COTTAGE GROVE CITY COUNCIL March 18, 2026

12800 RAVINE PARKWAY SOUTH
COTTAGE GROVE, MINNESOTA 55016

COUNCIL CHAMBER - 7:00 PM

1 Call to Order

2 Pledge of Allegiance

3 Roll Call

4 Open Forum

5 Adoption of Agenda

6 Presentations

A Exceptional Service Award - Detective Jeff Rydeen
Staff Recommendation: Present Exceptional Service Award to Detective Jeff Rydeen.

7 Consent Agenda

A City Council Regular Meeting Minutes (2026-02-18)
Staff Recommendation: Approve the February 18, 2026, City Council Regular Meeting Minutes.

B City Council Regular Meeting Minutes (2026-03-04)
Staff Recommendation: Approve the March 4, 2026, City Council Regular Meeting Minutes.

C Parks, Recreation, and Natural Resources Meeting Minutes (2026-02-09)
Staff Recommendation: Approve the February 9, 2026, Parks, Recreation and Natural Resources Meeting Minutes.

D Temporary Gambling Permit - Ladies Rock Off-Road Club
Staff Recommendation: Authorize issuance of a single-occasion gambling permit to Angela Stevens on behalf of the Ladies Rock Off-Road Club to conduct a raffle at Carbones on September 11, 2026, at 7 PM.

E Response to Open Forum - Allison Steenberg
Staff Recommendation: Receive a response letter to the open forum question from Allison Steenberg.

F Approval of Rental Licenses
Staff Recommendation: Approve the issuance of rental licenses to the addresses listed in the attached table.

G Labor Attorney Professional Services Agreement
Staff Recommendation: Approve the professional services agreement between the law firm of Madden Galanter Hansen and the City of Cottage Grove.

H Noteefy Software and Agreement
Staff Recommendation: Approve the Noteefy Master Agreement and purchase of the Noteefy SaaS solution in the amount of $5,000 annually.

I Real Estate Equities LCDA Loan Agreement for Hadley Apartment Project
Staff Recommendation: Approve Resolution 2026-043 authorizing the Metropolitan Livable Communities Act Loan agreement for $785,000, to be used for the Hadley Ridge Apartments project.

J Professional Services Agreement with Kutak Rock LLP for EDA Legal Services
Staff Recommendation: Motion to approve the Professional Services Agreement with Kutak Rock LLP for EDA Legal Services

K 2025 Convention and Visitors Bureau Annual Report
Staff Recommendation: Approve the 2025 Cottage Grove Convention and Visitors Bureau Annual Report.

L Mississippi Dunes Fishing Pier Purchase
Staff Recommendation: Authorize purchase of Mississippi Dunes Park fishing pier from Hewitt Docks for $37,428 and assembly and installation from Diddy's Docks for $16,599.

M Municipal State Aid Street Funds Advance Resolution - 80th Street Reconstruction Project
Staff Recommendation: Adopt resolution 2026-040 requesting Minnesota State Aid Streets Funds Advance.

N BCA Master Joint Powers Agreement and Amendment
Staff Recommendation: Adopt Resolution 2026-042 approving the State of Minnesota Joint Powers Agreement and Court Services Amendment with the City of Cottage Grove on behalf of its City Attorney and Police Department.

O Public Safety Distributed Antenna System (DAS) and Cellular Signal Booster System forthe Low Zone Water Treatment Plant
Staff Recommendation: Approve the KonectaUSA proposal in the amount of $164,735 and authorize the installation of the Public Safety DAS and the cellular signal booster system at the Low Zone Water Treatment Plant.

P Fee Table Amendments – Commercial Electrical Permit Review Fees, Water Meter Fees, and Finance Fees
Staff Recommendation: Adopt Ordinance No. 1110 amending the City Fee Table for the following: 1) Commercial Electrical Review Fees 2) Large Water Meter Fees 3) Electronic Check Fees (eCheck)

Q Trash Container Storage – Ordinance Amendment
Staff Recommendation: Adopt Ordinance No. 1111 to amend City Code Titles 4-2-2, Definitions, and 4-2-11B(1)(a)(b), Container Storage Requirements, to allow trash containers to be stored along the side of the home or garage with no screening required.

R Sale of Suplus Property
Staff Recommendation: Authorize Public Works to advertise and sell surplus property on Cranky Ape and or MNBid.

S Rental Agreement with Tri State Bobcat for three Skid Steers
Staff Recommendation: Approve the three year rental agreement with Tri State Bobcat for three skid steers in the amount of $138,240.

T US Bank Encroachment Agreement
Staff Recommendation: Approve the US Bank Encroachment Agreement.

U 2026 Mill & Overlay - Approve Plans & Specifications and Authorize Bidding
Staff Recommendation: Adopt Resolution 2026-041 approving the plans and specifications and authorizing bidding for the 2026 Mill and Overlay Improvements

V MnDOT/City/County Agreement - 80th Street Reconstruction Project
Staff Recommendation: Adopt Resolution 2026-039 approving the State of Minnesota Department of Transportation, Washington County and City of Cottage Grove Cooperative Construction Agreement for the Trunk Highway 61 at 80th Street project.

W Right-of-Way Permit Management Special Provisions and Control Policy
Staff Recommendation: Approve the Right-of-Way Permit Management Special Provisions and Control Policy.

X American Water Infrastructure Act Support - Barr Engineering Agreement
Staff Recommendation: Approve the Professional Services Agreement with Barr Engineering Company in the amount of $44,900.

Y Response to Open Forum - Peggy Nelson
Staff Recommendation: Receive the Open Forum response from Public Safety.

8 Approve Disbursements

A Approve Disbursements
Staff Recommendation: Approve disbursements from 02-27-2026 through 03-12-2026 in the amount of $1,866,506.66.

9 Public Hearings

10 Bid Awards

11 Regular Agenda

A Ravara Trails – Minor Subdivision, Zoning Amendment, Planned Unit Development and Preliminary Plat
Staff Recommendation: 1) Adopt Resolution 2026-046 approving a Minor Subdivision to split 3.77 acres and 24.06 acres from two existing parcels at 10052 80th Street and 10478 80th Street. 2) Adopt Ordinance No. 1108 approving the zoning amendment to change the zoning of 148.72 acres of land generally located east of Keats Avenue (CSAH 19), north of 77th Street and south of 70th Street, from AG-2, Agriculture, to R-4, Transitional Residential. 3) Adopt Resolution 2026-045 approving a Preliminary Plat and Planned Unit Development for a subdivision to be called Ravara Trails, which will consist of 269 single-family units and 306 townhome units.

B Talcott Glen - Rezoning and Preliminary Plat
Staff Recommendation: 1) Adopt Ordinance No. 1109 approving a Zoning Amendment to change the zoning of 69.5 acres of land generally located west of Hadley Avenue and 95th Street and east of Grey Cloud Trail, from AG-2, Agriculture, to R-4, Transitional Residential. 2) Adopt Resolution 2026-044 approving the Preliminary Plat for a residential subdivision to be called Talcott Glen, which will consist of 177 single-family homes.

C McHattie Landing - Preliminary Plat and Planned Unit Development
Staff Recommendation: Adopt Resolution 2026-047 approving the Preliminary Plat and Planned Unit Development for a subdivision to be called McHattie Landing, which will consist of 85 lots for single-family homes.

12 Council Comments and Requests

13 Workshops - Open to Public

A Police Annual Report and Use of Force Data Presentation
Staff Recommendation: Receive Cottage Grove Police's 2025 use of force and annual report presentation.

B MN Law Enforcement Support Office (MN-LESO) Participation
Staff Recommendation: Authorize Cottage Grove Public Safety to continue participating in the Minnesota Law Enforcement Support Office program and the State Plan of Operation (SPO).

C Recreational Vehicles
Staff Recommendation: Receive information and recommend that staff proceed with a Council item of proposed amendments to Ordinance Chapter 5, governing recreational vehicles, neighborhood electric vehicles, and micro-mobility devices, including electric-assisted bicycles.

14 Workshops - Closed to Public

15 Adjournment

City Council Action Request

6.A.

Meeting Date	3/18/2026
Department	Administration
Agenda Category	Presentation
Title	Exceptional Service Award - Detective Jeff Rydeen
Staff Recommendation	Present Exceptional Service Award to Detective Jeff Rydeen.
Budget Implication	N/A
Attachments	None

City Council Action Request

7.A.

Meeting Date	3/18/2026
Department	Administration
Agenda Category	Action Item
Title	City Council Regular Meeting Minutes (2026-02-18)
Staff Recommendation	Approve the February 18, 2026, City Council Regular Meeting Minutes.
Budget Implication	N/A
Attachments	1. 2026-02-18 City Council Meeting

COTTAGE GROVE CITY COUNCIL

February 18, 2026

12800 RAVINE PARKWAY SOUTH
COTTAGE GROVE, MN 55016

COUNCIL CHAMBER - 7:00 P.M

1. CALL TO ORDER

The City Council of the City of Cottage Grove, Washington County, Minnesota, held a regular meeting on February 18, 2026, at Cottage Grove City Hall, 12800 Ravine Parkway. Mayor Bailey called the meeting to order.

2. PLEDGE OF ALLEGIANCE

The audience, staff, and City Council Members stood and recited the Pledge of Allegiance.

3. ROLL CALL

Tammy Anderson, City Clerk, called the roll: Mayor Bailey-Here; Council Member Clausen-Here; Council Member Garza-Here; Council Member Olsen-Here; Council Member Thiede-Here.

Also present: Jennifer Levitt, City Administrator; Ryan Burfeind, Public Works Director; Zac Dockter, Parks and Recreation Director; Phil Jents, Communication Manager; Pete Koerner, Public Safety Director; Korine Land, City Attorney-LeVander, Gillen & Miller, PA; Brenda Malinowski, Finance Director; Emily Schmitz, Community Development Director; Sam Pierret, Senior Planner; Paul Sponholz, Engineer.

4. OPEN FORUM

Mayor Bailey opened the Open Forum and asked if anyone wished to speak about anything that's not on tonight's agenda. We had a sign-up sheet in the entryway and a couple, Philip and Talia, signed up to speak about Data Centers.

Ms. Winkels said well, my first question is if there's a Data Center planned for Cottage Grove?

Mayor Bailey replied okay, at the moment I can say that I'm not aware of an actual Data Center being planned in Cottage Grove.

Ms. Winkels said oh, okay. Well, then my statistics don't mean anything. Mr. Winkels said it's about the amount of water and electricity they use.

Mayor Bailey said you can share, though, feel free to share.

Ms. Winkels said well, it does use over 400 million gallons of water per year, equals that for 1,000 households. The electricity use is 4% of the total electrical grid, which equals 100,000 homes a year. The bills for us would double, and I don't like that, we're on a fixed income. Plus the unknown climate impact that the heat gives off, it's a constant noise, and we need to put like a pause on Data Centers until we have more information available on how they impact the environment. So, that was my, so, I'm glad we're not having one.

Mayor Bailey said well, what I'll share with you is that no one's shown up to say, hey, I want to build one.

Ms. Winkels replied but it's there, they've got one going for Inver Grove Heights, and now the public has been notified about it, and so there is an uproar. So, I wanted to get it before that happens, so.

Mayor Bailey said I appreciate it, thank you.

Ms. Winkels replied I appreciate it.

As no one else wished to speak, Mayor Bailey closed Open Forum.

5. ADOPTION OF AGENDA

Motion by Council Member Thiede to adopt the agenda; second by Council Member Garza. Motion carried: 5-0.

6. PRESENTATIONS

A. Proclamation - February 18, 2026 Tibetan New Year
Staff Recommendation: Proclaim February 18, 2026 as the Tibetan New Year, also known as LOSAR, in Cottage Grove.

Mayor Bailey said I asked Council Member Clausen to read the proclamation, and afterward, I'll ask for a motion and a second.

Council Member Clausen said thank you, mayor, the proclamation is as follows; he then proceeded to read aloud the proclamation.

Motion by Council Member Clausen to proclaim February 18, 2026 as the Tibetan New Year, also known as LOSAR, in Cottage Grove; second by Council Member Olsen. Motion carried: 5-0.

7. CONSENT AGENDA

A. Approve the November 10, 2025 Parks, Recreation and Natural Resources Commission Meeting Minutes.
B. Accept the 2026 Strategic Directions.
C. Appoint Jordan Dibich to the Parks, Recreation and Natural Resources Commission.
D. Approve Ordinance 1107, amending the City Fee Table.
E. Appoint Alanna Sobattka to the position of Assistant City Engineer at Grade 22, Step 1 of the 2026 Non-represented Pay Plan, with a start date to be effective as soon as possible.
F. Approve the issuance of rental licenses to the properties listed in the attached table.
G. 1) Authorize the Fire Department to apply for a FY26 AFG SAFER Grant to support the hiring of 8 full-time firefighters. 2) Authorize the Fire Department to retain Firehouse Grants to write a FY26 SAFER Grant.
H. Authorize entering into an agreement with Aurora Strategic Advisors for Federal lobbying services in 2026.
I. Amend the Recreation Facility Use Policy to recognize Blazing Stars Special Olympics as a Priority 3 Athletic Association.
J. 1) Approve the Cooperative Agreement between Washington County and the City of Cottage Grove for the Construction Costs of County Road (CR) 74 Improvements Project. 2) Approve the Cooperative Agreement between Washington County and the City of Cottage Grove for Maintenance of County Road (CR) 74 Improvements Project.
K. Authorize the sale of a 2018 Dodge Ram 5500 Ambulance (Unit Number 24-0833-18).
L. Approve the one-year rental agreement with MTI for a 16-foot mower for $15,750.

Council Member Thiede wished to pull Item C, Appointment to Parks, Recreation and Natural Resources Commission, on the Consent Agenda for further comment and/or discussion.

Council Member Thiede said I am the liaison to the Parks, Recreation and Natural Resources Commission this year, and every February we kind of have different terms that come up, and we need to either reinstate the people if

they have term left or we have to find somebody new. So, it turns out that this year Samantha Crabtree, who has been on the Commission I think for like eight years, term limited out; she's been a great asset on that Commission, and I'm sure this won't be the last we see of her getting involved in the City. We talked to a couple different people, and we came to a decision that Jordan Dibich should be appointed to the Parks, Recreation and Natural Resources Commission effective March 1, 2026. Council Member Thiede said I would appreciate it if you guys would kind of take a look at that and approve that tonight with the Consent calendar.

Motion by Council Member Thiede to approve the Consent Agenda; second by Council Member Garza.
Motion carried: 5-0.

8. A. APPROVE DISBURSEMENTS

Staff Recommendation: Approve disbursements from 01-30-2026 through 02-12-2026 in the amount of $1,787, 521.69.

Motion by Council Member Clausen to approve disbursements; second by Council Member Olsen.
Motion carried: 5-0.

9. PUBLIC HEARINGS

A. Yellow Tree Development - Site Plan Review, Planned Unit Development, Preliminary and Final Plat, Tax Abatement
Staff Recommendation: 1) Hold a Public Hearing for the Tax Abatement request by Yellow Tree Development. 2) Adopt Resolution 2026-032 approving the sale of Outlot B, Frattalone's Southpoint Ridge, to East Point Apartments, LLC, and the Purchase Agreement for Outlot B, Frattalone's Southpoint Ridge with East Point Apartments, LLC. 3) Adopt Resolution 2026-030 approving the Preliminary Plat and Final Plat for Everwood 6th Addition. 4) Adopt Resolution 2026-031 approving the Planned Unit Development and Site Plan Review for a 186-unit, six-story multifamily apartment building located on East Point Douglas Road South. 5) Approve the Stormwater Management Facilities Agreement, Encroachment Agreement, and Permanent Trail Access Agreement. 6) Adopt Resolution 2026-028 approving the Tax Abatement Agreement between the City and East Point Apartments, LLC.

Mayor Bailey said I know we have a couple different people who will be speaking on this topic, but we'll start with Sam Pierret, our Senior Planner with the City. I know Nate Carlson, who is our Economic Development Manager, will also be speaking a little bit later, and then I also believe we have Shane Rudland from Ehlers, who will be sharing some information.

Senior Planner Pierret said thank you, Mr. Mayor, and Members of the Council. This evening I am presenting, along with my esteemed colleagues, the Yellow Tree Development proposal for a Site Plan, Planned Unit Development, Preliminary and Final Plat, and Tax Abatement Public Hearing for an apartment building on Outlot D of the Everwood Addition and Outlot B of Frattalone's Southpoint Ridge. These are on East Point Douglas Road and are vacant parcels that are wooded with some steep grades there. Outlot B is currently owned by the City of Cottage Grove and is proposed to be purchased by the developer to facilitate access to their parcel and the development due to the steep grades and the restricted buildable area here. Outlot B does not currently have a Conservation Easement, unlike some other portions of the property, as seen here. A Conservation Easement was established over Outlots D and C of the Everwood Addition in 1997, and then that was amended in 2007 in response to a proposed development. No development, including grading, excavating, or structure construction may occur on Outlot D above the 860 contour line, which is the area that is still in a Conservation Easement. A former farm road was also preserved as a Trail Easement and must remain a natural path with very limited grading and excavation allowed. The farm road connected East Point Douglas to what is now Aspen Cove, north of the parcel, and the farm road is part of the Trail Easement, the northerly 60% of that farm road is the portion that is still in Conservation

Easement. The lower 40% of the original road is not in the Conservation Easement. The location of the proposed trail may be amended as the City sees fit, so long as an unpaved pedestrian connection is maintained to East Point Douglas Road. The Conservation Easement, the Trail Easement, and the grades of the property significantly reduce the buildable area on the site. The developer has had to design their building around these areas, including the grading that is allowed. The Minnesota Land Trust has approved all proposed trail configuration and grading within that Trail Easement. Due to the site constraints, as I mentioned, the applicant has proposed to purchase Outlot B of Frattalone's Southpoint Ridge; this would mean that these two pieces of land need to be combined, and since they're in two different plats, the land must be re-platted to combine land that's in two different plats. The applicant has prepared the Everwood 6th Addition and included the required Drainage and Utility Easements for Preliminary and Final Plat consideration this evening.

The property is currently zoned Mixed Use, where apartment buildings are a permitted use, and the property is also guided Mixed Use in our 2040 Comprehensive Plan. Permitted density in the Mixed Use District is 20-to-40 units per acre, and the proposed density of the apartment building would be 30.39 units per acre.

As mentioned, the applicant has also requested a Planned Unit Development (PUD) with this request. The Planning Commission discussed this at length at their December meeting; the applicant has requested that PUD consideration, which is a Zoning tool to allow flexibility in the City's Zoning Standards where, without using a Variance, in unique situations where unique circumstances exist. The proposal being located on the land with the existing Conservation Easement, Trail Easement, and the varying topography are all unique limitations to this property where the use of a PUD would be acceptable. Providing diverse housing opportunities while preserving these natural features also supports the use of the PUD, which is in conformance with the City's Strategic Plan, Comprehensive Plan, etc. The PUD is proposed for building height, building setbacks, parking ratios, and architectural materials. I'll also note that the Rohrs apartment project, further down on East Point Douglas Road at the cul-de-sac, also was approved as a PUD in 2024. The applicant is proposing a six-story apartment building with four levels of residential and two levels of covered parking. That PUD that I mentioned would allow the maximum height of the building to be 77 feet, where 55 feet is allowed by our Zoning Ordinance. As I discussed, the varying grades of the site would result in the front of the building being 77 feet tall, at the tallest point; however, as you move around the back of the building, it will be built into the hillside, and so the height actually will be 45 feet from lowest adjacent grade to the top of the roof or the parapet. The structure setbacks are also proposed to be reduced via the PUD, from 20 feet to 10 feet; this is acceptable given, again, the reduced buildable area on site and the 10-foot setback will keep the structure out of all Drainage and Utility Easements.

The applicant has also proposed to provide landscaping on site in compliance with the City Code; up to 40% of the existing trees may be removed on site per Code, however, given the extensive area in the Conservation Easement where trees are not allowed to be removed, a significant amount of trees will be preserved on the site. The applicant will also be responsible for thinning some overgrowth and brush on the City-owned parcel to the east, along East Point Douglas Road, and the MnDOT parcel to the south on the corner of East Point Douglas Road. The developer must also maintain these properties to the back of the curb, using sod and irrigation on the MnDOT parcel, but seed will be used on the City-owned parcel because it does serve as a stormwater feature and also has some very interesting grades.

Architecture of the building is also a proposed use of the PUD: The developer has requested to use 61% Class 1 or 2 materials, where 65% is required by our Ordinance. The applicant has ensured that the portion of the walls facing East Point Douglas Road will have that 65% or more Class 1 or 2 materials used, while other portions of the building as you wrap around to the back side will be closer to that 61%. This is again similar to the Rohrs build, which was approved for 61% of Class 1 or 2 materials in 2024; however, giving adherence to that 65% on the portions facing Highway 61. So, this is very similar to that request as well.

The PUD would also request a reduction in the number of parking spaces required on site. There are 298 spaces required, and the applicant has proposed 296 spaces; this would be split up between 38 surface parking stalls and 258 underground stalls on that two-tiered parking system. A Fire truck turnaround area must be provided to accommodate Fire truck turning on the paved surface on the west side of the building. To accommodate the truck turning, up to 2 spaces may be lost; therefore, staff is comfortable with reducing the required parking down to 294 spaces for a parking ratio of 1.58 spaces per unit of the PUD. This would be comparable, again I'll mention the Rohrs apartments, which had 1.5 spaces per unit and also The Legends apartments, which had 1.2 spaces per unit.

An existing unpaved, natural trail currently exists on the property, connecting the sidewalk and East Point Douglas, up to Aspen Cove, this is that former farm road that I mentioned earlier. As I mentioned, there is that existing Trail Easement that was established as part of the Conservation Easement that must stay in place, undisturbed, in a more natural state. However, the lower 40% of the farm road may be amended, and the applicant has proposed to route that behind the proposed building, along the parking lot, and then down on the west side, over Outlot B to East Point Douglas Road. This has been found to be an acceptable pedestrian connection by staff, and the Land Trust, as I mentioned, also reviewed this and gave their blessing.

The applicant has also proposed a stairway connection over the City lot on the east side of the property for residents only to be able to access the trail on East Point Douglas Road.

Senior Planner Pierret said and with that, I will bring up my counterpart, Ryan Burfeind, the Public Works Director, to talk about some transportation information.

Director Burfeind said Good Evening, Mayor and Members of the Council. I'm going to talk about two different things, thinking about East Point Douglas Road, the capacity of that, and I'll also touch on Hardwood Avenue capacity, and then look at some off-site pedestrian connectivity as well.

So, you can see on the screen there are currently around 1,100 trips per day on East Point Douglas Road. In looking at Rohrs, which is under construction, and Yellow Tree, that adds about another 1,500 trips per day, so we're looking at 2,600 trips per day on East Point Douglas Road, and the capacity is 5,000. So, from an engineering perspective, we're comfortable with that because Yellow Tree is the last developable property on East Point Douglas Road. So, this is really kind of the end of major traffic growth for this roadway. Certainly, it's a contributor, I mean that's a big change, it's a change in that traffic pattern, but it is within the design capacity.

Also, highlighted in yellow is the Hardwood-East Point Douglas Road intersection. Thinking about what impacts this development may have, certainly over time we're going to continue to monitor this area for continuing traffic changes. Right now, with Yellow Tree and Rohrs combined, looking at warrants for that intersection, warrants are what would trigger like an all-way stop or a traffic signal, if it's even greater. At this time, an all-way stop, those are the lower warrants, those are not met at this time with the traffic that we're anticipating.

On the right, we're kind of thinking big picture, what are we looking at with Hardwood Avenue? That's a road that we continue to monitor; we put the signal in at Hardwood Court because we've seen continued traffic growth along that roadway. It's kind of two different roadways: As you go north of East Point Douglas Road, it's a two-lane arterial roadway, and as you go south, it's a four-lane arterial. So, these numbers in yellow, the top number is the existing traffic counts, the bottom is the capacity. So, thinking similar to East Point Douglas Road, both sections of road around 40% capacity, and then Yellow Tree and Rohrs will add to this; so, it's definitely going to increase that traffic amount on Hardwood Avenue, no question, but it's still within design capacities, and we're still going to continue to monitor that roadway, as we continue to get development and redevelopment, for any needs. No additional improvements at this time are recommended for Hardwood Avenue. The signal was the main one, and the signal did take into account this growth, so this project and then Rohrs were contributing factors to the need for that signal, we took those into account from a traffic perspective.

The last thing is pedestrian connectivity. At the Planning Commission, I know there was quite a bit of discussion about pedestrian connectivity and what does East Point Douglas Road look like. Thinking about these four-lane sections, this picture on the left, that's where it's that four-lane section, and they are a barrier to pedestrians, there's no question. We're trying to move traffic efficiently along this roadway. You can see in the middle, at Harkness there used to be a striped crosswalk, but we removed that when we put the signal in; the signal is where we've got that blue star. We really wanted to try and encourage pedestrians to use that signalized intersection, that's the safe, protected crosswalk at this point, but certainly, with the amount of apartments, you're going to have a lot of pedestrians on East Point Douglas Road. So, I think it's something we want to continue to look at when we think about our Safe Streets and Roads for All, we have that grant that we're going to be implementing and doing a lot of pedestrian review throughout the City. Even looking at where I highlighted in yellow, there's that striped-out median right now, definitely some opportunities for improvement there I think for pedestrian access actually at this location. It would work quite well if we could do like a protected median or something like that, so I think there are some things, just for the whole network, not just for Yellow Tree, but for all the users and all the residents on East Point Douglas Road, there are probably some improvements that we could make here in the

future at a relatively low cost. We want to review that with our Safe Streets for All program because we want to look Citywide, what's our biggest issue points, where are our biggest challenges for pedestrians to cross. So, that's what I have from a transportation perspective. With that, I will turn it over to Nate.

Council Member Garza said hi, Ryan, thank you so much for all that information, that was a lot and really, really good. Just a quick question on that intersection that's circled in yellow, is there any plans as far as bike trails, like extra, going all along the new area that's going to put in?

Director Burfeind replied Council Member Garza, no new plans for additional bike trails right now. Currently, we do have bike trails on both sides of Hardwood Avenue, it does switch to a sidewalk when you go south of East Point. Being an arterial roadway, that's where we like to see those trails on both sides, so feeling good about that roadway, and then East Point Douglas Road has just the one sidewalk, but being more of a minor collector, that's pretty typical to see the one sidewalk on one side. So, from a kind of global perspective, I think we're pretty comfortable with it, so no changes at this time.

Council Member Garza said so, with the couple of new apartment units that are going in, you don't anticipate more need for expanding the bike trails down that way or anything?

Director Burfeind replied not at this time, Council Member Garza. With two bike trails on Hardwood, that's really kind of maxed out at that point, and like I said, it is a sidewalk and not a bike trail on East Point, but that is pretty typical for a roadway like that to not have more of that kind of higher speed bike trail on a cul-de-sac.

Council Member Garza said thank you.

Council Member Thiede said I see that we're talking about pedestrians and where they're most likely to go, coming out of Yellow Tree. Being that it's a market rate and so forth, there's probably not necessarily a lot of older people, but we do know and you kind of mentioned this in the narrative, but they're going to probably come across East Point Douglas and go right up into the parking lot by Kohl's, or they're going to go right into by Culver's and so forth. So, I'm just wondering whether we should, I know you mentioned in there about the steepness of some of that and making it ADA and so forth, but I mean, people aren't going to be taking that route anyway, most likely, and I don't know, maybe we should kind of consider maybe doing something with that.

Director Burfeind replied yeah, Council Member Thiede, we can definitely take that into consideration. You're right, the grades were the biggest challenge. We did look at that, I believe with The Legends. The other item that was probably a bigger concern, but we can definitely look at it, is Kohl's itself. You know, mostly that's on private property, so it would have to be owned by Kohl's and maintained by Kohl's and not the City; so, it's just something we'd have to work with them if they would have interest in taking on that connection. Certainly, for their customers it would be a nice quick access; in the summertime, people would probably walk up the hill, but in the winter, normally, you're not getting up that hill. So, that's something we can look at further.

Council Member Thiede said and obviously, they may also walk up the drive there to the child care center and to come across to get to a walkway on 80th Street, which ends a little soon right there, at Culver's and so forth, which might be a way, too, and then you get into an easement that the City could possibly do something there.

Director Burfeind replied no, and that's correct, if it was in like a public easement and that was the route that was determined, then it is something the City could maintain for sure. So, it's something we can look into further.

Mayor Bailey asked if there were any other questions, none were asked. Mayor Bailey said thank you, Ryan.

Director Burfeind said all right, I'll turn it over to Nate.

Good Evening, Mayor and Members of the Council. Nate Carlson, I'm the Economic Development Manager. I'm also joined with my colleague, Shane Rudland of Ehlers, and we'll be presenting tonight the application and review of Tax Abatement for the Yellow Tree project.

Manager Carlson said so, the question of what is tax abatement and why is it needed for this apartment project, I'd state it's similar to TIF, it captures the increment from an improvement on a site, but it only accounts for the City taxes; that's what we're contemplating this evening. The new taxes from the project will continue to flow to the County and School District, and with this Tax Abatement Project, there are no affordable unit requirements, allowing more flexible use, as opposed to a housing Tax Increment Financing (TIF) District. The reason for the

application is due to the significant site constraints; it's not economically feasible for this project to move forward if not but for the assistance, and our abatement review was conducted by our team at Ehlers. The graph before you demonstrates what the Total Project Cost is at this time, which is just over $45.6 million, with a per unit cost of $245,409.

As for what the abatement terms are in the agreement, first of all, they have to finance and construct the project. These new taxes need to be paid, they need to prove up the total costs prior to us issuing the note, it's what we have determined a lookback clause to right size the note; right now, it's situated where there's $100,000 buffer and if there's cost savings beyond $100,000, then there is a 50-cent reduction per dollar that's reduced. It's situated as a 10-year note, with step downs; to the right, there's a graph that shows the year-over-year reduction. It starts at 100% for the first 3 years, and then over the course of the next few years, it decreases by 5%, and then in year 8, it's down to 75%. Following year 10, all taxes will be flowing back to the City. The present value of the note currently is situated at $1.241 million. I'd invite my colleague, Shane, forward to discuss more of the returns of the project.

Thank you, Mayor and Council Members, Shane Rudland with Ehlers, we do the financial work for you guys related to these projects. You'll maybe recall we were before you in March 2025 with a similar project, at that time, it was 160 units. Over the course of roughly that year, between now and then, the development has gone up to 186 units. Included in your packet is a breakout of the mix between studios, all the way up to three bedrooms, but the project has gotten bigger.

The terms of the abatement that you heard back in March 2025 are the same, although the abatement number has gone up because there are more units, there's more cost to the project; the finances are largely the same, and that's why we kept the abatement structure and the stepdown the same as what you saw back in March 2025. We've tweaked the lookback a little bit, and it's kind of developing that whole concept with the developer, giving them a buffer, but also again and to right size the abatement amount. If the cost comes in lower, the whole concept there being they presented a cost today, and if they save money in the project, then the abatement that would be committed in present value isn't needed in the amount that we committed today. So, pretend they save $1 million dollars, obviously, they didn't need the abatement amount that we're talking about today, for example. We generally don't anticipate that, construction cost lookbacks are usually not enacted, but they are a method that lots of cities use, especially in the metro, to manage abatement and TIF notes.

So, with that, we have the same recommendation as we had before, although again, the note amount is different because the costs and unit count are changed. And with that, I'll be happy to answer any questions.

Mayor Bailey said okay.

Manager Carlson said I should state, mayor, it's necessary for the Council to hold a Public Hearing; it has been stated in the newspaper, it's been notified, and so prior to acting on the resolution, we do need to hold a Public Hearing.

Mayor Bailey replied so, before we do that, let me just ask Council, with our staff here, the different members, I know Ryan got asked while he was in the middle of his, but are there any questions at the moment that Council has for staff or Ehlers? None were asked.

Mayor Bailey opened the Public Hearing. As no one spoke on this item, Mayor Bailey closed the Public Hearing.

Council Member Thiede said one question, is anybody from Yellow Tree here?

Mayor Bailey replied I believe they are, and he asked them if they'd like to speak.

Council Member Thiede said I didn't see it in the packet anywhere, I was just curious, what is your estimate of cost for these different level of apartments? Actually, I wasn't sure what a Tetris Alcove was, maybe you could, I did find the alcove and the concept of what the alcove is, and so forth, but I couldn't find anything that added the word Tetris to it, and I'm thinking maybe it's the access somehow, or?

The applicant replied exactly, that's a unit plan that we developed four-or-five years ago that allows an efficiency within different unit types and how they allocate on the exterior cladding. So, we have a way that we can

divide the walls between units in a staggered pattern, so it looks like two Tetris pieces coming together. So, that bulk of two units, one is an alcove that only has roughly 16 feet of exterior wall, and the adjacent unit is a full one bedroom, and the bedroom has a window and the living space does as well. So, that's just a term that we use to identify that grouping of a design set.

Council Member Thiede said so then like for, and I think a studio was maybe the smallest at about 500 square-feet?

The applicant replied yeah, correct.

Council Member Thiede asked what were you thinking, estimating, I don't know if you're on a monthly rent on that, or?

The applicant asked for the rent? Absolutely. So, we, our goal since we started at Yellow Tree is to provide entry point market-rate housing, that's why we have a broad unit mix: Studio, alcove, one bedroom, one bedroom den, two bedrooms, and a stack of three bedrooms as well. So, the studios would likely start in the high $1,200s, $1,280. The one bedroom alcove units, so it has a bedroom but not an exterior window, high $1,300 is probably where it'll average out. One bedrooms will range from $1,400 all the way up to $1,900 if they have a den, that sort of thing. So, you know, we do look at the Area Median Income and kind of consider where those fall as far as kind of a rental segment, and that does provide I believe the majority, if not almost all of our units being at 80% AMI or below, and a majority of our one-bedrooms at 60% AMI just naturally.

Council Member Thiede said all right, good to know, thanks.

Council Member Olsen said Good Evening, thanks for coming out in the snow, I'm sure that was fun. Two things that I'm curious about, and I know that you mentioned it when we originally workshopped, but I just am going to ask because we're a little further down the road, what is your plan for maintenance of the facility?

The applicant replied yep, so, we are a fully integrated company, so we do, I head up the design, my original business partner heads up property management, and we have in-house construction. So, we build and manage and own all of our properties, and we have a full staff, property management, leasing, there will be an assigned maintenance person, and then we also have roving maintenance if any additional work orders might be needed for the building.

Council Member Olsen asked is your maintenance person on site?

The applicant replied oh, yeah. Yep, so, they'll be required to be on site every day. They may be called away or we may provide an additional person for filter changes or some other type of maintenance, but this is a fully-staffed building. So, there will be someone at the front door, someone available to take leases, and then the maintenance, certainly.

Council Member Olsen said okay, and I know you've been working on a project in Inver Grove and Crystal as well, I think. When you're built out and you anticipate 90% or whatever it is of capacity for your rental units, do you have an idea of the number of residents that that would represent? So, for example, you know you've got a mix of units, and I'm sure you know some are going to be one person and some are going to be two, three. So, based on some of the statistics from your other units and just your experience, do you have a ballpark idea?

The applicant replied we do, absolutely. I don't have it for this building, based upon the unit types, but I know studios are almost certainly always a one person, very rarely do we have more than one person in one of our studios, and that's true for alcoves. One bedrooms I would put it under 1.5 persons per unit, one bedroom dens might be a little bit more. Two bedrooms are almost always two, it's a roommate situation for the most time. We do have some families, you know, certainly in Farmington we anticipate them in Inver Grove, and I think that's going to be consistent here. I doubt that that's going to get over three persons per two-bedroom, maybe four.

Council Member Olsen said I appreciate that, and the reason I asked the question is earlier, as you saw in the presentation, there was some conversation about pedestrians, primarily some of our elderly, who live in the adjacent units, and what that might look like in terms of where they can cross the road and all those kinds of things. Obviously, having another developer putting an apartment building in there is going to add some additional pressure to that. Further, being market rate, I would guess that you probably have more of your renters who actually have a vehicle vs. some of the more affordable that we have in town as well. So, I'm just trying to kind of get a feel for okay, it's a pretty tight little area there on East Point Douglas with all those apartments in there, and

are people going to be able to get in, get out, be safe, especially if they're not moving as fast as maybe they did 20, 30 years ago. So, that's helpful information, thank you.

Mayor Bailey asked if there were any other questions for the applicant; none were asked. Mayor Bailey said all right, thank you, appreciate it.

Motion by Council Member Garza to Adopt Resolution 2026-032, approving the sale of Outlot B, Frattalone's Southpoint Ridge, to East Point Apartments, LLC, and the Purchase Agreement for Outlot B, Frattalone's Southpoint Ridge with East Point Apartments, LLC; second by Council Member Thiede. Motion carried: 5-0.

Motion by Council Member Clausen to Adopt Resolution 2026-030 approving the Preliminary Plat and Final Plat for Everwood 6th Addition; second by Council Member Garza. Motion carried: 5-0.

Motion by Council Member Olsen to Adopt Resolution 2026-031 approving the Planned Unit Development and Site Plan Review for a 186-unit, six-story multifamily apartment building located on East Point Douglas Road South; second by Council Member Clausen. Motion carried: 5-0.

Motion by Council Member Thiede to Approve the Stormwater Management Facilities Agreement, Encroachment Agreement, and Permanent Trail Access Agreement; second by Council Member Garza. Motion carried: 5-0.

Motion by Council Member Garza to Adopt Resolution 2026-028 approving the Tax Abatement Agreement between the City and East Point Apartments, LLC; second by Council Member Thiede. Motion carried: 5-0.

Mayor Bailey said there you go, it sounds good, thank you; Council Member Olsen said welcome to Cottage Grove.

Mayor Bailey said I'm very interested to see how it looks over there, it's hard to visualize it a little bit. I mean, your pictures do a good job of it, but it's going to be interesting to see how it looks there.

Council Member Garza said we just really want to make sure that they keep in mind all of the pedestrians that will be walking along that road and crossing there so that is really, really important, and there's a lot of kids down there, so. Council Member Olsen said I agree, 100%.

Mayor Bailey said I will just share with the Council, if you're not aware of this or not, but a week from tomorrow I will be actually going to The Legends with, I believe, you guys, along with our staff, to meet with some of the residents over there to share with them the process and all that and any concerns that they might have. So, they get to hear that, too, so we can make sure that they feel comfortable. I know there's a lot happening in their area over there, between the Rohrs and now this project.

Council Member Garza said and kids are busy, busy over there, they love to run around in that area.

Mayor Bailey said sounds good, thank you all for that.

10. BID AWARDS - None.

11. REGULAR AGENDA - None.

12. COUNCIL COMMENTS AND REQUESTS

Council Member Clausen said well, thank you, mayor, I have nothing to add tonight.

Council Member Olsen said thank you, mayor. Earlier this evening, Council Member Clausen read a proclamation about the Lunar New Year, thank you for doing that, by the way. I wanted to just mention it's been a pretty busy week between that, we also saw the start of Ramadan for our Muslim friends on 2-17, and then, of course, today is Ash Wednesday, so Lent is right around the corner as well. I'm grateful that we were able to recognize Lunar New Year because when we were growing up, we always called it I think it was Chinese New Year, and since that time,

it's expanded to include all of the Asian countries that celebrate in that area, like Korea, Vietnam, Brunei, etc. It's important that everybody who lives here in the City of Cottage Grove understands that you're welcome here, we very much appreciate the fact that you've chosen Cottage Grove as the place to settle and hopefully raise a family, and do all of those things. And whether it's Ramadan or the Lunar New Year or Ash Wednesday, we wish all of you the very best for these holy days.

Lastly, mayor, I wanted to just mention when I received a memo via email the other day from our new Economic Development Manager, one of the things that he referenced in the memo was the Maxfield Study. The Maxfield Study, for those who may not know, is a study that the City commissioned to look at housing, and in particular, apartments. Maxfield gave us sort of a target that we should try to hit based on the data that they had at the time in order to ensure that we have a variety of housing stock available for people, who either currently live in town and are looking to live someplace different, whether that's a step up or a step down, and/or people who want to move to town. So, I'm just curious if staff might consider kind of updating us, now that we've approved Yellow Tree, we've got Rohrs and some others that we've also approved recently; I'd be curious to know where we're at vs. the target. For example, if the Maxfield Study said hey, you need 1,000 additional units, what have we done since that time, and how close are we or how far away are we from that goal? And with that, mayor, I'll turn it back to you.

Council Member Thiede said all right, so coming in here from outside, you might not be thinking about it, but Strawberry Fest is only 120 days away, and it'll be warm and sunny, and it'll be beautiful weather for Strawberry Fest. So, mark that on your calendar for June 18.

And I don't know, I might be stealing a little bit of the mayor's thunder here, but we've got, he was talking about Ash Wednesday and so forth, the Fish Fry is starting at River Oaks on Friday night, and I know the mayor's going to be there, I'm going to be there for the first night. Mayor Bailey said Council Member Olsen is going to be there, too, I believe. Council Member Thiede said, oh, there you go, okay. And keep in mind that reservations do need to be made because they fill the place up pretty quickly. So, and the expanded menu this year actually looks really good, too, so look up River Oaks and the Fish Fry is a great thing to take in. So, I think that's all I've got, just be careful. Mayor Bailey said and don't forget the dessert; Council Member Thiede said the dessert, oh, yeah, there's salted caramel cheesecake, that we've actually been able to sample in the past, and that's really, really good. Mayor Bailey said yes, that is good, and the chocolate cake. Council Member Thiede said well, I like the cheesecake better, but yeah, it's good chocolate cake, too. Otherwise, just be careful going home tonight because it is fairly slippery, and actually probably one of the worst snowstorms I think we've had this year so far, isn't it? I don't know, Ryan?

Director Burfeind said it's pretty close. Mayor Bailey said Ryan doesn't have much hair left on the top of his head, so I think that tells you how this winter has been.

Council Member Garza said well, I will share the last event that we have on here from our Parks and Rec group. The Parks and Rec Department, they're having an event called Grow and Glow. It sounds like a lot of fun, actually, it's a mindfulness and friendship event. It's on March 6, from 10 to 11:30, at the Glacial Valley Park. It looks like participants will enjoy yoga, facemasks, succulent planting, and fun, fizzy drinks. It sounds fun to me. Space is limited, so you can register online with our Parks and Rec Department. Back to you, mayor.

Mayor Bailey said the only other thing I was just going to bring up since I think we covered most of the other topics, and Council Member Olsen mentioned it briefly, I've been honored and I say that sincerely, the Tibetan Community has actually invited me to be a guest speaker at their event tomorrow, up in Isanti. So, part of the proclamation is kind of great timing because I'm going to be able to read our proclamation up there, but they were pretty excited to have me come as kind of their guest speaker there. So, I'll be able to kind of immerse himself in their culture, which is going to be pretty awesome. So, I was very honored to be invited to that event, and I'll report back to Council and staff kind of how that all panned out.

The other last thing I'll just say is I had the opportunity, as our Communications Manager is here, I got to do the last official taping of the Mayor's Moment at the TruLens facility here in Cottage Grove. For those who may not be aware, they're actually moving from their current facility in Cottage Grove to a larger facility, in the Central Park in

Woodbury, which is maybe sad for us because it's not going to be in Cottage Grove, but they're going to have a lot more space. It's good for them from a growth standpoint.

And though I can't publicly say it, but we did hear a certain business, I'm looking out in the audience at Phil Jents, that we heard from them that they've already had somebody else that's interested in that spot. And let's just say if it's true and they come in, we're all going to love it because it does involve food, which I think we all love.

Council Member Olsen asked is it finally White Castle time? Mayor Bailey replied no, I wish it was a White Castle, so I'd just be okay with that, I'm being honest with you. Council Member Olsen said you know, Kori does business in West St. Paul, she could bring us some at some point, maybe. Mayor Bailey said that's true.

13. WORKSHOPS - OPEN TO PUBLIC - None.

14. WORKSHOPS - CLOSED TO PUBLIC - None.

15. ADJOURNMENT

Motion by Council Member Garza, second by Council Member Thiede, to adjourn the meeting at 7:50 p.m. Motion carried: 5-0.

Minutes prepared by Judy Graf and reviewed by Tamara Anderson, City Clerk.

City Council Action Request

7.B.

Meeting Date	3/18/2026
Department	Administration
Agenda Category	Action Item
Title	City Council Regular Meeting Minutes (2026-03-04)
Staff Recommendation	Approve the March 4, 2026, City Council Regular Meeting Minutes.
Budget Implication	N/A
Attachments	1. 2026-03-04 City Council Meeting

COTTAGE GROVE CITY COUNCIL

March 4, 2026

12800 RAVINE PARKWAY SOUTH
COTTAGE GROVE, MN 55016

COUNCIL CHAMBER - 7:00 P.M

1. CALL TO ORDER

The City Council of the City of Cottage Grove, Washington County, Minnesota, held a regular meeting on March 4, 2026 at Cottage Grove City Hall, 12800 Ravine Parkway. Mayor Bailey called the meeting to order.

2. PLEDGE OF ALLEGIANCE

The audience, staff, and City Council Members stood and recited the Pledge of Allegiance.

3. ROLL CALL

Tammy Anderson, City Clerk, called the roll: Mayor Bailey-Here; Council Member Clausen-Here; Council Member Garza-Arrived after Roll Call; Council Member Olsen-Here; Council Member Thiede-Here.

Also present: Jennifer Levitt, City Administrator; Nick Arrigoni, Deputy Fire Chief; Ryan Burfeind, Public Works Director; Phil Jents, Communication Manager; Pete Koerner, Public Safety Director; Korine Land, City Attorney-LeVander, Gillen & Miller, PA; Brenda Malinowski, Finance Director; Jon Pritchard, Fire Chief; Emily Schmitz, Community Development Director; Sam Pierret, Senior Planner; Sam Drewry, Code Enforcer; Brad Peterson, Public Safety Captain; Paul Sponholz; Engineer.

4. OPEN FORUM

Mayor Bailey opened the Open Forum and asked if anyone wished to speak about anything that's not on tonight's agenda. He said there were two people who already signed up, the first is Peggy Nelson whose topic is ordinance. Welcome.

Hello everyone, my name is Peggy Nelson, and I am here about the submission of a proposal for an ordinance to regulate facial coverings by law enforcement in Cottage Grove. I sent this out to all of you on the Council, Honorable Mayor, and to all of you and to the Police Department, so I respectfully submit the attached proposed ordinance of your consideration. The ordinance would regulate the use of facial coverings by law enforcement officers while performing visible, non-undercover duties within the City of Cottage Grove, and its purpose is to support public trust, promote effective communication, and ensure clarity identified during routine law enforcement. The proposed ordinance includes reasonable, practical exceptions for undercover assignments, tactical incidents, situations requiring protective equipment due to hazardous or environmental conditions. The intent is not to criticize local law enforcement but to reinforce transparency and consistency and visible policy attacks. I respectfully ask the City Council to review the attached proposal to determine whether it may be appropriate for referral to staff or discussion at a future Council Meeting. I am available to answer questions when additional information is needed. The purpose and findings: The identification and clarification during law enforcement interactions support public trust, community, and confidence. Concealing a facial identity during routine or visible law enforcement duties may create confusion, hinder communication, and reduce transparency. Minnesota Statute 609.735 restricts the identity-concealing mask in public places except under limited conditions. Certain opportunities such as undercover assignments, tactical incidents, or hazardous environments require

special equipment or identified concealed. I'd like to point out that in MPR News the St. Paul City Council passed this ordinance prohibiting law enforcement from wearing masks. I would really like to see the whole City of Cottage Grove have this. I thank you very much for your time.

Mayor Bailey said thank you, Peggy. The next person who signed up was Tracy Hamilton, and it's regarding cars driving behind Walmart.

Tracy Hamilton said sorry, I don't have anything written or anything like that. Mayor Bailey said you're okay. Tracy said I wasn't expecting this many people, but it's a pleasant surprise. So, as you're aware, I live behind Walmart, and nothing against Walmart, Walmart's actually been great. The issue has been people from the VFW that frequent it daily, numerous times in a day, living in the neighborhood using the field between Walmart and the VFW to avoid driving on the streets after they've been drinking. They go through that field and drive right next to our house and then get on the street. There used to be barriers because we're in a cul-de-sac and they couldn't drive through, but then those were taken down. So, I know we worked with the Cottage Grove Police Department, but it's such a quick drive, like they're not going to get there in time. So, I don't know what can be done, but people walk their dogs and stuff like that, so.

Mayor Bailey replied well, thank you for bringing it to our attention. To be honest with you, I thought this was going a completely different direction.

Tracy said no, Walmart's been great. I don't have a problem with Walmart.

Council Member Olsen said I didn't know those barriers were gone. When did those get taken down?

Tracy replied somebody ripped them down, somebody ripped the barriers down, and the thing is the barriers were down, and then the snowplow actually was putting snow there, so now they're kind of like encroaching on our yard, and they literally drive right there. I mean, I would never take my car and drive through somebody's yard, and we've tried to talk to them, but they won't interact, which is fine, I don't really want to. And then we've talked to Cottage Grove, and they wouldn't talk to them, but it's such a quick drive, and it's not just one car, usually it's like four or five at a time.

Mayor Bailey said okay, all right, thank you for letting us know, appreciate that. Tracy said have a good meeting.

Mayor Bailey said those were the only people who had signed up for Open Forum. He asked is there anybody who happened to walk in that wants to speak during Open Forum but didn't sign up?

Hi, my name is Allison Steenberg, I own Boondocks Vintage Boutique. Basically, I am kind of coming to you with a proposal for the Old Cottage Grove Historic District, Lamar Avenue South. So, I know that the Tanks farm will be developed into a new development with a lot of new homes, and I believe that they're going to have to put like City water and sewer there. I know currently we have a beautiful, like we don't have a downtown district of Cottage Grove right now, and there's a huge historic like story, I guess, right on Lamar Avenue, I mean going all the way back to like 1840s, and I just think that it could be developed, kind of like Afton, in a small way. But right now, right next to our building is Angeline, which is owned by the bank but cannot be purchased, I don't want to purchase it by any means, but it cannot turn into anything because it has no water and septic or parking, and so it just sits there. It's beautifully renovated, he put over $1 million into it, but it just sits there, empty. And we're obviously having a lot of issues getting people down Lamar Avenue because there's the sign ordinance is a big problem, and then the fact that there is just no reason to drive down that road unless you know we're there. I just think that if we could maybe with that new water and sewer maybe get some sort of like hook up to some of the businesses down there. We could like rival Afton, like people go to the State Park and then the Ravine Park, and then they can go after they're done on their hikes they could go either to Afton and get out of their car one time and go to Selma's and have an ice cream cone, and then go to one of the restaurants down there, and then go to like Dwell, but they only have to get out of their car one time. Where with our City, after you're done, you either decide to go to Afton, Hastings, Woodbury, Stillwater and do that; so, we're losing a bunch of tax money, too, because there's just nothing to get out. You go to a strip mall and you get out and you go to ice cream at Baskin Robbins, good ice cream, I'm not going to lie, but then you get back in your car, and then you drive to like 70th Street Junction, and then you go to like TJ Maxx. And it's just not like a, we have beautiful historical landmarks in

our City that I think that we could capitalize on; I don't think it would be real expensive to try to do that or cumbersome, it would just make us have a reason to come down. And with all the new high-end developments that are coming, people are going to go other places. I have this for you guys, who do I give this to?

Mayor Bailey said you can hand it to me, I'll take it. Thank you.

As no one else wished to address the Council, Mayor Bailey closed the Open Forum.

5. ADOPTION OF AGENDA

Motion by Council Member Thiede to adopt the agenda; second by Council Member Garza. Motion carried: 5-0.

6. PRESENTATIONS

A. Annual Photo Contest
Staff Recommendation: Receive information on Annual Photo Contest winners.

Mayor Bailey said our Communications Manager, Phil Jents, is going to take us through this. Mayor Bailey asked the Council Members to join him down in front of the dais.

Thank you, Honorable Mayor, Members of the Council, everyone in attendance, my name is Phil Jents, the City's Communications Manager, and I am honored and delighted to be here tonight once again to talk about the 2026 City of Cottage Grove Annual Photo Contest. I would be lying if I said that selfishly this wasn't one of my and our Communications staff favorite events of the year, it's just a great way to engage our community and kind of share in the vibrancy and beauty that our community has to offer through people's really awesome photography. So, this year was no different, it was a lot of fun, and a lot of fun to help manage. The City promoted this contest through various communication channels: Social media, the newsletter, the website, etc. This year our categories included Life in Cottage Grove, Animals, Lifestyle, and Landscape, and then also a Best in Show category, which of course encapsulates all of the photo submissions that we received; we got 86 total photo submissions, so a healthy library of really adorable, beautiful photos from our residents. So, with that and without further ado, I will move on to our winners.

- Life in Cottage Grove: "Farm on the Hill" by Jean Anderson. Phil said this one is incredible.
- Animals: "Fox on Lamar Avenue" by Erin Spence. I thought I heard that this was taken by a phone, which is pretty wild but also very impressive, and maybe I'm wrong on that, but still a great photo.
- Lifestyle: "Baby Rainbow on the Way" by Zoua Her; I think that's just a very awesomely-titled photo.
- Landscape: "Where Summer Lingers" by Charlene Swanlund. That is also amazing and beautiful.
- Best in Show: Mirror Flight, also by Charlene Swanlund.

Phile said so, again, 86 total photos. The City of Cottage Grove staff compiled them, voted on them, and those are your winners for the 2026 Annual Photo Contest, and with that, I'll yield back to you, mayor.

Mayor Bailey said all right, I believe we have one of the winners here. Just so everybody's aware, in the recognition we present you with a Certificate of Appreciation with a picture on there of what you took a picture of within the City of Cottage Grove, and then you get a little check that comes with it, which is always kind of nice.

So, Erin Spence is here this evening with us, the others are not. He invited Erin to come up to the front, and everyone applauded her. Mayor Bailey presented Erin with her certificate and check, and asked Erin is this something you like to do all the time, or this just happened? Because that is a cute picture.

Erin replied I was on my way home and we pulled over and I took the photo, so there were two little guys, and we actually saw them twice in the same week, and the second time the photo was taken.

Phil said maybe we can just get all together and we'll do a quick group photo. He said this won't be as good as that photo, but thanks. Everyone laughed.

Mayor Bailey thanked Erin and she was given another round of applause.

Mayor Bailey said just so the public knows, too, one of the things that we do, part of the deal with this photo contest is we take these photos and utilize them in different advertising that we do within the City of Cottage Grove, whether it's economic development. As a matter of fact, eventually here we'll show we've got kind of a new backdrop that's on our trade show kit, and a lot of the pictures that are on that backdrop are actually from residents in Cottage Grove that took amazing pictures of what life is like in Cottage Grove. So, I thought I'd just mention that to the group.

B. Firefighter/Paramedic Swearing In Ceremony
Staff Recommendation: Swearing-in and recognition of Firefighter/Paramedics Michael Dandl, Sam Anderson, and Adam Higley.

Mayor Bailey said we'll just stay right here because the next great thing that we have is the Firefighter/Paramedic Swearing In Ceremony. Our Public Safety Director is here, we also have our Deputy Fire Chief, Nick Arrigoni, and Fire Chief Pritchard is here. So, we'll turn it over to them and get things rolling. I see a bunch of people way back in the audience there.

Deputy Fire Chief Arrigoni said yes, so if we can, I think the first thing we'll do is invite anybody that's here to support our firefighters being sworn in tonight, if you can kind of file in and come in and support them. As we're getting settled, Mayor and Council, thank you for having us tonight. As you know, the Fire Service is deeply rooted in tradition, and one of those traditions is swearing in of firefighters. Throughout the country, this takes place for various reasons, promotions, appointments, end of probation period, so tonight what we'd like to do is perform the swearing in of Mike Dandl and Sam Anderson, who have completed paramedic school and have also completed their task book as a paramedic. So, for lack of better terms, they are fully functioning Firefighter-Paramedics now, which is fantastic. Also, we would like to swear in Adam Higley, as he is nearing the end of his probation period. So, Adam will go first.

Adam began his Fire Service career as a Fire Explorer with the Roseville Fire Department. He graduated from Mounds View High School and the Opportunities in Emergency Care Program at Spring Lake Park High School in 2020. Earning his EMT Firefighter 1 and Firefighter 2 certifications, he then began working for the Lake Johanna Fire Department as a Firefighter-EMT while pursuing his undergraduate degree at the University of St. Thomas. After completing his Bachelor's Degree in 2024, Adam attended Century College where he completed his Associate's Degree in Paramedic Science. In June 2025, Adam was hired with us as a Firefighter-Paramedic; since joining the Fire Department, he's been heavily involved in the development of our rope technical rescue capabilities and is currently in Community Paramedic school.

When not on duty, Adam enjoys drumming, DJing, rock climbing, and teaching, anything that keeps him active and engaged. Adam finds deep fulfillment in serving the Cottage Grove community alongside a Public Safety team committed to excellence on every response. He is grateful for the leadership and crew members who have invested in his personal and professional growth and looks forward to the opportunities to serve that lie ahead.

After his swearing in, his mother, Erin, will be pinning his badge.

City Administrator Jennifer Levitt asked Adam to please raise his right hand and repeat the oath after her, which he did. Administrator Levitt congratulated him and shook his hand and everybody applauded.

Adam's mother, Erin, pinned on Adam's badge, after which everyone applauded. Adam then shook hands with Mayor Bailey and all of the Council Members.

Deputy Chief Arrigoni said next up will be Sam Anderson. Sam Anderson grew up in Cottage Grove and graduated from Park High School in 2022. Before joining the Fire Department, Sam was involved in the Cottage Grove Police

Explorer Program and continues to stay involved as a Reserve Officer. In 2022, Sam was offered a parttime Firefighter position with the Cottage Grove Fire Department.

During his time with the Fire Department, Sam has completed numerous State certifications and training programs to further develop his skills in Fire and EMS. Last year, Sam had the privilege of being hired as a fulltime Firefighter with the Cottage Grove Fire Department while attending paramedic school through Century College. Sam obtained his Paramedic certification last year and has since been working as a Firefighter-Paramedic. Sam has a strong interest in public education, he does a lot of our CPR teaching, bleeding control, and fire safety.

Outside of work, Sam enjoys playing video games, building Warhammer models, and playing tabletop games with friends.

After his swearing in, his mother, Tessa, will be pinning his badge.

Administrator Levitt asked Sam to raise his right hand and repeat the oath after her, which he did. Administrator Levitt congratulated Sam and shook his hand and everyone applauded.

Sam's mother, Tessa, pinned Sam's badge, after which everyone applauded, and Sam shook hands with Mayor Bailey and all of the Council Members.

Deputy Chief Arrigoni said next is Mike Dandl. Mike and his family moved from St. Paul to Cottage Grove in 1995, where Mike graduated from Park High School in 2000. On May 13, 2002, Mike officially began his time with the Cottage Grove Fire Department as a paid on-call Firefighter. For 22 years as a paid on-call Firefighter, Mike obtained his EMT, nearly every Fire certification offered through the State of Minnesota, assisted with training, became a Lieutenant, and was honored as being the first two-time Firefighter of the Year. You've done a lot, my friend. Mike takes absolute pride in representing the department out in the community, and is usually one of the first to sign up when opportunities become available, which I can confirm. In October 2024, Mike finally got the ultimate honor of being offered a fulltime position with the department. He started paramedic school in January 2025 and officially became a Paramedic just before Thanksgiving 2025. Mike has also assisted with training the next generation of Firefighters and EMTs as an instructor with Century College.

When he's not working, he enjoys taking his oversized truck out in the mud with friends and family, enjoys watching Wild hockey, watching his daughter play volleyball, and collects and displays action figures and merchandise of his favorite WWF wrestler, The Ultimate Warrior, which I also can confirm if you ever want to come visit his desk.

Mike has done many things in his time in the Fire Service, but the thing he's most proud of is being called a husband, a dad, a son, a brother, an uncle, and a friend.

Unfortunately, Mike's wife, Amanda, is sick tonight, so hopefully she's watching at home. So, after the swearing in, his daughter, Brazia, will be pinning his badge.

Administrator Levitt asked Mike to raise his right hand and repeat the oath after her, which he did. She congratulated him and everyone applauded.

Mike's daughter, Brazia, pinned Mike's badge, after which everyone applauded. Mike then shook hands with Mayor Bailey and all of the Council Members.

After all were sworn in, Phil took photos of the newly sworn in Firefighter-Paramedics with Mayor Bailey, the Council Members, and all Public Safety personnel in attendance.

Mayor Bailey said all right, as they're leaving, why don't we give them another round of applause, and everyone applauded. He said it's pretty amazing, we had some of our former firefighters as well as our current firefighters here.

C. Woolery Scholarship Fund Check Presentation
Staff Recommendation: Allow Justin and Kim Olsen and the Cottage Grove Lions an opportunity to present donations to the Cottage Grove Public Safety Board for the Woolery Scholarship.

Mayor Bailey said our Director of Public Safety, Pete Koerner, is going to kick this off, and I do know that Mr. Woolery is here this evening, along with his wife, Katie, and then the Public Safety Board is also here this evening. So, let's get everybody up here.

Director Koerner said I just have a couple slides that I wanted to cover tonight first, just kind of highlighting all the great things that our Public Safety Board does for our Public Safety team and our community. After that, obviously, there will be a few words from the Lions Club as well, and Justin and Kim, they also help with the scholarship fund.

The Public Safety Board is a 501(c)(3) organization; its made up of citizen volunteers from various backgrounds. We do have a liaison from both the Police and Fire Department, Ryan Pierre from Police, and right now from Fire, Jon Pritchard hits most of the meetings. Just as a plug for them, if anyone wants to get involved and is looking to volunteer, they meet once a month and do a variety of fundraising events throughout the year. Their mission is to provide financial support for equipment, training, and programs to enhance safety and to provide crime prevention and safety information to citizens. Our finance director is best friends every time we have a donation, so thank you. They get really involved in the community through different events: They're at parades, they're at our Strawberry Fest, they sponsor things with Night to Unite. Over the years, they've sponsored Safety Camp, and they're always at our Police and Fire Open Houses and most recently, again at the HERO Center Open House and the Community Showcase. So, they're out there, out and about.

Funding Opportunities: Sometimes they'll get just a grant, but most of the time it's just blood, sweat, and tears going out there and doing fundraising and getting donations. I don't know if one of them will bring it up later, but they just started a raffle that I think they just kicked off, too. One of their members is really into the plushies and all the different patches and everything, and they also started selling Challenge Coins; so, they're looking for a lot of unique ways to raise money. Ongoing Support: A lot of the money that they have donated is to the Police Department Fitness Center and the Fire Fitness Center. The portable speed signs you see around town have been donated by them. They donated the message board that we have. Most recently, they cut a check for just over $20,000 for our newest K9, to pay for a lot of the equipment, squad setups, and everything. Now they're really doing a lot more with the technology, too; most recently, they donated a state of the art drone to us, and that was upwards of over $10,000. And, of course, the Craig Woolery Scholarship.

So, with that, I just have a couple slides about the scholarship, I'm not going to read it all to you. Council Member Olsen, I don't want to steal his thunder, I've heard he likes to talk a little bit. The Scholarship Application is on the City of Cottage Grove webpage, if you click on the Public Safety Board, we have a link to everything. I think with the amount of money they've been raising, they used to just do one and now you have a few I think they'll be looking for. All of that information is on our website. With that, I'll turn it over to Council Member Olsen.

Council Member Olsen said thank you, Pete, and thank you to the Cottage Grove Public Safety Board and the Cottage Grove Lions Club for being here this evening, along with the City Council, and of course, most importantly, Craig Woolery, and his wonderful wife, Katie, for being here this evening.

For those who may not be aware, the Craig Woolery Scholarship is intended to support young people in our community who want to go into a career in public service as a firefighter, an EMT, or a police officer. We have been grateful over the years to have had many worthy recipients, some of whom are now in their fulltime careers, which is very rewarding. This scholarship was started I think seven years ago because Craig has been retired for what, eight years now? Is that right? Boy, the time flies when you're having fun, it sure does. He's still the most handsome police officer in the history of the City of Cottage Grove if anybody asks, hands down, just take my word for it. Craig is one of those people who, when he retired as our Public Safety Director, he walked away from a long, very honorable career of service with the City of Cottage Grove, and he served in a variety of capacities, not just as a police officer but also as a paramedic. He also served as a commander on the S.W.A.T. team for 11 years, which was a long time. He trained a lot of the current S.W.A.T. officers who are serving on the S.W.A.T. team. He was a bike officer, so he got to ride his bike around town and hand out the trading cards to the kids and things. He was a D.A.R.E. officer. I tell this story a lot, but one of the things that impressed me most about Craig is when he became the Public Safety Director, after a career in law enforcement, he actually went to firefighter school. He put himself into firefighter school because he said I'm going to have to supervise firefighters, I better know what it's like to be a firefighter. And having just this past summer, with Council Member Garza and the Mayor, having spent a day

doing firefighter-related activities, I can tell you that is not for the faint of heart; I took a nice long nap after that for sure. So, it gave me a little extra appreciation for what Craig did.

The Woolery Scholarship is intended to reward those who exemplify the very best in those who want to serve their communities, and it's appropriate that our Cottage Grove Lions, to my left, also partner with us on this scholarship because the motto of Lions is "We Serve," and there is no greater service to your community than being a part of the Public Safety team. It's a very rewarding way of going through your career, but it also comes with lots of challenges, whether it's being away from your family, being on call all the time, etc. So, it takes a special person to do that, which is why when my wife, Kim, and I started this scholarship in Craig's name we wanted it to go to young people who have that passion to actually give back to the community and know what they're getting into.

The Public Safety Board has administered this scholarship since its inception, and they do a really good job of taking applications, selecting the candidates, and then following through to make sure that those candidates are rewarded. So, this year we are able to make a donation of $1,500 as a family to the Woolery Scholarship, and an additional $1,500 on behalf of the Cottage Grove Lions Club for a matching donation, totaling $3,000, and we'd like to present that check to Craig and Katie this evening in Craig's honor for this year's Craig Woolery Scholarship. Thank you.

Cindy of the Cottage Grove Public Safety Board said we are honored to be able to administer this. It's been great, and we've had plenty of applicants. As Justin said, they have become police officers, firefighters, or EMTs, so we're very proud of that. Unfortunately, right now, we have not had any applications, so I encourage the public if you are in high school in Cottage Grove, please apply for this. It is well worth it, and we are honored to do it. It depends on how many we have depends on how much goes out, so, the minimum is $1,000. I thank Justin and I thank the Board of the Lions Club for donating this money to us.

Craig Woolery said Justin, Kim, you guys have been so generous as well as great public servants. Mayor, Council, the Crime Board, and the Lions, oh, my gosh. I know that as times are difficult and you justify for dollars in Public Safety needs and what the public expects, those funds make a huge difference, and to see that keep coming and see the good use it's being put to just makes me really proud to be a retired old guy. So, thank you.

Mayor Bailey said awesome. All right, let's give everyone a round of applause, and everyone applauded. He said again, I'll make one last plug for applications for this scholarship, maybe we'll work on some communication through social media and such within the City, just maybe an extra push to make sure we get some applications in there. And I also want to, I want to kick it back, I don't know if Cindy, if you want to take it, he was mentioning about a raffle. Do you want to tell everybody? Because that's a fundraiser.

Cindy replied so we try to do several fundraisers during the year to help raise money to support our Police Department, Fire Department, and our whole Public Safety Board. We at this time are selling raffle tickets, they are $25 each; with that money, we're hoping to get more in our account because when we paid for the dog, we kind of took a little hit, but that's what we're here for, we do that. So, if you see any of us around, feel free to grab us for a ticket.

Mayor Bailey said all right, sounds good. So, thank you again, Lions, for doing that donation. Thank you to the members of the Public Safety Board and for all of those out there who are donating to this cause. Again, if you want to donate to the Craig Woolery Scholarship Fund, you're welcome to do that, whether you reach out to one of us on the Council, we can get you to the right person, or the Public Safety Board will take care of it for you, too.

A photo was taken of the Lions Club members, the Public Safety Board members, Director Koerner, Craig and Katie Woolery, along with Mayor Bailey and the City Council Members. After the photo, everyone again applauded.

D. Proclamation - Gary Spooner Day
Staff Recommendation: Proclaim March 15, 2026 as Gary Spooner Day.

Mayor Bailey said believe it or not, we have one more presentation this evening. This is a proclamation that we're doing for Gary Spooner Day here in Cottage Grove. I asked Council Member Thiede to read the proclamation, and then we'll look to him to make the motion to proclaim that for a special recognition on Gary's birthday in about another week.

Council Member Thiede said Gary is also known as Santa to most of the kids in Cottage Grove, but this is to proclaim March 15, 2026, as Gary Spooner Day in Cottage Grove. Council Member Thiede read aloud the proclamation.

Motion by Council Member Thiede to proclaim March 15, 2016 as Gary Spooner Day; second by Council Member Olsen. Motion carried: 5-0.

Mayor Bailey said just for the public, who might be wondering why are we doing something at age 87, it sounds like an odd year that you would do it, Gary is going through some pretty serious health issues right now, and so definitely prayers and such to him and his family. In consultation with our staff, as his family is putting together a kind of big party this year, I thought it was only fitting that we recognize him for his many, many years of community spirit, community focus, AKA our Santa here in Cottage Grove. We wish him much success, and I'll be able to present him with the proclamation at his birthday party next week. So, thank you, Council, for acknowledging that.

7. CONSENT AGENDA

A. Approve the February 4, 2026 City Council Regular Meeting Minutes.
B. Approve the February 4, 2026 City Council Special Meeting Minutes.
C. Accept and place on file the minutes from the December 15, 2025 Planning Commission Meeting.
D. Approve the November 25, 2025 Convention and Visitors Bureau Meeting Minutes.
E. Appoint Bradley Madison to the Planning Commission with a term ending on February 29, 2028, and appoint Commissioner Jessica Fisher to the Planning Commission Chair position through February 28, 2027.
F. Approve the appointment of Joseph McDermott and Mary Doheny to their first terms on the Advisory Committee on Historic Preservation, effective March 1, 2026, and ending on February 29, 2028.
G. Approve the Lower Potency Hemp Edible Retailer License to Cherokee Liquors (DBA G-Will Liquors) at 6999 80th Street South, Cottage Grove.
H. Authorize issuance of a single-occasion gambling permit to Corrie Lynn Kopischke on behalf of Phoenix Residence, to conduct a raffle at River Oaks Golf Course, 11099 Highway 61, Cottage Grove, on June 8, 2026, from 12:30-6:00 p.m.
I. Authorize issuance of a single-occasion gambling permit to David Gene Martin, on behalf of Accacia Lodge No. 51, to conduct a raffle at 11094 70th Street South, Cottage Grove, on October 3, 2026, at 6:00 p.m..
J. Approve the grant agreement with Washington County in the amount of $3,000 and authorize the expenditure of the $300 matching contribution.
K. Approve the issuance of rental licenses to the properties listed in the attached table.
L. 1) Authorize the department to sell two ATVs (Units #5398 and 5399) to 61 Marine & Sports for $5,000. 2) Authorize the department to purchase two E-bikes with the proceeds from the sale of surplus equipment. The cost is not to exceed $5,000.
M. Approve the purchase of a replacement vehicle for the administrative fleet.
N. Authorize Service Agreement with Pathfinder Trail Building, LLC for Bike Park jump line improvements for the amount of $73,608.
O. Authorize staff to apply for a MN DNR Expedited Conservation Partners Grant for Kingston Park native habitat restoration in the amount of $75,000.

P. Authorize Construction Manager as Adviser A/A C132 contract with Kraus-Anderson for preconstruction services in the amount of $10,000 and preconstruction administration and management fee equal to 2.25% (estimated at $91,842) of the project costs for the Ice Arena Remodel Project.
Q. Approve the 2026 Grant Agreement for Municipal Recycling Grant Distribution in the amount of $60,078.
R. Approve the Cottage Grove 2026 Standard Specifications for Utility and Street Construction, the 2026 Standard Detail Plates, and the 2026 Engineering Design Standards.
S. Adopt Resolution 2026-021 approving the Plans and Specifications and authorizing bidding for the for the 2026 Pavement Management Project.
T. Approve Change Order #1 and Adopt Resolution 2026-029 approving the final payment of $169,818.48 for the 2025 Hamlet Pond-Phase 2: Bank Grading and Sediment Removal project.
U. Approve the Professional Services Agreement with In Control, Inc. and appropriate officials are hereby authorized to sign all necessary documents to effectuate these actions.
V. 1) Approve the Assessment Waiver Agreement for 6237 64th Street South and appropriate officials are hereby authorized to sign all necessary documents to effectuate these actions. 2) Adopt the assessment in the amount of $6,300.00, as outlined in the Agreement.
W. Adopt Resolution 2026-038 authorizing staff to apply for the Minnesota LCCMR grant in the amount of $386,250 to assist in the completion of plans for the Mississippi Dunes Park Building.

Council Member Thiede wished to pull Item F, ACHP Commission Appointments, and Council Member Olsen wished to pull Item E, Planning Commission Appointments, on the Consent Agenda for further comment and/or discussion.

Council Member Olsen said as you can read here, this item is a recommendation to appoint Brad Madison to the Planning Commission with a term ending on February 29, 2028, and appoint Commissioner Jessica Fisher to the Planning Commission Chair position through February 28, 2027. I put these forward with the understanding that our current Chair, Evan Frazier, has timed out in his tenure on the Planning Commission, and Evan did just a magnificent job for the entire time he served on the commission and has been our Chair for the past several years. Evan is certainly going to be missed, but his departure leaves us with an opening both at the Chair position and at the Planning Commission member position. So, I would ask for your consideration to appoint Brad Madison to fill that spot and appoint current Commissioner Jessica Fisher to the Chair position, so that when we convene our Planning Commission meeting here at the end of the month, we're at full strength. And with that, I'll turn it back to you, mayor.

Council Member Thiede said we had a couple openings on the Historic Preservation Commission so Emily and Max and myself talked to a few different people, and we thought that a couple of great additions to that group would be Joseph McDermott and Mary Doheny. Joseph actually has a strong interest in historic preservation of Cottage Grove and is interested in historical research and has some property law background and things like that, so he was very energetic when we talked to him. Mary is actually a retired registered nurse, very involved in the community, she's lived in the community for 42 years. She volunteers at the local food shelf, and actually serves as a Master Gardener. So, I'd really appreciate your confirmation of having these two people join the Historic Preservation Board.

Motion by Council Member Clausen to approve the Consent Agenda; second by Council Member Garza.
Motion carried: 5-0.

8. A. APPROVE DISBURSEMENTS

Staff Recommendation: Approve disbursements from 02-13-2026 through 02-26-2026 in the amount of $4,366,287.26.

Motion by Council Member Olsen to approve disbursements; second by Council Member Garza.
Motion carried: 5-0.

9. PUBLIC HEARINGS - None.

10. BID AWARDS - None.

11. REGULAR AGENDA

A. Panera - Site Plan Review and Conditional Use Permit
Staff Recommendation: 1) Adopt Resolution 2026-036 approving a Site Plan Review for the construction of a restaurant and associated site improvements to be located at 7162 East Point Douglas Road South. 2) Adopt Resolution 2026-037 approving a Conditional Use Permit for a restaurant with a drive-up window to be located at 7162 East Point Douglas Road South. 3) Approve the Permanent Utility Easement, Encroachment Agreement, Permanent Drainage and Utility Easement, Permanent Sidewalk Easement, and the Stormwater Management and Facilities Agreement with DCJ Cottage Grove, LLC.

Mayor Bailey said our Planner, Max Erickson, is going to walk us through this. So, welcome, Max.

Planner Erickson said Good Evening, Mayor, and Members of the Council. CA Commercial Development has applied for a Site Plan Review and Conditional Use Permit to construct a drive-through restaurant, which will operate as Panera Bread. The site is located at 7162 East Point Douglas Road South, the parcel is approximately 1.2 acres; it is east of 80th Street and the Highway 61 interchange. The parcel is unique in that it is combined two lots of St. Paul Park Acre lots, which was originally platted in 1888. The site has previously been used as a fuel station, which was originally approved in the 1980s. The old fuel station building remains on site with signage removed. The fuel canopy and the pumps have been removed, as well as the underground tanks. An environmental study has been conducted for the removal of the fuel tanks, and it is currently under review by the Minnesota Pollution Control Agency.
Zoning & Land Use: The site is zoned Mixed Use Commercial and is consistent with the 2040 Comprehensive Plan. The site is currently surrounded by other Mixed Use businesses on the north side of Highway 61. Drive-through restaurants are considered Conditional Use in the Mixed Use Zoning District.
Site Plan Proposal: The applicant proposes to redevelop the entire site. The existing building will be removed and replaced with a 2,600 square-foot fast food drive-through restaurant with outdoor seating. The fuel station was constructed under old Code standards, and the applicant proposes to construct new stormwater features, which align with modern stormwater standards.
Site Access and Parking: The applicant proposes to reduce the accesses from three to two along East Point Douglas Road; the eastern access is proposed to be reduced to 26 feet in width, which meets current Code requirements. The eastern access will function as a right in, right out access as it currently functions, and the southern access will remain as it functions as a two-way access. The City is expecting to make improvements to 80th Street and East Point Douglas Road, adjacent to this property. Construction of this project will align a little bit with that redevelopment of 80th Street and East Point, so coordination between the City and the applicant will be had to ensure efficiency for both projects. General flow of the site will be in a counter-clockwise fashion with the drive-through and southern parking will remain as a two way. The applicant proposes to construct a private pedestrian sidewalk, which will connect to the public sidewalk along East Point Douglas; this will slightly encroach into City Right-of-Way, which will require an Encroachment Agreement. City Code requires this proposal to include 28 parking spaces, and the applicant proposes 38, which is a combination of angled and front in parking. City Code Title 11-4-2 requires drive-throughs to provide a minimum of six vehicles for car stacking in the drive-through, and the applicant is proposing eight, which meets Code standards. All setbacks will meet City Code standards.
The applicant will meet City Code requirements for:

Architecture: By providing an exterior primarily made of earth-tone brick and glass. Fiber cement panels will accent the proposed brick with a metal trim surrounding the windows, as well as an aluminum canopy. All proposed architectural materials will meet our City Code requirements.
Landscaping: The applicant proposes to remove 11 trees, and this will not require mitigation per City Code requirements. The applicant is proposing to meet all landscaping plantings required, including perimeter plantings around the building. Because of the sight limitations and the stormwater requirements of the site, the applicant is proposing to add plantings within the Drainage & Utility Easements in the site; staff have determined that this has minimal to no impact of current features of these Easements, and staff have made the applicant aware and they're understanding that these plantings will be at risk of future removal if the City needs to go in and do any work. The applicant has also been made aware that the property owner will be the responsible party to replace these plantings at such time any work would occur in these areas.
Parking: Parking lots greater than 25 spaces require parking lot islands per City Code. The applicant has proposed several landscaped bump outs throughout the site, and this Code is to break up large swaths of pavement in large parking areas. Their proposal meets City Code requirements. They also plan to landscape the perimeter of the building, including a little bit of a larger area for the drive-through. All the proposed landscaping will meet City Code requirements.
Signage: An existing pylon sign remains on site from the fuel station. This sign was legally placed under a prior City Code. As pylon signs are no longer acceptable, this sign is considered a legal non-conforming sign. The applicant plans to utilize and modify this existing sign in lieu of a new monument sign to provide good sight lines from Highway 61 as advertisement. Per City Code, legal non-conforming signs are allowed to be modified as long as the modifications do not make the sign more non-conforming. The applicant recognizes that this is a legal non-conforming sign and proposes to remove the lower cabinet of the existing sign, reducing overall square footage of signage. The applicant plans to paint the pylon pole black and add the Panera logo on the existing square footage on the top of the sign. All proposed modifications meet City Code requirements.
Lighting: The applicant has provided a Lighting Plan for proposed lighting on the site. Per City Code, the applicant has demonstrated that no larger than 1' candle of lighting will leave the perimeter of the property line.
Required Easements: This proposal will require three additional Easements to be implemented on site to maintain full maintenance access from the City should the need arise. As the lot was created prior to modern lot requirements, there's no 10' Drainage & Utility Easement around the perimeter of the property. There is an existing 10' that exists on the north side, so a remaining 10' Drainage & Utility Easement will be required for the remainder of the property. This will prevent building encroachments within these areas if the City needs to implement future utility or stormwater features.
Sidewalk: Current public sidewalk encroaches onto private property and will require an additional Easement for the City to maintain full maintenance coverage of this public sidewalk.
Utility Easement: An existing Utility Easement exists on the southern part of the property, and there is a sanitary line that is located outside of this Easement. An additional Easement to encompass the required area of the sanitary line is required based on the depth.

Planner Erickson said with that, I leave the recommendation before you. The applicant is also present for any questions.

Mayor Bailey thanked Max and asked if there were any questions for Max from the Council.

Council Member Olsen said thanks, Max. This is the second time I got to see it, and it gets better every time, so good job, appreciate it. This may be for you or you may want to phone a friend. The first question I have is with regard to the property behind the facility. That property has historically been poorly maintained, and I know that the bank has often had to interact with the previous tenant, asking about removal of branches and I think there was even a dead tree at some point back there. So, my question is this: What can we expect in terms of the landscaping, etc. behind the building. I saw the plan for some of the plantings, etc. that you shared, but behind the building, just maintaining that and kind of keeping it clean and visibly appealing. Because if you're at the bank, going through the drive-through, clearly you see it, and there was even a point in time I think where a tree may have fallen into the drive-through area of the bank in the past. Do you have any thoughts on that, or?

Max replied Council Member Olsen, Mayor, and Members of Council, the Site Plan does demonstrate that there is a trash enclosure that will push up to the existing 10' D & U. Some of the stormwater basin will cut close to that, so there will be some removal, and I can point to Emily to provide any more comments.

Council Member Olsen said like I said, always feel free to phone a friend.

Director Schmitz said Mayor, Council, teamwork always, right? It's important to note that a lot of the existing trees are on the adjacent parcel, Council Member Olsen, that you're referencing, and those will remain. But any existing trees on that northerly property line of the Site to be redeveloped will be removed, and then new landscaping will be installed, hopefully eliminating the challenges with some of those maybe dead or dying trees back there.

Council Member Olsen replied beautiful, thank you. I did have another question, and that relates to the sign. I know that the intent is to reuse the sign. Is what we saw from the presentation an accurate depiction of what we can expect from that sign, or will there be any dynamic elements to it? In other words, will there be pricing of some sort or a message of some sort that rotates on the sign, or is it just going to simply be the Panera logo?

Max replied Council Member Olsen, Mayor, and Members of the Council, the submitted sign depiction will remain static and, per City Code, we wouldn't allow for any moving.

Council Member Olsen said yeah, perfect, great. And then the last question I had might be for Ryan, and that has to do with there's a watermain that kind of sits in that intersection where East Point intersects right in front of what used to be the Speedway and now it'll be the Panera; as this construction is being progressive over time, do we have any work that we're going to be doing on that main or any of the pipes underground at that point in time?

Director Burfeind replied Mayor, Members of the Council, no work with this project on the watermain. There is also sanitary sewer that runs on the property, which I think Max mentioned, and these are being corrected for. Any watermain work with East Point Douglas Road would likely occur in 2027; unfortunately, it's a little bit of a delay, but that's when we would complete any necessary work. Right now, we're not anticipating any. With the age of that watermain and the issues we've had, we're not anticipating any full watermain replacement.

Council Member Olsen said okay, that's really what I was asking about was based on the age and condition if that needed to happen, so perfect, thank you. Back to you, mayor.

Council Member Garza said when you just mentioned the watermain, and it may or may not be an issue, but I just remember when it was Speedway, they had a serious issue with some type of sewer something or other. Is that going to be an issue with Panera? Every time you walked in the store, it smelled really bad.

Director Burfeind replied Mayor, Members of the Council, I'm not directly familiar with that, but that can happen with different issues in older properties. With the way they're constructing a new building, it'll meet all new Building Codes with traps and such, so I wouldn't anticipate any challenges going forward.

Council Member Garza said okay, thank you.

Mayor Bailey asked if there were any more questions from the Council, and there were none. He asked if the applicant would like to speak on this topic.

I'm Mark Wilhoite, VP of Development for CA Commercial Development, out of Cincinnati, Ohio, 3805 Edwards Road, Suite 390. I thought all these people were here for our Panera project, so that's like a good thing, but I've been to a lot of City Council meetings across the country, and I haven't seen this much support for paramedics and Fire Chief, you know, it's really great to see. I guess that's one of the reasons Panera has wanted to end up in Cottage Grove, they've looked here for ten years. The VP of Real Estate was a McDonald's guy, and we ended up running into this site, catching it, and actually, there's a quick update, we did close on it today, so we own it and we're ready to start construction, open it this year, we need to open it in 2026. So, we're ready to go when City staff can free up permits and we're moving on. But we're excited here, and if there's any other questions, and I didn't realize, could we make the sign turn around? Can we do that? No, so, it is a static sign, it'll be lit, and that was the only deal point that Panera took to their Real Estate Committee was the existing sign had to stay. So, they actually wanted the bottom half, but through some difficult negotiations with Emily and Max, we ended up compromising and pulled that bottom half off, which I think again, it's a non-conforming sign, but it's an important

sign. So you can see it from Highway 61 and Panera is embedded in that little area right there, so we're all excited to get this thing going. So, we appreciate it.

Mayor Bailey said well, and I can share with you when I put little postings out on social media, there's the excitement for Panera coming, and the question is, but you just answered it, when will it be open, by the end of this year so in 2026.

Mr. Wilhoite replied it will be, yes, the sooner the better so definitely by the end of the year.

Mayor Bailey asked if Council had any questions for him but there were none. He said all right, thank you for the update.

Mayor Bailey said Max, thank you for your presentation.

Motion by Council Member Thiede to Adopt Resolution 2026-036 approving a Site Plan Review for the construction of a restaurant and associated site improvements to be located at 7162 East Point Douglas Road South; second by Council Member Garza. Motion carried: 5-0.

Motion by Council Member Garza to Adopt Resolution 2026-037 approving a Conditional Use Permit for a restaurant with a drive-up window to be located at 7162 East Point Douglas Road South; second by Council Member Clausen. Motion carried: 5-0.

Motion by Council Member Clausen to approve the Permanent Utility Easement, Encroachment Agreement, Permanent Drainage and Utility Easement, Permanent Sidewalk Easement, and the Stormwater Management and Facilities Agreement with DCJ Cottage Grove, LLC; second by Council Member Olsen. Motion carried: 5-0.

Mayor Bailey told Mr. Wilhoite we're looking forward to it, we're glad to have you here.

B. New Life Church (11245 Point Douglas Drive South) - Site Plan Review
Staff Recommendation: 1) Adopt Resolution 2026-035 approving the Site Plan Review for a 5,814 square-foot building addition to the existing New Life Church building, located at 11245 Point Douglas Drive South. 2) Approve the Stormwater Management Facilities Agreement with New Life Community Church.

Mayor Bailey said Emily Schmitz, our Community Development Director, will take us through this one.

Director Schmitz said yes, Mayor, Council, New Life Church, I know they've been planning this for quite some time, are working through a Site Plan Review. Their location is just south on Highway 61, just south of River Oaks Golf Course. It is a unique building down there, if you've ever been down there, you know exactly the one that I'm talking about, its kind of an octagon shape. It is in the R-2 Zoning District, so they did secure a Conditional Use Permit for their operation as a place of worship, I think back in the 1990s, so they've been operating for quite some time and now are outgrowing their walls.

Proposal: So, they are proposing about a 5,800 square-foot addition to their building. As you can see, its essentially just to the east of their existing building there. It will be lobby space, but mostly focused on creating some additional classroom space for their Sunday and Wednesday youth operations and education opportunities that they do provide. Their site is a little bit larger, about 10 acres, so they are meeting all those setbacks with their proposed addition.

Access/Parking: They access directly off of Highway 61, and that access will remain for the time being. Obviously, they'll continue to work with MnDOT as needed if they make some adjustments for safety purposes on Highway 61; but as it relates to parking, they do have parking on site to support their existing use plus the addition, so they're okay there. They are proposing and showing on their Site Plan some proof of parking, so those classrooms are going to be utilized just on that Sunday, Wednesday timeframe, but of course we always want to be proactive; and if at some point they're interested to expand in some type of education capacity, we want to make sure that we're thinking ahead on that site to allow for those additional parking spaces to be utilized.

Utilities: Given this site is quite a ways outside of our current service area for City utilities, it is served by private septic and well. The applicant is proposing to move their well with this project as the existing well today is right where they're going to put that building addition. So, they'll be moving that well, and then they're also working with Washington County to ensure that they've got a compliant septic system, so I believe they're actually installing a brand-new system out there to support not only their existing use but the expansion as well. We'll want to make sure that we see both of those permits before we issue them a Building Permit to start with this building addition activity.
Landscaping & Tree Mitigation: There's quite a bit of tree cover on the site, as I mentioned, and of course it's a larger site. They are proposing to remove a minimal amount of trees. Our Zoning Code does allow for us to evaluate mitigation and removal, based off of large tracts of existing trees, so we're able to navigate that and understand that they will not trigger mitigation with the trees that they're proposing to remove. Then, of course, with all projects they are proposing a Landscape Plan that does align with our required landscape standards and maintaining that minimum open space requirement on their site.
Stormwater: Given they are proposing to add some additional impervious to the site, with all of our projects we want to make sure they're meeting those minimum stormwater standards. So, they are installing some additional stormwater infrastructure on the site to be able to manage and support that additional runoff.
Architectural Materials: With their architectural materials, we worked with them through ensuring that they were aligning with our standards, meeting that combination of Class 1 and Class 2 materials on their building. So, they are proposing some brick that will align as best as it can with the existing building; obviously, it's a unique structure out there, but they certainly have every intent to make sure that it does flow together.

Director Schmitz said so, with that, there are two recommendations before you this evening. Obviously, I'm available and I know there is a representative from the church, who is available as well for some specific questions.

Mayor Bailey said thank you, Emily. First of all, Council, any questions? There were none. Mayor Bailey asked is the applicant here? Would you like to speak? Again, just your name and address for the record if you would.

Sure, my name is Dan Torgerson, with Station 19 Architects, I live in the great City of Ramsey, so 16934 Kamacite Street in Ramsey. I don't really have anything to add, I think Emily hit on everything. The church offers the Bread of Life through Jesus unlike Panera, their stuff is just bread. Everybody laughed.

Council Member Olsen said you have been waiting for that all week.

Dan replied no, I just thought of it now, I didn't know Panera was going to be here.

Mayor Bailey said that was good, and Council Member Olsen said well done.

Mayor Bailey said all right, any questions for the applicant at all? None were asked. Mayor Bailey said looks good, thank you, sir.

Mayor Bailey said before I go for a motion and a second, Emily, one quick question, this is just in general. It doesn't appear, looking at the picture, as we know at some point in time Highway 61 is going to be upgraded and/or added frontage roads or whatever. I'm assuming this addition isn't going to, wouldn't be far enough that you'd even have to worry about that in the future, is that correct?

Director Schmitz replied Mayor, Council, no, any adjustments on Highway 61 wouldn't impact this particular addition or vice versa.

Mayor Bailey said that's what I thought, and I just wanted to make sure I brought that up as we see things continue to develop along Highway 61 there. So, okay, thank you.

Motion by Council Member Clausen to Adopt Resolution 2026-035, approving the Site Plan Review for a 5,814 square-foot building addition to the existing New Life Church building, located at 11245 Point Douglas Drive South; second by Council Member Olsen. Motion carried: 5-0.

Motion by Council Member Garza to approve the Stormwater Management Facilities Agreement with New Life Community Church; second by Council Member Thiede. Motion carried: 5-0.

Mayor Bailey told Mr. Torgerson good luck, congratulations with the addition.

12. COUNCIL COMMENTS AND REQUESTS

Council Member Clausen said Mayor, I have nothing to add tonight. Thank you.

Council Member Olsen said thank you, Mayor. One thing that I wanted to mention this evening is we've turned the page into March, and today actually felt like a little bit of touch of Spring, which is nice to see. I wanted to remind everybody that March is Women's History Month, it is a National Proclamation made every year by Congress and the President. This month is intended to recognize and honor the contributions of women to society throughout the history of the United States and, of course, in the modern day. We are extremely fortunate in the City of Cottage Grove to have many very accomplished women who serve the community here on our City staff. We also have the honor of being represented by Senators Klobuchar and Smith, Senator Seeburger from the Minnesota State Capitol, our County Commissioner, Karla Bigham, and of course our very own Council Member Monique Garza. Each and every one of them do a magnificent job representing the community with honor and dignity, and we're grateful for their willingness to serve. To the staff, just know that your contributions are greatly appreciated and duly noted regularly, and we maybe never say thank you enough, but let me take this opportunity to personally thank each and every one of you for what you bring to the table. It's a hard job running a City, especially a growing City, and a City with a City Council like ours who's so doggone engaged in day-to-day business that we're constantly asking questions and, you know, at least from a personal perspective, probably being a pain in the backside more often than not. But we're grateful and just wanted to make sure that we acknowledged all that you do this evening, and thank you for the service that you provide our residents. With that, mayor, back to you.

Council Member Thiede said all right, well, the first thing I should say is there's 106 days to Strawberry Fest, so the countdown is going.

Also, something that's maybe a little bit of a coincidence, we actually recorded *The Grovecast* yesterday for this month. One of the things that I happened to mention in *The Grovecast* was multiple times in the past 16 years or more, I kind of mentioned it would be kind of neat to have Cottage Grove have a downtown area. It would be kind of neat in Old Cottage Grove to actually find some developers or whatever that could actually develop and make an Old Cottage Grove and have some stores there and things like that that might be more focused on crafts and some more local type of things, you know, a country store type deal, a general store type deal and everything. It just kind of caught me a little bit with the gal that got up and kind of talked about that prior to our meeting tonight because she's got the Boondocks down there, and it'd be kind of neat to maybe do some of that. Again, it's all about timing with some of these things, so it might be interesting to see if there's some way for that to develop.

Council Member Garza said there's the new Frog Farm down there, too.

Council Member Thiede said Frog Farm? Council Member Olsen said yep, that's exactly right, go in and check it out, it's pretty cool. Council Member Thiede said I guess we should hop right into that one.

Mayor Bailey asked is that for you? Council Member Thiede replied that's it for me, that's probably plenty, right?

Council Member Garza said thank you, mayor. I will mention there are a couple of fun events that are happening at the Ice Arena at the end of March and beginning of April:

- March 28, we have the Cottage Grove Easter Egg Hunt, that will start at 9:00 a.m., and you can register online for that at our local website for the Ice Arena. It looks like it's $8 for each person to participate with a lot of prizes and a lot of fun stuff. So, if you don't have plans, come out Saturday, March 28, at 9:00 a.m., to our Cottage Grove Easter Egg Hunt.
- April 3, they're going to have a Miniature Golf event at the Ice Arena. Interesting, so that is $42 for a group of up to six people that can participate. It looks like it'll be a lot of fun, and that's on April 3.

Mayor Bailey said fantastic, thank you. Yeah, they're trying to do a lot of different things with the Ice Arena. Council Member Garza said the Ice Arena is having a lot of fun events.

Mayor Bailey said all right, so I thought I'd share a couple quick things for the public. First of all, I want to acknowledge in our audience tonight, we chatted earlier this evening, our Met Council representative, Mark Jenkins, sat through here and got to hear all the fun stuff going on in Cottage Grove and Public Safety and all that. So, Mark, we appreciate the communication and such you have with our community. Nothing against our previous representatives, but we get to see you a lot more than we've seen the other ones, so it's nice to see your involvement and constant contact with us. So, thank you for that.

I also want to just mention, I know we were talking about Strawberry Fest being 106 days away, beyond that, I don't have the dates down because it's not on my little calendar thing here, but Fourth of July Fireworks Celebration here in Cottage Grove. And for those who may or may not realize, this is the 250th Anniversary of the United States of America. There is a plan to have a bigger than normal fireworks show at our Kingston Park in Cottage Grove. So, what I've been doing as the mayor for many years is I reach out to our local businesses and ask them if they'd be willing to help donate, to put money towards the Fourth of July Fireworks Celebration in Cottage Grove. I just want to let you, it was interesting, I think I just put it out or requested some emails out, I think it was last Sunday, and by Monday evening, I already had four businesses reach back out to me, totaling over $25,000. So, I just want to acknowledge already: Renewal by Andersen stepped up immediately, 3M, Tennis Sanitation in a big way, and then NorthPoint Development has already reached out to me, pledging money. I'm going to be working with the Lions Club because they're actually the ones that put the celebration on, and again, that's just the start and there's more coming, I know. I'll announce those once I know for sure that that is the case, but we want to very much thank them for supporting our community. Frankly, I would ask you if you see anybody who works for these companies or you happen to come across them, or if you're going to go in and look at windows at Renewal, or whatever, make sure you say thank you. It is so important, they don't have to do this, but they're doing it because they're part of the pride of Cottage Grove, and we do really, really appreciate that.

Council Member Olsen said mayor, the fireworks will take place on Sunday, July 5, at Kingston Park, and the event actually starts at 5 o'clock, that's when we start serving food and doing all those fun things, and then the fireworks at dusk.

Mayor Bailey said there we go, thank you for that.

Mayor Bailey said the last thing, it was the only other thing on the list that staff usually gives me, this is what's coming up, do you want to say anything? That is the Friday Night Fish Frys, which are going on everywhere right now, but I will mention I also made reservations for this coming Friday for a group of us going down there. It's from 4:30 to 8:00 p.m. at the River Oaks Golf Course and Event Center. It's very good, a few of us were there about two weeks ago, I believe, for the first night of it, and the food was amazing. Staff is very good, and I'm not saying that just because it's a Cottage Grove-owned facility, but the fact is they do a really, really good job, and it was packed when we were there. So, reservations are required, so it's easy, just go on the website, it's a simple process to get yourself reservations there. So, whether it's there or the VFW or somewhere else in Cottage Grove, I encourage you to get out and support the local businesses.

Mayor Bailey said with that, the next item on our agenda is a Workshop, which is Open to the Public, but we'll be doing that Workshop in the Training Room. There are two items in our Workshop this evening to share with the public:

1) 13A is Ordinance Amendments Workshop, and we'll be going over a variety of possible changes to some of our Ordinances in Cottage Grove. I think some of them the public is going to be very happy about, and we'll get to that more later.
2) 13B is 2026 Mill and Overlay Improvements to 95th Street and some Lane Reallocations. I actually had somebody just recently reach out and ask me about 95th Street, so it's perfect timing that we're going to be discussing this right now.

There are no Workshops Closed to the Public, so just for the public, be aware we won't be adjourning in here, but I do want to wish everybody a great evening and a nice, warm weekend coming, it sounds like. So, everybody take care, and again, we'll be moving to the Training Room.

13. WORKSHOPS - OPEN TO PUBLIC - TRAINING ROOM

A. Ordinance Amendments Workshop - Code Updates
Staff Recommendation: Provide direction on proposed Code Updates.

Mayor Bailey said Sam Pierret, our Senior Planner, is going to be taking us through part of this.

Sam said since the 2023 Major Code Revision, staff has been intentional about annually updating our Zoning Code so that we don't go through another large Code overhaul like in the past.

So, I will just start us off here by it's proposed that we move the definitions for brew, pub, light brew distillery, and cocktail room; currently, those are in our Historic Conditional Use Permit section of the ordinance, and we're just moving that to our definition section where it's more easily discoverable. And then also adding a definition for breweries and tap rooms; currently, these are not defined and brewery is actually a use that is allowed in the Industrial District but the conditional use is not defined. So, adding definitions that would match State Statutes for all of these items and then allowing brewery and micro-distilleries, which are actually when you're brewing or cooking that product on site in the Planned Business and Industrial Districts. And then brew pub, tap room, and cocktail room are more a restaurant or sampling component that could take place at a brewery or a micro-distillery, allowing those as permitted uses in the Planned Business District where our restaurants are already a permitted use, and a conditional use in the Industrial I-1 Zone where restaurants are in conditional use. That would be our first option.

Council Member Garza asked does this mean that we're possibly getting some breweries or tap rooms or anything?

Council Member Thiede said I'd still like to turn the old firehouse into a brewery.

Sam replied it would open us up to that possibility, and this is just the Zoning fact that would show those I-2, I-1 and Planned Business Areas of the community south of Highway 61 where these operations could potentially go.

Sam said so, if you read the packet, you did have some information in there about Zoning Permits and things like that. As staff has kind of gone through the last week, we've determined that our Temporary Accessory Outdoor Sales, the fireworks tent, the garden center at Cub Foods, things like that, can be permitted under our current Permitting of Administrative Conditional Use Permit. So, we've taken away that Zoning Permit idea, we're not proposing that, it would just go through that Administrative Conditional Use Permit process that we already do administratively. However, the Temporary Accessory Outdoor Sales was also a term that was not defined in the Code, but it was used in our Table of Uses. So, it's proposed to add a definition, as well as Performance Standards, so signs, aesthetic signage compliance for those Temporary Uses in the parking lots, just so that we're making sure that we are reviewing these with the Building Permits that come in for the tent structures. But we have a permitting process and we have actual definitions to go from.

Sam said the next one is proposing that allowing accessory buildings to be no more than 2 feet taller than the principal structure. So, right now, a structure accessory building cannot be any taller than the principal building. So, when we're looking at houses in the Thompson-Grove neighborhood where they were built 13-to-14 feet tall, residents are having a real hard time storing things like their boats, their taller trucks and vehicles, their RVs in their garages when they're only limited to that 13-or-14 foot height. So, the proposed language would allow the buildings to be no more than 2 feet taller than the principal structure or 18 feet tall, whichever is less. So, for the taller homes, that 18 feet would still stand true, but for these shorter homes, we could increase that to that 2 feet taller. I do have a couple of examples here: So, these are 2 garages over in that neighborhood where the homes are at 13-to-14 foot height, and then the garage is about 2 feet taller than the home. You can see that the aesthetics are still there, it's

not overpowering the house. So, this would just be a good idea to really help our residents be able to store their things inside so that Code Enforcement Sam doesn't have to get involved.

Council Member Olsen asked out of curiosity, how did we land on that specific metric?

Sam replied that is a very good question. So, as we looked at should we say 3 feet or 4 feet, when we looked at, there were more examples in the neighborhood than just these two. I have several pictures of what we looked at and as a comparison between the house vs. the accessory building, once you hit 4 to 5 feet taller than the house, it was starting to look a little bit awkward, we do have a couple of those. So, the 2-foot range seemed, and then in conversations with applicants, too, that 2 feet seemed like that would have been a really good point for them to be able to get that additional height to store what they wanted to store in there but also keep the aesthetics.

Council Member Olsen replied okay, so we sort of arrived at that on our own, essentially, by just kind of comparing and contrasting what still looks right but provides the homeowner with a little flexibility?

Sam replied correct. Council Member Olsen said okay, thank you.

Sam said the next item would be our clear-view triangle. This is measuring from a corner lot 10 feet back, along the corner property lines, and then connecting those lines with a straight line up that area is required in our fence ordinance and our sign code; to be clear and free from fences, structures over 30 inches in height. It's not extremely clear in our Code right now, though, that landscaping over 30 inches is also restricted inches and should not be placed in the clear-view triangle. So, staff is proposing to add the clear-view triangle also to the landscaping portion of our ordinance to make it extra clear that plant materials, fences, and visual obstructions within that clear-view triangle are not allowed, also giving the City authority to order removal of these vision obstructions. Right now, that authority to order removal is a little ambiguous in the Code, so this would be taken care of on a complaint basis. We're not going to go out and look at every corner in the City for Code enforcement, it's more of a complaint basis. The next image here shows a couple different fences in the community: You can see one was cut off where that clear-view triangle is open, and you can see the vehicles, the trail, pedestrian crossing, and everything. And then the next image just shows those red triangles are the areas that we would require are being kept free and clear of fences, structures, plantings, all of that sort of good stuff.

Council Member Olsen asked so this applies to commercial properties as well, right? Sam replied yes, correct.

Sam said the next item is timely as we are also considering changing the minimum lot width in our R-4, Transitional Residential District from 45 feet to 40 feet. Density requirements within the City and within the metro as a whole are continuing to increase and are expected to increase with the 2050 Comprehensive Plan. Cottage Grove has already adopted a couple developments with 40-foot wide lots, Mississippi Landing, Settlers Bluff, and the Ravara Trails development that was just considered by the Planning Commission the other night, and it also had 40-foot wide lots. In conjunction with that, 40-to-44 foot wide lots, it would be proposed to allow the dwelling to be 5 feet from the side yard setback, where right now dwellings are required to be 7.5 feet from the side yard setback, but the garage side is 5 feet. So, it would be reducing that side yard setback on lots 40-to-44 feet wide to 5 feet for the house, 5 feet for the garage side, but once you get up to 45 feet, that house setback would remain at 7.5 feet. I did have just a couple images here of the previously-approved development at Mississippi Landing, Settlers Bluff; this is just showing the 40-foot wide lots with the 5-foot side yard setbacks.

Council Member Thiede said in some cases, in my opinion, how tight some of these houses get and the narrow lots and so forth, but I was thinking about this the other day, too, that like with that Settlers Bluff, I mean, that area in between the houses just is wasted area. It'd almost be better, in some cases, just to have them actually together or some sort of row homes type of deal, right? But I guess, you know, that's just kind of a general comment.

Council Member Olsen asked Council Member Garza do you see this becoming much more prevalent in the market? Council Member Garza replied unfortunately, it is.

Council Member Thiede said I mean, I could stand between those, they've got a wing span of about 6 feet, so I mean I could push on both houses at that 5 feet.

Council Member Garza said a lot of the bigger cities that are further out, like over towards Minneapolis, that area, a lot of these, this is just the new construction way. They're just putting in as many houses as they possibly can, so, and cities are approving it left and right, so that is what I'm seeing. Council Member Olsen said I don't know.

Sam said the next proposed change would be the parking requirements on corner lots in Business Districts. The image on the screen is from the Panera proposal that you just heard about tonight. So, staff is proposing to allow parking 10 feet from the Right-of-Way on only one side of the road Right-of-Way, and then maintaining our 20-foot parking setback on the other side of the Right-of-Way. So, Panera was able to meet the 20-foot setback that is currently recorded on both sides. However, a 10-foot setback would keep the parking out of our Drainage & Utility Easements. There would still be a sod or a landscaped buffer between the road and the parking lot. However, it would just give the businesses a little bit more flexibility in where they're able to put their parking and everything. It did come up during the Panera consideration, as far as the setbacks for parking on corner lots.

Council Member Garza asked did that change anything for Panera, as far as parking availability or anything?

Sam replied no, they were able to meet the 20-foot on both sides, but what we'll be recommending is having that ability to give these types, especially when you think about redevelopment. We want to be able to have the ability for those types to make them more relaxed, a better way to put it. So, if we have the 10-foot on one side of a corner and 20 on the other, that gives this side a little flexibility.

Council Member Garza asked so are you proposing it for Panera? Sam replied no. Council Member Garza said so, going forward, gotcha, thank you.

Mayor Bailey said only because you have the picture up there and it got brought up at tonight's meeting on Panera, so those trees that are towards Huntington Bank, who owns those?

Council Member Olsen said yeah, that's what I was going to ask.

Sam replied so Huntington Bank owns those.

Mayor Bailey said so they own them, so if there's issues, they need to take care of it, okay.

Council Member Thiede said but weren't they the ones complaining about it? Council Member Olsen replied they were to me. Council Member Thiede said that's what it sounded like to me.

Council Member Garza said and remember the way that SA was, that back side, that no one looked at it or seen it or whatever unless you seen, but now that Panera's going to have a driveway going around it, that's going to be always visible, so people will see it.

Mayor Bailey said the only reason I brought it up is because I agree, there used to, I don't know it's still there, I guess I don't want to go look, but there used to be a bunch of dead trees back there. And I would assume that if it's still that way, we're going to want to talk to, if it is Huntington that owns that, then they need to clean that up. Because, and to your point, I mean, we're going to do all this nice landscaping, Ryan's going to redo the roads, and then you're going to look at this blob of who knows what sitting there, so.

Council Member Garza said there is one large dead, I believe, Ash tree that is on what now is Panera property, which will obviously. Mayor Bailey said yeah, that'll go. Council Member Garza said yes, that'll go.

Administrator Levitt said well, the nice thing is before they start construction, they'll obviously stake the perimeter of the side with the lot line, and that would give us clearance for remediation for the trees.

Mayor Bailey said yeah, that would be good. That was the only thing, when you brought that up, I'm thinking, well, if they're not going to be taking it out, I'm like.

Council Member Olsen said yeah, what's interesting is when they complain about it, I mean the Huntington folks, they made it sound like that was all Speedway property.

Council Member Garza said maybe they didn't even realize that it was theirs. Council Member Olsen said I wonder if they even know.

Sam said I have just one last thing, and that is a great segue into this. So, the last thing that we are proposing to update is our table of driveway dimensions; currently, it is very unclear about what the minimum and maximum width for driveways is with residential and commercial and industrial districts. So, we are just proposing to update these with clear, definable numbers of minimum driveway width, maximum driveway width at the property line in these Zoning Districts so that we know and are able to communicate that to our potential applicants with all of that.

Council Member Clausen asked and are these consistent with neighbors and things, or are these numbers, did we come up with them; or are they consistent so our builders kind of have consistency, too, when they plot and develop things, I know Cottage Grove is this and this?

Sam replied we've always had very clear residential driveway widths, so that's known. Council Member Clausen said thank you.

Council Member Thiede said it's like you've got somebody with a 3-car garage, what is that? That's probably about a 36 or a 40, and that's where it has to fit, where it intersects with the road.

Director Burfeind said three cars are actually able to come straight out, more modern 3-car garages; I think they used to be maybe a little bit wider, but 3-car can come right out at 28, we've ran them. Then you see that 4-car garage nowadays, and that has to narrow in, so.

Council Member Olsen said in many cases, they bring them in and then they widen.

Director Burfeind replied yeah, surprisingly, they're about 26, they've got pretty narrow in modern standards, so.

Mayor Bailey asked when you say, just so I'm aware, so when it says property line there, does that mean property line at the street or property line at the garage? Director Burfeind replied by the street.

Sam said that concludes all of my fun, but Sam Drewry, our Code Enforcement Officer, will take it away with some very interesting items.

Administrator Levitt said just to clarify, Council, the items that we went over on those Code changes, are you agreeable to those modifications, or are there any concerns?

Mayor Bailey said I didn't hear anybody, I mean, not that everybody likes them.

Administrator Levitt said regarding lot size, I knew Dave wasn't going to like it. I told staff, I said Dave Thiede's going to say something right away. Thanks, Dave.

Mayor Bailey said the only, well, maybe you already know this, but you know, there's another for the Council, if you haven't been following along, there's another newer version of the Missing Middle laws coming through, which are going to take away our, I want to say that would take away our rights to deal with homes, duplexes next to single family, how many cars can park or not park. We wouldn't be able to put any restrictions on what materials a home is made of; as a matter of fact, Jennifer and I were saying literally, Dave, someone next to your house can put in a pole barn type house, and we couldn't do anything. Oh, and by the way, you see me now getting on my soapbox, sorry, but all of this would be administratively within 3 days, it has to be administratively approved. So, it doesn't go to the Council, it doesn't go to the Planning Commission, and so if your next-door neighbor.

Council Member Thiede asked so who's proposing that? Mayor Bailey replied it's up at the Capitol right now, it's going through the committees.

Council Member Thiede said yes, but who's proposing it and why? Mayor Bailey replied it was a combination of builders.

Council Member Olsen said it's first-ring suburbs and the cities of Minneapolis and St. Paul representation, but they claim that it's something that the builders are demanding as a way to lower their costs and be able to create Affordable Housing for people. Metro Cities is fighting it and we fought it last year, too. Yeah, there's a wide variety of opinions on how to go about creating Affordable Housing, this just happens to be one.

Mayor Bailey said what's weird, what I'm going to say is this is one of those times where there's actually some support on both the Democrat and the Republican side; so, this isn't like one party's driving this, at this point, there's people from both parties. So, I'm sorry, I hijacked the meeting, but it's a segue because some of the stuff they're proposing, we just said we're going to go through this and we're going to approve all this. Heaven forbid, if something happens by the end of the year, we'd have to come through and clear the slate again because of what they're proposing.

Council Member Garza said it has a lot to do with more of the cities, the Twin Cities vs. our outer rings, and these proposals are more to help the people that are within the cities, that they feel that they're helping them. But like the City of St. Paul, the rent people, like they did something last year to try to help that, but it's still not bringing development or developers to the cities to do more. So, by doing some of these things, they feel like that will help to bring more growth, and it doesn't help us, but for the inner cities, a duplex next to a single family is normal.

Sam Drewry, Code Enforcement Officer, said Good Evening, Mayor, Members of the Council, your favorite topic, Property Maintenance Ordinance Amendments. As you know, staff has spent the last several months creating a 5-

year Strategic Plan for our Code Enforcement Program. As part of that process, I have identified several ordinances that I think we should probably make a few amendments to in order to better help us meet those Strategic Plan goals. I am going to be stopping after each one, so if you have questions, we can go through and answer any that you may have.

The first one I'd like to talk about is our Trash Container Storage Ordinance. So, currently, our ordinance states that we do have to have all trash containers stored completely out of public view. This requires them to be stored either in a garage, an enclosed structure, or behind some sort of screening, and that has to be completely out of public view from the street and neighboring properties as well. So, obviously, enforcement does require a significant amount of staff time and resources. A lot of that staff time could be spent on more serious violations, like proactive Code Enforcement, public education, and those types of things. Just to kind of put it in perspective here, in 2025 almost 500 of our 730 cases included a trash container violation. These photos are a really good demonstration, these are two properties that actually did receive compliance notices. These trash containers, the way that they are stored are in violation of our current ordinances, so both of these homes actually did receive a compliance notice. With our enforcement process, currently we send an initial letter, we then send a follow-up letter if it remains in violation, so at this point we're at two, maybe three inspections. Ultimately, we move to a criminal citation for noncompliance with any of our property maintenance ordinances.

A citation isn't always the best solution, unfortunately, that does tend to draw out our process. It goes in front of a Washington County judge, they have to have an actual court date set up, and that judge can then determine if they want to move forward with pursuing it, they can throw it out because its a trash container, let's be real, and they can also give the homeowner another amount of time. So, it doesn't always get us to a solution that we're looking for, and it's certainly not in a timely manner. With that, again we see many more follow-up inspections as well.

So, with our limited staff that we have, we really have to prioritize our enforcement and determine if we want to go this route or if we want to potentially look into changing our Trash Container ordinance. So, the proposed language would allow for trash containers to be stored on the sides of the home. You can see the circles in these photos, that would be permitted without any sort of screening. Anything where we have an S or in this area here, along this front of the home, would still be prohibited. So, we would allow for those 2 houses that I showed you previously, those would be compliant with this proposed language. Again, moving forward with an amendment like this would significantly decrease the amount of violations that we're seeing; therefore allowing for a lot more staff time to enforce those significant blight properties and would allow for a lot more proactive enforcement, not only in our residential, but in commercial and industrial. It would also allow more time for public education, which would hopefully in the long term end up decreasing our overall violations. So, I would appreciate any feedback that you have and I'm happy to answer any questions you have.

Council Member Clausen stated as a person who formerly used to enforce those laws, it's not a good public contact, people would get very frustrated about any of those things, too. In the first two photographs that you showed, these are people who took really nice care of their homes with flowers, and then we would come there saying you can't store your trashcan on the side. I would agree with this suggestion that you have.

Council Member Garza said it's funny that we're having this conversation because just today my neighbor said he received a citation, and he said I don't understand it. So, he's storing in his garage, but he said when summer comes, I have to smell this in my garage, and I said yeah. I didn't know what to say, so this one is good.

Sam replied it is a huge concern that I hear from the citizens, and I don't want to store my stinky trashcans in my garage, and then we're requiring them to invest, you know, however much or little financial investment to go out and purchase and/or build some sort of screening to ensure that they're still obeying the ordinance requirements. So, by proposing this change I think we're kind of finding a balance, we're making sure that we're still taking care of neighborhood aesthetics and still making sure that we're looking out for our property owners and their property values, but we're just pulling back a little bit on how strict we are. And by doing that also, we would be more in line with a lot of the other communities. I surveyed 17 communities, and along with us, there were only 3 of those 17 that require trashcans to be completely out of public view.

Mayor Bailey said the only question or comment, and by the way, I'm looking forward to the change, the number of people that call me about this is crazy but I support the change, but the question I have for you, though, is well, two maybe, one is it has to be in a trash container, correct?

Sam replied correct. So, I apologize, one thing that I haven't touched on tonight is we have separate ordinances pertaining to general trash accumulation. So, that's anything, whether it's right outside the can, it has to be in trash bags, and we know those people are setting it out for trash pick up, we have a separate ordinance that prohibits and addresses that. We also have a separate ordinance that addresses just what we call unsheltered storage, so things that are being left at the curb, just the random items that are throughout the property. So, by making this amendment, that would not affect those other 2 ordinances, they will be staying in there as is.

Mayor Bailey said okay, good, and like I said, I support the change. The other question is, and it's ironic that we were talking a little bit earlier about these homes that are tighter together, and you just commented about smell. And, so, I'm thinking okay, if we're going to allow this, then what? So, I'm assuming smell is going to be a violation with the homes that are close to each other and the neighbors start smelling the other neighbor's trash?

Sam replied we do have general nuisance ordinances that would address any sort of putrid smells.

Mayor Bailey said I mean, I'm hoping it won't happen, but.

Sam replied right. One thing to consider, though, is with those homes, our current ordinance would still allow them to be stored alongside the homes as long as they have a street. So, that still puts an issue with the current ordinance.

Mayor Bailey said good point, okay.

Council Member Olsen said yeah, I support the new language. Out of curiosity, I don't know if this even was on your radar, but when you surveyed these other communities, do you happen to know how many of them, if any, had City-provided waste disposal?

Sam replied I do not, that is not something that I looked into.

Council Member Olsen said okay. I see more cities going with that, so I was just curious if it was a topic of conversation that got brought up because if they have a carrier, there would be some uniformity with regard to the actual containers themselves vs. the current situation where you know they have several different choices. And I'm not advocating, I just wondered if it came up. So, thank you. It'll make your life a lot easier.

Sam replied I think ultimately it will be very beneficial and it will allow us to focus on things that I think everyone, including you, Mayor, Council, and our citizens probably are a little bit more concerned with.

Council Member Garza said like the piles of stuff at the end of the driveways, like the garage sales at the end of the driveway. They drive me insane, so that much I'd rather be addressed more than the trashcans, you know?

Sam replied and we do have ordinances pertaining to that. So, again, by taking some of the focus away from these very lovely, beautiful, well-kept homes that do happen to have a violation, we can focus more on that proactive enforcement; and hopefully catch some of those properties before it becomes an issue or it sits out there for a couple weeks before we get a complaint.

Sam asked any other questions so far from you all? Council Member Olsen replied no, a good call, good job. Sam replied thank you very much.

Sam said the next thing I would like to talk about is adding a Snow Removal Requirements Ordinance to our multifamily rental licensing requirements. Currently, the City does not have any snow removal requirements for our private multifamily properties. I am proposing that we do add language under our Rental License requirements that multifamily properties must remove snowfall of 1" or more from sidewalks within 12 hours and then snowfall of 3" or more within 72 hours of cessation. This is stemming from an increase of complaints that I've received from some of our residents that live at these multifamily rental properties, primarily just due to lack of timely snow removal. We've had a lot of snow this year and with that, an increase in complaints. We have several ordinances in our Rental Licensing requirements, those are all related to protect our renters. This could definitely prove to be a big safety hazard, and the snow can cause mobility challenges as well. So, I am proposing that we add this to our current ordinances.

Council Member Olsen asked so how does that work in terms of real life? Currently, these properties theoretically have property management of some sort, and that property management is likely to have contractual agreements with snow removal companies, landscaping companies, that kind of stuff. Are we of the opinion that they're either not following the language in the contracts, therefore the snow's not getting removed? Or that they're just not contracting? I'm curious, like what's the real life application here?

Sam replied so, I don't know the specifics, this is just based on complaints that I have received. So, whether or not there's a contract that's not being met by a private company that's been hired by the management companies, or whether or not the management companies aren't taking the initiative to ensure that they have those snow removal services lined up. I'm unaware of this currently, and the companies don't have that ordinance in place currently, it's not information that they necessarily even have to share with us if we ask. So, by putting this in place it just gives us a little piece behind the rental license that we issue to them; stating that hey, these are your requirements that you have to meet in order to maintain your rental license, whether that's contracting out a service and ensuring that's written into your contract with whomever. It would just be an additional requirement that they would have to meet along with a lot of the other requirements that we have set up for health and safety things.

Council Member Olsen asked and if they fail to meet that requirement today, we have nothing we can necessarily do about it because we don't have an ordinance. Sam said correct. Council Member Olsen said this would provide us with an avenue for accountability, is that what you're proposing? Sam replied yes.

Council Member Garza said the same with the renters, would they give us the ability to abate it then? If it's been 74 hours and they still haven't done it, it would give us the right to hire someone to get it done.

Sam replied that I don't really know, based off this section of the ordinances on there. We have the ability to abate all of our nuisance violations, but this is specifically under our Rental License requirements, so that's something I would have to discuss with Kori.

Council Member Olsen said yeah, I think that we should, don't you? Council Member Garza replied yeah. Council Member Olsen said because I know, for example, Gary Orloff will often respond to concerns from residents who say oh, my God, it snowed 4" last night, and nobody's been here to plow my street. The reality is it's not the City's street, so the City doesn't plow it, and people don't even know that they're in a private environment; and the Planning Commission just approved the application for Ravara Trails, and I know a lot of those streets are going to be private. So, this will be applicable, so yeah, I mean, I think we do need to have some sort of opportunity to abate if they don't perform.

Sam said so this will only be applicable to multifamily rental properties, so our apartment buildings that we license. So, it would not be applicable to a private street in a townhome development at all.

Council Member Olsen asked but should it be?

Director Burfeind said one thing with those private roads that I can add is we require in the Development Agreement and everything recorded is that there's a Private Roadway Maintenance Agreement that is signed and recorded, so that does discuss snowplowing. So, we could look at that to make sure this is covered stuff.

Mayor Bailey said well, as long as it's covered, that's a good thing because if we're seeing more of this now where you're going to have these private roads, and I don't know, maybe you and I have had to deal with The Cottages.

Council Member Olsen said and even the properties adjacent to Hidden Valley, that's another.

Mayor Bailey said yeah, I know, but I've gotten phone calls, you've gotten phone calls, you've gotten phone calls on The Cottages, and would this, because that's a rental, that would cover?

Sam replied yes, because that's a licensed Rental Multifamily Property, so this would apply to The Cottages. It would not apply to what you're referring to, those townhome associations that are in Hidden Valley because those are at least the wings coming off of them, for lack of better words, those wings are private streets and it's not as a whole a rental licensed multifamily establishment.

Council Member Olsen said so maybe you guys can compare notes and just see if there's language that needs to mirror each other or whatever.

Mayor Bailey said the other interesting thing, I'll just throw this in because this just happened last week when I sat two hours at The Legends; but snow actually came up because they were concerned about, they get told that they have to move their cars out of that lot along Highway 61, and they were concerned about parking or being able to

move their cars out into the street. And I'm going, okay, hopefully we've plowed already, but if they go to try to move their car out in the street and we haven't plowed yet, I mean I don't know what the answer is. I do agree that we need to have some teeth in it, so if you're going to bring that back and talk to Kori about it, but that came up last week by multiple people, about what do we do with our cars if they've got to clear the parking lot by a certain time. That's what they were asking us at The Legends.

Sam replied well, yes, we'll definitely bring that to Kori and see if it's an option to do abatement or if that needs to be under a different Code Section or what we can do with that moving forward for clarification.

Mayor Bailey said and maybe also, I'll just throw this out there, maybe we can check, are other cities doing anything with it?

Administrator Levitt replied we can follow up on that. Sam, where did that 72 hours come from? You know, it's just one of those things where if you're in a single-family home, you wouldn't leave your driveway, especially 72 hours, unplowed. I just think about Public Safety emergency responses, 72 hours is a big number.

Sam replied so, to answer both of your questions because I heard something about what do other cities do? It's not extremely common. Again, I did research those things and haven't seen sister cities, as we call them, I think there were 3 of them that had snow removal requirements for these multifamily properties, in addition to the complaints we've been receiving. I know we looked at the City of Maplewood, they did have a very similar ordinance to this, it was very, very helpful in enforcement. The 72 hours, although that doesn't seem like an extended period of time, when we have that large accumulation of snowfall, we do need to allow those multifamily dwellings more time for clearing just because they're facing a lot of logistics like where do we put the cars, are the streets plowed? And a lot of them don't have a lot of places to deposit the snow when it's that much at one given time. So, that all logistically comes into play with that removal, which is why they're allowed a little bit more time for a larger amount of snow.

Council Member Olsen asked didn't that say, for 72 hours, didn't it say 3"? Sam replied yes. Council Member Olsen said that doesn't sound like that much to me. I mean, I don't know, with 3" of snow, should it take 72 hours to remove? Maybe that number needs to be bigger, I'm not sure.

Sam replied yeah, and in fact, I think it's 3" of snow, plowing street I think is a little bit different than 3" of snow in parking lots and areas where there is regularly vehicles being parked outside. And like I said, just some of those logistical things, so while it doesn't seem like that much, especially here in Minnesota, and our City of course is fantastic at snow removal on the public streets, I think it does pose a little bit more of a challenge for some of those compact multifamily properties.

Council Member Garza said and you will see that a lot of rental properties like in St. Paul, they do give them at least 2 days, sometimes after a snowfall, because they have to continue to get their cars out. So, they really do give them that time, that's great, so it makes sense to me with the 72 hours, I get it.

Council Member Olsen replied okay, good enough.

Council Member Clausen said Sam, one other thing. When you say you're receiving complaints from multifamily, is there any one property that was a higher caller than the others?

Sam replied Hinton Heights was probably the biggest one.

Mayor Bailey said I've got a couple from them. Believe me, the bigger one was The Cottages.

Sam said I was going to say The Cottages was another. This year, both of them came from Hinton Heights, last year I had one from Hinton Heights and The Cottages. We unfortunately have received a lot of concerns from the tenants of The Cottages, it has recently changed management, and I've been receiving a lot less since then.

Mayor Bailey replied I haven't either. So, that is low as well, knock on wood, right?

Council Member Garza said well, they're not giving messages that get to you, it's getting better.

Mayor Bailey said it actually is down there.

Sam said all right, the next ordinance I would like to discuss is the Residential Vehicle Maximum. So, currently, the City allows for a maximum of 4 vehicles to be stored on the exterior of the property. We define a vehicle as a car, truck, trailer, RV, camper, boat, all of the above. So, anything stored outside is going to count towards this 4 vehicle maximum.

I am proposing a new ordinance to raise that to 6 vehicles be allowed to be stored on the exterior of the property. This comes with a multigenerational households and large families with multiple licensed drivers, multiple vehicles. In addition, it does attract people who have those recreational vehicles and have those boats, that sort of thing.

Mayor Bailey said I just said that's Dave Thiede's house right there, and everybody laughed. Council Member Thiede said you might see my red convertible. Sam replied I'm glad you guys like that picture.

Sam said so we are proposing to raise that to 6, we certainly don't want to have a situation where it looks like a parking lot, but we do want to make sure that we are addressing some of these concerns with those multigenerational and multi-vehicle properties. I have issued a lot of compliance notices for this violation, specifically, and I get more and more calls of people stating exactly that, like all my kids are home and they all drive, they're all home from college, or I live with my mom, my dad, my grandma, and my grandpa, and I have 2 adult kids. So, I am getting more calls about that and this provides a big difficulty, especially in the winter, when we have our parking restrictions for no on-street parking.

One thing I do want to make clear is that we do have separate ordinances again for vehicles, they must be in operable condition, they must display current tabs, and they do need to be parked on an improved surface. Again, with this, we would still enforce that, and vehicles may not block the sidewalks or obstruct the roadway. So, we are still having those ordinances in place that we would address. We're just updating that limit from 4 to 6 to better accommodate some of our citizens.

Mayor Bailey said to what you just said then, so somebody came to you and said well, I'm going to have 6 cars, but when you fit say 2 in the garage, 2 in the driveway, and then 2 that are going to hang down over the sidewalk, the 2 on the sidewalk, even though we allow 6, they wouldn't be able to park there?

Sam replied they wouldn't be able to block it, yeah, and have any other roadblocks.

Council Member Thiede said but it's only going to be for a week when the kids are home.

Sam said if they violate any of these other ordinances, they're still in violation; it doesn't matter if it's one day or one week.

Council Member Olsen said so again, from a practical perspective, we have lots of residents who have toys, and what we've asked them to do is in many cases they put an improved surface along the side of the home so they can park their RV or their boat or whatever the case might be. If they did not do that, and they've got let's say a boat and a RV parked right up near the house in the driveway, theoretically they could still have 4 additional vehicles beyond that as long as they didn't hang out into the roadway.

Sam replied correct. As long as they are on that improved surface or if they choose not to make any additional improvements, as long as its on the driveway and as long as they're not hanging into a sidewalk or the street.

Council Member Olsen asked but if they choose to try to move one of those to the side, and I see this a lot with boats, and its on the grass, on the trailer, then that's a violation?

Sam replied that is also a violation, yep. Regardless of how many vehicles they have on the property, that would still be a violation of our Code.

Administrator Levitt asked Sam how do we get people not to like pave their entire front yard for vehicles?

Sam replied that would be a great question for Senior Planner Sam. To my knowledge, we do have restrictions on how much impervious surface you can have. I don't know what they are, specifically, but that would be something that our planners would know.

Administrator Levitt said that ordinance, before you do this, should ensure that they can't pave their front yard. Because I thought of this for Council Member Olsen, because I mean you could have a sea of asphalt or a sea of concrete in a front yard and side yard.

Council Member Olsen said well, and to be frank, there are properties in the City that actually have fenced in their yard and then they put a door on the fence in the back yard, and then they pull their toys in, and they've got impervious surface in the back yard where they store their boats or their RVs or things, I've seen that many times. So, it's just something that, I think it's, I get the intent, and I think the intent is good, but this one might require a little bit additional research just to make sure that we've got all of our I's dotted and T's crossed in terms of hey,

how are people going to play the Jenga puzzle, and are they going to deal with it the way that they need to? Because many of our driveways aren't all that long.

Mayor Bailey said well, that's why I asked about it. I mean, in some of these newer neighborhoods, there's no way you're going to get 6 vehicles.

Council Member Olsen said now my driveway when I grew up was only a 2-car driveway, but it was super long. I could fit 6 vehicles on it, piece of cake; but my driveway now, I have a 3-car garage, and there's no way in hell I could fit 6 cars in my driveway.

Sam asked Planner Pierret, Sam, do you know what those dimensions are, off the top of your head?

Planner Pierret replied so the impervious surface is in most of our residential districts 40% of your entire lot area, but I do think there is a requirement for the amount of impervious just in the front yard. So, I'll have to do some research on that.

Sam said because that will help limit that paving the whole front yard, right? I feel like that's the answer.

Council Member Clausen said I don't know how much this applies to the driveway widths, while they can probably widen it after they get it past the property line, it would be hard with a newer home, but they could probably park them both, maybe.

Council Member Olsen said well, and I think about, for example, the properties in Pine Coulee. You know, there's a lot of funky stuff that goes on because they're in Pine Coulee, right? They don't feel like they're under the microscope very much, and I've seen yards out there with 6 cars parked in the grass, you know? I mean, it's just crazy what people do, so.

Sam said fortunately, we do have citizens in Pine Coulee who have said this, the neighborhood watch is around there, but there is something going on there.

Sam said we can certainly look into what those exact numbers are in ordinances that we already have in place to see if that would be enough to limit the number of vehicles in driveways. Council Member Olsen said thank you.

Sam said next I would like to talk about diseased trees. So, our current ordinance does prohibit diseased trees on private property and allows for the City to abate them at the cost. With this, the City incurs the upfront cost and liability, risks for doing the abatement. What we need to discuss today as opposed to a specific ordinance language change or amendment is really what we want to do with our policy. I know Council, in the past, you have shared concerns with moving forward with the abatement of all the diseased trees. That, as it says, would require significant upfront costs, usually about $2,000-to-$3,000 per tree. In the most recent abatement we did, the company that we hired removed 2 trees at a cost of $2,000 each.

So, moving forward, we can't continue to complete abatement for all diseased trees that are received on private property. The other option we have is, as I mentioned earlier when we were discussing trash containers, all of our ordinance violations are criminal misdemeanors, so we do have the option to issue criminal citations for properties that do not remove diseased trees after we have sent compliance letters.

Council Member Thiede asked is that different for the front yard and back yard? Sam replied it is. Council Member Thiede asked and do you identify somebody that has a critical disease for a tree? Because, I mean, there's some cases where people will take a dead tree and cut off the top but leave the rest, they might put a birdhouse on it or they might leave part of it that actually rots a little bit, then the woodpeckers will kind of make homes in the limbs and things like that. So, is that something that you're going to say well, that has to come down?

Sam replied so, we are kind of going to have two separate discussions today: We're going to discuss diseased trees and then we're going to discuss dead trees. So, first, discussing the diseased trees, those would have to be ruled diseased and inspected by our City Forester.

Council Member Thiede said yeah, all right.

Sam said so, and it wouldn't just be willy nilly, whatever the homeowner wants to do. We would have to make sure that it's confirmed diseased.

Council Member Thiede said so it could potentially be a diseased tree that could be dangerous to other trees around it in their yard or adjoining yards.

Council Member Olsen said or it's not quite dead yet, you know.

Council Member Olsen asked so, what did we spend on abatement say last year for diseased trees? Does anybody know?

Sam replied so, fortunately, we have not had to do a lot of diseased tree abatement at this point, primarily because we have faced a lot of difficulties with can we take those upfront costs and concerns with liabilities of going onto citizens' properties and removing them. The one abatement situation that we have had was on a totally vacant property, there was absolutely no response from the owner, so it was very easy for us to go on and remove the tree. The concern with some of the other complaints that we've gotten is if its homeowner occupied, the homeowners have stated that they either simply don't have the money or there's been no response. So, the concern is with the liability of going onto their property, gaining access to the property, is it going to be something that moves to a warrant situation? So, we really haven't done too many abatements, and that's been kind of the question that has brought us to this point is what do we want that policy to be moving forward? Because what we do with one property we have to do with all properties, we need to make sure that we're doing fair enforcement.

So, that's kind of what we're looking to discuss this evening, and do we want to move forward with that abatement process? Is the City okay taking on those upfront costs, that liability? Do we want to look into potentially issuing criminal citations as an alternative, or how do we want to approach those situations?

Mayor Bailey asked what would be the cost on a criminal citation? And I don't mean cost for us, but I mean what are we talking about for a fine on a citation?

Sam replied so a criminal citation I believe is up to 90 days in jail and/or a $1,000 fine. So, if we issue that citation, that's going to go before the judge, and we present all of the information we've gathered, all of the notices we've sent, all of the photos that we've taken, any communication that we've had with the property owner, that all gets presented to the judge at the hearing. And then it's completely up to the judge what they want to do moving forward. I haven't had any citations issued specifically for tree maintenance, but for other citations that I've issued, it's across the board. You know, I've had a judge say you've had 30 days to take care of a violation, I've had a judge simply throw it out, I've had a judge impose fines. So, it's really completely out of our hands at that point what direction that judge is going to choose to go.

Council Member Olsen said right, so I'm going to go back to my question. Is our current ordinance an ordinance that states that we can abate?

Sam replied yes.

Council Member Olsen said but we don't.

Sam replied we have, but not for every single situation. We come across, like I said, very few situations where we've gotten to the point where we've needed to do an abatement. As I said, with one of those properties, it was vacant, the rest were occupied, and not fully, kind of, and we paused. At that point, too, and we'll get into this at tree discussion, a lot of the trees have died or at least appear to be dead, and in those situations, it's up to our City Forester, specifically with the Emerald Ash Borer and many other tree pests actually vacate the trees.

Council Member Thiede said yeah, see, I think we need to give options to somebody. I mean, that's a lot of money to take down a tree and so forth. If a forester goes in and says well, it's not a, it poses no immediate danger to infect other trees or property and it's not, let's say something that is an imminent potential for falling on a neighbor's house or something like that, you know, or something of that nature. They can have some time and things like that to figure out how are they going to take care of it. Or they may, you know, take certain parts of it off and leave other parts or something like that. But I feel that because I'm going to maybe have to make a decision on one of the big old trees here pretty soon because I'll have to see how many leaves come back to it this year because there's a little bit of bark that's coming off, but. So, in that case, it's right on the border of the neighbor's and so forth, and so we might be able to get together and share a cost on something like that. But, you know, but I think we have to have a little bit of leeway that way.

Administrator Levitt said, Council, we're aware like Woodbury, I'm told they're setting aside a half million dollars over 3 years to allow for an abatement program because the city is essentially having no money and they'll have to make it up in 3-to-5 years to be able to pay it back. But the problem is we need money from the City to front it and float it, and we don't have any funds set aside to float a large abatement program.

Council Member Garza said just with the cost and more than likely most of the homes that would need something done with trees are our older homes, which are probably our senior population, which are already on a limited budget, right? Because our new constructions we're not dealing with tree problems, it's most of those established 1950-1960 homes. So, by putting something in place that will help the residents because, like I think Dave said, that's a huge expense, and I'm not saying that every older house is occupied by someone that's been there a very long time, but more than likely it is, and they're going to be on a limited budget situation.

Mayor Bailey said now, when you made the comment earlier about the ones that we had to do, that was $2,000 on each, was that diseased?

Sam replied yes, those were diseased tree actions.

Mayor Bailey said so, and I know you're going to get into the dead trees here shortly. I'm not sure what the answer is, but I'm just going to say this. So, when you drive around in our neighborhoods, obviously because Cottage Grove planted Ash trees everywhere, front yards, back yards, they're all over the place, and you go around now and there are a lot of dead trees in our communities. I do remember that one, those trees are going to fall over at some point, and they're going to land on somebody's house, somebody's car, or somebody's fence, but that's where I, and maybe it's not so much in this realm, but I do think we've got to do something. And that's why, I didn't know that Woodbury did that, but Woodbury knows it because they know that it also brings down the vibrancy of your neighborhood. I mean, if I look down my neighborhood and there's all these dead trees in peoples' back yards, and I'm going to put my house up for sale, do you think someone's going to want to buy my house? They're thinking, well, look, they've got all these dead trees over here, or the neighbor next to my house has got a bunch of dead trees and those trees start falling over or the branches start falling in my yard.

Council Member Olsen said yeah, and if they've got 6 cars in their driveway, that's a greater percentage of damage.

Council Member Garza said my neighborhood is a prime example of 1959-1960, and there's a ton of dead trees all around there, and our City, we've been treating them so instead of; some of them have been taken down, but a lot of them, we're treating them, and they're thinking that will help to refurbish them? I don't know what it does to them, but it does something, so.

Council Member Clausen asked do we have a definition of a diseased tree? Because if you look at the Emerald Ash Borer, it took years to die, it starts at the top and works their way down. Coming up, is there going to be something better if I just wait my time out and let it die? Would that be better for the homeowner? And then let's just use the issue we have, let's just go back, apply this proposed ordinance to 5 years ago, when we had a City full of trees that had half their leaves gone; if it happens again, how do you apply because we had hundreds and hundreds of trees we have to deal with? I'm just thinking about the cost, and we could hire fulltime people to go around and find diseased trees, there'd be so many. I'm just trying to put it all together, how it all works together now, and I'm not there yet.

Sam replied I think it's very important that as difficult as it is, we're looking at a diseased tree, which is completely separate from a dead tree because they have different implications. So, a diseased tree is something that's going to be infected with ash borer that our forester identifies. A diseased tree it's very likely you're still going to see that live growth. A completely dead tree, even if it's a dead Ash tree that was previously infected by Emerald Ash Borer, is still being infected by Emerald Ash Borer, we are going to be treating differently than a diseased tree that's still infected that still has maybe, you know, that one green branch that's growing off the top of it. So, I think it's important that we're looking at those very separately.

In addition, this is something that, like most of our other Code violations within the program, is addressed on a complaint basis because, as you said, we just do not have staff time or resources to go around and proactively

enforce or address Citywide any of our Codes, including diseased trees. So, we're not proposing again an ordinance change, we're really looking for feedback on how to approach this and our policy moving forward. Just to make sure that, Mayor and Council, you are aware that moving forward, if we do want to continue with enforcement and abatement, that is going to be a significant upfront cost for the City, and we just need to be able to accommodate for that. And, again, once we've kind of wrapped up with the diseased trees, I can certainly go more into the dead trees as well because that's a little bit of it that determines our scenario.

Administrator Levitt said Mayor and Council, what I hear you saying is you'd like us to explore some other options, and maybe as part of the budget conversation, we maybe look at a program or something because you're seeing the costs for this.

Council Member Thiede said I'd much rather it continue to be more reactive and follow up on complaints than all of a sudden put an army of people out, looking for diseased and dead trees.

Council Member Olsen said well, we didn't spend much last year, it doesn't sound like, on abatement because we were concerned that going into peoples' yards was a problem. So, I mean, shoot, if the legal opinion is yeah, you know what? We can't actually enforce our ordinance because of potential exposure, well, that makes the conversation quite a bit different.

Mayor Bailey said well, I didn't really catch it that way, I caught it that in order to do it, for us to abate it, we've got to pay for it until it gets assessed in taxes.

Council Member Olsen replied yeah, but we also have to have permission to go into the property, if it's a property that is inhabited, and that's why we pumped the brakes, should we do this or should we not do this? Again, if the attorney says, guess what, too much exposure, that's not a wise decision, then shoot, then abatement's off the table.

Sam said and there would be a process for that, that's an administrative warrant process that we can go through, but again, it's going to be the upfront cost that the City would have.

Council Member Olsen said it feels like I know which way this is going, but I would like to hear from the attorney.

Administrator Levitt said and I honestly think, based upon getting your feedback of how it'd move on, I think we need to look at a program and think about all the different ways. Because I hear what you're saying, it's a financial burden to the residents. And to the mayor's point, you don't want to look at an entire neighborhood of dead trees, so it has to be a voluntary program in which they'd take down the tree for reimbursement or an assessment waiver type thing is established. So, I think I hear what you're saying because the burden to the resident is too great.

Sam said and it would be a reactive process where they would reach out to us if we had a program; Administrator Levitt said yes.

Mayor Bailey said just real quick, and I know you're going to go to dead trees, but you brought it up earlier, and it is interesting because you go through these neighborhoods now and you see all the tall, dead trees, but your comment, I think you mentioned that earlier, the green is starting to come back up from the bottom on those shoots from the base. So, technically, that's not a dead tree.

Sam replied technically, that is not a dead tree, it is a diseased tree.

Mayor Bailey said that's what I'm saying, so that's where the two.

Council Member Thiede said but it's still a communicable disease; Sam and Mayor Bailey both said yes. Council Member Thiede said if the main shoot is dead, but it's still coming up? Sam replied yes, it's still a live tree with live growth and a live blush. So, the Emerald Ash Borer was still infected, but it could come back.

Sam said my next slide will help clarify a dead tree.

Sam said all right, dead trees. These are unmistakably dead trees; so, we don't see any live growth whatsoever. So, currently, our ordinance states that essentially any time one of these dead trees bothers a single individual or property, we can require the removal, and we also can do an abatement if the homeowner does not remove it.
What we are proposing is to change that language to it has to cause harm to a considerable number of members of the public. So, essentially, it must be a public nuisance in order for us to be able to require the removal. So, to your point, Council Member Thiede, if it's something where the tree's going to fall on my neighbor's garage, it's not really

a public nuisance. If it's going to fall into the public street and affect traffic, sidewalk, that would be a public nuisance with this change that we would address and require the removal of the tree. So, you really have to be careful when addressing the dead trees. Obviously, we want to make sure that we're maintaining the aesthetics of the neighborhoods, we don't want to see all these dead trees everywhere, but in addition, it's very similar to what if my neighbor's tree branch is growing over the fenceline and I want them to trim it? That really falls into more of that civil category, of a civil dispute between private properties. So, we are proposing to make this language change to ensure that we're only able to require removal if it is a public nuisance.

Mayor Bailey said I don't like it. Council Member Olsen said yeah, I don't either.

Council Member Thiede said sometimes we get, you know, I don't tend to like to nail things down so much. I mean, you've got to leave a little bit of, well, is it really a nuisance and so forth. But we create ordinances and everything else that nails down every last little thing, you know, and it gets expensive and it gets expensive to actually regulate and everything else. So, I think we've got to be careful with, at least in my opinion, how much we do that. But, I mean, sure, we can reword it a little bit, but I think it's a better direction from where it was.

Council Member Garza asked so right now, if there's a dead tree in your back yard, what are the ramifications of that?

Sam replied so, if there is a dead tree in your back yard, the way that this ordinance is written, it says the City can require you to remove it, and if you don't remove it, we can abate it. So, essentially, it's almost identical to the diseased trees.

Council Member Garza said and the City would require you to remove it because its an eyesore? Council Member Thiede said because it looks ugly, I guess, yeah.

Council Member Olsen said it could be a safety concern.

Council Member Garza said well, see, that's why I'm asking. So, if its an eyesore, that's different, right?

Council Member Olsen said think about the winds that we've had.

Council Member Thiede said well, those are the considerations that may be taken into account, you know? If you've got something and its right close to a playground or something like that, there's a possibility that a limb could break and injure a considerable number of people in the public or something like that, then yes, that's a situation where I would say you'd want to say that you need to get rid of that tree. But if it's like the one that we looked at a second ago, and its just standing right out there in the middle and its not a danger to anybody except for an eagle that might land on one of the branches and it would break, it might still recover; so, you know, I think we're getting a little bit too specific.

Council Member Garza said that was my wonder, too, that's my wonder. I mean, I understand it, but if its a safety issue, if its leaning, if there's something like that, I totally get it; but those pictures that you just showed, if that was in the back yard of someone's home.

Mayor Bailey said all right, so here's my question, then why do we have Code Enforcement? Well, that's a dead tree that could fall on somebody's property. What about the fact that the next-door neighbor, let's say my next-door neighbor is storing a bunch of trash and crap in their back yard? We Code Enforcement that. Does it affect all of the community? No.

Council Member Garza said no, but I feel like it's different, and mostly, I feel like it's different and maybe, like you said, it's trying to be too many parameters around it. Because if you have a dead tree in your back yard and if it were to fall left, right, front, or back, and it doesn't harm anyone, then what is the harm, right? But if it were to fall left, right, front, or back and it were to fall on your neighbor's house, then I understand that. But if you have a half acre and you've got a dead tree in your back yard, why is that an issue with the City? So, I don't know, and I'm not, I'm just trying to understand, as far as picking our battles, just like we talked about the trashcans and is it worth our enforcement? So, that's the only reason I'm questioning it. I get it if it's a safety concern, of course I don't want to see something fall on someone's fence or home or any of those types of things, but I also don't want to cause undue strain to families if we don't need to if that makes sense.

Council Member Clausen said well, as far as the City, we have dead trees in the middle of a wooded, public park; are we going to now have to send our crews into Woodridge Park in the middle of nowhere where there might be a dead and diseased tree and take it down? You know, we have to follow our own ordinances, too.

Council Member Thiede said well, I think in that case it's more of the opinion of the City and what we want those woods and parks to look like, okay? If we've got a trail that's going through it or it's in an area that again, there's a considerable number of members of the public that would actually use that, and its owned by the City, there's also certain liabilities there and so forth; so, if something should happen, if that tree should fall, you know, the City could be liable.

Council Member Clausen said there's a lot of trees on public property that we're not dealing with.

Council Member Thiede said I know, but again, I think the different situations have to be looked at to say what is the danger or what is the safety issue associated with it. If it's just aesthetics, I have a hard time with that.

Sam said yeah, the way the ordinance is currently worded, I don't have the exact language up here, but basically it's any sort of annoyance, frustration, hazard to any one individual. So, if I'm your neighbor and you have a dead tree in your back yard that is just going to fall in the yard and not necessarily damage or injure anyone or anything, technically it's still a violation. So, at this point, if I filed a complaint, then the City could and would require you to remove it. I think feedback from Kori has been that we're looking to move away from that, but Emily I think can speak a little bit more to Kori's direction on that.

Emily said so hearing what you're saying, mayor, we need to go back and do some investigation or more detail into understanding where that line may be drawn from a legal perspective, as it relates to Council Member Clausen and public property, right, thinking about Ryan and his team, and Zac, I suppose, on those open spaces. If we are saying a dead tree is a dead tree is a dead tree, how are we going to navigate that across the whole City? So, we'll come back.

Council Member Olsen and Council Member Garza said thank you.

Sam asked any additional questions before I wrap up? I know that was a big one.

Council Member Olsen asked has there been any conversation about fences and the way people maintain their fences?

Sam asked Council Member Olsen can you get a little bit more specific?

Council Member Olsen replied I can, walk down Jamaica Avenue.

Sam asked the lack of fence maintenance?

Council Member Olsen replied yep, look at the lack of fence maintenance there. Is there any dialogue whatsoever about that as a potential concern, something that we want to try to help guide the public on maintaining those fences? Because, again, a poorly-maintained fence, much like a dead tree or anything else, can fall over. It's certainly unsightly, and it can detract from the overall aesthetics of the community. I'm just wondering if that's been a conversation point?

Sam replied absolutely. I mean, it's certainly something that is on my radar, similar to all of our other Codes with current staffing and resources; we don't really have the ability to do a full-blown proactive Code Enforcement program, as much as I would like to, that would really be the ideal. We have moved forward with seasonal help doing the proactive sweeps, so that's something that could and would be incorporated in a proactive sweep, and we could look into just nailing those areas along Jamaica as well.

Emily said Council Member Olsen, we've sent mass mailings to the property owners in the past, along Jamaica, and we found some success, at least just from an educational perspective.

Council Member Thiede asked so have you ever reached out to somebody that puts in fences and say, hey, I might have a deal if you can give these homeowners a really good price and have somebody that's able to offer them, saying this would be a highly-discounted price, and kind of be the leaders in negotiating some of that?

Administrator Levitt replied the one fence that we did something like that used to be at the old City Hall, and it was the most complicated and expensive wrought-iron fence that we put down there, and it was hard to get all of them on board to sign onto that wrought-iron fence and get the right to enter. It was extremely complicated just to take care of, I think it was probably four properties, so to think about doing it all on Jamaica, it would be very, very complicated. Everyone would have to sign on and agree to some unit price, and they'd essentially be waiving their assessment, right?

Council Member Garza said and they're already pushing back about increased taxes, so I really don't see how that would fly.

Council Member Olsen said thank you, a lot of good stuff there, appreciate it.

Sam said thank you very much for your time tonight, and we will get back to you with all of the questions you guys had as well.

Mayor Bailey said thank you.

B. 2026 Mill and Overlay Improvements - 95th Street Lane Reallocation
Staff Recommendation: Receive information on the 95th Street Lane reallocation and provide feedback to staff.

Paul Sponholz, City Engineer, said all right, Good Evening, Mayor, Council Members. This summer we have in our program is to resurface and Mill and Overlay the 95th Street here between Jamaica Avenue and Hadley. This is just a representation of where that project is, with Jamaica here on the right side, and on the left side is Hadley Avenue. Its sandwiched between Up North Plastics and Werner Electric and then the residential neighborhood on the west side there. Most of this corridor is a 4-lane roadway, 2 lanes in each direction, no turn lanes for a lot of it, but we do have just 1 lane in each direction on both ends with the turn lanes here, at Jamaica, and a roundabout at the west end. What we're looking at doing with this project is what sometimes some of us engineers call a "road diet." We have a 4-lane section on the left side there that the existing condition of 95th Street and most of that corridor on the 2 lanes needs direction. What we're proposing to do here is converting that to a 3-lane section, 1 central shared left-turn lane, and then 1 lane in each direction, and then just the leftover space is just reserved for the shoulder.

So, this has a lot of different advantages, and some of it is much better pedestrian safety, much better safety for the vehicles. Pedestrian safety with the 4 lanes: What often happens when you've got 2 vehicles side by side approaching a crosswalk or something, 1 vehicle slows down and stops for the pedestrian, but the other 1 keeps rolling and doesn't see the pedestrian that the other vehicle's stopping for, and we have an unfortunate situation that splits these 4 lanes. It's a very common crash situation for pedestrians.

With converting to the 3 lanes, we eliminate that situation, so it's much safer. With the left-turn lane, you get some more of a pedestrian refuge between the different lanes of traffic.

Then we've got the dedicated left turn, so those turns that are most likely going to cause a vehicle to stop, to wait for that oncoming traffic, they're completely pulled out of traffic; and then you don't have any rear-end type crashes and so forth, so that saves that and then improves the traffic operations that those stopping vehicles are removed from the through traffic. Whereas the right hand, yes, you get the right turns, but they're not coming to a complete stop in most cases.

Also, along with this corridor, we have a lot of truck traffic. The truck traffic's trying to get into these industries along this way to get into those driveways in the middle part of that large, long truck. What often happens is it goes to the leftmost lane and then cross across the right lane, causing a conflict point that way as well. So, with the shoulder, if you want to call it that, they've got a lot more maneuverability, and if they have to, they can pull into a little bit of that left lane but not get completely out of that right lane. So, it's more obvious what they're doing, so there's a lot of safety.

We took a look at some of the crash history here, and in the last 16 years, we've had 16 crashes all here; half of them are those rear-end crashes, so something that'll be easily, most likely solved with the 3-lane sections. Then we had another, the next one was left-turn conflicts, having the left turn dedicated lane will help with some of those, and we had one pedestrian-related crash up here as well.

Another thing that's beneficial with the 3-lane section is it helps to just manage the speed. Instead of the 2 lanes in each direction, cars really can't pass each other, so that helps to manage the speed. The corridor is short enough where you're never really having to worry about having to follow somebody too long that they're going much slower than the speed limit, but it does help manage that speed limit.

As far as the traffic volumes, the 3-lane sections can easily accommodate as much as 15,000 vehicles a day and then some, depending on the situation. What we have out here on the west end, in the residential area, we get only about 3,500 vehicles a day, and about 7,000 as we approach Jamaica. So, that's significantly under the capacity, certainly

for the long-term future, we don't anticipate getting anywhere near that capacity of 15,000 vehicles, so we should be able to accommodate that.

And that gives us just the pictures of the ends of this corridor here at Jamaica, we've got just 1 lane in each direction for through lanes, and we do have a right and left turn dedicated lanes here at the signalized intersection. At the roundabout, we only have 1 lane in each direction, so then both end points then widen to the 4 lanes, so we're really operating with the 2 lanes out there anyway, so.

Then we do have a lot of the 3-lane segments throughout the City. Here's just one, not too far from this neighborhood here on Hadley Avenue, and in this case at 97th Street with 3-lane sections so it's something that we're familiar with.

Certainly, 20 years ago, when these road diets really became introduced to the public, there was a lot of concern and misunderstanding of them, but I think it's become a lot more acceptable to the public, and I think they better understand what we're doing here.

And then one great thing is we're doing the resurfacing project this year, we're milling off about 2" of that top layer, and then putting it back. This is a great opportunity to really have a low-cost improvement in the safety and operations. We'll be out there having to redo all the lane striping anyway, so it's really almost a cost mutual situation and a little differences in the pavement marking between a 4-lane vs. a 3-lane. So, it's a great opportunity to create improvement without much of a cost difference.

So, with that, I'd appreciate your feedback.

Council Member Olsen said do it.

Council Member Thiede said my first reaction, though, is I'm hesitant because you know we did that on Hinton, then we went back and forth, I think about 3 different times; because I built a house in Hidden Valley in 1997, and I think it was 4 lanes. Then it went to 3 lane, you know, and then it went back to 4 lane, and I just want to make sure that we're not overlooking something. I mean, you've got trucks that are turning right into businesses there, so what kind of lineup of traffic are you going to get behind those trucks, where otherwise with the 4-lane, they just take the other lane?

Director Burfeind replied they're actually going right from the left lane today; they're not able to make the turn from the right lane because they hop the curb. So, it's a big safety issue.

Council Member Thiede said all right.

Director Burfeind said I happen to live down there, and I've seen a number of close calls because they're in the left lane, slowing down, and cars are zipping by on the right, and then they make the turn and everything's a conflict. So, it operates as a 2-lane today. I don't know a single time I've seen a car drive in that right lane, even if they're going slow, so it's an unusual roadway as it sits today.

Administrator Levitt said and Ryan, the pedestrian improvement, we put an actual median in to cross pedestrians and the safety issue from the residential neighborhood.

Director Burfeind replied yeah, we're going to look to see if there's a spot that makes sense. At a bare minimum, it's going to make the Hamlet and Harkness crossings much safer for the reasons Paul talked about, and then we'll evaluate it if there could be like a refuge island in a location as well.

Mayor Bailey asked Paul if he could go back to the, I think it was the first picture, I just want to ask a question. So, I just want to be very clear. So, I see, and I'm fine with the center lane idea, but I'm also seeing you've got the lines on the side; now, are those bikes?

Paul replied in this picture, yes, the shoulder can accommodate on-road bicycling, but.

Director Burfeind said we won't stripe it that way, it won't have those lines.

Mayor Bailey said I don't mind you putting a stripe there to slow or calm the traffic down, but I don't want, I would be fearful of pedestrians riding their bikes along, as Dave's talking about, with the trucks going by or multiple trucks are going by. I just wanted to check on that because I've been dealing a lot at the Met Council with the tab on these pedestrian things.

Director Burfeind said we won't do all the green; do you see all that green marking and the bikes? Mayor Bailey replied yeah. Director Burfeind said none of that, it'll just be a shoulder.

Paul said we do have the multiuse trails on both sides of it, so that definitely does it.
Mayor Bailey said well, that's why I'm asking. It's like the trails are already there on both sides.

Director Burfeind said our next step, it sounds like Council's in favor of this, is a Communication Plan. So, we would reach out to all the businesses in the corridor and then do communication with all of the residents as well. This change wouldn't happen until probably July or August, so we've got quite some time, but the plan will come to Council for approval next week, so we wanted to get your feedback before we finalized it.
Council Member Olsen said thank you.
Mayor Bailey said sounds good, is Council good?
Council Member Thiede said yes, thank you.

14. WORKSHOPS - CLOSED TO PUBLIC - None.

15. ADJOURNMENT

Motion by Council Member Olsen, second by Council Member Garza, to adjourn the meeting at 9:59 p.m.
Motion carried: 5-0.

Minutes prepared by Judy Graf and reviewed by Tamara Anderson, City Clerk

City Council Action Request

7.C.

Meeting Date	3/18/2026
Department	Parks and Recreation
Agenda Category	Action Item
Title	Parks, Recreation, and Natural Resources Meeting Minutes (2026-02-09)
Staff Recommendation	Approve the February 9, 2026, Parks, Recreation and Natural Resources Meeting Minutes.
Budget Implication	N/A
Attachments	1. Parks and Recreation Commission Minutes 2.9.26

PARKS AND RECREATION COMMISSION **Date: February 9, 2026**
12800 RAVINE PARKWAY SOUTH
COTTAGE GROVE MN, 55016
COUNCIL CHAMBER - 7:00 P.M

1. CALL TO ORDER
   Meeting called to order at 7:00pm at City Hall

2. ROLL CALL

   Members Present: Adam Larson, Samanthia Crabtree, David Olson, Kelly Glasford, Debra Gustafson, Shane Waterman, Sam Larson

   Members Absent: Susannah Brown, Justin Waterman

   Others Present: Zac Dockter Parks Director, Noah Ranem, Jim Fohrman, Council Member Dave Thiede

3. APPROVAL OF THE AGENDA

4. APPROVAL OF THE MINUTES

   A motion to approve minutes from November 10, 2025, was made by Commissioner Crabtree & seconded by Commissioner Gustafson. Minutes Approved.

5. OPEN FORUM
   None

6. ACTION ITEMS

   A. Ponds Park Natural Resources Management Plan
   We acquired Still Ponds Park Property in 2022. It has a beautiful shallow lake area and a lot of good forest habitat. We have been there clearing the undergrowth, buckthorn and things of that nature. We did warn the Commission that the pine plantation that was established there in the 1950's/1960's was pretty degraded, with very tall red pines that are starting to fall over and get diseased. We did invite a staff member from the Minnesota DNR Forestry Department, multiple people from the Washington County Conservation District, South Washington County Watershed District, and other arborists and they all agreed that the plantation needs to go over time. We are trying to take a phased approach because we realize the visual impact will be considerable. The first

step was to establish the natural resources management plan so we can collectively show what that area will look like after a full habitat restoration. The plan has been

submitted to the Commission for review. It was completed by the South Washington County Watershed District staff. It does a good job of laying out the history of the land, history of the area, what the goals are, what the estimated cost of the restoration will be, and long-term management. Commissioner Gustafson commented that the plan had the incorrect population of Cottage Grove at 35,000 and it is closer to 40,000 and needs to be amended. Commissioner Larson inquired about the total costs listed in the summary. Zac confirmed that the total cost would be all columns added up collectively and that the activity phasing page is just more detailed information from the summary page. Commissioner Olson brought to the Commissions' attention that the document states there is a conservation easement in place, however after previous discussion with Zac and research there is in fact no conservation easement in place on this property and we should make sure to have that amended. A motion was made to approve the plan with the two exceptions notes made by Commissioner Olson. Seconded by Commissioner S. Waterman.

B. Peterson Park Concept Master Plan Review

Peterson Park is an exciting new park development project southwest of Jamaica Avenue & Military Road. Like Still Ponds Park, this is one of the more significant lakes, in terms of surface area, in Cottage Grove that we are excited that we were able to obtain the land all the way around the lake. The Council wrestled a little bit last year about putting the trail all the way around the lake, but we are working with the developer to make sure this happens. This will be about a 1-mile loop lake trail. Zac walked through the design plan with the Commission, looking for feedback on the first draft of this concept plan. Commissioner Crabtree inquired how many parking spaces there will be. Zac stated there will be about a dozen right now. Commissioner Crabtree had concern about that not being enough as we anticipate this to be a heavily trafficked park. She wanted to know if there is room for additional parking spaces, or what other options people would have for parking. Zac stated that there will be an opportunity for off-street parking on the interior neighborhood roads. Zac does not anticipate this to be high destination park where there are lots of people at one time, but rather people will come and go, so additional parking spots probably won't be necessary. Commissioner Olson stated he was able to drive around a portion of the lake and is really optimistic about this park. Zac mentioned to the Commission that we will be putting in a small dock for water access, however there will not be fishing opportunities as the lake is fairly shallow. Zac mentioned there is also connection to the park from the southwest corner through Shepard Farm. Commissioner Crabtree asked if there would be rental opportunities similar to Grey Cloud Island. Zac stated we should have some sort of paddling launch and then revisit if we do a paddle share. Commissioner Gustafson received feedback from neighbors regarding the access point down at the southern point. It looks like the only access point is through the west cul-de-sac. Neighbors

wanted to know if there was any way to have the access point off of Jamaica by the east cul-de-sac as it would be easier access. Zac stated that there is a trail connection that goes out of that cul-de-sac and runs up Jamaica. It doesn't cut back directly into the park because of some drainage and other issues, but as you get further north you'll see there is that opportunity where it loops back into the park. Some of the other feedback she received was about the future playground. Neighbors would like to see more of a nature color scheme and have two different areas for older and younger kids. In terms of restroom and park shelter the feedback was that the solid side of the structure should have it on the side, not the back. The thought is if is angled right, to make sure it is more visible from higher traffic area like Jamaica and Ravine Road so there is less opportunity for graffiti and potential crime. Zac stated that he understands the concern, but reality is, no matter where you put it, there will be a wall towards Jamaica. Zac stated we will be putting security lighting and cameras in the area to protect our assets. The playground design is almost complete, and it is a nature-based theme that he thinks people will enjoy. Commissioner Gustafson knows this is going to be a phased approach and there is grant in the packet from the DNR and would want to know if the start of the project be based on when we get grant funding. Zac stated that the plan to apply for the DNR Outdoor Recreation grant as well as local DNR Local Trail grant by March 31st. If we get those grants, we will get notification sometime in June, once the contracts are complete it would be closer to September so this would most likely be a spring 2027 construction project. In the meantime, we are working with a developer to get the trails and park grated and bring topsoil in. Commissioner Larson asked if we are doing asphalt trails. Zac stated that there are concrete trails around the active area and the trails themselves will break off into asphalt trails. Commissioner Larson asked if there was going to be any delineation to show what park property is and what private property is. Zac stated that we do a pretty good job with managing our property lines and putting up posts that say park property and addressing encroachment issues by having property owners removing their stuff they put on park property. We have already addressed a few encroachment issues on the south side of the lake that had not been dealt with in the past and got everything cleaned up last year. Commissioner Larson asked if we would be planning a multi-use trail with bike lanes or would it mostly be for walking. Zac stated it is scheduled to be an 8-ft trail right now; however, the grant actually requires a 10-ft trail. We had to be very conscious of the space we had to work with as we wanted to preserve as many large trees as we could, so we would not be able to get a 10-ft trail around the entire lake. The trail will be open to bicycling, rollerblading, walkers, runners, whatever it might be. This will be our third lake loop trail in the community. A motion to approve the master plan for Peterson Park was mad by Commissioner Glasford. Seconded by Commissioner S. Waterman.

C. Grant Application Letters of Support

Now that we have approved the master plan concept for Peterson Park, we can move forward with applying for the grants as previously mentioned. Looking for a motion to accept a letter of support to use in the grant application process. Commissioner

Crabtree asked if the previously discussed 8-ft trail vs 10- ft trail will impact our chance for this grant. Zac stated that it may, but he did talk to staff and there is a reason for exception section for things like preserving habitat or not removing large trees. A motion to approve the letter of support made by Commissioner Crabtree. Seconded by Commissioner Olson.

D. Public Landscapes Initiative Program

This is something the Commission reviews almost annually. The goal of the program is to beautify the community and make sure when we remove trees from the community for development that we are taking fee from that and putting that back into replanting in the community. This can go towards things like Arbor Day tree planting, mass park planting, new park development and right of way beautification. One of the things that was talked about at the strategic planning session with City Council was that we need to get better on how we strategize right of way beautification. We have over 400 gardens in Cottage Grove, and a lot of those are in the right of way which is a dangerous spot for workers to try to maintain those. We had a heart to heart with City Council, and we want more focus on hardscapes and where we do have softscapes, have more plants, flowers, and trees and really make those areas pop and make sure we maintain those the best we can. We would like to use the Public Landscape Initiative and prioritize these projects such as the Jamaica area landscaping as many of those gardens have gotten beyond what we can maintain. 80th Street has also given us a lot of challenges but that will be reconstructed this year so we will clean that area up then. Looking for support to amend the current plan. Commissioner Crabtree asked if the new roundabout at 80th & Keats would be part of this. Zac stated yes, we have a landscape plan that is more hardscape but will have softscaping elements too. Commissioner Olson asked Zac to explain the maintenance of hardscapes as that was not included in the report. Zac stated that yes hardscapes are not free of maintenance either and depending on if you do stamp or colored concrete there is sealing every 5 years or so that comes with that. We do have trucks that go by that washes these curb areas and the reality is that the maintenance involved with that compared to trying to get out to the gardens monthly is much less and much safer. A motion to approve the Public Landscapes Initiative as recommended made by Commissioner Olson. Seconded by Commissioner S. Waterman.

E. Commissioner Term Review

One Commissioner has termed out this year; we will take care of that at the end of the meeting. Just reminding you of your terms. Commissioner S. Waterman and Commissioner Olson have offered to refill their seat. Commissioner Crabtree has termed out, so we are actively looking to fill her seat. We also still have a youth seat open that needs to be filled. No action needed.

F. Facility Use Reclassification of Special Olympics

We have an item regarding our facility use policy in regard to the Blazing Stars Special

Olympics program. This is a non-profit group we have been working with for a few years that uses a few facilities across our community for their league programming. The challenge we have had is we only have two programs we recognize as priority three associations: The Cottage Grove Athletic Association & The Eastridge Athletic Association. So, as we work down our priorities, we can't move on to our priority four groups until we've got all the field allocations for the priority three groups. As you can imagine, with the two associations being our two largest users, it takes a long time to figure out what fields are still available because they have to wait for registration numbers to come through. Historically those groups have played really well with the Blazing Stars Special Olympics program, and try to allocate the fields for their programs, but for us as a city to wait and for them to try to wait for all that allocation to play out it becomes a little cumbersome. So, with that we would like to make them a priority three group so we can get their facilities right away alongside CGA & ERAA. We think this group is a great partner that helps the community and surrounding communities and we think we should re-prioritize them. Noah Ranem coordinates our facility use and stated that in the last two years he has worked with these groups and they have been very open to moving things around. Blazing Stars is still growing, and they are adding some new fall sports, so getting them a seat at the same table makes our lives a lot easier. And so, if the Commission is supportive of that, Zac provided an amended facility use policy that they could consider for action. Commissioner S. Waterman asked if Blazing Stars would be at the field coordination meeting that is typically held in January. Zac confirmed yes. Commissioner Olson stated he raised a question with Zac earlier about our priority three association requirements and in order to do this, we have to waive conditions one and two, but the rest of them we should still require. So, his suggestion is we limit our waving to only one and two, which is what Zac did with the revision. Commissioner Larson motioned to approve, Commission approved.

7. PRESENTATIONS
None

8. ACTION UPDATES

Denzer Park
We started this project in summer 2024 and took a hiatus in 2025 as we reallocated our budgets for parks. Part of the reason we did this was because development had stopped in the area and we weren't building a park in the middle of nowhere. Now that homes have been built, and apartment complexes are interested again, we think it is time to service that neighborhood, so we are going to put the project back out to bid. We already have the playground and shelter on order, so we hope to have that park constructed this coming year of 2026.

CG Trailway Corridor Restoration

We have had a lot of timber down from diseased, dead, dying, and invasive trees that have been sitting for a long time because we were not able to burn it last winter. We were supposed to burn it this winter but have run into challenges, so we just authorized a contract to have the rest of it hauled away in the next week or two.

Oltman Park
Complete except for the picnic shelter, the playground actually got established in November. We will let the turf grow in through next year and hope to be able to play on the fields in 2027.

Mississippi Dunes Park
We have a lot of funding applications out right now. We have four or five applications for further grant funding for the road leading into the park, the building, the playground, the fishing pier, and the boat launch. Once we figure out what we will get from the 3M settlement program, if anything, then we can work back from there and figure out how we want to piece together this project. Commissioner S. Waterman asked Zac about how the grants dictate the schedule of how the park is built, and if we did get a majority or all the grants that we are applying for, would there be scheduling that would be fixed. Zac stated that there will be grant funding for probably everything in the park except for the building. Buildings are really hard to get grants for; however, we are applying for a grant for the building from LCCMR but that will probably be a 50% match.

Peterson Park
Discussed earlier in action items

Still Ponds Park
Focusing on habitat restoration

2025 Park Playground Donation
We donated Belden & Hardwood Park playgrounds to Kids Around the World last spring. We received word that Hardwood Park will be going to Jamaica & Belden will be going to Panama, and we look forward to doing this again.

Ice Arena Naming Rights
We talked to the Commission at the last meeting about entering an agreement with Front Burner Sports, well, that is now happening. They are just starting to develop their story on why people should invest in the Cottage Grove Ice Arena, so there is a concept out there but not ready to present to the Commission at this time, but more information will be presented at the next meeting.

9. DONATIONS
None

10. STAFF REPORTS & MATERIALS

Each division has submitted a report for the Commission to review.

11. COMMISSION COMMENTS

This will be Commissioner Crabtree's last meeting. She started on the Commission in 2016. During Sam's time on the Commission, she was a part of many major projects including the renovation of almost every single park building, expanded Hamlet Park, acquired 400 acres of park and open space, plus added 35 miles of trails. She helped guide the East Ravine Park Trail master plan, and saw the openings of Cedarhurst Meadow Park, Oltman Park, Antlers Ridge, Strawberry Fields, & Glacial Valley Park. We acquired 1900 feet of shoreline along the Mississippi River for the Mississippi Dunes project. We added unique recreation activities such as the bike park, paddle share, kayak rental program, playgrounds, interpretive signage, and trail mapping just to name a few. Sam helped preserve protect and restore hundreds of acres across the community, while also renovating existing parks like Arbor Meadows, Hearthside, Granada & Hamlet and now have plans for the Ice Arena. Sam's strongest voice was making dynamic playgrounds. Zac presented Commissioner Crabtree with a Hockey Mom parking sign.

12. COUNCIL COMMENTS

Council Member Clausen asked the Commission for feedback on the Kingston Park building versus Mississippi Dunes Park and which is more important in terms of funding. Commissioner Olson stated Kingston Park first & Mississippi Dunes Park second. Commissioner Larson stated he would be opposite and wants a working park at Mississippi Dunes before replacing the building at Kingston Park. Commissioner Glasford stated she would prefer Mississippi Dunes because it's a cool entity that we currently don't have that could draw more people to our community. Commissioner Crabtree asked what the plans for the building will be and would the building be an integral part for the usage at Mississippi Dunes or would it be more beneficial to upgrade Kingston, since that is the biggest park we use in Cottage Grove versus waiting a little while at Mississippi Dunes. Zac answered that the park would be fully functional without the building. Commissioner Crabtree ultimately agreed with Commissioner Olson that Kingston should be done first and then Mississippi Dunes as long as we can get grant money for the other things to make it functional.

13. WORKSHOP
None

14. ADJOURNMENT

Motion to adjourn made by Commissioner Crabtree. Second by Commissioner J . Waterman. Meeting adjourned at 8:00pm

City Council Action Request

7.D.

Meeting Date	3/18/2026
Department	Administration
Agenda Category	Action Item
Title	Temporary Gambling Permit - Ladies Rock Off-Road Club
Staff Recommendation	Authorize issuance of a single-occasion gambling permit to Angela Stevens on behalf of the Ladies Rock Off-Road Club to conduct a raffle at Carbones on September 11, 2026, at 7 PM.
Budget Implication	N/A
Attachments	1. Memo - Public Safety

Cottage Grove
Where Pride and Prosperity Meet

Department of Public Safety
Police • Fire • EMS

To: City Administrator Jennifer Levitt

From: Director of Public Safety Peter J. Koerner

Date: March 4, 2026

Subject: **GAMBLING LICENSE APPLICATION – SINGLE OCCASION**

INTRODUCTION

Under State Statutes, four types of nonprofit organizations are eligible to conduct lawful gambling in Minnesota (fraternal, religious, veteran, and other nonprofit) and most events, with the exception of certain raffles, require obtaining either an exempt or an excluded permit from the Minnesota Gambling Control Board. Permits issued by the Minnesota Gambling Control Board require approval of the local government authority where the event will be held.

The Public Safety Department investigates single-occasion gambling permit applications and provides the City Council with a recommendation on whether a permit should be issued. If the City Council authorizes issuance of a permit, the City Clerk signs off on the application and forwards it to the Minnesota Gambling Control Board or issues the permit itself if none is required by the Gambling Control Board.

BACKGROUND

Pursuant to City Ordinance, Angela Rae Stevens, on behalf of the Ladies Rock Off-Road Club, 15453 Darling Path, Rosemount, MN 55068 has submitted an application for a Temporary Single Occasion gambling permit to be held at Carbone's Kitchen & Pub, 7155 Jorgensen Lane S, Cottage Grove, MN 55016 on September 11, 2026, at 7:00pm. The Department of Public Safety is required to conduct a police investigation of the applicants.

DISCUSSION

The application as submitted is complete in compliance with our ordinance and is exempt from the licensing requirements of the Minnesota Charitable Gambling Control Board.

We have investigated the applicants and have not found any facts which would constitute a basis for denial of this application, under the provisions of the City's Gambling Ordinance.

RECOMMENDATION

Recommend that the City Council approve the single occasion Gambling Permit application for the Ladies Rock Off-Road Club.

Peter J. Koerner – Director of Public Safety 03/04/2026

City Council Action Request

7.E.

Meeting Date	3/18/2026
Department	Convention and Visitors Bureau
Agenda Category	Action Item
Title	Response to Open Forum - Allison Steenberg
Staff Recommendation	Receive a response letter to the open forum question from Allison Steenberg.
Budget Implication	N/A
Attachments	1. 2026-3-4 Allison CC Response 2

Cottage Grove
Where Pride and Prosperity Meet

March 10, 2026

Allison Steenberg
7402 Lamar Avenue S
Cottage Grove, MN 55016

Ms. Steenberg,

Thank you for your comments received at the March 4, 2026, City Council open forum related to the ability and support to create redevelopment within the 'Old Cottage Grove' area.
The City's 2040 Comprehensive Plan guides development within the community and outlines land uses for development. Land uses include a range of residential development, commercial and industrial uses. This plan is implemented as utility services become available and landowners become willing to sell for development and redevelopment. The Old Cottage Grove area will rely on landowners for redevelopment opportunities however, it is important to note the parcel sizes and access to city sewer and water within this area create immediate challenges to support commercial, retail, and residential growth and/or redevelopment.

The City of Cottage Grove recognizes the challenges that small businesses face, and the City appreciates the dedication that small business owners have made to the Cottage Grove Community. The city and the Economic Development Authority (EDA) work to provide support to businesses including financial resources and business development services. Commercial growth within a community relies heavily on the willingness of land and property owners to sell for either redevelopment or development. Old Cottage Grove faces challenges with its geographic location in relationship to the growth areas of the city and availability of city sewer and water. The city continues to ensure their zoning codes are up to date and focus on a streamline process for new and existing businesses to work through required approvals quickly.

Development and redevelopment rely on the availability and extension of city sewer and water to support growth. Current city sewer and water is located at Keats Avenue and will require development to extend those services eastward to the Old Cottage Grove Area. Extending sewer and water services to the Old Cottage Grove ahead of development would be a cost near $18 million which the City does not have included in the 5-year Capital Improvement Plan.

Sincerely,

Emily Schmitz
Community Development Director

City Council Action Request

7.F.

Meeting Date	3/18/2026
Department	Community Development
Agenda Category	Action Item
Title	Approval of Rental Licenses
Staff Recommendation	Approve the issuance of rental licenses to the addresses listed in the attached table.
Budget Implication	N/A

Attachments

1.	Rental License Approvals CC Memo
2.	Rental License Approvals Table

Cottage Grove
Where Pride and Prosperity Meet

TO: Honorable Mayor and City Council
Jennifer Levitt, City Administrator

FROM: Samantha Drewry, Code Enforcement Officer

DATE: March 11, 2026

RE: Rental License Approvals

Background/Discussion

Rental licenses are required for nonowner-occupied residential properties (City Code Title 9-13, Property Maintenance, and Title 9-14, Rental Licensing) and are issued on a biennial basis. The licensing process includes submittal of the rental license application, payment of the rental license fee, and public criminal history report. Rental inspections are conducted on all rental properties as part of the licensing process. Once all information has been submitted and the inspection satisfactorily completed, the Council must approve the license prior to it being issued.

The properties listed in the attached table have completed the licensing process and are ready to have their licenses issued following Council approval.

Recommendation

Approve the issuance of rental licenses to the properties listed in the attached table.

2026 RENTAL LICENSES

CITY COUNCIL APPROVAL - MARCH 18, 2026

RENTAL LICENSE NUMBER	PROPERTY STREET #	PROPERTY STREET NAME	PROPERTY OWNER
RENT-001890	9023	67th Street South	Mishra, Shrawan Kumar & Vandana
RENT-001902	7863	Hemingway Avenue South	Washington County CDA
RENT-001915	9116	Indian Boulevard South	Gregerson, Michael
RENT-001923	6953	99th Street Court South	Olayemi Odujole
RENT-001977	7892	72nd Street South	T Rental
RENT-001993	6766	Meadow Grass Lane South	Reef Point Investments LLC
RENT-002070	12075	Grey Cloud Trail South	PAS Associates LTD.
RENT-002133	8007	Jewel Avenue South	Laurie's Woods LLC
RENT-002143	8827	92nd Street South	Homes for Now
RENT-002145	6754	Meadow Grass Lane South	Homes for Now
RENT-002170	8408	87th Street South	Invitation Homes
RENT-002185	8233	Belden Boulevard South	SFR Borrower 2021-2 LLC
RENT-002187	9826	74th Street Circle South	SFR Borrower 2021-2 LLC
RENT-002189	7274	Janero Avenue South	HPA Borrower 2019-2 LLC
RENT-002235	8316	66th Street South	8316 66th St LLC
RENT-002333	7200	61st Street South	Miller, Joshua
RENT-002412	6764	Jody Avenue South	Military Keats, LLC
RENT-002943	8751	Hallmark Avenue South	Ben and Amanda Greene
RENT-003081	6553	Jody Avenue South	Liu, Ling

MULTI-FAMILY:

Grove 80, 7550 80th Street South; 1 Building, 120 Units

Blue Stem, 7601 79th Street South; 1 Building, 52 Units

City Council Action Request

7.G.

Meeting Date	3/18/2026
Department	Administration
Agenda Category	Action Item
Title	Labor Attorney Professional Services Agreement
Staff Recommendation	Approve the professional services agreement between the law firm of Madden Galanter Hansen and the City of Cottage Grove.
Budget Implication	N/A

Attachments

1.	20260309 Labor Attorney PSA Memo
2.	Professional Services Agreement (2026-2027)

To:	Honorable Mayor and City Council Members Jennifer Levitt, City Administrator
From:	Joe Fischbach, Human Resources Manager
Date:	March 9, 2026
Subject:	Labor Attorney Professional Services Agreement Memo

Background
Since the 1990s, the city has used attorney Mr. Scott Lepak with the law firm Barna, Guzy and Steffen as its primary labor attorney. This work includes labor contract negotiations, reviewing proposed discipline memos, contract grievances, mediation and arbitration. Mr. Lepak informed the city that he will be winding down his practice and retiring. Mr. Lepak was one of the most used labor attorneys in the public sector in Minnesota.

With Mr. Lepak's retirement, City staff reviewed what other attorneys are available that specialize in this type of work in the public sector. Ms. Susan Hansen, with the law firm Madden Galanter Hansen, was identified as a potential successor. Like Mr. Lepak, Ms. Hansen specializes in labor attorney work almost exclusively with public sector clients. Again, like Mr. Lepak, Ms. Hansen represents a vast number of cities and counties in Minnesota.

City staff, including the City Administrator, department heads and the Human Resources Manager met with Ms. Hansen to discuss the scope of work, needs of the City and her philosophy regarding contract negotiations with bargaining groups. Staff believe Ms. Hansen is the right attorney to represent the City going forward.

Susan and City Attorney Kori Land have negotiated the attached professional services agreement for City Council consideration.

Action Requested
Approve the professional services agreement between the law firm of Madden Galanter Hansen and the City of Cottage Grove.

PROFESSIONAL SERVICES AGREEMENT

This Professional Services Agreement ("Agreement"), by and between the City of Cottage Grove, 12800 Ravine Parkway South, Cottage Grove, Minnesota 55016, hereinafter referred to as "City" and Madden Galanter Hansen, PLLC, Attorneys at Law, 7760 France Avenue South, Suite 290, Bloomington, Minnesota 55435-5834, hereinafter referred to as "Consultant."

RECITALS

WHEREAS, the City is required under the Minnesota Public Employment Labor Relations Act (PELRA) to undertake the negotiations of contracts with employees represented by exclusive representatives (unions); and

WHEREAS, the City has determined that retaining a consultant to assist in its negotiations with the unions best fulfills its obligations with respect to labor negotiations; and

WHEREAS, the City may need legal advice on labor and employment related issues in the future.

NOW, THEREFORE, in consideration of the mutual undertakings and agreements contained within the Agreement, the City and the Consultant agree as follows:

A. Scope of Services

As requested and directed by the City Administrator, their designee, or the Human Resources Manager, provide legal advice and assistance regarding labor relations and personnel matters, including:

1. Representation, with the labor negotiating team, in labor negotiations including:

    a. Assistance in developing/drafting initial contract language and terms;

    b. Analysis of existing contract language for administrative and legal implications and offer recommendations regarding the same;

    c. Preparation of management negotiations strategy;

    d. Management spokesperson for at the table labor negotiations;

    e. Preparation of management proposals and timely drafting of final labor bargaining agreement and finalization;

    f. Pre-labor negotiation briefings, settlement summaries and appropriate status reports for the information and action as necessary or as requested.

2. Representation in grievance matters and counseling with management staff in initial grievance steps. Handling of grievance arbitrations.

3. Representation of the City in unit determination hearings.

4. Provide legal representation and advice to the City related to labor relations advice, including proposed union contract terms, personnel matters, and data practices issues on an ongoing, as-needed basis.

B. Consideration and Terms of Payment

1. Consideration for all services performed shall be as follows:

   Providing labor negotiation services, travel and other labor relation services, including negotiations other than arbitration, administrative hearing and litigation representation, billed in tenths of an hour at the rate of $235.00 per hour. Arbitration and administrative hearing representation, if requested by the City, shall be at the rate of $245.00 per hour.

2. Consultant will also be reimbursed for expenses, including mileage consistent with the amount set forth by the IRS per mile, photocopying charges at $.15 per page, charges for facsimile transmissions at the rate of $.50 per page, and reimbursement of long distance telephone charges.

3. The Consultant will submit invoices on a periodic basis to the City for payment for services performed. Payment shall be made within thirty (30) days after receipt of invoices for services performed.

C. Changes

The City and Consultant may, from time to time, require changes in the terms of this Agreement. Any such changes that are mutually agreed to by the parties shall be incorporated as written amendments to this Agreement and attached hereto.

D. Duration

The terms of this Agreement shall be applicable for a period commencing March 1, 2026, through February 28, 2027. The Agreement may be terminated by either party after giving ninety (90) days written notice. The Agreement may also be terminated by either party upon written notice in the event of substantial failure by the other party to perform in accordance with the terms of this Agreement. The non-performing party shall have fifteen (15) calendar days from the date of the termination notice to cure or submit a plan for cure that is acceptable to the other party.

E. Independent Contractor

It is agreed by the parties that at all times and for all purposes hereunder, that the Consultant is an independent contractor and not an employee of the City.

F. Insurance

The Consultant agrees it will defend, indemnify and hold harmless the City, its officers and employees against any and all liability, loss, costs, damages and expenses which the City, its officers or employees may hereafter sustain, incur, or be required to pay arising out of the negligent or willful acts of omission of Consultant and out of Consultant's performance or failure to adequately perform its obligations pursuant to this Agreement.

The Consultant further agrees, in order to protect itself and the City under the indemnity provisions set forth above, the Consultant will maintain at all times during the term of this Agreement, general, professional, and auto liability policies on an occurrence basis, including lawyer's professional liability insurance with a coverage amount of not less than $2 million dollars ($2,000,000.00) per claim, $5 million dollars ($5,000,000.00) aggregate. Consultant shall provide the City with a copy of the Certificate of Insurance showing all of the coverages carried by Consultant upon request by the City. Except as required above, all such policies shall provide limits not less than the tort liability limitations set forth in Minnesota Statutes Section 466.04. If applicable, the Consultant also agrees to maintain Workers Compensation insurance in the statutory amounts. Certificates of insurance showing the coverage listed here shall be during the term of this Agreement, have and keep in force liability insurance coverage provided to the City prior to the effective date of this Agreement. All policies shall provide that they shall not be canceled, materially changed, or not renewed without thirty (30) days prior notice thereof to the City. This provision shall act as a condition subsequent; failure to abide by this provision shall be deemed as a substantial breach of Agreement.

G. Data Practices

The City may disclose private and/or confidential data to Consultant as necessary for purposes of legal advice and consultation. Consultant agrees to abide by the applicable provisions of the Minnesota Government Data Practices Act, Minnesota Statutes, Chapter 13, pertaining to privacy or confidentiality. Consultant understands that all of the data created, collected, received, stored, used, maintained or disseminated by the Consultant in performing those functions that the City would perform as a government entity, is subject to the requirements of Chapter 13 and the Consultant must comply with those requirements as if it were a government entity. This does not create a duty on the part of the Consultant to provide the public with access to public data if the public data is available from the City, except as required by the terms of this Agreement.

H. General Provisions

1. Assignment. This Agreement is not assignable without the mutual written agreement of the parties.

2. Waiver. A waiver by either City or Consultant of any breach of this Agreement shall be in writing. Such a waiver shall not affect the waiving party's rights with respect to any other or further breach.

3. Governing Law. This Agreement shall be construed in accordance with the laws of the State of Minnesota and any action must be venued in Washington County District Court.

4. Amendments. Any modification or amendment to this Agreement shall require a written agreement signed by both parties.

5. Severability. If any term of this Agreement is found to be void or invalid, such invalidity shall not affect the remaining terms of this Agreement, which shall continue in full force and effect.

6. Entire Agreement. This Agreement constitutes the entire agreement of the parties and supersedes all prior communications, understandings and agreements relating to the subject matter hereof, whether oral or written.

[The remainder of this page is intentionally left blank]

IN WITNESS WHEREOF, the parties have caused the Agreement to be duly executed intending to be bound thereby.

City of Cottage Grove

Dated:_____

By: _____
Myron Bailey, Mayor

By: _____
Tamara Anderson, City Clerk

Madden Galanter Hansen, PLLC

Dated: 3/9/2026



By:
Susan K. Hansen
Its Partner

City Council Action Request

7.H.

Meeting Date	3/18/2026
Department	IT Department
Agenda Category	Action Item
Title	Noteefy Software and Agreement
Staff Recommendation	Approve the Noteefy Master Agreement and purchase of the Noteefy SaaS solution in the amount of $5,000 annually.
Budget Implication	This is a budget adjustment for the 2026 budget being sourced from cost savings from the River Oaks Service Fees annual budget.
Attachments	1. CouncilMemoNoteefy

Cottage Grove
Where Pride and Prosperity Meet

To: Honorable Mayor and City Council
Jennifer Levitt, City Administrator
Zac Dockter, Parks and Recreation Director
Dennis Neitz, River Oaks General Manager

From: Brian Bluhm, IT Manager

Date: March 9, 2026

Subject: Noteefy Software and Agreement

Introduction

River Oaks Municipal Golf Course continues to see strong demand for tee times, particularly during peak season. However, like most golf operations, there are unavoidable gaps caused by late cancellations, weather-related adjustments, and unused tee times that open unexpectedly throughout the day. These openings often go unfilled simply because golfers are unaware, they are available.

To address this recurring challenge and capture revenue that may otherwise be lost, staff are recommending the adoption of **Noteefy**, a waitlist and automated tee-time notification platform designed specifically for golf course operations. Noteefy is used widely throughout the industry to help courses fill last-minute availability with virtually no staff workload.

Noteefy

Noteefy functions as a digital "smart waitlist" that allows golfers to subscribe to specific dates, time windows, and group sizes. The process is fully automated:

- A golfer visits the River Oaks booking website and selects the day(s) and preferred time range for a desired reservation.
- If no tee times are available, the golfer can opt in to be notified if a matching tee time opens.
- When a cancellation or new opening occurs, Noteefy automatically sends a real-time text and/or email alert to golfers on the waitlist.
- The tee time is then booked directly through our existing reservation platform on a first-come, first-served basis.

This model requires no additional customer service workload and seamlessly integrates with common tee-sheet systems.

Examples of Revenue Capture

Industry data provided by Noteefy and referenced by other municipal and privately operated courses show consistent financial upside:

- Courses commonly report recovering thousands of dollars per month in tee-time revenue previously lost to cancellation gaps.
- One example course reported recovering **approximately $40,000 in a single season** from Noteefy-driven bookings.
- Another municipality documented that **over 60%** of all last-minute tee-time openings were successfully filled through Noteefy notifications.
- High-demand days—holidays, weekends, and tournament weeks—show the strongest impact with rapid fill-rates often occurring within minutes of alerts being sent.

While specific revenue for River Oaks will depend on seasonality and demand patterns, staff anticipate meaningful additional revenue recovery, particularly during the peak May–September window when last-minute availability is most likely to be filled.

Budget Implications

This is a budget adjustment for the 2026 budget being sourced from cost savings from the River Oaks Service Fees annual budget.

Staff Recommendation

Staff recommends the approval of the Noteefy Master Agreement and purchase of the Noteefy SaaS solution in the amount of $5000 annually.

Noteefy

Date: February 3, 2026
Valid Through: February 27, 2027
Proposed By: Scott Low
Email: scott@noteefy.app

Noteefy, Inc.
22543 Ventura Blvd
Ste 220 PMB1136
Woodland Hills, CA 91364

River Oaks Golf Course **("Company")**
11099 South Highway 61
Cottage Grove, MN 55016
United States

Billing Contact:
Dennis Neitz
Dneitz@cottagegrovemn.gov

Initial Term Start Date: February 28, 2026 (the "Effective Date")
Initial Term End Date: February 27, 2027
Billing Frequency: Annual
Payment Method: CC
Payment Terms: Due Upon Receipt

Software Subscriptions	Start Date	Qty.	Annual License Fee
Noteefy Course Solution License: • Noteefy platform and Admin Portal • Support Services, software updates, upgrades, and maintenance • Full deployment, onboarding, and customer success resource	02/28/2026	1.0	USD $5,000.00 / 1 USD $5,000.00

NET TOTAL AMOUNT YEAR 1: $5,000 USD

Terms and Conditions:

The Noteefy Course Solution is subject to and governed by the terms of the Master Software License Agreement ("MSLA"), which is incorporated by reference into this Order Form.

The Initial Term is defined in the MSLA. The Initial Term will be renewed each year for Extension Terms unless terminated in accordance with the applicable terms in the MSLA. The License Fee is subject to annual increases as described in the MSLA.

Pricing does not include applicable taxes, which Company agrees to pay, and which will be added to the payment.

This Order Form, along with the MSLA and its exhibits, is the "Agreement" between us with respect to Company's license to use the Noteefy Course Solution and the Licensed Software. This Agreement is entered into as of the Effective Date between Noteefy, Inc. ("Noteefy" or "Licensor") and the Company, along with its Affiliates ("Licensee"). By signing below, the Parties agree to be bound by this Agreement as of the Effective Date.

Noteefy

Noteefy Inc:		**River Oaks Golf Course:**	
Signature:	_____	Signature:	_____
Name (Print):	_____	Name (Print):	_____
Title:	_____	Title:	_____
Date:	_____	Date:	_____

NOTEEFY®
MASTER SOFTWARE LICENSE AGREEMENT
for Noteefy Course Solution™

Last Updated: August 2025

THIS MASTER SOFTWARE LICENSE AGREEMENT and all corresponding exhibits, schedules, and Order Forms (this "**Agreement**") is entered into as of Effective Date in the applicable Order Form, or if no Effective Date is stated, the date the Order Form is signed by the Parties (the "**Effective Date**"), by and between Noteefy Inc., a Delaware corporation, located at 22543 Ventura Blvd, Ste 220 PMB1136, Woodland Hills, CA 91364 ("**Licensor**"), and Licensee, with individual or multiple associated golf properties, identified in the applicable Order Form. ("**Licensee**"). Licensor and Licensee may hereinafter be referred to individually as "Party" and collectively as "Parties."

Recitals

A. Licensor (together with its Affiliates) is a developer and licensor of certain technologies and services. Licensor's proprietary software applications, collectively known as the "**Noteefy Course Solution**" provide golf tee-time booking confirmation, wait list services, and lead management software and compiles certain corresponding data into proprietary databases accessible by Licensee. This proprietary software, which may be provided in one or more applications, tools, or accessible portals, is referred to herein as the "**Licensed Software**." The Licensed Software may include (i) the Confirm™ Tool, (ii) the Waitlist™ Tool, (iii) the Lead Management™ Tool, and (iv) separate proprietary databases or portals accessible by Licensee, but not accessible by End Users (the "**Noteefy Admin Portals**"), and (iv) other tools or functionality as may be added by Licensor to the Notify Course Solution from time to time and made available to Licensee.

B. Licensee desires to license the Licensed Software from Licensor, subject to the terms and conditions of this Agreement, to use the Licensed Software and to make the Confirm Tool, the Lead Management Tool and the Waitlist Tool available to its customers (also referred to as "**End Users**" in this Agreement). Access to and use of the Licensed Software is limited as described in this Agreement.

Terms

NOW, THEREFORE, in consideration of the mutual covenants, terms, and conditions set forth herein, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties agree as follows:

1. DEFINITIONS

For purposes of this Agreement, capitalized terms used but not defined elsewhere in this Agreement have the meanings assigned to those terms below.

"Action" is defined in Section 13.15.

"Affiliate" means, with respect to any Person, any other Person directly or indirectly Controlling or Controlled by, or under direct or indirect common Control with such Person.

"Agreement" is defined in the Preamble.

"Applicable Law" means all applicable laws, rules, regulations, rulings, judgments, directives, or other requirements of any governmental authority in any country or jurisdiction, including the Privacy Laws, as amended from time to time.

"CANSPAM" means the Controlling the Assault of Non-Solicited Pornography and Marketing Act (15 USC §§ 7701-7713).

"CCPA" means the California Consumer Protection Act of 2018 (Cal. Civ. Code §1798.100 et. seq.), as amended by the CPRA.

"Claim" is defined in Section 11.3.

"Confidential Information" is defined in Section 8.1.

"Confirm Tool" means a tool that allows the End User, after booking a tee time in Licensee's scheduling system, to request and receive confirmation messages by text message or email related to and to confirm scheduled tee times. The End User checks a box on Licensee's website (in the online scheduling system) to request confirmation messages.

"Control, Controlling, and Controlled" means, with respect to any Person, the possession, directly or indirectly, of the affirmative power to direct or cause the direction of the management and policies of such Person, whether through the ownership of securities, partnership interests or other ownership interests, by contract, by membership or involvement in the board of directors or other management structure of such Person, or otherwise.

“CPRA” means the California Privacy Rights Act of 2020.

“Disclosing Party” means the Party disclosing Confidential Information.

“Effective Date” is defined in the Preamble.

“End User” means any customer or prospective customer of Licensee that uses or accesses the Licensed Software from Licensee’s website, opens an account with Noteefy to use or access the Licensed Software for Licensee’s golf courses, or permits the customer’s information to be added to the Licensed Software in order to access or receive the functionality of the Licensed Software.

“End User Agreement” is defined in Section 5.2.

“End User Personal Data” means the Personal Data of an End User.

“Exceptions” is defined in Exhibit A.

“Extension Term” is defined in Section 12.1.

“Force Majeure Event” is defined in Section 13.11.

“GDPR” means the General Data Protection Regulation.

“Improvement” means any invention, modification, addition, derivative work, enhancement, Update, revision, translation, abridgement, condensation or expansion, by any Party, to, or arising from, the Licensor Intellectual Property, or any other form in which the Licensor Intellectual Property or any part thereof, may be recast, transformed, or adapted.

“Indemnified Party” is defined in Section 11.6.

“Indemnifying Party” is defined in Section 11.6.

“Initial Term” is defined in Section 12.1.

“Lead Management Tool” means the software tool that allows the Licensee to create custom forms for Licensee to make available to End Users through the Noteefy Course Solution. End Users check a box on Licensee’s website agreeing to receive the custom forms, which Licensor distributes to End Users on behalf of Licensee.

“Licensed Software” is defined in the Recitals.

“Licensee” is defined in the Preamble.

“Licensee Authorized User” means Licensee’s personnel and any other person authorized by Licensee to, on behalf of Licensee, access and use the Licensed Software, including the Confirm Tool, the Lead Management Tool, the Waitlist Tool, and the Noteefy Admin Portals.

“Licensee Intellectual Property” means all software source code and object code of Licensee and any and all component parts thereof, any and all documentation relating thereto, and all copyrights, trade secrets, patents, trademarks, service marks, right of publicity, authors’ rights, contract and licensing rights, goodwill and all other intellectual property rights and proprietary rights therein or arising therefrom, as they may exist now or hereafter come into existence, and all renewals and extensions thereof. Licensee Intellectual Property does not include any Licensor Intellectual Property including the Licensed Software and Updates, the Use Data, or any improvements or derivative works thereof.

“License Fee” is defined in Section 7.1.

“Licensor” is defined in the Preamble.

“Licensor Intellectual Property” means the Licensed Software, any Improvements to or derivative works of the Licensed Software, all software source code and object code embodied in the Licensed Software and any and all component parts thereof, any and all documentation relating to the Licensed Software, the Licensor Marks, the Use Data, any Improvements or derivative works thereof, and all copyrights, trade secrets, patents, trademarks, service marks, right of publicity, authors’ rights, contract and licensing rights, goodwill and all other intellectual property rights and proprietary rights therein or arising therefrom, as they may exist now or hereafter may come into existence, and all renewals and extensions thereof. The Licensor Intellectual Property includes Licensor’s business principles, and those analytical concepts, approaches, methodologies, models, algorithms, processes, discoveries, ideas, and formats developed by Licensor in the course of its work for Licensee as well as other parties, or during its own research or research with others, as well as databases therein. Licensor Intellectual Property does not include any Licensee Intellectual Property.

“Licensor Marks” means the trademarks, service marks, logos and other marks, designs, or source indicators of or used by Licensor or its Affiliates.

“Modifications” is defined in Section 2.2.

“Noteefy Admin Portals” is defined in Recital A.

“Noteefy Course Solution” is defined in Recital A.

“Order Form” is defined in Section 7.1.

“Parties” is defined in the Preamble.

“Permitted Uses” is defined in Section 2.1.

“Person” means individual, company (whether general or limited), limited liability company, corporation, trust, estate, association, nominee or other entity.

“Personal Data” means any information that relates to an individual (e.g., a customer) and that, alone or in combination with other data, can be used to identify, contact, or precisely locate an individual, or other information that constitutes “personal data,” “personal information,” or “personally identifiable information” governed under Privacy Laws.

“Privacy Laws” means all Applicable Laws and restrictions relating to the processing of Personal Data, privacy and security that may exist in any relevant jurisdiction, including the CCPA, GDPR, CANSPAM, CPRA, and the TCPA, each of the foregoing as amended or replaced from time to time.

“Recipient” is defined in Section 8.1.

“Security Incident” means any unauthorized access or disclosure of any End User Personal Data not permitted by this Agreement.

“Security Program” is defined in Section 4.1.

“Support Services” is defined in Section 4.2.

“System Availability” is defined in Exhibit A.

“TCPA” means Telephone Consumer Protection Act of 1991 (47 USC § 227).

“Term” is defined in Section 12.1.

“Updates” is defined in Section 4.2.

“Use Data” means any and all statistics, information and data received or generated by or through, or with the assistance of, the Licensed Software or arising as a result of the use by Licensee, a Licensee Authorized User, or any End User of the Licensed Software, not including End User Personal Data.

“Waitlist Tool” means a tool that allows the End User to create an account and then request and receive text message or email notifications when the End User’s desired tee time becomes available in Licensee’s tee time scheduling system. After creating an account, the End User will,

while using Licensee's online scheduling system, be able to request to receive notifications related to desired tee times identified by the End User.

2. GRANT OF RIGHTS

2.1 Limited License.

Subject to the terms and conditions of this Agreement, Licensor grants to Licensee a limited, non-exclusive, non-transferable, and non-sublicensable license to the Licensed Software during the Term, solely for the Permitted Uses. The Permitted Uses are: (i) making the Waitlist Tool and the Confirm Tool available to its End Users for non-commercial, personal use in accordance with and subject to this Agreement; (ii) using the Lead Management Tool to create custom forms that are made available to its End Users for purposes of collecting End User preferences about golf course services and amenities; and (iii) accessing the Use Data and the End User Personal Data made available to Licensee in the Noteefy Admin Portals (collectively, the "**Permitted Uses"**).

Licensee's rights in the Licensed Software are limited to the Permitted Uses expressly granted in this Agreement. Licensee has no right to transfer, sublicense or otherwise sell or distribute the Licensed Software, the Use Data, or the End User Personal Data to any third party except as permitted by the terms of this Agreement. If Licensor accepts in writing a Licensee request for customization of the Licensed Software, Licensee hereby grants Licensor a limited, non-exclusive, non-transferable, and non-sublicensable (except to the extent required to customize the Licensee Intellectual Property under this Section) license to use the Licensee Intellectual Property and End User Personal Data for the sole purpose of customizing the Licensed Software in accordance with any reasonable usage instructions provided to Licensor by Licensee.

2.2 Modifications and Improvements.

Any and all modifications to the Licensed Software performed by or for Licensee, including changes to the source code of the Licensed Software (the "**Modifications**") and any Improvements are and remain the sole and exclusive property of the Licensor, subject to Licensee's limited rights, along with any and all restrictions, under this Agreement. Licensee hereby assigns to Licensor any and all rights in or to any Modifications and Improvements, which will be deemed upon creation to be elements of the Licensed Software. Licensor may, at its sole discretion, elect to integrate any Modification or Improvement into the Licensed Software.

2.3 Restrictions and Prohibited Uses.

Licensee will and is only permitted to use the Licensed Software, the Use Data, and the End User Personal Data (from or in the Waitlist Tool) for the Permitted Uses outlined in Section 2.1 and in accordance with this Agreement. Any purpose or use not specifically authorized herein is strictly prohibited unless otherwise agreed to in writing by Licensor. Licensee will not, and is not authorized to, at any time, directly or indirectly: (i) rent, lease, lend, sell, sublicense, assign, distribute, publish, transfer, copy, provide, disclose, or otherwise make available the Licensed Software to any person, firm, entity or third party, except to its End Users as specifically permitted in this Agreement; (ii) modify, alter, adapt, customize or otherwise change the Licensed Software in any manner, for any purpose without the prior written consent of Licensor at its sole discretion; (iii) decompile, disassemble, decode, reverse translate, reverse engineer or otherwise attempt to derive, discover, directly access or gain access to the source code of the Licensed Software or any component or portion thereof; (iv) bypass or breach any security protection used for or contained in the Licensed Software; (v) use the Licensed Software for purposes of benchmarking or competitive analysis of the Licensed Software; developing, using, or providing a competitive software product or service; or any other purpose that is to Licensor's detriment or commercial disadvantage; (vi) copy or create derivative works of the Licensed Software, in whole or in part; (vii) use the Licensed Software in any manner or for any purpose that infringes, misappropriates, or otherwise violates any intellectual property rights or other right of any third party, or that violates Applicable Law; (viii) remove any proprietary notices included within the Licensed Software; (ix) disclose, release, distribute, deliver, or otherwise make available the Use Data or any End User Personal Data (other than to the End User that owns it), or any portion thereof, to any third party ; or (x) publish, enhance, or display any compilation or directory based upon information derived from the Use Data or the End User Personal Data, or any portion thereof. The Licensee may not use any Licensed Software, Use Data, or End User Personal Data collected through the Waitlist Tool for commercial use or marketing purposes. Licensee represents and warrants that End User Personal Data will be used in accordance with and only as permitted by Applicable Laws and regulations, including the Privacy Laws.

2.4 Reservation of Rights.

Licensor hereby expressly reserves unto itself all rights not granted to Licensee in this Agreement. Nothing in this Agreement grants Licensee the right to use any of the Licensor Marks without the prior written consent of Licensor. Except for the limited rights and licenses expressly granted under this Agreement, nothing in this Agreement grants, by implication, waiver, estoppel, or otherwise, to Licensee or any third party any

intellectual property rights or other right, title, or interest in or to the Licensed Software or the Use Data.

2.5 Security Measures.

The Licensed Software may contain technological measures designed to prevent unauthorized or illegal use of the Licensed Software, the Use Data or End User Personal Data. Licensee acknowledges and agrees that: (a) Licensor may use these and other lawful measures to verify Licensee's compliance with the terms of this Agreement and enforce Licensor's rights, including all intellectual property rights, in and to the Licensed Software and the Use Data; (b) Licensor may deny any individual access to or use of the Licensed Software if Licensor, in its sole and absolute discretion, believes that a person's use of the Licensed Software would violate any provision of this Agreement, regardless of whether Licensee designated such person as an authorized End User; and (c) Licensor and its representatives may collect, maintain, process and use the Use Data and any diagnostic, technical, usage and related information, including information about Licensee's computers, systems and software, that Licensor may gather periodically to improve the performance of the Licensed Software or provide the Support Services. End User Personal Data collected through the Waitlist Tool will be treated in accordance with Licensor's privacy notice, as amended from time to time, which can be viewed at: https://noteefy.app/privacy, and which will be in compliance with applicable Privacy Laws.

Licensee hereby grants Licensor a limited, non-exclusive, non-transferable, and non-sublicensable license to use the Licensee Intellectual Property and End User Personal Data in connection with these security measures and for the uses set forth in this Section, in accordance with any reasonable usage instructions provided to Licensor by Licensee. Licensee is responsible to ensure that this use of End User Personal Data is permitted as required under applicable Privacy Laws, including obtaining any required consents. If End Users are provided with an “opt out,” Licensee will immediately notify Licensor of any End Users who exercise an “opt out” in connection with any End User Personal Data that may be collected in the Licensed Software or used by either Party under this Agreement. Licensee is responsible for End User Personal Data added into the Confirm Tool or the Lead Management Tool by Licensee or any End User. End User Personal Data collected in or through the Confirm Tool or the Lead Management Tool will be treated in accordance with Licensee's privacy notice, as amended from time to time, which will be in compliance with applicable Privacy Laws.

3. IMPLEMENTATION

Licensor will use its commercially reasonable efforts to implement the Licensed Software for Licensee promptly and with Licensor's standard technical and design requirements for the Licensed Software, unless other requirements are agreed to in the Order Form. For standard implementations, the initial implementation costs are included in the fees set forth in the initial Order Form to be paid by the Licensee. Additional fees may apply to non-standard implementations and subsequent development or customizations, as agreed upon by the Parties in writing or in an Order Form.

4. SECURITY; SUPPORT SERVICES; DATA PROCESSING

4.1 Security Program.

Licensee will use its commercially reasonable efforts to implement, and will require its third party service providers to implement, appropriate security measures, systems, and tools that are customary in the applicable industry to secure the Licensed Software and Use Data on its systems, Licensor's Confidential Information, and the End User Personal Data on its systems. Licensor will use its commercially reasonable efforts to implement, and will require its third party service providers to implement, appropriate security measures, systems, and tools that are customary in the applicable industry to secure Licensee's Confidential Information and the End User Personal Data located on Licensor's systems.

Licensor and Licensee will maintain commercially reasonable information security programs designed to protect the confidentiality, integrity, and availability of End User Personal Data, that are appropriate to (i) the size, scope and type of its business, (ii) the amount of resources available to it, (iii) the type of information that it stores or processes, and (iv) the need to maintain the security and confidentiality of such information (collectively, the "**Security Program**"). The Security Program must include access controls regarding the End User Personal Data, systems and network monitoring (including the use of intrusion detection and intrusion prevention systems), management and oversight of vendors, and patching and vulnerability management. Neither Party is liable for any failures to comply with Privacy Laws to the extent the other Party's failure to implement adequate security measures contributes to the loss or event giving rise to the liability.

If either Party discovers or is notified of a Security Incident, such Party must promptly notify the other Party of the Security Incident. In the event of a Security Incident, the Party experiencing the Security Incident will (i) immediately investigate and take

commercially reasonable steps to mitigate any potential damages and remediate the cause of the Security Incident; (ii) provide the other Party with a reasonable description of the cause and impact of any Security Incident and provide updates of material developments; (iii) take commercially reasonable actions to prevent any similar reoccurrence (or terminate this Agreement and Licensee must remove all Licensed Software, Use Data, and Licensor Confidential Information from its systems); (iv) cooperate with the other Party in its efforts to investigate and mitigate the Security Incident and comply with any Applicable Laws that require reporting of the Security Incident; and (v) cooperate with the other Party with respect to any litigation or investigation by or against third parties in connection with the Security Incident.

4.2 Support Services and Updates.

Support Services. Licensor provides email support services (the "**Support Services**") during reasonable business hours. Licensor will provide e-mail support information to End Users through the online FAQ or terms of use, as applicable, with respect to the proper use and functionality of the Licensed Software. Support Services are subject to the terms of this Agreement, and Licensor's support responders do not have the ability or authority to change the terms of this Agreement through Support Services. Licensor's current email for Support Services is support@noteefy.app. Other contact information for Support Services may be provided in the Order Form.

Updates. "Updates" means minor improvements in or corrections to the performance or functionality of the Licensed Software. Licensor will, included in the annual License Fee, provide to Licensee Updates to the Licensed Software within a reasonable time after such Updates become available and have been tested and approved by Licensor, as long as Licensee's License Fee is fully paid and Licensee's account is current. Licensee must follow all instructions provided with the Updates, and if the Updates require any action on the part of Licensee or End Users to install or use the Updates, Licensee will inform End Users and Licensee Authorized Users as instructed by Licensor, and if needed, require an updated End User consent, notice, or acceptance before using or continuing to use the Licensed Software. All Updates must be installed in accordance with applicable instructions, and if a sooner time is not provided in the instructions, within 90 days of availability.

4.3 Processing of End User Personal Data.

With respect to Licensee's instance of the Confirm Tool and the Lead Management Tool, Licensee acknowledges that Licensee is the controller and Licensor is the processor of the End User Personal Data. Licensor will process End User Personal Data solely on

behalf of Licensee and in accordance with the Licensee's documented instructions and is not a controller of any End User Personal Data. Licensor is not responsible for ensuring compliance with Privacy Laws applicable to Licensee or with Licensee's privacy policy. Licensor will cooperate with Licensee in responding to requests from End Users exercising their rights under applicable Privacy Laws. Licensor is not responsible for Licensee's compliance with such requests.

With respect to the Waitlist Tool, Licensor acknowledges that Licensor is the controller and Licensee is the processor of the End User Personal Data. Licensee will process End User Personal Data solely on behalf of Licensor and in accordance with the Licensor's documented instructions and is not a controller of any End User Personal Data. Licensee is not responsible for ensuring compliance with Privacy Laws applicable to Licensor or with Licensor's privacy policy. Licensee will cooperate with Licensor in responding to requests from End Users exercising their rights under applicable Privacy Laws. Licensee is not responsible for Licensor's compliance with such requests.

5. LICENSEE ADDITIONAL OBLIGATIONS

5.1 Availability to End Users.

During the Term, Licensee is authorized under the terms and conditions of this Agreement to make the Licensed Software available to its End Users on or through Licensee's website.

5.2 Terms and Conditions for End Users.

Licensee acknowledges and agrees that each individual End User may be required to, prior to use of the Licensed Software, agree to Licensor's terms and conditions for use of the Licensed Software, as amended from time to time, which can be viewed at: https://noteefy.app/terms (the "**End User Agreement**"). Licensee acknowledges and agrees that Licensor may update the End User Agreement from time to time at Licensor's sole discretion, and each End User's use of the Licensed Software will serve as its acceptance of the updated End User Agreement. If the End User Agreement is updated, Licensee will require End Users to accept the new End User Agreement before accessing the Licensed Software. Licensee will take no action to interfere with routing of any End Users to the End User Agreement as a requirement to access the Licensed Software.

Licensee will also provide the End User with access to Licensee's Privacy Notice describing Licensee's collection and use of End User Personal Data and will comply with its Privacy Notice and applicable Privacy Laws. Licensee will be responsible for its

receipt, collection, and use of any End User Personal Data and the collection of the End User Personal Data by Licensor in accordance with Licensee's instructions in connection with use of the Confirm Tool and the Lead Management Tool. Licensee will provide Licensor with instructions regarding End User Personal Data that is processed by Licensor and will promptly inform Licensor of any (a) End User "opt out" election and (b) End User Personal Data that must be deleted or collected by Licensee in response to any End User request.

5.3 Unauthorized Use or Access.

Only Licensee Authorized Users are permitted to access the Licensed Software on behalf of Licensee, and only for the Permitted Uses. Licensee is responsible for compliance with this Agreement by Licensee Authorized Users.

Licensee will promptly notify Licensor if it becomes aware of any illegal or unauthorized use of any part of Licensor Intellectual Property by End Users or any other third party, including any use of the Licensor Marks, and will reasonably assist Licensor in taking all steps necessary to defend Licensor's rights therein; provided, however, that Licensee will not be required to incur any out of pocket expenses in connection therewith.

Licensee will promptly notify Licensor if it becomes aware of any illegal or unauthorized use of any part of Licensor Intellectual Property by Licensee Authorized Users, including any use of the Licensor Marks, and will reasonably assist Licensor in taking all steps necessary to defend Licensor's rights therein.

6. OWNERSHIP RIGHTS

6.1 Licensed Software.

Licensee acknowledges and agrees that: (i) the Licensed Software is licensed, not sold, to Licensee by Licensor and Licensee does not have under or in connection with this Agreement any ownership interest or any intellectual property rights in the Licensed Software; (ii) Licensor exclusively owns and at all times retains all right, title, and interest, including all intellectual property rights, in and to all Licensor Intellectual Property including the Licensed Software; and (iii) Licensee hereby unconditionally and irrevocably assigns to Licensor or Licensor's designee, its entire right, title, and interest in and to any intellectual property rights that Licensee may now or hereafter have in or relating to the Licensed Software (including any rights in derivative works or Improvements relating to either of them), whether held or acquired by operation of law, contract, assignment or otherwise. Licensee will not claim for itself or for any third parties any rights, title, interest or licenses to the Licensor Intellectual Property, except

for the licenses expressly set forth in this Agreement. Licensee will execute any reasonably requested documents, render any reasonably requested assistance, and take such other actions as may be reasonably requested by Licensor when necessary to apply for, register, perfect, confirm and protect any rights in Licensor's intellectual property rights described in this Section. Licensee further acknowledges that: (a) the Licensed Software is an original compilation protected by copyright laws; (b) Licensor has dedicated substantial resources to create, collect, manage, and compile the Licensed Software; and (c) various aspects of the Licensed Software constitute trade secrets of Licensor. Licensor may terminate this Agreement without advance notice to Licensee or an opportunity for Licensee to cure and without further obligation or liability, if Licensee contests any of Licensor's right, title, or interest in or to the Licensor Intellectual Property, including in a judicial proceeding anywhere throughout the world. Licensor acknowledges that, as between Licensor and Licensee, Licensee exclusively owns and at all times retains all right, title, and interest, including all intellectual property rights, in and to all Licensee Intellectual Property. Licensor will not claim for itself or for any third parties any rights, title, interest or licenses to the Licensee Intellectual Property, except for the licenses expressly set forth in this Agreement.

6.2 Improvements and Modifications.

Licensor, at all times, exclusively owns all right, title, and interest in and to any Improvements and Modifications to any Licensor Intellectual Property. The Parties acknowledge and agree that no joint development will be conducted under this Agreement. Any mutual development projects require a separate agreement written and duly executed by each Party.

6.3 Markings and Notices.

Licensee will not intentionally remove, alter, destroy or distort any proprietary, trademark or copyright markings or notices on or contained within the Licensor Intellectual Property, or any related materials or documentation provided by Licensor to Licensee. Licensor will not intentionally remove, alter, destroy or distort any proprietary, trademark or copyright markings or notices on or contained within the Licensee Intellectual Property, or any related materials or documentation provided by Licensee to Licensor.

6.4 End User Personal Data.

Confirm Tool and Lead Management Tool End User Personal Data

As between Licensor and Licensee, all right, title and interest in and to the End User Personal Data collected and used in the Confirm Tool and the Lead Management Tool will vest exclusively in Licensee, and Licensor hereby unconditionally and irrevocably assigns to Licensee or Licensee's designee its entire right, title, and interest in and to any rights that Licensor may now or hereafter have in or relating to this End User Personal Data, whether held or acquired by operation of law, contract, assignment or otherwise. Licensee represents and warrants that it will comply with all Applicable Law, including Privacy Laws, with respect to this End User Personal Data and to enter into any other agreements and establish and implement any policies and procedures regarding data transfer or protection that may be required in furtherance of compliance with any such Privacy Laws.

Waitlist Tool End User Personal Data

As between Licensor and Licensee, all right, title and interest in and to the End User Personal Data collected and used in the Waitlist Tool will vest exclusively in Licensor, and Licensee hereby unconditionally and irrevocably assigns to Licensor or Licensor's designee its entire right, title, and interest in and to any rights that Licensee may now or hereafter have in or relating to this End User Personal Data, whether held or acquired by operation of law, contract, assignment or otherwise. Licensor represents and warrants that it will comply with all Applicable Law, including Privacy Laws, with respect to this End User Personal Data and to enter into any other agreements and establish and implement any policies and procedures regarding data transfer or protection that may be required in furtherance of compliance with any such Privacy Laws.

6.5 Limited Use.

Licensee will use the Licensed Software and the Use Data solely for the Permitted Uses per the terms and conditions of this Agreement and not for any commercial use or resale.

7. FEES AND PAYMENT

7.1 License Fee.

Licensee will pay Licensor the fees (collectively, the "**License Fee**") included in the applicable Licensor order form ("**Order Form**") during or for the Term specified in the Order Form for the licenses to the Licensed Software for the Permitted Uses under this Agreement. Licensee must make all payments in United States dollars on or before the invoice due dates reflected in the Order Form. Unless otherwise stated in the Order

Form, all License Fees, plus applicable taxes and other charges, must be paid on or before the first day of the applicable Initial Term or Extension Term of the License.

Licensor may increase the License Fee each year; however, if the increase from the prior year License Fee is more than 10%, Licensor will notify Licensee at least 30 days before the increase becomes effective and Licensee will have 10 days to terminate this Agreement by written notice to Licensor from the date of the notification from Licensor. If Licensee does not terminate this Agreement within the 10-day period, then the new License Fee will be deemed accepted by Licensee.

7.2 Taxes.

Licensee is responsible for all sales, use, and excise taxes, and any other similar taxes, duties, and charges of any kind imposed by any federal, state, or local government or regulatory authority on any amounts payable by Licensee hereunder, other than any taxes imposed on Licensor's income.

7.3 Reports.

Licensor will provide the agreed upon Use Data, if any, to Licensee from time to time by making it available in the Noteefy Admin Portals or as otherwise agreed upon in writing by the Parties.

7.4 Delinquent Payments.

Any payments not received when due will be considered delinquent. Without limiting Licensor's other rights and remedies: (a) Licensor may charge interest to Licensee on all past due amounts, including the entire past due balance, late payment fees, and collection costs, at the rate of 1.5% per month calculated daily and compounded monthly or, if lower, the highest rate permitted under Applicable Law; and (b) Licensee will reimburse Licensor for all costs Licensor incurs in collecting any amounts due from Licensee, including reasonable attorneys' fees, court costs, and collection fees. Interest will accrue from the date the applicable payment was due until paid in full and Licensee's account is current.

Late, rejected, reversed, or returned payments are also subject to a monthly late payment fee (if disclosed in the Order Form) beginning on the date the payment was due and continuing until Licensee's account is current with no outstanding overdue balances. Licensor reserves all other rights and remedies under this Agreement that it may have with respect to late, rejected, returned, or reversed payments under this Agreement. If a payment is late, rejected, or reversed or otherwise missed, and Licensee

does not rectify and return the account to current within five business days of notice from Licensor, then Licensor may also, at its discretion, lock the Noteefy Admin Portals and disable the Confirm Tool, the Lead Management Tool and the Waitlist Tool on the Licensee's website, terminate this Agreement, or pursue any other remedies available to it, and, if this Agreement is not terminated, Licensor may continue to collect the License Fee, late payment fees, interest, and any other collection costs until Licensee's account is again current. To bring the account current after a late, rejected, or reversed payment, Licensee must make all outstanding payments in full, including applicable late payment fees, interest, and any other collection costs or expenses.

8. CONFIDENTIALITY

8.1 Confidential Information.

In connection with this Agreement, each Party acknowledges that it may receive the other Party's confidential or proprietary information, whether orally or in written, electronic, or other form and whether or not marked, designated, or otherwise identified as "confidential" (the "**Confidential Information**"), and each Party will (i) treat the other Party's Confidential Information in a confidential manner; (ii) not use any of the other Party's Confidential Information for any purpose not expressly contemplated by this Agreement; (iii) not copy, use or disclose the Confidential Information to third parties without the express written consent of the other Party; (iv) cause its employees, Affiliates, and representatives to comply with the terms and provisions of Section 8 while remaining responsible for the actions and disclosures of such employees, Affiliates, and representatives; and (v) upon expiration or termination of this Agreement, promptly return or destroy all of the other Party's Confidential Information that is in written or tangible form in accordance with Section 8.2.

Without limiting the foregoing, for purposes of this Agreement, the Licensed Software, the Use Data, and the End User Personal Data collected or used in the Waitlist Tool will be deemed Confidential Information of Licensor, and the Licensee Intellectual Property and the End User Personal Data collected or used in the Confirm Tool and the Lead Management Tool will be deemed Confidential Information of Licensee. To the extent the End User Personal Data in the Confirm Tool/Lead Management Tool and in the Waitlist Tool are identical, each Party may consider the identical data to be its Confidential Information and will not be liable to the other Party for failure to protect that information under Section 8, although such information is still subject to the other promises and obligations under this Agreement and liability may arise under other Sections of this Agreement.

The terms and content of this Agreement are Confidential Information of Licensor and will not be revealed to any third party by Licensee, except to the extent (i) permitted by this Agreement, (ii) required by Applicable Law, or (iii) made to a court or other mediator in connection with a dispute between the Parties. Licensee understands that, although Licensee's specific License Fee and other pricing information is "**Confidential Information**" of both Licensee and Licensor, Licensor may offer and provide this Agreement to other licensees, with different terms or with the same or substantially identical terms.

"Confidential Information" does not include information that: (a) is now or subsequently becomes public knowledge through no fault, omission, or other act of the Party receiving Confidential Information (the "**Recipient**"); (b) was already in the Recipient's possession at the time of disclosure and was not obtained directly or indirectly from the Disclosing Party; or (c) was received by the Recipient from an independent third party free of any restriction and without breach of any obligation owed to the Disclosing Party.

8.2 Return or Destruction of Confidential Information.

At any time after the Term, at the Disclosing Party's written request, the Recipient and its Affiliates will promptly return to the Disclosing Party all copies, whether in written, electronic, or other form or media, of the Disclosing Party's Confidential Information, or destroy all such copies and certify in writing to the Disclosing Party that such Confidential Information has been destroyed. Despite the foregoing, the Recipient may retain copies of Confidential Information that are stored on the Recipient's IT backup and disaster recovery systems until the ordinary course deletion thereof. The Recipient will continue to be bound by the terms and conditions of this Agreement with respect to such retained Confidential Information.

8.3 Survival.

The provisions of Section 8 survive any termination of the Agreement.

9. REPRESENTATIONS AND WARRANTIES

9.1 Mutual Representations and Warranties.

Each Party represents and warrants to the other that as of the date hereof: (i) it has the power and authority to enter into this Agreement and to perform all of its respective obligations and undertakings and to grant the rights set forth herein; (ii) the execution and delivery of this Agreement, the performance of its obligations hereunder, and the

consummation of the transactions contemplated hereby have been duly authorized by all requisite corporate, board, and shareholder action, as applicable; (iii) this Agreement constitutes legal, valid, and binding obligations enforceable against such Party in accordance with its respective terms; (iv) it is validly existing and in good standing under the laws of the jurisdiction of its organization, and (v) the execution, delivery and performance of this Agreement does not and will not conflict with or violate any organizational documents of such Party, any Applicable Law, the terms of any agreement between it and a third party, or require the consent, notice, declaration, or filing with or other action by any Person.

9.2 Licensee Representations and Warranties.

Without limiting the generality of Section 9.1, Licensee represents and warrants to Licensor that: (i) to the best of Licensee's knowledge, the Licensee Intellectual Property does not infringe the copyrights, trademarks, trade dress, patents, intellectual property rights or any other right of any third party; and (ii) Licensee will only make the Licensed Software available to End Users in accordance with Licensor's instructions and the terms of this Agreement.

9.3 Licensor Representations and Warranties.

Without limiting the generality of Section 9.1, Licensor represents and warrants to Licensee that: (i) to the best of Licensor's knowledge, the Licensor Intellectual Property does not infringe the copyrights, trademarks, trade dress, patents, intellectual property rights or any other right of any third party; (ii) when initially made available by Licensor to Licensee, the Licensed Software is free from viruses and any malicious code and will operate in accordance with this Agreement (this applies prior to installation and does not include any corruption, inoperability, viruses, or malware or malicious code introduced by Licensee's systems or during the attempt to implement the Licensed Software on Licensee's systems); and (iii) Licensor will use commercially reasonable efforts to maintain the System Availability set forth in Exhibit A, subject to the Exceptions.

In connection with this Section, Licensee's sole remedy, except as otherwise provided in Section 11.3 or Exhibit A (as applicable to Section 9.3 (iii)), is (at Licensor's option): (a) repair or replacement by Licensor of the Licensed Software with Licensed Software that is compliant with this Agreement or (b) termination of this Agreement. The implementation fee, if any, will not be refunded to Licensee unless implementation was not possible due to no fault of Licensee or its systems, and Licensor exercises its right to terminate this Agreement rather than repair or replace the Licensed Software.

Section 11.3 supersedes this Section with respect to, and describes the sole remedy for, any Claims described and included in that Section.

9.4 Disclaimer of Warranties.

The warranties set forth above are limited warranties and are the only warranties provided by Licensor with respect to the Licensed Software. Licensor expressly disclaims, and Licensee hereby expressly waives, all other warranties, express or implied, including warranties of merchantability, fitness for a particular purpose. **Except for the limited warranties set forth herein, Licensor provides and Licensee accepts the Licensed Software, Use Data, and Support Services "as is" without any warranties, express, implied, or statutory.**

There is no warranty or guarantee that the Licensed Software or Use Data will be error free or sufficient for Licensee's or an End User's purposes. Licensee agrees that its use of the Licensed Software is at its own discretion and risk and that the Licensee is solely responsible for any damage to Licensee's computer systems or other devices, including those of Licensee Authorized Users, or any loss of data that results from use by Licensee Authorized Users or End Users. Licensee is solely responsible for any Licensee website that features the Licensed Software and any and all use by Licensee, Licensee Authorized Users, and any End Users using Licensee's website to access or use the Licensed Software.

10. LIMITATION OF LIABILITY

TO THE MAXIMUM EXTENT PERMISSIBLE UNDER APPLICABLE LAW, EXCEPT IN CASE OF ANY INFRINGEMENT OR MISAPPROPRIATION OF THE INTELLECTUAL PROPERTY OF THE OTHER PARTY, BREACHES OF THE CONFIDENTIALITY TERMS, OR DAMAGES FINALLY AWARDED TO A THIRD PARTY THAT ARE TO BE INDEMNIFIED UNDER SECTION 11, NEITHER PARTY WILL BE LIABLE TO THE OTHER PARTY OR ANY THIRD PARTY FOR ANY LOSS OF BUSINESS OR PROFITS, OR REPLACEMENT COSTS, OR FOR ANY INDIRECT, CONSEQUENTIAL, INCIDENTAL, PUNITIVE, OR SPECIAL DAMAGES, REGARDLESS OF THE FORM OF ACTION, WHETHER IN CONTRACT OR IN TORT, INCLUDING NEGLIGENCE, EVEN IF SUCH PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

EXCEPT IN THE CASE OF ANY INFRINGEMENT OR MISAPPROPRIATION OF THE INTELLECTUAL PROPERTY OF THE OTHER PARTY, UNDER NO CIRCUMSTANCES WILL LICENSOR'S TOTAL LIABILITY OF ANY KIND ARISING OUT OF OR RELATED TO THIS AGREEMENT, INCLUDING ANY WARRANTY CLAIMS HEREUNDER, REGARDLESS OF THE FORUM AND REGARDLESS OF WHETHER ANY ACTION OR CLAIM IS BASED ON CONTRACT, TORT, (INCLUDING NEGLIGENCE), STRICT PRODUCT LIABILITY,

INFRINGEMENT OR ANY OTHER LEGAL THEORY, EXCEED THE AMOUNT PAID BY LICENSEE DURING THE PREVIOUS 12 MONTHS LEADING UP TO THE CLAIM; PROVIDED, HOWEVER, THAT IN NO EVENT WILL THE LIMITATION SET FORTH HEREIN LIMIT A PARTY'S RIGHT TO OBTAIN EQUITABLE RELIEF AGAINST THE OTHER PARTY OR LIMIT LICENSOR'S RIGHT TO ANY PAYMENT OF LICENSEE FEES OR OTHER COMPENSATION PAYABLE UNDER THIS AGREEMENT.

EACH PARTY ACKNOWLEDGES THAT THE LIMITATIONS OF LIABILITY SET OUT IN THIS SECTION REFLECT AN INFORMED, VOLUNTARY ALLOCATION BETWEEN THE PARTIES OF THE RISKS (KNOWN AND UNKNOWN) THAT MAY EXIST IN CONNECTION WITH THIS AGREEMENT.

11. INDEMNIFICATION; INTELLECTUAL PROPERTY INFRINGEMENT

11.1 Licensee's Indemnity.

Licensee will indemnify, defend and hold harmless the Licensor and its owners, officers, directors, employees, and contractors against any and all claims, damages, liabilities, charges or expenses raised against or incurred by the foregoing Indemnified Parties as a result of a third party claim arising out of or related to (i) Licensee's material breach of any of its obligations or representations and warranties under this Agreement; (ii) any negligent or tortious act, willful misconduct or willful omission by Licensee; or (iii) any illegal or unauthorized use of the End User Personal Data or the Licensor Intellectual Property, including the Licensed Software and the Use Data, or breach of Privacy Laws, by Licensee or the Licensee Authorized Users.

11.2 Licensor's Indemnity.

Licensor will indemnify, defend and hold harmless the Licensee and its owners, officers, directors, employees, and contractors against any and all claims, damages, liabilities, charges or expenses raised against or incurred by the foregoing Indemnified Parties as a result of a third party claim arising out of or related to (i) Licensor's material breach of any of its obligations under this Agreement; (ii) any negligent or tortious act, willful misconduct or willful omission by Licensor; or (iii) any illegal or unauthorized use of the End User Personal Data or the Licensee Intellectual Property, or breach of the Privacy Laws, by Licensor.

11.3 Infringement Claim.

If the Licensed Software becomes subject to any claim, suit, action or proceeding alleging that Licensee's use of the Licensed Software according to this Agreement's

terms and conditions infringes or violates a third party's patent, copyright, trade secret, or other intellectual property right (a "**Claim**"), or if as a result of a Claim or the settlement thereof, Licensee's use of the Licensed Software under this Agreement is prohibited or enjoined, Licensor will in its sole and absolute discretion: (i) obtain for Licensee the right to use the Licensed Software; (ii) modify the Licensed Software so that it becomes non-infringing but without impairing its functionality or deleting any material features; (iii) replace the Licensed Software with non-infringing software having features and functionality substantially similar to the Licensed Software and customizations reasonably acceptable to Licensee; or (iv) if the foregoing actions in clauses (i) through (iii) are not reasonably available after having used commercially reasonable efforts to cause or obtain the same, terminate this Agreement upon 30 days' advance written notice to Licensee.

11.4 Exclusions.

Notwithstanding any other provision of Section 11, Licensor will have no liability or indemnity obligations for any claim arising (i) from Licensee's alleged breach of a contractual obligation to any third party, whether express, implied or quasi contractual; or (ii) from any modifications or customizations of the Licensed Software other than those made by Licensor.

11.5 Exclusive Remedy.

NOTWITHSTANDING ANYTHING IN THIS AGREEMENT TO THE CONTRARY, SECTIONS 11.2 AND 11.3 REPRESENT LICENSOR'S ENTIRE LIABILITY AND LICENSEE'S EXCLUSIVE REMEDIES WITH RESPECT TO INFRINGEMENT OF ANY INTELLECTUAL PROPERTY RIGHTS BY THE LICENSED SOFTWARE, WHETHER UNDER THEORY OF CONTRACT, WARRANTY, INDEMNITY OR OTHERWISE.

11.6 Notice; Participation.

The Party claiming indemnification under Section 11 (the "**Indemnified Party**") must promptly notify the other Party (the "**Indemnifying Party**") of any such claim of which it becomes aware and will, at the Indemnifying Party's expense, provide reasonable cooperation in connection with the defense or settlement of any such claim. In connection with any third party claim giving rise to indemnity hereunder, Licensor's counsel will assume the defense of any such action and its fees and expenses in defending such action will be paid by the Indemnifying Party. No action taken by the Indemnified Party in accordance with such defense, including the settlement of such action, will relieve the Indemnifying Party of its indemnification obligations herein provided with respect to any damages resulting therefrom.

11.7 Licensor's Insurance.

During the Term, Licensor will carry commercially reasonable insurance policies including commercial general liability insurance with a limit of not less than $1,000,000.00 per occurrence and $2,000,000.00 in the aggregate.

12. TERM AND TERMINATION

12.1 Term.

The term of this Agreement will be the term specified in the Order Form or other written agreement between the Parties, or if not otherwise agreed to by the Parties in writing, will commence on the Effective Date and end on the day before the one year anniversary of the Effective Date (the "**Initial Term**"), unless terminated earlier pursuant to the terms herein or as otherwise agreed in the Order Form or by the Parties in writing. This Agreement will automatically renew following the Initial Term in successive one year terms (each an "**Extension Term**"; the Extension Terms, together with the Initial Term, collectively, the "**Term**"), unless terminated by either Party for any reason with written notice at least 30 days prior to the expiration of the Initial Term or any given Extension Term, or unless otherwise terminated as permitted in this Agreement.

12.2 Termination for Convenience.

Licensor may terminate this Agreement at any time, without cause, upon 30 days' prior written notice to Licensee. If Licensor terminates this Agreement without cause, Licensor will refund to Licensee the prorata portion of the fully paid annual subscription fee (not including any implementation fee contained therein) for the number of full months during the year covered by the annual subscription fee that follow the effective date of the termination. Under any other circumstances, subscription fees are not refundable, except as otherwise provided in Section 9.3.

12.3 Termination for Breach.

Termination by Licensor.

If Licensee breaches any material term or condition of this Agreement, including its payment obligations, Licensee will have 30 days after the delivery of written notice by Licensor to reasonably cure the breach. If such breach is not cured within such 30 day period, or if Licensee becomes insolvent or seeks protection under any bankruptcy, receivership, trust, deed, creditor's arrangement, or comparable proceeding, or if any such proceeding is instituted against Licensee and not dismissed within 60 days,

Licensor will have the right (but not the obligation) to immediately terminate this Agreement.

Termination by Licensee.

If Licensor breaches any material term or condition of this Agreement, Licensor will have 30 days after the delivery of written notice by Licensee to reasonably cure the breach. If such breach is not cured within such 30 day period, or if Licensor becomes insolvent or seeks protection under any bankruptcy, receivership, trust, deed, creditor's arrangement, or comparable proceeding, or if any such proceeding is instituted against Licensor and not dismissed within 60 days, Licensee will have the right (but not the obligation) to immediately terminate this Agreement.

12.4 No compensation.

Neither Party is entitled to any compensation (whether for the loss of distribution rights, goodwill or otherwise) as a result of the termination of this Agreement at the end of the Term or in accordance with Section 12.2, except that Licensee is entitled to payment of any License Fees that became due but were not paid during the Term and all other fees, costs, taxes, interest, and expenses accrued or incurred by Licensor or otherwise owed to Licensor by Licensee under Section 7.

12.5 Effect of Expiration or Termination.

Upon any expiration or termination of this Agreement, Licensee will immediately (i) cease using the Use Data, End User Personal Data, and any Licensor Intellectual Property including the Licensed Software; (ii) except for one copy if required by law for legal and regulatory purposes, return to Licensor or destroy every copy of the Licensed Software and the Use Data and End User Personal Data in its possession or control; and (iii) upon written request from Licensor, provide Licensor with written certification of its compliance with the foregoing. For the avoidance of doubt, notwithstanding any expiration or termination of this Agreement, Licensor will continue to be entitled to all License Fees arising under this Agreement during the specified Term, even if the Agreement terminates before the end of the Term.

13. GENERAL PROVISIONS

13.1 Governing Law.

All matters arising out of or relating to this Agreement are governed by and will be construed in accordance with the internal laws of the State of Delaware without giving

effect to any choice or conflict of law provision or rule (whether of the State of Delaware or any other jurisdiction).

13.2 Venue.

Any legal suit, action, or proceeding arising out of or relating to this Agreement or the transactions contemplated hereby must be instituted in the federal courts of the United States of America or the courts of the State of California, in each case located in Los Angeles County within the City of Los Angeles, and each Party irrevocably submits to the exclusive jurisdiction of such courts in any such suit, action, or proceeding.

13.3 Injunctive Relief.

Each Party acknowledges that a breach or alleged or threatened breach by the other Party of any confidentiality obligations or infringement or misuse of any intellectual property or intellectual property rights of a Party would cause the irreparable harm for which monetary damages would not be an adequate remedy, and each Party agrees that, in the event of such breach or alleged or threatened breach, the injured Party will be entitled to equitable relief, including a restraining order, an injunction, specific performance, and any other relief that may be available from any court, without any requirement to post a bond or other security, or to prove actual damages or that monetary damages are not an adequate remedy. Such remedies are not exclusive and are in addition to all other remedies that may be available at law, in equity, or otherwise.

13.4 Waiver of Jury Trial.

Each Party acknowledges and agrees that any controversy that may arise under this Agreement is likely to involve complicated and difficult issues and, therefore, each such Party irrevocably and unconditionally waives any right it may have to a trial by jury in respect of any legal action arising out of or relating to this Agreement or the transactions contemplated hereby. Each Party to this Agreement certifies and acknowledges that (a) no representative of any other Party has represented, expressly or otherwise, that such other Party would not seek to enforce the foregoing waiver in the event of a legal action, (b) such Party has considered the implications of this waiver, (c) such Party makes this waiver voluntarily, and (d) such Party has been induced to enter into this Agreement by, among other things, the mutual waivers and certifications in this Section.

13.5 Entire Agreement; Amendment.

This Agreement and all related exhibits and schedules and Order Forms, constitutes the sole and entire agreement of the Parties to this Agreement with respect to the subject matter contained herein and therein, and supersedes all prior and contemporaneous understandings, agreements, representations, and warranties, both written and oral, with respect to such subject matter. To the extent of any conflicting terms between this Agreement and the Order Form, this Agreement will prevail, except with respect to terms specifically added to the Order Form to modify this Agreement (in which case, the Order Form will prevail as to those terms).

This Agreement may be amended, modified, or supplemented by an agreement in writing signed by each Party. Signing of a new Order Form by the Parties incorporating the new terms of this Agreement is a satisfactory signed writing for purposes of amending this Agreement. This Agreement may also be unilaterally amended by Licensor upon notice to Licensee at least 30 days before the amendment becomes effective and Licensee will have 10 days to terminate this Agreement by written notice to Licensor from the date of the notification from Licensor. If Licensee does not terminate this Agreement within the 10-day period, then the amendment will be deemed accepted by Licensee. Despite the foregoing, the License Fee may only be increased by Licensor during a Term as described in Section 7.1 or by written agreement or Order Form signed by both Parties.

13.6 Assignment.

This Agreement may not be assigned by either Party to any other Person without the express written approval of the other Party and any attempt at assignment in violation of this Section is null and void. Despite the foregoing, Licensor may assign this Agreement without such consent to (i) any Affiliate, or (ii) any third party in the event of a merger, reorganization, or sale of all or substantially all of Licensor's assets or voting securities.

13.7 Publicity.

Subject in all respects to Section 8, the Parties agree that Licensor may issue press releases and make public statements regarding this Agreement and the transactions contemplated hereby, including disclosing that Licensee is a customer that licenses the Noteefy Course Solution, with the prior consent of the Licensee, which consent will not be unreasonably withheld.

13.8 Notices.

Except for routine notices (which may be delivered via email), all notices, requests, consents, claims, demands, waivers, and other communications hereunder must be in writing and will be considered given (a) when delivered by hand (with written confirmation of receipt); (b) when received by the addressee if sent by a nationally recognized overnight courier (receipt requested); or (c) on the third day after the date mailed, by certified mail (return receipt requested, postage pre-paid). Notices must be sent to the respective Parties at the following addresses (or at such other address specified for a Party in a notice given in accordance with this Section):

If to Licensee: to the address specified in the Order Form.

If to Licensor: Noteefy Inc.
Attn: Jake Gordon
22543 Ventura Blvd, Ste 220 PMB1136
Woodland Hills, CA 91364
Email: jake@noteefy.app

13.9 Waiver.

No waiver by any Party of any of the provisions in this Agreement is effective unless explicitly set forth in writing and signed by the Party so waiving. No waiver by any Party will operate as a waiver with respect to any failure, breach, or default not expressly identified by such written waiver, whether of a similar or different character, and whether occurring before or after that waiver. No failure to exercise, or delay in exercising, any right, remedy, power, or privilege arising from this Agreement is a waiver thereof; nor does any single or partial exercise of any right, remedy, power, or privilege hereunder preclude any other or further exercise thereof or the exercise of any other right, remedy, power, or privilege.

13.10 Independent Contractors.

The Parties acknowledge and agree that they are dealing with each other hereunder as independent contractors. Nothing contained in this Agreement will be interpreted as constituting either Party the joint venture, employee or partner of the other Party or as conferring upon either Party the power of authority to bind the other Party in any transaction with third parties. Notwithstanding the foregoing, all services provided must be performed in the United States unless specifically stated otherwise in a written amendment.

13.11 Force Majeure.

No Party is liable or responsible to the other Party, nor will be deemed to have defaulted under or breached this Agreement, for any failure or delay in fulfilling or performing any term of this Agreement (except under Section 6, Section 8, or any obligations to make payments to the other Party hereunder), when and to the extent such failure or delay is caused by or results from acts beyond the affected Party's reasonable control, including: (a) acts of God; (b) flood, fire, earthquake, other potential disasters or catastrophes, such as epidemics and pandemics (including the Covid-19 pandemic), or explosion; (c) war, invasion, hostilities (whether war is declared or not), terrorist threats or acts, riot, or other civil unrest; (d) government order or law; (e) actions, embargoes, or blockades in effect on or after the date of this Agreement; (f) action by any governmental authority; (g) national or regional emergency; (h) strikes, labor stoppages or slowdowns, or other industrial disturbances; and (i) shortage of adequate power or transportation facilities (a "**Force Majeure Event**"). The Party suffering a Force Majeure Event must give notice within 10 days of the Force Majeure Event to the other Party, stating the period of time the occurrence is expected to continue, and must use diligent efforts to end the failure or delay and ensure the effects of such Force Majeure Event are minimized.

13.12 Severability.

Any provision of this Agreement, or the application thereof to any person or circumstance, that, for any reason, in whole or in part, is prohibited or unenforceable in any jurisdiction will, as to such jurisdiction, be ineffective to the extent of such prohibition or unenforceability without invalidating the remaining provisions of this Agreement (or the remaining portions of such provision) or the application thereof to any other person or circumstance, and any such prohibition or unenforceability in any jurisdiction will not invalidate or render unenforceable such provision (or portion thereof) or the application thereof to any person or circumstance in any other jurisdiction.

13.13 Counterparts.

This Agreement may be executed in counterparts, each of which is deemed an original, but all of which together are one and the same agreement. A signed copy of this Agreement delivered by email or other recognized means of secure electronic transmission (such as DocuSign or AdobeSign) have the same legal effect as delivery of an original signed copy of this Agreement. This Agreement may be duly executed by the

Parties by signing an Order Form that incorporates this Agreement and its terms by reference.

13.14 Third Parties.

The Parties confirm that there are no third-party beneficiaries to this Agreement. Except as explicitly granted to Indemnified Parties within the indemnification provisions to this Agreement, the Parties do not intend to and do not confer any rights on any third parties by virtue of this Agreement, and accordingly any provisions of law conferring rights to third parties will not apply to this Agreement.

13.15 Attorney's Fees.

Should either Party hereto initiate a legal or administrative action or proceeding (an "**Action**") to enforce any of the terms or conditions of this Agreement, the prevailing Party is entitled to recover from the losing Party all reasonable costs of the Action, including attorneys' fees and all other costs and expenses.

13.16 Export Regulation.

The Licensed Software may be subject to export control laws, including the Export Control Reform Act and its associated regulations. Licensee will not, directly or indirectly, export, re-export, or release the Licensed Software to, or make the Licensed Software accessible from, any jurisdiction or country to which export, re-export, or release is prohibited by law, rule, or regulation. Licensee will comply with all applicable federal laws, regulations, and rules, and complete all required undertakings (including obtaining any necessary export license or other governmental approval), prior to exporting, re-exporting, releasing, or otherwise making the Licensed Software available outside the United States.

13.17 Survival.

Any rights, obligations, or required performance of the Parties in this Agreement which, by their express terms or nature and context are intended to survive termination or expiration of this Agreement, will survive any such termination or expiration, including the rights and obligations set forth in Sections 2, 4, 5, 6, 7, 8, 10, 11, 12.5, and 13.

13.18 Successors and Assigns.

This Agreement is binding upon and inures to the benefit of the Parties hereto and their respective successors and permitted assigns.

13.19 Headings; Interpretation.

The headings in this Agreement are for reference only and do not affect the interpretation of this Agreement. This Agreement will be construed without regard to any presumption or rule requiring construction or interpretation against the Party drafting an instrument or causing any instrument to be drafted. The schedules, exhibits, and Order Forms referred to in this Agreement are an integral part of this Agreement to the same extent as if they were set forth verbatim herein. The terms and any form of the terms "including" or "includes" will be interpreted as if followed by "without limitation to."

13.20 Further Assurances.

Each of the Parties hereto will, and will cause their respective Affiliates to, execute and deliver such additional documents, instruments, conveyances, and assurances and take such further actions as may be reasonably required to carry out the provisions hereof and give effect to the transactions contemplated hereby.

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EXHIBIT A

SYSTEM AVAILABILITY

The Licensed Software is provided "as is." However, Licensor will use commercially reasonable efforts to make the Licensed Software available for access and use consistent with this Agreement ("**System Availability**") at least 95% of the time on a monthly basis, excluding unavailability as a result of any of the following exceptions ("**Exceptions**"): (a) act or omission or failure to follow provided instructions by Licensee or a Licensee Authorized User; (b) access or use of the Licensed Software by Licensee or a Licensee Authorized User that does not strictly comply with this Agreement; (c) use of the Licensed Software by any End User that does not comply with the End User Agreement; (d) Licensee's delay in performing, or failure to perform, any of its obligations under this Agreement; (e) Internet connectivity of Licensee, any Licensee Authorized User, or any End User; (f) a Force Majeure Event; (g) failure, interruption, outage, or other problem with any software, hardware, system, network, facility, or other matter not supplied by Licensor; (h) scheduled downtime, maintenance, processes to enhance security, or Licensee set-up or customization; or (i) disabling or suspension of the Licensed Software under Section 7.4 or termination of the Agreement under Sections 12 or 13.12.

If for a period of 10 consecutive days or more service availability does not meet the standard in this Section for reasons other than one or more of the Exceptions, Client's sole remedy is reimbursement of the pro-rated amount of the Subscription Fee for the period of the downtime.

City Council Action Request

7.I.

Meeting Date	3/18/2026
Department	Economic Development
Agenda Category	Resolution
Title	Real Estate Equities LCDA Loan Agreement for Hadley Apartment Project
Staff Recommendation	Approve Resolution 2026-043 authorizing the Metropolitan Livable Communities Act Loan agreement for $785,000, to be used for the Hadley Ridge Apartments project.
Budget Implication	$785,000 loan to Real Estate Equities serviced through LCDA Grant from Met Council.

Attachments

1.	Real Estate Equities LCA Loan Agreement Memo
2.	Council Resolution 2026-043

To:	Honorable Mayor and City Council Jennifer Levitt, City Administrator
From:	Nate Carlson, Economic Development Manager
Date:	March 18, 2026
Subject:	Livable Communities Act Loan Agreement – Real Estate Equities Apartment Project (Hadley Ridge Apartments)

Introduction/Background

On June 18, 2025, the City Council approved the Site Plan Review, Comprehensive Plan Amendment, and Zoning Amendment (Resolutions 2025-083, 2025-082, and Ordinance 1101) for the Real Estate Equities 164-unit multi-family rental apartment project proposed at 10015 Hamlet Avenue (Hadley Ridge Apartments).

Resolution 2025-092 was also approved on June 18, supporting dedication of City Local Affordable Housing Aid (LAHA) funds for 2024, 2025, and 2026 for the project in an estimated total amount of $785,000. Real Estate Equities continued to seek out funding support opportunities and on July 30, 2025, the City Council approved Resolution 2025-108 authorizing the City to submit an application for Livable Communities Demonstration Account (LCDA) funding of $785,000 through the Metropolitan Council.

On November 19, 2025, the City Council approved the LAHA funding agreement for $916,000. The increased amount was due to increased construction costs. Also on November 19, 2025, Council approved Resolution 2025-160 authorizing the issuance, sale, and delivery of its multi-family housing revenue bonds in an amount not to exceed $50,000,000.

The Hadley Ridge project was selected for $785,000 of LCDA grant funding. The City will be responsible for distributing the funds to the developer once the project achieves certain milestones and submitting reports to the Met Council. The funds are structured as a loan from the City. A loan agreement has been prepared for council authorization. The funds from this grant may be used for work through December 31, 2028.

Recommendation

Approve Resolution 2026-043 authorizing the Metropolitan Livable Communities Act Loan Agreement for $785,000 to be used for the Hadley Ridge Apartments project.

CITY OF COTTAGE GROVE
WASHINGTON COUNTY
STATE OF MINNESOTA

RESOLUTION NO. 2026-043

A RESOLUTION AUTHORIZING EXECUTION OF LOAN AGREEMENT WITH COTTAGE GROVE AH I, LLLP

WHEREAS, Cottage Grove AH I, LLLP, a Minnesota limited liability partnership (the "Developer") has acquired and intends to develop the property located at 10015 Hamlet Avenue South in the City (the "Development Property") and construct a multifamily residential rental development consisting of 164 units meeting certain affordability levels (the "Project"); and

WHEREAS, to assist with the costs of the Project, the City, on behalf of the Developer, applied for and received a Livable Communities Demonstration Account grant in the amount of $785,000 (the "LCDA Grant") from the Metropolitan Council (the "Council"); and

WHEREAS, on January 7, 2026, the Council and the City entered into a Metropolitan Livable Communities Act Grant Agreement (the "Grant Agreement") regarding use of the LCDA Grant; and

WHEREAS, the proceeds of the LCDA Grant may be used for eligible activities of the Project as described in the Grant Agreement (the "Grant-Eligible Activities"); and

WHEREAS, the City desires to loan the proceeds of the LCDA Grant in the principal amount of $785,000 to the Developer pursuant to a loan agreement in the form attached hereto as Exhibit A (the "Loan Agreement") to provide financing for a portion of the Project's Grant-Eligible Activities; and

WHEREAS, the City believes that the development of the Project, and fulfillment generally of this Loan Agreement, are in the vital and best interests of the City and the health, safety, morals, and welfare of its residents, and in accord with the public purposes and provisions of the applicable Minnesota and local laws and requirements under which the Project has been undertaken and is being assisted; and

WHEREAS, the City and the Developer desire to enter into the Loan Agreement for the purpose of setting forth their respective responsibilities with respect to the expenditure of LCDA Grant for Grant-Eligible Activities.

Now, Therefore, Be It Resolved by the City of Cottage Grove as follows:

1. The Loan Agreement is hereby approved in substantially the form attached hereto as Exhibit A. The mayor and city administrator are authorized and directed to execute it on behalf of the City.

2. City staff and consultants are hereby authorized and directed to take all other actions necessary or convenient to carry out the intent of this resolution.

Whereupon said resolution was declared duly passed and adopted this 18th day of March, 2026.

_____
Myron Bailey, Mayor

ATTEST:

_____
Tamara Anderson, City Clerk

EXHIBIT A

Loan Agreement Attached.

LOAN AGREEMENT

THIS LOAN AGREEMENT (the "Agreement") is made and entered into as of this ___ day of _____, 2026 (the "Effective Date"), between the city of Cottage Grove, a municipal corporation under the laws of Minnesota (the "City"), and Cottage Grove AH I, LLLP, a Minnesota limited liability limited partnership (the "Borrower"). The Effective Date is the date this Agreement is executed by the second party to sign.

WITNESSETH:

WHEREAS, the Borrower has acquired and intends to develop the property located at 10015 Hamlet Avenue South in the City and legally described in Exhibit A attached hereto (the "Development Property") and construct thereon a multifamily residential rental development consisting of 164 units meeting certain affordability levels (the "Project"); and

WHEREAS, to assist with the costs of the Project, the City, on behalf of the Borrower, applied for and received a Livable Communities Demonstration Account ("LCDA") grant in the total sum of $785,000 (the "LCDA Grant") from the Metropolitan Council (the "Council"); and

WHEREAS, on January 7, 2026, the Council and the City entered into a Metropolitan Livable Communities Act Grant Agreement (the "Grant Agreement"), with an expiration date of December 31, 2028, as may be extended pursuant to Section 5.03 of the Grant Agreement, as more specifically described herein and which is attached hereto as Exhibit B; and

WHEREAS, the proceeds of the LCDA Grant may be used for eligible project activities of the Project to be constructed on the Development Property and as further described in the Grant Agreement (the "Grant-Eligible Activities"), which amounts may be reallocated pursuant to Section 2.09 of the Grant Agreement; and

WHEREAS, the City desires to loan the proceeds of the LCDA Grant in the principal amount of $785,000 to the Borrower (the "Loan") to provide financing for a portion of the Grant-Eligible Activities with respect to the construction of the Project on the Development Property; and

WHEREAS, the City believes that the development of the Project, and fulfillment generally of this Agreement, are in the vital and best interests of the City and the health, safety, morals, and welfare of its residents, and in accord with the public purposes and provisions of the applicable Minnesota and local laws and requirements under which the Project has been undertaken and is being assisted; and

WHEREAS, the City and the Borrower desire to enter into this Agreement for the purpose of setting forth their respective responsibilities with respect to the Loan.

NOW, THEREFORE, in consideration of the premises and the mutual obligations of the parties hereto, each of them does hereby covenant and agree with the other as follows:

ARTICLE I
DEFINITIONS

As used in this Agreement, the following terms shall have the following meaning:

Borrower Documents: any and all documents and instruments in connection with the Project as reasonably requested by the City.

Disbursement Request Form: the form, substantially in the form attached hereto as Exhibit C, to be submitted to the City when a disbursement of the Loan is requested and which is referred to in Article VI hereof, together with such other request forms as may be reasonably required from the Council and the City.

Grant Agreement: the Metropolitan Livable Communities Act Grant Agreement No. SG-25119 between the Council and the City for the Hadley Ridge Apartments Project, attached hereto as Exhibit B.

Grant-Eligible Activities: the activities on the Development Property funded in full or in part by the LCDA Grant, as set forth in Exhibit A of the Grant Agreement.

Loan: the sum of $785,000 to be loaned by the City to the Borrower under this Agreement.

Loan Documents: collectively, this Agreement, the Mortgage, and the Note.

Mortgage: the Combination Mortgage and Security Agreement of even date herewith from the Borrower to the City securing repayment of the Note in the form approved by the City.

Note: the Note of even date herewith from the Borrower to the City in the amount of the Loan evidencing Borrower's obligation to repay the Loan in the form approved by the City.

Plans and Specifications: the final plans and specifications for the construction and installation of the Grant-Eligible Activities which have been approved by the City.

Project: the Hadley Ridge Apartments Project including 164 units of affordable multifamily residential housing.

Project Costs: the costs of the Grant-Eligible Activities eligible to be reimbursed with the proceeds of the LCDA Grant under the Grant Agreement and as authorized by law.

Development Property: the property legally described in Exhibit A attached hereto.

ARTICLE II
TERM OF AGREEMENT

This Agreement shall take effect and be in force from and after the Effective Date, and shall remain in effect until the Borrower has performed all of its obligations under this Agreement, the Loan Documents, and the Grant Agreement, unless earlier terminated as provided in this Agreement or the Grant Agreement.

ARTICLE III
THE LOAN

Subject to the terms and conditions of this Agreement, the City will make the Loan to the Borrower to be used for payment of Project Costs, which Loan shall be disbursed pursuant to this Agreement. In consideration for the Loan, the Borrower agrees to perform all of its obligations under this Agreement. The Loan shall be evidenced by the Note payable by the Borrower to the City which shall be dated as of the date of closing on the Loan (the "Loan Closing Date"). Proceeds of the Loan shall be disbursed in accordance with Articles V and VI hereof.

ARTICLE IV
STATEMENT OF WORK

Proceeds of the Loan may be used to construct or install any of the improvements described as Grant-Eligible Activities in the Grant Agreement in accordance with the terms set forth herein. In accordance with the Grant Agreement, the Borrower will commence construction of the Grant-Eligible Activities and pay the Project Costs with respect to the Project Improvements prior to December 31, 2028. The grant expires on December 31, 2028. If the Borrower finds it necessary to request an extension of the Grant Agreement from the Metropolitan Council, the Borrower must provide written notice to the City at least 120 days prior to the expiration date of the grant in order for the City to have sufficient time to request an extension of the Grant Agreement under Section 5.03 of the Grant Agreement.

ARTICLE V
CONDITIONS OF DISBURSEMENT

The obligation of the City to make or cause to be made disbursements of the proceeds of the Loan pursuant to Article VI hereof shall be subject to the conditions precedent that it shall have received on or before the date of the disbursement hereunder the following:

a. the Borrower Documents, the Mortgage, and the Note, duly executed and delivered by the Borrower;

b. evidence satisfactory to the City that the Grant-Eligible Activities and the construction, installation and contemplated use thereof are permitted by and comply in all material respects with all applicable restrictions and requirements in prior conveyances, zoning ordinances, subdivision and platting requirements and other laws and regulations;

c. all other conditions specified in the authorizing City approvals and entitlements and the Grant Agreement shall have been duly satisfied by the Borrower or waived in writing by the City or the Council, as applicable;

d. no uncured Event of Default (as defined in Article VIII hereof), and no event which with the giving of notice or the lapse of time or both would constitute an Event of Default, shall have occurred and be continuing and all representations and warranties made by the Borrower in Article VII hereof shall continue to be, in all material respects, true and correct as of the date of such disbursement;

e. if required by the City, the City shall have been furnished with a statement of the Borrower and of any contractor, in form and substance acceptable to the City, to the extent reasonably available, setting forth the names, addresses and amounts due or to become due as well as the amounts previously paid to every contractor, subcontractor, person, firm or corporation furnishing materials or performing labor in connection with the construction of any part of the Grant-Eligible Activities; and

f. the Borrower shall have provided to the City such documentation and information reasonably necessary to evidence its compliance with all of the provisions of this Agreement, including without limitation the provisions of the Grant Agreement applicable to the Borrower, as the City may reasonably request.

The Borrower's investor limited partner, U.S. Bancorp Community Investment Corporation, a Delaware corporation (together with its permitted successors and/or assigns, the "Investor Limited Partner"), shall have an opportunity, but not an obligation, to cure any Events of Default or defaults under this Agreement and under any of the other Loan Documents, and any such cure shall be accepted by the City as if cured by the Borrower itself.

ARTICLE VI
REQUESTS FOR DISBURSEMENT

6.01. Disbursement. The City and the Borrower agree that, on the terms and subject to the conditions hereinafter set forth and the conditions set forth in the Grant Agreement, including the reallocation of Project Costs among the Grant-Eligible Activities pursuant to Section 2.09 of the Grant Agreement, the Loan shall be disbursed from the City to the Borrower, or the Borrower's agent or designee, in disbursements, with the last disbursement being made upon one hundred percent (100%) completion of the Grant-Eligible Activities. Disbursements of the Loan shall not be made more often than monthly. Notwithstanding anything to the contrary contained herein, the City shall only be obligated to make the disbursements hereunder to pay Project Costs in an amount up to or equal to the lesser of the amount of the Loan or the amount actually disbursed by the Council to the City under the Grant Agreement and such obligation is further subject to the conditions of Article V hereof.

6.02. Disbursement Request.

a. When the Borrower desires to obtain a disbursement of the Loan, the Borrower shall submit to the City the Disbursement Request Form, together with any additional documents reasonably required by the City or the Council, duly signed by the Borrower.

The Disbursement Request Form shall be submitted by the Borrower at least 45 days prior to the date of the requested disbursement. The Disbursement Request Form shall constitute a representation and warranty by the Borrower to the City that all representations and warranties of the Borrower set forth in the Borrower Documents are true and correct as of the date of such Disbursement Request Form, except for such representations and warranties which, by their nature, would not be applicable as of the date of such Disbursement Request.

b. At the time of submission of the Disbursement Request Form, the Borrower shall also submit the following to the City:

1. a written lien waiver from the general contractor for work done and materials supplied by it which were paid or a conditional lien waiver from the general contractor for work done and materials supplied by it which are to be paid pursuant to the current Disbursement Request Form and from each subcontractor for work done and materials supplied by it which were paid or are to be paid for pursuant to the prior Disbursement Request Form;

2. evidence satisfactory to the City that the Grant-Eligible Activities completed as of the date of the Disbursement Request Form have been constructed or installed in accordance with the Plans and Specifications in all material respects;

3. an executed Sworn Construction Statement, in form and substance acceptable to such parties, signed by the Borrower showing all costs and expenses of any kind theretofore actually paid or incurred in constructing the Grant-Eligible Activities; and

4. a certified statement of the Borrower reflecting the use to which the proceeds of the Loan have been applied in addition to those uses reflected in the Sworn Construction Statement referred to in clause (b)(3) above.

c. Upon receipt of the Disbursement Request Form, if the City has determined that all the conditions set forth in Articles V and VI hereof have been satisfied, a request for disbursement shall be submitted to the Council. The adequacy of the request for disbursement shall be determined by the City and the Council in their sole discretion, such determination not to be unreasonably withheld, conditioned, or delayed. After submission of the Disbursement Request Form, if the Borrower has performed all of its agreements and complied with all requirements to be performed or complied with under this Agreement and the Grant Agreement, including satisfaction of all applicable conditions precedent contained

in Article V hereof, the City shall make a disbursement to the Borrower, or the Borrower's agent or designee, in the amount of the requested disbursement or such lesser amount as shall be approved, within 45 days after the date of the City's receipt of the Disbursement Request Form, or, if later, upon receipt of grant proceeds from the Council. Each disbursement shall be paid from the proceeds of the LCDA Grant, subject to the City's and the Council's determination that the relevant Project Cost is payable from the LCDA Grant under the Grant Agreement. The City is under no obligation to disburse any proceeds of the Loan until it receives a disbursement of the LCDA Grant from the Council. Notwithstanding anything to the contrary herein, if the Project Costs of the Grant-Eligible Activities exceeds the amount to be reimbursed under this Agreement, such excess shall be the sole responsibility of the Borrower.

ARTICLE VII
BORROWER'S COVENANTS, REPRESENTATIONS, WARRANTIES AND AGREEMENTS

The Borrower covenants, represents, warrants and agrees that, to the best of its knowledge:

a. The Borrower is a limited liability limited partnership duly organized and validly existing under the laws of Minnesota, is duly authorized to operate in Minnesota, has the power to enter into and execute this Agreement and by appropriate action has authorized the execution and delivery of this Agreement.

b. The Borrower Documents will not result in any breach of or constitute a default under any other mortgage, lease, loan, grant or credit agreement, organizational documents, or other instrument to which the Borrower is a party or by which it may be bound or affected.

c. The Loan Documents will constitute valid, legal and binding obligations of the Borrower enforceable against the Borrower.

d. The Borrower has or will have all necessary approvals, licenses and permits required for construction and operation of the Project except those which cannot be obtained until completion of the Grant-Eligible Activities or the Project, as the case may be.

e. The Borrower shall permit the City, upon reasonable notice, during normal business hours, and in a manner that does not unreasonably interfere with Borrower's operations, to examine all books, records, contracts, plans, permits, bills and statements of account pertaining to the Grant-Eligible Activities and to make copies as the City may require.

f. The Borrower shall obey and comply with all federal, state and local laws, rules and regulations in connection with the Project.

g. The City's actions in approving the Loan shall not be construed as an approval by the City of providing any additional funds for the Project or other improvements related to the Project.

h. The Borrower agrees to pay for all of the costs incurred to construct the Grant-Eligible Activities including any cost overruns. There are no public funds for the Grant-Eligible Activities except for the Loan.

ARTICLE VIII
DEFAULT

Any one or more of the following shall constitute an event of default (an "Event of Default") under this Agreement:

a. The Borrower shall herein default in the performance or observance of any agreement, covenant or condition required to be performed or observed by the Borrower under the terms of this Agreement or the Grant Agreement, to the extent such obligations exist, and such default shall not be remedied within 60 days after written notice to the Borrower from the City specifying such default.

b. The Borrower shall be in default of any term of any other agreement relating to the Grant-Eligible Activities which is not cured within 60 days after written notice from the City or if the default cannot be cured within 60 days within such reasonable time as is required to cure the default, provided that the Borrower is diligently pursuing a cure.

c. Any representation or warranty made by the Borrower herein or any document or certificate furnished to the City shall prove at any time to be incorrect or misleading as of the date made.

d. The Borrower engages in any illegal activities.

e. The Borrower uses any of the Loan funds contrary to this Agreement or the Grant Agreement which is not cured within 60 days after written notice from the City.

f. The Borrower shall fail to obtain and/or keep in force insurance only of the types and in the amounts as specified within this Agreement, or shall fail to indemnify and hold harmless the City as set forth herein which is not cured within 10 business days after written notice from the City, or such longer period as may be reasonably required to obtain such insurance provided Borrower is diligently pursuing the same.

g. The failure to repay any principal of the Loan when due.

ARTICLE IX
REMEDIES

Whenever any Event of Default shall have happened and is continuing beyond any applicable cure period, any one or more of the following remedial steps may be taken by the City:

a. The City may terminate this Agreement;

b. The City may suspend or terminate any further disbursements to be made under this Agreement;

c. The City may suspend its performance under this Agreement during the continuance of the Event of Default; and/or

d. The City may take whatever action at law or in equity, consistent with applicable law and subject to the limitations herein, as may be necessary or appropriate to seek repayment or reimbursement of the Loan funds disbursed to the Borrower, to enforce performance and observance of any obligation, agreement, covenant, representation or warranty of the Borrower under this Agreement, or any related instrument; or to otherwise compensate the City for any damages on account of such Event of Default.

No remedy conferred upon or reserved to the City is intended to be exclusive of any other available remedy or remedies, but each and every such remedy shall be cumulative and shall be in addition to every other remedy given under this Agreement or now or hereafter existing at law or in equity or by statute. No delay or omission to exercise any right or power accruing upon any Event of Default shall impair any such right or power, nor shall be construed to be a waiver thereof, but any such right and power may be exercised from time to time and as often as may be deemed expedient. In order to entitle the City to exercise any remedy reserved to it in this Article, it shall not be necessary to give any notice, other than such notice as may be herein expressly required or be required by law.

ARTICLE X
ADDITIONAL PROVISIONS

a. Indemnity, Hold Harmless. The Borrower shall and does hereby agree to indemnify against and to hold the City, and its officers, councilmembers, agents, and employees including the independent contractors, consultants and legal counsel, servants and employees thereof (hereinafter, for purposes of this section, collectively the "Indemnified Parties"), harmless of and from any and all liability, loss, or damage to the extent caused by Borrower's acts or omissions that it or they may incur under or by reason of this Agreement and against any loss or damage to property or any injury to or death of any person occurring at or about or resulting from any defect in the Grant-Eligible Activities or the Project, and of and from any and all claims and demands whatsoever that may be asserted against one or more of the Indemnified Parties by reason of any alleged obligations or undertakings on the Borrower's part to perform or discharge any of the terms, covenants, or agreements contained herein.

Except for any willful misrepresentation or any willful, wanton, or grossly negligent misconduct of the Indemnified Parties, the Borrower agrees to protect and defend the Indemnified Parties, now and forever, and further agrees to hold the aforesaid harmless from any claim, demand, suit, action or other proceeding whatsoever by any person or entity whatsoever under this Agreement, the Grant Agreement or the transactions contemplated hereby or the acquisition, construction, installation, ownership, and operation of the Project or the Grant-Eligible Activities.

This indemnification and hold harmless provision shall survive the execution, delivery, and performance of this Agreement and the creation and repayment of any indebtedness to City under this Agreement.

b. Independent Contractor. For the purpose of this Agreement, the Borrower shall be deemed an independent contractor and not an employee or agent of the City. Any and all employees or agents of the Borrower shall not be considered employees or agents of the City.

c. Compliance With Minnesota Laws. All of the data created, collected, received, stored, used, maintained or disseminated by the Borrower with respect to the Grant-Eligible Activities are subject to the requirements of Minnesota Statutes, Chapter 13, (the "Minnesota Government Data Practices Act" or "MGDPA") and, except as provided in Section 13.05, subdivision 11(b) of the MGDPA, the Borrower agrees to comply with those requirements under the MGDPA to the extent applicable. The remedies in Section 13.08 of the MGDPA may apply to the Borrower. If any provision of this Agreement is in conflict with the MGDPA or other Minnesota State laws, state law shall control. The Borrower shall comply with the conflict of interest provisions of Minnesota Statutes, Sections 471.87 through 471.88.

d. Contractor and Subcontractor Compliance. The Borrower shall comply with and shall cause all contractors and subcontractors to comply with all applicable state and federal laws, and to the extent applicable to the Borrower, the Grant Agreement. The Borrower shall require all contractors and subcontractors performing work covered by the Loan to obtain all required permits, licenses and certifications and comply with all applicable state and federal Occupational Safety and Health Act regulations.

e. Site Compliance. The Borrower shall meet or require to be met all applicable requirements of:

(1) Federal and state laws relating to stormwater discharges including, without limitation, any applicable requirements of Code of Federal Regulations, title 40, parts 122 and 123; and

(2) The Council's *2030 Water Resources Management Policy Plan* and the City's local water management plan Property is located.

f. Fair Housing Compliance. The Borrower shall comply in all respects with the affordability and fair housing marketing plan requirements set forth in Article 3 of the Grant Agreement.

g. Environmental Site Assessment. The Borrower shall ensure that a Phase I Environmental Site Assessment or other environmental review of the Project will be carried out if appropriate for the scope and nature of the Project.

ARTICLE XI
INSURANCE

With respect to the Project, the Borrower shall maintain all insurance required by the Grant Agreement.

ARTICLE XII
RECORDS AND REPORTS

Upon request, the Borrower shall submit to the City a full account of the status of the activities undertaken as part of this Agreement. The following records shall be maintained by the Borrower, copies of which shall be submitted in such form as City may prescribe:

a. All receipts and invoices relating to expenditure of Loan funds.

b. Records shall be sufficient to reflect all costs incurred in performance of the Loan. The books, records, documents, and accounting procedures, relevant to the Loan shall be subject to examination by the City, the Council and state agencies and the legislative auditor.

ARTICLE XIII
AMENDMENT

This Agreement shall not be amended or modified without the prior written approval of the City and the Borrower.

ARTICLE XIV
INCORPORATION OF GRANT AGREEMENT

The Borrower acknowledges and agrees that all terms, conditions and obligations contained in the Grant Agreement are incorporated herein, and made a part of this Agreement. In addition to the terms, conditions and obligations described herein, the Borrower further acknowledges, accepts and assumes all of the City's obligations described in the Grant Agreement, unless such obligations can only be reasonably performed by the City, including but not limited to, the obligation to repay the LCDA Grant if required by the Council. For purposes of enforcing this Agreement, the Borrower acknowledges, accepts and agrees that the City shall inure to, and possess the rights and authority of the Council as described in the Grant Agreement.

ARTICLE XV
MISCELLANEOUS

a. Notices. All notices provided for herein shall be in writing and shall be deemed to have been given when delivered personally or when deposited in the United States mail, registered or certified, postage prepaid, addressed as follows:

If to the Borrower:	Cottage Grove AH I, LLLP 579 Selby Avenue St. Paul, MN 55102 Attn: Patrick Ostrom
With a copy to:	Winthrop & Weinstine, P.A. 225 South Sixth Street, Suite 3500 Minneapolis, Minnesota 55402 Attn: Jeff Drennan
With a copy to:	U.S. Bancorp Community Investment Corporation 505 North Seventh Street, 10th Floor Mail Code: SL-MO-T10F St. Louis, MO 63101 USB Project No: 36034 Attn.: Director of LIHTC Asset Management
If to the City:	City of Cottage Grove 12800 Ravine Parkway South Cottage Grove, MN 55016 Attn: City Administrator
With a copy to:	Kennedy & Graven, Chartered 150 South Fifth Street, Suite 700 Minneapolis, MN 55402 Attention: Ronald H. Batty

or addressed to either party at such other address as such party shall hereafter furnish by notice to the other party as above provided.

b. Binding Effect; Waiver. The provisions of this Agreement shall inure to the benefit of and be binding upon the Borrower and the City and their respective successors and assigns. No delay on the part of the City in exercising any right, power or privilege shall operate as a waiver thereof, nor shall any single or partial exercise of any right, power or privilege constitute such waiver nor exhaust the same, which shall be continuing. The rights and remedies of the City specified in this Agreement shall be in addition to and not exclusive of any other right and remedies which the City, by operation of law, would otherwise have.

c. Survival of Agreements, Representations and Warranties. All agreements, representations and warranties made in this Agreement by the Borrower shall survive its termination.

d. Governing Law. This Agreement and the attachments are to be construed and enforced according to and governed by the laws of Minnesota.

e. Counterparts, Electronic Signatures. This Agreement may be executed in any number of counterparts, all of which shall constitute a single agreement, any one of which bearing signatures of all parties shall be deemed an original. An electronic or facsimile signature is deemed to be the same as an original signature.

f. Time. Time is of the essence in the performance of this Agreement.

g. Entire Agreement. This Agreement contains the entire agreement of the parties hereto on the matters covered herein. No other agreement, statement or promise made by either party or by any employee, officer or agent of either party hereto that is not in writing and signed by both parties to this Agreement shall be binding.

h. No Joint Venture. The relationship between the City and the Borrower is solely that of grantor and grantee and the relationship by and between the City and the Borrower is not, nor shall it be deemed to create, a partnership or joint venture in the Project.

i. Venue. All matters whether sounding in tort or in contract, relating to the validity, construction, performance, or enforcement of this Agreement shall be controlled by and determined in accordance with the laws of Minnesota, and the Borrower agrees that all legal actions initiated by the Borrower with respect to or arising from any provision contained in this Agreement shall be initiated, filed and venued exclusively in District Court in Washington County, Minnesota.

j. Attorneys' Fees and Expenses. In the event the Borrower should default under any of the provisions of this Agreement and the City should employ attorneys or incur other expenses for the collection of amounts due hereunder or the enforcement of performance of any obligation or agreement on the part of the Borrower, the Borrower will on demand pay to the City the reasonable fee of such attorneys and such other expenses so incurred, but only in the event the City prevails in pursuing such claims.

k. Assignment. This Agreement may not be assigned by the Borrower without the prior written consent of City, which consent shall be in the sole discretion of the City.

(The remainder of this page is intentionally left blank.)

IN WITNESS WHEREOF, the parties have caused this Loan Agreement to be executed the day and year first above written.

COTTAGE GROVE AH I, LLLP,
a Minnesota limited liability limited partnership

By: Cottage Grove AH GP I, LLC,
a Minnesota limited liability company
Its: General Partner

By: _____
Name: Michael Lavin
Title: President

STATE OF MINNESOTA)
) ss.
COUNTY OF _____)

The foregoing instrument was executed before me this _____ day of _____, 2026, by Michael Lavin, the President of Cottage Grove AH GP I, LLC, a Minnesota limited liability company, the General Partner of Cottage Grove AH I, LLLP, a Minnesota limited liability limited partnership, on behalf of the limited liability limited partnership.

_____
Notary Public

CITY OF COTTAGE GROVE

By:_____
Myron Bailey, Mayor

By:_____
Jennifer Levitt, City Administrator

STATE OF MINNESOTA)
) ss.
COUNTY OF _____)

The foregoing instrument as acknowledged before me this _____ day of _____, 2026, by Myron Bailey, the Mayor of the City of Cottage Grove, a municipal corporation under the laws of Minnesota, on behalf of the City.

_____
Notary Public

STATE OF MINNESOTA)
) ss.
COUNTY OF _____)

The foregoing instrument as acknowledged before me this _____ day of _____, 2026, by Jennifer Levitt, the City Administrator of the City of Cottage Grove, a municipal corporation under the laws of Minnesota, on behalf of the City.

_____
Notary Public

EXHIBIT A

LEGAL DESCRIPTION OF DEVELOPMENT PROPERTY

The Development Property is legally described as follows:

Lot 1, Block 1, Preserve at Prairie Dunes, Washington County, Minnesota

EXHIBIT B

GRANT AGREEMENT

LIVABLE COMMUNITIES DEMONSTRATION ACCOUNT
DEVELOPMENT GRANT PROGAM

GRANTEE: City of Cottage Grove	**GRANT NO. SG-25119**
PROJECT: Hadley Ridge Apartments	
GRANT AMOUNT: $785,000	**CYCLE: 2025**
COUNCIL ACTION: November 12, 2025	**EXPIRATION DATE: December 31, 2028**

METROPOLITAN LIVABLE COMMUNITIES ACT
GRANT AGREEMENT

THIS GRANT AGREEMENT ("Agreement") is made and entered into by the Metropolitan Council ("Council") and the Municipality, County, or Development Authority identified above as "Grantee."

WHEREAS, Minnesota Statutes section 473.251 creates the Metropolitan Livable Communities Fund, the uses of which fund must be consistent with and promote the purposes of the Metropolitan Livable Communities Act ("LCA") and the policies of the Council's Metropolitan Development Guide; and

WHEREAS, Minnesota Statutes sections 473.251 and 473.253 establish within the Metropolitan Livable Communities Fund a Livable Communities Demonstration Account and require the Council to use the funds in the account to make grants or loans to municipalities participating in the Local Housing Incentives Account Program under Minnesota Statutes section 473.254 or to Counties or Development Authorities to fund the initiatives specified in Minnesota Statutes section 473.25(b) in Participating Municipalities; and

WHEREAS, the Grantee is a Municipality participating in the Local Housing Incentives Account program under Minnesota Statutes section 473.254, a County, or a Development Authority; and

WHEREAS, the Grantee seeks funding in connection with an application for Livable Communities Demonstration Account grant program funds submitted in response to the Council's notice of availability of grant funds for the "Funding Cycle" identified above and will use the grant funds made available under this Agreement to help fund the "Project" identified in the application; and

WHEREAS, the Council awarded Livable Communities Demonstration Account grant program funds to the Grantee subject to any terms, conditions, and clarifications stated in its Council Action, and with the understanding that the Project identified in the application will proceed to completion in a timely manner, all grant funds will be expended prior to the "Expiration Date" identified above and Project construction will have "commenced" before the Expiration Date.

NOW THEREFORE, in reliance on the above statements and in consideration of the mutual promises and covenants contained in this Agreement, the Grantee and the Council agree as follows:

I. DEFINITIONS

1.01. Definition of Terms. The terms defined in this Section have the meanings given them in this section unless otherwise provided or indicated by the context.

(a) ***Commenced.*** For the purposes of Sections 2.08 and 5.03, "commenced" means significant physical improvements have occurred in furtherance of the Project (*e.g.*, a foundation is being constructed or other tangible work on a structure has been initiated). In the absence of significant physical improvements, visible staking, engineering, land surveying, soil testing, cleanup site investigation, or pollution cleanup activities are not evidence of Project commencement for the purposes of this Agreement.

(b) ***Council Action.*** "Council Action" means the action or decision of the governing body of the Metropolitan Council, on the meeting date identified at Page 1 of this Agreement, by which the Grantee was awarded Livable Communities Demonstration Account funds.

(c) ***County.*** "County" means Anoka, Carver, Dakota, Hennepin, Ramsey, Scott, and Washington Counties.

(d) ***Development Authority.*** "Development Authority" means a statutory or home rule charter city, a housing and redevelopment authority, an economic development authority, or a port authority in the Metropolitan Area.

(e) ***Metropolitan Area.*** "Metropolitan Area" means the seven-county metropolitan area as defined by Minnesota Statutes section 473.121, subdivision 2.

(f) ***Municipality.*** "Municipality" means a statutory or home rule charter city or town participating in the Local Housing Incentives Account Program under Minnesota Statutes section 473.254.

(g) ***Participating Municipality.*** "Participating Municipality" means a statutory or home rule charter city or town which has elected to participate in the Local Housing Incentive Account program and negotiated affordable and life-cycle housing goals for the Municipality pursuant to Minnesota Statutes section 473.254.

(h) ***Project.*** Unless clearly indicated otherwise by the context of a specific provision in this Agreement, "Project" means the development or redevelopment project identified in the application for Demonstration Account funds for which grant funds were requested that through its design and execution will deliver benefits such as housing, connections, and jobs to the region. Grant-funded activities typically are components of the Project.

(i) ***Redeployment of Repaid Grant Funds.*** "Redeployment of Repaid Grant Funds" means Grantee redeployment of Repaid Grant Funds to continue supporting affordable housing components of the Project or implement or support projects that will help the Grantee (or the Participating Municipality within which the Project is located) meet its affordable and life-cycle housing goals.

(j) ***Repaid Grant Funds.*** "Repaid Grant Funds" means repaid loan principal and interest grant funds made available to the Grantee and disbursed to the Project Owner in the form of a loan pursuant to Sections 2.05 and 2.06 of this Agreement.

II. GRANT FUNDS

2.01. Source of Funds. The grant funds made available to the Grantee under this Agreement are from the Livable Communities Demonstration Account of the Metropolitan Livable Communities Fund. The grant funds are derived from the property tax authorized by Minnesota Statutes section 473.253, subdivision 1 and are not from State or federal sources.

2.02 Grant Amount. The Council will grant to the Grantee the "Grant Amount" identified at Page 1 of this Agreement. The Council's obligation to reimburse the Grantee for eligible grant-funded expenditures shall not exceed the Grant Amount. Notwithstanding any other provision of this Agreement, the Grantee understands and agrees that any reduction or termination of Livable Communities Demonstration Account grant funds made available to the Council may result in a like reduction in the Grant Amount made available to the Grantee.

2.03. Authorized Use of Grant Funds. The Grant Amount made available to the Grantee under this Agreement shall be used only for the purposes and activities described in the application for Livable Communities Demonstration Account grant funds. The grant funds may be used for reimbursement of real estate acquisition costs if: (a) the property was purchased within the twelve-month period preceding the date by which the LCDA Development grant program applications for the Funding Cycle were due; (b) the real estate was purchased by the Grantee or by a not-for-profit or a socially responsible developer; and (c) the Project will lead to the development of affordable housing or will result in jobs retained, created, or made more accessible to low-income and underserved populations, including opportunities for entrepreneurship. Property holding costs are an eligible use of grant funds but may not exceed five percent (5%) of the amount of the grant funds awarded for property acquisition or $100,000, whichever is less. A Project summary that describes eligible uses of the grant funds as approved by the Council is attached to and incorporated into this Agreement as Attachment A. Aerial photography or drawings that identify the specific location(s) within the Project boundaries for which grant funds must be used is attached to and incorporated into this Agreement as Attachment B. Grant funds must be used to fund the initiatives specified in Minnesota Statutes section 473.25(b), in a Participating Municipality.

2.04. Ineligible Uses. Grant funds must be used for eligible costs directly associated with the Project activities for which the Council awarded grant funds. A detailed list of ineligible and eligible costs is available from the Community Development/Metropolitan Transportation Services Finance and Administration Department. Except for reimbursement for real estate acquisition and holding costs as provided in Section 2.03, grant funds also shall not be used by the Grantee or others to supplant or replace: (a) grant or loan funds obtained for the Project from other sources; or (b) Grantee contributions to the Project, including financial assistance, real property or other resources of the Grantee; or (c) funding or budgetary commitments made by the Grantee or others prior to the Council Action, unless specifically authorized in Attachment A. The Council shall bear no responsibility for cost overruns which may be incurred by the Grantee or others in the implementation or performance of the Project activities. The Grantee agrees to comply with any "business subsidy" requirements of Minnesota Statutes sections 116J.993 to 116J.995 that apply to the Grantee's expenditures or uses of the grant funds.

2.05. Loans for Low-Income Housing Tax Credit Projects. If consistent with the application and the Project activities described or identified in Attachments A and B or if requested in writing by the Grantee, the Grantee may structure the grant assistance to the Project as a loan so the Project Owner can take advantage of federal and state low-income housing tax credit programs. The Grantee may use

the grant funds as a loan for a low-income housing tax credit project, subject to the terms and conditions stated in Sections 2.03 and 2.04 and the following additional terms and conditions:

(a) The Grantee covenants and represents to the Council that the Project is a rental housing project that received or will receive an award of low-income housing tax credits under Section 42 of the Internal Revenue Code of 1986, as amended, and the low-income housing tax credit program administered by the Minnesota Housing Finance Agency or a program administered by the Minneapolis/Saint Paul Housing Finance Board or another designated housing credit agency that suballocates low- income- housing tax credits in the Metropolitan Area.

(b) The Grantee will execute a loan agreement with the Project Owner. Prior to disbursing any grant funds for the Project, the Grantee will provide to the Council a copy of the loan agreement between the Grantee and the Project Owner.

(c) Notwithstanding the Expiration Date identified at Page 1 of this Agreement and referenced in Section 5.01, when the Grantee receives Repaid Grant Funds and elects Redeployment of Repaid Grant Funds the Grantee shall report Redeployment of Repaid Grant Funds in the next annual Housing Policy and Production Survey.(d) The grant funds made available to the Grantee and disbursed to the Project Owner by the Grantee in the form of a loan may be used only for the grant-eligible activities and Project components for which the Grantee was awarded the grant funds. For the purposes of this Agreement, the term "Project Owner" means the current Project Owner and any Project Owner successor(s).

(e) Pursuant to Section 2.04, the grant funds made available to the Grantee and disbursed to the Project Owner in the form of a loan shall not be used by the Grantee, the Project Owner, or others to supplant or replace: (1) grant or loan funds obtained for the Project from other sources; or (2) Grantee contributions to the Project, including financial assistance, real property, or other resources of the Grantee; or (3) funding or budgetary commitments made by the Grantee or others prior to the Council Action, unless specifically authorized in Attachment A. The Council will not make the grant funds available to the Grantee in a lump sum payment but will disburse the grant funds to the Grantee on a reimbursement basis pursuant to Section 2.11.

(f) By executing this Agreement, the Grantee: (1) acknowledges that the Council expects the loan will be repaid so the grant funds may be used to help fund other activities consistent with the requirements of the Metropolitan Livable Communities Act; (2) covenants, represents, and warrants to the Council that the Grantee's loan to the Project Owner will meet all applicable low-income housing tax credit program requirements under Section 42 of the Internal Revenue Code of 1986, as amended (the "Code"), and the low-income housing tax credit program administered by the Minnesota Housing Finance Agency or a program administered by the Minneapolis/Saint Paul Housing Finance Board or another designated housing credit agency that suballocates low- income- housing tax credits in the Metropolitan Area; and (3) agrees to administer its loan to the Project Owner consistent with federal and state low-income housing tax credit program requirements.

(g) The Grantee will, at its own expense, use diligent efforts to recover loan proceeds: (1) whenever the Project Owner becomes obligated to repay the Grantee's loan or defaults on the Grantee's loan; (2) when the initial thirty-year "compliance period" expires, unless the Council agrees in writing that the Grantee may make the grant funds available as a loan to the Project Owner for an "extended use period"; and (3) if noncompliance with low-income housing tax credit

program requirements or some other event triggers the Project Owner's repayment obligations under its loan agreement with the Grantee. Except as otherwise provided in this Paragraph (g), the Grantee must repay to the Council all loan repayment amounts the Grantee receives from the Project Owner. The Grantee shall not be obligated to repay the grant funds to the Council except to the extent the Project Owner repays its loan to the Grantee, provided the Grantee has exercised the reasonable degree of diligence and used administrative and legal remedies a reasonable and prudent housing finance agency would use to obtain payment on a loan, taking into consideration (if applicable) the subordinated nature of the loan.

As an alternative to such loan proceeds recovery, the Grantee may elect Redeployment of Repaid Grant Funds. If the Grantee elects Redeployment of Repaid Grant Funds, the Grantee shall report such Redeployment of Repaid Grant Funds in its next annual Housing Policy and Production Survey. Upon the Council's review of any Redeployment of Repaid Grant Funds identified in the Grantee's Housing Policy or Production Survey or otherwise, the Council reserves the right to request return of such funds if, after review, the Council determines such Redeployment of Repaid Grants Funds does not comply with the Livable Communities Act program requirements, or affordable and life-cycle housing goals. Upon the Council's request, the Grantee shall promptly return the Repaid Grant Funds.

(h) If the Grantee earns any interest or other income from its loan agreement with the Project Owner, the Grantee must repay to the Council all interest or other income the Grantee receives from the Project Owner. Alternatively, the Grantee may elect redeployment of interest or other income received from the Project Owner. If the Grantee elects redeployment of such interest or other income so received, the Grantee shall report such redeployment in its next annual Housing Policy and Production Survey. Upon the Council's review of any such redeployment identified in the Grantee's Housing Policy or Production Survey or otherwise, the Council reserves the right to request return of such interest or other funds if, after review, the Council determines such redeployment of does not comply with the Livable Communities Act program requirements, or affordable and life-cycle housing goals. Upon the Council's request, the Grantee shall promptly return the interest or other income received from the Project Owner. The Grantee is not obligated to earn any interest or other income from its loan agreement with the Project Owner, except to the extent required by any applicable law.

2.06. Revolving or Deferred Loans. If consistent with the application and the Project summary or if requested in writing by the Grantee, the Grantee may use the grant funds to make deferred loans (loans made without interest or periodic payments), revolving loans (loans made with interest and periodic payments), otherwise make the grant funds available on a "revolving" basis for the purposes of implementing the Project activities described or identified in Attachments A and B.

As an alternative to such loan proceeds recovery for revolving loans, the Grantee may elect Redeployment of Repaid Grant Funds. If the Grantee elects Redeployment of Repaid Grant Funds, the Grantee shall report such Redeployment of Repaid Grant Funds in its next annual Housing Policy and Production Survey. Upon the Council's review of any Redeployment of Repaid Grant Funds identified in the Grantee's Housing Policy or Production Survey or otherwise, the Council reserves the right to request return of such funds if, after review, the Council determines such Redeployment of Repaid Grants Funds does not comply with the Livable Communities Act program requirements, or affordable and life-cycle housing goals. Upon the Council's request, the Grantee shall promptly return the Repaid Grant Funds.

2.07. Restrictions on Loans or Grants to Subrecipients. The Grantee shall not permit any subgrantee, subrecipient, or contractor to use the grant funds for loans or grants to any subrecipient at any tier unless the Grantee obtains the prior written consent of the Council. The requirements of this Section 2.07 shall be included in all subgrants, subrecipient agreements, and contracts.

2.08. Project Commencement and Changes. The Project for which grant funds were requested must be "commenced" prior to the Expiration Date. If the grant funds will be used only for land acquisition and holding costs as authorized by Section 2.03 and will not be used for any other grant-eligible activities, the property acquired for the Project must be purchased prior to the Expiration Date. The Grantee must promptly inform the Council in writing of any significant changes to the Project for which the grant funds were awarded, as well as any potential changes to the grant-funded activities described or identified in Attachments A and B. Failure to inform the Council of any significant changes to the Project or significant changes to grant-funded components of the Project, and use of grant funds for ineligible or unauthorized purposes, will jeopardize the Grantee's eligibility for future LCA awards. Grant funds will not be disbursed prior to Council approval of significant changes to either the Project or to grant-funded activities described or identified in Attachments A and B.

2.09. Budget Variance. The Grantee may reallocate up to twenty percent (20%) of the Grant Amount among the grant-funded activities provided: (a) the grant funds may be used only for Project activities for which the Council awarded the grant funds; (b) the reallocation does not significantly change the Project deliverables; and (c) the Grantee receives written permission from Council staff prior to reallocating any grant funds. Council staff may administratively approve budget reallocation requests that exceed twenty percent (20%) of the Grant Amount only if the reallocation does not significantly change the Project deliverables. Notwithstanding the aggregate or net effect of any variances, the Council's obligation to provide grant funds under this Agreement shall not exceed the Grant Amount identified at Page 1 of this Agreement.

2.10. Loss of Grant Funds. The Grantee agrees to remit to the Council in a prompt manner: any unspent grant funds, including any grant funds that are not expended prior to the Expiration Date identified at Page 1 of this Agreement; any grant funds that are not used for the authorized purposes; and any interest earnings described in Section 2.12 that are not used for the purposes of implementing the grant-funded Project activities described or identified in Attachments A and B. For the purposes of this Agreement, grant funds are "expended" prior to the Expiration Date if the Grantee pays or is obligated to pay for expenses of eligible grant-funded Project activities that occurred prior to the Expiration Date and the eligible expenses were incurred prior to the Expiration Date. Unspent or unused grant funds and other funds remitted to the Council shall revert to the Council's Livable Communities Demonstration Account for distribution through application processes in future Funding Cycles or as otherwise permitted by law.

2.11. Payment Requests, Documentation, and Disbursements. The Council will disburse grant funds in response to payment requests submitted by the Grantee through the Council's online grant management system and reviewed and approved by the Council's authorized agent. The Council will make the final determination whether the expenditures are eligible for reimbursement under this Agreement, and verify the total amount requested from the Council. Reimbursement of any costs does not constitute a waiver by the Council of any Grantee noncompliance with this Agreement.

The Council shall disburse grant funds for all grant-eligible expenditures within thirty-five (35) days of the receipt of satisfactory documentation from the Grantee. **NOTWITHSTANDING THE**

PROVISIONS OF THIS SECTION 2.11, THE COUNCIL WILL NOT DISBURSE ANY GRANT FUNDS TO THE GRANTEE UNLESS THE GRANTEE (OR PARTICIPATING MUNICIPALITY WITHIN WHICH THE PROJECT IS LOCATED) HAS ADOPTED A FAIR HOUSING POLICY AS REQUIRED BY SECTION 3.04.

The Council will reimburse up to 90 percent of the awarded grant funds. The remaining 10 percent may be withheld before a final payment is issued until the Grantee: (a) completes the Project or grant deliverables identified in the project summary; and (b) submits a final request for payment and the Final Report as required under Section 3.03. If the required deliverables are not submitted within the term and closeout period specified in Section 4.01, the Council shall have no obligation to disburse the remaining 10 percent. In such cases, the remaining funds shall revert to the Council's Livable Communities Demonstration Account for redistribution through future funding cycles or as otherwise permitted by law.

2.12. Interest Earnings. If the Grantee earns any interest or other income from the grant funds received from the Council under this Agreement, the Grantee will use the interest earnings or income only for the purposes of implementing the Project activities described or identified in Attachments A and B.

2.13. Effect of Grant. Issuance of this Grant neither implies any Council responsibility for contamination, if any, at the Project site nor imposes any obligation on the Council to participate in any pollution cleanup of the Project site if such cleanup is undertaken or required.

III. AFFORDABILITY; AFFIRMATIVE FAIR HOUSING

3.01. Affordability Term. If the Project for which the grant funds were awarded includes affordable housing units, the Grantee shall, through written instruments or otherwise, ensure the affordable units will remain affordable for a minimum period of fifteen (15) years. The Grantee's obligation under this Section may be satisfied if other Project funding sources (*e.g.*, the Minnesota Housing Finance Agency or the U.S. Department of Housing and Urban Development ("HUD")) or state or federal laws (*e.g.*, low-income housing tax credit programs) require an affordability term of at least fifteen (15) years. For the purposes of this Section, "affordable housing unit" means a unit that is affordable to households at sixty percent (60%) or less of the Area Median Income ("AMI"), as established by HUD, unless the Grantee's application stated an affordability standard lower than sixty percent (60%) of AMI, in which case the Grantee's lower affordability standard shall apply. The affordability requirements of this Section shall survive the expiration or termination of this Agreement.

3.02. Affirmative Fair Housing Marketing Plans. If the Project for which the grant funds were awarded is a housing project or includes housing units (whether market rate or affordable), the Grantee shall, through written instruments or otherwise, ensure the Project owner (and any subsequent owner(s)) adopts and implements an affirmative fair housing marketing plan for Project housing units. For the purposes of this section, "affirmative fair housing marketing plan" means an affirmative fair housing marketing plan that substantially conforms to affirmative fair housing marketing plans published by the U.S. Department of Housing and Urban Development ("HUD"), or sample affirmative fair housing marketing plans published by the Minnesota Housing Finance Agency. The affirmative fair housing marketing plan requirement under this section shall continue for the minimum affordability term specified in Section 3.01 and shall survive the expiration or termination of this Agreement.

3.03. Section 8 Housing Choice Vouchers. If the Project is a housing project, or includes housing units (whether market rate or affordable), and the Grantee stated in its application that the Project housing units would be made available to households participating in the federal Housing Choice Voucher program, the Grantee shall, through written instruments or otherwise, ensure the Project owner (and any subsequent owner(s)) adopts and implements a policy under which the Project owner will not refuse to lease Project units to households or individuals participating in the Housing Choice Voucher program because those households or individuals are Housing Choice Voucher program participants. The Housing Choice Voucher requirement under this section shall continue for the minimum affordability term specified in Section 3.01 and shall survive the expiration or termination of this Agreement.

3.04. Fair Housing Policy. If the Project will include a housing component, the Grantee (or participating Municipality) must have adopted a Fair Housing Policy. For the purposes of this section, the term "Fair Housing Policy" means a written statement regarding the Grantee's (or participating Municipality's) commitment to fair housing that substantively includes at least the following elements: a purpose statement; procedures for responding to fair housing concerns and complaints; and a designated individual or staff position responsible for fair housing issues. A best practices guide, as well as a copy of a model local fair housing policy is available at: https://metrocouncil.org/Handbook/Files/Resources/Best-Practices/Fair-Housing-Policy-Guide.aspx.

IV. ACCOUNTING, AUDIT, AND REPORT REQUIREMENTS

4.01. Accounting and Records. The Grantee agrees to establish and maintain accurate and complete accounts and records relating to the receipt and expenditure of all grant funds received from the Council. Notwithstanding the expiration and termination provisions of Sections 5.01 and 5.02, such accounts and records shall be kept and maintained by the Grantee for a period of six (6) years following the completion of the Project activities described or identified in Attachments A and B or six (6) years following the expenditure of the grant funds, whichever occurs earlier. Accounting methods shall be in accordance with generally accepted accounting principles.

4.02. Audits. The above accounts and records of the Grantee shall be audited in the same manner as all other accounts and records of the Grantee are audited and may be audited or inspected on the Grantee's premises or otherwise by individuals or organizations designated and authorized by the Council at any time, following reasonable notification to the Grantee, for a period of six (6) years following the completion of the Project activities or six (6) years following the expenditure of the grant funds, whichever occurs earlier. Pursuant to Minnesota Statutes section 16C.05, subdivision 5, the books, records, documents, and accounting procedures and practices of the Grantee that are relevant to this Agreement are subject to examination by the Council and either the Legislative Auditor or the State Auditor, as appropriate, for a minimum of six (6) years.

4.03. Report Requirements. The Grantee will report to the Council on a semi-annual basis by January 31 (for the period of July 1 through December 31) and July 31 (for the period January 1 through June 30) of each calendar year during the term of this Agreement. The Grantee reports shall describe the status of the Project activities described or identified in Attachments A and B. The report shall also describe the Project spending for the current reporting period and projected spending for the future reporting periods. The Grantee also must complete and submit to the Council a Final Report before the final disbursement of grant funds will be approved. The form and content of the semi-annual status reports and the Final Report will be determined by the Council. These reporting

requirements and the reporting requirements of Sections 2.05 and 2.06 shall survive the expiration or termination of this Agreement.

4.04. Environmental Site Assessment. The Grantee represents that a Phase I Environmental Site Assessment or other environmental review has been or will be carried out, if such environmental assessment or review is appropriate for the scope and nature of the Project activities funded by this Grant, and that any environmental issues have been or will be adequately addressed.

V. AGREEMENT TERM

5.01 Term and Close Out. This Agreement is effective upon execution of this Agreement by the Council. Unless terminated pursuant to Section 5.02, this Agreement expires on the Expiration Date identified at Page 1 of this Agreement. Failure of the Grantee to timely execute this Agreement does not extend the Expiration Date. The Grantee has 120 calendar days after the Expiration Date to provide documentation and information necessary to close out this Agreement and receive disbursements for eligible grant-funded Project activities as prescribed in Section 2.03. If the Grantee fails to provide necessary documentation and information during this 120-day close out period, the Grantee shall not be eligible to receive any unpaid grant funds and the Council will not disburse any unpaid grant funds to the Grantee. This 120-day close out period does not extend any Grantee reporting deadlines established in this Agreement or authorize the Grantee to expend or commit any grant funds after the Expiration Date. **ALL GRANT FUNDS NOT EXPENDED BY THE GRANTEE PRIOR TO THE EXPIRATION DATE AND REQUESTED FOR REIMBURSEMENT PRIOR TO THE END OF THE CLOSEOUT PERIOD SHALL REVERT TO THE COUNCIL**

5.02. Termination. This Agreement may be terminated by the Council for cause at any time upon fourteen (14) calendar days' written notice to the Grantee. Cause shall mean a material breach of this Agreement and any amendments of this Agreement. If this Agreement is terminated prior to the Expiration Date, the Grantee shall receive payment on a pro rata basis for eligible Project activities described or identified in Attachments A and B that have been completed prior to the termination. Termination of this Agreement does not alter the Council's authority to recover grant funds on the basis of a later audit or other review and does not alter the Grantee's obligation to return any grant funds due to the Council as a result of later audits or corrections. If the Council determines the Grantee has failed to comply with the terms and conditions of this Agreement and the applicable provisions of the Metropolitan Livable Communities Act, the Council may take any action to protect the Council's interests and may refuse to disburse additional grant funds and may require the Grantee to return all or part of the grant funds already disbursed.

5.03. Amendments and Extension. The Council and the Grantee may amend this Agreement by mutual agreement. Amendments or an extension of this Agreement shall be effective only on the execution of written amendments signed by authorized representatives of the Council and the Grantee. If the Grantee needs a change to the Project, additional time within which to complete the grant-funded activities and commence the Project, a change in the budget, or a change in grant-funded activities the Grantee must submit to the Council **AT LEAST NINETY (90) CALENDAR DAYS PRIOR TO THE EXPIRATION DATE**, a complete, written amendment request. All requirements must be met for a request to be considered complete. **THE EXPIRATION DATE MAY BE EXTENDED, BUT THE PERIOD OF ANY EXTENSION(S) SHALL NOT EXCEED TWO (2) YEARS BEYOND THE ORIGINAL EXPIRATION DATE IDENTIFIED AT PAGE 1 OF THIS AGREEMENT.**

VI. GENERAL PROVISIONS

6.01. Equal Opportunity. The Grantee agrees it will not discriminate against any employee or applicant for employment because of race, color, creed, religion, national origin, sex, gender identity, marital status, status with regard to public assistance, familial status, membership or activity in a local civil rights commission, disability, sexual orientation, or age and will take affirmative action to insure applicants and employees are treated equally with respect to all aspects of employment, rates of pay and other forms of compensation, and selection for training.

6.02. Conflict of Interest. The members, officers, and employees of the Grantee shall comply with all applicable state statutory and regulatory conflict of interest laws and provisions.

6.03. Liability. Subject to the limitations provided in Minnesota Statutes chapter 466, to the fullest extent permitted by law, the Grantee shall defend, indemnify, and hold harmless the Council and its members, employees, and agents from and against all claims, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of or resulting from the conduct or implementation of the Project activities funded by this grant, except to the extent the claims, damages, losses, and expenses arise from the Council's own negligence. Claims included in this indemnification include, without limitation, any claims asserted pursuant to the Minnesota Environmental Response and Liability Act (MERLA), Minnesota Statutes chapter 115B, the federal Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) as amended, United States Code, Title 42, sections 9601 *et seq.*, and the federal Resource Conservation and Recovery Act of 1976 (RCRA) as amended, United States Code, title 42, sections 6901 *et seq.* This obligation shall not be construed to negate, abridge, or otherwise reduce any other right or obligation of indemnity which otherwise would exist between the Council and the Grantee. The provisions of this Section shall survive the expiration or termination of this Agreement. This indemnification shall not be construed as a waiver on the part of either the Grantee or the Council of any immunities or limits on liability provided by Minnesota Statutes chapter 466, or other applicable state or federal law.

6.04. Acknowledgments and Signage. The Grantee will acknowledge the financial assistance provided by the Council in promotional materials, press releases, reports, and publications relating to the Project. The acknowledgment will contain the following or comparable language:

Financing for this project was provided by the Metropolitan Council
Metropolitan Livable Communities Fund

Until the Project is completed, the Grantee shall ensure the above acknowledgment language, or alternative language approved by the Council's authorized agent, is included on all signs (if any) located at Project or construction sites that identify Project funding partners or entities providing financial support for the Project. The acknowledgment and signage should refer to the "Metropolitan Council" (not "Met Council" or "Metro Council").

6.05. Permits, Bonds, and Approvals. The Council assumes no responsibility for obtaining any applicable local, state, or federal licenses, permits, bonds, authorizations, or approvals necessary to perform or complete the Project activities described or identified in Attachments A and B. The Grantee and its developer(s), if any, must comply with all applicable licensing, permitting, bonding, authorization, and approval requirements of federal, state, local governmental, and regulatory agencies, including conservation districts.

6.06. Subgrantees, Contractors, and Subcontractors. The Grantee shall include in any subgrant, contract, or subcontract for Project activities appropriate provisions to ensure subgrantee, contractor, and subcontractor compliance with all applicable state and federal laws and this Agreement. Along with such provisions, the Grantee shall require that contractors and subcontractors performing work covered by this Grant obtain all required permits, licenses and certifications, and comply with all applicable state and federal Occupational Safety and Health Act regulations. If the Project for which the grant funds were awarded includes affordable units, the Grantee's subgrant agreement(s) shall expressly include the affordability and affirmative fair housing marketing plan requirements of Sections 3.01 and 3.02.

6.07 Stormwater Discharge and Water Management Plan Requirements. If any grant funds are used for urban site redevelopment, the Grantee shall at such redevelopment site meet or require to be met all applicable requirements of:

(a) Federal and state laws relating to stormwater discharges including, without limitation, any applicable requirements of Code of Federal Regulations, title 40, parts 122 and 123; and

(b) The Council's *2050 Water Resources Policy Plan* and the local water management plan for the jurisdiction within which the redevelopment site is located.

6.08. Authorized Agent. Payment requests, written reports, and correspondence submitted to the Council pursuant to this Agreement shall be directed to the Authorized Agent named below or their successor through the Council's online grants administration portal or to the below contact information:

Attn: Kelly Nezworski
Metropolitan Council
CD & MTS Finance and Administration
390 Robert Street North
Saint Paul, Minnesota 55101-1805
kelly.nezworski@metc.state.mn.us

6.09. Non-Assignment. Minnesota Statutes section 473.253, subdivision 2 requires the Council to distribute grant funds to eligible "municipalities," metropolitan-area counties, or "development authorities" for projects in municipalities participating in the Local Housing Incentives Account program. Accordingly, this Agreement is not assignable and shall not be assigned by the Grantee.

6.10. Authorization to Reproduce Images. The Grantee certifies that the Grantee: (a) is the owner of any renderings, images, perspectives, sections, diagrams, photographs, or other copyrightable materials (collectively, "copyrightable materials") that are in the Grantee's application or are submitted to the Council as part of the grant application review process or after grant award, or that the Grantee is fully authorized to grant permissions regarding the copyrightable materials; and (b) the copyrightable materials do not infringe upon the copyrights of others. The Grantee agrees the Council has a nonexclusive royalty-free license and all necessary permissions to reproduce and publish the copyrightable materials for noncommercial purposes, including but not limited to press releases, presentations, reports, and on the internet. The Grantee also agrees the Grantee will not hold the Council responsible for the unauthorized use of the copyrightable materials by third parties.

6.11. Warranty of Legal Capacity. The individuals signing this Agreement on behalf of the Grantee and on behalf of the Council represent and warrant on the Grantee's and the Council's behalf respectively that the individuals are duly authorized to execute this Agreement on the Grantee's and the Council's behalf respectively and that this Agreement constitutes the Grantee's and the Council's valid, binding, and enforceable agreements.

6.12. Counterparts. This Agreement may be executed in counterpart, each of which counterpart constitutes an original, but both of which together constitute one instrument.

6.13. Electronic Signatures. The electronic signatures of the Council's and the Grantee's authorized representatives shall be valid as an original signature of the authorized representatives and shall be effective to bind the Council and the Grantee under this Agreement. This Agreement containing, or to which there is affixed, an electronic signature shall be deemed to: (a) be "written" or "in writing"; (b) have been signed; and (c) constitute a record established and maintained in the ordinary course of business and an original written record when printed from electronic files. "Electronic signature" also means a manually signed original signature that is then transmitted by any electronic means, including without limitation a faxed version of an original signature or an electronically scanned and transmitted version (*e.g.*, via PDF) of an original signature. The Council's or the Grantee's failure to produce the original signature of any electronically transmitted signature shall not affect the enforceability of this Agreement.

This space intentionally left blank. Signature page follows.

LIVABLE COMMUNITIES DEMONSTRATION ACCOUNT
DEVELOPMENT GRANT PROGAM

IN WITNESS WHEREOF, the Grantee and the Council have caused this Agreement to be executed by their duly authorized representatives. This Agreement is effective on the date of final execution by the Council.

CITY OF COTTAGE GROVE

By: _____
Title: mayor
Date: 12/17/25

By: _____
Title: City Clerk
Date: 12/17/25

By: _____
Title: _____
Date: _____

By: _____
Title: _____
Date: _____

Approved as to form:

By: _____
City Attorney's Office

Date: _____

METROPOLITAN COUNCIL

By: _____
LisaBeth Barajas, Executive Director
Community Development Division

Date: 01/07/2026

ATTACHMENT A

PROJECT SUMMARY

This attachment comprises this page and the succeeding page(s) which contain(s) a summary of the Project identified in the application for Livable Communities Demonstration Account grant funds submitted in response to the Council's notice of availability of Demonstration Account grant funds for the Funding Cycle identified at Page 1 of this Agreement. The summary reflects the proposed Project for which the Grantee was awarded grant funds by the Council Action, and may reflect changes in Project funding sources, changes in funding amounts, or minor changes in the proposed Project that occurred subsequent to application submission. The application is incorporated into this Agreement by reference and is made a part of this Agreement as follows. If the application or any provision of the application conflicts with or is inconsistent with the Council Action, other provisions of this Agreement, or the Project summary contained in this Attachment A, the terms, descriptions and dollar amounts reflected in the Council Action or contained in this Agreement and the Project summary shall prevail. For the purposes of resolving conflicts or inconsistencies, the order of precedence is: (1) the Council Action; (2) this Agreement; (3) the Project summary; and (4) the grant application.

Livable Communities Project Summary

Grant # **SG-25119**
Type: **LCDA Development**
Applicant: City of Cottage Grove
Project Name: Hadley Ridge Apartments
Project Location: 10015 Hamley Avenue
Council District: 12 - Jenkins

Project Detail	
Project Overview	This project will create 164 units of mixed-income housing, many of which are two- and three-bedroom units to accommodate families.
Total Jobs	3
Living Wage Jobs	3
Total housing units	164
Affordable units	140; 3 @ <30% AMI; 15 @ 31-50% AMI; 122 @ 51-60% AMI
Anticipated # bedrooms	30 1BR; 88 2BR; 46 3BR
Funding	
Requested Amount	$785,000
Use of Funds & Award Amount	
$785,000	**Award Amount**
$785,000	**Activities**: Renewable energy, stormwater management, pedestrian improvements, affordable housing amenities **Deliverables**: Solar and EV charging, resident amenities, a connecting trail, and two stormwater infiltration basins

ATTACHMENT B

PROJECT LOCATION(S)

This attachment comprises this page and the succeeding page(s) which contain aerial photography or drawings that identify the specific location(s) within the Project boundaries for which the Grantee must use the grant funds. The attached photography or drawings also may identify the types of eligible activities for which the grant funds must be used at specific locations within the Project boundaries.

Project Location(s)

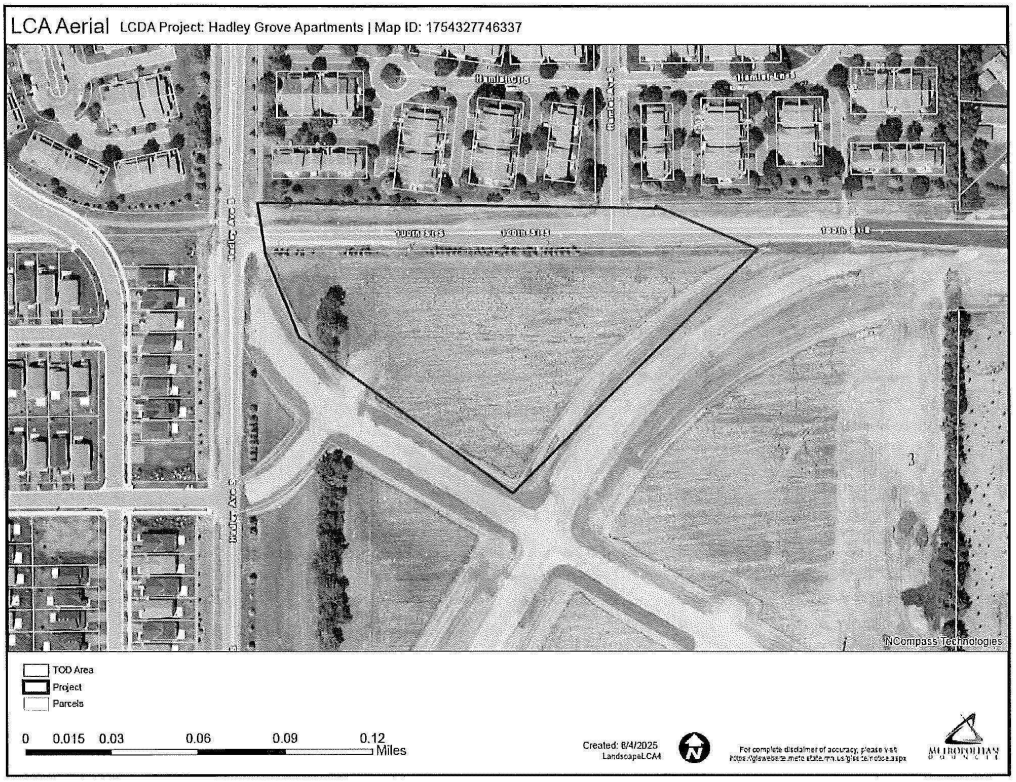

EXHIBIT C

DISBURSEMENT REQUEST FORM

City of Cottage Grove
12800 Ravine Parkway South
Cottage Grove, MN 55016
Attn: City Administrator

The undersigned, Cottage Grove AH I, LLLP, a Minnesota limited liability limited partnership (the "Borrower"), pursuant to that certain Loan Agreement, dated as _____ (the "Loan Agreement"), between the City of Cottage Grove, Minnesota (the "City"), and the Borrower, hereby requests payment of the expenses listed on the attached Expense Listing.

The total amount to be disbursed for this draw is $_____.

In connection with this draw, the undersigned hereby represents as follows:

a. each obligation listed in the attached Exhibit A has been incurred and is a Project Cost related to the Grant-Eligible Activities,
b. no license or permit necessary for construction of the Grant-Eligible Activities previously issued has been revoked or the issuance thereof subjected to challenge before any court of other governmental authority having or asserting jurisdiction thereover;
c. no event has occurred and is continuing which, but for the giving of notice, the expiration of any cure period, or both, would constitute an event of default under the Loan Agreement or the Grant Agreement;
d. all funds of the Borrower's match, if any, have been fully disbursed for the payment of Project Costs; and
e. _____% of the Grant-Eligible Activities have been completed.

Cottage Grove AH I, LLLP, **a Minnesota limited liability limited partnership** **By: Cottage Grove AH I, LLC, a Minnesota limited liability company** **Its: Special Limited Partner** By: _____ Name: Patrick R. Ostrom Its: Vice President	Approved: **CITY OF COTTAGE GROVE, MINNESOTA** By _____ Its City Administrator

Exhibit A

Expense Listing

Expense Description	Amount

41730400v2

NOTE

$785,000 Cottage Grove, Minnesota
_____, 2026

FOR VALUE RECEIVED, the undersigned (herein called the "Borrower"), promises to pay to the order of the city of Cottage Grove, a municipal corporation under the laws of Minnesota, or its assigns (the "Lender"), the sum of $785,000 (the "Loan"). Said sum was made available to the Borrower pursuant to the terms of a Loan Agreement of even date herewith (the "Loan Agreement") between the Lender and the Borrower to enable the Borrower to undertake the development of the Grant-Eligible Activities (as defined in the Loan Agreement) on the Development Property (as defined in the Loan Agreement) located in the city of Cottage Grove, Minnesota.

1. This Note shall not bear interest.

2. The principal of the Loan shall be due and payable in one lump sum on the earliest of: (a) August 1, 2043, (b) the sale of any portion of the Development Property by the Borrower without the Lender's prior written consent if required in the Loan Agreement, or (c) the Borrower's default under the Loan Agreement or Combination Mortgage and Security Agreement of even date herewith (the "Mortgage") from the Borrower to the Lender (the "Maturity Date"), at which time all unpaid principal and sums paid or advanced by the Lender is due and payable. This Note may also be required to be repaid in whole or in part in accordance with Article IX of the Loan Agreement. So long as the Senior Loan is outstanding, upon the prior written consent of Trustee (as defined below) the Note may be prepaid at any time without penalty.

3. If suit is instituted by Lender, or its successors or assigns, to recover on this Note, the Borrower agrees to pay all costs of such collection actually incurred, including reasonable attorneys' fees and court costs. If this Note be reduced to judgment, such judgment shall bear the lawful interest rate pertaining to judgments, but not to exceed six percent (6%) per annum.

4. The Borrower hereby waives presentment, demand, protest and notice of demand, protest and nonpayment of this Note.

5. This Note is given pursuant to the Loan Agreement and the Mortgage delivered by the Borrower. If either the Loan Agreement or the Mortgage is found to be invalid for whatever reason, such invalidity shall constitute an Event of Default hereunder. This Note is secured by the Mortgage and such Mortgage describes the rights of the Lender as to the acceleration of the indebtedness evidenced by this Note.

All of the agreements, conditions, covenants, provisions, and stipulations contained in the Loan Agreement, the Mortgage, or any other instrument securing this Note are hereby made a part of this Note to the same extent and with the same force and effect as if they were fully set forth herein. It is agreed that time is of the essence of this Note. If an Event of Default occurs under the Loan Agreement, the Mortgage, or any other instrument securing this Note, then the Lender may at its right and option, without notice, declare immediately due and payable the principal

balance of this Note and sums paid or advanced by the Lender, together with reasonable attorneys' fees and expenses incurred by the Lender in collecting or enforcing payment hereof, whether by lawsuit or otherwise, and all other sums due hereunder or any instrument securing this Note.

6. The remedies of the Lender as provided herein and in the Loan Agreement, the Mortgage, or any other instrument securing this Note shall be cumulative and concurrent and may be pursued singly, successively, or together, and, at the sole discretion of the Lender, may be exercised as often as occasion therefor shall occur; and the failure to exercise any such right or remedy shall in no event be construed as a waiver or release thereof.

The Lender shall not be deemed, by any act of omission or commission, to have waived any of its rights or remedies hereunder unless such waiver is in writing and signed by the Lender and then only to the extent specifically set forth in the writing. A waiver with reference to one event shall not be construed as continuing or as a bar to or waiver of any right or remedy as to a subsequent event. This Note may not be amended, modified, or changed except only by an instrument in writing signed by the party against whom enforcement of any such amendment, modifications, or change is sought.

7. If any term of this Note, or the application thereof to any person or circumstances, shall, to any extent, be invalid or unenforceable, the remainder of this Note, or the application of such term to persons or circumstances other than those to which it is invalid or unenforceable shall not be affected thereby, and each term of this Note shall be valid and enforceable to the fullest extent permitted by law.

8. This Note shall be governed by and construed in accordance with the laws of Minnesota.

9. Neither the Borrower nor any member shall have any personal liability for the Borrower's obligations hereunder, it being recognized by the Lender the obligations of the Borrower hereunder are non-recourse obligations and that the remedies of the Lender are limited to the collateral security provided in connection with the Loan.

10. Borrower is indebted to U.S. Bank Trust Company, National Association, as trustee under the terms of a Trust Indenture, dated as of December 1, 2025 (the "Trustee"), in connection with a loan made to Borrower (the "Senior Loan") using the proceeds of certain bonds designated (i) Multifamily Housing Revenue Bonds (Hadley Ridge Apartments Project), Series 2025A (the "Series 2025A Bonds"), in the original aggregate principal amount of $32,255,000, (ii) Multifamily Housing Revenue Bonds (Hadley Ridge Apartments Project), Series 2025B (the "Series 2025B Bonds"), in the original aggregate principal amount of $1,300,000, (iii) Taxable Multifamily Housing Revenue Bonds (Hadley Ridge Apartments Project), Series 2025C (the "Series 2025C Bonds"), in the original aggregate principal amount of $9,725,000, and (iv) Multifamily Housing Revenue Bonds (Hadley Ridge Apartments Project), Subordinate Series 2025D (the "Series 2025D Bonds" and, together with the Series 2025A Bonds, the Series 2025B Bonds, and the Series 2025C Bonds, the "Bonds"), in the original aggregate principal amount of $2,000,000.

This Note and the Loan shall be subordinate in all respects to that certain Mortgage, Assignment of Leases and Rents, Security Agreement, Fixture Filing, and Environmental Indemnity by Borrower in favor of City of Cottage Grove, recorded on December 31, 2025 in the Office of the County Recorder of Washington County, Minnesota as Document No. 4493079, and assigned to Trustee by Assignment of Mortgage, recorded on December 31, 2025 in the Office of the County Recorder of Washington County, Minnesota as Document No. 4493080 (collectively, the "Senior Mortgage"), as security for the Senior Loan. For as long as the Senior Mortgage remains outstanding, Lender shall not exercise any of the remedies provided for in this Note or any mortgage securing the Loan or modify the terms of this Note without the prior written consent of any holder of the Senior Mortgage, which holder shall be a third-party beneficiary under this Note and may, among other things, enforce the provisions of this Section.

11. IT IS HEREBY CERTIFIED AND RECITED that all conditions, acts, and things required to exist, happen, and be performed precedent to or in the issuance of this Note do exist, have happened, and have been performed in regular and due form as required by law.

(The remainder of this page is intentionally left blank.)

IN WITNESS WHEREOF, this Note has been duly executed by the undersigned as of the date and year first written above.

COTTAGE GROVE AH I, LLLP,
a Minnesota limited liability limited partnership

By: Cottage Grove AH GP I, LLC,
a Minnesota limited liability company
Its: General Partner

By: _____
Name: Michael Lavin
Title: President

41730401v2

COMBINATION MORTGAGE AND SECURITY AGREEMENT

THIS MORTGAGE SECURES A LOAN MADE UNDER AN AFFORDABLE HOUSING PROGRAM BY A STATE OR LOCAL GOVERNMENT AGENCY, AND AS SUCH IS EXEMPT FROM MORTGAGE REGISTRATION TAX PURSUANT TO MINNESOTA STATUTES, SECTION 287.04(6).

THIS COMBINATION MORTGAGE AND SECURITY AGREEMENT (hereinafter referred to as the "Mortgage") is made and given as of the ___ day of _____, 2026, by Cottage Grove AH I, LLLP, a Minnesota limited liability limited partnership (the "Mortgagor"), in favor of the city of Cottage Grove, a municipal corporation under the laws of Minnesota (the "Mortgagee").

RECITALS:

WHEREAS, the Mortgagor hereby mortgages and conveys to the Mortgagee the real property and improvements situated in the County of Washington, State of Minnesota, and legally described on Exhibit A attached hereto and made a part hereof, the leases and rents with respect to the real property and improvements and all personal property and equipment, and all products and proceeds thereof owned by Mortgagor and used in the operation of the Project (as defined in the hereinafter-described Loan Agreement) (herein, collectively the "Property"); and

WHEREAS, this Mortgage, together with the Loan Agreement of even date herewith (the "Loan Agreement") between the Mortgagor and the Mortgagee and all other documents securing the Loan as defined below (collectively, the "Loan Documents") are given in consideration of and as security for the payment of $785,000 (the "Loan"), receipt of which is hereby acknowledged and which is made to enable the Mortgagor to complete the Grant-Eligible Activities (as defined in the Loan Agreement). The Loan is evidenced by a Note (the "Note") in the amount of $785,000 executed by the Mortgagor, to the order of the Mortgagee, of even date herewith. The unpaid principal sum shall be due and payable by the Mortgagor in full on August 1, 2043 (the "Maturity Date").

AGREEMENTS:

NOW, THEREFORE, to secure (a) the due and punctual payment of principal on the Note and the obligations of the Mortgagor under the Loan Agreement and all renewals, extensions and modifications thereof any agreements or obligations issued in substitution therefore (provided the

principal amount secured by this Mortgage shall not exceed $785,000) and (b) the performance of all the covenants and agreements of the Mortgagor herein, in the Loan Agreement and in any other agreement now or hereafter entered into between the Mortgagor and Mortgagee in connection with the Loan Agreement or the Grant-Eligible Activities contemplated therein (the payment and other obligations evidenced by the Loan Agreement, this Mortgage and all such other agreements are hereinafter collectively referred to as the "Indebtedness"), the Mortgagor does hereby mortgage, grant, bargain, sell, assign, transfer and convey unto the Mortgagee forever, with power of sale the following:

I.

All of the Mortgagor's right, title and interest in and to the Property and the buildings, structures, other improvements, fixtures and personal property now standing or at any time hereafter constructed or placed upon the Property (the "Improvements"), including but not limited to (i) all building materials, supplies and equipment now or hereafter located on the Property and suitable or intended to be incorporated in any Improvements located or to be erected on the Property; (ii) all heating, plumbing and lighting apparatus, motors, engines and machinery, electrical equipment, incinerator apparatus, air-conditioning equipment, water and gas apparatus, pipes, faucets, and all other fixtures of every description which are now or may hereafter be placed or used upon the Property or in any of the Improvements now or hereinafter located thereon; (iii) all additions, accessions, increases, parts, fittings, accessories, replacements, substitutions, betterments, repairs and proceeds to and of any and all of the foregoing; (iv) all hereditaments, easements, appurtenances; estates, and other rights and interests now or hereafter belonging to or in any way pertaining to the Property or to any of the Improvements now or hereafter located thereof; and (v) all tangible personal property owned by the Mortgagor and now or at any time hereafter located on or relating to the Property.

II.

All rents, issues, profits, condemnation awards, revenues and income arising from the ownership, operation or sale of the Property and the Improvements and all proceeds and products thereof (herein collectively called "Revenues and Income").

To Have and To Hold the Property and the Improvements (together, the "Mortgaged Property"), and the Revenues and Income unto the Mortgagee forever; provided, nevertheless, that this Mortgage is granted upon the express condition that if the Mortgagor shall cause to be paid to the Mortgagee as and when due and payable the Indebtedness, and shall also keep and perform each and every covenant and agreement of the Mortgagor herein contained, then this Mortgage and the estate hereby granted shall cease and be and become void and shall be released of record at the expense of the Mortgagor; otherwise this Mortgage shall be and remain in full force and effect.

The Mortgagor represents, warrants and covenants to and with the Mortgagee that Mortgagor is lawfully seized of the Property and has good right and full power and authority to execute this Mortgage and to mortgage the Mortgaged Property; that the Mortgagor owns the Mortgaged Property free from all liens; security interests and encumbrances except as agreed to by the Mortgagee; that the Mortgagor will warrant and defend the title to the Mortgaged Property

and the lien and priority of this Mortgage against all claims and demands of all persons whomsoever, whether now existing or hereafter arising, except (i) as agreed to by the Mortgagee, (ii) listed on Exhibit B attached hereto and made a part hereof, and (iii) the regulatory agreement or land use restriction agreement to be entered into relating to low-income housing tax credits (collectively, the "Permitted Encumbrances"). The covenants and warranties of this paragraph shall survive foreclosure of this Mortgage and shall run with the Property.

The Mortgagor further covenants and agrees as follows:

1. Payment of the Indebtedness and Compliance with Other Agreements.

(a) The Mortgagor will cause the principal on the Indebtedness to be duly and punctually paid in accordance with the terms of the Note, the Loan Agreement and this Mortgage, when and as due and payable. The provisions of the Note and Loan Agreement are hereby incorporated by reference into this Mortgage as fully as if set forth at length herein.

(b) Mortgagor will duly and punctually perform each and every obligation under the Loan Agreement and any other agreement on or hereafter entered into by the Mortgagor and Mortgagee in connection with the Loan Agreement or the Grant-Eligible Activities contemplated therein.

2. Payment of Taxes, Assessments and Other Charges; Escrow. Subject to paragraph 6 relating to contests, the Mortgagor shall pay before a penalty might attach for nonpayment thereof, all taxes and assessments and all other charges whatsoever levied upon or assessed or placed against the Mortgaged Property, except that assessments may be paid in installments so long as no fine or penalty is added to any installment for the nonpayment thereof. The Mortgagor shall likewise pay all taxes, assessments and other charges, levied upon or assessed, placed or made against, or measured by, this Mortgage, or the recordation hereof, or the Indebtedness secured hereby, provided that the Mortgagor shall not be obliged to pay such tax, assessment or charge if such payment would be contrary to law or would result in the payment of an unlawful rate of interest on the Indebtedness secured hereby; and provided further that nothing herein contained shall be construed as requiring the Mortgagor to pay any net income, profits or revenues taxes of the Mortgagee. The Mortgagor shall promptly furnish to the Mortgagee all notices received by the Mortgagor of amounts due under this paragraph and shall furnish receipts evidencing such payments within 10 days after such payments are made.

3. Payment of Utility Charges. Subject to paragraph 6 relating to contests, the Mortgagor shall pay all charges made by utility companies, whether public or private, for electricity, gas, heat, water, or sewer, furnished or used in connection with the Mortgaged Property or any part thereof, and will upon written request of the Mortgagee, furnish proper receipts evidencing such payment.

4. Liens. Subject to paragraph 6 hereof relating to contests, the Mortgagor shall not create, incur or suffer to exist any lien, encumbrance or charge on the Mortgaged Property or Revenues and Income or any part thereof which may have priority over the lien hereof, other than the lien of current real estate taxes and installments of special assessments with respect to which

no penalty is yet payable, and other than any lien granted in connection with the current financing secured by the Property including without limitation the Permitted Encumbrances. Subject to paragraph 6 relating to contests, the Mortgagor shall pay, when due, the claims of all persons supplying labor or materials to or in connection with the Mortgaged Property.

5. Compliance with Laws. Subject to paragraph 6 relating to contests, the Mortgagor shall comply with all present and future statutes, laws, rules, orders, regulations and ordinances affecting the Mortgaged Property, any part thereof or the use thereof. The Mortgagor shall not use or occupy nor permit the use and occupancy of the Property without a current Certificate of Occupancy issued by the city of Cottage Grove, Minnesota.

6. Permitted Contests. The Mortgagor shall not be required to (i) pay any tax, assessment or other charge referred to in paragraph 2 hereof, (ii) pay any charges referred to in paragraph 3 hereof, (iii) discharge or remove any lien, encumbrance or charge referred to in paragraph 4 hereof, or (iv) comply with any statute, law, rule, order, regulation or ordinance referred to in paragraph 5 hereof, so long as the Mortgagor shall (a) contest, in good faith, the existence, or the validity thereof, the amount of damages caused thereby or the extent of the Mortgagor's liability therefor, by appropriate proceedings which shall operate during the pendency thereof to prevent (A) the collection of, or other realization upon the tax, assessment, charge or lien, encumbrance or charge so contested, (B) the sale, forfeiture or loss of the Mortgaged Property or any part thereof, and (C) any interference with the use or occupancy of the Mortgaged Property or any part thereof, and (b) shall give such security to the Mortgagee as may be reasonably demanded by the Mortgagee to insure compliance with the foregoing provisions of this paragraph 6. Mortgagor shall give prompt written notice to Mortgagee of the commencement of any contest referred to in this paragraph 6.

7. Insurance. The Mortgagor shall keep the improvements now existing or hereafter erected on the Mortgaged Property insured against loss by fire and any other hazards for which the Mortgagee requires insurance for full replacement value of the improvements. This insurance shall be maintained only in the amounts and for the periods as required under the terms of the Loan Agreement. If the Mortgagor fails to maintain coverage described above, the Mortgagee may, at the Mortgagee's option, obtain coverage to protect the Mortgagee's rights in the Mortgaged Property in accordance with paragraph 6.

All insurance policies and renewals shall be reasonably acceptable to the Mortgagee and shall include a standard mortgage clause. If the Mortgagee requires, the Mortgagor shall promptly give to the Mortgagee all receipts of paid premiums and renewal notices. In the event of loss, the Mortgagor shall give prompt notice to the insurance carrier and the Mortgagee. The Mortgagee may make proof of loss if not made promptly by the Mortgagor.

If the Mortgaged Property is acquired by the Mortgagee, the Mortgagor's rights to any insurance policies and proceeds resulting from damage to the Mortgaged Property prior to the acquisition shall pass to the Mortgagee to the extent of the sums secured by this Mortgage immediately prior to the acquisition.

8. Preservation and Maintenance of Mortgaged Property. The Mortgagor (i) shall keep the buildings and other Improvements hereafter erected as part of the Project on the Property

in safe and good repair and condition, ordinary wear and tear and damage by insured casualty excepted (provided that the Mortgagor may proceed to demolish the existing buildings when vacant), (ii) shall reasonably maintain the parking and landscaped areas of the Mortgaged Property, (iii) shall not commit waste or permit impairment or deterioration of the Mortgaged Property, and (iv) shall not remove from the Property any of the fixtures and personal property included in the Mortgaged Property unless the same is immediately replaced with like property of at least equal value and utility (provided that Mortgagor may proceed to demolish and remove all existing personal property and fixtures located on the Property).

9. Inspection. The Mortgagee, or its agents, shall have the right at all reasonable times, to enter upon the Mortgaged Property for the purposes of inspecting the Mortgaged Property or any part thereof. The Mortgagee shall, however, have no duty to make such inspection.

10. Protection of Mortgagee's Security. Subject to the rights of the Mortgagor under paragraph 6 hereof, if the Mortgagor fails to perform any of the covenants and agreements contained in this Mortgage or if any action or proceeding is commenced which affects the Mortgaged Property or the interest of the Mortgagee therein, or the title thereto, then the Mortgagee, at the Mortgagee's option, upon advance written notice to the Mortgagor, may perform such covenants and agreements, defend against and/or investigate such action or proceeding, and take such other action as the Mortgagee deems necessary to protect the Mortgagee's interest. The Mortgagee shall be the sole judge of the legality, validity and priority of any claim, lien, encumbrance, tax assessment, charge and premium paid by it and of the amount necessary to be paid in satisfaction thereof. The Mortgagee is hereby given the irrevocable power of attorney (which power is coupled with an interest and is irrevocable) effective upon the occurrence of an Event of Default, to enter upon the Mortgaged Property as the Mortgagor's agent in the Mortgagor's name to perform any and all covenants and agreement to be performed by the Mortgagor as herein provided. Any amounts disbursed or incurred by the Mortgagee pursuant to this paragraph 10 shall become additional Indebtedness of the Mortgagor secured by this Mortgage. Unless the Mortgagor and the Mortgagee agree in writing to other terms of repayment, such amounts shall be immediately due and payable. The Mortgagee shall, at its option, be subrogated to the lien of any mortgage or other lien discharged in whole or in part by the Indebtedness or by the Mortgagee under the provisions hereof, and any such subrogation rights shall be additional and cumulative security for this Mortgage. Nothing contained in this paragraph 10 shall require the Mortgagee to incur any expense or do any act hereunder, and the Mortgagee shall not be liable to the Mortgagor for any damages or claims arising out of action taken by the Mortgagee pursuant to this paragraph 10.

11. Condemnation.

(a) The Mortgagor hereby irrevocably assigns to the Mortgagee any award or payment which becomes payable by reason of any taking of the Mortgaged Property, or any part thereof, whether directly or indirectly or temporarily or permanently, in or by condemnation or other eminent domain proceedings or by reason of sale under threat thereof, or in anticipation of the exercise of the right of condemnation or other eminent domain proceedings (hereinafter called "Taking"). Forthwith upon receipt by Mortgagor of notice of the institution of any proceeding or negotiations for a Taking, the Mortgagor shall give notice thereof to the Mortgagee. The Mortgagee may appear in any such proceedings and participate in any such negotiations and may be represented by counsel.

The Mortgagor, notwithstanding that the Mortgagee may not be a party to any such proceeding, will promptly give to the Mortgagee copies of all notices, pleadings, judgments, determinations, and other papers received by the Mortgagor therein. The Mortgagor will not enter into any agreement permitting or consenting to the Taking of the Mortgaged Property, or any part thereof, or providing for the conveyance thereof in lieu of condemnation, with anyone authorized to acquire the same in condemnation or by eminent domain unless the Mortgagee shall first have consented thereto in writing, which consent will not be unreasonably withheld. All Taking awards shall be adjusted jointly by the Mortgagor and the Mortgagee. All awards payable as a result of a Taking shall be paid to the Mortgagee, which may, at its option, apply them after first deducting the Mortgagee's expenses incurred in the collection thereof, to the payment of the Indebtedness, whether or not due and in such order of application as the Mortgagee may determine, or to the repair or restoration of the Mortgaged Property, in such manner as the Mortgagee may determine. Any application of Taking awards to principal of the Indebtedness shall not extend or postpone the due date of any installments payable under the Indebtedness or change the amount of such installments.

(b) If the Taking involves a taking of any building or other Improvements now or hereafter located on the Property, the Mortgagor shall proceed, with reasonable diligence, to demolish and remove any ruins and complete repair or restoration of the Mortgaged Property as nearly as possible to its size, type and character immediately prior to the Taking, but only to the extent that the condemnation awards are available or adequate to complete such repair or restoration.

(c) The Mortgagor shall promptly reimburse the Mortgagee upon demand for all of the Mortgagee's expense, including reasonable attorneys' fees, incurred in the collection of awards.

12. Information; Books and Records. The Mortgagor will prepare or cause to be prepared at the Mortgagor's expense and deliver to the Mortgagee immediately upon becoming aware of the existence of any condition or event which constitutes, or which after notice or lapse of time or both would constitute, an Event of Default, written notice specifying the nature and period of existence thereof and what action the Mortgagor has taken, is taking or proposes to take with respect thereto. The Mortgagor shall keep and maintain at all times at the Mortgagor's address stated below or at such other place as the Mortgagee may approve in writing, complete and accurate books of accounts and records in sufficient detail to correctly reflect the receipts and expenses in connection with the acquisition, construction, operation and/or sale of the Mortgaged Property and copies of all written contracts, leases and other instruments which affect the Mortgaged Property. Such books, records, contracts, leases and other instruments shall be subject to examination and inspection by the Mortgagee or its representative during ordinary business hours.

13. Indemnification by the Mortgagor. The Mortgagor shall bear all loss, expense (including reasonable attorneys' fees) and damage in connection with, and agrees to indemnify and hold harmless the Mortgagee and its agents, servants and employees (the "Indemnified Parties") from, all claims, demands and judgments made or recovered against the Indemnified Parties because of bodily injuries, including death at any time resulting therefrom, and/or because

of damages to property of the Mortgagee or others (including loss of use) from any cause whatsoever, arising out of, incidental to, or in connection with the construction and/or operation of the Improvements prior to appointment of a receiver or foreclosure of this Mortgage or arising by reason of the presence of hazardous or toxic substances on the Property or in the Improvements or releases thereof from the Mortgaged Property, whether or not due to any act of omission or commission, including negligence of the Mortgagor or the Mortgagor's employee, servants or agents. The Mortgagor's liability hereunder shall not be limited to the extent of insurance carried by or provided by the Mortgagor or subject to any exclusion from coverage in any insurance policy. The obligations of the Mortgagor under this paragraph shall survive the payment of the Note; provided, however, that Mortgagor shall not be required to indemnify, defend, and hold harmless the Indemnified Parties from and against any of the foregoing if such claims, demands, losses, expenses, and/or judgements made or recovered against or suffered by the Indemnified Parties are the result of the gross negligence of intentional misconduct of such Indemnified Parties.

14. Security Interest. This Mortgage shall constitute a security agreement with respect to (and the Mortgagor hereby grants the Mortgagee a security interest in) the tangible personal property and fixtures included in the Mortgaged Property, as more particularly described in Granting Clause I of this Mortgage, and the Revenues and Income, as more particularly described in Granting Clause II. The Mortgagor will from time to time, at the request of the Mortgagee, execute any and all financing statements covering such personal property and fixtures (in a form satisfactory to the Mortgagee) which the Mortgagee may reasonably consider necessary or appropriate to perfect its interest.

15. Events of Default. Each of the following occurrences shall constitute an event of default hereunder (herein called an "Event of Default"):

(a) The Mortgagor shall fail to duly and punctually pay any obligation payable under the Note or Loan Agreement which is not cured within 10 business days after written notice from the Mortgagee.

(b) The Mortgagor shall fail duly to perform or observe any of the covenants or agreements contained in this Mortgage (other than default in the performance, or breach, of any covenant of the Mortgagor in paragraph 1(a) hereof) and such failure shall continue for a period of 60 days after the Mortgagee has given written notice to the Mortgagor specifying such default or breach.

(c) The Mortgagor shall make assignment for the benefit of the Mortgagor's creditors, or shall admit in writing the Mortgagor's inability to pay the Mortgagor's debts as they become due, or shall file a petition in bankruptcy, or shall become or be adjudicated bankrupt or insolvent, however defined, or shall file a petition seeking any reorganization, dissolution, liquidation, arrangement, composition, readjustment or similar relief under any present or future bankruptcy or insolvency statute, law or regulation or shall file an answer admitting to or not contesting the material allegations of petition filed against the Mortgagor in such proceedings, or shall not, within 90 days after the filing of such petition against the Mortgagor, have same dismissed or vacated, or shall seek or consent to or acquiesce in the appointment of any trustee, receiver or liquidator of a material part of the Mortgagor's properties or of the Mortgaged Property or shall not, within 90 days after the

appointment, without the Mortgagor's consent or acquiescence, of a trustee, receiver or liquidator of any material part of the Mortgagor's properties or of the Mortgaged Property, have such appointment vacated.

(d) An Event of Default under the Loan Agreement (as defined in the Loan Agreement) or Note shall have occurred and be continuing or the Mortgagor shall be in default under any other agreement now or hereafter entered into by the Mortgagor and the Mortgagee in connection with the Loan Agreement or the Grant-Eligible Activities contemplated therein after expiration of any applicable cure periods.

16. Remedies. Whenever any Event of Default shall have occurred and be continuing, the Mortgagee may, at its option, exercise one or more of the following rights and remedies (and/or any other rights and remedies available to it):

(a) The Mortgagee may, by written notice to the Mortgagor, declare immediately due and payable all Indebtedness secured by this Mortgage, and the same shall thereupon be immediately due and payable, without further notice or demand.

(b) The Mortgagee shall have and may exercise with respect to all personal property and fixtures which are part of the Mortgaged Property and with respect to the Revenues and Income all the rights and remedies accorded upon default to a secured party under the Uniform Commercial Code, as in effect in Minnesota. If notice to the Mortgagor of the intended disposition of such property is required by law in a particular instance, such notice shall be deemed commercially reasonable if given to the Mortgagor in the manner specified in paragraph 20 at least 10 calendar days prior to the date of intended disposition. The Mortgagor shall pay on demand all costs and expenses incurred by the Mortgagee in exercising such rights and remedies, including without limitation, reasonable attorneys' fees and legal expenses.

(c) The Mortgagee may (and is hereby authorized and empowered to) foreclose this Mortgage by action or advertisement, pursuant to the statutes of Minnesota in such case made and provided, power being expressly granted to sell the Mortgaged Property at public auction and convey the same to the purchaser in fee simple the Mortgagor's interest in the Property at the time of such sale and, out of the proceeds arising from such sale, to pay all Indebtedness secured hereby, and all legal costs and charges of such foreclosure and the maximum attorneys' fees permitted by law, which costs, charges and fees the Mortgagor agree to pay.

THE MORTGAGOR HEREBY CONSENTS TO AND ACKNOWLEDGES THE RIGHT OF THE MORTGAGEE, AT MORTGAGEE'S OPTION, TO ACT TO FORECLOSE THIS MORTGAGE BY ACTION OR ADVERTISEMENT PURSUANT TO MINNESOTA STATUTES, CHAPTER 580 OR 581. A POWER OF SALE BEING HEREIN EXPRESSLY GRANTED WHICH SHALL ALLOW THE MORTGAGEE TO SELL AT PUBLIC AUCTION AFTER SERVICE OF NOTICE THEREOF UPON THE OCCUPANT OF THE MORTGAGED PROPERTY, THE MORTGAGOR ACKNOWLEDGES THAT SUCH SERVICE NEED NOT BE MADE ON THE MORTGAGOR PERSONALLY UNLESS THE MORTGAGOR IS AN OCCUPANT OF THE MORTGAGED PROPERTY AND THAT NO HEARING IS REQUIRED

IN CONNECTION WITH THE SALE. MORTGAGOR EXPRESSLY WAIVES ANY AND ALL RIGHTS TO PRIOR NOTICE OF SALE AND ANY AND ALL RIGHTS TO PRIOR HEARING IN CONNECTION WITH THE SALE. OUT OF THE PROCEEDS OF SUCH SALE THE PRINCIPAL AMOUNT OF THE LOAN SHALL BE PAID TOGETHER WITH ALL LEGAL COSTS AND CHARGES OF FORECLOSURE WITH MAXIMUM ATTORNEYS' FEES PERMITTED BY LAW.

(d) The Mortgagee shall be entitled, without notice and without any showing of waste of the Mortgaged Property, inadequacy of the Mortgaged Property as security for the Indebtedness, or insolvency of the Mortgagor, to the appointment of a receiver of the rents and profits of the Mortgaged Property, including those past due.

(e) The Mortgagee may pursue one or more of the remedies provided for in the Loan Agreement or any other agreement now or hereafter entered into between the Mortgagor and the Mortgagee in connection with the Loan Agreement or the Grant-Eligible Activities contemplated herein.

17. Estoppel Certificate. The Mortgagor agrees at any time and from time to time, upon not less than 15 days' prior notice by the Mortgagee, to execute, acknowledge and deliver, without charge, to the Mortgagee or to any person designated by the Mortgagee, a statement in writing certifying, to the best of its knowledge, that this Mortgage is unmodified (or if there have been modifications, identifying the same by the date thereof and specifying the nature thereof), the principal amount then secured hereby, that the Mortgagor has not received any notice of default or notice of acceleration or foreclosure of this Mortgage (or if the Mortgagor has received such a notice, that it has been revoked, if such be the case), that to the knowledge of the Mortgagor no Event of Default exists hereunder (or if any such Event of Default does exist, specifying the same and stating that the same has been cured, if such be the case), the Mortgagor to the Mortgagor's knowledge have no claims or offsets against the Mortgagee (or if the Mortgagor have any such claims, specifying the same), and the dates to which the principal and the other sums and charges payable by the Mortgagor pursuant to the Loan Agreement have been paid. In the event the Mortgagor fails to execute, acknowledge and deliver such statement within the time above required, the Mortgagor hereby appoint and constitute the Mortgagee as the Mortgagor's attorney-in-fact to do so (which power of attorney is coupled with an interest and is irrevocable), the Mortgagor shall be fully bound by any such statement executed by the Mortgagee on the Mortgagor's behalf to the same extent as if the Mortgagor had executed, acknowledged and delivered the same. The Mortgagee agrees to provide statements of the principal balance payable pursuant to the Note from time to time upon request of the Mortgagor.

18. Forbearance Not a Waiver, Rights and Remedies Cumulative. No delay by the Mortgagee in exercising any right shall be deemed a waiver of or preclude the exercise of such right or remedy, and no waiver by the Mortgagee of any particular provision of this Mortgage shall be deemed effective unless in writing signed by the Mortgagee. All such rights and remedies provided for herein or which the Mortgagee may have otherwise, at law or in equity, shall be distinct, separate and cumulative and may be exercised concurrently, independently or successively in any order whatsoever, and as often as the occasion therefor arises. The Mortgagee's taking action pursuant to paragraph 10 or receiving proceeds, awards or damages pursuant to paragraph 7 or 11 shall not impair any right or remedy available to the Mortgagee

under paragraph 16 hereof. Acceleration of maturity of the Indebtedness, once claimed hereunder by the Mortgagee, may, at the option of Mortgagee, be rescinded by written acknowledgment to that effect by the Mortgagee, but the tender and acceptance of partial payments alone shall not in any way affect or rescind such acceleration of maturity of the Indebtedness.

19. Successors and Assigns Bound; Number; Gender; Agents; Captions. The covenants and agreements herein contained shall bind, and the rights hereunder shall inure to, the respective heirs, legal representatives, successors and assignees of the Mortgagee and the Mortgagor. Wherever used, the singular number shall include the plural, and the plural the singular, and the use of any gender shall apply to all genders. In exercising any rights hereunder or taking any actions provided for herein, the Mortgagee may act through its employees, agents or independent contractor as authorized by Mortgagee. The captions and headings of the paragraphs of this Mortgage are for convenience only and are not to be used to interpret or define the provisions hereof.

20. Notice. Any notice from the Mortgagee to the Mortgagor under this Mortgage shall be deemed to have been given by the Mortgagee and received by the Mortgagor when mailed by certified mail by the Mortgagee or its agents to the Mortgagor at the address set forth in paragraph 26(a) below or at such other address as the Mortgagor may designate in writing to the Mortgagee.

21. Governing Law; Severability. This Mortgage shall be governed by the laws of Minnesota. In the event that any provision or clause of this Mortgage conflicts with applicable law, such conflict shall not affect other provisions of this Mortgage which can be given effect without the conflicting provisions and to this end the provisions of the Mortgage are declared to be severable.

22. Counterparts. This Mortgage may be executed in any number of counterparts, each of which shall be an original, but all of which together shall constitute one instrument.

23. Waiver of Marshaling. The Mortgagor, any party who consents to this Mortgage and any party who now of hereafter acquires a lien on the Mortgaged Property and who has actual or constructive notice of this Mortgage hereby waives any and all right to require the marshaling of assets in connection with the exercise of any of the remedies permitted by applicable law or provided herein and waives any right to have the Mortgaged Property sold in separate tracts pursuant to Minnesota Statutes, Section 580.08.

24. Construction Mortgage. This Mortgage secures an obligation incurred for the construction of an improvement on land and is a construction mortgage.

25. Application of Rents. Notwithstanding anything to the contrary herein, all Rents collected by the Mortgagee or any receiver each month shall be applied as determined by Mortgagor, or as otherwise determined by applicable law.

26. Fixture Filing. From the date of its recording, this Mortgage shall be effective as a financing statement filed as a fixture filing with respect to all goods constituting part of the Mortgaged Property (as more particularly described in Granting Clause I of this Mortgage) which

are or are to become fixtures related to the real estate described herein. For this purpose, the following information is set forth:

(a) Name and Address of the Mortgagor:

Cottage Grove AH I, LLLP
579 Selby Avenue
St. Paul, MN 55102
Attn: Patrick Ostrom

With a copy to: Winthrop & Weinstine, P.A.
225 South Sixth Street, Suite 3500
Minneapolis, Minnesota 55402
Attn: Jeff Drennan

(b) Name and Address of the Mortgagee:

City of Cottage Grove
12800 Ravine Parkway South
Cottage Grove, MN 55016
Attn: City Administrator

With a copy to: Kennedy & Graven, Chartered
150 South Fifth Street, Suite 700
Minneapolis, MN 55402
Attention: Ronald H. Batty

This document covers goods which are or are to become fixtures.

27. Additional Provisions.

(a) The Mortgagee agrees, notwithstanding any other provision herein to the contrary, that in the event of a foreclosure of the Property, that no tenant may be evicted or tenancy terminated (other than for good cause), and the rent on no apartment unit may be increased, for the three year period following foreclosure if such eviction, termination of tenancy or increase in rent would be contrary to the provisions of Section 42(h)(6)(E) of the Internal Revenue Code of 1986, as amended. This Mortgage is expressly subordinate to this provision.

(b) This Mortgage and the Note shall be construed according to the laws of Minnesota.

(c) In the event of any fire or other casualty to the Project or eminent domain proceedings resulting in condemnation of the Project or any part hereof, the Mortgagor shall have the right to rebuild the Project, and to use all available insurance or

condemnation proceeds therefor, provided that no material default then exists under the Loan Documents. If the casualty or condemnation affects only part of the Project and total rebuilding is infeasible, then proceeds may be used for partial rebuilding and partial repayment of the Loan in a manner that provides adequate security to the Mortgagee for repayment of the remaining balance of the Loan.

(d) The Mortgagor will permit the Mortgagee's authorized representatives to enter the Property at all times during normal business hours for the purpose of inspecting the same; provided the Mortgagee shall have no duty to make such inspections and shall not incur any liability or obligation for making or not making any such inspections.

(e) The Mortgagor hereby agrees to defend, indemnify, and hold harmless Mortgagee from and against any and all claims, losses, damages, liabilities, costs, and expenses, including without limitation reasonable attorneys' fees, incurred by the Mortgagee as a result of any hazardous materials or substances which are on the Property in violation of applicable environmental laws at any time during which the Mortgagor shall be in custody or control of the Property. This indemnification shall remain in full force and effect and shall survive the repayment of the Loan and the exercise of any remedy by the Mortgagee hereunder including a foreclosure of the Mortgage or the acceptance of a deed in lieu of foreclosure.

(f) The Mortgagor shall have the right and privilege, but not the obligation, to borrow additional funds and to further encumber the security and collateral given and pledged to the Mortgagee hereunder at any time, from time to time, and as often as the Mortgagor shall determine, but only with the prior written consent of the Mortgagee, which consent shall not be unreasonably withheld, delayed and conditioned, except for the Permitted Encumbrances set forth in Exhibit B.

(g) If the Mortgagor fails to perform any of the covenants and agreements contained in this Mortgage, subject to any applicable cure periods, or if any action or proceeding is commenced which effects the Property or the interest of the Mortgagee therein, or the title thereto, then the Mortgagee, at Mortgagee's option, upon 60 days advance written notice to the Mortgagor, may perform such covenants and agreements to defend against and/or investigate such action or proceeding, and take such other action as the Mortgagee deems necessary to protect the Mortgagee's interest. The Mortgagee shall be the sole judge of the legality, validity and priority of any claim, lien, encumbrance, tax assessment, charge and premium paid by it and of the amount necessary to be paid in satisfaction thereof. The Mortgagee is hereby given the irrevocable power of attorney (which power is coupled with an interest and is irrevocable) effective 60 days after written notice, to enter upon the Property as the Mortgagor's agent in the Mortgagor's name to perform any and all covenants and agreements to be performed by the Mortgagor as herein provided. Any amounts disbursed or incurred by the Mortgagee pursuant to this paragraph shall become additional indebtedness of the Mortgagor secured by this Mortgage. Unless the Mortgagor and the Mortgagee agree in writing to other terms of repayment, such amounts shall be immediately due and payable. The Mortgagee shall, at its option, be subrogated to the lien of any mortgage or other lien discharged in whole or in part by the indebtedness or by the Mortgagee under the provisions hereof, and any such subrogation

rights shall require the Mortgagee to incur any expense or do any act hereunder, and the Mortgagee shall not be liable to the Mortgagor for any damages or claims arising out of action taken by the Mortgagee pursuant to this paragraph.

(h) Mortgagor is indebted to U.S. Bank Trust Company, National Association, as trustee under the terms of a Trust Indenture, dated as of December 1, 2025 (the "Trustee"), in connection with a loan made to Mortgagor (the "Senior Loan") using the proceeds of certain bonds designated (i) Multifamily Housing Revenue Bonds (Hadley Ridge Apartments Project), Series 2025A (the "Series 2025A Bonds"), in the original aggregate principal amount of $32,255,000, (ii) Multifamily Housing Revenue Bonds (Hadley Ridge Apartments Project), Series 2025B (the "Series 2025B Bonds"), in the original aggregate principal amount of $1,300,000, (iii) Taxable Multifamily Housing Revenue Bonds (Hadley Ridge Apartments Project), Series 2025C (the "Series 2025C Bonds"), in the original aggregate principal amount of $9,725,000, and (iv) Multifamily Housing Revenue Bonds (Hadley Ridge Apartments Project), Subordinate Series 2025D (the "Series 2025D Bonds" and, together with the Series 2025A Bonds, the Series 2025B Bonds, and the Series 2025C Bonds, the "Bonds"), in the original aggregate principal amount of $2,000,000. The Senior Loan is secured by that certain Mortgage, Assignment of Leases and Rents, Security Agreement, Fixture Filing, and Environmental Indemnity by Mortgagor in favor of City of Cottage Grove, recorded on December 31, 2025 in the Office of the County Recorder of Washington County, Minnesota as Document No. 4493079, and assigned to Trustee by Assignment of Mortgage, recorded on December 31, 2025 in the Office of the County Recorder of Washington County, Minnesota as Document No. 4493080 (collectively, the "Senior Mortgage").

Notwithstanding anything to the contrary in this Mortgage, the Note or any other loan documents evidencing or securing the Loan, Mortgagor and Mortgagee acknowledge and agree that the Trustee has senior and superior rights under the Senior Mortgage with respect to the Mortgaged Property. This Mortgage is subject and subordinate to the Senior Mortgage and, to the extent any provisions in this Mortgage conflict with or limits or exceeds in any way such senior and superior rights of the Trustee under the Senior Mortgage, such conflicting, limiting or exceeding provisions shall be abated and not enforced by Mortgagee so long as the Senior Mortgage encumbers the Mortgaged Property.

THE MORTGAGOR ACKNOWLEDGES THAT THIS IS A LEGAL DOCUMENT AND THAT BEFORE SIGNING THE MORTGAGOR HAS FULLY UNDERSTOOD THE TERMS AND CONDITIONS HEREIN, AND THE RIGHTS WAIVED HEREBY AND THE EFFECT OF SUCH WAIVER OR HAS SOUGHT LEGAL COUNSEL TO EXPLAIN SUCH TERMS AND CONDITIONS, RIGHTS AND THE WAIVER OF SUCH RIGHTS.

(The remainder of this page is intentionally left blank.)

IN WITNESS WHEREOF, the Mortgagor has caused this Mortgage to be duly executed as of the day and year first above written.

COTTAGE GROVE AH I, LLLP,
a Minnesota limited liability limited partnership

By: Cottage Grove AH GP I, LLC,
a Minnesota limited liability company
Its: General Partner

By: _____
Name: Michael Lavin
Title: President

STATE OF MINNESOTA)
) ss.
COUNTY OF _____)

The foregoing instrument was executed before me this _____ day of _____, 2026, by Michael Lavin, the President of Cottage Grove AH GP I, LLC, a Minnesota limited liability company, the General Partner of Cottage Grove AH I, LLLP, a Minnesota limited liability limited partnership, on behalf of the limited liability limited partnership.

_____
Notary Public

This document drafted by:

Kennedy & Graven, Chartered (RHB)
150 South Fifth Street
Minneapolis, MN 55402-1299

EXHIBIT A

LEGAL DESCRIPTION

Lot 1, Block 1, Preserve at Prairie Dunes, Washington County, Minnesota

EXHIBIT B

PERMITTED ENCUMBRANCES

1. Resolution No. 2022-158 Approving the Final Plat named The Preserve at Prairie Dunes filed February 1, 2023, as Document No. 4398022.

2. Drainage and utility easements shown on the plat of Preserve at Prairie Dunes filed May 16, 2023, as Document No. 4405744.

3. Development Agreement, dated November 19, 2025, filed December 31, 2025, as Document No. 4493074.

4. Real Estate Equities Encroachment & Maintenance Agreement Relating to Developer Improvements on Hadley Ridge in the City of Cottage Grove, Washington County, Minnesota, dated November 19, 2025, filed December 31, 2025, as Document No. 4493075.

5. Permanent Hydrant Access Easement, dated November 19, 2025, filed December 31, 2025, as Document No.4493076.

6. Stormwater Management Facilities Agreement, dated November 19, 2025, filed December 31, 2025, as Document No. 4493077.

7. Regulatory Agreement, dated December 1, 2025, filed December 31, 2025, as Document No. 4493078.

8. Mortgage, Assignment of Leases and Rents, Security Agreement, Fixture Filing, and Environmental Indemnity, by Cottage Grove AH I, LLLP, a Minnesota limited liability limited partnership, as mortgagor, to and for the benefit of the City of Cottage Grove, as mortgagee, dated December 1, 2025, recorded on December 31, 2025 as Document No. 4493079, securing indebtedness in the original principal amount of $45,280,000.00.

   As assigned by Assignment of Mortgage, dated December 1, 2025, recorded on December 31, 2025, as Document No. 4493080.

9. Declaration of Restrictive Covenants, dated December 30, 2025, filed December 31, 2025, as Document No. 4493081.

10. Mortgage, Security Agreement, and Fixture Financing Statement, by Cottage Grove AH I, LLLP, a Minnesota limited liability limited partnership, as mortgagor, to and for the benefit of the City of Cottage Grove, as mortgagee, dated December 30, 2025, recorded on December 31, 2025 as Document No. 4493082, securing indebtedness in the original principal amount of $916,000.00.

11. Declaration of Land Use Restrictive Covenants for Low-Income Housing Tax Credits, dated December 30, 2025, filed December 31, 2025, as Document No. 4493083.

12. Agreement Regarding Restriction on Sale of Units, dated October 30, 2025, filed December 31, 2025, as Document No. 4493084.

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City Council Action Request

7.J.

Meeting Date	3/18/2026
Department	Economic Development
Agenda Category	Action Item
Title	Professional Services Agreement with Kutak Rock LLP for EDA Legal Services
Staff Recommendation	Motion to approve the Professional Services Agreement with Kutak Rock LLP for EDA Legal Services
Budget Implication	Legal services as needed for project legal review.

Attachments

1.	PSA Kutak Rock LLP Memo
2.	Cottage Grove Kutak Rock LLP Legal Services Agreement (3-6-26)

To:	Honorable Mayor and City Council Jennifer Levitt, City Administrator
From:	Nate Carlson, Economic Development Manager
Date:	March 18, 2026
Subject:	Professional Services Agreement with Kutak Rock LLP for EDA Legal Services

Introduction/Background

The Cottage Grove Economic Development Authority (EDA) reviews and approves development incentives, which require legal counsel services. City staff acknowledges that these projects can be legally complex and require a responsive legal team. Kutak Rock LLP provides the EDA and City with a team of legal experts who are prepared to assist throughout project review. Examples of legal services include the following: Tax Increment Financing, Tax Abatement, state and federal grants, and loan document development. A professional services agreement has been prepared for Council approval.

The City recognizes and appreciates the long-term relationship with Kennedy and Graven's legal team.

Recommendation

Move approval of the professional services agreement with Kutak Rock LLP.

Agreement Between
the City of Cottage Grove, Minnesota and Kutak Rock LLP

This Professional Services Agreement ("Agreement") between the City of Cottage Grove, Minnesota, a political subdivision of the State of Minnesota, (including the Economic Development Authority of Cottage Grove, "CITY") and Kutak Rock LLP, 60 South 6th St Suite 3400, Minneapolis, MN 55402 ("ATTORNEYS"). In consideration of the mutual terms and conditions hereinafter set forth, the CITY and ATTORNEYS agree as follows:

1. Scope of Services. The CITY hereby retains the ATTORNEYS to provide legal services to the CITY, at the direction of designated CITY staff, as public finance counsel and with respect to development and redevelopment projects, including, but not limited to, tax increment financing ("TIF") and other financing tools and programs of the CITY. The scope of any specific project will be agreed to by the parties in advance.

2. Cost/Payment.

A. The CITY will pay the ATTORNEYS for legal services under this Agreement, which are not passed through to a private party or subject to clause C, below, at the following rates in 2026: $400 per hour for partners, $275 per hour for associate attorneys, and $210 per hour for paralegal time. Rates may be adjusted annually and ATTORNEYS shall notify CITY of any adjustment to hourly rates at least thirty (30) days prior to the effective date of any adjustment. Any fees of ATTORNEYS that will be paid by a private party will be billed at ATTORNEYS' normal recovery or billing rate. ATTORNEYS shall bill time in increments of one-tenth of an hour. The ATTORNEYS shall submit an itemized invoice to the CITY on a monthly basis or at such other intervals as reasonably appropriate and acceptable to staff of the CITY.

B. Upon receipt of the invoice and review of the charges by the appropriate staff, payment shall be made by the CITY to the ATTORNEYS within thirty-five (35) days following the receipt of the invoice.

C. Fees related to a TIF, abatement or housing improvement area ("HIA") bond issue shall be arrived at on a negotiated fixed fee basis plus costs invoiced upon the closing of the bond issue. In the event the bond issue does not proceed, ATTORNEYS shall be compensated at the hourly rates set forth in clause A, above.

3. Independent Contractor. It is agreed by the parties that at all times and for all purposes within the scope of this Agreement, the relationship of the ATTORNEYS to the CITY is that of an independent contractor and not that of employee, and that the ATTORNEYS shall be entitled to none of the rights, privileges or benefits of the CITY employees.

4. Insurance. It is the responsibility of the ATTORNEYS to purchase and maintain such insurance as will protect the ATTORNEYS from claims which may arise out of or result from legal services provided under the terms of this Agreement. During the performance of

the services under this Agreement, ATTORNEYS shall maintain Professional Liability/Errors and Omissions Coverage, which shall be no less than $1,500,000 per claim and $2,000,000 aggregate. Nothing in this Agreement shall constitute a waiver by the CITY of any statutory or common law immunities, limits or exceptions to liability. ATTORNEYS shall furnish the CITY with certificates of insurance upon request and shall include a provision that such insurance shall not be canceled without written notice to the CITY.

5. Term. The term of this Agreement shall commence when the Agreement is fully executed by both parties and shall continue until terminated pursuant to Section 6 herein.

6. Termination. CITY may terminate this Agreement at any time by giving written notice to the ATTORNEYS. In the event of termination, the ATTORNEYS will be paid by the CITY for all services provided in a satisfactory and timely manner up to the date of termination and ATTORNEYS shall promptly transfer to the CITY all work product in a method directed by the CITY.

7. Audit. Until the expiration of six (6) years after the furnishing of services pursuant to this Agreement, the ATTORNEYS, upon written request, shall make available to the CITY, the State Auditor, or the CITY'S ultimate funding source, a copy of this Agreement, and the books, documents, records, and accounting procedures and practices of the ATTORNEYS relating to this Agreement.

8. Data Practices. All data collected, created, received, maintained or disseminated for any purpose in the course of the ATTORNEYS' performance of this Agreement is governed by the Minnesota Government Data Practices Act, Minn. Stat. Ch. 13 ("Act"), or any other applicable state statutes, any state rules adopted to implement the Act and statutes, as well as federal statutes and regulations on data privacy.

9. Entire Agreement. This Agreement shall constitute the entire agreement between the parties and shall supersede all prior oral or written negotiations.

10. Notices. Any notice required under this Agreement shall be communicated to the following addresses:

If to CITY:
City of Cottage Grove
12800 Ravine Parkway South
Cottage Grove, MN 55016
Attention: City Administrator

Or emailed: jlevitt@cottagegrovemn.gov

If to ATTORNEYS:
Kutak Rock LLP
60 South 6th Street, Suite 3400
Minneapolis, MN 55402
Attention: Jenny Boulton

Or emailed: Jenny.Boulton@KutakRock.com

11. Subcontracts. ATTORNEYS shall not enter into subcontracts for any of the services provided for in this Agreement without the express written consent of the CITY.

12. Assignment. This Agreement is not assignable without the mutual written agreement of the parties.

13. Waiver. A waiver by either CITY or ATTORNEYS of any breach of this Agreement shall be in writing. Such a waiver shall not affect the waiving party's rights with respect to any other or further breach.

14. Governing Law. This Agreement shall be construed in accordance with the laws of the State of Minnesota and any action must be venued in Washington County District Court.

15. Amendments. Any modification or amendment to this Agreement shall require a written agreement signed by both parties.

16. Severability. If any term of this Agreement is found to be void or invalid, such invalidity shall not affect the remaining terms of this Agreement, which shall continue in full force and effect.

WHEREFORE, the parties hereto have executed this Agreement on the last date written below.

CITY OF COTTAGE GROVE

BY: _____

Myron Bailey, Mayor

BY:_____

Tamara Anderson, City Clerk

KUTAK ROCK LLP

BY: _____

ITS:_____

Date: _____

Employer Identification Number: 47-0597598

City Council Action Request

7.K.

Meeting Date	3/18/2026
Department	Convention and Visitors Bureau
Agenda Category	Action Item
Title	2025 Convention and Visitors Bureau Annual Report
Staff Recommendation	Approve the 2025 Cottage Grove Convention and Visitors Bureau Annual Report.
Budget Implication	N/A

Attachments

1.	2025 Annual Report Memo
2.	2025 CVB Annual Report

Cottage Grove
Where Pride and Prosperity Meet

To: Honorable Mayor and City Council
Jennifer Levitt, City Administrator

From: Phil Jents, Communications Manager

Date: February 27, 2026

Subject: 2025 CVB Annual Report

Background

According to the bylaws for the Cottage Grove Convention and Visitors Bureau (CVB), each year the CVB is required to submit a written Annual Report to the City Council no later than 2nd Quarter of the following year. The Annual Report provides an overview of highlights, activities, and the budget from the 2025 calendar year.

The 2025 CVB Annual Report was presented at the February 24, 2026 CVB meeting.

Recommendation

Approve the 2025 Cottage Grove Convention and Visitors Bureau Annual Report.

Attachment

2025 CVB Annual Report.



Cottage Grove Convention & Visitors Bureau

2025 Annual Report

12800 Ravine Parkway South
Cottage Grove, MN 55016
651-458-2800 | DiscoverCottageGrove.com

DISCOVER
COTTAGE GROVE



Welcome

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A Message From The

CHAIRMAN OF THE BOARD

Dear Friends, Partners and Visitors,

As Chairman of the Board of the Cottage Grove Convention and Visitor Bureau (CVB), I am proud to reflect on a year marked by progress, purpose, and growing momentum. In 2025, the CVB reaffirmed its commitment to promoting Cottage Grove as a welcoming, vibrant destination that celebrates our community's natural beauty, rich amenities, and exceptional quality of life.

Our mission is to support local economic vitality by attracting visitors, encouraging exploration, and enhancing the overall experience of those who live, work, and play in Cottage Grove. This past year, we laid the foundation for long-term growth through focused planning, expanded partnerships, and strategic investments in tourism development.

Looking ahead, our efforts will continue to center on promoting Cottage Grove's unique story. We are building stronger connections with local businesses, developing compelling marketing campaigns, and supporting events and initiatives that showcase everything our city has to offer. From our scenic parks and trail systems to our family-friendly events and growing hospitality sector, the future of tourism in Cottage Grove is full of promise.

We are grateful for the collaboration of our community partners, the dedication of our board and staff, and the ongoing support of our residents. Together, we are creating lasting impact and driving Cottage Grove forward as a destination of choice in Minnesota.

Thank you for your continued trust and enthusiasm.

Sincerely,

Justin Olsen
Chairman of the Board
Cottage Grove Convention and Visitor Bureau









Live. Work. Play. Visit.

Nestled between Wisconsin and the Twin Cities Metro, Cottage Grove is a haven for those seeking an active lifestyle and a deep connection with nature. With its extensive network of parks and trails, it beckons residents and visitors alike to explore and unwind amidst lush greenery and scenic landscapes. From sprawling urban parks teeming with recreational facilities to winding trails that meander through picturesque woodlands and along tranquil rivers, there's something for every outdoor enthusiast to enjoy. Families gather for picnics, friends engage in friendly games, and fitness enthusiasts jog or cycle along the paths, invigorated by the fresh air and revitalizing surroundings. Amidst the hustle and bustle of city living, these green oases provide a sanctuary for rejuvenation, reflection, and connection with the natural world, embodying the perfect balance between urban excitement and natural tranquility.

Whether you're here for a long time or just a fun time, Cottage Grove offers ample opportunities for housing, work, and play. Not only are we a safe and prosperous community, we pride ourselves in being a warm and welcoming place for residents and visitors to live, work, play, and visit.



MEET OUR TEAM

The Convention and Visitors Bureau (CVB) markets and promotes Cottage Grove as a year-round visitor destination, working in partnership with industries, corporate partners, state partners, city departments, and regional destination marketing organizations. The CVB serves as the primary marketing organization responsible for executing promotional programs to ensure positive economic impact in Cottage Grove through steady growth of the travel industry.

Mission

The CVB's mission is to promote Cottage Grove as a premier destination for leisure travelers, weddings, and outdoor enthusiasts, a recognized and successful host city for meetings and conventions, and a prominent and respected venue for sporting events.

To learn more about the CVB's activities, please visit our website or sign up for our newsletter.

Board Members

Justin Olsen, Chair

Laurie Levine, Director

Tony Khambata, Director

Erik Olsen, Director

Sarah Grecula, Director

Chris Reese, Director

Michael Haatvedt, Director

Staff Members

Jennifer Levitt, City Administrator

Jaime Mann, Assistant to the City Administrator

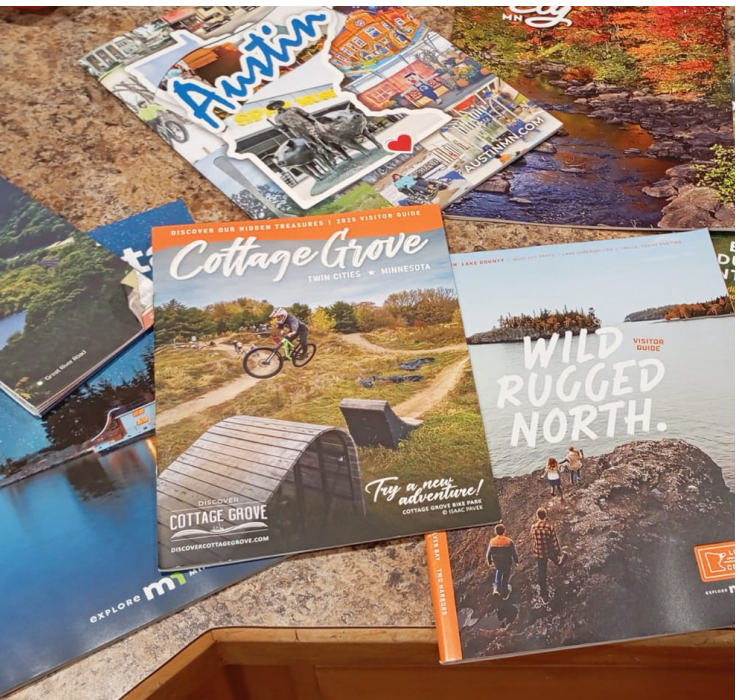
Phil Jents, Communications Manager

Courtney Pirsig, Communications Specialist

Alexa Anderson, Communications Specialist







Key Accomplishments

2025 VISITOR GUIDE

The 20-page guide represents the opportunities for visitors and travelers alike to discover our unique city. From lodging facilities, outdoor parks and recreation, events, meeting venues and more, there's something inside for everyone. Flipping through the pages is truly a reminder of what people who live here already know: The city is a special place to live, work and play.

By the Numbers

- This is the fourth annual publication for Cottage Grove.
- This guide boasts 20 pages full of amenities, activities and information about Cottage Grove.
- There are 6 total ads in this publication.
- $3,275 in revenue was collected from advertising dollars through this publication.

In Addition to the Numbers

- This publication was created entirely in-house, providing massive cost savings to the CVB by not hiring an outside organization.
- There is a digital flipbook of the guide hosted on DiscoverCottageGrove.com, which is an elevated version of the printed piece. This includes links and QR codes driving traffic to local businesses and advertisers.

Where Can I Find It?

- Mall of America, Welcome Centers and Visitor Centers, and mail by request.
- City Hall, Cottage Grove Ice Arena, and other local locations.
- To see the digital flipbook, visit our website: DiscoverCottageGrove.com/Visitors-Guide

7,000
Copies Printed

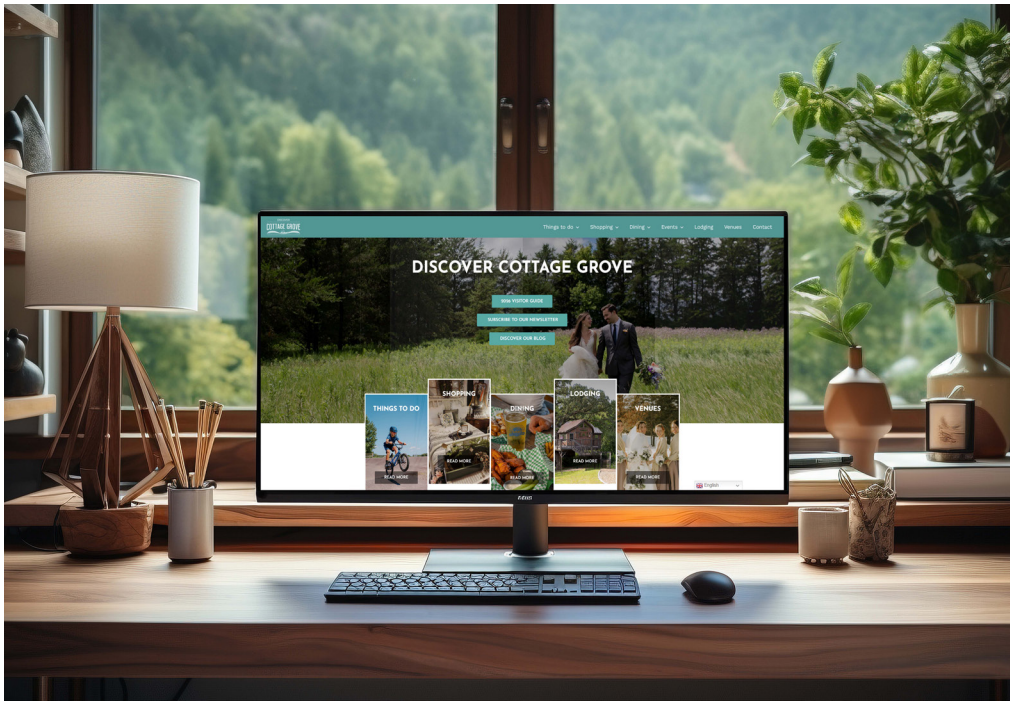
6
Paid Advertisers

$3,275
Revenue Collected

Key Accomplishments

WEBSITE

The CVB's most valuable marketing asset is our website, **DiscoverCottageGrove.com**. Here is where residents and visitors can access the Visitor Guide, our events calendar, and a list of suggestions for dining, lodging, entertainment, and more.



Users by Month

January – 1,016 ↑ 23%
February – 855 ↓ 50%
March – 1,286 ↓ 1%
April – 1,237 ↑ 48%
May – 1,558 ↓ 44%
June – 2,043 ↓ 79%
July – 5,833 ↑ 192%
August – 7,082 ↑ 343%
September – 7,852 ↑ 45%
October – 1,194 ↓ 34%
November – 1,411 ↓ 19%
December – 1,506 ↓ 40%

Most Viewed Pages

1. Food Truck Festival
2. Patio Week (calendar event)
3. Homepage
3. Fourth of July (calendar event)
4. Calendar

Total Users (YOY)

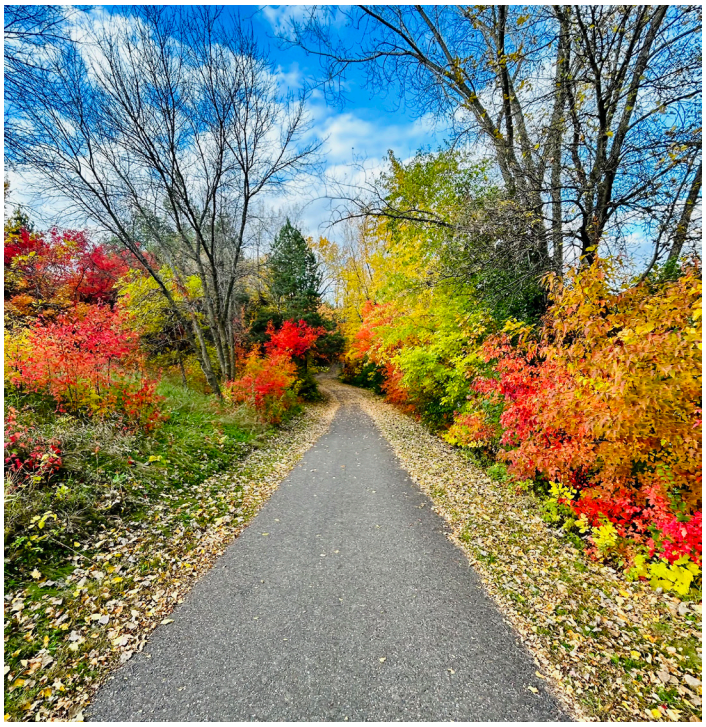
		First user prim...Channel Group)	↓ Total users	New users	Returning users	Average engagement time per active user
☐		Total	31,824 100% of total	31,240 100% of total	2,808 100% of total	21s Avg 0%
☐	1	Organic Search	12,680 (39.84%)	12,708 (40.68%)	2,142 (76.28%)	35s
☐	2	Paid Social	11,669 (36.67%)	11,559 (37%)	224 (7.98%)	1s
☐	3	Direct	5,857 (18.4%)	5,369 (17.19%)	366 (13.03%)	28s
☐	4	Organic Social	1,145 (3.6%)	1,136 (3.64%)	28 (1%)	11s
☐	5	Referral	390 (1.23%)	386 (1.24%)	47 (1.67%)	46s
☐	6	Unassigned	67 (0.21%)	67 (0.21%)	1 (0.04%)	10s
☐	7	Email	11 (0.03%)	11 (0.04%)	0 (0%)	12s
☐	8	Paid Other	4 (0.01%)	4 (0.01%)	0 (0%)	5s

Organic: Visitors landing on your website due to unpaid search results. (SEO, keywords, etc.)
Direct: Visitors who arrive at your site by typing your website URL directly into their browser's address bar.
Referral: Visitors who land on your website from sites other than the major search engines. (Facebook, Google, Private Domains, etc.)











Key Accomplishments

PHOTO & VIDEO

This year, we're celebrating the authentic spirit of Cottage Grove by featuring photography sourced directly from our residents. By leveraging community programs and photo contests, we've gathered a stunning collection of local imagery at little to no cost. We also continued our partnership with TrueLens Media, (formerly known as the South Washington County Telecommunications Commission), to produce 10 videos that capture the city's most vibrant events and activities.

Key Accomplishments

SOCIAL MEDIA

Effective social media plays a key role in building our brand and bringing people to Cottage Grove. The interactive and visual nature of our social media presence provides powerful opportunities for people to engage and experience Cottage Grove through video and photos. Giving potential visitors a first-hand look at the city's restaurants, parks, recreational opportunities, wedding venues and other offerings has been incredibly effective. We've reached thousands of people and shown them all the city has to offer.

Ad Campaigns

Not only does social media build our brand, but effective social media ad campaigns reach new users, target specific audiences, increases brand visibility, and helps to increase sign-ups and lead generation. An advantage of marketing through social media as opposed to "traditional" print advertising is the ability to allow for consumer interaction. Not only can people click where to go, they can also "like" and "share" without any additional cost to the producer.







*Food Truck Festival Budget

Boosted Ads

Strawberry Fest
(Facebook Post)
34.8K Impressions
$199.96 Spent

Patio Week
(Facebook Post)
42K Impressions
$199.78 Spent

Food Truck Festival
(Facebook Post)
395.9K Impressions
$1,942.59 Spent





Top Performing Campaign

Food Truck Festival
Vendor Lineup Announcement
(Facebook Post)

Link Clicks: 7,386

Top Performing Video

Food Truck Festival
One Month Away Reminder
(Facebook Video)

Link Clicks: 11,397

Facebook Stats

January 1 - December 31, 2025

268 Posts	↑ 6%
543,056 Post Reach	↑ 146%
4.5% Engagement Rate	↑ 22%
971,290 Impressions	N/A
4,772 Followers	↑ 14%

Instagram Stats

January 1 - December 31, 2025

194 Posts	↓ 2%
12 Reels/Videos	
34,600 Post Reach	↑ 6%
2.7% Engagement Rate	↓ 3%
1,094 Followers	↑ 20%

Twitter (X) Stats

January 1 - December 31, 2025

7 Tweets	↓ 96%
81 Followers	↓ 1%

YouTube Stats

The Madison
313 views

Food Truck Festival
124 views

The Holidays Shine Bright in Cottage Grove
86 views

Halloween in Cottage Grove
54 views

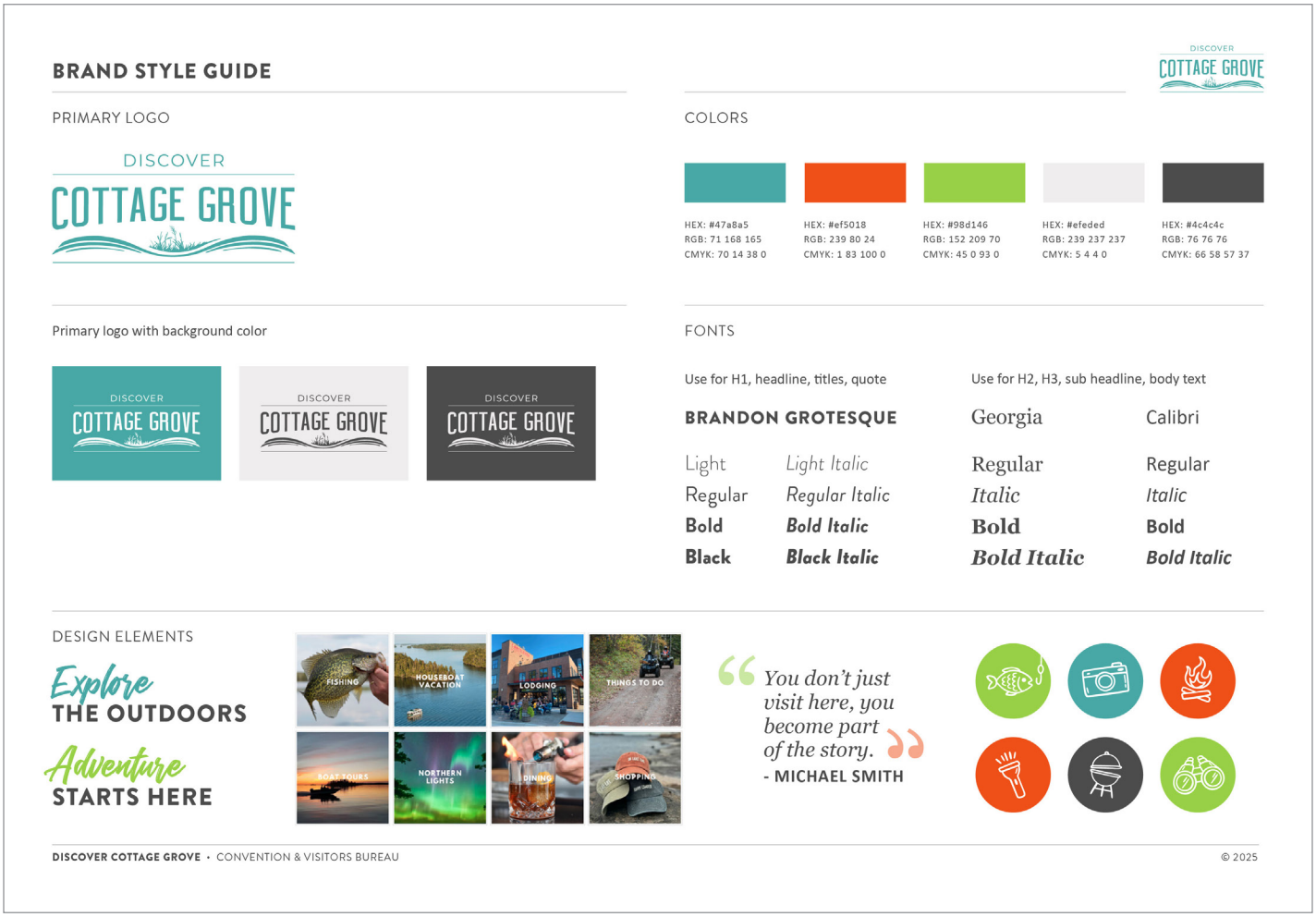
Thrive in the Grove: Spring Edition
43 views

Thrive in the Grove: Summer Edition
32 views

Public Relations

OUR BRAND

In 2025, Discover Cottage Grove formalized its first comprehensive brand style guide. This wasn't a rebranding, but rather a way to codify our existing identity. By defining these visual standards, we ensure every piece of communication – both digital and print – stays consistent and true to the authentic brand our visitors recognize.



MARKETING & COMMUNICATIONS

Effectively marketing the city and showcasing it as a recreation, retail and meeting destination requires a multi-faceted approach. We use strategic practices to promote our community – such as the visitor guide, partnerships, paid media, blog posts, monthly newsletter, community engagement, sponsorships, and more.







Public Relations

PAID MEDIA

Minnesota Monthly – $1,860

- Run of Site Advertising
- E-Newsletter Featured Partner

Have Fun Biking Magazine – $2,880

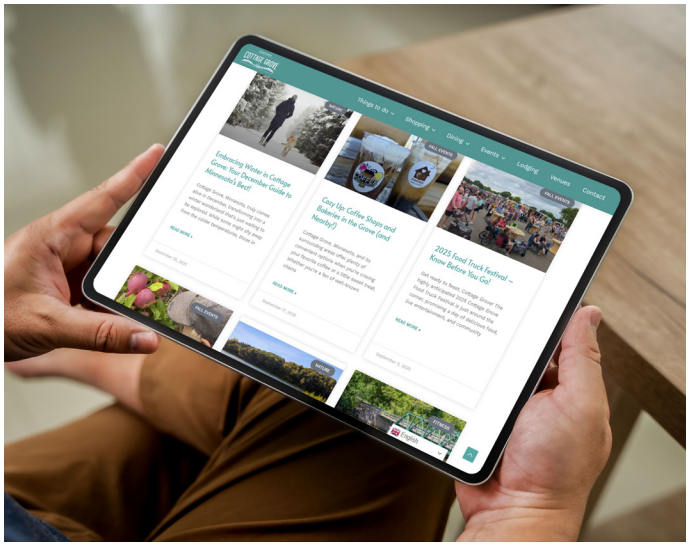
- 2025 Bike/Hike Guide Ad



13 BLOG POSTS

Discover Cottage Grove Blog

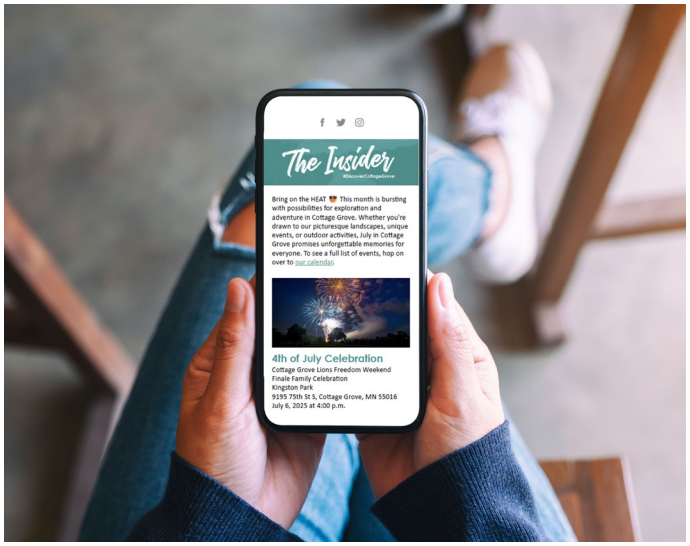
- The Best Wedding Venues in Cottage Grove, MN
- Family Adventure Awaits: Top Kid-Friendly Activities in Cottage Grove!
- 2025 Food Truck Festival – Know Before You Go!
- Cozy Up: Coffee Shops and Bakeries in the Grove (and Nearby!)
- Embracing Winter in Cottage Grove: Your December Guide to Minnesota's Best!
- ... and more!



12 NEWSLETTERS

The Insider | Monthly E-Newsletter

Our monthly E-newsletter, The Insider, delivers a curated blend of local events, classes, tips, tricks, helpful links, ideas, and more. Each month is full of seasonal happenings with a direct link to our Discover Cottage Grove event calendar. You can also access our social media platforms and visitor guide. Your ultimate, digital guide to Cottage Grove. The Insider currently has 4,037 subscribers.



SWAG

In 2025, we handed out a few different swag items: branded luggage tags, cups, drawstring bags, beach balls, flex pencils, and visitor guides.

Public Relations

COMMUNITY ENGAGEMENT

14,000 - 16,000
Attendance

34
Food Trucks

10
Sponsors

30
Marketplace Booths











Food Truck Festival

The annual Discover Cottage Grove Food Truck Festival was a huge success! Guests enjoyed a variety of food trucks, live music, a beer garden, marketplace, free admission, kids activities, and more.

Expenses Summary

Site $10,625.79
Entertainment $3,301.88
Kids Activities $1,406.44
Other..... $3,470.00
Total $18,804.11

Income Summary

Food Trucks & Marketplace $17,000.00
Sponsorships $6,744.94
Total $23,744.94

Profit & Loss Summary

Total Income $23,744.94
Total Expenses $18,804.11
Profit $4,940.83

Public Relations

COMMUNITY ENGAGEMENT



Cottage Grove Strawberry Fest

We promoted the Cottage Grove Strawberry Fest to bring families together for the annual, four-day event. The festival is run completely by volunteers with no admission fee or cost to watch the main stage events. We are continuous supporters of Cottage Grove Strawberry Fest and have a DCG booth in the marketplace area.



Strawberry Fest Coloring Contest

New this year, we hosted a coloring contest – a fresh strategic initiative designed to deepen community roots and spark early excitement for Strawberry Fest. We received 112 entries, and the finalists were recognized at the event. This activity is just a small glimpse into what Discover Cottage Grove can do for future collaborations.



Patio Week

In July, Discover Cottage Grove launched a new program called “Patio Week” – designed to showcase the diverse outdoor dining scene in Cottage Grove. Throughout the week, the event featured a “Patio Lineup” highlighting local favorites. Each day focused on a different venue or theme, featuring deals, specials, and more.



Hometown Holiday

This community event has quickly become a signature winter tradition, transforming City Hall into a festive wonderland that captures the heart of our small-town charm. To ensure the success and growth of this event, Discover Cottage Grove took an active role in its promotion, targeting not only residents, but neighboring visitors as well.

Financial Resources

BUDGET HIGHLIGHTS

Revenue

Budgeted Revenue = $100,300.00

Total 2025 Revenue = $102,020.88

Revenue Breakdown

Lodging Tax = $74,314.44

Other Revenue = $27,706.44

Overall

- Budgeted: $100,300.00
- Actual: $102,020.88

Note: The DOR collected a one-time fee of $5,578.59 and an ongoing administration fee of ~1% ($321.38) for a total of $5,899.97 since the beginning of DOR collections.

Expenses

Budgeted Expenses = $104,131.25

Total 2025 Expenses = $96,523.43

Summary

2025	Budget	Actual
Revenue	$100,300.00	$102,020.88
Expense	$104,131.25	$96,523.43



Strategic Plan

LOOKING AHEAD

As we look toward the coming year, Discover Cottage Grove is committed to evolving alongside our visitors. Our 2026 roadmap is defined by a shift toward connectivity, sustainability, and identity. We aren't just looking to increase numbers; we are looking to deepen the impact of every visit and ensure our growth benefits the entire community.

Cultivating a Modern Tourism Culture

Following our partnership with Chandlerthinks, we continue to follow our comprehensive strategic roadmap. This data-driven framework guides our decision-making and resource allocation, ensuring that every effort fulfills our mandate: promoting Cottage Grove to a wider audience while building a destination our residents are proud of.

Marketing Initiatives

- Premier Digital Gateway: Rebuild the website experience to be an inspirational, user-friendly hub for trip planning.
- Digital Campaigns: Launch targeted ad sets to capture high-potential visitors from the Minneapolis-St. Paul metro.
- Data-Driven Engagement: Build a robust visitor database for email marketing and to measure tourism initiatives.
- Dynamic Social Presence: Maintain an engaging social media calendar with regular posts, photos, and videos.

Partnerships & Experience Development

- Package Existing Assets: Create tourism packages by partnering with local businesses and nearby communities.
- Develop New Attractions: Explore the possibility of adding a permanent photo op station or "World's Largest _____."
- Utilize Social Media Influencers: Partner with high-follower influencers to tell our story through their lens.
- Annual Wedding Fair: Organize a wedding fair to showcase Cottage Grove as a premier wedding destination.
- Sponsor or attend community events that are outside of the Cottage Grove area. (ex. Lumberjack Days, Hockey Day Minnesota, Woodbury Days, Heritage Days, etc.)

Community & Stakeholder Engagement

- Engage with Stakeholders: Gather input and ideas from tourism stakeholders to develop new programs and events.
- Tourism Summit: Host an annual tourism summit that encourages business networking and skill building.
- Local Spotlights: A new social media series focused on the faces and stories behind our favorite local attractions.









Cottage Grove Convention & Visitors Bureau

12800 Ravine Parkway South
Cottage Grove, MN 55016
651-458-2800 | DiscoverCottageGrove.com

DISCOVER
COTTAGE GROVE

City Council Action Request

7.L.

Meeting Date	3/18/2026
Department	Parks and Recreation
Agenda Category	Action Item
Title	Mississippi Dunes Fishing Pier Purchase
Staff Recommendation	Authorize purchase of Mississippi Dunes Park fishing pier from Hewitt Docks for $37,428 and assembly and installation from Diddy's Docks for $16,599.
Budget Implication	Funds from MN DNR Grant with a potential 10% match from Park Trust Fund.

Attachments

1.	Memo-Fishing Pier Purchase
2.	Pier Spec Sheet final
3.	Hewitt Quote
4.	Estimate_1340_from_Diddys_Docks
5.	Boardsafe Docs 2nd

To: Honorable Mayor and City Council
Jennifer Levitt, City Administrator

From: Zac Dockter, Parks and Recreation Director
Brenda Malinowski, Finance Director

Date: March 5, 2026

Subject: Mississippi Dunes Fishing Pier Purchase

Introduction/Background
By Council action on February 19, 2025, the City entered into a grant agreement with the Minnesota Department of Natural Resources (MN DNR) for the purchase of a fishing pier at Mississippi Dunes Park. The purchase was delayed while staff coordinated proper public access options. Staff has created both temporary and permanent access options that allow for the purchase and installation of the pier at this time.

The agreement states that the MN DNR will pay for all product and installation costs of the fishing pier up to $70,000 (pier cost is estimated at $50,000). The City is responsible for constructing a concrete or asphalt footing to connect the pier to the shore while also bringing an accessible walking path to the fishing pier. Staff is not concerned with these requirements and can perform all or majority of work with in-house labor. It is projected that this agreement requires less than a 10% match of City funds. The 10% match will be funded with the Park Trust Fund.

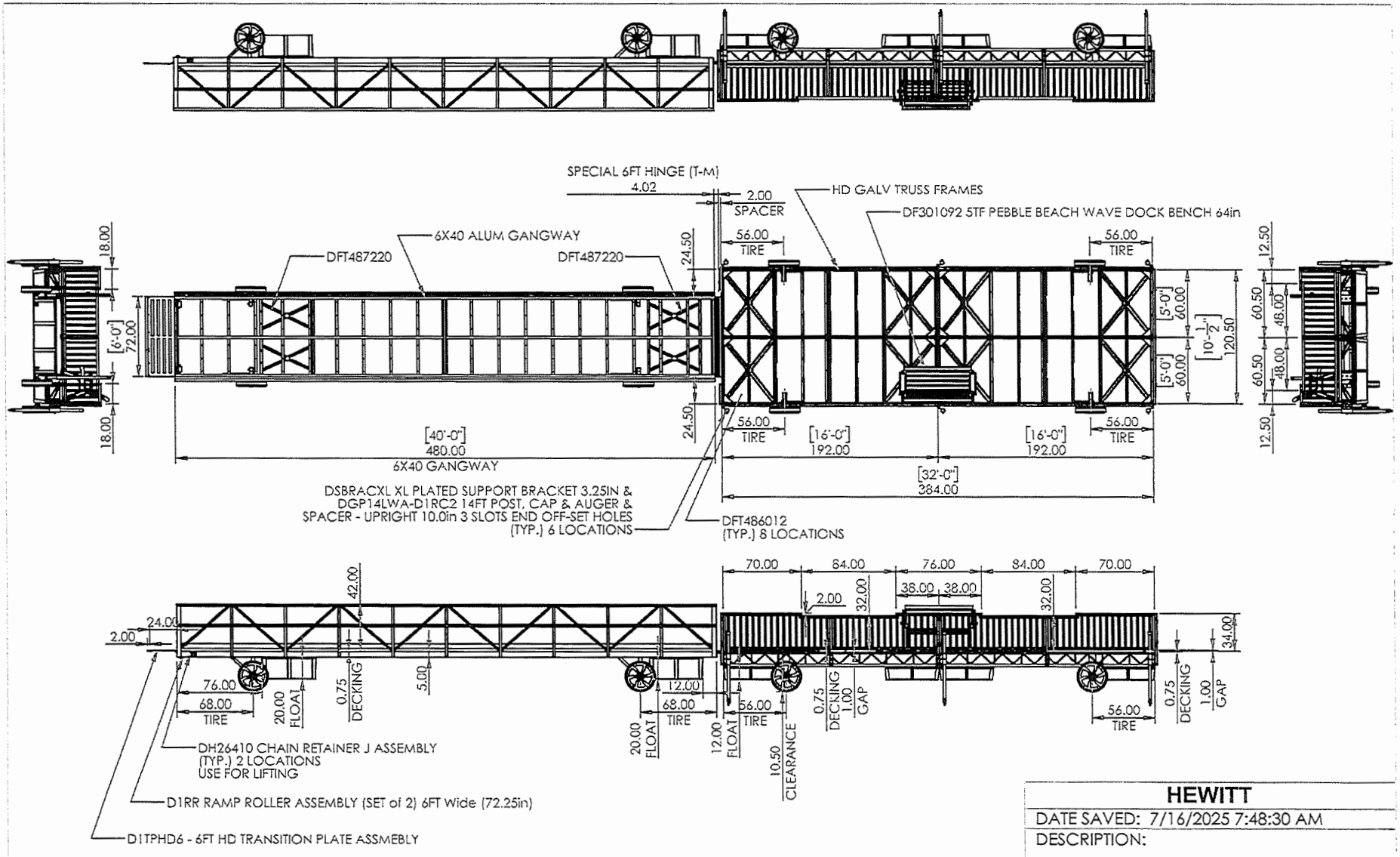
The City received two quotes from MN DNR approved vendors for the purchase of the pier. The results of the quotes are as follows:

Hewitt Docks & Diddy's Docks	$54,027.00
Boardsafe Docks	$116,067.33

Staff is recommending purchase of the fishing pier from the low quote from Hewitt Docks and Diddy's Docks. Hewitt Docks is the manufacturer of the pier while Diddy's Docks is responsible for assembly and installation. Upon City Council approval, purchase orders will be issued as follows:

Hewitt Docks	$37,428
Diddy's Docks	$16,599

Staff Recommendation
Authorize purchase of Mississippi Dunes Park fishing pier from Hewitt Docks for $37,428 and assembly and installation from Diddy's Docks for $16,599.



HEWITT

PLEASE SIGN BELOW IF ALL DIMESIONS ARE CORRECT
AND MEET YOUR REQUIREMENTS

SIGNED BY _____ DATE _____

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HEWITT

DATE SAVED: 7/16/2025 7:48:30 AM

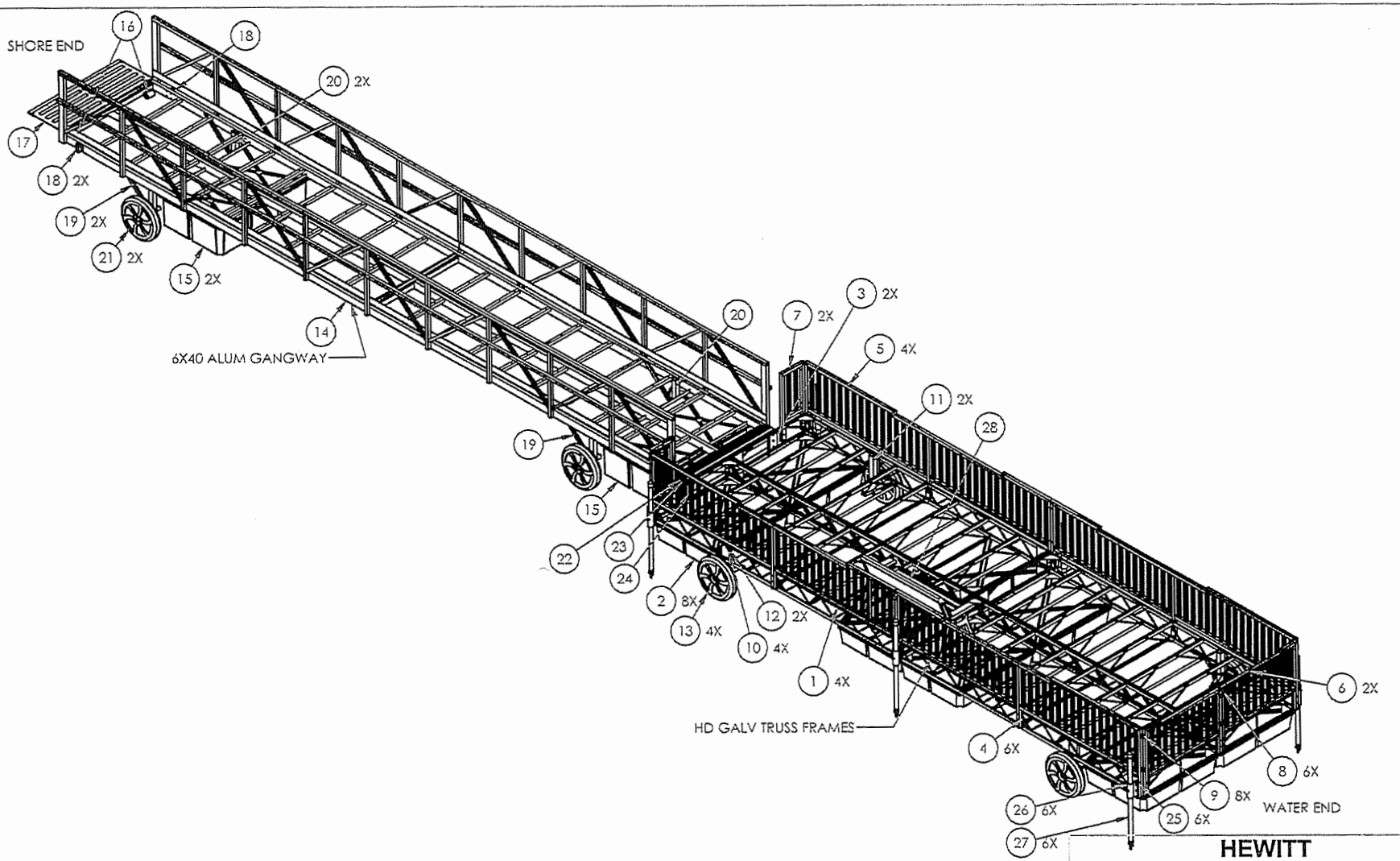
DESCRIPTION:

PRELIMINARY

DIM

DRAWN BY	DWG. NAME:	REV
TCW	MN DNR-CITY OF COTTAGE GROVE-DOCK ASSEMBLY (CHUN-051)P2	

SCALE: 1:120 | WEIGHT: | SHEET 2 OF 3



HEWITT

PLEASE SIGN BELOW IF ALL DIMESIONS ARE CORRECT AND MEET YOUR REQUIREMENTS

SIGNED BY _____ DATE _____

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HEWITT

DATE SAVED: 7/16/2025 7:48:30 AM

DESCRIPTION:

PRELIMINARY

ISO & BOM

DRAWN BY	DWG. NAME:	REV
TCW	MN DNR-CITY OF COTTAGE GROVE-DOCK ASSEMBLY (CHUN-051)P2 DEALER	

SCALE: 1:80 | WEIGHT: | SHEET 1 OF 3

HEWITT
EXCELLENCE BY DESIGN

Sales Quote

Sales Quote Number: 8295
Sales Quote Date: 5/23/2025
Quote Expires: 6/22/2025
Customer ID: MINNESOTA WALK-IN
Terms: COD
Phone:

Phone: 507/225-3421
Fax: 507/225-3053

MINNESOTA WALK-IN
NICOLLET, MN 56074

Ship To:
MINNESOTA WALK-IN
NICOLLET, MN 56074

FOB	Ship Via	Sales Person	Requested Shipment Date
	,	Front Desk	5/23/2025

Qty	Item No	Description	U of M	Disc %	Unit Price	Ext Price
4	D16FLGA16	5'x16' TRUSS FLOATING DOCK GALV-WHITE	Each		4,732.00	18,928.00
8	DFT486012	48"x60"x12" FLOAT TANK WITH PLUG	Kit		339.00	2,712.00
2	SPECIAL2	SPECIAL WELD DSSP36 3 Hole Side Plate 6x0.25x12.5	Each		57.00	114.00
6	SPECIAL	DSSP33 3 Hole Steel Side Plate 3in wide	Each		41.00	246.00
78	D1RAILA	ADA HAND RAILING (PER FOOT)	Each		110.00	8,580.00
4	LWCHL	HI-LIFT CORNER ASSIST WITH ROLLERS	Kit		271.00	1,084.00
2	DFT487220	48"x72"x20" FLOAT TANK WITH PLUG	Kit		456.00	912.00
2	DH26410	CHAIN RETAINER "J"	Each		63.00	126.00
1	D6HINHTM	6' BOLT-ON PIANO HINGE TALL-MEDIUM	Each		675.00	675.00
6	DSBRACXL	XL GALV SUPPORT BRACKET (3-1/4")	Each		73.00	438.00
6	DGP14LWA	14'x2" GALVANIZED PIPE WITH AUGER (2" ID)	Each		217.00	1,302.00
6	D1RC2WE	2" ROUND PIPE CAP WITH FLAT TOP-WHITE	Each		3.50	21.00
1	DF301092	5' PEBBLE BEACH WAVE DOCK BENCH	Kit		650.00	650.00
8	SPECIALM	Axel Ports	Each		55.00	440.00
1	MISC	Shipping			1,200.00	1,200.00

Taxable Subtotal:	0.00
Non-taxable Subtotal:	37,428.00
Invoice Discount:	0.00
Total Sales Tax:	0.00
Total:	**37,428.00**

Diddy's Docks
5612 Sunrise Trail
Madison Lake, MN 56063
5073178599
Diddysdocks@gmail.com

Estimate 1340

DATE 03/05/2026

ADDRESS
City of Cottage Grove
City of Cottage Grove
8635 W Pt Douglas RD S
Cottage Grove, MN 55016

SHIP TO
City of Cottage Grove
City of Cottage Grove
8635 W Pt Douglas RD S
Cottage Grove, MN 55016

DATE	ACTIVITY	DESCRIPTION	QTY	RATE	AMOUNT
03/02/2026	**Dock**	6'X40' Gangway Aluminum-White Assembly SKU: D1FGAA6X40	1	16,599.00	16,599.00T

Price valid for 30 days. Subject to change from manufacturer.
ALL orders of $2,500 require 75% deposit.

SUBTOTAL	16,599.00
TAX	0.00
TOTAL	**$16,599.00**

Accepted By

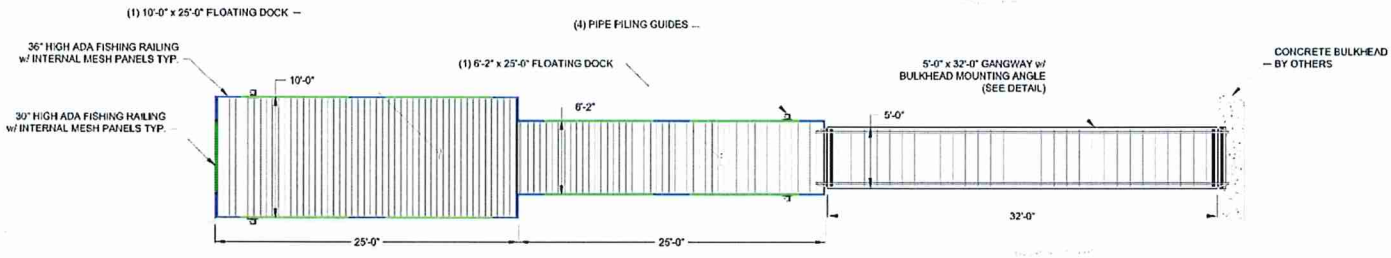
Accepted Date

BoardSafe Docks
604 Crisscross Road, Fleetwood, PA 19522 | O: 610-899-0286
BoardSafe Docks is a wholly owned subsidiary of Northeast Products and Services, Inc.

August 1, 2025

Subject: **Fishing Dock System – Mooers Lake – Cottage Grove, MN**

BoardSafe Docks is pleased to submit our proposal to manufacture and ship one **Fishing Dock System** to the following site: **Mooers Lake – Cottage Grove, MN**. All work will be completed in accordance with the following work scope, specifications, and layout drawing below.



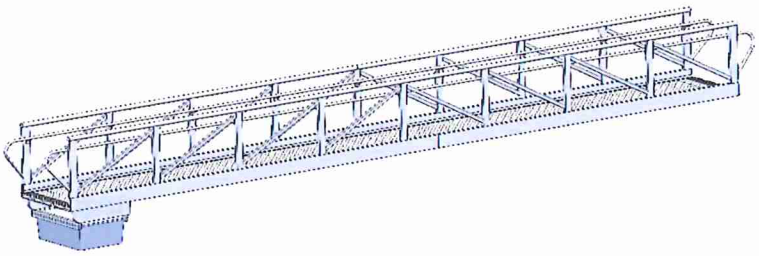
ITEMS TO BE PROVIDED:

Type:	Qty.:	Size:
Gangway – Dual Rail	1	5'0" x 32'0"
Floating Dock	1	6'2" x 25'0"
Floating Dock	1	10'0" x 25'0"
Removal Skids - Optional	4	NA
Bulkhead Mounting Angle Kit – Steel*	1	6'0"
Bulkhead Mounting Angle Kit – Hinge Pin*	1	6'0"
Hinge Attachment*	1	11'0"
Pipe Pile Guides - Exterior	4	4" x 4" square tube bracket
Fishing Rail w/ Mesh Panels*	1	115'0"
Pick Up D-Rings *(for Installation and/or Seasonal Removal)*	1	NA

** priced per linear foot*

WORK SCOPE & SPECIFICATIONS:

Gangway:

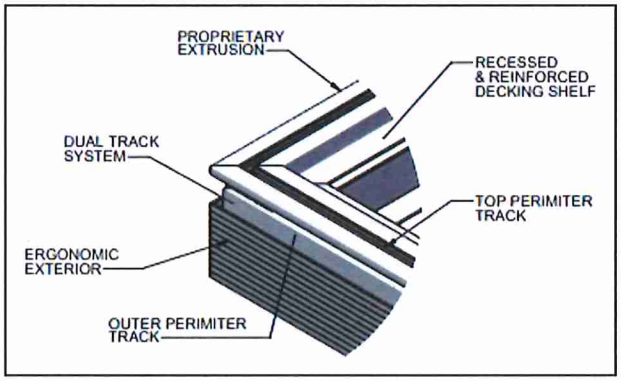


- All framing components to be Marine Grade 6061 or 6063 Aluminum.
- All fasteners are to be stainless steel.
- Flotation is to be plastic encapsulated foam.
- Supplemental flotation is required to be added to the bottom of the gangway to provide a freeboard of 16" to 18" (with no live load present)
- Structural Truss Railing to be located on both sides of gangway. Railing to be located at a minimum height of 42-inches with an intermediate handrail to be located at 34-inches.
- Decking to be 12-inch wide, raised rib, knurled aluminum, welded in place.
- Integrated hinges are to be located at the top and bottom of the gangway. Hinges are to be mechanically attached; welded connections will not be permitted. 1 ¼" schedule 40 stainless steel pipe hinge pins with stainless steel hardware
- A 4-inch toe kick should be provided on both sides of gangway.

Floating Docks:



- 16" freeboard with no live load present
- 2.5" draft depth with no live load present
- 50-Series Dock Frame
  - Track in top of extrusion allows for bolting accessories to the top perimeter of dock.
  - Rectangular aluminum extrusion
  - Measures 6.06" high by 3.77" wide
  - Weight of 3.69lb/lineal foot
- All framing components are Marine Grade 6061 or 6063 Aluminum.
- All fasteners are stainless steel.
- All flotation is plastic encapsulated foam.
- Decking is Gray Composite with a span rating of 24" on center
  - 5/4" x 6" nominal sizing
  - Fiberglass reinforced HDPE
- Decking is attached using the ***TimberStrong*** fastening system, meaning there are no fasteners in the deck surface.
  - Fastener is mechanically attached to each deck board, per ***TimberStrong*** specifications
  - Attachment at each joist is with one #10 stainless steel, self-tapping screw, placed through the ***TimberStrong*** fastener and into the corresponding joist



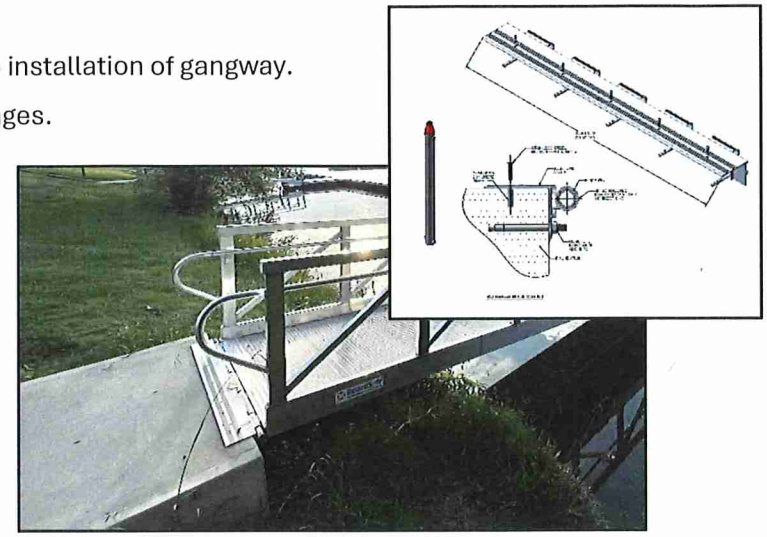
Framing Detail

Removal Skids - Optional:

- Each floating dock will be equipped with integrated skids to facilitate easier seasonal removal.

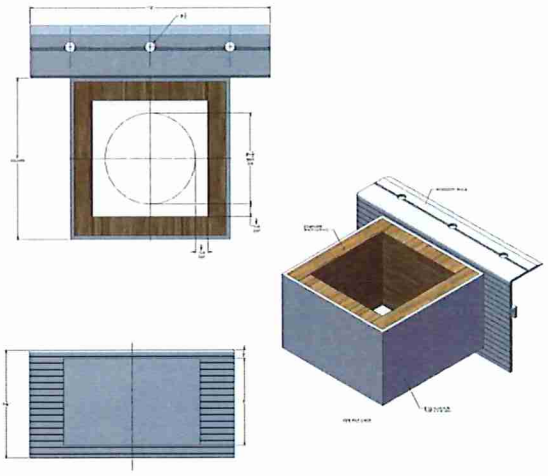
Bulkhead Mounting Angle Kit:

- To be fastened to concrete foundation prior to installation of gangway.
- Steel angles with integrated attachment of hinges.
- Stainless drop-in threaded inserts and flat head screws for top mounting surface
- Hinges are to be mechanically attached
- 1 ¼" schedule 40 pipe hinge pins with stainless steel hardware
- 5/8" diameter stainless wedge anchors
- Priced per linear foot.



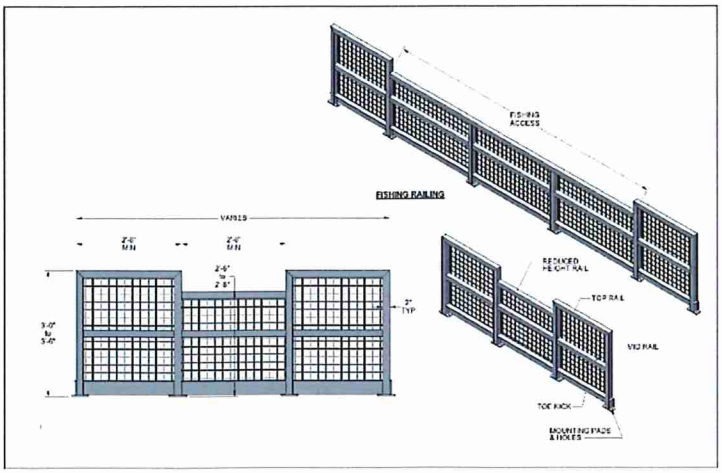
Pipe Pile Guides:

- Guide is bolted to mainframe on the exterior of floating dock.
- The location of the guide can be adjusted by loosening the hardware and sliding the guide to a new position.
- Guides shall be made from Grade 6061, T6 aluminum.
- Internal composite wear guides.
- Standard design accepts up to a 4.5" diameter pile.
- Piles are not included.



Fishing Rail:

- Fishing railing is comprised of sections of standard height railing and reduced height (30" tall) railing. The sections will alternate from tall to short, offering equally distributed accessible fishing locations.
- All sections of railing in this proposal will utilize aluminum mesh panels, which adhere to the ADA spacing requirements which prevent a 4" sphere from passing through the railing.
- A toe kick is integrated into each railing section.
- Fishing pier railing is priced per linear foot.



PRICING *(taxes not included)*

- All components as listed above $109,630.18
- Shipping $ 6,437.15
- **Total** **$ 116,067.33**

Payment Terms: A 50% deposit is required at the time of order placement, with an additional 35% payment due upon completion of manufacturing. The remaining balance is to be paid in full prior to shipment. Pricing is valid for **30 days** from the date of this proposal.

Delivery/Shipping: Our estimated production timeline is **20-24 weeks** from date of deposit receipt. BoardSafe Docks will communicate with customers in the event additional manufacturing time is required. All components will be shipped to worksite

Warranty: The dock system is warranted for a period of 1 year from delivery date. The warranty covers labor and materials. The warranty DOES NOT cover damage caused by acts of God *(storms, wind, flooding, ice or any other adverse weather conditions),* modification by client or damage by vessel.

Miscellaneous:

- Cost for installation services is an additional **$18,621.55,** which includes mobilizing a crew to the job site and any equipment and tool rental costs related to the installation.
- Permitting, site preparation, foundation design and foundation site prep/installation is by others
- BoardSafe products are US-made and comply with Buy America Build America regulations.
- Enclosed: Standard Terms and Conditions.

Customer Acceptance:

- Name: _____
- Signature: _____
- Date: _____

With over 20 years of experience, BoardSafe Docks has a proven track record of delivering best-in-class dock solutions. We are confident in our ability to meet your project needs with exceptional quality and efficiency. Thank you for considering our quotation. We look forward to the opportunity to complete this project for you. If you have any questions or need further information, please don't hesitate to contact me.

Kelly Beals
Business Development Team
604 Crisscross Rd. - Fleetwood, PA 19522
315.559.2116 | kellyb@boardsafedocks.com

Standard Terms and Conditions

1. Definitions. The following terms shall be defined as follows:

A. The term "Quote" as used herein shall mean the document to which these Standard Terms and Conditions are attached, and which contains certain specifications concerning the Scope of Work, payment terms, deliverables and related matters.

B. The term "Agreement" as used herein shall mean, collectively, these Standard Terms and Conditions, the Quote, the attached fee schedule, and any and all other documents which may be attached to the Quote or to these Standard Terms and Conditions.

2. Scope of Work. Northeast Products and Services, Inc. ("Northeast") agrees to provide those services as agreed to in the Scope of Work contained in the Quote ("Scope of Work" or "Work"), and Customer agrees to pay NORTHEAST' fees and costs set forth in the Quote as payment for the Work.

3. Changes to Scope of Work. Any services not described in the Scope of Work will be considered additional services ("Additional Services") and will require NORTHEAST's prior written consent to provide the Additional Services. NORTHEAST reserves the right to accept or decline any request for Additional Services for any one or more reasons, including but not limited to, time and schedule restraints, conflicts of interest, compensation, and other reasons in NORTHEAST's sole discretion. For any Additional Services which NORTHEAST agrees to provide, Client shall pay NORTHEAST additional compensation on a time and materials basis at NORTHEAST's standard hourly rates which are attached and incorporated into these Standard Terms and Conditions.

4. Customer's Obligations. Customer shall do all of the following:

A. timely provide NORTHEAST with such data, drawings, specifications, documentation and information as required by NORTHEAST to properly and fully perform the Work (collectively, the "Project Documents").

B. provide a point of contact person at Customer who is knowledgeable about the project for which Customer has retained NORTHEAST (the "Project") and from whom NORTHEAST can obtain the necessary information and materials needed to complete the Project.

C. make timely payments to NORTHEAST in accordance with the terms of the Quote. Payments not made within ___ days of Invoice date shall be subject to a late payment fee equal to ___% of the amount past due.

D. promptly notify NORTHEAST of any changes, omissions, or errors with regard to the Project Documents, and provide written notice of any alleged or perceived development, defect or non-conformance of the Work.

E. review all Work produced by NORTHEAST.

F. be responsible for, and NORTHEAST may rely upon, the accuracy and completeness of the Project Documents and information whether furnished by Customer or its agents, representatives, contractors, or their employees.

5. Reliance Upon Project Documents. NORTHEAST shall be permitted to rely upon the truthfulness and accuracy of the Project Documents in performing its Work.

6. Ownership of Work Product. All engineering calculations, drawings, sketches, reports, summaries, graphs, and such other documentation prepared or produced by NORTHEAST, its officers, owners and employees in

performing the Work, whether in handwritten, electronic, digital, and any other form (the "Work Product") are the sole property of NORTHEAST, and NORTHEAST shall be deemed the author and owner of the Work Product, and shall retain all common law, statutory and other reserved rights, including but not limited to, copyrights and patents.

7. Proprietary Information. Proprietary confidential information ("Confidential Information") developed or disclosed by either Customer or NORTHEAST to the other shall be clearly labeled and identified as Confidential Information by the disclosing party at the time of disclosure. When concurrent written identification of Confidential Information is not feasible at the time of such disclosure the disclosing party shall provide such identification in writing promptly thereafter. Each party shall handle the other's Confidential Information in the same manner as the receiving party handles its own Confidential Information. Disclosure of Confidential Information shall be restricted to those individuals who need access to such Confidential Information as needed to ensure proper performance of the Work. It is understood and agreed that money damages will be an insufficient remedy for any breach of this Section 7 and, in addition to all other remedies that the non-breaching party may have, the non-breaching party shall be entitled to equitable relief, including injunctive relief to prevent such breach or otherwise enforce the terms of this Section 7. Customer and NORTHEAST hereby waive any requirement for the securing or posting of any bond in connection with such remedy. Such equitable remedies shall not be deemed to be the exclusive remedies for a breach by a non-breaching party but shall be in addition to all other remedies available at law or equity including the recovery of reasonable attorneys' fees and costs incurred by the non-breaching party in enforcing its rights under this Section 7.

8. Standard of Care, No Warranties. NORTHEAST will perform its Work using that degree of skill and care ordinarily exercised by other competent engineers providing similar services in the same locale and under the same or similar circumstances. EXCEPT FOR THE EXPRESS REPRESENTATIONS AND WARRANTIES SET FORTH HEREIN, NORTHEAST MAKES NO WARRANTIES, REPRESENTATIONS OR GUARANTEES, WHATSOEVER. NORTHEAST EXPLICITLY DISCLAIMS ANY OTHER WARRANTIES OF ANY KIND, WHETHER EXPRESS, IMPLIED, OR STATUTORY, INCLUDING BUT NOT LIMITED, TO WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

9. Use by Customer Only. All Work Product produced or generated by NORTHEAST is intended for use only by Customer and only for, and with respect to, the Project. The Work Product is not assignable, transferable, saleable, or useable by any third party, nor may it be used by Customer or any third party with respect to any project other than the Project without the prior express written consent of NORTHEAST.

10. Default. Customer shall be in default of this Agreement if it fails to make any payment due NORTHEAST within the time period set forth in the Quote. NORTHEAST and Customer shall, respectively, be in default of this Agreement if it: *(a)* fails to fulfill any respective material obligation under this Agreement and such failure is not cured within twenty (20) days following written notice from the other; or *(b)* files for bankruptcy protection, or a receiver is appointed for them. Upon the occurrence of a default beyond the applicable cure period, the parties shall have the right to: *(a)* terminate this Agreement upon written notice to the other, at which time all rights and obligations of the parties hereunder shall terminate; and/or *(b)* except as otherwise limited or otherwise prohibited by the terms of this Agreement, seek such other damages as permitted by law and equity.

11. Limitation on Liability.

A. NORTHEAST is not responsible for any losses, damages, injuries, judgments, costs, and the like arising out of, or caused by: *(a)* the Work Product being used by someone (whether person, entity, partnership, etc.) other than Customer without the express prior written consent of NORTHEAST, and/or *(b)* the use of the Work Product for any matter or project other than the Project without the express prior written consent of NORTHEAST; *(c)* the acts, errors and omissions of Customer, Customer's shareholders, officers, directors, employees, agents,

representatives, affiliates, contractors, subcontractors and suppliers; and *(d)* the acts, errors and omissions of any third party with whom NORTHEAST must contract in order to obtain any necessary state-specific engineering stamps.

B. To the fullest extent permitted by law, NORTHEAST's total liability to Customer for any and all claims, losses, expenses, demands, damages, and injuries to persons or property arising out of this Agreement under any theory of liability, whether in tort, breach of contract, breach of warranty, or other theory of liability, shall be limited to the greater of (i) the total amount of fees paid to NORTHEAST by Customer under this Agreement, and (ii) Fifty Thousand Dollars ($50,000.00). NORTHEAST shall not be liable for any indirect, special or consequential losses, damage or liabilities arising out of the performance of its obligations hereunder, under any theory of liability, including but not limited to, the loss of use, loss of profit or business, business interruption, and punitive damages whether caused by the acts of NORTHEAST or otherwise.

12. Indemnification. Customer hereby agrees to indemnify and hold NORTHEAST, its shareholders, officers, directors, employees, agents, representatives and affiliates, harmless from and against any and all claims, demands, liabilities, damages, costs, expenses, and judgments, including without limitation, reasonable attorneys' fees, which arise out of or are related to any claim, demand, suit, action, brought by any party or state, federal and local governmental agency or department, as a result of the misuse of the Work Product in violation of Section 9, above, and arising out of the intentional misconduct and negligent acts and omissions of Customer, its shareholders, partners, members, managers, officers, directors, employees, agents, representatives, contractors and vendors.

13. Insurance. NORTHEAST and Customer agree to provide and maintain appropriate liability insurance for the Project. Each party agrees to provide a Certificate of Insurance to the other upon written request.

14. Independent Contractor. NORTHEAST is an independent contractor, not an employee of Customer or any company affiliated with Customer. The Agreement between NORTHEAST and Customer does not create a partnership or joint venture and neither party is authorized to act as agent for or bind the other party.

15. Taxes. If applicable, sales tax, non-US withholding tax or other additional taxes not required by US authorities are additional to the Quote. The Quote is the net amount to be paid to NORTHEAST in USD.

16. No Exclusivity. NORTHEAST and Customer expressly acknowledge that the Agreement between them does not create an exclusive relationship between the parties. Customer is free to engage others to perform services of the same or similar nature to those provided by NORTHEAST, and NORTHEAST shall be entitled to offer and provide engineering services to others and solicit other clients.

17. No Solicitation. During such time as NORTHEAST is performing the Work and for a period of one (1) year thereafter, Customer agrees not to solicit, recruit, engage or otherwise employ or retain, on a full-time, part-time, consulting, work-for-hire or any other kind of basis, any employee of NORTHEAST.

18. Governing Law and Jurisdiction. This Agreement shall be interpreted in accordance with, and the rights of the parties hereto shall be determined by, the laws of the Commonwealth of Pennsylvania without respect to conflicts of law. The district magistrate court having jurisdiction over matters arising at NORTHEAST's corporate headquarters located in Fleetwood, Berks County, Pennsylvania, and the Court of Common Pleas of Berks County shall each have jurisdiction over the resolution of any disputes arising under this Agreement, and shall serve as the proper venue for any actions brought in connection with the parties' rights and obligations under this Agreement. Customer waives the right to raise any objections to jurisdiction and venue.

19. No Third Party Beneficiary. This Agreement is only between NORTHEAST and Customer. There is no intended or unintended third party beneficiary of this Agreement.

20. Force Majeure. A party shall not be liable for any resulting loss if the fulfillment of any of the terms or provisions of this Agreement is delayed or prevented by revolutions, insurrections, riots, civil disorder, wars, acts of enemies, terrorism, national, state or local emergency, disease, epidemic, pandemic, quarantine, government orders or regulations, disruptions or failures in the supply chain, embargoes, strikes, labor shortages, floods, fires, acts of God, or by any cause not within the control of either NORTHEAST or Customer, which by the exercise of reasonable diligence such party is unable to prevent, whether similar or dissimilar to any of the foregoing.

21. Successors and Assigns. This Agreement shall be binding upon the successors and permitted assigns of the parties. This Agreement shall not be assignable without the prior written consent of the non-assigning party.

22. Severability and Enforceability. The parties hereby agree that each provision of this Agreement shall be treated as a separate and independent clause, and the unenforceability of any one clause (or part thereof) shall in no way impair the enforceability of any of the other clauses of this Agreement. If any provision of this Agreement is determined to be invalid, illegal, or unenforceable, it shall not affect the enforceability of any other provision of this Agreement. Rather, the invalid, illegal, or unenforceable provision shall be modified so that it is valid, legal, and enforceable.

23. Headings. The headings used in this Agreement are solely for convenience of the parties and ease of reference and shall not affect its interpretation.

24. Modifications and Amendments. This Agreement represent the complete and full agreement and understanding of NORTHEAST and Customer with respect to the subject matter set forth herein and supersedes any and all prior agreements or understandings between the parties with respect to the subject matter set forth herein. There are no promises, undertakings or representations other than as set forth in the Agreement. This Agreement can only be modified in a writing signed by both NORTHEAST and Customer.

25. Construction of Agreement. NORTHEAST and Customer have reviewed the Agreement and have had the opportunity to negotiate it. The normal rule of construction to the effect that any ambiguities are to be resolved against the drafting party shall not be employed in the interpretation of this Agreement.

26. Notices. All notices given pursuant to this Agreement shall be in writing and shall be delivered personally, by certified mail – return receipt requested, or by nationally recognized overnight delivery service to the parties at their addresses appearing in the Quote. Notice shall be deemed given on the date delivered; provided, however, if delivery is refused, delivery will be deemed to have occurred on the date delivery was first attempted. Regular day-to-day communications between the parties concerning the Project shall take place via such communication methods as preferred by the parties.

Date: _____

Customer Name: _____

Customer Signature: _____

Northeast Products and Services, Inc.
604 Crisscross Rd.
Fleetwood, PA 19522
Phone: 720-987-4051

City Council Action Request

7.M.

Meeting Date	3/18/2026
Department	Engineering
Agenda Category	Action Item
Title	Municipal State Aid Street Funds Advance Resolution - 80th Street Reconstruction Project
Staff Recommendation	Adopt resolution 2026-040 requesting Minnesota State Aid Streets Funds Advance.
Budget Implication	N/A

Attachments

1.	MSAS Advance Request Memo
2.	MSAS Advance Resolution-16743653-v2 REVISED

To: Honorable Mayor and City Council
Jennifer Levitt, City Administrator

From: Paul Sponholz, PE, City Engineer

Date: March 2, 2026

Re: Municipal State Aid Street Funds Advance Resolution

Background

Included in the Capital Improvement Plan for 2026 is the rehabilitation of 80th Street from Highway 61 to Ideal Avenue and East Point Douglas Road from 80th Street to the T-intersection near Arby's. The Minnesota Department of Transportation (MnDOT) is also incorporating work to reconstruct the entrance and exit ramps at the interchange of 80th Street and Highway 61 into the project. The City Council approved plans and specifications and authorized bidding for the project on January 7th, 2026.

Also included in the Capital Improvement Plan for 2026 is a Washington County-led project to construct a roundabout at 80th Street and Keats Avenue.

Discussion

The total cost estimate for the engineering and construction of the 80th Street and East Point Douglas Road project is $17,290,000, of which about $5,286,000 is the estimated cost of the MnDOT portion of the project. The project is funded with several other sources, including a $5,000,000 federal grant, TIF funds, Washington County funds, assessments, water and sewer utility funds, and about $4,500,000 from Municipal State Aid Funds.

The total cost estimate for the engineering and construction of the 80th Street and Keat Avenue roundabout is about $5,200,000, of which about $2,400,000 is the city share of the cost. The city share is funded from water and sewer utility funds and about $2,000,000 from Municipal State Aid Funds.

Each year, the City receives approximately $2.5 million in funding from Minnesota State Aid to help fund improvements of state aid routes within the City. Due to the magnitude of the proposed improvements to 80th Street and East Point Douglas Road and the roundabout construction at 80th Street and Keats Avenue, all of which are state aid routes, the City is proposing to advance $4 million in funding from future year allocations, the maximum allowed by the state.

This is similar to what was done in 2020 for the 80th Street improvements and in 2023 for the Jamaica Avenue/East Point Douglas Road improvements. The attached resolution requests the advancement in state aid funding.

This resolution is a revision of Resolution No. 2026-020 that the Council adopted on January 21, 2026. MnDOT changed the requirements of the resolution and asked the City to adopt a new resolution. At the time of the first resolution, MnDOT only wanted the City to show the advance amount of $4,000,000. MnDOT did not want the City to include an estimate of its 2026 state aid funding allotment which wasn't finalized at the time. Also MnDOT didn't want to show the estimated disbursements of that allocation, only the disbursements of the $4,000,000 advance. However, MnDOT now wants the City to show the 2026 allotment and its disbursements included on the resolution, not just the advance funds. Since the first resolution, the allotment is no longer an estimate but is now an actual amount and included in the account balance. At the time of the first resolution, the account balance was $0, but is now $2,608,103, the value of the 2026 allotment. This resolution now includes disbursements totaling $6,608,103 instead of $4,000,000. That total disbursement includes both the 2026 allotment of $2,608,103 and the $4,000,000 advance of state aid funds. As long as the City was changing the resolution, the estimated disbursements for the projects shown on the resolution have been updated to current cost estimates and additional projects that are eligible for state aid funding have been included.

Recommendation

Staff recommends that the City Council adopt resolution 2026-040 requesting Minnesota State Aid Streets Funds Advance.

CITY OF COTTAGE GROVE, MINNESOTA
CITY COUNCIL
RESOLUTION 2026-040

RESOLUTION AUTHORIZING THE REQUST FOR A MUNICIPAL STATE AID STREET FUNDS ADVANCE

WHEREAS, the City of Cottage Grove (Municipality) is planning to implement Municipal State Aid Street Project(s) in 2026 which will require State Aid funds in excess of those available in its State Aid Construction Account; and

WHEREAS, said Municipality is prepared to proceed with the construction of said project(s) through the use of an advance from the Municipal State Aid Street Fund to supplement the available funds in their State Aid Construction Account; and

WHEREAS, the advance is based on the following determination of estimated expenditures:

Account Balance as of date 2/24/2026		$2,608,103.00
Less estimated disbursements:		
Project SAP 180-110-014 (Jamaica Ave)	$206,795.90	
Project SAP 180-112-013 (E. Pt. Douglas Rd)	$1,824,871.62	
Project SP 180-102-020 (80th St)	$3,872,000.00	
Project SAP 180-112-014 (E. Pt. Douglas Rd)	$605,000.00	
Project SAP 180-102-021 (80th St/Keats Av)	$99,435.48	
Bond Principle (if any)	$0.00	
Project Finals (overruns-if any)	$0.00	
Total Estimated Disbursements		$6,608,103.00
Advance Amount (amount in excess of acct balance)		$4,000,000.00

WHEREAS, repayment of the funds so advanced will be made in accordance with the provisions of Minnesota Statutes 162.14, Subd. 6 and Minnesota Rules, Chapter 8820.1500, Subp. 10b; and

WHEREAS, the Municipality acknowledges advance funds are released on a first-come-first-serve basis and this resolution does not guarantee the availability of funds.

NOW THEREFORE, BE IT RESOLVED that the Commissioner of Transportation be and is hereby requested to approve this advance for financing approved Municipal State Aid Street Project(s) of the City of Cottage Grove in an amount up to $4,000,000. I hereby authorize repayments from subsequent accruals to the Municipal State Aid Street Construction Account of said Municipality from future year allocations until fully repaid.

CITY OF COTTAGE GROVE, MINNESOTA
CITY COUNCIL
RESOLUTION 2026-040

Passed this 18th day of March 2026.

_____
Myron Bailey, Mayor

Attest:

_____
Tamara Anderson, City Clerk

City Council Action Request

7.N.

Meeting Date	3/18/2026
Department	Public Safety
Agenda Category	Action Item
Title	BCA Master Joint Powers Agreement and Amendment
Staff Recommendation	Adopt Resolution 2026-042 approving the State of Minnesota Joint Powers Agreement and Court Services Amendment with the City of Cottage Grove on behalf of its City Attorney and Police Department.
Budget Implication	N/A

Attachments

1.	JPA and Court Services Amendment Renewal 03042026
2.	BCA Master JPA Resolution 2026-042
3.	Cottage Grove PD Master JPA 2026
4.	Cottage Grove PD Court Amendment 2026

To: Honorable Mayor and City Council
Jennifer Levitt, City Administrator

From: Peter J Koerner, Director of Public Safety

Date: March 4, 2026

Subject: **BCA'S MASTER JOINT POWERS AGREEMENT AND AMENDMENT**

The Bureau of Criminal Apprehension (BCA) is updating its Master Joint Powers Agreement (JPA) and Court Services Amendment, with all Minnesota Law Enforcement Agencies. In accordance with the State Statute, approval by City Council resolution is required as a statutory city and the Joint Powers Agreement and Court Services Amendment signed by the Mayor and City Clerk.

The JPA and Court Services Amendment was reviewed and approved previously by City Attorney Kori Land and City Prosecuting Attorney F. Joe Taylor. There are no changes since last approval.

There are no additional costs associated with this agreement.

RECOMMENDATION

Adopt resolution 2026-042 approving the State of Minnesota Joint Powers Agreement and Court Services Amendment with the City of Cottage Grove on behalf of its City Attorney and Police Department.

CITY OF COTTAGE GROVE, MINNESOTA
CITY COUNCIL
RESOLUTION 2026-042

RESOLUTION APPROVING THE STATE OF MINNESOTA JOINT POWERS AGREEMENTS WITH THE CITY OF COTTAGE GROVE ON BEHALF OF ITS CITY ATTORNEY AND POLICE DEPARTMENT

WHEREAS, City of Cottage Grove on behalf of its Prosecuting Attorney and Police Department desires to enter into Joint Powers Agreements with the State of Minnesota, Department of Public Safety, Bureau of Criminal Apprehension to use systems and tools available over the State's criminal justice data communications network for which the City is eligible; and

WHEREAS, the Joint Powers Agreements further provide the City with the ability to add, modify and delete connectivity, systems and tools over the five-year life of the agreement and obligates the City to pay the costs for the network connection; and

NOW, THEREFORE, BE IT RESOLVED, by the City Council of the City of Cottage Grove, County of Washington, State of Minnesota as follows:

1. That the State of Minnesota Joint Powers Agreements by and between the State of Minnesota acting through its Department of Public Safety, Bureau of Criminal Apprehension and the City of Cottage Grove on behalf of its Prosecuting Attorney and Police Department, are hereby approved.

2. That the Director of Public Safety, Peter J Koerner, or his successor, is designated as the Authorized Representative for the Police Department. The Authorized Representative is also authorized to sign any subsequent amendment or agreement that may be required by the State of Minnesota to maintain the City's connection to the systems and tools offered by the State.

   To assist the Authorized Representative with the administration of the agreement, Records Manager Alicia Hill is appointed as the Authorized Representative's designee.

3. That the Prosecuting Attorney, F. Joe Taylor, or his successor, is designated as the Authorized Representative for the Prosecuting Attorney. The Authorized Representative is also authorized to sign any subsequent amendment or agreement that may be required by the State of Minnesota to maintain the City's connection to the systems and tools offered by the State.

   To assist the Authorized Representative with the administration of the agreement, Kelly Engel is appointed as the Authorized Representative's designee.

4. That Myron Bailey, the Mayor for the City of Cottage Grove, and Tamara Anderson, the City Clerk, are authorized to sign the State of Minnesota Joint Powers Agreements.

Passed this 18th day of March 2026.

_____
Myron Bailey, Mayor

Attest:

_____
Tamara Anderson, City Clerk

State of Minnesota
Joint Powers Agreement

This Agreement is between the State of Minnesota, acting through its Department of Public Safety on behalf of the Bureau of Criminal Apprehension ("BCA"), and the City of Cottage Grove on behalf of its Police Department ("Governmental Unit"). The BCA and the Governmental Unit may be referred to jointly as "Parties."

Recitals

Under Minn. Stat. § 471.59, the BCA and the Governmental Unit are empowered to engage in agreements that are necessary to exercise their powers. Under Minn. Stat. § 299C.46, the BCA must provide a criminal justice data communications network to benefit political subdivisions as defined under Minn. Stat. § 299C.46, subd. 2 and subd. 2(a). The Governmental Unit is authorized by law to utilize the criminal justice data communications network pursuant to the terms set out in this Agreement. In addition, BCA either maintains repositories of data or has access to repositories of data that benefit authorized political subdivisions in performing their duties. The Governmental Unit wants to access data in support of its official duties.

The purpose of this Agreement is to create a method by which the Governmental Unit has access to those systems and tools for which it has eligibility, and to memorialize the requirements to obtain access and the limitations on the access.

Agreement

1 Term of Agreement

1.1 Effective Date. This Agreement is effective on the date the BCA obtains all required signatures under Minn. Stat. § 16C.05, subdivision 2.

1.2 Expiration Date. This Agreement expires five years from the date it is effective.

2 Agreement Between the Parties

2.1 General Access. BCA agrees to provide Governmental Unit with access to the Minnesota Criminal Justice Data Communications Network (CJDN) and those systems and tools which the Governmental Unit is authorized by law to access via the CJDN for the purposes outlined in Minn. Stat. § 299C.46.

2.2 Methods of Access.

The BCA offers three (3) methods of access to its systems and tools. The methods of access are:

A. **Direct access** occurs when individual users at the Governmental Unit use the Governmental Unit's equipment to access the BCA's systems and tools. This is generally accomplished by an individual user entering a query into one of BCA's systems or tools.

B. **Indirect Access** occurs when individual users at the Governmental Unit go to another Governmental Unit to obtain data and information from BCA's systems and tools. This method of access generally results in the Governmental Unit with indirect access obtaining the needed data and information in a physical format like a paper report.

C. **Computer-to-Computer System Interface** occurs when the Governmental Unit's computer exchanges data and information with BCA's computer systems and tools using an interface. Without limitation, interface types include: state message switch, web services, enterprise service bus and message queuing.

For purposes of this Agreement, Governmental Unit employees or contractors may use any of these

methods to use BCA's systems and tools as described in this Agreement. Governmental Unit will select a method of access and can change the methodology following the process in Clause 2.10.

2.3 Federal Systems Access. In addition, pursuant to 28 CFR §20.30-38 and Minn. Stat. §299C.58, BCA may provide Governmental Unit with access to the Federal Bureau of Investigation (FBI) National Crime Information Center.

2.4 Governmental Unit Policies. Both the BCA and the FBI's Criminal Justice Information Systems (FBI-CJIS) have policies, regulations and laws on access, use, audit, dissemination, hit confirmation, logging, quality assurance, screening (pre-employment), security, timeliness, training, use of the system**,** and validation. Governmental Unit has created its own policies to ensure that Governmental Unit's employees and contractors comply with all applicable requirements. Governmental Unit ensures this compliance through appropriate enforcement. These BCA and FBI-CJIS policies and regulations, as amended and updated from time to time, are incorporated into this Agreement by reference. The policies are available at https://bcanextest.x.state.mn.us/launchpad/.

2.5 Governmental Unit Resources. To assist Governmental Unit in complying with the federal and state requirements on access to and use of the various systems and tools, information is available at https://sps.x.state.mn.us/sites/bcaservicecatalog/default.aspx. Additional information on appropriate use is found in the Minnesota Bureau of Criminal Apprehension Policy on Appropriate Use of Systems and Data available at https://bcanextest.x.state.mn.us/launchpad/cjisdocs/docs.cgi?cmd=FS&ID=795&TYPE=DOCS.

2.6 Access Granted.

A. Governmental Unit is granted permission to use all current and future BCA systems and tools for which Governmental Unit is eligible. Eligibility is dependent on Governmental Unit (i) satisfying all applicable federal or state statutory requirements; (ii) complying with the terms of this Agreement; and (iii) acceptance by BCA of Governmental Unit's written request for use of a specific system or tool.

B. To facilitate changes in systems and tools, Governmental Unit grants its Authorized Representative authority to make written requests for those systems and tools provided by BCA that the Governmental Unit needs to meet its criminal justice obligations and for which Governmental Unit is eligible.

2.7 Future Access. On written request from the Governmental Unit, BCA also may provide Governmental Unit with access to those systems or tools which may become available after the signing of this Agreement, to the extent that the access is authorized by applicable state and federal law. Governmental Unit agrees to be bound by the terms and conditions contained in this Agreement that when utilizing new systems or tools provided under this Agreement.

2.8 Limitations on Access. BCA agrees that it will comply with applicable state and federal laws when making information accessible. Governmental Unit agrees that it will comply with applicable state and federal laws when accessing, entering, using, disseminating, and storing data. Each party is responsible for its own compliance with the most current applicable state and federal laws.

2.9 Supersedes Prior Agreements. This Agreement supersedes any and all prior agreements between the BCA and the Governmental Unit regarding access to and use of systems and tools provided by BCA.

2.10 Requirement to Update Information. The parties agree that if there is a change to any of the information whether required by law or this Agreement, the party will send the new information to the other party in writing within 30 days of the change. This clause does not apply to changes in systems or tools provided under this Agreement.

This requirement to give notice additionally applies to changes in the individual or organization serving the Governmental Unit as its prosecutor. Any change in performance of the prosecutorial function must be provided to the BCA in writing by giving notice to the Service Desk, BCA.ServiceDesk@state.mn.us.

2.11 Transaction Record. The BCA creates and maintains a transaction record for each exchange of data utilizing

its systems and tools. In order to meet FBI-CJIS requirements and to perform the audits described in Clause 7, there must be a method of identifying which individual users at the Governmental Unit conducted a particular transaction.

If Governmental Unit uses either direct access as described in Clause 2.2A or indirect access as described in Clause 2.2B, BCA's transaction record meets FBI-CJIS requirements.

When Governmental Unit's method of access is a computer-to-computer interface as described in Clause 2.2C, the Governmental Unit must keep a transaction record sufficient to satisfy FBI-CJIS requirements and permit the audits described in Clause 7 to occur.

If a Governmental Unit accesses data from the Driver and Vehicle Services Division in the Minnesota Department of Public Safety and keeps a copy of the data, Governmental Unit must have a transaction record of all subsequent access to the data that are kept by the Governmental Unit. The transaction record must include the individual user who requested access, and the date, time and content of the request. The transaction record must also include the date, time and content of the response along with the destination to which the data were sent. The transaction record must be maintained for a minimum of six (6) years from the date the transaction occurred and must be made available to the BCA within one (1) business day of the BCA's request.

2.12 Court Information Access. Certain BCA systems and tools that include access to and/or submission of Court Records may only be utilized by the Governmental Unit if the Governmental Unit completes the Court Data Services Subscriber Amendment, which upon execution will be incorporated into this Agreement by reference. These BCA systems and tools are identified in the written request made by the Governmental Unit under Clause 2.6 above. The Court Data Services Subscriber Amendment provides important additional terms, including but not limited to privacy (see Clause 8.2, below), fees (see Clause 3 below), and transaction records or logs, that govern Governmental Unit's access to and/or submission of the Court Records delivered through the BCA systems and tools.

2.13 Vendor Personnel Screening. The BCA will conduct all vendor personnel screening on behalf of Governmental Unit as is required by the FBI CJIS Security Policy. The BCA will maintain records of the federal, fingerprint-based background check on each vendor employee as well as records of the completion of the security awareness training that may be relied on by the Governmental Unit.

3 Payment

The Governmental Unit currently accesses the criminal justice data communications network described in Minn. Stat. §299C.46. The bills are sent annually for a total annual cost of Three Thousand Nine Hundred Sixty and 00/100 Dollars ($3,960.00).

The Governmental Unit will identify its contact person for billing purposes, and will provide updated information to BCA's Authorized Representative within ten business days when this information changes.

If Governmental Unit chooses to execute the Court Data Services Subscriber Amendment referred to in Clause 2.12 in order to access and/or submit Court Records via BCA's systems, additional fees, if any, are addressed in that amendment.

4 Authorized Representatives

The BCA's Authorized Representative is the person below, or her successor:

Name: Kathryn Meiers, Interim Deputy Superintendent

Address:	Minnesota Department of Public Safety; Bureau of Criminal Apprehension 1430 Maryland Avenue Saint Paul, Minnesota 55106
Telephone:	651-793-7050
Email Address:	kathryn.meiers@state.mn.us

The Governmental Unit's Authorized Representative is the person below, or his successor:

Name:	Peter Koerner, Director of Public Safety
Address:	12800 Ravine Parkway S Cottage Grove, Minnesota 55016
Telephone:	651-458-6003
Email Address:	pkoerner@cottagegrovemn.gov

5 Assignment, Amendments, Waiver, and Agreement Complete

5.1 Assignment. Neither party may assign nor transfer any rights or obligations under this Agreement.

5.2 Amendments. Any amendment to this Agreement, except those described in Clauses 2.6 and 2.7 above must be in writing and will not be effective until it has been signed and approved by the same parties who signed and approved the original agreement, their successors in office, or another individual duly authorized.

5.3 Waiver. If either party fails to enforce any provision of this Agreement, that failure does not waive the provision or the right to enforce it.

5.4 Agreement Complete. This Agreement contains all negotiations and agreements between the BCA and the Governmental Unit. No other understanding regarding this Agreement, whether written or oral, may be used to bind either party.

6 Liability

Each party will be responsible for its own acts and behavior and the results thereof and shall not be responsible or liable for the other party's actions and consequences of those actions. The Minnesota Torts Claims Act, Minn. Stat. § 3.736 and other applicable laws govern the BCA's liability. The Minnesota Municipal Tort Claims Act, Minn. Stat. Ch. 466 and other applicable laws, governs the Governmental Unit's liability.

7 Audits

7.1 Under Minn. Stat. § 16C.05, subd. 5, the Governmental Unit's books, records, documents, internal policies and accounting procedures and practices relevant to this Agreement are subject to examination by the BCA, the State Auditor or Legislative Auditor, as appropriate, for a minimum of six years from the end of this Agreement.

Under Minn. Stat. § 6.551, the State Auditor may examine the books, records, documents, and accounting procedures and practices of BCA. The examination shall be limited to the books, records, documents, and accounting procedures and practices that are relevant to this Agreement.

7.2 Under applicable state and federal law, the Governmental Unit's records are subject to examination by the BCA to ensure compliance with laws, regulations and policies about access, use, and dissemination of data.

7.3 If the Governmental Unit accesses federal databases, the Governmental Unit's records are subject to examination by the FBI and BCA; the Governmental Unit will cooperate with FBI and BCA auditors and make any requested data available for review and audit.

7.4 If the Governmental Unit accesses state databases, the Governmental Unit's records are subject to examination by the BCA: the Governmental Unit will cooperate with the BCA auditors and make any requested data available for review and audit.

7.5 To facilitate the audits required by state and federal law, Governmental Unit is required to have an inventory of the equipment used to access the data covered by this Agreement and the physical location of each.

8 Government Data Practices

8.1 BCA and Governmental Unit. The Governmental Unit and BCA must comply with the Minnesota Government Data Practices Act, Minn. Stat. Ch. 13, as it applies to all data accessible under this Agreement, and as it applies to all data created, collected, received, stored, used, maintained, or disseminated by the Governmental Unit under this Agreement. The remedies of Minn. Stat. §§ 13.08 and 13.09 apply to the release of the data referred to in this clause by either the Governmental Unit or the BCA.

8.2 Court Records. If Governmental Unit chooses to execute the Court Data Services Subscriber Amendment referred to in Clause 2.12 in order to access and/or submit Court Records via BCA's systems, the following provisions regarding data practices also apply. The Court is not subject to Minn. Stat. Ch. 13 but is subject to the *Rules of Public Access to Records of the Judicial Branch* promulgated by the Minnesota Supreme Court. All parties acknowledge and agree that Minn. Stat. § 13.03, subdivision 4(e) requires that the BCA and the Governmental Unit comply with the *Rules of Public Access* for those data received from Court under the Court Data Services Subscriber Amendment. All parties also acknowledge and agree that the use of, access to or submission of Court Records, as that term is defined in the Court Data Services Subscriber Amendment, may be restricted by rules promulgated by the Minnesota Supreme Court, applicable state statute or federal law. All parties acknowledge and agree that these applicable restrictions must be followed in the appropriate circumstances.

9 Investigation of Alleged Violations; Sanctions

For purposes of this clause, "Individual User" means an employee or contractor of Governmental Unit.

9.1 Investigation. The Governmental Unit and BCA agree to cooperate in the investigation and possible prosecution of suspected violations of federal and state law referenced in this Agreement. Governmental Unit and BCA agree to cooperate in the investigation of suspected violations of the policies and procedures referenced in this Agreement. When BCA becomes aware that a violation may have occurred, BCA will inform Governmental Unit of the suspected violation, subject to any restrictions in applicable law. When Governmental Unit becomes aware that a violation has occurred, Governmental Unit will inform BCA subject to any restrictions in applicable law.

9.2 Sanctions Involving Only BCA Systems and Tools.

The following provisions apply to BCA systems and tools not covered by the Court Data Services Subscriber Amendment. None of these provisions alter the Governmental Unit internal discipline processes, including those governed by a collective bargaining agreement.

9.2.1 For BCA systems and tools that are not covered by the Court Data Services Subscriber Amendment, Governmental Unit must determine if and when an involved Individual User's access to systems or tools is to be temporarily or permanently eliminated. The decision to suspend or terminate access may be made as soon as alleged violation is discovered, after notice of an alleged violation is received, or after an investigation has occurred. Governmental Unit must report the status of the Individual User's access to BCA without delay. BCA reserves the right to make a different determination concerning an Individual User's access to systems or tools than that made by Governmental Unit and BCA's determination controls.

9.2.2 If BCA determines that Governmental Unit has jeopardized the integrity of the systems or tools

covered in this Clause 9.2, BCA may temporarily stop providing some or all the systems or tools under this Agreement until the failure is remedied to the BCA's satisfaction. If Governmental Unit's failure is continuing or repeated, Clause 11.1 does not apply and BCA may terminate this Agreement immediately.

9.3 Sanctions Involving Only Court Data Services

The following provisions apply to those systems and tools covered by the Court Data Services Subscriber Amendment, if it has been signed by Governmental Unit. As part of the agreement between the Court and the BCA for the delivery of the systems and tools that are covered by the Court Data Services Subscriber Amendment, BCA is required to suspend or terminate access to or use of the systems and tools either on its own initiative or when directed by the Court. The decision to suspend or terminate access may be made as soon as an alleged violation is discovered, after notice of an alleged violation is received, or after an investigation has occurred. The decision to suspend or terminate may also be made based on a request from the Authorized Representative of Governmental Unit. The agreement further provides that only the Court has the authority to reinstate access and use.

9.3.1 Governmental Unit understands that if it has signed the Court Data Services Subscriber Amendment and if Governmental Unit's Individual Users violate the provisions of that Amendment, access and use will be suspended by BCA or Court. Governmental Unit also understands that reinstatement is only at the direction of the Court.

9.3.2 Governmental Unit further agrees that if Governmental Unit believes that one or more of its Individual Users have violated the terms of the Amendment, it will notify BCA and Court so that an investigation as described in Clause 9.1 may occur.

10 Venue

Venue for all legal proceedings involving this Agreement, or its breach, must be in the appropriate state or federal court with competent jurisdiction in Ramsey County, Minnesota.

11 Termination

11.1 Termination. The BCA or the Governmental Unit may terminate this Agreement at any time, with or without cause, upon 30 days' written notice to the other party's Authorized Representative.

11.2 Termination for Insufficient Funding. Either party may immediately terminate this Agreement if it does not obtain funding from the Minnesota Legislature, or other funding source; or if funding cannot be continued at a level sufficient to allow for the payment of the services covered here. Termination must be by written notice to the other party's authorized representative. The Governmental Unit is not obligated to pay for any services that are provided after notice and effective date of termination. However, the BCA will be entitled to payment, determined on a pro rata basis, for services satisfactorily performed to the extent that funds are available. Neither party will be assessed any penalty if the agreement is terminated because of the decision of the Minnesota Legislature, or other funding source, not to appropriate funds. Notice of the lack of funding must be provided within a reasonable time of the affected party receiving that notice.

12 Continuing Obligations

The following clauses survive the expiration or cancellation of this Agreement: Liability; Audits; Government Data Practices; 9. Investigation of Alleged Violations; Sanctions; and Venue.

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The Parties indicate their agreement and authority to execute this Agreement by signing below.

1. GOVERNMENTAL UNIT

Name: _____
(PRINTED)

Signed: _____

Title: _____
(with delegated authority)

Date: _____

Name: _____
(PRINTED)

Signed: _____

Title: _____
(with delegated authority)

Date: _____

2. DEPARTMENT OF PUBLIC SAFETY, BUREAU OF CRIMINAL APPREHENSION

Name: _____
(PRINTED)

Signed: _____

Title: _____
(with delegated authority)

Date: _____

3. COMMISSIONER OF ADMINISTRATION
As delegated to the Office of State Procurement

By: _____

Date: _____

ADMIN ID #: _____

COURT DATA SERVICES SUBSCRIBER AMENDMENT TO CJDN SUBSCRIBER AGREEMENT

This Court Data Services Subscriber Amendment ("Subscriber Amendment") is entered into by the State of Minnesota, acting through its Department of Public Safety, Bureau of Criminal Apprehension, ("BCA") and the City of Cottage Grove on behalf of its Police Department ("Agency"), and by and for the benefit of the State of Minnesota acting through its State Court Administrator's Office ("Court") who shall be entitled to enforce any provisions hereof through any legal action against any party.

Recitals

This Subscriber Amendment modifies and supplements the Agreement between the BCA and Agency, SWIFT Contract Number 281197, of even or prior date, for Agency use of BCA systems and tools (referred to herein as "the CJDN Subscriber Agreement"). Certain BCA systems and tools that include access to and/or submission of Court Records may only be utilized by the Agency if the Agency completes this Subscriber Amendment. The Agency desires to use one or more BCA systems and tools to access and/or submit Court Records to assist the Agency in the efficient performance of its duties as required or authorized by law or court rule. Court desires to permit such access and/or submission. This Subscriber Amendment is intended to add Court as a party to the CJDN Subscriber Agreement and to create obligations by the Agency to the Court that can be enforced by the Court. It is also understood that, pursuant to the Master Joint Powers Agreement for Delivery of Court Data Services to CJDN Subscribers ("Master Authorization Agreement") between the Court and the BCA, the BCA is authorized to sign this Subscriber Amendment on behalf of Court. Upon execution the Subscriber Amendment will be incorporated into the CJDN Subscriber Agreement by reference. The BCA, the Agency and the Court desire to amend the CJDN Subscriber Agreement as stated below.

The CJDN Subscriber Agreement is amended by the addition of the following provisions:

1. **TERM; TERMINATION; ONGOING OBLIGATIONS.** This Subscriber Amendment shall be effective on the date finally executed by all parties and shall remain in effect until expiration or termination of the CJDN Subscriber Agreement unless terminated earlier as provided in this Subscriber Amendment. Any party may terminate this Subscriber Amendment with or without cause by giving written notice to all other parties. The effective date of the termination shall be thirty days after the other party's receipt of the notice of termination, unless a later date is specified in the notice. The provisions of sections 5 through 9, 12.b., 12.c., and 15 through 24 shall survive any termination of this Subscriber Amendment as shall any other provisions which by their nature are intended or expected to survive such termination. Upon termination, the Subscriber shall perform the responsibilities set forth in paragraph 7(f) hereof.

2. **Definitions**. Unless otherwise specifically defined, each term used herein shall have the meaning assigned to such term in the CJDN Subscriber Agreement.

a. **"Authorized Court Data Services"** means Court Data Services that have been authorized for delivery to CJDN Subscribers via BCA systems and tools pursuant to an Authorization Amendment to the Joint Powers Agreement for Delivery of Court Data Services to CJDN Subscribers ("Master Authorization Agreement") between the Court and the BCA.

b. **"Court Data Services"** means one or more of the services set forth on the Justice Agency Resource webpage of the Minnesota Judicial Branch website (for which the current address is www.courts.state.mn.us) or other location designated by the Court, as the same may be amended from time to time by the Court.

c. "**Court Records**" means all information in any form made available by the Court to Subscriber through the BCA for the purposes of carrying out this Subscriber Amendment, including:

i. "**Court Case Information**" means any information in the Court Records that conveys information about a particular case or controversy, including without limitation Court Confidential Case Information, as defined herein.

ii. "**Court Confidential Case Information**" means any information in the Court Records that is inaccessible to the public pursuant to the Rules of Public Access and that conveys information about a particular case or controversy.

iii. "**Court Confidential Security and Activation Information"** means any information in the Court Records that is inaccessible to the public pursuant to the Rules of Public Access and that explains how to use or gain access to Court Data Services, including but not limited to login account names, passwords, TCP/IP addresses, Court Data Services user manuals, Court Data Services Programs, Court Data Services Databases, and other technical information.

iv. "**Court Confidential Information**" means any information in the Court Records that is inaccessible to the public pursuant to the Rules of Public Access, including without limitation both i) Court Confidential Case Information; and ii) Court Confidential Security and Activation Information.

d. "**DCA**" shall mean the district courts of the state of Minnesota and their respective staff.

e. "**Policies & Notices**" means the policies and notices published by the Court in connection with each of its Court Data Services, on a website or other location designated by the Court, as the same may be amended from time to time by the Court. Policies & Notices for each Authorized Court Data Service identified in an approved request form under section 3, below, are hereby made part of this Subscriber Amendment by this reference and provide additional terms and conditions that govern Subscriber's use of Court Records accessed through such services, including but not limited to provisions on access and use limitations.

f. "**Rules of Public Access**" means the Rules of Public Access to Records of the Judicial Branch promulgated by the Minnesota Supreme Court, as the same may be amended from time to time, including without limitation lists or tables published from time to time by the Court entitled *Limits on Public Access to Case Records or Limits on Public Access to Administrative Records*, all of which by this reference are made a part of this Subscriber Amendment. It is the obligation of Subscriber to check from time to time for updated rules, lists, and tables and be familiar with the contents thereof. It is contemplated that such rules, lists, and tables will be posted on the Minnesota Judicial Branch website, for which the current address is www.courts.state.mn.us.

g. "**Court**" shall mean the State of Minnesota, State Court Administrator's Office.

h. **"Subscriber"** shall mean the Agency.

i. "**Subscriber Records**" means any information in any form made available by the Subscriber to the Court for the purposes of carrying out this Subscriber Amendment.

3. REQUESTS FOR AUTHORIZED COURT DATA SERVICES. Following execution of this Subscriber Amendment by all parties, Subscriber may submit to the BCA one or more separate requests for Authorized Court Data Services. The BCA is authorized in the Master Authorization Agreement to process, credential and approve such requests on behalf of Court and all such requests approved by the BCA are adopted and incorporated herein by this reference the same as if set forth verbatim herein.

a. **Activation**. Activation of the requested Authorized Court Data Service(s) shall occur promptly following approval.

b. **Rejection**. Requests may be rejected for any reason, at the discretion of the BCA and/or the Court.

c. **Requests for Termination of One or More Authorized Court Data Services**. The Subscriber may request the termination of an Authorized Court Data Services previously requested by submitting a notice to Court with a copy to the BCA. Promptly upon receipt of a request for termination of an Authorized Court Data Service, the BCA will deactivate the service requested. The termination of one or more Authorized Court Data Services does not terminate this Subscriber Amendment. Provisions for termination of this Subscriber Amendment are set forth in section 1. Upon termination of Authorized Court Data Services, the Subscriber shall perform the responsibilities set forth in paragraph 7(f) hereof.

4. SCOPE OF ACCESS TO COURT RECORDS LIMITED. Subscriber's access to and/or submission of the Court Records shall be limited to Authorized Court Data Services identified in an approved request form under section 3, above, and other Court Records necessary for Subscriber to use Authorized Court Data Services. Authorized Court Data Services shall only be used according to the instructions provided in corresponding Policies & Notices or other materials and only as necessary to assist Subscriber in the efficient performance of Subscriber's duties

required or authorized by law or court rule in connection with any civil, criminal, administrative, or arbitral proceeding in any Federal, State, or local court or agency or before any self-regulatory body. Subscriber's access to the Court Records for personal or non-official use is prohibited. Subscriber will not use or attempt to use Authorized Court Data Services in any manner not set forth in this Subscriber Amendment, Policies & Notices, or other Authorized Court Data Services documentation, and upon any such unauthorized use or attempted use the Court may immediately terminate this Subscriber Amendment without prior notice to Subscriber.

5. GUARANTEES OF CONFIDENTIALITY. Subscriber agrees:

a. To not disclose Court Confidential Information to any third party except where necessary to carry out the Subscriber's duties as required or authorized by law or court rule in connection with any civil, criminal, administrative, or arbitral proceeding in any Federal, State, or local court or agency or before any self-regulatory body.

b. To take all appropriate action, whether by instruction, agreement, or otherwise, to insure the protection, confidentiality and security of Court Confidential Information and to satisfy Subscriber's obligations under this Subscriber Amendment.

c. To limit the use of and access to Court Confidential Information to Subscriber's bona fide personnel whose use or access is necessary to effect the purposes of this Subscriber Amendment, and to advise each individual who is permitted use of and/or access to any Court Confidential Information of the restrictions upon disclosure and use contained in this Subscriber Amendment, requiring each individual who is permitted use of and/or access to Court Confidential Information to acknowledge in writing that the individual has read and understands such restrictions. Subscriber shall keep such acknowledgements on file for one year following termination of the Subscriber Amendment and/or CJDN Subscriber Agreement, whichever is longer, and shall provide the Court with access to, and copies of, such acknowledgements upon request. For purposes of this Subscriber Amendment, Subscriber's bona fide personnel shall mean individuals who are employees of Subscriber or provide services to Subscriber either on a voluntary basis or as independent contractors with Subscriber.

d. That, without limiting section 1 of this Subscriber Amendment, the obligations of Subscriber and its bona fide personnel with respect to the confidentiality and security of Court Confidential Information shall survive the termination of this Subscriber Amendment and the CJDN Subscriber Agreement and the termination of their relationship with Subscriber.

e. That, notwithstanding any federal or state law applicable to the nondisclosure obligations of Subscriber and Subscriber's bona fide personnel under this Subscriber Amendment, such obligations of Subscriber and Subscriber's bona fide personnel are founded independently on the provisions of this Subscriber Amendment.

6. APPLICABILITY TO PREVIOUSLY DISCLOSED COURT RECORDS. Subscriber acknowledges and agrees that all Authorized Court Data Services and related Court Records disclosed to Subscriber prior to the effective date of this Subscriber Amendment shall be subject to the provisions of this Subscriber Amendment.

7. LICENSE AND PROTECTION OF PROPRIETARY RIGHTS. During the term of this Subscriber Amendment, subject to the terms and conditions hereof, the Court hereby grants to Subscriber a nonexclusive, nontransferable, limited license to use Court Data Services Programs and Court Data Services Databases to access or receive the Authorized Court Data Services identified in an approved request form under section 3, above, and related Court Records. Court reserves the right to make modifications to the Authorized Court Data Services, Court Data Services Programs, and Court Data Services Databases, and related materials without notice to Subscriber. These modifications shall be treated in all respects as their previous counterparts.

a. Court Data Services Programs. Court is the copyright owner and licensor of the Court Data Services Programs. The combination of ideas, procedures, processes, systems, logic, coherence and methods of operation embodied within the Court Data Services Programs, and all information contained in documentation pertaining to the Court Data Services Programs, including but not limited to manuals, user documentation, and passwords, are trade secret information of Court and its licensors.

b. Court Data Services Databases. Court is the copyright owner and licensor of the Court Data Services Databases and of all copyrightable aspects and components thereof. All specifications and information pertaining to the Court Data Services Databases and their structure, sequence and organization, including without limitation data schemas such as the Court XML Schema, are trade secret information of Court and its licensors.

c. Marks. Subscriber shall neither have nor claim any right, title, or interest in or use of any trademark used in connection with Authorized Court Data Services, including but not limited to the marks "MNCIS" and "Odyssey."

d. Restrictions on Duplication, Disclosure, and Use. Trade secret information of Court and its licensors will be treated by Subscriber in the same manner as Court Confidential Information. In addition, Subscriber will not copy any part of the Court Data Services Programs or Court Data Services Databases, or reverse engineer or otherwise attempt to discern the source code of the Court Data Services Programs or Court Data Services Databases, or use any trademark of Court or its licensors, in any way or for any purpose not specifically and expressly authorized by this Subscriber Amendment. As used herein, "trade secret information of Court and its licensors" means any information possessed by Court which derives independent economic value from not being generally known to, and not being readily ascertainable by proper means by, other persons who can obtain economic value from its disclosure or use. "Trade secret information of Court and its licensors" does not, however, include information which was known to Subscriber prior to Subscriber's receipt thereof, either directly or indirectly, from Court or its licensors, information which is independently developed by Subscriber without reference to or use of information received from Court or its licensors, or information which would not qualify as a trade secret under Minnesota law. It will not be a violation of this section 7, sub-section d, for Subscriber to make up to one copy of training materials and configuration documentation, if any, for each individual authorized to access, use, or configure Authorized Court Data Services, solely for its own use in connection with this Subscriber Amendment. Subscriber will take all steps reasonably necessary to protect the copyright, trade secret, and trademark rights of Court and its licensors and Subscriber will advise its bona fide personnel who are permitted access to any of the Court Data Services Programs and Court Data Services Databases, and trade secret information of Court and its licensors, of the restrictions upon duplication, disclosure and use contained in this Subscriber Amendment.

e. Proprietary Notices. Subscriber will not remove any copyright or proprietary notices included in and/or on the Court Data Services Programs or Court Data Services Databases, related documentation, or trade secret information of Court and its licensors, or any part thereof, made available by Court directly or through the BCA, if any, and Subscriber will include in and/or on any copy of the Court Data Services Programs or Court Data Services Databases, or trade secret information of Court and its licensors and any documents pertaining thereto, the same copyright and other proprietary notices as appear on the copies made available to Subscriber by Court directly or through the BCA, except that copyright notices shall be updated and other proprietary notices added as may be appropriate.

f. Title; Return. The Court Data Services Programs and Court Data Services Databases, and related documentation, including but not limited to training and configuration material, if any, and logon account information and passwords, if any, made available by the Court to Subscriber directly or through the BCA and all copies, including partial copies, thereof are and remain the property of the respective licensor. Except as expressly provided in section 12.b., within ten days of the effective date of termination of this Subscriber Amendment or the CJDN Subscriber Agreement or within ten days of a request for termination of Authorized Court Data Service as described in section 4, Subscriber shall either: (i) uninstall and return any and all copies of the applicable Court Data Services Programs and Court Data Services Databases, and related documentation, including but not limited to training and configuration materials, if any, and logon account information, if any; or (2) destroy the same and certify in writing to the Court that the same have been destroyed.

8. INJUNCTIVE RELIEF. Subscriber acknowledges that the Court, Court's licensors, and DCA will be irreparably harmed if Subscriber's obligations under this Subscriber Amendment are not specifically enforced and that the Court, Court's licensors, and DCA would not have an adequate remedy at law in the event of an actual or threatened violation by Subscriber of its obligations. Therefore, Subscriber agrees that the Court, Court's licensors, and DCA shall be entitled to an injunction or any appropriate decree of specific performance for any actual or threatened violations or breaches by Subscriber or its bona fide personnel without the necessity of the Court, Court's licensors, or DCA showing actual damages or that monetary damages would not afford an adequate remedy. Unless Subscriber is an office, officer, agency, department, division, or bureau of the state of Minnesota, Subscriber shall be liable to the Court, Court's licensors, and DCA for reasonable attorneys fees incurred by the Court, Court's licensors, and DCA in obtaining any relief pursuant to this Subscriber Amendment.

9. LIABILITY. Subscriber and the Court agree that, except as otherwise expressly provided herein, each party will be responsible for its own acts and the results thereof to the extent authorized by law and shall not be responsible for the acts of any others and the results thereof. Liability shall be governed by applicable law. Without limiting the foregoing, liability of the Court and any Subscriber that is an office, officer, agency, department, division, or bureau of the state of Minnesota shall be governed by the provisions of the Minnesota Tort Claims Act, Minnesota Statutes, section 3.376, and other applicable law. Without limiting the foregoing, if Subscriber is a political subdivision of the state of Minnesota, liability of the Subscriber shall be governed by the provisions of Minn. Stat. Ch. 466 (Tort Liability, Political Subdivisions) or other applicable law. Subscriber and Court further acknowledge that the liability, if any, of the BCA is governed by a separate agreement between the Court and the BCA dated December 13, 2010 with DPS-M -0958.

10. AVAILABILITY. Specific terms of availability shall be established by the Court and communicated to Subscriber by the Court and/or the BCA. The Court reserves the right to terminate this Subscriber Amendment immediately and/or temporarily suspend Subscriber's Authorized Court Data Services in the event the capacity of any host computer system or legislative appropriation of funds is determined solely by the Court to be insufficient to meet the computer needs of the courts served by the host computer system.

11. [reserved]

12. ADDITIONAL USER OBLIGATIONS. The obligations of the Subscriber set forth in this section are in addition to the other obligations of the Subscriber set forth elsewhere in this Subscriber Amendment.

a. Judicial Policy Statement. Subscriber agrees to comply with all policies identified in Policies & Notices applicable to Court Records accessed by Subscriber using Authorized Court Data Services. Upon failure of the Subscriber to comply with such policies, the Court shall have the option of immediately suspending the Subscriber's Authorized Court Data Services on a temporary basis and/or immediately terminating this Subscriber Amendment.

b. Access and Use; Log. Subscriber shall be responsible for all access to and use of Authorized Court Data Services and Court Records by Subscriber's bona fide personnel or by means of Subscriber's equipment or passwords, whether or not Subscriber has knowledge of or authorizes such access and use. Subscriber shall also maintain a log identifying all persons to whom Subscriber has disclosed its Court Confidential Security and Activation Information, such as user ID(s) and password(s), including the date of such disclosure. Subscriber shall maintain such logs for a minimum period of six years from the date of disclosure, and shall provide the Court with access to, and copies of, such logs upon request. The Court may conduct audits of Subscriber's logs and use of Authorized Court Data Services and Court Records from time to time. Upon Subscriber's failure to maintain such logs, to maintain accurate logs, or to promptly provide access by the Court to such logs, the Court may terminate this Subscriber Amendment without prior notice to Subscriber.

c. Personnel. Subscriber agrees to investigate, at the request of the Court and/or the BCA, allegations of misconduct pertaining to Subscriber's bona fide personnel having access to or use of Authorized Court Data Services, Court Confidential Information, or trade secret information of the Court and its licensors where such persons are alleged to have violated the provisions of this Subscriber Amendment, Policies & Notices, Judicial Branch policies, or other security requirements or laws regulating access to the Court Records.

d. Minnesota Data Practices Act Applicability. If Subscriber is a Minnesota Government entity that is subject to the Minnesota Government Data Practices Act, Minn. Stat. Ch. 13, Subscriber acknowledges and agrees that: (1) the Court is not subject to Minn. Stat. Ch. 13 (see section 13.90) but is subject to the Rules of Public Access and other rules promulgated by the Minnesota Supreme Court; (2) Minn. Stat. section 13.03, subdivision 4(e) requires that Subscriber comply with the Rules of Public Access and other rules promulgated by the Minnesota Supreme Court for access to Court Records provided via the

BCA systems and tools under this Subscriber Amendment; (3) the use of and access to Court Records may be restricted by rules promulgated by the Minnesota Supreme Court, applicable state statute or federal law; and (4) these applicable restrictions must be followed in the appropriate circumstances.

13. FEES; INVOICES. Unless the Subscriber is an office, officer, department, division, agency, or bureau of the state of Minnesota, Subscriber shall pay the fees, if any, set forth in applicable Policies & Notices, together with applicable sales, use or other taxes. Applicable monthly fees commence ten (10) days after notice of approval of the request pursuant to section 3 of this Subscriber Amendment or upon the initial Subscriber transaction as defined in the Policies & Notices, whichever occurs earlier. When fees apply, the Court shall invoice Subscriber on a monthly basis for charges incurred in the preceding month and applicable taxes, if any, and payment of all amounts shall be due upon receipt of invoice. If all amounts are not paid within 30 days of the date of the invoice, the Court may immediately cancel this Subscriber Amendment without notice to Subscriber and pursue all available legal remedies. Subscriber certifies that funds have been appropriated for the payment of charges under this Subscriber Amendment for the current fiscal year, if applicable.

14. MODIFICATION OF FEES. Court may modify the fees by amending the Policies & Notices as provided herein, and the modified fees shall be effective on the date specified in the Policies & Notices, which shall not be less than thirty days from the publication of the Policies & Notices. Subscriber shall have the option of accepting such changes or terminating this Subscriber Amendment as provided in section 1 hereof.

15. WARRANTY DISCLAIMERS.

a. WARRANTY EXCLUSIONS. EXCEPT AS SPECIFICALLY AND EXPRESSLY PROVIDED HEREIN, COURT, COURT'S LICENSORS, AND DCA MAKE NO REPRESENTATIONS OR WARRANTIES OF ANY KIND, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE OR MERCHANTABILITY, NOR ARE ANY WARRANTIES TO BE IMPLIED, WITH RESPECT TO THE INFORMATION, SERVICES OR COMPUTER PROGRAMS MADE AVAILABLE UNDER THIS AGREEMENT.

b. ACCURACY AND COMPLETENESS OF INFORMATION. WITHOUT LIMITING THE GENERALITY OF THE PRECEDING PARAGRAPH, COURT, COURT'S LICENSORS, AND DCA MAKE NO WARRANTIES AS TO THE ACCURACY OR COMPLETENESS OF THE INFORMATION CONTAINED IN THE COURT RECORDS.

16. RELATIONSHIP OF THE PARTIES. Subscriber is an independent contractor and shall not be deemed for any purpose to be an employee, partner, agent or franchisee of the Court, Court's licensors, or DCA. Neither Subscriber nor the Court, Court's licensors, or DCA shall have the right nor the authority to assume, create or incur any liability or obligation of any kind, express or implied, against or in the name of or on behalf of the other.

17. NOTICE. Except as provided in section 2 regarding notices of or modifications to Authorized Court Data Services and Policies & Notices, any notice to Court or Subscriber

hereunder shall be deemed to have been received when personally delivered in writing or seventy-two (72) hours after it has been deposited in the United States mail, first class, proper postage prepaid, addressed to the party to whom it is intended at the address set forth on page one of this Agreement or at such other address of which notice has been given in accordance herewith.

18. NON-WAIVER. The failure by any party at any time to enforce any of the provisions of this Subscriber Amendment or any right or remedy available hereunder or at law or in equity, or to exercise any option herein provided, shall not constitute a waiver of such provision, remedy or option or in any way affect the validity of this Subscriber Amendment. The waiver of any default by either Party shall not be deemed a continuing waiver, but shall apply solely to the instance to which such waiver is directed.

19. FORCE MAJEURE. Neither Subscriber nor Court shall be responsible for failure or delay in the performance of their respective obligations hereunder caused by acts beyond their reasonable control.

20. SEVERABILITY. Every provision of this Subscriber Amendment shall be construed, to the extent possible, so as to be valid and enforceable. If any provision of this Subscriber Amendment so construed is held by a court of competent jurisdiction to be invalid, illegal or otherwise unenforceable, such provision shall be deemed severed from this Subscriber Amendment, and all other provisions shall remain in full force and effect.

21. ASSIGNMENT AND BINDING EFFECT. Except as otherwise expressly permitted herein, neither Subscriber nor Court may assign, delegate and/or otherwise transfer this Subscriber Amendment or any of its rights or obligations hereunder without the prior written consent of the other. This Subscriber Amendment shall be binding upon and inure to the benefit of the Parties hereto and their respective successors and assigns, including any other legal entity into, by or with which Subscriber may be merged, acquired or consolidated.

22. GOVERNING LAW. This Subscriber Amendment shall in all respects be governed by and interpreted, construed and enforced in accordance with the laws of the United States and of the State of Minnesota.

23. VENUE AND JURISDICTION. Any action arising out of or relating to this Subscriber Amendment, its performance, enforcement or breach will be venued in a state or federal court situated within the State of Minnesota. Subscriber hereby irrevocably consents and submits itself to the personal jurisdiction of said courts for that purpose.

24. INTEGRATION. This Subscriber Amendment contains all negotiations and agreements between the parties. No other understanding regarding this Subscriber Amendment, whether written or oral, may be used to bind either party, provided that all terms and conditions of the CJDN Subscriber Agreement and all previous amendments remain in full force and effect except as supplemented or modified by this Subscriber Amendment.

IN WITNESS WHEREOF, the Parties have, by their duly authorized officers, executed this Subscriber Amendment in duplicate, intending to be bound thereby.

1. SUBSCRIBER (AGENCY)

Subscriber must attach written verification of authority to sign on behalf of and bind the entity, such as an opinion of counsel or resolution.

Name: _____
(PRINTED)

Signed: _____

Title: _____
(with delegated authority)

Date: _____

Name: _____
(PRINTED)

Signed: _____

Title: _____
(with delegated authority)

Date: _____

2. DEPARTMENT OF PUBLIC SAFETY, BUREAU OF CRIMINAL APPREHENSION

Name: _____
(PRINTED)

Signed: _____

Title: _____
(with delegated authority)

Date: _____

3. COMMISSIONER OF ADMINISTRATION

delegated to Materials Management Division

By: _____

Date: _____

4. COURTS

Authority granted to Bureau of Criminal Apprehension

Name: _____
(PRINTED)

Signed: _____

Title: _____
(with authorized authority)

Date: _____

City Council Action Request

7.O.

Meeting Date	3/18/2026
Department	IT Department
Agenda Category	Action Item
Title	Public Safety Distributed Antenna System (DAS) and Cellular Signal Booster System forthe Low Zone Water Treatment Plant
Staff Recommendation	Approve the KonectaUSA proposal in the amount of $164,735 and authorize the installation of the Public Safety DAS and the cellular signal booster system at the Low Zone Water Treatment Plant.
Budget Implication	There is no cost to the City's general fund for this project. Funding will be provided through the State of Minnesota – Grant Contract Agreement, via an amendment approved by the Minnesota Pollution Control Agency (MPCA). This means the entire project—equipment, installation, and certification—will be funded under the grant and will not impact operating budgets.
Attachments	1. KonectaPacket

To:	Honorable Mayor and City Council Jennifer Levitt, City Administrator Ryan Burfeind, Public Works Director
From:	Brian Bluhm, IT Manager
Date:	March 9, 2026
Subject:	Public Safety Distributed Antenna System (DAS) and Cellular Signal Booster System for the Low Zone Water Treatment Plant

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Introduction

The City of Cottage Grove's Low Zone Water Treatment Plant has been found to have insufficient cellular coverage and inadequate Public Safety radio signal throughout the facility. These deficiencies were identified after construction and confirmed through testing performed in coordination with Washington County's Public Safety radio team, which verified that radio signal does not extend beyond the front entry area.

To ensure reliable communication for both daily operations and emergency response—and to meet state requirements for Emergency Responder Radio Coverage—a Public Safety Distributed Antenna System (DAS) and a cellular signal booster system are needed for the facility. These systems will provide essential radio and cellular coverage throughout the building, supporting operational continuity and responder safety.

Background and Need

Modern public facilities must support reliable communication for both emergency personnel and operational staff. Two key communication challenges at the Low Zone Water Treatment Plant have been identified:

1. Public Safety Radio Coverage – State Code Requirement

Minnesota fire and building codes require that emergency responders have clear and uninterrupted radio coverage throughout critical infrastructure facilities.
A **Public Safety DAS** ensures:

- Reliable first responder radio communication inside the building
- Compliance with state requirements for Emergency Responder Radio Coverage (ERRC)

- Improved safety for fire, police, and emergency personnel during incident response
- Reliable communication in areas where exterior signal cannot penetrate reinforced structures

2. Cellular Signal Reliability for Operational and Emergency Use

The water treatment plant's construction materials and below-grade areas significantly weaken cellular signal strength. Reliable cellular service is required for:

- SCADA alerts and remote notifications
- Staff communication during routine operations
- Emergency coordination when radio use is not practical
- Vendor and contractor access to communication while onsite

A **cellular signal booster** system resolves these issues by capturing, amplifying, and redistributing carrier signals throughout the facility.

Proposals

Installation proposals were sought from two preferred vendors, Pierson Wireless and the city's current cellular enhancement provider KonectaUSA. It was determined by staff the KonectaUSA proposal better aligned with city goals, priorities and pricing.

KonectaUSA – $164,735

Pierson Wireless - $229,178

KonectaUSA provided a turnkey proposal that includes:

- Engineering design and signal analysis
- Installation of a **Public Safety DAS** that meets Minnesota ERRC code
- Installation of a **commercial cellular signal booster system** for major carriers
- Equipment, cabling, antennas, and integration
- Testing, certification, and documentation
- Coordination with public safety radio authorities for compliance validation
- Warranty and post-installation support

This solution covers the entire plant, including lower-level areas where signals are currently not usable.

Budget Implications

There is **no cost to the City's general fund** for this project.

Funding will be provided through the: **State of Minnesota – Grant Contract Agreement**, via an amendment approved by the **Minnesota Pollution Control Agency (MPCA)**.

This means the entire project—equipment, installation, and certification—will be funded under the grant and will not impact operating budgets.

Staff Recommendation

Staff recommend **approval of the KonectaUSA proposal** in the amount of $164,735 and authorization to move forward with the installation of the Public Safety DAS and the cellular signal booster system at the Low Zone Water Treatment Plant.

These systems are essential for:

- Meeting state emergency communication code requirements
- Ensuring responder and staff safety
- Maintaining reliable operational communication within the facility
- Providing long-term infrastructure resilience

Konecta LLC dba KonectaUSA
8401 73rd Ave. N. Suite E21
Minneapolis, MN 55428
7634252252

KonectaUSA

ADDRESS
City of Cottage Grove
Attn. Accounts Payable
12800 Ravine Pkwy. S.
Cottage Grove, MN 55016

SHIP TO
City of Cottage Grove
Attn. Brian Bluhm
Water Treatment Plant
10901 Ideal Ave. S.
Cottage Grove, MN 55016

Estimate 1215

DATE 03/10/2026

EXPIRATION DATE 04/09/2026

SHIP VIA	P.O. NUMBER	PROJECT MANAGER
TBD	TBD - Cellular & Public Safety	Mike Bozyk

ACTIVITY	QTY	RATE	AMOUNT
Quote *Quote for the Installation of a Public Safety System @ Water Treatment Plant, 10901 Ideal Ave. S., Cottage Grove.	1	0.00	0.00
Public Safety System Components/Services included: (1) ADRF PSR-9533-U-27 Active DAS (1) Donor Antenna (9) Inside Antennas (1) Back-up Battery Cable, Connectors, Splitters, Couplers *Installation Labor AHJ Coordination/Permitting iBwave RF Design Project Management, System Commissioning, Optimization, and Programming Post-Construction Grid Test AHJ Close-Out Docs Conduit and Core Holes as discussed on Site Survey *Prevailing Wage included in this quote.	1	92,210.00	92,210.00
Maint. Agreement Annual System Inspection, Testing, and Reporting - Cost of 1st year	1	2,550.00	2,550.00
Quote *Quote for the Installation of a Cellular Remediation System @ Water Treatment Plant, 10901 Ideal Ave. S., Cottage Grove. Coverage Areas are: Main Level and Lower Level	1	0.00	0.00

Please make checks payable to Konecta LLC. For credit or purchase card payments, a 3.5% administrative fee will be added. To avoid a 2% monthly finance charge, please pay within 30 days of the date of invoice. Thank you!

ACTIVITY	QTY	RATE	AMOUNT
Components Nextivity Cel-Fi Quatra 4000c System includes the following: (1) Nextivity Cel-Fi Quatra 4000c Network Unit (5) Coverage Units (3) LPDA Directional Donor Antennas (8) Inside Antennas Cabling, Splitters, Connectors, Lightning Surge Protection *Installation Labor, Hardware, Materials System Design, Commissioning, Testing, and Optimization *Prevailing Wage included in this quote.	1	68,775.00	68,775.00
Maintenance/Monitoring Agreement Wave Portal Remote Monitoring and Annual Maintenance Inspection - Cost of 1st year	1	1,200.00	1,200.00

Thank you for the opportunity to provide you with this quote!

This estimate does not include any required lift rental, roof penetration, or applicable sales tax.

A 50% down payment is required prior to shipment of equipment.

SUBTOTAL	164,735.00
TAX (0%)	0.00
TOTAL	$164,735.00

Accepted By

Accepted Date

Please make checks payable to Konecta LLC. For credit or purchase card payments, a 3.5% administrative fee will be added. To avoid a 2% monthly finance charge, please pay within 30 days of the date of invoice. Thank you!

This is a budgetary estimate for planning purposes only.

Date: 7/28/25

PIERSON WIRELESS

5205 Hovis Road, Charlotte, NC 28208
(402) 421-9000 | www.piersonwireless.com
Your Wireless. Our Mission.

Scope of Work:

Pierson Wireless submits the following budgetary estimate for Cottage Grove Water Treatment Plant located at 10901 Ideal Ave S in Cottage Grove, MN 55016.
The budgetary solution presented is a neutral host DAS providing coverage for AT&T, T-Mobile and Verizon. The estimate is based on the total coverage area of 40820 square feet.

Budgetary Estimate Summary

Project:	Cottage Grove Water Treatment Plant
Location:	10901 Ideal Ave S, Cottage Grove, MN 55016
Carrier(s):	AT&T, T-Mobile and Verizon
Frequencies to be Covered:	Priority Frequency Bands per Carrier ONLY - AT&T, T-Mobile, and Verizon Modular DAS Solution Capable of Future Bands & Technologies

Facility Information

Facility Type:	Manufacturing/Warehouse
Floors:	2
Total Square Footage:	40,820
Building Density:	Building Density: Dense

Required For Base Functionality

Phase 1: Design & Engineering

Carrier Coordination/Formal Site Assessment	$6,000.00
Design & Engineering	$2,466.40
TOTAL	**$8,466.40**

Required For Base Functionality

Phase 2: Installation/Implementation Estimate

Professional Services & Logistics	$10,680.38
Passive Material	$10,028.52
Active Material	$47,754.20
Installation	$10,725.00
Optimization, Testing/Processing, & Closeout	$7,789.84
TOTAL	**$86,977.94**

TOTAL	**$95,444.34**

Monitoring & Management of NH DAS

Annual Monitoring & Management (Mandatory Warranty Compliance)-Base	$9,500.00

Required Signal Source Option 1

Bi-Directional Amplifier (BDA) Signal Source (AT&T, T-Mobile, & Verizon)

Materials	$33,877.74
Installation	$12,000.00
TOTAL	**$45,877.74**

Required Signal Source Option 2

Dedicated Carrier Signal Source (AT&T, T-Mobile, & Verizon)

Materials	$79,568.03
Installation & One Time Service Fee(s)	$74,996.13
Annual Monitoring & Management (Required Annual Subscription)-Base	$33,500.00
TOTAL	**$188,064.16**

Clarifications:

- This budgetary estimate includes:
  - This budgetary solution is estimated for new Part-90 industrial-grade and Carrier-approved neutral host cellular DAS with a dual band "Core Frequencies Layer" consisting of (2) 5W/37dBm DAS remote units. This converged solution will utilize the same passive infrastructure as the ERCES solution.
  - Material procurement, professional services, installation and activation/optimization.
  - Network operator solution approval coordination.
  - Post Activation walk test to validate solution.
  - Comprehensive Closeout Package with installation photos, as-builts and test results.
- During our initial onsite survery, and based on the data gathered, it is unlikely that the BDA signal source option will work in the present RF environment. Currently the outdoor macro signal for each Carrier is borderline unusable. Further onsite testing during the formal design & engineering process will determine what's possible.
- A signal source must be included in the quote. The two options are a Bi-Directional Amplifier (BDA), and dedicated signal source. Some markets will not allow BDAs so a dedicated signal source may be required. Pierson Wireless will work with the carriers to determine what signal source may be allowed/required in phase 1 of the project.
- A Bi-Directional Amplifier (BDA) signal source will be fed from off-the-air and will be required to have a rebroadcast agreement for each carrier.
  - A BDA signal source will have appropriate frequencies that the carriers own and operate in the market or priority bands.
- A dedicated signal source will require an internet circuit from the Customer. The circuit is recommended at a minimum 1Gbps (10Gbps for 5G UWB).
  - The customer is not allowed to resell the signal source hardware and software. The customer must retain ownership of the hardware and software.
  - A dedicated signal source will have PCS & AWS frequencies.
- Annual Monitoring & Management (Required Annual Subscription)
  - Mandatory Warranty Compliance is to maintain warranty to a BDA fed DAS. Base quote is represented.
  - Required Annual Subscription is required for a dedicated signal source. The minimum contract is 3 years. Base quote is represented.
  - Other SLA options are available outside of the Base Option and can be provided.
  - Discounts are available for multi-year contracts: 15% - 3-Year & 20% - 5-Year.
- This proposal is contingent upon the Public Safety DAS being installed first or simultaneously.
- This proposal assumes standard working hours of 7am-5pm.
- No Electrical services are included in this budgetary estimate.
- No conduit is included in this estimate.
- No drywall patching, or installation of access hatches are included in this estimate.
- No Union labor is included in this estimate.
- Prevailing wage considerations have not been included in this estimate.
- **Sales tax is not included in the costs of this budgetary estimate.**
- Any potential tariff surcharge for this current estimate is not included at this time. If applicable, this additional surcharge would be presented during the formal design and estimation process. Pierson Wireless will not know the final tariff surcharge figure until the OEMs provide quotes based on our design. If tariffs are applicable and required, Pierson Wireless will be passing through the applied tariff surcharge with no additional markup and with full transparency with its customers.
- This budgetary estimate is valid for 30 days as a reference point only.

This is a budgetary estimate only. *An actual solution/design has not been produced. If a firm quotation is desired, a design is required. The fee for this service is listed above in Phase 1 as Carrier/AHJ Coordination and Design & Engineering. Should the Customer elect to perform the assessment and design services, these costs will be deducted from the final proposal.*

This is a budgetary estimate for planning purposes only.

Date: 7/29/25

PIERSON WIRELESS

5205 Hovis Road, Charlotte, NC 28208
(402) 421-9000 | www.piersonwireless.com

Your Wireless. Our Mission.

Scope of Work:

Pierson Wireless submits the following budgetary estimate for Cottage Grove Water Treatment Plant located at 10901 Ideal Ave S in Cottage Grove, MN 55016.

The budgetary solution presented is an Emergency Responder Communication Enhancement System (ERCES) providing coverage with an Public Safety BDA for 700 AND 800 MHz 2W CLASS A AC. The estimate is based on the total coverage area of 40820 square feet.

Budgetary Estimate Summary

Project:	Cottage Grove Water Treatment Plant
Location:	10901 Ideal Ave S, Cottage Grove, MN 55016
Customer Name:	Brian Bluhm
Customer Number	651-458-2880
Customer Email	bbluhm@cottagegrovemn.gov

Facility Information

Facility Type:	Manufacturing/Warehouse
Floors in Coverage Area:	1
Floors in Facility Area:	2
Total Square Footage:	40,820
Building Density:	Building Density: Dense

Phase 1: AHJ & Site Assessment Estimate

AHJ Coordination	$500.00
Site Walk/Assessment/Grid Testing	$1,908.20
TOTAL	**$2,408.20**

Phase 2: Design/Installation/Implementation Estimate

iBwave DAS Design and Engineering	$1,658.20
Professional Services, Lift Rental, & Logistics	$10,178.38
Material: Passive	$11,110.46
Material: Head-end (BDA & Fire Panel)	$11,205.02
Installation: Passive	$12,500.00
Installation: Head-end (BDA & Fire Panel)	$10,250.00
Commissioning, Testing, Compliance Verification & Closeout	$3,150.00
TOTAL	**$60,052.06**

TOTAL PO: Pierson Wireless	**$62,460.26**

Monitoring & Management + Yearly Compliance Audit (Required by Building Owner)

Monitoring & Required Annual Compliance Audit	$9,500.00

2 Hour Riser Rated Material (If Needed)

Material: 2-Hour Fire Riser Rated	$6,319.44
Installation: 2-Hour Fire Riser Rated	$1,110.00
TOTAL	**$7,429.44**

Clarifications:

- Solution Estimate
  - This solution is estimated for 16 indoor omni antennas, 15 splitters/directional couplers, 66 connectors, and approximately 1750 feet of indoor coxial cable.
- Building Density
  - Open – This is generally used for warehouse and manufacturing types of buildings that have large open areas with minimal walls. This does not include warehouses that have floor to ceiling storage racks.
  - Light – This is generally used for warehouse and manufacturing types of buildings that have large open areas with some office areas. This is also used for office buildings, with a majority of cubicles for offices.
  - Medium – This is generally used for office buildings with many offices and conference rooms. This is also used for hotels and apartment buildings.
  - Dense – This is generally used for hospitals and warehouses with floor to ceiling storage racks
- Antenna Per Square Foot Density
  - Open: 12,500, Light: 10,000, Medium: 7,500, Dense: 5,000
- Any future design and pricing are contingent on the completion of a thorough site survey and assessment of existing RF signals in the building at such time as the building can be deemed "90% construction complete" and include building skin, rooftop, windows, interior walls, etc.
  - Any changes to the ERCES requirements may impact the initial design and pricing for this project and will be confirmed prior to the start of the project.
- All head-end equipment is required to be installed in a 2-hour rated room. All considerations to ensure that the head-end room/area will meet that specification will be provided by others.
- This estimate may include the additional labor and materials necessary to achieve a 2-hour fire rating for all riser coax cabling supporting the system, per the requirements of the Current County AHJ and the International Fire Code.
- This estimate may include the yearly acceptance test of an ERCES system that is required by the Federal codes and AHJ.
  - Federal codes and the AHJ require an ERCES system to be fully tested annually and report provided to the AHJ.
- Monitoring & Management (Warranty Compliance)
  - Includes 5 Year Warranty on Active and Passive DAS Infrastructure
  - Includes Pierson Wireless NOC Remote Monitoring
  - Includes Pierson Wireless NOC Remote Support
  - Includes Quarterly Reporting Via Pierson Wireless NOC
  - Includes AHJ Required Annual Compliance Audit
- This quote does not include battery backup. It is assumed there is available power that is backed up by the Plant's generator.
- This estimate assumes standard working hours of 7am-5pm.
- No Electrical services are included in this estimate.
- No conduit is included in this estimate.
- No drywall patching, or installation of access hatches are included in this estimate.
- No Union labor is included in this estimate.
- Prevailing wage considerations have not been included in this estimate.
- **Sales tax is not included in the costs of this estimate.**
- Any potential tariff surcharge for this current estimate is not included at this time. If applicable, this additional surcharge would be presented during the formal design and estimation process. Pierson Wireless will not know the final tariff surcharge figure until the OEMs provide quotes based on our design. If tariffs are applicable and required, Pierson Wireless will be passing through the applied tariff surcharge with no additional markup and with full transparency with its customers.
- This estimate is valid for 30 days as a reference point only.

Docusign Envelope ID: 61CECC58-2DD4-4833-8272-E8BB4AF82373

MINNESOTA POLLUTION CONTROL AGENCY
520 Lafayette Road North
St. Paul, MN 55155-4194

STATE OF MINNESOTA
GRANT CONTRACT AGREEMENT AMENDMENT NUMBER 3

SWIFT Contract Number: 233114
AI: 102922
Activity ID: PRO20230003

Recitals

This State of Minnesota, acting through its Department of **Minnesota Pollution Control Agency,** (“MPCA” "State") 520 Lafayette Road North, St. Paul, MN 55155-4194 and **City of Cottage Grove,** 12800 Ravine Parkway South, Cottage Grove, MN 55016 ("Grantee" or "Contractor" or “City”) agree that this Amendment (“Amendment”) will amend the Grant Contract Agreement (“Agreement”) referenced herein. All terms and conditions set forth in the original Agreement and any subsequent amendment, but not amended herein, shall remain in full force and effect as written. In the event of conflict, the terms of this Amendment shall prevail.

Grant Contract Agreement Amendment

In this Amendment, changes to pre-existing Agreement language will use ~~strike through~~ for deletions and underlining for insertions.

1. Award and Amendment Information

1.1 **Original Agreement.** The Agreement has an original term from **August 1, 2023** to **December 31, 2026**.

1.2 **Prior Amendments.**

☐ N/A
☒Amendment 1
☒Amendment 2
☐Amendment 3
☐Amendment 4

1.3 **Items Altered.**

☒Attachment A: Workplan
☐Attachment A: Budget
☐Award Term (end date)
☒Award Amount (compensation)
☐Authorized Representative
☒Grantees Duties

☐Other

1.4 **Effective Date.** This Amendment shall be effective on **February 27, 2026** or the date the State obtains all required signatures, whichever is later.

2. Amendments.

2.1 Attachment A Changes. Attachment A is amended as detailed in the attached Revised Attachment A Amendment ~~2~~ 3.

Docusign Envelope ID: 61CECC58-2DD4-4833-8272-E8BB4AF82373

2.2 Award Amount. The total obligation of the State for all compensation and reimbursements to the Grantee under this grant agreement will not exceed ~~**$42,816,009.25 (Forty-two Million Eight Hundred Sixteen Thousand Nine Dollars and Twenty-Five Cents)**~~ **$43,003,009.25 (Forty-three Million Three Thousand Nine Dollars and Twenty-Five Cents).**

Attachments

The following Attachments are attached and incorporated into this Grant Contract Agreement Amendment. In the event of a conflict between the terms of this Grant Contract Agreement Amendment and its Attachments, or between Attachments, the order of precedence is first the Grant Contract Agreement Amendment, and then in the following order:

Attachment A
Attachment B

Signatures

Title	Name	Signature	Date
Contract Specialist	Christensen,Katie Joan	DocuSigned by: Christensen,Katie Joan D65377C975814D4...	February 27, 2026
City Administrator	Jennifer Levitt	DocuSigned by: Jennifer Levitt CD99A180F921446...	March 3, 2026
Assistant Division Director	Anna M Hotz	Signed by: Anna M Hotz 61EBCA8CB5E84F0...	March 3, 2026

Docusign Envelope ID: 61CECC58-2DD4-4833-8272-E8BB4AF82373

MINNESOTA POLLUTION CONTROL AGENCY
520 Lafayette Road North
St. Paul, MN 55155-4194

Project Workplan

Doc Type: Contract

Swift #:	233114
AI #:	102922
Activity ID #:	PRO20230003

Project Title: **City of Cottage Grove Low Zone Water Treatment Plant Construction Project**

1. Project Summary:

Organization: City of Cottage Grove (the City)
Contact name: Jennifer Levitt, P.E.
Address: 12800 Ravine Parkway South
Cottage Grove, MN 55016
Phone: 651-458-2890
E-mail: jlevitt@cottagegrovemn.gov

Minnesota Pollution Control Agency (MPCA) contact:

MPCA project manager: Rebecca Place
Address: 520 Lafayette Road North
St. Paul, MN 55155
Phone: 651-757-2807
E-mail: rebecca.place@state.mn.us

Project information

Start date: 8/2023 **End date:** 12/31/2026

Total costs: ***~~$42,816,009.25~~*** ***$43,003,009.25***

Docusign Envelope ID: 61CECC58-2DD4-4833-8272-E8BB4AF82373

2. Statement of Problems, Opportunities, and Existing Conditions

The City of Cottage Grove will oversee construction of the Low Pressure Zone Water Treatment Plant (WTP). This WTP will be located at the Northeast corner of the intersection of Ideal Avenue South and 110th Street in Cottage Grove and will provide safe drinking water to residents. In addition, and on the same site, the City will oversee construction of the new Well 13 to replace Wells 1 and 2. The WTP will provide treatment for Well 13 and existing Well 10. Cottage Grove will construct the WTP's capacity and features in a way that is consistent with the final Design Justification Report approved by Co-Trustees on 3/1/2023 as well as items in the design plan sheets approved on 5/11/2023. This project also includes the design and construction for bringing fiber service to the treatment plant and development of plans required for chlorine storage. The City will purchase and install wireless connectivity equipment for the Low Zone WTP. The current service is insufficient, which is a violation of National Fire Protection Association standards for Emergency Services Communications.

The City is building the WTP adjacent to the City's new Utility and Engineering Building (UEB). The Utility and Engineering Building will house all staff and equipment for the operations and maintenance of the City's PFAS water treatment plants. Twenty five percent of the staff (5 out of 20) at the UEB will be fully dedicated to PFAS water treatment operation. Construction costs for the portions of the UEB that will be utilized for the staff dedicated to PFAS water treatment are Settlement-eligible and include costs for utilities, construction management, construction administration, and construction inspection.

The City will decommission and demolish Well #2 temporary treatment and move the temporary vessels to the Low Pressure Zone WTP.

3. Measurable Outcomes

The City will report at least quarterly to the MPCA regarding progress of the project. The City will also report to the MPCA as part of the quarterly report the itemized costs incurred for that quarter for reimbursement by the MPCA. Monthly reimbursement requests can be provided as determined by the City.

4. Costs

City costs eligible for reimbursement include design, construction, and administration costs. Amendment 2 includes MPCA approval of the use of contingency funds to pay $100,000 for the unforeseen additional staff hours needed to complete the project.

City Council Action Request

7.P.

Meeting Date	3/18/2026
Department	Community Development
Agenda Category	Action Item
Title	Fee Table Amendments – Commercial Electrical Permit Review Fees, Water Meter Fees, and Finance Fees
Staff Recommendation	Adopt Ordinance No. 1110 amending the City Fee Table for the following: 1) Commercial Electrical Review Fees 2) Large Water Meter Fees 3) Electronic Check Fees (eCheck)
Budget Implication	N/A

Attachments

1.	Fee Updates CC Memo
2.	Fee Updates Ordinance No. 1110
3.	2026 Proposed Fee's (Staff)

Cottage Grove
Where Pride and Prosperity Meet

To: Honorable Mayor and City Council

From: Emily Schmitz, Community Development Director
Andrew McLean, Chief Building Official
Brenda Malinowski, Finance Director
Ryan Burfeind, Public Works Director

CC: Jennifer Levitt, City Administrator

Date: March 10, 2026

Subject: Fee Table Amendments – Commercial Electrical Permit Review Fees, Water Meter Fees, and Finance Fees

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Background

City staff periodically review the City Fee Table and are proposing the following three updates.

Commercial Electrical Review Fees
For 2026, the City instituted review fees for commercial electrical permits. However, upon implementation, it was discovered that those fees were much higher than the surrounding market. The current commercial electrical review fees are as follows:

Commercial/Industrial/Apartment and All Solar:	2.5% of Project Value x 0.025
Electrical Plan Review:	35% of Permit Fee

In order to be more in line with the market, the city will utilize a sliding scale similar to the fee structure used in calculating commercial building permit fees. The proposed fees are:

Electrical fees for commercial/industrial permits (new construction, additions, and alterations):
- 2.5% of the project valuation for the first $300,000
- 0.5% of the project valuation above $300,000 to $1,500,000
- 0.25% of the project valuation above $1,500,000
- $150.00 minimum fee

Electrical fees for new multi-family dwellings (apartments)
- 1.0% of the project valuation

Electrical plan review fee:
- 20% of the electrical permit fee

Large Water Meter Fee Changes
As part of the City's water utility fund, water meters are sold to all new buildings. This ranges from smaller ¾" meters for all new homes, to meters up to 6" for high water users in the industrial

park. For smaller meters, pricing is determined in late fall and set at a fixed rate on the fee table for the following year. Larger meters come with a high cost, which can vary greatly throughout the year based on industry pricing. This price variability has been an increasing issue in recent years, leading to a change in the fee table to state that actual costs will be charged to users. Typically, a 6% administrative fee is included on top of the actual cost, to cover staff time when sizing and purchasing meters for these unique water users. This additional 6% was not originally included in the 2026 fee table and is proposed to be added at this time. The table below shows the seven meters that are affected by this change.

Proposed Changes:

Fee	Current Fee	Proposed Fee
2-Inch Compound	Actual Cost Plus Sales Tax	Actual Cost Plus 6% Plus Sales Tax
Mag Meter 3-Inch	Actual Cost Plus Sales Tax	Actual Cost Plus 6% Plus Sales Tax
Mag Meter 4-Inch	Actual Cost Plus Sales Tax	Actual Cost Plus 6% Plus Sales Tax
Mag Meter 6-Inch	Actual Cost Plus Sales Tax	Actual Cost Plus 6% Plus Sales Tax
Ultra Sonic 3-Inch	Actual Cost Plus Sales Tax	Actual Cost Plus 6% Plus Sales Tax
Ultra Sonic 4-Inch	Actual Cost Plus Sales Tax	Actual Cost Plus 6% Plus Sales Tax
Ultra Sonic 6-Inch	Actual Cost Plus Sales Tax	Actual Cost Plus 6% Plus Sales Tax

Electronic Check Fees (eCheck)

On February 18, 2026, Ordinance No. 1107 was adopted, which amended the City's fee schedule to add a transaction fee for payments processed via electronic check (eCheck). However, the amount applied to each eCheck (1.9%) was incorrect in Ordinance No. 1107. This ordinance amendment includes the corrected $1.95 per eCheck.

Staff Recommendation

Approve Ordinance No. 1110, amending the City Fee Table for the following items:

1) Amend the City Fee Table to institute Commercial Electrical Review Fees:

   Electrical fees for commercial/industrial permits (new construction, additions, and alterations):
   - 2.5% of the project valuation for the first $300,000
   - 0.5% of the project valuation above $300,000 to $1,500,000
   - 0.25% of the project valuation above $1,500,000
   - $150.00 minimum fee

   Electrical fees for new multi-family dwellings (apartments)
   - 1.0% of the project valuation

   Electrical plan review fee:
   - 20% of the electrical permit fee

2) Amend the City Fee Table to change the Large Water Meter Fees

Fee	Proposed Fee
2-Inch Compound	Actual Cost Plus 6% Plus Sales Tax
Mag Meter 3-Inch	Actual Cost Plus 6% Plus Sales Tax
Mag Meter 4-Inch	Actual Cost Plus 6% Plus Sales Tax
Mag Meter 6-Inch	Actual Cost Plus 6% Plus Sales Tax
Ultra Sonic 3-Inch	Actual Cost Plus 6% Plus Sales Tax
Ultra Sonic 4-Inch	Actual Cost Plus 6% Plus Sales Tax
Ultra Sonic 6-Inch	Actual Cost Plus 6% Plus Sales Tax

3) Amend the City Fee Table by correcting the Electronic Check Fees (eCheck) to be up to $1.95 per eCheck.

CITY OF COTTAGE GROVE
ORDINANCE NO. 1110

AN ORDINANCE FOR THE CITY OF COTTAGE GROVE, MINNESOTA, AMENDING THE CITY FEE TABLE

The City Council of the City of Cottage Grove, Washington County, Minnesota, does hereby ordain as follows:

SECTION 1. AMENDMENT. The City Fee Table administered by the City of Cottage Grove, County of Washington, State of Minnesota, shall be amended as specified in Attachment A effective upon publication and will remain in effect until amended or otherwise specified.

SECTION 2. PUBLICATION BY TITLE AND SUMMARY. Pursuant to Minnesota Statute Section 412.191, subd. 4, in the case of a lengthy ordinance, a summary may be published in lieu of the entire ordinance. The entire ordinance has been posted in accordance with State Statute 415.19 on the City's Public Notices board at City Hall, and on the City's website under Pending Ordinances at least ten days before consideration. A copy of the entire ordinance is available at the office of the City Clerk and the fee table in its entirety will be published on the City's website. The following summary is approved by the City Council and shall be published in lieu of the entire ordinance:

Ordinance 1110 amends the City Fee Table as follows:

1) ***Commercial Electrical Permit Plan Review Fee***

Fee Name	**Current Fee**	**Proposed Fee**
Commercial/Industrial/Apartment and All Solar	2.5% of Project Value x 0.025	Delete
Electrical fees for commercial/industrial permits (new construction, additions, and alterations)	New	• 2.5% of the construction valuation for the first $300,000 • 0.5% of the construction valuation above $300,000 to $1,500,000 • 0.25% of the construction valuation above $1,500,000 • $150.00 minimum fee
Electrical fees for new multi-family dwellings (apartments)	New	1.0% of the construction valuation
Electrical plan review fee	35% of Permit Fee	20% of Electrical Permit Fee

2) ***Large Water Meter Fees***

Fee	**Current Fee**	**Proposed Fee**
2-Inch Compound	Actual Cost Plus Sales Tax	Actual Cost Plus 6% Plus Sales Tax
Mag Meter 3-Inch	Actual Cost Plus Sales Tax	Actual Cost Plus 6% Plus Sales Tax
Mag Meter 4-Inch	Actual Cost Plus Sales Tax	Actual Cost Plus 6% Plus Sales Tax
Mag Meter 6-Inch	Actual Cost Plus Sales Tax	Actual Cost Plus 6% Plus Sales Tax
Ultra Sonic 3-Inch	Actual Cost Plus Sales Tax	Actual Cost Plus 6% Plus Sales Tax
Ultra Sonic 4-Inch	Actual Cost Plus Sales Tax	Actual Cost Plus 6% Plus Sales Tax
Ultra Sonic 6-Inch	Actual Cost Plus Sales Tax	Actual Cost Plus 6% Plus Sales Tax

*3) **E-check Fee** – Up to $1.95 per eCheck.*

The full text of Ordinance 1110 is available at Cottage Grove City Hall.

SECTION 3. EFFECTIVE DATE. This ordinance shall be in full force and effect after its passage and publication according to law.

Passed this 18th day of March, 2026.

_____
Myron Bailey, Mayor

Attest:

_____
Tamara Anderson, City Clerk

Published in the Pioneer Press on 3/20/2026.

Category	Subcategory	Item	Tier	2026 Fees
Ambulance	Advanced Life Support	Stand-By (Paramedic without Ambulance)		$80.00 per hour
Ambulance	Advanced Life Support	Stand-By (Two EMS Providers (at least one Paramedic) with Ambulance)		$220.00 per hour
Ambulance	Advanced Life Support	Treatment and Transport - Tier 1		$2,690.00
Ambulance	Advanced Life Support	Treatment and Transport - Tier 2		$3,010.00
Ambulance	Advanced Life Support	Treatment without Transport (includes all medication administration, oxygen administration, and cardiac arrest care)		$550.00
Ambulance	Basic Life Support	Evaluation without Transport (includes assessment, vital signs (including pulse oximetry), blood glucose measurement, basic bandaging, band-aid, basic wound care, splinting or carbon monoxide monitoring)		No Charge Resident; $550.00 Non Resident
Ambulance	Basic Life Support	Stand-By (EMT without Ambulance)		$55.00 per hour
Ambulance	Basic Life Support	Treatment and Transport		$2,150.00
Ambulance	Other	Blood draw for legal purposes (Legal Blood Draw) for outside agency		$200.00
Ambulance	Other	Mileage Charge (Per Loaded Mile From City Limits)		$40.00
Ambulance	Other	Non-Resident Fee		$230.00
Ambulance	Other	Special Services EMS Charge		$450.00
Animal	Impound	City-Ordered, Administrative Fee		Actual Cost Incurred By Impound Facility
Animal	Impound	City-Ordered, Facility Fee		Actual Cost Incurred By Impound Facility
Animal	Licenses	Dog/Cat, Duplicate Tag		$5.00 each
Animal	Licenses	Dog/Cat, Multiple Animal		$100.00 Per Calendar Year
Animal	Licenses	Dog/Cat, Non-Spayed/Non-Neutered (1 Calendar Year)		$20.00 Renewal
Animal	Licenses	Dog/Cat, Non-Spayed/Non-Neutered (Lifetime License)		$75.00
Animal	Licenses	Dog/Cat, Spayed/Neutered (1 Calendar Year)		$15.00 Renewal
Animal	Licenses	Dog/Cat, Spayed/Neutered (Micro-chipped Lifetime License)		$50.00
Animal	Licenses	Dog/Cat, Spayed/Neutered (No Micro-chip Lifetime License)		$60.00
Animal	Licenses	Goats, Temporary Keeping of, Vegetation Management		$50.00 Per Calendar Year
Animal	Licenses	Kennel, Commercial		$50.00 per year
Animal	Other	Administrative hearing fee, dangerous/potentially dangerous dog		$200.00
Animal	Registrations	Dog, Dangerous		$60.00 Spayed/Neutered; $65.00 Non-Spayed/Non-Neutered per Calendar Year
Animal	Registrations	Dog, Potentially Dangerous		$60.00 Spayed/Neutered; $65.00 Non-Spayed/Non-Neutered per Calendar Year
Development	Area Charges, Commercial/Industrial	Sanitary Sewer, Remainder of City		$2,730 per acre
Development	Area Charges, Commercial/Industrial	Sanitary Sewer, South District Lower		$15,260 per acre
Development	Area Charges, Commercial/Industrial	Sanitary Sewer, South District Upper		$5,740 per acre
Development	Area Charges, Commercial/Industrial	Sanitary Sewer, Utility Staging Area 2		$11,490 per acre
Development	Area Charges, Commercial/Industrial	Storm Water Facilities, East Ravine		$15,370 per acre
Development	Area Charges, Commercial/Industrial	Storm Water Facilities, Remainder of City		$13,130 per acre
Development	Area Charges, Commercial/Industrial	Storm Water Facilities, South District		$15,150 per acre
Development	Area Charges, Commercial/Industrial	Storm Water Facilities, West Draw		$14,630 per acre
Development	Area Charges, Commercial/Industrial	Waterworks		$8,450 per acre

Category	Subcategory	Item	Tier	2026 Fees
Development	Area Charges, Residential	Sanitary Sewer, Remainder of City		$1,950 per acre
Development	Area Charges, Residential	Sanitary Sewer, South District Lower		$10,820 per acre
Development	Area Charges, Residential	Sanitary Sewer, South District Upper		$4,080 per acre
Development	Area Charges, Residential	Sanitary Sewer, Upper Ravine		$9,970 per acre
Development	Area Charges, Residential	Sanitary Sewer, Utility Staging Area 2		$8,150 per acre
Development	Area Charges, Residential	Sanitary Sewer, West Draw Area 1		$2,440 per acre
Development	Area Charges, Residential	Sanitary Sewer, West Draw Area 2		$4,010 per acre
Development	Area Charges, Residential	Storm Water Facilities, East Ravine - High Density		$15,370 per acre
Development	Area Charges, Residential	Storm Water Facilities, East Ravine - Medium Density		$12,840 per acre
Development	Area Charges, Residential	Storm Water Facilities, East Ravine - Single Family		$10,510 per acre
Development	Area Charges, Residential	Storm Water Facilities, Remainder of City - Ag Developed		$9,420 per acre
Development	Area Charges, Residential	Storm Water Facilities, Remainder of City - Estate		$6,550 per acre
Development	Area Charges, Residential	Storm Water Facilities, Remainder of City - High Density		$13,130 per acre
Development	Area Charges, Residential	Storm Water Facilities, Remainder of City - Medium Density		$10,940 per acre
Development	Area Charges, Residential	Storm Water Facilities, Remainder of City - Single Family		$9,000 per acre
Development	Area Charges, Residential	Storm Water Facilities, South District - High Density		$15,150 per acre
Development	Area Charges, Residential	Storm Water Facilities, South District - Medium Density		$12,660 per acre
Development	Area Charges, Residential	Storm Water Facilities, South District - Single Family		$10,380 per acre
Development	Area Charges, Residential	Storm Water Facilities, SW Drainage Area - Multi Family		$12,890 per acre
Development	Area Charges, Residential	Storm Water Facilities, SW Drainage Area - Single Family		$9,860 per acre
Development	Area Charges, Residential	Storm Water Facilities, Upper Ravine - Multi Family		$6,870 per acre
Development	Area Charges, Residential	Storm Water Facilities, Upper Ravine - Single Family		$5,820 per acre
Development	Area Charges, Residential	Storm Water Facilities, West Draw - Ag Developed		$10,480 per acre
Development	Area Charges, Residential	Storm Water Facilities, West Draw - Estate		$7,320 per acre
Development	Area Charges, Residential	Storm Water Facilities, West Draw - High Density		$14,640 per acre

Category	Subcategory	Item	Tier	2026 Fees
Development	Area Charges, Residential	Storm Water Facilities, West Draw - Medium Density		$12,200 per acre
Development	Area Charges, Residential	Storm Water Facilities, West Draw - Single Family		$9,760 per acre
Development	Area Charges, Residential	Water Works, Remainder of City		$6,810 per acre
Development	Connection Fees, Commercial/Industrial	Sanitary Sewer		$1,770 per acre
Development	Connection Fees, Commercial/Industrial	Water Works		$2,620 per acre
Development	Connection Fees, Residential	Sanitary Sewer, Entire City		$460 per unit
Development	Connection Fees, Residential	Water Works, Entire City		$370 per unit
Development	Engineering	City Concept Review, Public Improvement (Private Developer)		1%
Development	Engineering	City Design Escrow, Public Improvement (Private Developer, Public Design)		5%
Development	Engineering	City Engineering Administration Fee, Public Improvement (Private Developer)		2%
Development	Engineering	City Engineering Administration Fee, Public Project		4%
Development	Engineering	City Inspection Escrow, Public Improvement (Private Developer, Private Design) - $0 - $1 million project valuation		6%
Development	Engineering	City Inspection Escrow, Public Improvement (Private Developer, Private Design) - Project valuation greater than $1 million		5%
Development	Engineering	City Inspection/Testing Escrow, Public Improvement (Private Developer, Public Design)		10%
Development	Engineering	Hourly Rate for Engineering and Staff Time		Actual Cost
Development	engineering	Park Land Dedication, Commercial	Land Only	Minimum of 10% of the Buildable Land within the Development.
Development	Engineering	Plan Review Escrow, Public Improvement (Private Developer, Private Design) - Project valuation greater than $1 million		2%
Development	Engineering	Plan Review Escrow, Public Improvement (Private Developer, Private Design) - $0 - $1 million project valuation		3%
Development	Engineering	Private Commercial Site Improvements - $0 - $100, 000 Valuation		$300.00 Base Fee for Up To The First $20,000 Site Improvement Valuation; $13.00 per Additional $1,000 Site Improvement Valuation
Development	Engineering	Private Commercial Site Improvements - $500,001 - $1,000,000 Valuation		$4,300.00 Base Fee for First $500,000 Site Improvement Valuation; $5.00 per Additional $1,000 Site Improvement Valuation
Development	Engineering	Private Commercial Site Improvements - Greater than $1,000,000 valuation		$6,600.00 Base Fee for First $1,000,000 Site Improvement Valuation; $4.5 per Additional $1,000 Site Improvement Valuation
Development	Engineering	Private Commercial Site Improvements $100, 001 - $500,000 Valuation		$1,300.00 Base Fee for First $100,000 Site Improvement Valuation; 8.00 per Additional $1,000 Site Improvement Valuation
Development	Engineering	Telecommunication Facilities Escrow Fee		$10,000.00
Development	Engineering	Telecommunication Facilities Lease (Escrow Fee and Contract Required; Tenant Responsible for Additional Consulting, Planning or Building Permit Fees)	Grange Water Tower (H10' X W10' X D24" Maximum Area)	$46,350.00/Year with 4% Annual Lease Rate Escalator (Leased Space in Excess of Maximum Area Prorated)
Development	Engineering	Telecommunication Facilities Lease (Escrow Fee and Contract Required; Tenant Responsible for Additional Consulting, Planning or Building Permit Fees)	Meadowgrass Water Tower (H10' X W12' X D32" Maximum Area)	$46,350.00/Year with 4% Annual Lease Rate Escalator (Leased Space in Excess of Maximum Area Prorated)

Category	Subcategory	Item	Tier	2026 Fees
Development	Engineering	Telecommunication Facilities Lease (Escrow Fee and Contract Required; Tenant Responsible for Additional Consulting, Planning or Building Permit Fees)	Inwood Water Tower (H10' X W12' X D32" Maximum Area)	$46,350.00/Year with 4% Annual Lease Rate Escalator (Leased Space in Excess of Maximum Area Prorated)
Development	Engineering	Telecommunication Facilities Lease (Escrow Fee and Contract Required; Tenant Responsible for Additional Consulting, Planning or Building Permit Fees)	Innsdale Water Tower (H10' X W12' X D32" Maximum Area)	$46,350.00/Year with 4% Annual Lease Rate Escalator (Leased Space in Excess of Maximum Area Prorated)
Development	Engineering	Telecommunication Facilities Lease (Escrow Fee and Contract Required; Tenant Responsible for Additional Consulting, Planning or Building Permit Fees)	92nd Street Water Tower (H10' X W12' X D32" Maximum Area)	$46,350.00/Year with 4% Annual Lease Rate Escalator (Leased Space in Excess of Maximum Area Prorated)
Development	Engineering	Telecommunication Facilities Lease (Generator Fee)		$6000.00/Per Year Per Generator With a 4% Annual Lease Rate Escalator
Development	Miscellaneous	Administrative Use Permit, Commercial		Add Note For All Planning Fees: *Any escrows received by the City shall be monitored to ensure sufficient escrow funds are held by the City. When an escrow account reaches a balance of 10% of the original escrow amount, the City shall invoice the applicant for the submittal of additional escrow funds in an amount consistent with the original escrow submittal. This process shall continue until the City has completed all necessary reviews.
Development	Miscellaneous	Administrative Use Permit, Residential		$565.00 Plus $5,000.00 Escrow
Development	Miscellaneous	Agricultural Preservation Documentation Processing		$150.00
Development	Miscellaneous	Business Park AUAR		$111.00 per Acre
Development	Miscellaneous	Business Subsidy Application		$10,000.00 Escrow (Unused Escrow Amount Returned)
Development	Miscellaneous	Comprehensive Plan		$50.00 Paper Copy/$10 Digital
Development	Miscellaneous	Comprehensive Plan Amendment, Map or Text		$670.00 + $55.00 GIS Fee + $2,500.00 Escrow
Development	Miscellaneous	Conditional Use Permit, Commercial		$565.00 Plus $5,000.00 Escrow
Development	Miscellaneous	Conditional Use Permit, Interim		$565.00 Plus $5,000.00 Escrow
Development	Miscellaneous	Conditional Use Permit, Residential		$565.00 Plus $5,000.00 Escrow
Development	Miscellaneous	East Ravine AUAR Charge		$120.00 Per Acre
Development	Miscellaneous	Environmental Assessment Worksheet		$620.00 Plus Actual Costs
Development	Miscellaneous	Financial Guarantee, Escrow for Subdivision Improvements		Public Improvements – 125% of Estimated Cost. Boulevard, Landscaping Improvements - 150% of Estimated Cost.
Development	Miscellaneous	Historic Preservation Delisting		$515.00
Development	Miscellaneous	Historic Preservation Designation		$515.00
Development	Miscellaneous	Lot Grading and Corner Lot Pin Compliance Escrow		$1,000.00 Per Lot
Development	Miscellaneous	Metropolitan Council SAC Charge		$2,485.00 Per Unit for Applicable 2025 Permits
Development	Miscellaneous	Mining, Annual Inspection and Review		$2,060.00
Development	Miscellaneous	Mining, Permit Removal per Occurrence		Under 100,000 tons - $300.00. Over 100,000 tons - $550.00
Development	Miscellaneous	Natural Resources Inventory		$70.00 Per Paper Copy
Development	Miscellaneous	Park and Open Space Identification Markers		$175/Post
Development	Miscellaneous	Park Land Dedication, Commercial	Cash in Lieu of	Estimated $8,500.00 Per Acre or 10% of the Fair Market Value, whichever is greater.
Development	Miscellaneous	Park Land Dedication, Industrial	Cash in Lieu of	$8,500 per acre or 10% of the Fair Market Value, whichever is greater.
Development	Miscellaneous	Park Land Dedication, Residential	Land Only	Minimum of 10% of the Buildable Land within the Development.
Development	Miscellaneous	Park Land Dedication, Residential	Cash in Lieu of (Single Family)	$5,000.00 Per Unit or 10% of the Fair Market Value, whichever is greater.
Development	Miscellaneous	Park Land Dedication, Residential	Cash in Lieu of (Quad Buildings)	$4,000.00 Per Unit or 10% of the Fair Market Value, whichever is greater.
Development	Miscellaneous	Park Land Dedication, Residential	Cash in Lieu of (Townhome)	$4,000.00 Per Unit or 10% of the Fair Market Value, whichever is greater.
Development	Miscellaneous	Park Land Dedication, Residential	Cash in Lieu of (Multi-Family (Apartments, Condos, Independent Senior Living))	$3,000.00 Per Unit or 10% of the Fair Market Value, whichever is greater.
Development	Miscellaneous	Park Land Dedication, Residential	Cash in Lieu of (Assisted Living (Skilled Care, Memory Care))	$8,500.00 Per Acre or 10% of the Fair Market Value, whichever is greater.

Category	Subcategory	Item	Tier	2026 Fees
Development	Miscellaneous	Plat, Final		$360.00 + $100.00/Acre + $5,000.00 Escrow
Development	Miscellaneous	Plat, Preliminary		$565.00 + $50.00 Per Lot/Unit + $15,000.00 Escrow
Development	Miscellaneous	Preliminary Development Review Escrow		$1,080.00 Plus $20.00 Per Acre; $1,000.00 Escrow
Development	Miscellaneous	Public ROW and Easement Vacations		$360.00
Development	Miscellaneous	PUD (Planned Unit Development)		$900 Plus a $2,000 Escrow
Development	Miscellaneous	Re-addressing		$150.00
Development	Miscellaneous	Sign Ordinance		$15.00 Per Paper Copy / $10.00 Digital Format
Development	Miscellaneous	Signs, Illegal, Return of		$10.00 Per Sign
Development	Miscellaneous	Site Plan		$500.00 Plus $5,000 Escrow
Development	Miscellaneous	Sketch Plan Review		$205.00 Plus $5000.00 Escrow
Development	Miscellaneous	Street Lighting - New Developments		$6.83/Lot/Month for 24 Months
Development	Miscellaneous	Street Renaming		$200.00 (Plus Sign Material and Labor for Installation)
Development	Miscellaneous	Subdivision, Minor		$500.00 Plus $2,000 Escrow
Development	Miscellaneous	Tree Mitigation	Replacement Trees	Reference Title 11-3-13
Development	Miscellaneous	Tree Mitigation	Cash In Lieu of	$150.00 Per Required Replacement Inch
Development	Miscellaneous	Variance, Post-Construction		$925.00
Development	Miscellaneous	Variance, Pre-Construction		$300.00
Development	Miscellaneous	Zoning Amendment, Text or Map		$665.00 Plus $2,000.00 Escrow
Development	Miscellaneous	Zoning Appeal		$310.00
Development	Miscellaneous	Zoning Letter		$100.00
Development	Miscellaneous	Zoning Ordinance		$30.00 Per Paper Copy / $10 Digital Format
Engineering	Miscellaneous	Off-Site Stormwater Ponding Fee		Reference City Stormwater Management Plan
Engineering	Miscellaneous	Sealcoating, Street, New Subdivision		$1.25 Per Square Yard
Engineering	Miscellaneous	Sealcoating, Trails		$2.50 Per Square Yard
Fines	Code Enforcement	Weeds, Tall, Abatement	1st Violation in 12-Month Period	$60.00 Plus Actual Cost
Fines	Code Enforcement	Weeds, Tall, Abatement	2nd Violation in 12-Month Period	$110.00 Plus Actual Cost
Fines	Code Enforcement	Weeds, Tall, Abatement	3rd Violation in 12-Month Period	$210.00 Plus Actual Cost
Fines	License	Cannabinoid & Low Potency THC, Underage Sale	1st Violation in a 24-Month Period	$500.00 (plus 1-day suspension) or, in lieu of the suspension and the fine, at the City Council's discretion, participation of all employees in an educational program approved by the Public Safety Director
Fines	License	Cannabinoid & Low Potency THC, Underage Sale	2nd Violation in a 24-Month Period	$1,000.00 (Plus 3-Day Suspension)
Fines	License	Cannabinoid & Low Potency THC, Underage Sale	3rd Violation in a 24-Month Period	$2,000.00 (Plus 7-Day Suspension)
Fines	License	Cannabinoid & Low Potency THC, Underage Sale	Additional Violations in a 24-Month Period	30-day Suspension
Fines	License	False Alarms, Commercial (0-4)		No Charge
Fines	License	False Alarms, Commercial (10+)		$300.00 Each
Fines	License	False Alarms, Commercial (5-6)		$75.00 Each
Fines	License	False Alarms, Commercial (7-9)		$150.00 Each
Fines	License	Liquor, Underage Sale	1st Violation in a 24-Month Period	$500.00 (plus 1-day suspension) or, in lieu of the suspension and the fine, at the City Council's discretion, participation of all employees in an educational program approved by the Public Safety Director
Fines	License	Liquor, Underage Sale	2nd Violation in a 24-Month Period	$1,000.00 (Plus 3-Day Suspension)
Fines	License	Liquor, Underage Sale	3rd Violation in a 24-Month Period	$1,500.00 (Plus 7-Day Suspension)
Fines	License	Liquor, Underage Sale	4th Violation in a 24-Month Period	Revocation
Fines	License	Tobacco, Underage Sale, Licensee	1st Violation in a 36-Month Period	$300.00
Fines	License	Tobacco, Underage Sale, Licensee	2nd Violation in a 36-Month Period	$600.00
Fines	License	Tobacco, Underage Sale, Licensee	3rd Violation in a 36-Month Period	$1,000.00 (Plus 7-Day Suspension)
Fines	License	Tobacco, Underage Sale, Licensee	4th Violation in a 36-Month Period	License Revocation
Fines	License	Tobacco, Underage Sales, Employee/Seller		$50.00
General Services	Copying/Printing	City Maps, Urban or Rural		$5.00 Each
General Services	Copying/Printing	Copies		$0.25
General Services	Copying/Printing	Printing, Large Format, Black and White		$5.00 Each
General Services	Copying/Printing	Printing, Large Format, Color		$10.00 Each
General Services	Finance	Assessment Search		$20.00
General Services	Finance	Credit Card Fee's - For All Activities Except Golf, Ice Arena, HERO Center, and Recreation.		$2.50 or 3.75% (or actual cost of processing the credit card)

Category	Subcategory	Item	Tier	2026 Fees
General Services	Finance	Credit Card Fee's - Recreation		6.98% for online payments (or actual cost of processing credit card)
General Services	Finance	Electric Checks (eChecks)		Up to $1.95 per eCheck
General Services	Finance	Finance Charge on Accounts Receivable Aged Greater than 30 Days		1.5% Per Month or $1.00 Minimum
General Services	Finance	Finance Charge on Annual Utility Bills Greater than 90 Days		4.5% Annual or $3.00 minimum (whichever is greater)
General Services	Finance	Finance, Projects		3%
General Services	Finance	Nonsufficient Fund Charge		$35.00
General Services	Finance	Tax exempt revenue bond financing (other exenses)		Actual out of Pocket Costs
General Services	Finance	Tax Increment Financing (TIF) Escrow		$10,000.00
General Services	Finance	Tax-Exempt Revenue Bond Financing		1% of the First $10 Million in Requested Financing, with 1/2 of the 1% Fee Being Charged on the Remaining Issue
General Services	Miscellaneous	Administration, Projects		2%
General Services	Miscellaneous	Appeals to the city administrator filing fee		$200.00/Each
General Services	Miscellaneous	City Hall Facility Use		Cleaning Fee, Additional - $50.00 per Hour. One Hour Minimum Charge
General Services	Miscellaneous	Election Filing Fee		$5.00
General Services	Miscellaneous	Special Meeting Fee		$500.00
Golf Course	Cart Rental	Daily		$34.00
Golf Course	Cart Rental	Daily		$44.00
Golf Course	Cart Rental	Senior, Non-Primetime		$24.00
Golf Course	Cart Rental	Senior, Non-Primetime		$34.00
Golf Course	Cart Rental	Twilight		$32.00
Golf Course	F/B Minimum	All other events		$1,500
Golf Course	F/B Minimum	Wedding event		$30 pp
Golf Course	Facility Rental	1/2 Banquet Room		$500
Golf Course	Facility Rental	Main Banquet Room		$1,000
Golf Course	Facility Rental	Wedding Rental		$6,000
Golf Course	Facility Rental	Wedding Rental & Ceremony		$7,500
Golf Course	Food Minimum	Main Banquet Room		NA
Golf Course	Food Minimum	Main Banquet Room- Wedding		NA
Golf Course	Food Minimum	Partial Rooms		NA
Golf Course	Greens Fee (Juniors)	18 Hole, After 1 PM		$25.00
Golf Course	Greens Fee (Juniors)	2 Hours Before Dark	Junior Free if playing with an adult	$10.00
Golf Course	Greens Fee (Juniors)	9 Hole, After 1 PM		$20.00
Golf Course	Greens Fee (Non-Patron)	18 Hole, Friday - Sunday & Holiday		$49.00
Golf Course	Greens Fee (Non-Patron)	18 Hole, Monday - Thursday		$44.00
Golf Course	Greens Fee (Non-Patron)	9 Hole, Friday - Sunday & Holiday, After 1 PM 7 before twillight		$29.00
Golf Course	Greens Fee (Non-Patron)	9 Hole, Monday - Thursday		$28.00
Golf Course	Greens Fee (Patron)	18 Hole, Friday - Sunday & Holiday		$45.00
Golf Course	Greens Fee (Patron)	18 Hole, Monday - Thursday		$40.00
Golf Course	Greens Fee (Patron)	9 Hole, Friday - Sunday & Holiday, After 1 PM		$27.00
Golf Course	Greens Fee (Patron)	9 Hole, Monday - Thursday		$27.00
Golf Course	Greens Fee (Seniors)	18 Hole, Friday - Sunday & Holiday After 1 PM 7 before twillight		$42.00
Golf Course	Greens Fee (Seniors)	18 Hole, Monday - Thursday		$31.00
Golf Course	Greens Fee (Seniors)	9 Hole, Friday - Sunday & Holiday, After 1 PM 7 before twillight		$25.00
Golf Course	Greens Fee (Seniors)	9 Hole, Monday - Thursday		$23.00
Golf Course	Greens Fee (Twilight Golf)	Walking		$30.00
Golf Course	Outdoor Tent Rental	Per 20' x 20' Tent		$250.00
Golf Course	Practice Range	Range Balls	Small	$8.00
Golf Course	Practice Range	Range Balls	Medium	$13.00
Golf Course	Practice Range	Range Balls	Large	$16.00
Golf Course	Ride Along Fee	Ride Along Fee		$15.00
Golf Course	Season Pass	Couple		$2,900.00
Golf Course	Season Pass	Couple, Weekday		$2,400.00
Golf Course	Season Pass	Half Cart Pass		$800.00
Golf Course	Season Pass	Half Cart Pass, Senior		$700.00
Golf Course	Season Pass	Individual		$1,950.00
Golf Course	Season Pass	Individual, Weekday		$1,600.00
Golf Course	Season Pass	Junior, Weekday		$475.00
Golf Course	Season Pass	Junior, Weekends After 1 PM		$675.00
Golf Course	Season Pass	Practice Range, Member		$450.00
Golf Course	Season Pass	Practice Range, Non-Member		$750.00
Golf Course	Season Pass	Senior		$1,600.00
Golf Course	Season Pass	Senior, Husband/Wife		$2,400.00
Golf Course	Season Pass	Senior, Husband/Wife, Weekday		$1,900.00

Category	Subcategory	Item	Tier	2026 Fees
Golf Course	Season Pass	Senior, Weekday		$1,400.00
Golf Course	Tournament	Shotgun, Before May 15 or After Sep 19	Monday - Thursday (includes $500 Merchandise Credit)	$6,500.00
Golf Course	Tournament	Shotgun, Before May 15 or After Sep 19	Friday - Sunday (includes $500 Merchandise Credit)	$7,500.00
Golf Course	Tournament	Shotgun, May 16 thru Sep 18	Monday - Thursday (includes $500 Merchandise Credit)	$7,750.00
Golf Course	Tournament	Shotgun, May 16 thru Sep 18	Friday - Sunday & Holidays (includes $500 Merchandise Credit)	$8,750.00
Golf Course	Trail Fee	Trail Fee		$15.00
Ice Arena	High School Hockey Games	Double - Admission Charged Varsity or JV games - Boys		50/50 Split - $2,250 Minimum per Game
Ice Arena	High School Hockey Games	Double - Admission Charged Varsity or JV games - Girls		50/50 Split - $1,750 Minimum per Game
Ice Arena	High School Hockey Games	Single - Admission Charged Varsity or JV games - Boys		50/50 Split - $1,750 Minimum per Game
Ice Arena	High School Hockey Games	Single - Admission Charged Varsity or JV games - Girls		50/50 Split - $1,450 Minimum per Game
Ice Arena	North & West Rink Ice Rental	72 Hour Deal		$180.00
Ice Arena	North & West Rink Ice Rental	Monday - Friday	Prime (2:00 PM - 10:00 PM)	$250.00
Ice Arena	North & West Rink Ice Rental	Monday - Friday	Non-Prime (10:00 PM - 2:00 PM)	$180.00
Ice Arena	North & West Rink Ice Rental	Off Season (April 1 – August 31) 1-30 Hours	1 - 10 Hours	$200.00
Ice Arena	North & West Rink Ice Rental	Off Season (April 1 – August 31) 31-60 Hours	11 - 20 Hours	$190.00
Ice Arena	North & West Rink Ice Rental	Off Season (April 1 – August 31) 61+ Hours	21- 35 Hours	$180.00 (21+ hours)
Ice Arena	North & West Rink Ice Rental	Off Season (April 1 – August 31) Non-Prime before 6am-or after 10pm	Non-Prime Rate (Before 6 AM or After 10 PM)	$185.00
Ice Arena	North & West Rink Ice Rental	Saturday & Sunday Non-Prime	Non-Prime (10:00 PM - 6:00 AM)	$180.00
Ice Arena	North & West Rink Ice Rental	Saturday & Sunday Prime	Prime (6:00 AM - 10:00 PM)	$250.00
Ice Arena	Public Skating	Figure Skaters Practice - North or West Rink		$14.00 Per Person
Ice Arena	Public Skating	Figure Skaters Practice - South Rink		$7.00 Per Person
Ice Arena	Public Skating	Open Hockey		$7.00 Per Person
Ice Arena	Public Skating	Public Skating		$7.00 Per Person
Ice Arena	Public Skating	Public Skating Punch Card		$49.00 Each
Ice Arena	Rentals, Other	Ice Resurfacing, Extra		$30.00
Ice Arena	Rentals, Other	Marquee Sign		$10.00 Per Day Per Side
Ice Arena	Rentals, Other	Meeting Room		$30.00 Per Hour
Ice Arena	Rentals, Other	Skate Rental		$5.00 Per Pair
Ice Arena	Rentals, Other	Skate Rental w/Skating School Program		$3.00 Per Pair
Ice Arena	Rentals, Other	Skate Sharpening		$7.00 Per Pair
Ice Arena	Rentals, Other	Skate Sharpening Punch Card		$49.00/ 8 Sharpening's
Ice Arena	South Rink Ice Rental	72 Hour Deal		$140.00 Plus Tax
Ice Arena	South Rink Ice Rental	Monday - Friday Non-Prime	Non-Prime (9:00 PM - 2:00 PM)	$140.00 Plus Tax
Ice Arena	South Rink Ice Rental	Monday - Friday Prime	Prime (2:00 PM - 9:00 PM)	$150.00 Plus Tax
Ice Arena	South Rink Ice Rental	Off Season (April 1 – August 31)	Prime (6:00 AM to 10:00 PM)	$155.00 Plus Tax
Ice Arena	South Rink Ice Rental	Off Season (April 1 – August 31)	Non-Prime (Before 6:00 AM or After 10:00 PM)	$145.00 Plus Tax
Ice Arena	South Rink Ice Rental	Saturday & Sunday	Prime (6:00 AM - 9:00 PM)	$155.00 Plus Tax
Ice Arena	South Rink Ice Rental	Saturday & Sunday	Non-Prime (9:00 PM - 6:00 AM)	$145.00 Plus Tax
Ice Arena	Turf Rental	March - September		$100.00 Plus Tax
Licenses	Animal	Chicken and Duck Keeping (year 1 and 2)	2 year license	$100.00 every 2 years
Licenses	Animal	Renewal - Chicken and Duck Keeping (year 3 and after)	2- year license	$50.00 every 2 years

Category	Subcategory	Item	Tier	2026 Fees
Licenses	Business	Adult Entertainment, Principal Uses		$5,000.00 plus Investigation Fee of $2,060.00 In-State; Up To $10,300.00 Out-State
Licenses	Business	Beekeeping		$100.00 every 2 years
Licenses	Business	Cannabis Cultivator (Registration Fee plus first Renewal Fee)		$1,500.00
Licenses	Business	Cannabis Cultivator (Renewal Fee)		$1,000.00
Licenses	Business	Cannabis Delivery Service (Registration Fee Plus First Renewal Fee)		$750.00
Licenses	Business	Cannabis Delivery Service (Renewal Fee)		$500.00
Licenses	Business	Cannabis Event Organizer Permit (Event Fee and Escrow) (One Event)		250.00 Each Event with a $5000.00 Escrow
Licenses	Business	Cannabis Lower-Potency Hemp Edible Manufacturer (Registration Fee Plus First Renewal Fee)		$1,000.00
Licenses	Business	Cannabis Lower-Potency Hemp Edible Manufacturer (Renewal Fee)		$500.00
Licenses	Business	Cannabis Lower-Potency Hemp Edible Retailer Initial Registration (1 License Per Retail Location) (Registration Fee Plus First Renewal Fee)		$250.00
Licenses	Business	Cannabis Lower-Potency Hemp Edible Retailer Renewal Fee (Per Retail Location)		$125.00
Licenses	Business	Cannabis Manufacturer (Registration Fee plus first Renewal Fee)		$1,500.00
Licenses	Business	Cannabis Manufacturer (Renewal Fee)		$1,000.00
Licenses	Business	Cannabis Medical Cannabis Combination (Renewal Fee)		$1,000.00
Licenses	Business	Cannabis Medical Cannabis Combination Initial Registration (Registration Fee Plus First Renewal Fee)		$1,500.00
Licenses	Business	Cannabis Mezzo (Renewal Fee)		$1,000.00
Licenses	Business	Cannabis Mezzo Initial Registration (Registration Fee Plus First Renewal Fee)		$1,500.00
Licenses	Business	Cannabis Micro (Renewal Fee)		$1,000.00
Licenses	Business	Cannabis Micro Initial Registration (Registration Fee Plus First Renewal Fee)		$1,000.00
Licenses	Business	Cannabis Retailer (Registration Fee plus first Renewal Fee)		$1,500.00
Licenses	Business	Cannabis Retailer (Renewal Fee)		$1,000.00
Licenses	Business	Cannabis Testing Facility (Registration Fee Plus First Renewal Fee)		$1,500.00
Licenses	Business	Cannabis Testing Facility (Renewal Fee)		$1,000.00
Licenses	Business	Cannabis Transporter (Registration Fee Plus First Renewal Fee)		$750.00
Licenses	Business	Cannabis Transporter (Renewal Fee)		$500.00
Licenses	Business	Cannabis Wholesaler (Registration Fee Plus First Renewal Fee)		$1,500.00
Licenses	Business	Cannabis Wholesaler (Renewal Fee)		$1,000.00
Licenses	Business	Commercial Film Production (High-Impact):	A production that includes more than five crew, more than 10 talents, and more than two personal vehicles	$200.00
Licenses	Business	Commercial Film Production (Low-Impact):	A production that includes less than five crew and less than 10 talents, no trucks or commercial vehicles, and only two personal vehicles allowed	$100.00
Licenses	Business	Fireworks Sales, Retail (Accessory Seller)		$100.00
Licenses	Business	Fireworks Sales, Retail (Principal Seller)		$350.00
Licenses	Business	Gambling, Investigation Fee (Premises Permits and Bingo Halls)		$250.00
Licenses	Business	Gambling, Permit and State Licensing Exemptions		$100.00
Licenses	Business	Liquor, 3.2% Malt Liquor, Investigation Fee		$250.00 (Except Temporary Licenses)
Licenses	Business	Liquor, 3.2% Malt Liquor, Off Sale		$200.00 Per Calendar Year
Licenses	Business	Liquor, 3.2% Malt Liquor, Off Sale, Brew Pub		$200.00 Per Calendar Year
Licenses	Business	Liquor, 3.2% Malt Liquor, Off Sale, Small Brewer		$200.00 Per Calendar Year

Category	Subcategory	Item	Tier	2026 Fees
Licenses	Business	Liquor, 3.2% Malt Liquor, On Sale		$600.00 Per Calendar Year
Licenses	Business	Liquor, 3.2% Malt Liquor, On Sale, Club		$100.00 Per Calendar Year
Licenses	Business	Liquor, 3.2% Malt Liquor, On Sale, Temporary		$50.00/Day For Each Location
Licenses	Business	Liquor, Consumption & Display		$300.00 Per Calendar Year
Licenses	Business	Liquor, Consumption & Display, Temporary		$25.00 Per Day
Licenses	Business	Liquor, Intoxicating, Investigation Fee	All Application Types	$500.00
Licenses	Business	Liquor, Intoxicating, Investigation Fee	Additional Investigation	$200.00
Licenses	Business	Liquor, Intoxicating, Investigation Fee	Foreign Corporations	Actual Cost
Licenses	Business	Liquor, Intoxicating, Off Sale		$200.00 Per Calendar Year
Licenses	Business	Liquor, Intoxicating, Off Sale, Brew Pub Malt Liquor		$500.00 Per Calendar Year
Licenses	Business	Liquor, Intoxicating, Off Sale, Micro distillery		$200.00 Per Calendar Year
Licenses	Business	Liquor, Intoxicating, Off Sale, Small Brewer Malt Liquor		$200.00 Per Calendar Year
Licenses	Business	Liquor, Intoxicating, Off Sale, Wine, Temporary		$50.00 Per Day for Each Location
Licenses	Business	Liquor, Intoxicating, On Sale		$6,000.00 Per Calendar Year
Licenses	Business	Liquor, Intoxicating, On Sale, Community Festival, Temporary		$50.00 Per Day for Each Location
Licenses	Business	Liquor, Intoxicating, On Sale, Brew Pub		$500.00 Per Calendar Year
Licenses	Business	Liquor, Intoxicating, On Sale, Brewer Taproom		$750.00 Per Calendar Year
Licenses	Business	Liquor, Intoxicating, On Sale, Club	<=200 Members	$300.00 Per Calendar Year
Licenses	Business	Liquor, Intoxicating, On Sale, Club	201 - 500 Members	$500.00 Per Calendar Year
Licenses	Business	Liquor, Intoxicating, On Sale, Club	501 - 1,000 Members	$650.00 Per Calendar Year
Licenses	Business	Liquor, Intoxicating, On Sale, Club	1,001 - 2,000 Members	$800.00 Per Calendar Year
Licenses	Business	Liquor, Intoxicating, On Sale, Club	2,001 - 4,000 Members	$1,000.00 Per Calendar Year
Licenses	Business	Liquor, Intoxicating, On Sale, Club	4,001 - 6,000 Members	$2,000.00 Per Calendar Year
Licenses	Business	Liquor, Intoxicating, On Sale, Club	>6,000 Members	$3,000.00 Per Calendar Year
Licenses	Business	Liquor, Intoxicating, On Sale, Culinary Class		$750.00 Per Calendar Year
Licenses	Business	Liquor, Intoxicating, On Sale, Micro distillery Cocktail Room		$750.00 Per Calendar Year
Licenses	Business	Liquor, Intoxicating, On Sale, Micro distillery, Temporary		$50.00 Per Day for Each Location
Licenses	Business	Liquor, Intoxicating, On Sale, Sports Facility or Cultural Facility, Temporary		$50.00 Per Day for Each Location
Licenses	Business	Liquor, Intoxicating, On Sale, Temporary		$50.00 Per Day for Each Location
Licenses	Business	Liquor, Intoxicating, On Sale, Wine		$2,000.00 Per Calendar Year
Licenses	Business	Liquor, Intoxicating, On Sale, Wine Festival, Temporary		$50.00 Per Day for Each Location
Licenses	Business	Liquor, Intoxicating, Sunday		$200.00 Per Calendar Year
Licenses	Business	Massage Business		$100.00 Per Calendar Year; $100.00 Initial Investigation Fee
Licenses	Business	Massage Therapist		$50.00 Per Calendar Year; $50.00 Initial Investigation Fee
Licenses	Business	Mobile Food Unit Operator License		$50/Day or $250/Year
Licenses	Business	Pawnbroker		$1,030.00 Per Calendar Year; $530.00 Investigation Fee
Licenses	Business	Peddler/Transient Merchant		$105.00 Per Calendar Year/License Period
Licenses	Business	Reapplication Fee following Revocation by the Council		Double the Current License Fee
Licenses	Business	Secondhand Goods Dealer, Single or Multiple		$1,030.00 Per Calendar Year; $530.00 Investigation Fee
Licenses	Business	Solicitor		$75.00 per Applicant per Calendar Year
Licenses	Business	Solid Waste and Recycling Collector, Commercial		$365.00 per Calendar Year
Licenses	Business	Solid Waste and Recycling Collector, Residential		$570.00 Per Calendar Year
Licenses	Business	Special Event Permit		$100.00
Licenses	Business	Tobacco Sales, Retail		$250.00 per Calendar Year
Licenses	Rental	Rental Dwelling, Late Fee		$50.00
Licenses	Rental	Rental Dwelling, Multiple Family		$175 Per Building Plus $20 Per Unit - Annually
Licenses	Rental	Rental Dwelling, Reinspection Fee		$60.00
Licenses	Rental	Rental Dwelling, Single/Duplex/Twin		$250 Per Unit - Biennially

Category	Subcategory	Item	Tier	2026 Fees
Parks	Donation	Memorial Bench		$2,500.00
Parks	Donation	Picnic Table		$1,250.00
Parks	Donation	Tree		$500.00/ or Price of the Tree + Plaque
Parks/Recreation	Event/Tournament	Class 2		$0.00
Parks/Recreation	Event/Tournament	Class 3		$325.00
Parks/Recreation	Event/Tournament	Class 4		$540.00
Parks/Recreation	Event/Tournament	Class 5		$695.00
Parks/Recreation	Event/Tournament	Concession Fee		$55.00
Parks/Recreation	Event/Tournament	Event Staff		As Quoted by Parks Division
Parks/Recreation	Event/Tournament	Field Markings Chalk/Paint		As Quoted by Parks Division
Parks/Recreation	Facility Use	Outdoor Ballfields (2 Hour Minimum)		$26.00/Hour (Resident); $36.00/Hour (Non-Resident)
Parks/Recreation	Facility Use	Outdoor Court (2 Hour Minimum)		$11.00/Hour (Resident); $16.00/Hour (Non-Resident)
Parks/Recreation	Facility Use	Outdoor Rink Rental		$60.00/Hour (Resident); $75.00/Hour (Non-Resident)
Parks/Recreation	Facility Use	Park Building		$191.00/Day (Resident): $258.00/Day (Non-Resident)
Parks/Recreation	Facility Use	Park Building: Glacial Valley Park		$464.00/Day (Resident): $567.00/day (Non-Resident)
Parks/Recreation	Facility Use	Pavilion, Shelter		$77.00/Day (Resident); $103.00/Day (Non-Resident)
Parks/Recreation	Facility Use	Tent/Bounce House Location Marking		$50.00/Marked Location
Permits	Building	Accessory Structures over 200sqft		Project Valuation Fee
Permits	Building	Building Permit based on Project Valuation		$500 - $2,000: $33.00 Base Fee for the first $500 Project Valuation; $5.00 per additional $100 Project Valuation $2,001 - $25,000: $94.00 Base Fee for first $2,000 Project Valuation; $18.00 per additional $1,000 Project Valuation $25,001 - $50,000: $518.00 Base Fee for first $25,000 Project Valuation; $13.00 per additional $1,000 Project Valuation $50,001 - $100,000: $849.00 Base Fee for first $50,000 Project Valuation; $9.00 per additional $1,000 Project Valuation $100,001 - $500,000: $1,317.00 Base Fee for first $100,000 Project Valuation; $8.00 per additional $1,000 Project Valuation $500,001 - $1,000,000: $4,267.00 Base Fee for first $500,000 Project Valuation; $7.00 per additional $1,000 Project Valuation $1,000,00 or Greater: $7,828.00 Base Fee for first $1,000,001 Project Valuation; $6.00 per additional $1,000 Project Valuation
Permits	Building	Building Permit Fee Table (All New Residential & Commercial Construction, Finishing, Alterations, Remodeling, Additions, Commercial Driveway/Parking Areas, and Swimming Pools Greater than 18 Inches Deep)		$116 Minimum (Residential) and $158 Minimum (Commercial)
Permits	Building	Building Plan Review Fee		$25.00 Minimum, 68% Maximum of Building Permit Fee
Permits	Building	City Contractor Licensing (Excluding Mechanical and Sign Contractor who hold a State License or Bond)		$60 Annual
Permits	Building	Commercial Certificate of Occupancy		$61.00
Permits	Building	Commercial Remodel - 2 Inspections		$140.00
Permits	Building	Commercial Remodel with Ceiling - 3 Inspections		$210.00
Permits	Building	Construction and Utility Permits		1/2 of the Original Permit Fee 180 Days From Issuance Date or 180 Days From Last Inspection Date
Permits	Building	Construction and Utility Permits		3% of Construction Cost ($150.00 Minimum)
Permits	Building	Contractor License per permit		$5.00 License Look-up for Contractors with Licenses at the State
Permits	Building	Decks (New)		$182.00
Permits	Building	Decks (Remodel - Railing/Stairs Non Structural)		$121.00
Permits	Building	Driveways, Residential		$90.00
Permits	Building	Investigative Fee		Charge Up To But Not Exceeding Permit Fee
Permits	Building	Kitchen/Bath Remodel		$116.00
Permits	Building	Manufactured Home		$116.00
Permits	Building	Pool, Inground, Demolition		$121.00
Permits	Building	Pool/Spa		$61.00
Permits	Building	Pool/Spa		$121.00
Permits	Building	Residential Temporary Certificate of Occupancy		$50.00
Permits	Building	Roofing (Commercial)		Project Valuation Fee
Permits	Building	Roofing (Residential)		$121.00
Permits	Building	Siding (Residential)		$121.00

Category	Subcategory	Item	Tier	2026 Fees
Permits	Building	Signs - Temporary		No Fee - Permit Application Required to be Filed with the City
Permits	Building	Signs (Pylon/Monument with Footings)		$121.00
Permits	Building	Signs (Wall Mount/Existing Pylon)		$90.00
Permits	Building	Windows/Doors (Existing Openings)		$121.00
Permits	Building	Windows/Doors (Modified Openings)		$182.00
Permits	Building	Wrecking, Moving, Demolition		$121.00
Permits	Electrical	Circuit or Feeder 0 to 200 Amp		$12.00/Circuit or Feeder
Permits	Electrical	Circuit or Feeder Over 200 Amp		$30.00/Circuit or Feeder
Permits	Electrical	Commercial/Industrial/Apartment and all solar	new construction, additions, and alterations	$150/Minimum Fee 2.5% of Project Valuation of the first $300,000 0.5% of Project Valuation above $300,000 .25% of Project Valuation above $1,500,000
Permits	Electrical	Electrical Inspection (per trip)		$70.00
Permits	Electrical	Electrical Permit Fee		$70.00
Permits	Electrical	Existing One or Two Family Dwelling: 0 to 14 Feeders or Circuits are Installed or Extended per Unit		$12.00/Feeder or Circuit
Permits	Electrical	Existing One- or Two-Family Dwelling: 15 or More Feeders or Circuits are Installed or Extended per Unit		$100.00/Dwelling Unit
Permits	Electrical	Grounding Electrode, Concrete-Encased (per trip)		$70.00
Permits	Electrical	Manufactured Home Park Lot Supply		$50/Pedestal
Permits	Electrical	New Multifamily Dwellings (Apartments)		1.0% of the Project Valuation
Permits	Electrical	New One- or Two-Family Dwelling: 0 to 25 Circuits and Feeders per Unit		$200.00/Dwelling Unit
Permits	Electrical	New One- or Two-Family Dwelling: Additional Circuits over 25 per Unit		$8.00/Feeder or Circuit
Permits	Electrical	Panel Changes		$100.00/Enclosure
Permits	Electrical	Plan Review		20% of Permit Fee
Permits	Electrical	Pools		$140.00
Permits	Electrical	Power Source: 0 to 400 Amp (0 to 250 Volts)		$70.00/Source
Permits	Electrical	Power Source: 0 to 400 Amp (Over 250 Volts)		$100.00/Source
Permits	Electrical	Power Source: 401 to 800 Amp (0 to 250 Volts)		$140.00/Source
Permits	Electrical	Power Source: 401 to 800 Amp (Over 250 Volts)		$200.00/Source
Permits	Electrical	Power Source: Over 800 Amp (0 to 250 Volts)		$200.00/Source
Permits	Electrical	Power Source: Over 800 Amp (Over 250 Volts)		$300.00/Source
Permits	Electrical	Reconnected Existing Circuit or Feeder (Panel Replacement)		$100.00/Enclosure
Permits	Electrical	Retrofitting of Existing Lighting Fixtures		$1.00/Fixture
Permits	Electrical	RV Pedestals (All Circuits Originating in Pedestal Including Factory Circuits)		$8.00/Circuit
Permits	Electrical	Separate Bonding Inspection		70
Permits	Electrical	Solar PV Installations for Electrical		(1) 0 watts to and including 5,000 watts, $90 or (2) 5,001 watts to and including 10,000 watts, $150 or (3) 10,001 watts to and including 20,000 watts, $225 or (4) 20,001 watts to and including 30,000 watts, $300 or (5) 30,001 watts to and including 40,000 watts, $375 or (6) 40,001 watts to and including 1,000,000 watts, $375 and $25 for each additional 10,000 watts over 40,000 watts or (7) 1,000,001 watts to 5,000,000 watts, $3,975 and $15 for each additional 10,000 watts over 1,000,001 watts or (8) 5,000,001 watts and larger, $12,975, and $10 for each additional 10,000 watts over 5,000,001 watts

Category	Subcategory	Item	Tier	2026 Fees
Permits	Electrical	State Surcharge		$1.00
Permits	Electrical	State Surcharge - Valuation		Permit Fee x .0005
Permits	Electrical	Street, Parking, and Outdoor Lighting Standards		$5.00/Standard
Permits	Electrical	Technology Circuits and Circuits Less than 50 Volts		$1.00/Device or Apparatus
Permits	Electrical	Traffic Signals		$5.00 Each
Permits	Electrical	Transformers for Electronic Power Supplies, Signs, and Outline Lighting		$5.50 Each
Permits	Electrical	Transformers for Light, Heat, and Power: 0 to 10 KVA		$20.00 Each
Permits	Electrical	Transformers for Light, Heat, and Power: More than 10 KVA		$40.00 Each
Permits	Fire Alarm Note: Add State Surcharge	Fire Alarm		2% of Construction Value, $158 Minimum
Permits	Fire Suppression Note: Add State Surcharge	Fire Suppression		2% of Construction Value, $158 Minimum
Permits	Grading/Excavation	Grading As-built Survey Certification		$39.00
Permits	Grading/Excavation	Permit - (0 - 50 Cubic Yards)		$26.00
Permits	Grading/Excavation	Permit - (1,001 - 10,000 Cubic Yards)		$211.00 Base Fee + $16.00 Per 1,000 Cubic Yards
Permits	Grading/Excavation	Permit - (10,001 - 100,000 Cubic Yards)		$355.00 Base Fee + $71.00 Per 10,000 Cubic Yards
Permits	Grading/Excavation	Permit - (100,001 - or more Cubic Yards)		$994.00 Base Fee + $39.00 Per 10,000 Cubic Yards
Permits	Grading/Excavation	Permit - (101 - 1,000 Cubic Yards)		$40.00 Base Fee + $19.00 Per 100 Cubic Yards
Permits	Grading/Excavation	Permit - (51 - 100 Cubic Yards)		$40.00
Permits	Grading/Excavation	Plan Review (0-50 Cubic Yards)		No Fee
Permits	Grading/Excavation	Plan Review (1,001 - 10,000 Cubic Yards)		$53.00
Permits	Grading/Excavation	Plan Review (10,001 - 100,000 Cubic Yards)		$53.00 Base Fee + $26.00 per 10,000 Cubic Yards
Permits	Grading/Excavation	Plan Review (100,001 - 200,000 Cubic Yards)		$287.00 Base Fee + $14.00 per 10,000 Cubic Yards
Permits	Grading/Excavation	Plan Review (101-1,000 Cubic Yards)		$40.00
Permits	Grading/Excavation	Plan Review (200,001 or more Cubic Yards)		$427.00 Base Fee + $7.75 per 10,000 Cubic Yards
Permits	Grading/Excavation	Plan Review (51 - 100 Cubic Yards)		$26.00
Permits	Grading/Excavation	Site Grading Inspection Fee		$66.00
Permits	Grading/Excavation	Site Grading/ As Built Reinspection Fee		$25.00
Permits	Inspections	Boulevard Tree/Sod Inspection		$165.00
Permits	Inspections	Boulevard Tree/Sod Reinspection		$60.00
Permits	Inspections	Curb Box Inspection		$170.00
Permits	Inspections	Curb Box Reinspection		$70.00
Permits	Inspections	Erosion Control Inspection (Residential Lot Not Covered by Development Agreement)		$825.00
Permits	Inspections	Inspections For Which No Fee Is Specifically Indicated		$61
Permits	Inspections	Inspections Outside Normal Business Hours		$110.00 Minimum
Permits	Inspections	Reinspection Fee (plumbing, mechanical & building)		$61.00 Maximum Per Site/Project Visit
Permits	Mechanical/Plumbing (Commercial) Note: Add State Surcharge	Mechanical		2% of Contract Price, $158 Minimum
Permits	Mechanical/Plumbing (Commercial) Note: Add State Surcharge	Plumbing, Domestic		2% of Contract Price, $158 Minimum
Permits	Mechanical/Plumbing (Commercial) Note: Add State Surcharge	Plumbing, Irrigation		2% of Contract price, $158 Minimum

Category	Subcategory	Item	Tier	2026 Fees
Permits	Mechanical/Plumbing (Commercial) Note: Add State Surcharge	Sewer Line		$168.00
Permits	Mechanical/Plumbing (Commercial) Note: Add State Surcharge	Water Line		$168.00
Permits	Mechanical/Plumbing (Residential) Note: Add State Surcharge	Mechanical/Plumbing Permit Fees (Residential): Addition/Alteration/Remodel		$61.00 Base Fee (Includes 1 Fixture) Plus $12.00 Each Additional Fixture ($231 Maximum Permit Fee)
Permits	Mechanical/Plumbing (Residential) Note: Add State Surcharge	New Home		$231.00
Permits	Miscellaneous Permit Fees	Building Inspection Card Replacement		$42.00
Permits	Plant Registration	Plant Registration		.01 Cents/Square Foot
Permits	State Surcharges, Building/Mechanical/Plumbing Permits	State Surcharge based on Fixed Fees		$1.00
Permits	State Surcharges, Building/Mechanical/Plumbing Permits	State Surcharges based on Project Valuation	$1,000,000 or Less	(1) $1,000,000 or less; $0.00 Base Fee + .0005 x valuation or (2) $1,000,001 - $2,000,000; $525 Base Fee + .0004 x valuation - $1,000,000 or (3) $2,000,001 - $3,000,000; $950 Base Fee + .0003 x valuation - $2,000,000 or (4) $3,000,001 - $4,000,000; $1,250 Base Fee + .0002 x valuation - $3,000,000 or (5) $4,000,001 - $5,000,000; $1,450 Base Fee + .0001 x valuation - $4,000,000 or (6) Greater than $5,000,001; $1,550 Base Fee + .00005 x valuation - $5,000,000
Permits	Zoning	Accessory Structures under 200sqft		$61.00/One Inspection
Permits	Zoning	Patios and Parking Areas, Residential		$61.00/One Inspection
Public Safety	Data Requests	Data Requests, Other		Determined by Actual Production Cost
Public Safety	Data Requests	Photographs		$20.00 (JPG Format on CD)
Public Safety	Data Requests	Police/Fire Reports		$0.25 Per Page Over 25 Pages
Public Safety	Data Requests	Recordings, Audio		$20.00 (CD/DVD)
Public Safety	Data Requests	Recordings, Squad Video (L3)		$20.00 (DVD)
Public Safety	Data Requests	Recordings, Video		$20.00 (DVD)
Public Safety	Data Requests	Transcription of Audio Recording		Determined by Actual Time at Current Transcription Rate
Public Safety	Fire Services	Burning Permit, Commercial		$100.00
Public Safety	Fire Services	Day Care Facility Inspection		$50.00
Public Safety	Fire Services	Fire Equipment Use		All Fire Equipment Use Based on Current FEMA Rates
Public Safety	Fire Services	Fire Permit		$50.00
Public Safety	Fire Services	Fireworks Outdoor Display	Per event	$ 250.00
Public Safety	Fire Services	Hazardous Materials and Other Charges for Service		$150.00 Per Hour Per Person Plus Materials. Minimum Charge of 4 Hours.
Public Safety	Fire Services	Tank Installation Permit		1% of Value ($100.00 Minimum)
Public Safety	Fire Services	Title III Facility Inspection		$50.00
Public Safety	Police Services	Blood Alcohol Test		$100.00
Public Safety	Police Services	Clearance Letters (i.e. Adoption, Passport, Etc.)		$20.00
Public Safety	Police Services	Daycare Checks		$20.00 Per Adult
Public Safety	Police Services	Excessive Use of Police Services (1 to 2 Nuisance service call(s) within 12 months)		No Charge
Public Safety	Police Services	Excessive Use of Police Services (3rd nuisance service call within 12 months)		$200.00
Public Safety	Police Services	Excessive Use of Police Services (4th nuisance service call within 12 months)		$400.00
Public Safety	Police Services	Excessive Use of Police Services (5th nuisance service call within 12 months)		$800.00
Public Safety	Police Services	Excessive Use of Police Services (6th nuisance service call within 12 months)		$1,600.00
Public Safety	Police Services	Excessive Use of Police Services (7th nuisance service call within 12 months and all subsequent nuisance calls)		$2,000.00
Public Safety	Police Services	Fingerprinting (Non-resident)		$35.00
Public Safety	Police Services	Fingerprinting (Resident)		$25.00
Public Safety	Police Services	Law Enforcement, Police Officer		$140.00 Per Hour
Public Safety	Police Services	Lockouts, Car Door Unlocking		$50.00 Per Event

Category	Subcategory	Item	Tier	2026 Fees
Public Safety	Police Services	Special Response Team (Outside Of Washington County)		Per Current Mutual Aid Agreement
Public Safety	Towing and Impound	Administrative Fee		Per Prosecuting Attorney
Public Safety	Towing and Impound	Impound, Storage Fee		Per Prosecuting Attorney
Public Safety	Towing and Impound	Towing Fee		Per Current Towing Contract
Public Safety	Towing and Impound	Towing/Storage Charge		Per Current Towing Contract
Public Safety	Towing and Impound	Vehicle Impoundment		Per Current Towing Contract
Public Works	Equipment	Air Compressor		$44.00
Public Works	Equipment	Asphalt Roller		$38.00
Public Works	Equipment	Backhoe		$88.00
Public Works	Equipment	Blower		$23.00
Public Works	Equipment	Brush Saw		$23
Public Works	Equipment	Chainsaw		$23.00
Public Works	Equipment	Chipper		$66.00
Public Works	Equipment	Grader		$121.00
Public Works	Equipment	Hotsy		$33.00
Public Works	Equipment	Hydro Mulcher (Additional Charges for Product Used)		$82.00
Public Works	Equipment	Loader, 3-Yard		$101.00
Public Works	Equipment	Loader, Skid steer		$71.00
Public Works	Equipment	Mower		$44.00
Public Works	Equipment	Paint Striper		$49.00
Public Works	Equipment	Patch Truck		$121.00
Public Works	Equipment	Paver, Pull Type		$44.00
Public Works	Equipment	Paver, Track Type		$210.00
Public Works	Equipment	Power Broom		$23.00
Public Works	Equipment	Sewer Vac (Requires 2 Operators)		$199.00
Public Works	Equipment	Sign Truck		$54.00
Public Works	Equipment	Snowblower		$23.00
Public Works	Equipment	Spray Patcher		$93.00
Public Works	Equipment	Sweeper		$111.00
Public Works	Equipment	Tar Kettle		$23.00
Public Works	Equipment	Tractor with Clam		$59.00
Public Works	Equipment	Tractor, Holder, with Mower		$65.00
Public Works	Equipment	Tractor, Large, with Mower		$65.00
Public Works	Equipment	Tractor, Small, with Mower		$49.00
Public Works	Equipment	Traffic Counter		$12.00
Public Works	Equipment	Trailer		$13.00
Public Works	Equipment	Trailer, Arrow Board		$28.00
Public Works	Equipment	Trailer, Jetter		$77.00
Public Works	Equipment	Trailer, Tandem Axel		$28.00
Public Works	Equipment	Trencher		$54.00
Public Works	Equipment	Truck, Bucket		$111.00
Public Works	Equipment	Truck, Dump, 1-Ton		$54.00
Public Works	Equipment	Truck, Dump, Single Axle		$59.00
Public Works	Equipment	Truck, Dump, Single Axle with Plow/Attachment		$93.00
Public Works	Equipment	Truck, Dump, Tandem Axle		$93.00
Public Works	Equipment	Truck, Dump, Tandem Axle with Plow/Attachment		$98.00
Public Works	Equipment	Truck, Pickup		$47.00
Public Works	Equipment	Truck, Pickup with Plow/Attachment		$59.00
Public Works	Equipment	Truck, Tanker		$82.00
Public Works	Equipment	Wacker		$19.00
Public Works	Equipment and Labor	Operator, Equipment, Overtime Rate		$101
Public Works	Equipment and Labor	Operator, Equipment, Standard Rate		$71.00
Public Works	Right-of-Way	Curb Cuts - Residential		$50.00
Public Works	Right-of-Way	Load Limit Permit		$74.00
Public Works	Right-of-Way	Right-of-Way Delay Penalty Fee		$80.00 (up to 3 Days) + $16.00/Day (After 3 Days)
Public Works	Right-of-Way	Right-of-Way Excavation Permit Fee: Hole		$225.00
Public Works	Right-of-Way	Right-of-Way Excavation Permit Fee: Trench or Bore, <1,000 LF		$75.00/100 Lineal Feet + Hole Fee ($225.00)
Public Works	Right-of-Way	Right-of-Way Excavation Permit Fee: Trench or Bore, >1,000 LF		$85.00/100 Lineal Feet + Hole Fee ($225.00)
Public Works	Right-of-Way	Right-of-Way Non-excavation Fee, Aerial or Overhead Lines		$53.00 Plus $5.25 per 100 Linear Feet
Public Works	Right-of-Way	Right-of-Way Obstruction Permit Fee		$225.00 + $0.21/Lineal Foot of Obstruction
Public Works	Right-of-Way	Right-of-Way Permit Extension Fee		$75.00
Public Works	Right-of-Way	Right-of-Way Registration Fee		$105.00 Annually
Public Works	Right-of-Way	Right-of-Way Sidewalk, Apron, Commercial		$225.00
Public Works	Right-of-Way	Small Wireless Facility Installation (6 to 15 Facilities)		$104.00 Per Facility
Public Works	Right-of-Way	Small Wireless Facility Installation (up to 5 facilities)		$520.00

Category	Subcategory	Item	Tier	2026 Fees
Public Works	Right-of-Way	Small Wireless Facility Installation, Plan Review Escrow		$10,000.00 (Unused Escrow Amount Returned)
Public Works	Right-of-Way	Small Wireless Facility, Collocation Rental		$182.00 Per Facility Per Year ($156.00 Rental/$26.00 Maintenance)
Public Works	Right-of-Way	Work Without a Permit		Double Permit Fee
Public Works	Signs	10' Galvanized Round Post		$38.00
Public Works	Signs	10' Galvanized Square Post		$48.00
Public Works	Signs	12' Galvanized Round Post		$44.00
Public Works	Signs	3" X 60" Post Delineators		$33.00
Public Works	Signs	6'3# Green Channel Post		$22.00
Public Works	Signs	7'2# Galvanized Channel Post		$22.00
Public Works	Signs	7'3# Galvanized Channel Post		$32.00
Public Works	Signs	8'2# Green Channel Post		$32.00
Public Works	Signs	9 Button Marker		$32.00
Public Works	Signs	Band-It Hardware Average		$23.00
Public Works	Signs	Crosswalk Arrow		$44.00
Public Works	Signs	Crosswalk Sign		$98.00
Public Works	Signs	Heavy Duty Cap Bracket 12"		$23.00
Public Works	Signs	Heavy Duty T Bracket 12"		$23.00
Public Works	Signs	Island Keep Right Sign		$49.00
Public Works	Signs	Light Pole Bracket		$28.00
Public Works	Signs	Marker Band		$17.00
Public Works	Signs	No Parking Sign		$28.00
Public Works	Signs	Nuts and Bolts Per Sign		$11.00
Public Works	Signs	Speed Limit Sign 24" X 30"		$44.00
Public Works	Signs	Square Surface Mount Bracket Break Away		$170.00
Public Works	Signs	Stop Sign - 30" Visual Impact Perception		$88.00
Public Works	Signs	Stop Sign - 36" Visual Impact Perception		$116.00
Public Works	Signs	Street Name Sign - 24" Visual Impact Perception		$104.00
Public Works	Signs	Street Name Sign - 28" Visual Impact Perception		$104.00
Public Works	Signs	Street Name Sign - 30" Visual Impact Perception		$112.00
Public Works	Signs	Street Name Sign - 34" Visual Impact Perception		$122.00
Public Works	Signs	Street Name Sign - 36" Visual Impact Perception		$123.00
Public Works	Signs	Street Name Sign - 42" Visual Impact Perception		$132.00
Public Works	Signs	Street Name Sign 48" Visual Impact Perception		$138.00
Public Works	Signs	Warning Sign - 30" Visual Impact Perception		$88.00
Public Works	Signs	Warning Sign - 36" Visual Impact Perception		$121.00
Public Works	Spring Clean up	Grill		$15.00
Public Works	Spring Clean up	Push mower		$15.00
Public Works	Spring Cleanup	Air Conditioner		$10.00
Public Works	Spring Cleanup	Appliances, Ammonia Refrigerant		$100.00 and Up
Public Works	Spring Cleanup	Bulbs, Fluorescent		No Charge
Public Works	Spring Cleanup	By Load (Car Trunk)		$30.00 - $75.00
Public Works	Spring Cleanup	By Load (Pickup Truck)		$70.00 - $175.00
Public Works	Spring Cleanup	By Load (SUV/Station Wagon)		$40.00 - $90.00
Public Works	Spring Cleanup	By Load Box Truck		$95.00 +
Public Works	Spring Cleanup	Car Battery		No Charge
Public Works	Spring Cleanup	Chair		$10.00
Public Works	Spring Cleanup	Computers		No Charge
Public Works	Spring Cleanup	Dishwasher		$10.00
Public Works	Spring Cleanup	Electronics		No Charge
Public Works	Spring Cleanup	Exercise Equipment		$15.00
Public Works	Spring Cleanup	Freezer		$15.00
Public Works	Spring Cleanup	Lumber, Railroad Tie, 6X6 or 6X8		$10.00
Public Works	Spring Cleanup	Lumber, Treated, 2X4		$5.00
Public Works	Spring Cleanup	Lumber, Treated, 4X4		$8.00
Public Works	Spring Cleanup	Mattress or Box Spring		$20.00
Public Works	Spring Cleanup	Mattress, Crib		$10.00
Public Works	Spring Cleanup	Microwave		No Charge
Public Works	Spring Cleanup	Paint, Household, Latex or Oil Based		No Charge
Public Works	Spring Cleanup	Refrigerator (No Gas Ammonia)		$10.00
Public Works	Spring Cleanup	Snow Blower		$25.00
Public Works	Spring Cleanup	Sofa		$15.00
Public Works	Spring Cleanup	Stove		$10.00
Public Works	Spring Cleanup	Television		No Charge
Public Works	Spring Cleanup	Tire, Car/Light Truck		$5.00 Each

Category	Subcategory	Item	Tier	2026 Fees
Public Works	Spring Cleanup	Tire, Semi Truck		$15.00 Each
Public Works	Spring Cleanup	Tire, Tractor		$35.00 Each
Public Works	Spring Cleanup	Washer or Dryer		$10.00 Each
Public Works	Spring Cleanup	Water Heater		$10.00 Each
Public Works	Spring Cleanup	Water Softener		$10.00 Each
Public Works	Street Lights	Fixture, Cobra Head, LED		$1,549.00
Public Works	Street Lights	Fixture, Concrete, LED		$3,053.00
Public Works	Street Lights	Fixture, Granville, LED		$1,968.00
Public Works	Street Lights	Fixture, Residential, LED		$2,089.00
Public Works	Street Lights	LED Luminaire		$2,530.00
Public Works	Street Lights	Mast Arm		$1,442.00
Public Works	Street Lights	Mast Arm, Pole		$935.00
Public Works	Street Lights	Mast Arm, Pole, Dual		$935.00
Public Works	Street Lights	Pole, Commercial Round- 30'		$4,630.00
Public Works	Street Lights	Pole, Commercial, Round Tapered - 20'		$2,580.00
Public Works	Street Lights	Pole, Commercial, Round Tapered - 30'		$4,000.00
Public Works	Street Lights	Pole, Concrete		$4,362.00
Public Works	Street Lights	Pole, Decorative Site Link 30'		$6,482.00
Public Works	Street Lights	Pole, Decorative, 14'		$3,489.00
Public Works	Street Lights	Pole, Decorative, 18'		$5,132.00
Public Works	Street Lights	Pole, Residential		$1,913.00
Utilities	Permits/Rentals	2½" Hydrant Water Meter, Deposit		$1,500.00
Utilities	Permits/Rentals	2½" Hydrant Water Meter, Permit Fee		$79.00
Utilities	Permits/Rentals	2½" Hydrant Water Meter, Rental Fee		$5.00 Per Day
Utilities	Permits/Rentals	2½" Meter, Consumption Charge		$5.50 per 1,000 Gallons Consumption
Utilities	Permits/Rentals	3/4" Adapter, Consumption Charge		$5.50 per 1,000 Gallons Consumption
Utilities	Permits/Rentals	3/4" Adapter, Deposit		$300.00
Utilities	Permits/Rentals	3/4" Adapter, Permit Fee		$79.00
Utilities	Permits/Rentals	3/4" Adapter, Rental Fee		$5.00 Per Day
Utilities	Permits/Rentals	Fire Hydrant Hookup Permit		$53.00
Utilities	Services	Accuracy Test of Water Meter (Requested by Water User) Outsource Meter Accuracy Certification		$158.00
Utilities	Services	Delinquent Account Certification		$75.00 Plus 10% Interest Per Annum
Utilities	Services	New Account Fee		$25.00
Utilities	Services	Utility Account Turn-off Fee		$83.50
Utilities	Services	Water and Sewer Restoration Fee		$5.00 Plus 6% Interest Per Annum
Utilities	Services	Water Reconnection or Turn-on Fee (Outside Water Department Regular Working Hours)		$115.00 Per Occurrence; $200.00 on Holidays
Utilities	Sewer Usage Rates	Commercial	Base Charge	$5.41 Per Month
Utilities	Sewer Usage Rates	Commercial	All Non-Irrigation Usage	$4.78 Per 1,000 Gallons
Utilities	Sewer Usage Rates	Commercial, Usage (Municipal Customer)		6% Over Commercial Rate
Utilities	Sewer Usage Rates	Residential	Base Charge	$5.41 Per Month
Utilities	Sewer Usage Rates	Residential	All Usage	$4.78 Per 1,000 Gallons
Utilities	Sewer Usage Rates	Residential, Usage (Municipal Customer)		6% Over Residential Rate
Utilities	Stormwater Utility Fees	1.5+ Acre Residential		$4.93 per Residential Unit Per Month
Utilities	Stormwater Utility Fees	Agricultural Land with Structure		$74.56 Per Parcel With Structure Per Year
Utilities	Stormwater Utility Fees	Apartments		$1.56 Per Residential unit Per Month
Utilities	Stormwater Utility Fees	Cemeteries		$11.76 Per Acre Per Year
Utilities	Stormwater Utility Fees	Churches		$25.85 Per Impervious Surface Acre Per Month
Utilities	Stormwater Utility Fees	Commercial / Industrial		$25.85 Per Impervious Surface Acre Per Month
Utilities	Stormwater Utility Fees	Golf Courses		$11.76 Per Acre Per Year
Utilities	Stormwater Utility Fees	Mining		$11.76 Per Acre Per Year
Utilities	Stormwater Utility Fees	Schools		$25.85 Per Impervious Surface Acre Per Month
Utilities	Stormwater Utility Fees	Single Family Home		$6.66 Per Residential Unit Per Month
Utilities	Stormwater Utility Fees	Townhomes		$3.22 Per Residential Unit Per Month
Utilities	Street Light Rates	City-Owned, Commercial		$6.83 Per Month Per Residential Lot Equivalent (2.5 Lots/Acre for Commercial and Churches; 1.25 Lots/Acre For Schools)
Utilities	Street Light Rates	City-Owned, Residential		$6.83 Per Month Per Lot
Utilities	Street Light Rates	Rural		$6.72 Per Year
Utilities	Street Light Rates	Xcel Owned		$8.22 Per Month
Utilities	Water Meters	2-Inch Compound		Actual Cost Plus 6% Plus Sales Tax
Utilities	Water Meters	3/4-Inch Model 435		$240.00 Plus Sales Tax
Utilities	Water Meters	5/8-Inch Model 420		$206.00 Plus Sales Tax
Utilities	Water Meters	Angle Valve - Compression Connection (each)		$130.00
Utilities	Water Meters	Angle Valve - Flare Connection (each)		$91.00
Utilities	Water Meters	Flange Kit (1 1/2 inch)		$137.00 Plus Sales Tax
Utilities	Water Meters	Flange Kit (2 Inch)		$147.00 Plus Sales Tax
Utilities	Water Meters	Flange Kit (3 inch)		$357.00 Plus Sales Tax
Utilities	Water Meters	Flange Kit (4 inch)		$620.00 Plus Sales Tax
Utilities	Water Meters	Flange Kit (6 inch)		$945.00 Plus Sales Tax
Utilities	Water Meters	Mag Meter 3-Inch		Actual Cost Plus 6% Plus Sales Tax

Category	Subcategory	Item	Tier	2026 Fees
Utilities	Water Meters	Mag Meter 4-Inch		Actual Cost Plus 6% Plus Sales Tax
Utilities	Water Meters	Mag Meter 6-Inch		Actual Cost Plus 6% Plus Sales Tax
Utilities	Water Meters	Meter Nipple		$19.00 Plus Sales Tax
Utilities	Water Meters	Shut-off Valve		$119.00 Plus Sales Tax
Utilities	Water Meters	Ultra Sonic 3-Inch		Actual Cost Plus 6% Plus Sales Tax
Utilities	Water Meters	Ultra Sonic 4-Inch		Actual Cost Plus 6% Plus Sales Tax
Utilities	Water Meters	Ultra Sonic 6-Inch		Actual Cost Plus 6% Plus Sales Tax
Utilities	Water Meters	Ultra Sonic Meter 1½-Inch		$1090.00 Plus Sales Tax
Utilities	Water Meters	Ultra Sonic Meter 1-Inch		$445.00 Plus Sales Tax
Utilities	Water Meters	Ultra Sonic Meter 2-Inch		$1,325.00 Plus Sales Tax
Utilities	Water Meters	Water Meter Radio Transmitter		$173.00 Plus Sales Tax
Utilities	Water Miscellaneous	Driveway Cover		$162.00
Utilities	Water Usage Rates	Commercial, Base Charge	Non-residential (0.5 Inches Meter Size)	$3.72 Per Month
Utilities	Water Usage Rates	Commercial, Base Charge	Non-residential (0.625 Inches Meter Size)	$3.72 Per Month
Utilities	Water Usage Rates	Commercial, Base Charge	Non-residential (0.75 Inches Meter Size)	$3.72 Per Month
Utilities	Water Usage Rates	Commercial, Base Charge	Non-residential (1.0 Inches Meter Size)	$14.80 Per Month
Utilities	Water Usage Rates	Commercial, Base Charge	Non-residential (1.5 Inches Meter Size)	$29.59 Per Month
Utilities	Water Usage Rates	Commercial, Base Charge	Non-residential (2.0 Inches Meter Size)	$44.45 Per Month
Utilities	Water Usage Rates	Commercial, Base Charge	Non-residential (3.0 Inches Meter Size)	$51.70 Per Month
Utilities	Water Usage Rates	Commercial, Base Charge	Non-residential (4.0 Inches Meter Size)	$73.87 Per Month
Utilities	Water Usage Rates	Commercial, Base Charge	Non-residential (6.0 Inches Meter Size)	$184.69 Per Month
Utilities	Water Usage Rates	Commercial, Usage (Irrigation)	<6,000 Gallons per Month	$1.95 Per 1,000 Gallons
Utilities	Water Usage Rates	Commercial, Usage (Irrigation)	6,001 to 9,000 Gallons per Month	$2.92 Per 1,000 Gallons
Utilities	Water Usage Rates	Commercial, Usage (Irrigation)	9,001 to 12,000 Gallons per Month	$4.39 Per 1,000 Gallons
Utilities	Water Usage Rates	Commercial, Usage (Irrigation)	>12,000 Gallons per Month	$6.56 Per 1,000 Gallons
Utilities	Water Usage Rates	Commercial, Usage (Municipal Customer)		6% Over Commercial Rate
Utilities	Water Usage Rates	Commercial, Usage (Non-Irrigation)	<6,000 Gallons per Month	$1.29 Per 1,000 Gallons
Utilities	Water Usage Rates	Commercial, Usage (Non-Irrigation)	6,001 to 9,000 Gallons per Month	$1.95 Per 1,000 Gallons
Utilities	Water Usage Rates	Commercial, Usage (Non-Irrigation)	9,001 to 12,000 Gallons per Month	$2.90 Per 1,000 Gallons
Utilities	Water Usage Rates	Commercial, Usage (Non-Irrigation)	>12,000 Gallons per Month	$4.37 Per 1,000 Gallons
Utilities	Water Usage Rates	Residential, Base Charge	Single Family	$3.72 Per Month
Utilities	Water Usage Rates	Residential, Base Charge	Multi-family (per REU)	$2.78 Per Month
Utilities	Water Usage Rates	Residential, Usage	<6,000 Gallons per Month	$1.29 Per 1,000 Gallons
Utilities	Water Usage Rates	Residential, Usage	6,001 to 9,000 Gallons per Month	$1.95 Per 1,000 Gallons
Utilities	Water Usage Rates	Residential, Usage	9,001 to 12,000 Gallons per Month	$2.90 Per 1,000 Gallons
Utilities	Water Usage Rates	Residential, Usage	>12,000 Gallons per Month	$4.37 Per 1,000 Gallons
Utilities	Water Usage Rates	Residential, Usage (Municipal Customer)		6% Over Residential Rate
Utilities	Water Usage Rates	Water, Usage	8 Dial Meters	Actual Gallons used

City Council Action Request

7.Q.

Meeting Date	3/18/2026
Department	Community Development
Agenda Category	Action Item
Title	Trash Container Storage – Ordinance Amendment
Staff Recommendation	Adopt Ordinance No. 1111 to amend City Code Titles 4-2-2, Definitions, and 4-2-11B(1)(a)(b), Container Storage Requirements, to allow trash containers to be stored along the side of the home or garage with no screening required.
Budget Implication	N/A

Attachments

1.	Trash Cont. Ord Memo 03-09-26, Ord No. 1111
2.	Ordinance No. 1111 Trash Ordinanace Emendment

To: Honorable Mayor and City Council
Jennifer Levitt, City Administrator

From: Samantha Drewry, Code Enforcement Officer

Date: March 9, 2026

Re: Trash Container Storage – Ordinance Amendment

Background

The City of Cottage Grove's Code Enforcement Program was established to ensure that neighborhoods remain clean, safe, and healthy. The program works to prevent unsafe or unsanitary conditions from negatively affecting property values and infringing on the rights and quality of life of others in the community.

At the March 4, 2026, City Council workshop, the Mayor and Councilmembers expressed support for amending City Code related to the storage of waste containers. In response to this direction, staff is proposing an ordinance amendment that would allow trash, recycling, and yard waste containers to be stored along the side of a home or garage without screening requirements when they are not placed at the curb for collection.

This proposed amendment does not change the separate ordinances governing trash accumulation outside containers or the storage of miscellaneous unsheltered items on private property or at the curb. These regulations will remain in place and continue to be enforced.

Recommendation

It is recommended the City Council adopt Ordinance No. 1111 to amend City Code Titles 4-2-2, Definitions, and 4-2-11B(1)(a), Container Storage Requirements, to allow trash containers to be stored along the side of the home or garage with no screening required.

CITY OF COTTAGE GROVE, MINNESOTA
ORDINANCE NO. 1111

AN ORDINANCE FOR THE CITY OF COTTAGE GROVE, MINNESOTA, AMENDING THE CODE OF THE CITY OF COTTAGE GROVE, TITLE 4, PUBLIC HEALTH AND SAFETY

The City Council of the City of Cottage Grove, Washington County, Minnesota, does hereby ordain as follows:

SECTION 1. AMENDMENT. The Code of the City of Cottage Grove, County of Washington, State of Minnesota, Title 4, Chapter 2, Section 4-2-2 shall be amended as follows:

§ 4-2-2: DEFINITIONS:

The following words, terms, and phrases when used in this Chapter shall have the meanings ascribed to them in this Section except where the context clearly indicates a different meaning:

BULKY WASTE: Shall have the meaning set forth in Minnesota Statutes and is a subset of mixed municipal solid waste. Includes household items and other discarded materials that due to their dimensions and weight are typically not collected as part of the regular trash and recycling or for which there is a separate fee, such as furniture, carpeting, mattresses, and appliances including electronic devices.

BULK REFUSE CONTAINER: Refuse container greater than ninety-six (96) gallons that is designed or engineered to collect refuse and other mixed municipal solid waste. Bulk refuse containers are constructed of durable material and have enclosed sides.

COLLECTION DAY or ***DAYS OF COLLECTION***: The designated day on which commercial or residential solid waste hauler or recycler is scheduled to collect trash.

COMMERCIAL ESTABLISHMENT: Any premises where a commercial or industrial enterprise of any kind is carried on, and shall include, but is not limited to, restaurants, clubs, churches, and schools where food is prepared or served.

COMMERCIAL/MULTIPLE-RESIDENTIAL DWELLING / INDUSTRIAL / ROLL-OFF SERVICE SOLID WASTE HAULER AND RECYCLER: A City licensed hauler who collects and hauls solid waste, including, but not limited to, garbage, recyclable materials, and construction/demolition waste, from commercial, multiple-residential dwelling and industrial properties or who provides roll-off box services.

COMMINGLED RECYCLABLES: Collection of recyclable materials whereby generators mix different types of recyclable materials in a single container for collection by a licensed hauler.

COMPOSTING: A method of recycling yard waste by allowing it to decay and then using it as a soil amendment.

CONSTRUCTION/DEMOLITION WASTE: Construction materials, packaging and rubble resulting from construction, remodeling, repair and demolition of buildings and roads, as well as sand, earth, brick, stone, crockery, trees, tree branches of more than two inches (2") in diameter and tree stumps.

CONTAINER: All containers for solid waste shall be made of metal, plastic, or other suitable material, which is rodentproof, fireproof, and waterproof, can be kept tightly closed, will not easily corrode and shall be of such size and weight that they can be

handled by one (1) person. No container shall have ragged or sharp edges or other defect liable to hamper or injure the person collecting the contents thereof.

COUNTY: County of Washington, Minnesota.

DAILY HAULING DISTRICT: A residential area in which garbage, recyclables and yard waste are collected on the same day, the boundaries and day of collection of which are established by Council resolution.

DUMPSTER: Large covered containers for large accumulations of garbage, recyclables or construction/demolition debris, including compactors.

GARBAGE: See definition of Mixed Municipal Solid Waste (MMSW).

HAZARDOUS WASTE: Shall have the meaning defined in Minnesota Statutes and includes any refuse, sludge, or other waste material or combinations of refuse, sludge or other waste materials in solid, semisolid, liquid, or contained gaseous form which because of its quantity, concentration, or chemical, physical, or infectious characteristics may: (a) cause or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible illness; or (b) pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed. Categories of hazardous waste materials include, but are not limited to explosives, flammables, oxidizers, poisons, irritants, and corrosives. Hazardous waste does not include source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954, as amended.

HOLIDAYS: Shall include only New Year's Day, Memorial Day, Fourth of July, Labor Day, Thanksgiving Day and Christmas Day.

MIXED MUNICIPAL SOLID WASTE (MMSW): Has the meaning set forth in Minnesota Statutes and shall include garbage, refuse, rubbish, trash, and other solid waste from residential, commercial, industrial, and community activities, that the generator of the waste aggregates for collection. MMSW does not include auto hulks, street sweepings, ash, construction debris, mining waste, sludges, tree and agricultural wastes, tires, lead acid batteries, motor and vehicle fluids and filters, and other materials collected, processed, and disposed of as separate waste streams. Also commonly referred to as "garbage".

MULTIPLE-RESIDENTIAL DWELLING: Any building used for residential purposes consisting of five (5) dwelling units or more with separate individual kitchen facilities for each dwelling unit.

RECYCLABLE MATERIALS: Shall have the meaning set forth in Minnesota Statutes and means materials that are separated from MMSW for the purpose of recycling or composting, including, at a minimum, the targeted materials.

RECYCLING: Shall have the definition in Minnesota Statutes and means the process of collecting and preparing recyclable materials and reusing the materials in their original form or using them in manufacturing processes that do not cause the destruction of recyclable materials in a manner that precludes further use.

RECYCLING CONTAINER: A container for use in the City's authorized curbside recycling program.

RESIDENTIAL DWELLING: Any single building consisting of four (4) or less dwelling units with individual kitchen facilities for each dwelling unit.

RESIDENTIAL DWELLING SOLID WASTE HAULER AND RECYCLER: A City licensed hauler who collects and hauls solid waste, including, but not limited to,

garbage, recyclable materials, and construction/demolition waste, from residential dwellings.

ROLL-OFF CONTAINERS: Open top dumpsters characterized by a rectangular footprint. The container is designed to be transported by special roll-off trucks. ***ROLL-OFF CONTAINERS*** are commonly used to contain loads of construction and demolition waste or other waste types.

SOLID WASTE: The general term for MMSW, recyclable materials, yard waste, bulky waste and SSCM.

SOURCE SEPARATED COMPOSTABLE MATERIALS (SSCM): Shall include food waste and other compostable organic materials that are source separated by the waste generator for the purpose of preparing them for use as compost and as further defined in Minnesota Statutes. Also referred to as “food waste”, “organics” and “source separated organics”. The terms “food waste”, “organics” and “source separated compostable materials” do not include yard waste for purposes of this Chapter.

SPECIAL PICK UP: Any collection of bulky waste and construction/demolition waste and excludes MMSW, recyclable materials, yard waste or SSCM.

TARGETED RECYCLABLE MATERIALS: Those recyclable materials identified in the Washington County standard list of residential curbside recyclables.

VOLUME BASED BILLING: A graduated rate structure based upon the volume of MMSW, recyclable materials, SSCM collected from a residential dwelling, multiple-residential dwellings, or a commercial enterprise.

YARD WASTE: Garden wastes, leaves, grass and lawn clippings, weeds, shrub, tree waste and other materials as defined by Minnesota Statutes and Council Resolution.

SECTION 2. AMENDMENT. The Code of the City of Cottage Grove, County of Washington, State of Minnesota, Title 4, Chapter 2, Section 4-2-11.B.1.a.1. shall be amended as follows:

§ 4-2-11: CONTAINERS:

A. Containers Required:

1. Garbage Containers:

a. All residential dwelling property owners shall provide one (1) or more containers to hold and contain all MMSW required by the City which may accumulate between times of collection.

b. Owners of commercial/multiple-residential dwellings/industrial establishments shall provide one (1) or more containers to hold and contain all garbage required by the City which may accumulate between times of collection.

c. Dumpster Required: Where garbage volume exceeds three (3) 90-gallon containers per week, dumpster service shall be utilized with the frequency of pick up being not less than once per week. The actual size of the dumpster or the frequency of pick up shall be determined by need as established by the Director of Public Works. The dumpster shall be a watertight receptacle with a tightfitting cover to prevent exposure of its contents to potential fly or vermin infestation.

2. Recyclable Materials Containers:

a. Residential Dwellings: All owners of residential dwellings shall provide one (1) or more containers to receive and collect all recyclable materials required by the City which may accumulate between times of collection.

b. Commercial/Multiple-Residential Dwellings/Industrial Establishments: All owners of commercial, multiple-residential dwellings and industrial establishments are required to provide containers for tenants to deposit recyclable materials for collection by a licensed hauler.

c. Dumpster Required: For all commercial, multiple-residential dwellings and industrial establishments where the volume exceeds three (3) 90-gallon containers per week, the owner shall utilize dumpster service with the frequency of pick up being not less than once per week. The actual size of the dumpster or the frequency of pick up shall be determined by need as established by the Director of Public Works. The dumpster shall be a watertight receptacle with a tightfitting cover to prevent exposure of its contents to potential fly or vermin infestation.

3. Roll-Off Containers:

a. Permit Required: The property owner shall secure at least one (1) roll-off container at any construction or demolition site. The owner shall pay the permit fee set forth by ordinance. In the event there is an open building permit for the property, no permit fee is required.

b. Storage: No solid wastes or construction/demolition waste, whether generated at the site or elsewhere, shall be stored outside the roll-off container.

c. Collection: The roll-off container shall be emptied within seven (7) days of the container being filled to capacity. Property owners and their contractors shall be responsible for cleaning up and disposing of construction debris carried by the elements onto neighboring property.

4. Composting Containers: Containers shall be of a durable material including, but not limited to, sturdy woven wire fencing, rot resistant wood, or a commercially purchased composting unit which will provide for adequate aeration. Containers shall be constructed and maintained in a structurally sound manner. Wood used in the construction of a compost container must be sound and free of rot.

5. Yard Waste Containers: All yard waste to be picked up by a licensed hauler shall be placed in a container or in separate compostable bags in compliance with Minnesota Statutes and shall not contain garbage, recyclable materials, SSCM or construction/demolition waste.

B. Storage And Placement of Containers:

1. Location for Residential Dwellings:

a. Storage Requirements

1) When not placed out for collection, all trash, recycling and yard waste containers may be stored outside if located in a side or rear yard but cannot be closer to the street than the building line of the residence. For corner lots, they cannot be stored in the side yard that is adjacent to a street
2) Trash, recycling and yard waste containers shall not be stored in front of any building line of the residence or attached garage, including driveways, front yards, or porches.

b. Placement for Collection
1) Trash, recycling and yard waste containers may be placed at the designated collection point no earlier than 4:00 PM on the day preceding the scheduled collection day.
2) Trash, recycling and yard waste containers must be removed from the collection point and returned to their designated storage location no later than 6:00 PM on the day of collection.

2. Location for Commercial, Multiple-Residential Dwellings, Industrial: Commercial/multiple-residential dwellings/industrial MMSW and recyclable materials containers shall be kept in a trash enclosure or building. All new trash and recycling enclosures or buildings constructed in compliance with this provision and all major alterations to such existing trash and recycling enclosures and buildings shall be constructed in compliance with the provisions relating to trash and recycling enclosure structures in subsection 11-3-8 of this Code. Bulky waste shall be contained within the enclosure.

3. Residential Dwelling Composting Containers: The compost container(s) shall be located in the rear yard no closer than five feet (5') to any rear or side property line and shall not be located closer than five feet (5') from the rear property line and shall not be located in any required front or side yard as defined in the zoning code, nor closer than twenty feet (20') to any habitable building(s) located off of the owner's property.

5. Roll-Off Containers: Roll-off containers must be located in an accessible location on the owner's property. In no event may a roll-off container be located in the right-of-way.

6. Bulk Refuse Containers:

C. Bulk refuse containers may not remain at any residential location for greater than thirty (30) days except under a building permit where work is being actively performed. Bulk refuse containers shall not be used for the storage or disposal of putrescible solid waste.

D. All bulk refuse containers will be clearly identified with the name of licensed hauler and phone number. Letters must be a minimum of three inches (3") in height and be clearly visible. All markings shall be maintained in legible condition. Container must be in good condition and serviceable.

E. No bulk refuse containers may be placed in the right-of-way.

SECTION 3. SUMMARY PUBLICATION. Pursuant to Minnesota Statutes Section 412.191, in the case of a lengthy ordinance, a summary may be published. While a copy of the entire ordinance is available without cost at the office of the City Clerk, the following summary is approved by the City Council and shall be published in lieu of publishing the entire ordinance:

Staff is proposing to amend the container storage ordinance to allow for storage of trash containers within the side and rear yards without being completely screened from view.

SECTION 4. EFFECTIVE DATE. This ordinance amendment shall be in full force and effective from and after adoption and publication according to law.

Passed this 18th day of March, 2026.

Myron Bailey, Mayor

Attest:

Tamara Anderson, City Clerk

City Council Action Request

7.R.

Meeting Date	3/18/2026
Department	Public Works
Agenda Category	Action Item
Title	Sale of Suplus Property
Staff Recommendation	Authorize Public Works to advertise and sell surplus property on Cranky Ape and or MNBid.
Budget Implication	N/A
Attachments	1. mnbid 2026

To: Honorable Mayor and City Council
Jennifer Levitt, City Administrator

From: Adam Moshier, Facilities and Fleet Maintenance Manager

Date: March 6, 2026

RE: Sale of Surplus Property

Introduction

Public Works is requesting this property be sold on auction. This equipment was replaced in 2025 or 2026 and is no longer needed by Public Works.

Unit Number	Equipment	Asset Number
31-8001-74	Cat Patrol Grader	593
75-2601-12	Ford Aerial Street Light Service Truck	3647
31-6001-09	Brush Bandit Chipper	3361
31-8409-16	Holder Utility Vehicle	3997
34-8710-18	Bombardier SW4S-F Sidewalk Machine	4170

Public Works also has miscellaneous shop parts and a broken chainsaw that will be sold that are no longer needed.

Requested Action

Authorize Public Works to advertise and sell surplus property on Cranky Ape and or MNBid.

City Council Action Request

7.S.

Meeting Date	3/18/2026
Department	Public Works
Agenda Category	Action Item
Title	Rental Agreement with Tri State Bobcat for three Skid Steers
Staff Recommendation	Approve the three year rental agreement with Tri State Bobcat for three skid steers in the amount of $138,240.
Budget Implication	$46,080 per year for three years, splitting costs from the Streets and Parks Departments.

Attachments

1.	3 year Skid Steer Rental Memo 2026
2.	Bobcat rental contract 2026

To: Honorable Mayor and City Council
Jennifer Levitt, City Administrator

From: Adam Moshier, Fleet and Facilities Manager

Date: March 5, 2026

Re: Approve Three Year Rental Agreement with Tri State Bobcat for three skid steers

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Background

In the approved 2026 budget, there is money allocated to rent skid steers. The Streets and Parks Departments previously rented skid steers from Tri State Bobcat. Staff has rented skid steers for many years instead of purchasing with the funds coming out of operating budgets of the Departments.

Staff is requesting to rent three skid steers from Tri State Bobcat for a total of $3,840 per month, $46,080 per year. A new rental agreement is needed as the Departments are getting new machines this year. This would be a three year agreement.

Staff tried different machines over the past few months and Bobcat stood out as the desirable machine due to its high visibility, different control options and comfortability. All of the current attachments the city owns fit the skid steers and require no additional cost.

The rental agreement has been reviewed by the City Attorney. Tri State Bobcat is the local dealer for skid steers which is why two quotes were not received.

Staff recommends approving the three year rental agreement with Tri State Bobcat in the amount of $138,240.

Budget

The budget for the rental of skid steers was $50,400 split for both Parks and Streets per year. These machines are under budget by $4,320 total.

Recommendation

It is recommended that the City Council approve the three year rental agreement with Tri State Bobcat for three skid steers in the amount of $138,240.

Tri-State Bobcat

Sales • Service • Rentals • Parts

www.tristatebobcat.com

BURNSVILLE
1200 Highway 13 E
Burnsville, MN 55337
(952) 894-0894
Fax (952) 894-5759

LITTLE CANADA
71 Minnesota Avenue
Little Canada, MN 55117
(651) 407-3727
Fax (651) 683-2476

HUDSON
588 Outpost Circle
Hudson, WI 54016
(715) 531-0801
Fax (715) 531-0805

ST. CROIX FA
2018 US Highway
St. Croix, Falls WI 5
(715) 557-601C
Fax (715) 483-70

Ship To: IN STORE PICKUP

Branch		
03 - Hudson		
Date	**Time**	**Page**
03/06/2026	7:51:30 (O)	1
Account No.	**Phone No.**	**Invoice No.**
13369	6514582895	
Ship Via	**Purchase Order**	
	Salesperson	
	RL	

Invoice To: CITY OF COTTAGE GROVE
12800 RAVINE PARKWAY SO
COTTAGE GROVE MN 55016-6103

RENTAL CONTRACT

Description R E S E R V A T I O N # 020255 Amount

** If you have any comments or concerns about the service you received **
********** please text a message to 952-592-2355 **********
****** or call Ryan at 715-531-0801 for a prompt response. ******

***CUSTOMER IS RESPONSIBLE FOR GENERAL SERVICE AND
MAINTANANCE ITEMS ON MACHINE***

BOBCAT LOADER T76 T76 T4 PLATINUM 1 4 WEE 1345.00
Stock #: B076006 Serial #: B4CE20153
Date Out: 02/11/2026 15:26 Expected return date: 03/11/2026 15:25
Machine hours out: 167
Rates: 475.00/DAILY 1495.00/WEEKL 3995.00/MONTH 1345.00/4 WEE
O/T Rates Per HR: 100.00/DAILY 100.00/WEEKL 100.00/MONTH 100.00/4 WEE

BOBCAT BUCKET ALL 80" SEVERE DUTY BUCK 1 4 WEE 50.00
Stock #: R2519 Serial #: R2519
Date Out: 02/11/2026 15:31 Expected return date: 03/11/2026 15:25
Rates: 10.00/DAILY 25.00/WEEKL 50.00/MONTH 50.00/4 WEE
O/T Rates Per HR: 100.00/DAILY 100.00/WEEKL 100.00/MONTH 100.00/4 WEE

BOBCAT LOADER S76 S76 T4 1 WEEKL 1045.00
Stock #: H064749 Serial #: B4CD13478
Date Out: 02/11/2026 15:31 Expected return date: 03/11/2026 15:25
Machine hours out: 427
Rates: 295.00/DAILY 1045.00/WEEKL 1895.00/MONTH 1895.00/4 WEE
O/T Rates Per HR: 100.00/DAILY 100.00/WEEKL 100.00/MONTH 100.00/4 WEE

BOBCAT BUCKET ALL 80" SEVERE DUTY BUCK 1 4 WEE 50.00
Stock #: R2608 Serial #: R2608
Date Out: 02/11/2026 15:32 Expected return date: 03/11/2026 15:25
Rates: 10.00/DAILY 25.00/WEEKL 50.00/MONTH 50.00/4 WEE
O/T Rates Per HR: 100.00/DAILY 100.00/WEEKL 100.00/MONTH 100.00/4 WEE

Signature: _____ Print Name: _____

LESSOR AND LESSEE AGREE THAT THE TERMS AND CONDITIONS ON THE REVERSE SIDE HEREOF ARE A PART OF THIS AGREEMENT AND ARE THOROUGHLY UNDERSTOOD.

"YOU PAY FOR TIME OUT NOT TIME USED"
Save Overtime Charges -
Return Equipment Promptly

THERE WILL BE A PER GAL CHARGE IF EQUIPMENT IS RETURNED WITH FULL F TANK(S).

Tri-State Bobcat

Sales • Service • Rentals • Parts

www.tristatebobcat.com

BURNSVILLE
1200 Highway 13 E
Burnsville, MN 55337
(952) 894-0894
Fax (952) 894-5759

LITTLE CANADA
71 Minnesota Avenue
Little Canada, MN 55117
(651) 407-3727
Fax (651) 683-2476

HUDSON
588 Outpost Circle
Hudson, WI 54016
(715) 531-0801
Fax (715) 531-0805

ST. CROIX FA
2018 US Highway
St. Croix, Falls WI 5
(715) 557-601(
Fax (715) 483-70

Ship To: IN STORE PICKUP

Branch		
03 - Hudson		
Date	**Time**	**Page**
03/06/2026	7:51:30 (O)	2
Account No.	**Phone No.**	**Invoice No.**
13369	6514582895	
Ship Via	**Purchase Order**	
	Salesperson	
	RL	

Invoice To: CITY OF COTTAGE GROVE
12800 RAVINE PARKWAY SO
COTTAGE GROVE MN 55016-6103

RENTAL CONTRACT

Description	R E S E R V A T I O N # 020255	Amount
BOBCAT LOADER T66	T66 T4 COMFORT SJC 7 1 4 WEE	1300.00
Stock #: L087615	Serial #: B4SB51914	
Date Out: 03/06/2026 07:49	Expected return date: 03/11/2026 15:25	
Machine hours out: 444		
Rates: 425.00/DAILY	1395.00/WEEKL 3195.00/MONTH 1300.00/4 WEE	
O/T Rates Per HR: 100.00/DAILY	100.00/WEEKL 100.00/MONTH 100.00/4 WEE	
VIRNIG BUCKET ALL	72" LP BUCKET 1 4 WEE	50.00
Stock #: R10579	Serial #: R10579	
Date Out: 03/06/2026 07:51	Expected return date: 03/11/2026 15:25	
Rates: 10.00/DAILY	25.00/WEEKL 50.00/MONTH 50.00/4 WEE	
O/T Rates Per HR: 100.00/DAILY	100.00/WEEKL 100.00/MONTH 100.00/4 WEE	
	Subtotal:	3840.00
	TOTAL CHARGE:	3840.00

MESSAGES

TSB - Ryan

___I FULLY UNDERSTAND I WILL BE BILLED FOR THE COMPLETE TIME THAT THE UNIT IS AWAY FROM TRI STATE BOBCAT

___IF MACHINE IS NOT RETURNED FULL OF FUEL, I UNDERSTAND I WILL BE BILLED $9.99 PER GALLON WHEN UNIT IS CHECKED IN

___THERE WILL BE A MINNIMUM CHARGE OF $50 IF EQUIPMENT IS NOT RETURNED CLEAN

___I FULLY UNDERSTAND I WILL BE BILLED FOR THE COMPLETE TIME THAT THE UNIT IS AWAY FROM TRI STATE BOBCAT

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Signature: _____ **Print Name:** _____

LESSOR AND LESSEE AGREE THAT THE TERMS AND CONDITIONS ON THE REVERSE SIDE HEREOF ARE A PART OF THIS AGREEMENT AND ARE THOROUGHLY UNDERSTOOD.

"YOU PAY FOR TIME OUT NOT TIME USED"
Save Overtime Charges -
Return Equipment Promptly

THERE WILL BE A PER GAL CHARGE IF EQUIPMENT IS RETURNED WITH FULL F TANK(S).

This agreement (including both the front and the back of this page) ("Agreement") is for the rental of the vehicle or equipment described on the other side of this page ("Front"), including all parts and accessories to such vehicle or equipment ("Equipment"). This agreement is between the person or entity indicated on the Front as the customer ("Customer"0 and Tri-State Bobcat, Inc. ("TSB")

1. OWNERSHIP AND OPERATION OF EQUIPMENT. Only Customer and the following persons with Customer's permission ("Authorized Operators") may operate the Equipment: Customer's employer, employees, fellow employees in the course of such employee's regular employment, or persons approved by TSB in writing. Customer and all Authorized Operators must: be at least 21 years old; be properly qualified to operate the Equipment and have a valid operator's license for the Equipment where required by law. Any person appearing to act under the direction of, at the behest of, or under the authority of the Customer, shall be conclusively presumed to be an agent of the Customer and thereby binds the Customer to all terms and conditions of this agreement. Customer agrees not to sublet, loan dispose of or assign the Equipment. Customer represents and warrants that any person who will use the Equipment is fully qualified to operate the Equipment in a safe manner.

2. RENTAL AND REFUELING CHARGES. Customer will pay TSB on demand at the TSB location or the "Remit to" address on the Front, all rental time, mileage, service, transportation, refueling service, environmental agency fees (including EPA, relevant AQMD or other agencies with jurisdiction) and other charges and sums in accordance with this Agreement, all sales and use taxes or tax reimbursement imposed with respect to the Equipment and this Agreement, and all expenses, including reasonable attorney's fees incurred in collecting same. The basic daily, weekly and monthly (4 weeks) rental will entitle Customer to a maximum of one-shift use (i.e. a maximum of 8 hours per day; 40 hours per week; 160 hours per 4 weeks). Use in excess of one shift will be payable based on the rates posted at the TSB location plus applicable taxes. All charges are subject to final audit by TSB. TSB will have a lien as allowed by law for charges incurred hereunder upon the premises and improvements upon which the Equipment is employed. Rentals are F.O.B. at the TSB location designated on the Front unless otherwise specified. Shipped charges from such location to the Customer's destination and return and loading, unloading, assembling and dismantling will be paid by Customer. Should Customer fail to pay any invoice to TSB in accordance with the terms of such invoice, Customer will pay a late payment fee to TSB on such delinquent payment until fully paid, at the maximum monthly rate allowed by the laws of the jurisdiction in which the TSB location specified on the Front is located. Customer may also be charged a reasonable fee for any check used for payment hereunder that is returned unpaid. TSB agrees to provide the Equipment to Customer with full fuel tank(s). If Equipment is not returned with full fuel tank(s), Customer agrees to pay TSB for re-filling the tank(s) at the refueling charge posted at TSB location where the Equipment is returned; $6.00 per gallon minimum charge.

3. CUSTOMER'S RESPONSIBILITIES. General: Customer must return the Equipment to TSB in the same good and clean condition it is in when Customer receives it, ordinary wear expected. The Equipment must be returned to TSB at the TSB location from which it was rented by the estimated return date specified on the Front, or sooner if demanded by TSB. Customer must confirm return receipt of the Equipment to TSB at the expiration or earlier termination of this agreement. Until TSB receives actual possession of the Equipment, Customer agrees to hold said Equipment in a safe and secure manner. The Equipment will be kept and used solely at Customer's business or the job site at which the Equipment is used, and will not be moved without TSB's prior written consent. The Equipment will be used only in accordance with the manufacturer's instructions within its rated capacity. Customer will notify TSB immediately of any accident, damage or failure involving the Equipment and promptly furnish TSB all information and assistance required under Paragraph 10. Maintenance: Customer will perform or cause to be perform and pay for all normal periodic and other basic service, adjustments and lubrication of the Equipment, including but not limited to: checking of the Equipment before each shift; checking and maintaining crankcase, transmission, cooling and fluid systems daily; and checking tire pressures and battery fluid and charge levels weekly, in addition to all other maintenance required to keep the Equipment in good working condition and in compliance with safety instructions. Insurance and Indemnification's: Customer agrees to provide insurance as required in Paragraph 8 and to indemnify and hold TSB harmless as provided in Paragraph 9. Preliminary Notices: Customer shall provide TSB the correct information necessary to file a Preliminary Notice according to state statutes. Customer also grants TSB permission to contact owners, contractors, financial institutions, and any other persons necessary to obtain this information.

4. RISK OF LOSS. All loss of or damage to the Equipment, up to the Equipment's fair market value, from any cause whatsoever while on rental or in Customer's care, custody or control, whether exclusive or not, and whether or not due to the fault of Customer, will be the sole responsibility of Customer (subject to the provisions and limitations of Paragraphs 7 and 8) and will be paid to TSB promptly upon Customer's receipt of an invoice therefor. Use of the Equipment by persons other than Customer or Authorized Operators will be at Customer's sole risk.

5. EVENTS OF DEFAULT. Customer shall be in default of this Agreement if Customer fails to pay any rent when due, or if Customer breaches any of the other terms of the Agreement, or if Customer becomes insolvent or ceases to do business as a going concern, or if a petition of bankruptcy is files by or against Customer, or if Customer is in default pursuant to the provisions of any other agreement by and between Customer and TSB. Customer will further be deemed to be in default if the Equipment is used: (A) to carry persons for hire; (B) to carry persons other than Authorized Operators or helpers employed by Customer (unless authorized by TSB on the Front), all of whom will ride only within the cab of the Equipment, and then only if such carriage is lawful; (C) to transport property for hire unless Customer obtains all necessary permits and licenses; (D) in violation of any law or ordinance; (E) in any race, test or contest; (F) for the carrying or hauling of explosives or other hazardous material in violation of applicable laws, rules or regulations; (G) in violation of Paragraph 3.

6. REMEDIES OF TSB. In case of default by Customer as specified in Paragraph 5, TSB may peaceably enter the premises where the Equipment is located and render it inoperative or remove same with or without process of law and without any notice or liability to Customer. Customer hereby waives any right to any hearing or to receive any notice of legal process, as a pre-condition for TSB recovering the Equipment. Customer agrees to permit such entry and action by TSB. In such case TSB may also terminate this agreement without notice to Customer or prejudice to any remedies or claims with TSB might otherwise have for rent, expense of retaking, court costs and reasonable attorney's fees. In addition, Customer, will pay to TSB a sum equal to the balance of the rent and other payments called for hereunder for the remainder of the rental term specified on the Front as liquidated damages and not as a penalty. Customer will remain liable for any loss or injury to the Equipment, notwithstanding such termination. TSB shall have the right to issue and circulate theft notices, cause warrants to be issued for the taking of custody of Customer, Customer's agents, partners or employees, or take any other steps which TSB reasonably deems necessary to recover the Equipment, if the Equipment is not returned on the date specified on the Front or sooner as permitted by the terms of this Agreement. TSB's remedies provided herein are not exclusive, but shall be cumulative and in addition to all other remedies existing at law or in equity. If the Equipment is used in any manner that would constitute default under Paragraph 5, or in violation of this Agreement, or is obtained from TSB by fraud or misrepresentation, or used in furtherance of any illegal purpose, all such use of the Equipment is without TSB's permission.

7. LOSS AND DAMAGE WAIVER. Any Customer not providing proof of insurance (See Paragraph 8) will be charged Loss and Damage Waiver equal to 15% on the rental amount. If the equipment is used in compliance with this Agreement and if Customer pays the "Loss and Damage Waiver" ("LDW"), Which is <u>not insurance</u> than TSB agrees to waive, to the extent specified therein and in the "Loss and damage waiver guide" provided herewith, customers responsibility to TSB for the loss of or damage to the equipment will be, if TSB personal determines that the damage or loss was not caused by negligence or abuse the customer will be covered according to the following schedule. First 25% of value* TSB covers 100%, customer responsibility none. Rest of value* TSB covers 50%, customer responsibility 50%-*value based on TSB Equipment selling price. Protection is offered for first $20,000.00 of value. Customer is fully responsible for all value in excess of $20,000.00. THIS LOSS AND DAMAGE WAIVER WILL BE VOID IN THE EVENT OF (A) ANY EVENT OF DEFAULT UNDER PARAGRAPH 5 OF THIS AGREEMENT, OR (B) ANY VIOLATION OF THE TERMS OF THIS AGREEMENT. NOTWITHSTANDING THE FOREGOING PROVISIONS OF THIS PARAGRAPH 7, CUSTOMER WILL BE LIABLE FOR ALL RESULTING LOSS OF OR DAMAGE TO THE EQUIPMENT, UP TO ITS FAIR MARKET VALUE AND EXPENSE OF TSB, IF IT RESULTS FROM ANY OF THE FOLLOWING CIRCUMSTANCES: (A) the use or operation of the Equipment, or improperly loading the Equipment, with a load exceeding the manufacturer's rated capacity of the Equipment, or improperly securing such load or improper coupling; (B) the failure of Customer to perform or pay for all normal periodic and other basic service, adjustments and lubrication of the Equipment; (C) the use or operation of the Equipment in a manner inconsistent with the manufacturer's or other safety instructions provided; (D) the loss of or damage to the Equipment during periods of riot, strike or civil commotion; (E) reckless, negligent or abusive use or operation (operator negligence) of or intentional damage to, the Equipment by Customer or with Customer's permission; (F) striking overhead object with the Equipment; (G) the loss of or damage of the Equipment occurring during the loading, unloading or transportation is at Customer's sole risk; (H) the use or operation of the Equipment in a hostile or warlike manner in times of peace or war; (I) <u>the loss of or damage to tires</u> or tools unless caused by fire, windstorm, vandalism or malicious mischief or coincident with any other protected loss or damage; (J) the loss of or damage to the Equipment caused by nuclear reaction, nuclear radioactive contamination, whether controlled or uncontrolled, direct or indirect, proximate or remote, or being in whole or in part caused by contributed to or aggravated by any other protected loss or damage; (K) boom damage from overloading of an Equipment boom or from a collision involved with a boom in motion; (L) all loss or damage associated with the Equipment's rollover or upset; (M) all losses or damage associated with vandalism or conversion report; (N) use or operation of the Equipment by person other than an Authorized Operator as defined herein; (O) Customer's failure to secure the Equipment by leaving the keys readily available to any unauthorized operator or by not reasonably restricting access to the Equipment; (P) all loss or damage associated with altering the Equipment to be used in a manner it was not designed for; (Q) any other failure of Customer to comply with any of the other provisions contained in Paragraph 1 through 15.

8. CUSTOMER'S INSURANCE OBLIGATION. Customer will not be charged the Loss and Damage Waiver under Paragraph 7 if, <u>AT THE TIME THE EQUIPMENT IS RENTED</u> Customer furnishes TSB a certificate evidencing the following insurance endorsed to show TSB as the loss payee and that such insurance may not be cancelled or materially modified except on twenty (20) days' prior written notice to TSB at TSB location shown on the Front, Customer will, at Customer's expense, at all times during the term of this Agreement, maintain in force property damage insurance (which covers loss or damage to rented equipment of the type included in this Agreement), public liability and third party property damage insurance with a single limit of $1,000,000 for bodily injury and property damage for each accident, on a primary and not excess or contributory basis, against Customer's liability for damage sustained by any person or persons, including, but not limited to, agents or employees of Customer, as a result of the maintenance, use, operation, possession, storage, erection, dismantling, servicing or transportation of the Equipment. Customer agees to abide by all the terms and conditions of said insurance. Customer, its agents and employees will cooperate fully with TSB and Customer's insurer in the investigation, prosecution and/or defense of any claim or suit arising therefrom and will do nothing to impair or invalidate the applicable insurance coverage. TSB's acquiescence in Customer's certificate(s) of insurance is not a waiver or modification of Customer's insurance, indemnity or any other obligation under this Agreement. The aforesaid Customer insurance obligation in no way limits Customer's ultimate liability hereunder. NO INSURANCE IS PROVIDED TO YOU BY TSB THROUGH THIS AGREEMENT EXCEPT WHAT IS REQUIRED BY LAW.

9. CUSTOMER'S OBLIGATION TO INDEMNIFY. Customer will defend, indemnify and hold harmless TSB, its subsidiaries, parent company and their officers, agents and employees, from and against all loss, liability, claim, action or expense, including reasonable attorney's fees, by reason of bodily injury, including death and property damage, sustained by any person or persons, including but not limited to employees of Customer, as a result of the maintenance, use, possession, operation, erection, dismantling, servicing or transportation of the Equipment, or Customer's failure to comply with this Agreement, except to the extent caused solely by the gross negligence or the intentional wrongful act of TSB.

10. NOTICE OF DAMAGE, LOSS OR ACCIDENT. In the event of the loss or theft of or damage to the Equipment, Customer agrees to notify TSB immediately by telephone, and thereafter to immediately report in writing to TSB and the public authorities (where required by law or by TSB) all relevant information. Customer will cause its agents and employees to give TSB and the public authorities proper and full information and assistance in the investigation and prosecution of any matter resulting from said loss, theft or damage.

11. CONDITION OF EQUIPMENT. Customer acknowledges that the Equipment is of a size, design, capacity and manufacture selected by Customer. Customer accepts the Equipment in good working condition and repair and declares the Customer fully understands its proper operation and use and that the Equipment will only be used by persons who fully understand its proper operation and use. Customer acknowledges and declares that Customer has examined, or has had the opportunity and right to examine, the Equipment, including all hitches, bolts, safety chains, hauling tongues, together with all devices and materials used to connect the Equipment to the Customer's towing vehicle, if any, and Customer accepts all Equipment in a secure and operative condition. TSB is not responsible for any damage to Customer's towing vehicle caused by detachable hitches or mirrors. If, during Customer's possession of the Equipment, it is found not to be in good mechanical condition, as a result of conditions not the responsibility of Customer, not caused by the fault of negligence of Customer or Customer's employees or agents, Customer will so notify TSB, whereupon TSB will, at its option and without any other liability or responsibility by TSB to Customer; (a) repair or suitably replace the Equipment within a reasonable time during TSB's normal working hours, with the term of this Agreement to be tolled for the period the Equipment if "down" or (b) remove the Equipment and terminate this Agreement and refund payments of rental charges, if any, for the unexpired term of the Agreement, less whatever is due TSB for damage to or maintenance of the Equipment which is the responsibility of Customer. Customer agrees to provide TSB full access to the Equipment to enable TSB to meet its responsibilities hereunder. Notwithstanding the foregoing provisions of this Paragraph 11, Customer agrees to indemnify and hold harmless TSB, as provided in Paragraph 9.

12. DISCLAIMER OF WARRANTY. TSB MAKES NO WARRANTY OF MERCHANTABILITY OR FITNESS OF THE EQUIPMENT FOR ANY PARTICULAR PURPOSE, EITHER EXPRESSED OR IMPLIED. THERE IS NO WARRANTY OR REPRESENTATION THAT THE EQUIPMENT IS FIT FOR CUSTOMER'S PARTICULAR USE, OR THAT IT IS FREE OF LATENT DEFECTS. TSB SHALL NOT BE RESPONSIBLE TO CUSTOMER OR ANY THIRD PARTY FOR LOSS, DAMAGE OR INJURY CAUSED BY OR IN ANY WAY ATTRIBUTABLE TO THE OPERATION, USE OR FAILURE OF THE EQUIPMENT. TSB SHALL NOT BE RESPONSIBLE FOR DEFECTS OR FAILURS UNKNOWN TO TSB. CUSTOMER ACKNOWLEDGES THAT TSB IS NOT A MANUFACTURER OF THE EQUIPMENT AND HAS NOT AND DOES NOT MAKE ANY REPRESENTATION, WARRANTIES OR COVENANTS.

13. FORCE MAJEURE. Any inability of TSB to perform, due to causes beyond TSB's reasonable control, including but not limited to acts of civil or military authority, Acts of God, labor difficulties, failure of transportation, and delays of suppliers, will excuse the performance of TSB's obligations under this Agreement.

14. MERGER/MODIFICATIONS/SEVERABILITY. This Agreement front and back expresses the entire Agreement between the parties with respect to the subject matter hereof. No change, modification or alteration of the terms hereof will be effective against TSB unless same is in writing and signed by a duly authorized officer of TSB. By executing this Agreement and accepting delivery of the Equipment, Customer accepts all of the terms and conditions contained herein, and waives any inconsistent terms and conditions otherwise stated by Customer or contained in any of Customer's documents. The paragraph headings in this Agreement are for convenience only and will not be used to expand or limit the actual terms and conditions hereof. The provisions of this Agreement are severable and if any provision in whole or in part or the application thereof, is held invalid or unenforceable, the remainder of this Agreement shall not be affected. In any action to enforce this Agreement or to seek a declaration of rights or responsibilities hereunder, the prevailing party will be entitled to a reasonable attorney's fee in addition to all other costs and expenses allowed by law.

15. OSHA. TSB has no control over the circumstances under which the Equipment will be used or the qualifications or lack of qualifications of the operator of the Equipment. Accordingly, TSB expressly disclaims any responsibility for compliance with Occupational Safety and Health Administration (OSHA) statutes, rules or regulations.

City Council Action Request

7.T.

Meeting Date	3/18/2026
Department	Engineering
Agenda Category	Action Item
Title	US Bank Encroachment Agreement
Staff Recommendation	Approve the US Bank Encroachment Agreement.
Budget Implication	N/A

Attachments

1.	CC encroachment memo
2.	Encroachment Agreement US Bank v2 (USB clean)

Cottage Grove
Where Pride and Prosperity Meet

To: Honorable Mayor and City Council
Jennifer Levitt, City Administrator

From: Paul Sponholz, PE, City Engineer

Date: February 26, 2026

Re: 80th Street US Bank Encroachment Agreement

Background

Included in the Capital Improvement Plan for 2026 is the rehabilitation of 80th Street from Highway 61 to Ideal Avenue and East Point Douglas Road from 80th Street to the T-intersection near Arby's. To obtain Minnesota Department of Transportation (MnDOT) and Federal approval for the project, the city must complete a right-of-way certificate certifying that the right-of-way is adequate to accommodate the construction of the project and that there or no encroachments in the right-of-way.

Discussion

While preparing plans for the project, staff discovered that US Bank has portions of its parking lot, signing, and retaining walls on existing city right-of-way for 80th Street. Staff found that the right-of-way was widened several times in the past, with the latest widening by dedication with Gateway North First Addition plat in 2003. That widening and dedication then encompassed those existing improvements and created the condition of the encroachment. Records found indicate that the City was aware of the encroachments at the time of the platting and allowed the encroachments to remain with the new dedication.

The preexisting encroachments do not interfere with the construction of the project or impair the roadway or interfere with the free and safe flow of traffic on it. MNDOT has agreed to allow the preexisting encroachments to remain with an agreement between the City and US Bank that allows the existing encroachments.

Recommendation

Staff recommends that the City Council approve the US Bank Encroachment Agreement.

AGREEMENT RELATING TO OWNER IMPROVEMENTS ON A PORTION OF 80TH STREET RIGHT OF WAY AND RETAINING WALL IN THE CITY OF COTTAGE GROVE, WASHINGTON COUNTY, MINNESOTA

THIS AGREEMENT ("Agreement") is made, entered into and effective this _____ day of _____, 2026, by and between the City of Cottage Grove, a Minnesota municipal corporation ("City"), and U.S. Bank National Association, a national banking association ("Owner"). Subject to the terms and conditions hereafter stated and based on the representations, warranties, covenants, agreements and recitals of the parties herein contained, the parties do hereby agree as follows:

ARTICLE 1
DEFINITIONS

1.1. Terms. The following terms, unless elsewhere specifically defined herein, shall have the following meanings as set forth below.

1.2. City. "City" means the City of Cottage Grove, a Minnesota municipal corporation.

1.3. City Property. "City Property" means the right-of-way dedicated as 80th Street, located in the City of Cottage Grove, Washington County, Minnesota.

1.4. Construction Plan. "Construction Plan" means all of the plans, drawings specifications and surveys on file with the City, as amended and approved by the City Engineer, relating to Owner Improvements, which are hereby incorporated by reference and made a part of this Agreement.

1.5. Encroachment Area. "Encroachment Area" means the real property, legally described on Exhibit A, attached hereto and incorporated herein, used by Owner for Owner Improvements.

1.6. Owner. "Owner" means U.S. Bank National Association, a national banking association.

1.7. Owner Improvements. "Owner Improvements" means a portion of Owner's parking lot, sidewalk, landscaping and related improvements located in the Encroachment Area on City Property, depicted on Exhibit B attached hereto and as detailed on the Construction Plan.

1.8. Owner Property. "Owner Property" means the real property located in the City of Cottage Grove, Washington County, Minnesota legally described on Exhibit C, attached hereto and incorporated herein.

1.9. Maintain. As used in this Agreement with respect to the Owner Improvements, "Maintain" and derivations thereof means to upkeep and repair in accordance with relevant City ordinances and regulations applicable to such improvements.

ARTICLE 2
RECITALS

2.1. Owner owns Owner Property.

2.2. The City and Owner desire to memorialize the rights and obligations to the Owner Improvements in the City property.

ARTICLE 3
AGREEMENTS

3.1. Construction And Maintenance Of Owner Improvements. Under the terms and conditions stated herein, Owner, at its own cost, is hereby authorized by the City to Maintain the Owner Improvements in the Encroachment Area. The Owner Improvements must remain at the locations in the Encroachment Area as depicted on Exhibit B. Owner shall not place any other structures, retaining walls, irrigation systems, buildings, fences, landscaping, trees or shrubs in the Encroachment Area, except for the Owner Improvements, or expand the Owner Improvements, without the City's prior written consent, which shall not be unreasonably withheld, conditioned, or delayed. The foregoing notwithstanding, Owners shall be allowed to continue to maintain the existing Owner Improvements.

3.2. City Not Responsible For Owner Improvements. Nothing contained herein shall be deemed an assumption by the City of any responsibility for construction, maintenance, replacement or repair of the Owner Improvements.

3.3. Continuing Right To Encroachment Area. Nothing contained herein shall be deemed a waiver or abandonment or transfer of the right, title and interest that the City holds to the Encroachment Area. The Agreement shall be perpetual in duration, shall constitute covenants running with the land, and shall be binding on the undersigned and all successors, assignees, devisees, or transferees of the parties and shall in all respects attach to the individual properties legally described in this Agreement.

3.4. Subordinate Position Of Owner Improvements. The Owner Improvements are subordinate to the rights of the City in the Encroachment Area.

3.5. Risk Of Loss. Owner understands and agrees that the Owner Improvements within the Encroachment Area may be adversely affected by damage caused to Owner Improvements arising out of the City's use of the Encroachment Area. The parties agree that the City is not responsible for such events; the City shall have no liability to Owner for such events. Owner assumes the risk of maintaining the Owner Improvements in the Encroachment Area.

3.6. Owner To Bear Cost Of Relocating Owner Improvements. The City is responsible for the repair and maintenance of the City Property in the Encroachment Area.

The City may require the Owner at the expense of the Owner to temporarily remove and subsequently replace the Owner Improvements in the City Property in order for the City to gain access to the City Property for the purpose of inspecting, repairing, maintaining, or replacing any improvements or adding future City improvements in the Encroachment Area.

If the Owner does not perform such tasks, the City may perform such tasks and in such case the Owner shall reimburse the City for the City's costs and expenses. Prior to commencing such tasks, the City shall send a notice to the Owner and allow the Owner twenty (20) days from the date of the written notice to perform the tasks. If the Owner has not completed the work within the twenty (20) days, then the City may proceed to perform the tasks. Once the City's costs and expenses have been determined by the City, the City shall send an invoice for such costs and expenses to the Owner. The Owner must pay the invoice within thirty (30) days after the date of the invoice. Such costs and expenses include, but are not limited to, costs charged the City by third parties such as contractors as well as the costs for City personnel that may have performed the work. Bills not paid shall incur the standard penalty and interest established by the City for utility billings within the City.

3.7. Emergency. The City shall not be required to give such notice if the City's engineer determines that an emergency exists. In such instance, the City, without giving notice to Owner may perform the work and in such case the Owner shall reimburse the City for the costs and expenses relating to the work. Once the City's costs and expenses have been determined by the City, the City shall send an invoice for such costs and expenses to the Owner. The Owner must pay the invoice within thirty (30) days after the date of the invoice. Such costs and expenses include, but are not limited to, costs charged to the City by third parties such as contractors as well as the costs for City personnel that may have performed the work. Bills not paid shall incur the standard penalty and interest established by the City for utility bills within the City.

3.8. Remedies. If the Owner fails to perform its obligations under this Agreement, then the City may avail itself of any remedy afforded by law or in equity and any of the following non-exclusive remedies:

(a) The City may specifically enforce this Agreement.

(b) If Owner fails to make payments under Section 3.6 or 3.7, then the City may certify to Washington County the amounts due as payable with the real estate taxes for Owner Property in the next calendar year; such certifications may be made under Minnesota Statutes, Chapter 444 in a manner similar to certifications for unpaid utility bills. The Owner waives any and all procedural and substantive objections to the imposition of such usual and customary charges on the Owner Property.

Further, as an alternate means of collection, if the written billing is not paid by the Owner, the City, without notice and without hearing, may specially assess the Owner Property for the costs and expenses incurred by the City. The Owner hereby waives any and all procedural and substantive objections to special assessments for the costs including, but not limited to, notice and hearing requirements and any claims that the charges or special assessments exceed the benefit to the Owner Property. The Owner waives any appeal rights otherwise available pursuant to Minnesota Statute §429.081. The Owner acknowledges that the benefit from the performance of tasks by the City equals or exceeds the amount of the charges and assessments for the costs that are being imposed hereunder upon the Owner Property.

No remedy herein conferred upon or reserved to the City shall be exclusive of any other available remedy or remedies, but each and every such remedy shall be cumulative and shall be in addition to every other remedy given under this Agreement or now or hereafter existing at law or in equity or by statute. No delay or omission to exercise any right or power accruing upon any default shall impair any such right or power or shall be construed to be a waiver thereof, but any such right and power may be exercised from time to time and as often as may be deemed expedient.

3.9. Indemnification. Except to the extent caused by the City, the Owner shall indemnify, defend and hold the City, its council, agents, consultants, attorneys, employees and representatives harmless against and in respect of any and all claims, demands, actions, suits, proceedings, losses, costs, expenses, obligations, liabilities, damages, recoveries, and deficiencies including interest, penalties and attorneys' fees, that the City incurs or suffers, which arise out of, result from or relate to any of the following:

(a) The Owner Improvements;

(b) Maintenance of the Owner Improvements;

(c) Failure by the Owner to observe or perform any covenant, condition, obligation or agreement on their part to be observed or performed under this Agreement; and

(d) Use of the Encroachment Area for Owner Improvements.

3.10. Limitation on Liability. Minnesota Tort Claims Act, Minnesota Statutes, Chapter 466, governs the Parties' liability. Nothing in this Agreement is intended to waive or limit the

provisions of the Tort Claims Act. The total liability of all third-party claims arising out of a single occurrence shall not exceed the limit set forth for each Party. The limits of liability for the undersigned Parties may not be added together to determine the maximum amount of liability for any one party. The intent of this paragraph is to impose on each party a limited duty to defend and indemnify each other subject to the limits of liability under Minnesota Statutes, Chapter 466.

3.11. City Duties. Nothing contained in this Agreement shall be considered an affirmative duty upon the City to perform the Owner's obligations contained in Article 3 if the Owner does not perform such obligations.

3.12. No Third Party Recourse. Third parties shall have no recourse against the City under this Agreement.

3.13. Recording. This Agreement shall be recorded with the Washington County Recorder against both the Owner Property and the Encroachment Area.

3.14. Binding Agreement. The parties mutually recognize and agree that all terms and conditions of this recordable Agreement shall run with the Owner Property and City Property and shall be binding upon the heirs, successors, administrators and assigns of the parties, for so long as the Owner Improvements remain on the City Property.

3.15. Amendment And Waiver. The parties hereto may by mutual written agreement amend this Agreement in any respect. Any party hereto may extend the time for the performance of any of the obligations of another, waive any inaccuracies in representations by another contained in this Agreement or in any document delivered pursuant hereto which inaccuracies would otherwise constitute a breach of this Agreement, waive compliance by another with any of the covenants contained in this Agreement and performance of any obligations by the other or waive the fulfillment of any condition that is precedent to the performance by the party so waiving of any of its obligations under this Agreement. Any agreement on the part of any party for any such amendment, extension or waiver must be in writing. No waiver of any of the provisions of this Agreement shall be deemed, or shall constitute, a waiver of any other provisions, whether or not similar, nor shall any waiver constitute a continuing waiver.

3.16. Governing Law. This Agreement shall be governed by and construed in accord with the laws of the State of Minnesota.

3.17. Counterparts. This Agreement may be executed in any number of counterparts, each of which shall be deemed an original, but all of which shall constitute one and the same instrument.

3.18. Headings. The subject headings of the sections this Agreement are included for purposes of convenience only and shall not affect the construction of interpretation of any of its provisions.

3.19. Notice. Notice shall mean notices given by one party to the other if in writing and if and when delivered or tendered: (i) in person; (ii) by depositing it in the United States mail in a sealed envelope, by certified mail, return receipt requested, with postage and postal charges

prepaid, or (iii) by proper and timely delivery to an overnight courier service addressed by name and address to the party or person intended addressed as follows:

If to City: City of Cottage Grove
Attention: City Administrator
12800 Ravine Parkway South
Cottage Grove, MN 55016

If to Owner: U.S. Bank National Association
Attention: Corporate Real Estate
800 Nicollet Mall, BC-MN-H15F
Minneapolis, MN 55402

with copy to : U.S. Bank National Association
Attention: Corporate Real Estate Counsel
800 Nicollet Mall, BC-MN-21CR
Minneapolis, MN 55402

or to such other address as the party addressed shall have previously designated by notice given in accordance with this Section. Notices shall be deemed to have been duly given on the date of service if served personally on the party to whom notice is to be given, on the third day after mailing if mailed by United States postal service as provided above, or within twenty-four (24) hours if sent via overnight courier service provided, that a notice not given as above shall, if it is in writing, be deemed given if and when actually received by a party.

[The remainder of this page has been intentionally left blank.]

IN WITNESS WHEREOF, the parties have executed this Agreement the year and day first set forth above.

CITY:
CITY OF COTTAGE GROVE

By:_____
Myron Bailey
Its Mayor

By:_____
Tamara Anderson
Its City Clerk

STATE OF MINNESOTA)
) ss.
COUNTY OF WASHINGTON)

On this _____ day of_____, 202__, before me a Notary Public within and for said County, personally appeared Myron Bailey and Tamara Anderson to me personally known, who being each by me duly sworn, each did say that they are respectively the Mayor and City Clerk of the City of Cottage Grove, the municipality named in the foregoing instrument, and that the said instrument was signed on behalf of said municipality by authority of its City Council and said Mayor and City Clerk acknowledged said instrument to be the free act and deed of said municipality.

_____
Notary Public

OWNER:
U.S. BANK NATIONAL ASSOCATION

By:_____
Its: _____

STATE OF _____)
) ss.
COUNTY OF_____)

On this _____ day of _____, 202__, before me a Notary Public within and for said County, personally appeared _____, to me personally known, who being by me duly sworn, did say that h/she is the Vice President for the entity named in the foregoing instrument, and that the said instrument was signed on behalf of said entity and said instrument is the free act and deed of said entity.

_____
Notary Public

THIS INSTRUMENT DRAFTED BY AND
AFTER RECORDING PLEASE RETURN TO:

Korine Land, #262432
LeVander, Gillen, & Miller, P.A.
1305 Corporate Center Drive Suite 300
Eagan, MN 55121
(651) 451-1831

EXHIBIT A
LEGAL DESCRIPTION OF ENCROACHMENT AREA

That part of 80th Street South as dedicated in the plat of GATEWAY NORTH FIRST ADDITION, according to said plat on file and of record in the office of the County Recorder, in and for, Washington County, Minnesota described as beginning at the southwest corner of Lot 2, Block 2, said GATEWAY NORTH FIRST ADDITION; thence South 00 degrees 12 minutes 08 seconds East, assumed bearing, along the southerly extension of the West line of said Lot 2, 3.50 feet; thence southeasterly, 19.63 feet along a tangential curve, concave to the northeast, having a radius of 12.50 feet and a central angle of 90 degrees 00 minutes 00 seconds; thence North 89 degrees 47 minutes 52 seconds East, tangent to the last described curve, 99.45 feet; thence North 00 degrees 12 minutes 08 seconds West, 16.00 feet to the South line of said Lot 2; thence South 89 degrees 47 minutes 52 seconds West, along said South line 111.95 feet to the point of beginning.
AND
Commencing at the southeast corner of said Lot 2; thence South 89 degrees 47 minutes 52 seconds West, assumed bearing along said South line, 26.66 feet to the point of beginning; thence continuing South 89 degrees 47 minutes 52 seconds West, 152.55 feet; thence South 23 degrees 52 minutes 45 seconds East, 13.01 feet; thence South 60 degrees 42 minutes 05 seconds West, 22.79 feet; thence South 31 degrees 14 minutes 53 seconds East, 4.50 feet; thence South 73 degrees 27 minutes 25 seconds East, 7.00 feet; thence North 89 degrees 54 minutes 35 seconds East, 142.49 feet; thence northeasterly 7.54 feet along a tangential curve, concave to the northwest, having a radius of 12.00 feet and a central angle of 35 degrees 58 minutes 47 seconds; thence North 53 degrees 56 minutes 01 seconds East, tangent to the last described curve, 7.48 feet; thence North 67 degrees 39 minutes 29 seconds East, 4.41 feet; thence easterly, 7.94 feet along a tangential curve concave to the South, having a radius of 20.15 and a central angle of 22 degrees 35 minutes 06 seconds; thence South 89 degrees 45 minutes 33 seconds East, tangent to the last described curve, 6.57 feet; thence North 00 degrees 14 minutes 27 seconds East, 3.00 feet; thence North 89 degrees 45 minutes 33 seconds West, 22.31 feet; thence North 21 degrees 35 minutes 20 seconds East, 17.48 feet to the point of beginning.
AND
Commencing at the southwest corner of said Lot 2; thence North 89 degrees 47 minutes 52 seconds East, assumed bearing along the South line of said Lot 2, 131.30 feet; thence South 00 degrees 00 minutes 00 seconds West, 7.19 feet to the point of beginning; thence South 00 degrees 00 minutes 00 seconds West, 8.10 feet; thence North 90 degrees 00 minutes 00 seconds West, 3.50 feet; thence North 00 degrees 00 minutes 00 seconds East, 8.10 feet; thence South 90 degrees 00 minutes 00 seconds East, 3.50 feet to the point of beginning.
AND
Commencing at the southeast corner of said Lot 2; thence South 89 degrees 47 minutes 52 seconds West, assumed bearing along the South line of said Lot 2, 225.88 feet; thence South 06 degrees 52 minutes 28 seconds East, 3.17 feet to the point of beginning; thence North 83 degrees 07 minutes 46 seconds East, 6.20 feet; thence South 06 degrees 52 minutes 28 seconds East, 17.09 feet; thence South 83 degrees 07 minutes 46 seconds West, 6.20 feet; thence North 06 degrees 52 minutes 28 seconds West, 17.09 feet to the point of beginning.

EXHIBIT B
DEPICTION OF OWNER IMPROVEMENTS

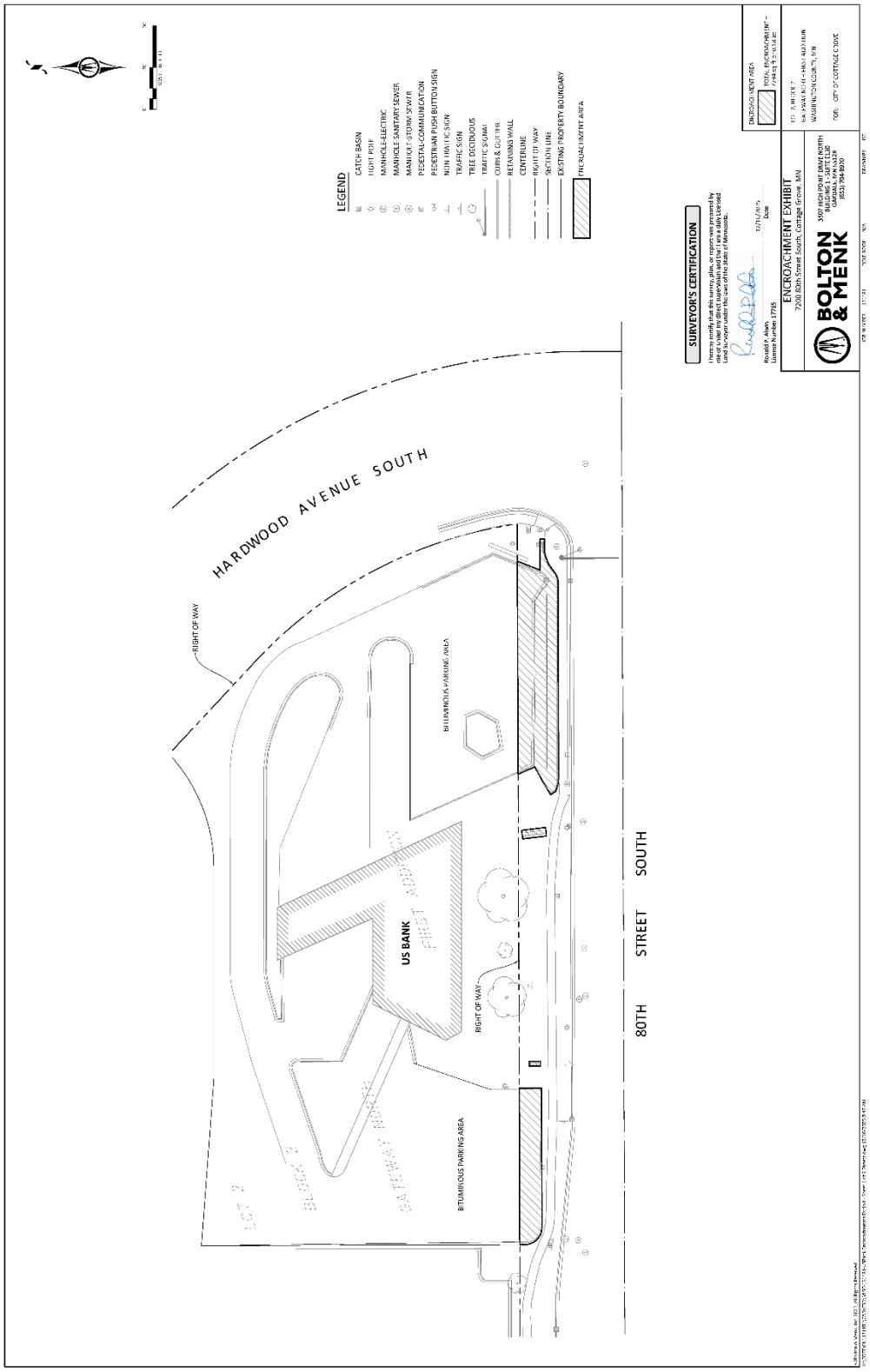


EXHIBIT C
LEGAL DESCRIPTION OF OWNER PROPERTY

Real property situated in the City of Cottage Grove, County of Washington, State of Minnesota, legally described as:

Lot 2, Block 2, Gateway North First Addition

PID: 0802721330050
Abstract Property

City Council Action Request

7.U.

Meeting Date	3/18/2026
Department	Engineering
Agenda Category	Action Item
Title	2026 Mill & Overlay - Approve Plans & Specifications and Authorize Bidding
Staff Recommendation	Adopt Resolution 2026-041 approving the plans and specifications and authorizing bidding for the 2026 Mill and Overlay Improvements
Budget Implication	$1,768,000 - Roadway and Trail Maintenance Fund

Attachments

1.	2026 MO Approve P&S and Authorize Bid Date - Memo
2.	2026 MO Approve P&S and Authorize Bid Date - Resolution
3.	2026-03-10 2026 Mill and Overlay Council Plans

To: Honorable Mayor and City Council
Jennifer Levitt, City Administrator

From: Genevieve Tester EIT, Graduate Engineer

Date: March 4, 2026

Re: 2026 Mill and Overlay Improvements

Background

The annual Mill and Overlay Project focuses on replacing the top layer of pavement to lengthen the life cycle of the roadway. As projects are completed, any necessary ADA improvements to bring existing pedestrian infrastructure into compliance would be addressed, as well as minor utility adjustments. This year as a part of the project, there are trail segments proposed for resurfacing and an updated streetscape along Hemingway Avenue north of 80th Street. The *Roadway and Trail Maintenance Fund* will be used for street and trail resurfacing. The improvements would not be assessed to the adjacent property owners.

Street Resurfacing

Included in the base bid, the proposed work for the Mill and Overlay Project in 2026 is to resurface:

- 95th Street from Jamaica Avenue to Hadley Avenue (**Figure 1**)
- Ideal Avenue from 95th Street to Cul-De-Sac (**Figure 1**)
- Hemingway Avenue from 80th Street to Cul-De-Sac (**Figure 2**)
- 79th Street from Hinton Avenue to Hearthside Avenue (**Figure 2**)
- Hearthside Avenue from 79th Street to Cul-De-Sac (**Figure 2**)

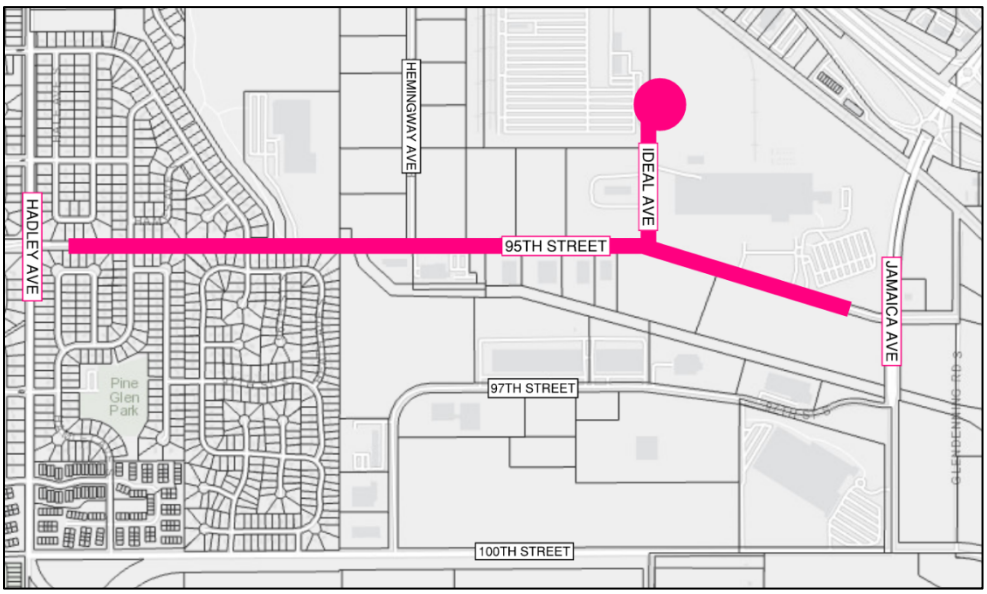


Figure 1: *2026 Mill and Overlay Improvements Project Location—95th St. and Ideal Ave.*

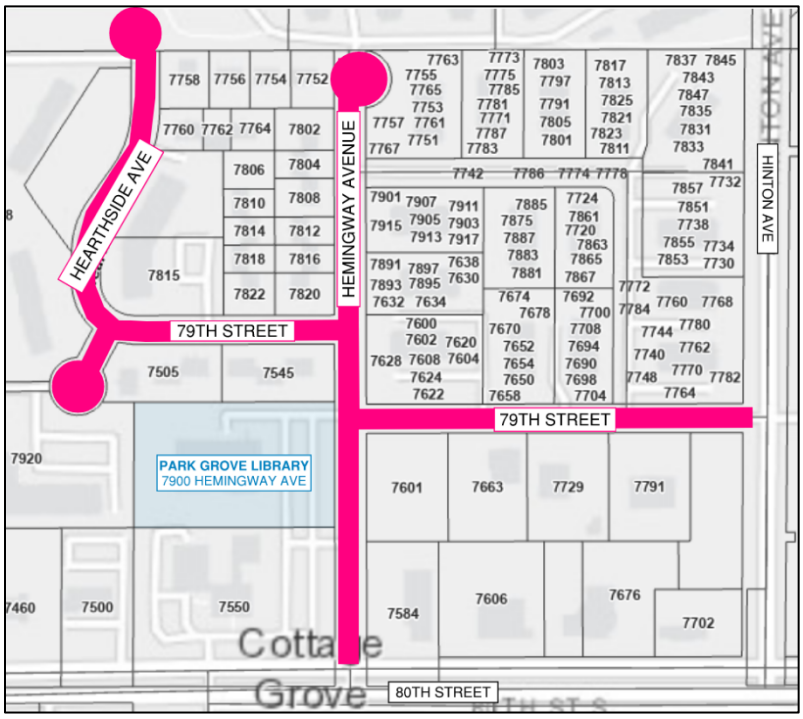


Figure 2: *2026 Mill and Overlay Improvements Project Location—79th St., Hemingway Ave., Hearthside Ave.*

Trail Resurfacing

Also included in the base bid, the 2026 Project proposes trail resurfacing along the north side of 95th Street from Jamaica Avenue to Hadley Avenue, the south side of 95th Street from 7887 95th Street to Hadley Avenue, and through Nina's Park from 77th Street to Park High School. The School District will reimburse the City for the trail work on the high school property through a cost-share agreement. In the event of favorable bidding, the City will include trail resurfacing along the west side of Jamaica Avenue from 95th Street to the Hwy61 roundabout. The trail resurfacing areas are depicted in **Figures 3 and 4**.

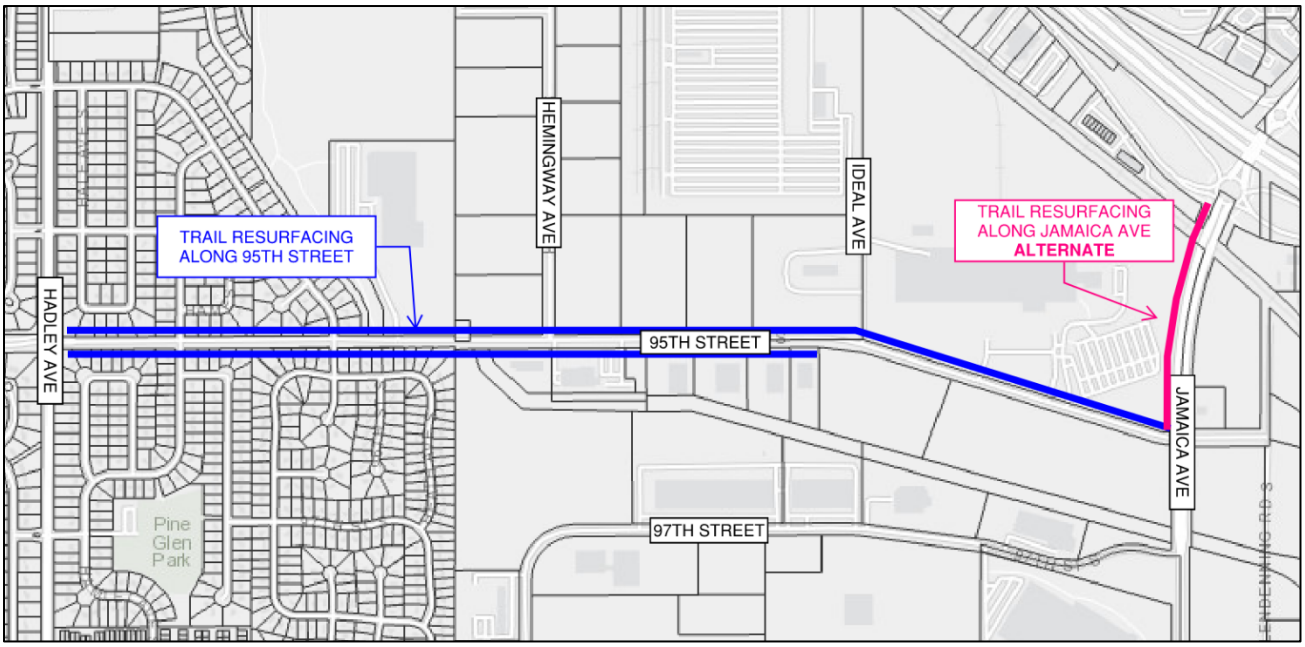


Figure 3: *2026 Mill and Overlay Improvements Trail Resurfacing—95th St. and Jamaica Ave.*

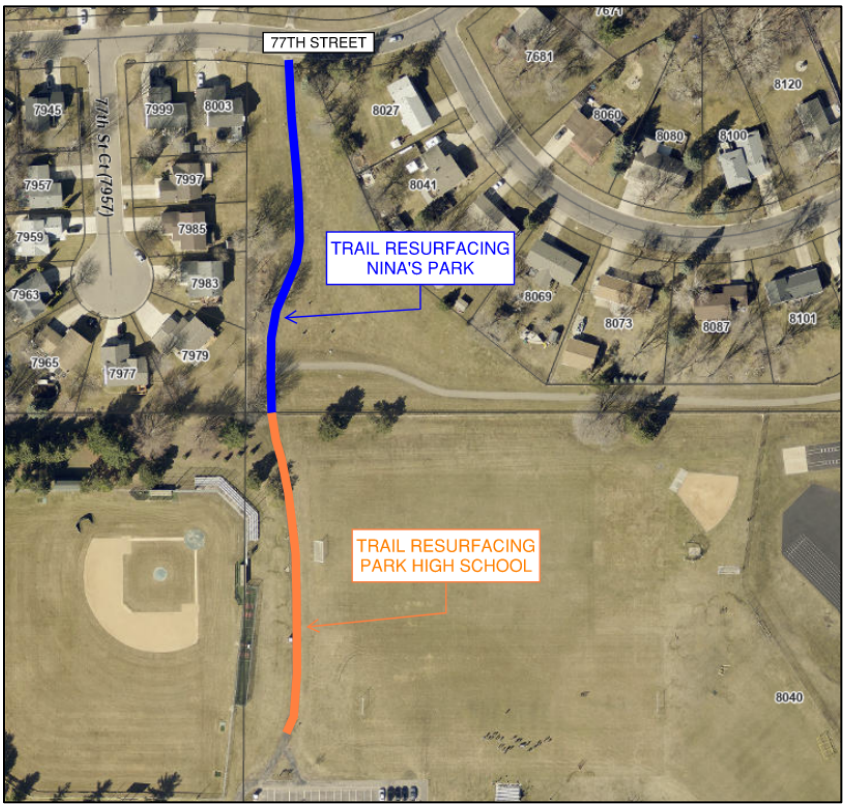


Figure 4: *2026 Mill and Overlay Improvements Trail Resurfacing—Nina's Park and Park High School*

Utility Improvements

Minor adjustments and patching to sanitary sewer and storm sewer structures are proposed to be completed as part of the street rehabilitation. Standard repairs to manholes and catch basins are included in the base bid. On Ideal Avenue, north of 95th Street, three block-style storm sewer structures require more extensive repair. The City will include this work if bids are favorable. Staff is pursuing a grant opportunity to help cover the cost of this additional work through a 50-50 cost-share agreement with the Watershed District. The grant award notification is expected prior to awarding the Mill and Overlay Project bid.

Hemingway Avenue Streetscape Improvements

In coordination with Washington County's Park Grove Library upgrades, and to enhance pedestrian safety, Hemingway Avenue will undergo streetscape improvements as part of the 2026 Mill and Overlay Project (included in the base bid). See **Figure 5**. The improvements, as presented at the September 17, 2025 City Council meeting, include curb bump-outs, striped on-street parking, new street trees, and upgraded landscaping. The County will pay for the streetscape improvements on Hemingway Avenue as outlined in the Park Grove Library Development Agreement.

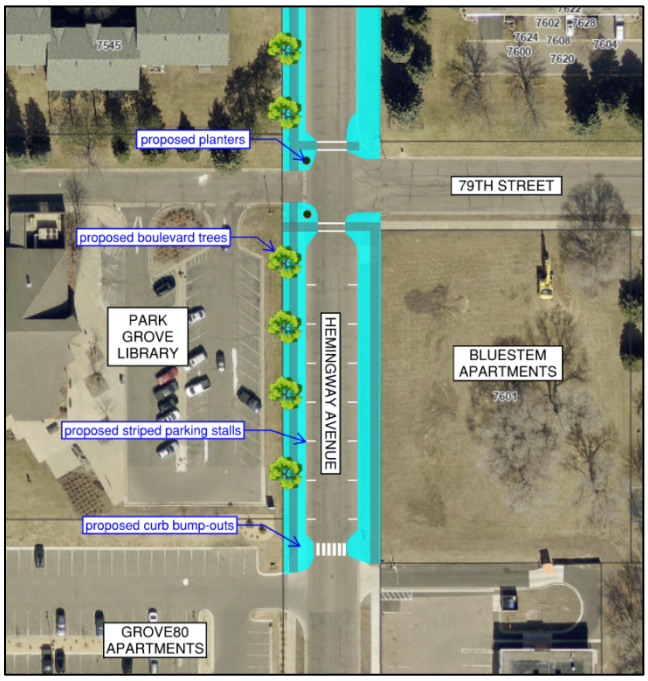


***Figure 5**: Hemingway Avenue Streetscape Improvements (not to scale)*

Discussion

The rehabilitation method proposed is to remove the top wear course layer of existing asphalt surface and replace it with a new asphalt surface. The distresses observed in the pavement point to a failing top layer of pavement, though the bottom base layer of pavement and the gravel base below the pavement are still structurally sound. Replacing the top layer of pavement will help to increase the lifecycle of the road; it is common with a mill and overlay project that any cracking of the roadway that has extended to the base layer will typically reflect through the new pavement within the first year. Utility repairs and adjustments, and ADA improvements will also be completed as part of the project. If the project moves forward, additional information will be provided to neighborhood residents, businesses, and property owners prior to construction. Construction would take place this coming spring through fall.

The road resurfacing project area shown in **Figure 2** directly connects to the 80th Street (TH 61 to Ideal Ave) Rehabilitation Project at the Hemingway Avenue and 80th Street intersection. These projects will be carefully coordinated to ensure road users and pedestrians are informed of any traffic impacts.

As discussed at the March 4, 2026 City Council Workshop, Staff is proposing a lane reallocation, or “road diet,” for 95th Street between Hadley Avenue and Jamaica Avenue, converting the current four-lane undivided roadway into a three-lane layout with one through lane in each direction and a center two-way left-turn lane. This change, shown in **Figure 6**, is intended to improve safety by reducing crash risks, calming traffic speeds, providing shoulder space for large vehicle turns, and enhancing pedestrian crossings.

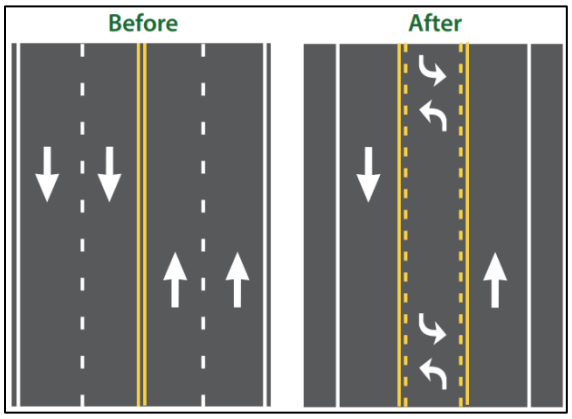


***Figure 6**: Typical Road Design Basic Design*

The lane reallocation will allow for a pedestrian refuge median. The proposed location is shown in **Figure 7**, between Harkness Avenue and the Van Meter driveway (7450 95th St.), adjacent to the Hamlet Park trail corridor. This median is a small, raised area in the middle of a road where pedestrians can safely pause while crossing. Adequate left-turn lane lengths will be maintained. There is a pedestrian refuge median on Hinton Avenue just south of 72nd Street; see **Figure 8**.



***Figure 7**: Proposed Pedestrian Refuge Median on 95th St.*



***Figure 8**: Pedestrian Refuge Median on Hinton Ave., just south of 72nd St.*

Plans and specifications have been prepared in accordance with City standards and specifications. The engineer's estimate for construction of the project is broken down in **Table 1**. The City has $1,019,000 in the 2026 Capital Improvements Plan for Mill and Overlay, and $506,000 for trail replacement. Alternate 1 is the trail resurfacing along the west side of Jamaica Avenue from 95th Street to the Hwy61 roundabout (**Figure 3**). Alternate 2 is the repair of the three storm sewer structures on Ideal Avenue, north of 95th Street.

Project Portion	Cost Estimate
Mill and Overlay – City	$960,000
Trail Replacement – City	$500,000
Trail Replacement – City *ALTERNATE 1*	$55,000
*Trail Replacement – School District	$13,000
*Hemingway Streetscape – County	$240,000
Ideal Avenue Storm Structure Repair – City *ALTERNATE 2*	$49,000
Utility Improvements – City	$55,000
Total Alternate 1	$55,000
Total Alternate 2	$49,000
Total Base Bid	$1,768,000

***Table 1**: 2026 Mill and Overlay Cost Estimate*

*The School District and County project portions are included in the Base Bid. The City will be reimbursed by the respective parties.

City Staff recommends that Council authorize bidding of the project. The bid date will be set by City Staff. Council authorization of a specific bid date is not required by state statute.

Recommendation

Staff recommends that the City Council adopt Resolution 2026-041 approving the plans and specifications and authorizing bidding for the 2026 Mill and Overlay Improvements.

CITY OF COTTAGE GROVE, MINNESOTA
CITY COUNCIL
RESOLUTION 2026-041

RESOLUTION APPROVING THE PLANS AND SPECIFICATIONS AND AUTHORIZING BIDDING FOR THE 2026 MILL AND OVERLAY IMPROVEMENTS

WHEREAS, plans and specifications have been prepared in accordance with the City Standards and Specifications for the 2026 Mill and Overlay Improvements; and

WHEREAS, a bid date will be set by City staff; and

WHEREAS, the City Engineer has presented such plans and specifications to the City Council for approval.

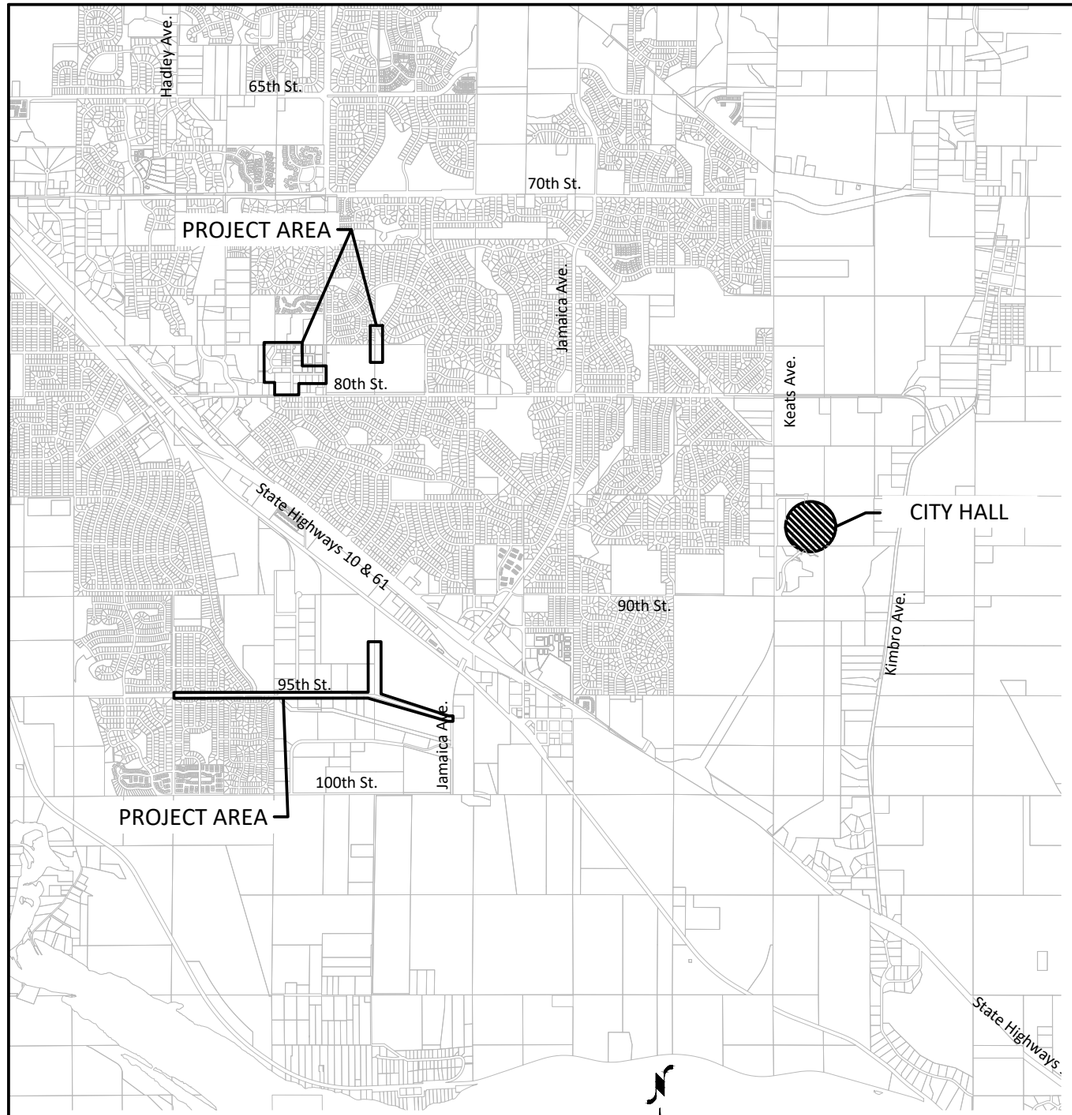
NOW, THEREFORE, BE IT RESOLVED, by the City Council of the City of Cottage Grove, County of Washington, State of Minnesota, approves the plans and specifications and authorizes bidding, for the 2026 Mill and Overlay Improvements.

Passed this 18th day of March 2026.

_____
Myron Bailey, Mayor

Attest:

_____
Tamara Anderson, City Clerk



PROJECT CONTROL NOTES:

1. ALL COORDINATES ARE WASHINGTON COUNTY COORDINATE SYSTEM
2. HORIZONTAL COORDINATES ARE BASED ON GEODETIC POSITION NAD83, 1986 ADJUSTMENT
3. VERTICAL ELEVATIONS ARE BASED ON MNDOT NAVD 88

SPECIFICATIONS:

1. ALL WORK SHALL CONFORM TO THE CITY OF COTTAGE GROVE'S STANDARD
2. SPECIFICATIONS FOR UTILITY AND STREET CONSTRUCTION, CURRENT EDITION

HORZ. SCALE: 0 2000 4000 FEET

MAP OF THE
CITY OF COTTAGE GROVE
WASHINGTON COUNTY, MN

Cottage Grove
Where Pride and Prosperity Meet

2026 MILL & OVERLAY

SHEET INDEX

SHEET NO.	DESCRIPTION
GENERAL	
G0.01	TITLE SHEET
G0.02	LEGEND
G2.01 - G2.02	LOCATION PLAN
CIVIL	
C1.01 - C1.02	TYPICAL SECTIONS
C1.03 - C1.08	MNDOT PEDESTRIAN CURB RAMP DETAILS
C1.09 - C1.10	STANDARD DETAIL PLATES
C2.01 - C2.03	EROSION CONTROL
C5.01	STORM SEWER PLAN & PROFILE
C6.01 - C6.02	STREET IMPROVEMENTS - HEMINGWAY NEIGHBORHOOD
C6.03	STREET IMPROVEMENTS - NINA'S PARK TRAIL
C6.04 - C6.06	STREET IMPROVEMENTS - 95TH STREET
C6.07	STREET IMPROVEMENTS - 95TH STREET ALTERNATE
C6.08	INTERSETCION DETAILS - HEMINGWAY NEIGHBORHOOD
C6.09 - C6.13	INTERSETCION DETAILS - 95TH STREET
C7.01 - C7.04	SIGNING AND STRIPING PLAN

THIS SET OF PLANS CONTAINS 35 SHEETS

MYRON BAILEY	MAYOR
DAVID THIEDE	COUNCIL MEMBER
MONIQUE GARZA	COUNCIL MEMBER
JUSTIN OLSEN	COUNCIL MEMBER
DAVID CLAUSEN	COUNCIL MEMBER
JENNIFER LEVITT	CITY ADMINISTRATOR
RYAN BURFEIND	DIRECTOR OF PUBLIC WORKS
KORINE LAND	ATTORNEY

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H:\CITY\25X140350001\CAD\C3D\140350001.dwg 3/10/2026 8:44:32 PM Plotted by: Andrew Olson

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

ANDREW N OLSON
LIC. NO. 59327 DATE 03/10/2026

BOLTON & MENK
3507 HIGH POINT DRIVE NORTH
BLDG. 1 - SUITE E130
OAKDALE, MN 55128
Phone: (651) 704-9970
Email: Oakdale@bolton-menk.com
www.bolton-menk.com

Cottage Grove
Where Pride and Prosperity Meet

DESIGNED	ZDB
DRAWN	KJB
CHECKED	ANO
CLIENT PROJ. NO.	140350

NO.	ISSUED FOR	DATE

COTTAGE GROVE, MINNESOTA
2026 MILL AND OVERLAY
TITLE SHEET

SHEET G0.01

EXISTING TOPOGRAPHIC SYMBOLS

- ACCESS GRATE
- AIR CONDITION UNIT
- ANTENNA
- AUTO SPRINKLER CONNECTION
- BARRICADE PERMANENT
- BASKETBALL POST
- BENCH
- BIRD FEEDER
- BOLLARD
- BUSH
- CATCH BASIN RECTANGULAR CASTING
- CATCH BASIN CIRCULAR CASTING
- CURB STOP
- CLEAN OUT
- CULVERT END
- DRINKING FOUNTAIN
- DOWN SPOUT
- ELECTRIC CAR CHARGE STATION
- FILL PIPE
- FIRE HYDRANT
- FLAG POLE
- FLARED END / APRON
- FUEL PUMP
- GRILL
- GUY WIRE ANCHOR
- HANDHOLE
- HANDICAP SPACE
- IRRIGATION SPRINKLER HEAD
- IRRIGATION VALVE BOX
- LIFT STATION CONTROL PANEL
- LIFT STATION
- LIGHT POLE
- MAILBOX
- MANHOLE-COMMUNICATION
- MANHOLE-ELECTRIC
- MANHOLE-GAS
- MANHOLE-HEAT
- MANHOLE-RECLAIMED WATER
- MANHOLE-SANITARY SEWER
- MANHOLE-STORM SEWER
- MANHOLE-UTILITY
- MANHOLE-WATER
- METER
- DRIVE-THRU MICROPHONE
- PARKING METER
- PAVEMENT MARKING
- PEDESTAL-COMMUNICATION
- PEDESTAL-ELECTRIC
- PEDESTRIAN PUSH BUTTON
- PICNIC TABLE
- POLE-UTILITY
- POST
- RAILROAD SIGNAL POLE
- REGULATION STATION GAS
- SATELLITE DISH
- SIGN TRAFFIC
- SIGNAL CONTROL CABINET
- SOIL BORING
- SIREN
- TELEPHONE BOOTH
- TILE INLET
- TILE OUTLET
- TILE RISER
- TRANSFORMER-ELECTRIC
- TREE-CONIFEROUS
- TREE-DEAD
- TREE-DECIDUOUS
- TREE STUMP
- TRAFFIC ARM BARRIER
- TRAFFIC SIGNAL
- TRASH CAN
- UTILITY MARKER
- VALVE
- VALVE POST INDICATOR
- VALVE VAULT
- VAULT
- VENT PIPE
- WATER SPIGOT
- WELL
- WETLAND DELINEATED MARKER
- WETLAND
- WET WELL
- YARD HYDRANT

PROPOSED TOPOGRAPHIC SYMBOLS

- CLEANOUT
- MANHOLE
- LIFT STATION
- STORM SEWER CIRCULAR CASTING
- STORM SEWER RECTANGULAR CASTING
- STORM SEWER FLARED END / APRON
- STORM SEWER OUTLET STRUCTURE
- STORM SEWER OVERFLOW STRUCTURE
- CURB BOX
- FIRE HYDRANT
- WATER VALVE
- WATER REDUCER
- WATER BEND
- WATER TEE
- WATER CROSS
- WATER SLEEVE
- WATER CAP / PLUG
- RIP RAP
- DRAINAGE FLOW
- TRAFFIC SIGNS

SURVEY SYMBOLS

- BENCHMARK LOCATION
- CONTROL POINT
- MONUMENT FOUND
- CAST IRON MONUMENT
- STONE MONUMENT

EXISTING TOPOGRAPHIC LINES

- RETAINING WALL
- FENCE
- FENCE-DECORATIVE
- GUARD RAIL
- TREE LINE
- BUSH LINE

SURVEY LINES

- CONTROLLED ACCESS
- BOUNDARY
- CENTERLINE
- EXISTING EASEMENT LINE
- PROPOSED EASEMENT LINE
- EXISTING LOT LINE
- PROPOSED LOT LINE
- EXISTING RIGHT-OF-WAY
- PROPOSED RIGHT-OF-WAY
- SETBACK LINE
- SECTION LINE
- QUARTER LINE
- SIXTEENTH LINE
- TEMPORARY EASEMENT

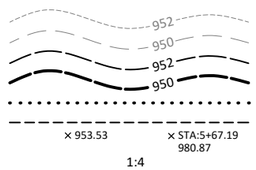
EXISTING UTILITY LINES

- FORCEMAIN
- SANITARY SEWER
- SANITARY SERVICE
- STORM SEWER
- STORM SEWER DRAIN TILE
- WATERMAIN
- WATER SERVICE
- RECLAIMED WATER

PROPOSED UTILITY LINES

- FORCEMAIN
- SANITARY SEWER
- SANITARY SERVICE
- STORM SEWER
- STORM SEWER DRAIN TILE
- WATERMAIN
- WATER SERVICE
- PIPE CASING
- TRENCHLESS PIPE (PLAN VIEW)
- TRENCHLESS PIPE (PROFILE VIEW)

GRADING INFORMATION



- EXISTING CONTOUR MINOR
- EXISTING CONTOUR MAJOR
- PROPOSED CONTOUR MINOR
- PROPOSED CONTOUR MAJOR
- PROPOSED GRADING LIMITS / SLOPE LIMITS
- PROJECT LIMITS
- PROPOSED SPOT ELEVATION
- RISE:RUN (SLOPE)

HATCH PATTERNS

- BITUMINOUS
- GRAVEL
- CONCRETE

EXISTING PRIVATE UTILITY LINES

NOTE:
EXISTING UTILITY INFORMATION SHOWN ON THIS PLAN HAS BEEN PROVIDED BY THE UTILITY OWNER. THE CONTRACTOR SHALL FIELD VERIFY EXACT LOCATIONS PRIOR TO COMMENCING CONSTRUCTION AS REQUIRED BY STATE LAW. NOTIFY GOPHER STATE ONE CALL, 1-800-252-1166 OR 651-454-0002.

THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D UNLESS OTHERWISE NOTED. THIS UTILITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/ASCE 38-22, ENTITLED "STANDARD GUIDELINE FOR INVESTIGATING AND DOCUMENTING EXISTING UTILITIES".

- UNDERGROUND FIBER OPTIC
- UNDERGROUND ELECTRIC
- UNDERGROUND GAS
- UNDERGROUND COMMUNICATION
- OVERHEAD ELECTRIC
- OVERHEAD COMMUNICATION
- OVERHEAD UTILITY

UTILITIES IDENTIFIED WITH A QUALITY LEVEL :

LINE TYPES FOLLOW THE FORMAT: UTILITY TYPE - QUALITY LEVEL
EXAMPLE: G-A G-A UNDERGROUND GAS, QUALITY LEVEL A
UTILITY QUALITY LEVEL (A,B,C,D) DEFINITIONS CAN BE FOUND IN CI/ASCE 38-22.

UTILITY QUALITY LEVELS:

QUALITY LEVEL D: PROVIDES THE MOST BASIC LEVEL OF INFORMATION. IT INVOLVES COLLECTING DATA FROM EXISTING UTILITY RECORDS. RECORDS MAY INCLUDE AS-BUILT DRAWINGS, DISTRIBUTION AND SERVICES MAPS, EXISTING GEOGRAPHIC INFORMATION SYSTEM DATABASES, CONSTRUCTION PLANS, ETC.

QUALITY LEVEL C: INVOLVES SURVEYING VISIBLE SUBSURFACE UTILITY STRUCTURES SUCH AS MANHOLES, HAND-HOLES, UTILITY VALVES AND METERS, FIRE HYDRANTS, PEDESTALS AND UTILITY MARKERS, AND THEN CORRELATING THE INFORMATION WITH EXISTING UTILITY RECORDS TO CREATE COMPOSITE DRAWINGS. INCLUDES QUALITY LEVEL D ACTIVITIES.

QUALITY LEVEL B: INVOLVES DESIGNATING THE HORIZONTAL POSITION OF SUBSURFACE UTILITIES THROUGH SURFACE DETECTION METHODS AND COLLECTING THE INFORMATION THROUGH A SURVEY METHOD. INCLUDES QUALITY LEVEL C AND D TASKS.

QUALITY LEVEL A: PROVIDES THE HIGHEST LEVEL OF ACCURACY. IT INVOLVES LOCATING OR POTHOLING UTILITIES AS WELL AS ACTIVITIES IN QUALITY LEVELS B, C, AND D. THE LOCATED FACILITY INFORMATION IS SURVEYED AND MAPPED AND THE DATA PROVIDES PRECISE PLAN AND PROFILE INFORMATION.

ABBREVIATIONS

A	ALGEBRAIC DIFFERENCE	GRAV	GRAVEL	RSC	RIGID STEEL CONDUIT
ADJ	ADJUST	GU	GUTTER	RT	RIGHT
ALT	ALTERNATE	GV	GATE VALVE	SAN	SANITARY SEWER
B-B	BACK TO BACK	HDPE	HIGH DENSITY POLYETHYLENE	SCH	SCHEDULE
BIT	BITUMINOUS	HH	HANDHOLE	SERV	SERVICE
BLDG	BUILDING	HP	HIGH POINT	SHLD	SHOULDER
BMP	BEST MANAGEMENT PRACTICE	HWL	HIGH WATER LEVEL	STA	STATION
BR	BEGIN RADIUS	HYD	HYDRANT	STD	STANDARD
BV	BUTTERFLY VALVE	I	INVERT	STM	STORM SEWER
CB	CATCH BASIN	K	CURVE COEFFICIENT	TC	TOP OF CURB
C&G	CURB AND GUTTER	L	LENGTH	TE	TEMPORARY EASEMENT
CIP	CAST IRON PIPE	LO	LOWEST OPENING	TEMP	TEMPORARY
CIPP	CURED-IN-PLACE PIPE	LP	LOW POINT	TNH	TOP NUT HYDRANT
CL	CENTER LINE	LT	LEFT	TP	TOP OF PIPE
CL.	CLASS	MAX	MAXIMUM	TYP	TYPICAL
CLVT	CULVERT	MH	MANHOLE	VCP	VITRIFIED CLAY PIPE
CMP	CORRUGATED METAL PIPE	MIN	MINIMUM	VERT	VERTICAL
C.O.	CHANGE ORDER	MR	MID RADIUS	VPC	VERTICAL POINT OF CURVE
COMM	COMMUNICATION	NIC	NOT IN CONTRACT	VPI	VERTICAL POINT OF INTERSECTION
CON	CONCRETE	NMC	NON-METALLIC CONDUIT	VPT	VERTICAL POINT OF TANGENT
CSP	CORRUGATED STEEL PIPE	NTS	NOT TO SCALE	WM	WATERMAIN
DIA	DIAMETER	NWL	NORMAL WATER LEVEL		
DIP	DUCTILE IRON PIPE	OHW	ORDINARY HIGH WATER LEVEL		
DWY	DRIVEWAY	PC	POINT OF CURVE	AC	ACRES
E	EXTERNAL CURVE DISTANCE	PCC	POINT OF COMPOUND CURVE	CF	CUBIC FEET
ELEC	ELECTRIC	PE	PERMANENT EASEMENT	CV	COMPACTED VOLUME
ELEV	ELEVATION	PED	PEDESTRIAN, PEDESTAL	CY	CUBIC YARD
EOF	EMERGENCY OVERFLOW	PERF	PERFORATED PIPE	EA	EACH
ER	END RADIUS	PERM	PERMANENT	EV	EXCAVATED VOLUME
ESMT	EASEMENT	PI	POINT OF INTERSECTION	LB	POUND
EX	EXISTING	PL	PROPERTY LINE	LF	LINEAR FEET
FES	FLARED END SECTION	PRC	POINT OF REVERSE CURVE	LS	LUMP SUM
F-F	FACE TO FACE	PT	POINT OF TANGENT	LV	LOOSE VOLUME
FF	FINISHED FLOOR	PVC	POLYVINYL CHLORIDE PIPE	SF	SQUARE FEET
F&I	FURNISH AND INSTALL	PVMT	PAVEMENT	SV	STOCKPILE VOLUME
FM	FORCEMAIN	R	RADIUS	SY	SQUARE YARD
FO	FIBER OPTIC	R/W	RIGHT-OF-WAY		
F.O.	FIELD ORDER	RCP	REINFORCED CONCRETE PIPE		
GRAN	GRANULAR	RET	RETAINING		

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ANDREW N OLSON
LIC. NO. 59327 DATE 03/10/2026

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Where Pride and Prosperity Meet

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KJB			
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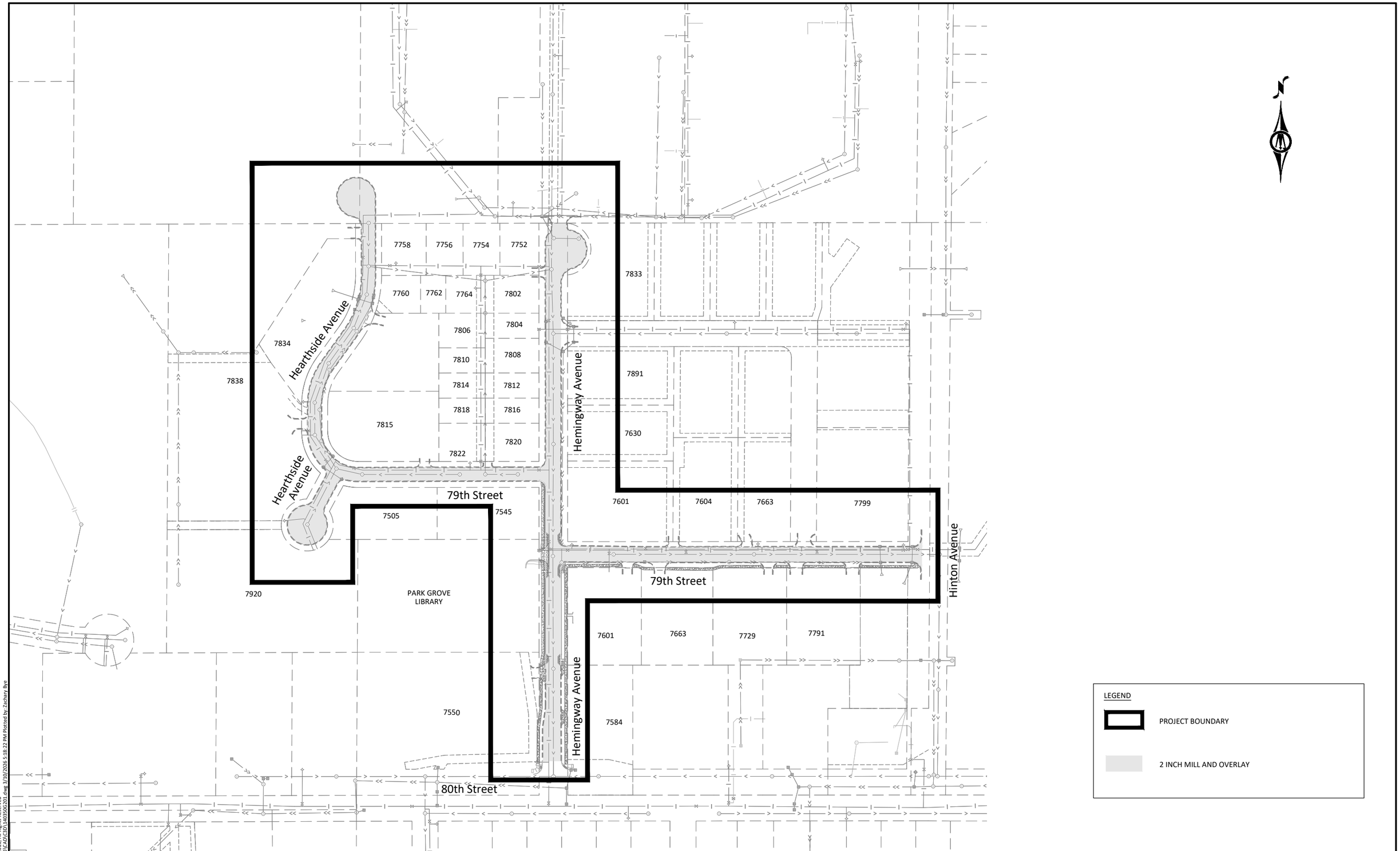
140350			

COTTAGE GROVE, MINNESOTA
2026 MILL AND OVERLAY
LEGEND

SHEET
G0.02



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HORZ. SCALE 0 100 200 FEET

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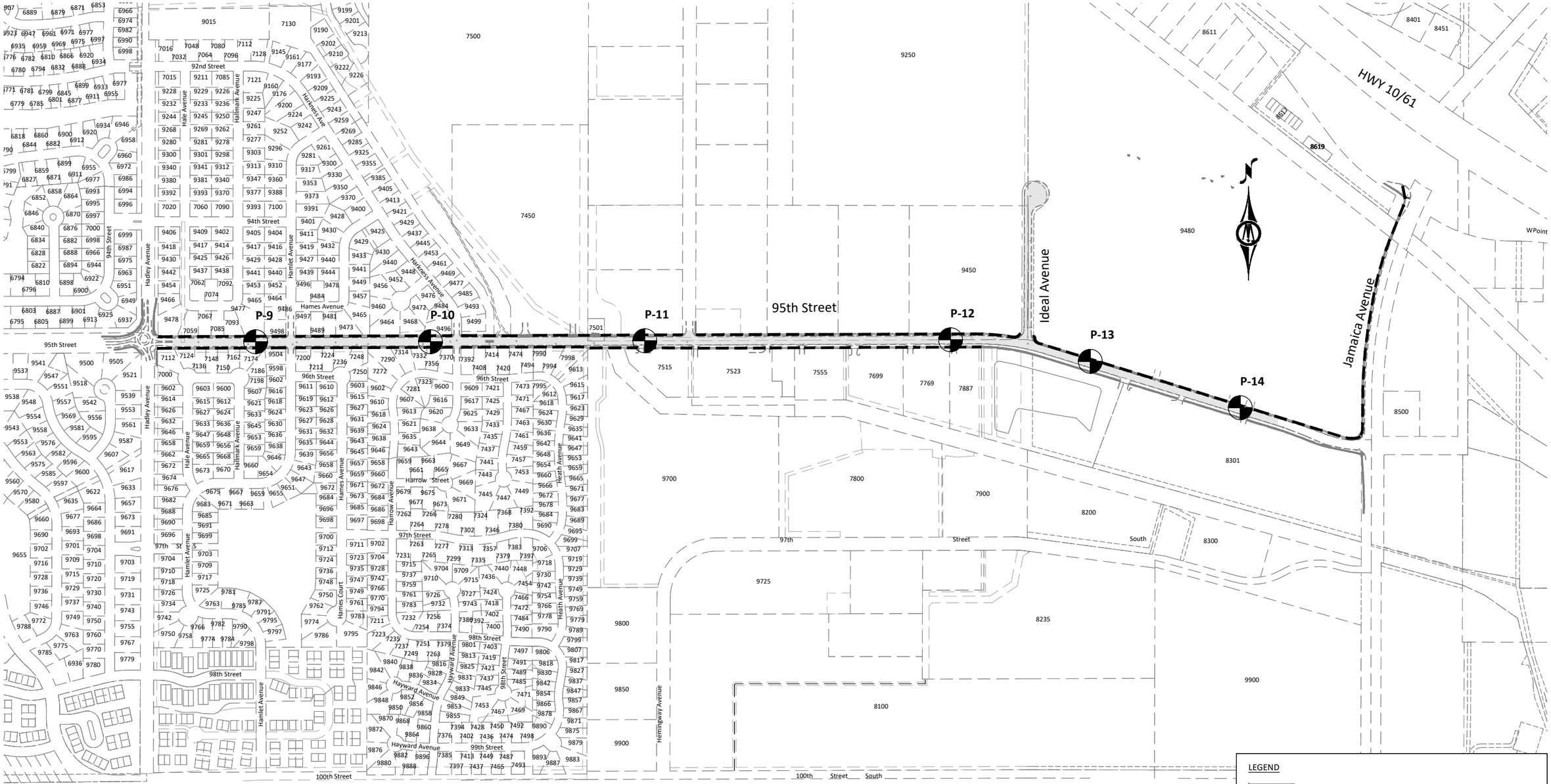
COTTAGE GROVE, MINNESOTA
2026 MILL AND OVERLAY
LOCATION PLAN - HEMINGWAY

SHEET G2.01



APPROXIMATE PAVEMENT REMOVAL DEPTHS		
CORE ID	LOCATION	CORE THICKNESS (IN)
P-9	05+00	5.0
P-10	15+50	4.5
P-11	28+50	9.0
P-12	46+75	6.0
P-13	55+50	7.5
P-14	64+50	7.5

HORZ. SCALE 0 300 600 FEET

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COTTAGE GROVE, MINNESOTA
2026 MILL AND OVERLAY
LOCATION PLAN - 95TH ST

SHEET G2.02

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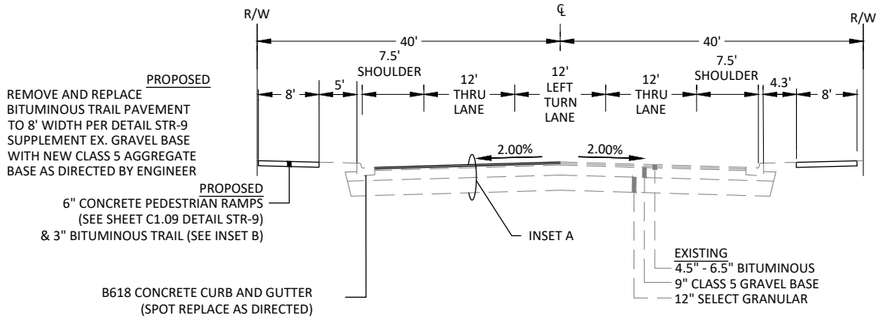
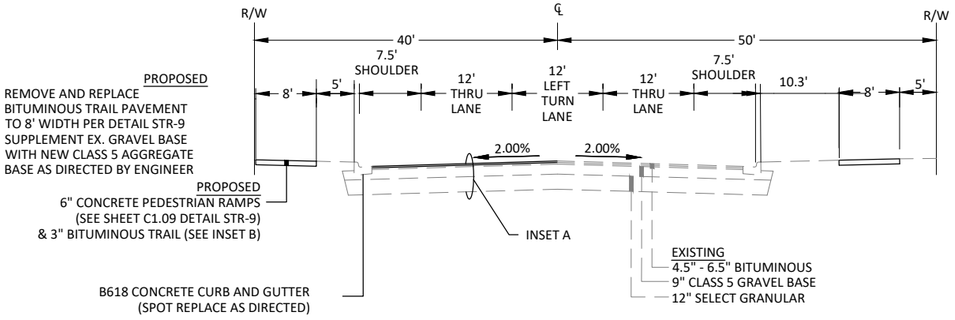
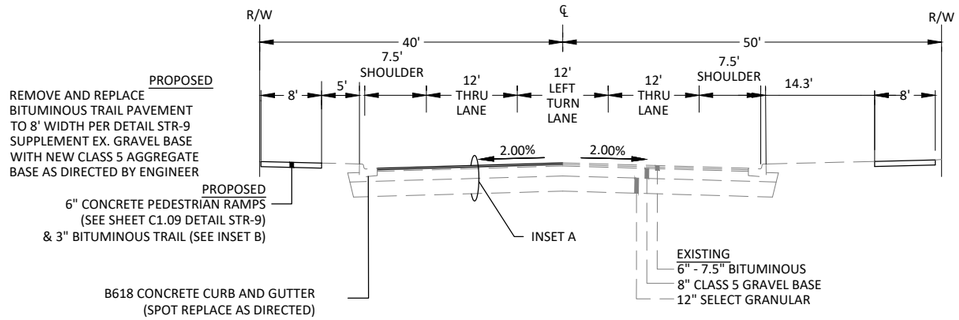


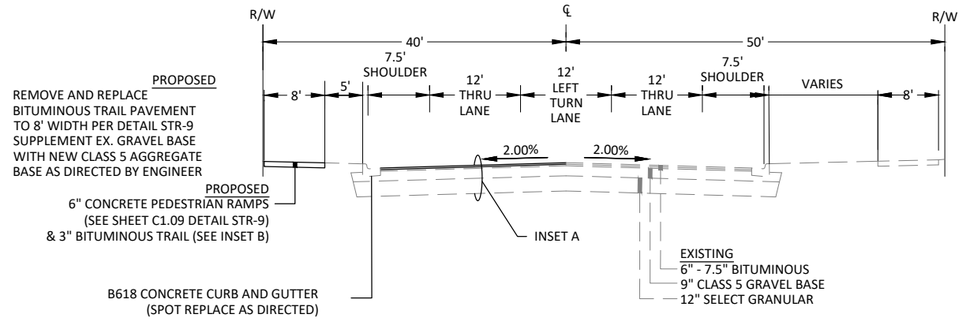
A TYPICAL SECTION PAVEMENT SECTION
95TH STREET SOUTH STA. 0+00 - STA. 24+75



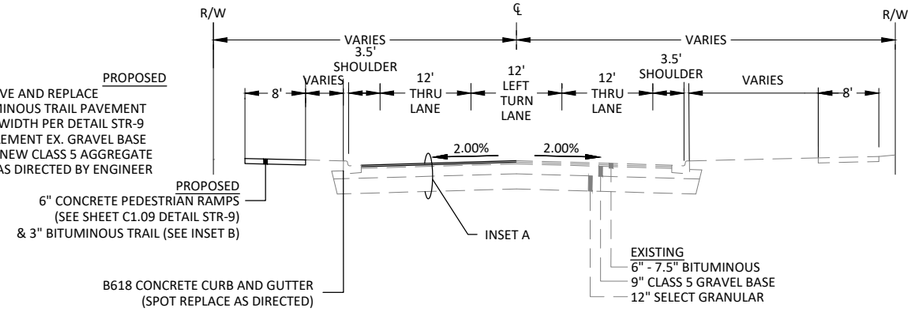
B TYPICAL SECTION PAVEMENT SECTION
95TH STREET SOUTH STA. 24+75 - STA. 27+25



C TYPICAL SECTION PAVEMENT SECTION
95TH STREET SOUTH STA. 27+25 - STA. 48+70



D TYPICAL SECTION PAVEMENT SECTION
95TH STREET SOUTH STA. 48+70 - STA. 51+50



E TYPICAL SECTION PAVEMENT SECTION
95TH STREET SOUTH STA. 51+50 - STA. 67+32

INSET A - BITUMINOUS STREET (MILL & OVERLAY)



INSET B - CONSTRUCT BITUMINOUS TRAIL



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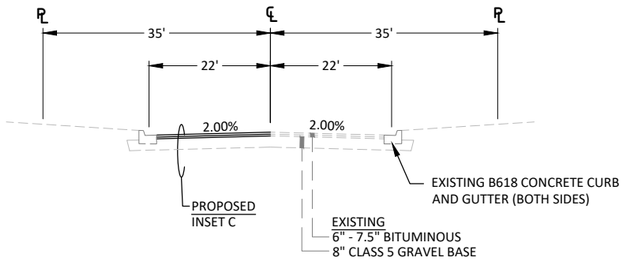
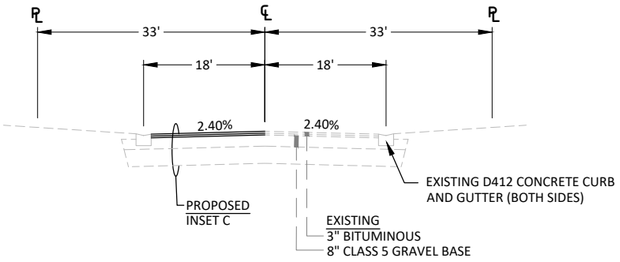
COTTAGE GROVE, MINNESOTA
2026 MILL AND OVERLAY
TYPICAL SECTIONS

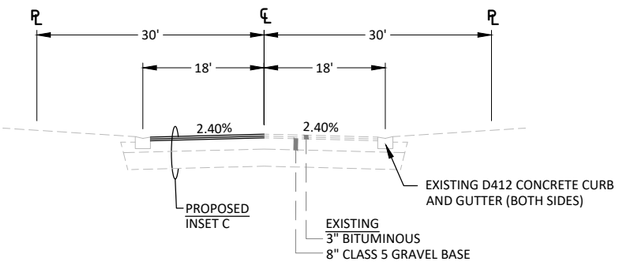
SHEET
C1.01



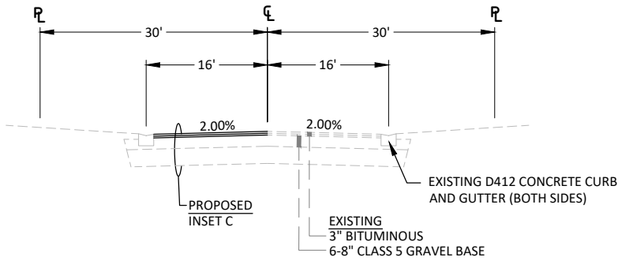
F TYPICAL PAVEMENT SECTION
IDEAL AVENUE



G TYPICAL PAVEMENT SECTION
HEMINGWAY AVENUE (STA: 93+00 TO STA: 105+59.86)

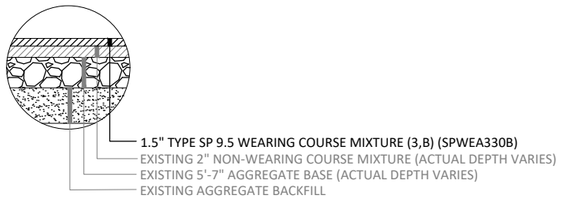


H TYPICAL PAVEMENT SECTION
79TH STREET SOUTH (EAST OF HEMINGWAY AVE SOUTH)



I TYPICAL PAVEMENT SECTION
HEARTHSIDE AVENUE
79TH STREET SOUTH (WEST OF HEMINGWAY AVE SOUTH)

INSET C - BITUMINOUS STREET (MILL & OVERLAY)



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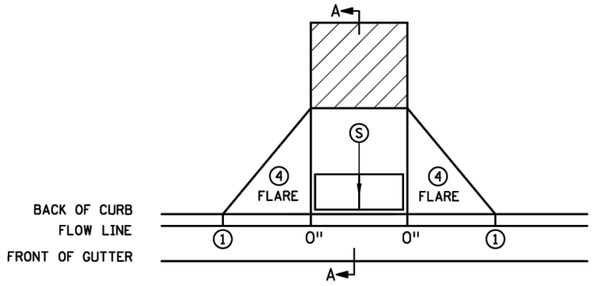
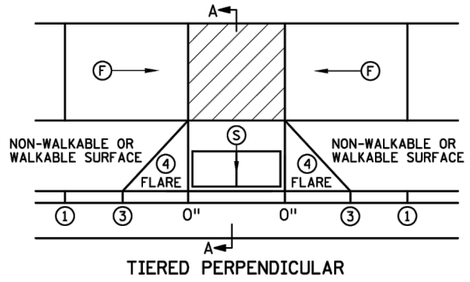
COTTAGE GROVE, MINNESOTA
2026 MILL AND OVERLAY
TYPICAL SECTIONS

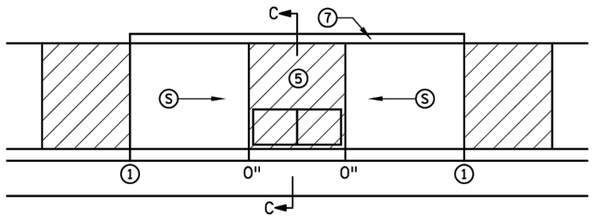
SHEET
C1.02



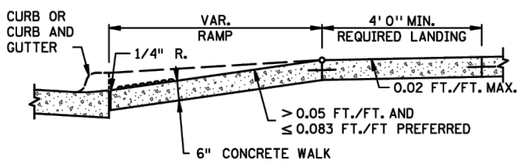
PERPENDICULAR



TIERED PERPENDICULAR

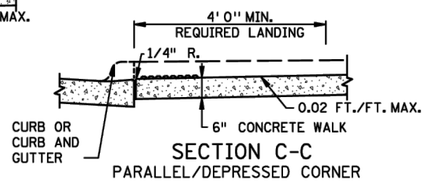


PARALLEL



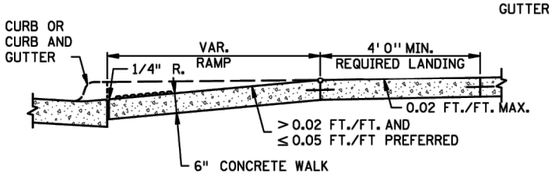
SECTION A-A

PERPENDICULAR/TIERED/DIAGONAL



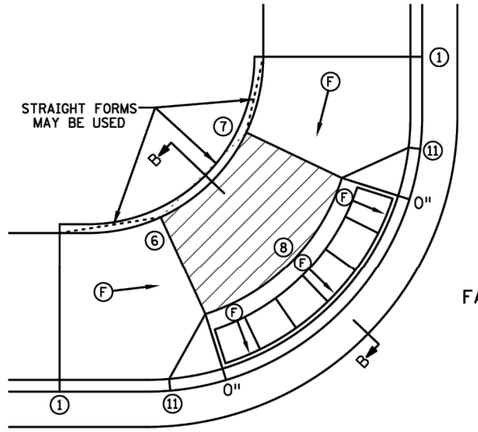
SECTION C-C

PARALLEL/DEPRESSED CORNER

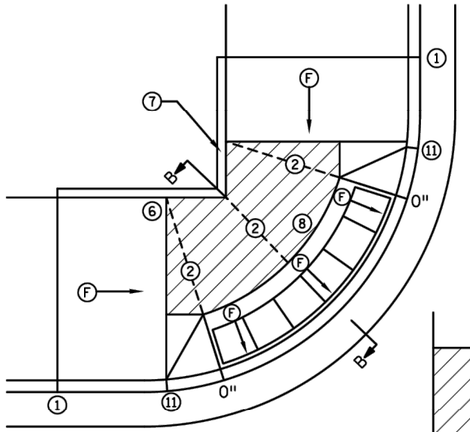


SECTION B-B

FAN

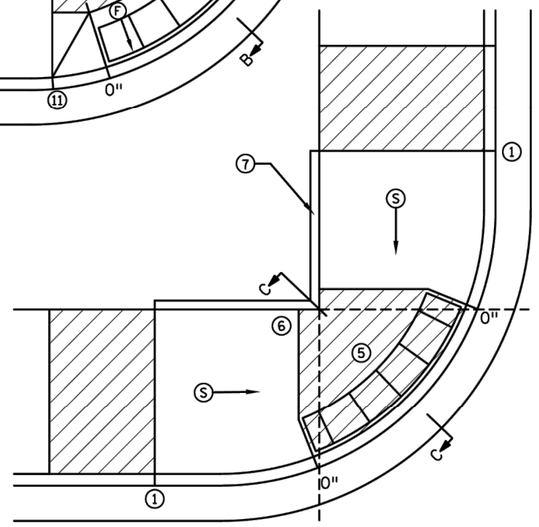


FAN ⑩

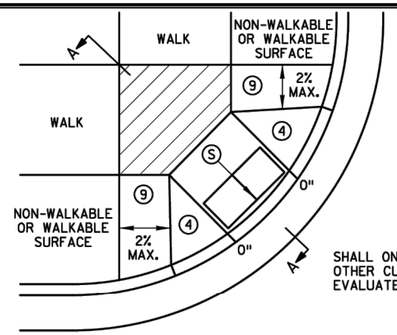


MODIFIED FAN ⑩

USED WHEN RIGHT-OF-WAY IS CONSTRAINED



DEPRESSED CORNER



DIAGONAL

SHALL ONLY BE USED AFTER ALL OTHER CURB RAMP TYPES HAVE BEEN EVALUATED AND DEEMED IMPRACTICAL

NOTES:

LANDINGS SHALL BE LOCATED ANYWHERE THE PEDESTRIAN ACCESS ROUTE (PAR) CHANGES DIRECTION, AT THE TOP OF RAMPS THAT HAVE RUNNING SLOPES GREATER THAN 5.0%, AND IF THE APPROACHING WALK IS INVERSE GRADE GREATER THAN 2%.

INITIAL CURB RAMP LANDINGS SHALL BE CONSTRUCTED WITHIN 15' FROM THE BACK OF CURB, WITH 6' FROM THE BACK OF CURB BEING THE PREFERRED DISTANCE, ONLY APPLICABLE WHEN THE INITIAL RAMP RUNNING SLOPE IS OVER 5.0%.

SECONDARY CURB RAMP LANDINGS ARE REQUIRED FOR EVERY 30" OF VERTICAL RISE WHEN THE LONGITUDINAL RUNNING SLOPE IS GREATER THAN 5.0%.

CONTRACTION JOINTS SHALL BE CONSTRUCTED ALONG ALL GRADE BREAKS WITHIN THE PAR. 1/4" DEEP VISUAL JOINTS SHALL BE USED AT THE TOPS OF CONCRETE FLARES ADJACENT TO WALKABLE SURFACES.

ALL GRADE BREAKS WITHIN THE PAR SHALL BE PERPENDICULAR TO THE PATH OF TRAVEL. THUS BOTH SIDES OF A SLOPED WALKING SURFACE MUST BE EQUAL LENGTH. (EXCEPT AS STATED IN ⑥ BELOW.

TO ENSURE RAMPS AND LANDINGS ARE PROPERLY CONSTRUCTED, ALL INITIAL LANDINGS AT A TOP OF A RAMPED SURFACE (RUNNING SLOPE GREATER THAN 2%) SHALL BE FORMED AND PLACED SEPARATELY IN AN INDEPENDENT CONCRETE POUR. FOLLOW SIDEWALK REINFORCEMENT DETAILS ON SHEET 6 OF 6 FOR ALL SEPARATELY POURED INITIAL LANDINGS.

WHEN SIDEWALK IS AT BACK OF CURB, TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE.

MAINTAIN POSITIVE BOULEVARD DRAINAGE TO TOP OF CURB.

ALL RAMP TYPES SHOULD HAVE A MINIMUM 3' LONG RAMP LENGTH.

4' MINIMUM WIDTH OF DETECTABLE WARNING IS REQUIRED FOR ALL RAMPS. DETECTABLE WARNINGS SHALL CONTINUOUSLY EXTEND FOR A MIN. OF 24" IN THE PATH OF TRAVEL. DETECTABLE WARNING TO COVER THE ENTIRE PAR WIDTH OF SHARED-USE PATHS AND THE ENTIRE PAR WIDTH OF THE WALK WITH THE EXCEPTION OF 3" MAXIMUM ON EACH OUTSIDE EDGE WHICH ENSURES THE DETECTABLE WARNINGS ARE ENCASED IN CONCRETE WHEN ADJACENT TO TURF. WHEN ADJACENT TO CONCRETE FLARES 0" - 3" OFFSET IS ALLOWED.

WHEN DESIGNING OR ORDERING RECTANGULAR DETECTABLE WARNING SURFACES SHOULD BE 6" LESS THAN THE INCOMING PAR. ARC LENGTH OF THE RADIAL DETECTABLE WARNINGS SHOULD NOT BE GREATER THAN 20 FEET.

RECTANGULAR DETECTABLE WARNINGS SHALL BE SETBACK 3" FROM THE BACK OF CURB. RADIAL DETECTABLE WARNINGS SHALL BE SETBACK 3" MINIMUM TO 6" MAXIMUM FROM THE BACK OF CURB.

① MATCH FULL HEIGHT CURB.

② 4' MINIMUM DEPTH LANDING REQUIRED ACROSS TOP OF RAMP.

③ 3" HIGH CURB WHEN USING A 3' LONG RAMP, 4" HIGH CURB WHEN USING A 4' LONG RAMP.

④ SEE SHEET 4 OF 6, TYPICAL SIDE TREATMENT OPTIONS, FOR DETAILS ON FLARES AND RETURNED CURBS.

⑤ DETECTABLE WARNINGS MAY BE PART OF THE 4' X 4' MIN. LANDING AREA IF IT IS NOT FEASIBLE TO CONSTRUCT THE LANDING OUTSIDE OF THE DETECTABLE WARNING AREA.

⑥ THE GRADE BREAK SHALL BE PERPENDICULAR TO THE BACK OF WALK. THIS WILL ENSURE THAT THE GRADE BREAK IS PERPENDICULAR TO THE DIRECTION OF TRAVEL. (TYPICAL FOR ALL)

⑦ WHEN ADJACENT TO GRASS, GRADING SHALL ALWAYS BE USED WHEN FEASIBLE. V CURB, IF USED, SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS. WHEN ADJACENT TO PARKING LOTS, CONCRETE OR BITUMINOUS TAPERS LESS THAN 5% RUNNING SLOPE SHOULD BE USED OVER V CURB TO REDUCE TRIPPING HAZARDS AND FACILITATE SNOW & ICE REMOVAL.

⑧ A 7' MIN TOP RADIUS GRADE BREAK IS REQUIRED TO BE CONSTRUCTIBLE.

⑨ PAVE FULL WALK WIDTH.

⑩ "S" SLOPES ON FANS SHALL ONLY BE USED WHEN ALL OTHER FEASIBLE OPTIONS HAVE BEEN EVALUATED AND DEEMED IMPRACTICAL.

⑪ INTERMEDIATE CURB HEIGHTS TAPER SHALL RISE AT 8-10% TO A MINIMUM 3" CURB HEIGHT. REDUCE INTERMEDIATE CURB HEIGHT TO 2+ INCHES IF NECESSARY TO MATCH ADJACENT BOULEVARD OR SIDEWALK GRADES.

LEGEND

THESE LONGITUDINAL SLOPE RANGES SHALL BE THE STARTING POINT. IF SITE CONDITIONS WARRANT, LONGITUDINAL SLOPES UP TO 8.3% OR FLATTER ARE ALLOWED.

(S) INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND THE CROSS SLOPE SHALL NOT EXCEED 2.0%.

(F) INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%.

LANDING AREA - 4' X 4' MIN. (5' X 5' MIN. PREFERRED) DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS. LANDING SHALL BE FULL WIDTH OF INCOMING PARS.

X" CURB HEIGHT

LEAD EXPERT OFFICE	JEFFREY PERKINS OPERATIONS DIVISION	PEDESTRIAN CURB RAMP DETAILS	APPROVED: 11-04-2021 REVISED:	THOMAS STYRBICKI STATE DESIGN ENGINEER	STANDARD PLAN 5-297.250	1 OF 6
DEPARTMENT OF TRANSPORTATION		STANDARD PLAN	STATE PROJ. NO.		SHEET NO.	
			TRUNK HWY.		TOTAL SHEETS	

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COTTAGE GROVE, MINNESOTA
2026 MILL AND OVERLAY
MNDOT PEDESTRIAN CURB RAMP DETAILS

SHEET C1.03

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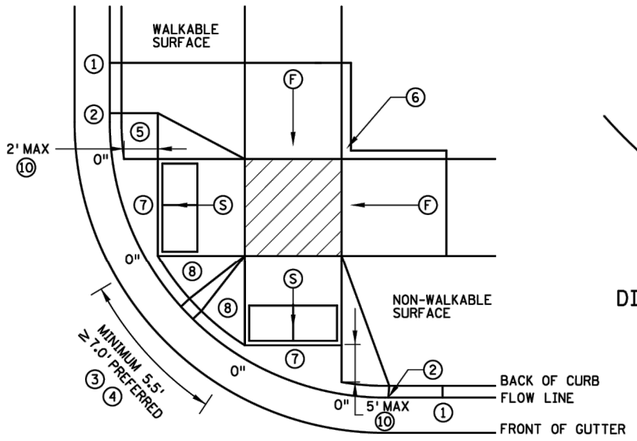
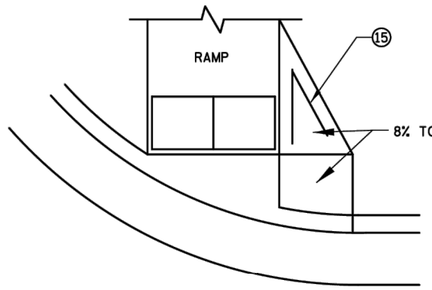
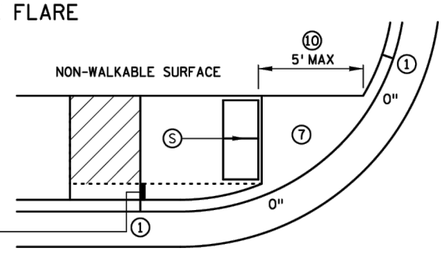


COMBINED DIRECTIONAL

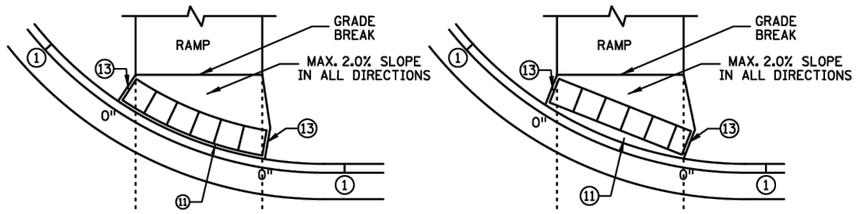


DIRECTIONAL RAMP WALKABLE FLARE

IF NON-CONCRETE BLVD. IS CONSTRUCTED AND IS LESS THAN 2' IN WIDTH AT TOP OF CURB TRANSITION, PAVE CONCRETE RAMP WIDTH TO ADJACENT BACK OF CURB.

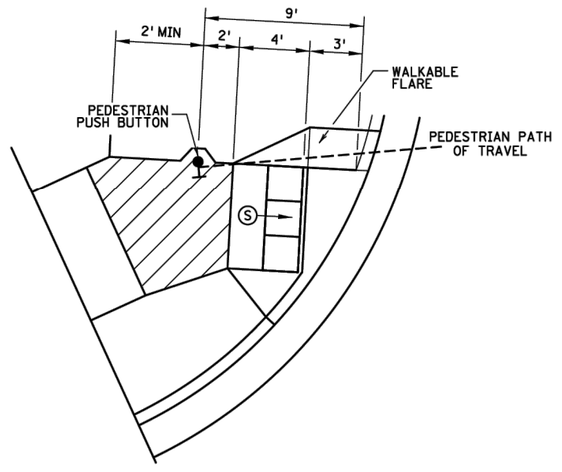


STANDARD ONE-WAY DIRECTIONAL ⑨



DETECTABLE WARNING PLACEMENT WHEN SETBACK CRITERIA IS EXCEEDED ⑫

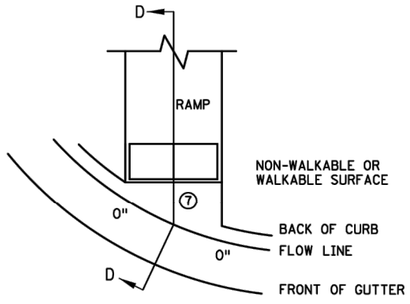
ONE-WAY DIRECTIONAL WITH DETECTABLE WARNING AT BACK OF CURB

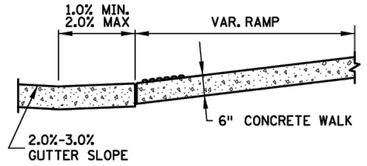


SEMI-DIRECTIONAL RAMP ③④⑨

3' DOME SETBACK, 4' LONG RAMP AND PUSH BUTTON 9' FROM THE BACK OF CURB

PRIMARILY USED FOR APS APPLICATIONS WHERE THE PAR DOES NOT CONTINUE PAST THE PUSH BUTTON (DEAD-END SIDEWALK)





SECTION D-D

CURB FOR DIRECTIONAL RAMPS ⑭

NOTES:

LANDINGS SHALL BE LOCATED ANYWHERE THE PEDESTRIAN ACCESS ROUTE (PAR) CHANGES DIRECTION, AT THE TOP OF RAMPS THAT HAVE RUNNING SLOPES GREATER THAN 5.0%, AND IF THE APPROACHING WALK IS INVERSE GRADE.

INITIAL CURB RAMP LANDINGS SHALL BE CONSTRUCTED WITHIN 15' FROM THE BACK OF CURB, WITH 6' FROM THE BACK OF CURB BEING THE PREFERRED DISTANCE, ONLY APPLICABLE WHEN THE INITIAL RAMP RUNNING SLOPE IS OVER 5.0%.

SECONDARY CURB RAMP LANDINGS ARE REQUIRED FOR EVERY 30" OF VERTICAL RISE WHEN THE LONGITUDINAL SLOPE IS GREATER THAN 5.0%.

CONTRACTION JOINTS SHALL BE CONSTRUCTED ALONG ALL GRADE BREAKS WITHIN THE PAR. 1/4" DEEP VISUAL JOINTS SHALL BE USED AT THE TOP GRADE BREAK OF CONCRETE FLARES ADJACENT TO WALKABLE SURFACES.

ALL GRADE BREAKS WITHIN THE PAR SHALL BE PERPENDICULAR TO THE PATH OF TRAVEL. THUS BOTH SIDES OF A SLOPED WALKING SURFACE MUST BE EQUAL LENGTH.

TO ENSURE INITIAL RAMPS AND INITIAL LANDINGS ARE PROPERLY CONSTRUCTED, LANDINGS SHALL BE CAST SEPARATELY. FOLLOW SIDEWALK REINFORCEMENT DETAILS ON SHEET 6 AND THE ADA SPECIAL PROVISION (PROSECUTION OF WORK).

TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE.

WHEN THE BOULEVARD IS 4' WIDE OR LESS, THE TOP OF CURB TAPER SHALL MATCH THE RAMP SLOPES TO REDUCE NEGATIVE BOULEVARD SLOPES FROM THE TOP BACK OF CURB TO THE PAR.

ALL RAMP TYPES SHOULD HAVE A MINIMUM 3' LONG RAMP LENGTH.

4' MINIMUM WIDTH OF DETECTABLE WARNING IS REQUIRED FOR ALL RAMPS. DETECTABLE WARNINGS SHALL CONTINUOUSLY EXTEND FOR A MIN. OF 24" IN THE PATH OF TRAVEL. DETECTABLE WARNING TO COVER THE ENTIRE PAR WIDTH OF SHARED-USE PATHS AND THE ENTIRE PAR WIDTH OF THE WALK WITH THE EXCEPTION OF 3" MAXIMUM ON EACH OUTSIDE EDGE WHICH ENSURES THE DETECTABLE WARNINGS ARE ENCASED IN CONCRETE WHEN ADJACENT TO TURF. WHEN ADJACENT TO CONCRETE FLARES 0" - 3" OFFSET IS ALLOWED.

WHEN DESIGNING OR ORDERING RECTANGULAR DETECTABLE WARNING SURFACES SHOULD BE 6" LESS THAN THE INCOMING PAR. ARC LENGTH OF THE RADIAL DETECTABLE WARNINGS SHOULD NOT BE GREATER THAN 20 FEET.

RADIAL DETECTABLE WARNINGS SHALL BE SETBACK 3" MINIMUM TO 6" MAXIMUM FROM THE BACK OF CURB. SEE NOTES ⑩ & ⑪ FOR INFORMATION REGARDING RECTANGULAR DETECTABLE WARNING PLACEMENT.

① MATCH FULL CURB HEIGHT.

② 3" HIGH CURB WHEN USING A 3' LONG RAMP
4" HIGH CURB WHEN USING A 4' LONG RAMP.

③ 3" MINIMUM CURB HEIGHT (5.5' MIN. DISTANCE REQUIRED BETWEEN DOMES)
4" PREFERRED (7' MIN. DISTANCE REQUIRED BETWEEN DOMES).

④ THE "BUMP" IN BETWEEN THE RAMPS SHOULD NOT BE IN THE PATH OF TRAVEL FOR COMBINED DIRECTIONAL RAMPS. IF THIS OCCURS MODIFY THE RAMP LOCATION OR SWITCH RAMP TO A FAN/DEPRESSED CORNER.

⑤ WHEN USING CONCRETE PAVED FLARES ON THE OUTSIDE OF DIRECTIONAL RAMPS, AND ADJACENT TO A WALKABLE SURFACE, DIRECTIONAL RAMP FLARES SHALL BE USED. SEE THE DETAIL ON THIS SHEET.

⑥ GRADING SHALL ALWAYS BE USED WHEN FEASIBLE. V CURB, IF USED, SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS. WHEN ADJACENT TO PARKING LOTS, CONCRETE OR BITUMINOUS TAPERS SHOULD BE USED OVER V CURB TO REDUCE TRIPPING HAZARDS AND FACILITATE SNOW & ICE REMOVAL.

⑦ MAX. 2.0% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK AND DRAIN TO FLOW LINE. SHALL BE CONSTRUCTED INTEGRAL WITH CURB AND GUTTER.

⑧ 8% TO 10% WALKABLE FLARE.

⑨ PLACE DOMES AT THE BACK OF CURB WHEN ALLOWABLE SETBACK CRITERIA IS EXCEEDED.

⑩ FRONT EDGE OF DETECTABLE WARNING SHALL BE SET BACK 2' MAXIMUM WHEN ADJACENT TO WALKABLE SURFACE, AND 5' MAXIMUM WHEN ADJACENT TO NON-WALKABLE SURFACE WITH ONE CORNER SET 3" FROM BACK OF CURB. A WALKABLE SURFACE IS DEFINED AS A PAVED SURFACE ADJACENT TO A CURB RAMP WITHOUT RAISED OBSTACLES THAT COULD MISTAKENLY BE TRAVERSED BY A USER WHO IS VISUALLY IMPAIRED.

⑪ RECTANGULAR DETECTABLE WARNINGS MAY BE SETBACK UP TO 9" FROM THE BACK OF CURB WITH CORNERS SET 3" FROM BACK OF CURB. IF 9" SETBACK IS EXCEEDED USE RADIAL DETECTABLE WARNINGS.

⑫ FOR DIRECTIONAL RAMPS WITH THE DETECTABLE WARNINGS PLACED AT THE BACK OF CURB, THE DETECTABLE WARNINGS SHALL COVER THE ENTIRE WIDTH OF THE WALK/PATH. THIS ENSURES A DETECTABLE EDGE AND HELPS ELIMINATE THE CURB TAPER OBSTRUCTING THE PATH OF PEDESTRIAN TRAVEL.

⑬ THE CONCRETE WALK SHALL BE FORMED AND CONSTRUCTED PERPENDICULAR TO THE BACK OF CURB. MAINTAIN 3" BETWEEN EDGE OF DOMES AND EDGE OF CONCRETE.

⑭ TO BE USED FOR ALL DIRECTIONAL RAMPS, EXCEPT WHERE DOMES ARE PLACED ALONG THE BACK OF CURB.

⑮ PLACE 2 NO. 4 BARS 4 INCHES FROM SIDE OF FORMS WITH A MINIMUM 2 INCHES OF CONCRETE COVER ALONG EACH SIDE OF FLARE (INCIDENTAL).

LEGEND

THESE LONGITUDINAL SLOPE RANGES SHALL BE THE STARTING POINT. IF SITE CONDITIONS WARRANT, LONGITUDINAL SLOPES UP TO 8.3% OR FLATTER ARE ALLOWED.

(S) INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND THE CROSS SLOPE SHALL NOT EXCEED 2.0%.

(F) INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%.

LANDING AREA - 4' X 4' MIN. (5' X 5' MIN. PREFERRED) DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS. LANDING SHALL BE FULL WIDTH OF INCOMING PARS.

X" CURB HEIGHT

LEAD EXPERT OFFICE	JEFFREY PERKINS OPERATIONS DIVISION		PEDESTRIAN CURB RAMP DETAILS	APPROVED: 11-04-2021 REVISED:	THOMAS STYRBICKI STATE DESIGN ENGINEER
STANDARD PLAN 5-297.250	2 OF 6				

DEPARTMENT OF TRANSPORTATION

STANDARD PLAN

STATE PROJ. NO.	SHEET NO.
TRUNK HWY.	TOTAL SHEETS

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
ANDREW N OLSON
LIC. NO. 59327 DATE 03/10/2026

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CHECKED	ANO
CLIENT PROJ. NO.	140350

NO.	ISSUED FOR	DATE

COTTAGE GROVE, MINNESOTA
2026 MILL AND OVERLAY
MNDOT PEDESTRIAN CURB RAMP DETAILS

SHEET C1.04

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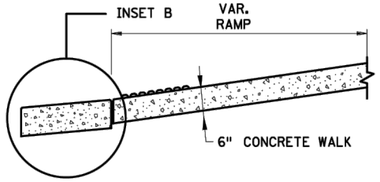
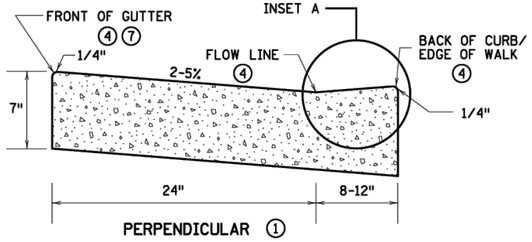
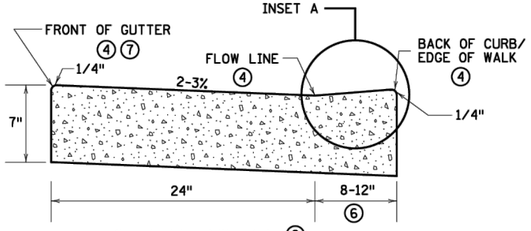
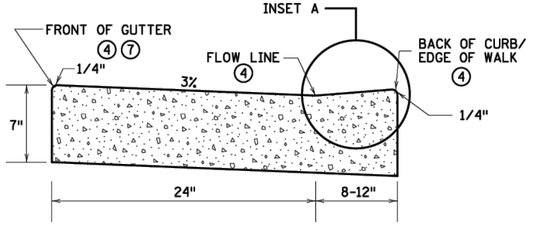




PERPENDICULAR ①

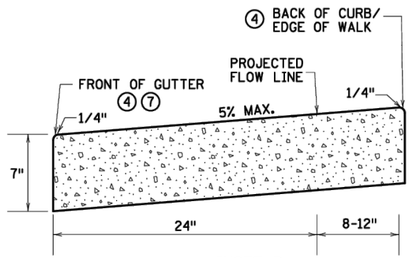


NON PERPENDICULAR ②

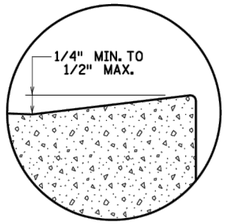


FOR CURB MACHINE PLACEMENT AROUND RADIUS ③
(REGARDLESS OF RAMP TYPE)

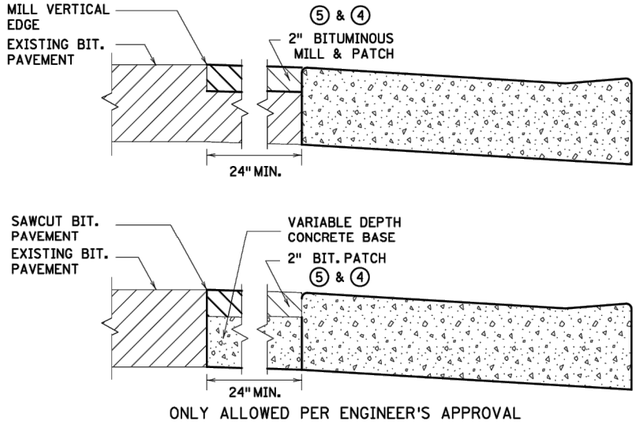
PEDESTRIAN ACCESS ROUTE CURB & GUTTER DETAIL



INSET B
OUTFLOW GUTTER ⑧



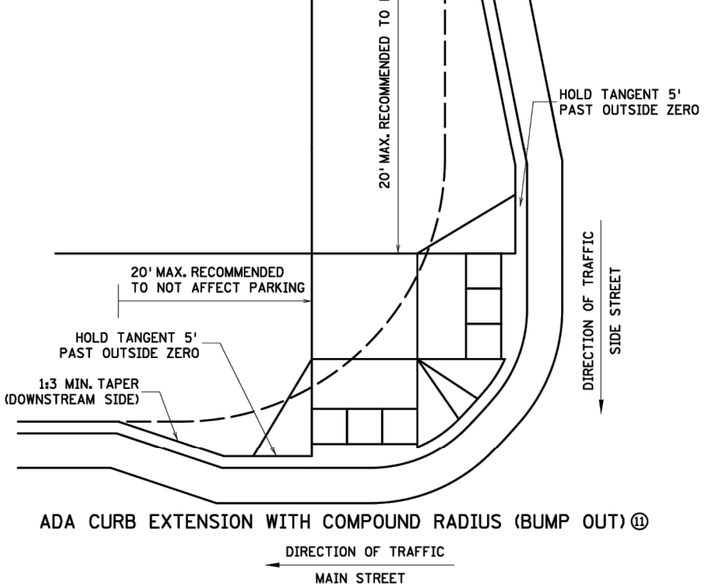
INSET A



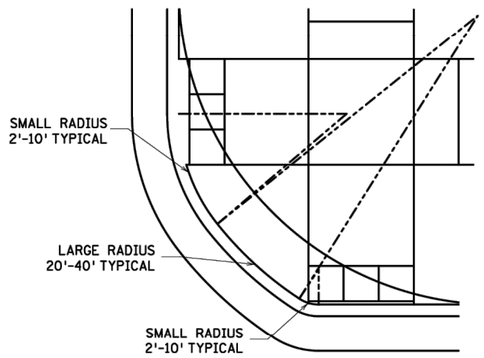
ONLY ALLOWED PER ENGINEER'S APPROVAL

PAVEMENT TREATMENT OPTIONS IN FRONT OF CURB & GUTTER

FOR USE ON CURB RAMP RETROFITS



ADA CURB EXTENSION WITH COMPOUND RADIUS (BUMP OUT) ⑪



COMBINED DIRECTIONAL ⑩
(COMPOUND RADIUS)

NOTES:

POSITIVE FLOW LINE DRAINAGE SHALL BE MAINTAINED THROUGH THE PEDESTRIAN ACCESS ROUTE (PAR) AT A 2% MAXIMUM.
NO PONDING SHALL BE PRESENT IN THE PAR.
ANY VERTICAL LIP THAT OCCURS AT THE FLOW LINE SHALL NOT BE GREATER THAN 1/4 INCH.

① FOR USE AT CURB CUTS WHERE THE PEDESTRIAN'S PATH OF TRAVEL IS ASSUMED PERPENDICULAR TO THE GUTTER FLOW LINE. RAMP TYPES INCLUDE: PERPENDICULAR, TIERED PERPENDICULAR, PARALLEL, AND DIAGONAL RAMPS.
② FOR USE AT CURB RAMPS WHERE THE PEDESTRIAN'S PATH OF TRAVEL IS ASSUMED NON PERPENDICULAR TO THE GUTTER FLOW LINE. RAMP TYPES INCLUDE: FANS & DEPRESSED CORNERS.
③ BEGIN GUTTER SLOPE TRANSITION 10' OUTSIDE OF ALL CURB RAMPS.
④ THERE SHALL BE NO VERTICAL DISCONTINUITIES GREATER THAN 1/4".
⑤ ELEVATION CHANGE TAKES PLACE FROM THE EXISTING TO NEW FRONT OF GUTTER. PATCH IS USED TO MATCH THE NEW GUTTER FACE INTO THE EXISTING ROADWAY.
⑥ VARIABLE WIDTH FOR DIRECTIONAL CURB APPLICATIONS. SEE SHEET 2 FOR DIRECTIONAL CURB SLOPE REQUIREMENTS.
⑦ TOP FRONT OF GUTTER SHALL BE CONSTRUCTED FLUSH WITH PROPOSED ADJACENT PAVEMENT ELEVATION. TOP 1.5" OF THE GUTTER FACE MUST BE A FORMED EDGE. PAR GUTTER SHALL NOT BE OVERLAID.
⑧ SHOULD BE USED AT VERTICALLY CONSTRAINED AREAS WHEN AT A DRAINAGE HIGH POINT OR SUPER ELEVATED ROADWAY SEGMENTS.
⑨ DRILL AND GROUT NO. 4 EPOXY-COATED 18" LONG TIE BARS AT 30" CENTER TO CENTER INTO EXISTING CONCRETE PAVEMENT 1' MINIMUM FROM ALL JOINTS.
⑩ HELPS PROVIDE TWO SEPARATE RAMPS, REDUCES THE DOME SETBACK LENGTH AND MINIMIZES DIRECTIONAL CURB. THIS RADIUS DESIGN CLOSELY FOLLOWS THE TURNING VEHICLE PATH WHILE OPTIMIZING CURB RAMP LENGTH.
⑪ CURB EXTENSIONS SHOULD BE USED IN VERTICALLY CONSTRAINED AREAS, USUALLY IN DOWNTOWN ROADWAY SEGMENTS WHERE ON-STREET PARKING IS AVAILABLE. CURB EXTENSIONS SHOULD BE CONSIDERED FOR APS INTERSECTIONS WHERE SPACE IS LIMITED. PUSH BUTTONS MUST MEET APS CRITERIA AS DESCRIBED IN THE PUSH BUTTON LOCATION DETAIL SHEET.

LEAD EXPERT OFFICE	JEFFREY PERKINS OPERATIONS DIVISION		PEDESTRIAN CURB RAMP DETAILS	APPROVED: 11-04-2021 REVISED:	THOMAS STYRBICKI STATE DESIGN ENGINEER	STANDARD PLAN 5-297.250	3 OF 6
	DEPARTMENT OF TRANSPORTATION		STANDARD PLAN		STATE PROJ. NO.	SHEET NO.	
					TRUNK HWY.	TOTAL SHEETS	

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ANDREW N OLSON
LIC. NO. 59327 DATE 03/10/2026

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140350			

COTTAGE GROVE, MINNESOTA
2026 MILL AND OVERLAY
MNDOT PEDESTRIAN CURB RAMP DETAILS

SHEET C1.05

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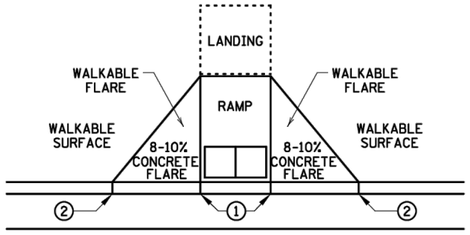
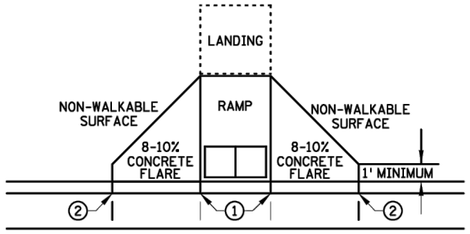
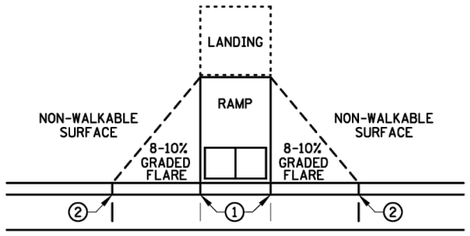


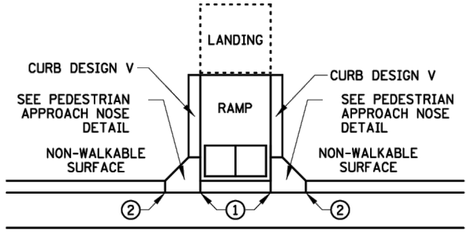
PAVED FLARES
ADJACENT TO WALKABLE SURFACE



PAVED FLARES
ADJACENT TO NON-WALKABLE SURFACE

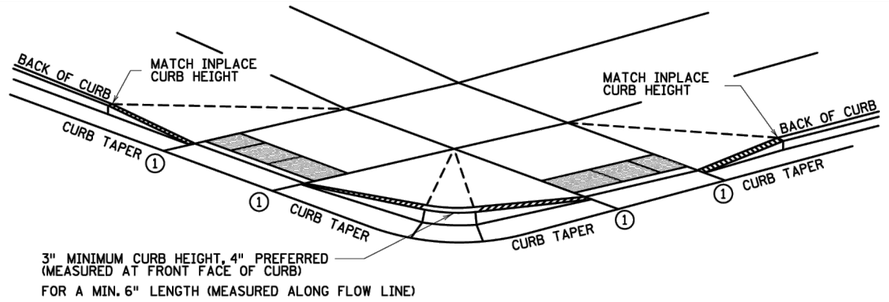


GRADED FLARES

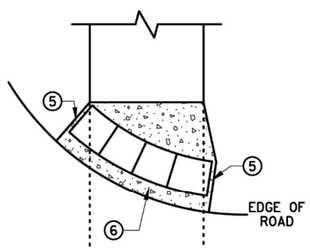


RETURNED CURB ④

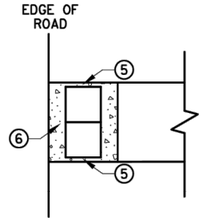
TYPICAL SIDE TREATMENT OPTIONS ③ ⑩



DETECTABLE EDGE WITH ⑦
CURB AND GUTTER

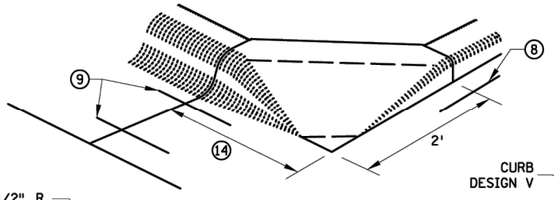


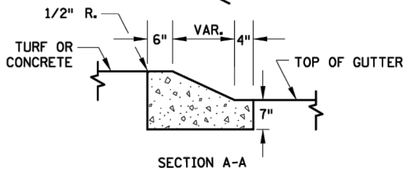
RADIAL DETECTABLE WARNING



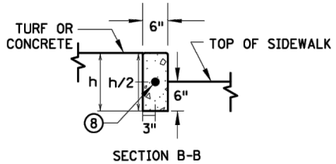
RECTANGULAR DETECTABLE WARNING

DETECTABLE EDGE WITHOUT CURB AND GUTTER

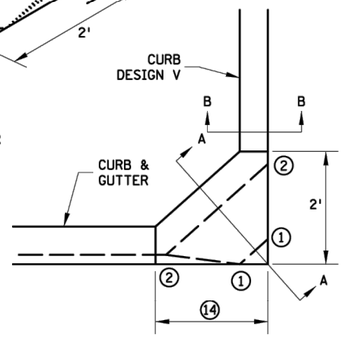




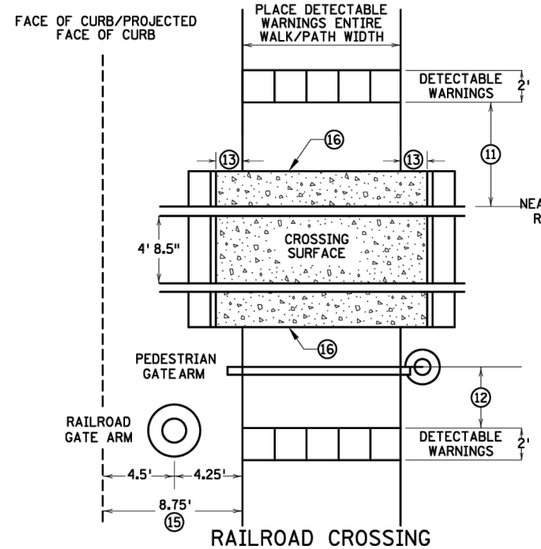
SECTION A-A



SECTION B-B



PEDESTRIAN APPROACH
NOSE DETAIL
(FOR RETURNED CURB
SIDE TREATMENT)



RAILROAD CROSSING
PLAN VIEW

NOTES:

INTERMEDIATE CURB HEIGHTS TAPER SHALL RISE AT 8-10% TO A MINIMUM 3 INCH CURB HEIGHT. INCREASE CURB TAPER LENGTH AT LESS THAN 8% OR REDUCE INTERMEDIATE CURB HEIGHT TO 2+ INCHES IF NECESSARY TO MATCH ADJACENT BOULEVARD OR SIDEWALK GRADES.

SEE STANDARD PLATE 7038 AND THIS SHEET FOR ADDITIONAL DETAILS ON DETECTABLE WARNING.

A WALKABLE SURFACE IS DEFINED AS A PAVED SURFACE ADJACENT TO A CURB RAMP WITHOUT RAISED OBSTACLES THAT COULD MISTAKENLY BE TRAVERSED BY A USER WHO IS VISUALLY IMPAIRED.

CONCRETE FLARE LENGTHS ADJACENT TO NON-WALKABLE SURFACES SHOULD BE LESS THAN 8' LONG MEASURED ALONG THE RAMPS FROM THE BACK OF CURB.

① 0" CURB HEIGHT. SEE INSET A ON SHEET 3 OF 6.

② FULL CURB HEIGHT.

③ SIDE TREATMENTS ARE APPLICABLE TO ALL RAMP TYPES AND SHOULD BE IMPLEMENTED AS NEEDED AS FIELD CONDITIONS DICTATE. THE ENGINEER SHALL DETERMINE THE RAMP SIDE TREATMENTS BASED ON MAINTENANCE OF BOTH ROADWAY AND SIDEWALK, ADJACENT PROPERTY CONSIDERATIONS, AND MITIGATING CONSTRUCTION IMPACTS.

④ TYPICALLY USED FOR MEDIANS AND ISLANDS.

⑤ WHEN NO CONCRETE FLARES ARE PROPOSED, THE CONCRETE WALK SHALL BE FORMED AND CONSTRUCTED PERPENDICULAR TO THE EDGE OF ROADWAY. MAINTAIN 3" MAX. BETWEEN EDGE OF DOMES AND EDGE OF CONCRETE.

⑥ IF NO CURB AND GUTTER IS PLACED IN RURAL SECTIONS, DETECTABLE WARNINGS SHALL BE PLACED 1' FROM THE EDGE OF BITUMINOUS ROADWAY AND/OR BITUMINOUS SHARED-USE PATH TO PROVIDE VISUAL CONTRAST.

⑦ ALL CONSTRUCTED CURBS MUST HAVE A CONTINUOUS DETECTABLE EDGE FOR THE VISUALLY IMPAIRED. THIS DETECTABLE EDGE REQUIRES DETECTABLE WARNINGS WHEREVER THERE IS ZERO-INCH HIGH CURB. CURB TAPERS ARE CONSIDERED A DETECTABLE EDGE WHEN THE TAPER STARTS WITHIN 3" OF THE EDGE OF THE DETECTABLE WARNINGS. AND UNIFORMLY RISES TO A 3-INCH MINIMUM CURB HEIGHT. ANY CURB NOT PART OF A CURB TAPER AND LESS THAN 3 INCHES IN HEIGHT IS NOT CONSIDERED A DETECTABLE EDGE AND THEREFORE IS NOT COMPLIANT WITH ACCESSIBILITY STANDARDS.

⑧ DRILL AND GROUT 1 - NO. 4 12" LONG REINFORCEMENT BAR (EPOXY COATED) WITH 3" MIN. COVER. REINFORCEMENT BARS ARE NOT NEEDED IF THE APPROACH NOSE IS POURED INTEGRAL WITH THE V CURB.

⑨ DRILL AND GROUT 2 - NO. 4 12" LONG REINFORCEMENT BARS (EPOXY COATED) WITH 3" MIN. COVER. REINFORCEMENT BARS ARE NOT NEEDED IF THE APPROACH NOSE IS POURED INTEGRAL WITH THE CURB AND GUTTER.

⑩ SIDE TREATMENT EXAMPLES SHOWN ARE WHEN THE INITIAL LANDING IS APPROXIMATELY LEVEL WITH THE FULL HEIGHT CURB (I.E. 6' LONG RAMP FOR 6" HIGH CURB). WHEN THE INITIAL LANDING IS MORE THAN 1" BELOW FULL HEIGHT CURB REFER TO SHEETS 1 & 2 TO MODIFY THE CURB HEIGHT TAPERS AND MAINTAIN POSITIVE BOULEVARD DRAINAGE. CONSTRUCT THESE TAPERS AT 0"-3" AT 8-10%, THEN LESS THAN 5% FROM 3" CURB TO FULL CURB HEIGHT.

⑪ NEAREST EDGE OF DETECTABLE WARNING SURFACES SHALL BE PLACED 12' MINIMUM TO 15' MAXIMUM FROM THE NEAREST RAIL. FOR SKEWED RAILWAYS IN NO INSTANCE SHALL THE DETECTABLE WARNING BE CLOSER THAN 12' MEASURED PERPENDICULAR TO THE NEAREST RAIL.

⑫ WHEN PEDESTRIAN GATES ARE PROVIDED, DETECTABLE WARNING SURFACES SHALL BE PLACED ON THE SIDE OF THE GATES OPPOSITE THE RAIL, 2' FROM THE APPROACHING SIDE OF THE GATE ARM. THIS CRITERIA GOVERNS OVER NOTE ⑪.

⑬ CROSSING SURFACE SHALL EXTEND 2' MINIMUM PAST THE OUTSIDE EDGE OF WALK OR SHARED-USE PATH.

⑭ 3' FOR MEDIANS AND SPLITTER ISLANDS. NOSE CAN BE REDUCED TO 2' ON FREE RIGHT ISLANDS.

⑮ SIDEWALK TO BE PLACED 8.75' MIN. FROM THE FACE OF CURB/PROJECTED FACE OF CURB. THIS ENSURES MIN. CLEARANCE BETWEEN THE SIDEWALK AND GATE ARM COUNTERWEIGHT SUPPORTS.

⑯ CONSTRUCT WITH EXPANSION MATERIAL PER MNDOT SPECIFICATION 3702 TYPES A-E. EXPANSION MATERIAL SHALL MATCH FULL HEIGHT OF ADJACENT CONCRETE.

LEAD EXPERT OFFICE: JEFFREY PERKINS, OPERATIONS DIVISION		PEDESTRIAN CURB RAMP DETAILS	APPROVED: 11-04-2021 REVISED:	THOMAS STYRBICKI, STATE DESIGN ENGINEER	STANDARD PLAN 5-297.250 — 4 OF 6
DEPARTMENT OF TRANSPORTATION		STANDARD PLAN	STATE PROJ. NO.	SHEET NO.	
			TRUNK HWY.	TOTAL SHEETS	

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ANDREW N OLSON
LIC. NO. 59327 DATE 03/10/2026

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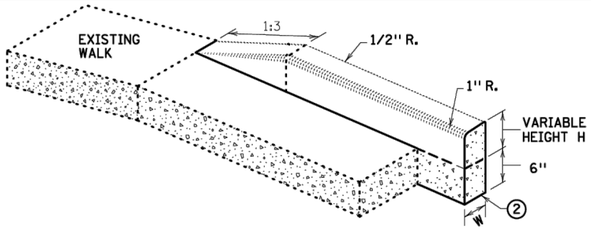
CLIENT PROJ. NO. 140350			

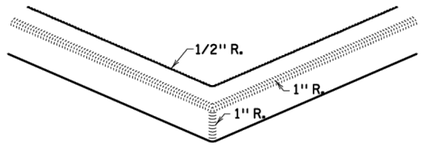
COTTAGE GROVE, MINNESOTA
2026 MILL AND OVERLAY
MNDOT PEDESTRIAN CURB RAMP DETAILS

SHEET C1.06



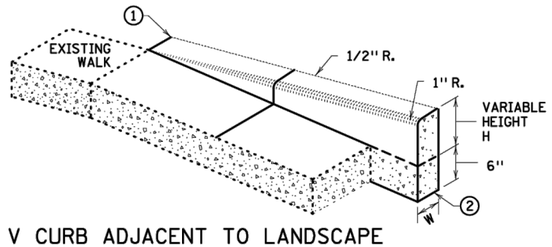
V CURB ADJACENT TO LANDSCAPE

CURB WITHIN SIDEWALK LIMITS



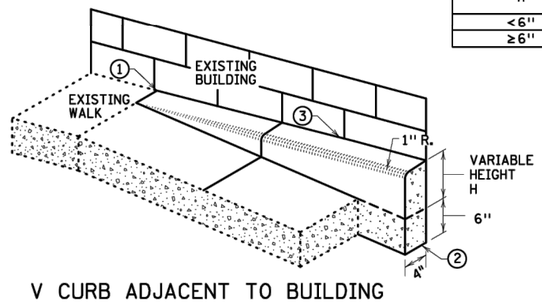
V CURB INTERSECTION

CONCRETE CURB DESIGN V	
CURB HEIGHT H	CURB WIDTH W
<6"	4"
≥6"	6"

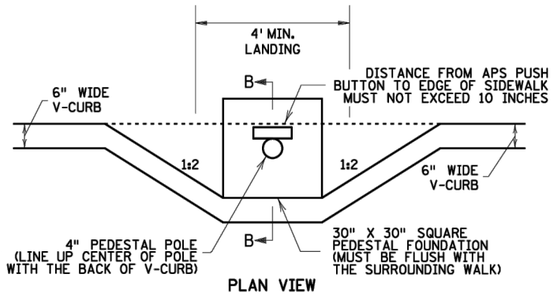


V CURB ADJACENT TO LANDSCAPE

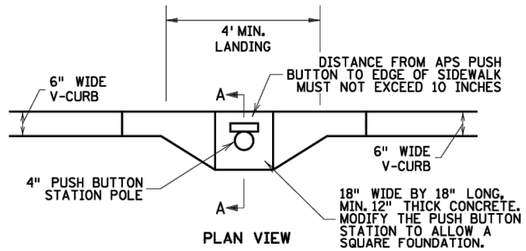
CURB OUTSIDE SIDEWALK LIMITS



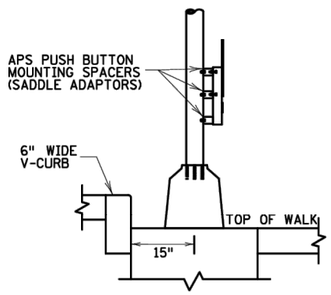
V CURB ADJACENT TO BUILDING OR BARRIER



PLAN VIEW

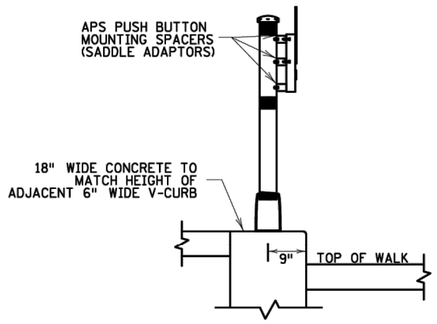


PLAN VIEW



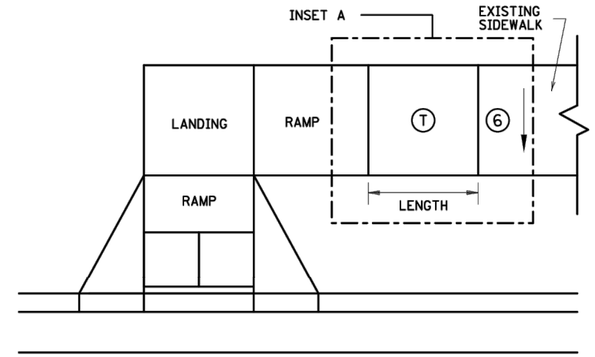
SECTION B-B

SIGNAL PEDESTAL & PUSH BUTTON (V-CURB)

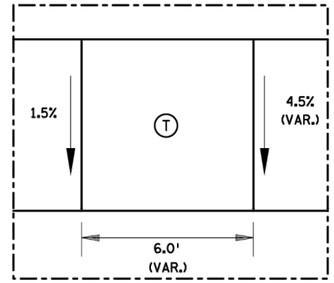


SECTION A-A

PUSH BUTTON STATION (V-CURB)



TRANSITION PANEL ④⑤



INSET A

NOTES:

A WALKABLE FLARE IS AN 8-10% CONCRETE FLARE THAT IS REQUIRED WHEN THE FLARE IS ADJACENT TO A WALKABLE SURFACE, OR WHEN THE PEDESTRIAN PATH OF TRAVEL OF A PUSH BUTTON TRAVERSES THE FLARE.

ALL V CURB CONTRACTION JOINTS SHALL MATCH CONCRETE WALK JOINTS.

WHERE RIGHT-OF-WAY ALLOWS, USE OF V CURB SHOULD BE MINIMIZED. GRADING ADJACENT TURF OR SLOPING ADJACENT PAVEMENT IS PREFERRED.

V CURB SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS.

V CURB NEXT TO BUILDING SHALL BE A 4" WIDTH AND SHALL MATCH PREVIOUS TOP OF SIDEWALK ELEVATIONS.

① END TAPERS AT TRANSITION SECTION SHALL MATCH INPLACE SIDEWALK GRADES.

② ALL V CURB SHALL MATCH BOTTOM OF ADJACENT WALK.

③ CONSTRUCT USING APPROVED EXPANSION MATERIAL PER MNDOT TYPE A-E EXPANSION. LEAVE A MINIMUM ½" TOP GAP AND SEAL WITH MNDOT APPROVED SILICONE PER MNDOT SPEC 3722.

④ THE MAX. RATE OF CROSS SLOPE TRANSITIONING IS 1' LINEAR FOOT OF SIDEWALK PER HALF PERCENT CROSS SLOPE. WHEN PAR WIDTH IS GREATER THAN 6' OR THE RUNNING SLOPE IS GREATER THAN 5%, DOUBLE THE CALCULATED TRANSITION LENGTH.

⑤ TRANSITION PANELS ARE TO ONLY BE USED AFTER THE RAMP, OR IF NEEDED, LANDING ARE AT THE FULL CURB HEIGHT (TYPICAL SECTION).

⑥ EXISTING CROSS SLOPE GREATER THAN 2.0%.

LEGEND

THESE LONGITUDINAL SLOPE RANGES SHALL BE THE STARTING POINT. IF SITE CONDITIONS WARRANT, LONGITUDINAL SLOPES UP TO 8.3% OR FLATTER ARE ALLOWED.

Ⓢ INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND THE CROSS SLOPE SHALL NOT EXCEED 2.0%.

LANDING AREA - 4' X 4' MIN. (5' X 5' MIN. PREFERRED) DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS. LANDING SHALL BE FULL WIDTH OF INCOMING PARS.

Ⓣ TRANSITION PANEL(S) - TO BE USED FOR TRANSITIONING THE CROSS-SLOPE OF A RAMP TO THE EXISTING WALK CROSS-SLOPE. RATE OF TRANSITION SHOULD BE 0.5% PER 1 LINEAR FOOT OF WALK. SEE THIS SHEET FOR ADDITIONAL INFORMATION.

LEAD EXPERT OFFICE: JEFFREY PERKINS, OPERATIONS DIVISION		PEDESTRIAN CURB RAMP DETAILS	APPROVED: 11-04-2021 REVISED:	THOMAS STYRBICKI, STATE DESIGN ENGINEER	STANDARD PLAN 5-297.250	5 OF 6
DEPARTMENT OF TRANSPORTATION		STANDARD PLAN			STATE PROJ. NO. / TRUNK HWY.	SHEET NO. / TOTAL SHEETS

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COTTAGE GROVE, MINNESOTA
2026 MILL AND OVERLAY
MNDOT PEDESTRIAN CURB RAMP DETAILS

SHEET C1.07

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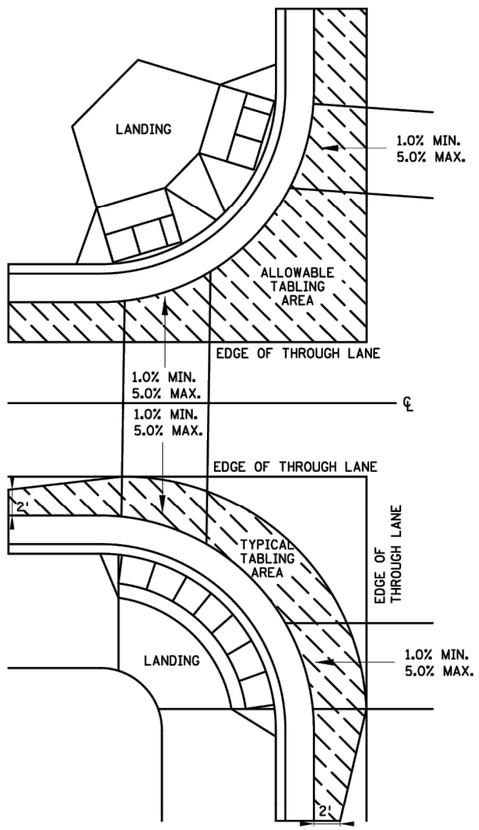
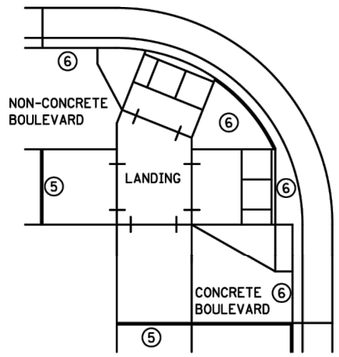
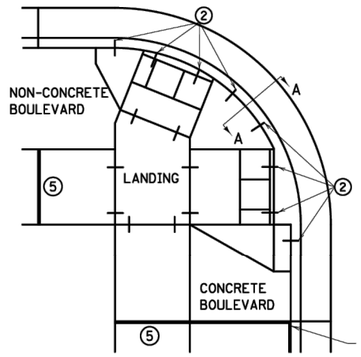


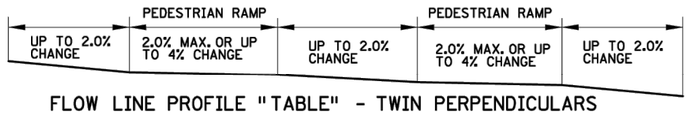
CURB LINE AND ROAD CROSSING ADJUSTMENTS



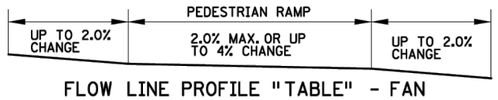
EXPANSION MATERIAL PLACEMENT FOR CONCRETE ROADWAYS



CURB LINE REINFORCEMENT ④ PLACEMENT ON BITUMINOUS ROADWAYS



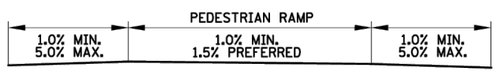
FLOW LINE PROFILE "TABLE" - TWIN PERPENDICULARS



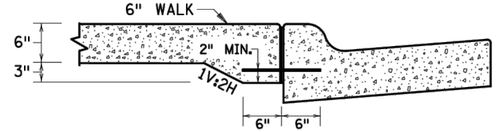
FLOW LINE PROFILE "TABLE" - FAN



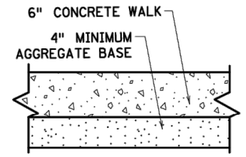
FLOW LINE PROFILE RAISE - TWIN PERPENDICULARS



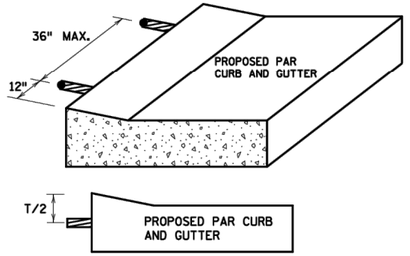
FLOW LINE PROFILE RAISE - FAN



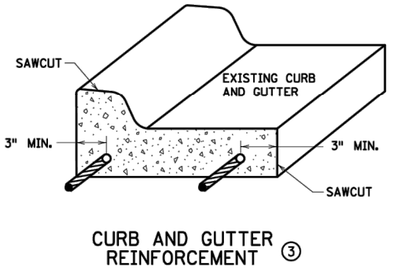
SECTION VIEW A-A
THICKENED SECTION
THROUGH CURB RAMP FLARES



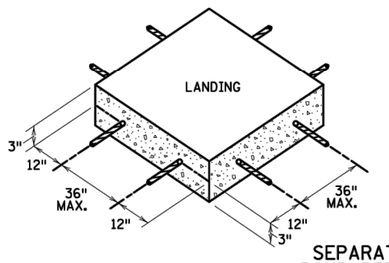
TYPICAL SIDEWALK SECTION
WITHIN INTERSECTION CORNER

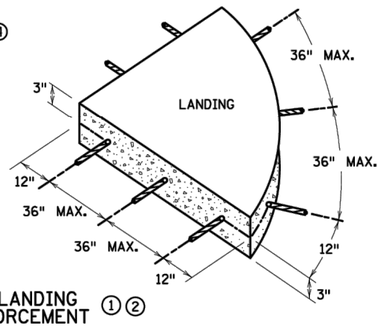


CURB RAMP REINFORCEMENT DETAILS ②④



CURB AND GUTTER REINFORCEMENT ③





SEPARATE LANDING POUR REINFORCEMENT ①②

GENERAL NOTES:

"TABLING" OF CROSSWALKS MEANS MAINTAINING LESS THAN 2% CROSS SLOPE WITHIN A CROSSWALK, IS REQUIRED WHEN A ROADWAY IS IN A STOP OR YIELD CONDITION AND THE PROJECT SCOPE ALLOWS.

RECONSTRUCTION PROJECTS: ON FULL PAVEMENT REPLACEMENT PROJECTS "TABLING" OF ENTIRE CROSSWALK SHALL OCCUR WHEN FEASIBLE.

MILL & OVERLAY PROJECTS: "TABLING" OF FLOW LINES, IN FRONT OF THE PEDESTRIAN RAMP, IS REQUIRED WHEN THE EXISTING FLOW LINE IS GREATER THAN 2%. WARPING OF THE BITUMINOUS PAVEMENT CAN NOT EXTEND INTO THE THROUGH LANE. TABLE THE FLOW LINE TO 2% OR AS MUCH AS POSSIBLE WHILE ADHERING TO THE FOLLOWING CRITERIA:
1) 1.0% MIN. CROSS-SLOPE OF THE ROAD
2) 5.0% MAX. CROSS-SLOPE OF THE ROAD
3) "TABLE" FLOW LINE UP TO 4% CHANGE FROM EXISTING SLOPE IN FRONT OF PEDESTRIAN RAMP
4) UP TO 2% CHANGE IN FLOW LINE FROM EXISTING SLOPE BEYOND THE PEDESTRIAN CURB RAMP

STAND-ALONE ADA RETROFITS: FOLLOW MILL & OVERLAY CRITERIA ABOVE HOWEVER ALL PAVEMENT WARPING IS DONE WITH BITUMINOUS PATCHING ON BITUMINOUS ROADWAYS AND FULL-DEPTH APRON REPLACEMENT ON CONCRETE ROADWAYS.

RAISING OF CURB LINES SHOULD OCCUR IN VERTICALLY CONSTRAINED AREAS. RAISE THE CURB LINES ENOUGH TO ALLOW COMPLIANT RAMPS OR AS MUCH AS POSSIBLE WHILE ADHERING TO THE FOLLOWING CRITERIA:
1) 1.0% MIN. AND 5.0% MAXIMUM CROSS-SLOPE OF THE ROAD
2) 1.0% MIN. FLOW LINE (ON EITHER SIDE OF PEDESTRIAN RAMP) TO MAINTAIN POSITIVE DRAINAGE
3) 5.0% RECOMMENDED MAX. FLOW LINE
4) LONGITUDINAL THROUGH LANE ROADWAY TAPERS SHOULD BE 1" VERTICAL PER 15' HORIZONTAL

NOTES:

① TO ENSURE RAMPS AND LANDINGS ARE PROPERLY CONSTRUCTED, ALL INITIAL LANDINGS AT A TOP OF A RAMPED SURFACE (RUNNING SLOPE GREATER THAN 2%) SHALL BE FORMED AND PLACED SEPARATELY IN AN INDEPENDENT CONCRETE POUR. FOLLOW SIDEWALK REINFORCEMENT DETAILS ON THIS SHEET FOR ALL SEPARATELY POURED INITIAL LANDINGS.

② DRILL AND GROUT NO. 4 12" LONG REINFORCEMENT BARS (EPOXY COATED) AT 36" MAXIMUM CENTER TO CENTER MINIMUM 12" SPACING FROM CONSTRUCTION JOINTS. BARS TO BE ADJUSTED TO MATCH RAMP GRADE. BARS TO BE PAID BY EACH.

③ DRILL AND GROUT 2 - NO. 4 X 12" LONG (6" EMBEDDED) REINFORCEMENT BARS (EPOXY COATED). REINFORCEMENT REQUIRED FOR ALL CONSTRUCTION JOINTS. BARS TO BE PAID BY EACH.

④ THIS CURB LINE REINFORCEMENT DETAIL SHALL BE USED ON BITUMINOUS ROADWAYS. FOR CONCRETE ROADWAYS, SEE NOTE 6.

⑤ CONSTRUCT WITH EXPANSION MATERIAL PER MNDOT SPECIFICATION 3702 TYPES A-E. EXPANSION MATERIAL SHALL MATCH FULL HEIGHT OF ADJACENT CONCRETE.

⑥ USE AN APPROVED TYPE F (1/4 INCH THICK) SEPARATION MATERIAL. SEPARATION MATERIAL SHALL MATCH FULL HEIGHT DIMENSION OF ADJACENT CONCRETE.

LEAD EXPERT OFFICE	JEFFREY PERKINS OPERATIONS DIVISION		PEDESTRIAN CURB RAMP DETAILS	APPROVED: 11-04-2021 REVISED:	THOMAS STYRBICKI STATE DESIGN ENGINEER	STANDARD PLAN 5-297.250	6 OF 6
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LIC. NO. 59327 DATE 03/10/2026

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COTTAGE GROVE, MINNESOTA
2026 MILL AND OVERLAY
MNDOT PEDESTRIAN CURB RAMP DETAILS

SHEET C1.08

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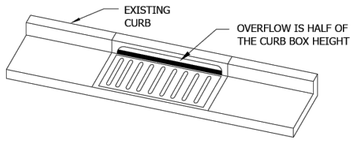
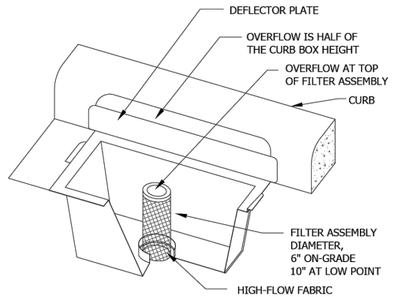


NOTE: USE WIMCO ROAD DRAIN CG-23 OR CG-3290-VB (DEPENDING ON CASTING TYPE) HIGH FLOW INLET PROTECTION CURB AND GUTTER MODELS, OR CITY APPROVED EQUAL.



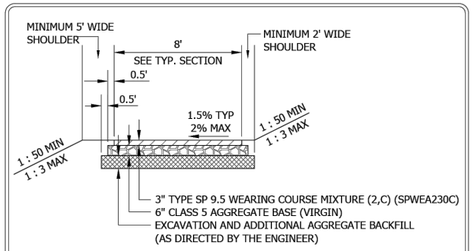
Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
INLET PROTECTION CATCH BASIN INSERT
COTTAGE GROVE, MINNESOTA

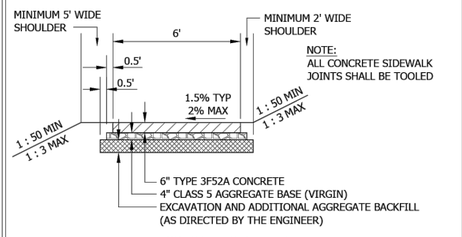
JANUARY 2026

PLATE NO. ERO-9

48_ERO9.DWG



BITUMINOUS TRAIL



CONCRETE SIDEWALK

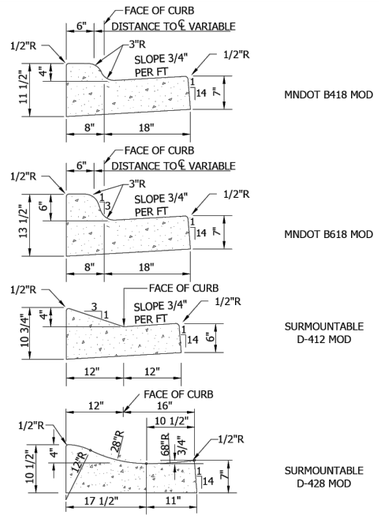
Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
TYPICAL BITUMINOUS TRAIL AND CONCRETE SIDEWALK SECTIONS
COTTAGE GROVE, MINNESOTA

JANUARY 2026

PLATE NO. STR-9

48_STR9.DWG



Cottage Grove — Where Pride and Prosperity Meet

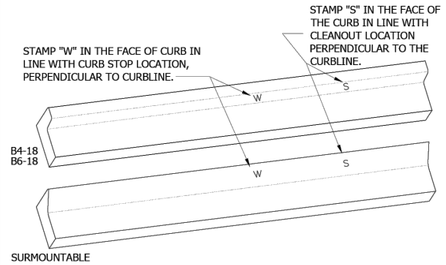
STANDARD DETAILS
CURB AND GUTTER
COTTAGE GROVE, MINNESOTA

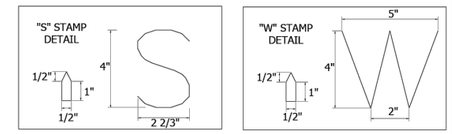
JANUARY 2026

PLATE NO. STR-10

48_STR10.DWG

NOTES:
1. ALL NEW AND EXISTING WATER AND SEWER SERVICE LOCATIONS SHALL BE MARKED IN CURB AS SHOWN. STAMPING OF SERVICE LOCATIONS SHALL BE CONSIDERED INCIDENTAL TO THE PRICE OF CURB.
2. CONCRETE CURB PANELS WITH W'S AND S'S NOT PLACED BY SPECIFIED STAMP WILL NOT BE ACCEPTED.





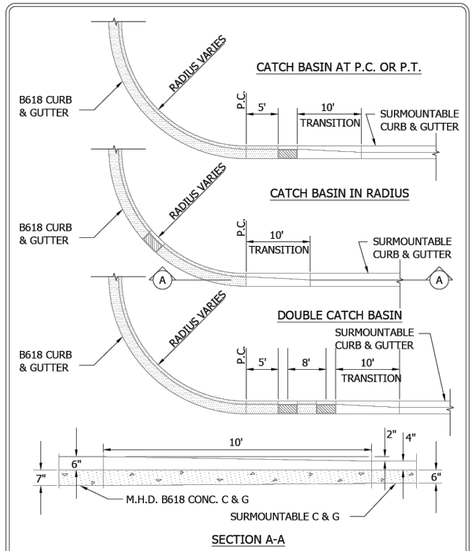
Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
WATER AND SEWER SERVICE LOCATION STAMP IN CURB
COTTAGE GROVE, MINNESOTA

JANUARY 2026

PLATE NO. STR-11

48_STR11.DWG



SECTION A-A

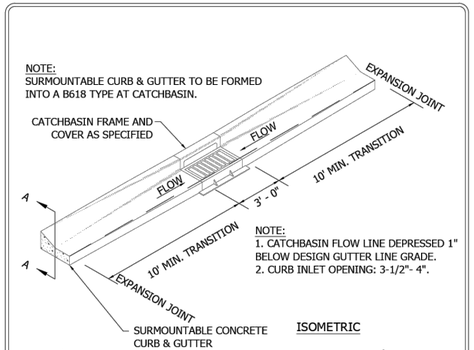
Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
CONCRETE CURB AND GUTTER TRANSITION
COTTAGE GROVE, MINNESOTA

JANUARY 2026

PLATE NO. STR-12

48_STR12.DWG



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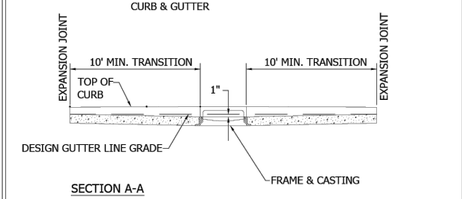


SECTION A-A

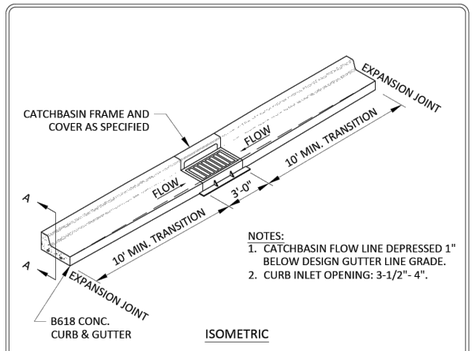
Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
SURMOUNTABLE CURB AND GUTTER CONSTRUCTION AT CATCHBASIN
COTTAGE GROVE, MINNESOTA

JANUARY 2026

PLATE NO. STR-13

48_STR13.DWG



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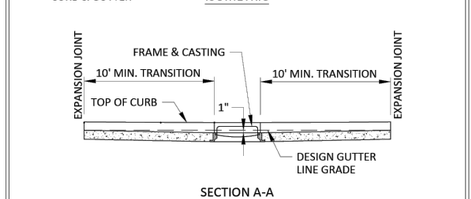

SECTION A-A

Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
B618 CURB AND GUTTER CONSTRUCTION AT CATCHBASIN
COTTAGE GROVE, MINNESOTA

JANUARY 2026

PLATE NO. STR-14

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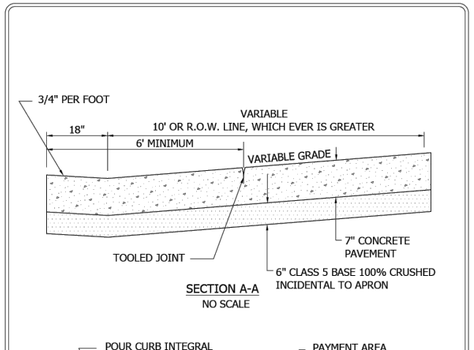
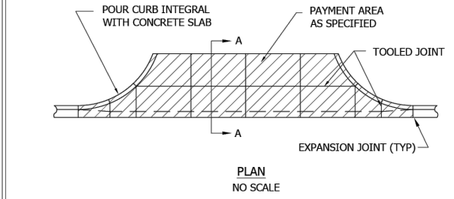


SECTION A-A
NO SCALE



PLAN
NO SCALE

Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
CONCRETE DRIVEWAY APRON COMMERCIAL
COTTAGE GROVE, MINNESOTA

JANUARY 2026

PLATE NO. STR-17

48_STR17.DWG

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ANDREW N OLSON
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CHECKED	ANO
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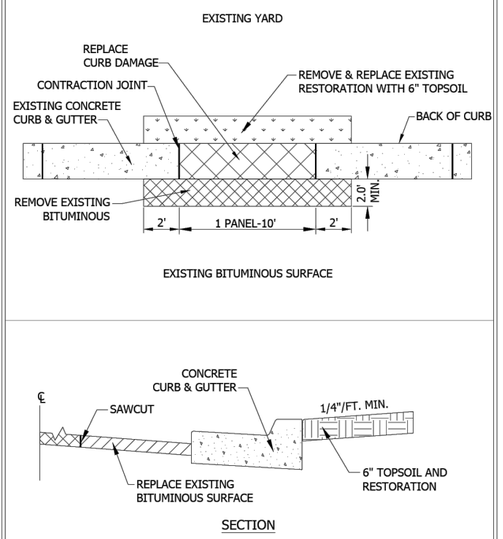
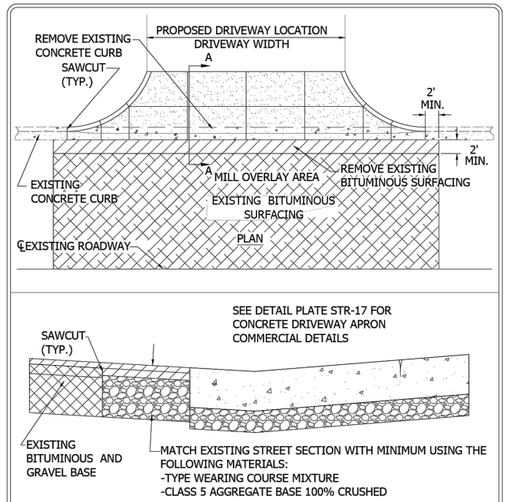
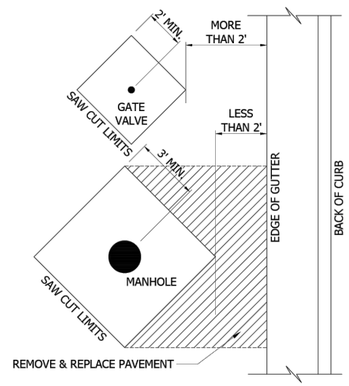
COTTAGE GROVE, MINNESOTA
2026 MILL AND OVERLAY
STANDARD DETAIL PLATES

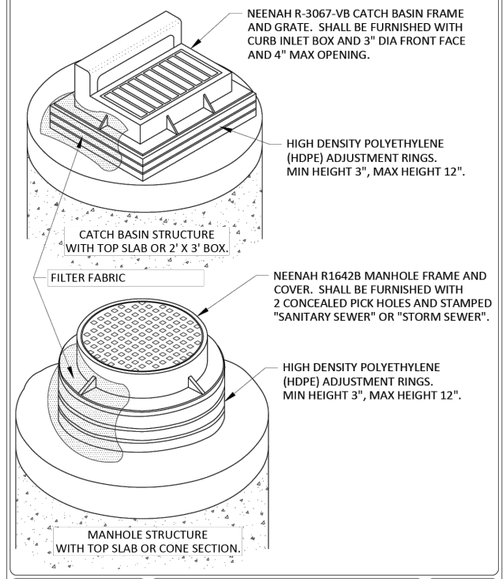
SHEET C1.09





NOTES:
1. CITY RIGHT-OF-WAY PERMIT IS REQUIRED PRIOR TO CONSTRUCTION.
2. FOR MATERIAL SPECIFICATION, REFER TO RIGHT-OF-WAY PERMIT.





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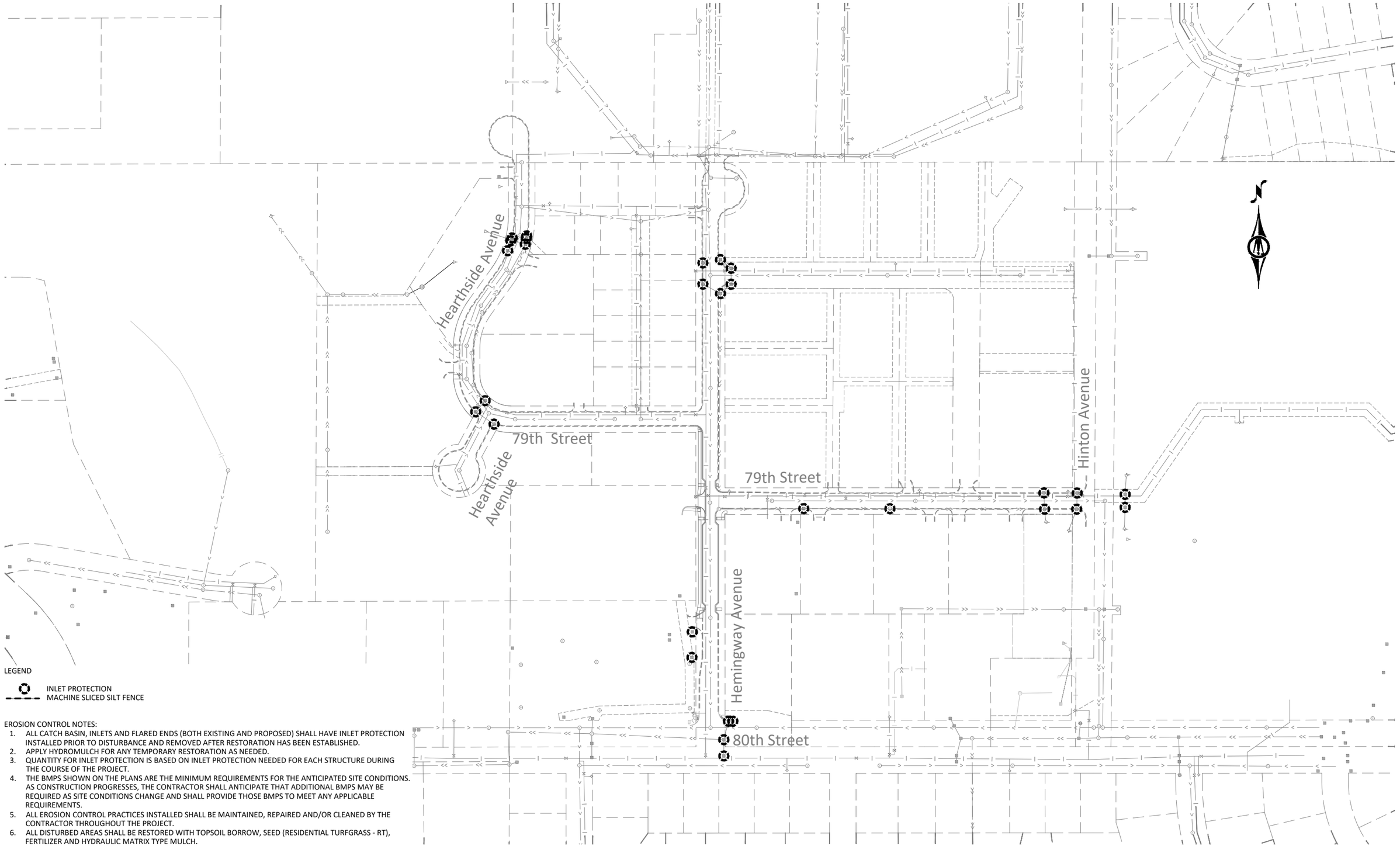
COTTAGE GROVE, MINNESOTA
2026 MILL AND OVERLAY
STANDARD DETAIL PLATES

SHEET C1.10



LEGEND

INLET PROTECTION
MACHINE SLICED SILT FENCE

EROSION CONTROL NOTES:

1. ALL CATCH BASIN, INLETS AND FLARED ENDS (BOTH EXISTING AND PROPOSED) SHALL HAVE INLET PROTECTION INSTALLED PRIOR TO DISTURBANCE AND REMOVED AFTER RESTORATION HAS BEEN ESTABLISHED.
2. APPLY HYDROMULCH FOR ANY TEMPORARY RESTORATION AS NEEDED.
3. QUANTITY FOR INLET PROTECTION IS BASED ON INLET PROTECTION NEEDED FOR EACH STRUCTURE DURING THE COURSE OF THE PROJECT.
4. THE BMPS SHOWN ON THE PLANS ARE THE MINIMUM REQUIREMENTS FOR THE ANTICIPATED SITE CONDITIONS. AS CONSTRUCTION PROGRESSES, THE CONTRACTOR SHALL ANTICIPATE THAT ADDITIONAL BMPS MAY BE REQUIRED AS SITE CONDITIONS CHANGE AND SHALL PROVIDE THOSE BMPS TO MEET ANY APPLICABLE REQUIREMENTS.
5. ALL EROSION CONTROL PRACTICES INSTALLED SHALL BE MAINTAINED, REPAIRED AND/OR CLEANED BY THE CONTRACTOR THROUGHOUT THE PROJECT.
6. ALL DISTURBED AREAS SHALL BE RESTORED WITH TOPSOIL BORROW, SEED (RESIDENTIAL TURFGRASS - RT), FERTILIZER AND HYDRAULIC MATRIX TYPE MULCH.

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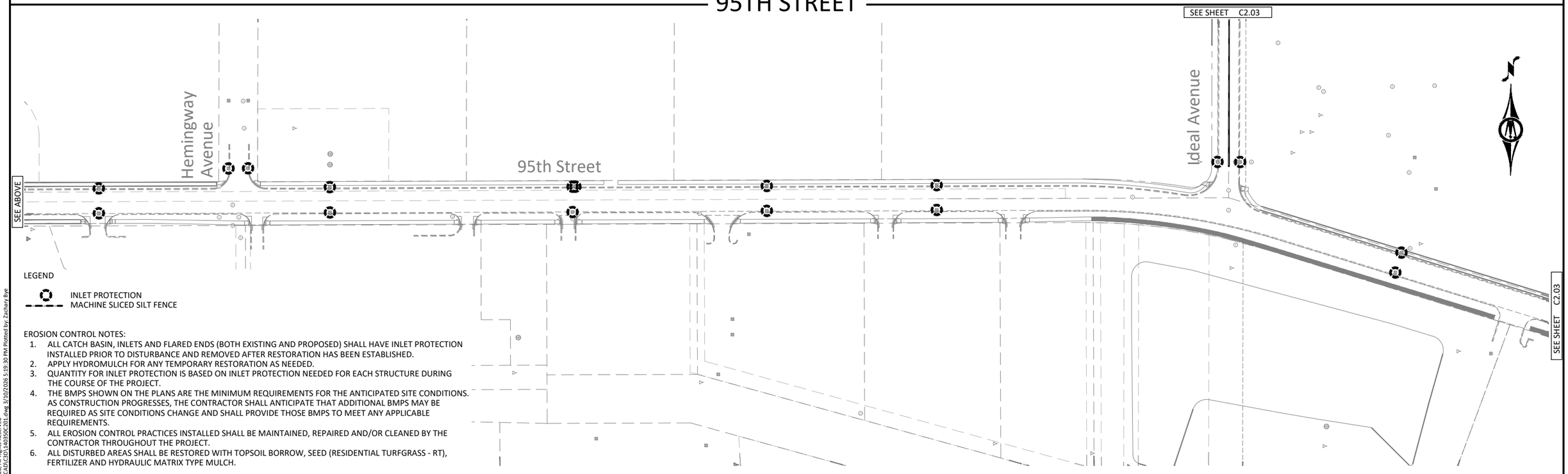
2026 MILL AND OVERLAY
EROSION CONTROL

SHEET
C2.01



95TH STREET



LEGEND

INLET PROTECTION
MACHINE SLICED SILT FENCE

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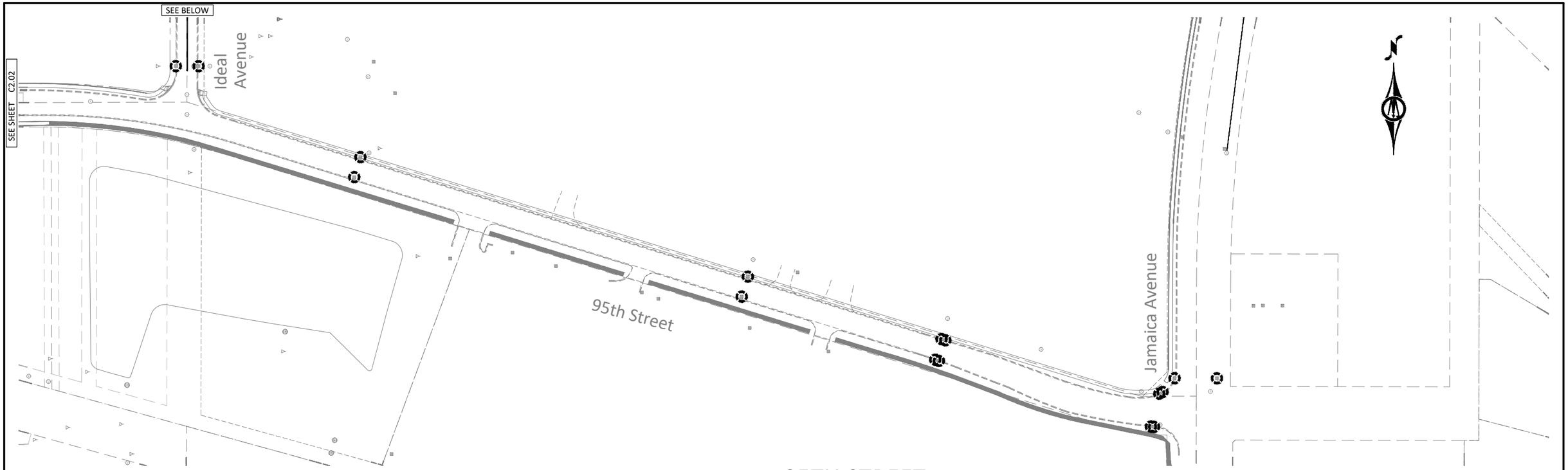
COTTAGE GROVE, MINNESOTA
2026 MILL AND OVERLAY
EROSION CONTROL

SHEET
C2.02



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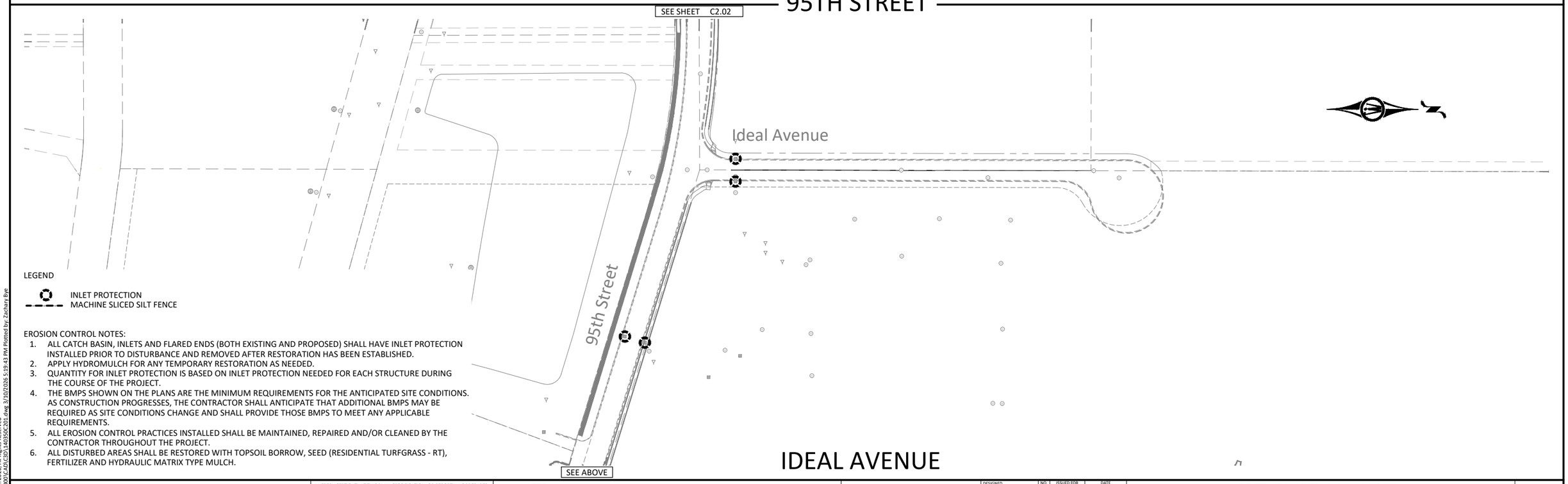

IDEAL AVENUE

LEGEND

INLET PROTECTION
MACHINE SLICED SILT FENCE

EROSION CONTROL NOTES:

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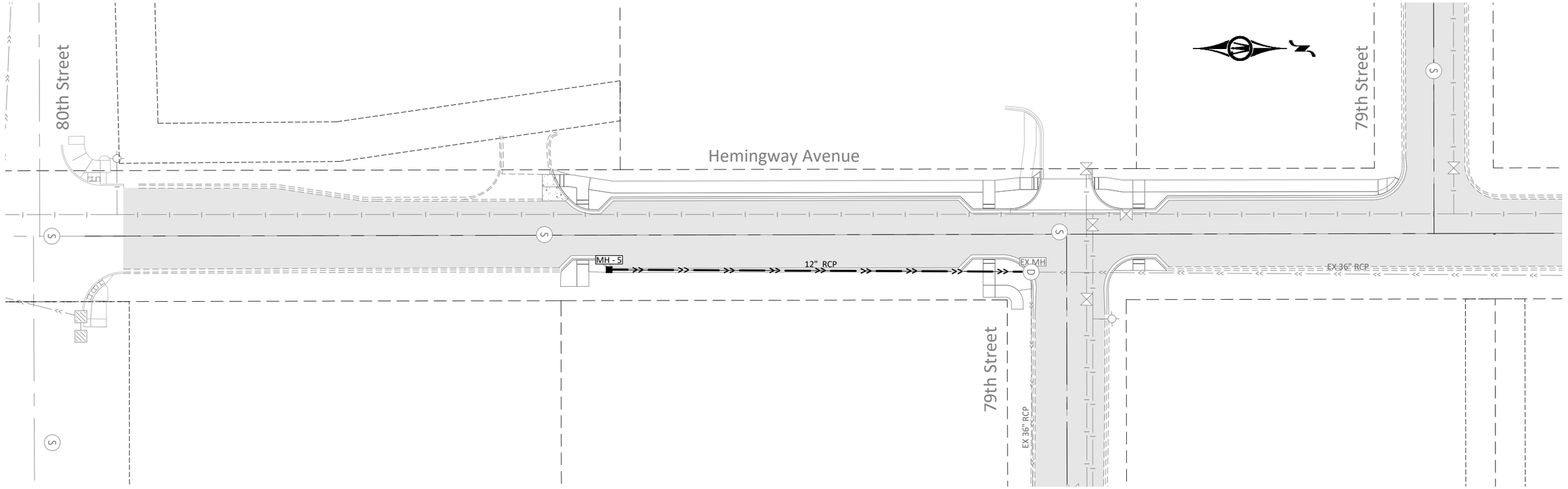
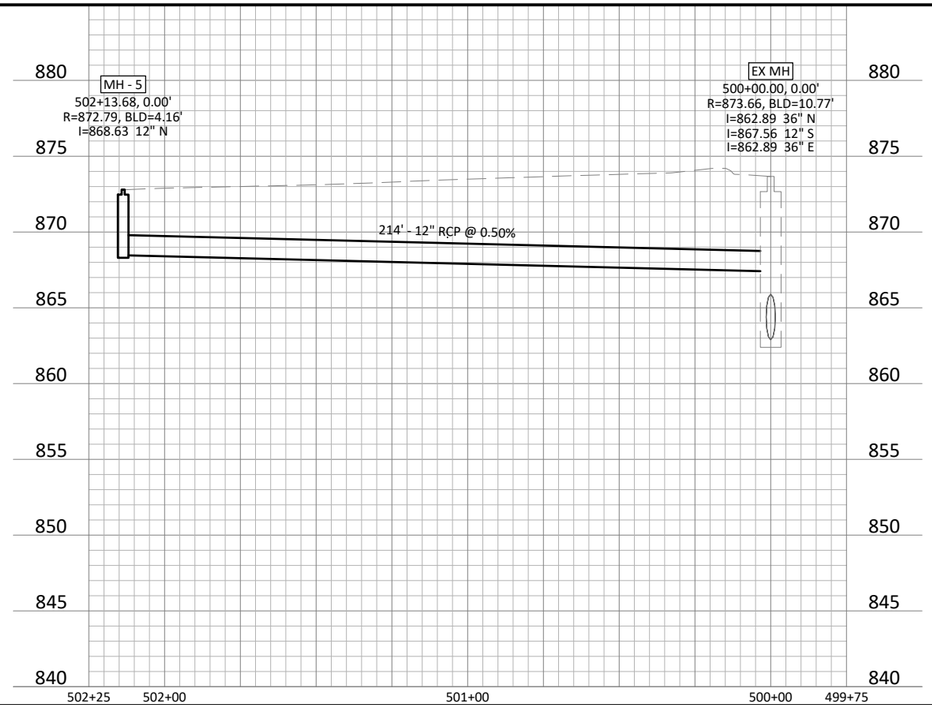
COTTAGE GROVE, MINNESOTA
2026 MILL AND OVERLAY
EROSION CONTROL

SHEET
C2.03





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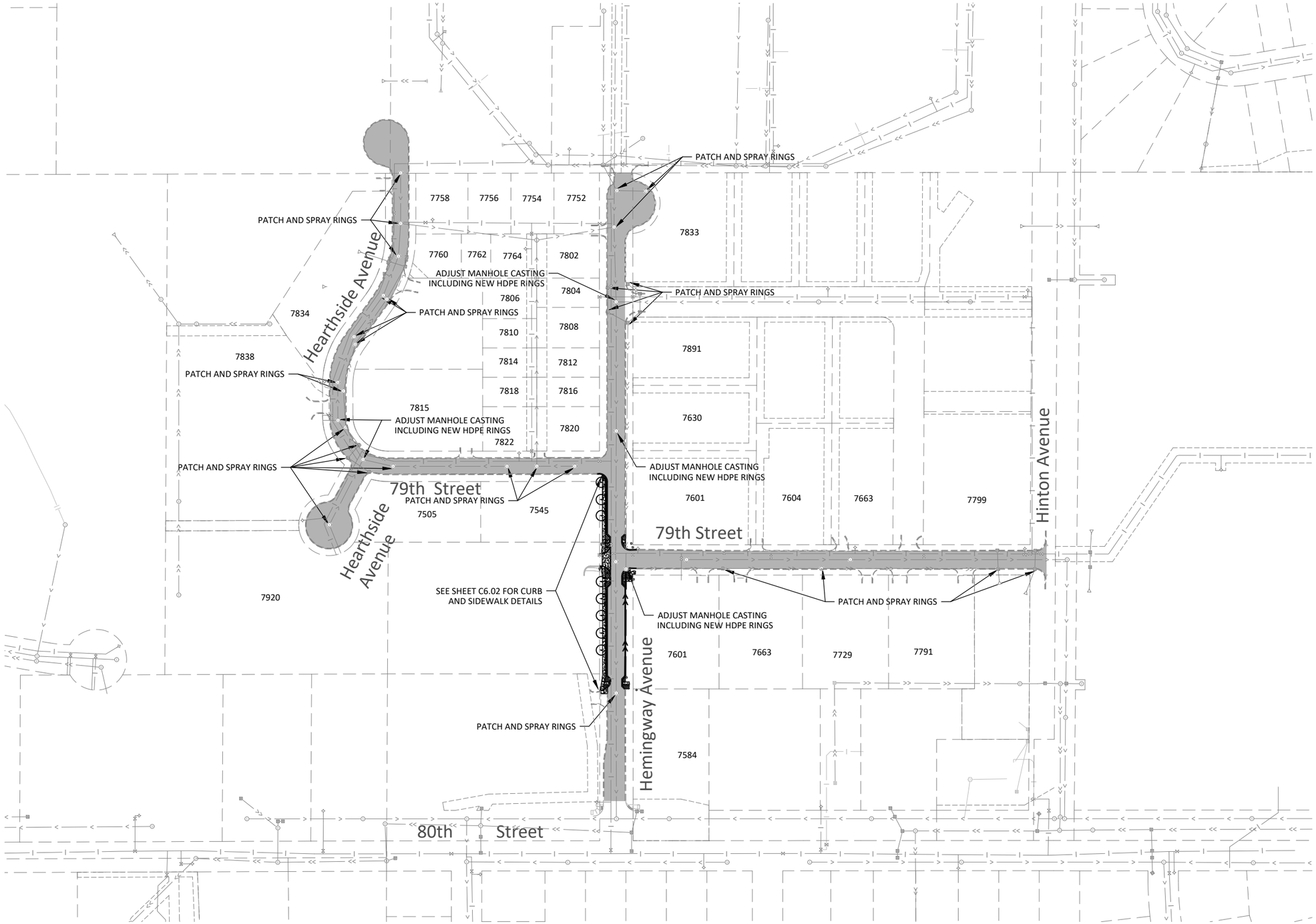
COTTAGE GROVE, MINNESOTA
2026 MILL AND OVERLAY
STORM SEWER PLAN & PROFILE
HEMINGWAY

SHEET C5.01



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HORZ. SCALE 0 100 200 FEET

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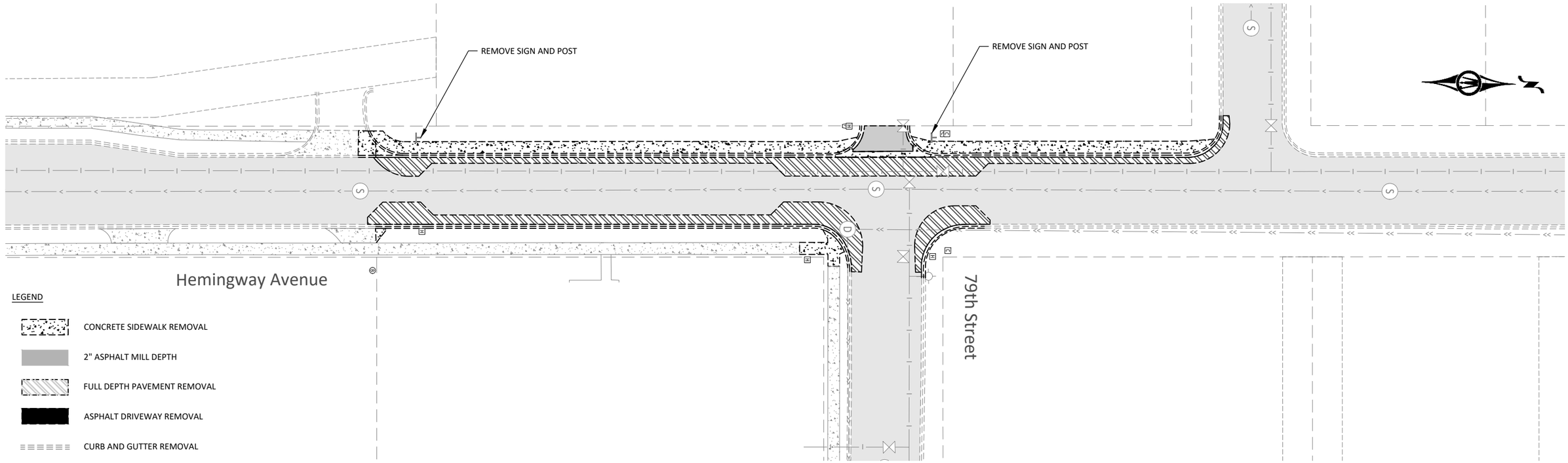
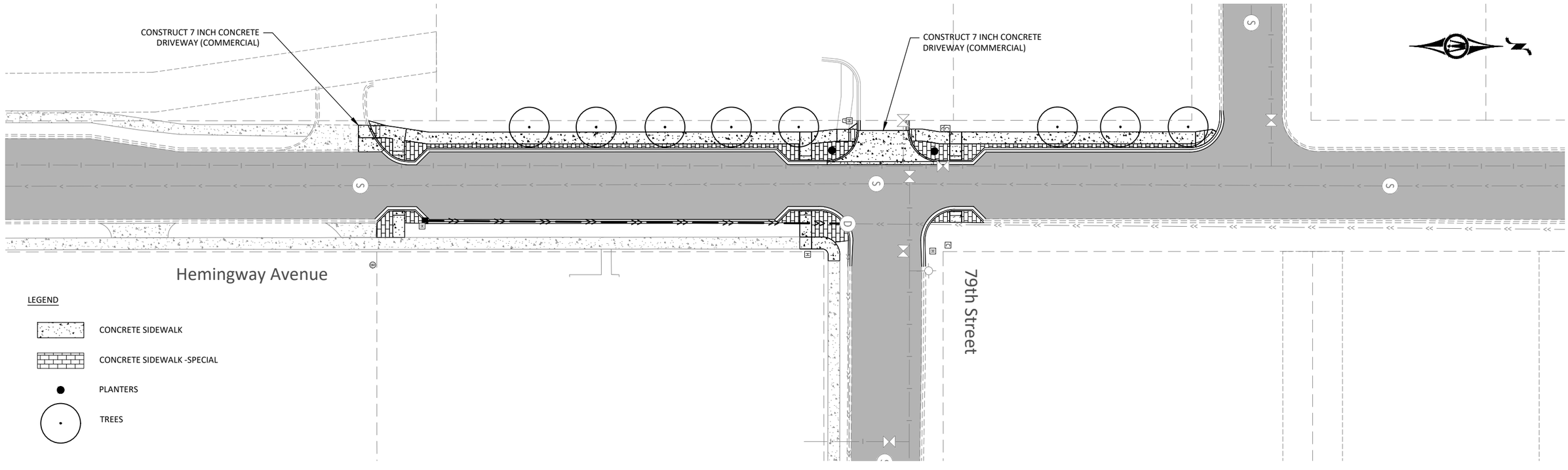
COTTAGE GROVE, MINNESOTA
2026 MILL AND OVERLAY
STREET IMPROVEMENTS - HEMINGWAY NEIGHBORHOOD

SHEET C6.01





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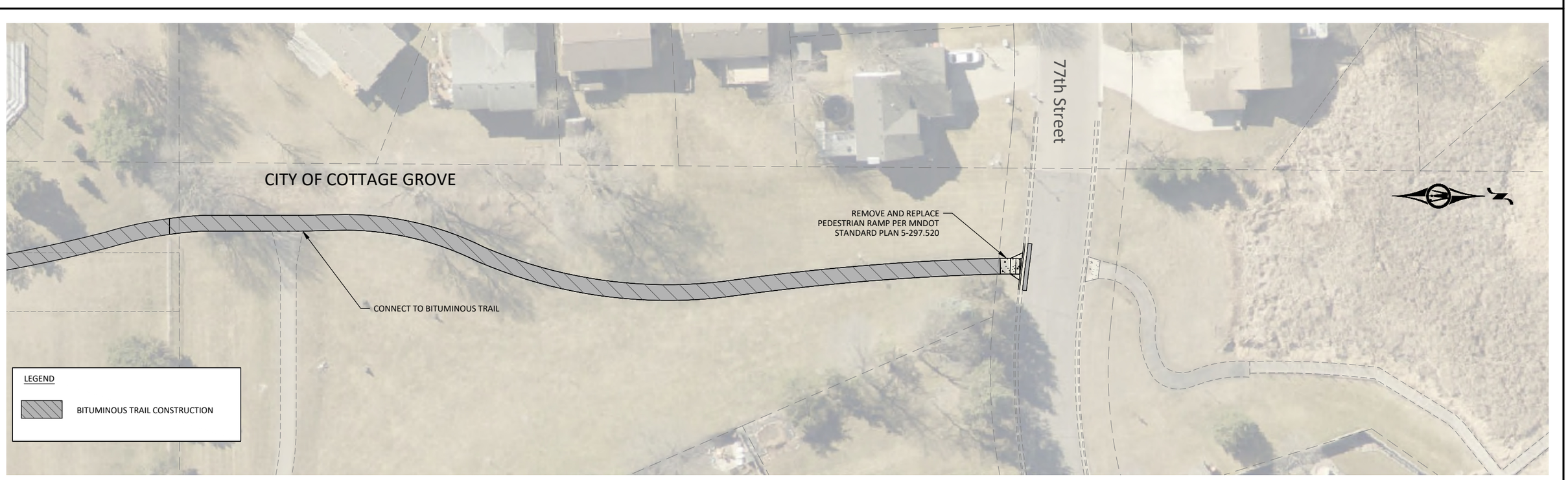
COTTAGE GROVE, MINNESOTA
2026 MILL AND OVERLAY
STREET IMPROVEMENTS - HEMINGWAY STREETSCAPE

SHEET C6.02





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HORZ. SCALE 0 25 50 FEET

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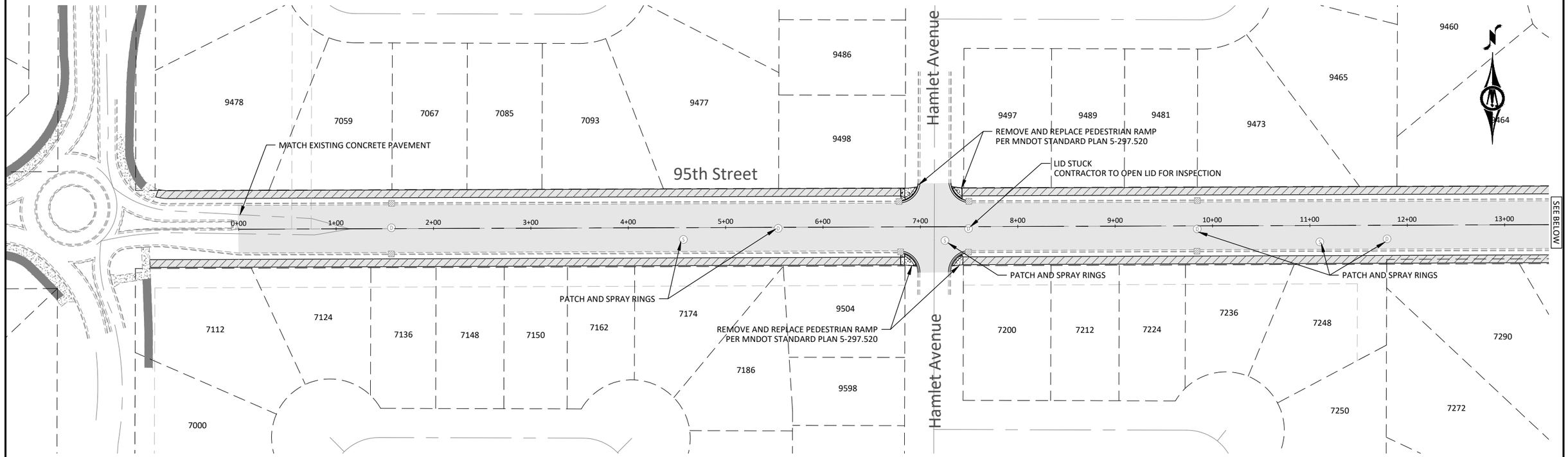
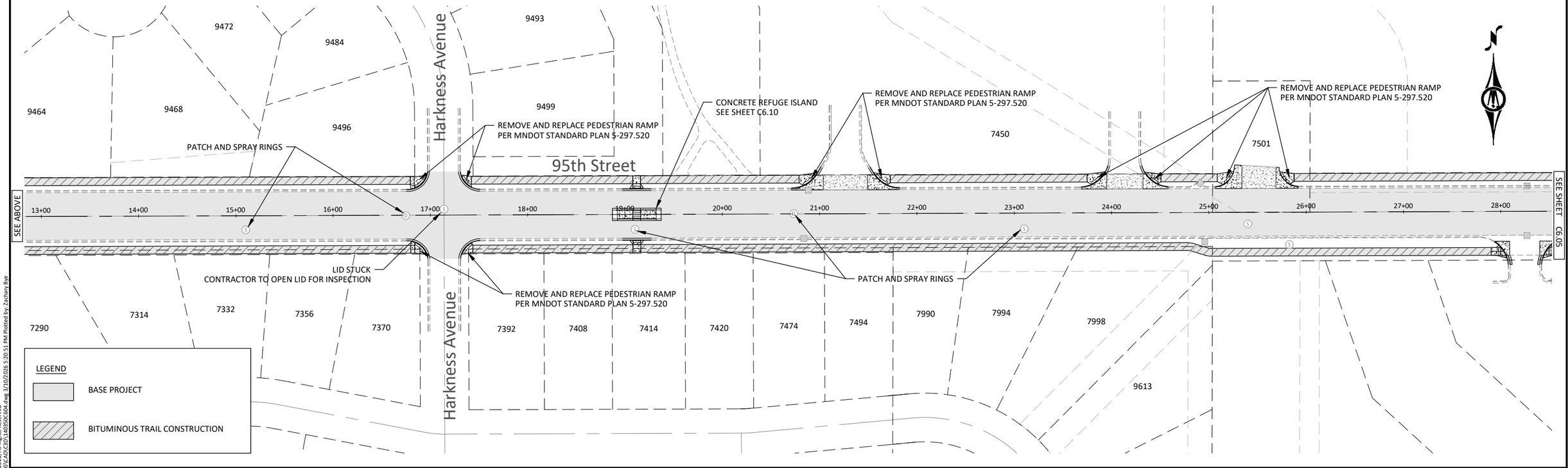
COTTAGE GROVE, MINNESOTA
2026 MILL AND OVERLAY
STREET IMPROVEMENTS - NINA'S PARK TRAIL

SHEET C6.03





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HORZ. SCALE 0 50 100 FEET

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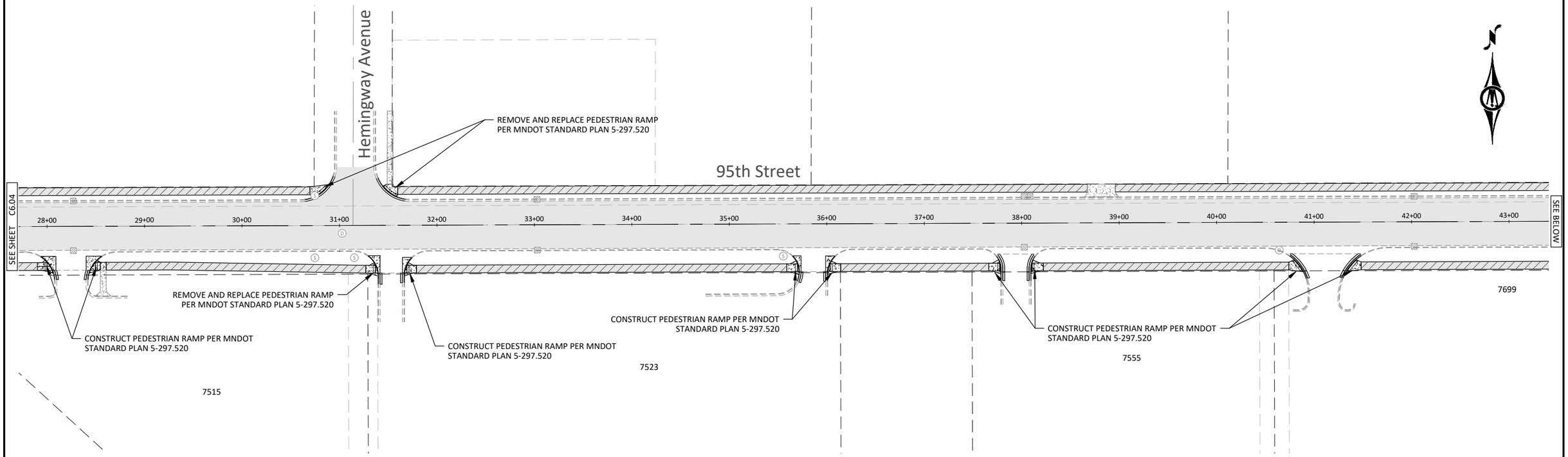
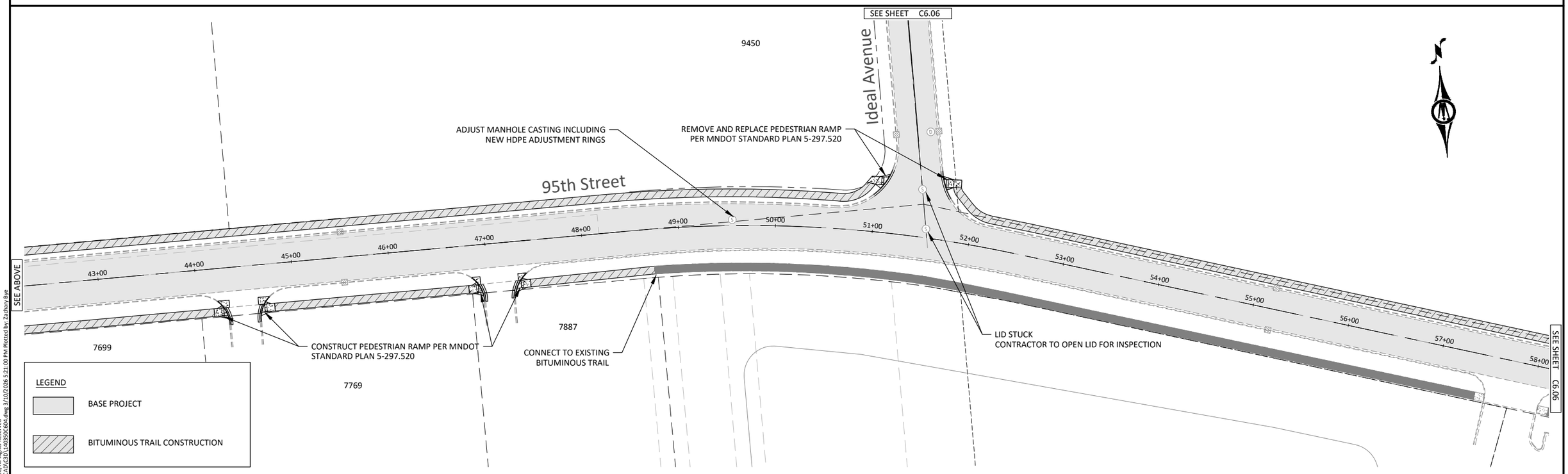
COTTAGE GROVE, MINNESOTA
2026 MILL AND OVERLAY
STREET IMPROVEMENTS - 95TH STREET

SHEET C6.04





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HORZ. SCALE 0 50 100 FEET

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COTTAGE GROVE, MINNESOTA
2026 MILL AND OVERLAY
STREET IMPROVEMENTS - 95TH STREET

SHEET C6.05

SEE SHEET C6.07

SEE SHEET C6.05

9480

95th Street

58+00 59+00 60+00 61+00 62+00 63+00 64+00 65+00 66+00 67+00

Jamaica Avenue

CONNECT TO EXISTING RAMP

8301

SEE SHEET C6.05

9450

50+00 51+00 52+00 53+00 54+00

Ideal Avenue

ADJUST MANHOLE CASTING INCLUDING NEW HDPE ADJUSTMENT RINGS

ALTERNATE 2: SPRAY LINE STORM STRUCTURE - 108" DIA (9 LF BUILD)
ADJUST MANHOLE CASTING INCLUDING NEW HDPE ADJUSTMENT RINGS

ALTERNATE 2: SPRAY LINE STORM STRUCTURE - 108" DIA (10 LF BUILD)
ADJUST MANHOLE CASTING INCLUDING NEW HDPE ADJUSTMENT RINGS

9480

ALTERNATE 2: SPRAY LINE STORM STRUCTURE - 108" DIA (9 LF BUILD)
ADJUST MANHOLE CASTING INCLUDING NEW HDPE ADJUSTMENT RINGS

SEE SHEET C6.05

LEGEND

- BASE PROJECT
- BITUMINOUS TRAIL CONSTRUCTION
- ALTERNATE 1 BITUMINOUS TRAIL CONSTRUCTION

HORZ. 0 50 100
SCALE FEET

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COTTAGE GROVE, MINNESOTA
2026 MILL AND OVERLAY
STREET IMPROVEMENTS - 95TH STREET

SHEET C6.06

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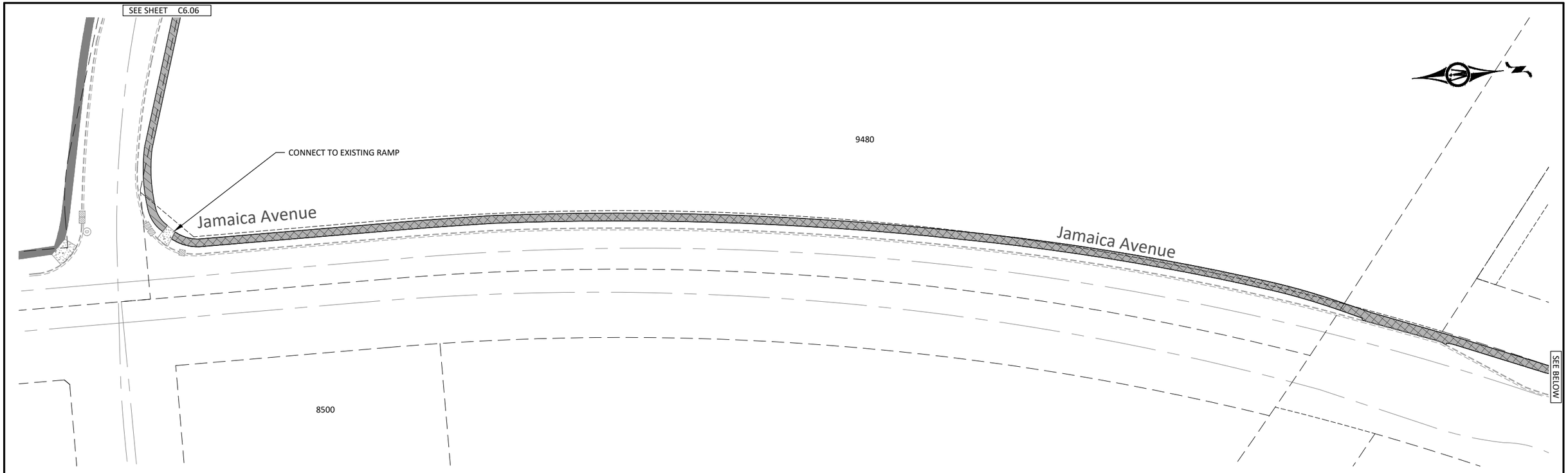

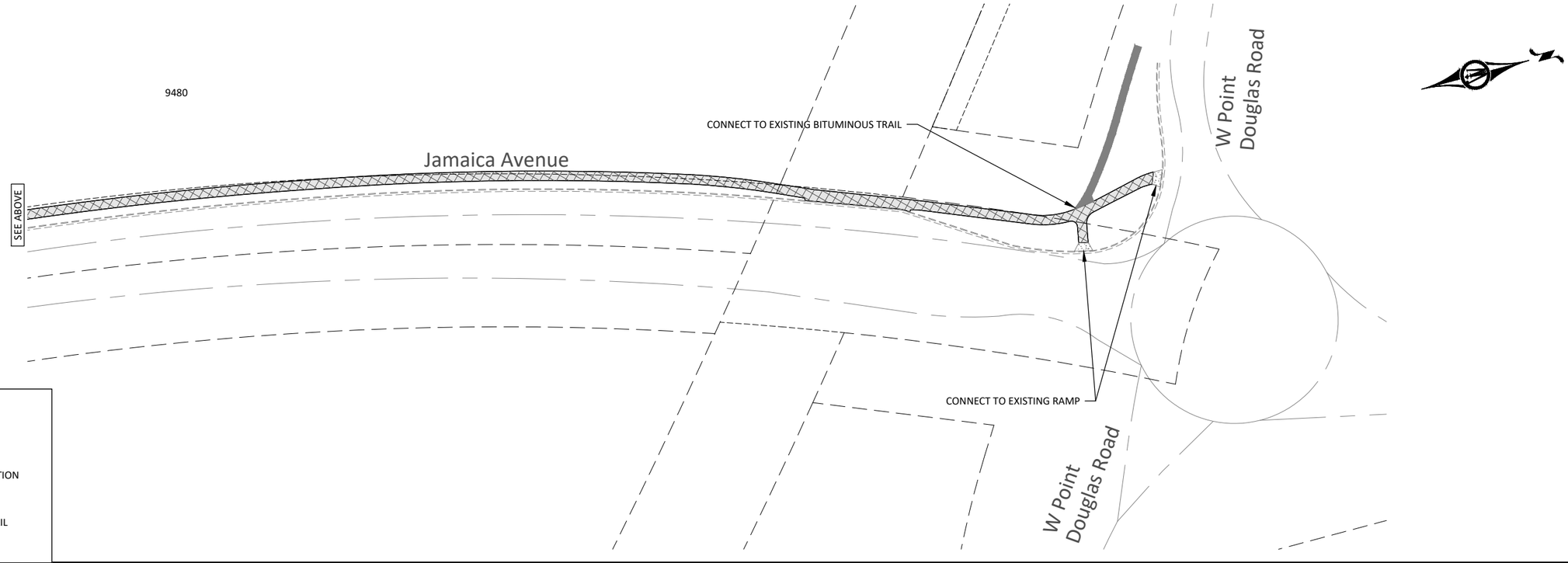

LEGEND

- BASE PROJECT
- BITUMINOUS TRAIL CONSTRUCTION
- ALTERNATE 1 BITUMINOUS TRAIL CONSTRUCTION

HORZ. 0 50 100
SCALE FEET

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COTTAGE GROVE, MINNESOTA
2026 MILL AND OVERLAY
STREET IMPROVEMENTS - 95TH STREET ALTERNATE

SHEET C6.07

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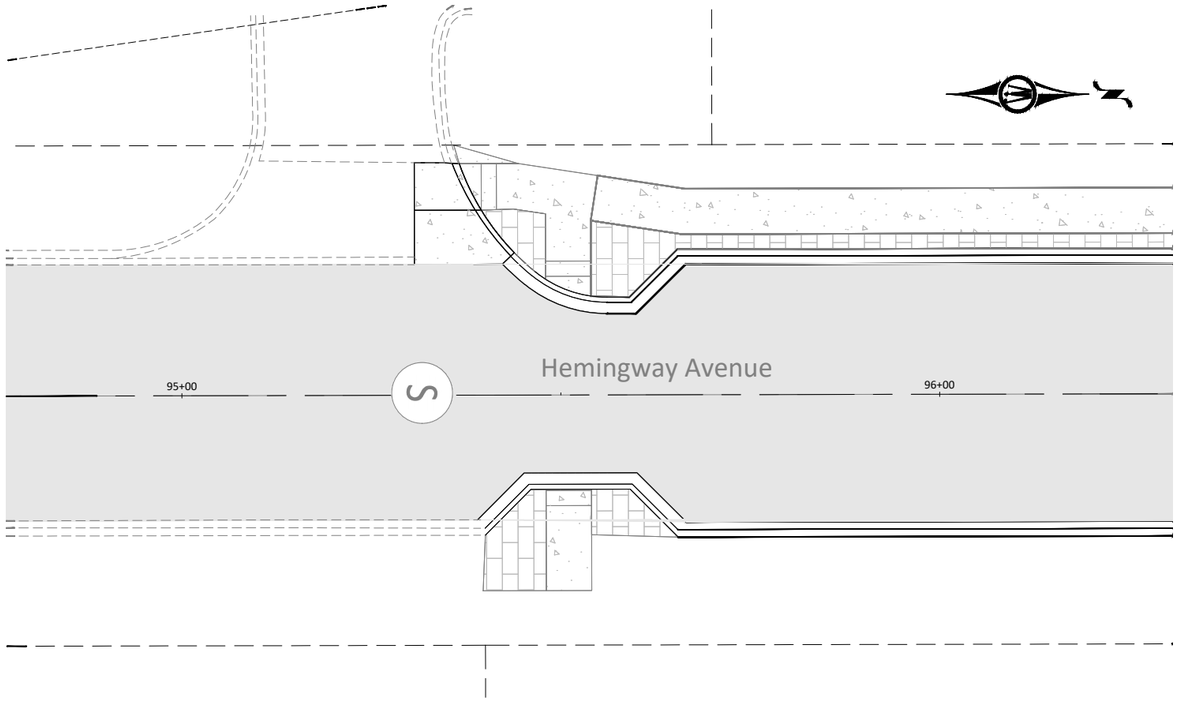

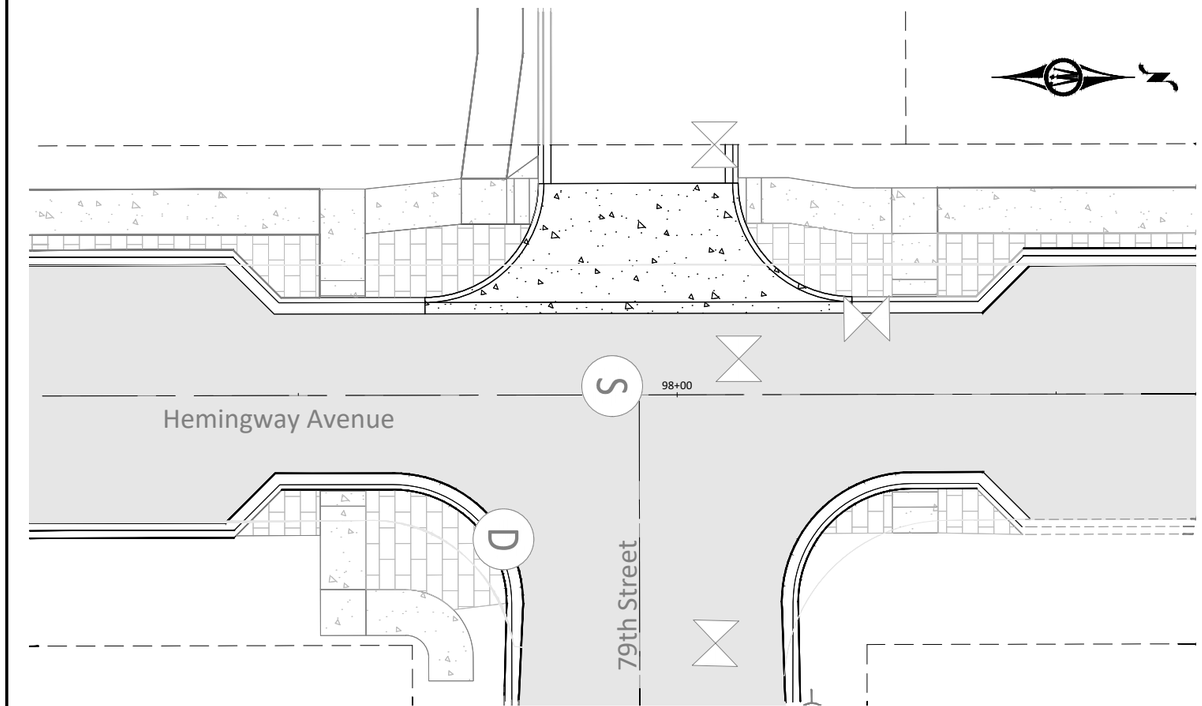

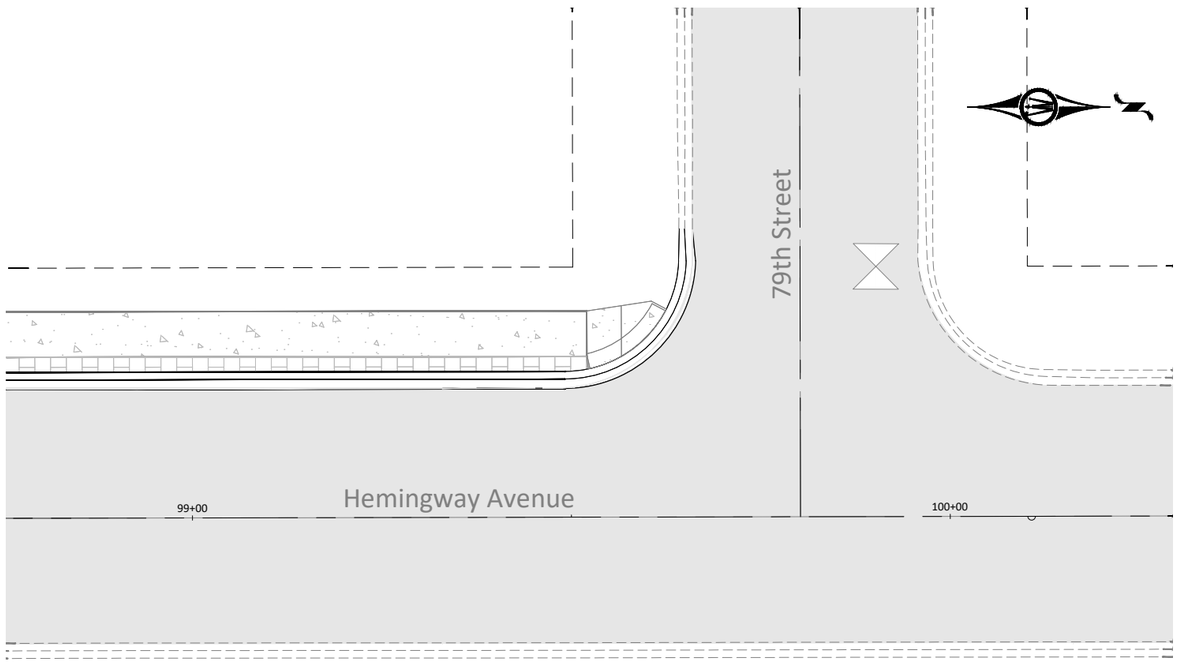

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HORZ. SCALE 0 10 20 FEET

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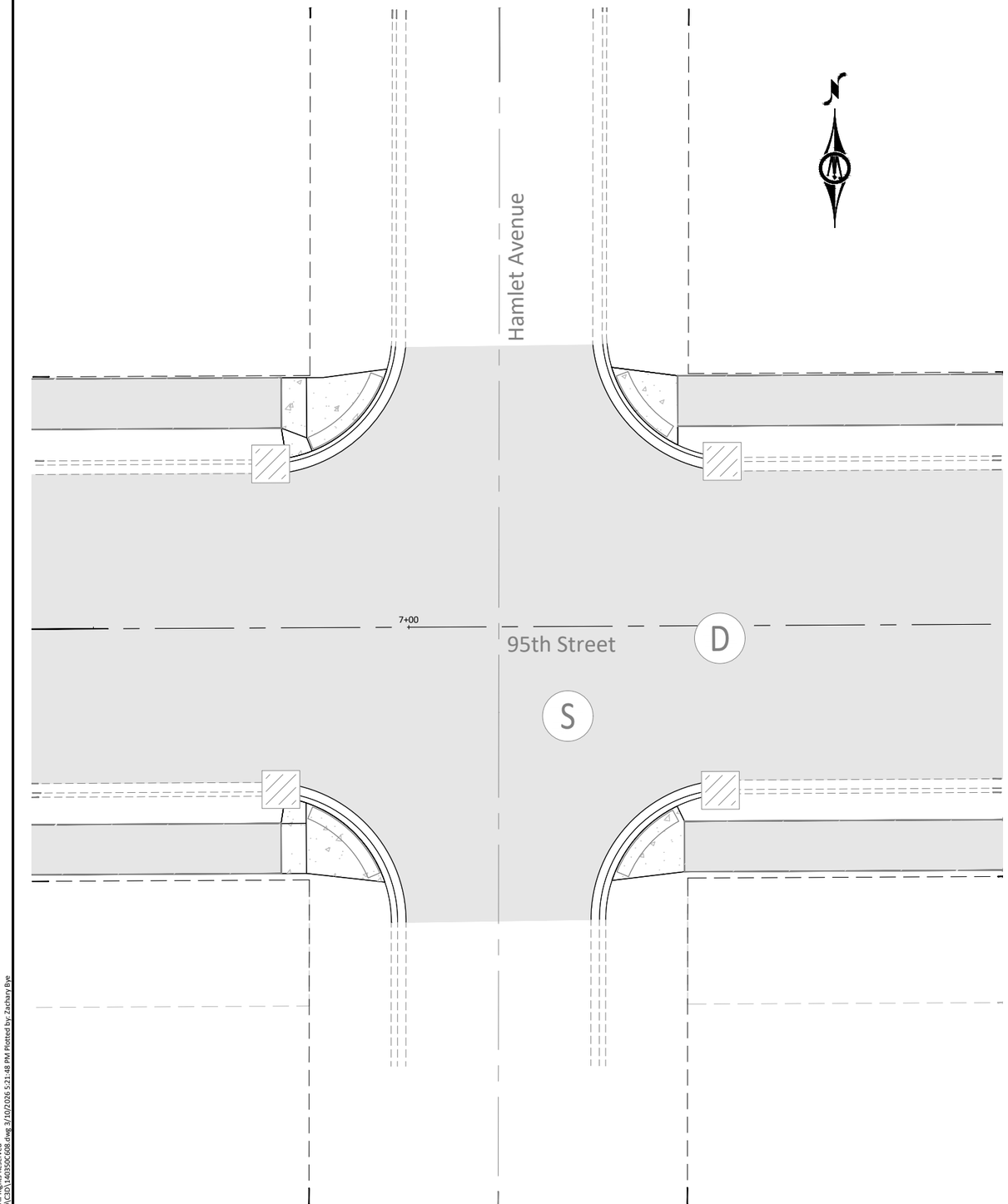
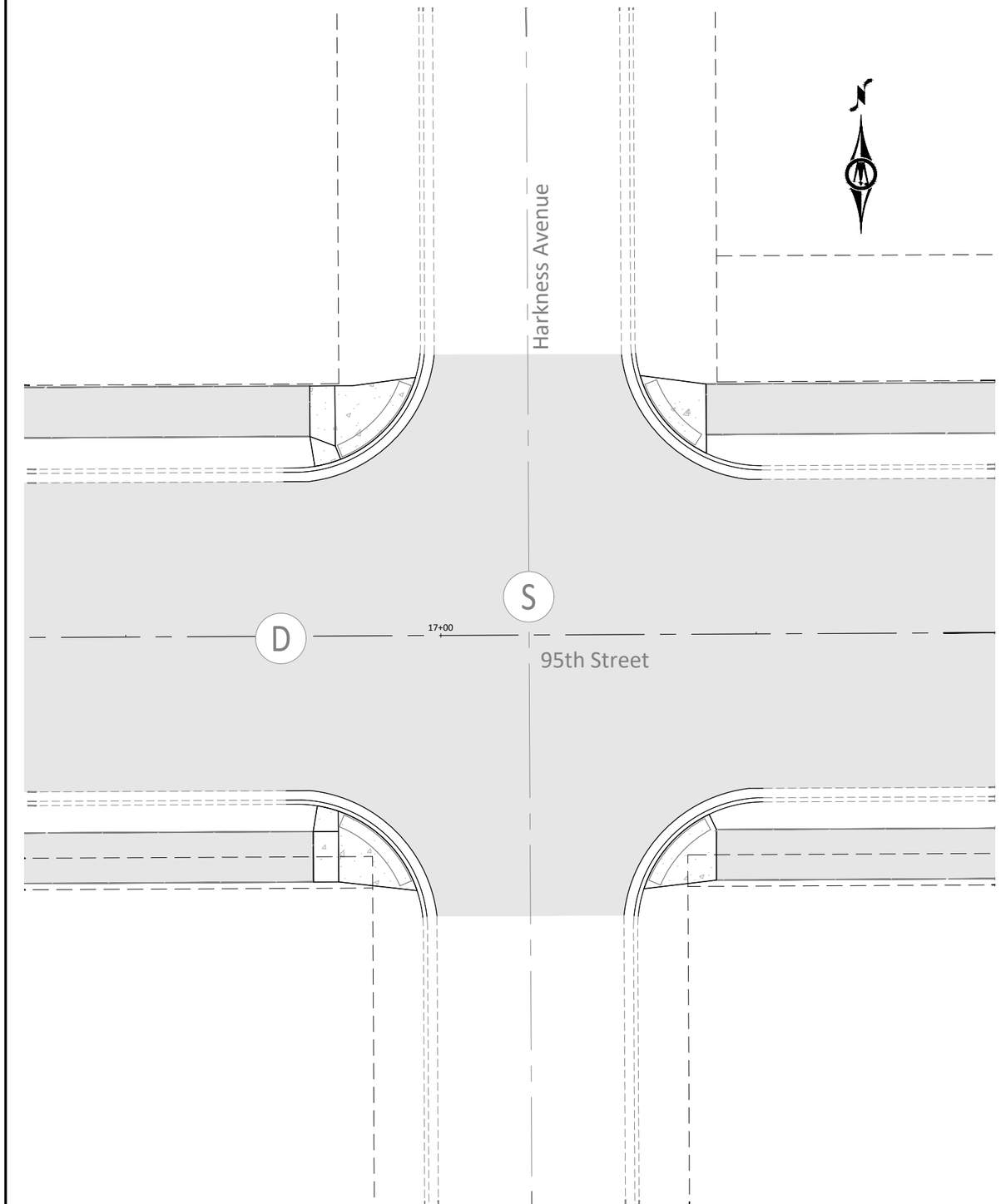
COTTAGE GROVE, MINNESOTA
2026 MILL AND OVERLAY
INTERSETCION DETAILS - HEMINGWAY NEIGHBORHOOD

SHEET C6.08





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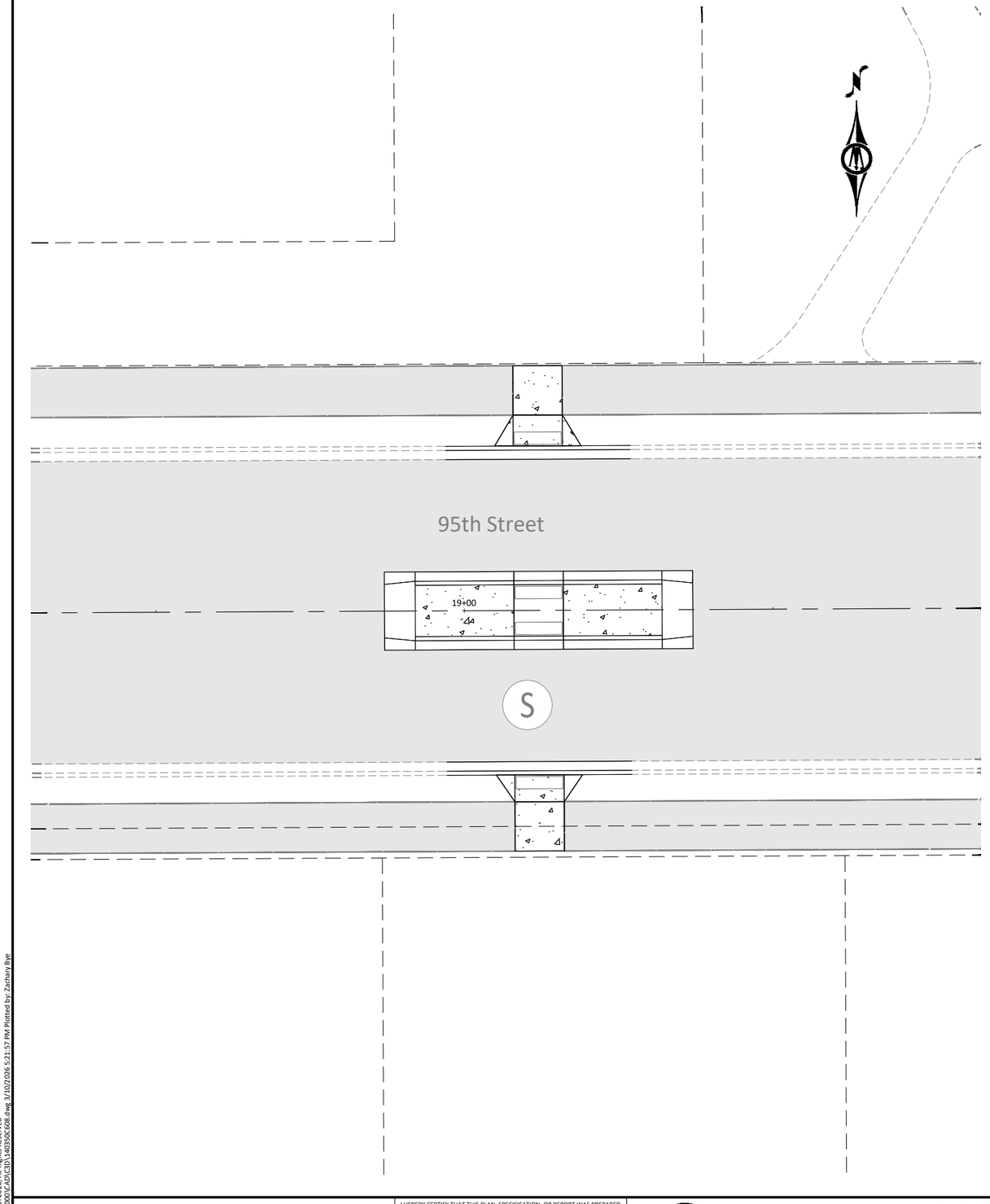
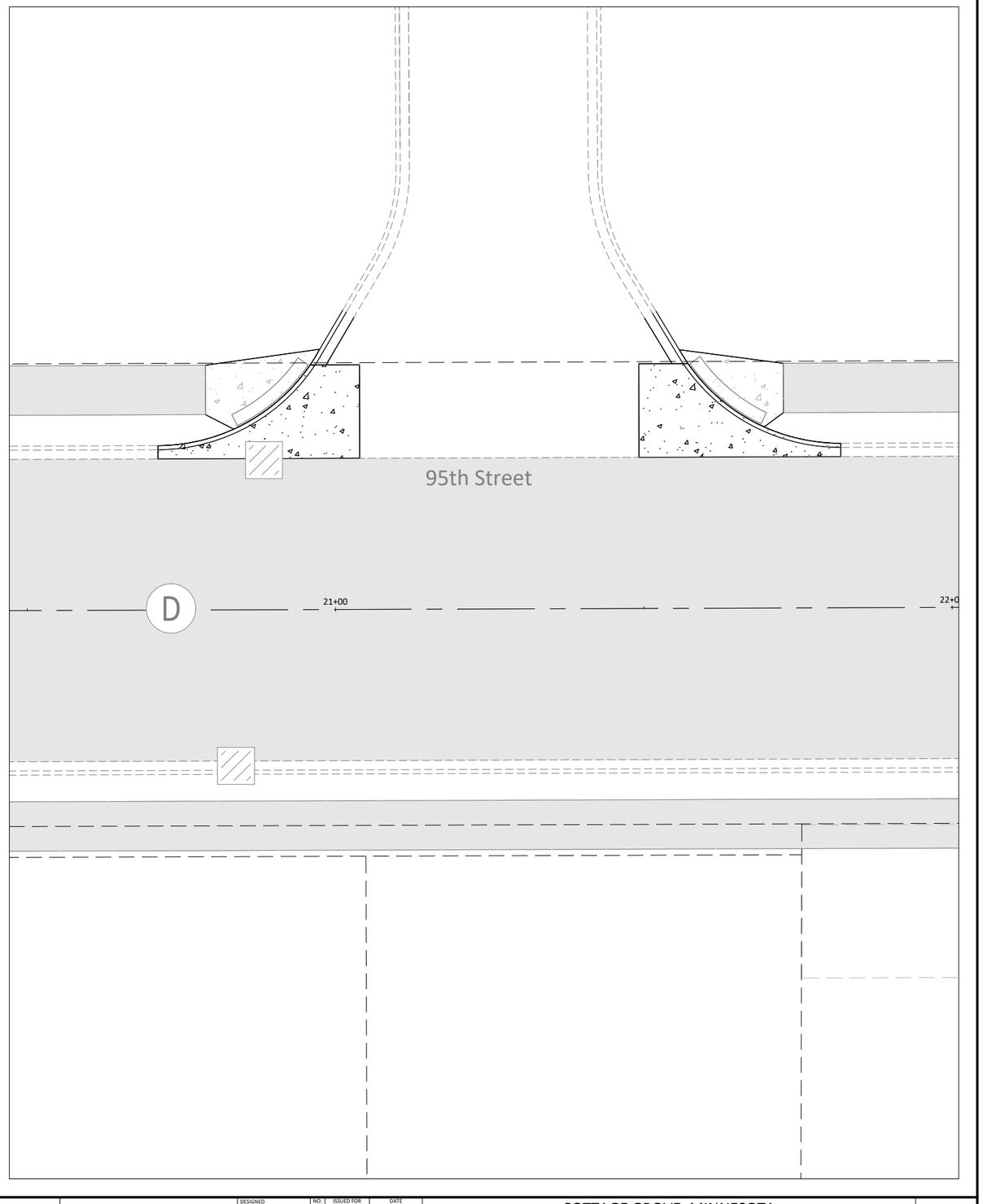
COTTAGE GROVE, MINNESOTA
2026 MILL AND OVERLAY
INTERSETCION DETAILS - 95TH STREET

SHEET
C6.09





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2026 MILL AND OVERLAY
INTERSETCION DETAILS - 95TH STREET

SHEET
C6.10

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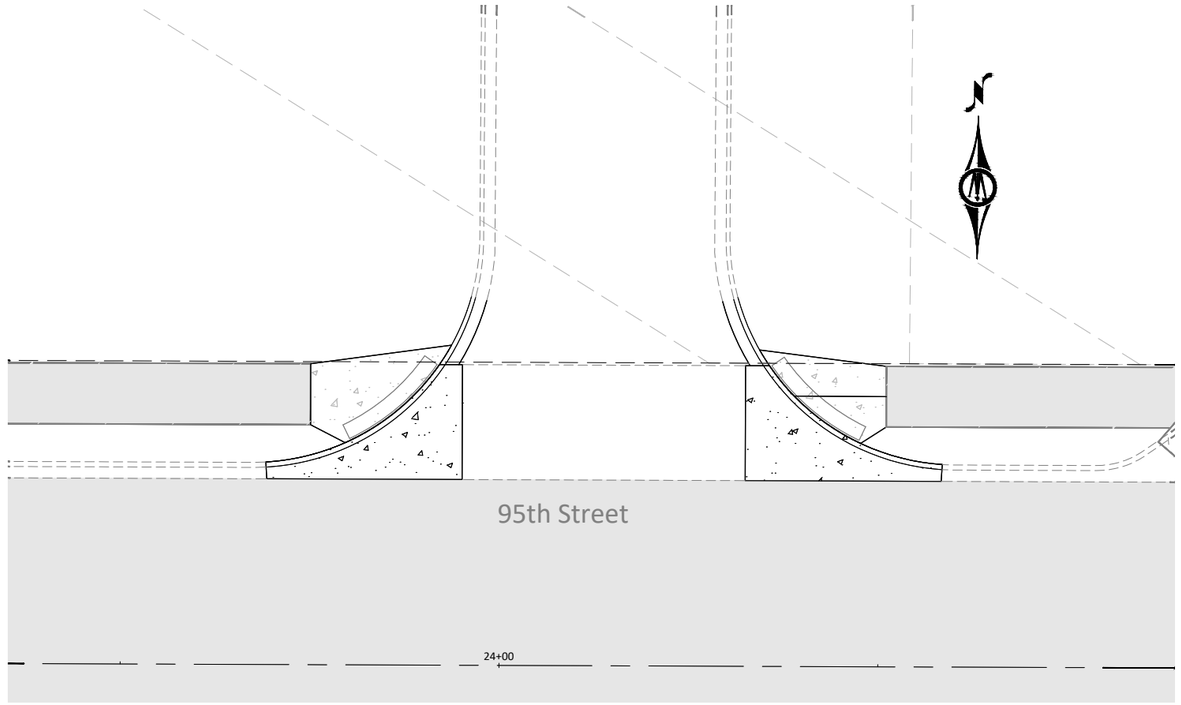

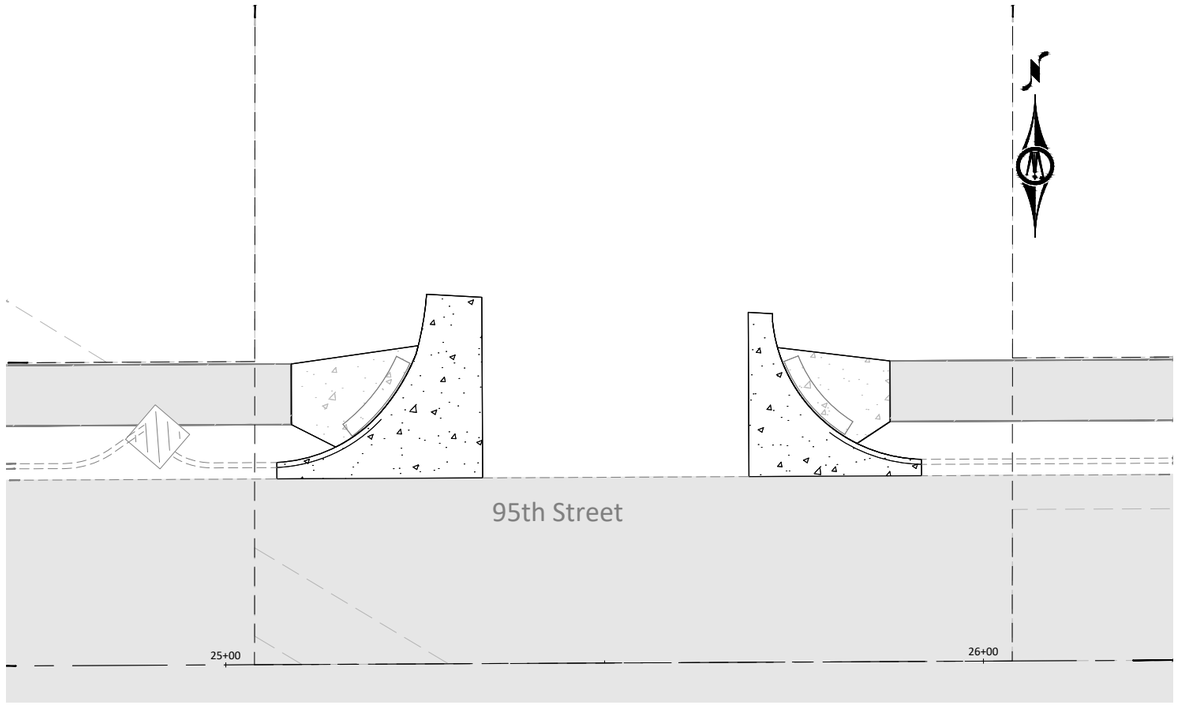

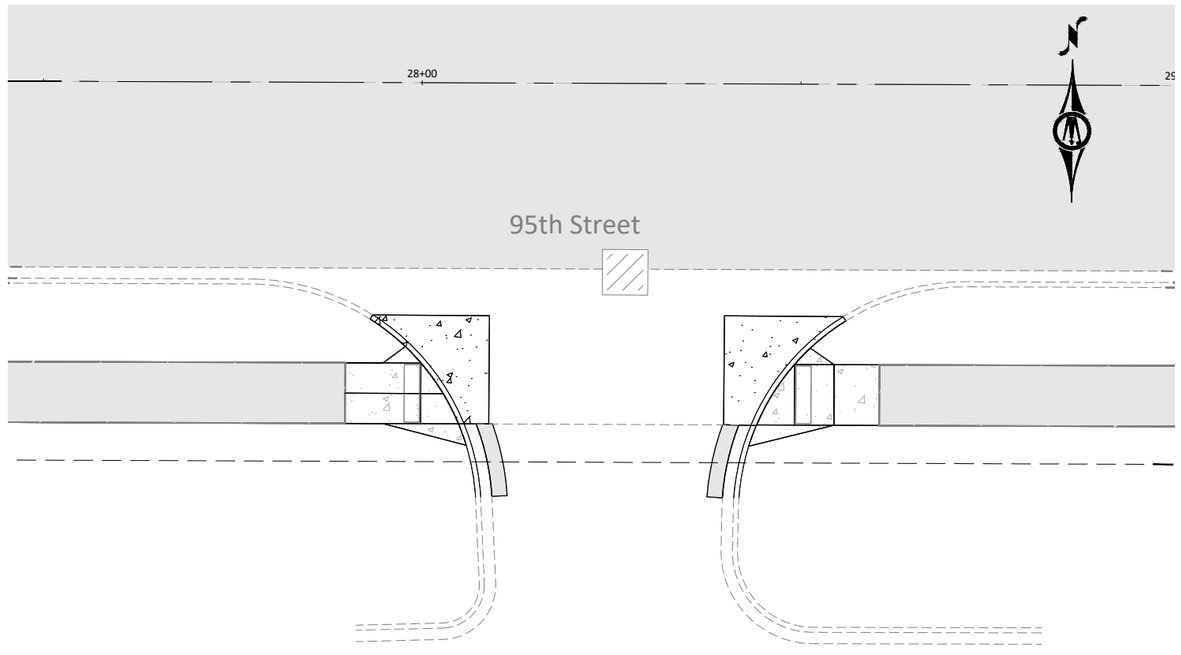

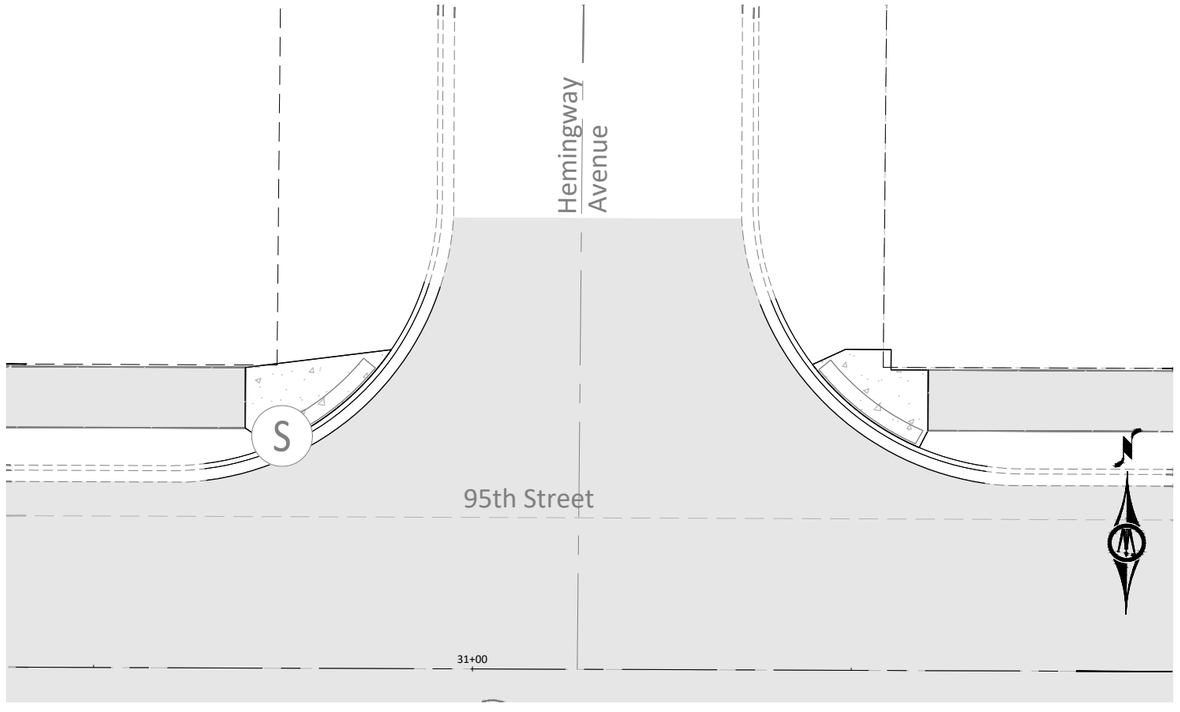

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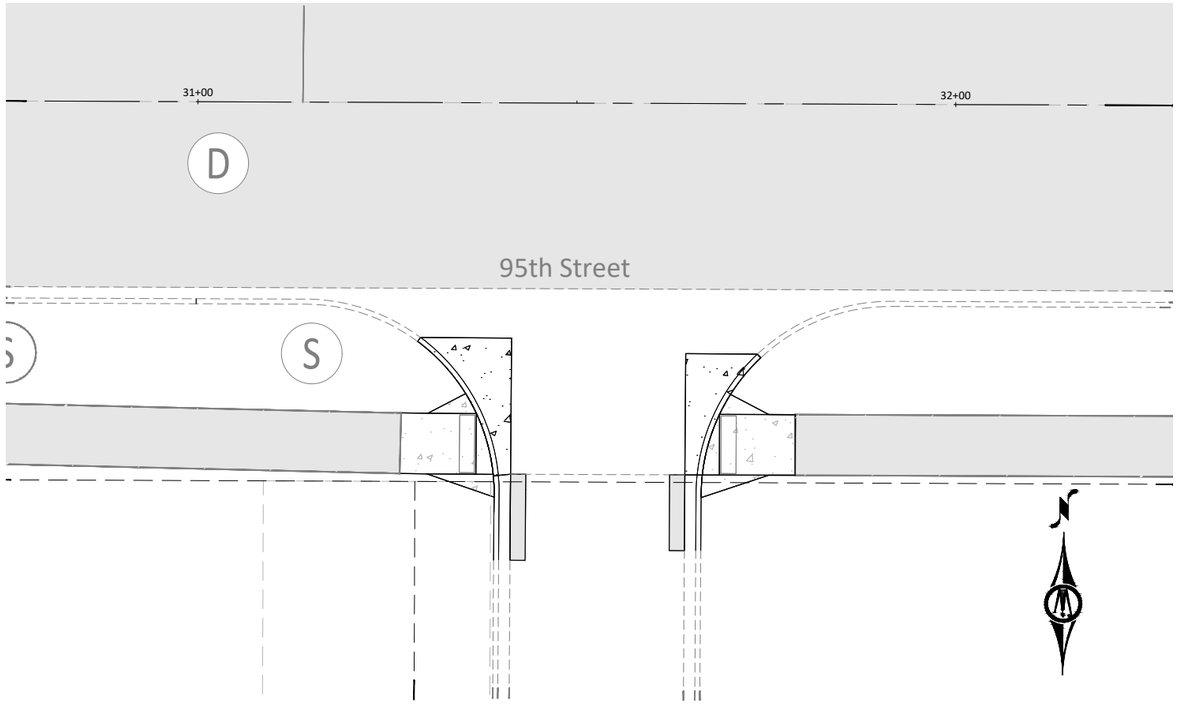
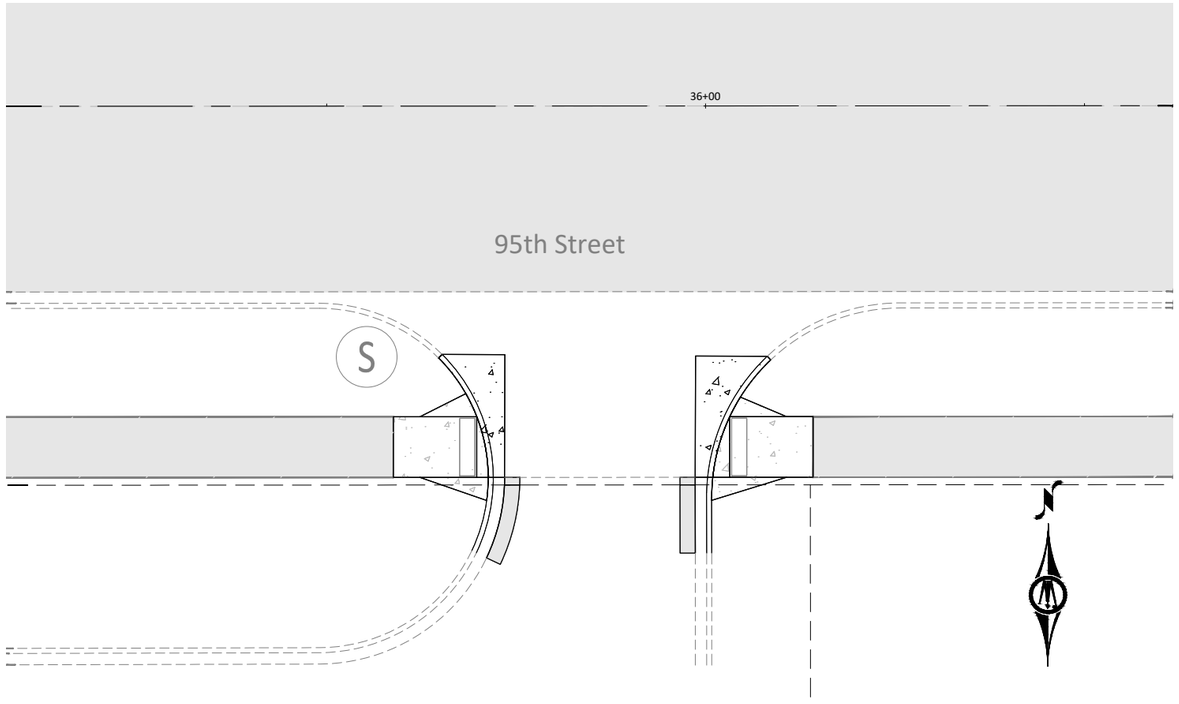
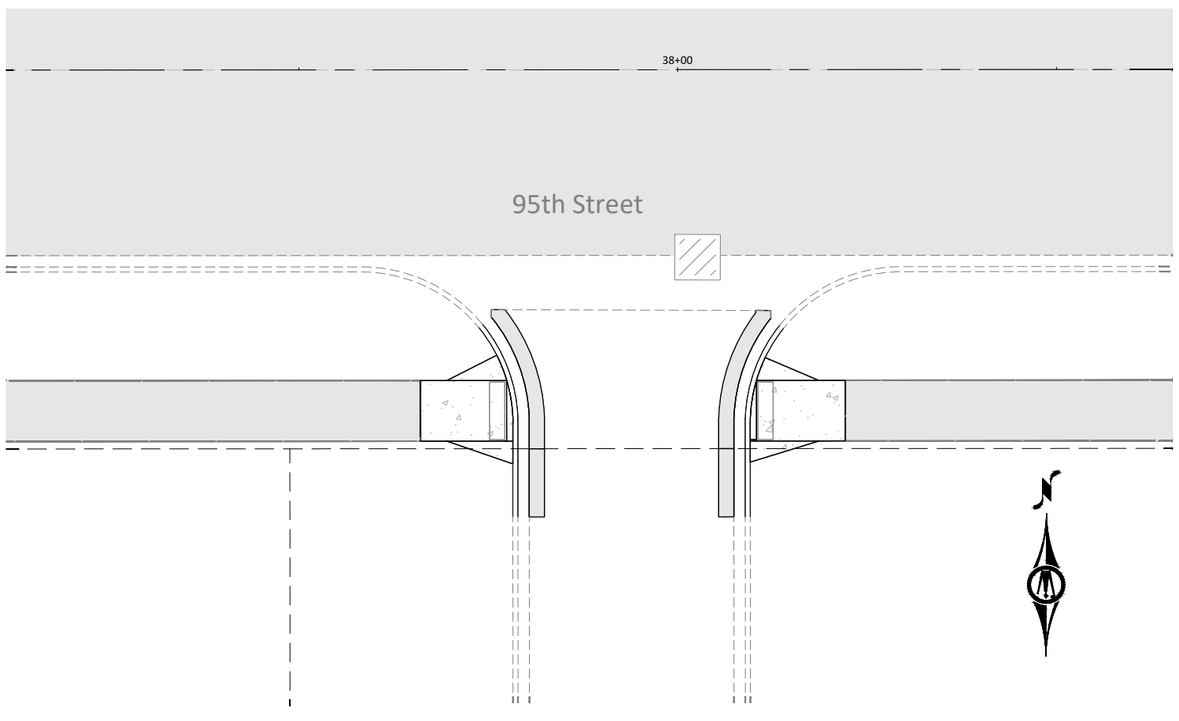
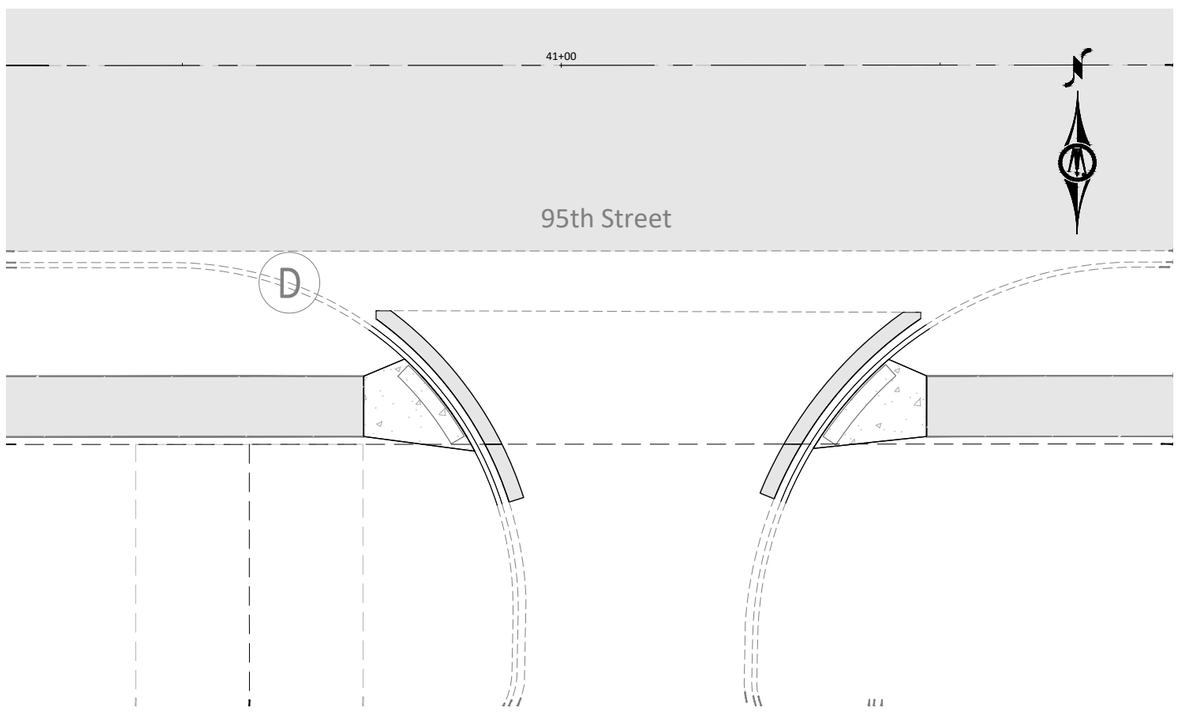
COTTAGE GROVE, MINNESOTA
2026 MILL AND OVERLAY
INTERSETCION DETAILS - 95TH STREET

SHEET
C6.11









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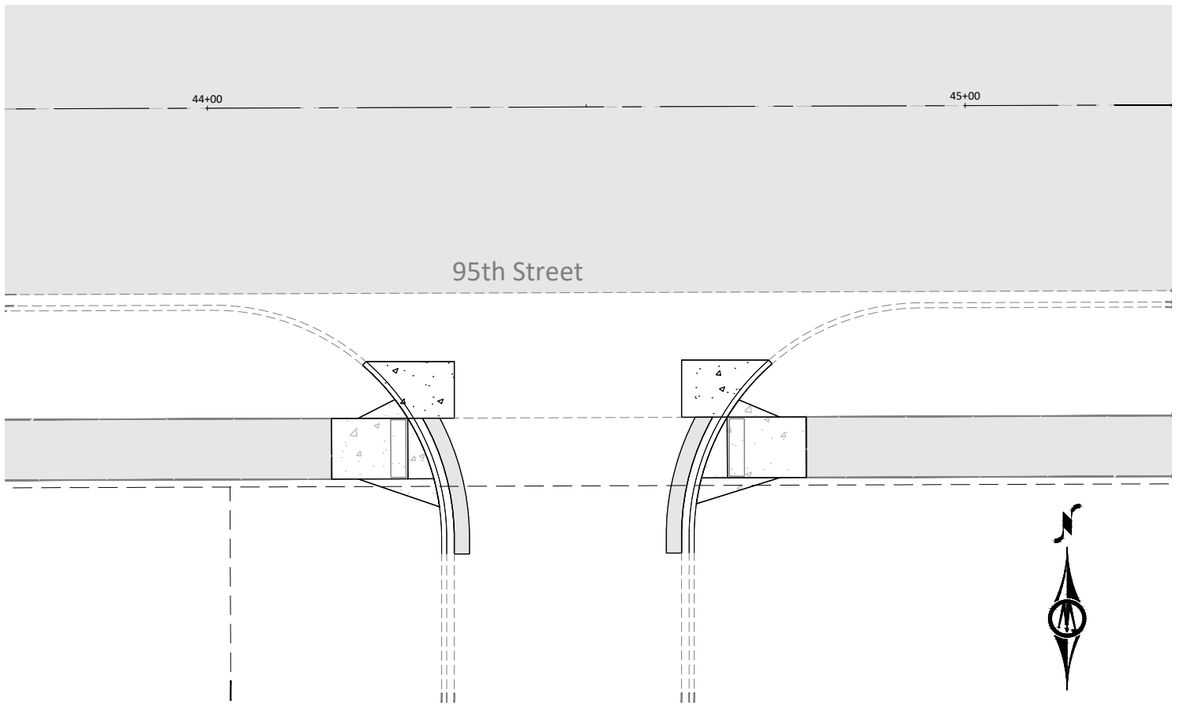
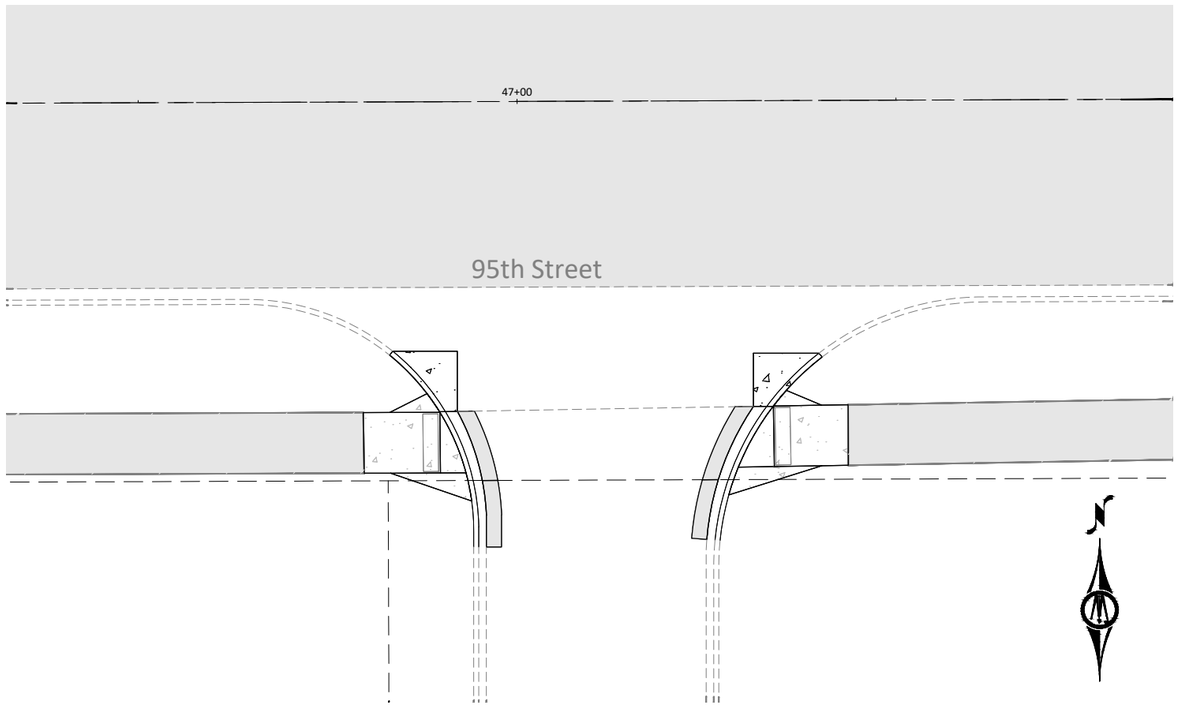
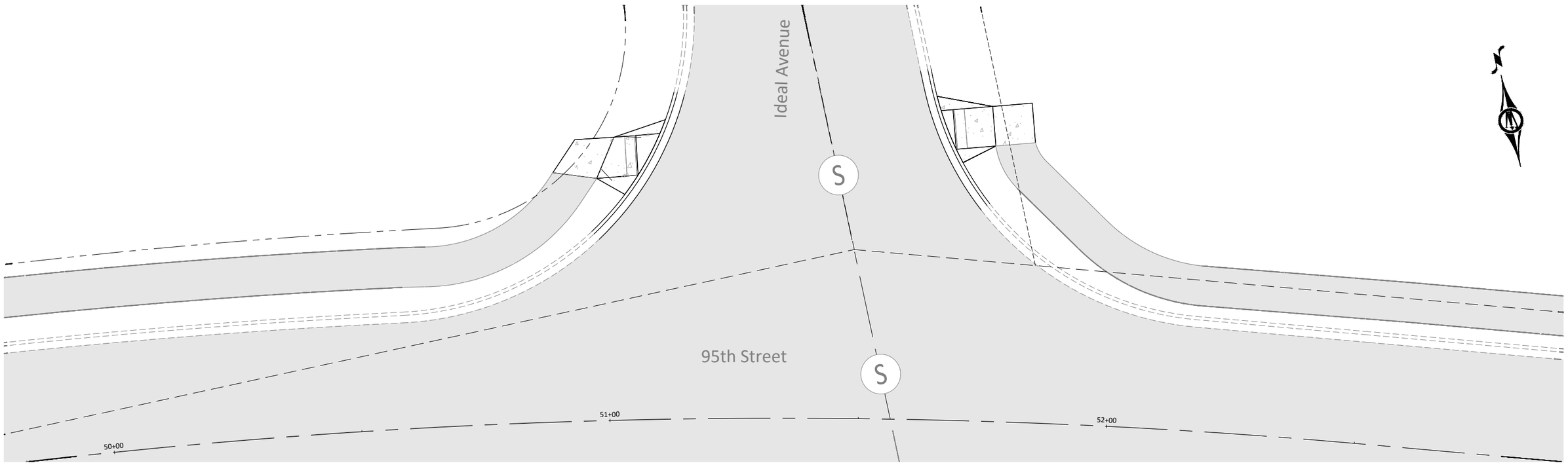
COTTAGE GROVE, MINNESOTA
2026 MILL AND OVERLAY
INTERSETCION DETAILS - 95TH STREET

SHEET
C6.12







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HORZ. SCALE 0 10 20 FEET

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INTERSETCION DETAILS - 95TH STREET

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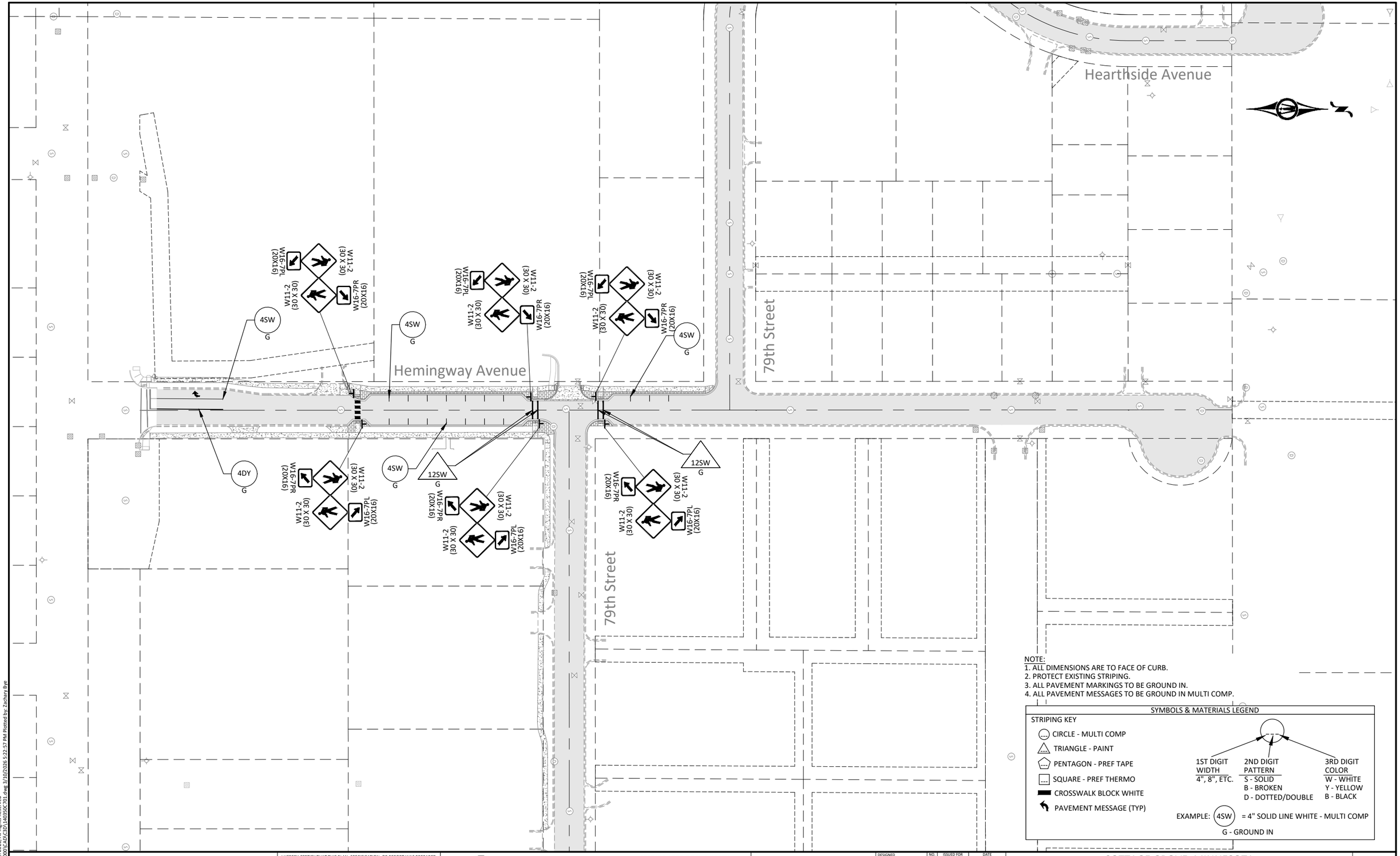

NOTE:
1. ALL DIMENSIONS ARE TO FACE OF CURB.
2. PROTECT EXISTING STRIPING.
3. ALL PAVEMENT MARKINGS TO BE GROUND IN.
4. ALL PAVEMENT MESSAGES TO BE GROUND IN MULTI COMP.

SYMBOLS & MATERIALS LEGEND

STRIPING KEY

- CIRCLE - MULTI COMP
- TRIANGLE - PAINT
- PENTAGON - PREF TAPE
- SQUARE - PREF THERMO
- CROSSWALK BLOCK WHITE
- PAVEMENT MESSAGE (TYP)

1ST DIGIT WIDTH	2ND DIGIT PATTERN	3RD DIGIT COLOR
4", 8", ETC.	S - SOLID	W - WHITE
	B - BROKEN	Y - YELLOW
	D - DOTTED/DOUBLE	B - BLACK

EXAMPLE: 4SW = 4" SOLID LINE WHITE - MULTI COMP
G - GROUND IN

HORZ. SCALE 0 50 100 FEET

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
ANDREW N OLSON
LIC. NO. 59327 DATE 03/10/2026

BOLTON & MENK
3507 HIGH POINT DRIVE NORTH
BLDG. 1 - SUITE E130
OAKDALE, MN 55128
Phone: (651) 704-9970
Email: Oakdale@bolton-menk.com
www.bolton-menk.com

Cottage Grove
Where Pride and Prosperity Meet

DESIGNED	ZDB
DRAWN	KJB
CHECKED	ANO
CLIENT PROJ. NO.	140350

NO.	ISSUED FOR	DATE

COTTAGE GROVE, MINNESOTA
2026 MILL AND OVERLAY
STRIPING AND SIGNING

SHEET C7.01

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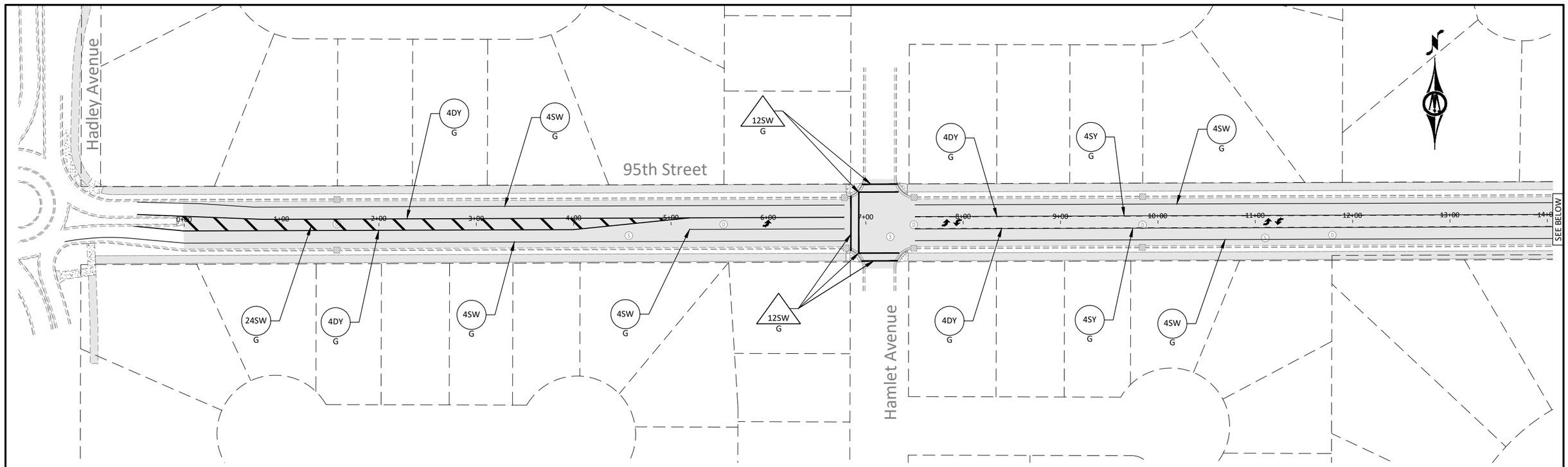
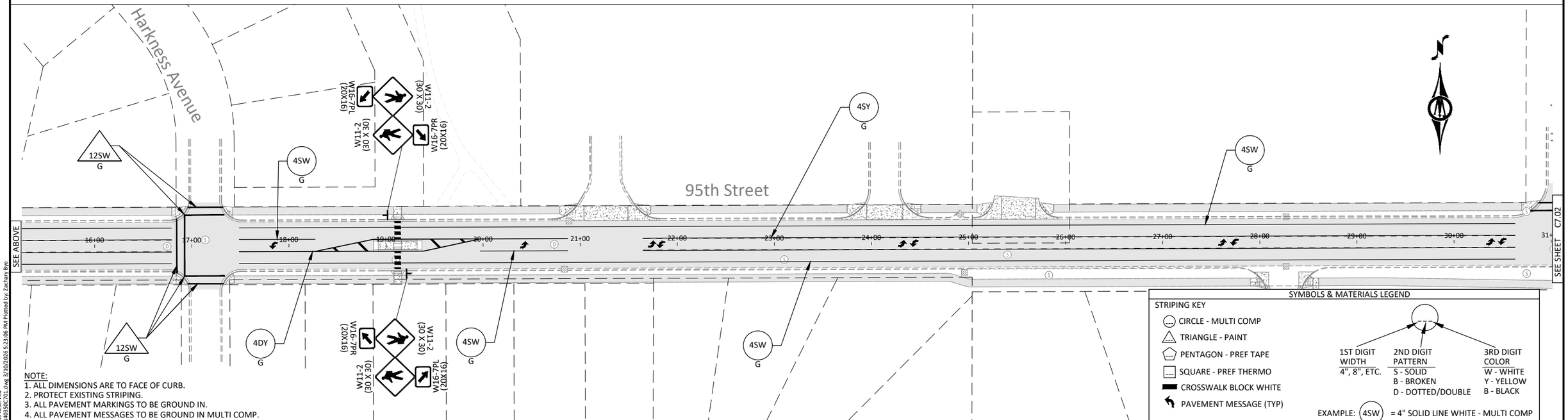


95TH STREET



NOTE:
1. ALL DIMENSIONS ARE TO FACE OF CURB.
2. PROTECT EXISTING STRIPING.
3. ALL PAVEMENT MARKINGS TO BE GROUND IN.
4. ALL PAVEMENT MESSAGES TO BE GROUND IN MULTI COMP.

SYMBOLS & MATERIALS LEGEND

STRIPING KEY

- CIRCLE - MULTI COMP
- TRIANGLE - PAINT
- PENTAGON - PREF TAPE
- SQUARE - PREF THERMO
- CROSSWALK BLOCK WHITE
- PAVEMENT MESSAGE (TYP)

1ST DIGIT WIDTH	2ND DIGIT PATTERN	3RD DIGIT COLOR
4", 8", ETC.	S - SOLID	W - WHITE
	B - BROKEN	Y - YELLOW
	D - DOTTED/DOUBLE	B - BLACK

EXAMPLE: 4SW = 4" SOLID LINE WHITE - MULTI COMP

G - GROUND IN

HORZ. SCALE 0 50 100 FEET

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ANDREW N OLSON
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2026 MILL AND OVERLAY
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SHEET C7.02

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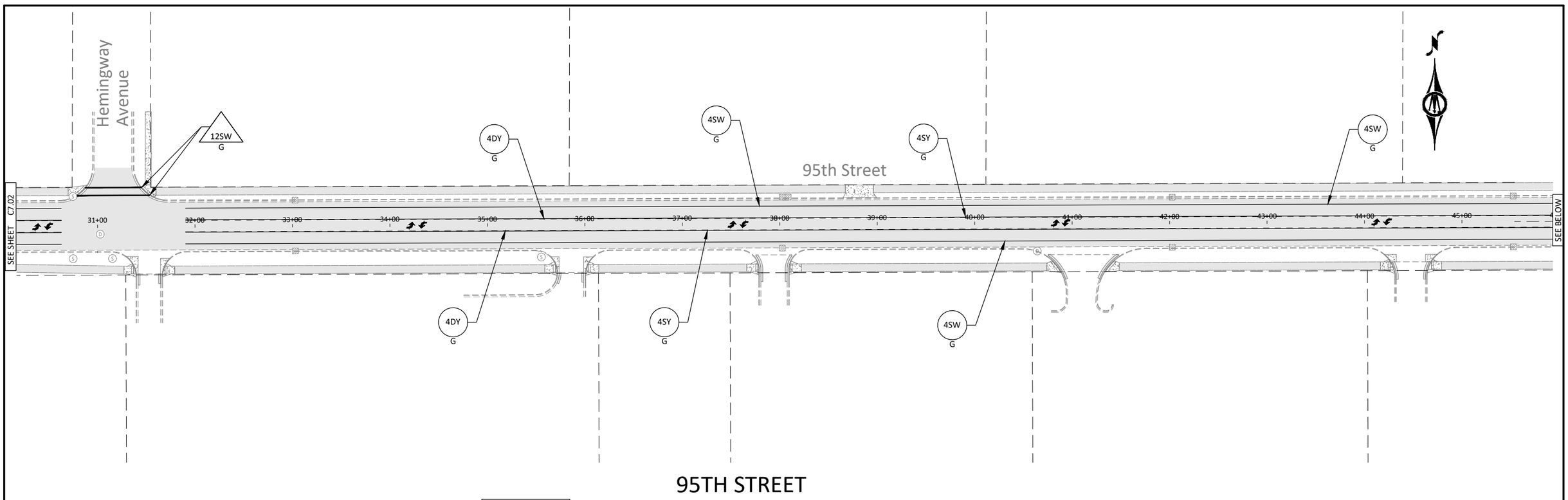
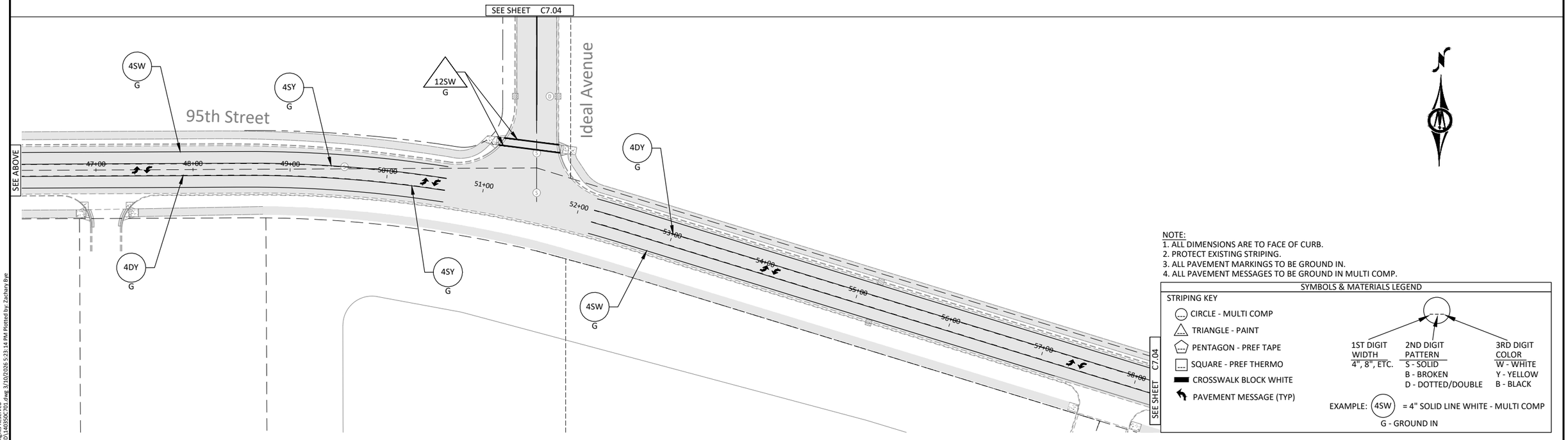


95TH STREET



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SYMBOLS & MATERIALS LEGEND

STRIPING KEY

- CIRCLE - MULTI COMP
- TRIANGLE - PAINT
- PENTAGON - PREF TAPE
- SQUARE - PREF THERMO
- CROSSWALK BLOCK WHITE
- PAVEMENT MESSAGE (TYP)

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4", 8", ETC.	S - SOLID	W - WHITE
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EXAMPLE: 4SW = 4" SOLID LINE WHITE - MULTI COMP

G - GROUND IN

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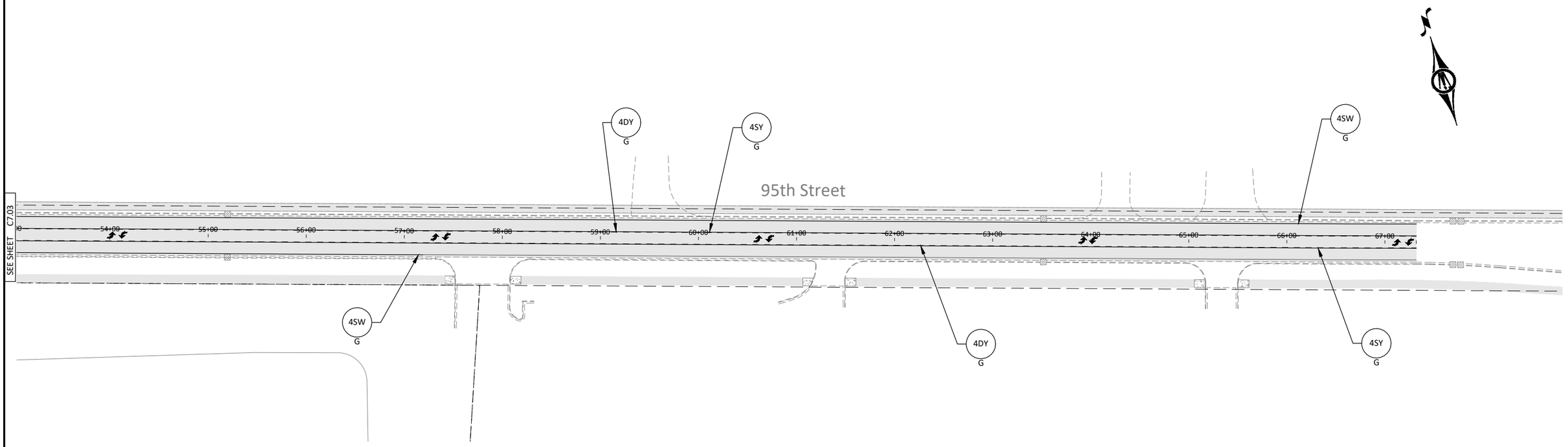
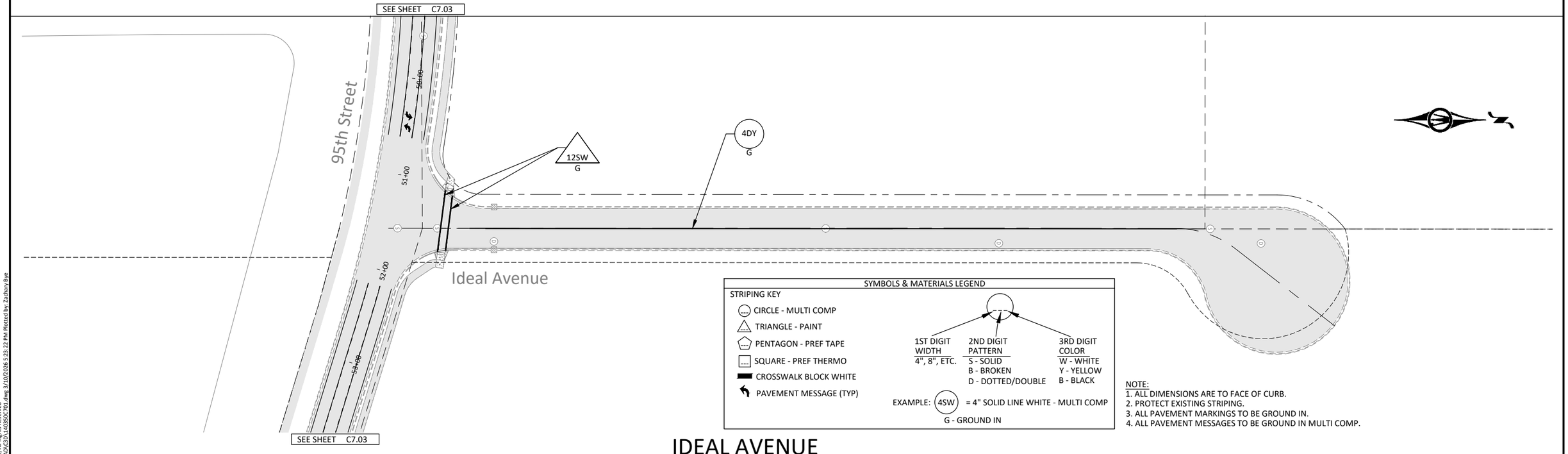
SHEET C7.03



95TH STREET



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IDEAL AVENUE

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2026 MILL AND OVERLAY
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SHEET C7.04

City Council Action Request

7.V.

Meeting Date	3/18/2026
Department	Engineering
Agenda Category	Action Item
Title	MnDOT/City/County Agreement - 80th Street Reconstruction Project
Staff Recommendation	Adopt Resolution 2026-039 approving the State of Minnesota Department of Transportation, Washington County and City of Cottage Grove Cooperative Construction Agreement for the Trunk Highway 61 at 80th Street project.
Budget Implication	City cost share of $46,551.67 for MNDOT project that is included in the 80th Street project.

Attachments

1.	TH 61-80th Street MNDOT Agreement Memo
2.	Resolution - Authorization of MnDOT Agreement No. 1061897 (Cottage Grove)
3.	1061897 AGR COTTAGE GROVE AND WASHINGTON COUNTY - FINAL

To: Honorable Mayor and City Council
Jennifer Levitt, City Administrator

From: Paul Sponholz, PE, City Engineer

Date: March 4, 2026

Re: State of Minnesota Department of Transportation and City of Cottage Grove and Washington County Cooperative Construction Agreement for TH 61 at 80th Street project

---

Background

Included in the Capital Improvement Plan for 2026 is the rehabilitation of 80th Street from Highway 61 to Ideal Avenue and East Point Douglas Road from 80th Street to the T-intersection near Arby's. The Minnesota Department of Transportation (MnDOT) is also incorporating work to reconstruct the entrance and exit ramps, replace the signals, and make improvements of the bridges at the interchange of Trunk Highway 61 and 80th Street into the project. The City Council approved plans and specifications and authorized bidding for the project on January 7, 2026.

Discussion

MnDOT requires that a resolution be adopted and an agreement be executed prior to construction for joint projects. MnDOT prepared the agreement entitled "State of Minnesota Department of Transportation and City of Cottage Grove and Washington County Cooperative Construction Agreement," which is attached. This agreement for the MnDOT portion of the project stipulates that the city will construct the project and that the State, City and County will share the cost. The agreement also provides for the maintenance and operation of the signal systems, lighting and sidewalks at the interchange.

The MnDOT portion of the project costs are estimated at $4,261,677.43 which will be reimbursed to the City as work is certified completed and as the City pays the contractor. The agreement discusses MnDOT supplied materials for the traffic signals with the city share amounting to $46,551.67, which will be deducted from the cost that MnDOT is reimbursing the city for their project. The agreement is also with the County covering County costs of the MnDOT supplied materials and construction engineering and the County contribution of $50,275.80.

Washington County will have other cost participation with the project, but that participation will be covered under a separate City and County Agreement to be considered by the City Council at an upcoming Council Meeting.

Recommendation

Staff recommends that the City Council adopt Resolution 2026-039 approving the State of Minnesota Department of Transportation, Washington County and City of Cottage Grove Cooperative Construction Agreement for the Trunk Highway 61 at 80th Street project.

CITY OF COTTAGE GROVE, MINNESOTA
CITY COUNCIL
RESOLUTION 2026-039

RESOLUTION APPROVING STATE OF MINNESOTA, DEPARTMENT OF TRANSPORTATION AGREEMENT NO. 1061897 AND AUTHORIZING ITS EXECUTION

WHEREAS, the City of Cottage Grove will perform grading, bituminous and concrete surfacing, reclamation, ADA improvements, signals, TMS, lighting, and Bridge No. 82019 and No. 82020 construction and other associated construction upon, along, and adjacent to Trunk Highway No. 61 at 80th Street ("Project") as part of State Project No. SP 8205-159; and

WHEREAS, the City of Cottage Grove requests the State of Minnesota participate in the costs associated with the Project; and

WHEREAS, the State of Minnesota is willing to participate in the costs of said construction and associated construction engineering for the Project.

NOW, THEREFORE, BE IT RESOLVED, by the City Council of the City of Cottage Grove, County of Washington, State of Minnesota:

1. Authorization to enter into MnDOT Agreement No. 1061897 to provide for payment by the State to the City of the State's share of the costs of the grading, bituminous and concrete surfacing, reclamation, ADA improvements, signals, TMS, lighting, and Bridge No. 82019 and No. 82020 construction and other associated construction to be performed upon, along, and adjacent to Trunk Highway No. 61 at 80th Street within the corporate City limits under State Project No. 8205-159.

2. The Mayor and the City Council are authorized to execute Agreement No. 1061897 and any amendments to that Agreement.

Passed this 18th day of March 2026.

_____
Myron Bailey, Mayor

Attest:

_____
Tamara Anderson, City Clerk

MnDOT Contract No.: **1061897**

STATE OF MINNESOTA
DEPARTMENT OF TRANSPORTATION
AND
CITY OF COTTAGE GROVE
AND
WASHINGTON COUNTY
COOPERATIVE CONSTRUCTION
AGREEMENT

State Project Number (SP):	**8205-159**
Trunk Highway Number (TH):	**61=003**
State Project Number:	**180-102-020**
State Project Number:	**180-112-014**
City's State-Aid Project Number (SAP):	**180-020-015**
County's State-Aid Project Number:	**082-639-008**
Federal Project Number:	**CDS-NHPP 0061(355)**
Lighting System Feed Point:	**"City"**
Signal System "A" ID:	**1735480**
Signal System "B" ID:	**1735478**

Original Amounts Encumbered

State Funds
$286,312.46

Federal Aid Funds
$3,275,200.00

State Match to Federal Aid Funds
$818,800.00

Total State Obligation
$4,261,677.43

Estimated Amount Receivable
$50,275.80

This Agreement is between the State of Minnesota, acting through its Commissioner of Transportation (State), the City of Cottage Grove, acting through its City Council (City), and Washington County, acting through its Board of County Commissioners (County).

Recitals

1. The City will perform grading, bituminous and concrete surfacing, reclamation, ADA improvements, signals, TMS, lighting, and Bridge No. 82019 and No. 82020 construction and other associated construction upon, along, and adjacent to Trunk Highway No. 61 at 80th Street according to City-prepared plans, specifications, and special provisions designated by the County as State Aid Project No. 082-639-008, by the City as State Aid Project No. 180-020-015, by the City and State as State Project No. 180-102-020 and No. 180-112-014, and by the State as State Project No. 8205-159 (TH 61=003) (Project); and

2. The City requests the State participate in the costs of the grading, bituminous and concrete surfacing, reclamation, ADA improvements, signals, TMS, lighting, and Bridge No. 82019 and No. 82020 construction and the State is willing to participate in the costs of said construction and associated construction engineering as set forth in this Agreement; and

3. MnDOT Contract Number 1052214, which has been executed between the City and the State, appoints the State as the City's agent to receive and disburse transportation related federal funds and sets forth duties and responsibilities for letting, payment, and other procedures for a federally funded contract let by the City; and

4. The State Federal-Aid funds will be paid to the City under the Delegated Contract Process on a reimbursable basis after expenses have been incurred, as set forth in this Agreement; and

5. The State funds will be paid to the City as set forth in this Agreement; and
6. The Catalog of Federal Domestic Assistance number or CFDA number is 20.205; and
7. The State requests the County participate in the costs of the State Furnished Materials and the County is willing to participate in the costs of said State Furnished Materials and associated construction engineering; and
8. Minnesota Statutes § 161.20, subdivision 2 authorizes the Commissioner of Transportation to make arrangements with and cooperate with any governmental authority for the purposes of constructing, maintaining, and improving the trunk highway system.

Agreement

1. Term of Agreement; Survival of Terms; Plans; Incorporation of Exhibits

1.1. ***Effective Date.*** This Agreement will be effective on the date the State obtains all signatures required by Minnesota Statutes § 16C.05, subdivision 2.

1.2. ***Expiration Date.*** This Agreement will expire when all obligations have been satisfactorily fulfilled.

1.3. ***Survival of Terms.*** All clauses which impose obligations continuing in their nature and which must survive in order to give effect to their meaning will survive the expiration or termination of this Agreement, including, without limitation, the following clauses: 2.4. State Ownership of Improvements; 5. Maintenance by the City; 11. Liability; Worker Compensation Claims; Insurance; 14. State Audits; 15. Government Data Practices; 17. Governing Law; Jurisdiction; Venue; and 19. Force Majeure. The terms and conditions set forth in Article 6. Signal Systems and EVP Systems Operation and Maintenance will survive the expiration of this Agreement, but may be terminated by another Agreement between the parties.

1.4. ***Plans, Specifications, and Special Provisions.*** State-approved City plans, specifications, and special provisions designated by the County as State Aid Project No. 082-639-008, by the City as State Aid Project No. 180-020-015, by the City and State as State Project No. 180-102-020 and No. 180-112-015, and by the State as State Project No. 8205-159 (TH 61=003) are on file in the office of the City's Engineer and incorporated into this Agreement by reference (Project Plans).

1.5. ***Duties of the City.*** The City will perform all of its duties and obligations in MnDOT Contract No. 1052214, which is incorporated herein by reference, in the solicitation, letting, award, and administration of the construction of the Project.

1.6. ***Exhibits.*** The Preliminary Schedule "I" is attached and incorporated into this Agreement.

2. Right-of-Way Use

2.1. ***Limited Right to Occupy.*** The State grants to the City (and its contractors and consultants) the right to occupy Trunk Highway Right-of-Way as necessary to perform the work described in the Project Plans. This right is limited to the purpose of constructing the Project, and administering such construction, and may be revoked by the State at any time, with or without cause. Cause for revoking this right of occupancy includes, but is not limited to, breaching the terms of this or any other agreement (relevant to this Project) with the State, failing to provide adequate traffic control or other safety measures, failing to perform the construction properly and in a timely manner, and failing to observe applicable environmental laws or terms of applicable permits. The State will have no liability to the City (or its contractors or consultants) for revoking this right of occupancy.

2.2. ***State Access; Suspension of Work; Remedial Measures.*** The State's District Engineer or assigned representative retains the right to enter and inspect the Trunk Highway Right-of-Way (including the

construction being performed on such right-of-way) at any time and without notice to the City or its contractor. If the State determines (in its sole discretion) that the construction is not being performed in a proper or timely manner, or that environmental laws (or the terms of permits) are not being complied with, or that traffic control or other necessary safety measures are not being properly implemented, then the State may notify and require the City (and its contractors and consultants) to suspend their operations until the City (and its contractors and consultants) take all necessary actions to rectify the situation to the satisfaction of the State. The State will have no liability to the City (or its contractors or consultants) for exercising or failing to exercise its rights under this provision.

2.3. ***Traffic Control; Worker Safety.*** While the City (and its contractors and consultants) are occupying the State's Right-of-Way, they must comply with the approved traffic control plan, and with applicable provisions of the Work Zone Field Handbook (*http://www.dot.state.mn.us/trafficeng/workzone/index.html*). All City, County, contractor, and consultant personnel occupying the State's Right-of-Way must be provided with required reflective clothing and hats.

2.4. ***State Ownership of Improvements.*** The State will retain ownership of its Trunk Highway Right-of-Way, including any improvements made to such right-of-way under this Agreement, unless otherwise noted. The warranties and guarantees made by the City's contractor with respect to such improvements (if any) will flow to the State. The City will assist the State, as necessary, to enforce such warranties and guarantees, and to obtain recovery from the City's consultants, and contractor (including its sureties) for non-performance of contract work, for design errors and omissions, and for defects in materials and workmanship. Upon request of the State, the City will undertake such actions as are reasonably necessary to transfer or assign contract rights to the State and to permit subrogation by the State with respect to claims against the City's consultants and contractors.

2.5. ***Utility Relocation.*** The State authorizes the City to issue Notices and Orders for utility relocation in accordance with Minnesota Statutes §161.45 and Minnesota Rules Part 8810.3100 through 8810.3600.

3. Contract Award and Construction

3.1. ***Bids and Award.*** The City will receive bids and award a construction contract to the lowest responsible bidder (or best value proposer), subject to concurrence by the State in that award, according to the Project Plans. The contract construction will be performed according to the Project Plans.

3.2. ***Bid Documents Furnished by the City.*** The City will, within seven days of opening bids for the construction contract, submit to the State Aid Agreements Engineer a copy of the low bid and an abstract of all bids together with the City's request for concurrence by the State in the award of the construction contract. The City will not award the construction contract until the State advises the City in writing of its concurrence.

3.3. ***Rejection of Bids.*** The City may reject and the State may require the City to reject any or all bids for the construction contract. The party rejecting or requiring the rejection of bids must provide the other party written notice of that rejection or requirement for rejection no later than 30 days after opening bids. Upon the rejection of all bids, a party may request, in writing, that the bidding process be repeated. Upon the other party's written approval of such request, the City will repeat the bidding process in a reasonable period of time, without cost or expense to the State.

3.4. ***Contract Terms.*** The City's contract with its construction contractor(s) must include the following terms:

A. A clause making the State of Minnesota, acting through its Commissioner of Transportation, an intended third-party beneficiary of the contract with respect to the portion of work performed on the State's Right-of-Way; and

B. A clause requiring the State to be named as an additional insured on any insurance coverage which the contractor is required to provide; and

C. A clause stating that any warranties provided by the contractor, for the work performed on the trunk highway, will flow to, and be enforceable by, the State as the owner of such improvements.

3.5. ***Direction, Supervision, and Inspection of Construction***

A. The contract construction will be under the direction of the City and under the direct supervision of a registered professional engineer. The supervision provided by the City may only be assigned, sublet, or transferred after the City is notified in writing by the State that such action is permitted under 23 CFR 1.33 and 23 CFR 635.105 and state law. This written consent will in no way relieve the City from its primary responsibility for satisfactory performance of the contract construction. The City will provide a City-employed registered professional engineer to oversee the contract construction, if the same consultant that designed the Project employs the engineer supervising the contract construction directly.

B. The State will be the primary overseer of the contract construction and a State District Engineer authorized representative will perform regular periodic inspections during construction. The City will give the State Aid Agreements Engineer at Roseville five days' notice of its intention to start the contract construction.

C. The City will notify the Independent Assurance Inspector when the contract construction is in progress that requires observation by the Independent Assurance Inspector as required by the Independent Assurance Schedule. Responsibility for the control of materials for the contract construction will be on the City and its contractor and will be carried out according to Specifications No. 1601 through and including No. 1609 in the State's current *Standard Specifications for Construction*.

3.6. ***Contaminated Soils and Groundwater within the State's Cost Participation Limits***

A. ***24 Hour Notification.*** The City will notify the State District Engineer's authorized representative a minimum of 24 hours prior to the contractor beginning the excavation and removal of any contaminated soils that have been identified within the Project limits.

B. ***Immediate Notification.*** The City will notify the State District Engineer's authorized representative immediately upon the contractor encountering contaminated soils and/or groundwater in areas that are within the Project limits. The City will confer with the State as to the handling, disposal, and any other issues related to contaminated materials found on State Right-of-Way or import of materials onto State Right-of-Way.

C. ***Environmental Consultant.*** The City will provide for an Environmental Consultant to be on site to observe and document the excavation, handling and disposal of contaminated soils that have been identified within the Project limits. If the contractor encounters contaminated materials in areas not previously identified and upon notification by the City to the State, the City hired Environmental Consultant will be provided to collect and analyze soil and/or groundwater samples to determine contaminant levels, work with the landfill for disposal of the soil waste, and provide oversight of any soil and groundwater handling and disposal. The City will not allow the contractor to excavate any contaminated soil unless the Environmental Consultant is present.

3.7. ***Completion of Construction.*** The City will cause the contract construction to be started and completed according to the time schedule in the construction contract special provisions. The completion date for the contract construction may be extended, by an exchange of letters between the appropriate City official and the State District Engineer's authorized representative, for unavoidable delays encountered in the performance of the contract construction.

3.8. ***Plan Changes.*** All changes in the Project Plans and all addenda, change orders, supplemental agreements, and work orders entered into by the City and its contractor for contract construction must be approved in writing by the State District Engineer's authorized representative.

3.9. ***State Furnished Engineering Services.*** Upon written request from the City, the State may furnish specific engineering or technical services, pursuant to Minnesota Statutes § 161.39. Such services may be covered by other technical services agreements. The City will pay the State to reimburse the Trunk Highway Fund for the full cost and expense of furnishing such services upon the State's requests for reimbursement. The costs and expenses will include the current State labor additives and overhead rates, subject to adjustment based on actual direct costs that have been verified by audit. Providing such services will not make the State a principal or co-principal with respect to liability regarding the contract construction.

3.10. ***Compliance with Laws, Ordinances, and Regulations***

A. The City will comply and cause its contractor to comply with all Federal, State, and Local laws, and all applicable ordinances and regulations. With respect only to that portion of work performed on the State's Trunk Highway Right-of-Way, the City will not require the contractor to follow local ordinances or to obtain local permits.

B. City treatment of all public, private, or cooperatively owned utility facilities which directly or indirectly serve the public and which occupy highway rights of way will conform to 23 CFR 645 "Utilities" which is incorporated into this Agreement by reference.

3.11. ***Construction Documents Furnished by the City.*** The City will keep records and accounts that enable it to provide the State, when requested, with the following:

A. Copies of the City contractor's invoice(s) covering all contract construction.

B. Copies of the endorsed and canceled City warrant(s) or check(s) paying for final contract construction, or computer documentation of the warrant(s) issued, certified by an appropriate City official that final construction contract payment has been made.

C. Copies of all construction contract change orders, supplemental agreements, and work orders.

D. A certification form, provided by the State, signed by the City's Engineer in charge of the contract construction attesting to the following:

i. Satisfactory performance and completion of all contract construction according to the Project Plans.

ii. Acceptance and approval of all materials furnished for the contract construction relative to compliance of those materials to the State's current *Standard Specifications for Construction*.

iii. Full payment by the City to its contractor for all contract construction.

E. Copies, certified by the City's Engineer, of material sampling reports and of material testing results for the materials furnished for the contract construction.

F. A copy of the "As Built" plan sent to the State Aid Agreements Engineer.

4. Right-of-Way; Easements; Permits

4.1. The City will obtain all rights-of-way, easements, construction permits, and any other permits and sanctions that may be required in connection with the local and trunk highway portions of the contract construction. Before payment by the State, the City will furnish the State with certified copies of the documents for rights-of-way and easements, construction permits, and other permits and sanctions required for State participation construction covered under this Agreement.

4.2. The City will convey to the State by quit claim deed, all newly acquired rights needed for the continuing operation and maintenance of the Trunk Highway, if any, upon completion of the Project, at no cost or expense to the State.

4.3. The City will comply with Minnesota Statutes § 216D.04, subdivision 1(a), for identification, notification, design meetings, and depiction of utilities affected by the contract construction.

5. Maintenance by the City

Upon completion of the Project, the City will provide the following without cost or expense to the State:

5.1. ***Sidewalks.*** Maintenance of any sidewalk construction where shown in the Project Plans, including stamped and colored concrete sidewalk (if any) and pedestrian ramps. Maintenance includes, but is not limited to, snow, ice and debris removal, patching, crack repair, panel replacement, cross-street pedestrian crosswalk markings, vegetation control of boulevards (if any), and any other maintenance activities necessary to perpetuate the sidewalks in a safe, useable, and aesthetically acceptable condition.

The State will maintain crosswalk markings on the Trunk Highway at ramps which intersect with City roads.

5.2. ***Lighting.*** Maintenance and ownership of any lighting facilities construction, except for TH 61 ramp lighting on Feedpoint 82P2. Maintenance of electrical lighting systems includes everything within the system, from the point of attachment to the power source or utility, to the last light on the feed point, including but not limited to re-lamping of lighting units or replacing of LED luminaires, repair or replacement of all damaged luminaire glassware, loose connections, luminaires when damaged or when ballasts fail, photoelectric control on luminaires, defective starter boards or drivers, damaged fuse holders, blown fuses, knocked down poles including wiring within the poles, damaged poles, pull boxes, underground wire, damaged foundations, equipment pad, installation of approved splices or replacement of wires, repair or extending of conduit, lighting cabinet maintenance including photoelectric cell, electrical distribution system, Gopher State One Call (GSOC) locates, and painting of poles and other equipment. The City will be responsible for the hook up cost and application to secure an adequate power supply to the service pad or pole and will pay all monthly electrical service expenses necessary to operate the lighting facility.

5.3. ***Additional Drainage.*** No party to this Agreement will drain any additional drainage volume into the storm sewer facilities constructed under the construction contract that was not included in the drainage for which the storm sewer facilities were designed, without first obtaining written permission to do so from the other party.

6. Signal Systems and EVP Systems Operation and Maintenance

Operation and maintenance responsibilities will be as follows for the Signal Systems and EVP Systems on TH 61 southbound ramp at 80th Street (System "A") and on TH 61 northbound ramp at 80th Street (System "B").

6.1. ***City Responsibilities***

A. ***Power.*** The City will be responsible for the hook-up cost and application to secure an adequate power supply to the service pad(s) or pole(s) and will pay all monthly electrical service expenses necessary to operate the Signal Systems, EVP Systems, and Interconnect.

B. ***Minor Signal System Maintenance.*** The City will provide for the following, without cost to the State.

i. Maintain the signal pole mounted LED luminaires, including replacing the luminaires when necessary. The LED luminaire must be replaced when it fails or when light levels drop below recommended AASHTO levels for the installation.

ii. Replace the Signal Systems LED indications. Replacing LED indications consists of replacing each LED indication when it reaches end of life per the MnDOT Traffic Engineering Manual or fails or no longer meets Institute of Traffic Engineers (ITE) standards for light output.

iii. Clean the Signal Systems controller cabinet and service cabinet exteriors.

iv. Clean and paint the Signal Systems and luminaire mast arm extensions. The painted equipment will undergo visual inspection over its lifespan by the State. In the event the State determines the equipment requires repainting, the City will be responsible for performing repainting in a timely manner. Painting will be in accordance with MnDOT Standard Specification 2565.3U, unless approved by the State's District Traffic Engineer. If the City does not comply with the maintenance terms as stated, the State may paint the equipment and invoice the City for 100 percent of the repainting.

v. Paint and maintain the cross-street pedestrian crosswalk markings. The State will maintain crosswalk markings on the Trunk Highway at ramps which intersect with City roads.

6.2. ***State Responsibilities***

A. ***Interconnect; Timing; Other Maintenance.*** The State will maintain the Interconnect and signing, and perform all other Signal System, APS, and signal pole luminaire circuit maintenance without cost to the City. All Signal System timing will be determined by the State, and no changes will be made without the State's approval.

B. ***EVP Systems Operation.*** The EVP Systems will be installed, operated, maintained, and removed according to the following conditions and requirements:

i. All maintenance of the EVP Systems must be done by State forces.

ii. Emitter units may be installed only on authorized emergency vehicles, as defined in Minnesota Statutes § 169.011, Subdivision 3. Authorized emergency vehicles may use emitter units only when responding to an emergency. The City will provide the State's District Engineer or their designated representative a list of all vehicles with emitter units, if requested by the State.

iii. Malfunction of the EVP Systems must be reported to the State immediately.

iv. In the event the EVP Systems or its components are, in the opinion of the State, being misused or the conditions set forth in Paragraph ii. above are violated, and such misuse or violation continues after the City receives written notice from the State, the State may remove the EVP Systems. Upon removal of the EVP Systems pursuant to this Paragraph, all of its parts and components become the property of the State.

v. All timing of the EVP Systems will be determined by the State.

6.3. ***Right-of-Way Access.*** Each party authorizes the other party to enter upon their respective public right-of-way to perform the maintenance activities described in this Agreement.

6.4. ***Related Agreements.*** This Agreement will supersede and terminate the operation and maintenance terms of Agreement No. 00587-R, dated September 20, 2012, between the parties for the intersection of TH 61 southbound ramp at 80th Street (System "A") and on TH 61 northbound ramp at 80th Street (System "B").

7. State Cost and Payment by the State

7.1. ***State Cost.*** The State's cost for grading, bituminous and concrete surfacing, reclamation, ADA improvements, signals, TMS, lighting, and Bridge No. 82019 and No. 82020 construction, less State Furnished Materials cost, is defined in the construction plan and the attached Schedule "I" and is reflective

Furnished Materials cost, is defined in the construction plan and the attached Schedule "I" and is reflective of the Participation Distribution prepared by the Office of State Aid for Local Transportation. Upon review of the construction contract bid documents described in Article 3.2, the State will decide whether to concur in the City's award of the construction contract and, if so, prepare a Revised Schedule "I" based on construction contract construction items, quantities, and unit prices, which will replace and supersede the Preliminary Schedule "I" as part of this Agreement. The contingency amount is provided to cover the cost difference between the Preliminary Schedule "I" and the Revised Schedule "I", overruns of the Project Plans' estimated quantities of State participation construction, and State approved additional construction including construction engineering costs.

A. ***Federal-Aid Funds and State Match to the Federal-Aid Funds.*** **$3,275,200.00** is the estimated Federal-Aid funded portion and **$818,800.00** is the State Match to the Federal-Aid funds of the State construction cost share and will be paid to the City through the State Aid Finance Office under the Delegated Contract Process (State Aid Manual, Chapter 5.3). The Federal-Aid funds available for the State cost share may be modified upon award of the construction contract.

B. ***State Funded.*** **$286,312.46** is the estimated State funded portion of the construction, State Furnished Materials, and the State funded construction engineering cost share. The State will pay the City the State funded portion of the State construction cost share as shown on the Revised Schedule "I", which does not include the contingency amount or construction engineering, after the following conditions have been met:

i. Encumbrance by the State of the State's full and complete State funded cost share and State funded construction engineering.

ii. Approval by the State's Land Management Director at Saint Paul of certified documentation, submitted by the City, for all right-of-way and easement acquisitions required for the contract construction.

iii. Execution of this Agreement and transmittal to the City.

iv. The State's receipt of a written request from the City for the advancement of funds. The request will include certification by the City that all necessary parties have executed the construction contract.

7.2. ***Construction Engineering Costs.*** The State will pay a construction engineering charge equal to 8 percent of the total State participation construction covered under this Agreement.

7.3. ***State Furnished Materials.*** The State will furnish a cabinet, vehicle detection equipment, and PTZ cameras (State Furnished Materials), according to the Project Plans, to operate the traffic control signal systems covered under this Agreement.

A. ***Signal System "A".*** The County's lump sum share for State Furnished Materials for Signal System "A" is **$46,551.67**. The County's cost share for Signal System "A" State Furnished Materials will be added to the County's total lump sum cost share.

B. **Signal System "B".** The City's lump sum share for State Furnished Materials for Signal System "B" is **$46,551.67.** The State's cost share is $46,551.67. The City's and State's cost share for Signal System "B" State Furnished Materials will be deducted from the State's total construction cost share as shown in the Schedule "I".

7.4. ***Limitations of State Payment; No State Payment to Contractor.*** The State's participation in the contract construction is limited to the amounts shown in Article 7.1, and the State's participation will not change except by a mutually agreed written amendment to this Agreement. The State's payment obligation

extends only to the City. The City's contractor is not intended to be and will not be deemed to be a third-party beneficiary of this Agreement. The City's contractor will have no right to receive payment from the State. The State will have no responsibility for claims asserted against the City by the City's contractor.

7.5. ***Final Payment by the State.*** Upon completion of all contract construction, the State will prepare a Final Schedule "I" in conjunction with the Delegated Contract Process. The Final Schedule "I" will be based on final quantities and include all State participation construction items and the construction engineering cost share covered under this Agreement. If the final cost of the State participation construction exceeds the amount of funds advanced by the State, the State will pay the difference to the City without interest. If the final cost of the State participation construction is less than the amount of funds advanced by the State, the City will refund the difference to the State without interest.

The State and the City waive claims for any payments or refunds less than $5.00 according to Minnesota Statutes § 15.415.

8. County Cost and Payment by the County

8.1. ***County Cost.*** **$50,275.80** is the County's full and complete lump sum cost for the Signal System "A" State Furnished Materials which consists of **$46,551.67** for State Furnished Materials and **$3,724.13** for construction engineering.

8.2. ***Conditions of Payment.*** The County will pay the State the full and complete lump sum amount after the following conditions have been met:

A. Execution of this Agreement and transmittal to the County.

B. The County's receipt of a written request from the State for the advancement of funds.

9. Authorized Representatives

Each party's Authorized Representative is responsible for administering this Agreement and is authorized to give and receive any notice or demand required or permitted by this Agreement.

9.1. The State's Authorized Representative will be:

Name, Title:	Malaki Ruranika, Cooperative Agreements Engineer (or successor)
Address:	395 John Ireland Boulevard, Mailstop 682, Saint Paul, MN 55155
Telephone:	(651) 366-4634
Email:	malaki.ruranika@state.mn.us

9.2. The City's Authorized Representative will be:

Name, Title:	Paul Sponholz, City Engineer (or successor)
Address:	12800 Ravine Parkway South, Cottage Grove, MN 55016
Telephone:	(651) 458-2848
Email:	psponholz@cottagegrovemn.gov

9.3. The County's Authorized Representative will be:

Name, Title:	Wayne Sandberg, County Engineer (or successor)
Address:	11660 Myeron Road North, Stillwater, MN 55082
Telephone:	651-762-6320
Email:	wayne.sandberg@washingtoncountymn.gov

10. Assignment; Amendments; Waiver; Contract Complete

10.1. ***Assignment.*** No party may assign or transfer any rights or obligations under this Agreement without the prior consent of the other party and a written assignment agreement, executed and approved by the same

parties who executed and approved this Agreement, or their successors in office. The foregoing does not prohibit the City or the County from contracting with a third-party to perform City or County maintenance responsibilities covered under this Agreement.

10.2. ***Amendments.*** Any amendment to this Agreement must be in writing and will not be effective until it has been executed and approved by the same parties who executed and approved the original Agreement, or their successors in office.

10.3. ***Waiver.*** If a party fails to enforce any provision of this Agreement, that failure does not waive the provision or the party's right to subsequently enforce it.

10.4. ***Contract Complete.*** This Agreement contains all prior negotiations and agreements between the State, the City, and the County. No other understanding regarding this Agreement, whether written or oral, may be used to bind either party.

11. Liability; Worker Compensation Claims; Insurance

11.1. Each party is responsible for its own acts, omissions and the results thereof to the extent authorized by law and will not be responsible for the acts and omissions of others and the results thereof. Minnesota Statutes § 3.736 and other applicable law govern liability of the State. Minnesota Statutes Chapter 466 and other applicable law govern liability of the City and the County. Notwithstanding the foregoing, the City and the County will indemnify, hold harmless, and defend (to the extent permitted by the Minnesota Attorney General) the State against any claims, causes of actions, damages, costs (including reasonable attorney's fees), and expenses arising in connection with the Project covered by this Agreement, regardless of whether such claims are asserted by the City's or County's contractor(s) or consultant(s) or by a third party because of an act or omission by the City, the County, or their contractor(s) or consultant(s).

11.2. Each party is responsible for its own employees for any claims arising under the Workers Compensation Act.

11.3. The City may require its contractor to carry insurance to cover claims for damages asserted against the City's contractor.

12. Nondiscrimination

Provisions of Minnesota Statutes § 181.59 and of any applicable law relating to civil rights and discrimination are considered part of this Agreement.

13. Title VI/Non-discrimination Assurances

The City and the County agrees to comply with all applicable USDOT Standard Title VI/Non-Discrimination Assurances contained in USDOT Order No. 1050.2A, and in particular Appendices A and E, which can be found at: https://edocs-public.dot.state.mn.us/edocs_public/DMResultSet/download?docId=11149035. If federal funds are included in this Agreement, the City will ensure the appendices and solicitation language within the assurances are inserted into contracts as required. The State may conduct a review of the City's compliance with this provision. The City must cooperate with the State throughout the review process by supplying all requested information and documentation to the State, making City and County staff and officials available for meetings as requested, and correcting any areas of non-compliance as determined by the State.

14. State Audits

Under Minnesota Statutes § 16C.05, subdivision 5, the City's and County's books, records, documents, accounting procedures, and practices relevant to this Agreement are subject to examination by the State and the State Auditor or Legislative Auditor, as appropriate, for a minimum of six years from the end of this Agreement.

15. Government Data Practices

The City, the County, and State must comply with the Minnesota Government Data Practices Act, Minnesota Statutes Chapter 13, as it applies to all data provided under this Agreement, and as it applies to all data created, collected, received, stored, used, maintained, or disseminated by the City and the County under this Agreement. The civil remedies of Minnesota Statutes §13.08 apply to the release of the data referred to in this clause by the City, the County, or the State.

16. Telecommunications Certification

By signing this Agreement, the City certifies that, consistent with Section 889 of the John S. McCain National Defense Authorization Act for Fiscal Year 2019, Pub. L. 115-232 (Aug. 13, 2018), and 2 CFR 200.216, the City will not use funding covered by this Agreement to procure or obtain, or to extend, renew, or enter into any contract to procure or obtain, any equipment, system, or service that uses "covered telecommunications equipment or services" (as that term is defined in Section 889 of the Act) as a substantial or essential component of any system or as critical technology as part of any system. The City will include this certification as a flow down clause in any contract related to this Agreement.

17. Governing Law; Jurisdiction; Venue

Minnesota law governs the validity, interpretation, and enforcement of this Agreement. Venue for all legal proceedings arising out of this Agreement, or its breach, must be in the appropriate state or federal court with competent jurisdiction in Ramsey County, Minnesota.

18. Termination; Suspension

18.1. ***By Mutual Agreement.*** This Agreement may be terminated by mutual agreement of the parties or by the State for insufficient funding as described below.

18.2. ***Termination for Insufficient Funding.*** The State may immediately terminate this Agreement if it does not obtain funding from the Minnesota Legislature, or other funding source; or if funding cannot be continued at a level sufficient to allow for the payment of the services covered here. Termination must be by written or fax notice to the City and the County. The State is not obligated to pay for any services that are provided after notice and effective date of termination. However, the City will be entitled to payment, determined on a pro rata basis, for services satisfactorily performed to the extent that funds are available. The State will not be assessed any penalty if this Agreement is terminated because of the decision of the Minnesota Legislature, or other funding source, not to appropriate funds.

18.3. ***Suspension.*** In the event of a total or partial government shutdown, the State may suspend this Agreement and all work, activities, performance, and payments authorized through this Agreement. Any work performed during a period of suspension will be considered unauthorized work and will be undertaken at the risk of non-payment.

19. Force Majeure

No party will be responsible to the other for a failure to perform under this Agreement (or a delay in performance) if such failure or delay is due to a force majeure event. A force majeure event is an event beyond a party's reasonable control, including but not limited to, unusually severe weather, fire, floods, other acts of God, labor disputes, acts of war or terrorism, or public health emergencies.

(The remainder of this page has been intentionally left blank.)

MnDOT Contract No.: **1061897**

STATE ENCUMBRANCE VERIFICATION

Individual certifies that funds have been encumbered as required by Minnesota Statutes § 16A.15 and 16C.05.

Signed: _____

Date: _____

SWIFT Purchase Order: 3000865600

CITY OF COTTAGE GROVE

The undersigned certify that they have lawfully executed this contract on behalf of the Governmental Unit as required by applicable charter provisions, resolutions, or ordinances.

By: _____

Title: _____

Date: _____

By: _____

Title: _____

Date: _____

DEPARTMENT OF TRANSPORTATION

Recommended for Approval:

By: _____
(District Engineer)

Date: _____

Approved:

By: _____
(State Design Engineer)

Date: _____

COMMISSIONER OF ADMINISTRATION

By: _____
(With Delegated Authority)

Date: _____

INCLUDE COPY OF RESOLUTION APPROVING THE AGREEMENT AND AUTHORIZING ITS EXECUTION.

WASHINGTON COUNTY

The undersigned certify that they have lawfully executed this contract on behalf of the Governmental Unit as required by applicable charter provisions, resolutions, or ordinances.

By: _____
(Chair, County Board of Commissioners)

Date: _____

By: _____
(County Administrator)

Date: _____

Approved as to form:

By: _____
(Assistant County Attorney)

Date: _____

Recommended for Approval:

By: _____
(County Engineer)

Date: _____

PRELIMINARY SCHEDULE "I"
Agreement No. 1061897
City of Cottage Grove and Washington County

SP 8205-159 (TH 61=003) Preliminary: March 3, 2026
Fed. Proj. CDS-NHPP 0061(355)
SP 180-102-020, SP 180-112-014
SAP 082-639-008, SAP 180-020-015

Grading, bituminous and concrete surfacing, reclamation, ADA improvements, signals, TMS, lighting, and Bridge No. 82019 and No. 82020 construction performed under City contract with ____
located on TH 61 at 80th Street

STATE COST PARTICIPATION				
	NHPP	STATE MATCH	STATE	TOTAL
TH 61 Ramps (From Sheet No. 5)	2,896,818.20	724,204.55		3,621,022.75
Bridge No. 82019 (From Sheet No. 6)	140,352.00	35,088.00		175,440.00
Bridge No. 82020 (From Sheet No. 6)	150,152.00	37,538.00		187,690.00
(1) Haul Salvaged Materials (From Sheet No. 7)			1,500.00	1,500.00
State Furnished Materials - Signal System "B" (From Sheet No. 8) (State Cost)			46,551.67	46,551.67
Subtotal	$3,187,322.20	$796,830.55	$48,051.67	$4,032,204.42
Construction Engineering (8%)			322,576.35	322,576.35
State Furnished Materials (From Sheet No. 8) (Signal System "B" Total Cost)			(93,103.34)	(93,103.34)
Subtotal	$3,187,322.20	$796,830.55	$277,524.68	$4,261,677.43
(2) Contingency Amount	87,877.80	21,969.45	8,787.78	
Encumbered Amount	$3,275,200.00	$818,800.00	$286,312.46	**$4,261,677.43**

(1) Amount of advance payment as described in Article 7.1.B of the Agreement (estimated amount)
(2) For the State's use only as described in Article 7.1 of the Agreement

COUNTY COST PARTICIPATION	
	TOTAL
State Furnished Materials - Signal System "A" (From Sheet No. 8) (County Cost)	46,551.67
Construction Engineering (8%)	3,724.13
(3) Total County Cost	**$50,275.80**

(3) Amount of advance payment as described in Article 8 of the Agreement

Data is considered Non-public prior to project award under the
Minnesota Government Data Practices Act, Minnesota Statutes Chapter 13.

(1) 80% FEDERAL NHPP, 20% STATE
(P) = PLAN QUANTITY

ITEM NUMBER	SP 8205-159 TH 61 RAMP WORK ITEM		UNIT	QUANTITY	UNIT PRICE	COST (1)
2011.601	AS BUILT		LUMP SUM	0.80	10,000.00	8,000.00
2021.501	MOBILIZATION		LUMP SUM	0.28	500,000.00	140,000.00
2104.502	REMOVE CONCRETE APRON		EACH	2.00	1,000.00	2,000.00
2104.502	REMOVE ANCHORAGE ASSEMBLY - TYPE 31		EACH	3.00	1,000.00	3,000.00
2104.502	REMOVE DELINEATOR / MARKER		EACH	7.00	100.00	700.00
2104.502	REMOVE SIGN		EACH	22.00	100.00	2,200.00
2104.502	REMOVE HANDHOLE		EACH	5.00	350.00	1,750.00
2104.502	REMOVE ENERGY ABSORBING TERMINAL		EACH	3.00	551.00	1,653.00
2104.502	SALVAGE SERVICE CABINET		EACH	1.00	600.00	600.00
2104.502	SALVAGE SIGN		EACH	1.00	100.00	100.00
2104.503	SAWING CONCRETE PAVEMENT (FULL DEPTH)		LIN FT	91.00	6.00	546.00
2104.503	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)		LIN FT	45.00	3.00	135.00
2104.503	REMOVE SEWER PIPE (STORM)		LIN FT	106.00	30.00	3,180.00
2104.503	REMOVE CURB AND GUTTER		LIN FT	516.00	4.00	2,064.00
2104.503	REMOVE GUARDRAIL-PLATE BEAM		LIN FT	2,785.00	8.00	22,280.00
2104.503	REMOVE DIRECT BURIED LIGHTING CABLE		LIN FT	2,500.00	2.00	5,000.00
2104.503	SALVAGE CHAIN LINK FENCE		LIN FT	20.00	20.00	400.00
2104.504	REMOVE CONCRETE MEDIAN		SQ YD	102.00	6.00	612.00
2104.504	REMOVE PAVEMENT		SQ YD	8,884.00	12.00	106,608.00
2104.504	REMOVE CONCRETE APPROACH PANEL	(P)	SQ YD	788.00	75.00	59,100.00
2104.504	REMOVE BITUMINOUS PAVEMENT		SQ YD	727.00	6.00	4,362.00
2104.504	REMOVE BITUMINOUS SHOULDER PAVEMENT		SQ YD	3,900.00	6.00	23,400.00
2104.518	REMOVE CONCRETE WALK		SQ FT	1,021.00	1.00	1,021.00
2104.601	REMOVE CABLES		LUMP SUM	1.00	3,000.00	3,000.00
2104.602	SALVAGE SIGN SPECIAL		EACH	2.00	1,000.00	2,000.00
2106.507	EXCAVATION - COMMON		CU YD	4,093.00	30.00	122,790.00
2106.507	EXCAVATION - SUBGRADE		CU YD	4,514.00	30.00	135,420.00
2106.507	SELECT GRANULAR EMBANKMENT (CV)		CU YD	4,092.00	14.00	57,288.00
2106.507	COMMON EMBANKMENT (CV)		CU YD	190.00	15.00	2,850.00
2108.604	GEOMEMBRANE SYSTEM		SQ YD	288.00	30.00	8,640.00
2118.507	AGGREGATE SURFACING (CV) CLASS 1		CU YD	234.00	50.00	11,700.00
2211.507	AGGREGATE BASE (CV) CLASS 5		CU YD	1,591.00	40.00	63,640.00
2211.607	AGGREGATE BASE SPECIAL (CV)		CU YD	5.00	15.00	75.00
2301.502	DOWEL BAR		EACH	4,832.00	15.00	72,480.00

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(1) 80% FEDERAL NHPP, 20% STATE
(P) = PLAN QUANTITY

ITEM NUMBER	SP 8205-159 TH 61 RAMP WORK ITEM		UNIT	QUANTITY	UNIT PRICE	COST (1)
2301.504	CONCRETE PAVEMENT 8.0"		SQ YD	8,374.00	110.00	921,140.00
2301.602	DRILL AND GROUT DOWEL BAR (EPOXY COATED)		EACH	180.00	30.00	5,400.00
2331.603	JOINT ADHESIVE		LIN FT	6,989.00	0.75	5,241.75
2360.509	TYPE SP 12.5 NON WEARING COURSE MIXTURE (4,B)		TON	489.00	90.00	44,010.00
2360.509	TYPE SP 12.5 WEARING COURSE MIXTURE (4,F)	(P)	TON	1,092.00	100.00	109,200.00
2406.503	EXPANSION JOINTS; DESIGN E8	(P)	LIN FT	410.00	150.00	61,500.00
2406.504	BRIDGE APPROACH PANELS		SQ YD	912.00	450.00	410,400.00
2451.507	COARSE FILTER AGGREGATE (CV)		CU YD	32.00	60.00	1,920.00
2451.507	FINE FILTER AGGREGATE (CV)		CU YD	11.00	60.00	660.00
2502.502	6" PRECAST CONCRETE HEADWALL		EACH	1.00	1,000.00	1,000.00
2502.503	6" TP PIPE DRAIN		LIN FT	150.00	50.00	7,500.00
2502.503	6" PERF TP PIPE DRAIN		LIN FT	288.00	50.00	14,400.00
2502.602	6" PVC PIPE DRAIN CLEANOUT		EACH	2.00	1,500.00	3,000.00
2503.602	CONNECT EXISTING PIPE TO NEW STRUCTURE		EACH	2.00	1,500.00	3,000.00
2503.603	PLUG FILL AND ABANDON PIPE SEWER		LIN FT	51.00	30.00	1,530.00
2506.502	CASTING ASSEMBLY		EACH	1.00	1,200.00	1,200.00
2506.503	CONSTRUCT DRAINAGE STRUCTURE DESIGN SD-48		LIN FT	3.20	700.00	2,240.00
2521.518	6" CONCRETE WALK		SQ FT	2,950.00	8.00	23,600.00
2521.602	DRILL AND GROUT REINF BAR (EPOXY COATED)		EACH	70.00	30.00	2,100.00
2521.618	CONCRETE CURB RAMP WALK		SQ FT	1,171.00	12.00	14,052.00
2531.503	CONCRETE CURB AND GUTTER DESIGN B624 (MOD)		LIN FT	575.00	25.00	14,375.00
2531.618	TRUNCATED DOMES		SQ FT	140.00	55.00	7,700.00
2545.502	EQUIPMENT PAD B		EACH	1.00	2,000.00	2,000.00
2545.503	3" NON-METALLIC CONDUIT		LIN FT	160.00	12.00	1,920.00
2545.503	DIRECT BURIED LIGHTING CABLE 4/C 4 AWG		LIN FT	2,500.00	15.00	37,500.00
2545.602	INSTALL SERVICE CABINET		EACH	1.00	800.00	800.00
2550.502	BURIED CABLE SIGN		EACH	5.00	140.00	700.00
2550.503	1.5" NON-METALLIC CONDUIT		LIN FT	355.00	3.20	1,136.00
2550.503	2" NON-METALLIC CONDUIT		LIN FT	180.00	6.50	1,170.00
2550.503	LEAD-IN CABLE 2 CONDUCTOR NO 14		LIN FT	1,010.00	4.00	4,040.00
2550.601	TEMPORARY COMMUNICATION SYSTEM		LUMP SUM	1.00	25,000.00	25,000.00
2550.601	FIBER OPTIC CABLE TESTING		LUMP SUM	1.00	13,500.00	13,500.00
2550.602	FIBER OPTIC PIGTAIL TERMINATION		EACH	6.00	1,600.00	9,600.00
2550.602	FIBER OPTIC CABLE SPLICING		EACH	1.00	2,100.00	2,100.00

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Minnesota Government Data Practices Act, Minnesota Statutes Chapter 13.

(1) 80% FEDERAL NHPP, 20% STATE
(P) = PLAN QUANTITY

ITEM NUMBER	SP 8205-159 TH 61 RAMP WORK ITEM	UNIT	QUANTITY	UNIT PRICE	COST (1)
2550.602	PULL VAULT	EACH	5.00	2,800.00	14,000.00
2550.602	LOOP DETECTOR DESIGN PREFORMED	EACH	4.00	1,800.00	7,200.00
2550.603	ARMORED FIBER OPTIC PIGTAIL 6SM	LIN FT	1,000.00	2.40	2,400.00
2550.603	REROUTE FIBER OPTIC CABLE	LIN FT	515.00	6.40	3,296.00
2550.603	1.5" BORED CONDUIT	LIN FT	380.00	16.00	6,080.00
2550.603	2" BORED CONDUIT	LIN FT	150.00	20.00	3,000.00
2554.502	ANCHORAGE ASSEMBLY - TYPE 31	EACH	3.00	4,000.00	12,000.00
2554.502	END TREATMENT-TANGENT TERMINAL	EACH	2.00	4,500.00	9,000.00
2554.503	TRAFFIC BARRIER DESIGN TYPE 31	LIN FT	2,075.00	37.50	77,812.50
2554.503	TRAFFIC BARRIER DESIGN TRANSITION TYPE 31	LIN FT	75.00	38.50	2,887.50
2554.602	GUIDE POST TYPE SPECIAL	EACH	3.00	200.00	600.00
2554.615	IMPACT ATTENUATOR	ASSEMBLY	1.00	201.00	201.00
2557.603	INSTALL CHAIN LINK FENCE	LIN FT	20.00	50.00	1,000.00
2563.601	TRAFFIC CONTROL	LUMP SUM	0.28	200,000.00	56,000.00
2563.613	PORTABLE CHANGEABLE MESSAGE SIGN	UNIT DAY	56.00	60.00	3,360.00
2564.502	INSTALL SIGN	EACH	1.00	1,100.00	1,100.00
2564.502	DELINEATOR/MARKER	EACH	7.00	325.00	2,275.00
2564.518	SIGN	SQ FT	166.00	50.00	8,300.00
2564.602	INSTALL SIGN SPECIAL	EACH	2.00	500.00	1,000.00
2565.501	EMERGENCY VEHICLE PREEMPTION SYSTEM A	LUMP SUM	0.50	10,000.00	5,000.00
2565.501	EMERGENCY VEHICLE PREEMPTION SYSTEM B	LUMP SUM	0.50	10,000.00	5,000.00
2565.516	TRAFFIC CONTROL SIGNAL SYSTEM A	SYSTEM	0.50	500,000.00	250,000.00
2565.516	TRAFFIC CONTROL SIGNAL SYSTEM B	SYSTEM	0.50	520,000.00	260,000.00
2565.616	TEMPORARY SIGNAL SYSTEM A	SYSTEM	0.50	60,000.00	30,000.00
2565.616	TEMPORARY SIGNAL SYSTEM B	SYSTEM	0.50	60,000.00	30,000.00
2573.501	STABILIZED CONSTRUCTION EXIT	LUMP SUM	1.00	5,000.00	5,000.00
2573.501	EROSION CONTROL SUPERVISOR	LUMP SUM	0.30	10,000.00	3,000.00
2573.502	STORM DRAIN INLET PROTECTION	EACH	1.00	250.00	250.00
2573.503	SILT FENCE, TYPE MS	LIN FT	7,988.00	2.00	15,976.00
2573.503	SEDIMENT CONTROL LOG TYPE WOOD FIBER	LIN FT	630.00	5.00	3,150.00
2574.505	SUBSOILING	ACRE	2.00	600.00	1,200.00
2574.505	SOIL BED PREPARATION	ACRE	3.10	600.00	1,860.00
2574.507	FILTER TOPSOIL BORROW	CU YD	43.00	54.00	2,322.00
2574.507	LOAM TOPSOIL BORROW	CU YD	1,919.00	55.00	105,545.00

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(1) 80% FEDERAL NHPP, 20% STATE
(P) = PLAN QUANTITY

ITEM NUMBER	SP 8205-159 TH 61 RAMP WORK ITEM	UNIT	QUANTITY	UNIT PRICE	COST (1)
2574.508	FERTILIZER TYPE 3	POUND	293.00	2.00	586.00
2574.508	FERTILIZER TYPE 4	POUND	46.00	3.00	138.00
2575.504	ROLLED EROSION PREVENTION CATEGORY 10	SQ YD	1,302.00	3.00	3,906.00
2575.504	ROLLED EROSION PREVENTION CATEGORY 20	SQ YD	2,500.00	3.00	7,500.00
2575.505	DISK ANCHORING	ACRE	1.20	750.00	900.00
2575.505	MOWING	ACRE	6.00	300.00	1,800.00
2575.505	WEED SPRAYING	ACRE	1.10	1,250.00	1,375.00
2575.505	SEEDING	ACRE	2.00	2,500.00	5,000.00
2575.506	WEED SPRAY MIXTURE	GALLON	0.50	400.00	200.00
2575.509	MULCH MATERIAL TYPE 3	TON	2.20	400.00	880.00
2575.523	WATER	M GALLON	2.00	300.00	600.00
2575.608	SEED SOUTHERN BOULEVARD	POUND	19.00	8.00	152.00
2575.608	SEED MESIC INSLOPE	POUND	63.00	15.00	945.00
2575.608	SEED WET DITCH	POUND	7.00	85.00	595.00
2575.608	SEED SOUTHERN TALLGRASS ROADSIDE	POUND	14.00	50.00	700.00
2580.503	INTERIM PAVEMENT MARKING	LIN FT	500.00	1.00	500.00
2581.518	REMOVABLE PREFORMED PAVEMENT MESSAGE TAPE	SQ FT	96.00	20.00	1,920.00
2582.503	4" SOLID LINE MULTI-COMPONENT (WR)	LIN FT	8,245.00	1.00	8,245.00
2582.503	6" SOLID LINE MULTI-COMPONENT GROUND IN (WR)	LIN FT	8,245.00	2.00	16,490.00
2582.503	24" SOLID LINE PREFORM THERMO GROUND IN ESR	LIN FT	51.00	2.00	102.00
2582.518	PAVEMENT MESSAGE PREFORM THERMOPLASTIC GROUND IN CONTRAST	SQ FT	215.00	35.00	7,525.00
2582.518	CROSSWALK PREFORM THERMOPLASTIC GROUND IN ENHANCED SKID RESISTANCE	SQ FT	528.00	15.00	7,920.00
				TOTAL	$3,621,022.75
	(1) **80% FEDERAL NHPP**	**$2,896,818.20**			
	20% STATE MATCH	**$724,204.55**			

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Minnesota Government Data Practices Act, Minnesota Statutes Chapter 13.

(2) 80% FEDERAL NHPP, 20% STATE

ITEM NUMBER	SP 8205-159 BRIDGE No. 82019 WORK ITEM		UNIT	QUANTITY	UNIT PRICE	COST (2)
2401.518	RAISED MEDIAN CONCRETE (3S52)	(P)	SQ FT	357.00	40.00	14,280.00
2401.602	CONCRETE END POST		EACH	4.00	10,000.00	40,000.00
2404.618	CONCRETE WEARING COURSE (3U17A) 2.0"	(P)	SQ FT	3,784.00	15.00	56,760.00
2433.502	REMOVE CONCRETE END POST		EACH	4.00	4,000.00	16,000.00
2433.502	ANCH TYPE REINF BARS (TYPE NT)		EACH	204.00	50.00	10,200.00
2433.518	REMOVE CONCRETE WEARING COURSE	(P)	SQ FT	264.00	50.00	13,200.00
2433.603	REPAIR PAVING BRACKET	(P)	LIN FT	100.00	250.00	25,000.00
					TOTAL	$175,440.00
	(2)	**80% FEDERAL NHPP**	**$140,352.00**			
		20% STATE MATCH	**$35,088.00**			

(3) 80% FEDERAL NHPP, 20% STATE

ITEM NUMBER	SP 8205-159 BRIDGE No. 82020 WORK ITEM		UNIT	QUANTITY	UNIT PRICE	COST (3)
2401.518	RAISED MEDIAN CONCRETE (3S52)	(P)	SQ FT	793.00	40.00	31,720.00
2401.602	CONCRETE END POST		EACH	4.00	10,000.00	40,000.00
2404.618	CONCRETE WEARING COURSE (3U17A) 2.0"	(P)	SQ FT	3,498.00	15.00	52,470.00
2433.502	REMOVE CONCRETE END POST		EACH	4.00	4,000.00	16,000.00
2433.502	ANCH TYPE REINF BARS (TYPE NT)		EACH	212.00	50.00	10,600.00
2433.518	REMOVE CONCRETE WEARING COURSE	(P)	SQ FT	218.00	50.00	10,900.00
2433.603	REPAIR PAVING BRACKET	(P)	LIN FT	104.00	250.00	26,000.00
					TOTAL	$187,690.00
	(3)	**80% FEDERAL NHPP**	**$150,152.00**			
		20% STATE MATCH	**$37,538.00**			

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Minnesota Government Data Practices Act, Minnesota Statutes Chapter 13.

(4) 100% STATE

ITEM NUMBER	SP 8205-159 HAUL SALVAGED MATERIAL WORK ITEM	UNIT	QUANTITY	UNIT PRICE	COST (4)
2104.601	HAUL SALVAGED MATERIAL	LUMP SUM	1.00	1,500.00	1,500.00
				TOTAL	$1,500.00
	(4) **100% STATE**	**$1,500.00**			

(5) 50% STATE, 50% CITY

ITEM NUMBER	SP 8205-159 STATE FURNISHED MATERIALS - SIGNAL SYSTEM "B"	UNIT	QUANTITY	UNIT PRICE	COST (5)
	-Lump Sum - For Information Only -				
	ATC CABINET 350	EACH	1.00	58,841.46	58,841.46
	AUTOSCOPE VEHICLE DETECTION	EACH	1.00	2,583.90	2,583.90
	AUTOSCOPE CAMERAS	EACH	3.00	8,823.54	26,470.62
	PTZ CAMERA	EACH	1.00	5,207.36	5,207.36
				TOTAL	**$93,103.34**
	(5) 50% STATE	$46,551.67			
	50% CITY	**$46,551.67**			

(6) 50% STATE, 50% COUNTY

ITEM NUMBER	SP 8205-159 STATE FURNISHED MATERIALS - SIGNAL SYSTEM "A"	UNIT	QUANTITY	UNIT PRICE	COST (6)
	-Lump Sum - For Information Only -				
	ATC CABINET 350	EACH	1.00	58,841.46	58,841.46
	AUTOSCOPE VEHICLE DETECTION	EACH	1.00	2,583.90	2,583.90
	AUTOSCOPE CAMERAS	EACH	3.00	8,823.54	26,470.62
	PTZ CAMERA	EACH	1.00	5,207.36	5,207.36
				TOTAL	$93,103.34
	(6) 50% STATE	$46,551.67			
	50% COUNTY	**$46,551.67**			

City Council Action Request

7.W.

Meeting Date	3/18/2026
Department	Administration
Agenda Category	Action Item
Title	Right-of-Way Permit Management Special Provisions and Control Policy
Staff Recommendation	Approve the Right-of-Way Permit Management Special Provisions and Control Policy.
Budget Implication	N/A

Attachments

1.	Approve ROW Permit Management Special Provisions and Control Policy Memo 2026-03-18
2.	2026 ROW Permit Management Special Provisions and Control Policy
3.	Large Scale Project - Plan Requirements

To: Honorable Mayor and City Council
Jennifer Levitt, City Administrator

From: Genevieve Tester, EIT, Graduate Engineer
Hailey Sutton, Engineering Technician

Date: February 23, 2026

Re: Right-of-Way Permit Management Special Provisions and Control Policy

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Background

Cottage Grove's Engineering Division processes over 250 right-of-way permits annually for private utility companies working within City Right-of-Way and Drainage and Utility Easements. Companies, such as Xcel Energy, Comcast, and Lumen, working under an issued permit are required to comply with the *Right-of-Way Permit Management Special Provisions and Control Policy*. This policy, originally created in 2016 and updated once in 2025, has been recently strengthened in response to insights gained during the installation of city-wide fiber networks, which revealed potential challenges and blind spots. Maintaining a consistent policy ensures uniformity, quality, and compliance across the numerous private projects throughout the City of Cottage Grove, protecting public infrastructure, ensuring safety, and supporting residents' needs.

Discussion

City Engineering Staff meets monthly with other metro cities to discuss right-of-way management. These discussions helped Cottage Grove refine policy language and emphasize key concerns within the various special provisions. The policy includes requirements related to annual right-of-way licensing, application requirements, plan set requirements, excavation and restoration standards, traffic control, operational procedures and field practices, winter work restrictions, joint trench installations in new subdivisions, non-compliant procedures, and project closeout.

Recommendation

Staff recommends that the City Council approve the *Right-of-Way Permit Management Special Provisions and Control Policy*.

City of Cottage Grove
Right-of-Way Permit Management
Special Provisions and Control Policy

The City of Cottage Grove (City) will be taking a proactive approach to control its public right-of-way (ROW) for the health, safety, and welfare of their citizenship, and to ensure streets, sidewalks, trail systems, and public spaces are free from unnecessary encumbrances resulting from ROW construction projects.

To ensure compliance with City right-of-way permit requirements and right-of-way franchise agreements, the City adopted a ROW Permit Management Policy that all contractors, utility companies, their contractors, sub-contractors, consultants, and inspectors shall abide by. The policy is as follows:

All contractors working within the City of Cottage Grove must annually obtain a Cottage Grove Contractor's License and a Right-of-Way License.

Refer to any provided record plans for known utility locations. The applicant is responsible for ensuring City of Cottage Grove utilities are not damaged during private utility installation operations. Any damage to Cottage Grove utilities resulting from permit-related work shall be repaired at the full cost of the permittee.

Damage to private utilities (including irrigation systems) resulting from work related to the permit shall be required to be repaired at the full cost of the permittee.

Permitting fees follow the City Fee Table. https://www.cottagegrovemn.gov/448/City-Fees

OPEN EXCAVATION: Any excavation within the Public Right-of-Way (ROW) of Cottage Grove shall be backfilled within five (5) calendar days of the excavation for public safety. A single permit can include multiple holes (e.g., pole replacements, pedestal/vault replacements). The *Right-of-Way Excavation* ***Hole*** *Permit Fee* covers up to five (5) holes within the same permit. Additional holes are billed in groups of five (5).

COMMUNICATION LINE DEPTHS: The standard in Cottage Grove is to place communication lines at a minimum of 36 inches below grade in the right-of-way and in drainage & utility easements. When crossing beneath a street, the facility must be a minimum of 60 inches below grade. A service drop toward the home shall be at a minimum of 12 inches below grade.

RESTORATION: All backfilled excavations shall be restored with sod or seed with mulch within 14 calendar days to comply with City Ordinances (City Specification Section 32 92 00 *Turf and Grasses*) and City NPDES Stormwater requirements. When winter conditions prevent restoration, excavations should be stabilized with mulch over the cold-weather months, and restoration shall be completed no later than May 31st of the following spring.

DRIVEWAY RESTORATION: Potholing or disturbing driveways is strongly discouraged and must be avoided at all costs. If a driveway or sidewalk is impacted, follow the guidelines below for the specific situation. All hardscape restoration must be replaced with in-kind material.

- Notify City Public Works Staff before any potholing is performed.
- If disturbing a sidewalk: Refer to City Standard Detail STR-42.
- If a sidewalk is present and the apron is disturbed: The entire apron must be removed and replaced (full width of the driveway from sidewalk to curb).
- If a sidewalk is present and the driveway on private property is disturbed: The patch must extend two (2) feet beyond the edge of disturbance and cover the full width of the driveway.
- If there is no sidewalk and the driveway is disturbed: The patch must extend two (2) feet beyond the edge of disturbance, down to the curb, and cover the full width of the driveway.

BITUMINOUS TRAILS: The width for a bituminous trail repair must match the width of the trail impacted or damaged—minimum eight (8) feet. This includes damage caused by potholing or locating activities related to the permit work. The permit holder shall be responsible for all associated repairs. If more than one (1) pothole is needed and the distance between the potholes is less than 16 feet, the bituminous repair shall equal the distance between the potholes plus an additional four (4) feet. The bituminous trail section shall be reconstructed to the City Standard Detail STR-9 within 14 calendar days from the bituminous trail removal. When winter conditions prevent placement of bituminous, cold-mix patch shall be utilized for temporary patching. All cold-mix patches shall be replaced with acceptable materials per City Standard Detail STR-9 no later than May 31st of the following spring.

CONCRETE: The minimum width for a concrete sidewalk repair shall match the existing sidewalk width. Concrete walks, medians, driveways, curbs, and gutters that experience cracks, spall, broken panels, and/or undermining as a result of permit related work shall be replaced by the permit holder or their subcontractors in-kind. All concrete sections replaced as part of the permit work shall conform to the Americans with Disabilities Act (ADA) standards for cross-slope and running slope to the greatest extent feasible. All pedestrian ramp truncated domes damaged as a result of permit work shall be replaced. All concrete replacements shall begin and end at a construction joint. No partial panel replacements shall be allowed. All concrete replacements shall be conducted in accordance with City Standards—see specification sections 32 13 14 *Concrete Walks, Medians, and Driveways* and 32 16 13 *Concrete Curbs and Gutters*. All concrete restoration shall be within 14 calendar days of removals or reported damage. When winter conditions prevent placement of concrete, cold-mix patch shall be utilized for temporary patching. All cold-mix patches shall be replaced with acceptable materials no later than May 31st of the following spring.

If the total concrete quantity for a right-of-way permitted project exceeds 15 cubic yards, City standard concrete testing is required at the full cost of the permittee. Please notify City Public Works Staff if concrete quantities are planned to exceed 15 cubic yards. Test results should be provided to the City Engineer. Failing test results will require removal and replacement.

DAMAGE TO, AND CARE OF, CITY STREETS: Tracking on public property is to be minimized and cleaned up at the end of each day. Damage to City streets resulting from work related to the permit shall be repaired at the full cost of the permittee, within 14 calendar days of removals or reported damage, and:

a. Shall match existing pavement thickness over 8" of class 5 aggregate base.
b. Shall conform to bituminous mix type SP 12.5 Wearing Course Mixture (2,B) [SPWEB240B].
c. Shall extend to the face of the adjacent concrete gutter when a patch is located within two (2) feet of the edge of the concrete gutter.
d. Shall conform to City Standard Detail STR-35 for roadway patches.
e. Shall conform to City Standard Detail STR-10 for curb replacements.
f. Shall occur immediately upon completion of the work. If a cold-mix patch is placed over the winter, it shall be replaced with hot-mix asphalt by May 31st of the following spring.

TEMPORARY TRAFFIC CONTROL: All temporary traffic control shall conform to the MnDOT Temporary Traffic Control Field Manual. All temporary traffic control shall be promptly removed—no later than seven (7) days after the completion of the on-site work.

DIRECTIONAL DRILLING: All duct size cannot be less than one half (1/2) of the diameter of the drill head. Pneumatic gopher missile boring, or boring operations that have limited steering capabilities, are prohibited. Directional drilling is the preferred method of installing conduit over micro-trenching or trenching. If right-of-way and utility easements are overly congested and boring is not practical, submit a trenching request to the City Engineer. Cottage Grove Public Works Staff shall be notified before all drilling operations to ensure conformity.

NEW STREETS: Hardscape disturbance in areas rehabilitated within the past five (5) years is strongly discouraged and must be avoided whenever possible. This includes, but is not limited to, new pavement, trails, sidewalks, medians, driveways, curbs, and gutters. Applicants may be required to redesign their plans to avoid these areas.

WINTER WORK: Due to cold weather impact on materials, challenging ground conditions, safety concerns, limited restoration options, and conflicts with winter maintenance, excavation of paved areas and soft surfaces is prohibited from November 1st until road restrictions are lifted in the spring, unless specifically approved by the City Public Works Department. The City reserves the right to deny permits if there is insufficient time for review or completion of work prior to November 1st.

JOINT TRENCH: A Joint Trench is a single, shared trench used to install multiple types of private utilities within new subdivisions. Developers and contractors coordinate to place several utility lines together in one trench. Prior to the issuance of any Joint Trench permits, permittees, contractors, and/or subcontractors must meet with City Public Works Staff to discuss the work. **Joint Trenches are required to be installed in Drainage & Utility Easements**.

LARGE-SCALE PROJECTS: To ensure proper practices and restoration, permits for large-scale underground boring or trenching networks will be issued one (1) neighborhood or reasonable area at a time as determined by the City Engineer, not to exceed 50,000 linear feet. Additional areas may be considered following discussion and approval by City Public Works Staff. Permit areas must reach Substantial Completion* before any additional permits are released. The City reserves the right to issue a stop-work order on any permit if the same applicant has outstanding punch list items on other active permits. Contractors installing large-

scale projects shall meet, upon request, with City Staff for an annual pre-construction meeting, weekly on-site meetings, and daily check-ins.

***Substantial Completion:**

- Utility installation within right-of-way and utility easements complete.
- Hardscape restoration complete (sidewalks, trails, driveways, pavement, etc.); temporary patching installed where seasonal limitations apply.
- Softscape restoration complete, or temporary stabilization installed where seasonal limitations apply.
- All temporary traffic control devices removed.
- Streets cleaned and construction debris removed.
- All disturbed areas are determined to be safe and stable.
- Final Completion Punch List created and communicated.

Final Completion:

- Full turf establishment.
- Permanent hardscape restoration complete where temporary patching was previously installed.
- Record plan (as-built) submitted and approved.
- All Punch List items completed and approved.

For any underground boring or trenching runs totaling **200LF or greater**, the following information must be included in the permit application. Refer to attached drawings for examples.

- Show all dimensions within the ROW and/or drainage & utility easements for each roadway, including edge of curb, edge of pavement, sidewalk, planned route of new facilities, road centerline, median, and any other relevant details.
- Include details of construction bore, trench, duct sizes, linear feet, contents of ducts/paths.
- Show relationships between all drawings.
- Show all planned new facilities.
- Include a title block for each sheet containing: project name, project number, facilities owner, preparer of sheet/design, revisions, compass reference, drawing scale, date prepared, sheet name, and sheet number.
- Include a legend of symbols and abbreviations.
- Confirm sheet notes reference title block notes or sheet notes.
- Label all street names.
- Indicate minimum depth below grade for underground facilities crossing roadways.
- Show all parcel lines and addresses for each parcel.
- Show traffic plans as required by MnDOT Temporary Traffic Control Field Manual.
- Show sheet legend for all sheets within permitting area on overall location plan.
- Show city boundaries and proposed area of work on overall location plan.
- Include construction timelines and a hotline number for resident inquiries.
- Include number of parcels passed.
- Include table of contents.

ROAD CROSSINGS: Road crossings should be minimized. Cottage Grove Public Works Staff will review each network on a case-by-case basis and shall be notified before each road crossing in the field.

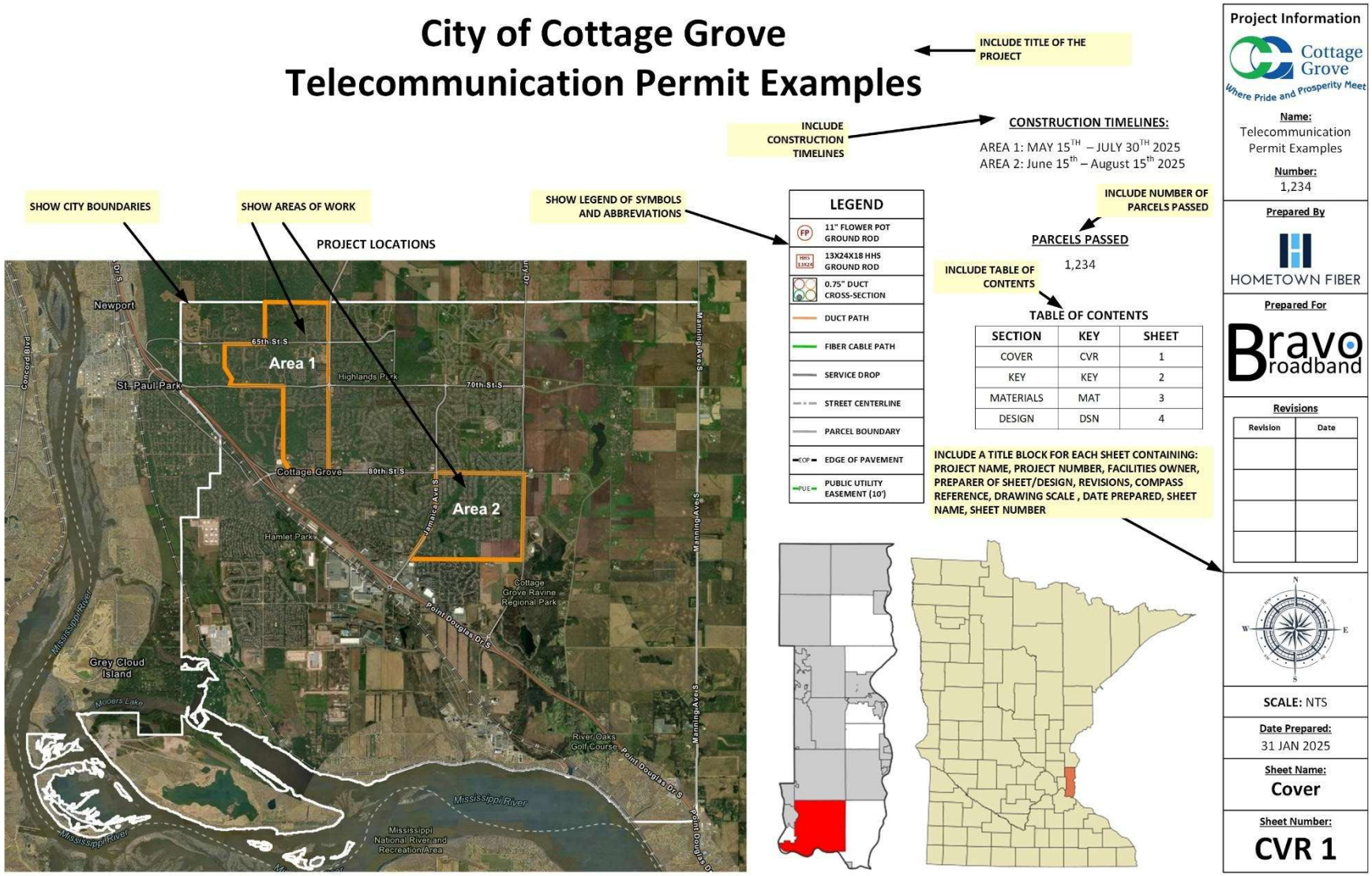
- No crossings are allowed at cul-de-sac intersections or within cul-de-sacs.
- If needed, all road crossings should occur at intersections, not mid-block, where possible.
- No road crossing shall be less than 500 feet away from the next consecutive road crossing on the same street.
- If needed, the road crossing must serve no fewer than 12 properties.
- Installers must mark the accurate bored depth at both ends of the crossing and at the midpoint using wax crayon or chalk on the pavement for inspection.
- Road crossings shall be at least 5 feet below grade under the curb and pavement sections.

PROJECT CLOSEOUT: Once the right-of-way project is complete, please notify Cottage Grove Public Works Staff for review and close-out. Record Plans must be submitted within two (2) weeks of all utility installation.

FAILURE TO CONFORM TO PROVISIONS: If any of the stated items (excavation restoration, bituminous trail restoration, concrete restoration, city street restoration, etc.) are not completed within respective timeframes, the Cottage Grove Public Works Department will perform the work as an overtime call-out (two hour minimum charge for all personnel and equipment required) and invoice all work associated to the permittee. These reimbursable expenses may include, but are not limited to labor, material, equipment, inspections, overhead (38% of total cost) and fringe benefits (63% of labor). If the Public Works Department is unable to perform the restoration, the City may hire a contractor to complete the necessary work for repairs, and charge the permit holder the contractor's invoice plus overhead (30% of the project cost) for administration and inspections.

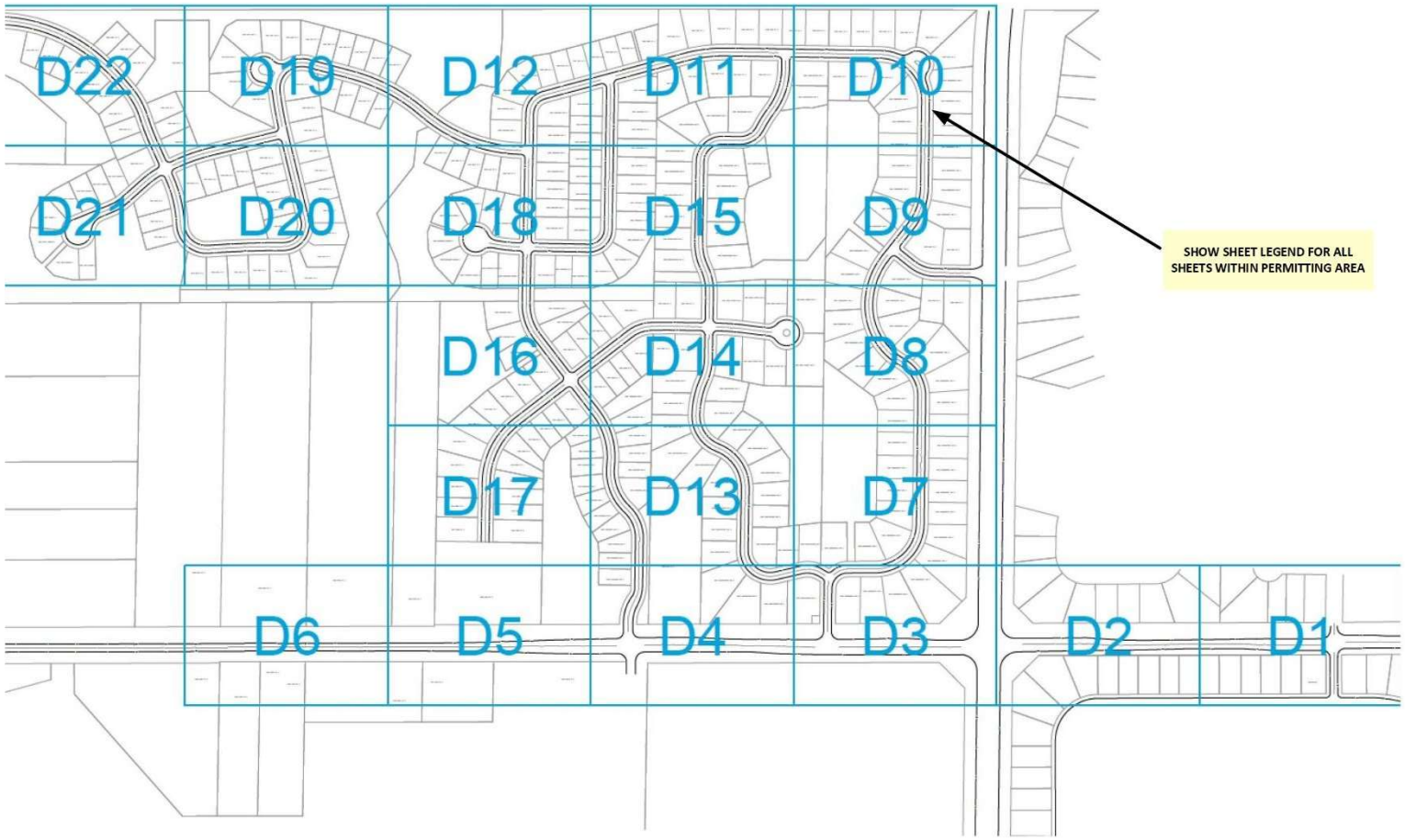
All restoration work not specifically mentioned in the sections above must be completed in compliance with the latest addition of the City of Cottage Grove Standard Specifications and Detail Plates.

LARGE-SCALE PROJECTS (>200LF) EXAMPLE PERMIT



LARGE-SCALE PROJECTS (>200LF) EXAMPLE PERMIT

EXAMPLE SHEETS KEY



Cottage Grove
Where Pride and Prosperity Meet

Name:
Telecommunication Permit Examples

Number:
1,234

Prepared By
HOMETOWN FIBER

Prepared For
Bravo Broadband

Revisions

Revision	Date

SCALE: NTS

Date Prepared:
31 JAN 2025

Sheet Name:
Key

Sheet Number:
KEY 2

LARGE-SCALE PROJECTS (>200LF) EXAMPLE PERMIT

EXAMPLE GOODS AND SERVICES LIST

ITEM ID	DESCRIPTION	UNIT	TOTAL
	BORE(s)		
###	(1) 3" BORE WITH 2 MICRO-DUCT BUNDLES	FT	##,###
###	(1) 3" BORE WITH 3 MICRO-DUCT BUNDLES	FT	##,###
###	(1) 3" BORE WITH 4 MICRO-DUCT BUNDLES	FT	##,###
	PULL(s)		
###	PULL (1) 2" DUCT	FT	##,###
###	PULL (1) 144 STRAND FIBER IN DUCT	FT	##,###
###	PULL TRACER WIRE IN DUCT	FT	##,###
	PLACEMENT(s)		
###	PLACE SMALL HAND HOLE 12" X 24" 18"	EA	##,###
###	PLACE FLOWER POT	EA	##,###
###	PLACE TRACER WIRE	EA	##,###
###	PLACE GROUND ROD	EA	##,###
###	PLACE EXPANDING 10,000 POUND ANCHOR	EA	##,###
###	PLACE U-GUARD 1"	EA	##,###
###	PLACE AERIAL 144 FIBER LASHED TO NEW STRAND	FT	##,###
###	144 STRAND FIBER COIL 50'	EA	##,###
	SPLICING AND TESTING		
###	FUSION SPLICE	EA	##,###
###	FIBER TEST OTDR RECORD	EA	##,###
###	SPLICE CASE SIZE D	EA	##,###
###	PLACE 1X8 SPLITTER	EA	##,###
	REMOVE AND REPLACE		
###	REMOVE AND REPLACE CEMENT	SQFT	##,###
###	REMOVE AND REPLACE ASPHALT	SQFT	##,###

PROVIDE A LIST OF GOODS AND SERVICES FOR ALL NEW FACILITIES

PROVIDE A TOTAL PROJECT COST ESTIMATE IN US DOLLARS

Total Project Cost Estimate: $_____(USD)

Cottage Grove
Where Pride and Prosperity Meet

Name:
Telecommunication Permit Examples

Number:
1,234

Prepared By
HOMETOWN FIBER

Prepared For
Bravo Broadband

Revisions

Revision	Date

SCALE: NTS

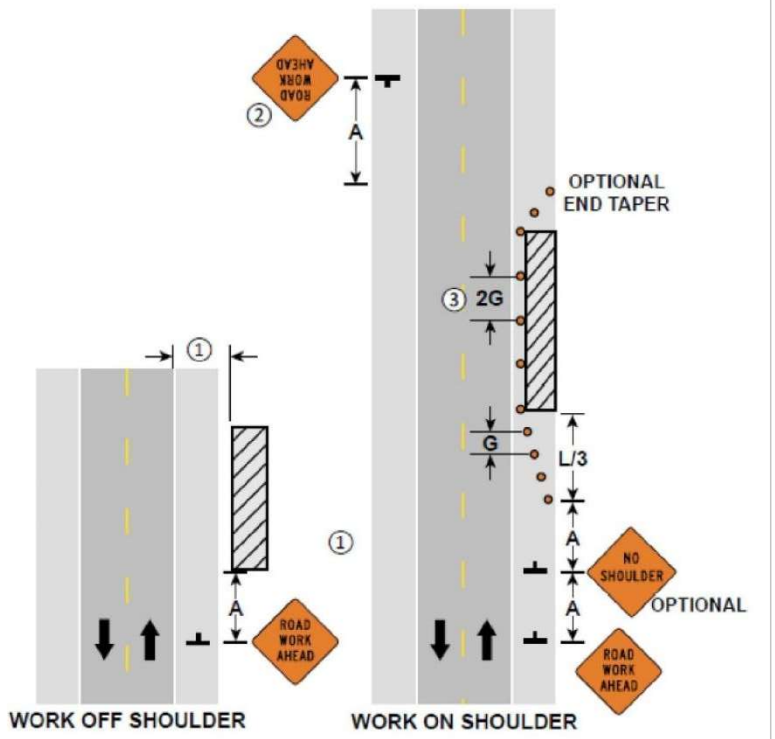
Date Prepared:
31 JAN 2025

Sheet Name:
Materials

Sheet Number:
MAT 3

LARGE-SCALE PROJECTS (>200LF) EXAMPLE PERMIT

EXAMPLE TRAFFIC CONTROL SHEET



SHOULDER AND PARKING LANE CLOSURE
Work On or Near Shoulder
3 DAYS or LESS — LAYOUT 8
6K-8

NOTES:

1. The ROAD WORK AHEAD sign may be omitted for short term daylight operations if a vehicle is displaying and operating a 360-degree flashing beacon and:
   a. The distance from curb face to the work space is at least 2 feet, or
   b. The distance from the edge of the roadway to the work space is at least 15 feet.
2. This ROAD WORK AHEAD sign shall be installed on two-lane, two-way roads if traffic control devices are installed for a work space in the opposite shoulder.
3. If this layout is used to close a parking lane that is normally open to vehicle travel during the time of day the closure will be in effect, the lane shall be considered a traveled lane and not a parking lane. Layout 42 shall be used to provide traffic control for the lane closure.
4. If this layout is used to close a parking lane, channelizer spacing may be reduced from 2G to G in high volume areas.

SHOW TRAFFIC PLANS AS REQUIRED BY MNDOT TEMPORARY TRAFFIC CONTROL FIELD MANUAL

Cottage Grove
Where Pride and Prosperity Meet

Name:
Telecommunication Permit Examples

Number:
1,234

Prepared By
HOMETOWN FIBER

Prepared For
Bravo broadband

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Revision	Date

SCALE: NTS

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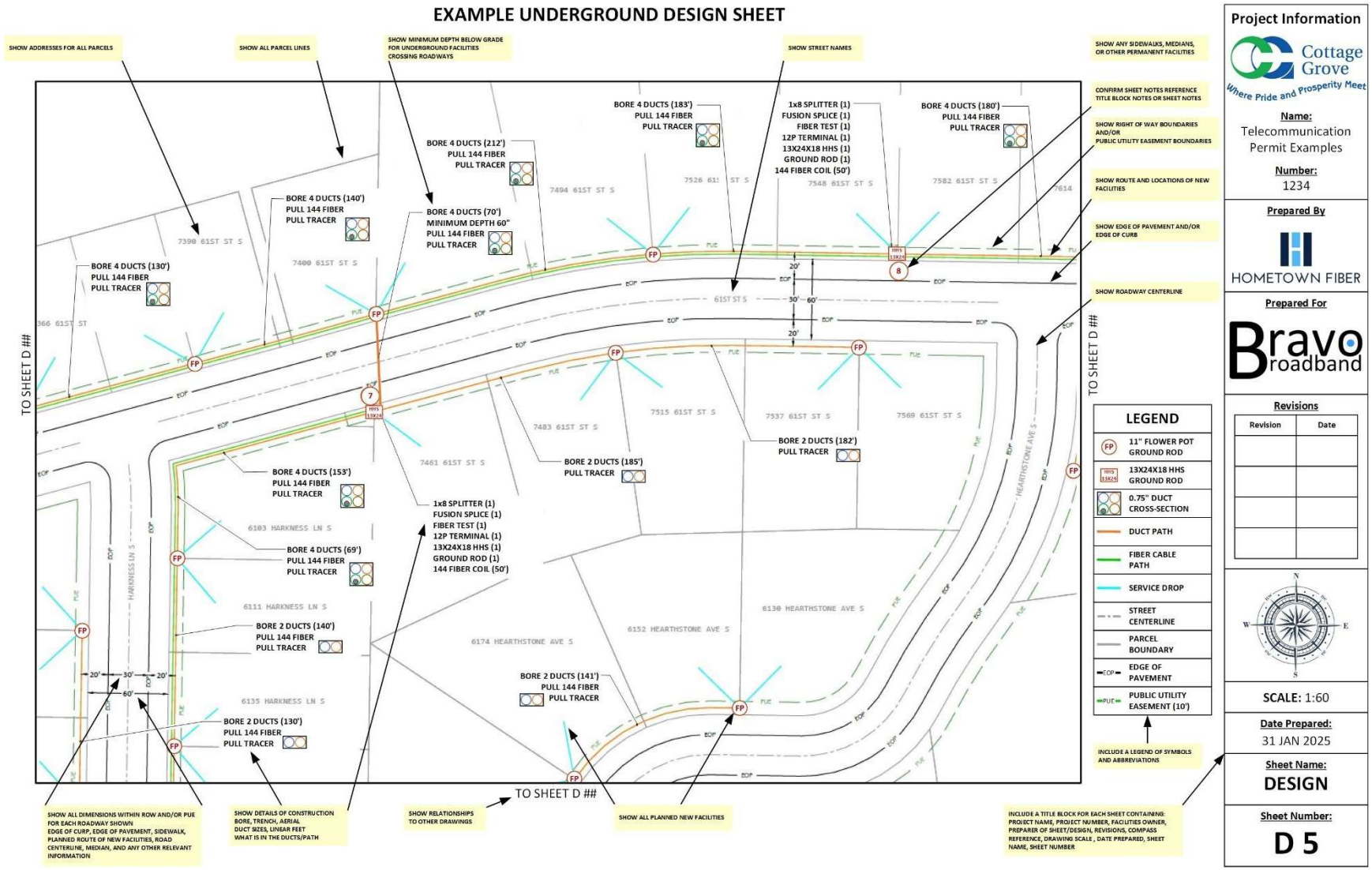
31 JAN 2025

Sheet Name:
Traffic Control

Sheet Number:
TCP 4

LARGE-SCALE PROJECTS (>200LF) EXAMPLE PERMIT



City Council Action Request

7.X.

Meeting Date	3/18/2026
Department	Administration
Agenda Category	Action Item
Title	American Water Infrastructure Act Support - Barr Engineering Agreement
Staff Recommendation	Approve the Professional Services Agreement with Barr Engineering Company in the amount of $44,900.
Budget Implication	$44,900 — Water Utility Operating Fund

Attachments

1.	Memo 2026-3-18 AWIA PSA
2.	Barr-Cottage Grove AWIA Updates_Final-2026-03-12
3.	Stantec Proposal 2026
4.	West Yost Proposal
5.	Agreement - AWIA R

To: Honorable Mayor and City Council
Jennifer Levitt, City Administrator

From: Ryan Burfeind, PE, Public Works Director
Chad Donnelly, PE, Deputy Public Works Director – Utilities
Brian Bluhm, IT Manager

Date: March 10, 2026

Re: Professional Services Agreement – American Water Infrastructure Act (AWIA) Support

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Background

The American Water Infrastructure Act of 2018 (AWIA) requires community water systems serving more than 3,300 people to evaluate potential risks to their infrastructure and develop plans to maintain safe drinking water during emergencies. The law amended the Safe Drinking Water Act and directs utilities to conduct a Risk and Resilience Assessment (RRA) and maintain an updated Emergency Response Plan (ERP). These requirements must be certified to the U.S. Environmental Protection Agency (EPA) according to deadlines based on system size.

Water utilities must complete these requirements to identify vulnerabilities such as natural disasters, cybersecurity threats, infrastructure failure, and contamination risks that could disrupt service or impact water quality. By evaluating these risks and establishing clear emergency response procedures, utilities strengthen system resilience, improve operational preparedness, and ensure the continued delivery of safe, reliable drinking water to the communities they serve. The RRA and ERP are to be renewed and certified every five years. The City of Cottage Grove is due for these updates in 2026.

Discussion

Public Works utilities staff (Staff) issued a Request for Proposal in February 2026 to three firms who practice in this area. The results of the solicitation and fees are below. Staff is recommending retaining Barr Engineering Company (Barr).

- Stantec – $24,900
- Barr Engineering – $44,900
- West Yost – $70,000

This cycle of AWIA work is unique as the City has completed and delivered on a multitude of water utility projects since the previous cycle. These projects include treatment plants, transmission mains, design and construction of operations technology networks and cyber posturing, as well as a well-field expansion. Staff feels strongly that a firm, such as Barr, is uniquely positioned to review the City's water utility from a new and fresh perspective. This cycle of AWIA work is also quite complex with cybersecurity related evaluations of which Barr possesses in the in-house expertise for. A full and in-depth review from a professional services

provider, that is new to the City, is warranted and is expected to reveal a new set of findings as well as new actions for consideration of system resiliency. The expectation of a 'new', not a renewed set of documents, reflects our recommendation herein.

Budget Implications

This is a 2026 non- budgeted item in the amount of $44,900 being sourced from the Water Utility Operating Fund.

Staff Recommendation

It is recommended the City Council approve the Professional Services Agreement with Barr Engineering company in the amount of $44,900 and appropriate officials are hereby authorized to sign all necessary documents to effectuate these actions.

February 2, 2026 (Updated 3/11/2026 to remove Barr's standard terms and conditions, updated 3/12/2026 to address two typos)

Ms. Sydney Peterson
City of Cottage Grove
10875 Ideal Ave S
Cottage Grove, MN 55016

Sent via email to cdonnelly@cottagegrovemn.gov

Re: Proposal for American Water Infrastructure Act (AWIA) Updates

Dear Mr. Donnelly:

Barr Engineering Co. (Barr) appreciates the opportunity to submit this proposal to provide updates to the City of Cottage Grove's (City's) existing risk and resiliency assessment and emergency response plan as required by the US EPA American Water Infrastructure Act (AWIA) of 2018. We believe Barr is well-positioned to assist the City with this work, as we have worked with various metro-area cities to develop the original AWIA documents five years ago.

We understand that the City is requesting assistance with updating two documents: 1) the risk and resiliency assessment (RRA), and 2) the emergency response plan (ERP). The EPA deadlines for the City to complete AWIA-required document updates are **June 30, 2026,** for the RRA, and **December 31, 2026,** for the ERP.

1.0 Proposed Work Tasks

We understand that the work tasks will involve evaluating and updating the City's RRA and ERP to maintain compliance with the EPA's AWIA requirements for community water systems. This work will require the following tasks:

1. Review existing documentation and conditions
2. Update the existing Risk and Resiliency Assessment (RRA)
3. Update the existing Emergency Response Plan (ERP)

The tasks, deliverables, project duration, and expected fee are listed below for each item.

Task 1: Review existing documentation and conditions

For Task 1, Barr will review existing documentation for pertinent information. This documentation includes, but is not limited to:

1. Risk and Resilience Assessment
2. Emergency Response Plan
3. Water Supply Master Plan
4. Hazard Mitigation Plan
5. Cybersecurity Assessment
6. Project summaries from the past 5 years for work done related to the City's public drinking water system. It is our understanding that this work includes:

   a. Permanent and temporary water treatment plant(s)
   b. New well(s)
   c. Raw and finished watermains
   d. Chemical feed modifications
7. Available project summaries for proposed future work related to the City's public drinking water system.

Key tasks and deliverables we will provide as part of Task 1 include:

- **Meetings:** 1 in-person meeting and phone calls or emails to discuss water system details
- **Site visits:** none
- **Assumptions:** Barr assumes the previous RRA and ERP source documents will be made available.
- **Deliverables:**
  - Request for information (RFI) of City documentation
  - Results of this work will be included in the RRA and ERP updates
- **Task Duration:** two weeks from receiving notice to proceed

Task 2: Update the existing Risk and Resiliency Assessment (RRA)

After reviewing the information requested as part of Task 1, Barr will meet with City staff to discuss current risk concerns for the water system and tour the City's water system infrastructure. Barr will then update the City's existing RRA to meet the AWIA requirements (financial, cybersecurity, distribution system, treatment plan, etc.).

As part of this task, Barr will use the EPA's Vulnerability Self-Assessment Tool (VSAT) template to identify malevolent acts and natural hazards that may pose a risk to the City's water system. This will include reviewing the items identified when developing the existing RRA as well as new items. All existing and newly identified malevolent acts and natural hazards will be included in a preliminary RRA for the City's review. VSAT will help identify risks and assess the City's resilience to these risks. The RRA report produced by the VSAT will be the deliverable to the City for this task.

After the preliminary RRA is updated, Barr will meet with the City to discuss any remaining questions about the water system and any additional hazards the City may want included in the RRA. We will then refine the preliminary RRA and submit the final RRA to the City.

After the RRA is finalized, the City will need to submit the certification form to the EPA confirming that it has an updated RRA that complies with the AWIA requirements; the RRA itself should not be sent to the EPA. The City's deadline for submitting certification to the EPA for the RRA is June 30, 2026. Key tasks and deliverables provided as part of Task 2 include:

- **Meetings:** 2 in-person meetings and phone calls/emails to discuss water system details and RRA results
- **Site visits:** kick-off meeting and water system tour to evaluate and familiarize with the system
- **Deliverables:**
  - Preliminary risk and resiliency assessment report (RRA from VSAT); draft for City review

  - Final RRA
  - Weekly email updates
- **Task Duration:** 10 weeks from completion of Task 1.

Task 3: Update the existing Emergency Response Plan (ERP)

To create an updated Emergency Response Plan (ERP), Barr will review the City's existing ERP (previously updated in 2021) to evaluate what needs to be updated to meet AWIA requirements. Any additional risks identified in the updated RRA will be incorporated into the updated ERP. Barr will meet with City staff to discuss our preliminary assessment of the existing ERP, provide recommendations from the updated RRA, and incorporate any new AWIA requirements (financial, cybersecurity, distribution system, treatment plant, etc.) into an updated ERP document.

The updated ERP will include Barr recommendations for communication with local, regional, and state-level response services and agencies, as well as guidance on training City staff on ERP procedures, ensuring the City is well-prepared to respond to an emergency. Barr will meet with the City once the preliminary update to the ERP is completed to discuss any remaining questions or concerns. Barr will then finalize the ERP and submit to the City.

After the ERP is finalized, the City will need to submit the certification form to the EPA confirming they have an updated ERP that complies with the AWIA requirements; the ERP itself should not be sent to the EPA. The City's deadline for submitting certification to the EPA for their ERP is December 31, 2026, or six months after certifying the RRA EPA, whichever is first. Key tasks and deliverables we will provide as part of Task 3 include:

- **Meetings:** 1 in-person meeting and phone calls/emails to discuss water system details and RRA results
- **Site visit:** None
- **Deliverables:**
  - Preliminary emergency response plan (ERP); draft for City review
  - Final ERP
  - Weekly email updates
- **Project Duration:** 10 weeks from receiving emergency response plans and after RRA is complete and certified to the EPA

Once the ERP is certified, the City has met AWIA requirements and is compliant.

2.0 City Responsibilities

The following are assumed responsibilities of City staff to complete this project:

1. Provide the existing risk and resiliency assessment (RRA) document
2. Provide the existing Emergency Response Plan (ERP)
3. Provide the existing comprehensive water system plan and DNR Water Supply Plan
4. Be available for site visits, meetings, and discussions on the water system for RRA and ERP
5. Provide timely responses to materials Barr prepares and submits to the City for review

6. Submit online certification of RRA to EPA
7. Submit online certification of ERP to EPA
8. Coordinate with other departments within the City, as needed

3.0 Project Team

The following Barr team will perform the proposed water treatment services:

- Nathan Thomas – Main client contact, project manager
- Ruth Olson – Technical contributor
- Julie Macejkovic – Principal-in-charge

4.0 Project Schedule

The proposed project schedule is below. This schedule assumes a notice to proceed by February 19, 2026.

Work Tasks	Deliverable Date
1. Review existing documentation and conditions	March 5, 2026
2. Update the existing RRA	June 2026
3. Update the existing ERP	December 2026, or 6-months following certification of the RRA

5.0 Fee Estimate

The tasks listed in this proposal will be performed on a time-and-materials basis for the estimated fees shown below.

Work Tasks	Fee Estimate
1. Review existing documentation and conditions	$8,400
2. Update the existing RRA	$21,500
3. Update the existing ERP	$15,000
Total Estimated Fees	**$44,900**

We are eager to start work on this project to help you comply with the EPA's AWIA requirements for your water system. If you have any questions concerning this proposal, please contact us.

Sincerely,

Julie Macejkovic, PE
Vice President

cc: Ruth Olson

Attachments: Standard Fee Schedule

U.S. Labor Fee Schedule—2026

Description	Rate* (U.S. dollars)
Vice President	$190-375
Consultant/Advisor	$210-325
Engineer/Scientist/Specialist IV	$185-205
Engineer/Scientist/Specialist III	$155-180
Engineer/Scientist/Specialist II	$130-150
Engineer/Scientist/Specialist I	$95-125
Technician IV	$155-205
Technician III	$125-150
Technician II	$95-120
Technician I	$60-90
Support Personnel III	$155-205
Support Personnel II	$95-150
Support Personnel I	$60-90

Rates for litigation support services will include a 30% surcharge.

A ten percent (10%) markup will be added to subcontracts for professional support and construction services to cover overhead and insurance surcharge expenses.

For travel destinations within the continental U.S. (CONUS) and Canada, meals will be reimbursed on a per diem basis. The per diem rate will be as published by the U.S. Internal Revenue Service (IRS) based on the High-Low method. Full-day per diem rates will be pro-rated on travel days. For travel destinations outside the continental U.S. (CONUS) and Canada, meals will be reimbursed based on actual expenses incurred.

All other reimbursable expenses, including but not limited to costs of transportation, lodging, parking, postage, shipping, and incidental charges, will be billed at actual reasonable cost. Mileage will be billed at the IRS-allowable rate.

Materials and supplies charges, printing charges, and equipment rental charges will be billed in accordance with Barr's standard rate schedules.

Vice President category includes consultants, advisors, engineers, scientists, and specialists who are officers of the company.

Consultant/Advisor category includes experienced personnel in a variety of fields. These professionals typically have advanced background in their areas of practice and include engineers, engineering specialists, scientists, related technical professionals, and professionals in complementary service areas such as communications and public affairs.

Engineer/Scientist/Specialist categories include registered professionals and professionals in training (e.g., engineers, geologists, and landscape architects) and graduates of engineering and science degree programs.

Technician category includes CADD operators, construction observers, cost estimators, data management technicians, designers, drafters, engineering technicians, interns, safety technicians, surveyors, and water, air, and waste samplers.

Support Personnel category includes information management, project accounting, report production, word processing, and other project support personnel.

*Rates do not include sales tax on services that may be required in some jurisdictions.

American Water Infrastructure Act Plan Updates Proposal

Professional Consulting Services
City of Cottage Grove



Prepared for:
City of Cottage Grove
12800 Ravine Parkway South
Cottage Grove, MN 55016

Prepared by:
Stantec
733 Marquette Avenue, Suite 1000
Minneapolis, MN 55402
Phone: 612-712-2000
Website: www.stantec.com

Contact Person:
Mark T. Janovec, PG
Project Manager
Direct Phone: 651-775-6532
Email: mark.janovec@stantec.com

February 2, 2026

Background

In accordance with America's Water Infrastructure Act (AWIA), also known as Senate Bill 3021 passed in 2018, the City of Cottage Grove was required to conduct and certify a Risk and Resilience Assessment (RRA) and an Emergency Response Plan (ERP). These RRA and ERP were originally completed in 2021 to meet EPA requirements. Cottage Grove partnered with Stantec with the creation of these documents.

The RRA and ERP are due to be amended every five years. The amended RRA is due no later than June 30, 2026. The ERP is due no later than six months after the RRA has been completed or no later than December 30, 2026.

The Environmental Protection Agency (EPA) and Department of Homeland Security (DHS) have provided valuable guidance and tools for conducting the amended RRAs and actionable ERPs. The EPA has provided supporting documentation, including baseline threat information and compliance guidance. This baseline information and guidance will be utilized in preparation of the RRA and ERP.

Purpose

The purpose of this scope of services is to provide professional services to assist the City with complying with the AWIA requirements by updating the RRA and the ERP to reflect current conditions. The AWIA legislation requires the City to continue to investigate vulnerabilities, implement solutions, and streamline response protocols to better protect and respond to hazardous events for their area's water assets and services.

Scope of Services

Task 1 Meetings and Coordination

Stantec will coordinate with the City through meetings, letters, transmittals, e-mails, memoranda and other forms of formal and informal communication, as appropriate. Stantec will attend and facilitate three formal meetings throughout the duration of this work effort. Each meeting is anticipated to be two hours in length. A preliminary list of anticipated meetings is as follows:

- Kick-off meeting and Baseline Utility Risk Resiliency Analysis
- Draft and Final RRA Review
- Draft and Final ERP Review

Task 2 Asset Review

2.1 Records Request

Data and information required will be identified by the City and Stantec at the project kick-off meeting and throughout the duration of the project. Data should be provided in electronic format that is consistent with the data and information provided (e.g., PDF, Microsoft Word, Excel, GIS/spatial etc.).

A preliminary list of data request items includes:

- Previous hazard impact history/insurance reports,
- City procedures for staffing, operation, and billing.
- City's Hazard Mitigation Plan
- City's Record Drawing information (inclusive of updates and expansions)
- City's most recent bond report for the water system (if applicable)
- Interlocal agreements for provision of, or sale of, raw and finished water
- Existing vulnerability assessment (or related) document
- Existing Incident Response Plan, Emergency Operations Plan, or related documents
- Existing Cybersecurity Assessment

2.2 Field Investigations

Due to Stantec's familiarity with Cottage Grove's infrastructure, field investigations will be limited to two site visits to investigate vulnerabilities at certain facilities. Additionally, City staff may be able to participate by conducting field investigations and reporting information back to Stantec, identifying areas of concern.

Locations that may require inspection include:

- Storage tanks
- Water well/ Treatment sites
- Interconnects
- Operations building
- Chemical storage area

- Computer servers and stations

Considerations for each site may include the following:

- How would the equipment be affected by strong winds, high water, or adverse weather?
- Where are flammable or combustible sources located adjacent to or within the site and how would a wildfire affect equipment and operations?
- Are the grounds fenced and is access controlled?
- Are buildings secure and how are they accessed (code, card, keys)?
- Where are the control panels located (building, rack mount) and are they secure?
- Are security protocols being followed?
- Is the equipment in good working order? Are there temporary adjustments that should be remedied and made permanent?

Since City staff already have a good understanding of some of these issues as related to these facilities, input from staff will greatly assist the completion of the RRA. Many of these items were previously considered in the development of the original RRA in 2021.

The focus will be on any changes that have taken place over the past five years, along with any new (or emerging) threats that pose greater risk than before. An example of this is the growing risk involved with cybersecurity. Vulnerabilities observed in other communities over the past five years have indicated that this portion of the risk assessment may be a key component to these RRA updates.

Task 3 Risk and Resiliency Assessment

3.1 Utility Risk Resiliency

The Utility Resiliency Index (URI) is a risk management scoring tool that can assess a utility's capability to respond to and recover from an incident that impacts critical operations. The URI is a valuable complement to the risk assessment performed in VSAT Web 2.0 which can also be used to compare scores across other utilities. A utility can use the URI together with the risk assessments results when developing an overall risk management plan.

The URI uses 12 indicators to calculate the index. Responses to the indicators are assigned values and weights, which are aggregated to provide a characterization of a utility's resilience on a scale from 0% to 100%. A low URI score indicates a low capability of the utility to respond to and recover from an incident, while a high URI score indicates a greater capability to do so.

3.2 Cybersecurity Assessment

Data gathering efforts will include a targeted interview with key staff to identify critical cyber/information assets and review the AWWA cyber assessment questionnaire. The assessment will focus on changes that have occurred since the previous RRA/ERP to the various areas of the water operations and administrative functions. This includes, but is not limited to, system changes and updates, cybersecurity measures and protocols, physical security and discussions with operations and maintenance staff and law enforcement.

Concurrent with our analysis of physical assets, Stantec will coordinate directly with Cottage Grove staff familiar with critical information assets to assess the status of system controls using the AWWA Cyber Assessment Tool, which has been updated and revised to maintain alignment with Section 2013 of AWIA (based on NIST framework). The intent of the cybersecurity assessment is to identify potential weaknesses in the diverse infrastructure, assess the current countermeasures in place, recommend mitigation and correction changes to the physical and network infrastructure, and identify the risk associated with each vulnerability.

For this assessment, we will bring in Sebastien Dubuc, our expert in cybersecurity and physical security of telecommunications systems. Sebastien has conducted these assessments for several major cities, including Tallahassee and Sarasota, Florida. Sebastien's background in software programming gives him a perspective regarding vulnerabilities that may exist in your computer infrastructure.

3.3 Risk Profiling

Using the baseline threat information provided by the EPA, Stantec will identify risks to the system from malevolent acts and natural hazards to be included in the risk assessment. Stantec will also coordinate with the City to identify if additional risks exist that are not included within the EPA's baseline threat guidance. Stantec will develop profiles, descriptions of hazards, for each of the risks identified in the draft list. These profiles will detail available risk information including previous occurrences, annual probabilities, magnitude, and estimated losses. Previous occurrences will be based upon data supplied by the City or other commercial or governmental sources (such as EPA, FEMA, NOAA, etc.). The annual probability and magnitude of impact (minimal to catastrophic) will be assigned to each hazard.

3.4 Hazard Ranking

The results from the above process will provide enough information to prioritize and rank the risks identified in the draft list. The final list of potential malevolent acts and hazards will be reviewed and approved by the City. This scope of services is based on reviewing the top 10 individual risks. For the purposes of this scope of services, natural threats (e.g. tornadoes, ice storms, severe drought, lightning strikes etc.) will be grouped and considered one threat. If the City desires more than 10 individual risks to be reviewed, Stantec can provide the efforts associated with Task 2.3 for the additional risks as an additional service with the City's approval.

3.5 Critical Facility (Asset)/Process Determination

Stantec will update the list of critical facilities (also known as assets), identifying any changes that have occurred in the past five years. The following are typically considered as critical facilities:

- Water treatment plants
- Pump stations
- Storage tanks
- Wellfields/production well sites
- Interconnects
- SCADA system
- Financial/billing system

- Electronic, computer or other automated systems
- Monitoring practices
- Chemical handling practices

3.6 Develop Risk & Resilience Assessment

Stantec will prepare a draft Risk & Resilience Assessment (RRA) by May 15, 2026, to deliver to the City for review with sufficient time for review before the EPA deadline. This assessment will evaluate the City's risks to, and resilience of, its system and critical assets within. Stantec will incorporate City comments and changes to create the final RRA prior to the June 30, 2026 deadline.

The delivery method for the RRA deliverables will require input from City staff due to the sensitivity of the information included.

3.7 RRA Certification Letter

Stantec will prepare the certification letter, as required by the AWIA, for the RRA. Each certification letter shall contain:

- Information that identifies the City water system submitting the certification
- Date of the certification
- Statement that the City water system has conducted, reviewed, or revised the assessment and plan (as applicable)

Task 4 Emergency Response Plan

Stantec will update the City's existing Emergency Response Plan 45 days prior to the EPA deadline of December 30, 2026. A report will be developed to include a plan for implementation, as required by the AWIA. This plan will provide clear guidance to City staff on how to mitigate, manage, and respond to vulnerabilities identified in the previously prepared RRA.

Incorporating the results from the RRA, the Emergency Response Plan will include:

4.1 Strategies and Resources

Strategies and resources to improve the resiliency of the system will be identified, including methods to secure equipment affected by the threats/hazards. These strategies and resources will be identified within the plan each for the following assets categories:

- SCADA system
- Water well/ Treatment sites
- Storage Tanks
- Water Distribution System
- Physical and Electronic Security

4.2 Mitigation and Attenuation Measures (Countermeasures)

Identification will be made of actions, procedures, and equipment which can obviate or significantly lessen the impact of a malevolent act or natural hazard on public health and safety, and supply of drinking water provided to communities, including:

- Development of alternative source water options
- Detection of Malevolent Acts
- Detection of Natural Hazards
- Cybersecurity recommendations

This task will also identify potential additional countermeasures that may be considered going forward in addressing the asset/threat pair. The RRA will be revisited to include the countermeasures, and the impact of incorporating those measures on the overall rating will be determined. In this way, the City will be able to determine whether the cost of the measure is appropriate for the reduction in the risk impact.

4.3 Response Measures

Response measures are defined as plans, protocols, and equipment to be utilized when responding to a malevolent act or natural hazard.

- Identification of chain of command and reporting protocols
- Development of applicable response plans and protocols
- Identification and location of applicable response equipment

These response measures will build upon the existing vulnerability assessments, emergency response plans, local mitigation strategies and enhanced state hazard plans. Recommendations for additional measures will be included in this analysis.

4.4 Report

The above measures will be summarized and organized into an Implementation Plan. A draft Emergency Response Plan will be sent to City Project Manager, in a format to be determined, by November 15, 2026. A final Emergency Response Plan, incorporating City comments, will be submitted to the City Project manager, in a format to be determined, prior to the December 30, 2026, deadline. The delivery method for the ERP deliverables will require input from City staff due to the sensitivity of the information included.

4.5 Certification Letter

Stantec will prepare the certification letter, as required by the AWIA, for the ERP. The certification letter shall contain:

- Information that identifies the City water system submitting the certification
- Date of the certification
- Statement that the City water system has conducted, reviewed, or revised the assessment and plan (as applicable)

Project Fee

The estimated fee for the above scope of work is indicated below. The fee is based on Stantec's current 2026 billing rates. Adjustments of budget may be required if identified risks require more extensive response planning than anticipated. Any additional work that may be identified/required by the City, will be performed as an amendment to this work order. The following summary table shows the fee by task and is based on time and materials in accordance with the anticipated general effort.

Task	Fee	Fee Type
Task 1 and 2: Meetings and Asset Review	$7,300	Hourly
Task 3: Risk and Resiliency Assessment	$8,900	Hourly
Task 4: Emergency Response Plan	$8,700	Hourly
Total Fee	$24,900	

Schedule

Stantec will provide services throughout the duration of the project in accordance with the scope of services listed above. Completion of deadlines may include some factors outside Stantec's control, such as time needed to obtain information from City departments and time required for reviews by City staff. We will give the City as much lead time as possible to respond to requests, to reduce any impact it may have on scheduling.

Stantec will complete the tasks as outlined below:

- Draft Risk and Resilience Assessment (Task 3) by May 15, 2026
- Final Risk and Resilience Assessment prior to June 30, 2026
- Draft Emergency Response Plan (Task 4) by November 15, 2026
- Final Emergency Response Plan prior to December 30, 2026

Stantec will work with the City to develop a more detailed schedule once the project has been kicked off. That schedule will identify other deadlines that will keep the process moving forward.

Exclusions

The following items are not included in the Scope of Services:

1. Design plans and/or documents
2. Flood study
3. Evaluation of software
4. Implementation of software
5. Site visits to all conveyances
6. Risk associated with equipment use
7. Risk associated with accidents/personal injury
8. Risk associated with litigation
9. Training

Assumptions

Stantec shall be entitled to rely upon the information and data provided by the City of Cottage Grove, City representatives, and City contracted entities or obtained from generally acceptable sources within the industry without independent verification except to the extent such verification is expressly included in the Work.

The intent of this project is to identify risks that impact level of services that impact potential health risk and public safety. Financial risk is not a consideration. Property damage risk is considered to the extent that it relates to health risk and public safety.

It is not practical for emergency response plans to be all inclusive of all risk identified in the RRA. Therefore, the ERP will be specific to select top ranked risks which have mitigation or response measures that are within the means of the City to implement. Stantec will coordinate with the City to determine the risk rankings which will be included in the ERP.

We are available to begin work immediately on this effort if this proposal is acceptable to you. If you have any questions or comments regarding the above work plan, please contact me at (651) 775-6532. We look forward to working with Cottage Grove again on this important planning effort.

Sincerely,

STANTEC CONSULTING SERVICES, INC.



Mark T. Janovec, PG
Project Manager



CITY OF COTTAGE GROVE

American Water Infrastructure Act Plan Updates

FEBRUARY 2, 2026

WEST YOST
Water. Engineered.

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1 COVER LETTER

February 2, 2026

Chad Donnelly, PE Deputy Public Works Director - Utilities
Sydney Peterson Engineering Secretary
12800 Ravine Parkway South
Cottage Grove, MN, 55016

WEST YOST
Water. Engineered.

2020 Research Park Drive
Suite 100
Davis, CA 95618

530.756.5905 phone
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westyost.com

RE: Request for Proposal – American Water Infrastructure Plan Updates

SENT: VIA EMAIL

Dear Chad and Sydney:

West Yost is excited to submit our proposal for the City of Cottage Grove's (City's) Five-Year RRA and ERP Review and Update for the City's Water Systems. At West Yost, we understand the critical role that an America's Water Infrastructure Act (AWIA) Risk and Resilience Assessment (RRA) and Emergency Response Plan (ERP) play in safeguarding the City and its community.

An Expert Team with Intimate Knowledge of AWIA Requirements. Our proposed team includes industry-leading professionals who are adept at navigating water system compliance complexities. Our team offers customized assessments that provide comprehensive insights and actionable recommendations to enhance the resilience, safety, and efficiency of the City's water infrastructure. Our team will be led by **Andrew Ohrt, PE, CISSP** who will serve as the Lead Facilitator and Project Manager. **Andrew**, who will serve as the City's primary point of contact, has supported numerous clients in completing their RRAs and ERPs.

Project Manager and Lead Facilitator Andrew Ohrt, PE, CISSP is a recognized, nationwide expert on water system resilience. His work includes supporting the American Water Works Association (AWWA) as a contractor and committee member. Since 2019, he has led the project to update AWWA's cybersecurity resources, which were widely used by utilities in their AWIA compliance efforts. Andrew volunteers his services on the J100 Standard Committee and is the Chair of the G430 Standard Committee. These AWWA standards provide many of the best practices for water sector resilience and security. In addition to his expertise, Andrew recently worked with the City on two cybersecurity-related projects and understands current challenges faced by the City.

Extensive Compliance Expertise and Proven Approach to Building Resilience. West Yost's AWIA experience includes work on approximately 75 RRA/ERP projects and 125 cyber RRAs. Our projects have helped water utilities serving more than 11 million people build resilience. With this wealth of experience, West Yost will help the City meet the EPA requirements and elevate the management and operation of the City's water system through this project.

AWIA does not prescribe a specific method for achieving regulatory compliance. However, West Yost uses the ecosystem of voluntary consensus standards and guidance documents developed by the AWWA with complimentary guidance from outside of the sector. West Yost is up to speed on what has changed since the 2020 AWIA requirements from a regulatory standpoint as well as the all-hazards threat landscape and will address these changes in the City's plans. West Yost is teamed with Axio to support the cybersecurity assessment to bring a truly unique assessment to the City. Axio is a national leader in critical infrastructure cyber-risk assessments supporting organizations with making the best possible financial risk management decisions.

Our proposal is valid for 60 days from the date of submittal. We are committed to providing a collaborative and responsive experience for a successful project outcome, and our team is available to begin work on this project. Please contact Andrew if you have questions or need additional information.

Sincerely
WEST YOST

Andrew Ohrt, PE,CISSP | Project Manager, Lead Facilitator
952.303.9905 | aohrt@westyost.com

Tara Mertz | QA/QC
916.884.0489 | tmertz@westyost.com



Prime Consultant: West Yost

West Yost is a consulting engineering firm founded in 1990, focused exclusively on water, wastewater, recycled water, groundwater, and stormwater. Headquartered in Davis, California, we have more than 260 staff across 11 offices, providing planning, design, construction management, and program management services. Our multidisciplinary team includes certified and licensed professionals spanning engineering, hydrogeology, control systems, cybersecurity, asset management, GIS, and construction services, all committed to delivering high quality work and exceptional client service.

West Yost is dedicated to providing exceptional client service and high-quality work products. Our success at meeting ongoing client needs is exemplified by our long-term relationships and ongoing project engagements. Our experience will allow us to serve as a valuable extension of your staff. West Yost will manage projects proactively and provide responsive service and timely work products.

Subconsultant: Axio

Axio is a cyber risk management platform that helps organizations make better security decisions by quantifying cyber risk in financial terms. They enable CISOs, risk leaders, and executives to understand, prioritize, and communicate cyber risk in a way that aligns with business objectives, regulatory expectations, and board-level decision making.

America's Water Infrastructure Act

Our team of industry-leading professionals is adept at navigating the complexities of water system compliance, offering tailored assessments that go beyond mere regulatory adherence. We provide comprehensive insights and actionable recommendations, ensuring not just compliance, but meaningful improvements in the resilience, safety, and efficiency of your water infrastructure.

FAST FACTS

150+	125	75+
WATER-FOCUSED STAFF	CYBER RRAs	RRA/ERP PROJECTS



Introduction to the Team

Our team has performed over 75 RRA/ERP projects and 125 cyber RRAs. Our experience in assessing, designing, and implementing similar systems is extensive, and many of our team members have worked together for more than ten years executing AWIA, RRA, ERP, and cybersecurity projects.

The team members selected for this project have recent, relevant experience in very similar projects and are ready to bring that experience to the City of Cottage Grove. Key technical staff listed below will be supported by other West Yost team members. Resumes are provided in Appendix A.

CITY OF COTTAGE GROVE OREGON



QA/QC

Tara Mertz



PROJECT MANAGER/ LEAD FACILITATOR

Andrew Ohrt, PE, CISSP

SUPPORT TEAM

Technical Analyst

Lead Rachel Schonwit, EIT

Technical Support

Joel Cox, GICSP, GPEN, GRID

Cybersecurity Lead

David W. White (Axio)

What Sets West Yost Apart?

We are active contributors to our field.

Project Manager and Lead facilitator Andrew Ohrt helps to advance the resiliency of our water utilities by regularly contributing to professional publications, developing guidelines, and leading workshops.

He is part of the guiding bodies that govern our industry's best practices.

Our subconsultant Axio, translates technical cyber risk into financial impact, enabling clients to make data backed investment, risk, and insurance decisions.

We love what we do, and we bring that passion and commitment to our clients.

"I was very pleased with the excellent customer service, meticulous attention to detail, and impressive expertise demonstrated by the staff at West Yost... The team's dedication to understanding our unique needs delivered accurate solutions with precision and efficiency. Our collaboration with West Yost was a significant boost for our project."

- BRYAN CASSENS, WATER RECLAMATION SERVICES DIRECTOR WATER RESOURCES CITY OF SCOTTSDALE, AZ



PROJECT MANAGER, LEAD FACILITATOR

Andrew Ohrt, PE, CISSP

Andrew Ohrt specializes in building all-hazards resilience for water and wastewater utilities. Projects he has led include all-hazards risk and resilience assessments, cybersecurity assessments, emergency response planning, and emergency preparedness training and exercising. Andrew currently leads West Yost's partnership with Idaho National Laboratory to bring consequence-driven, cyber-informed engineering. From 2019-2022, he led West Yost's support of clients' America's Water Infrastructure Act of 2018 compliance efforts.

This included over 35 all-hazard RRAs and 80 cyber-RRAs for 30+ utilities. Between 2019 and 2021, Andrew served as the project lead for development of AWWA's cybersecurity resources including the Water Sector Cybersecurity Risk Management Guidance and Self-Assessment Tool, and various training resources. He currently serves as the AWWA G-430 Standard for Security Practices for Operation and Management Committee Chair. Andrew is AWWA J100 Utility Risk and Resilience certified.



QA/QC

Tara Mertz

Tara Mertz is a Principal Technical Specialist who provides services in cybersecurity risk assessment and operational technology systems master planning with a focus on cybersecurity, resilient design, and governance. Tara brings over 22 years of public sector Information Technology/Operational Technology leadership experience.

Her experience includes project management of cross-functional teams, technical ownership and responsibility for critical infrastructure, and strategic planning. She is technically proficient and effectively communicates with all stakeholders. Through her long-term involvement as a member of the Municipal Information Systems Association of California (MISAC) and the northern California Critical Infrastructure Security working group, Tara has cultivated respect from her water and wastewater peers and developed long-lasting relationships. Tara is AWWA J100 Utility Risk and Resilience certified.



CYBERSECURITY LEAD

David W. White

David W. White is President and cofounder of Axio, advancing cyber risk quantification for critical infrastructure. He leads work with the U.S. Department of Energy and helped develop national cybersecurity maturity frameworks. His work reflects a commitment to fairness, security, and resilient systems that underpin essential public services.

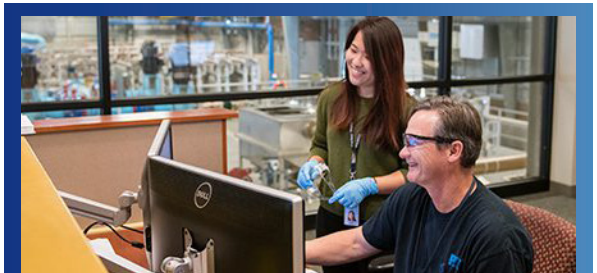
American Water Works Association

We arent justt consultants, we are active contributors in our field.

Andrew has dedicated his career to helping Water Utilities manage risks and stay resilient.

Andrew was part of the team that wrote the AWWA J100 Utility Certifcation for the American Water Works Association.

The certification helps utility owners and operators identify vulnerabilities, and potential hazards to their systems and meet industry requirements.



Utility Risk & Resilience Certificate Program



LEAD TECHNICAL ANALYST

Rachel Schonwit, EIT

Rachel Schonwit has specialized experience in Enterprise Asset Management (EAM) implementation projects, seamlessly executing projects aligned with client objectives and goals. Her asset management experience includes condition assessments, risk assessments, renewal prioritization, and utility performance and metric benchmarking. She has a breadth of experience across multiple industry sectors including asset management, risk and resiliency planning, and water system master planning.



TECHINCAL SUPPORT

Joel Cox, GICSP, GPEN, GRID

Joel Cox is a technical specialist and engineers with 30+ years of experience providing design and delivery of network architecture and data center infrastructure. He has extensive experience designing and assessing industrial control system networks for water utilities, including conducting detailed network analyses, penetration testing coordination, and AWIA-aligned cybersecurity assessments. Joel is motivated by helping utilities design networks that not only meet today's cybersecurity expectations, but also remain resilient and adaptable over the long term.

The the projects below further detail our team's experience assisting water and utility agencies with AWA compliance.



West Yost completed an update of the City's RRA and ERP in 2020 and 2025. The City successfully self-certified their RRA and are compliant with AWIA/SDWA §1433. The project team is currently working on ERP revisions.

West Yost conducted a comprehensive assessment of the City's infrastructure and identified resilience improvements. Instead of recommending full-scale improvements which would have been prohibitively expensive, West Yost proposed an integrated approach where site security and systems monitoring improvements would be implemented as part of other upgrades. This opportunistic approach has led to significant improvements.

REFERENCE: Robert Ervin | Principal Professional Engineer City of Minneapolis 612.573.2079, Robert.Ervin@minneapolismn.gov

Cybersecurity Risk Management Guidance and Tool

AMERICAN WATER WORKS ASSOCIATION, CA



West Yost led the 2024 revision of AWWA's suite of cybersecurity resources. The existing Water Sector Cybersecurity Risk Management Guidance, Assessment Tool, and Small Systems Guidance were updated and merged to create a more seamless user experience. In addition to supporting any water or wastewater utility with both Safe Drinking Water Act §1433 (AWIA) compliance and cybersecurity risk management due diligence.

Through this project, the team better aligned the AWWA resources with the revised NIST Cybersecurity Framework v2.0, the CISA Cybersecurity Performance Goals and the EPA's Cybersecurity Performance Goals.

The project team restructured AWWA's resources to focus on cybersecurity risk management planning and implementation. In addition to updating the existing resources, this project resulted in new resources to support the sector. These include: the Cybersecurity Risk Management Getting Started Guide, the Cyber-Risk Management Plan Template, and the Cyber-Incident Response Plan Template. Each of these builds on the Water Sector Maturity Model developed through this project.

The project team facilitated a workshop to engage stakeholders from across the sector to facilitate representation. The project team remained agile and updated resources as needed to address uncertainty in the Federal government.

REFERENCE: Kevin Morley | Manager, Federal Relations 202.326.6124, kmorley@awwa.org

AWIA Compliance Services, 2020 and 2025
CITY OF MODESTO, CA



West Yost lead the development of the City of Modesto's RRA and ERP in 2020 and updates to each document in 2025. During the first round of AWIA compliance in 2020, West Yost built on an RRA partially completed by the City on a less than two month schedule during the COVID pandemic. This improved the analysis and supported both practical outcomes of the RRA and resulted in a document that was more audit-ready.

In 2025, West Yost revised the RRA to be more comprehensive through a workshop-based process that provided staff the opportunity to discuss the City's capabilities and capacities for resilience in a more detailed way. In addition, West Yost developed Risk and Resilience Management Strategies to help the City build resilience to the highest risk scenarios. West Yost developed the City's ERP in 2020 and updated it in 2025.

REFERENCE: Jim Alves | Senior Civil Engineer
209.571.5557, jalves@modestogov.com

AWIA Compliance Services, 2020 and 2025
SAN GABRIEL VALLEY WATER COMPANY, CA



West Yost lead the development of the San Gabriel Valley Los Angeles County and Fontana Water Companies with AWIA compliance documents in both 2020 and 2025. West Yost prepared the original RRAs and ERPs for both Companies in 2020 through a rigorous process. This included several four-hour workshops and site visits to dozens of facilities. These projects were delivered on accelerated, parallel schedules in 2020 to provide deliverables to the client before the EPA certification deadlines.

West Yost developed updates to the RRAs and ERPs in 2025. Through this update, each document was updated to account for system changes, staff changes, revised standards, and changing regulations. Both companies are implementing the recommended risk and resilience management strategies developed by West Yost.

REFERENCE: Tom Jenkins | Safety Coordinator
626.448.6183 x2245, tajenkins@sgvwater.com

"West Yost has provided San Gabriel Valley Water Company with exceptional expert guidance through both the SCADA Master Plan development and PLC Hardware selection projects. The West Yost team has brought expertise and vision that has helped San Gabriel make company-wide decisions and capital investments that will ensure compliance and security. This is what San Gabriel's experience has been working with West Yost."

- SETH ZIELKE, DIRECTOR OF OPERATIONS SAN GABRIEL VALLEY WATER COMPANY, FONTANA WATER COMPANY DIVISION

Approach

Our team of industry-leading professionals is adept at navigating the complexities of water system compliance, offering tailored assessments that go beyond mere regulatory adherence. **We provide comprehensive insights and actionable recommendations that promote compliance while driving meaningful improvements in the resilience, safety, and efficiency of your water infrastructure. With West Yost, you're not just meeting standards; you're elevating the entire management and operation of your water system.** Our proven approach to developing RRAs and ERPs will provide the City with the necessary time to meet EPA compliance timelines and combines master planning and systems analysis to support the City's strategic vision. We have assembled a team of technical professionals with extensive experience in hazard mitigation, risk and resilience assessments, and emergency response planning to meet the regulation deadlines.

We utilize facilitated stakeholder workshops and associated activities to involve stakeholders throughout this process, gathering input to assess and enhance system resilience.

PROJECT STAGE	RELATED ACTIONS
1: Establish an Open Line of Communication	▪ Meet with The City and key stakeholders to establish project outcomes based on available budget and project schedule. ▪ Review currently available pertinent information including, but not limited to, the previous 2021 AWIA RRA and ERP.
2: Gather Information and Input	▪ Build on the knowledge and experience of City staff. ▪ Work with City staff to understand historical and ongoing resilience building efforts.
3: Conduct Evaluation	▪ Identify and assess the City's current assets and resilience. ▪ Evaluate current and future vulnerabilities to City infrastructure.
4: Identify and Prioritize Actions	▪ Prioritize resilience implementation strategies and actions using risk-based and cost-benefit analysis methods. ▪ Provide an implementation plan for identified actions.
5: Execute	▪ Set the City up for successful funding and implementation of risk and resilience management strategies.

America's Water Infrastructure Act of 2018

The America's Water Infrastructure Act of 2018 (AWIA) was signed into law in October of 2018. Under this law, utilities are required to conduct risk and resilience assessments (RRAs) and prepare or revise emergency response plans (ERPs) every five years. Utilities must certify to the EPA that they have achieved these requirements.

For the RRA, utilities must assess risks to and resilience of their assets relative to malevolent acts and natural hazards. Utility system assets are broadly defined and include physical infrastructure, financial infrastructure, chemicals and chemical systems, automated systems, system operations and maintenance, and capital and operational needs for risk and resilience system management.

Industry Standards

Our team possesses extensive knowledge of the AWIA requirements and has participated in several recent EPA AWIA audits for our clients. Since the City last completed AWIA SDWA §1433 compliance activities, numerous things have changed, including:

1. Updates to AWWA standards, most prominently J100-21 and the associated Operational Guide. These updates change how the risks associated with specific threats and hazards are evaluated.
2. Changes to the EPA's approach to ensuring AWIA compliance.
   a. The EPA is exercising its audit authority under the Safe Drinking Water Act to confirm that AWIA compliance actions meet the associated requirements.
3. Changes to our operating environment – Our understanding of the threats (e.g., malevolent) and hazards (e.g., weather events) that are impacting utility operations around the U.S. are continuously evolving.

4. Changes to the City's operations and staff – The City's organization are continuously evolving as infrastructure investments are made, staff leave, new staff join, and customer demands change.

To support delivery of the scope, we couple the resources and assessments the City has already invested with the latest industry guidance, resources, and best practices. These include:

- AWWA. 2021. J100-21 Risk Analysis and Management for Critical Asset Protection Standard for Risk and Resilience Management of Water and Wastewater Systems.
- AWWA. 2023. Risk and Resilience Management of Water and Wastewater Systems, Operations Guide to AWWA Standard J100.
- AWWA. 2022. G440-22 – Emergency Preparedness Practices.
- AWWA. 2025. AWWA Cybersecurity Resources.
- AWWA. 2020. G430-14(R20) – Security Practices for Operation and Management.
- EPA. 2024. Baseline Information on Malevolent Acts for Community Water Systems, Version 3.0.

These standards represent risk and resilience management and emergency preparedness best practices for the water sector. Using these standards demonstrates due diligence. In addition to the AWWA standards, West Yost will leverage Idaho National Laboratory's Cyber-Informed Engineering Implementation Guide and related resources.

These standards are regularly updated. If a more recent version is available, the project team will use it to support project delivery. To the extent possible, West Yost will use historical and concurrent work to inform this project and achieve compliance.

These standards are regularly updated. If a more recent version is available, the project team will use it to support project delivery. To the extent possible, West Yost will use historical and concurrent work to inform this project and achieve compliance.

Understanding

West Yost will be completing a thorough 5-year risk and resilience assessment update of the City of Cottage Grove's drinking water system and review of the related water division ERP. The RRA and ERP shall, at a minimum, be conducted according to Water Sector best practicesestablished by the American Water Works Association (AWWA) and EPA. This assessment and review will provide recommendations to minimize impacts on public health, and the safety and supply of drinking water from natural hazards or malevolent acts.

The City has previously developed RRA and ERP documents. These provide a good foundation for the updates. However, there is room for the documents to be brought more into alignment with the AWWA industry guidance, as previously noted. In addition, West Yost recently supported the City with a detailed assessment of their current SCADA cybersecurity services. The results of that assessment will be integrated into the RRA and ERP, as appropriate.

Scope of Services

West Yost takes an all-hazards approach to address the full range of potential threats and hazards, including malevolent acts, natural hazards, dependency hazards, and proximity hazards approach that considers governance, prevention, protection, preparedness, response, and recovery needs.

The following sections summarize the proposed scope of work to develop an AWIA SDWA §1433 compliant RRA and ERP. The West Yost scope of services consists of the following tasks:

Task 1. Project Management

Task 2. Risk and Resilience Update

Task 3. Emergency Response Plan Update



TASK 1. PROJECT INITIATION AND PROJECT MANAGEMENT

The objective of this task is to track work progress and expenditures to maintain the project schedule and budget. This is done using proactive communications, quality assurance, and quality control. Project management activities include the following:

- **Initiation Meeting –** West Yost will prepare for and coordinate a project initiation meeting to be held virtually. The project team will review the project approach, scope and updated project schedule and finalize schedules for meetings and the final RRA/RRMS workshop.
- **Progress Meetings –** Conference calls will be held as-needed to review project status, including work completed during the latest report period, work anticipated to be completed during the next reporting period, identified problems/issues that could affect project budget/expenditures and/or schedule, outstanding issues to be resolved, and action items.
- **Invoices –** Monthly invoices and progress reports will be prepared.
- **Quality Control** – In accordance with our internal quality assurance/quality control (QA/QC) policy, quality assurance and quality control will be performed for each of the project deliverables prior to final submission to the City.
- **Project Closeout Meeting –** In accordance with our internal policy, we will conduct final project closeout activities, including final document delivery, and final progress report attached to invoice.

TASK 1 ASSUMPTIONS

- West Yost will provide monthly progress reports and monthly invoices.
- West Yost will prepare all meeting and workshop facilitation materials.

TASK 1 DELIVERABLES

- The Initiation Meeting will be held virtually.

TASK 2. RISK AND RESILIENCE ASSESSMENT UPDATE

Under this task, West Yost will work with the City to update the City's RRA.

Task 2.1 Data Request and Review

To support updating the RRA, the City will provide West Yost with the following information:

1. Changes in the number of service connections, number of customers, wholesale services.
2. Changes to Critical Facilities, including:
    a. Address
    b. Capacity
    c. Year constructed
    d. Asset value
5. Reduction in system capacity if taken offline.
6. Changes to physical security assets are countermeasures at Critical Facilities (ex. site lighting, perimeter fencing, security cameras).
7. Chemicals used, handling and storage.

The West Yost project team will also review:

The City's Previous:

- RRA
- ERP,
- Water Master Plan
- Hazard Mitigation Plan
- Cybersecurity and systems improvements performed through related recent project work with the City to inform Information Technology (IT)and Operational Technology (OT) systems changes

The project team will evaluate what has changed since the 2020/2021 RRA then reevaluate and update critical assets and related threats with input from City stakeholders.

Task 2.2 Analysis of Consequences, Vulnerability, and Likelihood

Based on the analysis of client-provided data from Task 2.1, the prior RRA, and staff interviews, risk will be reevaluated. This task consists of estimating each of the three variables needed to calculate risk, which are:

- The consequence of a threat/hazard to an asset
- The vulnerability of an asset to a threat
- The likelihood of a threat occurring

Consequence Analysis

West Yost will apply a structured all-hazards consequence analysis consistent with the AWWA J100-21 standard, ensuring that cyber, physical, natural, and dependency/proximity hazards are evaluated using a common, comparable framework. For each threat-asset pair, consequences will be estimated using worst-case reasonable-case assumptions. This approach avoids speculative extremes.

Vulnerability Analysis

The project team will evaluate the ability of each critical asset and its protective systems to withstand each specified threat or hazard. West Yost will document and account for existing protective systems such as: physical security systems, the City security procedures, backup power generation, and existing emergency response capabilities, plans, and protocols. The West Yost team will collect the information to support this portion of the analysis as part of Task 2.1 Data Request. If more information is required, it will be requested through email.

Threat Likelihood Analysis

West Yost will estimate the threat likelihood (also known as annualized probability or frequency) that a specific threat or hazard will occur for each threat-asset pair retained for analysis. We will use standard information on frequency and severity from sources such as National Oceanic and Atmospheric Administration (NOAA) and United States Geological Survey (USGS), local hazard mitigation plans, and the EPA. The analysis will also account for the utility-specific threat/hazard occurrence information gathered previously. The results will be summarized in the RRA Summary Report.

Calculate Risk and Resilience

West Yost will calculate risk and resilience for each priority threat-asset pair using the following equation from AWWA's J100 Standard:

Risk = Consequences x Vulnerability x Threat Likelihood (C x V x T)

West Yost will also complete the Utility Resilience Index (URI), as presented in AWWA's J100 Standard.

West Yost will update estimates of consequences, vulnerabilities, and threat likelihoods for each identified threat-asset pair. The information produced will be used to calculate the baseline risk for each threat-asset pair. The results will be summarized in the RRA Summary Report.

Task 2.3 Cyber-Risk & Resilience Assessment

West Yost will identify and scope a defined set of cyber-risk scenarios relevant to the City's operations. Through a facilitated workshops with key stakeholders, we will validate underlying assumptions and gather key input to drive the analysis. Results will be reviewed with stakeholders, highlighting loss estimates and the key drivers influencing those outcomes. All findings will be documented with transparent assumptions, limitations, and actionable recommendations for next steps. The deliverable for this task includes estimates of the financial impact to the City if a cyber-attack were to take place.

Task 2.4 Risk & Resilience Assessment Summary Report

Using the consequences, vulnerabilities, and threat likelihoods estimated in Task 2.2, the risks to and resilience of the City operations will be evaluated. West Yost will prepare a draft RRA to summarize the tasks conducted during this project, the results of the workshops and analyses, and the risk and resilience calculations. The report will be of sufficient depth and breadth to document that the City used an all-hazards approach and is in compliance with AWIA SDWA §1433.

Task 2.5 Risk & Resilience Management Strategy Development

Once risks have been calculated, Risk and Resilience Management Strategies (RRMS) will be developed for implementation to reduce the risk of the greatest threat-asset pairs. RRMSs may include physical security or cybersecurity upgrades, natural hazard mitigation, training, policy/procedure changes, monitoring strategies, and operational/financial changes that can make the City more resilient.

Workshop – RRA & RRMS Review

The West Yost team will conduct an RRA & RRMS review workshop to discuss the findings from the RRA analysis, including the highest risks to the City and the proposed RRMSs which can address those risks. The RRMSs will be incorporated into the RRA.

Draft-RRA Submittal

Following the RRA & RRMS review workshop, the draft RRA will be provided to the City for review. Upon receipt of the City's comments on the draft RRA, West Yost will revise and finalize the document. With completion of this report, the City will be able to certify with the EPA that the RRA is complete.

TASK 2 ASSUMPTIONS

- The City will provide the data requested by West Yost through Task 2.1.
- Workshop – RRA & RRMS Review is estimated to be up to two hours in duration and will be held in person.
- The City will provide a location to hold the workshop.
- The City staff will be available to participate in the workshop.
- The schedule assumes that the City will complete a review of the Draft RRA within three weeks of receipt of the draft RRA.

TASK 2 DELIVERABLES

- West Yost will provide an initial data request.
- West Yost will prepare all meeting and workshop facilitation materials.
- West Yost will prepare the draft and final RRA.

TASK 3. EMERGENCY RESPONSE PLAN UPDATE

West Yost will evaluate the City's current ERP with a focus on achieving AWIA compliance. West Yost's evaluation approach is based on three main principles:

Standards-Based Planning – supports conformity with the standards and ease implementation of the ERP during an emergency situation.

Concept of Operations – guides development of the ERP, defines the overall approach to emergency situations including what should happen, when, and at whose direction.

Capability-Based Planning – guides development of the ERP to help the City build capacity to take a specific course of action. Capabilities-based planning answers the question, "Do I have the right mix of training, organizations, plans, people, leadership and management, equipment, and facilities to perform a required emergency function?"

After the evaluation, West Yost will provide a draft ERP with recommendations for the City to review, then finalize the ERP. Once the final ERP is provided, the City will be able to certify compliance for the ERP with the EPA.

TASK 3 ASSUMPTIONS

- The City will provide an editable version of the current ERP.
- The City will provide any additional emergency preparedness documents developed since the last AWIA compliance efforts. This may include incident response plans, incident or exercise after action reports, etc.

TASK 3 DELIVERABLES

- West Yost will prepare a Draft and Final Updated ERP.

TASK 4. AS-NEEDED SERVICES

The objective of this task is to provide additional services related to the previous tasks as requested by the City of Cottage Grove. These services may allow the City to immediately begin implementing RRMSs identified within the RRA.

Anticipated as-needed services include:

- **Emergency Preparedness Exercise –** A table-top exercise will be conducted to evaluate the City personnels' ability to implement the revised ERP. For example, West Yost regularly leads A Day without SCADA® exercises to help utilities better understand their dependence on SCADA and ability to operate in the absence of automation.
- **Cyber Incident Response Planning –** A detailed assessment of City's existing Business Continuity (BC), Disaster Recovery (DR), and Public Communications plans. These documents will be incorporated with best practice Incident Response (IR) planning components into a cyber specific IR plan (CIRP).
- **Policies and Procedures Development –** Security of systems through governance Policies and related Procedures are developed to align and support the City's systematic approach to cybersecurity and related standards.

TASK 4 ASSUMPTIONS

- No work on this task will be completed without prior client authorization, scoping, and associated budget/schedule amendment, if needed.

TASK 4 DELIVERABLES

- West Yost will provide deliverables as determined by scoping activities.

6 SCHEDULE

West Yost anticipates providing Task 1 deliverables within three weeks after receiving notice to proceed and all required data. Currently, the project is estimated to start in February 2026 and will be completed in June 2026.

Schedule

TASKS	2026				
	FEB	MAR	APR	MAY	JUN
Task 1. Project Management					
Task 2. Risk and Resilience Assessment Update					
Task 3. ERP Update					

West Yost's proposed level of effort and budget for each of the tasks described above is shown in the table below. Any additional services not included in this scope of services will be performed only after receiving written authorization and a corresponding budget augmentation.

Estimated Project Hours and Budget		
TASKS	**LEVEL OF EFFORT** *HOURS*	**ESTIMATED BUDGET** *DOLLARS*
Task 1. Project Management	14	$4,902
Task 2. Risk and Resilience Assessment Update	119	$57,570
Task 2.1. Data Request and Review	6	$1,760
Task 2.2. Analysis of Consequences, Vulnerability, and Likelihood	34	$11,007
Task 2.3. Cyber-Risk & Resilience Assessment	0[(a)]	$22,000
Task 2.4. Risk & Resilience Assessment Summary Report	54	$15,310
Task 2.5. Risk & Resilience Management Strategy Development	25	$9,338
Task 3. Emergency Response Plan Update	28	$7,581
Task 4. As-Needed Services [(a)]	TBD[(b)]	TBD[(b)]
Total Project Hours and Budget	**169**	**$70,000**

(a) West Yost labor associated with this task is included in Task 2.2 Analysis of Consequences, Vulnerability, and Likelihood.

(b) The as-needed task budget will be determined based on any of the services selected.

A RESUME APPENDIX

- Andrew Ohrt, PE, CISSP
- Tara Mertz
- Rachel Schonwit, EIT
- Joel Cox, GICSP, GPEN, GRID
- David W. White (Axio)



Andrew Ohrt, PE, CISSP

PROJECT MANAGER, LEAD FACILITATOR

Staff Title: Resilience Practice Area Lead. Principal Technical Specialist I

Office Location: Remote – Minnesota

Years of Experience: 19

Years with West Yost: 6

Professional Registrations

- Professional Environmental Engineer: Alaska No. 14322, Minnesota No. 50531, Washington No. 47854
- Certified Information System Security Practitioner (CISSP)

Education

- MS, Civil Engineering, University of Minnesota, Twin Cities
- BA, Physics, Gustavus Adolphus

Professional Certificates

- AWWA Utility Risk and Resilience
- Envision Sustainability Professional (ENV SP)
- FEMA IS-100.b, IS-120.a, IS-130, IS-200.B, IS-700.A, IS-800.B, IS-860.B
- Institute of Asset Management
- Idaho National Laboratory CCE Work Force Development
- Idaho National Laboratory National and Homeland Security Instructor

Professional Affiliations

- American Water Works Association
  - G430 Standard for Security Practices for Operation and Management Committee – Chair
- American Public Works Association – Cybersecurity Training Development Work Group
- Cyber-informed Engineering Work Group

Andrew Ohrt an experienced facilitator and program manager specializing in infrastructure resilience. Over the course of Andrew's career, he has assisted water, wastewater, stormwater, and power clients to build all-hazards resilience with a focus on cybersecurity. Currently, Andrew leads West Yost's Resilience Practice. He also leads West Yost's partnership with Idaho National Laboratory (INL) and the American Water Works Association (AWWA) to bring Cyber-informed Engineering (CIE) to the Water Sector. CIE is an emerging approach to engineer out cyber risk from our nation's critical infrastructure systems. He recently led West Yost's program to support clients' America's Water Infrastructure Act of 2018 (AWIA) compliance efforts. This included over 35 full risk and resilience assessments (RRAs) and over 60 cyber-RRAs. Since 2019, Andrew has served as the project lead for development of the American Water Works Association's cybersecurity resources including the Water Sector Cybersecurity Risk Management Guidance and Self-Assessment Tool, the small systems version of the tool, and various training resources. These resources include the cybersecurity eLearning modules as part of the Utility Risk and Resilience Certificate Program and AWIA Small Systems Certificate Program.

EXPERIENCE

2018 America's Water Infrastructure Act Risk and Resilience Assessment and Emergency Response Plan Compliance Projects: Program Manager/Technical Lead. West Yost has assisted approximately 15 clients with their all-hazards America's Water Infrastructure Act (AWIA) 2018-compliant Risk and Resilience Assessments (RRAs) and Emergency Response Plans (ERPs). For each project, West Yost completes a thorough gap analysis after reviewing and organizing previously completed RRA- and ERP-related resources. We conduct both RRAs and ERPs according to the American Water Works Association (AWWA) standards, which represent cross-sector best practices. Each RRA considers natural, built, cyber, and personnel assets and any relevant threats and hazards. Risk and resilience management strategies are developed to address the highest risks and reduce vulnerabilities. Next, an ERP is developed. This is built on existing emergency preparedness plans and refined to align with AWIA and state requirements and industry best practices. Finally, we prepare self-certification documentation for submittal to the Environmental Protection Agency. We performed or are performing these services for the following clients.

Select Large Utilities (serving more than 100,000 people):

- City of Minneapolis, MN
- City of Fairfield, CA
- Fontana Water Company – San Gabriel Valley Water Company, Fontana, CA
- Los Angeles County – San Gabriel Valley Water Company, El Monte, CA
- Joint Water Commission and Barney Reservoir Joint Operating Commission, OR
- Lake Oswego-Tigard Water Partnership, OR

America's Water Infrastructure Act Risk and Resilience Assessment, Santa Clara Valley Water District (Valley Water), San Jose, CA: Technical Lead. West Yost is assisting Valley Water with their America's Water Infrastructure Act (AWIA) 2018 (S.3021) risk and resilience assessment (RRA) and emergency response plan (ERP)-compliance certification. West Yost reviewed and documented Valley Water's previously completed RRAs and ERPs to provide a thorough gap analysis. Staff interviews will be conducted to gather data for sensitive and high-security information. West Yost will make project recommendations to address compliance gaps. West Yost will complete summary reports for Valley Water to document compliance and will prepare certification letters for submittal to the Environmental Protection Agency. We will develop a compliance dashboard to provide a high-level summary for executives and critical customers.

2018 America's Water Infrastructure Act Cyber-Risk and Resilience Assessment, Municipal Water District of Orange County, CA: Project Manager. As a subcontractor to Herndon Solutions Group, West Yost conducted cyber-risk and resilience (cyber-RRAs) for member agencies using the American Water Works Association's Cybersecurity Risk Management Tool and Guidance and elements of the Idaho National Laboratory's Cyber-Informed Engineering methodology. West Yost conducted site visits and workshops to understand how each member agency uses technology and the associated cybersecurity controls they have in place. We developed cyber-risk and resilience management strategies to support America's Water Infrastructure Act emergency response plan compliance.

ADDITIONAL EXPERIENCE

Embedded Security and Emergency Manager, Prince William County Service Authority, VA: From August 2017 to April 2018, served as the embedded security and emergency preparedness manager for the Prince William County Service Authority (PWCSA) in the Washington, D.C. National Capitol Region. Significant components of this include: training staff in the principles of the Incident Command System, development of communications plans and guidance documents, conducting workshops, drills, and a table-top exercise to enhance PWCSA's organizational resilience to service disruption emergency events.

Cybersecurity Resource Update, American Water Works Association (AWWA), Denver, CO: West Yost was once again selected by AWWA to update the cybersecurity resources used by hundreds of utilities around the United States. This includes subject matter expert engagement to determine how to shape the changes to the resources, implementation of those resources, and communication to the Water Sector on how the resources can support their cybersecurity improvement efforts. This will also establish alignment with the NIST Cybersecurity Framework v2.0. Many of the changes are intended to support smaller and under-resourced utilities get started on their cybersecurity improvement journey.

A Day without SCADA Emergency Preparedness Exercise, City of Sacramento, CA: Exercise Director. West Yost conducted an emergency preparedness exercise for the City. The scenario simulated a loss of automation within the water system. Consistent with CIE/CCE, a focus of the scenario was to understand current organizational capabilities and engineering of the system to successfully respond and recover. The exercise resulted in an after-action report/implementation plan with numerous improvements to City operations.

SELECTED PRESENTATIONS AND PUBLICATIONS

- Wright, Virginia, Andrew Ohrt, and Andy Bochman. Engineering Cybersecurity into U.S. Critical Infrastructure. Harvard Business Review. April 17, 2023.
- Ohrt, Andrew. Et al. Engineering Cyber-Physical Resilience. Journal of the American Water Works Association. May 2021.
- Ohrt, Andrew, Kevin Morley, Dan Groves, and Joel Cox. Tackle Cybersecurity and AWIA Compliance with AWWA's New Cybersecurity Risk Management Tool. Journal of the American Water Works Association. Volume 112. Number 3. March 2020.
- Moore, Sarah and Andrew Ohrt. "Risk & Resilience Management: The Columbus DPU Way." Water Infrastructure Conference. 2017.



Tara M. Mertz

QA/QC

Staff Title: Principal Technical Specialist I

Office Location: Sacramento, CA

Years of Experience: 23

Years with West Yost: 2

Certifications

- CompTIA Security+ SY0-701, 2024
- MCPS: Microsoft Certified Professional, 2018

Education

- BA, Communications, San Diego State University
- SANS MGT414: SANS Training Program for CISSP Certification
- Department of Homeland Security, 201 – Intermediate Cybersecurity for Industrial Control Systems
- Department of Homeland Security, 301 – ICS Cybersecurity
- VMWare vSphere v7.x Install, Configure, Manage
- Cisco Security CSFPA and CSVPN
- Homeland Security/FEMA Certificates: IS100, IS120, IS130, IS200, IS553, IS700, and K146
- AWWA Utility Risk and Resilience Certificate Program

Professional Affiliations

- Control Systems Cybersecurity Association International CS2AI

Tara Mertz is a Principal Technical Specialist who provides technical advisory services in cybersecurity and resilience of operational technology systems. She is an experienced master planner and conducts risk assessments with a focus on cybersecurity, network architecture, and governance. Tara joined West Yost in January 2022 and brings to the team 22+ years of public sector IT/OT leadership experience.

Her experience includes program management, project management of cross-functional teams, technical owner's advisory services, cybersecurity risk assessment, network design, and implementation planning. She is technically proficient and effectively communicates strategic planning vision to stakeholders.

Through her long-term involvement as a member of the Municipal Information Systems Association of California (MISAC) and the northern California Critical Infrastructure Security working group, Tara has cultivated respect from her water and wastewater peers and developed long-lasting relationships.

EXPERIENCE

AWIA Cybersecurity Improvements, East Orange County Water District, Orange, CA: Subject Matter Expert. Tara is responsible for the overall execution and coordination of all aspects of the project including reviewing vendor submittals related to hardware and software, development of policies and procedures, and assistance with managing the District's ongoing SCADA governance initiative. West Yost previously conducted the District's AWIA cybersecurity assessment using the AWWA Cybersecurity Tool and Guidance. The cybersecurity assessment identified the need for the District to conduct a SCADA Master Plan with a strategic approach to system-wide SCADA technology and support improvements. West Yost developed the District's SCADA Master Plan. The SCADA Master Plan identified key cybersecurity improvements, including policies and procedures, access control and physical security improvements, and execution of an ongoing SCADA governance initiative. Through this project, West Yost will assist the District with implementation of the required cybersecurity improvements.

Operational Technology Planning Services Project, Honolulu Board of Water Supply's (BWS), HI: Subject Matter Expert. Tara focuses on developing a comprehensive plan for addressing operational technology (OT) issues across all Divisions of BWS. The plan also justifies the business need for operational technology upgrades, creates a roadmap for implementation and outlines tactical implementation approaches for BWS to structure technology investments. Tara has used her background in water utility IT and OT to assist in creating recommendations for OT Wireless technology and SCADA Network improvement projects as well as providing QA/QC to the project.

SCADA Cybersecurity Baseline Assessment, Waterman Water Treatment Plant, City of Fairfield, CA: Project Manager and Technical Team Member. As Phase I, conducted and assessed the current cybersecurity posture of the Waterman SCADA systems in alignment with industry best practices including NIST CSF and CISA CIS Controls v8. The scope of work included site visits to collect data and evaluate configurations then develop documentation of the current state and prioritized recommendations for addressing vulnerabilities and improving resiliency.

IT and SCADA Infrastructure Cybersecurity Risk and Vulnerability Assessment, Eastern Municipal Water District, Perris, CA: Project Manager. Tara is responsible for providing overall project management, data collection, baseline gap analysis, assessment using NIST-CSF framework, and development of project portfolio based on recommendations.

SCADA Hardware Virtualization, Waterman Water Treatment Plant, City of Fairfield, CA: Project Manager and Technical Lead. As Phase 2, developed an implementation plan and designed high level network architecture cybersecurity improvements including virtualization of the core SCADA systems. The project work included upgrades and migration of SCADA Software HMI and Historians as well as implementation of a new industrial alarm system. The project also addressed the support of the new SCADA systems through Roles and Responsibilities workshops and extensive coordination with the City of Fairfield IT department for development of disaster recovery methods and guidelines plus maintenance of the new virtual systems.

SCADA Technology Upgrades Project Phase 1, Fairfield-Suisun Sewer District, Fairfield, CA: Technical Lead. West Yost OTCR provided services for the network design and initial comprehensive cybersecurity assessment of the District's core SCADA systems including servers, workstations, network equipment, and software. Tara documented the current condition of the network communications equipment including routers, switches, and firewalls and provided recommendations for secure network convergence between the SCADA and untrusted networks as well as improvements to enhance resiliency through distributed architecture of the core SCADA servers.

SCADA Technology Upgrades Project Phase 2, Fairfield-Suisun Sewer District, Fairfield, CA: Project Manager and Technical Lead. As Phase 2, Tara and her team developed hardware and software performance specifications, bills of materials, an implementation plan, and designed high level network architecture cybersecurity improvements including virtualization of the core SCADA systems and segmentation of the networks. The project work includes technical owner's advisory services and engineering support during implementation of upgrades to the SCADA Software HMI and industrial alarm system. Tara is also supporting the District as program manager to coordinate and validate the work performed by contractors and subcontractors of the District.

SCADA Cybersecurity Baseline Assessment, Las Gallinas Valley Sanitary District, San Rafael, CA: Project Manager and Technical Lead. West Yost OTCR provided services to Las Gallinas Valley Sanitary District to provide a comprehensive SCADA network assessment aimed at identifying, documenting, and outlining any cybersecurity deficiencies or areas which may benefit from alternative improvements. Tara was responsible for providing overall project management, coordinating site visits for evaluation of systems and data collection, and development of a prioritized list of projects based on recommendations for foundational cybersecurity safeguards.

Pump Station Instrumentation and Controls System (ICS) Upgrade for Honolulu Board of Water Supply (BWS), City and County of Honolulu, HI: Procurement Coordination. West Yost, as a member of the Arcadis team, is providing services for Phase 1 of the Instrumentation and Controls System Upgrade project. West Yost will develop and provide two documents that form a complete Instrumentation and Controls System Master Plan: an Instrumentation and Controls System Strategic Plan and an Instrumentation and Controls System Upgrades Program. The Instrumentation and Controls System Strategic Plan defines how the BWS Instrumentation and Controls System will support the overall BWS Vision, Mission, Values and Strategic Goals as documented in the BWS Strategic Plan 2014-2017. The Instrumentation and Controls System Upgrades Program will guide existing and develop new capital improvement projects to meet the goals of the Instrumentation and Controls System Strategic Plan. West Yost is working closely with BWS staff to create agreement with the assumptions and criteria used, and concurrence and understanding with the findings and recommendations in the preparation of draft chapters presented for comment.



Rachel Schonwit, EIT

LEAD TECHNICAL ANALYST

Staff Title: Engineer II

Office Location: Davis, CA

Years of Experience: 6

Years with West Yost: 1

Professional Registrations and Certifications

- Certified Engineer in Training

Education

- BS, Chemical Engineering, University of California, Davis

Rachel Schonwit has specialized experience in Enterprise Asset Management (EAM) implementation projects, seamlessly executing projects aligned with client objectives and goals. Her asset management experience includes condition assessments, risk assessments, renewal prioritization, and utility performance and metric benchmarking. She has a breadth of experience across multiple industry sectors including asset management, risk and resiliency planning, and water system master planning.

EXPERIENCE

2018 America's Water Infrastructure Act (AWIA) Risk and Resilience Assessment (RRA) and Emergency Response Plan (ERP) Compliance Projects: Technical analyst for numerous all-hazards RRA's and ERP's. For each project, West Yost completed a thorough gap analysis after reviewing and organizing previously completed RRA and ERP-related resources. RRA's and ERPs were completed in accordance with WWA standards and best management practices. Each RRA considers natural, built, cyber and personal assets and all threats and hazards. Rachel performed the evaluations for the following utilities:

- City of Minneapolis, MN
- Stanislaus Regional Water Authority, CA
- City of Vallejo, CA
- City of Stockton, CA
- City of Modesto, CA
- Carlsbad Municipal Water District, CA

OTHER WATER INFRASTRUCTURE PROJECTS

2024 Water Master Plan, City of Lincoln, CA: Staff Engineer for the preparation of a 2024 Water Master Plan (WMP) for the City of Lincoln. Tasks include technical support in data analysis, system modeling, and infrastructure evaluation to help develop efficient and sustainable water supply strategies.

Enterprise Asset Management Implementation, Sacramento County, CA: Project Manager for Enterprise Asset Management/CMMS implementation for Sacramento County Department of Water Resources (DWR). Tasks included developing business process maps, developing levels of service, identifying critical organizational asset management goals, defining asset hierarchies, configuring the asset management software to DWR-specific workflows, developing scenarios for testing the software, and leading training for operations and maintenance staff.

Enterprise Asset Management Software Implementation, Moulton Niguel Water District, CA: Project Manager for Enterprise Asset Management (EAM) software

implementation for Moulton Niguel Water District (MNWD). Tasks included developing business process maps, identifying critical organizational asset management goals, developing a change management plan, defining asset hierarchies, configuring the asset management software to MNWD-specific workflows, developing scenarios for testing the software, and leading software training for all staff.

Enterprise Asset Management Software Implementation, Elsinore Valley Municipal Water District, CA: Project Manager for Enterprise Asset Management (EAM) software implementation for Elsinore Valley Municipal Water District (EVMWD). Tasks included developing business process maps, developing a change management plan, identifying critical organizational asset management goals, defining asset hierarchies, configuring the asset management software to EVMWD-specific workflows, developing scenarios for testing the software, and leading training for operations and maintenance staff.

Enterprise Asset Management Software Implementation, City of Berkeley, CA: Project Manager for Enterprise Asset Management (EAM) software implementation for City of Berkeley's Public Works and Parks Recreation & Waterfront Departments. Tasks included developing business process maps, developing a change management plan, identifying critical organizational asset management goals, defining asset hierarchies, configuring the asset management software to City-specific workflows, developing scenarios for testing the software, and leading training for operations and maintenance staff.

Enterprise Asset Management Software Implementation, City of Gainesville, GA: Project Manager for Enterprise Asset Management (EAM) software implementation for City of Gainesville Department of Water Resources (COGDWR). Tasks included developing business process maps, identifying critical organizational asset management goals, defining asset hierarchies, configuring the asset management software to COGDWR-specific workflows, developing scenarios for testing the software, and leading training for operations and maintenance staff. The implementation also included incorporating COGDWR's backflow management program into the software.

Enterprise Asset Management Software Implementation, City of Mobile, AL: Project Manager for Enterprise Asset Management (EAM) software implementation for City of Mobile's Public Works Department. Tasks included developing business process maps, developing a change management plan, identifying critical organizational asset management goals, defining asset hierarchies, configuring the asset management software to City-specific workflows, developing scenarios for testing the software, and leading training for operations and maintenance staff.

Long-Range Utilities Implementation Strategy, Presidio Trust, San Francisco, CA: Staff Engineer for the evaluation of the water system and wastewater collection system utilities at the Presidio of San Francisco as part of the Presidio Trust's Long-Range Utilities Implementation Strategy. The evaluations included asset inventory and condition assessment, capacity modeling, risk and resiliency planning, system optimization and evaluation of supply options.

Sustainable Water Supply Master Plan, City of Santa Clara, CA: Staff Engineer for the development of a Water Supply Master Plan for the City of Santa Clara. The objective of this Water Supply Master Plan is to provide an innovative and sustainable plan that addresses drought and climate resiliency for the City through assessing existing water infrastructure and planned growth. Rachel helped lead a workshop with the City's operations, engineering, and finance staff to discuss the framework for asset management to identify the City's most critical asset management needs and helped conduct the risk assessment task, incorporating condition assessment results into City-specific risk factors to assess both component and facility risk. Risk results were used to prioritize rehabilitation projects.

Regional Surface Water Supply Project, Stanislaus Regional Water Authority, Turlock, CA: Project Manager for the operational Regional Surface Water Supply Project. The completed regional infrastructure includes a raw water pump station and pipelines, a state-of-the-art water treatment plant, treated water transmission mains, and connections to the local systems of the Cities of Ceres and Turlock. West Yost acts as the Owner's Representative, overseeing the design-build (DB) contract, valued at $195 million. In addition, West Yost is currently implementing a Computerized Maintenance Management System (CMMS) and providing training to Operations & Maintenance staff for its effective use.



Joel A. Cox, GICSP, GPEN, GRID

TECHNICAL SUPPORT

Staff Title: Engineering Manager I

Office Location: Phoenix, AZ

Years of Experience: 30

Years with West Yost: 7

Professional Certifications

- GIAC GICSP (Industrial Security Professional)
- GIAC GRID (Response and Industrial Defense)
- GIAC GPEN (Penetration Testing)
- Red Tiger Security, Securing ICS/SCADA Systems
- Department of Homeland Security, 210W – Cybersecurity for Industrial Control Systems

Professional Qualifications

- SANS Certified Instructor Candidate for ICS612
- Virtualization (ESXi, SCALE, etc.)
- Network (Routing & Switching)
- Firewall (Palo Alto, Fortigate)
- Power/UPS Systems
- Operating Systems (Linux, Windows)
- Database (SQL Server, MySQL, etc.)
- PLC and SCADA Systems
- Various scripting languages

Joel Cox is a technical specialist and engineer who provides a broad range of design and delivery of network architecture and data center infrastructure with a focus on industrial control network architecture and cybersecurity.

He has served as Subject Matter Expert for the design and implementation of Information Technology (IT) enterprise systems and Operational Technology (OT) to support manufacturing, services and municipal water and wastewater treatment systems. He is also a SANS Certified Instructor Candidate for specialized industrial control system training. His experience includes project management, disaster recovery planning and information system security; communications network design and implementation; database design and implementation; storage design and implementation; and virtualization design and implementation.

EXPERIENCE

2018 America's Water Infrastructure Act Risk and Resilience Assessment and Emergency Response Plan Compliance Projects: Technical Lead. West Yost has assisted approximately 15 clients with their all-hazards America's Water Infrastructure Act (AWIA) 2018-compliant Risk and Resilience Assessments (RRAs) and Emergency Response Plans (ERPs). For each project, West Yost completes a thorough gap analysis after reviewing and organizing previously completed RRA- and ERP-related resources. We conduct both RRAs and ERPs according to the American Water Works Association (AWWA) standards, which represent cross-sector best practices. Each RRA considers natural, built, cyber, and personnel assets and any relevant threats and hazards. Risk and resilience management strategies are developed to address the highest risks and reduce vulnerabilities. Next, an ERP is developed. This is built on existing emergency preparedness plans and refined to align with AWIA and state requirements and industry best practices. Finally, we prepare self-certification documentation for submittal to the Environmental Protection Agency. We performed or are performing these services for the following clients.

Large Utilities (serving more than 100,000 people):

- City of Minneapolis, MN
- Fontana Water Company – San Gabriel Valley Water Company, Fontana, CA
- Lake Oswego-Tigard Water Partnership, OR
- Los Angeles County – San Gabriel Valley Water Company, El Monte, CA

Medium Utilities (serving between 50,000 and 99,999 people):

- City of Pleasanton, CA

2018 America's Water Infrastructure Act Cyber-Risk and Resilience Assessment, Municipal Water District of Orange County, CA: Project Manager. As a subcontractor to Herndon Solutions Group, West Yost conducted cyber-risk and resilience (cyber-RRAs) for member agencies using the American Water Works Association's Cybersecurity Risk Management Tool and Guidance and elements of the Idaho National Laboratory's Cyber-Informed Engineering methodology. West Yost conducted site visits and workshops to understand how each member agency uses technology and the associated cybersecurity

controls they have in place. We developed cyber-risk and resilience management strategies to support America's Water Infrastructure Act emergency response plan compliance.

2018 America's Water Infrastructure Act Risk and Resilience Assessment/Emergency Response Plan Compliance Gap Assessment, Santa Clara Valley Water District, San Jose, CA: Technical Lead. West Yost assisted Santa Clara Valley Water District (Valley Water) with their America's Water Infrastructure Act 2018 risk and resilience assessment (RRA) and emergency response plan (ERP) compliance certification. Valley Water serves approximately 1.8 million people and includes Silicon Valley in their service area. We reviewed previously completed RRAs and ERPs to provide a thorough gap analysis. We completed staff interviews, made project recommendations, and wrote summary reports and certification letters. We evaluated Valley Water's critical chemical suppliers in a detailed chemical supply chain resilience evaluation using an abbreviated set of questionnaires based on the Supply Chain Resilience Assessment & Management program at the Ohio State University.

Cyber Risk and Resilience Assessment, Fairfax Water, Fairfax, CA: Technical Lead. West Yost is currently supporting Fairfax Water build AWIA compliance. West Yost is conducting a cyber-risk and resilience assessment (cyber-RRA) of industrial control and enterprise systems. The cyber-RRA is being conducted according to AWWA's J100 methodology and AWWA's Water Sector Cybersecurity Risk Management Guidance and Tool. The cyber-RRA will conclude with the development of cyber-risk mitigation measures. This will allow direct integration into the physical RRA to seamlessly create a comprehensive all-hazards RRA. West Yost is also integrating the principles of Idaho National Laboratory's Cyber-Informed Engineering (CIE) and Cyber-Informed/Consequence-Driven Engineer (CCE) into the cyber-RRA. CIE/CCE is a new methodology aimed at the identification of engineering controls to reduce the consequences of a cyberattack.

SCADA Master Plan, City of Glendale, AZ: Technical Lead/Specialist. West Yost is developing the City of Glendale's SCADA Master Plan to identify and prioritize improvements focused on cybersecurity, resiliency, standards, and improvements toaging infrastructure.

SCADA Master Plan and Implementation, City of Tempe, AZ: Technical Lead/Specialist. West Yost is updating the City of Tempe's SCADA Master Plan to identify and prioritize improvements focused on cybersecurity, resiliency, standards, and improvements to aging infrastructure. West Yost is acting as Program Manager for approved implementation projects and is providing implementation services.

SCADA Master Plan and Implementation, San Gabriel Valley Water Company,CA: Technical Lead/Specialist. West Yost is developing the SGVWC SCADA Master Plan to identify and prioritize improvements focused on cybersecurity, resiliency, standards, and improvements to aging infrastructure. This includes completing an AWIA assessment and providing recommendations to address gaps in AWIA priority 1 controls.

SCADA Master Plan, City of Garden Grove, CA: Technical Specialist. West Yost is updating the City of Garden Grove's Water Master Plan to identify and prioritize improvements that will provide adequate flows and pressure to meet peak demands and fire flow requirements, meet regulatory requirements, provide redundancy for emergencies and address its aging infrastructure. West Yost's Operations Technology Cybersecurity and Resilience (OTCR) team also conducted an evaluation to provide a practical and implementable SCADA Implementation plan. Execution of the plan will provide the City with a modernized SCADA system that is flexible, user-friendly, and both physically and cyber resilient using industry leading design practices.

SCADA Master Plan and Implementation, City of Hillsboro, OR: Technical Lead/Specialist. West Yost is developing the City of Hillsboro SCADA Master Plan to identify and prioritize improvements focused on cybersecurity, resiliency, standards, and improvements to aging infrastructure. This includes completing an AWIA assessment and providing recommendations to address gaps in AWIA priority 1 controls.

David W. White

910 Ponce De Leon Ave NE Unit 4, Atlanta, GA 30306
917-209-9284 | dwhite@axio.com | LinkedIn: dwhite-axio

Summary

David W. White is President and Co-founder of Axio, where he advances cyber risk quantification and resilience across critical infrastructure sectors. He leads Axio's work with the U.S. Department of Energy and the Cyber Risk Institute and contributes to policy initiatives shaping the future of cyber oversight. David is also Co-founder and Co-chair of the Enterprise Risk Quantification Institute (ERQI), a non-profit that supports practitioners worldwide with vendor-neutral, methodology-agnostic approaches to risk quantification. He co-developed Axio's risk quantification methodology and previously led the development of national frameworks such as the Cybersecurity Capability Maturity Model (C2M2), CERT-RMM, and the Smart Grid Maturity Model. A first-generation college graduate, David credits early mentors for his path into engineering and resilience leadership. He is guided by a commitment to fairness, security, and protecting the systems that matter most.

Experience

2026 to present — **Co-founder and Co-chair**
Enterprise Risk Quantification Institute (ERQI) https://www.entriskquant.org

2013 to present — **Co-founder and President**
Axio, New York, NY

- Primarily responsible for evangelizing cyber risk management and risk quantification. Frequent speaker at conferences and events on a wide range of cybersecurity topics.
- Wide ranging functional responsibilities, including sales, marketing, technology and methodology development, customer delivery, customer success, and strategy.
- Led initial development of Axio assessment methodology and related Saas application for a wide range of cybersecurity assessment instruments, including NIST-CSF, C2M2, CIS18, CMMC, and various proprietary instruments.
- Consults with US Department of Energy on evolution and stewardship of the C2M2.
- Initial development of Axio's cyber risk quantification methodology. Ongoing involvement in evolution of methodology and Axio's SaaS application for risk quantification.
- Lead Axio's relationship with various critical infrastructure trade associations, including the American Public Power Association (APPA), the American Gas Association (AGA), the National Rural Electric Cooperative Association (NRECA), the Edison Electric Institute (EEI), the American Petroleum Institute (API), Canadian Gas Association (CGA), Cyber Risk Institute (CRI), the American Hospital Association (AHA), and the American Water Works Association (AWWA).
- Lead Axio's government affairs activities, including relationships with the United States Congress, federal agencies, and non-governmental organizations.

2000 – 2013 — **Various Technical and Management Positions**
Carnegie Mellon University Software Engineering Institute, Pittsburgh, PA

Technical Manager, Cybersecurity and Resilience Frameworks Portfolio and various prior technical roles, CERT Program, 2006 - 2013

- Technical leadership and research strategy for CERT's cybersecurity maturity models and frameworks and associated research, diagnostic methods, and training.
- Chief architect, Department of Energy's Cybersecurity Capability Maturity Model (C2M2) V1.
- Co-authored the CERT Resilience Management Model (CERT-RMM) – a capability maturity model for enterprise cybersecurity, business continuity, and IT operations.
- Led development of tailored extensions to CERT-RMM for US Postal Service. Developed security review process and instrument for international postal exchanges, which has been adopted by the Universal Postal Union.
- Chief architect for the SEI Smart Grid Maturity Model (SGMM). Led development of V1.1 and 1.2, associated diagnostic method, courses, and benchmarking methods.

Manager, Product Strategy, 2003 – 2006
Managed internal consulting team of 4; assisted in developing and implementing SEI product plans, transition strategies, and marketing and outreach programs.

Manager, Contracts, 2004 – 2006
Managed team of 10; responsible for writing, negotiation, and execution of research contracts, confidentiality agreements, licenses, and other contracts.

Manager, SEI Partner Network (Licensing Program), 2002 – 2003
Responsible for SEI Partner Network, a licensing and authorization program that makes SEI courses and consulting methods available worldwide.

Account Executive, Program Integration Directorate, 2000 – 2002
Responsible for sales of applied research; highly consultative sales process with long cycles and multi-$100K transaction values.

1999 – 2000 **Entrepreneur and Consultant**
Developed strategy and patented technology for wireless commerce venture, including authoring patent application, fundraising, and developing business plan.

1990 – 1999 **Various Business Development positions, culminating as Vice President (1995)**
RedZone Robotics, Inc., Pittsburgh, PA

Additional Information

Clearance
- US DoD Top Secret, 2008 – 2013; Sensitive compartmented information, 2012 – 2013

Education
- MS, Civil Engineering/Computer-Aided Engineering and Robotics, Carnegie Mellon University, Pittsburgh. Thesis: *A Manually Deployed Sensor for Mapping Buried Pipes*. Advisor: Red Whittaker.
- BS, Civil Engineering and Engineering and Public Policy, Carnegie Mellon University, Pittsburgh.

Selected Publications
- Moore, Samara; White, David W.; & Model Development Team. *Electricity Subsector Cybersecurity Capability Maturity Model (ES-C2M2) Version 1.0*.
- The SGMM Team. *Smart Grid Maturity Model: SGMM Model Definition, A framework for smart grid transformation, Version 1.2*. Carnegie Mellon University. 2011.
- Caralli, Richard A.; Allen, Julia H.; & White, David W. *CERT® Resilience Management Model: A Maturity Model for Managing Operational Resilience*. Addison-Wesley. 2011.

Patents
- Electromagnetic pipe mapper for accurate location and depth determination, US Patent 5640092, Motazed, Smith, and White, applied September 27, 1990, published June 17, 1997.
- Scannable barcode display and methods for using the same, US Patent 6877661, Webb, White, Amidi, Miller, and Dobbler, applied August 16, 2000, published April 12, 2005.

WE SUPPORT OUR COMMUNITIES

WE ARE WATER FOCUSED

WE TAKE PRIDE IN WHAT WE DO

WE STRIVE TO BECOME OUR BEST

WE DO WHAT'S RIGHT

WE BELIEVE IN QUALITY

WE LISTEN

WE SOLVE CHALLENGING PROBLEMS

WE SEE THE BIGGER PICTURE

WE TAKE OWNERSHIP

WE COLLABORATE

WE HAVE FUN

WE ARE WEST YOST

WEST YOST

Water. Engineered.

AGREEMENT FOR PROFESSIONAL SERVICES

THIS AGREEMENT ("Agreement") is made and executed this ___ day of _____, 20__, by and between the City of Cottage Grove, 12800 Ravine Parkway South, Cottage Grove, Minnesota 55016, ("City") and Barr Engineering Company, 4300 Market Point Dr., Bloomington, MN 55435 ("Consultant").

WHEREAS, the City has accepted the proposal of the Consultant for certain professional services; and

WHEREAS, Consultant desires to perform the services for the City under the terms and conditions set forth in this Agreement.

NOW, THEREFORE, in consideration of the mutual consideration contained herein, it is hereby agreed as follows:

1. SERVICES.

    a. City agrees to engage Consultant as an independent contractor for the purpose of performing certain professional Services ("Services"), as defined in the following documents:

        i. A proposal dated February 2, 2026, incorporated herein as Exhibit A.

        ii. Where the terms and conditions of this Agreement and those terms and conditions included in the Exhibits specifically conflict, the terms of this Agreement shall apply.

    b. Consultant covenants and agrees to provide the Services to the reasonable satisfaction of the City in a timely fashion, as set forth in the Exhibits, subject to Section 7 of this Agreement.

    c. Consultant agrees to use reasonable care in its professional judgement to comply with all federal, state, and local laws and ordinances applicable to the Services to be performed under this Agreement. Consultant represents and warrants that it has the requisite training, skills, and experience necessary to provide the Services and is appropriately licensed and has obtained all permits from all applicable agencies and governmental entities.

2. PAYMENT.

    a. City agrees to pay and Consultant agrees to receive and accept payment for Services as set forth in the Exhibits.
    b. Any changes in the scope of the work of the Services that may result in an increase to the compensation due the Consultant shall require prior written approval by the

authorized representative of the City or by the City Council. The City will not pay additional compensation for Services that do not have prior written authorization.

c. Consultant shall submit itemized bills for Services provided to City on a monthly basis. Bills submitted shall be paid in the same manner as other claims made to City.

3. TERM. The term of this Agreement is identified in the Exhibits. This Agreement may be extended upon the written mutual consent of the parties for such additional periods as they deem appropriate, and upon the same terms and conditions as stated herein.

4. TERMINATION.

a. Termination by Either Party. This Agreement may be terminated by either party upon thirty (30) days' written notice delivered to the other party to the addresses listed in Section 13 of this Agreement. Upon termination under this provision, if there is no default by the Consultant, Consultant shall be paid for Services rendered and reimbursable expenses incurred until the effective date of termination.

b. Termination Due to Default. This Agreement may be terminated by either party upon written notice in the event of substantial failure by the other party to perform in accordance with the terms of this Agreement. The non-performing party shall have fifteen (15) calendar days from the date of the termination notice to cure or to submit a plan for cure that is acceptable to the other party.

5. SUBCONTRACTORS. Consultant shall not enter into subcontracts for any of the Services provided for in this Agreement without the express written consent of the City, unless specifically provided for in the Exhibits. Consultant shall pay any subcontractor involved in the performance of this Agreement within the ten (10) days of the Consultant's receipt of payment by the City for undisputed services provided by the subcontractor.

6. STANDARD OF CARE. In performing its Services, Consultant will use that degree of care and skill ordinarily exercised, under similar circumstances, by reputable members of its profession in the same locality at the time the Services are provided. No warranty, express or implied, is made or intended by Consultant's undertaking herein or its performance of Services.

7. DELAY IN PERFORMANCE. Neither City nor Consultant shall be considered in default of this Agreement for delays in performance caused by circumstances beyond the reasonable control of the nonperforming party. For purposes of this Agreement, such circumstances include, but are not limited to, abnormal weather conditions; floods; earthquakes; fire; epidemics; war, riots, and other civil disturbances; strikes, lockouts, work slowdowns, and other labor disturbances; sabotage; judicial restraint; and inability to procure permits, licenses or authorizations from any local, state, or federal agency for any of the supplies, materials, accesses, or services required to be provided by either City or Consultant under this

Agreement. If such circumstances occur, the nonperforming party shall, within a reasonable time of being prevented from performing, give written notice to the other party describing the circumstances preventing continued performance and the efforts being made to resume performance of this Agreement. Consultant will be entitled to payment for its reasonable additional charges, if any, due to the delay.

8. CITY'S REPRESENTATIVE. The City has designated Chad Donnelly, PE to act as the City's representative with respect to the Services to be performed under this Agreement. He or she shall have complete authority to transmit instructions, receive information, interpret, and define the City's policy and decisions with respect to the Services covered by this Agreement.

9. PROJECT MANAGER AND STAFFING. The Consultant has designated Julie Macejkovic, PE and Nathan Thomas, PE to be the primary contacts for the City in the performance of the Services. They shall be assisted by other staff members as necessary to facilitate the completion of the Services in accordance with the terms established herein. Consultant may not remove or replace these designated staff without the approval of the City.

10. INDEMNIFICATION.

    a. Consultant and City each agree to indemnify, and hold harmless each other, its agents and employees, from and against legal liability for all claims, losses, damages, and expenses to the extent such claims, losses, damages, or expenses are caused by its negligent acts, errors, or omissions. In the event claims, losses, damages, or expenses are caused by the joint or concurrent negligence of Consultant and City, they shall be borne by each party in proportion to its own negligence.

    b. Consultant shall indemnify City against legal liability for damages arising out of claims by Consultant's employees. City shall indemnify Consultant against legal liability for damages arising out of claims by City's employees.

11. INSURANCE. During the performance of the Services under this Agreement, Consultant shall maintain the following insurance:

    a. General Liability Insurance, with a limit of $2,000,000 for any number of claims arising out of a single occurrence.

    b. Professional Liability Insurance, with a limit of $2,000,000 for any number of claims arising out of a single occurrence.

    c. Workers' Compensation Insurance in accordance with statutory requirements.

    d. Automobile Liability Insurance, with a combined single limit of $2,000,000.

Consultant shall furnish the City with certificates of insurance, which shall include a provision that such insurance shall not be canceled without written notice to the City. The City shall be included or named as an additional insured on the General Liability Insurance policy.

12. OWNERSHIP OF DOCUMENTS. Professional documents, drawings, and specifications prepared by the Consultant as part of the Services shall become the property of the City when Consultant has been compensated for all Services rendered, provided, however, that Consultant shall have the unrestricted right to their use. Consultant shall retain its rights in its standard drawing details, specifications, databases, computer software, and other proprietary property. Rights to proprietary intellectual property developed, utilized, or modified in the performance of the Services shall remain the property of the Consultant.

13. NOTICES. Notices shall be communicated to the following addresses:

If to City:
City of Cottage Grove
10875 Ideal Ave S
Cottage Grove, MN 55016
Attention: Chad Donnelly, PE

Or emailed: cdonnelly@cottagegrovemn.gov

If to Consultant:
Barr Engineering Company
4300 Market Point Dr.
Bloomington, MN 55435
Attention: Julie Macejkovic

Or emailed: jmacejkovic@barr.com

14. INDEPENDENT CONTRACTOR STATUS. All services provided by Consultant, its officers, agents and employees pursuant to this Agreement shall be provided as employees of Consultant or as independent contractors of Consultant and not as employees of the City for any purpose.

15. GENERAL PROVISIONS.

    a. Assignment. This Agreement is not assignable without the mutual written agreement of the parties.

    b. Waiver. A waiver by either City or Consultant of any breach of this Agreement shall be in writing. Such a waiver shall not affect the waiving party's rights with respect to any other or further breach.

c. Governing Law. This Agreement shall be construed in accordance with the laws of the State of Minnesota and any action must be venued in Washington County District Court.

d. Amendments. Any modification or amendment to this Agreement shall require a written agreement signed by both parties.

e. Severability. If any term of this Agreement is found be void or invalid, such invalidity shall not affect the remaining terms of this Agreement, which shall continue in full force and effect.

f. Data Practices Compliance. All data collected by the City pursuant to this Agreement shall be subject to the Minnesota Government Data Practices Act, Minnesota Statutes, Chapter 13.

g. Entire Agreement. This Agreement constitutes the entire agreement of the parties and supersedes all prior communications, understandings and agreements relating to the subject matter hereof, whether oral or written.

[The remainder of this page is intentionally left blank]

CITY OF COTTAGE GROVE

By: _____
Myron Bailey, Mayor

By: _____
Tamara Anderson, City Clerk

Date: _____

CONSULTANT

Signature: _____

Name: _____

Its: _____

Date: _____

City Council Action Request

7.Y.

Meeting Date	3/18/2026
Department	Administration
Agenda Category	Action Item
Title	Response to Open Forum - Peggy Nelson
Staff Recommendation	Receive the Open Forum response from Public Safety.
Budget Implication	N/A
Attachments	1. Item Attachment Files Nelson - Open Forum Response

Cottage Grove
Where Pride and Prosperity Meet

March 13, 2026

Peggy Nelson
7490 Hinton Park Ave. S.
Cottage Grove, MN 55016

Ms. Nelson,

At the City Council Meeting on March 4th, you proposed an ordinance to regulate facial coverings by law enforcement to promote public trust, effective communication, and identifiability during routine interactions with law enforcement. Staff has carefully reviewed and considered your proposal to reach a decision.

The Cottage Grove Police Department (CGPD) shares your commitment to constitutional policing and 21st Century Policing strategies, which are widely regarded as the best practices for building and maintaining community trust, communication, and partnerships.

While Minnesota State Statute 609.735 does not apply to peace officers acting within the scope of their official duties and CGPD's policy does not prohibit facial coverings, our practices do limit the use of facial coverings. Officers may wear facial coverings only when necessary to conceal the identity of an undercover officer or provide hazard protection. CGPD officers should be readily identifiable even when facial coverings are necessary, except when operating in an undercover role. Thus, CGPD's practices currently align with your proposal.

While the goals underlying your proposed ordinance are honorable, the legality and effects are debated. Firstly, federal agents may be exempt from local regulations, and unmasking mandates in other jurisdictions have not been definitively tested in courts yet. Secondly, enforcement of such an ordinance may create conflict leading to costly legal battles and hindered cooperation from our local, state, and federal partners.

We empathize with your concerns; however, the City of Cottage Grove will not regulate facial coverings for law enforcement. We do value your insights and recommendations, and we hope to continue dialogue as our community navigates the issues surrounding immigration enforcement. Your community spirit and advocacy are greatly appreciated.

Thank you for expressing your concerns allowing the Department and City an opportunity to reflect upon our practices so we may continue to serve our community with excellence.

Respectfully,

Brad Petersen
Deputy Director of Public Safety

City Council Action Request

8.A.

Meeting Date	3/18/2026
Department	Finance
Agenda Category	Action Item
Title	Approve Disbursements
Staff Recommendation	Approve disbursements from 02-27-2026 through 03-12-2026 in the amount of $1,866,506.66.
Budget Implication	N/A

Attachments

1.	Expense Approval Report 3-18-2026 Council Meeting
2.	Payroll Check Register 3-18-2026 Council Meeting

City Council Action Request

11.A.

Meeting Date 3/18/2026

Department Community Development

Agenda Category Action Item

Title Ravara Trails – Minor Subdivision, Zoning Amendment, Planned Unit Development and Preliminary Plat

Staff Recommendation 1) Adopt Resolution 2026-046 approving a Minor Subdivision to split 3.77 acres and 24.06 acres from two existing parcels at 10052 80th Street and 10478 80th Street. 2) Adopt Ordinance No. 1108 approving the zoning amendment to change the zoning of 148.72 acres of land generally located east of Keats Avenue (CSAH 19), north of 77th Street and south of 70th Street, from AG-2, Agriculture, to R-4, Transitional Residential. 3) Adopt Resolution 2026-045 approving a Preliminary Plat and Planned Unit Development for a subdivision to be called Ravara Trails, which will consist of 269 single-family units and 306 townhome units.

Budget Implication N/A

Attachments

1.	2026-03-18 CC Memo Ravara Trails
2.	Ravara Trails Resolution 2026-046 - Minor Subdivision
3.	Ravara Trails Ordinance No. 1108 - Rezoning
4.	Ravara Trails Resolution 2026-045 - PP & PUD
5.	Ravara Trails Lot Split Survey (Tank Trust)
6.	Ravara Trails Lot Split Survey West (Eileen Tank)
7.	Ravara Trails Preliminary Plat Narrative
8.	Ravara Trails Site Plan
9.	Ravara Trails Preliminary Plat Plans
10.	Ravara Trails Engineering Plan Review Memo 2026-02-17
11.	Ravara Trails Proposed Phasing Plan
12.	Ravara Trails Landscaping Plan
13.	Ravara Trails Open Space
14.	Ravara Trails Traffic Impact Study

TO: Honorable Mayor and City Council
Jennifer Levitt, City Administrator

FROM: Samantha Pierret, Senior Planner

DATE: March 10, 2026

RE: Ravara Trails – Minor Subdivision, Zoning Amendment, Planned Unit Development and Preliminary Plat

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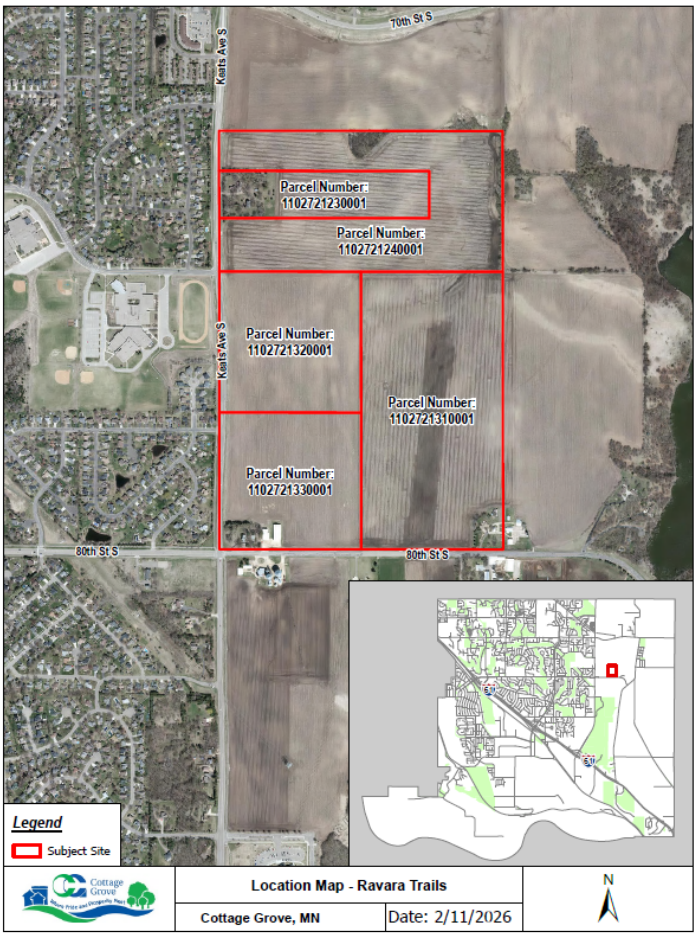
Proposal

Twin Cities Land Development has submitted an application for a Zoning Amendment, Planned Unit Development (PUD), Preliminary Plat, and Minor Subdivision for a subdivision consisting of 575 residential lots including 306 townhome lots and 269 single-family lots. The subject site is located east of Keats Avenue (CSAH 19) north of 77th Street and south of 70th Street and consists of five parcels totaling approximately 239.5 acres. The proposed development will be on 148.72 acres. The Applicant is proposing to rezone the subject site to R-4, Transitional Residential District.



Review Schedule
Application Received: December 31, 2025
Planning Commission Meeting: February 23, 2026
City Council Meeting: March 18, 2026
120-Day Review Deadline: April 30, 2026

Background

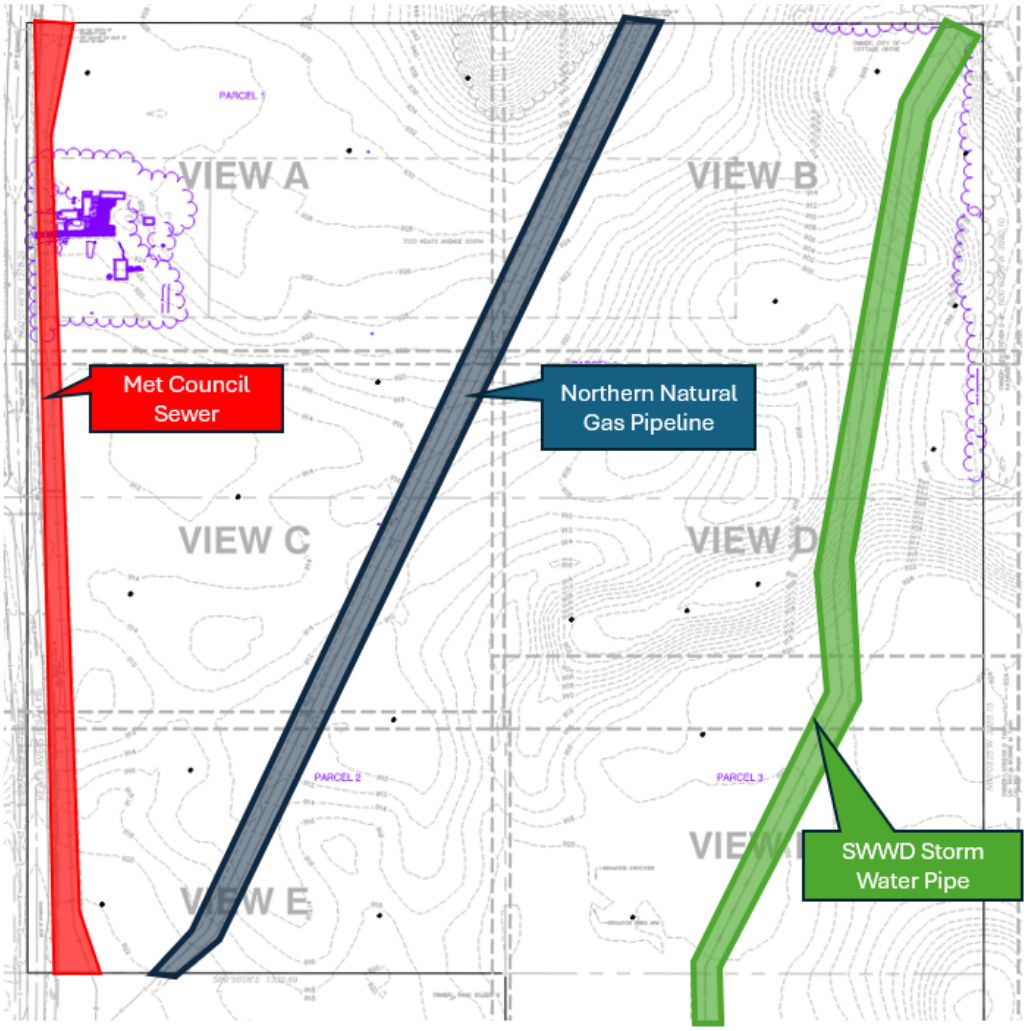
Site Conditions
The subject property consists of five parcels totaling approximately 239.5 acres. The proposed development will be on 148.72 acres. Currently, there are three dwellings on these parcels. The two farmsteads accessed from 80th Street (10052 80th Street and 10478 80th Street) will remain as the proposed development will not impact these residences. One dwelling accessed from Keats Avenue (7333 Keats Avenue) will be removed in preparation for the proposed development. A majority of the parcels are currently used as tilled cropland.



Existing Conditions

A pipeline easement in favor of Northern Natural Gas runs through the center of the development area. The Met Council sanitary sewer line runs along Keats Avenue on the west side of the

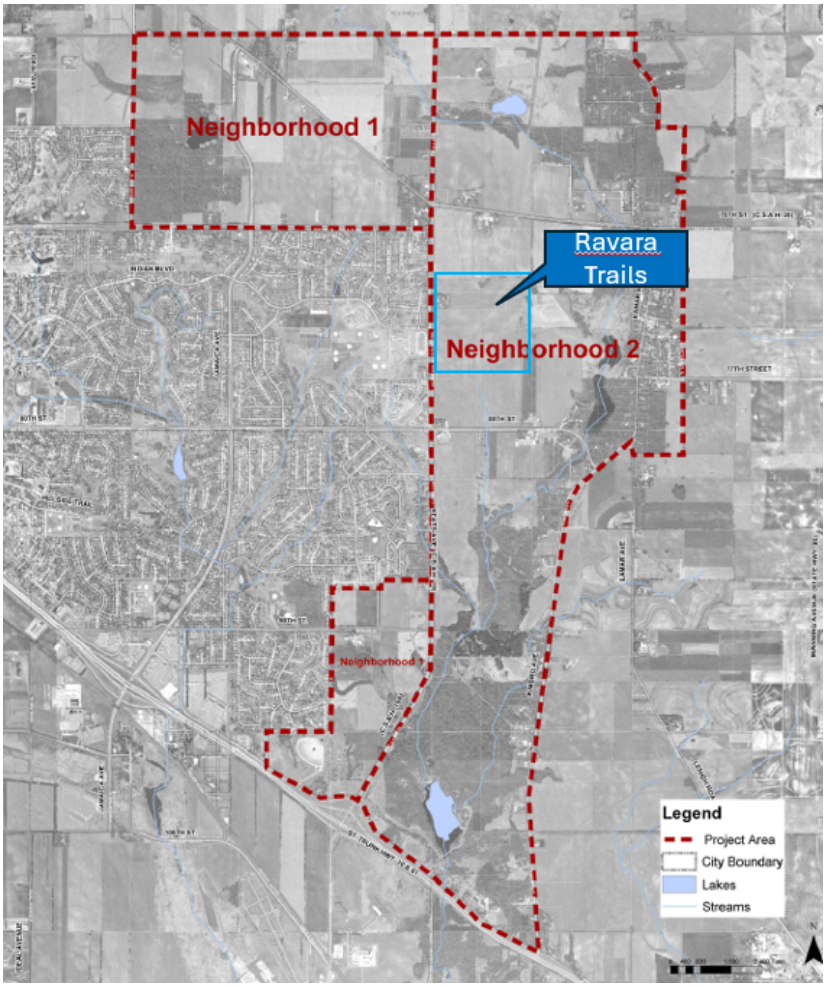
development area, and the South Washington Watershed District storm water pipe is located in an easement on the east side of the project area.



Existing Easements

East Ravine Master Plan

The East Ravine Master Plan was adopted in 2006 to plan and guide future development in the East Ravine Area. The Master Plan describes land use designations, major roadway alignments, parks and open space locations, and the types of utility extensions necessary to serve the area. One of the goals of the Plan is to provide an attractive residential environment that encourages a range of housing opportunities including move-up housing. The Plan area was divided into two zones, Neighborhood 1 and Neighborhood 2. Ravara Trails is located in Neighborhood 2. This area of Neighborhood 2 was planned for medium to low density residential development connected to the future parkway system and open space system via trail segments and greenways. Neighborhood 2 was planned as an attractive living environment for a wide range of housing types.

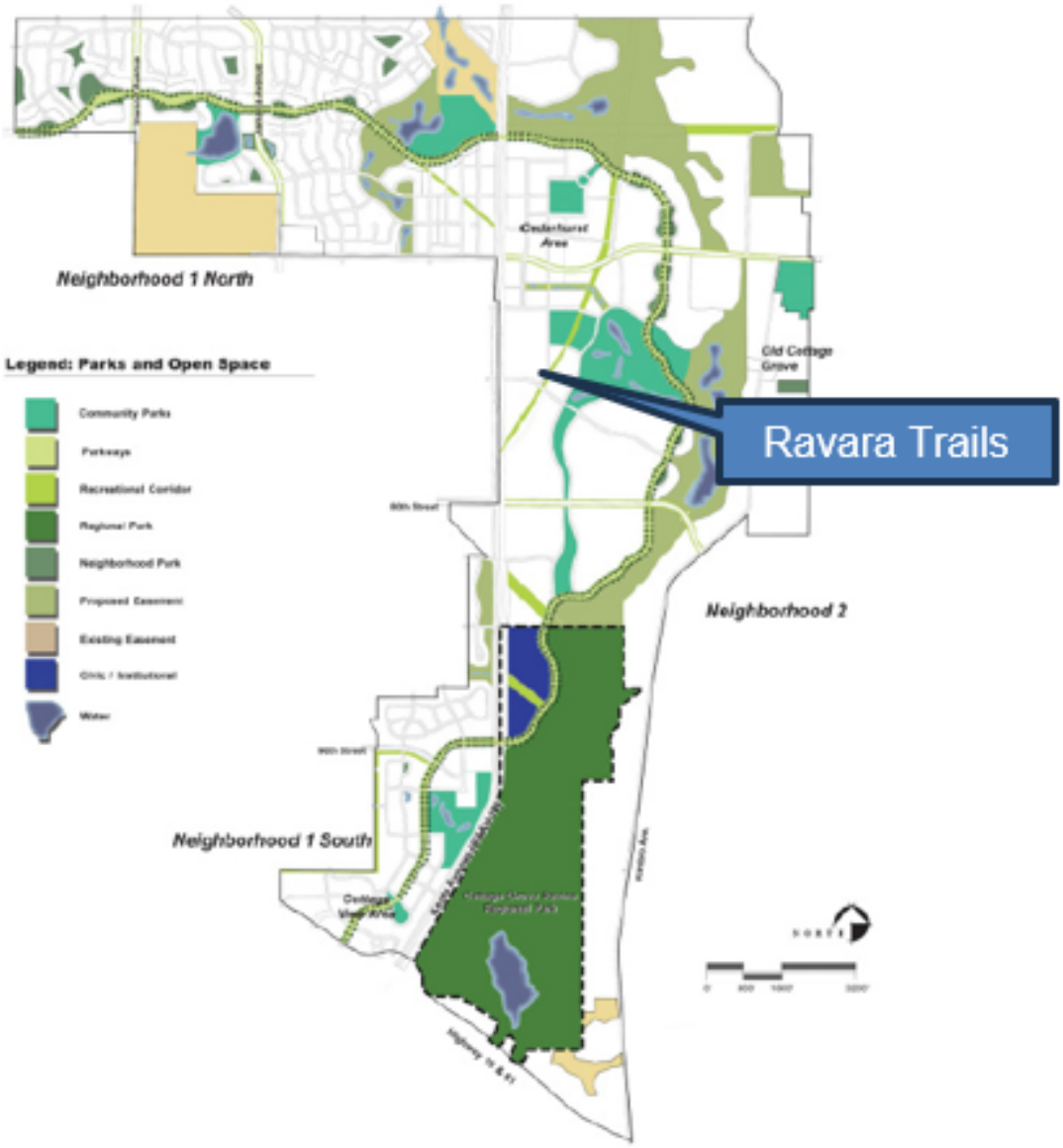


East Ravine Master Plan Neighborhoods - 2006

The Master Plan envisioned the utilization of townhomes and rowhouses with rear garage orientations to keep trash collection and surface parking in the rear of homes with individual units still having a public walk-up, front door access. Low Density areas were anticipated to have large estate lots 85 feet wide or greater and narrower lots between 65-75 feet wide. Over the years, minimum density requirements have increased and narrower lots have become more commonplace by the housing market. Ravara Trails is proposed to have 40-foot-wide and 65-foot-wide lots.

One of the critical features of the Master Plan was the creation of the parkway (Ravine Parkway) to establish a “central spine” through the project area. The parkway would have harmonious design elements such as lighting, plantings, colors, and textures. A segment of Ravine Parkway will be constructed in conjunction with the Ravara Trails development.

A Parks and Open Space Schematic was prepared that showed neighborhood parks, community parks for more intensive recreational activities, and trails along all major roadways (Keats and the parkway). A neighborhood park is proposed in Ravara Trails (Outlot L), and some acreage will be dedicated towards the future community park north of 80th Street to meet park dedication requirements for Ravara Trails.

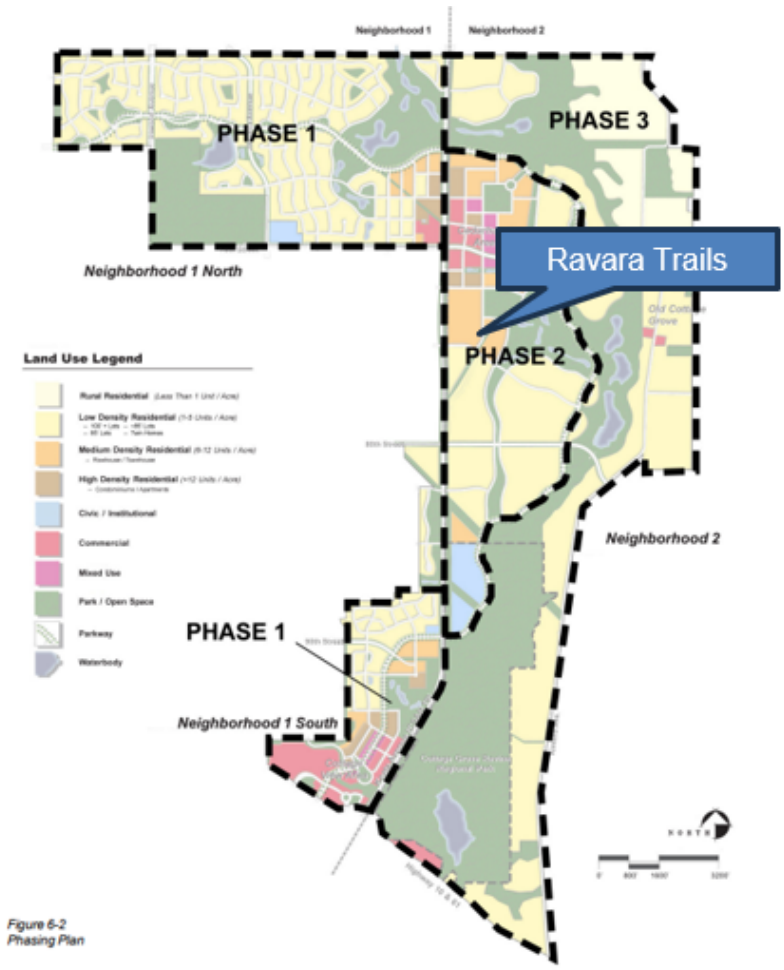


East Ravine Master Plan Parks & Open Space

Planning for utilities in this area included stubbing into the Met Council's sewer interceptor. The Ravara Trails area was in Phase 1 where access is readily available. A water tower is anticipated to be needed near Keats and 70th Street. Stormwater management was proposed to be addressed using a system of ponds and infiltration basins along parkways and in green spaces.

It was anticipated that implementation of the East Ravine Master Plan would be a phased approach taking 20 years or more. The Ravara Trails area was anticipated to develop as a Phase 2 after Neighborhood 1 was close to being built out (which it is).

The proposed Ravara Trails development meets several of these goals and standards as seen in the following report.



East Ravine Master Plan – Phasing Plan

AUAR

Part of the East Ravine Master Plan process was completion of an Alternative Urban Areawide Review (AUAR) for the East Ravine neighborhoods. AUARs are used to understand cumulative development/land use impacts at a high level when site and project specifics are unknown.

The AUAR was originally completed in 2005 and is required to be updated every five years to remain valid. The AUAR was most recently updated in November 2025. The 2025 update reflected current conditions including the completion of several residential neighborhoods in Neighborhood 1 and updated traffic volumes. Climate adaptation and resilience information was included as required in the 2025 update and included recommendations encouraging lighter colored roofing, using Stormwater Management Best Practices, and encouraging more vegetation to reduce urban heat islands.

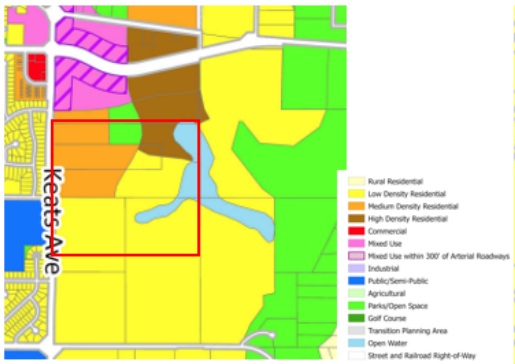
A Mitigation Plan is also part of the AUAR and includes compliance with floodplain regulations, requiring landscape buffers along major roadways, requiring green space that minimizes the need for irrigation, including residential design standards that ensure a variety of housing design, and monitoring actual development versus the AUAR assumptions using the City's GIS system.

The proposed Ravara Trails development is in compliance with the AUAR as seen in the following report.

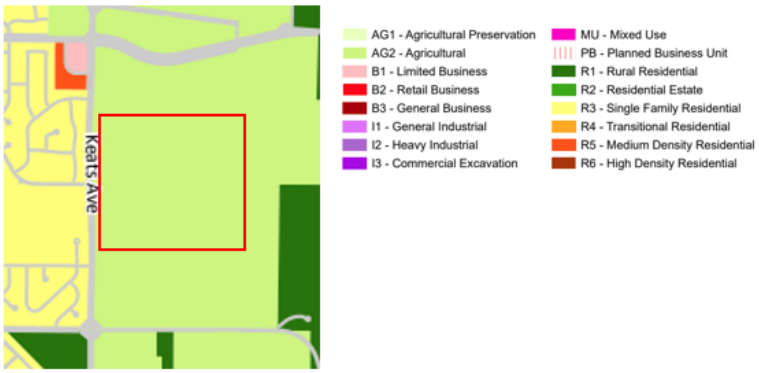
Planning Considerations

Rezoning and Comprehensive Plan

The subject properties are currently zoned AG-2, Agricultural, and are guided a mixture of Low Density Residential, Medium Density Residential, High Density Residential, and Parks/Open Space in the 2040 Comprehensive Plan. The Comprehensive Plan guides the actions of the community by presenting a vision for the future by identifying policies, strategies, and investments the community will undertake while providing a repository of information. All land use decisions must be consistent with the Comprehensive Plan. Zoning regulations specifically define how land can be used. Zoning divides a jurisdiction into multiple districts, and the Zoning Ordinance provides regulations that guide community development and growth within each district. The zoning regulations are the primary tool used to implement the City's vision in the Comprehensive Plan.



2040 Future Land Use



Current Zoning

The Applicant is requesting to rezone the properties from AG-2 to R-4, Transitional Residential, which would be in accordance with the long-term growth plan for the parcels. Only 3.77 acres of parcel 1102721330001 (10052 80th Street) and 24.06 acres of parcel 1102721310001 (10478 80th Street) will be rezoned after being split via the Minor Subdivision process. The remaining acreage will remain zoned AG-2 so the current landowners may continue to use the properties for agricultural activities.

Low Density Residential as defined in the Comprehensive Plan allows for 2 to 4 units per acre density, Medium Density Residential allows for 5 to 13 units per acre density, and High Density Residential allows for 14 to 30 units per acre density. The R-4, Transitional Residential District, is intended to provide transitional areas that will allow a mixture of single family detached and single family attached dwellings on smaller lots where property is adjacent to a minor or major collector street and/or where property is adjacent to higher intensity development or land use.

The Applicant is proposing 4.35 units per net acre. Net density is defined as, "The total number of units divided by the total land area less major right of ways (arterials and collectors) and less wetlands protected by the Wetland Conservation Act, provided that the right of way (including major roads) shall not be deducted if dedicated to the City at no cost." The Ravara Trails calculation is shown below:

Gross Acreage of Ravara Trails Development: 148.72 acres
Subtract Existing ROW Keats Avenue: 3.55 acres
Subtract Proposed ROW Ravine Parkway, Keats Avenue, and Indian Blvd: 16.68 acres
Equals Net Acreage: 128.49 acres

Dividing 575 total housing units by the net acreage of 128.49 acres results in 4.5 units per acre. At 4.5 units per acre, the Ravara Trails development falls between Low and Medium Density residential classifications in the Comprehensive Plan. The City is working with the Met Council on density averaging and the area guided High Density Residential where single family lots are proposed. Density is being averaged across the development area including the low-, medium-, and high-density residential areas. The Applicant has clustered the urban townhomes in the area guided for Medium Density Residential and proposed single family lots in the area guided Low Density Residential. The proposed density configuration meets the Comprehensive Plan's guidance for density clustering, keeping higher density residential along Keats Avenue on the northwest side of the development and maintaining single family residential on the south and east sides of the development.

The proposed preliminary plat is consistent with the 2040 Comprehensive Plan in the following ways:

- The Land Use Map in the 2040 Comprehensive Plan identifies the future land use development of the subject property as low to high density residential and parks/open space. The Developer is proposing a mixture of townhomes and single-family lots for the subject property with a neighborhood park, which is consistent with the 2040 Comprehensive Plan.
- The proposed density of 4.5 units per acre is consistent with the Low Density Residential (1-4 units per acre) and Medium Density Residential (5-13 units per acre) land uses.
- The proposed development helps provide the City with a diverse mix of housing types that are needed to serve various income levels and stages of life.
- The proposed preliminary plat and grading plan are consistent with the given land use designation for this area.

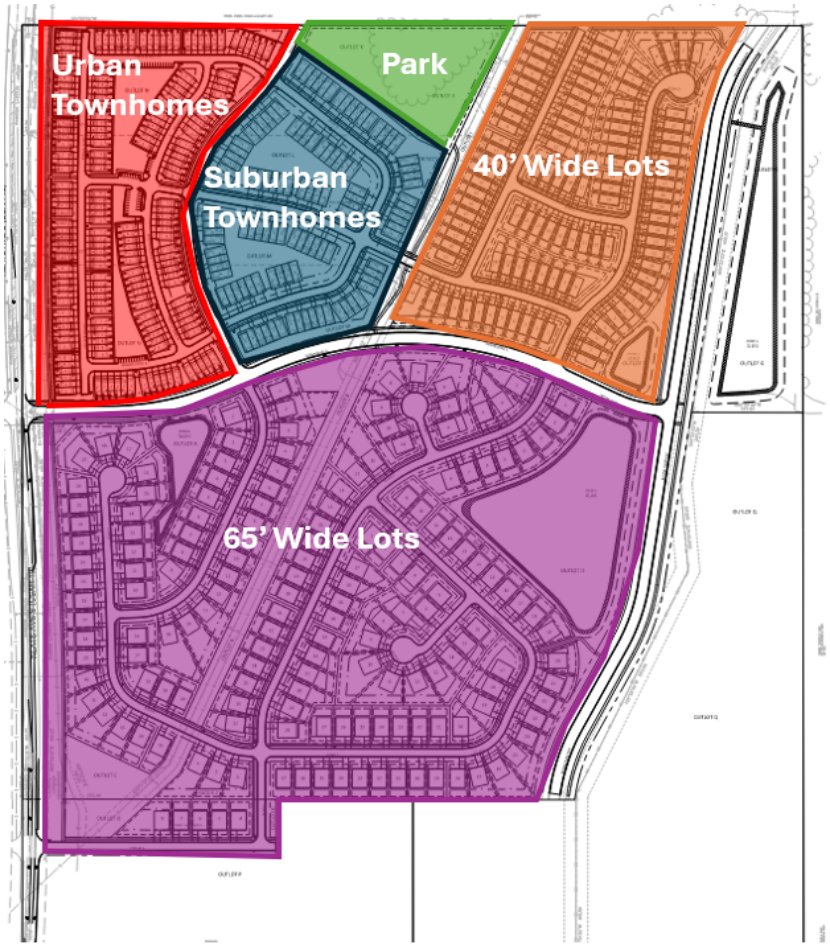
Housing Needs Analysis
Maxfield Research and Consulting completed a Housing Needs Analysis (HNA) for the City in 2024. The HNA provided recommendations on the amount and types of housing that should be developed to meet current and future needs of the community.

Single Family Lots:
It is anticipated there will be demand for an additional 1,317 single-family units by 2030 and 1,139 single-family units by 2035. These numbers did not take into account platted lots or lots under active construction during the study period. Subtracting single family lots platted after the study period (Lochridge), there is still demand for 1,269 single family lots by 2030. The Ravara Trails development proposes to plat 269 single family lots leaving approximately 1,000 single family lots to be platted by 2030 to meet market demand.

Townhome Lots:
It is anticipated that there will be demand for an additional 593 owned multi-family units (townhomes) by 2030 and 631 owned multi-family units by 2035. Subtracting townhome lots platted after the study period (Lochridge), there is still demand for 545 multifamily lots by 2030.

The Ravara Trails development proposes to plat 306 townhome lots, leaving approximately 239 multifamily lots to be platted by 2030 to meet market demand.

Preliminary Plat
The preliminary plat, as proposed, depicts a logical development given the performance standards of the zoning district. The plat consists of 575 owner-occupied townhome and single-family units. The Applicant has proposed 192 urban townhome lots (garage in rear), 114 suburban townhome lots (garage at front), 105 villa single family lots (40 feet wide), and 164 65-foot-wide single-family lots. The townhomes will be attached in groups of three, four, five, and six units.

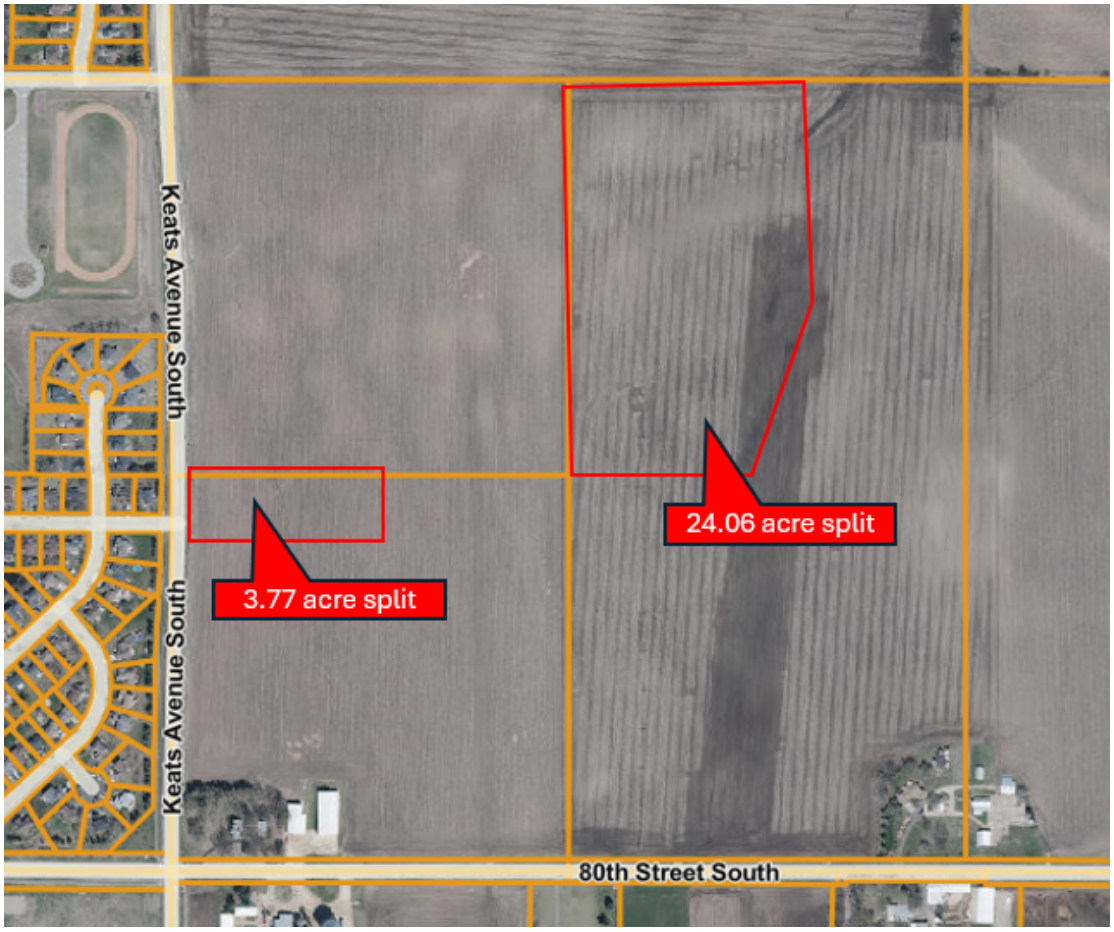


The preliminary plat includes proposed Roads A and I terminating at the northern boundary of the development. A temporary turnaround shall be included for vehicles to turn around at Road I until future development is connected from the north. Road A shall have future road connection barricades and signage until future development connects to the north. Barricades are suitable at Road A because there are no residential lots fronting on this section of Road A. Utilities will be

stubbed in Roads A and I in anticipation of future development on the north side of the development. A segment of Ravine Parkway will also be constructed to the northern boundary of the project. Utilities will be stubbed across Ravine Parkway at Indian Boulevard in anticipation of future development to the east and northeast. The Applicant has also proposed to bring 77th Street across Keats Avenue as a second access to the development. Utilities will be stubbed at 77th Street and Road C to facilitate future utility connections when 77th Street is extended.

Minor Subdivision

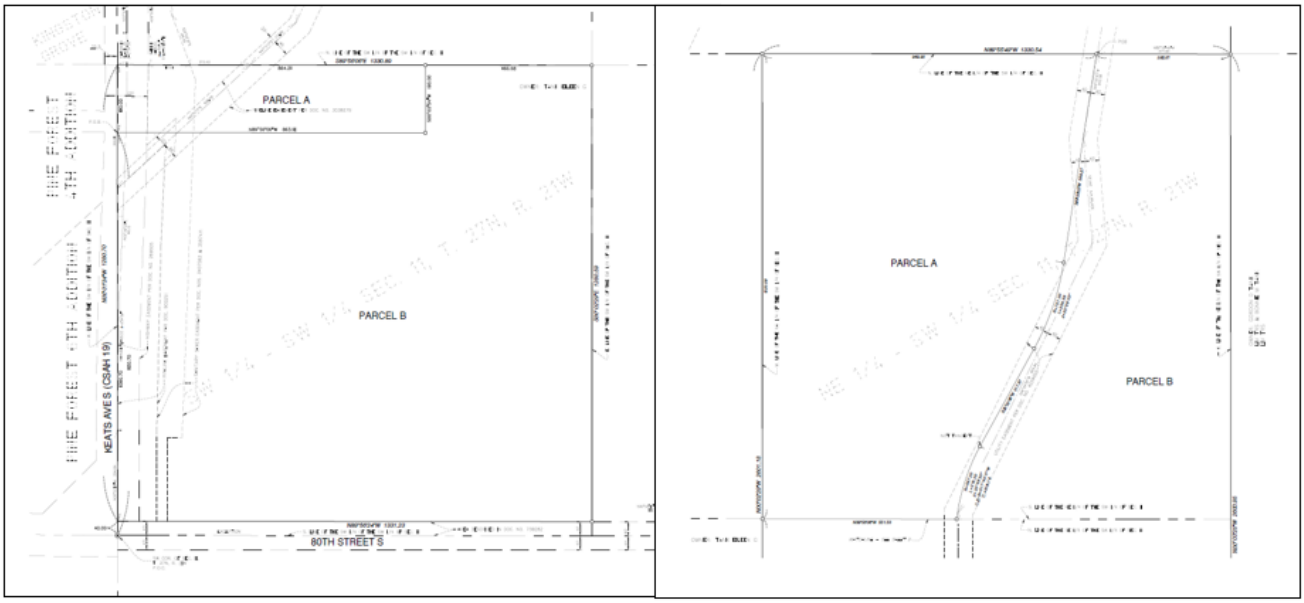
The Applicant has requested to split 3.77 acres from parcel 1102721330001 (10052 80th Street) leaving 35.36 acres as tilled farmland with the farmstead to be owned by the current landowner. The Applicant has also requested to split 24.06 acres of parcel 1102721310001 (10478 80th Street) leaving 55.41 acres as tilled farmland with the farmstead to be owned by the current landowner.



Proposed Minor Subdivisions

Splitting the properties is allowed without platting via a Minor Subdivision per Title 10-2-1 of the Cottage Grove Subdivision Ordinance, which states that platting may be waived for the division of a single parcel of land into two separate parcels. The newly created parcels must meet all requirements of the Subdivision and Zoning Ordinances and be located in the R-1, R-2, AG-1, or AG-2 Districts.

The parcels are currently zoned AG-2 and the remaining acreage with farmsteads and tillable fields will be greater than the minimum lot size of ten acres. The acreage to be split must immediately be combined with land in the Ravara Trails plat to ensure lots greater than ten acres are created.



Minor Subdivision Surveys

Planned Unit Development

The Planned Unit Development (PUD) is a zoning tool that provides additional flexibility for development that an underlying zoning district would not otherwise allow. For example, a PUD may make exceptions to setbacks or lot widths. To provide multiple product types on varying lot sizes, the Applicant is proposing lot width and side yard setback reductions and flexibility from the required landscape buffer along major roads. A PUD is also required to allow private streets in the townhome areas. In return for this flexibility, the Applicant will dedicate 80-foot wide right of way for Ravine Parkway, construct an 8-foot-wide paved trail over the gas easement, and plat lots for a variety of life-cycle home products including attached townhomes, villas, and traditional single-family homes. The Applicant has also included guest parking lots in the townhome area, and the private streets will not allow parking on either side of the street. The proposed development meets or exceeds all other zoning code requirements.

Zoning Development Standards

The development performance standards of the requested zoning district classifications and those requested as part of the development are detailed below. The Applicant has requested a Planned Unit Development (PUD) as part of their application. The PUD would support multiple product types on varying lot sizes and the inclusion of private streets in the townhome areas.

The development performance standards of the requested zoning district classifications are detailed below. As part of the PUD request, the Developer is proposing 40-foot-wide lots with reduced side yard setbacks on the house side. These adjusted setbacks allow for the lots to support varying product types within the development. Reduced side yard setbacks were approved for the 40-foot-wide lots in Mississippi Landing and Settler's Bluff developments.

Lot Development Performance Standards			
Standard	**R-4 District**	**Proposed 40' Lot Width**	**Proposed 65' Lot Width**
Minimum lot width at the front setback	45 feet	**40 feet**	65 feet
Minimum side yard setback, house	7.5 feet	**5 feet**	7.5 feet
Minimum side yard setback, garage	5 feet	5 feet	5 feet
Minimum front yard setback	25 feet	25 feet	25 feet
Minimum rear yard setback	30 feet	30 feet	30 feet
Corner lot setback	20 feet	20 feet	20 feet
Maximum Principal structure height	35 feet	35 feet	35 feet
Maximum Impervious Surface Coverage	50%	50%	50%

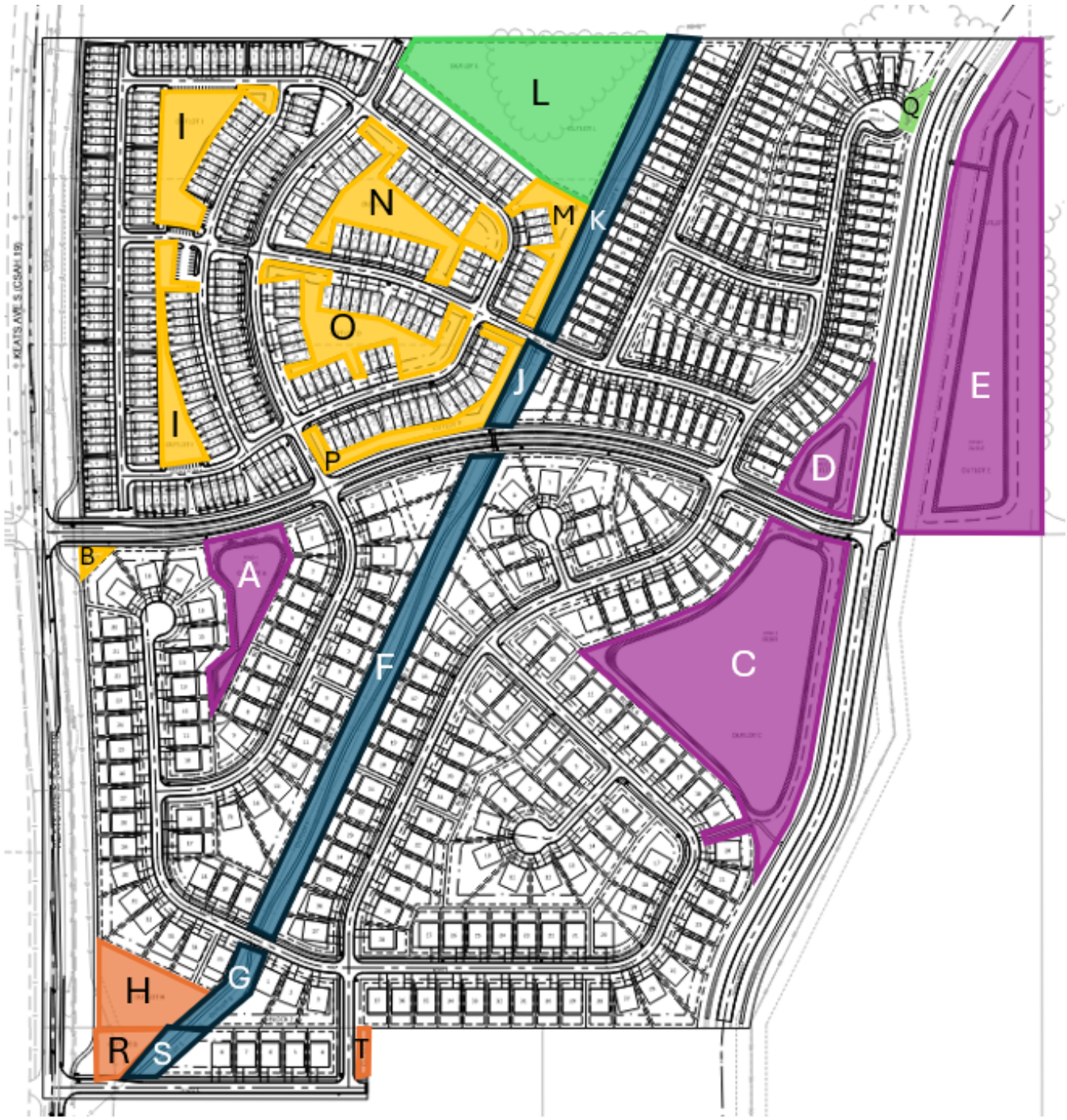
Townhome building units must have a fifteen foot setback between buildings, ten feet for residential garages, be at least 25 feet from R-1, R-2, and R-3 Districts, and have at least two paved off-street parking spaces. The proposed buildings comply with these distance and parking requirements.

Proposed Development Outlots

The proposed preliminary plat creates 20 outlots throughout the development that are proposed to be owned by various entities in the long term. The table and image below provide the proposed outlots and the intended long-term ownership of each outlot.



Preliminary Plat



Proposed Development Outlots

Proposed Development Outlots, Proposed Long-Term Ownership, & Proposed Use		
Proposed Development Outlot	**Proposed Long-Term Ownership**	**Proposed Use**
Outlot A	City	Stormwater pond
Outlot B	HOA	Entry monument and landscaping
Outlot C	City	Stormwater pond
Outlot D	City	Stormwater pond
Outlot E	City	Stormwater Pond

Outlot F	City	Paved trail in gas easement
Outlot G	City	Paved trail in gas easement
Outlot H	City	Open space reserved for future stormwater, Met Council Sewer Interceptor Easement
Outlot I	HOA	Open space around urban townhomes
Outlot J	City	Paved trail in gas easement
Outlot K	City	Paved trail in gas easement
Outlot L	City	Future Neighborhood Park and Water Tower
Outlot M	HOA	Open space around suburban townhomes
Outlot N	HOA	Open space between suburban townhomes
Outlot O	HOA	Open space between suburban townhomes
Outlot P	HOA	Open space between suburban townhomes
Outlot Q	City	Paved pedestrian connection to Ravine Parkway trail
Outlot R	City	Open Space Reserved for Future Stormwater; Met Council Sewer Interceptor Easement
Outlot S	City	Paved trail in gas easement
Outlot T	Developer	Future lot development area

Outlot T may be retained by the developer until future development connects to Outlot T. The developer that retains Outlot T must agree in the development agreement to negotiate in good faith with the current or future developer/property owner(s) to ensure that a residential lot can be created on Outlot T.

Park Land and Open Space

A minimum of 10 percent of developable area (development area less areas below the highwater level of ponding areas and right-of-way) shall be required to be dedicated for new developments to provide residents with public recreation facilities including parks and open spaces as a part of development projects per City Code Title 10-4-3. This equals 12.94 acres in the proposed Ravara Trails development.

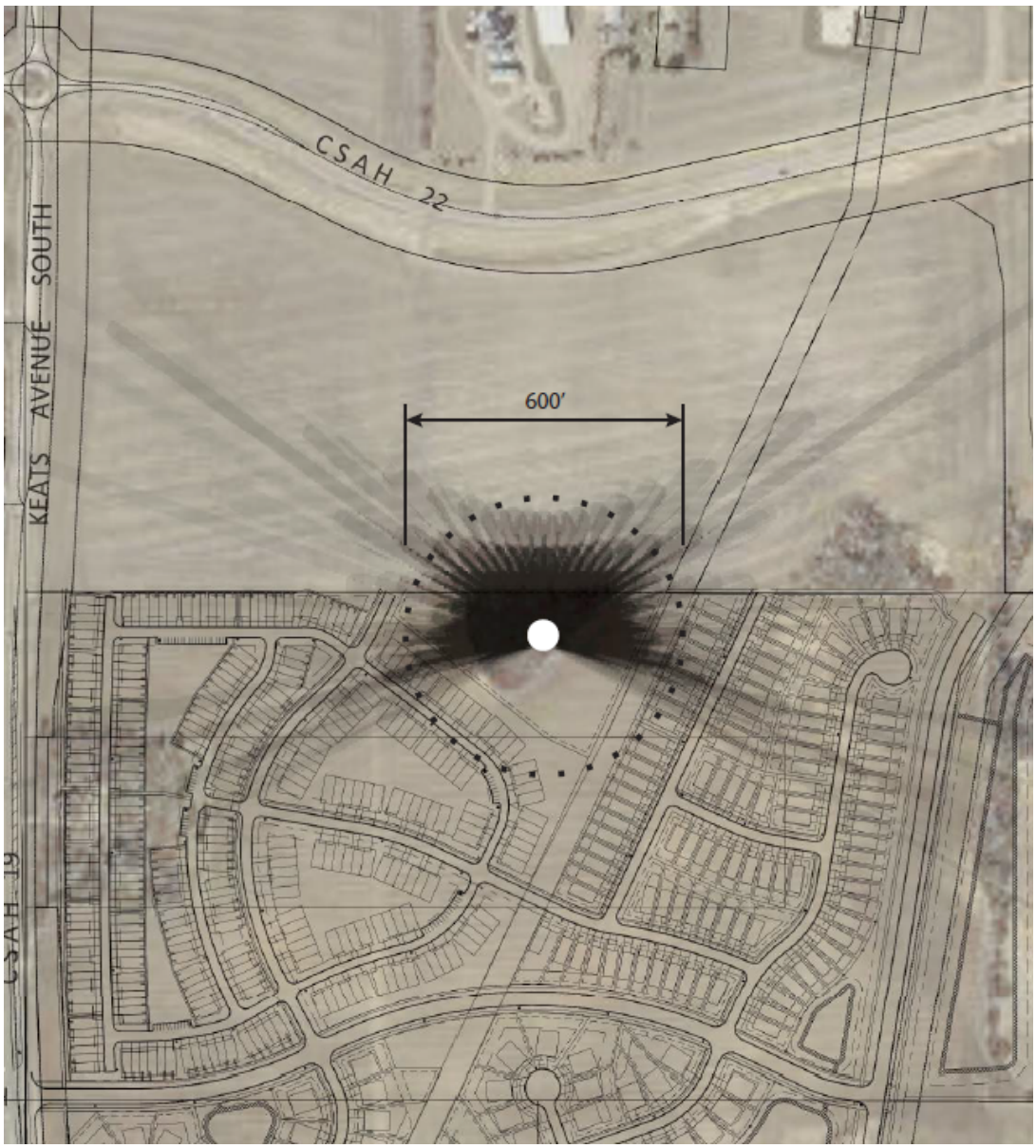
Outlot L (4.15 acres) is proposed to be dedicated to the City for a future neighborhood park. The neighborhood park is included in the City's 2040 Comprehensive Plan. Outlot L does not comprise the entirety of the planned park area. Additional land from the parcel to the north will be dedicated upon development of that property to complete the planned park. The future neighborhood park will include a playground, covered shelter, sport court, and open space covered with native plantings. A water tower is planned to be in the center of the park on an existing high point. Vehicular access will be from the north at the time the parcel to the north develops. Park and open

space markers are to be installed prior to issuance of a building permit for lots abutting park and open space as identified by the Parks and Recreation Director or their designee.



Preliminary Neighborhood Park Concept with Water Tower

A shadow analysis was performed on the proposed water tower location to analyze the impacts of shadows on proposed residential lots. While the study used existing grades and not the grades proposed in the Ravara Trails development, the analysis is beneficial to show areas that may be shaded at various portions of the day when the water tower is constructed.



Future Water Tower Shade Study

A community park is planned in the south/southeast portion of parcels 1102721420001 and 1102721310001 north of 80th Street. The preliminary Community Park Master Plan will also encompass some land along the north and west sides of Vandenberg Lake. The community park is preliminarily planned to have multiple ball fields, soccer fields, a skate park, splash pad, basketball courts, and a building with restrooms. A trail system will connect the park to planned conserved land along Vandenberg Lake. A canoe/kayak launch on Vandenberg Lake is also proposed. The park will be developed as future development east of Keats continues, as land is able to be acquired from property owners, and as funding is available. At this time, development of park amenities is not planned on the east side of the lake in Old Cottage Grove; however, the public will be able to access the entirety of the lake from the community park as it is a public waterbody.



Preliminary Community Park Concept

Some of the land proposed for the community park is owned by the Tank family, who owns a majority of the land within the proposed Ravara Trails development. Typically, required park areas are dedicated at such time the parcel is sold for development. Given members of the Tank family will retain acreage for farmsteads and tilled cropland that is planned for the future community park, the Tanks will dedicate some acreage towards the future community park to meet park dedication requirements of Ravara Trails.

To meet the required park dedication acreage, the Applicant will be dedicating Outlot L at 3.40 acres (4.15 acres minus water tower area of 1.5 acres). The Applicant will also deed Outlots F, G, J, K, and S to the City for a paved trail connection through the gas easement. The City will provide a credit for the construction of a paved trail in Outlots F, G, J, K, and S. This credit will be based on the estimated construction costs of the trail and is estimated to be an equivalent of 0.64 acres of park dedication. This dedication will be finalized through the development agreement. The trail acreage equivalent of 0.64 acres plus Outlot L dedication of 3.40 acres will be added

together (4.04 acres) and subtracted from the 12.94 acres of park dedication required. The remaining 8.90 acres will be dedicated and deeded to the city by the Tank family from parcel 1102721310001 in the area proposed for the future community park. A Memorandum of Understanding (MOU) must be signed by the Tanks and the City to document the park dedication requirement.

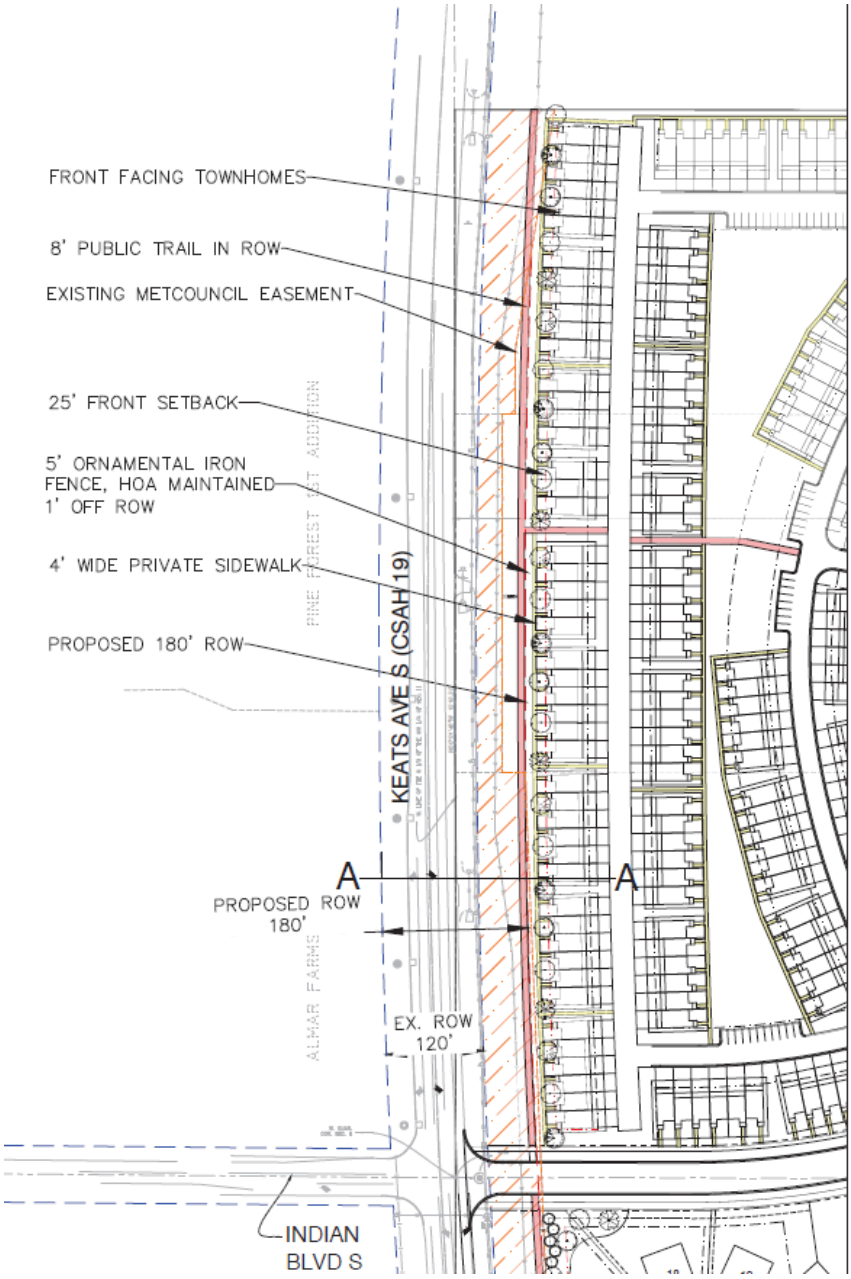


Future Community Park and Ravara Trails

Transportation

The proposed development will have two access points off Keats Avenue (CSAH 19) at Indian Boulevard and 77th Street. The Applicant's engineer conducted a Traffic Impact Study (TIS) for Ravara Trails dated December 31, 2025. The TIS focuses on the traffic impacts to Keats Avenue. Keats Avenue is a two-lane undivided County roadway. The County recently convened a CSAH 19 Technical Advisory Committee that is actively studying the future of CSAH 19 from Highway 61 to Bailey Road in Woodbury. The City is represented by planning and engineering staff on the committee and the TAC is aware of the proposed Ravara Trails development.

The County requires 180-foot-wide right of way along Keats Avenue in anticipation of future expansion of Keats from two lanes to four lanes. The existing right of way in the area is 120 feet wide. No additional right of way can be obtained on the west side of Keats due to existing development; therefore, the Applicant needs to dedicate the additional 60 feet of right of way necessary to meet 180 feet of width. The Met Council Sewer Interceptor and easement are also located within those 180 feet of right of way.



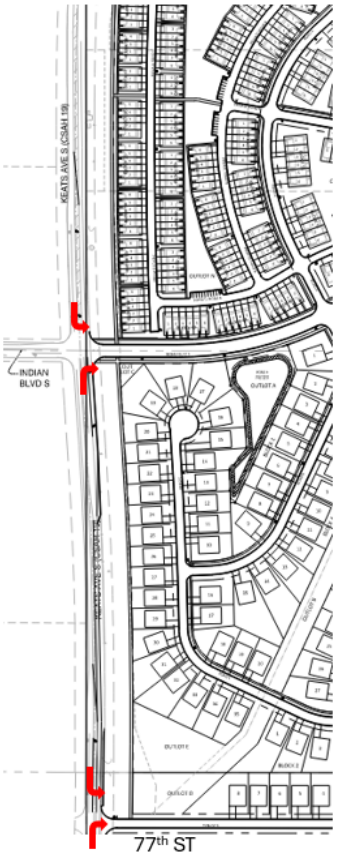
Keats Avenue Right of Way

The proposed development is anticipated to generate approximately 4,456 daily trips. To facilitate traffic moving in and out of the development, the developer is responsible to construct northbound right turn lanes and southbound left turn lanes on Keats Avenue at 77th Street and Indian Boulevard. These turn lanes would prevent vehicles turning into the proposed development from blocking through vehicles on Keats Avenue. A segment of Ravine Parkway is also required to be constructed with a northbound left turn lane and southbound right turn lane into the proposed development at Indian Boulevard.

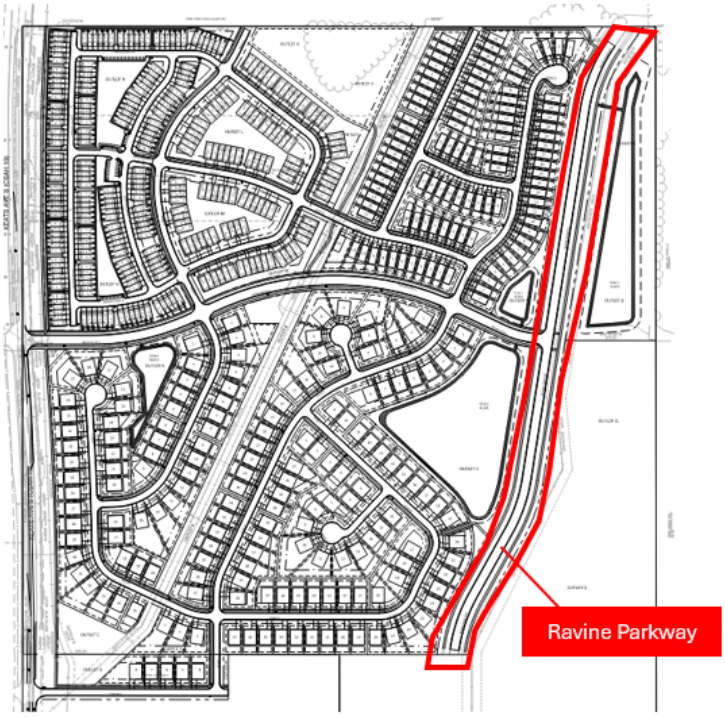
Intersections of Keats at Indian Boulevard and 77th Street were studied for proposed levels of service during peak a.m. and p.m. hours. Levels of Service (LOS) are ranked from A to F and correspond to the average delay per vehicle. LOS A indicates the best traffic operation and LOS F indicates an intersection where demand exceeds capacity. The study also included the impacts to the intersection of Keats Avenue and 80th Street (anticipating the future roundabout) and the intersection of Keats Avenue and 70th Street. All intersections are expected to operate at an overall LOS B or better except for Keats Avenue at 70th Street, which operates at an overall LOS C during the peak p.m. hours only.

Turn lanes will be added on Indian Boulevard and 77th Street as they intersect with Keats Avenue. The city has had conversations with Washington County regarding the final configuration of turn lanes on these intersecting streets. It is anticipated that each side street leg will have a combined through/left turn lane and a right turn lane to accommodate traffic, and additional right-of-way will be available to separate the combined through/left lanes in the future.

With the existing schools along Indian Boulevard, traffic along Keats Avenue is heavier in the area during drop-off and pick-up hours. Although traffic flow is slowed during these times, additional traffic control is not warranted at this time due to the limited hours of increased traffic.



Proposed Turn Lanes



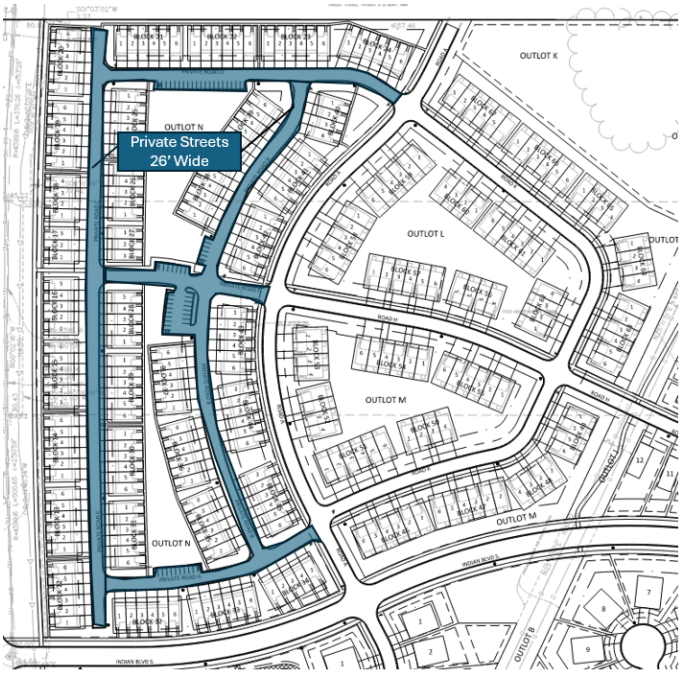
Ravine Parkway Location

In the future, the Indian Boulevard and Keats Avenue intersection may require traffic control such as a stoplight as Ravara Trails and other adjacent developments fill in. The City and County will monitor the intersection to determine when traffic control is warranted.

A segment of Ravine Parkway will be constructed in conjunction with the proposed development. As development continues to the north and south, Ravine Parkway will be extended to 70th Street and 80th Street and will facilitate access to the east side of the proposed development and future development to the east.

The internal road system will include a mixture of public and private streets. Private streets at least 26 feet wide are proposed to be incorporated in the urban townhome areas. No parking will be allowed on the private streets. Instead, parking will be available in driveways and garages and visitors may park in designated visitor parking lots dispersed throughout the townhomes. The parking lots will be connected to the townhome buildings via sidewalks and trails.

Private streets are only allowed via PUD per the City's Subdivision Ordinance. The Applicant has requested PUD consideration for the development. Staff is supportive of the request for private streets in the urban townhome area to allow visitor parking areas to be established along the street. The Urban Townhomes have vehicular access from the rear of the homes, making these streets more synonymous with an alleyway. These private streets will be signed with No Parking on both sides. The remainder of the streets will be public and provide the interconnection to collector streets and future developments to the north, east, and south.

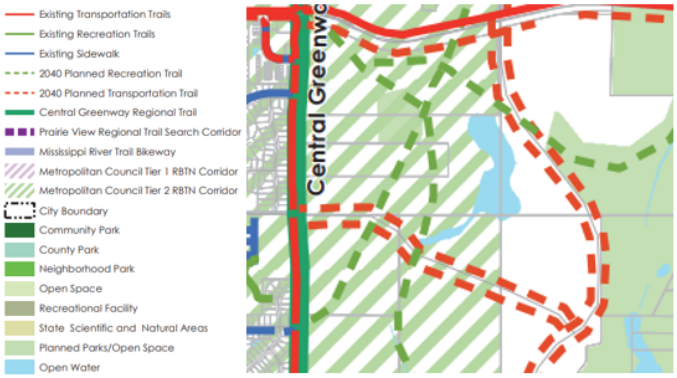


Proposed Private Streets 26 Feet Wide

Trails and Sidewalks

The 2040 Comprehensive Plan depicts planned recreation and transportation trails within the development area. The Central Greenway Regional Trail is also depicted along Keats Avenue. An eight-foot-wide bituminous trail is proposed on both sides of Ravine Parkway. This trail will connect with future segments of trail along Ravine Parkway. Eight-foot-wide trail segments are

required on both sides of Indian Boulevard. An interconnected paved sidewalk system is proposed throughout the neighborhood with six-foot-wide sidewalks throughout. A sidewalk connection is proposed along Road A (public road) up to the future neighborhood park on Outlot L. The proposed development includes the area of an existing pipeline easement. No structures may be constructed over the pipeline easement; however, a paved trail is acceptable.



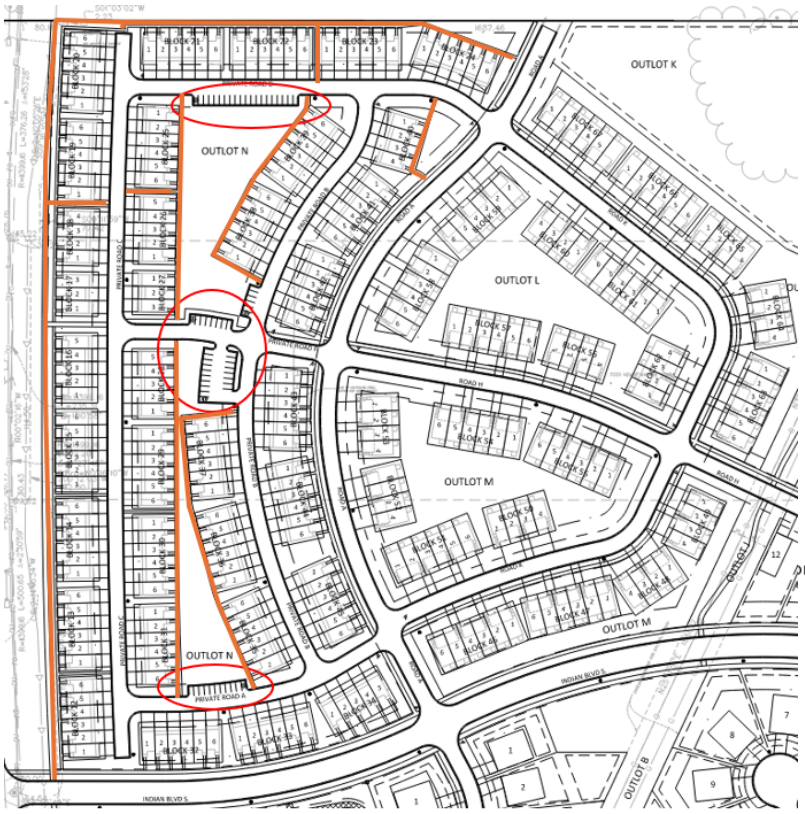
Comprehensive Plan Trail Connections

The development will construct the proposed eight-foot-wide bituminous trail segments as generally outlined in the comprehensive plan (shown above) and illustrated below. These trail sections include the Central Greenway Regional Trail along the east side of Keats Avenue within County right of way, trails along both sides of Indian Boulevard, a trail within the pipeline easement, and trails along both sides of Ravine Parkway. It is anticipated that these trails will be extended as future development occurs in the area. Marked pedestrian crossings will be provided for the gas easement trail at Indian Boulevard and Road H.



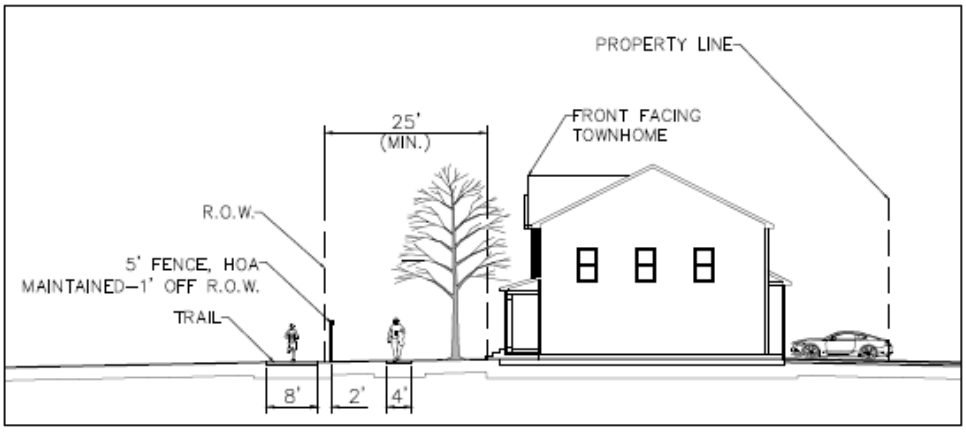
Trail Connections

The urban townhomes will have their front doors connected via a system of internal sidewalks and trails. The internal trail system will also connect visitor parking areas to these sidewalks for access to the townhomes. Some blocks will have paved front door connections onto the public trail along Indian Boulevard and public sidewalk along Road A. This sidewalk connection will be similar to sidewalk connections to front doors in older, historic neighborhoods and communities. Connecting to the public trail/sidewalk prevents a redundant private connection running parallel to the public trail/sidewalk. Property owners will be responsible for maintaining their sidewalk from the trail to their front door.



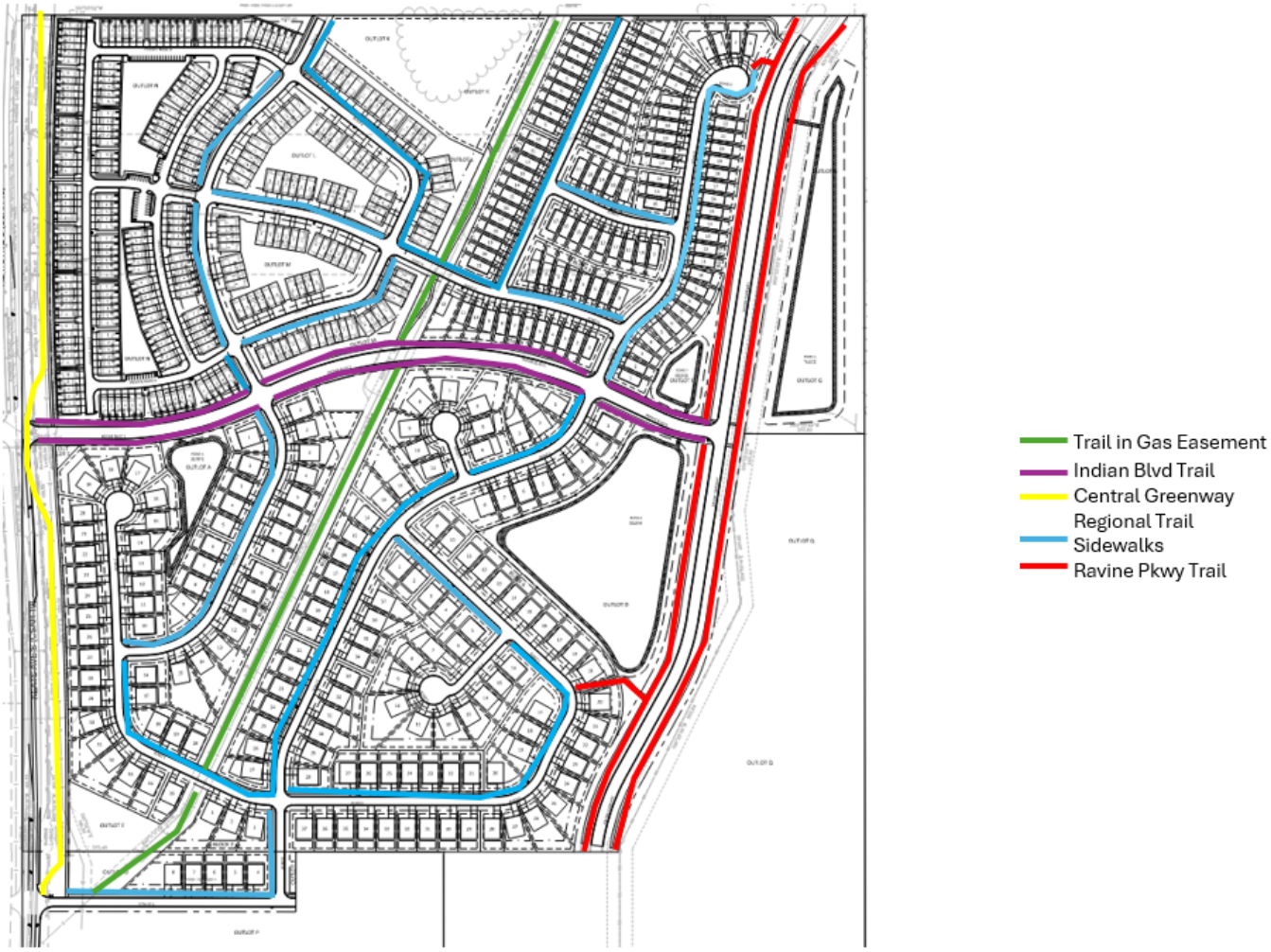
Private Trail/Sidewalk Connections

The urban townhomes fronting on Keats Avenue will have their own private sidewalk that will be separated from the Central Greenway Regional Trail via a black wrought iron fence and landscaping. This redundancy is necessary to avoid encroaching onto Met Council's sewer interceptor easement and Washington County's right of way with multiple sidewalk connections to the public trail.



Keats Avenue Cross Section at Urban Townhomes

An eight-foot-wide bituminous trail within Outlot C will act as a pedestrian connection to the trail along Ravine Parkway between Lots 19 and 20 Block 6. Outlot Q will provide a paved pedestrian connection from the end of cul-de-sac D to the paved pedestrian trail along Ravine Parkway. These outlots will be owned by the City, and the property owners adjacent to the trail will be responsible for mowing the sod on each side of the trail.



Pedestrian Connectivity

There will not be a painted crosswalk across Keats from Ravara Trails. Given Keats is a 55-mph roadway, pedestrian crossings should not be promoted. The County TAC is studying whether a grade-separated crossing can be installed in the area in the future.

Tree Preservation and Landscaping

The properties currently contain 3,907 existing qualifying inches of trees. City Code Title 11-3-13 allows 25 percent of the qualifying inches identified on site to be removed (976.75 inches). The Applicant proposes to remove 3,415 qualifying inches, an excess of 2,438.25 inches. The excess inches removed must be replaced at a rate of 50 percent; therefore, the Applicant must replace 1,219.12 inches. The Applicant's preliminary landscape plans show 2,485 inches being mitigated by common lot landscaping and individual lot plantings. The developer will also be responsible to remove all trees from Outlot L (future park). The trees should be removed to make space for a future water tower and to ensure the park amenities can be installed without putting responsibility on the City to remove trees in the future. This tree removal will need to be detailed on tree removal specifications prior to beginning grading.

City Code Title 11-6-5 requires a minimum amount of landscape plantings to be installed as a part of development projects within the City. These required plantings include yard trees, building perimeter plantings, and landscape requirements. Lots less than 60 feet wide must have two trees

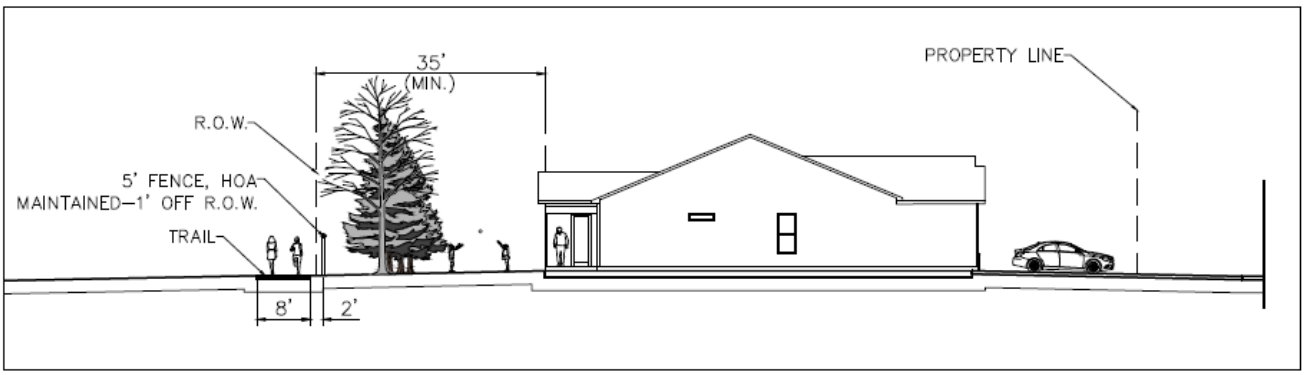
per lot, one in the front yard. Lots 60 feet wide or greater must have three trees per lot, one in the front yard. The maximum canopy spread on lots less than 60 feet wide is 30 feet and a maximum height of 30 feet. Townhouse lots must have one tree per 40 linear feet of site perimeter with one overstory deciduous tree in the front yard between each building group. In addition, each single-family lot is required to have 10 understory shrubs and each townhouse unit must have 5 understory shrubs.



Landscaping Plan

A buffer averaging 50 feet in width but no less than 30 feet wide must run parallel to the rear lot line along Major Roadways in the R-2 through R-5 zoned districts. The buffer shall be a combination of trees, fences, and shrubs that create a minimum of 50 percent year-round opacity at maturity. Keats Avenue and Ravine Parkway are considered major roadways. Part of the PUD consideration is to amend the required buffer along Keats Avenue for the urban townhomes. The urban townhomes' front doors will face Keats Avenue. The buffer requirement is proposed to be

waived via the PUD in favor of a black wrought iron fence separating the right of way from the townhomes with some trees and shrubs being planted in the yard space between the buildings and the fence. These plantings and the fence will be maintained by the HOA to ensure they remain on site. The Applicant has proposed installing a black wrought iron fence in the rear yards of single-family lots abutting Keats Avenue right of way. The single-family lots will have extra vegetation planted in rear yards to meet buffer requirements. The vegetation and fencing will be maintained by the HOA to ensure they remain on site as a buffer.



Keats Avenue Cross Section at Single Family Lots

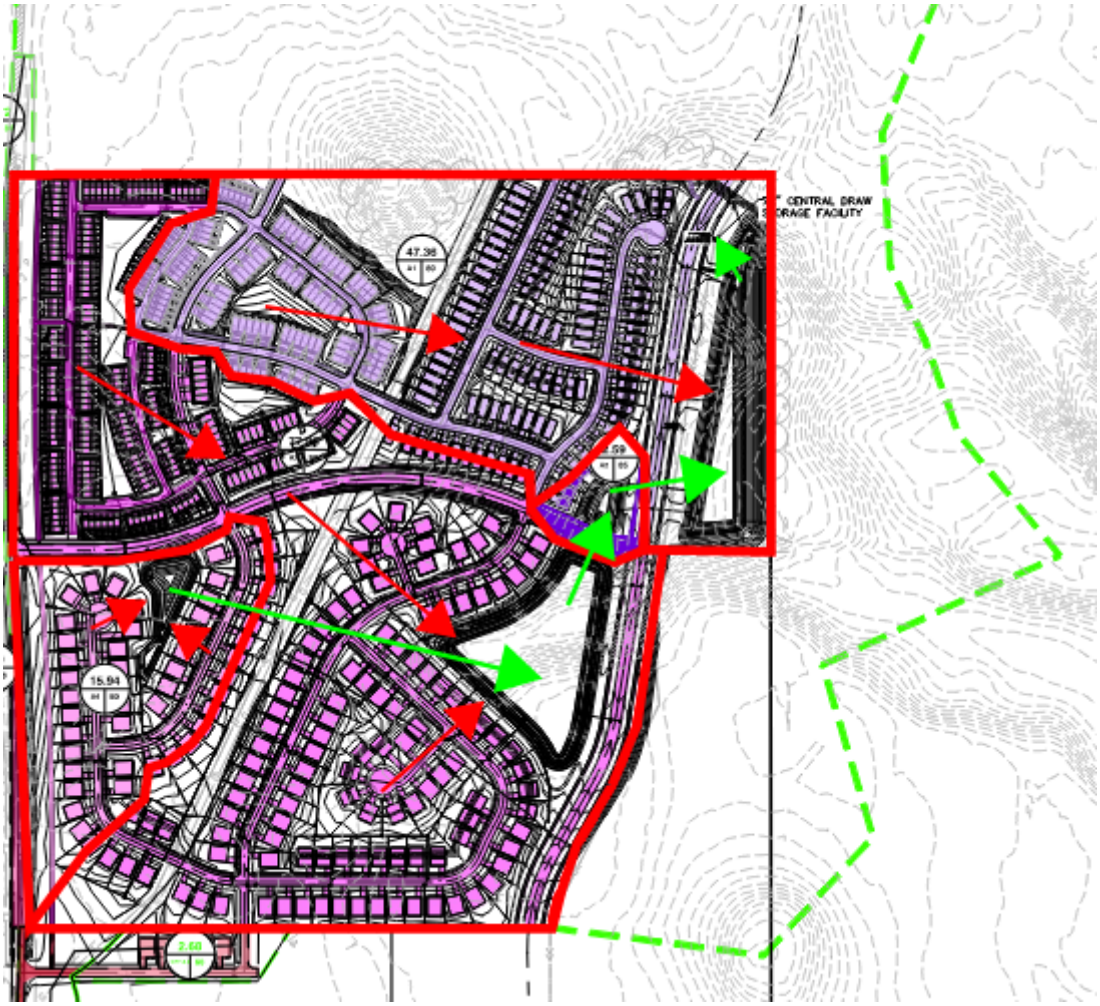
Lots along Ravine Parkway in Blocks 6 and 9 will need additional landscaping buffer from Ravine Parkway. Staff has also requested the Applicant to update landscaping plans showing boulevard trees along Indian Boulevard to maintain a “neighborhood feel” of the street since no homes will front on Indian Boulevard with front yard trees. Boulevard trees are also required along Ravine Parkway as depicted in master planning documents.

A condition of approval will require planning department and City Forester approval of the final landscape plan.

Stormwater Management Plan

The developer’s engineer submitted a stormwater management plan dated December 31, 2025, which has been reviewed by the City. Comments on the plan are included in the review memo dated February 17, 2026. City engineering staff will continue to work with the developer’s engineer to ensure the site meets water quality standards as well as rate and volume control rules. The developer will be required to deed Outlots A, C, D, and E to the City for stormwater purposes. Outlots H and R shall also be dedicated for future drainage that may be required for Keats Avenue. Outlot E contains part of a future larger regional stormwater pond. Access routes from streets to each stormwater pond are required to allow for ongoing maintenance of City infrastructure.

The development site is designed with four stormwater ponds that are connected by storm sewer pipe. The image below shows the general flow of stormwater through the site. Drainage areas within the development are delineated by the red lines and drain to their respective area pond. The green arrows illustrate that Pond 1 drains to Pond 2 which drains to Pond 3 which drains to Pond 4 and then outlets into the 72-inch Central Draw pipe. The image also shows that stormwater from areas outside of the development (as delineated by the green dashed lines) flows into the site; the proposed ponds and storm sewers are designed to handle offsite flow.



Grading

As with all new development projects, site grading is necessary to build the streets, provide proper drainage and ponding, and to create building pads, among other things. City staff and engineering consultants will review grading plans to ensure the plans meet city, state, and watershed district requirements for flood control, erosion control, and drainage. The preliminary grading plan was reviewed by the City's engineering staff, and their review comments are included in the February 17, 2026, plan review memo. Additional grading review will be required upon submittal of final grading and utility plans for the site.

The future City park that will be constructed on the north side of the development will require grading to prepare for future park areas. The Developer shall rough grade and remove material from this area using plans reviewed and approved by the City Engineer and Parks Director.

Utilities

The proposed development will connect to existing watermain and sanitary sewer on the west side of the development at Keats Avenue. They will connect into the Met Council sewer interceptor near Indian Boulevard. The engineering plan review memo dated February 17, 2026, contains comments from city staff and from consulting engineers regarding utility design that will be required to be addressed by the Applicant prior to approval of final plans.

Utilities will be stubbed in proposed Roads A, I, Ravine Parkway, Indian Boulevard, and 77th Street to serve future development to the north, east, and south.

Architecture

The Applicant has submitted conceptual designs of the various home products for reference.



Proposed Urban Townhomes – Home Entrance on One Side, Garage on Other





Proposed Suburban Townhome s – Home Entrance and Garage on Same Side





Proposed 40-Foot Wide Single Family Lots

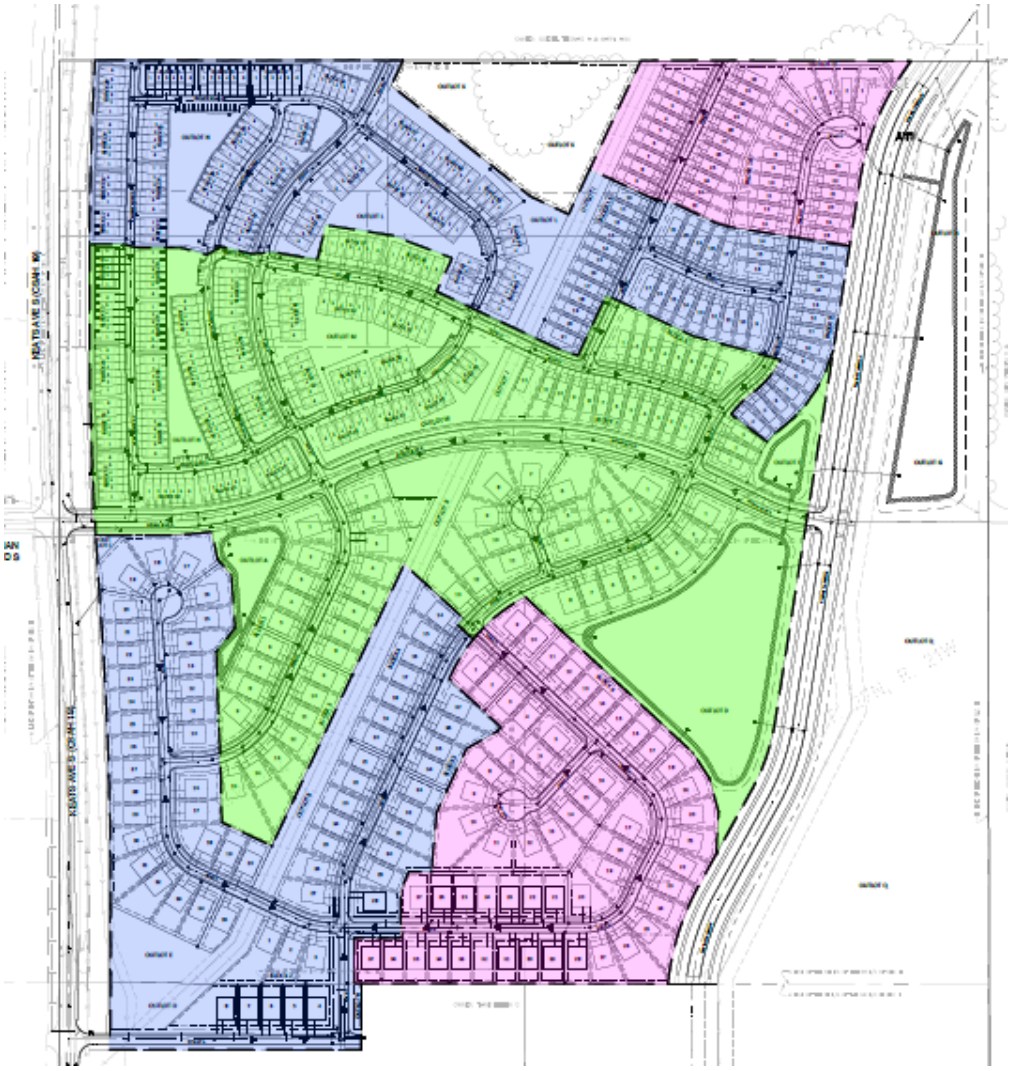




Proposed 65-Foot Wide Single Family Lots

Phasing

The Developer is proposing construction throughout three phases. The area shown in green below indicates the proposed first phase of the development. Phase two is blue and Phase three is in pink.



Area Charges and Development Fees
Area charges and related development fees for this project will be based on the acreages shown on the final plat. These fees and charges will be accurately adjusted based on the final plat layout and be provided in the development agreement. All fees and charges will be memorialized within the development agreement. Payment to the City will be required at the time the development agreement is fully executed by the City and Developer.

Homeowners Association
Homeowners Associations will be established by the developer. The HOAs will enforce architectural guidelines and will ensure the upkeep of common community amenities including the entrance monument, townhome green spaces, buffer plantings along Keats Avenue, and fencing along Keats Avenue.

Neighborhood Meeting
The Applicant held a neighborhood meeting on February 3, 2026. Notice of the neighborhood meeting was sent to surrounding property owners within 500 feet of the project area. The intent of the meeting was to give neighboring property owners the opportunity to ask questions and present concerns they might have to the developer in the early planning stages of the proposed project. Ten residents attended and spoke with the Applicant and staff about the proposal.

Residents questioned the safety of people (particularly schoolchildren) crossing Keats Avenue to get to Cottage Grove Middle School and Grey Cloud Elementary School. The County's CSAH 19 Technical Advisory Committee is reviewing the area and is aware of the proposed development. Pedestrian underpass feasibility is being studied by the County in the area. The City and County will continue to study the necessity of an underpass and construction options including cost, location, and timing.

There were also multiple questions about the traffic impacts at Indian Boulevard and Keats Avenue, particularly during school pickup and drop off hours. The Applicant performed a traffic analysis in conjunction with their application at the intersections. All intersections would operate at a Level of Service C or better at all hours of the day. A LOS of C indicates a stable flow of vehicles. While school drop-off and pick-up does add significant traffic to the area, streets are not designed for traffic increases during particular hours of the day. In the future, a traffic signal may be needed at Keats and Indian. The City and County will continue to monitor traffic in the area to determine when to install traffic signals.

There was also concern that the schools are already over capacity, and residents questioned whether the school district could handle this many more students. City staff meets regularly with staff from the school district and provides the school district with current and future development information monthly. The school district continues to construct building additions to accommodate students, including an addition to Cottage Grove Middle School currently under construction and a future addition at Grey Cloud Elementary expected to begin construction in spring 2026.

Residents also questioned whether the development would include green space. A portion of a planned neighborhood park will be dedicated as Outlot L. A community park is also planned for an area southeast of the development, north of 80th Street near Vandenberg Lake. The community park will be constructed as land is acquired, as funding is available, and as

development warrants. There is also an existing pipeline easement where no structures may be constructed. The easement will contain a paved public trail to the future neighborhood park.

There were concerns about the density of the development, particularly the number of townhomes in the northwest portion of the development. The property is in a mixture of future land use designations including low, medium, and high density residential. The proposed development as a whole meets Comprehensive Plan land use ratios, and the northwest area is guided Medium Density Residential where higher density is expected. The proposal for townhomes and single-family residential development with varying lot sizes and densities also aligns with the 2024 Housing Market Study for units that could be supported in the community.

Planning Commission Meeting
At their February 23, 2026, meeting, the Planning Commission reviewed this request and held a public hearing. A letter was received from South Washington County Schools concerning the safety of pedestrian crossings of Keats Avenue. One email was received prior to the meeting and included questions about school capacity, pedestrian crossings of Keats Avenue, and density of the townhomes. Staff addressed the concerns from the letters. The Planning Commission voted unanimously (4-0) to recommend the City Council approve the requests.

Public Hearing Notices
Public hearing notices were mailed to 112 property owners who are within 500 feet of the proposed subdivision and published in the St. Paul Pioneer Press on February 11, 2026.

Recommendation

The City Council is recommended to take the following actions:

1. Adopt Resolution 2026-046 approving a Minor Subdivision to split 3.77 acres and 24.06 acres from two existing parcels at 10052 80th Street and 10478 80th Street.

2. Adopt Ordinance No. 1108 approving the zoning amendment to change the zoning of 148.72 acres of land generally located east of Keats Avenue (CSAH 19), north of 77th Street and south of 70th Street, from AG-2, Agriculture, to R-4, Transitional Residential.

3. Adopt Resolution 2026-045 approving a Preliminary Plat and Planned Unit Development for a subdivision to be called Ravara Trails, which will consist of 269 single-family units and 306 townhome units.

Attachments
A. Preliminary Plans
B. Engineering Review Memorandum 02/17/2026

CITY OF COTTAGE GROVE, MINNESOTA
CITY COUNCIL
RESOLUTION 2026-046

A RESOLUTION APPROVING MINOR SUBDIVISIONS TO SUBDIVIDE A 39.1-ACRE PARCEL OF LAND LOCATED AT 10052 80TH STREET SOUTH AND A 79.5-ACRE PARCEL OF LAND LOCATED AT 10478 80TH STREET SOUTH

WHEREAS, Twin Cities Land Development applied for a Minor Subdivision to subdivide 39.1-acres at the property legally described below:

The Southwest Quarter of the Southwest Quarter, Except the South 40 feet of Section 11, Township 27 North, Range 21 West, Washington County, Minnesota

Abstract Property.

Commonly known as 10052 80th Street South, Cottage Grove, Washington County, State of Minnesota.

WHEREAS, Twin Cities Land Development applied for a minor subdivision to subdivide 79.5-acres at the property legally described below:

Part of the East one-half of the Southwest Quarter of Section 11, Township 27 North, Range 21 West, except the South 40 feet thereof, Washington County, Minnesota

Abstract Property.

Commonly Known as 10478 80th Street South, Cottage Grove, Washington County, State of Minnesota.

WHEREAS, public hearing notices were mailed to property owners within 500 feet of the properties and a public hearing notice was published in the St. Paul Pioneer Press; and

WHEREAS, a planning staff report, which detailed specific information on the property and the application request, was prepared and presented; and

WHEREAS, the public hearing was open for public testimony. No public testimony was received. The applicant attended the public hearing and staff answered questions from the Planning Commission; and

WHEREAS, the Planning Commission unanimously (4-to-0 vote) recommended that the City Council approve minor subdivision at 10052 80th Street South into two separate parcels and minor subdivision at 10478 80th Street South into two separate parcels at their February 23, 2026, meeting.

NOW, THEREFORE BE IT RESOLVED, the City Council of the City of Cottage Grove, Washington County, Minnesota, hereby approves the Minor Subdivision to subdivide 39.1-acres legally described above and 79.5-acres legally described above subject to the following conditions:

1) Land under ten acres shall be immediately combined with adjoining parcels to create conforming parcels either via land combination or plat.

Passed this 18th day of March 2026.

_____
Myron Bailey, Mayor

Attest:

_____
Tamara Anderson, City Clerk

CITY OF COTTAGE GROVE, MINNESOTA
ORDINANCE NO. 1108

AN ORDINANCE FOR THE CITY OF COTTAGE GROVE, MINNESOTA AMENDING CITY CODE TITLE 11-2-6, ZONING MAP, TO REZONE CERTAIN PROPERTY FROM AG-2, AGRICULTURE, TO R-4, TRANSITIONAL RESIDENTIAL DISTRICT

The City Council of the City of Cottage Grove, Washington County, Minnesota, does ordain as follows:

SECTION 1. AMENDMENT. The City of Cottage Grove's Official Zoning Map as referenced in Section 11-2-6 of the "Code of the City of Cottage Grove," County of Washington, State of Minnesota, shall be amended by rezoning 148.72 acres of land legally described below from AG-2, Agriculture, to R-4, Transitional Residential:

The South one-half of the Northwest Quarter of Section 11, Township 27 North, Range 21 West, excepting therefrom the South 442 feet of the North 818 feet of the West 1972 feet of said South one-half of the Northwest Quarter of Section 11, Washington County, Minnesota

AND

The Northwest Quarter of the Southwest Quarter of Section 11, Township 27 North, Range 21 West, Washington County, Minnesota

AND

That part of the Southwest Quarter of the Southwest Quarter of Section 11, Township 27 North, Range 21 West, Washington County, Minnesota, described as follows:

Commencing at the southwest corner of said Section 11; thence North 00 degrees 01 minutes 34 seconds West, assumed bearing along the west line of said Southwest Quarter of the Southwest Quarter of Section 11, a distance of 1130.70 feet to the point of beginning; thence continuing North 00 degrees 01 minutes 34 seconds West, along said west line, a distance of 190.00 feet to the north line of said Southwest Quarter of the Southwest Quarter of Section 11; thence South 89 degrees 56 minutes 06 seconds East, along said north line, a distance of 864.21 feet; thence South 00 degrees 03 minutes 54 seconds West 190.00 feet; thence North 89 degrees 56 minutes 06 seconds West 863.91 feet to the point of beginning

AND

Part of the East one-half of the Southwest Quarter (NW ¼ of SW ¼) of Section 11, Township 27 North, Range 21 West, except the South 40 feet thereof, Washington County, Minnesota.

ALSO EXCEPT that part of said East one-half of the Southwest Quarter of Section 11 described as follows:

Commencing at the southeast corner of said Southwest Quarter of Section 11; thence North 00 degrees 03 minutes 25 seconds West, assumed bearing along the east line of said Southwest Quarter, a distance of 2640.95 feet to the north line of said East one-half of the Southwest Quarter; thence North 89 degrees 55 minutes 49 seconds West, along said north line, a distance of 380.61 feet to the point of beginning; thence South 08 degrees 55 minutes 33 seconds West 599.27 feet; thence southwesterly 258.99 feet along a tangential curve concave to the northwest, having a radius of 737.00 feet and a central angle of 20 degrees 08 minutes 03 seconds; thence South 29 degrees 03 minutes 36 seconds West, tangent to said curve, a distance of 317.97 feet; thence southwesterly 218.00 feet along a non-tangential curve concave to the southeast, having a radius of 597.00 feet, a central angle of 20 degrees 55 minutes 20 seconds, and a chord bearing of South 17 degrees 45 minutes 17 seconds West, to the south line of the Northeast Quarter of said Southwest Quarter of Section 11; thence North 89 degrees 56 minutes 06 seconds West, along said south line, a distance of 551.58 feet to the west line of said Northeast Quarter of the Southwest Quarter; thence North 00 degrees 02 minutes 29 seconds West, along said west line, a distance of 1320.59 feet to said north line; thence South 89 degrees 55 minutes 49 seconds East 949.93 feet to the point of beginning.

Abstract Property (PIDS 1102721230001, 1102721240001, 1102721320001, 1102721330001 and 1102721310001)

SECTION 2. SUMMARY PUBLICATION. Pursuant to Minnesota Statutes Section 412.191, in the case of a lengthy ordinance, a summary may be published. While a copy of the entire ordinance is available without cost at the office of the City Clerk, the following summary is approved by the City Council and shall be published in lieu of publishing the entire Official Zoning ordinance:

"The City of Cottage Grove's Official Zoning Map (City Code Title 11-2-6) shall be amended to rezone 148.72 acres of land generally located east of Keats Avenue (CSAH 19), north of 77th Street and south of 70th Street, from AG-2, Agriculture, to R-4, Transitional Residential."

SECTION 3. EFFECTIVE DATE. This ordinance amendment shall be in full force and effective from and after adoption and publication according to law.

Passed this 18th day of March, 2026.

Myron Bailey, Mayor

Attest:

Tamara Anderson, City Clerk

CITY OF COTTAGE GROVE, MINNESOTA
CITY COUNCIL
RESOLUTION 2026-045

A RESOLUTION APPROVING A PRELIMINARY PLAT AND PLANNED UNIT DEVELOPMENT (PUD) CONSISTING OF 269 SINGLE-FAMILY LOTS AND 306 TOWNHOME LOTS TO BE CALLED RAVARA TRAILS

WHEREAS, Twin Cities Land Development., submitted an application for a Preliminary Plat and Planned Unit Development to be called Ravara Trails; and

WHEREAS, the proposed Ravara Trails development would be located east of Keats Avenue, north of 77th Street, and south of 70th Street on property legally described as:

Parcel 1:

The South one-half of the Northwest Quarter of Section 11, Township 27 North, Range 21 West, excepting therefrom the South 442 feet of the North 818 feet of the West 1972 feet of said South one-half of the Northwest Quarter of Section 11, Washington County, Minnesota

Parcel 2:

The Northwest Quarter of the Southwest Quarter of Section 11, Township 27 North, Range 21 West, Washington County, Minnesota

Parcel 3:

That part of the Southwest Quarter of the Southwest Quarter of Section 11, Township 27 North, Range 21 West, Washington County, Minnesota, described as follows:

Commencing at the southwest corner of said Section 11; thence North 00 degrees 01 minutes 34 seconds West, assumed bearing along the west line of said Southwest Quarter of the Southwest Quarter of Section 11, a distance of 1130.70 feet to the point of beginning; thence continuing North 00 degrees 01 minutes 34 seconds West, along said west line, a distance of 190.00 feet to the north line of said Southwest Quarter of the Southwest Quarter of Section 11; thence South 89 degrees 56 minutes 06 seconds East, along said north line, a distance of 864.21 feet; thence South 00 degrees 03 minutes 54 seconds West 190.00 feet; thence North 89 degrees 56 minutes 06 seconds West 863.91 feet to the point of beginning.

Parcel 4:

Part of the East one-half of the Southwest Quarter (NW ¼ of SW ¼) of Section 11, Township 27 North, Range 21 West, except the South 40 feet thereof, Washington County, Minnesota.

ALSO EXCEPT that part of said East one-half of the Southwest Quarter of Section 11 described as follows:

Commencing at the southeast corner of said Southwest Quarter of Section 11; thence North 00 degrees 03 minutes 25 seconds West, assumed bearing along the east line of said Southwest Quarter, a distance of 2640.95 feet to the north line of said East one-half of the Southwest Quarter; thence North 89 degrees 55 minutes 49 seconds West, along said north line, a distance of 380.61 feet to the point of beginning; thence South 08 degrees 55 minutes 33 seconds West 599.27 feet; thence southwesterly 258.99 feet along a tangential curve concave to the northwest, having a radius of 737.00 feet and a central angle of 20 degrees 08 minutes 03 seconds; thence South 29 degrees 03 minutes 36 seconds West, tangent to said curve, a distance of 317.97 feet; thence southwesterly 218.00 feet along a non-tangential curve concave to the southeast, having a radius of 597.00 feet, a central angle of 20 degrees 55 minutes 20 seconds, and a chord bearing of South 17 degrees 45 minutes 17 seconds West, to the south line of the Northeast Quarter of said Southwest Quarter of Section 11; thence North 89 degrees 56 minutes 06 seconds West, along said south line, a distance of 551.58 feet to the west line of said Northeast Quarter of the Southwest Quarter; thence North 00 degrees 02 minutes 29 seconds West, along said west line, a distance of 1320.59 feet to said north line; thence South 89 degrees 55 minutes 49 seconds East 949.93 feet to the point of beginning.
Abstract Property.

WHEREAS, public hearing notices were mailed to property owners within 500 feet of the property and a public hearing notice was published in the St. Paul Pioneer Press; and

WHEREAS, a planning staff report, which detailed specific information on the property and the application request, was prepared and presented; and

WHEREAS, the Planning Commission held the public hearing for the preliminary plat and planned unit development on February 23, 2026; and

WHEREAS, the public hearing was open for public testimony and testimony from the applicant and the public was received and entered into the public record; and

WHEREAS, the Planning Commission unanimously (4-to-0 vote) recommended that the City Council approve the preliminary plat and planned unit development for the proposed Ravara Trails residential development.

NOW, THEREFORE BE IT RESOLVED, the City Council of the City of Cottage Grove, Washington County, Minnesota, hereby approves the Preliminary Plat and Planned Unit Development for the proposed residential development consisting of 269 single-family lots and 306 townhome lots, on property legally described above subject to the following conditions:

General Development

1. The Applicant and builders must comply with all city ordinances and policies except as may be modified by agreement of the Developer and City staff.

2. The Applicant must obtain appropriate building permits from the City, and permits or approvals from other regulatory agencies including, but not limited to: South Washington Watershed District, Minnesota Department of Health, Minnesota

Department of Natural Resources, Northern Natural Gas, Met Council, Washington County, and Minnesota Pollution Control Agency.

3. Demolition permits must be obtained from the City for demolition of existing structures.

4. Appropriate permits must be obtained for sealing existing wells and abandoning existing septic systems. Verification of well sealing and septic system abandonment shall be submitted to the City.

5. The Applicant shall enter into a development agreement with the City. The development agreement shall be executed by the Applicant prior to City Council approval of the final plat.

6. The Applicant shall incorporate into the final plat the recommendations, requirements, and evaluations noted in the Bolton & Menk memorandum dated February 17, 2026, subject to modifications by the City Engineer.

7. The Developer shall agree in the development agreement to negotiate in good faith with the current property owner or future developer and with the City to ensure a residential lot may be created on Outlot T.

8. Any proposed retaining walls shall be constructed on private property and be owned and maintained by private property owners or Homeowners Associations. The City will not accept responsibility for retaining walls.

9. The proposed wrought iron fence and vegetative buffer along Keats Avenue (Lots 19 to 31 Block 1 and Blocks 12 to 20) and vegetative buffer along Ravine Parkway (Lots 20 to 26 Block 6, Lot 1 Block 10, and Lots 23 to 10 Block 9) shall be maintained by the Homeowners Associations and shall remain in place, uniform on all lots, and well maintained.

10. Any proposed fencing installed by any property owner adjoining Ravine Parkway (Lots 20 to 26 Block 6, Lot 1 Block 10, and Lots 23 to 10 Block 9) shall use the same fence design, materials, and color. The fence shall be placed on the house side of any earth-berm or landscaping and must not encroach within the Ravine Parkway right-of-way.

Platting, Land Dedication, and Easements

11. The project shall be completed in accordance with the plans submitted and as amended by the conditions of approval and as approved by the City Engineer. Any significant changes to the plans, as determined by Planning staff, shall require review and approval by the Planning Commission and City Council.

12. Outlots A, C, D, and E shall be deeded to the City at the time of recording the final plat for stormwater purposes. Outlots H and R shall also be deeded to the City at the time of recording the final plat for stormwater purposes.

13. Outlots B, I, M, N, O, and P shall be owned and maintained by the HOA.

14. Outlot L shall be deeded to the City at the time of recording the final plat for a neighborhood park.

15. The park dedication requirements will be satisfied upon dedication of Outlot L and 8.9 acres of parcel 1102721310001. A memorandum of understanding shall be entered into by the landowner(s) of parcel 1102721310001 and the City to dedicate 8.9 acres for the future community park. Failure to sign the MOU or dedicate acreage will require the developer to pay cash in lieu of land for park dedication.

16. Outlots F, G, J, K, Q, and S shall de deeded to the City at the time of recording the final plat for public trail purposes.

Construction and Grading

17. The Developer must apply for and obtain a grading permit from the City prior to beginning any work on the subject site. Associated financial guarantees shall also be submitted prior to beginning any site work. Grading, Drainage, and Erosion Control plans must be approved by the City Engineer, other necessary permits (i.e. NPDES permit) must be obtained, and a preconstruction meeting must be held prior to issuance of a grading permit.

18. Applicable permits for grading and construction shall be obtained from Northern Natural Gas, South Washington Watershed District, Met Council, and Washington County prior to commencing grading.

19. Upon completing the installation of sanitary, water, and storm utilities, an as-built survey of these utilities must be submitted to the City. Electronic copies of site utilities must be submitted to the City.

20. The Developer shall rough grade, seed, and remove all trees from Outlot L using plans reviewed and approved by the City Engineer and Parks Director.

Lot Performance Standards

21. The architectural standards of the development shall be consistent with the following:

    a. Architectural design is required on all four sides of the principal structure.

    b. Architectural materials must be varying on the front façade of the principal structure (shakes, board and batten, brick or stone, accent siding, shutters, window boxes, etc.).

22. Once a house plan is approved for a given lot, no identical house plan may be constructed on the five lots surrounding it, i.e. the lots adjacent on either side, the lot most directly across the street, and the lots adjacent to the lot most directly across the street.

Utilities

23. The Developer is responsible for providing the necessary easements and costs associated with road and utility improvements serving the site. All drainage and utility easements, as recommended by the City Engineer, must be shown on the final plat and dedicated to the City for public purposes.

24. Utilities shall be stubbed at proposed Roads A, I, Ravine Parkway, Indian Boulevard, and 77th Street to serve future development to the north, east, and south.

Streets

25. Future road connection signs and barricades shall be provided at the end of streets to be extended in the future.

26. Future trail connection signs and barricades shall be provided at the end of any trail or sidewalk to be extended in the future.

27. Private streets shall be marked “No Parking.”

28. A temporary turnaround shall be provided on the northerly point of proposed Road I. If the turnaround will be on neighboring property, an easement shall be recorded with the Final Plat describing the area for temporary turnaround.

29. Connections to Keats Avenue will require turn lane construction on Keats Avenue as well as on the connecting streets of Indian Boulevard and 77th Street. Approvals will be required by the City and the County.

30. The developer shall construct Ravine Parkway and Indian Boulevard to Minnesota State Aid Standards (MSAS).

Landscaping and Irrigation

31. Irrigation systems installed within City right-of-way are solely the responsibility and risk of the Developer, or individual. The City is not responsible or liable for any damage or costs related to installation, damage, or replacement of lawn irrigation systems placed in the boulevard as a result of City use of or future changes in the right of way. The HOA is responsible for the maintenance of the irrigation system within the boulevard area to the back of the curb and within any outlots. An irrigation plan is required to be submitted and approved prior to the issuance of a building permit. The HOA is responsible for irrigation to the back of the curb on Ravine Parkway.

32. All proposed tree locations on the proposed landscape plan shall be reviewed and approved by the City Forester. Deciduous trees should be located a minimum of 5 feet off any utility pipe. Coniferous trees shall be located a minimum of 15 feet off any utility pipe. No trees shall be located within a storm pond high water level or within the pond access routes. Trees shall not be located so as to interfere with hydrants, street lighting, utilities, and traffic signage.

33. The Developer is responsible for establishing the final grades, topsoil, and seeding/sodding of all the lots, outlots, and boulevards within the subdivision.

34. The HOA will be required to maintain vegetation within all HOA owned outlots. including outlots containing monument signage.

35. Prior to releasing the plat for recording, a final landscaping plan shall be approved by planning staff and the City Forester in writing.

36. Boulevard trees shall be included on the revised landscaping plan along Indian Boulevard and Ravine Parkway. Boulevard tree placement shall be approved by the City Forester.

37. Additional vegetative screening shall be provided in the rear yards of lots abutting Ravine Parkway. This screening shall be shown on the final landscaping plan approved by planning staff and the City Forester.

38. All trees and brush shall be removed from proposed Outlot L. Updated tree mitigation calculations shall be provided to Planning staff.

Onsite Infrastructure Improvements

39. A street lighting plan that complies with the City's street lighting plans for the East Ravine area must be submitted by the Developer and approved by the City Engineer prior to Final Plat approval.

40. An eight-foot-wide paved trail shall be installed on the north and south sides of Indian Boulevard and the east and west sides of Ravine Parkway.

41. An eight-foot-wide paved trail shall be installed in Outlots F, G, J, K, and S.

42. Six-foot concrete sidewalks shall be installed as submitted by the Developer and approved by the City Engineer prior to Final Plat approval.

43. The Developer must place iron monuments at all lot and block corners and at all other angle points on property lines. Iron monuments must be placed after all site and right-of-way grading has been completed in order to preserve the lot markers for future property owners.

44. The Developer is responsible for the cost and installation of public land boundary markers at the corners of private properties abutting Outlots A, C, D, F, G, H, J, K, L, and S. The open space markers must be installed before a building permit is issued for the lot that abuts the recommended marker location. The actual number and location of park boundary markers is subject to approval of the Parks Director.

45. The Developer shall contact the electric, telephone, gas, and cable companies that are authorized to provide service to the property to ascertain whether any of those utility providers intend to install underground lines within the development.

46. The Developer is responsible for all street maintenance; upkeep and repair of curbs, boulevards, and sod; and street sweeping until the project is complete. All streets must be maintained free of debris and soil until the subdivision is completed. The Developer hereby agrees to indemnify and hold the City harmless from any and all claims for damages of any nature whatsoever arising out of Developer's acts or omissions in performing the obligations imposed upon Developer by this paragraph.

47. The Homeowners Association will be responsible for the private streets, private parking areas, and private storm sewer in perpetuity. This includes all pavement maintenance, upkeep and repair of curbs, boulevards, sod, pavement markings, storm structures and piping, and street maintenance including but not limited to plowing and sweeping.

48. Drainage and utility easements shall be provided over all private streets to ensure City access to public utilities (water and sanitary sewer) beneath the streets.

49. The Developer will provide to the City copies of test results, suppliers, subcontractors, etc., relating to the work to be performed by the Developer. The Developer agrees to furnish to the City a list of contractors being considered for retention by the developer for the performance of the work described in the development agreement.

50. The Developer is responsible for the control of grass and weeds in excess of eight inches on vacant lots or boulevards within their development. Failure to control grass and weeds will be considered a Developer's default and the City may, at its option, perform the work and the Developer shall promptly reimburse the City for any expense incurred by the City.

51. The Developer will be required to conduct all major activities to construct the public improvements during the following hours of operation:

Monday through Friday	7:00 A.M. to 7:00 P.M.
Saturday	9:00 A.M. to 7:00 P.M. (with prior approval from the City Engineer)
Sunday/City Holidays	Not Allowed

This does not apply to activities that are required on a 24-hour basis such as dewatering or bi-pass pumping, etc. Any deviations from the above hours are subject to approval of the City Engineer.

52. The Developer shall weekly, or more often if required by the City Engineer, clear from the public streets and property any soil, earth, or debris resulting from construction work by the Developer or its agents or assigns. All debris, including brush, vegetation, trees, and demolition materials, shall be properly disposed of off-site; burying construction debris, trees, and other vegetation is prohibited. Burning of trees and structures is prohibited, except for fire training only.

53. The Developer grants the City, its agents, employees, officers, and contractors permission to enter the site to perform all necessary work and/or inspections during grading and the installation of public improvements by the Developer.

54. Upon completion of the work, the Developer shall provide the City with a full set of as-built plans for City records and transmitted to the City in a DWG AutoCAD format and pdf format. Developer must also furnish the City with a pdf format of the final plat and four prints of the recorded plat. If the Developer does not provide as-builts, the City will produce them at the developer's expense.

55. The Developer is responsible for completing the final grade on all lots and ensuring all boulevards and yards have a minimum of four inches of organic topsoil or black dirt on them. Placement of organic topsoil or black dirt and shrubs must not be transferred to homeowners.

56. Adequate dumpsters must be on site during construction of streets, utilities, and houses. When the dumpsters are full, they must be emptied immediately or replaced with an empty dumpster. The Developer is responsible to require each builder to provide an on-site dumpster to contain all construction debris, thereby preventing it from being blown off-site. It is the responsibility of the Developer to ensure no debris blows on or off site.

57. Adequate portable toilets must be on-site at all times during construction of utilities, roadways, and houses. At no time shall any house under construction be more than 250 feet away from any portable toilet. Toilets must be regularly emptied.

58. After the site is rough graded, but before any utility construction commences or building permits are issued, the erosion control plan shall be implemented by the Developer and inspected and approved by the City. The City may impose additional erosion control requirements if it is determined that the methods implemented are insufficient to properly control erosion.

59. The Developer is responsible for erosion control inspection fees at the current rates. If the Developer does not reimburse the City for the costs the City incurred for such work within thirty (30) days, the City may draw down the letter of credit to pay such costs.

60. All areas disturbed by the excavation and back-filling operations shall be fertilized, mulched, and disc anchored as necessary for seed retention. Time is of the essence in controlling erosion. If the Developer does not comply with the erosion control plan and schedule, or supplementary instructions received from the City, or in an emergency determined at the sole discretion of the City, the City may take such action as it deems appropriate to control erosion immediately. The City will notify the Developer in advance of any proposed action, but failure of the City to do so will not affect the Developer's and the City's rights or obligations. If the Developer does not reimburse the City for any costs of the City incurred for such work within thirty (30) days, the City may draw down the letter of credit to pay such costs.

61. Dust control measures must be in place to prevent dust and erosion, including, but not limited to daily watering, silt fences, and seeding. The City Engineer may impose reasonable measures to reduce dust at the site.

62. Temporary parking during construction shall be permitted on only one side of the street. No construction parking is permitted on Keats Avenue.

63. Property owners with private sidewalk access to public sidewalks or trails shall be responsible for maintaining their private sidewalk from the public sidewalk or trail to their front door including snow removal.

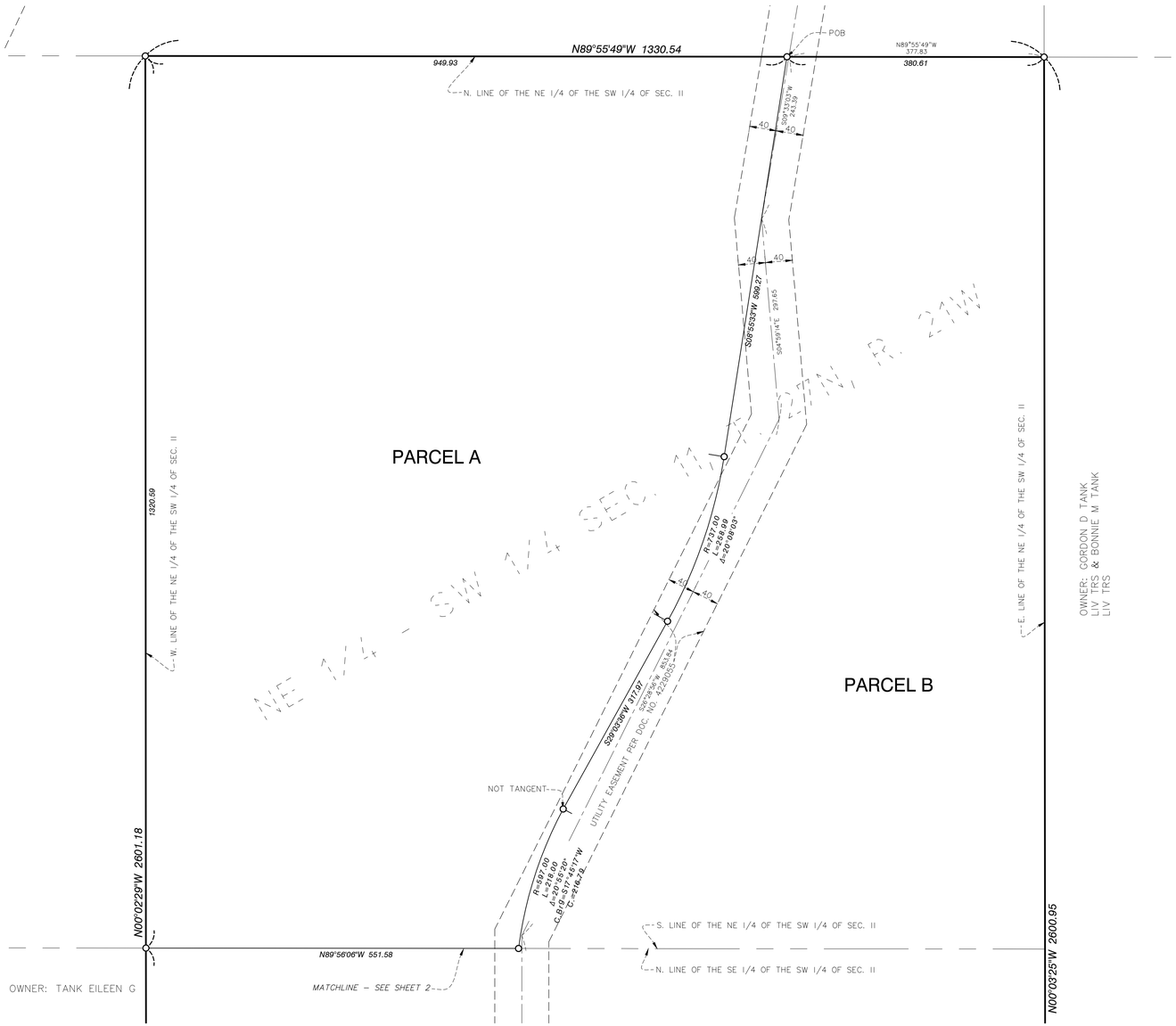
64. The Homeowners Associations shall be responsible for maintenance including snow removal on private trails and sidewalks connecting townhomes and on private streets.

Passed this 18th day of March 2026.

_____
Myron Bailey, Mayor

Attest:

_____
Tamara Anderson, City Clerk



EXISTING LEGAL DESCRIPTION

Part of the East one-half of the Southwest Quarter (NW ¼ of SW ¼) of Section 11, Township 27 North, Range 21 West, except the South 40 feet thereof, Washington County, Minnesota.

Abstract Property

PROPOSED LEGAL DESCRIPTION - PARCEL A

That part of the East one-half of the Southwest Quarter (NW ¼ of SW ¼) of Section 11, Township 27 North, Range 21 West, Washington County, Minnesota, described as follows:

Commencing at the southeast corner of said Southwest Quarter of Section 11; thence North 00 degrees 03 minutes 25 seconds West, assumed bearing along the east line of said Southwest Quarter, a distance of 2640.95 feet to the north line of said East one-half of the Southwest Quarter; thence North 89 degrees 55 minutes 49 seconds West, along said north line, a distance of 380.61 feet to the point of beginning; thence South 08 degrees 55 minutes 33 seconds West 599.27 feet; thence southwesterly 258.99 feet along a tangential curve concave to the northwest, having a radius of 737.00 feet and a central angle of 20 degrees 08 minutes 03 seconds; thence South 29 degrees 03 minutes 36 seconds West, tangent to said curve, a distance of 317.97 feet; thence southwesterly 218.00 feet along a non-tangential curve concave to the southeast, having a radius of 597.00 feet, a central angle of 20 degrees 55 minutes 20 seconds, and a chord bearing of South 17 degrees 45 minutes 17 seconds West, to the south line of the Northeast Quarter of said Southwest Quarter of Section 11; thence North 89 degrees 56 minutes 06 seconds West, along said south line, a distance of 551.58 feet to the west line of said Northeast Quarter of the Southwest Quarter; thence North 00 degrees 02 minutes 29 seconds West, along said west line, a distance of 1320.59 feet to said north line; thence South 89 degrees 55 minutes 49 seconds East 949.93 feet to the point of beginning.

PROPOSED LEGAL DESCRIPTION - PARCEL B

Part of the East one-half of the Southwest Quarter (NW ¼ of SW ¼) of Section 11, Township 27 North, Range 21 West, except the South 40 feet thereof, Washington County, Minnesota.

ALSO EXCEPT that part of said East one-half of the Southwest Quarter of Section 11 described as follows:

Commencing at the southeast corner of said Southwest Quarter of Section 11; thence North 00 degrees 03 minutes 25 seconds West, assumed bearing along the east line of said Southwest Quarter, a distance of 2640.95 feet to the north line of said East one-half of the Southwest Quarter; thence North 89 degrees 55 minutes 49 seconds West, along said north line, a distance of 380.61 feet to the point of beginning; thence South 08 degrees 55 minutes 33 seconds West 599.27 feet; thence southwesterly 258.99 feet along a tangential curve concave to the northwest, having a radius of 737.00 feet and a central angle of 20 degrees 08 minutes 03 seconds; thence South 29 degrees 03 minutes 36 seconds West, tangent to said curve, a distance of 317.97 feet; thence southwesterly 218.00 feet along a non-tangential curve concave to the southeast, having a radius of 597.00 feet, a central angle of 20 degrees 55 minutes 20 seconds, and a chord bearing of South 17 degrees 45 minutes 17 seconds West, to the south line of the Northeast Quarter of said Southwest Quarter of Section 11; thence North 89 degrees 56 minutes 06 seconds West, along said south line, a distance of 551.58 feet to the west line of said Northeast Quarter of the Southwest Quarter; thence North 00 degrees 02 minutes 29 seconds West, along said west line, a distance of 1320.59 feet to said north line; thence South 89 degrees 55 minutes 49 seconds East 949.93 feet to the point of beginning.

NOTES

1) The east line of the Southwest Quarter of Section 11, Township 27 North, Range 21 West, Washington County, Minnesota, is assumed to have a bearing of N00°03'25"W.
2) All distances are in feet.
3) Existing Area: 3,461,712 sq ft / 79.47 acres
   Proposed Parcel A Area: 1,047,986 sq ft / 24.06 acres
   Proposed Parcel B Area: 2,413,726 sq ft / 55.41 acres

LEGEND

- ⊙ Denotes Washington County Cast Iron Monument found
- ○ Denotes 1/2 inch x 18 inch iron monument set marked by license no. 57366 unless otherwise shown

ALLIANT ENGINEERING
733 Marquette Ave, Ste 700
Minneapolis, MN 55402
612.758.3080 MAIN
612.758.3099 FAX
www.alliant-inc.com

I hereby certify that this survey, plan, or report was prepared by me or under my direct supervision and that I am a duly Licensed Land Surveyor under the laws of the state of Minnesota.

DANIEL EKREM
Print Name

Signature
02/05/2026 — Date
57366 — License Number

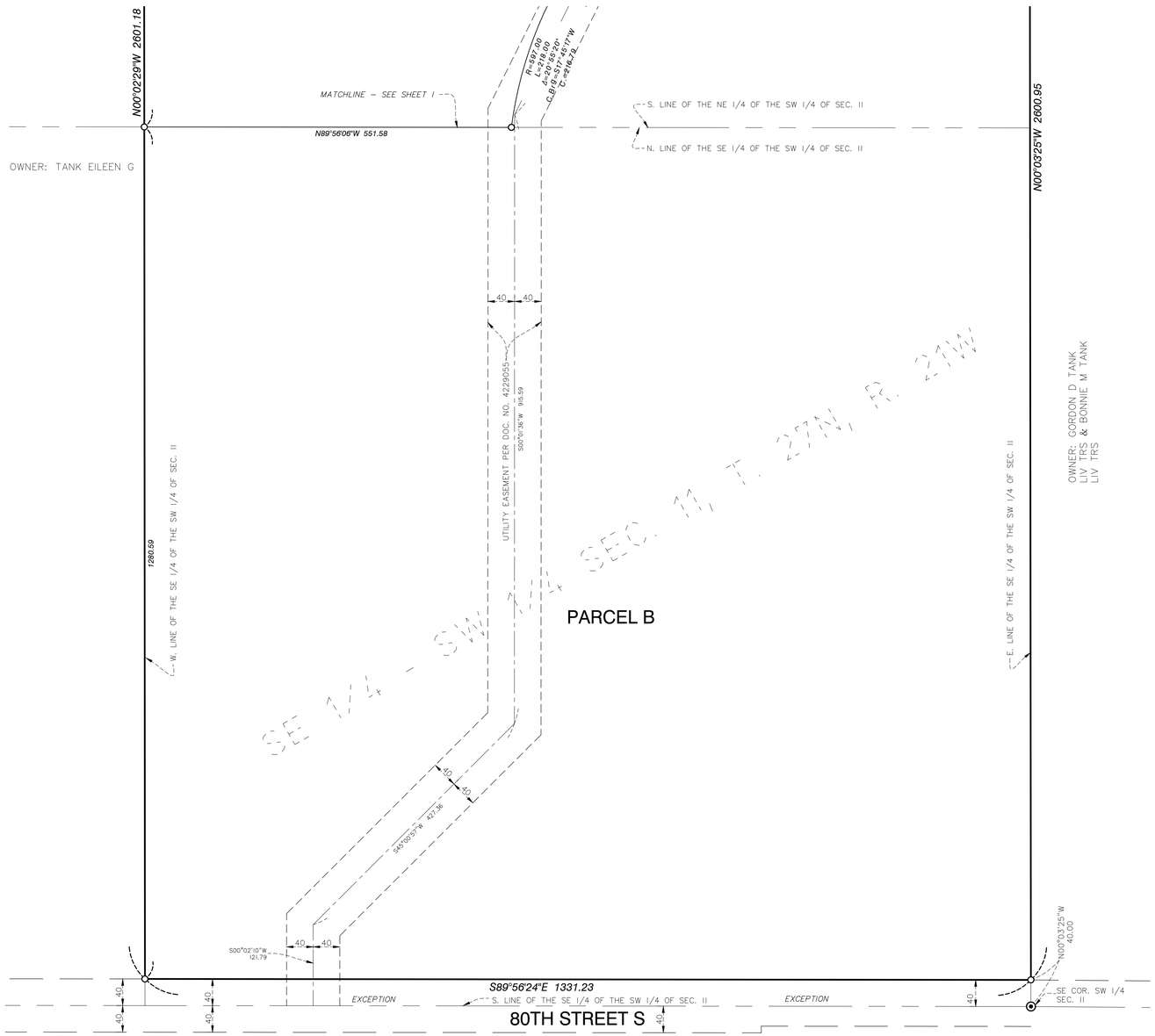
TANK TRUST PROPERTY

SIMPLE LOT DIVISION

10478 80TH STREET S
COTTAGE GROVE, MINNESOTA

DRAWN BY	DE
CHECKED BY	DE
DATE ISSUED	2/5/26
SCALE	1"=100'
JOB NO.	4000570-00
FIELD BY	RS, MN, EL

Drawing name: X:\4000570-00\001\40 Design\000 Source - Survey\SURVEY_LOT SPLIT_East.dwg Feb 05, 2026 - 1:35pm



LEGEND

- ⊙ Denotes Washington County Cast Iron Monument found
- ○ Denotes 1/2 inch x 18 inch iron monument set marked by license no. 57366 unless otherwise shown

N

0 50 100 200
SCALE IN FEET

ALLIANT ENGINEERING

733 Marquette Ave, Ste 700
Minneapolis, MN 55402
612.758.3080 MAIN
612.758.3099 FAX
www.alliant-inc.com

I hereby certify that this survey, plan, or report was prepared by me or under my direct supervision and that I am a duly Licensed Land Surveyor under the laws of the state of Minnesota.

DANIEL EKREM
Print Name

Signature
02/05/2026 57366
Date License Number

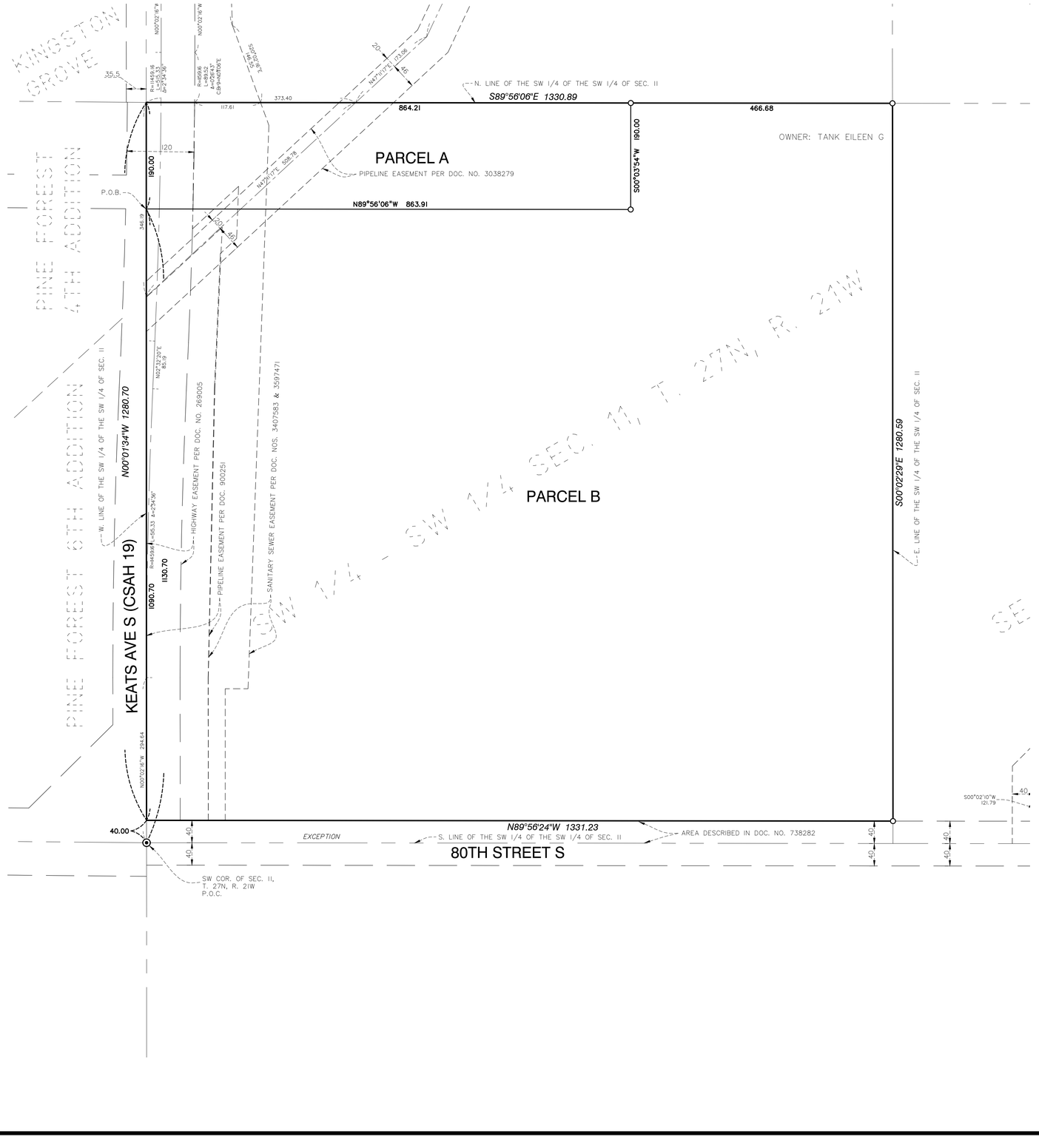
TANK TRUST PROPERTY

SIMPLE LOT DIVISION

10478 8TH STREET S
COTTAGE GROVE, MINNESOTA

DRAWN BY	DE
CHECKED BY	DE
DATE ISSUED	2/5/26
SCALE	1"=100'
JOB NO.	4000570-00
FIELD BY	RS, MN, EL

Drawing name: X:\4000570-00\001\40 Design\000 Source - Survey\SURVEY_LOT SPLIT_East.dwg Feb 05, 2026 - 1:35pm



EXISTING LEGAL DESCRIPTION

The Southwest Quarter of the Southwest Quarter, Except the South 40 feet of Section 11, Township 27 North, Range 21 West , Washington County, Minnesota.

PROPOSED LEGAL DESCRIPTION - PARCEL A

That part of the Southwest Quarter of the Southwest Quarter of Section 11, Township 27 North, Range 21 West, Washington County, Minnesota, described as follows:

Commencing at the southwest corner of said Section 11; thence North 00 degrees 01 minutes 34 seconds West, assumed bearing along the west line of said Southwest Quarter of the Southwest Quarter of Section 11, a distance of 1130.70 feet to the point of beginning; thence continuing North 00 degrees 01 minutes 34 seconds West, along said west line, a distance of 190.00 feet to the north line of said Southwest Quarter of the Southwest Quarter of Section 11; thence South 89 degrees 56 minutes 06 seconds East, along said north line, a distance of 864.21 feet; thence South 00 degrees 03 minutes 54 seconds West 190.00 feet; thence North 89 degrees 56 minutes 06 seconds West 863.91 feet to the point of beginning.

PROPOSED LEGAL DESCRIPTION - PARCEL B

The Southwest Quarter of the Southwest Quarter, Except the South 40 feet of Section 11, Township 27 North, Range 21 West , Washington County, Minnesota.

ALSO EXCEPT that part of said Southwest Quarter of the Southwest Quarter of Section 11 described as follows:

Commencing at the southwest corner of said Section 11; thence North 00 degrees 01 minutes 34 seconds West, assumed bearing along the west line of said Southwest Quarter of the Southwest Quarter of Section 11, a distance of 1130.70 feet to the point of beginning; thence continuing North 00 degrees 01 minutes 34 seconds West, along said west line, a distance of 190.00 feet to the north line of said Southwest Quarter of the Southwest Quarter of Section 11; thence South 89 degrees 56 minutes 06 seconds East, along said north line, a distance of 864.21 feet; thence South 00 degrees 03 minutes 54 seconds West 190.00 feet; thence North 89 degrees 56 minutes 06 seconds West 863.91 feet to the point of beginning.

NOTES

1) The west line of the Southwest Quarter of the Southwest Quarter of Section 11, Township 27 North, Range 21 West, Washington County, Minnesota, is assumed to have a bearing of N00°01'34"W.
2) All distances are in feet.
3) Existing Area: 1,704,614 sq ft / 39.13 acres
   Proposed Parcel A Area: 164,172 sq ft / 3.77 acres
   Proposed Parcel B Area: 1,540,442 sq ft / 35.36 acres

LEGEND

- ⊙ Denotes Washington County Cast Iron Monument found
- ○ Denotes 1/2 inch x 18 inch iron monument set marked by license no. 57366 unless otherwise shown

ALLIANT ENGINEERING
733 Marquette Ave, Ste 700
Minneapolis, MN 55402
612.758.3080 MAIN
612.758.3099 FAX
www.alliant-inc.com

I hereby certify that this survey, plan, or report was prepared by me or under my direct supervision and that I am a duly Licensed Land Surveyor under the laws of the state of Minnesota.

DANIEL EKREM
Print Name

Signature
02/05/2026 — Date
57366 — License Number

EILEEN TANK PROPERTY

SIMPLE LOT DIVISION

10052 80TH STREET S
COTTAGE GROVE, MINNESOTA

DRAWN BY	DE
CHECKED BY	DE
DATE ISSUED	2/5/26
SCALE	1"=100'
JOB NO.	4000570-00
FIELD BY	RS, MN, EL

Drawing name: X:\4000570-00\001\40 Design\000 Source - Survey\SURVEY_LOT SPLIT_West.dwg Feb 05, 2026 - 1:22pm

4800 Olson Memorial Hwy, Suite 100
Golden Valley, MN 55422
www.TCLandDev.com

RAVARA TRAILS

RESIDENTIAL DEVELOPMENT PRELIMINARY PLAT/PUD SUBMITTAL

Twin Cities Land Development (TCLD) is pleased to submit the Preliminary Plat, Planned Unit Development (PUD), Rezoning, and Minor Subdivision for the proposed Ravara Trails Development. This development is located along Keats Ave South, between 77th Street South and 80th Street South. We respectfully request Preliminary Plat, PUD, Rezoning, and Minor Subdivision approval from the Planning Commission and City Council to advance this thoughtfully designed community that aligns with the city's comprehensive plan and supports long-term growth objectives.

PROPERTY / DEVELOPMENT SITE INFORMATION

EXISTING SITE DESCRIPTION

Address:	Unassigned
PIDs:	1102721240001, 1102721320001, 1102721310001, 1102721230001, 1102721330001
Total Acres:	148.72 acres
Existing Zoning:	Agricultural
Existing Guide Plan:	Low Density Residential, Med Density Residential, High Density Residential

The site is located along Keats Avenue South, north of 80th Street South and south of 70th Street South within Cottage Grove. The development encompasses five existing parcels totaling approximately 148.72 acres. The land includes an existing farmstead and is predominantly active farmland, offering a diverse and adaptable landscape for residential development.

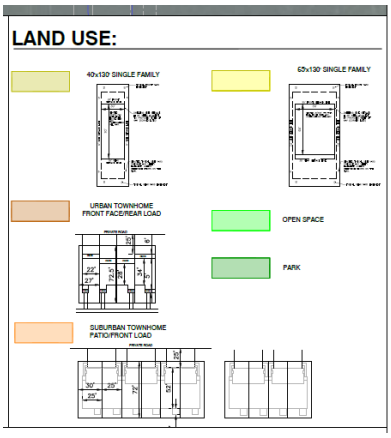
The site's topography ranges from an elevation of approximately 884 feet on the east side to 972 feet on the north side, indicating a gradual rise across the property. A regional low point is located on the eastern portion of the site, which presently serves as a natural drainage basin for much of the relatively flat surrounding terrain.

The site is currently served by a sanitary sewer stub connected to the Metropolitan Council Environmental Services (MCES) trunk line, which runs parallel to Keats Avenue South along the western boundary. Watermain stubs are also available within Keats Avenue, providing convenient access for the proposed development. Additionally, a South Washington Watershed stormwater trunkline runs along the eastern edge of the site, offering a direct connection point for the planned onsite stormwater management system.

SITE PLAN



Single Family 65’ x 140 lots	164
Single Family 40’ X 130’ lots	105
Urban Townhomes	192
Suburban Townhomes	114
TOTAL Units:	**575**



GENERAL DESCRIPTION

The Ravara Trail development site plan includes a total of 575 residential units, featuring a diverse mix of townhome and single-family housing types. This composition aligns with the vision outlined in the East Ravine Master Plan Area's comprehensive plan. The unit breakdown consists of 3, 4, 5, and 6-unit urban row townhomes, 4 and 6-unit suburban row townhomes; as well as single-family homes on 40-foot and 65-foot-wide lots. The proposed location is particularly well-suited for this variety of housing due to several key factors, including:

1. Alignment with the Comprehensive Plan
   The proposed housing mix directly supports the vision outlined in the East Ravine Master Plan, which calls for a balanced blend of low, medium and high-density residential options. This ensures consistency with long-term city planning goals by providing a desirable place to live.

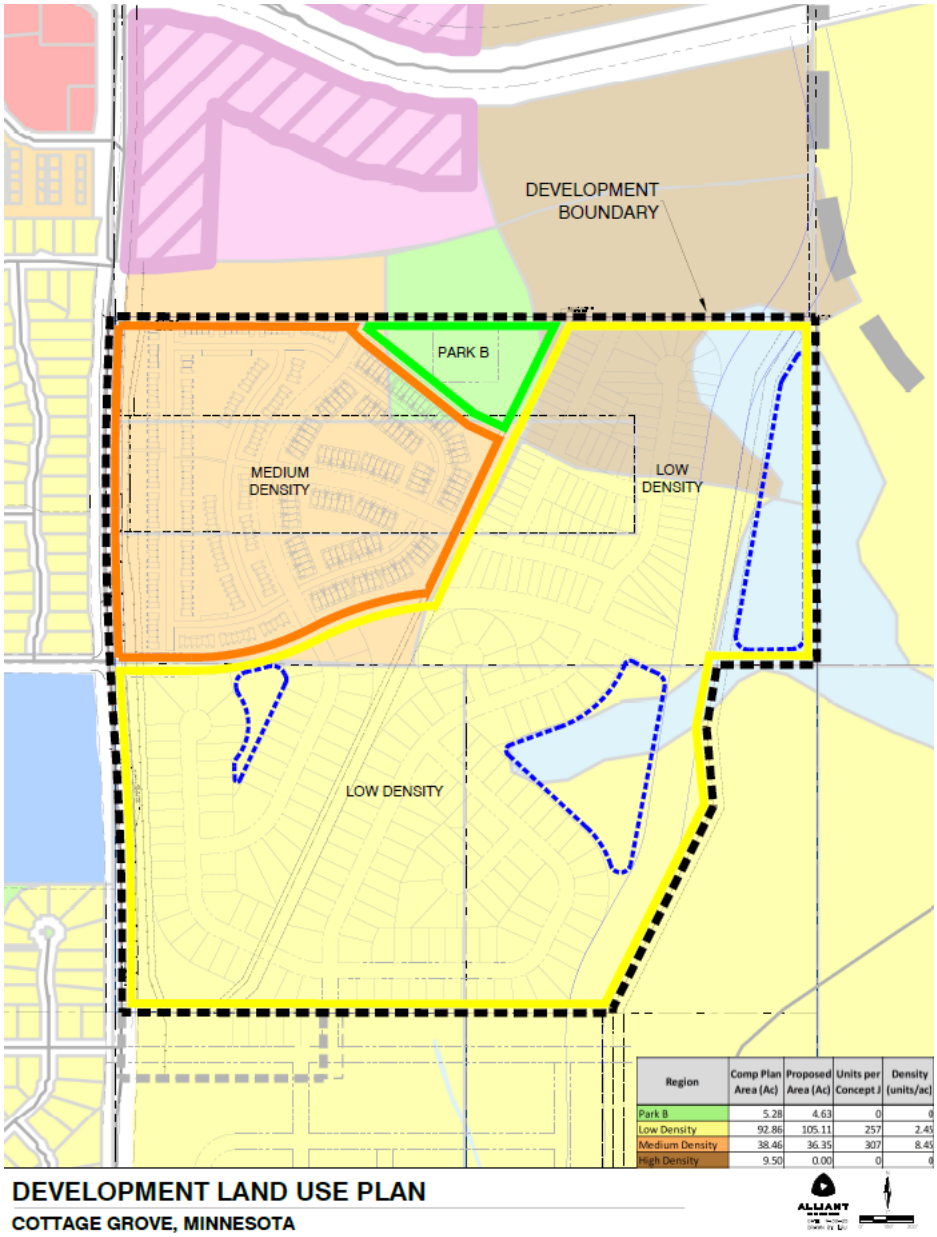
2. Strong Market Demand
   A recent housing market analysis identified a significant unmet need for higher-value, move-up housing in Cottage Grove. Ravara Trails is designed to meet this need by offering a diverse mix of homes that appeal to first-time homebuyers, growing families who want to stay in the community, and empty nesters looking to downsize while remaining in the community.

3. Preserves and Provides Access to Natural Resources
   The development plan incorporates green space and natural drainage features, supporting the City's goal to protect natural resources and environmental systems. Located adjacent to the planned East Ravine Park and Trail, as well as near the existing 500-acre Cottage Grove Ravine Regional Park, the site offers residents immediate access to scenic trails, wooded ravines, and numerous recreational opportunities. This natural setting enhances quality of life and adds long-term appeal to the neighborhood. In addition, the community's trail network will ultimately connect to the surrounding trail system, creating seamless access for residents and promoting walkability.

4. Infrastructure and Connectivity
   This development will provide direct access to Ravine Parkway and Keats Avenue, allowing residents and the community convenient access to major transportation corridors, including Interstate 494, Highway 61 and Highway 95, as well as express transit routes to downtown Saint Paul and Minneapolis. This makes it an attractive location for commuters and enhances regional accessibility.

5. Proximity to schools
   Centrally located in Cottage Grove, the proposed development offers families convenient access to the assigned schools within the South Washington School District (SoWashCo Schools). Grey Cloud Elementary and Cottage Grove Middle School, both located just west of the neighborhood, are easily reachable by foot or bike, making daily commutes simple and safe for students. Park Senior High School provides a wide range of academic and extracurricular opportunities to support student development.

LAND USE AND ZONING REGULATIONS



The property is guided as a mix of Low Density Residential, Med Density Residential and High Density Residential. The development of the property will rezone the parcel to Low Density Residential and Med Density Residential, generally keeping overall density.

Land uses for the properties adjacent to the site are guided with:

- To North: Commercial and High Density Residential
- To West: Low Density Residential and School
- To South: Low Density Residential
- To East: Low Density Residential and Park/Open Space

DIMENSIONAL STANDARDS

The following is a summary of the proposed development lot standards and setbacks:

Urban Townhome Dimensions
Width – 3 Unit, 4 Unit, 5 Unit, 6 Unit
Depth – 45 feet
Suburban Townhome Dimensions
Width – 4 Unit, 6 Unit
Depth – 57 feet
40' Single Family Pad Dimensions
Width – 30 feet
Depth – 70 feet
65' Single Family Pad Dimension
Width – 52.5 feet
Depth – 65 feet

Urban Townhome Setbacks
Front Door – 15 feet
Front Door along Keats Ave – 25 feet
Garage Door – 25 feet
Perimeter – 30 feet
Townhome Corner – 20 feet
Between townhome Buildings – 20 feet

Suburban Townhome Setbacks
Front – 25 feet
Perimeter – 30 feet
Townhome Corner – 20 feet
Between townhome Buildings – 15 feet

Single Family Setbacks
Front – 25 feet
Rear – 35 feet
Corner Side Yard – 20 feet
Side Yard (40' wide) – 5'/5'
Side Yard (65' wide) – 7.5'/5' (garage)

Townhome Parking:

Garage:	306 stalls
Driveway:	306 stalls
Guest:	73 stalls
Total:	685 stalls

Proposed ROW
Internal ROW – 60 feet
Indian Blvd ROW – 80 feet
Ravine Parkway – 140 feet

Proposed Development Area/Calculations:

Total Development Gross Site Area:	148.72 acres
Keats Ave ROW:	7.44 acres

Easements:

SWWD Stormsewer Easement Area:	3.16 acres
Met Council Easement:	3.43 acres
Northern Gas Easement:	4.48 acres

PLANNED UNIT DEVELOPMENT FLEXIBILITY AND BENEFITS

The project is requesting flexibility from zoning standards for Villa single family homes and Urban townhomes. The Villa single family homes are requesting flexibility for 2 of 9 R-4 dimensional standards. The townhomes are requesting flexibility for 1 of 9 R-5 dimensional standards. Dimensional flexibility being requested for each is as follows:

Villa Single Family	Required	Proposed
lot width	45 feet	40 feet
Sideyard setback	7.5 feet	5 feet

Urban Townhomes	Required	Proposed
Front Setback	25 feet	15 feet

The project is also requesting flexibility from a 50-foot landscape buffer to Keats Avenue of 25 feet for the Urban Townhomes and 35 feet for the single family lots south of Indian Boulevard. A landscape buffer reduction for these areas was not presented as part of the concept plan submittal as the plan was based on anticipated Keats Avenue right-of-way of 120 feet. Since that time, Washington county has requested a total right-of-way width of 180 feet, which requires an additional 60 feet east of Keats Avenue to total 120 feet east of the Keats Avenue centerline. It should be noted that 30 feet of the requested 120 feet of right-of-way comes as a result of additional right-of-way no longer being available west of Keats Avenue due to homes in that area. Had 30 feet of additional right-of-way been available to the west the project would not require flexibility for the 50-foot landscape buffer zoning standards. It should be noted that a Landscape Buffer of 85 feet for the Urban Townhomes and 95 feet for the single-family homes will appear to exist until Washington County reconstructs Keats Avenue and occupies the additional right-of-way being requested.

The applicant respectfully requests consideration of the following project elements in exchange for flexibility to the 4 zoning standards previously identified:

1. Ravine Parkway realignment through the entire site of which approximately half is located off site and to the east per the Comprehensive plan.
2. Keats Avenue right-of-way dedication and additional 30 feet no longer available to the west.
3. City Park & water tower dedication.
4. A variety of life cycle housing products and pricing options, which is consistent with the Cities Comprehensive Plan.
5. Public and private open spaces
6. A network of trails extending through the site and connecting to existing trails.

PARK AND OPEN SPACE

The site plan includes 4.15 acres of open space on the north end of the site, which will be dedicated to the City of Cottage Grove. Just southeast of the development lies the future East Ravine Park, a key component of the city's long-term recreational vision. A pedestrian trail along Ravine Parkway will connect the proposed neighborhood to nearby parks, enhancing walkability and outdoor access. Thoughtfully integrated throughout the plan are multiple green spaces, designed to encourage community interaction, support neighborhood gatherings, and create inclusive, accessible environments that strengthen social cohesion.

STREET DESIGN AND ACCESS

The development will have two access points from Keats Ave. One access point at Indian Blvd, which will be extended east through the site and the other access point at 77th St. S. The roadways within the development will be public roads that are 32 feet face to face within a 60-foot right-of-way and private roads that are 22 and 26 feet face to face. Ravine Parkway will not be constructed with the development.

MASS GRADING

The site is anticipated to be mass graded in one phase, in accordance with the City of Cottage Grove's specifications and guidelines. The proposed grading will maintain the current drainage patterns.

SANITARY SEWER AND WATERMAIN

Adequate sanitary sewer is available for connection into the existing MCES Gravity Sewer on the west side of the site. A stub is provided in the northeast corner of the Indian Blvd S and Keats Ave S intersection. Watermain for the site will be served by two connections on the west side of the site. One connection will be in the Keats Ave S and Indian Blvd S intersection and the other will be in the 77th St S and Keats Ave S intersection.

STORMWATER MANAGEMENT

The site will comply with all applicable requirements of the City of Cottage Grove stormwater management plan. The stormwater plan is to have four stormwater management basins on site with the ultimate discharge to SWWD storm line running through the site.

WETLANDS

A Wetland Report completed by Kjolhaug, dated January 24th, 2025, identified no Wetlands on the site.

TREE PRESERVATION AND LANDSCAPING

Trees are generally located near the existing home, in a small woodland area near the future water tower and along the north end of the east property boundary, which amounts to 3,907 caliper inches. Trees surrounding the

existing home and east boundary will be impacted as a result of site grading and total 2,805 caliper inches, which will require 1,102 caliper inches of tree replacement. The current landscape plan proposes 2,485 caliper inches of tree replacement, which complies with the City of Cottage Grove Tree Preservation code.

HOMEOWNERS ASSOCIATION AND ARCHITECTURAL GUIDELINES

To ensure a visually appealing neighborhood, Ravara Trails will establish a Master Homeowners Association (HOA) that will enforce architectural guidelines promoting diversity and visual interest among homes. These guidelines include tracking mechanisms to prevent monotony and ensure varied styles, materials, and colors.

The HOA will also ensure the long-term upkeep of common community amenities to preserve their superior quality and attractiveness. This includes overseeing the proposed entrance monument and cluster mailbox units.

The HOA will oversee a review and approval process for all designs, aiming to maintain a vibrant streetscape and uphold high aesthetic standards. We believe this approach will enhance our community and contribute positively to Cottage Grove's architectural landscape.

BUILDER INFORMATION

Twin Cities Land Development anticipates partnering with multiple builders for this community including Creative Homes and Robert Thomas Homes. Townhome construction will likely be divided among builders based on product type. One to three builders are expected to handle the single-family homes.

CONCEPTUAL, ARCHITECTURAL ELEVATIONS

The architectural renderings we are sharing below serve as representative examples to illustrate the general dimensions and massing of the homes that could potentially be constructed on the proposed lot sizes. These renderings are intended to provide a visual reference to help stakeholders understand the possible spatial characteristics of the homes within the Ravara Trails community.

It's important to note that specific architectural designed tailored for Ravara Trails will be developed and submitted for city review and approval as part of the final application process. Future final designs will ensure compliance with the City's regulations and reflect the unique character envisioned for this community.

CONCEPTUAL DESIGN PRECEDENTS – 22’ URBAN TOWNHOMES – HOME ENTRANCE ON ONE SIDE, GARAGE ON OTHER SIDE



CONCEPTUAL DESIGN PRECEDENTS – SUBURBAN TOWNHOME – HOME ENTRANCE AND GARAGE ENTRANCE ON THE SAME SIDE.





CONCEPTUAL DESIGN PRECEDENTS – 40’ LOTS, SINGLE FAMILY





CONCEPTUAL DESIGN PRECEDENTS – 65’ LOTS, SINGLE FAMILY





CONCLUSION

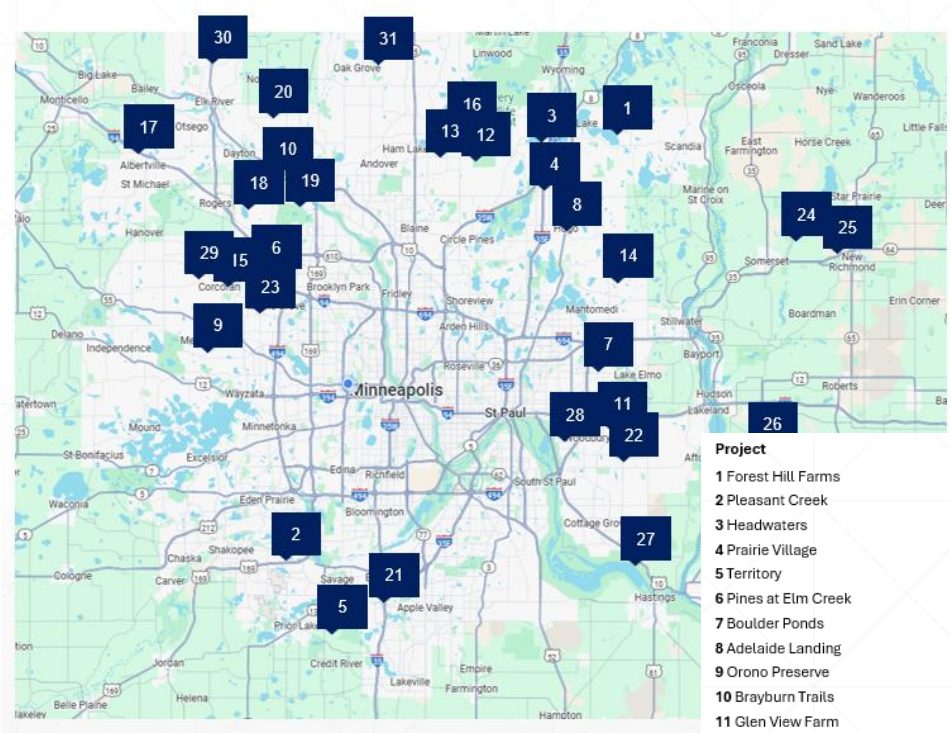
Twin Cities Land Development is pleased to submit the Preliminary Plat, Planned Unit Development (PUD), Rezoning, and Minor Subdivision application for the Ravara Trails project. We believe the proposed site plan is consistent with the goals and long-term vision of the City of Cottage Grove. We look forward to delivering a high-quality residential development and respectfully request approval of these applications to advance Ravara Trails to the mass grading stage.

ABOUT US

The TCLD team has experience in every facet of Twin Cities real estate development, investment, and management. The project team has developed thousands of single-family and multi-family lots, establishing itself as the most prominent local lot developer in the Twin Cities.

As a trusted residential developer, our track record speaks for itself. Over the years, we have successfully brought numerous projects to life, earning a reputation for integrity, reliability, and exceptional results. Our diverse portfolio showcases our ability to adapt to evolving market trends and deliver projects that stand the test of time.

LOCAL DEVELOPMENT EXPERIENCE



Project	Lots	City	Status
1 Forest Hill Farms	35	Forest Lake	Completed
2 Pleasant Creek	44	Prior Lake	Completed
3 Headwaters	54	Forest Lake	Completed
4 Prairie Village	70	Hugo	Completed
5 Territory	25	Prior Lake	Completed
6 Pines at Elm Creek	58	Plymouth	Completed
7 Boulder Ponds	99	Lake Elmo	Completed
8 Adelaide Landing	331	Hugo	Completed
9 Orono Preserve	39	Orono	Completed
10 Brayburn Trails	256	Dayton	Completed
11 Glen View Farm	141	Woodbury	Completed
12 Oakwood Ponds	210	Blaine	Active
13 Mill Pond	93	Blaine	Active
14 Gateway	16	Grant	Completed
15 Woods of Medina	16	Medina	Completed
16 Lexington Waters	272	Blaine	Active
17 Anton Village	335	St. Michael	Active
18 Evanswood	365	Maple Grove	Active
19 Brayburn Trails East	146	Dayton	Active
20 Trott Brook Crossing	275	Ramsey	Active
21 Ritter Meadows	255	Lakeville	Active
22 Aster Landing	25	Woodbury	Completed
23 Edgewater	59	Maple Grove	Completed
24 Gloverdale	600	New Richmond, WI	Active
25 Meadow Crossing	94	New Richmond, WI	Active
26 Oak Hill	110	River Falls, WI	Active
27 Heritage Ridge	40	Hastings	Active
28 Cherrywood/Meadow	144	Newport/Woodbury	Active
29 Brindle Path	35	Medina	Active
30 Meadowsweet Bend	104	Elk River	Active
31 Aspen Glenn	39	Oak Grove	Active

DEVELOPMENT TEAM

Developer/Contract Buyer:	TCLD Land Holdings, LLC 4800 Olson Memorial Highway, Suite 100 Golden Valley, MN 55422 Ben Schmidt, President Ben@TCLandDev.com (612)-716-3047 Ashley D'Alessandro, Development Manager Ashley@TClandDev.com (651) 587-7983 Tracey Rust, Vice President Tracey@TClandDev.com (952) 221-2566
Civil Engineer/Surveyor:	Alliant Engineering, Inc. 733 Marquette Ave, Ste 700 Minneapolis, MN 55402 Clark Wicklund, Vice President cwicklund@alliant-inc.com (612) 490-2431 Logan Josephson, Engineer ljosephson@alliant-inc.com (612) 767-9306 Dan Ekrem, Surveyor dekrem@alliant-inc.com (612) 767-9326
Legal:	Mark Radke mradke@felhaber.com

RAVARA TRAILS - SITE PLAN

COTTAGE GROVE, MINNESOTA

N

1"
0' 75' 150'

DATE: 3-4-26
DRAWN BY: LRJ

ALLIANT ENGINEERING

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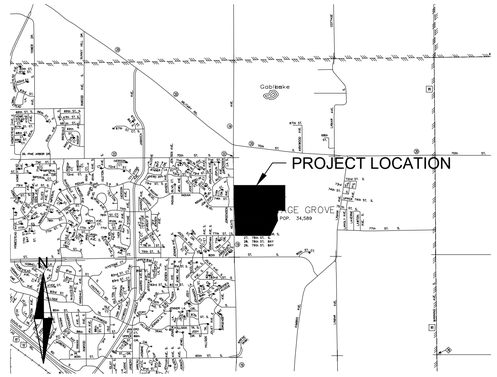
RAVARA TRAILS

COTTAGE GROVE, MINNESOTA





VICINITY MAP

Scale: 1"=4000'

CONTACT LIST

DEVELOPER
Twin Cities Land Development
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Golden Valley, 55422
Email: tracey@tclanddev.com
Contact: Tracey Rust

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LANDSCAPE ARCHITECT
John Gronhovd
License No. 59233
Email: jgronhovd@alliant-inc.com

PLAN SUBMISSION/REVISION MATRIX

#	SHEET DESCRIPTION	2025-12-31
1	COVER SHEET	X
2-4	EXISTING CONDITIONS PLAN	X
5	DEMO AND REMOVAL PLAN - OVERALL	X
6-11	DEMO AND REMOVAL PLAN - VIEW A-VIEW F	X
12	PRELIMINARY PLAT - OVERALL	X
13-18	PRELIMINARY PLAT - VIEW A-VIEW F	X
19	PARCEL AREA TABLE	X
20	SITE PLAN - OVERALL	X
21	SITE PLAN NOTES AND DETAILS	X
22-27	SITE PLAN - VIEW A-VIEW F	X
28-30	KEATS AVE TURN LANE PLANS	X
31	GRADING AND DRAINAGE PLAN - OVERALL	X
32-37	GRADING AND DRAINAGE PLAN - VIEW A-VIEW F	X
38	GRADING AND DRAINAGE PLAN DETAILS	X
39-42	GRADING PROFILES	X
43-45	POND DETAILS	X
46	EROSION AND SEDIMENT CONTROL PLAN - OVERALL	X
47	EROSION AND SEDIMENT CONTROL NOTES AND DETAILS	X
48-53	EROSION AND SEDIMENT CONTROL PLAN - VIEW A-VIEW F	X
54	SANITARY SEWER AND WATERMAIN PLAN - OVERALL	X
55-60	SANITARY SEWER AND WATERMAIN PLAN - VIEW A-VIEW F	X
61	STORM SEWER PLAN - OVERALL	X
62-67	STORM SEWER PLAN - VIEW A-VIEW F	X
68	STORM SEWER SCHEDULES	X
69	TREE PRESERVATION PLAN - OVERVIEW	X
70-75	TREE PRESERVATION PLAN - VIEW A-VIEW F	X
76	TREE INVENTORY	X
77	LANDSCAPE PLAN - OVERALL	X
78-83	LANDSCAPE PLAN - VIEW A-VIEW F	X
84	LANDSCAPE PLAN - DETAILS	X
85	LIGHTING PLAN - OVERALL	X
86-91	LIGHTING PLAN - VIEW A-VIEW F	X

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TWIN CITIES LAND DEVELOPMENT

RAVARA TRAILS
COTTAGE GROVE, MINNESOTA
PRELIMINARY PLAT SUBMITTAL
COVER SHEET

DESCRIPTION	DATE
City Submittal	2025-12-31

CERTIFICATION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Civil Engineer under the laws of the State of MINNESOTA

PRELIMINARY
FOR REVIEW ONLY
NOT FOR CONSTRUCTION

Clark Wicklund — 40922
Date — License no.

QA/QC CHECK

By — Date

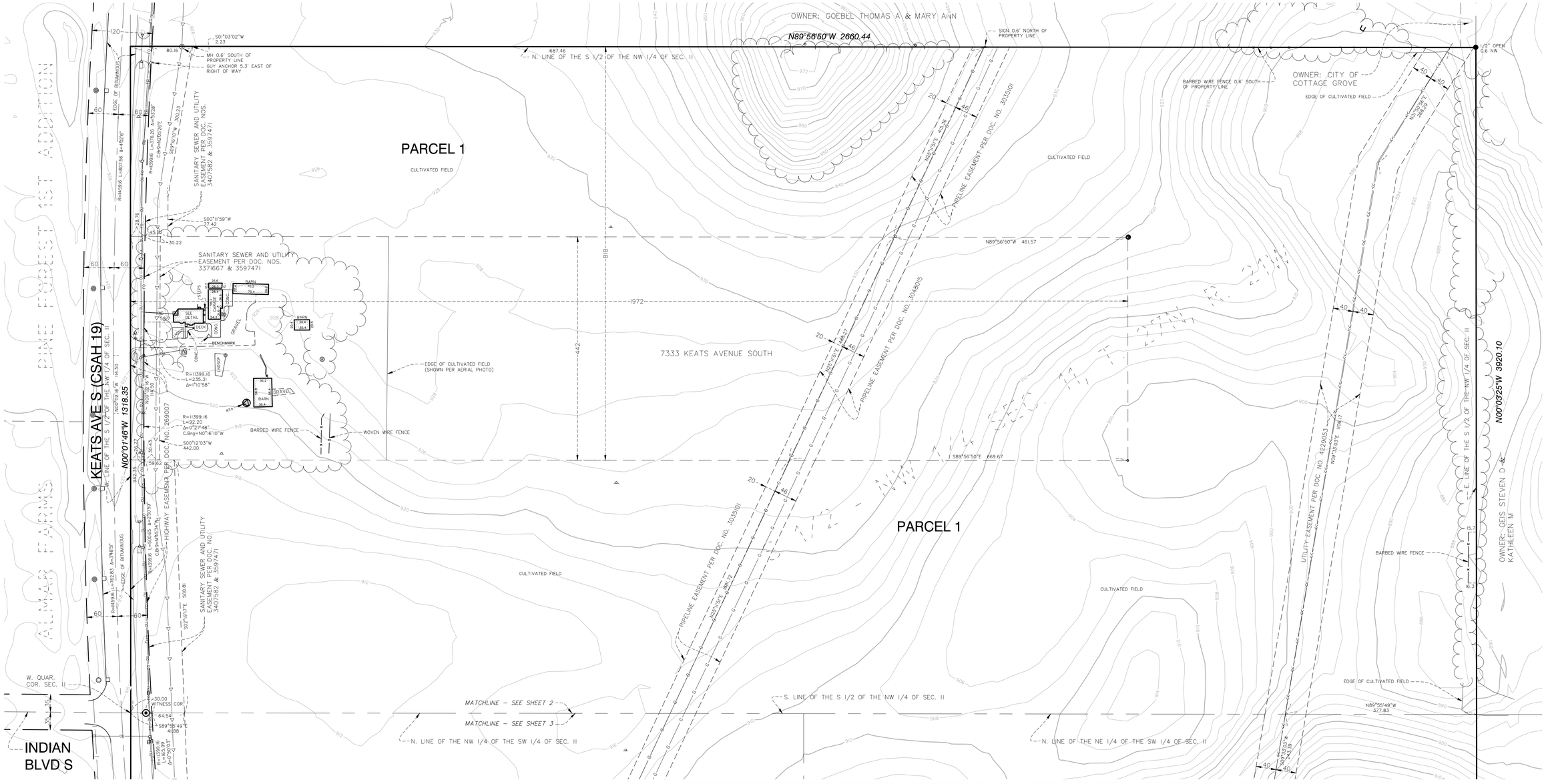
PROJECT TEAM DATA

Designed By: CJW
Drafted By: LRJ
Project No.: 4000570-00

1

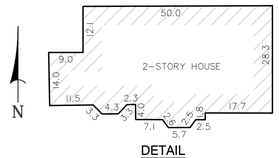
Sheet 1 of 91

File Location: X:\4000570-00\00140 Design\00 Sheets + Preliminary\COVER.dwg Plotted By: Logan.Josephson on December 31, 2025 - 11:02:32 PM



LEGEND

- SET CAP IRON MONUMENT 57366
- FOUND IRON MONUMENT
- FOUND CAST IRON MONUMENT
- TELEPHONE BOX
- SANITARY MANHOLE
- CATCH BASINS
- POWER POLE W/ GUY ANCHOR
- ELECTRIC METER
- GAS METER
- HAND HOLE
- TELEPHONE BOX
- CURB STOP
- WOOD POST
- WELL
- BUSH/SHRUB
- SIGN
- GAS
- SANITARY SEWER
- STORM SEWER
- WATERMAIN
- FIBER OPTIC
- OVERHEAD TELEPHONE
- FENCE
- TREE LINE
- EXISTING BUILDING
- FIRE HYDRANT



DETAIL
NOT TO SCALE

Know what's below.
Call before you dig.
Dial 811

FOR REVIEW ONLY
PRELIMINARY
NOT FOR CONSTRUCTION

PROPERTY DESCRIPTION - COMM. NO. 705488

Parcel 1:
The South one-half of the Northwest Quarter (S ½ of NW ¼) of Section 11, Township 27 North, Range 21 West, excepting therefrom the South 442 feet of the North 818 feet of the West 1972 feet of said South one-half of the Northwest Quarter (S ½ of NW ¼) of Section 11, Washington County, Minnesota.
(1102721240001)

And

Parcel 2:
The Northwest Quarter of the Southwest Quarter (NW ¼ of SW ¼) of Section 11, Township 27 North, Range 21 West, Washington County, Minnesota.
(1102721320001)

And

Parcel 3:

Part of the East one-half of the Southwest Quarter (NW ¼ of SW ½) of Section 11, Township 27 North, Range 21 West, except the South 40 feet thereof, Washington County, Minnesota.
(Part of 1102721310001. Final Legal Description TBD. See requirement below.)

Abstract Property

PROPERTY DESCRIPTION - COMM. NO. 706056

The South 442 feet of the North 818 feet of the West 1972 feet of the South Half of the Northwest Quarter (S 1/2 of NW 1/4) of Section 11, Township 27 North, Range 21 West, Washington County, Minnesota.

Abstract Property

NOTES

1. This survey and the property description shown here on are based upon information found in the commitments for title insurance prepared by Land Title, Inc, as agent for First American Title Insurance Company, file no. 705488, dated November 7, 2024, and file no. 706056, dated November 22, 2024.

2. The south line of the SE 1/4 - SW 1/4 of Sec. 11, T. 27N, R. 21W is assumed to have a bearing of S89°56'24"E.

3. All distances are in feet.

4. The property has vehicular access to Keats Avenue South (CSAH 19) and 80th Street South, public rights of way.

5. The area of the above described property is 8,727,964 square feet or 200.366 acres.

6. The locations of existing public utilities on or serving the property are depicted based on Gopher State One Call Ticket Nos. 250130469 & 250130388, available city maps, records and observed evidence locations. Lacking excavation, underground utility locations may not be exact. Verify critical utilities prior to construction or design.

7. Benchmark: Top Nut of Hydrant located south of the garage, west of the concrete that is south of said garage, and north of the gravel driveway at 7333 Keats Avenue South has an elevation of 927.87 feet NAVD 88.

N

0 50 100 200
SCALE IN FEET

I hereby certify that this survey, [illegible] report was prepared by me or under my direct supervision and that I am a duly Licensed Land Surveyor under the laws of the State of

#
Print Name

Signature

#
Date

#
License Number

FOR REVIEW

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TWIN CITIES LAND DEVELOPMENT TC LD

PROJECT
RAVARA TRAILS

PROPERTY ADDRESS
COTTAGE GROVE, MINNESOTA

DOCUMENT
EXISTING CONDITIONS

DESCRIPTION	DATE
CITY SUBMITTAL	2025-12-31

JOB NO.	DRAWN BY:	DATE	DESCRIPTION
4006570-00	DE	2025-12-31	CITY SUBMITTAL
SCALE: 1" = 100'	CHECKED BY: DE		
FIELD DATE:	FIELD CREW: RS, EL, NW, MS, RJ, KJ		

Sheet 1 of 3

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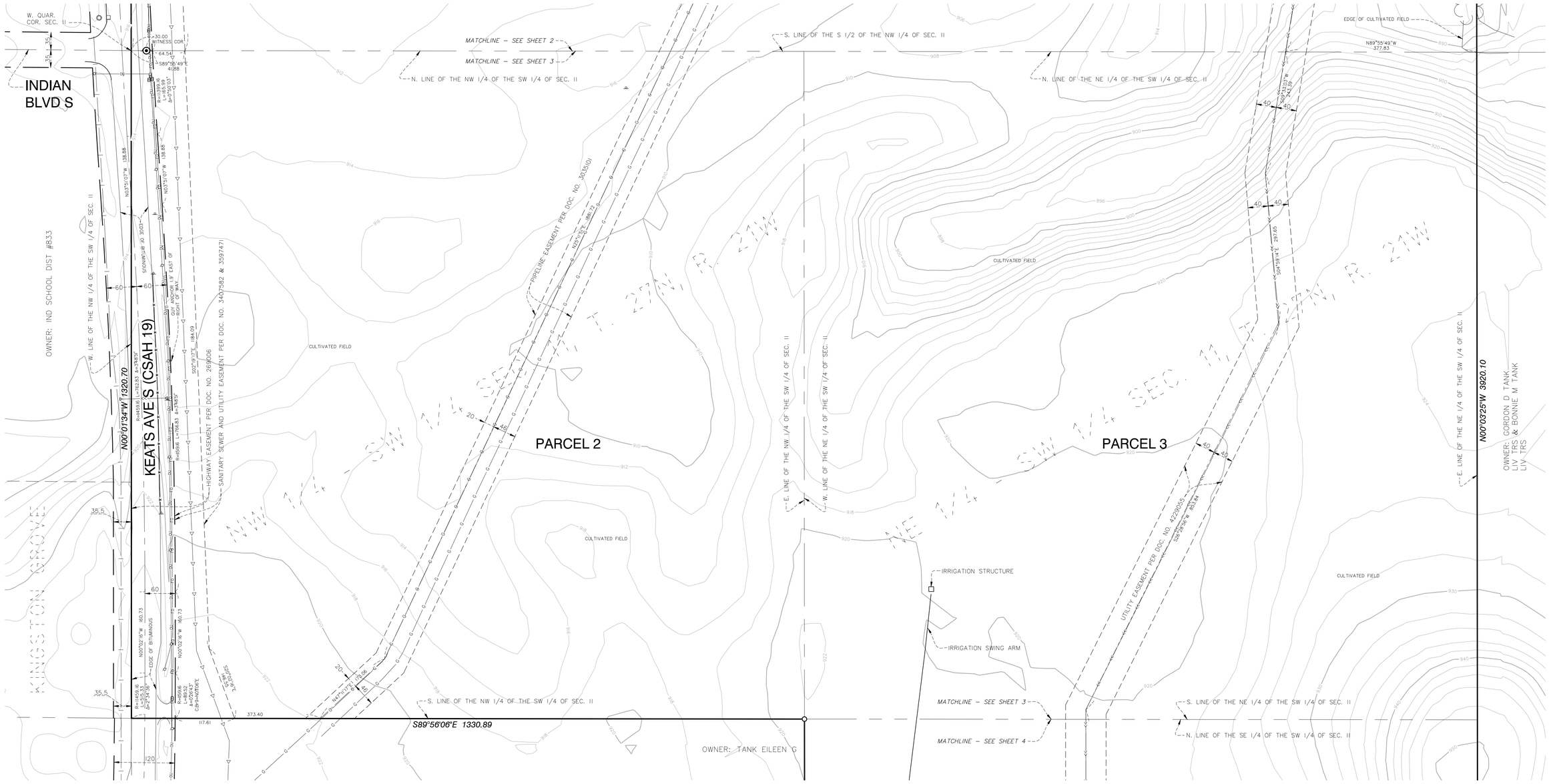

LEGEND

- SET CAP IRON MONUMENT 57366
- FOUND IRON MONUMENT
- FOUND CAST IRON MONUMENT
- TELEPHONE BOX
- SANITARY MANHOLE
- CATCH BASINS
- POWER POLE W/ GUY ANCHOR
- ELECTRIC METER
- GAS METER
- HAND HOLE
- TELEPHONE BOX
- CURB STOP
- WOOD POST
- WELL
- BUSH/SHRUB
- SIGN
- GAS
- SANITARY SEWER
- STORM SEWER
- WATERMAIN
- FIBER OPTIC
- OVERHEAD TELEPHONE
- FENCE
- CULVERT
- TREE LINE
- EXISTING BUILDING
- FIRE HYDRANT

N

0 50 100 200
SCALE IN FEET

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TWIN CITIES LAND DEVELOPMENT

PROJECT
RAVARA TRAILS

PROPERTY ADDRESS
COTTAGE GROVE, MINNESOTA

DOCUMENT
EXISTING CONDITIONS

JOB NO.	DRAWN BY:	DATE	DESCRIPTION
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SCALE	CHECKED BY:		
1" = 100'	DE		
FIELD DATE:	FIELD CREW:		
	RS, EL, MN, MS, RJ, KJ		

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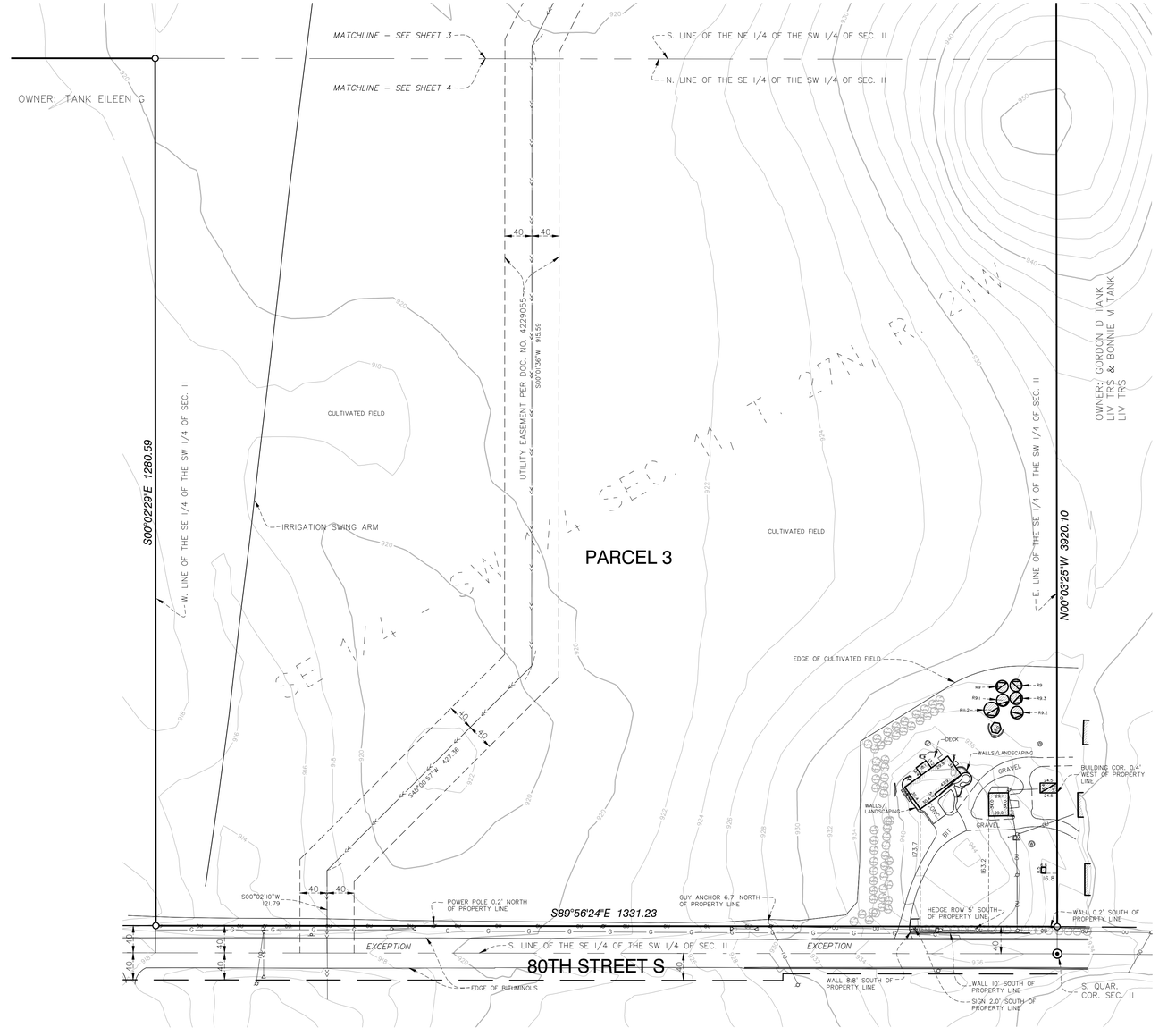

LEGEND

SET CAP IRON MONUMENT 57366	GAS
FOUND IRON MONUMENT	SANITARY SEWER
FOUND CAST IRON MONUMENT	STORM SEWER
TELEPHONE BOX	WATERMAIN
SANITARY MANHOLE	FIBER OPTIC
CATCH BASINS	OVERHEAD TELEPHONE
POWER POLE W/ GUY ANCHOR	FENCE
ELECTRIC METER	CULVERT
GAS METER	TREE LINE
HAND HOLE	
TELEPHONE BOX	EXISTING BUILDING
CURB STOP	FIRE HYDRANT
WOOD POST	
WELL	
BUSH/SHRUB	
SIGN	

N

0 50 100 200
SCALE IN FEET

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TWIN CITIES LAND DEVELOPMENT TC LD

PROJECT
RAVARA TRAILS

PROPERTY ADDRESS
COTTAGE GROVE, MINNESOTA

DOCUMENT
EXISTING CONDITIONS

DESCRIPTION	DATE
CITY SUBMITTAL	2025-12-31

JOB NO. 4006570-00
DRAWN BY: DE
CHECKED BY: DE
SCALE: 1" = 100'
FIELD DATE:
FIELD CREW: RS, EL, WK, MS, RJ, KJ

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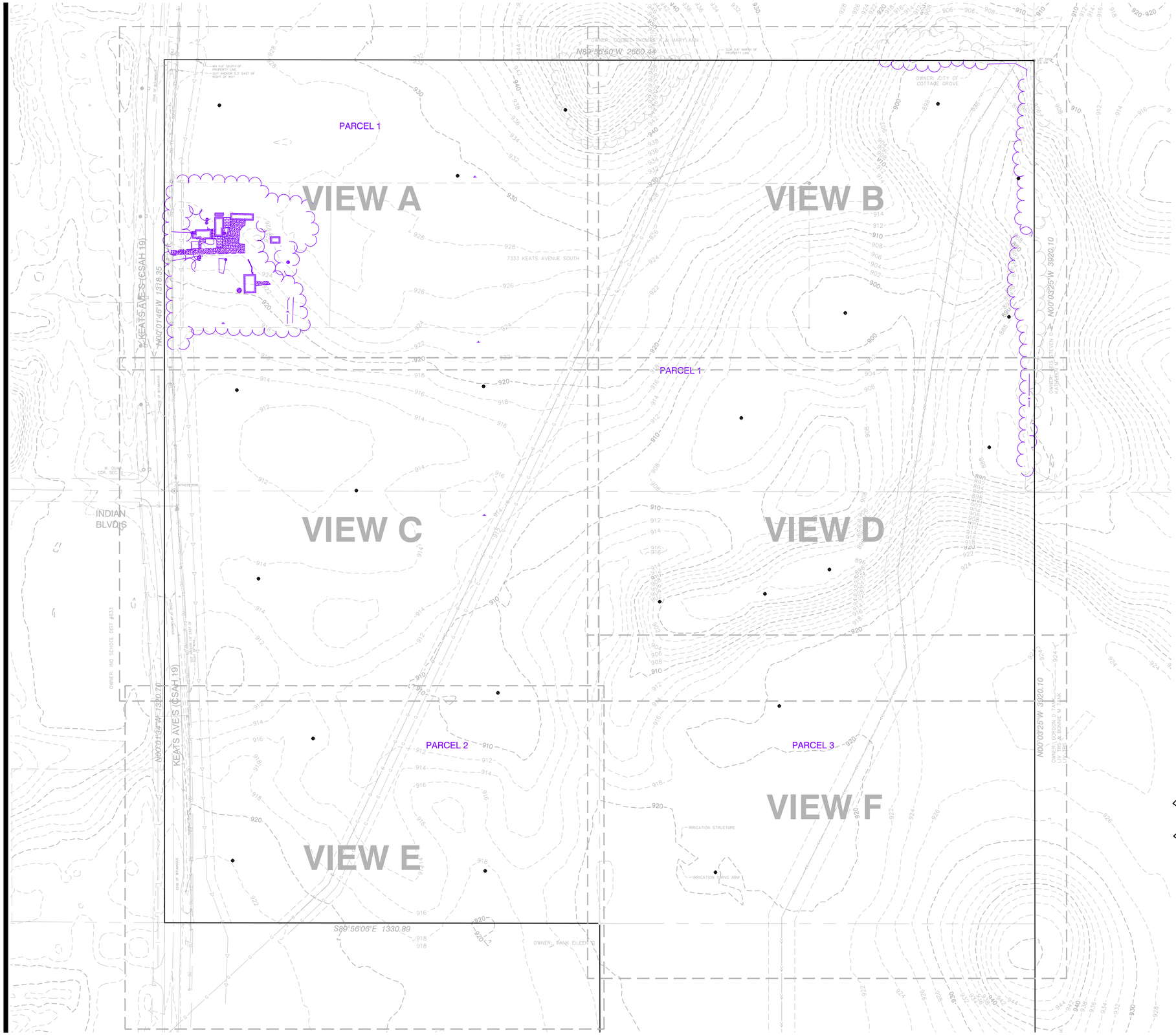

NOTES:

1. PRIOR TO STARTING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE TO MAKE SURE THAT ALL REQUIRED PERMITS AND APPROVALS HAVE BEEN OBTAINED. NO CONSTRUCTION OR FABRICATION SHALL BEGIN UNTIL THE CONTRACTOR HAS RECEIVED AND THOROUGHLY REVIEWED ALL PLANS AND OTHER DOCUMENTS APPROVED BY ALL OF THE PERMITTING AUTHORITIES.
2. CONTRACTOR TO NOTIFY GOPHER STATE ONE CALL, 800-252-1166, 48 HOURS PRIOR TO EXCAVATION WORK. CONTRACTOR SHALL HAVE PRIVATE UTILITIES LOCATED.
3. CONTRACTOR SHALL FIELD VERIFY THE LOCATIONS AND ELEVATIONS OF EXISTING UTILITIES AND TOPOGRAPHIC FEATURES, SUCH AS EXISTING GUTTER GRADES AT THE PROPOSED DRIVEWAYS, PRIOR TO THE START OF SITE GRADING. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY DISCREPANCIES OR VARIATIONS FROM THE PLANS.
4. CONTRACTOR SHALL PROPERLY DISPOSE OF ALL MATERIAL REMOVALS. CONTRACTOR TO SALVAGE ALL MATERIALS POSSIBLE AND COORDINATE WITH OWNER ON FINAL USE.
5. PRIOR TO EARTH DISTURBANCE, INSTALL EROSION AND SEDIMENT CONTROL AS NECESSARY TO PREVENT SEDIMENT TRANSPORT OFFSITE DURING CONSTRUCTION WORK. INSTALL SILT FENCE AND INLET PROTECTION AT DISTURBANCE LIMITS.
6. SEE TREE PRESERVATION SHEETS FOR TREE REMOVALS AND INDIVIDUAL TREE LOCATIONS.
7. DEVELOPER OR CONTRACTOR TO PROVIDE A COPY OF WELL SEALING RECORDS ONCE WELL SEALING IS COMPLETE.
8. ALL EXISTING FEATURES AS SHOWN BUT ALSO INCLUDING UNDERGROUND UTILITIES SHALL BE REMOVED FROM PUBLIC ROW. NO ABANDONMENT IS ALLOWED.
9. ALL REMOVALS IN AREAS OF NO MASS GRADING SHALL INCLUDE RESTORATION OF AREA COMPLETE WITH SEEDING AND APPROPRIATE EROSION CONTROL.
10. ALL REMOVAL LIMITS DEPICTED AND ESTIMATED AND ASSUMED CONTRACTOR WILL REMOVE AT NEAREST EXISTING JOINTS OR PANELS.

LEGEND:

- REMOVE GRAVEL ROADS
- REMOVE BUILDING
- REMOVE CONCRETE
- TREE CLEARING LIMITS.
- SOIL BORING
- EXISTING GAS PIPELINE
- EXISTING SANITARY SEWER
- EXISTING STORM SEWER

DEMOLITION TO BE COMPLETED BY OTHERS. ALL STRUCTURES AND UTILITIES TO BE DEMOLISHED BEFORE MASS GRADING AND STREET AND UTILITY CONSTRUCTION.

N

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0 75 150 300
SCALE IN FEET

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TWIN CITIES LAND DEVELOPMENT

RAVARA TRAILS

COTTAGE GROVE, MINNESOTA

PRELIMINARY PLAT SUBMITTAL

DEMO AND REMOVAL PLAN - OVERALL

DATE	DESCRIPTION
2025-12-31	City Submittal

CERTIFICATION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Civil Engineer under the laws of the State of MINNESOTA

FOR REVIEW ONLY
PRELIMINARY
NOT FOR CONSTRUCTION

Clark Wicklund
Date
40922
License no.

QA/QC CHECK

By
Date

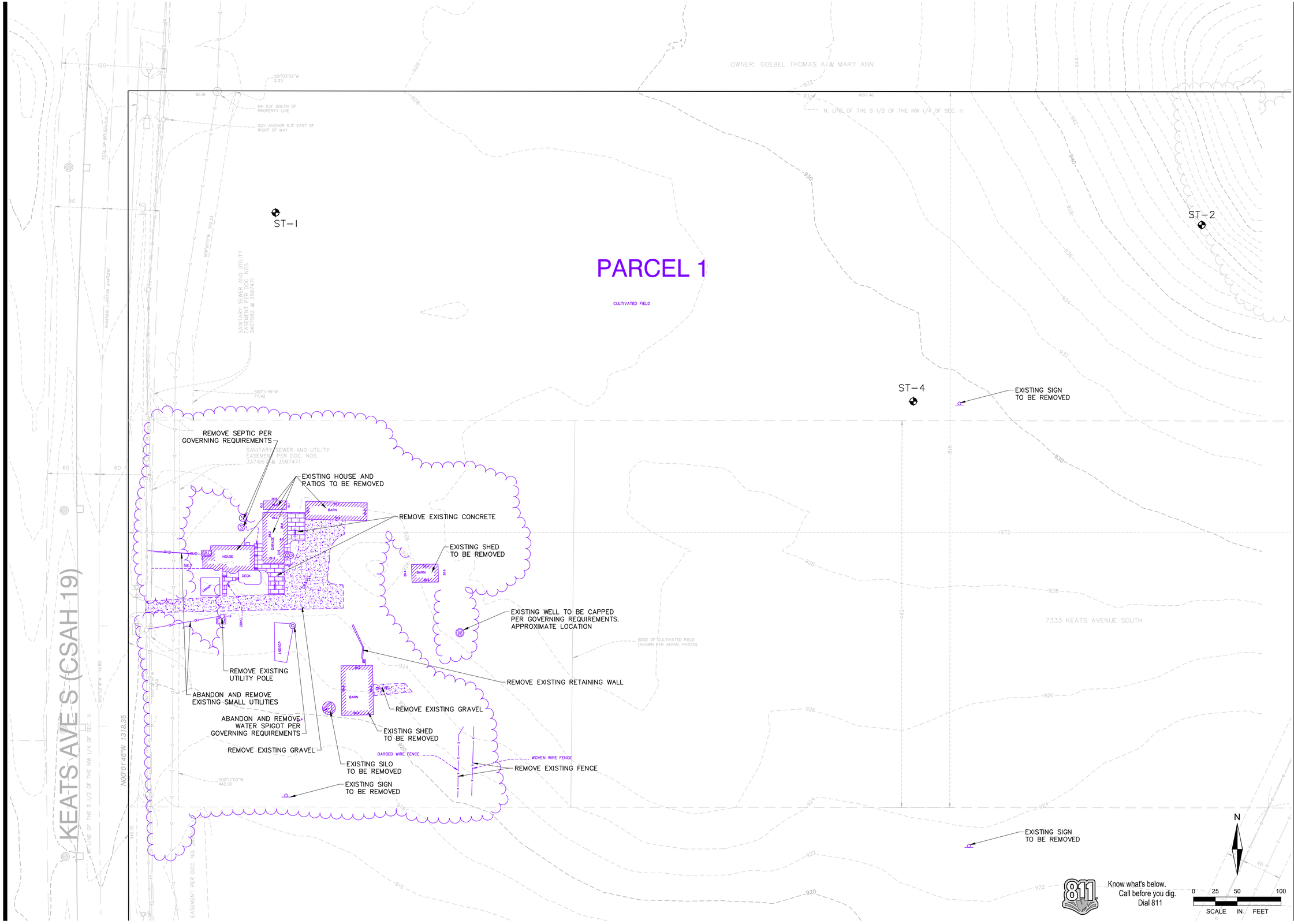
PROJECT TEAM DATA

Designed By: CJW
Drafted By: LRJ
Project No.: 4000570-00

5

Sheet 5 of 91

File Location: X:\4000570-00\001140 Design\00 Sheets - Preliminary\DEMOLITION.dwg Plotted By: Logan Josephson on December 31, 2025 at 12:24:47 PM



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RAVARA TRAILS

COTTAGE GROVE, MINNESOTA

PRELIMINARY PLAT SUBMITTAL

DEMO AND REMOVAL PLAN - VIEW A

DATE	DESCRIPTION
2025-12-31	City Submittal

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Date 40922 License no.

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QA/QC CHECK

By Date

PROJECT TEAM DATA

Designed By: CJW

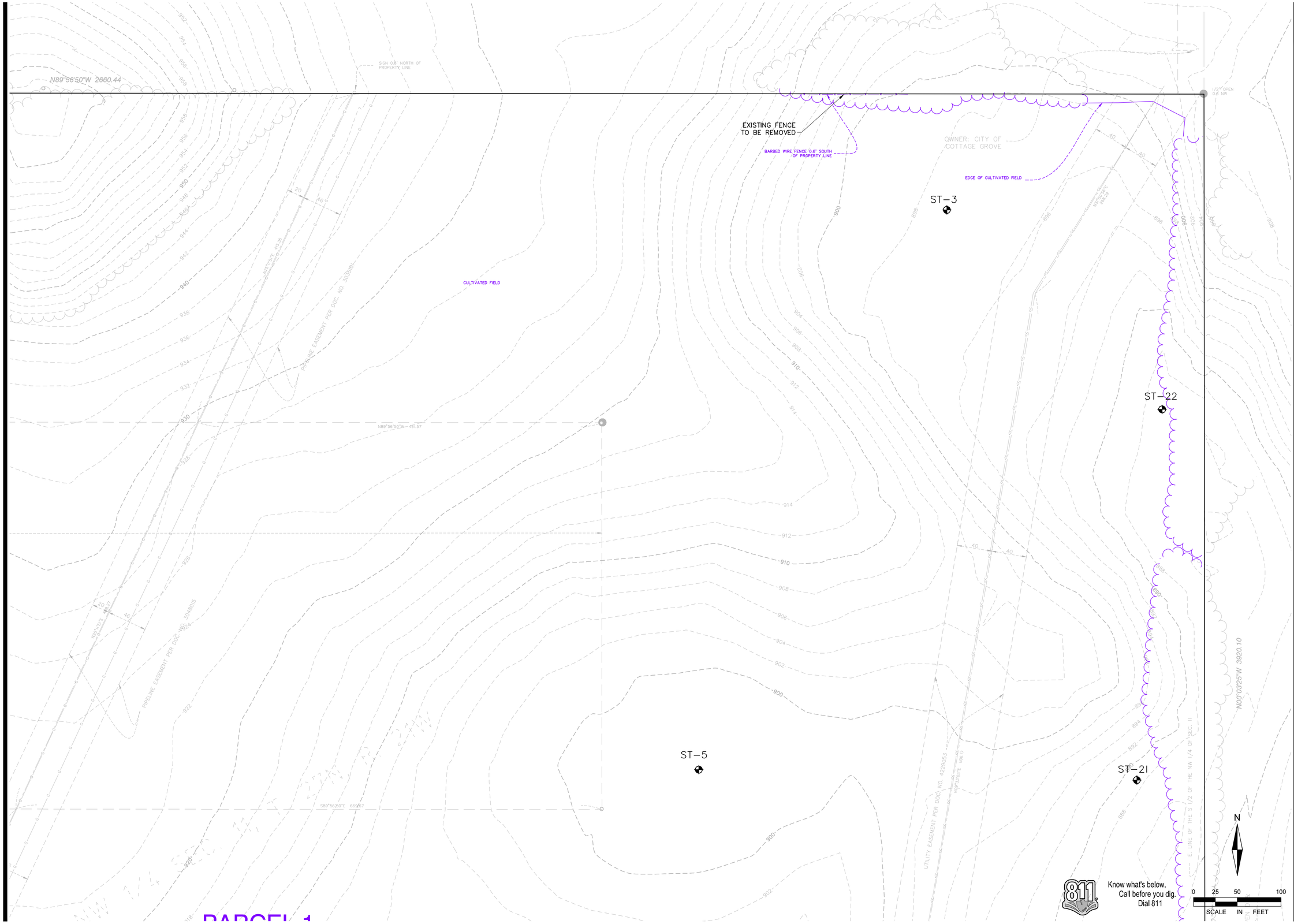
Drafted By: LRJ

Project No.: 4000570-00

6

Sheet 6 of 91

File Location: X:\4000570-00\001\40 Design\00 Sheets - Preliminary\DEMOLITION.dwg Plotted By: Logan Josephson on December 31, 2025 at 12:12:51 PM



PARCEL 1

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RAVARA TRAILS

COTTAGE GROVE, MINNESOTA

PRELIMINARY PLAT SUBMITTAL

DEMO AND REMOVAL PLAN - VIEW B

DESCRIPTION	DATE
City Submittal	2025-12-31

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Clark V. Vichlund — 40922
Date — License no.

QA/QC CHECK

By — Date

PROJECT TEAM DATA

Designed By: CJW
Drafted By: LRJ
Project No.: 4000570-00

7

Sheet 7 of 91

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COTTAGE GROVE, MINNESOTA

PRELIMINARY PLAT SUBMITTAL
DEMO AND REMOVAL PLAN - VIEW C

DATE	DESCRIPTION
2025-12-31	City Submittal

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By

Date

PROJECT TEAM DATA

Designed By: CJW

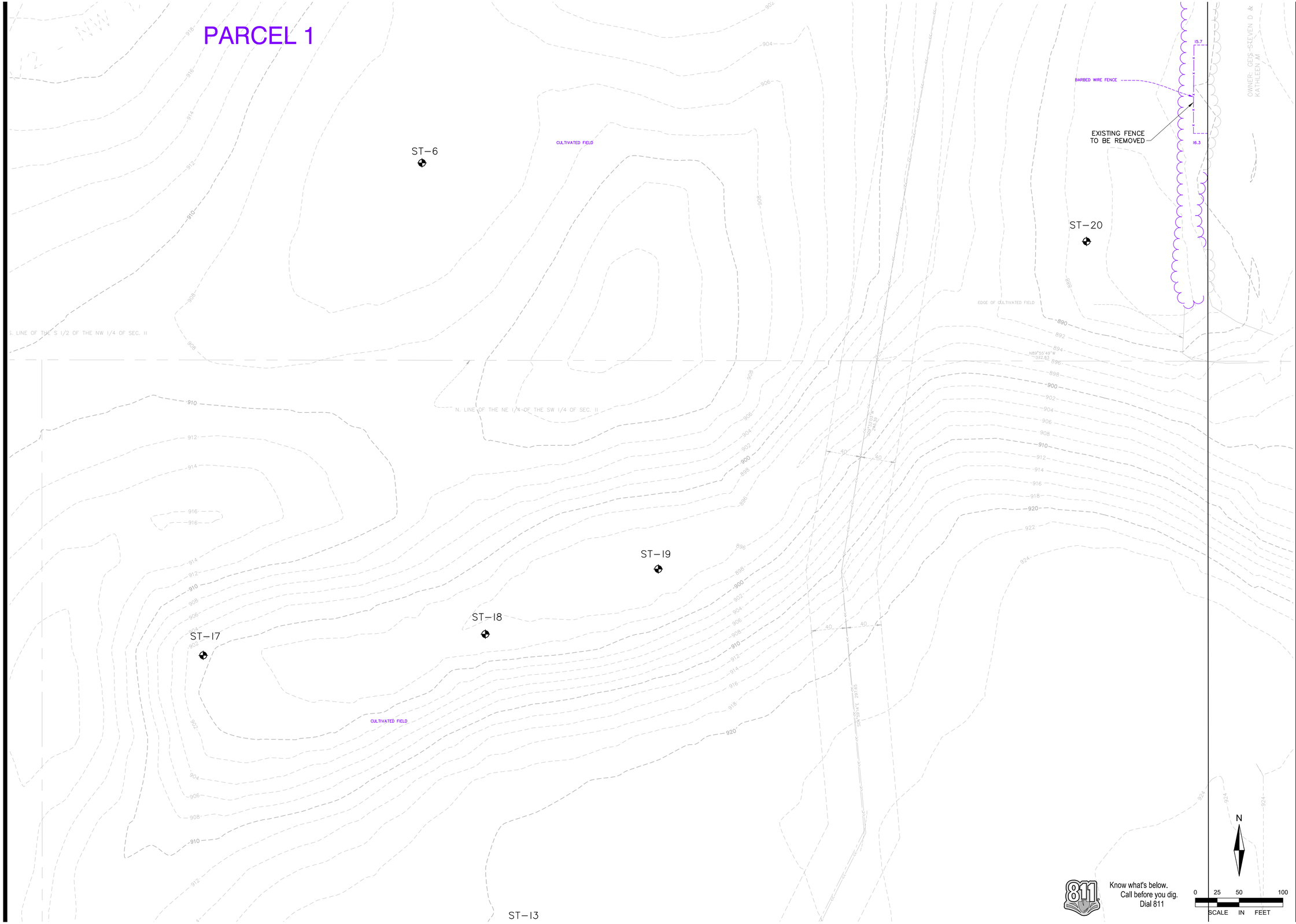
Drafted By: LRJ

Project No.: 4000570-00

8

Sheet 8 of 91

File Location: X:\4000570-00\00140 Design\00 Sheets - Preliminary\DEMOLITION.dwg Plotted By: Logan Josephson on December 31, 2025 at 12:13:01 PM



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TC LD

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COTTAGE GROVE, MINNESOTA

PRELIMINARY PLAT SUBMITTAL

DEMO AND REMOVAL PLAN - VIEW D

DATE	DESCRIPTION
2025-12-31	City Submittal

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QA/QC CHECK

By Date

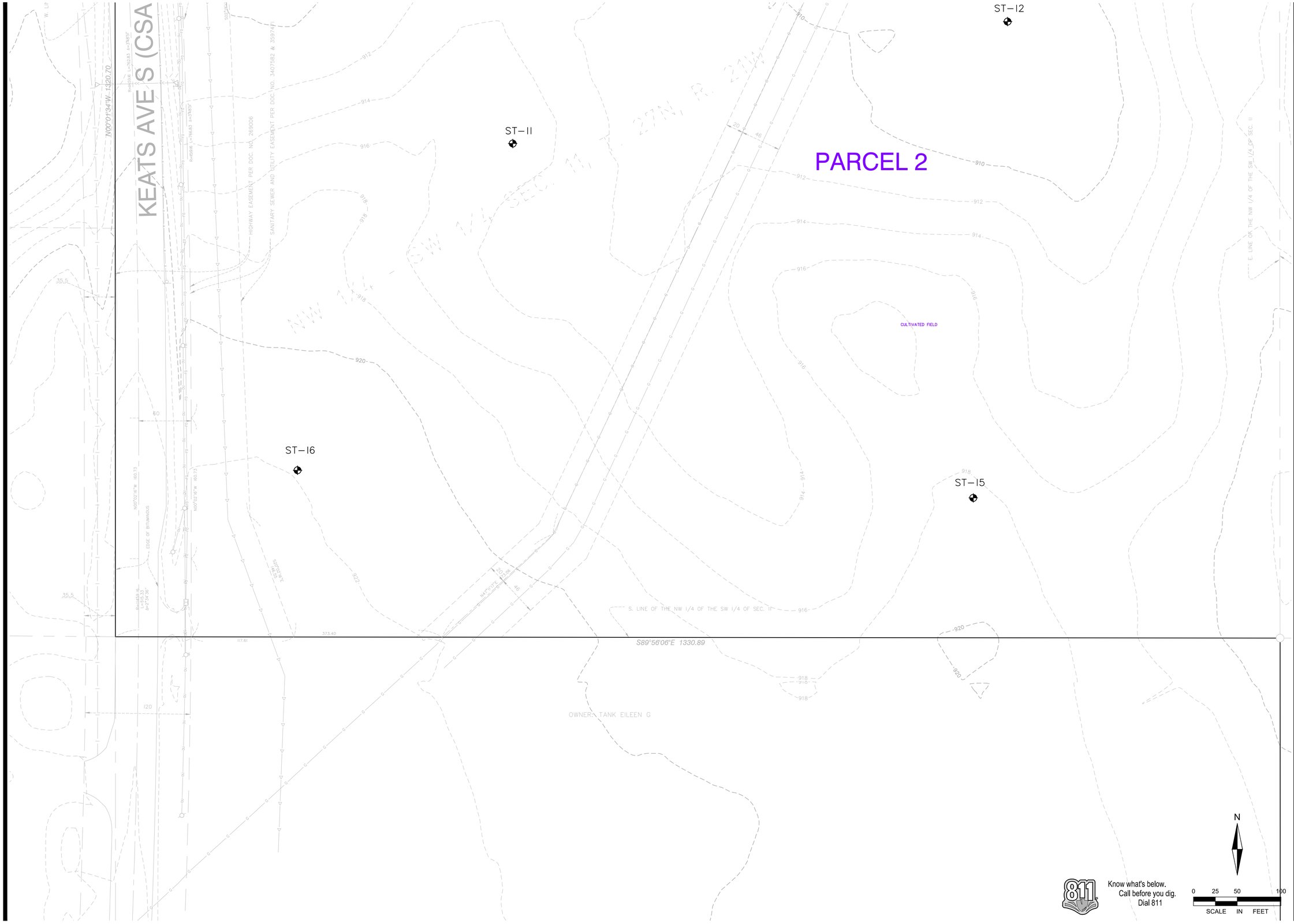
PROJECT TEAM DATA

Designed By: CJW
Drafted By: LRJ
Project No.: 4000570-00

9

Sheet 9 of 91

File Location: X:\4000570-00\00140 Design\00 Sheets - Preliminary\DEMOLITION.dwg Plotted By: Logan Josephson on December 31, 2025 at 12:13:06 PM



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RAVARA TRAILS

COTTAGE GROVE, MINNESOTA

PRELIMINARY PLAT SUBMITTAL

DEMO AND REMOVAL PLAN - VIEW E

DATE	DESCRIPTION
2025-12-31	City Submittal

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Date 40922 License no.

QA/QC CHECK

By Date

PROJECT TEAM DATA

Designed By: CJW

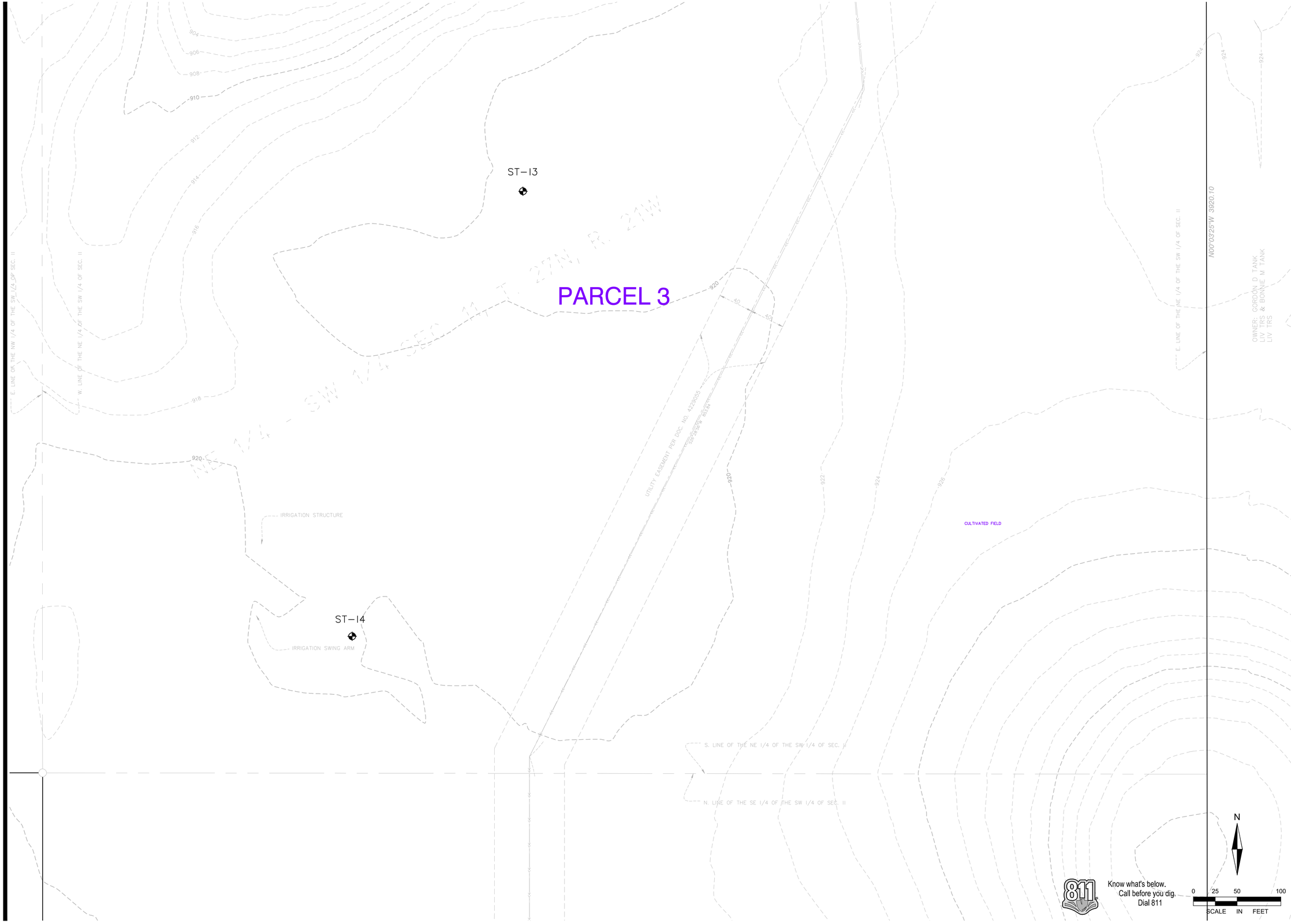
Drafted By: LRJ

Project No.: 4000570-00

10

Sheet 10 of 91

File Location: X:\4000570-00\001140 Design\00 Sheets - Preliminary\DEMOLITION.dwg Plotted By: Logan.Josephson on December 31, 2025 at 12:13:11 PM



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TWIN CITIES LAND DEVELOPMENT

RAVARA TRAILS

COTTAGE GROVE, MINNESOTA

PRELIMINARY PLAT SUBMITTAL

DEMO AND REMOVAL PLAN - VIEW F

DESCRIPTION	DATE
City Submittal	2025-12-31

CERTIFICATION

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Clark Wicklund
Date

40922
License no.

QA/QC CHECK

By Date

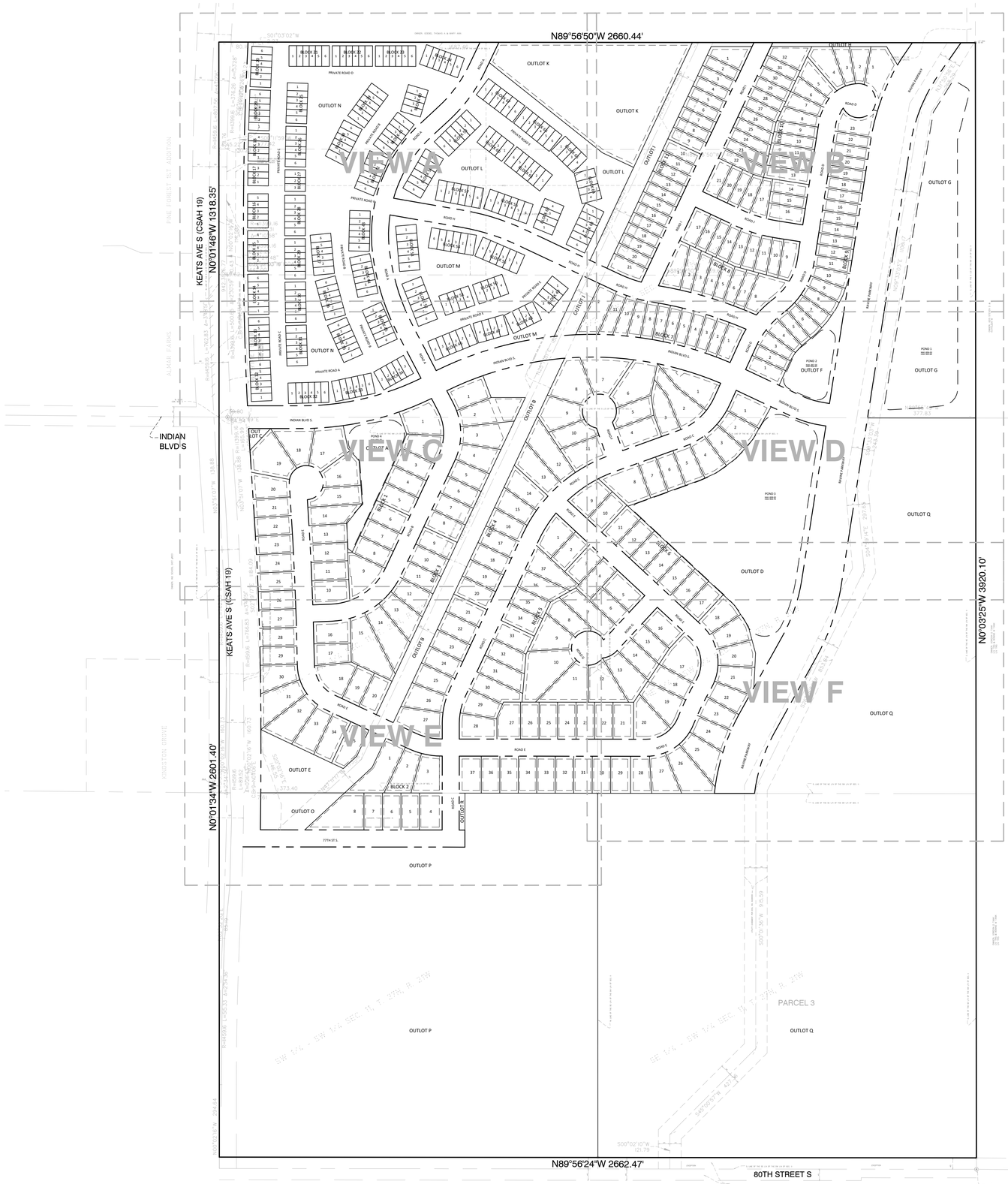
PROJECT TEAM DATA

Designed By: CJW
Drafted By: LRJ
Project No.: 4000570-00

11

Sheet 11 of 91

File Location: X:\4000570\5000140 Design\50 Sheets - Preliminary\DEMOLITION.dwg Plotted By: Logan Josephson on December 31, 2025 at 12:15:16 PM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N89°56'24"W 2662.47'
80TH STREET S
KEATS AVE S (CSAH 19)
N0°01'46"W 1318.35'
N0°01'34"W 2601.40'
N0°03'25"W 3920.10'
INDIAN BLVD S
VIEW A
VIEW B
VIEW C
VIEW D
VIEW E
VIEW F
OUTLOT K
OUTLOT L
OUTLOT M
OUTLOT N
OUTLOT A
OUTLOT B
OUTLOT C
OUTLOT D
OUTLOT E
OUTLOT F
OUTLOT G
OUTLOT O
OUTLOT P
OUTLOT Q
PARCEL 3
BLOCK 1
BLOCK 2
BLOCK 3
BLOCK 4
BLOCK 5
BLOCK 6
BLOCK 7
BLOCK 8
BLOCK 9
BLOCK 10
BLOCK 11
BLOCK 12
BLOCK 13
BLOCK 14
BLOCK 15
BLOCK 16
BLOCK 17
BLOCK 18
BLOCK 19
BLOCK 20
BLOCK 21
BLOCK 22
BLOCK 23
BLOCK 24
BLOCK 25
BLOCK 26
BLOCK 27
BLOCK 28
BLOCK 29
BLOCK 30
BLOCK 31
BLOCK 32
BLOCK 33
BLOCK 34
BLOCK 35
BLOCK 36
BLOCK 37
PRIVATE ROAD A
PRIVATE ROAD B
PRIVATE ROAD C
PRIVATE ROAD D
ROAD A
ROAD B
ROAD C
ROAD D
ROAD E
ROAD F
ROAD G
ROAD H
POND 1
POND 2
POND 3
POND 4
777TH ST S
S00°03'02"W
S00°02'10"W 121.79'
S89°57'50"E 1973.40'
S89°57'50"E 1973.40'
S89°57'50"E 1973.40



DATE	DESCRIPTION
2025-12-31	City Submittal

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City & Vicinity Map

Date: 40922

License no.

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By: Date:

PROJECT TEAM DATA

Designed By: CJW

Drafted By: LRJ

Project No.: 4000570-00

Sheet 13 of 91

13

RAVARA TRAILS

COTTAGE GROVE, MINNESOTA

PRELIMINARY PLAT SUBMITTAL

PRELIMINARY PLAT - VIEW A

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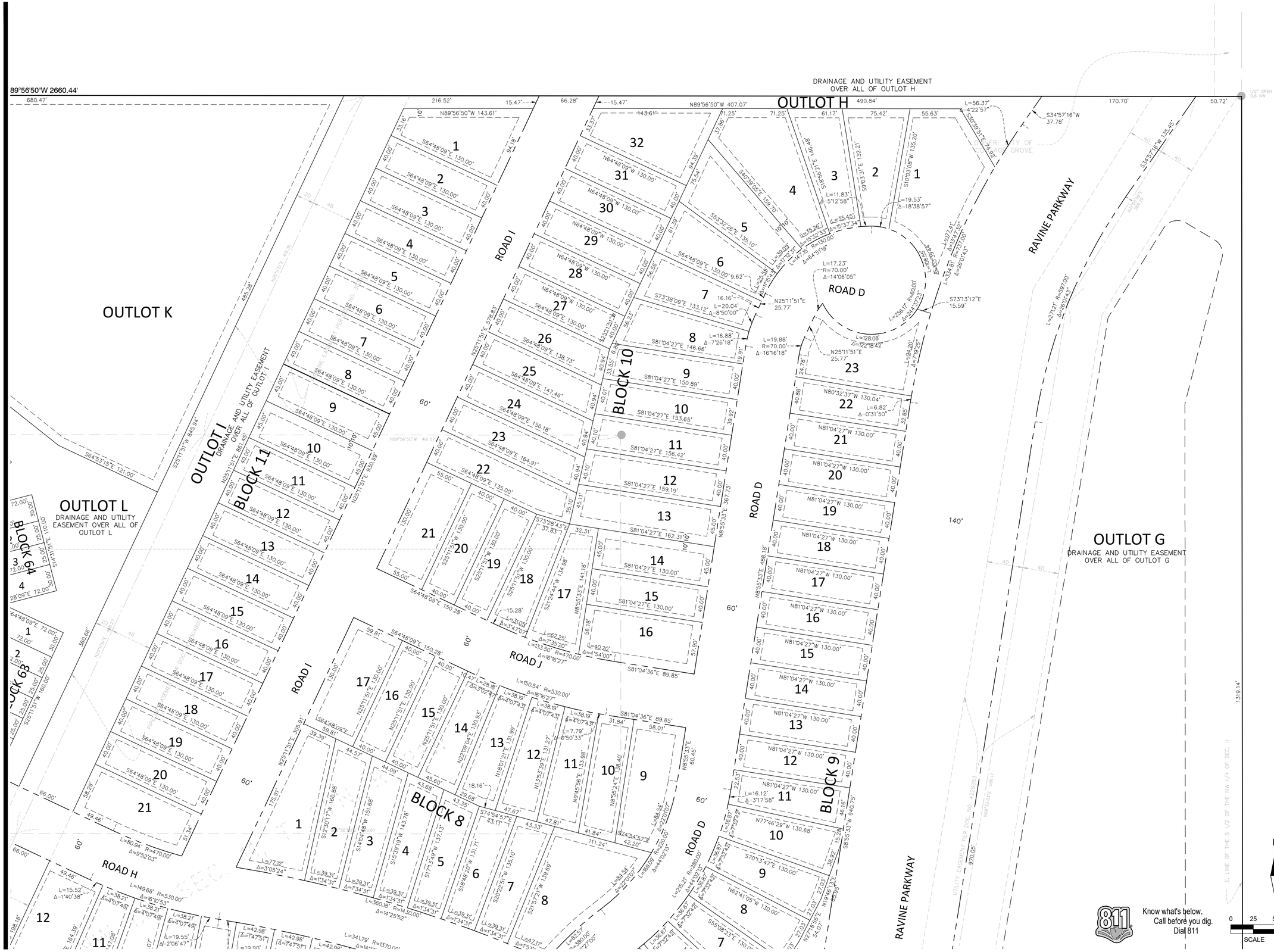
89°56'50"W 2660.44'
680.47'
216.52'
15.47'
66.28'
DRAINAGE AND UTILITY EASEMENT OVER ALL OF OUTLOT H
OUTLOT H
N89°56'50"W 407.07'
490.84'
L=56.37'
Δ=4°22'57"
S34°57'16"W 37.78'
170.70'
50.72'
OUTLOT K
OUTLOT I
DRAINAGE AND UTILITY EASEMENT OVER ALL OF OUTLOT I
OUTLOT L
DRAINAGE AND UTILITY EASEMENT OVER ALL OF OUTLOT L
OUTLOT G
DRAINAGE AND UTILITY EASEMENT OVER ALL OF OUTLOT G
ROAD I
ROAD D
ROAD J
ROAD H
BLOCK 10
BLOCK 8
BLOCK 9
BLOCK 11
BLOCK 64
BLOCK 63
RAVINE PARKWAY
N89°56'50"W 143.61'
N89°56'50"W 461.37'
S64°48'09"E 130.00'
N64°48'09"W 130.00'
S81°04'27"E 146.66'
S81°04'27"E 150.89'
S81°04'27"E 153.65'
S81°04'27"E 156.42'
S81°04'27"E 159.19'
S81°04'27"E 162.31'
S81°04'27"E 130.00'
S81°04'36"E 89.85'
N81°04'27"W 130.00'
N25°11'51"E 25.77'
S73°13'12"E 15.59'
S25°11'51"W 845.94'
S64°53'15"E 121.00'
S25°11'51"W 880.45'
S25°11'51"W 330.99'
S25°11'51"W 360.66'
S25°11'51"W 180.00'
S64°48'09"E 72.00'
N25°11'51"E 578.83'
N25°11'51"E 775.91'
S64°48'09"E 150.28'
S64°48'09"E 135.00'
S64°48'09"E 164.91'
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S64°48'09"E 130.00'
S64°48'09"E 59.81'
S73°28'43"E 37.83'
S21°24'14"W 134.98'
S20°22'57"W 135.10'
S18°48'20"W 131.71'
S17°13'49"W 137.13'
S15°39'19"W 143.78'
S14°04'48"W 151.68'
S12°30'17"W 160.68'
S10°55'46"W 169.59'
S09°21'15"W 178.49'
S07°46'44"W 187.40'
S06°12'13"W 196.30'
S04°37'42"W 205.21'
S03°03'11"W 214.11'
S01°28'40"W 223.02'
S00°06'03"E 231.92'
S01°40'54"E 240.83'
S03°15'25"E 249.73'
S04°49'56"E 258.64'
S06°24'27"E 267.54'
S07°58'58"E 276.45'
S09°33'29"E 285.35'
S11°07'59"E 294.26'
S12°42'30"E 303.16'
S14°17'01"E 312.07'
S15°51'32"E 320.97'
S17°26'03"E 329.88'
S18°48'09"E 338.78'
S18°48'09"E 347.69'
S18°48'09"E 356.59'
S18°48'09"E 365.50'
S18°48'09"E 374.40'
S18°48'09"E 383.31'
S18°48'09"E 392.21'
S18°48'09"E 401.12'
S18°48'09"E 410.02'
S18°48'09"E 418.93'
S18°48'09"E 427.83'
S18°48'09"E 436.74'
S18°48'09"E 445.64'
S18°48'09"E 454.55'
S18°48'09"E 463.45'
S18°48'09"E 472.36'
S18°48'09"E 481.26'
S18°48'09"E 490.17'
S18°48'09"E 499.07'
S18°48'09"E



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TWIN CITIES LAND DEVELOPMENT

RAVARA TRAILS

COTTAGE GROVE, MINNESOTA

PRELIMINARY PLAT SUBMITTAL

PRELIMINARY PLAT- VIEW C

DATE	DESCRIPTION
2025-12-31	City Submittal

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FOR REVIEW PRELIMINARY NOT FOR CONSTRUCTION

Clark Wicklund
Date 40922 License no.

QA/QC CHECK

By Date

PROJECT TEAM DATA

Designed By: CJW
Drafted By: LRJ
Project No.: 4000570-00

15

Sheet 15 of 91

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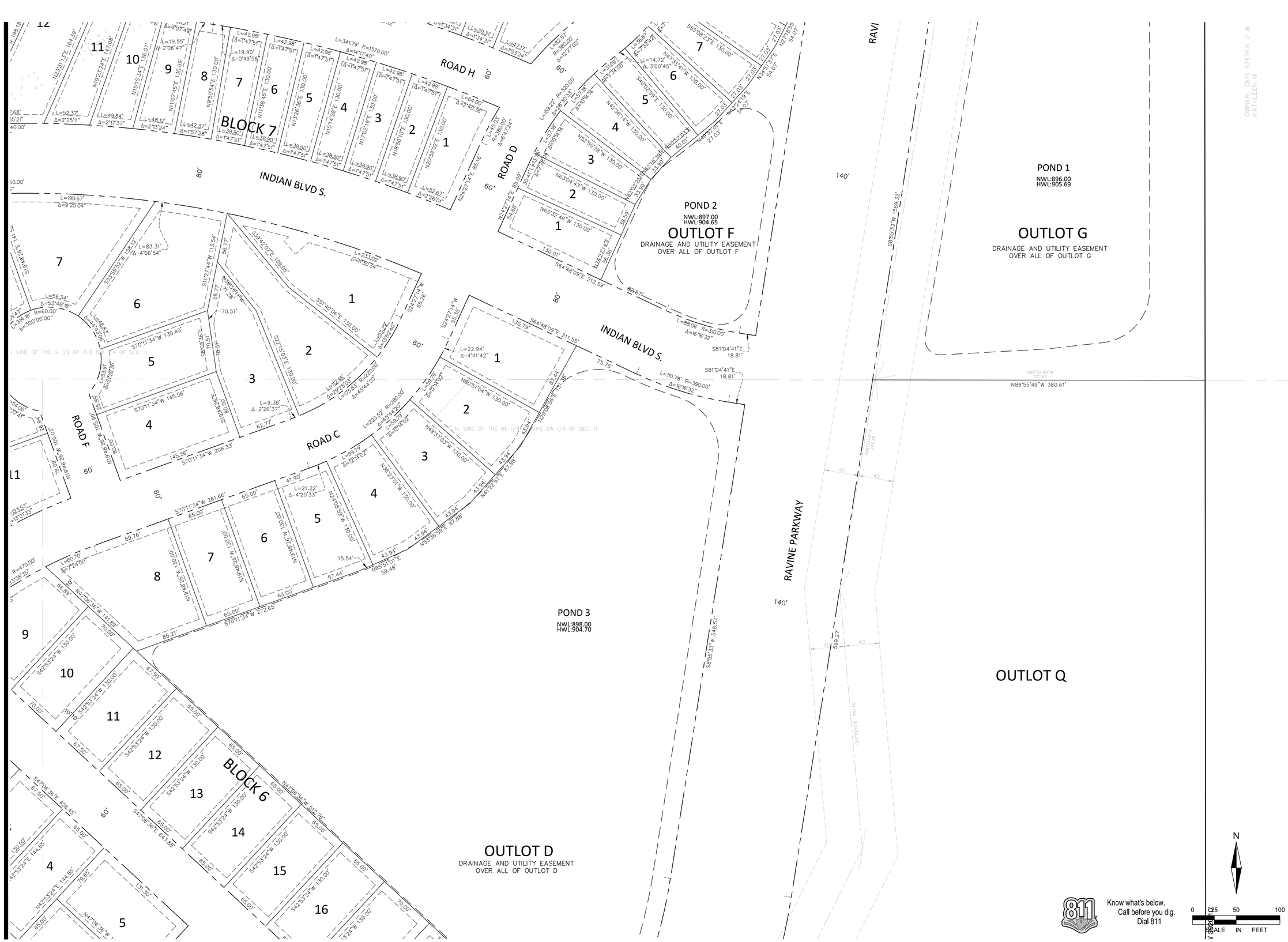

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TWIN CITIES LAND DEVELOPMENT

RAVARA TRAILS

COTTAGE GROVE, MINNESOTA

PRELIMINARY PLAT SUBMITTAL

PRELIMINARY PLAT - VIEW D

DATE	DESCRIPTION
2025.12.31	City Submittal

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Clark Wicklund
Date

40922
License no.

QA/QC CHECK

By Date

PROJECT TEAM DATA

Designed By: CJW
Drafted By: LRJ
Project No.: 4000570-00

16

Sheet 16 of 91

File Location: X:\4000570-00\01140 Design\00 Sheets - Preliminary\PRELIMINARY PLAT.dwg Plotted By: Logan Josephson on December 31, 2025 at 12:13:52 PM



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TWIN CITIES LAND DEVELOPMENT

RAVARA TRAILS

COTTAGE GROVE, MINNESOTA

PRELIMINARY PLAT SUBMITTAL

PRELIMINARY PLAT- VIEW E

DATE	DESCRIPTION
2025-12-31	City Submittal

CERTIFICATION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Civil Engineer under the laws of the State of MINNESOTA.

FOR REVIEW PRELIMINARY NOT FOR CONSTRUCTION

Clark Wicklund

Date 40922 License no.

QA/QC CHECK

By Date

PROJECT TEAM DATA

Designed By: CJW

Drafted By: LRJ

Project No.: 4000570-00

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Sheet 17 of 91

File Location: X:\4000570-00\001140 Design\00 Sheets - Preliminary\PRELIMINARY PLAT.dwg Plotted By: Logan Josephson on December 01, 2025 at 12:13:57 PM



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TWIN CITIES · IOWA · DND DEVELOPMENT

RAVARA TRAILS

COTTAGE GROVE, MINNESOTA

PRELIMINARY PLAT SUBMITTAL

PRELIMINARY PLAT- VIEW F

DESCRIPTION	DATE
City Submittal	2025-12-31

CERTIFICATION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Civil Engineer under the laws of the State of MINNESOTA.

PRELIMINARY
FOR REVIEW
NOT FOR CONSTRUCTION

Clark Wicklund — 40922
Date — License no.

QA/QC CHECK

By — Date

PROJECT TEAM DATA

Designed By: CJW
Drafted By: LRJ
Project No.: 4000570-00

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Sheet 18 of 91

File Location: X:\4000570-00\001\401 Design\00 Sheets - Preliminary\PRELIMINARY PLAT.dwg Plotted By: Logan Josephson on Dec 30, 2025 at 12:14:02 PM

PARCEL AREA TABLE		
PARCEL	AREA SF	AREA AC
B1-L1	14,203	0.33
B1-L2	10,238	0.24
B1-L3	8,710	0.20
B1-L4	8,710	0.20
B1-L5	9,100	0.21
B1-L6	9,100	0.21
B1-L7	8,710	0.20
B1-L8	8,531	0.20
B1-L9	13,376	0.31
B1-L10	10,772	0.25
B1-L11	8,477	0.19
B1-L12	8,526	0.20
B1-L13	8,637	0.20
B1-L14	10,603	0.24
B1-L15	10,919	0.25
B1-L16	12,509	0.29
B1-L17	15,893	0.36
B1-L18	13,335	0.31
B1-L19	17,577	0.40
B1-L20	10,257	0.24
B1-L21	8,466	0.19
B1-L22	8,483	0.19
B1-L23	8,483	0.19
B1-L24	8,484	0.19
B1-L25	8,467	0.19
B1-L26	8,469	0.19
B1-L27	8,468	0.19
B1-L28	8,465	0.19
B1-L29	8,460	0.19
B1-L30	10,369	0.24
B1-L31	14,078	0.32
B1-L32	15,382	0.35
B1-L33	11,792	0.27
B1-L34	11,198	0.26
B1-L35	10,518	0.24
B2-L1	17,228	0.40
B2-L2	11,923	0.27
B2-L3	12,264	0.28
B2-L4	10,400	0.24
B2-L5	8,450	0.19
B2-L6	8,450	0.19
B2-L7	8,450	0.19
B2-L8	17,968	0.41
B3-L1	10,847	0.25
B3-L2	17,304	0.40
B3-L3	13,169	0.30
B3-L4	10,302	0.24
B3-L5	8,637	0.20
B3-L6	8,450	0.19
B3-L7	8,450	0.19
B3-L8	8,775	0.20
B3-L9	8,775	0.20
B3-L10	8,450	0.19
B3-L11	8,582	0.20
B3-L12	9,966	0.23
B3-L13	12,010	0.28
B3-L14	16,809	0.39
B3-L15	20,428	0.47
B3-L16	10,306	0.24
B3-L17	9,359	0.21

PARCEL AREA TABLE		
PARCEL	AREA SF	AREA AC
B3-L18	12,114	0.28
B3-L19	8,450	0.19
B3-L20	8,869	0.20
B4-L1	14,982	0.34
B4-L3	10,851	0.25
B4-L4	11,645	0.27
B4-L5	9,703	0.22
B4-L6	16,948	0.39
B4-L7	16,544	0.38
B4-L8	16,995	0.39
B4-L9	13,605	0.31
B4-L10	10,022	0.23
B4-L11	11,477	0.26
B4-L12	16,154	0.37
B4-L13	13,323	0.31
B4-L14	11,021	0.25
B4-L15	9,475	0.22
B4-L16	8,775	0.20
B4-L17	8,450	0.19
B4-L18	8,450	0.19
B4-L19	8,450	0.19
B4-L20	9,100	0.21
B4-L21	8,775	0.20
B4-L22	9,032	0.21
B4-L23	8,450	0.19
B4-L24	8,450	0.19
B4-L25	9,388	0.22
B4-L26	10,533	0.24
B4-L27	13,770	0.32
B5-L1	11,027	0.25
B5-L2	8,775	0.20
B5-L3	8,775	0.20
B5-L4	9,415	0.22
B5-L5	10,484	0.24
B5-L6	8,534	0.20
B5-L7	13,634	0.31
B5-L8	10,246	0.24
B5-L9	12,912	0.30
B5-L10	22,616	0.52
B5-L11	16,255	0.37
B5-L12	13,985	0.32
B5-L13	13,560	0.31
B5-L14	9,600	0.22
B5-L15	8,793	0.20
B5-L16	10,075	0.23
B5-L17	15,279	0.35
B5-L18	9,848	0.23
B5-L19	13,028	0.30
B5-L20	12,811	0.29
B5-L21	9,425	0.22
B5-L22	8,450	0.19
B5-L23	8,450	0.19
B5-L24	8,450	0.19
B5-L25	8,450	0.19
B5-L26	8,450	0.19
B5-L27	10,196	0.23
B5-L28	10,759	0.25
B5-L29	9,551	0.22
B5-L30	30,851	0.71
B5-L33	9,100	0.21

PARCEL AREA TABLE		
PARCEL	AREA SF	AREA AC
B5-L34	8,775	0.20
B5-L35	8,450	0.19
B5-L36	9,955	0.23
B5-L37	12,029	0.28
B6-L1	10,969	0.25
B6-L2	9,645	0.22
B6-L3	9,645	0.22
B6-L4	9,645	0.22
B6-L5	8,849	0.20
B6-L6	8,450	0.19
B6-L7	8,450	0.19
B6-L8	15,356	0.35
B6-L9	10,876	0.25
B6-L10	9,100	0.21
B6-L11	8,775	0.20
B6-L12	8,450	0.19
B6-L13	8,450	0.19
B6-L14	8,450	0.19
B6-L15	8,450	0.19
B6-L16	8,450	0.19
B6-L17	9,100	0.21
B6-L18	10,063	0.23
B6-L19	10,166	0.23
B6-L20	10,166	0.23
B6-L21	10,393	0.24
B6-L22	9,236	0.21
B6-L23	8,814	0.20
B6-L24	9,558	0.22
B6-L25	13,283	0.30
B6-L26	15,846	0.36
B6-L27	11,101	0.25
B6-L28	9,166	0.21
B6-L29	9,100	0.21
B6-L30	8,450	0.19
B6-L31	8,450	0.19
B6-L32	8,450	0.19
B6-L33	8,450	0.19
B6-L34	8,450	0.19
B6-L35	8,450	0.19
B6-L36	8,450	0.19
B6-L37	10,075	0.23
B7-L1	7,450	0.17
B7-L2	5,323	0.12
B7-L3	5,323	0.12
B7-L4	5,323	0.12
B7-L5	5,323	0.12
B7-L6	5,323	0.12
B7-L7	5,323	0.12
B7-L8	5,322	0.12
B7-L9	5,716	0.13
B7-L10	6,108	0.14
B7-L11	6,797	0.16
B7-L12	12,215	0.28
B8-L1	9,639	0.22
B8-L2	6,475	0.15
B8-L3	6,103	0.14
B8-L4	5,788	0.13
B8-L5	5,529	0.13
B8-L6	5,485	0.13
B8-L7	5,657	0.13

PARCEL AREA TABLE		
PARCEL	AREA SF	AREA AC
B8-L8	11,751	0.27
B8-L9	7,762	0.18
B8-L10	5,533	0.13
B8-L11	5,685	0.13
B8-L12	5,638	0.13
B8-L13	5,677	0.13
B8-L14	5,485	0.13
B8-L15	5,200	0.12
B8-L16	5,200	0.12
B8-L17	7,775	0.18
B9-L1	7,218	0.17
B9-L2	5,384	0.12
B9-L3	5,940	0.14
B9-L4	5,940	0.14
B9-L5	5,584	0.13
B9-L6	5,922	0.14
B9-L7	5,922	0.14
B9-L8	5,922	0.14
B9-L9	5,922	0.14
B9-L10	5,948	0.14
B9-L11	5,516	0.13
B9-L12	5,200	0.12
B9-L13	5,200	0.12
B9-L14	5,200	0.12
B9-L15	5,200	0.12
B9-L16	5,200	0.12
B9-L17	5,200	0.12
B9-L18	5,200	0.12
B9-L19	5,200	0.12
B9-L20	5,200	0.12
B9-L21	5,200	0.12
B9-L22	5,236	0.12
B9-L23	9,245	0.21
B10-L1	14,332	0.33
B10-L2	6,982	0.16
B10-L3	6,539	0.15
B10-L4	10,804	0.25
B10-L5	8,064	0.19
B10-L6	6,320	0.15
B10-L7	6,050	0.14
B10-L8	6,379	0.15
B10-L9	5,975	0.14
B10-L10	6,078	0.14
B10-L11	6,201	0.14
B10-L12	6,312	0.14
B10-L13	7,234	0.17
B10-L14	5,850	0.13
B10-L15	5,200	0.12
B10-L16	7,504	0.17
B10-L17	6,513	0.15
B10-L18	5,567	0.13
B10-L19	5,200	0.12
B10-L20	5,200	0.12
B10-L21	7,150	0.16
B10-L22	6,661	0.15
B10-L23	6,422	0.15
B10-L24	6,073	0.14
B10-L25	5,724	0.13
B10-L26	5,375	0.12
B10-L27	5,200	0.12

PARCEL AREA TABLE		
PARCEL	AREA SF	AREA AC
B10-L28	5,200	0.12
B10-L29	5,200	0.12
B10-L30	5,200	0.12
B10-L31	5,200	0.12
B10-L32	8,304	0.19
B11-L1	8,277	0.19
B11-L2	5,200	0.12
B11-L3	5,200	0.12
B11-L4	5,200	0.12
B11-L5	5,200	0.12
B11-L6	5,200	0.12
B11-L7	5,200	0.12
B11-L8	5,200	0.12
B11-L9	5,850	0.13
B11-L10	5,850	0.13
B11-L11	5,200	0.12
B11-L12	5,200	0.12
B11-L13	5,200	0.12
B11-L14	5,200	0.12
B11-L15	5,200	0.12
B11-L16	5,200	0.12
B11-L17	5,200	0.12
B11-L18	5,200	0.12
B11-L19	5,200	0.12
B11-L20	5,200	0.12
B11-L21	7,392	0.17
B12-L1	1,957	0.04
B12-L2	1,595	0.04
B12-L3	1,595	0.04
B12-L4	1,595	0.04
B12-L5	1,595	0.04
B12-L6	1,958	0.04
B13-L1	1,958	0.04
B13-L2	1,595	0.04
B13-L3	1,595	0.04
B13-L4	1,595	0.04
B13-L5	1,595	0.04
B13-L6	1,957	0.04
B14-L1	1,958	0.04
B14-L2	1,595	0.04
B14-L3	1,595	0.04
B14-L4	1,595	0.04
B14-L5	1,595	0.04
B14-L6	1,957	0.04
B15-L1	1,957	0.04
B15-L2	1,595	0.04
B15-L3	1,595	0.04
B15-L4	1,595	0.04
B15-L5	1,595	0.04
B15-L6	1,957	0.04
B16-L1	1,958	0.04
B16-L2	1,595	0.04
B16-L3	1,595	0.04
B16-L4	1,595	0.04
B16-L5	1,958	0.04
B17-L1	1,958	0.04
B17-L2	1,595	0.04
B17-L3	1,957	0.04
B18-L1	1,958	0.04
B18-L2	1,595	0.04

PARCEL AREA TABLE		
PARCEL	AREA SF	AREA AC
B18-L3	1,595	0.04
B18-L4	1,957	0.04
B19-L1	1,957	0.04
B19-L2	1,595	0.04
B19-L3	1,595	0.04
B19-L4	1,595	0.04
B19-L5	1,595	0.04
B19-L6	1,957	0.04
B20-L1	1,958	0.04
B20-L2	1,595	0.04
B20-L3	1,595	0.04
B20-L4	1,595	0.04
B20-L5	1,595	0.04
B20-L6	1,957	0.04
B21-L1	1,958	0.04
B21-L2	1,595	0.04
B21-L3	1,595	0.04
B21-L4	1,595	0.04
B21-L5	1,595	0.04
B21-L6	1,957	0.04
B22-L1	1,958	0.04
B22-L2	1,595	0.04
B22-L3	1,595	0.04
B22-L4	1,595	0.04
B22-L5	1,595	0.04
B22-L6	1,958	0.04
B23-L1	1,957	0.04
B23-L2	1,595	0.04
B23-L3	1,595	0.04
B23-L4	1,595	0.04
B23-L5	1,595	0.04
B23-L6	1,958	0.04
B24-L1	1,957	0.04
B24-L2	1,595	0.04
B24-L3	1,595	0.04
B24-L4	1,595	0.04
B24-L5	1,595	0.04
B24-L6	1,957	0.04
B25-L1	1,957	0.04
B25-L2	1,595	0.04
B25-L3	1,595	0.04
B25-L4	1,595	0.04
B25-L5	1,595	0.04
B25-L6	1,957	0.04
B26-L1	1,958	0.04
B26-L2	1,595	0.04
B26-L3	1,595	0.04
B26-L4	1,595	0.04
B26-L5	1,595	0.04
B26-L6	1,957	0.04
B27-L1	1,957	0.04
B27-L2	1,595	0.04
B27-L3	1,958	0.04
B28-L1	1,957	0.04
B28-L2	1,595	0.04
B28-L3	1,595	0.04
B28-L4	1,595	0.04
B28-L5	1,595	0.04
B28-L6	1,957	0.04
B29-L1	1,958	0.04

PARCEL AREA TABLE		
PARCEL	AREA SF	AREA AC
B29-L2	1,595	0.04
B29-L3	1,595	0.04
B29-L4	1,595	0.04
B29-L5	1,595	0.04
B29-L6	1,958	0.04
B30-L1	1,957	0.04
B30-L2	1,595	0.04
B30-L3	1,595	0.04
B30-L4	1,595	0.04
B30-L5	1,595	0.04
B30-L6	1,957	0.04
B31-L1	1,958	0.04
B31-L2	1,595	0.04
B31-L3	1,595	0.04
B31-L4	1,595	0.04
B31-L5	1,595	0.04
B31-L6	1,957	0.04
B32-L1	1,958	0.04
B32-L2	1,595	0.04
B32-L3	1,595	0.04
B32-L4	1,595	0.04
B32-L5	1,595	0.04
B32-L6	1,958	0.04
B33-L1	1,957	0.04
B33-L2	1,595	0.04
B33-L3	1,595	0.04
B33-L4	1,595	0.04
B33-L5	1,595	0.04
B33-L6	1,957	0.04
B34-L1	1,957	0.04
B34-L2	1,595	0.04
B34-L3	1,595	0.04
B34-L4	1,595	0.04
B34-L5	1,957	0.04
B35-L1	1,958	0.04
B35-L2	1,595	0.04
B35-L3	1,595	0.04
B35-L4	1,595	0.04
B35-L5	1,595	0.04
B35-L6	1,958	0.04
B36-L1	1,958	0.04
B36-L2	1,595	0.04
B36-L3	1,595	0.04
B36-L4	1,595	0.04
B36-L5	1,595	0.04
B36-L6	1,958	0.04
B37-L1	1,957	0.04
B37-L2	1,595	0.04
B37-L3	1,595	0.04
B37-L4	1,595	0.04
B37-L5	1,595	0.04
B37-L6	1,958	0.04
B38-L1	1,958	0.04
B38-L2	1,595	0.04
B38-L3	1,595	0.04
B38-L4	1,595	0.04
B38-L5	1,595	0.04
B38-L6	1,957	0.04
B39-L1	1,958	0.04
B39-L2	1,595	0.04

PARCEL AREA TABLE		
PARCEL	AREA SF	AREA AC
B39-L3	1,595	0.04
B39-L4	1,595	0.04
B39-L5	1,595	0.04
B39-L6	1,958	0.04
B40-L1	1,958	0.04
B40-L2	1,595	0.04
B40-L3	1,595	0.04
B40-L4	1,958	0.04
B41-L1	1,958	0.04
B41-L2	1,595	0.04
B41-L3	1,595	0.04
B41-L4	1,595	0.04
B41-L5	1,595	0.04
B41-L6	1,957	0.04
B42-L1	1,958	0.04
B42-L2	1,595	0.04
B42-L3	1,595	0.04
B42-L4	1,595	0.04
B42-L5	1,595	0.04
B42-L6	1,958	0.04
B43-L1	1,958	0.04
B43-L2	1,595	0.04
B43-L3	1,595	0.04
B43-L4	1,595	0.04
B43-L5	1,595	0.04
B43-L6	1,958	0.04
B44-L1	1,957	0.04
B44-L2	1,595	0.04
B44-L3	1,595	0.04
B44-L4	1,595	0.04
B44-L5	1,595	0.04
B44-L6	1,958	0.04
B45-L1	1,957	0.04
B45-L2	1,595	0.04
B45-L3	1,595	0.04
B45-L4	1,595	0.04
B45-L5	1,595	0.04
B45-L6	1,957	0.04
B46-L1	2,160	0.05
B46-L2	1,800	0.04
B46-L3	1,800	0.04
B46-L4	1,800	0.04
B46-L5	1,800	0.04
B46-L6	2,160	0.05
B47-L1	2,160	0.05
B47-L2	1,800	0.04
B47-L3	1,800	0.04
B47-L4	2,160	0.05
B48-L1	2,160	0.05
B48-L2	1,800	0.04
B48-L3	1,800	0.04
B48-L4	2,160	0.05
B49-L1	2,160	0.05
B49-L2	1,800	0.04
B49-L3	1,800	0.04
B49-L4	2,160	0.05
B50-L1	2,160	0.05
B50-L2	1,800	0.04
B50-L3	1,800	0.04
B50-L4	2,160	0.05

PARCEL AREA TABLE		
PARCEL	AREA SF	AREA AC
B51-L1	2,160	0.05
B51-L2	1,800	0.04
B51-L3	1,800	0.04
B51-L4	2,160	0.05
B52-L1	2,160	0.05
B52-L2	1,800	0.04
B52-L3	1,800	0.04
B52-L4	1,800	0.04
B52-L5	1,800	0.04
B52-L6	2,160	0.05
B53-L1	2,160	0.05
B53-L2	1,800	0.04
B53-L3	1,800	0.04
B53-L4	1,800	0.04
B53-L5	1,800	0.04
B53-L6	2,160	0.05
B54-L1	2,160	0.05
B54-L2	1,800	0.04
B54-L3	1,800	0.04
B54-L4	1,800	0.04
B54-L5	1,800	0.04
B54-L6	2,160	0.05
B55-L1	2,160	0.05
B55-L2	1,800	0.04
B55-L3	1,800	0.04
B55-L4	1,800	0.04
B55-L5	1,800	0.04
B55-L6	2,160	0.05
B56-L1	2,160	0.05
B56-L2	1,800	0.04
B56-L3	1,800	0.04
B56-L4	1,800	0.04
B56-L5	1,800	0.04
B56-L6	2,160	0.05
B57-L1	2,160	0.05
B57-L2	1,800	0.04
B57-L3	1,800	0.04
B57-L4	1,800	0.04
B57-L5	1,800	0.04
B57-L6	2,160	0.05
B58-L1	2,160	0.05
B58-L2	1,800	0.04
B58-L3	1,800	0.04
B58-L4	1,800	0.04
B58-L5	1,800	0.04
B58-L6	2,160	0.05
B59-L1	2,160	0.05
B59-L2	1,800	0.04
B59-L3	1,800	0.04
B59-L4	1,800	0.04
B59-L5	1,800	0.04
B59-L6	2,160	0.05
B60-L1	2,160	0.05
B60-L2	1,800	0.04
B60-L3	1,800	0.04
B60-L4	2,160	0.05
B61-L1	2,160	0.05
B61-L2	1,800	0.04
B61-L3	1,800	0.04
B61-L4	1,800	0.04

PARCEL AREA TABLE		
PARCEL	AREA SF	AREA AC
B61-L5	1,800	0.04
B61-L6	2,160	0.05
B62-L1	2,160	0.05
B62-L2	1,800	0.04
B62-L3	1,800	0.04
B62-L4	2,160	0.05
B63-L1	2,160	0.05
B63-L2	1,800	0.04
B63-L3	1,800	0.04
B63-L4	1,800	0.04
B63-L5	1,800	0.04
B63-L6	2,160	0.05
B64-L1	2,160	0.05
B64-L2	1,800	0.04
B64-L3	1,800	0.04
B64-L4	2,160	0.05
B65-L1	2,160	0.05
B65-L2	1,800	0.04
B65-L3	1,800	0.04
B65-L4	2,160	0.05
B66-L1	2,160	0.05
B66-L2	1,800	0.04
B66-L3	1,800	0.04
B66-L4	1,800	0.04
B66-L5	1,800	0.04
B66-L6	2,160	0.05
B67-L1	2,160	0.05
B67-L2	1,800	0.04
B67-L3	1,800	0.04
B67-L4	1,800	0.04
B67-L5	1,800	0.04
B67-L6	2,160	0.05
OUTLOT A	48,673	1.12
OUTLOT B	109,525	2.51
OUTLOT C	2,980	0.07
OUTLOT D	289,772	6.65
OUTLOT E	58,419	1.34
OUTLOT F	40,518	0.93
OUTLOT G	349,546	8.02
OUTLOT H	9,402	0.22
OUTLOT I	58,865	1.35
OUTLOT J	14,287	0.33
OUTLOT K	180,979	4.15
OUTLOT L	167,682	3.85
OUTLOT M	137,924	3.17
OUTLOT N	379,408	8.71
OUTLOT O	29,281	0.67
OUTLOT P	1,540,442	35.36
OUTLOT Q	2,413,726	55.41
OUTLOT R	2,600	0.06
ROW-INDIAN	169,806	3.90
ROW-INTER-N	313,205	7.19
ROW-INTER-S	458,871	10.53
ROW-KEATS	324,246	7.44
ROW-RAVINE	387,068	8.89
TOTAL	10,432,579	239.50

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RAVARA TRAILS
COTTAGE GROVE, MINNESOTA

PRELIMINARY PLAT SUBMITTAL
PARCEL AREA TABLE

DATE	DESCRIPTION
2025-12-31	City Submittal

CERTIFICATION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Civil Engineer under the laws of the State of MINNESOTA.

PRELIMINARY
FOR REVIEW ONLY
NOT FOR CONSTRUCTION

Clark Wicklund

Date 40922 License no.

QA/QC CHECK

By Date

PROJECT TEAM DATA

Designed By: CJW
Drafted By: LRJ
Project No.: 4000570-00

19

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SITE PLAN DATA:

PIDS: 11.027.21.24.0001	60.54 AC
11.027.21.23.0001	20.01 AC
11.027.21.32.0001	40.34 AC
11.027.21.31.0001	79.47 AC
11.027.21.33.0001	39.13 AC
TOTAL GROSS AREA	239.49 AC
OUTLOT P	35.36 AC
OUTLOT Q	55.41 AC
TOTAL PROJECT AREA AREA	148.72 AC
OUTLOT K (PARK DEDICATION)	4.15 AC
EXISTING ROW (KEATS AVE S)	3.55 AC
PROPOSED ROW DEDICATION (KEATS AVE S)	3.89 AC
NET TOTAL PRODUCT AREA	137.13 AC
PROPOSED ROW (FUTURE RAVINE PKWY)	8.89 AC
PROPOSED ROW (FUTURE INDIAN BLVD S)	3.90 AC
PROPOSED ROW (INTERIOR NORTH)	7.19 AC
PROPOSED ROW (INTERIOR SOUTH)	10.53 AC

SITE PLAN OUTLOT DATA:

OUTLOT	OWNER
OUTLOT WITH PONDS: A, D, F, G	CITY
OUTLOT: K (CITY PARK)	CITY
OUTLOT WITH PIPELINE: B, E, I, J, P, O	HOA/DEVELOPER
OUTLOT: C, H, L, M, N, O	HOA/DEVELOPER

SITE PLAN LOT DATA:

URBAN TOWNHOME:

LOT WIDTH MINIMUM:	22 FT
LOT DEPTH MINIMUM:	72.5 FT
END LOT WIDTH:	27 FT
FRONT DOOR SETBACK:	15 FT
KEATS AVE FRONT DOOR SETBACK:	25 FT
GARAGE SETBACK:	25 FT
CORNER SETBACK:	20 FT
BUILDING SEPARATION:	20 FT

SUBURBAN TOWNHOME:

LOT WIDTH MINIMUM:	25 FT
LOT DEPTH MINIMUM:	72 FT
END LOT WIDTH:	30 FT
FRONT SETBACK:	25 FT
CORNER SETBACK:	20 FT
BUILDING SEPARATION:	15 FT

VILLA SINGLE FAMILY LOTS:

LOT WIDTH MINIMUM:	40 FT
LOT DEPTH MINIMUM:	130 FT
SIDE YARD SETBACK:	5 FT
SIDE YARD SETBACK:	5 FT

65' SINGLE FAMILY LOTS:

LOT WIDTH MINIMUM:	65 FT
LOT DEPTH MINIMUM:	130 FT
SIDE YARD SETBACK:	5 FT (GARAGE SIDE)
	7.5 FT (NON-GARAGE SIDE)

LOT TYPE:	UNITS	AREA (AC)	DENSITY (UNITS/AC)
URBAN TOWNHOMES	192	17.83	10.77
SUBURBAN TOWNHOMES	114	15.31	7.45
VILLA SINGLE FAMILY LOTS	105	34.42	3.05
65' SINGLE FAMILY LOTS	164	69.56	2.36
TOTAL UNITS	575	137.12	4.19

GUEST PARKING STALLS: 73

IMPERVIOUS SURFACES:

MAX. IMPERVIOUS SURFACE ALLOWED:

VILLA SINGLE FAMILY LOTS = 50% MAX. PER LOT

65' SINGLE FAMILY LOTS = 40% MAX PER LOT

ATTACHED DWELLINGS = 40% OF TOTAL AREA

SITE NOTES:

1. SEE SHEET 21 FOR TYPICAL LOT DETAILS AND TYPICAL ROAD SECTIONS.
2. ALL CURB RETURNS ARE MEASURED FROM BACK OF CURB UNLESS OTHERWISE NOTED.

LEGEND:

- EASEMENT LINE
- BUILDING SETBACK
- PROPERTY LINE
- LOT LINE
- ROW
- STOP/STREET SIGN
- STREET LIGHT
- POND MAINTENANCE ACCESS (TURF)
- CITY OPEN/PARK MARKER SIGN

N

0 75 150 300

SCALE IN FEET

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TWIN CITIES LAND DEVELOPMENT

RAVARA TRAILS

COTTAGE GROVE, MINNESOTA

PRELIMINARY PLAT SUBMITTAL

SITE PLAN - OVERALL

DATE	DESCRIPTION
2025-12-31	City Submittal

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FOR REVIEW
NOT FOR CONSTRUCTION

Clark Wicklund — 40922
Date — License no.

QA/QC CHECK

By — Date

PROJECT TEAM DATA

Designed By: CJW
Drafted By: LRJ
Project No.: 4000570-00

20

Sheet 20 of 91

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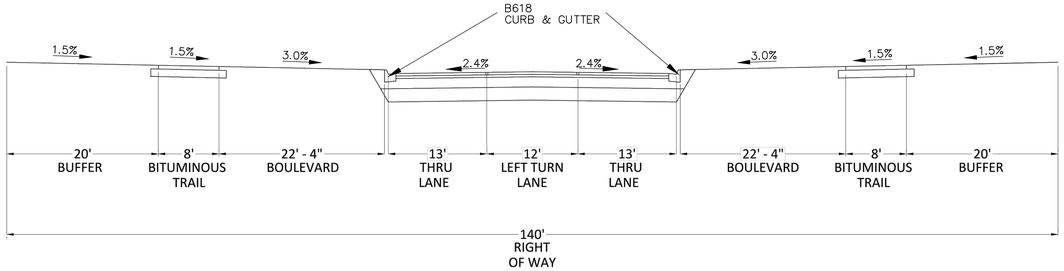
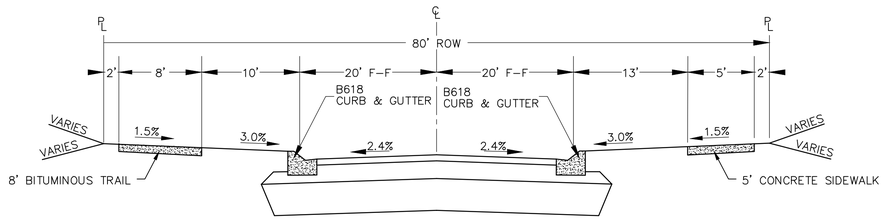
TYPICAL ROAD SECTIONS



RAVINE PARKWAY S (BY OTHERS) 140' ROW ROAD SECTION

NOT TO SCALE



TYPICAL 80' ROW ROAD SECTION

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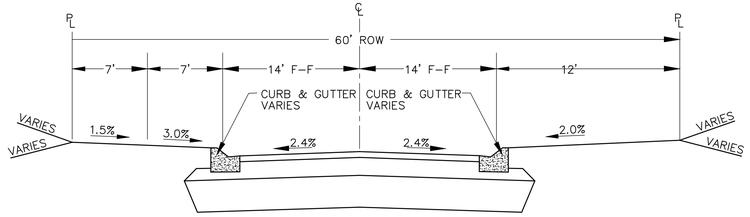
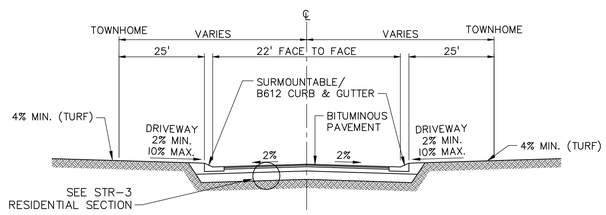


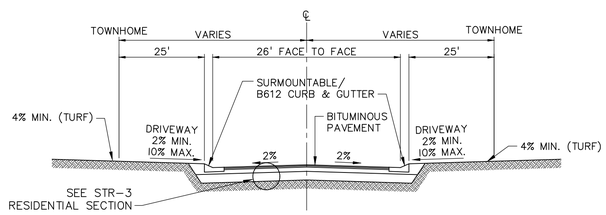
TYPICAL 60' ROW ROAD SECTION

NOT TO SCALE



SUBURBAN TH PRIVATE ROAD SECTION (22' F-F)

NOT TO SCALE

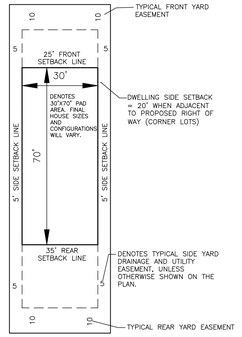


URBAN TH PRIVATE ROAD SECTION (26' F-F)

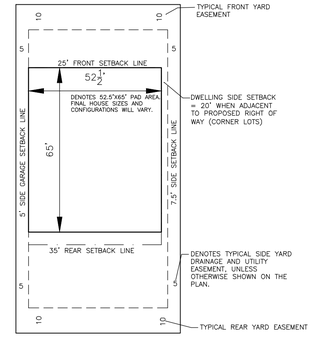
NOT TO SCALE

DEVELOPMENT LOT DETAILS

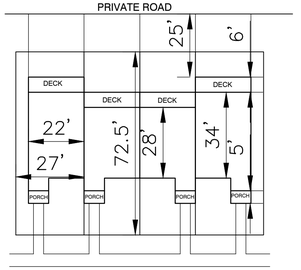
40'x130' SINGLE FAMILY



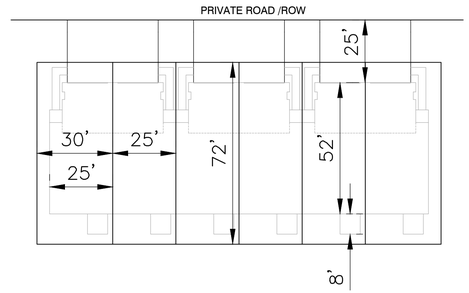
65'x130' SINGLE FAMILY



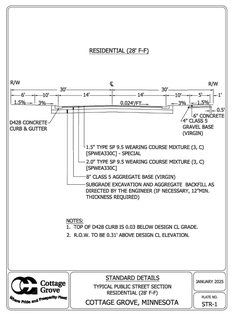
URBAN TOWNHOME FRONT FACE/REAR LOAD

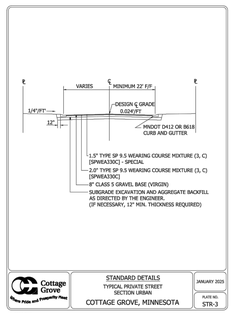


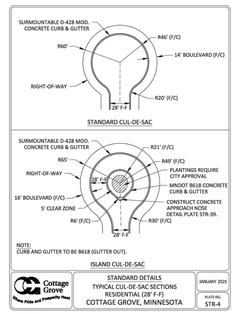
SUBURBAN TOWNHOME PATIO/FRONT LOAD

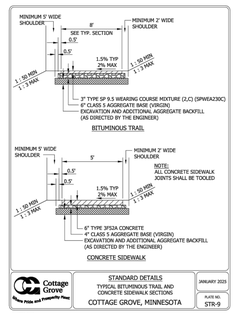


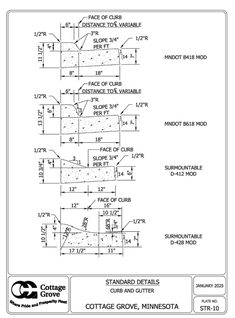
CITY OF COTTAGE GROVE STANDARD DETAILS

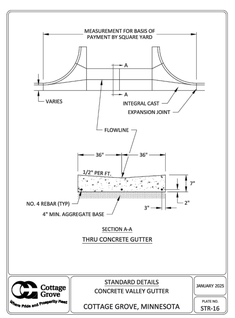


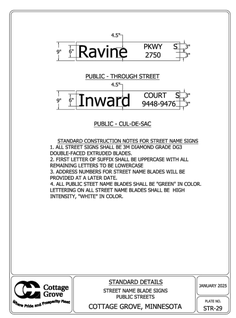


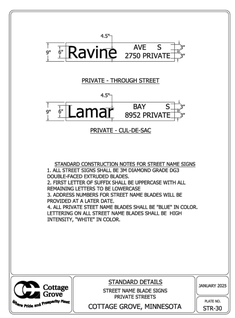












STANDARD DETAILS TYPICAL PUBLIC STREET SECTION RESIDENTIAL (28' F-F) COTTAGE GROVE, MINNESOTA	JANUARY 2025	PLATE NO. STR-1	48_STR1.DWG
STANDARD DETAILS TYPICAL PRIVATE STREET SECTION URBAN COTTAGE GROVE, MINNESOTA	JANUARY 2025	PLATE NO. STR-3	48_STR3.DWG
STANDARD DETAILS TYPICAL CUL-DE-SAC SECTIONS RESIDENTIAL (28' F-F) COTTAGE GROVE, MINNESOTA	JANUARY 2025	PLATE NO. STR-4	48_STR4.DWG
STANDARD DETAILS TYPICAL BITUMINOUS TRAIL AND CONCRETE SIDEWALK SECTIONS COTTAGE GROVE, MINNESOTA	JANUARY 2025	PLATE NO. STR-9	48_STR9.DWG
STANDARD DETAILS CURB AND GUTTER COTTAGE GROVE, MINNESOTA	JANUARY 2025	PLATE NO. STR-10	48_STR10.DWG
STANDARD DETAILS CONCRETE VALLEY GUTTER COTTAGE GROVE, MINNESOTA	JANUARY 2025	PLATE NO. STR-16	48_STR16.DWG
STANDARD DETAILS STREET NAME BLADE SIGNS PUBLIC STREETS COTTAGE GROVE, MINNESOTA	JANUARY 2025	PLATE NO. STR-29	48_STR29.DWG
STANDARD DETAILS STREET NAME BLADE SIGNS PRIVATE STREETS COTTAGE GROVE, MINNESOTA	JANUARY 2025	PLATE NO. STR-30	48_STR30.DWG

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TWIN CITIES LAND DEVELOPMENT

RAVARA TRAILS
COTTAGE GROVE, MINNESOTA

PRELIMINARY PLAT SUBMITTAL
SITE PLAN NOTES AND DETAILS

DATE	DESCRIPTION
2025-12-31	City Submittal

CERTIFICATION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Civil Engineer under the laws of the State of MINNESOTA.

PRELIMINARY
FOR REVIEW
NOT FOR CONSTRUCTION

Clark Wicklund — 40922
Date — License no.

QA/QC CHECK

By — Date

PROJECT TEAM DATA

Designed By: CJW
Drafted By: LRJ
Project No.: 4000570-00

21

Sheet 21 of 91

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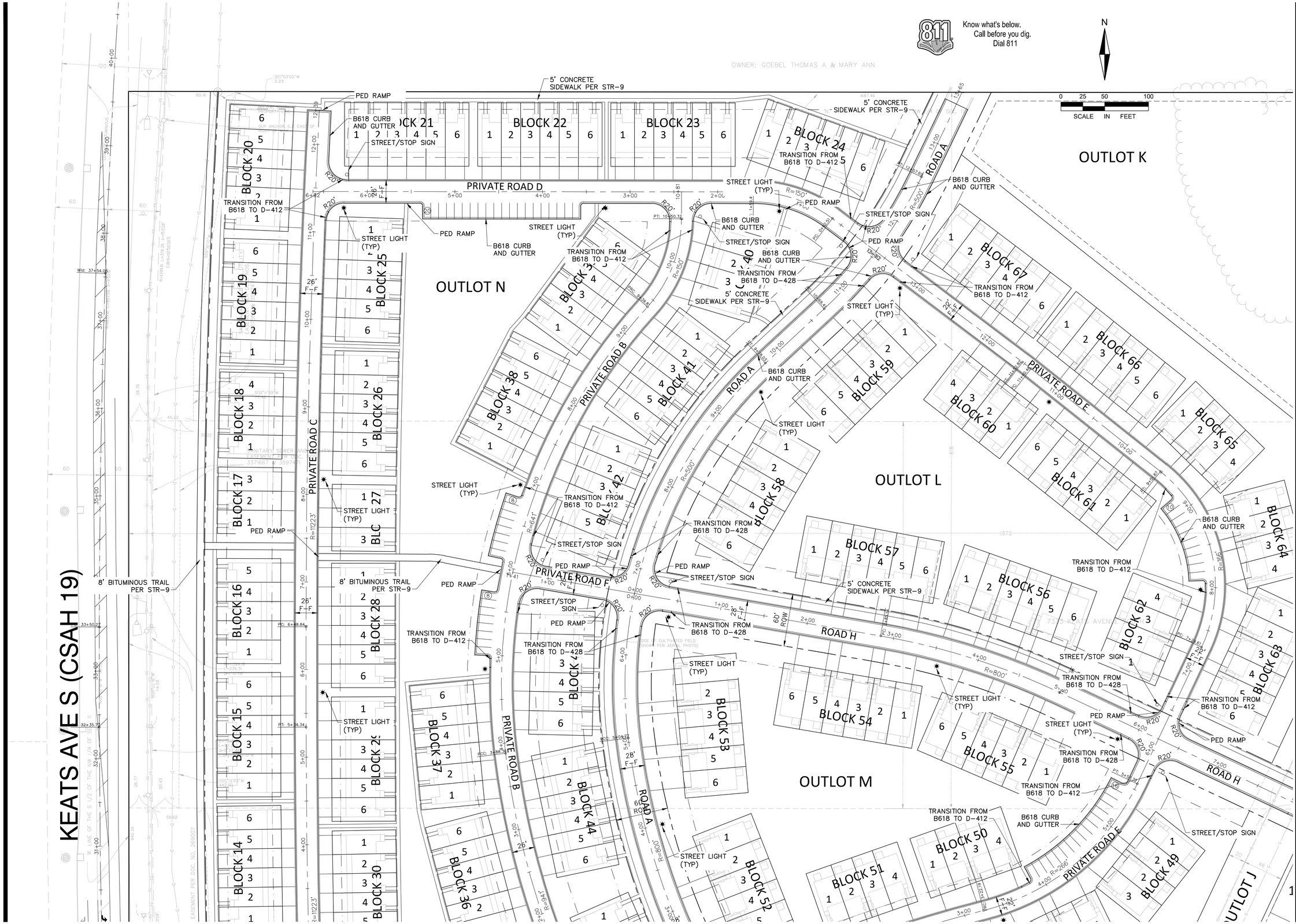

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TWIN CITIES LAND DEVELOPMENT

RAVARA TRAILS

COTTAGE GROVE, MINNESOTA

PRELIMINARY PLAT SUBMITTAL

SITE PLAN - VIEW A

DATE	DESCRIPTION
2025-12-31	City Submittal

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Clark Vinci Lund

Date 40922 License no.

QA/QC CHECK

By Date

PROJECT TEAM DATA

Designed By: CJW

Drafted By: LRJ

Project No.: 4000570-00

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TWIN CITIES LAND DEVELOPMENT

RAVARA TRAILS

COTTAGE GROVE, MINNESOTA

PRELIMINARY PLAT SUBMITTAL

SITE PLAN - VIEW B

DATE	DESCRIPTION
2025-12-31	City Submittal

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Clark Wicklund

Date 40922 License no.

QA/QC CHECK

By Date

PROJECT TEAM DATA

Designed By: CJW

Drafted By: LRJ

Project No.: 4000570-00

23

Sheet 23 of 91

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TWIN CITIES LAND DEVELOPMENT

RAVARA TRAILS

COTTAGE GROVE, MINNESOTA

PRELIMINARY PLAT SUBMITTAL

SITE PLAN - VIEW C

DATE	DESCRIPTION
2025-12-31	City Submittal

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FOR REVIEW PRELIMINARY NOT FOR CONSTRUCTION

Clark Wicklund
Date 40922 License no.

QA/QC CHECK

By Date

PROJECT TEAM DATA

Designed By: CJW
Drafted By: LRJ
Project No.: 4000570-00

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Sheet 24 of 91

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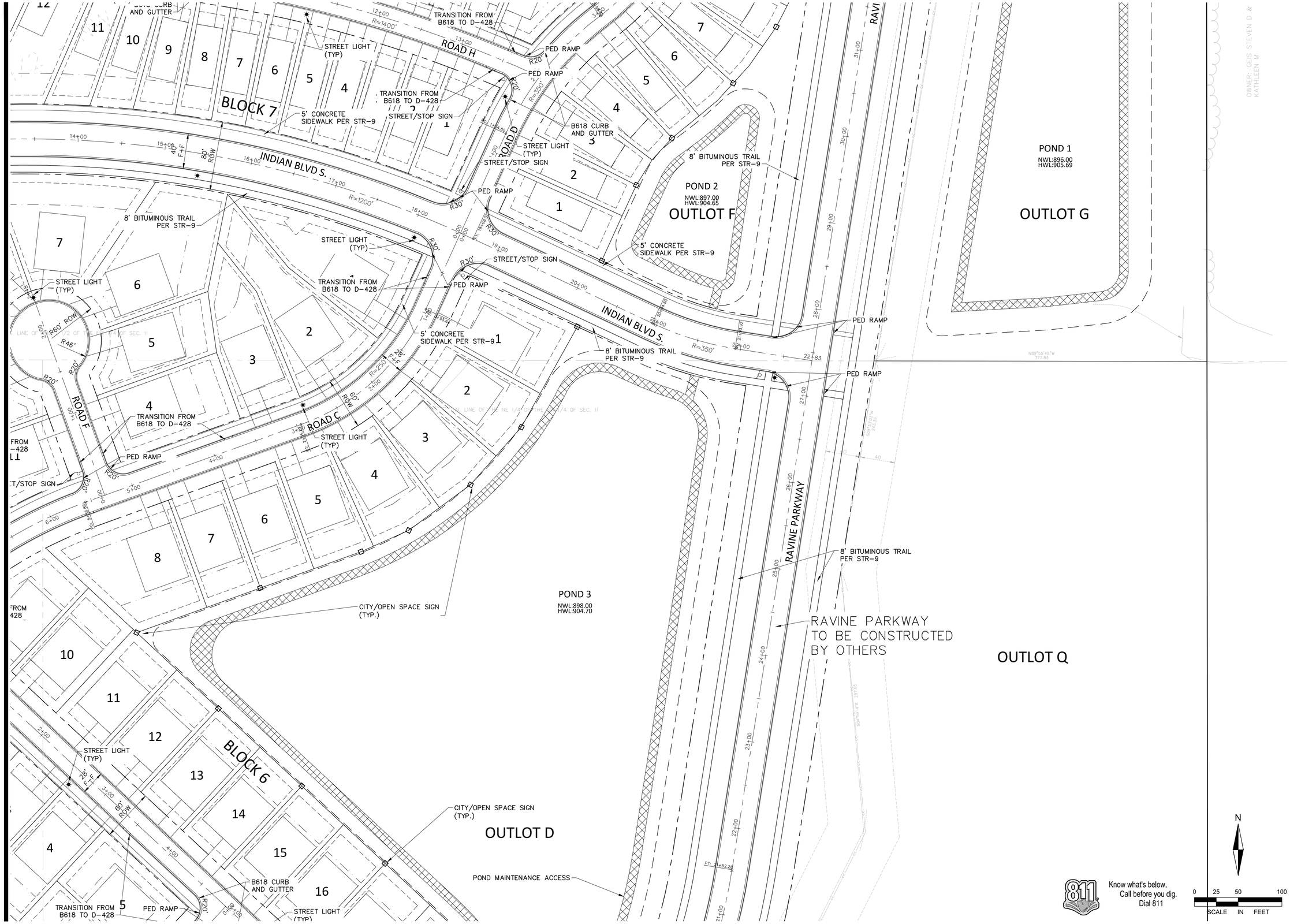

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TWIN CITIES LAND DEVELOPMENT

RAVARA TRAILS

COTTAGE GROVE, MINNESOTA

PRELIMINARY PLAT SUBMITTAL

SITE PLAN - VIEW D

DESCRIPTION	DATE
City Submittal	2025-12-31

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PROJECT TEAM DATA

Designed By: CJW
Drafted By: LRJ
Project No.: 4000570-00

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Sheet 25 of 91

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TWIN CITIES LAND DEVELOPMENT

RAVARA TRAILS
COTTAGE GROVE, MINNESOTA

PRELIMINARY PLAT SUBMITTAL

SITE PLAN - VIEW E

DESCRIPTION	DATE
City Submittal	2026-12-31

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Clark Wicklund
Date
40922
License no.

QA/QC CHECK

By
Date

PROJECT TEAM DATA

Designed By: CJW
Drafted By: LRJ
Project No.: 4000570-00

26

Sheet 26 of 91

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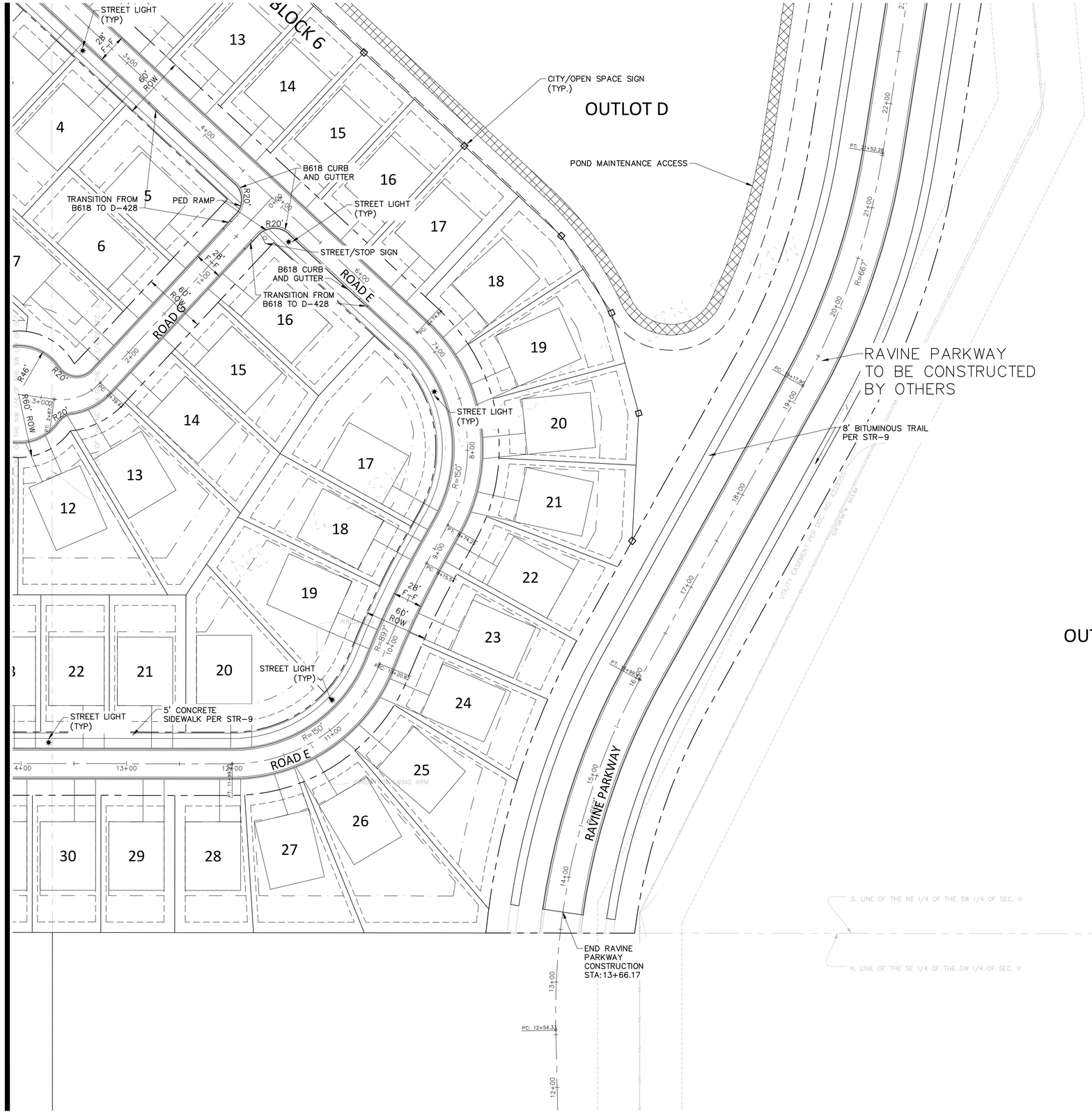

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TWIN CITIES LAND DEVELOPMENT

RAVARA TRAILS

COTTAGE GROVE, MINNESOTA

PRELIMINARY PLAT SUBMITTAL

SITE PLAN - VIEW F

DESCRIPTION	DATE
City Submittal	2025-12-31

CERTIFICATION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Civil Engineer under the laws of the State of MINNESOTA

PRELIMINARY
FOR REVIEW
NOT FOR CONSTRUCTION

Clark Wicklund — 40922
Date — License no.

QA/QC CHECK

By — Date

PROJECT TEAM DATA

Designed By: CJW
Drafted By: LRJ
Project No.: 4000570-00

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DEMOLITION AND REMOVALS PLAN

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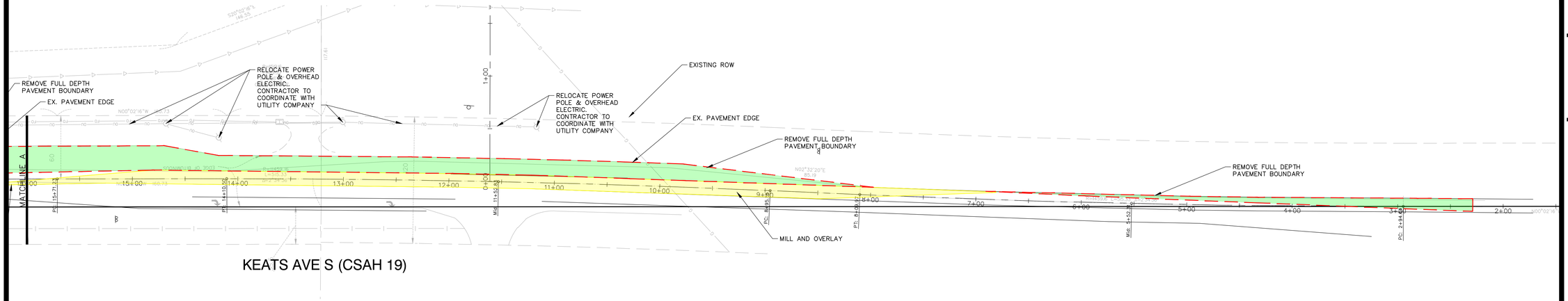
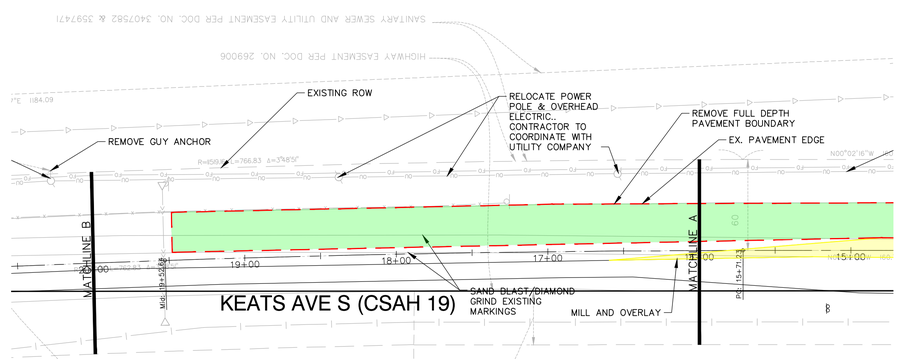
STA: 1+00 - 16+00



LEGEND

- REMOVE FULL DEPTH PAVEMENT
- MILL AND OVERLAY
- REMOVE PAVEMENT

STA:16+00 - 20+00



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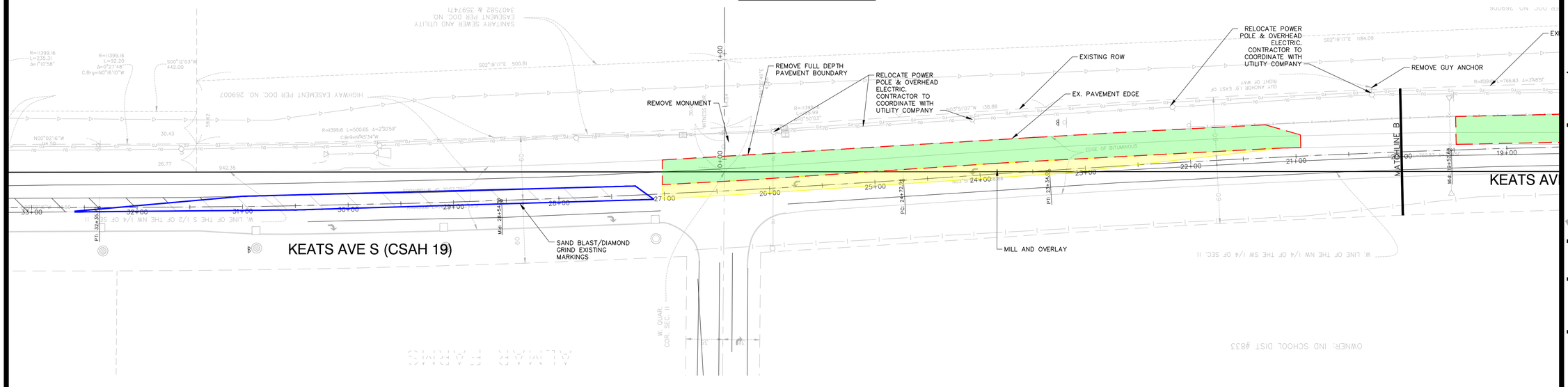
STA: 20+00 - 33+00



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TWIN CITIES LAND DEVELOPMENT TC LD

RAVARA TRAILS

COTTAGE GROVE, MINNESOTA

PRELIMINARY PLAT SUBMITTAL KEATS AVE. TURN LANE DEMO AND REMOVALS

DATE	DESCRIPTION
2025-12-31	City Submittal

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40922
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Designed By: CJW
Drafted By: LRJ
Project No.: 4000570-00

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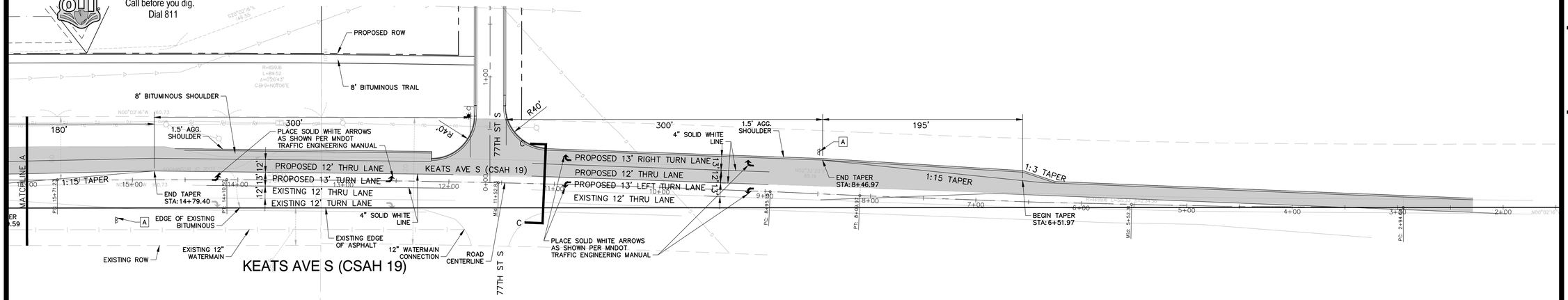
SITE AND PAVEMENT PLAN

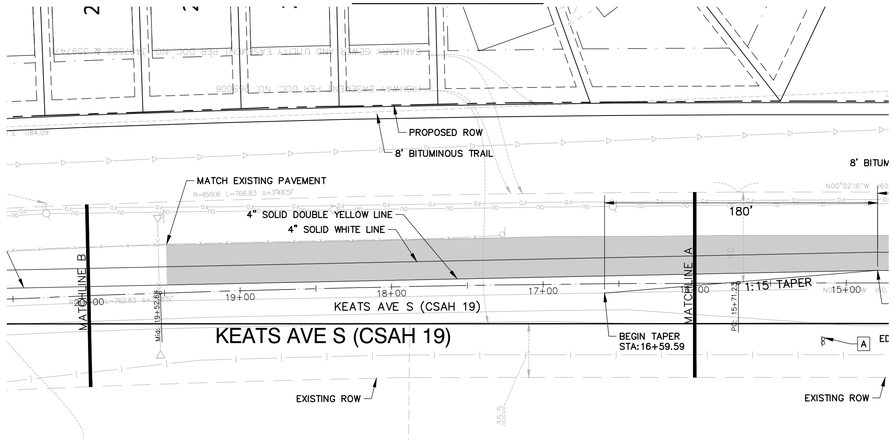
STA: 1+50 - 16+00



LEGEND

FULL DEPTH PAVEMWNT PAVEMENT (SEE INSET A)

STA:16+00 - 20+00



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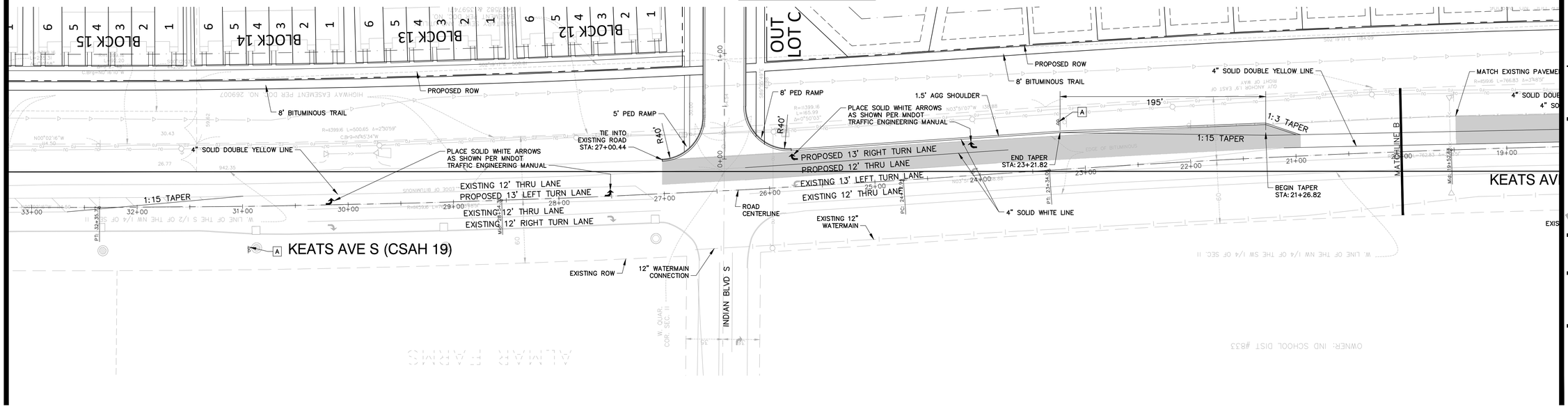

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TWIN CITIES LAND DEVELOPMENT

RAVARA TRAILS
COTTAGE GROVE, MINNESOTA

PRELIMINARY PLAT SUBMITTAL
KEATS AVE. TURN LANE SITE AND PAVEMENT PLAN

DESCRIPTION	DATE
City Submittal	2025-12-31

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Date 40922 License no.

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Project No.: 4000570-00

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TURN LANE NOTES

1. ALL GRADES ARE TO FINISHED PAVEMENT UNLESS OTHERWISE NOTED.
2. GOVERNING SPECIFICATIONS SHALL BE THE LATEST EDITION OF MNDOT "STANDARD SPECIFICATIONS FOR CONSTRUCTION."
3. ALL TEMPORARY TRAFFIC CONTROL DEVICES AND ALL PERMANENT SIGNING & MARKINGS SHALL CONFORM TO THE MMUTCD, INCLUDING "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS, 2014."
4. CONTRACTOR SHALL NOTIFY DAKOTA COUNTY HIGHWAY DEPT. AND SUBMIT A TRAFFIC CONTROL PLAN FOR APPROVAL PRIOR TO PERFORMING ANY WORK WITHIN THE COUNTY RIGHT-OF-WAY.
5. CONTRACTOR SHALL REMOVE ALL CONFLICTING PAVEMENT MARKINGS.
6. ALL TURN LANE STRIPING SHALL BE COMPLETED USING MULTI-COMPONENT PAINT.
7. CONTRACTOR SHALL COORDINATE WORK AROUND AND RELOCATION OF SMALL UTILITIES.
8. DESIGN OF TURN LANES HAVE BEEN IN ACCORDANCE WITH THE TYPICAL SECTIONS PROVIDED BY THE CITY OF LAKEVILLE.

LEGEND

NEW FULL DEPTH PAVEMENT

MILL AND OVERLAY

REMOVE PAVEMENT

NEW BITUMINOUS PAVEMENT (SEE INSET A)

SIGN SCHEDULE

SIGN	SIGN NO.	SIZE	QUANTITY
(A) ONLY ONLY ONLY	R3-8ACA	54" X 30" (BLACK ON WHITE)	4

(INSET A)



LANE PAVEMENT

(SECTION TO BE PROVIDED BY WAASHINGTON COUNTY)

- 4" TYPE SP 12.5 WEARING COURSE MIXTURE (3, C), SPWEB340C (TWO EQUAL LIFTS)
- 2" TYPE SP 12.5 NON-WEARING COURSE MIXTURE (3,B) MNDOT SPEC. 2360, SPNWB330B
- 13.5" AGGREGATE BASE (CV) CLASS 5 MNDOT SPEC. 2211
- 2' SELECT GRANULAR

LEGEND

- NEW FULL DEPTH PAVEMENT THRU AND TURN LANES
- NEW FULL DEPTH PAVEMENT SHOULDER
- MILL & OVERLAY
- INPLACE ROADWAY

SPECIFIC NOTES:

(A) BACKFILL WITH SELECT GRADING MATERIAL.

(B) 1.5' OBSTACLE FREE CLEAR ZONE FROM BACE OF CURB (TYP.)

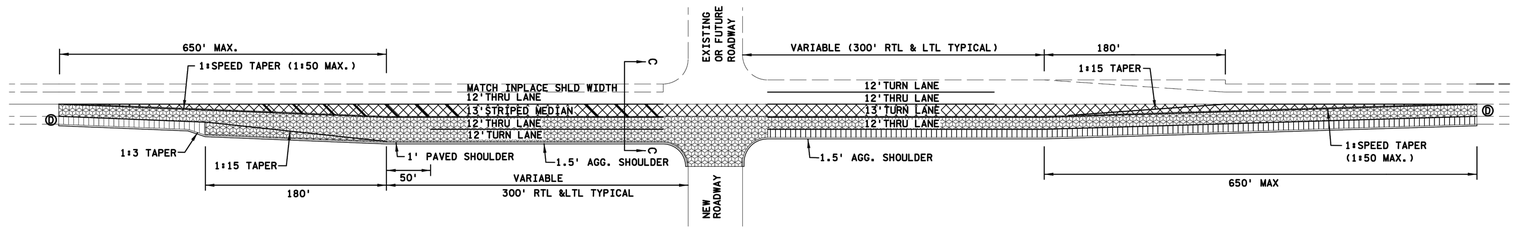
(C) BITUMINOUS PAVEMENT SHALL INCLUDE A SAFETY EDGE. SEE MNDOT TECH. MEMO 16-01-T-01 FOR SAFETY EDGE GUIDELINES.

(D) MATCH INPLACE SHOULDER WIDTH.

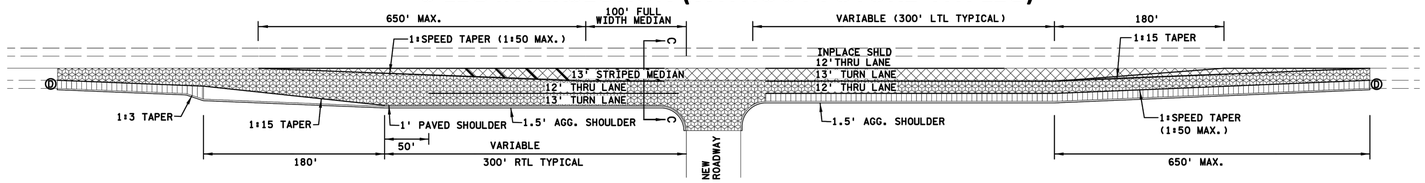
GENERAL NOTES:

- DIMENSIONS SHOWN ARE FOR 12 FOOT LANES WITH A 50 MPH DESIGN SPEED AND CALCULATED AT A 50:1 TAPER.
- DO NOT HATCH MEDIAN AREAS LESS THAN 8' WIDE.
- SEE WASHINGTON COUNTY STANDARD PLANS WC-9000 THRU WC-9009 FOR STRIPING DETAILS.
- DRAWING IS NOT TO SCALE.

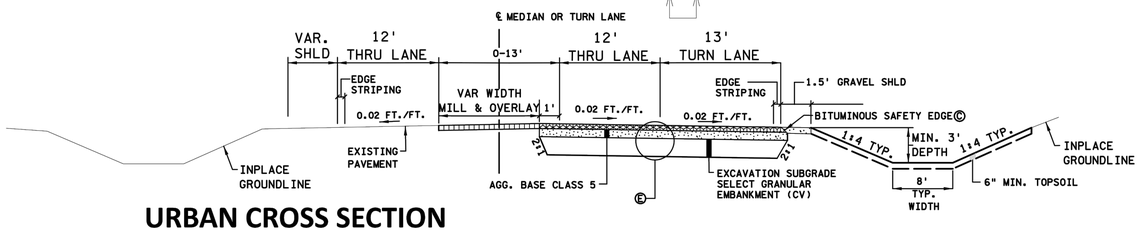
4-LEG INTERSECTION



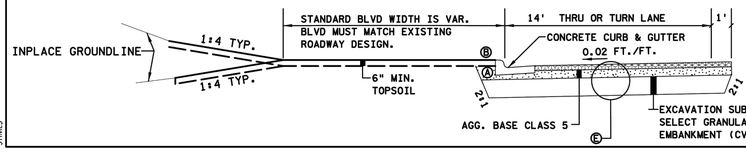
3 LEG INTERSECTION (WITHOUT FUTURE 4TH LEG)



TYPICAL CROSS SECTION C C (RURAL)



URBAN CROSS SECTION



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$TIME$

Washington County	DRAWN BY XXX DESIGNED BY XXX CHECKED BY XXX	LAST REVISION: 05/30/2025	WASHINGTON COUNTY GUIDANCE DOCUMENT TURN LANE STANDARDS NEW ACCESS WIDENING TO NEAR SIDE	SHEET 3 OF 3

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RAVARA TRAILS

COTTAGE GROVE, MINNESOTA

PRELIMINARY PLAT SUBMITTAL

KEATS AVE. TURN LANE DETAILS

DESCRIPTION	DATE
City Submittal	2025-12-31

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PRELIMINARY FOR REVIEW NOT FOR CONSTRUCTION

Clark Wicklund — 40922

Date — License no.

QA/QC CHECK

By — Date

PROJECT TEAM DATA

Designed By: CJW

Drafted By: LRJ

Project No.: 4000570-00

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Sheet 30 of 91

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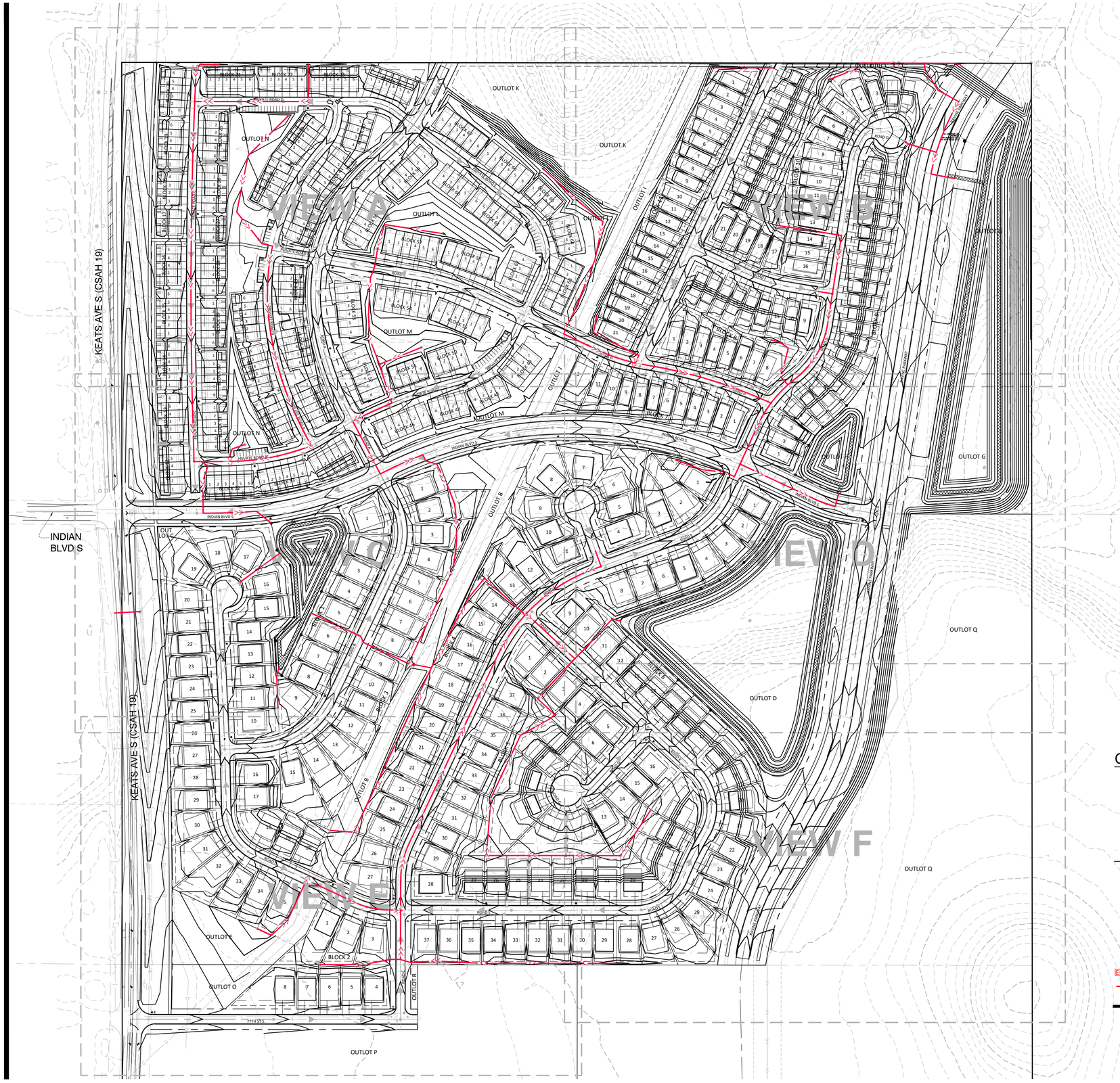

GRADING NOTES:

1. ALL FINISHED GRADES SHALL SLOPE AWAY FROM PROPOSED BUILDINGS AT MINIMUM GRADE OF 2.0%. ALL SWALES SHALL HAVE A MINIMUM SLOPE OF 2.00%.
2. THE CONTRACTOR SHALL KEEP THE ADJACENT ROADWAYS FREE OF DEBRIS AND PREVENT THE OFF-SITE TRACKING OF SOIL IN ACCORDANCE WITH THE REQUIREMENTS OF THE CITY AND WATERSHED.
3. NOTIFY GOPHER STATE ONE CALL, AT (800)252-1166, 48 HOURS PRIOR TO START OF CONSTRUCTION.
4. ALL IMPROVEMENTS TO CONFORM WITH CITY OF COTTAGE GROVE CONSTRUCTION STANDARDS SPECIFICATION, LATEST EDITION.
5. CONTRACTOR SHALL COORDINATE ANY NECESSARY ROAD CLOSURE OR RESTRICTIONS WITH CITY. NOTIFY THE CITY AT LEAST 48 HOURS IN ADVANCE OF ANY AGREED UPON TRAFFIC CONTROL AND PROVIDE A TRAFFIC CONTROL PLAN.
6. ROCK CONSTRUCTION ENTRANCES SHALL BE PROVIDED AT ALL CONSTRUCTION ACCESS POINTS.
7. REFER TO GEOTECHNICAL REPORT AND PROJECT MANUAL, FOR SOIL CORRECTION REQUIREMENTS AND TESTING REQUIREMENTS.
8. STRIP TOPSOIL PRIOR TO ANY CONSTRUCTION. REUSE STOCKPILE ON SITE. STOCKPILE PERIMETERS MUST BE PROTECTED WITH SILT FENCE.
9. PRIOR TO STARTING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE TO MAKE SURE THAT ALL REQUIRED PERMITS AND APPROVALS HAVE BEEN OBTAINED. NO CONSTRUCTION OR FABRICATION SHALL BEGIN UNTIL THE CONTRACTOR HAS RECEIVED AND THOROUGHLY REVIEWED ALL PLANS AND OTHER DOCUMENTS APPROVED BY ALL OF THE PERMITTING AUTHORITIES.
10. IMMEDIATELY FOLLOWING GRADING OF (3:1 OR GREATER) SIDE SLOPES AND DRAINAGE SWALES, WOOD FIBER BLANKET OR OTHER APPROVED SOIL STABILIZING METHOD (APPROVED BY ENGINEER) SHALL BE APPLIED OVER APPROVED SEED MIXTURE AND A MINIMUM OF 6" TOPSOIL SHALL BE PLACED IN ALL PUBLIC/CITY ROW BOULEVARD AND MASS GRADED PUBLIC/CITY OUTLOTS. 4" TOPSOIL REQUIRED ELSEWHERE OR PER HOLD DOWN DETAILS.
11. THE GENERAL CONTRACTOR MUST DISCUSS DEWATERING PLANS WITH ALL SUBCONTRACTORS TO VERIFY NPDES REQUIREMENTS. IF DEWATERING IS REQUIRED DURING CONSTRUCTION, CONTRACTOR SHOULD CONSULT WITH EROSION CONTROL INSPECTOR AND ENGINEER TO DETERMINE APPROPRIATE METHOD.
12. REFER TO STORMWATER POLLUTION PREVENTION PLAN (SWPPP) FOR ALL EROSION AND SEDIMENT CONTROL DEVICE LOCATION, DESCRIPTIONS, NOTES AND DETAILS INCLUDING CONCRETE WASHOUT STATION INSTRUCTIONS.
13. FREEBOARD: THE LOW FLOOR ELEVATION OF PADS SHALL BE AT MINIMUM 3.0 FT ABOVE THE CRITICAL EVENT 100-YEAR ELEVATION AND AT MINIMUM 2.0 FT ABOVE THE EMERGENCY OVERFLOW (EOF) ELEVATION OF NEARBY WATERBODIES AND STORMWATER PONDS. FOR BACK/SIDE YARD CONVEYANCE AND TEMPORARY PONDING AREAS THERE MUST BE 1-FT BETWEEN OVERLAND EMERGENCY OVERFLOW ELEVATION AND LOW ADJACENT ELEVATION OF ADJACENT STRUCTURE.
14. SEE GRADING PROFILES SHEET FOR ADDITIONAL GRADING DETAILS ON ALL ROADWAYS.
15. SEE POND PROFILE AND DETAIL SHEETS FOR ADDITIONAL POND CROSS SECTIONS AND DESIGN DETAIL.
16. SEE TREE PRESERVATION PLAN SHEETS FOR TREE REMOVAL AND TREE PRESERVATION DETAILS.
17. BEDROCK SHALL BE REMOVED AS RECOMMENDED IN GOETECHNICAL REPORT AND PER DETAILS IN THIS PLAN SET.

RETAINING WALL NOTES:

1. ALL RETAINING WALLS SHALL BE ROUGH GRADED AT A 2:1 SLOPE WITH BASE OF SLOPE AT PROPOSED WALL FACE.
2. THE RETAINING WALL SLOPE AREAS ARE TO BE MAINTAINED UNTIL RETAINING WALL CONSTRUCTION OCCURS. ANY EROSION SHALL BE REMEDIED AND RESTORED.
3. BUILDING PERMITS ARE REQUIRED FOR ALL RETAINING WALLS 4 FEET IN HEIGHT OR GREATER AND THE WALLS SHALL BE DESIGNED BY A STRUCTURAL ENGINEER WITH DESIGN REVIEWED AND APPROVED BY THE CITY PRIOR TO INSTALLATION. ANY QUESTIONS REGARDING THE BUILDING PERMITS SHALL BE DIRECTED TO THE CITY BUILDING INSPECTOR.
4. INSTALL SAFETY RAILING ATOP ALL WALLS WHERE REQUIRED BY CODE.
5. RETAINING WALL CONTRACTOR AND/OR RETAINING WALL STRUCTURAL ENGINEER ARE RESPONSIBLE TO REVIEW CIVIL SITE ENGINEERING DRAWINGS. ANY OBSERVED CONCERNS WITH CIVIL SITE ENGINEERING DESIGN ELEMENTS RELATED TO RETAINING WALLS THAT REQUIRE MODIFICATIONS TO THE CIVIL SITE DESIGN IS THEIR RESPONSIBILITY TO COORDINATE WITH PROJECT OWNER AND CIVIL SITE ENGINEER. IF NO COORDINATION IS REQUESTED IT SHALL BE UNDERSTOOD THAT ALL CONDITIONS WITHIN THE CIVIL SITE DESIGN AND PLANS ARE ACCEPTABLE AND ABLE TO BE PROVIDED FOR IN THE RETAINING WALL DESIGN AND CONSTRUCTION.
6. RETAINING WALLS ARE TO BE FINAL DESIGNED AND PERMITTED BY OTHERS.
7. RETAINING WALLS DEPICTED ON ALLIANT GRADING PLAN AS MODULAR BLOCK RETAINING WALLS.

WARNING
HIGH-PRESSURE PIPELINE(S)
EXCAVATION AND/OR CONSTRUCTION PROHIBITED
WITHOUT COMPLIANCE WITH STATE ONE-CALL AND
WITHOUT WRITTEN PERMISSION FROM
NORTHERN NATURAL GAS

GRADING LEGEND:

FRONT OF PAD
954.5 GARAGE FLOOR ELEVATION
955.0 TOP OF FOUNDATION
L(1) HOUSE TYPE, ADDITIONAL REQUIRED STEPS BEYOND TYP. STEP ASSUMED = 0.7"
946.5 LOWEST FLOOR ELEVATION (W &, SW)
949.1 REAR ELEVATION (L, SL, F &, SOG)
REAR OF PAD
(6.3%) PROPOSED DRIVEWAY GRADE FROM SETBACK TO ROW
789 EXISTING CONTOUR
789 PROPOSED CONTOUR
x962.44 PROPOSED SPOT ELEVATION
TW XXX TOP OF WALL ELEVATION
BW XXX BOTTOM OF WALL ELEVATION
DIRECTION OF DRAINAGE
L/SL LOOK OUT / SPLIT LOOK OUT
W WALK OUT / SPLIT WALK OUT
F FULL BASEMENT
SOG SLAB ON GRADE
EOF:726.86 EMERGENCY OVERFLOW ROUTING AND ELEVATAION
EMERGENCY OVERFLOW ROUTING
EXISTING TREE TO REMAIN
TREE PROTECTION LIMIT
PROPOSED CATCH BASINS
PROPOSED STORM SEWER
PROPOSED EASEMENT
PROPERTY LINE
DRAINAGE SWALE - CENTER
LOT LINE
RIGHT-OF-WAY
POND MAINTENANCE ACCESS (TURF)
FEMA ZONE A (PER MAP #27163C0410E)
ST-205 EXISTING SOIL BORING

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TWIN CITIES LAND DEVELOPMENT

RAVARA TRAILS
COTTAGE GROVE, MINNESOTA

PRELIMINARY PLAT SUBMITTAL GRADING AND DRAINAGE PLAN - OVERALL

DATE	DESCRIPTION
2025-12-31	City Submittal

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Clark Wicklund — 40922
Date — License no.

QA/QC CHECK

By — Date

PROJECT TEAM DATA

Designed By: CJW
Drafted By: LRJ
Project No.: 4000570-00

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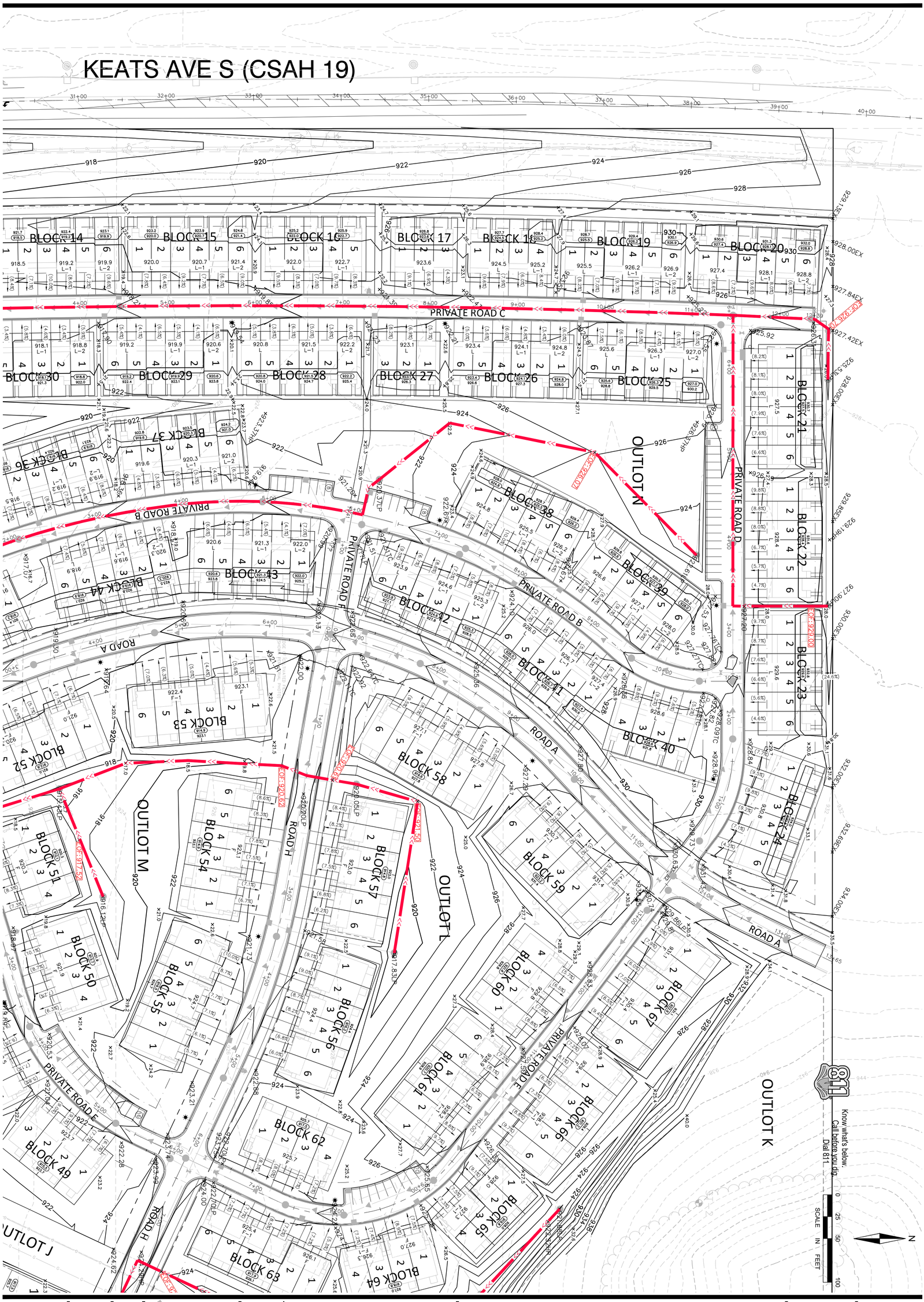

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City & Vicinity Name

Date

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License no.

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By

Date

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Designed By: CJW

Drafted By: LRJ

Project No.: 4000570-00

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RAVARA TRAILS

COTTAGE GROVE, MINNESOTA

PRELIMINARY PLAT SUBMITTAL

GRADING AND DRAINAGE PLAN - VIEW A

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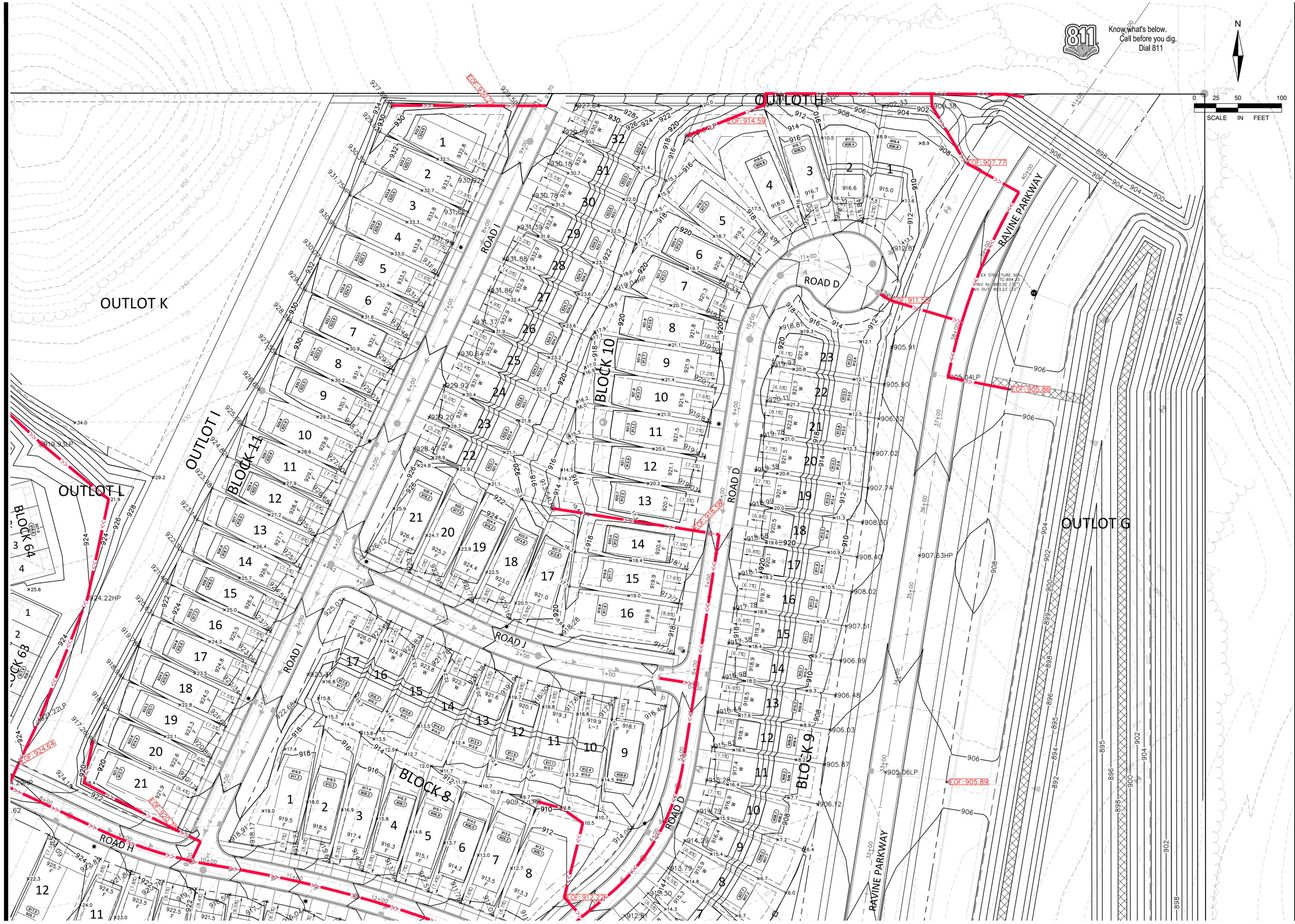

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TWIN CITIES LAND DEVELOPMENT

RAVARA TRAILS

COTTAGE GROVE, MINNESOTA

PRELIMINARY PLAT SUBMITTAL

GRADING AND DRAINAGE PLAN - VIEW B

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TWIN CITIES LAND DEVELOPMENT

RAVARA TRAILS

COTTAGE GROVE, MINNESOTA

PRELIMINARY PLAT SUBMITTAL
GRADING AND DRAINAGE PLAN - VIEW C

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Date 40922 License no.

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Drafted By: LRJ
Project No.: 4000570-00

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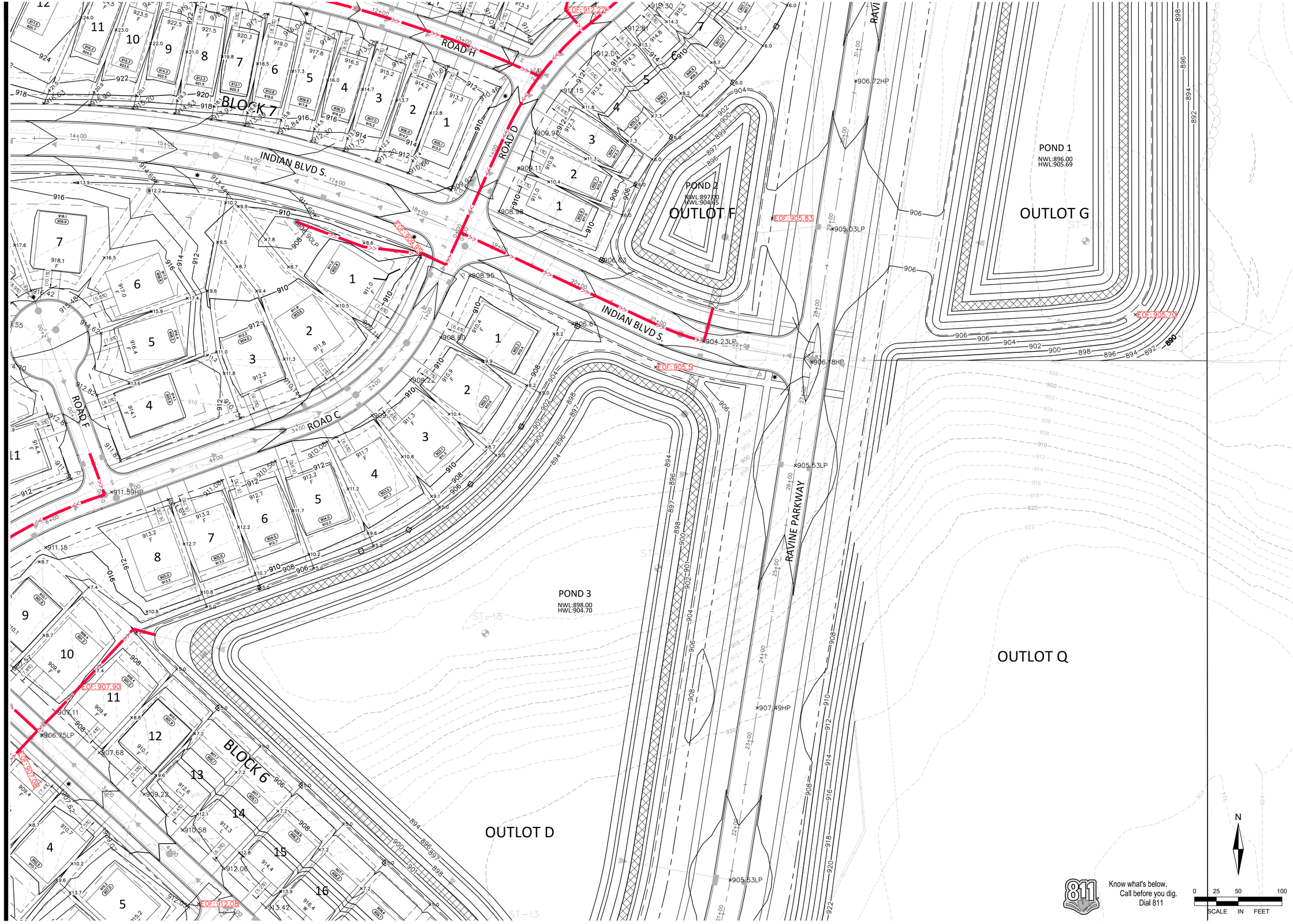

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TWIN CITIES LAND DEVELOPMENT

RAVARA TRAILS

COTTAGE GROVE, MINNESOTA

PRELIMINARY PLAT SUBMITTAL

GRADING AND DRAINAGE PLAN - VIEW D

DESCRIPTION	DATE
City Submittal	2025-12-31

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Project No.: 4000570-00

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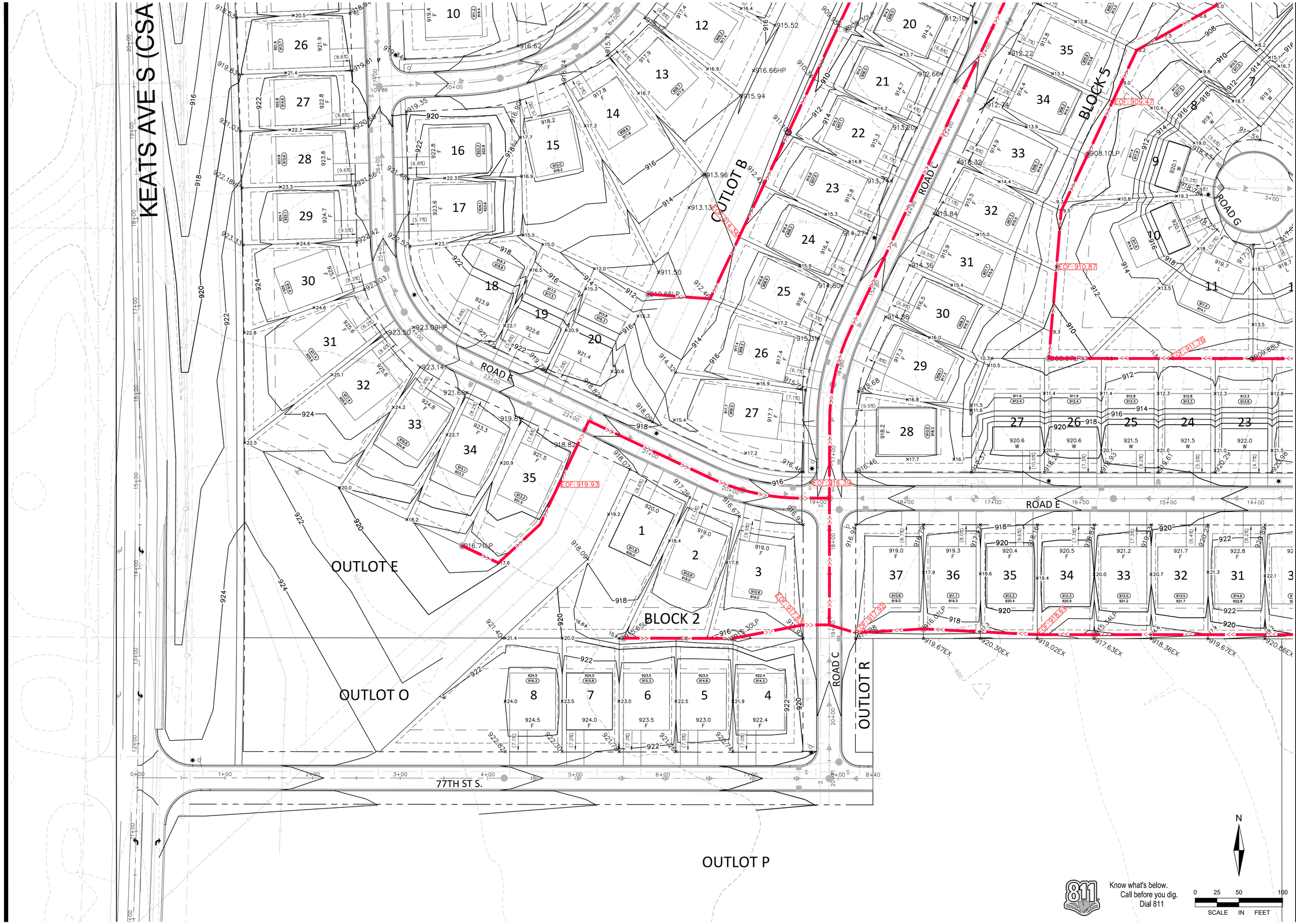

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TWIN CITIES LAND DEVELOPMENT

RAVARA TRAILS

COTTAGE GROVE, MINNESOTA

PRELIMINARY PLAT SUBMITTAL
GRADING AND DRAINAGE PLAN - VIEW E

DATE	DESCRIPTION
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Designed By: CJW
Drafted By: LRJ
Project No.: 4000570-00

36

Sheet 36 of 91

File Location: X:\4000570-00\001\40 Design\00 Sheets - Preliminary\GRADING.dwg Plotted By: Logan Josephson on December 31, 2025 at 12:16:15 PM

OUTLOT D

OUTLOT Q

BLOCK 6

ROAD E

ROAD G

RAVINE PARKWAY

×907.68

×909.22

×910.58

×912.06

×914.72

×916.12

×917.17

×918.13

×919.09

×919.63

×920.34

×920.88

×922.41

×922.02

×924.29

×916.43

×918.01

×920.06

×905.53LP

×910.40LP

×909.88LP

×920.86EX

×921.53EX

×921.16EX

×921.20EX

×921.08EX

×921.48EX

×922.43HP

×921.74

×921.21LP

×921.18

×920.14

×913.35

×914.14

×913.42

×914.68

×916.05

×917.08

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×918.12

×919.09

×920.54

×920.18

×920.64

×920.39

×922.39

×922.34

×922.42

×924.18

×924.64

×924.39

×924.34

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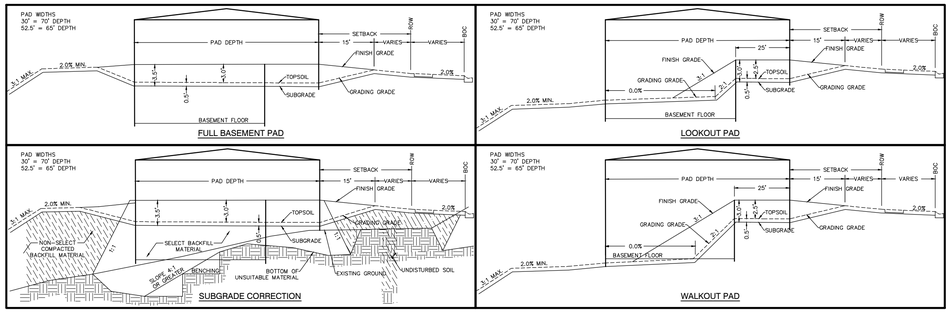
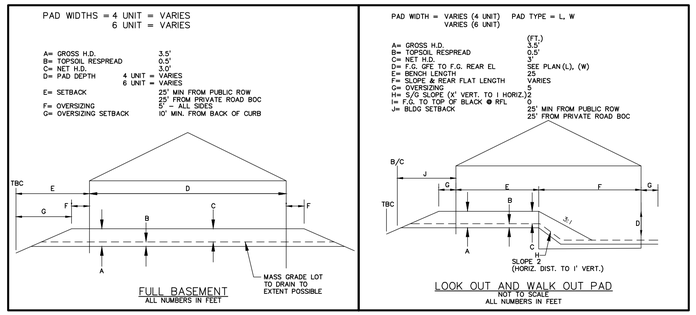
×924



SINGLE FAMILY HOME HOLD DOWN DETAILS

NOT TO SCALE



SUBURBAN TOWNHOME HOLD DOWN DETAILS

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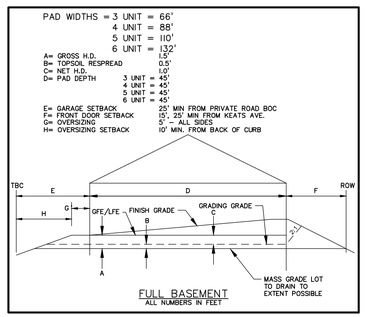

URBAN TOWNHOME HOLD DOWN DETAILS

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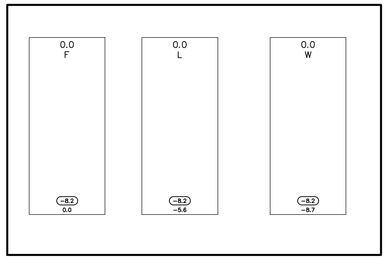
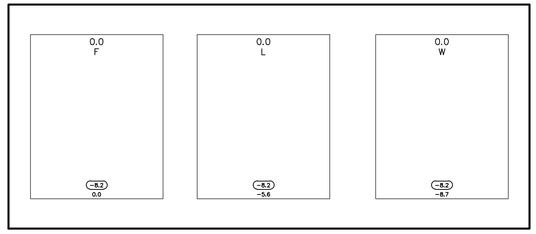
40' LOT GRADING PADS



65' LOT GRADING PADS



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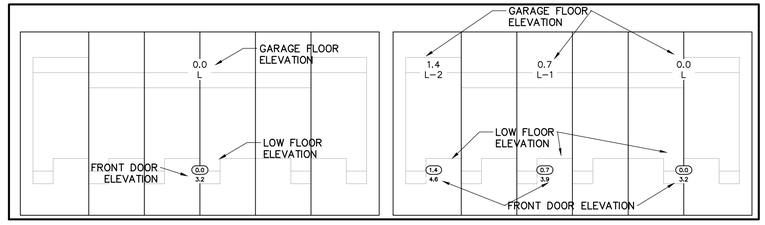

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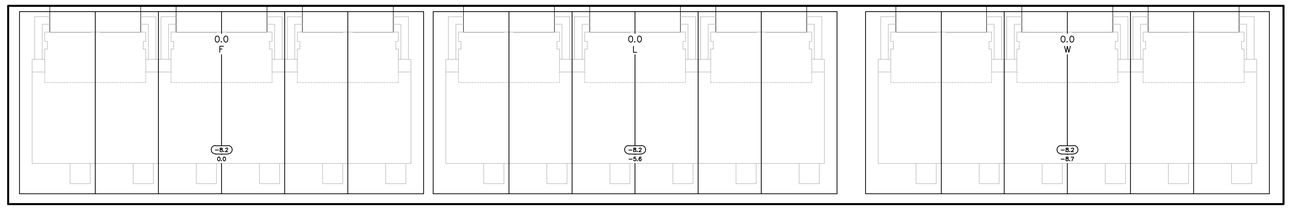

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TWIN CITIES LAND DEVELOPMENT TC LD

RAVARA TRAILS

COTTAGE GROVE, MINNESOTA

PRELIMINARY PLAT SUBMITTAL

GRADING AND DRAINAGE PLAN DETAILS

DATE	DESCRIPTION
2025-12-31	City Submittal

CERTIFICATION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Civil Engineer under the laws of the State of MINNESOTA.

PRELIMINARY FOR REVIEW NOT FOR CONSTRUCTION

Clark Vinciguerra — 40922

Date — License no.

QA/QC CHECK

By — Date

PROJECT TEAM DATA

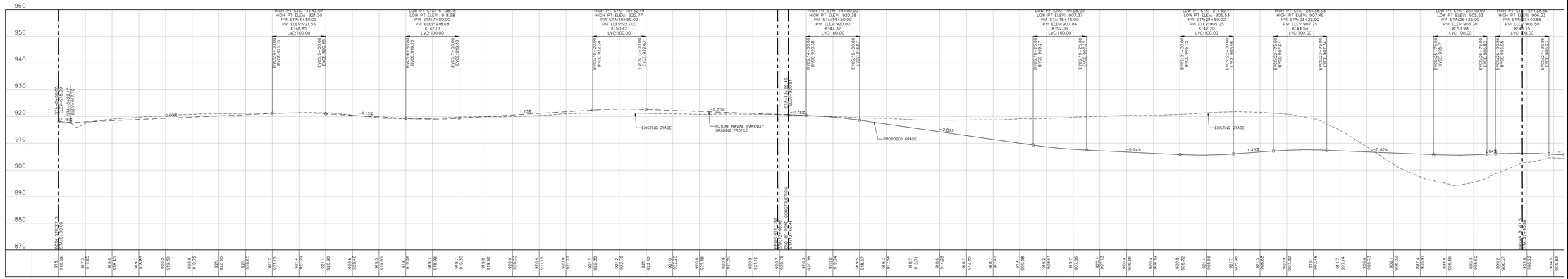
Designed By: CJW

Drafted By: LRJ

Project No.: 4000570-00

File Location: X:\4000570-00\0140 Design\00 Sheets - Preliminary\GRADING.dwg Plotted By: Logan Josephson on December 31, 2025 at 10:16:38 PM

RAVINE PARKWAY



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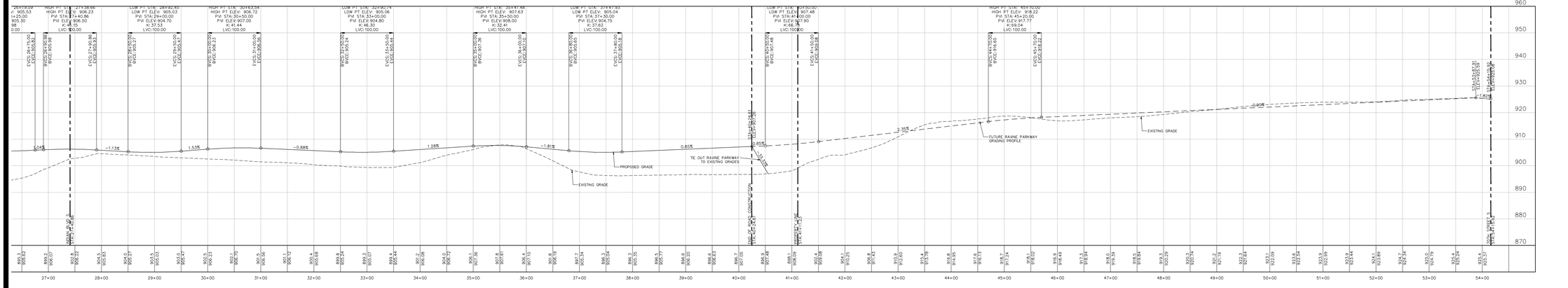

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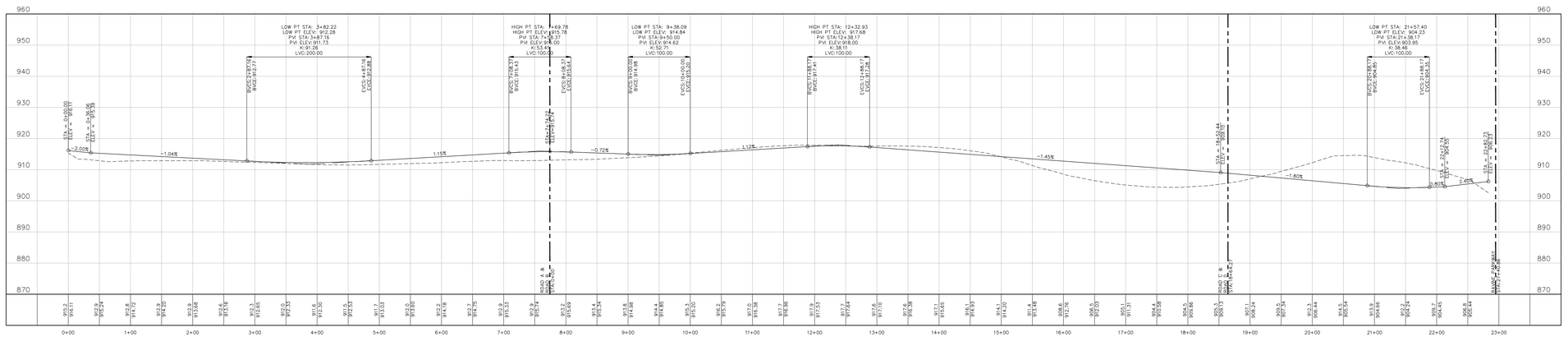

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TWIN CITIES LAND DEVELOPMENT

RAVARA TRAILS
COTTAGE GROVE, MINNESOTA

PRELIMINARY PLAT SUBMITTAL
GRADING PROFILES

DATE	DESCRIPTION
2026-12-31	City Submittal

CERTIFICATION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Civil Engineer under the laws of the State of MINNESOTA.

FOR CASE PRELIMINARY NOT FOR CONSTRUCTION

Clark Wicklund — 40922
Date — License no.

QA/QC CHECK

By — Date

PROJECT TEAM DATA

Designed By: CJW
Drafted By: LRJ
Project No.: 4000570-00

39

Sheet 39 of 91

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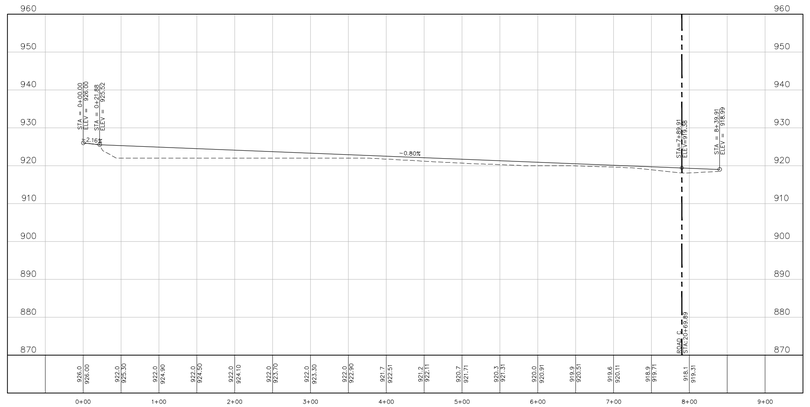
77TH STREET SOUTH



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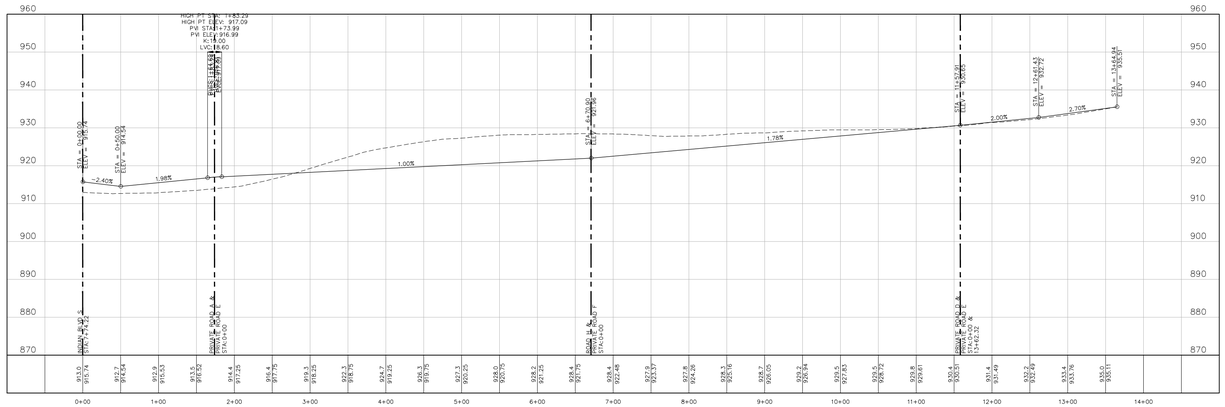

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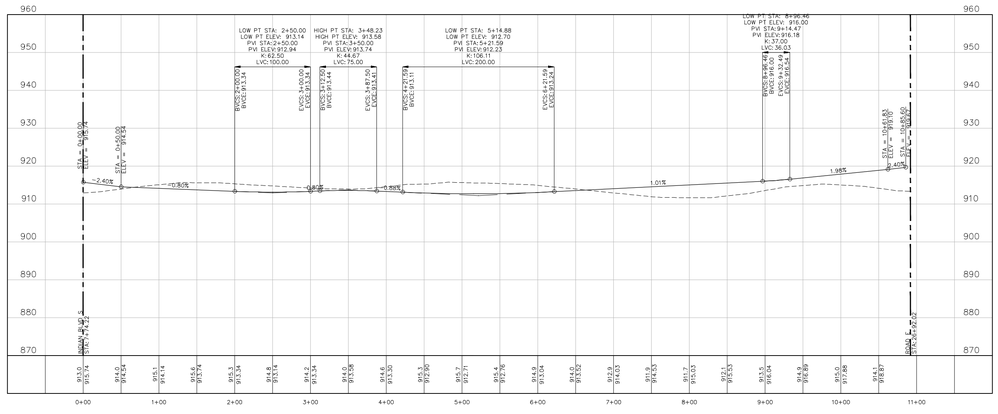

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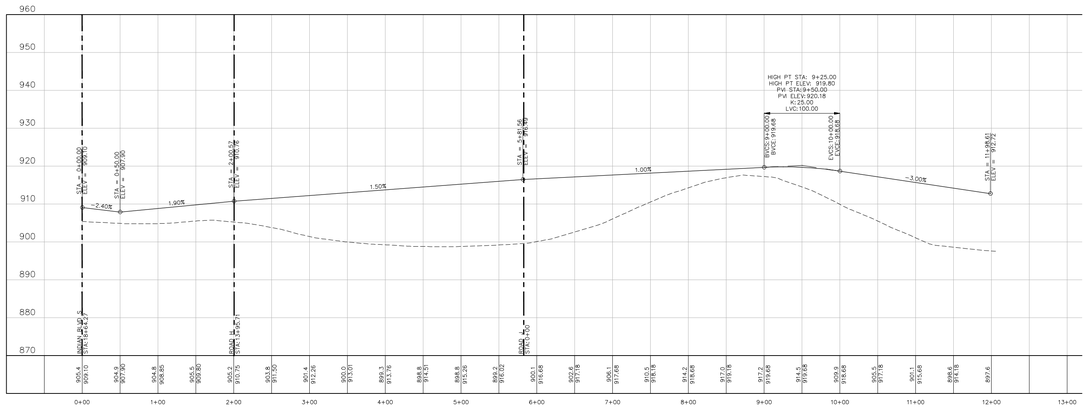

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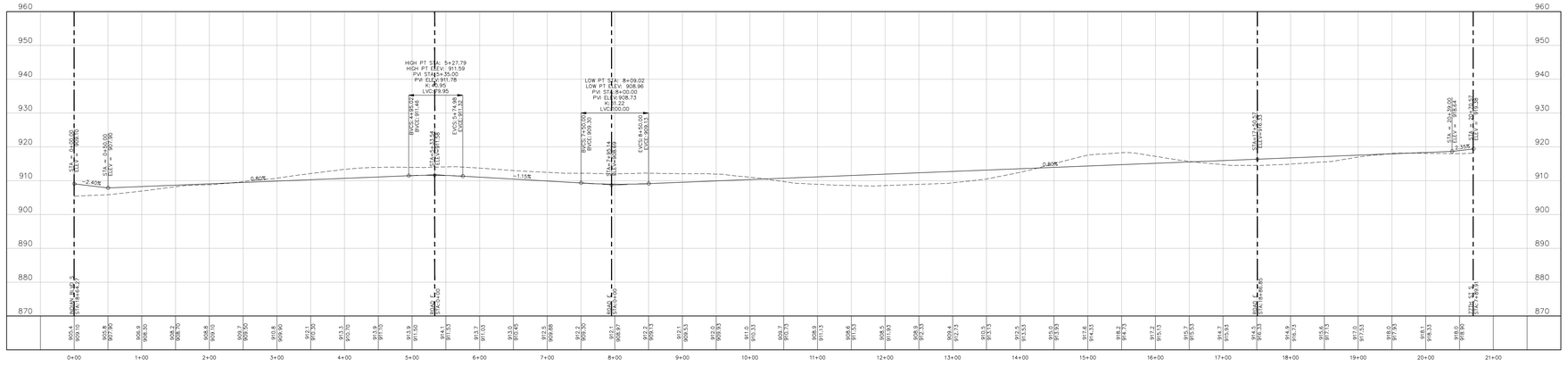

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TWIN CITIES LAND DEVELOPMENT

RAVARA TRAILS

COTTAGE GROVE, MINNESOTA

PRELIMINARY PLAT SUBMITTAL

GRADING PROFILES (2)

DATE	DESCRIPTION
2025-12-31	City Submittal

CERTIFICATION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Civil Engineer under the laws of the State of MINNESOTA.

FOR REVIEW ONLY
NOT FOR CONSTRUCTION
PRELIMINARY

Clark Vicchiullo
Date

40922
License no.

QA/QC CHECK

By Date

PROJECT TEAM DATA

Designed By: CJW
Drafted By: LRJ
Project No.: 4000570-00

40

Sheet 40 of 91

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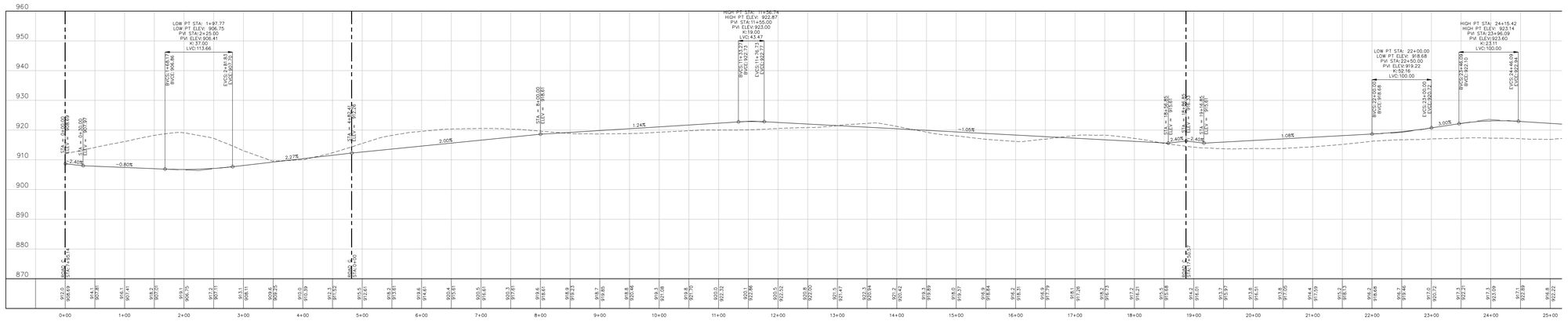

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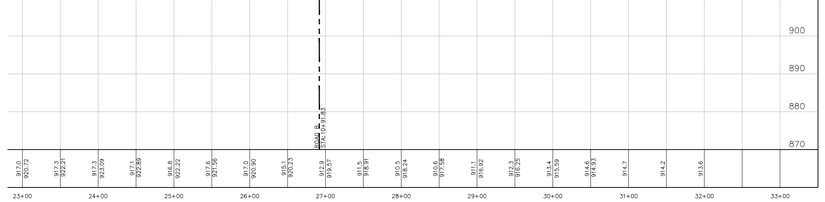

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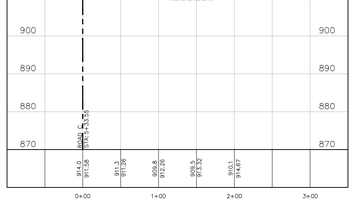

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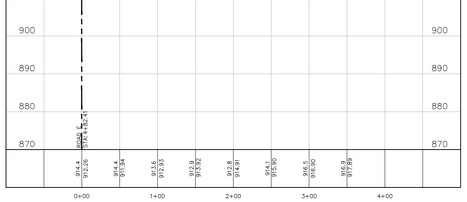

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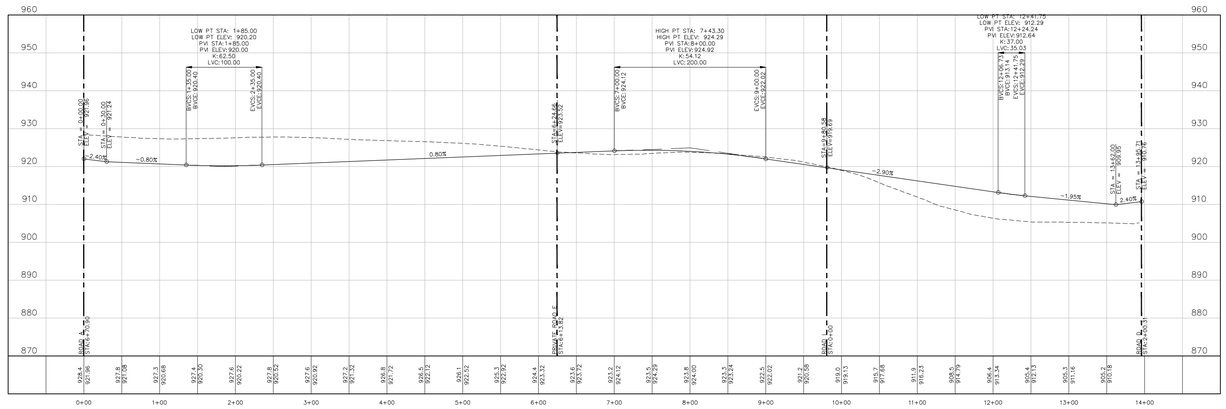

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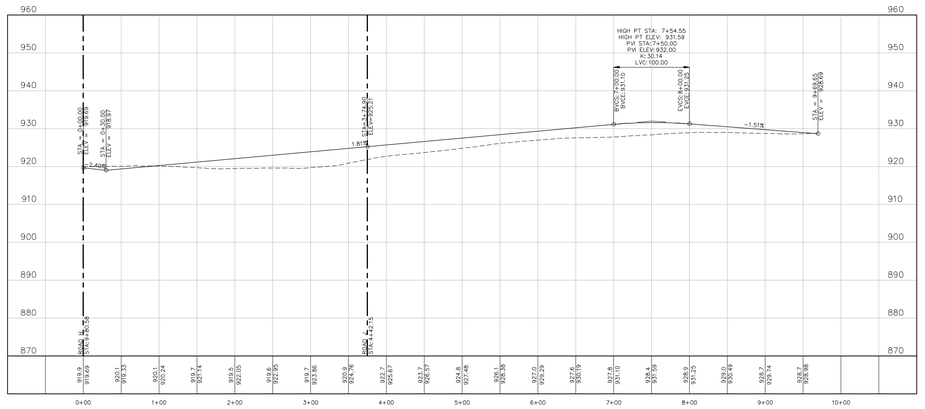

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RAVARA TRAILS
COTTAGE GROVE, MINNESOTA

PRELIMINARY PLAT SUBMITTAL
GRADING PROFILES (3)

DATE	DESCRIPTION
2025-12-31	City Submittal

CERTIFICATION

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PRELIMINARY FOR REVIEW NOT FOR CONSTRUCTION

Clark V Richtanz
Date 40922
License no.

QA/QC CHECK

By Date

PROJECT TEAM DATA

Designed By: CJW
Drafted By: LRJ
Project No.: 4000570-00

41

Sheet 41 of 91

File Location: X:\4000570-00\001\40 Design\20 Sheets - Preliminary\GRADING PROFILES.dwg Posted By: Logan Josephson on Dec 31, 2025 at 12:17:06 PM

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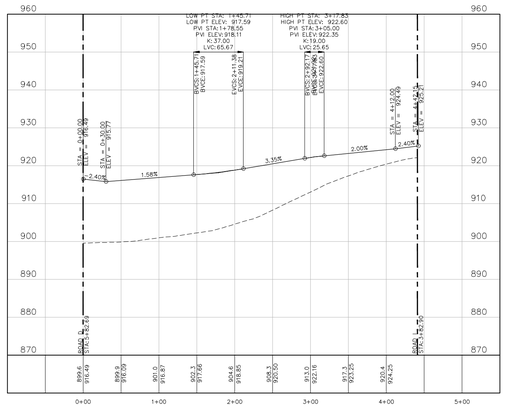

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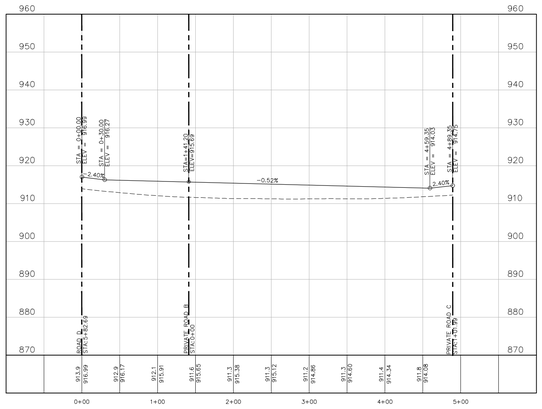

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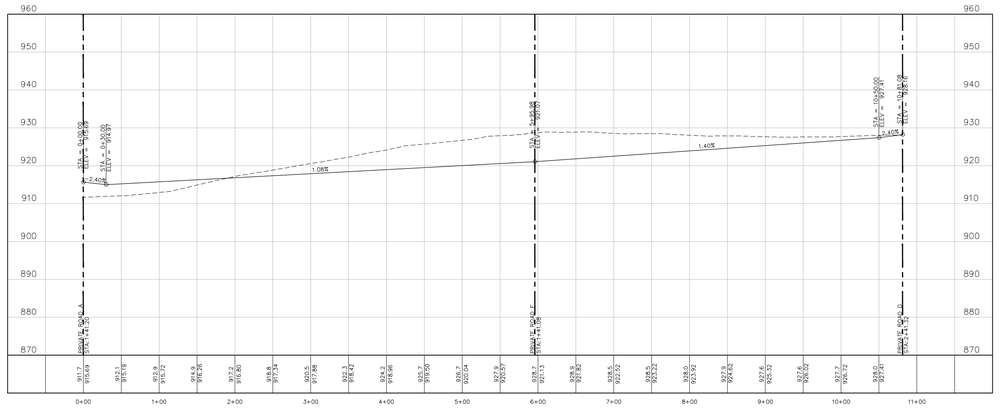

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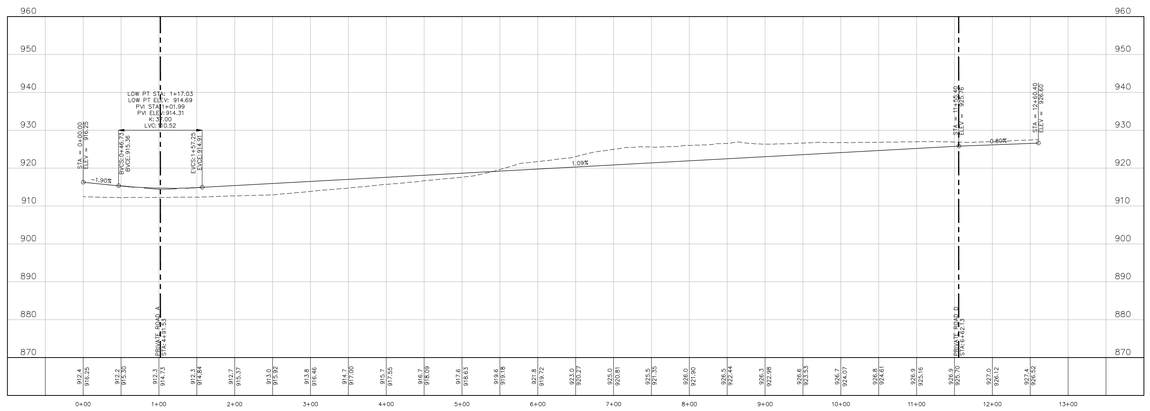

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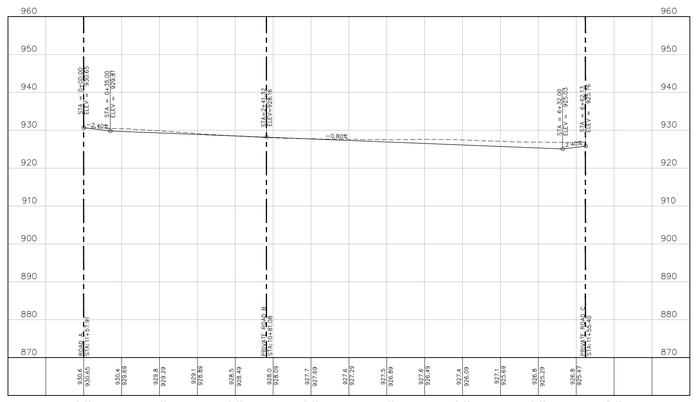

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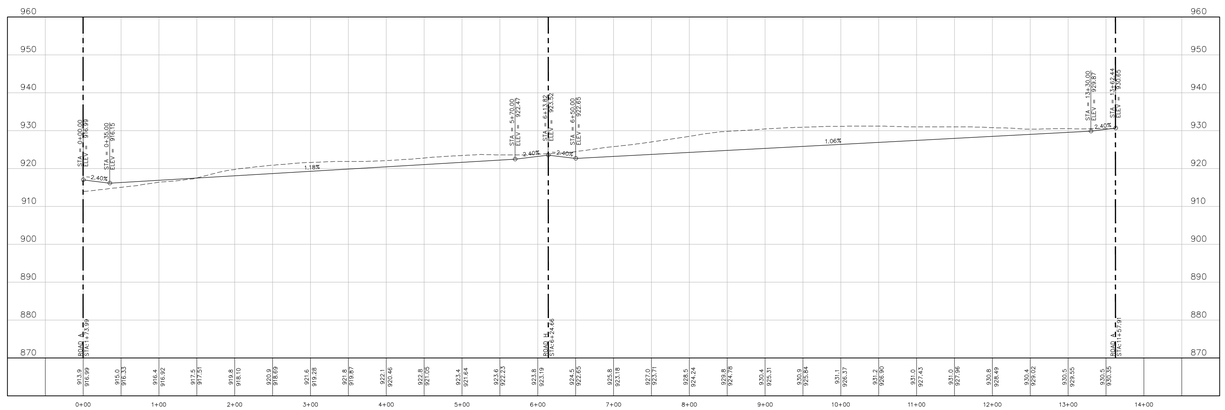

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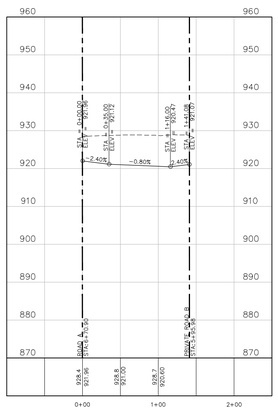

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TWIN CITIES LAND DEVELOPMENT

RAVARA TRAILS

COTTAGE GROVE, MINNESOTA

PRELIMINARY PLAT SUBMITTAL
GRADING PROFILES (4)

DATE	DESCRIPTION
2025-12-31	City Submittal

CERTIFICATION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Civil Engineer under the laws of the State of MINNESOTA.

FOR REVIEW ONLY
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NOT FOR CONSTRUCTION

Clark Vincent Lund
Date 40922 License no.

QA/QC CHECK

By Date

PROJECT TEAM DATA

Designed By: CJW
Drafted By: LRJ
Project No.: 4000570-00

42

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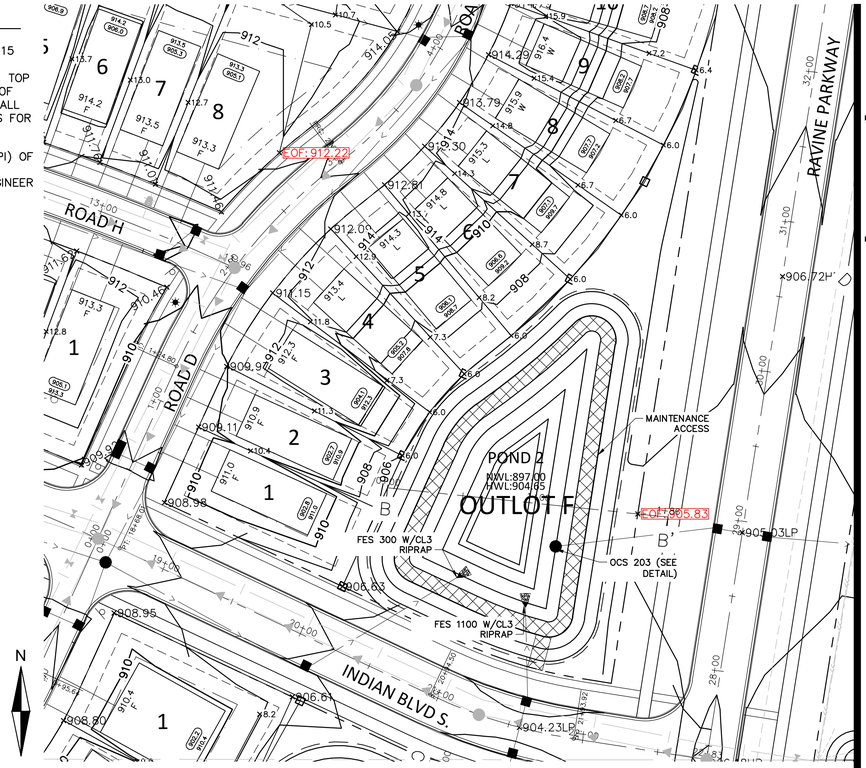
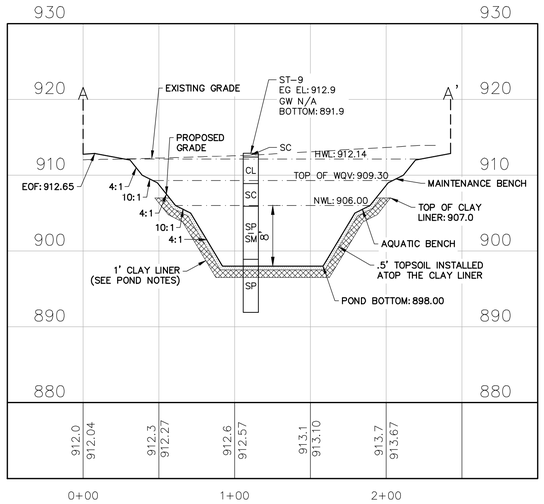
POND NOTES:

1. POND SHALL CONFORM TO CITY STANDARD DETAIL STO-15
2. 12" CLAY LINER SHALL BE INSTALLED AT BASE OF 18" SUBCUT WITH 6" OF TOPSOIL PLACED ATOP CLAY LINER. TOP SOIL AND CLAY LINER TO BE INSTALLED FROM BOTTOM OF THE POND TO 1' ABOVE THE POND NWLL. THE LINER SHALL BE INSTALLED PER CITY OF COTTAGE GROVE STANDARDS FOR THICKNESS AND SPECIFICATION.
3. CLAY LINER SHALL HAVE A MAXIMUM PERMEABILITY OF 1x10^-6 CM/S AND SHALL HAVE A PLASTICITY INDEX (PI) OF 20 OR LESS.
4. CONTRACTOR SHALL WORK WITH THE GEOTECHNICAL ENGINEER TO ASSURE CLAY LINER MATERIAL IS SATISFACTORILY IMPERMEABLE.

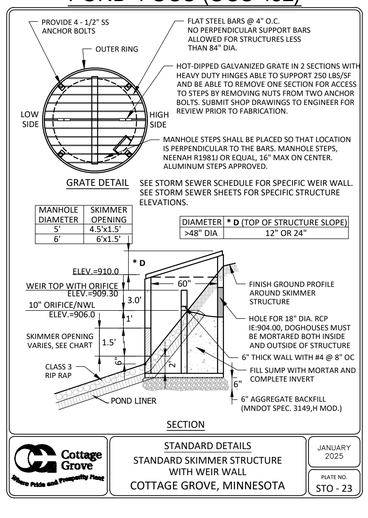
LEGEND:

- EASEMENT LINE
- LOT LINE
- ROW
- 789 EXISTING CONTOUR
- 789 PROPOSED CONTOUR
- PROPOSED CATCH BASINS
- PROPOSED STORM SEWER
- 10' MAINTENANCE ACCESS ROUTE
- ST-205 EXISTING SOIL BORING





POND 4 OCS (OCS 452)



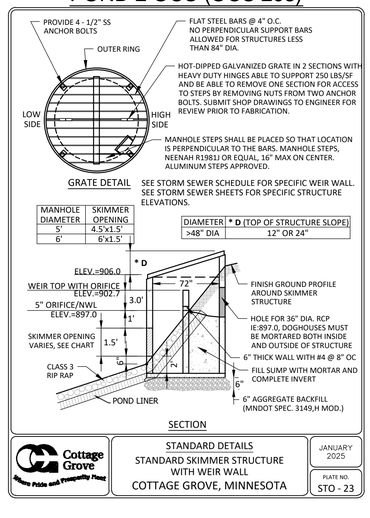
Cottage Grove — Where Pride and Tranquility Meet

STANDARD DETAILS
STANDARD SKIMMER STRUCTURE WITH WEIR WALL
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. STO - 23

POND 2 OCS (OCS 203)

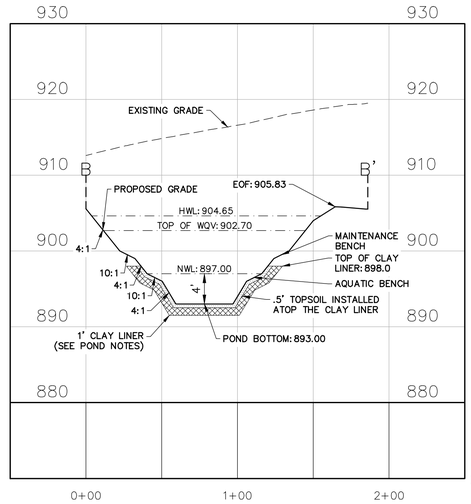


Cottage Grove — Where Pride and Tranquility Meet

STANDARD DETAILS
STANDARD SKIMMER STRUCTURE WITH WEIR WALL
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. STO - 23



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RAVARA TRAILS

COTTAGE GROVE, MINNESOTA

PRELIMINARY PLAT SUBMITTAL

POND 2 AND 4 DETAILS

DATE	DESCRIPTION
2025-12-31	City Submittal

CERTIFICATION

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Clark Vicklund
Date
40922
License no.

PRELIMINARY FOR REVIEW NOT FOR CONSTRUCTION

QA/QC CHECK

By Date

PROJECT TEAM DATA

Designed By: CJW
Drafted By: LRJ
Project No.: 4000570-00

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Sheet 43 of 91

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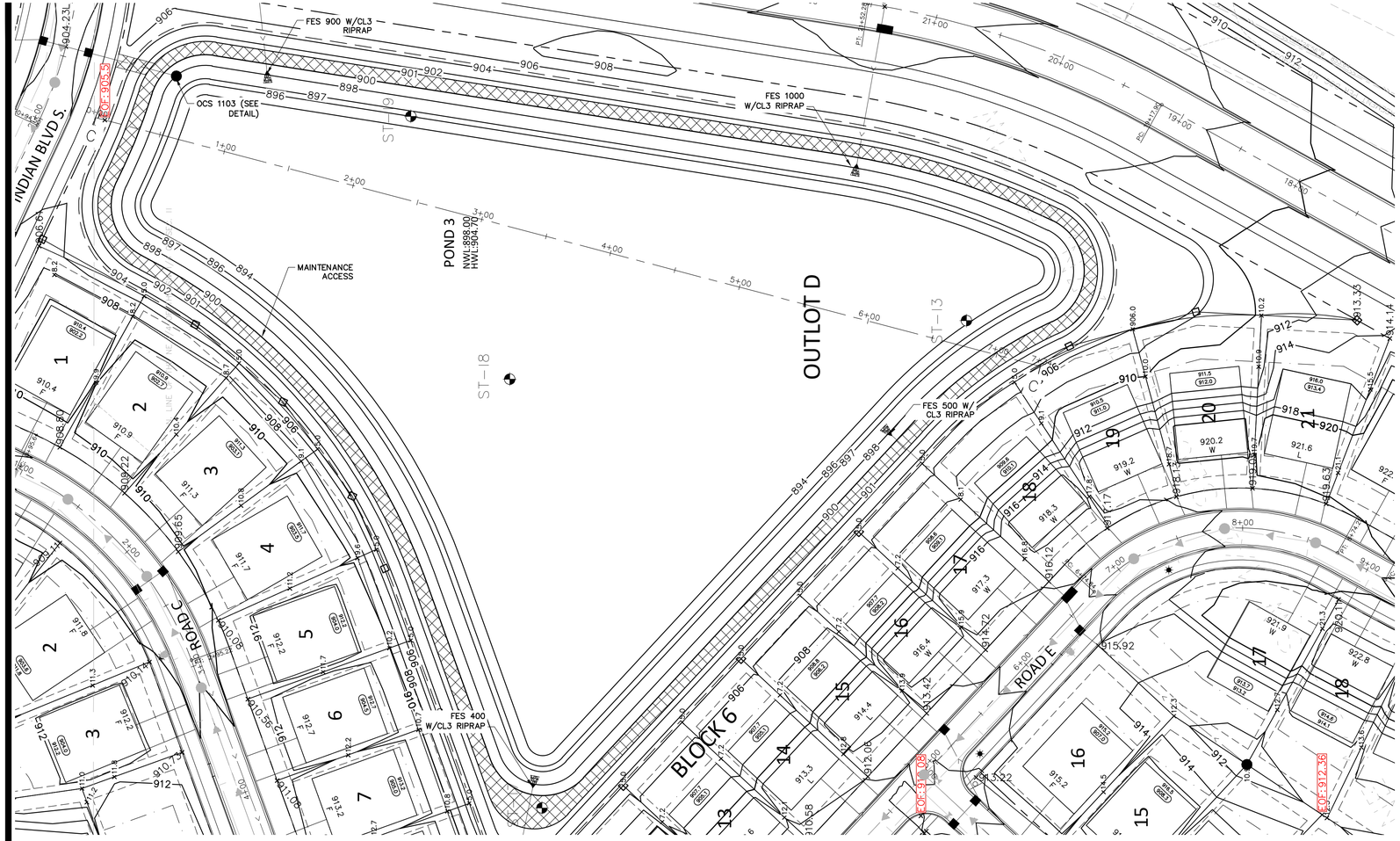
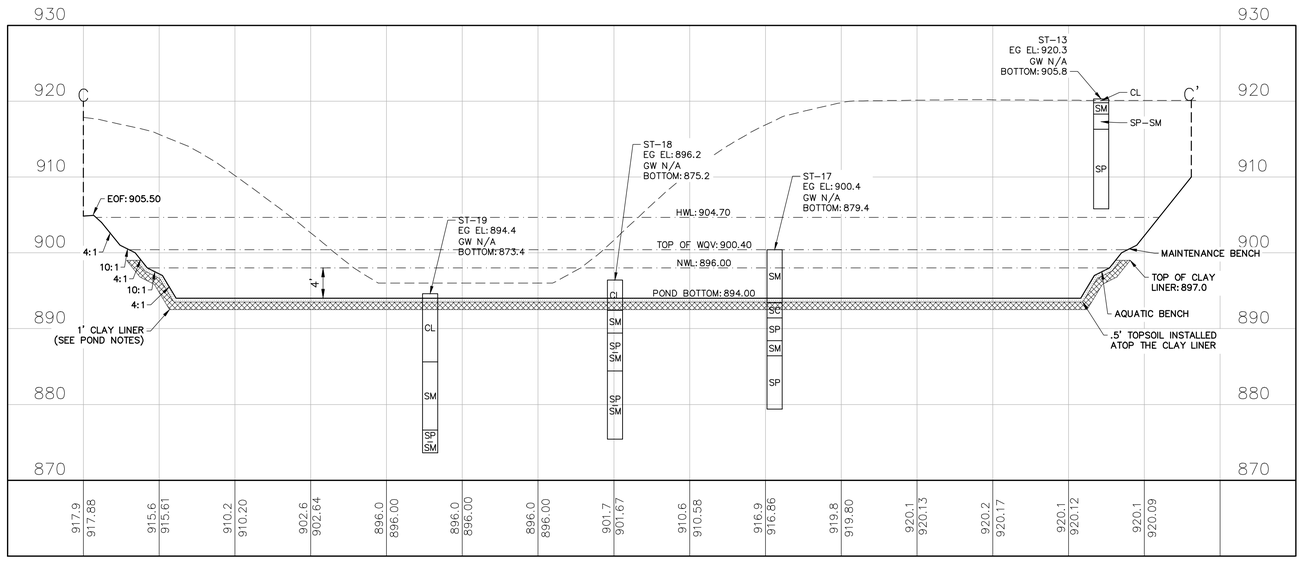
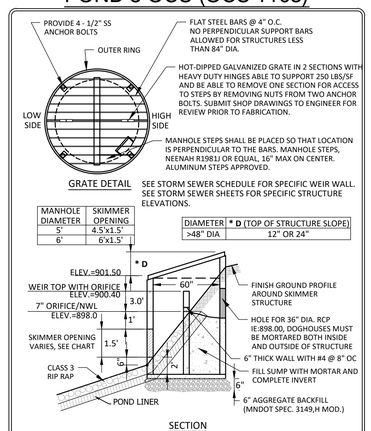




POND 3 OCS (OCS 1103)



MANHOLE DIAMETER	SKIMMER OPENING
5'	4.5'x1.5'
6'	6'x1.5'

DIAMETER	* D (TOP OF STRUCTURE SLOPE)
>48" DIA	12" OR 24"

Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
STANDARD SKIMMER STRUCTURE WITH WEIR WALL
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. STO - 23

POND NOTES:

1. POND SHALL CONFORM TO CITY STANDARD DETAIL STO-15
2. 12" CLAY LINER SHALL BE INSTALLED AT BASE OF 18" SUBCUT WITH 6" OF TOPSOIL PLACED ATOP CLAY LINER. TOP SOIL AND CLAY LINER TO BE INSTALLED FROM BOTTOM OF THE POND TO 1' ABOVE THE POND NWLL. THE LINER SHALL BE INSTALLED PER CITY OF COTTAGE GROVE STANDARDS FOR THICKNESS AND SPECIFICATION.
3. CLAY LINER SHALL HAVE A MAXIMUM PERMEABILITY OF 1x10^-6 CM/S AND SHALL HAVE A PLASTICITY INDEX (PI) OF 20 OR LESS.
4. CONTRACTOR SHALL WORK WITH THE GEOTECHNICAL ENGINEER TO ASSURE CLAY LINER MATERIAL IS SATISFACTORILY IMPERMEABLE.

LEGEND:

- EASEMENT LINE
- LOT LINE
- ROW
- 789 EXISTING CONTOUR
- 789 PROPOSED CONTOUR
- PROPOSED CATCH BASINS
- PROPOSED STORM SEWER
- 10' MAINTENANCE ACCESS ROUTE
- ST-205 EXISTING SOIL BORING

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RAVARA TRAILS

COTTAGE GROVE, MINNESOTA

PRELIMINARY PLAT SUBMITTAL

POND 3 DETAIL

DATE	DESCRIPTION
2026-12-31	City Submittal

CERTIFICATION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Civil Engineer under the laws of the State of MINNESOTA.

PRELIMINARY NOT FOR CONSTRUCTION

Clark Wicklund — 40922
Date — License no.

QA/QC CHECK

By — Date

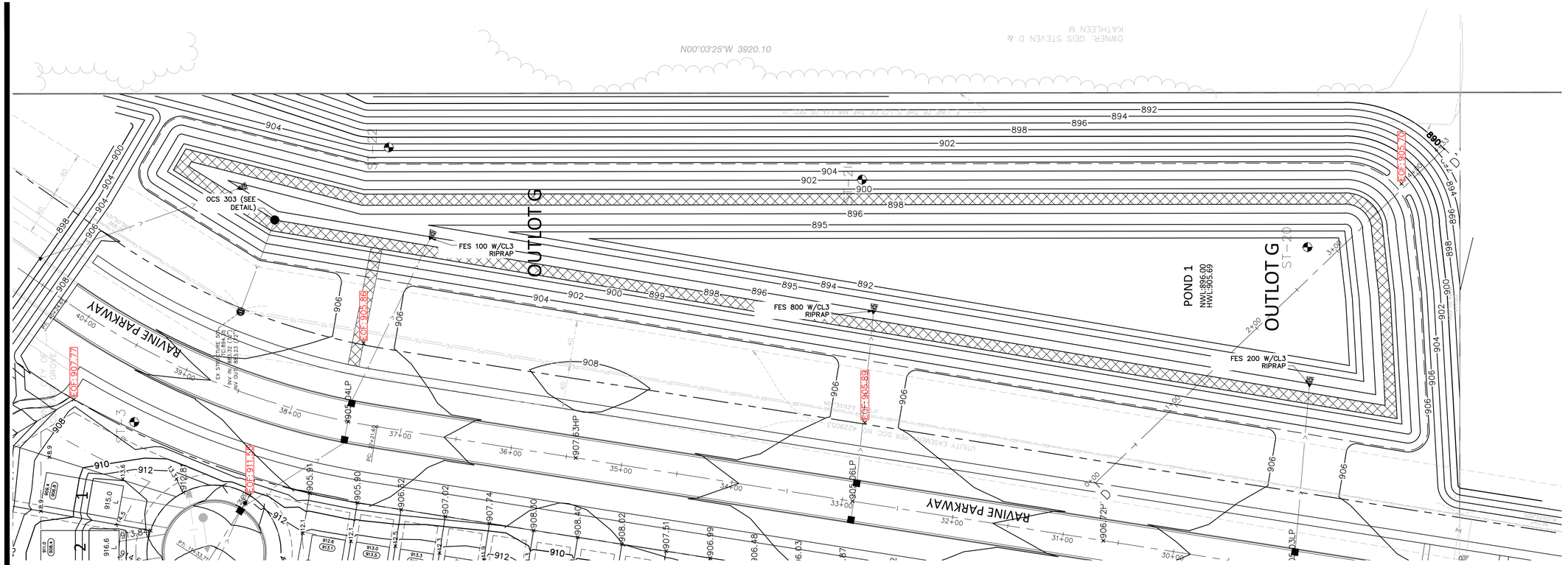
PROJECT TEAM DATA

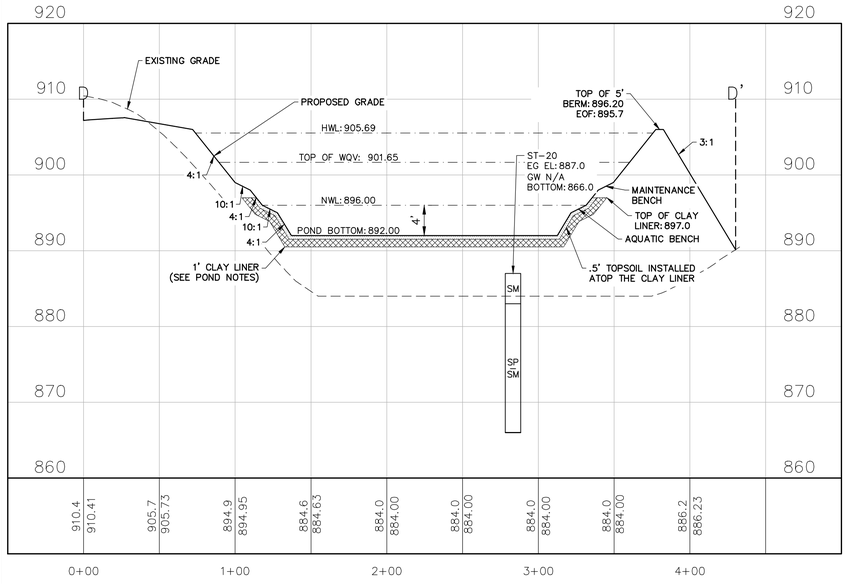
Designed By: CJW
Drafted By: LRJ
Project No.: 4000570-00

44

Sheet 44 of 91

File Location: X:\4000570-00\00140 Design\00 Sheets - Preliminary\POND DETAILS.dwg Printed By: Logan Josephson on December 31, 2025 at 12:18:03 PM





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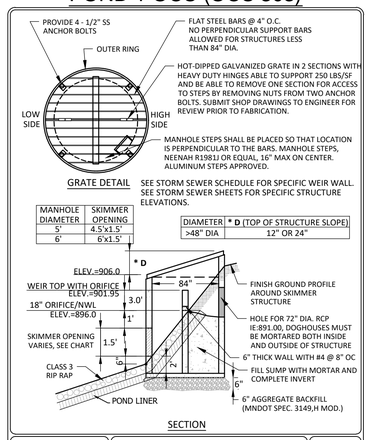

Cottage Grove
Where Pride and Prosperity Meet

STANDARD DETAILS
STANDARD SKIMMER STRUCTURE WITH WEIR WALL
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. STO - 23

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RAVARA TRAILS
COTTAGE GROVE, MINNESOTA

PRELIMINARY PLAT SUBMITTAL
POND 1 DETAIL

DATE	DESCRIPTION
2025-12-31	City Submittal

CERTIFICATION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Civil Engineer under the laws of the State of MINNESOTA.

PRELIMINARY FOR REVIEW NOT FOR CONSTRUCTION

Clark Vicklund — 40922
Date — License no.

QA/QC CHECK

By — Date

PROJECT TEAM DATA

Designed By: CJW
Drafted By: LRJ
Project No.: 4000570-00

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NOTE TO CONTRACTOR:

THE MASS GRADING CONTRACTOR IS RESPONSIBLE FOR INSTALLATION OF ALL EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES (BMPS) (EXCEPT FOR POST GRADE BMPS NEEDED AFTER UTILITY CONSTRUCTION ACTIVITY). THE BMPS ARE TO BE INSTALLED AT A MINIMUM AS SHOWN IN THE PLAN, IF CONDITIONS ARISE, ADDITIONAL BMP SUPPLEMENTATION TO PREVENT SITE EROSION OR SEDIMENT TRANSPORT MAY BE NECESSARY. THE MASS GRADING CONTRACTOR IS RESPONSIBLE FOR ALL BMPS REQUIRED TO COMPLETE THE MASS GRADING ACTIVITIES AND SUBSEQUENT TEMPORARY SOIL STABILIZATION NECESSARY TO PREPARE SITE FOR STREET AND UTILITY CONSTRUCTION AND HOME BUILDING. AT THE COMPLETION OF MASS GRADING WORK AND SATISFACTORY SITE SOIL STABILIZATION, THE DEVELOPER AND MASS GRADING CONTRACTOR SHALL COORDINATE THE TRANSFER OF NPDES PERMIT RESPONSIBILITIES TO THE STREET AND UTILITY CONTRACTOR.

THE STREET AND UTILITY CONTRACTOR WILL THEN ASSUME THE RESPONSIBILITY TO PROVIDE INSPECTION AND MAINTENANCE OF ANY IN-PLACE BMPS AS WELL AS INSTALL THE ADDITIONAL BMPS REQUIRED IN THE STREET AND UTILITY CONSTRUCTION DOCUMENT SWPPP. UPON COMPLETION OF STREET AND UTILITY CONSTRUCTION, THE STREET AND UTILITY CONTRACTOR SHALL REMOVE ANY BMPS INSTALLED DURING THE STREET AND UTILITY PHASE THAT ARE NO LONGER REQUIRED AND COORDINATE THE TRANSFER OF NPDES PERMIT RESPONSIBILITIES BACK TO THE DEVELOPER.

NOTES:

1. SEE SHEET 47 FOR ALL EROSION AND SEDIMENT CONTROL NOTES AND DETAILS.

EROSION CONTROL RESPONSIBLE PARTY:

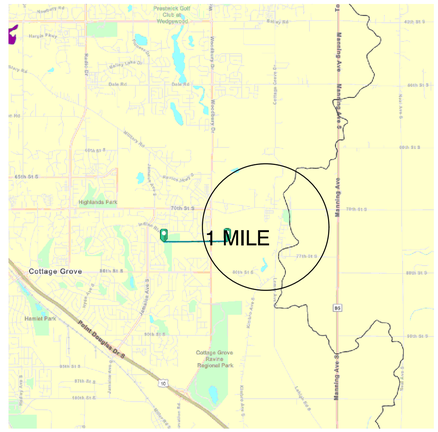
TWIN CITIES LAND DEVELOPMENT

SITE IMPERVIOUS DATA

PRE-CONSTRUCTION ACRES OF IMPERVIOUS:	1.85 AC
POST-CONSTRUCTION ACRES OF IMPERVIOUS:	55.14 AC
TOTAL NEW IMPERVIOUS SURFACE ACRES:	53.29 AC

SWPPP BMP QUANTITIES:

FINAL BMP QUANTITIES TO BE PROVIDED WITHIN CONSTRUCTION DOCUMENT PLAN SET.



VICINITY MAP
NOT TO SCALE

LEGEND:

- EXISTING CONTOUR (789)
- PROPOSED CONTOUR (789)
- PROPOSED RETAINING WALL
- DIRECTION OF DRAINAGE
- PROPOSED CATCH BASINS
- PROPOSED STORM SEWER
- PROPERTY LINE
- LOT LINE
- RIGHT-OF-WAY
- EXISTING VEGETATION LIMITS (APPROX)
- PRE — SF — PROPOSED SILT FENCE (PRE GRADING)
- PST — SF — PROPOSED SILT FENCE (POST GRADING)
- EXISTING TREE TO REMAIN
- INLET PROTECTION
- BIOROLL
- DND — DO NOT DISTURB AREAS
- TEMPORARY DRAINAGE ROUTING DURING MASS GRADING
- ROCK CONSTRUCTION ENTRANCE
- CATAGORY 3 EROSION CONTROL BLANKET
- DEWATERING TRENCH
- WETLAND BUFFER
- TEMPORARY SEDIMENT BASIN
- TEMPORARY DEWATERING CHANNEL

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RAVARA TRAILS
COTTAGE GROVE, MINNESOTA

PRELIMINARY PLAT SUBMITTAL EROSION AND SEDIMENT CONTROL PLAN - OVERALL

DATE	DESCRIPTION
2025-12-31	City Submittal

CERTIFICATION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Civil Engineer under the laws of the State of MINNESOTA

Clark Wicklund
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40922
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QA/QC CHECK

By Date

PROJECT TEAM DATA

Designed By: CJW
Drafted By: LRJ
Project No.: 4000570-00

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File Location: X:\4000570\4000570-00\00140 Design\00 Sheets - Preliminary\EROSION CONTROL.dwg Plotted By: Logan Josephson on Dec 31, 2025 at 12:18:33 PM

EROSION CONTROL GENERAL NOTES:

1. NO LAND DISTURBING ACTIVITY SHALL OCCUR UNTIL A GRADING PERMIT HAS BEEN ISSUED FROM THE CITY OF COTTAGE GROVE AND THE WATERSHED DISTRICT. UNLESS EXPRESSLY EXTENDED BY A PERMIT, THE HOURS OF OPERATION SHALL BE LIMITED TO 7:00 AM TO 7:00 PM MONDAY-FRIDAY AND 9:00AM TO 7:00 PM SATURDAY.
2. BEST MANAGEMENT PRACTICES (BMP'S) REFER TO EROSION AND SEDIMENT CONTROL PRACTICES DEFINED IN THE MPCA PROTECTING WATER QUALITY IN URBAN AREAS AND THE MINNESOTA CONSTRUCTION SITE EROSION AND SEDIMENT CONTROL PLANNING HANDBOOK.
3. ALL BMP'S SELECTED SHALL BE APPROPRIATE FOR THE TIME OF YEAR, SITE CONDITIONS, AND ESTIMATED DURATION OF USE.
4. ALL WORK AND MATERIALS SHALL BE CONSTRUCTED ACCORDING TO THE APPROVED PLANS. ANY DEVIATION FROM THE APPROVED PLANS SHALL REQUIRE WRITTEN APPROVAL FROM THE ENGINEER OF RECORD.
5. A COPY OF THESE PLANS MUST BE ON THE JOB SITE WHENEVER CONSTRUCTION IS IN PROGRESS.
6. THE BOUNDARIES OF THE LAND DISTURBANCE LIMITS SHOWN ON THE PLANS SHALL BE CLEARLY FLAGGED IN THE FIELD PRIOR TO CONSTRUCTION. NO DISTURBANCE BEYOND THE DISTURBED LIMITS.
7. WHEREVER POSSIBLE, PRESERVE THE EXISTING TREES, GRASS AND OTHER VEGETATIVE COVER TO HELP FILTER RUNOFF.
8. ESTABLISH A PERMANENT VEGETATIVE COVER ON ALL EXPOSED SOILS WHERE LAND IS COMING OUT OF AGRICULTURAL PRODUCTION. PLANT AS SOON AS POSSIBLE TO ESTABLISH DENSE GRASS FILTER PRIOR TO CONSTRUCTION AND TO MINIMIZE WEED GROWTH.
9. ALL TREES NOT LISTED FOR REMOVAL SHALL BE PROTECTED. DO NOT OPERATE EQUIPMENT WITHIN THE DRIPLINE, ROOT ZONES OR WITHIN TREE PROTECTION FENCE AREAS.
10. ALL EROSION AND SEDIMENT CONTROL FACILITIES (BMP'S) SHALL BE INSTALLED AND IN OPERATION PRIOR TO LAND DISTURBANCE ACTIVITIES AND THEY SHALL BE SATISFACTORILY MAINTAINED UNTIL CONSTRUCTION IS COMPLETED AND THE POTENTIAL FOR EROSION HAS PASSED.
11. SILT FENCE IS REQUIRED AT DOWN GRADIENT PERIMETER OF DISTURBED AREAS AND STOCKPILES. PROTECT WETLANDS, WATERCOURSES AND ADJACENT PROPERTIES FROM SEDIMENTATION AND STORMWATER RUNOFF.
12. THE BMP'S SHOWN ON THE PLANS ARE THE MINIMUM REQUIREMENTS FOR THE ANTICIPATED SITE CONDITIONS. AS CONSTRUCTION PROGRESSES AND UNEXPECTED OR SEASONAL CONDITIONS DICTATE, THE PERMITTEE/CONTRACTOR SHALL ANTICIPATE THAT MORE BMP'S WILL BE NECESSARY TO ENSURE EROSION AND SEDIMENT CONTROL ON THE SITE. DURING THE COURSE OF CONSTRUCTION, IT IS THE RESPONSIBILITY OF THE PERMITTEE/CONTRACTOR TO ADDRESS ANY NEW CONDITIONS THAT MAY BE CREATED BY CONSTRUCTION ACTIVITIES AND/OR CLIMATIC EVENTS AND TO PROVIDE ADDITIONAL BMP'S OVER AND ABOVE THE MINIMUM REQUIREMENTS SHOWN ON THE PLANS, AS MAY BE NEEDED TO PROVIDE EFFECTIVE PROTECTION OF WATER AND SOIL RESOURCES.
13. THE BMP'S SHALL BE INSPECTED DAILY BY THE PERMITTEE/CONTRACTOR AND MAINTAINED AS NECESSARY TO ENSURE THEIR CONTINUED FUNCTIONING. SILT FENCES CLEANED OR REPLACED AT SEDIMENT BUILDUP OF 1/2 OF THE FENCE HEIGHT.
14. LAND DISTURBING ACTIVITIES SHALL OCCUR IN INCREMENTS OF WORKABLE SIZE SUCH THAT ADEQUATE BMP CONTROL CAN BE PROVIDED THROUGHOUT ALL PHASES OF CONSTRUCTION. THE SMALLEST PRACTICAL AREA SHALL BE EXPOSED OR OTHERWISE DISTURBED AT ANY ONE TIME.
15. OPERATE TRACK EQUIPMENT (DOZER) UP AND DOWN EXPOSED SOIL SLOPES ON FINAL PASS, LEAVING TRACK GROOVES PERPENDICULAR TO THE SLOPE. DO NOT BACK-BLADE. LEAVE A SURFACE ROUGH TO MINIMIZE EROSION.
16. ALL AREAS DISTURBED BY CONSTRUCTION SHALL BE STABILIZED FROM EROSION WITHIN 7 DAYS OF SUBSTANTIAL COMPLETION OF GRADING IN THAT AREA. TEMPORARY SEED AND MULCH SHALL COVER ALL EXPOSED SOILS IF GRADING COMPLETION IS DELAYED LONGER THAN 7 DAYS. PERMANENT SEED AND MULCH OR SOD IS REQUIRED WITHIN 3 DAYS OF COMPLETION OF FINAL GRADING.
17. GENERAL TEMPORARY SEED SHALL BE MNDOT MIX 190 @ 100 LBS. PER ACRE OR APPROVED EQUAL. PERMANENT SEED SHALL BE MNDOT MIX 270 @ 120 LBS. PER ACRE OR APPROVED EQUAL. (PLANTING DATES PER SPEC 2575) MULCH SHALL BE MNDOT TYPE 1 (CLEAN OAT STRAW) @ 2 TONS PER ACRE AND DISK ANCHORED IN PLACE OR APPROVED EQUAL. FERTILIZER SHALL BE 80-80-80 NPK PER ACRE (UNLESS P RESTRICTIONS APPLY) AND INCORPORATED INTO THE SEED BED.
18. POND, BASIN AND WETLAND AREAS SHALL BE SEEDED IN ACCORDANCE WITH LANDSCAPE PLAN.
19. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE PROPERLY DISPOSED OF WITHIN THIRTY (30) DAYS AFTER FINAL SITE STABILIZATION IS ACHIEVED OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED.
20. AN ALTERNATE EROSION & SEDIMENT CONTROL PLAN SHALL BE REQUIRED FOR LAND DISTURBANCES ON EACH LOT AS PART OF ANY FUTURE BUILDING PERMIT FOR THE CONSTRUCTION OF STRUCTURES AND DRIVEWAYS.
21. ALL EROSION AND SEDIMENT CONTROL ITEMS MUST BE IN COMPLIANCE WITH MPCA CSW PERMIT (MN R100001)

EROSION AND SEDIMENT CONTROL MAINTENANCE PROGRAM:

1. INSPECT SILT FENCES IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. IMMEDIATELY REPAIR FAILED OR FAILING SILT FENCE.
2. REPLACEMENT - FABRIC SHALL BE REPLACED PROMPTLY WHEN IT DECOMPOSES OR BECOMES INEFFECTIVE BEFORE THE BARRIER IS NO LONGER NECESSARY.
3. SEDIMENT REMOVAL - SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH STORM EVENT. THEY MUST BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY ONE-THIRD THE HEIGHT OF THE BARRIER. ANY SEDIMENT REMAINING IN PLACE AFTER THE SILT FENCE OR FILTER FABRIC IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM WITH EXISTING GRADE, PREPARED, AND SEEDED WITH THE APPROPRIATE SEED MIX, OR SODDED AS DIRECTED BY THE ENGINEER.
4. REMOVAL OF SILT FENCE - SILT FENCES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFUL PURPOSE, BUT NOT BEFORE THE UPWARD SLOPING AREA HAS BEEN PERMANENTLY STABILIZED. IF THE UPWARD SLOPING AREA IS TO BE EXPOSED LONGER THAN SIX (6) MONTHS, THAT AREA SHALL BE COVERED WITH TEMPORARY VEGETATION WHEN FIRST EXPOSED.
5. THE CONTRACTOR MUST ROUTINELY INSPECT THE CONSTRUCTION SITE ONCE EVERY SEVEN (7) DAYS DURING ACTIVE CONSTRUCTION AND WITHIN 24 HOURS AFTER A RAINFALL EVENT GREATER THAN 0.5 INCHES IN 24 HOURS.
6. ALL INSPECTIONS AND MAINTENANCE CONDUCTED DURING CONSTRUCTION MUST BE RECORDED IN WRITING AND THESE RECORDS MUST BE RETAINED WITH THE SWPPP RECORDS OF EACH INSPECTION AND MAINTENANCE ACTIVITY SHALL INCLUDE:
   - 6.1. DATE AND TIME OF INSPECTIONS;
   - 6.2. NAME OF PERSON(S) CONDUCTING INSPECTIONS;
   - 6.3. FINDINGS OF INSPECTIONS, INCLUDING RECOMMENDATIONS FOR CORRECTIVE ACTIONS;
   - 6.4. CORRECTIVE ACTIONS TAKEN (INCLUDING DATES, TIMES, AND PARTY COMPLETING MAINTENANCE ACTIVIES.)
   - 6.5. DATE AND AMOUNT OF ALL RAINFALL EVENTS GREATER THAN ½ INCH (0.5 INCHES) IN 24 HOURS:
   - 6.6. DOCUMENTS OF CHANGES MADE TO THE SWPPP AS REQUIRED IN PART III.A.4.
7. WHERE PARTS OF THE CONSTRUCTION SITE HAVE UNDERGONE FINAL STABILIZATION, BUT WORK REMAINS ON OTHER PARTS OF SITE, INSPECTIONS OF THE STABILIZED AREAS MAY BE REDUCED TO ONCE PER MONTH. WHERE WORK HAS BEEN SUSPENDED DUE TO FROZEN GROUND CONDITIONS, THE REQUIRED INSPECTIONS AND MAINTENANCE MUST TAKE PLACE AS SOON AS RUNOFF OCCURS AT THE SITE OR PRIOR TO RESUMING CONSTRUCTION, WHICHEVER COMES FIRST.

CONSTRUCTION SEQUENCING:

MASS GRADING PHASE:

1. INSTALL STABILIZED CONSTRUCTION ENTRANCES.
2. PREPARE TEMPORARY PARKING AND STORAGE AREA.
3. INSTALL THE PRE-GRADING SILT FENCES AND INLET PROTECTION BMPs ON THE SITE.
4. CONSTRUCT ALL PRE-GRADING EROSION AND SEDIMENTATION CONTROL BMPs.
5. COMPLETE MASS GRADING AND INSTALL TEMPORARY AND PERMANENT SEEDING AND PLANTING.
6. CONSTRUCT POST-GRADING SILT FENCE ON THE SITE.

NOTE:
INFILTRATION BASINS TO BE CONSTRUCTED IN AN ORDER WHERE THEY ARE TO BE PROTECTED FROM SILTATION AND HEAVY EQUIPMENT.

STREET & UTILITY PHASE:

1. INSTALL UTILITIES, UNDERDRAINS, STORM SEWERS, CURBS AND GUTTERS.
2. INSTALL RIP RAP AROUND OUTLET STRUCTURES.
3. INSTALL INLET PROTECTION AROUND ALL STORM SEWER STRUCTURES.
4. PREPARE SITE FOR PAVING.
5. PAVE SITE.
6. INSTALL INLET PROTECTION DEVICES.
7. INSTALL POST STREET AND UTILITY SILT FENCE.
8. INSTALL PRIVATE UTILITIES
9. REMOVE ALL TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES (ONLY IF SITE IS STABILIZED), IF REQUIRED BY THE CONTRACT.

IMPERVIOUS SURFACES:

MAX. IMPERVIOUS SURFACE ALLOWED:

SINGLE FAMILY LOTS = 50% MAX. PER LOT
ATTACHED DWELLINGS = 40% OF TOTAL AREA

EROSION CONTROL SCHEDULE:

1. PRIOR TO ANY CONSTRUCTION OR DEMOLITION, SILT FENCE AND FILTERS SHALL BE INSTALLED AS SHOWN TO INTERCEPT RUNOFF.
2. ALL EROSION CONTROL INSTALLATIONS SHALL REMAIN IN PLACE AND BE MAINTAINED IN GOOD CONDITION BY THE CONTRACTOR UNTIL THE SITE HAS BEEN RE-VEGETATED. CONTRACTOR MAY REMOVE NECESSARY SILT FENCING/FILTERS TO CONSTRUCT ROADWAYS, WHILE MAINTAINING ADEQUATE EROSION CONTROL IN ADJACENT AREA.
3. SUFFICIENT TOPSOIL SHALL BE STOCKPILED AND PRESERVED TO ALLOW FOR THE REPLACEMENT OF 6" OF TOPSOIL FOR DISTURBED AREAS TO BE RE-VEGETATED. COMPACTION MUST BE MINIMIZED DURING CONSTRUCTION ACTIVITY.
4. THE CONTRACTOR SHALL SCHEDULE SITE GRADING, UTILITY INSTALLATION AND PAVEMENT CONSTRUCTION SO THAT THE GENERAL SITE CAN BE MULCHED AND RE-SEEDED SOON AFTER DISTURBANCE. AREAS THAT WILL NOT BE SUBJECT TO CONSTRUCTION TRAFFIC SHALL BE SEEDED (MnDOT MIX 190 @ 100#/AC AND MULCHED OR SODDED WITHIN SEVEN (7) DAYS OF BEING DISTURBED.
5. CONTRACTOR SHALL INSTALL EROSION CONTROL DEVICES AS INDICATED ON THIS EROSION CONTROL PLAN AND ANY ADDITIONAL REQUIRED BASED ON MEANS, METHODS AND SEQUENCES OF CONSTRUCTION.

SEDIMENT CONTROL PRACTICES:

1. SEDIMENT CONTROL PRACTICES MUST MINIMIZE SEDIMENT FROM ENTERING SURFACE WATERS, INCLUDING CURB AND GUTTER SYSTEMS AND STORM SEWER INLETS.
2. SEDIMENT CONTROL PRACTICES MUST BE ESTABLISHED ON ALL DOWN GRADIENT PERMITERS BEFORE ANY UPGRADIENT LAND DISTURBING ACTIVITIES BEGIN. THESE PRACTICES SHALL REMAIN IN PLACE UNTIL FINAL STABILIZATION HAS BEEN ESTABLISHED.
3. THE TIMING OF THE INSTALLATION OF SEDIMENT CONTROL PRACTICES MAY BE ADJUSTED TO ACCOMMODATE SHORT-TERM ACTIVITIES SUCH AS CLEARING OR GRUBBING, OR PASSAGE OF VEHICLES. ANY SHORT-TERM ACTIVITY MUST BE COMPLETED AS QUICKLY AS POSSIBLE AND THE SEDIMENT CONTROL PRACTICES MUST BE INSTALLED IMMEDIATELY AFTER THE ACTIVITY IS COMPLETED. HOWEVER, SEDIMENT CONTROL PRACTICES MUST BE INSTALLED BEFORE THE NEXT PRECIPITATION EVENT EVEN IF THE ACTIVITY IS NOT COMPLETE.
4. ALL STORM DRAIN INLETS MUST BE PROTECTED BY APPROPRIATE BMPS DURING CONSTRUCTION UNTIL ALL SOURCES WITH POTENTIAL FOR DISCHARGING TO THE INLET HAVE BEEN STABILIZED.
5. TEMPORARY SOIL STOCKPILES MUST HAVE SILT FENCES OR OTHER EFFECTIVE SEDIMENT CONTROLS, AND CANNOT BE PLACED IN SURFACE WATERS, INCLUDING STORM WATER CONVEYANCES SUCH AS CURB AND GUTTER SYSTEMS, OR CONDUITS AND DITCHES.
6. SITE CONSTRUCTION ENTRANCES WILL BE AS SHOWN ON THE PLAN. ROCK CONSTRUCTION ENTRANCES SHALL BE INSTALLED AT EACH ENTRANCE.
7. STREET SWEEPING SHALL BE USED IN ADDITION TO ROCK CONSTRUCTION ENTRANCES IF ROCK CONSTRUCTION ENTRANCE ALONE IS NOT ADEQUATE TO PREVENT SEDIMENT TRACKING ONTO THE STREET.

EROSION AND SEDIMENT CONTROL AMENDMENT:

1. SWPPP AMENDMENTS SHALL BE MADE ACCORDING TO THE CONSTRUCTION STORMWATER PERMIT.
2. PERMITTEES MUST AMEND THE SWPPP WITHIN 7 DAYS TO INCLUDE ADDITIONAL OR MODIFIED BMPS WHENEVER THERE IS A CHANGE IN DESIGN, CONSTRUCITON, OPERATION, MAINTENANCE, WEATHER, OR SEASONAL CONDITION HAVING A SIGNIFICANT EFFECT ON THE DISCHARGE OF POLLUTANTS TO SURFACE WATERS OR GROUNDWATER.
3. PERMITTEES MUST AMEND THE SWPPP WITHIN 7 DAYS TO INCLUDE ADDITIONAL OR MODIFIED BMPS WHENEVER INSPECTIONS OR INVESTIGATIONS BY THE SITE OWNER OR OPERATOR, USEPA OR MPCA OFFICIALS INDICATE THE SWPPP IS NOT EFFECTIVE IN ELIMINATING OR SIGNIFICALTY MINIMIZING THE DISCHARGE OF POLLUTATNTS TO SURFACE WATERS OR GROUNDWATER OR THE DISCHARGES ARE CAUSING WATER QUALITY STANDARD EXCEEDANCES OR THE SWPPP IS NOT CONSISTENT WITH THE OBJECTIVES OF USEPA APPROVED TMDL.

FINAL STABILIZATION:

THE CONTRACTOR MUST ENSURE FINAL STABILIZATION OF THE SITE. THE CONTRACTOR MUST SUBMIT A NOTICE OF TERMINATION (NOT) WITHIN 30 DAYS AFTER FINAL STABILIZATION IS COMPLETE, OR ANOTHER OWNER/OPERATOR (PERMITTEE) HAS ASSUMED CONTROL OF ALL AREAS OF THE SITE THAT HAVE NOT UNDERGONE FINAL STABILIZATION. FINAL STABILIZATION CAN BE ACHIEVED IN THE FOLLOWING WAY:

ALL SOIL DISTURBING ACTIVITIES AT THE SITE HAVE BEEN COMPLETED AND ALL SOILS MUST BE STABILIZED BY A UNIFORM PERENNIAL VEGETATIVE COVER WITH A DENSITY OF 70 PERCENT OVER THE ENTIRE PERVIOUS SURFACE AREA, OR OTHER EQUIVALENTMEANS NECESSARY TO PREVENT SOIL FAILURE UNDER EROSIVE CONDITIONS AND;

A. ALL DRAINAGE DITCHES, CONSTRUCTED TO DRAIN WATER FROM THE SITE AFTER CONSTRUCTION IS COMPLETE, MUST BE STABILIZED TO PRECLUDE EROSION;
B. ALL TEMPORARY SYNTHETIC, AND STRUCTURAL EROSION PREVENTION AND SEDIMENT CONTROL BMPS (SUCH AS SILT FENCE) MUST BE REMOVED AS PART OF THE SITE FINAL STABILIZATION; AND
C. THE CONTRACTORS MUST CLEAN OUT ALL SEDIMENT FROM CONVEYANCES AND FROM TEMPORARY SEDIMENTATION BASINS THAT ARE TO BE USED AS PERMANENT WATER QUALITY MANAGEMENT BASINS. SEDIMENT MUST BE STABILIZED TO PREVENT IT FROM BEING WASHED BACK INTO THE BASIN, CONVEYANCES OR DRAINAGE WAYS DISCHARGING OFF-SITE OR TO SURFACE WATERS. THE CLEAN OUT OF PERMANENT BASINS MUST BE SUFFICIENT TO RETURN THE BASIN TO DESIGN CAPACITY.

POLLUTION PREVENTION MANAGEMENT MEASURES:

THE CONTRACTOR SHALL IMPLEMENT THE FOLLOWING POLLUTION PREVENTION MANAGEMENT MEASURES ON THE SITE:

1. SOLID WASTE: COLLECTED SEDIMENT, ASPHALT AND CONCRETE MILLINGS, FLOATING DEBRIS, PAPER, PLASTIC, FABRIC, CONSTRUCTION AND DEMOLITION DEBRIS AND OTHER WASTES MUST BE DISPOSED OF PROPERLY AND MUST COMPLY WITH MPCA DISPOSAL REQUIREMENTS.
2. HAZARDOUS MATERIAL: OIL, GASOLINE, PAINT AND ANY HAZARDOUS SUBSTANCES MUST BE PROPERLY STORED, INCLUDING SECONDARY CONTAINMENT, TO PREVENT SPILLS, LEAKS OR OTHER DISCHARGE. RESTRICTED ACCESS TO STORAGE AREAS MUST BE PROVIDED TO PREVENT VANDALISM. STORAGE AND DISPOSAL OF HAZARDOUS WASTE MUST BE IN COMPLIANCE WITH MPCA REGULATIONS.
3. CONCRETE WASHOUT IS DONE TRUCK BY TRUCK WITH A MOBILE WASHOUT SYSTEM PROVIDED AND COMPLETED BY THE CONCRETE CONTRACTOR. RUNOFF MUST BE CONTAINED AND WASTE PROPERLY DISPOSED OF.
4. NO ENGINE DEGREASING IS ALLOWED ON SITE.
5. STREET SWEEPING IS REQUIRED A MINIMUM OF 1 x PER WEEK OR AS DIRECTED BY CITY ENGINEER.

ACTIVE SWPPP LEGEND

CONSTRUCTION SEQUENCE	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR
MULCH BERM													
FIBER ROLLS / MULCH SOCKS													
SILT FENCE													
TEMPORARY MULCH COVER													
TEMPORARY HYDROMULCH													
EROSION CONTROL BLANKET													
ROCK DRIVEWAY / ROCK PADS													
INLET PROTECTION DEVICES													
PAVEMENT (DRIVEWAY/ROADS)													
SOD													
STOCKPILES													

NOTE: CONTRACTOR, GENERAL CONTRACTOR OR SWPPP INSPECTOR TO COMPLETE TABLE AS GRADING PROGRESSES

SEDIMENT BARRIERS
1. SILT FENCE (MnDOT 3886)
2. CURB LOG
3. ROCK WEEPER

INLET PROTECTION DEVICES
1. WIMCO (MnDOT TYPE A & C)
2. INFRASAFE STORM DRAIN/CULVERT
3. SILT SACK (MnDOT TYPE A)
4. DANDY BAG (MnDOT TYPE B)

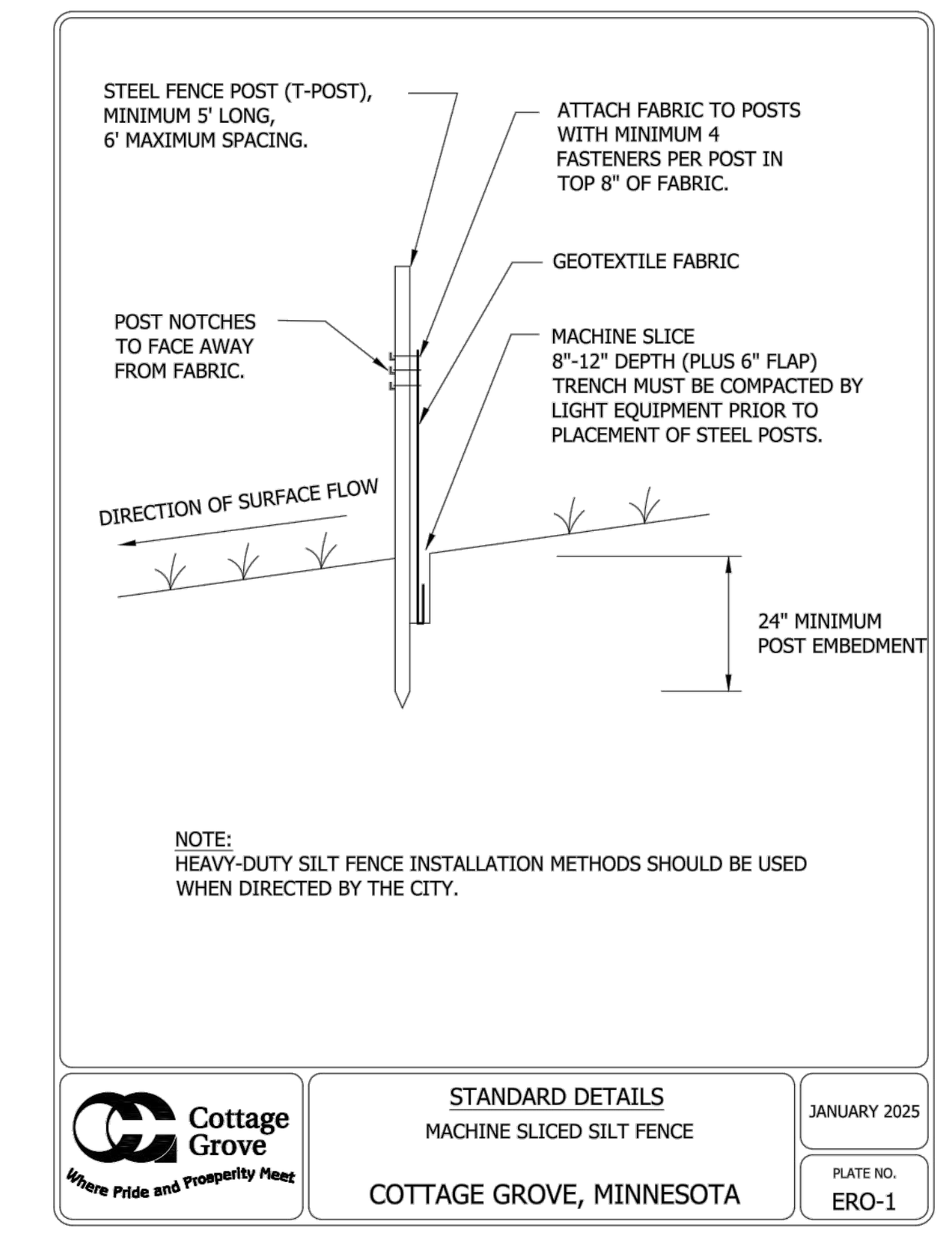
ANTI-TRACKING CONTROL
1. 2" CRUSHED CLEAR ROCK (LAND DEVELOPMENT)

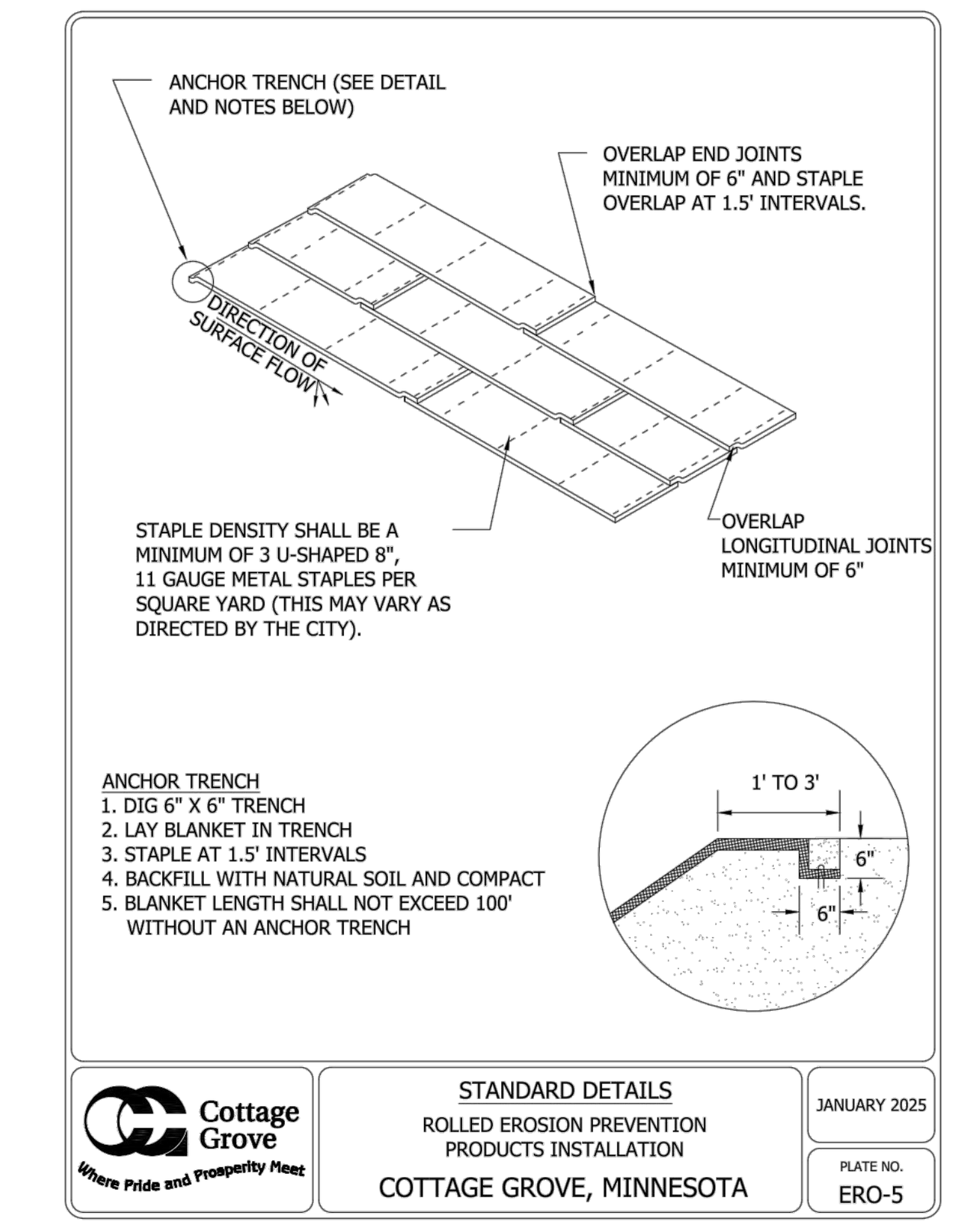
TEMPORARY SEED MIX
1. MnDOT-100 (OATS 20-120 DAY STABILIZATION)
2. MnDOT-150 (1-2 YEAR STABILIZATION)

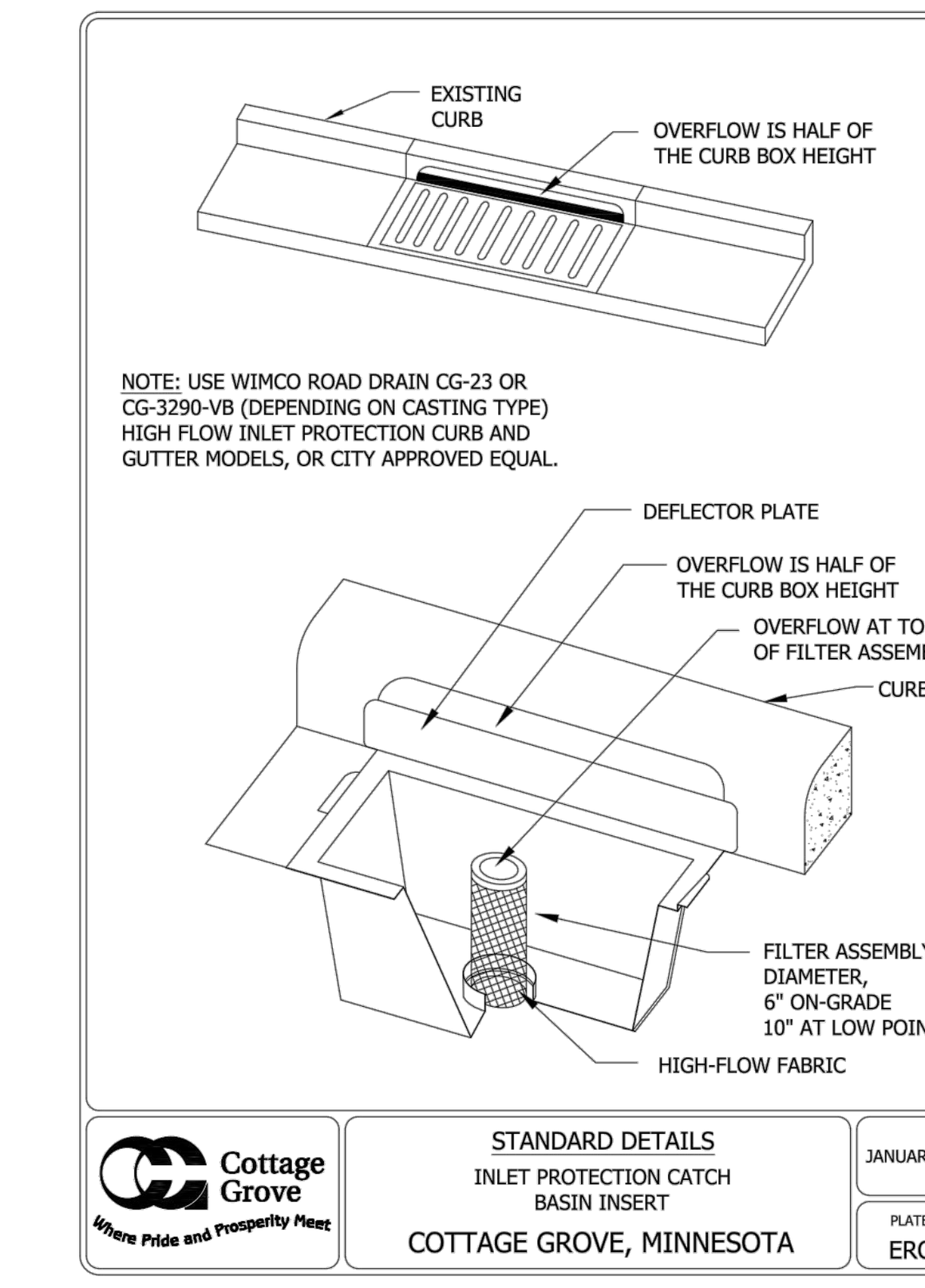
PERMANENT SEED MIX/STABILIZATION
1. MnDOT 270 (RESIDENTIAL TURF)
2. SOD

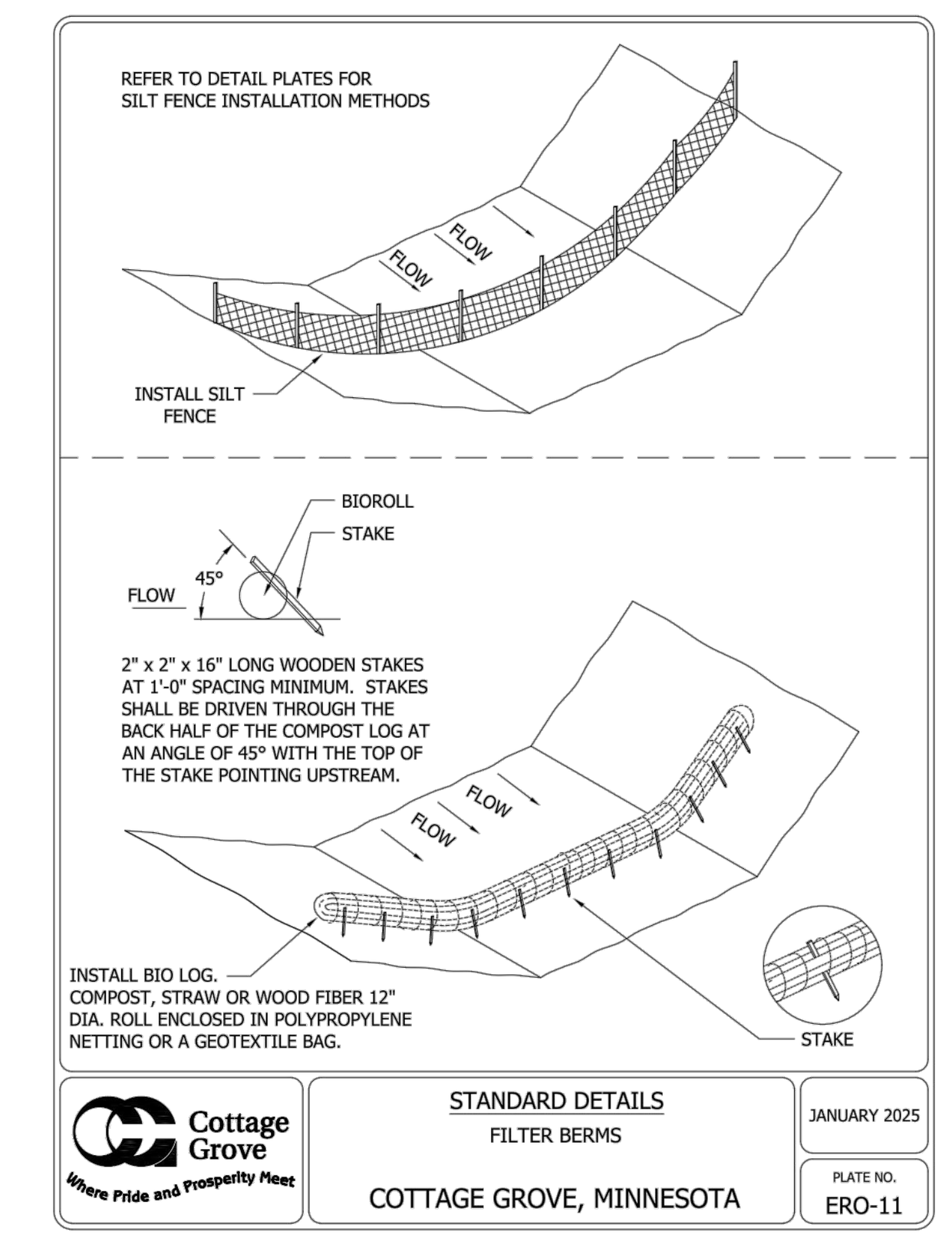
STABILIZATION BMP'S
1. STRAW/HAY MnDOT TYPE 1 MULCH
2. EROSION CONTROL BLANKET MnDOT CAT. 3
3. HYDROMULCH MnDOT TYPE 5
4. TURF REINFORCEMENT MAT SC250 NORTH AMERICAN GREEN OR EQUAL-MNDOT CAT 6

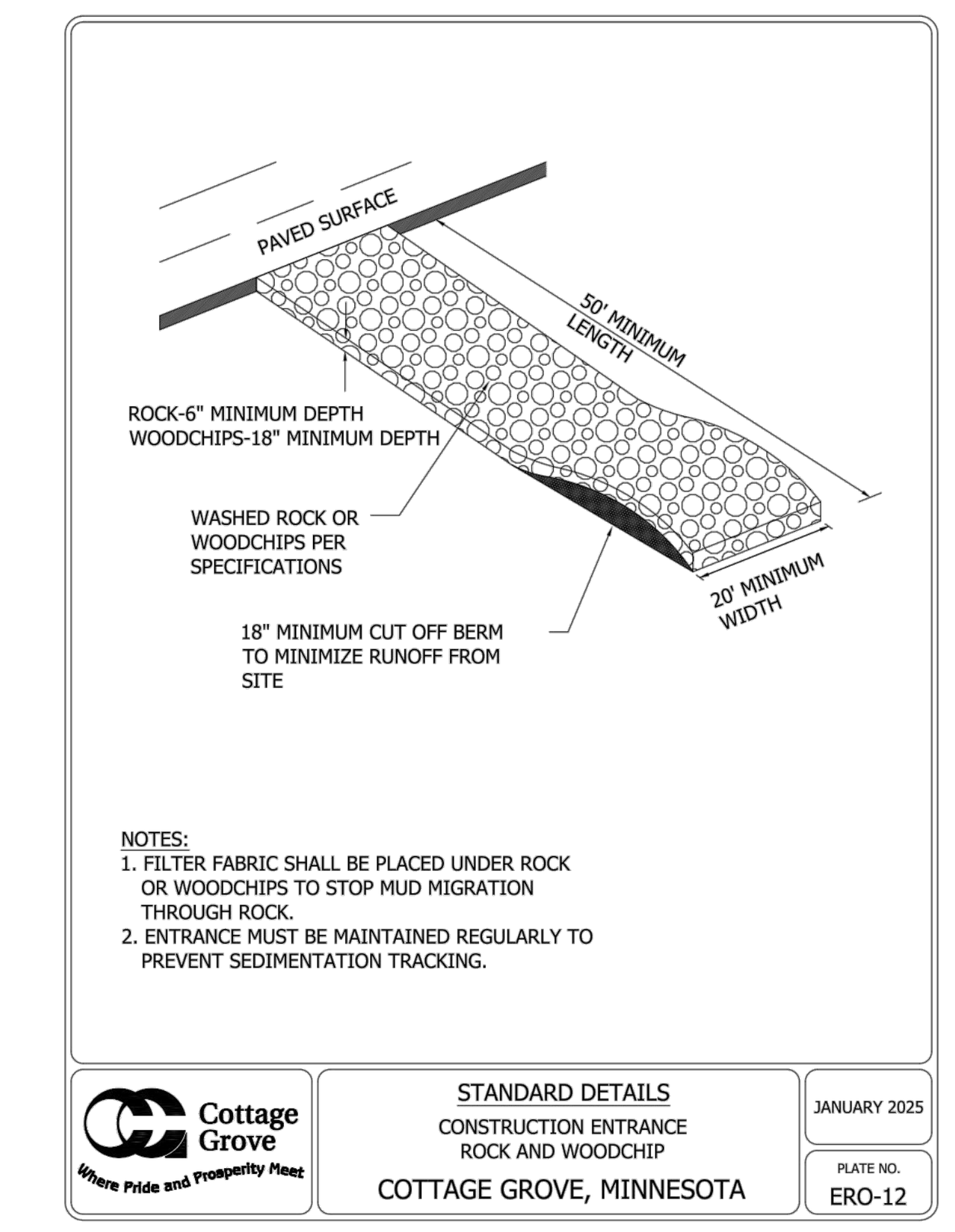
GRADING ACTIVITY
1. CONCRETE WASHOUT IS DONE TRUCK BY TRUCK WITH A MOBILE WASHOUT SYSTEM PROVIDED AND COMPLETED BY THE CONCRETE CONTRACTOR.

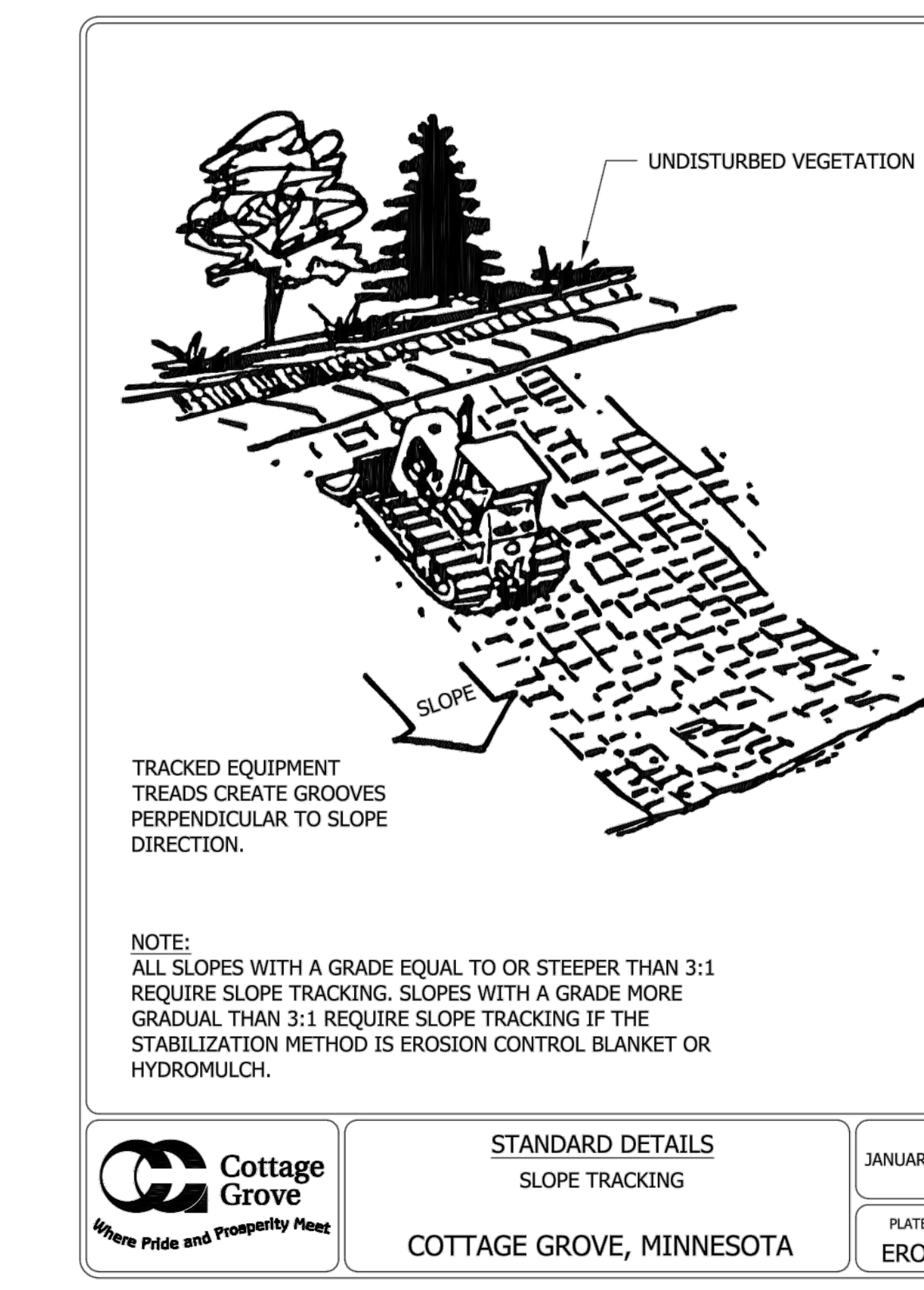


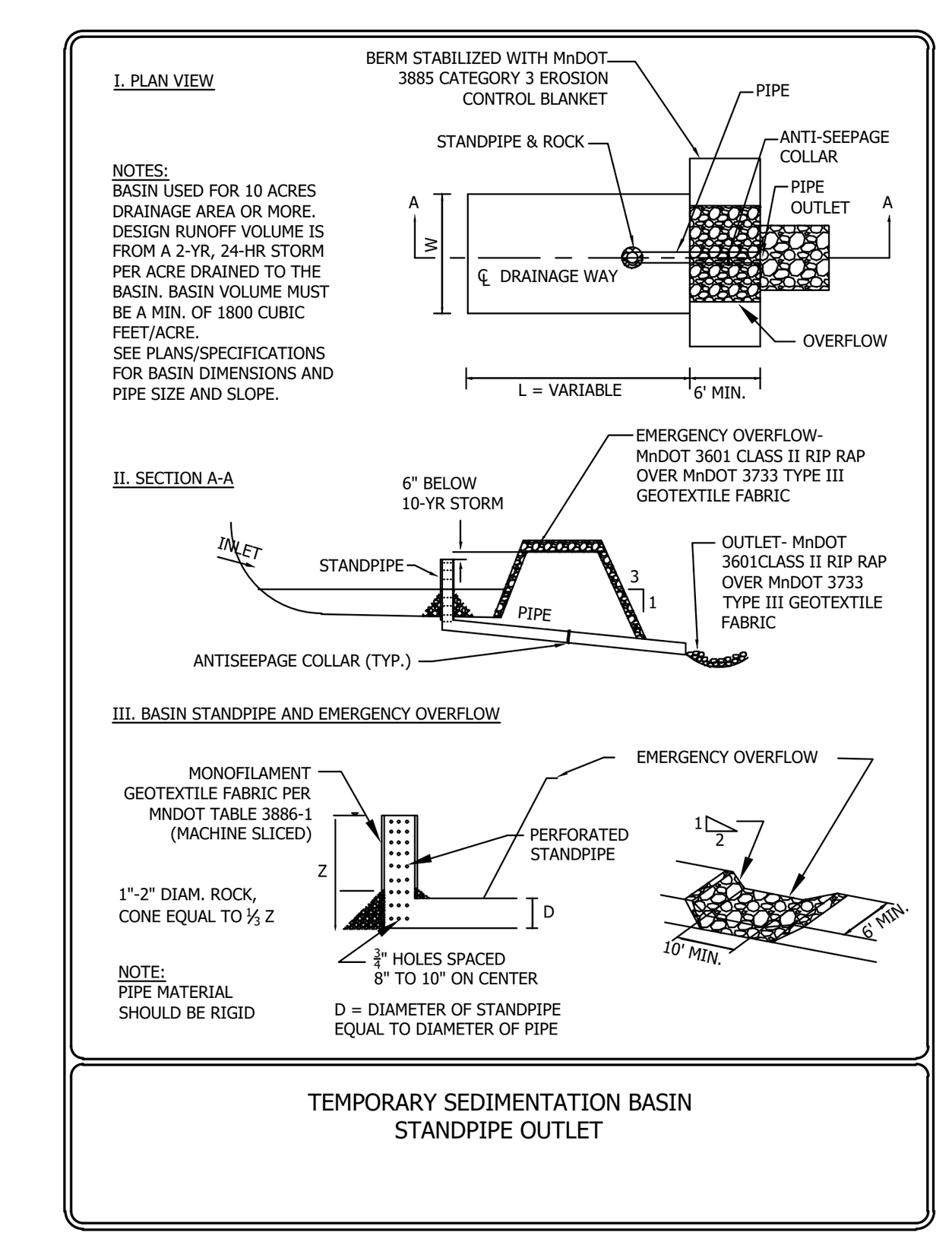


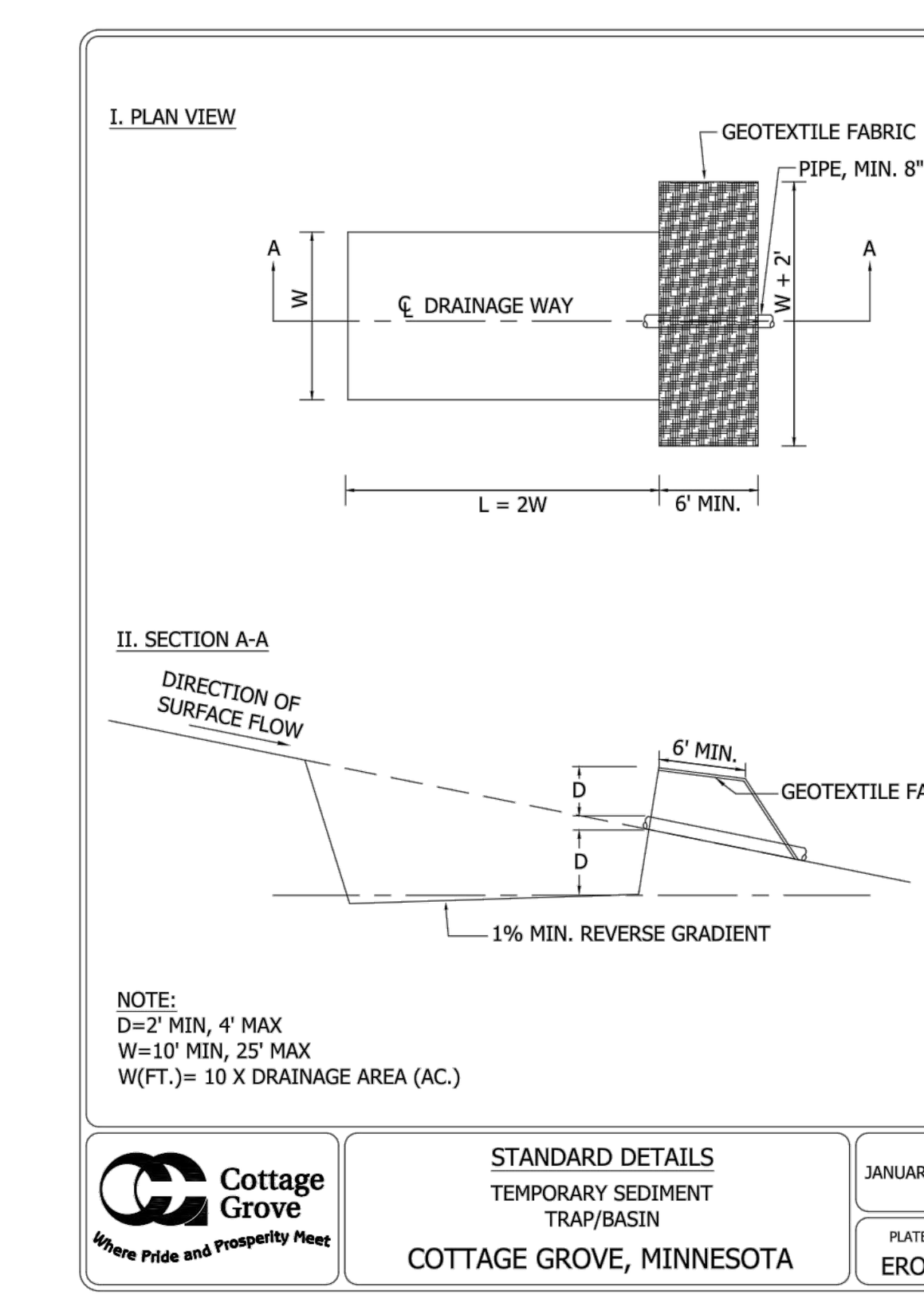












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TWIN CITIES LAND DEVELOPMENT

RAVARA TRAILS
COTTAGE GROVE, MINNESOTA

PRELIMINARY PLAT SUBMITTAL
EROSION AND SEDIMENT CONTROL NOTES AND DETAILS

DATE	DESCRIPTION
2025-12-31	City Submittal

CERTIFICATION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Civil Engineer under the laws of the State of MINNESOTA.

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Clark Wicklund
Date 40922 License no.

QA/QC CHECK

By Date

PROJECT TEAM DATA

Designed By: CJW
Drafted By: LRJ
Project No.: 4000570-00

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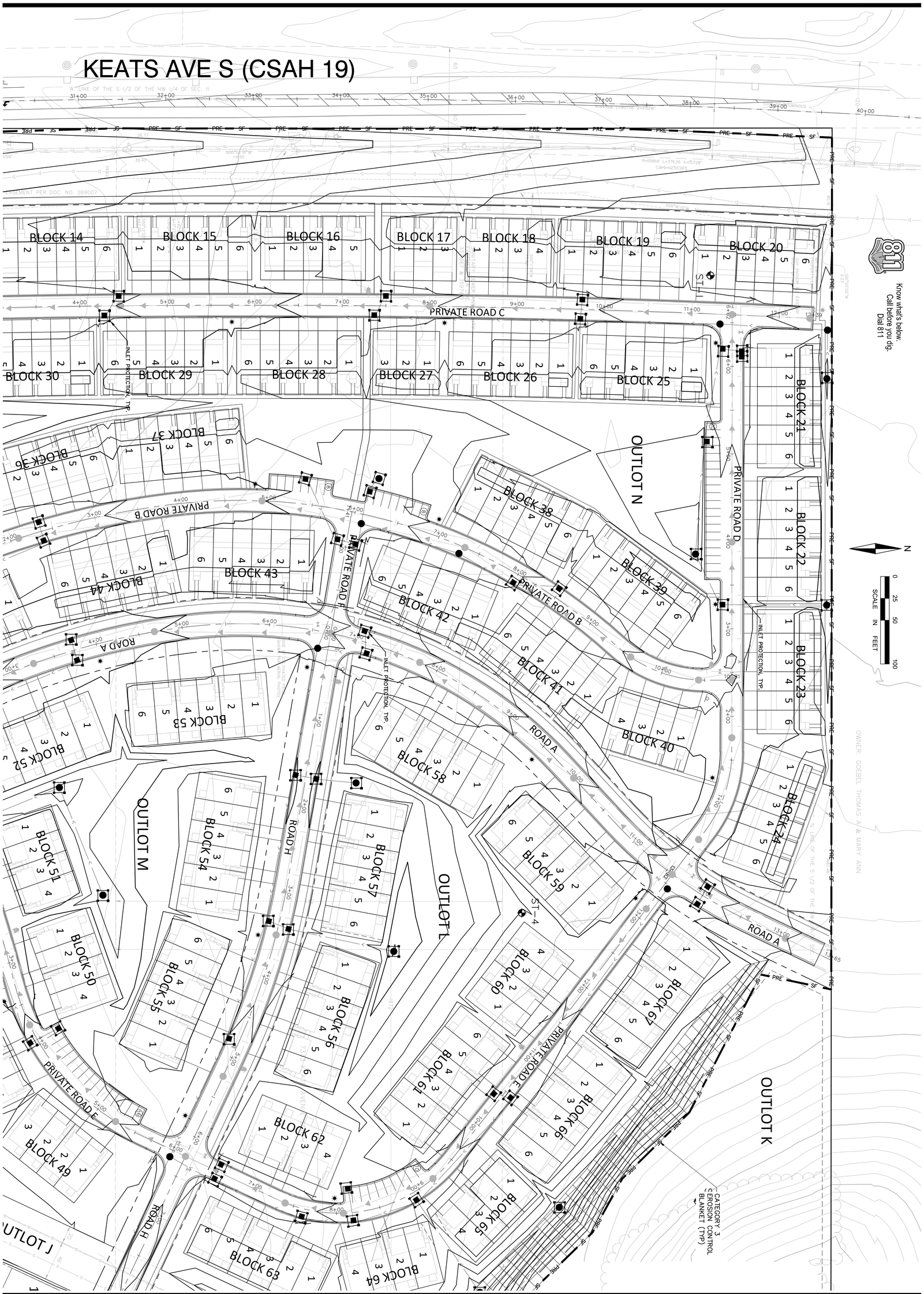

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Chris K. Vinciguerra

Date 40922

License no.

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PROJECT TEAM DATA

Designed By: CJW

Drafted By: LRJ

Project No.: 4000570-00

RAVARA TRAILS

COTTAGE GROVE, MINNESOTA

PRELIMINARY PLAT SUBMITTAL
EROSION AND SEDIMENT CONTROL PLAN - VIEW A

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RAVARA TRAILS

COTTAGE GROVE, MINNESOTA

PRELIMINARY PLAT SUBMITTAL EROSION AND SEDIMENT CONTROL PLAN - VIEW B

DATE	DESCRIPTION
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Clark Vilcinskas

Date 40922 License no.

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Designed By: CJW

Drafted By: LRJ

Project No.: 4000570-00

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RAVARA TRAILS

COTTAGE GROVE, MINNESOTA

PRELIMINARY PLAT SUBMITTAL
EROSION AND SEDIMENT CONTROL PLAN - VIEW C

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Designed By: CJW
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Project No.: 4000570-00

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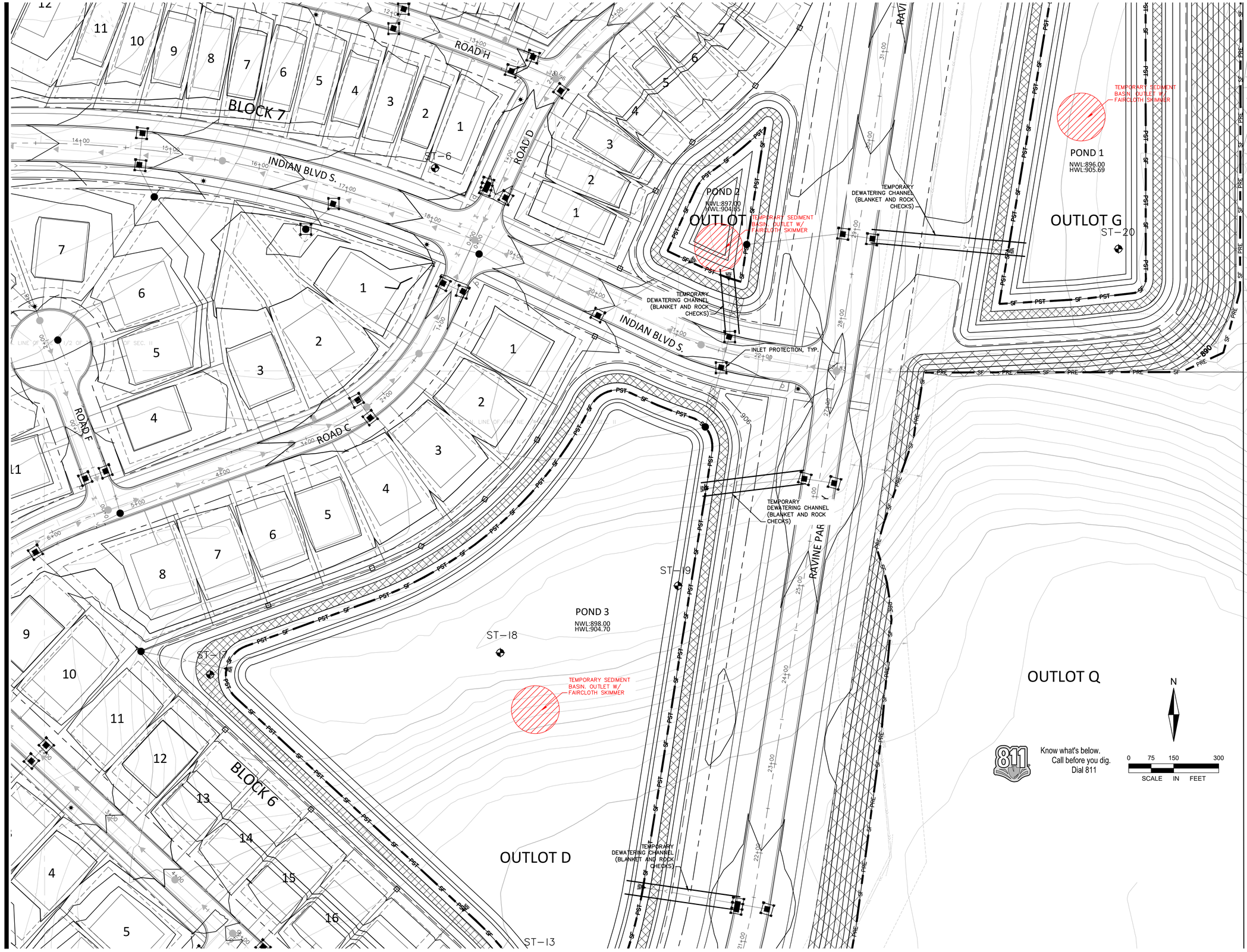

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RAVARA TRAILS

COTTAGE GROVE, MINNESOTA

PRELIMINARY PLAT SUBMITTAL EROSION AND SEDIMENT CONTROL PLAN - VIEW D

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Designed By: CJW
Drafted By: LRJ
Project No.: 4000570-00

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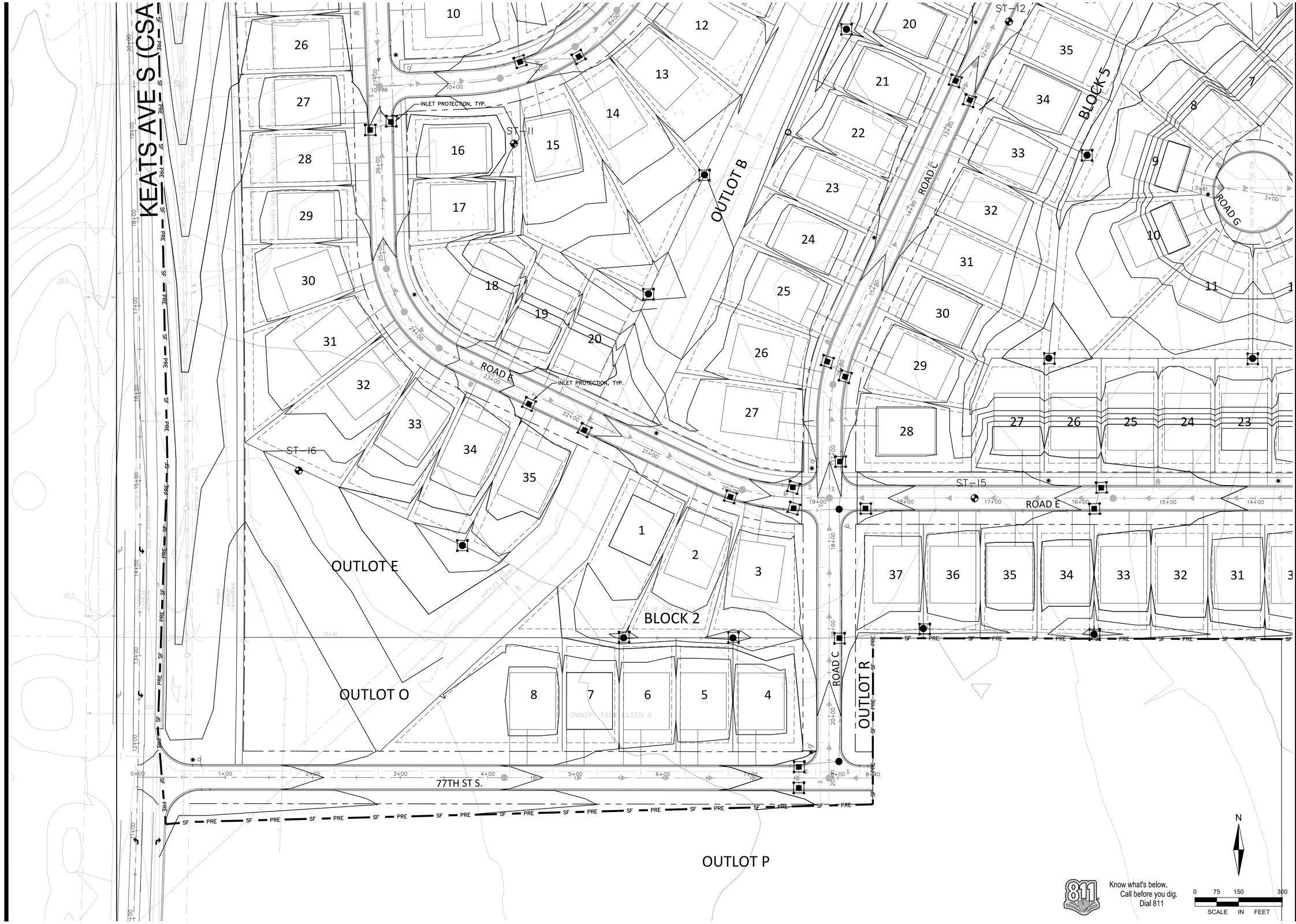

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RAVARA TRAILS

COTTAGE GROVE, MINNESOTA

PRELIMINARY PLAT SUBMITTAL
EROSION AND SEDIMENT CONTROL PLAN - VIEW E

DESCRIPTION	DATE
City Submittal	2025-12-31

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Project No.: 4000570-00

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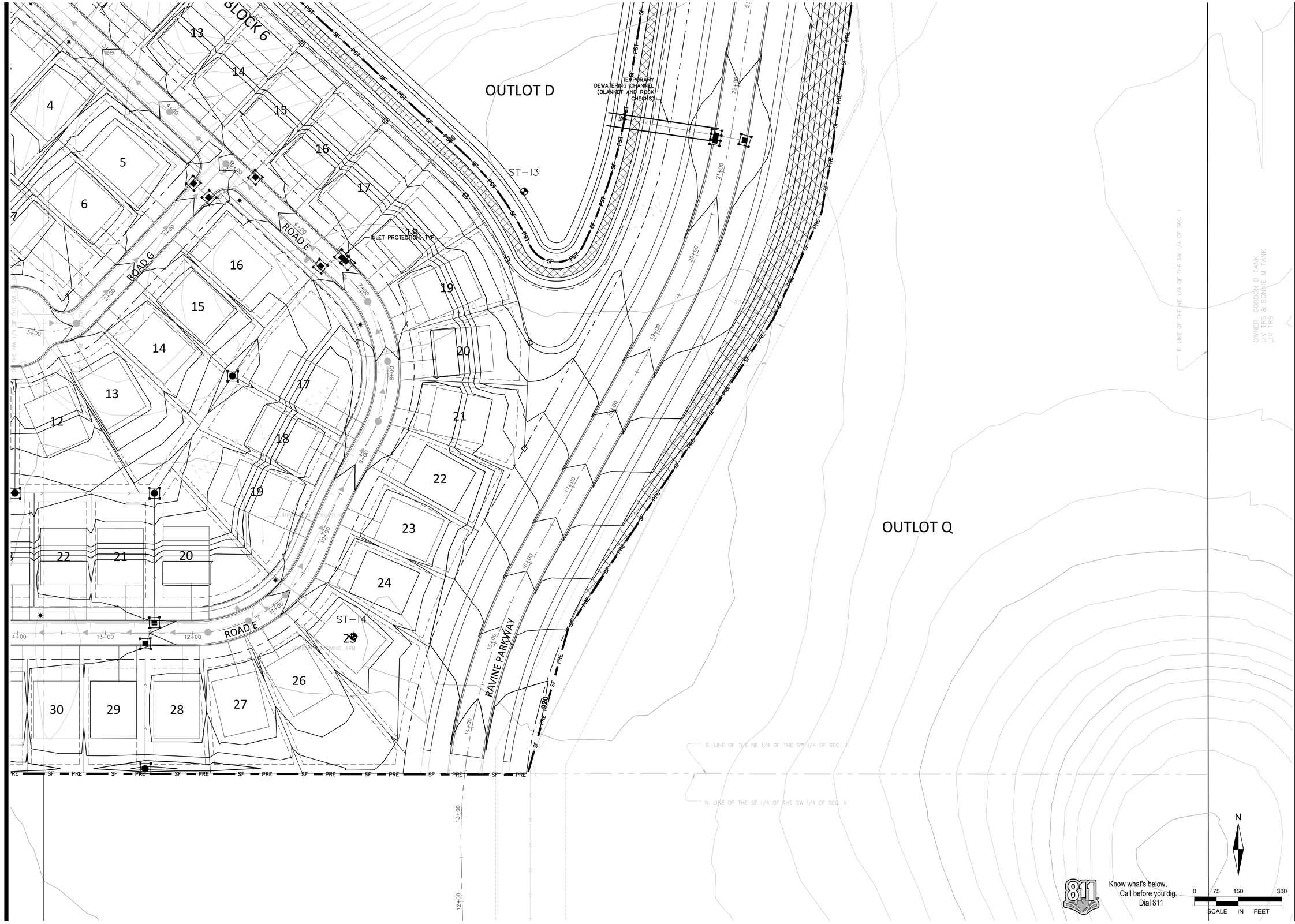

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RAVARA TRAILS

COTTAGE GROVE, MINNESOTA

PRELIMINARY PLAT SUBMITTAL EROSION AND SEDIMENT CONTROL PLAN - VIEW F

DATE	DESCRIPTION
2025-12-31	City Submittal

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Clark Victor Lund
Date
40922
License no.

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PROJECT TEAM DATA

Designed By: CJW
Drafted By: LRJ
Project No.: 4000570-00

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UTILITY NOTES:

1. EXISTING UTILITIES, SERVICE LOCATIONS AND ELEVATIONS SHALL BE VERIFIED IN FIELD PRIOR TO CONSTRUCTION.
2. MAINTAIN A MIN 24" VERTICAL SEPARATION AT ALL PIPE CROSSINGS. WATER AND SANITARY SEWER TRUNK MAINS TO MAINTAIN 10' HORIZONTAL SEPARATION. LOWER WATERMAIN AS NECESSARY.
3. CONTRACTOR IS RESPONSIBLE FOR ALL PERMITS PRIOR TO THE START OF CONSTRUCTION.
4. PROVIDE A MINIMUM OF 4" STYROFOAM BOARD INSULATION FOR ALL STORM SEWER AND WATERMAIN CROSSINGS WHERE VERTICAL OR HORIZONTAL SEPARATION IS LESS THAN 36".
5. ALL UTILITY WORK WITHIN THE R.O.W. SHALL COMPLY WITH THE CITY OF COTTAGE GROVE'S STANDARD SPECIFICATIONS FOR STREET AND UTILITY CONSTRUCTION.
6. NOTIFY GOPHER STATE ONE CALL 48 HOURS IN ADVANCE OF ANY UTILITY WORK.
7. PROVIDE TEMPORARY TRAFFIC CONTROL IN COMPLIANCE WITH MNDOT "TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS–FIELD MANUAL" LATEST REVISION, FOR ANY CONSTRUCTION WITHIN PUBLIC R.O.W.
8. ALL SANITARY MANHOLES TO BE 48" DIAMETER CONCRETE W/NEENAH R–1642 CASTING, UNLESS NOTED OTHERWISE.
9. WATERMAIN, SERVICES, AND VALVES SHALL BE INSTALLED WITH MINIMUM 7.5' OF COVER.
10. WATER SERVICES SHALL BE 1" DIA. TYPE K COPPER W/ 1" CORP. STOP AND 1" CURB BOX.
11. SEWER SERVICES SHALL BE 4" PVC SCH 40 MINIMUM 2% SLOPE UNLESS OTHERWISE NOTED ON THE PLANS.
12. SANITARY SEWER SERVICES TO EXTEND 15' PAST ROW WITH RISER AT END OF SERVICE. PER CITY DETAIL SER–1
13. EXTEND CURB STOP 1' BEYOND ROW WHEN SIDEWALK IS PRESENT.
14. WATER SERVICE TAIL TO BE EXTENDED 15' PAST ROW PER CITY DETAIL SER–1.
15. WATER SERVICES MAY BE PLACED IN SAME TRENCH AS SEWER SERVICES PROVIDED THAT A 24" VERTICAL & A 36" HORIZONTAL SEPARATION ARE MAINTANED AND PIPE MATERIALS MEET THE CITY AND BUILDING CODES.
16. ALL CURB BOXES SHALL BE ADJUSTED TO AN ELEVATION OF 1" BELOW FINSHED GRADE.
17. ALL 8" WATERMAIN SHALL 8" CL–52 DIP.
18. CITY TO REIMBURSE DEVELOPER FOR SEWER AND WATER OVER SIZING AND OVER DEPTH.

LEGEND:

- PROPOSED STORM SEWER
- PROPOSED DRAIN TILE
- PROPOSED SANITARY SEWER
- PROPOSED WATERMAIN
- PROPOSED CATCH BASIN
- PROPOSED SANITARY MANHOLE
- PROPOSED GATE VALVE
- PROPOSED HYDRANT
- EXISTING GATE VALVE
- EXISTING HYDRANT
- EXISTING WATERMAIN
- EXISTING CATCH BASIN
- EXISTING STORM MANHOLE
- EXISTING STORM SEWER
- EXISTING SANITARY MANHOLE
- EXISTING SANITARY SEWER

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RAVARA TRAILS

COTTAGE GROVE, MINNESOTA

PRELIMINARY PLAT SUBMITTAL
SANITARY SEWER AND WATERMAIN PLAN
- OVERALL

DATE	DESCRIPTION
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PROJECT TEAM DATA

Designed By: CJW
Drafted By: LRJ
Project No.: 4000570-00

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Sheet 54 of 91

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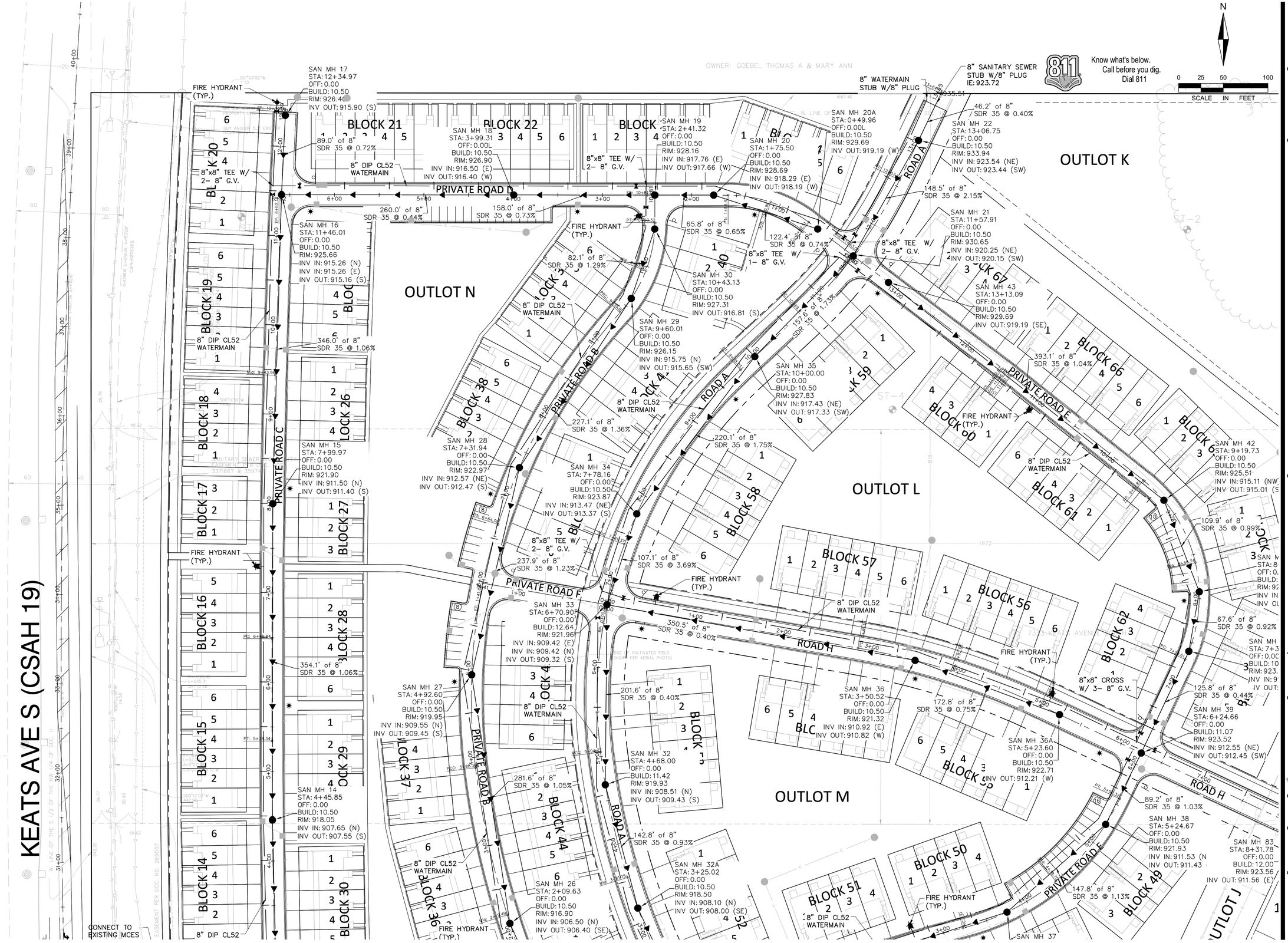

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RAVARA TRAILS

COTTAGE GROVE, MINNESOTA

PRELIMINARY PLAT SUBMITTAL
SANITARY SEWER AND WATERMAIN PLAN - VIEW A

DATE	DESCRIPTION
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Designed By: CJW
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COTTAGE GROVE, MINNESOTA

PRELIMINARY PLAT SUBMITTAL SANITARY SEWER AND WATERMAIN PLAN - VIEW B

DATE	DESCRIPTION
2025-12-31	City Submittal

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PRELIMINARY PLAT SUBMITTAL
SANITARY SEWER AND WATERMAIN PLAN - VIEW C

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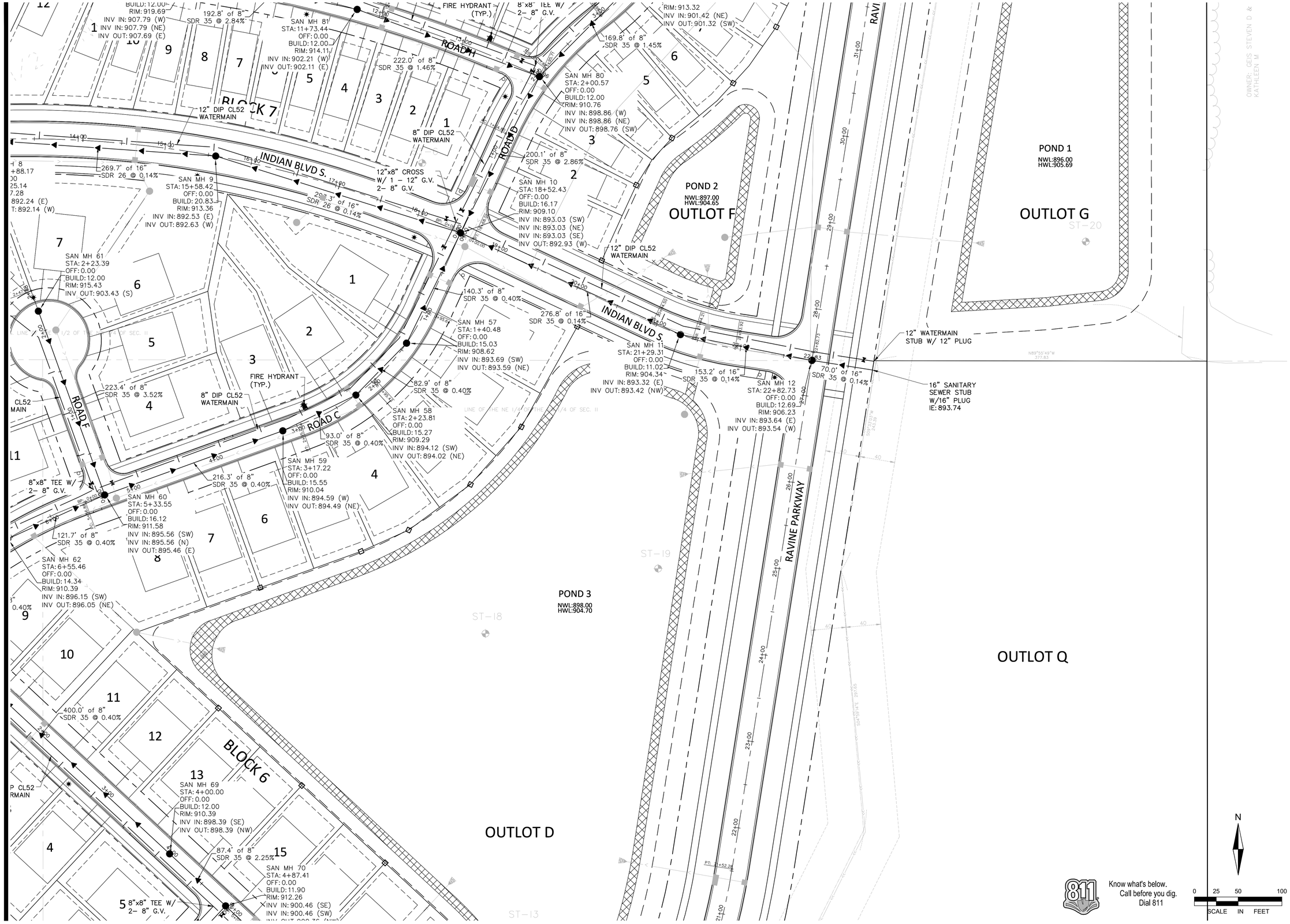

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COTTAGE GROVE, MINNESOTA

PRELIMINARY PLAT SUBMITTAL
SANITARY SEWER AND WATERMAIN PLAN - VIEW D

DESCRIPTION	DATE
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Project No.: 4000570-00

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KEATS AVE S (CSA

FIRE HYDRANT (TYP.)

8"x8" TEE W/ 2– 8" G.V.

SAN MH 51
STA: 26+89.94
OFF: 0.00
BUILD: 19.95
RIM: 919.67
INV IN: 899.82 (S)
INV IN: 899.82 (N)
INV OUT: 899.72 (E)

SDR 35 @ 0.40%

SAN MH 49
STA: 8+53.81
OFF: 0.00
BUILD: 16.97
RIM: 915.57
INV IN: 898.70 (SW)
INV OUT: 898.60 (NE)

OFF: 0.00
BUILD: 16.68
RIM: 914.93
INV IN: 898.35 (SW)
INV OUT: 898.25 (NE)

92.8' of 8"
SDR 35 @ 0.40%

138.3' of 8"
SDR 26 @ 0.40%

SAN MH 50
STA: 9+47.12
OFF: 0.00
BUILD: 17.76
RIM: 916.83
INV IN: 899.17 (W)
INV OUT: 899.07 (NE)

8" DIP CL52 WATERMAIN

208.6' of 8"
SDR 26 @ 5.11%

SAN MH 54
STA: 24+81.22
OFF: 0.00
BUILD: 12.00
RIM: 922.47
INV IN: 910.57 (SE)
INV OUT: 910.47 (N)

53.5' of 8"
SDR 35 @ 1.01%

57.4' of 8"
SDR 35 @ 0.56%

SAN MH 55
STA: 24+27.46
OFF: 0.00
BUILD: 12.00
RIM: 923.11
INV OUT: 911.11 (SE)
INV OUT: 911.11 (NW)

SAN MH 56
STA: 23+69.73
OFF: 0.00
BUILD: 12.00
RIM: 922.69
INV IN: 910.79 (NW)
INV OUT: 910.69 (SE)

FIRE HYDRANT (TYP.)

382.3' of 8"
SDR 35 @ 1.63%

ROAD F

OUTLOT B

ROAD C

SAN MH 65
STA: 12+19.95
OFF: 0.00
BUILD: 12.00
RIM: 912.09
INV IN: 900.19 (SW)
INV OUT: 900.09 (NE)

8" DIP CL52 WATERMAIN

600.1' of 8"
SDR 35 @ 0.71%

BLOCK 5

FIRE HYDRANT (TYP.)

SAN MH 72
STA: 3+59.27
OFF: 0.00
BUILD: 12.00
RIM: 918.07
INV OUT: 906.07 (E)

ROAD G

106.7
SDR

FIRE HYDRANT (TYP.)

SAN MH 66
STA: 16+20.62
OFF: 0.00
BUILD: 12.00
RIM: 915.29
INV IN: 903.39 (S)
INV OUT: 903.29 (NE)

8" DIP CL52 WATERMAIN

129.8' of 8"
SDR 35 @ 1.14%

8"x8" CROSS W/ 3– 8" G.V.

8" DIP CL52 WATERMAIN

FIRE HYDRANT (TYP.)

ROAD E

324.2' of 8"
SDR 35 @ 0.85%

380.0' of
SDR 35 @ 0

SAN MH 78
STA: 15+62.62
OFF: 0.00
BUILD: 12.00
RIM: 918.71
INV IN: 906.81 (E)
INV OUT: 906.71 (W)

SAN MH 67
STA: 17+50.57
OFF: 0.00
BUILD: 12.36
RIM: 916.33
INV IN: 903.97 (W)
INV IN: 903.97 (E)
INV IN: 903.97 (S)
INV OUT: 904.87 (N)

SAN MH 68
STA: 19+87.09
OFF: 0.00
BUILD: 12.00
RIM: 916.37
INV IN: 904.47 (NW)
INV OUT: 904.37 (E)

99.8' of 8"
SDR 35 @ 0.40%

OUTLOT E

BLOCK 2

8" DIP CL52 WATERMAIN

320.0' of 8"
SDR 35 @ 1.07%

OUTLOT O

OUTLOT R

12"x8" TEE W/ 1– 12" G.V. 2– 8" G.V.

12" WATERMAIN STUB W/ 12" PLUG

CONNECT TO EXISTING 12" WATERMAIN

BORE 67LF UNDER KEATS AVE S

77TH ST S.

371.1' of 8"
SDR 35 @ 0.77%

60.0' of 8"
SDR 35 @ 0.40%

8" SANITARY SEWER STUB W/8" PLUG
IE: 907.73

SAN MH 67B
STA: 4+18.81
OFF: 0.00L
BUILD: 12.00
RIM: 922.36
INV OUT: 910.36 (E)

8" WATERMAIN STUB W/ 8" PLUG

OUTLOT P

8" SANITARY SEWER STUB W/8" PLUG
IE: 907.61

30.0' of 8"
SDR 35 @ 0.40%

SAN MH 67A
STA: 20+70.57
OFF: 0.00
BUILD: 12.00
RIM: 919.39
INV IN: 907.49 (W)
INV IN: 907.49 (S)
INV IN: 907.49 (E)
INV OUT: 907.39 (N)

N

0 25 50 100
SCALE IN FEET

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TWIN CITIES LAND DEVELOPMENT

RAVARA TRAILS
COTTAGE GROVE, MINNESOTA

PRELIMINARY PLAT SUBMITTAL
SANITARY SEWER AND WATERMAIN PLAN
- VIEW E

DATE	DESCRIPTION
2025-12-31	City Submittal

CERTIFICATION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Civil Engineer under the laws of the State of MINNESOTA.

PRELIMINARY NOT FOR CONSTRUCTION

Clark Wicklund
Date
40922
License no.

QA/QC CHECK

By
Date

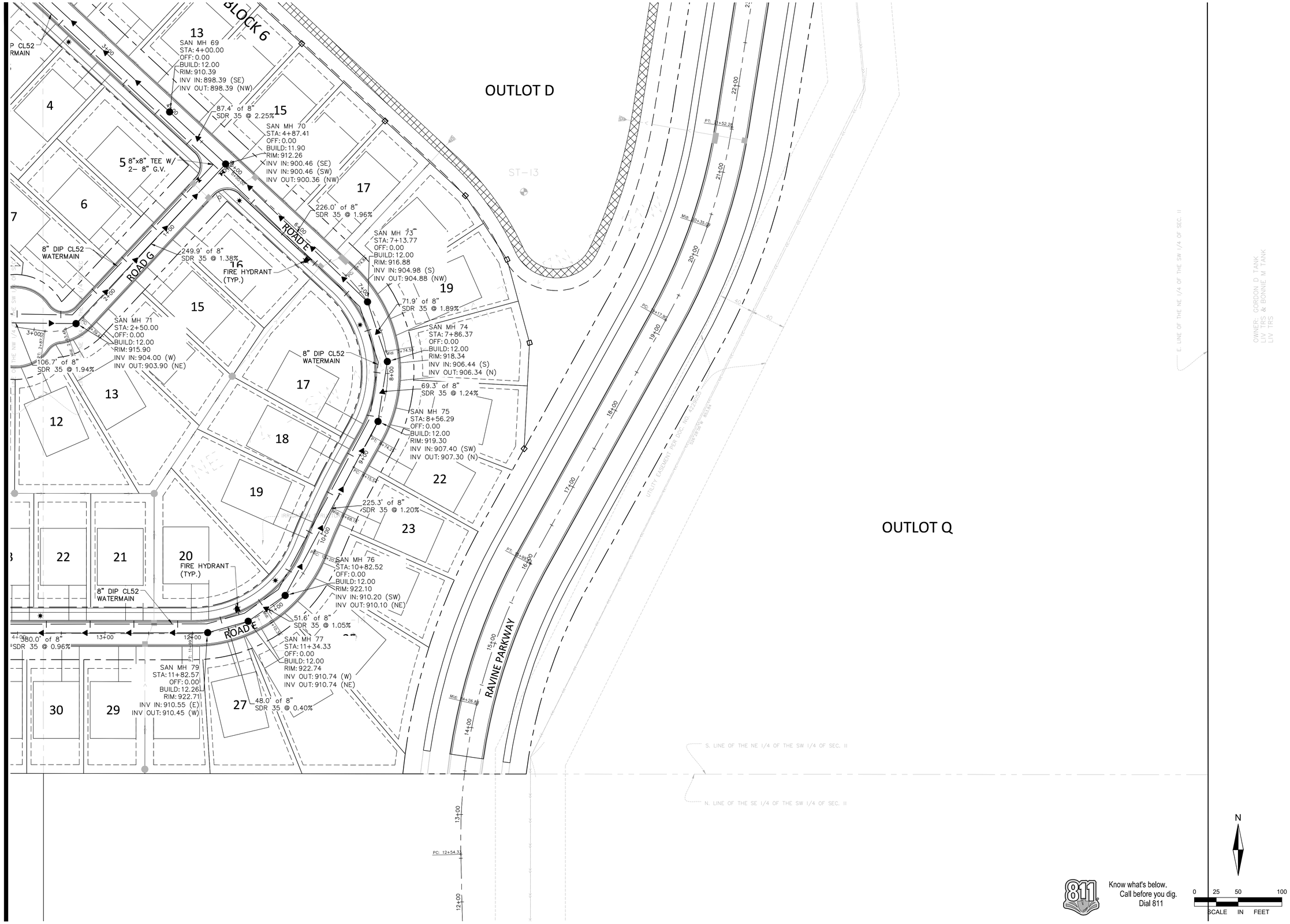
PROJECT TEAM DATA

Designed By: CJW
Drafted By: LRJ
Project No.: 4000570-00

59

Sheet 59 of 91

File Location: X:\4000570-00\0140 Design\30 Sheets - Preliminary\SAN-WM.dwg Plotted By: Logan Josephson on December 31, 2025 at 10:09:09 AM



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TWIN CITIES LAND DEVELOPMENT

RAVARA TRAILS

COTTAGE GROVE, MINNESOTA

PRELIMINARY PLAT SUBMITTAL
SANITARY SEWER AND WATERMAIN PLAN - VIEW F

DESCRIPTION	DATE
City Submittal	2025-12-31

CERTIFICATION

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PRELIMINARY
FOR REVIEW
NOT FOR CONSTRUCTION

Clark Wicklund
Date

40922
License no.

QA/QC CHECK

By Date

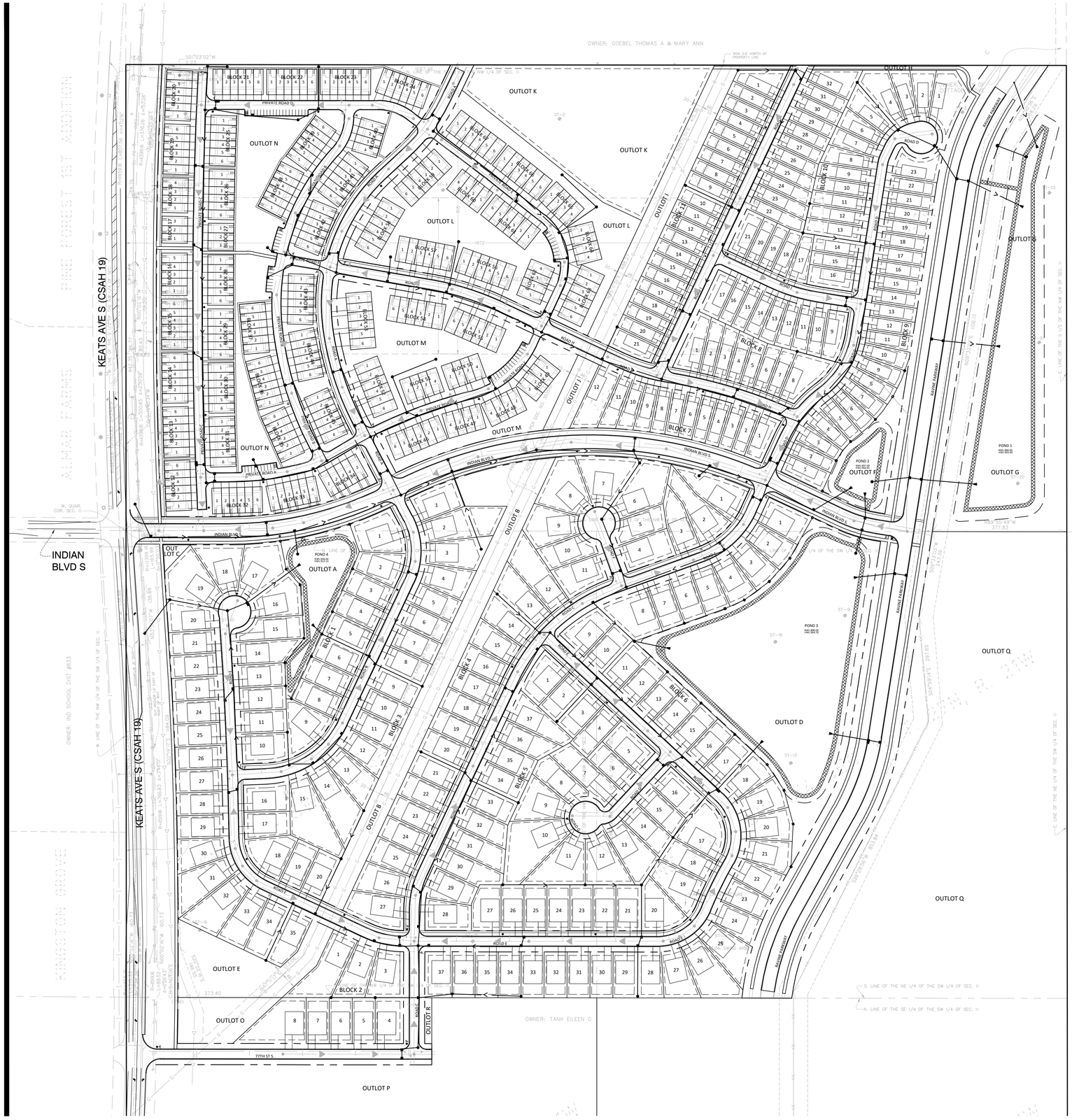
PROJECT TEAM DATA

Designed By: CJW
Drafted By: LRJ
Project No.: 4000570-00

60

Sheet 60 of 91

File Location: X:\4000570-00\0140 Design\00 Sheets - Preliminary\GAN-VMA.dwg Plotted By: Logan Josephson on December 31, 2025 at 10:14 PM



UTILITY NOTES:

1. EXISTING UTILITIES, SERVICE LOCATIONS AND ELEVATIONS SHALL BE VERIFIED IN FIELD PRIOR TO CONSTRUCTION.
2. CONTRACTOR IS RESPONSIBLE FOR ALL PERMITS PRIOR TO THE START OF CONSTRUCTION.
3. MAINTAIN A MIN 2' VERTICAL SEPARATION AT ALL PIPE CROSSINGS. LOWER WATERMAIN AS NECESSARY.
4. PROVIDE A MINIMUM OF 4" THICK STYROFOAM BOARD INSULATION FOR ALL STORM SEWER AND WATERMAIN CROSSINGS WHERE VERTICAL OR HORIZONTAL SEPARATION IS LESS THAN 36".
5. ALL UTILITY WORK WITHIN THE R.O.W. SHALL COMPLY WITH THE CITY OF COTTAGE GROVE'S STANDARD SPECIFICATIONS FOR STREET AND UTILITY CONSTRUCTION.
6. PROVIDE TEMPORARY TRAFFIC CONTROL IN COMPLIANCE WITH MNDOT "TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS–FIELD MANUAL" LATEST REVISION, FOR ANY CONSTRUCTION WITHIN PUBLIC R.O.W.
7. SEE SHEET 68 FOR STORM SEWER DESIGN SCHEDULES.

LEGEND:

- PROPOSED STORM SEWER
- PROPOSED DRAIN TILE
- PROPOSED SANITARY SEWER
- PROPOSED WATERMAIN
- PROPOSED CATCH BASIN
- PROPOSED SANITARY MANHOLE
- PROPOSED GATE VALVE
- PROPOSED HYDRANT
- EXISTING GATE VALVE
- EXISTING HYDRANT
- EXISTING WATERMAIN
- EXISTING CATCH BASIN
- EXISTING STORM MANHOLE
- EXISTING STORM SEWER
- EXISTING SANITARY MANHOLE
- EXISTING SANITARY SEWER
- POND MAINTENANCE ACCESS
- WETLAND BUFFER

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0 75 150 300

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TWIN CITIES LAND DEVELOPMENT

RAVARA TRAILS

COTTAGE GROVE, MINNESOTA

PRELIMINARY PLAT SUBMITTAL

STORM SEWER PLAN - OVERALL

DATE	DESCRIPTION
2025-12-31	City Submittal

CERTIFICATION

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Clark Wicklund — 40922
Date — License no.

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By — Date

PROJECT TEAM DATA

Designed By: CJW
Drafted By: LRJ
Project No.: 4000570-00

61

Sheet 61 of 91

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OWNER: GOEBEL THOMAS A & MARY ANN

KEATS AVE S (CSAH 19)

PRIVATE ROAD C

PRIVATE ROAD B

PRIVATE ROAD D

PRIVATE ROAD E

PRIVATE ROAD F

ROAD A

ROAD H

OUTLOT K

OUTLOT L

OUTLOT M

OUTLOT N

BLOCK 14
BLOCK 15
BLOCK 16
BLOCK 17
BLOCK 18
BLOCK 19
BLOCK 20
BLOCK 21
BLOCK 22
BLOCK 23
BLOCK 24
BLOCK 25
BLOCK 26
BLOCK 27
BLOCK 28
BLOCK 29
BLOCK 30
BLOCK 36
BLOCK 37
BLOCK 38
BLOCK 39
BLOCK 40
BLOCK 41
BLOCK 42
BLOCK 43
BLOCK 44
BLOCK 45
BLOCK 46
BLOCK 47
BLOCK 48
BLOCK 49
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BLOCK 54
BLOCK 55
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BLOCK 57
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BLOCK 59
BLOCK 60
BLOCK 61
BLOCK 62
BLOCK 63
BLOCK 64
BLOCK 65
BLOCK 66
BLOCK 67

MH 444A
CB 444B
CB 449
CB 446A
CBMH 446
CBMH 445
CBMH 447
CBMH 447A
CBMH 448
MH 444
CB 443
CBMH 442
CB 441
CBMH 440
CB 439
CBMH 438
CB 363
CBMH 362
MH 361
CB 357
CBMH 360B
CBMH 360A
MH 360
CB 359B
CBMH 359
CBMH 359A
CB 426
CBMH 430
CB 431
CBMH 425B
CB 424
CBMH 423
CB 421B
CBMH 421A
CBMH 356
CB 354
CB 351
CBMH 353
CBMH 352
MH 355
CBMH 350
CBMH 349A
CBMH 349
CB 339
MH 337
CBMH 338
CBMH 339A
CB 340A
CBMH 340
CBMH 341
CB 343
CBMH 344
CB 345
CB 348
CBMH 347
MH 346
CBMH 336

ST-2
ST-4

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TWIN CITIES LAND DEVELOPMENT

RAVARA TRAILS

COTTAGE GROVE, MINNESOTA

PRELIMINARY PLAT SUBMITTAL

STORM SEWER PLAN - VIEW A

DATE	DESCRIPTION
2026-12-31	City Submittal

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PRELIMINARY
NOT FOR CONSTRUCTION
FOR REVIEW ONLY

Clark Wicklund — 40922
Date — License no.

QA/QC CHECK

By — Date

PROJECT TEAM DATA

Designed By: CJW
Drafted By: LRJ
Project No.: 4000570-00

62

Sheet 62 of 91

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OUTLOT K
OUTLOT L
OUTLOT H
OUTLOT G
OUTLOT I
BLOCK 10
BLOCK 11
BLOCK 8
BLOCK 9
BLOCK 64
BLOCK 63
ROAD I
ROAD J
ROAD H
ROAD D
RAVINE PARKWAY
CB 335
CBMH 334
CBMH 333
STUB A
CB 106
CBMH 105
CBMH 104
CBMH 101
CBMH 102
TEMPORARY FES 1201
TEMPORARY FES 1200
OCS 303
FES 100
FES 800
CBMH 802
CBMH 801
CB 332
CBMH 331
CBMH 330
CB 319A
CBMH 318
CBMH 319
CBMH 316
CBMH 329
CBMH 342
CBMH 314
CB 315
CBMH 313
CB 328
CBMH 327
CB 336A
CB 312
CBMH 326
CBMH 325
CBMH 311
CBMH 310
CB 323
CB 321
MH 324
MH 336
SIGN 0.6' NORTH OF PROPERTY LINE
SIGNIFICANT TREE
SIGNIFICANT TREE LINE
SIGNIFICANT TREE GROUP



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TWIN CITIES LAND DEVELOPMENT

RAVARA TRAILS

COTTAGE GROVE, MINNESOTA

PRELIMINARY PLAT SUBMITTAL

STORM SEWER PLAN - VIEW C

DESCRIPTION	DATE
City Submittal	2025-12-31

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Designed By: CJW
Drafted By: LRJ
Project No.: 4000570-00

64

Sheet 64 of 91

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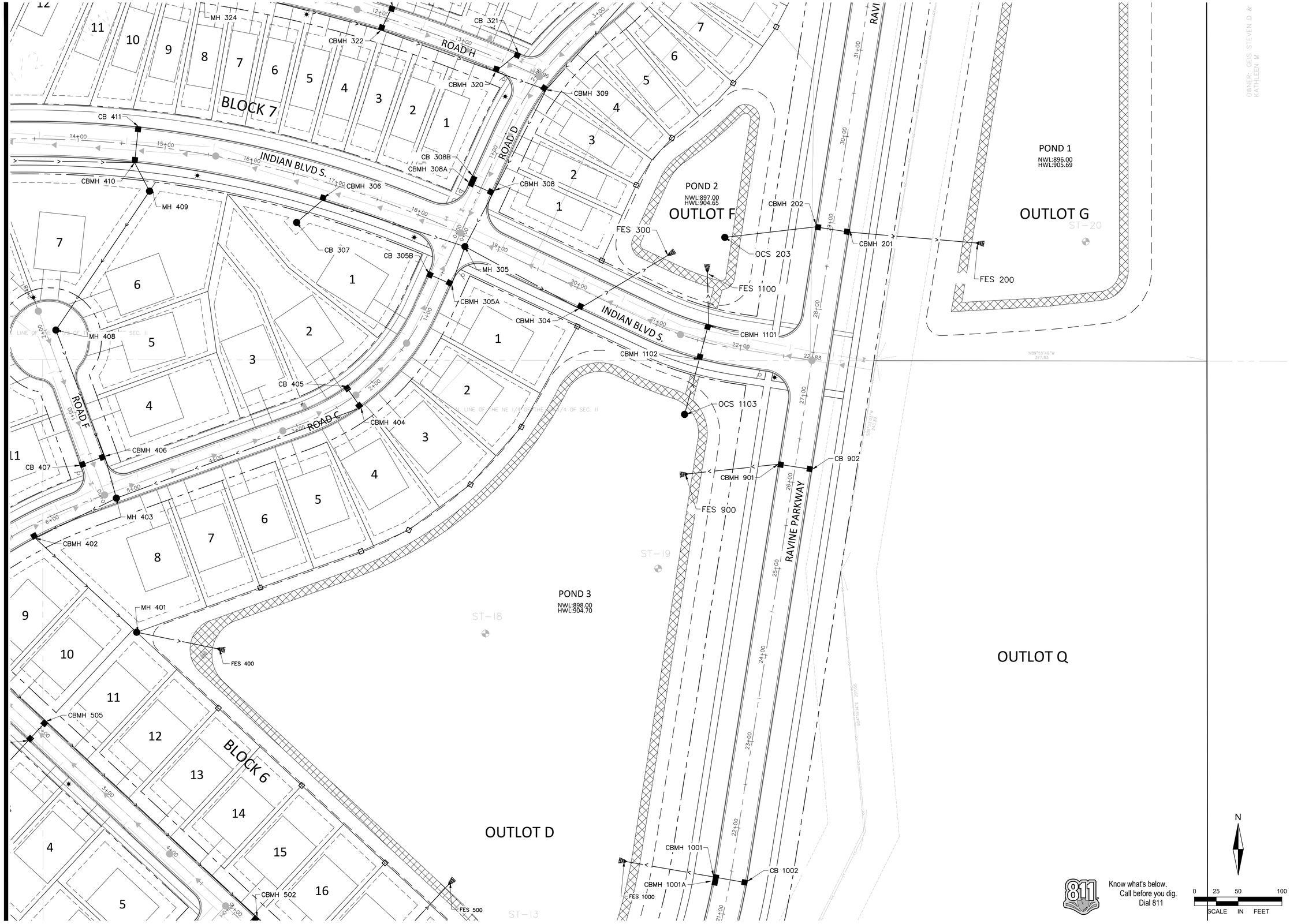

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TWIN CITIES LAND DEVELOPMENT

RAVARA TRAILS

COTTAGE GROVE, MINNESOTA

PRELIMINARY PLAT SUBMITTAL
STORM SEWER PLAN - VIEW D

DESCRIPTION	DATE
City Submittal	2025-12-31

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Designed By: CJW
Drafted By: LRJ
Project No.: 4000570-00

65

Sheet 65 of 91

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PRELIMINARY PLAT SUBMITTAL
STORM SEWER PLAN - VIEW E

DESCRIPTION	DATE
City Submittal	2025-12-31

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Designed By: CJW
Drafted By: LRJ
Project No.: 4000570-00

66

Sheet 66 of 91

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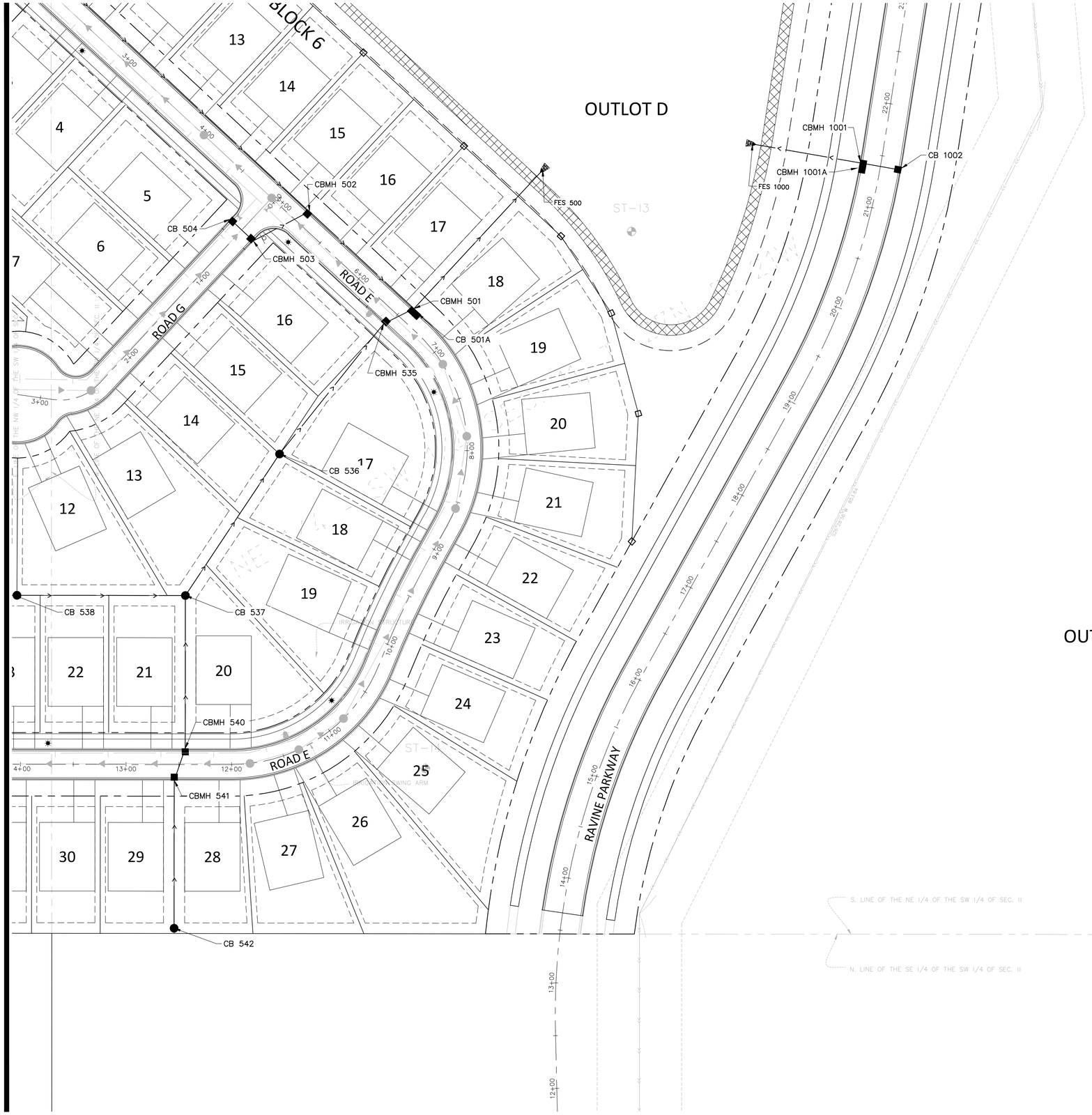

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COTTAGE GROVE, MINNESOTA

PRELIMINARY PLAT SUBMITTAL

STORM SEWER PLAN - VIEW F

DESCRIPTION	DATE
City Submittal	2025-12-31

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Date

40922
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By Date

PROJECT TEAM DATA

Designed By: CJW
Drafted By: LRJ
Project No.: 4000570-00

67

Sheet 67 of 91

File Location: X:\4000570-00\0140 Design\00 Sheets - Preliminary\STORM SEWER.dwg Plotted By: Logan Josephson on December 31, 2025 at 12:41:45 PM

STORM SEWER SCHEDULES:

MH/CB		P. DIA.	P. SLOPE	PIPE	PIPE	FROM	TO	RIM	STR.	CAST	BUILD
FROM	TO	[IN]	[FT/FT]	MAT'L	LENGTH [FT]	INVERT	INVERT	ELEV.	TYPE	TYPE	[FT]
CB 106	CBMH 105	12	0.0048	PP	174.75	909.44	908.60	913.64	27"	R-4342	4.20
CBMH 105	CBMH 104	12	0.0180	PP	117.34	908.60	906.49	915.68	48"	R-3501TB	7.08
CBMH 104	CBMH 102	12	0.0571	PP	107.87	906.49	900.33	910.69	48"	R-3501TB	4.20
CBMH 102	CBMH 101	15	0.0172	PP	39.33	900.08	899.40	904.54	48"	R-3067VB	4.46
CBMH 101	FES 100	21	0.0082	RCP	161.99	897.32	896.00	904.54	48"	R-3067VB	7.22
OCS 203	CBMH 202	36	0.0015	RCP	104.33	897.00	896.85	906.00	60"	GRATE	9.00
CBMH 202	CBMH 201	36	0.0015	PP	39.33	896.85	896.79	904.53	60"	R-3067VB	7.68
CBMH 201	FES 200	36	0.0040	RCP	148.18	896.59	896.00	904.53	60"	R-3067VB	7.94
CB 363	CBMH 362	12	0.0126	PP	55.87	920.04	919.34	924.24	2'x3'	R-3501TB	4.20
CBMH 362	MH 361	12	0.0118	PP	70.37	919.34	918.51	923.54	48"	R-3501TB	4.20
MH 361	MH 360	12	0.0148	PP	115.61	918.51	916.80	922.71	48"	R-1642	4.20
CB 360B	CBMH 360A	12	0.0448	PP	19.53	917.17	916.30	920.37	27"	R-4342	3.20
CBMH 360A	MH 360	12	0.0060	PP	38.03	912.10	911.87	920.50	48"	R-3067VB	8.40
MH 360	CBMH 359	12	0.0250	PP	24.38	911.87	911.26	921.00	48"	R-1642	9.13
CB 359B	CBMH 359A	12	0.0044	PP	78.76	915.10	914.75	919.30	2'x3'	R-3067VB	4.20
CBMH 359A	CBMH 359	12	0.0044	PP	27.42	914.75	914.63	920.76	48"	R-3067VB	6.01
CBMH 359	MH 355	18	0.0051	PP	127.10	910.76	910.11	921.11	48"	R-3067VB	10.35
CB 357	CBMH 356	12	0.0044	PP	31.41	917.93	917.79	922.13	2'x3'	R-3067V	4.20
CBMH 356	MH 355	12	0.0150	PP	55.51	917.79	916.96	922.26	48"	R-3067V	4.47
MH 355	CBMH 352	21	0.0053	PP	146.94	909.86	909.08	922.00	48"	R-1642	12.14
CB 354	CBMH 353	12	0.0265	PP	42.82	916.85	915.72	920.05	27"	R-4342	3.20
CBMH 353	CBMH 352	12	0.0044	PP	30.12	915.72	915.58	919.92	48"	R-3501TB	4.20
CBMH 352	CBMH 349	21	0.0083	PP	169.72	909.08	907.67	919.92	48"	R-3501TB	10.84
CB 351	CBMH 350	12	0.0080	PP	120.12	914.63	913.67	917.83	27"	R-4342	3.20
CBMH 350	CBMH 349	12	0.0200	PP	30.21	913.67	913.06	920.93	48"	R-3501TB	7.26
CBMH 349A	CBMH 349	27	0.0039	PP	141.77	907.17	906.61	920.88	48"	R-3501TB	13.71
CBMH 349	MH 337	27	0.0040	PP	150.52	906.61	906.01	922.04	48"	R-3501TB	15.43
CB 348	CBMH 347	12	0.0044	PP	29.55	926.71	926.58	930.91	2'x3'	R-3067V	4.20
CBMH 347	MH 346	12	0.0044	PP	38.21	926.58	926.41	930.98	48"	R-3067V	4.40
MH 346	CBMH 344	12	0.0147	PP	298.66	926.41	922.02	930.81	48"	R-1642	4.40
CB 345	CBMH 344	12	0.0044	PP	25.41	921.97	921.86	926.17	2'x3'	R-3501TB	4.20
CBMH 344	CBMH 341	12	0.0095	PP	159.95	921.86	920.34	926.25	48"	R-3501TB	4.39
CB 343	CBMH 342	12	0.0222	PP	132.97	918.68	915.73	921.88	27"	R-4342	3.20
CBMH 342	CBMH 341	12	0.0222	PP	125.20	915.73	912.95	919.93	48"	R-4342	4.20
CBMH 341	CBMH 340	18	0.0070	PP	76.97	912.45	911.91	924.58	48"	R-3501TB	12.13
CB 340A	CBMH 340	12	0.0052	PP	42.80	919.84	919.62	924.04	2'x3'	R-3067VB	4.20
CBMH 340	CBMH 339A	18	0.0090	PP	60.61	911.91	911.36	923.82	48"	R-3501TB	11.91
CBMH 339A	CBMH 338	21	0.0042	PP	109.22	911.11	910.66	923.21	48"	R-3501TB	12.10
CB 339	CBMH 338	12	0.0044	PP	24.00	917.71	917.60	921.91	2'x3'	R-3067V	4.20
CBMH 338	MH 337	21	0.0052	PP	56.93	910.66	910.36	921.91	48"	R-3067VB	11.25
MH 337	CBMH 336	27	0.0096	PP	187.04	906.01	904.22	923.62	48"	R-1642	17.61
CB 336A	CBMH 336	12	0.0050	PP	102.09	914.06	913.55	917.26	27"	R-4342	3.20
CBMH 336	MH 324	30	0.0062	PP	178.16	903.97	902.86	923.43	60"	R-3501TB	19.46
CB 335	CBMH 334	12	0.0044	PP	160.19	924.69	923.99	927.89	27"	R-4342	3.20
CBMH 334	CBMH 333	12	0.0044	PP	33.75	923.99	923.84	928.71	48"	R-3501TB	4.72
STUB A	CBMH 333	12	0.0062	PP	37.98	924.50	924.26				
CBMH 333	CBMH 330	12	0.0060	PP	410.68	923.84	921.37	928.94	48"	R-3501TB	5.10
CB 332	CBMH 331	12	0.0044	PP	140.69	923.41	922.79	926.61	27"	R-4342	3.20
CBMH 331	CBMH 330	12	0.0110	PP	30.00	922.79	922.46	927.54	48"	R-3501TB	4.75
CBMH 330	CBMH 329	15	0.0130	PP	106.37	921.12	919.74	927.37	48"	R-3067V	6.25
CBMH 329	CBMH 327	15	0.0136	PP	218.70	919.74	916.77	925.44	48"	R-3067V	5.70
CB 328	CBMH 327	12	0.0057	PP	30.00	917.45	917.28	921.65	2'x3'	R-3501TB	4.20
CBMH 327	CBMH 325	15	0.0210	PP	143.84	916.77	913.74	921.48	48"	R-3067V	4.71
CB 326	CBMH 325	12	0.0044	PP	34.37	914.38	914.23	918.58	2'x3'	R-3067VB	4.20
CBMH 325	MH 324	15	0.0300	PP	55.80	913.74	912.07	918.88	48"	R-3067V	5.14
MH 324	CBMH 322	36	0.0041	PP	209.21	902.36	901.51	919.07	72"	R-1642	16.71
CB 323	CBMH 322	12	0.0044	PP	30.36	908.51	908.38	912.71	2'x3'	R-3501TB	4.20
CBMH 322	CBMH 320	36	0.0045	PP	139.26	901.51	900.89	912.83	60"	R-3501TB	11.32
CB 321	CBMH 320	12	0.0044	PP	33.75	905.31	905.16	909.51	2'x3'	R-3067VB	4.20
CBMH 320	CBMH 309	36	0.0048	PP	61.47	900.89	900.59	909.75	60"	R-3067V	8.86
CB 319A	CBMH 319	12	0.0207	PP	85.20	912.10	910.34	915.30	27"	R-4342	3.20
CBMH 319	CBMH 318	12	0.0065	PP	177.31	910.34	909.18	913.54	48"	R-4342	3.20
CBMH 318	CBMH 316	15	0.0035	PP	30.00	908.93	908.83	917.90	48"	R-3501TB	8.97
CBMH 316	CBMH 313	15	0.0062	PP	159.81	908.83	907.84	917.90	48"	R-3501TB	9.07
CB 315	CBMH 314	12	0.0044	PP	244.66	911.46	910.38	915.66	2'x3'	R-3067V	4.20
CBMH 314	CBMH 313	15	0.0038	PP	159.81	910.13	909.53	915.85	48"	R-3067VB	5.72
CBMH 313	CBMH 310	18	0.0083	PP	181.89	907.59	906.08	916.30	48"	R-3501TB	8.71
CB 312	CBMH 311	12	0.0055	PP	126.79	906.07	905.37	909.27	27"	R-4342	3.20
CBMH 311	CBMH 310	12	0.0070	PP	34.41	905.37	905.13	913.43	48"	R-3501TB	8.06
CBMH 310	CBMH 309	21	0.0070	PP	224.24	904.38	902.81	913.70	48"	R-3501TB	9.32
CBMH 309	CBMH 308	36	0.0078	PP	133.11	900.59	899.55	910.26	72"	R-3501TB	9.67
CB 308B	CB 308A	12	0.0200	PP	6.00	903.45	903.33	907.65	60"	R-3067V	4.20
CB 308A	CBMH 308	12	0.0080	PP	30.00	903.33	903.09	907.53	2'x3'	R-3067VB	4.20
CBMH 308	MH 305	36	0.0086	PP	68.92	899.55	898.96	907.54	48"	R-3067V	7.99
CB 307	MH 306	12	0.0055	PP	38.74	903.70	903.49	906.90	27"	R-4342	3.20
CBMH 306	MH 305	12	0.0070	PP	171.35	903.49	902.29	910.91	48"	R-3067V	7.42
CB 305B	CBMH 305A	12	0.0044	PP	30.00	903.28	903.15	907.48	2'x3'	R-3067VB	4.20
CBMH 305A	MH 305	12	0.0044	PP	45.72	903.15	902.95	907.47	48"	R-3067V	4.32
MH 305	CBMH 304	42	0.0042	PP	148.70	898.46	897.84	908.61	84"	R-1642	10.15
CBMH 304	FES 300	48	0.0024	RCP	121.07	897.29	897.00	905.69	72"	R-3067V	8.40

MH/CB		P. DIA.	P. SLOPE	PIPE	PIPE	FROM	TO	RIM	STR.	CAST	BUILD
FROM	TO	[IN]	[FT/FT]	MAT'L	LENGTH [FT]	INVERT	INVERT	ELEV.	TYPE	TYPE	[FT]
CB 455	CBMH 454	12	0.0100	PP	105.44	910.80	909.75	914.00	27"	R-4342	3.20
CBMH 454	CBMH 452	15	0.0100	PP	330.63	909.50	906.19	914.21	48"	R-3067V	4.71
CBMH 452	CBMH 452	12	0.0055	PP	41.35	907.54	907.31	911.74	2'x3'	R-3067VB	4.20
CBMH 452	CBMH 450	18	0.0075	PP	77.58	905.94	905.36	911.75	48"	R-3067VB	5.81
OCS 451	CBMH 450	18	0.0026	RCP	63.21	904.00	903.84	906.00	OCS	GRATE	2.00
CBMH 450	MH 417	36	0.0019	PP	317.76	903.34	902.74	912.10	60"	R-3067V	8.76
CB 449	CBMH 448	12	0.0169	PP	122.03	924.70	922.64	927.90	2'x3'	R-4342	3.20
CBMH 448	CBMH 447A	12	0.0503	PP	64.25	922.64	919.41	926.84	48"	R-3067V	4.20
CBMH 447A	CBMH 447	15	0.0033	PP	129.04	919.16	918.73	922.61	27"	R-4342	3.45
CBMH 447	CBMH 445	15	0.0033	PP	107.55	918.73	918.38	925.00	48"	R-3067VB	6.27
CB 446A	CBMH 446	12	0.0085	PP	6.00	920.62	920.57	924.82	2'x3'	R-3501TB	4.20
CBMH 446	CBMH 445	15	0.0062	PP	27.82	920.32	920.15	924.77	48"	R-3501TB	4.45
CBMH 445	MH 444	18	0.0045	PP	28.30	918.13	918.00	924.67	48"	R-3501TB	6.54
CB 444B	MH 444A	12	0.0044	PP	55.55	922.33	922.09	925.53	48"	R-4342	3.20
MH 444A	MH 444	12	0.0085	PP	123.17	922.09	921.04	927.40	48"	R-1642	5.31
MH 444	CBMH 442	18	0.0046	PP	159.79	918.00	917.26	925.24	48"	R-1642	7.24
CB 443	CBMH 442	12	0.0050	PP	28.06	919.21	919.07	923.41	2'x3'	R-3501TB	4.20
CBMH 442	CBMH 440	18	0.0108	PP	235.41	917.26	914.71	923.39	48"	R-3501TB	6.13
CB 441	CBMH 440	12	0.0050	PP	30.91	916.77	916.62	920.97	2'x3'	R-3501TB	4.20
CBMH 440	CBMH 438	21	0.0074	PP	308.59	914.46	912.19	920.82	48"	R-3501TB	6.36
CB 439	CBMH 438	12	0.0059	PP	32.56	913.46	913.27	917.66	2'x3'	R-3501TB	4.20
CBMH 438	CBMH 437A	21	0.0115	PP	302.67	912.19	908.71	917.47	48"	R-3501TB	5.28
CB 437C	CBMH 437B	12	0.0044	PP	27.04	908.97	908.85	913.17	2'x3'	R-3067V	4.20
CBMH 437B	CBMH 437A	12	0.0120	PP	28.04	908.85	908.51	914.34	27"	R-3501TB	5.49
CBMH 437A	MH 437	24	0.0091	PP	51.69	908.46	907.99	914.35	48"	R-3501TB	5.89
MH 437	CBMH 435	27	0.0048	PP	23.71	907.74	907.63	914.47	60"	R-1642	6.73
CB 436	CBMH 435	12	0.0044	PP	27.67	909.43	909.31	913.63	2'x3'	R-3501TB	4.20
CBMH 435	CBMH 433	27	0.0054	PP	137.71	907.63	906.89	913.70	48"	R-3501TB	6.07
CB 434	CBMH 433A	12	0.0065	PP	16.30	909.13	909.02	913.33	27"	R-4342	4.20
CBMH 433A	CBMH 433	12	0.0085	PP	48.47	909.02	908.61	913.70	48"	R-3067VB	4.68
CBMH 433	CBMH 432	27	0.0071	PP	145.77	906.89	905.86	914.42	48"	R-3501TB	7.53
CBMH 432	MH 427	27	0.0074	PP	45.45	905.86	905.52	915.17	48"	R-3501TB	9.31
CB 431	CBMH 430	12	0.0044	PP	28.02	912.64	912.52	916.84	2'x3'	R-3501TB	4.20
CBMH 430	CBMH 428	12	0.0105	PP	198.94	912.52	910.43	916.81	48"	R-3501TB	4.29
CB 429	CBMH 428	12	0.0044	PP	28.09	910.47	910.35	914.67	2'x3'	R-3501TB	4.20
MH 427	CBMH 428	12	0.0070	PP	41.11	910.10	909.81	914.64	48"	R-3501TB	4.54
MH 427	MH 420	30	0.0058	PP	140.90	905.27	904.46	915.60	60"	R-1642	10.33
CB 426	CBMH 425B	12	0.0044	PP	30.18	914.48	914.35	918.68	2'x3'	R-3501TB	4.20
CBMH 425B	CBMH 425	12	0.0105	PP	159.43	914.35	912.67	918.67	48"	R-3501TB	4.32
CB 425A	CBMH 425	12	0.0044	PP	30.01	912.69	912.56	916.89	2'x3'	R-3067V	4.20
CBMH 425	MH 420	15	0.0061	PP	47.95	912.31	912.02	916.88	48"	R-3067VB	4.57
CB 424	CBMH 423	12	0.0055	PP	127.58	912.92	912.22	916.12	27"	R-4342	3.20
CBMH 423	CBMH 422	12	0.0065	PP	106.36	912.22	911.53	915.43	48"	R-4342	3.21
CBMH 422	CBMH 421	15	0.0040	PP	33.52	911.28	911.14	917.02	48"	R-3501TB	5.74
CB 421B	CBMH 421A	12	0.0044	PP	42.36	915.75	915.56	919.95	2'x3'	R-3067VB	4.20
CBMH 421A	CBMH 421	12	0.0106	PP	235.97	915.56	913.06	920.11	48"	R-3501TB	4.55
CBMH 421	MH 420	15	0.0114	PP	144.02	911.14	909.50	917.28	48"	R-3501TB	6.14
MH 420	CBMH 418	36	0.0046	PP	107.12	903.96	903.47	916.47	72"	R-1642	12.51
CB 419	CBMH 418	12	0.0044	PP	29.38	909.94	909.81	914.14	2'x3'	R-3067V	4.20
CBMH 418	MH 417	36	0.0048	PP	78.92	903.47	903.09	914.10	60"	R-3067V	10.63
MH 417	CBMH 413	48	0.0026	PP	159.10	901.59	901.18	915.73	96"	R-1642	14.14
CB 416	CBMH 413	12	0.0044	PP	231.85	906.12	905.10	909.32	27"	R-4342	3.20
CB 414	CBMH 413	12	0.0055	PP	41.33	910.10	909.87	914.30	2'x3'	R-3067VB	4.20
CBMH 413	MH 412	48	0.0029	PP	246.09	901.18	900.47	914.30	72"	R-3067VB	13.12
MH 412	CBMH 410	48	0.0028	PP	274.93	900.47	899.70	917.18	72"	R-1642	16.71
CB 411	CBMH 410	12	0.0044	PP	41.33	909.95	909.77	914.15	2'x3'	R-3067V	4.20
CBMH 410	MH 409	54	0.0015	PP	36.83	899.65	899.60	914.15	84"	R-3067V	14.50
MH 409	MH 408	54	0.0015	PP	191.56	899.60	899.31	912.20	96"	R-4342	12.60
MH 408	CBMH 406	54	0.0015	PP	154.83	899.31	899.08	914.46	84"	R-1642	15.15
CB 407	CBMH 406	12	0.0044	PP	30.00	906.72	906.59	910.92	2'x3'	R-3067V	4.20
CBMH 406	MH 403	54	0.0015	PP	49.63	899.08	899.01	911.18	84"	R-3067V	12.10
CB 405	CBMH 404	12	0.0044	PP	30.00	904.78	904.65	908.98	2'x3'	R-3501TB	4.20
CBMH 404	MH 403	12	0.0044	PP	298.05	904.65	903.34	909.00	48"	R-3501TB	4.35
MH 403	CBMH 402	54	0.0015	PP	103.16	899.01	898.85	911.39	84"	R-1642	12.38
CBMH 402	MH 401	54	0.0015	PP	157.81	898.85	898.62	910.22	144"	R-3067V	11.37
MH 401	FES 400	54	0.0018	RCP	96.71	898.17	898.00	905.80	84"	R-4342	7.63

MH/CB		P. DIA.	P. SLOPE	PIPE	PIPE	FROM	TO	RIM	STR.	CAST	BUILD
FROM	TO	[IN]	[FT/FT]	MAT'L	LENGTH [FT]	INVERT	INVERT	ELEV.	TYPE	TYPE	[FT]
CB 542	CBMH 541	12	0.0044	PP	140.07	914.03	913.41	917.23	27"	R-4342	3.20
CBMH 541	CBMH 540	12	0.0044	PP	31.76	913.41	913.27	921.63	48"	R-3501TB	8.22
CBMH 540	CBMH 537	12	0.0419	PP	145.00	913.27	907.20	921.74	48"	R-3501TB	8.47
CB 539	CBMH 538	12	0.0044	PP	232.94	905.47	904.45	908.67	27"	R-4342	3.20
CBMH 538	CBMH 537	15	0.0033	PP	159.56	904.20	903.67	909.88	48"	R-4342	5.68
CBMH 537	CBMH 536	15	0.0100	PP	160.87	903.67	902.06	910.40	48"	R-4342	6.73
CBMH 536	CBMH 535	18	0.0051	PP	157.93	901.81	901.00	910.92	48"	R-4342	9.11
CBMH 535	CBMH 501	18	0.0073	PP	32.01	901.00	900.77	915.22	48"	R-3501TB	14.22
CB 534	CBMH 533	12	0.0044	PP	29.33	915.08	914.95	919.28	2'x3'	R-3067V	4.20
CBMH 533	MH 532	12	0.0073	PP	46.01	914.95	914.62	919.30	48"	R-3067V	4.35
MH 532	CBMH 528	12	0.0109	PP	164.62	914.62	912.82	919.54	48"	R-1642	4.92
CB 531	CB 530	12	0.0044	PP	195.11	912.14	911.28	915.34	27"	R-4342	3.20
CB 530	CBMH 528	12	0.0044	PP	93.49	911.28	910.87	916.01	48"	R-4342	4.73
CB 529A	CBMH 529	12	0.0044	PP	124.94	912.45	911.90	915.65	27"	R-4342	3.20
CBMH 529	CBMH 528	12	0.0044	PP	124.67	911.90	911.35	915.30	48"	R-4342	3.40
CBMH 528	MH 521	18	0.0039	PP	147.21	910.37	909.80	917.05	48"	R-3067V	6.68
CB 527	CBMH 526	12	0.0044	PP	175.61	913.71	912.94	916.91	48"	R-4342	3.20
CBMH 526	CBMH 524	12	0.0044	PP	70.00	912.94	912.63	919.13	48"	R-3501TB	6.19
CB 525A	CBMH 525	12	0.0220	PP	150.34	910.76	907.45	913.96	27"	R-4342	3.20
CBMH 525	CBMH 524	12	0.0095	PP	175.00	907.45	905.79	910.66	48"	R-4342	3.21
CBMH 524	CBMH 523B	18	0.0038	PP	183.96	905.29	904.59	918.14	48"	R-3501TB	12.85
CBMH 523B	CBMH 523	18	0.0048	PP	74.15	904.59	904.24	915.99	48"	R-3067V	11.40
CB 523A	CBMH 523	12	0.0064	PP	30.07	911.22	911.03	915.42	2'x3'	R-3501TB	4.20
MH 521	CBMH 523	21	0.0037	PP	52.19	903.99	903.80	915.23	48"	R-3067VB	11.24
CB 522B	CBMH 522A	12	0.0044	PP	31.03	914.04	913.90	918.24	2'x3'	R-3501TB	4.20
CBMH 522A	CBMH 522	12	0.0120	PP	261.33	913.90	910.77	918.16	48"	R-3501TB	4.26
CBMH 522	MH 521	15	0.0057	PP	30.08	910.52	910.35	915.24	48"	R-3067V	4.72
MH 521	CBMH 520	27	0.0042	PP	54.59	903.30	903.07	916.17	60"	R-1642	12.87
CBMH 520	CBMH 519	30	0.0026	PP	96.10	902.82	902.57	915.51	60"	R-3067V	12.69
CB 519A	CBMH 519	12	0.0044	PP	32.44	910.59	910.45	914.79	2'x3'	R-3501TB	4.20
CBMH 519	CBMH 514	30	0.0028	PP	346.54	902.57	901.60	914.88	60"	R-3501TB	12.31
CB 517	CBMH 514	12	0.0044	PP	145.00	904.90	904.26	908.10	27"	R-4342	3.20
CB 516	CBMH 515	12	0.0051	PP	135.00	905.10	904.41	908.30	27"	R-4342	3.20
CBMH 515	CBMH 514	12	0.0160	PP	32.75	904.41	903.89	911.98	48"	R-3501TB	7.57
CBMH 514	CBMH 513	36	0.0016	PP	278.14	901.10	900.66	912.08	60"	R-3501TB	10.98
CB 513A	CBMH 513	12	0.0057	PP	30.00	905.66	905.49	909.86	2'x3'	R-3501TB	4.20
CBMH 513	CBMH 512	36	0.0018	PP	137.92	900.66	900.41	909.69	60"	R-3067V	9.03
CBMH 512	MH 508	36	0.0018	PP	58.99	900.41	900.31	908.55	60"	R-3067V	8.14
CB 511	CBMH 510	12	0.0062	PP	160.37	902.37	901.38	905.57	27"	R-4342	3.20
CBMH 510	MH 508	15	0.0063	PP	31.22	901.13	900.93	908.65	48"	R-3501TB	7.52
CBMH 508	CBMH 505	36	0.0023	PP	184.90	900.31	899.88	908.86	96"	R-1642	8.55
CB 507	CBMH 506	12	0.0056	PP	140.00	901.28	900.50	904.48	27"	R-4342	3.20
CBMH 506	CBMH 505	15	0.0054	PP	30.00	900.25	900.08	906.43	48"	R-3501TB	6.18
CBMH 505	CBMH 502	42	0.0014	PP	328.75	899.38	898.92	906.43	72"	R-3501TB	7.05
CB 504	CBMH 503	12	0.0044	PP	30.00	907.46	907.33	911.66	2'x3'	R-3067V	4.20
CBMH 503	CBMH 502	15	0.0060	PP	59.95	907.08	906.72	911.79	48"	R-3067VB	4.71
CBMH 502	CBMH 501	42	0.0017	PP	135.00	898.92	898.69	912.74	72"	R-3501TB	13.82
CB 501A	CBMH 501	12	0.0200	PP	6.00	911.36	911.24	915.56	2'x3'	R-3501TB	4.20
CBMH 501	FES 500	42	0.0030	RCP	179.00	898.53	898.00	915.44	96"	R-3501TB	16.91
CB 609	CBMH 608	12	0.0044	PP	90.2579	911.8	911.4029	915	27"	R-4342	3.2
CBMH 608	CBMH 607	12	0.0047	PP	69.95	911.40	911.08	915.96	48"	R-3501TB	4.56
CBMH 607	CBMH 606	12	0.0116	PP	117.52	911.08	909.71	915.28	48"	R-3501TB	4.20
CBMH 606	CBMH 602	12	0.0070	PP	218.35	909.71	908.19	914.16	48"	R-3501TB	4.45
CBMH 604	CBMH 602	12	0.0044	PP	30.10	908.59	908.46	912.79	2'x3'	R-3501TB	4.20
CBMH 605	CBMH 602	15	0.0033	PP	249.31	908.21	907.38	912.87	48"	R-3501TB	4.66
CB 603	CBMH 602	15	0.0033	PP	145.00	908.06	907.58	911.51	27"	R-4342	3.45
CBMH 602	CBMH 601A	24	0.0017	PP	12.82	906.63	906.61	912.39	48"	R-3501TB	5.76
CBMH 601A	MH 601	27	0.0017	PP	145.00	906.36	906.12	912.38	48"	R-3501TB	6.02
MH 601	FES 600	27	0.0017	RCP	32.13	906.06	906.00	912.00	48"	R-4342	5.94
CB 709	CBMH 708	12	0.0088	PP	31.12	915.83	915.56	920.03	2'x3'	R-3501TB	4.20
CBMH 708	CBMH 706	12	0.0127	PP	285.03	915.56	911.94	919.76	48"	R-3067V	4.20
CB 707	CBMH 706	12	0.0097	PP	43.72	912.37	911.95	916.57	2'x3'	R-3501TB	4.20
CBMH 706	MH 703	15	0.0089	PP	221.53	911.69	909.71	916.15	48"	R-3501TB	4.46
FES 705	CBMH 704	12	0.0350	PP	115.49	914.09	910.05	914.09	FES		
CBMH 704	MH 703	15	0.0096	PP	165.88	909.80	908.21	913.25	48"	R-4342	3.45
MH 703	CBMH 701	21	0.0056	PP	62.78	907.71	907.35	914.25	48"	R-1642	6.54
CB 702	CBMH 701	12	0.0044	PP	6.00	909.32	909.29	913.52	2'x3'	R-3501TB	4.20
CBMH 701	FES 700	24	0.0059	RCP	175.73	907.03	906.00	913.50	48"	R-3501TB	6.47
CB 802	CBMH 801	12	0.0065	PP	39.32	900.36	900.10	904.56	2'x3'	R-3067VB	4.20
CBMH 801	FES 800	12	0.0175	RCP	152.05	898.66	896.00



LEGEND:

- EXISTING TREE TO REMAIN (1324)
- EXISTING TREE TO BE REMOVED (1324)
- TREE REMOVAL LIMITS/FENCE

TREE PRESERVATION REQUIREMENTS:

QUALIFYING TREE: A HEALTHY TREE MEETING ONE (1) OF THE FOLLOWING DEFINITIONS: A HARDWOOD DECIDUOUS TREE AT LEAST SIX INCHES (6") DBH, A SOFTWOOD DECIDUOUS TREE AT LEAST EIGHT INCHES (8") DBH, OR A CONIFEROUS TREE AT LEAST TEN FEET (10') IN HEIGHT, BUT NO TREES CONSISTING OF THE FOLLOWING SPECIES: ANY TREE ON THE MINNESOTA DEPARTMENT OF NATURAL RESOURCES INVASIVE SPECIES LIST, ASH, OR ELM.

CONIFEROUS TREE: A WOOD PLANT WHICH, AT MATURITY, IS AT LEAST TWELVE FEET (12') OR MORE IN HEIGHT, AND WHICH RETAINS ITS GREEN COLOR YEAR–ROUND AND DOES NOT DROP ITS FRONDS OR NEEDLES IN THE WINTER.

HARDWOOD DECIDUOUS TREE: A TREE OF ONE (1) OF THE FOLLOWING SPECIES: IRONWOOD, OAK, MAPLE (HARD), WALNUT, HICKORY, BIRCH, BLACK CHERRY, HACKBERRY, OR LOCUST.

SOFTWOOD DECIDUOUS TREE: A TREE OF ONE (1) OF THE FOLLOWING SPECIES: COTTONWOOD, POPLAR, ASPEN, SILVER MAPLE, BASSWOOD, OR WILLOW.

PERMITTED REMOVAL:

Land Use	Permitted removal threshold (percent of existing qualifying inches)
Residential <10 units/acre	25%
Residential >10 units/acre, Business/Commercial	40%

QUALIFYING TREE INCHES REMOVED BEYOND THE PERMITTED THRESHOLDS SHALL BE REPLACED AT A RATE OF FIFTY PERCENT (50%), EQUALING ONE (1) REPLACEMENT CALIPER INCH FOR TWO (2) REMOVED DIAMETER INCHES.

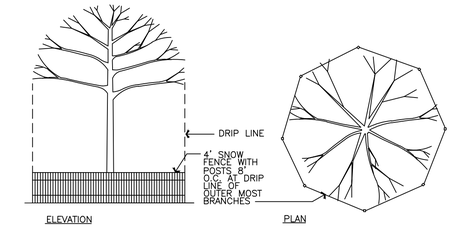
LANDSCAPING CREDIT. REPLACEMENT TREES PLANTED IN ACCORDANCE WITH A TREE PRESERVATION PLAN AND RELATED MITIGATION SHALL BE CREDITED AGAINST CITY LANDSCAPING REQUIREMENTS.

TREE INVENTORY & REMOVAL CALCULATION

Total Significant Inches				
3,907				
Inches in >10 Units/ac	**Permitted Removal (40%)**	**Significant Inches Removed**	**Removal Beyond Allowed**	**Replacement at Required Rate (50%)**
1,564	626	1,564	938	469
Inches in <10 Units/ac	**Permitted Removal (25%)**	**Significant Inches Removed**	**Removal Beyond Allowed**	**Replacement at Required Rate (50%)**
2,343	586	1,851	1,265	633
				Total Replacement Required
				1,102

TREE PRESERVATION NOTES:

1. BEFORE ANY CONSTRUCTION OR GRADING OF DEVELOPMENT PROJECT IS TO OCCUR, A TREE PROTECTION FENCE SHALL BE INSTALLED PER THE TREE REMOVAL LINE. THIS FENCE MUST REMAIN IN PLACE UNTIL ALL GRADING AND CONSTRUCTION ACTIVITY IS TERMINATED.
2. NO ENCROACHMENT, LAND DISTURBANCE, GRADE CHANGE, TRENCHING, FILLING, COMPACTION OF CHANGE IN SOIL CHEMISTRY SHALL OCCUR WITHIN FENCED AREAS PROTECTING SIGNIFICANT TREES.
3. CONTRACTOR TO PREVENT THE CHANGE IN SOIL CHEMISTRY DUE TO CONCRETE WASHOUT AND LEAKAGE OR SPILLAGE OF TOXIC MATERIALS, SUCH AS FUELS OR PAINTS.
4. ONLY TREES DEFINED AS "QUALIFYING" PER CITY CODE WERE INCLUDED IN THE EXISTING TREE INVENTORY.
5. NO TREES SHALL BE REMOVED UNTIL THIS TREE PRESERVATION PLAN IS APPROVED BY THE CITY OF COTTAGE GROVE.
6. TREES OUTSIDE OF THE DEVELOPMENT BOUNDARY ARE NOT SHOWN OR LISTED IN INVENTORY.
7. TREES WITHIN KEATS AVE. RIGHT–OF–WAY DEDICATION ARE EXEMPTED FROM CALCULATIONS.



NOTE: TREE PROTECTION SHALL BE PROVIDED BY CONTRACTOR AS REQUIRED TO ENSURE SURVIVABILITY OF EXISTING TREES TO REMAIN. NO HEAVY EQUIPMENT SHALL BE STORED WITHIN THE TREE DRIP LINE AS DESIGNATED ABOVE.

TREE PROTECTION FENCE
NOT TO SCALE

Know what's below. Call before you dig Dial 811

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TWIN CITIES LAND DEVELOPMENT

RAVARA TRAILS
COTTAGE GROVE, MINNESOTA

PRELIMINARY PLAT SUBMITTAL
TREE PRESERVATION PLAN - OVERVIEW

DESCRIPTION	DATE
City Submittal	2025-12-31

CERTIFICATION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly licensed Landscape Architect under the laws of the State of MINNESOTA

PRELIMINARY FOR REVIEW NOT FOR CONSTRUCTION

John Gronhovd — 59233
Date — License no.

QA/QC CHECK

By — Date

PROJECT TEAM DATA

Designed By:
Drafted By:
Project No.: 4000570-00

69

Sheet 69 of 91

File Location: X:\4000570-000\01\40 Design\00 Sheets - Preliminary\TREE - PRES.dwg Plotted By: Logan Josephson on December 31, 2025 at 12:21 PM



DATE	DESCRIPTION
2025-12-31	City Submittal

CERTIFICATION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly licensed Landscape Architect under the laws of the State of Minnesota.

Signature

Joni Giesfeldt

Date

License no. 59233

PRELIMINARY NOT FOR CONSTRUCTION

PROJECT TEAM DATA

Designed By:

Drafted By:

Project No.: 40305763-00

QA/QC CHECK

By

Date

RAVARA TRAILS

COTTAGE GROVE, MINNESOTA

PRELIMINARY PLAT SUBMITTAL

TREE PRESERVATION PLAN - VIEW A

TC LD TWIN CITIES LAND DEVELOPMENT

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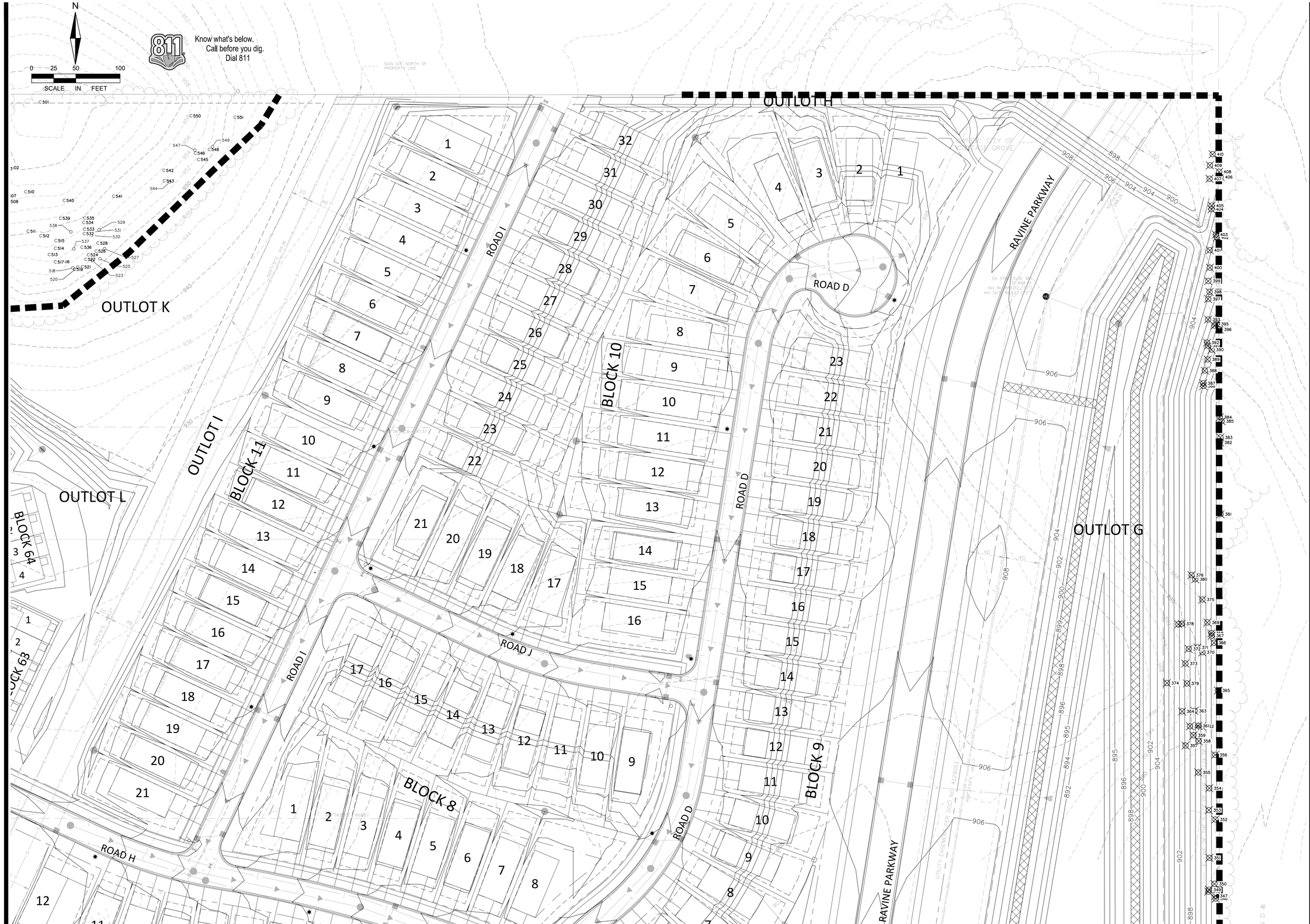
Sheet 70 of 91

70



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TWIN CITIES LAND DEVELOPMENT TC LD

RAVARA TRAILS

COTTAGE GROVE, MINNESOTA

PRELIMINARY PLAT SUBMITTAL
TREE PRESERVATION PLAN - VIEW B

DATE	DESCRIPTION
2025-12-31	City Submittal

CERTIFICATION

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FOR REVIEW
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John Glorhood
Date 59233 License no.

QA/QC CHECK

By Date

PROJECT TEAM DATA

Designed By:
Drafted By:
Project No.: 4000570-00

71

Sheet 71 of 91

File Location: X:\4000570-00\00140 Design\00 Sheets - Preliminary\TREE - PRES.dwg Plotted By: Logan Josephson on December 31, 2025 at 12:21:34 PM



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TWIN CITIES LAND DEVELOPMENT

RAVARA TRAILS

COTTAGE GROVE, MINNESOTA

PRELIMINARY PLAT SUBMITTAL

TREE PRESERVATION PLAN - VIEW C

DESCRIPTION	DATE
City Submittal	2025-12-31

CERTIFICATION

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John Gronhovd — 59233
Date — License no.

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QA/QC CHECK

By — Date

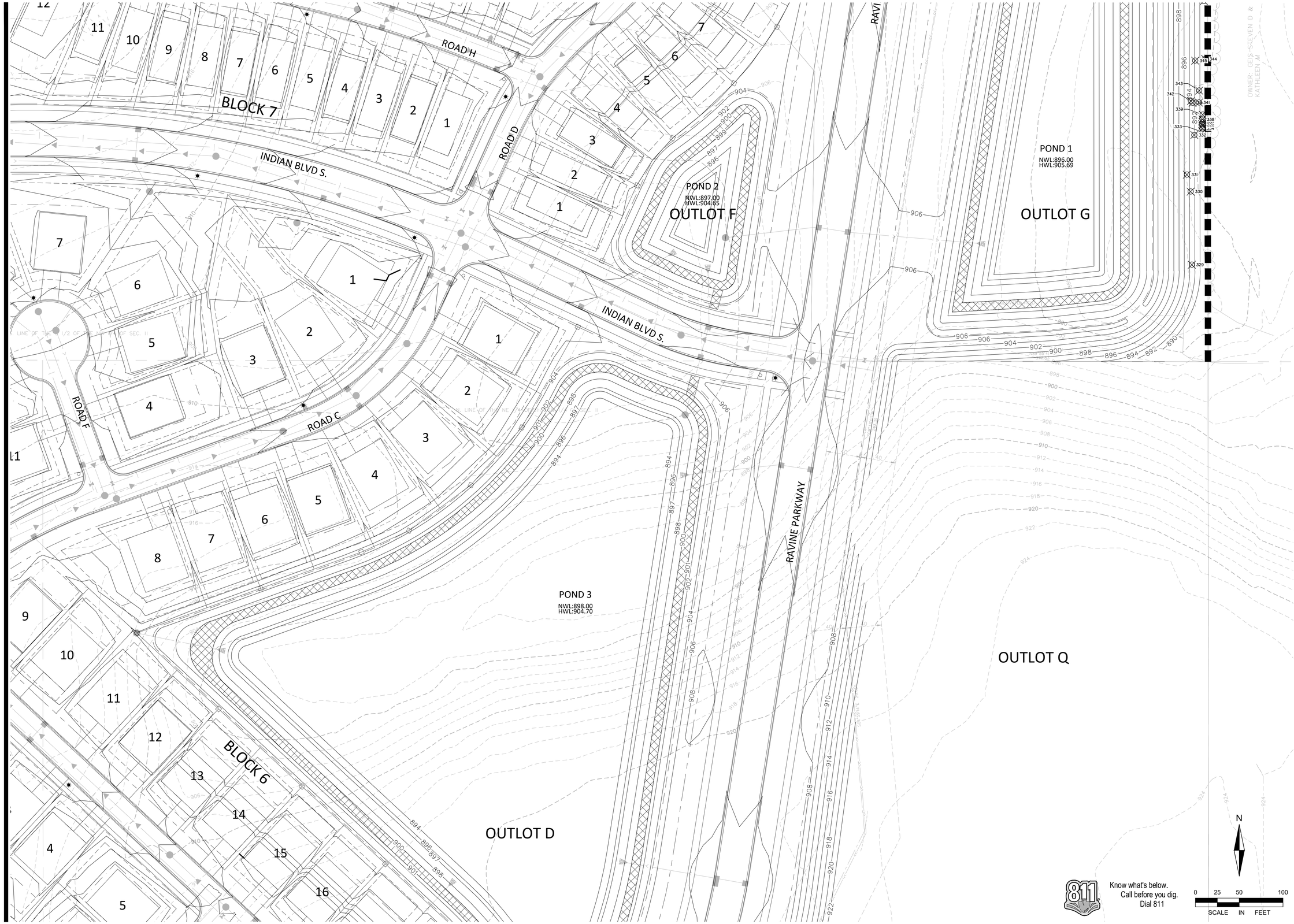
PROJECT TEAM DATA

Designed By:
Drafted By:
Project No.: 4000570-00

72

Sheet 72 of 91

File Location: X:\4000570-00\0140 Design\00 Sheets - Preliminary\TREE - PRES.dwg Plotted By: Logan Josephson on December 31, 2025 at 12:21:38 PM



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TWIN CITIES LAND DEVELOPMENT

RAVARA TRAILS

COTTAGE GROVE, MINNESOTA

PRELIMINARY PLAT SUBMITTAL

TREE PRESERVATION PLAN - VIEW D

DATE	DESCRIPTION
2025-12-31	City Submittal

CERTIFICATION

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FOR REVIEW PRELIMINARY NOT FOR CONSTRUCTION

John Gronhovd
Date 59233 License no.

QA/QC CHECK

By Date

PROJECT TEAM DATA

Designed By:

Drafted By:

Project No.: 4000570-00

73

Sheet 73 of 91

File Location: X:\4000570-00\001\40 Design\00 Sheets - Preliminary\TREE - PRES.dwg Plotted By: Logan Josephson on December 31, 2025 at 12:21:43 PM



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TWIN CITIES LAND DEVELOPMENT TC LD

RAVARA TRAILS

COTTAGE GROVE, MINNESOTA

PRELIMINARY PLAT SUBMITTAL

TREE PRESERVATION PLAN - VIEW E

DESCRIPTION	DATE
City Submittal	2026-12-31

CERTIFICATION

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PRELIMINARY NOT FOR CONSTRUCTION FOR REVIEW ONLY

John Gronlund — 59233
Date — License no.

QA/QC CHECK

By — Date

PROJECT TEAM DATA

Designed By:

Drafted By;

Project No.: 4000570-00

74

Sheet 74 of 91

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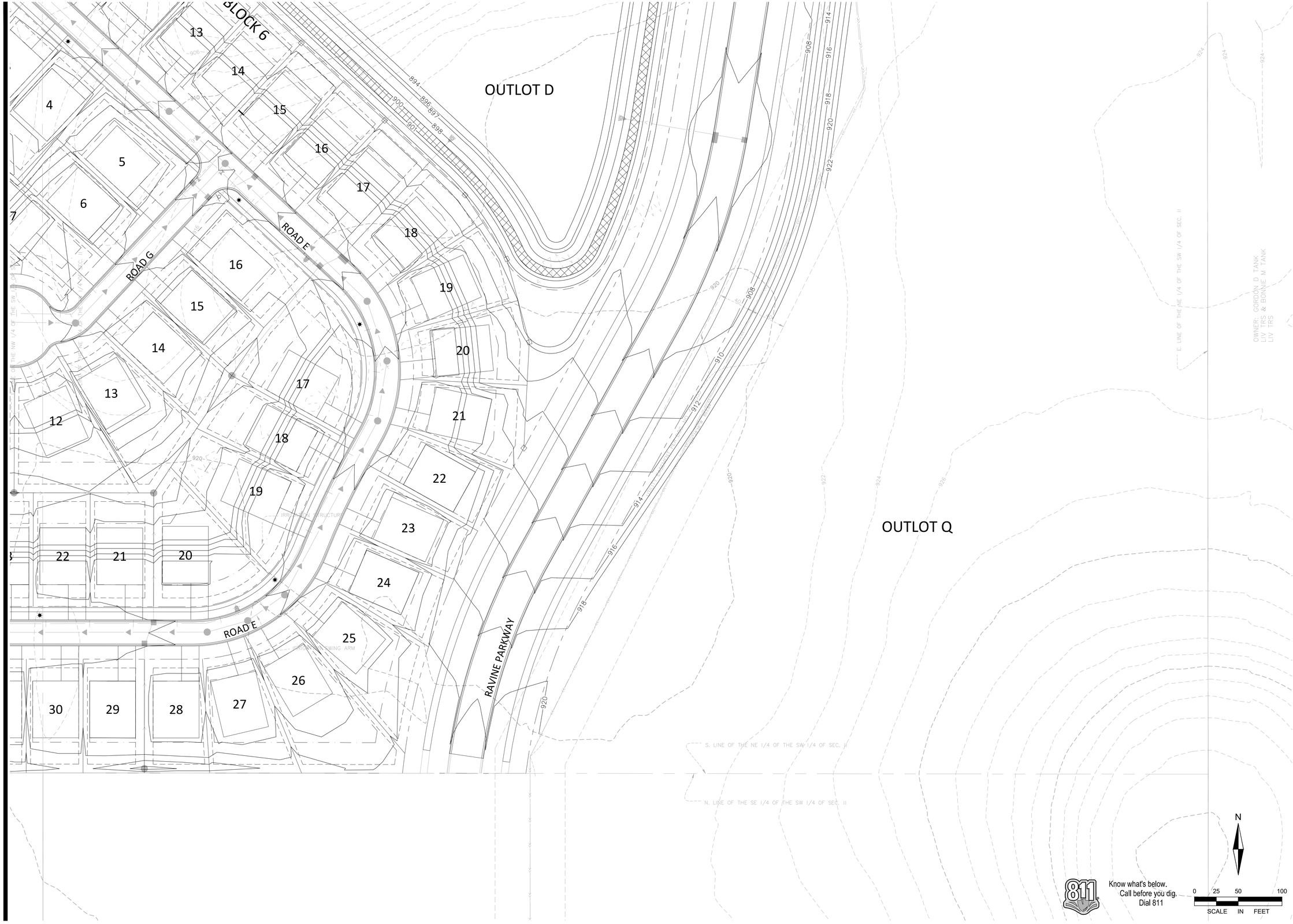
0 25 50 100
SCALE IN FEET

File Location: X:\4000570-00\0140 Design\00 Sheets - Preliminary\TREE - PRES.dwg Plotted By: Logan Josephson on December 31, 2025 at 12:21:48 PM



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TWIN CITIES LAND DEVELOPMENT

RAVARA TRAILS

COTTAGE GROVE, MINNESOTA

PRELIMINARY PLAT SUBMITTAL

TREE PRESERVATION PLAN - VIEW F

DESCRIPTION	DATE
City Submittal	2025-12-31

CERTIFICATION

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PRELIMINARY
FOR REVIEW
NOT FOR CONSTRUCTION

John Gronnvold
Date

59233
License no.

QA/QC CHECK

By Date

PROJECT TEAM DATA

Designed By:
Drafted By:
Project No.: 4000570-00

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File Location: X:\4000570-00\01\40 Design\03 Sheets - Preliminary\TREE - PRES.dwg Plotted By: Logan Josephson on December 31, 2025 at 12:53 PM

TAG	DBH	NAME_COMMON	STATUS	REMOVE	LOCATION
8	8	Boxelder	SIGNIFICANT	X	10+
20	20	Norway Maple	SIGNIFICANT	X	10+
201	24	Eastern Red Cedar	EXEMPT	X	
202	24	Boxelder	EXEMPT	X	
203	20	Boxelder	EXEMPT	X	
204	14	Boxelder	EXEMPT	X	
205	12	Red Pine	EXEMPT	X	
206	14	Boxelder	EXEMPT	X	
207	16	Boxelder	EXEMPT	X	
208	9	Boxelder	EXEMPT	X	
209	16	Boxelder	EXEMPT	X	
210	16	Boxelder	EXEMPT	X	
211	10	Boxelder	EXEMPT	X	
212	31	Silver Maple	EXEMPT	X	
213	13	Black Cherry	SIGNIFICANT	X	10+
214	24	Boxelder	SIGNIFICANT	X	10+
215	10	Colorado Blue Spruce	SIGNIFICANT	X	10+
216	12	Colorado Blue Spruce	SIGNIFICANT	X	10+
217	18	Flowering Crab	SIGNIFICANT	X	10+
218	11	White Spruce	SIGNIFICANT	X	10+
219	22	Boxelder	SIGNIFICANT	X	10+
220	16	Boxelder	SIGNIFICANT	X	10+
221	11	Boxelder	SIGNIFICANT	X	10+
222	13	Boxelder	SIGNIFICANT	X	10+
223	12	Boxelder	SIGNIFICANT	X	10+
224	7	Black Cherry	SIGNIFICANT	X	10+
225	8	Hackberry	SIGNIFICANT	X	10+
226	18	Sugar Maple	SIGNIFICANT	X	10+
227	24	Boxelder	SIGNIFICANT	X	10+
228	13	Boxelder	SIGNIFICANT	X	10+
229	21	Sugar Maple	SIGNIFICANT	X	10+
230	18	Colorado Blue Spruce	SIGNIFICANT	X	10+
231	23	Northern Red Oak	SIGNIFICANT	X	10+
232	19	Norway Maple	SIGNIFICANT	X	10+
233	14	Colorado Blue Spruce	SIGNIFICANT	X	10+
234	15	Colorado Blue Spruce	SIGNIFICANT	X	10+
235	6	Balsam Fir	SIGNIFICANT	X	10+
236	8	Balsam Fir	SIGNIFICANT	X	10+
237	6	Balsam Fir	SIGNIFICANT	X	10+
238	13	Basswood	SIGNIFICANT	X	10+
239	14	Sugar Maple	SIGNIFICANT	X	10+
240	16	Boxelder	SIGNIFICANT	X	10+
241	11	Boxelder	SIGNIFICANT	X	10+
242	14	Boxelder	SIGNIFICANT	X	10+
243	15	Boxelder	SIGNIFICANT	X	10+
244	8	Boxelder	SIGNIFICANT	X	10+
245	12	Boxelder	SIGNIFICANT	X	10+
246	10	Boxelder	SIGNIFICANT	X	10+
247	15	Boxelder	SIGNIFICANT	X	10+
248	24	Scotch Pine	SIGNIFICANT	X	10+
249	8	Boxelder	SIGNIFICANT	X	10+
250	21	Boxelder	SIGNIFICANT	X	10+
251	16	Boxelder	SIGNIFICANT	X	10+
252	27	Boxelder	SIGNIFICANT	X	10+
253	8	Boxelder	SIGNIFICANT	X	10+
254	15	Colorado Blue Spruce	SIGNIFICANT	X	10+
255	15	Colorado Blue Spruce	SIGNIFICANT	X	10+
256	10	Colorado Blue Spruce	SIGNIFICANT	X	10+
257	23	Colorado Blue Spruce	SIGNIFICANT	X	10+
258	10	Boxelder	SIGNIFICANT	X	10+
259	10	Boxelder	SIGNIFICANT	X	10+
260	18	Boxelder	SIGNIFICANT	X	10+
261	17	Boxelder	SIGNIFICANT	X	10+
262	10	Boxelder	SIGNIFICANT	X	10+
263	8	Boxelder	SIGNIFICANT	X	10+
264	9	Boxelder	SIGNIFICANT	X	10+
265	19	White Spruce	SIGNIFICANT	X	10+
266	16	White Spruce	SIGNIFICANT	X	10+
267	17	Boxelder	SIGNIFICANT	X	10+
268	24	Boxelder	SIGNIFICANT	X	10+
269	44	Boxelder	SIGNIFICANT	X	10+
270	21	Boxelder	SIGNIFICANT	X	10+
271	20	Boxelder	SIGNIFICANT	X	10+
272	27	Boxelder	SIGNIFICANT	X	10+
273	13	Boxelder	SIGNIFICANT	X	10+
274	9	Boxelder	SIGNIFICANT	X	10+
275	16	Boxelder	SIGNIFICANT	X	10+
276	35	Boxelder	SIGNIFICANT	X	10+
277	17	Boxelder	SIGNIFICANT	X	10+
278	12	Boxelder	SIGNIFICANT	X	10+
279	18	Boxelder	SIGNIFICANT	X	10+
280	12	Boxelder	SIGNIFICANT	X	10+
281	12	Boxelder	SIGNIFICANT	X	10+
282	26	Boxelder	SIGNIFICANT	X	10+
283	24	Boxelder	SIGNIFICANT	X	10+
284	21	Boxelder	SIGNIFICANT	X	10+
285	12	Boxelder	SIGNIFICANT	X	10+
286	5	White Spruce	SIGNIFICANT	X	10+
287	15	White Spruce	SIGNIFICANT	X	10+
288	36	Silver Maple	SIGNIFICANT	X	10+

TAG	DBH	NAME_COMMON	STATUS	REMOVE	LOCATION
289	22	Silver Maple	SIGNIFICANT	X	10+
290	22	Silver Maple	SIGNIFICANT	X	10+
291	26	Silver Maple	SIGNIFICANT	X	10+
292	12	Boxelder	EXEMPT	X	
293	16	Hackberry	EXEMPT	X	
294	31	Basswood	EXEMPT	X	
295	48	Basswood	EXEMPT	X	
296	19	Basswood	EXEMPT	X	
297	21	Silver Maple	EXEMPT	X	
298	13	Black Cherry	EXEMPT	X	
299	17	Hackberry	EXEMPT	X	
300	17	Black Cherry	EXEMPT	X	
320	13	Scotch Pine	EXEMPT	X	
321	9	Silver Maple	EXEMPT	X	
322	32	Silver Maple	SIGNIFICANT	X	10+
323	30	Silver Maple	SIGNIFICANT	X	10+
324	24	Basswood	SIGNIFICANT	X	10+
325	22	Basswood	SIGNIFICANT	X	10+
326	36	Silver Maple	SIGNIFICANT	X	10+
327	28	Silver Maple	SIGNIFICANT	X	10+
328	84	Silver Maple	SIGNIFICANT	X	10+
329	35	Boxelder	SIGNIFICANT	X	
330	10	Hackberry	SIGNIFICANT	X	
331	6	Black Cherry	SIGNIFICANT	X	
332	12	Black Cherry	SIGNIFICANT	X	
333	8	Black Cherry	SIGNIFICANT	X	
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336	8	Black Cherry	SIGNIFICANT	X	
337	6	Black Cherry	SIGNIFICANT	X	
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347	16	Black Cherry	SIGNIFICANT	X	
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371	13	Boxelder	SIGNIFICANT	X	
372	58	Boxelder	SIGNIFICANT	X	
373	10	Boxelder	SIGNIFICANT	X	
374	8	Black Cherry	SIGNIFICANT	X	
375	35	Eastern Cottonwood	SIGNIFICANT	X	
376	20	Eastern Cottonwood	SIGNIFICANT	X	
377	20	Boxelder	SIGNIFICANT	X	
378	21	Boxelder	SIGNIFICANT	X	
379	14	Boxelder	SIGNIFICANT	X	
380	17	Eastern Cottonwood	SIGNIFICANT	X	
381	8	Boxelder	SIGNIFICANT	X	
382	25	Boxelder	SIGNIFICANT	X	
383	15	Boxelder	SIGNIFICANT	X	
384	16	Boxelder	SIGNIFICANT	X	
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386	13	Boxelder	SIGNIFICANT	X	
387	8	Boxelder	SIGNIFICANT	X	
388	34	Boxelder	SIGNIFICANT	X	
389	22	Boxelder	SIGNIFICANT	X	
390	11	Boxelder	SIGNIFICANT	X	
391	13	Boxelder	SIGNIFICANT	X	
392	29	Boxelder	SIGNIFICANT	X	
393	25	Black Cherry	SIGNIFICANT	X	
394	10	Boxelder	SIGNIFICANT	X	
395	11	Boxelder	SIGNIFICANT	X	
396	13	Boxelder	SIGNIFICANT	X	
397	16	Black Cherry	SIGNIFICANT	X	

TAG	DBH	NAME_COMMON	STATUS	REMOVE	LOCATION
398	9	Boxelder	SIGNIFICANT	X	
399	6	Black Cherry	SIGNIFICANT	X	
400	11	Boxelder	SIGNIFICANT	X	
401	14	Black Cherry	SIGNIFICANT	X	
402	18	Boxelder	SIGNIFICANT	X	
403	8	Boxelder	SIGNIFICANT	X	
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406	42	Boxelder	SIGNIFICANT	X	
407	31	Boxelder	SIGNIFICANT	X	
408	29	Boxelder	SIGNIFICANT	X	
409	8	Boxelder	SIGNIFICANT	X	
410	12	Boxelder	SIGNIFICANT	X	
411	10	Colorado Blue Spruce	SIGNIFICANT	X	
412	10	Colorado Blue Spruce	SIGNIFICANT	X	
413	10	Colorado Blue Spruce	SIGNIFICANT	X	
414	10	Colorado Blue Spruce	SIGNIFICANT	X	
415	37	Silver Maple	SIGNIFICANT	X	
416	27	Silver Maple	SIGNIFICANT	X	
417	33	Silver Maple	SIGNIFICANT	X	
418	10	Flowering Crab	SIGNIFICANT	X	
419	13	Colorado Blue Spruce	SIGNIFICANT	X	
420	10	Colorado Blue Spruce	SIGNIFICANT	X	
421	10	Colorado Blue Spruce	SIGNIFICANT	X	
422	10	Colorado Blue Spruce	SIGNIFICANT	X	
423	8	Colorado Blue Spruce	SIGNIFICANT	X	
424	10	Colorado Blue Spruce	SIGNIFICANT	X	
425	14	Colorado Blue Spruce	SIGNIFICANT	X	
426	10	Colorado Blue Spruce	SIGNIFICANT	X	
427	10	Colorado Blue Spruce	SIGNIFICANT	X	
428	8	Colorado Blue Spruce	SIGNIFICANT	X	
429	9	Colorado Blue Spruce	SIGNIFICANT	X	
430	8	Colorado Blue Spruce	SIGNIFICANT	X	
431	12	Colorado Blue Spruce	SIGNIFICANT	X	
432	12	Colorado Blue Spruce	SIGNIFICANT	X	
433	9	Colorado Blue Spruce	SIGNIFICANT	X	
434	20	Northern Red Oak	SIGNIFICANT	X	
435	13	Colorado Blue Spruce	SIGNIFICANT	X	
436	12	Colorado Blue Spruce	SIGNIFICANT	X	
437	10	Colorado Blue Spruce	SIGNIFICANT	X	
438	15	Colorado Blue Spruce	SIGNIFICANT	X	
439	15	Colorado Blue Spruce	SIGNIFICANT	X	
440	27	Flowering Crab	SIGNIFICANT	X	
441	35	Basswood	SIGNIFICANT	X	
442	38	Basswood	SIGNIFICANT	X	
443	10	Northern Red Oak	SIGNIFICANT	X	
445	7	Northern Red Oak	SIGNIFICANT	X	
446	20	Sugar Maple	SIGNIFICANT	X	
447	10	Northern Red Oak	SIGNIFICANT	X	
448	6	White Spruce	SIGNIFICANT	X	
500	6	Hackberry	SIGNIFICANT		
501	9	Boxelder	SIGNIFICANT		
502	11	Black Cherry	SIGNIFICANT		
503	6	Black Cherry	SIGNIFICANT		
504	6	Black Cherry	SIGNIFICANT		
505	6	Black Cherry	SIGNIFICANT		
506	10	Black Cherry	SIGNIFICANT		
507	9	Hackberry	SIGNIFICANT		
508	9	Hackberry	SIGNIFICANT		
509	7	Hackberry	SIGNIFICANT		
510	9	Boxelder	SIGNIFICANT		
511	11	Boxelder	SIGNIFICANT		
512	8	Hackberry	SIGNIFICANT		
513	7	Hackberry	SIGNIFICANT		
514	6	Hackberry	SIGNIFICANT		
515	8	Hackberry	SIGNIFICANT		
516	9	Hackberry	SIGNIFICANT		
517	6	Hackberry	SIGNIFICANT		
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521	8	Hackberry	SIGNIFICANT		
522	7	Hackberry	SIGNIFICANT		
523	9	Hackberry	SIGNIFICANT		
524	6	Hackberry	SIGNIFICANT		
525	6	Black Cherry	SIGNIFICANT		
526	13	Hackberry	SIGNIFICANT		
527	12	Black Cherry	SIGNIFICANT		
528	12	Hackberry	SIGNIFICANT		
529	11	Black Cherry	SIGNIFICANT		
530	9	Hackberry	SIGNIFICANT		
531	10	Hackberry	SIGNIFICANT		
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533	9	Hackberry	SIGNIFICANT		
534	10	Hackberry	SIGNIFICANT		
535	6	Hackberry	SIGNIFICANT		
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537	9	Hackberry	SIGNIFICANT		
538	18	Hackberry	SIGNIFICANT		
539	8	Hackberry	SIGNIFICANT		

TAG	DBH	NAME_COMMON	STATUS	REMOVE	LOCATION
540	12	Hackberry	SIGNIFICANT		
541	7	Hackberry	SIGNIFICANT		
542	11	Hackberry	SIGNIFICANT		
543	6	Hackberry	SIGNIFICANT		
544	7	Black Cherry	SIGNIFICANT		
545	7	Hackberry	SIGNIFICANT		
546	36	Hackberry	SIGNIFICANT		
547	8	Hackberry	SIGNIFICANT		
548	13	Hackberry	SIGNIFICANT		
549	9	Hackberry	SIGNIFICANT		
550	14	Hackberry	SIGNIFICANT		
551	14	Black Cherry	SIGNIFICANT		

INVENTORY LEGEND

SIGNIFICANT	TREE TO BE PRESERVED
SIGNIFICANT	TREE TO BE REMOVED
EXEMPT	TREE EXEMPT FROM CALCULATIONS (WITHIN KEATS AVE. RIGHT-OF-WAY DEDICATION)
10+	TREE WITHIN >10 UNITS PER ACRE AREA

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0 25 50 100
SCALE IN FEET

ALLIANT
www.alliant-inc.com

TWIN CITIES LAND DEVELOPMENT

RAVARA TRAILS

COTTAGE GROVE, MINNESOTA

PRELIMINARY PLAT SUBMITTAL

TREE INVENTORY

DATE	DESCRIPTION
2025-12-31	City Submittal

CERTIFICATION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Landscape Architect under the laws of the State of MINNESOTA

PRELIMINARY NOT FOR CONSTRUCTION

John Gronhovd — 59233
Date — License no.

QA/QC CHECK

By — Date

PROJECT TEAM DATA

Designed By:
Drafted By:
Project No.: 4000570-00

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LEGEND

- DECIDUOUS OVERSTORY TREES
- CONIFEROUS TREES
- SIDE SLOPE SEED MIX
  MN STATE SEED MIX 33-261
- MESIC PRAIRIE GENERAL
  MN STATE SEED MIX 35-241

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RAVARA TRAILS

COTTAGE GROVE, MINNESOTA

PRELIMINARY PLAT SUBMITTAL
LANDSCAPE PLAN - OVERALL

DESCRIPTION	DATE
City Submittal	2025-12-31

CERTIFICATION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly licensed Landscape Architect under the laws of the State of MINNESOTA

PRELIMINARY
FOR REVIEW
NOT FOR CONSTRUCTION

John Gronhovd — 59233
Date — License no.

QA/QC CHECK

By — Date

PROJECT TEAM DATA

Designed By:
Drafted By:
Project No.: 4000570-00

77

Sheet 77 of 91

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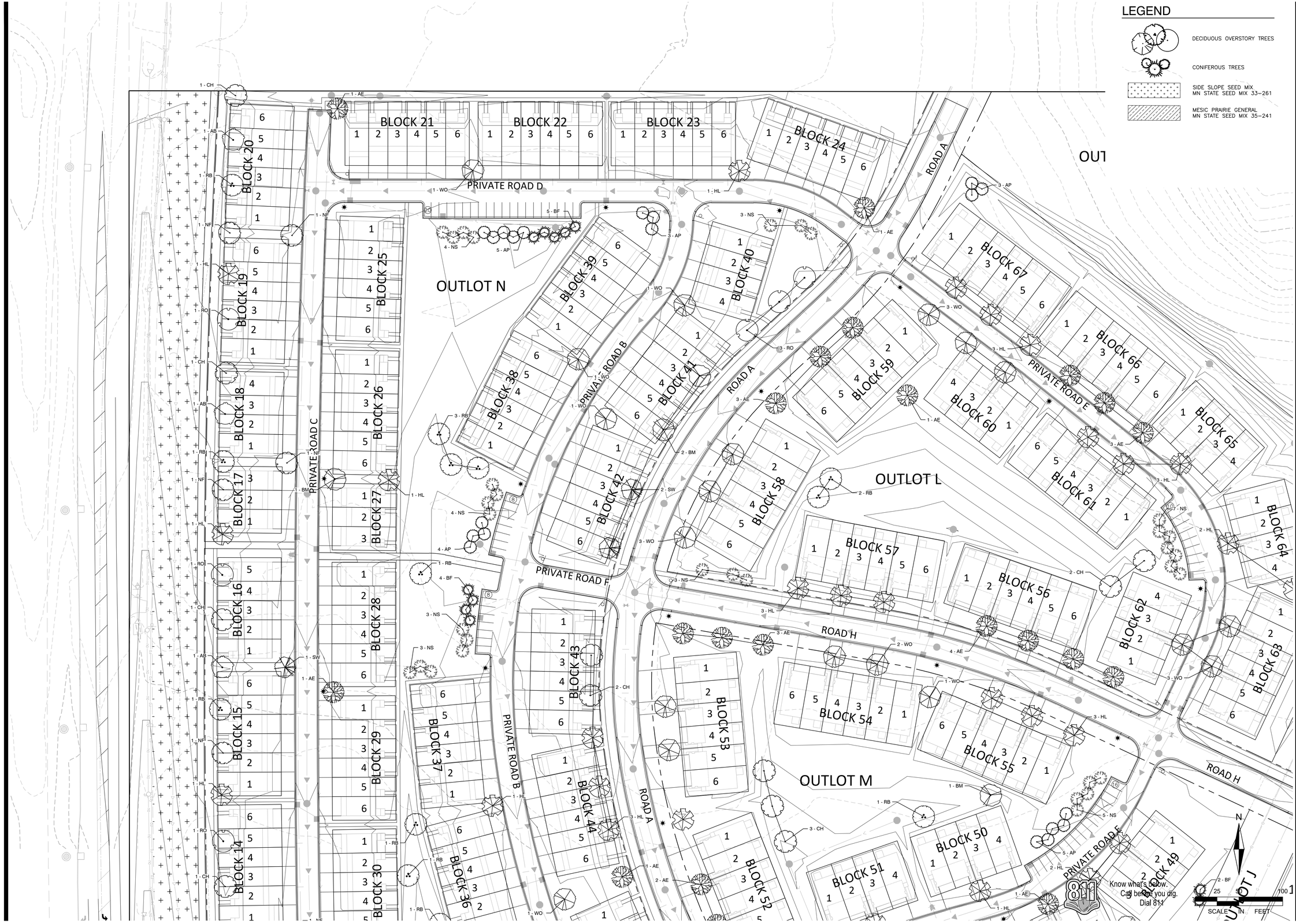

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COTTAGE GROVE, MINNESOTA

PRELIMINARY PLAT SUBMITTAL
LANDSCAPE PLAN - VIEW A

DATE	DESCRIPTION
2025-12-31	City Submittal

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Date
59233
License no.

QA/QC CHECK

By
Date

PROJECT TEAM DATA

Designed By:
Drafted By:
Project No.: 4000570-00

78

Sheet 78 of 91

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OUTLOT K

OUTLOT H

OUTLOT L

OUTLOT G

ROAD I

ROAD J

ROAD D

ROAD H

BLOCK 10

BLOCK 11

BLOCK 8

BLOCK 9

BLOCK 64

BLOCK 63

RAVINE PARKWAY

LEGEND

DECIDUOUS OVERSTORY TREES

CONIFEROUS TREES

SIDE SLOPE SEED MIX
MN STATE SEED MIX 33–261

MESIC PRAIRIE GENERAL
MN STATE SEED MIX 35–241

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COTTAGE GROVE, MINNESOTA

PRELIMINARY PLAT SUBMITTAL

LANDSCAPE PLAN - VIEW B

DATE	DESCRIPTION
2025-12-31	City Submittal

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Drafted By:

Project No.: 4000570-00

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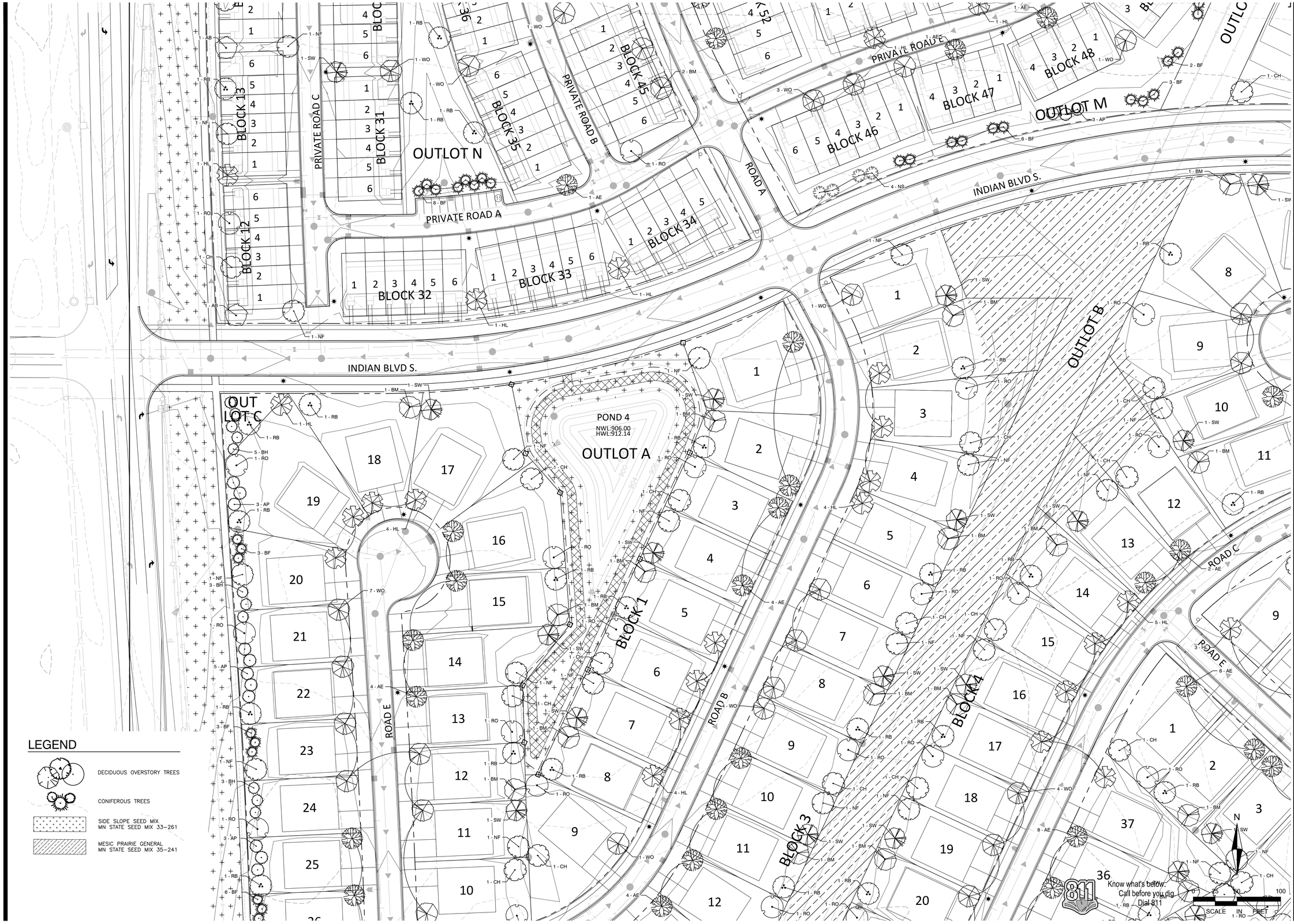

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RAVARA TRAILS

COTTAGE GROVE, MINNESOTA

PRELIMINARY PLAT SUBMITTAL

LANDSCAPE PLAN - VIEW C

DATE	DESCRIPTION
2025-12-31	City Submittal

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PROJECT TEAM DATA

Designed By:
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80

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LEGEND

- DECIDUOUS OVERSTORY TREES
- CONIFEROUS TREES
- SIDE SLOPE SEED MIX MN STATE SEED MIX 33-261
- MESIC PRAIRIE GENERAL MN STATE SEED MIX 35-241

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LANDSCAPE PLAN - VIEW D

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81

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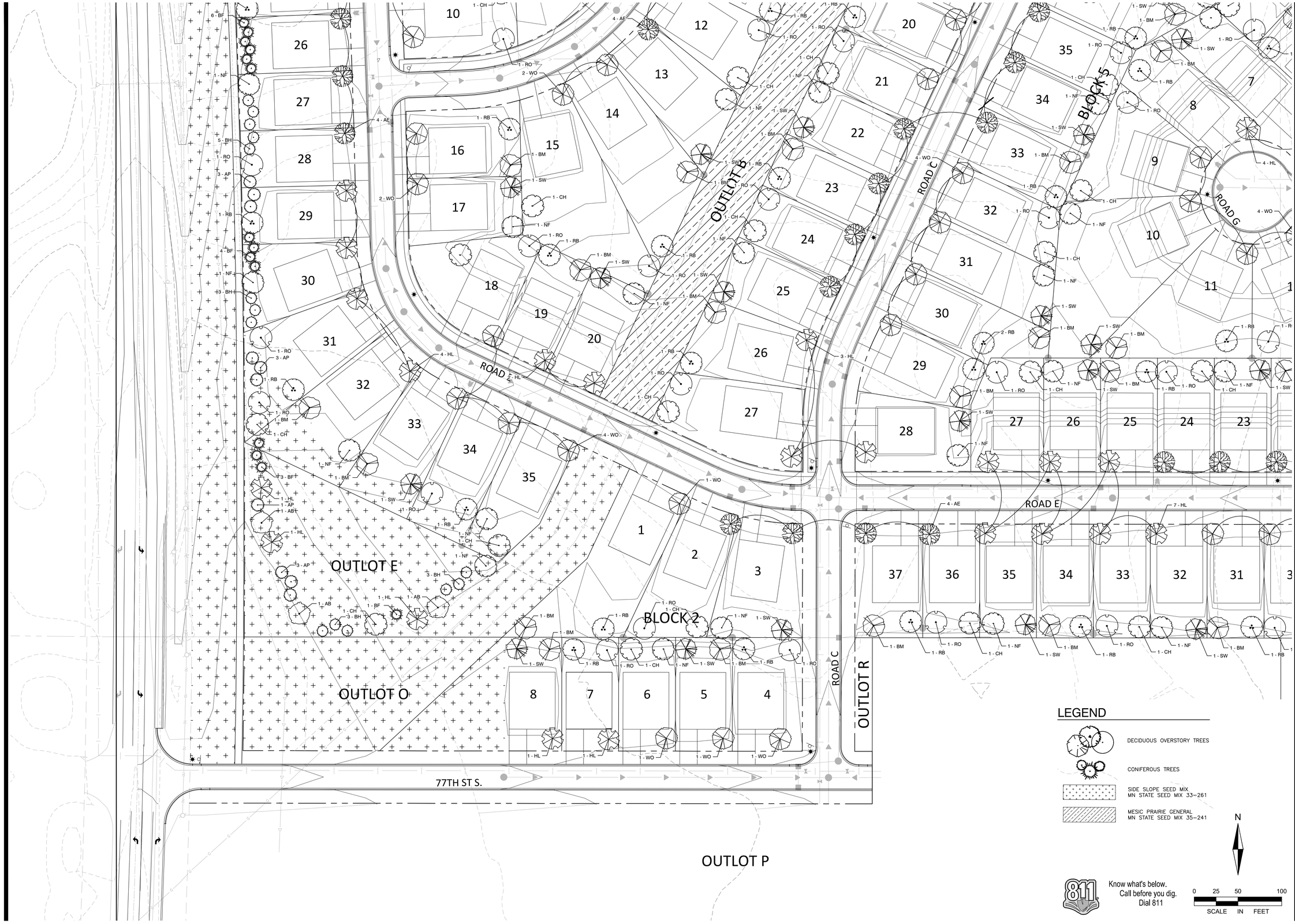

LEGEND

- DECIDUOUS OVERSTORY TREES
- CONIFEROUS TREES
- SIDE SLOPE SEED MIX
  MN STATE SEED MIX 33-261
- MESIC PRAIRIE GENERAL
  MN STATE SEED MIX 35-241

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LANDSCAPE PLAN - VIEW E

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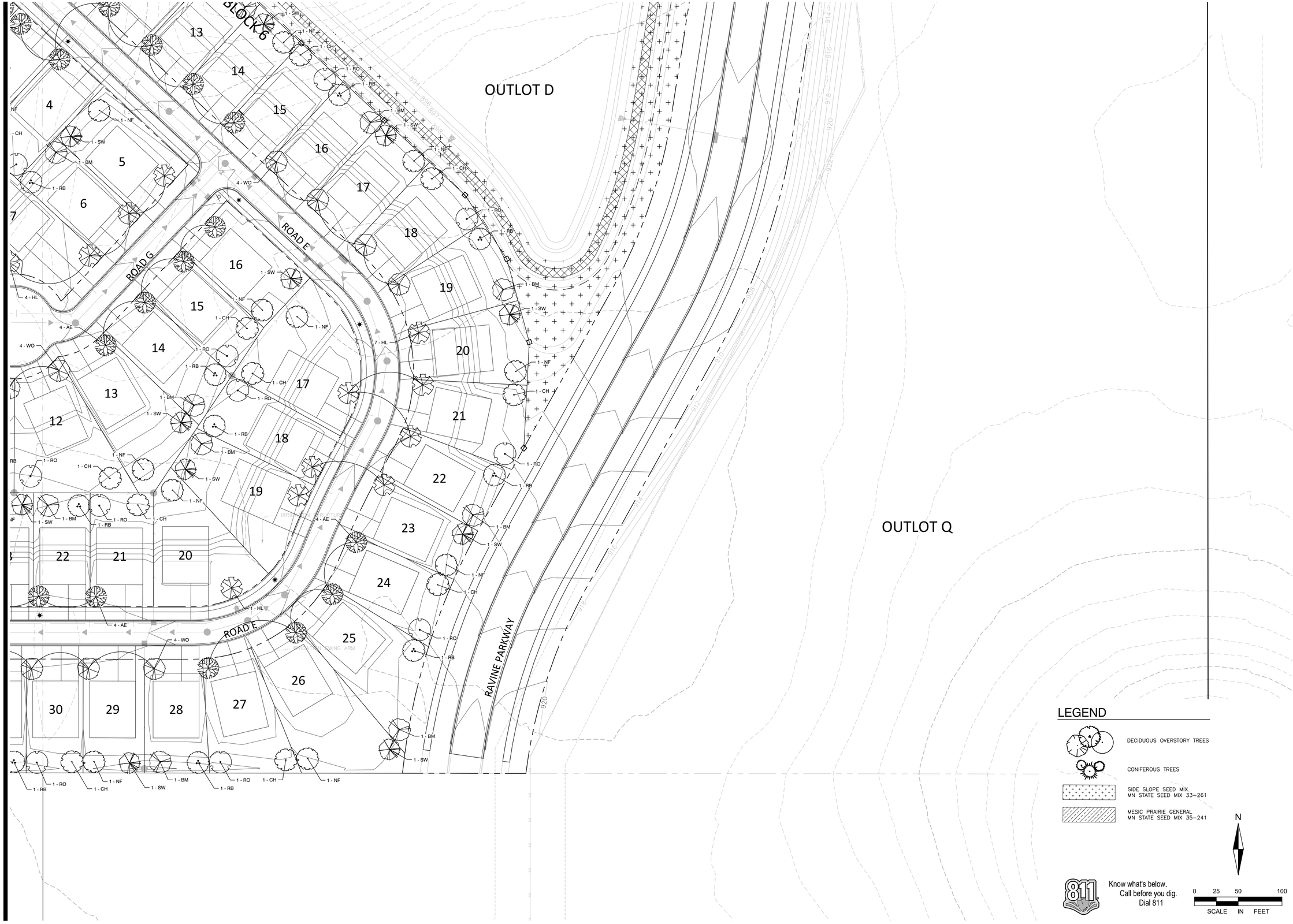
BLOCK 6
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OUTLOT Q
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ROAD E
ROAD E
RAVINE PARKWAY
IRRIGATION SWING ARM
IRRIGATION SWING ARM
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4 - HL
7 - HL
1 - HL
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TREE MITIGATION REQUIREMENTS:

MITIGATED INCHES TO BE REPLACED:	1,102 INCHES (/2.5 INCH CALIPER) = 441 TREES
MITIGATION INCHES PROVIDED:	2,485 INCHES (/2.5 INCHES CALIPER = 994 TREES)

(LANDSCAPE TREES PROVIDED ARE COUNTED TOWARD MITIGATION REQUIREMENT, SEE TREE PRESERVATION PLAN, PAGE 69.)

OVERALL LANDSCAPE REQUIREMENTS:

TOWNHOME LOTS MUST HAVE ONE OVERSTORY DECIDUOUS TREE PLANTED IN THE FRONT YARD BETWEEN EACH BUILDING GROUP WITH 1 OVERSTORY TREE/40' LF SITE PERIMETER OVERALL. 5 SHRUBS PER UNIT TO BE PROVIDED WITH CONSTRUCTION.

LOTS LESS THAN 60 FEET WIDE MUST HAVE 2 TREES PER LOT. ONE TREE IN THE FRONT YARD. THE FRONT YARD TREE SHALL HAVE A MAXIMUM CANOPY SPREAD OF 30 FEET AND MAXIMUM HEIGHT OF 30 FEET. 10 SHRUBS PER UNIT TO BE PROVIDED WITH CONSTRUCTION

LOTS 60 FEET WIDE OR GREATER MUST HAVE 3 TREES PER LOT. ONE TREE IN THE FRONT YARD. THE FRONT YARD TREE MAY BE A TRADITIONAL OVERSTORY DECIDUOUS TREES. 10 SHRUBS PER UNIT TO BE PROVIDED WITH CONSTRUCTION.

50' AVERAGE, 30' MINIMUM YEAR-ROUND BUFFER OF 50% OPACITY REQUIRED IN REAR YARDS OF LOTS AND TOWNHOUSES ADJACENT TO KEATS AVE S. / CSAH 19. (BLOCK 1, LOTS 19-35 AND BLOCKS 12-20.)

LOT TYPE:	OVERALL:
TOWNHOME (1/40 LF)	208 TREES REQUIRED (8,296 LF) 227 TREES PROVIDED
40' LOTS (2/LOT)	210 TREES REQUIRED (105 LOTS) 210 TREES PROVIDED
65' LOTS (3/LOT)	492 TREES REQUIRED (164 LOTS) 492 TREES PROVIDED
KEATS AVE BUFFER TREES PROVIDED:	65 TREES
TOTAL REQUIRED TOTAL PROVIDED	910 TREES 994 TREES

SEEDING NOTES

MESIC PRAIRIE MIX: MN STATE 35-241 MESIC PRAIRIE GENERAL.
SEEDING RATE TO BE 36.5 LBS/ACRE (PURE LIVE SEED).

SIDE-SLOPE SEED MIX: MN STATE 33-261 STORMWATER SOUTH & WEST.
SEEDING RATE TO BE 44 LBS/ACRE (PURE LIVE SEED).

APPLY SEED PER THE FOLLOWING: MULCH SEEDED AREAS WITH Mn/DOT TYPE 3 (MCIA CERTIFIED WEED FREE) MULCH AT A RATE OF 1 TON PER ACRE WITHIN 48 HOURS OF SEEDING. MULCH SHOULD THEN BE DISC ANCHORED TO KEEP IT FROM BLOWING AWAY.

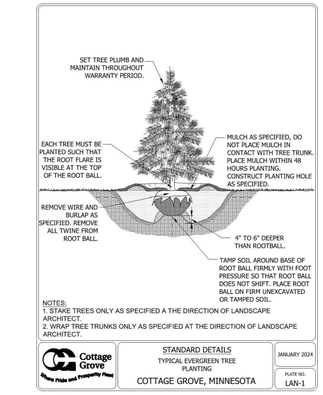
SEEDING SHALL BE APPLIED FROM APRIL 15 – JULY 20 OR SEPTEMBER 20 – FREEZE UP. IF HYDROSEEDING UTILIZE APPROXIMATELY 500 GALLONS OF WATER PER ACRE. REFER TO MN/DOT SPEC 3884 FOR PROPER INSTALLATION OF HYDRO-SEED. ALL NATIVE SEEDS USED ON THIS PROJECT SHALL BE CERTIFIED TO BE OF MINNESOTA ORIGIN BY THE MINNESOTA CROP IMPROVEMENT ASSOCIATION (MCIA). SITE TO BE PREPARED BY LOOSENING TOPSOIL TO A MINIMUM DEPTH OF 3 INCHES. THE SITE TO BE HARROWED OR RAKED FOLLOWING SEEDING, AND THEN PACKED USING A CULTI-PACKER OR EQUIVALENT. SEE MNDOT SEEDING MANUAL FOR REFERENCE.

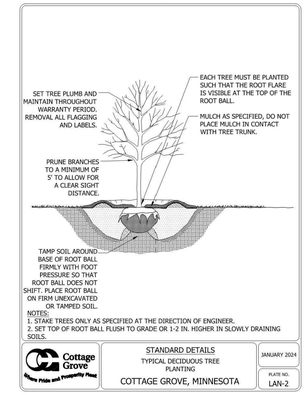
MAINTAIN SEEDED AREAS BY WATERING, REMULCHING AND REPLANTING AS NECESSARY TO ESTABLISH A UNIFORMLY DENSE STAND OF THE SPECIFIED GRASSES UNTIL ACCEPTED. ANY AREAS FAILING TO ESTABLISH A STAND SHALL BE RESEEDED, REFERTILIZED AND REMULCHED WHENEVER 70% VEGETATIVE COVER IS NOT ACHIEVED. RESEEDING SHALL CONFORM IN ALL RESPECTS TO THESE SPECIFICATIONS. THE CONTRACTOR SHALL REPAIR ANY DAMAGE TO THE WORK AREAS RESULTING FROM EROSION AND/OR EQUIPMENT. THE CONTRACTOR SHALL REPAIR DAMAGE, INCLUDING REGRADING, RESEEDING, ETC. AS NECESSARY, BEFORE SIGNIFICANT DAMAGE OCCURS.

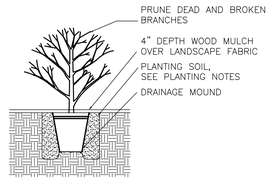
LANDSCAPE NOTES:

1. DECIDUOUS TREES SHOULD BE LOCATED A MINIMUM OF 5 FT OFF ANY UTILITY PIPE.
2. CONIFEROUS TREES SHOULD BE LOCATED A MINIMUM OF 15 FT OFF ANY UTILITY PIPE.
3. NO TREE SHOULD BE LOCATED WITHIN 10 FT OF A HYDRANT OR 15 FT FROM A STREETLIGHT.
4. NO TREES SHOULD BE LOCATED WITHIN A STORM POND HIGH WATER LEVEL (HWL).
5. NO TREES SHOULD BE LOCATED WITHIN A STORM POND'S 20 FT ACCESS ROUTE, AND NO CONIFEROUS TREES WITHIN 5 FT OF THE 20 FT POND ACCESS ROUTE.
6. NO CONIFEROUS TREES WITHIN 20 FT OF A PROPOSED SIDEWALK/TRAIL.
7. NO DECIDUOUS TREES WITHIN 5 FT OF SIDEWALK/TRAIL/DRIVEWAYS.
8. TREES SHOULD NOT BE PLANTED WITHIN DRAINAGE AND UTILITY EASEMENTS
9. TREES WITHIN CITY OUTLOTS SHOULD CONFORM TO THE APPROVED SPECIES LIST.
10. INSTALL 4" MIN TOP SOIL TO SOD, SEED AND SHRUB AREAS. FINE GRADE ALL SOD AND SEED AREAS. INSTALL 12" TOP SOIL TO PERENNIAL AND ANNUAL FLOWER AREAS.
11. STAKE OR MARK ALL PLANT MATERIAL LOCATIONS PRIOR TO INSTALLATION. OWNERS REPRESENTATIVE TO APPROVE ALL STAKING PRIOR TO INSTALLATION.
12. ALL SHRUB AREAS UNLESS SPECIFIED AS OTHER, TO BE BED MULCHED DOUBLE SHREDDED HARDWOOD MULCH OVER FILTER FABRIC, NATURAL COLOR, UNLESS SPECIFIED AS OTHER. POLY-EDGER TO BE VALLEY VIEW BLACK DIAMOND OR APPROVED EQUAL.
13. INSTALL 4-6" DEPTH SHREDDED HARDWOOD MULCH AROUND ROOT SAUCER OF ALL TREES ISOLATED FROM PLANT BEDS. DO NOT PILE MULCH AGAINST THE BASE OF A PLANT OR TREE TRUNK; PULL THE MULCH FOUR INCHES AWAY FROM ROOT FLARE.
14. PLANT SOIL SHALL CONSIST OF 1:1:1, SELECT LOAMY TOPSOIL, PEAT MOSS, PIT RUN SAND.
15. COMPLETELY GUARANTEE ALL WORK FOR A PERIOD OF TWO YEARS BEGINNING AT THE DATE OF ACCEPTANCE. MAKE ALL REPLACEMENTS PROMPTLY (AS PER DIRECTION OF OWNER).
16. ALL MATERIAL SHALL COMPLY WITH THE LATEST EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK, AMERICAN ASSOCIATION OF NURSERYMEN.
17. ALL TREE TRUNKS SHALL BE WRAPPED WITH BROWN CREPE TREE WRAP. APPLY WRAP IN NOVEMBER AND REMOVE IN APRIL.
18. CALL GOPHER STATE ONE CALL AT 651-454-0002 FOR LOCATING ALL UNDERGROUND UTILITIES AND AVOID DAMAGE TO UTILITIES DURING THE COURSE OF THE WORK.
19. MAINTAIN ALL PLANT MATERIALS, INCLUDING WATERING, UNTIL THE TIME OF ACCEPTANCE.
20. COORDINATE INSTALLATION WITH GENERAL CONTRACTOR.
21. STAKING AND GUYING OF TREES OPTIONAL: MAINTAIN PLUMBNESS OF TREES FOR DURATION OF WARRANTY PERIOD.
22. SWEEP AND WASH ALL PAVED SURFACES AND REMOVE ALL DEBRIS RESULTING FROM LANDSCAPE OPERATIONS.
23. LANDSCAPE CONTRACTOR SHALL INSTALL KENTUCKY BLUE GRASS SOD IN DENOTED AREAS INCLUDING ALL R.O.W. PER LOCAL INDUSTRY STANDARDS. SOD SHALL BE LAID PARALLEL TO THE CONTOURS AND HAVE STAGGERED JOINTS.
24. IRRIGATION TO BE PROVIDED FOR SOD IN RAVINE PARKWAY BOULEVARD. IRRIGATION SYSTEM TO BE OWNED AND MAINTAINED BY HOA.
25. SUPPLY DESIGN AND INSTALLATION FOR NEW WATER EFFICIENT IRRIGATION SYSTEM. DESIGN SYSTEM INCLUDING CONTROLS, ELECTRICAL AND WATER SERVICE CONNECTIONS WITH 100% COVERAGE OF NEW SOD, LANDSCAPE ISLANDS AND PLANTING AREAS. SOD, SEED AND SHRUB AREAS TO BE ON SEPARATE ZONES. EXCESS WATER SHALL NOT COME IN CONTACT WITH BUILDINGS OR SIDEWALKS. THE IRRIGATION SYSTEM SHALL HAVE A RAIN/FREEZE SENSOR SHUTOFF. USE RAINBIRD OR APPROVED EQUAL COORDINATE WITH G.C. AND WORK OF OTHER SECTION.
26. CITY STANDARD SPECIFICATION SHALL GOVERN FOR ALL IMPROVEMENTS ON PUBLIC RIGHT-OF-WAY OR PUBLIC PROPERTY.
27. LOTS LESS THAN 60 FEET WIDE MUST HAVE 2 TREES PER LOT. ONE TREE IN THE FRONT YARD. THE FRONT YARD TREE SHALL HAVE A MAXIMUM CANOPY SPREAD OF 30 FEET AND MAXIMUM HEIGHT OF 30 FEET.

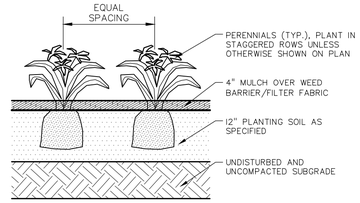
LANDSCAPE DETAILS:



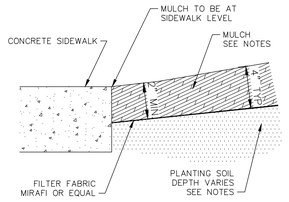




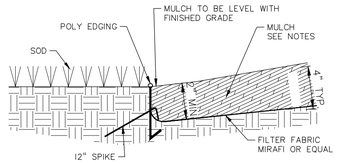
1 SHRUB PLANTING DETAIL
NOT TO SCALE



2 PERENNIAL PLANTING DETAIL
NOT TO SCALE



3 MULCH AT SIDEWALK DETAIL
NOT TO SCALE



4 MULCH AT SOD DETAIL
NOT TO SCALE

PLANT SCHEDULE

SYMBOL	CODE	QTY	COMMON NAME	BOTANICAL NAME	SIZE	CONTAINER
CONIFEROUS TREES						
	AP	44	Austrian Pine	Pinus nigra	8` Ht.	B&B
	BF	50	Balsam Fir	Abies balsamea	8` Ht.	B&B
	BH	25	Black Hills Spruce	Picea glauca densata	8` Ht.	B&B
	NS	36	Norway Spruce	Picea abies	8` Ht.	B&B
DECIDUOUS TREES						
	AB	8	Autumn Blaze® Freeman Maple	Acer x freemanii 'Jeffersred'	2.5" Cal.	B&B
	AE	114	Accolade Elm	Ulmus japonica x wilsoniana 'Morton' TM	2.5" Cal.	B&B
	BM	76	Burgundy Belle® Red Maple	Acer rubrum 'Magnificent Magenta'	2.5" Cal.	B&B
	CH	77	Common Hackberry	Celtis occidentalis	2.5" Cal.	B&B
	HL	124	Skyline® Honey Locust	Gleditsia triacanthos inermis 'Skycole'	2.5" Cal.	B&B
	NF	84	Northern Flare® Sugar Maple	Acer saccharum 'Sisseton'	2.5" Cal.	B&B
	RB	90	River Birch Multi-Trunk	Betula nigra	8` Ht.	B&B
	RO	78	Red Oak	Quercus rubra	2.5" Cal.	B&B
	SW	74	Swamp White Oak	Quercus bicolor	2.5" Cal.	B&B
	WO	114	White Oak	Quercus alba	2.5" Cal.	B&B

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RAVARA TRAILS
COTTAGE GROVE, MINNESOTA

PRELIMINARY PLAT SUBMITTAL

LANDSCAPE PLAN - DETAILS

DATE	DESCRIPTION
2025-12-31	City Submittal

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Date — License no.

QA/QC CHECK

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PROJECT TEAM DATA

Designed By:
Drafted By:
Project No.: 4000570-00

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Sheet 84 of 91

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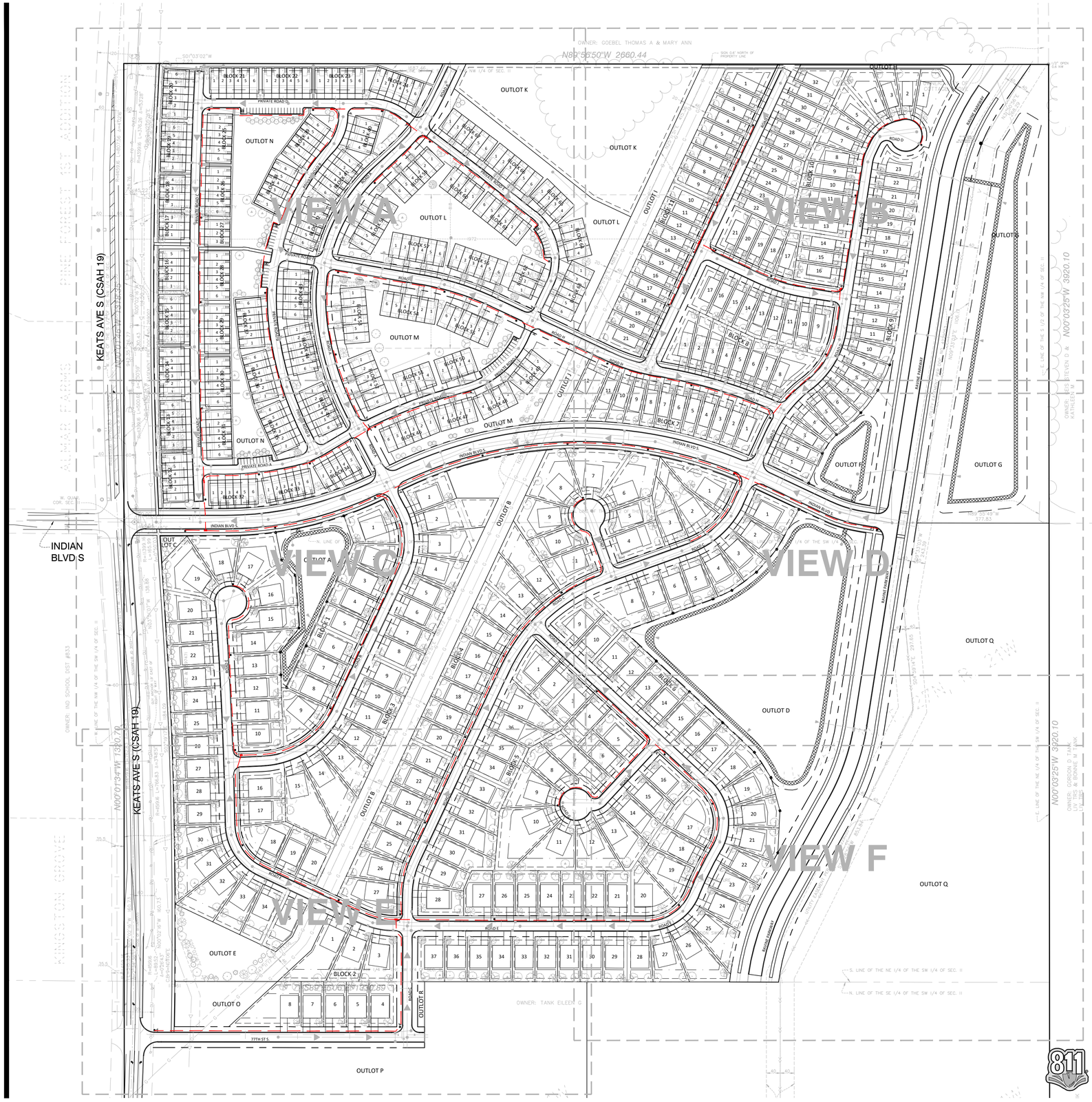
KEATS AVE S (CSAH 19)
INDIAN BLVD S
PINE FOREST 1ST ADDITION
ALMAR FARMS
KINGSTON GROVE
OWNER: GOEBEL THOMAS A & MARY ANN
N89°56'50"W 2660.44
N00°03'25"W 3920.10
N00°01'34"W 1330.70
OWNER: GORDON D ZIMMERMAN
OWNER: TANK EILEEN G
OWNER: IND SCHOOL DIST #833
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OUTLOT L
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KEATS AVE S (CSAH 19)

PRIVATE ROAD C

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PRIVATE ROAD B

PRIVATE ROAD F

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HANDHOLE HH7 (LGT–1)
HANDHOLE HH8 (LGT–1)

LIGHTING UNIT L33 (LGT–7)
LIGHTING UNIT L34 (LGT–7)
LIGHTING UNIT L35 (LGT–7)
LIGHTING UNIT L36 (LGT–7)
LIGHTING UNIT L37 (LGT–7)
LIGHTING UNIT L39 (LGT–7)
LIGHTING UNIT L40 (LGT–7)
LIGHTING UNIT L41 (LGT–7)
LIGHTING UNIT L42 (LGT–7)
LIGHTING UNIT L43 (LGT–7)
LIGHTING UNIT L47 (LGT–7)
LIGHTING UNIT L48 (LGT–7)
LIGHTING UNIT L49 (LGT–7)
LIGHTING UNIT L50 (LGT–7)
LIGHTING UNIT L51 (LGT–7)

3–1/C #6 LIGHTING CABLE IN 1.5" NMC

OWNER: GOEBEL THOMAS A & MARY ANN

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TWIN CITIES LAND DEVELOPMENT TC LD

RAVARA TRAILS

COTTAGE GROVE, MINNESOTA

PRELIMINARY PLAT SUBMITTAL

LIGHTING PLAN - VIEW A

DATE	DESCRIPTION
2025-12-31	City Submittal

CERTIFICATION

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PRELIMINARY
FOR REVIEW
NOT FOR CONSTRUCTION

Clark Victorlund — 40922
Date — License no.

QA/QC CHECK

By — Date

PROJECT TEAM DATA

Designed By: CJW
Drafted By: LRJ
Project No.: 4000570-00

86

Sheet 86 of 91

File Location: X:\4000570-00\100140 Design\00 Sheets - Preliminary\LIGHTING.dwg Plotted By: Logan Josephson on December 31, 2025 at 2:23:49 PM

OUTLOT K

OUTLOT L

OUTLOT H

OUTLOT G

N89°56'50"W 2660.44

SIGN 0.6' NORTH OF PROPERTY LINE

1/2" OPEN 0.6 NW

N00°03'25"W 3920.10

BLOCK 10

BLOCK 11

BLOCK 8

BLOCK 9

BLOCK 64

BLOCK 63

ROAD D

ROAD I

ROAD J

ROAD H

RAVINE PARKWAY

LIGHTING UNIT L63 (LGT-7)

LIGHTING UNIT L62 (LGT-7)

LIGHTING UNIT L61 (LGT-7)

LIGHTING UNIT L58 (LGT-7)

LIGHTING UNIT L57 (LGT-7)

LIGHTING UNIT L56 (LGT-7)

LIGHTING UNIT L59 (LGT-7)

LIGHTING UNIT L60 (LGT-7)

LIGHTING UNIT L55 (LGT-7)

LIGHTING UNIT L52 (LGT-7)

3-1/C #6 LIGHTING CABLE IN 1.5" NMC

HANDHOLE HH11 (LGT-1)

HANDHOLE HH10 (LGT-1)

EX STRUCTURE SCH TO-INV IN=881.22 INV OUT=881.32

EX STRUCTURE SCH TO-INV IN=883.23

UTILITY EASEMENT PER DOC. NO. 4308015

E. LINE OF THE S 1/2 OF THE NW 1/4 OF SEC. 11

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LIGHTING PLAN - VIEW B

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2025-12-31	City Submittal

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Date — License no.

QA/QC CHECK

By — Date

PROJECT TEAM DATA

Designed By: CJW

Drafted By: LRJ

Project No.: 4000570-00

87

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PRELIMINARY PLAT SUBMITTAL

LIGHTING PLAN - VIEW C

DATE	DESCRIPTION
2025-12-31	City Submittal

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QA/QC CHECK

By Date

PROJECT TEAM DATA

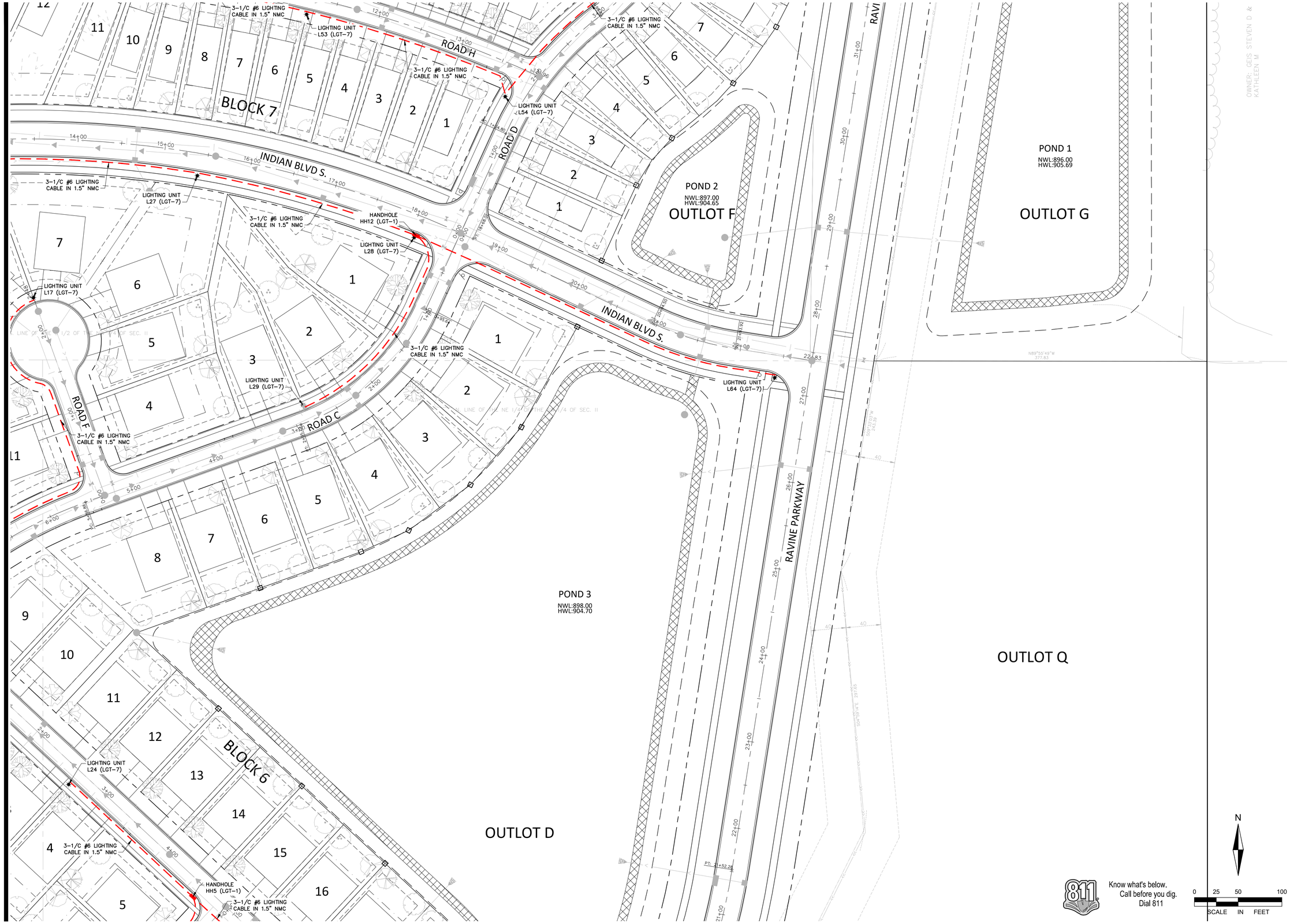
Designed By: CJW

Drafted By: LRJ

Project No.: 4000570-00

88

Sheet 88 of 91



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LIGHTING PLAN - VIEW D

DESCRIPTION	DATE
City Submittal	2025-12-31

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PROJECT TEAM DATA

Designed By: CJW
Drafted By: LRJ
Project No.: 4000570-00

89

Sheet 89 of 91

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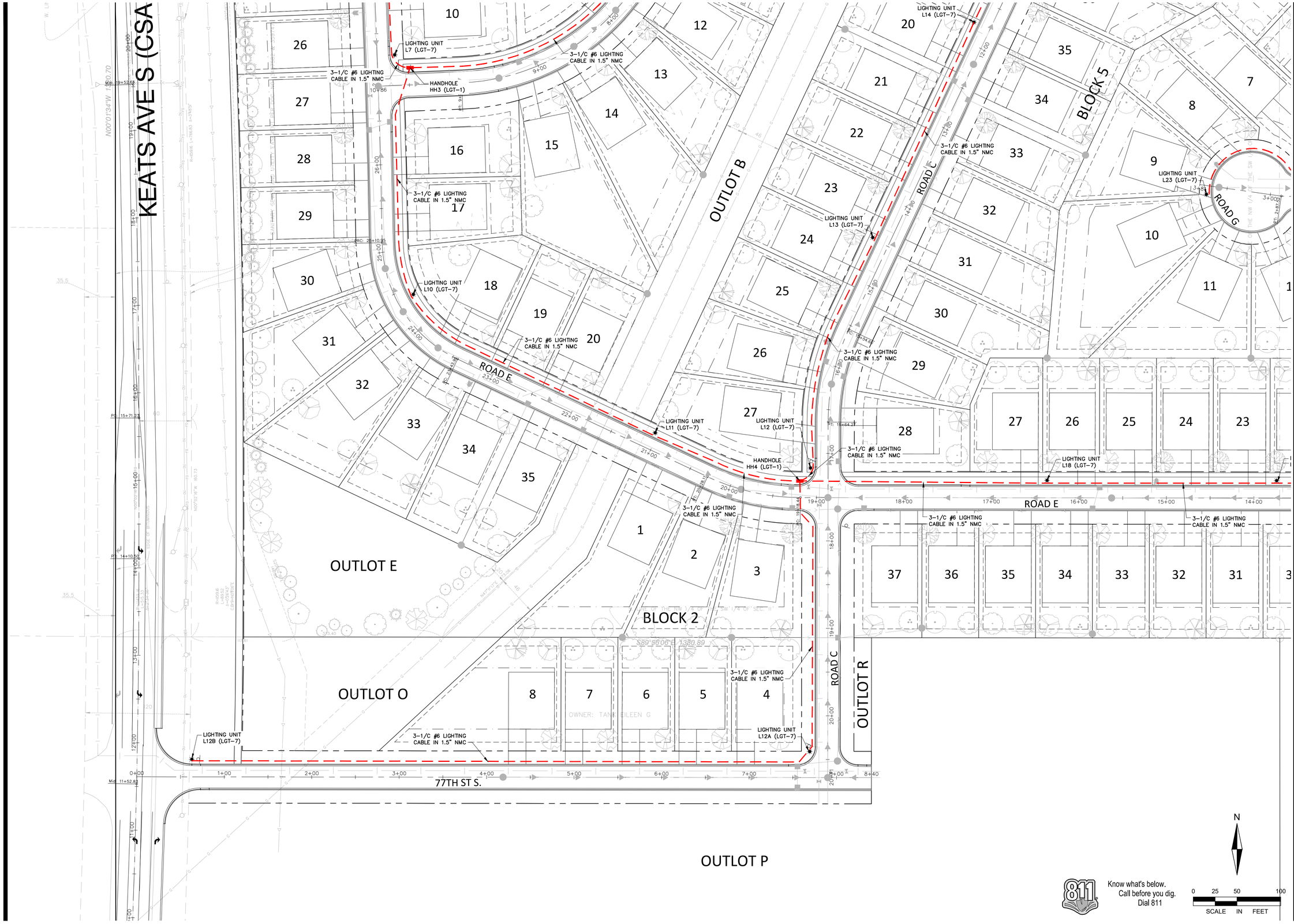

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PRELIMINARY PLAT SUBMITTAL

LIGHTING PLAN - VIEW E

DESCRIPTION	DATE
City Submittal	2026-12-31

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By — Date

PROJECT TEAM DATA

Designed By: CJW
Drafted By: LRJ
Project No.: 4000570-00

90

Sheet 90 of 91

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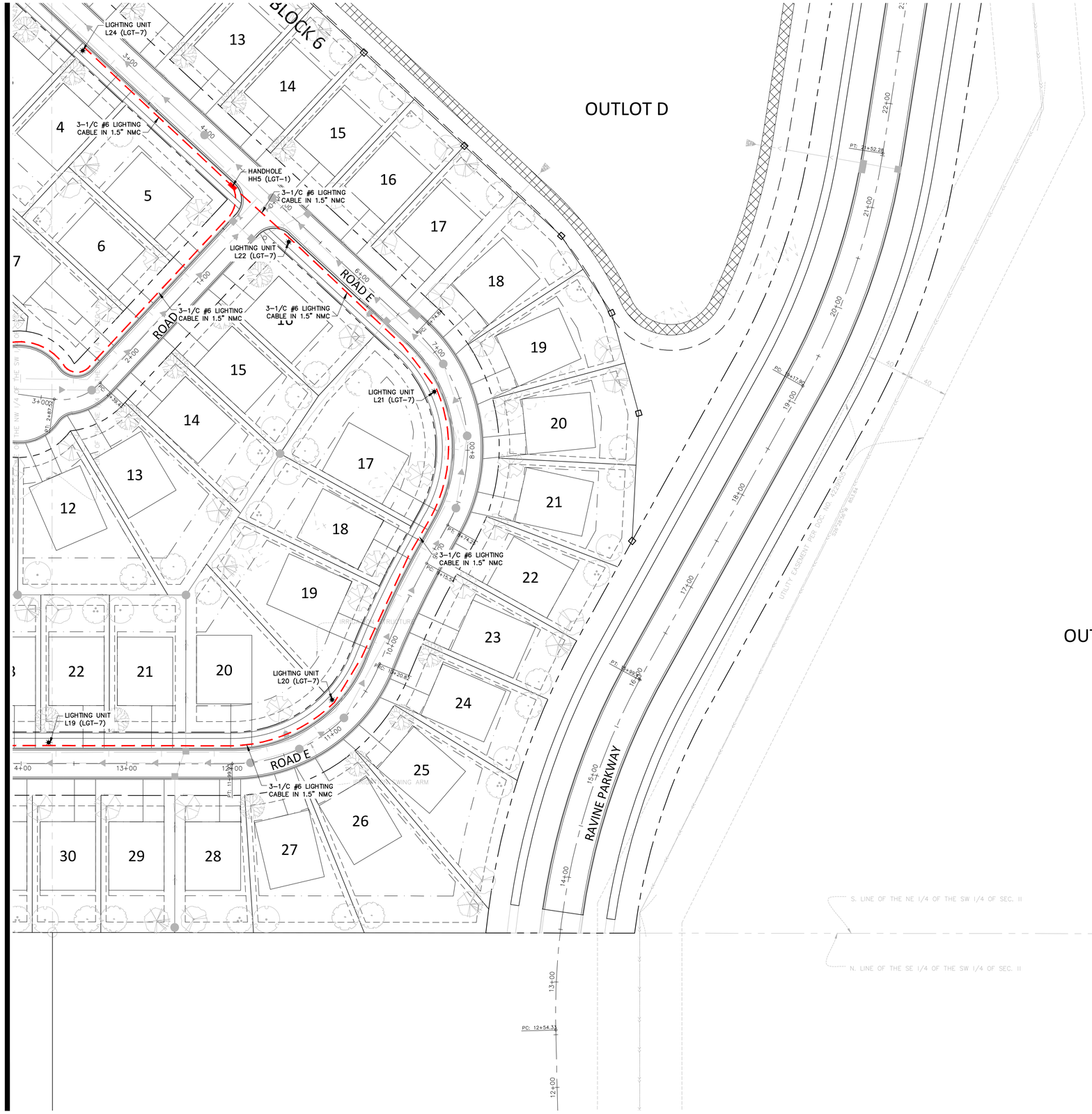

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PRELIMINARY PLAT SUBMITTAL

LIGHTING PLAN - VIEW F

DESCRIPTION	DATE
City Submittal	2025-12-31

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PROJECT TEAM DATA

Designed By: CJW
Drafted By: LRJ
Project No.: 4000570-00

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MEMORANDUM

Date: 02/17/2026

To: Paul Sponholz, PE

From: Mike Boex, PE

Subject: Ravara Trails Plan Review
City of Cottage Grove, MN
Project No.: 26X.142116.000

This memo summarizes the review of the Ravara Trails Preliminary Plat Submittal, submitted by Alliant, dated 12/31/2025 (received 01/06/2026).

Preliminary Plat Plans

Sheet 1:

1. On the final plans, identify the horizontal and vertical datums used on the project.
2. On the final plans, please add a note on the cover sheet that the City of Cottage Grove's Standard Specifications for Street and Utility Construction shall govern for all improvements within the public right-of-way, public easement, or public property.

Sheet 2:

3. On future submittals, depict the existing manholes along the MCES interceptor. Record plans can be provided, but manholes should be located for final design.
    a. Existing sewer stubs from the interceptor should also be depicted when connecting.

Sheet 3:

4. The existing condition sheets don't appear to extend into the property where Lots 4-8 Block 2, and 77th Street are located.

Sheet 5:

5. Revise note #8 to also state that no abandonment is allowed in public outlot or public easement, in addition to public right-of-way.

Sheet 6:

6. Add a note to provide well sealing records to the City once complete.

Sheet 15:

7. Outlot C: drainage and utility easement should be provided on the west and north sides to match the proposed easements along Indian Boulevard and CSAH 19.

Sheet 20:

8. Road A sidewalk: When north of Private Road D, the Road A sidewalk should be located on the east side of the road to be adjacent to the future city park. A pedestrian ramp for a crossing should be placed in the northwest quadrant of the Road A/Private Road D intersection.

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9. Trail connections:
    a. Where bituminous trails intersect, provide 10-ft radii for snow removal operations.
    b. Provide a paved trail from the north plat line down to 77th Street along the gas pipeline over Outlots I, J, B, E, & O. A stub section of trail towards Outlot K (park) is not needed at this time and will occur when the park is developed.
        i. When approaching 77th Street from the north, the trail will turn west in the 77th Street right-of-way and tie into the proposed CSAH 19 trail. Sidewalk along the north side of 77th Street will then connect and terminate into this trail. The intent is to avoid a sidewalk section between the pipeline trail and CSAH 19 trail, as it should be a continuous trail for plowing equipment.
        ii. Midblock Trail Crossings:
            1. Signs: Trail crossing signs (W11-2 & W16-7P) should be placed on the back side of the pedestrian ramp as vehicles approach the crossing; signs should be placed on both sides of the sign post and visible from both directions.
            2. Markings:
                a. Painted 12” crosswalk markings shall be placed at the mid-block crossing of Indian Boulevard since it’s a collector roadway.
                b. Mid-block crossings of typical residential streets do not require markings.
        iii. There are various mid-block trail and sidewalk connections to private streets such as Private Road C. On private streets, the City will defer to the developer and their engineer as to whether crossings will receive signage or other treatments.
    c. The County is studying the potential for a pedestrian crossing between Indian Boulevard and 77th Street. To that end, consider enlarging Outlot E behind Lots 31-32 Block 1 to allow for some additional flexibility for future pedestrian facilities.
    d. Trail should be provided at the Road D cul-de-sac to the Ravine Parkway trail. The trail connection should be as straight as possible and contained within a 20-ft wide city-owned outlot.
        i. Due to this, a sidewalk connection on one side of Road D should be provided.
            1. Streetlights shall be on the sidewalk side of the road.
            2. A preliminary concept was submitted by the developer depicting sidewalk on the east side of Road D. On the south side of the cul-de-sac, the sidewalk should make a 90-degree or more gradual turn so snow removal equipment can make the maneuver. Consider revising right-of-way at Lot 23 Block 10 accordingly, if sidewalk is proposed in this location.
        ii. In addition to the sidewalk, a pedestrian ramp to the cul-de-sac should be provided in-line with the trail for plowing access.

e. Road E to Ravine utloway trail: a 20-ft outlot should be provided through Block 6 for a trail corridor.

10. Provide sidewalk along 77th Street within the development, on the north side of the street.
    a. Extend the sidewalk on the west side of Road C from Road E to 77th St.
    b. Sidewalk should be extended with this project along 77th Street on the west side of CSAH 19, from 78th Street to CSAH 19 on the south side of the street. The city will reimburse the developer for this work.
11. Temporary cul-de-sac:
    a. Due to the number of units, a temporary cul-de-sac will be needed at the end of Road I.
12. Similar to Lot 2 Block 3, extend Lot 1 Block 3 to the gas pipeline easement.
13. Outlots:
    a. Outlots B, J, I, E, O shall be deeded to the City.
    b. Outlot H: this outlot can be removed from the plat, along with the east/west trail connection.
    c. Outlots R & Q: It is anticipated these will be removed from the plat in future submittals.
14. Open space marker locations have been provided by the City's park department; see locations attached to this memo.
15. Indian Boulevard is anticipated to extend east of Ravine Parkway, provide curb radii accordingly for a future extension.
    a. Right-of-way should be dedicated accordingly, thereby modifying Outlot G. A right-of-way easement should be obtained over what is currently depicted as Outlot Q, understanding Outlot Q will not be part of the plat in future submittals.
16. The layout for the site should include the following proposed turn lanes:
    a. Keats Ave/77th St: WB approach needs a shared left/thru lane and a right turn lane.
    b. Keats Ave/Indian Blvd:
        i. Opening Day: WB shared left/thru lane and a right turn lane (construct the curb lines and pavement width for the future lane configuration, including accounting for turning movements).
            1. Maintain EB as signed and striped today (shared left/thru lane, right turn lane)
        ii. Future Lane Configuration: WB approach with left, thru, and right lanes. EB approach restriped, widened, and signed for left, thru, and right turn lanes. See sketch attached to this memo.
            1. Widen Indian Blvd at the intersection with Keats Ave for the future condition to a minimum of 48 feet (2-11' thru lanes (1 EB/ 1WB) + 11' left turn lane (WB) + 11' right turn lane (WB) + 2' curb reaction WB + adequate curb reaction/shoulder EB to help with truck turns off Keats Ave – confirm truck turning movements do not conflict with waiting WB left turning vehicles). Note that the EB shoulder width would be a

minimum 2’ but will likely be wider to accommodate the truck turning (SBL and NBR) to not conflict with vehicles stopped for the WB left.

c. Indian Blvd/Ravine Pkwy: EB approach needs a shared left/thru lane and a right turn lane.

17. Provide truck turning movement verification for all intersections.

18. Provide pedestrian ramps on the east side of Keats Ave at Indian Blvd and the east side of Keats Ave at 77th St

    a. Trail crossing across Indian Blvd on the east side of Keats Ave.

    b. Trail crossing across 77th St on the east side of Keats Ave.

19. No marked or signed pedestrian crossing across Keats Ave; confirm with Washington County.

    a. The traffic study mentions a marked and signed pedestrian crossing with RRFBs or signalized crossing in accordance with Washington County approval.

    b. The signal warrant analysis identified in the traffic study will assist in defining signal needs.

20. Trail connection from Block 1 to the CSAH 19 Trail:

    a. Provide a 20-ft city owned outlot between Lots 26 and 27 Block 1 for a bituminous trail connection to the CSAH 19 trail.

    b. Alternatively, provide a 20-ft city owned outlot between Lots 19 and 20 Block 1 for a bituminous trail connection to the CSAH 19 trail. This would also require a sidewalk extension along Road E north of Road B. With that change, the sidewalk on Road E should be moved to the opposite side of the street.

21. According to the Design of Turn Lane Guidelines and in accordance with Washington County, left and right turn lanes (including tapers) on Keats Ave (55 mph) should be a minimum of 480 feet (300 foot turn lane + 180’ taper).

    a. The speed limit along Indian Blvd and 77th St is anticipated to be 30 mph, matching the sections to the west of Keats Avenue. According to the design of Turn Lane Guidelines, since the approaches to Keats Ave and Ravine Pkwy are stop controlled, the left and right turn lanes should be a minimum of 160 feet + the queue length for a full stop condition with no deceleration in the thru lane.

22. Based on the traffic analysis, the following are recommended for design considerations, alignment shifts, and minimum turn lane lengths (measure from the crossing sidewalk/trail location).

    a. Keats Ave/Indian Blvd

        i. SB left: current design is acceptable (585 feet)

        ii. NB right: current length is acceptable (480 feet) but right turn lane taper should be 180 feet, not 195 feet. Shorten the taper, lengthen the full turn lane.

        iii. Stripe the westbound approach for the opening day configuration (WB shared left/thru and right turn lane) but design and construct the roadway width for the future configuration (left turn, thru, and right turn lanes) – assume 11’ lanes for all movements.

iv. Future WB left: 160’ + 140’ = 300 feet, design for a minimum of 300 feet including taper (1:10 taper appropriate on Indian Blvd) – 190’ turn lane + 110’ taper.

v. WB right: 160’ + 90’ = 250 feet, design for a minimum of 250 feet including taper (1:10 taper appropriate on Indian Blvd) – 140’ turn lane + 110’ taper.

vi. Align the crown of Indian Blvd to match into the current west side crown/centerline.

b. Keats Ave/77th St

i. Alignment for Keats Ave should be down the current alignment/crown which is between the existing centerline (between the NB and SB through lanes).

ii. SB left: current design is 470 feet, extend the southbound left turn lane to 480 feet (300 full lane width plus 180’ taper).

iii. NB right: current length is acceptable (480 feet) but right turn lane taper should be 180 feet, not 195 feet.

iv. WB right: 160’ + 40’ = 200 feet, design for a minimum of 200 feet including taper (1:10 taper appropriate on Indian Blvd) – 90’ turn lane + 110’ taper. Striping for WB approach to be a shared left/thru lane and a right turn lane.

1. East leg will have to be widened minimally at Keats Ave (11’ EB lane with 2’ curb reaction, 11’ WB shared left/thru lane, 11’ WB right turn lane with 2’ curb reaction)

c. Ravine Parkway/Indian Blvd

i. EB right: Design for a minimum of 200 feet including taper (1:10 taper appropriate on Indian Blvd) – 90’ turn lane + 110’ taper. Striping for EB approach to be a shared left/thru lane and a right turn lane.

1. West leg: (11’ WB lane with 2’ curb reaction, 11’ EB shared left/thru lane, 11’ EB right turn lane with 2’ curb reaction)

ii. It is anticipated that the east leg (WB approach) will be striped with a shared left/thru lane and a right turn lane.

<u>Sheet 21:</u>

23. Greenspace grades within right-of-way shall be 2% minimum (revise Ravine Parkway section).

24. Indian Boulevard shall be a 36-ft (face to face) typical section.

a. Indian Boulevard shall have 8-ft bituminous trail o both sides of the road.

b. A pavement section will need to be determined for Indian Boulevard.

25. All residential streets will need to be constructed with a temporary bituminous wedge (city detail STR-26) to protect the curb until the final wear course is placed per the conditions outlined in the development agreement.

a. Indian Boulevard and Ravine Parkway shall receive the final wear course as soon as the project schedule will allow. If late year construction prevents final wear course paving, the wedge shall be utilized until wear can be placed the following spring.

26. Cross sections should depict 6-ft sidewalk, where present.

27. It is understood that all private streets in the next submittal will be 26-ft in width, and that no-parking signage will be provided on both sides of the private streets.

    a. Final plans will need to clearly identify private infrastructure. Private streets will contain private storm sewer and private street lighting.

28. Road A should be signed for no-parking on the east side of the street south of Private Road D, due to the anticipated traffic volumes in the area.

29. Permitting:

    a. Northern Natural Gas: Public street and utility crossings will need to be permitted, as will trail encroachments. Copy the City on all correspondence and provide documentation of approvals. Research utility crossing requirements and perform potholes to verify pipeline elevations at each utility or street crossing. The City may require casings across the easement during final design for certain utility crossings. Proposed grading appears place fill over the pipelines in some areas (up to 4-ft), confirm pipeline requirements related to cover (both min. and max.).

    b. MCES: Similarly, permitting and approvals will need to be obtained from MCES.

Sheet 22:

30. The urban townhomes (clusters of 6): there is no distinct linework for driveways depicted other than lines extended from each lot line. Previous discussions with the developer indicate there may be rock mulch areas between driveways – please depict this on future plan submittals.

31. Public residential roads, such as Road A, shall use D428 curb per the city standard detail plate.

    a. Indian Boulevard should remain B618 curb.

Sheet 23:

32. Per city policy, stop signs shall not be placed at residential t-intersections (e.g. Road J to Road I). Please adjust all accordingly.

33. Barricades and future street extension signs per city standard details STR-31 and 32 shall be placed at the end of streets to be extended. Place a barricade at the end of any trail or sidewalk to be extended in the future as well.

Sheet 24:

34. All sidewalks within the development shall be noted 6-ft in width.

35. As depicted, the trail crossing across Indian Blvd is set back over 75 feet from Keats Ave. A gradual s-curve should pull the trail closer to the CSAH 19 intersection as the trail approaches Indian Boulevard.

Sheet 26:

36. As depicted, the CSAH 19 trail crossing across 77th St is set back over 75 feet from Keats Ave. A gradual s-curve should pull the trail closer to the CSAH 19 intersection as the trail approaches 77th Street.

Sheets 28-29:

37. One of the existing poles identified for relocation is an outdoor warning siren; coordination with Cottage Grove public safety will be required.

38. Label Indian Blvd. and 77th St. in plan view.
39. Location of the centerline/crown does not appear to be accurate with existing lanes. Verify. Should be located at or near the lane lines.
40. Indian Blvd. milling or full depth removal may not be necessary in the northbound left turn lane when just adding a northbound right turn lane.
41. Coordinate work with the planned Keats Ave/80th St roundabout as this may affect the tapers and tie-ins on Keats Ave south of 77th St. Obtain CAD information from Washington County.

Sheet 30:

42. Do not include the "Washington County Guidance Document" in the plans.

Sheet 31:

43. Retaining wall notes are present; clarify if there are any intended on this project.

Sheet 32:

44. Ensure 2% minimum grade in all greenspaces.
45. Provide 3(H):1(V) maximum slopes in all areas; review slopes behind Blocks 65-67.
46. The future City park that will be constructed on the north side of the development will require grading to prepare for future park areas. The Developer shall rough grade and remove material from this area using plans reviewed and approved by the City Engineer and Parks Director.

Sheet 33:

47. Label all street high and low points; for example Road I near Station 7+50.
48. Lot 32 Block 10 cannot be built as shown; the proposed street must be extended further for the driveway and a temporary turnaround must be provided on Road I.
49. Rear-yard storm sewer:
    a. Per the City's engineering standards, there should only be a maximum overland drainage distance of 3-4 lots before providing a catch basin. See Lots 17-11 Block 8; check rest of project for conformance).
    b. Rear yard storm sewer should be limited to 300-lf maximum lengths as straight as possible, from the street for jetting.
50. Review drainage at the end of Road I such that it doesn't impact the adjacent property. Identify a temporary EOF route.
51. Freeboard/EOF standards:
    a. For backyard and side-yard conveyance and temporary ponding areas, there must be at least 1 foot between the overland overflow elevation and the low adjacent grade elevation of the adjacent structure. The Lot 13 Block 8 low adjacent grade (912.9) does not meet this standard to the rear-yard EOF (912.22).
52. Profiles should be provided depicting the grading impacts over the existing SWWD storm pipe. Provide a submittal documenting the proposed bury depths are compatible with the pipe class. Depict all existing structures as some do not appear on the submitted plans.

53. Drainage and utility easement should be provided when drainage from one lot crosses another. Provide additional easement or center drainage swales within the provided easement (e.g. Lot 4 Block 6).

Sheet 34:

54. Driveway grades shall not exceed 10%; please review Private Road E and the rest of the project for conformance.

Sheet 35:

55. Freeboard/EOF standards:

    a. For stormwater facilities with emergency overflows, the low adjacent grade elevation for all new structures must be a minimum of 3 feet above both the peak surface water elevation for the 100-year precipitation event and 2 feet above the emergency overflow elevation of any immediately adjacent new stormwater basin.

        i. The Lot 8 Block 9 low adjacent grade (907.2) does not meet this standard to the pond HWL (904.65), nor the EOF (905.83). Lots 4 and 9 should also be adjusted relative to the EOF.

        ii. Lot 17 Block 5 on Sheet 37 should also be modified.

56. Update the EOF paths on the plan to clarify the intended overflow routes around the ponds (Pond 3 to Pond 2 to Pond 1). If correct, the Pond 2 EOF will control freeboard to Block 6 around Pond 3. Please revise Lots 13, 14, 16.

57. All pond access routes: Provide a maximum longitudinal slope of 6(H):1(V) for accessibility.

58. Due to the needed right-of-way for a future Indian Boulevard extension, the depicted pond grading should be reevaluated. The pond HWL shall be completely encompassed within the revised Outlot G. Rough grading of the new right-of-way should also be provided.

59. Provide a 5-ft minimum horizontal distance at a 6(H):1(V) maximum slope immediately adjacent to a pedestrian facility (trail) if the adjacent slopes are steeper than 4(H):1(V).

60. The Pond 1 HWL is above the catch basin low point of Ravine Parkway. Provide 1-ft of freeboard from catch basin rim elevations to all pond HWLs. Check entire plan for conformance, including Pond 2.

Sheet 36:

61. Each lot shall provide a minimum 20-lf backyard at a maximum 10(H):1(V) slope. Check all lots for conformance (e.g. Lot 17 Block 3).

Sheet 39:

62. Ravine Parkway must be designed and built to State Aid Standards. All requirements are outlined in the MnDOT State Aid Manual (https://www.dot.state.mn.us/stateaid/manual.html). Crest and sag curves should be designed for 40-mph on Ravine Parkway.

63. Indian Boulevard shall also be designed and built to State Aid Standards (30 mph).

64. Maximum intersection approach grade (all streets): provide a 2% maximum grade for the first 100-ft approaching an intersection (at a yield or stop condition), as measured from the intersecting street's curb line. Please ensure conformance.

65. Road Profiles: confirm labeling on intersecting streets in profile. It appears that Private Road A intersects Road A at station 0+00, however the profile labels an intersection of Road D.

66. Final plans shall include intersection details to clarify drainage patterns and grades for all street intersections (e.g. grades around radii, where crown of street will be carried through or warped, etc.). The need for valley gutters will be reviewed once intersection details and drainage areas are provided, but typically valley gutters are placed when longitudinal grades are less than 2%.

Sheet 43:

67. Pond Notes #2: a 12" minimum layer of topsoil shall be placed over the 12" clay liner (24" minimum subcut). The pond section view should also be updated. These comments apply to all subsequent sheets and notes.

68. Confirm pond grading is in accordance with city standard detail STO-15; slopes should be 4(H):1(V) maximum above the NWL. It appears the slopes between 906-909 may be greater. Labeling additional contours for clarity on Sheet 34 may help.

69. All ponds: revisit outlet structure rim elevations and ensure they can be accessed given the surrounding pond grading. For example, the Pond 2 rim (906) is 2-vf above the proposed HWL and 9-vf above the contour depicted. Structure grates should be accessible to public works staff.

    a. The city will allow submerged outlet pipes on this project to better fit structures into pond slopes. The top of submerged pipe should be 1-vf (min.) below the NWL, and the invert should be 2-vf (min.) above the bottom of the pond. A minimum adverse grade of 1% from submerged invert to outlet structure should be provided.

Sheet 54:

70. Redundant portions of watermain on Indian Boulevard shall be removed from the plan. Refer to the sketch attached to this memo for the 12" watermain routes through the development.

71. Sanitary Sewer: additional coordination will occur during final design to ensure sewer depths can adequately serve future development.

    a. Similar to watermain, sewer will likely need to extend beyond the Road D cul-de-sac to provide service to the parcel to the east, as it's anticipated to develop from 70th Street to the south.

    b. Road A sewer is anticipated to serve the property to the north.

72. Hydrant spacing:

    a. Obtain the following coverage per the City's Engineering Guidelines document:

        i. 300-ft radius: covers entire single-family lot

        ii. 250-ft radius: covers entire multi-family lot

73. Valves: provide valves such that 20-25 maximum homes are isolated at a time.

74. Where needed, irrigation services shall conform to city standard detail SER-12 (4" DIP and gate valve).

Sheet 55:

75. Review hydrant and streetlight conflicts throughout the project (e.g. between Lot 1 Block 60 & Lot 6 Block 61, between Lots 5/6 Block 1).

a. A conflict also appears on Sheet 64 between Lot 5 & Lot 6 Block 1.

76. Watermain and sewer should be sufficiently extended beyond a permanent street section such that the permanent street (curb and gutter) is not disturbed once utilities are connected to. Review the end of Road A and consider obtaining easement from the landowner to the north to extend utilities, or shorten the proposed permanent road section.

Sheet 56:

77. Provide a temporary hydrant, and label it as such, for flushing at the north side of Road I.

Sheet 57:

78. All 12" water main shall receive butterfly valves per city standard detail WAT-4 and the city standard specifications.

Sheet 58:

79. Provide a temporary hydrant, and label it as such, for flushing at the east side of Indian Boulevard and Ravine Parkway.

Sheet 59:

80. The watermain stub at 77th/Road C in the easterly direction shall conform to city standard detail WAT-8.

a. The sewer and water stubs to the south of the intersection should be removed at this time due to the unknown configuration of the development to the south.

i. A 12" cross should be placed at the intersection of Road C and 77th Street to provide flexibility in the future should a southerly extension be desired.

81. Since 77th Street will be fully constructed with utilities, a ghost plat should be submitted for the south side of the road, and services provided during final design.

82. The 12" watermain on 77th Street is not needed and can be an 8".

Sheet 61:

83. Easement widths will be confirmed when plan and profiles are provided for the proposed utilities. Generally, a minimum easement width should be twice the pipe depth centered over the pipe, or 10' (min.) on each side of the pipe, whichever is greater.

a. Review all areas and provide easement between Lot 6 Block 22 and Lot 1 Block 23, similar to the area between Blocks 64 & 65.

b. Ensure storm pipes are centered in easements (CB-536 to CBMH 535).

c. Areas along the north and south plat lines are a concern.

i. Accounting for structure diameter, a few feet of clearance are provided to the north property line from MH-444A. Obtain additional permanent easement to the north as outlined above.

ii. Additional permanent easement is needed in the area of Lots 34-37 Block 6.

84. Avoid placing storm pipe behind the curb as that location typically conflicts with streetlight bases, signs, and potential boulevard tree plantings. This may require structures to be moved or additional structures to be added; storm manholes can be used as necessary if catch basins aren't needed for drainage. This comment applies to all sheets.

a. For example: on Indian Boulevard station 13+00 the storm pipe is in conflict with the light pole foundation, and at the Road G/Road E intersection the storm pipe could be in conflict with the street name sign post. Please adjust all locations.

b. Address the storm pipe behind curb on road A.

85. Limit rear yard storm sewer to a 300-ft maximum length of run from the street for jetting purposes, keeping them as straight as possible. For example, the section behind Block 5 is approximately 750-lf.

Sheet 64:

86. Evaluate options to reduce potential short-circuiting of treatment in Pond 4 by creating more separation between FES-700 and OCS-451. This may also help the orientation of the skimmer opening relative to the pond slope given the outlet pipe and weir wall orientation.

a. Pond 2 should also be evaluated; OCS-203 should be shifted to the north.

b. Pond 3 could also be improved; FES 900 located only about 70 feet from OCS 1103.

Sheet 68:

87. 27" diameter structures are not allowed and are not part of the Cottage Grove standard details. City standard detail STO-9 requires a 48" (minimum) diameter structure; please revise the structure schedule.

88. The storm sewer structure schedule provided with the final plans shall identify the applicable City Detail Plate number and special notes such as sump depth if applicable.

a. The first storm structure upstream of a stormwater basin within the street shall be a sump structure. See applicable city detail plates.

Sheet 69:

89. Clear all trees within Outlot K as a part of this project.

Sheet 77:

90. Boulevard trees should be provided on Indian Boulevard, similar to Ravine Parkway.

91. A vegetative/berm/fence buffer is also required for lots that back up to Ravine Parkway. Additional trees should be added here to create a buffer that is 50% opaque at maturity.

a. Create a vegetative buffer easement that the HOA has rights to, ensuring landscaping does not get removed.

92. Ensure there is a tree between every townhome group.

93. Outlots B, J, I, E, O shall be restored with MnDOT Seed Mix Mesic Inslope (MI), formerly 25-141.

Sheet 85:

94. Street lighting within the neighborhood shall conform to the east ravine standard pole (city detail LGT-8).

95. A cobrahead light per city detail LGT-13 shall be provided at street connections to CSAH 19 (Indian Boulevard and 77th Street).

96. Indian Boulevard:

a. Streetlights (LGT-8) shall be provided on both sides on Indian Blvd due to trail being on both sides of the street. Provide 250 to 300-ft spacing each side of road in a staggered fashion.

97. Provide streetlights at intersections and any mid-block pedestrian crossings. Re-space lights as necessary.

a. Some residential lights are spaced greater than 300-lf. Try to space 200-250-lf at lot lines to the greatest extent possible, with 300-lf maximum spacing used sparingly.

98. Service cabinet and conduit locations will be reviewed in more detail when final plans depicting phasing are submitted.

Traffic Study:

99. Provide a 10-year after Build analysis (approximately 2040).

a. This will help to identify when a signal or roundabout may be necessary at Keats Ave and Indian Blvd.

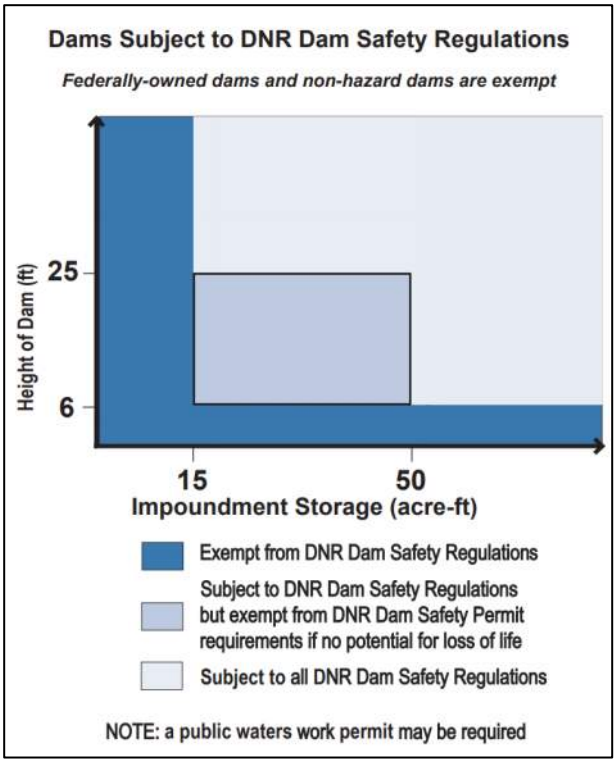
100. Provide an existing crash analysis at the analyzed intersections to understand existing safety concerns, to identify where they may be concerns with an increase in traffic volume from the development, and identify existing concerns that could be alleviated with development improvements. Add the safety analysis data to the Appendix to support the content shown in the report.

101. Provide review of signal warrants at Keats Ave and Indian Blvd with and without the development to understand whether a signal is warranted or not today (or how close to meeting a warrant) and due to the development

Stormwater:

102. As submitted, outflow from Pond 1 (366 cfs) is routed to the 72" Central Draw storm drain; the Central Draw pipe has capacity for about 190 cfs without surcharging, but the full pipe capacity is not available for use by Ravara Trails. Pond 1 outflow to the Central Draw storm drain needs to be limited to the unit peak outflow rates of 0.09 cfs/acre and 0.56 cfs/acre for Subwatershed ER-A3 and ER-A5.4, respectively. Some of the existing surface storage should be utilized as it is today, with consideration to adjacent properties and existing HWLs.

103. Dam Safety: Pond 1 includes an embankment 16 feet high (906 – 890). The pond volume is 36 acre-feet at elevation 906. The height and volume of the dam indicate that it is: "*Subject to DNR Dam Safety Regulations but exempt from DNR Dam Safety Permit requirements if no potential for loss of life*." Please work with the DNR Dam Safety Unit to determine the permit requirements; potential low hazard determination and exempt from permit requirements.



104. HydroCAD:

    a. The proposed condition model (PDRN) simulates the OFF-1 100-year flow as 370 cfs and 4.95" runoff. The existing condition model (EDRN) simulates the OFF-1 100-year flow as 439 cfs and 4.61" of runoff. Clarify why the peak flows and runoff volumes differ when the drainage area and curve number do not.

    b. HWL of Pond 1 is higher than Ponds 2 & 3. Please verify that the HydroCAD modeling has included consideration of variable tailwater and/or reverse flows.

    c. The outlet structures for Ponds 1, 2, 3 and 4 (nodes 5P, 12P, 2P and 17P) simulate the OCS weir wall with a breadth of 4 or 5 feet. Please correct this breadth dimension to 0.5 feet or explain your reasoning.

    d. Ponds 1, 2 and 3 OCS weirs are simulated with 4:1 sideslopes. Please simulate the OCS weirs as rectangular or explain your reasoning.

    e. The EOF elevation for Pond 2 (Sheet 43) 905.83 does not match the EOF Elevation in HydroCAD of 905.5 feet. Please be consistent.

    f. EOF Elevation for Pond 4 (Sheet 43) 912.75 does not match the EOF Elevation in HydroCAD of 912.65 feet. Please be consistent.

105. Curve Numbers: Subwatersheds A1, A2, A3, and A4 include pervious areas with curve numbers (CN) set to 69 (50-75% Grass, Fair Condition, HSGB) and 79 (<50% Grass, Poor, HSG B). As per Section 6.1.4 of the Surface Water Management Plan please consider modeling the future condition grass/open space areas of HSGB soils with a CN of 61.

106. The Storm Water Management Plan report on page 5 of 6 explains that the Proposed TP Load of 23.4 lbs. exceeds the SWWD TP Load Limit of 10.87 lbs. Additional BMPs or purchase of mitigation credits will be required.
    a. The proposed condition MIDS model results indicate that the TP Load is 37 lbs./year. Please revise the proposed TP load to 37 lbs. within the stormwater narrative report. Additional BMPs and/or purchase of mitigation credits of (26.13 lbs. = 37-10.87) will be required to achieve compliance.
    b. Since the Northeast corner of the development site lies outside of the 10-year GW Capture Zone, please consider use of infiltration for volume control and water quality treatment in this area.
107. Ponds:
    a. Please correct Table 4 on Page 4 of 6 in the Stormwater Management Plan. The Table appears to be jumbled with columns 2 and 3 having NWL and Watershed areas matching BMPs in downstream order and remaining columns possibly arranged by Pond number. Please correct the table and the NURP 2.5" Rainfall HydroCAD results.
    b. The Permanent pool volume within Pond 4 of 49,152 cu. ft. (0.72 " of runoff) is less than the runoff computed in HydroCAD for a 2.5" rainfall of 69,086 cu. ft. (1.01" of runoff). Please increase the permanent pool storage within Pond 4 or explain why this is not feasible.
108. Rational Storm Design:
    a. The Storm Sewer Schedule on Sheet 68 indicates pipe sizes and elevations but doesn't include the Rational Design Flows & Velocities. Please provide the additional design details.
        i. On-site storm sewer should be sized to a 5-year rational method design. Submit design calculations for the storm sewer system and a drainage area map showing each catchment with manholes and catch basins labeled. Include individual pipe segment velocities with calculations for review. Trunk facilities should be analyzed and designed to accommodate the 100-year ponded discharges plus 5-year rational flows from areas that enter the trunk to be carried to the next storage area downstream.
            1. Pipe sizes and slopes should be selected to provide a minimum open channel velocity of 3 feet per second.
            2. Maximum storm sewer velocities should be kept at 10 feet per second or less.
            3. When changing pipe sizes in structure, match crown of pipe elevations instead of inverts.
            4. Please show storm catch basin IDs, pipe sizes, grades, elevations, and drainage areas on the plans consistent with the rational design tables.
            5. Pipe outlets to wet ponds should be placed at the NWL and have design velocities of 6 fps or less. Pipe outlets into filtration basins or other overland discharge should have design velocities of 4 fps or less.
109. The SWPPP might be improved by addressing the following:

a. Tabulate quantities of all erosion prevention and sediment control BMPs.

110. Models and CAD Files: Please note that digital copies of the final version stormwater models (HydroCAD and P8) and shapefiles or CAD drawings of existing and proposed drainage areas are to be submitted to the city once the review and revision process is complete.



SITE PLAN DATA:

PIDS: 11.027.21.24.0001	60.54 AC
11.027.21.23.0001	20.01 AC
11.027.21.32.0001	40.34 AC
11.027.21.31.0001	79.47 AC
11.027.21.33.0001	39.13 AC
TOTAL GROSS AREA	239.49 AC
OUTLOT P	35.36 AC
OUTLOT Q	55.41 AC
TOTAL PROJECT AREA AREA	148.72 AC
OUTLOT K (PARK DEDICATION)	4.15 AC
EXISTING ROW (KEATS AVE S)	3.55 AC
PROPOSED ROW DEDICATION (KEATS AVE S)	3.89 AC
NET TOTAL PRODUCT AREA	137.13 AC
PROPOSED ROW (FUTURE RAVINE PKWY)	8.89 AC
PROPOSED ROW (FUTURE INDIAN BLVD S)	3.90 AC
PROPOSED ROW (INTERIOR NORTH)	7.19 AC
PROPOSED ROW (INTERIOR SOUTH)	10.53 AC

SITE PLAN OUTLOT DATA:

OUTLOT	OWNER
OUTLOT WITH PONDS: A, D, F, G	CITY
OUTLOT: K (CITY PARK)	CITY
OUTLOT WITH PIPELINE: B, E, I, J, P, O	HOA/DEVELOPER
OUTLOT: C, H, L, M, N, O	HOA/DEVELOPER

SITE PLAN LOT DATA:

URBAN TOWNHOME:

LOT WIDTH MINIMUM:	22 FT
LOT DEPTH MINIMUM:	72.5 FT
END LOT WIDTH:	27 FT
FRONT DOOR SETBACK:	15 FT
KEATS AVE FRONT DOOR SETBACK:	25 FT
GARAGE SETBACK:	25 FT
CORNER SETBACK:	20 FT
BUILDING SEPARATION:	20 FT

SUBURBAN TOWNHOME:

LOT WIDTH MINIMUM:	25 FT
LOT DEPTH MINIMUM:	72 FT
END LOT WIDTH:	30 FT
FRONT SETBACK:	25 FT
CORNER SETBACK:	20 FT
BUILDING SEPARATION:	15 FT

VILLA SINGLE FAMILY LOTS:

LOT WIDTH MINIMUM:	40 FT
LOT DEPTH MINIMUM:	130 FT
SIDE YARD SETBACK:	5 FT
SIDE YARD SETBACK:	5 FT

65' SINGLE FAMILY LOTS:

LOT WIDTH MINIMUM:	65 FT
LOT DEPTH MINIMUM:	130 FT
SIDE YARD SETBACK:	5 FT (GARAGE SIDE)
	7.5 FT (NON-GARAGE SIDE)

LOT TYPE:	UNITS	AREA (AC)	DENSITY (UNITS/AC)
URBAN TOWNHOMES	192	17.83	10.77
SUBURBAN TOWNHOMES	114	15.31	7.45
VILLA SINGLE FAMILY LOTS	105	34.42	3.05
65' SINGLE FAMILY LOTS	164	69.56	2.36
TOTAL UNITS	575	137.12	4.19

GUEST PARKING STALLS: 73

IMPERVIOUS SURFACES:

MAX. IMPERVIOUS SURFACE ALLOWED:

VILLA SINGLE FAMILY LOTS = 50% MAX. PER LOT

65' SINGLE FAMILY LOTS = 40% MAX PER LOT

ATTACHED DWELLINGS = 40% OF TOTAL AREA

SITE NOTES:

1. SEE SHEET 21 FOR TYPICAL LOT DETAILS AND TYPICAL ROAD SECTIONS.
2. ALL CURB RETURNS ARE MEASURED FROM BACK OF CURB UNLESS OTHERWISE NOTED.

LEGEND:

- EASEMENT LINE
- BUILDING SETBACK
- PROPERTY LINE
- LOT LINE
- ROW
- STOP/STREET SIGN
- STREET LIGHT
- POND MAINTENANCE ACCESS (TURF)
- CITY OPEN/PARK MARKER SIGN

N

0 75 150 300

SCALE IN FEET

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TWIN CITIES LAND DEVELOPMENT

RAVARA TRAILS

COTTAGE GROVE, MINNESOTA

PRELIMINARY PLAT SUBMITTAL

SITE PLAN - OVERALL

DATE	DESCRIPTION
2025-12-31	City Submittal

CERTIFICATION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Civil Engineer under the laws of the State of MINNESOTA.

Clark Wickland — 40922 — License no.

Date

PRELIMINARY FOR REVIEW ONLY NOT FOR CONSTRUCTION

QA/QC CHECK

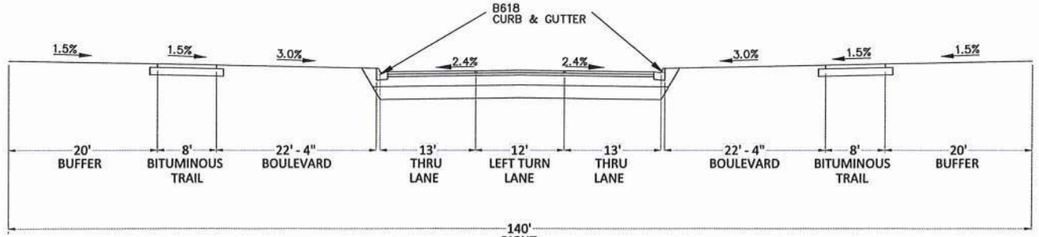
By Date

PROJECT TEAM DATA

Designed By: CJW
Drafted By: LRJ
Project No.: 4000570-00

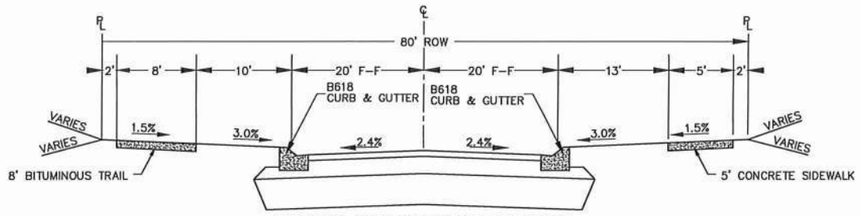
File Location: X:\4000\570-00\00-ref Design\00 Sheets - Preliminary\00Title.dwg Plotted By: Logan Johnstone on December 31, 2025 By: Clark Pfe

TYPICAL ROAD SECTIONS



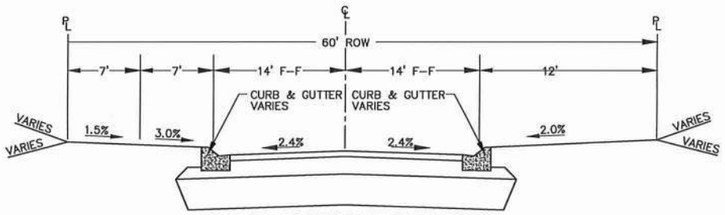
RAVINE PARKWAY S (BY OTHERS) 140' ROW ROAD SECTION

NOT TO SCALE



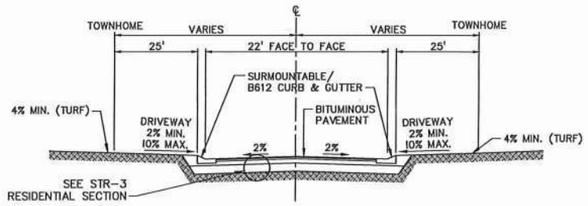
TYPICAL 80' ROW ROAD SECTION

NOT TO SCALE



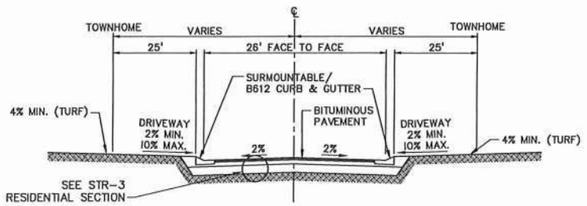
TYPICAL 60' ROW ROAD SECTION

NOT TO SCALE



SUBURBAN TH PRIVATE ROAD SECTION (22' F-F)

NOT TO SCALE

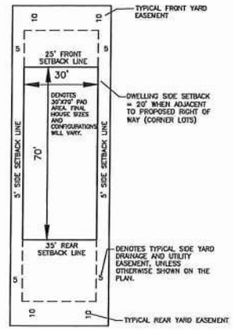


URBAN TH PRIVATE ROAD SECTION (26' F-F)

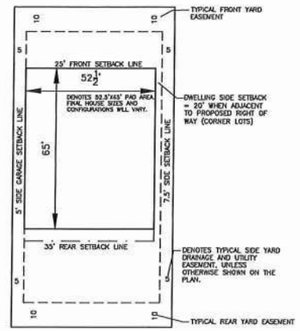
NOT TO SCALE

DEVELOPMENT LOT DETAILS

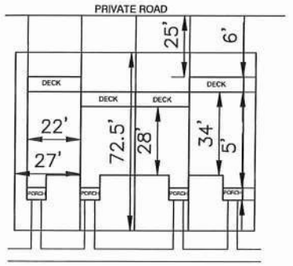
40'x130' SINGLE FAMILY



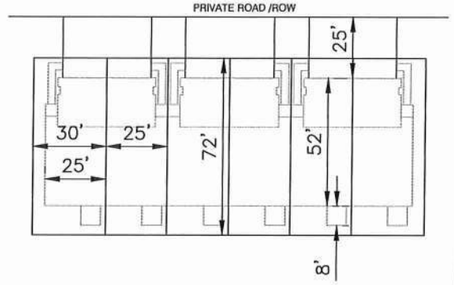
65'x130' SINGLE FAMILY



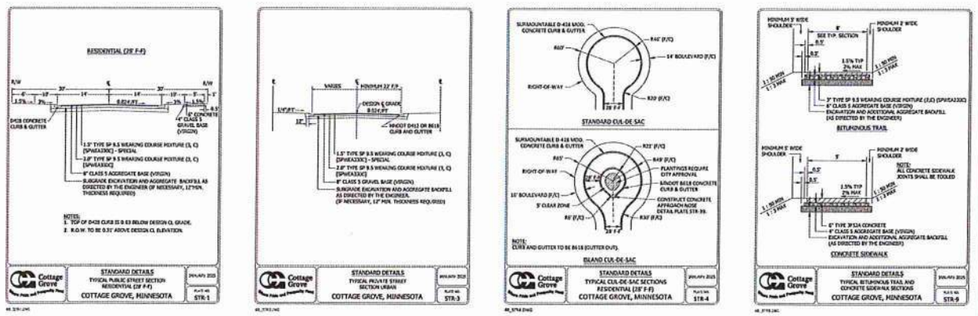
URBAN TOWNHOME
FRONT FACE/REAR LOAD



SUBURBAN TOWNHOME
PATIO/FRONT LOAD



CITY OF COTTAGE GROVE STANDARD DETAILS



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RAVARA TRAILS
COTTAGE GROVE, MINNESOTA

PRELIMINARY PLAT SUBMITTAL

SITE PLAN NOTES AND DETAILS

DATE	DESCRIPTION
2025-12-31	City Submittal

CERTIFICATION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Civil Engineer under the laws of the State of MINNESOTA.

PRELIMINARY NOT FOR CONSTRUCTION

Clark Wicklund — 40922
Date — License no.

QA/QC CHECK

By — Date

PROJECT TEAM DATA

Designed By: CJW
Drafted By: LRJ
Project No.: 4000570-00

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Sheet 21 of 91

File Location: X:\4000570-000\01-Civil Design\02-Drawings - Preliminary\PDF\Dwg - Plotted By: Logan Josephson on December 31, 2025 at 12:47:02 PM

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OWNER: COEBEL THOMAS A & MARY ANN

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SCALE IN FEET

OUTLOT K

OUTLOT N

OUTLOT L

OUTLOT M

KEATS AVE S (CSAH 19)

PRIVATE ROAD D

PRIVATE ROAD B

PRIVATE ROAD C

PRIVATE ROAD E

PRIVATE ROAD F

ROAD A

ROAD H

5' CONCRETE SIDEWALK PER STR-9

PED RAMP

B618 CURB AND GUTTER

STREET/STOP SIGN

STREET LIGHT (TYP)

TRANSITION FROM B618 TO D-412

TRANSITION FROM B618 TO D-428

8' BITUMINOUS TRAIL PER STR-9

BLOCK 14
BLOCK 15
BLOCK 16
BLOCK 17
BLOCK 18
BLOCK 19
BLOCK 20
BLOCK 21
BLOCK 22
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TWIN CITIES LAND DEVELOPMENT

RAVARA TRAILS
COTTAGE GROVE, MINNESOTA

PRELIMINARY PLAT SUBMITTAL

SITE PLAN - VIEW A

DATE	DESCRIPTION
2025-12-31	City Submittal

CERTIFICATION

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Date — License no.

QA/QC CHECK

By — Date

PROJECT TEAM DATA

Designed By: CJW
Drafted By: LRJ
Project No.: 4000570-00

22

Sheet 22 of 91

File Location: X:\4000570\500\01-ref\Design\00 Sheets - Preliminary\PDF\Comp - Plotted By: Logan Josephson on December 31, 2025 at 12:07 PM



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TWIN CITIES LAND DEVELOPMENT TC LD

RAVARA TRAILS

COTTAGE GROVE, MINNESOTA

PRELIMINARY PLAT SUBMITTAL

SITE PLAN - VIEW B

DATE	DESCRIPTION
2025-12-31	City Submittal

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FOR REVIEW PRELIMINARY NOT FOR CONSTRUCTION

Clark Wicklund
Date 40922 License no.

QA/QC CHECK

By Date

PROJECT TEAM DATA

Designed By: CJW
Drafted By: LRJ
Project No.: 4000570-00

23



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TWIN CITIES LAND DEVELOPMENT

RAVARA TRAILS

COTTAGE GROVE, MINNESOTA

PRELIMINARY PLAT SUBMITTAL

SITE PLAN - VIEW C

DATE	DESCRIPTION
2025-12-31	City Submittal

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FOR REVIEW PRELIMINARY NOT FOR CONSTRUCTION

Clark Wicklund
Date 40922
License no.

QA/QC CHECK

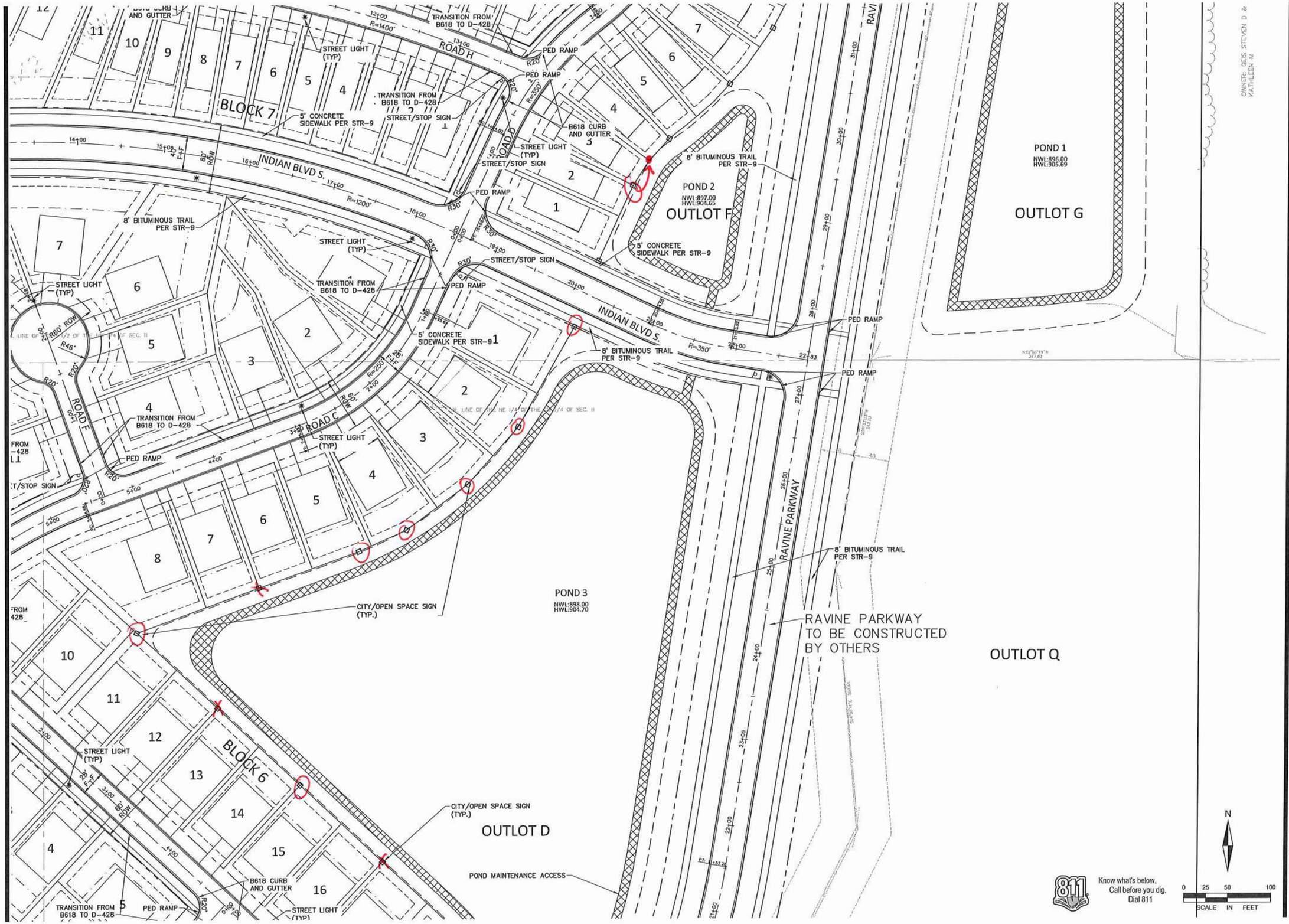
By Date

PROJECT TEAM DATA

Designed By: CJW
Drafted By: LRJ
Project No.: 4000570-00

24

Sheet 24 of 91



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TWIN CITIES LAND DEVELOPMENT

RAVARA TRAILS

COTTAGE GROVE, MINNESOTA

PRELIMINARY PLAT SUBMITTAL

SITE PLAN - VIEW D

DATE	DESCRIPTION
2025-12-31	City Submittal

CERTIFICATION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Civil Engineer under the laws of the State of MINNESOTA.

Clark Wicklund
Date 40922
License no.

PRELIMINARY FOR REVIEW NOT FOR CONSTRUCTION

QA/QC CHECK

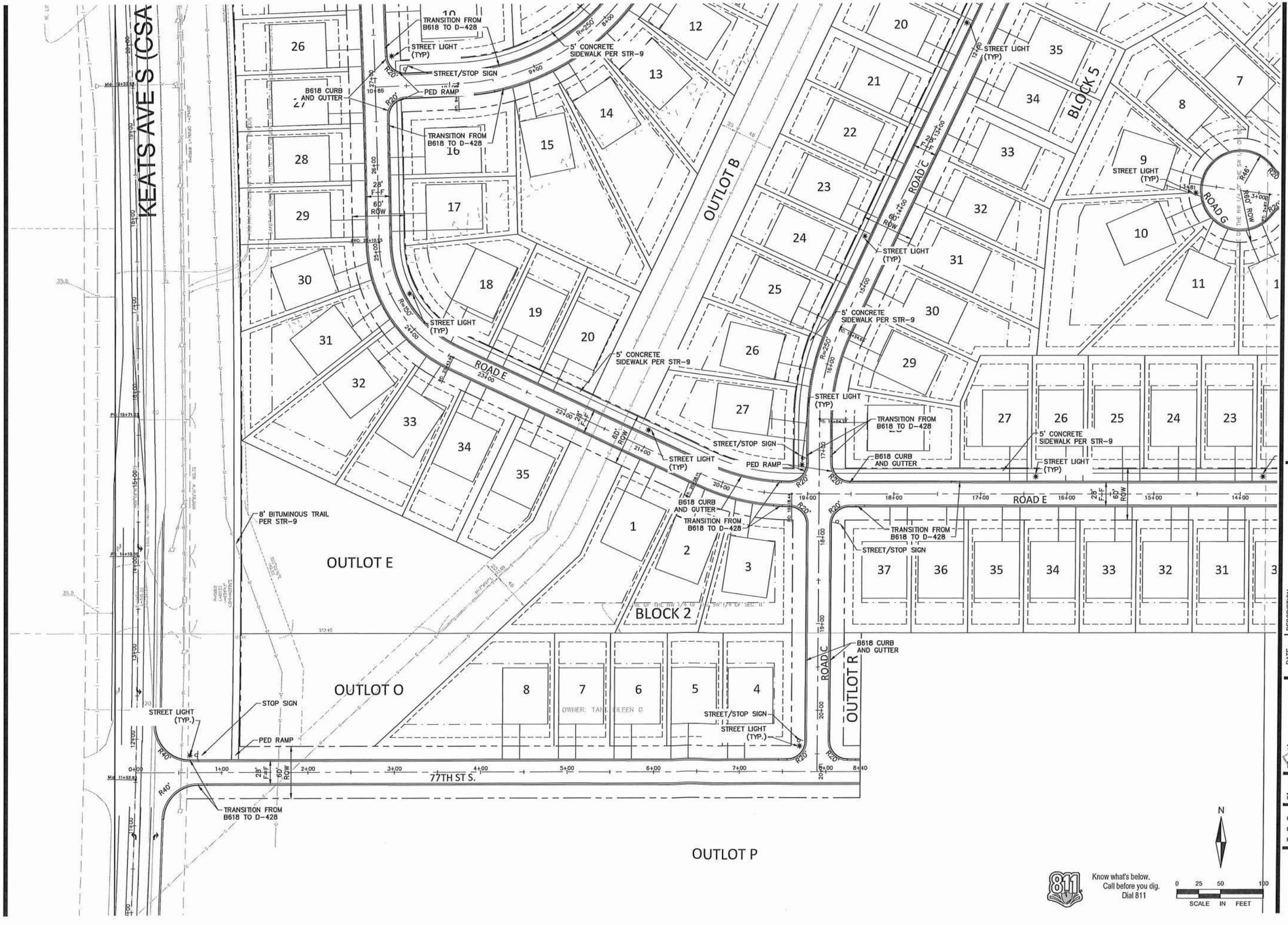
By Date

PROJECT TEAM DATA

Designed By: CJW
Drafted By: LRJ
Project No.: 4000570-00

25

Sheet 25 of 91



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TWIN CITIES LAND DEVELOPMENT

RAVARA TRAILS

COTTAGE GROVE, MINNESOTA

PRELIMINARY PLAT SUBMITTAL

SITE PLAN - VIEW E

DATE	DESCRIPTION
2025-12-31	City Submittal

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Date 40922 License no.

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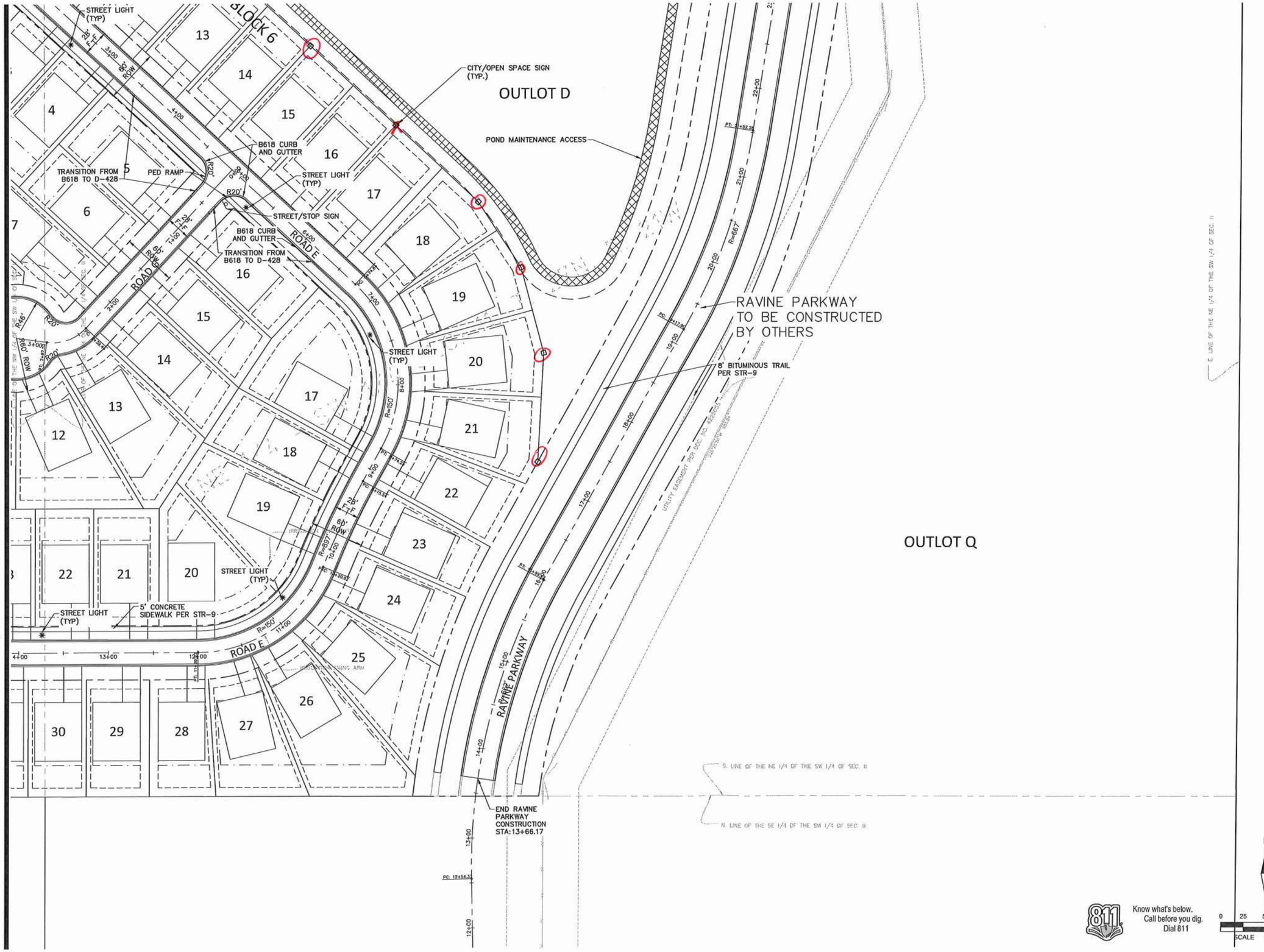
PROJECT TEAM DATA

Designed By: CJW
Drafted By: LRJ
Project No.: 4000570-00

26

Sheet 26 of 91



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SITE PLAN - VIEW F

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Date 40922 License no.

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By Date

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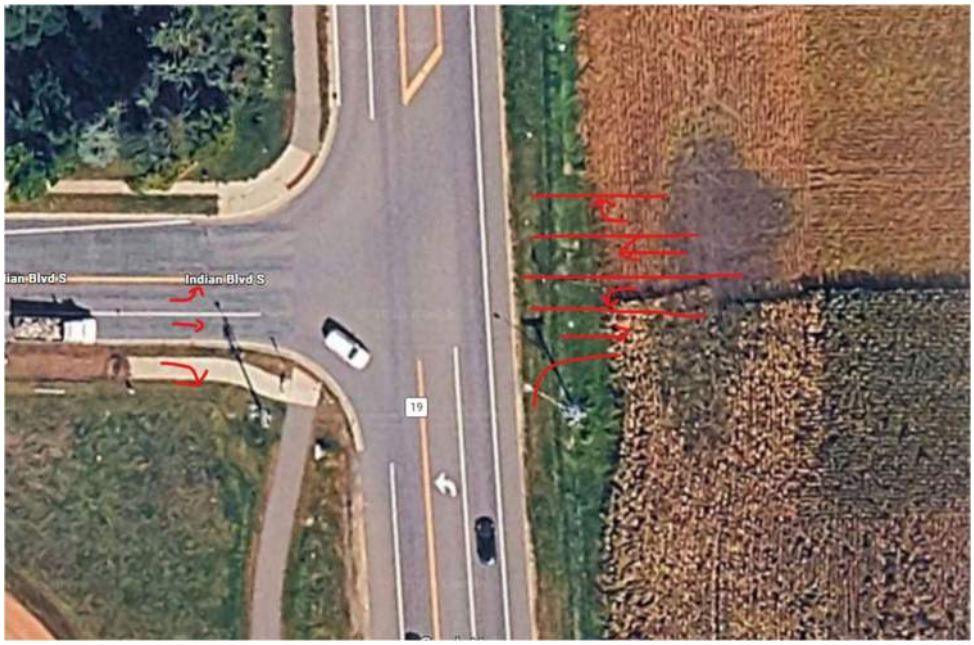
Designed By: CJW
Drafted By: LRJ
Project No.: 4000570-00

27

Sheet 27 of 91

CSAH 19 / Indian Boulevard Future Lane Configuration



RAVARA TRAILS - SITE PLAN

COTTAGE GROVE, MINNESOTA

N

1"
0' 75' 150'

DATE: 2-10-26
DRAWN BY: LRJ

ALLIANT ENGINEERING

12"
8"

KEATS AVE S (CSAH 19)

INDIAN BLVD S

80TH STREET S

RAVINE PARKWAY

OUTLOT A
OUTLOT B
OUTLOT C
OUTLOT D
OUTLOT E
OUTLOT F
OUTLOT G
OUTLOT H
OUTLOT I
OUTLOT K
OUTLOT L
OUTLOT M
OUTLOT N
OUTLOT O
OUTLOT R

POND 1 NWL 898.00 HWL 905.69
POND 2 NWL 892.00 HWL 904.00
POND 3 NWL 898.00 HWL 905.70
POND 4 NWL 899.00 HWL 910.14

BLOCK 1 BLOCK 2 BLOCK 3 BLOCK 4 BLOCK 5 BLOCK 6 BLOCK 7 BLOCK 8 BLOCK 9 BLOCK 10 BLOCK 11 BLOCK 12 BLOCK 13 BLOCK 14 BLOCK 15 BLOCK 16 BLOCK 17 BLOCK 18 BLOCK 19 BLOCK 20 BLOCK 21 BLOCK 22 BLOCK 23 BLOCK 24 BLOCK 25 BLOCK 26 BLOCK 27 BLOCK 28 BLOCK 29 BLOCK 30 BLOCK 31 BLOCK 32 BLOCK 33 BLOCK 34 BLOCK 35 BLOCK 36 BLOCK 37 BLOCK 38 BLOCK 39 BLOCK 40 BLOCK 41 BLOCK 42 BLOCK 43 BLOCK 44 BLOCK 45 BLOCK 46 BLOCK 47 BLOCK 48 BLOCK 49 BLOCK 50 BLOCK 51 BLOCK 52 BLOCK 53 BLOCK 54 BLOCK 55 BLOCK 56 BLOCK 57 BLOCK 58 BLOCK 59 BLOCK 60 BLOCK 61 BLOCK 62 BLOCK 63 BLOCK 64 BLOCK 65 BLOCK 66 BLOCK 67

ROAD A ROAD B ROAD C ROAD D ROAD E ROAD F ROAD G ROAD H ROAD I ROAD J ROAD K

PRIVATE ROAD B PRIVATE ROAD C PRIVATE ROAD D PRIVATE ROAD F

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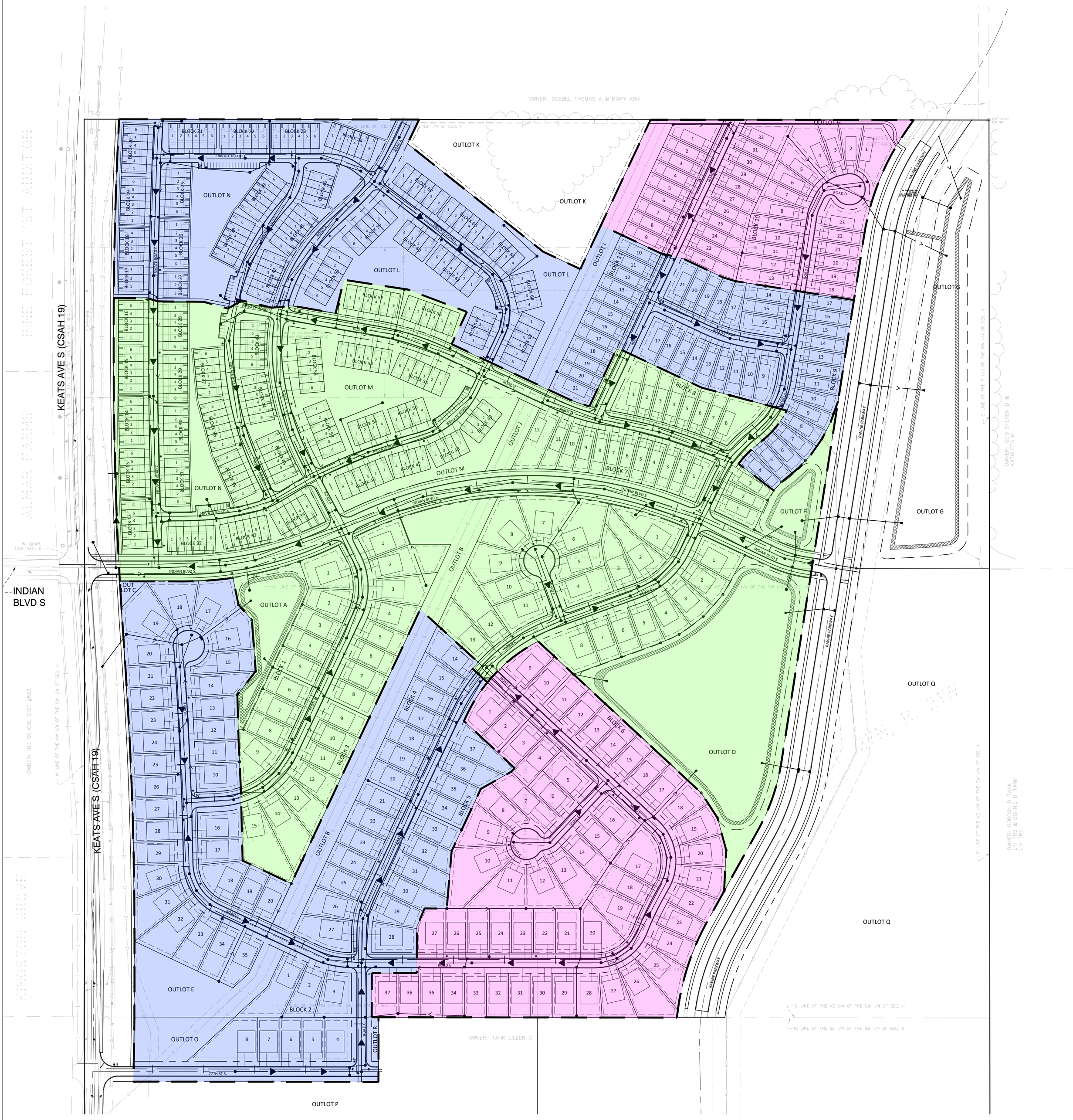

LEGEND:

- EASEMENT LINE
- BUILDING SETBACK
- PROPERTY LINE
- LOT LINE
- ROW
- PHASE 1
- PHASE 2
- PHASE 3

PHASE 1:

LOT TYPE BREAKDOWN	
VILLA LOTS	23
65' LOTS	45
SUBURBAN TOWNHOMES	62
URBAN TOWNHOMES	106
TOTAL:	236

PHASE 2:

LOT TYPE BREAKDOWN	
VILLA LOTS	43
65' LOTS	63
SUBURBAN TOWNHOMES	52
URBAN TOWNHOMES	86
TOTAL:	244

PHASE 3:

LOT TYPE BREAKDOWN	
VILLA LOTS	39
65' LOTS	56
SUBURBAN TOWNHOMES	0
URBAN TOWNHOMES	0
TOTAL:	95

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RAVARA TRAILS - PHASING PLAN

COTTAGE GROVE, MINNESOTA

N

1" = 0' 75' 150'

DATE: 1-6-26
DRAWN BY: LRJ

ALLIANT ENGINEERING


VIEW A
VIEW B
VIEW C
VIEW D
VIEW E
VIEW F
OUTLOT I
OUTLOT N
OUTLOT M
OUTLOT O
OUTLOT P
OUTLOT L
OUTLOT K
OUTLOT J
OUTLOT D
OUTLOT E
OUTLOT C
OUTLOT A
OUTLOT B
BLOCK 21
BLOCK 22
BLOCK 23
BLOCK 24
BLOCK 25
BLOCK 26
BLOCK 27
BLOCK 28
BLOCK 29
BLOCK 30
BLOCK 31
BLOCK 32
BLOCK 33
BLOCK 34
BLOCK 35
BLOCK 36
BLOCK 37
BLOCK 38
BLOCK 39
BLOCK 40
BLOCK



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TWIN CITIES LAND DEVELOPMENT

RAVARA TRAILS

COTTAGE GROVE, MINNESOTA

PRELIMINARY PLAT SUBMITTAL
LANDSCAPE PLAN - VIEW A

DATE	DESCRIPTION
2025-12-31	City Submittal

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PRELIMINARY
FOR REVIEW
NOT FOR CONSTRUCTION

John Gronholz — 59233
Date — License no.

QA/QC CHECK

By — Date

PROJECT TEAM DATA

Designed By:

Drafted By:

Project No.: 4000570-00

78

Sheet 78 of 91

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RAVARA TRAILS

COTTAGE GROVE, MINNESOTA

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LANDSCAPE PLAN - VIEW B

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Drafted By:

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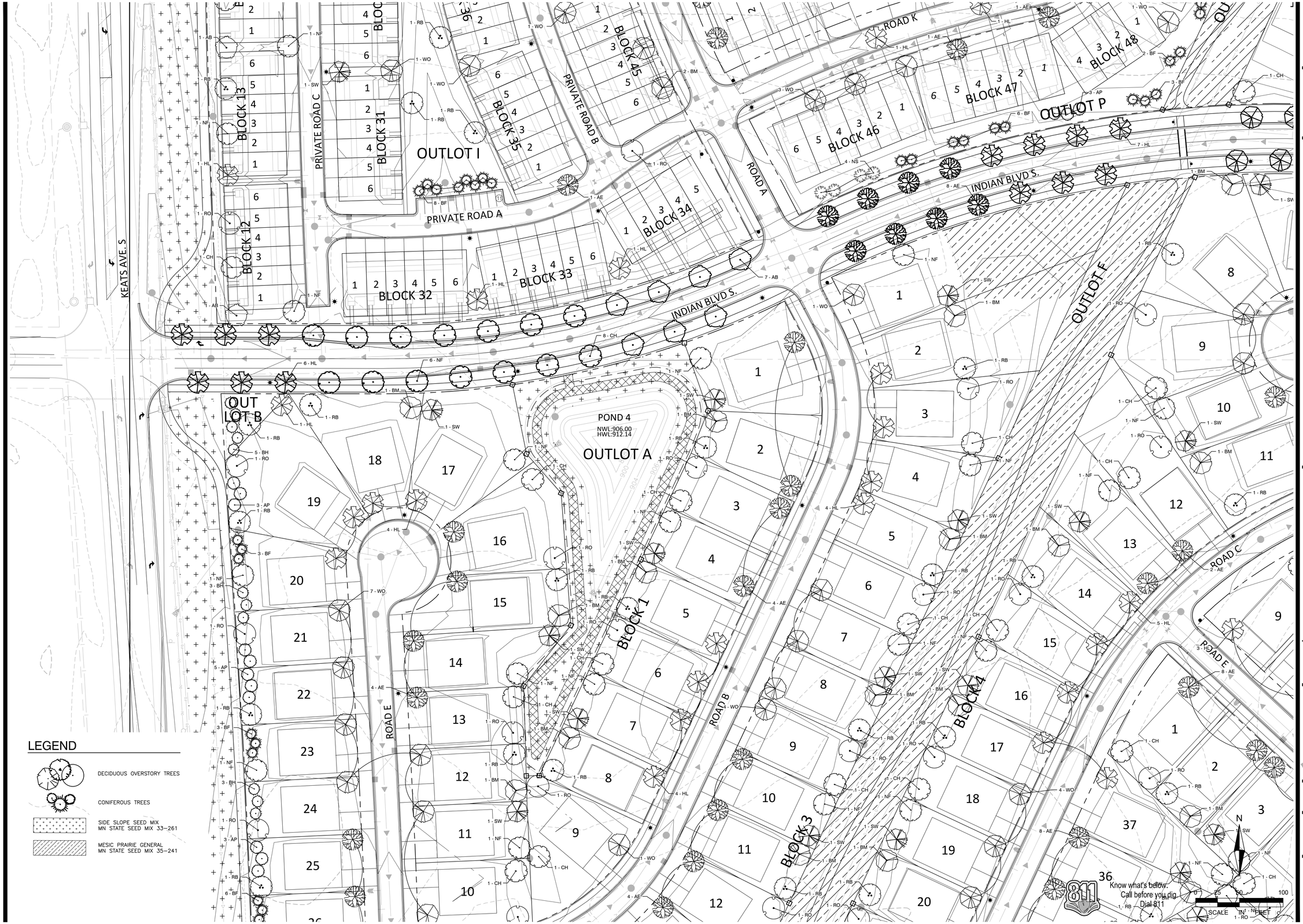

LEGEND

- DECIDUOUS OVERSTORY TREES
- CONIFEROUS TREES
- SIDE SLOPE SEED MIX MN STATE SEED MIX 33-261
- MESIC PRAIRIE GENERAL MN STATE SEED MIX 35-241

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COTTAGE GROVE, MINNESOTA

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LANDSCAPE PLAN - VIEW C

DATE	DESCRIPTION
2025-12-31	City Submittal

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Drafted By:
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Sheet 80 of 91

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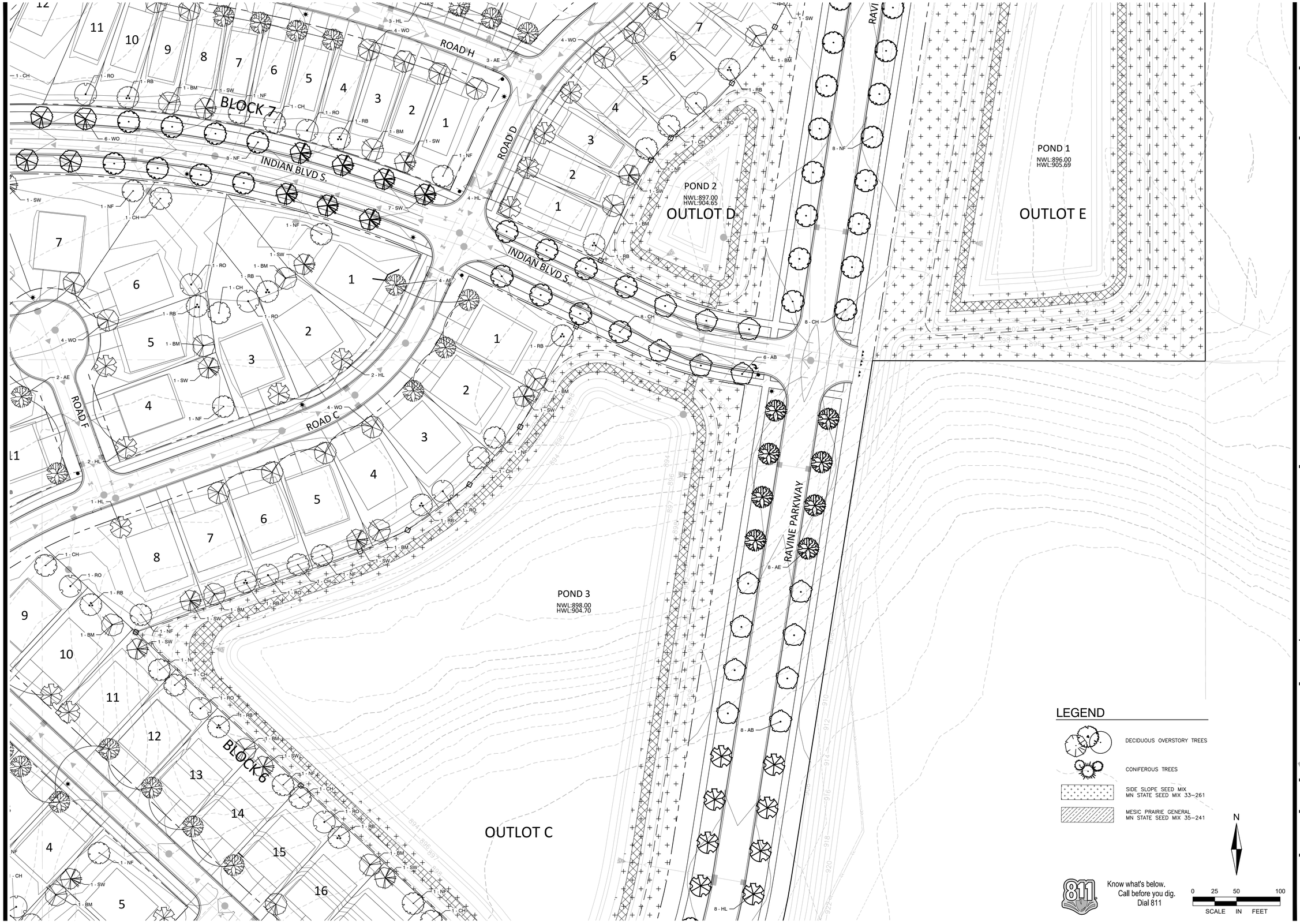

LEGEND

- DECIDUOUS OVERSTORY TREES
- CONIFEROUS TREES
- SIDE SLOPE SEED MIX MN STATE SEED MIX 33–261
- MESIC PRAIRIE GENERAL MN STATE SEED MIX 35–241

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COTTAGE GROVE, MINNESOTA

PRELIMINARY PLAT SUBMITTAL

LANDSCAPE PLAN - VIEW D

DATE	DESCRIPTION
2025-12-31	City Submittal

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Date — License no.

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By — Date

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Designed By:
Drafted By:
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81

Sheet 81 of 91

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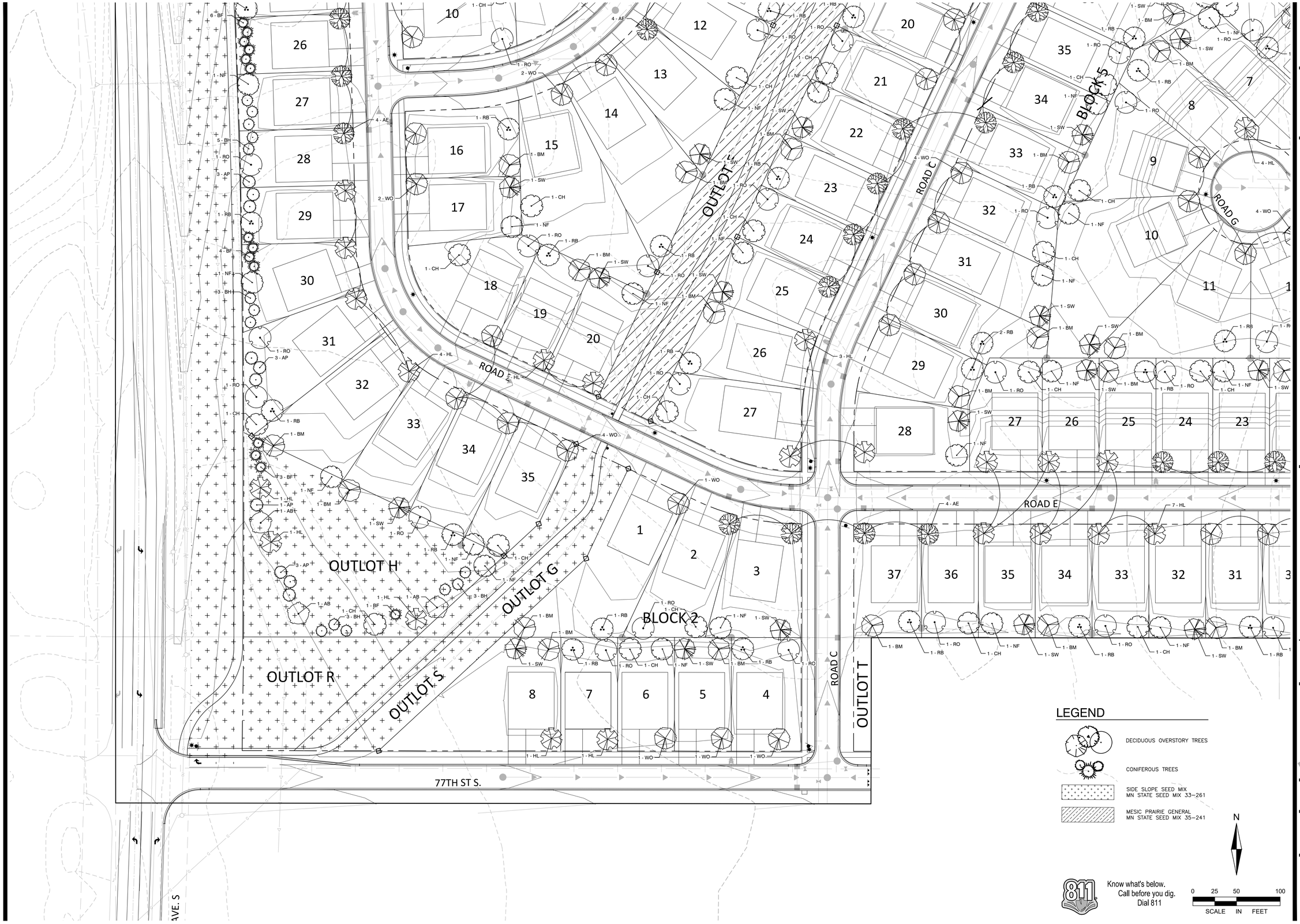

LEGEND

- DECIDUOUS OVERSTORY TREES
- CONIFEROUS TREES
- SIDE SLOPE SEED MIX MN STATE SEED MIX 33-261
- MESIC PRAIRIE GENERAL MN STATE SEED MIX 35-241

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RAVARA TRAILS

COTTAGE GROVE, MINNESOTA

PRELIMINARY PLAT SUBMITTAL
LANDSCAPE PLAN - VIEW E

DATE	DESCRIPTION
2025-12-31	City Submittal

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Date — License no.

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PROJECT TEAM DATA

Designed By:
Drafted By:
Project No.: 4000570-00

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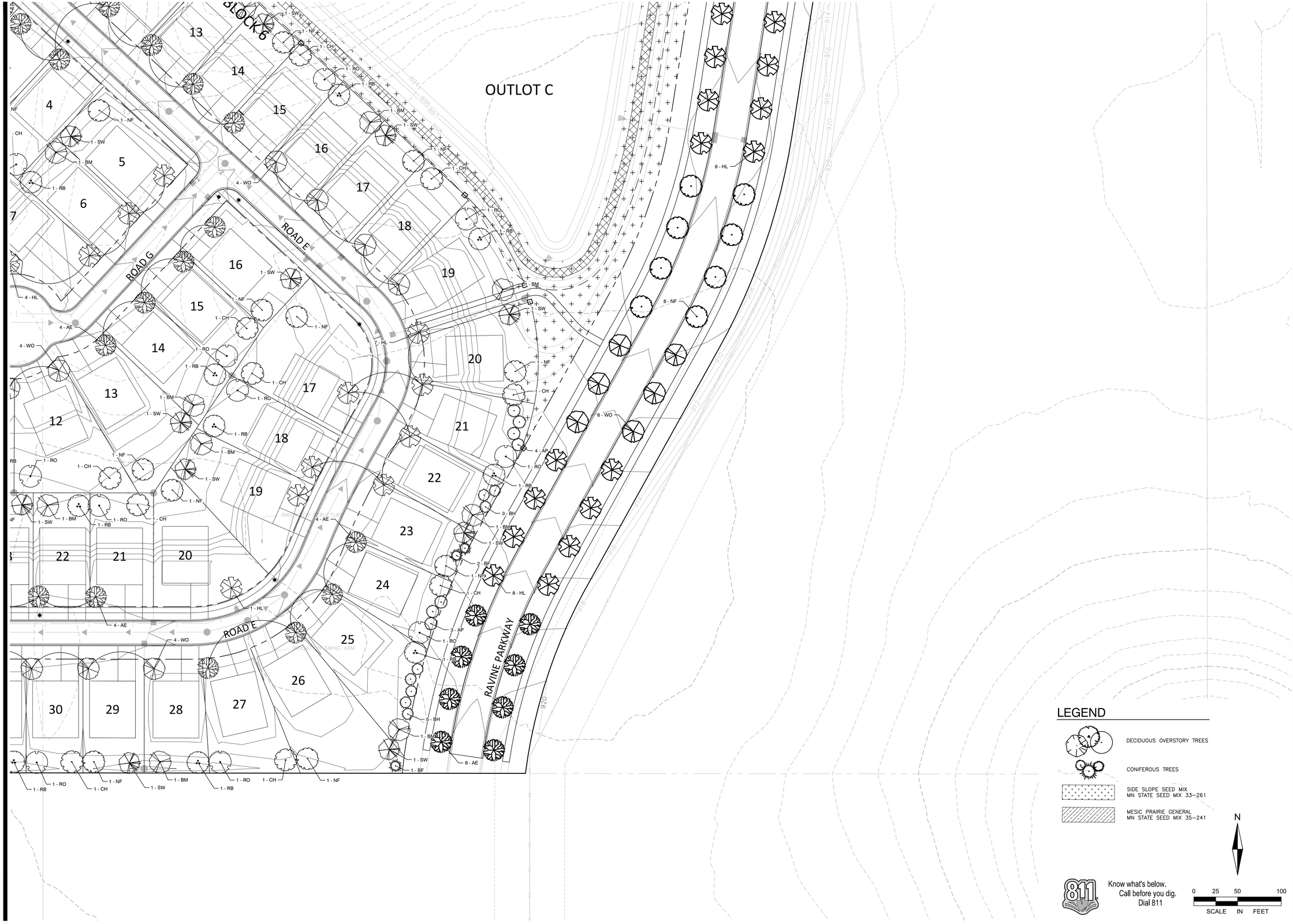

LEGEND

- DECIDUOUS OVERSTORY TREES
- CONIFEROUS TREES
- SIDE SLOPE SEED MIX MN STATE SEED MIX 33-261
- MESIC PRAIRIE GENERAL MN STATE SEED MIX 35-241

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TWIN CITIES LAND DEVELOPMENT

RAVARA TRAILS

COTTAGE GROVE, MINNESOTA

PRELIMINARY PLAT SUBMITTAL

LANDSCAPE PLAN - VIEW F

DESCRIPTION	DATE
City Submittal	2025-12-31

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John Gronhovd

Date

59233

License no.

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By

Date

PROJECT TEAM DATA

Designed By:

Drafted By:

Project No.: 4000570-00

83

Sheet 83 of 91

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TREE MITIGATION REQUIREMENTS:

MITIGATED INCHES TO BE REPLACED:	1,102 INCHES (/2.5 INCH CALIPER) = 441 TREES
MITIGATION INCHES PROVIDED:	2,485 INCHES (/2.5 INCHES CALIPER = 994 TREES)

(LANDSCAPE TREES PROVIDED ARE COUNTED TOWARD MITIGATION REQUIREMENT, SEE TREE PRESERVATION PLAN, PAGE 69.)

OVERALL LANDSCAPE REQUIREMENTS:

TOWNHOME LOTS MUST HAVE ONE OVERSTORY DECIDUOUS TREE PLANTED IN THE FRONT YARD BETWEEN EACH BUILDING GROUP WITH 1 OVERSTORY TREE/40' LF SITE PERIMETER OVERALL. 5 SHRUBS PER UNIT TO BE PROVIDED WITH CONSTRUCTION.

LOTS LESS THAN 60 FEET WIDE MUST HAVE 2 TREES PER LOT. ONE TREE IN THE FRONT YARD. THE FRONT YARD TREE SHALL HAVE A MAXIMUM CANOPY SPREAD OF 30 FEET AND MAXIMUM HEIGHT OF 30 FEET. 10 SHRUBS PER UNIT TO BE PROVIDED WITH CONSTRUCTION

LOTS 60 FEET WIDE OR GREATER MUST HAVE 3 TREES PER LOT. ONE TREE IN THE FRONT YARD. THE FRONT YARD TREE MAY BE A TRADITIONAL OVERSTORY DECIDUOUS TREES. 10 SHRUBS PER UNIT TO BE PROVIDED WITH CONSTRUCTION.

50' AVERAGE, 30' MINIMUM YEAR-ROUND BUFFER OF 50% OPACITY REQUIRED IN REAR YARDS OF LOTS AND TOWNHOUSES ADJACENT TO KEATS AVE S. / CSAH 19. (BLOCK 1, LOTS 19-35 AND BLOCKS 12-20.)

LOT TYPE:	OVERALL:
TOWNHOME (1/40 LF)	208 TREES REQUIRED (8,296 LF) 228 TREES PROVIDED
40' LOTS (2/LOT)	210 TREES REQUIRED (105 LOTS) 210 TREES PROVIDED
65' LOTS (3/LOT)	492 TREES REQUIRED (164 LOTS) 494 TREES PROVIDED
ROADWAY BUFFER TREES PROVIDED: (KEATS AVE., RAVINE PKWY)	117 TREES
BLVD. TREES PROVIDED: (INDIAN BLVD. S., RAVINE PKWY)	184 TREES
TOTAL REQUIRED TOTAL PROVIDED	910 TREES 1,233 TREES

SEEDING NOTES

MESIC PRAIRIE MIX: MN STATE 35-241 MESIC PRAIRIE GENERAL.
SEEDING RATE TO BE 36.5 LBS/ACRE (PURE LIVE SEED).

SIDE-SLOPE SEED MIX: MN STATE 33-261 STORMWATER SOUTH & WEST.
SEEDING RATE TO BE 44 LBS/ACRE (PURE LIVE SEED).

APPLY SEED PER THE FOLLOWING: MULCH SEEDED AREAS WITH Mn/DOT TYPE 3 (MCIA CERTIFIED WEED FREE) MULCH AT A RATE OF 1 TON PER ACRE WITHIN 48 HOURS OF SEEDING. MULCH SHOULD THEN BE DISC ANCHORED TO KEEP IT FROM BLOWING AWAY.

SEEDING SHALL BE APPLIED FROM APRIL 15 - JULY 20 OR SEPTEMBER 20 - FREEZE UP. IF HYDROSEEDING UTILIZE APPROXIMATELY 500 GALLONS OF WATER PER ACRE. REFER TO MN/DOT SPEC 3884 FOR PROPER INSTALLATION OF HYDRO-SEED. ALL NATIVE SEEDS USED ON THIS PROJECT SHALL BE CERTIFIED TO BE OF MINNESOTA ORIGIN BY THE MINNESOTA CROP IMPROVEMENT ASSOCIATION (MCIA). SITE TO BE PREPARED BY LOOSENING TOPSOIL TO A MINIMUM DEPTH OF 3 INCHES. THE SITE TO BE HARROWED OR RAKED FOLLOWING SEEDING, AND THEN PACKED USING A CULTI-PACKER OR EQUIVALENT. SEE MNDOT SEEDING MANUAL FOR REFERENCE.

MAINTAIN SEEDED AREAS BY WATERING, REMULCHING AND REPLANTING AS NECESSARY TO ESTABLISH A UNIFORMLY DENSE STAND OF THE SPECIFIED GRASSES UNTIL ACCEPTED. ANY AREAS FAILING TO ESTABLISH A STAND SHALL BE RESEEDED, REFERTILIZED AND REMULCHED WHENEVER 70% VEGETATIVE COVER IS NOT ACHIEVED. RESEEDING SHALL CONFORM IN ALL RESPECTS TO THESE SPECIFICATIONS. THE CONTRACTOR SHALL REPAIR ANY DAMAGE TO THE WORK AREAS RESULTING FROM EROSION AND/OR EQUIPMENT. THE CONTRACTOR SHALL REPAIR DAMAGE, INCLUDING REGRADING, RESEEDING, ETC. AS NECESSARY, BEFORE SIGNIFICANT DAMAGE OCCURS.

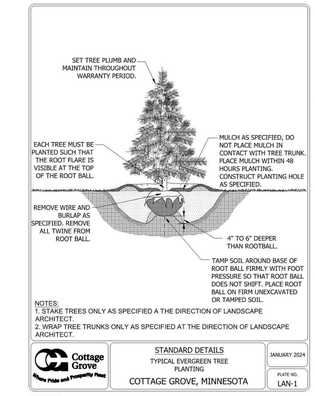
PLANT SCHEDULE

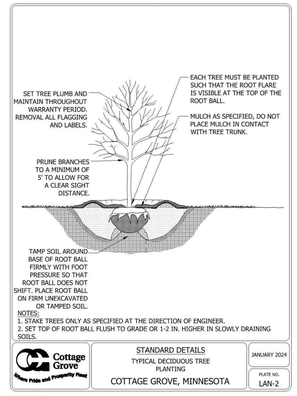
SYMBOL	CODE	QTY	COMMON NAME	BOTANICAL NAME	SIZE	CONTAINER
CONIFEROUS TREES						
	AP	61	Austrian Pine	Pinus nigra	8` Ht.	B&B
	BF	64	Balsam Fir	Abies balsamea	8` Ht.	B&B
	BH	49	Black Hills Spruce	Picea glauca densata	8` Ht.	B&B
	NS	36	Norway Spruce	Picea abies	8` Ht.	B&B
DECIDUOUS TREES						
	AB	37	Autumn Blaze® Freeman Maple	Acer x freemanii 'Jeffersred'	2.5" Cal.	B&B
	AE	146	Accolade Elm	Ulmus japonica x wilsoniana 'Morton' TM	2.5" Cal.	B&B
	BM	76	Burgundy Belle® Red Maple	Acer rubrum 'Magnificent Magenta'	2.5" Cal.	B&B
	CH	108	Common Hackberry	Celtis occidentalis	2.5" Cal.	B&B
	HL	161	Skyline® Honey Locust	Gleditsia triacanthos inermis 'Skycole'	2.5" Cal.	B&B
	NF	114	Northern Flare® Sugar Maple	Acer saccharum 'Sisseton'	2.5" Cal.	B&B
	RB	90	River Birch Multi-Trunk	Betula nigra	8` Ht.	B&B
	RO	78	Red Oak	Quercus rubra	2.5" Cal.	B&B
	SW	81	Swamp White Oak	Quercus bicolor	2.5" Cal.	B&B
	WO	132	White Oak	Quercus alba	2.5" Cal.	B&B

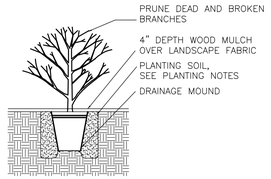
LANDSCAPE NOTES:

1. DECIDUOUS TREES SHOULD BE LOCATED A MINIMUM OF 5 FT OFF ANY UTILITY PIPE.
2. CONIFEROUS TREES SHOULD BE LOCATED A MINIMUM OF 15 FT OFF ANY UTILITY PIPE.
3. NO TREE SHOULD BE LOCATED WITHIN 10 FT OF A HYDRANT OR 15 FT FROM A STREETLIGHT.
4. NO TREES SHOULD BE LOCATED WITHIN A STORM POND HIGH WATER LEVEL (HWL).
5. NO TREES SHOULD BE LOCATED WITHIN A STORM POND'S 20 FT ACCESS ROUTE, AND NO CONIFEROUS TREES WITHIN 5 FT OF THE 20 FT POND ACCESS ROUTE.
6. NO CONIFEROUS TREES WITHIN 20 FT OF A PROPOSED SIDEWALK/TRAIL.
7. NO DECIDUOUS TREES WITHIN 5 FT OF SIDEWALK/TRAIL/DRIVEWAYS.
8. TREES SHOULD NOT BE PLANTED WITHIN DRAINAGE AND UTILITY EASEMENTS
9. TREES WITHIN CITY OUTLOTS SHOULD CONFORM TO THE APPROVED SPECIES LIST.
10. INSTALL 4" MIN TOP SOIL TO SOD, SEED AND SHRUB AREAS. FINE GRADE ALL SOD AND SEED AREAS. INSTALL 12" TOP SOIL TO PERENNIAL AND ANNUAL FLOWER AREAS.
11. STAKE OR MARK ALL PLANT MATERIAL LOCATIONS PRIOR TO INSTALLATION. OWNERS REPRESENTATIVE TO APPROVE ALL STAKING PRIOR TO INSTALLATION.
12. ALL SHRUB AREAS UNLESS SPECIFIED AS OTHER, TO BE BED MULCHED DOUBLE SHREDDED HARDWOOD MULCH OVER FILTER FABRIC, NATURAL COLOR, UNLESS SPECIFIED AS OTHER. POLY-EDGER TO BE VALLEY VIEW BLACK DIAMOND OR APPROVED EQUAL.
13. INSTALL 4-6" DEPTH SHREDDED HARDWOOD MULCH AROUND ROOT SAUCER OF ALL TREES ISOLATED FROM PLANT BEDS. DO NOT PILE MULCH AGAINST THE BASE OF A PLANT OR TREE TRUNK; PULL THE MULCH FOUR INCHES AWAY FROM ROOT FLARE.
14. PLANT SOIL SHALL CONSIST OF 1:1:1, SELECT LOAMY TOPSOIL, PEAT MOSS, PIT RUN SAND.
15. COMPLETELY GUARANTEE ALL WORK FOR A PERIOD OF TWO YEARS BEGINNING AT THE DATE OF ACCEPTANCE. MAKE ALL REPLACEMENTS PROMPTLY (AS PER DIRECTION OF OWNER).
16. ALL MATERIAL SHALL COMPLY WITH THE LATEST EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK, AMERICAN ASSOCIATION OF NURSERYMEN.
17. ALL TREE TRUNKS SHALL BE WRAPPED WITH BROWN CREPE TREE WRAP. APPLY WRAP IN NOVEMBER AND REMOVE IN APRIL.
18. CALL GOPHER STATE ONE CALL AT 651-454-0002 FOR LOCATING ALL UNDERGROUND UTILITIES AND AVOID DAMAGE TO UTILITIES DURING THE COURSE OF THE WORK.
19. MAINTAIN ALL PLANT MATERIALS, INCLUDING WATERING, UNTIL THE TIME OF ACCEPTANCE.
20. COORDINATE INSTALLATION WITH GENERAL CONTRACTOR.
21. STAKING AND GUYING OF TREES OPTIONAL: MAINTAIN PLUMBNESS OF TREES FOR DURATION OF WARRANTY PERIOD.
22. SWEEP AND WASH ALL PAVED SURFACES AND REMOVE ALL DEBRIS RESULTING FROM LANDSCAPE OPERATIONS.
23. LANDSCAPE CONTRACTOR SHALL INSTALL KENTUCKY BLUE GRASS SOD IN DENOTED AREAS INCLUDING ALL R.O.W. PER LOCAL INDUSTRY STANDARDS. SOD SHALL BE LAID PARALLEL TO THE CONTOURS AND HAVE STAGGERED JOINTS.
24. IRRIGATION TO BE PROVIDED FOR SOD IN RAVINE PARKWAY BOULEVARD. IRRIGATION SYSTEM TO BE OWNED AND MAINTAINED BY HOA.
25. SUPPLY DESIGN AND INSTALLATION FOR NEW WATER EFFICIENT IRRIGATION SYSTEM. DESIGN SYSTEM INCLUDING CONTROLS, ELECTRICAL AND WATER SERVICE CONNECTIONS WITH 100% COVERAGE OF NEW SOD, LANDSCAPE ISLANDS AND PLANTING AREAS. SOD, SEED AND SHRUB AREAS TO BE ON SEPARATE ZONES. EXCESS WATER SHALL NOT COME IN CONTACT WITH BUILDINGS OR SIDEWALKS. THE IRRIGATION SYSTEM SHALL HAVE A RAIN/FREEZE SENSOR SHUTOFF. USE RAINBIRD OR APPROVED EQUAL COORDINATE WITH G.C. AND WORK OF OTHER SECTION.
26. CITY STANDARD SPECIFICATION SHALL GOVERN FOR ALL IMPROVEMENTS ON PUBLIC RIGHT-OF-WAY OR PUBLIC PROPERTY.
27. LOTS LESS THAN 60 FEET WIDE MUST HAVE 2 TREES PER LOT. ONE TREE IN THE FRONT YARD. THE FRONT YARD TREE SHALL HAVE A MAXIMUM CANOPY SPREAD OF 30 FEET AND MAXIMUM HEIGHT OF 30 FEET.

LANDSCAPE DETAILS:







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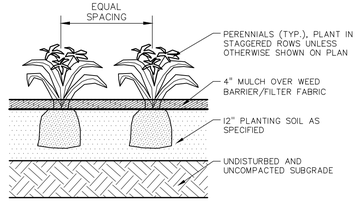

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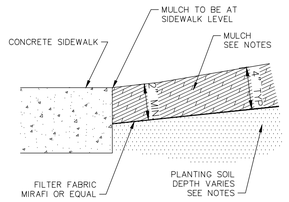

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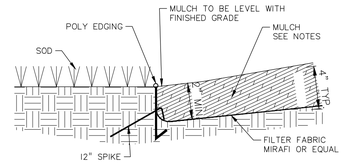

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RAVARA TRAILS
COTTAGE GROVE, MINNESOTA
PRELIMINARY PLAT SUBMITTAL
LANDSCAPE PLAN - DETAILS

DATE	DESCRIPTION
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John Gronholz — 59233
Date — License no.

QA/QC CHECK

By — Date

PROJECT TEAM DATA

Designed By:
Drafted By:
Project No.: 4000570-00

84

Sheet 84 of 91

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SITE PLAN DATA:

PIDS: 11.027.21.24.0001	60.54 AC
11.027.21.23.0001	20.01 AC
11.027.21.32.0001	40.34 AC
11.027.21.31.0001	79.47 AC
11.027.21.33.0001	39.13 AC
TOTAL GROSS AREA	239.49 AC
OUTLOT P	35.36 AC
OUTLOT Q	55.41 AC
TOTAL PROJECT AREA AREA	148.72 AC
OUTLOT K (PARK DEDICATION)	4.15 AC
EXISTING ROW (KEATS AVE S)	3.55 AC
PROPOSED ROW DEDICATION (KEATS AVE S)	3.89 AC
NET TOTAL PRODUCT AREA	137.13 AC
PROPOSED ROW (FUTURE RAVINE PKWY)	8.89 AC
PROPOSED ROW (FUTURE INDIAN BLVD S)	3.90 AC
PROPOSED ROW (INTERIOR NORTH)	7.19 AC
PROPOSED ROW (INTERIOR SOUTH)	10.53 AC

SITE PLAN OUTLOT DATA:

OUTLOT	OWNER
OUTLOT WITH PONDS: A, D, F, G	CITY
OUTLOT: K (CITY PARK)	CITY
OUTLOT WITH PIPELINE: B, E, I, J, P, O	HOA/DEVELOPER
OUTLOT: C, H, L, M, N, O	HOA/DEVELOPER

SITE PLAN LOT DATA:

URBAN TOWNHOME:
- LOT WIDTH MINIMUM: 22 FT
- LOT DEPTH MINIMUM: 72.5 FT
- END LOT WIDTH: 27 FT
- FRONT DOOR SETBACK: 15 FT
- KEATS AVE FRONT DOOR SETBACK: 25 FT
- GARAGE SETBACK: 25 FT
- CORNER SETBACK: 20 FT
- BUILDING SEPARATION: 20 FT

SUBURBAN TOWNHOME:
- LOT WIDTH MINIMUM: 25 FT
- LOT DEPTH MINIMUM: 72 FT
- END LOT WIDTH: 30 FT
- FRONT SETBACK: 25 FT
- CORNER SETBACK: 20 FT
- BUILDING SEPARATION: 15 FT

VILLA SINGLE FAMILY LOTS:
- LOT WIDTH MINIMUM: 40 FT
- LOT DEPTH MINIMUM: 130 FT
- SIDE YARD SETBACK: 5 FT
- SIDE YARD SETBACK: 5 FT

65' SINGLE FAMILY LOTS:
- LOT WIDTH MINIMUM: 65 FT
- LOT DEPTH MINIMUM: 130 FT
- SIDE YARD SETBACK: 5 FT (GARAGE SIDE)
- SIDE YARD SETBACK: 7.5 FT (NON-GARAGE SIDE)

LOT TYPE:	UNITS	AREA (AC)	DENSITY (UNITS/AC)
URBAN TOWNHOMES	192	17.83	10.77
SUBURBAN TOWNHOMES	114	15.31	7.45
VILLA SINGLE FAMILY LOTS	105	34.42	3.05
65' SINGLE FAMILY LOTS	164	69.56	2.36
TOTAL UNITS	575	137.12	4.19

GUEST PARKING STALLS: 73

IMPERVIOUS SURFACES:

MAX. IMPERVIOUS SURFACE ALLOWED:

VILLA SINGLE FAMILY LOTS = 50% MAX. PER LOT

65' SINGLE FAMILY LOTS = 40% MAX PER LOT

ATTACHED DWELLINGS = 40% OF TOTAL AREA

SITE NOTES:

1. SEE SHEET 21 FOR TYPICAL LOT DETAILS AND TYPICAL ROAD SECTIONS.
2. ALL CURB RETURNS ARE MEASURED FROM BACK OF CURB UNLESS OTHERWISE NOTED.

LEGEND:

- EASEMENT LINE
- BUILDING SETBACK
- PROPERTY LINE
- LOT LINE
- ROW
- STOP/STREET SIGN
- STREET LIGHT
- POND MAINTENANCE ACCESS (TURF)
- CITY OPEN/PARK MARKER SIGN

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TWIN CITIES LAND DEVELOPMENT

RAVARA TRAILS

COTTAGE GROVE, MINNESOTA

PRELIMINARY PLAT SUBMITTAL

SITE PLAN - OVERALL

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Drafted By: LIU
Project No.: 4000570-00

20

Sheet 20 of 91

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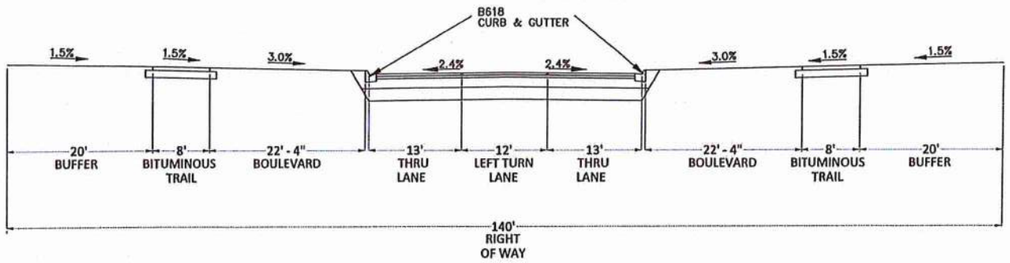
TYPICAL ROAD SECTIONS



RAVINE PARKWAY S (BY OTHERS) 140' ROW ROAD SECTION

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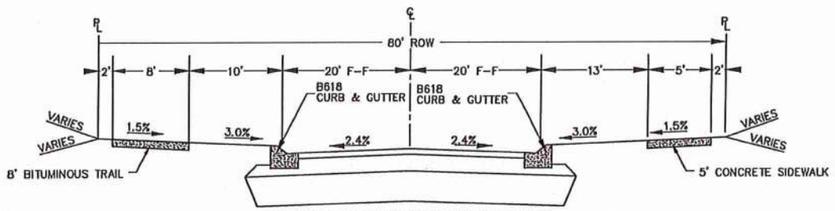

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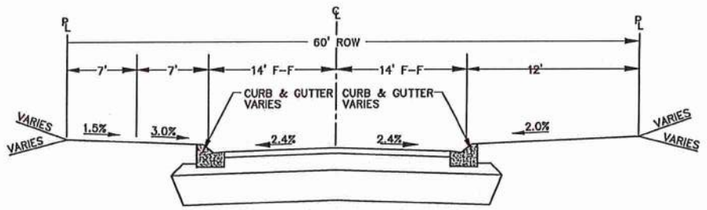

TYPICAL 60' ROW ROAD SECTION

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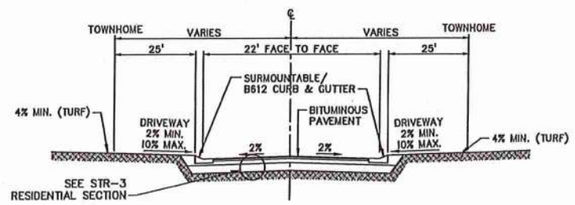

SUBURBAN TH PRIVATE ROAD SECTION (22' F-F)

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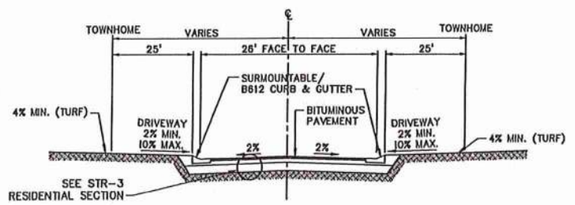

URBAN TH PRIVATE ROAD SECTION (26' F-F)

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DEVELOPMENT LOT DETAILS

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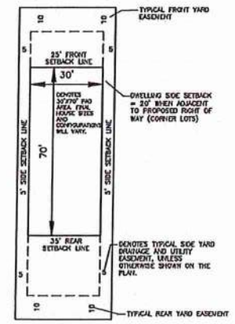
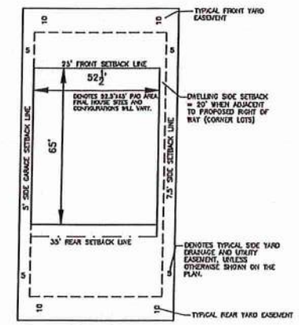
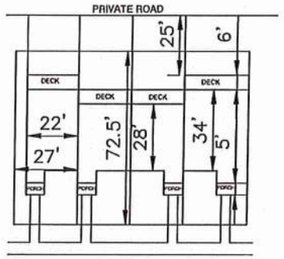


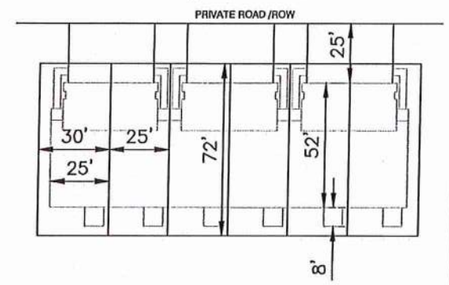
65'x130' SINGLE FAMILY



URBAN TOWNHOME
FRONT FACE/REAR LOAD



SUBURBAN TOWNHOME
PATIO/FRONT LOAD



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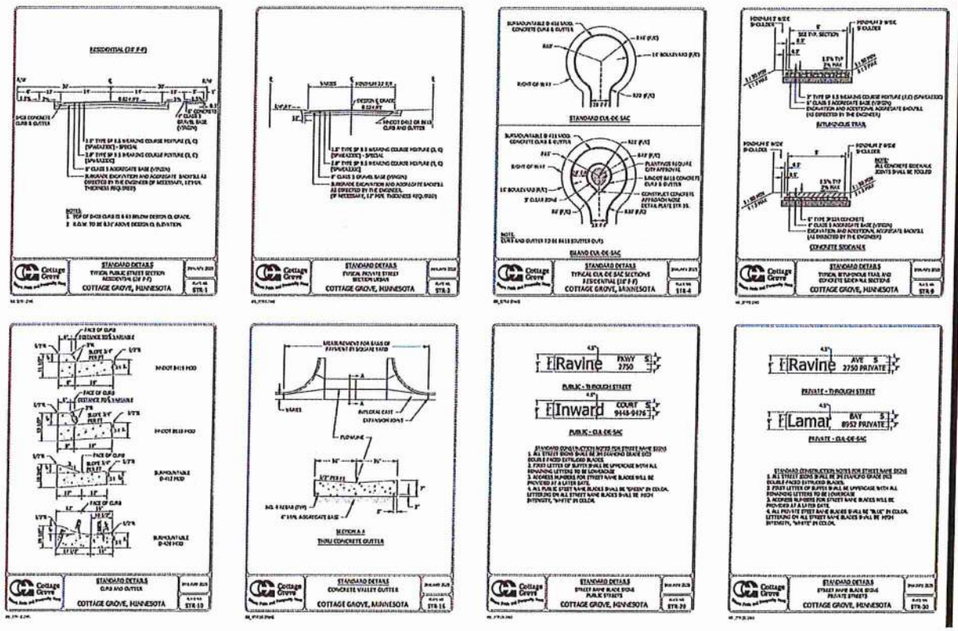

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RAVARA TRAILS

COTTAGE GROVE, MINNESOTA

PRELIMINARY PLAT SUBMITTAL
SITE PLAN NOTES AND DETAILS

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Drafted By: LRJ
Project No.: 4000570.00

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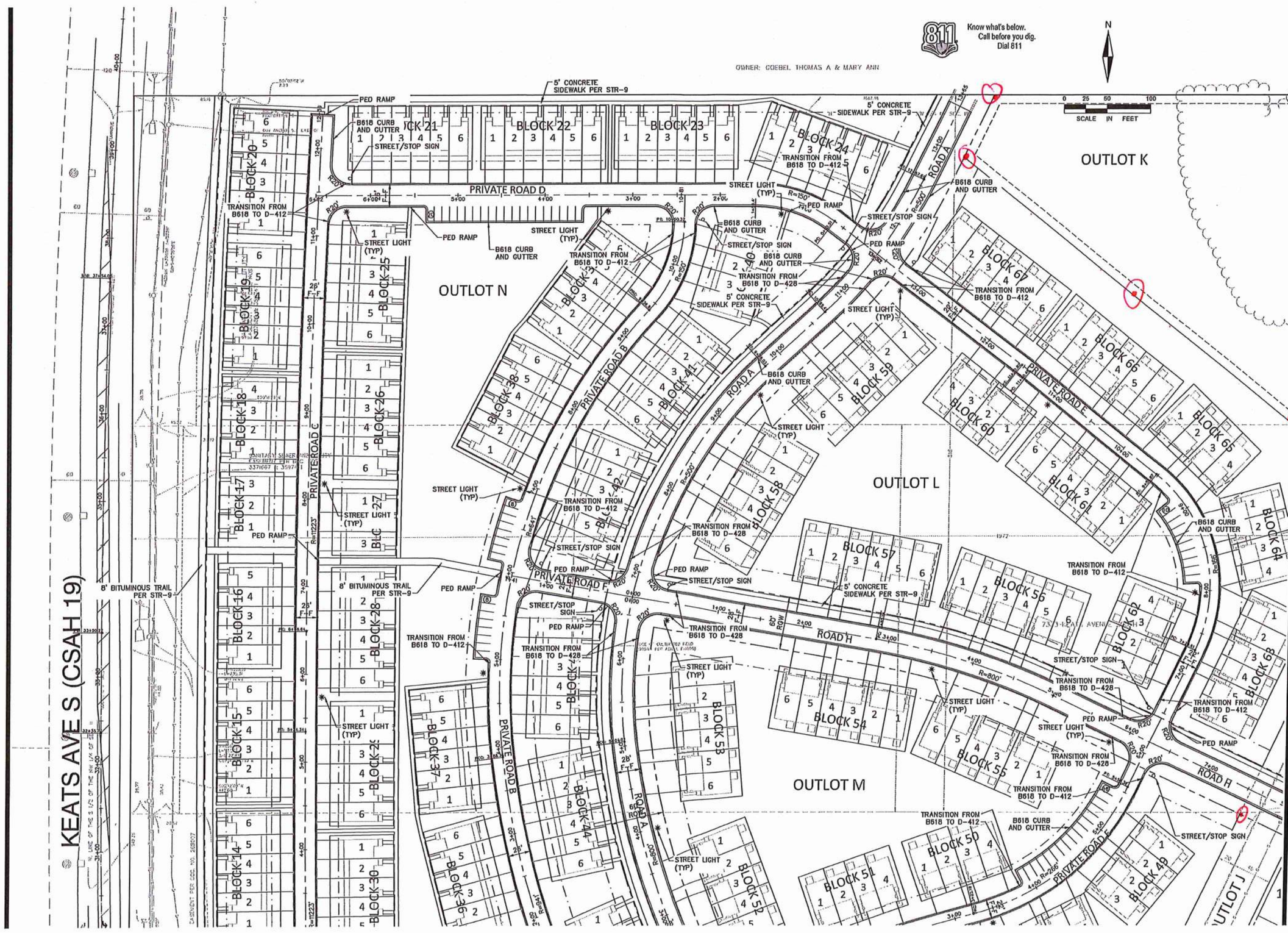

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SITE PLAN - VIEW A

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SITE PLAN - VIEW B

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Drafted By: LRJ
Project No.: 4000570-00

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SITE PLAN - VIEW C

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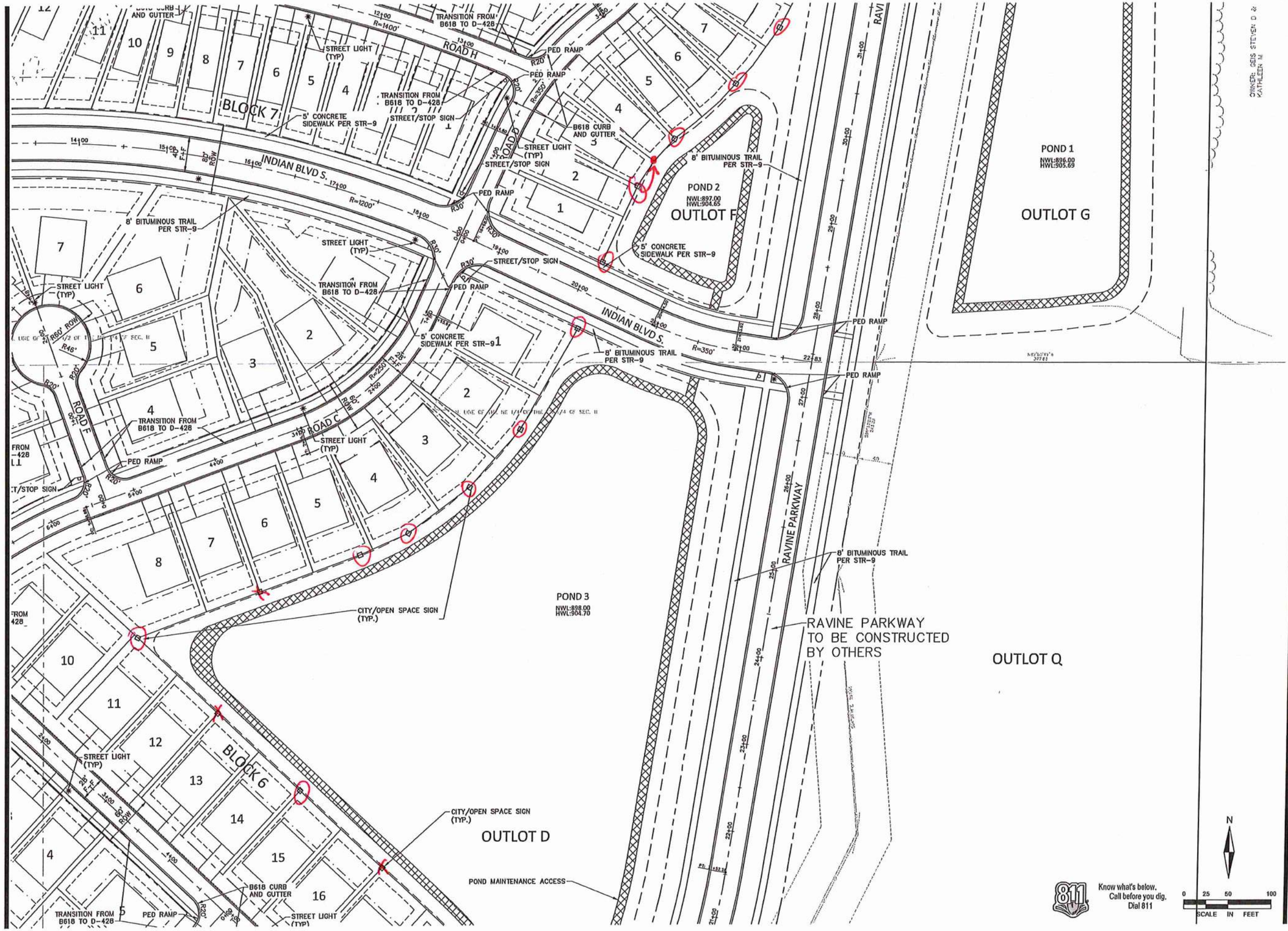

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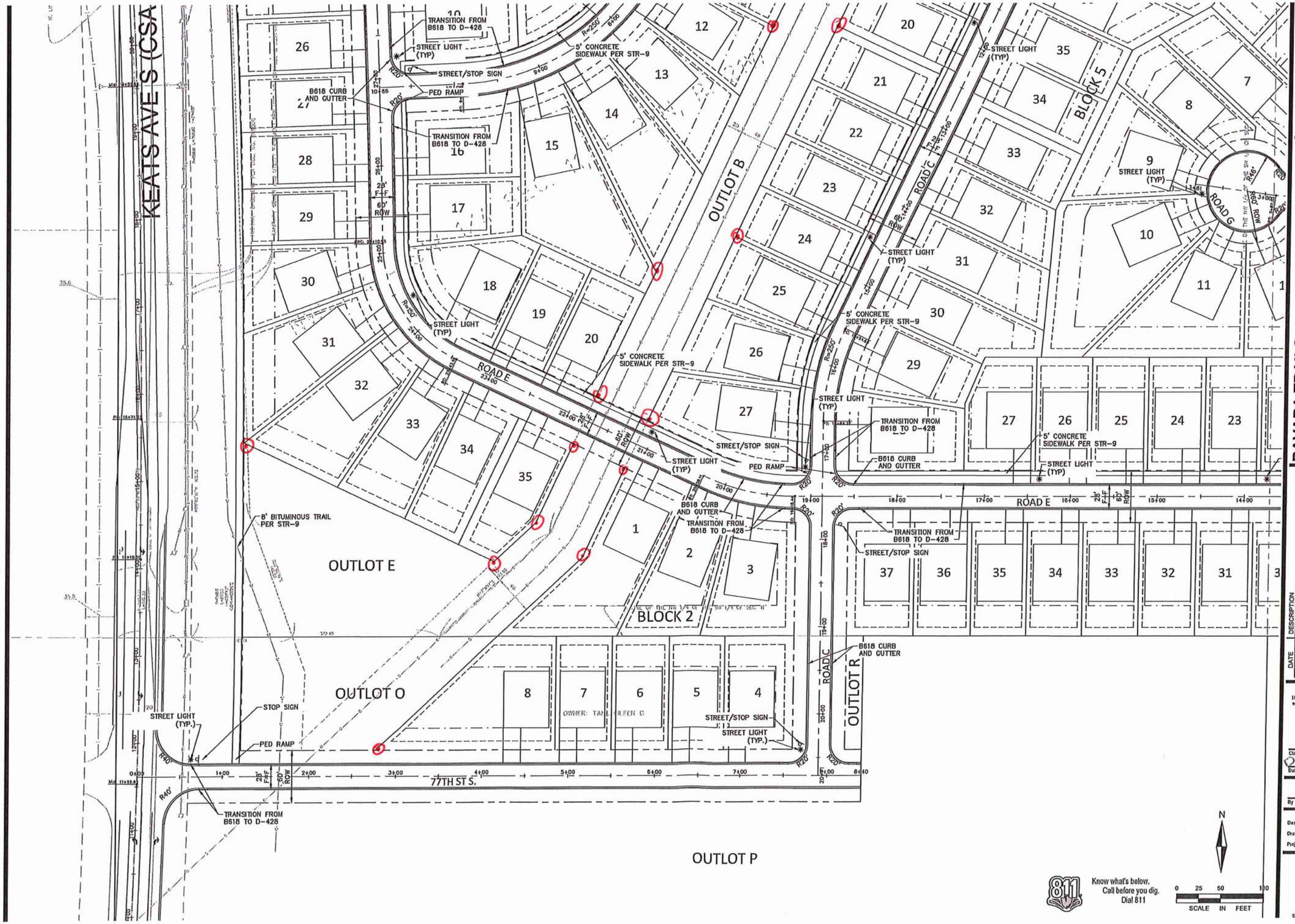

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Drafted By: LRJ
Project No.: 4000570.00

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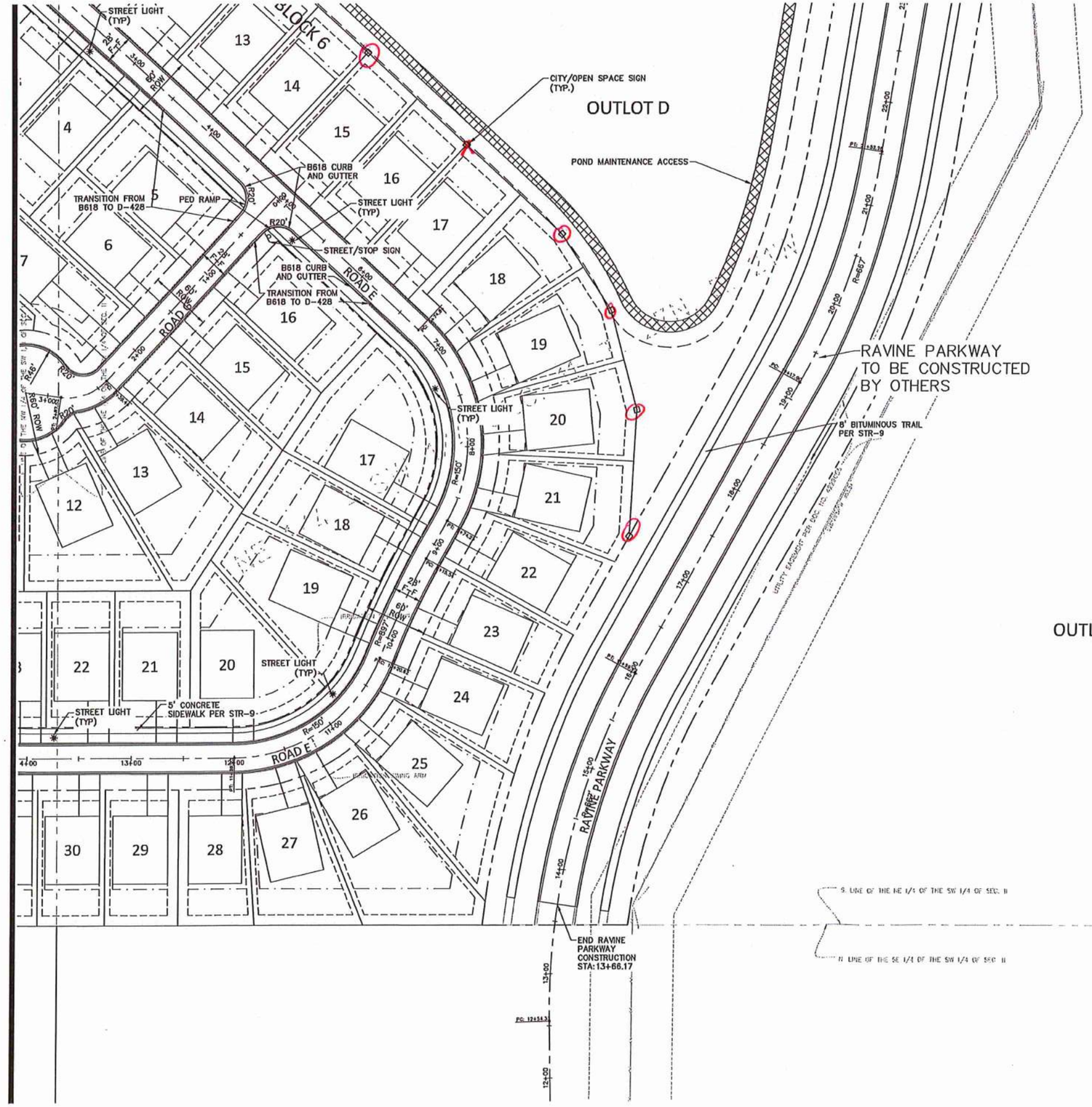

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PROJECT TEAM DATA

Designed By: CJV
Drafted By: LRJ
Project No.: 4000570.00

27

Sheet 27 of 91

Traffic Impact Study

RAVARA TRAILS (COTTAGE GROVE, MN)

DRAFT DOCUMENT
December 31st, 2025

Prepared By:
Nick Grage, PE, PTOE, RSP_1

ALLIANT ENGINEERING, INC. | 733 Marquette Avenue, Suite 700, Minneapolis, MN 55402

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Table 9. 2030 Build Conditions Traffic Operations Analysis Results 14

1. Introduction

Alliant Engineering has completed a traffic impact study for the proposed Ravara Trails residential development located along CSAH 19 (Keats Avenue) in Cottage Grove, MN (see **Figure 1**). The development, located on a 148.72-acre parcel, consists of various residential land uses including 269 single-family homes, 192 urban townhomes, and 114 suburban townhomes for a total of 575 dwelling units. The objectives of this study are to evaluate existing traffic operations within the study area, identify any potential traffic impacts to the adjacent roadway network due to the proposed development trips, and recommend improvements to address issues if necessary. The following provides the assumptions, analysis, and study conclusions offered for consideration.

2. Existing Year 2025 Conditions

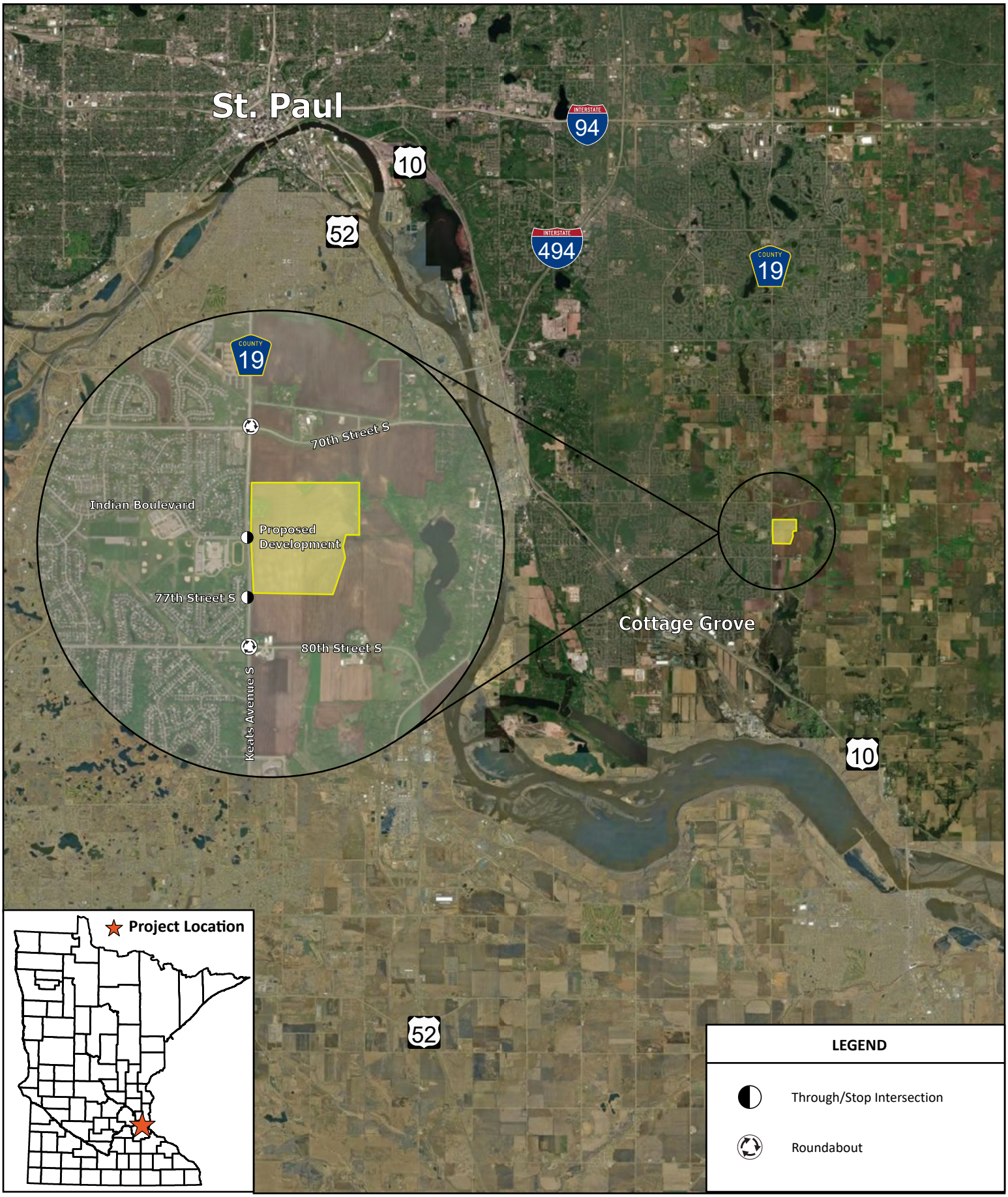
The existing conditions were reviewed to establish a baseline for identifying any future impacts associated with the proposed development. The evaluation of existing conditions includes various field observations and research, turning movement counts, and an intersection capacity analysis.

2.1 STUDY AREA INTERSECTIONS

The following study intersections were identified:

- Keats Avenue & 70th Street
- Keats Avenue & Indian Boulevard (Primary Site Access)
- Keats Avenue & 77th Street (Secondary Site Access)
- Keats Avenue & 80th Street

It should be noted that in addition to the two proposed development accesses along Keats Avenue, a north-south roadway (Ravine Parkway) is also anticipated along the east side of the development running parallel to Keats Avenue and connecting to both 70th Street to the north and 80th Street to the south. This would result in two additional three-legged intersections providing additional access to the east side of the development.



Ravara Trails

Figure 1

Project Location

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2.2 DATA COLLECTION

2.2.1 Existing Traffic Volumes

To document existing conditions, 13-hour (6:00 a.m. to 7:00 p.m.) intersection turning movement counts (TMCs) were collected at the study intersections of 70th Street, Indian Boulevard, and 77th Street by Alliant on Thursday, May 29th, 2025. Washington County provided a 24-hour count for the 80th Street intersection, which was collected on Thursday, February 24th, 2024. The a.m. peak was found to be 7:15 to 8:15 a.m. and the p.m. peak was found to be 4:00 to 5:00 p.m. with volumes along Keats Avenue being comparable across both data sets.

2.2.2 Roadway / Intersection Characteristics

In addition to traffic volume data collection, observations were completed to identify roadway / intersection characteristics within the study area (i.e. geometry, posted speed limits, and traffic control), which are summarized in **Table 1** and **Table 2**. Existing traffic volumes within the study area are shown in **Figure 2**.

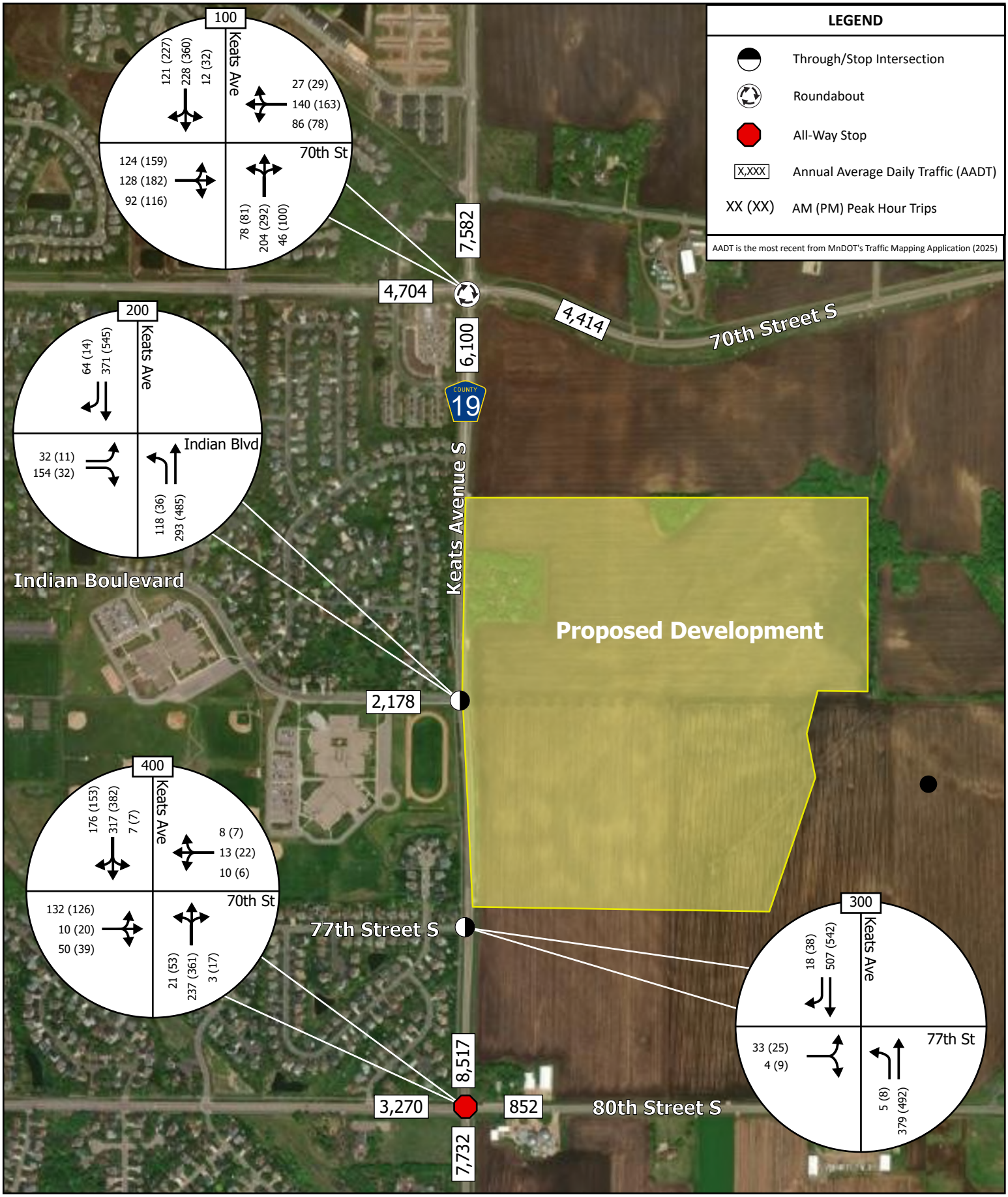
Table 1. Roadway Characteristics

Roadway	Cross-Section	Speed Limit	Functional Classification
Keats Avenue	2-Lane Undivided	55 mph	Minor Arterial
70th Street	2-Lane Undivided	55 mph	Minor Arterial
Indian Boulevard	2-Lane Undivided	30 mph	Major Collector
77th Street	2-Lane Undivided	30 mph	Local
80th Street	4-Lane Undivided	45 mph	Minor Arterial

Table 2. Existing Conditions Intersection Characteristics

Intersection	Traffic Control	Lane Designations by Approach[1, 2]			
		NB	SB	EB	WB
Keats Avenue & 70th Street	Roundabout	LTR	LTR	LTR	LTR
Keats Avenue & Indian Boulevard	Through / Stop	L / T	T / R	L / R	-
Keats Avenue & 77th Street	Through / Stop	LT*	T / R	LR	-
Keats Avenue & 80th Street	All-Way Stop[3]	LT / R	LT / R	LT / T / R	LT / TR

*[1]L=Left-Turn, T=Through, R=Right-Turn, *=Bypass Lane*
[2]Separate Lanes are Denoted by /
[3]AWS will be replaced with RAB prior to forecast year 2030



Ravara Trails

Figure 2

2025 Existing Conditions Volumes

ALLIANT

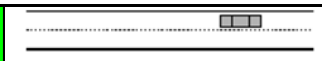
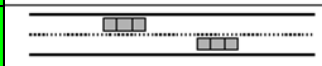
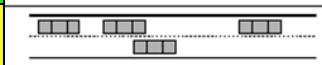
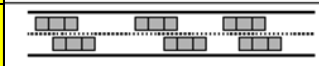
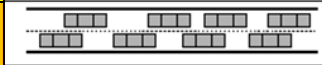
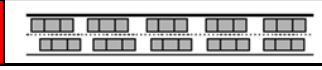
N

0 0.15 0.3 Miles

2.3 INTERSECTION CAPACITY ANALYSIS

The intersection capacity analyses were completed using Synchro/SimTraffic software to establish a baseline condition to which future traffic operations could be compared. HCS 2024 was also used to analyze the roundabout at Keats Avenue & 70th Street as well as the future roundabout at Keats Avenue & 80th Street. Capacity analysis results identify a Level of Service (LOS), which indicates the quality of traffic flow through an intersection. Intersections are given a ranking from LOS A through LOS F. The LOS results are based on average delay per vehicle, which corresponds to the delay threshold values shown in **Table 3**. LOS A indicates the best traffic operation, with vehicles experiencing minimal delays. LOS F indicates an intersection where demand exceeds capacity, or a breakdown of traffic flow. For side-street stop-controlled intersections, a key measure of operational effectiveness is the side-street LOS. Lengthy delays and poor LOS can occur on side-street approaches even if the overall intersection is functioning well, making side-street LOS a valuable design criterion.

Table 3. Level of Service Criteria

Level of Service		Description	Delay per Vehicle (seconds)	
			Signalized Intersection	Unsignalized Intersection
A		**Free Flow:** Low volumes and no delays.	0 - 10	0 - 10
B		**Stable Flow:** Speeds restricted by travel conditions, minor delays.	> 10 - 20	> 10 - 15
C		**Stable Flow:** Speeds and maneuverability closely controlled due to higher volumes.	> 20 - 35	> 15 - 25
D		**Stable Flow:** Speeds considerably affected by change in operating conditions. High density traffic restricts maneuverability, volume near capacity.	> 35 - 55	> 25 - 35
E		**Unstable Flow:** Low speeds, considerable delay, volume at or slightly over capacity.	> 55 - 80	> 35 - 50
F		**Forced Flow:** Very low speeds, volume exceed capacity, long delays with stop and go traffic.	> 80	> 50

Source: Highway Capacity Manual, 2010 Edition, Transportation Research Board, Exhibits 18-4 & 19-1.

After LOS, the second component of the capacity analysis is a study of vehicular queuing, or the lineup of vehicles waiting to pass through an intersection. An intersection can operate with an acceptable LOS, but if queues from the intersection block entrances to turn lanes or adjacent driveways, unsafe operating conditions could result. The 95th percentile queue, or the length of queue with only a five percent probability of being exceeded during an analysis period, is considered the standard for design purposes.

2.3.1 2025 Existing Conditions Intersection Capacity Analysis

The existing year 2025 intersection capacity analysis was performed for the study intersections during the weekday a.m. and p.m. peak hours as observed by Alliant as noted previously. Results of the existing year 2025 intersection capacity analysis presented in **Table 4** indicate that all study intersections currently operate at overall LOS A during the a.m. and p.m. peak hours under existing year 2025 traffic volumes except for Keats Avenue & 70th Street which operates at overall LOS B during the p.m. peak hour. The only notable side-street delay observed in the traffic simulations was at the Keats Avenue & 70th Street intersection where the southbound approach performs at a high-performing LOS C with some queuing during the p.m. peak hour. Detailed operations and queuing analysis results are presented in the appendix.

Table 4. 2025 Existing Conditions Intersection Capacity Analysis Results

Intersection	AM Peak Hour		PM Peak Hour	
	LOS	Delay (s)	LOS	Delay (s)
CSAH 19 (Keats Avenue) & 70th Street	A / A	7.7 / 8.6	B / C	13.0 / 15.1
CSAH 19 (Keats Avenue) & Indian Boulevard	A / A	3.5 / 8.7	A / A	2.1 / 6.8
CSAH 19 (Keats Avenue) & 77th Street	A / A	1.7 / 9.8	A / B	1.4 / 10.9
CSAH 19 (Keats Avenue) & 80th Street	A / A	5.9 / 7.3	A / A	7.2 / 9.1

Overall Intersection LOS / Worst Approach LOS
Overall Intersection Delay / Worst Approach Delay

3. Forecast Year 2030 No Build Conditions

3.1 2030 NO BUILD TRAFFIC VOLUMES

The timeline for complete buildout of the site is unknown at this time, with grading expected to take place in 2026. As a result, a forecast year of 2030 was selected for an analysis of future conditions. Based on the Minnesota State Aid Equivalent Single Axel Load (MnESAL) calculator and the historical AADT values along Keats Avenue, 70th Street, and 80th Street, an annual growth rate of one percent per year was used to generate forecast year 2030 volumes shown in **Figure 3**.

3.2 2030 NO BUILD ROADWAY / INTERSECTION CHARACTERISTICS

The roadway network from 70th Street to 77th Street is projected to remain unchanged between 2025 and 2030. However, the intersection of Keats Avenue & 80th Street is programmed for reconstruction within this time frame. The existing all-way stop will be replaced with a single-lane roundabout, similar to that at 70th Street.

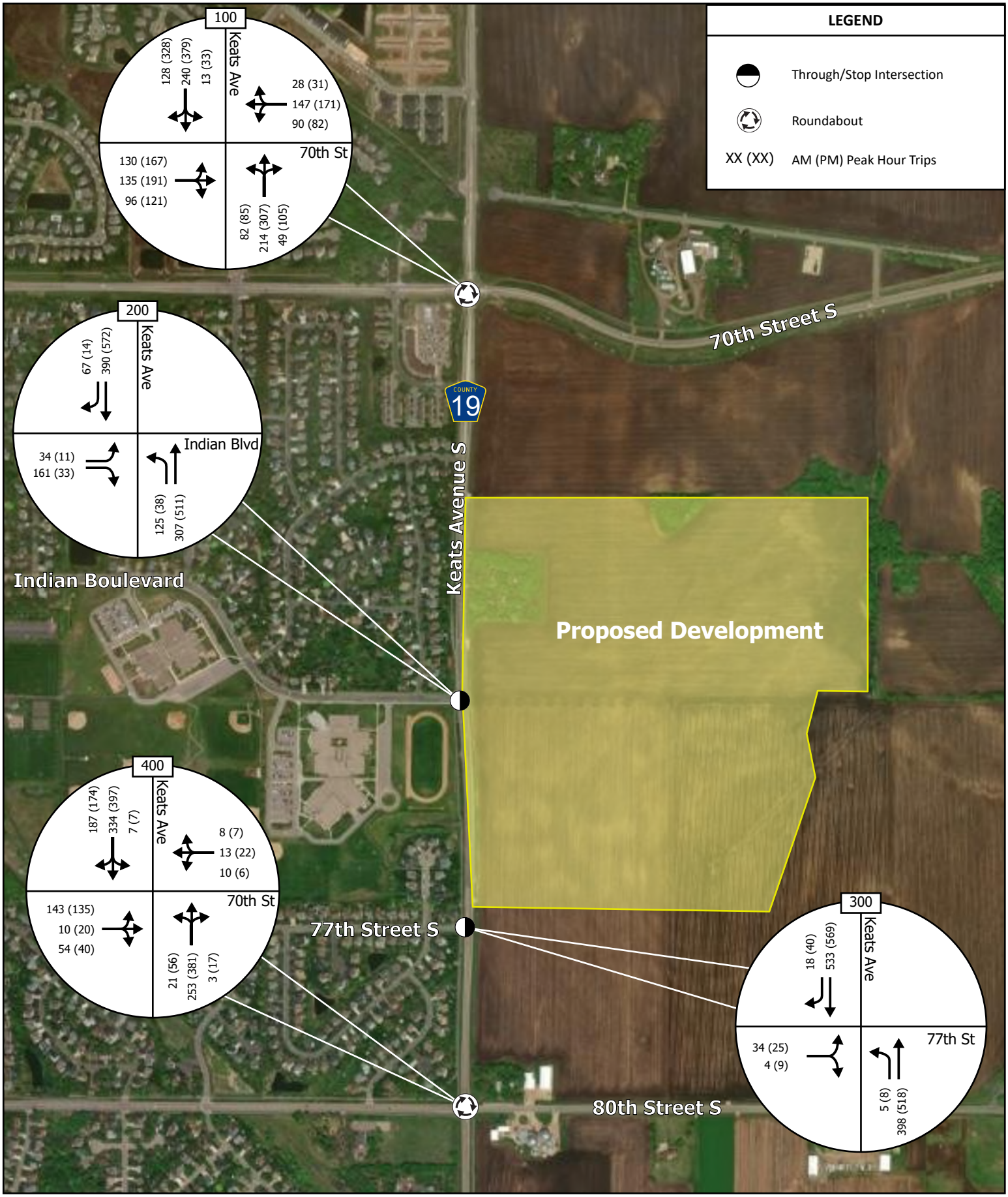
3.3 2030 NO BUILD CONDITIONS INTERSECTION CAPACITY ANALYSIS

The forecast year 2030 No Build intersection capacity analysis was performed for the study intersections during the weekday a.m. and p.m. peak hours as observed by Alliant as noted previously. Results of the forecast year 2030 No Build intersection capacity analysis presented in **Table 5** indicate that all study intersections will continue to operate at overall LOS A during the a.m. and p.m. peak hours under forecast year 2030 traffic volumes except for Keats Avenue & 70th Street which operates at overall LOS B during the p.m. peak hour. Side-street delays increase slightly at all intersections, but they are minor and mostly do not result in a change to the LOS. The only notable change is the eastbound approach at Keats Avenue & 77th Street, which increases an average of 0.6 seconds to LOS B. Detailed operations and queuing analysis results are presented in the appendix.

Table 5. 2030 No Build Conditions Intersection Capacity Analysis Results

Intersection	AM Peak Hour		PM Peak Hour	
	LOS	Delay (s)	LOS	Delay (s)
CSAH 19 (Keats Avenue) & 70th Street	A / A	8.1 / 9.1	B / C	14.7 / 17.4
CSAH 19 (Keats Avenue) & Indian Boulevard	A / A	3.8 / 9.1	A / A	2.3 / 6.4
CSAH 19 (Keats Avenue) & 77th Street	A / B	1.7 / 10.4	A / B	1.4 / 11.4
CSAH 19 (Keats Avenue) & 80th Street	A / A	6.2 / 7.6	A / A	7.4 / 9.3

Overall Intersection LOS / Worst Approach LOS
Overall Intersection Delay / Worst Approach Delay



Ravara Trails

Figure 3

Forecast 2030 No Build Conditions Volumes

ALLIANT

N

0 0.15 0.3 Miles

4. Forecast Year 2030 Build Conditions

The proposed Ravara Trails residential development is located on a 148.72-acre parcel in Cottage Grove, MN. The development consists of 269 single-family homes, 192 urban townhomes, and 114 suburban townhomes for a total of 575 dwelling units. The site plan is still undergoing reviews by various agencies and will be subject to change, including unit counts, until a final plat is approved. The proposed site plan is shown in **Figure 4**.

4.1 PROPOSED ACCESS

Access to the proposed development along the study corridor is available at the following two locations:

- Keats Avenue & Indian Boulevard
    - An expansion of the existing three-leg intersection to add a westbound leg for access to the north and center parts of the development. New dedicated turn lanes would be added along Keats Avenue to prevent vehicles turning to the development from blocking through vehicles. The new intersection would be expected to through-stop controlled.
- Keats Avenue & 77th Street
    - An expansion of the existing three-leg intersection to add a westbound leg for access to the south side of the development. New dedicated turn lanes would be added along Keats Avenue to prevent vehicles turning to the development from blocking through vehicles. The new intersection would be expected to through-stop controlled.

In addition to the two accesses along Keats Avenue, a north-south roadway (Ravine Parkway) is also anticipated along the east side of the development running parallel to Keats Avenue and connecting to both 70th Street to the north and 80th Street to the south. This would result in two additional three-legged intersections providing additional access to the east side of the development. Proposed geometry and traffic control initially considered for the study intersection accesses are summarized in **Table 6**.

Table 6. Proposed Development Intersection Characteristics

Intersection	Traffic Control	Lane Designations by Approach[1]			
		NB	SB	EB	WB
Keats Avenue & Indian Boulevard	Through / Stop	L / T / R	L / T / R	LT / R	LTR
Keats Avenue & 77th Street	Through / Stop	L / T / R	L / T / R	LTR	LTR

[1]*L=Left-Turn, T=Through, R=Right-Turn*
[2]*Separate Lanes are Denoted by /*



Ravara Trails

Figure 4

Proposed Site Plan

ALLIANT

N 0 0.08 0.16 Miles

4.2 TRIP GENERATION

To account for traffic impacts associated with the proposed development, trip generation estimates were developed for the weekday a.m. and p.m. peak hours. The trip generation estimates were developed utilizing trip generation rates for similar land uses as documented in the *ITE Trip Generation Manual, 12th Edition*. The ITE Trip Generation Manual provides peak hour and daily trip generation rates based on studies of similar land uses. Estimated site generated traffic based on the ITE Trip Generation Manual is detailed in **Table 7**. Results of the trip generation estimates indicate the current development plan is expected to generate approximately 332 a.m. peak hour, 406 p.m. peak hour, and 4,456 daily trips. To provide a conservative estimate of the impact of the current development plan, pass-by trips and multi-use reductions were not applicable.

4.2.1 Trip Distribution & Assignment

The distribution of site-generated traffic was estimated based on a review of historical traffic volumes, collected TMCs, know traffic patterns, and engineering judgment. The estimated proposed development directional distribution is shown in **Figure 5**. This proposed distribution assumes a small portion of traffic will use the new north-south roadway (Ravine Parkway). This trip distribution was applied to the respective estimated site-generated traffic volumes to generate forecast year 2030 Build scenario traffic volumes shown in **Figure 6**.

Table 7. Proposed Development Trip Generation Estimate

Land Use (ITE Code)	Units	Size	AM Peak Hour Trips[1]			PM Peak Hour Trips[1]			Daily Trips
			Trips In	Trips Out	Total Trips	Trips In	Trips Out	Total Trips	
Single-Family Detached Housing (210)	Dwelling Units	269	51	137	188	155	95	250	2,446
	Internal Capture (N/A)[2]		*Not Applied*						
	Land Use Gross Trips		**51**	**137**	**188**	**155**	**95**	**250**	**2,446**
	Pass-By Trips (N/A)[2]		*Not Applicable*						
	Land Use Net Trips		**51**	**137**	**188**	**155**	**95**	**250**	**2,446**
Single-Family Attatched Housing (215)	Dwelling Units	306	36	108	144	89	67	156	2,010
	Internal Capture (N/A)[2]		*Not Applied*						
	Land Use Gross Trips		**36**	**108**	**144**	**89**	**67**	**156**	**2,010**
	Pass-By Trips (N/A)[2]		*Not Applicable*						
	Land Use Net Trips		**36**	**108**	**144**	**89**	**67**	**156**	**2,010**
Subtotal ITE Trips			87	245	332	244	162	406	4,456
Internal Capture[2]			*Not Applied*						
Subtotal Gross Trips			**87**	**245**	**332**	**244**	**162**	**406**	**4,456**
Pass-By Trips[2]			*Not Applicable*						
Project Net New Trips			**87**	**245**	**332**	**244**	**162**	**406**	**4,456**

Source: Institute of Transportation Engineers (ITE) Trip Generation Manual, 12th Edition.

1: Trips generated for the a.m. and p.m. peak hour of the adjacent roadway network.

2: Internal capture rates and pass-by trips not applied or not applicable.



Ravara Trails

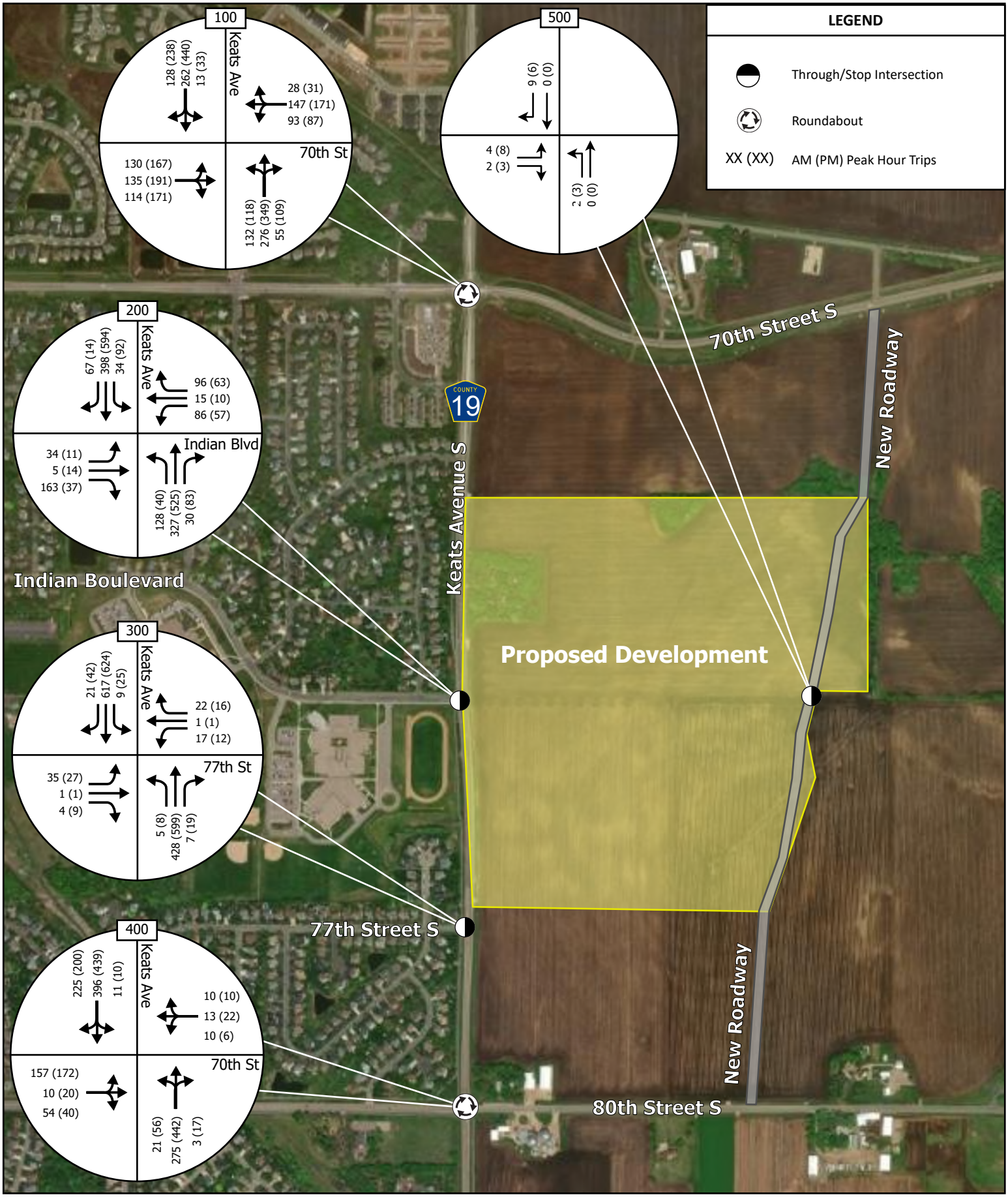
ALLIANT

Figure 5

Proposed Development Trips Directional Distribution

N

0 0.1 0.2 Miles



Ravara Trails

Figure 6

Forecast 2030 Build Conditions Volume

ALLIANT

N

0 0.15 0.3 Miles

4.3 2030 BUILD CONDTIONS INTERSECTION CAPACITY ANALYSIS

To understand the extent to which the proposed development impacts the study area roadway network, the forecast year 2026 Build conditions were analyzed. Results, presented below in **Table 8**, indicate that all study intersections are expected to operate at overall LOS B or better during the a.m. and p.m. peak hours except for Keats Avenue & 70th Street which operates at overall LOS C during the p.m. peak hour. The most significant increases in delay and LOS occur along the side-street approaches of Keats Avenue & Indian Boulevard, where the new westbound approach was initially modeled without a dedicated right-turn lane. During the a.m. peak hour this approach would perform at LOS E with left-turn and through movements blocking right-turns. Detailed operations and queuing analysis results are presented in the appendix.

Table 8. 2030 Build Conditions Traffic Operations Analysis Results

Intersection	AM Peak Hour		PM Peak Hour	
	LOS	Delay (s)	LOS	Delay (s)
CSAH 19 (Keats Avenue) & 70th Street	B / B	11.1 / 11.5	C / D	20.5 / 25.9
CSAH 19 (Keats Avenue) & Indian Boulevard	B / E	12.2 / 44.1	A / D	6.0 / 25.9
CSAH 19 (Keats Avenue) & 77th Street	A / C	2.5 / 15.7	A / C	2.4 / 15.6
CSAH 19 (Keats Avenue) & 80th Street	A / B	8.8 / 10.0	A / A	9.4 / 9.8

Overall Intersection LOS / Worst Approach LOS
Overall Intersection Delay / Worst Approach Delay

4.4 2030 BUILD CONDTIONS W/ IMPROVEMENTS INTERSECTION CAPACITY ANALYSIS

Although a dedicated right-turn lane is not provided for the new westbound approach at Indian Boulevard, the face-to-face width of is 40 feet which whould provide enough room for right-turning vehicles to bypass left-turning and through vehicles. Results of the forecast year 2030 Build with Improvements analysis, presented below in **Table 9**, indicate that all study intersections are expected to operate at overall LOS B or better during the a.m. and p.m. peak hours except for Keats Avenue & 70th Street which operates at overall LOS C during the p.m. peak hour. However, with the modified right-turn assumptions the side-street approaches of Keats Avenue & Indian Boulevard operate at LOS C during both the a.m. and p.m. peak hours. Dedicated side-street right-turn lanes at 77th Street provided very little improvement, as the existing eastbound left-turns dictate the worst-approach LOS. Detailed operations and queuing analysis results are presented in the appendix.

Table 9. 2030 Build Conditions Traffic Operations Analysis Results

Intersection	AM Peak Hour		PM Peak Hour	
	LOS	Delay (s)	LOS	Delay (s)
CSAH 19 (Keats Avenue) & 70th Street	B / B	11.1 / 11.5	C / D	20.5 / 25.9
CSAH 19 (Keats Avenue) & Indian Boulevard	A / C	9.0 / 23.1	A / C	5.6 / 19.3
CSAH 19 (Keats Avenue) & 77th Street	A / C	2.4 / 15.1	A / C	2.6 / 20.2
CSAH 19 (Keats Avenue) & 80th Street	A / B	8.8 / 10.0	A / A	9.4 / 9.8

Overall Intersection LOS / Worst Approach LOS
Overall Intersection Delay / Worst Approach Delay

5. Site Plan Review

A review of the proposed site plan was completed to identify any issues and recommend potential improvements regarding vehicle ingress / egress and internal circulation. The following should be considered:

- The proposed internal roadways, cul-de-sacs, and parking layouts appear to adequately accommodate typical passenger vehicles. However, truck turning movements should be reviewed to ensure that delivery, garbage trucks, and plows have adequate accommodations to negotiate internal roadways.
    - Appropriate traffic control and signing should be considered for internal roadways to ensure motorists understand which roadways have the right of way to reduce crash risks.
- Sidewalk is currently shown throughout the site plan with internal connections to a variety of parcels and external connections to both existing and proposed facilities along Keats Avenue.
    - Coordination with City and County staff should occur regarding external connections to regional trail networks and the design of pedestrian ramps and crossings.
    - With Grey Cloud Elementary and Cottage Grove Middle School located along Indian Boulevard on the opposite side of Keats Avenue, increased visibility (striping, signing, flashers, etc.) for pedestrians and bicyclists crossing Keats Avenue at Indian Boulevard would likely be needed.
        - Although crosswalk or tunnel alternatives could be considered short-term, finalizing design or constructing these with the initial phases of the development would be premature and unlikely to capture the true demand for these facilities. Based on pedestrian and bicycle counts from existing TMCs at 70th Street, there is little existing east-west demand as the area is largely undeveloped east of Keats Avenue. However, this would obviously change with the construction of 575 dwelling units.

6. Conclusions & Recommendations

The following study conclusions / recommendations are offered for consideration:

- The proposed Ravara Trails residential development consists of 269 single-family homes, 192 urban townhomes, and 114 suburban townhomes for a total of 575 dwelling units.
    - In addition to the two accesses along Keats Avenue, a north-south roadway (Ravine Parkway) is also anticipated along the east side of the development running parallel to Keats Avenue and connecting to both 70th Street to the north and 80th Street to the south.
- The proposed development would be expected to generate approximately 332 a.m. peak hour, 406 p.m. peak hour, and 4,456 daily trips for the current development plan.
- Results of the existing year 2025 and forecast year 2030 No Build analyses indicate that all study intersections are expected to operate at overall LOS B or better during the a.m. and p.m. peak hours.
- Results of the forecast year 2030 Build analysis indicates that all study intersections are expected to operate at overall LOS C or better during the weekday a.m. and p.m. peak hours. However, with a single approach lane the westbound approach at Indian Boulevard operates at LOS E during the a.m. peak.
    - Only Keats Avenue & 70th Street operates at overall LOS C and side-street LOS D, doing so in the p.m. peak hour. All other intersections operate at overall LOS B or better in both peak hours.
    - Although a dedicated right-turn lane is not provided for the new westbound approach at Indian Boulevard, the face-to-face width of is 40 feet which would provide enough room for right-turning vehicles to bypass left-turning and through vehicles.
    - Although not modeled, it is expected that all Ravine Parkway intersections would perform at LOS A due to low overall volumes.
- Results of the forecast year 2030 Build with Improvements analysis indicates that all study intersections are expected to operate at overall LOS C or better during the a.m. and p.m. peak hours.
    - Only Keats Avenue & 70th Street operates at overall LOS C and side-street LOS D, doing so in the p.m. peak hour. All other intersections operate at overall LOS B or better in both peak hours.
    - With the modified right-turn assumptions the side-street approaches of Keats Avenue & Indian Boulevard operate at LOS C during both the a.m. and p.m. peak hours.
    - Dedicated side-street right-turn lanes at 77th Street provided very little improvement, as the existing eastbound left-turns dictate the worst-approach LOS.

A review of the proposed site plan was completed to identify any issues and recommend potential improvements regarding vehicle ingress / egress, internal circulation, and pedestrian / bicycle connectivity. A summary is provided in **Section 5.0: Site Plan Review**.

Appendix

RAVARA TRAILS – TRAFFIC IMPACT STUDY

Measures of Effectiveness - Synchro/SimTraffic

Tank Brier Development Traffic Impact Study - Measures of Effectiveness Summary

Existing Year 2025 Conditions

Intersection	AM Peak Hour		PM Peak Hour	
	LOS	Delay (s)	LOS	Delay (s)
CSAH 19 (Keats Avenue) & 70th Street	A / A	7.7 / 8.6	B / C	13.0 / 15.1
CSAH 19 (Keats Avenue) & Indian Boulevard	A / A	3.5 / 8.7	A / A	2.1 / 6.8
CSAH 19 (Keats Avenue) & 77th Street	A / A	1.7 / 9.8	A / B	1.4 / 10.9
CSAH 19 (Keats Avenue) & 80th Street	A / A	5.9 / 7.3	A / A	7.2 / 9.1

Overall Intersection LOS / Worst Approach LOS
Overall Intersection Delay / Worst Approach Delay

Year 2030 No Build Conditions

Intersection	AM Peak Hour		PM Peak Hour	
	LOS	Delay (s)	LOS	Delay (s)
CSAH 19 (Keats Avenue) & 70th Street	A / A	8.1 / 9.1	B / C	14.7 / 17.4
CSAH 19 (Keats Avenue) & Indian Boulevard	A / A	3.8 / 9.1	A / A	2.3 / 6.4
CSAH 19 (Keats Avenue) & 77th Street	A / B	1.7 / 10.4	A / B	1.4 / 11.4
CSAH 19 (Keats Avenue) & 80th Street	A / A	6.2 / 7.6	A / A	7.4 / 9.3

Overall Intersection LOS / Worst Approach LOS
Overall Intersection Delay / Worst Approach Delay

Year 2030 Build Conditions

Intersection	AM Peak Hour		PM Peak Hour	
	LOS	Delay (s)	LOS	Delay (s)
CSAH 19 (Keats Avenue) & 70th Street	B / B	11.1 / 11.5	C / D	20.5 / 25.9
CSAH 19 (Keats Avenue) & Indian Boulevard	B / E	12.2 / 44.1	A / D	6.0 / 25.9
CSAH 19 (Keats Avenue) & 77th Street	A / C	2.5 / 15.7	A / C	2.4 / 15.6
CSAH 19 (Keats Avenue) & 80th Street	A / B	8.8 / 10.0	A / A	9.4 / 9.8

Overall Intersection LOS / Worst Approach LOS
Overall Intersection Delay / Worst Approach Delay

Year 2030 Build Conditions w/ Improvements

Intersection	AM Peak Hour		PM Peak Hour	
	LOS	Delay (s)	LOS	Delay (s)
CSAH 19 (Keats Avenue) & 70th Street	B / B	11.1 / 11.5	C / D	20.5 / 25.9
CSAH 19 (Keats Avenue) & Indian Boulevard	A / C	9.0 / 23.1	A / C	5.6 / 19.3
CSAH 19 (Keats Avenue) & 77th Street	A / C	2.4 / 15.1	A / C	2.6 / 20.2
CSAH 19 (Keats Avenue) & 80th Street	A / B	8.8 / 10.0	A / A	9.4 / 9.8

Overall Intersection LOS / Worst Approach LOS
Overall Intersection Delay / Worst Approach Delay

Existing Year 2025 Conditions - AM Peak Hour

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
CSAH 19 (Keats Avenue) & 70th Street	Movement Delay (sec/veh)	6.0	9.4	5.7	5.5	9.4	5.4	4.7	8.7	4.7	5.4	10.2	6.0	7.7
	Total Delay (hr)	0.2	0.3	0.2	0.1	0.3	0.0	0.1	0.5	0.1	0.0	0.6	0.2	2.6
	Movement LOS	A	A	A	A	A	A	A	A	A	A	B	A	A
	Movement Volume	125	124	95	91	133	31	76	213	43	10	225	124	1290
	Movement 95th Queue (ft)	93	93	93	74	74	74	65	65	65	88	88	88	
	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	0	0	0	
	Approach Delay (sec/veh)	7.1			7.5			7.3			8.6			
	Approach LOS	A			A			A			A			

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
CSAH 19 (Keats Avenue) & Indian Boulevard	Movement Delay (sec/veh)	15.0	0.0	7.3	0.0	0.0	0.0	4.9	1.0	0.0	0.0	2.8	1.9	3.5
	Total Delay (hr)	0.1	0.0	0.3	0.0	0.0	0.0	0.2	0.1	0.0	0.0	0.3	0.0	1.0
	Movement LOS	B	A	A	A	A	A	A	A	A	A	A	A	A
	Movement Volume	33	0	154	0	0	0	115	292	0	0	374	66	1034
	Movement 95th Queue (ft)	49	0	99	0	0	0	66	0	0	0	0	12	
	Storage Bay Distance (ft)	0	0	170	0	0	0	300	0	0	0	0	335	
	Approach Delay (sec/veh)	8.7			0.0			2.1			2.7			
	Approach LOS	A			A			A			A			

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
CSAH 19 (Keats Avenue) & 77th Street	Movement Delay (sec/veh)	10.4	0.0	4.4	0.0	0.0	0.0	2.6	0.9	0.0	0.0	1.7	0.9	1.7
	Total Delay (hr)	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.2	0.0	0.4
	Movement LOS	B	A	A	A	A	A	A	A	A	A	A	A	A
	Movement Volume	34	0	4	0	0	0	4	374	0	0	511	17	944
	Movement 95th Queue (ft)	42	0	42	0	0	0	12	0	0	0	0	0	
	Storage Bay Distance (ft)	0	0	0	0	0	0	50	0	0	0	0	0	
	Approach Delay (sec/veh)	9.8			0.0			0.9			1.7			
	Approach LOS	A			A			A			A			

Existing Year 2025 Conditions - PM Peak Hour

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
CSAH 19 (Keats Avenue) & Indian Boulevard	Movement Delay (sec/veh)	13.2	0.0	4.4	0.0	0.0	0.0	3.1	0.9	0.0	0.0	2.7	2.2	2.1
	Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.4	0.0	0.5
	Movement LOS	B	A	A	A	A	A	A	A	A	A	A	A	A
	Movement Volume	12	0	32	0	0	0	36	477	0	0	550	14	1121
	Movement 95th Queue (ft)	33	0	34	0	0	0	35	0	0	0	0	0	
	Storage Bay Distance (ft)	0	0	170	0	0	0	300	0	0	0	0	0	
	Approach Delay (sec/veh)	6.8			0.0			1.1			2.7			
	Approach LOS	A			A			A			A			

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
CSAH 19 (Keats Avenue) & 77th Street	Movement Delay (sec/veh)	12.9	0.0	4.6	0.0	0.0	0.0	2.5	1.0	0.0	0.0	1.2	0.7	1.4
	Total Delay (hr)	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.2	0.0	0.4
	Movement LOS	B	A	A	A	A	A	A	A	A	A	A	A	A
	Movement Volume	26	0	8	0	0	0	8	482	0	0	546	40	1110
	Movement 95th Queue (ft)	39	0	39	0	0	0	17	0	0	0	0	0	
	Storage Bay Distance (ft)	0	0	0	0	0	0	50	0	0	0	0	0	
	Approach Delay (sec/veh)	10.9			0.0			1.0			1.2			
	Approach LOS	B			A			A			A			

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
CSAH 19 (Keats Avenue) & 80th Street	Movement Delay (sec/veh)	3.8	6.4	2.6	2.6	5.6	2.9	5.3	9.9	3.9	4.9	8.4	3.8	7.2
	Total Delay (hr)	0.1	0.0	0.0	0.0	0.0	0.0	0.1	1.0	0.0	0.0	0.9	0.2	2.3
	Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
	Movement Volume	124	20	38	5	22	8	53	352	17	5	394	150	1188
	Movement 95th Queue (ft)	48	48	20	29	29	13	67	67	10	45	45	28	
	Storage Bay Distance (ft)	0	0	220	0	0	230	0	0	245	0	0	280	
	Approach Delay (sec/veh)	3.8			4.6			9.1			7.1			
	Approach LOS	A			A			A			A			

Year 2030 No Build Conditions - AM Peak Hour

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
CSAH 19 (Keats Avenue) & 70th Street	Movement Delay (sec/veh)	6.2	9.8	6.2	6.1	9.7	5.9	5.4	9.4	5.0	6.6	10.9	6.2	8.1
	Total Delay (hr)	0.2	0.3	0.2	0.2	0.4	0.0	0.1	0.6	0.1	0.0	0.7	0.2	3.0
	Movement LOS	A	A	A	A	A	A	A	A	A	A	B	A	A
	Movement Volume	131	126	101	90	146	28	84	219	50	12	233	132	1352
	Movement 95th Queue (ft)	92	92	92	83	83	83	77	77	77	96	96	96	
	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	0	0	0	
	Approach Delay (sec/veh)	7.5			8.1			7.8			9.1			
	Approach LOS	A			A			A			A			

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
CSAH 19 (Keats Avenue) & Indian Boulevard	Movement Delay (sec/veh)	18.9	0.0	7.1	0.0	0.0	0.0	5.8	1.0	0.0	0.0	3.1	2.1	3.8
	Total Delay (hr)	0.2	0.0	0.3	0.0	0.0	0.0	0.2	0.1	0.0	0.0	0.3	0.0	1.1
	Movement LOS	C	A	A	A	A	A	A	A	A	A	A	A	A
	Movement Volume	32	0	160	0	0	0	128	311	0	0	383	69	1083
	Movement 95th Queue (ft)	52	0	87	0	0	0	75	0	0	0	0	12	
	Storage Bay Distance (ft)	0	0	170	0	0	0	300	0	0	0	0	335	
	Approach Delay (sec/veh)	9.1			0.0			2.4			2.9			
	Approach LOS	A			A			A			A			

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
CSAH 19 (Keats Avenue) & 77th Street	Movement Delay (sec/veh)	11.0	0.0	5.1	0.0	0.0	0.0	2.3	1.0	0.0	0.0	1.6	1.0	1.7
	Total Delay (hr)	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.2	0.0	0.4
	Movement LOS	B	A	A	A	A	A	A	A	A	A	A	A	A
	Movement Volume	36	0	4	0	0	0	5	406	0	0	525	16	992
	Movement 95th Queue (ft)	44	0	44	0	0	0	11	0	0	0	0	0	
	Storage Bay Distance (ft)	0	0	0	0	0	0	50	0	0	0	0	0	
	Approach Delay (sec/veh)	10.4			0.0			1.0			1.6			
	Approach LOS	B			A			A			A			

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
CSAH 19 (Keats Avenue) & 80th Street	Movement Delay (sec/veh)	3.9	6.5	2.6	2.1	4.3	2.1	3.9	8.0	2.4	3.8	8.1	3.8	6.2
	Total Delay (hr)	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.8	0.2	1.8
	Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
	Movement Volume	142	9	54	8	14	8	22	259	4	6	342	178	1046
	Movement 95th Queue (ft)	53	53	24	27	27	15	45	45	6	38	38	26	
	Storage Bay Distance (ft)	0	0	220	0	0	230	0	0	245	0	0	280	
	Approach Delay (sec/veh)	3.7			3.1			7.6			6.6			
	Approach LOS	A			A			A			A			

Year 2030 No Build Conditions - PM Peak Hour

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
CSAH 19 (Keats Avenue) & Indian Boulevard	Movement Delay (sec/veh)	12.7	0.0	4.6	0.0	0.0	0.0	3.2	0.9	0.0	0.0	3.1	2.6	2.3
	Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.5	0.0	0.6
	Movement LOS	B	A	A	A	A	A	A	A	A	A	A	A	A
	Movement Volume	10	0	36	0	0	0	36	512	0	0	561	12	1167
	Movement 95th Queue (ft)	28	0	37	0	0	0	35	0	0	0	0	0	
	Storage Bay Distance (ft)	0	0	170	0	0	0	300	0	0	0	0	0	
	Approach Delay (sec/veh)	6.4			0.0			1.1			3.1			
	Approach LOS	A			A			A			A			

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
CSAH 19 (Keats Avenue) & 77th Street	Movement Delay (sec/veh)	13.8	0.0	4.1	0.0	0.0	0.0	2.5	1.0	0.0	0.0	1.3	0.6	1.4
	Total Delay (hr)	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.2	0.0	0.4
	Movement LOS	B	A	A	A	A	A	A	A	A	A	A	A	A
	Movement Volume	24	0	8	0	0	0	6	515	0	0	564	38	1155
	Movement 95th Queue (ft)	43	0	43	0	0	0	14	0	0	0	0	0	
	Storage Bay Distance (ft)	0	0	0	0	0	0	50	0	0	0	0	0	
	Approach Delay (sec/veh)	11.4			0.0			1.0			1.3			
	Approach LOS	B			A			A			A			

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
CSAH 19 (Keats Avenue) & 80th Street	Movement Delay (sec/veh)	3.8	6.4	2.5	3.0	5.7	3.1	5.6	10.1	4.0	4.8	8.8	4.1	7.4
	Total Delay (hr)	0.1	0.0	0.0	0.0	0.0	0.0	0.1	1.1	0.0	0.0	1.0	0.2	2.5
	Movement LOS	A	A	A	A	A	A	A	B	A	A	A	A	A
	Movement Volume	135	20	39	4	22	9	59	372	16	5	393	169	1243
	Movement 95th Queue (ft)	46	46	18	28	28	15	64	64	10	50	50	33	
	Storage Bay Distance (ft)	0	0	220	0	0	230	0	0	245	0	0	280	
	Approach Delay (sec/veh)	3.8			4.7			9.3			7.4			
	Approach LOS	A			A			A			A			

Year 2030 Build Conditions - AM Peak Hour

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
CSAH 19 (Keats Avenue) & Indian Boulevard	Movement Delay (sec/veh)	26.4	15.9	24.7	48.0	46.3	39.9	6.5	2.2	1.0	3.9	3.9	2.3	12.2
	Total Delay (hr)	0.2	0.0	1.1	1.2	0.2	1.0	0.2	0.2	0.0	0.0	0.4	0.0	4.5
	Movement LOS	D	C	C	E	E	E	A	A	A	A	A	A	B
	Movement Volume	32	6	159	87	17	91	129	332	28	34	396	74	1385
	Movement 95th Queue (ft)	132	132	175	254	254	254	72	0	0	31	4	14	
	Storage Bay Distance (ft)	0	0	170	0	0	0	300	0	0	300	0	335	
	Approach Delay (sec/veh)	24.7			44.1			3.3			3.7			
	Approach LOS	C			E			A			A			

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
CSAH 19 (Keats Avenue) & 77th Street	Movement Delay (sec/veh)	16.6	7.8	10.2	13.1	0.0	4.4	2.9	1.3	0.5	2.6	2.2	1.6	2.5
	Total Delay (hr)	0.2	0.0	0.0	0.1	0.0	0.0	0.0	0.2	0.0	0.0	0.4	0.0	0.9
	Movement LOS	C	A	B	B	A	A	A	A	A	A	A	A	A
	Movement Volume	33	1	4	15	0	22	3	436	8	8	613	20	1163
	Movement 95th Queue (ft)	53	53	53	47	47	47	11	0	0	12	0	0	
	Storage Bay Distance (ft)	0	0	0	0	0	0	240	0	0	250	0	0	
	Approach Delay (sec/veh)	15.7			7.9			1.3			2.2			
	Approach LOS	C			A			A			A			

Year 2030 Build Conditions - PM Peak Hour

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
CSAH 19 (Keats Avenue) & Indian Boulevard	Movement Delay (sec/veh)	23.9	24.6	6.2	31.3	34.1	20.1	3.4	1.9	3.2	12.1	4.2	2.9	6.0
	Total Delay (hr)	0.1	0.1	0.1	0.5	0.1	0.4	0.0	0.3	0.1	0.3	0.7	0.0	2.7
	Movement LOS	C	C	A	D	D	C	A	A	A	B	A	A	A
	Movement Volume	10	13	37	58	8	66	38	515	79	82	575	11	1492
	Movement 95th Queue (ft)	43	43	44	121	121	121	32	2	0	52	0	0	
	Storage Bay Distance (ft)	0	0	170	0	0	0	300	0	0	300	0	0	
	Approach Delay (sec/veh)	13.1			25.9			2.2			5.1			
	Approach LOS	B			D			A			A			

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
CSAH 19 (Keats Avenue) & 77th Street	Movement Delay (sec/veh)	19.2	16.5	5.9	12.6	36.9	8.1	3.2	1.3	2.4	9.8	2.1	1.3	2.4
	Total Delay (hr)	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.1	0.3	0.0	0.7
	Movement LOS	C	C	A	B	E	A	A	A	A	A	A	A	A
	Movement Volume	24	1	9	10	1	15	7	586	20	25	605	43	1346
	Movement 95th Queue (ft)	42	42	42	38	38	38	17	0	0	31	0	0	
	Storage Bay Distance (ft)	0	0	0	0	0	0	240	0	0	250	0	0	
	Approach Delay (sec/veh)	15.6			10.9			1.4			2.3			
	Approach LOS	C			B			A			A			

Year 2030 Build Conditions w/ Improvements - AM Peak Hour

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
CSAH 19 (Keats Avenue) & Indian Boulevard	Movement Delay (sec/veh)	30.3	26.1	21.7	43.1	33.9	6.3	6.0	2.2	0.7	3.4	3.8	2.2	9.0
	Total Delay (hr)	0.3	0.0	1.0	0.9	0.1	0.2	0.2	0.2	0.0	0.0	0.4	0.0	3.3
	Movement LOS	D	D	C	E	D	A	A	A	A	A	A	A	A
	Movement Volume	30	6	165	77	14	109	129	326	28	33	386	71	1374
	Movement 95th Queue (ft)	131	131	160	138	138	89	69	0	1	26	1	4	
	Storage Bay Distance (ft)	0	0	170	0	0	100	300	0	300	300	0	335	
	Approach Delay (sec/veh)	23.1			22.4			3.1			3.5			
	Approach LOS	C			C			A			A			

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
CSAH 19 (Keats Avenue) & 77th Street	Movement Delay (sec/veh)	16.9	9.2	3.9	16.8	11.1	4.5	3.7	1.2	0.7	3.3	2.1	1.5	2.4
	Total Delay (hr)	0.2	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.3	0.0	0.7
	Movement LOS	C	A	A	C	B	A	A	A	A	A	A	A	A
	Movement Volume	35	1	5	12	1	23	5	426	8	8	599	21	1144
	Movement 95th Queue (ft)	53	53	14	33	33	37	12	0	0	12	2	0	
	Storage Bay Distance (ft)	0	0	50	0	0	50	50	0	0	250	0	0	
	Approach Delay (sec/veh)	15.1			8.8			1.2			2.1			
	Approach LOS	C			A			A			A			

Year 2030 Build Conditions w/ Improvements - PM Peak Hour

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
CSAH 19 (Keats Avenue) & Indian Boulevard	Movement Delay (sec/veh)	34.3	29.2	5.9	32.2	27.3	9.1	3.9	1.9	3.1	12.0	4.2	3.2	5.6
	Total Delay (hr)	0.1	0.1	0.1	0.4	0.1	0.2	0.0	0.3	0.1	0.3	0.7	0.0	2.4
	Movement LOS	D	D	A	D	D	A	A	A	A	B	A	A	A
	Movement Volume	11	11	38	49	9	69	39	518	76	95	561	13	1489
	Movement 95th Queue (ft)	47	47	40	74	74	48	33	2	0	48	0	0	
	Storage Bay Distance (ft)	0	0	170	0	0	100	300	0	0	300	0	0	
	Approach Delay (sec/veh)	15.4			19.3			2.2			5.3			
	Approach LOS	C			C			A			A			

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
CSAH 19 (Keats Avenue) & 77th Street	Movement Delay (sec/veh)	27.2	18.2	4.7	19.5	12.2	8.9	4.2	1.3	2.5	9.2	1.9	1.4	2.6
	Total Delay (hr)	0.2	0.0	0.0	0.1	0.0	0.0	0.0	0.2	0.0	0.1	0.3	0.0	0.9
	Movement LOS	D	C	A	C	B	A	A	A	A	A	A	A	A
	Movement Volume	25	2	11	13	1	19	8	585	17	27	582	41	1331
	Movement 95th Queue (ft)	47	47	20	33	33	33	15	0	0	30	0	0	
	Storage Bay Distance (ft)	0	0	50	0	0	50	50	0	0	250	0	0	
	Approach Delay (sec/veh)	20.2			13.2			1.4			2.2			
	Approach LOS	C			B			A			A			

Appendix

RAVARA TRAILS – TRAFFIC IMPACT STUDY

Measures of Effectiveness - HCS 2024

HCS Roundabouts Report

General Information

Analyst	CJV
Agency or Co.	Alliant Engineering Inc.
Date Performed	10/27/2025
Analysis Year	2025
Time Analyzed	AM Peak
Project Description	Tank Brier Development Study



Site Information

Intersection	CSAH 19 (Keats Ave) & 70th...
E/W Street Name	70th Street
N/S Street Name	CSAH 19 (Keats Avenue)
Analysis Time Period, hrs	1.00
Peak Hour Factor	0.90
Jurisdiction	

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0
Lane Assignment			LTR				LTR				LTR				LTR	
Volume (V), veh/h	0	124	128	92	0	86	140	27	0	78	204	46	0	12	228	121
Percent Heavy Vehicles, %	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Flow Rate (v_{PCE}), pc/h	0	146	151	108	0	101	165	32	0	92	240	54	0	14	269	143
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Pedestrians Crossing, p/h	0				0				0				0			
Proportion of CAVs, %	0															

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway, s		4.9763			4.9763			4.9763			4.9763	
Follow-Up Headway, s		2.6087			2.6087			2.6087			2.6087	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h		405			298			386			426	
Entry Volume, veh/h		382			281			364			402	
Circulating Flow (v_c), pc/h	384			478			311			358		
Exiting Flow (v_{ex}), pc/h	219			400			418			478		
Capacity (c_{pce}), pc/h		933			847			1005			958	
Capacity (c), veh/h		880			800			948			904	
v/c Ratio (x)		0.43			0.35			0.38			0.44	

Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh		9.4			8.7			8.1			9.4	
Lane LOS		A			A			A			A	
95% Queue Length, Q_{95} (veh)		2.3			1.6			1.9			2.4	
95% Queue Length, Q_{95} (ft)		60.3			41.9			49.8			62.9	
Approach Delay, s/veh | LOS	9.4	A		8.7	A		8.1	A		9.4	A	
Intersection Delay, s/veh | LOS	8.9						A					

HCS Roundabouts Report

General Information

Analyst	CJV
Agency or Co.	Alliant Engineering Inc.
Date Performed	10/27/2025
Analysis Year	2025
Time Analyzed	PM Peak
Project Description	Tank Brier Development Study



Site Information

Intersection	CSAH 19 (Keats Ave) & 70th...
E/W Street Name	70th Street
N/S Street Name	CSAH 19 (Keats Avenue)
Analysis Time Period, hrs	1.00
Peak Hour Factor	0.98
Jurisdiction	

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0
Lane Assignment			LTR				LTR				LTR				LTR	
Volume (V), veh/h	0	159	182	116	0	78	163	29	0	81	292	100	0	32	360	227
Percent Heavy Vehicles, %	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Flow Rate (v_{PCE}), pc/h	0	169	193	123	0	83	173	31	0	86	310	106	0	34	382	241
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Pedestrians Crossing, p/h	0				0				0				0			
Proportion of CAVs, %	0															

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway, s		4.9763			4.9763			4.9763			4.9763	
Follow-Up Headway, s		2.6087			2.6087			2.6087			2.6087	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h		485			287			502			657	
Entry Volume, veh/h		466			276			483			632	
Circulating Flow (v_c), pc/h	499			565			396			342		
Exiting Flow (v_{ex}), pc/h	333			500			510			588		
Capacity (c_{pce}), pc/h		830			776			921			974	
Capacity (c), veh/h		798			746			886			936	
v/c Ratio (x)		0.58			0.37			0.54			0.67	

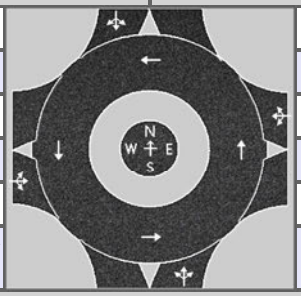
Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh		13.7			9.5			11.6			15.1	
Lane LOS		B			A			B			C	
95% Queue Length, Q_{95} (veh)		4.1			1.7			3.5			6.0	
95% Queue Length, Q_{95} (ft)		105.8			43.9			90.3			154.8	
Approach Delay, s/veh | LOS	13.7	B		9.5	A		11.6	B		15.1	C	
Intersection Delay, s/veh | LOS	13.0						B					

HCS Roundabouts Report

General Information

Analyst	CJV
Agency or Co.	Alliant Engineering Inc.
Date Performed	10/27/2025
Analysis Year	2030
Time Analyzed	AM Peak
Project Description	Tank Brier Development Study



Site Information

Intersection	CSAH 19 (Keats Ave) & 70th...
E/W Street Name	70th Street
N/S Street Name	CSAH 19 (Keats Avenue)
Analysis Time Period, hrs	1.00
Peak Hour Factor	0.90
Jurisdiction	

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0
Lane Assignment			LTR				LTR				LTR				LTR	
Volume (V), veh/h	0	130	135	96	0	90	147	28	0	82	214	49	0	13	240	128
Percent Heavy Vehicles, %	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Flow Rate (v_{PCE}), pc/h	0	153	159	113	0	106	173	33	0	97	252	58	0	15	283	151
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Pedestrians Crossing, p/h	0				0				0				0			
Proportion of CAVs, %	0															

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway, s		4.9763			4.9763			4.9763			4.9763	
Follow-Up Headway, s		2.6087			2.6087			2.6087			2.6087	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h		425			312			407			449	
Entry Volume, veh/h		401			294			384			424	
Circulating Flow (v_c), pc/h	404			502			327			376		
Exiting Flow (v_{ex}), pc/h	232			421			438			502		
Capacity (c_{pce}), pc/h		914			827			989			940	
Capacity (c), veh/h		862			780			933			887	
v/c Ratio (x)		0.47			0.38			0.41			0.48	

Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh		10.1			9.3			8.6			10.1	
Lane LOS		B			A			A			B	
95% Queue Length, Q_{95} (veh)		2.6			1.8			2.1			2.7	
95% Queue Length, Q_{95} (ft)		68.1			47.2			55.0			70.7	
Approach Delay, s/veh | LOS	10.1	B		9.3	A		8.6	A		10.1	B	
Intersection Delay, s/veh | LOS	9.6						A					

HCS Roundabouts Report

General Information

Analyst	CJV
Agency or Co.	Alliant Engineering Inc.
Date Performed	10/27/2025
Analysis Year	2030
Time Analyzed	PM Peak
Project Description	Tank Brier Development Study



Site Information

Intersection	CSAH 19 (Keats Ave) & 70th...
E/W Street Name	70th Street
N/S Street Name	CSAH 19 (Keats Avenue)
Analysis Time Period, hrs	1.00
Peak Hour Factor	0.98
Jurisdiction	

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0
Lane Assignment			LTR				LTR				LTR				LTR	
Volume (V), veh/h	0	167	191	121	0	82	171	31	0	85	307	105	0	33	379	238
Percent Heavy Vehicles, %	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Flow Rate (v_{PCE}), pc/h	0	177	203	128	0	87	181	33	0	90	326	111	0	35	402	253
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Pedestrians Crossing, p/h	0				0				0				0			
Proportion of CAVs, %	0															

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway, s		4.9763			4.9763			4.9763			4.9763	
Follow-Up Headway, s		2.6087			2.6087			2.6087			2.6087	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h		508			301			527			690	
Entry Volume, veh/h		488			289			507			663	
Circulating Flow (v_c), pc/h	524			593			415			358		
Exiting Flow (v_{ex}), pc/h	349			524			536			617		
Capacity (c_{pce}), pc/h		809			754			904			958	
Capacity (c), veh/h		778			725			869			921	
v/c Ratio (x)		0.63			0.40			0.58			0.72	

Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh		15.5			10.3			12.8			17.4	
Lane LOS		C			B			B			C	
95% Queue Length, Q_{95} (veh)		4.9			2.0			4.1			7.3	
95% Queue Length, Q_{95} (ft)		126.4			51.6			105.8			188.3	
Approach Delay, s/veh | LOS	15.5	C		10.3	B		12.8	B		17.4	C	
Intersection Delay, s/veh | LOS	14.7						B					

HCS Roundabouts Report

General Information

Analyst	CJV
Agency or Co.	Alliant Engineering Inc.
Date Performed	10/27/2025
Analysis Year	2030
Time Analyzed	AM Peak
Project Description	Tank Brier Development Study



Site Information

Intersection	CSAH 19 (Keats Ave) & 70th...
E/W Street Name	70th Street
N/S Street Name	CSAH 19 (Keats Avenue)
Analysis Time Period, hrs	1.00
Peak Hour Factor	0.92
Jurisdiction	

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0
Lane Assignment			LTR				LTR				LTR				LTR	
Volume (V), veh/h	0	130	135	114	0	93	147	28	0	132	276	55	0	13	262	128
Percent Heavy Vehicles, %	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Flow Rate (v_{PCE}), pc/h	0	150	156	131	0	107	169	32	0	152	318	63	0	15	302	147
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Pedestrians Crossing, p/h	0				0				0				0			
Proportion of CAVs, %	0															

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway, s		4.9763			4.9763			4.9763			4.9763	
Follow-Up Headway, s		2.6087			2.6087			2.6087			2.6087	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h		437			308			533			464	
Entry Volume, veh/h		412			291			503			438	
Circulating Flow (v_c), pc/h	424			620			321			428		
Exiting Flow (v_{ex}), pc/h	234			468			500			540		
Capacity (c_{pce}), pc/h		895			733			995			892	
Capacity (c), veh/h		845			692			938			841	
v/c Ratio (x)		0.49			0.42			0.54			0.52	

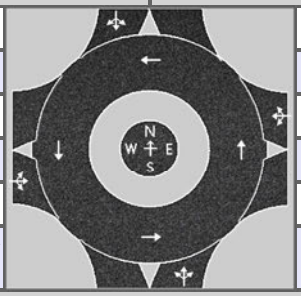
Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh		10.7			11.1			10.9			11.5	
Lane LOS		B			B			B			B	
95% Queue Length, Q_{95} (veh)		2.8			2.1			3.4			3.2	
95% Queue Length, Q_{95} (ft)		73.4			55.0			89.1			83.8	
Approach Delay, s/veh | LOS	10.7	B		11.1	B		10.9	B		11.5	B	
Intersection Delay, s/veh | LOS	11.1						B					

HCS Roundabouts Report

General Information

Analyst	CJV
Agency or Co.	Alliant Engineering Inc.
Date Performed	10/27/2025
Analysis Year	2030
Time Analyzed	PM Peak
Project Description	Tank Brier Development Study



Site Information

Intersection	CSAH 19 (Keats Ave) & 70th...
E/W Street Name	70th Street
N/S Street Name	CSAH 19 (Keats Avenue)
Analysis Time Period, hrs	1.00
Peak Hour Factor	0.98
Jurisdiction	

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0
Lane Assignment			LTR				LTR				LTR				LTR	
Volume (V), veh/h	0	167	191	171	0	87	171	31	0	118	349	109	0	33	440	238
Percent Heavy Vehicles, %	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Flow Rate (v_{PCE}), pc/h	0	177	203	181	0	92	181	33	0	125	370	116	0	35	467	253
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Pedestrians Crossing, p/h	0				0				0				0			
Proportion of CAVs, %	0															

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway, s		4.9763			4.9763			4.9763			4.9763	
Follow-Up Headway, s		2.6087			2.6087			2.6087			2.6087	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h		561			306			611			755	
Entry Volume, veh/h		539			294			588			726	
Circulating Flow (v_c), pc/h	594			672			415			398		
Exiting Flow (v_{ex}), pc/h	354			559			580			740		
Capacity (c_{pce}), pc/h		753			695			904			920	
Capacity (c), veh/h		724			669			869			884	
v/c Ratio (x)		0.75			0.44			0.68			0.82	

Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh		22.8			11.8			16.0			25.9	
Lane LOS		C			B			C			D	
95% Queue Length, Q_{95} (veh)		8.1			2.3			6.0			12.0	
95% Queue Length, Q_{95} (ft)		209.0			59.3			154.8			309.6	
Approach Delay, s/veh | LOS	22.8	C		11.8	B		16.0	C		25.9	D	
Intersection Delay, s/veh | LOS	20.5						C					

HCS Roundabouts Report

General Information

Analyst	CJV
Agency or Co.	Alliant Engineering Inc.
Date Performed	10/27/2025
Analysis Year	2030
Time Analyzed	AM Peak
Project Description	Tank Brier Development Study



Site Information

Intersection	CSAH 19 (Keats Ave) & 80th...
E/W Street Name	80th Street
N/S Street Name	CSAH 19 (Keats Avenue)
Analysis Time Period, hrs	1.00
Peak Hour Factor	0.86
Jurisdiction	

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0
Lane Assignment			LTR				LTR				LTR				LTR	
Volume (V), veh/h	0	143	10	54	0	10	13	8	0	21	253	3	0	7	334	187
Percent Heavy Vehicles, %	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Flow Rate (v_{PCE}), pc/h	0	176	12	67	0	12	16	10	0	26	312	4	0	9	412	230
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Pedestrians Crossing, p/h	0				0				0				0			
Proportion of CAVs, %	0															

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway, s		4.9763			4.9763			4.9763			4.9763	
Follow-Up Headway, s		2.6087			2.6087			2.6087			2.6087	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h		255			38			342			651	
Entry Volume, veh/h		241			36			323			614	
Circulating Flow (v_c), pc/h	433			514			197			54		
Exiting Flow (v_{ex}), pc/h	25			272			498			491		
Capacity (c_{pce}), pc/h		887			817			1129			1306	
Capacity (c), veh/h		837			771			1065			1232	
v/c Ratio (x)		0.29			0.05			0.30			0.50	

Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh		7.5			5.1			6.4			8.3	
Lane LOS		A			A			A			A	
95% Queue Length, Q_{95} (veh)		1.2			0.1			1.3			3.0	
95% Queue Length, Q_{95} (ft)		31.4			2.6			34.1			78.6	
Approach Delay, s/veh | LOS	7.5	A		5.1	A		6.4	A		8.3	A	
Intersection Delay, s/veh | LOS	7.5						A					

HCS Roundabouts Report

General Information

Analyst	CJV
Agency or Co.	Alliant Engineering Inc.
Date Performed	10/27/2025
Analysis Year	2030
Time Analyzed	PM Peak
Project Description	Tank Brier Development Study



Site Information

Intersection	CSAH 19 (Keats Ave) & 80th...
E/W Street Name	80th Street
N/S Street Name	CSAH 19 (Keats Avenue)
Analysis Time Period, hrs	1.00
Peak Hour Factor	0.94
Jurisdiction	

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0
Lane Assignment			LTR				LTR				LTR				LTR	
Volume (V), veh/h	0	135	20	40	0	6	22	7	0	56	381	17	0	7	397	174
Percent Heavy Vehicles, %	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Flow Rate (v_{PCE}), pc/h	0	149	22	44	0	7	24	8	0	62	422	19	0	8	439	193
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Pedestrians Crossing, p/h	0				0				0				0			
Proportion of CAVs, %	0															

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway, s		4.9763			4.9763			4.9763			4.9763	
Follow-Up Headway, s		2.6087			2.6087			2.6087			2.6087	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h		215			39			503			640	
Entry Volume, veh/h		207			38			484			615	
Circulating Flow (v_c), pc/h	454			633			179			93		
Exiting Flow (v_{ex}), pc/h	49			279			579			490		
Capacity (c_{pce}), pc/h		868			724			1150			1255	
Capacity (c), veh/h		835			696			1105			1207	
v/c Ratio (x)		0.25			0.05			0.44			0.51	

Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh		7.0			5.7			8.0			8.6	
Lane LOS		A			A			A			A	
95% Queue Length, Q_{95} (veh)		1.0			0.2			2.3			3.1	
95% Queue Length, Q_{95} (ft)		25.8			5.2			59.3			80.0	
Approach Delay, s/veh | LOS	7.0	A		5.7	A		8.0	A		8.6	A	
Intersection Delay, s/veh | LOS	8.1						A					

HCS Roundabouts Report

General Information

Analyst	CJV
Agency or Co.	Alliant Engineering Inc.
Date Performed	10/27/2025
Analysis Year	2030
Time Analyzed	AM Peak
Project Description	Tank Brier Development Study



Site Information

Intersection	CSAH 19 (Keats Ave) & 80th...
E/W Street Name	80th Street
N/S Street Name	CSAH 19 (Keats Avenue)
Analysis Time Period, hrs	1.00
Peak Hour Factor	0.87
Jurisdiction	

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0
Lane Assignment			LTR				LTR				LTR				LTR	
Volume (V), veh/h	0	157	10	54	0	10	13	10	0	21	275	3	0	11	396	225
Percent Heavy Vehicles, %	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Flow Rate (v_{PCE}), pc/h	0	191	12	66	0	12	16	12	0	26	335	4	0	13	482	274
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Pedestrians Crossing, p/h	0				0				0				0			
Proportion of CAVs, %	0															

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway, s		4.9763			4.9763			4.9763			4.9763	
Follow-Up Headway, s		2.6087			2.6087			2.6087			2.6087	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h		269			40			365			769	
Entry Volume, veh/h		254			38			344			725	
Circulating Flow (v_c), pc/h	507			552			216			54		
Exiting Flow (v_{ex}), pc/h	29			316			538			560		
Capacity (c_{pce}), pc/h		823			786			1107			1306	
Capacity (c), veh/h		776			741			1044			1232	
v/c Ratio (x)		0.33			0.05			0.33			0.59	

Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh		8.5			5.4			6.8			10.0	
Lane LOS		A			A			A			B	
95% Queue Length, Q_{95} (veh)		1.4			0.2			1.5			4.2	
95% Queue Length, Q_{95} (ft)		36.7			5.2			39.3			110.0	
Approach Delay, s/veh | LOS	8.5	A		5.4	A		6.8	A		10.0	B	
Intersection Delay, s/veh | LOS	8.8						A					

HCS Roundabouts Report

General Information

Analyst	CJV
Agency or Co.	Alliant Engineering Inc.
Date Performed	10/27/2025
Analysis Year	2030
Time Analyzed	PM Peak
Project Description	Tank Brier Development Study



Site Information

Intersection	CSAH 19 (Keats Ave) & 80th...
E/W Street Name	80th Street
N/S Street Name	CSAH 19 (Keats Avenue)
Analysis Time Period, hrs	1.00
Peak Hour Factor	0.94
Jurisdiction	

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0
Lane Assignment			LTR				LTR				LTR				LTR	
Volume (V), veh/h	0	172	20	40	0	6	22	10	0	56	442	17	0	10	439	200
Percent Heavy Vehicles, %	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Flow Rate (v_{PCE}), pc/h	0	190	22	44	0	7	24	11	0	62	489	19	0	11	486	221
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Pedestrians Crossing, p/h	0				0				0				0			
Proportion of CAVs, %	0															

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway, s		4.9763			4.9763			4.9763			4.9763	
Follow-Up Headway, s		2.6087			2.6087			2.6087			2.6087	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h		256			42			570			718	
Entry Volume, veh/h		246			40			548			690	
Circulating Flow (v_c), pc/h	504			741			223			93		
Exiting Flow (v_{ex}), pc/h	52			307			690			537		
Capacity (c_{pce}), pc/h		825			648			1099			1255	
Capacity (c), veh/h		794			623			1057			1207	
v/c Ratio (x)		0.31			0.06			0.52			0.57	

Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh		8.1			6.5			9.7			9.8	
Lane LOS		A			A			A			A	
95% Queue Length, Q_{95} (veh)		1.3			0.2			3.2			3.9	
95% Queue Length, Q_{95} (ft)		33.5			5.2			82.6			100.6	
Approach Delay, s/veh | LOS	8.1	A		6.5	A		9.7	A		9.8	A	
Intersection Delay, s/veh | LOS	9.4						A					

Appendix

RAVARA TRAILS – TRAFFIC IMPACT STUDY

Turning Movement Counts

ALLIANT ENGINEERING, INC.

733 S Marquette Ave #700, Minneapolis, MN 55402

Intersection: Keats Avenue & 70th Street
Date: 5/29/2025
Duration: 0600-1900

Site Code 100
Ref Pt: N/A
Page No: 1 of 4

All Vehicles (Cars & Trucks) Printed

	Keats Avenue Southbound						70th Street Westbound						Keats Avenue Northbound						70th Street Eastbound						Int. Veh. Total	Int. Ped/ Bike Total
Start Time	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes		
6:00	--	--	11	7	**18**	--	--	7	21	3	**31**	--	--	6	17	18	**41**	--	--	8	13	4	**25**	1	115	1
6:15	--	1	25	11	**37**	--	--	15	26	3	**44**	--	--	11	22	13	**46**	--	--	10	7	14	**31**	1	158	1
6:30	--	3	37	16	**56**	--	--	20	24	3	**47**	--	1	12	45	16	**74**	--	--	13	25	16	**54**	--	231	--
6:45	--	1	33	24	**58**	--	--	16	17	2	**35**	--	--	11	46	10	**67**	--	--	18	15	18	**51**	--	211	--
Hour Total	--	5	106	58	**169**	--	--	58	88	11	**157**	--	1	40	130	57	**228**	--	--	49	60	52	**161**	2	715	2
7:00	--	3	40	26	**69**	2	--	12	31	4	**47**	--	--	14	37	19	**70**	--	--	21	20	14	**55**	--	241	2
7:15	--	1	73	32	**106**	--	--	27	46	5	**78**	--	--	16	55	9	**80**	--	--	34	32	28	**94**	--	358	--
7:30	--	1	52	33	**86**	--	--	13	25	10	**48**	--	--	26	60	12	**98**	--	--	26	28	29	**83**	--	315	--
7:45	--	10	45	25	**80**	--	--	22	35	9	**66**	--	--	16	45	13	**74**	--	--	38	33	21	**92**	--	312	--
Hour Total	--	15	210	116	**341**	2	--	74	137	28	**239**	--	--	72	197	53	**322**	--	--	119	113	92	**324**	--	1226	2
8:00	--	--	58	31	**89**	1	--	24	34	3	**61**	--	--	20	44	12	**76**	--	--	26	35	14	**75**	--	301	1
8:15	--	3	43	28	**74**	1	--	15	21	6	**42**	--	--	8	48	6	**62**	--	--	40	23	15	**78**	--	256	1
8:30	--	4	43	24	**71**	1	--	8	20	8	**36**	--	--	15	54	14	**83**	--	--	36	31	27	**94**	--	284	1
8:45	1	4	43	21	**69**	--	--	9	19	6	**34**	--	--	11	50	8	**69**	--	--	31	20	15	**66**	--	238	--
Hour Total	1	11	187	104	**303**	3	--	56	94	23	**173**	--	--	54	196	40	**290**	--	--	133	109	71	**313**	--	1079	3
9:00	--	5	48	27	**80**	1	--	6	24	9	**39**	--	--	8	37	6	**51**	--	1	19	21	9	**50**	--	220	1
9:15	--	3	40	29	**72**	1	--	8	17	6	**31**	--	--	12	40	11	**63**	--	1	27	20	21	**69**	--	235	1
9:30	--	5	31	27	**63**	--	--	6	19	4	**29**	--	--	12	38	10	**60**	--	--	25	23	9	**57**	--	209	--
9:45	--	4	38	22	**64**	--	--	7	14	7	**28**	--	--	10	41	7	**58**	--	--	17	25	14	**56**	--	206	--
Hour Total	--	17	157	105	**279**	2	--	27	74	26	**127**	--	--	42	156	34	**232**	--	2	88	89	53	**232**	--	870	2
10:00	--	4	36	18	**58**	--	1	8	25	7	**41**	--	--	11	38	5	**54**	--	--	30	18	19	**67**	--	220	--
10:15	--	3	45	18	**66**	1	--	11	21	5	**37**	--	1	15	54	10	**80**	--	--	14	14	14	**42**	--	225	1
10:30	--	7	37	16	**60**	--	--	7	20	8	**35**	--	--	11	45	7	**63**	--	--	15	22	16	**53**	--	211	--
10:45	--	5	55	28	**88**	--	--	10	19	6	**35**	--	--	11	41	10	**62**	--	--	13	22	9	**44**	--	229	--
Hour Total	--	19	173	80	**272**	1	1	36	85	26	**148**	--	1	48	178	32	**259**	--	--	72	76	58	**206**	--	885	1
11:00	--	9	57	40	**106**	--	--	4	23	2	**29**	1	--	8	33	12	**53**	1	1	26	19	12	**58**	--	246	2
11:15	--	7	48	29	**84**	--	--	8	22	6	**36**	--	--	9	46	9	**64**	--	--	24	25	17	**66**	3	250	3
11:30	1	1	47	23	**72**	--	1	12	19	8	**40**	--	--	17	55	11	**83**	--	--	19	27	13	**59**	--	254	--
11:45	--	7	39	22	**68**	--	1	6	24	2	**33**	--	--	13	43	10	**66**	--	--	23	38	17	**78**	--	245	--
Hour Total	1	24	191	114	**330**	--	2	30	88	18	**138**	1	--	47	177	42	**266**	1	1	92	109	59	**261**	3	995	5
12:00	--	9	44	33	**86**	1	--	8	28	4	**40**	--	--	13	36	9	**58**	--	2	18	18	16	**54**	1	238	2
12:15	--	9	50	27	**86**	--	--	14	18	9	**41**	--	--	18	42	13	**73**	--	--	21	24	15	**60**	2	260	2
12:30	--	2	55	23	**80**	--	--	5	28	3	**36**	--	--	11	36	11	**58**	--	1	28	30	13	**72**	2	246	2
12:45	--	6	60	46	**112**	--	--	13	19	3	**35**	--	--	10	56	8	**74**	--	--	22	19	16	**57**	--	278	--
Hour Total	--	26	209	129	**364**	1	--	40	93	19	**152**	--	--	52	170	41	**263**	--	3	89	91	60	**243**	5	1022	6
13:00	1	6	40	27	**74**	--	--	9	19	8	**36**	--	--	6	46	9	**61**	--	--	22	26	18	**66**	3	237	3
13:15	--	4	55	31	**90**	1	--	17	25	10	**52**	--	--	9	35	15	**59**	--	--	24	27	5	**56**	2	257	3
13:30	--	4	39	29	**72**	--	--	16	25	2	**43**	--	--	15	44	9	**68**	--	--	24	21	11	**56**	--	239	--
13:45	--	8	54	31	**93**	1	--	9	34	5	**48**	--	--	9	50	14	**73**	--	1	22	32	17	**72**	--	286	1
Hour Total	1	22	188	118	**329**	2	--	51	103	25	**179**	--	--	39	175	47	**261**	--	1	92	106	51	**250**	5	1019	7
14:00	--	--	45	30	**75**	--	--	6	27	3	**36**	1	--	15	56	19	**90**	1	--	20	33	27	**80**	1	281	3
14:15	--	6	65	39	**110**	--	--	12	36	6	**54**	--	--	12	46	24	**82**	--	--	23	32	20	**75**	3	321	3
14:30	--	9	54	30	**93**	--	--	19	28	5	**52**	--	--	21	56	19	**96**	--	2	27	30	12	**71**	2	312	2
14:45	--	10	60	40	**110**	--	1	13	39	5	**58**	--	--	11	56	9	**76**	--	1	39	28	18	**86**	2	330	2
Hour Total	--	25	224	139	**388**	--	1	50	130	19	**200**	1	--	59	214	71	**344**	1	3	109	123	77	**312**	8	1244	10
15:00	--	5	73	39	**117**	--	--	10	28	7	**45**	--	--	11	55	27	**93**	--	--	35	23	15	**73**	2	328	2
15:15	--	10	58	40	**108**	--	--	25	34	8	**67**	--	--	20	80	24	**124**	--	--	37	49	32	**118**	3	417	3
15:30	--	8	64	39	**111**	--	--	13	43	12	**68**	--	--	17	89	27	**133**	--	--	54	43	34	**131**	3	443	3
15:45	--	5	77	46	**128**	--	--	27	32	4	**63**	--	--	15	59	22	**96**	--	--	41	42	17	**100**	3	387	3
Hour Total	--	28	272	164	**464**	--	--	75	137	31	**243**	--	--	63	283	100	**446**	--	--	167	157	98	**422**	11	1575	11
16:00	--	7	103	46	**156**	--	--	15	26	6	**47**	--	--	18	78	33	**129**	--	--	47	40	28	**115**	9	447	9
16:15	--	10	73	62	**145**	--	--	20	43	10	**73**	--	--	21	65	29	**115**	--	1	32	54	33	**120**	7	453	7
16:30	--	9	95	54	**158**	1	--	14	44	10	**68**	--	--	23	74	21	**118**	--	--	47	46	27	**120**	3	464	4
16:45	--	6	89	65	**160**	--	--	29	50	3	**82**	--	--	19	75	17	**111**	--	1	31	42	28	**102**	7	455	7
Hour Total	--	32	360	227	**619**	1	--	78	163	29	**270**	--	--	81	292	100	**473**	--	2	157	182	116	**457**	26	1819	27
17:00	1	4	72	36	**113**	--	--	27	42	12	**81**	--	--	20	81	25	**126**	--	--	31	27	29	**87**	16	407	16
17:15	--	8	84	57	**149**	--	--	17	45	3	**65**	--	--	21	54	14	**89**	--	2	35	39	28	**104**	--	407	--
17:30	--	7	66	55	**128**	--	--	11	42	3	**56**	--	--	15	59	20	**94**	--	--	18	50	30	**98**	--	376	--
17:45	--	9	75	43	**127**	--	--	17	46	2	**65**	--	--	13	69	14	**96**	--	--	31	39	32	**102**	1	390	1
Hour Total	1	28	297	191	**517**	--	--	72	175	20	**267**	--	--	69	263	73	**405**	--	2	115	155	119	**391**	17	1580	17
18:00	--	3	64	35	**102**	--	--	13	27	7	**47**	--	--	12	37	19	**68**	--	--	33	27	27	**87**	--	304	--
18:15	--	7	67	32	**106**	2	--	11	17	1	**29**	--	--	22	49	20	**91**	--	--	31	21	19	**71**	2	297	4
18:30	--	5	52	29	**86**	--	--	11	26	2	**39**	--	--	7	44	5	**56**	1	--	23	12	18	**53**	--	234	1
18:45	--	2	41	32	**75**	--	--	7	23	1	**31**	--	--	8	45	4	**57**	--	--	21	15	13	**49**	2	212	2
Hour Total	--	17	224	128	**369**	2	--	42	93	11	**146**	--	--	49	175	48	**272**	1	--	108	75	77	**260**	4	1047	7
Grand Total	4	269	2798	1673	**4744**	14	4	689	1460	286	**2439**	2	2	715	2606	738	**4061**	3	14	1390	1445	983	**3832**	81	15076	100
% of App.	0.1%	5.7%	59.0%	35.3%			0.2%	28.2%	59.9%	11.7%			0.0%	17.6%	64.2%	18.2%			0.4%	36.3%	37.7%	25.7%				
% of Total	0.0%	1.8%	18.6%	11.1%	31.5%	14.0%	0.0%	4.6%	9.7%	1.9%	16.2%	2.0%	0.0%	4.7%	17.3%	4.9%	26.9%	3.0%	0.1%	9.2%	9.6%	6.5%	25.4%	81.0%		
Cars Total	4	201	2625	1643	**4473**	7	4	657	1364	222	**2247**	--	2	672	2475	712	**3861**	1	13	1349	1349	943	**3654**	42	14235	50
Cars % of Movement	100%	74.7%	93.8%	98.2%	94.3%	14.0%	100%	95.4%	93.4%	77.6%	92.1%	0.0%	100%	94.0%	95.0%	96.5%	95.1%	2.0%	92.9%	97.1%	93.4%	95.9%	95.4%	84.0%	94.4%	
Trucks Total	--	68	173	30	**271**	7	--	32	96	64	**192**	2	--	43	131	26	**200**	2	1	41	96	40	**178**	39	841	50
Trucks % of Movement	0.0%	25.3%	6.2%	1.8%	5.7%	14.0%	0.0%	4.6%	6.6%	22.4%	7.9%	4.0%	0.0%	6.0%	5.0%	3.5%	4.9%	4.0%	7.1%	2.9%	6.6%	4.1%	4.6%	78.0%	5.6%	

ALLIANT ENGINEERING, INC.

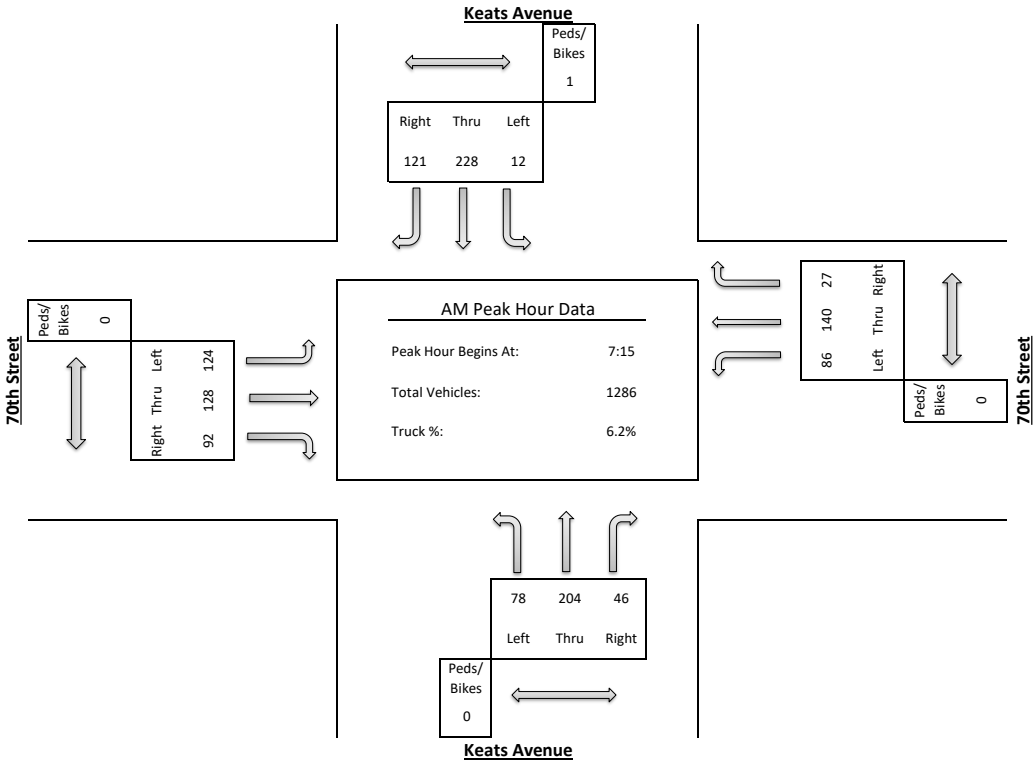
733 S Marquette Ave #700, Minneapolis, MN 55402

Intersection: Keats Avenue & 70th Street
Date: 5/29/2025
Duration: 0600-1900

Site Code 100
Ref Pt: N/A
Page No: 2 of 4

All Vehicles (Cars & Trucks) Printed

	Keats Avenue Southbound						70th Street Westbound						Keats Avenue Northbound						70th Street Eastbound						Int. Veh. Total	Int. Ped/ Bike Total
Start Time	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes		
7:15	--	1	73	32	**106**	--	--	27	46	5	**78**	--	--	16	55	9	**80**	--	--	34	32	28	**94**	--	358	--
7:30	--	1	52	33	**86**	--	--	13	25	10	**48**	--	--	26	60	12	**98**	--	--	26	28	29	**83**	--	315	--
7:45	--	10	45	25	**80**	--	--	22	35	9	**66**	--	--	16	45	13	**74**	--	--	38	33	21	**92**	--	312	--
8:00	--	--	58	31	**89**	1	--	24	34	3	**61**	--	--	20	44	12	**76**	--	--	26	35	14	**75**	--	301	1
Hour Total	--	12	228	121	**361**	1	--	86	140	27	**253**	--	--	78	204	46	**328**	--	--	124	128	92	**344**	--	1286	1
% of App.	0.0%	3.3%	63.2%	33.5%			0.0%	34.0%	55.3%	10.7%			0.0%	23.8%	62.2%	14.0%			0.0%	36.0%	37.2%	26.7%				
% of Total	0.0%	0.9%	17.7%	9.4%	28.1%	100.0%	0.0%	6.7%	10.9%	2.1%	19.7%	0.0%	0.0%	6.1%	15.9%	3.6%	25.5%	0.0%	0.0%	9.6%	10.0%	7.2%	26.7%	0.0%		
Cars Total	--	4	216	119	**339**	--	--	85	129	21	**235**	--	--	67	194	46	**307**	--	--	121	118	86	**325**	--	1206	--
Cars % of Movement	0.0%	33.3%	94.7%	98.3%	93.9%	--	0.0%	98.8%	92.1%	77.8%	92.9%	--	0.0%	85.9%	95.1%	100%	93.6%	--	0.0%	97.6%	92.2%	93.5%	94.5%	--	93.8%	
Trucks Total	--	8	12	2	**22**	1	--	1	11	6	**18**	--	--	11	10	--	**21**	--	--	3	10	6	**19**	--	80	1
Trucks % of Movement	0.0%	66.7%	5.3%	1.7%	6.1%	100.0%	0.0%	1.2%	7.9%	22.2%	7.1%	0.0%	0.0%	14.1%	4.9%	0.0%	6.4%	0.0%	0.0%	2.4%	7.8%	6.5%	5.5%	0.0%	6.2%	



ALLIANT ENGINEERING, INC.

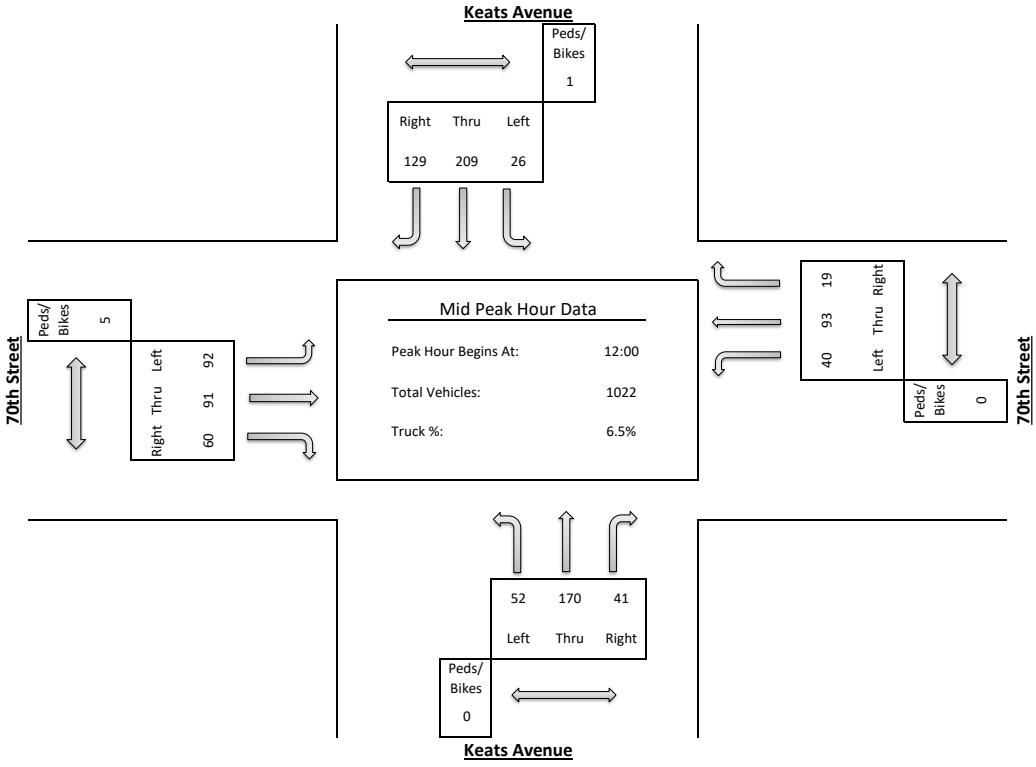
733 S Marquette Ave #700, Minneapolis, MN 55402

Intersection: Keats Avenue & 70th Street
Date: 5/29/2025
Duration: 0600-1900

Site Code 100
Ref Pt: N/A
Page No: 3 of 4

All Vehicles (Cars & Trucks) Printed

	Keats Avenue Southbound						70th Street Westbound						Keats Avenue Northbound						70th Street Eastbound						Int. Veh. Total	Int. Ped/ Bike Total
Start Time	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes		
12:00	--	9	44	33	**86**	1	--	8	28	4	**40**	--	--	13	36	9	**58**	--	2	18	18	16	**54**	1	238	2
12:15	--	9	50	27	**86**	--	--	14	18	9	**41**	--	--	18	42	13	**73**	--	--	21	24	15	**60**	2	260	2
12:30	--	2	55	23	**80**	--	--	5	28	3	**36**	--	--	11	36	11	**58**	--	1	28	30	13	**72**	2	246	2
12:45	--	6	60	46	**112**	--	--	13	19	3	**35**	--	--	10	56	8	**74**	--	--	22	19	16	**57**	--	278	--
Hour Total	--	26	209	129	**364**	1	--	40	93	19	**152**	--	--	52	170	41	**263**	--	3	89	91	60	**243**	5	1022	6
% of App.	0.0%	7.1%	57.4%	35.4%			0.0%	26.3%	61.2%	12.5%			0.0%	19.8%	64.6%	15.6%			1.2%	36.6%	37.4%	24.7%				
% of Total	0.0%	2.5%	20.5%	12.6%	35.6%	16.7%	0.0%	3.9%	9.1%	1.9%	14.9%	0.0%	0.0%	5.1%	16.6%	4.0%	25.7%	0.0%	0.3%	8.7%	8.9%	5.9%	23.8%	83.3%		
Cars Total	--	19	199	127	**345**	1	--	35	81	12	**128**	--	--	51	166	37	**254**	--	3	86	81	59	**229**	3	956	4
Cars % of Movement	0.0%	73.1%	95.2%	98.4%	94.8%	25.0%	0.0%	87.5%	87.1%	63.2%	84.2%	0.0%	0.0%	98.1%	97.6%	90.2%	96.6%	0.0%	100%	96.6%	89.0%	98.3%	94.2%	75.0%	93.5%	
Trucks Total	--	7	10	2	**19**	--	--	5	12	7	**24**	--	--	1	4	4	**9**	--	--	3	10	1	**14**	2	66	2
Trucks % of Movement	0.0%	26.9%	4.8%	1.6%	5.2%	0.0%	0.0%	12.5%	12.9%	36.8%	15.8%	0.0%	0.0%	1.9%	2.4%	9.8%	3.4%	0.0%	0.0%	3.4%	11.0%	1.7%	5.8%	100.0%	6.5%	



ALLIANT ENGINEERING, INC.

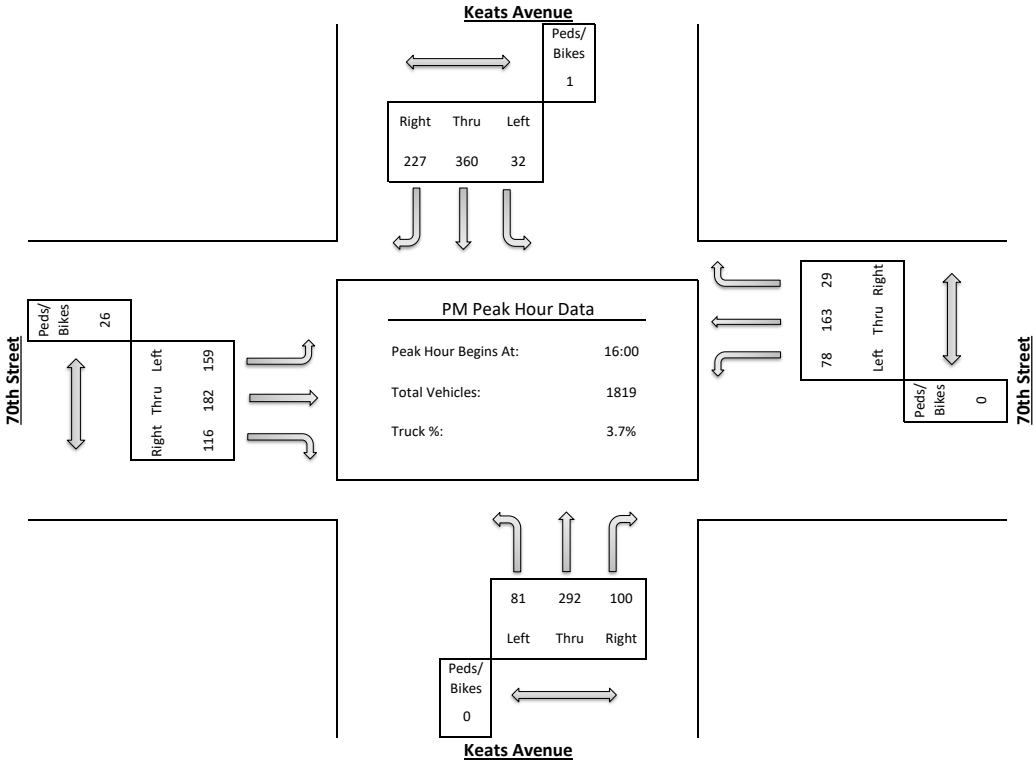
733 S Marquette Ave #700, Minneapolis, MN 55402

Intersection: Keats Avenue & 70th Street
Date: 5/29/2025
Duration: 0600-1900

Site Code 100
Ref Pt: N/A
Page No: 4 of 4

All Vehicles (Cars & Trucks) Printed

	Keats Avenue Southbound						70th Street Westbound						Keats Avenue Northbound						70th Street Eastbound						Int. Veh. Total	Int. Ped/ Bike Total
Start Time	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes		
16:00	--	7	103	46	**156**	--	--	15	26	6	**47**	--	--	18	78	33	**129**	--	--	47	40	28	**115**	9	447	9
16:15	--	10	73	62	**145**	--	--	20	43	10	**73**	--	--	21	65	29	**115**	--	1	32	54	33	**120**	7	453	7
16:30	--	9	95	54	**158**	1	--	14	44	10	**68**	--	--	23	74	21	**118**	--	--	47	46	27	**120**	3	464	4
16:45	--	6	89	65	**160**	--	--	29	50	3	**82**	--	--	19	75	17	**111**	--	1	31	42	28	**102**	7	455	7
Hour Total	--	32	360	227	**619**	1	--	78	163	29	**270**	--	--	81	292	100	**473**	--	2	157	182	116	**457**	26	1819	27
% of App.	0.0%	5.2%	58.2%	36.7%			0.0%	28.9%	60.4%	10.7%			0.0%	17.1%	61.7%	21.1%			0.4%	34.4%	39.8%	25.4%				
% of Total	0.0%	1.8%	19.8%	12.5%	34.0%	3.7%	0.0%	4.3%	9.0%	1.6%	14.8%	0.0%	0.0%	4.5%	16.1%	5.5%	26.0%	0.0%	0.1%	8.6%	10.0%	6.4%	25.1%	96.3%		
Cars Total	--	29	324	222	**575**	1	--	72	159	26	**257**	--	--	80	289	97	**466**	--	2	157	179	116	**454**	7	1752	8
Cars % of Movement	0.0%	90.6%	90.0%	97.8%	92.9%	12.5%	0.0%	92.3%	97.5%	89.7%	95.2%	0.0%	0.0%	98.8%	99.0%	97.0%	98.5%	0.0%	100%	100%	98.4%	100%	99.3%	87.5%	96.3%	
Trucks Total	--	3	36	5	**44**	--	--	6	4	3	**13**	--	--	1	3	3	**7**	--	--	--	3	--	**3**	19	67	19
Trucks % of Movement	0.0%	9.4%	10.0%	2.2%	7.1%	0.0%	0.0%	7.7%	2.5%	10.3%	4.8%	0.0%	0.0%	1.2%	1.0%	3.0%	1.5%	0.0%	0.0%	0.0%	1.6%	0.0%	0.7%	100.0%	3.7%	



ALLIANT ENGINEERING, INC.

733 S Marquette Ave #700, Minneapolis, MN 55402

Intersection: Keats Avenue & - Indian Boulevard
Date: 5/29/2025
Duration: 0600-1900

Site Code 200
Ref Pt: N/A

All Vehicles (Cars & Trucks) Printed

	Keats Avenue Southbound						0 Westbound						Keats Avenue Northbound						Indian Boulevard Eastbound						Int. Veh. Total	Int. Ped/ Bike Total
Start Time	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes		
6:00	--	--	29	1	**30**	--	--	--	--	--	**0**	--	--	--	35	--	**35**	--	--	2	--	2	**4**	1	69	1
6:15	--	--	55	--	**55**	--	--	--	--	--	**0**	--	--	2	46	--	**48**	--	--	3	--	3	**6**	1	109	1
6:30	--	--	69	5	**74**	--	--	--	--	--	**0**	--	--	1	74	--	**75**	--	--	4	--	1	**5**	1	154	1
6:45	--	--	66	5	**71**	--	--	--	--	--	**0**	--	--	3	60	--	**63**	--	--	3	--	5	**8**	--	142	--
Hour Total	--	--	219	11	**230**	--	--	--	--	--	--	--	--	6	215	--	**221**	--	--	12	--	11	**23**	3	474	3
7:00	--	--	57	9	**66**	--	--	--	--	--	**0**	--	--	13	78	--	**91**	--	--	--	--	4	**4**	--	161	--
7:15	--	--	95	35	**130**	--	--	--	--	--	**0**	--	--	53	66	--	**119**	--	--	4	--	45	**49**	--	298	--
7:30	--	--	85	17	**102**	--	--	--	--	--	**0**	--	--	38	83	--	**121**	--	--	15	--	75	**90**	--	313	--
7:45	--	--	93	8	**101**	--	--	--	--	--	**0**	--	--	14	67	--	**81**	--	--	10	--	26	**36**	2	218	2
Hour Total	--	--	330	69	**399**	--	--	--	--	--	--	--	--	118	294	--	**412**	--	--	29	--	150	**179**	2	990	2
8:00	--	--	98	4	**102**	--	--	--	--	--	**0**	--	--	13	77	--	**90**	--	--	3	--	8	**11**	--	203	--
8:15	--	--	69	10	**79**	--	--	--	--	--	**0**	--	--	13	55	--	**68**	--	--	9	--	15	**24**	--	171	--
8:30	--	--	70	8	**78**	--	--	--	--	--	**0**	--	--	14	75	--	**89**	--	--	12	--	17	**29**	--	196	--
8:45	--	--	73	2	**75**	--	--	--	--	--	**0**	--	--	7	73	--	**80**	--	--	3	--	8	**11**	1	166	1
Hour Total	--	--	310	24	**334**	--	--	--	--	--	--	--	--	47	280	--	**327**	--	--	27	--	48	**75**	1	736	1
9:00	--	--	63	1	**64**	--	--	--	--	--	**0**	--	--	3	47	--	**50**	--	--	2	--	3	**5**	2	119	2
9:15	--	--	72	1	**73**	--	--	--	--	--	**0**	--	--	8	60	--	**68**	--	--	1	--	3	**4**	--	145	--
9:30	--	--	40	3	**43**	--	--	--	--	--	**0**	--	--	3	59	--	**62**	--	--	--	--	2	**2**	--	107	--
9:45	--	--	67	4	**71**	--	--	--	--	--	**0**	--	--	4	61	--	**65**	--	--	1	--	1	**2**	--	138	--
Hour Total	--	--	242	9	**251**	--	--	--	--	--	--	--	--	18	227	--	**245**	--	--	4	--	9	**13**	2	509	2
10:00	--	--	61	3	**64**	--	--	--	--	--	**0**	--	--	4	58	--	**62**	--	--	--	--	8	**8**	--	134	--
10:15	--	--	69	1	**70**	--	--	--	--	--	**0**	--	--	2	77	--	**79**	--	--	1	--	7	**8**	--	157	--
10:30	--	--	65	2	**67**	--	--	--	--	--	**0**	--	--	3	64	--	**67**	--	--	3	--	4	**7**	--	141	--
10:45	--	--	78	3	**81**	--	--	--	--	--	**0**	--	--	6	65	--	**71**	--	--	--	--	4	**4**	5	156	5
Hour Total	--	--	273	9	**282**	--	--	--	--	--	--	--	--	15	264	--	**279**	--	--	4	--	23	**27**	5	588	5
11:00	--	--	80	2	**82**	--	--	--	--	--	**0**	--	--	6	62	--	**68**	--	--	2	--	10	**12**	--	162	--
11:15	--	--	78	3	**81**	--	--	--	--	--	**0**	--	--	2	74	--	**76**	--	--	--	--	7	**7**	--	164	--
11:30	--	--	83	1	**84**	--	--	--	--	--	**0**	--	--	5	81	--	**86**	--	--	3	--	3	**6**	--	176	--
11:45	--	--	59	2	**61**	--	--	--	--	--	**0**	--	--	5	68	--	**73**	--	--	1	--	2	**3**	--	137	--
Hour Total	--	--	300	8	**308**	--	--	--	--	--	--	--	--	18	285	--	**303**	--	--	6	--	22	**28**	--	639	--
12:00	--	--	67	--	**67**	--	--	--	--	--	**0**	--	--	5	58	--	**63**	--	--	3	--	6	**9**	1	139	1
12:15	--	--	86	1	**87**	--	--	--	--	--	**0**	--	--	9	77	--	**86**	--	--	1	--	7	**8**	2	181	2
12:30	--	--	74	1	**75**	--	--	--	--	--	**0**	--	--	2	62	--	**64**	--	--	2	--	5	**7**	1	146	1
12:45	--	--	89	--	**89**	--	--	--	--	--	**0**	--	--	5	73	--	**78**	--	--	3	--	3	**6**	2	173	2
Hour Total	--	--	316	2	**318**	--	--	--	--	--	--	--	--	21	270	--	**291**	--	--	9	--	21	**30**	6	639	6
13:00	--	--	64	5	**69**	--	--	--	--	--	**0**	--	--	7	64	--	**71**	--	--	1	--	2	**3**	1	143	1
13:15	--	--	75	5	**80**	--	--	--	--	--	**0**	--	--	6	67	--	**73**	--	--	2	--	12	**14**	2	167	2
13:30	--	--	68	5	**73**	--	--	--	--	--	**0**	--	--	6	62	--	**68**	--	--	4	--	4	**8**	--	149	--
13:45	--	--	83	2	**85**	--	--	--	--	--	**0**	--	--	11	74	--	**85**	--	--	4	--	10	**14**	2	184	2
Hour Total	--	--	290	17	**307**	--	--	--	--	--	--	--	--	30	267	--	**297**	--	--	11	--	28	**39**	5	643	5
14:00	--	--	69	11	**80**	--	--	--	--	--	**0**	--	--	25	94	--	**119**	--	--	3	--	7	**10**	--	209	--
14:15	--	--	81	12	**93**	--	--	--	--	--	**0**	--	--	27	80	--	**107**	--	--	4	--	12	**16**	1	216	1
14:30	--	--	80	4	**84**	--	--	--	--	--	**0**	--	--	18	75	--	**93**	--	--	25	--	58	**83**	4	260	4
14:45	--	--	83	8	**91**	--	--	--	--	--	**0**	--	--	10	74	--	**84**	--	--	5	--	10	**15**	--	190	--
Hour Total	--	--	313	35	**348**	--	--	--	--	--	--	--	--	80	323	--	**403**	--	--	37	--	87	**124**	5	875	5
15:00	--	--	89	8	**97**	--	--	--	--	--	**0**	--	--	14	100	--	**114**	--	--	8	--	15	**23**	3	234	3
15:15	--	--	102	10	**112**	--	--	--	--	--	**0**	--	--	6	124	--	**130**	--	--	9	--	23	**32**	2	274	2
15:30	--	--	106	1	**107**	--	--	--	--	--	**0**	--	--	3	127	--	**130**	--	--	15	--	19	**34**	1	271	1
15:45	--	--	123	1	**124**	--	--	--	--	--	**0**	--	--	10	102	--	**112**	--	--	6	--	5	**11**	--	247	--
Hour Total	--	--	420	20	**440**	--	--	--	--	--	--	--	--	33	453	--	**486**	--	--	38	--	62	**100**	6	1026	6
16:00	--	--	140	3	**143**	--	--	--	--	--	**0**	--	--	6	129	--	**135**	--	--	4	--	5	**9**	3	287	3
16:15	--	--	124	3	**127**	--	--	--	--	--	**0**	--	--	8	110	--	**118**	--	--	3	--	8	**11**	2	256	2
16:30	--	--	135	4	**139**	--	--	--	--	--	**0**	--	--	10	133	--	**143**	--	--	1	--	13	**14**	3	296	3
16:45	--	--	146	4	**150**	--	--	--	--	--	**0**	--	--	12	113	--	**125**	--	--	3	--	6	**9**	1	284	1
Hour Total	--	--	545	14	**559**	--	--	--	--	--	--	--	--	36	485	--	**521**	--	--	11	--	32	**43**	9	1123	9
17:00	--	--	125	3	**128**	--	--	--	--	--	**0**	--	--	7	125	--	**132**	--	--	6	--	10	**16**	4	276	4
17:15	--	--	130	7	**137**	--	--	--	--	--	**0**	--	--	15	106	--	**121**	--	--	5	--	7	**12**	1	270	1
17:30	--	--	106	12	**118**	--	--	--	--	--	**0**	--	--	18	98	--	**116**	--	--	4	--	15	**19**	--	253	--
17:45	--	--	127	15	**142**	--	--	--	--	--	**0**	--	--	42	115	--	**157**	--	--	5	--	13	**18**	1	317	1
Hour Total	--	--	488	37	**525**	--	--	--	--	--	--	--	--	82	444	--	**526**	--	--	20	--	45	**65**	6	1116	6
18:00	--	--	85	33	**118**	--	--	--	--	--	**0**	--	--	24	70	--	**94**	--	--	6	--	7	**13**	--	225	--
18:15	--	--	84	16	**100**	--	--	--	--	--	**0**	--	--	20	76	--	**96**	--	--	1	--	4	**5**	2	201	2
18:30	--	--	90	6	**96**	--	--	--	--	--	**0**	--	--	7	59	--	**66**	--	--	4	--	12	**16**	--	178	--
18:45	--	--	61	1	**62**	--	--	--	--	--	**0**	--	--	3	63	--	**66**	--	--	2	--	9	**11**	--	139	--
Hour Total	--	--	320	56	**376**	--	--	--	--	--	--	--	--	54	268	--	**322**	--	--	13	--	32	**45**	2	743	2
Grand Total	--	--	4366	311	**4677**	--	--	--	--	--	**0**	--	--	558	4075	--	**4633**	--	--	221	--	570	**791**	52	10101	52
% of App. Total	0.0%	0.0%	93.4%	6.6%			0.0%	0.0%	0.0%	0.0%			0.0%	12.0%	88.0%	0.0%			0.0%	27.9%	0.0%	72.1%				
% of Total	0.0%	0.0%	43.2%	3.1%	46.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	5.5%	40.3%	0.0%	45.9%	0.0%	0.0%	2.2%	0.0%	5.6%	7.8%	100.0%		
Cars Total	--	--	4140	299	**4439**	--	--	--	--	--	**0**	--	--	527	3891	--	**4418**	--	--	207	--	536	**743**	32	9600	32
Cars % of Movement	0.0%	0.0%	94.8%	96.1%	94.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	94.4%	95.5%	0.0%	95.4%	0.0%	0.0%	93.7%	0.0%	94.0%	93.9%	100.0%	95.0%	
Trucks Total	--	--	226	12	**238**	--	--	--	--	--	**0**	--	--	31	184	--	**215**	--	--	14	--	34	**48**	20	501	20
Trucks % of Movement	0.0%	0.0%	5.2%	3.9%	5.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	5.6%	4.5%	0.0%	4.6%	0.0%	0.0%	6.3%	0.0%	6.0%	6.1%	100.0%	5.0%	

ALLIANT ENGINEERING, INC.

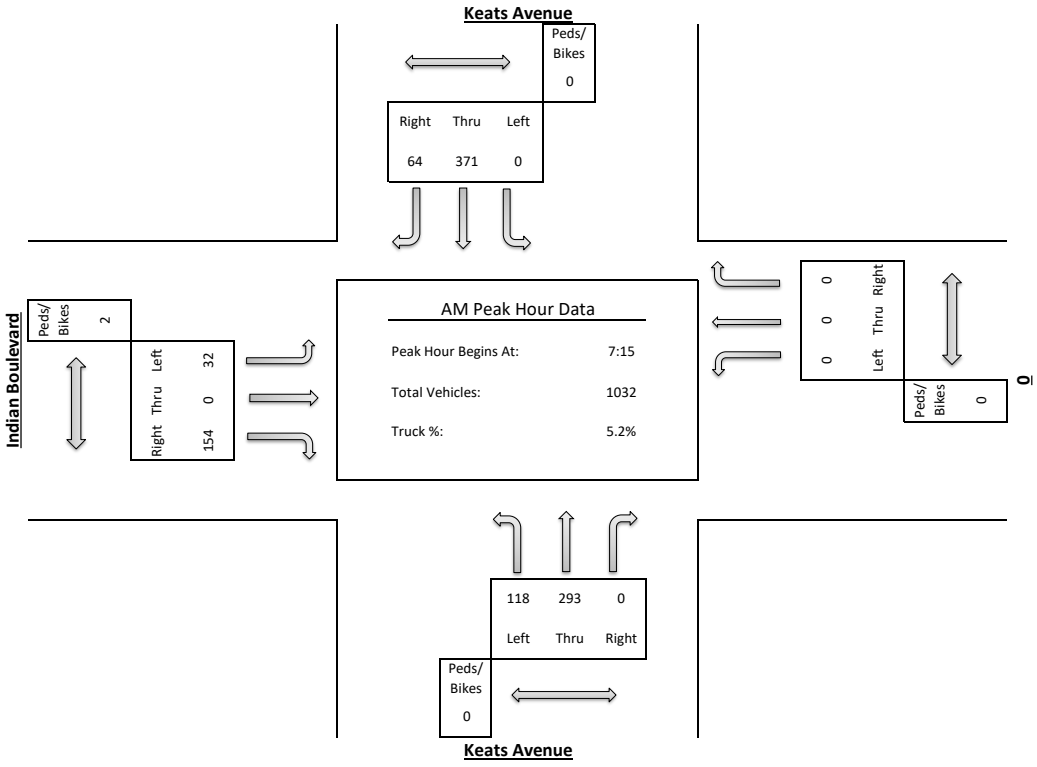
733 S Marquette Ave #700, Minneapolis, MN 55402

Intersection: Keats Avenue & - Indian Boulevard
Date: 5/29/2025
Duration: 0600-1900

Site Code 200
Ref Pt: N/A
Page No: 2 of 4

All Vehicles (Cars & Trucks) Printed

	Keats Avenue Southbound						0 Westbound						Keats Avenue Northbound						Indian Boulevard Eastbound						Int. Veh. Total	Int. Ped/ Bike Total
Start Time	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes		
7:15	--	--	95	35	**130**	--	--	--	--	--	**0**	--	--	53	66	--	**119**	--	--	4	--	45	**49**	--	298	--
7:30	--	--	85	17	**102**	--	--	--	--	--	**0**	--	--	38	83	--	**121**	--	--	15	--	75	**90**	--	313	--
7:45	--	--	93	8	**101**	--	--	--	--	--	**0**	--	--	14	67	--	**81**	--	--	10	--	26	**36**	2	218	2
8:00	--	--	98	4	**102**	--	--	--	--	--	**0**	--	--	13	77	--	**90**	--	--	3	--	8	**11**	--	203	--
Hour Total	--	--	371	64	**435**	--	--	--	--	--	**--**	--	--	118	293	--	**411**	--	--	32	--	154	**186**	2	1032	2
% of App.	0.0%	0.0%	85.3%	14.7%			0.0%	0.0%	0.0%	0.0%			0.0%	28.7%	71.3%	0.0%			0.0%	17.2%	0.0%	82.8%				
% of Total	0.0%	0.0%	35.9%	6.2%	42.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	11.4%	28.4%	0.0%	39.8%	0.0%	0.0%	3.1%	0.0%	14.9%	18.0%	100.0%		
Cars Total	--	--	358	59	**417**	--	--	--	--	--	**0**	--	--	110	276	--	**386**	--	--	31	--	144	**175**	--	978	--
Cars % of Movement	0.0%	0.0%	96.5%	92.2%	95.9%	--	0.0%	0.0%	0.0%	0.0%	0.0%	--	0.0%	93.2%	94.2%	0.0%	93.9%	--	0.0%	96.9%	0.0%	93.5%	94.1%	--	94.8%	
Trucks Total	--	--	13	5	**18**	--	--	--	--	--	**0**	--	--	8	17	--	**25**	--	--	1	--	10	**11**	2	54	2
Trucks % of Movement	0.0%	0.0%	3.5%	7.8%	4.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	6.8%	5.8%	0.0%	6.1%	0.0%	0.0%	3.1%	0.0%	6.5%	5.9%	100.0%	5.2%	



ALLIANT ENGINEERING, INC.

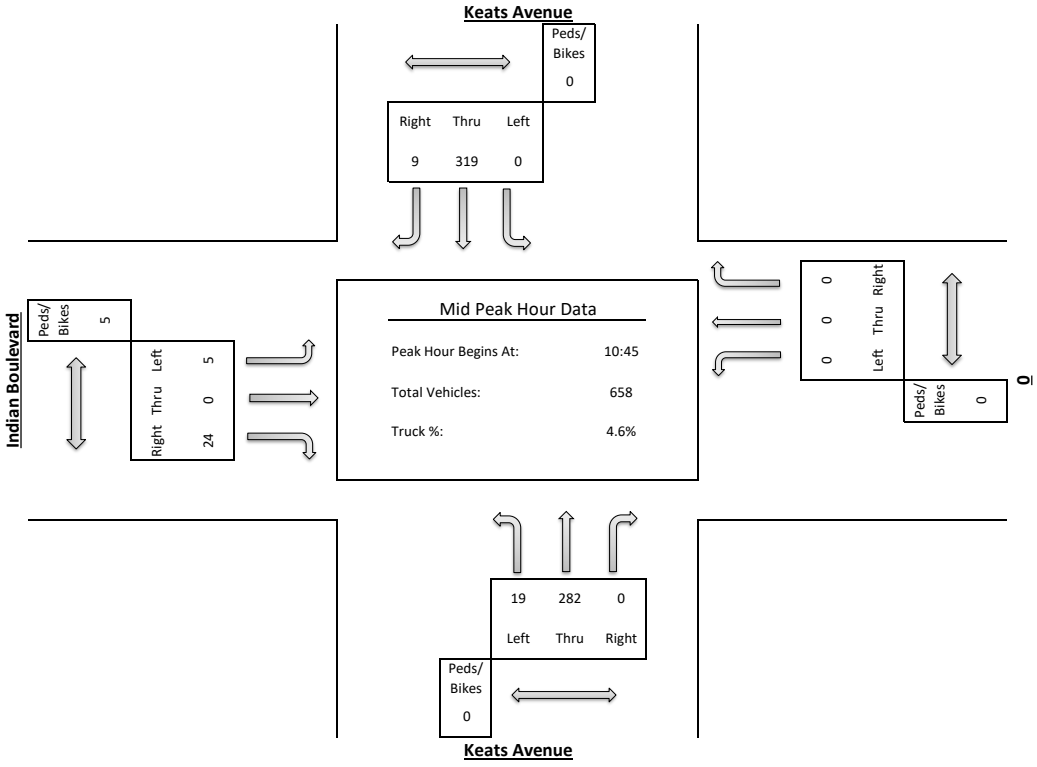
733 S Marquette Ave #700, Minneapolis, MN 55402

Intersection: Keats Avenue & - Indian Boulevard
Date: 5/29/2025
Duration: 0600-1900

Site Code 200
Ref Pt: N/A
Page No: 3 of 4

All Vehicles (Cars & Trucks) Printed

	Keats Avenue Southbound						0 Westbound						Keats Avenue Northbound						Indian Boulevard Eastbound						Int. Veh. Total	Int. Ped/ Bike Total
Start Time	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes		
10:45	--	--	78	3	**81**	--	--	--	--	--	**0**	--	--	6	65	--	**71**	--	--	--	--	4	**4**	5	156	5
11:00	--	--	80	2	**82**	--	--	--	--	--	**0**	--	--	6	62	--	**68**	--	--	2	--	10	**12**	--	162	--
11:15	--	--	78	3	**81**	--	--	--	--	--	**0**	--	--	2	74	--	**76**	--	--	--	--	7	**7**	--	164	--
11:30	--	--	83	1	**84**	--	--	--	--	--	**0**	--	--	5	81	--	**86**	--	--	3	--	3	**6**	--	176	--
Hour Total	--	--	319	9	**328**	--	--	--	--	--	**--**	--	--	19	282	--	**301**	--	--	5	--	24	**29**	5	658	5
% of App.	0.0%	0.0%	97.3%	2.7%			0.0%	0.0%	0.0%	0.0%			0.0%	6.3%	93.7%	0.0%			0.0%	17.2%	0.0%	82.8%				
% of Total	0.0%	0.0%	48.5%	1.4%	49.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.9%	42.9%	0.0%	45.7%	0.0%	0.0%	0.8%	0.0%	3.6%	4.4%	100.0%		
Cars Total	--	--	302	8	**310**	--	--	--	--	--	**0**	--	--	19	271	--	**290**	--	--	5	--	23	**28**	3	628	3
Cars % of Movement	0.0%	0.0%	94.7%	88.9%	94.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%	96.1%	0.0%	96.3%	0.0%	0.0%	100%	0.0%	95.8%	96.6%	100.0%	95.4%	
Trucks Total	--	--	17	1	**18**	--	--	--	--	--	**0**	--	--	--	11	--	**11**	--	--	--	--	1	**1**	2	30	2
Trucks % of Movement	0.0%	0.0%	5.3%	11.1%	5.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3.9%	0.0%	3.7%	0.0%	0.0%	0.0%	0.0%	4.2%	3.4%	100.0%	4.6%	



ALLIANT ENGINEERING, INC.

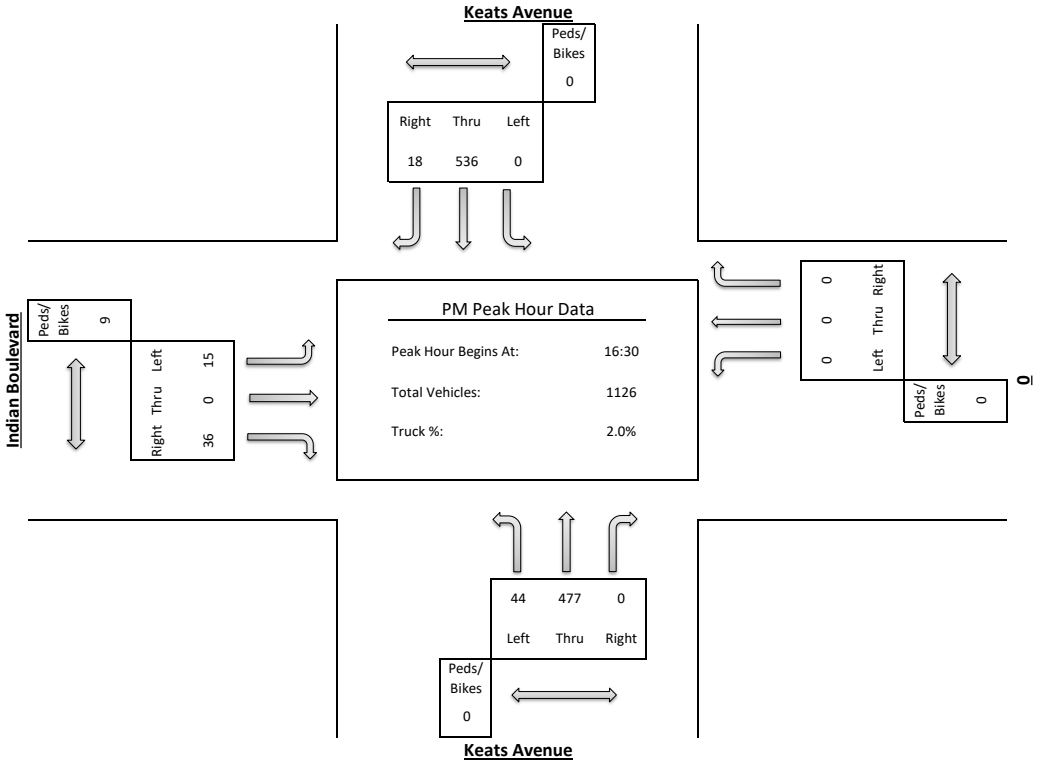
733 S Marquette Ave #700, Minneapolis, MN 55402

Intersection: Keats Avenue & - Indian Boulevard
Date: 5/29/2025
Duration: 0600-1900

Site Code 200
Ref Pt: N/A
Page No: 4 of 4

All Vehicles (Cars & Trucks) Printed

	Keats Avenue Southbound						0 Westbound						Keats Avenue Northbound						Indian Boulevard Eastbound						Int. Veh. Total	Int. Ped/ Bike Total
Start Time	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes		
16:30	--	--	135	4	**139**	--	--	--	--	--	**0**	--	--	10	133	--	**143**	--	--	1	--	13	**14**	3	296	3
16:45	--	--	146	4	**150**	--	--	--	--	--	**0**	--	--	12	113	--	**125**	--	--	3	--	6	**9**	1	284	1
17:00	--	--	125	3	**128**	--	--	--	--	--	**0**	--	--	7	125	--	**132**	--	--	6	--	10	**16**	4	276	4
17:15	--	--	130	7	**137**	--	--	--	--	--	**0**	--	--	15	106	--	**121**	--	--	5	--	7	**12**	1	270	1
Hour Total	--	--	536	18	**554**	--	--	--	--	--	**--**	--	--	44	477	--	**521**	--	--	15	--	36	**51**	9	1126	9
% of App.	0.0%	0.0%	96.8%	3.2%			0.0%	0.0%	0.0%	0.0%			0.0%	8.4%	91.6%	0.0%			0.0%	29.4%	0.0%	70.6%				
% of Total	0.0%	0.0%	47.6%	1.6%	49.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3.9%	42.4%	0.0%	46.3%	0.0%	0.0%	1.3%	0.0%	3.2%	4.5%	100.0%		
Cars Total	--	--	516	18	**534**	--	--	--	--	--	**0**	--	--	44	476	--	**520**	--	--	15	--	35	**50**	4	1104	4
Cars % of Movement	0.0%	0.0%	96.3%	100%	96.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%	99.8%	0.0%	99.8%	0.0%	0.0%	100%	0.0%	97.2%	98.0%	100.0%	98.0%	
Trucks Total	--	--	20	--	**20**	--	--	--	--	--	**0**	--	--	--	1	--	**1**	--	--	--	--	1	**1**	5	22	5
Trucks % of Movement	0.0%	0.0%	3.7%	0.0%	3.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	2.8%	2.0%	100.0%	2.0%	



ALLIANT ENGINEERING, INC.

733 S Marquette Ave #700, Minneapolis, MN 55402

Intersection: Keats Avenue & - 77th Street
Date: 5/29/2025
Duration: 0600-1900

Site Code 300
Ref Pt: N/A
Page No: 1 of 4

All Vehicles (Cars & Trucks) Printed

	Keats Avenue Southbound						0 Westbound						Keats Avenue Northbound						77th Street Eastbound						Int. Veh. Total	Int. Ped/ Bike Total
Start Time	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes		
6:00	--	--	30	1	**31**	--	--	--	--	--	**0**	--	--	--	34	--	**34**	--	--	2	--	--	**2**	--	67	--
6:15	--	--	58	--	**58**	--	--	--	--	--	**0**	--	--	1	46	--	**47**	--	--	3	--	1	**4**	2	109	2
6:30	--	--	69	--	**69**	--	--	--	--	--	**0**	--	--	--	73	--	**73**	--	--	3	--	1	**4**	1	146	1
6:45	--	--	69	2	**71**	--	--	--	--	--	**0**	--	--	1	52	--	**53**	--	--	10	--	3	**13**	--	137	--
Hour Total	--	--	226	3	**229**	--	--	--	--	--	**--**	--	--	2	205	--	**207**	--	--	18	--	5	**23**	3	459	3
7:00	--	--	60	--	**60**	--	--	--	--	--	**0**	--	--	--	86	--	**86**	--	--	3	--	--	**3**	--	149	--
7:15	1	--	136	3	**140**	--	--	--	--	--	**0**	--	--	2	107	--	**109**	--	--	12	--	2	**14**	--	263	--
7:30	--	--	153	7	**160**	--	--	--	--	--	**0**	--	--	1	114	--	**115**	--	--	6	--	1	**7**	--	282	--
7:45	--	--	118	3	**121**	--	--	--	--	--	**0**	--	--	1	74	--	**75**	--	--	8	--	1	**9**	1	205	1
Hour Total	1	--	467	13	**481**	--	--	--	--	--	**--**	--	--	4	381	--	**385**	--	--	29	--	4	**33**	1	899	1
8:00	--	--	100	5	**105**	--	--	--	--	--	**0**	--	--	1	84	--	**85**	--	--	7	--	--	**7**	1	197	1
8:15	--	--	77	6	**83**	--	--	--	--	--	**0**	--	--	--	64	--	**64**	--	--	5	--	1	**6**	--	153	--
8:30	--	--	77	8	**85**	--	--	--	--	--	**0**	--	--	--	78	--	**78**	--	--	9	--	4	**13**	1	176	1
8:45	--	--	81	3	**84**	--	--	--	--	--	**0**	--	--	2	74	--	**76**	--	--	3	--	2	**5**	--	165	--
Hour Total	--	--	335	22	**357**	--	--	--	--	--	**--**	--	--	3	300	--	**303**	--	--	24	--	7	**31**	2	691	2
9:00	--	--	62	4	**66**	--	--	--	--	--	**0**	--	--	--	48	--	**48**	--	--	4	--	2	**6**	--	120	--
9:15	--	--	74	2	**76**	--	--	--	--	--	**0**	--	--	--	65	--	**65**	--	--	3	--	1	**4**	1	145	1
9:30	--	--	39	3	**42**	--	--	--	--	--	**0**	--	--	--	58	--	**58**	--	--	2	--	--	**2**	--	102	--
9:45	--	--	67	1	**68**	--	--	--	--	--	**0**	--	--	--	64	--	**64**	--	--	2	--	1	**3**	--	135	--
Hour Total	--	--	242	10	**252**	--	--	--	--	--	**--**	--	--	--	235	--	**235**	--	--	11	--	4	**15**	1	502	1
10:00	--	--	66	3	**69**	--	--	--	--	--	**0**	--	--	1	64	--	**65**	--	--	1	--	--	**1**	1	135	1
10:15	--	--	74	2	**76**	--	--	--	--	--	**0**	--	--	1	76	--	**77**	--	--	2	--	--	**2**	1	155	1
10:30	--	--	64	3	**67**	--	--	--	--	--	**0**	--	--	--	64	--	**64**	--	--	2	--	1	**3**	5	134	5
10:45	--	--	80	2	**82**	--	--	--	--	--	**0**	--	--	--	69	--	**69**	--	--	2	--	1	**3**	--	154	--
Hour Total	--	--	284	10	**294**	--	--	--	--	--	**--**	--	--	2	273	--	**275**	--	--	7	--	2	**9**	7	578	7
11:00	--	--	87	5	**92**	--	--	--	--	--	**0**	--	--	1	67	--	**68**	--	--	--	--	--	**0**	--	160	--
11:15	--	--	84	2	**86**	--	--	--	--	--	**0**	--	--	2	76	--	**78**	--	--	2	--	2	**4**	--	168	--
11:30	--	--	79	3	**82**	--	--	--	--	--	**0**	--	--	1	79	--	**80**	--	--	9	--	1	**10**	--	172	--
11:45	--	--	63	4	**67**	--	--	--	--	--	**0**	--	--	3	71	--	**74**	--	--	--	--	3	**3**	1	144	1
Hour Total	--	--	313	14	**327**	--	--	--	--	--	**--**	--	--	7	293	--	**300**	--	--	11	--	6	**17**	1	644	1
12:00	--	--	70	2	**72**	--	--	--	--	--	**0**	--	--	2	60	--	**62**	--	--	3	--	2	**5**	2	139	2
12:15	--	--	89	6	**95**	--	--	--	--	--	**0**	--	--	3	82	--	**85**	--	--	3	--	--	**3**	--	183	--
12:30	--	--	73	2	**75**	--	--	--	--	--	**0**	--	--	--	65	--	**65**	--	--	--	--	1	**1**	1	141	1
12:45	--	--	93	2	**95**	--	--	--	--	--	**0**	--	--	3	74	--	**77**	--	--	5	--	1	**6**	2	178	2
Hour Total	--	--	325	12	**337**	--	--	--	--	--	**--**	--	--	8	281	--	**289**	--	--	11	--	4	**15**	5	641	5
13:00	--	--	67	1	**68**	--	--	--	--	--	**0**	--	--	--	68	--	**68**	--	--	1	--	2	**3**	1	139	1
13:15	--	--	84	2	**86**	--	--	--	--	--	**0**	--	--	1	69	--	**70**	--	--	4	--	--	**4**	1	160	1
13:30	--	--	68	4	**72**	--	--	--	--	--	**0**	--	--	1	62	--	**63**	--	--	6	--	1	**7**	2	142	2
13:45	--	--	91	2	**93**	--	--	--	--	--	**0**	--	--	1	83	--	**84**	--	--	3	--	--	**3**	2	180	2
Hour Total	--	--	310	9	**319**	--	--	--	--	--	**--**	--	--	3	282	--	**285**	--	--	14	--	3	**17**	6	621	6
14:00	--	--	72	4	**76**	--	--	--	--	--	**0**	--	--	2	120	--	**122**	--	--	2	--	1	**3**	--	201	--
14:15	--	--	92	2	**94**	--	--	--	--	--	**0**	--	--	2	100	--	**102**	--	--	4	--	1	**5**	1	201	1
14:30	--	--	136	4	**140**	--	--	--	--	--	**0**	--	--	1	88	--	**89**	--	--	5	--	--	**5**	--	234	--
14:45	--	--	88	2	**90**	--	--	--	--	--	**0**	--	--	--	81	--	**81**	--	--	4	--	3	**7**	--	178	--
Hour Total	--	--	388	12	**400**	--	--	--	--	--	**--**	--	--	5	389	--	**394**	--	--	15	--	5	**20**	1	814	1
15:00	--	--	101	4	**105**	--	--	--	--	--	**0**	--	--	1	103	--	**104**	--	--	7	--	3	**10**	3	219	3
15:15	--	--	115	11	**126**	--	--	--	--	--	**0**	--	--	1	127	--	**128**	--	--	2	--	2	**4**	1	258	1
15:30	--	--	111	16	**127**	--	--	--	--	--	**0**	--	--	3	126	--	**129**	--	--	3	--	3	**6**	3	262	3
15:45	--	--	116	8	**124**	--	--	--	--	--	**0**	--	--	3	106	--	**109**	--	--	--	--	1	**1**	--	234	--
Hour Total	--	--	443	39	**482**	--	--	--	--	--	**--**	--	--	8	462	--	**470**	--	--	12	--	9	**21**	7	973	7
16:00	--	--	140	8	**148**	--	--	--	--	--	**0**	--	--	4	132	--	**136**	--	--	4	--	3	**7**	4	291	4
16:15	--	--	121	12	**133**	--	--	--	--	--	**0**	--	--	--	111	--	**111**	--	--	6	--	3	**9**	3	253	3
16:30	--	--	139	6	**145**	--	--	--	--	--	**0**	--	--	2	136	--	**138**	--	--	7	--	--	**7**	3	290	3
16:45	--	--	142	12	**154**	--	--	--	--	--	**0**	--	--	2	113	--	**115**	--	--	8	--	3	**11**	2	280	2
Hour Total	--	--	542	38	**580**	--	--	--	--	--	**--**	--	--	8	492	--	**500**	--	--	25	--	9	**34**	12	1114	12
17:00	--	--	129	8	**137**	--	--	--	--	--	**0**	--	--	4	121	--	**125**	--	--	6	--	5	**11**	4	273	4
17:15	--	--	130	7	**137**	--	--	--	--	--	**0**	--	--	4	115	--	**119**	--	--	6	--	1	**7**	1	263	1
17:30	--	--	119	--	**119**	--	--	--	--	--	**0**	--	--	3	111	--	**114**	--	--	6	--	5	**11**	--	244	--
17:45	1	--	127	9	**137**	--	--	--	--	--	**0**	--	--	1	149	--	**150**	--	--	9	--	1	**10**	--	297	--
Hour Total	1	--	505	24	**530**	--	--	--	--	--	**--**	--	--	12	496	--	**508**	--	--	27	--	12	**39**	5	1077	5
18:00	--	--	88	10	**98**	--	--	--	--	--	**0**	--	--	2	91	--	**93**	--	--	3	--	1	**4**	1	195	1
18:15	--	--	78	9	**87**	--	--	--	--	--	**0**	--	--	2	89	--	**91**	--	--	3	--	--	**3**	--	181	--
18:30	--	--	95	8	**103**	--	--	--	--	--	**0**	--	--	1	67	--	**68**	--	--	1	--	2	**3**	2	174	2
18:45	--	--	65	2	**67**	--	--	--	--	--	**0**	--	--	--	64	--	**64**	--	--	2	--	--	**2**	--	133	--
Hour Total	--	--	326	29	**355**	--	--	--	--	--	**--**	--	--	5	311	--	**316**	--	--	9	--	3	**12**	3	683	3
Grand Total	2	--	4706	235	**4943**	--	--	--	--	--	**0**	--	--	67	4400	--	**4467**	--	--	213	--	73	**286**	54	9696	54
% of App.	0.0%	0.0%	95.2%	4.8%			0.0%	0.0%	0.0%	0.0%			0.0%	1.5%	98.5%	0.0%			0.0%	74.5%	0.0%	25.5%				
% of Total	0.0%	0.0%	48.5%	2.4%	51.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.7%	45.4%	0.0%	46.1%	0.0%	0.0%	2.2%	0.0%	0.8%	2.9%	100.0%		
Cars Total	2	--	4449	228	**4679**	--	--	--	--	--	**0**	--	--	66	4186	--	**4252**	--	--	210	--	70	**280**	27	9211	27
Cars % of Movement	100%	0.0%	94.5%	97.0%	94.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	98.5%	95.1%	0.0%	95.2%	0.0%	0.0%	98.6%	0.0%	95.9%	97.9%	100.0%	95.0%	
Trucks Total	--	--	257	7	**264**	--	--	--	--	--	**0**	--	--	1	214	--	**215**	--	--	3	--	3	**6**	27	485	27
Trucks % of Movement	0.0%	0.0%	5.5%	3.0%	5.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.5%	4.9%	0.0%	4.8%	0.0%	0.0%	1.4%	0.0%	4.1%	2.1%	100.0%	5.0%	

ALLIANT ENGINEERING, INC.

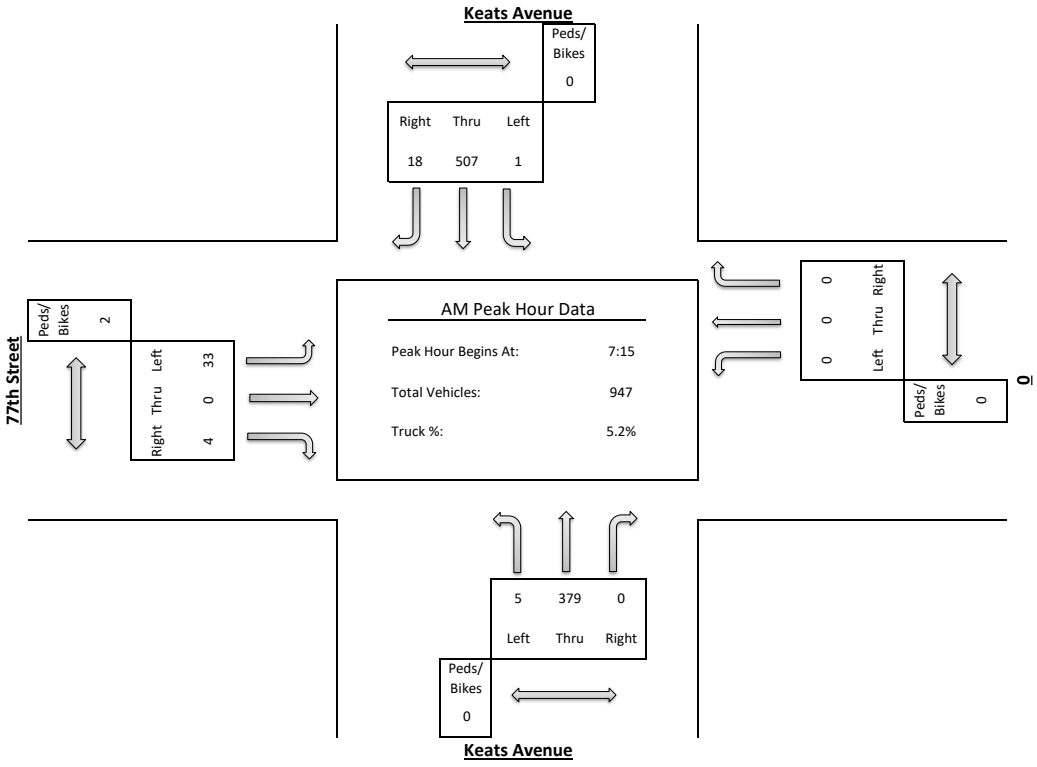
733 S Marquette Ave #700, Minneapolis, MN 55402

Intersection: Keats Avenue & - 77th Street
Date: 5/29/2025
Duration: 0600-1900

Site Code 300
Ref Pt: N/A

All Vehicles (Cars & Trucks) Printed

	Keats Avenue Southbound						0 Westbound						Keats Avenue Northbound						77th Street Eastbound						Int. Veh. Total	Int. Ped/ Bike Total
Start Time	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes		
7:15	1	--	136	3	**140**	--	--	--	--	--	**0**	--	--	2	107	--	**109**	--	--	12	--	2	**14**	--	263	--
7:30	--	--	153	7	**160**	--	--	--	--	--	**0**	--	--	1	114	--	**115**	--	--	6	--	1	**7**	--	282	--
7:45	--	--	118	3	**121**	--	--	--	--	--	**0**	--	--	1	74	--	**75**	--	--	8	--	1	**9**	1	205	1
8:00	--	--	100	5	**105**	--	--	--	--	--	**0**	--	--	1	84	--	**85**	--	--	7	--	--	**7**	1	197	1
Hour Total	1	--	507	18	**526**	--	--	--	--	--	**--**	--	--	5	379	--	**384**	--	--	33	--	4	**37**	2	947	2
% of App.	0.2%	0.0%	96.4%	3.4%			0.0%	0.0%	0.0%	0.0%			0.0%	1.3%	98.7%	0.0%			0.0%	89.2%	0.0%	10.8%				
% of Total	0.1%	0.0%	53.5%	1.9%	55.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.5%	40.0%	0.0%	40.5%	0.0%	0.0%	3.5%	0.0%	0.4%	3.9%	100.0%		
Cars Total	1	--	485	17	**503**	--	--	--	--	--	**0**	--	--	4	354	--	**358**	--	--	33	--	4	**37**	2	898	2
Cars % of Movement	100%	0.0%	95.7%	94.4%	95.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	80.0%	93.4%	0.0%	93.2%	0.0%	0.0%	100%	0.0%	100%	100%	100.0%	94.8%	
Trucks Total	--	--	22	1	**23**	--	--	--	--	--	**0**	--	--	1	25	--	**26**	--	--	--	--	--	**0**	--	49	--
Trucks % of Movement	0.0%	0.0%	4.3%	5.6%	4.4%	--	0.0%	0.0%	0.0%	0.0%	0.0%	--	0.0%	20.0%	6.6%	0.0%	6.8%	--	0.0%	0.0%	0.0%	0.0%	0.0%	--	5.2%	



ALLIANT ENGINEERING, INC.

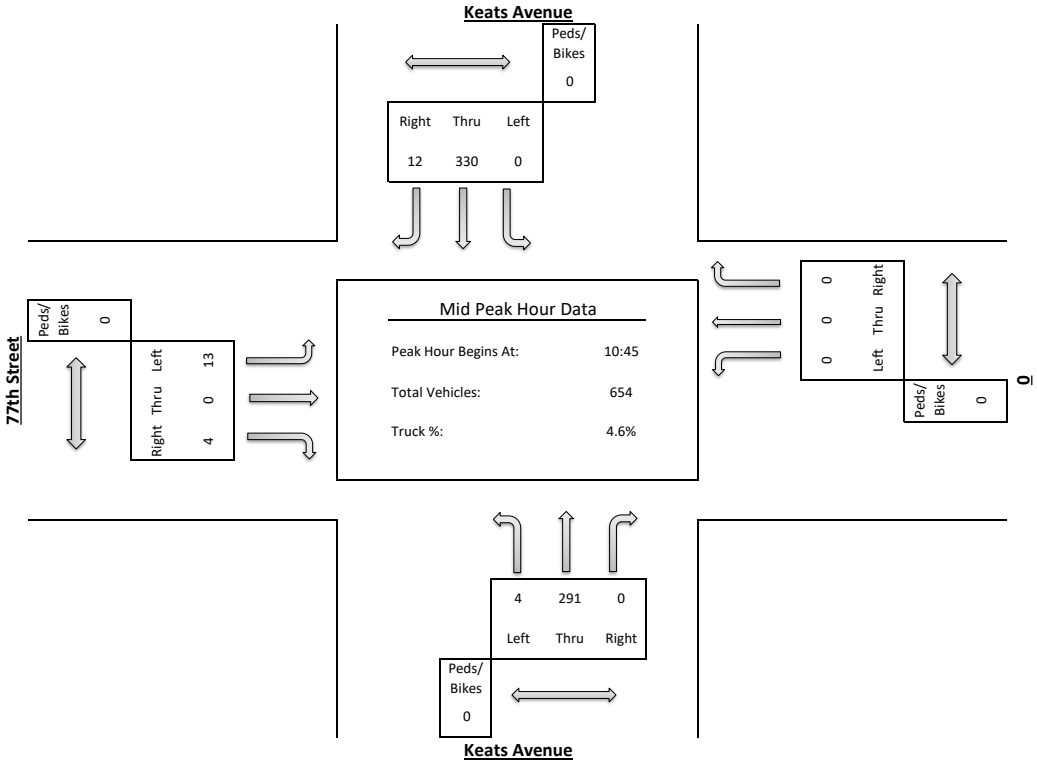
733 S Marquette Ave #700, Minneapolis, MN 55402

Intersection: Keats Avenue & - 77th Street
Date: 5/29/2025
Duration: 0600-1900

Site Code 300
Ref Pt: N/A
Page No: 3 of 4

All Vehicles (Cars & Trucks) Printed

	Keats Avenue Southbound						0 Westbound						Keats Avenue Northbound						77th Street Eastbound						Int. Veh. Total	Int. Ped/ Bike Total
Start Time	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes		
10:45	--	--	80	2	**82**	--	--	--	--	--	**0**	--	--	--	69	--	**69**	--	--	2	--	1	**3**	--	154	--
11:00	--	--	87	5	**92**	--	--	--	--	--	**0**	--	--	1	67	--	**68**	--	--	--	--	--	**0**	--	160	--
11:15	--	--	84	2	**86**	--	--	--	--	--	**0**	--	--	2	76	--	**78**	--	--	2	--	2	**4**	--	168	--
11:30	--	--	79	3	**82**	--	--	--	--	--	**0**	--	--	1	79	--	**80**	--	--	9	--	1	**10**	--	172	--
Hour Total	--	--	330	12	**342**	--	--	--	--	--	**--**	--	--	4	291	--	**295**	--	--	13	--	4	**17**	--	654	--
% of App.	0.0%	0.0%	96.5%	3.5%			0.0%	0.0%	0.0%	0.0%			0.0%	1.4%	98.6%	0.0%			0.0%	76.5%	0.0%	23.5%				
% of Total	0.0%	0.0%	50.5%	1.8%	52.3%	--	0.0%	0.0%	0.0%	0.0%	0.0%	--	0.0%	0.6%	44.5%	0.0%	45.1%	--	0.0%	2.0%	0.0%	0.6%	2.6%	--		
Cars Total	--	--	312	12	**324**	--	--	--	--	--	**0**	--	--	4	279	--	**283**	--	--	13	--	4	**17**	--	624	--
Cars % of Movement	0.0%	0.0%	94.5%	100%	94.7%	--	0.0%	0.0%	0.0%	0.0%	0.0%	--	0.0%	100%	95.9%	0.0%	95.9%	--	0.0%	100%	0.0%	100%	100%	--	95.4%	
Trucks Total	--	--	18	--	**18**	--	--	--	--	--	**0**	--	--	--	12	--	**12**	--	--	--	--	--	**0**	--	30	--
Trucks % of Movement	0.0%	0.0%	5.5%	0.0%	5.3%	--	0.0%	0.0%	0.0%	0.0%	0.0%	--	0.0%	0.0%	4.1%	0.0%	4.1%	--	0.0%	0.0%	0.0%	0.0%	0.0%	--	4.6%	



ALLIANT ENGINEERING, INC.

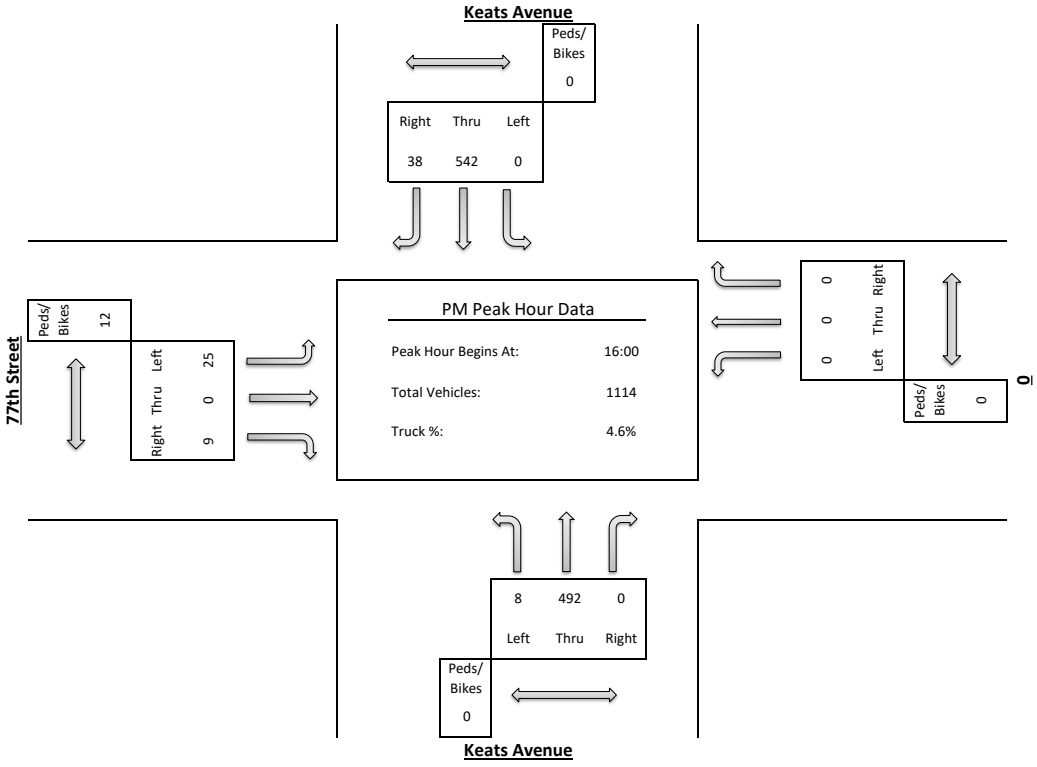
733 S Marquette Ave #700, Minneapolis, MN 55402

Intersection: Keats Avenue & - 77th Street
Date: 5/29/2025
Duration: 0600-1900

Site Code 300
Ref Pt: N/A
Page No: 4 of 4

All Vehicles (Cars & Trucks) Printed

	Keats Avenue Southbound						0 Westbound						Keats Avenue Northbound						77th Street Eastbound						Int. Veh. Total	Int. Ped/ Bike Total
Start Time	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes		
16:00	--	--	140	8	**148**	--	--	--	--	--	**0**	--	--	4	132	--	**136**	--	--	4	--	3	**7**	4	291	4
16:15	--	--	121	12	**133**	--	--	--	--	--	**0**	--	--	--	111	--	**111**	--	--	6	--	3	**9**	3	253	3
16:30	--	--	139	6	**145**	--	--	--	--	--	**0**	--	--	2	136	--	**138**	--	--	7	--	--	**7**	3	290	3
16:45	--	--	142	12	**154**	--	--	--	--	--	**0**	--	--	2	113	--	**115**	--	--	8	--	3	**11**	2	280	2
Hour Total	--	--	542	38	**580**	--	--	--	--	--	**--**	--	--	8	492	--	**500**	--	--	25	--	9	**34**	12	1114	12
% of App.	0.0%	0.0%	93.4%	6.6%			0.0%	0.0%	0.0%	0.0%			0.0%	1.6%	98.4%	0.0%			0.0%	73.5%	0.0%	26.5%				
% of Total	0.0%	0.0%	48.7%	3.4%	52.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.7%	44.2%	0.0%	44.9%	0.0%	0.0%	2.2%	0.0%	0.8%	3.1%	100.0%		
Cars Total	--	--	499	36	**535**	--	--	--	--	--	**0**	--	--	8	486	--	**494**	--	--	25	--	9	**34**	3	1063	3
Cars % of Movement	0.0%	0.0%	92.1%	94.7%	92.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%	98.8%	0.0%	98.8%	0.0%	0.0%	100%	0.0%	100%	100%	100.0%	95.4%	
Trucks Total	--	--	43	2	**45**	--	--	--	--	--	**0**	--	--	--	6	--	**6**	--	--	--	--	--	**0**	9	51	9
Trucks % of Movement	0.0%	0.0%	7.9%	5.3%	7.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.2%	0.0%	1.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	4.6%	



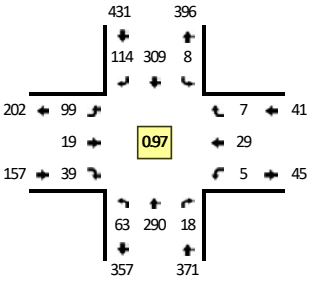
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

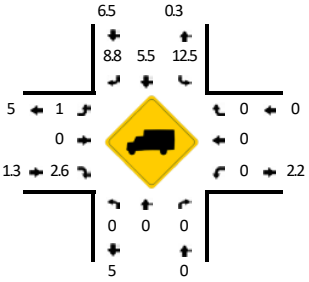
LOCATION: CSAH 19 (Keats Ave) -- 80th St S
CITY/STATE: Cottage Grove, MN

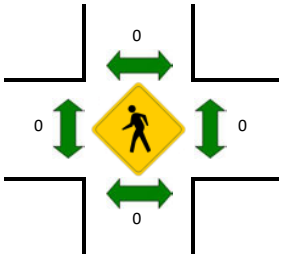
QC JOB #: 16495901
DATE: Thu, Feb 29 2024

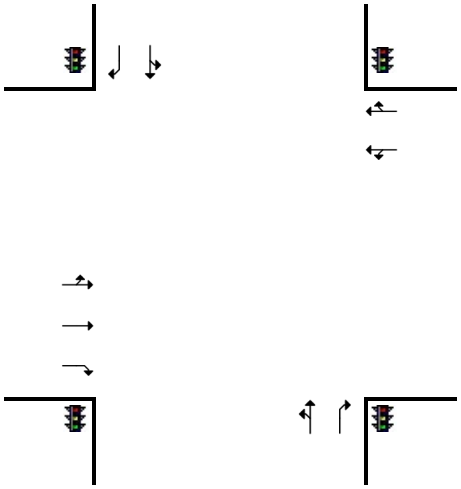
Peak-Hour: 4:15 PM -- 5:15 PM
Peak 15-Min: 4:30 PM -- 4:45 PM

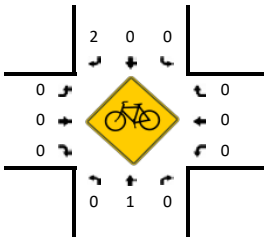


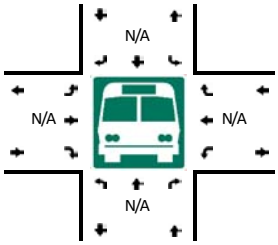
TRUE DATA TO IMPROVE MOBILITY

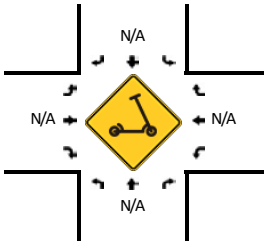












15-Min Count Period Beginning At	CSAH 19 (Keats Ave) (Northbound)				CSAH 19 (Keats Ave) (Southbound)				80th St S (Eastbound)				80th St S (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
12:00 AM	1	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	11	
12:15 AM	0	1	0	0	0	0	2	0	0	0	0	0	0	0	0	0	3	
12:30 AM	0	1	0	0	0	1	3	0	0	0	1	0	0	0	0	0	6	
12:45 AM	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	3	23
1:00 AM	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2	14
1:15 AM	0	2	0	0	0	3	0	0	0	0	0	0	0	0	0	0	5	16
1:30 AM	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	2	12
1:45 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	10
2:00 AM	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	11
2:15 AM	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	3	9
2:30 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	9
2:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8
3:00 AM	1	0	1	0	0	0	1	0	1	0	0	0	0	0	0	0	4	9
3:15 AM	0	1	0	0	0	1	0	0	1	0	0	0	0	1	0	0	4	10
3:30 AM	0	6	0	0	0	0	2	0	1	0	0	0	1	0	0	0	10	18
3:45 AM	0	0	0	0	0	2	0	0	0	0	3	0	0	0	0	0	5	23
4:00 AM	0	3	0	0	0	3	1	0	1	0	1	0	0	1	0	0	10	29
4:15 AM	0	2	0	0	0	5	1	0	1	1	1	0	1	1	0	0	13	38
4:30 AM	0	5	1	0	0	8	2	0	3	1	1	0	0	1	0	0	22	50
4:45 AM	1	1	0	0	0	4	3	0	3	0	1	0	0	0	0	0	13	58
5:00 AM	0	3	1	0	1	8	0	0	2	0	1	0	0	0	1	0	17	65
5:15 AM	0	7	0	0	1	13	2	0	5	0	0	0	1	1	1	0	31	83
5:30 AM	1	6	0	0	0	20	3	0	1	1	3	0	2	1	1	0	39	100
5:45 AM	0	11	0	0	0	20	2	0	6	1	4	0	0	1	1	0	46	133
6:00 AM	3	17	0	0	0	16	2	0	12	0	6	0	1	1	1	0	59	175
6:15 AM	0	21	0	0	0	33	3	0	8	1	5	0	0	2	0	0	73	217
6:30 AM	2	33	2	2	0	46	10	0	12	1	10	0	0	2	0	0	120	298
6:45 AM	3	44	3	2	1	52	5	0	17	0	7	0	1	1	2	0	138	390
7:00 AM	1	60	4	1	0	41	15	0	15	1	6	0	2	2	2	0	150	481
7:15 AM	6	61	0	1	2	49	47	1	37	3	13	0	3	1	5	0	229	637
7:30 AM	2	56	1	0	0	80	44	0	33	0	15	0	1	3	1	0	236	753
7:45 AM	3	52	2	1	2	73	26	1	24	7	12	0	3	5	1	0	212	827
8:00 AM	8	33	0	0	1	45	19	0	18	0	10	0	3	4	1	0	142	819
8:15 AM	7	38	1	0	1	43	14	0	16	5	11	0	0	2	2	0	140	730
8:30 AM	6	41	1	0	4	50	22	0	21	4	6	0	1	5	5	0	166	660
8:45 AM	5	36	5	0	0	33	10	0	19	0	8	0	3	3	0	0	122	570
9:00 AM	2	32	2	0	0	41	17	0	12	0	6	0	4	2	0	0	118	546
9:15 AM	1	26	3	1	0	68	17	0	11	1	6	0	1	2	0	0	137	543

15-Min Count Period Beginning At	CSAH 19 (Keats Ave) (Northbound)				CSAH 19 (Keats Ave) (Southbound)				80th St S (Eastbound)				80th St S (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
9:30 AM	5	29	2	1	2	34	13	0	5	2	5	0	4	1	0	0	103	480
9:45 AM	2	46	4	0	2	34	6	0	9	2	9	0	1	3	1	0	119	477
10:00 AM	5	33	1	1	1	39	12	0	11	6	6	0	2	6	1	0	124	483
10:15 AM	6	36	2	1	0	37	13	0	12	1	8	0	2	2	4	0	124	470
10:30 AM	5	35	3	0	0	47	12	0	19	1	6	0	1	2	2	0	133	500
10:45 AM	8	26	1	1	1	31	12	0	11	1	3	0	3	1	0	0	99	480
11:00 AM	9	27	4	1	1	35	11	0	6	5	8	0	0	1	1	0	109	465
11:15 AM	5	32	2	1	1	26	10	0	14	2	7	0	3	0	0	0	103	444
11:30 AM	8	31	1	0	0	30	13	0	7	1	12	0	0	1	0	0	104	415
11:45 AM	6	29	6	1	1	42	14	0	18	2	11	0	0	6	0	0	136	452
12:00 PM	10	31	2	0	0	42	19	0	14	2	8	0	0	9	0	0	137	480
12:15 PM	6	26	3	0	1	32	13	0	5	2	6	0	0	3	1	0	98	475
12:30 PM	5	38	0	0	0	39	11	0	13	2	5	0	0	0	0	0	113	484
12:45 PM	19	26	1	1	1	48	20	0	10	4	8	0	2	3	0	0	143	491
1:00 PM	4	23	2	0	2	34	14	0	16	4	8	0	1	2	1	0	111	465
1:15 PM	7	43	1	2	1	39	18	0	10	7	7	0	0	2	0	0	137	504
1:30 PM	12	32	1	0	1	41	9	0	8	7	17	0	3	2	1	0	134	525
1:45 PM	11	39	3	1	0	43	8	0	13	3	8	0	2	4	0	0	135	517
2:00 PM	11	68	6	1	0	31	23	0	22	2	11	0	0	1	1	0	177	583
2:15 PM	8	62	4	0	1	48	13	0	25	4	9	0	1	3	2	0	180	626
2:30 PM	11	43	6	1	2	79	43	0	19	1	9	0	2	3	2	0	221	713
2:45 PM	13	61	4	2	2	45	20	0	13	3	9	0	1	2	0	0	175	753
3:00 PM	17	67	0	0	1	54	22	0	29	4	8	0	1	3	1	0	207	783
3:15 PM	11	70	2	2	3	78	23	0	44	8	16	0	2	2	0	0	261	864
3:30 PM	11	80	7	2	2	64	18	0	37	2	12	1	1	0	1	0	238	881
3:45 PM	13	53	3	0	1	79	26	0	22	2	12	0	1	2	4	0	218	924
4:00 PM	6	77	5	0	1	63	32	0	25	4	7	0	3	2	1	0	226	943
4:15 PM	16	61	2	1	1	80	29	0	22	6	9	0	1	8	3	0	239	921
4:30 PM	17	82	2	1	0	84	31	0	16	4	14	0	0	6	2	0	259	942
4:45 PM	12	71	8	0	5	75	26	0	28	6	9	0	2	6	1	0	249	973
5:00 PM	14	76	6	2	2	70	28	0	33	3	7	0	2	9	1	0	253	1000
5:15 PM	16	55	2	1	4	58	27	0	19	8	9	0	0	4	1	0	204	965
5:30 PM	13	71	3	1	9	52	25	0	24	4	6	0	4	3	2	0	217	923
5:45 PM	16	52	5	6	1	72	19	0	27	4	5	0	1	4	1	0	213	887
6:00 PM	11	51	2	1	1	53	14	0	19	2	11	0	3	0	1	0	169	803
6:15 PM	6	39	1	1	2	54	15	0	13	2	6	0	3	5	0	0	147	746
6:30 PM	10	44	3	0	1	38	20	0	15	2	8	0	1	3	2	0	147	676
6:45 PM	3	36	2	0	1	34	14	1	11	5	7	0	1	5	2	0	122	585
7:00 PM	12	33	0	1	1	32	10	0	10	4	6	0	0	2	0	0	111	527
7:15 PM	5	22	2	0	2	30	19	0	13	0	1	0	0	1	0	0	95	475
7:30 PM	3	10	2	1	0	34	15	1	6	0	4	0	0	2	1	0	79	407
7:45 PM	3	27	3	1	1	27	11	0	16	4	11	0	0	2	0	0	106	391
8:00 PM	3	25	0	0	1	13	12	1	9	3	7	0	0	3	1	0	78	358
8:15 PM	5	25	1	0	0	19	9	0	11	2	2	0	0	2	1	0	77	340
8:30 PM	9	21	1	0	1	21	12	0	5	1	5	0	0	1	1	0	78	339
8:45 PM	6	24	1	0	1	21	8	0	6	1	5	0	1	1	0	0	75	308
9:00 PM	2	17	1	0	0	17	11	1	9	3	2	0	1	1	0	0	65	295
9:15 PM	4	17	0	0	0	15	3	0	4	1	0	0	0	0	1	0	45	263
9:30 PM	1	11	0	0	0	21	4	0	5	1	4	0	0	0	1	0	48	233
9:45 PM	4	11	4	0	0	15	4	0	3	0	5	0	0	0	0	0	46	204
10:00 PM	2	14	0	0	0	17	5	1	3	3	3	0	0	0	0	0	48	187
10:15 PM	5	15	0	1	0	6	4	1	0	0	0	0	0	1	0	0	33	175
10:30 PM	3	6	0	0	1	5	3	0	4	0	0	0	0	1	1	0	24	151
10:45 PM	2	5	0	0	0	10	5	0	2	1	1	0	0	0	0	0	26	131
11:00 PM	4	6	0	0	0	3	2	0	2	0	2	0	1	0	0	0	20	103
11:15 PM	2	8	0	0	0	2	2	0	0	0	0	0	0	0	0	0	14	84
11:30 PM	3	2	0	0	2	3	1	0	4	2	1	0	0	0	0	0	18	78
11:45 PM	1	3	0	0	0	4	5	0	1	0	0	0	0	0	0	0	14	66

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	68	328	8	4	0	336	124	0	64	16	56	0	0	24	8	0	1036
Heavy Trucks	0	0	0		0	28	8		0	0	4		0	0	0		40
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	4	0		0	0	8		0	0	0		0	0	0		12
Scooters																	

Comments:

Report generated on 3/11/2024 8:26 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Appendix

RAVARA TRAILS – TRAFFIC IMPACT STUDY

Current Site Plan



SITE PLAN DATA:

PIDS: 11.027.21.24.0001	60.54 AC
11.027.21.23.0001	20.01 AC
11.027.21.32.0001	40.34 AC
11.027.21.31.0001	79.47 AC
11.027.21.33.0001	39.13 AC
TOTAL GROSS AREA	239.49 AC
OUTLOT P	35.36 AC
OUTLOT Q	55.41 AC
TOTAL PROJECT AREA AREA	148.72 AC
OUTLOT K (PARK DEDICATION)	4.15 AC
EXISTING ROW (KEATS AVE S)	3.55 AC
PROPOSED ROW DEDICATION (KEATS AVE S)	3.89 AC
NET TOTAL PRODUCT AREA	137.13 AC
PROPOSED ROW (FUTURE RAVINE PKWY)	8.89 AC
PROPOSED ROW (FUTURE INDIAN BLVD S)	3.90 AC
PROPOSED ROW (INTERIOR NORTH)	7.19 AC
PROPOSED ROW (INTERIOR SOUTH)	10.53 AC

SITE PLAN OUTLOT DATA:

OUTLOT	OWNER
OUTLOT WITH PONDS: A, D, F, G	CITY
OUTLOT: K (CITY PARK)	CITY
OUTLOT WITH PIPELINE: B, E, I, J, P, O	HOA/DEVELOPER
OUTLOT: C, H, L, M, N, O	HOA/DEVELOPER

SITE PLAN LOT DATA:

URBAN TOWNHOME:

LOT WIDTH MINIMUM:	22 FT
LOT DEPTH MINIMUM:	72.5 FT
END LOT WIDTH:	27 FT
FRONT DOOR SETBACK:	15 FT
KEATS AVE FRONT DOOR SETBACK:	25 FT
GARAGE SETBACK:	25 FT
CORNER SETBACK:	20 FT
BUILDING SEPARATION:	20 FT

SUBURBAN TOWNHOME:

LOT WIDTH MINIMUM:	25 FT
LOT DEPTH MINIMUM:	72 FT
END LOT WIDTH:	30 FT
FRONT SETBACK:	25 FT
CORNER SETBACK:	20 FT
BUILDING SEPARATION:	15 FT

VILLA SINGLE FAMILY LOTS:

LOT WIDTH MINIMUM:	40 FT
LOT DEPTH MINIMUM:	130 FT
SIDE YARD SETBACK:	5 FT
SIDE YARD SETBACK:	5 FT

65' SINGLE FAMILY LOTS:

LOT WIDTH MINIMUM:	65 FT
LOT DEPTH MINIMUM:	130 FT
SIDE YARD SETBACK:	5 FT (GARAGE SIDE)
	7.5 FT (NON-GARAGE SIDE)

LOT TYPE:	UNITS	AREA (AC)	DENSITY (UNITS/AC)
URBAN TOWNHOMES	192	17.83	10.77
SUBURBAN TOWNHOMES	114	15.31	7.45
VILLA SINGLE FAMILY LOTS	105	34.42	3.05
65' SINGLE FAMILY LOTS	164	69.56	2.36
TOTAL UNITS	575	137.12	4.19

GUEST PARKING STALLS: 73

IMPERVIOUS SURFACES:

MAX. IMPERVIOUS SURFACE ALLOWED:

VILLA SINGLE FAMILY LOTS = 50% MAX. PER LOT

65' SINGLE FAMILY LOTS = 40% MAX PER LOT

ATTACHED DWELLINGS = 40% OF TOTAL AREA

SITE NOTES:

1. SEE SHEET 21 FOR TYPICAL LOT DETAILS AND TYPICAL ROAD SECTIONS.
2. ALL CURB RETURNS ARE MEASURED FROM BACK OF CURB UNLESS OTHERWISE NOTED.

LEGEND:

- EASEMENT LINE
- BUILDING SETBACK
- PROPERTY LINE
- LOT LINE
- ROW
- STOP/STREET SIGN
- STREET LIGHT
- POND MAINTENANCE ACCESS (TURF)
- CITY OPEN/PARK MARKER SIGN

N

0 75 150 300

SCALE IN FEET

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TWIN CITIES LAND DEVELOPMENT

RAVARA TRAILS

COTTAGE GROVE, MINNESOTA

PRELIMINARY PLAT SUBMITTAL

SITE PLAN - OVERALL

DATE	DESCRIPTION
2025-12-31	City Submittal

CERTIFICATION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Civil Engineer under the laws of the State of MINNESOTA.

PRELIMINARY
FOR REVIEW
NOT FOR CONSTRUCTION

Clark Wicklund — 40922
Date — License no.

QA/QC CHECK

By — Date

PROJECT TEAM DATA

Designed By: CJW
Drafted By: LRJ
Project No.: 4000570-00

20

Sheet 20 of 91

File Location: X:\4000570-00\1140 Design\00 Sheets - Preliminary\SITE.dwg Plotted By: Logan.Josephson on December 31, 2025 at 10:09 AM

City Council Action Request

11.B.

Meeting Date 3/18/2026

Department Community Development

Agenda Category Action Item

Title Talcott Glen - Rezoning and Preliminary Plat

Staff Recommendation 1) Adopt Ordinance No. 1109 approving a Zoning Amendment to change the zoning of 69.5 acres of land generally located west of Hadley Avenue and 95th Street and east of Grey Cloud Trail, from AG-2, Agriculture, to R-4, Transitional Residential. 2) Adopt Resolution 2026-044 approving the Preliminary Plat for a residential subdivision to be called Talcott Glen, which will consist of 177 single-family homes.

Budget Implication N/A

Attachments

1.	Talcott Glen CC Memo
2.	Talcott Glen Ordinance No. 1109 - Rezoning
3.	Talcott Glen Resolution 2026-044 - Prelim Plat
4.	Talcott Glen - A. Preliminary Civil Plan Set
5.	Talcott Glen - B. Preliminary Plat
6.	Talcott Glen - C. Phasing Plan 03-09-2026
7.	Talcott Glen - D. Stormwater Management Plan
8.	Talctot Glen - E. Talcott Glen Draft Review Comments_021826 rev2

TO: Honorable Mayor and City Council
Jennifer Levitt, City Administrator

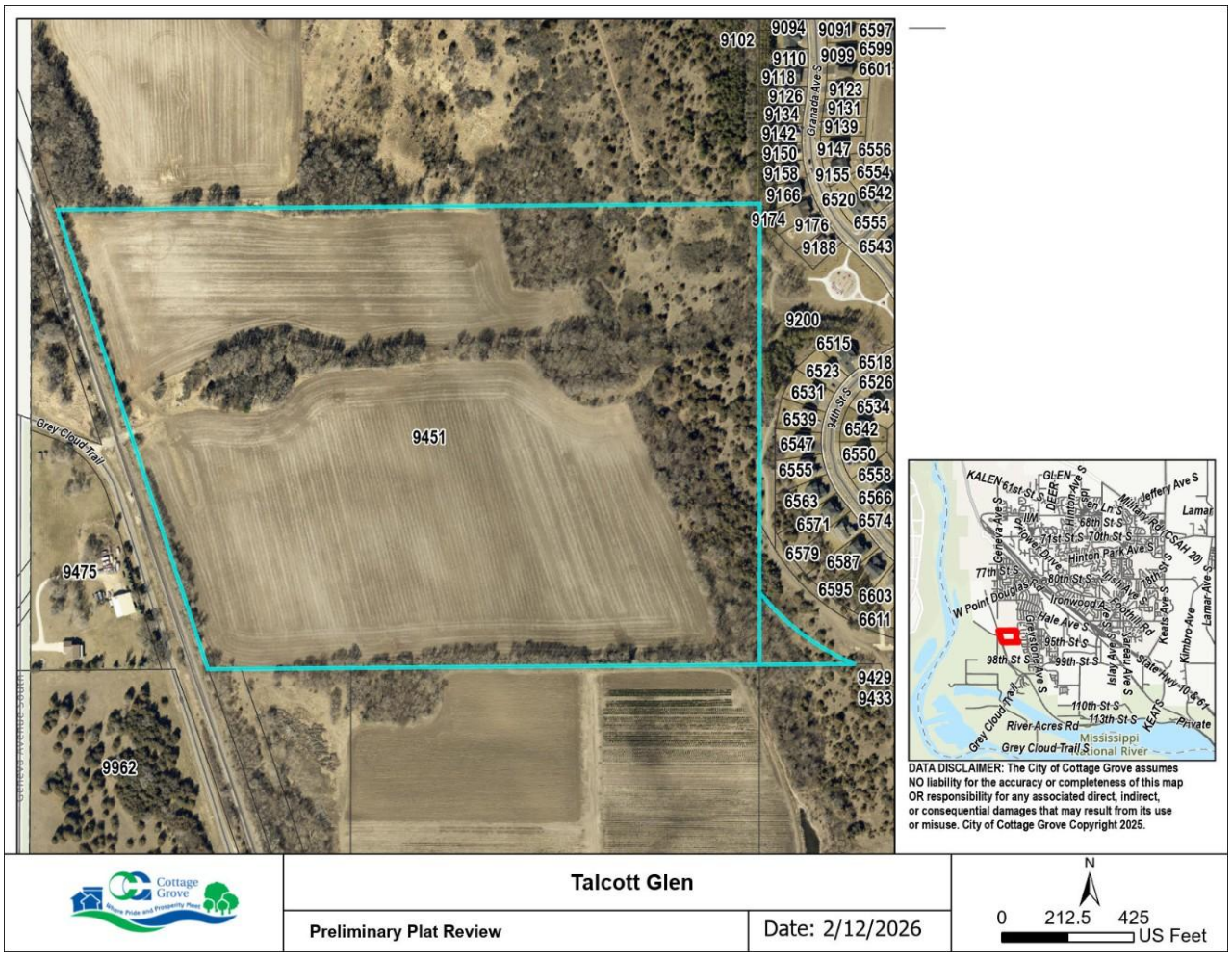
FROM: Max Erickson, Planner

DATE: March 11, 2026

RE: Talcott Glen - Zoning Amendment and Preliminary Plat

Proposal

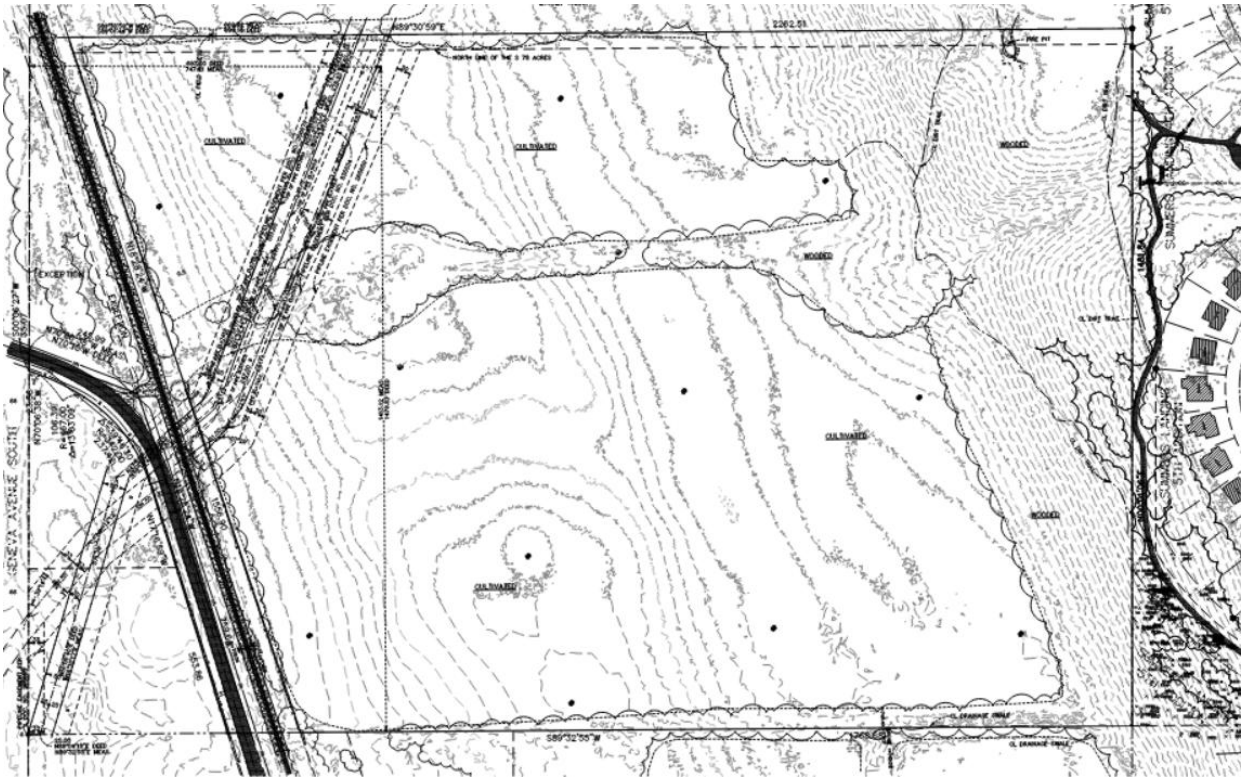
Lennar (Applicant and Developer) is requesting approval of a Zoning Amendment and Preliminary Plat on one parcel totaling 69.5 acres of land zoned AG-2, Agriculture, located west of the Summer's Landing Development and 95th Street. The Developer is proposing to rezone the subject site to R-4, Transitional Residential District, and a Preliminary Plat to create 177 single family lots.



Review Schedule
Application Received: January 26, 2026
Application Accepted: January 26, 2026
Planning Commission Meeting: February 23, 2026
City Council Meeting: March 18, 2026
60-Day Review Deadline: March 27, 2026

Background

Site Conditions
The existing parcel is 69.5 acres and is primarily used as tilled cropland with a windrow of trees through the center of the parcel. The eastern portion of the parcel is sloped and generally wooded. A BNSF Railway runs along the western edge of the property which includes a small rail crossing currently used to access the site. This crossing will be required to be removed by the Developer as part of this project. The southern property boundary borders Bailey's Nursery. A gas pipeline easement extends from the northern property line through the property to the western property line.



Existing Site Conditions

Neighborhood Meeting
The Developer held a neighborhood meeting on February 10, 2026. Notice of the neighborhood meeting was sent to surrounding property owners within 500 feet of the project area. The intent of the meeting was to give neighboring property owners the opportunity to ask questions and present concerns they might have to the Developer in the early planning stages of the proposed project.

Nine property owners from neighboring subdivisions, Summer's Landing and Mississippi Dunes Estates, attended the meeting and one resident emailed the city after the neighborhood meeting, which is included in the packet.

The general concern of those in attendance was focused on the extension of 95th Street. The residents inquired about additional screening being provided by the Developer for the lots adjacent to the extended 95th Street segment to the west of Mississippi Dunes Boulevard. The residents in attendance also asked the Developer about timing of tree removal and project timeline.

Since the neighborhood meeting, staff have reviewed the background and history of 95th Street and the surrounding developments. Additional details related to the existing screening along 95th Street to the north and on the south side east of Mississippi Dunes Boulevard and why additional screening was not provided to the west of Mississippi Dunes Boulevard has been included in the traffic section of this report.

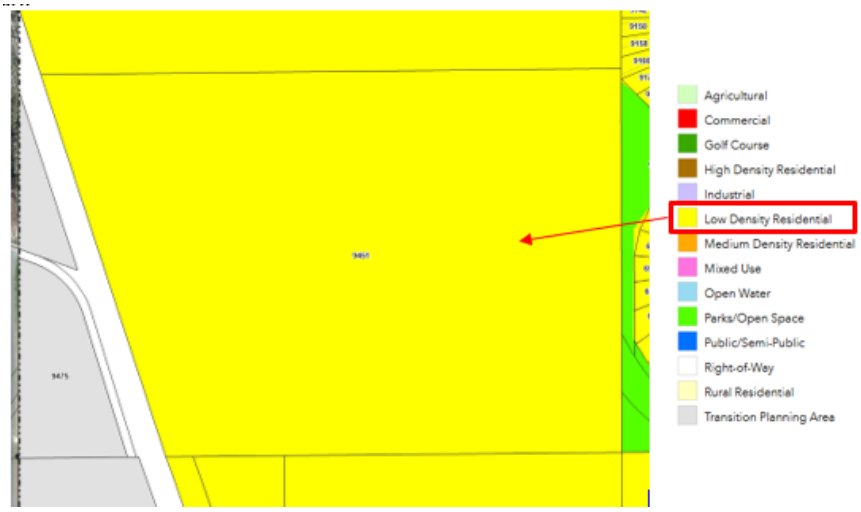
Planning Considerations

Plan Review

The dates of the plan set utilized for this review were submitted by Pioneer Engineering and are dated 1/16/26. The city's engineering consultant, Stantec, reviewed the plans and provided comments in a memo dated 2/18/26. Both the plan set and review memo are attached.

Zoning and Comprehensive Plan

The subject property is currently zoned as AG-2, Agriculture, and is guided as Low Density Residential in the 2040 Comprehensive Plan. The Comprehensive Plan guides the actions of the community by presenting a vision for the future by identifying policies, strategies, and investments the community will undertake while providing a repository of information. All land use decisions must be consistent with the adopted Comprehensive Plan. Zoning regulations specifically define how land can be used. Zoning divides jurisdictions into multiple districts and the Zoning Ordinance provides regulations which guide community development and growth within each district. The zoning regulations are the primary tool used to implement the City's vision found in the Comprehensive Plan.



2040 Comprehensive Plan Future Use

The Developer is requesting to rezone the subject property from AG-2, Agriculture, to R-4, Transitional Residential, which would be in accordance with the long-term growth plan for the parcel. Low Density Residential as defined in the Comprehensive Plan allows for 2 to 4 units per acre density. The purpose of the R-4 District is to provide transitional areas that will allow a mixing of single-family detached and single family attached dwellings on smaller lots where property is adjacent to a minor or major collector street and/or where property is adjacent to higher intensity development or land use.



Proposed Zoning to R-4

The Developer is proposing a combination of 50-foot lots and 65-foot lots. Minimum lot width within the R-4 zoning district is 45 feet; therefore, the proposed lot sizes would align with the R-4 standards in City Code.

The Developer is proposing approximately 2.95 units per net acre. Net density is defined as, “The total number of units divided by the total land area less major right of ways (arterials and collectors) and less wetland protected by the Wetland Conservation Act, provided that right of way (including major roads) shall not be deducted if dedicated to the City at no cost.”

The Talcott Glen density calculation is shown below:

Gross Acreage of Development: 69.5 acres
Subtract proposed areas below pond high-water levels: 7.34 acres
Area of 95th St (Collector) Right-of-Way: 2.34 acres

Equals Net Acreage: 59.82 acres

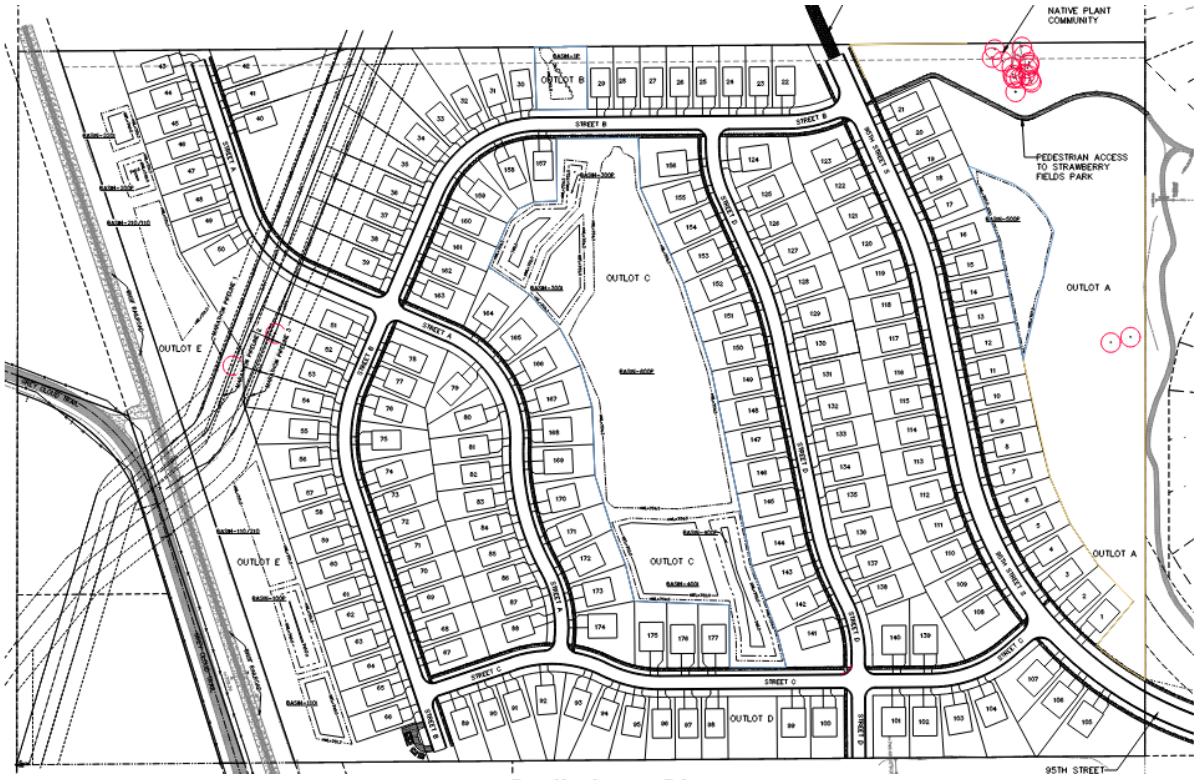
Divide 177 total housing units by net acreage to get units per acre of 2.95. At 2.95 units per acre the Talcott Glen development complies with the definition of Low Density residential of 2 to 4 units per acre.

The proposed preliminary plat and the land use map from the 2040 Comprehensive Plan are consistent in the following ways:

- The Land Use Map in the 2040 Comprehensive Plan identifies the future land use development of the subject property as low density residential land uses. The Developer is proposing single-family lots for the subject property, which is consistent with the 2040 Comprehensive Plan.
- The proposed density of 2.95 units per acre is consistent with the 2040 Comprehensive Plan.
- The proposed rezoning to the R-4 District is consistent with the planned low-density outline in the 2040 Comp Plan for this property.
- Proposed Lot widths are consistent with the R-4 Zoning District standards
- The proposed development helps provide the city with varied housing types that are needed to serve varying income levels and stages in the life cycle.
- The proposed preliminary plat and grading plan are consistent with the low-density residential land use designation for this area.

Preliminary Plat

The preliminary plat, as proposed, depicts a logical development of a viable property given the adopted performance standards of the zoning district. The proposed plat consists of 177 single family lots. Five outlots are proposed which include areas designed to manage stormwater.



Preliminary Plat

Zoning Development Standards

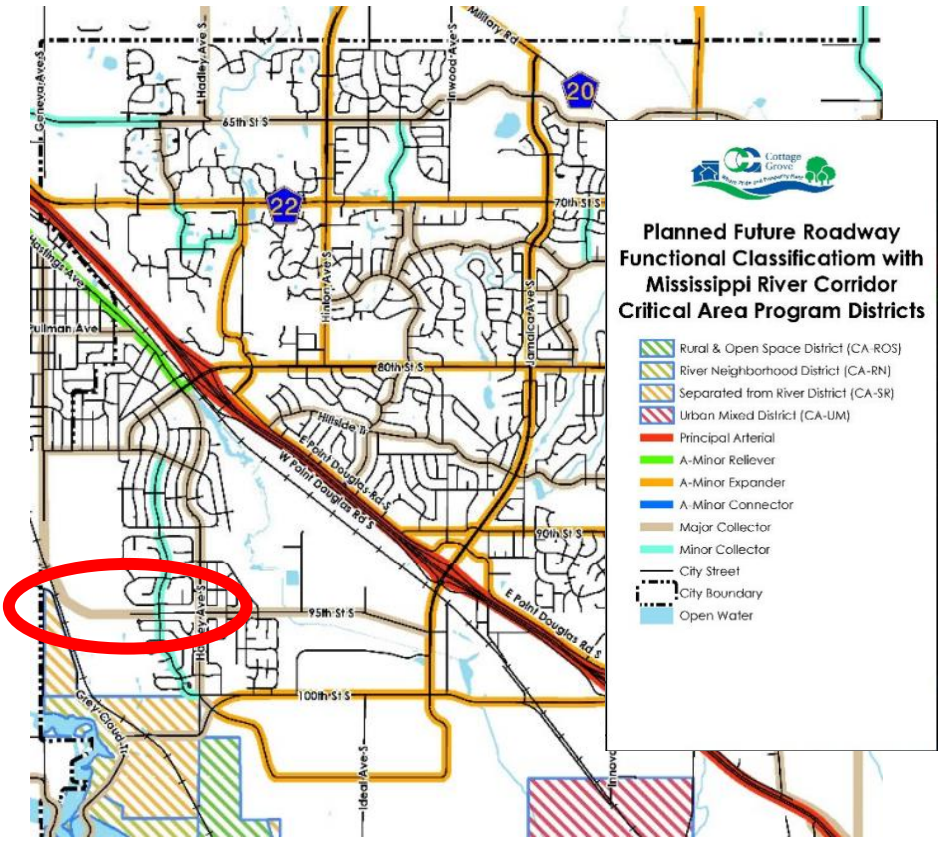
The development performance standards of the requested zoning district classifications and those requested as part of the development are detailed below. The Developer meets or exceeds the performance standards of the R-4, Transitional Residential zoning district.

Lot Development Performance Standards		
Single Family Standards	Proposed	R-4 Single Family Residential
Lot depth	120 feet	120 feet
Lot width	65 and 50 feet	45 feet
Front yard setback	25 feet	25 feet
Rear yard setback	30 feet	30 feet
Side yard setback	7.5 feet	7.5 feet
Side yard, garage setback	5 feet	5 feet
Maximum impervious surface coverage		50%

Transportation

95th Street Background

The proposed access to Talcott Glen is from an extension of 95th Street as indicated on the city's future road map. 95th Street currently ends at Mississippi Dunes Boulevard. In 2003, approval of the Mississippi Dunes Estates development required construction of the east segment of 95th Street between Hadley Avenue and Mississippi Dunes Boulevard; however, further discussions regarding alignment were needed for the segment of 95th Street west of Mississippi Dunes Boulevard.



Future Road Classification 2040 Comp Plan

In 2005, the city conducted a roadway scoping study for 95th Street to evaluate the options to serve further development west of Mississippi Dunes Boulevard and potential extension to the

west over the BNSF Railroad track. Three options were considered within the study as generally shown below. All options would require either the dedication of right-of-way and/or development to trigger the construction of the 95th Street extension.



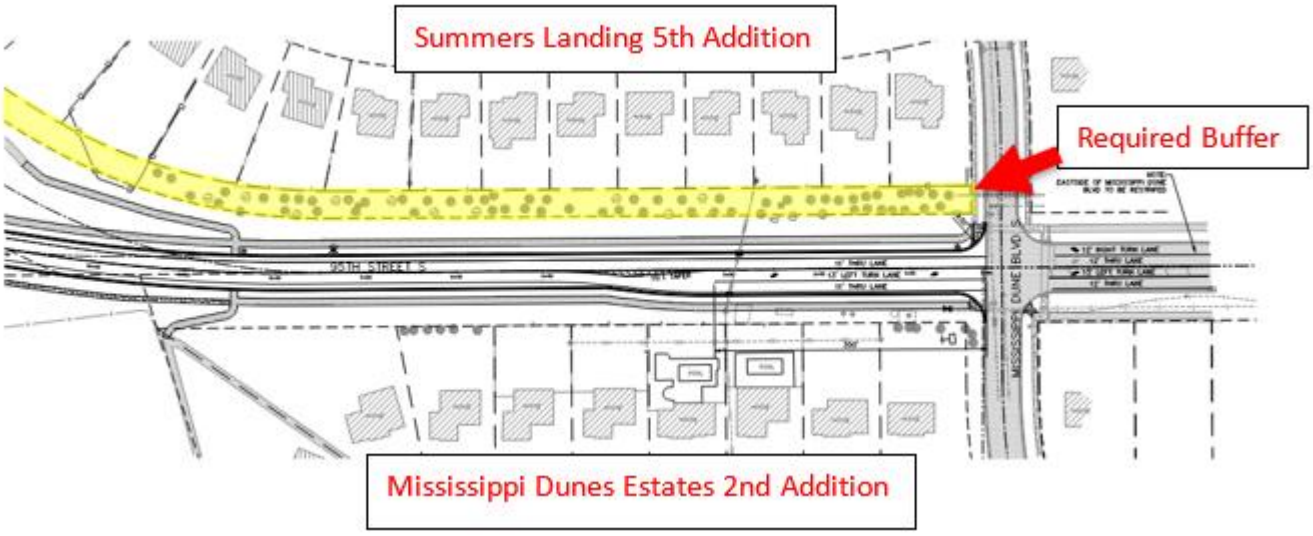
2005 Scoping Study Options

At about the same time as the 95th Street analysis was occurring; Mississippi Dunes Estates 2nd Addition (west side of Mississippi Dunes Boulevard) was approved. The development agreement for Mississippi Dunes Estates 2nd Addition required that Lots 5 through 12 of Block 3 (properties which border the future westward extension of 95th Street) to be restricted from being built until 95th Street alignment was determined and constructed between Mississippi Dunes Boulevard and the western property boundary. This was done to give the city time to decide on the final alignment and ensure that grading would not impact these lots. Following the evaluation of the 95th Street alignments and determination that future development would need to drive the alignment and construction of 95th Street west of Mississippi Dunes Boulevard, the Developer of Mississippi Dunes Estates 2nd Addition approached the city regarding the removal of the restriction placed on Lots 5 through 12. In 2009, a temporary construction easement was established over those lots allowing for them to be built on while also preserving area for grading at such time 95th Street were to be constructed to the west. Additional buffering trees were not planted on these lots anticipating they would be removed at such time 95th Street was constructed west of Mississippi Dunes Boulevard.

In 2016 the Summers Landing development was approved to the north of 95th Street. The Developer completed improvements to Hadley Ave S and widened 95th Street S between Hadley Ave and Mississippi Dunes Boulevard. Summers Landing also added an access to 95th Street via Mississippi Dunes Boulevard. The Summers Landing Development dedicated the 95th Street right-of-way west of Mississippi Dunes Boulevard for future construction of the road.

A buffer was also created with an outlot owned and maintained by the Summers Landing HOA adjacent to the lots abutting 95th Street on both the east and west sides of Mississippi Dunes Boulevard. The buffer was required to be landscaping, fencing or berming aligning with code

standards. The Developer chose to install a fence on the east side of Mississippi Dunes Boulevard and landscaping on the west side which aligned with the code standards.



95th Street Western Leg

The 95th Street alignment was adjusted as part of the Summers Landing Development to follow Option 3, which would not impact the existing lots within the Mississippi Dunes Estates development as initially anticipated with the other options. The construction easement over these lots will not be needed.

The City will work with Lots 5 through 12 of Block 3 Mississippi Dunes Estates 2nd Addition for the planting of buffer trees on their private lots to align with required code standards for buffering along major roadways.

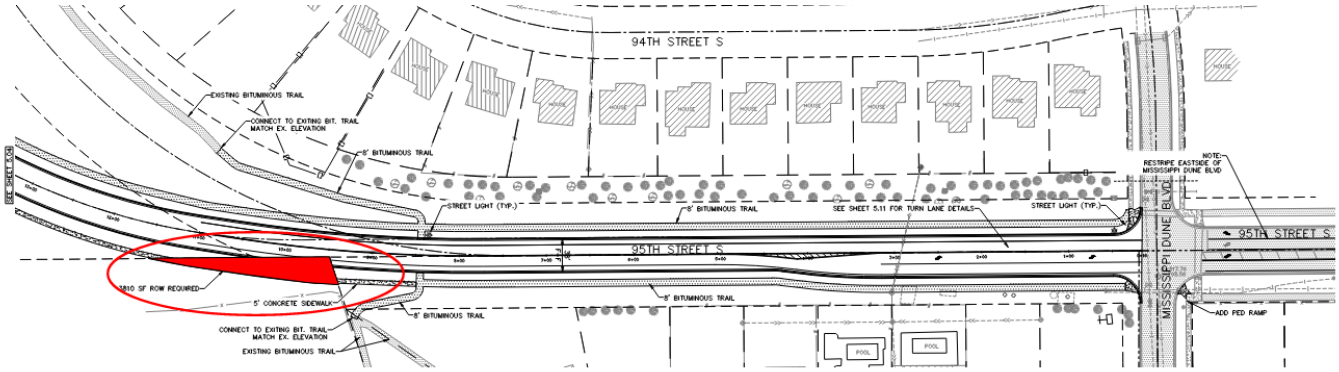
Traffic generation information was prepared during the studies in the early 2000s for the 95th Street extension report and for the roundabout at 95th Street and Hadley Avenue. The studies did a good job of analyzing the potential development of the area parcels including the Marathon Ashland, Summer's Landing, Nesvig, Bailey's, Mississippi Dunes and the anticipated developments within St. Paul Park at the time. The anticipated traffic generation does not warrant any additional traffic control given that 95th Street is designed to support the proposed traffic counts and will be monitored as development continues.

Development Access

Access to the proposed Talcott Glen development will be from the extension of 95th Street. The 95th Street right-of-way is currently 120 feet wide; however, the right-of-way will be narrowed to 66 feet wide within the development which will support a collector road width of 36 feet. It was originally planned for 95th Street to be a four-lane roadway at this time it was planned to support additional development in St Paul Park however, given 95th Street will no longer support that development, 66 feet of right-of-way is sufficient to support the two-lane collector roadway.

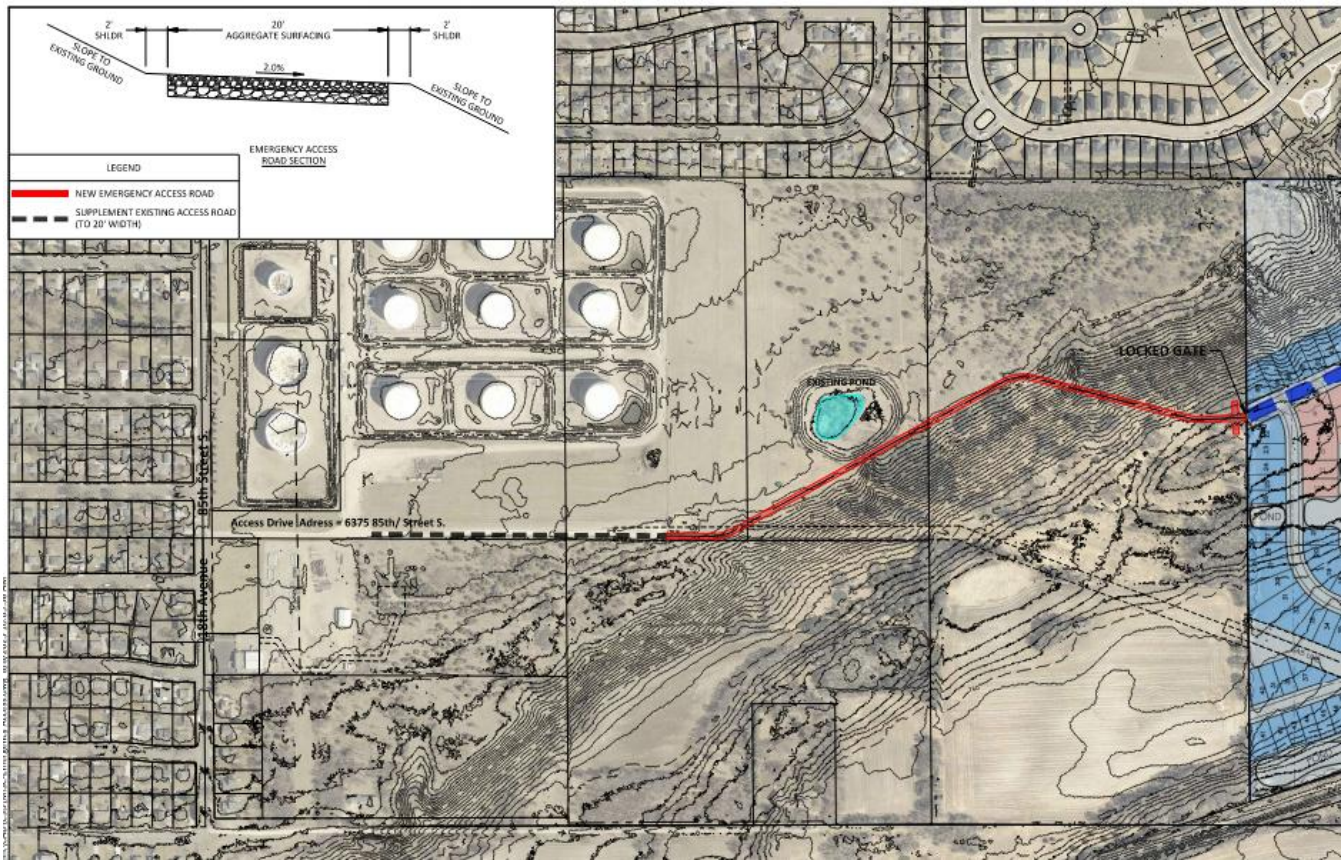
At the intersection with Mississippi Dunes Boulevard, eastbound 95th Street will be striped for left and right turn lanes as well as through-lanes. The striping on westbound at 95th Street will be changed to reflect the extension.

The final alignment of 95th Street requires the Developer to acquire a portion of the Bailey property for right-of-way purposes. The Developer will be required to complete a lot split prior to the recording of the plat. A registered survey and legal description of the area required to complete the lot split for the required right-of-way will be required.



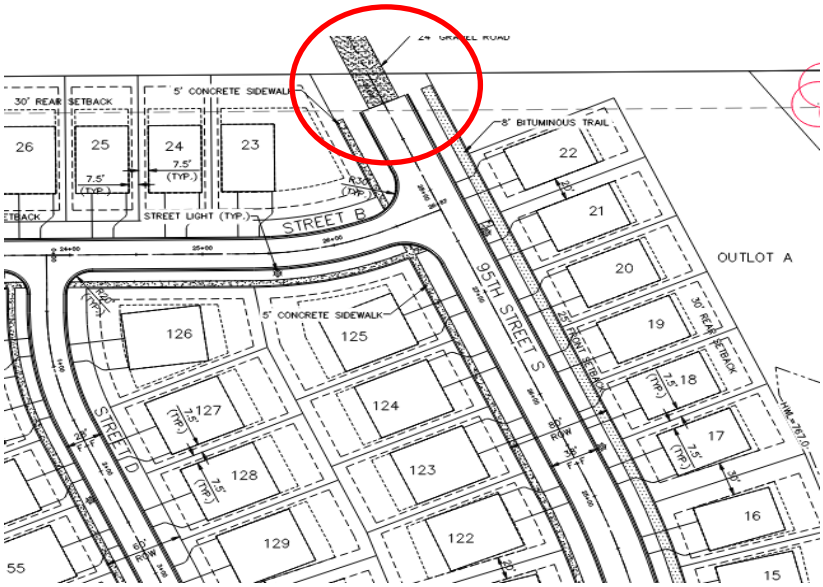
Required Lot Split/Right-Of-Way Dedication

A second access is required for all developments with greater than 30 lots for emergency access purposes per fire code. The Developer will work with the adjacent property owner to the north, Marathon, to construct a temporary access for emergency access use only. Developer will be responsible for any improvements to the access required to meet the emergency access standards.



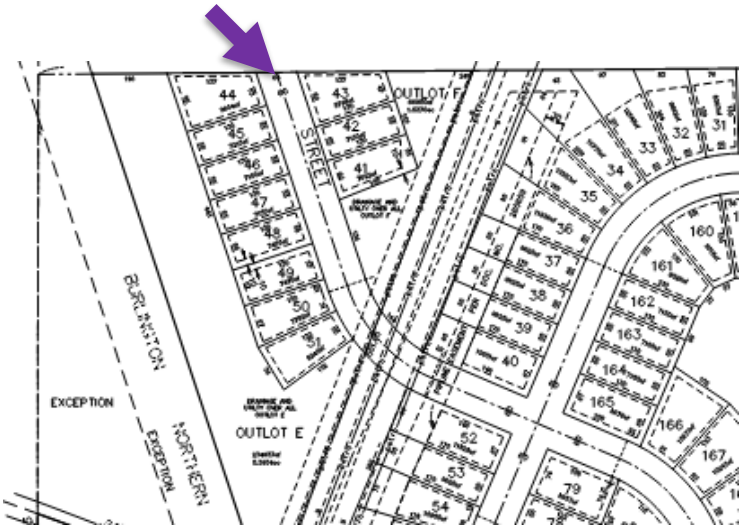
Possible Secondary Emergency Access

The proposed access would connect the development to 85th Street to the north to be used in an emergency situation where 95th Street was not accessible by emergency vehicles. The Class 5 access road would not be accessible by the public and would be gated at the development. The Developer is responsible for installation of the security gate. An access agreement between the city and the property owner (Marathon) will be required to ensure emergency access is permitted on the temporary road. At such time permanent access is constructed with further development on the parcels to the north of this development site, the temporary access would not be maintained.



Gated Emergency Access at the Development

As with all development, it is imperative for Developers to extend future road connections across property lines as well as utilities to allow for future development to efficiently connect at such time of development. The road stubbed in the northwest corner requires a temporary turnaround to be provided on the adjacent parcel. This allows for snowplow turn around and minimal impact at such time the street and utilities are extended and connected to future development. A temporary easement in favor of the city with the property owner is required for the turn around and utility extension.



Required Turn Around

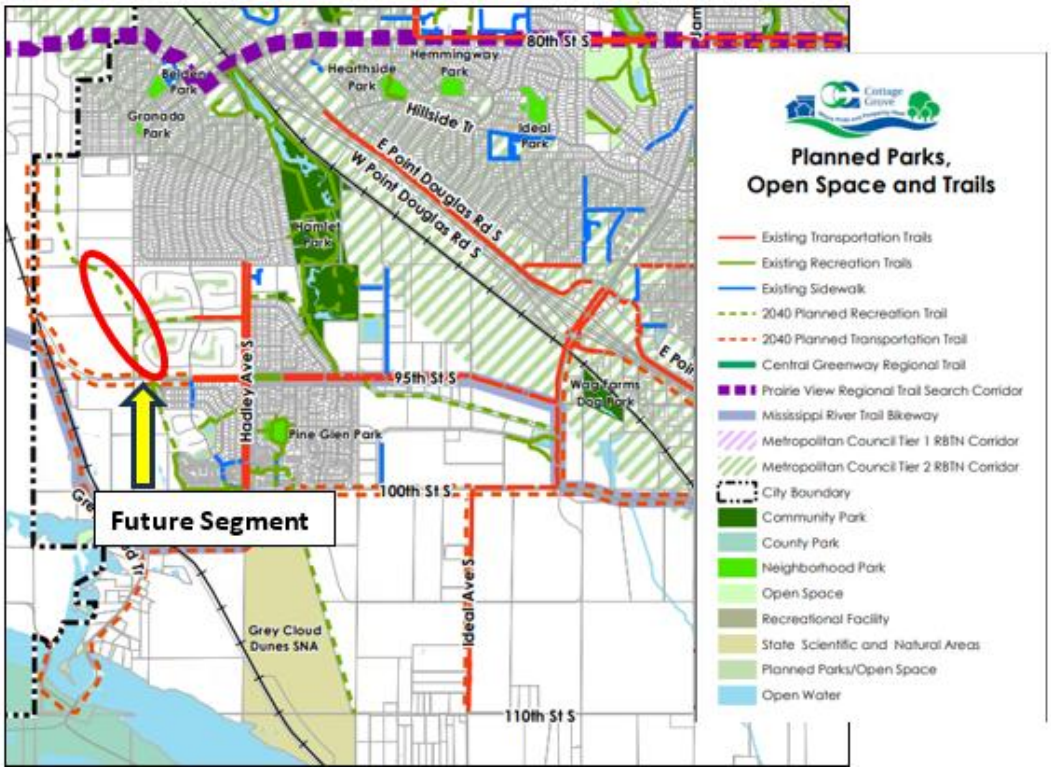
The two future road connections on the south side of the development do not require turnarounds given there are no lots fronting on those road stubs. The proposed stub adjacent to the temporary lift station will used as the turnaround.



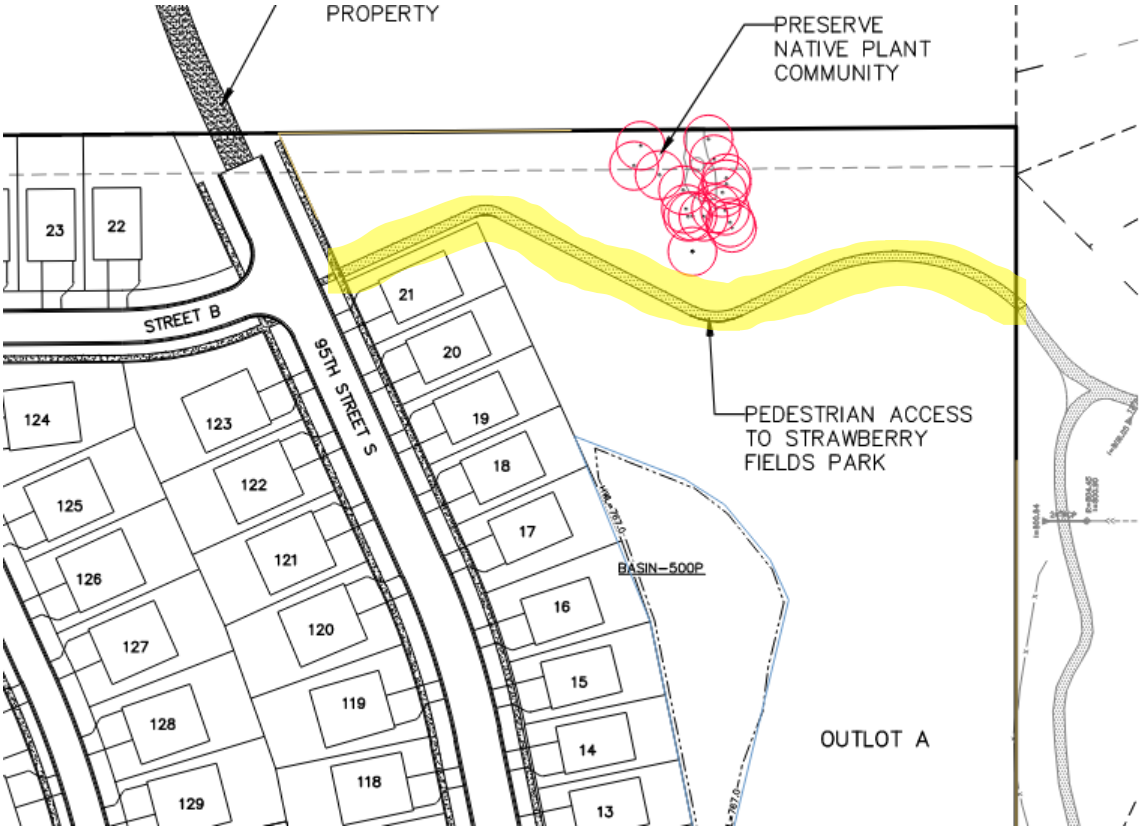
Southern Future Road Connections

Sidewalks and Trails

The trail stub at Strawberry Fields Park was constructed for anticipated development to extend the trail to the west and northwest outlined in the 2040 Planned Recreation Trail in the 2040 Comp Plan. The Developer will provide a trail connection to this trail in Strawberry Fields Park to 95th Street within Outlot A. The city will credit the Developer for the 20-foot-wide trail section towards park dedication. This trail connection will provide a more direct connection for the Talcott Glen neighborhood to Strawberry Fields Park. A habitat study was completed in the fall of 2025 and will be updated in the spring of 2026 to ensure appropriate measures for any identified habitat are taken. Staff will work with the applicant to provide a final alignment prior to approval of the final plat.

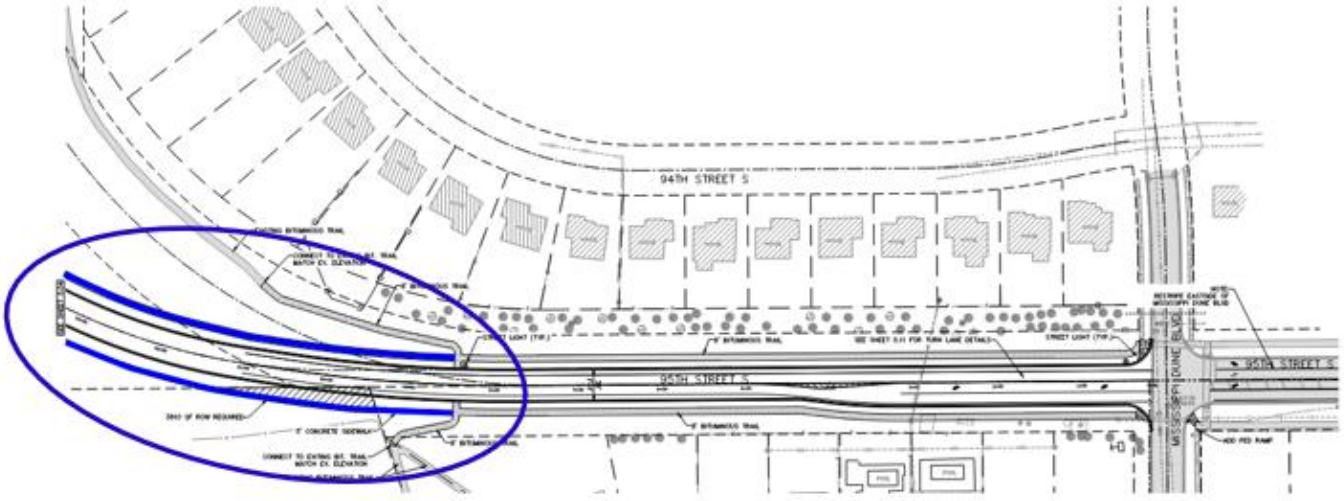


Planned Trail Segment Per 2040 Comp Plan



Possible Trail Connection to Strawberry Fields Park

Trails exist on both the north and south sides of 95th Street east of Mississippi Dunes Boulevard. Given lots will be fronting 95th Street within the development, the trail will transition to a 5-foot sidewalk after the trail crossing/connection to Strawberry Fields Park. The sidewalk will connect to the required sidewalk on one side of each street within the Talcott Glen Neighborhood.



Proposed Trail/Sidewalk Transition

Park Land and Open Space

A minimum of 10 percent of developable area shall be required to provide residents with public recreation facilities including parks and open spaces as a part of development projects per City Code Title 10-4-3. 6.95 acres of park dedication is required for the Talcott Glen development. Outlot A is not identified on the parks or trails map as a future park. As a condition of the city accepting Outlot A, the Developer will work with the Parks and Recreation Director to create a Forest Editing Plan to clarify removal of non-qualifying trees, identify trees to preserve, brush removal and a seeding mix approved by the Parks and Recreation Director. The Forest Editing Plan shall be created and accepted prior to the 20-foot-wide trail segment prior to the issuance of a grading permit.

The city will provide credit for the construction of the trail connection in the northeast corner of the site from 95th Street to Strawberry Fields Park. At such time the trail corridor is reviewed and approved, the Developer shall receive credit for a 20-foot-wide corridor of the extent of the trail as part of the final plat and outlined in the development agreement.

Area Charges and Development Fees

Area charges and related development fees for this project will be based on the acreages shown on the final plat. These fees and charges will be accurately adjusted based on the final plat layout and be provided in the development agreement. Payment to the City will be required at the time the development agreement is fully executed by the City and Developer.

Tree Preservation

The tree inventory has identified 10,294 existing qualifying inches of trees within the development property. Qualifying Trees are defined as: A healthy tree meeting one of the following definitions: a hardwood deciduous tree at least 6 inches Diameter at Breast Height (DBH), a softwood deciduous tree at least 8 inches DBH, or a coniferous tree at least 10 feet in height. Trees that are considered non-qualifying include Elm, Ash, any DNR defined invasive species, or trees that are dead, mostly dead, or hazardous to public safety. For residential uses less than 10 units per acre, City Code Title 11-3-13 allows 25 percent of the qualifying inches identified on the site to be removed (2,574 inches).

The current tree inventory provided by the Developer proposes to remove 7,798 qualifying inches, an excess of 5,224 inches. The excess inches removed must be replaced at a rate of 50 percent; therefore, the Developer is required to mitigate 2,612 inches.

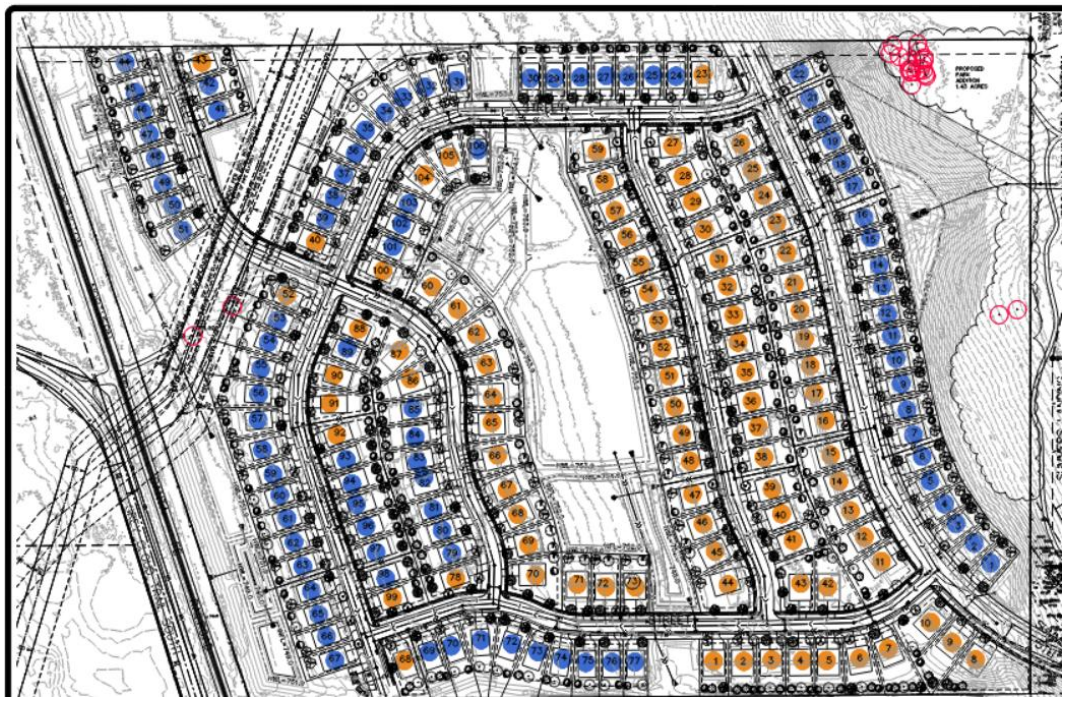
Tree Mitigation Requirements	
Total Qualifying Inches Identified On site	10,294 inches
Proposed number of qualifying inches to be removed	7,798 Inches
Allowable qualifying Inches without Mitigation (25%)	2,574 Inches
Remaining Qualifying Inches (Proposed – Allowable 25%)	5,224 Inches
50% of qualifying Inches required to be mitigated	2,612 Inches

The Developer’s preliminary landscape plans show 2,099 inches being mitigated with landscape plantings. The remainder of the mitigation inches shall be mitigated with additional plantings within the development site or via cash paid in lieu of planting. The final tree mitigation will be outlined in the final plat and development agreement given the alignment of the trail in the northeast corner of the site may impact the required mitigation.

Landscaping

City Code Title 11-6-5 requires a minimum amount of landscape plantings to be installed as a part of development projects within the City. These required plantings include yard trees, building perimeter plantings, and landscape requirements. Lots less than 60 feet wide must have two yard trees, one of which must be a front yard tree. These smaller lots may have a small statured tree (maximum canopy spread of 30 feet) in the front yard. Lots over 60 feet wide must have three yard trees one of which must be a front yard tree. On wider lots the front yard tree must be an overstory species (maximum canopy spread over 30 feet). The Developer's landscape plan demonstrates adequate required trees per lot. In addition, each single-family lot is required to have 10 understory shrubs.

Boulevard trees are required to be included along 95th Street up to the proposed development. No boulevard trees will be required on 95th Street past the easterly property line. Staff have requested additional trees to be added to outlots where applicable and will not disturb stormwater function or access to. A revised landscaping plan including the required landscape Boulevard Trees along 95th Street between Mississippi Dunes Boulevard and the east property line. will be required to be submitted prior to approval of the Final Plat.



Landscaping Plan

Stormwater Management Plan

The Developer's engineer submitted a stormwater management plan that has been reviewed by the city. Comments on the plan are included in the review memo dated February 18, 2026. City engineering staff will continue to work with the Developer's engineer to ensure the site meets water quality standards as well as rate and volume control rules. The Developer will be required to deed Outlots B, C, D, and E to the city for ownership and maintenance of stormwater infrastructure.

The development site is currently designed with stormwater ponding and treatment in three areas. Stormwater discharged from the Summers Landing neighborhood is routed to a pond on the

bottom of the slope on the east side of Talcott Glen. A system of wet and dry basins is located in the middle of the development which will treat runoff from the central areas. On the west side, another system of wet and dry basins will treat runoff from the side of the proposed site.



Stormwater Site Flow

Grading

As with all new development projects, site grading is necessary to build the streets, provide proper drainage and ponding, and to create building pads, among other things. City staff will review grading plans to ensure the plans meet city, state, and watershed district requirements for flood control, erosion control, and drainage. The preliminary grading plan was reviewed by the City's engineering staff, and their review comments are included in the February 18, 2026, plan review memo. Additional grading review will be required upon submittal of final grading and utility plans for the site.

Utilities

The engineering plan review memo dated February 18, 2026, contains comments that will be required to be addressed by the Developer prior to approval of final plans.

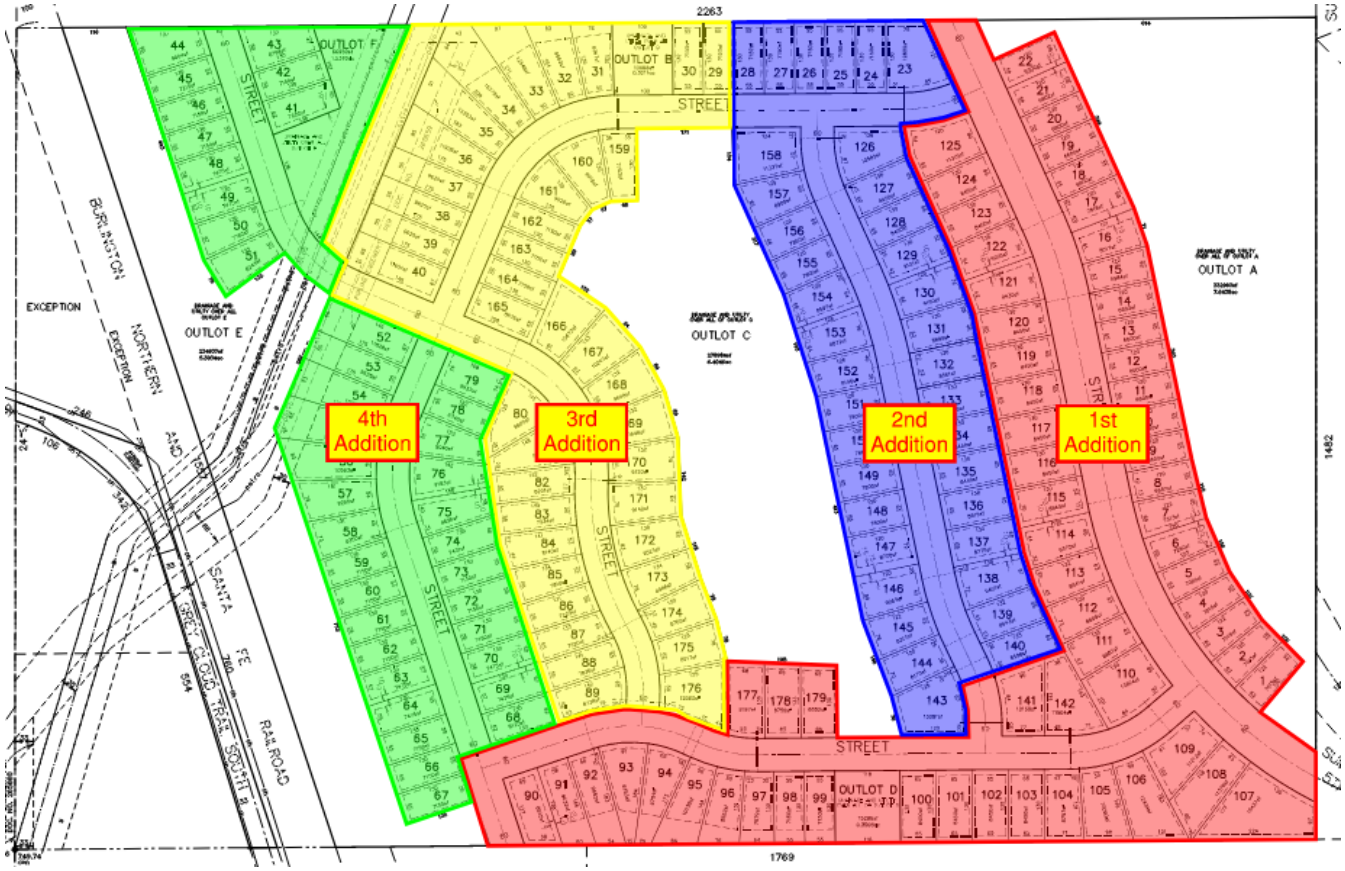
Sanitary sewer at Talcott Glen will gravity flow to the southwest corner of the parcel where a temporary lift station will be installed. The lift station will connect via 4-inch DIP forcemain to an existing sanitary manhole at 95th Street and Mississippi Dunes Boulevard. The lift station will be designed to accommodate the homes in this development as well as potential future devleopment of parcels to the north. The existing sanitary infrastructure beyond 95th Street and Mississippi Dunes Boulevard have capacity to support flow from Talcott Glen and any future development to the north.

At such time as the land currently owned by Bailey Nursery, just south of the proposed development, is developed, the temporary lift station would be removed. Wastewater would then gravity flow south to the recently completed permanent lift station at Mississippi Landing.

Water will be brought to Talcott Glen via two mains: the extension of a 12-inch main down 95th Street and the extention of an 8-inch main from Strawberry Fields Park. Utiltiies will be stubbed along proposed road connections to the north and south of the proeprty for future developments.

Phasing

The Developer is proposing construction throughout four phases. The area shown in red below indicates the proposed first phase of the development. Phase two is blue, Phase three is in yellow, and Phase four is in green.



Proposed Phasing Plan

Public Hearing Notices

Public hearing notices were mailed to 76 property owners who are within 500 feet of the proposed subdivision and extension of 95th Street and published in the *St. Paul Pioneer Press* on February 11, 2026.

Planning Commission Meeting

The City's Planning Commission reviewed this proposal and held a public hearing at their February 23, 2026, meeting. Clarifying questions/concerns were relayed by one member of the public as follows:

- What will the plan be for the bald eagles that frequent the area?
    - Staff indicated the DNR will inspect the area to ensure no disturbance to protected habitat.

- What will the Mississippi Dunes tree buffer look like behind the Mississippi Dunes Estates 2nd Addition Properties?
    - Staff will work with the 8 property owners on the south side of 95th Street, west of Mississippi Dunes Boulevard to install plantings on private property as a buffer. Buffer plantings are not permitted within city right-of-way given this would require long term maintenance by the city.

- A concern was raised about the trail crossing at 95th Street and how this will be navigated to ensure safety.
    - Staff clarified that the design of the trail crossing will meet code standards with appropriate signage, sightlines, and markings to ensure a safe pedestrian crossing is maintained.

The Planning Commission unanimously voted (4-0) to recommend approval.

Recommendation

That the City Council take the following actions:

1. Adopt Ordinance No. 1109 approving a Zoning Amendment to change the zoning of 69.5 acres of land generally located west of Hadley Avenue and 95th Street and east of Grey Cloud Trail, from AG-2, Agriculture, to R-4, Transitional Residential.

2. Adopt Resolution 2026-044 approving the Preliminary Plat for a residential subdivision to be called Talcott Glen, which will consist of 177 single-family homes.

Attachments

A. Preliminary Civil Plan Set Dated: 1/16/26
B. Preliminary Plat Dated 2/19/26
C. Phasing Plan Dated 1/16/26
D. Stormwater Management Plans
E. Engineering Review Memorandum Dated 2/18/26

CITY OF COTTAGE GROVE, MINNESOTA
ORDINANCE NO. 1109

AN ORDINANCE FOR THE CITY OF COTTAGE GROVE, MINNESOTA AMENDING CITY CODE TITLE 11-2-6, ZONING MAP, TO REZONE CERTAIN PROPERTY FROM AG-2, AGRICULTURE, TO R-4, TRANSITIONAL RESIDENTIAL DISTRICT

The City Council of the City of Cottage Grove, Washington County, Minnesota, does ordain as follows:

SECTION 1. AMENDMENT. The City of Cottage Grove's Official Zoning Map as referenced in Section 11-2-6 of the "Code of the City of Cottage Grove," County of Washington, State of Minnesota, shall be amended by rezoning 69.5 acres of land legally described below from AG-2, Agriculture, to R-4, Transitional Residential:

The Northwest Quarter of Section 19 in Township 27 North of Range 21 West, Washington County, Minnesota, excepting therefrom the north 70 rods thereof, and also excepting therefrom the railroad right of way, as now laid out and traveled across said tract, according to the United States Government Survey.

Minus the following legal description:

Tract A: That part of the Northwest Quarter of Section 19 in Township 27 North of Range 21 West, lying southerly and westerly of a line 33 feet southerly and westerly of the center line of Grey Cloud Trail as now established, except the South 352.64 feet, according to the United States Government Survey thereof and situated in Washington County, Minnesota.

Tract B: The South 352.64 feet of the Northwest Quarter of Section 19 in Township 27 North of Range 21 West, lying 33 feet westerly of the center line of Grey Cloud Trail as now established, according to the United States Government Survey thereof and situated in Washington County, Minnesota.

ALSO LESS AND EXCEPT All that part of the Northwest Quarter of Section 19 in Township 27 North of Range 21 West, lying west of the Chicago, Burlington & Quincy Railroad right of way and north of the center line of the existing public highway, described as follows: Commencing at the northwest corner of Section 19, Township 27 North, Range 21 West; thence south along the west line of said Section 19 a distance of 1218.5 feet to the intersection with the west line of the Chicago, Burlington & Quincy Railroad right of way and the point of beginning of the description of the tract of land to be hereby described; thence South 18 degrees 52 minutes East, along said right of way line a distance of 733.7 feet to the center line of the present county highway extended; thence North 70 degrees 15 minutes West, along said center line extended and the center line of said county highway to the intersection thereof with the west line of said Section 19; thence north on the west line of said Section 19 to the point of beginning.

Abstract Property (PID 1902721240001)

SECTION 2. SUMMARY PUBLICATION. Pursuant to Minnesota Statutes Section 412.191, in the case of a lengthy ordinance, a summary may be published. While a copy of the entire ordinance is available without cost at the office of the City Clerk, the following summary is approved by the City Council and shall be published in lieu of publishing the entire Official Zoning ordinance:

> "The City of Cottage Grove's Official Zoning Map (City Code Title 11-2-6) shall be amended to rezone 69.5 acres of land generally located west of Hadley Avenue South and 95th Street South and East of Grey Cloud Trail, from AG-2, Agriculture, to R-4, Transitional Residential."

SECTION 3. EFFECTIVE DATE. This ordinance amendment shall be in full force and effective from and after adoption and publication according to law.

Passed this 18th day of March, 2026.

_____
Myron Bailey, Mayor

Attest:

_____
Tamara Anderson, City Clerk

CITY OF COTTAGE GROVE, MINNESOTA
CITY COUNCIL
RESOLUTION 2026-044

A RESOLUTION APPROVING PRELIMINARY PLAT TO BE KNOWN AS TALCOTT GLEN

WHEREAS, Lennar, applied for a Preliminary Plat for a development to be called Talcott Glen consisting of 177 single-family homes on property legally described below:

The Northwest Quarter of Section 19 in Township 27 North of Range 21 West, Washington County, Minnesota, excepting therefrom the north 70 rods thereof, and also excepting therefrom the railroad right of way, as now laid out and traveled across said tract, according to the United States Government Survey.

Minus the following legal description:

Tract A: That part of the Northwest Quarter of Section 19 in Township 27 North of Range 21 West, lying southerly and westerly of a line 33 feet southerly and westerly of the center line of Grey Cloud Trail as now established, except the South 352.64 feet, according to the United States Government Survey thereof and situated in Washington County, Minnesota.

Tract B: The South 352.64 feet of the Northwest Quarter of Section 19 in Township 27 North of Range 21 West, lying 33 feet westerly of the center line of Grey Cloud Trail as now established, according to the United States Government Survey thereof and situated in Washington County, Minnesota.

ALSO LESS AND EXCEPT All that part of the Northwest Quarter of Section 19 in Township 27 North of Range 21 West, lying west of the Chicago, Burlington & Quincy Railroad right of way and north of the center line of the existing public highway, described as follows: Commencing at the northwest corner of Section 19, Township 27 North, Range 21 West; thence south along the west line of said Section 19 a distance of 1218.5 feet to the intersection with the west line of the Chicago, Burlington & Quincy Railroad right of way and the point of beginning of the description of the tract of land to be hereby described; thence South 18 degrees 52 minutes East, along said right of way line a distance of 733.7 feet to the center line of the present county highway extended; thence North 70 degrees 15 minutes West, along said center line extended and the center line of said county highway to the intersection thereof with the west line of said Section 19; thence north on the west line of said Section 19 to the point of beginning.

Abstract Property (PID 1902721240001)

WHEREAS, public hearing notices were mailed to property owners within 500 feet of the property, and a public hearing notice was published in the St. Paul Pioneer Press; and

WHEREAS, a planning staff report, which detailed specific information on the property and the application request, was prepared and presented; and

WHEREAS, the public hearing was open for public testimony, and testimony from the Applicant and the public was received and entered into the public record; and

WHEREAS, the Planning Commission unanimously (4-to-0 vote) recommended that the City Council approve the Preliminary Plat consisting of 177 single-family homes to be called Talcott Glen, at their February 23, 2026, meeting.

NOW, THEREFORE BE IT RESOLVED, the City Council of the City of Cottage Grove, Washington County, Minnesota, hereby approves the Preliminary Plat consisting of 177 single-family homes to be called Talcott Glen located on the property legally described above, subject to the conditions below:

General Development

1. The Developer and builders must comply with all city ordinances and policies except as may be modified by agreement of the Developer and City staff.

2. The Applicant must obtain appropriate building permits from the City, and permits or approvals from other regulatory agencies including, but not limited to: South Washington Watershed District, Minnesota Department of Health, Minnesota Department of Natural Resources, Northern Natural Gas, Met Council, Washington County, and Minnesota Pollution Control Agency.

3. The Developer shall enter into a development agreement with the City. The development agreement shall be executed by the Developer prior to City Council approval of the Final Plat.

4. The Developer shall incorporate into the final plat the recommendations, requirements, and evaluations noted in the Stantec memorandum dated February 18, 2026, subject to modifications that are agreed to by the Developer and City Engineer. All comments shall be adopted herein by reference.

Platting, Land Dedication, and Easements

5. The project shall be completed in accordance with the plans submitted and as amended by the conditions of approval and as approved by the City Engineer. Any significant changes to the plans, as determined by Planning staff, shall require review and approval by the Planning Commission and City Council.

6. Outlots A, B, C, D, and E shall be deeded to the City at the time of recording of the final plat.

7. Park dedication of 6.95 acres via accepted land dedication aligning with the future park plan or cash in lieu of is required as part of the proposed development.

8. A 20-foot-wide trail corridor for the stairs and paved trail from 95th Street to Strawberry Fields Park will be credited towards required park dedication as outlined in the development agreement. The final alignment of the trail connection will be determined prior to final plat.

9. A Forest Editing Plan (tree removal, trees to be saved, brush clearing, required establishment) is required to be reviewed and approved by the Parks and Recreation Director prior to issuance of a grading permit for Outlot A.

10. The gas easement shall be incorporated, were feasible, into future lots.

11. No retaining walls shall be permitted within public right-of-way or future city owned outlots.

Construction and Grading

12. A grading permit, application fee, and financial guarantee are required prior to beginning any site work.

13. An as-built grading survey that meets city standards is required after mass site grading.

14. Upon completing the installation of sanitary, water, and storm utilities, an as-built survey of these utilities must be submitted to the city. Electronic copies of site utilities must be submitted to the city.

15. A 5-foot sidewalk is required to be constructed on both sides of 95th Street South within the development.

16. The Developer shall submit an updated stormwater management and site plan that is consistent with City stormwater management code requirements prior to the approval of the final plat.

17. The Developer shall be responsible for constructing the pedestrian connection from 95th Street to Strawberry Fields Park.

18. The Developer is responsible for working with property owners and ensuring all personal property encroachments are removed from the 95th Street South Right-Of-Way between Mississippi Dunes Boulevard and the western property line of the Right-Of-Way.

19. The Developer is responsible for designing and constructing the extension of 95th Street from Mississippi Dunes Boulevard to the eastern property line of the subject development parcel. The trails along the north and south sides of 95th Street must be connected with a viable safe trail crossing to preserve functionality of the trail.

20. The Developer is responsible for obtaining the approximate 3,800 square foot area from the Bailey Nursery for the required 95th Street right-of-way. This area must be deeded to the City as right-of-way.

Lot Performance Standards

21. The architectural standards of the homes shall be consistent with the following:

a. Architectural design is required on all four sides of the principal structure.

b. Architectural materials must be varying on the front façade of the principal structure (shakes, board and batten, accent siding, shutters, window boxes, etc.).

22. Once a house plan is approved for a given lot, no identical house plan may be constructed on the five lots surrounding it; i.e., the lots adjacent on either side, the lot most directly across the street, and the lots adjacent to the lot most directly across the street.

Utilities

23. The Developer is responsible for providing the necessary easements and for building the road and utility improvements serving the site. All drainage and utility easements, as recommended by the City Engineer, must be shown on the Final Plat and dedicated to the City for public purposes.

24. The Developer is responsible for obtaining drainage and utility easements from the Property Owners of the property to south and north for the extension of utilities.

25. The Developer is responsible for designing and constructing the sanitary lift station and the forcemain that will serve Talcott Glen as approved by the City Engineer.

Streets

26. Future road extension signs shall be provided at the future road access points.

27. The secondary emergency access shall be designed and constructed from 95th Street to 85th Street by the Developer to specifications approved by the City's Fire Chief. The Developer shall install a gate for access by only emergency services. The Developer shall work with the property owners for construction easement access.

28. 95th Street shall be designed as a 36-foot roadway within a 66-foot right-of-way.

29. The Developer is responsible for removing the access crossing the BNSF owned Railroad. This crossing shall not be used as a construction access.

Landscaping and Irrigation

30. Irrigation systems installed within City right-of-way are solely the responsibility and risk of the Developers or individual. The City is not responsible or liable for any damage or costs related to installation, damage, or replacement of lawn irrigation systems placed in the boulevard as a result of City use of or future changes in the right of way.

31. The Developer is responsible for establishing the final grades, topsoil, and sodding from front lot line to rear lot line of all the lots, outlots, and boulevards within the subdivision.

32. Street trees shall be planted where practical along future city owned outlots without impact to pond access routes as approved by the City Engineer.

33. Boulevard trees shall be planted along 95th Street as determined by the City Forester from Mississippi Dunes Boulevard to the eastern edge of the property.

34. Two yard trees and ten shrubs shall be installed within each lot less than 60 feet wide. One yard tree shall be located in the front yard. The front yard tree may be an understory tree.

35. Three yard trees (no less than two different species), and ten shrubs shall be installed within each lot greater than 60 feet wide. One yard tree shall be located in the front yard. The front yard tree shall be an overstory tree.

36. Prior to releasing the Final Plat for recording, a final landscaping plan shall be approved by planning staff in writing.

37. Required tree mitigation shall be met by providing required landscaping and/or a combination of plantings and cash in lieu of planting to be calculated prior to the approval of the Final Plat.

38. An updated habitat study to reflect springtime flora growth shall be conducted prior to the issuance of a grading permit.

<u>Onsite Infrastructure Improvements</u>

39. A street lighting plan must be submitted by the Developer and approved by the City Engineer.

40. The Developer must place iron monuments at all lot and block corners and at all other angle points on property lines. Iron monuments must be placed after all site and right-of-way grading has been completed in order to preserve the lot markers for future property owners.

41. The Developer shall contact the electric, telephone, gas, and cable companies that are authorized to provide service to the property to ascertain whether any of those utility providers intend to install underground lines within the development.

42. The existing Gas Pipeline Easement shall be located and marked accordingly by the Developer to prevent encroachment onto easement. The Developer shall secure agreements with the pipeline companies to allow final approved roads and utilities to cross the existing pipeline easement. It is the responsibility of the Developer to notify property owners of the requirements of the responsibilities for applicable lots.

43. The Developer is responsible for all street maintenance; upkeep and repair of curbs, boulevards, and sod; and street sweeping until the project is complete. All streets must be maintained free of debris and soil until the subdivision is completed. The Developer hereby agrees to indemnify and hold the City harmless from any and all claims for damages of any nature whatsoever arising out of Developer's acts or omissions in performing the obligations imposed upon Developer by this paragraph.

44. The Developer will provide the City with copies of test results, suppliers, subcontractors, etc., relating to the work to be performed by the Developer. The Developer agrees to furnish to the City a list of contractors being considered for retention by the Developer for the performance of the work described in the development agreement.

45. The Developer is responsible for the control of grass and weeds in excess of eight inches on vacant lots or boulevards within their development. Failure to control grass and weeds will be considered a Developer's default, and the City may, at its option, perform the work and the Developer shall promptly reimburse the City for any expense incurred by the City.

46. The Developer will be required to conduct all major activities to construct the public improvements during the following hours of operation:

Monday through Friday	7:00 A.M. to 7:00 P.M.
Saturday	9:00 A.M. to 7:00 P.M. (with prior approval from the City Engineer)
Sunday/City Holidays	Not Allowed

This does not apply to activities that are required on a 24-hour basis such as dewatering or bi-pass pumping, etc. Any deviations from the above hours are subject to approval of the City Engineer.

47. All debris, including brush, vegetation, trees, and demolition materials, shall be properly disposed of off-site; burying construction debris, trees, and other vegetation is prohibited. Burning of trees and structures is prohibited, except for fire training only.

48. The Developer grants the City, its agents, employees, officers, and contractors permission to enter the site to perform all necessary work and/or inspections during grading and the installation of public improvements by the Developer.

49. The Developer is responsible for completing the final grade on all lots and ensuring all boulevards and yards have a minimum of four inches of organic topsoil or black dirt on them. Placement of organic topsoil or black dirt, sod, and shrubs must not be transferred to homeowners.

50. Notwithstanding any other provision of this resolution to the contrary, the City will issue building permits for model homes as noted in the Developer's agreement to be approved with the final plat. An unobstructed gravel surface road extension from a paved street surface to the proposed model home's driveway is required.

51. The Developer is responsible for requiring each builder to provide an on-site dumpster to contain all construction debris, thereby preventing it from being blown off-site. It is the responsibility of the Developer to ensure no debris blows on or off site.

52. Adequate portable toilets must be on-site at all times during construction of utilities, roadways, and houses. At no time shall any house under construction be more than 250 feet away from any portable toilet. Toilets must be regularly emptied.

53. At all times during construction, the approved SWPPP must be followed. The City may impose additional erosion control requirements if it is determined that the methods implemented are insufficient to properly control erosion.

54. The Developer is responsible for erosion control inspection fees at the current rates. If the Developer does not reimburse the City for the costs the City incurred for such work within thirty (30) days, the City may draw down the letter of credit to pay such costs.

55. Temporary parking during construction shall be permitted on only one side of the street and shall not be permitted on Grey Cloud Trail or 95th Street west of Mississippi Dunes Boulevard.

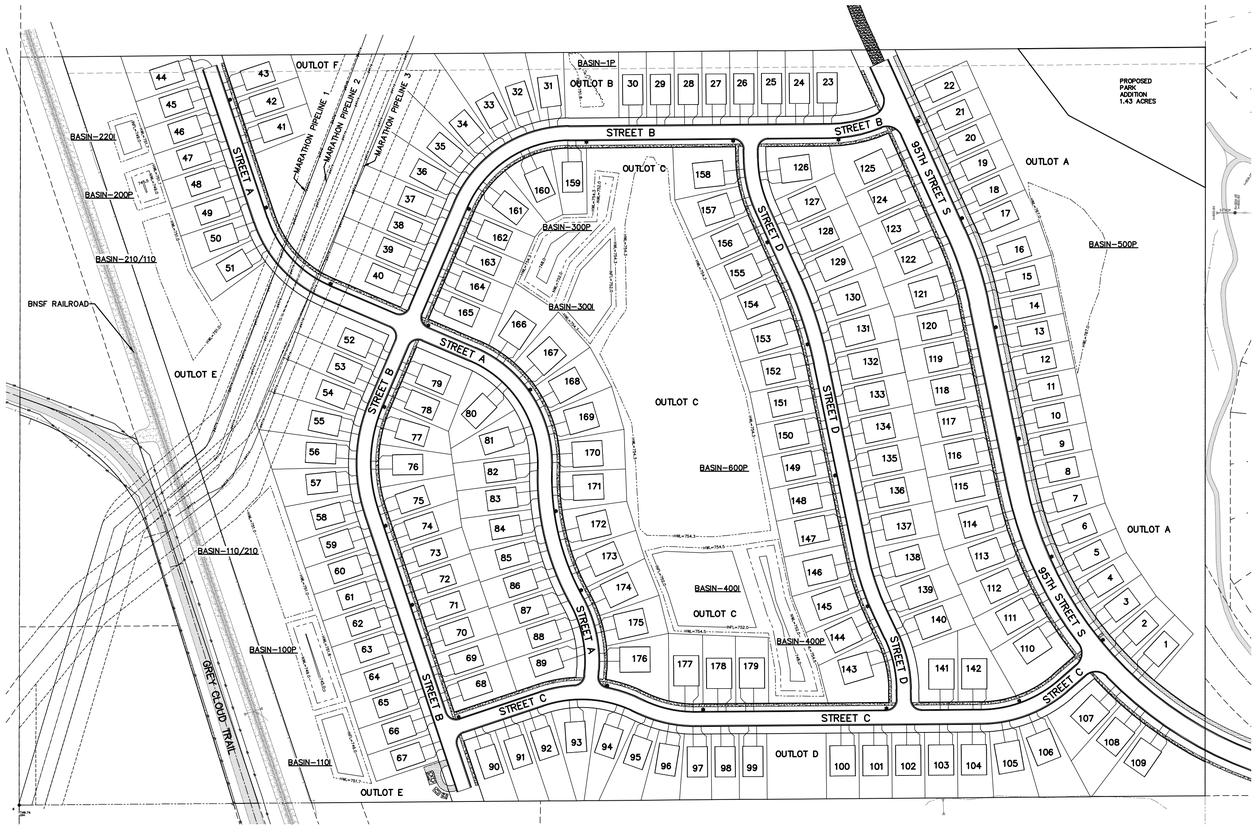
Passed this 18th day of March 2026.

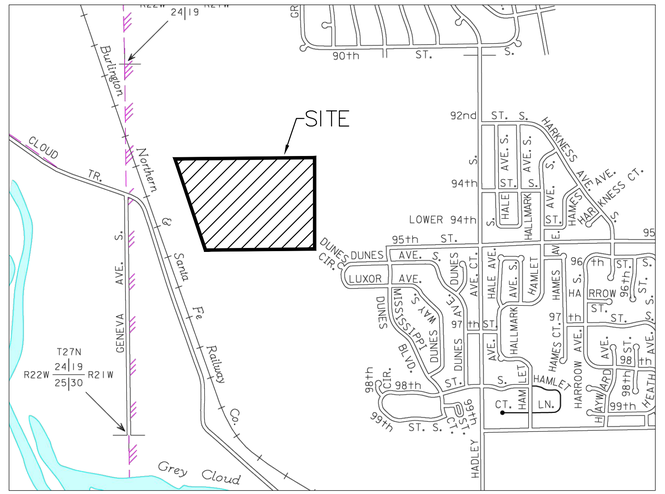
_____
Myron Bailey, Mayor

Attest:

_____
Tamara Anderson, City Clerk

TALCOTT GLEN
PRELIMINARY DEVELOPMENT PLANS
COTTAGE GROVE, MINNESOTA





LOCATION MAP

WARNING
HIGH-PRESSURE PIPELINE(S)
Excavation and/or Construction Prohibited
Without compliance with **STATE ONE-CALL**, AND
Without Written Permission From
MARATHON PIPELINE INC. L.L.C.
CALL BRIAN PHILIPS 419-379-8506
PRIOR TO ANY WORK IN MARATHON EASEMENT

SHEET INDEX

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1.01	LEGEND
2.01	EXISTING CONDITIONS
3.01	PRELIMINARY PLAT
4.01-4.02	PRELIMINARY REMOVALS PLAN
5.00	PRELIMINARY OVERALL SITE PLAN
5.01-5.05	PRELIMINARY SITE PLAN
5.11	95TH STREET TURN LANES
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S5	PROPOSED HYDROLOGY MAP
L1	LANDSCAPE PLAN
T1-T8	TREE PRESERVATION PLAN
T1	95TH STREET TREE PRESERVATION PLAN

Know what's **below.**
Call before you dig.

N

0 75 150 200
GRAPHIC SCALE IN FEET

BENCH MARK
TOP NUT OF HYDRANT
LOCATED AT SW QUADRANT OF
MISSISSIPPI DUNES BOULEVARD
AND 94TH STREET S.
NAVD 88 ELEV=819.06

00-ENG-123105-SHEET-COVR

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Mendota Heights, MN 55120
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Fax: 681-9488
www.pioneereng.com

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota
Name Brian N. Molinaro
Reg. No. 47504 Date 01-16-26

Revisions

Date	01-16-26
Designed	NAP
Drawn	SHA

COVER

LENNAR
16305 36TH AVENUE NORTH
PLYMOUTH, MINNESOTA 55446

TALCOTT GLEN
COTTAGE GROVE, MINNESOTA

1.00 OF 47

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LEGEND

UTILITY LINES

EXISTING	PROPOSED	FUTURE	DESCRIPTION
			SANITARY MANHOLE
			SANITARY SEWER (SANITARY & WATERMAIN PLANS)
			SANITARY SEWER (STORM SEWER PLANS)
FM	FM	FM	FORCE MAIN
			HYDRANT
			GATE VALVE
			REDUCER
			CURB STOP
			WATERMAIN (SANITARY & WATERMAIN PLANS)
			WATERMAIN (STORM SEWER PLANS)
			CATCH BASIN
			BEEHIVE
			STORM MANHOLE
			FLARED END SECTION
			CONTROL STRUCTURE
			STORM SEWER (SANITARY & WATERMAIN PLANS)
			STORM SEWER (STORM SEWER PLANS)
			CULVERT
PERF	PERF	PERF	PERFORATED DRAINTILE
DT	DT	DT	SOLID DRAINTILE SERVICE
			CASING
e	e	e	UNDERGROUND ELECTRIC LINE
fo	fo	fo	UNDERGROUND FIBER OPTIC LINE
g	g	g	UNDERGROUND GAS PIPELINE
petro	petro	petro	UNDERGROUND PETROLEUM PIPELINE
t	t	t	UNDERGROUND TELEPHONE LINES
tv	tv	tv	UNDERGROUND TELEVISION LINE
oh	oh	oh	OVERHEAD UTILITY LINES

SITE LINES

EXISTING	PROPOSED	FUTURE	DESCRIPTION
			SURMOUNTABLE CURB & GUTTER
			B-STYLE CURB & GUTTER
			RIBBON CURB & GUTTER
			EDGE OF BITUMINOUS
			YELLOW PAVEMENT STRIPING (SINGLE/DOUBLE)
			WHITE PAVEMENT STRIPING (SINGLE/DOUBLE)
			PHASE LINE
			CENTERLINE
902	902	902	2' CONTOUR LINE
900	900	900	10' CONTOUR LINE
	OUTLET=987.0	OUTLET=987.0	BASIN OUTLET LINE
	HWL=900.2	HWL=900.2	BASIN HIGH WATER LINE
	84.3		PROPOSED SPOT ELEVATION
			EMERGENCY OVERFLOW
			DRAINAGE FLOW ARROW
			DELINEATED / PROPOSED WETLAND LINE
BUFFER	BUFFER	BUFFER	WETLAND BUFFER
			TREE LINE
FEMA	FEMA	FEMA	FEMA FLOODPLAIN BOUNDARY
			RETAINING WALL
X	X	X	FENCE (BARBED WIRE)
#	#	#	FENCE (CHAIN LINK)
[]	[]	[]	FENCE (WOOD)
	C		CONSERVATION AREA SIGN
	W		WETLAND BUFFER SIGN
			TYPE III BARRICADE
			LIGHT POLE
			STREET SIGNS
			PEDESTRIAN RAMP

SURVEY LINES

EXISTING	PROPOSED	FUTURE	DESCRIPTION
			BOUNDARY
			RIGHT OF WAY
			LOT LINE
			EASEMENT
			SET BACK LINE
			SECTION LINE
			RESTRICTED ACCESS

HATCH PATTERNS

- GRAVEL SURFACE
- BITUMINOUS SURFACE
- CONCRETE SURFACE

TOPOGRAPHIC SYMBOLS

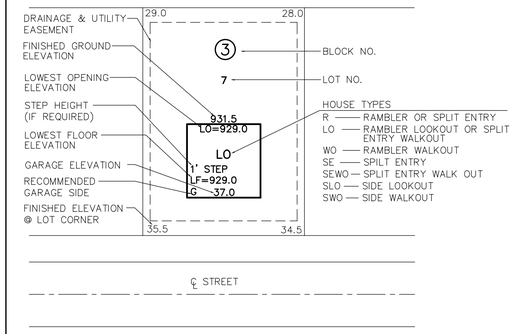
- CATCH BASIN
- CATCH BASIN BEEHIVE
- FLARED END SECTION
- GATE VALVE
- HYDRANT
- WATER SERVICE
- WATER WELL
- MONITORING WELL
- CLEANOUT
- HAND HOLE
- MANHOLE OTHER THAN SANITARY OR STORM
- SANITARY OR STORM MANHOLE
- LAWN SPRINKLER VALVE
- LAWN SPRINKLER HEAD
- UTILITY POLE
- TRANSFORMER BOX
- FIBER OPTIC BOX
- ELECTRIC BOX
- NATURAL GAS METER
- LIGHT POLE
- SEMAPHORE
- TELEPHONE BOX
- CABLE BOX
- CAST IRON MONUMENT
- FOUND IRON PIPE
- JUDICIAL LAND MARK
- PK NAIL
- CONTROL POINT
- SPIKE
- FLAG POLE
- TEST HOLE
- MAILBOX
- SIGN
- BOLLARD
- CONSERVATION POST
- DECIDUOUS TREE
- CONIFEROUS TREE
- SHRUB / BUSH

ABBREVIATIONS

A	ALGEBRAIC DIFFERENCE
B-B	BACK TO BACK
BV	BUTTERFLY VALVE
BOC	BACK OF CURB
BFE	BASE FLOOD ELEVATION
BMP	BEST MANAGEMENT PRACTICE
℄	CENTER LINE
CB	CATCHBASIN
CBMH	CATCHBASIN MANHOLE
CMP	CORRUGATED METAL PIPE
CO	CLEAN OUT
CS	CURB STOP
DIP	DUCTILE IRON PIPE
DT	DRAINTILE
EL/ELEV	ELEVATION
EX	EXISTING
FES	FLARED END SECTION
F-F	FACE TO FACE
FM	FORCEMAIN
GB	GRADE BREAK
GND	GROUND
GV	GATE VALVE
HP	HIGH POINT
HYD	HYDRANT
HWL	HIGH WATER LEVEL
INV	INVERT
K	CURVE COEFFICIENT
L	LENGTH
LF	LOWEST FLOOR
LO	LOOKOUT
LO	LOWEST OPENING
LP	LIQUID PETROLEUM
LP	LOW POINT
MH	MANHOLE
PC	POINT OF CURVATURE
PCC	POINT OF COMPOUND CURVATURE
PI	POINT OF INTERSECTION
P℄	PROPERTY LINE
PRC	POINT OF REVERSE CURVATURE
PVT	POINT OF TANGENCY
PVC	POINT OF VERTICAL CURVATURE
PVC	POLYVINYL CHLORIDE PIPE
PVI	POINT OF VERTICAL INTERSECTION
R	RADIUS
R	RAMBLER
RCP	REINFORCED CONCRETE PIPE
ROW	RIGHT OF WAY
SSWR	SANITARY SEWER
STA	STATION
STRM	STORM SEWER
SWPPP	STORM WATER POLLUTION PROTECTION PLAN
TNH	TOP NUT HYDRANT
TYP	TYPICAL
WM	WATER MAIN
WO	WALKOUT

LOT INFORMATION

(TYPICAL SECTION NOT TO SCALE)



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Name Brian N. Molinaro
Reg. No. 47504 Date 01-16-26

Revisions

Date	01-16-26
Designed	NAP
Drawn	SHA

00-ENG-123105-SHEET-LGND

LEGEND

LENNAR
16305 36TH AVENUE NORTH
PLYMOUTH, MINNESOTA 55446

TALCOTT GLEN
COTTAGE GROVE, MINNESOTA

1.01 OF 47

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EXCEPTION

N89°30'59"E 2262.51

NORTH LINE OF THE S 78 ACRES

S89°30'59"W MEAS.
S89°01'44"W DEED

669.39 MEAS.
699.18 DEED

693.00 DEED
747.21 MEAS.

CL FIELD

CULTIVATED

WOODED

FIRE PIT

CL DIRT TRAIL

SUMMERS ADDITION

SUMMERS 5TH ADDITION

1481.84

N00°01'06"E

EXCEPTION

N18°28'24"W

S00°06'27"W
355.07

N70°06'38"W
245.99 MEAS.
N70°15'W DEED

23.58

106.39
R=467.00'
Δ=13°03'09"

Δ=39°36'50"
R=342.00'
237.42'

N18°28'24"W
1556.90

N17°16'59"W
591.00

759.64

553.86

PIPELINE EASEMENT PER DOC. NO. 2656569

PIPELINE EASEMENT PER DOC. NO. 835534

PIPELINE EASEMENT PER DOC. NO. 3566078

TOP OF PIPE EL=+/-901.6

TOP OF PIPE EL=+/-901.8

TOP OF PIPE EL=+/-902.0

TOP OF PIPE EL=+/-902.2

TOP OF PIPE EL=+/-902.4

TOP OF PIPE EL=+/-902.6

TOP OF PIPE EL=+/-902.8

TOP OF PIPE EL=+/-903.0

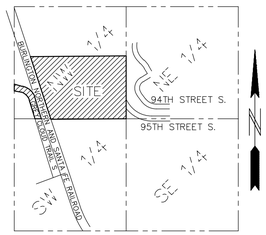
TOP OF PIPE EL=+/-903.2

TOP OF PIPE EL=+/-903.4

TOP OF PIPE



VICINITY MAP
NO SCALE



SECTION 19, TWP. 27, RGE. 21
WASHINGTON, MINNESOTA
LOCATION MAP
NO SCALE

DRAINAGE AND UTILITY EASEMENTS ARE SHOWN THUS:

being 5 feet in width, and adjoining lot lines unless otherwise indicated, and 10 feet in width and adjoining street lines and rear lot lines unless otherwise indicated on the plat.

TOTAL GROSS AREA	69.50	ACRES
TOTAL LOT AREA	35.6373	ACRES
NUMBER OF LOTS	179	
NUMBER OF OUTLOTS	6	
TOTAL OUTLOT AREA	21.6507	ACRES
TOTAL PROPSED RIGHT OF WAY AREA–LOCAL STREETS	11.2508	ACRES
TOTAL EXISTING RIGHT OF WAY AREA GREY CLOUD TRAIL SOUTH	0.9612	ACRES

Property Description per Commitment for title insurance Commitment No. NCS–1210403–MPLS, issuing Office File No. NCS–1210403–MPLS, Commitment Date: February 26th, 2024. AT 7:30 A.M. issued by First American Title Insurance Company National Commercial Service.

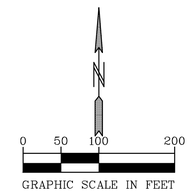
The Northwest Quarter of Section 19 in Township 27 North of Range 21 West, Washington County, Minnesota, excepting thereform the north 70 rods thereof, and also excepting therefrom the railroad right of way, as now liad out and traveled across said tract, according to the United States Government Survey.

Minus the following legal descripion:

Tract A: That part of the Northwest Quarter of Section 19 in Township 27 North of Range 21 West, lying southerly and westerly of a line 33 feet southerly and westerly of the center line of Grey Cloud Trail as now established, except the South 352.64 feet, according to the United States Government Survey thereof and situated in Washington County, Minnesota.

Tract B: The South 352.64 feet of the Northwest Quarter of Section 19 in Township 27 North of Range 21 West, lying 33 feet westerly of the center line of Grey Cloud Trail as now established, according to the United States Government Survey thereof and situated in Washington County, Minnesota.

ALSO LESS AND EXCEPT All That part of the Northwest Quarter of Section 19 in Township 27 North of Range 21 West, lying west of the Chicago, Burlington & Quincy Railroad right of way and north of the center line of the existing public highway, described as follows: Commence at the northwest corner of Section 19, Township 27 North, Range 21 West; thence south along the west line of said Section 19 a distance of 1218.5 feet to the intersection with the west line of the Chicago, Burlington & Quincy Railroad right of way and the point of beginning of the description of the tract of land to be hereby described; thence South 18 degrees 52 minutes East, along said right of way line a distance of 733.7 feet to the center line of the present county highway extended; thence North 70 degrees 15 mintes West, along said center line extended and the center line of said county highway to the intersection thereof with the west line of said Section 19; thenc north on the west line of said Section 19 to the point of beginning.



GRAPHIC SCALE IN FEET

00-SURV-123105-BASE.DWG

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www.pioneereng.com

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Surveyor under the laws of the State of Minnesota

Name Peter J. Hawkinson
Reg. No. 42299 Date 01-16-26

Revisions

Date	01-16-26
Designed	NAP
Drawn	SHA

PRELIMINARY PLAT

LENNAR
16305 36TH AVENUE NORTH
PLYMOUTH, MINNESOTA 55446

TALCOTT GLEN
COTTAGE GROVE, MINNESOTA

3.01 OF 47

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CLEAR & GRUB 19.9 AC VEGETATION/TREES

MARATHON PIPELINE 1

MARATHON PIPELINE 2

MARATHON PIPELINE 3

BNSF RAILROAD

REMOVE FOUNDATION REMNANT

REMOVE GRAVEL PATH

REMOVE EXISTING COLLAPSED BARN

REMOVE EXISTING DEBRIS

REMOVE EXISTING TANK AND PUMP HOUSE

REMOVE EXISTING BLOCK FOUNDATION

PROTECT EXISTING FAUNA DURING CONSTRUCTION

CLEAR & GRUB 19.9 AC VEGETATION/TREES

PROTECT EXISTING FAUNA DURING CONSTRUCTION

EXTENT OF CLEARING

GRANADA AVENUE S

REMOVE EXISTING FES

REMOVE & REPLACE EX. TRAIL FOR WATERMAIN CROSSING

PROTECT EXISTING FAUNA DURING CONSTRUCTION

EXTENT OF CLEARING

94TH STREET S

GREY CLOUD TRAIL

PIPELINE EASEMENT PER DOC. NO. 265660

CLEAR & GRUB 19.9 AC VEGETATION/TREES

EXTENT OF CLEARING

SEE SHEET 4.02

REMOVE EXIST FES (2) & PIF

DEMO 261 SY EX. BITUMINOUS TRAIL

WARNING
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0 50 100 200
GRAPHIC SCALE IN FEET

BENCH MARK
TOP NUT OF HYDRANT
LOCATED AT SW QUADRANT OF MISSISSIPPI DUNES BOULEVARD AND 94TH STREET S.
NAVD 88 ELEV=819.06

00-ENG-123105-SHEET-DEMO

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Name: Brian N. Molinaro
Reg. No. 47504 Date 01-16-26

Revisions

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Designed	NAP
Drawn	SHA

PRELIMINARY REMOVALS PLAN

LENNAR
16305 36TH AVENUE NORTH
PLYMOUTH, MINNESOTA 55446

TALCOTT GLEN
COTTAGE GROVE, MINNESOTA

4.01 OF 47

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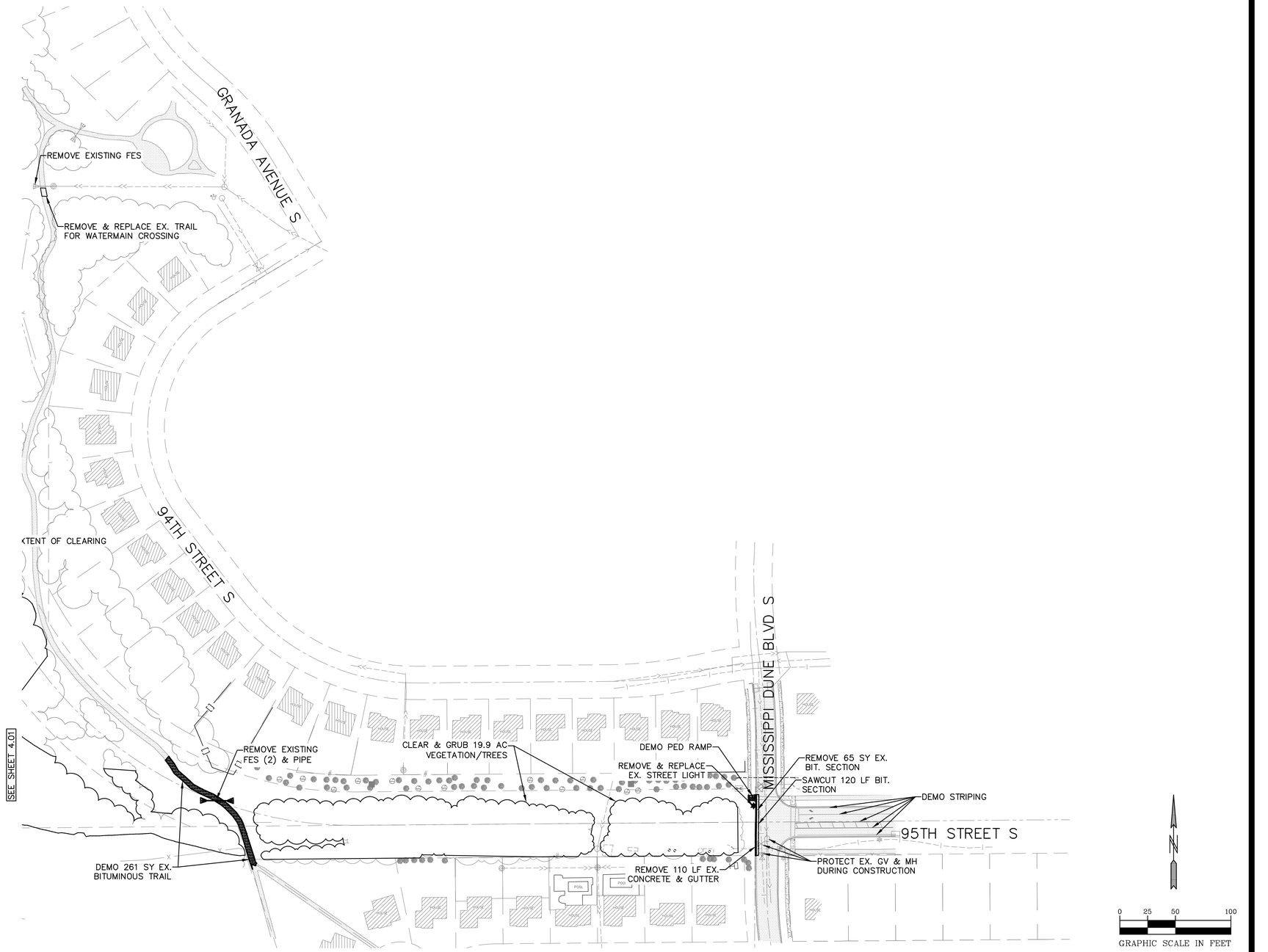

BENCH MARK
TOP NUT OF HYDRANT
LOCATED AT SW QUADRANT OF
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AND 94TH STREET S.
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00-ENG-123105-SHEET-DEMO

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PRELIMINARY REMOVALS PLAN

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TALCOTT GLEN
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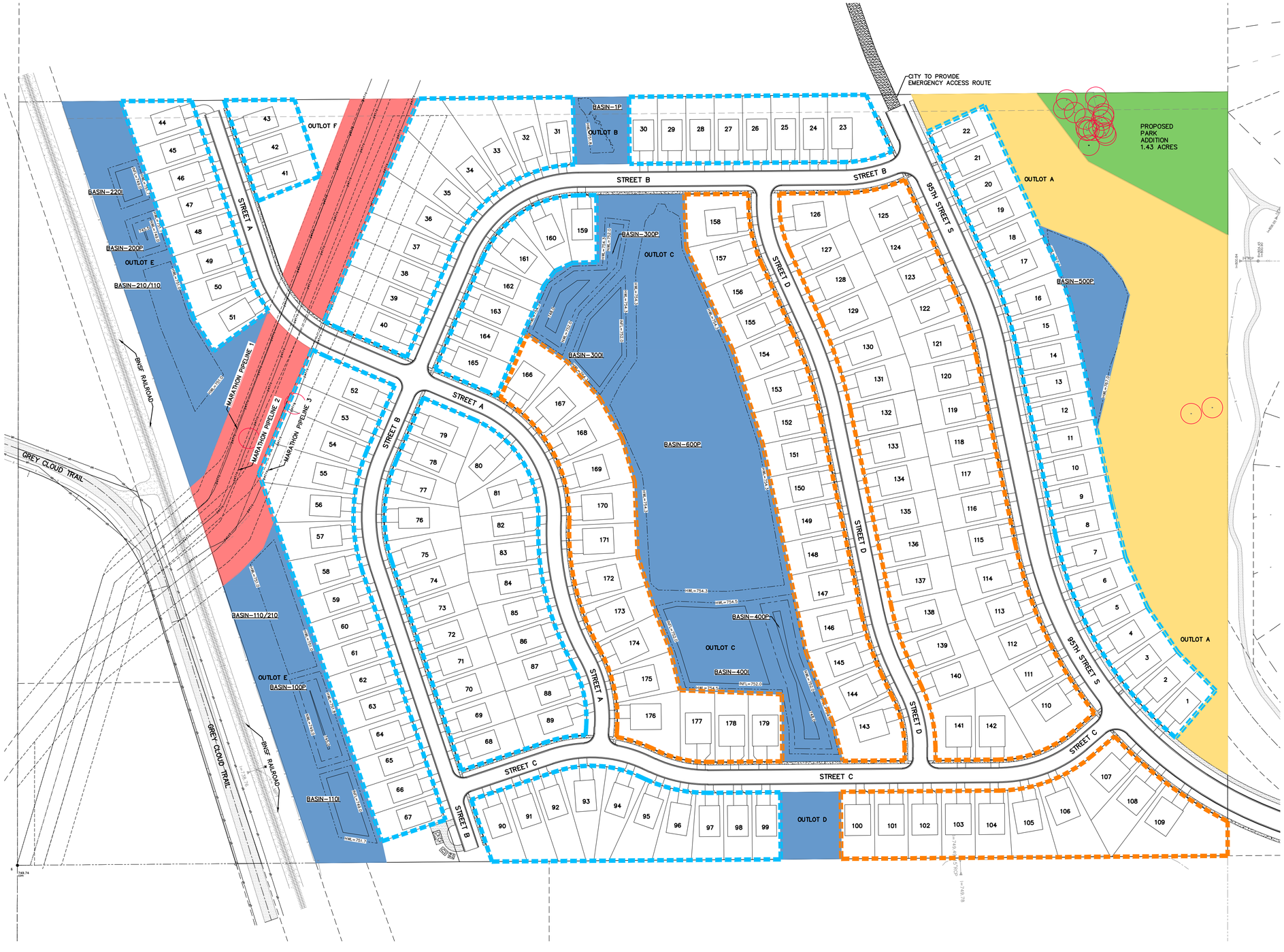

SITE DATA:

2040 LAND USE
LOW DENISTY (246 UNITS/ACRE)

EXISTING ZONING: AG1 (AGRICULTURE)
PROPOSED ZONING: R-4

73 – 65' LOTS
106 – 55' LOTS

179 TOTAL HOMESITES

DENSITY CALCULATION

TOTAL GROSS AREA	69.50 ACRES
PARK AREA:	1.43 ACRES
OPEN/SLOPES:	5.57 ACRES
GREY CLOUD TRAIL:	0.96 ACRES
PIPELINE:	2.34 ACRES
STORM WATER:	11.72 ACRES
NET DEVELOPABLE AREA	47.48 ACRES
NET DENSITY = 179/47.48 :	3.77 UNITS/ACRE

R-4 STANDARDS:
WIDTH: 45'
DEPTH: 120'
FRONT SETBACK: 25'
REAR YARD SETBACK: 30'
SIDE SETBACK: 7.5' INTERIOR, 5' GARAGE
IMPERVIOUS MAX: 50%

65' LOTS
PROPOSED LOTS: 73

50' LOTS
PROPOSED LOTS: 106

PROTECT FAUNA DURING CONSTRUCTION

WARNING
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0 50 100 200
GRAPHIC SCALE IN FEET

BENCH MARK
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LOCATED AT SW QUADRANT OF
MISSISSIPPI DUNES BOULEVARD
AND 94TH STREET S.
NAVD 88 ELEV=819.06

00-ENG-123105-SHEET-SITE-OVR

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Name Brian N. Molinaro
Reg. No. 47504 Date 01-16-26

Revisions

Date 01-16-26
Designed NAP
Drawn SHA

PRELIMINARY OVERALL SITE PLAN

LENNAR
16305 36TH AVENUE NORTH
PLYMOUTH, MINNESOTA 55446

TALCOTT GLEN
COTTAGE GROVE, MINNESOTA

5.00 OF 47

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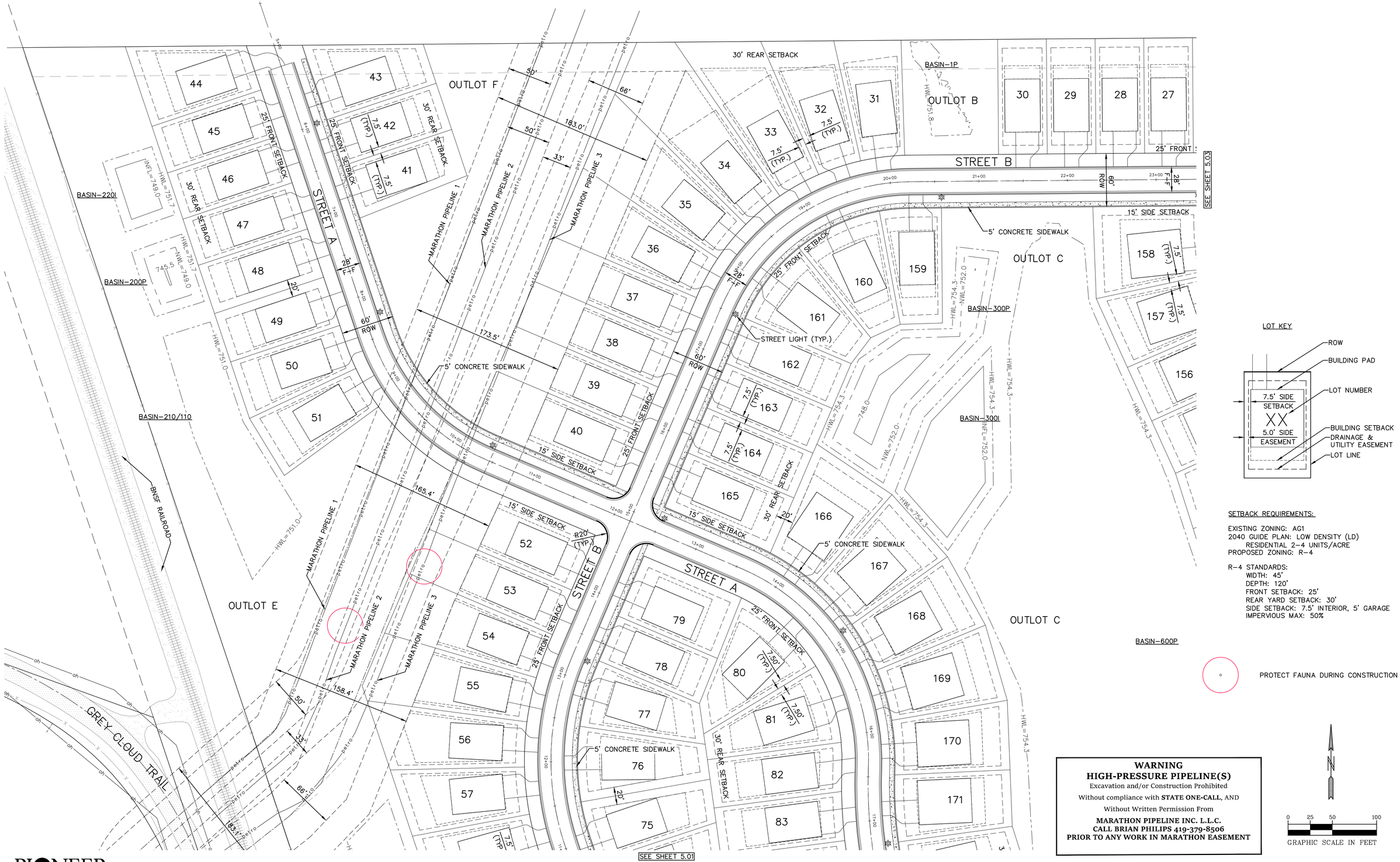

LOT KEY

SETBACK REQUIREMENTS:

EXISTING ZONING: AG1
2040 GUIDE PLAN: LOW DENSITY (LD)
RESIDENTIAL 2-4 UNITS/ACRE
PROPOSED ZONING: R-4

R-4 STANDARDS:
WIDTH: 45'
DEPTH: 120'
FRONT SETBACK: 25'
REAR YARD SETBACK: 30'
SIDE SETBACK: 7.5' INTERIOR, 5' GARAGE
IMPERVIOUS MAX: 50%

WARNING
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0 25 50 100
GRAPHIC SCALE IN FEET

00-ENG-123105-SHEET-SITE

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(651) 681-1914
Fax: 681-9488
www.pioneereng.com

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Name Brian N. Molinaro
Reg. No. 47504 Date 01-16-26

Revisions

Date	01-16-26
Designed	NAP
Drawn	SHA

PRELIMINARY SITE PLAN

LENNAR
16305 36TH AVENUE NORTH
PLYMOUTH, MINNESOTA 55446

TALCOTT GLEN
COTTAGE GROVE, MINNESOTA

5.01 OF 47

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SEE SHEET 5.01

SEE SHEET 5.03

SEE SHEET 5.04

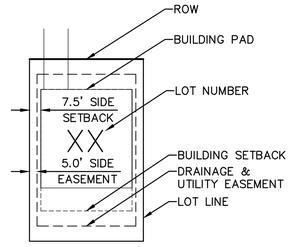
SETBACK REQUIREMENTS:

EXISTING ZONING: AG1
2040 GUIDE PLAN: LOW DENSITY (LD)
RESIDENTIAL 2-4 UNITS/ACRE
PROPOSED ZONING: R-4

R-4 STANDARDS:
WIDTH: 45'
DEPTH: 120'
FRONT SETBACK: 25'
REAR YARD SETBACK: 30'
SIDE SETBACK: 7.5' INTERIOR, 5' GARAGE
IMPERVIOUS MAX: 50%

PROTECT FAUNA DURING CONSTRUCTION

LOT KEY



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GRAPHIC SCALE IN FEET

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PRELIMINARY SITE PLAN

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PLYMOUTH, MINNESOTA 55446

TALCOTT GLEN
COTTAGE GROVE, MINNESOTA

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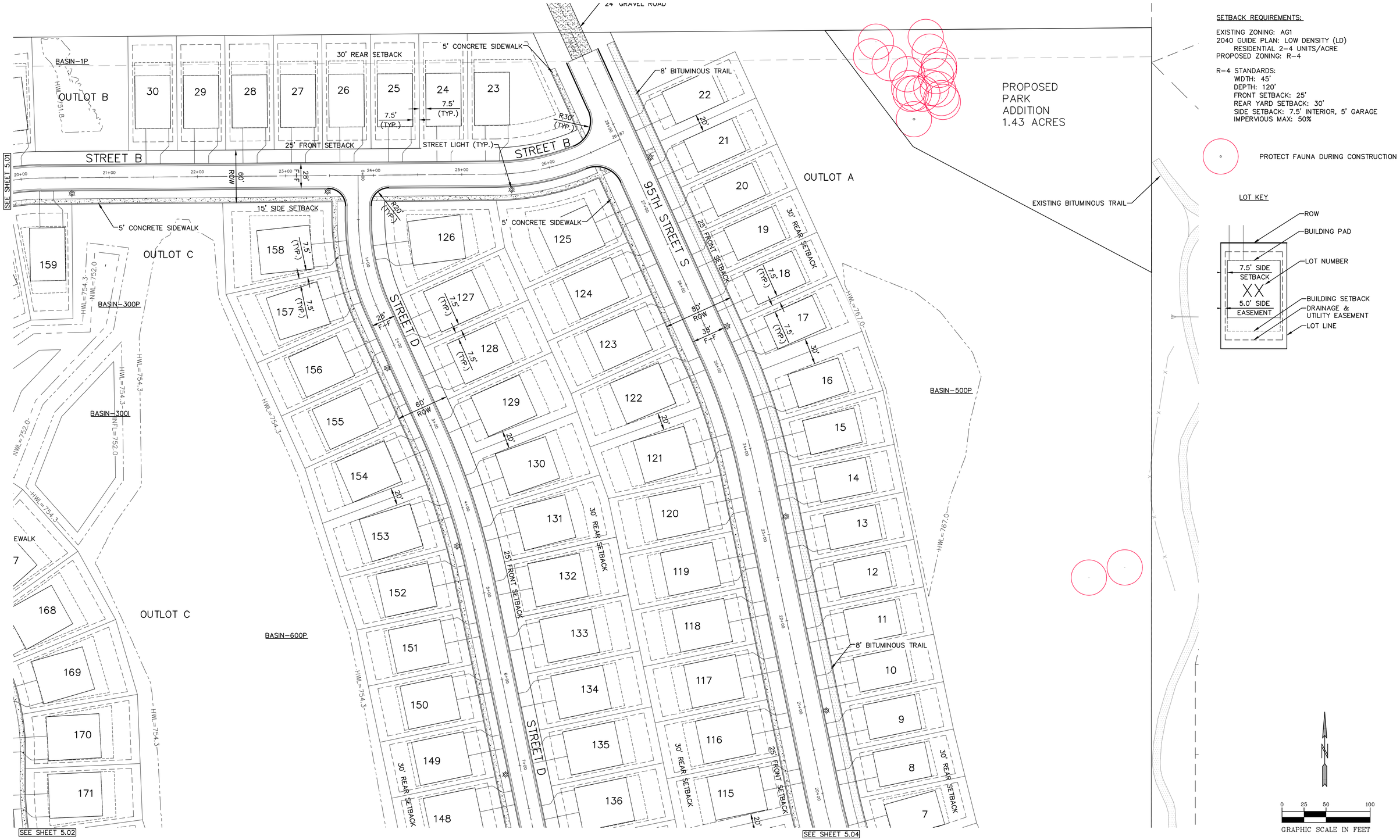

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PRELIMINARY SITE PLAN

LENNAR
16305 36TH AVENUE NORTH
PLYMOUTH, MINNESOTA 55446

TALCOTT GLEN
COTTAGE GROVE, MINNESOTA

5.03 OF 47

00-ENG-123105-SHEET-SITE

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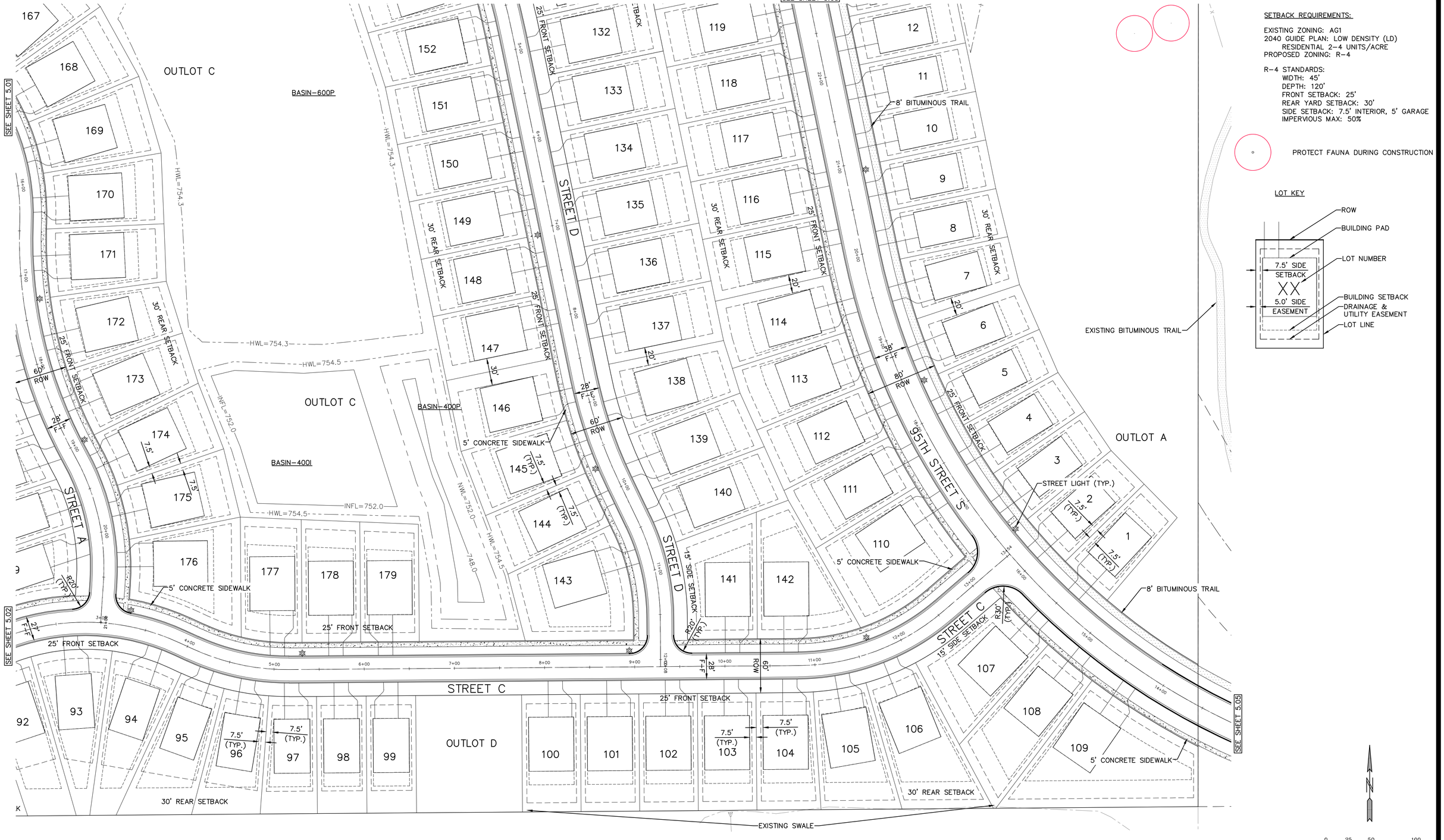

SETBACK REQUIREMENTS:

EXISTING ZONING: AG1
2040 GUIDE PLAN: LOW DENSITY (LD)
RESIDENTIAL 2-4 UNITS/ACRE
PROPOSED ZONING: R-4

R-4 STANDARDS:
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DEPTH: 120'
FRONT SETBACK: 25'
REAR YARD SETBACK: 30'
SIDE SETBACK: 7.5' INTERIOR, 5' GARAGE
IMPERVIOUS MAX: 50%

PROTECT FAUNA DURING CONSTRUCTION

LOT KEY

N

0 25 50 100
GRAPHIC SCALE IN FEET

00-ENG-123105-SHEET-SITE

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PRELIMINARY SITE PLAN

LENNAR
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PLYMOUTH, MINNESOTA 55446

TALCOTT GLEN
COTTAGE GROVE, MINNESOTA

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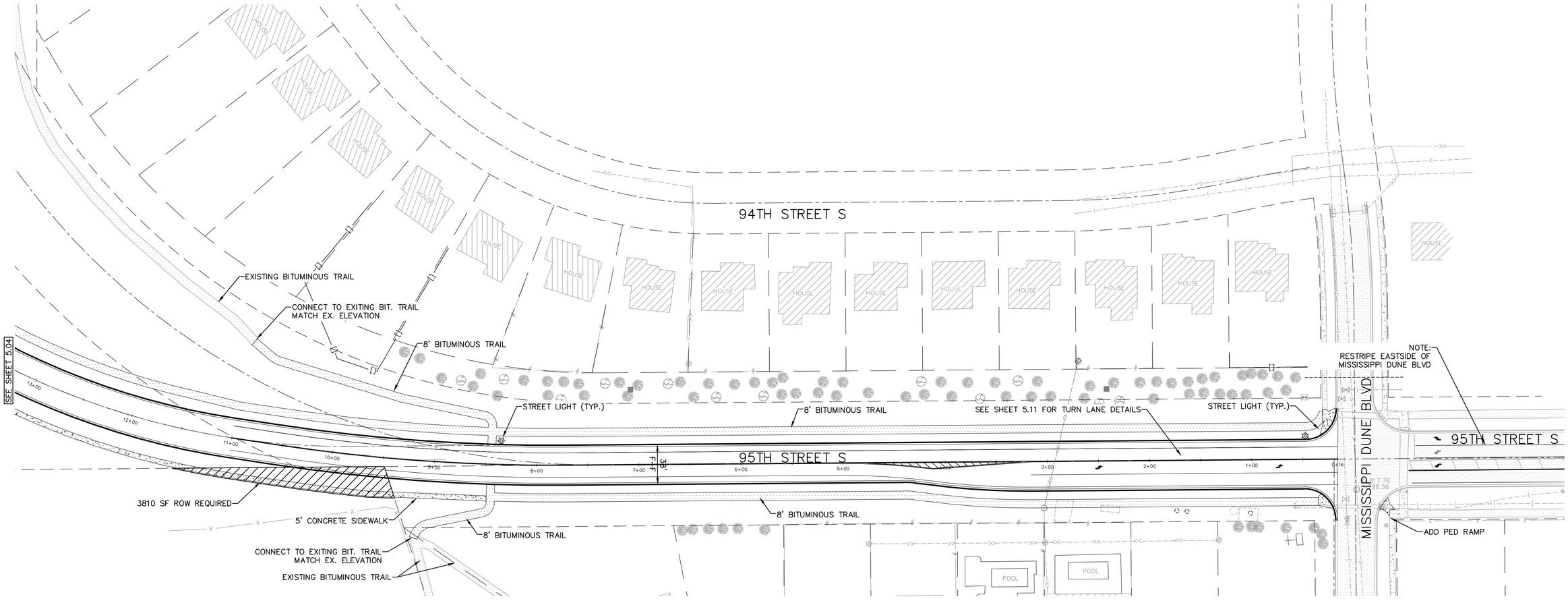
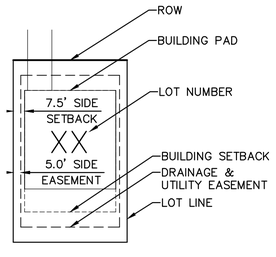


PROTECT FAUNA DURING CONSTRUCTION

LOT KEY



SETBACK REQUIREMENTS:

EXISTING ZONING: AG1
2040 GUIDE PLAN: LOW DENSITY (LD)
RESIDENTIAL 2-4 UNITS/ACRE
PROPOSED ZONING: R-4

R-4 STANDARDS:
WIDTH: 45'
DEPTH: 120'
FRONT SETBACK: 25'
REAR YARD SETBACK: 30'
SIDE SETBACK: 7.5' INTERIOR, 5' GARAGE
IMPERVIOUS MAX: 50%

N

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GRAPHIC SCALE IN FEET

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PRELIMINARY SITE PLAN

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TALCOTT GLEN
COTTAGE GROVE, MINNESOTA

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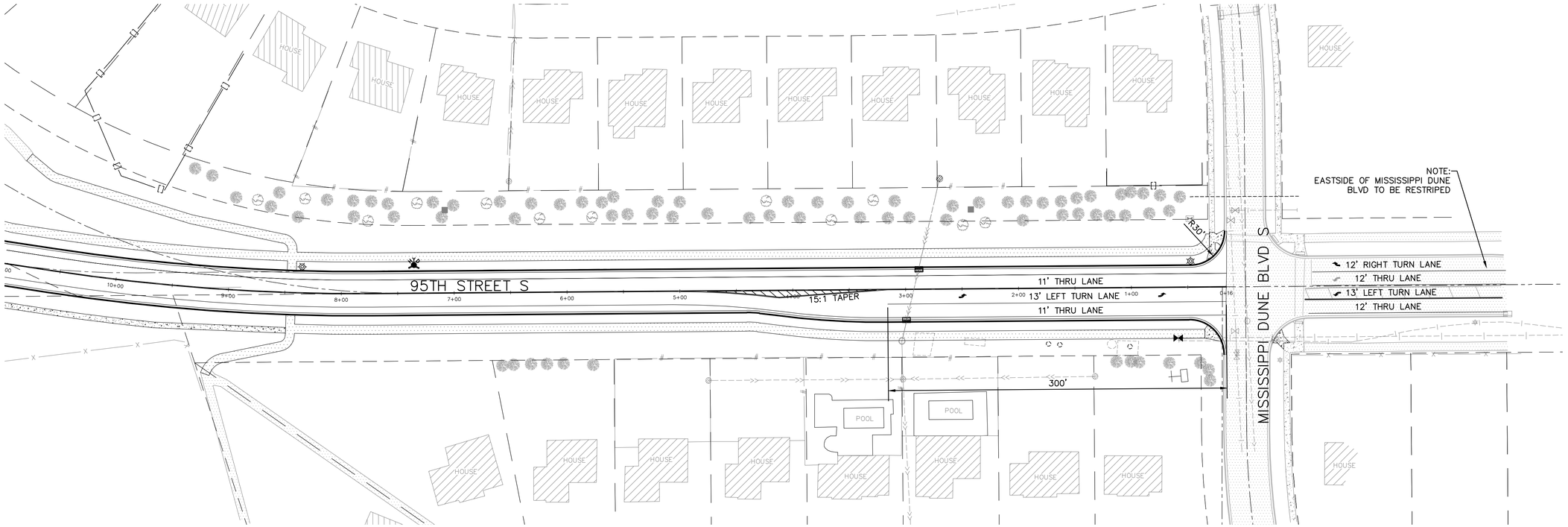

N

0 25 50 100

GRAPHIC SCALE IN FEET

BENCH MARK
TOP NUT OF HYDRANT
LOCATED AT SW QUADRANT OF
MISSISSIPPI DUNES BOULEVARD
AND 94TH STREET S.
NAVD 88 ELEV=819.06

00-ENG-123105-SHEET-TURN-LANE

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95TH STREET TURN LANES

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TALCOTT GLEN
COTTAGE GROVE, MINNESOTA

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ST-1 — ST-1 TO ST-7: DENOTES STANDARD PENETRATION TEST BORING

TP-15 — TP-15 TO TP-22: DENOTES 2023 BRAUN INTERTECT TEST PIT

1 — 1 TO 13: DENOTES 2022 HAUGO GEOTECHNICAL TEST PIT

197 — 197 TO 218: DENOTES 2005 CONSULTANTS SOIL BORING

NOTE: ALL LOCATIONS ARE APPROXIMATE

SETBACK REQUIREMENTS:

EXISTING ZONING: AG1
2040 GUIDE PLAN: LOW DENSITY (LD)
RESIDENTIAL 2-4 UNITS/ACRE
PROPOSED ZONING: R-4

R-4 STANDARDS:
WIDTH: 45'
DEPTH: 120'
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REAR YARD SETBACK: 30'
SIDE SETBACK: 7.5' INTERIOR, 5' GARAGE
IMPERVIOUS MAX: 50%

BUILDING REQUIREMENTS

POND ADJACENT LOTS:	
LOW ADJACENT GROUND	3'+HWL
	2'+EOF
LOCAL LOWPOINTS:	
LOW ADJACENT GROUND	1'+EOF

BASIN ACCESS 7% SLOPE MAX.

FLEXAMAT OVERFLOW

0 25 50 100
GRAPHIC SCALE IN FEET

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Name: Brian N. Molinaro
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Date 01-16-26
Designed NAP
Drawn SHA

PRELIMINARY GRADING PLAN

LENNAR
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PLYMOUTH, MINNESOTA 55446

TALCOTT GLEN
COTTAGE GROVE, MINNESOTA

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SEE SHEET 6.01

SEE SHEET 6.03

SEE SHEET 6.04

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FLEXAMAT OVERFLOW

0 25 50 100
GRAPHIC SCALE IN FEET

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PRELIMINARY GRADING PLAN

LENNAR
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TALCOTT GLEN
COTTAGE GROVE, MINNESOTA

6.02 OF 47

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ST-1 ST-1 TO ST-7: DENOTES STANDARD PENETRATION TEST BORING

TP-15 TP-15 TO TP-22: DENOTES 2023 BRAUN INTERTECT TEST PIT

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FLEXAMAT OVERFLOW

GRAPHIC SCALE IN FEET
0 25 50 100

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PRELIMINARY GRADING PLAN

LENNAR
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TALCOTT GLEN
COTTAGE GROVE, MINNESOTA

6.03 OF 47

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ST-1 ST-1 TO ST-7: DENOTES STANDARD PENETRATION TEST BORING

TP-15 TP-15 TO TP-22: DENOTES 2023 BRAUN INTERTECT TEST PIT

1 1 TO 13: DENOTES 2022 HAUGO GEOTECHNICAL TEST PIT

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NOTE: ALL LOCATIONS ARE APPROXIMATE

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2'+EOF
LOCAL LOWPOINTS:
LOW ADJACENT GROUND 1'+EOF

BASIN ACCESS 7% SLOPE MAX.

FLEXAMAT OVERFLOW

N

0 25 50 100
GRAPHIC SCALE IN FEET

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PRELIMINARY GRADING PLAN

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COTTAGE GROVE, MINNESOTA

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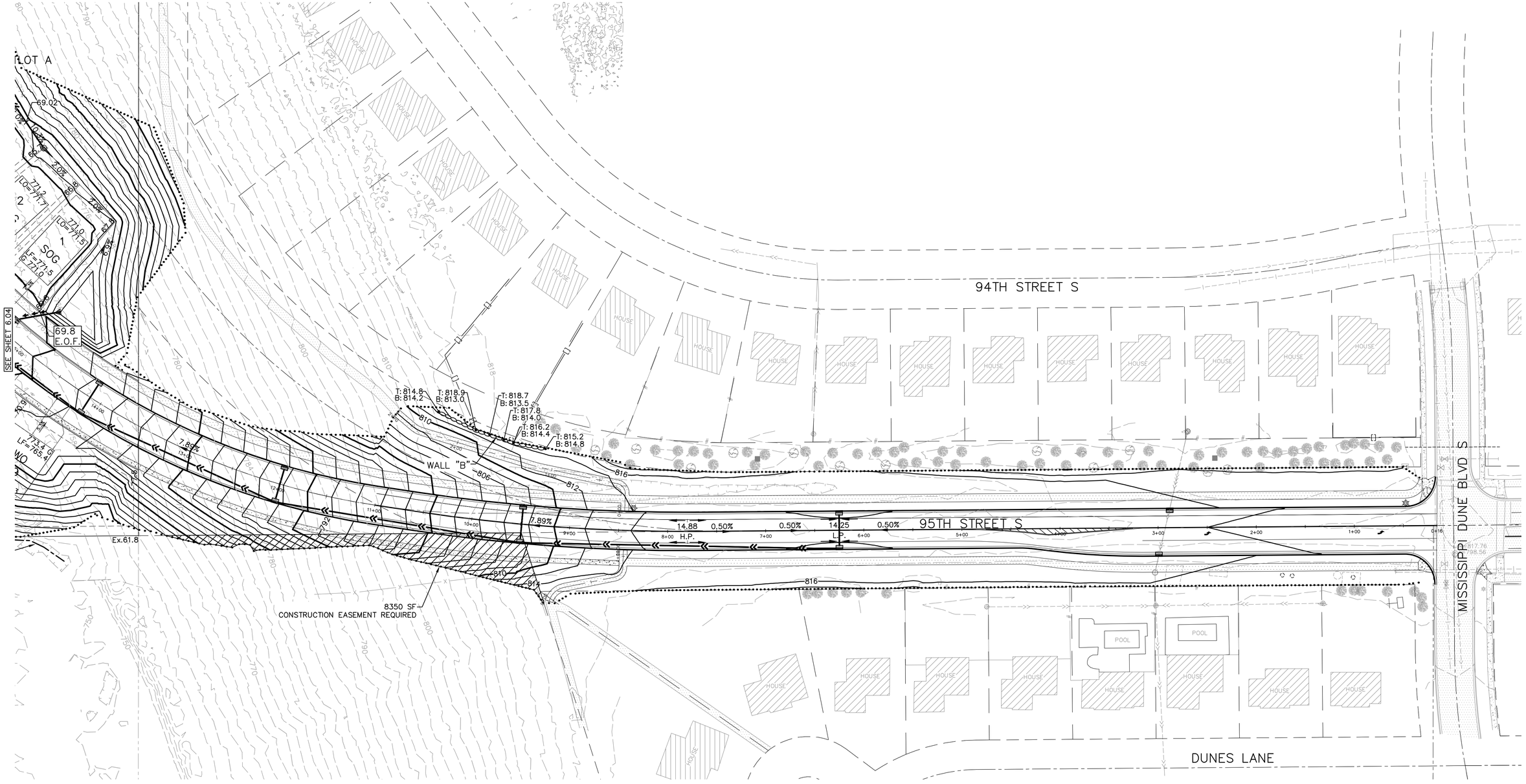

ST-1 ST-1 TO ST-7: DENOTES STANDARD PENETRATION TEST BORING

TP-15 TP-15 TO TP-22: DENOTES 2023 BRAUN INTERTECT TEST PIT

1 1 TO 13: DENOTES 2022 HAUGO GEOTECHNICAL TEST PIT

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NOTE: ALL LOCATIONS ARE APPROXIMATE

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	2'+EOF
LOCAL LOWPOINTS:	
LOW ADJACENT GROUND	1'+EOF

N

0 25 50 100
GRAPHIC SCALE IN FEET

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PRELIMINARY GRADING PLAN

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TALCOTT GLEN
COTTAGE GROVE, MINNESOTA

6.05 OF 47

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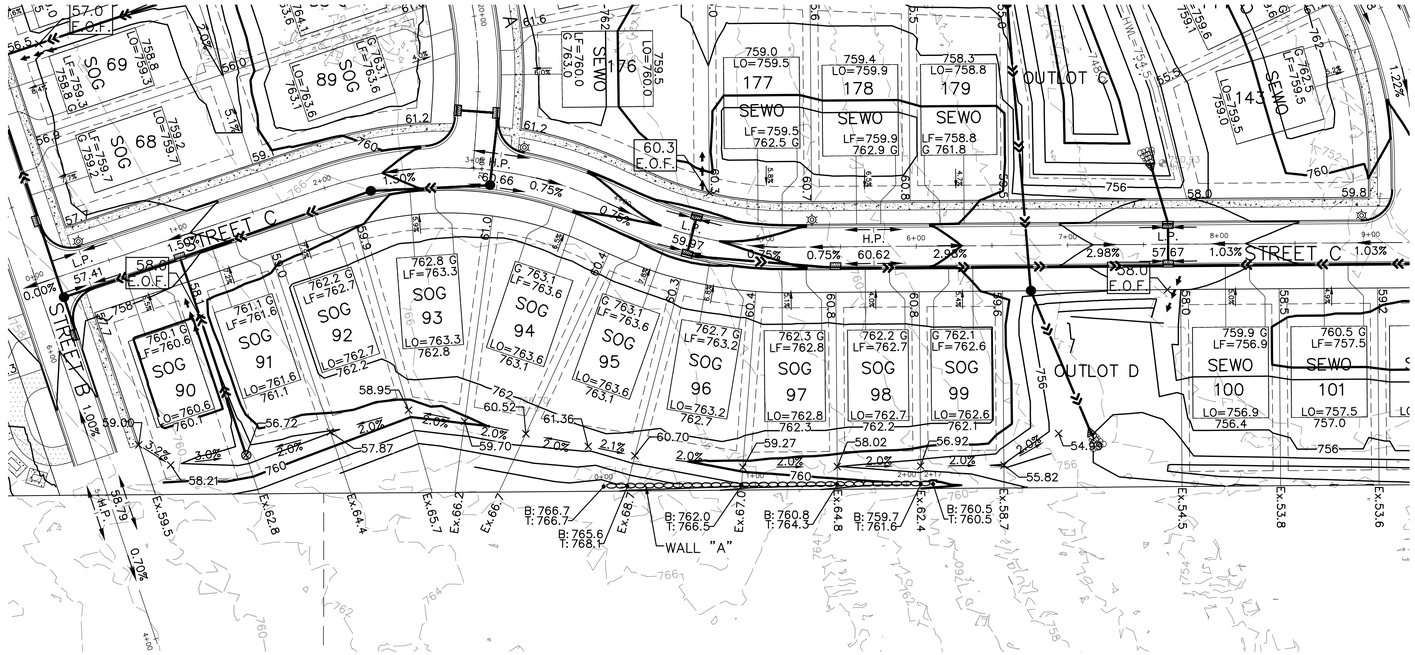
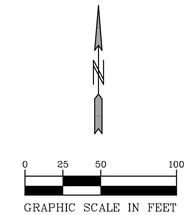
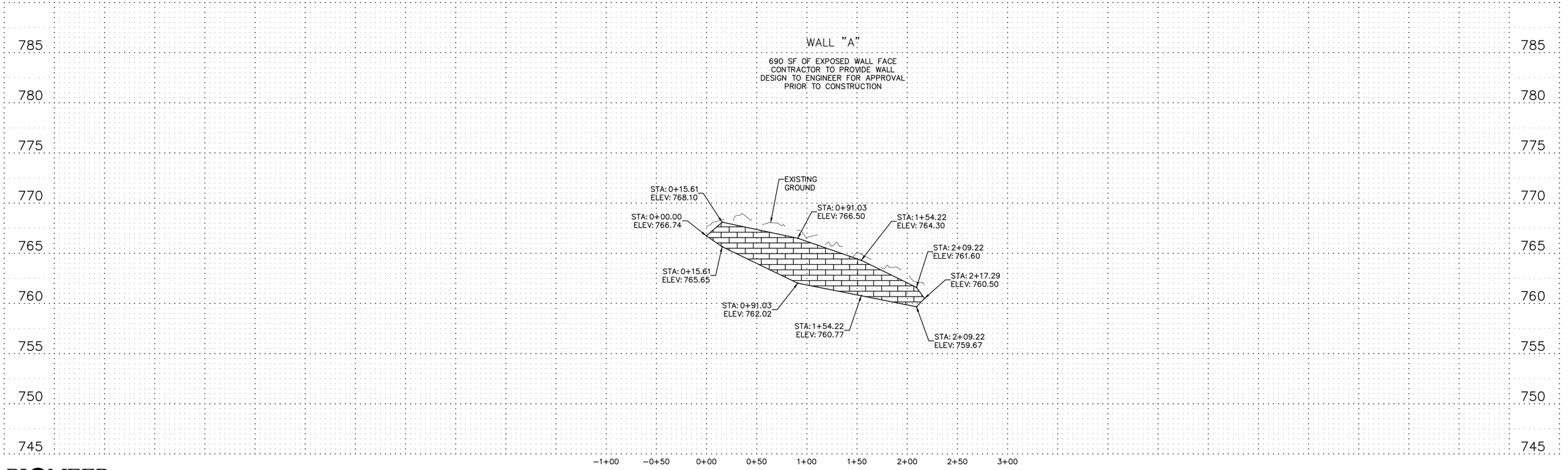




BENCH MARK
TOP NUT OF HYDRANT
LOCATED AT SW QUADRANT OF
MISSISSIPPI DUNES BOULEVARD
AND 94TH STREET S.
NAVD 88 ELEV=819.06

WALL "A"



00-ENG-123105-SHEET-WALL

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PRELIMINARY WALL PLAN

LENNAR
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PLYMOUTH, MINNESOTA 55446

TALCOTT GLEN
COTTAGE GROVE, MINNESOTA

6.11 OF 47

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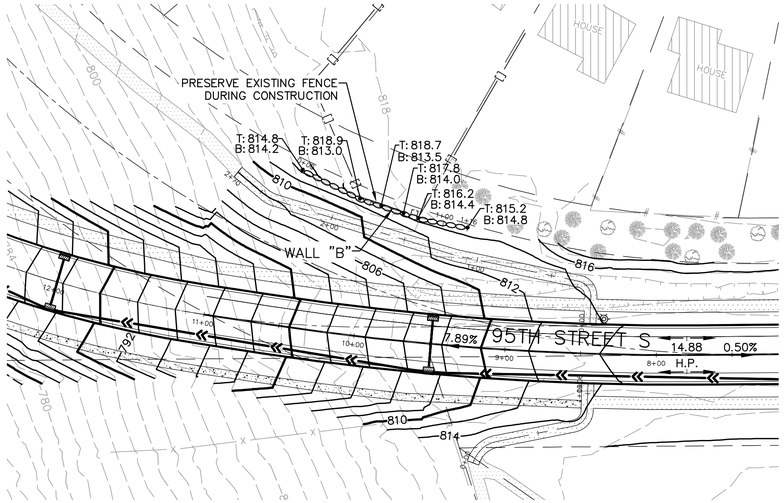
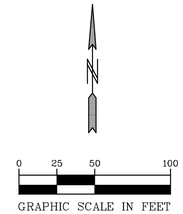
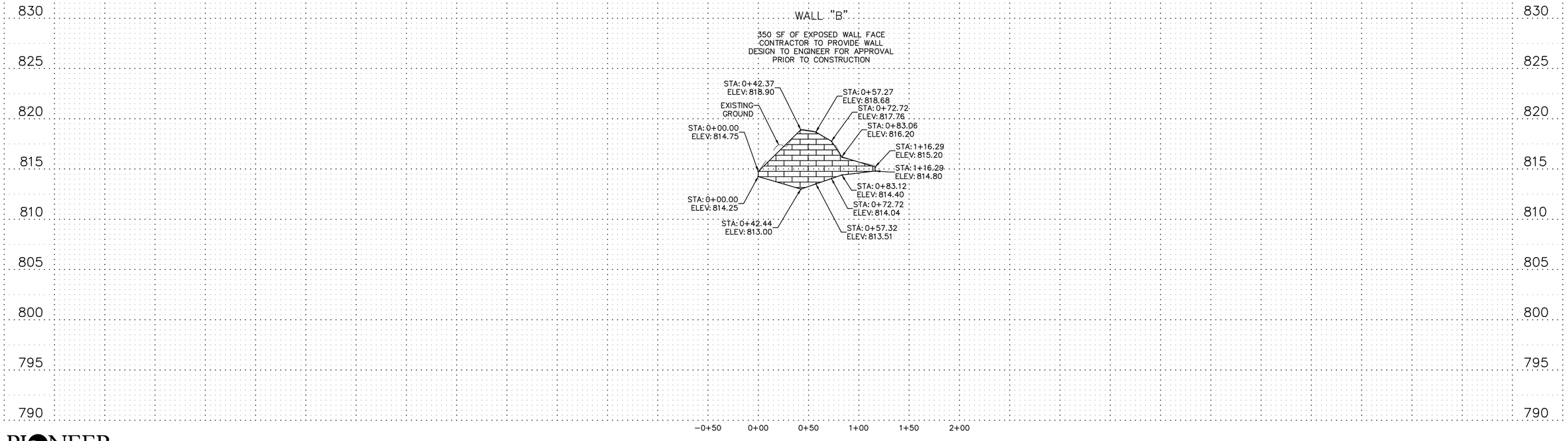




BENCH MARK
TOP NUT OF HYDRANT
LOCATED AT SW QUADRANT OF
MISSISSIPPI DUNES BOULEVARD
AND 94TH STREET S.
NAVD 88 ELEV=819.06

WALL "B"



00-ENG-123105-SHEET-WALL

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PRELIMINARY WALL PLAN

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TALCOTT GLEN
COTTAGE GROVE, MINNESOTA

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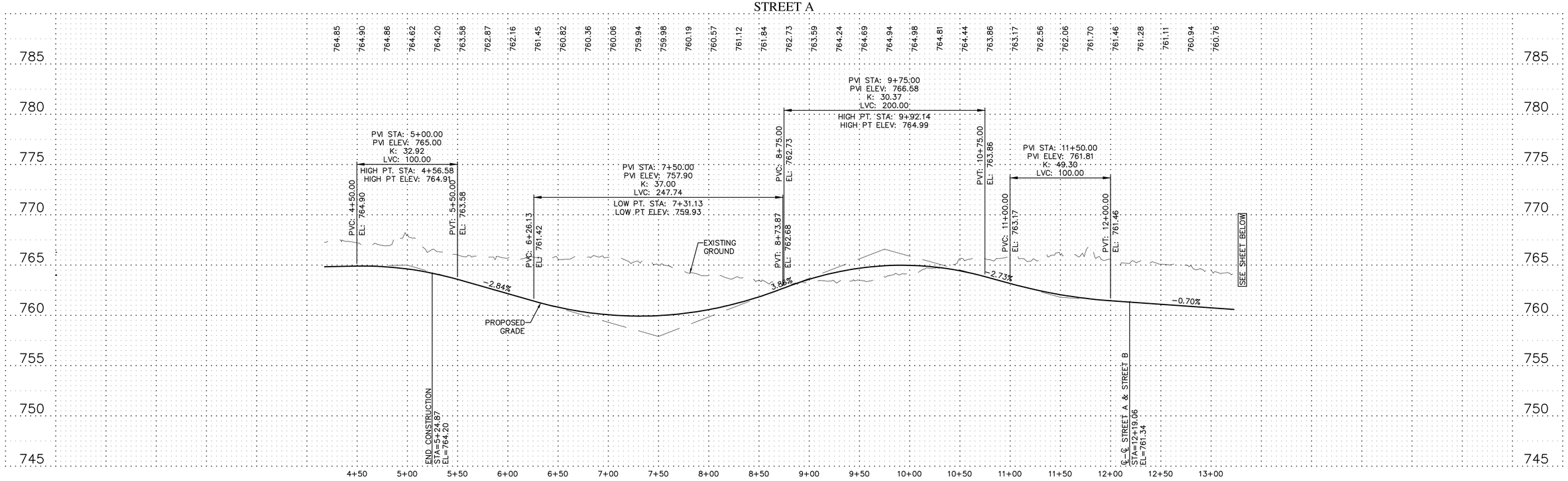
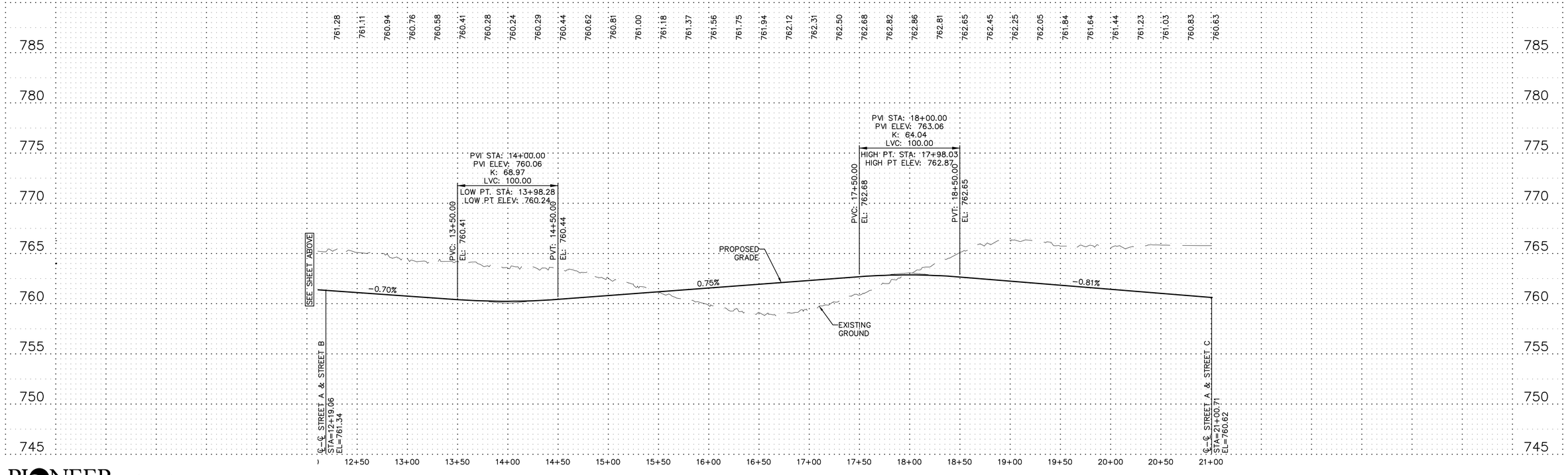
STREET A



STREET A



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www.pioneereng.com

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Name: Brian N. Molinaro
Reg. No. 47504 Date 01-16-26

Revisions

Date	01-16-26
Designed	NAP
Drawn	SHA

PRELIMINARY ROAD PROFILE

LENNAR
16305 36TH AVENUE NORTH
PLYMOUTH, MINNESOTA 55446

TALCOTT GLEN
COTTAGE GROVE, MINNESOTA

00-ENG-123105-SHEET-ROAD-PROF

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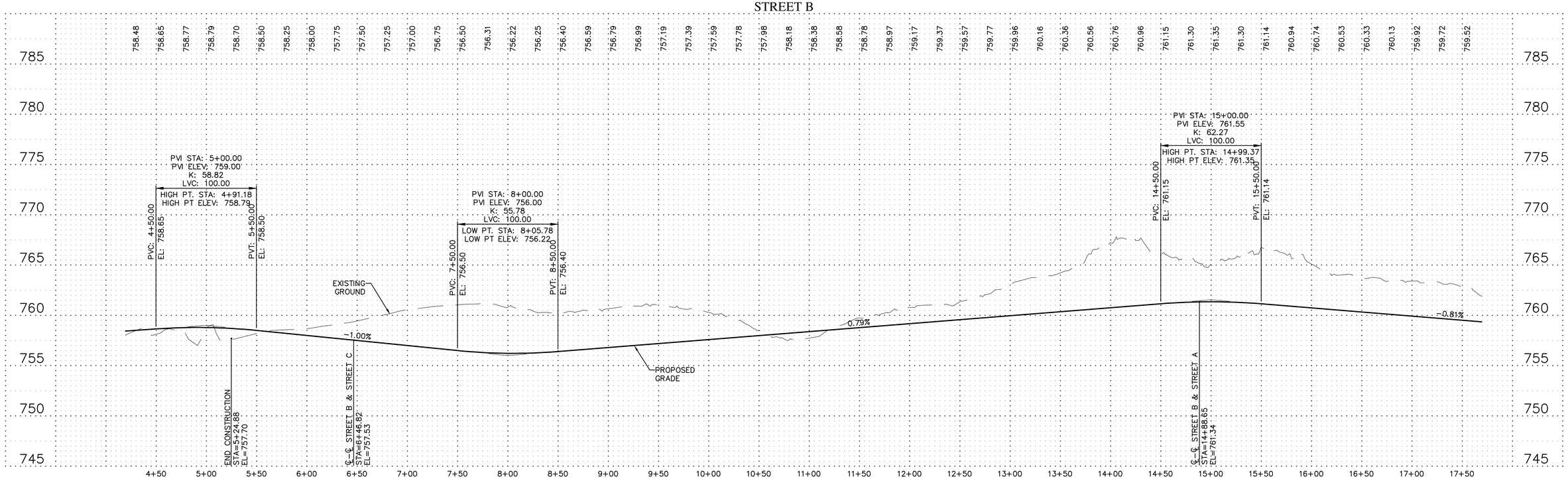
STREET B



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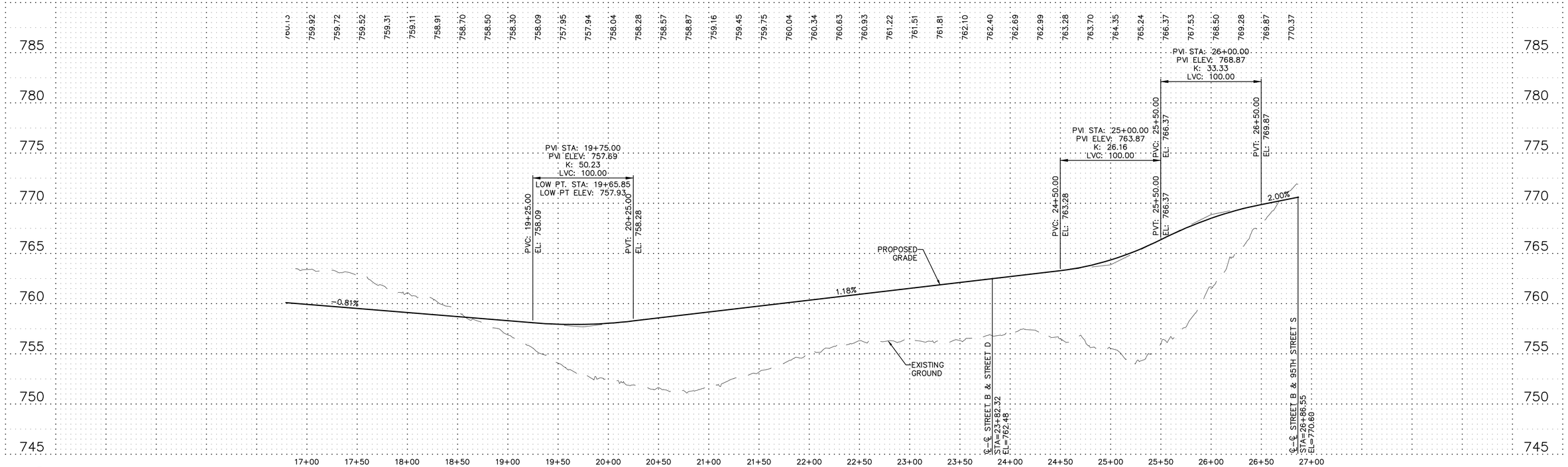

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TALCOTT GLEN
COTTAGE GROVE, MINNESOTA

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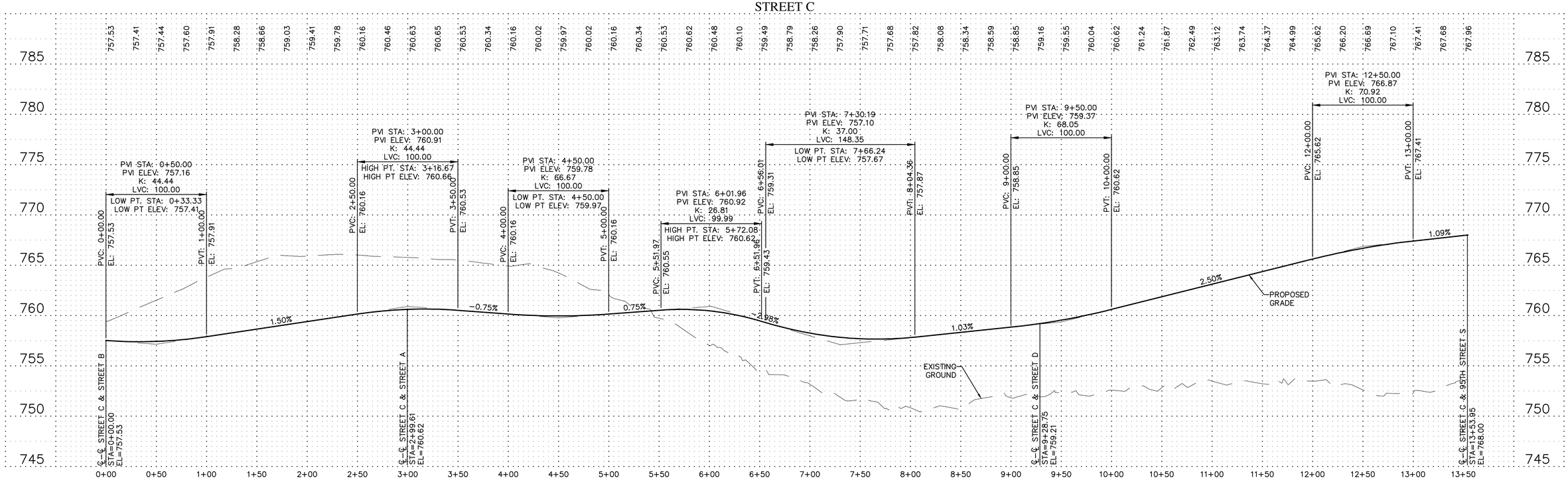
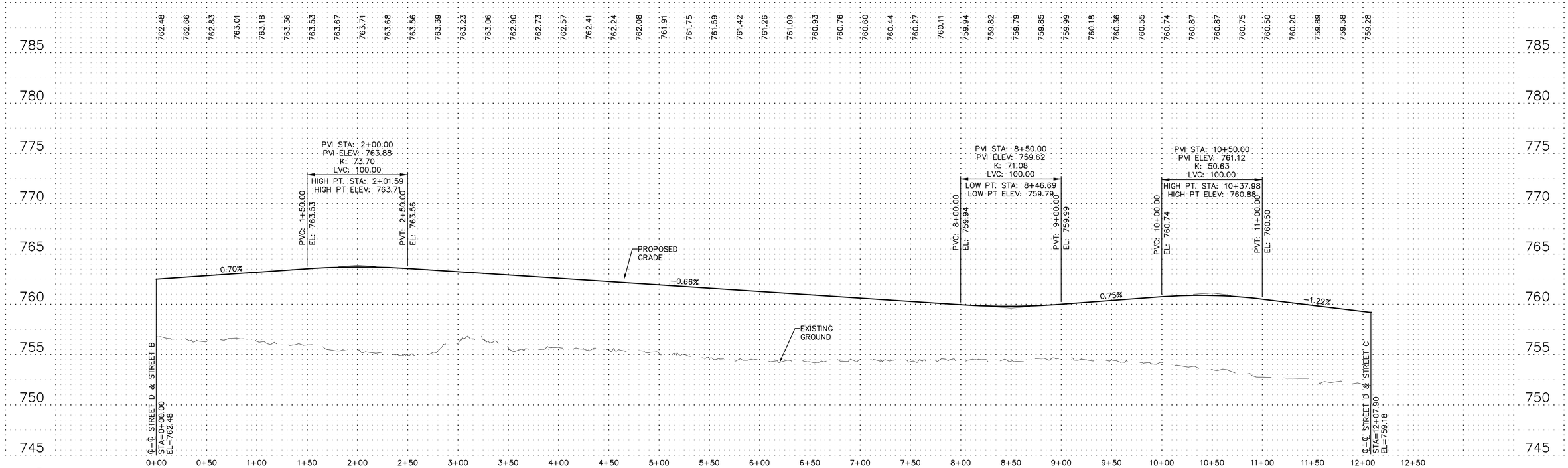
STREET C



STREET D



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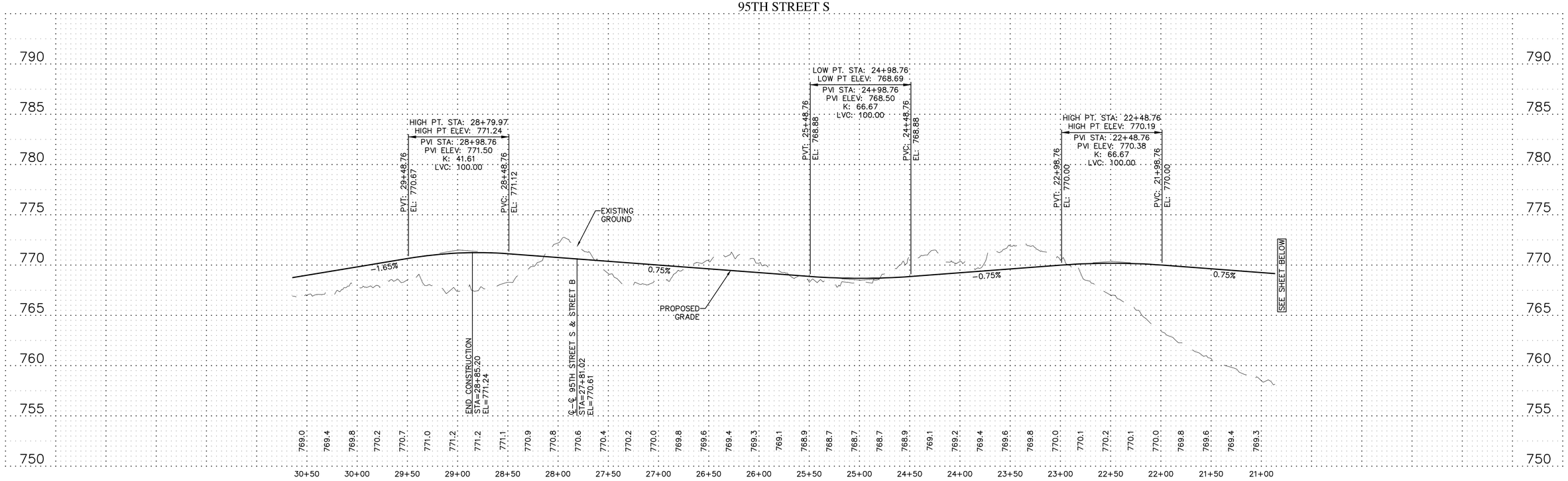
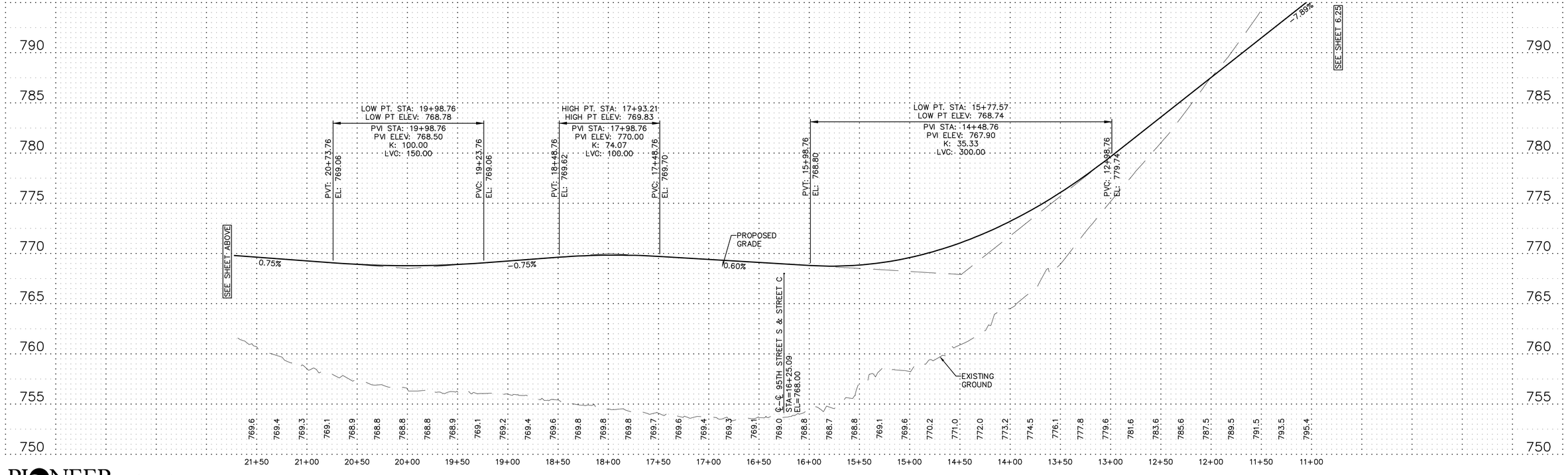
95TH STREET S



95TH STREET S



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PRELIMINARY ROAD PROFILE

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PLYMOUTH, MINNESOTA 55446

TALCOTT GLEN
COTTAGE GROVE, MINNESOTA

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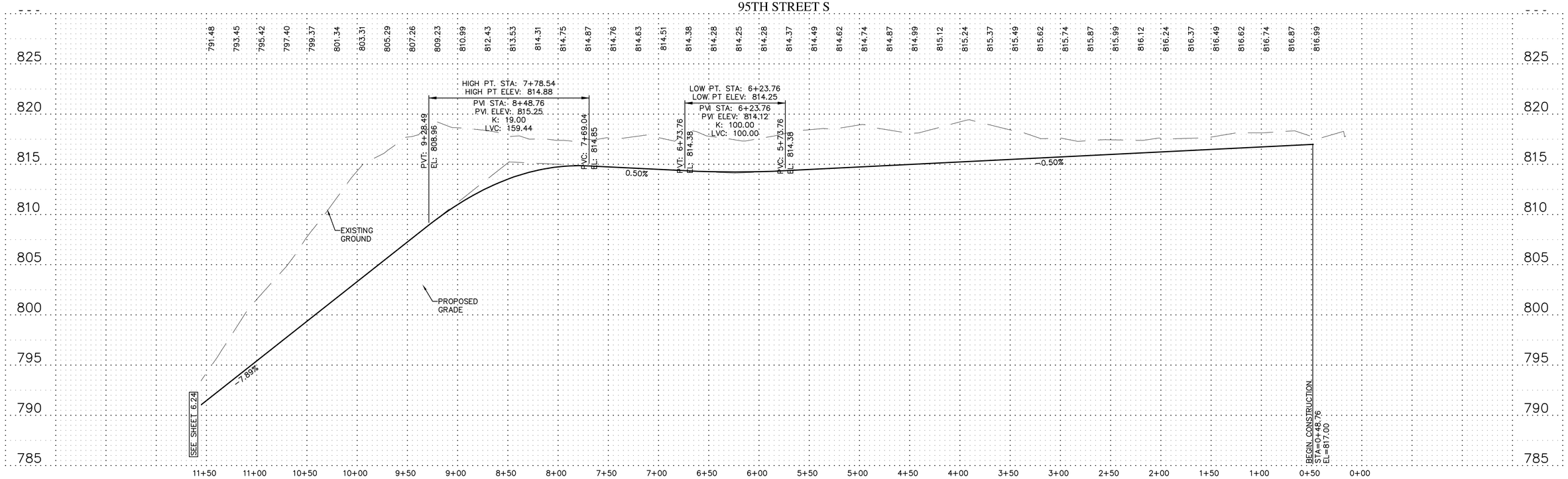

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PRELIMINARY ROAD PROFILE

LENNAR
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PLYMOUTH, MINNESOTA 55446

TALCOTT GLEN
COTTAGE GROVE, MINNESOTA

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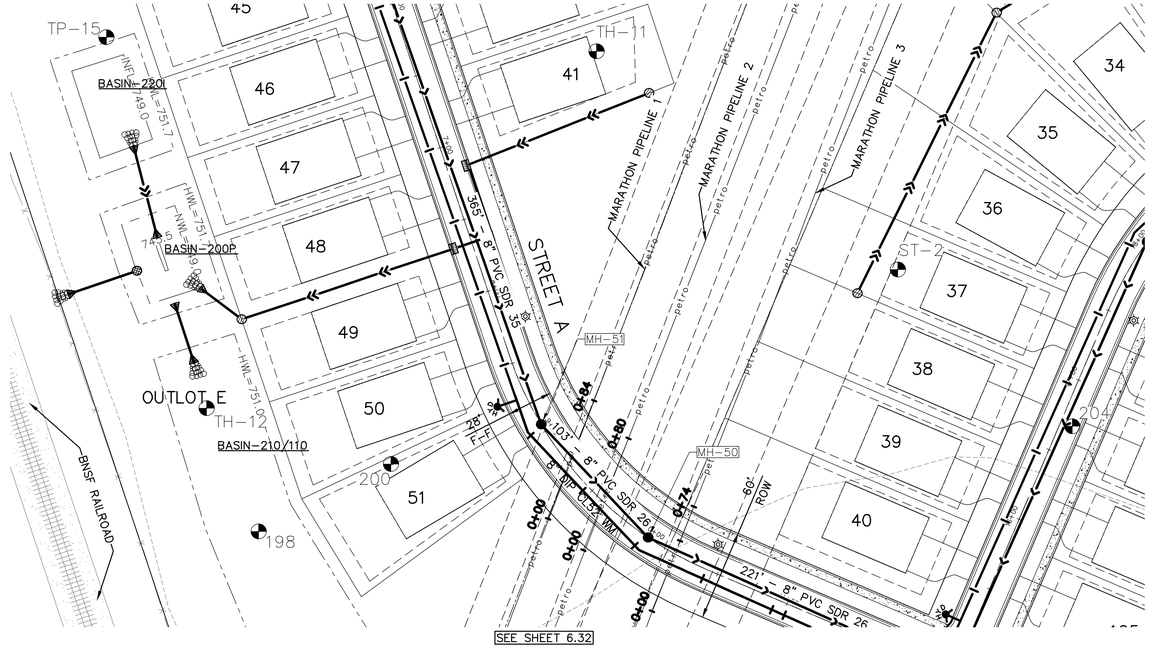
ST-1 ST-1 TO ST-7: DENOTES STANDARD PENETRATION TEST BORING

TP-15 TP-15 TO TP-22: DENOTES 2023 BRAUN INTERTECT TEST PIT

1 1 TO 13: DENOTES 2022 HAUGO GEOTECHNICAL TEST PIT

197 197 TO 218: DENOTES 2005 CONSULTANTS SOIL BORING

NOTE: ALL LOCATIONS ARE APPROXIMATE



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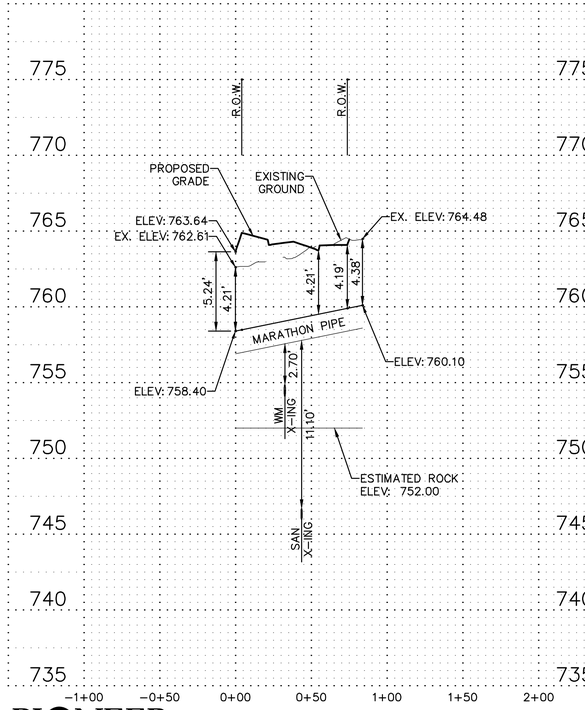
N

0 25 50 100
GRAPHIC SCALE IN FEET

BENCH MARK
TOP NUT OF HYDRANT
LOCATED AT SW QUADRANT OF
MISSISSIPPI DUNES BOULEVARD
AND 94TH STREET S.
NAVD 88 ELEV=819.06

MARATHON PIPELINE 1



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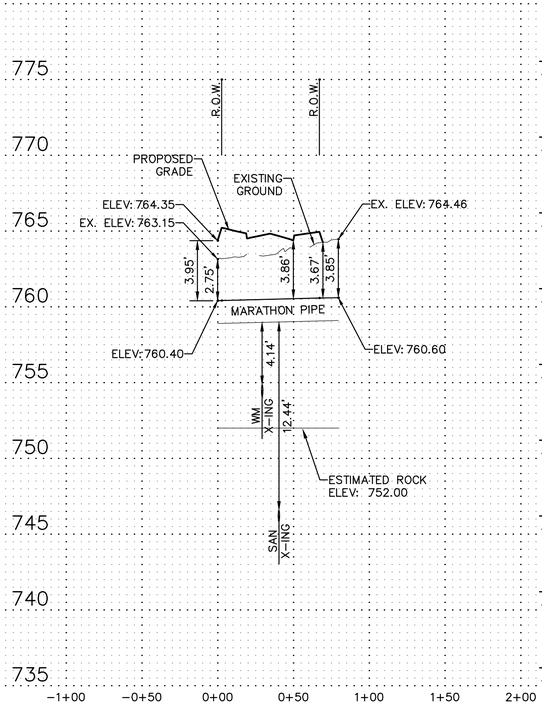
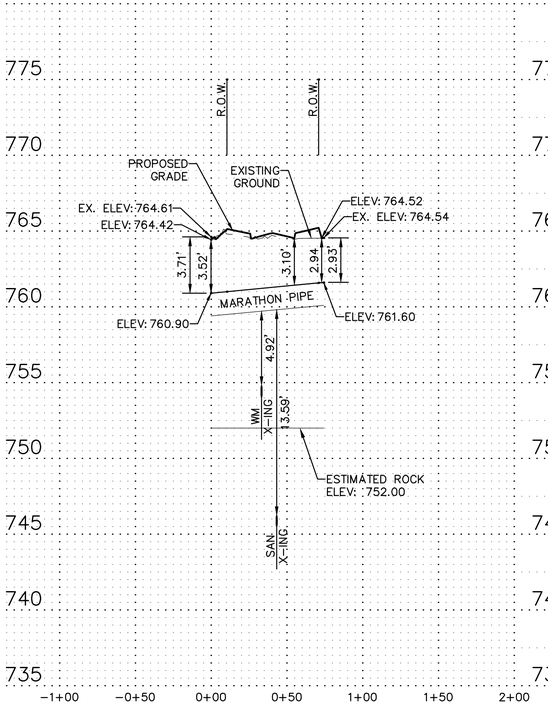


MARATHON PIPELINE 3



00-ENG-123105-SHEET-GAS

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Designed	NAP
Drawn	SHA

PRELIMINARY GAS CROSSING DETAILS

LENNAR
16305 36TH AVENUE NORTH
PLYMOUTH, MINNESOTA 55446

TALCOTT GLEN
COTTAGE GROVE, MINNESOTA

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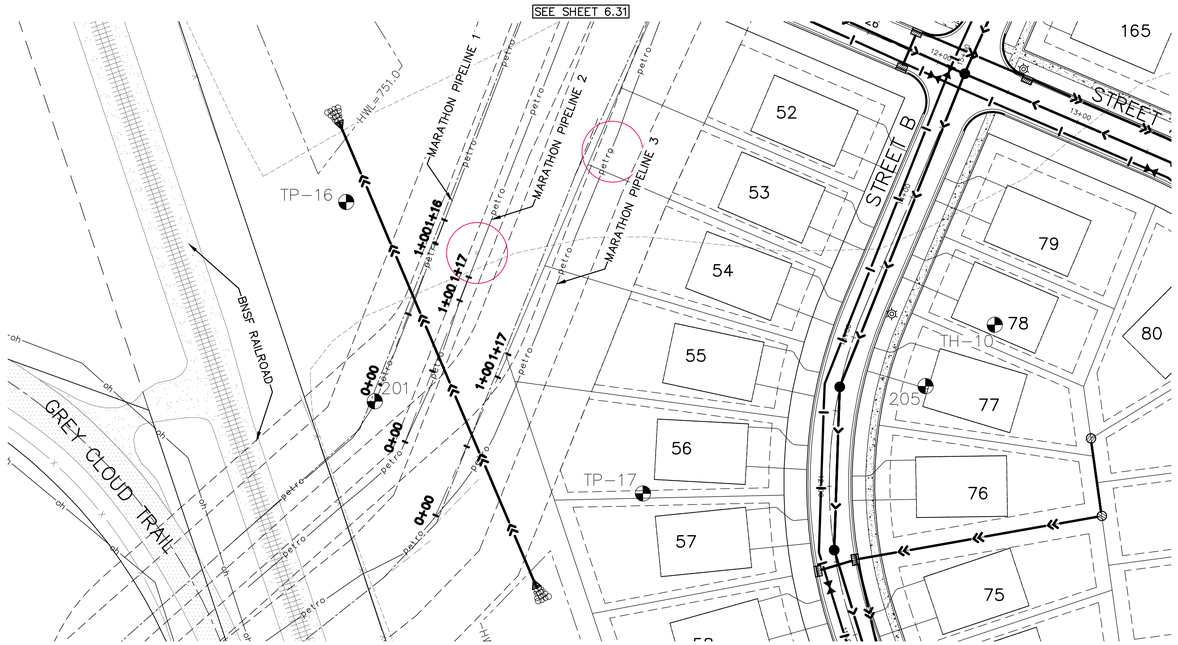
ST-1 ST-1 TO ST-7: DENOTES STANDARD PENETRATION TEST BORING

TP-15 TP-15 TO TP-22: DENOTES 2023 BRAUN INTERTECT TEST PIT

1 1 TO 13: DENOTES 2022 HAUGO GEOTECHNICAL TEST PIT

197 197 TO 218: DENOTES 2005 CONSULTANTS SOIL BORING

NOTE: ALL LOCATIONS ARE APPROXIMATE



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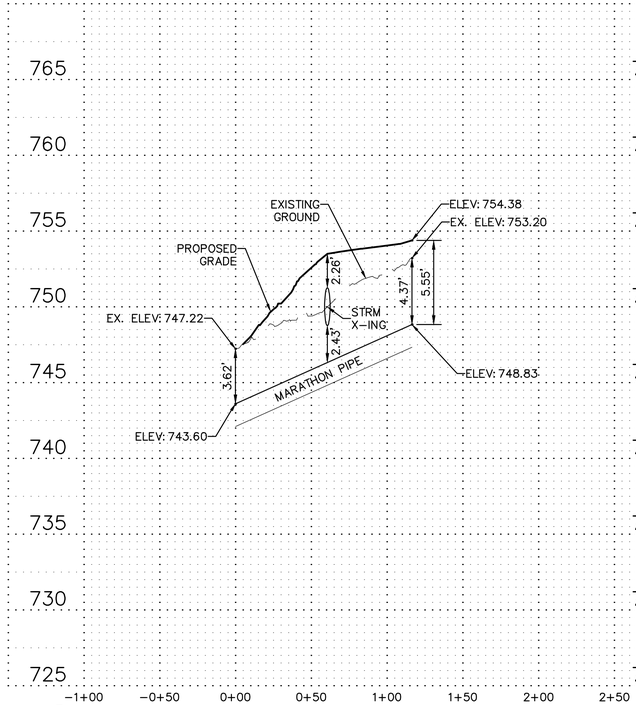
N

0 25 50 100
GRAPHIC SCALE IN FEET

BENCH MARK
TOP NUT OF HYDRANT
LOCATED AT SW QUADRANT OF
MISSISSIPPI DUNES BOULEVARD
AND 94TH STREET S.
NAVD 88 ELEV=819.06

MARATHON PIPELINE 1 SOUTH



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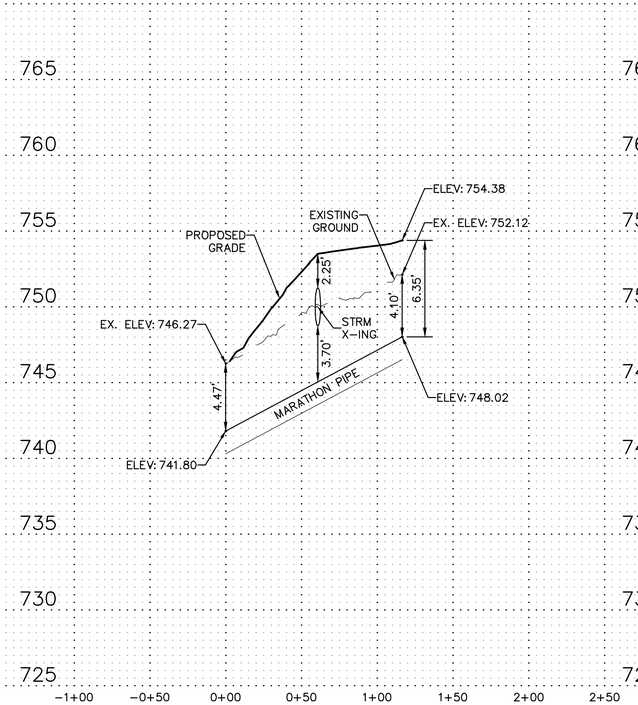
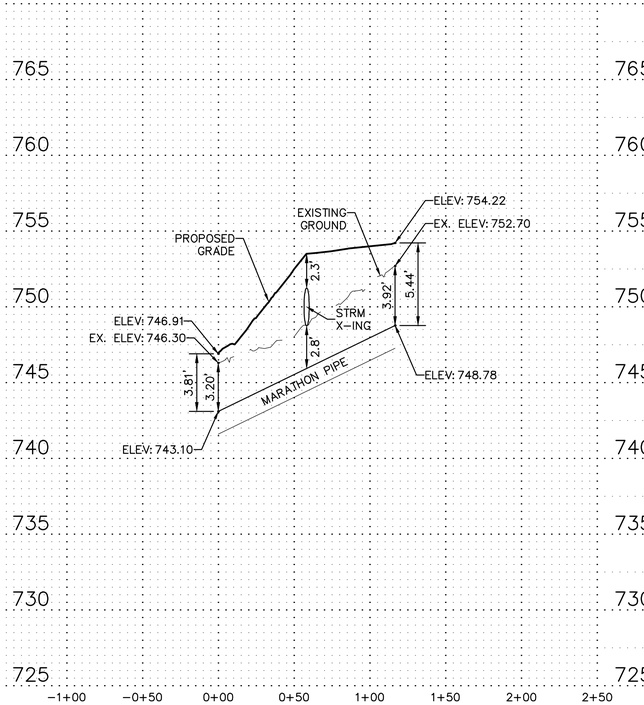


MARATHON PIPELINE 3 SOUTH



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Name Brian N. Molinaro
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PRELIMINARY GAS CROSSING DETAILS

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PLYMOUTH, MINNESOTA 55446

TALCOTT GLEN
COTTAGE GROVE, MINNESOTA

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LEGEND

- ROCK CONSTRUCTION ENTRANCE INSTALL BEFORE START OF GRADING
- PERIMETER EROSION CONTROL FENCE. INSTALL BEFORE START OF GRADING
- HEAVY DUTY SECONDARY EROSION CONTROL FENCE TO BE INSTALLED 48 HOURS AFTER COMPLETION OF GRADING.
- CAT 20 BLANKET FROM BACK OF CURB TO ROW TO BE INSTALLED AFTER COMPLETION OF SIDEWALK CONSTRUCTION.
- BASIN ACCESS 7% SLOPE MAX.
- SUMPED RIP RAP PERMANENT ENERGY DISSIPATER, INSTALL WITHIN 24 HOURS AFTER CONNECTION TO A SURFACE WATER.
- CATCH BASIN INLET PROTECTION TO BE INSTALLED AFTER 1ST LIFT OF BITUMINOUS.
- CATCH BASIN INLET PROTECTION TO BE INSTALLED WITH CATCH BASIN GRATE.
- STRAW BIO ROLLS. INSTALL WITHIN 7 DAYS OF GRADING COMPLETION OR BEFORE 1ST RAINFALL EVENT WHICHEVER IS FIRST
- ROCK BERM. INSTALL WITHIN 7 DAYS OF GRADING COMPLETION OR BEFORE 1ST RAINFALL EVENT WHICHEVER IS FIRST
- MNDOT CAT 20 EROSION CONTROL BLANKET. INSTALL WITHIN 7 DAYS OF GRADING COMPLETION
- STABILIZED EMERGENCY OVERFLOW
- FLEXAMAT OVERFLOW

PROTECT FAUNA DURING CONSTRUCTION

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0 50 100 200
GRAPHIC SCALE IN FEET

BENCH MARK
TOP NUT OF HYDRANT
LOCATED AT SW QUADRANT OF
MISSISSIPPI DUNES BOULEVARD
AND 94TH STREET S.
NAVD 88 ELEV=819.06

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PRELIMINARY EROSION CONTROL PLAN

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TALCOTT GLEN
COTTAGE GROVE, MINNESOTA

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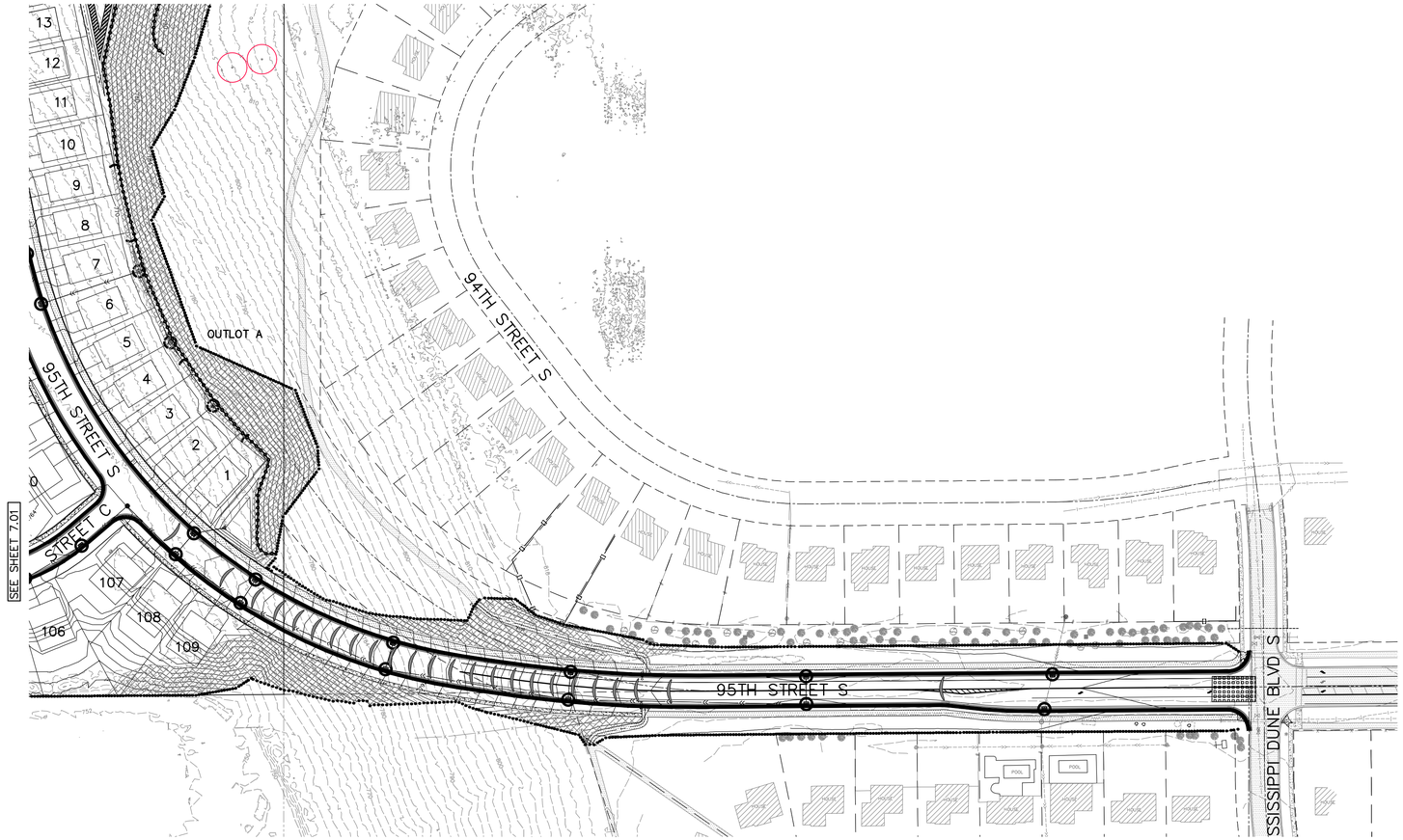

LEGEND

- ROCK CONSTRUCTION ENTRANCE INSTALL BEFORE START OF GRADING
- PERIMETER EROSION CONTROL FENCE. INSTALL BEFORE START OF GRADING
- HEAVY DUTY SECONDARY EROSION CONTROL FENCE TO BE INSTALLED 48 HOURS AFTER COMPLETION OF GRADING.
- CAT 20 BLANKET FROM BACK OF CURB TO ROW TO BE INSTALLED AFTER COMPLETION OF SIDEWALK CONSTRUCTION.
- BASIN ACCESS 7% SLOPE MAX.
- SUMPED RIP RAP PERMANENT ENERGY DISSIPATER, INSTALL WITHIN 24 HOURS AFTER CONNECTION TO A SURFACE WATER.
- CATCH BASIN INLET PROTECTION TO BE INSTALLED AFTER 1ST LIFT OF BITUMINOUS.
- CATCH BASIN INLET PROTECTION TO BE INSTALLED WITH CATCH BASIN GRATE.
- STRAW BIO ROLLS. INSTALL WITHIN 7 DAYS OF GRADING COMPLETION OR BEFORE 1ST RAINFALL EVENT WHICHEVER IS FIRST
- ROCK BERM. INSTALL WITHIN 7 DAYS OF GRADING COMPLETION OR BEFORE 1ST RAINFALL EVENT WHICHEVER IS FIRST
- MNDOT CAT 20 EROSION CONTROL BLANKET. INSTALL WITHIN 7 DAYS OF GRADING COMPLETION
- STABILIZED EMERGENCY OVERFLOW
- FLEXAMAT OVERFLOW
- PROTECT FAUNA DURING CONSTRUCTION

N

0 50 100 200

GRAPHIC SCALE IN FEET

BENCH MARK
TOP NUT OF HYDRANT
LOCATED AT SW QUADRANT OF MISSISSIPPI DUNES BOULEVARD AND 94TH STREET S.
NAVD 88 ELEV=819.06

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PRELIMINARY EROSION CONTROL PLAN

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PLYMOUTH, MINNESOTA 55446

TALCOTT GLEN
COTTAGE GROVE, MINNESOTA

7.02 OF 47

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TEMPORARY SEED SHALL BE DONE IN ACCORDANCE TO MNDOT 2575 & 3876; CONSISTING OF:

- MAY 1 – AUGUST 1: MINNESOTA STATE SEED MIXTURE O (OATS) @ 100.0 LBS. PER ACRE OR APPROVED EQUAL.
- AUGUST 1 – OCTOBER 1: MINNESOTA STATE SEED MIXTURE WW (WINTER WHEAT) @ 100.0 LBS. PER ACRE OR APPROVED EQUAL.
- MULCH SHALL BE MNDOT 3882, TYPE 1 @ 2 TONS PER ACRE OR APPROVED EQUAL AND DISK ANCHORED IN PLACE OR APPROVED EQUAL, INSTALLED TO MINIMUM 90% COVERAGE OF THE SURFACE AREA DISTURBED.
- MNDOT 3881, TYPE 1 COMMERCIAL FERTILIZER, 10–10–20 @ 200 LBS. PER ACRE

PERMANENT BASIN SEEDING SHALL BE DONE IN ACCORDANCE WITH MNDOT 2575 & 3876 CONSISTING OF:

- WET BASIN BENCH/(IN)FILTRATION BASIN: MINNESOTA STATE SEED MIXTURE WD (WET DITCH) AT 20 POUNDS PER ACRE.
- ABOVE BASIN BENCH TO HIGH WATER LEVEL: MINNESOTA STATE SEED MIXTURE STR (SOUTHERN TALLGRASS ROADSIDE) AT 26 POUNDS PER ACRE.
- MULCH SHALL BE MNDOT 3882, TYPE 3 @ 2 TONS PER ACRE OR APPROVED EQUAL AND DISK ANCHORED IN PLACE OR APPROVED EQUAL.
- MNDOT 3881, TYPE 4 NATURAL–BASED FERTILIZER, 18–1–8 FOR LOAM & CLAY LOAM OR 17–10–7 FOR SANDY SOILS @ 120 LBS PER ACRE EACH

UPLAND/NATURAL AREA SEEDING SHALL BE DONE IN ACCORDANCE TO MNDOT 2575 & 3876; CONSISTING OF:

- MINNESOTA STATE SEED MIXTURE STR (SOUTHERN TALLGRASS ROADSIDE) AT 26 POUNDS PER ACRE.
- MULCH SHALL BE MNDOT 3882, TYPE 3 @ 2 TONS PER ACRE OR APPROVED EQUAL AND DISK ANCHORED IN PLACE OR APPROVED EQUAL,
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- MINNESOTA STATE SEED MIXTURE STR (SOUTHERN TALLGRASS ROADSIDE) AT 26 POUNDS PER ACRE.

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0 50 100 200
GRAPHIC SCALE IN FEET

BENCH MARK
TOP NUT OF HYDRANT LOCATED AT SW QUADRANT OF MISSISSIPPI DUNES BOULEVARD AND 94TH STREET S.
NAVD 88 ELEV=819.06

00-ENG-123105-SHEET-SEED

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PRELIMINARY SEEDING PLAN

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PLYMOUTH, MINNESOTA 55446

TALCOTT GLEN
COTTAGE GROVE, MINNESOTA

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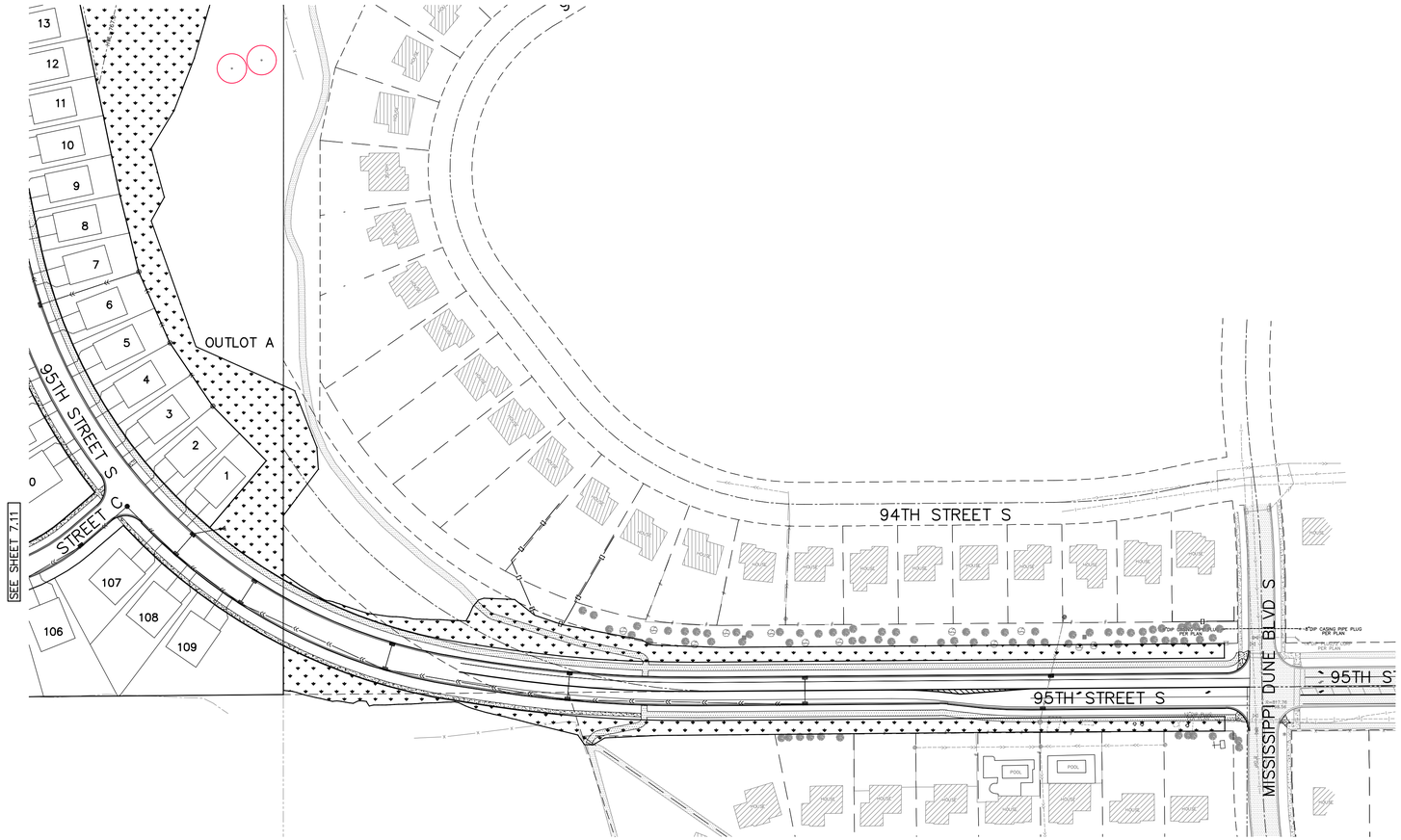

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- AUGUST 1 – OCTOBER 1: MINNESOTA STATE SEED MIXTURE WW (WINTER WHEAT) @ 100.0 LBS. PER ACRE OR APPROVED EQUAL.
- MULCH SHALL BE MNDOT 3882, TYPE 1 @ 2 TONS PER ACRE OR APPROVED EQUAL AND DISK ANCHORED IN PLACE OR APPROVED EQUAL, INSTALLED TO MINIMUM 90% COVERAGE OF THE SURFACE AREA DISTURBED.
- MNDOT 3881, TYPE 1 COMMERCIAL FERTILIZER, 10–10–20 @ 200 LBS. PER ACRE

PERMANENT BASIN SEEDING SHALL BE DONE IN ACCORDANCE WITH MNDOT 2575 & 3876 CONSISTING OF:

- WET BASIN BENCH/(IN)FILTRATION BASIN: MINNESOTA STATE SEED MIXTURE WD (WET DITCH) AT 20 POUNDS PER ACRE.
- ABOVE BASIN BENCH TO HIGH WATER LEVEL: MINNESOTA STATE SEED MIXTURE STR (SOUTHERN TALLGRASS ROADSIDE) AT 26 POUNDS PER ACRE.
- MULCH SHALL BE MNDOT 3882, TYPE 3 @ 2 TONS PER ACRE OR APPROVED EQUAL AND DISK ANCHORED IN PLACE OR APPROVED EQUAL.
- MNDOT 3881, TYPE 4 NATURAL–BASED FERTILIZER, 18–1–8 FOR LOAM & CLAY LOAM OR 17–10–7 FOR SANDY SOILS @ 120 LBS PER ACRE EACH

UPLAND/NATURAL AREA SEEDING SHALL BE DONE IN ACCORDANCE TO MNDOT 2575 & 3876; CONSISTING OF:

- MINNESOTA STATE SEED MIXTURE STR (SOUTHERN TALLGRASS ROADSIDE) AT 26 POUNDS PER ACRE.
- MULCH SHALL BE MNDOT 3882, TYPE 3 @ 2 TONS PER ACRE OR APPROVED EQUAL AND DISK ANCHORED IN PLACE OR APPROVED EQUAL,
- MNDOT 3881, TYPE 4 NATURAL–BASED FERTILIZER, 18–1–8 FOR LOAM & CLAY LOAM OR 17–10–7 FOR SANDY SOILS @ 120 LBS PER ACRE EACH

UPLAND/NATURAL AREA BLUFF SEEDING SHALL BE DONE IN ACCORDANCE TO MNDOT 2575 & 3876; CONSISTING OF:

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- MULCH SHALL BE MNDOT 3882, TYPE 3 @ 2 TONS PER ACRE OR APPROVED EQUAL AND DISK ANCHORED IN PLACE OR APPROVED EQUAL,
- MNDOT 3881, TYPE 4 NATURAL–BASED FERTILIZER, 18–1–8 FOR LOAM & CLAY LOAM OR 17–10–7 FOR SANDY SOILS @ 120 LBS PER ACRE EACH

PROTECT FAUNA DURING CONSTRUCTION

0 50 100 200

GRAPHIC SCALE IN FEET

BENCH MARK
TOP NUT OF HYDRANT
LOCATED AT SW QUADRANT OF
MISSISSIPPI DUNES BOULEVARD
AND 94TH STREET S.
NAVD 88 ELEV=819.06

00-ENG-123105-SHEET-SEED

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I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota
Name Brian N. Molinaro
Reg. No. 47504 Date 01-16-26

Revisions

Date	01-16-26
Designed	NAP
Drawn	SHA

PRELIMINARY SEEDING PLAN

LENNAR
16305 36TH AVENUE NORTH
PLYMOUTH, MINNESOTA 55446

TALCOTT GLEN
COTTAGE GROVE, MINNESOTA

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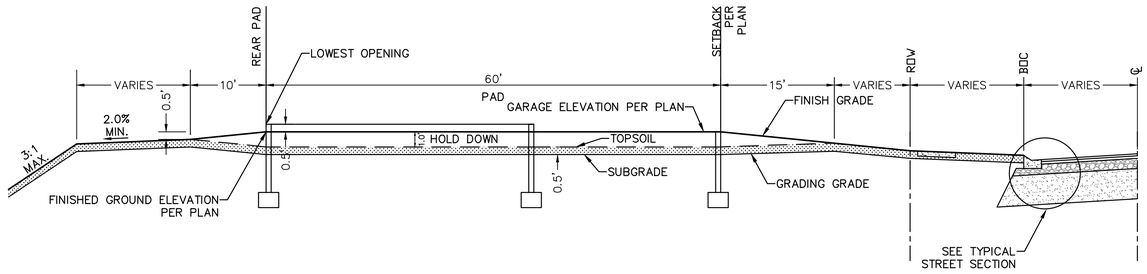

SLAB-ON-GRADE

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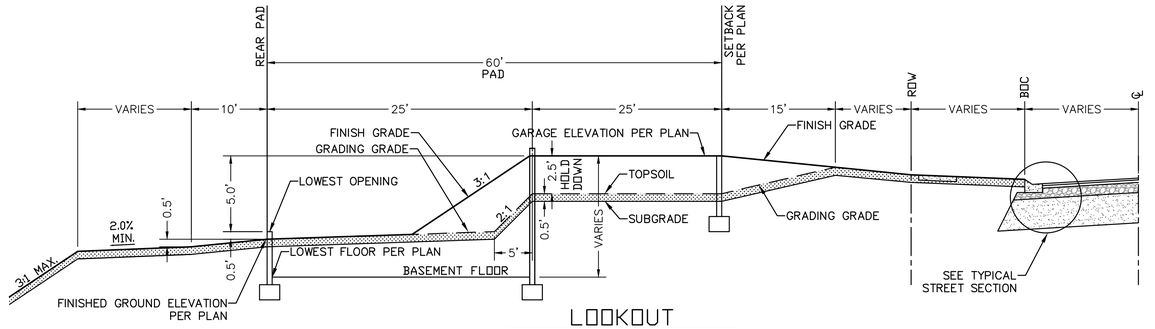

LOOKOUT

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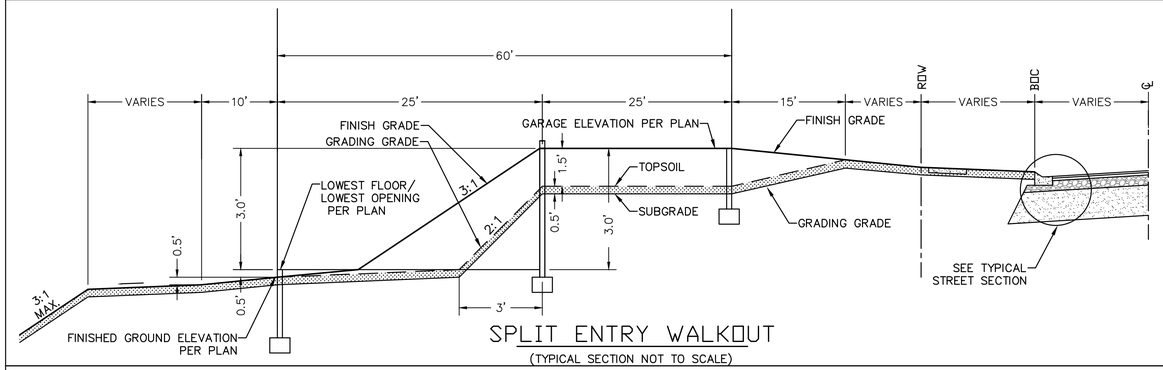

SPLIT ENTRY WALKOUT

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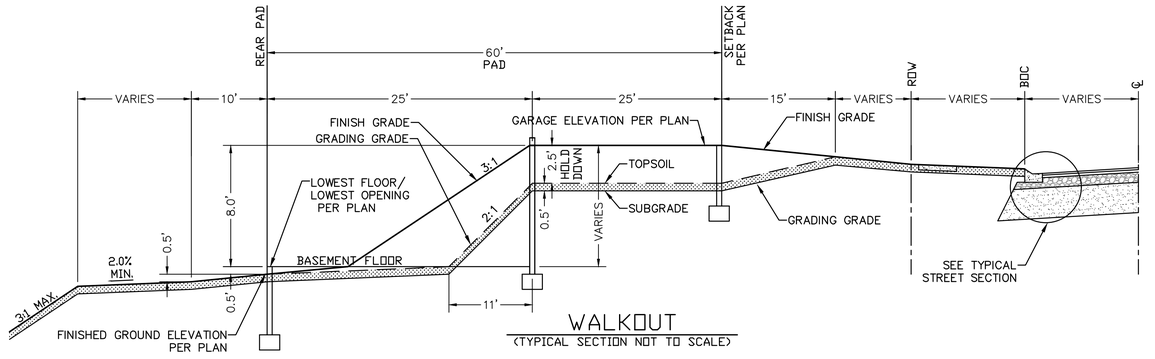

WALKOUT

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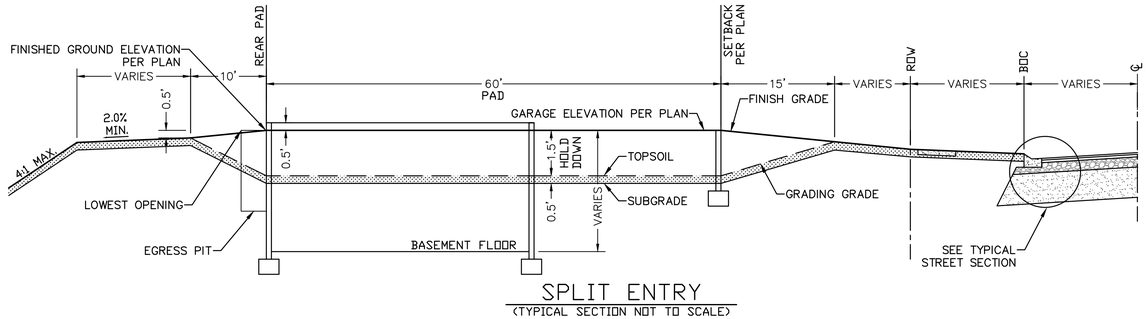

SPLIT ENTRY

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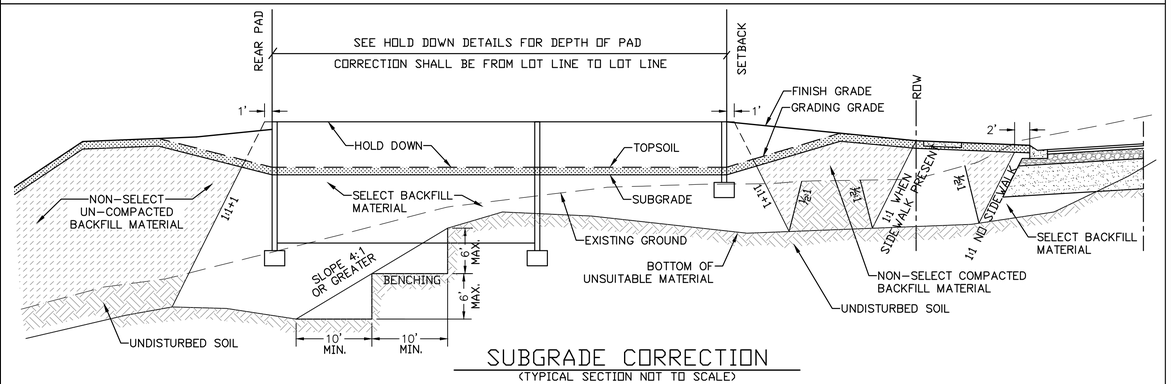

SUBGRADE CORRECTION

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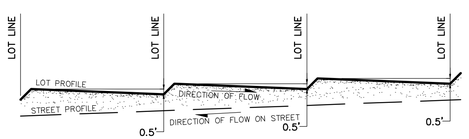

LOT BENCHING DETAIL

NO SCALE

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Drawn	SHA

PRELIMINARY GRADING DETAILS

LENNAR
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PLYMOUTH, MINNESOTA 55446

TALCOTT GLEN
COTTAGE GROVE, MINNESOTA

00-ENG-123105-SHEET-DTLS-GRAD

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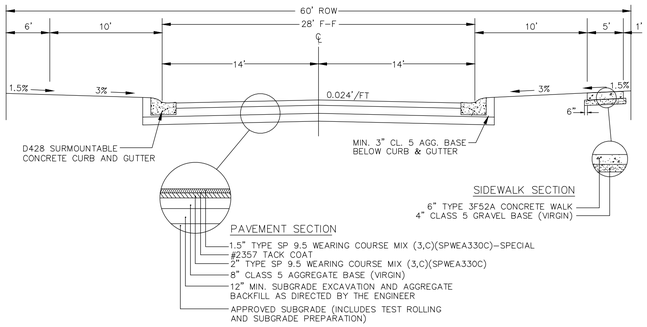
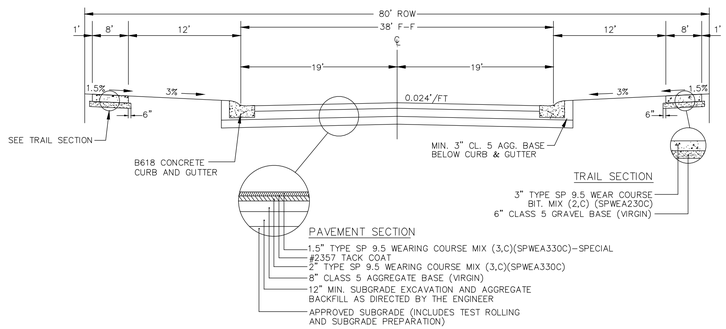


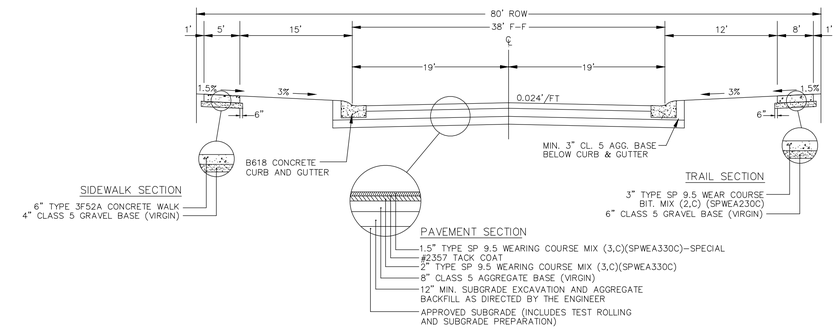
RESIDENTIAL STREET SECTION (TYP.)

TYPICAL SECTION (N.T.S.)



COLLECTOR STREET SECTION (STA: 0+00 TO 8+50)

TYPICAL SECTION (N.T.S.)



COLLECTOR STREET SECTION (STA: 8+50 TO 30+00)

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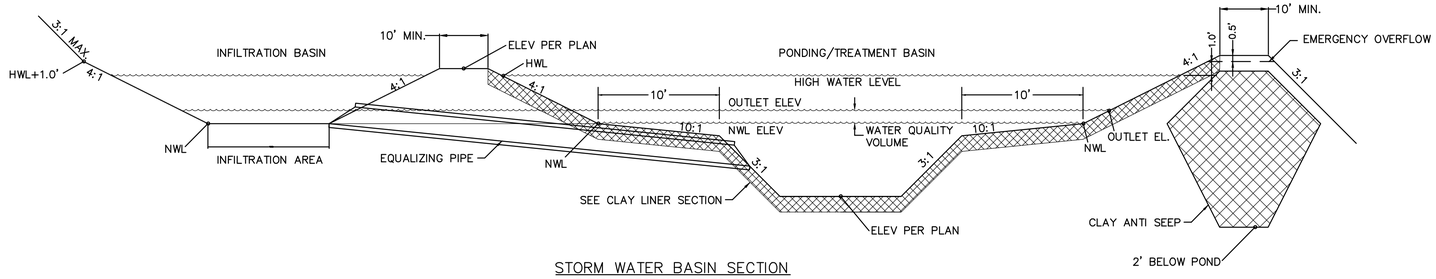

STORM WATER BASIN SECTION

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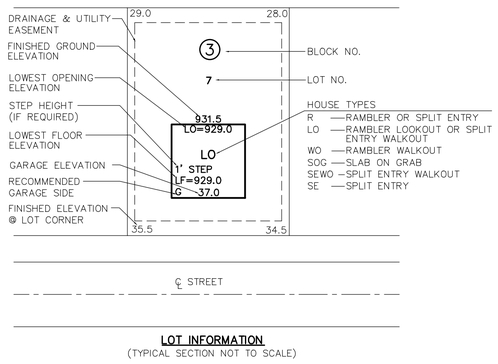

LOT INFORMATION

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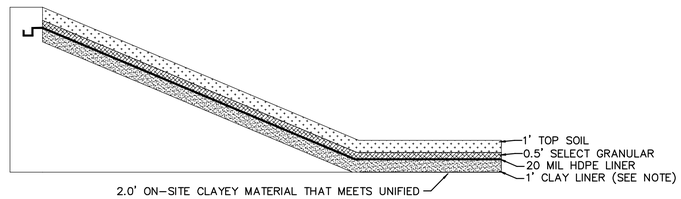

CLAY LINER SECTION

(TYPICAL SECTION NOT TO SCALE)

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COTTAGE GROVE, MINNESOTA

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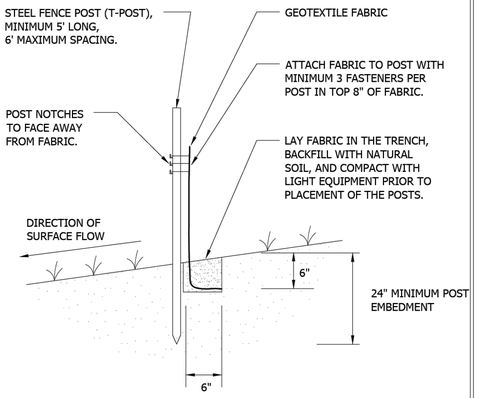


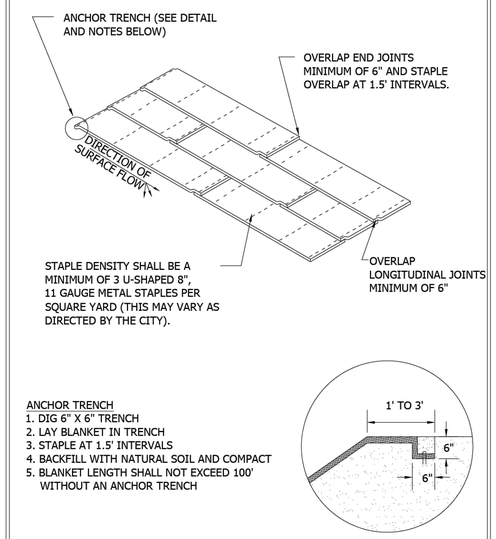
Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
HAND INSTALLED SILT FENCE
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. ERO-2

48_ERO2.DWG



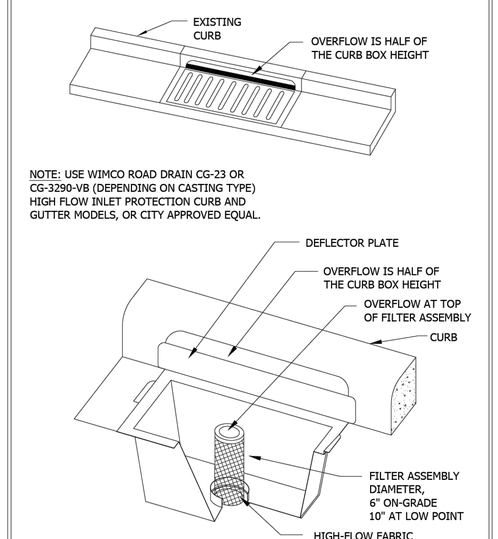
Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
ROLLED EROSION PREVENTION PRODUCTS INSTALLATION
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. ERO-5

48_ERO5.DWG



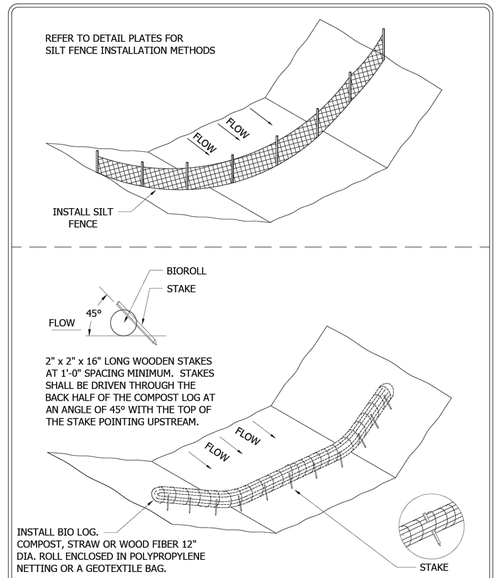
Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
INLET PROTECTION CATCH BASIN INSERT
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. ERO-9

48_ERO9.DWG



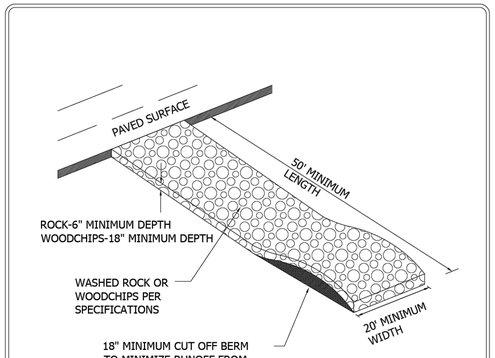
Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
FILTER BERMS
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. ERO-11

48_ERO11.DWG



NOTES:
1. FILTER FABRIC SHALL BE PLACED UNDER ROCK OR WOODCHIPS TO STOP MUD MIGRATION THROUGH ROCK.
2. ENTRANCE MUST BE MAINTAINED REGULARLY TO PREVENT SEDIMENTATION TRACKING.

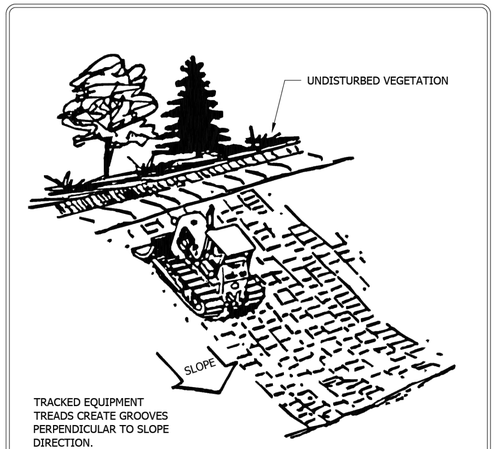
Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
CONSTRUCTION ENTRANCE ROCK AND WOODCHIP
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. ERO-12

48_ERO12.DWG



TRACKED EQUIPMENT TREADS CREATE GROOVES PERPENDICULAR TO SLOPE DIRECTION.

NOTE:
ALL SLOPES WITH A GRADE EQUAL TO OR STEEPER THAN 3:1 REQUIRE SLOPE TRACKING. SLOPES WITH A GRADE MORE GRADUAL THAN 3:1 REQUIRE SLOPE TRACKING IF THE STABILIZATION METHOD IS EROSION CONTROL BLANKET OR HYDROMULCH.

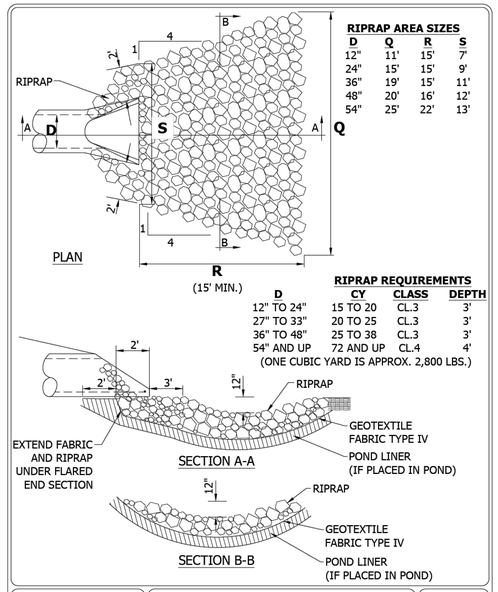
Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
SLOPE TRACKING
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. ERO-13

48_ERO13.DWG



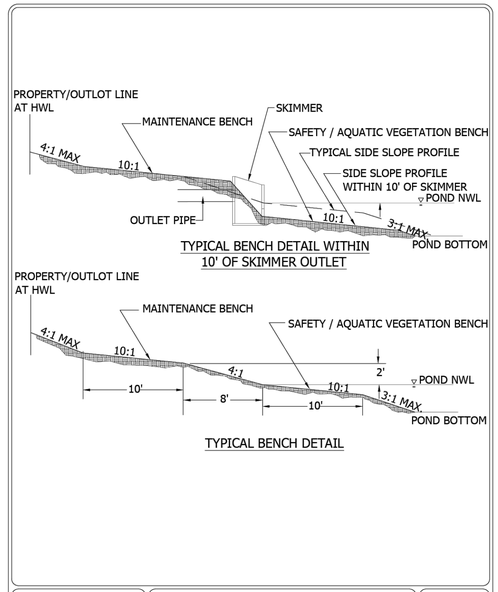
Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
RIPRAP AT FLARED END SECTION
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. STO-12

48_STO12.DWG



Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
TYPICAL BENCH DETAIL
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. STO-15

48_STO15.DWG

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Revisions

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Designed	NAP
Drawn	SHA

00-ENG-123105-SHEET-DTLS-GRAD

PRELIMINARY GRADING DETAILS

LENNAR
16305 36TH AVENUE NORTH
PLYMOUTH, MINNESOTA 55446

TALCOTT GLEN
COTTAGE GROVE, MINNESOTA

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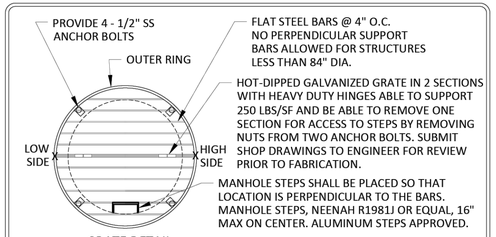
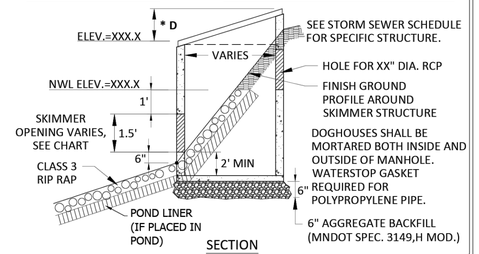


GRATE DETAIL

MANHOLE DIAMETER	SKIMMER OPENING
4'	3'x1.5'
5'	4.5'x1.5'
6'	6'x1.5'

DIAMETER	* D (TOP OF STRUCTURE SLOPE)
48" DIA	9" OR 18"
>48" DIA	12" OR 24"



SECTION

Cottage Grove — Where Pride and Prosperity Meet

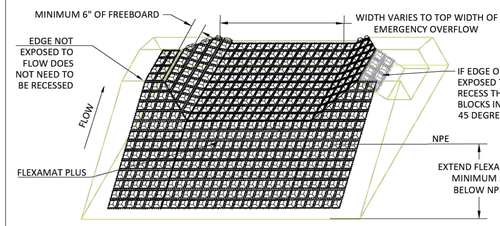
STANDARD DETAILS
STANDARD SKIMMER STRUCTURE
COTTAGE GROVE, MINNESOTA

JANUARY 2025

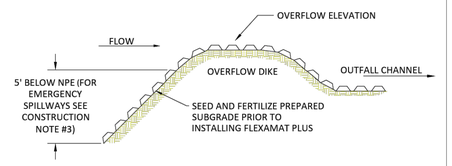
PLATE NO. STO-16

48_STO16.DWG

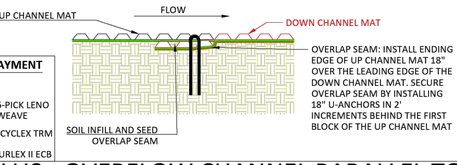
EMERGENCY SPILLWAY - ISOMETRIC VIEW



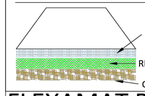
OVERFLOW DIKE - PROFILE VIEW



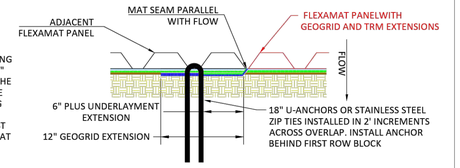
1. OVERLAP METHOD FOR SEAMS PERPENDICULAR TO FLOW



FLEXAMAT PLUS UNDERLAYMENT



2. OVERLAP METHOD FOR SEAMS PARALLEL TO FLOW



FLEXAMAT PLUS - OVERFLOW CHANNEL PARALLEL TO FLOW

CONSTRUCTION NOTES:

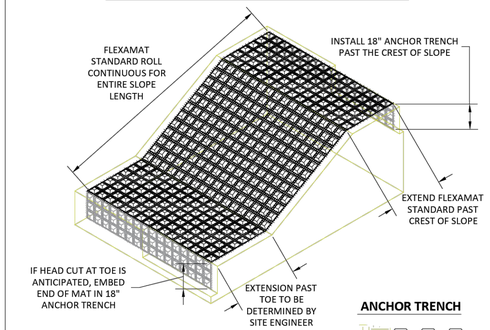
1. AN ENGINEER OR MANUFACTURERS REPRESENTATIVE SHALL BE ONSITE FOR THE START OF THE INSTALLATION.
2. ALL SUBGRADE SURFACES PREPARED FOR PLACEMENT OF MATS SHALL BE SMOOTH AND FREE OF ALL ROCKS, STICKS, ROOTS, OTHER PROTRUSIONS, OR DEBRIS OF ANY KIND. THE PREPARED SURFACE SHALL PROVIDE A FIRM UNYIELDING SUBGRADE FOR THE MATS.
3. PRIOR TO THE FLEXAMAT PLUS INSTALLATION SEED AND FERTILIZE SUBGRADE WITH SITE SPECIFIC SEED MIX IN ACCORDANCE WITH THE PROJECT PLANS AND SPECIFICATIONS.
4. MAT SHALL EXTEND 5' BELOW NORMAL POND ELEVATION. (FOR EMERGENCY OVERFLOW INSTALLATIONS EXTEND THE MAT 3' DOWN THE INSIDE FACE OF THE OVERFLOW DIKE.)
5. INSTALL FLEXAMAT PLUS ROLLS. MANUFACTURER RECOMMENDS INSTALLING THE WIDEST MAT POSSIBLE FOR SPILLWAY APPLICATIONS.
   - 5.1. FOR WIDTHS WIDER THAN 16', INSTALL 15.5' WIDE MATS WITH GEOGRID AND TRM UNDERLAYMENT EXTENSIONS. INSTALL ADJACENT MAT OVER THE 12" GEOGRID AND 6" TRM UNDERLAYMENT EXTENSIONS OF THE ADJACENT MATS. ENSURE THE GEOGRID AND TRM UNDERLAYMENT EXTENSIONS ARE LAYING FLAT ON THE SUBGRADE BEFORE INSTALLING ADJACENT MAT OVER THE EXTENSIONS. INSTALL #3 REBAR 18" U-ANCHORS IN 2' INCREMENTS ACROSS THE GEOGRID AND TRM EXTENSION OVERLAP. INSTALL ANCHORS PERPENDICULAR TO THE FLOW DIRECTLY BEHIND FIRST ROW OF BLOCKS ON THE ADJACENT MAT.
   - 5.2. FOR ADDITIONAL SECTIONS OF MAT, OVERLAP THE DOWNSTREAM SECTION 18" WITH UPSTREAM SECTION OF MAT. PRIOR TO INSTALLING OVERLAP, FLIP UPSTREAM MAT BACK 24". EXCAVATE 2.25" OF SOIL 18" FROM THE END OF THE UPSTREAM MAT. DOWNSTREAM SECTION IS THEN LAID IN THE SHALLOW TRENCH. RETURN AND TAMP SOIL OVER INITIAL EDGE AND SEED AREA. FLIP END OF UPSTREAM MAT OVER THE SOIL COVERED INITIAL LEADING EDGE. SEED AND FERTILIZE SOIL INFILL PRIOR TO FLIPPING END OF UPSTREAM MAT OVER THE SOIL COVERED INITIAL LEADING EDGE OF DOWNSTREAM MAT. SECURE PERPENDICULAR OVERLAP SEAMS BY INSTALLING #3 REBAR - 18" U ANCHORS PERPENDICULAR TO FLOW IN 2' INCREMENTS.
6. AT THE END OF THE ARMORED SPILLWAY, EMBED THE MAT 18" IN A TERMINATION TRENCH. FILL AND COMPACT TERMINATION TRENCH WITH SUITABLE FILL. (AS SPECIFIED BY EOR.)

MOTZ ENTERPRISES, INC.
Flexamat
(513)772-6689
Info@Flexamat.com
Flexamat.com

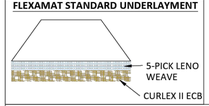
Flexamat® PERMANENT EROSION CONTROL

REV - 1

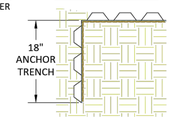
ISOMETRIC VIEW OF SLOPE AND ANCHOR TRENCHES



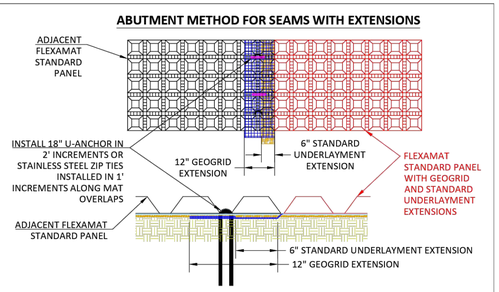
FLEXAMAT STANDARD UNDERLAYMENT



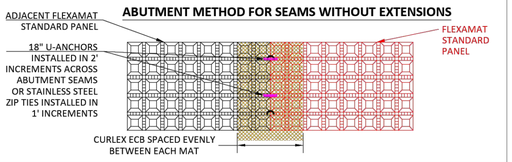
ANCHOR TRENCH



ABUTMENT METHOD FOR SEAMS WITH EXTENSIONS



ABUTMENT METHOD FOR SEAMS WITHOUT EXTENSIONS



FLEXAMAT STANDARD - SLOPE ARMORING

CONSTRUCTION NOTES:

1. AN ENGINEER OR MANUFACTURERS REPRESENTATIVE SHALL BE ONSITE FOR THE START OF THE INSTALLATION.
2. ALL SUBGRADE SURFACES PREPARED FOR PLACEMENT OF MATS SHALL BE SMOOTH AND FREE OF ALL ROCKS, STICKS, ROOTS, OTHER PROTRUSIONS, OR DEBRIS OF ANY KIND.
3. PRIOR TO FLEXAMAT STANDARD INSTALLATION SEED AND FERTILIZE SUBGRADE WITH SITE SPECIFIC SEED MIX IN ACCORDANCE WITH THE PROJECT PLANS AND SPECIFICATIONS.
4. INSTALL FLEXAMAT STANDARD ROLLS THAT ARE CONTINUOUS FOR ENTIRE SLOPE LENGTH. FOR SLOPES LONGER THAN 16', USE MATS WITH EXTENSIONS CUT TO THE LENGTH OF THE SLOPE. INSTALL MATS TO THAT THE MATTING EXTENDS PAST THE CREST OF SLOPE AND INTO AN 18" ANCHOR TRENCH.
   - 4.1. FOR ARMORED SLOPE LENGTHS 16' OR LESS, INSTALL CURLEX ECB EQUALLY UNDER ADJACENT MATS. SECURE SEAM WITH #3 REBAR 18" U-ANCHORS IN 2' INCREMENTS THE LENGTH OF THE ABUTMENT.
   - 4.2. ARMORED SLOPE LENGTHS LONGER THAN 16', INSTALL NEXT MAT OVER EXTENSIONS.
5. INSTALL SUBSEQUENT MATS OVER THE GEOGRID EXTENSION AND STANDARD UNDERLAYMENT EXTENSION OF THE PREVIOUSLY INSTALLED MAT. ENSURE THE GEOGRID AND STANDARD UNDERLAYMENT EXTENSIONS ARE LAYING FLAT ON THE SUBGRADE BEFORE INSTALLING ADJACENT MAT OVER THE EXTENSIONS.
6. INSTALL #3 REBAR 18" U-ANCHORS IN 2' INCREMENTS ACROSS THE GEOGRID AND STANDARD EXTENSION ABUTMENT. INSTALL ANCHORS PERPENDICULAR TO THE SLOPE DIRECTLY BEHIND FIRST ROW OF BLOCKS ON THE ADJACENT MAT.
7. AT THE END OF THE ARMORED SLOPE, IF HEAD CUT IS ANTICIPATED, EMBED THE MAT 18" IN A TERMINATION TRENCH. FILL AND COMPACT TERMINATION TRENCH WITH SUITABLE FILL.

MOTZ ENTERPRISES, INC.
Flexamat
(513)772-6689
Info@Flexamat.com
Flexamat.com

Flexamat® PERMANENT EROSION CONTROL

REV - 1

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Designed	NAP
Drawn	SHA

PRELIMINARY GRADING DETAILS

LENNAR
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PLYMOUTH, MINNESOTA 55446

TALCOTT GLEN
COTTAGE GROVE, MINNESOTA

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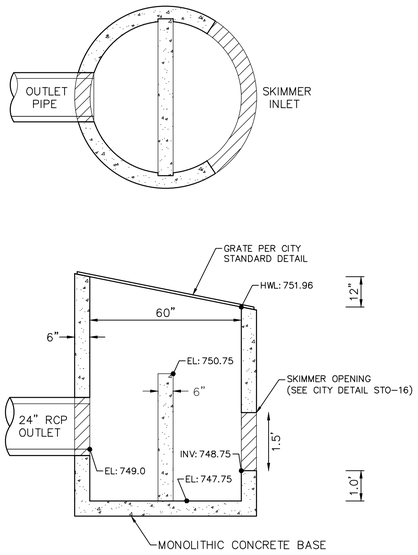
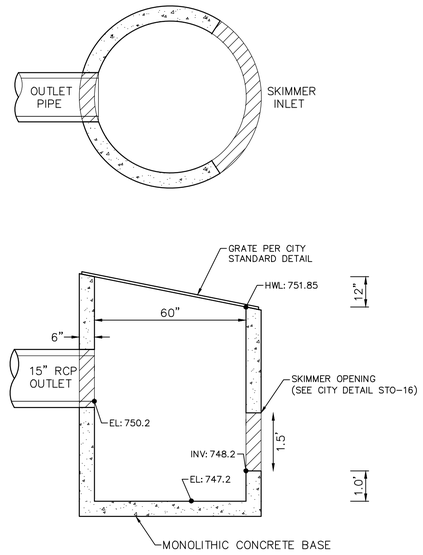


POND OUTLET CONTROL STRUCTURE OCS-100
(NOT TO SCALE)



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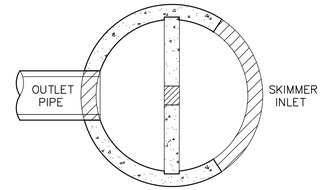
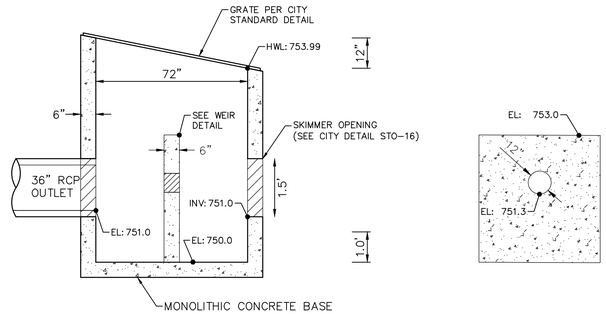
(NOT TO SCALE)





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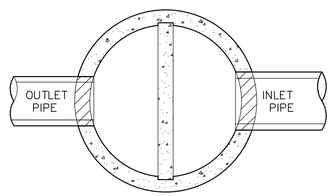

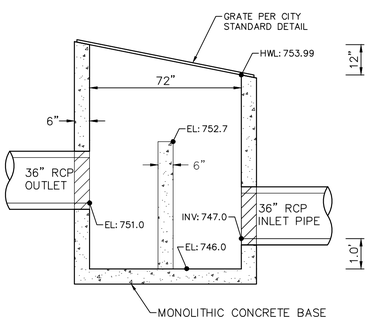

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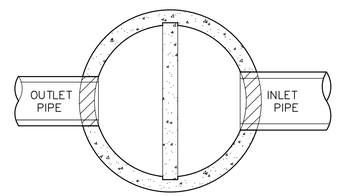
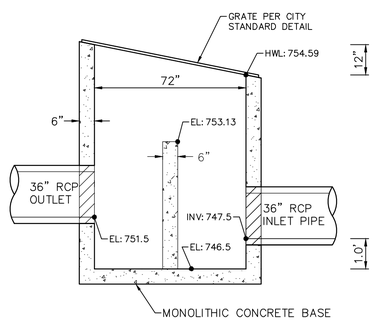
(NOT TO SCALE)





POND OUTLET CONTROL STRUCTURE OCS-400
(NOT TO SCALE)

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Revisions

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Designed	NAP
Drawn	SHA

PRELIMINARY OCS DETAILS

LENNAR
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PLYMOUTH, MINNESOTA 55446

TALCOTT GLEN
COTTAGE GROVE, MINNESOTA

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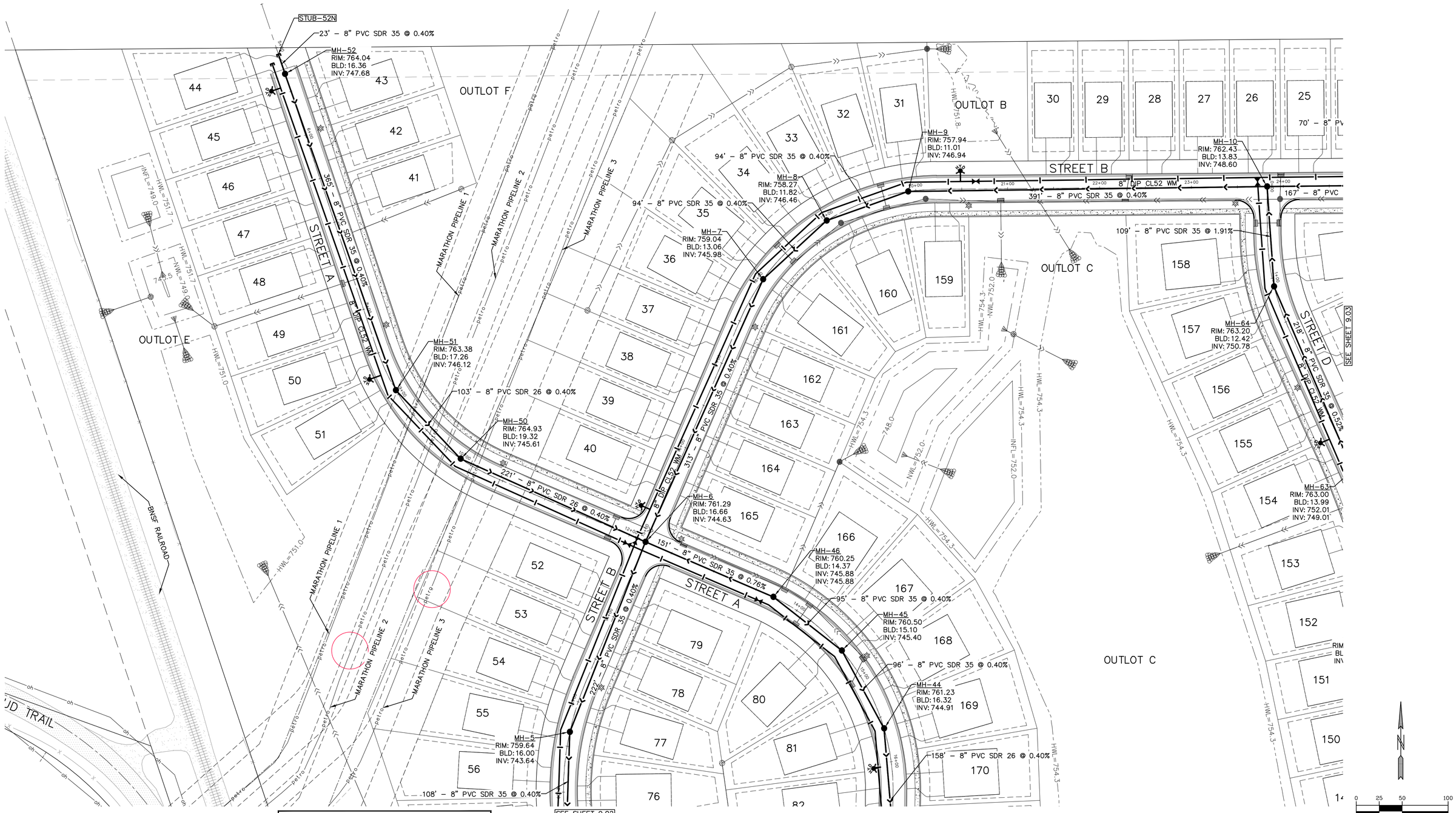

WARNING
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Without compliance with **STATE ONE-CALL**, AND
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MARATHON PIPELINE INC. L.L.C.
CALL BRIAN PHILIPS 419-379-8506
PRIOR TO ANY WORK IN MARATHON EASEMENT

SANITARY SEWER & WATERMAIN NOTES:
1. ALL SANITARY SEWER SHALL ADHERE TO THE FOLLOWING:
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   –GREATER THAN 28' DEPTH = DETERMINED BY ENGINEER
2. ALL WATERMAIN PIPE SHALL BE 8" DIP UNLESS NOTED OTHERWISE, EXCEPT HYDRANT LEADS WHICH SHALL BE 6"

PROTECT FAUNA DURING CONSTRUCTION

BENCH MARK
TOP NUT OF HYDRANT
LOCATED AT SW QUADRANT OF
MISSISSIPPI DUNES BOULEVARD
AND 94TH STREET S.
NAVD 88 ELEV=819.06

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PRELIMINARY SANITARY SEWER & WATERMAIN PLAN

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TALCOTT GLEN
COTTAGE GROVE, MINNESOTA

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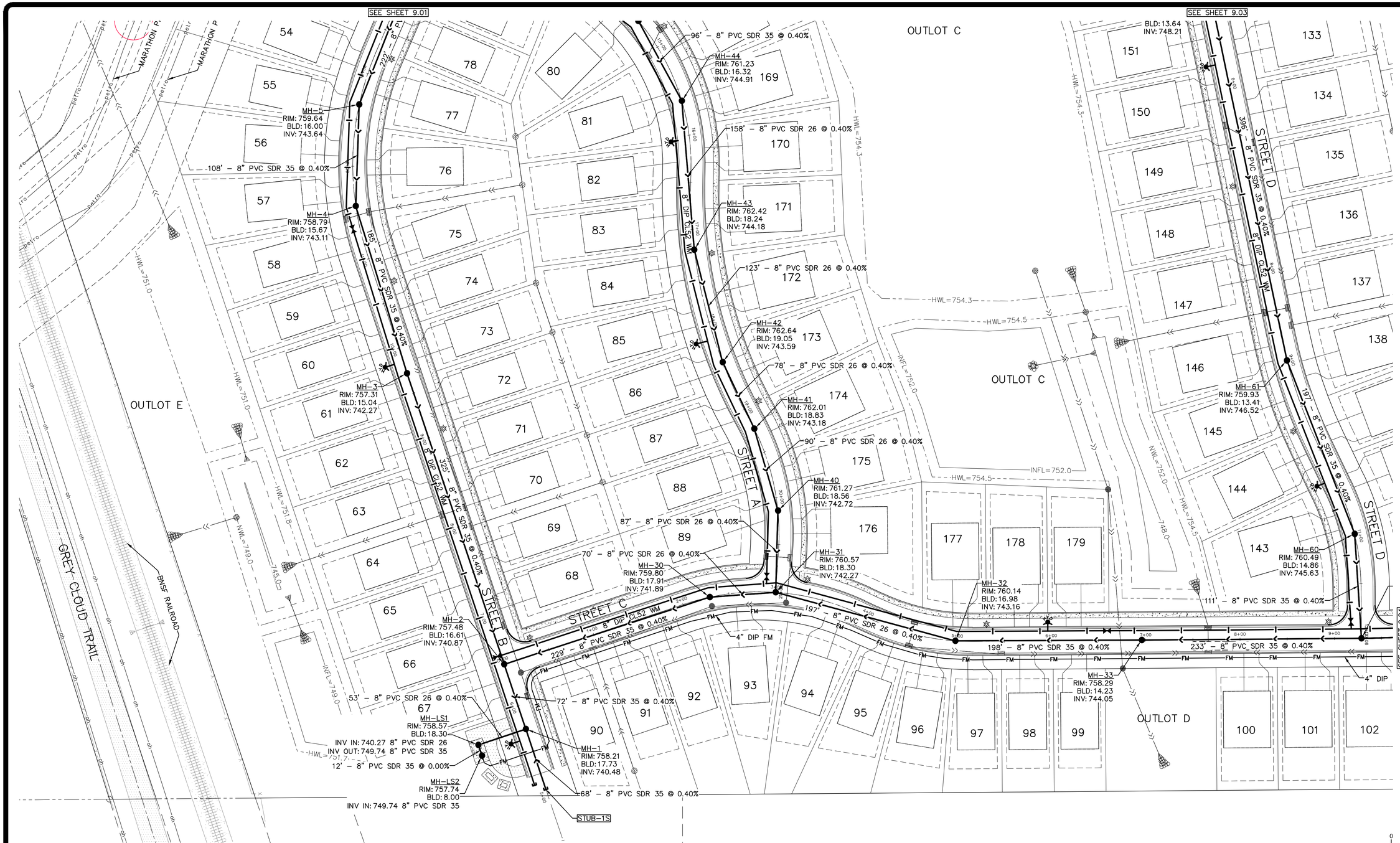

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0 25 50 100
GRAPHIC SCALE IN FEET

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COTTAGE GROVE, MINNESOTA

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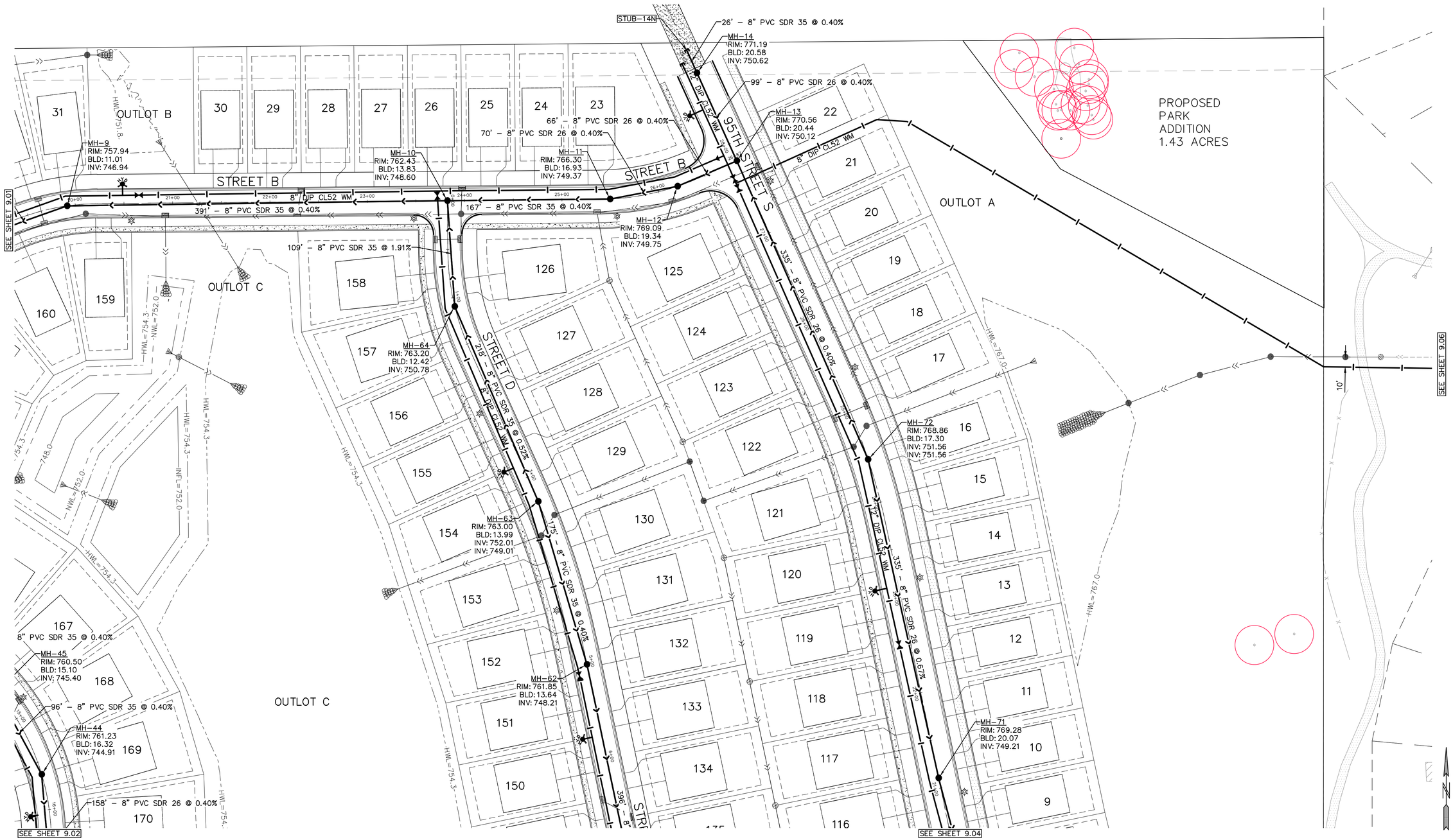

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TALCOTT GLEN
COTTAGE GROVE, MINNESOTA

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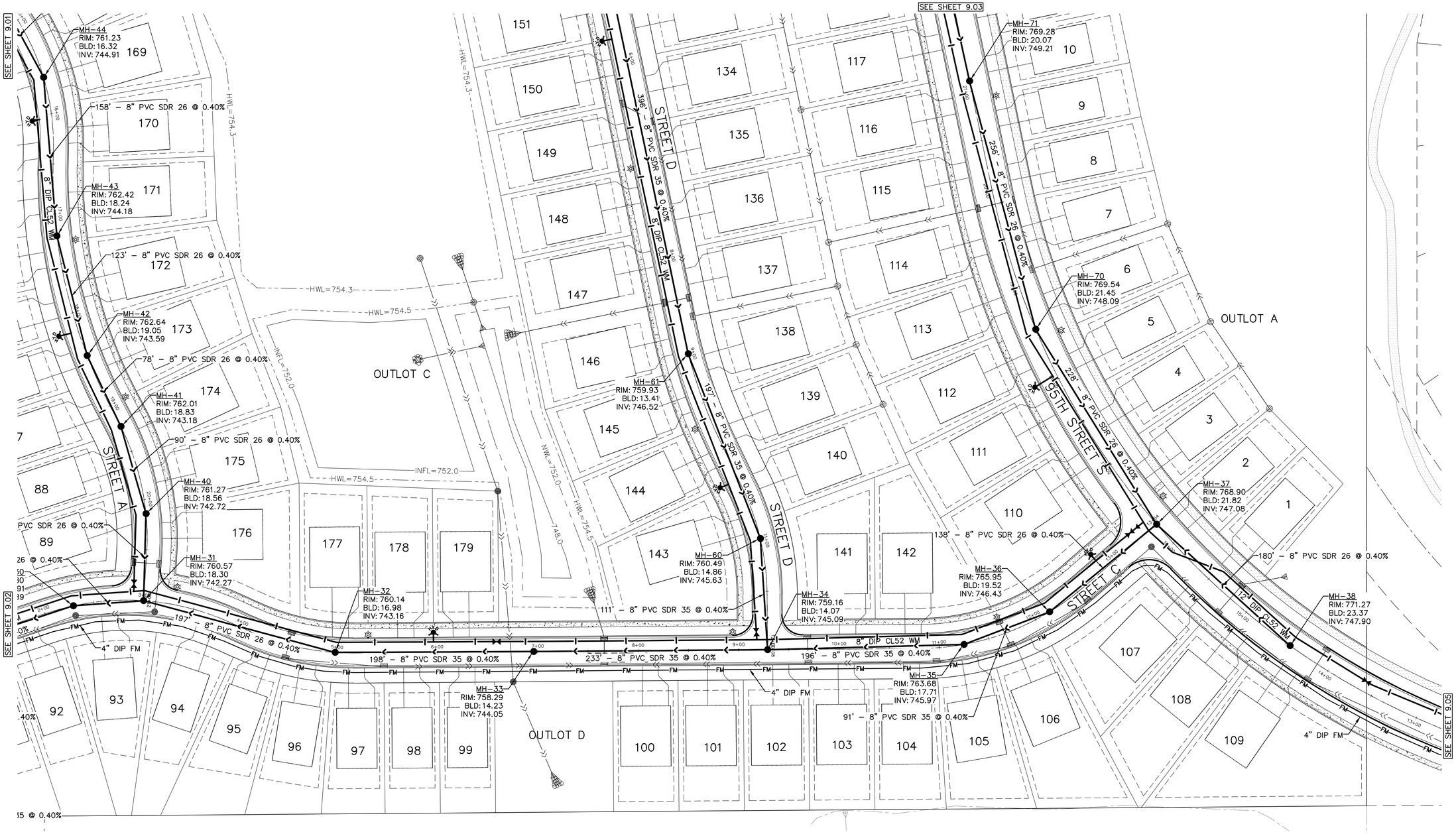

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TALCOTT GLEN
COTTAGE GROVE, MINNESOTA

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94TH STREET S

SEE SHEET 9.04

SDR 26 @ 0.40%

MH–38
RIM: 771.27
BLD: 23.37
INV: 747.90

DIP FM

14+00 13+00 12+00 11+00 10+00 9+00 8+00 7+00 6+00 5+00 4+00 3+00 2+00 1+00 0+00

MH–22
RIM: 814.55
BLD: 13.05
INV: 801.50

12" DIP CL52 WM

95TH STREET S

399' – 8" DIP CL52 @ 0.40%

4" DIP FM

MH–21
RIM: 815.70
BLD: 15.90
INV: 799.80

314' – 8" DIP CL52 @ 0.40%

12" DIP CL52 WM

8"DIP CASING PIPE PLUG PER PLAN

MH–20
RIM: 817.56
BLD: 19.02

817.76
798.56

MISSISSIPPI DUNE BLVD S

NOTE:
CONNECT TO EXISTING 12"DIP WATERMAIN. CONTRACTOR TO FIELD VERIFY LOCATION & ELEVATION.

NOTE:
CONNECT TO EXISTING SANITARY SEWER. CONTRACTOR TO FIELD VERIFY LOCATION & ELEVATION.

DUNES LANE

HOUSE POOL

N

SANITARY SEWER & WATERMAIN NOTES:

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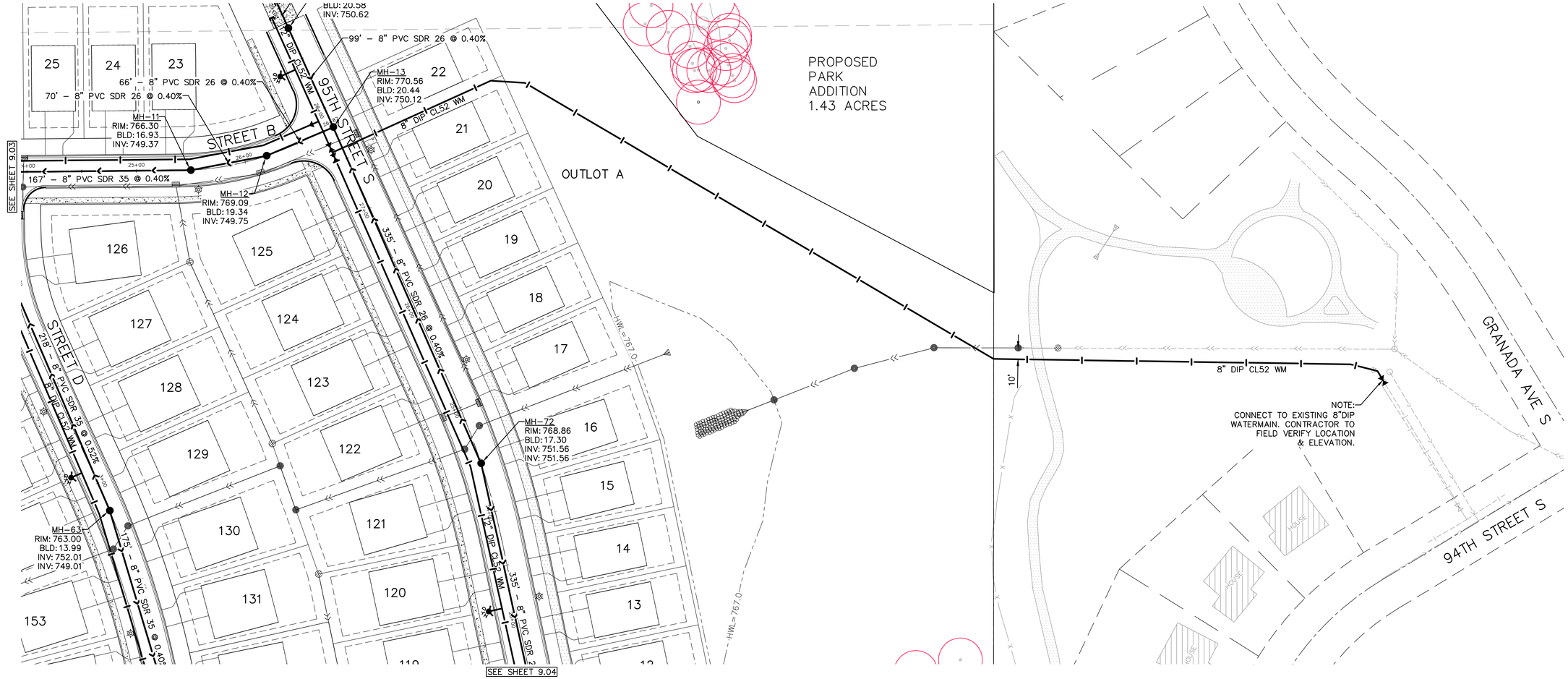

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PROTECT FAUNA DURING CONSTRUCTION

N

0 25 50 100

GRAPHIC SCALE IN FEET

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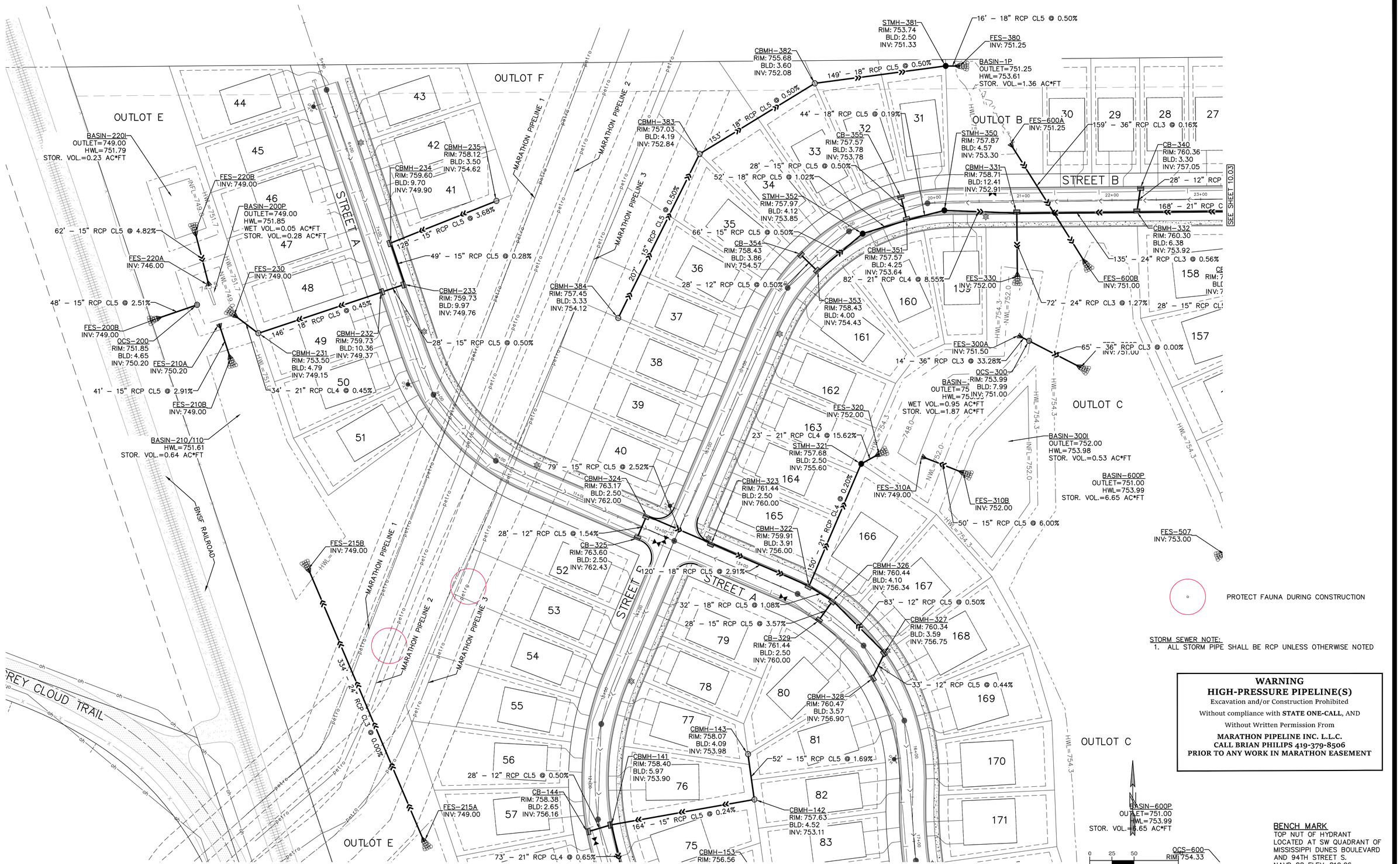
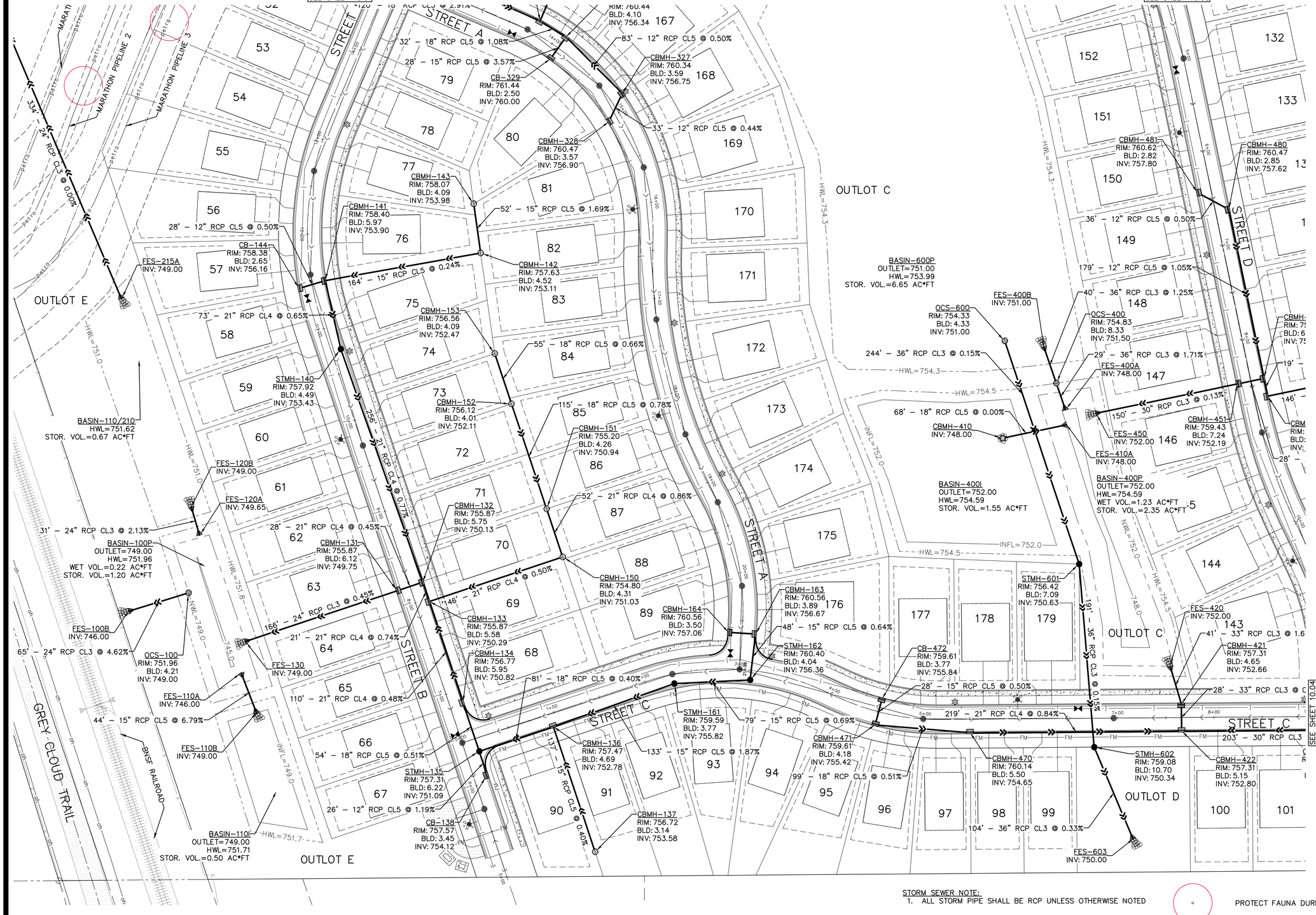

OUTLOT E
OUTLOT F
OUTLOT B
OUTLOT C
STREET A
STREET B
BASIN-220I
OUTLET=749.00
HWL=751.79
STOR. VOL.=0.23 AC*FT
FES-220B
INV: 749.00
BASIN-200P
OUTLET=749.00
HWL=751.85
WET VOL.=0.05 AC*FT
STOR. VOL.=0.28 AC*FT
62' - 15" RCP CL5 @ 4.82%
FES-220A
INV: 746.00
FES-230
INV: 749.00
48' - 15" RCP CL5 @ 2.51%
FES-200B
INV: 749.00
OCS-200
RIM: 751.85
BLD: 4.65
INV: 750.20
FES-210A
INV: 750.20
41' - 15" RCP CL5 @ 2.91%
FES-210B
INV: 749.00
BASIN-210/110
HWL=751.61
STOR. VOL.=0.64 AC*FT
128' - 15" RCP CL5 @ 3.68%
49' - 15" RCP CL5 @ 0.28%
146' - 18" RCP CL5 @ 0.45%
CBMH-233
RIM: 759.73
BLD: 9.97
INV: 749.76
CBMH-232
RIM: 759.73
BLD: 10.36
INV: 749.37
CBMH-231
RIM: 753.50
BLD: 4.79
INV: 749.15
28' - 15" RCP CL5 @ 0.50%
34' - 21" RCP CL4 @ 0.45%
CBMH-235
RIM: 758.12
BLD: 3.50
INV: 754.62
CBMH-234
RIM: 759.60
BLD: 9.70
INV: 749.90
MARATHON PIPELINE 1
MARATHON PIPELINE 2
MARATHON PIPELINE 3
BNSF RAILROAD
FES-215B
INV: 749.00
334' - 24" RCP CL3 @ 0.00%
FES-215A
INV: 749.00
CB-144
RIM: 758.38
BLD: 2.65
INV: 756.16
28' - 12" RCP CL5 @ 0.50%
CBMH-141
RIM: 758.40
BLD: 5.97
INV: 753.90
164' - 15" RCP CL5 @ 0.24%
73' - 21" RCP CL4 @ 0.65%
CBMH-153
RIM: 756.56
SEE SHEET 10.02
CBMH-142
RIM: 757.63
BLD: 4.52
INV: 753.11
52' - 15" RCP CL5 @ 1.69%
CBMH-143
RIM: 758.07
BLD: 4.09
INV: 753.98
CBMH-328
RIM: 760.47
BLD: 3.57
INV: 756.90
33' - 12" RCP CL5 @ 0.44%
CBMH-327
RIM: 760.34
BLD: 3.59
INV: 756.75
83' - 12" RCP CL5 @ 0.50%
CB-329
RIM: 761.44
BLD: 2.50
INV: 760.00
32' - 18" RCP CL5 @ 1.08%
28' - 15" RCP CL5 @ 3.57%
CBMH-326
RIM: 760.44
BLD: 4.10
INV: 756.34
120' - 18" RCP CL5 @ 2.91%
150' - 21" RCP CL4 @ 0.20%
CBMH-322
RIM: 759.91
BLD: 3.91
INV: 756.00
CB-325
RIM: 763.60
BLD: 2.50
INV: 762.43
28' - 12" RCP CL5 @ 1.54%
CBMH-324
RIM: 763.17
BLD: 2.50
INV: 762.00
79' - 15" RCP CL5 @ 2.52%
CBMH-323
RIM: 761.44
BLD: 2.50
INV: 760.00
FES-310A
INV: 749.00
FES-310B
INV: 752.00
50' - 15" RCP CL5 @ 6.00%
STMH-321
RIM: 757.68
BLD: 2.50
INV: 755.60
FES-320
INV: 752.00
23' - 21" RCP CL4 @ 15.62%
CBMH-384
RIM: 757.45
BLD: 3.33
INV: 754.12
207' - 15" RCP CL5 @ 0.50%
CBMH-383
RIM: 757.03
BLD: 4.19
INV: 752.84
153' - 18" RCP CL5 @ 0.50%
CBMH-382
RIM: 755.68
BLD: 3.60
INV: 752.08
149' - 18" RCP CL5 @ 0.50%
STMH-381
RIM: 753.74
BLD: 2.50
INV: 751.33
16' - 18" RCP CL5 @ 0.50%
FES-380
INV: 751.25
BASIN-1P
OUTLET=751.25
HWL=753.61
STOR. VOL.=1.36 AC*FT
44' - 18" RCP CL5 @ 0.19%
STMH-350
RIM: 757.87
BLD: 4.57
INV: 753.30
FES-600A
INV: 751.25
159' - 36" RCP CL3 @ 0.16%
CB-355
RIM: 757.57
BLD: 3.78
INV: 753.78
28' - 15" RCP CL5 @ 0.50%
52' - 18" RCP CL5 @ 1.02%
STMH-352
RIM: 757.97
BLD: 4.12
INV: 753.85
66' - 15" RCP CL5 @ 0.50%
CB-354
RIM: 758.43
BLD: 3.86
INV: 754.57
28' - 12" RCP CL5 @ 0.50%
CBMH-351
RIM: 757.57
BLD: 4.25
INV: 753.64
82' - 21" RCP CL4 @ 8.55%
CBMH-353
RIM: 758.43
BLD: 4.00
INV: 754.43
CBMH-331
RIM: 758.71
BLD: 12.41
INV: 752.91
28' - 12" RCP
168' - 21" RCP C
CB-340
RIM: 760.36
BLD: 3.30
INV: 757.05
CBMH-332
RIM: 760.30
BLD: 6.38
INV: 753.92
135' - 24" RCP CL3 @ 0.56%
FES-330
INV: 752.00
FES-600B
INV: 751.00
72' - 24" RCP CL3 @ 1.27%
28' - 15" RCP CL
FES-300A
INV: 751.50
14' - 36" RCP CL3 @ 33.28%
65' - 36" RCP CL3 @ 0.00%
INV: 751.00
OCS-300
RIM: 753.99
BLD: 7.99
INV: 751.00
BASIN-
OUTLET=75
HWL=75
WET VOL.=0.95 AC*FT
STOR. VOL.=1.87 AC*FT
BASIN-300I
OUTLET=752.00
HWL=753.98
STOR. VOL.=0.53 AC*FT
BASIN-600P
OUTLET=751.00
HWL=753.99
STOR. VOL.=6.65 AC*FT
FES-507
INV: 753.00
BASIN-600P
OUTLET=751.00
HWL=753.99
STOR. VOL.=6.65 AC*FT
OCS-600
RIM: 754.33
INV: 751.00
SEE SHEET 10.03
PROTECT FAUNA DURING CONSTRUCTION
HWL=754.3
HWL=752.0
HWL=748.0
INFL=752.0
INFL=749.0
HWL=751.7
HWL=749.0
HWL=751.7
HWL=751.7
HWL=754.3
HWL=754.3
HWL=754.3



WARNING
HIGH-PRESSURE PIPELINE(S)
Excavation and/or Construction Prohibited
Without compliance with **STATE ONE-CALL**, AND
Without Written Permission From
MARATHON PIPELINE INC. L.L.C.
CALL BRIAN PHILIPS 419-379-8506
PRIOR TO ANY WORK IN MARATHON EASEMENT

0 25 50 100
GRAPHIC SCALE IN FEET

BENCH MARK
TOP NUT OF HYDRANT
LOCATED AT SW QUADRANT OF
MISSISSIPPI DUNES BOULEVARD
AND 94TH STREET S.
NAVD 88 ELEV=819.06

STORM SEWER NOTE:
1. ALL STORM PIPE SHALL BE RCP UNLESS OTHERWISE NOTED

PROTECT FAUNA DURING CONSTRUCTION

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I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota
Name Brian N. Molinaro
Reg. No. 47504 Date 01-16-26

Revisions

Date	01-16-26
Designed	NAP
Drawn	SHA

PRELIMINARY STORM SEWER PLAN

LENNAR
16305 36TH AVENUE NORTH
PLYMOUTH, MINNESOTA 55446

TALCOTT GLEN
COTTAGE GROVE, MINNESOTA

00-ENG-123105-SHEET-STRM

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STORM SEWER NOTE:
1. ALL STORM PIPE SHALL BE RCP UNLESS OTHERWISE NOTED

PROTECT FAUNA DURING CONSTRUCTION

PROPOSED PARK ADDITION 1.43 ACRES

OUTLOT A

OUTLOT B

OUTLOT C

STREET B

STREET D

65TH STREET S

BASIN-1P
OUTLET=751.25
HWL=753.61
STOR. VOL.=1.36 AC*FT

BASIN-300I
OUTLET=752.00
HWL=753.98
STOR. VOL.=0.53 AC*FT

BASIN-600P
OUTLET=751.00
HWL=753.99
STOR. VOL.=6.65 AC*FT

BASIN-300P
OUTLET=751.00
HWL=753.99
STOR. VOL.=6.65 AC*FT

BASIN-500P
OUTLET=762.00
HWL=767.33
STOR. VOL.=2.33 AC*FT

BASIN-
OUTLET=75
HWL=75
WET VOL.=0.95 AC*FT
STOR. VOL.=1.87 AC*FT

CB-355
IM: 757.57
BLD: 3.78
NV: 753.78

STMH-350
RIM: 757.87
BLD: 4.57
INV: 753.30

CBMH-331
RIM: 758.71
BLD: 12.41
INV: 752.91

FES-600A
INV: 751.25

CB-340
RIM: 760.36
BLD: 3.30
INV: 757.05

STMH-333
RIM: 762.28
BLD: 7.64
INV: 754.65

CB-341
RIM: 762.30
BLD: 3.79
INV: 758.51

CBMH-334
RIM: 765.34
BLD: 9.74
INV: 755.61

CBMH-335
RIM: 768.49
BLD: 6.26
INV: 762.23

CBMH-336
RIM: 770.11
BLD: 7.18
INV: 762.92

CBMH-337
RIM: 768.29
BLD: 4.04
INV: 764.25

CB-338
RIM: 768.29
BLD: 3.77
INV: 764.52

CBMH-332
RIM: 760.30
BLD: 6.38
INV: 753.92

CBMH-342
RIM: 762.40
BLD: 5.54
INV: 756.86

CB-343
RIM: 762.40
BLD: 5.40
INV: 757.00

CBMH-351
RIM: 757.57
BLD: 4.25
INV: 753.64

FES-330
INV: 752.00

FES-600B
INV: 751.00

CBMH-360
RIM: 760.00
BLD: 4.04
INV: 755.96

FES-300A
INV: 751.50

OCS-300
RIM: 753.99
BLD: 7.99
INV: 751.00

FES-320
NV: 752.00

FES-310A
INV: 749.00

FES-310B
INV: 752.00

CBMH-326
RIM: 760.44
BLD: 4.10
INV: 756.34

CBMH-327
RIM: 760.34
BLD: 3.59
INV: 756.75

CBMH-481
RIM: 760.62
BLD: 2.82
INV: 757.80

CBMH-480
RIM: 760.47
BLD: 2.85
INV: 757.62

CBMH-361
RIM: 761.50
BLD: 3.77
INV: 757.73

STMH-504
RIM: 761.93
BLD: 4.90
INV: 757.03

STMH-506
RIM: 762.57
BLD: 7.62
INV: 754.95

STMH-505
RIM: 762.67
BLD: 7.42
INV: 755.25

FES-507
INV: 753.00

STMH-501
RIM: 768.52
BLD: 8.73
INV: 759.79

STMH-502
RIM: 768.59
BLD: 9.10
INV: 759.49

STMH-503
RIM: 762.80
BLD: 5.26
INV: 757.54

CBMH-458
RIM: 761.73
BLD: 3.77
INV: 757.96

CBMH-457
RIM: 760.69
BLD: 4.12
INV: 756.57

CBMH-456
RIM: 759.65
BLD: 4.09
INV: 755.56

CBMH-460
RIM: 768.40
BLD: 10.84
INV: 757.55

CBMH-461
RIM: 768.40
BLD: 10.65
INV: 757.75

CBMH-455
RIM: 758.57
BLD: 4.65
INV: 753.92

CBMH-452
RIM: 759.43
BLD: 6.85

FES-400B
INV: 751.00

OCS-600
RIM: 754.33
BLD: 4.33
INV: 751.00

OCS-400
RIM: 754.83
BLD: 8.33
INV: 751.50

FES-500
INV: 762.00

STMH-551
RIM: 767.70
BLD: 4.70
INV: 763.00

STMH-552
RIM: 790.36
BLD: 19.01
INV: 771.35

STMH-553
RIM: 801.14
BLD: 15.90
INV: 785.24

STMH-554
RIM: 803.09
BLD: 2.50
INV: 800.84

FES-550
INV: 762.00

CBMH-463
RIM: 767.25
BLD: 8.22
INV: 759.03

49' – 18" RCP CL5 @ 0.50%
3" RCP CL5 @ 0.19%
97' – 18" RCP CL5 @ 0.46%
159' – 36" RCP CL3 @ 0.16%
78' – 21" RCP CL4 @ 1.53%
28' – 12" RCP CL5 @ 0.49%
28' – 15" RCP CL5 @ 0.50%
168' – 21" RCP CL4 @ 0.43%
140' – 21" RCP CL4 @ 0.51%
26' – 15" RCP CL5 @ 0.50%
71' – 18" RCP CL5 @ 0.50%
210' – 18" RCP CL5 @ 0.45%
135' – 24" RCP CL3 @ 0.56%
82' – 21" RCP CL4 @ 8.55%
72' – 24" RCP CL3 @ 1.27%
28' – 15" RCP CL5 @ 0.50%
38' – 15" RCP CL5 @ 0.50%
182' – 15" RCP CL5 @ 0.92%
65' – 36" RCP CL3 @ 0.00%
14' – 36" RCP CL3 @ 33.28%
186' – 15" RCP CL5 @ 1.19%
43' – 15" RCP CL5 @ 1.19%
164' – 15" RCP CL5 @ 1.19%
25' – 15" RCP CL5 @ 1.19%
15.62%
50' – 15" RCP CL5 @ 6.00%
25' – 15" RCP CL5 @ 1.19%
149' – 15" RCP CL5 @ 1.19%
163' – 15" RCP CL5 @ 1.20%
130' – 15" RCP CL5 @ 0.86%
130' – 18" RCP CL5 @ 0.78%
135' – 18" RCP CL5 @ 0.81%
83' – 12" RCP CL5 @ 0.50%
33' – 12" RCP CL5 @ 0.44%
36' – 12" RCP CL5 @ 0.50%
179' – 12" RCP CL5 @ 1.05%
40' – 36" RCP CL3 @ 1.25%
151' – 21" RCP CL4 @ 2.23%
44' – 24" RCP CL3 @ 0.64%
38' – 21" RCP CL4 @ 0.51%
77' – 24" RCP CL3 @ 7.73%
75' – 24" RCP CL3 @ 7.85%
79' – 24" RCP CL3 @ 7.49%
31' – 24" RCP CL3 @ 3.23%
71' – 18" RCP CL5 @ 0.45%
106' – 15" RCP CL5 @ 0.49%

SEE SHEET 10.01
SEE SHEET 10.02
SEE SHEET 10.04

NOTE:
CONNECT TO EXISTING STORM SEWER. REMOVE EXISTING FES. CONTRACTOR TO FIELD VERIFY LOCATION & ELEVATION.

0 25 50 100
GRAPHIC SCALE IN FEET

BENCH MARK
TOP NUT OF HYDRANT LOCATED AT SW QUADRANT OF MISSISSIPPI DUNES BOULEVARD AND 94TH STREET S.
NAVD 88 ELEV=819.06

00-ENG-123105-SHEET-STRM

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(651) 681-1914
Fax: 681-9488
www.pioneereng.com

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota
Name: Brian N. Molinaro
Reg. No. 47504 Date 01-16-26

Revisions

Date	01-16-26
Designed	NAP
Drawn	SHA

PRELIMINARY STORM SEWER PLAN

LENNAR
16305 36TH AVENUE NORTH
PLYMOUTH, MINNESOTA 55446

TALCOTT GLEN
COTTAGE GROVE, MINNESOTA

10.03 OF 47

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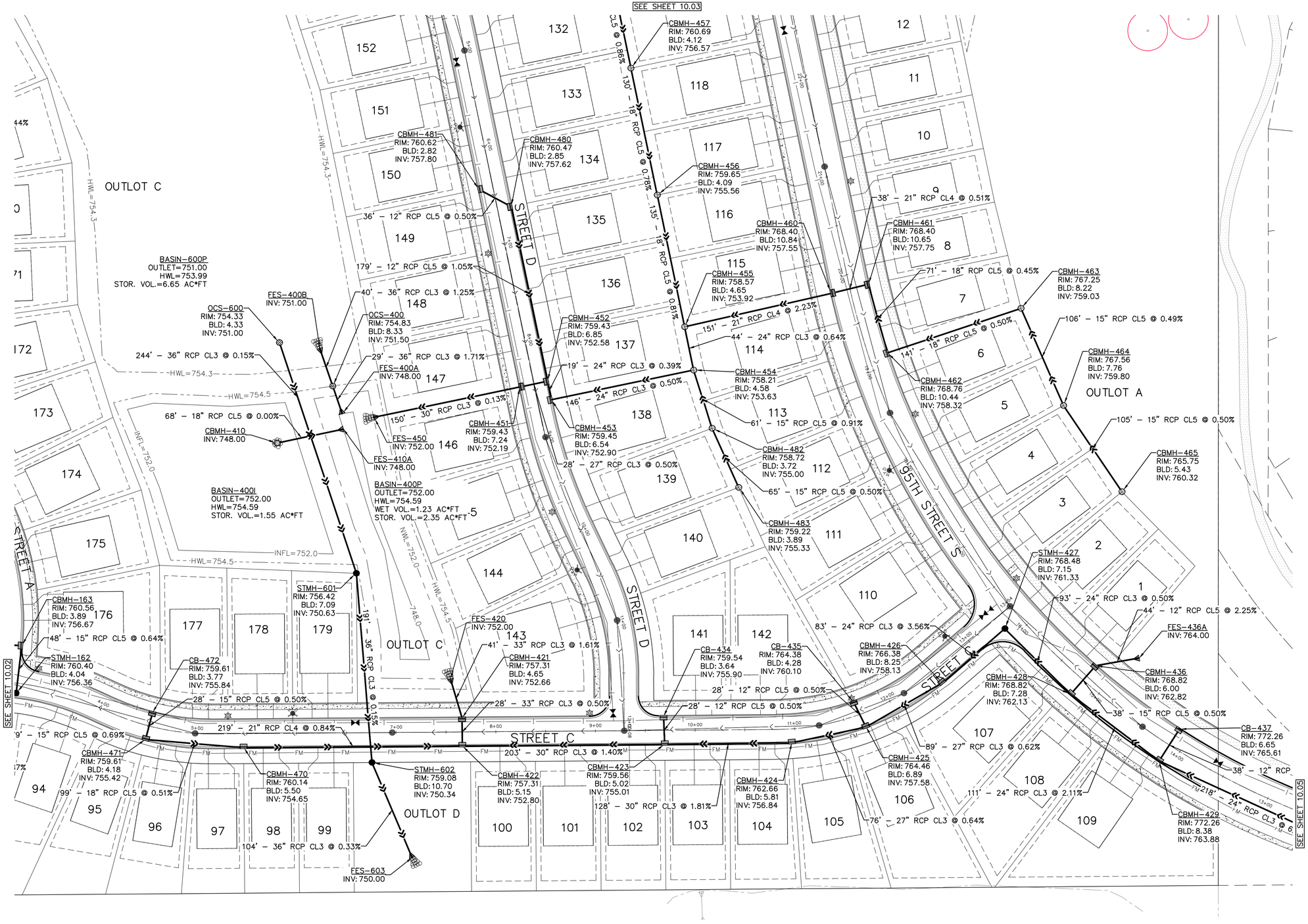

BENCH MARK
TOP NUT OF HYDRANT
LOCATED AT SW QUADRANT OF
MISSISSIPPI DUNES BOULEVARD
AND 94TH STREET S.
NAVD 88 ELEV=819.06

STORM SEWER NOTE:
1. ALL STORM PIPE SHALL BE RCP UNLESS OTHERWISE NOTED

PROTECT FAUNA DURING CONSTRUCTION

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Designed	NAP
Drawn	SHA

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PLYMOUTH, MINNESOTA 55446

TALCOTT GLEN
COTTAGE GROVE, MINNESOTA

10.04 OF 47

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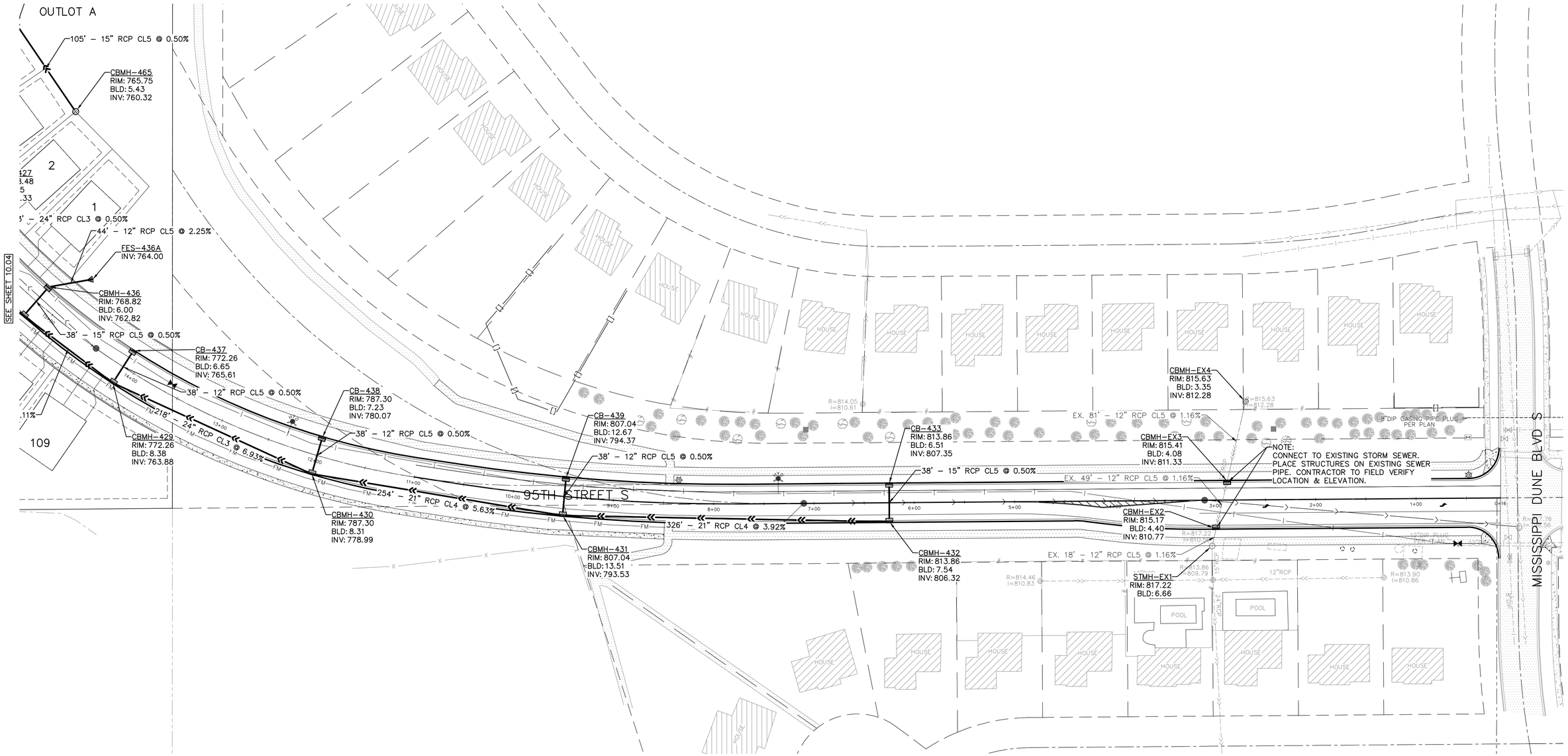

PROTECT FAUNA DURING CONSTRUCTION

STORM SEWER NOTE:
1. ALL STORM PIPE SHALL BE RCP UNLESS OTHERWISE NOTED

N

0 25 50 100
GRAPHIC SCALE IN FEET

BENCH MARK
TOP NUT OF HYDRANT
LOCATED AT SW QUADRANT OF
MISSISSIPPI DUNES BOULEVARD
AND 94TH STREET S.
NAVD 88 ELEV=819.06

00-ENG-123105-SHEET-STRM

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Revisions

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Designed	NAP
Drawn	SHA

PRELIMINARY STORM SEWER PLAN

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PLYMOUTH, MINNESOTA 55446

TALCOTT GLEN
COTTAGE GROVE, MINNESOTA

10.05 OF 47

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STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

TO COMPLY WITH THE GENERAL STORMWATER PERMIT FOR CONSTRUCTION ACTIVITY

THE FULL STORMWATER MANAGEMENT PLAN IS A SEPARATE DOCUMENT AVAILABLE UPON REQUEST

CONSTRUCTION ACTIVITY INFORMATION

PROJECT NAME: TALCOTT GLEN
PROJECT LOCATION:
95TH STREET SOUTH
COTTAGE GROVE, MINNESOTA 55016
WASHINGTON COUNTY
LATITUDE/LONGITUDE: 44.811780, -92.969636

TOTAL PROJECT AREA DISTURBED: 61.1 ACRES
TOTAL EXISTING IMPERVIOUS AREA: X.X ACRES
TOTAL PROPOSED IMPERVIOUS AREA: 23.7 ACRES

RECEIVING WATERS:
XXXX CREEK

DATES OF CONSTRUCTION:
CONSTRUCTION START DATE: MONTH 1, 202Y EST. COMPLETION DATE: MONTH 1, 202X

CONTACT INFORMATION

PROJECT OWNER
XXCOMPANYXX
FIRST LASTNAME – TITLE
XXX HIGHWAY X
City, State Zip
PHONE XXX-XXX-XXXX
EMAIL: XXX@XXXXXXXXXX.COM

CONTRACTOR:
XXCOMPANYXX
FIRST LASTNAME – TITLE
XXX HIGHWAY
City, State Zip
PHONE XXX-XXX-XXXX
EMAIL: XXX@XXXXXXXXXX.COM

GENERAL CONSTRUCTION PROJECT INFORMATION

THE CONSTRUCTION OF NEW ROADWAYS, 95TH STREET S, STREET A, STREET B, STREET C, AND STREET D, AND 179 LOTS FOR RESIDENTIAL DEVELOPMENT. THIS CONSTRUCTION WILL COMPLETE GRADING, INSTALLATION OF SANITARY SEWER, WATERMAIN, STORM SEWER, CONCRETE CURB AND GUTTER, BITUMINOUS SURFACING, STREET LIGHTING, LANDSCAPING, EROSION CONTROL, AND TURF ESTABLISHMENT.

BASED ON THE SOIL BORINGS THAT WERE RETRIEVED FROM THE SITE, SOILS ENCOUNTERED ON SITE ARE CLAYEY SAND, SILTY SAND, POORLY GRADED SAND, SANDY LEAN CLAY, LEAN CLAY, AND HIGHLY WEATHERED BEDROCK.

GENERAL SITE INFORMATION (III.A)

1. THE PROJECT IS REQUIRED TO MEET THE CONSTRUCTION STORMWATER REQUIREMENTS FOR THE NPDES GENERAL STORMWATER PERMIT AND MNDOT SPEC. 1717, 2573, AND 2575.
2. THE CONTRACTOR SHALL INSTALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES IN ACCORDANCE WITH MNDOT GENERAL CONDITIONS 2573 TO BE INSPECTED BY THE CITY PRIOR TO STARTING ANY CONSTRUCTION OPERATION THAT MAY CAUSE ANY SEDIMENTATION OR SILTATION AT THE SITE.
3. LOCATIONS, TYPE AND QUANTITY OF TEMPORARY AND PERMANENT EROSION CONTROL MEASURES CAN BE FOUND WITHIN THE CONSTRUCTION PLANS.
4. THE PROJECT IS NOT LOCATED WITHIN 1 MILE AND FLOWS TO AN IMPAIRED WATER BODY. THEREFORE, THE PROJECT WILL NOT NEED TO STABILIZE ALL EXPOSED SOILS NO LATER THAN 7 DAYS. DITCHES OR RAVINES THROUGHOUT THE PROJECT THAT ARE DISTURBED SHALL BE STABILIZED WITHIN 24 HOURS.
5. THE PROJECT IS NOT LOCATED WITH 1 MILE AND FLOWS TO AN IMPAIRED WATER BODY. THEREFORE, TEMPORARY SEDIMENT BASINS ARE NEEDED FOR DRAINAGE AREAS OF 10 ACRES OR MORE FLOWING TO A COMMON LOCATION.
6. THE CONTRACTOR SHALL INSTALL ADDITIONAL BMP'S AS NECESSARY TO PREVENT SEDIMENT TRANSPORT PER PERMIT REQUIREMENTS
7. INLET PROTECTION, SILT FENCE AND BIOROLLS SHALL BE INSTALLED IN THE FIELD AS SHOWN ON THE PLANS AS DIRECTED BY THE ENGINEER.
8. PERMIT COVERAGE FOR THIS PROJECT CANNOT BE ISSUED UNTIL ALL OF THE REQUIREMENTS OF SECTION 22 OF THE GENERAL STORMWATER PERMIT WITH REGARDS TO WETLAND PERMITTING, DECISIONS, AND MITIGATIVE SEQUENCING HAVE BEEN FINALIZED AND DOCUMENTED.

THE INTENDED SEQUENCING OF MAJOR CONSTRUCTION ACTIVITIES IS AS FOLLOWS:
1. INSTALL STABILIZED ROCK CONSTRUCTION ENTRANCE
2. INSTALLATION OF SILT FENCE AROUND SITE
3. INSTALL DOUBLE SILT FENCE AROUND WETLAND AREAS
4. INSTALL ORANGE CONSTRUCTION FENCING AROUND INFILTRATION AREAS.
5. CLEAR AND GRUB FOR TEMPORARY SEDIMENT BASIN/POND INSTALL.
6. CONSTRUCT TEMP PONDS – CAN USE PROPOSED BASINS AS TEMP PONDS
7. CLEAR AND GRUB REMAINDER OF SITE
8. STRIP AND STOCKPILE TOPSOIL
9. ROUGH GRADING OF SITE
10. STABILIZE DENUDED AREAS AND STOCKPILES
11. INSTALL SANITARY SEWER, WATER MAIN, STORM SEWER AND SERVICES
12. INSTALL SILT FENCE/INLET PROTECTION AROUND CB'S
13. INSTALL STREET SECTION
14. INSTALL CURB AND GUTTER
15. BITUMINOUS ON STREETS
16. INSTALL SMALL UTILITIES (GAS, ELECTRIC, PHONE, CABLE, ETC.)
17. FINAL GRADE BOULEVARD, INSTALL SEED AND MULCH
18. REMOVE ACCUMULATED SEDIMENT FROM BASIN/POND
19. FINAL GRAD POND/INFILTRATION BASINS (DO NOT COMPACT SOILS IN INFILTRATION AREAS.)
20. WHEN ALL CONSTRUCTION ACTIVITY IS COMPLETE AND THE SITE IS STABILIZED BY EITHER SEED OR SOD/LANDSCAPING, REMOVE SILT FENCE AND RESEED AREAS DISTURBED BY THE REMOVAL.

ENVIRONMENTALLY SENSITIVE AREAS:
WETLANDS – THERE ARE NO/IMPACTS TO WETLANDS PER SECTION 22 OF THE PERMIT. SEE ATTACHED WETLAND PLAN FOR IMPACTS AND MITIGATION. THE APPROVED WETLANDS PERMIT IS ON FILE WITH THE OWNER.

SPECIAL AND IMPAIRED WATERS – N/A IMPAIRMENT(S): N/A

TMDL – N/A

SCIENTIFIC OR NATURAL AREAS – THERE ARE NO SNA WITHIN 1 MILE OF THE PROJECT.

KARST AREA – THE PROJECT IS NOT LOCATED WITHIN A KARST AREA.

CALCAREOUS FENS – THE PROJECT DOES NOT DISCHARGE TO A FEN.

TRAINING (21.1)

THE CONTRACTOR SHALL ENSURE THAT THE TRAINING REQUIREMENTS IN PART 21.1 OF THE GENERAL STORMWATER PERMIT FOR CONSTRUCTION ACTIVITY ARE COMPLIED WITH. THE INDIVIDUALS TRAINED WILL BE RECORDED IN THE SWPPP BEFORE THE START OF CONSTRUCTION OR AS SOON AS PERSONNEL FOR THE PROJECT HAVE BEEN DETERMINED. PROVIDE INFORMATION IN THE SPACE PROVIDED BELOW FOR ADDITIONAL PERSONNEL ON THE PROJECT AS REQUIRED BY THE PERMIT.

SWPPP DESIGNER	COMPANY	CERTIFICATION
SWPPP INSTALLER		
SWPPP INSPECTOR		

PERMANENT STORMWATER MANAGEMENT SYSTEM (15.1)

1. THE PROJECT WILL CREATE A NEW CUMULATIVE IMPERVIOUS SURFACE GREATER THAN OR EQUAL TO ONE ACRE. THE PROJECT PROPOSES TO CONSTRUCT A STORMWATER TREATMENT SYSTEM TO COLLECT RUNOFF TO BE DISCHARGED OFFSITE. TREATMENT FOR THE RUNOFF IS TO BE EXECUTED BY THE PROPOSED STORMWATER MANAGEMENT SYSTEM. CALCULATIONS DETAILING THE BASINS ARE AVAILABLE UPON REQUEST.

BMP SELECTION & STORMWATER MANAGEMENT (7.1)

1. THE CONTRACTOR SHALL INSTALL AND MAINTAIN THE BMPS IDENTIFIED IN THIS PLAN IN AN APPROPRIATE AND FUNCTIONAL MANNER AND IN ACCORDANCE WITH RELEVANT MANUFACTURER SPECIFICATIONS AND ACCEPTED ENGINEERING PRACTICES TO MINIMIZE THE DISCHARGE OF POLLUTANTS IN STORMWATER FROM CONSTRUCTION ACTIVITIES. THESE BMPS SHALL BE INSPECTED BY THE CITY.
2. THE CONTRACTOR SHOULD CONSTRUCT TEMPORARY OR PERMANENT WET SEDIMENTATION BASINS IDENTIFIED IN THIS PLAN (WHEN REQUIRED, SEE SECTION 14 AND 15) AS A FIRST STEP IN CONSTRUCTION AND STORMWATER ROUTED TO THESE.
3. THE CONTRACTOR MUST PHASE CONSTRUCTION SO TO LIMIT DISTURBED LAND TO AREAS THAT CAN BE EFFECTIVELY INSPECTED AND MAINTAINED. PER SECTION 11 OF THE PERMIT.
4. ALL EROSION CONTROL NETTING USED ON THE SITE AS PART OF THE SOIL STABILIZATION TECHNIQUES, ARE ENCOURAGED TO USE PRODUCTS THAT HAVE BEEN SHOWN TO MINIMIZE IMPACTS ON WILDLIFE. THE U.S. FISH & WILDLIFE SERVICE RECOMMENDS USING TYPES OF NETTING PRACTICES THAT ARE CONSIDERED "WILDLIFE FRIENDLY," INCLUDING THOSE THAT USE NATURAL FIBER OR 100 PERCENT BIODEGRADABLE MATERIALS AND THAT USE A LOOSE WEAVE WITH A NON-WELDED, MOVABLE JOINTED NETTING.

EROSION PREVENTION PRACTICES (8.1)

1. THE CONTRACTOR SHALL PHASE THE WORK TO LIMIT THE OVERALL DISTURBANCE OF THE PROJECT AT ANY GIVEN TIME. NATURAL VEGETATIVE BUFFERS SHALL BE MAINTAINED BETWEEN THE WORK LIMITS AND ALL SURFACE WATERS OR WETLANDS THROUGHOUT THE COURSE OF CONSTRUCTION.
2. THE AREAS NOT TO BE DISTURBED WILL BE DELINEATED THROUGH THE USE OF SILT FENCE, BIOROLLS AND CONSTRUCTION STAKING.
3. THE CONTRACTOR SHALL MAINTAIN A NATURAL, VEGETATED BUFFER ADJACENT TO THE WETLANDS WHEREVER POSSIBLE DURING CONSTRUCTION.
4. TEMPORARY COVER SHALL BE PROVIDED USING TEMPORARY SEED WITH EROSION CONTROL BLANKET OR HYDROMULCH.
5. PERMANENT COVER SHALL BE PROVIDED AS DETAILED ON THE CONSTRUCTION PLANS USING SEED WITH EROSION CONTROL BLANKET OR HYDROMULCH. PERMITTEES MUST NOT USE MULCH, HYDROMULCH, TACKIFIER, POLYACRYLAMIDE OR SIMILAR EROSION PREVENTION PRACTICES WITHIN ANY PORTION OF THE NORMAL WETTED PERIMETER OF A TEMPORARY OR PERMANENT DRAINAGE DITCH OR SWALE SECTION WITH A CONTINUOUS SLOPE OF GREATER THAN 2 PERCENT
6. THE CONTRACTOR IS REQUIRED TO PROVIDE ANY ADDITIONAL EROSION PREVENTION MEASURES NECESSARY FOR CONFORMANCE TO THE NPDES CONSTRUCTION PERMIT THROUGHOUT CONSTRUCTION.
7. STABILIZATION TIME FRAMES – INITIATE STABILIZATION IMMEDIATELY WHEN CONSTRUCTION TEMPORARILY OR PERMANENTLY CEASES ON A PORTION OF THE SITE. COMPLETE STABILIZATION WITHIN THE TIME FRAMES LISTED.

7.1.	LAST 200 LINEAL FEET OF DITCH OR SWALE	24 HOURS OF CONNECTION TO SURFACE WATERS
7.2.	REMAINING DITCH OR SWALE	7 DAYS
7.3.	PIPE AND CULVERT OUTLETS	24 HOURS
7.4.	EXPOSED SOIL AND STOCKPILES	7 DAYS

SEDIMENT CONTROL PRACTICES (9.1)

1. SILT FENCE AND ALL OTHER DOWN GRADIENT PERIMETER CONTROL DEVICES SHALL BE INSTALLED AND INSPECTED BY THE CITY PRIOR TO ANY LAND DISTURBANCE ACTIVITY.
2. EROSION CONTROL BLANKET AND BIOROLLS SHALL BE PLACED WITHIN THE DITCH BOTTOMS WITHIN 24 HOURS AFTER FINE GRADING.
3. PRIOR TO STOCKPILING SOIL, SEDIMENT CONTROLS AT THE BASE OF THE STOCKPILE NED TO BE INSTALLED. STOCKPILES LOCATED ON SITE SHALL BE SEEDED, MULCHED OR BLANKETED AND HAVE SILT FENCE OR A BMP APPROVED BY THE ENGINEER IN THE FIELD PLACED AROUND THE BASE OF THE STOCKPILE.
4. MAINTAIN A 50-FOOT NATURAL BUFFER DOWN GRADIENT OF THE SITE OR REDUNDANT SEDIMENT CONTROLS IF BUFFER IS NOT FEASIBLE, WHEN THE CONSTRUCTION IS WITHIN 50 FEET OF A SURFACE WATER.
5. MINIMIZE SOIL COMPACTION BY NOT DISTURBING AREAS OUTSIDE OF THE CONSTRUCTION LIMITS. DELINEATE AREAS NOT TO BE DISTURBED PRIOR TO STARTING GROUND DISTURBING ACTIVITIES. PRESERVE ALL NATURAL BUFFERS SHOWN ON THE PLANS. NO HEAVY CONSTRUCTION EQUIPMENT ALLOWED IN FILTRATION OR INFILTRATION AREAS PER PLANS.
6. CONTRACTOR SHALL USE STREET SWEEPING IN ADDITION TO VEHICLE TRACKING BMPS IF THESE BMPS ALONE ARE NOT ADEQUATE TO PREVENT SEDIMENT TRACKING ONTO THE STREET.
7. ANY SEDIMENT CONTROL PRACTICE USING SOIL IMPLEMENTED BY THE CONTRACTOR SHALL BE TEMPORARILY OR PERMANENTLY STABILIZED WITHIN 24 HOURS OF INSTALLATION.

DEWATERING AND BASIN DRAINING (10.1)

1. DEWATERING IS NOT ANTICIPATED ON THIS PROJECT. HOWEVER, IF DEWATERING IS NECESSARY, THE CONTRACTOR SHALL SUBMIT A PLAN TO THE ENGINEER FOR ACCEPTANCE.
2. IF DEWATERING IS NECESSARY, IT MUST NOT CAUSE NUISANCE CONDITIONS IN SURFACE WATERS FROM DEWATERING AND BASIN DRAINING DISCHARGE.
3. IF THE DEWATERING OR PUMPING PROCESS IS TURBID OR CONTAINS SEDIMENT LADEN WATER, IT MUST BE TREATED THROUGH THE USE OF A SEDIMENT CONTROL (TRAPS, VEGETATIVE FILTER STRIPS, FLOCCULANTS OR OTHER SEDIMENT REDUCING MEASURES) SUCH THAT DISCHARGE DOES NOT VISIBLY CONTAIN MORE TURBIDITY THAN THE RECEIVING WATER.
4. WHEN POSSIBLE, USE WELL VEGETATED (EG. GRASSY OR WOODED) UPLAND AREAS ON THE SITE TO INFILTRATE DEWATERING WATERS BEFORE DISCHARGED OFF SITE.
5. DISCHARGE DIRECTLY INTO A SURFACE WATER OR WETLAND IS NOT PERMITTED. RECEIVING WATERS CANNOT BE USED AS PART OF THE TREATMENT AREA.
6. ALL CONSTRUCTION DEWATERING SHALL BE DISCHARGED TO AN APPROVED LOCATION FOR TREATMENT PRIOR TO DISCHARGE TO THE RECEIVING WATER. THE DEWATERING PLAN SHALL BE DEVELOPED AND SUBMITTED TO THE ENGINEER FOR REVIEW IN ACCORDANCE WITH MNDOT SPEC. 1717.2E.
7. CONDITIONS OF THE SITE MAY REQUIRE A PERMIT TO BE OBTAINED FROM THE MINNESOTA DEPARTMENT OF NATURAL RESOURCES FOR WATER APPROPRIATIONS. THE CONTRACTOR WILL BE RESPONSIBLE FOR OBTAINING ANY NECESSARY PERMITS FOR DEWATERING.
8. THE DISCHARGE POINT OF DEWATERING WATERS SHOULD BE VISUALLY INSPECTED AND PHOTOGRAPHED AT THE BEGINNING OF OPERATION AND AT LEAST ONCE EVERY 24 HOURS OF OPERATION TO ENSURE EXCESS TURBIDITY IS NOT BEING RELEASED TO THE RECEIVING WATERS.'
9. IF NUISANCE CONDITIONS RESULT FROM THE DISCHARGE, PERMITTEES MUST CEASE DEWATERING IMMEDIATELY AND CORRECTIVE ACTIONS MUST OCCUR BEFORE DEWATERING IS RESUMED. NUISANCE CONDITIONS INCLUDES, BUT IS NOT LIMITED TO, A SEDIMENT PLUME IN THE DISCHARGE OR THE DISCHARGE APPEARS CLOUDY, OR OPAQUE, OR HAS A VISIBLE CONTRAST, OR HAS A VISIBLE OIL FILM, OR HAS AQUATIC HABITAT DEGRADATION THAT CAN BE IDENTIFIED BY AN OBSERVER.

INSPECTIONS AND MAINTENANCE (11.1)

1. THE CONTRACTOR SHALL IDENTIFY A CERTIFIED EROSION AND SEDIMENT CONTROL SUPERVISOR TO CONDUCT INSPECTIONS FOR THE PROJECT.
2. THE CONSTRUCTION SITE SHALL BE OBSERVED AT LEAST ONCE EVERY 7 DAYS DURING ACTIVE CONSTRUCTION AND WITHIN 24 HOURS AFTER A RAINFALL EVENT GREATER THAN 0.5 INCHES IN 24 HOURS AND 7 DAYS AFTER THAT. PER SECTION 11.11 THE INSPECTION CAN BE ADJUSTED AS FOLLOW.
   - AREAS WITH PERMANENT COVER CAN BE REDUCED TO ONCE A MONTH
   - SITES WITH PERMANENT COVER AND NO CONSTRUCTION ACTIVITY CAN BE REDUCED TO ONCE A MONTH
   - WHERE CONSTRUCTION ACTIVITY HAS BEEN SUSPENDED DUE TO FROZEN GROUND CONDITIONS, INSPECTION MAY BE SUSPENDED AND RESUME WITHIN 24 HOURS OF RUNOFF OCCURRING
3. WHEN SEDIMENT IS OBSERVED UP TO APPROXIMATELY ONE-THIRD OF THE HEIGHT OF SILT FENCE, SEDIMENT SHALL BE REMOVED. SILT FENCE WILL BE REPLACED, OR SUPPLEMENTED IF IT BECOMES NON-FUNCTIONAL.
4. THE CITY OF COTTAGE GROVE IS RESPONSIBLE TO MAINTAIN PERMANENT BMP'S.
5. DURING EACH INSPECTION THE FOLLOWING SHALL BE OBSERVED:
   - ALL EROSION PREVENTION AND SEDIMENT CONTROL BMP'S AND POLLUTION PREVENTION MEASURES.
   - SURFACE WATERS – INCLUDING DITCHES AND CONVEYANCE SYSTEMS NEED TO BE OBSERVED FOR EROSION AND SEDIMENT.
   - CONSTRUCTION SITE VEHICLE EXIT LOCATIONS FOR EVIDENCE OF TRACKING ONTO PAVED SURFACES.
   - INSPECT SURROUNDING PROPERTIES FOR EVIDENCE OF OFF SITE SEDIMENT ACCUMULATION.
   - INFILTRATION AREAS FOR SIGNS OF SEDIMENT DEPOSITION AND COMPACTION (TO ENSURE THAT EQUIPMENT IS NOT BEING DRIVEN ACROSS THE AREA).
7. RECORD ALL INSPECTIONS AND MAINTENANCE ACTIVITIES IN WRITING WITHIN 24 HOURS. SUBMIT INSPECTION REPORTS IN A FORMAT THAT IS ACCEPTABLE TO THE PROJECT ENGINEER. INCLUDE THE FOLLOWING IN THE RECORDS OF EACH INSPECTION AND MAINTENANCE ACTIVITY:
   - DATE AND TIME OF INSPECTIONS
   - NAME OF PERSONS CONDUCTING INSPECTIONS
   - FINDINGS OF INSPECTIONS WITH PHOTOGRAPHS AND RECOMMENDATIONS FOR CORRECTIVE ACTIONS
   - CORRECTIVE ACTIONS TAKEN, INCLUDING DATES, TIMES, AND PARTY COMPLETING MAINTENANCE ACTIVITIES
   - DATE AND AMOUNT OF ALL RAINFALL EVENTS GREATER THAN 0.5 INCH IN 24 HOURS
   - DOCUMENT AND DISCHARGES, DEWATERING OPERATIONS AND NUISANCE CONDITIONS WITH PHOTOGRAPHS.
   - DOCUMENTS AND CHANGES MADE TO THE SWPPP
8. REPLACE, REPAIR OR SUPPLEMENT ALL NONFUNCTIONAL BMPS BY THE END OF THE NEXT BUSINESS DAY FOLLOWING DISCOVERY UNLESS LISTED DIFFERENTLY BELOW:
   - A. REPAIR, REPLACE, OR SUPPLEMENT PERIMETER CONTROL DEVICES WHEN IT BECOMES NONFUNCTIONAL OR SEDIMENT REACHES 1/2 THE HEIGHT OF THE DEVICE. COMPLETE REPAIRS BY THE END OF THE NEXT BUSINESS DAY FOLLOWING DISCOVERY.
   - B. REPAIR OR REPLACE INLET PROTECTION DEVICES WHEN THEY BECOME NONFUNCTIONAL OR SEDIMENT REACHES 1/2 THE HEIGHT AND/OR DEPTH OF THE DEVICE.
   - C. DRAIN AND REMOVE SEDIMENT FROM TEMPORARY AND PERMANENT SEDIMENT BASINS ONCE THE SEDIMENT HAS REACHED 1/2 THE STORAGE VOLUME. COMPLETE WORK WITHIN 72 HOURS OF DISCOVERY.
   - D. REMOVE ALL DELTAS AND SEDIMENT DEPOSITED IN SURFACE WATERS INCLUDING DRAINAGE WAYS, CATCH BASINS, AND OTHER DRAINAGE SYSTEMS. RESTABILIZE ANY AREAS THAT ARE DISTURBED BY SEDIMENT REMOVAL OPERATIONS. SEDIMENT REMOVAL AND STABILIZATION MUST BE COMPLETED WITHIN 7 DAYS OF DISCOVERY. PREPARE AND SUBMIT A SITE MANAGEMENT PLAN FOR WORKING IN SURFACE WATERS. CONTACT ALL APPROPRIATE AUTHORITIES PRIOR TO WORKING IN SURFACE WATERS.
   - E. REMOVE TRACKED SEDIMENT FROM PAVED SURFACES BOTH ON AND OFF SITE WITHIN 24 HOURS OF DISCOVERY. STREET SWEEPING MAY HAVE TO OCCUR MORE OFTEN TO MINIMIZE OFF SITE IMPACTS. LIGHTLY WET THE PAVEMENT PRIOR TO SWEEPING.
   - F. MAINTAIN ALL BMPS UNTIL WORK HAS BEEN COMPLETED, SITE HAS GONE UNDER FINAL STABILIZATION, AND THE NOTICE OF TERMINATION (NOT) HAS BEEN SUBMITTED TO THE MPCA.

POLLUTION PREVENTION MANAGEMENT MEASURES (12.1)

ALL WORK NECESSARY TO PROVIDE PROPER POLLUTION PREVENTION MEASURES SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT.
1. COLLECTED SEDIMENT, ASPHALT AND CONCRETE MILLINGS, FLOATING DEBRIS, AND OTHER WASTE MUST BE DISPOSED OF PROPERLY AND MUST COMPLY WITH MPCA DISPOSAL REQUIREMENTS.
2. CONSTRUCTION MATERIALS NEED TO BE COVERED TO MINIMIZE STORMWATER INTERACTION UNLESS MATERIAL IS NOT A POTENTIAL SOURCE OF STORMWATER CONTAMINATION.
3. OIL, GASOLINE, PAINT AND ANY HAZARDOUS SUBSTANCES MUST BE PROPERLY STORED, INCLUDING SECONDARY CONTAINMENT TO PREVENT SPILLS, LEAKS OR OTHER DISCHARGES. RESTRICTED ACCESS TO STORAGE AREAS MUST BE PROVIDED TO PREVENT VANDALISM. STORAGE AND DISPOSAL OF HAZARDOUS WASTE MUST BE IN COMPLIANCE WITH MPCA REGULATIONS.
4. EXTERNAL WASHING OF TRUCKS AND OTHER CONSTRUCTION VEHICLES IS NOT ALLOWED ON SITE. RUNOFF MUST BE CONTAINED AND WASTE PROPERLY DISPOSED OF. NO ENGINE DEGREASING IS ALLOWED ON SITE.
5. ALL LIQUID AND SOLID WASTE GENERATED BY CONCRETE WASHOUT OPERATIONS MUST BE CONTAINED IN A LEAK-PROOF CONTAINMENT FACILITY OR IMPERMEABLE LINER. A COMPACTED CLAY LINER THAT DOES NOT ALLOW WASHOUT LIQUIDS TO ENTER THE GROUND WATER IS CONSIDERED AN IMPERMEABLE LINER. THE LIQUID AND SOLID WASTES MUST NOT CONTACT THE GROUND, AND THERE MUST NOT BE RUNOFF FROM THE CONCRETE WASHOUT OPERATIONS OR AREAS. LIQUID AND SOLID WASTE MUST BE DISPOSED OF PROPERLY AND IN COMPLIANCE WITH MPCA REGULATIONS. A SIGN MUST BE INSTALLED ADJACENT TO EACH WASHOUT FACILITY TO INFORM CONCRETE EQUIPMENT OPERATORS TO UTILIZE THE PROPER FACILITIES.

SEE FOLLOWING SHEET FOR CONTINUED SWPPP NOTES

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I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota
Name Brian. N. Molinaro
Reg. No. 47504 Date 01-16-25

Revisions

Date	01-16-25
Designed	NAP
Drawn	SHA

STORMWATER POLLUTION PREVENTION PLAN

LENNAR
16305 36TH AVENUE NORTH
PLYMOUTH, MINNESOTA 55446

TALCOTT GLEN
COTTAGE GROVE, MINNESOTA

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5. ANY SPILLS OF HAZARDOUS MATERIALS AND/OR A MINIMUM OF 5-GALLONS PETROLEUM SHALL BE IMMEDIATELY REPORTED TO THE MPCA (STATE DUTY OFFICER: 1.800.422.0798 OR 651.297.8610). ANY SPILLS ABOVE THE REPORTABLE QUANTITIES LIMITS IN THE CODE OF FEDERAL REGULATIONS (CFR) TITLE 40, PART 302 SHALL BE REPORTED TO THE EPA NATIONAL RESPONSE CENTER (1.800.424.8802). IN ORDER TO REDUCE THE RISK OF HAZARDOUS MATERIALS COMING INTO CONTACT WITH STORM WATER, THE FOLLOWING PRACTICES WILL BE FOLLOWED: A) AN EFFORT WILL BE MADE TO STORE ONLY ENOUGH PRODUCTS REQUIRED TO DO THE WORK, B) ALL MATERIALS STORED ON SITE WILL BE STORED IN A NEAT, ORDERLY MANNER IN THEIR APPROPRIATE CONTAINERS AND IF POSSIBLE, UNDER COVER, C) PRODUCTS WILL BE KEPT IN THEIR ORIGINAL CONTAINERS WITH THE ORIGINAL MANUFACTURER'S LABEL UNLESS THE ORIGINAL CONTAINER CANNOT BE RESEALED, IN WHICH CASE THE ORIGINAL LABEL AND MATERIALS SAFETY DATA SHALL BE RETAINED, D) SUBSTANCES WILL NOT BE MIXED WITH ONE ANOTHER UNLESS RECOMMENDED BY THE MANUFACTURER, E) WHENEVER POSSIBLE, ALL OF A PRODUCT WILL BE USED BEFORE DISPOSING OF THE CONTAINER, F) THE MANUFACTURER'S RECOMMENDATIONS FOR PROPER USE AND DISPOSAL WILL BE FOLLOWED, AND G) THE OPERATOR WILL INSPECT DAILY TO ENSURE PROPER USE AND DISPOSAL OF MATERIALS ON SITE. MANUFACTURER'S RECOMMENDED METHODS FOR SPILL CLEANUP WILL BE CLEARLY POSTED AND SITE PERSONNEL WILL BE MADE AWARE OF THE PROCEDURES AND THE LOCATION OF THE INFORMATION AND CLEANUP SUPPLIES.

6. ALL SANITARY WASTE WILL BE COLLECTED BY TEMPORARY SANITARY FACILITIES PROVIDED AT THE SITE BY THE CONTRACTOR THROUGHOUT THE CONSTRUCTION PROJECT. ALL CONSTRUCTION PERSONNEL SHALL UTILIZE TEMPORARY SANITARY FACILITIES, WHICH SHALL BE REGULARLY SERVICE BY A COMMERCIAL OPERATOR. TEMPORARY SANITARY FACILITIES SHALL BE PLACED IN A LOCATION WHERE ACCIDENTAL SPILLAGE OF THE FACILITY SHALL NOT DISCHARGE TO THE STORM SEWER SYSTEM.

TEMPORARY SEDIMENTATION BASINS (14.2)

1. TEMPORARY SEDIMENTATION BASINS ARE REQUIRED WHERE 10 OR MORE ACRES DRAIN TO A COMMON LOCATION TO PROVIDE TREATMENT OF THE RUNOFF BEFORE IT LEAVES THE CONSTRUCTION SITE OR ENTERS SURFACE WATERS. WHEN A CONSTRUCTION SITE DISCHARGES TO AN IMPAIRED WATER BODY, TEMPORARY SEDIMENTATION BASINS ARE REQUIRED WHERE 5 OR MORE ACRES DRAIN TO A COMMON LOCATION. TEMPORARY SEDIMENTATION BASINS CAN BE CONVERTED TO PERMANENT BASINS AFTER CONSTRUCTION IS COMPLETE.

2. THE TEMPORARY BASIN MUST PROVIDE LIVE STORAGE FOR A CALCULATED VOLUME OF RUNOFF FROM A TWO (2)-YEAR, 24-HOUR STORM FROM EACH ACRE DRAINED TO THE BASIN OR 1,800 CUBIC FEET OF LIVE STORAGE PER ACRE DRAINED, WHICHEVER IS GREATER. WHERE PERMITTEES HAVE NOT CALCULATED THE TWO (2)-YEAR, 24-HOUR STORM RUNOFF AMOUNT, THE TEMPORARY BASIN MUST PROVIDE 3,600 CUBIC FEET OF LIVE STORAGE PER ACRE OF THE BASINS DRAINAGE AREA.

3. PERMITTEES MUST DESIGN THE OUTLET STRUCTURE TO WITHDRAW WATER FROM THE SURFACE TO MINIMIZE THE DISCHARGE OF POLLUTANTS. PERMITTEES MAY TEMPORARILY SUSPEND THE USE OF A SURFACE WITHDRAWAL MECHANISM DURING FROZEN CONDITIONS. THE BASIN MUST INCLUDE A STABILIZED EMERGENCY OVERFLOW TO PREVENT FAILURE OF POND INTEGRITY. PROVIDE ENERGY DISSIPATION FOR THE BASIN OUTLET WITHIN 24 HOURS OF CONNECTION TO A SURFACE WATER.

4. WHERE A TEMPORARY SEDIMENT BASIN MEETING THE REQUIREMENTS OF THE ABOVE IS INFEASIBLE, PERMITTEES MUST INSTALL EFFECTIVE SEDIMENT CONTROLS SUCH AS SMALLER SEDIMENT BASINS AND/OR SEDIMENT TRAPS, SILT FENCES, VEGETATIVE BUFFER STRIPS OR ANY APPROPRIATE COMBINATION OF MEASURES AS DICTATED BY INDIVIDUAL SITE CONDITIONS. IN DETERMINING WHETHER INSTALLING A SEDIMENT BASIN IS INFEASIBLE, PERMITTEES MUST CONSIDER PUBLIC SAFETY AND MAY CONSIDER FACTORS SUCH AS SITE SOILS, SLOPE, AND AVAILABLE AREA ON-SITE. PERMITTEES MUST DOCUMENT THIS DETERMINATION OF INFEASIBILITY IN THE SWPPP.

FINAL STABILIZATION (4.1)

1. ALL DISTURBED AREAS SHALL BE PERMANENTLY STABILIZED AS SHOWN ON THE CONSTRUCTION PLANS. METHODS TO ACHIEVE FINAL STABILIZATION INCLUDE: SEED WITH MULCH OR EROSION CONTROL BLANKET AND SOD.

2. ALL AREAS SEEDED BY MEANS OF BROADCAST SEEDING SHALL BE HAND RAKED TO INCORPORATE THE SEEDS INTO THE TOPSOIL.

3. EROSION CONTROL BLANKETS SHALL BE PLACED IN THE DITCH BOTTOM WITHIN 24 HOURS AFTER FINE GRADING. BIOROLLS SHALL BE PLACED IN CONJUNCTION WITH THE BLANKET IN THE DITCH BOTTOMS. THE BIOROLLS ARE INTENDED TO SERVE AS PERMANENT DITCH CHECKS.

4. THE PERMITTEE WILL SUBMIT A NOTICE OF TERMINATION (NOT) WITHIN 30 DAYS AFTER FINAL STABILIZATION. FINAL STABILIZATION SHALL CONSIST OF A UNIFORM PERENNIAL VEGETATIVE COVER OF AT LEAST 70 PERCENT OF THE EXPECTED FINAL VEGETATIVE GROWTH DENSITY OR OTHER PERMANENT COVER HAS BEEN ESTABLISHED OVER THE ENTIRE PERVIOUS SURFACES.

5. PERMIT COVERAGE TERMINATES ON INDIVIDUAL LOTS IF THE STRUCTURES ARE FINISHED AND TEMPORARY EROSION PREVENTION AND DOWNGRADIENT PERIMETER CONTROL IS COMPLETE, THE RESIDENCE SELLS TO THE HOMEOWNER, AND THE PERMITTEE DISTRIBUTES THE MPCA'S "HOMEOWNER FACT SHEET" TO THE HOMEOWNER.

PERMIT TERMINATION CONDITIONS (13.1)

1. PERMITTEES MUST COMPLETE ALL CONSTRUCTION ACTIVITY AND MUST INSTALL PERMANENT COVER OVER ALL AREAS PRIOR TO SUBMITTING THE NOTICE OF TERMINATION (NOT). VEGETATIVE COVER MUST CONSIST OF A UNIFORM PERENNIAL VEGETATION WITH A DENSITY OF 70 PERCENT OF ITS EXPECTED FINAL GROWTH. VEGETATION IS NOT REQUIRED WHERE THE FUNCTION OF A SPECIFIC AREA DICTATES NO VEGETATION, SUCH AS IMPERVIOUS SURFACES OR THE BASE OF A SAND FILTER.

2. FOR RESIDENTIAL CONSTRUCTION ONLY, PERMIT COVERAGE TERMINATES ON INDIVIDUAL LOTS IF THE LOT IS SOLD TO THE HOMEOWNER, STRUCTURES ARE FINISHED, AND PERMANENT COVER HAS BEEN ESTABLISHED. FOR LOTS THAT ARE SOLD TO THE HOMEOWNER WHERE PERMANENT COVER HAS NOT BEEN ESTABLISHED, COVERAGE TERMINATES IF TEMPORARY EROSION PREVENTION AND DOWNGRADIENT PERIMETER CONTROL IS PROPERLY INSTALLED, AND THE PERMITTEE DISTRIBUTES THE MPCA'S "HOMEOWNER FACT SHEET" TO THE HOMEOWNER.

3. WHEN SUBMITTING THE NOT PERMITTEES MUST INCLUDE EITHER GROUND OR AERIAL PHOTOGRAPHS SHOWING THE REQUIREMENTS OF 13.2 HAVE BEEN MET. PERMITTEES ARE NOT REQUIRED TO TAKE PHOTOGRAPHS OF EVERY DISTINCT PART OF THE SITE, HOWEVER THE CONDITIONS PORTRAYED MUST BE SUBSTANTIALLY SIMILAR TO THOSE AREAS THAT ARE NOT PHOTOGRAPHED. PHOTOGRAPHS MUST BE CLEAR AND IN FOCUS AND MUST INCLUDE THE DATE THE PHOTO WAS TAKEN.

RECORDS RETENTION (5.1&6.1)

1. RECORDS MUST BE KEPT ON SITE IN A PHYSICAL OR ELECTRONIC FORMAT DURING NORMAL WORKING HOURS WITH PERSONNEL WHO HAVE OPERATIONAL CONTROL OVER THE APPLICABLE PORTION OF THE SITE. THESE RECORDS MUST INCLUDE:
   A. COPY OF THE SWPPP AND AMENDMENTS
   B. TRAINING DOCUMENTATION
   C. INPSECTION AND MAINTENANCE RECORDS

2. THIS SWPPP WILL BE AMENDED AS NEEDED AND/OR AS REQUIRED BY PROVISIONS OF THE PERMIT. ANY CHANGES TO THE SWPPP SHALL BE NOTED BELOW AND ON THE APPLICABLE PLAN SHEETS. ANY AMENDMENTS TO THE SWPPP MUST BE INCORPORATED WITHIN 7 DAYS TO INCLUDE ADDITIONAL OR MODIFIED BMPS.

3. THE CONTRACTOR WILL RECORD CHANGES TO THE SWPPP AND MAINTAIN DOCUMENTATION OF THESE CHANGES ON SITE AT ALL TIMES. A SUMMARY MAINTENANCE/CONSTRUCTION OBSERVATION REPORT WILL BE RECORDED AFTER EACH SITE INSPECTION/OBSERVATION.

4. THE CONTRACTOR WILL BE RESPONSIBLE TO MAINTAIN AND REPAIR THE EROSION AND SEDIMENT CONTROL BMP'S UNTIL FINAL STABILIZATION IS COMPLETE AND A NOTICE OF TERMINATION (NOT) IS SUBMITTED.

ITEM DESCPRIPTION	UNIT	ESTIMATED QUANTITY
CONSTRUCTION LIMIT STAKING	LF	X
ROCK CONSTRUCTION ENTRANCE	EA	1
ROCK CONSTRUCTION ENTRANCE MAINTENANCE	EA	1
EROSION CONTROL FENCE	LF	XXXX
MAINTENANCE OF PERIMETER EROSION CONTROL	YR	1
BIOROLL DITCH CHECK	EA	XXX
STREET SWEEPING AND VACUUMING	YR	1
STORM DRAIN INLET PROTECTION	EA	XX
TEMPORARY SEED AND MULCH	AC	X.X
PERMANENT SEED AND MULCH	AC	X.X
MAINTAIN SEED AND MULCH	AC	X.X
EROSION CONTROL BLANKET (MNDOT CAT. 20)	SY	XXX
VEHICLE AND EQUIPMENT CLEANING	LS	1
VEHICLE AND EQUIPMENT FUELING	LS	1
VEHICLE AND EQUIPMENT MAINTENANCE	LS	1
SPILL PREVENTION AND CONTROL	LS	1
ROCK BERM EROSION CONTROL	LS	1
RIP RAP ENERGY DISSIPATOR	CY	X.X
INDIVIDUAL LOT HOME CONSTRUCTION EROSION CONTROL	EA	XX

AMENDMENT	BY	DATE

NOTE:
SEE SHEET 8.11 FOR OUTLET CONTROL STRUCTURE DETAILS

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I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota
Name: Brian. N. Molinaro
Reg. No. 47504 Date 01-16-25

Revisions

Date	01-16-25
Designed	NAP
Drawn	SHA

STORMWATER POLLUTION PREVENTION PLAN

LENNAR
16305 36TH AVENUE NORTH
PLYMOUTH, MINNESOTA 55446

TALCOTT GLEN
COTTAGE GROVE, MINNESOTA

OA-ENG-123105-SHEET-SWPPP

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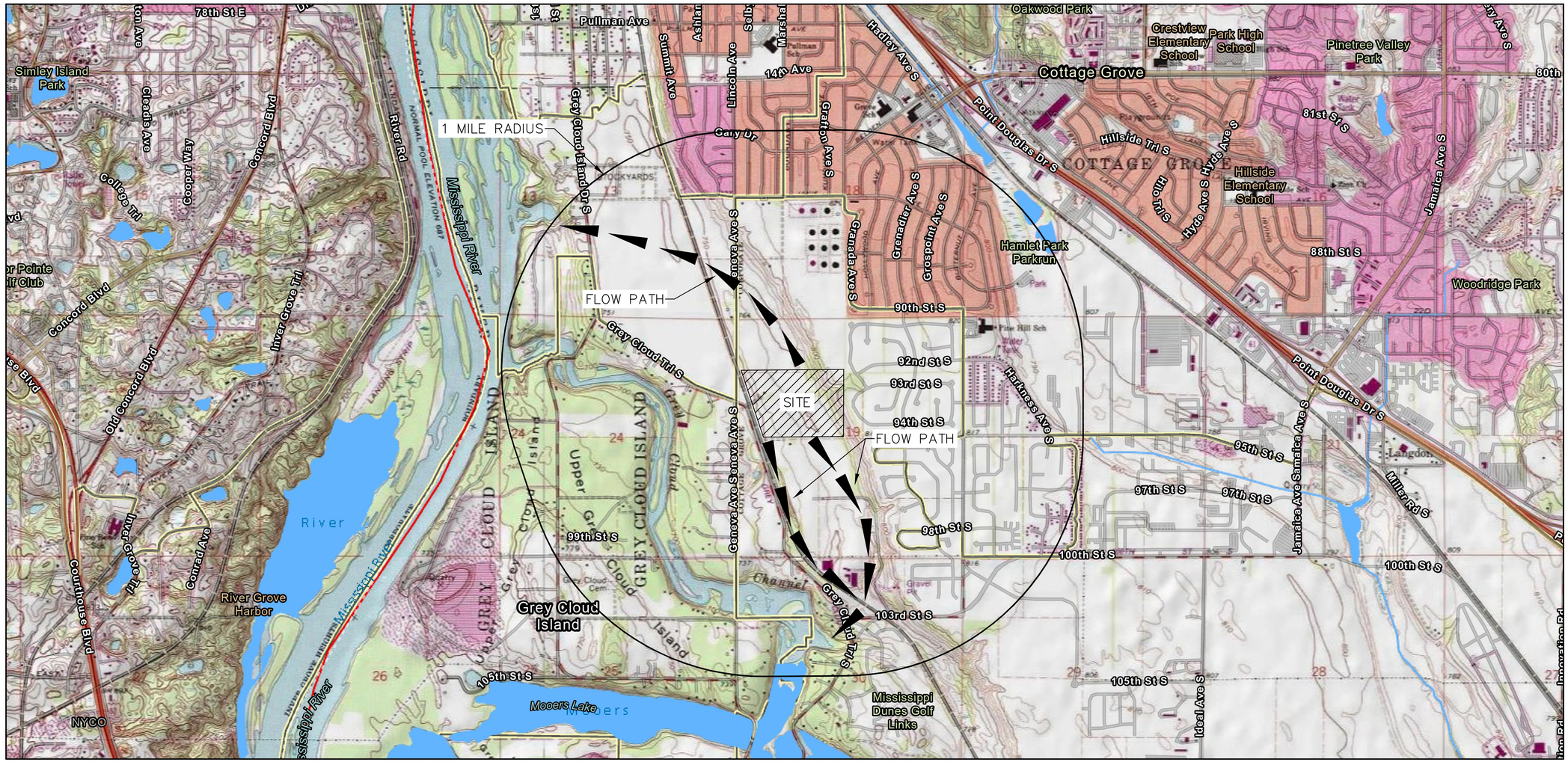
MPCA's Construction Stormwater Special Waters Search



12/17/2025, 2:11:17 PM

- Waterbody Units - Lakes (1)
- Waterbody Units - Streams (1)
- Impaired Streams with additional construction requirements
- MS4 - MNDOT
- MS4 - County
- MS4 - Watershed District
- MS4 - City or Township

1:36,112

0 0.28 0.55 1.1 mi

0 0.47 0.95 1.9 km

Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, (c) OpenStreetMap contributors, and the GIS User Community, Copyright:© 2013 National Geographic Society, i-cubed

Minnesota Pollution Control Agency

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Fax: 681-9488
www.pioneereng.com

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota

Name Brian. N. Molinaro

Reg. No. 47504 Date 01-16-25

Revisions

Date	01-16-25
Designed	NAP
Drawn	SHA

MPCA MAP

LENNAR
16305 36TH AVENUE NORTH
PLYMOUTH, MINNESOTA 55446

TALCOTT GLEN
COTTAGE GROVE, MINNESOTA

OA-ENG-123105-SHEET-MPCA

S3 OF S5

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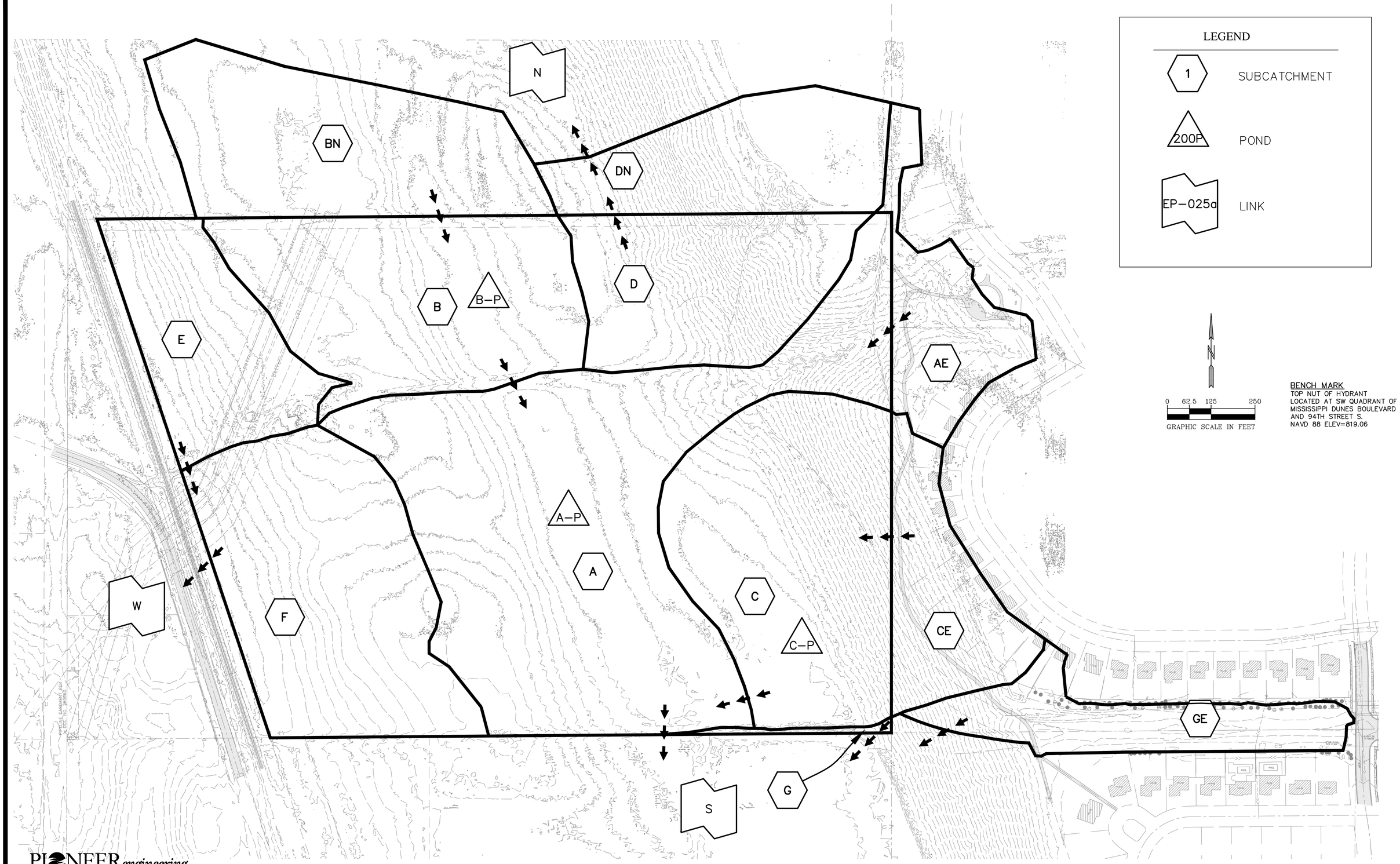

BENCH MARK
TOP NUT OF HYDRANT
LOCATED AT SW QUADRANT OF
MISSISSIPPI DUNES BOULEVARD
AND 94TH STREET S.
NAVD 88 ELEV=819.06

OA-ENG-123105-SHEET-HYDR-EXIS

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Name Brian. N. Molinaro
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Drawn	SHA

EXISTING HYDROLOGY

LENNAR
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PLYMOUTH, MINNESOTA 55446

TALCOTT GLEN
COTTAGE GROVE, MINNESOTA

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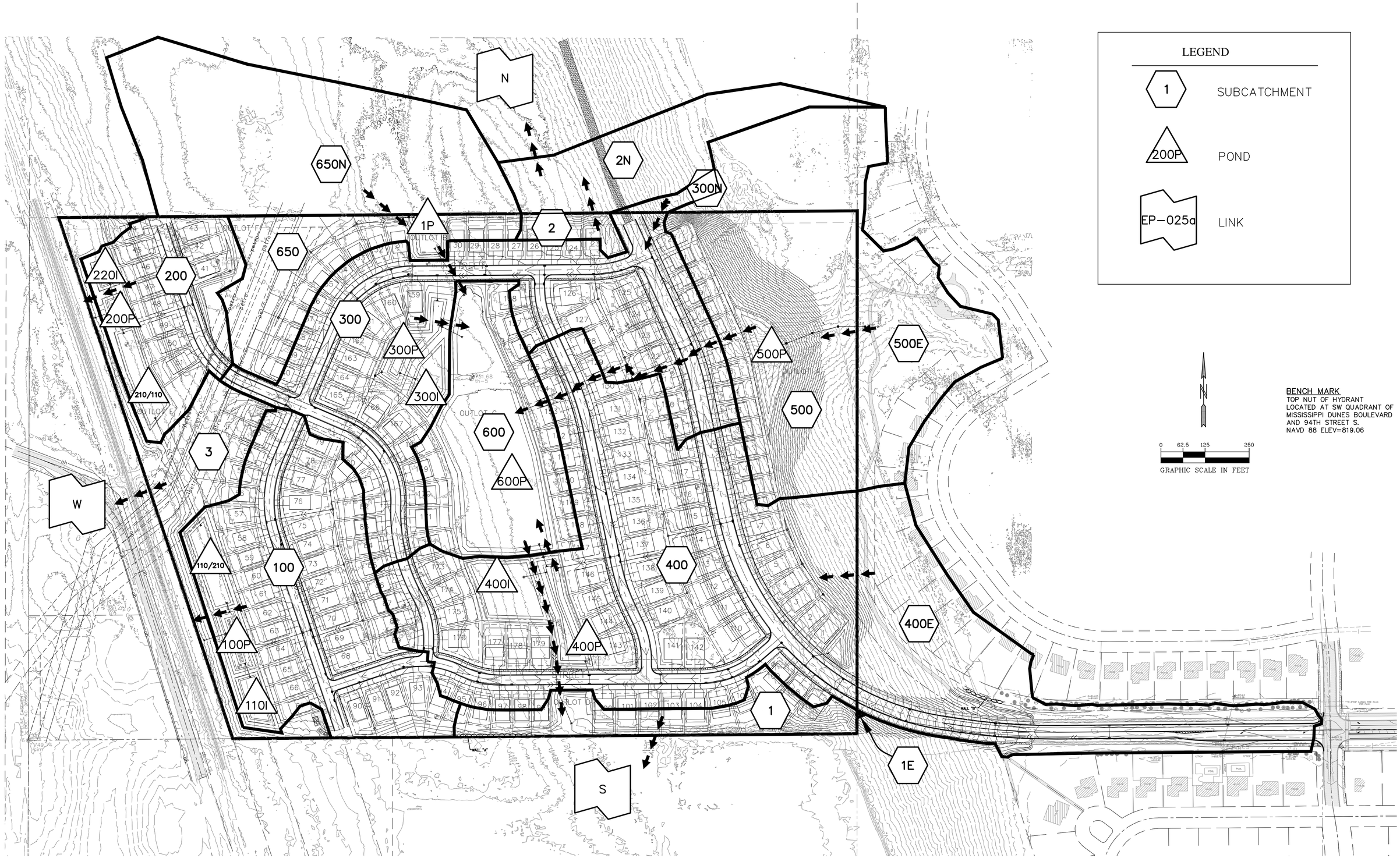

BENCH MARK
TOP NUT OF HYDRANT
LOCATED AT SW QUADRANT OF
MISSISSIPPI DUNES BOULEVARD
AND 94TH STREET S.
NAVD 88 ELEV=819.06

OA-ENG-123105-SHEET-HYDR-PROP

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Drawn	SHA

PROPOSED HYDROLOGY MAP

LENNAR
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PLYMOUTH, MINNESOTA 55446

TALCOTT GLEN
COTTAGE GROVE, MINNESOTA

S5 OF S5

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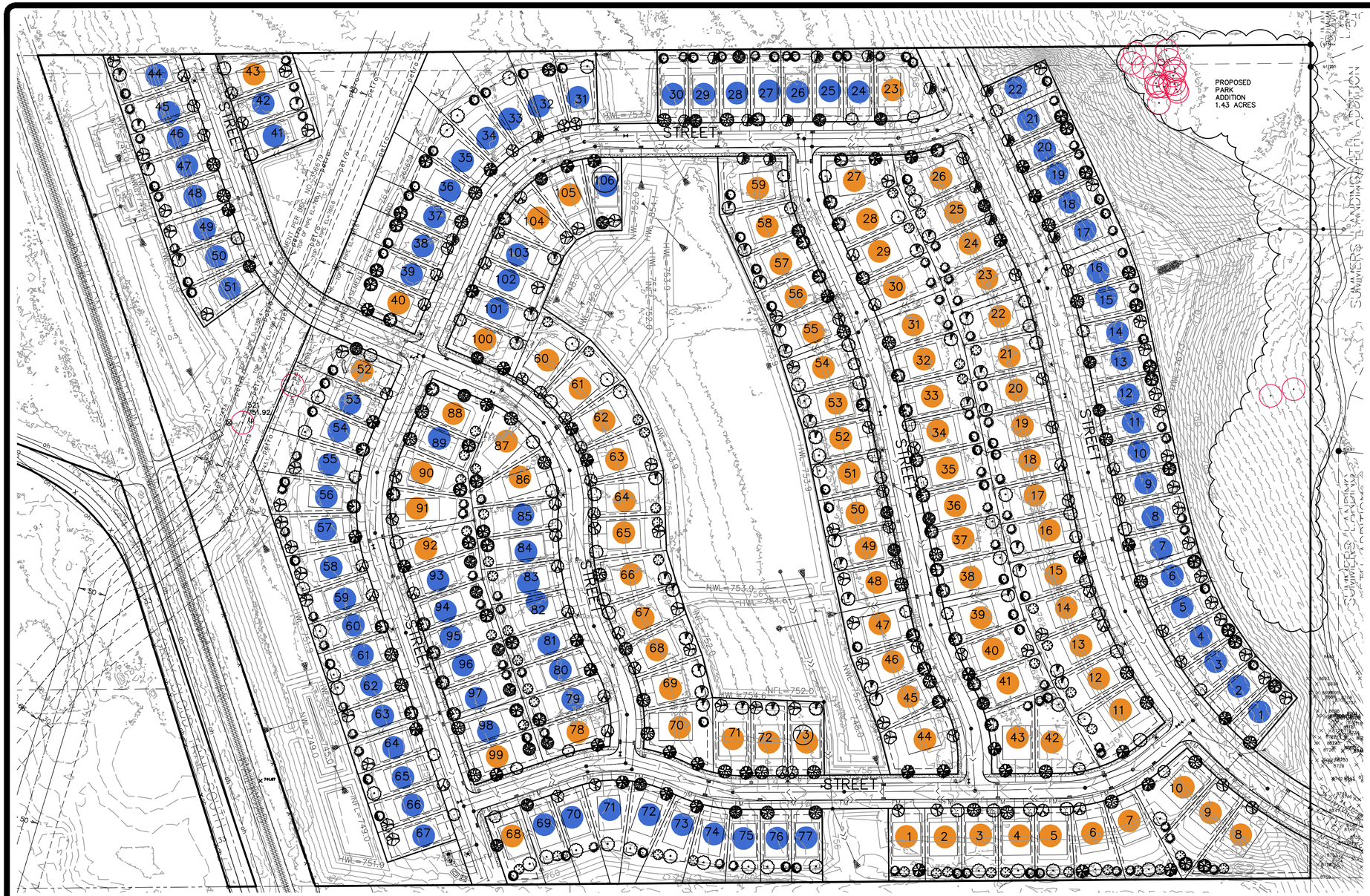


PLANT SCHEDULE

KEY	COMMON NAME/Scentific name	ROOT	QUANTITY
	OVERSTORY TREES		
	NORTHWOOD MAPLE/Acer rubrum 'Northwood'	3" B&B	40
	KENTUCKY COFFEE TREE/Gymnocladus dioicus	3" B&B	27
	COMMON HACKBERRY/Celtis occidentalis	3" B&B	24
	THORNLESS HONEYLOCUST/Gleditsia triacanthos var. inermis	3" B&B	37
	BOULEVARD LINDEN/Tilia americana 'Boulevard'	3" B&B	33
	NORTHERN PIN OAK/Quercus ellipsoidalis	3" B&B	43
	SIENNA GLEN MAPLE/Acer x freemanii 'Sienna Glen'	3" B&B	29
	AUTUMN BLAZE MAPLE/Acer x freemanii 'Jeffersred'	3" B&B	35
	RIVER BIRCH/Betula nigra	10-12' B&B	41
	SWAMP WHITE OAK/Quercus bicolor	3" B&B	56
	SUGAR MAPLE/Acer Saccarum 'Green Mountain'	3" B&B	30
	Princeton Elm/Ulmus americana 'Princeton'	3" B&B	16
	WHITESPIRE BIRCH/Betula platyphylla var. japonica	10-12' B&B	42
	EVERGREEN TREES		
	BLACK HILLS SPRUCE/Picea glauca densata	8' B&B	72
	NORWAY SPRUCE/Picea abies	8' B&B	48
	WHITE PINE/Pinus strobus	8' B&B	65
	TOTAL		638

LANDSCAPE NOTES:

OVERSTORY DECIDUOUS TREES REQUIRED:
LOTS LESS THAN 60' WIDE: 2 TREES/LOT (1 IN FRONT YARD)
LOTS 60' WIDE OR GREATER: 3 TREES/LOT (1 IN FRONT YARD)
CONIFEROUS TREES MAY BE SUBSTITUTED FOR ANY OF THE OVERSTORY DECIDUOUS TREES EXCEPT FOR FRONT YARD TREES.

TOTAL LOTS: 179
LOTS 60' WIDE AND OVER: 89
LOTS LESS THAN 60' WIDE: 90

TOTAL REQUIRED TREES: 447
LOTS 60' WIDE AND OVER: 267
LOTS LESS THAN 60' WIDE: 180

MITIGATION REQUIRED: 2,612" (SEE TREE PRESERVATION PLAN)

PROPOSED TREES: 638; 2,099"
3" OVERSTORY: 453; 1,359"
8' CONIFER (COUNTS AS 4"): 185; 740"

LOCATION OF RARE PLANTS INVENTORIED BY MIDWEST NATURAL RESOURCES FALL 2025

LANDSCAPE NOTES

– THE LANDSCAPE CONTRACTOR SHALL VISIT THE PROJECT SITE TO BECOME FAMILIAR WITH THE EXISTING CONDITIONS PRIOR TO SUBMITTING A BID.

– THE LANDSCAPE CONTRACTOR SHALL NOTIFY THE LANDSCAPE ARCHITECT OF PROPOSED PHYSICAL START DATE AT LEAST 7 DAYS IN ADVANCE.

– THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR THE FIELD VERIFICATION OF ALL EXISTING UTILITY LOCATIONS ON THE PROJECT SITE WITH GOPHER STATE ONE CALL 1-800-252-1166 PRIOR TO COMMENCING WORK. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION AND REPAIR OF EXISTING UTILITIES DAMAGED DURING CONSTRUCTION AT NO COST TO THE OWNER. NOTIFY THE LANDSCAPE ARCHITECT OF ANY CONFLICTS TO FACILITATE PLANT RELOCATION.

– GRADING TO BE PERFORMED BY OTHERS.

– NO PLANT MATERIAL SHALL BE INSTALLED UNTIL GRADING AND CONSTRUCTION HAS BEEN COMPLETED IN THE IMMEDIATE AREA.

– ALL PLANT MATERIAL SHALL MEET THE STANDARDS FOUND IN THE AMERICAN ASSOCIATION OF NURSERYMEN–AMERICAN STANDARD FOR NURSERY STOCK.

– ALL CONTAINER MATERIAL TO BE GROWN IN THE CONTAINER A MINIMUM OF SIX (6) MONTHS PRIOR TO PLANTING ON SITE.

– DECIDUOUS AND CONIFEROUS TREES SHALL NOT BE STAKED, BUT THE LANDSCAPE CONTRACTOR MUST GUARANTEE STANDABILITY TO A WIND SPEED OF 60 M.P.H.

– THE LANDSCAPE CONTRACTOR SHALL PROVIDE A MINIMUM GUARANTEE OF ONE YEAR ONE TIME REPLACEMENT ON NEW PLANT MATERIALS. GUARANTEE SHALL BE AGREED UPON BY DEVELOPER/BUILDER AND LANDSCAPE CONTRACTOR.

– THE LANDSCAPE ARCHITECT RESERVES THE RIGHT TO REJECT ANY PLANTS WHICH ARE DEEMED UNSATISFACTORY BEFORE, DURING OR AFTER INSTALLATION.

– IF THERE IS A DESCREPANCY BETWEEN THE NUMBER OF PLANTS SHOWN ON THE PLAN AND THE NUMBER SHOWN ON THE PLANT LIST, THE NUMBER SHOWN ON THE PLAN WILL TAKE PRECEDENCE.

–THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MULCHES AND PLANTING SOIL QUANTITIES TO COMPLETE WORK SHOWN ON THE PLAN. THE LANDSCAPE CONTRACTOR SHALL VERIFY ALL QUANTITIES SHOWN ON THE PLANT SCHEDULE.

– COMMERCIAL GRADE POLY LAWN EDGING SHALL BE INSTALLED WHERE NOTED.

– THE LANDSCAPE CONTRACTOR SHALL REPAIR ALL DAMAGE TO THE SITE CAUSED BY THE PLANTING OPERATION AT NO COST TO THE OWNER.

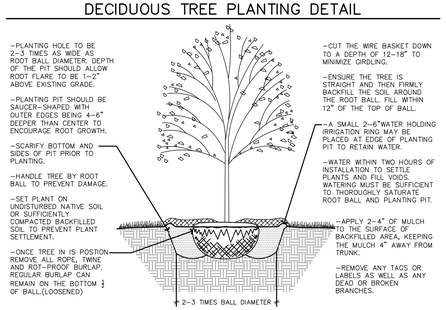
– THE LANDSCAPE CONTRACTOR SHALL KEEP PAVEMENTS CLEAN UNSTAINED. ALL PEDESTRIAN AND VEHICLE ACCESS TO BE MAINTAINED THROUGHOUT CONSTRUCTION PERIOD. ALL WASTES SHALL BE PROMPTLY REMOVED FROM THE SITE. ANY DAMAGE TO EXISTING FACILITIES SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.

– THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLYING WITH ALL APPLICABLE CODES, REGULATIONS AND PERMITS GOVERNING THE WORK.

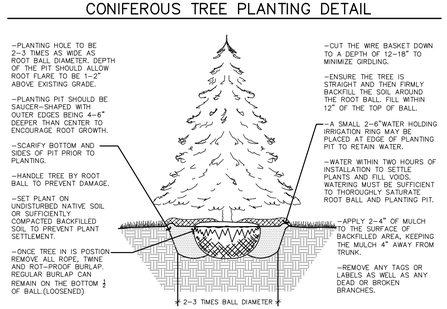
– STORAGE OF MATERIALS OR SUPPLIES ON–SITE WILL NOT BE ALLOWED.

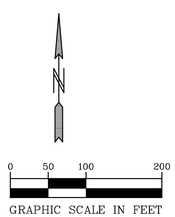
00-PLAN-1231005-SHEET-LAND

DECIDUOUS TREE PLANTING DETAIL



CONIFEROUS TREE PLANTING DETAIL





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Name Jennifer L. Thompson
Reg. No. 44763 Date 1-9-2026

Revisions

Date	01-09-26
Designed	JLT
Drawn	JLT

LANDSCAPE PLAN

LENNAR
16305 36TH AVENUE NORTH
PLYMOUTH, MINNESOTA 55446

TALCOTT GLEN
COTTAGE GROVE, MINNESOTA

L1 OF 1

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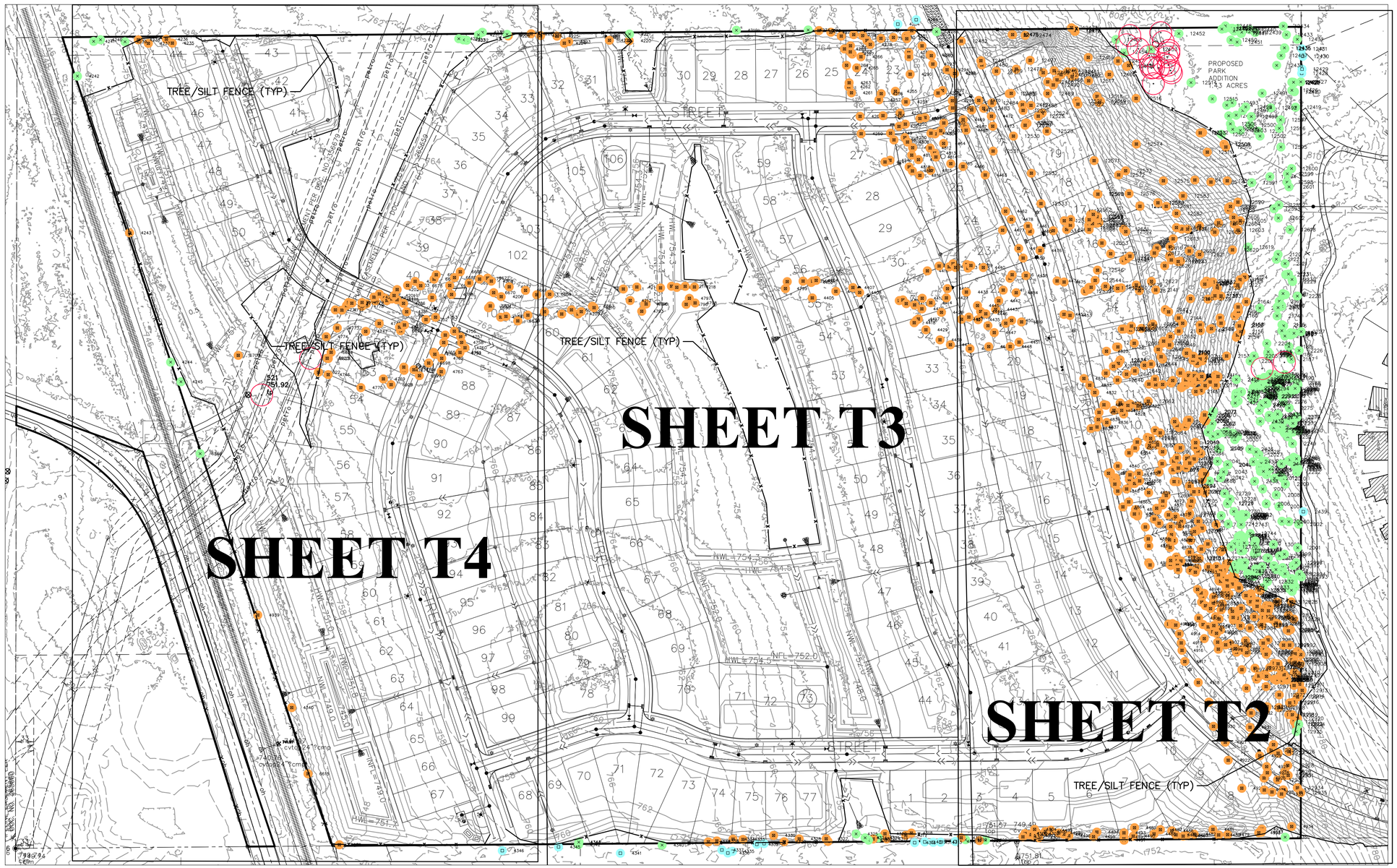
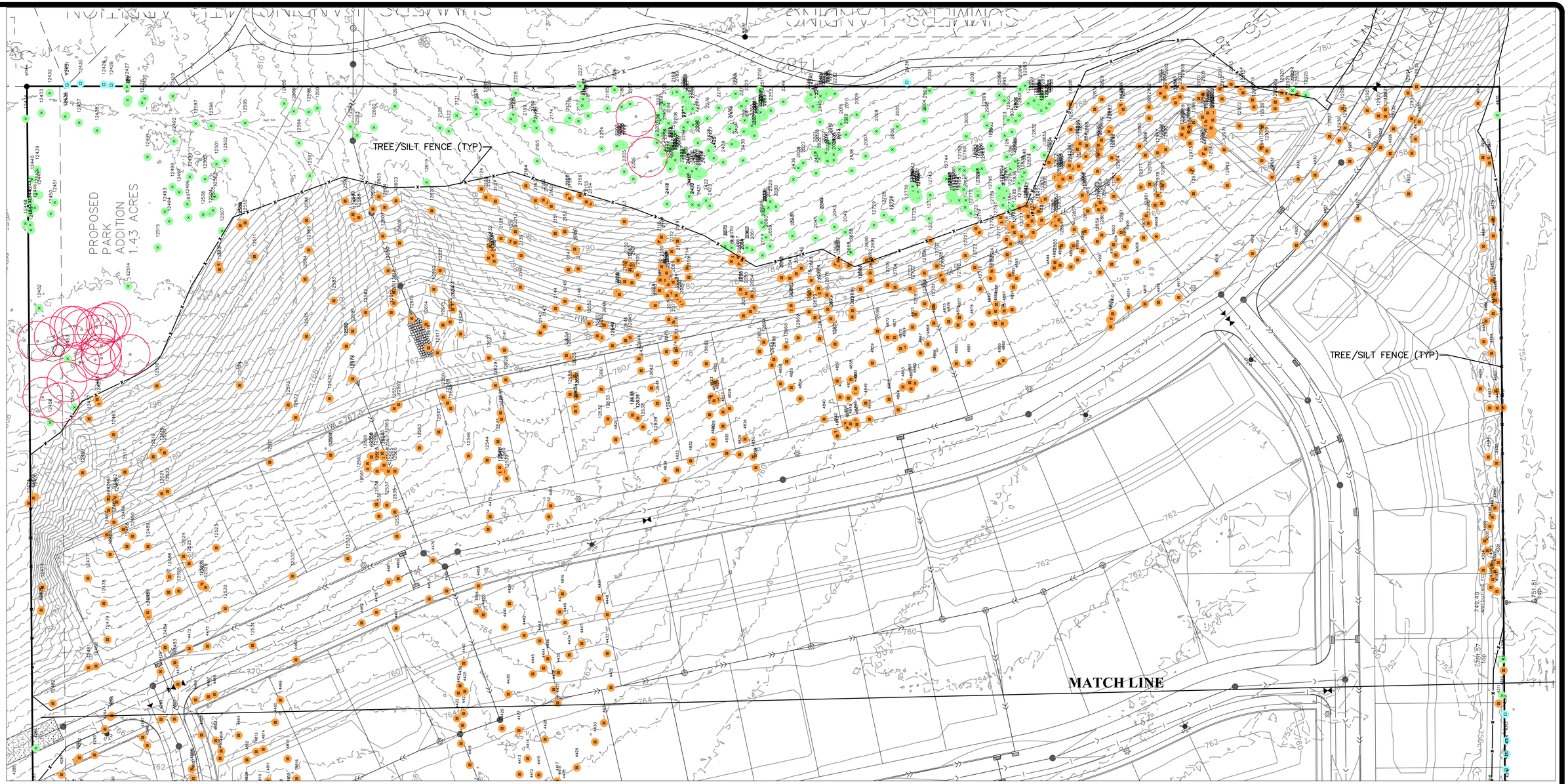

TREE/SILT FENCE (TYP)
TREE/SILT FENCE (TYP)
TREE/SILT FENCE (TYP)
TREE/SILT FENCE (TYP)
PROPOSED PARK ADDITION 1.43 ACRES
SHEET T3
SHEET T4
SHEET T2
STREET
STREET
HWL=754.3
NWL=754.5
NWL=754.5
NWL=754.5



12516 TREE TO BE REMOVED
12514 TREE TO BE SAVED
12429 TREE LOCATED OFF-SITE

LOCATION OF RARE PLANTS INVENTORIED BY MIDWEST NATURAL RESOURCES FALL 2025

0 25 50 100
GRAPHIC SCALE IN FEET

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Drawn	JLT

00-PLAN-1231005-SHEET-TREE

TREE PRESERVATION PLAN

LENNAR
16305 36TH AVENUE NORTH
PLYMOUTH, MINNESOTA 55446

TALCOTT GLEN
COTTAGE GROVE, MINNESOTA

T2 OF 8

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SHEET T2

MATCH LINE

TREE/SILT FENCE (TYP)

TREE/SILT FENCE (TYP)

MATCH LINE

SHEET T4

12516 TREE TO BE REMOVED
12514 TREE TO BE SAVED
12429 TREE LOCATED OFF-SITE

LOCATION OF RARE PLANTS INVENTORIED BY MIDWEST NATURAL RESOURCES FALL 2025

0 25 50 100
GRAPHIC SCALE IN FEET

00-PLAN-1231005-SHEET-TREE

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Drawn JLT

TREE PRESERVATION PLAN

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TALCOTT GLEN
COTTAGE GROVE, MINNESOTA

T3 OF 8

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SHEET T3

MATCH LINE

TREE/SILT FENCE (TYP)

TREE/SILT FENCE (TYP)

LOCATION OF RARE PLANTS INVENTORIED BY MIDWEST NATURAL RESOURCES FALL 2025

12516 TREE TO BE REMOVED
12514 TREE TO BE SAVED
12429 TREE LOCATED OFF-SITE

0 25 50 100
GRAPHIC SCALE IN FEET

00-PLAN-1231005-SHEET-TREE

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TREE PRESERVATION PLAN

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TALCOTT GLEN
COTTAGE GROVE, MINNESOTA

T4 OF 8

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TagID	DBH	Common Name	Scientific Name	Notes	*Non Qualifyin	Status
2001	12,13	Red Cedar	*Juniperus virginiana*	45'height		Save
2002	3	Red Cedar	*Juniperus virginiana*	15'height		Save
2003	11	Red Cedar	*Juniperus virginiana*	30'height		Save
2004	12	Red Cedar	*Juniperus virginiana*	30'height		Save
2005	11	Red Cedar	*Juniperus virginiana*	30'height		Save
2006	4	Red Cedar	*Juniperus virginiana*	30'height		Save
2007	11	Red Cedar	*Juniperus virginiana*	12'height		Save
2008	16	Red Cedar	*Juniperus virginiana*	30'height		Save
2009	7	Red Cedar	*Juniperus virginiana*	30'height		Save
2010	2	Red Cedar	*Juniperus virginiana*	12'height		Save
2011	2	Red Cedar	*Juniperus virginiana*	12'height		Save
2012	3	Red Cedar	*Juniperus virginiana*	15'height		Save
2013	5	Red Cedar	*Juniperus virginiana*	15'height		Save
2014	4	Red Cedar	*Juniperus virginiana*	15'height		Save
2015	10	Red Cedar	*Juniperus virginiana*	30'height		Save
2016	3	Red Cedar	*Juniperus virginiana*	15'height		Save
2017	3	Red Cedar	*Juniperus virginiana*	30'height		Save
2018	2	Red Cedar	*Juniperus virginiana*	15'height		Save
2019	4	Red Cedar	*Juniperus virginiana*	30'height		Save
2020	5	Red Cedar	*Juniperus virginiana*	30'height		Save
2021	9	Red Cedar	*Juniperus virginiana*	30'height		Save
2022	4	Red Cedar	*Juniperus virginiana*	30'height		Save
2023	6	Red Cedar	*Juniperus virginiana*	30'height		Save
2024	4	Red Cedar	*Juniperus virginiana*	30'height		Save
2025	2	Red Cedar	*Juniperus virginiana*	12'height		Save
2026	2	Red Cedar	*Juniperus virginiana*	12'height		Save
2027	2	Red Cedar	*Juniperus virginiana*	12'height		Save
2028	4	Red Cedar	*Juniperus virginiana*	12'height		Save
2029	4	Red Cedar	*Juniperus virginiana*	30'height		Save
2030	9	Red Cedar	*Juniperus virginiana*	30'height		Save
2031	12	Siberian Elm	*Ulmus pumila*		x	Save
2032	4	Red Cedar	*Juniperus virginiana*	30'height		Save
2033	4	Red Cedar	*Juniperus virginiana*	30'height		Save
2034	2	Red Cedar	*Juniperus virginiana*	15'height		Save
2035	3	Red Cedar	*Juniperus virginiana*	15'height		Save
2036	2	Red Cedar	*Juniperus virginiana*	20'height		Save
2037	8	Red Cedar	*Juniperus virginiana*	30'height		Save
2038	11	Red Cedar	*Juniperus virginiana*	30'height		Save
2039	11	Red Cedar	*Juniperus virginiana*	30'height		Save
2040	4	Red Cedar	*Juniperus virginiana*	30'height		Save
2041	24	Red Cedar	*Juniperus virginiana*	30'height		Save
2042	12	Red Cedar	*Juniperus virginiana*	30'height		Save
2043	4	Red Cedar	*Juniperus virginiana*	30'height		Save
2044	5	Red Cedar	*Juniperus virginiana*	30'height		Save
2045	4	Red Cedar	*Juniperus virginiana*	30'height		Save
2046	3	Red Cedar	*Juniperus virginiana*	20'height		Remove
2047	6	Black Cherry	*Prunus serotina*			Remove
2048	12	Red Cedar	*Juniperus virginiana*	30'height		Remove
2049	4	Red Cedar	*Juniperus virginiana*	30'height		Remove
2050	6	Black Cherry	*Prunus serotina*			Remove
2051	4	Red Cedar	*Juniperus virginiana*	30'height		Remove
2052	2	Red Cedar	*Juniperus virginiana*	20'height		Remove
2053	10	Red Cedar	*Juniperus virginiana*	30'height		Remove
2054	3	Red Cedar	*Juniperus virginiana*	20'height		Remove
2055	2	Red Cedar	*Juniperus virginiana*	20'height		Remove
2056	2	Red Cedar	*Juniperus virginiana*	20'height		Remove
2057	6	Black Cherry	*Prunus serotina*			Remove
2058	7	Red Cedar	*Juniperus virginiana*	30'height		Save
2059	4	Red Cedar	*Juniperus virginiana*	30'height		Save
2060	2	Red Cedar	*Juniperus virginiana*	20'height		Save
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2064	12	Red Cedar	*Juniperus virginiana*	30'height		Remove
2065	4	Red Cedar	*Juniperus virginiana*	30'height		Remove
2066	2	Red Cedar	*Juniperus virginiana*	20'height		Remove
2067	6	Red Cedar	*Juniperus virginiana*	30'height		Remove
2068	3	Red Cedar	*Juniperus virginiana*	20'height		Remove
2069	9	Red Cedar	*Juniperus virginiana*	30'height		Remove
2070	3	Red Cedar	*Juniperus virginiana*	30'height		Save
2071	10	Red Cedar	*Juniperus virginiana*	30'height		Save
2072	3	Red Cedar	*Juniperus virginiana*	20'height		Save
2073	15	Red Cedar	*Juniperus virginiana*	45'height		Remove
2074	3	Red Cedar	*Juniperus virginiana*	20'height		Remove
2075	2	Red Cedar	*Juniperus virginiana*	20'height		Remove
2076	4	Red Cedar	*Juniperus virginiana*	20'height		Remove
2077	3	Red Cedar	*Juniperus virginiana*	20'height		Remove
2078	12	Red Cedar	*Juniperus virginiana*	45'height		Remove
2079	13	Red Cedar	*Juniperus virginiana*	45'height		Remove
2080	17	Red Cedar	*Juniperus virginiana*	45'height		Remove
2081	12	Red Cedar	*Juniperus virginiana*	45'height		Remove
2082	5	Red Cedar	*Juniperus virginiana*	30'height		Remove
2083	4	Red Cedar	*Juniperus virginiana*	30'height		Remove
2084	12	Red Cedar	*Juniperus virginiana*	45'height		Remove
2085	13	Red Pine	*Pinus resinosa*	50'height		Remove
2086	2	Red Cedar	*Juniperus virginiana*	15'height		Remove
2087	3	Red Cedar	*Juniperus virginiana*	30'height		Remove
2088	5	Red Cedar	*Juniperus virginiana*	30'height		Remove
2089	3	Red Cedar	*Juniperus virginiana*	30'height		Remove
2090	3	Red Cedar	*Juniperus virginiana*	30'height		Remove
2091	13	Siberian Elm	*Ulmus pumila*		x	Remove
2092	5	Red Cedar	*Juniperus virginiana*	30'height		Remove
2093	3	Red Cedar	*Juniperus virginiana*	30'height		Remove
2094	5	Red Cedar	*Juniperus virginiana*	30'height		Remove
2095	3	Red Cedar	*Juniperus virginiana*	30'height		Remove
2096	5	Red Cedar	*Juniperus virginiana*	30'height		Remove
2097	4	Red Cedar	*Juniperus virginiana*	30'height		Remove
2098	2	Red Cedar	*Juniperus virginiana*	30'height		Remove
2099	5	Red Cedar	*Juniperus virginiana*	30'height		Remove

TagID	DBH	Common Name	Scientific Name	Notes	*Non Qualifyin	Status
2100	11	Red Cedar	*Juniperus virginiana*	30'height		Remove
2101	6	Red Cedar	*Juniperus virginiana*	30'height		Remove
2102	3	Red Cedar	*Juniperus virginiana*	30'height		Remove
2103	10	Red Cedar	*Juniperus virginiana*	30'height		Remove
2104	6	Red Cedar	*Juniperus virginiana*	30'height		Remove
2105	2	Red Cedar	*Juniperus virginiana*	30'height		Remove
2106	13	Red Cedar	*Juniperus virginiana*	45'height		Remove
2107	3,2	Red Cedar	*Juniperus virginiana*	30'height		Remove
2108	12	Red Cedar	*Juniperus virginiana*	45'height		Remove
2109	9	Red Cedar	*Juniperus virginiana*	30'height		Remove
2110	3	Red Cedar	*Juniperus virginiana*	30'height		Remove
2111	8	Red Cedar	*Juniperus virginiana*	30'height		Remove
2112	3	Red Cedar	*Juniperus virginiana*	30'height		Remove
2113	3	Red Cedar	*Juniperus virginiana*	30'height		Remove
2114	14	Red Cedar	*Juniperus virginiana*	45'height		Remove
2115	4	Red Cedar	*Juniperus virginiana*	45'height		Remove
2116	11	Red Cedar	*Juniperus virginiana*	45'height		Remove
2117	5	Red Cedar	*Juniperus virginiana*	30'height		Remove
2118	14,6,6	Red Cedar	*Juniperus virginiana*	45'height		Remove
2119	5	Red Cedar	*Juniperus virginiana*	45'height		Remove
2120	13	Siberian Elm	*Ulmus pumila*		x	Save
2121	5	Red Cedar	*Juniperus virginiana*	30'height		Save
2122	13	Siberian Elm	*Ulmus pumila*		x	Save
2123	7	Red Cedar	*Juniperus virginiana*	30'height		Save
2124	8,6	Red Cedar	*Juniperus virginiana*	30'height		Remove
2125	12	Siberian Elm	*Ulmus pumila*		x	Remove
2126	26	Red Cedar	*Juniperus virginiana*	45'height		Remove
2127	5	Red Cedar	*Juniperus virginiana*	30'height		Remove
2128	14	Red Cedar	*Juniperus virginiana*	45'height		Remove
2129	3	Red Cedar	*Juniperus virginiana*	20'height		Remove
2130	6	Red Cedar	*Juniperus virginiana*	30'height		Remove
2131	6	Red Cedar	*Juniperus virginiana*	30'height		Remove
2132	6	Red Cedar	*Juniperus virginiana*	30'height		Remove
2133	7	Red Cedar	*Juniperus virginiana*	30'height		Remove
2134	5	Red Cedar	*Juniperus virginiana*	30'height		Remove
2135	17	Red Cedar	*Juniperus virginiana*	45'height		Remove
2136	2	Red Cedar	*Juniperus virginiana*	20'height		Remove
2137	3	Red Cedar	*Juniperus virginiana*	30'height		Remove
2138	3	Red Cedar	*Juniperus virginiana*	20'height		Remove
2139	26	Red Cedar	*Juniperus virginiana*	45'height		Remove
2140	7	Red Cedar	*Juniperus virginiana*	30'height		Remove
2141	6	Red Cedar	*Juniperus virginiana*	30'height		Remove
2142	6	Red Cedar	*Juniperus virginiana*	30'height		Remove
2143	5	Red Cedar	*Juniperus virginiana*	30'height		Remove
2144	8,6,6	Red Cedar	*Juniperus virginiana*	30'height		Remove
2145	9	Red Cedar	*Juniperus virginiana*	30'height		Remove
2146	7	Red Cedar	*Juniperus virginiana*	30'height		Remove
2147	12	Red Cedar	*Juniperus virginiana*	30'height		Remove
2148	5	Red Cedar	*Juniperus virginiana*	30'height		Remove
2149	2	Red Cedar	*Juniperus virginiana*	20'height		Remove
2150	6	Red Cedar	*Juniperus virginiana*	30'height		Remove
2151	3	Red Cedar	*Juniperus virginiana*	20'height		Remove
2152	3	Red Cedar	*Juniperus virginiana*	20'height		Remove
2153	6,5,4,4	Red Cedar	*Juniperus virginiana*	30'height		Remove
2154	5	Red Cedar	*Juniperus virginiana*	20'height		Remove
2155	4	Red Cedar	*Juniperus virginiana*	30'height		Remove
2156	4	Red Cedar	*Juniperus virginiana*	20'height		Remove
2157	2	Red Cedar	*Juniperus virginiana*	20'height		Remove
2158	3	Red Cedar	*Juniperus virginiana*	20'height		Remove
2159	5	Red Cedar	*Juniperus virginiana*	20'height		Remove
2160	12,9,6,6	Red Cedar	*Juniperus virginiana*	45'height		Remove
2161	4	Red Cedar	*Juniperus virginiana*	20'height		Remove
2162	4	Red Cedar	*Juniperus virginiana*	30'height		Remove
2163	2	Red Cedar	*Juniperus virginiana*	12'height		Remove
2164	3,3,3	Red Cedar	*Juniperus virginiana*	20'height		Remove
2165	12,11	Red Cedar	*Juniperus virginiana*	30'height		Save
2166	6	Black Cherry	*Prunus serotina*			Save
2167	5	Red Cedar	*Juniperus virginiana*	30'height		Save
2168	2	Red Cedar	*Juniperus virginiana*	20'height		Save
2169	9	Red Cedar	*Juniperus virginiana*	30'height		Save
2170	3	Red Cedar	*Juniperus virginiana*	20'height		Save
2171	3	Red Cedar	*Juniperus virginiana*	20'height		Save
2172	4	Red Cedar	*Juniperus virginiana*	30'height		Save
2173	4	Red Cedar	*Juniperus virginiana*	30'height		Save
2174	3,2	Red Cedar	*Juniperus virginiana*	30'height		Save
2175	6	Red Cedar	*Juniperus virginiana*	30'height		Save
2176	2	Red Cedar	*Juniperus virginiana*	20'height		Save
2177	6	Red Cedar	*Juniperus virginiana*	30'height		Save
2178	5,4,4	Red Cedar	*Juniperus virginiana*	30'height		Save
2179	4	Red Cedar	*Juniperus virginiana*	30'height		Save
2180	3	Red Cedar	*Juniperus virginiana*	30'height		Save
2181	2	Red Cedar	*Juniperus virginiana*	20'height		Save
2182	3	Red Cedar	*Juniperus virginiana*	30'height		Save
2183	2	Red Cedar	*Juniperus virginiana*	20'height		Save
2184	2	Red Cedar	*Juniperus virginiana*	20'height		Save
2185	5	Red Cedar	*Juniperus virginiana*	30'height		Save
2186	5	Red Cedar	*Juniperus virginiana*	30'height		Save
2187	5	Red Cedar	*Juniperus virginiana*	30'height		Save
2188	3	Red Cedar	*Juniperus virginiana*	30'height		Save
2189	2	Red Cedar	*Juniperus virginiana*	20'height		Save
2190	6	Black Cherry	*Prunus serotina*			Save
2191	8	Red Cedar	*Juniperus virginiana*	30'height		Save
2192	6	Red Cedar	*Juniperus virginiana*	30'height		Save
2193	6	Red Cedar	*Juniperus virginiana*	30'height		Save
2194	6	Black Cherry	*Prunus serotina*			Save
2195	5	Red Cedar	*Juniperus virginiana*	30'height		Save
2196	3	Red Cedar	*Juniperus virginiana*	20'height		Save
2197	5	Red Cedar	*Juniperus virginiana*	30'height		Save
2198	3	Red Cedar	*Juniperus virginiana*	30'height		Save
2199	4	Red Cedar	*Juniperus virginiana*	30'height		Save

TagID	DBH	Common Name	Scientific Name	Notes	*Non Qualifyin	Status
2200	6	Red Cedar	*Juniperus virginiana*	30'height		Save
2201	8	Red Cedar	*Juniperus virginiana*	30'height		Save
2202	6	Red Cedar	*Juniperus virginiana*	30'height		Save
2203	6	Red Cedar	*Juniperus virginiana*	30'height		Save
2204	5	Red Cedar	*Juniperus virginiana*	30'height		Save
2205	2	Red Cedar	*Juniperus virginiana*	12'height		Save
2206	10	Red Cedar	*Juniperus virginiana*	30'height		Save
2207	6	Red Cedar	*Juniperus virginiana*	30'height		Save
2208	2	Red Cedar	*Juniperus virginiana*	12'height		Save
2209	12	Red Cedar	*Juniperus virginiana*	30'height		Save
2210	3	Red Cedar	*Juniperus virginiana*	20'height		Save
2211	12	Red Cedar	*Juniperus virginiana*	30'height		Save
2212	2	Red Cedar	*Juniperus virginiana*	12'height		Save
2213	5	Red Cedar	*Juniperus virginiana*	30'height		Save
2214	5	Red Cedar	*Juniperus virginiana*	30'height		Save
2215	4	Red Cedar	*Juniperus virginiana*	30'height		Save
2216	5	Red Cedar	*Juniperus virginiana*	30'height		Save
2217	3	Red Cedar	*Juniperus virginiana*	30'height		Save
2218	5	Red Cedar	*Juniperus virginiana*	30'height		Save
2219	27	Siberian Elm	*Ulmus pumila*		x	Save
2220	2	Red Cedar	*Juniperus virginiana*	20'height		Save
2221	2	Red Cedar	*Juniperus virginiana*	20'height		Save
2222	2	Red Cedar	*Juniperus virginiana*	20'height		Save
2223	4	Red Cedar	*Juniperus virginiana*	30'height		Save
2224	4	Red Cedar	*Juniperus virginiana*	20'height		Save
2225	2	Red Pine	*Pinus resinosa*	20'height		Save
2226	13	Red Cedar	*Juniperus virginiana*	30'height		Save
2227	5	Red Pine	*Pinus resinosa*	30'height		Save
2228	8	Red Pine	*Pinus resinosa*	30'height		Save
2229	4	Red Cedar	*Juniperus virginiana*	30'height		Save
2230	3	Red Cedar	*Juniperus virginiana*	30'height		Save
2231	7	Red Cedar	*Juniperus virginiana*	30'height		Save
2232	5	Red Cedar	*Juniperus virginiana*	25'height		Save
2233	5	Red Cedar	*Juniperus virginiana*	25'height		Save
2234	2	Red Cedar	*Juniperus virginiana*	25'height		Save
2235	2	Red Cedar	*Juniperus virginiana*	25'height		Save
2236	4	Red Cedar	*Juniperus virginiana*	25'height		Save
2237	12	Siberian Elm	*Ulmus pumila*		x	Save
2238	6	Black Cherry	*Prunus serotina*			Save
2239	5	Red Cedar	*Juniperus virginiana*	25'height		Save
2240	2	Red Cedar	*Juniperus virginiana*	25'height		Save
2241	3	Red Cedar	*Juniperus virginiana*	25'height		Save
2242	5	Red Cedar	*Juniperus virginiana*	25'height		Save
2243	2	Red Cedar	*Juniperus virginiana*	25'height		Save
2244	6	Red Cedar	*Juniperus virginiana*	25'height		Save
2245	2	Red Cedar	*Juniperus virginiana*	25'height		Save
2246	7	Red Cedar	*Juniperus virginiana*	25'height		Save
2247	12	Siberian Elm	*Ulmus pumila*		x	Save
2248	8	Red Cedar	*Juniperus virginiana*	25'height		Save
2249	12	Red Cedar	*Juniperus virginiana*	25'height		Save
2250	4	Red Cedar	*Juniperus virginiana*	25'height		Save
2251	6	Red Cedar	*Juniperus virginiana*	25'height		Save
2252	9	Red Cedar	*Juniperus virginiana*	25'height		Save
2253	6	Red Cedar	*Juniperus virginiana*	25'height		Save
2254	2	Red Cedar	*Juniperus virginiana*	25'height		Save
2255	3	Red Cedar	*Juniperus virginiana*	25'height		Save
2256	4	Red Cedar	*Juniperus virginiana*	25'height		Save
2257	16	Siberian Elm	*Ulmus pumila*		x	Save
2258	3	Red Cedar	*Juniperus virginiana*	25'height		Save
2259	2	Red Cedar	*Juniperus virginiana*	15'height		Save
2260	3	Red Cedar	*Juniperus virginiana*	25'height		Save
2261	2	Red Cedar	*Juniperus virginiana*	25'height		Save
2262	4	Red Cedar	*Juniperus virginiana*	25'height		Save
2263	3	Red Cedar	*Juniperus virginiana*	25'height		Save
2264	2	Red Cedar	*Juniperus virginiana*	15'height		Save
2265	3	Red Cedar	*Juniperus virginiana*	25'height		Save
2266	2	Red Cedar	*Juniperus virginiana*	15'height		Save
2267	3	Red Cedar	*Juniperus virginiana*	25'height		Save
2268	6	Red Cedar	*Juniperus virginiana*	25'height		Save
2269	5	Red Cedar	*Juniperus virginiana*	25'height		Save
2270	2	Red Cedar	*Juniperus virginiana*	25'height		Save
2271	2	Red Cedar	*Juniperus virginiana*	15'height		Save
2272	4	Red Cedar	*Juniperus virginiana*	15'height		Save
2273	2	Red Cedar	*Juniperus virginiana*	15'height		Save
2274	12	Siberian Elm	*Ulmus pumila*		x	Save
2275	7	Red Cedar	*Juniperus virginiana*	25'height		Save
2276	3	Red Cedar	*Juniperus virginiana*	15'height		Save
2277	3	Red Cedar	*Juniperus virginiana*	15'height		Save
2278	5	Red Cedar	*Juniperus virginiana*	25'height		Save
2279	8	Red Cedar	*Juniperus virginiana*	25'height		Save
2280	5	Red Cedar	*Juniperus virginiana*	25'height		Save
2281	2	Red Cedar	*Juniperus virginiana*	15'height		Save
2282	5	Red Cedar	*Juniperus virginiana*	25'height		Save
2283	3	Red Cedar	*Juniperus virginiana*	15'height		Save
2284	6	Black Cherry	*Prunus serotina*			Save
2285	2	Red Cedar	*Juniperus virginiana*	15'height		Save
2286	7	Red Cedar	*Juniperus virginiana*	25'height		Save
2287	2	Red Cedar	*Juniperus virginiana*	15'height		Save
2288	3	Red Cedar	*Juniperus virginiana*	15'height		Save
2289	2	Red Cedar	*Juniperus virginiana*	15'height		Save
2290	2	Red Cedar	*Juniperus virginiana*	15'height		Save
2291	18	Siberian Elm	*Ulmus pumila*	leading stem top broken, trun	x	Save
2292	6	Black Cherry	*Prunus serotina*			Save
2293	4	Red Cedar	*Juniperus virginiana*	25'height		Save
2294	3	Red Cedar	*Juniperus virginiana*	15'height		Save
2295	9	Red Cedar	*Juniperus virginiana*	25'height		Save
2296	3	Red Cedar	*Juniperus virginiana*	25'height		Save
2297	5	Red Cedar	*Juniperus virginiana*	25'height		Save
2298	2	Red Cedar	*Juniperus virginiana*	15'height		Save
2299	2	Red Cedar	*Juniperus virginiana*	15'height		Save

TagID	DBH	Common Name	Scientific Name	Notes	*Non Qualifyin	Status
2300	7	Red Cedar	*Juniperus virginiana*	25'height		Save
2401	6	Red Cedar	*Juniperus virginiana*	25'height		Save
2402	6	Red Cedar	*Juniperus virginiana*	25'height		Save
2403	3	Red Cedar	*Juniperus virginiana*	25'height		Save
2404	18	Siberian Elm	*Ulmus pumila*	40% dead	x	Save
2405	4	Red Cedar	*Juniperus virginiana*	25'height		Save
2406	2	Red Cedar	*Juniperus virginiana*	25'height		Save
2407	3	Red Cedar	*Juniperus virginiana*	25'height		Save
2408	2	Red Cedar	*Juniperus virginiana*	15'height		Save
2409	6	Red Cedar	*Juniperus virginiana*	25'height		Save
2410	3	Red Cedar	*Juniperus virginiana*	15'height		Save
2411	2	Red Cedar	*Juniperus virginiana*	15'height		Save
2412	4	Red Cedar	*Juniperus virginiana*	25'height		Save
2413	3	Red Cedar	*Juniperus virginiana*	25'height		Save
2414	3	Red Cedar	*Juniperus virginiana*	25'height		Save
2415	14	Red Cedar	*Juniperus virginiana*	45'height		Save
2416	14	Red Cedar	*Juniperus virginiana*	45'height		Save
2417	10	Red Cedar	*Juniperus virginiana*	25'height		Save
2418	5	Red Cedar	*Juniperus virginiana*	25'height		Save
2419	3	Red Cedar	*Juniperus virginiana*	25'height		Save
2420	4	Red Cedar	*Juniperus virginiana*	25'height		Save
2421	3	Red Cedar	*Juniperus virginiana*	25'height		Save
2422	6	Red Cedar	*Juniperus virginiana*	25'height		Save
2423	8	Red Cedar	*Juniperus virginiana*	45'height		Save
2424	5	Red Cedar	*Juniperus virginiana*	25'height		Save
2425	3	Red Cedar	*Juniperus virginiana*	15'height		Save
2426	6	Red Cedar	*Juniperus virginiana*	25'height		Save
2427	4	Red Cedar	*Juniperus virginiana*	25'height		Save
2428	2	Red Cedar	*Juniperus virginiana*	12'height		Save
2429	5	Red Cedar	*Juniperus virginiana*	25'height		Save
2430	12	Red Cedar	*Juniperus virginiana*	45'height		Save
2431	3	Red Cedar	*Juniperus virginiana*	25'height		Save
2432	3	Red Cedar	*Juniperus virginiana*	25'height		Save
2433	2	Red Cedar	*Juniperus virginiana*	12'height		Save
2434	17	Red Cedar	*Juniperus virginiana*	45'height		Save
2435	12	Red Cedar	*Juniperus virginiana*	45'height		Save
2436	5	Red Cedar	*Juniperus virginiana*	12'height		Save
2437	2	Red Cedar	*Juniperus virginiana*	15'height		Save
2438	3	Red Cedar	*Juniperus virginiana*	15'height		Save
2439	4	Red Cedar	*Juniperus virginiana*	15'height		Off-Site
2440	2	Red Cedar	*Juniperus virginiana*	12'height		Save
12419	16	Siberian Elm	*Ulmus pumila*		x	Save
12420	18	Siberian Elm	*Ulmus pumila*		x	Save
12421	12	Siberian Elm	*Ulmus pumila*		x	Save
12422	12	Siberian Elm	*Ulmus pumila*		x	Save
12423	13	Siberian Elm	*Ulmus pumila*		x	Save
12424	17	Siberian Elm	*Ulmus pumila*		x	Save
12425	14	Siberian Elm	*Ulmus pumila*		x	Save
12426	7	Hackberry	*Celtis occidentalis*			Save
12427	14	Red Pine	*Pinus resinosa*	60' height		Save
12428	13	Red Pine	*Pinus resinosa*	60' height		Off-Site
12429	17	Red Pine	*Pinus resinosa*	60' height		Off-Site
12430	15	Box Elder	*Acer negundo*			Off-Site
12431	15	Red Pine	*Pinus resinosa*	60' height		Off-Site
12432	3	Red Cedar	*Juniperus virginiana*	15' height		Save
12433	15	Siberian Elm	*Ulmus pumila*	60% dead	x	Save
12434	12	Siberian Elm	*Ulmus pumila*	60% dead	x	Save
12435	6	Black Cherry	*Prunus serotina*			Save
12436	6	Black Cherry	*Prunus serotina*			Save
12437	24	Red Cedar	*Juniperus virginiana*	50' height		Save
12438	12	Siberian Elm	*Ulmus pumila*		x	Save
12439	3	Red Cedar	*Juniperus virginiana*	15' height		Save
12440	6	Red Cedar	*Juniperus virginiana*	25' height		Save
12441	6	Red Cedar	*Juniperus virginiana*	25' height		Save
12442	4	Red Cedar	*Juniperus virginiana*	15' height		Save
12443	11	Red Cedar	*Juniperus virginiana*	25' height		Save
12444	7	Red Cedar	*Juniperus virginiana*	20' height		Save
12445	4	Red Cedar	*Juniperus virginiana*	15' height		Save
12446	3	Red Cedar	*Juniperus virginiana*	15' height		Save
12447	4	Red Cedar	*Juniperus virginiana*	15' height		Save
12448	3	Red Cedar	*Juniperus virginiana*	15' height		Save
12449	4	Red Cedar	*Juniperus virginiana*	15' height		Save
12450	4	Red Cedar	*Juniperus virginiana*	15' height		Save
12451	7	Red Cedar	*Juniperus virginiana*	25' height		Save
12452	12, 7	Black Cherry	*Prunus serotina*	split at trunk		Save
12453	3	Red Cedar	*Juniperus virginiana*	15' height		Save
12454	5	Red Cedar	*Juniperus virginiana*	15' height		Save
12455	5	Red Cedar	*Juniperus virginiana*	20' height		Remove
12456	5	Red Cedar	*Juniperus virginiana*	20' height		Remove
12457	11	Red Cedar	*Juniperus virginiana*	25' height		Remove
12458	3	Red Cedar	*Juniperus virginiana*	15' height		Save
12459	4	Red Cedar	*Juniperus virginiana*	15' height		Remove
12460	7	Red Cedar	*Juniperus virginiana*	25' height		Remove
12461	7	Black Cherry	*Prunus serotina*			Remove
12462	7	Red Cedar	*Juniperus virginiana*	15' height		Remove
12463	12	Siberian Elm	*Ulmus pumila*	80% dead	x	Remove
12464	4	Red Cedar	*Juniperus virginiana*	15' height		Remove
12465	3	Red Cedar	*Juniperus virginiana*	12' height		Remove
12466	3	Red Cedar	*Juniperus virginiana*	15' height		Remove
12467	3	Red Cedar	*Juniperus virginiana*	12' height		Remove
12468	4	Red Cedar	*Juniperus virginiana*	20' height		Remove
12469	3	Red Cedar	*Juniperus virginiana*	15' height		Remove
12470	14	Red Cedar	*Juniperus virginiana*	25' height		Remove
12471	7	Red Cedar	*Juniperus virginiana*	20' height		Remove
12472	6	Red Cedar	*Juniperus virginiana*	20' height		Remove
12473	7	Red Cedar	*Juniperus virginiana*	25' height		Remove
12474	6	Staghorn Sumac	*Rhus typhina*	decay along trunk	x	Remove
12475	4	Red Cedar	*Juniperus virginiana*	15' height		Remove
12476	8	Red Cedar	*Juniperus virginiana*	25' height		Remove
12477	14	Siberian Elm	*Ulmus pumila*	80% dead	x	Remove

00-PLAN-1231005-SHEET-TREE

PIONEER engineering
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I hereby certify that this plan was prepared by me or

12478	12	Red Cedar	*Juniperus virginiana*	25' height		Remove
12479	8	Red Cedar	*Juniperus virginiana*	20' height		Remove
12480	11	Black Cherry	*Prunus serotina*			Remove
12481	11	Black Cherry	*Prunus serotina*			Remove
12482	14	White Mulberry	*Morus alba*			Remove
12483	7	Black Cherry	*Prunus serotina*			Remove
12484	4	Red Cedar	*Juniperus virginiana*	15' height		Remove
12485	12	Siberian Elm	*Ulmus pumila*		x	Remove
12486	24	Siberian Elm	*Ulmus pumila*		x	Remove
12487	12	Red Cedar	*Juniperus virginiana*	30' height		Remove
12488	6	Black Cherry	*Prunus serotina*			Remove
12489	4	Red Cedar	*Juniperus virginiana*	15' height		Remove
12490	5	Red Cedar	*Juniperus virginiana*	15' height		Remove
12491	18	Siberian Elm	*Ulmus pumila*	80% dead	x	Save
12492	7	Black Cherry	*Prunus serotina*			Save
12493	6	Black Cherry	*Prunus serotina*			Save
12494	3	Red Cedar	*Juniperus virginiana*	25' height		Save
12495	12	Black Cherry	*Prunus serotina*			Save
12496	8	Black Cherry	*Prunus serotina*			Save
12497	6	Black Cherry	*Prunus serotina*			Save
12498	6	Red Cedar	*Juniperus virginiana*	25' height		Save
12499	10	Black Cherry	*Prunus serotina*			Save
12500	14	American Elm	*Ulmus americana*	80% dead	x	Save
12501	12	Siberian Elm	*Ulmus pumila*	80% dead, major woodpecker	x	Save
12502	15	Siberian Elm	*Ulmus pumila*	60% dead	x	Save
12503	7	Black Cherry	*Prunus serotina*			Save
12504	9	Black Cherry	*Prunus serotina*			Save
12505	4	Red Cedar	*Juniperus virginiana*	20' height		Save
12506	7	Black Cherry	*Prunus serotina*			Save
12507	18,14	Siberian Elm	*Ulmus pumila*		x	Save
12508	4	Red Cedar	*Juniperus virginiana*	20' height		Remove
12509	6	Red Cedar	*Juniperus virginiana*	20' height		Remove
12510	5	Red Cedar	*Juniperus virginiana*	20' height		Remove
12511	4	Red Cedar	*Juniperus virginiana*	20' height		Remove
12512	7	Black Cherry	*Prunus serotina*			Remove
12513	5	Red Cedar	*Juniperus virginiana*	20' height		Remove
12514	2	Red Cedar	*Juniperus virginiana*	12' height		Save
12515	6	Black Cherry	*Prunus serotina*			Save
12516	14	Siberian Elm	*Ulmus pumila*		x	Remove
12517	12	Siberian Elm	*Ulmus pumila*		x	Remove
12518	8	Hackberry	*Celtis occidentalis*			Remove
12519	12	Hackberry	*Celtis occidentalis*			Remove
12520	12	Siberian Elm	*Ulmus pumila*		x	Remove
12521	12	Siberian Elm	*Ulmus pumila*		x	Remove
12522	8	Red Cedar	*Juniperus virginiana*	25' height		Remove
12523	11	Northern Pin Oak	*Quercus ellipsoidalis*			Remove
12524	8	Red Cedar	*Juniperus virginiana*	20' height		Remove
12525	7	Black Cherry	*Prunus serotina*			Remove
12526	12	Red Cedar	*Juniperus virginiana*	25' height		Remove
12527	12	Black Cherry	*Prunus serotina*			Remove
12528	23	Black Cherry	*Prunus serotina*			Remove
12529	13	Red Cedar	*Juniperus virginiana*	25' height		Remove
12530	6	Crabapple	*Malus* sp.			Remove
12531	12	American Elm	*Ulmus americana*		x	Remove
12532	12	Siberian Elm	*Ulmus pumila*		x	Remove
12533	6	Black Cherry	*Prunus serotina*			Remove
12534	4	Red Cedar	*Juniperus virginiana*	15' height		Remove
12535	15	Red Cedar	*Juniperus virginiana*	35' height		Remove
12536	14	American Elm	*Ulmus americana*		x	Remove
12537	12	Black Cherry	*Prunus serotina*			Remove
12538	13	American Elm	*Ulmus americana*		x	Remove
12539	12	Hackberry	*Celtis occidentalis*			Remove
12540	14	Hackberry	*Celtis occidentalis*			Remove
12541	14	Hackberry	*Celtis occidentalis*			Remove
12542	9	Hackberry	*Celtis occidentalis*			Remove
12543	6	Hackberry	*Celtis occidentalis*			Remove
12544	12	Hackberry	*Celtis occidentalis*			Remove
12545	11	Red Cedar	*Juniperus virginiana*	35' height		Remove
12546	14	Red Cedar	*Juniperus virginiana*	35' height		Remove
12547	10, 6,5,5	Red Cedar	*Juniperus virginiana*	30' height		Remove
12548	28	Siberian Elm	*Ulmus pumila*		x	Remove
12549	7	Red Cedar	*Juniperus virginiana*	30' height		Remove
12550	5	Red Cedar	*Juniperus virginiana*	30' height		Remove
12551	8	Red Cedar	*Juniperus virginiana*	35' height		Remove
12552	12	Red Cedar	*Juniperus virginiana*	35' height		Remove
12553	12	Siberian Elm	*Ulmus pumila*		x	Remove
12554	22	Red Cedar	*Juniperus virginiana*	35' height		Remove
12555	7	Black Cherry	*Prunus serotina*	poor growth form, leaning tov	x	Remove
12556	11	Red Cedar	*Juniperus virginiana*	35' height		Remove
12557	10	Red Cedar	*Juniperus virginiana*	35' height		Remove
12558	11	Red Cedar	*Juniperus virginiana*	35' height		Remove
12559	12	Red Cedar	*Juniperus virginiana*	35' height		Remove
12560	3	Red Cedar	*Juniperus virginiana*	30' height		Remove
12561	7	Red Cedar	*Juniperus virginiana*	30' height		Remove
12562	12	Siberian Elm	*Ulmus pumila*		x	Remove
12563	8	Red Cedar	*Juniperus virginiana*	30' height		Remove
12564	12	Red Cedar	*Juniperus virginiana*	35' height		Remove
12565	14	Red Cedar	*Juniperus virginiana*	35' height		Remove
12566	13	Black Cherry	*Prunus serotina*			Remove
12567	3	Red Cedar	*Juniperus virginiana*	20' height		Remove
12568	2	Red Cedar	*Juniperus virginiana*	20' height		Remove
12569	9	Red Cedar	*Juniperus virginiana*	30' height		Remove
12570	11	Red Cedar	*Juniperus virginiana*	35' height		Remove
12571	4	Red Cedar	*Juniperus virginiana*	12'height		Remove
12572	5	Red Cedar	*Juniperus virginiana*	20'height		Remove
12573	3	Red Cedar	*Juniperus virginiana*	12'height		Remove
12574	7	Red Cedar	*Juniperus virginiana*	20'height		Remove
12575	10,6,5	Red Cedar	*Juniperus virginiana*	20'height		Remove
12576	10	Red Cedar	*Juniperus virginiana*	20'height		Remove
12577	3	Red Cedar	*Juniperus virginiana*	12'height		Remove

TagID	DBH	Common Name	Scientific Name	Notes	*Non Qualifyin	Status
12578	3	Red Cedar	*Juniperus virginiana*	12'height		Remove
12579	12,14	Siberian Elm	*Ulmus pumila*		x	Remove
12580	2	Red Cedar	*Juniperus virginiana*	12'height		Remove
12581	3	Red Cedar	*Juniperus virginiana*	12'height		Remove
12582	4	Red Cedar	*Juniperus virginiana*	15'height		Remove
12583	7	Red Cedar	*Juniperus virginiana*	15'height		Remove
12584	3	Red Cedar	*Juniperus virginiana*	12'height		Remove
12585	3	Red Cedar	*Juniperus virginiana*	12'height		Remove
12586	12	Red Cedar	*Juniperus virginiana*	35'height		Remove
12587	7	Red Cedar	*Juniperus virginiana*	20'height		Remove
12588	35	Siberian Elm	*Ulmus pumila*		x	Remove
12589	12	Red Cedar	*Juniperus virginiana*	35'height		Remove
12590	5	Red Cedar	*Juniperus virginiana*	20'height		Remove
12591	12	Siberian Elm	*Ulmus pumila*		x	Save
12592	7	Hackberry	*Celtis occidentalis*			Save
12593	7	Hackberry	*Celtis occidentalis*			Save
12594	3	Red Cedar	*Juniperus virginiana*	12'height		Save
12595	8	Red Cedar	*Juniperus virginiana*	20'height		Save
12596	2	Red Cedar	*Juniperus virginiana*	12'height		Save
12597	5	Red Cedar	*Juniperus virginiana*	20'height		Save
12598	12	Siberian Elm	*Ulmus pumila*		x	Save
12599	4	Red Cedar	*Juniperus virginiana*	20'height		Save
12600	5	Red Cedar	*Juniperus virginiana*	20'height		Save
12601	12	Siberian Elm	*Ulmus pumila*		x	Save
12602	7	Hackberry	*Celtis occidentalis*			Save
12603	19	Hackberry	*Celtis occidentalis*			Remove
12604	16	Hackberry	*Celtis occidentalis*			Remove
12605	17	Hackberry	*Celtis occidentalis*			Remove
12606	6	Hackberry	*Celtis occidentalis*			Remove
12607	6	Red Cedar	*Juniperus virginiana*	20'height		Remove
12608	7	Black Cherry	*Prunus serotina*			Remove
12609	6	Black Cherry	*Prunus serotina*			Remove
12610	9	Black Cherry	*Prunus serotina*			Remove
12611	6	Black Cherry	*Prunus serotina*			Remove
12612	4	Red Cedar	*Juniperus virginiana*	20'height		Remove
12613	29	Siberian Elm	*Ulmus pumila*	40% dead	x	Remove
12614	28	Siberian Elm	*Ulmus pumila*		x	Remove
12615	7	Hackberry	*Celtis occidentalis*			Remove
12616	11	Red Cedar	*Juniperus virginiana*	20'height		Remove
12617	18	Siberian Elm	*Ulmus pumila*			Remove
12618	12	Siberian Elm	*Ulmus pumila*			Save
12619	14	Red Cedar	*Juniperus virginiana*	45'height		Save
12620	14	Hackberry	*Celtis occidentalis*			Remove
12621	11	Red Cedar	*Juniperus virginiana*	40'height		Remove
12622	11	Black Cherry	*Prunus serotina*			Remove
12623	3	Red Cedar	*Juniperus virginiana*	40'height		Remove
12624	14	Siberian Elm	*Ulmus pumila*		x	Remove
12625	5	Red Cedar	*Juniperus virginiana*	30'height		Remove
12626	6	Hackberry	*Celtis occidentalis*			Remove
12627	15	Siberian Elm	*Ulmus pumila*		x	Remove
12628	8	Red Cedar	*Juniperus virginiana*	40'height		Remove
12629	15	Red Cedar	*Juniperus virginiana*	40'height		Remove
12630	16	Hackberry	*Celtis occidentalis*			Remove
12631	15	Hackberry	*Celtis occidentalis*			Remove
12632	17	Siberian Elm	*Ulmus pumila*		x	Remove
12633	2	Red Cedar	*Juniperus virginiana*	12'height		Remove
12634	4	Red Cedar	*Juniperus virginiana*	35'height		Remove
12635	20	Northern Pin Oak	*Quercus ellipsoidalis*			Remove
12636	3	Red Cedar	*Juniperus virginiana*	20'height		Remove
12637	2	Red Cedar	*Juniperus virginiana*	12'height		Remove
12638	8	Black Cherry	*Prunus serotina*			Remove
12639	7	Crabapple	*Malus* sp.	major woodpecker damage	x	Remove
12640	6	Crabapple	*Malus* sp.			Remove
12641	17	Northern Pin Oak	*Quercus ellipsoidalis*			Remove
12642	6	Black Cherry	*Prunus serotina*			Remove
12643	15	Northern Pin Oak	*Quercus ellipsoidalis*			Remove
12644	6	Black Cherry	*Prunus serotina*			Remove
12645	7	Red Cedar	*Juniperus virginiana*	30'height		Remove
12646	6	Red Cedar	*Juniperus virginiana*	30'height		Remove
12647	5	Red Cedar	*Juniperus virginiana*	30'height		Remove
12648	4	Red Cedar	*Juniperus virginiana*	30'height		Remove
12649	9	Red Cedar	*Juniperus virginiana*	30'height		Remove
12650	15	Red Cedar	*Juniperus virginiana*	45'height		Remove
12651	9	Red Cedar	*Juniperus virginiana*	35'height		Remove
12652	9	Red Cedar	*Juniperus virginiana*	30'height		Remove
12653	11	Red Cedar	*Juniperus virginiana*	35'height		Remove
12654	9	Red Cedar	*Juniperus virginiana*	35'height		Remove
12655	14	Red Cedar	*Juniperus virginiana*	45'height		Remove
12656	13	Red Cedar	*Juniperus virginiana*	45'height		Remove
12657	13	Red Cedar	*Juniperus virginiana*	45'height		Remove
12658	18	Northern Pin Oak	*Quercus ellipsoidalis*			Remove
12659	13	Red Cedar	*Juniperus virginiana*	45'height		Remove
12660	16	Red Cedar	*Juniperus virginiana*	45'height		Remove
12661	16	Red Cedar	*Juniperus virginiana*	45'height		Remove
12662	17	Northern Pin Oak	*Quercus ellipsoidalis*			Remove
12663	7	Black Cherry	*Prunus serotina*			Remove
12664	11	Black Cherry	*Prunus serotina*			Remove
12665	15	Black Cherry	*Prunus serotina*			Remove
12666	2	Red Cedar	*Juniperus virginiana*	12'height		Remove
12667	2	Red Cedar	*Juniperus virginiana*	12'height		Remove
12668	13	Black Cherry	*Prunus serotina*			Remove
12669	10	Black Cherry	*Prunus serotina*			Remove
12670	15	Siberian Elm	*Ulmus pumila*		x	Remove
12671	12	Box Elder	*Acer negundo*			Remove
12672	15	Siberian Elm	*Ulmus pumila*		x	Remove
12673	3	Red Cedar	*Juniperus virginiana*	30'height		Remove
12674	4	Red Cedar	*Juniperus virginiana*	30'height		Remove
12675	12	Siberian Elm	*Ulmus pumila*		x	Remove
12676	5	Red Cedar	*Juniperus virginiana*	30'height		Remove
12677	3	Red Cedar	*Juniperus virginiana*	30'height		Remove

TagID	DBH	Common Name	Scientific Name	Notes	*Non Qualifyin	Status
12678	7	Black Cherry	*Prunus serotina*			Remove
12679	6	Black Cherry	*Prunus serotina*			Remove
12680	5	Red Cedar	*Juniperus virginiana*	30'height		Remove
12681	15	Red Cedar	*Juniperus virginiana*	45'height		Remove
12682	24	Red Cedar	*Juniperus virginiana*	45'height		Remove
12683	6	Black Cherry	*Prunus serotina*			Remove
12684	3	Red Cedar	*Juniperus virginiana*	30'height		Remove
12685	10	Red Cedar	*Juniperus virginiana*	30'height		Remove
12686	12	Red Cedar	*Juniperus virginiana*	45'height		Remove
12687	4	Red Cedar	*Juniperus virginiana*	30'height		Remove
12688	10	Northern Pin Oak	*Quercus ellipsoidalis*			Save
12689	8	Red Cedar	*Juniperus virginiana*	30'height		Remove
12690	3	Red Cedar	*Juniperus virginiana*	30'height		Remove
12691	13	Black Cherry	*Prunus serotina*			Remove
12692	4	Red Cedar	*Juniperus virginiana*	30'height		Remove
12693	10	Red Cedar	*Juniperus virginiana*	45'height		Remove
12694	10	Red Cedar	*Juniperus virginiana*	45'height		Remove
12695	4	Red Cedar	*Juniperus virginiana*	30'height		Remove
12696	12	Siberian Elm	*Ulmus pumila*		x	Remove
12697	14	Siberian Elm	*Ulmus pumila*		x	Remove
12698	9	Black Cherry	*Prunus serotina*			Remove
12699	7	Black Cherry	*Prunus serotina*			Remove
12700	9	Black Cherry	*Prunus serotina*			Remove
12701	11	Black Cherry	*Prunus serotina*			Remove
12702	12	Red Cedar	*Juniperus virginiana*	45'height		Remove
12703	14	Red Cedar	*Juniperus virginiana*	45'height		Remove
12704	4	Red Cedar	*Juniperus virginiana*	30'height		Remove
12705	13	Siberian Elm	*Ulmus pumila*		x	Remove
12706	8	Black Cherry	*Prunus serotina*			Remove
12707	6	Black Cherry	*Prunus serotina*			Remove
12708	11	Black Cherry	*Prunus serotina*			Remove
12709	14	Black Cherry	*Prunus serotina*			Remove
12710	10	Red Cedar	*Juniperus virginiana*	45'height		Remove
12711	7	Black Cherry	*Prunus serotina*			Remove
12712	15	Black Cherry	*Prunus serotina*			Remove
12713	4	Red Cedar	*Juniperus virginiana*	30'height		Remove
12714	4	Red Cedar	*Juniperus virginiana*	30'height		Remove
12715	4	Red Cedar	*Juniperus virginiana*	30'height		Remove
12716	14	Red Cedar	*Juniperus virginiana*	45'height		Remove
12717	17	Northern Pin Oak	*Quercus ellipsoidalis*			Remove
12718	11	Red Cedar	*Juniperus virginiana*	30'height		Remove
12719	5	Red Cedar	*Juniperus virginiana*	45'height		Remove
12720	6	Red Cedar	*Juniperus virginiana*	45'height		Remove
12721	12	American Elm	*Ulmus americana*		x	Remove
12722	15	Black Cherry	*Prunus serotina*			Remove
12723	4	Red Cedar	*Juniperus virginiana*	30'height		Remove
12724	3	Red Cedar	*Juniperus virginiana*	30'height		Save
12725	11	Red Cedar	*Juniperus virginiana*	45'height		Save
12726	22	Red Cedar	*Juniperus virginiana*	45'height		Save
12727	8,8	Red Cedar	*Juniperus virginiana*	45'height		Save
12728	18	Siberian Elm	*Ulmus pumila*		x	Save
12729	6	Black Cherry	*Prunus serotina*			Save
12730	7	Red Cedar	*Juniperus virginiana*	30'height		Save
12731	5	Red Cedar	*Juniperus virginiana*	30'height		Save
12732	2	Red Cedar	*Juniperus virginiana*	30'height		Save
12733	3	Red Cedar	*Juniperus virginiana*	30'height		Save
12734	4	Red Cedar	*Juniperus virginiana*	30'height		Save
12735	2	Red Cedar	*Juniperus virginiana*	30'height		Save
12736	5	Red Cedar	*Juniperus virginiana*	30'height		Save
12737	8	Red Cedar	*Juniperus virginiana*	45'height		Save
12738	7	Red Cedar	*Juniperus virginiana*	45'height		Save
12739	10	Red Cedar	*Juniperus virginiana*	45'height		Save
12740	2	Red Cedar	*Juniperus virginiana*	12'height		Save
12741	12	Siberian Elm	*Ulmus pumila*		x	Save
12742	3	Red Cedar	*Juniperus virginiana*	12'height		Save
12743	11	Red Cedar	*Juniperus virginiana*	45'height		Save
12744	14	Red Cedar	*Juniperus virginiana*	45'height		Save
12745	8	Red Cedar	*Juniperus virginiana*	45'height		Save
12746	3	Red Cedar	*Juniperus virginiana*	30'height		Save
12747	11	Red Cedar	*Juniperus virginiana*	45'height		Save
12748	4	Red Cedar	*Juniperus virginiana*	30'height		Save
12749	2	Red Cedar	*Juniperus virginiana*	20'height		Save
12750	5	Red Cedar	*Juniperus virginiana*	30'height		Save
12751	8	Red Cedar	*Juniperus virginiana*	45'height		Save
12752	3	Red Cedar	*Juniperus virginiana*	20'height		Save
12753	2	Siberian Elm	*Ulmus pumila*	20'height	x	Save
12754	10	Red Cedar	*Juniperus virginiana*	45'height		Save
12755	9	Red Cedar	*Juniperus virginiana*	45'height		Save
12756	12	Red Cedar	*Juniperus virginiana*	45'height		Save
12757	9	Red Cedar	*Juniperus virginiana*	45'height		Save
12758	12,7	Red Cedar	*Juniperus virginiana*	45'height		Save
12759	4	Red Cedar	*Juniperus virginiana*	30'height		Save
12760	4	Red Cedar	*Juniperus virginiana*	30'height		Save
12761	10	Red Cedar	*Juniperus virginiana*	45'height		Save
12762	7	Red Cedar	*Juniperus virginiana*	45'height		Save
12763	11	Red Cedar	*Juniperus virginiana*	45'height		Save
12764	4	Red Cedar	*Juniperus virginiana*	30'height		Save
12765	11	Red Cedar	*Juniperus virginiana*	45'height		Save
12766	13	Red Cedar	*Juniperus virginiana*	45'height		Save
12767	5	Red Cedar	*Juniperus virginiana*	30'height		Save
12768	13	Red Cedar	*Juniperus virginiana*	45'height		Save
12769	6	Red Cedar	*Juniperus virginiana*	30'height		Save
12770	11	Red Cedar	*Juniperus virginiana*	45'height		Save
12771	12	Red Cedar	*Juniperus virginiana*	45'height		Remove
12772	3	Red Cedar	*Juniperus virginiana*	30'height		Remove
12773	11	Red Cedar	*Juniperus virginiana*	45'height		Remove
12774	7	Red Cedar	*Juniperus virginiana*	30'height		Remove
12775	6	Red Cedar	*Juniperus virginiana*	30'height		Remove
12776	8	Red Cedar	*Juniperus virginiana*	30'height		Remove
12777	4	Red Cedar	*Juniperus virginiana*	30'height		Remove

TagID	DBH	Common Name	Scientific Name	Notes	*Non Qualifyin	Status
12778	5	Red Cedar	*Juniperus virginiana*	30'height		Remove
12779	4	Red Cedar	*Juniperus virginiana*	30'height		Remove
12780	15	Siberian Elm	*Ulmus pumila*		x	Remove
12781	9	Red Cedar	*Juniperus virginiana*	45'height		Remove
12782	12	Red Cedar	*Juniperus virginiana*	45'height		Remove
12783	3	Red Cedar	*Juniperus virginiana*	30'height		Remove
12784	4	Red Cedar	*Juniperus virginiana*	30'height		Save
12785	2	Red Cedar	*Juniperus virginiana*	20'height		Save
12786	5	Red Cedar	*Juniperus virginiana*	30'height		Save
12787	8	Red Cedar	*Juniperus virginiana*	45'height		Save
12788	12	Red Cedar	*Juniperus virginiana*	45'height		Save
12789	4	Red Cedar	*Juniperus virginiana*	30'height		Save
12790	14	Red Cedar	*Juniperus virginiana*	45'height		Save
12791	9	Red Cedar	*Juniperus virginiana*	45'height		Save
12792	5	Red Cedar	*Juniperus virginiana*	45'height		Save
12793	4	Red Cedar	*Juniperus virginiana*	30'height		Save
12794	10	Red Cedar	*Juniperus virginiana*	45'height		Save
12795	15	Red Cedar	*Juniperus virginiana*	45'height		Save
12796	12	Red Cedar	*Juniperus virginiana*	45'height		Save
12797	4	Red Cedar	*Juniperus virginiana*	30'height		Save
12798	7	Red Cedar	*Juniperus virginiana*	30'height		Save
12799	14	Red Cedar	*Juniperus virginiana*	45'height		Save
12800	17	Red Cedar	*Juniperus virginiana*	45'height		Save
12801	5	Red Cedar	*Juniperus virginiana*	45'height		Save
12802	12	Red Cedar	*Juniperus virginiana*	45'height		Save
12803	4	Red Cedar	*Juniperus virginiana*	30'height		Save
12804	11	Red Cedar	*Juniperus virginiana*	45'height		Save
12805	5	Red Cedar	*Juniperus virginiana*	30'height		Save
12806	6	Red Cedar	*Juniperus virginiana*	45'height		Save
12807	6	Red Cedar	*Juniperus virginiana*	45'height		Save
12808	9	Red Cedar	*Juniperus virginiana*	45'height		Save
12809	4	Red Cedar	*Juniperus virginiana*	30'height		Save
12810	6	Red Cedar	*Juniperus virginiana*	30'height		Save
12811	14	Siberian Elm	*Ulmus pumila*	partial decay at trunk	x	Save
12812	3	Red Cedar	*Juniperus virginiana*	20'height		Save
12813	2	Red Cedar	*Juniperus virginiana*	20'height		Save
12814	2	Red Cedar	*Juniperus virginiana*	20'height		Save
12815	2	Red Cedar	*Juniperus virginiana*	20'height		Save
12816	5	Red Cedar	*Juniperus virginiana*	30'height		Save
12817	4	Red Cedar	*Juniperus virginiana*	20'height		Save
12818	3	Red Cedar	*Juniperus virginiana*	20'height		Save
12819	5	Red Cedar	*Juniperus virginiana*	30'height		Save
12820	4	Red Cedar	*Juniperus virginiana*	30'height		Save
12821	5	Red Cedar	*Juniperus virginiana*	30'height		Save
12822	4	Red Cedar	*Juniperus virginiana*	30'height		Save
12823	5	Red Cedar	*Juniperus virginiana*	30'height		Save
12824	3	Red Cedar	*Juniperus virginiana*	20'height		Save
12825	2	Red Cedar	*Juniperus virginiana*	20'height		Save
12826	5	Red Cedar	*Juniperus virginiana*	30'height		Save
12827	4	Red Cedar	*Juniperus virginiana*	20'height		Save
12828	5	Red Cedar	*Juniperus virginiana*	20'height		Remove
12829	4	Red Cedar	*Juniperus virginiana*	20'height		Remove
12830	4	Red Cedar	*Juniperus virginiana*	20'height		Remove
12831	12	Red Cedar	*Juniperus virginiana*	45'height		Remove
12832	15	Red Cedar	*Juniperus virginiana*	45'height		Save
12833	12	Red Cedar	*Juniperus virginiana*	45'height		Save
12834	5	Red Cedar	*Juniperus virginiana*	30'height		Remove
12835	2	Red Cedar	*Juniperus virginiana*	20'height		Remove
12836	2	Red Cedar	*Juniperus virginiana*	20'height		Save
12837	4	Red Cedar	*Juniperus virginiana*	20'height		Save
12838	3	Red Cedar	*Juniperus virginiana*	20'height		Save
12839	5	Red Cedar	*Juniperus virginiana*	30'height		Save
12840	18	Red Cedar	*Juniperus virginiana*	45'height		Save
12841	3	Red Cedar	*Juniperus virginiana*	20'height		Remove
12842	5	Red Cedar	*Juniperus virginiana*	30'height		Remove
12843	6	Red Cedar	*Juniperus virginiana*	45'height		Remove
12844	3	Red Cedar	*Juniperus virginiana*	30'height		Remove
12845	2	Red Cedar	*Juniperus virginiana*	30'height		Remove
12846	5	Red Cedar	*Juniperus virginiana*	30'height		Remove
12847	11	Red Cedar	*Juniperus virginiana*	45'height		Remove
12848	2	Red Cedar	*Juniperus virginiana*	30'height		Remove
12849	2	Red Cedar	*Juniperus virginiana*	20'height		Remove
12850	3	Red Cedar	*Juniperus virginiana*	30'height		Remove
12851	3	Red Cedar	*Juniperus virginiana*	30'height		Remove
12852	12	Red Cedar	*Juniperus virginiana*	45'height		Remove
12853	2	Red Cedar	*Juniperus virginiana*	30'height		Remove
12854	12	American Elm	*Ulmus americana*		x	Remove
12855	2	Red Cedar	*Juniperus virginiana*	30'height		Remove
12856	15	Red Cedar	*Juniperus virginiana*	45'height		Remove
12857	6	Red Cedar	*Juniperus virginiana*	45'height		Remove
12858	7	Red Cedar	*Juniperus virginiana*	45'height		Remove
12859	6	Red Cedar	*Juniperus virginiana*	30'height		Remove
12860	4	Red Cedar	*Juniperus virginiana*	30'height		Remove
12861	9	Red Cedar	*Juniperus virginiana*	45'height		Remove
12862	2	Red Cedar	*Juniperus virginiana*	20'height		Remove
12863	4	Red Cedar	*Juniperus virginiana*	30'height		Remove
12864	8	Red Cedar	*Juniperus virginiana*	30'height		Remove
12865	4	Red Cedar	*Juniperus virginiana*	30'height		Remove
12866	13	Red Cedar	*Juniperus virginiana*	45'height		Remove
12867	3	Red Cedar	*Juniperus virginiana*	30'height		Remove
12868	3	Red Cedar	*Juniperus virginiana*	30'height		Remove
12869	8	Red Cedar	*Juniperus virginiana*	30'height		Remove
12870	7	Red Cedar	*Juniperus virginiana*	30'height		Remove
12871	15	Red Cedar	*Juniperus virginiana*	45'height		Remove
12872	11	Red Cedar	*Juniperus virginiana*	45'height		Remove
12873	5	Red Cedar	*Juniperus virginiana*	30'height		Remove
12874	6	Red Cedar	*Juniperus virginiana*	45'height		Remove
12875	13	Red Cedar	*Juniperus virginiana*	45'height		Remove
12876	5	Red Cedar	*Juniperus virginiana*	30'height		Remove
12877	3	Red Cedar	*Juniperus virginiana*	30'height		Remove

00-PLAN-1231005-SHEET-TREE

PIONEER*engineering*
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I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Landscape Architect under the laws of the State of Minnesota

Name Jennifer L. Thompson
Reg. No. 44763 Date 1-9-2026

Revisions

Date 01-16-26
Designed JLT
Drawn JLT

TREE PRESERVATION PLAN

LENNAR
16305 36TH AVENUE NORTH
PLYMOUTH, MINNESOTA 55446

TALCOTT GLEN
COTTAGE GROVE, MINNESOTA

T6 OF 8

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TagID	DBH	Common Name	Scientific Name	Notes	*Non Qualifyin	Status
12878	12	Red Cedar	*Juniperus virginiana*	45'height		Remove
12879	2	Red Cedar	*Juniperus virginiana*	20'height		Remove
12880	2	Red Cedar	*Juniperus virginiana*	20'height		Remove
12881	3	Red Cedar	*Juniperus virginiana*	20'height		Remove
12882	5	Red Cedar	*Juniperus virginiana*	30'height		Remove
12883	8	Red Cedar	*Juniperus virginiana*	45'height		Remove
12884	4	Red Cedar	*Juniperus virginiana*	20'height		Remove
12885	3	Red Cedar	*Juniperus virginiana*	30'height		Remove
12886	8	Red Cedar	*Juniperus virginiana*	45'height		Remove
12887	7	Red Cedar	*Juniperus virginiana*	45'height		Remove
12888	8	Red Cedar	*Juniperus virginiana*	30'height		Remove
12889	3	Red Cedar	*Juniperus virginiana*	30'height		Remove
12890	2	Red Cedar	*Juniperus virginiana*	20'height		Remove
12891	2	Red Cedar	*Juniperus virginiana*	20'height		Remove
12892	8	Red Cedar	*Juniperus virginiana*	30'height		Remove
12893	11	Red Cedar	*Juniperus virginiana*	45'height		Remove
12894	11	Red Cedar	*Juniperus virginiana*	45'height		Remove
12895	10	Red Cedar	*Juniperus virginiana*	45'height		Remove
12896	8	Red Cedar	*Juniperus virginiana*	30'height		Remove
12897	11	Red Cedar	*Juniperus virginiana*	45'height		Remove
12898	11	Red Cedar	*Juniperus virginiana*	45'height		Remove
12899	13	Red Cedar	*Juniperus virginiana*	45'height		Remove
12900	6	Red Cedar	*Juniperus virginiana*	30'height		Remove
12901	7	Red Cedar	*Juniperus virginiana*	30'height		Remove
12902	9	Red Cedar	*Juniperus virginiana*	30'height		Remove
12903	4	Red Cedar	*Juniperus virginiana*	20'height		Remove
12904	9	Red Cedar	*Juniperus virginiana*	30'height		Remove
12905	11	Red Cedar	*Juniperus virginiana*	45'height		Remove
12906	8	Red Cedar	*Juniperus virginiana*	30'height		Remove
12907	8	Red Cedar	*Juniperus virginiana*	30'height		Remove
12908	4	Red Cedar	*Juniperus virginiana*	30'height		Remove
12909	12	Red Cedar	*Juniperus virginiana*	45'height		Remove
12910	7	Red Cedar	*Juniperus virginiana*	45'height		Remove
12911	3,3,3	Red Cedar	*Juniperus virginiana*	20'height		Remove
12912	2,3	Red Cedar	*Juniperus virginiana*	20'height		Remove
12913	10	Red Cedar	*Juniperus virginiana*	30'height		Remove
12914	11	Red Cedar	*Juniperus virginiana*	45'height		Remove
12915	7	Red Cedar	*Juniperus virginiana*	30'height		Remove
12916	3	Red Cedar	*Juniperus virginiana*	30'height		Remove
12917	4	Red Cedar	*Juniperus virginiana*	30'height		Remove
12918	6	Red Cedar	*Juniperus virginiana*	30'height		Remove
12919	2	Red Cedar	*Juniperus virginiana*	30'height		Remove
12920	12	Red Cedar	*Juniperus virginiana*	45'height		Remove
12921	11	Red Cedar	*Juniperus virginiana*	45'height		Remove
12922	4	Red Cedar	*Juniperus virginiana*	30'height		Remove
12923	10	Red Cedar	*Juniperus virginiana*	45'height		Remove
12924	5	Red Cedar	*Juniperus virginiana*	30'height		Save
12925	3	Red Cedar	*Juniperus virginiana*	30'height		Save
12926	14	Black Cherry	*Prunus serotina*			Remove
12927	16	American Elm	*Ulmus americana*		x	Remove
12928	15	American Elm	*Ulmus americana*		x	Remove
12929	14	Black Cherry	*Prunus serotina*			Remove
12930	7	Black Cherry	*Prunus serotina*			Remove
12931	14	Black Cherry	*Prunus serotina*			Remove
12932	14	Box Elder	*Acer negundo*			Remove
12933	12	Box Elder	*Acer negundo*			Remove
12934	14	American Elm	*Ulmus americana*		x	Remove
12935	12	American Elm	*Ulmus americana*		x	Remove
12936	15	American Elm	*Ulmus americana*		x	Remove
12937	11	Black Walnut	*Juglans nigra*			Remove
12938	6	Red Cedar	*Juniperus virginiana*	30'height		Remove
12939	17	Black Cherry	*Prunus serotina*			Remove
12940	13	Red Cedar	*Juniperus virginiana*	45'height		Remove
12941	9	Black Cherry	*Prunus serotina*			Remove
12942	11	Red Cedar	*Juniperus virginiana*	45'height		Remove
12943	6	Black Cherry	*Prunus serotina*			Remove
12944	15	American Elm	*Ulmus americana*		x	Remove
12945	4	Red Cedar	*Juniperus virginiana*	30'height		Remove
12946	3	Red Cedar	*Juniperus virginiana*	30'height		Remove
12947	10	Red Cedar	*Juniperus virginiana*	30'height		Remove
12948	4	Red Cedar	*Juniperus virginiana*	30'height		Remove
12949	11	Red Cedar	*Juniperus virginiana*	45'height		Remove
12950	7	Red Cedar	*Juniperus virginiana*	45'height		Remove
12951	3	Red Cedar	*Juniperus virginiana*	30'height		Remove
12952	11	Red Cedar	*Juniperus virginiana*	45'height		Remove
12953	5	Red Cedar	*Juniperus virginiana*	30'height		Remove
12954	3	Red Cedar	*Juniperus virginiana*	30'height		Remove
12955	2	Red Cedar	*Juniperus virginiana*	30'height		Remove
12956	8	Red Cedar	*Juniperus virginiana*	45'height		Remove
12957	6	Red Cedar	*Juniperus virginiana*	30'height		Remove
12958	4	Red Cedar	*Juniperus virginiana*	30'height		Remove
12959	6	Red Cedar	*Juniperus virginiana*	30'height		Remove
12960	4	Red Cedar	*Juniperus virginiana*	30'height		Remove
12961	2	Red Cedar	*Juniperus virginiana*	30'height		Remove
12962	7	Red Cedar	*Juniperus virginiana*	30'height		Remove
12963	6	Red Cedar	*Juniperus virginiana*	30'height		Remove
12964	5	Red Cedar	*Juniperus virginiana*	30'height		Remove
12965	5	Red Cedar	*Juniperus virginiana*	30'height		Remove
12966	8	Red Cedar	*Juniperus virginiana*	30'height		Remove
12967	9	Red Cedar	*Juniperus virginiana*	30'height		Remove
12968	4	Red Cedar	*Juniperus virginiana*	30'height		Remove
12969	4	Red Cedar	*Juniperus virginiana*	30'height		Remove
12970	4	Red Cedar	*Juniperus virginiana*	30'height		Remove
12971	3	Red Cedar	*Juniperus virginiana*	30'height		Remove
12972	5	Red Cedar	*Juniperus virginiana*	45'height		Remove
12973	3	Red Cedar	*Juniperus virginiana*	30'height		Remove
12974	7	Red Cedar	*Juniperus virginiana*	30'height		Remove
12975	6	Black Cherry	*Prunus serotina*			Remove
12976	6	Red Cedar	*Juniperus virginiana*	30'height		Remove
12977	5	Red Cedar	*Juniperus virginiana*	30'height		Remove

TagID	DBH	Common Name	Scientific Name	Notes	*Non Qualifyin	Status
12978	11	Red Cedar	*Juniperus virginiana*	45'height		Remove
12979	3	Red Cedar	*Juniperus virginiana*	30'height		Remove
12980	10	Red Cedar	*Juniperus virginiana*	45'height		Remove
12981	18	Siberian Elm	*Ulmus pumila*	major decay along base	x	Remove
12982	14	Siberian Elm	*Ulmus pumila*		x	Remove
12983	10	Red Cedar	*Juniperus virginiana*	45'height		Remove
12984	13	Red Cedar	*Juniperus virginiana*	45'height		Remove
12985	20	Bur Oak	*Quercus macrocarpa*			Remove
12986	2	Red Cedar	*Juniperus virginiana*	30'height		Remove
12987	10	Red Cedar	*Juniperus virginiana*	45'height		Remove
12988	3	Red Cedar	*Juniperus virginiana*	30'height		Remove
12989	3	Red Cedar	*Juniperus virginiana*	30'height		Remove
12990	3	Red Cedar	*Juniperus virginiana*	30'height		Remove
12991	5	Red Cedar	*Juniperus virginiana*	30'height		Remove
12992	2	Red Cedar	*Juniperus virginiana*	20'height		Remove
12993	6	Red Cedar	*Juniperus virginiana*	45'height		Save
12994	5	Red Cedar	*Juniperus virginiana*	30'height		Save
12995	5	Red Cedar	*Juniperus virginiana*	30'height		Save
12996	6	Red Cedar	*Juniperus virginiana*	45'height		Save
12997	7	Red Cedar	*Juniperus virginiana*	45'height		Save
12998	11	Red Cedar	*Juniperus virginiana*	45'height		Save
12999	6	Red Cedar	*Juniperus virginiana*	30'height		Save
13000	6	Red Cedar	*Juniperus virginiana*	30'height		Save
4199	16	Siberian Elm	*Ulmus pumila*		x	Remove
4200	13	Siberian Elm	*Ulmus pumila*		x	Remove
4201	12	Siberian Elm	*Ulmus pumila*		x	Remove
4202	23	Siberian Elm	*Ulmus pumila*		x	Remove
4203	11	Siberian Elm	*Ulmus pumila*		x	Remove
4204	14	American Elm	*Ulmus americana*	crown partial broken	x	Remove
4205	14	Siberian Elm	*Ulmus pumila*		x	Remove
4206	20	Siberian Elm	*Ulmus pumila*		x	Remove
4207	13	Siberian Elm	*Ulmus pumila*		x	Remove
4208	13	Siberian Elm	*Ulmus pumila*		x	Remove
4209	16	Siberian Elm	*Ulmus pumila*		x	Remove
4210	30	American Elm	*Ulmus americana*		x	Remove
4211	10,7	Black Cherry	*Prunus serotina*			Remove
4212	14	Box Elder	*Acer negundo*			Remove
4213	9	Black Cherry	*Prunus serotina*			Remove
4214	12,12,12	Box Elder	*Acer negundo*			Remove
4215	12	Siberian Elm	*Ulmus pumila*		x	Remove
4216	13	Box Elder	*Acer negundo*			Remove
4217	11	Box Elder	*Acer negundo*			Remove
4218	14	Box Elder	*Acer negundo*			Remove
4219	24,21,18,16,16	American Elm	*Ulmus americana*		x	Save
4220	19	Box Elder	*Acer negundo*			Remove
4221	19	Box Elder	*Acer negundo*			Save
4222	12,12,11	Box Elder	*Acer negundo*			Remove
4223	11	Box Elder	*Acer negundo*			Remove
4224	12	Box Elder	*Acer negundo*			Remove
4225	13,10,9	Box Elder	*Acer negundo*			Remove
4226	10	Black Cherry	*Prunus serotina*			Remove
4227	8	Black Cherry	*Prunus serotina*			Remove
4228	16	Black Cherry	*Prunus serotina*			Remove
4229	25,18	American Elm	*Ulmus americana*		x	Save
4230	18	Box Elder	*Acer negundo*			Save
4231	25	Box Elder	*Acer negundo*	severe decay at base	x	Save
4232	14	Box Elder	*Acer negundo*			Save
4233	16	Box Elder	*Acer negundo*			Save
4234	22,21,13	Box Elder	*Acer negundo*			Save
4235	17	Siberian Elm	*Ulmus pumila*		x	Remove
4236	18	Siberian Elm	*Ulmus pumila*		x	Remove
4237	13	Siberian Elm	*Ulmus pumila*		x	Remove
4238	15	Siberian Elm	*Ulmus pumila*		x	Remove
4239	16	Siberian Elm	*Ulmus pumila*		x	Save
4240	12	Siberian Elm	*Ulmus pumila*		x	Save
4241	12	Siberian Elm	*Ulmus pumila*		x	Save
4242	16,11	Box Elder	*Acer negundo*			Save
4243	12,10	Box Elder	*Acer negundo*			Remove
4244	18,14	Box Elder	*Acer negundo*			Save
4245	14	Box Elder	*Acer negundo*			Save
4246	11	Black Cherry	*Prunus serotina*			Remove
4247	7	Black Cherry	*Prunus serotina*			Remove
4248	21	Box Elder	*Acer negundo*			Remove
4249	7	Black Cherry	*Prunus serotina*			Remove
4250	8	Hackberry	*Celtis occidentalis*			Remove
4251	8	Black Cherry	*Prunus serotina*			Remove
4252	9	Hackberry	*Celtis occidentalis*			Remove
4253	8	Hackberry	*Celtis occidentalis*			Remove
4254	10	Hackberry	*Celtis occidentalis*			Remove
4255	14,12	Siberian Elm	*Ulmus pumila*		x	Remove
4256	10	Hackberry	*Celtis occidentalis*			Remove
4257	21	Box Elder	*Acer negundo*			Remove
4259	13	Black Cherry	*Prunus serotina*			Remove
4260	14	Siberian Elm	*Ulmus pumila*		x	Remove
4261	14	Siberian Elm	*Ulmus pumila*		x	Remove
4262	14	Siberian Elm	*Ulmus pumila*		x	Remove
4263	14	Siberian Elm	*Ulmus pumila*		x	Remove
4264	14	Black Cherry	*Prunus serotina*			Remove
4265	14,8	Siberian Elm	*Ulmus pumila*		x	Remove
4266	19	Siberian Elm	*Ulmus pumila*		x	Remove
4267	12	Box Elder	*Acer negundo*			Remove
4268	12	Box Elder	*Acer negundo*			Remove
4269	8	Black Cherry	*Prunus serotina*			Remove
4270	15	Siberian Elm	*Ulmus pumila*		x	Remove
4271	19	Siberian Elm	*Ulmus pumila*		x	Remove
4272	11	Black Cherry	*Prunus serotina*			Remove
4273	26,6	Box Elder	*Acer negundo*			Remove
4274	23	Box Elder	*Acer negundo*			Save
4275	9	Black Cherry	*Prunus serotina*			Remove
4276	6	Hackberry	*Celtis occidentalis*			Remove

TagID	DBH	Common Name	Scientific Name	Notes	*Non Qualifyin	Status
4277	9	Hackberry	*Celtis occidentalis*			Remove
4278	9	Hackberry	*Celtis occidentalis*			Remove
4279	16	Hackberry	*Celtis occidentalis*			Remove
4280	12	Box Elder	*Acer negundo*			Remove
4281	13	Box Elder	*Acer negundo*			Remove
4282	9	Black Cherry	*Prunus serotina*			Remove
4283	16	Box Elder	*Acer negundo*			Remove
4284	7	Black Cherry	*Prunus serotina*			Off-Site
4285	14	Quaking Aspen	*Populus tremuloides*			Off-Site
4286	7	Black Cherry	*Prunus serotina*			Save
4287	19	Quaking Aspen	*Populus tremuloides*			Remove
4288	13	Black Cherry	*Prunus serotina*			Remove
4289	8	Black Cherry	*Prunus serotina*			Remove
4290	9	Hackberry	*Celtis occidentalis*			Remove
4291	8	Black Cherry	*Prunus serotina*			Remove
4292	9	Black Cherry	*Prunus serotina*			Remove
4293	9	Black Cherry	*Prunus serotina*			Remove
4294	18	Siberian Elm	*Ulmus pumila*		x	Remove
4295	19	Siberian Elm	*Ulmus pumila*		x	Remove
4296	13	Siberian Elm	*Ulmus pumila*		x	Remove
4297	13	Siberian Elm	*Ulmus pumila*		x	Remove
4298	9	Black Cherry	*Prunus serotina*			Remove
4299	9	Hackberry	*Celtis occidentalis*			Remove
4301	5	Red Cedar	*Juniperus virginiana*			Remove
4302	12	Norway Spruce	*Picea abies*			Remove
4303	12	Norway Spruce	*Picea abies*			Remove
4304	17	Box Elder	*Acer negundo*			Remove
4305	14	Norway Spruce	*Picea abies*			Remove
4306	12	Norway Spruce	*Picea abies*			Remove
4307	13	Norway Spruce	*Picea abies*			Remove
4308	26	Box Elder	*Acer negundo*			Save
4309	16	Green Ash	*Fraxinus pennsylvanica*	infested with Emeral Ash Bore	x	Remove
4310	6	Norway Spruce	*Picea abies*			Save
4311	25	Green Ash	*Fraxinus pennsylvanica*	infested with Emeral Ash Bore	x	Remove
4312	16	Green Ash	*Fraxinus pennsylvanica*	infested with Emeral Ash Bore	x	Off-Site
4313	18, 21, 14	Green Ash	*Fraxinus pennsylvanica*	infested with Emeral Ash Bore	x	Off-Site
4314	16	Green Ash	*Fraxinus pennsylvanica*	infested with Emeral Ash Bore	x	Off-Site
4315	21	Green Ash	*Fraxinus pennsylvanica*	infested with Emeral Ash Bore	x	Off-Site
4316	29	Green Ash	*Fraxinus pennsylvanica*	infested with Emeral Ash Bore	x	Off-Site
4317	12	Box Elder	*Acer negundo*			Remove
4318	13	Box Elder	*Acer negundo*			Remove
4319	22	Green Ash	*Fraxinus pennsylvanica*	infested with Emeral Ash Bore	x	Remove
4320	21	Green Ash	*Fraxinus pennsylvanica*	infested with Emeral Ash Bore	x	Remove
4321	16	Siberian Elm	*Ulmus pumila*		x	Save
4322	15	Green Ash	*Fraxinus pennsylvanica*	infested with Emeral Ash Bore	x	Remove
4323	16	Box Elder	*Acer negundo*			Save
4324	17	Box Elder	*Acer negundo*			Save
4325	12, 6	Box Elder	*Acer negundo*			Save
4326	18,	Box Elder	*Acer negundo*			Remove
4327	16, 11, 12, 12	Box Elder	*Acer negundo*			Remove
4328	16, 17, 13	Box Elder	*Acer negundo*			Remove
4329	17	Box Elder	*Acer negundo*			Remove
4330	13	Box Elder	*Acer negundo*			Remove
4331	17	Box Elder	*Acer negundo*			Off-Site
4332	15	Box Elder	*Acer negundo*			Off-Site
4333	16	Box Elder	*Acer negundo*			Remove
4334	15	Box Elder	*Acer negundo*			Remove
4335	17, 13, 11	Box Elder	*Acer negundo*			Off-Site
4336	17	Box Elder	*Acer negundo*			Off-Site
4337	17, 16	Box Elder	*Acer negundo*			Off-Site
4338	19, 12	Box Elder	*Acer negundo*			Remove
4339	16, 11	Box Elder	*Acer negundo*			Remove
4340	19, 10	Box Elder	*Acer negundo*			Remove
4341	17	Box Elder	*Acer negundo*			Off-Site
4342	17	Siberian Elm	*Ulmus pumila*		x	Save
4343	14	Siberian Elm	*Ulmus pumila*		x	save
4344	12	Box Elder	*Acer negundo*			Save
4345	25	Box Elder	*Acer negundo*			Off-Site
4346	16, 7	Green Ash	*Fraxinus pennsylvanica*	infested with Emeral Ash Bore	x	Off-Site
4401	15, 12	Box Elder	*Acer negundo*			Remove
4402	16	Box Elder	*Acer negundo*			Remove
4403	13	Box Elder	*Acer negundo*			Remove
4404	13, 11	Box Elder	*Acer negundo*			Remove
4405	27, 10	Siberian Elm	*Ulmus pumila*		x	Remove
4406	2, 10, 10, 9, 10,	Box Elder	*Acer negundo*			Remove
4407	12	Box Elder	*Acer negundo*	evidence of decay		Remove
4408	14	American Elm	*Ulmus americana*		x	Remove
4409	17	Siberian Elm	*Ulmus pumila*		x	Remove
4410	14	Siberian Elm	*Ulmus pumila*		x	Remove
4411	21	Siberian Elm	*Ulmus pumila*		x	Remove
4412	14	Box Elder	*Acer negundo*	evidence of decay		Remove
4413	15	Box Elder	*Acer negundo*			Remove
4414	16	Box Elder	*Acer negundo*			Remove
4415	14	Hackberry	*Celtis occidentalis*			Remove
4416	13	Siberian Elm	*Ulmus pumila*		x	Remove
4417	14	Siberian Elm	*Ulmus pumila*		x	Remove
4418	19	Siberian Elm	*Ulmus pumila*		x	Remove
4419	17	Siberian Elm	*Ulmus pumila*		x	Remove
4420	13	Box Elder	*Acer negundo*			Remove
4421	14, 11	Siberian Elm	*Ulmus pumila*		x	Remove
4422	12	Siberian Elm	*Ulmus pumila*		x	Remove
4423	12, 11, 9	Siberian Elm	*Ulmus pumila*	decay at base	x	Remove
4424	15	Siberian Elm	*Ulmus pumila*		x	Remove
4425	15	Siberian Elm	*Ulmus pumila*		x	Remove
4426	19	Box Elder	*Acer negundo*			Remove
4427	19, 9	Hackberry	*Celtis occidentalis*			Remove
4428	15	Hackberry	*Celtis occidentalis*			Remove
4429	19, 19	Siberian Elm	*Ulmus pumila*		x	Remove
4430	17	Siberian Elm	*Ulmus pumila*		x	Remove
4431	20	Siberian Elm	*Ulmus pumila*		x	Remove

TagID	DBH	Common Name	Scientific Name	Notes	*Non Qualifyin	Status
4432	17	Siberian Elm	*Ulmus pumila*		x	Remove
4433	14, 5, 5	Siberian Elm	*Ulmus pumila*		x	Remove
4434	26	Siberian Elm	*Ulmus pumila*	evidence of decay	x	Remove
4435	13	Hackberry	*Celtis occidentalis*			Remove
4436	12	Hackberry	*Celtis occidentalis*			Remove
4437	20	Hackberry	*Celtis occidentalis*			Remove
4438	15	Siberian Elm	*Ulmus pumila*		x	Remove
4439	15, 11	Siberian Elm	*Ulmus pumila*		x	Remove
4440	15	Siberian Elm	*Ulmus pumila*		x	Remove
4441	22	American Elm	*Ulmus americana*		x	Remove
4442	13	Box Elder	*Acer negundo*	evidence of decay		Remove
4443	15	Hackberry	*Celtis occidentalis*			Remove
4444	20	Hackberry	*Celtis occidentalis*			Remove
4445	13	Box Elder	*Acer negundo*			Remove
4446	12	Hackberry	*Celtis occidentalis*			Remove
4447	15	Siberian Elm	*Ulmus pumila*		x	Remove
4448	21	Siberian Elm	*Ulmus pumila*		x	Remove
4449	13	Black Cherry	*Prunus serotina*			Remove
4450	13	Hackberry	*Celtis occidentalis*			Remove
4451	12	Siberian Elm	*Ulmus pumila*		x	Remove
4452	19	Siberian Elm	*Ulmus pumila*		x	Remove
4453	13	Black Cherry	*Prunus serotina*			Remove
4454	24	Hackberry	*Celtis occidentalis*			Remove
4455	12	Hackberry	*Celtis occidentalis*			Remove
4456	12, 8	Siberian Elm	*Ulmus pumila*		x	Remove
4457	18	Siberian Elm	*Ulmus pumila*		x	Remove
4458	12	Hackberry	*Celtis occidentalis*			Remove
4459	13	Siberian Elm	*Ulmus pumila*		x	Remove
4460	13	Siberian Elm	*Ulmus pumila*		x	Remove
4461	13	Hackberry	*Celtis occidentalis*			Remove
4462	19	Siberian Elm	*Ulmus pumila*		x	Remove
4463	12, 11	Siberian Elm	*Ulmus pumila*		x	Remove
4464	21	Box Elder	*Acer negundo*			Remove
4465	13	Siberian Elm	*Ulmus pumila*	evidence of decay	x	Remove
4466	12	Siberian Elm	*Ulmus pumila*		x	Remove
4467	17	American Elm	*Ulmus americana*		x	Remove
4468	17	Siberian Elm	*Ulmus pumila*		x	Remove
4469	19	Siberian Elm	*Ulmus pumila*		x	Remove
4470	17	Siberian Elm	*Ulmus pumila*		x	Remove
4471	12	American Elm	*Ulmus americana*		x	Remove
4472	15	Black Cherry	*Prunus serotina*			Remove
4473	12	Box Elder	*Acer negundo*	evidence of decay		Remove
4474	16	Siberian Elm	*Ulmus pumila*		x	Remove
4475	22	Siberian Elm	*Ulmus pumila*		x	Remove
4476	9	Red Cedar	*Juniperus virginiana*			Remove
4477	5	Red Cedar	*Juniperus virginiana*			Remove
4478	6	Red Cedar	*Juniperus virginiana*			Remove
4479	20	Box Elder	*Acer negundo*	evidence of decay		Remove
4480	16	Box Elder	*Acer negundo*			Remove
4481	13	Box Elder	*Acer negundo*			Remove
4482	3	Red Cedar	*Juniperus virginiana*			Remove
4483	23	Box Elder	*Acer negundo*			Remove
4484	15, 15	Box Elder	*Acer negundo*	evidence of decay		Remove
4485	20	Box Elder	*Acer negundo*			Remove
4486	12	American Elm	*Ulmus americana*		x	Remove
4487	15	American Elm	*Ulmus americana*		x	Remove
4488	13	American Elm	*Ulmus americana*		x	Remove
4489	13	American Elm	*Ulmus americana*		x	Remove
4490	24	Box Elder	*Acer negundo*			Remove
4491	23	Box Elder	*Acer negundo*			Remove
4492	25	Box Elder	*Acer negundo*			Remove
4493	14	American Elm	*Ulmus americana*		x	Remove
4494	13	Box Elder	*Acer negundo*			Remove
4495	19	Box Elder	*Acer negundo*			Remove
4496	15	Norway Spruce	*Picea abies*			Remove
4497	11	Norway Spruce	*Picea abies*			Remove
4498	12	Norway Spruce	*Picea abies*			Remove
4499	12	Norway Spruce	*Picea abies*			Remove
4500	12	Norway Spruce	*Picea abies*			Remove
4746	25	Siberian Elm	*Ulmus pumila*	decay at base	x	Remove
4747	15	Siberian Elm	*Ulmus pumila*	broken top, decay along base	x	Remove
4748	13	Siberian Elm	*Ulmus pumila*		x	Remove
4749	14	Siberian Elm	*Ulmus pumila*		x	Remove
4750	15,12	Siberian Elm	*Ulmus pumila*		x	Remove
4751	16	Siberian Elm	*Ulmus pumila*		x	Remove
4752	13	Siberian Elm	*Ulmus pumila*		x	Remove
4753	17	Siberian Elm	*Ulmus pumila*		x	Remove
4754	14	Siberian Elm	*Ulmus pumila*		x	Remove
4755	12	Siberian Elm	*Ulmus pumila*		x	Remove
4756	12	Siberian Elm	*Ulmus pumila*		x	Remove
4757	13	Siberian Elm	*Ulmus pumila*		x	Remove
4758	12	Siberian Elm	*Ulmus pumila*		x	Remove
4759	12	Siberian Elm	*Ulmus pumila*		x	Remove
4760	15	Siberian Elm	*Ulmus pumila*		x	Remove
4761	15	Siberian Elm	*Ulmus pumila*		x	Remove
4762	15	Siberian Elm	*Ulmus pumila*		x	Remove
4763	21	Siberian Elm	*Ulmus pumila*		x	Remove
4764	13	Siberian Elm	*Ulmus pumila*		x	Remove
4765	14	Siberian Elm	*Ulmus pumila*		x	Remove
4766	12,8	Siberian Elm	*Ulmus pumila*		x	Remove
4767	13	Siberian Elm	*Ulmus pumila*		x	Remove
4768	12	Siberian Elm	*Ulmus pumila*		x	Remove
4769	32	Siberian Elm	*Ulmus pumila*		x	Remove
4770	16,15,7	American Elm	*Ulmus americana*		x	Remove
4771	20	Siberian Elm	*Ulmus pumila*		x	Remove
4772	13,6	Siberian Elm	*Ulmus pumila*		x	Remove
4773	13	Siberian Elm	*Ulmus pumila*		x	Remove
4774	12	Siberian Elm	*Ulmus pumila*		x	Remove
4775	14	Siberian Elm	*Ulmus pumila*		x	Remove
4776	13	Siberian Elm	*Ulmus pumila*		x	Remove

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I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Landscape Architect under the laws of the State of Minnesota

Name Jennifer L. Thompson
Reg. No. 44763 Date 1-9-2026

Revisions

Date 01-16-26
Designed JLT
Drawn JLT

TREE PRESERVATION PLAN

LENNAR
16305 36TH AVENUE NORTH
PLYMOUTH, MINNESOTA 55446

TALCOTT GLEN
COTTAGE GROVE, MINNESOTA

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TagID	DBH	Common Name	Scientific Name	Notes	*Non Qualifyin	Status
4777	13	Siberian Elm	*Ulmus pumila*		x	Remove
4778	15	Siberian Elm	*Ulmus pumila*		x	Remove
4779	16	Siberian Elm	*Ulmus pumila*		x	Remove
4780	13,10	Siberian Elm	*Ulmus pumila*		x	Remove
4781	14	Siberian Elm	*Ulmus pumila*		x	Remove
4782	12	Siberian Elm	*Ulmus pumila*		x	Remove
4783	13	Siberian Elm	*Ulmus pumila*		x	Remove
4784	18,15	Siberian Elm	*Ulmus pumila*		x	Remove
4785	17	Siberian Elm	*Ulmus pumila*		x	Remove
4786	14	Siberian Elm	*Ulmus pumila*		x	Remove
4787	12	Siberian Elm	*Ulmus pumila*		x	Remove
4788	22	Siberian Elm	*Ulmus pumila*		x	Remove
4789	19	Siberian Elm	*Ulmus pumila*		x	Remove
4790	18	Siberian Elm	*Ulmus pumila*		x	Remove
4791	19	Siberian Elm	*Ulmus pumila*		x	Remove
4792	21	Siberian Elm	*Ulmus pumila*		x	Remove
4793	19	Siberian Elm	*Ulmus pumila*		x	Remove
4794	19	Black Cherry	*Prunus serotina*			Remove
4795	,4, 13, 12, 12, 12	Box Elder	*Acer negundo*			Remove
4796	14	Box Elder	*Acer negundo*			Remove
4797	12, 10	Box Elder	*Acer negundo*			Remove
4798	12	Box Elder	*Acer negundo*			Remove
4799	12	Siberian Elm	*Ulmus pumila*		x	Remove
4800	12	Box Elder	*Acer negundo*			Remove
4801	17	Siberian Elm	*Ulmus pumila*		x	Remove
4802	9	Black Cherry	*Prunus serotina*			Remove
4803	13	Hackberry	*Celtis occidentalis*			Remove
4804	9	Hackberry	*Celtis occidentalis*			Remove
4805	9	Hackberry	*Celtis occidentalis*			Remove
4806	10	Hackberry	*Celtis occidentalis*			Remove
4807	6	Black Cherry	*Prunus serotina*			Remove
4808	11	Black Cherry	*Prunus serotina*			Remove
4809	9	Black Cherry	*Prunus serotina*			Remove
4810	8	Black Cherry	*Prunus serotina*			Remove
4811	18	Black Cherry	*Prunus serotina*			Remove
4812	10	Black Cherry	*Prunus serotina*			Remove
4813	13	Hackberry	*Celtis occidentalis*			Remove
4814	14	Black Cherry	*Prunus serotina*			Remove
4815	18,10	Siberian Elm	*Ulmus pumila*		x	Remove
4816	7	Black Cherry	*Prunus serotina*			Remove
4817	17	Black Cherry	*Prunus serotina*			Remove
4818	24	Siberian Elm	*Ulmus pumila*		x	Remove
4819	10	Black Cherry	*Prunus serotina*			Remove
4820	10,9	Red Cedar	*Juniperus virginiana*			Remove
4822	7	Black Cherry	*Prunus serotina*			Remove
4823	9	Red Cedar	*Juniperus virginiana*			Remove
4824	21	Red Cedar	*Juniperus virginiana*			Remove
4825	8	Red Cedar	*Juniperus virginiana*			Remove
4826	11	Red Cedar	*Juniperus virginiana*			Remove
4827	7	Red Cedar	*Juniperus virginiana*			Remove
4828	10	Red Cedar	*Juniperus virginiana*			Remove
4829	17	Black Cherry	*Prunus serotina*			Remove
4830	7	Red Cedar	*Juniperus virginiana*			Remove
4831	5	Red Cedar	*Juniperus virginiana*			Remove
4832	18	Hackberry	*Celtis occidentalis*			Remove
4833	8	Red Cedar	*Juniperus virginiana*			Remove
4834	10	Hackberry	*Celtis occidentalis*			Remove
4835	12	Hackberry	*Celtis occidentalis*			Remove
4836	16	Black Cherry	*Prunus serotina*			Remove
4837	12	Black Cherry	*Prunus serotina*			Remove
4838	8	Black Cherry	*Prunus serotina*			Remove
4839	18,15	Box Elder	*Acer negundo*	major trunk decay, both trunk	x	Remove
4840	10	Black Cherry	*Prunus serotina*			Remove
4841	11	Black Cherry	*Prunus serotina*			Remove
4842	6	Black Cherry	*Prunus serotina*			Remove
4843	8	Black Cherry	*Prunus serotina*			Remove
4844	14	Black Cherry	*Prunus serotina*	hollow trunk section		Remove
4845	9	Black Cherry	*Prunus serotina*			Remove
4846	12	Black Cherry	*Prunus serotina*			Remove
4847	7	Black Cherry	*Prunus serotina*			Remove
4848	11	Black Cherry	*Prunus serotina*			Remove
4849	18	Black Cherry	*Prunus serotina*	decay at base		Remove
4850	14	Black Cherry	*Prunus serotina*			Remove
4851	7	Hackberry	*Celtis occidentalis*			Remove
4852	23	Siberian Elm	*Ulmus pumila*		x	Remove
4853	10	Black Cherry	*Prunus serotina*			Remove
4854	8	Black Cherry	*Prunus serotina*			Remove
4855	13	Black Cherry	*Prunus serotina*			Remove
4856	12	Siberian Elm	*Ulmus pumila*		x	Remove
4857	13,11	Box Elder	*Acer negundo*			Remove
4858	15,11	Box Elder	*Acer negundo*			Remove
4859	16	Black Cherry	*Prunus serotina*			Remove
4860	12	Red Cedar	*Juniperus virginiana*			Remove
4861	8	Red Cedar	*Juniperus virginiana*			Remove
4862	9	Red Cedar	*Juniperus virginiana*			Remove
4863	12,17,12	Siberian Elm	*Ulmus pumila*		x	Remove
4864	9	Black Cherry	*Prunus serotina*			Remove
4865	9	Red Cedar	*Juniperus virginiana*			Remove
4866	17	Siberian Elm	*Ulmus pumila*		x	Remove
4867	17	Siberian Elm	*Ulmus pumila*		x	Remove
4868	7	Red Cedar	*Juniperus virginiana*			Remove
4869	7	Red Cedar	*Juniperus virginiana*			Remove
4870	16	Siberian Elm	*Ulmus pumila*		x	Remove
4871	11	Black Cherry	*Prunus serotina*			Remove
4872	15	Siberian Elm	*Ulmus pumila*		x	Remove
4873	16	Siberian Elm	*Ulmus pumila*		x	Remove
4874	11	Red Cedar	*Juniperus virginiana*			Remove
4875	11	Red Cedar	*Juniperus virginiana*			Remove
4876	11	Red Cedar	*Juniperus virginiana*			Remove
4877	21	Box Elder	*Acer negundo*			Remove

TagID	DBH	Common Name	Scientific Name	Notes	*Non Qualifyin	Status
4878	18	Red Cedar	*Juniperus virginiana*			Remove
4879	9	Hackberry	*Celtis occidentalis*			Remove
4880	17	Siberian Elm	*Ulmus pumila*		x	Remove
4881	11	Siberian Elm	*Ulmus pumila*		x	Remove
4882	17	Siberian Elm	*Ulmus pumila*		x	Remove
4883	6	Red Cedar	*Juniperus virginiana*			Remove
4884	10	Red Cedar	*Juniperus virginiana*			Remove
4885	6	Red Cedar	*Juniperus virginiana*			Remove
4886	7	Red Cedar	*Juniperus virginiana*			Remove
4887	8	Red Cedar	*Juniperus virginiana*			Remove
4888	7	Red Cedar	*Juniperus virginiana*			Remove
4889	6	Red Cedar	*Juniperus virginiana*			Remove
4890	9	Red Cedar	*Juniperus virginiana*			Remove
4891	9	Red Cedar	*Juniperus virginiana*			Remove
4892	15	Box Elder	*Acer negundo*			Remove
4893	20	Siberian Elm	*Ulmus pumila*		x	Remove
4894	6	Red Cedar	*Juniperus virginiana*			Remove
4895	6	Red Cedar	*Juniperus virginiana*			Remove
4896	14,8	Box Elder	*Acer negundo*	major decline, decay at base	x	Remove
4897	7	Red Cedar	*Juniperus virginiana*			Remove
4898	7	Red Cedar	*Juniperus virginiana*			Remove
4899	12	Red Cedar	*Juniperus virginiana*			Remove
4900	18	Siberian Elm	*Ulmus pumila*		x	Remove
4901	16	Red Cedar	*Juniperus virginiana*			Remove
4902	6	Red Cedar	*Juniperus virginiana*			Remove
4903	5	Red Cedar	*Juniperus virginiana*			Remove
4904	6	Red Cedar	*Juniperus virginiana*			Remove
4905	11	Red Cedar	*Juniperus virginiana*			Remove
4906	14,11	Box Elder	*Acer negundo*	decay at base		Remove
4907	8	Black Cherry	*Prunus serotina*			Remove
4908	7	Red Cedar	*Juniperus virginiana*			Remove
4909	13	Black Cherry	*Prunus serotina*			Remove
4910	12,12,10,11	Box Elder	*Acer negundo*	decay along trunk		Remove
4911	9	Black Cherry	*Prunus serotina*			Remove
4912	7	Black Cherry	*Prunus serotina*			Remove
4913	8	Black Cherry	*Prunus serotina*			Remove
4914	21	Siberian Elm	*Ulmus pumila*		x	Remove
4915	15,15	Box Elder	*Acer negundo*			Remove
4916	7,10	Black Cherry	*Prunus serotina*			Remove
4917	16	Siberian Elm	*Ulmus pumila*		x	Remove
4918	22	Box Elder	*Acer negundo*			Remove
4919	21,21	Box Elder	*Acer negundo*			Remove
4920	12	American Elm	*Ulmus americana*		x	Remove
4921	18	Box Elder	*Acer negundo*			Remove
4922	20	Siberian Elm	*Ulmus pumila*		x	Remove
4923	14	Black Cherry	*Prunus serotina*			Remove
4924	18,16	Siberian Elm	*Ulmus pumila*		x	Remove
4925	9	Black Cherry	*Prunus serotina*			Remove
4926	18,17	Box Elder	*Acer negundo*			Remove
4927	19	Box Elder	*Acer negundo*			Remove
4928	12	Box Elder	*Acer negundo*			Remove
4929	13,16	Box Elder	*Acer negundo*			Remove
4930	12	Box Elder	*Acer negundo*			Remove
4931	5,2	Red Cedar	*Juniperus virginiana*			Remove
4932	15	Siberian Elm	*Ulmus pumila*		x	Remove
4933	11	Black Cherry	*Prunus serotina*			Remove
4934	16	Box Elder	*Acer negundo*			Remove
4935	21	Box Elder	*Acer negundo*			Save
4936	22,22	Box Elder	*Acer negundo*			Remove
4937	11	Hackberry	*Celtis occidentalis*			Remove
4938	10	Hackberry	*Celtis occidentalis*			Remove
4939	12	Box Elder	*Acer negundo*			Remove
6566	21,16	Box Elder	*Acer negundo*			Save
6615	,6, 10, 14, 14, 8,	Box Elder	*Acer negundo*			Remove
6620	14, 7, 14, 16	Black Cherry	*Prunus serotina*			Remove
6622	7,6,6	Black Cherry	*Prunus serotina*			Remove
6623	6	Red Cedar	*Juniperus virginiana*			Remove
6624	10	Red Cedar	*Juniperus virginiana*			Remove
6628	19	White Pine	*Pinus strobus*			Remove
6629	11	Red Cedar	*Juniperus virginiana*			Remove
6630	12,14	Box Elder	*Acer negundo*			Remove
6631	19	Box Elder	*Acer negundo*			Remove
6636	14	Black Cherry	*Prunus serotina*			Remove
6650	16	Red Cedar	*Juniperus virginiana*			Remove
6655	15	Box Elder	*Acer negundo*			Remove
6657	9	Black Cherry	*Prunus serotina*			Remove
6659	17	Box Elder	*Acer negundo*			Remove
6663	16,10	Box Elder	*Acer negundo*			Remove
6666	12	Box Elder	*Acer negundo*			Remove
6670	12	Box Elder	*Acer negundo*			Remove
6672	8	Black Cherry	*Prunus serotina*			Remove
6677	13	Box Elder	*Acer negundo*			Remove
6678	16,11,9	Box Elder	*Acer negundo*	decay at base		Remove
6681	12	Box Elder	*Acer negundo*			Remove
6683	14	Box Elder	*Acer negundo*			Remove
6685	12	Hackberry	*Celtis occidentalis*			Remove
6689	16,12	Box Elder	*Acer negundo*			Remove
6690	18	Box Elder	*Acer negundo*			Remove
6692	15	Box Elder	*Acer negundo*			Remove
6698	13,9	Hackberry	*Celtis occidentalis*			Remove
6699	45	Cottonwood	*Populus deltoides*			Remove
6700	17	Black Cherry	*Prunus serotina*	evidence of decay		Remove

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I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Landscape Architect under the laws of the State of Minnesota

Name Jennifer L. Thompson
Reg. No. 44763 Date 1-9-2026

Revisions

Date	01-16-26
Designed	JLT
Drawn	JLT

TREE PRESERVATION PLAN

LENNAR
16305 36TH AVENUE NORTH
PLYMOUTH, MINNESOTA 55446

TALCOTT GLEN
COTTAGE GROVE, MINNESOTA

T8 OF 8

00-PLAN-1231005-SHEET-TREE

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Tag No.	DBH	Common Name	Scientific Name	Notes	Non Qualifying	
8601	13	Siberian Elm	*Ulmus pumila*		x	Remove
8602	21,20	Siberian Elm	*Ulmus pumila*		x	Remove
8603	22	Siberian Elm	*Ulmus pumila*		x	Remove
8604	13	Siberian Elm	*Ulmus pumila*		x	Remove
8605	19	American Elm	*Ulmus americana*		x	Remove
8606	13	American Elm	*Ulmus americana*		x	Remove
8607	10	Hackberry	*Celtis occidentalis*			Remove
8608	27	Siberian Elm	*Ulmus pumila*		x	Remove
8609	30,13	Siberian Elm	*Ulmus pumila*		x	Remove
8610	12	American Elm	*Ulmus americana*	decay along trunk	x	Remove
8611	20,14	Siberian Elm	*Ulmus pumila*	decay along trunk	x	Remove
8612	15	Siberian Elm	*Ulmus pumila*		x	Remove
8613	14	Siberian Elm	*Ulmus pumila*		x	Remove
8614	26	Siberian Elm	*Ulmus pumila*	missing a main branch near base, decay	x	Remove
8615	17	Siberian Elm	*Ulmus pumila*		x	Remove
8616	12	Siberian Elm	*Ulmus pumila*		x	Remove
8617	24	Siberian Elm	*Ulmus pumila*		x	Remove
8618	30,16,14	Siberian Elm	*Ulmus pumila*	decay along trunk	x	Remove
8619	22	Siberian Elm	*Ulmus pumila*	decay along trunk	x	Remove
8620	8	Hackberry	*Celtis occidentalis*			Remove
8625	15	Siberian Elm	*Ulmus pumila*		x	Remove
8622	7	Hackberry	*Celtis occidentalis*			Remove
8623	29	Siberian Elm	*Ulmus pumila*		x	Remove
8624	17	Siberian Elm	*Ulmus pumila*		x	Remove
8625	23,14	Siberian Elm	*Ulmus pumila*		x	Remove
8626	38,25	Siberian Elm	*Ulmus pumila*	decay along trunk, large branches missi	x	Remove
8627	21	Siberian Elm	*Ulmus pumila*		x	Remove
8628	14	Siberian Elm	*Ulmus pumila*		x	Remove
8629	15	Siberian Elm	*Ulmus pumila*		x	Remove
8630	16	Siberian Elm	*Ulmus pumila*		x	Remove
8631	13	Siberian Elm	*Ulmus pumila*		x	Remove
8632	12	Siberian Elm	*Ulmus pumila*		x	Remove
8633	13	Box Elder	*Acer negundo*			Remove
8634	29	Siberian Elm	*Ulmus pumila*		x	Remove
8635	12	Box Elder	*Acer negundo*			Remove
8636	15,14,3	Siberian Elm	*Ulmus pumila*		x	Remove
8637	35	Siberian Elm	*Ulmus pumila*	decay along trunk	x	Remove
8638	13	Siberian Elm	*Ulmus pumila*		x	Remove
8639	15	American Elm	*Ulmus americana*		x	Remove
8640	12,10	Siberian Elm	*Ulmus pumila*		x	Remove
8641	20	Siberian Elm	*Ulmus pumila*		x	Remove
8642	12	Siberian Elm	*Ulmus pumila*		x	Remove
8643	16,6	Siberian Elm	*Ulmus pumila*		x	Remove
8644	12	Hackberry	*Celtis occidentalis*			Remove
8645	12	Siberian Elm	*Ulmus pumila*		x	Remove
8646	12,7	Siberian Elm	*Ulmus pumila*		x	Remove
8647	15	Siberian Elm	*Ulmus pumila*		x	Remove
8648	12	Siberian Elm	*Ulmus pumila*		x	Remove
8649	16	Siberian Elm	*Ulmus pumila*		x	Remove
8650	14	Siberian Elm	*Ulmus pumila*		x	Remove
8651	17	Siberian Elm	*Ulmus pumila*		x	Remove
8652	19	Siberian Elm	*Ulmus pumila*		x	Remove
8653	13,11	Siberian Elm	*Ulmus pumila*	decay along trunk	x	Remove
8654	13	Box Elder	*Acer negundo*			Remove
8655	10,8	Hackberry	*Celtis occidentalis*			Remove
8656	14	Siberian Elm	*Ulmus pumila*		x	Remove
8657	10	Hackberry	*Celtis occidentalis*			Remove
8658	25	Siberian Elm	*Ulmus pumila*		x	Remove
8659	37	Siberian Elm	*Ulmus pumila*		x	Remove
8660	17	Hackberry	*Celtis occidentalis*			Remove
8661	13	Hackberry	*Celtis occidentalis*			Remove
8662	17	Siberian Elm	*Ulmus pumila*		x	Remove
8663	13	Hackberry	*Celtis occidentalis*			Remove
8664	22	Siberian Elm	*Ulmus pumila*	decay along trunk	x	Remove
8665	14,13	Siberian Elm	*Ulmus pumila*		x	Remove
8666	14	Siberian Elm	*Ulmus pumila*		x	Remove
8667	13	Siberian Elm	*Ulmus pumila*		x	Remove
8668	35	Siberian Elm	*Ulmus pumila*		x	Remove
8669	8	Hackberry	*Celtis occidentalis*			Remove
8670	3	Red Cedar	*Juniperus virginiana*	15' in height		Remove
8671	4	Red Cedar	*Juniperus virginiana*	17' in height		Remove
8672	2	Red Cedar	*Juniperus virginiana*	15' in height		Remove
8673	3	Red Cedar	*Juniperus virginiana*	15' in height		Remove
8674	3	Red Cedar	*Juniperus virginiana*	15' in height		Remove

Tag No.	DBH	Common Name	Scientific Name	Notes	Non Qualifying	
8675	3	Red Cedar	*Juniperus virginiana*	15' in height		Remove
8676	3	Red Cedar	*Juniperus virginiana*	15' in height		Remove
8677	3	Red Cedar	*Juniperus virginiana*	15' in height		Remove
8678	3	Red Cedar	*Juniperus virginiana*	15' in height		Remove
8679	3	Red Cedar	*Juniperus virginiana*	15' in height		Save
8680	5	Red Cedar	*Juniperus virginiana*	25' in height		Save
8681	2	Red Cedar	*Juniperus virginiana*	15' in height		Save
8682	5,3	Red Cedar	*Juniperus virginiana*	25' in height		Save
8683	6	Red Cedar	*Juniperus virginiana*	25' in height		Save
8684	3,3,2	Red Cedar	*Juniperus virginiana*	15' in height		Save
8685	5	Red Cedar	*Juniperus virginiana*	25' in height		Save
8686	5	Red Cedar	*Juniperus virginiana*	15' in height		Save
8687	4	Red Cedar	*Juniperus virginiana*	15' in height		Save
8688	6	Red Cedar	*Juniperus virginiana*	25' in height		Save
8689	6	Red Cedar	*Juniperus virginiana*	20' in height		Save
8690	3	Red Cedar	*Juniperus virginiana*	15' in height		Save
8691	5,3	Red Cedar	*Juniperus virginiana*	20' in height		Save
8692	4	Red Cedar	*Juniperus virginiana*	15' in height		Remove
8693	2	Red Cedar	*Juniperus virginiana*	15' in height		Remove
8694	5	Red Cedar	*Juniperus virginiana*	20' in height		Remove
8695	3	Red Cedar	*Juniperus virginiana*	25' in height		Remove
8696	3	Red Cedar	*Juniperus virginiana*	20' in height		Remove
8697	2	Red Cedar	*Juniperus virginiana*	20' in height		Remove
8698	4	Red Cedar	*Juniperus virginiana*	30' in height		Remove
8699	2	Red Cedar	*Juniperus virginiana*	15' in height		Remove
8700	11	Red Cedar	*Juniperus virginiana*	30' in height		Remove
8701	13	Red Cedar	*Juniperus virginiana*	35' in height		Remove
8702	4	Red Cedar	*Juniperus virginiana*	25' in height		Save
8703	2	Red Cedar	*Juniperus virginiana*	25' in height		Save
8704	8	Red Cedar	*Juniperus virginiana*	30' in height		Save
8705	8	Red Cedar	*Juniperus virginiana*	30' in height		Save
8706	3	Red Cedar	*Juniperus virginiana*	15' in height		Save
8707	9	Red Cedar	*Juniperus virginiana*	30' in height		Remove
8708	4	Red Cedar	*Juniperus virginiana*	25' in height		Remove
8709	13	Red Cedar	*Juniperus virginiana*	40' in height		Remove
8710	5	Red Cedar	*Juniperus virginiana*	30' in height		Save
8711	18,6	Red Cedar	*Juniperus virginiana*	40' in height		Save
8712	6	Red Cedar	*Juniperus virginiana*	30' in height		Save
8713	5	Red Cedar	*Juniperus virginiana*	30' in height		Save
8714	2	Red Cedar	*Juniperus virginiana*	25' in height		Save
8715	2	Red Cedar	*Juniperus virginiana*	15' in height		Save
8716	8	Red Cedar	*Juniperus virginiana*	30' in height		Save
8717	9	Red Cedar	*Juniperus virginiana*	35' in height		Save
8718	4	Red Cedar	*Juniperus virginiana*	30' in height		Save
8719	6	Red Cedar	*Juniperus virginiana*	35' in height		Save
8720	3	Red Cedar	*Juniperus virginiana*	20' in height		Save
8721	14	Red Cedar	*Juniperus virginiana*	30' in height		Save
8722	4	Red Cedar	*Juniperus virginiana*	30' in height		Save
8723	6	Red Cedar	*Juniperus virginiana*	30' in height		Save
8724	3	Red Cedar	*Juniperus virginiana*	15' in height		Save
8725	5	Red Cedar	*Juniperus virginiana*	15' in height		Save
8726	6	Red Cedar	*Juniperus virginiana*	30' in height		Save
8727	3	Red Cedar	*Juniperus virginiana*	15' in height		Save
8728	6	Red Cedar	*Juniperus virginiana*	35' in height		Save
8729	5	Red Cedar	*Juniperus virginiana*	15' in height		Save
8730	5	Red Cedar	*Juniperus virginiana*	30' in height		Save
8731	3	Red Cedar	*Juniperus virginiana*	15' in height		Save
8732	10	Red Cedar	*Juniperus virginiana*	30' in height		Save
8733	15,10	Red Cedar	*Juniperus virginiana*	35' in height		Save
8734	5	Red Cedar	*Juniperus virginiana*	25' in height		Save
8735	3	Red Cedar	*Juniperus virginiana*	15' in height		Save
8736	3	Red Cedar	*Juniperus virginiana*	20' in height		Save
8737	4	Red Cedar	*Juniperus virginiana*	15' in height		Save
8738	3	Red Cedar	*Juniperus virginiana*	20' in height		Save
8739	4	Red Cedar	*Juniperus virginiana*	25' in height		Save
8740	4	Red Cedar	*Juniperus virginiana*	20' in height		Save
8741	3	Red Cedar	*Juniperus virginiana*	20' in height		Save
8742	2	Red Cedar	*Juniperus virginiana*	15' in height		Save
8743	14,8,8	Siberian Elm	*Ulmus pumila*		x	Save
8744	4	Red Cedar	*Juniperus virginiana*	20' in height		Save
8745	4	Red Cedar	*Juniperus virginiana*	25' in height		Save
8746	3	Red Cedar	*Juniperus virginiana*	25' in height		Save
8747	12,8	Siberian Elm	*Ulmus pumila*		x	Remove
8748	7	Black Cherry	*Prunus serotina*			Remove
8749	14,8	Box Elder	*Acer negundo*			Remove

Tag No.	DBH	Common Name	Scientific Name	Notes	Non Qualifying	
8750	15	Siberian Elm	*Ulmus pumila*		x	Remove
8751	7	Black Cherry	*Prunus serotina*			Remove
8752	15	American Elm	*Ulmus americana*		x	Remove
8753	16	American Elm	*Ulmus americana*		x	Remove
8754	13	Box Elder	*Acer negundo*	90% of crown missing	x	Remove
8755	12	Box Elder	*Acer negundo*			Remove
8756	15	Box Elder	*Acer negundo*			Remove
8757	18	Box Elder	*Acer negundo*			Remove
8758	17	Box Elder	*Acer negundo*			Remove
8759	15	Siberian Elm	*Ulmus pumila*	decay along trunk	x	Save
8760	15	Siberian Elm	*Ulmus pumila*		x	Save
8761	17	Siberian Elm	*Ulmus pumila*		x	Save
8762	20	Box Elder	*Acer negundo*	50% of crown dead		Remove
8763	14	Green Ash	*Fraxinus pennsylvanica*	infected by emerald ash borer	x	Remove
8764	3	Red Cedar	*Juniperus virginiana*	15' in height		Remove
8765	2	Red Cedar	*Juniperus virginiana*	20' in height		Remove
8766	3	Red Cedar	*Juniperus virginiana*	15' in height		Remove
8767	14	Box Elder	*Acer negundo*			Save
8768	3	Red Cedar	*Juniperus virginiana*	20' in height		Save
8769	12,10,9	Box Elder	*Acer negundo*			Save
8770	5	Red Cedar	*Juniperus virginiana*	25' in height		Save
8771	2	Red Cedar	*Juniperus virginiana*	15' in height		Save
8772	3	Red Cedar	*Juniperus virginiana*	20' in height		Save
8773	22	Red Cedar	*Juniperus virginiana*	30' in height		Save
8774	5	Red Cedar	*Juniperus virginiana*	20' in height		Save
8775	4	Red Cedar	*Juniperus virginiana*	20' in height		Save
8776	4	Red Cedar	*Juniperus virginiana*	20' in height		Save
8777	4	Red Cedar	*Juniperus virginiana*	20' in height		Save
8778	5	Red Cedar	*Juniperus virginiana*	20' in height		Save
8779	3	Red Cedar	*Juniperus virginiana*	20' in height		Save
8780	5	Red Cedar	*Juniperus virginiana*	20' in height		Save
8781	3	Red Cedar	*Juniperus virginiana*	20' in height		Save
8782	5	Red Cedar	*Juniperus virginiana*	20' in height		Save
8783	3	Red Cedar	*Juniperus virginiana*	20' in height		Save
8784	6	Red Cedar	*Juniperus virginiana*	30' in height		Save
8785	5	Red Cedar	*Juniperus virginiana*	20' in height		Save
8786	5	Red Cedar	*Juniperus virginiana*	20' in height		Save
8787	5	Red Cedar	*Juniperus virginiana*	20' in height		Save
8788	4	Red Cedar	*Juniperus virginiana*	20' in height		Save
8789	4	Red Cedar	*Juniperus virginiana*	20' in height		Save
8790	4	Red Cedar	*Juniperus virginiana*	20' in height		Save
8791	5	Red Cedar	*Juniperus virginiana*	20' in height		Save
8792	8	Red Cedar	*Juniperus virginiana*	25' in height		Save
8793	7,4	Red Cedar	*Juniperus virginiana*	25' in height		Save
8794	3	Red Cedar	*Juniperus virginiana*	20' in height		Remove
8795	8	Red Cedar	*Juniperus virginiana*	30' in height		Remove
8796	5	Red Cedar	*Juniperus virginiana*	15' in height		Remove
8797	5,4,3,3	Red Cedar	*Juniperus virginiana*	20' in height		Remove
8798	4	Red Cedar	*Juniperus virginiana*	15' in height		Remove
8799	4	Red Cedar	*Juniperus virginiana*	15' in height		Remove
8800	13	Siberian Elm	*Ulmus pumila*		x	Remove
8801	8	Red Cedar	*Juniperus virginiana*	35' in height		Save
8802	3	Red Cedar	*Juniperus virginiana*	15' in height		Save
8803	4	Red Cedar	*Juniperus virginiana*	20' in height		Save
8804	3	Red Cedar	*Juniperus virginiana*	20' in height		Save
8805	8	Red Cedar	*Juniperus virginiana*	30' in height		Save
8806	7	Red Cedar	*Juniperus virginiana*	20' in height		Save
8807	7	Red Cedar	*Juniperus virginiana*	20' in height		Remove
8808	4	Red Cedar	*Juniperus virginiana*	15' in height		Remove
8809	7	Red Cedar	*Juniperus virginiana*	20' in height		Remove
8810	4	Red Cedar	*Juniperus virginiana*	20' in height		Remove
8811	4	Red Cedar	*Juniperus virginiana*	15' in height		Remove
8812	4	Red Cedar	*Juniperus virginiana*	15' in height		Remove
8813	6	Red Cedar	*Juniperus virginiana*	20' in height		Remove
8814	5	Red Cedar	*Juniperus virginiana*	20' in height		Remove
8815	5	Red Cedar	*Juniperus virginiana*	20' in height		Remove
8816	5	Red Cedar	*Juniperus virginiana*	20' in height		Remove
8817	3	Red Cedar	*Juniperus virginiana*	15' in height		Remove
8818	2	Red Cedar	*Juniperus virginiana*	15' in height		Remove
8819	5	Red Cedar	*Juniperus virginiana*	20' in height		Remove

Tag No.	DBH	Common Name	Scientific Name	Notes	Non Qualifying	
8820	2	Red Cedar	*Juniperus virginiana*	15' in height		Remove
8821	2	Red Cedar	*Juniperus virginiana*	30' in height		Remove
8822	7,4,2,2	Red Cedar	*Juniperus virginiana*	20' in height		Remove
8823	8,5	Red Cedar	*Juniperus virginiana*	30' in height		Remove
8824	10	Red Cedar	*Juniperus virginiana*	30' in height		Remove
8825	3	Red Cedar	*Juniperus virginiana*	15' in height		Remove
8826	8	Red Cedar	*Juniperus virginiana*	20' in height		Remove
8827	10	Red Cedar	*Juniperus virginiana*	20' in height		Remove
8828	2	Red Cedar	*Juniperus virginiana*	15' in height		Remove
8829	3	Red Cedar	*Juniperus virginiana*	20' in height		Remove
8830	10,8,6,5,2	Red Cedar	*Juniperus virginiana*	30' in height		Remove
8831	3	Red Cedar	*Juniperus virginiana*	15' in height		Save
8832	4	Red Cedar	*Juniperus virginiana*	15' in height		Save
8833	5	Red Cedar	*Juniperus virginiana*	20' in height		Save
8834	3	Red Cedar	*Juniperus virginiana*	15' in height		Save
8835	4	Red Cedar	*Juniperus virginiana*	20' in height		Save
8836	5	Red Cedar	*Juniperus virginiana*	20' in height		Save
8837	5	Red Cedar	*Juniperus virginiana*	20' in height		Save
8838	8	Red Cedar	*Juniperus virginiana*	20' in height		Save

8821 TREE TO BE REMOVED
8802 TREE TO BE SAVED

TREE INVENTORY PROVIDED BY MIDWEST NATURAL RESOURCES, INC.
KEN ARNDT, FORESTER

* Non Qualifying Trees are Elm, Ash, any DNR defined invasive species, or trees that are dead, mostly dead, or hazard
Non Qualifying Trees are excluded from all calculations

Total Significant Inches: 1,127
Total Significant Inches Removed: 574 (51%)
Total Significant Inches Saved: 553
Allowable Removal: 282" (25%)

Removal over threshold: 292"

TREE PRESERVATION NOTES

BEFORE LAND CLEARING BEGINS, CONTRACTOR SHOULD MEET WITH THE CONSULTANT ON SITE TO REVIEW ALL WORK PROCEDURES, ACCESS ROUTES, STORAGE AREAS, AND TREE PROTECTION MEASURES.

NO FILL SHOULD BE PLACED AGAINST THE TRUNK, ON THE ROOT CROWN, OR WITHIN THE DRIP LINE AREA OF ANY TREES THAT ARE TO BE SAVED.

NO GRADING, TRENCHING OR PLACEMENT OF EQUIPMENT IS ALLOWED IN THE TREE PROTECTION AREA.

WORK PERFORMED WITHIN THE TREE PROTECTION AREA SHOULD BE DONE BY HAND AND UNDER THE SUPERVISION OF THE CONSULTING ARBORIST.

PRUNING OF OAK TREES MUST NOT TAKE PLACE FROM APRIL 15 TO JULY 15 TO PREVENT THE SPREAD OF OAK WILT DISEASE.

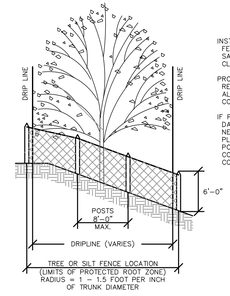
IF WOUNDING OF OAK TREES OCCUR ANYTIME BETWEEN APRIL TO AUGUST, A NON-TOXIC WOUND DRESSING MUST BE APPLIED IMMEDIATELY, (EXCAVATORS MUST HAVE A NON-TOXIC TREE WOUND DRESSING WITH THEM ON DEVELOPMENT SITES).

TREE PROTECTION DETAIL

NOT TO SCALE

TREES TO BE SAVED SHALL BE FENCED OFF WITH BRIGHT ORANGE POLYETHYLENE SAFETY NETTING OR HEAVY DUTY SILT FENCE AND STEEL STAKES AT THE DRIP LINE, OR AS DIRECTED BY THE OWNER'S CONSULTANT.

PROTECTION FENCE WILL HELP INSURE AGAINST DAMAGE BY VEHICLES, COMPACTION OF SOILS AND/OR THE CHEMICAL ALTERATION OF SOILS DUE TO CONCRETE WASHOUT, PAINTS AND LEAKAGE OR SPILLAGE OF ANY TOXIC MATERIALS.



INSTALL TREE OR SILT FENCE PRIOR TO OR AT SAME TIME AS LAND CLEARING.

PROTECTION FENCE SHOULD REMAIN IN PLACE UNTIL ALL CONSTRUCTION IS COMPLETE.

IF PROTECTION FENCE IS DAMAGED OR REMOVED, NEW FENCING MUST BE PLACED BACK IN ORIGINAL POSITION UNTIL CONSTRUCTION IS COMPLETE.

N

0 25 50 100
GRAPHIC SCALE IN FEET

00-PLAN-1231005-SHEET-TREE 95TH ROW

PIONEER engineering
CIVIL ENGINEERS LAND PLANNERS LAND SURVEYORS LANDSCAPE ARCHITECTS
2422 Enterprise Drive
Mendota Heights, MN 55120
(651) 681-1914
Fax: 681-9488
www.pioneereng.com

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Landscape Architect under the laws of the State of Minnesota

Name Jennifer L. Thompson
Reg. No. 44763 Date 1-9-2026

Revisions

Date 01-09-26
Designed JLT
Drawn JLT

TREE PRESERVATION PLAN
95TH STREET CORRIDOR

LENNAR
16305 36TH AVENUE NORTH
PLYMOUTH, MINNESOTA 55446

TALCOTT GLEN
COTTAGE GROVE, MINNESOTA

T1 OF 1

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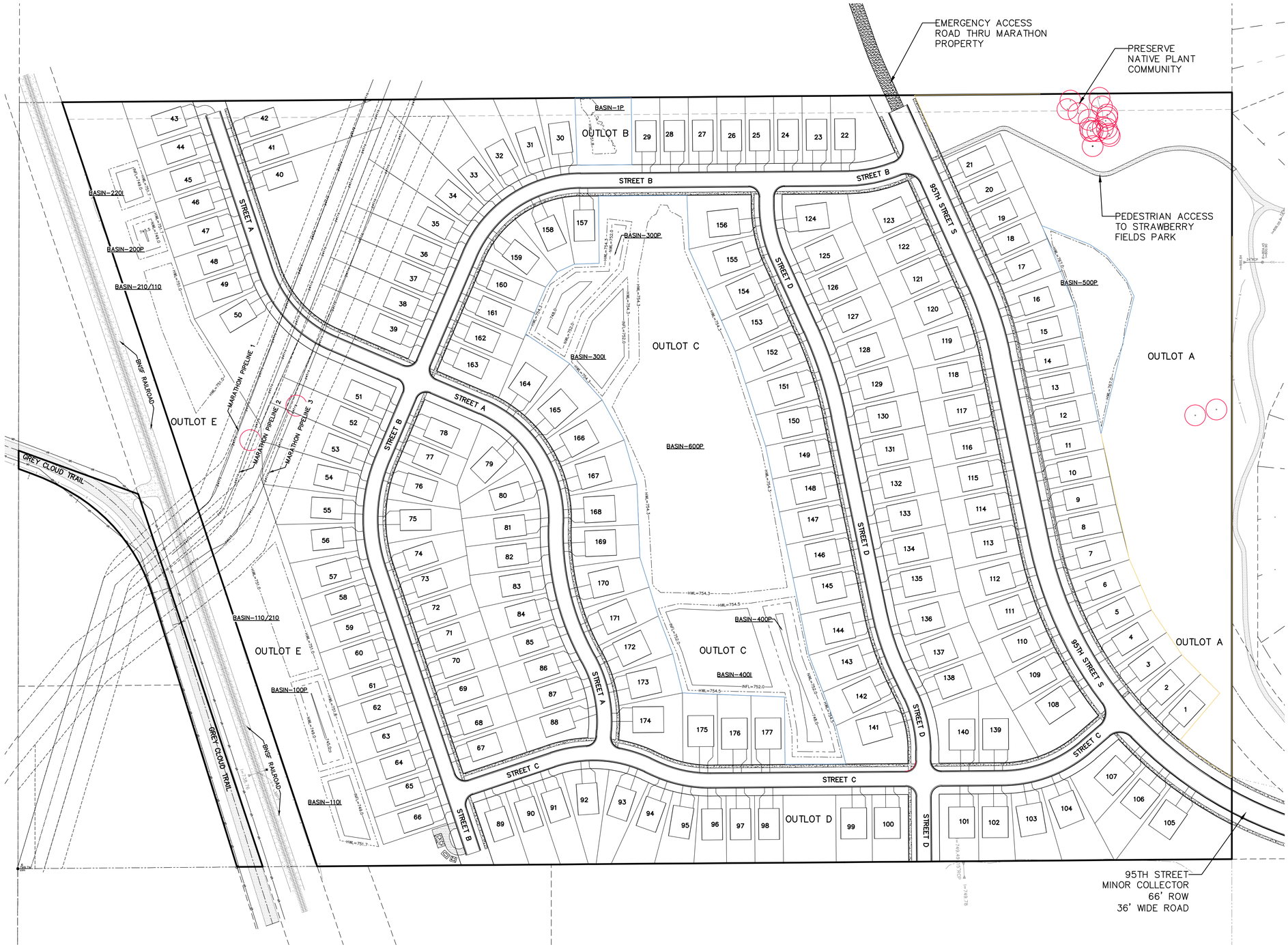

BENCH MARK
TOP NUT OF HYDRANT
LOCATED AT SW QUADRANT OF MISSISSIPPI DUNES BOULEVARD AND 94TH STREET S.
NAVD 88 ELEV=819.06

00-ENG-123105--CITY SITE-REVISIONS

PIONEER engineering
CIVIL ENGINEERS LAND PLANNERS LAND SURVEYORS LANDSCAPE ARCHITECTS
2422 Enterprise Drive
Mendota Heights, MN 55120
(651) 681-1914
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www.pioneereng.com

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota
Name Brian N. Molinaro
Reg. No. 47504 Date 01-16-26

Revisions
1. 02-04-2026 FHR Comments

Date	01-16-26
Designed	NAP
Drawn	SHA

REVISED SITE PLAN
FEBRUARY 19, 2026

LENNAR
16305 36TH AVENUE NORTH
PLYMOUTH, MINNESOTA 55446

TALCOTT GLEN
COTTAGE GROVE, MINNESOTA

1 OF 1

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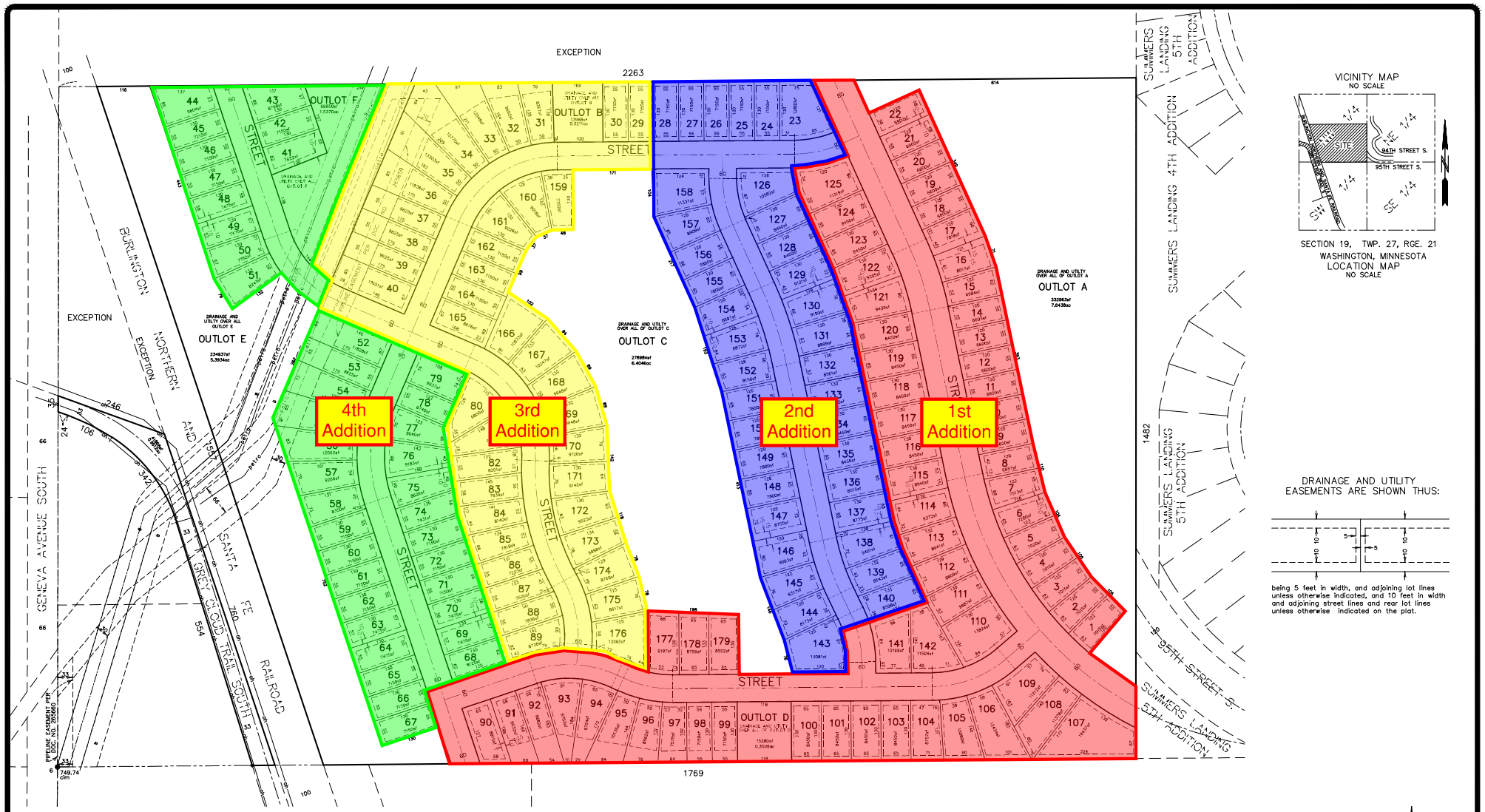

VICINITY MAP
NO SCALE

SECTION 19, TWP. 27, RGE. 21
WASHINGTON, MINNESOTA
LOCATION MAP
NO SCALE

DRAINAGE AND UTILITY EASEMENTS ARE SHOWN THUS:

being 5 feet in width, and adjoining lot lines unless otherwise indicated, and 10 feet in width and adjoining street lines and rear lot lines unless otherwise indicated on the plat.

TOTAL GROSS AREA	69.50	ACRES
TOTAL LOT AREA	35.6373	ACRES
NUMBER OF LOTS	179	
NUMBER OF OUTLOTS	6	
TOTAL OUTLOT AREA	21.6507	ACRES
TOTAL PROPSED RIGHT OF WAY AREA-LOCAL STREETS	11.2508	ACRES
TOTAL EXISTING RIGHT OF WAY AREA GREY CLOUD TRAIL SOUTH	0.9612	ACRES

Property Description per Commitment for title Insurance Commitment No. NCS-1210403-MPLS, Issuing Office File No. NCS-1210403-MPLS, Commitment Date: February 26th, 2024. AT 7:30 A.M. Issued by First American Title Insurance Company National Commercial Service.

The Northwest Quarter of Section 19 in Township 27 North of Range 21 West, Washington County, Minnesota, excepting therefrom the north 70 rods thereof, and also excepting therefrom the railroad right of way, as now laid out and traveled across said tract, according to the United States Government Survey.

Minus the following legal description:

Tract A: That part of the Northwest Quarter of Section 19 in Township 27 North of Range 21 West, lying southerly and westerly of a line 33 feet southerly and westerly of the center line of Grey Cloud Trail as now established, except the South 352.64 feet, according to the United States Government Survey thereof and situated in Washington County, Minnesota.

Tract B: The South 352.64 feet of the Northwest Quarter of Section 19 in Township 27 North of Range 21 West, lying 33 feet westerly of the center line of Grey Cloud Trail as now established, according to the United States Government Survey thereof and situated in Washington County, Minnesota.

ALSO LESS AND EXCEPT All That part of the Northwest Quarter of Section 19 in Township 27 North of Range 21 West, lying west of the Chicago, Burlington & Quincy Railroad right of way and north of the center line of the existing public highway, described as follows: Commence at the northwest corner of Section 19, Township 27 North, Range 21 West; thence south along the west line of said Section 19 a distance of 1218.5 feet to the intersection with the west line of the Chicago, Burlington & Quincy Railroad right of way and the point of beginning of the description of the tract of land to be hereby described; thence South 18 degrees 52 minutes East, along said right of way line a distance of 733.7 feet to the center line of the present county highway extended; thence North 70 degrees 15 mintes West, along said center line extended and the center line of said county highway to the intersection thereof with the west line of said Section 19; thence north on the west line of said Section 19 to the point of beginning.

0 50 100 200
GRAPHIC SCALE IN FEET

00-SURV-123105-BASE.DWG

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I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Surveyor under the laws of the State of Minnesota
Name: Peter J. Hawkinson
Reg. No. 42299 Date 01-16-26

Revisions

Date 01-16-26
Designed NAP
Drawn SJA

PRELIMINARY PLAT

LENNAR
16305 36TH AVENUE NORTH
PLYMOUTH, MINNESOTA 55446

TALCOTT GLEN
COTTAGE GROVE, MINNESOTA

3.01 OF 47

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Talcott Glen

Cottage Grove, Minnesota

Preliminary Storm Water Management Plan



January 9, 2026

Property Owner:

Lennar Homes
16305 36th Avenue North
Plymouth, Minnesota 55446

Consultant to Project Owner:

PIONEER engineering P.A.

Pioneer Engineering, P.A.
2422 Enterprise Drive
Mendota Heights Minnesota 55120

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Appendix A: Hydrology Maps
Appendix B: HydroCAD Calculations
Appendix C: P8 Calculations
Appendix D: Soils Reports

I hereby certify that this Specification, plan, or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of Minnesota.

Brian M. Molinaro
Minn. Reg. No. 47504

_____

Date: _____01-09-2026_____

I. Introduction

The following is a hydrology summary for the construction of a 179-home development to be called Talcott Glen, located at the west end of 95th Avenue in Cottage Grove, Minnesota.

II. Existing Site Conditions

A. Current Land Use

The site is currently 69.50 acres of agricultural land; the open area is farmed in row crops, with Stands of woods on the east side, through the middle of the site around the abandoned farmstead and on the north property line.

B. Topography - Existing Hydrology

The existing topography varies across the site from a wooded slope at the eastern edge of the property to a flat draw running north south in the center of the site. Onsite stormwater runoff discharges to the south into the Bailey's Nursery and to the west along the BNSF right of way. The Summers Landing project to the east of the site discharges storm water through an existing ravine on the eastern slope. A small portion of the site discarges to the north.

Review of the City of Cottage Grove Storm water management plan defines the site in the SW-A3, SW-A6 and SW-A8 drainage districts, with the SW-A2, SWA4 and SW-A6 districts contributing drainage to the site. The Surface Waters & Wetland Areas that receive stormwater within one mile are shown in the Drainage Maps in APPENDIX A.

C. Special or Impaired Waters

A special and impaired waters search was completed using the MPCA search engine (http://pca-gis02.pca.state.mn.us/CSW/index.html) on February 21, 2020. The project no discharge point within one mile of, and flows to, a special water listed in Appendix A, Part B of the NPDES Construction Site General Permit, but does have a discharge point within one mile of, and flows to, the Mississippi River which is a water listed as impaired under Section 303(D) of the Federal Clean Water Act.

Waterbody ID	07010206-814
Name of Waterbody	Mississippi River
Type	Steam
Special Water	No
Impaired Water	Yes
Pollutants	Fecal Coliform; Mercury in fish tissue; Mercury in water column; Nutrients; PCB in fish tissue; Perfluorooctane Sulfonate (PFOS) in fish tissue; Perfluorooctane Sulfonate (PFOS) in water column; Total suspended solids
Approved TMDL	Yes

D. Groundwater

No groundwater was encounter in the soil borings.

E. Soils

Braun Intertec completed soil borings and prepared a Geotechnical Evaluation Report, dated December 16,2025. The general geologic profile consists of ½ to 1½ feet of topsoil underlain by Glacial Outwash with limestone bedrock at elevation 749. The outwash consisted of poorly graded sands with silt and poorly graded sand. Based on the soil borings from the geotechnical investigations, the site consists primarily of sand and silty sand consistent with Hydraulic Soil Group A. The complete report can be found in Appendix C.

A review of the USDA Natural Resources Conservation Services Soils Survey Map (See Appendix C) indicated the following soils on site:

Soil Symbol	Soil Name	% of Site	Hydrologic Soil Group	Kf	T factor	Representative value			Erosion Potential
						% Sand	% Silt	% Clay	
7B	Hubbard loamy sand, 1 to 6 percent slopes	90	131	A	0.02	5	83.8	9.2	Slight
7D	Hubbard loamy sand, 12 to 18 percent slopes	100	121	A	0.02	5	83.8	9.2	Slight
8	Sparta loamy sand, 0 to 2 percent slopes	90	131	A	0.17	5	84.3	9.2	Slight
100B	Copaston loam, 0 to 6 percent slopes	100	112	D	0.28	1	43	38.5	Slight
151	Burkhardt sandy loam, 0 to 3 percent slopes	90	177	A	0.24	2	67.4	23.6	Slight
151B	Burkhardt sandy loam, 3 to 9 percent slopes	90	131	A	0.24	2	67.4	23.6	Slight
298	Richwood silt loam, 0 to 2 percent slopes	90	102	B	0.37	4	11.7	69.8	Slight
327	Dickman sandy loam, 0 to 2 percent slopes	90	131	A	0.2	2	68.3	19.7	Slight
529	Ripon silt loam, 1 to 2 percent slopes	90	121	C	0.43	2	14.2	71.8	Slight

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high-water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

F. Karst

This site, as much of southeastern Minnesota does, lies in an area where there is a potential for Karst in the bedrock. The site contains a shallow soil cover over limestone bedrock.

We have performed a detailed review of the South Washington watershed District karst inventory, which documents several karst related features within 1 mile up stream of this project site, including at least 2 within a 1/4-mile of the site. There is a potential for karst related features at this project site.

III. Proposed Site Conditions & Design Considerations

A. Proposed Development

The proposed development consists of a 179-home subdivision of single-family lots. The total impact area of the proposed development is approximately 69.5 acres. Local streets will be constructed with underground sewer and water utilities to provide access and services to each lot. Stormwater will be collected by storm sewer and routed to constructed stormwater basins before discharging offsite.

The table below provides information on the estimated acreage of on-site land cover before and after project development.

Cover Types	Existing - Acres Sub-catchments A,B,C,D,E,F,G	Proposed- Acres Sub-catchments 1,2,100,150,200,220,240,280,350,400,450,500	CN Value
Cropland	46.85	25.63	67
Gravel Surface	0.03	0.0	96
Lawn/landscaping	0.00	16.30	58
Meadow	3.24	2.19	30
Woods	18.34	2.01	30
Impervious surfaces	0.07	21.23	98
Pond	0.00	1.17	100
TOTAL *	**68.53**	**65.53**	

*Onsite areas only – does not include offsite areas

B. Proposed Topography

The proposed drainage patterns will be reflective of the existing drainage patterns when possible. The drainage maps are shown in Appendix A.

C. Design Requirements

The City of Cottage Grove Stormwater Management Plan requires all new developments to meet flow rate, water quality, and volume requirements. The City or Cottage Grove also refers to requirements of the South Washington Watershed District rules for stormwater management features. These requirements are summarized as follows:

1. Rate Control

Sites are required to meet existing conditions for rate control.

In addition to meeting existing flow rates leaving the property, the city has established maximum discharge rates for the drainage area discharging offsite summarized as follows:

SW-A2 thru A8 MAX RATE 0.36 cfs/acre

Based on the contributions from the site and through the site – the total discharge allowable would be 54.4 cfs.

To meet the SWWD requirements, NOAA Atlas 14 rainfall data should be used when modeling the system.

2. Water Quality

The City requires that new development projects include BMPs that at a minimum achieve post-development reductions in TP and TSS by 50% and 80%, respectively. This can be accomplished with any combination of BMP's as designed in the Minnesota Strom Water Manual.

Watershed rules call for a TP loading rate of 0.22 lbs./acre/year or existing loading rates, whichever is less, since the project site drains to the Mississippi River.

To meet the NPDES Construction Stormwater Permit the permanent sedimentation basins must:

- The basin must have a permanent volume of 1800 cubic feet of storage below the outlet pipe for each acre that drains to the basin.
- The basin must be designed to provide live storage for a water quality volume (calculated as an instantaneous volume) of one (1) inch of runoff from the new impervious surfaces created by the project.
- Basin outlets shall be designed such that the water quality volume is discharged at no more than 5.66 cubic feet per second (cfs) per acre of surface area of the pond. The basin's water quality volume is calculated as 1 inch of runoff from the new impervious surfaces created by the project.

3. Volume Control

The required volume reduction is the first 1" of runoff over the development site's impervious surface. The City also requires the location of infiltration basins be located outside the 10-year composite groundwater capture zone.

To meet the NPDES Construction Stormwater Permit the infiltration systems must:

- Be design so that the water quality volume of one (1) inch of runoff from the new impervious surfaces created by the project is retained on site (i.e. infiltration or other volume reduction practices) and not discharged to a Surface Water.
- Discharge the water quality volume routed to the system through the soil surface or filter media within 48 hours or less.
- Verify soil type and to ensure a minimum of three (3) feet of separation from the seasonally saturated soils (or from bedrock) and the bottom of the proposed infiltration/filtration system.

4. Storm Sewer Design

The storm sewer must be designed to handle a 5-year 24-hour ATLAS 14 Storm Event. (City of Cottage Grove Stormwater Management Plan)

5. Pad Elevations

Home low openings should be 3-feet (minimum) above the 100-year HWL
Elevation and 2-feet above the emergency over-flow, when adjacent to a stormwater basin. Home low openings adjacent to temporary ponding areas must be minimum of 1-foot above local EOF's. (City of Cottage Grove SWMP)

D. Proposed Hydrology

The proposed hydrology is designed to maintain drainage patterns similar to existing conditions where possible. To meet the Rate, Volume and water quality requirements Four (4) pretreatment basins with infiltration components and Four (4) dry basins were designed for the site. The drainage is split into 4 major sub-catchments; East, Central, Northwest and South West. The following is a summary of the proposed components:

East
The eastern drainage consists of drainage from basins from the Summer Landing Development as well as the large slope on the eastern edge of the site. To control this flow a dry basin (500P) is proposed in the rear yards east of 95th street. This will capture and slow the flow rate to the large central basin (600P)

Central
Two pretreatment basins (300P and 400P) take the stormwater from the eastern 2/3rds of the development - including the extension of 95th street into the site. These pretreatment basins discharge to infiltration basins (300I and 400I) meeting volume requirements. The infiltration basins are offline and take the volume from the 2.5" storm. From the 2.5" storm to the 10 year storm the basins are controlled OCS that discharges to Basin 600. Above the 10 year event the basins are connected via a armored channel that equalizes all off the basins to create enough storage to minimize the discharge offsite. Basin 600 discharges to the south.

Northwest
A pretreatment basin (200P) collects water from north of the gas pipeline and discarges to a infiltration basin (200I) with excess drainage overflowing to a dry basin (210/110). The infiltration basin is offline and takes the volume from the 2.5" storm. From the 2.5" storm to the 10 year storm the basins are controlled OCS that discharges to Basin 110/220. Above the 10 year event the basins are connected via a armored channel that equalizes all off the basins to create enough storage to minimize the discharge offsite. The dry basin (110/220) is hydraulically connected to the dry basin south of the gas line.

Southwest
A pretreatment basin (100P) collects water from north of the gas pipeline and discharges to a infiltration basin (100I) with excess drainage overflowing to a dry basin (110/210). The infiltration basin is offline and takes the volume from the 2.5" storm. From the 2.5" storm to the 10 year storm the basins are controlled OCS that discharges to Basin 110/220. Above the 10 year event the basins are connected via a armored channel that equalizes all off the basins to create enough storage to minimize the discharge offsite. The dry basin is hydraulically connected to the dry basin south of the gas line (110/220).

IV. Results

1. Rate Control

The proposed flow rate from the proposed development shall not exceed the flow rate of the existing drainage areas for the two, ten and 100-year storm events.

The following table is a summary of the results of the flow rate derived by the HydroCAD models.

Drainage Designation	2-Year Flow Rate (cfs)		10-Year Flow Rate (cfs)		100-Year Flow Rate (cfs)	
	Existing	Proposed	Existing	Proposed	Existing	Proposed
South	0.0	0.28	2.98	2.89	29.81	24.45
North	0.0	0.0	0.02	0.0	2.77	0.00
West	3.48	0.95	13.16	1.93	47.65	14.12

The maximum 100-year discharge required by the city is achieved through capturing the majority of the 100-year runoff volume within the live storage volume of the basins, and discharging through an orifice in the control structure weir wall. Reduction is reached for all events.

The City Stromwater Management Plan allows for a maximum discharge from the site (including the offsite contributions – as 54.4 CFS. The total offsite flow from the site is 38.57 CFS.

2. Water Quality

The Minnesota Stormwqater Manual allows for the use of wet basins as pretreatment devises to infiltration. These basins need to be 25% of the volume from a 2.5” storm event in the drainage area. Below is a summary of the pretreatment sizes”

Treatment Basin Volume (Wet Storage)			
Basin Model Name (HydroCAD)	2.5” Event Runoff (ac*ft)	25% Required Volume (ac-ft)	Volume Proposed (ac*ft)
100P	0.52	0.13	0.22
200P	0.17	0.04	0.06
300P	0.90	0.23	0.95
400P	1.30	0.32	1.23

In addition to meeting the aforementioned guidelines, a P8 model was developed to provide calculations verifying the 50% Phosphorus and 80% TSS removal from water discharged off-site. The P8 model results show 92.5% Phosphorus and 97.8% TSS removal for the required water quality volume. An existing condition P8 model was developed to verify that TSS and TP discharge is reduced in proposed conditions. The following table summarizes the reduced discharge in proposed conditions.

	TSS (lbs/yr)	TP (lbs/yr)
Existing	692.2	3.6
Proposed	297.6	3.4
Proposed Reduction	97.8%	92.5%

There is an addition TMDL for the site of meeting the Maximum Allowable Total Phosphorus Loading Rate 0.22 (lbs/ac/yr). The site produces 0.052 lbs/ac/year of Total Phosphorous

Results can be found in Appendix B.

3. Volume Control

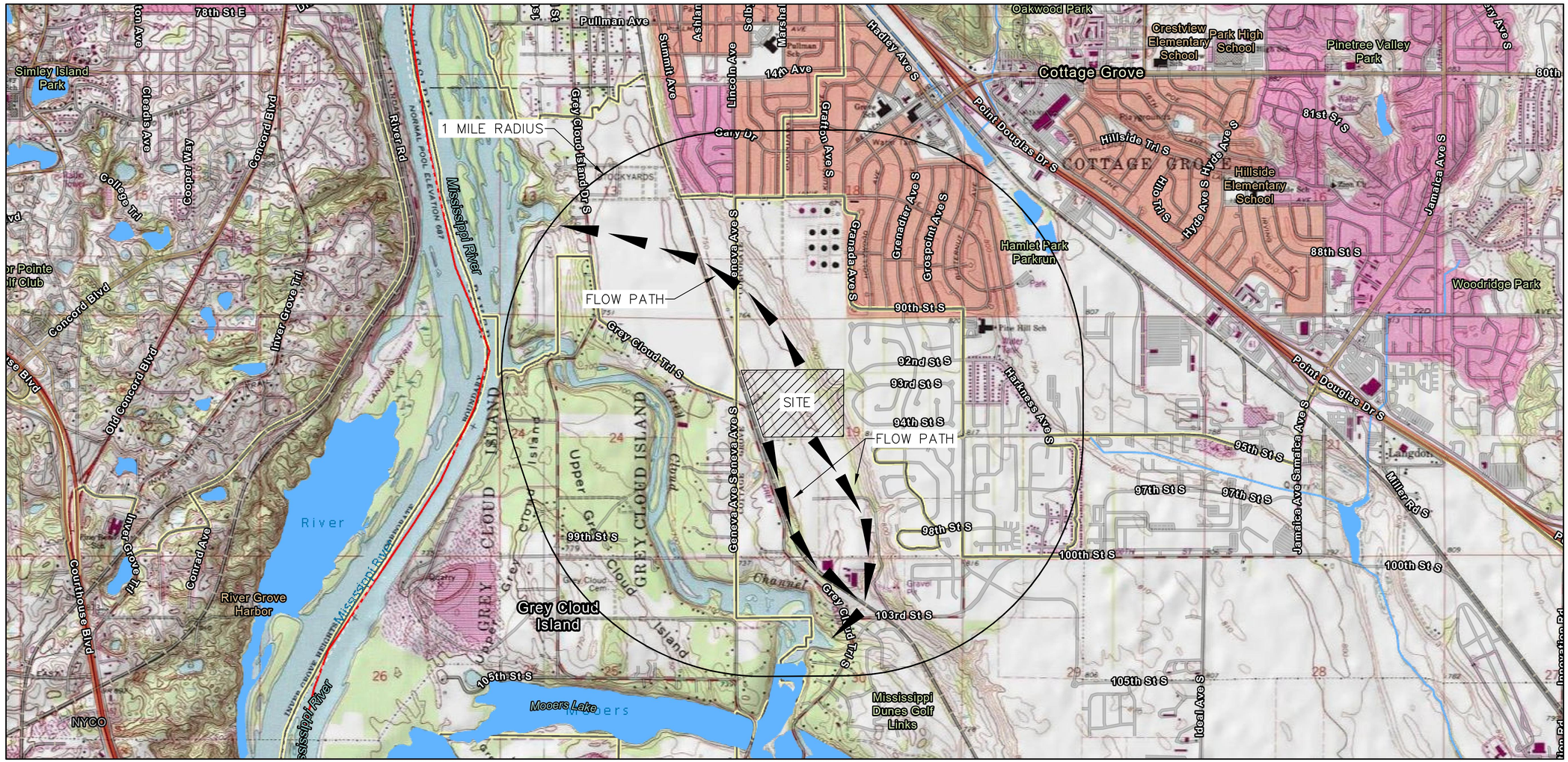
To meet the NPDES Permit the project must be design so that the water quality volume of 1inch of runoff from the new impervious surfaces created by the project is retained on site (i.e. infiltration or other BMP)

Volume Reduction Captured				
Basin Model Name	New Imp. Surface Area (acre)	Live Storage Required 1.0" (ac-ft)	Bottom / Outlet Elev.	Water Quality Volume Proposed (ac*ft)
100I	3.56	0.30	749.0 / 750.75	0.59
200I	1.19	0.10	749.0 / 750.2	0.16
300I	6.03	0.50	752.0 / 752.7	0.50
400I	10.31	0.86	752.0 / 753.1	1.02

Infiltration Basin Capacity					
Basin Name	Captured Volume Below Outlet (ac*ft)	Surface area (sf) @ 1" Volume	Infiltration Rate (in/hr)	Draw Down Time (hr)	48 Hour Drawdown Volume (ac*ft)
100I	0.59	7,617	0.80	48	0.56
200I	0.16	3,367	0.80	48	0.25
300I	0.50	7,839	0.80	48	0.58
400I	1.02	25,801	0.80	48	1.90

Appendix A: Hydrology Maps

MPCA's Construction Stormwater Special Waters Search



12/17/2025, 2:11:17 PM

- Waterbody Units - Lakes (1)
- Waterbody Units - Streams (1)
- Impaired Streams with additional construction requirements
- MS4 - MNDOT
- MS4 - County
- MS4 - Watershed District
- MS4 - City or Township

1:36,112

0 0.28 0.55 1.1 mi

0 0.47 0.95 1.9 km

Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, (c) OpenStreetMap contributors, and the GIS User Community, Copyright:© 2013 National Geographic Society, i-cubed

Minnesota Pollution Control Agency

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Name Brian. N. Molinaro

Reg. No. 47504 Date 01-16-25

Revisions

Date	01-16-25
Designed	NAP
Drawn	SHA

MPCA MAP

LENNAR
16305 36TH AVENUE NORTH
PLYMOUTH, MINNESOTA 55446

TALCOTT GLEN
COTTAGE GROVE, MINNESOTA

OA-ENG-123105-SHEET-MPCA

S3 OF S5

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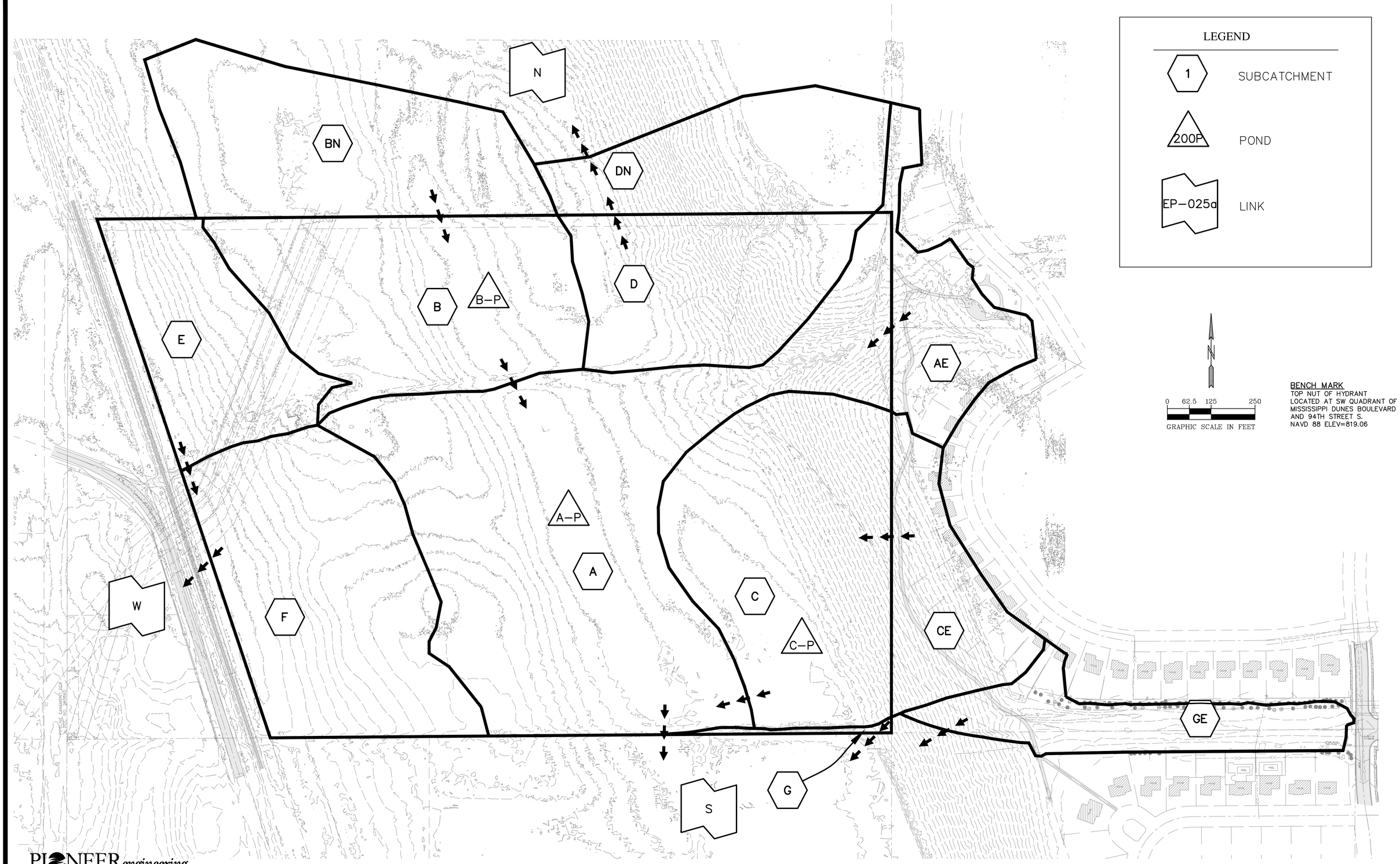

BENCH MARK
TOP NUT OF HYDRANT
LOCATED AT SW QUADRANT OF
MISSISSIPPI DUNES BOULEVARD
AND 94TH STREET S.
NAVD 88 ELEV=819.06

OA-ENG-123105-SHEET-HYDR-EXIS

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Name Brian. N. Molinaro
Reg. No. 47504 Date 01-16-25

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Date	01-16-25
Designed	NAP
Drawn	SHA

EXISTING HYDROLOGY

LENNAR
16305 36TH AVENUE NORTH
PLYMOUTH, MINNESOTA 55446

TALCOTT GLEN
COTTAGE GROVE, MINNESOTA

S4 OF S5

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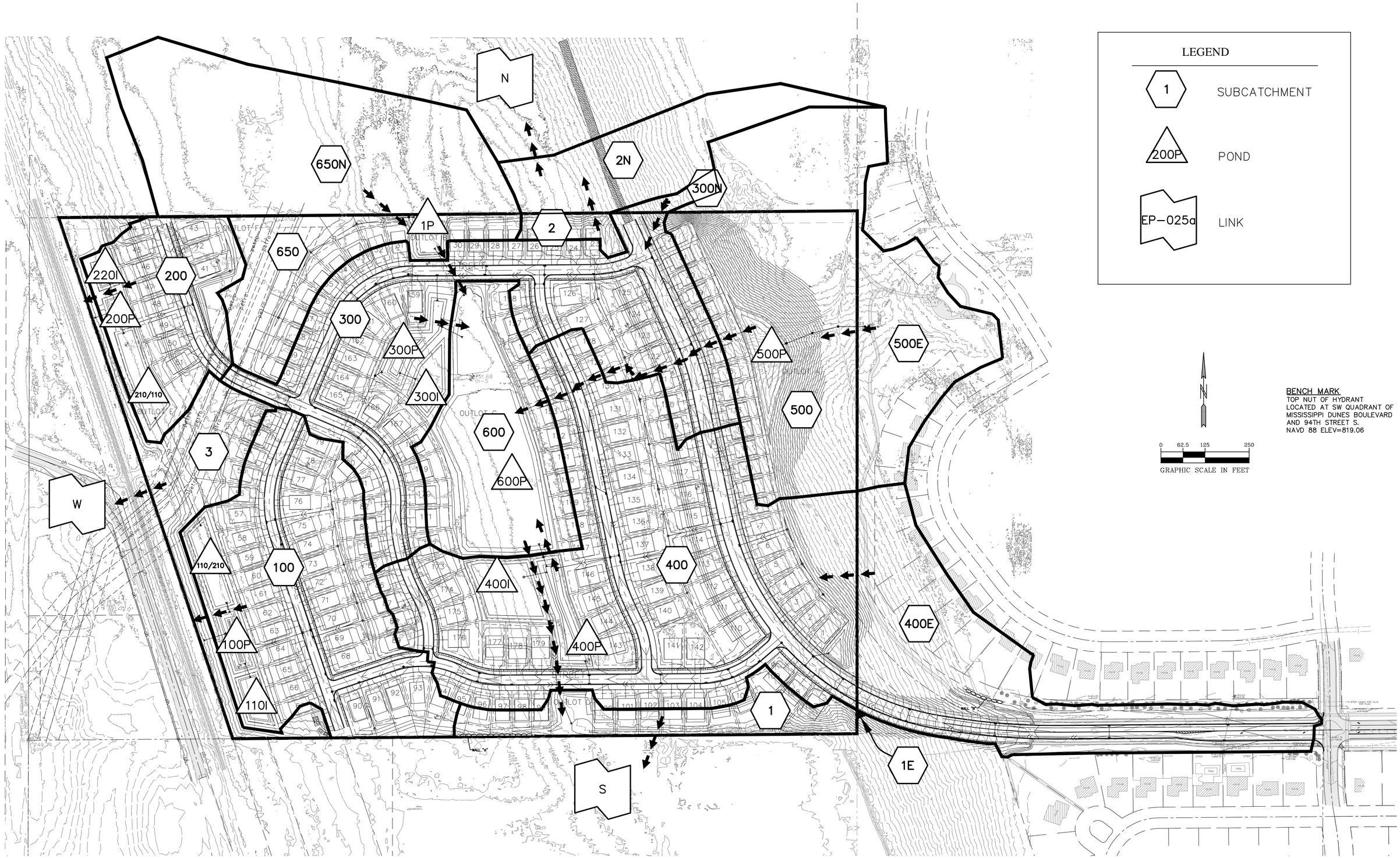

BENCH MARK
TOP NUT OF HYDRANT
LOCATED AT SW QUADRANT OF
MISSISSIPPI DUNES BOULEVARD
AND 94TH STREET S.
NAVD 88 ELEV=819.06

OA-ENG-123105-SHEET-HYDR-PROP

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Name Brian. N. Molinaro
Reg. No. 47504 Date 01-16-25

Revisions

Date	01-16-25
Designed	NAP
Drawn	SHA

PROPOSED HYDROLOGY MAP

LENNAR
16305 36TH AVENUE NORTH
PLYMOUTH, MINNESOTA 55446

TALCOTT GLEN
COTTAGE GROVE, MINNESOTA

S5 OF S5

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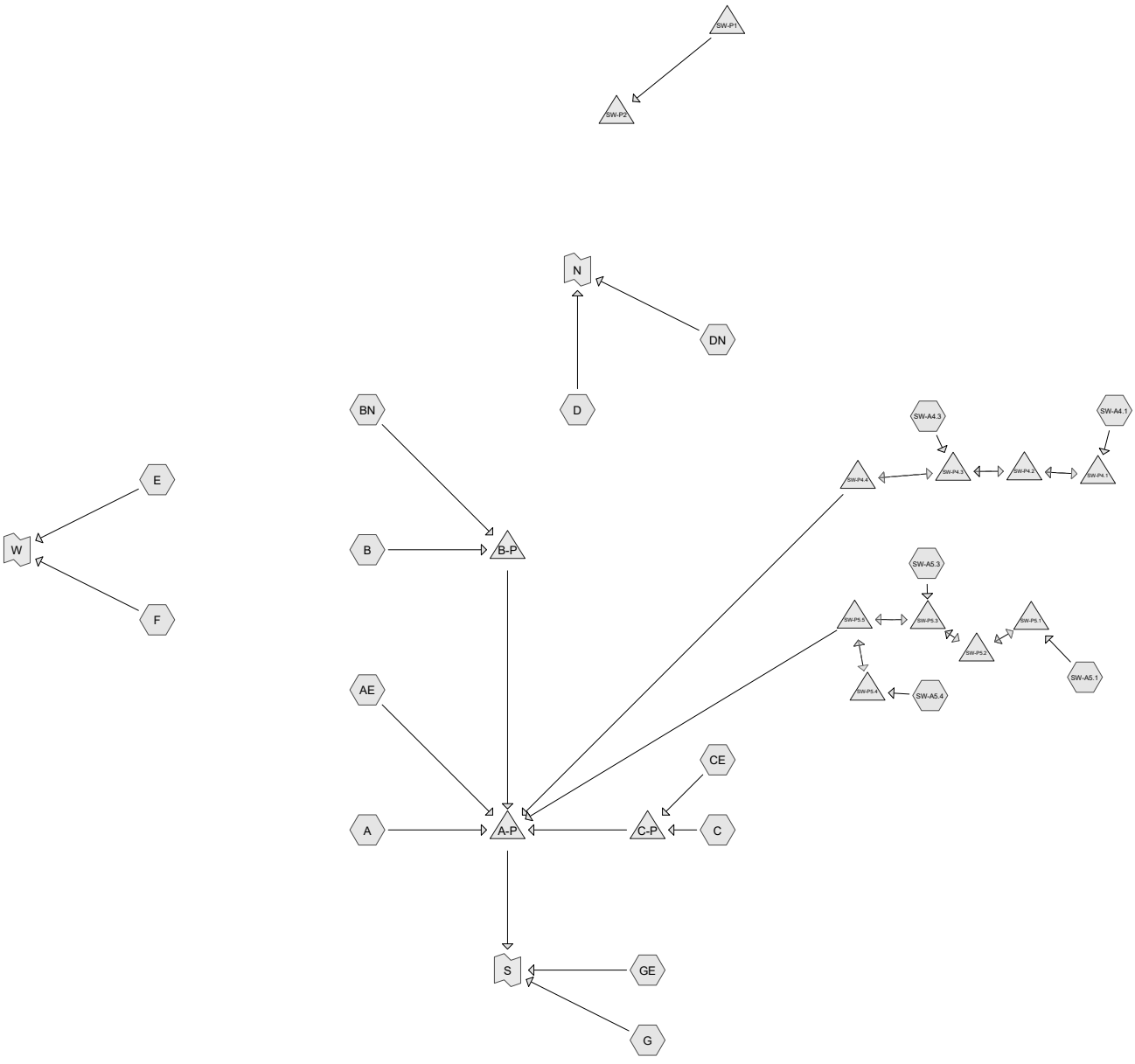
Appendix B: HydroCAD Calculations



Subcat Reach Pond Link

Routing Diagram for 00-123105-Existing (01-23-2026)
Prepared by {enter your company name here}, Printed 1/26/2026
HydroCAD® 10.10-7a s/n 00590 © 2021 HydroCAD Software Solutions LLC

Summary for Subcatchment A: A

Runoff = 2.03 cfs @ 12.70 hrs, Volume= 16,728 cf, Depth= 0.21"
Routed to Pond A-P : (new Pond)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 2-yr Rainfall=2.79", Smoothing=On

	Area (sf)	CN	Description
*	720,950	67	Cropland, HSG A
*	203,104	30	Woods, HSG A
*	32,845	30	Meadow_Undisturbed, HSG A
*	170	98	Impervious, HSG A
	957,069	58	Weighted Average
	956,899		99.98% Pervious Area
	170		0.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.0					**Direct Entry,**

Summary for Subcatchment AE: AE

Runoff = 0.25 cfs @ 12.77 hrs, Volume= 2,418 cf, Depth= 0.16"
Routed to Pond A-P : (new Pond)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 2-yr Rainfall=2.79", Smoothing=On

	Area (sf)	CN	Description
*	52,870	30	Woods, HSG A
*	66,206	75	Single Family Residential, HSG A
*	25,924	58	Meadow, HSG A
*	19,102	30	Meadow_Undisturbed, HSG A
*	13,254	98	Impervious, HSG A
	177,356	56	Weighted Average
	164,102		92.53% Pervious Area
	13,254		7.47% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.0					**Direct Entry,**

Summary for Subcatchment B: B

Runoff = 1.87 cfs @ 12.63 hrs, Volume= 11,879 cf, Depth= 0.32"
Routed to Pond B-P : (new Pond)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 2-yr Rainfall=2.79", Smoothing=On

	Area (sf)	CN	Description
*	392,179	67	Cropland, HSG A
*	54,125	30	Woods, HSG A
*	1,476	30	Meadow_Undisturbed, HSG A
*	434	98	Impervious, HSG A
	448,213	62	Weighted Average
	447,779		99.90% Pervious Area
	434		0.10% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.0					**Direct Entry,**

Summary for Subcatchment BN: BN

Runoff = 0.20 cfs @ 13.37 hrs, Volume= 2,963 cf, Depth= 0.09"
Routed to Pond B-P : (new Pond)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 2-yr Rainfall=2.79", Smoothing=On

	Area (sf)	CN	Description
*	240,073	67	Cropland, HSG A
*	67,105	30	Woods, HSG A
*	98,892	30	Meadow_Undisturbed, HSG A
	406,070	52	Weighted Average
	406,070		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.0					**Direct Entry,**

Summary for Subcatchment C: C

Runoff = 0.02 cfs @ 18.37 hrs, Volume= 679 cf, Depth= 0.02"
Routed to Pond C-P : (new Pond)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 2-yr Rainfall=2.79", Smoothing=On

	Area (sf)	CN	Description
*	220,908	67	Cropland, HSG A
*	242,386	30	Woods, HSG A
*	44,136	30	Meadow_Undisturbed, HSG A
	507,431	46	Weighted Average
	507,431		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.0					**Direct Entry,**

Summary for Subcatchment CE: CE

Runoff = 0.05 cfs @ 13.57 hrs, Volume= 938 cf, Depth= 0.06"
Routed to Pond C-P : (new Pond)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 2-yr Rainfall=2.79", Smoothing=On

	Area (sf)	CN	Description
*	72,622	30	Woods, HSG A
*	73,058	75	Single Family Residential, HSG A
*	41,418	30	Meadow_Undisturbed, HSG A
*	7,599	98	Impervious, HSG A
	194,698	50	Weighted Average
	187,099		96.10% Pervious Area
	7,599		3.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.0					**Direct Entry, 30**

Summary for Subcatchment D: D

[45] Hint: Runoff=Zero

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"
Routed to Link N : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 2-yr Rainfall=2.79", Smoothing=On

	Area (sf)	CN	Description
*	51,784	67	Cropland, HSG A
*	216,874	30	Woods, HSG A
*	38,391	30	Meadow_Undisturbed, HSG A
	307,049	36	Weighted Average
	307,049		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.0					**Direct Entry,**

Summary for Subcatchment DN: DN

[45] Hint: Runoff=Zero

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"
Routed to Link N : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 2-yr Rainfall=2.79", Smoothing=On

	Area (sf)	CN	Description
*	173,230	30	Woods, HSG A
*	95,432	30	Meadow_Undisturbed, HSG A
	268,661	30	Weighted Average
	268,661		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.0					**Direct Entry,**

Summary for Subcatchment E: E

Runoff = 0.45 cfs @ 12.70 hrs, Volume= 4,008 cf, Depth= 0.19"
Routed to Link W : Offsite Discharge

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 2-yr Rainfall=2.79", Smoothing=On

	Area (sf)	CN	Description
*	473	96	Gravel, HSG A
*	184,092	67	Cropland, HSG A
*	49,991	30	Woods, HSG A
*	21,631	30	Meadow_Undisturbed, HSG A
*	2,411	98	Impervious, HSG A
	258,596	57	Weighted Average
	256,186		99.07% Pervious Area
	2,411		0.93% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.0					**Direct Entry,**

Summary for Subcatchment F: F

Runoff = 3.09 cfs @ 12.57 hrs, Volume= 17,126 cf, Depth= 0.41"
Routed to Link W : Offsite Discharge

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 2-yr Rainfall=2.79", Smoothing=On

	Area (sf)	CN	Description
*	616	96	Gravel, HSG A
*	470,977	67	Cropland, HSG A
*	22,431	30	Woods, HSG A
*	2,971	30	Meadow_Undisturbed, HSG A
*	41	98	Impervious, HSG A
	497,036	65	Weighted Average
	496,995		99.99% Pervious Area
	41		0.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.0					**Direct Entry,**

Summary for Subcatchment G: G

[45] Hint: Runoff=Zero

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"
Routed to Link S : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 2-yr Rainfall=2.79", Smoothing=On

	Area (sf)	CN	Description
*	10,162	30	Woods, HSG A
	10,162		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.0					**Direct Entry,**

Summary for Subcatchment GE: GE

[45] Hint: Runoff=Zero

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"
Routed to Link S : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 2-yr Rainfall=2.79", Smoothing=On

	Area (sf)	CN	Description
*	100,409	30	Woods, HSG A
*	18,876	75	Single Family Residential, HSG A
*	58,143	30	Meadow_Undisturbed, HSG A
*	2,324	98	Impervious, HSG A
	179,752	36	Weighted Average
	177,428		98.71% Pervious Area
	2,324		1.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.0					**Direct Entry,**

Summary for Subcatchment SW-A4.1: NE QUAD

Runoff = 21.86 cfs @ 12.50 hrs, Volume= 95,557 cf, Depth= 0.83"
Routed to Pond SW-P4.1 : summers landing 30P

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 2-yr Rainfall=2.79", Smoothing=On

	Area (ac)	CN	Description
*	10.250	98	Paved Parking, HSG B
*	1.530	98	Water Surface, HSG B
*	20.080	61	>75% Grass Cover, HSG B
	31.860	75	Weighted Average
	20.080		63.03% Pervious Area
	11.780		36.97% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.0					**Direct Entry,**
25.0	0	Total, Increased to minimum Tc = 30.0 min			

Summary for Subcatchment SW-A4.3: NW QUAD

Runoff = 21.22 cfs @ 12.53 hrs, Volume= 95,740 cf, Depth= 0.73"
Routed to Pond SW-P4.3 : Summers landing 31P

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 2-yr Rainfall=2.79", Smoothing=On

	Area (ac)	CN	Description
*	10.510	98	Paved Parking, HSG B
*	23.970	61	>75% Grass cover, Good
*	1.590	98	Water Surface, HSG B
	36.070	73	Weighted Average
	23.970		66.45% Pervious Area
	12.100		33.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.0					**Direct Entry,**
25.0	0	Total, Increased to minimum Tc = 30.0 min			

Summary for Subcatchment SW-A5.1: SE QUAD

Runoff = 17.56 cfs @ 12.53 hrs, Volume= 80,550 cf, Depth= 0.69"
Routed to Pond SW-P5.1 : Summers landing 28P

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 2-yr Rainfall=2.79", Smoothing=On

	Area (ac)	CN	Description
*	8.430	98	
*	22.650	61	
*	1.260	98	
	32.340	72	Weighted Average
	22.650		70.04% Pervious Area
	9.690		29.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.0					**Direct Entry,**
25.0	0	Total, Increased to minimum Tc = 30.0 min			

Summary for Subcatchment SW-A5.3: SW QUAD N

Runoff = 11.07 cfs @ 12.53 hrs, Volume= 51,768 cf, Depth= 0.64"
Routed to Pond SW-P5.3 : Summers landing POND 2 NORTH

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 2-yr Rainfall=2.79", Smoothing=On

	Area (ac)	CN	Description
*	5.230	98	
*	16.000	61	
*	0.960	98	
	22.190	71	Weighted Average
	16.000		72.10% Pervious Area
	6.190		27.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.0					**Direct Entry,**
25.0	0	Total, Increased to minimum Tc = 30.0 min			

Summary for Subcatchment SW-A5.4: SW QUAD S

Runoff = 6.18 cfs @ 12.53 hrs, Volume= 27,896 cf, Depth= 0.73"
Routed to Pond SW-P5.4 : Summers Landing POND 2 SOUTH

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 2-yr Rainfall=2.79", Smoothing=On

	Area (ac)	CN	Description
*	2.560	98	
*	7.220	61	
*	0.730	98	
	10.510	73	Weighted Average
	7.220		68.70% Pervious Area
	3.290		31.30% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.0					**Direct Entry,**
25.0	0	Total, Increased to minimum Tc = 30.0 min			

Summary for Pond A-P: (new Pond)

Inflow = 2.28 cfs @ 12.70 hrs, Volume= 20,219 cf
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link S : (new Link)

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Peak Elev= 751.31' @ 25.67 hrs Surf.Area= 88,328 sf Storage= 20,212 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	751.00'	327,150 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
751.00	43,080	0	0
752.00	190,165	116,623	116,623
753.00	230,890	210,528	327,150

Device	Routing	Invert	Outlet Devices
#1	Primary	752.00'	**20.0' long + 20.0 '/' SideZ x 30.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=751.00' TW=0.00' (Dynamic Tailwater)
↑**1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond B-P: (new Pond)

Inflow Area = 854,283 sf, 0.05% Impervious, Inflow Depth = 0.21" for 2-yr event
Inflow = 1.95 cfs @ 12.63 hrs, Volume= 14,842 cf
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond A-P : (new Pond)

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Peak Elev= 751.49' @ 25.67 hrs Surf.Area= 44,118 sf Storage= 14,839 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	751.00'	134,145 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
751.00	15,900	0	0
752.00	72,965	44,433	44,433
753.00	106,459	89,712	134,145

Device	Routing	Invert	Outlet Devices
#1	Primary	751.90'	**30.0' long + 10.0 '/' SideZ x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=751.00' TW=751.00' (Dynamic Tailwater)
1=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Pond C-P: (new Pond)

Inflow Area = 702,129 sf, 1.08% Impervious, Inflow Depth = 0.03" for 2-yr event
Inflow = 0.06 cfs @ 15.23 hrs, Volume= 1,617 cf
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond A-P : (new Pond)

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Peak Elev= 752.15' @ 25.67 hrs Surf.Area= 15,150 sf Storage= 1,614 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	752.00'	128,974 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
752.00	6,033	0	0
753.00	65,844	35,939	35,939
754.00	120,226	93,035	128,974

Device	Routing	Invert	Outlet Devices
#1	Primary	752.60'	**40.0' long + 50.0 '/' SideZ x 20.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=752.00' TW=751.00' (Dynamic Tailwater)
1=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Pond SW-P1: SW-P1

[43] Hint: Has no inflow (Outflow=Zero)

Volume	Invert	Avail.Storage	Storage Description
#1	810.00'	87.505 af	**Custom Stage Data (Prismatic)**Listed below

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
810.00	6.048	0.000	0.000
812.00	6.451	12.499	12.499
814.00	6.854	13.305	25.804
816.00	7.284	14.138	39.942
820.00	8.131	30.830	70.772
822.00	8.602	16.733	87.505

Device	Routing	Invert	Outlet Devices
#1	Primary	810.00'	**12.0" Round Culvert** L= 80.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 810.00' / 809.00' S= 0.0125 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=0.00' TW=747.00' (Dynamic Tailwater)
↑—**1=Culvert** (Controls 0.00 cfs)

Summary for Pond SW-P2: SW-P2

Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to nonexistent node SW-P3

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Peak Elev= 747.00' @ 0.00 hrs Surf.Area= 6.476 ac Storage= 0.000 af

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	747.00'	67.788 af	**Custom Stage Data (Prismatic)**Listed below

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
747.00	6.476	0.000	0.000
749.00	7.070	13.546	13.546
751.00	7.538	14.608	28.154
753.00	8.024	15.562	43.716
756.00	8.024	24.072	67.788

Device	Routing	Invert	Outlet Devices
#1	Primary	747.00'	**21.0" Round Culvert** L= 500.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 747.00' / 746.00' S= 0.0020 '/' Cc= 0.900 n= 0.013, Flow Area= 2.41 sf

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=747.00' (Free Discharge)
1=Culvert (Controls 0.00 cfs)

Summary for Pond SW-P4.1: summers landing 30P

Inflow = 21.86 cfs @ 12.50 hrs, Volume= 95,557 cf
Outflow = 1.08 cfs @ 15.87 hrs, Volume= 62,285 cf, Atten= 95%, Lag= 201.9 min
Primary = 1.08 cfs @ 15.87 hrs, Volume= 62,285 cf
Routed to Pond SW-P4.2 : Summers landing 30PI
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond SW-P4.2 : Summers landing 30PI

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Starting Elev= 808.50' Surf.Area= 1.284 ac Storage= 4.283 af
Peak Elev= 809.58' @ 15.87 hrs Surf.Area= 1.541 ac Storage= 5.837 af (1.554 af above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= 762.9 min (1,620.5 - 857.6)

Volume	Invert	Avail.Storage	Storage Description
#1	804.00'	11.323 af	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
804.00	0.730	0.000	0.000
808.00	1.112	3.684	3.684
809.00	1.456	1.284	4.968
811.00	1.749	3.205	8.173
812.00	2.121	1.935	10.108
812.50	2.738	1.215	11.323

Device	Routing	Invert	Outlet Devices
#1	Primary	809.00'	**12.0" Round Culvert** L= 35.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 809.00' / 808.00' S= 0.0286 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Secondary	810.00'	**8.0' long x 30.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=1.08 cfs @ 15.87 hrs HW=809.58' TW=806.22' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 1.08 cfs @ 2.29 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=808.50' TW=805.00' (Dynamic Tailwater)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond SW-P4.2: Summers landing 30PI

Inflow = 1.08 cfs @ 15.87 hrs, Volume= 62,285 cf
Outflow = 0.67 cfs @ 24.23 hrs, Volume= 61,955 cf, Atten= 38%, Lag= 501.7 min
Discarded = 0.67 cfs @ 24.23 hrs, Volume= 61,955 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond SW-P4.3 : Summers landing 31P
Tertiary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond SW-P4.1 : summers landing 30P

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Peak Elev= 807.60' @ 24.23 hrs Surf.Area= 8,791 sf Storage= 18,291 cf

Plug-Flow detention time= 416.3 min calculated for 61,954 cf (99% of inflow)
Center-of-Mass det. time= 394.2 min (2,014.7 - 1,620.5)

Volume	Invert	Avail.Storage	Storage Description
#1	805.00'	124,959 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
805.00	5,274	0	0
808.00	9,331	21,908	21,908
809.00	14,735	12,033	33,941
811.00	19,577	34,312	68,253
812.00	22,804	21,191	89,443
812.50	119,260	35,516	124,959

Device	Routing	Invert	Outlet Devices
#1	Primary	809.00'	**15.0" Round Culvert** L= 661.0' Ke= 0.700 Inlet / Outlet Invert= 809.00' / 804.50' S= 0.0068 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf
#2	Tertiary	810.00'	**8.0' long x 30.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#3	Discarded	805.01'	**8.300 in/hr Exfiltration over Surface area above 805.01'** Excluded Surface area = 5,288 sf

Discarded OutFlow Max=0.67 cfs @ 24.23 hrs HW=807.60' (Free Discharge)
3=Exfiltration (Exfiltration Controls 0.67 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=805.00' TW=804.50' (Dynamic Tailwater)
1=Culvert (Controls 0.00 cfs)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=805.00' TW=808.50' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Pond SW-P4.3: Summers landing 31P

Inflow = 21.22 cfs @ 12.53 hrs, Volume= 95,740 cf
Outflow = 1.81 cfs @ 15.19 hrs, Volume= 91,567 cf, Atten= 91%, Lag= 159.7 min
Primary = 1.81 cfs @ 15.19 hrs, Volume= 91,567 cf
Routed to Pond SW-P4.4 : Summers landing 31PI
Tertiary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond SW-P4.4 : Summers landing 31PI

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Starting Elev= 804.50' Surf.Area= 69,445 sf Storage= 195,814 cf
Peak Elev= 805.30' @ 15.19 hrs Surf.Area= 74,827 sf Storage= 253,539 cf (57,725 cf above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= 663.8 min (1,526.9 - 863.2)

Volume	Invert	Avail.Storage	Storage Description
#1	800.50'	805,360 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
800.50	35,945	0	0
803.50	53,587	134,298	134,298
804.50	69,445	61,516	195,814
806.50	82,896	152,341	348,155
807.50	100,885	91,891	440,046
808.00	104,644	51,382	491,428
811.00	104,644	313,932	805,360

Device	Routing	Invert	Outlet Devices
#1	Primary	804.50'	**12.0" Round Culvert** L= 35.0' Ke= 0.700 Inlet / Outlet Invert= 804.50' / 803.50' S= 0.0286 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Tertiary	805.50'	**8.0' long x 30.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=1.81 cfs @ 15.19 hrs HW=805.30' TW=801.81' (Dynamic Tailwater)
1=Culvert (Inlet Controls 1.81 cfs @ 2.69 fps)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=804.50' TW=800.50' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Pond SW-P4.4: Summers landing 31PI

Inflow = 1.81 cfs @ 15.19 hrs, Volume= 91,567 cf
Outflow = 0.96 cfs @ 23.43 hrs, Volume= 91,069 cf, Atten= 47%, Lag= 494.1 min
Discarded = 0.96 cfs @ 23.43 hrs, Volume= 91,069 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond A-P : (new Pond)
Tertiary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond SW-P4.3 : Summers landing 31P

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Peak Elev= 803.25' @ 23.43 hrs Surf.Area= 13,416 sf Storage= 29,937 cf

Plug-Flow detention time= 479.8 min calculated for 91,069 cf (99% of inflow)
Center-of-Mass det. time= 456.8 min (1,983.7 - 1,526.9)

Volume	Invert	Avail.Storage	Storage Description
#1	800.50'	215,575 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
800.50	8,380	0	0
803.50	13,880	33,390	33,390
804.50	19,929	16,905	50,295
806.50	25,755	45,684	95,979
807.50	34,193	29,974	125,953
808.00	36,033	17,557	143,509
810.00	36,033	72,066	215,575

Device	Routing	Invert	Outlet Devices
#1	Primary	804.50'	**15.0" Round Culvert** L= 1,010.0' Ke= 0.700 Inlet / Outlet Invert= 804.50' / 801.00' S= 0.0035 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf
#2	Tertiary	805.50'	**8.0' long x 30.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#3	Discarded	800.51'	**8.300 in/hr Exfiltration over Surface area above 800.51'** Excluded Surface area = 8,398 sf

Discarded OutFlow Max=0.96 cfs @ 23.43 hrs HW=803.25' (Free Discharge)
3=Exfiltration (Exfiltration Controls 0.96 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=800.50' TW=751.00' (Dynamic Tailwater)
1=Culvert (Controls 0.00 cfs)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=800.50' TW=804.50' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Pond SW-P5.1: Summers landing 28P

Inflow = 17.56 cfs @ 12.53 hrs, Volume= 80,550 cf
Outflow = 1.97 cfs @ 14.17 hrs, Volume= 78,223 cf, Atten= 89%, Lag= 98.5 min
Primary = 1.97 cfs @ 14.17 hrs, Volume= 78,223 cf
Routed to Pond SW-P5.2 : Summers Landing 28PI
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond SW-P5.2 : Summers Landing 28PI

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Starting Elev= 806.00' Surf.Area= 55,104 sf Storage= 141,054 cf
Peak Elev= 806.78' @ 14.17 hrs Surf.Area= 60,381 sf Storage= 186,053 cf (44,999 cf above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= 520.0 min (1,386.0 - 866.1)

Volume	Invert	Avail.Storage	Storage Description
#1	802.00'	432,852 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
802.00	23,396	0	0
805.00	39,204	93,900	93,900
806.00	55,104	47,154	141,054
808.00	68,648	123,752	264,806
809.00	86,609	77,629	342,435
810.00	94,225	90,417	432,852

Device	Routing	Invert	Outlet Devices
#1	Primary	806.00'	**12.0" Round Culvert** L= 35.0' Ke= 0.500 Inlet / Outlet Invert= 806.00' / 805.00' S= 0.0286 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Secondary	807.00'	**5.0' long x 30.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=1.97 cfs @ 14.17 hrs HW=806.78' TW=804.82' (Dynamic Tailwater)
1=Culvert (Inlet Controls 1.97 cfs @ 3.01 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=806.00' TW=806.00' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Pond SW-P5.2: Summers Landing 28PI

Inflow = 1.97 cfs @ 14.17 hrs, Volume= 78,223 cf
Outflow = 1.79 cfs @ 0.00 hrs, Volume= 101,354 cf, Atten= 9%, Lag= 0.0 min
Discarded = 1.79 cfs @ 0.00 hrs, Volume= 101,354 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond SW-P5.3 : Summers landing POND 2 NORTH
Tertiary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond SW-P5.1 : Summers landing 28P

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Starting Elev= 806.00' Surf.Area= 16,338 sf Storage= 23,268 cf
Peak Elev= 806.00' @ 0.00 hrs Surf.Area= 16,338 sf Storage= 23,268 cf

Plug-Flow detention time= 178.0 min calculated for 78,085 cf (100% of inflow)
Center-of-Mass det. time= (not calculated: outflow precedes inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	804.00'	141,493 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
804.00	6,954	0	0
805.00	11,622	9,288	9,288
806.00	16,338	13,980	23,268
808.00	20,651	36,989	60,257
809.00	26,716	23,684	83,941
810.00	29,463	28,090	112,030
811.00	29,463	29,463	141,493

Device	Routing	Invert	Outlet Devices
#1	Primary	806.00'	**12.0" Round Culvert** L= 622.0' Ke= 0.700 Inlet / Outlet Invert= 806.00' / 803.00' S= 0.0048 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Tertiary	807.00'	**8.0' long x 30.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#3	Discarded	804.01'	**8.300 in/hr Exfiltration over Surface area above 804.01'** Excluded Surface area = 7,001 sf

Discarded OutFlow Max=1.79 cfs @ 0.00 hrs HW=806.00' (Free Discharge)
3=Exfiltration (Exfiltration Controls 1.79 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=806.00' TW=803.00' (Dynamic Tailwater)
1=Culvert (Controls 0.00 cfs)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=806.00' TW=806.00' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Pond SW-P5.3: Summers landing POND 2 NORTH

Inflow = 11.07 cfs @ 12.53 hrs, Volume= 51,768 cf
Outflow = 1.33 cfs @ 14.14 hrs, Volume= 50,260 cf, Atten= 88%, Lag= 96.1 min
Primary = 1.33 cfs @ 14.14 hrs, Volume= 50,260 cf
Routed to Pond SW-P5.5 : Summers Landing 29l
Tertiary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond SW-P5.5 : Summers Landing 29l

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Starting Elev= 803.00' Surf.Area= 41,920 sf Storage= 152,896 cf
Peak Elev= 803.66' @ 14.14 hrs Surf.Area= 44,356 sf Storage= 181,218 cf (28,323 cf above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= 514.0 min (1,383.1 - 869.1)

Volume	Invert	Avail.Storage	Storage Description
#1	798.00'	532,787 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
798.00	24,234	0	0
802.00	33,387	115,242	115,242
803.00	41,920	37,654	152,896
805.00	49,340	91,260	244,156
806.00	58,658	53,999	298,155
810.00	58,658	234,632	532,787

Device	Routing	Invert	Outlet Devices
#1	Primary	803.00'	**12.0" Round Culvert** L= 35.0' Ke= 0.700 Inlet / Outlet Invert= 803.00' / 802.00' S= 0.0286 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Tertiary	804.00'	**3.0' long x 30.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=1.33 cfs @ 14.14 hrs HW=803.66' TW=801.99' (Dynamic Tailwater)
1=Culvert (Inlet Controls 1.33 cfs @ 2.43 fps)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=803.00' TW=800.00' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Pond SW-P5.4: Summers Landing POND 2 SOUTH

Inflow = 6.18 cfs @ 12.53 hrs, Volume= 27,896 cf
Outflow = 0.75 cfs @ 14.04 hrs, Volume= 27,031 cf, Atten= 88%, Lag= 90.7 min
Primary = 0.75 cfs @ 14.04 hrs, Volume= 27,031 cf
Routed to Pond SW-P5.5 : Summers Landing 29l
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond SW-P5.5 : Summers Landing 29l

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Starting Elev= 803.00' Surf.Area= 31,846 sf Storage= 105,243 cf
Peak Elev= 803.47' @ 14.04 hrs Surf.Area= 33,782 sf Storage= 120,749 cf (15,506 cf above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= 533.6 min (1,396.8 - 863.2)

Volume	Invert	Avail.Storage	Storage Description
#1	798.00'	324,420 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
798.00	15,145	0	0
802.00	23,612	77,514	77,514
803.00	31,846	27,729	105,243
805.00	40,039	71,885	177,128
806.00	50,909	45,474	222,602
808.00	50,909	101,818	324,420

Device	Routing	Invert	Outlet Devices
#1	Primary	803.00'	**12.0" Round Culvert** L= 35.0' Ke= 0.700 Inlet / Outlet Invert= 803.00' / 802.00' S= 0.0286 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Secondary	804.00'	**3.0' long x 30.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.75 cfs @ 14.04 hrs HW=803.47' TW=801.89' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.75 cfs @ 2.07 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=803.00' TW=800.00' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Pond SW-P5.5: Summers Landing 29l

Inflow = 2.08 cfs @ 14.10 hrs, Volume= 77,290 cf
Outflow = 1.31 cfs @ 17.47 hrs, Volume= 77,164 cf, Atten= 37%, Lag= 202.6 min
Discarded = 1.21 cfs @ 17.47 hrs, Volume= 76,091 cf
Primary = 0.10 cfs @ 17.47 hrs, Volume= 1,073 cf
Routed to Pond A-P : (new Pond)
Tertiary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond SW-P5.4 : Summers Landing POND 2 SOUTH

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Peak Elev= 803.18' @ 17.47 hrs Surf.Area= 9,028 sf Storage= 16,599 cf

Plug-Flow detention time= 224.9 min calculated for 77,162 cf (100% of inflow)
Center-of-Mass det. time= 217.5 min (1,605.4 - 1,387.9)

Volume	Invert	Avail.Storage	Storage Description
#1	800.00'	112,832 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
800.00	2,718	0	0
802.00	5,260	7,978	7,978
803.00	8,713	6,987	14,965
805.00	12,132	20,845	35,810
806.00	15,768	13,950	49,760
810.00	15,768	63,072	112,832

Device	Routing	Invert	Outlet Devices
#1	Primary	803.00'	**18.0" Round Culvert** L= 750.0' Ke= 0.700 Inlet / Outlet Invert= 803.00' / 801.00' S= 0.0027 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf
#2	Tertiary	806.00'	**12.0" Round Culvert** L= 35.0' Ke= 0.700 Inlet / Outlet Invert= 806.00' / 803.00' S= 0.0857 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#3	Discarded	800.01'	**8.300 in/hr Exfiltration over Surface area above 800.01'** Excluded Surface area = 2,731 sf

Discarded OutFlow Max=1.21 cfs @ 17.47 hrs HW=803.18' (Free Discharge)
3=Exfiltration (Exfiltration Controls 1.21 cfs)

Primary OutFlow Max=0.10 cfs @ 17.47 hrs HW=803.18' TW=751.24' (Dynamic Tailwater)
1=Culvert (Barrel Controls 0.10 cfs @ 1.27 fps)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=800.00' TW=803.00' (Dynamic Tailwater)
2=Culvert (Controls 0.00 cfs)

Summary for Link N: (new Link)

Inflow Area = 575,710 sf, 0.00% Impervious, Inflow Depth = 0.00" for 2-yr event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs

Summary for Link S: (new Link)

Inflow	=	0.00 cfs @	0.00 hrs, Volume=	0 cf
Primary	=	0.00 cfs @	0.00 hrs, Volume=	0 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs

Summary for Link W: Offsite Discharge

Inflow Area = 755,633 sf, 0.32% Impervious, Inflow Depth = 0.34" for 2-yr event
Inflow = 3.48 cfs @ 12.60 hrs, Volume= 21,134 cf
Primary = 3.48 cfs @ 12.60 hrs, Volume= 21,134 cf, Atten= 0%, Lag= 0.1 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs

Summary for Subcatchment A: A

Runoff = 11.51 cfs @ 12.57 hrs, Volume= 58,924 cf, Depth= 0.74"
Routed to Pond A-P : (new Pond)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 10-yr Rainfall=4.16", Smoothing=On

	Area (sf)	CN	Description
*	720,950	67	Cropland, HSG A
*	203,104	30	Woods, HSG A
*	32,845	30	Meadow_Undisturbed, HSG A
*	170	98	Impervious, HSG A
	957,069	58	Weighted Average
	956,899		99.98% Pervious Area
	170		0.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.0					**Direct Entry,**

Summary for Subcatchment AE: AE

Runoff = 1.74 cfs @ 12.57 hrs, Volume= 9,481 cf, Depth= 0.64"
Routed to Pond A-P : (new Pond)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 10-yr Rainfall=4.16", Smoothing=On

	Area (sf)	CN	Description
*	52,870	30	Woods, HSG A
*	66,206	75	Single Family Residential, HSG A
*	25,924	58	Meadow, HSG A
*	19,102	30	Meadow_Undisturbed, HSG A
*	13,254	98	Impervious, HSG A
	177,356	56	Weighted Average
	164,102		92.53% Pervious Area
	13,254		7.47% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.0					**Direct Entry,**

Summary for Subcatchment B: B

Runoff = 7.56 cfs @ 12.53 hrs, Volume= 35,481 cf, Depth= 0.95"
Routed to Pond B-P : (new Pond)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 10-yr Rainfall=4.16", Smoothing=On

	Area (sf)	CN	Description
*	392,179	67	Cropland, HSG A
*	54,125	30	Woods, HSG A
*	1,476	30	Meadow_Undisturbed, HSG A
*	434	98	Impervious, HSG A
	448,213	62	Weighted Average
	447,779		99.90% Pervious Area
	434		0.10% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.0					**Direct Entry,**

Summary for Subcatchment BN: BN

Runoff = 2.44 cfs @ 12.63 hrs, Volume= 15,693 cf, Depth= 0.46"
Routed to Pond B-P : (new Pond)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 10-yr Rainfall=4.16", Smoothing=On

	Area (sf)	CN	Description
*	240,073	67	Cropland, HSG A
*	67,105	30	Woods, HSG A
*	98,892	30	Meadow_Undisturbed, HSG A
	406,070	52	Weighted Average
	406,070		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.0					**Direct Entry,**

Summary for Subcatchment C: C

Runoff = 1.04 cfs @ 12.77 hrs, Volume= 10,247 cf, Depth= 0.24"
Routed to Pond C-P : (new Pond)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 10-yr Rainfall=4.16", Smoothing=On

	Area (sf)	CN	Description
*	220,908	67	Cropland, HSG A
*	242,386	30	Woods, HSG A
*	44,136	30	Meadow_Undisturbed, HSG A
	507,431	46	Weighted Average
	507,431		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.0					**Direct Entry,**

Summary for Subcatchment CE: CE

Runoff = 0.86 cfs @ 12.63 hrs, Volume= 6,225 cf, Depth= 0.38"
Routed to Pond C-P : (new Pond)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 10-yr Rainfall=4.16", Smoothing=On

	Area (sf)	CN	Description
*	72,622	30	Woods, HSG A
*	73,058	75	Single Family Residential, HSG A
*	41,418	30	Meadow_Undisturbed, HSG A
*	7,599	98	Impervious, HSG A
	194,698	50	Weighted Average
	187,099		96.10% Pervious Area
	7,599		3.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.0					**Direct Entry, 30**

Summary for Subcatchment D: D

Runoff = 0.02 cfs @ 18.77 hrs, Volume= 509 cf, Depth= 0.02"
Routed to Link N : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 10-yr Rainfall=4.16", Smoothing=On

	Area (sf)	CN	Description
*	51,784	67	Cropland, HSG A
*	216,874	30	Woods, HSG A
*	38,391	30	Meadow_Undisturbed, HSG A
	307,049	36	Weighted Average
	307,049		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.0					**Direct Entry,**

Summary for Subcatchment DN: DN

[45] Hint: Runoff=Zero

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"
Routed to Link N : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 10-yr Rainfall=4.16", Smoothing=On

	Area (sf)	CN	Description
*	173,230	30	Woods, HSG A
*	95,432	30	Meadow_Undisturbed, HSG A
	268,661	30	Weighted Average
	268,661		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.0					**Direct Entry,**

Summary for Subcatchment E: E

Runoff = 2.82 cfs @ 12.57 hrs, Volume= 14,857 cf, Depth= 0.69"
Routed to Link W : Offsite Discharge

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 10-yr Rainfall=4.16", Smoothing=On

	Area (sf)	CN	Description
*	473	96	Gravel, HSG A
*	184,092	67	Cropland, HSG A
*	49,991	30	Woods, HSG A
*	21,631	30	Meadow_Undisturbed, HSG A
*	2,411	98	Impervious, HSG A
	258,596	57	Weighted Average
	256,186		99.07% Pervious Area
	2,411		0.93% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.0					**Direct Entry,**

Summary for Subcatchment F: F

Runoff = 10.39 cfs @ 12.50 hrs, Volume= 46,495 cf, Depth= 1.12"
Routed to Link W : Offsite Discharge

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 10-yr Rainfall=4.16", Smoothing=On

	Area (sf)	CN	Description
*	616	96	Gravel, HSG A
*	470,977	67	Cropland, HSG A
*	22,431	30	Woods, HSG A
*	2,971	30	Meadow_Undisturbed, HSG A
*	41	98	Impervious, HSG A
	497,036	65	Weighted Average
	496,995		99.99% Pervious Area
	41		0.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.0					**Direct Entry,**

Summary for Subcatchment G: G

[45] Hint: Runoff=Zero

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"
Routed to Link S : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 10-yr Rainfall=4.16", Smoothing=On

	Area (sf)	CN	Description
*	10,162	30	Woods, HSG A
	10,162		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.0					**Direct Entry,**

Summary for Subcatchment GE: GE

Runoff = 0.01 cfs @ 18.77 hrs, Volume= 298 cf, Depth= 0.02"
Routed to Link S : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 10-yr Rainfall=4.16", Smoothing=On

	Area (sf)	CN	Description
*	100,409	30	Woods, HSG A
*	18,876	75	Single Family Residential, HSG A
*	58,143	30	Meadow_Undisturbed, HSG A
*	2,324	98	Impervious, HSG A
	179,752	36	Weighted Average
	177,428		98.71% Pervious Area
	2,324		1.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.0					**Direct Entry,**

Summary for Subcatchment SW-A4.1: NE QUAD

Runoff = 50.15 cfs @ 12.50 hrs, Volume= 206,740 cf, Depth= 1.79"
Routed to Pond SW-P4.1 : summers landing 30P

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 10-yr Rainfall=4.16", Smoothing=On

	Area (ac)	CN	Description
*	10.250	98	Paved Parking, HSG B
*	1.530	98	Water Surface, HSG B
*	20.080	61	>75% Grass Cover, HSG B
	31.860	75	Weighted Average
	20.080		63.03% Pervious Area
	11.780		36.97% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.0					**Direct Entry,**
25.0	0	Total, Increased to minimum Tc = 30.0 min			

Summary for Subcatchment SW-A4.3: NW QUAD

Runoff = 51.75 cfs @ 12.50 hrs, Volume= 215,160 cf, Depth= 1.64"
Routed to Pond SW-P4.3 : Summers landing 31P

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 10-yr Rainfall=4.16", Smoothing=On

	Area (ac)	CN	Description
*	10.510	98	Paved Parking, HSG B
*	23.970	61	>75% Grass cover, Good
*	1.590	98	Water Surface, HSG B
	36.070	73	Weighted Average
	23.970		66.45% Pervious Area
	12.100		33.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.0					**Direct Entry,**
25.0	0	Total, Increased to minimum Tc = 30.0 min			

Summary for Subcatchment SW-A5.1: SE QUAD

Runoff = 44.18 cfs @ 12.50 hrs, Volume= 184,693 cf, Depth= 1.57"
Routed to Pond SW-P5.1 : Summers landing 28P

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 10-yr Rainfall=4.16", Smoothing=On

	Area (ac)	CN	Description
*	8.430	98	
*	22.650	61	
*	1.260	98	
	32.340	72	Weighted Average
	22.650		70.04% Pervious Area
	9.690		29.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.0					**Direct Entry,**
25.0	0	Total, Increased to minimum Tc = 30.0 min			

Summary for Subcatchment SW-A5.3: SW QUAD N

Runoff = 28.81 cfs @ 12.50 hrs, Volume= 121,203 cf, Depth= 1.50"
Routed to Pond SW-P5.3 : Summers landing POND 2 NORTH

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 10-yr Rainfall=4.16", Smoothing=On

	Area (ac)	CN	Description
*	5.230	98	
*	16.000	61	
*	0.960	98	
	22.190	71	Weighted Average
	16.000		72.10% Pervious Area
	6.190		27.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.0					**Direct Entry,**
25.0	0	Total, Increased to minimum Tc = 30.0 min			

Summary for Subcatchment SW-A5.4: SW QUAD S

Runoff = 15.08 cfs @ 12.50 hrs, Volume= 62,693 cf, Depth= 1.64"
Routed to Pond SW-P5.4 : Summers Landing POND 2 SOUTH

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 10-yr Rainfall=4.16", Smoothing=On

	Area (ac)	CN	Description
*	2.560	98	
*	7.220	61	
*	0.730	98	
	10.510	73	Weighted Average
	7.220		68.70% Pervious Area
	3.290		31.30% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.0					**Direct Entry,**
25.0	0	Total, Increased to minimum Tc = 30.0 min			

Summary for Pond A-P: (new Pond)

[80] Warning: Exceeded Pond B-P by 0.12' @ 19.53 hrs (7.22 cfs 170,933 cf)

Inflow = 13.25 cfs @ 12.57 hrs, Volume= 203,628 cf
Outflow = 2.95 cfs @ 20.82 hrs, Volume= 86,801 cf, Atten= 78%, Lag= 495.3 min
Primary = 2.95 cfs @ 20.82 hrs, Volume= 86,801 cf
Routed to Link S : (new Link)

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Peak Elev= 752.14' @ 20.82 hrs Surf.Area= 195,674 sf Storage= 142,717 cf

Plug-Flow detention time= 653.7 min calculated for 86,801 cf (43% of inflow)
Center-of-Mass det. time= 436.7 min (1,492.1 - 1,055.5)

Volume	Invert	Avail.Storage	Storage Description
#1	751.00'	327,150 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
751.00	43,080	0	0
752.00	190,165	116,623	116,623
753.00	230,890	210,528	327,150

Device	Routing	Invert	Outlet Devices
#1	Primary	752.00'	**20.0' long + 20.0 '/' SideZ x 30.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=2.95 cfs @ 20.82 hrs HW=752.14' TW=0.00' (Dynamic Tailwater)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 2.95 cfs @ 0.96 fps)

Summary for Pond B-P: (new Pond)

[86] Warning: Oscillations may require smaller dt (severity=4971)

Inflow Area = 854,283 sf, 0.05% Impervious, Inflow Depth = 0.72" for 10-yr event
Inflow = 9.91 cfs @ 12.57 hrs, Volume= 51,174 cf
Outflow = 0.41 cfs @ 16.59 hrs, Volume= 6,663 cf, Atten= 96%, Lag= 241.4 min
Primary = 0.41 cfs @ 16.59 hrs, Volume= 6,663 cf
Routed to Pond A-P : (new Pond)

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Peak Elev= 752.07' @ 25.67 hrs Surf.Area= 75,423 sf Storage= 49,878 cf

Plug-Flow detention time= 1,120.9 min calculated for 6,663 cf (13% of inflow)
Center-of-Mass det. time= 982.9 min (1,863.4 - 880.5)

Volume	Invert	Avail.Storage	Storage Description
#1	751.00'	134,145 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
751.00	15,900	0	0
752.00	72,965	44,433	44,433
753.00	106,459	89,712	134,145

Device	Routing	Invert	Outlet Devices
#1	Primary	751.90'	**30.0' long + 10.0 '/' SideZ x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=0.41 cfs @ 16.59 hrs HW=751.93' TW=751.90' (Dynamic Tailwater)
1=Broad-Crested Rectangular Weir (Weir Controls 0.41 cfs @ 0.44 fps)

Summary for Pond C-P: (new Pond)

Inflow Area = 702,129 sf, 1.08% Impervious, Inflow Depth = 0.28" for 10-yr event
Inflow = 1.87 cfs @ 12.70 hrs, Volume= 16,473 cf
Outflow = 0.14 cfs @ 21.73 hrs, Volume= 2,086 cf, Atten= 92%, Lag= 541.7 min
Primary = 0.14 cfs @ 21.73 hrs, Volume= 2,086 cf
Routed to Pond A-P : (new Pond)

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Peak Elev= 752.61' @ 21.73 hrs Surf.Area= 42,640 sf Storage= 14,895 cf

Plug-Flow detention time= 626.6 min calculated for 2,086 cf (13% of inflow)
Center-of-Mass det. time= 446.8 min (1,380.9 - 934.0)

Volume	Invert	Avail.Storage	Storage Description
#1	752.00'	128,974 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
752.00	6,033	0	0
753.00	65,844	35,939	35,939
754.00	120,226	93,035	128,974

Device	Routing	Invert	Outlet Devices
#1	Primary	752.60'	**40.0' long + 50.0 '/' SideZ x 20.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.14 cfs @ 21.73 hrs HW=752.61' TW=752.13' (Dynamic Tailwater)
1=Broad-Crested Rectangular Weir (Weir Controls 0.14 cfs @ 0.29 fps)

Summary for Pond SW-P1: SW-P1

[43] Hint: Has no inflow (Outflow=Zero)

Volume	Invert	Avail.Storage	Storage Description
#1	810.00'	87.505 af	**Custom Stage Data (Prismatic)**Listed below

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
810.00	6.048	0.000	0.000
812.00	6.451	12.499	12.499
814.00	6.854	13.305	25.804
816.00	7.284	14.138	39.942
820.00	8.131	30.830	70.772
822.00	8.602	16.733	87.505

Device	Routing	Invert	Outlet Devices
#1	Primary	810.00'	**12.0" Round Culvert** L= 80.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 810.00' / 809.00' S= 0.0125 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=0.00' TW=747.00' (Dynamic Tailwater)
↑**1=Culvert** (Controls 0.00 cfs)

Summary for Pond SW-P2: SW-P2

Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to nonexistent node SW-P3

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Peak Elev= 747.00' @ 0.00 hrs Surf.Area= 6.476 ac Storage= 0.000 af

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	747.00'	67.788 af	**Custom Stage Data (Prismatic)**Listed below

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
747.00	6.476	0.000	0.000
749.00	7.070	13.546	13.546
751.00	7.538	14.608	28.154
753.00	8.024	15.562	43.716
756.00	8.024	24.072	67.788

Device	Routing	Invert	Outlet Devices
#1	Primary	747.00'	**21.0" Round Culvert** L= 500.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 747.00' / 746.00' S= 0.0020 '/' Cc= 0.900 n= 0.013, Flow Area= 2.41 sf

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=747.00' (Free Discharge)
1=Culvert (Controls 0.00 cfs)

Summary for Pond SW-P4.1: summers landing 30P

Inflow = 50.15 cfs @ 12.50 hrs, Volume= 206,740 cf
Outflow = 7.77 cfs @ 13.66 hrs, Volume= 173,272 cf, Atten= 85%, Lag= 69.5 min
Primary = 3.10 cfs @ 13.66 hrs, Volume= 136,975 cf
Routed to Pond SW-P4.2 : Summers landing 30PI
Secondary = 4.67 cfs @ 13.66 hrs, Volume= 36,297 cf
Routed to Pond SW-P4.2 : Summers landing 30PI

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Starting Elev= 808.50' Surf.Area= 1.284 ac Storage= 4.283 af
Peak Elev= 810.36' @ 13.66 hrs Surf.Area= 1.655 ac Storage= 7.085 af (2.802 af above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= 456.6 min (1,296.9 - 840.4)

Volume	Invert	Avail.Storage	Storage Description
#1	804.00'	11.323 af	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
804.00	0.730	0.000	0.000
808.00	1.112	3.684	3.684
809.00	1.456	1.284	4.968
811.00	1.749	3.205	8.173
812.00	2.121	1.935	10.108
812.50	2.738	1.215	11.323

Device	Routing	Invert	Outlet Devices
#1	Primary	809.00'	**12.0" Round Culvert** L= 35.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 809.00' / 808.00' S= 0.0286 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Secondary	810.00'	**8.0' long x 30.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=3.10 cfs @ 13.66 hrs HW=810.36' TW=807.71' (Dynamic Tailwater)
1=Culvert (Inlet Controls 3.10 cfs @ 3.94 fps)

Secondary OutFlow Max=4.67 cfs @ 13.66 hrs HW=810.36' TW=807.71' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Weir Controls 4.67 cfs @ 1.62 fps)

Summary for Pond SW-P4.2: Summers landing 30PI

Inflow = 7.77 cfs @ 13.66 hrs, Volume= 173,272 cf
Outflow = 3.71 cfs @ 15.80 hrs, Volume= 172,906 cf, Atten= 52%, Lag= 128.5 min
Discarded = 2.12 cfs @ 15.80 hrs, Volume= 150,551 cf
Primary = 1.59 cfs @ 15.80 hrs, Volume= 22,355 cf
Routed to Pond SW-P4.3 : Summers landing 31P
Tertiary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond SW-P4.1 : summers landing 30P

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Peak Elev= 809.66' @ 15.80 hrs Surf.Area= 16,324 sf Storage= 44,134 cf

Plug-Flow detention time= 312.9 min calculated for 172,903 cf (100% of inflow)
Center-of-Mass det. time= 303.4 min (1,600.3 - 1,296.9)

Volume	Invert	Avail.Storage	Storage Description
#1	805.00'	124,959 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
805.00	5,274	0	0
808.00	9,331	21,908	21,908
809.00	14,735	12,033	33,941
811.00	19,577	34,312	68,253
812.00	22,804	21,191	89,443
812.50	119,260	35,516	124,959

Device	Routing	Invert	Outlet Devices
#1	Primary	809.00'	**15.0" Round Culvert** L= 661.0' Ke= 0.700 Inlet / Outlet Invert= 809.00' / 804.50' S= 0.0068 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf
#2	Tertiary	810.00'	**8.0' long x 30.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#3	Discarded	805.01'	**8.300 in/hr Exfiltration over Surface area above 805.01'** Excluded Surface area = 5,288 sf

Discarded OutFlow Max=2.12 cfs @ 15.80 hrs HW=809.66' (Free Discharge)
3=Exfiltration (Exfiltration Controls 2.12 cfs)

Primary OutFlow Max=1.59 cfs @ 15.80 hrs HW=809.66' TW=805.74' (Dynamic Tailwater)
1=Culvert (Inlet Controls 1.59 cfs @ 2.43 fps)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=805.00' TW=808.50' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Pond SW-P4.3: Summers landing 31P

Inflow = 51.75 cfs @ 12.50 hrs, Volume= 237,515 cf
Outflow = 11.03 cfs @ 13.39 hrs, Volume= 233,098 cf, Atten= 79%, Lag= 53.4 min
Primary = 3.34 cfs @ 13.39 hrs, Volume= 158,171 cf
Routed to Pond SW-P4.4 : Summers landing 31PI
Tertiary = 7.69 cfs @ 13.39 hrs, Volume= 74,927 cf
Routed to Pond SW-P4.4 : Summers landing 31PI

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Starting Elev= 804.50' Surf.Area= 69,445 sf Storage= 195,814 cf
Peak Elev= 806.00' @ 13.39 hrs Surf.Area= 79,547 sf Storage= 307,715 cf (111,901 cf above start)

Plug-Flow detention time= 1,739.9 min calculated for 37,283 cf (16% of inflow)
Center-of-Mass det. time= 410.5 min (1,274.0 - 863.5)

Volume	Invert	Avail.Storage	Storage Description
#1	800.50'	805,360 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
800.50	35,945	0	0
803.50	53,587	134,298	134,298
804.50	69,445	61,516	195,814
806.50	82,896	152,341	348,155
807.50	100,885	91,891	440,046
808.00	104,644	51,382	491,428
811.00	104,644	313,932	805,360

Device	Routing	Invert	Outlet Devices
#1	Primary	804.50'	**12.0" Round Culvert** L= 35.0' Ke= 0.700 Inlet / Outlet Invert= 804.50' / 803.50' S= 0.0286 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Tertiary	805.50'	**8.0' long x 30.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=3.34 cfs @ 13.39 hrs HW=806.00' TW=802.75' (Dynamic Tailwater)
1=Culvert (Inlet Controls 3.34 cfs @ 4.25 fps)

Tertiary OutFlow Max=7.69 cfs @ 13.39 hrs HW=806.00' TW=802.75' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Weir Controls 7.69 cfs @ 1.91 fps)

Summary for Pond SW-P4.4: Summers landing 31PI

Inflow = 11.03 cfs @ 13.39 hrs, Volume= 233,098 cf
Outflow = 4.44 cfs @ 16.32 hrs, Volume= 232,540 cf, Atten= 60%, Lag= 175.9 min
Discarded = 2.65 cfs @ 16.32 hrs, Volume= 201,167 cf
Primary = 1.79 cfs @ 16.32 hrs, Volume= 31,373 cf
Routed to Pond A-P : (new Pond)
Tertiary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond SW-P4.3 : Summers landing 31P

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Peak Elev= 805.27' @ 16.32 hrs Surf.Area= 22,182 sf Storage= 66,581 cf

Plug-Flow detention time= 369.1 min calculated for 232,540 cf (100% of inflow)
Center-of-Mass det. time= 358.4 min (1,632.4 - 1,274.0)

Volume	Invert	Avail.Storage	Storage Description
#1	800.50'	215,575 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
800.50	8,380	0	0
803.50	13,880	33,390	33,390
804.50	19,929	16,905	50,295
806.50	25,755	45,684	95,979
807.50	34,193	29,974	125,953
808.00	36,033	17,557	143,509
810.00	36,033	72,066	215,575

Device	Routing	Invert	Outlet Devices
#1	Primary	804.50'	**15.0" Round Culvert** L= 1,010.0' Ke= 0.700 Inlet / Outlet Invert= 804.50' / 801.00' S= 0.0035 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf
#2	Tertiary	805.50'	**8.0' long x 30.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#3	Discarded	800.51'	**8.300 in/hr Exfiltration over Surface area above 800.51'** Excluded Surface area = 8,398 sf

Discarded OutFlow Max=2.65 cfs @ 16.32 hrs HW=805.27' (Free Discharge)
3=Exfiltration (Exfiltration Controls 2.65 cfs)

Primary OutFlow Max=1.79 cfs @ 16.32 hrs HW=805.27' TW=751.87' (Dynamic Tailwater)
1=Culvert (Barrel Controls 1.79 cfs @ 3.21 fps)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=800.50' TW=804.50' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Pond SW-P5.1: Summers landing 28P

Inflow = 44.18 cfs @ 12.50 hrs, Volume= 184,693 cf
Outflow = 9.41 cfs @ 13.41 hrs, Volume= 182,251 cf, Atten= 79%, Lag= 54.4 min
Primary = 3.88 cfs @ 13.41 hrs, Volume= 132,663 cf
Routed to Pond SW-P5.2 : Summers Landing 28PI
Secondary = 5.53 cfs @ 13.41 hrs, Volume= 49,588 cf
Routed to Pond SW-P5.2 : Summers Landing 28PI

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Starting Elev= 806.00' Surf.Area= 55,104 sf Storage= 141,054 cf
Peak Elev= 807.55' @ 13.41 hrs Surf.Area= 65,611 sf Storage= 234,697 cf (93,643 cf above start)

Plug-Flow detention time= 1,280.4 min calculated for 41,197 cf (22% of inflow)
Center-of-Mass det. time= 368.3 min (1,214.8 - 846.4)

Volume	Invert	Avail.Storage	Storage Description
#1	802.00'	432,852 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
802.00	23,396	0	0
805.00	39,204	93,900	93,900
806.00	55,104	47,154	141,054
808.00	68,648	123,752	264,806
809.00	86,609	77,629	342,435
810.00	94,225	90,417	432,852

Device	Routing	Invert	Outlet Devices
#1	Primary	806.00'	**12.0" Round Culvert** L= 35.0' Ke= 0.500 Inlet / Outlet Invert= 806.00' / 805.00' S= 0.0286 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Secondary	807.00'	**5.0' long x 30.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=3.88 cfs @ 13.41 hrs HW=807.55' TW=805.82' (Dynamic Tailwater)
1=Culvert (Inlet Controls 3.88 cfs @ 4.94 fps)

Secondary OutFlow Max=5.53 cfs @ 13.41 hrs HW=807.55' TW=805.82' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Weir Controls 5.53 cfs @ 2.01 fps)

Summary for Pond SW-P5.2: Summers Landing 28Pl

Inflow = 9.41 cfs @ 13.41 hrs, Volume= 182,251 cf
Outflow = 4.51 cfs @ 15.13 hrs, Volume= 205,375 cf, Atten= 52%, Lag= 103.4 min
Discarded = 2.23 cfs @ 15.14 hrs, Volume= 166,435 cf
Primary = 2.28 cfs @ 15.13 hrs, Volume= 38,940 cf
Routed to Pond SW-P5.3 : Summers landing POND 2 NORTH
Tertiary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond SW-P5.1 : Summers landing 28P

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Starting Elev= 806.00' Surf.Area= 16,338 sf Storage= 23,268 cf
Peak Elev= 807.06' @ 15.14 hrs Surf.Area= 18,616 sf Storage= 41,734 cf (18,466 cf above start)

Plug-Flow detention time= 184.1 min calculated for 182,104 cf (100% of inflow)
Center-of-Mass det. time= 42.7 min (1,257.5 - 1,214.8)

Volume	Invert	Avail.Storage	Storage Description
#1	804.00'	141,493 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
804.00	6,954	0	0
805.00	11,622	9,288	9,288
806.00	16,338	13,980	23,268
808.00	20,651	36,989	60,257
809.00	26,716	23,684	83,941
810.00	29,463	28,090	112,030
811.00	29,463	29,463	141,493

Device	Routing	Invert	Outlet Devices
#1	Primary	806.00'	**12.0" Round Culvert** L= 622.0' Ke= 0.700 Inlet / Outlet Invert= 806.00' / 803.00' S= 0.0048 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Tertiary	807.00'	**8.0' long x 30.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#3	Discarded	804.01'	**8.300 in/hr Exfiltration over Surface area above 804.01'** Excluded Surface area = 7,001 sf

Discarded OutFlow Max=2.23 cfs @ 15.14 hrs HW=807.06' (Free Discharge)
3=Exfiltration (Exfiltration Controls 2.23 cfs)

Primary OutFlow Max=2.28 cfs @ 15.13 hrs HW=807.06' TW=804.42' (Dynamic Tailwater)
1=Culvert (Outlet Controls 2.28 cfs @ 3.42 fps)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=806.00' TW=806.00' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Pond SW-P5.3: Summers landing POND 2 NORTH

Inflow = 28.81 cfs @ 12.50 hrs, Volume= 160,143 cf
Outflow = 5.35 cfs @ 13.51 hrs, Volume= 158,495 cf, Atten= 81%, Lag= 60.3 min
Primary = 3.19 cfs @ 13.51 hrs, Volume= 116,188 cf
Routed to Pond SW-P5.5 : Summers Landing 29I
Tertiary = 2.19 cfs @ 15.27 hrs, Volume= 42,306 cf
Routed to Pond SW-P5.5 : Summers Landing 29I

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Starting Elev= 803.00' Surf.Area= 41,920 sf Storage= 152,896 cf
Peak Elev= 804.43' @ 15.32 hrs Surf.Area= 47,210 sf Storage= 216,438 cf (63,543 cf above start)

Plug-Flow detention time= 2,705.4 min calculated for 5,599 cf (3% of inflow)
Center-of-Mass det. time= 355.1 min (1,245.7 - 890.6)

Volume	Invert	Avail.Storage	Storage Description
#1	798.00'	532,787 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
798.00	24,234	0	0
802.00	33,387	115,242	115,242
803.00	41,920	37,654	152,896
805.00	49,340	91,260	244,156
806.00	58,658	53,999	298,155
810.00	58,658	234,632	532,787

Device	Routing	Invert	Outlet Devices
#1	Primary	803.00'	**12.0" Round Culvert** L= 35.0' Ke= 0.700 Inlet / Outlet Invert= 803.00' / 802.00' S= 0.0286 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Tertiary	804.00'	**3.0' long x 30.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=3.19 cfs @ 13.51 hrs HW=804.41' TW=803.50' (Dynamic Tailwater)
1=Culvert (Inlet Controls 3.19 cfs @ 4.06 fps)

Tertiary OutFlow Max=2.19 cfs @ 15.27 hrs HW=804.43' TW=804.07' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Weir Controls 2.19 cfs @ 1.71 fps)

Summary for Pond SW-P5.4: Summers Landing POND 2 SOUTH

Inflow = 15.08 cfs @ 12.50 hrs, Volume= 62,693 cf
Outflow = 2.35 cfs @ 13.49 hrs, Volume= 61,735 cf, Atten= 84%, Lag= 59.4 min
Primary = 2.35 cfs @ 13.49 hrs, Volume= 59,670 cf
Routed to Pond SW-P5.5 : Summers Landing 29l
Secondary = 0.18 cfs @ 16.06 hrs, Volume= 2,065 cf
Routed to Pond SW-P5.5 : Summers Landing 29l

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Starting Elev= 803.00' Surf.Area= 31,846 sf Storage= 105,243 cf
Peak Elev= 804.10' @ 15.64 hrs Surf.Area= 36,362 sf Storage= 142,840 cf (37,597 cf above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= 554.7 min (1,399.1 - 844.4)

Volume	Invert	Avail.Storage	Storage Description
#1	798.00'	324,420 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
798.00	15,145	0	0
802.00	23,612	77,514	77,514
803.00	31,846	27,729	105,243
805.00	40,039	71,885	177,128
806.00	50,909	45,474	222,602
808.00	50,909	101,818	324,420

Device	Routing	Invert	Outlet Devices
#1	Primary	803.00'	**12.0" Round Culvert** L= 35.0' Ke= 0.700 Inlet / Outlet Invert= 803.00' / 802.00' S= 0.0286 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Secondary	804.00'	**3.0' long x 30.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=2.34 cfs @ 13.49 hrs HW=803.99' TW=803.47' (Dynamic Tailwater)
1=Culvert (Outlet Controls 2.34 cfs @ 3.73 fps)

Secondary OutFlow Max=0.18 cfs @ 16.06 hrs HW=804.10' TW=804.07' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Weir Controls 0.18 cfs @ 0.60 fps)

Summary for Pond SW-P5.5: Summers Landing 29l

Inflow = 7.70 cfs @ 13.49 hrs, Volume= 220,229 cf
Outflow = 4.80 cfs @ 15.59 hrs, Volume= 220,081 cf, Atten= 38%, Lag= 125.9 min
Discarded = 1.50 cfs @ 15.59 hrs, Volume= 124,981 cf
Primary = 3.29 cfs @ 15.59 hrs, Volume= 95,100 cf
Routed to Pond A-P : (new Pond)
Tertiary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond SW-P5.4 : Summers Landing POND 2 SOUTH

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Peak Elev= 804.08' @ 15.59 hrs Surf.Area= 10,555 sf Storage= 25,348 cf

Plug-Flow detention time= 141.1 min calculated for 220,081 cf (100% of inflow)
Center-of-Mass det. time= 138.1 min (1,426.7 - 1,288.7)

Volume	Invert	Avail.Storage	Storage Description
#1	800.00'	112,832 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
800.00	2,718	0	0
802.00	5,260	7,978	7,978
803.00	8,713	6,987	14,965
805.00	12,132	20,845	35,810
806.00	15,768	13,950	49,760
810.00	15,768	63,072	112,832

Device	Routing	Invert	Outlet Devices
#1	Primary	803.00'	**18.0" Round Culvert** L= 750.0' Ke= 0.700 Inlet / Outlet Invert= 803.00' / 801.00' S= 0.0027 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf
#2	Tertiary	806.00'	**12.0" Round Culvert** L= 35.0' Ke= 0.700 Inlet / Outlet Invert= 806.00' / 803.00' S= 0.0857 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#3	Discarded	800.01'	**8.300 in/hr Exfiltration over Surface area above 800.01'** Excluded Surface area = 2,731 sf

Discarded OutFlow Max=1.50 cfs @ 15.59 hrs HW=804.08' (Free Discharge)
↑**3=Exfiltration** (Exfiltration Controls 1.50 cfs)

Primary OutFlow Max=3.29 cfs @ 15.59 hrs HW=804.08' TW=751.77' (Dynamic Tailwater)
↑**1=Culvert** (Barrel Controls 3.29 cfs @ 3.39 fps)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=800.00' TW=803.00' (Dynamic Tailwater)
↑**2=Culvert** (Controls 0.00 cfs)

Summary for Link N: (new Link)

Inflow Area = 575,710 sf, 0.00% Impervious, Inflow Depth = 0.01" for 10-yr event
Inflow = 0.02 cfs @ 18.77 hrs, Volume= 509 cf
Primary = 0.02 cfs @ 18.77 hrs, Volume= 509 cf, Atten= 0%, Lag= 0.1 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs

Summary for Link S: (new Link)

Inflow	=	2.96 cfs @	20.82 hrs,	Volume=	87,098 cf
Primary	=	2.96 cfs @	20.82 hrs,	Volume=	87,098 cf, Atten= 0%, Lag= 0.1 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs

Summary for Link W: Offsite Discharge

Inflow Area = 755,633 sf, 0.32% Impervious, Inflow Depth = 0.97" for 10-yr event
Inflow = 13.16 cfs @ 12.53 hrs, Volume= 61,353 cf
Primary = 13.16 cfs @ 12.54 hrs, Volume= 61,353 cf, Atten= 0%, Lag= 0.1 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs

Summary for Subcatchment A: A

Runoff = 50.92 cfs @ 12.50 hrs, Volume= 214,141 cf, Depth= 2.68"
Routed to Pond A-P : (new Pond)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 100-yr(7.4") Rainfall=7.40", Smoothing=On

	Area (sf)	CN	Description
*	720,950	67	Cropland, HSG A
*	203,104	30	Woods, HSG A
*	32,845	30	Meadow_Undisturbed, HSG A
*	170	98	Impervious, HSG A
	957,069	58	Weighted Average
	956,899		99.98% Pervious Area
	170		0.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.0					**Direct Entry,**

Summary for Subcatchment AE: AE

Runoff = 8.61 cfs @ 12.50 hrs, Volume= 36,688 cf, Depth= 2.48"
Routed to Pond A-P : (new Pond)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 100-yr(7.4") Rainfall=7.40", Smoothing=On

	Area (sf)	CN	Description
*	52,870	30	Woods, HSG A
*	66,206	75	Single Family Residential, HSG A
*	25,924	58	Meadow, HSG A
*	19,102	30	Meadow_Undisturbed, HSG A
*	13,254	98	Impervious, HSG A
	177,356	56	Weighted Average
	164,102		92.53% Pervious Area
	13,254		7.47% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.0					**Direct Entry,**

Summary for Subcatchment B: B

Runoff = 28.01 cfs @ 12.50 hrs, Volume= 115,730 cf, Depth= 3.10"
Routed to Pond B-P : (new Pond)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 100-yr(7.4") Rainfall=7.40", Smoothing=On

	Area (sf)	CN	Description
*	392,179	67	Cropland, HSG A
*	54,125	30	Woods, HSG A
*	1,476	30	Meadow_Undisturbed, HSG A
*	434	98	Impervious, HSG A
	448,213	62	Weighted Average
	447,779		99.90% Pervious Area
	434		0.10% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.0					**Direct Entry,**

Summary for Subcatchment BN: BN

Runoff = 15.96 cfs @ 12.50 hrs, Volume= 70,599 cf, Depth= 2.09"
Routed to Pond B-P : (new Pond)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 100-yr(7.4") Rainfall=7.40", Smoothing=On

	Area (sf)	CN	Description
*	240,073	67	Cropland, HSG A
*	67,105	30	Woods, HSG A
*	98,892	30	Meadow_Undisturbed, HSG A
	406,070	52	Weighted Average
	406,070		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.0					**Direct Entry,**

Summary for Subcatchment C: C

Runoff = 13.22 cfs @ 12.56 hrs, Volume= 64,279 cf, Depth= 1.52"
Routed to Pond C-P : (new Pond)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 100-yr(7.4") Rainfall=7.40", Smoothing=On

	Area (sf)	CN	Description
*	220,908	67	Cropland, HSG A
*	242,386	30	Woods, HSG A
*	44,136	30	Meadow_Undisturbed, HSG A
	507,431	46	Weighted Average
	507,431		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.0					**Direct Entry,**

Summary for Subcatchment CE: CE

Runoff = 6.77 cfs @ 12.53 hrs, Volume= 30,722 cf, Depth= 1.89"
Routed to Pond C-P : (new Pond)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 100-yr(7.4") Rainfall=7.40", Smoothing=On

	Area (sf)	CN	Description
*	72,622	30	Woods, HSG A
*	73,058	75	Single Family Residential, HSG A
*	41,418	30	Meadow_Undisturbed, HSG A
*	7,599	98	Impervious, HSG A
	194,698	50	Weighted Average
	187,099		96.10% Pervious Area
	7,599		3.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.0					**Direct Entry, 30**

Summary for Subcatchment D: D

Runoff = 2.43 cfs @ 12.63 hrs, Volume= 17,490 cf, Depth= 0.68"
Routed to Link N : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 100-yr(7.4") Rainfall=7.40", Smoothing=On

	Area (sf)	CN	Description
*	51,784	67	Cropland, HSG A
*	216,874	30	Woods, HSG A
*	38,391	30	Meadow_Undisturbed, HSG A
	307,049	36	Weighted Average
	307,049		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.0					**Direct Entry,**

Summary for Subcatchment DN: DN

Runoff = 0.47 cfs @ 12.97 hrs, Volume= 6,417 cf, Depth= 0.29"
Routed to Link N : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 100-yr(7.4") Rainfall=7.40", Smoothing=On

	Area (sf)	CN	Description
*	173,230	30	Woods, HSG A
*	95,432	30	Meadow_Undisturbed, HSG A
	268,661	30	Weighted Average
	268,661		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.0					**Direct Entry,**

Summary for Subcatchment E: E

Runoff = 13.16 cfs @ 12.50 hrs, Volume= 55,669 cf, Depth= 2.58"
Routed to Link W : Offsite Discharge

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 100-yr(7.4") Rainfall=7.40", Smoothing=On

	Area (sf)	CN	Description
*	473	96	Gravel, HSG A
*	184,092	67	Cropland, HSG A
*	49,991	30	Woods, HSG A
*	21,631	30	Meadow_Undisturbed, HSG A
*	2,411	98	Impervious, HSG A
	258,596	57	Weighted Average
	256,186		99.07% Pervious Area
	2,411		0.93% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.0					**Direct Entry,**

Summary for Subcatchment F: F

Runoff = 34.50 cfs @ 12.50 hrs, Volume= 141,447 cf, Depth= 3.41"
Routed to Link W : Offsite Discharge

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 100-yr(7.4") Rainfall=7.40", Smoothing=On

	Area (sf)	CN	Description
*	616	96	Gravel, HSG A
*	470,977	67	Cropland, HSG A
*	22,431	30	Woods, HSG A
*	2,971	30	Meadow_Undisturbed, HSG A
*	41	98	Impervious, HSG A
	497,036	65	Weighted Average
	496,995		99.99% Pervious Area
	41		0.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.0					**Direct Entry,**

Summary for Subcatchment G: G

Runoff = 0.02 cfs @ 12.97 hrs, Volume= 243 cf, Depth= 0.29"
Routed to Link S : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 100-yr(7.4") Rainfall=7.40", Smoothing=On

	Area (sf)	CN	Description
*	10,162	30	Woods, HSG A
	10,162		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.0					**Direct Entry,**

Summary for Subcatchment GE: GE

Runoff = 1.42 cfs @ 12.63 hrs, Volume= 10,239 cf, Depth= 0.68"
Routed to Link S : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 100-yr(7.4") Rainfall=7.40", Smoothing=On

	Area (sf)	CN	Description
*	100,409	30	Woods, HSG A
*	18,876	75	Single Family Residential, HSG A
*	58,143	30	Meadow_Undisturbed, HSG A
*	2,324	98	Impervious, HSG A
	179,752	36	Weighted Average
	177,428		98.71% Pervious Area
	2,324		1.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.0					**Direct Entry,**

Summary for Subcatchment SW-A4.1: NE QUAD

Runoff = 127.55 cfs @ 12.47 hrs, Volume= 520,867 cf, Depth= 4.50"
Routed to Pond SW-P4.1 : summers landing 30P

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 100-yr(7.4") Rainfall=7.40", Smoothing=On

	Area (ac)	CN	Description
*	10.250	98	Paved Parking, HSG B
*	1.530	98	Water Surface, HSG B
*	20.080	61	>75% Grass Cover, HSG B
	31.860	75	Weighted Average
	20.080		63.03% Pervious Area
	11.780		36.97% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.0					**Direct Entry,**
25.0	0	Total, Increased to minimum Tc = 30.0 min			

Summary for Subcatchment SW-A4.3: NW QUAD

Runoff = 137.40 cfs @ 12.47 hrs, Volume= 560,690 cf, Depth= 4.28"
Routed to Pond SW-P4.3 : Summers landing 31P

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 100-yr(7.4") Rainfall=7.40", Smoothing=On

	Area (ac)	CN	Description
*	10.510	98	Paved Parking, HSG B
*	23.970	61	>75% Grass cover, Good
*	1.590	98	Water Surface, HSG B
	36.070	73	Weighted Average
	23.970		66.45% Pervious Area
	12.100		33.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.0					**Direct Entry,**
25.0	0	Total, Increased to minimum Tc = 30.0 min			

Summary for Subcatchment SW-A5.1: SE QUAD

Runoff = 120.03 cfs @ 12.50 hrs, Volume= 489,785 cf, Depth= 4.17"
Routed to Pond SW-P5.1 : Summers landing 28P

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 100-yr(7.4") Rainfall=7.40", Smoothing=On

	Area (ac)	CN	Description
*	8.430	98	
*	22.650	61	
*	1.260	98	
	32.340	72	Weighted Average
	22.650		70.04% Pervious Area
	9.690		29.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.0					**Direct Entry,**
25.0	0	Total, Increased to minimum Tc = 30.0 min			

Summary for Subcatchment SW-A5.3: SW QUAD N

Runoff = 80.22 cfs @ 12.50 hrs, Volume= 327,233 cf, Depth= 4.06"
Routed to Pond SW-P5.3 : Summers landing POND 2 NORTH

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 100-yr(7.4") Rainfall=7.40", Smoothing=On

	Area (ac)	CN	Description
*	5.230	98	
*	16.000	61	
*	0.960	98	
	22.190	71	Weighted Average
	16.000		72.10% Pervious Area
	6.190		27.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.0					**Direct Entry,**
25.0	0	Total, Increased to minimum Tc = 30.0 min			

Summary for Subcatchment SW-A5.4: SW QUAD S

Runoff = 40.03 cfs @ 12.47 hrs, Volume= 163,373 cf, Depth= 4.28"
Routed to Pond SW-P5.4 : Summers Landing POND 2 SOUTH

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 100-yr(7.4") Rainfall=7.40", Smoothing=On

	Area (ac)	CN	Description
*	2.560	98	
*	7.220	61	
*	0.730	98	
	10.510	73	Weighted Average
	7.220		68.70% Pervious Area
	3.290		31.30% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.0					**Direct Entry,**
25.0	0	Total, Increased to minimum Tc = 30.0 min			

Summary for Pond A-P: (new Pond)

Inflow = 78.65 cfs @ 12.72 hrs, Volume= 1,249,025 cf
Outflow = 29.42 cfs @ 13.91 hrs, Volume= 1,132,124 cf, Atten= 63%, Lag= 71.4 min
Primary = 29.42 cfs @ 13.91 hrs, Volume= 1,132,124 cf
Routed to Link S : (new Link)

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Peak Elev= 752.53' @ 13.91 hrs Surf.Area= 211,646 sf Storage= 222,594 cf

Plug-Flow detention time= 211.5 min calculated for 1,132,124 cf (91% of inflow)
Center-of-Mass det. time= 130.4 min (1,313.1 - 1,182.7)

Volume	Invert	Avail.Storage	Storage Description
#1	751.00'	327,150 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
751.00	43,080	0	0
752.00	190,165	116,623	116,623
753.00	230,890	210,528	327,150

Device	Routing	Invert	Outlet Devices
#1	Primary	752.00'	**20.0' long + 20.0 '/' SideZ x 30.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=29.42 cfs @ 13.91 hrs HW=752.53' TW=0.00' (Dynamic Tailwater)
↑**1=Broad-Crested Rectangular Weir** (Weir Controls 29.42 cfs @ 1.83 fps)

Summary for Pond B-P: (new Pond)

[86] Warning: Oscillations may require smaller dt (severity=1045)

Inflow Area = 854,283 sf, 0.05% Impervious, Inflow Depth = 2.62" for 100-yr(7.4") event
Inflow = 43.96 cfs @ 12.50 hrs, Volume= 186,329 cf
Outflow = 19.10 cfs @ 12.79 hrs, Volume= 141,789 cf, Atten= 57%, Lag= 17.1 min
Primary = 19.10 cfs @ 12.79 hrs, Volume= 141,789 cf
Routed to Pond A-P : (new Pond)

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Peak Elev= 752.53' @ 13.91 hrs Surf.Area= 90,679 sf Storage= 87,704 cf

Plug-Flow detention time= 385.5 min calculated for 141,789 cf (76% of inflow)
Center-of-Mass det. time= 309.4 min (1,157.9 - 848.5)

Volume	Invert	Avail.Storage	Storage Description
#1	751.00'	134,145 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
751.00	15,900	0	0
752.00	72,965	44,433	44,433
753.00	106,459	89,712	134,145

Device	Routing	Invert	Outlet Devices
#1	Primary	751.90'	**30.0' long + 10.0 '/' SideZ x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=19.03 cfs @ 12.79 hrs HW=752.30' TW=752.08' (Dynamic Tailwater)
1=Broad-Crested Rectangular Weir (Weir Controls 19.03 cfs @ 1.40 fps)

Summary for Pond C-P: (new Pond)

Inflow Area = 702,129 sf, 1.08% Impervious, Inflow Depth = 1.62" for 100-yr(7.4") event
Inflow = 19.99 cfs @ 12.53 hrs, Volume= 95,001 cf
Outflow = 13.22 cfs @ 12.82 hrs, Volume= 80,614 cf, Atten= 34%, Lag= 17.3 min
Primary = 13.22 cfs @ 12.82 hrs, Volume= 80,614 cf
Routed to Pond A-P : (new Pond)

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Peak Elev= 752.82' @ 12.82 hrs Surf.Area= 54,913 sf Storage= 24,904 cf

Plug-Flow detention time= 107.4 min calculated for 80,614 cf (85% of inflow)
Center-of-Mass det. time= 45.9 min (917.0 - 871.2)

Volume	Invert	Avail.Storage	Storage Description
#1	752.00'	128,974 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
752.00	6,033	0	0
753.00	65,844	35,939	35,939
754.00	120,226	93,035	128,974

Device	Routing	Invert	Outlet Devices
#1	Primary	752.60'	**40.0' long + 50.0 '/' SideZ x 20.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=13.22 cfs @ 12.82 hrs HW=752.82' TW=752.13' (Dynamic Tailwater)
1=Broad-Crested Rectangular Weir (Weir Controls 13.22 cfs @ 1.20 fps)

Summary for Pond SW-P1: SW-P1

[43] Hint: Has no inflow (Outflow=Zero)

Volume	Invert	Avail.Storage	Storage Description
#1	810.00'	87.505 af	**Custom Stage Data (Prismatic)**Listed below

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
810.00	6.048	0.000	0.000
812.00	6.451	12.499	12.499
814.00	6.854	13.305	25.804
816.00	7.284	14.138	39.942
820.00	8.131	30.830	70.772
822.00	8.602	16.733	87.505

Device	Routing	Invert	Outlet Devices
#1	Primary	810.00'	**12.0" Round Culvert** L= 80.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 810.00' / 809.00' S= 0.0125 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=0.00' TW=747.00' (Dynamic Tailwater)
↑—**1=Culvert** (Controls 0.00 cfs)

Summary for Pond SW-P2: SW-P2

Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to nonexistent node SW-P3

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Peak Elev= 747.00' @ 0.00 hrs Surf.Area= 6.476 ac Storage= 0.000 af

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	747.00'	67.788 af	**Custom Stage Data (Prismatic)**Listed below

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
747.00	6.476	0.000	0.000
749.00	7.070	13.546	13.546
751.00	7.538	14.608	28.154
753.00	8.024	15.562	43.716
756.00	8.024	24.072	67.788

Device	Routing	Invert	Outlet Devices
#1	Primary	747.00'	**21.0" Round Culvert** L= 500.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 747.00' / 746.00' S= 0.0020 '/' Cc= 0.900 n= 0.013, Flow Area= 2.41 sf

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=747.00' (Free Discharge)
1=Culvert (Controls 0.00 cfs)

Summary for Pond SW-P4.1: summers landing 30P

Inflow = 127.55 cfs @ 12.47 hrs, Volume= 520,867 cf
Outflow = 52.16 cfs @ 12.80 hrs, Volume= 487,120 cf, Atten= 59%, Lag= 19.8 min
Primary = 4.92 cfs @ 12.75 hrs, Volume= 106,678 cf
Routed to Pond SW-P4.2 : Summers landing 30PI
Secondary = 47.83 cfs @ 12.80 hrs, Volume= 380,442 cf
Routed to Pond SW-P4.2 : Summers landing 30PI

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Starting Elev= 808.50' Surf.Area= 1.284 ac Storage= 4.283 af
Peak Elev= 812.11' @ 13.89 hrs Surf.Area= 2.261 ac Storage= 10.357 af (6.074 af above start)

Plug-Flow detention time= 685.1 min calculated for 300,546 cf (58% of inflow)
Center-of-Mass det. time= 367.3 min (1,188.8 - 821.5)

Volume	Invert	Avail.Storage	Storage Description
#1	804.00'	11.323 af	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
804.00	0.730	0.000	0.000
808.00	1.112	3.684	3.684
809.00	1.456	1.284	4.968
811.00	1.749	3.205	8.173
812.00	2.121	1.935	10.108
812.50	2.738	1.215	11.323

Device	Routing	Invert	Outlet Devices
#1	Primary	809.00'	**12.0" Round Culvert** L= 35.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 809.00' / 808.00' S= 0.0286 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Secondary	810.00'	**8.0' long x 30.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=4.92 cfs @ 12.75 hrs HW=811.68' TW=809.50' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 4.92 cfs @ 6.26 fps)

Secondary OutFlow Max=47.76 cfs @ 12.80 hrs HW=811.73' TW=810.08' (Dynamic Tailwater)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 47.76 cfs @ 3.45 fps)

Summary for Pond SW-P4.2: Summers landing 30PI

Inflow = 52.16 cfs @ 12.80 hrs, Volume= 487,120 cf
Outflow = 12.24 cfs @ 13.92 hrs, Volume= 486,697 cf, Atten= 77%, Lag= 67.3 min
Discarded = 6.93 cfs @ 13.93 hrs, Volume= 258,854 cf
Primary = 5.38 cfs @ 13.33 hrs, Volume= 227,843 cf
Routed to Pond SW-P4.3 : Summers landing 31P
Tertiary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond SW-P4.1 : summers landing 30P

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Peak Elev= 812.10' @ 13.93 hrs Surf.Area= 41,355 sf Storage= 92,528 cf

Plug-Flow detention time= 199.7 min calculated for 486,687 cf (100% of inflow)
Center-of-Mass det. time= 195.7 min (1,384.5 - 1,188.8)

Volume	Invert	Avail.Storage	Storage Description
#1	805.00'	124,959 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
805.00	5,274	0	0
808.00	9,331	21,908	21,908
809.00	14,735	12,033	33,941
811.00	19,577	34,312	68,253
812.00	22,804	21,191	89,443
812.50	119,260	35,516	124,959

Device	Routing	Invert	Outlet Devices
#1	Primary	809.00'	**15.0" Round Culvert** L= 661.0' Ke= 0.700 Inlet / Outlet Invert= 809.00' / 804.50' S= 0.0068 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf
#2	Tertiary	810.00'	**8.0' long x 30.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#3	Discarded	805.01'	**8.300 in/hr Exfiltration over Surface area above 805.01'** Excluded Surface area = 5,288 sf

Discarded OutFlow Max=6.93 cfs @ 13.93 hrs HW=812.10' (Free Discharge)
3=Exfiltration (Exfiltration Controls 6.93 cfs)

Primary OutFlow Max=5.38 cfs @ 13.33 hrs HW=811.98' TW=807.55' (Dynamic Tailwater)
1=Culvert (Outlet Controls 5.38 cfs @ 4.39 fps)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=805.00' TW=808.50' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Pond SW-P4.3: Summers landing 31P

Inflow = 137.40 cfs @ 12.47 hrs, Volume= 788,533 cf
Outflow = 59.78 cfs @ 12.84 hrs, Volume= 783,375 cf, Atten= 56%, Lag= 22.3 min
Primary = 5.13 cfs @ 12.78 hrs, Volume= 122,966 cf
Routed to Pond SW-P4.4 : Summers landing 31PI
Tertiary = 55.21 cfs @ 12.84 hrs, Volume= 660,409 cf
Routed to Pond SW-P4.4 : Summers landing 31PI

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Starting Elev= 804.50' Surf.Area= 69,445 sf Storage= 195,814 cf
Peak Elev= 807.92' @ 15.67 hrs Surf.Area= 104,061 sf Storage= 483,340 cf (287,526 cf above start)

Plug-Flow detention time= 689.8 min calculated for 587,561 cf (75% of inflow)
Center-of-Mass det. time= 394.2 min (1,312.7 - 918.5)

Volume	Invert	Avail.Storage	Storage Description
#1	800.50'	805,360 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
800.50	35,945	0	0
803.50	53,587	134,298	134,298
804.50	69,445	61,516	195,814
806.50	82,896	152,341	348,155
807.50	100,885	91,891	440,046
808.00	104,644	51,382	491,428
811.00	104,644	313,932	805,360

Device	Routing	Invert	Outlet Devices
#1	Primary	804.50'	**12.0" Round Culvert** L= 35.0' Ke= 0.700 Inlet / Outlet Invert= 804.50' / 803.50' S= 0.0286 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Tertiary	805.50'	**8.0' long x 30.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=5.13 cfs @ 12.78 hrs HW=807.36' TW=805.00' (Dynamic Tailwater)
1=Culvert (Inlet Controls 5.13 cfs @ 6.53 fps)

Tertiary OutFlow Max=55.16 cfs @ 12.84 hrs HW=807.40' TW=805.56' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Weir Controls 55.16 cfs @ 3.62 fps)

Summary for Pond SW-P4.4: Summers landing 31PI

Inflow = 59.78 cfs @ 12.84 hrs, Volume= 783,374 cf
Outflow = 10.27 cfs @ 15.69 hrs, Volume= 782,600 cf, Atten= 83%, Lag= 170.7 min
Discarded = 5.25 cfs @ 15.69 hrs, Volume= 448,387 cf
Primary = 5.02 cfs @ 15.69 hrs, Volume= 334,213 cf
Routed to Pond A-P : (new Pond)
Tertiary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond SW-P4.3 : Summers landing 31P

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Peak Elev= 807.92' @ 15.69 hrs Surf.Area= 35,720 sf Storage= 140,462 cf

Plug-Flow detention time= 251.4 min calculated for 782,585 cf (100% of inflow)
Center-of-Mass det. time= 247.1 min (1,559.8 - 1,312.7)

Volume	Invert	Avail.Storage	Storage Description
#1	800.50'	215,575 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
800.50	8,380	0	0
803.50	13,880	33,390	33,390
804.50	19,929	16,905	50,295
806.50	25,755	45,684	95,979
807.50	34,193	29,974	125,953
808.00	36,033	17,557	143,509
810.00	36,033	72,066	215,575

Device	Routing	Invert	Outlet Devices
#1	Primary	804.50'	**15.0" Round Culvert** L= 1,010.0' Ke= 0.700 Inlet / Outlet Invert= 804.50' / 801.00' S= 0.0035 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf
#2	Tertiary	805.50'	**8.0' long x 30.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#3	Discarded	800.51'	**8.300 in/hr Exfiltration over Surface area above 800.51'** Excluded Surface area = 8,398 sf

Discarded OutFlow Max=5.25 cfs @ 15.69 hrs HW=807.92' (Free Discharge)
3=Exfiltration (Exfiltration Controls 5.25 cfs)

Primary OutFlow Max=5.02 cfs @ 15.69 hrs HW=807.92' TW=752.46' (Dynamic Tailwater)
1=Culvert (Barrel Controls 5.02 cfs @ 4.09 fps)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=800.50' TW=804.50' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Pond SW-P5.1: Summers landing 28P

Inflow = 120.03 cfs @ 12.50 hrs, Volume= 489,785 cf
Outflow = 42.62 cfs @ 12.77 hrs, Volume= 486,957 cf, Atten= 64%, Lag= 16.5 min
Primary = 5.83 cfs @ 12.68 hrs, Volume= 113,504 cf
Routed to Pond SW-P5.2 : Summers Landing 28PI
Secondary = 37.57 cfs @ 12.79 hrs, Volume= 373,452 cf
Routed to Pond SW-P5.2 : Summers Landing 28PI

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Starting Elev= 806.00' Surf.Area= 55,104 sf Storage= 141,054 cf
Peak Elev= 809.54' @ 15.19 hrs Surf.Area= 90,694 sf Storage= 389,980 cf (248,926 cf above start)

Plug-Flow detention time= 743.3 min calculated for 345,903 cf (71% of inflow)
Center-of-Mass det. time= 463.5 min (1,289.6 - 826.2)

Volume	Invert	Avail.Storage	Storage Description
#1	802.00'	432,852 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
802.00	23,396	0	0
805.00	39,204	93,900	93,900
806.00	55,104	47,154	141,054
808.00	68,648	123,752	264,806
809.00	86,609	77,629	342,435
810.00	94,225	90,417	432,852

Device	Routing	Invert	Outlet Devices
#1	Primary	806.00'	**12.0" Round Culvert** L= 35.0' Ke= 0.500 Inlet / Outlet Invert= 806.00' / 805.00' S= 0.0286 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Secondary	807.00'	**5.0' long x 30.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=5.81 cfs @ 12.68 hrs HW=808.88' TW=806.51' (Dynamic Tailwater)
1=Culvert (Inlet Controls 5.81 cfs @ 7.40 fps)

Secondary OutFlow Max=37.50 cfs @ 12.79 hrs HW=809.04' TW=807.31' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Weir Controls 37.50 cfs @ 3.67 fps)

Summary for Pond SW-P5.2: Summers Landing 28Pl

Inflow = 42.62 cfs @ 12.77 hrs, Volume= 486,957 cf
Outflow = 6.74 cfs @ 15.52 hrs, Volume= 510,055 cf, Atten= 84%, Lag= 164.7 min
Discarded = 4.07 cfs @ 15.21 hrs, Volume= 331,364 cf
Primary = 2.68 cfs @ 18.15 hrs, Volume= 178,691 cf
Routed to Pond SW-P5.3 : Summers landing POND 2 NORTH
Tertiary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond SW-P5.1 : Summers landing 28P

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Starting Elev= 806.00' Surf.Area= 16,338 sf Storage= 23,268 cf
Peak Elev= 809.53' @ 15.21 hrs Surf.Area= 28,170 sf Storage= 98,467 cf (75,199 cf above start)

Plug-Flow detention time= 206.7 min calculated for 486,778 cf (100% of inflow)
Center-of-Mass det. time= 145.0 min (1,434.7 - 1,289.6)

Volume	Invert	Avail.Storage	Storage Description
#1	804.00'	141,493 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
804.00	6,954	0	0
805.00	11,622	9,288	9,288
806.00	16,338	13,980	23,268
808.00	20,651	36,989	60,257
809.00	26,716	23,684	83,941
810.00	29,463	28,090	112,030
811.00	29,463	29,463	141,493

Device	Routing	Invert	Outlet Devices
#1	Primary	806.00'	**12.0" Round Culvert** L= 622.0' Ke= 0.700 Inlet / Outlet Invert= 806.00' / 803.00' S= 0.0048 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Tertiary	807.00'	**8.0' long x 30.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#3	Discarded	804.01'	**8.300 in/hr Exfiltration over Surface area above 804.01'** Excluded Surface area = 7,001 sf

Discarded OutFlow Max=4.07 cfs @ 15.21 hrs HW=809.53' (Free Discharge)
3=Exfiltration (Exfiltration Controls 4.07 cfs)

Primary OutFlow Max=2.68 cfs @ 18.15 hrs HW=809.28' TW=805.96' (Dynamic Tailwater)
1=Culvert (Outlet Controls 2.68 cfs @ 3.41 fps)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=806.00' TW=806.00' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Pond SW-P5.3: Summers landing POND 2 NORTH

Inflow = 80.22 cfs @ 12.50 hrs, Volume= 505,924 cf
Outflow = 22.34 cfs @ 12.72 hrs, Volume= 503,996 cf, Atten= 72%, Lag= 13.4 min
Primary = 4.77 cfs @ 12.62 hrs, Volume= 140,392 cf
Routed to Pond SW-P5.5 : Summers Landing 29I
Tertiary = 18.53 cfs @ 12.76 hrs, Volume= 363,604 cf
Routed to Pond SW-P5.5 : Summers Landing 29I

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Starting Elev= 803.00' Surf.Area= 41,920 sf Storage= 152,896 cf
Peak Elev= 806.41' @ 13.90 hrs Surf.Area= 58,658 sf Storage= 322,266 cf (169,370 cf above start)

Plug-Flow detention time= 719.2 min calculated for 351,093 cf (69% of inflow)
Center-of-Mass det. time= 311.1 min (1,317.6 - 1,006.6)

Volume	Invert	Avail.Storage	Storage Description
#1	798.00'	532,787 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
798.00	24,234	0	0
802.00	33,387	115,242	115,242
803.00	41,920	37,654	152,896
805.00	49,340	91,260	244,156
806.00	58,658	53,999	298,155
810.00	58,658	234,632	532,787

Device	Routing	Invert	Outlet Devices
#1	Primary	803.00'	**12.0" Round Culvert** L= 35.0' Ke= 0.700 Inlet / Outlet Invert= 803.00' / 802.00' S= 0.0286 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Tertiary	804.00'	**3.0' long x 30.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=4.76 cfs @ 12.62 hrs HW=805.55' TW=803.52' (Dynamic Tailwater)
1=Culvert (Inlet Controls 4.76 cfs @ 6.06 fps)

Tertiary OutFlow Max=18.47 cfs @ 12.76 hrs HW=805.88' TW=804.69' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Weir Controls 18.47 cfs @ 3.27 fps)

Summary for Pond SW-P5.4: Summers Landing POND 2 SOUTH

[86] Warning: Oscillations may require smaller dt (severity=2)

Inflow = 40.03 cfs @ 12.47 hrs, Volume= 165,013 cf
Outflow = 9.50 cfs @ 12.68 hrs, Volume= 163,891 cf, Atten= 76%, Lag= 12.5 min
Primary = 3.74 cfs @ 12.62 hrs, Volume= 63,230 cf
Routed to Pond SW-P5.5 : Summers Landing 29I
Secondary = 6.56 cfs @ 12.70 hrs, Volume= 100,661 cf
Routed to Pond SW-P5.5 : Summers Landing 29I

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Starting Elev= 803.00' Surf.Area= 31,846 sf Storage= 105,243 cf
Peak Elev= 806.18' @ 15.48 hrs Surf.Area= 50,909 sf Storage= 231,607 cf (126,364 cf above start)

Plug-Flow detention time= 1,371.4 min calculated for 58,647 cf (36% of inflow)
Center-of-Mass det. time= 684.6 min (1,509.5 - 824.9)

Volume	Invert	Avail.Storage	Storage Description
#1	798.00'	324,420 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
798.00	15,145	0	0
802.00	23,612	77,514	77,514
803.00	31,846	27,729	105,243
805.00	40,039	71,885	177,128
806.00	50,909	45,474	222,602
808.00	50,909	101,818	324,420

Device	Routing	Invert	Outlet Devices
#1	Primary	803.00'	**12.0" Round Culvert** L= 35.0' Ke= 0.700 Inlet / Outlet Invert= 803.00' / 802.00' S= 0.0286 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Secondary	804.00'	**3.0' long x 30.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=3.72 cfs @ 12.62 hrs HW=804.76' TW=803.51' (Dynamic Tailwater)
1=Culvert (Inlet Controls 3.72 cfs @ 4.74 fps)

Secondary OutFlow Max=6.52 cfs @ 12.70 hrs HW=804.91' TW=804.23' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Weir Controls 6.52 cfs @ 2.39 fps)

Summary for Pond SW-P5.5: Summers Landing 29l

Inflow = 31.58 cfs @ 12.69 hrs, Volume= 667,886 cf
Outflow = 10.46 cfs @ 13.99 hrs, Volume= 667,691 cf, Atten= 67%, Lag= 77.9 min
Discarded = 2.50 cfs @ 13.19 hrs, Volume= 224,473 cf
Primary = 7.58 cfs @ 13.99 hrs, Volume= 441,578 cf
Routed to Pond A-P : (new Pond)
Tertiary = 0.38 cfs @ 13.99 hrs, Volume= 1,640 cf
Routed to Pond SW-P5.4 : Summers Landing POND 2 SOUTH

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Peak Elev= 806.32' @ 13.99 hrs Surf.Area= 15,768 sf Storage= 54,866 cf

Plug-Flow detention time= 98.1 min calculated for 667,691 cf (100% of inflow)
Center-of-Mass det. time= 96.8 min (1,461.5 - 1,364.7)

Volume	Invert	Avail.Storage	Storage Description
#1	800.00'	112,832 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
800.00	2,718	0	0
802.00	5,260	7,978	7,978
803.00	8,713	6,987	14,965
805.00	12,132	20,845	35,810
806.00	15,768	13,950	49,760
810.00	15,768	63,072	112,832

Device	Routing	Invert	Outlet Devices
#1	Primary	803.00'	**18.0" Round Culvert** L= 750.0' Ke= 0.700 Inlet / Outlet Invert= 803.00' / 801.00' S= 0.0027 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf
#2	Tertiary	806.00'	**12.0" Round Culvert** L= 35.0' Ke= 0.700 Inlet / Outlet Invert= 806.00' / 803.00' S= 0.0857 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#3	Discarded	800.01'	**8.300 in/hr Exfiltration over Surface area above 800.01'** Excluded Surface area = 2,731 sf

Discarded OutFlow Max=2.50 cfs @ 13.19 hrs HW=806.00' (Free Discharge)
3=Exfiltration (Exfiltration Controls 2.50 cfs)

Primary OutFlow Max=7.58 cfs @ 13.99 hrs HW=806.32' TW=752.53' (Dynamic Tailwater)
1=Culvert (Barrel Controls 7.58 cfs @ 4.29 fps)

Tertiary OutFlow Max=0.38 cfs @ 13.99 hrs HW=806.32' TW=805.91' (Dynamic Tailwater)
2=Culvert (Inlet Controls 0.38 cfs @ 1.71 fps)

Summary for Link N: (new Link)

Inflow Area = 575,710 sf, 0.00% Impervious, Inflow Depth = 0.50" for 100-yr(7.4") event
Inflow = 2.77 cfs @ 12.70 hrs, Volume= 23,907 cf
Primary = 2.77 cfs @ 12.70 hrs, Volume= 23,907 cf, Atten= 0%, Lag= 0.1 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs

Summary for Link S: (new Link)

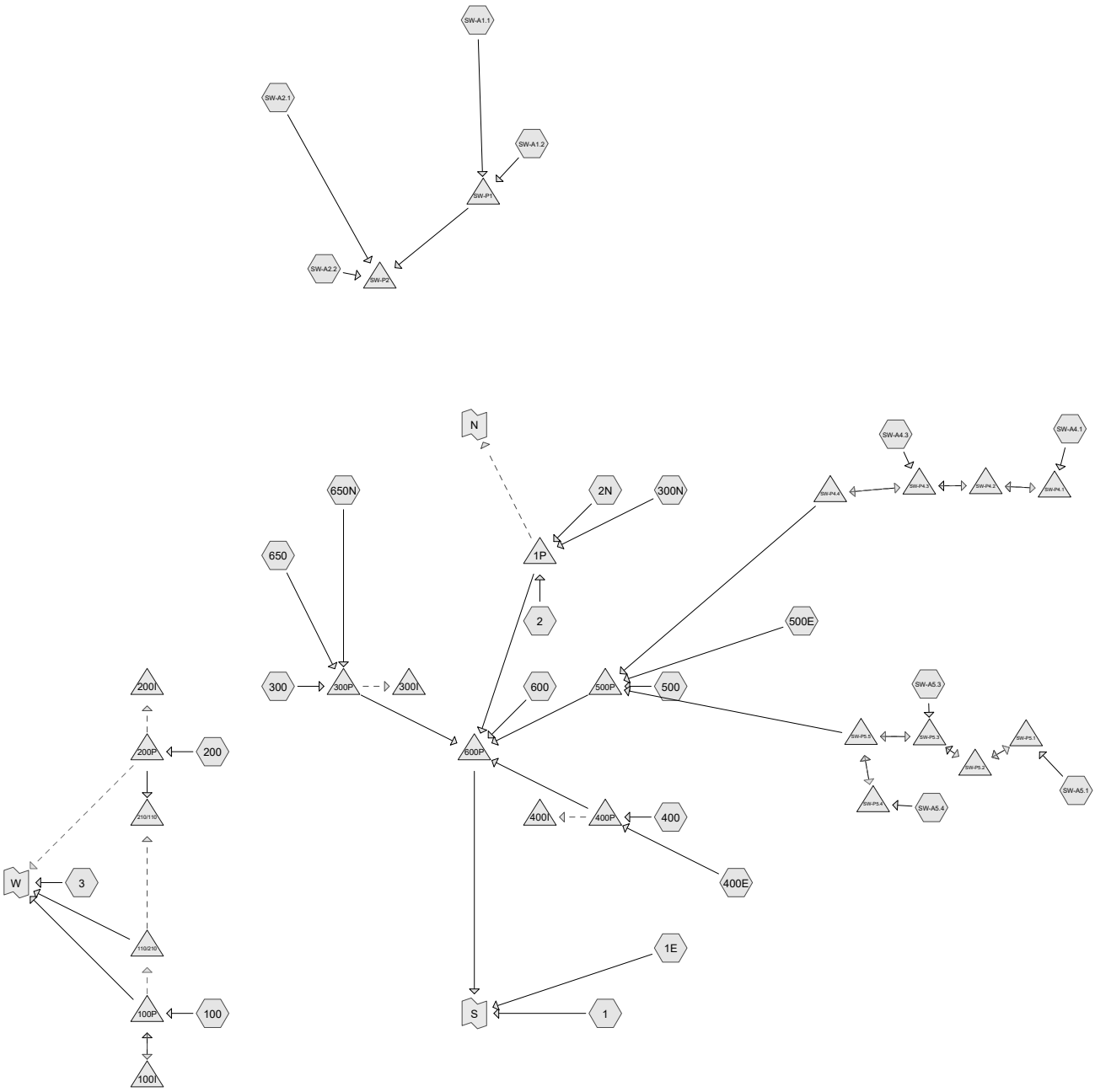
Inflow	=	29.87 cfs @	13.89 hrs,	Volume=	1,142,606 cf
Primary	=	29.87 cfs @	13.89 hrs,	Volume=	1,142,606 cf, Atten= 0%, Lag= 0.1 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs

Summary for Link W: Offsite Discharge

Inflow Area = 755,633 sf, 0.32% Impervious, Inflow Depth = 3.13" for 100-yr(7.4") event
Inflow = 47.65 cfs @ 12.50 hrs, Volume= 197,115 cf
Primary = 47.65 cfs @ 12.50 hrs, Volume= 197,115 cf, Atten= 0%, Lag= 0.1 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs



Subcat Reach Pond Link

Routing Diagram for 00-123105-Proposed (01-22-2026)
Prepared by {enter your company name here}, Printed 1/26/2026
HydroCAD® 10.10-7a s/n 00590 © 2021 HydroCAD Software Solutions LLC

Summary for Subcatchment 1: 1

Runoff = 0.95 cfs @ 12.57 hrs, Volume= 4,774 cf, Depth= 0.52"
Routed to Link S : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 2-yr Rainfall=2.79", Smoothing=On

	Area (sf)	CN	Description
*	15,380	58	Meadow, HSG A
*	72,637	61	75%GrassCoverGood, HSG A
*	21,849	98	Impervious, HSG A
	109,867	68	Weighted Average
	88,017		80.11% Pervious Area
	21,849		19.89% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.0					**Direct Entry, 30**

Summary for Subcatchment 1E: 1

Runoff = 0.00 cfs @ 12.70 hrs, Volume= 5 cf, Depth= 0.21"
Routed to Link S : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 2-yr Rainfall=2.79", Smoothing=On

	Area (sf)	CN	Description
*	260	58	Meadow, HSG A
	260		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					**Direct Entry, 30**
10.0	0	Total, Increased to minimum Tc = 30.0 min			

Summary for Subcatchment 2: 2

Runoff = 0.22 cfs @ 12.57 hrs, Volume= 1,086 cf, Depth= 0.56"
Routed to Pond 1P : SW-A3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 2-yr Rainfall=2.79", Smoothing=On

	Area (sf)	CN	Description
*	18,100	61	75%GrassCoverGood, HSG A
*	5,161	98	Impervious, HSG A
	23,261	69	Weighted Average
	18,100		77.81% Pervious Area
	5,161		22.19% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.0					**Direct Entry,**

Summary for Subcatchment 2N: 2N

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"
Routed to Pond 1P : SW-A3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 2-yr Rainfall=2.79", Smoothing=On

	Area (sf)	CN	Description
*	48,805	30	Meadow Undisturbed, HSG A
*	102,224	30	Woods, HSG A
*	367	61	75%GrassCoverGood, HSG A
	151,396	30	Weighted Average
	151,396		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.0					**Direct Entry,**

Summary for Subcatchment 3: 3

Runoff = 0.22 cfs @ 12.77 hrs, Volume= 2,187 cf, Depth= 0.16"
Routed to Link W : Offsite Discharge

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 2-yr Rainfall=2.79", Smoothing=On

	Area (sf)	CN	Description
*	25,414	30	Meadow Undisturbed, HSG A
*	88,248	58	Meadow, HSG A
*	37,923	61	75%GrassCoverGood, HSG A
*	8,826	98	Impervious, HSG A
	160,411	56	Weighted Average
	151,586		94.50% Pervious Area
	8,826		5.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.0					**Direct Entry, 30**

Summary for Subcatchment 100: 100

Runoff = 6.58 cfs @ 12.50 hrs, Volume= 28,740 cf, Depth= 0.83"
Routed to Pond 100P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 2-yr Rainfall=2.79", Smoothing=On

	Area (sf)	CN	Description
*	53,291	58	Meadow, HSG A
*	6,304	100	Water Surface, HSG A
*	202,414	61	75%GrassCoverGood, HSG A
*	155,403	98	Impervious, HSG A
	417,413	75	Weighted Average
	255,706		61.26% Pervious Area
	161,707		38.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0					**Direct Entry,**
15.0	0	Total, Increased to minimum Tc = 30.0 min			

Summary for Subcatchment 200: 200

Runoff = 1.99 cfs @ 12.53 hrs, Volume= 9,526 cf, Depth= 0.60"
Routed to Pond 200P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 2-yr Rainfall=2.79", Smoothing=On

	Area (sf)	CN	Description
*	78,605	58	Meadow, HSG A
*	2,099	100	Water Surface, HSG A
*	57,616	61	75%GrassCoverGood, HSG A
*	51,948	98	Impervious, HSG A
	190,268	70	Weighted Average
	136,222		71.59% Pervious Area
	54,047		28.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0					**Direct Entry,**
15.0	0	Total, Increased to minimum Tc = 30.0 min			

Summary for Subcatchment 300: 300

Runoff = 11.67 cfs @ 12.50 hrs, Volume= 48,553 cf, Depth= 1.09"
Routed to Pond 300P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 2-yr Rainfall=2.79", Smoothing=On

	Area (sf)	CN	Description
*	41,527	58	Meadow, HSG A
*	11,734	100	Water Surface, HSG A
*	216,369	61	75%GrassCoverGood, HSG A
*	262,554	98	Impervious, HSG A
	532,184	80	Weighted Average
	257,896		48.46% Pervious Area
	274,288		51.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					**Direct Entry,**
10.0	0	Total, Increased to minimum Tc = 30.0 min			

Summary for Subcatchment 300N: 300N

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"
Routed to Pond 1P : SW-A3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 2-yr Rainfall=2.79", Smoothing=On

	Area (sf)	CN	Description
*	2,354	30	Meadow Undisturbed, HSG A
*	9,502	30	Woods, HSG A
	11,856	30	Weighted Average
	11,856		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0					**Direct Entry,**
15.0	0	Total, Increased to minimum Tc = 30.0 min			

Summary for Subcatchment 400: 400

Runoff = 14.04 cfs @ 12.50 hrs, Volume= 60,570 cf, Depth= 0.88"
Routed to Pond 400P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 2-yr Rainfall=2.79", Smoothing=On

	Area (sf)	CN	Description
*	28,566	30	Meadow Undisturbed, HSG A
*	76,756	58	Meadow, HSG A
*	15,316	100	Water Surface, HSG A
*	5,805	30	Woods, HSG A
*	338,087	61	75%GrassCoverGood, HSG A
*	364,894	98	Impervious, HSG A
	829,424	76	Weighted Average
	449,214		54.16% Pervious Area
	380,210		45.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0					**Direct Entry,**
15.0	0	Total, Increased to minimum Tc = 30.0 min			

Summary for Subcatchment 400E: 400E

Runoff = 2.18 cfs @ 12.57 hrs, Volume= 12,108 cf, Depth= 0.41"
Routed to Pond 400P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 2-yr Rainfall=2.79", Smoothing=On

	Area (sf)	CN	Description
*	41,605	30	Meadow Undisturbed, HSG A
*	16,296	58	Meadow, HSG A
*	80,928	75	Single Family Residential, HSG A
*	51,903	30	Woods, HSG A
*	76,491	61	75%GrassCoverGood, HSG A
*	84,186	98	Impervious, HSG A
	351,409	65	Weighted Average
	267,223		76.04% Pervious Area
	84,186		23.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0					**Direct Entry,**
15.0	0	Total, Increased to minimum Tc = 30.0 min			

Summary for Subcatchment 500: 500

Runoff = 0.06 cfs @ 13.70 hrs, Volume= 1,208 cf, Depth= 0.05"
Routed to Pond 500P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 2-yr Rainfall=2.79", Smoothing=On

	Area (sf)	CN	Description
*	55,625	30	Meadow Undisturbed, HSG A
*	129,892	58	Meadow, HSG A
*	81,587	30	Woods, HSG A
*	36,684	61	75%GrassCoverGood, HSG A
*	17,250	98	Impervious, HSG A
	321,039	49	Weighted Average
	303,789		94.63% Pervious Area
	17,250		5.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0					**Direct Entry,**
15.0	0	Total, Increased to minimum Tc = 30.0 min			

Summary for Subcatchment 500E: 500E

Runoff = 0.02 cfs @ 15.23 hrs, Volume= 616 cf, Depth= 0.02"
Routed to Pond 500P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 2-yr Rainfall=2.79", Smoothing=On

	Area (sf)	CN	Description
*	66,520	30	Meadow Undisturbed, HSG A
*	25,924	58	Meadow, HSG A
*	77,212	75	Single Family Residential, HSG A
*	120,110	30	Woods, HSG A
*	0	61	75%GrassCoverGood, HSG A
*	15,779	98	Impervious, HSG A
	305,546	47	Weighted Average
	289,767		94.84% Pervious Area
	15,779		5.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0					**Direct Entry,**
15.0	0	Total, Increased to minimum Tc = 30.0 min			

Summary for Subcatchment 600: 600

Runoff = 1.02 cfs @ 12.63 hrs, Volume= 6,478 cf, Depth= 0.32"
Routed to Pond 600P : SW-A6

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 2-yr Rainfall=2.79", Smoothing=On

	Area (sf)	CN	Description
*	165,774	58	Meadow, HSG A
*	55,574	61	75%GrassCoverGood, HSG A
*	23,078	98	Impervious, HSG A
	244,426	62	Weighted Average
	221,348		90.56% Pervious Area
	23,078		9.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.0					**Direct Entry,**

Summary for Subcatchment 650: 650

Runoff = 0.86 cfs @ 12.60 hrs, Volume= 4,984 cf, Depth= 0.38"
Routed to Pond 300P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 2-yr Rainfall=2.79", Smoothing=On

	Area (sf)	CN	Description
*	71,141	58	Meadow, HSG A
*	69,683	61	75%GrassCoverGood, HSG A
*	16,439	98	Impervious, HSG A
	157,263	64	Weighted Average
	140,824		89.55% Pervious Area
	16,439		10.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.0					**Direct Entry,**

Summary for Subcatchment 650N: 650N

Runoff = 0.20 cfs @ 13.37 hrs, Volume= 2,963 cf, Depth= 0.09"
Routed to Pond 300P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 2-yr Rainfall=2.79", Smoothing=On

	Area (sf)	CN	Description
*	99,094	30	Meadow Undisturbed, HSG A
*	239,951	67	Cropland, HSG A
*	67,113	30	Woods, HSG A
	406,158	52	Weighted Average
	406,158		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.0					**Direct Entry,**

Summary for Subcatchment SW-A1.1: Fuel Storage Facility Site - SW-A1.1

Runoff = 11.25 cfs @ 12.57 hrs, Volume= 62,436 cf, Depth= 0.41"
Routed to Pond SW-P1 : SW-P1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 2-yr Rainfall=2.79", Smoothing=On

	Area (ac)	CN	Description
*	41.600	65	Estimated CN for tanks and greenspace
	41.600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.0					**Direct Entry,**
25.0	0	Total, Increased to minimum Tc = 30.0 min			

Summary for Subcatchment SW-A1.2: SW-A1.2

Runoff = 55.00 cfs @ 12.47 hrs, Volume= 225,103 cf, Depth= 1.79"
Routed to Pond SW-P1 : SW-P1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 2-yr Rainfall=2.79", Smoothing=On

	Area (ac)	CN	Description
*	4.500	100	
*	26.600	90	future C/I outside of tank farm
*	3.500	75	SFR
	34.600	90	Weighted Average
	30.100		86.99% Pervious Area
	4.500		13.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.0					**Direct Entry,**
25.0	0	Total, Increased to minimum Tc = 30.0 min			

Summary for Subcatchment SW-A2.1: SW-A2.1

Runoff = 65.52 cfs @ 12.50 hrs, Volume= 272,625 cf, Depth= 1.09"
Routed to Pond SW-P2 : SW-P2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 2-yr Rainfall=2.79", Smoothing=On

	Area (ac)	CN	Description
*	42.900	75	LDR
*	3.600	100	Pond @ NWL
*	18.700	90	C/I
*	3.400	75	SFR
	68.600	80	Weighted Average
	65.000		94.75% Pervious Area
	3.600		5.25% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.0					**Direct Entry,**
25.0	0	Total, Increased to minimum Tc = 30.0 min			

Summary for Subcatchment SW-A2.2: SW-A2.2

Runoff = 14.89 cfs @ 12.50 hrs, Volume= 65,084 cf, Depth= 0.83"
Routed to Pond SW-P2 : SW-P2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 2-yr Rainfall=2.79", Smoothing=On

	Area (ac)	CN	Description
*	21.700	75	LDR
	21.700		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	1,000	0.0750	1.24		**Lag/CN Method,**
13.5	1,000	Total, Increased to minimum Tc = 30.0 min			

Summary for Subcatchment SW-A4.1: NE QUAD

Runoff = 21.86 cfs @ 12.50 hrs, Volume= 95,557 cf, Depth= 0.83"
Routed to Pond SW-P4.1 : summers landing 30P

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 2-yr Rainfall=2.79", Smoothing=On

	Area (ac)	CN	Description
*	10.250	98	Paved Parking, HSG B
*	1.530	98	Water Surface, HSG B
*	20.080	61	>75% Grass Cover, HSG B
	31.860	75	Weighted Average
	20.080		63.03% Pervious Area
	11.780		36.97% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.0					**Direct Entry,**
25.0	0	Total, Increased to minimum Tc = 30.0 min			

Summary for Subcatchment SW-A4.3: NW QUAD

Runoff = 21.22 cfs @ 12.53 hrs, Volume= 95,740 cf, Depth= 0.73"
Routed to Pond SW-P4.3 : Summers landing 31P

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 2-yr Rainfall=2.79", Smoothing=On

	Area (ac)	CN	Description
*	10.510	98	Paved Parking, HSG B
*	23.970	61	>75% Grass cover, Good
*	1.590	98	Water Surface, HSG B
	36.070	73	Weighted Average
	23.970		66.45% Pervious Area
	12.100		33.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.0					**Direct Entry,**
25.0	0	Total, Increased to minimum Tc = 30.0 min			

Summary for Subcatchment SW-A5.1: SE QUAD

Runoff = 17.56 cfs @ 12.53 hrs, Volume= 80,550 cf, Depth= 0.69"
Routed to Pond SW-P5.1 : Summers landing 28P

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 2-yr Rainfall=2.79", Smoothing=On

	Area (ac)	CN	Description
*	8.430	98	
*	22.650	61	
*	1.260	98	
	32.340	72	Weighted Average
	22.650		70.04% Pervious Area
	9.690		29.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.0					**Direct Entry,**
25.0	0	Total, Increased to minimum Tc = 30.0 min			

Summary for Subcatchment SW-A5.3: SW QUAD N

Runoff = 11.07 cfs @ 12.53 hrs, Volume= 51,768 cf, Depth= 0.64"
Routed to Pond SW-P5.3 : Summers landing POND 2 NORTH

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 2-yr Rainfall=2.79", Smoothing=On

	Area (ac)	CN	Description
*	5.230	98	
*	16.000	61	
*	0.960	98	
	22.190	71	Weighted Average
	16.000		72.10% Pervious Area
	6.190		27.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.0					**Direct Entry,**
25.0	0	Total, Increased to minimum Tc = 30.0 min			

Summary for Subcatchment SW-A5.4: SW QUAD S

Runoff = 6.18 cfs @ 12.53 hrs, Volume= 27,896 cf, Depth= 0.73"
Routed to Pond SW-P5.4 : Summers Landing POND 2 SOUTH

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 2-yr Rainfall=2.79", Smoothing=On

	Area (ac)	CN	Description
*	2.560	98	
*	7.220	61	
*	0.730	98	
	10.510	73	Weighted Average
	7.220		68.70% Pervious Area
	3.290		31.30% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.0					**Direct Entry,**
25.0	0	Total, Increased to minimum Tc = 30.0 min			

Summary for Pond 1P: SW-A3

Inflow Area = 186,513 sf, 2.77% Impervious, Inflow Depth = 0.07" for 2-yr event
Inflow = 0.22 cfs @ 12.57 hrs, Volume= 1,086 cf
Outflow = 0.08 cfs @ 13.24 hrs, Volume= 1,139 cf, Atten= 65%, Lag= 40.4 min
Discarded = 0.08 cfs @ 13.24 hrs, Volume= 1,139 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond 600P : SW-A6
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link N : (new Link)

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Peak Elev= 751.17' @ 13.24 hrs Surf.Area= 3,312 sf Storage= 317 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 63.5 min (939.0 - 875.5)

Volume	Invert	Avail.Storage	Storage Description
#1	751.00'	78,327 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
751.00	500	0	0
752.00	17,399	8,950	8,950
754.00	51,978	69,377	78,327

Device	Routing	Invert	Outlet Devices
#1	Primary	751.25'	**36.0" Round Culvert** L= 136.0' Ke= 0.500 Inlet / Outlet Invert= 751.25' / 751.25' S= 0.0000 '/' Cc= 0.900 n= 0.013, Flow Area= 7.07 sf
#2	Secondary	753.50'	**40.0' long + 10.0 '/' SideZ x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#3	Discarded	751.00'	**1.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.08 cfs @ 13.24 hrs HW=751.17' (Free Discharge)
3=Exfiltration (Exfiltration Controls 0.08 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=751.00' TW=751.00' (Dynamic Tailwater)
1=Culvert (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=751.00' TW=0.00' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Pond 100I:

Inflow	=	3.19 cfs @	12.72 hrs,	Volume=	17,772 cf
Outflow	=	0.15 cfs @	14.84 hrs,	Volume=	17,772 cf, Atten= 95%, Lag= 127.0 min
Discarded	=	0.15 cfs @	14.84 hrs,	Volume=	17,772 cf

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Peak Elev= 750.26' @ 14.84 hrs Surf.Area= 7,869 sf Storage= 8,333 cf

Plug-Flow detention time= 533.8 min calculated for 17,772 cf (100% of inflow)
Center-of-Mass det. time= 533.8 min (1,888.6 - 1,354.8)

Volume	Invert	Avail.Storage	Storage Description
#1	749.00'	57,705 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
749.00	5,359	0	0
752.00	11,337	25,044	25,044
754.00	21,324	32,661	57,705

Device	Routing	Invert	Outlet Devices
#1	Discarded	749.00'	**0.800 in/hr Exfiltration over Surface area** Phase-In= 0.01'

Discarded OutFlow Max=0.15 cfs @ 14.84 hrs HW=750.26' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.15 cfs)

Summary for Pond 100P:

Inflow = 6.58 cfs @ 12.50 hrs, Volume= 28,740 cf
Outflow = 3.35 cfs @ 12.74 hrs, Volume= 28,587 cf, Atten= 49%, Lag= 14.2 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link W : Offsite Discharge
Secondary = 3.19 cfs @ 12.72 hrs, Volume= 17,772 cf
Routed to Pond 100I :
Tertiary = 0.40 cfs @ 14.82 hrs, Volume= 10,815 cf
Routed to Pond 110/210 :

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Starting Elev= 749.00' Surf.Area= 6,303 sf Storage= 9,680 cf
Peak Elev= 750.26' @ 14.82 hrs Surf.Area= 8,370 sf Storage= 18,928 cf (9,248 cf above start)

Plug-Flow detention time= 719.7 min calculated for 18,908 cf (66% of inflow)
Center-of-Mass det. time= 387.8 min (1,245.4 - 857.6)

Volume	Invert	Avail.Storage	Storage Description
#1	746.00'	1,651,315 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
746.00	150	0	0
749.00	6,303	9,680	9,680
750.75	9,172	13,541	23,220
750.76	21,872	155	23,375
752.00	26,693	30,110	53,486
754.00	36,714	63,407	116,893
800.00	30,000	1,534,422	1,651,315

Device	Routing	Invert	Outlet Devices
#1	Tertiary	751.29'	**20.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#2	Secondary	749.00'	**15.0" Round Culvert** L= 40.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 749.00' / 748.60' S= 0.0100 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 1.23 sf
#3	Primary	754.00'	**24.0" Round Culvert** L= 50.0' Ke= 0.500 Inlet / Outlet Invert= 754.00' / 749.65' S= 0.0870 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf
#4	Tertiary	749.65'	**24.0" Round Culvert** L= 33.0' Ke= 0.500 Inlet / Outlet Invert= 749.65' / 749.00' S= 0.0197 '/' Cc= 0.900 n= 0.130, Flow Area= 3.14 sf

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=749.00' TW=0.00' (Dynamic Tailwater)
└**3=Culvert** (Controls 0.00 cfs)

Secondary OutFlow Max=3.18 cfs @ 12.72 hrs HW=750.03' TW=749.47' (Dynamic Tailwater)
└**2=Culvert** (Outlet Controls 3.18 cfs @ 3.99 fps)

Tertiary OutFlow Max=0.40 cfs @ 14.82 hrs HW=750.26' TW=749.21' (Dynamic Tailwater)
├**1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)
└**4=Culvert** (Barrel Controls 0.40 cfs @ 0.74 fps)

Summary for Pond 110/210:

Inflow = 0.40 cfs @ 14.82 hrs, Volume= 10,815 cf
Outflow = 0.36 cfs @ 16.10 hrs, Volume= 10,726 cf, Atten= 10%, Lag= 76.8 min
Primary = 0.24 cfs @ 16.10 hrs, Volume= 8,798 cf
Routed to Link W : Offsite Discharge
Secondary = 0.12 cfs @ 16.10 hrs, Volume= 1,929 cf
Routed to Pond 210/110 :

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Peak Elev= 749.24' @ 16.10 hrs Surf.Area= 8,765 sf Storage= 2,027 cf

Plug-Flow detention time= 189.1 min calculated for 10,726 cf (99% of inflow)
Center-of-Mass det. time= 183.7 min (1,249.2 - 1,065.5)

Volume	Invert	Avail.Storage	Storage Description
#1	749.00'	1,187,361 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
749.00	8,220	0	0
752.00	15,077	34,946	34,946
755.00	18,950	51,041	85,986
800.00	30,000	1,101,375	1,187,361

Device	Routing	Invert	Outlet Devices
#1	Primary	752.50'	**20.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#2	Secondary	749.00'	**24.0" Round Culvert** L= 40.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 749.00' / 749.00' S= 0.0000 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 3.14 sf
#3	Primary	749.00'	**21.0" Round Culvert** L= 67.0' Ke= 0.500 Inlet / Outlet Invert= 749.00' / 748.66' S= 0.0051 '/' Cc= 0.900 n= 0.013, Flow Area= 2.41 sf

Primary OutFlow Max=0.24 cfs @ 16.10 hrs HW=749.24' TW=0.00' (Dynamic Tailwater)
1=Broad-Crested Rectangular Weir (Controls 0.00 cfs)
3=Culvert (Barrel Controls 0.24 cfs @ 1.85 fps)

Secondary OutFlow Max=0.12 cfs @ 16.10 hrs HW=749.24' TW=749.08' (Dynamic Tailwater)
2=Culvert (Barrel Controls 0.12 cfs @ 0.87 fps)

Summary for Pond 200I:

Inflow	=	1.37 cfs @	12.59 hrs, Volume=	9,179 cf
Outflow	=	0.06 cfs @	19.04 hrs, Volume=	9,178 cf, Atten= 95%, Lag= 386.8 min
Discarded	=	0.06 cfs @	19.04 hrs, Volume=	9,178 cf

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Peak Elev= 750.26' @ 19.04 hrs Surf.Area= 3,446 sf Storage= 3,500 cf

Plug-Flow detention time= 607.1 min calculated for 9,178 cf (100% of inflow)
Center-of-Mass det. time= 607.1 min (2,058.8 - 1,451.7)

Volume	Invert	Avail.Storage	Storage Description
#1	749.00'	334,200 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
749.00	2,100	0	0
753.50	6,900	20,250	20,250
799.00	6,900	313,950	334,200

Device	Routing	Invert	Outlet Devices
#1	Discarded	749.00'	**0.800 in/hr Exfiltration over Surface area** Phase-In= 0.01'

Discarded OutFlow Max=0.06 cfs @ 19.04 hrs HW=750.26' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.06 cfs)

Summary for Pond 200P:

Inflow Area = 190,268 sf, 28.41% Impervious, Inflow Depth = 0.60" for 2-yr event
Inflow = 1.99 cfs @ 12.53 hrs, Volume= 9,526 cf
Outflow = 1.37 cfs @ 12.59 hrs, Volume= 9,519 cf, Atten= 31%, Lag= 3.6 min
Primary = 0.02 cfs @ 19.04 hrs, Volume= 341 cf
Routed to Pond 210/110 :
Secondary = 1.37 cfs @ 12.59 hrs, Volume= 9,179 cf
Routed to Pond 200I :
Tertiary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link W : Offsite Discharge

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Starting Elev= 749.00' Surf.Area= 2,090 sf Storage= 2,320 cf
Peak Elev= 750.26' @ 19.04 hrs Surf.Area= 3,261 sf Storage= 5,697 cf (3,377 cf above start)

Plug-Flow detention time= 871.7 min calculated for 7,199 cf (76% of inflow)
Center-of-Mass det. time= 569.2 min (1,441.4 - 872.2)

Volume	Invert	Avail.Storage	Storage Description
#1	745.00'	327,220 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
745.00	10	0	0
748.00	630	960	960
749.00	2,090	1,360	2,320
754.00	6,730	22,050	24,370
799.00	6,730	302,850	327,220

Device	Routing	Invert	Outlet Devices
#1	Primary	751.50'	**20.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#2	Secondary	749.00'	**15.0" Round RCP_Round 15"** L= 40.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 746.00' / 749.00' S= -0.0750 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 1.23 sf
#3	Primary	750.20'	**15.0" Round Culvert** L= 50.0' Ke= 0.500 Inlet / Outlet Invert= 750.20' / 749.00' S= 0.0240 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#4	Tertiary	754.00'	**15.0" Round Culvert** L= 33.0' Ke= 0.500 Inlet / Outlet Invert= 754.00' / 749.00' S= 0.1515 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=0.02 cfs @ 19.04 hrs HW=750.26' TW=749.19' (Dynamic Tailwater)
1=Broad-Crested Rectangular Weir (Controls 0.00 cfs)
3=Culvert (Inlet Controls 0.02 cfs @ 0.85 fps)

Secondary OutFlow Max=1.35 cfs @ 12.59 hrs HW=749.56' TW=749.29' (Dynamic Tailwater)
2=RCP_Round 15" (Inlet Controls 1.35 cfs @ 2.53 fps)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=749.00' TW=0.00' (Dynamic Tailwater)
4=Culvert (Controls 0.00 cfs)

Summary for Pond 210/110:

Inflow	=	0.13 cfs @	16.46 hrs, Volume=	2,269 cf
Outflow	=	0.03 cfs @	20.46 hrs, Volume=	1,724 cf, Atten= 78%, Lag= 240.3 min
Primary	=	0.03 cfs @	20.46 hrs, Volume=	1,724 cf

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Peak Elev= 749.21' @ 20.46 hrs Surf.Area= 9,149 sf Storage= 1,853 cf

Plug-Flow detention time= 1,212.4 min calculated for 1,724 cf (76% of inflow)
Center-of-Mass det. time= 1,164.3 min (2,193.7 - 1,029.4)

Volume	Invert	Avail.Storage	Storage Description
#1	749.00'	2,080,850 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
749.00	8,851	0	0
753.50	15,374	54,506	54,506
754.00	34,000	12,344	66,850
756.00	44,000	78,000	144,850
800.00	44,000	1,936,000	2,080,850

Device	Routing	Invert	Outlet Devices
#1	Primary	749.00'	**24.0" Round Culvert** L= 333.0' Ke= 0.500 Inlet / Outlet Invert= 749.00' / 749.00' S= 0.0000 '/' Cc= 0.900 n= 0.016, Flow Area= 3.14 sf

Primary OutFlow Max=0.03 cfs @ 20.46 hrs HW=749.21' (Free Discharge)
1=Culvert (Barrel Controls 0.03 cfs @ 0.24 fps)

Summary for Pond 300I:

Inflow	=	3.57 cfs @	12.87 hrs, Volume=	28,517 cf
Outflow	=	0.21 cfs @	13.83 hrs, Volume=	28,516 cf, Atten= 94%, Lag= 57.7 min
Discarded	=	0.21 cfs @	13.83 hrs, Volume=	28,516 cf

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Peak Elev= 752.90' @ 13.83 hrs Surf.Area= 11,504 sf Storage= 9,613 cf

Plug-Flow detention time= 406.2 min calculated for 28,516 cf (100% of inflow)
Center-of-Mass det. time= 406.1 min (1,938.1 - 1,532.0)

Volume	Invert	Avail.Storage	Storage Description
#1	752.00'	54,346 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
752.00	9,768	0	0
754.00	13,610	23,378	23,378
755.00	15,250	14,430	37,808
756.00	17,826	16,538	54,346

Device	Routing	Invert	Outlet Devices
#1	Discarded	752.00'	**0.800 in/hr Exfiltration over Surface area** Phase-In= 0.01'

Discarded OutFlow Max=0.21 cfs @ 13.83 hrs HW=752.90' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.21 cfs)

Summary for Pond 300P:

Inflow Area = 1,095,605 sf, 26.54% Impervious, Inflow Depth = 0.62" for 2-yr event
Inflow = 12.49 cfs @ 12.50 hrs, Volume= 56,500 cf
Outflow = 6.75 cfs @ 12.87 hrs, Volume= 56,249 cf, Atten= 46%, Lag= 22.0 min
Primary = 3.18 cfs @ 12.87 hrs, Volume= 27,732 cf
Routed to Pond 600P : SW-A6
Secondary = 3.57 cfs @ 12.87 hrs, Volume= 28,517 cf
Routed to Pond 300I :

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Starting Elev= 752.00' Surf.Area= 15,962 sf Storage= 41,550 cf
Peak Elev= 753.00' @ 12.87 hrs Surf.Area= 20,035 sf Storage= 59,495 cf (17,945 cf above start)

Plug-Flow detention time= 1,448.6 min calculated for 14,699 cf (26% of inflow)
Center-of-Mass det. time= 371.0 min (1,227.7 - 856.7)

Volume	Invert	Avail.Storage	Storage Description
#1	748.00'	1,471,090 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
748.00	4,813	0	0
752.00	15,962	41,550	41,550
754.00	24,132	40,094	81,644
755.00	29,560	26,846	108,490
800.00	31,000	1,362,600	1,471,090

Device	Routing	Invert	Outlet Devices
#1	Secondary	752.00'	**15.0" Round RCP_Round 15"** L= 34.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 749.00' / 752.00' S= -0.0882 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 1.23 sf
#2	Primary	753.57'	**20.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#3	Primary	751.00'	**36.0" Round Culvert** L= 50.0' Ke= 0.500 Inlet / Outlet Invert= 751.00' / 750.85' S= 0.0030 '/' Cc= 0.900 n= 0.013, Flow Area= 7.07 sf
#4	Device 3	752.70'	**6.0' long Sharp-Crested Vee/Trap Weir** Cv= 2.62 (C= 3.28)

Primary OutFlow Max=3.18 cfs @ 12.87 hrs HW=753.00' TW=751.15' (Dynamic Tailwater)
- **2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)
- **3=Culvert** (Passes 3.18 cfs of 16.71 cfs potential flow)
  - **4=Sharp-Crested Vee/Trap Weir** (Weir Controls 3.18 cfs @ 1.78 fps)

Secondary OutFlow Max=3.57 cfs @ 12.87 hrs HW=753.00' TW=752.43' (Dynamic Tailwater)
- **1=RCP_Round 15"** (Inlet Controls 3.57 cfs @ 3.40 fps)

Summary for Pond 400I:

Inflow	=	8.85 cfs @	12.83 hrs, Volume=	64,452 cf
Outflow	=	0.48 cfs @	15.77 hrs, Volume=	64,451 cf, Atten= 95%, Lag= 176.2 min
Discarded	=	0.48 cfs @	15.77 hrs, Volume=	64,451 cf

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Peak Elev= 753.20' @ 15.77 hrs Surf.Area= 25,865 sf Storage= 28,930 cf

Plug-Flow detention time= 620.2 min calculated for 64,451 cf (100% of inflow)
Center-of-Mass det. time= 620.2 min (1,914.4 - 1,294.3)

Volume	Invert	Avail.Storage	Storage Description
#1	752.00'	1,905,717 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
752.00	22,201	0	0
754.00	28,289	50,490	50,490
755.00	31,134	29,712	80,202
800.00	50,000	1,825,515	1,905,717

Device	Routing	Invert	Outlet Devices
#1	Discarded	752.00'	**0.800 in/hr Exfiltration over Surface area** Phase-In= 0.01'

Discarded OutFlow Max=0.48 cfs @ 15.77 hrs HW=753.20' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.48 cfs)

Summary for Pond 400P:

Inflow Area = 1,180,834 sf, 39.33% Impervious, Inflow Depth = 0.74" for 2-yr event
Inflow = 16.10 cfs @ 12.50 hrs, Volume= 72,678 cf
Outflow = 9.83 cfs @ 12.83 hrs, Volume= 72,462 cf, Atten= 39%, Lag= 19.8 min
Primary = 0.98 cfs @ 12.83 hrs, Volume= 8,010 cf
Routed to Pond 600P : SW-A6
Secondary = 8.85 cfs @ 12.83 hrs, Volume= 64,452 cf
Routed to Pond 400I :

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Starting Elev= 752.00' Surf.Area= 14,785 sf Storage= 53,655 cf
Peak Elev= 753.27' @ 12.83 hrs Surf.Area= 18,464 sf Storage= 74,693 cf (21,038 cf above start)

Plug-Flow detention time= 1,531.7 min calculated for 18,807 cf (26% of inflow)
Center-of-Mass det. time= 400.5 min (1,261.4 - 860.9)

Volume	Invert	Avail.Storage	Storage Description
#1	746.00'	1,394,052 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
746.00	3,100	0	0
752.00	14,785	53,655	53,655
754.00	20,600	35,385	89,040
755.00	26,944	23,772	112,812
800.00	30,000	1,281,240	1,394,052

Device	Routing	Invert	Outlet Devices
#1	Secondary	753.12'	**20.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#2	Secondary	752.00'	**18.0" Round Culvert** L= 40.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 750.25' / 752.00' S= -0.0437 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 1.77 sf
#3	Primary	751.50'	**36.0" Round Culvert** L= 50.0' Ke= 0.500 Inlet / Outlet Invert= 751.50' / 751.00' S= 0.0100 '/' Cc= 0.900 n= 0.013, Flow Area= 7.07 sf
#4	Primary	753.74'	**20.0' long + 10.0 '/' SideZ x 12.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.57 2.62 2.70 2.67 2.66 2.67 2.66 2.64
#5	Device 3	753.13'	**6.0' long Sharp-Crested Vee/Trap Weir** Cv= 2.62 (C= 3.28)

Primary OutFlow Max=0.98 cfs @ 12.83 hrs HW=753.27' TW=751.13' (Dynamic Tailwater)
- **3=Culvert** (Passes 0.98 cfs of 16.96 cfs potential flow)
  - **5=Sharp-Crested Vee/Trap Weir** (Weir Controls 0.98 cfs @ 1.21 fps)
- **4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Secondary OutFlow Max=8.85 cfs @ 12.83 hrs HW=753.27' TW=752.33' (Dynamic Tailwater)
- **1=Broad-Crested Rectangular Weir** (Weir Controls 2.76 cfs @ 0.95 fps)
- **2=Culvert** (Inlet Controls 6.09 cfs @ 3.83 fps)

Summary for Pond 500P:

Inflow = 0.15 cfs @ 17.43 hrs, Volume= 2,897 cf
Outflow = 0.12 cfs @ 18.66 hrs, Volume= 2,865 cf, Atten= 19%, Lag= 73.2 min
Primary = 0.12 cfs @ 18.66 hrs, Volume= 2,865 cf
Routed to Pond 600P : SW-A6

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Peak Elev= 762.17' @ 18.66 hrs Surf.Area= 5,458 sf Storage= 842 cf

Plug-Flow detention time= 226.1 min calculated for 2,865 cf (99% of inflow)
Center-of-Mass det. time= 221.9 min (1,293.4 - 1,071.5)

Volume	Invert	Avail.Storage	Storage Description
#1	762.00'	916,206 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
762.00	4,629	0	0
765.00	19,533	36,243	36,243
767.00	34,242	53,775	90,018
800.00	15,830	826,188	916,206

Device	Routing	Invert	Outlet Devices
#1	Primary	762.00'	**15.0" Round RCP_Round 15"** L= 30.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 762.00' / 761.70' S= 0.0100 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 1.23 sf

Primary OutFlow Max=0.12 cfs @ 18.66 hrs HW=762.17' TW=751.39' (Dynamic Tailwater)
↑—**1=RCP_Round 15"** (Barrel Controls 0.12 cfs @ 1.94 fps)

Summary for Pond 600P: SW-A6

Inflow = 4.95 cfs @ 12.84 hrs, Volume= 45,085 cf
Outflow = 1.25 cfs @ 16.01 hrs, Volume= 45,085 cf, Atten= 75%, Lag= 190.2 min
Discarded = 1.18 cfs @ 16.01 hrs, Volume= 43,920 cf
Primary = 0.08 cfs @ 16.01 hrs, Volume= 1,164 cf
Routed to Link S : (new Link)

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Peak Elev= 751.44' @ 16.01 hrs Surf.Area= 50,780 sf Storage= 14,460 cf

Plug-Flow detention time= 161.3 min calculated for 45,085 cf (100% of inflow)
Center-of-Mass det. time= 161.3 min (1,113.2 - 951.9)

Volume	Invert	Avail.Storage	Storage Description
#1	751.00'	9,387,964 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
751.00	14,707	0	0
752.00	96,389	55,548	55,548
754.00	139,253	235,642	291,190
756.00	150,327	289,580	580,770
800.00	250,000	8,807,194	9,387,964

Device	Routing	Invert	Outlet Devices
#1	Primary	751.00'	**36.0" Round Culvert** L= 150.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 751.00' / 750.50' S= 0.0033 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 7.07 sf
#2	Device 1	753.50'	**6.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#3	Discarded	751.00'	**1.000 in/hr Exfiltration over Surface area** Phase-In= 0.01'
#4	Device 1	751.30'	**10.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=1.18 cfs @ 16.01 hrs HW=751.44' (Free Discharge)
└**3=Exfiltration** (Exfiltration Controls 1.18 cfs)

Primary OutFlow Max=0.08 cfs @ 16.01 hrs HW=751.44' TW=0.00' (Dynamic Tailwater)
└**1=Culvert** (Passes 0.08 cfs of 0.98 cfs potential flow)
├**2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)
└**4=Orifice/Grate** (Orifice Controls 0.08 cfs @ 1.28 fps)

Summary for Pond SW-P1: SW-P1

Inflow Area = 3,319,272 sf, 5.91% Impervious, Inflow Depth = 1.04" for 2-yr event
Inflow = 65.43 cfs @ 12.50 hrs, Volume= 287,539 cf
Outflow = 2.10 cfs @ 17.86 hrs, Volume= 236,615 cf, Atten= 97%, Lag= 321.5 min
Primary = 2.10 cfs @ 17.86 hrs, Volume= 236,615 cf
Routed to Pond SW-P2 : SW-P2

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Peak Elev= 810.81' @ 17.86 hrs Surf.Area= 6.212 ac Storage= 5.088 af

Plug-Flow detention time= 1,446.5 min calculated for 236,610 cf (82% of inflow)
Center-of-Mass det. time= 1,383.0 min (2,216.8 - 833.7)

Volume	Invert	Avail.Storage	Storage Description
#1	810.00'	87.505 af	**Custom Stage Data (Prismatic)**Listed below

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
810.00	6.048	0.000	0.000
812.00	6.451	12.499	12.499
814.00	6.854	13.305	25.804
816.00	7.284	14.138	39.942
820.00	8.131	30.830	70.772
822.00	8.602	16.733	87.505

Device	Routing	Invert	Outlet Devices
#1	Primary	810.00'	**12.0" Round Culvert** L= 80.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 810.00' / 809.00' S= 0.0125 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=2.10 cfs @ 17.86 hrs HW=810.81' TW=748.00' (Dynamic Tailwater)
↑**1=Culvert** (Inlet Controls 2.10 cfs @ 3.07 fps)

Summary for Pond SW-P2: SW-P2

Inflow Area = 7,252,740 sf, 4.86% Impervious, Inflow Depth > 0.95" for 2-yr event
Inflow = 80.80 cfs @ 12.50 hrs, Volume= 574,323 cf
Outflow = 3.08 cfs @ 22.65 hrs, Volume= 458,241 cf, Atten= 96%, Lag= 608.9 min
Primary = 3.08 cfs @ 22.65 hrs, Volume= 458,241 cf
Routed to nonexistent node SW-P3

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Peak Elev= 748.06' @ 22.65 hrs Surf.Area= 6.790 ac Storage= 7.163 af

Plug-Flow detention time= 1,599.5 min calculated for 458,232 cf (80% of inflow)
Center-of-Mass det. time= 1,148.9 min (2,560.3 - 1,411.4)

Volume	Invert	Avail.Storage	Storage Description
#1	747.00'	67.788 af	**Custom Stage Data (Prismatic)**Listed below

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
747.00	6.476	0.000	0.000
749.00	7.070	13.546	13.546
751.00	7.538	14.608	28.154
753.00	8.024	15.562	43.716
756.00	8.024	24.072	67.788

Device	Routing	Invert	Outlet Devices
#1	Primary	747.00'	**21.0" Round Culvert** L= 500.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 747.00' / 746.00' S= 0.0020 '/' Cc= 0.900 n= 0.013, Flow Area= 2.41 sf

Primary OutFlow Max=3.08 cfs @ 22.65 hrs HW=748.06' (Free Discharge)
1=Culvert (Barrel Controls 3.08 cfs @ 2.91 fps)

Summary for Pond SW-P4.1: summers landing 30P

Inflow = 21.86 cfs @ 12.50 hrs, Volume= 95,557 cf
Outflow = 1.08 cfs @ 15.87 hrs, Volume= 62,285 cf, Atten= 95%, Lag= 201.9 min
Primary = 1.08 cfs @ 15.87 hrs, Volume= 62,285 cf
Routed to Pond SW-P4.2 : Summers landing 30PI
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond SW-P4.2 : Summers landing 30PI

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Starting Elev= 808.50' Surf.Area= 1.284 ac Storage= 4.283 af
Peak Elev= 809.58' @ 15.87 hrs Surf.Area= 1.541 ac Storage= 5.837 af (1.554 af above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= 762.9 min (1,620.5 - 857.6)

Volume	Invert	Avail.Storage	Storage Description
#1	804.00'	11.323 af	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
804.00	0.730	0.000	0.000
808.00	1.112	3.684	3.684
809.00	1.456	1.284	4.968
811.00	1.749	3.205	8.173
812.00	2.121	1.935	10.108
812.50	2.738	1.215	11.323

Device	Routing	Invert	Outlet Devices
#1	Primary	809.00'	**12.0" Round Culvert** L= 35.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 809.00' / 808.00' S= 0.0286 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Secondary	810.00'	**8.0' long x 30.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=1.08 cfs @ 15.87 hrs HW=809.58' TW=806.22' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 1.08 cfs @ 2.29 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=808.50' TW=805.00' (Dynamic Tailwater)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond SW-P4.2: Summers landing 30PI

Inflow = 1.08 cfs @ 15.87 hrs, Volume= 62,285 cf
Outflow = 0.67 cfs @ 24.23 hrs, Volume= 61,955 cf, Atten= 38%, Lag= 501.7 min
Discarded = 0.67 cfs @ 24.23 hrs, Volume= 61,955 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond SW-P4.3 : Summers landing 31P
Tertiary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond SW-P4.1 : summers landing 30P

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Peak Elev= 807.60' @ 24.23 hrs Surf.Area= 8,791 sf Storage= 18,291 cf

Plug-Flow detention time= 416.3 min calculated for 61,954 cf (99% of inflow)
Center-of-Mass det. time= 394.2 min (2,014.7 - 1,620.5)

Volume	Invert	Avail.Storage	Storage Description
#1	805.00'	124,959 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
805.00	5,274	0	0
808.00	9,331	21,908	21,908
809.00	14,735	12,033	33,941
811.00	19,577	34,312	68,253
812.00	22,804	21,191	89,443
812.50	119,260	35,516	124,959

Device	Routing	Invert	Outlet Devices
#1	Primary	809.00'	**15.0" Round Culvert** L= 661.0' Ke= 0.700 Inlet / Outlet Invert= 809.00' / 804.50' S= 0.0068 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf
#2	Tertiary	810.00'	**8.0' long x 30.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#3	Discarded	805.01'	**8.300 in/hr Exfiltration over Surface area above 805.01'** Excluded Surface area = 5,288 sf

Discarded OutFlow Max=0.67 cfs @ 24.23 hrs HW=807.60' (Free Discharge)
3=Exfiltration (Exfiltration Controls 0.67 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=805.00' TW=804.50' (Dynamic Tailwater)
1=Culvert (Controls 0.00 cfs)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=805.00' TW=808.50' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Pond SW-P4.3: Summers landing 31P

Inflow = 21.22 cfs @ 12.53 hrs, Volume= 95,740 cf
Outflow = 1.81 cfs @ 15.19 hrs, Volume= 91,567 cf, Atten= 91%, Lag= 159.7 min
Primary = 1.81 cfs @ 15.19 hrs, Volume= 91,567 cf
Routed to Pond SW-P4.4 : Summers landing 31PI
Tertiary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond SW-P4.4 : Summers landing 31PI

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Starting Elev= 804.50' Surf.Area= 69,445 sf Storage= 195,814 cf
Peak Elev= 805.30' @ 15.19 hrs Surf.Area= 74,827 sf Storage= 253,539 cf (57,725 cf above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= 663.8 min (1,526.9 - 863.2)

Volume	Invert	Avail.Storage	Storage Description
#1	800.50'	805,360 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
800.50	35,945	0	0
803.50	53,587	134,298	134,298
804.50	69,445	61,516	195,814
806.50	82,896	152,341	348,155
807.50	100,885	91,891	440,046
808.00	104,644	51,382	491,428
811.00	104,644	313,932	805,360

Device	Routing	Invert	Outlet Devices
#1	Primary	804.50'	**12.0" Round Culvert** L= 35.0' Ke= 0.700 Inlet / Outlet Invert= 804.50' / 803.50' S= 0.0286 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Tertiary	805.50'	**8.0' long x 30.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=1.81 cfs @ 15.19 hrs HW=805.30' TW=801.81' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 1.81 cfs @ 2.69 fps)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=804.50' TW=800.50' (Dynamic Tailwater)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond SW-P4.4: Summers landing 31PI

Inflow = 1.81 cfs @ 15.19 hrs, Volume= 91,567 cf
Outflow = 0.96 cfs @ 23.43 hrs, Volume= 91,069 cf, Atten= 47%, Lag= 494.1 min
Discarded = 0.96 cfs @ 23.43 hrs, Volume= 91,069 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond 500P :
Tertiary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond SW-P4.3 : Summers landing 31P

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Peak Elev= 803.25' @ 23.43 hrs Surf.Area= 13,416 sf Storage= 29,937 cf

Plug-Flow detention time= 479.8 min calculated for 91,069 cf (99% of inflow)
Center-of-Mass det. time= 456.8 min (1,983.7 - 1,526.9)

Volume	Invert	Avail.Storage	Storage Description
#1	800.50'	215,575 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
800.50	8,380	0	0
803.50	13,880	33,390	33,390
804.50	19,929	16,905	50,295
806.50	25,755	45,684	95,979
807.50	34,193	29,974	125,953
808.00	36,033	17,557	143,509
810.00	36,033	72,066	215,575

Device	Routing	Invert	Outlet Devices
#1	Primary	804.50'	**15.0" Round Culvert** L= 1,010.0' Ke= 0.700 Inlet / Outlet Invert= 804.50' / 801.00' S= 0.0035 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf
#2	Tertiary	805.50'	**8.0' long x 30.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#3	Discarded	800.51'	**8.300 in/hr Exfiltration over Surface area above 800.51'** Excluded Surface area = 8,398 sf

Discarded OutFlow Max=0.96 cfs @ 23.43 hrs HW=803.25' (Free Discharge)
3=Exfiltration (Exfiltration Controls 0.96 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=800.50' TW=762.00' (Dynamic Tailwater)
1=Culvert (Controls 0.00 cfs)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=800.50' TW=804.50' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Pond SW-P5.1: Summers landing 28P

Inflow = 17.56 cfs @ 12.53 hrs, Volume= 80,550 cf
Outflow = 1.97 cfs @ 14.17 hrs, Volume= 78,223 cf, Atten= 89%, Lag= 98.5 min
Primary = 1.97 cfs @ 14.17 hrs, Volume= 78,223 cf
Routed to Pond SW-P5.2 : Summers Landing 28PI
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond SW-P5.2 : Summers Landing 28PI

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Starting Elev= 806.00' Surf.Area= 55,104 sf Storage= 141,054 cf
Peak Elev= 806.78' @ 14.17 hrs Surf.Area= 60,381 sf Storage= 186,053 cf (44,999 cf above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= 520.0 min (1,386.0 - 866.1)

Volume	Invert	Avail.Storage	Storage Description
#1	802.00'	432,852 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
802.00	23,396	0	0
805.00	39,204	93,900	93,900
806.00	55,104	47,154	141,054
808.00	68,648	123,752	264,806
809.00	86,609	77,629	342,435
810.00	94,225	90,417	432,852

Device	Routing	Invert	Outlet Devices
#1	Primary	806.00'	**12.0" Round Culvert** L= 35.0' Ke= 0.500 Inlet / Outlet Invert= 806.00' / 805.00' S= 0.0286 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Secondary	807.00'	**5.0' long x 30.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=1.97 cfs @ 14.17 hrs HW=806.78' TW=804.82' (Dynamic Tailwater)
1=Culvert (Inlet Controls 1.97 cfs @ 3.01 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=806.00' TW=806.00' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Pond SW-P5.2: Summers Landing 28PI

Inflow = 1.97 cfs @ 14.17 hrs, Volume= 78,223 cf
Outflow = 1.79 cfs @ 0.00 hrs, Volume= 101,354 cf, Atten= 9%, Lag= 0.0 min
Discarded = 1.79 cfs @ 0.00 hrs, Volume= 101,354 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond SW-P5.3 : Summers landing POND 2 NORTH
Tertiary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond SW-P5.1 : Summers landing 28P

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Starting Elev= 806.00' Surf.Area= 16,338 sf Storage= 23,268 cf
Peak Elev= 806.00' @ 0.00 hrs Surf.Area= 16,338 sf Storage= 23,268 cf

Plug-Flow detention time= 178.0 min calculated for 78,085 cf (100% of inflow)
Center-of-Mass det. time= (not calculated: outflow precedes inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	804.00'	141,493 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
804.00	6,954	0	0
805.00	11,622	9,288	9,288
806.00	16,338	13,980	23,268
808.00	20,651	36,989	60,257
809.00	26,716	23,684	83,941
810.00	29,463	28,090	112,030
811.00	29,463	29,463	141,493

Device	Routing	Invert	Outlet Devices
#1	Primary	806.00'	**12.0" Round Culvert** L= 622.0' Ke= 0.700 Inlet / Outlet Invert= 806.00' / 803.00' S= 0.0048 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Tertiary	807.00'	**8.0' long x 30.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#3	Discarded	804.01'	**8.300 in/hr Exfiltration over Surface area above 804.01'** Excluded Surface area = 7,001 sf

Discarded OutFlow Max=1.79 cfs @ 0.00 hrs HW=806.00' (Free Discharge)
3=Exfiltration (Exfiltration Controls 1.79 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=806.00' TW=803.00' (Dynamic Tailwater)
1=Culvert (Controls 0.00 cfs)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=806.00' TW=806.00' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Pond SW-P5.3: Summers landing POND 2 NORTH

Inflow = 11.07 cfs @ 12.53 hrs, Volume= 51,768 cf
Outflow = 1.33 cfs @ 14.14 hrs, Volume= 50,260 cf, Atten= 88%, Lag= 96.1 min
Primary = 1.33 cfs @ 14.14 hrs, Volume= 50,260 cf
Routed to Pond SW-P5.5 : Summers Landing 29l
Tertiary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond SW-P5.5 : Summers Landing 29l

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Starting Elev= 803.00' Surf.Area= 41,920 sf Storage= 152,896 cf
Peak Elev= 803.66' @ 14.14 hrs Surf.Area= 44,356 sf Storage= 181,218 cf (28,323 cf above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= 514.0 min (1,383.1 - 869.1)

Volume	Invert	Avail.Storage	Storage Description
#1	798.00'	532,787 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
798.00	24,234	0	0
802.00	33,387	115,242	115,242
803.00	41,920	37,654	152,896
805.00	49,340	91,260	244,156
806.00	58,658	53,999	298,155
810.00	58,658	234,632	532,787

Device	Routing	Invert	Outlet Devices
#1	Primary	803.00'	**12.0" Round Culvert** L= 35.0' Ke= 0.700 Inlet / Outlet Invert= 803.00' / 802.00' S= 0.0286 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Tertiary	804.00'	**3.0' long x 30.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=1.33 cfs @ 14.14 hrs HW=803.66' TW=801.99' (Dynamic Tailwater)
1=Culvert (Inlet Controls 1.33 cfs @ 2.43 fps)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=803.00' TW=800.00' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Pond SW-P5.4: Summers Landing POND 2 SOUTH

Inflow = 6.18 cfs @ 12.53 hrs, Volume= 27,896 cf
Outflow = 0.75 cfs @ 14.04 hrs, Volume= 27,031 cf, Atten= 88%, Lag= 90.7 min
Primary = 0.75 cfs @ 14.04 hrs, Volume= 27,031 cf
Routed to Pond SW-P5.5 : Summers Landing 29l
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond SW-P5.5 : Summers Landing 29l

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Starting Elev= 803.00' Surf.Area= 31,846 sf Storage= 105,243 cf
Peak Elev= 803.47' @ 14.04 hrs Surf.Area= 33,782 sf Storage= 120,749 cf (15,506 cf above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= 533.6 min (1,396.8 - 863.2)

Volume	Invert	Avail.Storage	Storage Description
#1	798.00'	324,420 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
798.00	15,145	0	0
802.00	23,612	77,514	77,514
803.00	31,846	27,729	105,243
805.00	40,039	71,885	177,128
806.00	50,909	45,474	222,602
808.00	50,909	101,818	324,420

Device	Routing	Invert	Outlet Devices
#1	Primary	803.00'	**12.0" Round Culvert** L= 35.0' Ke= 0.700 Inlet / Outlet Invert= 803.00' / 802.00' S= 0.0286 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Secondary	804.00'	**3.0' long x 30.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.75 cfs @ 14.04 hrs HW=803.47' TW=801.89' (Dynamic Tailwater)
1=Culvert (Inlet Controls 0.75 cfs @ 2.07 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=803.00' TW=800.00' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Pond SW-P5.5: Summers Landing 29l

Inflow = 2.08 cfs @ 14.10 hrs, Volume= 77,290 cf
Outflow = 1.31 cfs @ 17.47 hrs, Volume= 77,164 cf, Atten= 37%, Lag= 202.6 min
Discarded = 1.21 cfs @ 17.47 hrs, Volume= 76,091 cf
Primary = 0.10 cfs @ 17.47 hrs, Volume= 1,073 cf
Routed to Pond 500P :
Tertiary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond SW-P5.4 : Summers Landing POND 2 SOUTH

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Peak Elev= 803.18' @ 17.47 hrs Surf.Area= 9,028 sf Storage= 16,599 cf

Plug-Flow detention time= 224.9 min calculated for 77,162 cf (100% of inflow)
Center-of-Mass det. time= 217.5 min (1,605.4 - 1,387.9)

Volume	Invert	Avail.Storage	Storage Description
#1	800.00'	112,832 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
800.00	2,718	0	0
802.00	5,260	7,978	7,978
803.00	8,713	6,987	14,965
805.00	12,132	20,845	35,810
806.00	15,768	13,950	49,760
810.00	15,768	63,072	112,832

Device	Routing	Invert	Outlet Devices
#1	Primary	803.00'	**18.0" Round Culvert** L= 750.0' Ke= 0.700 Inlet / Outlet Invert= 803.00' / 801.00' S= 0.0027 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf
#2	Tertiary	806.00'	**12.0" Round Culvert** L= 35.0' Ke= 0.700 Inlet / Outlet Invert= 806.00' / 803.00' S= 0.0857 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#3	Discarded	800.01'	**8.300 in/hr Exfiltration over Surface area above 800.01'** Excluded Surface area = 2,731 sf

Discarded OutFlow Max=1.21 cfs @ 17.47 hrs HW=803.18' (Free Discharge)
3=Exfiltration (Exfiltration Controls 1.21 cfs)

Primary OutFlow Max=0.10 cfs @ 17.47 hrs HW=803.18' TW=762.15' (Dynamic Tailwater)
1=Culvert (Barrel Controls 0.10 cfs @ 1.27 fps)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=800.00' TW=803.00' (Dynamic Tailwater)
2=Culvert (Controls 0.00 cfs)

Summary for Link N: (new Link)

Inflow	=	0.00 cfs @	0.00 hrs, Volume=	0 cf
Primary	=	0.00 cfs @	0.00 hrs, Volume=	0 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs

Summary for Link S: (new Link)

Inflow	=	0.95 cfs @	12.57 hrs, Volume=	5,943 cf
Primary	=	0.95 cfs @	12.57 hrs, Volume=	5,943 cf, Atten= 0%, Lag= 0.1 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs

Summary for Link W: Offsite Discharge

Inflow	=	0.28 cfs @	15.37 hrs, Volume=	10,985 cf
Primary	=	0.28 cfs @	15.37 hrs, Volume=	10,985 cf, Atten= 0%, Lag= 0.1 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs

Summary for Subcatchment 1: 1

Runoff = 2.77 cfs @ 12.50 hrs, Volume= 11,970 cf, Depth= 1.31"
Routed to Link S : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 10-yr Rainfall=4.16", Smoothing=On

	Area (sf)	CN	Description
*	15,380	58	Meadow, HSG A
*	72,637	61	75%GrassCoverGood, HSG A
*	21,849	98	Impervious, HSG A
	109,867	68	Weighted Average
	88,017		80.11% Pervious Area
	21,849		19.89% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.0					**Direct Entry, 30**

Summary for Subcatchment 1E: 1

Runoff = 0.00 cfs @ 12.57 hrs, Volume= 16 cf, Depth= 0.74"
Routed to Link S : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 10-yr Rainfall=4.16", Smoothing=On

	Area (sf)	CN	Description
*	260	58	Meadow, HSG A
	260		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					**Direct Entry, 30**
10.0	0	Total, Increased to minimum Tc = 30.0 min			

Summary for Subcatchment 2: 2

Runoff = 0.62 cfs @ 12.50 hrs, Volume= 2,659 cf, Depth= 1.37"
Routed to Pond 1P : SW-A3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 10-yr Rainfall=4.16", Smoothing=On

	Area (sf)	CN	Description
*	18,100	61	75%GrassCoverGood, HSG A
*	5,161	98	Impervious, HSG A
	23,261	69	Weighted Average
	18,100		77.81% Pervious Area
	5,161		22.19% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.0					**Direct Entry,**

Summary for Subcatchment 2N: 2N

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"
Routed to Pond 1P : SW-A3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 10-yr Rainfall=4.16", Smoothing=On

	Area (sf)	CN	Description
*	48,805	30	Meadow Undisturbed, HSG A
*	102,224	30	Woods, HSG A
*	367	61	75%GrassCoverGood, HSG A
	151,396	30	Weighted Average
	151,396		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.0					**Direct Entry,**

Summary for Subcatchment 3: 3

Runoff = 1.58 cfs @ 12.57 hrs, Volume= 8,575 cf, Depth= 0.64"
Routed to Link W : Offsite Discharge

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 10-yr Rainfall=4.16", Smoothing=On

	Area (sf)	CN	Description
*	25,414	30	Meadow Undisturbed, HSG A
*	88,248	58	Meadow, HSG A
*	37,923	61	75%GrassCoverGood, HSG A
*	8,826	98	Impervious, HSG A
	160,411	56	Weighted Average
	151,586		94.50% Pervious Area
	8,826		5.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.0					**Direct Entry, 30**

Summary for Subcatchment 100: 100

Runoff = 15.08 cfs @ 12.50 hrs, Volume= 62,181 cf, Depth= 1.79"
Routed to Pond 100P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 10-yr Rainfall=4.16", Smoothing=On

	Area (sf)	CN	Description
*	53,291	58	Meadow, HSG A
*	6,304	100	Water Surface, HSG A
*	202,414	61	75%GrassCoverGood, HSG A
*	155,403	98	Impervious, HSG A
	417,413	75	Weighted Average
	255,706		61.26% Pervious Area
	161,707		38.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0					**Direct Entry,**
15.0	0	Total, Increased to minimum Tc = 30.0 min			

Summary for Subcatchment 200: 200

Runoff = 5.38 cfs @ 12.50 hrs, Volume= 22,793 cf, Depth= 1.44"
Routed to Pond 200P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 10-yr Rainfall=4.16", Smoothing=On

	Area (sf)	CN	Description
*	78,605	58	Meadow, HSG A
*	2,099	100	Water Surface, HSG A
*	57,616	61	75%GrassCoverGood, HSG A
*	51,948	98	Impervious, HSG A
	190,268	70	Weighted Average
	136,222		71.59% Pervious Area
	54,047		28.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0					**Direct Entry,**
15.0	0	Total, Increased to minimum Tc = 30.0 min			

Summary for Subcatchment 300: 300

Runoff = 23.63 cfs @ 12.50 hrs, Volume= 96,441 cf, Depth= 2.17"
Routed to Pond 300P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 10-yr Rainfall=4.16", Smoothing=On

	Area (sf)	CN	Description
*	41,527	58	Meadow, HSG A
*	11,734	100	Water Surface, HSG A
*	216,369	61	75%GrassCoverGood, HSG A
*	262,554	98	Impervious, HSG A
	532,184	80	Weighted Average
	257,896		48.46% Pervious Area
	274,288		51.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					**Direct Entry,**
10.0	0	Total, Increased to minimum Tc = 30.0 min			

Summary for Subcatchment 300N: 300N

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"
Routed to Pond 1P : SW-A3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 10-yr Rainfall=4.16", Smoothing=On

	Area (sf)	CN	Description
*	2,354	30	Meadow Undisturbed, HSG A
*	9,502	30	Woods, HSG A
	11,856	30	Weighted Average
	11,856		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0					**Direct Entry,**
15.0	0	Total, Increased to minimum Tc = 30.0 min			

Summary for Subcatchment 400: 400

Runoff = 31.32 cfs @ 12.50 hrs, Volume= 128,697 cf, Depth= 1.86"
Routed to Pond 400P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 10-yr Rainfall=4.16", Smoothing=On

	Area (sf)	CN	Description
*	28,566	30	Meadow Undisturbed, HSG A
*	76,756	58	Meadow, HSG A
*	15,316	100	Water Surface, HSG A
*	5,805	30	Woods, HSG A
*	338,087	61	75%GrassCoverGood, HSG A
*	364,894	98	Impervious, HSG A
	829,424	76	Weighted Average
	449,214		54.16% Pervious Area
	380,210		45.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0					**Direct Entry,**
15.0	0	Total, Increased to minimum Tc = 30.0 min			

Summary for Subcatchment 400E: 400E

Runoff = 7.34 cfs @ 12.50 hrs, Volume= 32,873 cf, Depth= 1.12"
Routed to Pond 400P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 10-yr Rainfall=4.16", Smoothing=On

	Area (sf)	CN	Description
*	41,605	30	Meadow Undisturbed, HSG A
*	16,296	58	Meadow, HSG A
*	80,928	75	Single Family Residential, HSG A
*	51,903	30	Woods, HSG A
*	76,491	61	75%GrassCoverGood, HSG A
*	84,186	98	Impervious, HSG A
	351,409	65	Weighted Average
	267,223		76.04% Pervious Area
	84,186		23.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0					**Direct Entry,**
15.0	0	Total, Increased to minimum Tc = 30.0 min			

Summary for Subcatchment 500: 500

Runoff = 1.20 cfs @ 12.67 hrs, Volume= 9,255 cf, Depth= 0.35"
Routed to Pond 500P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 10-yr Rainfall=4.16", Smoothing=On

	Area (sf)	CN	Description
*	55,625	30	Meadow Undisturbed, HSG A
*	129,892	58	Meadow, HSG A
*	81,587	30	Woods, HSG A
*	36,684	61	75%GrassCoverGood, HSG A
*	17,250	98	Impervious, HSG A
	321,039	49	Weighted Average
	303,789		94.63% Pervious Area
	17,250		5.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0					**Direct Entry,**
15.0	0	Total, Increased to minimum Tc = 30.0 min			

Summary for Subcatchment 500E: 500E

Runoff = 0.78 cfs @ 12.70 hrs, Volume= 7,008 cf, Depth= 0.28"
Routed to Pond 500P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 10-yr Rainfall=4.16", Smoothing=On

	Area (sf)	CN	Description
*	66,520	30	Meadow Undisturbed, HSG A
*	25,924	58	Meadow, HSG A
*	77,212	75	Single Family Residential, HSG A
*	120,110	30	Woods, HSG A
*	0	61	75%GrassCoverGood, HSG A
*	15,779	98	Impervious, HSG A
	305,546	47	Weighted Average
	289,767		94.84% Pervious Area
	15,779		5.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0					**Direct Entry,**
15.0	0	Total, Increased to minimum Tc = 30.0 min			

Summary for Subcatchment 600: 600

Runoff = 4.13 cfs @ 12.53 hrs, Volume= 19,349 cf, Depth= 0.95"
Routed to Pond 600P : SW-A6

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 10-yr Rainfall=4.16", Smoothing=On

	Area (sf)	CN	Description
*	165,774	58	Meadow, HSG A
*	55,574	61	75%GrassCoverGood, HSG A
*	23,078	98	Impervious, HSG A
	244,426	62	Weighted Average
	221,348		90.56% Pervious Area
	23,078		9.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.0					**Direct Entry,**

Summary for Subcatchment 650: 650

Runoff = 3.07 cfs @ 12.53 hrs, Volume= 13,939 cf, Depth= 1.06"
Routed to Pond 300P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 10-yr Rainfall=4.16", Smoothing=On

	Area (sf)	CN	Description
*	71,141	58	Meadow, HSG A
*	69,683	61	75%GrassCoverGood, HSG A
*	16,439	98	Impervious, HSG A
	157,263	64	Weighted Average
	140,824		89.55% Pervious Area
	16,439		10.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.0					**Direct Entry,**

Summary for Subcatchment 650N: 650N

Runoff = 2.44 cfs @ 12.63 hrs, Volume= 15,697 cf, Depth= 0.46"
Routed to Pond 300P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 10-yr Rainfall=4.16", Smoothing=On

	Area (sf)	CN	Description
*	99,094	30	Meadow Undisturbed, HSG A
*	239,951	67	Cropland, HSG A
*	67,113	30	Woods, HSG A
	406,158	52	Weighted Average
	406,158		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.0					**Direct Entry,**

Summary for Subcatchment SW-A1.1: Fuel Storage Facility Site - SW-A1.1

Runoff = 37.87 cfs @ 12.50 hrs, Volume= 169,513 cf, Depth= 1.12"
Routed to Pond SW-P1 : SW-P1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 10-yr Rainfall=4.16", Smoothing=On

	Area (ac)	CN	Description
*	41.600	65	Estimated CN for tanks and greenspace
	41.600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.0					**Direct Entry,**
25.0	0	Total, Increased to minimum Tc = 30.0 min			

Summary for Subcatchment SW-A1.2: SW-A1.2

Runoff = 92.85 cfs @ 12.47 hrs, Volume= 385,735 cf, Depth= 3.07"
Routed to Pond SW-P1 : SW-P1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 10-yr Rainfall=4.16", Smoothing=On

	Area (ac)	CN	Description
*	4.500	100	
*	26.600	90	future C/I outside of tank farm
*	3.500	75	SFR
	34.600	90	Weighted Average
	30.100		86.99% Pervious Area
	4.500		13.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.0					**Direct Entry,**
25.0	0	Total, Increased to minimum Tc = 30.0 min			

Summary for Subcatchment SW-A2.1: SW-A2.1

Runoff = 132.70 cfs @ 12.50 hrs, Volume= 541,517 cf, Depth= 2.17"
Routed to Pond SW-P2 : SW-P2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 10-yr Rainfall=4.16", Smoothing=On

	Area (ac)	CN	Description
*	42.900	75	LDR
*	3.600	100	Pond @ NWL
*	18.700	90	C/I
*	3.400	75	SFR
	68.600	80	Weighted Average
	65.000		94.75% Pervious Area
	3.600		5.25% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.0					**Direct Entry,**
25.0	0	Total, Increased to minimum Tc = 30.0 min			

Summary for Subcatchment SW-A2.2: SW-A2.2

Runoff = 34.16 cfs @ 12.50 hrs, Volume= 140,811 cf, Depth= 1.79"
Routed to Pond SW-P2 : SW-P2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 10-yr Rainfall=4.16", Smoothing=On

	Area (ac)	CN	Description
*	21.700	75	LDR
	21.700		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	1,000	0.0750	1.24		**Lag/CN Method,**
13.5	1,000	Total, Increased to minimum Tc = 30.0 min			

Summary for Subcatchment SW-A4.1: NE QUAD

Runoff = 50.15 cfs @ 12.50 hrs, Volume= 206,740 cf, Depth= 1.79"
Routed to Pond SW-P4.1 : summers landing 30P

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 10-yr Rainfall=4.16", Smoothing=On

	Area (ac)	CN	Description
*	10.250	98	Paved Parking, HSG B
*	1.530	98	Water Surface, HSG B
*	20.080	61	>75% Grass Cover, HSG B
	31.860	75	Weighted Average
	20.080		63.03% Pervious Area
	11.780		36.97% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.0					**Direct Entry,**
25.0	0	Total, Increased to minimum Tc = 30.0 min			

Summary for Subcatchment SW-A4.3: NW QUAD

Runoff = 51.75 cfs @ 12.50 hrs, Volume= 215,160 cf, Depth= 1.64"
Routed to Pond SW-P4.3 : Summers landing 31P

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 10-yr Rainfall=4.16", Smoothing=On

	Area (ac)	CN	Description
*	10.510	98	Paved Parking, HSG B
*	23.970	61	>75% Grass cover, Good
*	1.590	98	Water Surface, HSG B
	36.070	73	Weighted Average
	23.970		66.45% Pervious Area
	12.100		33.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.0					**Direct Entry,**
25.0	0	Total, Increased to minimum Tc = 30.0 min			

Summary for Subcatchment SW-A5.1: SE QUAD

Runoff = 44.18 cfs @ 12.50 hrs, Volume= 184,693 cf, Depth= 1.57"
Routed to Pond SW-P5.1 : Summers landing 28P

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 10-yr Rainfall=4.16", Smoothing=On

	Area (ac)	CN	Description
*	8.430	98	
*	22.650	61	
*	1.260	98	
	32.340	72	Weighted Average
	22.650		70.04% Pervious Area
	9.690		29.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.0					**Direct Entry,**
25.0	0	Total, Increased to minimum Tc = 30.0 min			

Summary for Subcatchment SW-A5.3: SW QUAD N

Runoff = 28.81 cfs @ 12.50 hrs, Volume= 121,203 cf, Depth= 1.50"
Routed to Pond SW-P5.3 : Summers landing POND 2 NORTH

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 10-yr Rainfall=4.16", Smoothing=On

	Area (ac)	CN	Description
*	5.230	98	
*	16.000	61	
*	0.960	98	
	22.190	71	Weighted Average
	16.000		72.10% Pervious Area
	6.190		27.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.0					**Direct Entry,**
25.0	0	Total, Increased to minimum Tc = 30.0 min			

Summary for Subcatchment SW-A5.4: SW QUAD S

Runoff = 15.08 cfs @ 12.50 hrs, Volume= 62,693 cf, Depth= 1.64"
Routed to Pond SW-P5.4 : Summers Landing POND 2 SOUTH

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 10-yr Rainfall=4.16", Smoothing=On

	Area (ac)	CN	Description
*	2.560	98	
*	7.220	61	
*	0.730	98	
	10.510	73	Weighted Average
	7.220		68.70% Pervious Area
	3.290		31.30% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.0					**Direct Entry,**
25.0	0	Total, Increased to minimum Tc = 30.0 min			

Summary for Pond 1P: SW-A3

Inflow Area = 186,513 sf, 2.77% Impervious, Inflow Depth = 0.17" for 10-yr event
Inflow = 0.62 cfs @ 12.50 hrs, Volume= 2,659 cf
Outflow = 0.14 cfs @ 13.40 hrs, Volume= 2,696 cf, Atten= 77%, Lag= 53.9 min
Discarded = 0.14 cfs @ 13.40 hrs, Volume= 2,696 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond 600P : SW-A6
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link N : (new Link)

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Peak Elev= 751.33' @ 13.40 hrs Surf.Area= 6,123 sf Storage= 1,102 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 92.9 min (945.6 - 852.7)

Volume	Invert	Avail.Storage	Storage Description
#1	751.00'	78,327 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
751.00	500	0	0
752.00	17,399	8,950	8,950
754.00	51,978	69,377	78,327

Device	Routing	Invert	Outlet Devices
#1	Primary	751.25'	**36.0" Round Culvert** L= 136.0' Ke= 0.500 Inlet / Outlet Invert= 751.25' / 751.25' S= 0.0000 '/' Cc= 0.900 n= 0.013, Flow Area= 7.07 sf
#2	Secondary	753.50'	**40.0' long + 10.0 '/' SideZ x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#3	Discarded	751.00'	**1.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.14 cfs @ 13.40 hrs HW=751.33' (Free Discharge)
3=Exfiltration (Exfiltration Controls 0.14 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=751.00' TW=751.00' (Dynamic Tailwater)
1=Culvert (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=751.00' TW=0.00' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Pond 100I:

Inflow	=	5.81 cfs @	12.56 hrs,	Volume=	21,308 cf
Outflow	=	0.17 cfs @	13.75 hrs,	Volume=	21,307 cf, Atten= 97%, Lag= 71.4 min
Discarded	=	0.17 cfs @	13.75 hrs,	Volume=	21,307 cf

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Peak Elev= 751.01' @ 13.75 hrs Surf.Area= 9,361 sf Storage= 14,780 cf

Plug-Flow detention time= 705.8 min calculated for 21,307 cf (100% of inflow)
Center-of-Mass det. time= 705.7 min (1,972.8 - 1,267.1)

Volume	Invert	Avail.Storage	Storage Description
#1	749.00'	57,705 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
749.00	5,359	0	0
752.00	11,337	25,044	25,044
754.00	21,324	32,661	57,705

Device	Routing	Invert	Outlet Devices
#1	Discarded	749.00'	**0.800 in/hr Exfiltration over Surface area** Phase-In= 0.01'

Discarded OutFlow Max=0.17 cfs @ 13.75 hrs HW=751.01' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.17 cfs)

Summary for Pond 100P:

Inflow = 15.08 cfs @ 12.50 hrs, Volume= 62,181 cf
Outflow = 7.14 cfs @ 12.56 hrs, Volume= 62,018 cf, Atten= 53%, Lag= 3.7 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link W : Offsite Discharge
Secondary = 5.81 cfs @ 12.56 hrs, Volume= 21,308 cf
Routed to Pond 100I :
Tertiary = 1.98 cfs @ 13.72 hrs, Volume= 40,711 cf
Routed to Pond 110/210 :

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Starting Elev= 749.00' Surf.Area= 6,303 sf Storage= 9,680 cf
Peak Elev= 751.01' @ 13.72 hrs Surf.Area= 22,841 sf Storage= 28,945 cf (19,265 cf above start)

Plug-Flow detention time= 380.8 min calculated for 52,339 cf (84% of inflow)
Center-of-Mass det. time= 257.2 min (1,097.6 - 840.4)

Volume	Invert	Avail.Storage	Storage Description
#1	746.00'	1,651,315 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
746.00	150	0	0
749.00	6,303	9,680	9,680
750.75	9,172	13,541	23,220
750.76	21,872	155	23,375
752.00	26,693	30,110	53,486
754.00	36,714	63,407	116,893
800.00	30,000	1,534,422	1,651,315

Device	Routing	Invert	Outlet Devices
#1	Tertiary	751.29'	**20.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#2	Secondary	749.00'	**15.0" Round Culvert** L= 40.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 749.00' / 748.60' S= 0.0100 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 1.23 sf
#3	Primary	754.00'	**24.0" Round Culvert** L= 50.0' Ke= 0.500 Inlet / Outlet Invert= 754.00' / 749.65' S= 0.0870 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf
#4	Tertiary	749.65'	**24.0" Round Culvert** L= 33.0' Ke= 0.500 Inlet / Outlet Invert= 749.65' / 749.00' S= 0.0197 '/' Cc= 0.900 n= 0.130, Flow Area= 3.14 sf

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=749.00' TW=0.00' (Dynamic Tailwater)
└**3=Culvert** (Controls 0.00 cfs)

Secondary OutFlow Max=5.79 cfs @ 12.56 hrs HW=750.74' TW=749.78' (Dynamic Tailwater)
└**2=Culvert** (Inlet Controls 5.79 cfs @ 4.72 fps)

Tertiary OutFlow Max=1.98 cfs @ 13.72 hrs HW=751.01' TW=749.55' (Dynamic Tailwater)
├**1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)
└**4=Culvert** (Barrel Controls 1.98 cfs @ 1.23 fps)

Summary for Pond 110/210:

Inflow = 1.98 cfs @ 13.72 hrs, Volume= 40,711 cf
Outflow = 1.75 cfs @ 14.64 hrs, Volume= 40,617 cf, Atten= 12%, Lag= 55.6 min
Primary = 1.73 cfs @ 14.73 hrs, Volume= 39,616 cf
Routed to Link W : Offsite Discharge
Secondary = 0.47 cfs @ 13.27 hrs, Volume= 1,001 cf
Routed to Pond 210/110 :

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Peak Elev= 749.65' @ 14.73 hrs Surf.Area= 9,712 sf Storage= 5,851 cf

Plug-Flow detention time= 97.2 min calculated for 40,616 cf (100% of inflow)
Center-of-Mass det. time= 94.9 min (1,103.7 - 1,008.8)

Volume	Invert	Avail.Storage	Storage Description
#1	749.00'	1,187,361 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
749.00	8,220	0	0
752.00	15,077	34,946	34,946
755.00	18,950	51,041	85,986
800.00	30,000	1,101,375	1,187,361

Device	Routing	Invert	Outlet Devices
#1	Primary	752.50'	**20.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#2	Secondary	749.00'	**24.0" Round Culvert** L= 40.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 749.00' / 749.00' S= 0.0000 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 3.14 sf
#3	Primary	749.00'	**21.0" Round Culvert** L= 67.0' Ke= 0.500 Inlet / Outlet Invert= 749.00' / 748.66' S= 0.0051 '/' Cc= 0.900 n= 0.013, Flow Area= 2.41 sf

Primary OutFlow Max=1.73 cfs @ 14.73 hrs HW=749.65' TW=0.00' (Dynamic Tailwater)
1=Broad-Crested Rectangular Weir (Controls 0.00 cfs)
3=Culvert (Barrel Controls 1.73 cfs @ 3.14 fps)

Secondary OutFlow Max=0.47 cfs @ 13.27 hrs HW=749.43' TW=749.32' (Dynamic Tailwater)
2=Culvert (Outlet Controls 0.47 cfs @ 1.45 fps)

Summary for Pond 200I:

Inflow	=	3.06 cfs @	12.51 hrs, Volume=	9,861 cf
Outflow	=	0.07 cfs @	13.21 hrs, Volume=	9,861 cf, Atten= 98%, Lag= 41.9 min
Discarded	=	0.07 cfs @	13.21 hrs, Volume=	9,861 cf

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Peak Elev= 750.78' @ 13.21 hrs Surf.Area= 3,995 sf Storage= 5,413 cf

Plug-Flow detention time= 675.0 min calculated for 9,861 cf (100% of inflow)
Center-of-Mass det. time= 675.0 min (2,071.7 - 1,396.7)

Volume	Invert	Avail.Storage	Storage Description
#1	749.00'	334,200 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
749.00	2,100	0	0
753.50	6,900	20,250	20,250
799.00	6,900	313,950	334,200

Device	Routing	Invert	Outlet Devices
#1	Discarded	749.00'	**0.800 in/hr Exfiltration over Surface area** Phase-In= 0.01'

Discarded OutFlow Max=0.07 cfs @ 13.21 hrs HW=750.78' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.07 cfs)

Summary for Pond 200P:

Inflow Area = 190,268 sf, 28.41% Impervious, Inflow Depth = 1.44" for 10-yr event
Inflow = 5.38 cfs @ 12.50 hrs, Volume= 22,793 cf
Outflow = 3.06 cfs @ 12.51 hrs, Volume= 22,787 cf, Atten= 43%, Lag= 0.7 min
Primary = 1.43 cfs @ 13.21 hrs, Volume= 12,925 cf
Routed to Pond 210/110 :
Secondary = 3.06 cfs @ 12.51 hrs, Volume= 9,861 cf
Routed to Pond 200I :
Tertiary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link W : Offsite Discharge

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Starting Elev= 749.00' Surf.Area= 2,090 sf Storage= 2,320 cf
Peak Elev= 750.78' @ 13.21 hrs Surf.Area= 3,739 sf Storage= 7,497 cf (5,177 cf above start)

Plug-Flow detention time= 367.0 min calculated for 20,467 cf (90% of inflow)
Center-of-Mass det. time= 278.4 min (1,129.0 - 850.6)

Volume	Invert	Avail.Storage	Storage Description
#1	745.00'	327,220 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
745.00	10	0	0
748.00	630	960	960
749.00	2,090	1,360	2,320
754.00	6,730	22,050	24,370
799.00	6,730	302,850	327,220

Device	Routing	Invert	Outlet Devices
#1	Primary	751.50'	**20.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#2	Secondary	749.00'	**15.0" Round RCP_Round 15"** L= 40.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 746.00' / 749.00' S= -0.0750 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 1.23 sf
#3	Primary	750.20'	**15.0" Round Culvert** L= 50.0' Ke= 0.500 Inlet / Outlet Invert= 750.20' / 749.00' S= 0.0240 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#4	Tertiary	754.00'	**15.0" Round Culvert** L= 33.0' Ke= 0.500 Inlet / Outlet Invert= 754.00' / 749.00' S= 0.1515 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=1.43 cfs @ 13.21 hrs HW=750.78' TW=749.28' (Dynamic Tailwater)
↑—**1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)
└—**3=Culvert** (Inlet Controls 1.43 cfs @ 2.59 fps)

Secondary OutFlow Max=3.02 cfs @ 12.51 hrs HW=750.13' TW=749.84' (Dynamic Tailwater)
↑—**2=RCP_Round 15"** (Inlet Controls 3.02 cfs @ 2.59 fps)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=749.00' TW=0.00' (Dynamic Tailwater)
↑—**4=Culvert** (Controls 0.00 cfs)

Summary for Pond 210/110:

Inflow	=	1.90 cfs @	13.27 hrs, Volume=	13,926 cf
Outflow	=	0.51 cfs @	14.73 hrs, Volume=	13,343 cf, Atten= 73%, Lag= 88.1 min
Primary	=	0.51 cfs @	14.73 hrs, Volume=	13,343 cf

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Peak Elev= 749.65' @ 14.73 hrs Surf.Area= 9,797 sf Storage= 6,084 cf

Plug-Flow detention time= 385.3 min calculated for 13,343 cf (96% of inflow)
Center-of-Mass det. time= 365.9 min (1,281.6 - 915.8)

Volume	Invert	Avail.Storage	Storage Description
#1	749.00'	2,080,850 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
749.00	8,851	0	0
753.50	15,374	54,506	54,506
754.00	34,000	12,344	66,850
756.00	44,000	78,000	144,850
800.00	44,000	1,936,000	2,080,850

Device	Routing	Invert	Outlet Devices
#1	Primary	749.00'	**24.0" Round Culvert** L= 333.0' Ke= 0.500 Inlet / Outlet Invert= 749.00' / 749.00' S= 0.0000 '/' Cc= 0.900 n= 0.016, Flow Area= 3.14 sf

Primary OutFlow Max=0.51 cfs @ 14.73 hrs HW=749.65' (Free Discharge)
1=Culvert (Barrel Controls 0.51 cfs @ 0.85 fps)

Summary for Pond 300I:

Inflow	=	5.71 cfs @	12.66 hrs,	Volume=	30,152 cf
Outflow	=	0.23 cfs @	13.31 hrs,	Volume=	30,151 cf, Atten= 96%, Lag= 39.1 min
Discarded	=	0.23 cfs @	13.31 hrs,	Volume=	30,151 cf

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Peak Elev= 753.26' @ 13.31 hrs Surf.Area= 12,187 sf Storage= 13,821 cf

Plug-Flow detention time= 462.6 min calculated for 30,150 cf (100% of inflow)
Center-of-Mass det. time= 462.5 min (1,950.5 - 1,488.0)

Volume	Invert	Avail.Storage	Storage Description
#1	752.00'	54,346 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
752.00	9,768	0	0
754.00	13,610	23,378	23,378
755.00	15,250	14,430	37,808
756.00	17,826	16,538	54,346

Device	Routing	Invert	Outlet Devices
#1	Discarded	752.00'	**0.800 in/hr Exfiltration over Surface area** Phase-In= 0.01'

Discarded OutFlow Max=0.23 cfs @ 13.31 hrs HW=753.26' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.23 cfs)

Summary for Pond 300P:

Inflow Area = 1,095,605 sf, 26.54% Impervious, Inflow Depth = 1.38" for 10-yr event
Inflow = 28.84 cfs @ 12.50 hrs, Volume= 126,077 cf
Outflow = 21.41 cfs @ 12.69 hrs, Volume= 125,820 cf, Atten= 26%, Lag= 11.3 min
Primary = 15.88 cfs @ 12.71 hrs, Volume= 95,668 cf
Routed to Pond 600P : SW-A6
Secondary = 5.71 cfs @ 12.66 hrs, Volume= 30,152 cf
Routed to Pond 300I :

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Starting Elev= 752.00' Surf.Area= 15,962 sf Storage= 41,550 cf
Peak Elev= 753.57' @ 12.71 hrs Surf.Area= 22,366 sf Storage= 71,592 cf (30,042 cf above start)

Plug-Flow detention time= 415.2 min calculated for 84,268 cf (67% of inflow)
Center-of-Mass det. time= 193.3 min (1,036.8 - 843.5)

Volume	Invert	Avail.Storage	Storage Description
#1	748.00'	1,471,090 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
748.00	4,813	0	0
752.00	15,962	41,550	41,550
754.00	24,132	40,094	81,644
755.00	29,560	26,846	108,490
800.00	31,000	1,362,600	1,471,090

Device	Routing	Invert	Outlet Devices
#1	Secondary	752.00'	**15.0" Round RCP_Round 15"** L= 34.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 749.00' / 752.00' S= -0.0882 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 1.23 sf
#2	Primary	753.57'	**20.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#3	Primary	751.00'	**36.0" Round Culvert** L= 50.0' Ke= 0.500 Inlet / Outlet Invert= 751.00' / 750.85' S= 0.0030 '/' Cc= 0.900 n= 0.013, Flow Area= 7.07 sf
#4	Device 3	752.70'	**6.0' long Sharp-Crested Vee/Trap Weir** Cv= 2.62 (C= 3.28)

Primary OutFlow Max=15.88 cfs @ 12.71 hrs HW=753.57' TW=751.61' (Dynamic Tailwater)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)
└**3=Culvert** (Passes 15.88 cfs of 25.50 cfs potential flow)
└**4=Sharp-Crested Vee/Trap Weir** (Weir Controls 15.88 cfs @ 3.05 fps)

Secondary OutFlow Max=5.70 cfs @ 12.66 hrs HW=753.56' TW=752.63' (Dynamic Tailwater)
└**1=RCP_Round 15"** (Inlet Controls 5.70 cfs @ 4.64 fps)

Summary for Pond 400I:

Inflow	=	28.66 cfs @	12.58 hrs,	Volume=	68,229 cf
Outflow	=	0.51 cfs @	13.23 hrs,	Volume=	68,228 cf, Atten= 98%, Lag= 39.1 min
Discarded	=	0.51 cfs @	13.23 hrs,	Volume=	68,228 cf

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Peak Elev= 753.74' @ 13.23 hrs Surf.Area= 27,505 sf Storage= 43,307 cf

Plug-Flow detention time= 703.2 min calculated for 68,227 cf (100% of inflow)
Center-of-Mass det. time= 703.1 min (1,937.7 - 1,234.5)

Volume	Invert	Avail.Storage	Storage Description
#1	752.00'	1,905,717 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
752.00	22,201	0	0
754.00	28,289	50,490	50,490
755.00	31,134	29,712	80,202
800.00	50,000	1,825,515	1,905,717

Device	Routing	Invert	Outlet Devices
#1	Discarded	752.00'	**0.800 in/hr Exfiltration over Surface area** Phase-In= 0.01'

Discarded OutFlow Max=0.51 cfs @ 13.23 hrs HW=753.74' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.51 cfs)

Summary for Pond 400P:

Inflow Area = 1,180,834 sf, 39.33% Impervious, Inflow Depth = 1.64" for 10-yr event
Inflow = 38.66 cfs @ 12.50 hrs, Volume= 161,570 cf
Outflow = 36.07 cfs @ 12.58 hrs, Volume= 161,348 cf, Atten= 7%, Lag= 4.7 min
Primary = 9.43 cfs @ 13.23 hrs, Volume= 93,119 cf
Routed to Pond 600P : SW-A6
Secondary = 28.66 cfs @ 12.58 hrs, Volume= 68,229 cf
Routed to Pond 400I :

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Starting Elev= 752.00' Surf.Area= 14,785 sf Storage= 53,655 cf
Peak Elev= 753.74' @ 13.23 hrs Surf.Area= 19,852 sf Storage= 83,834 cf (30,179 cf above start)

Plug-Flow detention time= 435.7 min calculated for 107,691 cf (67% of inflow)
Center-of-Mass det. time= 205.7 min (1,048.9 - 843.2)

Volume	Invert	Avail.Storage	Storage Description
#1	746.00'	1,394,052 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
746.00	3,100	0	0
752.00	14,785	53,655	53,655
754.00	20,600	35,385	89,040
755.00	26,944	23,772	112,812
800.00	30,000	1,281,240	1,394,052

Device	Routing	Invert	Outlet Devices
#1	Secondary	753.12'	**20.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#2	Secondary	752.00'	**18.0" Round Culvert** L= 40.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 750.25' / 752.00' S= -0.0437 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 1.77 sf
#3	Primary	751.50'	**36.0" Round Culvert** L= 50.0' Ke= 0.500 Inlet / Outlet Invert= 751.50' / 751.00' S= 0.0100 '/' Cc= 0.900 n= 0.013, Flow Area= 7.07 sf
#4	Primary	753.74'	**20.0' long + 10.0 '/' SideZ x 12.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.57 2.62 2.70 2.67 2.66 2.67 2.66 2.64
#5	Device 3	753.13'	**6.0' long Sharp-Crested Vee/Trap Weir** Cv= 2.62 (C= 3.28)

Primary OutFlow Max=9.43 cfs @ 13.23 hrs HW=753.74' TW=752.08' (Dynamic Tailwater)
- **3=Culvert** (Passes 9.42 cfs of 24.91 cfs potential flow)
  - **5=Sharp-Crested Vee/Trap Weir** (Weir Controls 9.42 cfs @ 2.56 fps)
- **4=Broad-Crested Rectangular Weir** (Weir Controls 0.01 cfs @ 0.13 fps)

Secondary OutFlow Max=28.64 cfs @ 12.58 hrs HW=753.65' TW=752.76' (Dynamic Tailwater)
- **1=Broad-Crested Rectangular Weir** (Weir Controls 20.58 cfs @ 1.93 fps)
- **2=Culvert** (Inlet Controls 8.06 cfs @ 4.56 fps)

Summary for Pond 500P:

Inflow = 5.31 cfs @ 16.03 hrs, Volume= 142,736 cf
Outflow = 5.10 cfs @ 16.86 hrs, Volume= 142,702 cf, Atten= 4%, Lag= 49.3 min
Primary = 5.10 cfs @ 16.86 hrs, Volume= 142,702 cf
Routed to Pond 600P : SW-A6

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Peak Elev= 763.43' @ 16.86 hrs Surf.Area= 11,724 sf Storage= 11,677 cf

Plug-Flow detention time= 42.4 min calculated for 142,702 cf (100% of inflow)
Center-of-Mass det. time= 42.3 min (1,123.8 - 1,081.5)

Volume	Invert	Avail.Storage	Storage Description
#1	762.00'	916,206 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
762.00	4,629	0	0
765.00	19,533	36,243	36,243
767.00	34,242	53,775	90,018
800.00	15,830	826,188	916,206

Device	Routing	Invert	Outlet Devices
#1	Primary	762.00'	**15.0" Round RCP_Round 15"** L= 30.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 762.00' / 761.70' S= 0.0100 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 1.23 sf

Primary OutFlow Max=5.10 cfs @ 16.86 hrs HW=763.43' TW=752.82' (Dynamic Tailwater)
↑—**1=RCP_Round 15"** (Barrel Controls 5.10 cfs @ 4.55 fps)

Summary for Pond 600P: SW-A6

Inflow = 26.77 cfs @ 12.66 hrs, Volume= 350,838 cf
Outflow = 5.58 cfs @ 19.54 hrs, Volume= 350,838 cf, Atten= 79%, Lag= 412.3 min
Discarded = 2.69 cfs @ 19.54 hrs, Volume= 196,386 cf
Primary = 2.89 cfs @ 19.54 hrs, Volume= 154,452 cf
Routed to Link S : (new Link)

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Peak Elev= 752.93' @ 19.54 hrs Surf.Area= 116,257 sf Storage= 154,114 cf

Plug-Flow detention time= 369.2 min calculated for 350,831 cf (100% of inflow)
Center-of-Mass det. time= 369.2 min (1,360.5 - 991.3)

Volume	Invert	Avail.Storage	Storage Description
#1	751.00'	9,387,964 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
751.00	14,707	0	0
752.00	96,389	55,548	55,548
754.00	139,253	235,642	291,190
756.00	150,327	289,580	580,770
800.00	250,000	8,807,194	9,387,964

Device	Routing	Invert	Outlet Devices
#1	Primary	751.00'	**36.0" Round Culvert** L= 150.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 751.00' / 750.50' S= 0.0033 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 7.07 sf
#2	Device 1	753.50'	**6.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#3	Discarded	751.00'	**1.000 in/hr Exfiltration over Surface area** Phase-In= 0.01'
#4	Device 1	751.30'	**10.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=2.69 cfs @ 19.54 hrs HW=752.93' (Free Discharge)
└**3=Exfiltration** (Exfiltration Controls 2.69 cfs)

Primary OutFlow Max=2.89 cfs @ 19.54 hrs HW=752.93' TW=0.00' (Dynamic Tailwater)
└**1=Culvert** (Passes 2.89 cfs of 16.54 cfs potential flow)
├**2=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)
└**4=Orifice/Grate** (Orifice Controls 2.89 cfs @ 5.30 fps)

Summary for Pond SW-P1: SW-P1

Inflow Area = 3,319,272 sf, 5.91% Impervious, Inflow Depth = 2.01" for 10-yr event
Inflow = 130.01 cfs @ 12.50 hrs, Volume= 555,248 cf
Outflow = 3.93 cfs @ 17.38 hrs, Volume= 491,744 cf, Atten= 97%, Lag= 292.8 min
Primary = 3.93 cfs @ 17.38 hrs, Volume= 491,744 cf
Routed to Pond SW-P2 : SW-P2

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Peak Elev= 811.58' @ 17.38 hrs Surf.Area= 6.367 ac Storage= 9.884 af

Plug-Flow detention time= 1,407.6 min calculated for 491,744 cf (89% of inflow)
Center-of-Mass det. time= 1,360.0 min (2,183.9 - 823.9)

Volume	Invert	Avail.Storage	Storage Description
#1	810.00'	87.505 af	**Custom Stage Data (Prismatic)**Listed below

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
810.00	6.048	0.000	0.000
812.00	6.451	12.499	12.499
814.00	6.854	13.305	25.804
816.00	7.284	14.138	39.942
820.00	8.131	30.830	70.772
822.00	8.602	16.733	87.505

Device	Routing	Invert	Outlet Devices
#1	Primary	810.00'	**12.0" Round Culvert** L= 80.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 810.00' / 809.00' S= 0.0125 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=3.93 cfs @ 17.38 hrs HW=811.58' TW=748.89' (Dynamic Tailwater)
↑**1=Culvert** (Inlet Controls 3.93 cfs @ 5.01 fps)

Summary for Pond SW-P2: SW-P2

Inflow Area = 7,252,740 sf, 4.86% Impervious, Inflow Depth > 1.94" for 10-yr event
Inflow = 168.36 cfs @ 12.50 hrs, Volume= 1,174,071 cf
Outflow = 7.63 cfs @ 19.65 hrs, Volume= 1,030,949 cf, Atten= 95%, Lag= 429.3 min
Primary = 7.63 cfs @ 19.65 hrs, Volume= 1,030,949 cf
Routed to nonexistent node SW-P3

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Peak Elev= 748.91' @ 19.65 hrs Surf.Area= 7.042 ac Storage= 12.914 af

Plug-Flow detention time= 1,271.7 min calculated for 1,030,929 cf (88% of inflow)
Center-of-Mass det. time= 952.5 min (2,351.0 - 1,398.5)

Volume	Invert	Avail.Storage	Storage Description
#1	747.00'	67.788 af	**Custom Stage Data (Prismatic)**Listed below

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
747.00	6.476	0.000	0.000
749.00	7.070	13.546	13.546
751.00	7.538	14.608	28.154
753.00	8.024	15.562	43.716
756.00	8.024	24.072	67.788

Device	Routing	Invert	Outlet Devices
#1	Primary	747.00'	**21.0" Round Culvert** L= 500.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 747.00' / 746.00' S= 0.0020 '/' Cc= 0.900 n= 0.013, Flow Area= 2.41 sf

Primary OutFlow Max=7.63 cfs @ 19.65 hrs HW=748.91' (Free Discharge)
1=Culvert (Barrel Controls 7.63 cfs @ 3.63 fps)

Summary for Pond SW-P4.1: summers landing 30P

Inflow = 50.15 cfs @ 12.50 hrs, Volume= 206,740 cf
Outflow = 7.77 cfs @ 13.66 hrs, Volume= 173,272 cf, Atten= 85%, Lag= 69.5 min
Primary = 3.10 cfs @ 13.66 hrs, Volume= 136,975 cf
Routed to Pond SW-P4.2 : Summers landing 30PI
Secondary = 4.67 cfs @ 13.66 hrs, Volume= 36,297 cf
Routed to Pond SW-P4.2 : Summers landing 30PI

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Starting Elev= 808.50' Surf.Area= 1.284 ac Storage= 4.283 af
Peak Elev= 810.36' @ 13.66 hrs Surf.Area= 1.655 ac Storage= 7.085 af (2.802 af above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= 456.6 min (1,296.9 - 840.4)

Volume	Invert	Avail.Storage	Storage Description
#1	804.00'	11.323 af	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
804.00	0.730	0.000	0.000
808.00	1.112	3.684	3.684
809.00	1.456	1.284	4.968
811.00	1.749	3.205	8.173
812.00	2.121	1.935	10.108
812.50	2.738	1.215	11.323

Device	Routing	Invert	Outlet Devices
#1	Primary	809.00'	**12.0" Round Culvert** L= 35.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 809.00' / 808.00' S= 0.0286 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Secondary	810.00'	**8.0' long x 30.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=3.10 cfs @ 13.66 hrs HW=810.36' TW=807.71' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 3.10 cfs @ 3.94 fps)

Secondary OutFlow Max=4.67 cfs @ 13.66 hrs HW=810.36' TW=807.71' (Dynamic Tailwater)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 4.67 cfs @ 1.62 fps)

Summary for Pond SW-P4.2: Summers landing 30PI

Inflow = 7.77 cfs @ 13.66 hrs, Volume= 173,272 cf
Outflow = 3.71 cfs @ 15.80 hrs, Volume= 172,906 cf, Atten= 52%, Lag= 128.5 min
Discarded = 2.12 cfs @ 15.80 hrs, Volume= 150,551 cf
Primary = 1.59 cfs @ 15.80 hrs, Volume= 22,355 cf
Routed to Pond SW-P4.3 : Summers landing 31P
Tertiary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond SW-P4.1 : summers landing 30P

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Peak Elev= 809.66' @ 15.80 hrs Surf.Area= 16,324 sf Storage= 44,134 cf

Plug-Flow detention time= 312.9 min calculated for 172,903 cf (100% of inflow)
Center-of-Mass det. time= 303.4 min (1,600.3 - 1,296.9)

Volume	Invert	Avail.Storage	Storage Description
#1	805.00'	124,959 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
805.00	5,274	0	0
808.00	9,331	21,908	21,908
809.00	14,735	12,033	33,941
811.00	19,577	34,312	68,253
812.00	22,804	21,191	89,443
812.50	119,260	35,516	124,959

Device	Routing	Invert	Outlet Devices
#1	Primary	809.00'	**15.0" Round Culvert** L= 661.0' Ke= 0.700 Inlet / Outlet Invert= 809.00' / 804.50' S= 0.0068 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf
#2	Tertiary	810.00'	**8.0' long x 30.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#3	Discarded	805.01'	**8.300 in/hr Exfiltration over Surface area above 805.01'** Excluded Surface area = 5,288 sf

Discarded OutFlow Max=2.12 cfs @ 15.80 hrs HW=809.66' (Free Discharge)
3=Exfiltration (Exfiltration Controls 2.12 cfs)

Primary OutFlow Max=1.59 cfs @ 15.80 hrs HW=809.66' TW=805.74' (Dynamic Tailwater)
1=Culvert (Inlet Controls 1.59 cfs @ 2.43 fps)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=805.00' TW=808.50' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Pond SW-P4.3: Summers landing 31P

Inflow = 51.75 cfs @ 12.50 hrs, Volume= 237,515 cf
Outflow = 11.03 cfs @ 13.39 hrs, Volume= 233,098 cf, Atten= 79%, Lag= 53.4 min
Primary = 3.34 cfs @ 13.39 hrs, Volume= 158,171 cf
Routed to Pond SW-P4.4 : Summers landing 31PI
Tertiary = 7.69 cfs @ 13.39 hrs, Volume= 74,927 cf
Routed to Pond SW-P4.4 : Summers landing 31PI

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Starting Elev= 804.50' Surf.Area= 69,445 sf Storage= 195,814 cf
Peak Elev= 806.00' @ 13.39 hrs Surf.Area= 79,547 sf Storage= 307,715 cf (111,901 cf above start)

Plug-Flow detention time= 1,739.9 min calculated for 37,283 cf (16% of inflow)
Center-of-Mass det. time= 410.5 min (1,274.0 - 863.5)

Volume	Invert	Avail.Storage	Storage Description
#1	800.50'	805,360 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
800.50	35,945	0	0
803.50	53,587	134,298	134,298
804.50	69,445	61,516	195,814
806.50	82,896	152,341	348,155
807.50	100,885	91,891	440,046
808.00	104,644	51,382	491,428
811.00	104,644	313,932	805,360

Device	Routing	Invert	Outlet Devices
#1	Primary	804.50'	**12.0" Round Culvert** L= 35.0' Ke= 0.700 Inlet / Outlet Invert= 804.50' / 803.50' S= 0.0286 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Tertiary	805.50'	**8.0' long x 30.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=3.34 cfs @ 13.39 hrs HW=806.00' TW=802.75' (Dynamic Tailwater)
1=Culvert (Inlet Controls 3.34 cfs @ 4.25 fps)

Tertiary OutFlow Max=7.69 cfs @ 13.39 hrs HW=806.00' TW=802.75' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Weir Controls 7.69 cfs @ 1.91 fps)

Summary for Pond SW-P4.4: Summers landing 31PI

Inflow = 11.03 cfs @ 13.39 hrs, Volume= 233,098 cf
Outflow = 4.44 cfs @ 16.32 hrs, Volume= 232,540 cf, Atten= 60%, Lag= 175.9 min
Discarded = 2.65 cfs @ 16.32 hrs, Volume= 201,167 cf
Primary = 1.79 cfs @ 16.32 hrs, Volume= 31,373 cf
Routed to Pond 500P :
Tertiary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond SW-P4.3 : Summers landing 31P

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Peak Elev= 805.27' @ 16.32 hrs Surf.Area= 22,182 sf Storage= 66,581 cf

Plug-Flow detention time= 369.1 min calculated for 232,540 cf (100% of inflow)
Center-of-Mass det. time= 358.4 min (1,632.4 - 1,274.0)

Volume	Invert	Avail.Storage	Storage Description
#1	800.50'	215,575 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
800.50	8,380	0	0
803.50	13,880	33,390	33,390
804.50	19,929	16,905	50,295
806.50	25,755	45,684	95,979
807.50	34,193	29,974	125,953
808.00	36,033	17,557	143,509
810.00	36,033	72,066	215,575

Device	Routing	Invert	Outlet Devices
#1	Primary	804.50'	**15.0" Round Culvert** L= 1,010.0' Ke= 0.700 Inlet / Outlet Invert= 804.50' / 801.00' S= 0.0035 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf
#2	Tertiary	805.50'	**8.0' long x 30.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#3	Discarded	800.51'	**8.300 in/hr Exfiltration over Surface area above 800.51'** Excluded Surface area = 8,398 sf

Discarded OutFlow Max=2.65 cfs @ 16.32 hrs HW=805.27' (Free Discharge)
3=Exfiltration (Exfiltration Controls 2.65 cfs)

Primary OutFlow Max=1.79 cfs @ 16.32 hrs HW=805.27' TW=763.41' (Dynamic Tailwater)
1=Culvert (Barrel Controls 1.79 cfs @ 3.21 fps)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=800.50' TW=804.50' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Pond SW-P5.1: Summers landing 28P

Inflow = 44.18 cfs @ 12.50 hrs, Volume= 184,693 cf
Outflow = 9.41 cfs @ 13.41 hrs, Volume= 182,251 cf, Atten= 79%, Lag= 54.4 min
Primary = 3.88 cfs @ 13.41 hrs, Volume= 132,663 cf
Routed to Pond SW-P5.2 : Summers Landing 28PI
Secondary = 5.53 cfs @ 13.41 hrs, Volume= 49,588 cf
Routed to Pond SW-P5.2 : Summers Landing 28PI

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Starting Elev= 806.00' Surf.Area= 55,104 sf Storage= 141,054 cf
Peak Elev= 807.55' @ 13.41 hrs Surf.Area= 65,611 sf Storage= 234,697 cf (93,643 cf above start)

Plug-Flow detention time= 1,280.4 min calculated for 41,197 cf (22% of inflow)
Center-of-Mass det. time= 368.3 min (1,214.8 - 846.4)

Volume	Invert	Avail.Storage	Storage Description
#1	802.00'	432,852 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
802.00	23,396	0	0
805.00	39,204	93,900	93,900
806.00	55,104	47,154	141,054
808.00	68,648	123,752	264,806
809.00	86,609	77,629	342,435
810.00	94,225	90,417	432,852

Device	Routing	Invert	Outlet Devices
#1	Primary	806.00'	**12.0" Round Culvert** L= 35.0' Ke= 0.500 Inlet / Outlet Invert= 806.00' / 805.00' S= 0.0286 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Secondary	807.00'	**5.0' long x 30.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=3.88 cfs @ 13.41 hrs HW=807.55' TW=805.82' (Dynamic Tailwater)
↑**1=Culvert** (Inlet Controls 3.88 cfs @ 4.94 fps)

Secondary OutFlow Max=5.53 cfs @ 13.41 hrs HW=807.55' TW=805.82' (Dynamic Tailwater)
↑**2=Broad-Crested Rectangular Weir** (Weir Controls 5.53 cfs @ 2.01 fps)

Summary for Pond SW-P5.2: Summers Landing 28PI

Inflow = 9.41 cfs @ 13.41 hrs, Volume= 182,251 cf
Outflow = 4.51 cfs @ 15.13 hrs, Volume= 205,375 cf, Atten= 52%, Lag= 103.4 min
Discarded = 2.23 cfs @ 15.14 hrs, Volume= 166,435 cf
Primary = 2.28 cfs @ 15.13 hrs, Volume= 38,940 cf
Routed to Pond SW-P5.3 : Summers landing POND 2 NORTH
Tertiary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond SW-P5.1 : Summers landing 28P

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Starting Elev= 806.00' Surf.Area= 16,338 sf Storage= 23,268 cf
Peak Elev= 807.06' @ 15.14 hrs Surf.Area= 18,616 sf Storage= 41,734 cf (18,466 cf above start)

Plug-Flow detention time= 184.1 min calculated for 182,104 cf (100% of inflow)
Center-of-Mass det. time= 42.7 min (1,257.5 - 1,214.8)

Volume	Invert	Avail.Storage	Storage Description
#1	804.00'	141,493 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
804.00	6,954	0	0
805.00	11,622	9,288	9,288
806.00	16,338	13,980	23,268
808.00	20,651	36,989	60,257
809.00	26,716	23,684	83,941
810.00	29,463	28,090	112,030
811.00	29,463	29,463	141,493

Device	Routing	Invert	Outlet Devices
#1	Primary	806.00'	**12.0" Round Culvert** L= 622.0' Ke= 0.700 Inlet / Outlet Invert= 806.00' / 803.00' S= 0.0048 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Tertiary	807.00'	**8.0' long x 30.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#3	Discarded	804.01'	**8.300 in/hr Exfiltration over Surface area above 804.01'** Excluded Surface area = 7,001 sf

Discarded OutFlow Max=2.23 cfs @ 15.14 hrs HW=807.06' (Free Discharge)
3=Exfiltration (Exfiltration Controls 2.23 cfs)

Primary OutFlow Max=2.28 cfs @ 15.13 hrs HW=807.06' TW=804.42' (Dynamic Tailwater)
1=Culvert (Outlet Controls 2.28 cfs @ 3.42 fps)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=806.00' TW=806.00' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Pond SW-P5.3: Summers landing POND 2 NORTH

Inflow = 28.81 cfs @ 12.50 hrs, Volume= 160,143 cf
Outflow = 5.35 cfs @ 13.51 hrs, Volume= 158,495 cf, Atten= 81%, Lag= 60.3 min
Primary = 3.19 cfs @ 13.51 hrs, Volume= 116,188 cf
Routed to Pond SW-P5.5 : Summers Landing 29I
Tertiary = 2.19 cfs @ 15.27 hrs, Volume= 42,306 cf
Routed to Pond SW-P5.5 : Summers Landing 29I

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Starting Elev= 803.00' Surf.Area= 41,920 sf Storage= 152,896 cf
Peak Elev= 804.43' @ 15.32 hrs Surf.Area= 47,210 sf Storage= 216,438 cf (63,543 cf above start)

Plug-Flow detention time= 2,705.4 min calculated for 5,599 cf (3% of inflow)
Center-of-Mass det. time= 355.1 min (1,245.7 - 890.6)

Volume	Invert	Avail.Storage	Storage Description
#1	798.00'	532,787 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
798.00	24,234	0	0
802.00	33,387	115,242	115,242
803.00	41,920	37,654	152,896
805.00	49,340	91,260	244,156
806.00	58,658	53,999	298,155
810.00	58,658	234,632	532,787

Device	Routing	Invert	Outlet Devices
#1	Primary	803.00'	**12.0" Round Culvert** L= 35.0' Ke= 0.700 Inlet / Outlet Invert= 803.00' / 802.00' S= 0.0286 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Tertiary	804.00'	**3.0' long x 30.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=3.19 cfs @ 13.51 hrs HW=804.41' TW=803.50' (Dynamic Tailwater)
1=Culvert (Inlet Controls 3.19 cfs @ 4.06 fps)

Tertiary OutFlow Max=2.19 cfs @ 15.27 hrs HW=804.43' TW=804.07' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Weir Controls 2.19 cfs @ 1.71 fps)

Summary for Pond SW-P5.4: Summers Landing POND 2 SOUTH

Inflow = 15.08 cfs @ 12.50 hrs, Volume= 62,693 cf
Outflow = 2.35 cfs @ 13.49 hrs, Volume= 61,735 cf, Atten= 84%, Lag= 59.4 min
Primary = 2.35 cfs @ 13.49 hrs, Volume= 59,670 cf
Routed to Pond SW-P5.5 : Summers Landing 29l
Secondary = 0.18 cfs @ 16.06 hrs, Volume= 2,065 cf
Routed to Pond SW-P5.5 : Summers Landing 29l

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Starting Elev= 803.00' Surf.Area= 31,846 sf Storage= 105,243 cf
Peak Elev= 804.10' @ 15.64 hrs Surf.Area= 36,362 sf Storage= 142,840 cf (37,597 cf above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= 554.7 min (1,399.1 - 844.4)

Volume	Invert	Avail.Storage	Storage Description
#1	798.00'	324,420 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
798.00	15,145	0	0
802.00	23,612	77,514	77,514
803.00	31,846	27,729	105,243
805.00	40,039	71,885	177,128
806.00	50,909	45,474	222,602
808.00	50,909	101,818	324,420

Device	Routing	Invert	Outlet Devices
#1	Primary	803.00'	**12.0" Round Culvert** L= 35.0' Ke= 0.700 Inlet / Outlet Invert= 803.00' / 802.00' S= 0.0286 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Secondary	804.00'	**3.0' long x 30.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=2.34 cfs @ 13.49 hrs HW=803.99' TW=803.47' (Dynamic Tailwater)
1=Culvert (Outlet Controls 2.34 cfs @ 3.73 fps)

Secondary OutFlow Max=0.18 cfs @ 16.06 hrs HW=804.10' TW=804.07' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Weir Controls 0.18 cfs @ 0.60 fps)

Summary for Pond SW-P5.5: Summers Landing 29l

Inflow = 7.70 cfs @ 13.49 hrs, Volume= 220,229 cf
Outflow = 4.80 cfs @ 15.59 hrs, Volume= 220,081 cf, Atten= 38%, Lag= 125.9 min
Discarded = 1.50 cfs @ 15.59 hrs, Volume= 124,981 cf
Primary = 3.29 cfs @ 15.59 hrs, Volume= 95,100 cf
Routed to Pond 500P :
Tertiary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond SW-P5.4 : Summers Landing POND 2 SOUTH

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Peak Elev= 804.08' @ 15.59 hrs Surf.Area= 10,555 sf Storage= 25,348 cf

Plug-Flow detention time= 141.1 min calculated for 220,081 cf (100% of inflow)
Center-of-Mass det. time= 138.1 min (1,426.7 - 1,288.7)

Volume	Invert	Avail.Storage	Storage Description
#1	800.00'	112,832 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
800.00	2,718	0	0
802.00	5,260	7,978	7,978
803.00	8,713	6,987	14,965
805.00	12,132	20,845	35,810
806.00	15,768	13,950	49,760
810.00	15,768	63,072	112,832

Device	Routing	Invert	Outlet Devices
#1	Primary	803.00'	**18.0" Round Culvert** L= 750.0' Ke= 0.700 Inlet / Outlet Invert= 803.00' / 801.00' S= 0.0027 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf
#2	Tertiary	806.00'	**12.0" Round Culvert** L= 35.0' Ke= 0.700 Inlet / Outlet Invert= 806.00' / 803.00' S= 0.0857 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#3	Discarded	800.01'	**8.300 in/hr Exfiltration over Surface area above 800.01'** Excluded Surface area = 2,731 sf

Discarded OutFlow Max=1.50 cfs @ 15.59 hrs HW=804.08' (Free Discharge)
3=Exfiltration (Exfiltration Controls 1.50 cfs)

Primary OutFlow Max=3.29 cfs @ 15.59 hrs HW=804.08' TW=763.29' (Dynamic Tailwater)
1=Culvert (Barrel Controls 3.29 cfs @ 3.39 fps)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=800.00' TW=803.00' (Dynamic Tailwater)
2=Culvert (Controls 0.00 cfs)

Summary for Link N: (new Link)

Inflow	=	0.00 cfs @	0.00 hrs, Volume=	0 cf
Primary	=	0.00 cfs @	0.00 hrs, Volume=	0 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs

Summary for Link S: (new Link)

Inflow	=	2.97 cfs @	19.17 hrs,	Volume=	166,438 cf
Primary	=	2.97 cfs @	19.17 hrs,	Volume=	166,438 cf, Atten= 0%, Lag= 0.1 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs

Summary for Link W: Offsite Discharge

Inflow	=	1.93 cfs @	14.70 hrs, Volume=	48,191 cf
Primary	=	1.93 cfs @	14.70 hrs, Volume=	48,191 cf, Atten= 0%, Lag= 0.1 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs

Summary for Subcatchment 1: 1

Runoff = 8.38 cfs @ 12.50 hrs, Volume= 34,209 cf, Depth= 3.74"
Routed to Link S : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 100-yr(7.4") Rainfall=7.40", Smoothing=On

	Area (sf)	CN	Description
*	15,380	58	Meadow, HSG A
*	72,637	61	75%GrassCoverGood, HSG A
*	21,849	98	Impervious, HSG A
	109,867	68	Weighted Average
	88,017		80.11% Pervious Area
	21,849		19.89% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.0					**Direct Entry, 30**

Summary for Subcatchment 1E: 1

Runoff = 0.01 cfs @ 12.50 hrs, Volume= 58 cf, Depth= 2.68"
Routed to Link S : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 100-yr(7.4") Rainfall=7.40", Smoothing=On

	Area (sf)	CN	Description
*	260	58	Meadow, HSG A
	260		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					**Direct Entry, 30**
10.0	0	Total, Increased to minimum Tc = 30.0 min			

Summary for Subcatchment 2: 2

Runoff = 1.83 cfs @ 12.50 hrs, Volume= 7,453 cf, Depth= 3.84"
Routed to Pond 1P : SW-A3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 100-yr(7.4") Rainfall=7.40", Smoothing=On

	Area (sf)	CN	Description
*	18,100	61	75%GrassCoverGood, HSG A
*	5,161	98	Impervious, HSG A
	23,261	69	Weighted Average
	18,100		77.81% Pervious Area
	5,161		22.19% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.0					**Direct Entry,**

Summary for Subcatchment 2N: 2N

Runoff = 0.26 cfs @ 12.97 hrs, Volume= 3,616 cf, Depth= 0.29"
Routed to Pond 1P : SW-A3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 100-yr(7.4") Rainfall=7.40", Smoothing=On

	Area (sf)	CN	Description
*	48,805	30	Meadow Undisturbed, HSG A
*	102,224	30	Woods, HSG A
*	367	61	75%GrassCoverGood, HSG A
	151,396	30	Weighted Average
	151,396		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.0					**Direct Entry,**

Summary for Subcatchment 3: 3

Runoff = 7.79 cfs @ 12.50 hrs, Volume= 33,183 cf, Depth= 2.48"
Routed to Link W : Offsite Discharge

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 100-yr(7.4") Rainfall=7.40", Smoothing=On

	Area (sf)	CN	Description
*	25,414	30	Meadow Undisturbed, HSG A
*	88,248	58	Meadow, HSG A
*	37,923	61	75%GrassCoverGood, HSG A
*	8,826	98	Impervious, HSG A
	160,411	56	Weighted Average
	151,586		94.50% Pervious Area
	8,826		5.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.0					**Direct Entry, 30**

Summary for Subcatchment 100: 100

Runoff = 38.36 cfs @ 12.47 hrs, Volume= 156,660 cf, Depth= 4.50"
Routed to Pond 100P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 100-yr(7.4") Rainfall=7.40", Smoothing=On

	Area (sf)	CN	Description
*	53,291	58	Meadow, HSG A
*	6,304	100	Water Surface, HSG A
*	202,414	61	75%GrassCoverGood, HSG A
*	155,403	98	Impervious, HSG A
	417,413	75	Weighted Average
	255,706		61.26% Pervious Area
	161,707		38.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0					**Direct Entry,**
15.0	0	Total, Increased to minimum Tc = 30.0 min			

Summary for Subcatchment 200: 200

Runoff = 15.36 cfs @ 12.50 hrs, Volume= 62,683 cf, Depth= 3.95"
Routed to Pond 200P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 100-yr(7.4") Rainfall=7.40", Smoothing=On

	Area (sf)	CN	Description
*	78,605	58	Meadow, HSG A
*	2,099	100	Water Surface, HSG A
*	57,616	61	75%GrassCoverGood, HSG A
*	51,948	98	Impervious, HSG A
	190,268	70	Weighted Average
	136,222		71.59% Pervious Area
	54,047		28.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0					**Direct Entry,**
15.0	0	Total, Increased to minimum Tc = 30.0 min			

Summary for Subcatchment 300: 300

Runoff = 54.61 cfs @ 12.47 hrs, Volume= 224,621 cf, Depth= 5.06"
Routed to Pond 300P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 100-yr(7.4") Rainfall=7.40", Smoothing=On

	Area (sf)	CN	Description
*	41,527	58	Meadow, HSG A
*	11,734	100	Water Surface, HSG A
*	216,369	61	75%GrassCoverGood, HSG A
*	262,554	98	Impervious, HSG A
	532,184	80	Weighted Average
	257,896		48.46% Pervious Area
	274,288		51.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0					**Direct Entry,**
10.0	0	Total, Increased to minimum Tc = 30.0 min			

Summary for Subcatchment 300N: 300N

Runoff = 0.02 cfs @ 12.97 hrs, Volume= 283 cf, Depth= 0.29"
Routed to Pond 1P : SW-A3

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 100-yr(7.4") Rainfall=7.40", Smoothing=On

	Area (sf)	CN	Description
*	2,354	30	Meadow Undisturbed, HSG A
*	9,502	30	Woods, HSG A
	11,856	30	Weighted Average
	11,856		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0					**Direct Entry,**
15.0	0	Total, Increased to minimum Tc = 30.0 min			

Summary for Subcatchment 400: 400

Runoff = 78.05 cfs @ 12.47 hrs, Volume= 318,994 cf, Depth= 4.62"
Routed to Pond 400P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 100-yr(7.4") Rainfall=7.40", Smoothing=On

	Area (sf)	CN	Description
*	28,566	30	Meadow Undisturbed, HSG A
*	76,756	58	Meadow, HSG A
*	15,316	100	Water Surface, HSG A
*	5,805	30	Woods, HSG A
*	338,087	61	75%GrassCoverGood, HSG A
*	364,894	98	Impervious, HSG A
	829,424	76	Weighted Average
	449,214		54.16% Pervious Area
	380,210		45.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0					**Direct Entry,**
15.0	0	Total, Increased to minimum Tc = 30.0 min			

Summary for Subcatchment 400E: 400E

Runoff = 24.39 cfs @ 12.50 hrs, Volume= 100,004 cf, Depth= 3.41"
Routed to Pond 400P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 100-yr(7.4") Rainfall=7.40", Smoothing=On

	Area (sf)	CN	Description
*	41,605	30	Meadow Undisturbed, HSG A
*	16,296	58	Meadow, HSG A
*	80,928	75	Single Family Residential, HSG A
*	51,903	30	Woods, HSG A
*	76,491	61	75%GrassCoverGood, HSG A
*	84,186	98	Impervious, HSG A
	351,409	65	Weighted Average
	267,223		76.04% Pervious Area
	84,186		23.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0					**Direct Entry,**
15.0	0	Total, Increased to minimum Tc = 30.0 min			

Summary for Subcatchment 500: 500

Runoff = 10.45 cfs @ 12.53 hrs, Volume= 48,117 cf, Depth= 1.80"
Routed to Pond 500P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 100-yr(7.4") Rainfall=7.40", Smoothing=On

	Area (sf)	CN	Description
*	55,625	30	Meadow Undisturbed, HSG A
*	129,892	58	Meadow, HSG A
*	81,587	30	Woods, HSG A
*	36,684	61	75%GrassCoverGood, HSG A
*	17,250	98	Impervious, HSG A
	321,039	49	Weighted Average
	303,789		94.63% Pervious Area
	17,250		5.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0					**Direct Entry,**
15.0	0	Total, Increased to minimum Tc = 30.0 min			

Summary for Subcatchment 500E: 500E

Runoff = 8.62 cfs @ 12.53 hrs, Volume= 41,040 cf, Depth= 1.61"
Routed to Pond 500P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 100-yr(7.4") Rainfall=7.40", Smoothing=On

	Area (sf)	CN	Description
*	66,520	30	Meadow Undisturbed, HSG A
*	25,924	58	Meadow, HSG A
*	77,212	75	Single Family Residential, HSG A
*	120,110	30	Woods, HSG A
*	0	61	75%GrassCoverGood, HSG A
*	15,779	98	Impervious, HSG A
	305,546	47	Weighted Average
	289,767		94.84% Pervious Area
	15,779		5.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0					**Direct Entry,**
15.0	0	Total, Increased to minimum Tc = 30.0 min			

Summary for Subcatchment 600: 600

Runoff = 15.27 cfs @ 12.50 hrs, Volume= 63,111 cf, Depth= 3.10"
Routed to Pond 600P : SW-A6

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 100-yr(7.4") Rainfall=7.40", Smoothing=On

	Area (sf)	CN	Description
*	165,774	58	Meadow, HSG A
*	55,574	61	75%GrassCoverGood, HSG A
*	23,078	98	Impervious, HSG A
	244,426	62	Weighted Average
	221,348		90.56% Pervious Area
	23,078		9.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.0					**Direct Entry,**

Summary for Subcatchment 650: 650

Runoff = 10.55 cfs @ 12.50 hrs, Volume= 43,364 cf, Depth= 3.31"
Routed to Pond 300P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 100-yr(7.4") Rainfall=7.40", Smoothing=On

	Area (sf)	CN	Description
*	71,141	58	Meadow, HSG A
*	69,683	61	75%GrassCoverGood, HSG A
*	16,439	98	Impervious, HSG A
	157,263	64	Weighted Average
	140,824		89.55% Pervious Area
	16,439		10.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.0					**Direct Entry,**

Summary for Subcatchment 650N: 650N

Runoff = 15.96 cfs @ 12.50 hrs, Volume= 70,614 cf, Depth= 2.09"
Routed to Pond 300P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 100-yr(7.4") Rainfall=7.40", Smoothing=On

	Area (sf)	CN	Description
*	99,094	30	Meadow Undisturbed, HSG A
*	239,951	67	Cropland, HSG A
*	67,113	30	Woods, HSG A
	406,158	52	Weighted Average
	406,158		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.0					**Direct Entry,**

Summary for Subcatchment SW-A1.1: Fuel Storage Facility Site - SW-A1.1

Runoff = 125.77 cfs @ 12.50 hrs, Volume= 515,686 cf, Depth= 3.41"
Routed to Pond SW-P1 : SW-P1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 100-yr(7.4") Rainfall=7.40", Smoothing=On

	Area (ac)	CN	Description
*	41.600	65	Estimated CN for tanks and greenspace
	41.600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.0					**Direct Entry,**
25.0	0	Total, Increased to minimum Tc = 30.0 min			

Summary for Subcatchment SW-A1.2: SW-A1.2

Runoff = 181.89 cfs @ 12.47 hrs, Volume= 780,668 cf, Depth= 6.22"
Routed to Pond SW-P1 : SW-P1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 100-yr(7.4") Rainfall=7.40", Smoothing=On

	Area (ac)	CN	Description
*	4.500	100	
*	26.600	90	future C/I outside of tank farm
*	3.500	75	SFR
	34.600	90	Weighted Average
	30.100		86.99% Pervious Area
	4.500		13.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.0					**Direct Entry,**
25.0	0	Total, Increased to minimum Tc = 30.0 min			

Summary for Subcatchment SW-A2.1: SW-A2.1

Runoff = 306.66 cfs @ 12.47 hrs, Volume= 1,261,250 cf, Depth= 5.06"
Routed to Pond SW-P2 : SW-P2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 100-yr(7.4") Rainfall=7.40", Smoothing=On

	Area (ac)	CN	Description
*	42.900	75	LDR
*	3.600	100	Pond @ NWL
*	18.700	90	C/I
*	3.400	75	SFR
	68.600	80	Weighted Average
	65.000		94.75% Pervious Area
	3.600		5.25% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.0					**Direct Entry,**
25.0	0	Total, Increased to minimum Tc = 30.0 min			

Summary for Subcatchment SW-A2.2: SW-A2.2

Runoff = 86.88 cfs @ 12.47 hrs, Volume= 354,765 cf, Depth= 4.50"
Routed to Pond SW-P2 : SW-P2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 100-yr(7.4") Rainfall=7.40", Smoothing=On

	Area (ac)	CN	Description
*	21.700	75	LDR
	21.700		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	1,000	0.0750	1.24		**Lag/CN Method,**
13.5	1,000	Total, Increased to minimum Tc = 30.0 min			

Summary for Subcatchment SW-A4.1: NE QUAD

Runoff = 127.55 cfs @ 12.47 hrs, Volume= 520,867 cf, Depth= 4.50"
Routed to Pond SW-P4.1 : summers landing 30P

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 100-yr(7.4") Rainfall=7.40", Smoothing=On

	Area (ac)	CN	Description
*	10.250	98	Paved Parking, HSG B
*	1.530	98	Water Surface, HSG B
*	20.080	61	>75% Grass Cover, HSG B
	31.860	75	Weighted Average
	20.080		63.03% Pervious Area
	11.780		36.97% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.0					**Direct Entry,**
25.0	0	Total, Increased to minimum Tc = 30.0 min			

Summary for Subcatchment SW-A4.3: NW QUAD

Runoff = 137.40 cfs @ 12.47 hrs, Volume= 560,690 cf, Depth= 4.28"
Routed to Pond SW-P4.3 : Summers landing 31P

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 100-yr(7.4") Rainfall=7.40", Smoothing=On

	Area (ac)	CN	Description
*	10.510	98	Paved Parking, HSG B
*	23.970	61	>75% Grass cover, Good
*	1.590	98	Water Surface, HSG B
	36.070	73	Weighted Average
	23.970		66.45% Pervious Area
	12.100		33.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.0					**Direct Entry,**
25.0	0	Total, Increased to minimum Tc = 30.0 min			

Summary for Subcatchment SW-A5.1: SE QUAD

Runoff = 120.03 cfs @ 12.50 hrs, Volume= 489,785 cf, Depth= 4.17"
Routed to Pond SW-P5.1 : Summers landing 28P

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 100-yr(7.4") Rainfall=7.40", Smoothing=On

	Area (ac)	CN	Description
*	8.430	98	
*	22.650	61	
*	1.260	98	
	32.340	72	Weighted Average
	22.650		70.04% Pervious Area
	9.690		29.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.0					**Direct Entry,**
25.0	0	Total, Increased to minimum Tc = 30.0 min			

Summary for Subcatchment SW-A5.3: SW QUAD N

Runoff = 80.22 cfs @ 12.50 hrs, Volume= 327,233 cf, Depth= 4.06"
Routed to Pond SW-P5.3 : Summers landing POND 2 NORTH

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 100-yr(7.4") Rainfall=7.40", Smoothing=On

	Area (ac)	CN	Description
*	5.230	98	
*	16.000	61	
*	0.960	98	
	22.190	71	Weighted Average
	16.000		72.10% Pervious Area
	6.190		27.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.0					**Direct Entry,**
25.0	0	Total, Increased to minimum Tc = 30.0 min			

Summary for Subcatchment SW-A5.4: SW QUAD S

Runoff = 40.03 cfs @ 12.47 hrs, Volume= 163,373 cf, Depth= 4.28"
Routed to Pond SW-P5.4 : Summers Landing POND 2 SOUTH

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
MSE 24-hr 3 100-yr(7.4") Rainfall=7.40", Smoothing=On

	Area (ac)	CN	Description
*	2.560	98	
*	7.220	61	
*	0.730	98	
	10.510	73	Weighted Average
	7.220		68.70% Pervious Area
	3.290		31.30% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.0					**Direct Entry,**
25.0	0	Total, Increased to minimum Tc = 30.0 min			

Summary for Pond 1P: SW-A3

Inflow Area = 186,513 sf, 2.77% Impervious, Inflow Depth = 0.73" for 100-yr(7.4") event
Inflow = 1.91 cfs @ 12.50 hrs, Volume= 11,352 cf
Outflow = 0.30 cfs @ 14.11 hrs, Volume= 11,363 cf, Atten= 84%, Lag= 96.5 min
Discarded = 0.30 cfs @ 14.11 hrs, Volume= 11,363 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond 600P : SW-A6
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link N : (new Link)

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Peak Elev= 751.75' @ 14.11 hrs Surf.Area= 13,128 sf Storage= 5,092 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 211.0 min (1,090.7 - 879.7)

Volume	Invert	Avail.Storage	Storage Description
#1	751.00'	78,327 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
751.00	500	0	0
752.00	17,399	8,950	8,950
754.00	51,978	69,377	78,327

Device	Routing	Invert	Outlet Devices
#1	Primary	751.25'	**36.0" Round Culvert** L= 136.0' Ke= 0.500 Inlet / Outlet Invert= 751.25' / 751.25' S= 0.0000 '/' Cc= 0.900 n= 0.013, Flow Area= 7.07 sf
#2	Secondary	753.50'	**40.0' long + 10.0 '/' SideZ x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#3	Discarded	751.00'	**1.000 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.30 cfs @ 14.11 hrs HW=751.75' (Free Discharge)
3=Exfiltration (Exfiltration Controls 0.30 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=751.00' TW=751.00' (Dynamic Tailwater)
1=Culvert (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=751.00' TW=0.00' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Pond 100I:

Inflow	=	5.87 cfs @	12.51 hrs,	Volume=	26,814 cf
Outflow	=	0.19 cfs @	13.21 hrs,	Volume=	26,814 cf, Atten= 97%, Lag= 42.0 min
Discarded	=	0.19 cfs @	13.21 hrs,	Volume=	26,814 cf

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Peak Elev= 751.57' @ 13.21 hrs Surf.Area= 10,490 sf Storage= 20,403 cf

Plug-Flow detention time= 886.0 min calculated for 26,813 cf (100% of inflow)
Center-of-Mass det. time= 886.0 min (2,089.2 - 1,203.3)

Volume	Invert	Avail.Storage	Storage Description
#1	749.00'	57,705 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
749.00	5,359	0	0
752.00	11,337	25,044	25,044
754.00	21,324	32,661	57,705

Device	Routing	Invert	Outlet Devices
#1	Discarded	749.00'	**0.800 in/hr Exfiltration over Surface area** Phase-In= 0.01'

Discarded OutFlow Max=0.19 cfs @ 13.21 hrs HW=751.57' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.19 cfs)

Summary for Pond 100P:

Inflow = 38.36 cfs @ 12.47 hrs, Volume= 156,660 cf
Outflow = 30.14 cfs @ 12.65 hrs, Volume= 156,482 cf, Atten= 21%, Lag= 10.8 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link W : Offsite Discharge
Secondary = 5.87 cfs @ 12.51 hrs, Volume= 26,814 cf
Routed to Pond 100I :
Tertiary = 24.79 cfs @ 12.66 hrs, Volume= 129,667 cf
Routed to Pond 110/210 :

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Starting Elev= 749.00' Surf.Area= 6,303 sf Storage= 9,680 cf
Peak Elev= 751.82' @ 12.66 hrs Surf.Area= 26,003 sf Storage= 48,811 cf (39,132 cf above start)

Plug-Flow detention time= 195.0 min calculated for 146,799 cf (94% of inflow)
Center-of-Mass det. time= 148.1 min (969.7 - 821.5)

Volume	Invert	Avail.Storage	Storage Description
#1	746.00'	1,651,315 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
746.00	150	0	0
749.00	6,303	9,680	9,680
750.75	9,172	13,541	23,220
750.76	21,872	155	23,375
752.00	26,693	30,110	53,486
754.00	36,714	63,407	116,893
800.00	30,000	1,534,422	1,651,315

Device	Routing	Invert	Outlet Devices
#1	Tertiary	751.29'	**20.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#2	Secondary	749.00'	**15.0" Round Culvert** L= 40.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 749.00' / 748.60' S= 0.0100 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 1.23 sf
#3	Primary	754.00'	**24.0" Round Culvert** L= 50.0' Ke= 0.500 Inlet / Outlet Invert= 754.00' / 749.65' S= 0.0870 '/' Cc= 0.900 n= 0.013, Flow Area= 3.14 sf
#4	Tertiary	749.65'	**24.0" Round Culvert** L= 33.0' Ke= 0.500 Inlet / Outlet Invert= 749.65' / 749.00' S= 0.0197 '/' Cc= 0.900 n= 0.130, Flow Area= 3.14 sf

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=749.00' TW=0.00' (Dynamic Tailwater)
└**3=Culvert** (Controls 0.00 cfs)

Secondary OutFlow Max=5.85 cfs @ 12.51 hrs HW=751.67' TW=750.69' (Dynamic Tailwater)
└**2=Culvert** (Inlet Controls 5.85 cfs @ 4.77 fps)

Tertiary OutFlow Max=24.79 cfs @ 12.66 hrs HW=751.82' TW=750.34' (Dynamic Tailwater)
├**1=Broad-Crested Rectangular Weir** (Weir Controls 20.62 cfs @ 1.94 fps)
└**4=Culvert** (Barrel Controls 4.17 cfs @ 1.52 fps)

Summary for Pond 110/210:

Inflow = 24.79 cfs @ 12.66 hrs, Volume= 129,667 cf
Outflow = 14.40 cfs @ 12.80 hrs, Volume= 129,567 cf, Atten= 42%, Lag= 8.5 min
Primary = 10.81 cfs @ 13.10 hrs, Volume= 121,700 cf
Routed to Link W : Offsite Discharge
Secondary = 5.75 cfs @ 12.72 hrs, Volume= 7,867 cf
Routed to Pond 210/110 :

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Peak Elev= 751.02' @ 13.10 hrs Surf.Area= 12,831 sf Storage= 21,232 cf

Plug-Flow detention time= 53.2 min calculated for 129,567 cf (100% of inflow)
Center-of-Mass det. time= 52.0 min (973.4 - 921.4)

Volume	Invert	Avail.Storage	Storage Description
#1	749.00'	1,187,361 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
749.00	8,220	0	0
752.00	15,077	34,946	34,946
755.00	18,950	51,041	85,986
800.00	30,000	1,101,375	1,187,361

Device	Routing	Invert	Outlet Devices
#1	Primary	752.50'	**20.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#2	Secondary	749.00'	**24.0" Round Culvert** L= 40.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 749.00' / 749.00' S= 0.0000 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 3.14 sf
#3	Primary	749.00'	**21.0" Round Culvert** L= 67.0' Ke= 0.500 Inlet / Outlet Invert= 749.00' / 748.66' S= 0.0051 '/' Cc= 0.900 n= 0.013, Flow Area= 2.41 sf

Primary OutFlow Max=10.81 cfs @ 13.10 hrs HW=751.02' TW=0.00' (Dynamic Tailwater)
1=Broad-Crested Rectangular Weir (Controls 0.00 cfs)
3=Culvert (Barrel Controls 10.81 cfs @ 4.89 fps)

Secondary OutFlow Max=5.66 cfs @ 12.72 hrs HW=750.58' TW=750.33' (Dynamic Tailwater)
2=Culvert (Outlet Controls 5.66 cfs @ 2.91 fps)

Summary for Pond 200I:

Inflow	=	4.62 cfs @	12.46 hrs,	Volume=	13,028 cf
Outflow	=	0.09 cfs @	12.80 hrs,	Volume=	13,028 cf, Atten= 98%, Lag= 20.5 min
Discarded	=	0.09 cfs @	12.80 hrs,	Volume=	13,028 cf

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Peak Elev= 751.66' @ 12.80 hrs Surf.Area= 4,942 sf Storage= 9,380 cf

Plug-Flow detention time= 898.6 min calculated for 13,028 cf (100% of inflow)
Center-of-Mass det. time= 898.6 min (2,214.8 - 1,316.2)

Volume	Invert	Avail.Storage	Storage Description
#1	749.00'	334,200 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
749.00	2,100	0	0
753.50	6,900	20,250	20,250
799.00	6,900	313,950	334,200

Device	Routing	Invert	Outlet Devices
#1	Discarded	749.00'	**0.800 in/hr Exfiltration over Surface area** Phase-In= 0.01'

Discarded OutFlow Max=0.09 cfs @ 12.80 hrs HW=751.66' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.09 cfs)

Summary for Pond 200P:

Inflow Area = 190,268 sf, 28.41% Impervious, Inflow Depth = 3.95" for 100-yr(7.4") event
Inflow = 15.36 cfs @ 12.50 hrs, Volume= 62,683 cf
Outflow = 14.29 cfs @ 12.55 hrs, Volume= 62,675 cf, Atten= 7%, Lag= 3.3 min
Primary = 10.57 cfs @ 12.59 hrs, Volume= 49,646 cf
Routed to Pond 210/110 :
Secondary = 4.62 cfs @ 12.46 hrs, Volume= 13,028 cf
Routed to Pond 200I :
Tertiary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Link W : Offsite Discharge

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Starting Elev= 749.00' Surf.Area= 2,090 sf Storage= 2,320 cf
Peak Elev= 751.72' @ 12.59 hrs Surf.Area= 4,610 sf Storage= 11,417 cf (9,097 cf above start)

Plug-Flow detention time= 170.2 min calculated for 60,355 cf (96% of inflow)
Center-of-Mass det. time= 140.5 min (969.7 - 829.2)

Volume	Invert	Avail.Storage	Storage Description
#1	745.00'	327,220 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
745.00	10	0	0
748.00	630	960	960
749.00	2,090	1,360	2,320
754.00	6,730	22,050	24,370
799.00	6,730	302,850	327,220

Device	Routing	Invert	Outlet Devices
#1	Primary	751.50'	**20.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#2	Secondary	749.00'	**15.0" Round RCP_Round 15"** L= 40.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 746.00' / 749.00' S= -0.0750 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 1.23 sf
#3	Primary	750.20'	**15.0" Round Culvert** L= 50.0' Ke= 0.500 Inlet / Outlet Invert= 750.20' / 749.00' S= 0.0240 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf
#4	Tertiary	754.00'	**15.0" Round Culvert** L= 33.0' Ke= 0.500 Inlet / Outlet Invert= 754.00' / 749.00' S= 0.1515 '/' Cc= 0.900 n= 0.013, Flow Area= 1.23 sf

Primary OutFlow Max=10.57 cfs @ 12.59 hrs HW=751.72' TW=749.70' (Dynamic Tailwater)
1=Broad-Crested Rectangular Weir (Weir Controls 4.99 cfs @ 1.16 fps)
3=Culvert (Inlet Controls 5.58 cfs @ 4.54 fps)

Secondary OutFlow Max=4.59 cfs @ 12.46 hrs HW=751.54' TW=750.94' (Dynamic Tailwater)
2=RCP_Round 15" (Inlet Controls 4.59 cfs @ 3.74 fps)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=749.00' TW=0.00' (Dynamic Tailwater)
4=Culvert (Controls 0.00 cfs)

Summary for Pond 210/110:

Inflow	=	15.32 cfs @	12.70 hrs, Volume=	57,513 cf
Outflow	=	5.73 cfs @	13.11 hrs, Volume=	56,914 cf, Atten= 63%, Lag= 24.7 min
Primary	=	5.73 cfs @	13.11 hrs, Volume=	56,914 cf

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Peak Elev= 751.01' @ 13.11 hrs Surf.Area= 11,769 sf Storage= 20,752 cf

Plug-Flow detention time= 150.7 min calculated for 56,914 cf (99% of inflow)
Center-of-Mass det. time= 143.5 min (1,007.1 - 863.6)

Volume	Invert	Avail.Storage	Storage Description
#1	749.00'	2,080,850 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
749.00	8,851	0	0
753.50	15,374	54,506	54,506
754.00	34,000	12,344	66,850
756.00	44,000	78,000	144,850
800.00	44,000	1,936,000	2,080,850

Device	Routing	Invert	Outlet Devices
#1	Primary	749.00'	**24.0" Round Culvert** L= 333.0' Ke= 0.500 Inlet / Outlet Invert= 749.00' / 749.00' S= 0.0000 '/' Cc= 0.900 n= 0.016, Flow Area= 3.14 sf

Primary OutFlow Max=5.73 cfs @ 13.11 hrs HW=751.01' (Free Discharge)
1=Culvert (Barrel Controls 5.73 cfs @ 2.25 fps)

Summary for Pond 300I:

Inflow	=	6.09 cfs @	12.45 hrs,	Volume=	52,048 cf
Outflow	=	0.27 cfs @	14.29 hrs,	Volume=	52,046 cf, Atten= 96%, Lag= 110.5 min
Discarded	=	0.27 cfs @	14.29 hrs,	Volume=	52,046 cf

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Peak Elev= 754.50' @ 14.29 hrs Surf.Area= 14,431 sf Storage= 30,393 cf

Plug-Flow detention time= 935.6 min calculated for 52,046 cf (100% of inflow)
Center-of-Mass det. time= 935.5 min (2,470.7 - 1,535.2)

Volume	Invert	Avail.Storage	Storage Description
#1	752.00'	54,346 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
752.00	9,768	0	0
754.00	13,610	23,378	23,378
755.00	15,250	14,430	37,808
756.00	17,826	16,538	54,346

Device	Routing	Invert	Outlet Devices
#1	Discarded	752.00'	**0.800 in/hr Exfiltration over Surface area** Phase-In= 0.01'

Discarded OutFlow Max=0.27 cfs @ 14.29 hrs HW=754.50' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.27 cfs)

Summary for Pond 300P:

Inflow Area = 1,095,605 sf, 26.54% Impervious, Inflow Depth = 3.71" for 100-yr(7.4") event
Inflow = 80.83 cfs @ 12.50 hrs, Volume= 338,599 cf
Outflow = 75.92 cfs @ 12.57 hrs, Volume= 338,172 cf, Atten= 6%, Lag= 4.1 min
Primary = 70.12 cfs @ 12.57 hrs, Volume= 286,124 cf
Routed to Pond 600P : SW-A6
Secondary = 6.09 cfs @ 12.45 hrs, Volume= 52,048 cf
Routed to Pond 300I :

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Starting Elev= 752.00' Surf.Area= 15,962 sf Storage= 41,550 cf
Peak Elev= 754.51' @ 13.98 hrs Surf.Area= 26,904 sf Storage= 94,675 cf (53,125 cf above start)

Plug-Flow detention time= 335.8 min calculated for 296,616 cf (88% of inflow)
Center-of-Mass det. time= 239.0 min (1,065.3 - 826.3)

Volume	Invert	Avail.Storage	Storage Description
#1	748.00'	1,471,090 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
748.00	4,813	0	0
752.00	15,962	41,550	41,550
754.00	24,132	40,094	81,644
755.00	29,560	26,846	108,490
800.00	31,000	1,362,600	1,471,090

Device	Routing	Invert	Outlet Devices
#1	Secondary	752.00'	**15.0" Round RCP_Round 15"** L= 34.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 749.00' / 752.00' S= -0.0882 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 1.23 sf
#2	Primary	753.57'	**20.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#3	Primary	751.00'	**36.0" Round Culvert** L= 50.0' Ke= 0.500 Inlet / Outlet Invert= 751.00' / 750.85' S= 0.0030 '/' Cc= 0.900 n= 0.013, Flow Area= 7.07 sf
#4	Device 3	752.70'	**6.0' long Sharp-Crested Vee/Trap Weir** Cv= 2.62 (C= 3.28)

Primary OutFlow Max=70.12 cfs @ 12.57 hrs HW=754.29' TW=752.70' (Dynamic Tailwater)
└─**2=Broad-Crested Rectangular Weir** (Weir Controls 33.16 cfs @ 2.29 fps)
└─**3=Culvert** (Barrel Controls 36.96 cfs @ 5.94 fps)
└─**4=Sharp-Crested Vee/Trap Weir** (Passes 36.96 cfs of 39.53 cfs potential flow)

Secondary OutFlow Max=6.08 cfs @ 12.45 hrs HW=754.19' TW=753.13' (Dynamic Tailwater)
└─**1=RCP_Round 15"** (Inlet Controls 6.08 cfs @ 4.96 fps)

Summary for Pond 400I:

Inflow = 47.38 cfs @ 12.38 hrs, Volume= 102,874 cf
Outflow = 0.55 cfs @ 12.65 hrs, Volume= 102,873 cf, Atten= 99%, Lag= 16.5 min
Discarded = 0.55 cfs @ 12.65 hrs, Volume= 102,873 cf

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Peak Elev= 754.53' @ 12.65 hrs Surf.Area= 29,784 sf Storage= 65,747 cf

Plug-Flow detention time= 1,044.5 min calculated for 102,873 cf (100% of inflow)
Center-of-Mass det. time= 1,044.4 min (2,354.3 - 1,309.8)

Volume	Invert	Avail.Storage	Storage Description
#1	752.00'	1,905,717 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
752.00	22,201	0	0
754.00	28,289	50,490	50,490
755.00	31,134	29,712	80,202
800.00	50,000	1,825,515	1,905,717

Device	Routing	Invert	Outlet Devices
#1	Discarded	752.00'	**0.800 in/hr Exfiltration over Surface area** Phase-In= 0.01'

Discarded OutFlow Max=0.55 cfs @ 12.65 hrs HW=754.53' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.55 cfs)

Summary for Pond 400P:

Inflow Area = 1,180,834 sf, 39.33% Impervious, Inflow Depth = 4.26" for 100-yr(7.4") event
Inflow = 102.30 cfs @ 12.47 hrs, Volume= 418,998 cf
Outflow = 89.40 cfs @ 12.49 hrs, Volume= 418,675 cf, Atten= 13%, Lag= 1.2 min
Primary = 81.22 cfs @ 12.65 hrs, Volume= 315,802 cf
Routed to Pond 600P : SW-A6
Secondary = 47.38 cfs @ 12.38 hrs, Volume= 102,874 cf
Routed to Pond 400I :

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Starting Elev= 752.00' Surf.Area= 14,785 sf Storage= 53,655 cf
Peak Elev= 754.53' @ 12.65 hrs Surf.Area= 23,931 sf Storage= 100,730 cf (47,075 cf above start)

Plug-Flow detention time= 270.2 min calculated for 365,020 cf (87% of inflow)
Center-of-Mass det. time= 179.4 min (1,003.4 - 824.0)

Volume	Invert	Avail.Storage	Storage Description
#1	746.00'	1,394,052 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
746.00	3,100	0	0
752.00	14,785	53,655	53,655
754.00	20,600	35,385	89,040
755.00	26,944	23,772	112,812
800.00	30,000	1,281,240	1,394,052

Device	Routing	Invert	Outlet Devices
#1	Secondary	753.12'	**20.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64
#2	Secondary	752.00'	**18.0" Round Culvert** L= 40.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 750.25' / 752.00' S= -0.0437 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 1.77 sf
#3	Primary	751.50'	**36.0" Round Culvert** L= 50.0' Ke= 0.500 Inlet / Outlet Invert= 751.50' / 751.00' S= 0.0100 '/' Cc= 0.900 n= 0.013, Flow Area= 7.07 sf
#4	Primary	753.74'	**20.0' long + 10.0 '/' SideZ x 12.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.57 2.62 2.70 2.67 2.66 2.67 2.66 2.64
#5	Device 3	753.13'	**6.0' long Sharp-Crested Vee/Trap Weir** Cv= 2.62 (C= 3.28)

Primary OutFlow Max=81.20 cfs @ 12.65 hrs HW=754.52' TW=753.10' (Dynamic Tailwater)
- **3=Culvert** (Passes 32.37 cfs of 38.64 cfs potential flow)
  - **5=Sharp-Crested Vee/Trap Weir** (Weir Controls 32.37 cfs @ 3.87 fps)
- **4=Broad-Crested Rectangular Weir** (Weir Controls 48.83 cfs @ 2.23 fps)

Secondary OutFlow Max=46.92 cfs @ 12.38 hrs HW=754.08' TW=753.65' (Dynamic Tailwater)
- **1=Broad-Crested Rectangular Weir** (Weir Controls 41.33 cfs @ 2.15 fps)
- **2=Culvert** (Inlet Controls 5.59 cfs @ 3.16 fps)

Summary for Pond 500P:

Inflow = 21.58 cfs @ 12.89 hrs, Volume= 864,949 cf
Outflow = 12.41 cfs @ 20.43 hrs, Volume= 864,909 cf, Atten= 42%, Lag= 452.6 min
Primary = 12.41 cfs @ 20.43 hrs, Volume= 864,909 cf
Routed to Pond 600P : SW-A6

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Peak Elev= 767.04' @ 20.43 hrs Surf.Area= 34,222 sf Storage= 91,244 cf

Plug-Flow detention time= 101.5 min calculated for 864,891 cf (100% of inflow)
Center-of-Mass det. time= 101.5 min (1,377.4 - 1,275.9)

Volume	Invert	Avail.Storage	Storage Description
#1	762.00'	916,206 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
762.00	4,629	0	0
765.00	19,533	36,243	36,243
767.00	34,242	53,775	90,018
800.00	15,830	826,188	916,206

Device	Routing	Invert	Outlet Devices
#1	Primary	762.00'	**15.0" Round RCP_Round 15"** L= 30.0' RCP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 762.00' / 761.70' S= 0.0100 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 1.23 sf

Primary OutFlow Max=12.41 cfs @ 20.43 hrs HW=767.04' TW=754.16' (Dynamic Tailwater)
1=RCP_Round 15" (Inlet Controls 12.41 cfs @ 10.11 fps)

Summary for Pond 600P: SW-A6

Inflow = 168.74 cfs @ 12.62 hrs, Volume= 1,529,946 cf
Outflow = 26.90 cfs @ 13.99 hrs, Volume= 1,529,946 cf, Atten= 84%, Lag= 82.0 min
Discarded = 3.29 cfs @ 13.99 hrs, Volume= 412,156 cf
Primary = 23.61 cfs @ 13.99 hrs, Volume= 1,117,790 cf
Routed to Link S : (new Link)

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Peak Elev= 754.51' @ 13.99 hrs Surf.Area= 142,072 sf Storage= 362,813 cf

Plug-Flow detention time= 332.8 min calculated for 1,529,946 cf (100% of inflow)
Center-of-Mass det. time= 332.8 min (1,516.0 - 1,183.2)

Volume	Invert	Avail.Storage	Storage Description
#1	751.00'	9,387,964 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
751.00	14,707	0	0
752.00	96,389	55,548	55,548
754.00	139,253	235,642	291,190
756.00	150,327	289,580	580,770
800.00	250,000	8,807,194	9,387,964

Device	Routing	Invert	Outlet Devices
#1	Primary	751.00'	**36.0" Round Culvert** L= 150.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 751.00' / 750.50' S= 0.0033 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 7.07 sf
#2	Device 1	753.50'	**6.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)
#3	Discarded	751.00'	**1.000 in/hr Exfiltration over Surface area** Phase-In= 0.01'
#4	Device 1	751.30'	**10.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=3.29 cfs @ 13.99 hrs HW=754.51' (Free Discharge)
└**3=Exfiltration** (Exfiltration Controls 3.29 cfs)

Primary OutFlow Max=23.61 cfs @ 13.99 hrs HW=754.51' TW=0.00' (Dynamic Tailwater)
└**1=Culvert** (Passes 23.61 cfs of 40.38 cfs potential flow)
├**2=Sharp-Crested Rectangular Weir** (Weir Controls 19.22 cfs @ 3.28 fps)
└**4=Orifice/Grate** (Orifice Controls 4.39 cfs @ 8.05 fps)

Summary for Pond SW-P1: SW-P1

Inflow Area = 3,319,272 sf, 5.91% Impervious, Inflow Depth = 4.69" for 100-yr(7.4") event
Inflow = 306.82 cfs @ 12.47 hrs, Volume= 1,296,354 cf
Outflow = 6.15 cfs @ 19.52 hrs, Volume= 1,179,678 cf, Atten= 98%, Lag= 422.9 min
Primary = 6.15 cfs @ 19.52 hrs, Volume= 1,179,678 cf
Routed to Pond SW-P2 : SW-P2

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Peak Elev= 813.82' @ 19.52 hrs Surf.Area= 6.818 ac Storage= 24.629 af

Plug-Flow detention time= 1,864.4 min calculated for 1,179,655 cf (91% of inflow)
Center-of-Mass det. time= 1,824.8 min (2,635.6 - 810.8)

Volume	Invert	Avail.Storage	Storage Description
#1	810.00'	87.505 af	**Custom Stage Data (Prismatic)**Listed below

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
810.00	6.048	0.000	0.000
812.00	6.451	12.499	12.499
814.00	6.854	13.305	25.804
816.00	7.284	14.138	39.942
820.00	8.131	30.830	70.772
822.00	8.602	16.733	87.505

Device	Routing	Invert	Outlet Devices
#1	Primary	810.00'	**12.0" Round Culvert** L= 80.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 810.00' / 809.00' S= 0.0125 '/' Cc= 0.900 n= 0.013, Flow Area= 0.79 sf

Primary OutFlow Max=6.15 cfs @ 19.52 hrs HW=813.82' TW=751.46' (Dynamic Tailwater)
1=Culvert (Barrel Controls 6.15 cfs @ 7.83 fps)

Summary for Pond SW-P2: SW-P2

Inflow Area = 7,252,740 sf, 4.86% Impervious, Inflow Depth > 4.63" for 100-yr(7.4") event
Inflow = 397.46 cfs @ 12.47 hrs, Volume= 2,795,688 cf
Outflow = 12.45 cfs @ 20.65 hrs, Volume= 2,544,822 cf, Atten= 97%, Lag= 491.0 min
Primary = 12.45 cfs @ 20.65 hrs, Volume= 2,544,822 cf
Routed to nonexistent node SW-P3

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Peak Elev= 751.47' @ 20.65 hrs Surf.Area= 7.652 ac Storage= 31.813 af

Plug-Flow detention time= 1,467.5 min calculated for 2,544,771 cf (91% of inflow)
Center-of-Mass det. time= 1,172.1 min (2,755.4 - 1,583.3)

Volume	Invert	Avail.Storage	Storage Description
#1	747.00'	67.788 af	**Custom Stage Data (Prismatic)**Listed below

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
747.00	6.476	0.000	0.000
749.00	7.070	13.546	13.546
751.00	7.538	14.608	28.154
753.00	8.024	15.562	43.716
756.00	8.024	24.072	67.788

Device	Routing	Invert	Outlet Devices
#1	Primary	747.00'	**21.0" Round Culvert** L= 500.0' RCP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 747.00' / 746.00' S= 0.0020 '/' Cc= 0.900 n= 0.013, Flow Area= 2.41 sf

Primary OutFlow Max=12.45 cfs @ 20.65 hrs HW=751.47' (Free Discharge)
1=Culvert (Barrel Controls 12.45 cfs @ 5.18 fps)

Summary for Pond SW-P4.1: summers landing 30P

Inflow = 127.55 cfs @ 12.47 hrs, Volume= 520,867 cf
Outflow = 52.16 cfs @ 12.80 hrs, Volume= 487,120 cf, Atten= 59%, Lag= 19.8 min
Primary = 4.92 cfs @ 12.75 hrs, Volume= 106,678 cf
Routed to Pond SW-P4.2 : Summers landing 30PI
Secondary = 47.83 cfs @ 12.80 hrs, Volume= 380,442 cf
Routed to Pond SW-P4.2 : Summers landing 30PI

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Starting Elev= 808.50' Surf.Area= 1.284 ac Storage= 4.283 af
Peak Elev= 812.11' @ 13.89 hrs Surf.Area= 2.261 ac Storage= 10.357 af (6.074 af above start)

Plug-Flow detention time= 685.1 min calculated for 300,546 cf (58% of inflow)
Center-of-Mass det. time= 367.3 min (1,188.8 - 821.5)

Volume	Invert	Avail.Storage	Storage Description
#1	804.00'	11.323 af	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
804.00	0.730	0.000	0.000
808.00	1.112	3.684	3.684
809.00	1.456	1.284	4.968
811.00	1.749	3.205	8.173
812.00	2.121	1.935	10.108
812.50	2.738	1.215	11.323

Device	Routing	Invert	Outlet Devices
#1	Primary	809.00'	**12.0" Round Culvert** L= 35.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 809.00' / 808.00' S= 0.0286 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Secondary	810.00'	**8.0' long x 30.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=4.92 cfs @ 12.75 hrs HW=811.68' TW=809.50' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 4.92 cfs @ 6.26 fps)

Secondary OutFlow Max=47.76 cfs @ 12.80 hrs HW=811.73' TW=810.08' (Dynamic Tailwater)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 47.76 cfs @ 3.45 fps)

Summary for Pond SW-P4.2: Summers landing 30PI

Inflow = 52.16 cfs @ 12.80 hrs, Volume= 487,120 cf
Outflow = 12.24 cfs @ 13.92 hrs, Volume= 486,697 cf, Atten= 77%, Lag= 67.3 min
Discarded = 6.93 cfs @ 13.93 hrs, Volume= 258,854 cf
Primary = 5.38 cfs @ 13.33 hrs, Volume= 227,843 cf
Routed to Pond SW-P4.3 : Summers landing 31P
Tertiary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond SW-P4.1 : summers landing 30P

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Peak Elev= 812.10' @ 13.93 hrs Surf.Area= 41,355 sf Storage= 92,528 cf

Plug-Flow detention time= 199.7 min calculated for 486,687 cf (100% of inflow)
Center-of-Mass det. time= 195.7 min (1,384.5 - 1,188.8)

Volume	Invert	Avail.Storage	Storage Description
#1	805.00'	124,959 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
805.00	5,274	0	0
808.00	9,331	21,908	21,908
809.00	14,735	12,033	33,941
811.00	19,577	34,312	68,253
812.00	22,804	21,191	89,443
812.50	119,260	35,516	124,959

Device	Routing	Invert	Outlet Devices
#1	Primary	809.00'	**15.0" Round Culvert** L= 661.0' Ke= 0.700 Inlet / Outlet Invert= 809.00' / 804.50' S= 0.0068 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf
#2	Tertiary	810.00'	**8.0' long x 30.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#3	Discarded	805.01'	**8.300 in/hr Exfiltration over Surface area above 805.01'** Excluded Surface area = 5,288 sf

Discarded OutFlow Max=6.93 cfs @ 13.93 hrs HW=812.10' (Free Discharge)
3=Exfiltration (Exfiltration Controls 6.93 cfs)

Primary OutFlow Max=5.38 cfs @ 13.33 hrs HW=811.98' TW=807.55' (Dynamic Tailwater)
1=Culvert (Outlet Controls 5.38 cfs @ 4.39 fps)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=805.00' TW=808.50' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Pond SW-P4.3: Summers landing 31P

Inflow = 137.40 cfs @ 12.47 hrs, Volume= 788,533 cf
Outflow = 59.78 cfs @ 12.84 hrs, Volume= 783,375 cf, Atten= 56%, Lag= 22.3 min
Primary = 5.13 cfs @ 12.78 hrs, Volume= 122,966 cf
Routed to Pond SW-P4.4 : Summers landing 31PI
Tertiary = 55.21 cfs @ 12.84 hrs, Volume= 660,409 cf
Routed to Pond SW-P4.4 : Summers landing 31PI

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Starting Elev= 804.50' Surf.Area= 69,445 sf Storage= 195,814 cf
Peak Elev= 807.92' @ 15.67 hrs Surf.Area= 104,061 sf Storage= 483,340 cf (287,526 cf above start)

Plug-Flow detention time= 689.8 min calculated for 587,561 cf (75% of inflow)
Center-of-Mass det. time= 394.2 min (1,312.7 - 918.5)

Volume	Invert	Avail.Storage	Storage Description
#1	800.50'	805,360 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
800.50	35,945	0	0
803.50	53,587	134,298	134,298
804.50	69,445	61,516	195,814
806.50	82,896	152,341	348,155
807.50	100,885	91,891	440,046
808.00	104,644	51,382	491,428
811.00	104,644	313,932	805,360

Device	Routing	Invert	Outlet Devices
#1	Primary	804.50'	**12.0" Round Culvert** L= 35.0' Ke= 0.700 Inlet / Outlet Invert= 804.50' / 803.50' S= 0.0286 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Tertiary	805.50'	**8.0' long x 30.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=5.13 cfs @ 12.78 hrs HW=807.36' TW=805.00' (Dynamic Tailwater)
↑—**1=Culvert** (Inlet Controls 5.13 cfs @ 6.53 fps)

Tertiary OutFlow Max=55.16 cfs @ 12.84 hrs HW=807.40' TW=805.56' (Dynamic Tailwater)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 55.16 cfs @ 3.62 fps)

Summary for Pond SW-P4.4: Summers landing 31PI

Inflow = 59.78 cfs @ 12.84 hrs, Volume= 783,374 cf
Outflow = 10.27 cfs @ 15.69 hrs, Volume= 782,600 cf, Atten= 83%, Lag= 170.7 min
Discarded = 5.25 cfs @ 15.69 hrs, Volume= 448,387 cf
Primary = 5.02 cfs @ 15.69 hrs, Volume= 334,213 cf
Routed to Pond 500P :
Tertiary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond SW-P4.3 : Summers landing 31P

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Peak Elev= 807.92' @ 15.69 hrs Surf.Area= 35,720 sf Storage= 140,462 cf

Plug-Flow detention time= 251.4 min calculated for 782,585 cf (100% of inflow)
Center-of-Mass det. time= 247.1 min (1,559.8 - 1,312.7)

Volume	Invert	Avail.Storage	Storage Description
#1	800.50'	215,575 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
800.50	8,380	0	0
803.50	13,880	33,390	33,390
804.50	19,929	16,905	50,295
806.50	25,755	45,684	95,979
807.50	34,193	29,974	125,953
808.00	36,033	17,557	143,509
810.00	36,033	72,066	215,575

Device	Routing	Invert	Outlet Devices
#1	Primary	804.50'	**15.0" Round Culvert** L= 1,010.0' Ke= 0.700 Inlet / Outlet Invert= 804.50' / 801.00' S= 0.0035 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf
#2	Tertiary	805.50'	**8.0' long x 30.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#3	Discarded	800.51'	**8.300 in/hr Exfiltration over Surface area above 800.51'** Excluded Surface area = 8,398 sf

Discarded OutFlow Max=5.25 cfs @ 15.69 hrs HW=807.92' (Free Discharge)
3=Exfiltration (Exfiltration Controls 5.25 cfs)

Primary OutFlow Max=5.02 cfs @ 15.69 hrs HW=807.92' TW=766.63' (Dynamic Tailwater)
1=Culvert (Barrel Controls 5.02 cfs @ 4.09 fps)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=800.50' TW=804.50' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Pond SW-P5.1: Summers landing 28P

Inflow = 120.03 cfs @ 12.50 hrs, Volume= 489,785 cf
Outflow = 42.62 cfs @ 12.77 hrs, Volume= 486,957 cf, Atten= 64%, Lag= 16.5 min
Primary = 5.83 cfs @ 12.68 hrs, Volume= 113,504 cf
Routed to Pond SW-P5.2 : Summers Landing 28PI
Secondary = 37.57 cfs @ 12.79 hrs, Volume= 373,452 cf
Routed to Pond SW-P5.2 : Summers Landing 28PI

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Starting Elev= 806.00' Surf.Area= 55,104 sf Storage= 141,054 cf
Peak Elev= 809.54' @ 15.19 hrs Surf.Area= 90,694 sf Storage= 389,980 cf (248,926 cf above start)

Plug-Flow detention time= 743.3 min calculated for 345,903 cf (71% of inflow)
Center-of-Mass det. time= 463.5 min (1,289.6 - 826.2)

Volume	Invert	Avail.Storage	Storage Description
#1	802.00'	432,852 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
802.00	23,396	0	0
805.00	39,204	93,900	93,900
806.00	55,104	47,154	141,054
808.00	68,648	123,752	264,806
809.00	86,609	77,629	342,435
810.00	94,225	90,417	432,852

Device	Routing	Invert	Outlet Devices
#1	Primary	806.00'	**12.0" Round Culvert** L= 35.0' Ke= 0.500 Inlet / Outlet Invert= 806.00' / 805.00' S= 0.0286 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Secondary	807.00'	**5.0' long x 30.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=5.81 cfs @ 12.68 hrs HW=808.88' TW=806.51' (Dynamic Tailwater)
1=Culvert (Inlet Controls 5.81 cfs @ 7.40 fps)

Secondary OutFlow Max=37.50 cfs @ 12.79 hrs HW=809.04' TW=807.31' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Weir Controls 37.50 cfs @ 3.67 fps)

Summary for Pond SW-P5.2: Summers Landing 28PI

Inflow = 42.62 cfs @ 12.77 hrs, Volume= 486,957 cf
Outflow = 6.74 cfs @ 15.52 hrs, Volume= 510,055 cf, Atten= 84%, Lag= 164.7 min
Discarded = 4.07 cfs @ 15.21 hrs, Volume= 331,364 cf
Primary = 2.68 cfs @ 18.15 hrs, Volume= 178,691 cf
Routed to Pond SW-P5.3 : Summers landing POND 2 NORTH
Tertiary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond SW-P5.1 : Summers landing 28P

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Starting Elev= 806.00' Surf.Area= 16,338 sf Storage= 23,268 cf
Peak Elev= 809.53' @ 15.21 hrs Surf.Area= 28,170 sf Storage= 98,467 cf (75,199 cf above start)

Plug-Flow detention time= 206.7 min calculated for 486,778 cf (100% of inflow)
Center-of-Mass det. time= 145.0 min (1,434.7 - 1,289.6)

Volume	Invert	Avail.Storage	Storage Description
#1	804.00'	141,493 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
804.00	6,954	0	0
805.00	11,622	9,288	9,288
806.00	16,338	13,980	23,268
808.00	20,651	36,989	60,257
809.00	26,716	23,684	83,941
810.00	29,463	28,090	112,030
811.00	29,463	29,463	141,493

Device	Routing	Invert	Outlet Devices
#1	Primary	806.00'	**12.0" Round Culvert** L= 622.0' Ke= 0.700 Inlet / Outlet Invert= 806.00' / 803.00' S= 0.0048 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Tertiary	807.00'	**8.0' long x 30.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#3	Discarded	804.01'	**8.300 in/hr Exfiltration over Surface area above 804.01'** Excluded Surface area = 7,001 sf

Discarded OutFlow Max=4.07 cfs @ 15.21 hrs HW=809.53' (Free Discharge)
3=Exfiltration (Exfiltration Controls 4.07 cfs)

Primary OutFlow Max=2.68 cfs @ 18.15 hrs HW=809.28' TW=805.96' (Dynamic Tailwater)
1=Culvert (Outlet Controls 2.68 cfs @ 3.41 fps)

Tertiary OutFlow Max=0.00 cfs @ 0.00 hrs HW=806.00' TW=806.00' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Summary for Pond SW-P5.3: Summers landing POND 2 NORTH

Inflow = 80.22 cfs @ 12.50 hrs, Volume= 505,924 cf
Outflow = 22.34 cfs @ 12.72 hrs, Volume= 503,996 cf, Atten= 72%, Lag= 13.4 min
Primary = 4.77 cfs @ 12.62 hrs, Volume= 140,392 cf
Routed to Pond SW-P5.5 : Summers Landing 29I
Tertiary = 18.53 cfs @ 12.76 hrs, Volume= 363,604 cf
Routed to Pond SW-P5.5 : Summers Landing 29I

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Starting Elev= 803.00' Surf.Area= 41,920 sf Storage= 152,896 cf
Peak Elev= 806.41' @ 13.90 hrs Surf.Area= 58,658 sf Storage= 322,266 cf (169,370 cf above start)

Plug-Flow detention time= 719.2 min calculated for 351,093 cf (69% of inflow)
Center-of-Mass det. time= 311.1 min (1,317.6 - 1,006.6)

Volume	Invert	Avail.Storage	Storage Description
#1	798.00'	532,787 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
798.00	24,234	0	0
802.00	33,387	115,242	115,242
803.00	41,920	37,654	152,896
805.00	49,340	91,260	244,156
806.00	58,658	53,999	298,155
810.00	58,658	234,632	532,787

Device	Routing	Invert	Outlet Devices
#1	Primary	803.00'	**12.0" Round Culvert** L= 35.0' Ke= 0.700 Inlet / Outlet Invert= 803.00' / 802.00' S= 0.0286 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Tertiary	804.00'	**3.0' long x 30.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=4.76 cfs @ 12.62 hrs HW=805.55' TW=803.52' (Dynamic Tailwater)
1=Culvert (Inlet Controls 4.76 cfs @ 6.06 fps)

Tertiary OutFlow Max=18.47 cfs @ 12.76 hrs HW=805.88' TW=804.69' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Weir Controls 18.47 cfs @ 3.27 fps)

Summary for Pond SW-P5.4: Summers Landing POND 2 SOUTH

Inflow = 40.03 cfs @ 12.47 hrs, Volume= 165,013 cf
Outflow = 9.50 cfs @ 12.68 hrs, Volume= 163,891 cf, Atten= 76%, Lag= 12.5 min
Primary = 3.74 cfs @ 12.62 hrs, Volume= 63,230 cf
Routed to Pond SW-P5.5 : Summers Landing 29l
Secondary = 6.56 cfs @ 12.70 hrs, Volume= 100,661 cf
Routed to Pond SW-P5.5 : Summers Landing 29l

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Starting Elev= 803.00' Surf.Area= 31,846 sf Storage= 105,243 cf
Peak Elev= 806.18' @ 15.48 hrs Surf.Area= 50,909 sf Storage= 231,607 cf (126,364 cf above start)

Plug-Flow detention time= 1,371.4 min calculated for 58,647 cf (36% of inflow)
Center-of-Mass det. time= 684.6 min (1,509.5 - 824.9)

Volume	Invert	Avail.Storage	Storage Description
#1	798.00'	324,420 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
798.00	15,145	0	0
802.00	23,612	77,514	77,514
803.00	31,846	27,729	105,243
805.00	40,039	71,885	177,128
806.00	50,909	45,474	222,602
808.00	50,909	101,818	324,420

Device	Routing	Invert	Outlet Devices
#1	Primary	803.00'	**12.0" Round Culvert** L= 35.0' Ke= 0.700 Inlet / Outlet Invert= 803.00' / 802.00' S= 0.0286 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#2	Secondary	804.00'	**3.0' long x 30.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=3.72 cfs @ 12.62 hrs HW=804.76' TW=803.51' (Dynamic Tailwater)
1=Culvert (Inlet Controls 3.72 cfs @ 4.74 fps)

Secondary OutFlow Max=6.52 cfs @ 12.70 hrs HW=804.91' TW=804.23' (Dynamic Tailwater)
2=Broad-Crested Rectangular Weir (Weir Controls 6.52 cfs @ 2.39 fps)

Summary for Pond SW-P5.5: Summers Landing 29l

Inflow = 31.58 cfs @ 12.69 hrs, Volume= 667,886 cf
Outflow = 10.46 cfs @ 13.99 hrs, Volume= 667,691 cf, Atten= 67%, Lag= 77.9 min
Discarded = 2.50 cfs @ 13.19 hrs, Volume= 224,473 cf
Primary = 7.58 cfs @ 13.99 hrs, Volume= 441,578 cf
Routed to Pond 500P :
Tertiary = 0.38 cfs @ 13.99 hrs, Volume= 1,640 cf
Routed to Pond SW-P5.4 : Summers Landing POND 2 SOUTH

Routing by Sim-Route method w/Net Flows, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs
Peak Elev= 806.32' @ 13.99 hrs Surf.Area= 15,768 sf Storage= 54,866 cf

Plug-Flow detention time= 98.1 min calculated for 667,691 cf (100% of inflow)
Center-of-Mass det. time= 96.8 min (1,461.5 - 1,364.7)

Volume	Invert	Avail.Storage	Storage Description
#1	800.00'	112,832 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
800.00	2,718	0	0
802.00	5,260	7,978	7,978
803.00	8,713	6,987	14,965
805.00	12,132	20,845	35,810
806.00	15,768	13,950	49,760
810.00	15,768	63,072	112,832

Device	Routing	Invert	Outlet Devices
#1	Primary	803.00'	**18.0" Round Culvert** L= 750.0' Ke= 0.700 Inlet / Outlet Invert= 803.00' / 801.00' S= 0.0027 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf
#2	Tertiary	806.00'	**12.0" Round Culvert** L= 35.0' Ke= 0.700 Inlet / Outlet Invert= 806.00' / 803.00' S= 0.0857 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf
#3	Discarded	800.01'	**8.300 in/hr Exfiltration over Surface area above 800.01'** Excluded Surface area = 2,731 sf

Discarded OutFlow Max=2.50 cfs @ 13.19 hrs HW=806.00' (Free Discharge)
3=Exfiltration (Exfiltration Controls 2.50 cfs)

Primary OutFlow Max=7.58 cfs @ 13.99 hrs HW=806.32' TW=766.01' (Dynamic Tailwater)
1=Culvert (Barrel Controls 7.58 cfs @ 4.29 fps)

Tertiary OutFlow Max=0.38 cfs @ 13.99 hrs HW=806.32' TW=805.91' (Dynamic Tailwater)
2=Culvert (Inlet Controls 0.38 cfs @ 1.71 fps)

Summary for Link N: (new Link)

Inflow	=	0.00 cfs @	0.00 hrs, Volume=	0 cf
Primary	=	0.00 cfs @	0.00 hrs, Volume=	0 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs

Summary for Link S: (new Link)

Inflow	=	24.45 cfs @	13.88 hrs,	Volume=	1,152,057 cf
Primary	=	24.45 cfs @	13.88 hrs,	Volume=	1,152,057 cf, Atten= 0%, Lag= 0.1 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs

Summary for Link W: Offsite Discharge

Inflow = 14.12 cfs @ 12.85 hrs, Volume= 154,883 cf
Primary = 14.12 cfs @ 12.85 hrs, Volume= 154,883 cf, Atten= 0%, Lag= 0.1 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.002 hrs

Appendix C: P8 Calculations

P8 Urban Catchment Model, Version 3.5

Case	00-123105 Existing.p8c	FirstDate	10/01/71	Run Date	01/23/26
Title	Msp Case	LastDate	12/31/00	Precip(in)	851.7
PrecFile	MSP_19700101-20001231.pcp	Events	2145	Rain(in)	739.41
PartFile	nurp50.p8p	TotalHrs	256426	Snow(in)	112.25
				TotalYrs	29.25

Mass Balances by Device and Variable

Device: OUT Type: PIPE Variable: TSS

Mass Balance Term	Flow_acft	Flow_cfs	Load_lbs	Load_lbs/yr	Conc_ppm
01 watershed inflows	217.86	0.01	20249.3	692.2	34.20
06 normal outlet	217.86	0.01	20249.3	692.2	34.20
09 total inflow	217.86	0.01	20249.3	692.2	34.20
10 surface outflow	217.86	0.01	20249.3	692.2	34.20
12 total outflow	217.86	0.01	20249.3	692.2	34.20
14 storage increase	0.00	0.00	0.0	0.0	
15 mass balance check	0.00	0.00	0.0	0.0	
Reduction (%)	0.00	0.00	0.0	0.0	

Device: OUT Type: PIPE Variable: TP

Mass Balance Term	Flow_acft	Flow_cfs	Load_lbs	Load_lbs/yr	Conc_ppm
01 watershed inflows	217.86	0.01	105.4	3.6	0.18
06 normal outlet	217.86	0.01	105.4	3.6	0.18
09 total inflow	217.86	0.01	105.4	3.6	0.18
10 surface outflow	217.86	0.01	105.4	3.6	0.18
12 total outflow	217.86	0.01	105.4	3.6	0.18
14 storage increase	0.00	0.00	0.0	0.0	
15 mass balance check	0.00	0.00	0.0	0.0	
Reduction (%)	0.00	0.00	0.0	0.0	

P8 Urban Catchment Model, Version 3.5

Case	00-123105 Existing.p8c	FirstDate	10/01/71	Run Date	01/23/26
Title	Msp Case	LastDate	12/31/00	Precip(in)	851.7
PrecFile	MSP_19700101-20001231.pcp	Events	2145	Rain(in)	739.41
PartFile	nurp50.p8p	TotalHrs	256426	Snow(in)	112.25
				TotalYrs	29.25

Case Title	Msp Case
Case Data File	00-123105 Existing.p8c
Path	L:\Engineering 3D\23\123105 Nesvig Lennar\Hydrology Design\P8\
Case Notes:	□
Storm Data File	MSP_19700101-20001231.pcp
Particle File	nurp50.p8p
Air Temp File File	MSP_19700101-20001231.tem

Time Steps Per Hour	60
Minimum Inter-Event Time (hrs)	10
Maximum Continuity Error %	2
Rainfall Breakpoint (inches)	0.8
Precipitation Scale Factor	1
Air Temp Offset (deg-F)	0
Loops Thru Storm File	5
Simulation Dates	
Start	1/1/1971
Keep	10/1/1971
Stop	12/31/2000

Max Snowfall Temperature (deg-f)	32.0
SnowMelt Temperature (deg-f)	32.0
Snowmelt Coef (in/degF-Day)	0.06
Soil Freeze Temp (deg-F)	32.0
Snowmelt Abstraction Factor	1.00
Evapo-Trans. Calibration Factor	1.00
Growing Season Start Month	5
Growing Season End Month	10

5-Day Antecedent Rainfall + Runoff (inches)		
CN Antecedent Moisture Condition	AMC-II	AMC-III
Growing Season	1.40	2.10
NonGrowing Season	0.50	1.10

Watershed Data

Watershed Name	GE	B	D	A	G	C	DN	BN	E	F	CE	AE			
Runoff to Device	OUT	OUT	OUT	OUT	OUT	OUT	OUT	OUT	OUT	OUT	OUT	OUT			
Infiltration to Device															
Watershed Area	4.126543	10.289563	7.048876	21.971284	0.233278	11.649012	6.167615	9.32208	5.936556	11.410384	4.469643	4.071545			
SCS Curve Number (Pervious)	34.787287	62.405741	36.240027	57.876659	30	46.107832	30	51.874773	56.709477	65.144795	47.571612	52.578287			

Scale Factor for Pervious Runoff Load	1	1	1	1	1	1	1	1	1	1	1	1			
Indirectly Connected Imperv Fraction	0.012932	0.000969	0	0.000178	0	0	0	0	0.009322	0.000083	0.039028	0.074733			
UnSwept Impervious Fraction	0	0	0	0	0	0	0	0	0	0	0	0			
UnSwept Depression Storage (inches)	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02			
UnSwept Imperv. Runoff Coefficient	1	1	1	1	1	1	1	1	1	1	1	1			
UnSwept Scale Factor for Particle Loads	1	1	1	1	1	1	1	1	1	1	1	1			
Swept Impervious Fraction	0	0	0	0	0	0	0	0	0	0	0	0			
Swept Depression Storage (inches)	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02			
Swept Imperv. Runoff Coefficient	1	1	1	1	1	1	1	1	1	1	1	1			
Swept Scale Factor for Particle Loads	1	1	1	1	1	1	1	1	1	1	1	1			
Sweeping Frequency	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5			
Sweeping Efficiency	1	1	1	1	1	1	1	1	1	1	1	1			
Sweeping Start Date (MMDD)	101	101	101	101	101	101	101	101	101	101	101	101			
Sweeping Stop Date (MMDD)	1231	1231	1231	1231	1231	1231	1231	1231	1231	1231	1231	1231			

Device Data															
Device Name	OUT														
Device Type	PIPE														
Infiltration Outlet															
Normal Outlet															
Spillway Outlet															
Particle Removal Scale Factor															
Bottom Elevation (ft)															
Bottom Area (acres)															
Permanent Pool Area (acres)															
Permanent Pool Volume (ac-ft)															
Perm Pool Infilt Rate (in/hr)															
Flood Pool Area (acres)															
Flood Pool Volume (ac-ft)															
Flood Pool Infilt Rate (in/hr)															
Infilt Basin Void Fraction (%)															
Detention Pond Outlet Parameters															
Outlet Type															
Outlet Orifice Diameter (in)															
Orifice Discharge Coef															
Outlet Weir Length (ft)															
Weir Discharge Coef															
Perforated Riser Height (ft)															
Number of Holes in Riser															
Holes Diameter															
Flood Pool Drain Time (hrs)															
Swale Parameters															
Length of Flow Path (ft)															
Slope of Flow Path %															
Bottom Width (ft)															
Side Slope (ft-v/ft-h)															
Maximum Depth of Flow (ft)															

Mannings n Constant															
Hydraulic Model															
Pipe, Splitter, Aquifer Parameter															
Hydraulic Res. Time (hrs)	0.5														

Particle Data					
Particle File	nurp50.p8p				
Particle Class	P0%	P10%	P30%	P50%	P80%
Filtration Efficiency (%)	90	100	100	100	100
Settling Velocity (ft/hr)	0	0.03	0.3	1.5	15
First Order Decay Rate (1/day)	0	0	0	0	0
2nd Order Decay (1/day-ppm)	0	0	0	0	0
Impervious Runoff Conc (ppm)	1	0	0	0	0
Pervious Runoff Conc (ppm)	1	100	100	100	200
Pervious Conc Exponent	0	1	1	1	1
Accum. Rate (lbs-ac-day)	0	1.75	1.75	1.75	3.5
Particle Removal Rate (1/day)	0	0.25	0.25	0.25	0.25
Washoff Coefficient	0	20	20	20	20
Washoff Exponent	0	2	2	2	2
Sweeper Efficiency	0	0	0	5	15

Water Quality Component Data										
Component Name	TSS	TP	TKN	CU	PB	ZN	HC			
Water Quality Criteria (ppm)										
Level 1	5	0.025	2	2	0.02	5	0.1			
Level 2	10	0.05	1	0.0048	0.014	0.0362	0.5			
Level 3	20	0.1	0.5	0.02	0.15	0.38	1			
Content Scale Factor	1	1	1	1	1	1	1			
Particle Composition (mg/kg)										
P0%	0	99000	600000	13600	2000	640000	250000			
P10%	1000000	3850	15000	340	180	1600	22500			
P30%	1000000	3850	15000	340	180	1600	22500			
P50%	1000000	3850	15000	340	180	1600	22500			
P80%	1000000	0	0	340	180	0	22500			

P8 Urban Catchment Model, Version 3.5				Run Date	01/23/26
Case	00-123105 Proposed.p8c	FirstDate	01/01/71	Precip(in)	870.4
Title	Startup Case	LastDate	12/31/00	Rain(in)	756.51
PrecFile	MSP_19700101-20001231.pcp	Events	2196	Snow(in)	113.84
PartFile	nurp50.p8p	TotalHrs	261888	TotalYrs	29.88

Case Title	Startup Case
Case Data File	00-123105 Proposed.p8c
Path	L:\Engineering 3D\23\123105 Nesvig Lennar\Hydrology Design\P8\
Case Notes:	simple startup case□
Storm Data File	MSP_19700101-20001231.pcp
Particle File	nurp50.p8p
Air Temp File File	MSP_19700101-20001231.tem

Time Steps Per Hour	4
Minimum Inter-Event Time (hrs)	10
Maximum Continuity Error %	2
Rainfall Breakpoint (inches)	0.8
Precipitation Scale Factor	1
Air Temp Offset (deg-F)	0
Loops Thru Storm File	1
Simulation Dates	
Start	1/1/1971
Keep	1/1/1971
Stop	12/31/2000

Max Snowfall Temperature (deg-f)	32.0
SnowMelt Temperature (deg-f)	32.0
Snowmelt Coef (in/degF-Day)	0.06
Soil Freeze Temp (deg-F)	32.0
Snowmelt Abstraction Factor	1.00
Evapo-Trans. Calibration Factor	1.00
Growing Season Start Month	5
Growing Season End Month	10

5-Day Antecedent Rainfall + Runoff (inches)		
CN Antecedent Moisture Condition	AMC-II	AMC-III
Growing Season	1.40	2.10
NonGrowing Season	0.50	1.10

Watershed Data

Watershed Name	650	650N	600	500	500E	400	400E	300	300N	200	100	3	2	2N	1	1E
Runoff to Device	BASIN 600	OUT	BASIN 600	BASIN 500	BASIN 500	BASIN 400	BASIN 400	BASIN 300	BASIN 300	BASIN 200	BASIN 100	OUT	OUT	OUT	OUT	OUT
Infiltration to Device																
Watershed Area	3.610253	9.32411	5.611256	7.370038	7.014381	19.04096	8.067247	12.217264	0.272179	4.367961	9.582481	3.682539	0.534007	3.47557	2.522193	0.005969
SCS Curve Number (Pervious)	59.484466	51.858929	58.753206	45.715537	44.495895	59.496435	54.209158	62.235175	30	59.886869	61.328126	54.056147	61	30.075229	60.475785	58
Scale Factor for Pervious Runoff Load	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Indirectly Connected Imperv Fraction	0.104532	0	0.094418	0.053732	0.051643	0.043994	0.023957	0.049335	0	0.027303	0.03723	0.05502	0.22187	0	0.198873	0

UnSwept Impervious Fraction	0	0	0	0	0	0.395943	0.21561	0.444017	0	0.245723	0.335071	0	0	0	0	0
UnSwept Depression Storage (inches)	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
UnSwept Imperv. Runoff Coefficient	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
UnSwept Scale Factor for Particle Loads	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Swept Impervious Fraction	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Swept Depression Storage (inches)	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Swept Imperv. Runoff Coefficient	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Swept Scale Factor for Particle Loads	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Sweeping Frequency	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Sweeping Efficiency	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Sweeping Start Date (MMDD)	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101	101
Sweeping Stop Date (MMDD)	1231	1231	1231	1231	1231	1231	1231	1231	1231	1231	1231	1231	1231	1231	1231	1231

Device Data																
Device Name	BASIN 100I	BASIN 110/220	BASIN 100	BASIN 200I	BASIN 200	BASIN 300I	BASIN 600	BASIN 300	BASIN 400I	BASIN 400	BASIN 500	OUT				
Device Type	INF_BASIN	POND	POND	INF_BASIN	POND	INF_BASIN	POND	POND	INF_BASIN	POND	POND	PIPE				
Infiltration Outlet																
Normal Outlet			BASIN 100I		BASIN 200I			BASIN 300I		BASIN 400I	BASIN 600					
Spillway Outlet			BASIN 110/220		BASIN 110/220			BASIN 600		BASIN 600	BASIN 600					
Particle Removal Scale Factor	1	1	1	1	1	1	1	1	1	1	1					
Bottom Elevation (ft)	749	749	746	749	746	752	751	747	752	746	762					
Bottom Area (acres)	0.123	0.39	0.06	0.05	0.02	0.22	0.34	0.11	0.51	0.07	0.11					
Permanent Pool Area (acres)		0.39	0.14		0.05		0	0.366		0.33	0.11					
Permanent Pool Volume (ac-ft)		0.01	0.22		0.05		0	0.95		1.23	0.01					
Perm Pool Infilt Rate (in/hr)		0	0		0		0.8	0		0	0.8					
Flood Pool Area (acres)	0.26	0.69	0.61	0.16	0.15	0.31	3.2	0.55	0.65	0.56	0.79					
Flood Pool Volume (ac-ft)	0.59	1.21	0.69	0.16	0.55	0.58	6.68	0.92	1.02	1.36	1.23					
Flood Pool Infilt Rate (in/hr)	0.8	0.8	0	0.8	0	0.8	0.8	0	0.8	0	0.8					
Infilt Basin Void Fraction (%)	100			100		100			100							
Detention Pond Outlet Parameters																
Outlet Type		ORIFICE	ORIFICE		ORIFICE		ORIFICE	ORIFICE		ORIFICE	ORIFICE					
Outlet Orifice Diameter (in)		24	15		15		36	15		18	15					
Orifice Discharge Coef		0.5	0.6		0.6		0.6	0.6		0.6	0.6					
Outlet Weir Length (ft)																
Weir Discharge Coef																
Perforated Riser Height (ft)																
Number of Holes in Riser																
Holes Diameter																
Flood Pool Drain Time (hrs)																
Swale Parameters																
Length of Flow Path (ft)																
Slope of Flow Path %																
Bottom Width (ft)																
Side Slope (ft-v/ft-h)																
Maximum Depth of Flow (ft)																
Mannings n Constant																
Hydraulic Model																
Pipe, Splitter, Aquifer Parameter																
Hydraulic Res. Time (hrs)												0				

Particle Data					
Particle File	nurp50.p8p				
Particle Class	P0%	P10%	P30%	P50%	P80%
Filtration Efficiency (%)	90	100	100	100	100
Settling Velocity (ft/hr)	0	0.03	0.3	1.5	15
First Order Decay Rate (1/day)	0	0	0	0	0
2nd Order Decay (1/day-ppm)	0	0	0	0	0
Impervious Runoff Conc (ppm)	1	0	0	0	0
Pervious Runoff Conc (ppm)	1	100	100	100	200
Pervious Conc Exponent	0	1	1	1	1
Accum. Rate (lbs-ac-day)	0	1.75	1.75	1.75	3.5
Particle Removal Rate (1/day)	0	0.25	0.25	0.25	0.25
Washoff Coefficient	0	20	20	20	20
Washoff Exponent	0	2	2	2	2
Sweeper Efficiency	0	0	0	5	15

Water Quality Component Data										
Component Name	TSS	TP	TKN	CU	PB	ZN	HC			
Water Quality Criteria (ppm)										
Level 1	5	0.025	2	2	0.02	5	0.1			
Level 2	10	0.05	1	0.0048	0.014	0.0362	0.5			
Level 3	20	0.1	0.5	0.02	0.15	0.38	1			
Content Scale Factor	1	1	1	1	1	1	1			
Particle Composition (mg/kg)										
P0%	0	99000	600000	13600	2000	64000	250000			
P10%	1000000	3850	15000	340	180	1600	22500			
P30%	1000000	3850	15000	340	180	1600	22500			
P50%	1000000	3850	15000	340	180	1600	22500			
P80%	1000000	0	0	340	180	0	22500			

P8 Urban Catchment Model, Version 3.5

Case	00-123105 Proposed.p8c	FirstDate	01/01/71	Run Date	01/23/26
Title	Startup Case	LastDate	12/31/00	Precip(in)	870.4
PrecFile	MSP_19700101-20001231.pcp	Events	2196	Rain(in)	756.51
PartFile	nurp50.p8p	TotalHrs	261888	Snow(in)	113.84
				TotalYrs	29.88

Mass Balances by Device and Variable

Device: OVERALL Type: NONE Variable: P0%

Mass Balance Term	Flow_acft	Flow_cfs	Load_lbs	Load_lbs/yr	Conc_ppm
01 watershed inflows	1532.08	0.07	4164.2	139.4	1.00
03 infiltrate	1401.21	0.06	3801.5	127.2	1.00
04 exfiltrate	1401.21	0.06	380.1	12.7	0.10
05 filtered	0.00	0.00	3421.3	114.5	
06 normal outlet	71.81	0.00	195.0	6.5	1.00
07 spillway outlet	59.13	0.00	160.8	5.4	1.00
09 total inflow	1532.08	0.07	4164.2	139.4	1.00
10 surface outflow	130.94	0.01	355.9	11.9	1.00
11 groundw outflow	1401.21	0.06	380.1	12.7	0.10
12 total outflow	1532.15	0.07	736.0	24.6	0.18
13 total trapped	0.00	0.00	3421.3	114.5	
14 storage increase	0.00	0.00	6.7	0.2	
15 mass balance check	-0.07	0.00	0.1	0.0	
Reduction (%)	0.00	0.00	82.2	82.2	

Device: OVERALL Type: NONE Variable: P10%

Mass Balance Term	Flow_acft	Flow_cfs	Load_lbs	Load_lbs/yr	Conc_ppm
01 watershed inflows	1532.08	0.07	80743.4	2702.7	19.39
03 infiltrate	1401.21	0.06	20491.8	685.9	5.38
04 exfiltrate	1401.21	0.06	0.0	0.0	0.00
05 filtered	0.00	0.00	20491.8	685.9	
06 normal outlet	71.81	0.00	1747.6	58.5	8.95
07 spillway outlet	59.13	0.00	1617.8	54.2	10.07
08 sedimen + decay	0.00	0.00	56884.5	1904.1	
09 total inflow	1532.08	0.07	80743.4	2702.7	19.39
10 surface outflow	130.94	0.01	3365.4	112.6	9.46
11 groundw outflow	1401.21	0.06	0.0	0.0	0.00
12 total outflow	1532.15	0.07	3365.4	112.6	0.81
13 total trapped	0.00	0.00	77376.3	2590.0	
14 storage increase	0.00	0.00	0.0	0.0	
15 mass balance check	-0.07	0.00	1.6	0.1	
Reduction (%)	0.00	0.00	95.8	95.8	

Device: OVERALL Type: NONE Variable: P30%

Mass Balance Term	Flow_acft	Flow_cfs	Load_lbs	Load_lbs/yr	Conc_ppm
01 watershed inflows	1532.08	0.07	80743.4	2702.7	19.39
03 infiltrate	1401.21	0.06	3217.0	107.7	0.84
04 exfiltrate	1401.21	0.06	0.0	0.0	0.00
05 filtered	0.00	0.00	3217.0	107.7	
06 normal outlet	71.81	0.00	1454.5	48.7	7.45
07 spillway outlet	59.13	0.00	914.1	30.6	5.69
08 sedimen + decay	0.00	0.00	75157.7	2515.7	
09 total inflow	1532.08	0.07	80743.4	2702.7	19.39
10 surface outflow	130.94	0.01	2368.6	79.3	6.66
11 groundw outflow	1401.21	0.06	0.0	0.0	0.00
12 total outflow	1532.15	0.07	2368.6	79.3	0.57
13 total trapped	0.00	0.00	78374.7	2623.4	
14 storage increase	0.00	0.00	0.0	0.0	
15 mass balance check	-0.07	0.00	0.1	0.0	
Reduction (%)	0.00	0.00	97.1	97.1	

Device: OVERALL Type: NONE Variable: P50%

Mass Balance Term	Flow_acft	Flow_cfs	Load_lbs	Load_lbs/yr	Conc_ppm
01 watershed inflows	1532.08	0.07	80743.4	2702.7	19.39
03 infiltrate	1401.21	0.06	416.1	13.9	0.11
04 exfiltrate	1401.21	0.06	0.0	0.0	0.00
05 filtered	0.00	0.00	416.1	13.9	
06 normal outlet	71.81	0.00	1105.3	37.0	5.66
07 spillway outlet	59.13	0.00	324.0	10.8	2.02
08 sedimen + decay	0.00	0.00	78898.0	2640.9	
09 total inflow	1532.08	0.07	80743.4	2702.7	19.39
10 surface outflow	130.94	0.01	1429.3	47.8	4.02
11 groundw outflow	1401.21	0.06	0.0	0.0	0.00
12 total outflow	1532.15	0.07	1429.3	47.8	0.34
13 total trapped	0.00	0.00	79314.1	2654.8	
14 storage increase	0.00	0.00	0.0	0.0	
15 mass balance check	-0.07	0.00	0.0	0.0	
Reduction (%)	0.00	0.00	98.2	98.2	

Device: OVERALL Type: NONE Variable: P80%

Mass Balance Term	Flow_acft	Flow_cfs	Load_lbs	Load_lbs/yr	Conc_ppm
01 watershed inflows	1532.08	0.07	161486.8	5405.3	38.78
03 infiltrate	1401.21	0.06	19.4	0.6	0.01
04 exfiltrate	1401.21	0.06	0.0	0.0	0.00
05 filtered	0.00	0.00	19.4	0.6	
06 normal outlet	71.81	0.00	1703.7	57.0	8.73
07 spillway outlet	59.13	0.00	24.8	0.8	0.15
08 sedimen + decay	0.00	0.00	159738.8	5346.8	

09 total inflow	1532.08	0.07	161486.8	5405.3	38.78
10 surface outflow	130.94	0.01	1728.6	57.9	4.86
11 groundw outflow	1401.21	0.06	0.0	0.0	0.00
12 total outflow	1532.15	0.07	1728.6	57.9	0.42
13 total trapped	0.00	0.00	159758.2	5347.5	
14 storage increase	0.00	0.00	0.0	0.0	
15 mass balance check	-0.07	0.00	0.0	0.0	
Reduction (%)	0.00	0.00	98.9	98.9	

Device: OVERALL Type: NONE Variable: TSS

Mass Balance Term	Flow_acft	Flow_cfs	Load_lbs	Load_lbs/yr	Conc_ppm
01 watershed inflows	1532.08	0.07	403717.0	13513.3	96.95
03 infiltrate	1401.21	0.06	24144.3	808.2	6.34
04 exfiltrate	1401.21	0.06	0.0	0.0	0.00
05 filtered	0.00	0.00	24144.3	808.2	
06 normal outlet	71.81	0.00	6011.2	201.2	30.80
07 spillway outlet	59.13	0.00	2880.7	96.4	17.92
08 sedimen + decay	0.00	0.00	370679.0	12407.5	
09 total inflow	1532.08	0.07	403717.0	13513.3	96.95
10 surface outflow	130.94	0.01	8892.0	297.6	24.99
11 groundw outflow	1401.21	0.06	0.0	0.0	0.00
12 total outflow	1532.15	0.07	8892.0	297.6	2.14
13 total trapped	0.00	0.00	394823.3	13215.7	
14 storage increase	0.00	0.00	0.0	0.0	
15 mass balance check	-0.07	0.00	1.7	0.1	
Reduction (%)	0.00	0.00	97.8	97.8	

Device: OVERALL Type: NONE Variable: TP

Mass Balance Term	Flow_acft	Flow_cfs	Load_lbs	Load_lbs/yr	Conc_ppm
01 watershed inflows	1532.08	0.07	1344.8	45.0	0.32
03 infiltrate	1401.21	0.06	469.2	15.7	0.12
04 exfiltrate	1401.21	0.06	37.6	1.3	0.01
05 filtered	0.00	0.00	431.6	14.4	
06 normal outlet	71.81	0.00	35.9	1.2	0.18
07 spillway outlet	59.13	0.00	26.9	0.9	0.17
08 sedimen + decay	0.00	0.00	812.1	27.2	
09 total inflow	1532.08	0.07	1344.8	45.0	0.32
10 surface outflow	130.94	0.01	62.8	2.1	0.18
11 groundw outflow	1401.21	0.06	37.6	1.3	0.01
12 total outflow	1532.15	0.07	100.4	3.4	0.02
13 total trapped	0.00	0.00	1243.7	41.6	
14 storage increase	0.00	0.00	0.7	0.0	
15 mass balance check	-0.07	0.00	0.0	0.0	
Reduction (%)	0.00	0.00	92.5	92.5	

Device: OVERALL Type: NONE Variable: TKN

Mass Balance Term	Flow_acft	Flow_cfs	Load_lbs	Load_lbs/yr	Conc_ppm
01 watershed inflows	1532.08	0.07	6132.0	205.3	1.47
03 infiltrate	1401.21	0.06	2642.7	88.5	0.69
04 exfiltrate	1401.21	0.06	228.1	7.6	0.06
05 filtered	0.00	0.00	2414.7	80.8	
06 normal outlet	71.81	0.00	181.6	6.1	0.93
07 spillway outlet	59.13	0.00	139.3	4.7	0.87
08 sedimen + decay	0.00	0.00	3164.1	105.9	
09 total inflow	1532.08	0.07	6132.0	205.3	1.47
10 surface outflow	130.94	0.01	321.0	10.7	0.90
11 groundw outflow	1401.21	0.06	228.1	7.6	0.06
12 total outflow	1532.15	0.07	549.1	18.4	0.13
13 total trapped	0.00	0.00	5578.8	186.7	
14 storage increase	0.00	0.00	4.0	0.1	
15 mass balance check	-0.07	0.00	0.1	0.0	
Reduction (%)	0.00	0.00	91.0	91.0	

Device: OVERALL Type: NONE Variable: CU

Mass Balance Term	Flow_acft	Flow_cfs	Load_lbs	Load_lbs/yr	Conc_ppm
01 watershed inflows	1532.08	0.07	193.9	6.5	0.05
03 infiltrate	1401.21	0.06	59.9	2.0	0.02
04 exfiltrate	1401.21	0.06	5.2	0.2	0.00
05 filtered	0.00	0.00	54.7	1.8	
06 normal outlet	71.81	0.00	4.7	0.2	0.02
07 spillway outlet	59.13	0.00	3.2	0.1	0.02
08 sedimen + decay	0.00	0.00	126.0	4.2	
09 total inflow	1532.08	0.07	193.9	6.5	0.05
10 surface outflow	130.94	0.01	7.9	0.3	0.02
11 groundw outflow	1401.21	0.06	5.2	0.2	0.00
12 total outflow	1532.15	0.07	13.0	0.4	0.00
13 total trapped	0.00	0.00	180.8	6.1	
14 storage increase	0.00	0.00	0.1	0.0	
15 mass balance check	-0.07	0.00	0.0	0.0	
Reduction (%)	0.00	0.00	93.2	93.2	

Device: OVERALL Type: NONE Variable: PB

Mass Balance Term	Flow_acft	Flow_cfs	Load_lbs	Load_lbs/yr	Conc_ppm
01 watershed inflows	1532.08	0.07	81.0	2.7	0.02
03 infiltrate	1401.21	0.06	11.9	0.4	0.00
04 exfiltrate	1401.21	0.06	0.8	0.0	0.00
05 filtered	0.00	0.00	11.2	0.4	
06 normal outlet	71.81	0.00	1.5	0.0	0.01
07 spillway outlet	59.13	0.00	0.8	0.0	0.01

08 sedimen + decay	0.00	0.00	66.7	2.2	
09 total inflow	1532.08	0.07	81.0	2.7	0.02
10 surface outflow	130.94	0.01	2.3	0.1	0.01
11 groundw outflow	1401.21	0.06	0.8	0.0	0.00
12 total outflow	1532.15	0.07	3.1	0.1	0.00
13 total trapped	0.00	0.00	77.9	2.6	
14 storage increase	0.00	0.00	0.0	0.0	
15 mass balance check	-0.07	0.00	0.0	0.0	
Reduction (%)	0.00	0.00	96.2	96.2	

Device: OVERALL Type: NONE Variable: ZN

Mass Balance Term	Flow_acft	Flow_cfs	Load_lbs	Load_lbs/yr	Conc_ppm
01 watershed inflows	1532.08	0.07	654.1	21.9	0.16
03 infiltrate	1401.21	0.06	281.9	9.4	0.07
04 exfiltrate	1401.21	0.06	24.3	0.8	0.01
05 filtered	0.00	0.00	257.6	8.6	
06 normal outlet	71.81	0.00	19.4	0.6	0.10
07 spillway outlet	59.13	0.00	14.9	0.5	0.09
08 sedimen + decay	0.00	0.00	337.5	11.3	
09 total inflow	1532.08	0.07	654.1	21.9	0.16
10 surface outflow	130.94	0.01	34.2	1.1	0.10
11 groundw outflow	1401.21	0.06	24.3	0.8	0.01
12 total outflow	1532.15	0.07	58.6	2.0	0.01
13 total trapped	0.00	0.00	595.1	19.9	
14 storage increase	0.00	0.00	0.4	0.0	
15 mass balance check	-0.07	0.00	0.0	0.0	
Reduction (%)	0.00	0.00	91.0	91.0	

Device: OVERALL Type: NONE Variable: HC

Mass Balance Term	Flow_acft	Flow_cfs	Load_lbs	Load_lbs/yr	Conc_ppm
01 watershed inflows	1532.08	0.07	10124.7	338.9	2.43
03 infiltrate	1401.21	0.06	1493.6	50.0	0.39
04 exfiltrate	1401.21	0.06	95.0	3.2	0.02
05 filtered	0.00	0.00	1398.6	46.8	
06 normal outlet	71.81	0.00	184.0	6.2	0.94
07 spillway outlet	59.13	0.00	105.0	3.5	0.65
08 sedimen + decay	0.00	0.00	8340.3	279.2	
09 total inflow	1532.08	0.07	10124.7	338.9	2.43
10 surface outflow	130.94	0.01	289.0	9.7	0.81
11 groundw outflow	1401.21	0.06	95.0	3.2	0.02
12 total outflow	1532.15	0.07	384.1	12.9	0.09
13 total trapped	0.00	0.00	9738.9	326.0	
14 storage increase	0.00	0.00	1.7	0.1	
15 mass balance check	-0.07	0.00	0.1	0.0	
Reduction (%)	0.00	0.00	96.2	96.2	

Appendix D: NRCS Soils Report & Geotechnical Reports

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Washington County, Minnesota

Talcott Glen



January 12, 2026

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Washington County, Minnesota
Survey Area Data: Version 21, Sep 10, 2025

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 1, 2024—Jul 1, 2024

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
7B	Hubbard loamy sand, 1 to 6 percent slopes	9.1	12.5%
7D	Hubbard loamy sand, 12 to 18 percent slopes	12.8	17.5%
8	Sparta loamy sand, 0 to 2 percent slopes	2.5	3.5%
100B	Copaston loam, 0 to 6 percent slopes	7.8	10.7%
151	Burkhardt sandy loam, 0 to 3 percent slopes	6.0	8.2%
151B	Burkhardt sandy loam, 3 to 9 percent slopes	10.2	14.0%
298	Richwood silt loam, 0 to 2 percent slopes	6.8	9.3%
327	Dickman sandy loam, 0 to 2 percent slopes	10.4	14.3%
529	Ripon silt loam, 1 to 2 percent slopes	7.4	10.2%
Totals for Area of Interest		**73.0**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They

generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Washington County, Minnesota

7B—Hubbard loamy sand, 1 to 6 percent slopes

Map Unit Setting

National map unit symbol: 1t932
Elevation: 700 to 1,500 feet
Mean annual precipitation: 28 to 36 inches
Mean annual air temperature: 39 to 48 degrees F
Frost-free period: 120 to 170 days
Farmland classification: Not prime farmland

Map Unit Composition

Hubbard and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hubbard

Setting

Landform: Outwash plains
Landform position (two-dimensional): Backslope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Outwash

Typical profile

Ap,AB - 0 to 20 inches: loamy sand
Bw - 20 to 35 inches: sand
C - 35 to 60 inches: sand

Properties and qualities

Slope: 1 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Available water supply, 0 to 60 inches: Low (about 4.0 inches)

Interpretive groups

Land capability classification (irrigated): 4s
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: A
Ecological site: F090AY019WI - Dry Sandy Upland
Forage suitability group: Sandy (G090AN022MN)
Other vegetative classification: Sandy (G090AN022MN)
Hydric soil rating: No

Minor Components

Dickman

Percent of map unit: 5 percent

Hydric soil rating: No

Sparta

Percent of map unit: 5 percent
Hydric soil rating: No

7D—Hubbard loamy sand, 12 to 18 percent slopes

Map Unit Setting

National map unit symbol: 1t934
Elevation: 700 to 1,500 feet
Mean annual precipitation: 28 to 36 inches
Mean annual air temperature: 39 to 48 degrees F
Frost-free period: 120 to 170 days
Farmland classification: Not prime farmland

Map Unit Composition

Hubbard and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hubbard

Setting

Landform: Outwash plains
Landform position (two-dimensional): Shoulder
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Outwash

Typical profile

Ap,AB - 0 to 20 inches: loamy sand
Bw - 20 to 35 inches: sand
C - 35 to 60 inches: sand

Properties and qualities

Slope: 12 to 18 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Available water supply, 0 to 60 inches: Low (about 4.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: A
Ecological site: F090AY019WI - Dry Sandy Upland

Forage suitability group: Sandy (G090AN022MN)
Other vegetative classification: Sandy (G090AN022MN)
Hydric soil rating: No

8—Sparta loamy sand, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 1t935
Elevation: 700 to 1,200 feet
Mean annual precipitation: 28 to 36 inches
Mean annual air temperature: 39 to 48 degrees F
Frost-free period: 120 to 170 days
Farmland classification: Not prime farmland

Map Unit Composition

Sparta and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Sparta

Setting

Landform: Outwash terraces
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Sandy glaciofluvial deposits

Typical profile

Ap,AB - 0 to 16 inches: loamy sand
Bw - 16 to 28 inches: loamy sand
C - 28 to 60 inches: sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 5.5 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: A
Ecological site: F090AY019WI - Dry Sandy Upland
Forage suitability group: Sandy (G090AN022MN)
Other vegetative classification: Sandy (G090AN022MN)
Hydric soil rating: No

Minor Components

Dickman
Percent of map unit: 4 percent
Hydric soil rating: No

Hubbard
Percent of map unit: 3 percent
Hydric soil rating: No

Sparta, bedrock substratum
Percent of map unit: 3 percent
Hydric soil rating: No

100B—Copaston loam, 0 to 6 percent slopes

Map Unit Setting
National map unit symbol: 1t93h
Elevation: 700 to 1,200 feet
Mean annual precipitation: 28 to 36 inches
Mean annual air temperature: 39 to 48 degrees F
Frost-free period: 120 to 170 days
Farmland classification: Farmland of statewide importance

Map Unit Composition
Copaston and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Copaston

Setting
Landform: Terraces, hills
Landform position (two-dimensional): Backslope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy sediment over bedrock

Typical profile
A - 0 to 8 inches: loam
Bw1 - 8 to 14 inches: sandy loam
Bw2 - 14 to 18 inches: gravelly sandy loam
2R - 18 to 22 inches: unweathered bedrock

Properties and qualities
Slope: 0 to 6 percent
Depth to restrictive feature: 12 to 20 inches to lithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None

Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Available water supply, 0 to 60 inches: Low (about 3.2 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: D
Ecological site: F090AY014WI - Loamy Bedrock Upland
Forage suitability group: Rocky (G090AN019MN)
Other vegetative classification: Rocky (G090AN019MN)
Hydric soil rating: No

151—Burkhardt sandy loam, 0 to 3 percent slopes

Map Unit Setting
National map unit symbol: 1t93r
Elevation: 700 to 1,900 feet
Mean annual precipitation: 28 to 36 inches
Mean annual air temperature: 39 to 48 degrees F
Frost-free period: 120 to 170 days
Farmland classification: Farmland of statewide importance

Map Unit Composition
Burkhardt and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Burkhardt

Setting
Landform: Outwash terraces
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy glaciofluvial deposits over outwash

Typical profile
A1,A2 - 0 to 13 inches: sandy loam
AB - 13 to 16 inches: sandy loam
2BC,2C - 16 to 60 inches: gravelly coarse sand

Properties and qualities
Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 3.5 inches)

Interpretive groups

Land capability classification (irrigated): 2s
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: A
Ecological site: F090AY019WI - Dry Sandy Upland
Forage suitability group: Sandy (G090AN022MN)
Other vegetative classification: Sandy (G090AN022MN)
Hydric soil rating: No

Minor Components

Dickman

Percent of map unit: 4 percent
Hydric soil rating: No

Hubbard

Percent of map unit: 3 percent
Hydric soil rating: No

Sparta

Percent of map unit: 3 percent
Hydric soil rating: No

151B—Burkhardt sandy loam, 3 to 9 percent slopes

Map Unit Setting

National map unit symbol: 1t93s
Elevation: 700 to 1,900 feet
Mean annual precipitation: 28 to 36 inches
Mean annual air temperature: 39 to 48 degrees F
Frost-free period: 120 to 170 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Burkhardt and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Burkhardt

Setting

Landform: Outwash terraces
Landform position (two-dimensional): Backslope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy glaciofluvial deposits over outwash

Typical profile

A1,A2 - 0 to 13 inches: sandy loam
AB - 13 to 16 inches: sandy loam
2BC,2C - 16 to 60 inches: gravelly coarse sand

Properties and qualities

Slope: 3 to 9 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 3.5 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: A
Ecological site: F090AY019WI - Dry Sandy Upland
Forage suitability group: Sandy (G090AN022MN)
Other vegetative classification: Sandy (G090AN022MN)
Hydric soil rating: No

Minor Components

Dickman

Percent of map unit: 4 percent
Hydric soil rating: No

Hubbard

Percent of map unit: 3 percent
Hydric soil rating: No

Sparta

Percent of map unit: 3 percent
Hydric soil rating: No

298—Richwood silt loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 1t94p
Elevation: 700 to 1,950 feet
Mean annual precipitation: 28 to 36 inches
Mean annual air temperature: 39 to 48 degrees F
Frost-free period: 120 to 170 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Richwood and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Richwood

Setting

Landform: Outwash plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loess over outwash

Typical profile

Ap,A - 0 to 19 inches: silt loam
Bt - 19 to 49 inches: silt loam
2C - 49 to 60 inches: sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: High (about 11.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 1
Hydrologic Soil Group: B
Ecological site: F090AY016WI - Loamy Upland
Forage suitability group: Sloping Upland, Neutral (G090AN002MN)
Other vegetative classification: Sloping Upland, Neutral (G090AN002MN)
Hydric soil rating: No

Minor Components

Lindstrom

Percent of map unit: 10 percent
Hydric soil rating: No

327—Dickman sandy loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 1t94w
Elevation: 700 to 1,600 feet
Mean annual precipitation: 28 to 36 inches
Mean annual air temperature: 39 to 48 degrees F
Frost-free period: 120 to 170 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Dickman and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Dickman

Setting

Landform: Outwash terraces
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Outwash

Typical profile

Ap,A - 0 to 14 inches: sandy loam
Bw - 14 to 17 inches: sandy loam
2BC,2C - 17 to 60 inches: sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Available water supply, 0 to 60 inches: Low (about 4.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: A
Ecological site: F090AY019WI - Dry Sandy Upland
Forage suitability group: Sandy (G090AN022MN)
Other vegetative classification: Sandy (G090AN022MN)
Hydric soil rating: No

Minor Components

Hubbard

Percent of map unit: 5 percent
Hydric soil rating: No

Sparta

Percent of map unit: 5 percent
Hydric soil rating: No

529—Ripon silt loam, 1 to 2 percent slopes

Map Unit Setting

National map unit symbol: 1t962
Elevation: 700 to 1,950 feet
Mean annual precipitation: 28 to 36 inches
Mean annual air temperature: 39 to 48 degrees F
Frost-free period: 120 to 170 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Ripon and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Ripon

Setting

Landform: Terraces, hills
Landform position (two-dimensional): Summit
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Loess over limestone bedrock

Typical profile

A - 0 to 13 inches: silt loam
Bt - 13 to 26 inches: silt loam
2R - 26 to 30 inches: unweathered bedrock

Properties and qualities

Slope: 1 to 2 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to high (0.00 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Available water supply, 0 to 60 inches: Low (about 5.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2s
Hydrologic Soil Group: C
Ecological site: F090AY014WI - Loamy Bedrock Upland
Forage suitability group: Rocky (G090AN019MN)
Other vegetative classification: Rocky (G090AN019MN)
Hydric soil rating: No

Minor Components

Channahon

Percent of map unit: 4 percent
Hydric soil rating: No

Whalan

Percent of map unit: 3 percent
Hydric soil rating: No

Waukegan

Percent of map unit: 3 percent
Hydric soil rating: No

Soil Information for All Uses

Suitabilities and Limitations for Use

The Suitabilities and Limitations for Use section includes various soil interpretations displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each interpretation.

Land Management

Land management interpretations are tools designed to guide the user in evaluating existing conditions in planning and predicting the soil response to various land management practices, for a variety of land uses, including cropland, forestland, hayland, pastureland, horticulture, and rangeland. Example interpretations include suitability for a variety of irrigation practices, log landings, haul roads and major skid trails, equipment operability, site preparation, suitability for hand and mechanical planting, potential erosion hazard associated with various practices, and ratings for fencing and waterline installation.

Erosion Hazard (Off-Road, Off-Trail) (Talcott Glen)

The ratings in this interpretation indicate the hazard of soil loss from off-road and off-trail areas after disturbance activities that expose the soil surface. The ratings are based on slope, soil erosion factor K, and an index of rainfall erosivity (R). The soil loss is caused by sheet or rill erosion in off-road or off-trail areas where 50 to 75 percent of the surface has been exposed by logging, grazing, mining, or other kinds of disturbance.

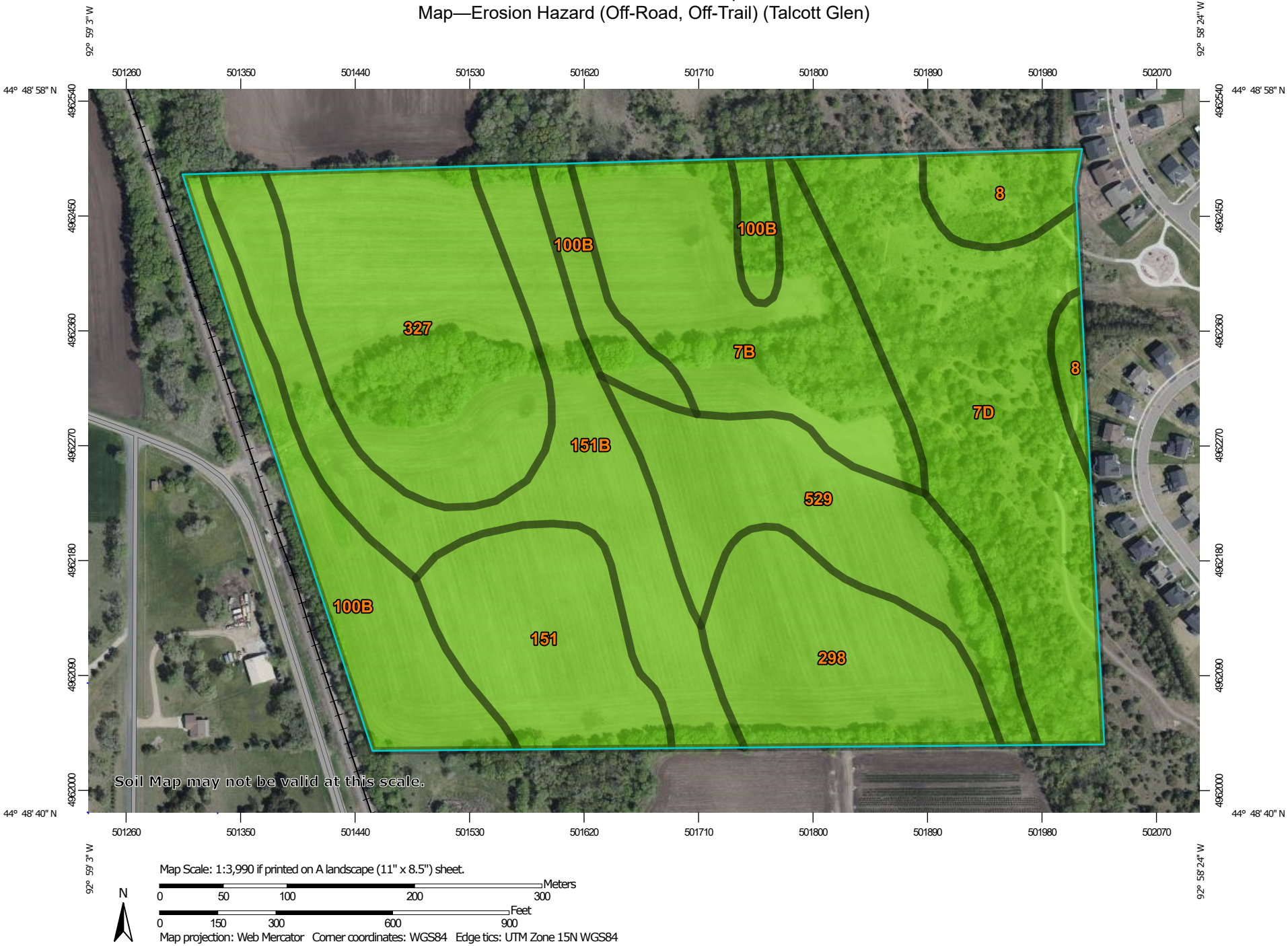
The ratings are both verbal and numerical. The hazard is described as "slight," "moderate," "severe," or "very severe." A rating of "slight" indicates that erosion is unlikely under ordinary climatic conditions; "moderate" indicates that some erosion is likely and that erosion-control measures may be needed; "severe" indicates that erosion is very likely and that erosion-control measures, including revegetation of bare areas, are advised; and "very severe" indicates that significant erosion is expected, loss of soil productivity and off-site damage are likely, and erosion-control measures are costly and generally impractical.

Numerical ratings indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the specified aspect of forestland management (1.00) and the point at which the soil feature is not a limitation (0.00).

The map unit components listed for each map unit in the accompanying Summary by Map Unit table in Web Soil Survey or the Aggregation Report in Soil Data Viewer are determined by the aggregation method chosen. An aggregated rating class is shown for each map unit. The components listed for each map unit are only those that have the same rating class as listed for the map unit. The percent composition of each component in a particular map unit is presented to help the user better understand the percentage of each map unit that has the rating presented.

Other components with different ratings may be present in each map unit. The ratings for all components, regardless of the map unit aggregated rating, can be viewed by generating the equivalent report from the Soil Reports tab in Web Soil Survey or from the Soil Data Mart site. Onsite investigation may be needed to validate these interpretations and to confirm the identity of the soil on a given site.

Custom Soil Resource Report
Map—Erosion Hazard (Off-Road, Off-Trail) (Talcott Glen)



Map Scale: 1:3,990 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 50 100 200 300

Feet
0 150 300 600 900

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 15N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- Very severe
- Severe
- Moderate
- Slight
- Not rated or not available

Soil Rating Lines
- Very severe
- Severe
- Moderate
- Slight
- Not rated or not available

Soil Rating Points
- Very severe
- Severe
- Moderate
- Slight
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Washington County, Minnesota
Survey Area Data: Version 21, Sep 10, 2025

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 1, 2024—Jul 1, 2024

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Tables—Erosion Hazard (Off-Road, Off-Trail) (Talcott Glen)

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
7B	Hubbard loamy sand, 1 to 6 percent slopes	Slight	Hubbard (90%)		9.1	12.5%
7D	Hubbard loamy sand, 12 to 18 percent slopes	Slight	Hubbard (100%)		12.8	17.5%
8	Sparta loamy sand, 0 to 2 percent slopes	Slight	Sparta (90%)		2.5	3.5%
100B	Copaston loam, 0 to 6 percent slopes	Slight	Copaston (100%)		7.8	10.7%
151	Burkhardt sandy loam, 0 to 3 percent slopes	Slight	Burkhardt (90%)		6.0	8.2%
151B	Burkhardt sandy loam, 3 to 9 percent slopes	Slight	Burkhardt (90%)		10.2	14.0%
298	Richwood silt loam, 0 to 2 percent slopes	Slight	Richwood (90%)		6.8	9.3%
327	Dickman sandy loam, 0 to 2 percent slopes	Slight	Dickman (90%)		10.4	14.3%
529	Ripon silt loam, 1 to 2 percent slopes	Slight	Ripon (90%)		7.4	10.2%
Totals for Area of Interest					**73.0**	**100.0%**

Rating	Acres in AOI	Percent of AOI
Slight	73.0	100.0%
Totals for Area of Interest	**73.0**	**100.0%**

Rating Options—Erosion Hazard (Off-Road, Off-Trail) (Talcott Glen)

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Soil Reports

The Soil Reports section includes various formatted tabular and narrative reports (tables) containing data for each selected soil map unit and each component of each unit. No aggregation of data has occurred as is done in reports in the Soil Properties and Qualities and Suitabilities and Limitations sections.

The reports contain soil interpretive information as well as basic soil properties and qualities. A description of each report (table) is included.

Soil Erosion

This folder contains a collection of tabular reports that present soil erosion factors and groupings. The reports (tables) include all selected map units and components for each map unit. Soil erosion factors are soil properties and interpretations used in evaluating the soil for potential erosion. Example soil erosion factors can include K factor for the whole soil or on a rock free basis, T factor, wind erodibility group and wind erodibility index.

RUSLE2 Related Attributes (Talcott Glen)

This report summarizes those soil attributes used by the Revised Universal Soil Loss Equation Version 2 (RUSLE2) for the map units in the selected area. The report includes the map unit symbol, the component name, and the percent of the component in the map unit. Soil property data for each map unit component include the hydrologic soil group, erosion factor Kf for the surface horizon, erosion factor T, and the representative percentage of sand, silt, and clay in the mineral surface horizon. Missing surface data may indicate the presence of an organic layer.

Report—RUSLE2 Related Attributes (Talcott Glen)

Soil properties and interpretations for erosion runoff calculations. The surface mineral horizon properties are displayed or the first mineral horizon below an organic surface horizon. Organic horizons are not displayed.

RUSLE2 Related Attributes–Washington County, Minnesota

Map symbol and soil name	Pct. of map unit	Slope length (ft)	Hydrologic group	Kf	T factor	Representative value		
						% Sand	% Silt	% Clay
7B—Hubbard loamy sand, 1 to 6 percent slopes								
Hubbard	90	131	A	.02	5	83.8	9.2	7.0
7D—Hubbard loamy sand, 12 to 18 percent slopes								
Hubbard	100	121	A	.02	5	83.8	9.2	7.0

RUSLE2 Related Attributes–Washington County, Minnesota								
Map symbol and soil name	Pct. of map unit	Slope length (ft)	Hydrologic group	Kf	T factor	Representative value		
						% Sand	% Silt	% Clay
8—Sparta loamy sand, 0 to 2 percent slopes								
Sparta	90	131	A	.17	5	84.3	9.2	6.5
100B—Copaston loam, 0 to 6 percent slopes								
Copaston	100	112	D	.28	1	43.0	38.5	18.5
151—Burkhardt sandy loam, 0 to 3 percent slopes								
Burkhardt	90	177	A	.24	2	67.4	23.6	9.0
151B—Burkhardt sandy loam, 3 to 9 percent slopes								
Burkhardt	90	131	A	.24	2	67.4	23.6	9.0
298—Richwood silt loam, 0 to 2 percent slopes								
Richwood	90	102	B	.37	4	11.7	69.8	18.5
327—Dickman sandy loam, 0 to 2 percent slopes								
Dickman	90	131	A	.20	2	68.3	19.7	12.0
529—Ripon silt loam, 1 to 2 percent slopes								
Ripon	90	121	C	.43	2	14.2	71.8	14.0

References

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374

United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

BRAUN INTERTEC

the science you build on

Geotechnical Evaluation Report

Nesvig Property

East of Grey Cloud Trail South & Geneva Avenue South
Cottage Grove, Minnesota

Prepared for

Lennar Corporation

Professional Certification:
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

Ryan M. Braun, PE
Project Engineer
License Number: 60238
December 16, 2025

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Braun Intertec Corporation

Project B2508001

December 16, 2025 Project B2508001

Jacob Champeau
Lennar Corporation
16355 36th Avenue North, Suite #100
Plymouth, MN 55446

Re: Geotechnical Evaluation
Nesvig Property
East of Grey Cloud Trail South & Geneva Avenue South
Cottage Grove, Minnesota

Dear Mr. Champeau:

We are pleased to present this geotechnical evaluation report for the new residential development located on the Nesvig Property. Please read the entire report for the results of the soil borings and our recommendations.

Thank you for making Braun Intertec Corporation (Braun Intertec) your geotechnical consultant for this project. If you have questions about this report, or if there are other services that we can provide in support of our work to date, please contact Ryan Braun at 952.738.2171 (rbraun@braunintertec.com) or Joe Westphal at 952.995.2238 (jwestphal@braunintertec.com).

Sincerely,
Braun Intertec Corporation

Ryan M. Braun, PE
Project Engineer

Joseph L. Westphal, PE
Director, Senior Engineer

c: Mr. Steve Troskey, Lennar Corporation
Mr. Joseph Jablonski, Lennar Corporation
Mr. Nicholas Polta, Pioneer Engineering P.A

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Descriptive Terminology of Soil

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1.0 Introduction

1.1 Project Description

This geotechnical evaluation report addresses the proposed design and construction of the residential development, located east of Grey Cloud Trail South and Geneva Avenue South in Cottage Grove, Minnesota. The project will include the construction of a new single-family residential development. The proposed development will also include associated streets, sidewalks, curb and gutter, site utilities, and stormwater management features. The provided site layout shows the proposed development will include a total of 164 single-family homes. We understand that the homes could consist of a variety of types within the development including slab-on-grade, full basement, walk-out and look-out style homes. Figure 1-1 below shows an illustration of the proposed site layout.

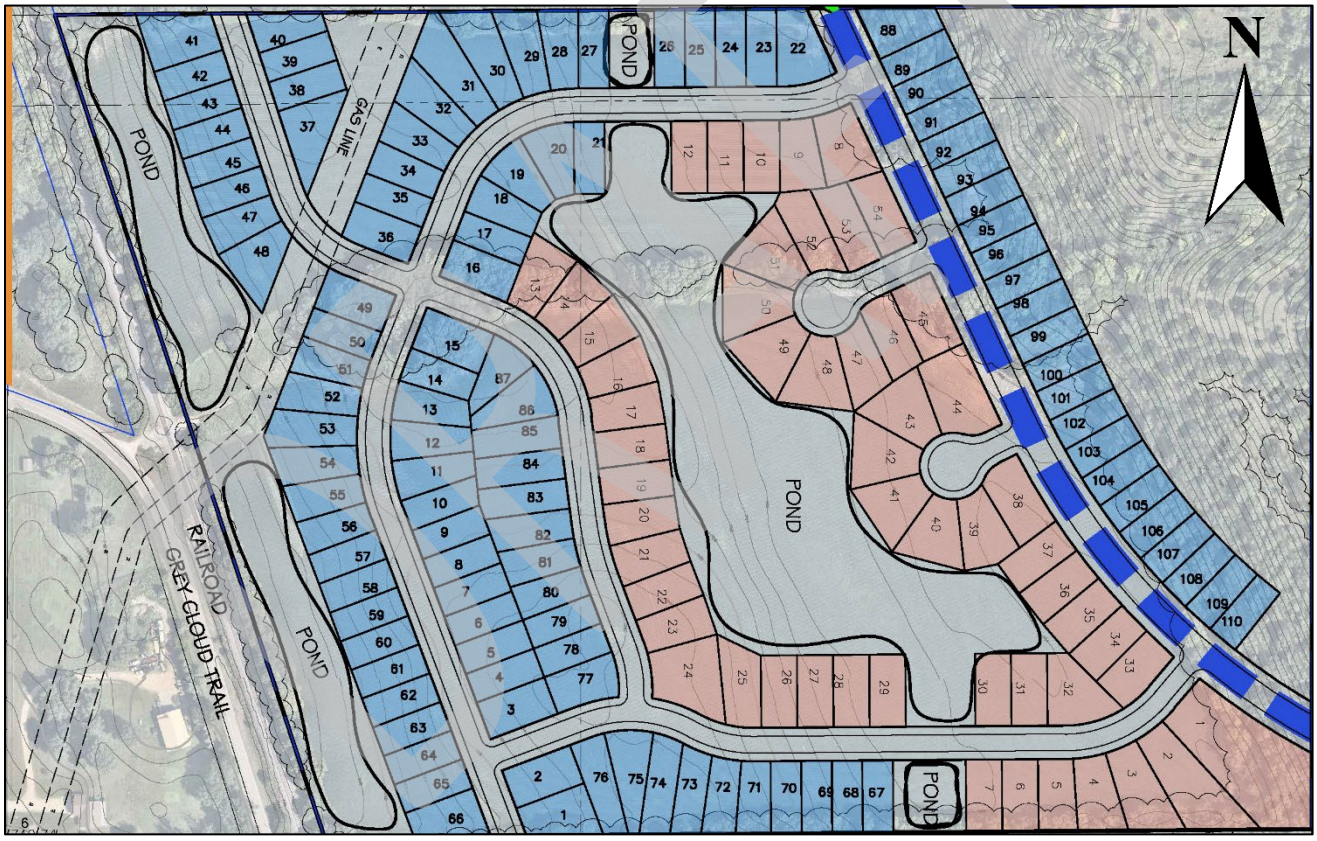

Figure 1-1. Site Layout
Figure provided by Pioneer Engineering dated July 14, 2025.

1.1.1 Structural Loads

We have assumed that the construction will consist of one to two-story, wood framed homes with full- or partial-depth basements, supported by cast in place concrete foundations. We have assumed that bearing

wall loads associated with the proposed residential construction will range from 3 to 4 kips (3,000 to 4,000) per linear foot (klf) and column loads, if any, will be no greater than 50 kips per column.

1.1.2 Pavement and Traffic Loads

We have assumed that bituminous pavements, typical of residential neighborhoods, will be subject to normal traffic conditions of cars, with occasional school buses, garbage trucks and light delivery trucks and road maintenance equipment estimated to be under 150,000 equivalent single axle loads (ESAL) over an assumed design life of 20 years.

1.2 Site Conditions and History

Currently, and historically the site has been used for agricultural purposes. The middle of the site is higher and is moderately wooded. The site is generally sloping from the northwest corner downwards to the southeast and southwest corners of the site, with surface elevations at the borings ranging from about 765 to 753 Mean Sea Level (MSL). Figure 1-2 shows an aerial photograph of the site.



Figure 1-2. Aerial Photograph of the Site in 2025
Figure provided by Washington County GIS.

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1.3 Purpose

The purpose of our geotechnical evaluation was to characterize subsurface geologic conditions at selected boring locations, evaluate their impact on the project, and provide geotechnical recommendations for the design and construction of the residential development.

1.4 Background Information and Reference Documents

We reviewed the following information:

- Existing topographic map prepared by MnTOPO.
- Preliminary site layout plan prepared by Pioneer Engineering, dated July 14, 2025.
- Previous test pit logs prepared by Braun Intertec under project number B2310333, dated October 16, 2023.
- Previous test pit logs prepared by Haugo Geotechnical Services dated November 2022.
- Previous Geotechnical Evaluation prepared by GME Consultants, Inc. dated December 21, 2005.

In addition to the provided sources, we have used several publicly available sources of information.

- Current and historic aerial photos from Google Earth, Minnesota Historical Aerial Photographs Online and Washington County GIS for information on site history.
- Geologic Atlas of Washington County, Minnesota – Surficial Geology map prepared and published by the Minnesota Geological Survey, dated 2016 for geological information of native soils

We have described our understanding of the proposed construction and site to the extent others reported it to us. Depending on the extent of available information, we may have made assumptions based on our experience with similar projects. If we have not correctly recorded or interpreted the project details, the project team should notify us. New or changed information could require additional evaluation, analyses, and/or recommendations.

1.5 Scope of Services

We performed our scope of services for the project in accordance with our Proposal QTB205644 to Lennar Corporation, dated August 29, 2025, and authorized on September 4, 2025. The following list describes the geotechnical tasks completed in accordance with our authorized scope of services.

- Reviewing the background information and reference documents previously cited.
- Staking and clearing the exploration location of underground utilities. Braun Intertec selected and staked the new exploration locations. We acquired the surface elevations and locations with GPS

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technology using the State of Minnesota's permanent GPS base station network. The Soil Boring Location Sketch included in the Appendix shows the approximate locations of the borings.

- Performing seven standard penetration test (SPT) borings, denoted as ST-1 to ST-7, to nominal depths of 15 to 20 feet below grade across the site. Note, several of the borings were terminated early due to auger refusal on apparent bedrock.
- Performing laboratory testing on select samples to aid in soil classification and engineering analysis.
- Preparing this report containing a boring location sketch, logs of soil borings, a summary of the soils encountered, results of laboratory tests, and recommendations for structure and pavement subgrade preparation and the design of foundations, floor slabs, exterior slabs, utilities, stormwater improvements and pavements.

Our scope of services did not include environmental services or testing and our geotechnical personnel performing this evaluation are not trained to provide environmental services or testing. We can provide environmental services or testing at your request.

2.0 Results

2.1 Geologic Overview

As part of our assessment, we reviewed the geologic maps for the general site area. Based on the geologic maps for Washington County dated 2016, the geology of the site generally consists of glacially deposited sands and gravel. We also reviewed bedrock geology and depth to bedrock maps for Washington County dated 2016. The depth to bedrock is relatively shallow, commonly less than 50 feet below existing grades and generally consists of Limestone from the Shakopee Formation.

We based the geologic origins used in this report on the soil types, in-situ and laboratory testing, and available common knowledge of the geological history of the site. Because of the complex depositional history, geologic origins can be difficult to ascertain. We did not perform a detailed investigation of the geologic history for the site.

2.2 Boring Results

Table 2-1 provides a summary of the soil boring results, in the general order we encountered the strata. Please refer to the Log of Boring sheets in the Appendix for additional details. The Descriptive Terminology sheets in the Appendix include definitions of abbreviations used in the table below.

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Table 2-1. Subsurface Profile Summary*

Strata	Soil Type -ASTM Classification	Range of Penetration Resistances	Commentary and Details
Topsoil	SM	NA	▪ Encountered in all borings and consists predominantly of silty sand (SM). ▪ Thicknesses at boring locations varied from 1/2 to 2 feet. ▪ Generally dark brown to black in color. ▪ Moisture condition generally moist.
Alluvial	CL	4 to 6 Blows per Foot (BPF)	▪ Encountered in Borings ST-2, ST-5, and ST-6 below the topsoil to a depth of about 4 feet. ▪ Encountered in Previous Braun Test Pits in TP-18 and TP-20 below the topsoil to a depth of about 3 to 6 feet. ▪ Encountered in Previous Haugo Test Pits in Test Pit #3 to a depth of about 7 feet. ▪ Encountered in Previous GME Borings at Borings 199, 204, and 210 below the topsoil to a depth of about 4 to 5 feet. ▪ Generally brown in color. ▪ Moisture condition generally moist.
Glacial deposits	SC, CL	7 to 35 BPF	▪ Encountered in Borings ST-1, ST-4, ST-5, and ST-7. ▪ Encountered in Previous GME Borings 197, 198, 201, 205, 206, and 218. ▪ Consists of clay soils with trace to with gravel and weathered bedrock fragments. ▪ Generally brown in color. ▪ Moisture condition generally moist.
	SP, SP-SM, SM	7 to 32 BPF (select samples had 50 blows for 5 inches of penetration)	▪ Encountered in most of the borings and consisted of silty sand (SM), poorly graded sand with silt (SP-SM), and poorly graded sand. ▪ Generally brown in color. ▪ Moisture condition generally varied from dry to moist.
Bedrock	Limestone	50 blows for 1 to 3 inches of penetration	▪ Encountered in Borings ST-2, ST-3, ST-4, ST-5, and ST-7. ▪ Encountered in Previous Braun Test Pits TP-15 through TP-22. ▪ Encountered in Previous Haugo Test Pits #1 through #9, and #11 through #13. ▪ Encountered in Previous GME Borings 197 through 207, 212, and 218. ▪ Highly weathered bedrock varied from elevation approx. 742 ft to 752.

*Abbreviations are defined in the attached Descriptive Terminology sheet.

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2.3 Groundwater

We did not observe groundwater while advancing our borings. Therefore, it appears that groundwater is below the depths explored. Project planning should anticipate seasonal and annual fluctuations of groundwater.

2.4 Laboratory Test Results

The boring logs show the results of laboratory testing testing we performed, next to the tested sample depth. The tests were completed in accordance with the latest American Society for Testing and Materials (ASTM) standards. The Appendix contains the results of these tests.

The moisture content (ASTM D 2216) of the selected samples varied from approximately 4 to 7 percent for the granular/sandy soils and moisture contents ranging from 10 to 28 percent moisture by weight for clay-laden soils. This indicates that the granular material is below or at its probable optimum moisture content, and near or above its probable optimum moisture content for the clay-laden soils.

Our mechanical analyses (ASTM C 117) indicated that the selected samples from Borings ST-1, ST-3, and ST-6 contained 8 to 13 percent silt and clay by weight. This indicates soils with classifications of poorly graded sand with silt (SP-SM) or silty sand (SM).

3.0 Recommendations

3.1 Design and Construction Discussion

The site generally appears suitable for the proposed residential development following mass grading construction. Shallow bedrock was encountered during our investigation, which could complicate the proposed development. Key discussion points for the project are provided below.

3.1.1 Building Subgrade Preparation

Based on the results of our subsurface exploration and evaluation, spread footing foundations bearing on engineered fill and/or native soils can support the proposed houses, after performing subgrade preparation. Subgrade preparation includes removing existing vegetation, topsoil, and any existing structures and soft/very loose soils. In agricultural fields, there is the possibility of field drain lines which will also need to be removed, if encountered.

Although preliminary grading plans were not available, we anticipate cuts and fills to be less than 10 feet from existing grades.

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3.1.2 Shallow Bedrock Site

Limestone bedrock was identified generally across the entire site, which could affect utility line trenches, plumbing, and footing excavations. The highly weathered limestone may possibly be excavated with a toothed excavating bucket; however, this will likely only work for only the upper weathered bedrock. Deeper excavation will likely require a hydraulic hammer, ripper, or explosive techniques. It is also possible that there may be areas where the bedrock has been eroded by nature and there may be deeper areas of soil which have filled in subsurface erosion channels.

Each house pad will require easily excavatable soil (not bedrock) **a minimum of 4 feet below the proposed low floor grade**. This 4-foot soil buffer zone will allow the installation of water and sanitary sewer services, foundations (spread footings and poured foundation walls) as well as interior plumbing (including drain tile and sump baskets) below the lowest floor, as required.

3.1.3 Reuse of On-Site Soils

The on-site soils that are free of organic materials and debris, are generally suitable for reuse as engineered fill. Some of the on-site soils may require moisture conditioning prior to reuse and compaction Any material to be used as engineered fill should be tested and approved by the geotechnical engineer prior to placement.

3.1.4 Pavement

Based on the soil borings, it is our opinion the pavements can be constructed on the on-site fill and/or native alluvial soils, as long as the in-place soils can pass a proofroll test. If difficulties passing a proofroll on these soils occur during construction, re-engineering of the existing soil or excavation to more suitable soils may be necessary prior to raising grade. In addition, we recommend a minimum of 4 feet of soil cover over shallow bedrock areas.

3.1.5 Karst

This site, as much of southeastern Minnesota does, lies in an area where there is a potential for Karst in the bedrock. The site contains a shallow soil cover over limestone bedrock.

We have performed a detailed review of the South Washington watershed District karst inventory, which documents several karst related features with 1 mile of this project site, including at least 2 within a 1/4-mile of the site. There is a potential for karst related features at this project site. We have discussed the potential of karst related concerns with the developer.

3.1.6 Reuse of Limestone Bedrock

Removed limestone is typically not reused as engineered fill. Often, the pieces of removed limestone exceed 4 inches in diameter and are too large to reuse as engineered fill. In addition, portions of the removed limestone are typically wet and require moisture conditioning (drying) which is often impractical. If reuse of some limestone is permitted, limestone fragments under 4 inches is size may be blended with soil, but we recommend no more than 1 part limestone fragment to 3 parts engineered soil (approximately 25 percent by volume, or less).

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Based on the quantity of proposed limestone bedrock removal required during construction, the limestone could likely be crushed and reused as an engineered product, if permitted. We anticipate MnDOT Class 5 Aggregate Base could possibly be produced, provided an experienced crushing and screening process is used. Additional soundness and durability testing of the limestone should be performed prior to crushing.

3.2 Site Grading and Subgrade Preparation

3.2.1 Building Subgrade Excavations

We recommend removing the topsoil and any unsuitable material below the proposed house pads and their oversize areas. We define unsuitable materials as existing fill (if encountered), frozen materials, organic soils, existing structures, existing utilities, vegetation, and soft/loose soils. Table 3-1 shows the anticipated excavation depths and bottom elevations for each of the at each of the boring locations. We have included soil correction depths at all the borings, assuming a building pad or pavement will be constructed.

Table 3-1. Building Excavation Depths

Location	Year Performed	Approximate Surface Elevation (ft)	Anticipated Excavation Depth (ft)	Anticipated Bottom Elevation (ft)
ST-1	2025	756.6	1	755 1/2
ST-2	2025	764.2	4	760
ST-3	2025	756.6	1/2	756
ST-4	2025	759.0	2	757
ST-5	2025	760.5	1	759 1/2
ST-6	2025	762.3	1 1/2	760 1/2
ST-7	2025	753.2	1 1/2	751 1/2
TP-15	2023	750.2	1 1/2	748 1/2
TP-16	2023	748.5	1 1/2	747
TP-17	2023	756.5	1 1/2	755
TP-18	2023	762.0	1 1/2	760 1/2
TP-19	2023	752.6	1 1/2	751
TP-20	2023	756.3	1	755
TP-21	2023	759.0	4	755
TP-22	2023	766	1	765
TP #1	2022	752.2	2	750
TP #3	2022	757.1	3	754
TP #4	2022	751.4	1 1/2	750
TP #5	2022	751.7	4	747 1/2
TP #6	2022	751.1	1 1/2	749 1/2
TP #7	2022	750.9	3	748
TP #9	2022	766.9	1	766
TP #10	2022	764.1	2	762

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Location	Year Performed	Approximate Surface Elevation (ft)	Anticipated Excavation Depth (ft)	Anticipated Bottom Elevation (ft)
TP #11	2022	765.7	1 1/2	764
TP #12	2022	749.6	1	748 1/2
TP #13	2022	747.3	1	746
197	2005	751.1	2	749
198	2005	751.0	2	749
199	2005	752.1	2	750
200	2005	751.8	1	751
201	2005	751.2	2	749
202	2005	750.3	1 1/2	748 1/2
203	2005	766.6	2	764 1/2
204	2005	755.1	1 1/2	753 1/2
205	2005	752.9	2	750 1/2
206	2005	752.4	1 1/2	750 1/2
207	2005	751.8	1 1/2	750
208	2005	795.8	1	794 1/2
209	2005	786.5	1	785 1/2
210	2005	760.6	1	759 1/2
211	2005	755.7	1 1/2	754
212	2005	755.0	2	753
213	2005	797.6	1	796 1/2
214	2005	803.6	1 1/2	802
215	2005	802.4	1	801
216	2005	791.7	4	787 1/2
217	2005	769.8	1	768 1/2
218	2005	758.3	1	757

Excavation depths will vary between the borings. Portions of the excavations may also extend deeper than indicated by the borings. A geotechnical representative should observe the excavations to make the necessary field judgments regarding the suitability of the exposed soils.

The contractor should use equipment and techniques to minimize soil disturbance. If soils become disturbed or are wet, we recommend excavation and replacement.

3.2.2 House Pad Bedrock Separation

We recommend that the house pads have easily excavatable soil (not bedrock) a minimum of 4 feet below the proposed low floor grade. This 4-foot soil buffer zone will allow the installation of water and sanitary sewer services, foundations (spread footings and poured foundation walls) as well as interior plumbing (including drain tile and sump baskets) below the lowest floor.

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Based on the proposed basement floor grades, and lowest floor elevations in the final grading plan (currently unavailable), we anticipate areas of bedrock conflicts, and the recommended separation may not be met. Test pits should be performed during mass grading to verify that the recommended 4-foot (or greater) bedrock separations is provided. Any areas where bedrock is found with less than 4-foot of separation, bedrock removal for the full extent of the proposed house pad envelope should be performed.

Based on this evaluation we are confident the bedrock surface is not flat; therefore, it is assumed there will be variable depths to bedrock within each house pad. In areas where extensive bedrock removal occurs for utility construction, stormwater ponds, or general mass grading, the adjacent house pad(s) should also be evaluated.

3.2.3 Excavation Oversizing

When removing unsuitable materials below structures or pavements, we recommend the excavation extend outward and downward at a slope of 1H:1V (horizontal:vertical) or flatter. See Figure 3-1 for an illustration of excavation oversizing.

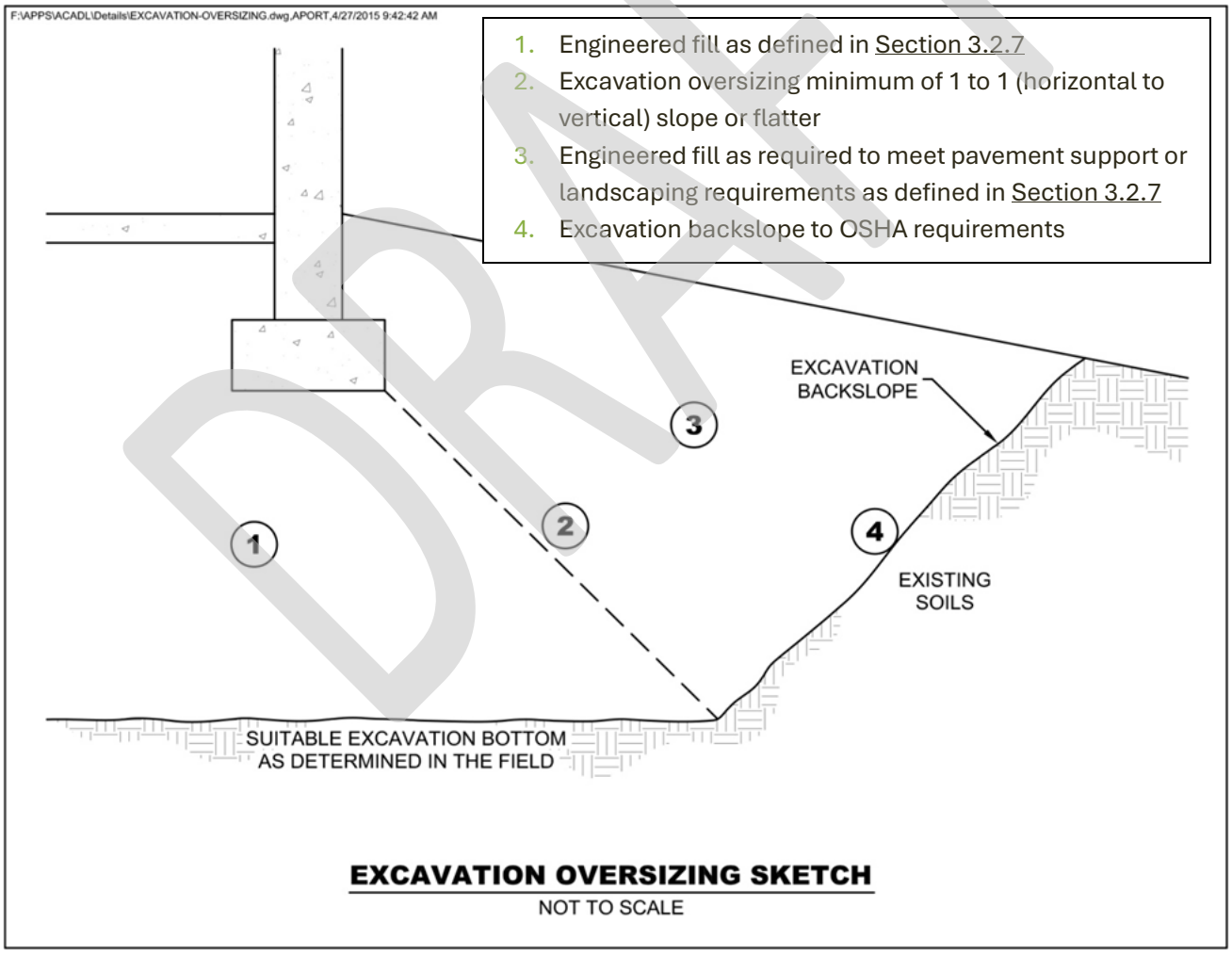

Figure 3-1. Generalized Illustration of Oversizing

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3.2.4 Excavated Slopes

Based on the borings, we anticipate on-site soils in excavations will consist of clays and silty sands. These soils are typically considered Type B Soil under OSHA (Occupational Safety and Health Administration) guidelines. OSHA guidelines indicate unsupported excavations in Type B soils should have a gradient no steeper than 1H:1V. Slopes constructed in this manner may still exhibit surface sloughing. OSHA requires an engineer to evaluate slopes or excavations over 20 feet in depth.

An OSHA-approved qualified person should review the soil classification in the field. Excavations must comply with the requirements of OSHA 29 CFR, Part 1926, Subpart P, "Excavations and Trenches." This document states that excavation safety is the responsibility of the contractor. The project specifications should reference these OSHA requirements.

3.2.5 Pavement and Exterior Slab Subgrade Preparation

We recommend the following steps for pavement and exterior slab subgrade preparation. Note that project planning may require additional subcuts to limit frost heave.

1. Strip unsuitable soils consisting of topsoil, organic soils, and existing fill down to native soils.
2. Have a geotechnical representative observe the excavated subgrade to evaluate if additional subgrade improvements are necessary, specifically soft or saturated soils.
3. Slope subgrade soils to areas of sand or drain tile (if fine grained soils are present) to allow the removal of accumulating water.
4. Scarify, moisture condition and surface compact the subgrade with at least three passes of a large roller with a minimum drum diameter of 3 1/2 feet.
5. Place pavement engineered fill to grade and compact in accordance with Section 3.2.7 to bottom of pavement and exterior slab section. See Section 3.6 for additional considerations related to frost heave.
6. Proofroll the pavement or exterior slab subgrade as described in Section 3.2.6.

3.2.6 Pavement Subgrade Proofroll

After preparing the subgrade as described above and prior to the placement of the aggregate base, we recommend proofrolling the subgrade soils with a fully loaded tandem-axle truck. We also recommend having a geotechnical representative observe the proofroll. Areas that fail the proofroll likely indicate soft or weak areas that will require additional soil correction work to support pavements.

The contractor should correct areas that display excessive yielding or rutting during the proofroll, as determined by the geotechnical representative. Possible options for subgrade correction include moisture conditioning and recompaction, subcutting and replacement with soil or crushed aggregate, chemical stabilization, and/or geotextiles. We recommend performing a second proofroll after the aggregate base material is in place, and prior to placing bituminous or concrete pavement.

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3.2.7 Engineered Fill Materials and Compaction

Table 3-2 below contains our recommendations for engineered fill materials.

Table 3-2. Engineered Fill Materials*

Locations To Be Used	Engineered Fill Classification	Possible Soil Type Descriptions	Gradation	Additional Requirements
▪ Below foundations < 10 ft of fill	Structural fill	SP, SP-SM, SM, SC, CL	100% passing 2-inch sieve	< 2% Organic Content (OC) Plasticity Index (PI)<20%
▪ Below foundations > 10 ft of fill	Structural fill	SP, SP-SM	100% passing 2-inch sieve < 12% passing #200 sieve	< 2% OC
▪ Drainage layer ▪ Non-frost-susceptible	▪ Free draining ▪ Non-frost-susceptible fill	GP, GW, SP, SW	100% passing 1-inch sieve < 50% passing #40 sieve < 5% passing #200 sieve	< 2% OC
Behind below-grade walls, beyond drainage layer	Retained fill	*SP, SP-SM, SM	100% passing 3-inch sieve < 20% passing #200 sieve	< 2% OC PI< 4%
Pavements	Pavement fill	SP, SP-SM, SM, SC, CL	100% passing 3-inch sieve	< 2% OC PI < 20%
Below landscaped surfaces, where subsidence is not a concern	Non-structural fill	Any	100% passing 6-inch sieve	< 10% OC PI<20%

* More select soils comprised of coarse sands with < 5% passing #200 sieve may be needed to accommodate work occurring in periods of wet or freezing weather.

Project grading plans were not available at the time of this report, so it is unknown if there will be any deep fill areas. If only clay fill is used to fill house pads where more than 10 feet of fill is needed, a construction delay of at least 3 to 9 months may be needed, depending on the final depths of clay fill used. As an alternative, on lots where deep fills are needed, sand fill (less than 12 percent passing the #200 sieve) could be used to initially fill the excavations below these house pads. The sand fill should be placed in thin compacted lifts, up to an elevation of 10 feet or less from the finished basement floor grades. On-site fine-grained soil can then be used to complete construction of the building pads. If the alternative method of filling the house pads partially with sand fill is used, a construction delay would not be needed.

We recommend spreading engineered fill in loose lifts of approximately 8 to 12 inches thick. We recommend compacting engineered fill in accordance with the criteria presented below in Table 3-3. The project documents should specify relative compaction of engineered fill, based on the structure located above the engineered fill, and vertical proximity to that structure.

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Table 3-3. Compaction Recommendations Summary

Reference	Relative Compaction, percent (ASTM D698 – Standard Proctor)	Moisture Content Variance from Optimum, percentage points	
		< 12% Passing #200 Sieve (typically SP, SP-SM)	> 12% Passing #200 Sieve (typically CL, SC, ML, SM)
Below building foundations and oversizing zones, less than 10 feet of fill	95	**	-1 to +3
Below building foundations and oversizing zones, more than 10 feet of fill	98	**	-1 to +2
Within 3 feet of pavement subgrade	100	**	-2 to +1
More than 3 feet below pavement subgrade	95	**	-1 to +3
Below landscaped surfaces	90	**	-1 to +3
Adjacent to below grade wall	95*	**	-1 to +3

*Increase compaction requirement to meet compaction required for structure supported by this engineered fill.
**The moisture content of the clean sand fill should be greater than 5 percent, but no more than 3 percentage points over optimum.

The project documents should not allow the contractor to use frozen material as engineered fill or to place engineered fill on frozen material. Frost should not penetrate under foundations during construction.

We recommend performing density tests in engineered fill to evaluate if the contractors are effectively compacting the soil and meeting project requirements.

3.3 Spread Footings

3.3.1 Embedment Depth

For frost protection, we recommend embedding perimeter footings of the structures, including attached garages, a minimum of 42 inches below the lowest exterior grade. Interior footings may be placed directly below floor slabs unless they will be subjected to freezing. We recommend embedding building footings not heated during winter construction, and other unheated footings associated with porches, decks, or stoops 60 inches below the lowest exterior grade.

3.3.2 Subgrade Improvement

If a small amount of groundwater is present within the footing excavation, or if the footing subgrade soils become disturbed prior to placing forms or reinforcement, we recommend subcutting the soft or wet soil and placing a 6- to 8-inch layer of crushed aggregate, which should be compacted into the subgrade. The aggregate will provide a stable working surface and will allow for the flow of water to a drain tile or sump pump.

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3.3.3 Net Allowable Bearing Pressure

We recommend sizing spread footings to exert a net allowable bearing pressure of up to 2,000 pounds per square foot (psf). This value includes a safety factor of at least 3.0 with regard to bearing capacity failure.

3.3.4 Settlement

We estimate that total and differential settlements among the footings will amount to less than 1- and 1/2-inch, respectively, under the assumed loads. Settlements could be higher if more than 10 feet of clayey fill is used to construct the building pads. Those lots would require a construction delay. To avoid a construction delay, those pads requiring more than 10 feet of fill below the lowest floor grades could initially be filled with clean sand fill, meeting the soil classification of poorly graded sand (SP) or poorly graded sand with silt (SP-SM) up to an elevation of less than 10 feet below the lowest floor slab and oversize areas. Less select clayey soil can then be used to fill the remainder of the building pad and oversize areas.

3.4 Below-Grade Walls

The following sections address soil parameters for basement wall design. Although construction of retaining walls has not been specified for this project to date, the following recommendations can also be used for preliminary retaining wall design. Additional soil analysis, including additional soil borings may be needed for final retaining wall design.

3.4.1 Drainage Control

We recommend installing drain tile to remove water behind the below-grade walls, at the location shown in Figure 3-2. The below-grade wall drainage system should also incorporate free-draining, engineered fill or a drainage board placed against the wall and connected to the drain tile.

Even with the use of free-draining, engineered fill, we recommend general waterproofing of below-grade walls that surround occupied or potentially occupied areas because of the potential cost impacts related to seepage after construction is complete.

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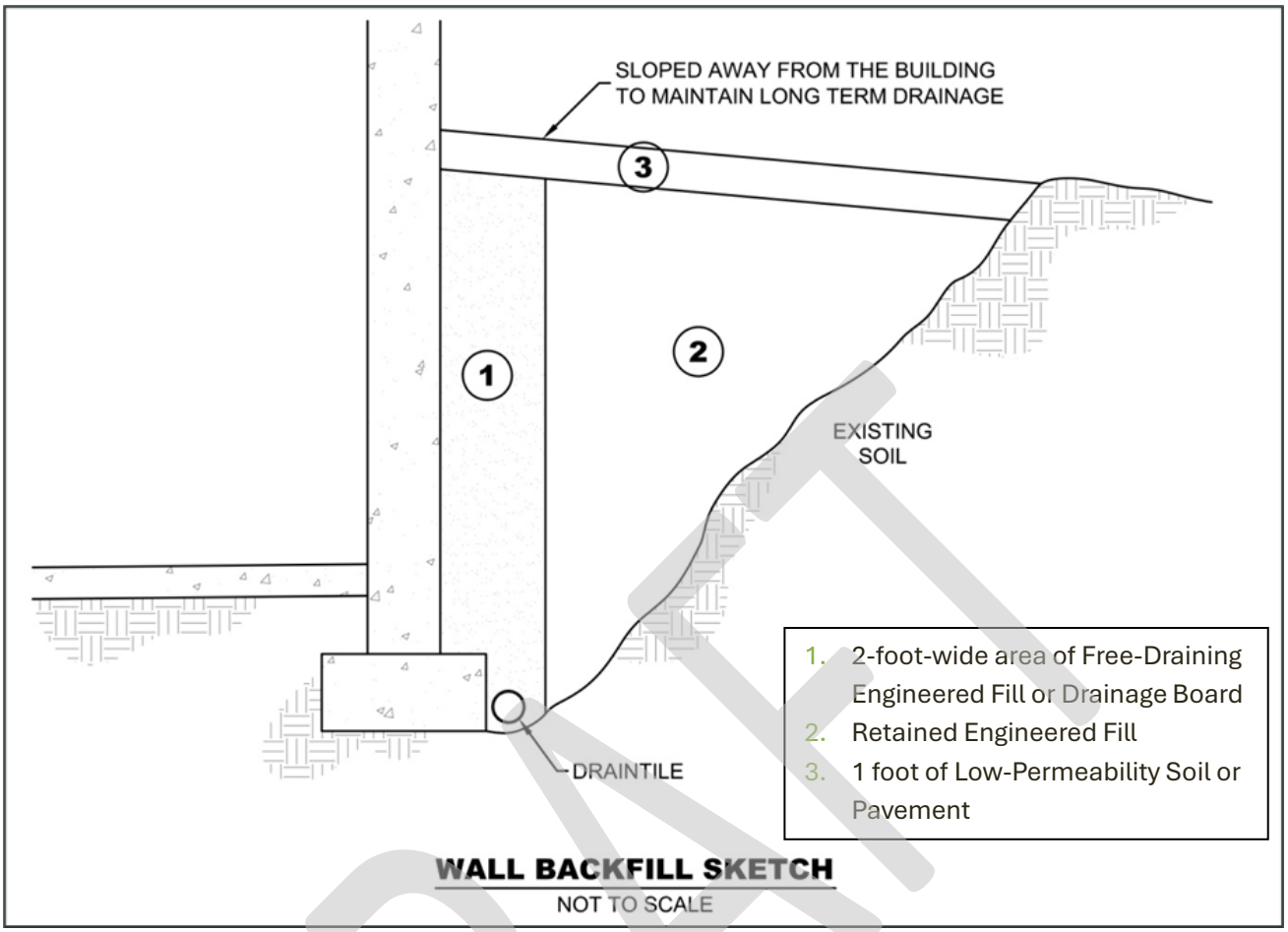

Figure 3-2. Generalized Illustration of Wall Engineered Fill

The materials listed in the sketch should meet the definitions in Section 3.4. Low-permeability material is capable of directing water away from the wall, like clay, topsoil, or pavement. The project documents should indicate if the contractor should brace the walls prior to filling and allow unbalanced fill heights.

3.4.2 Configuring and Resisting Lateral Loads

Below-grade wall design can use active earth pressure conditions if the walls can rotate slightly. If the wall design cannot tolerate rotation, then design should use at-rest earth pressure conditions. Rotation up to 0.002 times the wall height is generally required for walls supporting sand. Rotation up to 0.02 times the wall height is required when wall supports clay.

Table 3-4 presents our recommended lateral coefficients and equivalent fluid pressures for wall design of active, at-rest and passive earth pressure conditions. The table also provides recommended wet unit weights and internal friction angles. Designs should also consider the slope of any engineered fill, and dead or live loads placed behind the walls within a horizontal distance that is equal to the height of the walls. Our recommended values assume the wall design provides drainage so water cannot accumulate behind the

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walls. The construction documents should clearly identify what soils the contractor should use for engineered fill of walls.

Table 3-4. Recommended Below-Grade Wall Design Parameters – Drained Conditions

Retained Soil	Wet Unit Weight (pcf)	Friction Angle (degrees)	Equivalent Active Fluid Pressure (pcf)	Equivalent At-Rest Fluid Pressure (pcf)	Equivalent Fluid Passive Pressure* (pcf)
Imported/ On-site Sand (SP, SP-SM)	120	33	35	55	N/A
On-site Silty Sand (SM)	125	30	42	62	375
On-site clayey soil (CL, SC)	125	26	50	70	320

* Based on Rankine model for soils in a region behind the wall extending at least 2 horizontal feet beyond the bottom outer edges of the wall footings and then rising up and away from the wall at an angle no steeper than 60 degrees from horizontal.

Sliding resistance between the bottom of the footing and the soil can also resist lateral pressures. We recommend assuming a sliding coefficient equal to 0.3 between the concrete and soil.

The values presented in this section are un-factored.

3.5 Interior Slabs

3.5.1 Proposed Slab Separation

We recommend that the house pads have easily excavatable soil (not bedrock) a minimum of 4 feet below the proposed low floor grade. See Section 3.2.2 for more discussion.

3.5.2 Moisture Vapor Protection

Excess transmission of water vapor could cause floor dampness, certain types of floor bonding agents to separate, or mold to form under floor coverings. If project planning includes using floor coverings or coatings, we recommend placing a vapor retarder or vapor barrier immediately beneath the slab. We also recommend consulting with floor covering manufacturers regarding the appropriate type, use and installation of the vapor retarder or barrier to preserve warranty assurances.

3.5.3 Radon

We recommend installing a radon mitigation system in accordance with local building code. Our certified and licensed radon mitigation professionals can assist in the design, at your request.

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3.6 Frost Protection

3.6.1 General

A mixture of clayey and silty sand soils will underlie exterior slabs, as well as pavements. We consider clayey and silty sand soils to be moderately to highly frost susceptible. Soils of this type can retain moisture and heave upon freezing. In general, this characteristic is not an issue unless these soils become saturated, due to surface runoff or infiltration, or are excessively wet in-situ. Once frozen, unfavorable amounts of general and isolated heaving of the soils and the surface structures supported on them could develop. This type of heaving could affect design drainage patterns and the performance of exterior slabs and pavements, as well as any isolated exterior footings and piers.

Note that general runoff and infiltration from precipitation are not the only sources of water that can saturate subgrade soils and contribute to frost heave. Roof drainage and irrigation of landscaped areas in close proximity to exterior slabs, pavements, and isolated footings and piers, contribute as well.

3.6.2 Frost Heave Mitigation

To address most of the heave related issues, we recommend setting general site grades and grades for exterior surface features to direct surface drainage away from buildings, across large, paved areas and away from walkways. Such grading will limit the potential for saturation of the subgrade and subsequent heaving. General grades should also have enough “slope” to tolerate potential larger areas of heave, which may not fully settle after thawing.

Even small amounts of frost-related differential movement at walkway joints or cracks can create tripping hazards. Project planning can explore several subgrade improvement options to address this condition.

One of the more conservative subgrade improvement options to mitigate potential heave is removing any frost-susceptible soils present below the exterior slab areas down to a minimum depth of 4 feet below subgrade elevations. We recommend filling the resulting excavation with non-frost-susceptible fill. We recommend providing drainage at the base of the subcut, as well as gradual transitions from this subcut (3H:1V or flatter gradient). We also recommend sloping the bottom of the excavation toward one or more collection points to remove any water entering the engineered fill. This approach will not be effective in controlling frost heave without removing the water.

An important geometric aspect of the excavation and replacement approach described above is sloping the banks of the excavations to create a more gradual transition between the unexcavated soils considered frost susceptible and the engineered fill in the excavated area, which is not frost susceptible. The slope allows attenuation of differential movement that may occur along the excavation boundary. We recommend slopes that are 3H:1V, or flatter, along transitions between frost-susceptible and non-frost-susceptible soils.

Figure 3-3 shows an illustration summarizing some of the recommendations.

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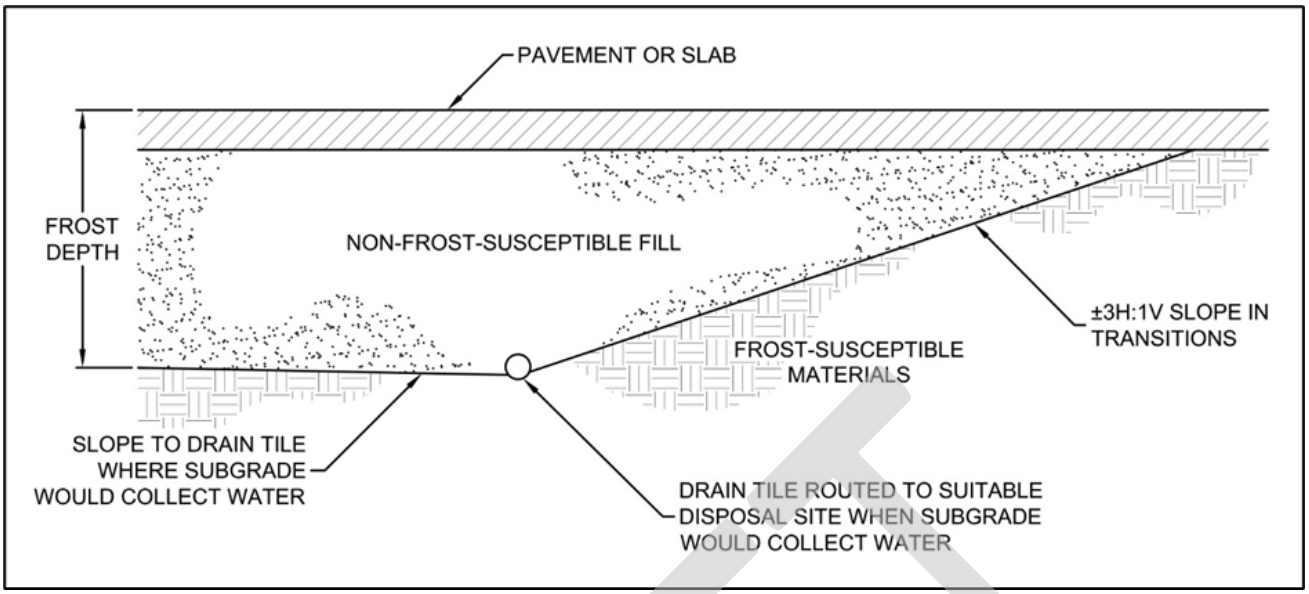

Figure 3-3. Frost Protection Geometry Illustration

Another option is to limit frost heave in critical areas, such as doorways and entrances, via frost-depth footings or localized excavations with sloped transitions between frost-susceptible and non-frost-susceptible soils, as described above.

Over the life of slabs and pavements, cracks will develop, and joints will open up, which will expose the subgrade and allow water to enter from the surface and either saturate or perch atop the subgrade soils. This water intrusion increases the potential for frost heave or moisture-related distress near the crack or joint. Therefore, we recommend implementing a detailed maintenance program to seal and/or fill any cracks and joints. The maintenance program should give special attention to areas where dissimilar materials abut one another, where construction joints occur and where shrinkage cracks develop.

3.7 Pavements and Exterior Slabs

3.7.1 Design Sections

Our scope of services for this project did not include laboratory tests on subgrade soils to determine an R-value for pavement design. Based on our experience with similar silty and clayey soils anticipated at the pavement subgrade elevation, we recommend pavement design assume an R-value of 20.

We assume that the City of Cottage Grove Standard Plates will be used pavement designs. If City standard plates aren't available, we recommend a bituminous pavement section that includes a minimum of 3 1/2 inches of bituminous pavement (a 1 1/2-inch surface course over a 2-inch base course) over 8 inches of aggregate base material over 18 inches of select granular. The local government agency may require alternative standard pavement sections.

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The ongoing performance of bituminous pavements is impacted by conditions under which the pavement is asked to perform in. These conditions include the environmental conditions, the actual use conditions, and the level of ongoing maintenance performed. Because of normal thermos-expansion and contraction, it is not unusual to have cracking develop within the first few years of placement and for the cracking to continue throughout the life of the pavement. A regular maintenance plan should be developed for filling cracks to lessen the potential impacts for cold weather distress due to frost heave or warm weather distress due to wetting and softening of the subgrade. It is also not unusual for the pavement to require a seal coat within the first 5 to 10 years to increase the long-term performance of the bituminous pavement.

3.7.2 Bituminous Pavement Materials

Appropriate mix designs are critical to the performance of flexible pavements. We can provide recommendations for pavement material selection during final pavement design.

3.7.3 Subgrade Drainage

We recommend installing perforated drainpipes throughout pavement areas at low points, around catch basins, and behind curb in landscaped areas. However, subgrade drainage should not be required where the pavement section subgrade consists of granular soils, with less than 20% passing a #200 Sieve. When required, we recommend installing drainpipes along pavement and exterior slab edges where exterior grades promote drainage toward those edge areas. The contractor should place drainpipes at the base of the granular subbase layer or in shallow trenches below the aggregate base material where no subbase is present.

3.7.4 Performance and Maintenance

We based the above pavement designs on a 20-year performance life for bituminous. This is the amount of time before we anticipate the pavement will require reconstruction. This performance life assumes routine maintenance, such as seal coating and crack sealing. The actual pavement life will vary depending on variations in weather, traffic conditions and maintenance.

It is common to place the non-wear course of bituminous and then delay placement of wear course. For this situation, we recommend evaluating if the reduced pavement section will have sufficient structure to support construction traffic.

3.8 Utilities

3.8.1 Subgrade Stabilization

Earthwork activities associated with utility installations located inside the building area should adhere to the recommendations in Section 3.2.

For exterior utilities, we anticipate the soils at typical invert elevations will be suitable for utility support. However, if construction encounters unfavorable conditions such as soft clay, organic soils or perched water at invert grades, the unsuitable soils may require some additional subcutting and replacement with sand or

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crushed rock to prepare a proper subgrade for pipe support. Project design and construction should not place utilities within the 1H:1V oversizing of foundations.

3.8.2 Excavations in Bedrock

As previously stated, excavations for utilities may encounter zones of bedrock at proposed pipe subgrade bearing elevations. The bedrock surface may be weathered where a typical backhoe can excavate through it but if excavations for utilities extend beyond the upper 3 feet of bedrock, the contractor will likely need alternative excavation practices, relatively larger equipment, pneumatic chisels, hammers, rippers, or blasting to remove more sound, less weathered bedrock below auger refusal depths. The rock should be removed deep enough that a suitable bedding material can also be placed beneath the pipes.

3.8.3 Corrosion Potential

The soil borings indicated the site predominantly consists of sandy soils with lesser amounts of clayey soil. We consider the sandy soils to be non- to slightly corrosive to metallic conduits. However, the clayey soils should be corrosive to metallic conduits unless the clayey soils are tested to verify that they are not corrosive to metallic conduits. If utilities extend through clay soils, we recommend bedding the utilities in sandy soil free of any clay lumps or constructing the utilities with non-corrosive materials.

3.9 Stormwater

We understand that stormwater basins or ponds will be included within the proposed development. Typical stormwater recommendations can be found in the Minnesota Stormwater Manual.

We understand the South Washington Watershed District, in conjunction with the stormwater manual, allows construction of infiltration stormwater ponds when there is a minimum 10 feet of soil separation from the proposed pond bottom to limestone bedrock surface. We further understand if there is less 10 feet of separation from the bottom of ponds to the bedrock surface, infiltration is not permitted, and stormwater basins require placement of a clay liner.

Based on our review of the current civil plans, the identified karst related features being in close proximity of the site, and the shallow depth to bedrock, we do not recommend infiltration of stormwater at this site. Furthermore, the stormwater management plan should consider a potential of long-term karst related concerns.

We understand the South Washington Watershed District, in conjunction with the stormwater manual, allows construction of retention stormwater ponds in close proximity to the limestone bedrock surface provided a clay liner is placed. For the clay liner, we recommend the clay liner be at least 2 feet thick and consist of lean clay soils with Plasticity Index (PI) of 20 or less. Additional soil parameters can be provided if required or requested. A project alternative could include using a manufactured geo-synthetic liner (minimum 12 mil Thickness) instead of a clay linear.

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4.0 Procedures

4.1 Penetration Test Borings

We drilled penetration test borings ST-1 and ST-7 with an all-terrain vehicle (ATV)-mounted core and auger drill equipped with hollow-stem auger on October 20, 2025. We performed the borings in general accordance with ASTM D6151 taking penetration test samples at 2 1/2- or 5-foot intervals in general accordance with ASTM D1586. The boring logs show the actual sample intervals and corresponding depths.

We sealed the penetration test boreholes (ST-1 to ST-7), that Braun Intertec performed in 2025, which extended beyond 15 feet, meeting the Minnesota Department of Health (MDH) Environmental Borehole criteria with an MDH-approved grout.

4.2 Exploratory Test Pits

Enebak Construction excavated the test pits that were observed by Braun Intertec with a backhoe, under the direction and observation of our staff on October 16, 2023. We prepared Test Pit Logs by visually examining the sidewalls of the test pits and classifying the materials brought to the surface by the backhoe bucket. We measured strata boundary depths with a steel tape and generally rounded to the nearest 1/2-foot.

4.3 Exploration Logs

4.3.1 Log of Boring Sheets

The Appendix includes Log of Boring sheets for our penetration test borings. The logs identify and describe the penetrated geologic materials and present the results of penetration resistance and other in-situ tests performed. The logs also present the results of laboratory tests performed on penetration test samples and groundwater measurements.

We inferred strata boundaries from changes in the penetration test samples and the auger cuttings. Because we did not perform continuous sampling, the strata boundary depths are only approximate. The boundary depths likely vary away from the boring locations, and the boundaries themselves may occur as gradual rather than abrupt transitions.

4.3.2 Log of Test Pit Sheets

The Appendix also includes Log of Test Pit sheets. The logs classify and describe the geologic materials exposed in the sidewalls and bottoms of the pits, present the results of laboratory tests performed on bulk samples obtained from them, and depict groundwater measurements.

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4.3.3 Log of Data Sheets – By Others

In addition to the Explorations (soil borings and test pits) we were apart from 2023to 2025, we were provided that data from 2005 Soil borings, performed by GME and 2022 Test pits, observed by Haugo Geotechnical Services. We assume the 2005 borings were also performed as standard penetration test borings in a similar manor under ASTM D1586, however as we were not overseeing the borings we cannot confirm their procedure. The excavating contractor and equipment were not noted in the information provided with 2022 test pit information. We assume they used similar procedures to the test pits that we used when performing the test pits but as we were not present,we cannot confirm the procedures used.

4.3.4 Geologic Origins

We assigned geologic origins to the materials shown on the logs and referenced within this report, based on: (1) a review of the background information and reference documents cited above, (2) visual classification of the various geologic material samples retrieved during the course of our subsurface exploration, (3) penetration resistance and other in-situ testing performed for the project, (4) laboratory test results, and (5) available common knowledge of the geologic processes and environments that have impacted the site and surrounding area in the past .

4.4 Material Classification and Testing

4.4.1 Visual and Manual Classification

We visually and manually classified the geologic materials encountered based on ASTM D2488. When we performed laboratory classification tests, we used the results to classify the geologic materials in accordance with ASTM D2487. The Appendix includes a chart explaining the classification system we used.

4.4.2 Laboratory Testing

The exploration logs in the Appendix note the results of the laboratory tests performed on geologic material samples. We performed the tests in general accordance with ASTM procedures.

4.5 Groundwater Measurements

The drillers checked for groundwater while advancing the penetration test borings, and again after auger withdrawal. We then filled the boreholes as noted on the boring logs.

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5.0 Qualifications

5.1 Variations in Subsurface Conditions

5.1.1 Material Strata

We developed our evaluation, analyses, and recommendations from a limited amount of site and subsurface information. It is not standard engineering practice to retrieve material samples from exploration locations continuously with depth. Therefore, we must infer strata boundaries and thicknesses to some extent. Strata boundaries may also be gradual transitions, and project planning should expect the strata to vary in depth, elevation, and thickness, away from the exploration locations.

Variations in subsurface conditions present between exploration locations may not be revealed until performing additional exploration work or starting construction. If future activity for this project reveals any such variations, you should notify us so that we may reevaluate our recommendations. Such variations could increase construction costs, and we recommend including a contingency to accommodate them.

5.1.2 Groundwater Levels

We made groundwater measurements under the conditions reported herein and shown on the exploration logs and interpreted in the text of this report. Note that the observation periods were relatively short, and project planning can expect groundwater levels to fluctuate in response to rainfall, flooding, irrigation, seasonal freezing and thawing, surface drainage modifications and other seasonal and annual factors.

5.2 Continuity of Professional Responsibility

5.2.1 Plan Review

We based this report on a limited amount of information, and we made a number of assumptions to help us develop our recommendations. We should be retained to review the geotechnical aspects of the designs and specifications. This review will allow us to evaluate whether we anticipated the design correctly, if any design changes affect the validity of our recommendations, and if the design and specifications correctly interpret and implement our recommendations.

5.2.2 Construction Observations and Testing

We recommend retaining Braun Intertec to perform the required observations and testing during construction as part of the ongoing geotechnical evaluation. This will allow us to correlate the subsurface conditions exposed during construction with those encountered by the borings and provide professional continuity from the design phase to the construction phase. If we do not perform observations and testing during construction, it becomes the responsibility of others to validate the assumption made during the preparation of this report and to accept the construction-related geotechnical engineer-of-record responsibilities.

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5.3 Use of Report

This report is for the exclusive use of the addressed parties. Without written approval, we assume no responsibility to other parties regarding this report. Our evaluation, analyses and recommendations may not be appropriate for other parties or projects.

5.4 Standard of Care

In performing its services, Braun Intertec used that degree of care and skill ordinarily exercised under similar circumstances by reputable members of its profession currently practicing in the same locality. No warranty, express or implied, is made.

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Appendix

Soil Boring Location Sketch
Log of Boring Sheets ST-1 through ST-7
Logs of Previous Test Pit Sheets TP-15 through TP-22
Logs of Previous Test Pit Sheets from Haugo #1 through #13
Logs of Previous Boring Sheets from GME Consultants 197 through 218
Descriptive Terminology of Soil

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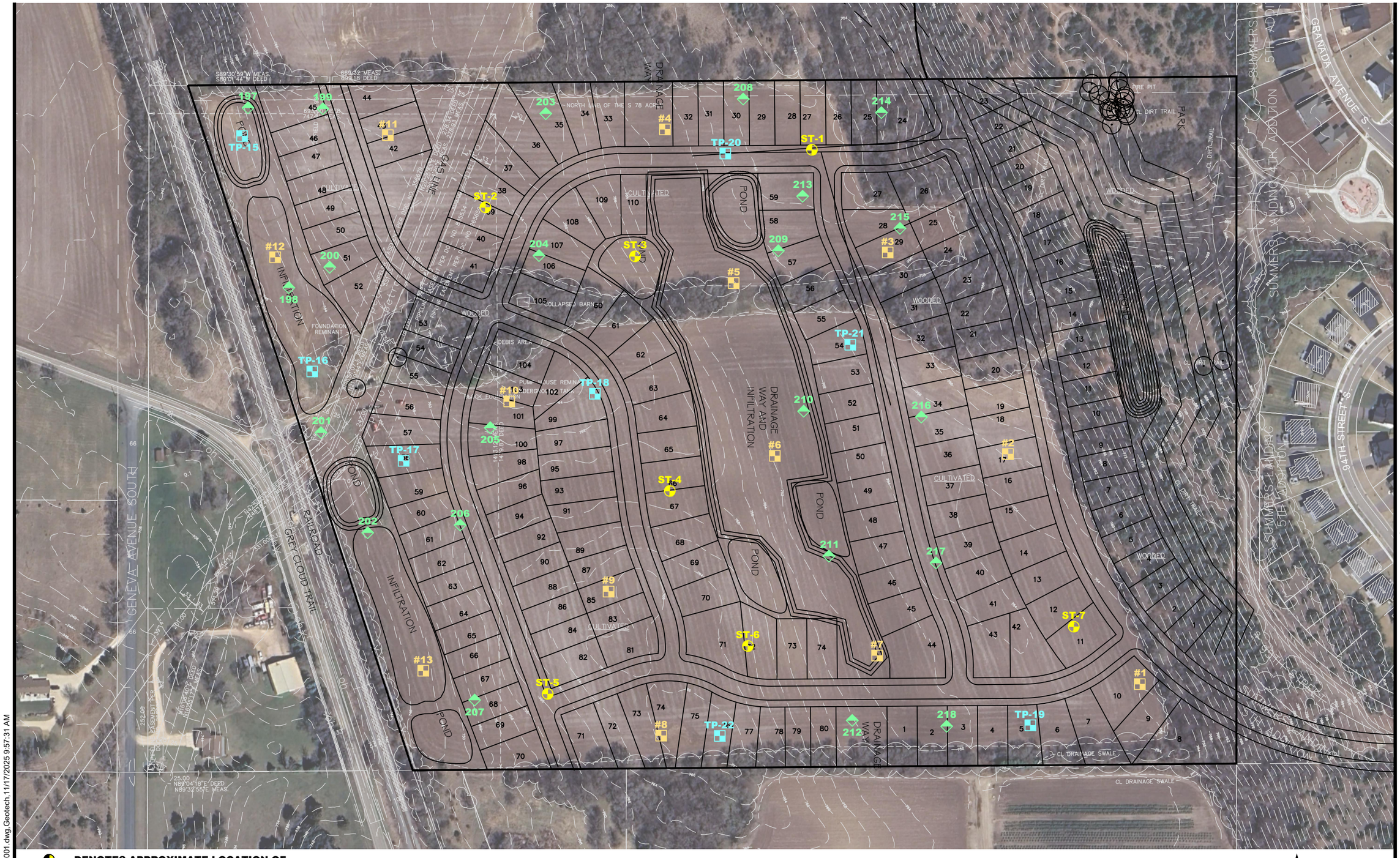
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INFILTRATION
DRAINAGE WAY AND INFILTRATION
POND
CULTIVATED
WOODED
COLLAPSED BARN
FOUNDATION REMNANT
DEBRIS AREA
PUMP HOUSE REMNANT
UNDERGROUND TANK
FOUNDATION
NORTH LINE OF THE S 78 ACRES
CL DRAINAGE SWALE
CL DIRT TRAIL
FIRE PIT
PARK
GRANADA AVENUE S.
SUMMERS LANDING 4TH ADDITION
SUMMERS LANDING 5TH ADDITION
94TH STREET S.
GENEVA AVENUE SOUTH
GREY CLOUD TRAIL
RAILROAD
EASEMENT PER DOC. NO. 2658534
EASEMENT PER DOC. NO. 2658535
EASEMENT PER DOC. NO. 2658536
EASEMENT PER DOC. NO. 2658537
S89°30'59"W MEAS.
S90°01'44"W DEED
669.32' MEAS.
669.18' DEED
N89°04'18"E DEED
N89°32'55"E MEAS.
25.00
252.00
264.00
1320.00
1321.00
1322.00
1323.00
1324.00
1325.00
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BRAUN INTERTEC
the science you build on

LOG OF BORING

See Descriptive Terminology sheet for explanation of abbreviations

Project Number B2508001
Geotechnical Evaluation
Nesvig Property - Cottage Grove
East of Grey Cloud Trail S & Geneva Ave S
Cottage Grove, Minnesota

BORING: **ST-1**
LOCATION: Captured with RTK GPS.
DATUM: NAD 1983 HARN Adj MN Washington (US Feet)
NORTHING: 125386.1 EASTING: 462382.1
DRILLER: M. Takada LOGGED BY: M. Kudanovych START DATE: 10/20/25 END DATE: 10/20/25
SURFACE ELEVATION: 756.6 ft RIG: 75011 METHOD: 3 1/4" HSA SURFACING: Soil WEATHER:

Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	PID ppm	MC %	Tests or Remarks
755.6		SILTY SAND (SM), fine to medium-grained, trace roots, dark brown, moist (TOPSOIL)					
1.0		SILTY SAND (SM), fine to medium-grained, with Gravel, tan, moist, dense (GLACIAL OUTWASH)		7-11-21 (32) 10"		4	P200=13%
752.6							
4.0		POORLY GRADED SAND with SILT (SP-SM), fine to coarse-grained, trace Gravel, brown, moist, medium dense (GLACIAL OUTWASH)	5	11-12-7 (19) 14"		4	P200=10%
749.6							
7.0		SANDY LEAN CLAY (CL), little Gravel, brown, dry to moist, hard (GLACIAL TILL)		11-27-8 (35) 14"			
747.6							
9.0		LEAN CLAY (CL), brown, moist, stiff (GLACIAL TILL)	10	4-6-7 (13) 14"			
				4-6-7-7 (13) 14"			
742.1							
14.5		END OF BORING	15				Water not observed while drilling.
		Boring immediately backfilled					

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See Descriptive Terminology sheet for explanation of abbreviations

Project Number B2508001
Geotechnical Evaluation
Nesvig Property - Cottage Grove
East of Grey Cloud Trail S & Geneva Ave S
Cottage Grove, Minnesota

BORING: **ST-2**
LOCATION: Captured with RTK GPS.
DATUM: NAD 1983 HARN Adj MN Washington (US Feet)
NORTHING: 125261.9 EASTING: 461678.2
DRILLER: M. Takada LOGGED BY: M. Kudanovych START DATE: 10/20/25 END DATE: 10/20/25
SURFACE ELEVATION: 764.2 ft RIG: 75011 METHOD: 3 1/4" HSA SURFACING: Soil WEATHER:

Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	PID ppm	MC %	Tests or Remarks
762.9		SILTY SAND (SM), fine to medium-grained, trace roots, dark brown, dry (TOPSOIL)					
1.3		SANDY LEAN CLAY (CL), brown, moist, soft (ALLUVIUM)		1-2-2 (4) 14"		28	
760.2							
4.0		POORLY GRADED SAND with SILT (SP-SM), fine to medium-grained, with Gravel, brown, dry, medium dense (GLACIAL OUTWASH)	5	13-12-11 (23) 10"			
				6-8-11 (19) 14"			
755.2							
9.0		POORLY GRADED SAND (SP), fine to medium-grained, trace Gravel, brown, dry, medium dense (GLACIAL OUTWASH)	10	4-7-8 (15) 14"			
752.2							
12.0		LIMESTONE, tan, highly weathered, (APPARENT BEDROCK)		13-15-16-19 (31) 10"			
749.7							
14.5		END OF BORING	15				Water not observed while drilling.
		Boring immediately backfilled					

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See Descriptive Terminology sheet for explanation of abbreviations

Project Number B2508001
Geotechnical Evaluation
Nesvig Property - Cottage Grove
East of Grey Cloud Trail S & Geneva Ave S
Cottage Grove, Minnesota

BORING: **ST-3**
LOCATION: Captured with RTK GPS.
DATUM: NAD 1983 HARN Adj MN Washington (US Feet)
NORTHING: 125156.5 EASTING: 462000.8
DRILLER: M. Takada LOGGED BY: M. Kudanovych START DATE: 10/20/25 END DATE: 10/20/25
SURFACE ELEVATION: 756.6 ft RIG: 75011 METHOD: 3 1/4" HSA SURFACING: Soil WEATHER:

Elev./ Depth ft	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	PID ppm	MC %	Tests or Remarks
756.1	SILTY SAND (SM), fine to medium-grained, trace roots, dark brown, moist (TOPSOIL)					
0.5	POORLY GRADED SAND with SILT (SP-SM), fine to medium-grained, trace Gravel, brown, moist, loose (GLACIAL OUTWASH)		3-4-5 (9) 14"		4	P200=9%
752.6						
4.0	POORLY GRADED SAND (SP), fine to medium-grained, trace Gravel, lenses of Clay and weathered bedrock, brown, moist, medium dense (GLACIAL OUTWASH)	5	3-7-5 (12) 14"			
749.6						
7.0	LIMESTONE, tan, highly weathered, (APPARENT BEDROCK)		13-15-11 (26) 14"			
		10	16-23-32 (55) 14"			
743.9						
12.7	END OF BORING		50/2" (REF) 2"			Water not observed while drilling.
	Boring immediately backfilled	15				

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See Descriptive Terminology sheet for explanation of abbreviations

Project Number B2508001
Geotechnical Evaluation
Nesvig Property - Cottage Grove
East of Grey Cloud Trail S & Geneva Ave S
Cottage Grove, Minnesota

BORING: **ST-4**
LOCATION: Captured with RTK GPS.
DATUM: NAD 1983 HARN Adj MN Washington (US Feet)
NORTHING: 124650.4 EASTING: 462075.7
DRILLER: M. Takada LOGGED BY: M. Kudanovych START DATE: 10/20/25 END DATE: 10/20/25
SURFACE ELEVATION: 759.0 ft RIG: 75011 METHOD: 3 1/4" HSA SURFACING: Soil WEATHER:

Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	PID ppm	MC %	Tests or Remarks
757.0		SILTY SAND (SM), fine to medium-grained, trace roots, dark brown, dry (TOPSOIL)					
2.0		SANDY LEAN CLAY (CL), trace Gravel, brown, moist (GLACIAL TILL)		3-3-4 (7) 14"		20	
755.0							
4.0		POORLY GRADED SAND (SP), fine to medium-grained, trace Gravel, brown, dry (GLACIAL OUTWASH)	5	3-4-6 (10) 14"			
				3-4-6 (10) 14"			
750.0							
9.0		LIMESTONE, tan, highly weathered, (APPARENT BEDROCK)	10	6-11-13 (24) 12"			
746.4							
12.7		END OF BORING Boring immediately backfilled		50/2" (REF) 2"			Water not observed while drilling.
			15				

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See Descriptive Terminology sheet for explanation of abbreviations

Project Number B2508001
Geotechnical Evaluation
Nesvig Property - Cottage Grove
East of Grey Cloud Trail S & Geneva Ave S
Cottage Grove, Minnesota

BORING: **ST-5**
LOCATION: Captured with RTK GPS.
DATUM: NAD 1983 HARN Adj MN Washington (US Feet)
NORTHING: 124213.1 EASTING: 461812.4
DRILLER: M. Takada LOGGED BY: M. Kudanovych START DATE: 10/20/25 END DATE: 10/20/25
SURFACE ELEVATION: 760.5 ft RIG: 75011 METHOD: 3 1/4" HSA SURFACING: Soil WEATHER:

Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	PID ppm	MC %	Tests or Remarks
759.5		SILTY SAND (SM), fine to medium-grained, trace roots, dark brown, dry (TOPSOIL)					
1.0		SANDY LEAN CLAY (CL), trace Gravel, brown, moist, medium (ALLUVIUM)		1-2-3 (5) 12"		17	
756.5							
4.0		SILTY SAND (SM), fine to medium-grained, trace Gravel, brown, moist, loose (GLACIAL OUTWASH)	5	3-4-6 (10) 14"		7	
753.5							
7.0		CLAYEY SAND (SC), with Gravel, reddish brown, moist, stiff (GLACIAL TILL)		4-7-8 (15) 12"			
751.5							
9.0		SILTY SAND (SM), fine-grained, brown, dry, medium dense (RESIDUUM)	10	3-6-7 (13) 14"			
748.5							
12.0		LIMESTONE, tan, highly weathered, (APPARENT BEDROCK)		50/2" (REF) 2"			Water not observed while drilling.
747.8							
12.7		END OF BORING					
		Boring immediately backfilled	15				

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LOG OF BORING

See Descriptive Terminology sheet for explanation of abbreviations

Project Number B2508001
Geotechnical Evaluation
Nesvig Property - Cottage Grove
East of Grey Cloud Trail S & Geneva Ave S
Cottage Grove, Minnesota

BORING: **ST-6**
LOCATION: Captured with RTK GPS.
DATUM: NAD 1983 HARN Adj MN Washington (US Feet)
NORTHING: 124316.2 EASTING: 462244.2
DRILLER: M. Takada LOGGED BY: M. Kudanovych START DATE: 10/20/25 END DATE: 10/20/25
SURFACE ELEVATION: 762.3 ft RIG: 75011 METHOD: 3 1/4" HSA SURFACING: Soil WEATHER:

Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	PID ppm	MC %	Tests or Remarks
760.7		SILTY SAND (SM), fine to medium-grained, trace roots, dark brown, dry (TOPSOIL)					
1.6		SANDY LEAN CLAY (CL), brown, moist, medium (ALLUVIUM)		3-2-4 (6) 14"		25	
758.3							
4.0		POORLY GRADED SAND with SILT (SP-SM), fine to medium-grained, trace Gravel, brown, moist, loose (GLACIAL OUTWASH)	5	3-3-4 (7) 14"		6	P200=8%
755.3							
7.0		SILTY SAND (SM), fine to coarse-grained, with Gravel, brown, moist, medium dense (GLACIAL TILL)		3-4-11 (15) 14"			
753.3							
9.0		SILTY SAND (SM), fine-grained, with Gravel, brown, dry, dense (RESIDUUM)	10	27-50/5" (REF) 8"			
				19-21-27-36 (48) 14"			
747.8							
14.5		END OF BORING	15				Water not observed while drilling.
		Boring immediately backfilled					

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LOG OF BORING

See Descriptive Terminology sheet for explanation of abbreviations

Project Number B2508001
Geotechnical Evaluation
Nesvig Property - Cottage Grove
East of Grey Cloud Trail S & Geneva Ave S
Cottage Grove, Minnesota

BORING: **ST-7**
LOCATION: Captured with RTK GPS.
DATUM: NAD 1983 HARN Adj MN Washington (US Feet)
NORTHING: 124358.0 EASTING: 462946.7
DRILLER: M. Takada LOGGED BY: M. Kudanovych START DATE: 10/20/25 END DATE: 10/20/25
SURFACE ELEVATION: 753.2 ft RIG: 75011 METHOD: 3 1/4" HSA SURFACING: Soil WEATHER:

Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	PID ppm	MC %	Tests or Remarks
751.8		SILTY SAND (SM), fine to medium-grained, trace roots, dark brown, dry (TOPSOIL)					
1.4		CLAYEY SAND (SC), trace Limestone, brown, moist, stiff (GLACIAL TILL)		3-4-7 (11) 14"		10	
749.2							
4.0		LIMESTONE, tan, highly weathered, (APPARENT BEDROCK)	5	7-6-9 (15) 14"			
				50/3" (REF)			
			10				
742.2				50/3" (REF) 2"			
11.0		END OF BORING Boring immediately backfilled	15				Water not observed while drilling.

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LOG OF TEST PIT

Project Number B2310333
Geotechnical Evaluation
Nesvig Property
9451 Grey Cloud Trail South
Cottage Grove, Minnesota

TEST PIT:	**TP-15**
LOCATION: See attached sketch	
DATUM:	
NORTHING:	EASTING:
EXCAVATOR: Enebak Construction	LOGGED BY: J. Carlson
START DATE: 10/16/23	END DATE: 10/16/23
SURFACE ELEVATION: 750.2 ft	RIG: Excavator
SURFACING: Field	WEATHER: Sun, 60°F

Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487)	Sample	PID ppm	Tests or Remarks
748.7		SILTY SAND (SM), dark brown, moist (TOPSOIL)			
1.5		SILTY SAND (SM), fine to medium-grained, little Gravel, and Cobbles, brown, moist			
746.2					
4.0		LIMESTONE, brown, highly weathered			
745.2					
5.0		END OF TEST PIT Test pit then backfilled with spoils			Water not observed while excavating.

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LOG OF TEST PIT

Project Number B2310333
Geotechnical Evaluation
Nesvig Property
9451 Grey Cloud Trail South
Cottage Grove, Minnesota

TEST PIT:	**TP-16**
LOCATION: See attached sketch	
DATUM:	
NORTHING:	EASTING:
EXCAVATOR: Enebak Construction	LOGGED BY: J. Carlson
START DATE: 10/16/23	END DATE: 10/16/23
SURFACE ELEVATION: 748.5 ft	RIG: Excavator
SURFACING: Field	WEATHER: Sun, 60°F

Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487)	Sample	PID ppm	Tests or Remarks
747.0		SILTY SAND (SM), dark brown, moist (TOPSOIL)			
1.5		SILTY SAND (SM), fine to medium-grained, with Gravel, and Cobbles, brown, moist			
743.5					
5.0		LIMESTONE, brown, highly weathered			
743.0		END OF TEST PIT			Water not observed while excavating.
5.5		Test pit then backfilled with spoils			

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LOG OF TEST PIT

Project Number B2310333
Geotechnical Evaluation
Nesvig Property
9451 Grey Cloud Trail South
Cottage Grove, Minnesota

TEST PIT:	**TP-17**
LOCATION: See attached sketch	
DATUM:	
NORTHING:	EASTING:
EXCAVATOR: Enebak Construction	LOGGED BY: J. Carlson
START DATE: 10/16/23	END DATE: 10/16/23
SURFACE ELEVATION: 756.5 ft	RIG: Excavator
SURFACING: Field	WEATHER: Sun, 60°F

Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487)	Sample	PID ppm	Tests or Remarks
755.0		SILTY SAND (SM), dark brown, moist (TOPSOIL)			
1.5 751.0		SILTY SAND (SM), fine to medium-grained, with Gravel, and Cobbles, brown, moist			
5.5 749.0		LIMESTONE, brown, highly weathered			
7.5		END OF TEST PIT Test pit then backfilled with spoils			Water not observed while excavating.

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LOG OF TEST PIT

Project Number B2310333
Geotechnical Evaluation
Nesvig Property
9451 Grey Cloud Trail South
Cottage Grove, Minnesota

TEST PIT:	**TP-18**
LOCATION: See attached sketch	
DATUM:	
NORTHING:	EASTING:
EXCAVATOR: Enebak Construction	LOGGED BY: J. Carlson
START DATE: 10/16/23	END DATE: 10/16/23
SURFACE ELEVATION: 762.0 ft	RIG: Excavator
SURFACING: Field	WEATHER: Sun, 60°F

Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487)	Sample	PID ppm	Tests or Remarks
760.5		SILTY SAND (SM), dark brown, moist (TOPSOIL)			
1.5		LEAN CLAY (CL), brown, moist			
756.5			5		
5.5		POORLY GRADED SAND (SP), fine to medium-grained, trace Gravel, brown, moist			
			10		
751.0					
11.0		LIMESTONE, brown, highly weathered			
750.0					
12.0		END OF TEST PIT Test pit then backfilled with spoils			Water not observed while excavating.
			15		
			20		

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LOG OF TEST PIT

Project Number B2310333
Geotechnical Evaluation
Nesvig Property
9451 Grey Cloud Trail South
Cottage Grove, Minnesota

TEST PIT:	**TP-19**
LOCATION: See attached sketch	
DATUM:	
NORTHING:	EASTING:
EXCAVATOR: Enebak Construction	LOGGED BY: J. Carlson
START DATE: 10/16/23	END DATE: 10/16/23
SURFACE ELEVATION: 752.6 ft	RIG: Excavator
SURFACING: Field	WEATHER: Sun, 60°F

Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487)	Sample	PID ppm	Tests or Remarks
751.1		SILTY SAND (SM), dark brown, moist (TOPSOIL)			
1.5		SILTY SAND (SM), fine to medium-grained, with Gravel, and Cobbles, brown, moist			
748.6					
4.0		LIMESTONE, brown, highly weathered			
744.6					
8.0		END OF TEST PIT Test pit then backfilled with spoils			Water not observed while excavating.

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LOG OF TEST PIT

Project Number B2310333
Geotechnical Evaluation
Nesvig Property
9451 Grey Cloud Trail South
Cottage Grove, Minnesota

TEST PIT:	**TP-20**
LOCATION: See attached sketch	
DATUM:	
NORTHING:	EASTING:
EXCAVATOR: Enebak Construction	LOGGED BY: J. Carlson
START DATE: 10/16/23	END DATE: 10/16/23
SURFACE ELEVATION: 756.3 ft	RIG: Excavator
SURFACING: Field	WEATHER: Sun, 60°F

Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487)	Sample	PID ppm	Tests or Remarks
755.3		SILTY SAND (SM), dark brown, moist (TOPSOIL)			
1.0		LEAN CLAY (CL), brown, moist			
753.3					
3.0		POORLY GRADED SAND (SP), fine to medium-grained, trace Gravel, and Cobbles, light brown, moist			
749.3					
7.0		LIMESTONE, brown, highly weathered			
745.3					
11.0		END OF TEST PIT Test pit then backfilled with spoils			Water not observed while excavating.

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LOG OF TEST PIT

Project Number B2310333
Geotechnical Evaluation
Nesvig Property
9451 Grey Cloud Trail South
Cottage Grove, Minnesota

TEST PIT:	**TP-21**
LOCATION: See attached sketch	
DATUM:	
NORTHING:	EASTING:
EXCAVATOR: Enebak Construction	LOGGED BY: J. Carlson
START DATE: 10/16/23	END DATE: 10/16/23
SURFACE ELEVATION: 759.0 ft	RIG: Excavator
SURFACING: Field	WEATHER: Sun, 60°F

Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487)	Sample	PID ppm	Tests or Remarks
755.0		SILTY SAND (SM), dark brown, moist (TOPSOIL)			
4.0		SILTY SAND (SM), fine to medium-grained, with Gravel, and Cobbles, brown, moist			
751.5			5		
7.5		LIMESTONE, brown, highly weathered			
			10		
744.5					
14.5		END OF TEST PIT	15		Water not observed while excavating.
		Test pit then backfilled with spoils			
			20		

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LOG OF TEST PIT

Project Number B2310333
Geotechnical Evaluation
Nesvig Property
9451 Grey Cloud Trail South
Cottage Grove, Minnesota

TEST PIT:	**TP-22**
LOCATION: See attached sketch	
DATUM:	
NORTHING:	EASTING:
EXCAVATOR: Enebak Construction	LOGGED BY: J. Carlson
START DATE: 10/16/23	END DATE: 10/16/23
SURFACE ELEVATION: 766.0 ft	RIG: Excavator
SURFACING: Field	WEATHER: Sun, 60°F

Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487)	Sample	PID ppm	Tests or Remarks
765.0		SILTY SAND (SM), dark brown, moist (TOPSOIL)			
1.0		SILTY SAND (SM), fine to medium-grained, with Gravel, and Cobbles, brown, moist			
763.0					
3.0		POORLY GRADED SAND (SP), fine-grained, trace Gravel, light brown, moist			
			5		
			10		
			15		
750.0					
16.0		LIMESTONE, brown, highly weathered			
749.5		END OF TEST PIT			Water not observed while excavating.
16.5		Test pit then backfilled with spoils			
			20		

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HAUGO GEOTECHNICAL SERVICES
Haugo GeoTechnical Services
2825 Cedar Ave South
Minneapolis, MN 55407
Telephone: 612-729-2959
Fax: 763-445-2238

TEST PIT NUMBER TP-1

CLIENT C G Land LLC
PROJECT NAME PID 1902721240001
PROJECT NUMBER 22-0302
PROJECT LOCATION Cottage Grove, MN
DATE STARTED 11/10/22 **COMPLETED** 11/10/22
GROUND ELEVATION 752.2 ft **TEST PIT SIZE** 3 1/4 inches
EXCAVATION CONTRACTOR HGTS - 45
GROUND WATER LEVELS:
EXCAVATION METHOD Test Pit
AT TIME OF EXCAVATION --- Not Encountered
LOGGED BY NA **CHECKED BY** PG
AT END OF EXCAVATION --- Not Encountered
NOTES
AFTER EXCAVATION --- Not Encountered

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	MOISTURE CONT. (%)	NOTES	▲ SPT N VALUE ▲ 20 40 60 80 / PL MC LL 20 40 60 80 / ☐ FINES CONTENT (%) ☐ 20 40 60 80
0.0		Silty Clay, black to dark brown, moist (Topsoil)						
2.5		(SM) Silty Sand, fine to medium grained, trace Gravel, brown, medium dense (Alluvium)						
5.0		(SP) Poorly Graded Sand, fine to medium grained, with Gravel, trace Cobbles, brown, moist (Alluvium)						
7.5		Limestone, tan (Bedrock)						

Bottom of test pit at 8.0 feet.

GEOTECH BH PLOTS - GINT STD US LAB.GDT - 11/18/22 11:46 - C:\USERS\HGTS 3\DROPBOX (HGTS)\HAUGO GEOTECHNICAL SERVICES\2022\22-0302 PID 1902721240001\22-0302 TEST PIT LOG DRAFT.GPJ

HAUGO GEOTECHNICAL SERVICES
Haugo GeoTechnical Services
2825 Cedar Ave South
Minneapolis, MN 55407
Telephone: 612-729-2959
Fax: 763-445-2238

TEST PIT NUMBER TP-3

CLIENT C G Land LLC
PROJECT NAME PID 1902721240001
PROJECT NUMBER 22-0302
PROJECT LOCATION Cottage Grove, MN
DATE STARTED 11/10/22 **COMPLETED** 11/10/22
GROUND ELEVATION 757.1 ft **TEST PIT SIZE** 3 1/4 inches
EXCAVATION CONTRACTOR HGTS - 45
GROUND WATER LEVELS:
EXCAVATION METHOD Test Pit
AT TIME OF EXCAVATION --- Not Encountered
LOGGED BY NA **CHECKED BY** PG
AT END OF EXCAVATION --- Not Encountered
NOTES
AFTER EXCAVATION --- Not Encountered

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	MOISTURE CONT. (%)	NOTES	▲ SPT N VALUE ▲ 20 40 60 80 / PL MC LL 20 40 60 80 / ☐ FINES CONTENT (%) ☐ 20 40 60 80
0.0		Silty Sand, dark brown and black, moist (Topsoil)						
2.5		(SP-SM) Poorly Graded Sand with Silt, fine to coarse grained, with Gravel, brown, medium dense (Alluvium)						
5.0		(CL) Lean Clay, greenish grey, moist (Alluvium)						
7.5		Weathered Limestone, tan (Bedrock)						
		Limestone, tan (Bedrock)						

Bottom of test pit at 9.0 feet.

GEOTECH BH PLOTS - GINT STD US LAB.GDT - 11/18/22 11:48 - C:\USERS\HGTS 3\DROPBOX (HGTS)\HAUGO GEOTECHNICAL SERVICES\2022\22-0302 PID 1902721240001\22-0302 TEST PIT LOG DRAFT.GPJ

Haugo GeoTechnical Services
2825 Cedar Ave South
Minneapolis, MN 55407
Telephone: 612-729-2959
Fax: 763-445-2238

TEST PIT NUMBER TP-4

CLIENT C G Land LLC
PROJECT NAME PID 1902721240001
PROJECT NUMBER 22-0302
PROJECT LOCATION Cottage Grove, MN
DATE STARTED 11/10/22 **COMPLETED** 11/10/22
GROUND ELEVATION 751.4 ft **TEST PIT SIZE** 3 1/4 inches
EXCAVATION CONTRACTOR HGTS - 45
GROUND WATER LEVELS:
EXCAVATION METHOD Test Pit
AT TIME OF EXCAVATION --- Not Encountered
LOGGED BY NA **CHECKED BY** PG
AT END OF EXCAVATION --- Not Encountered
NOTES
AFTER EXCAVATION --- Not Encountered

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	MOISTURE CONT. (%)	NOTES
0.0		Silty Clay, black, moist (Topsoil)					
2.5		(SP-SM) Poorly Graded Sand with Silt, fine to coarse grained, with Gravel, brown, medium dense					
5.0		Limestone, tan (Bedrock)					

Bottom of test pit at 5.0 feet.

▲ SPT N VALUE ▲
20 40 60 80
PL MC LL
20 40 60 80
☐ FINES CONTENT (%) ☐
20 40 60 80

GEOTECH BH PLOTS - GINT STD US LAB.GDT - 11/18/22 11:48 - C:\USERS\HGTS 3\DROPBOX (HGTS)\HAUGO GEOTECHNICAL SERVICES\2022\22-0302 PID 190272124000\122-0302 TEST PIT LOG DRAFT.GPJ

HAUGO GEOTECHNICAL SERVICES
Haugo GeoTechnical Services
2825 Cedar Ave South
Minneapolis, MN 55407
Telephone: 612-729-2959
Fax: 763-445-2238

TEST PIT NUMBER TP-5

CLIENT C G Land LLC
PROJECT NAME PID 1902721240001
PROJECT NUMBER 22-0302
PROJECT LOCATION Cottage Grove, MN
DATE STARTED 11/10/22 **COMPLETED** 11/10/22
GROUND ELEVATION 751.7 ft **TEST PIT SIZE** 3 1/4 inches
EXCAVATION CONTRACTOR HGTS - 45
GROUND WATER LEVELS:
EXCAVATION METHOD Test Pit
AT TIME OF EXCAVATION --- Not Encountered
LOGGED BY NA **CHECKED BY** PG
AT END OF EXCAVATION --- Not Encountered
NOTES
AFTER EXCAVATION --- Not Encountered

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	MOISTURE CONT. (%)	NOTES	▲ SPT N VALUE ▲ 20 40 60 80 / PL MC LL 20 40 60 80 / ☐ FINES CONTENT (%) ☐ 20 40 60 80
0.0		Silty Clay, black, moist (Topsoil)						
2.5		Limestone, tan (Bedrock)						

Bottom of test pit at 4.5 feet.

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Haugo GeoTechnical Services
2825 Cedar Ave South
Minneapolis, MN 55407
Telephone: 612-729-2959
Fax: 763-445-2238

TEST PIT NUMBER TP-6

CLIENT C G Land LLC
PROJECT NAME PID 1902721240001
PROJECT NUMBER 22-0302
PROJECT LOCATION Cottage Grove, MN
DATE STARTED 11/10/22 **COMPLETED** 11/10/22
GROUND ELEVATION 751.1 ft **TEST PIT SIZE** 3 1/4 inches
EXCAVATION CONTRACTOR HGTS - 45
GROUND WATER LEVELS:
EXCAVATION METHOD Test Pit
AT TIME OF EXCAVATION --- Not Encountered
LOGGED BY NA **CHECKED BY** PG
AT END OF EXCAVATION --- Not Encountered
NOTES
AFTER EXCAVATION --- Not Encountered

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	MOISTURE CONT. (%)	NOTES	▲ SPT N VALUE ▲ 20 40 60 80 / PL MC LL 20 40 60 80 / ☐ FINES CONTENT (%) ☐ 20 40 60 80
0.0		Silty Clay, black, moist (Topsoil)						
2.5		(SM) Silty Sand, fine to medium grained, trace Gravel, brown, moist (Alluvium)						
		Limestone, tan (Bedrock)						

Bottom of test pit at 3.5 feet.

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Haugo GeoTechnical Services
2825 Cedar Ave South
Minneapolis, MN 55407
Telephone: 612-729-2959
Fax: 763-445-2238

TEST PIT NUMBER TP-7

CLIENT C G Land LLC
PROJECT NAME PID 1902721240001
PROJECT NUMBER 22-0302
PROJECT LOCATION Cottage Grove, MN
DATE STARTED 11/10/22 **COMPLETED** 11/10/22
GROUND ELEVATION 750.9 ft **TEST PIT SIZE** 3 1/4 inches
EXCAVATION CONTRACTOR HGTS - 45
GROUND WATER LEVELS:
EXCAVATION METHOD Test Pit
AT TIME OF EXCAVATION --- Not Encountered
LOGGED BY NA **CHECKED BY** PG
AT END OF EXCAVATION --- Not Encountered
NOTES
AFTER EXCAVATION --- Not Encountered

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	MOISTURE CONT. (%)	NOTES	▲ SPT N VALUE ▲ 20 40 60 80 / PL MC LL 20 40 60 80 / ☐ FINES CONTENT (%) ☐ 20 40 60 80
0.0		Silty Clay, black, moist (Topsoil)						
2.5		(SP-SM) Poorly Graded Sand with Silt, fine to medium grained, with Gravel, reddish brown (Alluvium)						
5.0		Weathered Limestone, tan (Bedrock)						
		Limestone, tan (Bedrock)						

Bottom of test pit at 7.0 feet.

GEOTECH BH PLOTS - GINT STD US LAB.GDT - 11/18/22 11:48 - C:\USERS\HGTS 3\ORDROX (HGTS)\HAUGO GEOTECHNICAL SERVICES\2022\22-0302 PID 19027212400011\22-0302 TEST PIT LOG DRAFT.GPJ

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2825 Cedar Ave South
Minneapolis, MN 55407
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Fax: 763-445-2238

TEST PIT NUMBER TP-9

CLIENT C G Land LLC
PROJECT NAME PID 1902721240001
PROJECT NUMBER 22-0302
PROJECT LOCATION Cottage Grove, MN
DATE STARTED 11/10/22 **COMPLETED** 11/10/22
GROUND ELEVATION 766.9 ft **TEST PIT SIZE** 3 1/4 inches
EXCAVATION CONTRACTOR HGTS - 45
GROUND WATER LEVELS:
EXCAVATION METHOD Test Pit
AT TIME OF EXCAVATION --- Not Encountered
LOGGED BY NA **CHECKED BY** PG
AT END OF EXCAVATION --- Not Encountered
NOTES
AFTER EXCAVATION --- Not Encountered

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	MOISTURE CONT. (%)	NOTES	▲ SPT N VALUE ▲ 20 40 60 80 / PL MC LL 20 40 60 80 / ☐ FINES CONTENT (%) ☐ 20 40 60 80
0.0		Sandy Lean Clay, dark brown, moist (Topsoil)						
2.5		(SM) Silty Sand, fine to medium grained, reddish brown, moist (Alluvium)						
5.0		(SP) Poorly Graded Sand, fine to coarse grained, with Gravel, brown, medium dense (Alluvium)						
7.5		(SP) Poorly Graded Sand, fine grained, brown, moist (Alluvium)						
10.0								
12.5								
15.0		(SC) Clayey Sand, reddish brown, moist (Alluvium)						
		Limestone, tan (Bedrock)						

Bottom of test pit at 16.0 feet.

GEOTECH BH PLOTS - GINT STD US LAB.GDT - 11/16/22 11:46 - C:\USERS\HGTS 3\DROPBOX (HGTS)\HAUGO GEOTECHNICAL SERVICES\2022\22-0302 PID 1902721240001\22-0302 TEST PIT LOG DRAFT.GPJ

HAUGO GEOTECHNICAL SERVICES
Haugo GeoTechnical Services
2825 Cedar Ave South
Minneapolis, MN 55407
Telephone: 612-729-2959
Fax: 763-445-2238

TEST PIT NUMBER TP-10

CLIENT C G Land LLC
PROJECT NAME PID 1902721240001
PROJECT NUMBER 22-0302
PROJECT LOCATION Cottage Grove, MN
DATE STARTED 11/10/22 **COMPLETED** 11/10/22
GROUND ELEVATION 764.1 ft **TEST PIT SIZE** 3 1/4 inches
EXCAVATION CONTRACTOR HGTS - 45
GROUND WATER LEVELS:
EXCAVATION METHOD Test Pit
AT TIME OF EXCAVATION --- Not Encountered
LOGGED BY NA **CHECKED BY** PG
AT END OF EXCAVATION --- Not Encountered
NOTES
AFTER EXCAVATION --- Not Encountered

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	MOISTURE CONT. (%)	NOTES	▲ SPT N VALUE ▲ 20 40 60 80 / PL MC LL 20 40 60 80 / ☐ FINES CONTENT (%) ☐ 20 40 60 80
0.0		Silty Sand, black, moist (Topsoil)						
2.5		(SP-SM) Poorly Graded Sand with Silt, fine to medium grained, trace Gravel, moist (Alluvium)						
5.0								
7.5								
10.0								

Bottom of test pit at 12.0 feet.

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2825 Cedar Ave South
Minneapolis, MN 55407
Telephone: 612-729-2959
Fax: 763-445-2238

TEST PIT NUMBER TP-11

CLIENT C G Land LLC
PROJECT NAME PID 1902721240001
PROJECT NUMBER 22-0302
PROJECT LOCATION Cottage Grove, MN
DATE STARTED 11/10/22 **COMPLETED** 11/10/22
GROUND ELEVATION 765.7 ft **TEST PIT SIZE** 3 1/4 inches
EXCAVATION CONTRACTOR HGTS - 45
GROUND WATER LEVELS:
EXCAVATION METHOD Test Pit
AT TIME OF EXCAVATION --- Not Encountered
LOGGED BY NA **CHECKED BY** PG
AT END OF EXCAVATION --- Not Encountered
NOTES
AFTER EXCAVATION --- Not Encountered

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	MOISTURE CONT. (%)	NOTES
0.0		Silty Sand, dark brown and black, moist (Topsoil)					
2.5		(SM) Silty Sand, fine to medium grained, brown, moist (Alluvium)					
5.0		(SP) Poorly Graded Sand, fine to medium grained, brown, moist (Alluvium)					
12.5		Weathered Limestone, tan (Bedrock)					
15.0		Limestone, tan (Bedrock)					

Bottom of test pit at 15.0 feet.

▲ SPT N VALUE ▲ 20 40 60 80
PL MC LL 20 40 60 80
☐ FINES CONTENT (%) ☐ 20 40 60 80

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Haugo GeoTechnical Services
2825 Cedar Ave South
Minneapolis, MN 55407
Telephone: 612-729-2959
Fax: 763-445-2238

TEST PIT NUMBER TP-12

CLIENT C G Land LLC
PROJECT NAME PID 1902721240001
PROJECT NUMBER 22-0302
PROJECT LOCATION Cottage Grove, MN
DATE STARTED 11/10/22 **COMPLETED** 11/10/22
GROUND ELEVATION 749.6 ft **TEST PIT SIZE** 3 1/4 inches
EXCAVATION CONTRACTOR HGTS - 45
GROUND WATER LEVELS:
EXCAVATION METHOD Test Pit
AT TIME OF EXCAVATION --- Not Encountered
LOGGED BY NA **CHECKED BY** PG
AT END OF EXCAVATION --- Not Encountered
NOTES
AFTER EXCAVATION --- Not Encountered

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	MOISTURE CONT. (%)	NOTES	▲ SPT N VALUE ▲ 20 40 60 80 / PL MC LL 20 40 60 80 / ☐ FINES CONTENT (%) ☐ 20 40 60 80
0.0		Silty Sand, dark brown and black, medium grained (Topsoil)						
		(SP-SM) Poorly Graded Sand with Silt, fine to medium grained, brown, moist (Alluvium)						
2.5		Limestone, tan (Bedrock)						

Bottom of test pit at 4.0 feet.

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Haugo GeoTechnical Services
2825 Cedar Ave South
Minneapolis, MN 55407
Telephone: 612-729-2959
Fax: 763-445-2238

TEST PIT NUMBER TP-13

CLIENT C G Land LLC
PROJECT NAME PID 1902721240001
PROJECT NUMBER 22-0302
PROJECT LOCATION Cottage Grove, MN
DATE STARTED 11/10/22 **COMPLETED** 11/10/22
GROUND ELEVATION 747.3 ft **TEST PIT SIZE** 3 1/4 Inches
EXCAVATION CONTRACTOR HGTS - 45
GROUND WATER LEVELS:
EXCAVATION METHOD Test Pit
AT TIME OF EXCAVATION --- Not Encountered
LOGGED BY NA **CHECKED BY** PG
AT END OF EXCAVATION --- Not Encountered
NOTES
AFTER EXCAVATION --- Not Encountered

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	MOISTURE CONT. (%)	NOTES	▲ SPT N VALUE ▲ 20 40 60 80 / PL MC LL 20 40 60 80 / ☐ FINES CONTENT (%) ☐ 20 40 60 80
0.0		Silty Clay, black, moist (Topsoil)						
2.5		(SM) Silty Sand, fine to medium grained, reddish brown, moist (Alluvium)						
5.0		Weathered Limestone, tan (Bedrock)						
		Limestone, tan (Bedrock)						

Bottom of test pit at 6.0 feet.

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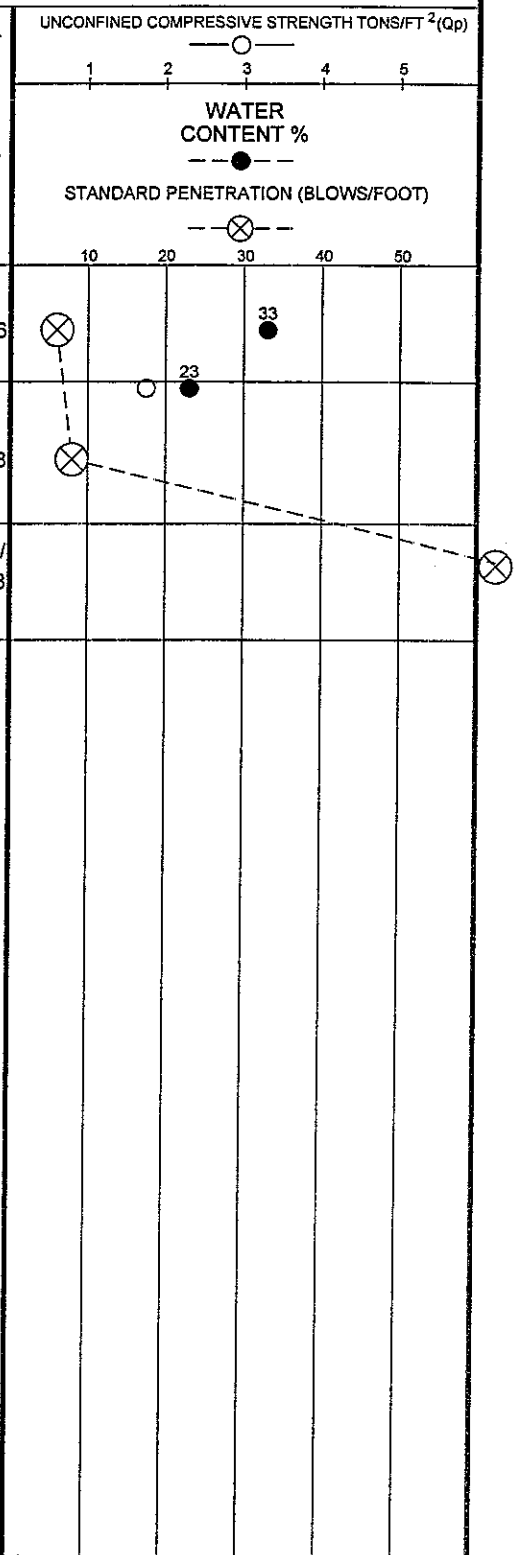
LOG OF BORING 197

PROJECT Rivers Edge Residential Development	SITE Grey Cloud Island Drive St. Paul Park, Minnesota
CLIENT D.R. Horton, Inc.	ARCHITECT-ENGINEER

SURFACE ELEVATION 751.1

DEPTH, FEET	SAMPLE NUMBER AND TYPE	WATER LEVEL	STRATA CHANGE, FEET	DESCRIPTION OF MATERIAL	SPECIAL TEST RESULTS	N-VALUE (BLOWS/FT.)
	1SS		1.8	Black Silt, trace sand, organic fines - soft - (ML) (Topsoil)		6
	2SS		4.0	Brown lean Clay, trace sand - very stiff - (CL)		8
5	3SS			Brown Silty Sand with sandstone fragments - extremely dense - damp - (SM) (Probable Weathered Bedrock)		73/ 0.8
				Auger refusal at 5 8 feet End of boring at 5.8 feet Hollow stem auger used full depth Borehole backfilled with cuttings		



WATER LEVEL OBSERVATIONS	
W.L.	Groundwater not encountered
W.L.	while drilling or after HSA
W.L.	removal

GME CONSULTANTS, INC.
Geotechnical Materials Environmental
14000 21st Avenue No.
Minneapolis, MN 55447
(763) 559-1859

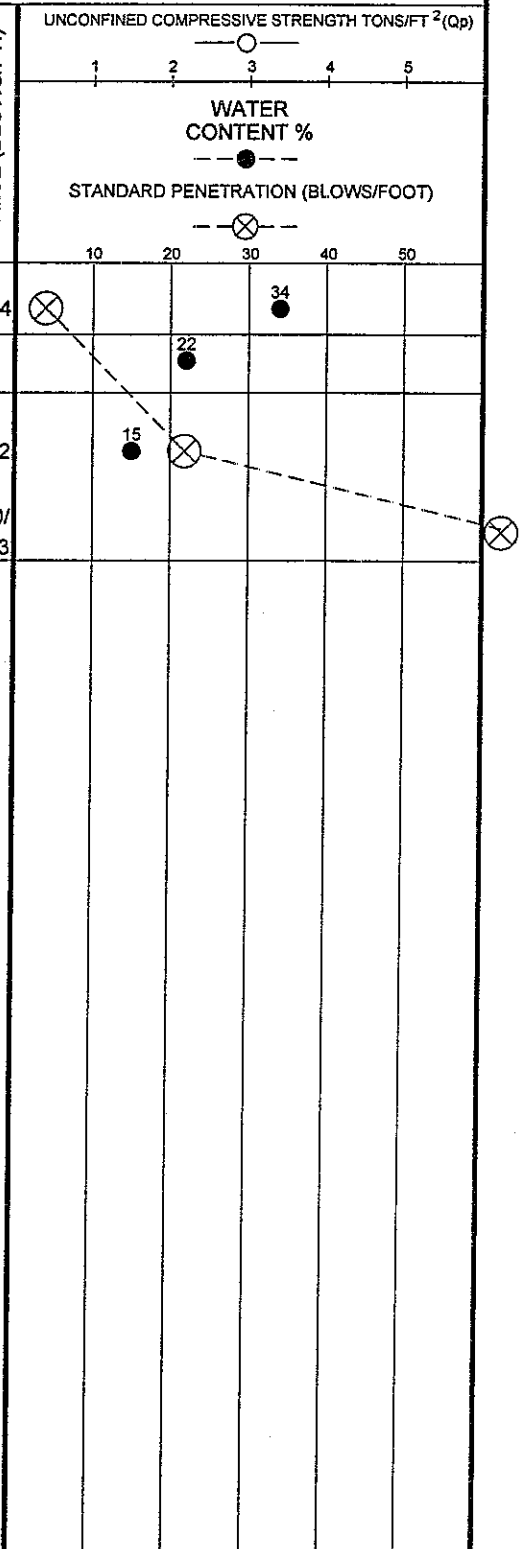
BORING STARTED	11/30/05		
BORING COMPLETED	11/30/05		
RIG	CME-750	DRILLER	SB
DRAWN	KMB	APPROVED	JPB
JOB #	9794-A	SHEET	1 of 1

The stratification lines represent approximate boundaries between soil types; insitu the transition may be gradual.

LOG OF BORING 198

PROJECT Rivers Edge Residential Development	SITE Grey Cloud Island Drive St. Paul Park, Minnesota
CLIENT D.R. Horton, Inc.	ARCHITECT-ENGINEER

DEPTH, FEET	SAMPLE NUMBER AND TYPE	WATER LEVEL	STRATA CHANGE, FEET	DESCRIPTION OF MATERIAL	SPECIAL TEST RESULTS	N-VALUE (BLOWS/FT.)
				SURFACE ELEVATION 751.0		
	1SS		1.1	Black Silt, trace sand, organic fines - soft - (ML) (Topsoil)		4
			2.0	Brown lean Clay, trace sand - (CL)		
	2SS			Brown Silty Sand with rock fragments - medium dense to extremely dense - damp - (SM) (Probable Weathered Bedrock)		22
	3SS					50/ 0.3
				Auger refusal at 4.6 feet End of boring at 4.6 feet Hollow stem auger used full depth Borehole backfilled with cuttings		



WATER LEVEL OBSERVATIONS	
W.L.	Groundwater not encountered
W.L.	while drilling or after HSA
W.L.	removal

GME CONSULTANTS, INC.
Geotechnical Materials Environmental
14000 21st Avenue No.
Minneapolis, MN 55447
(763) 559-1859

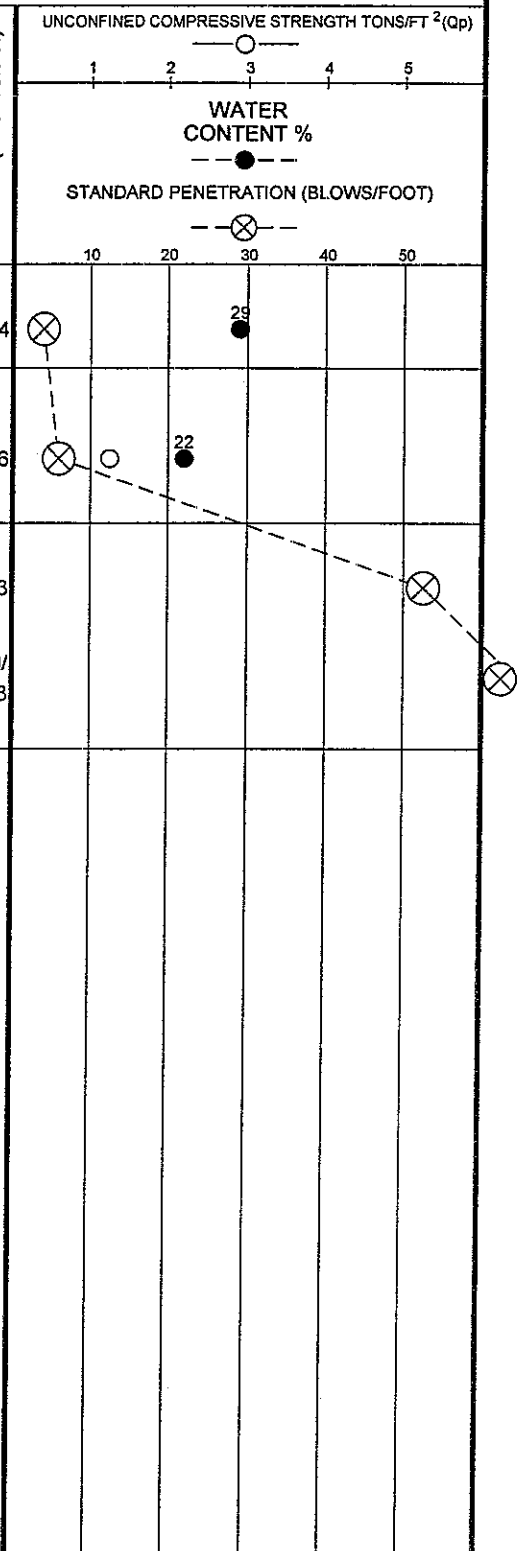
BORING STARTED	11/30/05		
BORING COMPLETED	11/30/05		
RIG	CME-750	DRILLER	SB
DRAWN	KMB	APPROVED	JPB
JOB #	9794-A	SHEET	1 of 1

The stratification lines represent approximate boundaries between soil types; insitu the transition may be gradual.

LOG OF BORING 199

PROJECT Rivers Edge Residential Development	SITE Grey Cloud Island Drive St. Paul Park, Minnesota
CLIENT D.R. Horton, Inc.	ARCHITECT-ENGINEER

DEPTH, FEET	SAMPLE NUMBER AND TYPE	WATER LEVEL	STRATA CHANGE, FEET	DESCRIPTION OF MATERIAL	SPECIAL TEST RESULTS	N-VALUE (BLOWS/FT.)
				SURFACE ELEVATION 752.1		
	1SS		1.6	Black Silt, trace sand, organic fines - soft - (ML) (Topsoil)		4
	2SS		4.0	Brown lean Clay, trace sand - firm - (CL)		6
5	3SS			Brown Silty Sand with sanstone and shale fragments - very dense to extremely dense - damp - (SM) (Probable Weathered Bedrock)		53
	4SS					50/ 0 3
				Auger refusal at 7.5 feet End of boring at 7.5 feet Hollow stem auger used full depth Borehole backfilled with cuttings		



WATER LEVEL OBSERVATIONS	
W.L.	Groundwater not encountered
W.L.	while drilling or after HSA
W.L.	removal

GME CONSULTANTS, INC.
Geotechnical Materials Environmental
14000 21st Avenue No.
Minneapolis, MN 55447
(763) 559-1859

BORING STARTED	11/30/05		
BORING COMPLETED	11/30/05		
RIG	CME-750	DRILLER	SB
DRAWN	KMB	APPROVED	JPB
JOB #	9794-A	SHEET	1 of 1

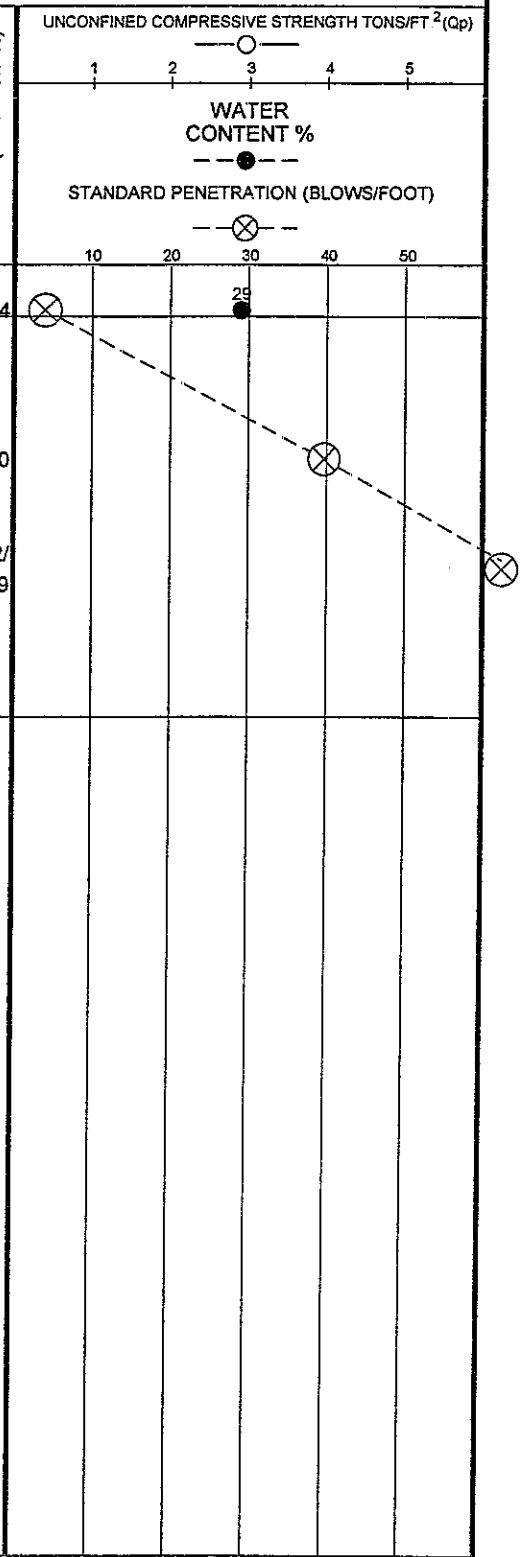
The stratification lines represent approximate boundaries between soil types; insitu the transition may be gradual.

LOG OF BORING 200

PROJECT Rivers Edge Residential Development	SITE Grey Cloud Island Drive St. Paul Park, Minnesota
CLIENT D.R. Horton, Inc.	ARCHITECT-ENGINEER

SURFACE ELEVATION 751.8

DEPTH, FEET	SAMPLE NUMBER AND TYPE	WATER LEVEL	STRATA CHANGE, FEET	DESCRIPTION OF MATERIAL	SPECIAL TEST RESULTS	N-VALUE (BLOWS/FT.)
	1SS		0.8	Black Silt, trace sand, organic fines - (ML) (Topsoil)		4
				Brown Silty Sand with shale fragments - medium dense to extremely dense - damp - (SM) (Probable Weathered Bedrock)		
	2SS					40
5	3SS					92/ 0 9
				Auger refusal at 7 feet End of boring at 7 feet Hollow stem auger used full depth Borehole backfilled with cuttings		



WATER LEVEL OBSERVATIONS	
W.L.	Groundwater not encountered
W.L.	while drilling or after HSA
W.L.	removal

GME CONSULTANTS, INC.
Geotechnical Materials Environmental
14000 21st Avenue No.
Minneapolis, MN 55447
(763) 559-1859

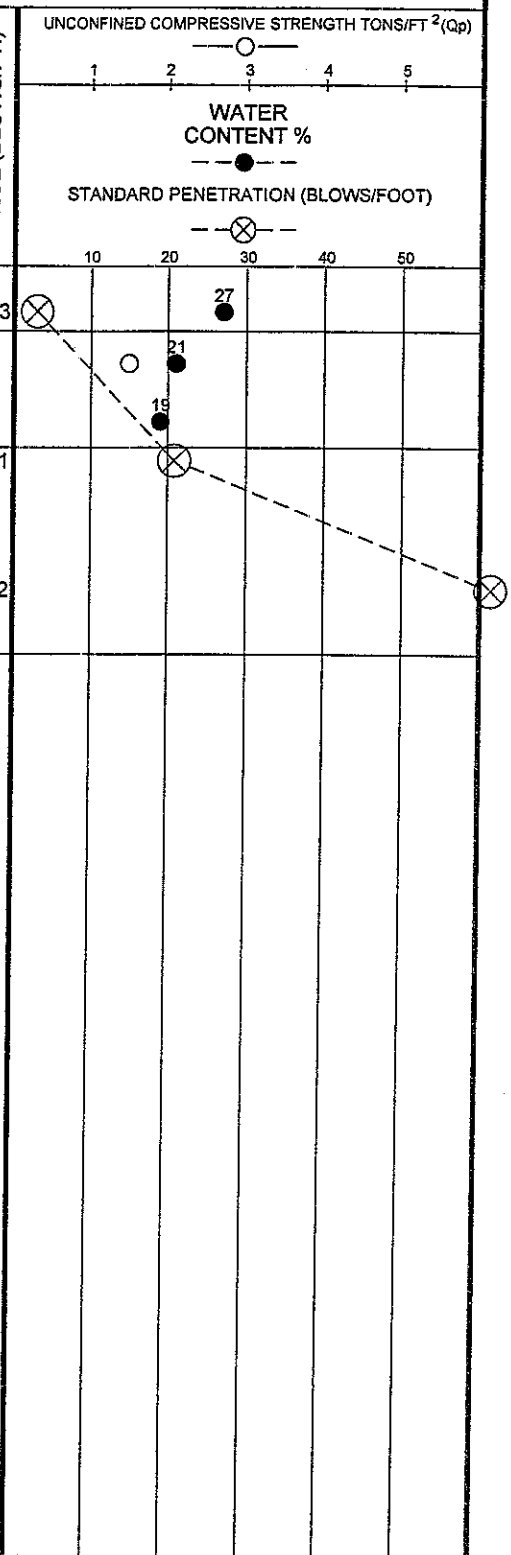
BORING STARTED	11/30/05		
BORING COMPLETED	11/30/05		
RIG	CME-750	DRILLER	SB
DRAWN	KMB	APPROVED	JPB
JOB #	9794-A	SHEET	1 of 1

The stratification lines represent approximate boundaries between soil types; insitu the transition may be gradual.

LOG OF BORING 201

PROJECT Rivers Edge Residential Development	SITE Grey Cloud Island Drive St. Paul Park, Minnesota
CLIENT D.R. Horton, Inc.	ARCHITECT-ENGINEER

DEPTH, FEET	SAMPLE NUMBER AND TYPE	WATER LEVEL	STRATA CHANGE, FEET	DESCRIPTION OF MATERIAL	SPECIAL TEST RESULTS	N-VALUE (BLOWS/FT.)
				SURFACE ELEVATION 751.2		
	1SS		1.0	Black Silt, trace sand, organic fines - soft - (ML) (Topsoil)		3
				Brown lean Clay, trace sand, gravel - (CL)		
	2SS		2.8	Brown Silty Sand with sandstone and shale fragments - very dense - damp - (SM) (Probable Weathered Bedrock)		21
5	3SS					62
				Auger refusal at 6 feet End of boring at 6 feet Hollow stem auger used full depth Borehole backfilled with cuttings		



WATER LEVEL OBSERVATIONS	
W.L.	Groundwater not encountered
W.L.	while drilling or after HSA
W.L.	removal

GME CONSULTANTS, INC.
Geotechnical Materials Environmental
14000 21st Avenue No.
Minneapolis, MN 55447
(763) 559-1859

BORING STARTED	11/30/05		
BORING COMPLETED	11/30/05		
RIG	CME-750	DRILLER	SB
DRAWN	KMB	APPROVED	JPB
JOB #	9794-A	SHEET	1 of 1

The stratification lines represent approximate boundaries between soil types; insitu the transition may be gradual.

LOG OF BORING 202

PROJECT Rivers Edge Residential Development	SITE Grey Cloud Island Drive St. Paul Park, Minnesota
CLIENT D.R. Horton, Inc.	ARCHITECT-ENGINEER

SURFACE ELEVATION 750.3

DEPTH, FEET	SAMPLE NUMBER AND TYPE	WATER LEVEL	STRATA CHANGE, FEET	DESCRIPTION OF MATERIAL	SPECIAL TEST RESULTS	N-VALUE (BLOWS/FT.)
			0.8	Black Silt, trace sand, organic fines - (ML) (Topsoil)		
	1SS			Brown Silty Sand with rock fragments - medium dense to extremely dense - damp - (SM) (Probable Weathered Bedrock)		4
	2SS					17
	3SS					50/ 0.5
				Auger refusal at 4.6 feet End of boring at 4.6 feet Hollow stem auger used full depth Borehole backfilled with cuttings		

UNCONFINED COMPRESSIVE STRENGTH TONS/FT ^{2} (Qp)

1 2 3 4 5

WATER CONTENT %

STANDARD PENETRATION (BLOWS/FOOT)

10 20 30 40 50

29

WATER LEVEL OBSERVATIONS	
W.L.	Groundwater not encountered
W.L.	while drilling or after HSA
W.L.	removal

GME CONSULTANTS, INC.
Geotechnical Materials Environmental
14000 21st Avenue No.
Minneapolis, MN 55447
(763) 559-1859

BORING STARTED	11/30/05
BORING COMPLETED	11/30/05
RIG CME-750	DRILLER SB
DRAWN KMB	APPROVED JPB
JOB # 9794-A	SHEET 1 of 1

The stratification lines represent approximate boundaries between soil types; insitu the transition may be gradual.

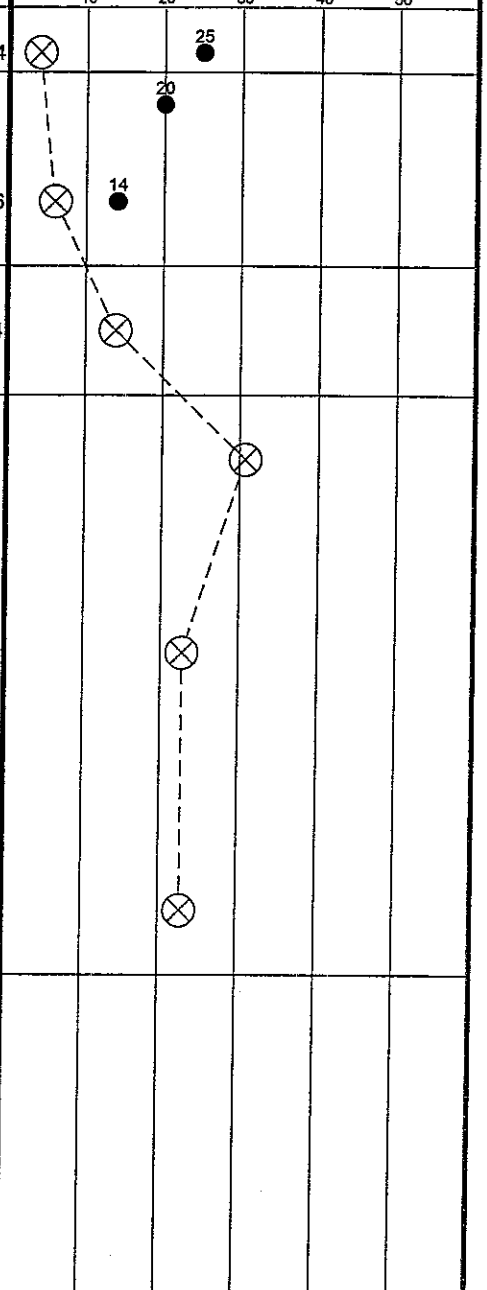
LOG OF BORING 203

PROJECT: Rivers Edge Residential Development
SITE: Grey Cloud Island Drive, St. Paul Park, Minnesota
CLIENT: D.R. Horton, Inc.
ARCHITECT-ENGINEER:

SURFACE ELEVATION: 766.6

DEPTH, FEET	SAMPLE NUMBER AND TYPE	WATER LEVEL	STRATA CHANGE, FEET	DESCRIPTION OF MATERIAL	SPECIAL TEST RESULTS	N-VALUE (BLOWS/FT.)
	1SS		1.0	Black Silt, trace sand, organic fines - soft - (ML) (Topsoil)		4
	2SS		4.0	Brown Silt with Sand - loose - (ML)		6
5	3SS		6.0	Brown Silty Sand, trace gravel - medium dense - damp - (SM)		14
	4SS			Brown poorly graded Sand with Silt, trace gravel - dense to medium dense - damp - (SP-SM)		31
10	5SS					23
	6SS					23
15				End of boring at 15 feet Hollow stem auger used full depth Borehole backfilled with cuttings		

UNCONFINED COMPRESSIVE STRENGTH TONS/FT^2 (Qp): 1 2 3 4 5
WATER CONTENT %
STANDARD PENETRATION (BLOWS/FOOT): 10 20 30 40 50



WATER LEVEL OBSERVATIONS

W.L.	Groundwater not encountered
W.L.	while drilling or after HSA
W.L.	removal

Boring caved at 13 feet after HSA removal

GME CONSULTANTS, INC.
Geotechnical Materials Environmental
14000 21st Avenue No.
Minneapolis, MN 55447
(763) 559-1859

BORING STARTED	11/30/05		
BORING COMPLETED	11/30/05		
RIG	CME-750	DRILLER	SB
DRAWN	KMB	APPROVED	JPB
JOB #	9794-A	SHEET	1 of 1

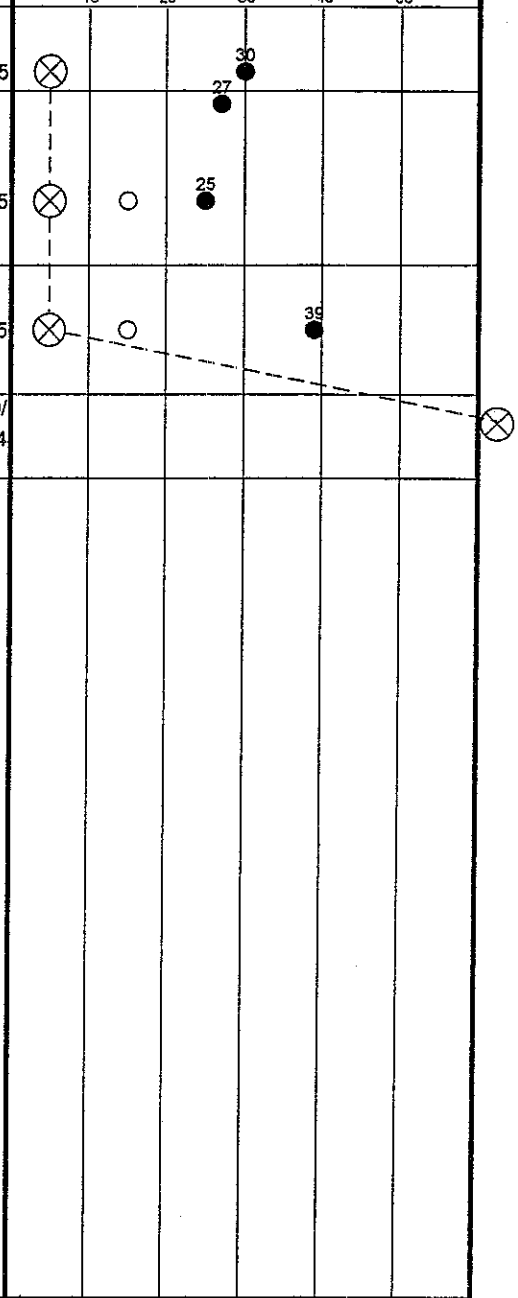
The stratification lines represent approximate boundaries between soil types; insitu the transition may be gradual.

LOG OF BORING 204

PROJECT Rivers Edge Residential Development	SITE Grey Cloud Island Drive St. Paul Park, Minnesota
CLIENT D.R. Horton, Inc.	ARCHITECT-ENGINEER

DEPTH, FEET	SAMPLE NUMBER AND TYPE	WATER LEVEL	STRATA CHANGE, FEET	DESCRIPTION OF MATERIAL	SPECIAL TEST RESULTS	N-VALUE (BLOWS/FT.)
				SURFACE ELEVATION 755.1		
	1SS		1.3	Black Silt, trace sand, organic fines - firm - (ML) (Topsoil)		5
	2SS		4.0	Brown lean Clay, trace sand - firm - (CL)		5
5	3SS		6.0	Gray brown lean to fat Clay - firm - (CL/CH)		5
	4SS			Brown Silty Sand with rock fragments - extremely dense - damp - (SM) (Probable Weathered Bedrock)		50/0.4
				Auger refusal at 7 3 feet End of boring at 7 3 feet Hollow stem auger used full depth Borehole backfilled with cuttings		

UNCONFINED COMPRESSIVE STRENGTH TONS/FT ^{2}(Qp)
1 2 3 4 5
WATER CONTENT %
STANDARD PENETRATION (BLOWS/FOOT)
10 20 30 40 50



WATER LEVEL OBSERVATIONS	
W.L.	Groundwater not encountered
W.L.	while drilling or after HSA
W.L.	removal

GME CONSULTANTS, INC.
Geotechnical Materials Environmental
14000 21st Avenue No.
Minneapolis, MN 55447
(763) 559-1859

BORING STARTED	11/30/05		
BORING COMPLETED	11/30/05		
RIG	CME-750	DRILLER	SB
DRAWN	KMB	APPROVED	JPB
JOB #	9794-A	SHEET	1 of 1

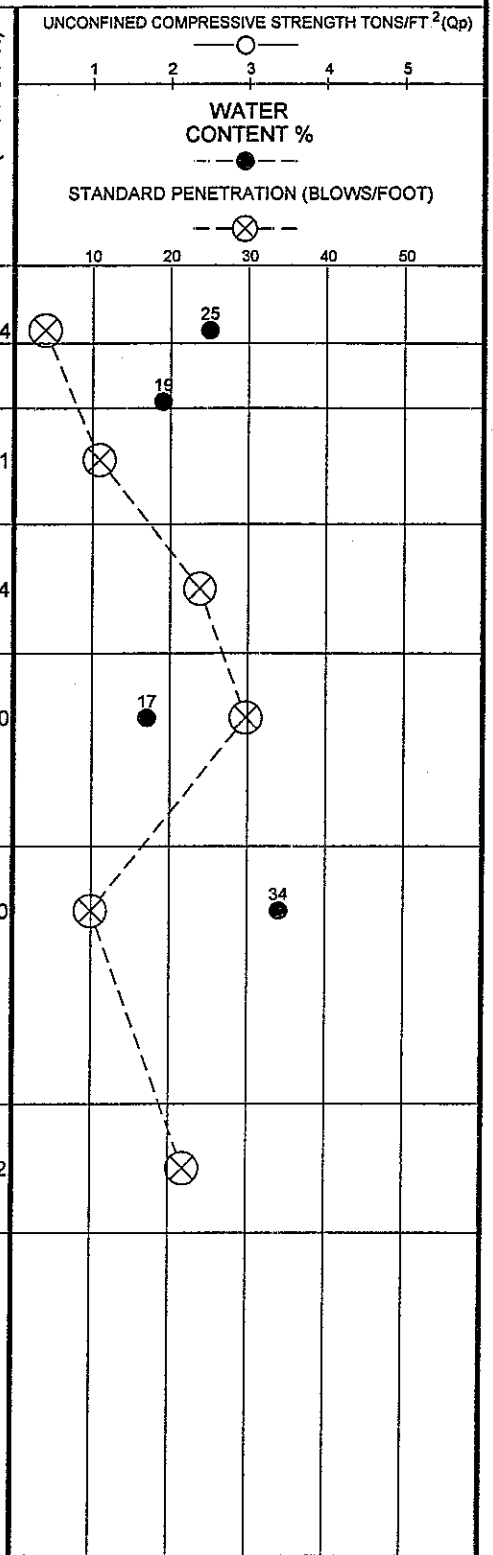
The stratification lines represent approximate boundaries between soil types; insitu the transition may be gradual.

LOG OF BORING 205

PROJECT: Rivers Edge Residential Development
SITE: Grey Cloud Island Drive, St. Paul Park, Minnesota
CLIENT: D.R. Horton, Inc.
ARCHITECT-ENGINEER:

SURFACE ELEVATION: 752.9

DEPTH, FEET	SAMPLE NUMBER AND TYPE	WATER LEVEL	STRATA CHANGE, FEET	DESCRIPTION OF MATERIAL	SPECIAL TEST RESULTS	N-VALUE (BLOWS/FT.)
	1SS		1.2	Black Silt, trace sand, organic fines - soft - (ML) (Topsoil)		4
			2.2	Brown lean Clay with Sand, trace gravel - (CL)		
	2SS		4.0	Brown Silty Sand with Gravel - medium dense - damp - (SM)		11
5	3SS		6.0	Brown poorly graded Sand, trace silt, gravel - medium dense - damp - (SP)		24
	4SS		9.0	Brown and red brown lean Clay, trace sand - very stiff - (CL)		30
10	5SS		13.0	Brown and dark brown lean Clay, trace sand - stiff - (CL)		10
15	6SS			Brown Silty Sand with sandstone fragments - medium dense - damp - (SM) (Probable Weathered Bedrock)		22
				End of boring at 15 feet Hollow stem auger used full depth Borehole backfilled with cuttings		



WATER LEVEL OBSERVATIONS	
W.L.	Groundwater not encountered
W.L.	while drilling or after HSA
W.L.	removal

Boring caved at 13.6 feet after HSA removal

GME CONSULTANTS, INC.
Geotechnical Materials Environmental
14000 21st Avenue No.
Minneapolis, MN 55447
(763) 559-1859

BORING STARTED	11/30/05		
BORING COMPLETED	11/30/05		
RIG	CME-750	DRILLER	SB
DRAWN	KMB	APPROVED	JPB
JOB #	9794-A	SHEET	1 of 1

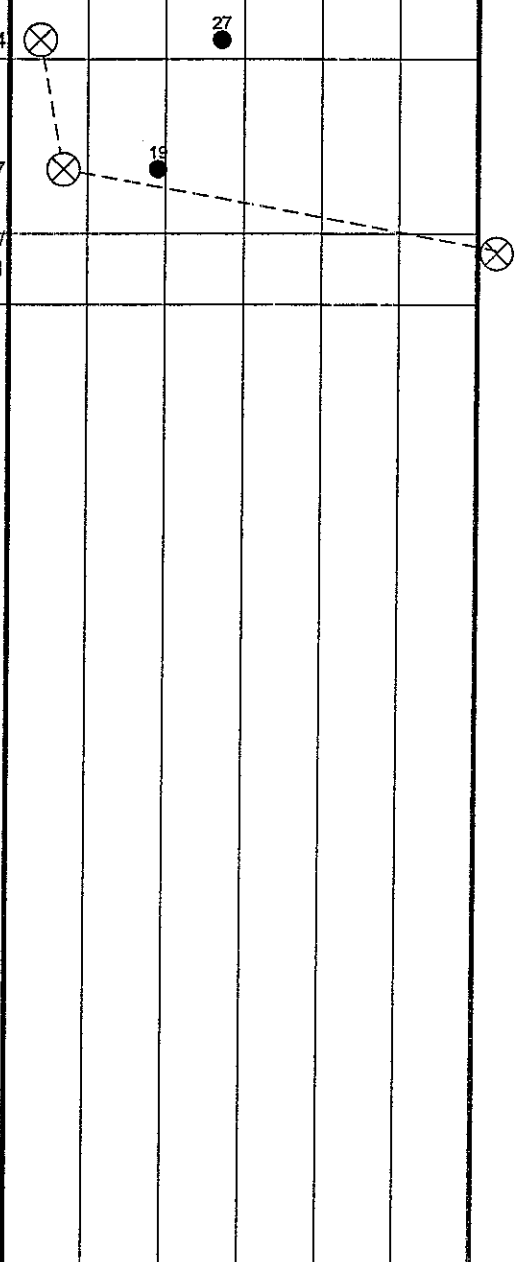
The stratification lines represent approximate boundaries between soil types; insitu the transition may be gradual.

LOG OF BORING 206

PROJECT Rivers Edge Residential Development	SITE Grey Cloud Island Drive St. Paul Park, Minnesota
CLIENT D.R. Horton, Inc.	ARCHITECT-ENGINEER

DEPTH, FEET	SAMPLE NUMBER AND TYPE	WATER LEVEL	STRATA CHANGE, FEET	DESCRIPTION OF MATERIAL	SPECIAL TEST RESULTS	N-VALUE (BLOWS/FT.)
				SURFACE ELEVATION 752.4		
	1SS		1.3	Black Silt, trace sand, organic fines - soft - (ML) (Topsoil)		4
	2SS		4.0	Brown Silty Clay with Sand, trace gravel - firm - (CL/ML)		7
5	3SS			Brown Silty Sand with sandstone fragments - extremely dense - damp - (SM) (Probable Weathered Bedrock)		50/0.1
				Auger refusal at 5 1 feet End of boring at 5.1 feet Hollow stem auger used full depth Borehole backfilled with cuttings		

UNCONFINED COMPRESSIVE STRENGTH TONS/FT ^{2} (Qp)
1 2 3 4 5
WATER CONTENT %
STANDARD PENETRATION (BLOWS/FOOT)
10 20 30 40 50



WATER LEVEL OBSERVATIONS	
W.L.	Groundwater not encountered
W.L.	while drilling or after HSA
W.L.	removal

GME CONSULTANTS, INC.
Geotechnical Materials Environmental
14000 21st Avenue No.
Minneapolis, MN 55447
(763) 559-1859

BORING STARTED	11/30/05		
BORING COMPLETED	11/30/05		
RIG	CME-750	DRILLER	SB
DRAWN	KMB	APPROVED	JPB
JOB #	9794-A	SHEET	1 of 1

The stratification lines represent approximate boundaries between soil types; insitu the transition may be gradual.

LOG OF BORING 207

PROJECT Rivers Edge Residential Development	SITE Grey Cloud Island Drive St. Paul Park, Minnesota
CLIENT D.R. Horton, Inc.	ARCHITECT-ENGINEER

SURFACE ELEVATION 751.8

DEPTH, FEET	SAMPLE NUMBER AND TYPE	WATER LEVEL	STRATA CHANGE, FEET	DESCRIPTION OF MATERIAL	SPECIAL TEST RESULTS	N-VALUE (BLOWS/FT.)
	1SS		1.2	Black Silt, trace sand, organic fines - soft - (ML) (Topsoil)		4
	2SS			Brown Silty Sand with sandstone fragments - very dense to extremely dense - damp - (SM) (Probable Weathered Bedrock)		59
	3SS					50/0.1
5				Auger refusal at 5 feet End of boring at 5 feet Hollow stem auger used full depth Borehole backfilled with cuttings		

UNCONFINED COMPRESSIVE STRENGTH TONS/FT ^{2} (Qp)
1 2 3 4 5
WATER CONTENT %
STANDARD PENETRATION (BLOWS/FOOT)
10 20 30 40 50
24

WATER LEVEL OBSERVATIONS	
W.L.	Groundwater not encountered
W.L.	while drilling or after HSA
W.L.	removal

GME CONSULTANTS, INC.
Geotechnical Materials Environmental
14000 21st Avenue No.
Minneapolis, MN 55447
(763) 559-1859

BORING STARTED	12/1/05		
BORING COMPLETED	12/1/05		
RIG	CME-750	DRILLER	SB
DRAWN	KMB	APPROVED	JPB
JOB #	9794-A	SHEET	1 of 1

The stratification lines represent approximate boundaries between soil types; insitu the transition may be gradual.

LOG OF BORING 208

PROJECT Rivers Edge Residential Development	SITE Grey Cloud Island Drive St. Paul Park, Minnesota
CLIENT D.R. Horton, Inc.	ARCHITECT-ENGINEER

SURFACE ELEVATION 795.8

DEPTH, FEET	SAMPLE NUMBER AND TYPE	WATER LEVEL	STRATA CHANGE, FEET	DESCRIPTION OF MATERIAL	SPECIAL TEST RESULTS	N-VALUE (BLOWS/FT.)
	1SS		0.6	Black to dark brown Silty Sand, trace organic fines - damp - (SM) (Topsoil)		5
			2.0	Brown Silty Sand, trace gravel - loose - damp - (SM)		
	2SS			Brown poorly graded Sand with Silt, trace gravel - loose - damp - (SP-SM)		7
5	3SS		6.0			6
	4SS			Brown poorly graded Sand, trace silt, gravel - loose to medium dense - damp - (SP)		9
10	5SS					20
	6SS					18
15				End of boring at 15 feet Hollow stem auger used full depth Borehole backfilled with cuttings		

UNCONFINED COMPRESSIVE STRENGTH TONS/FT ^{2} (Qp)

1 2 3 4 5

WATER CONTENT %

STANDARD PENETRATION (BLOWS/FOOT)

10 20 30 40 50

WATER LEVEL OBSERVATIONS	
W.L.	Groundwater not encountered
W.L.	while drilling or after HSA
W.L.	removal

Boring caved at 12 feet after HSA removal

GME CONSULTANTS, INC.
Geotechnical Materials Environmental
14000 21st Avenue No.
Minneapolis, MN 55447
(763) 559-1859

BORING STARTED	11/29/05		
BORING COMPLETED	11/29/05		
RIG	CME-750	DRILLER	SB
DRAWN	KMB	APPROVED	JPB
JOB #	9794-A	SHEET	1 of 1

The stratification lines represent approximate boundaries between soil types; insitu the transition may be gradual.

LOG OF BORING 209

PROJECT Rivers Edge Residential Development	SITE Grey Cloud Island Drive St. Paul Park, Minnesota
CLIENT D.R. Horton, Inc.	ARCHITECT-ENGINEER

SURFACE ELEVATION 786.5

DEPTH, FEET	SAMPLE NUMBER AND TYPE	WATER LEVEL	STRATA CHANGE, FEET	DESCRIPTION OF MATERIAL	SPECIAL TEST RESULTS	N-VALUE (BLOWS/FT.)
	1SS		0.8	Black Sandy Silt, trace organic fines - (ML) (Topsoil)		10
				Brown Silty Sand, trace gravel - medium dense - damp - (SM)		
	2SS		4.0			9
5	3SS		6.0	Brown poorly graded Sand, trace silt, gravel - medium dense - damp - (SP)		20
	4SS		9.0	Brown Silty Sand, trace gravel - medium dense - damp - (SM)		14
10	5SS			Brown poorly graded Sand, trace silt, gravel - medium dense - damp - (SP)		11
	6SS					13
15				End of boring at 15 feet Hollow stem auger used full depth Borehole backfilled with cuttings		

UNCONFINED COMPRESSIVE STRENGTH TONS/FT.^{2} (Qp)

1 2 3 4 5

WATER CONTENT %

STANDARD PENETRATION (BLOWS/FOOT)

10 20 30 40 50

22

WATER LEVEL OBSERVATIONS	
W.L.	Groundwater not encountered
W.L.	while drilling or after HSA
W.L.	removal

Boring caved at 12.6 feet after HSA removal

GME CONSULTANTS, INC.
Geotechnical Materials Environmental
14000 21st Avenue No.
Minneapolis, MN 55447
(763) 559-1859

BORING STARTED	11/29/05		
BORING COMPLETED	11/29/05		
RIG	CME-750	DRILLER	SB
DRAWN	KMB	APPROVED	JPB
JOB #	9794-A	SHEET	1 of 1

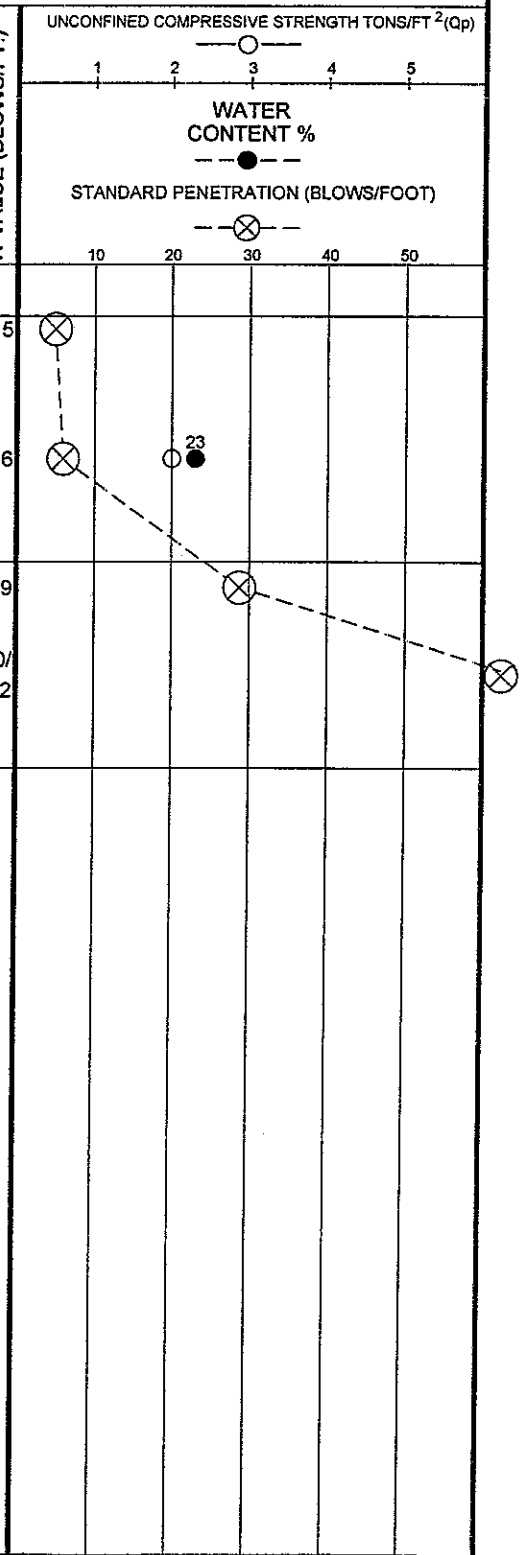
The stratification lines represent approximate boundaries between soil types; insitu the transition may be gradual.

LOG OF BORING 210

PROJECT Rivers Edge Residential Development	SITE Grey Cloud Island Drive St. Paul Park, Minnesota
CLIENT D.R. Horton, Inc.	ARCHITECT-ENGINEER

SURFACE ELEVATION 760.6

DEPTH, FEET	SAMPLE NUMBER AND TYPE	WATER LEVEL	STRATA CHANGE, FEET	DESCRIPTION OF MATERIAL	SPECIAL TEST RESULTS	N-VALUE (BLOWS/FT.)
	1SS		0.8	Black to dark brown Clayey Sand with Organic Fines - (SC/OL) (Topsoil) Brown lean Clay, trace sand - firm - (CL)		5
	2SS					6
			4.6			
5	3SS			Brown Silty Sand, trace gravel - medium dense to extremely dense - damp - (SM)		29
	SS					50/0.2
				Auger refusal at 7.8 feet End of boring at 7.8 feet Hollow stem auger used full depth Borehole backfilled with cuttings		



WATER LEVEL OBSERVATIONS	
W.L.	Groundwater not encountered
W.L.	while drilling or after HSA
W.L.	removal

GME CONSULTANTS, INC.
Geotechnical Materials Environmental
14000 21st Avenue No.
Minneapolis, MN 55447
(763) 559-1859

BORING STARTED	11/30/05		
BORING COMPLETED	11/30/05		
RIG	CME-750	DRILLER	SB
DRAWN	KMB	APPROVED	JPB
JOB #	9794-A	SHEET	1 of 1

The stratification lines represent approximate boundaries between soil types; insitu the transition may be gradual.

LOG OF BORING 211

PROJECT: Rivers Edge Residential Development

SITE: Grey Cloud Island Drive, St. Paul Park, Minnesota

CLIENT: D.R. Horton, Inc.

ARCHITECT-ENGINEER:

SURFACE ELEVATION: 755.7

DEPTH, FEET	SAMPLE NUMBER AND TYPE	WATER LEVEL	STRATA CHANGE, FEET	DESCRIPTION OF MATERIAL	SPECIAL TEST RESULTS	N-VALUE (BLOWS/FT.)
	1SS		1.4	Black Silt, trace sand, organic fines - soft - (ML) (Topsoil)		3
	2SS		4.0	Brown Sandy Silt - loose - (ML)		4
	3SS			Brown Silty Sand with clay seams, trace gravel - (SM)		50/0.4
				Auger refusal at 4.5 feet End of boring at 4.5 feet Hollow stem auger used full depth Borehole backfilled with cuttings		

UNCONFINED COMPRESSIVE STRENGTH TONS/FT ^{2} (Qp)

1 2 3 4 5

WATER CONTENT %

STANDARD PENETRATION (BLOWS/FOOT)

10 20 30 40 50

25

19

22

WATER LEVEL OBSERVATIONS	
W.L.	Groundwater not encountered
W.L.	while drilling or after HSA
W.L.	removal

GME CONSULTANTS, INC.
Geotechnical Materials Environmental
14000 21st Avenue No.
Minneapolis, MN 55447
(763) 559-1859

BORING STARTED	11/30/05		
BORING COMPLETED	11/30/05		
RIG	CME-750	DRILLER	SB
DRAWN	KMB	APPROVED	JPB
JOB #	9794-A	SHEET	1 of 1

The stratification lines represent approximate boundaries between soil types; insitu the transition may be gradual.

LOG OF BORING 212

PROJECT Rivers Edge Residential Development	SITE Grey Cloud Island Drive St. Paul Park, Minnesota
CLIENT D.R. Horton, Inc.	ARCHITECT-ENGINEER

SURFACE ELEVATION 755.0

DEPTH, FEET	SAMPLE NUMBER AND TYPE	WATER LEVEL	STRATA CHANGE, FEET	DESCRIPTION OF MATERIAL	SPECIAL TEST RESULTS	N-VALUE (BLOWS/FT.)
			0.8	Black Silt, trace sand, organic fines - (ML) (Topsoil)		
	1SS			Brown Silty Sand, trace gravel - loose to medium dense - damp - (SM)		4
	2SS		4.0			12
	3SS			Brown to light brown Silty Sand with rock fragments - extremely dense - damp - (SM) (Probable Weathered Bedrock)		50/ 0.5
5	4SS					50/ 0 3
	5SS					50/ 0.3
10				Auger refusal at 11 4 feet End of boring at 11.4 feet Hollow stem auger used full depth Borehole backfilled with cuttings		

UNCONFINED COMPRESSIVE STRENGTH TONS/FT ^{2} (Qp)

1 2 3 4 5

WATER CONTENT %

STANDARD PENETRATION (BLOWS/FOOT)

10 20 30 40 50

24

WATER LEVEL OBSERVATIONS	
W.L.	Groundwater not encountered
W.L.	while drilling or after HSA
W.L.	removal

GME CONSULTANTS, INC.
Geotechnical Materials Environmental
14000 21st Avenue No.
Minneapolis, MN 55447
(763) 559-1859

BORING STARTED	12/1/05		
BORING COMPLETED	12/1/05		
RIG	CME-750	DRILLER	SB
DRAWN	KMB	APPROVED	JPB
JOB #	9794-A	SHEET	1 of 1

The stratification lines represent approximate boundaries between soil types; insitu the transition may be gradual.

LOG OF BORING 213

PROJECT Rivers Edge Residential Development	SITE Grey Cloud Island Drive St. Paul Park, Minnesota
CLIENT D.R. Horton, Inc.	ARCHITECT-ENGINEER

SURFACE ELEVATION 797.6

DEPTH, FEET	SAMPLE NUMBER AND TYPE	WATER LEVEL	STRATA CHANGE, FEET	DESCRIPTION OF MATERIAL	SPECIAL TEST RESULTS	N-VALUE (BLOWS/FT.)
			0.6	Black Sandy Silt, trace organic fines - (ML) (Topsoil)		
	1SS			Brown poorly graded Sand with Silt, trace gravel - loose to medium dense - damp - (SP-SM)		5
	2SS					6
5	3SS					8
	4SS					5
10	5SS					10
			13.0			
	6SS			Brown poorly graded Sand, trace silt, gravel - medium dense - damp - (SP)		10
15				End of boring at 15 feet Hollow stem auger used full depth Borehole backfilled with cuttings		

UNCONFINED COMPRESSIVE STRENGTH TONS/FT ^{2}(Qp)

1 2 3 4 5

WATER CONTENT %

STANDARD PENETRATION (BLOWS/FOOT)

10 20 30 40 50

WATER LEVEL OBSERVATIONS	
W.L.	Groundwater not encountered
W.L.	while drilling or after HSA
W.L.	removal

Boring caved at 13 feet after HSA removal

GME CONSULTANTS, INC.
Geotechnical Materials Environmental
14000 21st Avenue No.
Minneapolis, MN 55447
(763) 559-1859

BORING STARTED	11/29/05		
BORING COMPLETED	11/29/05		
RIG	CME-750	DRILLER	SB
DRAWN	KMB	APPROVED	JPB
JOB #	9794-A	SHEET	1 of 1

The stratification lines represent approximate boundaries between soil types; insitu the transition may be gradual.

LOG OF BORING 214

PROJECT Rivers Edge Residential Development	SITE Grey Cloud Island Drive St. Paul Park, Minnesota
CLIENT D.R. Horton, Inc.	ARCHITECT-ENGINEER

SURFACE ELEVATION 803.6

DEPTH, FEET	SAMPLE NUMBER AND TYPE	WATER LEVEL	STRATA CHANGE, FEET	DESCRIPTION OF MATERIAL	SPECIAL TEST RESULTS	N-VALUE (BLOWS/FT.)
	1SS		1.3	Black Sandy Silt, trace organic fines - very loose - (ML) (Topsoil)		2
	2SS		4.0	Brown Silty Sand, trace gravel - loose - damp - (SM)		9
5	3SS		6.0	Brown poorly graded Sand with Silt, trace gravel - medium dense - damp - (SP-SM)		17
	4SS			Brown poorly graded Sand, trace silt, gravel - loose to medium dense - damp - (SP)		9
10	5SS					14
	6SS					11
15				End of boring at 15 feet Hollow stem auger used full depth Borehole backfilled with cuttings		

UNCONFINED COMPRESSIVE STRENGTH TONS/FT ^{2} (Qp)
1 2 3 4 5
WATER CONTENT %
STANDARD PENETRATION (BLOWS/FOOT)
10 20 30 40 50

WATER LEVEL OBSERVATIONS	
W.L.	Groundwater not encountered
W.L.	while drilling or after HSA
W.L.	removal

Boring caved at 12 feet after HSA removal

GME CONSULTANTS, INC.
Geotechnical Materials Environmental
14000 21st Avenue No.
Minneapolis, MN 55447
(763) 559-1859

BORING STARTED	11/29/05		
BORING COMPLETED	11/29/05		
RIG	CME-750	DRILLER	SB
DRAWN	KMB	APPROVED	JPB
JOB #	9794-A	SHEET	1 of 1

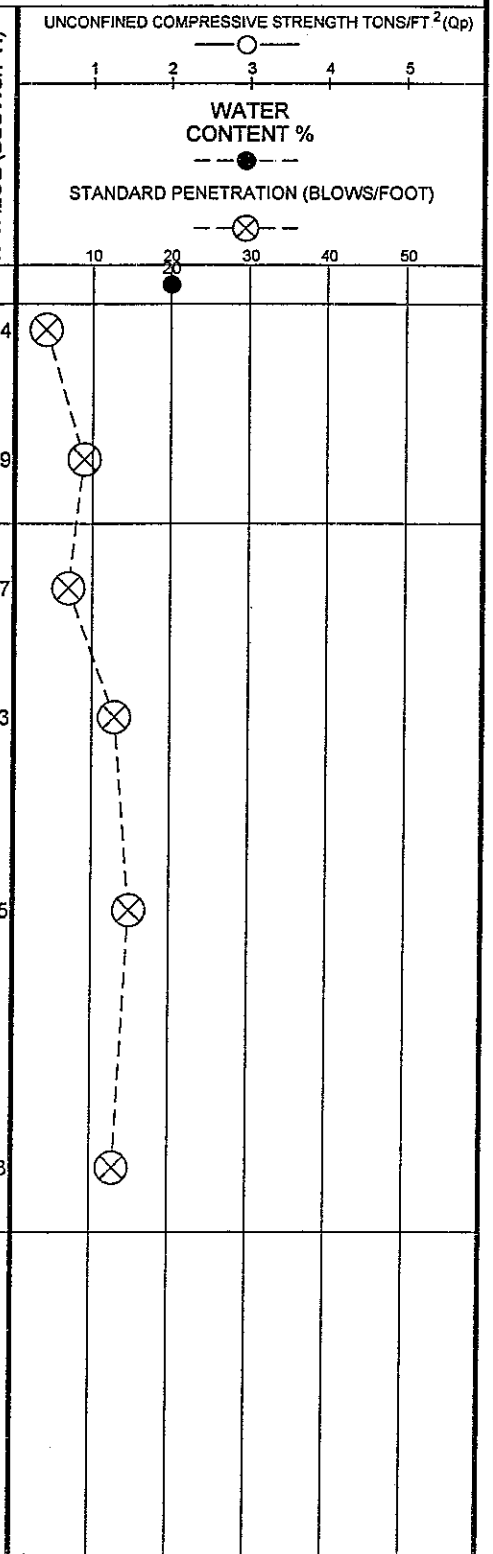
The stratification lines represent approximate boundaries between soil types; insitu the transition may be gradual.

LOG OF BORING 215

PROJECT Rivers Edge Residential Development	SITE Grey Cloud Island Drive St. Paul Park, Minnesota
CLIENT D.R. Horton, Inc.	ARCHITECT-ENGINEER

SURFACE ELEVATION 802.4

DEPTH, FEET	SAMPLE NUMBER AND TYPE	WATER LEVEL	STRATA CHANGE, FEET	DESCRIPTION OF MATERIAL	SPECIAL TEST RESULTS	N-VALUE (BLOWS/FT.)
			0.6	Dark brown Silty Sand, trace organic fines - damp - (SM) (Topsoil)		
	1SS			Brown Silty Sand, trace gravel - loose - damp - (SM)		4
	2SS		4.0			9
5	3SS			Brown poorly graded Sand, trace silt, gravel - loose to medium dense - damp - (SP)		7
	4SS					13
10	5SS					15
	6SS					13
15				End of boring at 15 feet Hollow stem auger used full depth Borehole backfilled with cuttings		



WATER LEVEL OBSERVATIONS	
W.L.	Groundwater not encountered
W.L.	while drilling or after HSA
W.L.	removal

Boring caved at 13 feet after HSA removal

GME CONSULTANTS, INC.
Geotechnical Materials Environmental
14000 21st Avenue No.
Minneapolis, MN 55447
(763) 559-1859

BORING STARTED	11/29/05		
BORING COMPLETED	11/29/05		
RIG	CME-750	DRILLER	SB
DRAWN	KMB	APPROVED	JPB
JOB #	9794-A	SHEET	1 of 1

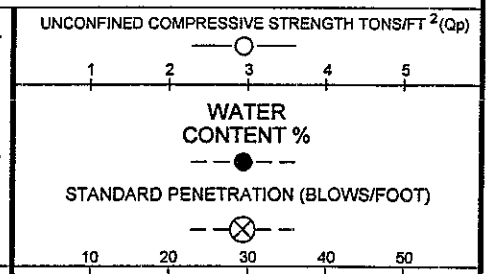
The stratification lines represent approximate boundaries between soil types; insitu the transition may be gradual.

LOG OF BORING 216

PROJECT Rivers Edge Residential Development	SITE Grey Cloud Island Drive St. Paul Park, Minnesota
CLIENT D.R. Horton, Inc.	ARCHITECT-ENGINEER

SURFACE ELEVATION 791.7

DEPTH, FEET	SAMPLE NUMBER AND TYPE	WATER LEVEL	STRATA CHANGE, FEET	DESCRIPTION OF MATERIAL	SPECIAL TEST RESULTS	N-VALUE (BLOWS/FT.)
			0.6	Dark brown Silty Sand, trace organic fines - (SM) (Topsoil)		
	1SS			Dark brown Silty Sand, trace organic fines - loose - damp - (SM)		4
	2SS		4.0			9
5	3SS			Brown poorly graded Sand, trace silt, gravel - loose to medium dense - damp - (SP)		11
	4SS					7
10	5SS					10
	6SS					7
15				End of boring at 15 feet Hollow stem auger used full depth Borehole backfilled with cuttings		



WATER LEVEL OBSERVATIONS	
W.L.	Groundwater not encountered
W.L.	while drilling or after HSA
W.L.	removal

Boring caved at 13 feet after HSA removal

GME CONSULTANTS, INC.
Geotechnical Materials Environmental
14000 21st Avenue No.
Minneapolis, MN 55447
(763) 559-1859

BORING STARTED	11/29/05		
BORING COMPLETED	11/29/05		
RIG	CME-750	DRILLER	SB
DRAWN	KMB	APPROVED	JPB
JOB #	9794-A	SHEET	1 of 1

The stratification lines represent approximate boundaries between soil types; insitu the transition may be gradual.

LOG OF BORING 217

PROJECT Rivers Edge Residential Development	SITE Grey Cloud Island Drive St. Paul Park, Minnesota
CLIENT D.R. Horton, Inc.	ARCHITECT-ENGINEER

SURFACE ELEVATION 769.8

DEPTH, FEET	SAMPLE NUMBER AND TYPE	WATER LEVEL	STRATA CHANGE, FEET	DESCRIPTION OF MATERIAL	SPECIAL TEST RESULTS	N-VALUE (BLOWS/FT.)
	1SS		0.8	Black to dark brown Silty Sand, trace organic fines - damp - (SM) (Topsoil)		4
				Brown Silty Sand, trace gravel - loose to medium dense - damp - (SM)		
	2SS					8
5	3SS		6.0			11
	4SS			Brown poorly graded Sand with Silt, Gravel - very dense to medium dense - damp - (SP-SM)		61/ 0 8
10	5SS		13.0			13
	6SS			Brown Silty Sand with Gravel - extremely dense - damp - (SM)		65/ 0 1
15				End of boring at 15 feet Hollow stem auger used full depth Borehole backfilled with cuttings		

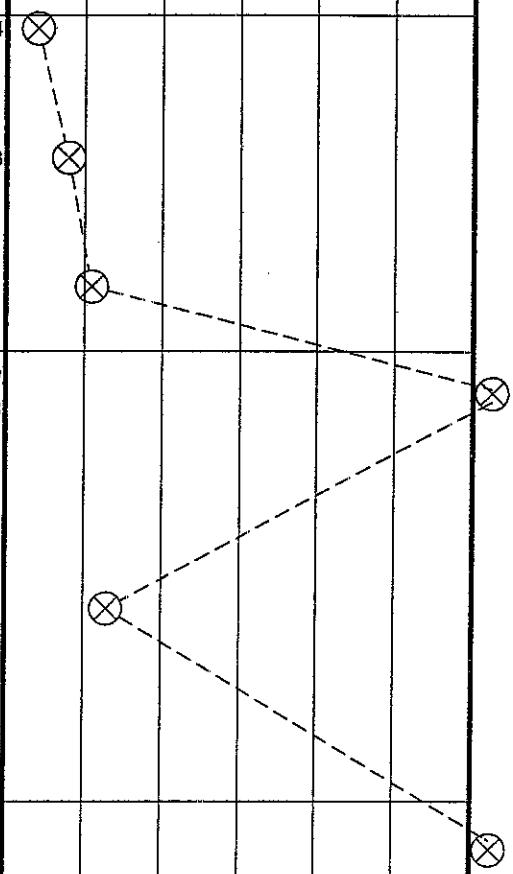
UNCONFINED COMPRESSIVE STRENGTH TONS/FT ^{2} (Qp)

1 2 3 4 5

WATER CONTENT %

STANDARD PENETRATION (BLOWS/FOOT)

10 20 30 40 50



WATER LEVEL OBSERVATIONS	
W.L.	Groundwater not encountered
W.L.	while drilling or after HSA
W.L.	removal

GME CONSULTANTS, INC.
Geotechnical Materials Environmental
14000 21st Avenue No.
Minneapolis, MN 55447
(763) 559-1859

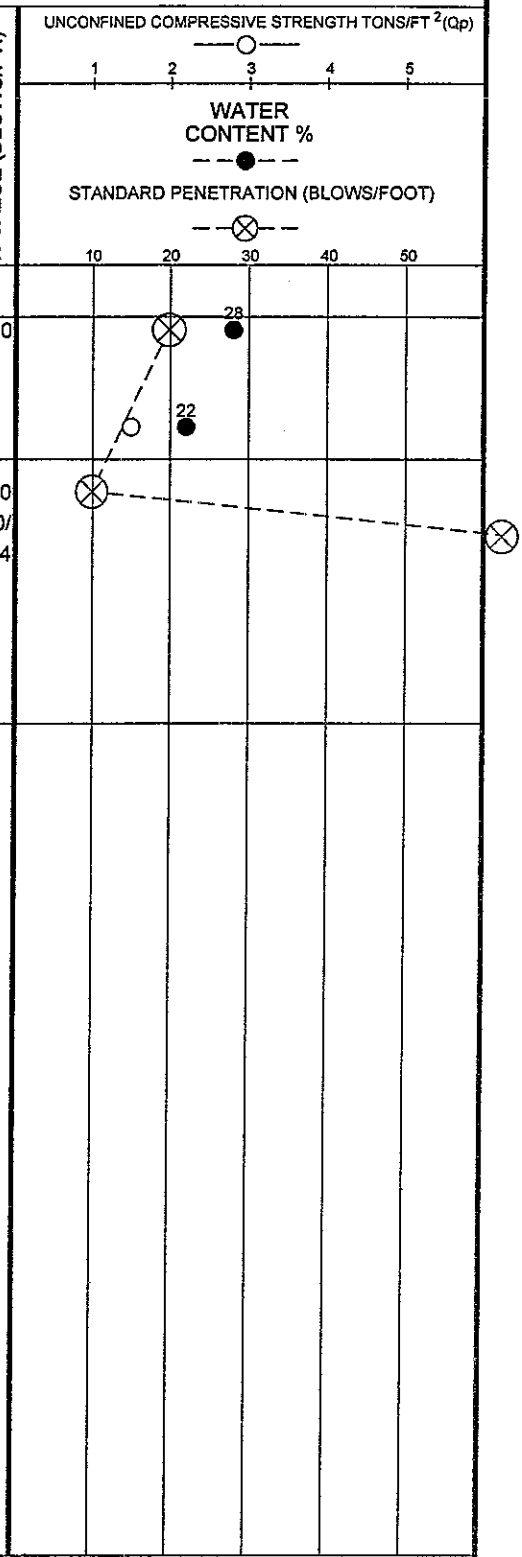
BORING STARTED	12/1/05		
BORING COMPLETED	12/1/05		
RIG	CME-750	DRILLER	SB
DRAWN	KMB	APPROVED	JPB
JOB #	9794-A	SHEET	1 of 1

The stratification lines represent approximate boundaries between soil types; insitu the transition may be gradual.

LOG OF BORING 218

PROJECT Rivers Edge Residential Development	SITE Grey Cloud Island Drive St. Paul Park, Minnesota
CLIENT D.R. Horton, Inc.	ARCHITECT-ENGINEER

DEPTH, FEET	SAMPLE NUMBER AND TYPE	WATER LEVEL	STRATA CHANGE, FEET	DESCRIPTION OF MATERIAL	SPECIAL TEST RESULTS	N-VALUE (BLOWS/FT.)
				SURFACE ELEVATION 758.3		
	1SS		0.8	Black Silt, trace sand, organic fines - (ML) (Topsoil)		
				Brown lean Clay, trace sand - soft - (CL)		20
			3.0			
	2SS			Brown Silty Sand with sandstone fragments - very dense to extremely dense - damp - (SM) (Probable Weathered Bedrock)		10
	3SS					50/
5						0.4
				Auger refusal at 7 1 feet End of boring at 7.1 feet Hollow stem auger used full depth Borehole backfilled with cuttings		



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The stratification lines represent approximate boundaries between soil types; insitu the transition may be gradual.

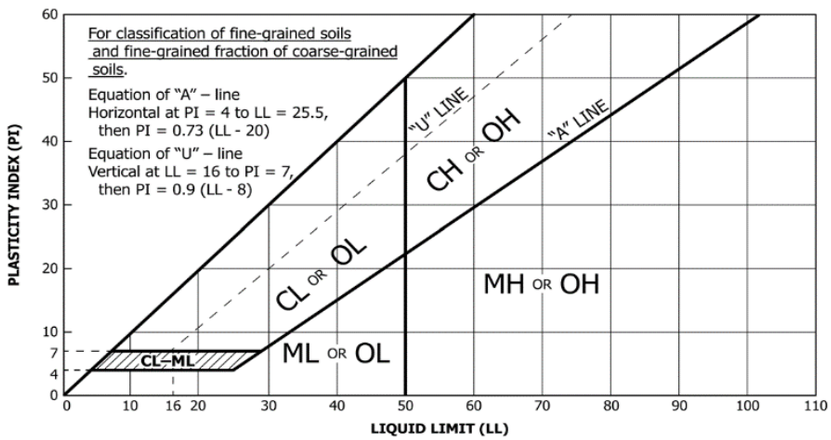
BRAUN INTERTEC
the science you build on

Descriptive Terminology of Soil

Based on Standards ASTM D2487/2488
(Unified Soil Classification System)

Criteria for Assigning Group Symbols and Group Names Using Laboratory Tests[A]				Soil Classification	
				Group Symbol	Group Name[B]
Coarse-grained Soils (more than 50% retained on No. 200 sieve)	Gravels (More than 50% of coarse fraction retained on No. 4 sieve)	Clean Gravels (Less than 5% fines[C])	$C_u \geq 4$ and $1 \leq C_c \leq 3^D$	GW	Well-graded gravel[E]
			$C_u < 4$ and/or ($C_c < 1$ or $C_c > 3$)[D]	GP	Poorly graded gravel[E]
		Gravels with Fines (More than 12% fines[C])	Fines classify as ML or MH	GM	Silty gravel[E F G]
			Fines Classify as CL or CH	GC	Clayey gravel[E F G]
	Sands (50% or more coarse fraction passes No. 4 sieve)	Clean Sands (Less than 5% fines[H])	$C_u \geq 6$ and $1 \leq C_c \leq 3^D$	SW	Well-graded sand[I]
			$C_u < 6$ and/or ($C_c < 1$ or $C_c > 3$)[D]	SP	Poorly graded sand[I]
		Sands with Fines (More than 12% fines[H])	Fines classify as ML or MH	SM	Silty sand[F G I]
			Fines classify as CL or CH	SC	Clayey sand[F G I]
Fine-grained Soils (50% or more passes the No. 200 sieve)	Silts and Clays (Liquid limit less than 50)	Inorganic	PI > 7 and plots on or above "A" line[J]	CL	Lean clay[K L M]
			PI < 4 or plots below "A" line[J]	ML	Silt[K L M]
		Organic	Liquid Limit – oven dried / Liquid Limit – not dried <0.75	OL	Organic clay[K L M N] / Organic silt[K L M O]
	Silts and Clays (Liquid limit 50 or more)	Inorganic	PI plots on or above "A" line	CH	Fat clay[K L M]
			PI plots below "A" line	MH	Elastic silt[K L M]
		Organic	Liquid Limit – oven dried / Liquid Limit – not dried <0.75	OH	Organic clay[K L M P] / Organic silt[K L M Q]
Highly Organic Soils		Primarily organic matter, dark in color, and organic odor		PT	Peat

A. Based on the material passing the 3-inch (75-mm) sieve.
B. If field sample contained cobbles or boulders, or both, add "with cobbles or boulders, or both" to group name.
C. Gravels with 5 to 12% fines require dual symbols:
   GW-GM well-graded gravel with silt
   GW-GC well-graded gravel with clay
   GP-GM poorly graded gravel with silt
   GP-GC poorly graded gravel with clay
D. $C_u = D_{60} / D_{10}$ $C_c = (D_{30})^2 / (D_{10} \times D_{60})$
E. If soil contains ≥ 15% sand, add "with sand" to group name.
F. If fines classify as CL-ML, use dual symbol GC-GM or SC-SM.
G. If fines are organic, add "with organic fines" to group name.
H. Sands with 5 to 12% fines require dual symbols:
   SW-SM well-graded sand with silt
   SW-SC well-graded sand with clay
   SP-SM poorly graded sand with silt
   SP-SC poorly graded sand with clay
I. If soil contains ≥ 15% gravel, add "with gravel" to group name.
J. If Atterberg limits plot in hatched area, soil is CL-ML, silty clay.
K. If soil contains 15 to < 30% plus No. 200, add "with sand" or "with gravel", whichever is predominant.
L. If soil contains ≥ 30% plus No. 200, predominantly sand, add "sandy" to group name.
M. If soil contains ≥ 30% plus No. 200 predominantly gravel, add "gravelly" to group name.
N. PI ≥ 4 and plots on or above "A" line.
O. PI < 4 or plots below "A" line.
P. PI plots on or above "A" line.
Q. PI plots below "A" line.



Laboratory Tests

DD	Dry density, pcf	**q_p**	Pocket penetrometer strength, tsf
WD	Wet density, pcf	**q_U**	Unconfined compression test, tsf
P200	% Passing #200 sieve	**LL**	Liquid limit
MC	Moisture content, %	**PL**	Plastic limit
OC	Organic content, %	**PI**	Plasticity index

Particle Size Identification

Boulders..... over 12"
Cobbles..... 3" to 12"
Gravel
  Coarse..... 3/4" to 3" (19.00 mm to 75.00 mm)
  Fine..... No. 4 to 3/4" (4.75 mm to 19.00 mm)
Sand
  Coarse..... No. 10 to No. 4 (2.00 mm to 4.75 mm)
  Medium..... No. 40 to No. 10 (0.425 mm to 2.00 mm)
  Fine..... No. 200 to No. 40 (0.075 mm to 0.425 mm)
Silt..... No. 200 (0.075 mm) to .005 mm
Clay..... < .005 mm

Relative Proportions[L,M]

trace..... 0 to 5%
little..... 6 to 14%
with..... ≥ 15%

Inclusion Thicknesses

lens..... 0 to 1/8"
seam..... 1/8" to 1"
layer..... over 1"

Apparent Relative Density of Cohesionless Soils

Very loose ..... 0 to 4 BPF
Loose ..... 5 to 10 BPF
Medium dense..... 11 to 30 BPF
Dense..... 31 to 50 BPF
Very dense..... over 50 BPF

Consistency of Cohesive Soils	Blows Per Foot	Approximate Unconfined Compressive Strength
Very soft	0 to 1 BPF	< 0.25 tsf
Soft	2 to 4 BPF	0.25 to 0.5 tsf
Medium	5 to 8 BPF	0.5 to 1 tsf
Stiff	9 to 15 BPF	1 to 2 tsf
Very Stiff	16 to 30 BPF	2 to 4 tsf
Hard	over 30 BPF	> 4 tsf

Moisture Content:

Dry: Absence of moisture, dusty, dry to the touch.
Moist: Damp but no visible water.
Wet: Visible free water, usually soil is below water table.

Drilling Notes:

Blows/N-value: Blows indicate the driving resistance recorded for each 6-inch interval. The reported N-value is the blows per foot recorded by summing the second and third interval in accordance with the Standard Penetration Test, ASTM D1586.

Partial Penetration: If the sampler could not be driven through a full 6-inch interval, the number of blows for that partial penetration is shown as #/x" (i.e. 50/2"). The N-value is reported as "REF" indicating refusal.

Recovery: Indicates the inches of sample recovered from the sampled interval. For a standard penetration test, full recovery is 18", and is 24" for a thinwall/shelby tube sample.

WOH: Indicates the sampler penetrated soil under weight of hammer and rods alone; driving not required.

WOR: Indicates the sampler penetrated soil under weight of rods alone; hammer weight and driving not required.

Water Level: Indicates the water level measured by the drillers either while drilling (▽), at the end of drilling (▼), or at some time after drilling (▽).

Sample Symbols

Standard Penetration Test
Modified California (MC)
Auger
Grab Sample
Rock Core
Thinwall (TW)/Shelby Tube (SH)
Texas Cone Penetrometer
Dynamic Cone Penetrometer

5/2021

Stantec Consulting Services Inc.
2080 Wooddale Drive Suite 100, Woodbury MN 55125-2920

February 18, 2026
File: 193807632

Joe Fox, PE
Project Engineer
10875 Ideal Avenue South
Cottage Grove, Minnesota 55016

Reference: Talcott Glen (Review Comments – Preliminary Plat Submittal)

Dear Joe,

Below are our review comments for the proposed Talcott Glen preliminary plat submittal received on 1/27/26:

General Comments:

1. A lighting plan must be submitted for review, 200'-250' maximum spacing between lights.
2. Submit a signing and pavement marking plan for review. Include two stop signs at a four-way intersection, prewarning signs at the 95th Street midblock trail crossing. The city will produce a map showing locations of park/open space identification signs; this information should be included in the sign plans.
3. Has the pipeline approved the proposed street and utility (sanitary & water) crossings over their facilities?
4. An emergency access route designed to meet fire code requirements north of 95th Street will be required. Survey, design and plan information for this emergency access must be submitted for review.
    a. This route should have a hammerhead turnaround just north of the property line.
    b. A gate should be installed at the property line.
5. Fire marshal requires temporary cul de sac off the end of Street A.
    a. Developer should get an easement from landowner to north for this purpose and for extension of utilities.
6. Include reference to the current City of Cottage Grove "Standard Specification for Utility and Street Construction", dated January 2025, in the project plans.

7. The location map on the cover sheet should be updated with current/existing streets.
8. Provide plan information on the flora to be protected during construction.

9. Will a development monument sign be proposed? If so, provide location and details.
10. Bedrock will be encountered throughout this site, please provide details for excavation and how the bedrock material will be disposed of or utilized.
11. Provide the most recent concept figures showing future development layouts for the properties located north of this development. Has any preplanning been prepared to aid in determining the sanitary sewer depth north of the proposed development?

Preliminary Plat Comments:

12. Has the entire right-of-way been acquired for extending 95th Street east of the development?
13. The preliminary grading plan indicates that a "construction easement required" to construct a portion of 95th Street. Has this construction easement been acquired to date?
14. City requires two 20-foot-wide access points for each pond.
15. Extend property lines for lots 34 thru 43 to the center of the pipeline easement.
16. Include an easement for a temporary turnaround at the north end of Street A.
17. Extend trail from Strawberry Fields Park as directed by the City. One segment is to extend the trail to the north for future development. The City is also considering another segment that may extend west to the sidewalk on 95th Street constructed with mulch and steps. All trails will need to be placed in a 20'outlot.
18. Maintenance benches are required around the entire perimeter for all ponds and basins, they must be contained entirely in an outlot.
19. If the pond on the east side of 95th Street stays, it should be platted in a separate outlot.
20. The preliminary site plan shows 15' side yard setbacks for corner lots, the City requirement is 20' side yard setbacks for corner lots.
21. Street D should be extended south beyond Street C to the southern property line of the development to provide access for future development (eliminate lot 102).

Preliminary Grading Plan Comments:

22. There is a significant amount of storm sewer in backyards that will be challenging to access for maintenance. Review the storm sewer and position as much in the streets as possible, stubs down lot lines to catch basins are ok and easy to access from the street for maintenance (jetting).
23. If the storm sewer in backyards stays, please provide EOF information that allows for safe overland passage through the development in accordance with the City's EOF requirements. Multiple locations appeared to not meet this standard.
24. Ensure all drainage is not being routed offsite (northeast, southeast), these areas will be required to be picked up with catch basins or an onsite graded swale instead of being drained offsite.
    a. This refers to lots 23-30 and 91-109
25. Provide information for where the storm sewer ponding overflows go (west side, south side).
    a. For example, FES-100B: When water leaves the pond, where does water flow?
26. There are a number of low points (LP) labeled on the plan that do not line up with a proposed low point CB (Ex: e of lot 48, e of lot 64, int of Street B&C, int of Street B&95th, etc.).
27. Where localized EOFs are being proposed between lot lines, multiple locations do not have a defined swale between the lots to ensure drainage stays within the drainage easement. (Ex: lot 177, 123, 107, etc)
28. Provide reasoning and purpose for the storm pond (500P) on the east side of 95th Street.
29. Lowest adjacent grade must be 2-feet above the adjacent detention basin EOF and 3-feet above the adjacent detention basin HWL (Ex: lots 47-49, 16-18).
30. Many of the HWL elevations labeled for the ponds and basins do not match the HWL elevation contour.
31. Include spot elevations at high points along side lot lines.
32. Flexamat is not allowed for overflows, use riprap.
33. Include riprap at both ends of pipes within basins.

34. If topsoil and aggregate backfill will be salvaged onsite indicate this on the plans, notes, and typical sections.

Preliminary Street & Utility Plan Comments:

35. Existing conditions plan: Include additional information for the extension of 95th Street east to Mississippi Dunes Boulevard.
36. Preliminary removals plan: Verify any wells on the property that need to be sealed/capped. Remove the gravel path/drive on the west side over the railroad tracks to Grey Cloud Trail, this will have to be coordinated with the railroad. There are structures in the proposed 95th Street ROW, near Mississippi Dunes Boulevard, that will have to be removed (south side of proposed street).
37. Preliminary overall site plan: The City will not provide the emergency access route to the north. The developer will provide the emergency access route (all weather road) to the north and include gate access as part of this plan.
    a. Please include survey and grading design work in the next submittal.
38. Preliminary overall site plan: There are areas that should be colored (Ex: outlot F, area near proposed lift station).
39. The preliminary site plan indicates the "lift station design by others". The developer will be responsible for the design of the lift station.
40. Preliminary site plan: A trail extension north from Strawberry Fields Park will be required. The City may consider a trail extension (mulch, steps) west to 95th Street.
41. Preliminary site plan: Street C indicates street width as 27' F-F, this should be 28' F-F. 95th Street within the development limits should be 36' F-F with 66' ROW. The plan shows an 8' trail constructed on the east side of 95th Street, a 5' sidewalk should be installed west of the 95th Street midblock trail crossing. Review realigned trail 95th Street midblock crossing with City staff for snow plowing access.
42. 95th Street turn lanes plan: Include additional information on the east side of Mississippi Dunes Boulevard to tie in location. Proposed trail and boulevard segments on the west side of Mississippi Dunes Boulevard should match up with the existing trails on the east side of Mississippi Dunes Boulevard. Proposed lane width (11') on the west side of Mississippi Dunes Boulevard should match the lane width (12') on the east side of Mississippi Dunes Boulevard. Verify turn lane taper lengths are correct.
43. Preliminary wall plan: Wall "A" is proposed to be placed in an easement, can grading modifications be made to eliminate the need for this wall? Wall "B" is proposed to be placed in City easement, can grading modifications be made to

eliminate the need for this wall? Note, nearby existing fence appears to be in easement. If these walls cannot be eliminated a maintenance and access agreement will be the required by the homeowner or HOA.

44. Preliminary road profile: Maintain a minimum longitudinal grade of 0.75% (Ex: Street A, Street D, 95th Street). Is there any reason why a consistent grade on 95th, from approximate station 0+00 to 8+50, cannot be maintained? What is the reasoning for the low point at approximate station 6+24?
45. Preliminary grading details: The final lift of bituminous will not be placed as part of this project, a separate final street project will be completed in the future.
46. Preliminary grading details: The clay section should be updated to include only clay and topsoil, use of liner is not allowed. Onsite clay material can only be used if it meets City specifications. Provide reasoning for the use of the clay anti seep.
47. Include one sheet that shows utilities in entire development.
48. Include sanitary, watermain, and storm profile views within the plans. The profiles should include utility crossing and show the anticipated rock depth based on geotechnical information available.
49. Label all water fittings and include the size of all gate valves within the plans. Note valves 12" or larger must be butterfly valves.
50. Fit all hydrant branches with gate valves.
    a. The planned short-pattern hydrant extensions may be a challenge to construct.
51. There are many mid-block hydrants. Could the plans be revised to place hydrants at intersections while still meeting the spatial requirements of the Ten State Standards.
52. Place hydrants at dead ends. At the northern end of Street A; at the southern end of Street B; at the northern end of 95th Street; at the southern end of Street D.
53. The preference is for GVs at intersections rather than mid-block. Unless the need can be justified.
54. The 8-inch line through Outlot A should be constructed with restraining gaskets or glands for the full length of this segment.
55. Add a hydrant branch and gate valve on top of hill. Suggested location is in the ROW of 95th where it fits best.
56. The City recommends that the water in this area be served by the Low Pressure Zone (maximum expected pressures near 80 psi, no PRV needed). This is in part driven by the desire to avoid issues with low service pressures as experienced in other parts of the City's water distribution system.
57. It is recommended to provide 12-inch trunk watermain connections available on both the north and south sides of this development. This will support future

extension of the Low Pressure Zone into the adjacent parcels and provide for acceptable service pressures and fire flows. The current plans show a 12-inch watermain extending along 95th Street S from the east and curving to the north, but no connection to the south is currently shown. The city will work with the developer to find the place for a 12-inch connection to the south. If Street D is extended south beyond Street C to the southern property line of the development (eliminating lot 102), this could be an acceptable location to route a 12-inch trunk watermain to the south.

58. Make sure sanitary sewer and water stubs are extended beyond driveways (Ex: north end of Street A).
59. Utilities should be stubbed into property to south on Streets B and D. The developer is required to work with the property owner to secure easements for the utilities.
60. Past projects have had issues with contractors not obtaining the minimum 8" sanitary grade of 0.40%. Less than 0.40% is not allowed. It is recommended that you increase the design grade to allow room for installation irregularities.
61. Use SDR 26 sanitary sewer pipe when depths are between 18' and 28' deep (Ex: north of MH-14, between MH-35 and MH-36).
62. Sanitary sewer and water services should be shown, verify they do not fall within proposed driveways wherever applicable.
63. Include irrigation plans and location for irrigation cabinets if the development is planning for irrigation.
64. There is approximately 700' of proposed sanitary sewer being installed within 95th Street just west of Mississippi Dunes Boulevard. Provide reasoning for the use of 8" DIP rather than continuing the extension of the proposed 4" DIP FM from the west.
65. Include storm sewer sump manholes in the last manholes in paved areas prior to entering ponding areas.
66. The existing storm sewer information at the east end of 95th Street near Mississippi Dunes Boulevard should be confirmed.
67. All storm pipes are shown to be RCP, use of corrugated polypropylene pipe (PP) is also allowed.
68. Storm sewer must be reachable by 300-foot jetting hose with jetter parked in the street. Backyard storm runs may need to be adjusted.
69. Stormwater pollution prevention plan: Include missing information.
70. Preliminary seeding plan shows upland natural area seeding to be located in basins and permanent basin seeding to be located in grassy areas, please confirm.

Landscape Plan Comments:

71. The City forester will review the proposed tree species. Allowable species are listed on the Cottage Grove Engineering Guidelines, available online.
72. Include proposed landscaping on 95th Street east to Mississippi Dunes Boulevard.

Stormwater Requirements:

73. Confirm pipe flow directions at ponds. SWMP and HydroCAD models indicate flow goes from 300P into 300I, but the pipe shown on sheet 6.01 indicates a flow direction from 300I to 300P.
74. HWL contours do not match HWL listed at various ponds. Verify and update information in HydroCAD and plans to be consistent with each other.
75. Please submit calculations showing the storm sewer is being met based on the 5-year rational method design. Pipes should be sized to have a minimum velocity of 3fps and no more than 10fps.
76. Stormwater pond 200P does not appear to contain the 100-yr storm at an elevation of 751.85 when comparing the EOF of 751.5. Please revise this design to contain this storm event.
77. Section 5 of the SWMP: the following are the rules for freeboard
    a. For stormwater facilities with emergency overflows, the low adjacent grade elevation for all new structures must be a minimum of 3 feet above the peak surface water elevation for the 100-year precipitation event and 2 feet above the emergency overflow elevation of any immediately adjacent new stormwater basin.
    b. For backyard and side-yard conveyance and temporary ponding areas, there must be at least 1 foot between the overland overflow elevation and the low adjacent grade elevation of the adjacent structure.

Regards,

Stantec Consulting Services Inc.

Tyler K. Johnson, PE
Phone: 612-712-2065
tyler.johnson@stantec.com

David R. Sanocki, PE
Phone: 651-712-2124
dave.sanocki@stantec.com

City Council Action Request

11.C.

Meeting Date	3/18/2026
Department	Community Development
Agenda Category	Presentation
Title	McHattie Landing - Preliminary Plat and Planned Unit Development
Staff Recommendation	Adopt Resolution 2026-047 approving the Preliminary Plat and Planned Unit Development for a subdivision to be called McHattie Landing, which will consist of 85 lots for single-family homes.
Budget Implication	N/A

Attachments

1.	McHattie Landing CC Memo
2.	McHattie Landing Resolution 2026-047 Prelim Plat & PUD
3.	McHattie Landing CIVIL PLANS
4.	McHattie Landing Engineer Plan Review Memo 2026-02-17
5.	MacHattie Landing Landscaping Plans
6.	McHattie Landing Comments from Neighborhood Meeting
7.	McHattie Landing Narrative
8.	McHattie Landing Traffic Review Memo
9.	McHattie Landing WETLAND LETTER

TO: Honorable Mayor and City Council
Jennifer Levitt, City Administrator

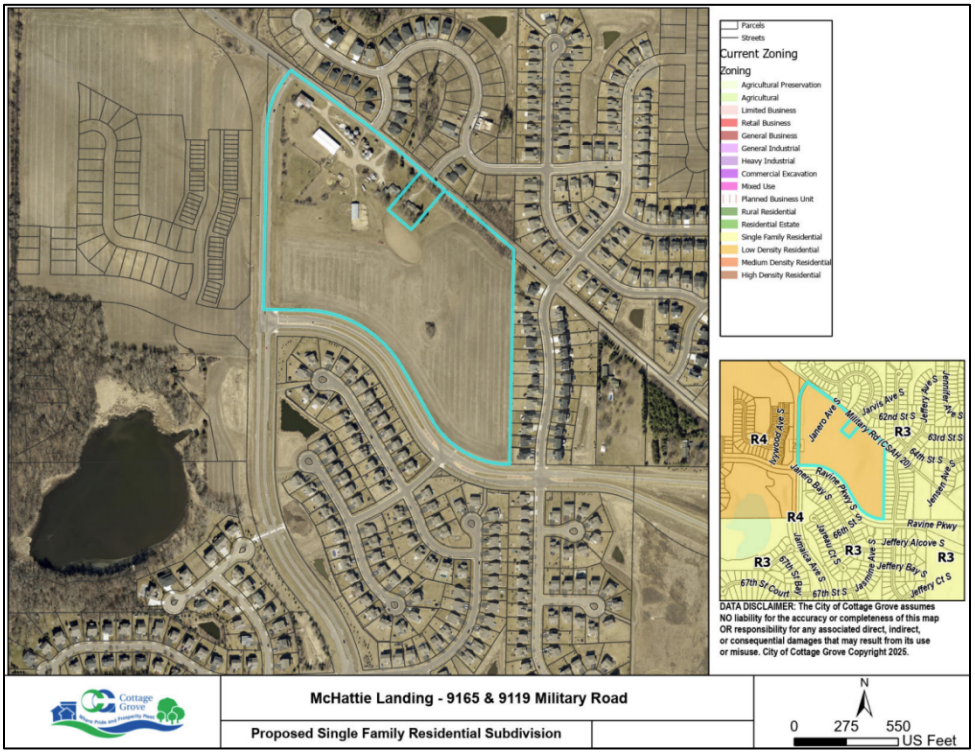
FROM: Kelly Becker, Associate Planner

DATE: March 11, 2026

RE: McHattie Landing – Preliminary Plat and Planned Unit Development (PUD)

Proposal

M/I Homes of Minneapolis/St. Paul, LLC (Applicant) is requesting approval of a Preliminary Plat and Planned Unit Development (PUD) for a project to be known as McHattie Landing. The subject property is located at 9119 and 9165 Military Road. The Applicant is proposing to construct 85 single family homes on approximately 36.35 acres. The property is currently zoned R-4, Transitional Residential District. The project will also incorporate long-range plans for the conversion of Military Road to a pedestrian trail with a small wayside park in the northwest corner of the site.



Review Schedule
Application Submitted: January 28, 2026
Application Accepted: January 28, 2026
Planning Commission Meeting: February 23, 2026
City Council Meeting: March 18, 2026
60-Day Review Deadline: March 29, 2026

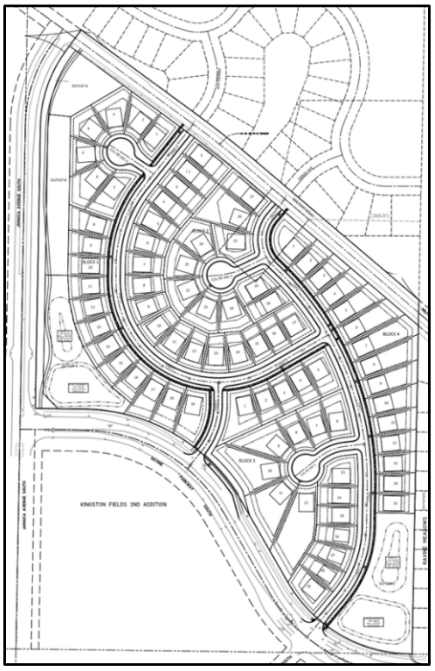
Background

Prior Approvals

In 2021, Manley Development submitted an application for a Preliminary Plat, Zoning Amendment, and Planned Unit Development (PUD) on the subject property. The proposal at that time included 80 single family homes and rezoning from AG-1, Agriculture Preservation, to R-4, Low Density Residential with a PUD. Flexibility proposed with the PUD included a reduced front yard setback from 30 feet to 25 feet, decreased minimum side yard setbacks (garage side) to 5 feet from 7.5 feet, and reduced minimum side yard setbacks (house side) from 10 feet to 7.5 feet. The preliminary plat layout had two proposed accesses to Ravine Parkway: a full access at the existing intersection at 66th Street and a second right-in/right-out access further to the west.

In February 2022, City Council approved all requests for the site; however, upon grading review prior to site construction, it was discovered that a significant amount of bedrock posed a challenge to feasibly construct the second right-in/right-out access onto Ravine Parkway. The project did not move forward at that time as the Applicant needed to pursue a revised layout and access plan to avoid the geotechnical constraints.

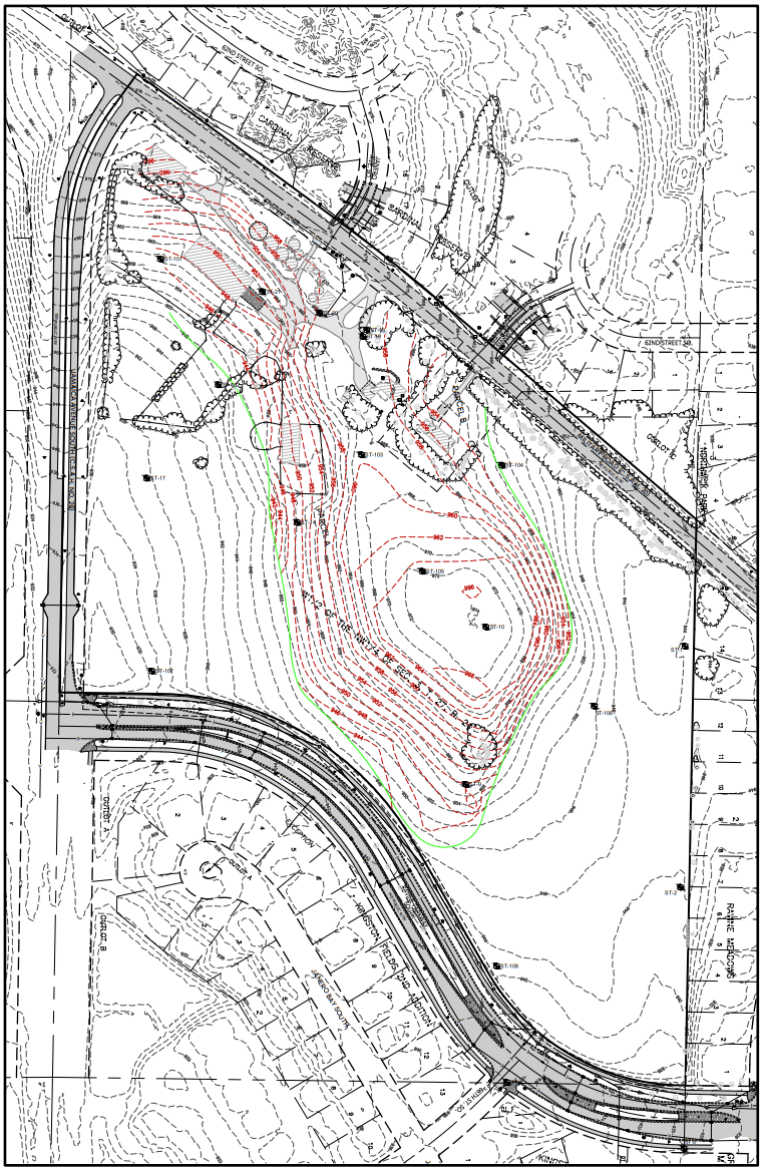
With the Council approval in February 2022, the property became zoned R-4, Low Density Residential. However, at the end of 2022, the City underwent a comprehensive zoning code update, which included amending the Zoning Map in its entirety, with various districts being renamed or renumbered. The Low Density Residential District was renamed to Transitional Residential District, and reductions in lot sizes and setback requirements were reflected in the Transitional Residential District to reflect the modern trend of smaller lot sizes and building heights. The purpose of the R-4, Transitional Residential District, is to provide transitional areas that will allow a mixing of single-family detached and single-family attached dwellings on smaller lots where property is adjacent to a minor or major collector street and/or where property is adjacent to higher intensity development or land use.



Previous Site Layout

Site Conditions

The 36.35-acre site consists of tilled fields with existing homesteads and agricultural buildings adjacent to Military Road. The proposed site has an overall topography that increases in height towards the center and northwestern corner as shown below. As previously noted, the site is constrained by shallow bedrock. The red lines in the image below are the contours of the bedrock. The green line shows the extent of the bedrock.



Existing Conditions

Neighborhood Meeting

The Applicant held a neighborhood meeting on February 12, 2026. Notice of the neighborhood meeting was sent to surrounding property owners within 500 feet of the project area. The intent of the meeting was to give neighboring property owners the opportunity to ask questions and present concerns they might have to the Developer in the early planning stages of the proposed project. The Applicant gave an overview of the development to 16 residents in attendance, and City staff responded to questions as well.

A primary concern voiced by several at the meeting was the impact that closing Military Road from Jamaica Avenue to Jeffery Avenue would have on traffic. Residents voiced concern that Jeffery Avenue already receives a high volume of traffic, with parking on street and speeding traffic presenting fears about safety. With the closure of Military Road, the concern is that traffic on the road will be increased from the neighborhoods to the north using Jeffery Avenue.

When Military is closed and the neighborhoods are completely built out, city staff estimate conservatively that Jeffery Avenue will see an average of 2,900 trips per day. This is based on the approximation that a typical single-family home generates 10 trips per day. As a comparison, other residential streets with homes on both sides in the city see similar traffic. Hyde Avenue, just north of Hillside Trail, sees an average of 2,305 cars per day. Grenadier Avenue just south of Grange sees 3,002 cars. One benefit of closing Military is that traffic from the south will no longer use Jeffery to reach Military.

Some residents at the meeting requested that the city consider keeping Military Road open to vehicular traffic until the County roundabout project at the Jamaica Avenue intersection is complete and additional road connections to the north in Woodbury are open. Staff clarified that the date of any future connections to the north through the existing neighborhoods and future Woodbury neighborhoods is dependent on development within Woodbury.

Questions and concerns about timeline of construction were also posed. The Applicant noted that mass grading onsite will begin this spring pending approvals, and blasting bedrock will be required on a portion of the site. Residents had concerns over the impact of blasting on the surrounding community, and the Applicant noted that they would be taking as much care as possible to be less disruptive while grading. While blasting might sound impactful, it does not have the power one might assume. Blasting was carried out at recent developments such as Lochridge, Mississippi Landing, and Hohenstein’s with no adverse effects.

While the City has no requirements regarding notification, at the other sites either the Developer or contractor gave written or oral notification to neighbors. As construction on this development nears, city staff will work with the Developer to notify residents who live nearby.

Additional comments and concerns were raised about the elevation and views of the homes, particularly where the proposed homes will be closest to existing homes in Ravine Meadows at the southeast corner of the plat. One resident requested that the number of homes in the development be reduced from 85 to 79, with no lots in the southeast corner or create a greater physical buffer along the east side. The Applicant and staff noted on the grading plans that a berm currently exists on the southeastern boundary and will remain in place. It was discussed that the berm will aid in providing a visual buffer between the homes due to the elevation of the berm and proposed walkout elevations of the new homes. Additionally, coniferous trees will be planted as a visual buffer along the east side of the project area. The Developer may work with adjacent property owners to plant larger trees to create a more substantial buffer.

There were also concerns about maintenance of the stormwater ponds. The Applicant clarified that an HOA will be created for all landscaping and common area maintenance. The ponds will be dedicated to the city and are required to be maintained per MS4 permit requirements.

Planning Commission Meeting
At their February 23, 2026 meeting, the Planning Commission reviewed this request and held a public hearing. Two residents provided public testimony about the proposed development. Staff have provided clarification on the following:

- A resident noted that Jeffery Avenue currently sees a high volume of traffic and experiences speeding vehicles on the road, and expressed concern that traffic volume will increase with the closure of Military Road.
    - Additional traffic analysis was performed for anticipated traffic on Jeffery Avenue when Military is closed and the neighborhoods are completely built out. The analysis shows that Jeffery Avenue will see an average of 2,900 trips per day. As stated above, city staff pointed to traffic counts on local streets with houses on both sides, similar to Jeffery Avenue. Those traffic counts show 3,002 vehicles per day on Grenadier and 2,305 cars per day on Hyde Avenue. Staff clarified that the new road connections through the proposed development will also help alleviate traffic volume on Jeffrey.
- A second resident requested clarification about road connections to the north.
    - Staff clarified the future roadway connections to Woodbury will be north/south connections while the east/west connection will be further north into Woodbury past the Cottage Grove/Woodbury border.
- The Commission inquired if traffic calming measures could be implemented on Jeffery Avenue to slow traffic.
    - Staff clarified that on-street parking as it exists today can help to slow traffic and there are no plans to prohibit on-street parking in the future.
- The Commission inquired about future road connections through this development to the north across the future Military Road trail.
    - Staff clarified that the existing Military Road will be removed and existing roadways will pass over the trail.
- The Commission posed a question to the Applicant regarding the extent of the blasting and the blasting process.
    - The Applicant clarified that the intent of any blasting onsite is to loosen up the bedrock for excavation, and that the blasting process is only loud for a very short amount of time.

The Planning Commission unanimously voted (4-0) to recommend approval.

Planning Considerations

Zoning and Comprehensive Plan
As mentioned previously, the subject property received approval in 2022 for rezoning from AG-1, Agriculture Preservation, to R-4, Low Density Residential, which is now Transitional Residential. Although the development proposed with the rezoning application at that time did not move forward, the rezoning of the property was still finalized, and it is currently zoned R-4. The site is guided as Low Density Residential in the 2040 Comprehensive Plan, which supports the

Transitional Residential zoning district. The Applicant is proposing 2.66 units per net acre. Net density is defined as, "The total number of units divided by the total land area less major rights of way (arterials and collectors) and less wetland protected by the Wetland Conservation Act, provided that right of way (including major roads) shall not be deducted if dedicated to the City at no cost." The McHattie Landing calculation is shown below:

Gross Acreage of McHattie Landing Development: 36.35 acres
Subtract Major Road ROW Military and Jamaica: 4.48
Equals Net Acreage: 31.87 acres

Divide 85 total housing units by net acreage to get units per acre of 2.66. At 2.66 units per acre, the McHattie Landing development complies with the definition of Low Density residential of 2 to 4 units per acre.

The proposed preliminary plat and the land use map from the City's 2040 Comprehensive Plan are consistent in the following ways:

- The Future Land Use Map in the 2040 Comprehensive Plan identifies the future land use development of the Applicant's property for low density residential land uses. The developer is proposing single-family lots for the property, which is consistent with the City's Future Vision 2040 Comprehensive Plan.

- The proposed density of 2.66 units per acre aligns with the Comprehensive Plan guidance of 2 to 4 units per acre.

- Trail and sidewalk connections are proposed and acceptable to the city.

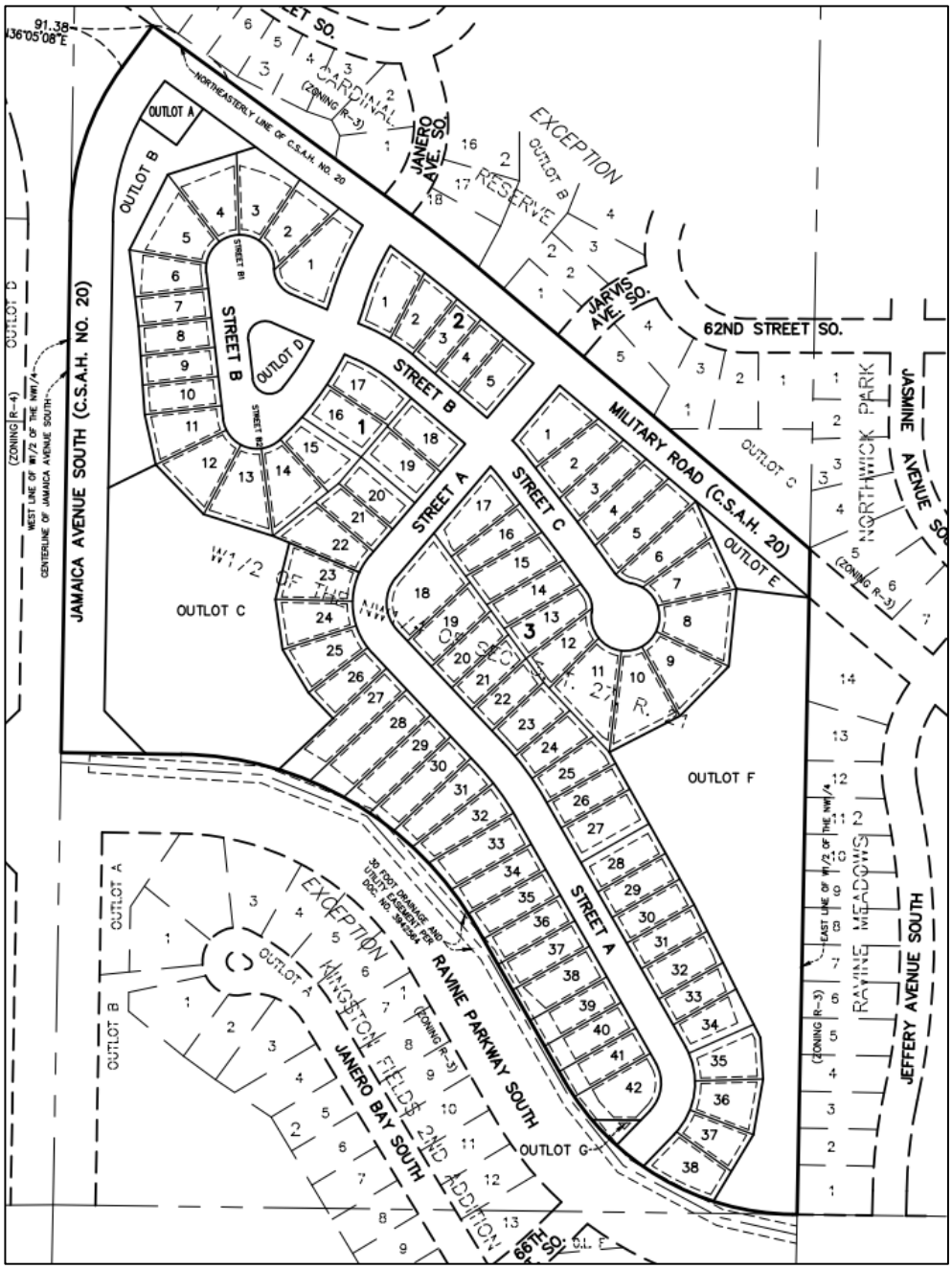
- The proposed preliminary plat and grading plan are consistent with the low-density residential land use designation for this area.

Preliminary Plat
The preliminary plat, as proposed, depicts a logical development of a viable property given the adopted performance standards of the zoning district. The Applicant has not yet finalized any phasing plans for the development. The proposed plat consists of 85 single family homes on mostly 52-foot and 62-foot wide lots. The homes will consist primarily of walkout and lookout designs, with some rambler designs as well. The preliminary plat includes proposed Streets A, B, and C and Outlots A, B, C, D, E, F, and G.

Outlots C and F will be deeded to the city for stormwater ponding. During review of the grading plans, staff noted that several areas within the outlots intended to be deeded to the City are exceeding a 4:1 slope on the final grading plans. City standards require a 4:1 slope or less within pond areas. The Developer will work with staff to revise the lot and outlot boundaries to ensure areas within outlots to be owned and maintained by the city are 4:1 or less. Areas that are not incorporated into individual lots may be incorporated into newly created outlots to be owned and maintained by the HOA.

Although the boundary of the outlots may change, Outlot B will be owned and maintained by the Homeowners Association for a landscape buffer. Outlots D and E shall also be owned and maintained by the HOA as open space. Finally, Outlot G shall be owned and maintained by the HOA for an entrance monument sign.

Road connections from Jarvis and Janero Avenues to the north will be established and converge within the proposed development before connecting to Ravine Parkway in the southest corner of the property. A pedestrian trail is designed within the Historic Military Road Corridor along the entire north boundary of the plat. Adjacent to the trail in the northwest corner of the plat will be a trail wayside park, within Outlot A.



McHattie Landing Preliminary Plat

Zoning Development Standards

The Planned Unit Development (PUD) is a zoning tool that provides additional flexibility for development that an underlying zoning district would not otherwise allow. The Applicant is requesting PUD flexibility on the following zoning performance standards as shown in the table below.

Lot Development Performance Standards		
Standard	**R-4 Transitional Residential**	**Proposed**
Lot width	45 feet	52 feet
Lot depth	120 feet	120 feet
Front yard setback	25 feet	25 feet
Rear yard setback	30 feet	30 feet
Side yard setback	7.5 feet	*6 feet
Side yard, garage setback	5 feet	6 feet
Corner lot side setback	20 feet	20 feet
Maximum structure height	35 feet	35 feet
Maximum impervious surface coverage	50%	50%

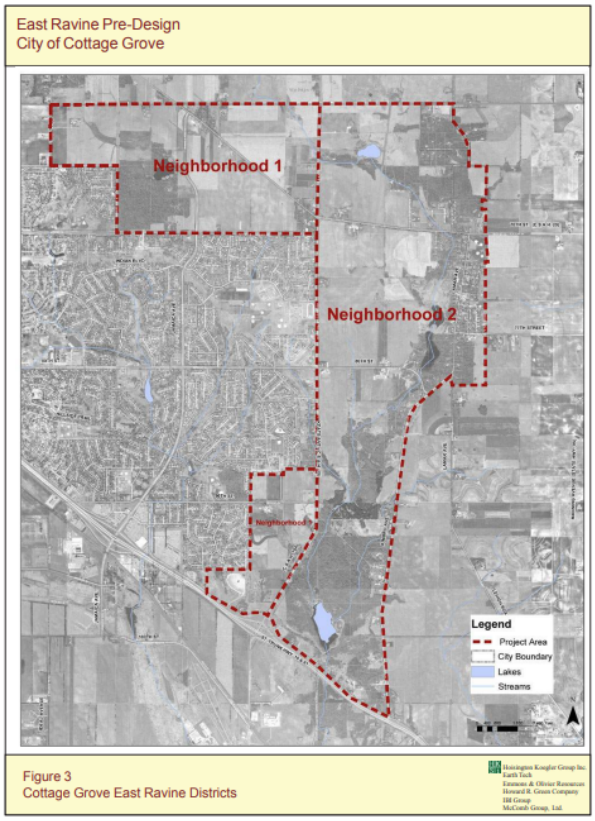
**requires flexibility per the PUD request*

The requested PUD flexibility for the reduced minimum side yard setback is consistent with the goals and policies of the comprehensive plan, including preservation of natural features (bedrock) while maintaining an allowed density. The R-4 zoning district requires a minimum side yard setback of 7.5 feet and minimum garage side yard setback of 5 feet. The Applicant is proposing to decrease the minimum house side yard setback to 6 feet and increase the minimum garage side yard setback to 6 feet. With the proposed flexibility, the minimum distance between structures would be maintained at 12 feet. Besides the flexibility for the side yard setback, the proposed development meets or exceeds all other R-4 zoning district standards.

East Ravine Master Plan and Alternative Urban Areawide Review (AUAR)

In 2006 the city completed the East Ravine Master Plan, a tool used to guide future development of the East Ravine area, which at the time had not yet been developed. The proposed development is within the area defined as Neighborhood 1 in the East Ravine Master Plan. Neighborhood 1 consists of large areas of predominantly Single-Family residential housing, which are interspersed with a combination of medium and higher density attached residences to provide a balance of housing opportunities. The Master Plan provides a layout pattern for streets, trails, and utilities in Neighborhood 1, which have been incorporated into the proposed plat.

Part of the East Ravine Master Plan process was completion of an Alternative Urban Areawide Review (AUAR) for the East Ravine neighborhoods. AUARs are used to understand cumulative development/land use impacts at a high level when site and project specifics are unknown. The AUAR was originally completed in 2005 and is required to be updated every five years to remain valid. The AUAR and associated Mitigation Plan were most recently updated in November 2025. The Mitigation Plan specifies measures or procedures that will be used to avoid, minimize, or mitigate the potential impacts of development within the AUAR study area. The primary mechanism for mitigation of environmental impacts is the effective use of ordinances, rules, regulations, and policies, including guidance given in the Master Plan and Comprehensive Plans. The proposed preliminary plat is consistent with the AUAR, and mitigation strategies have been included in the conditions of approval for this proposed development.



East Ravine Neighborhood Map

Military Road Removal

With anticipated growth in the East Ravine area, a Master Plan was completed to provide a guide for the overall layout of roads, utilities, stormwater, and other development patterns. In addition to road alignment, utilities and design, the Master Plan outlined a long-range trail plan to ensure pedestrian connectivity through the East Ravine area. The conversion of Military Road to a pedestrian trail was included in the Master Plan beginning at Keats Avenue in the Cedarhurst area to the Cottage Grove/Woodbury border. The plan for conversion of Military Road to a trail from Keats Avenue to Jamaica Avenue was further illustrated and outlined in the City's 2030 Comprehensive Plan, completed in 2011, and continues to be outlined as the long-range plan for the corridor transitioning to a recreational trail.

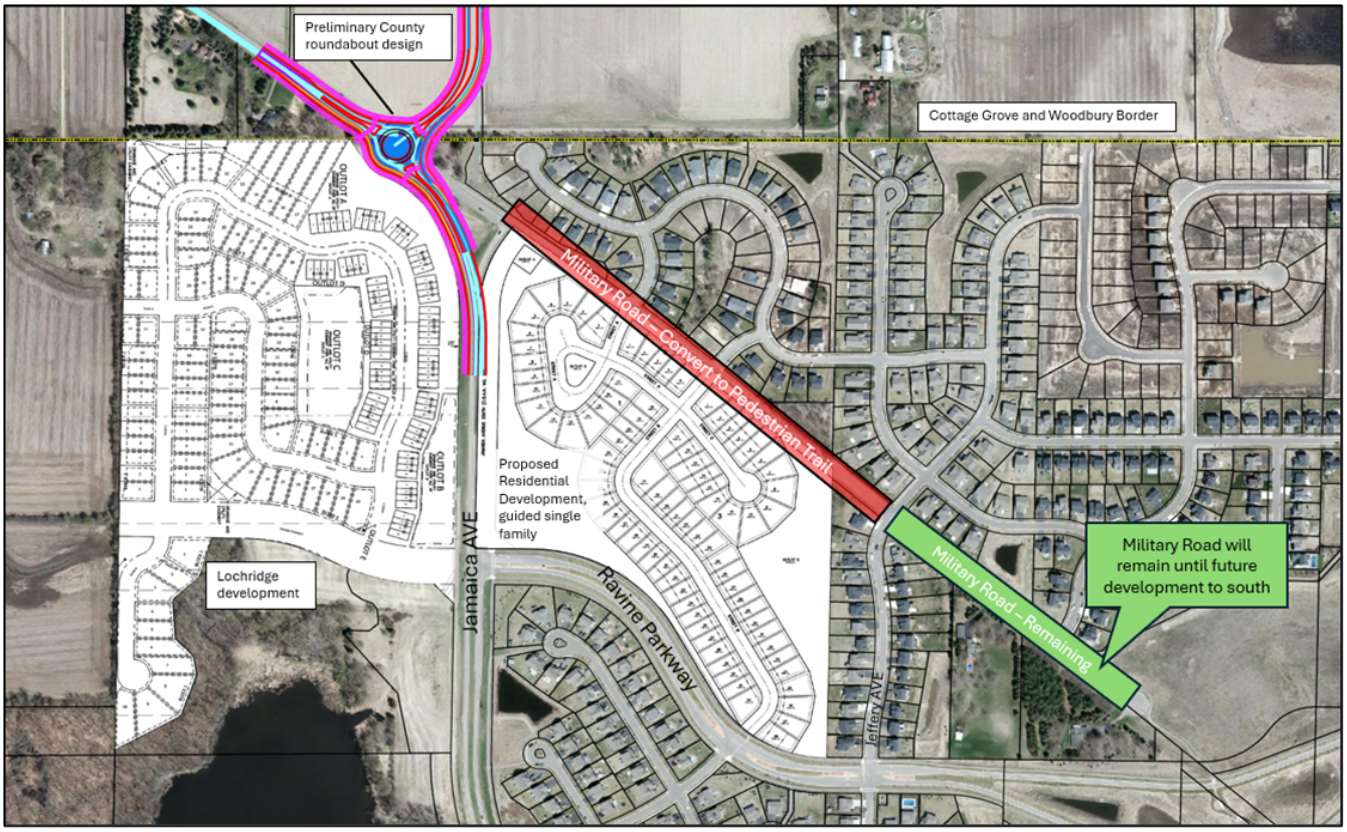
In conjunction with this development and an anticipated Washington County realignment and roundabout project along Jamaica Avenue, the Military Road connection between Jeffery Avenue and Jamaica Avenue is planned to be removed and the corridor converted into a pedestrian trail. Since 2018, the conversion of Military Road to a pedestrian trail has been implemented with several other developments in the East Ravine area including Woodward Ponds, Eastridge Woods, and Glacial Valley Estates starting at Keats Avenue and currently ending at Ravine Parkway.

Military Road removal will likely be triggered by Washington County's realignment and roundabout project along Jamaica Avenue as it intersects with Military Road to the west or as the developer works through final lot grading and streets, with removal of the road occurring no earlier than 2027. Military Road east of Jefferey Avenue will remain a vehicular connection between Jeffery

Avenue and Jensen Avenue until such a time as the remaining two properties on that stretch of the road no longer require access from Military Road.

Additional traffic analysis was completed for anticipated traffic on Jeffery Avenue when Military is closed and the neighborhoods in the area are completely built out. The analysis shows that Jeffery Avenue currently sees 2,252 trips per day and will have an average of 2,900 trips per day at such time McHattie Landing road connections are complete and Military Road is removed. As stated above, city staff pointed to traffic counts on local streets with houses on both sides, similar to Jeffery Avenue. Similar traffic counts within the community showing 3,002 vehicles per day are on Grenadier and 2,305 cars per day on Hyde Avenue.

The trail itself within the Military Road Corridor will be composed of an 8-foot-wide asphalt surface. The Developer will be required to pay half of the estimated costs for the removal of the roadway and installation of a trail for the segment adjacent to the proposed development. These funds will be outlined and collected with the development agreement and will be combined with the funds collected previously from the Cardinal Reserve, Northwick Park, and Ravine Meadows developments for this portion of road removal and trail installation.



Future Roundabout and Military Road Closure

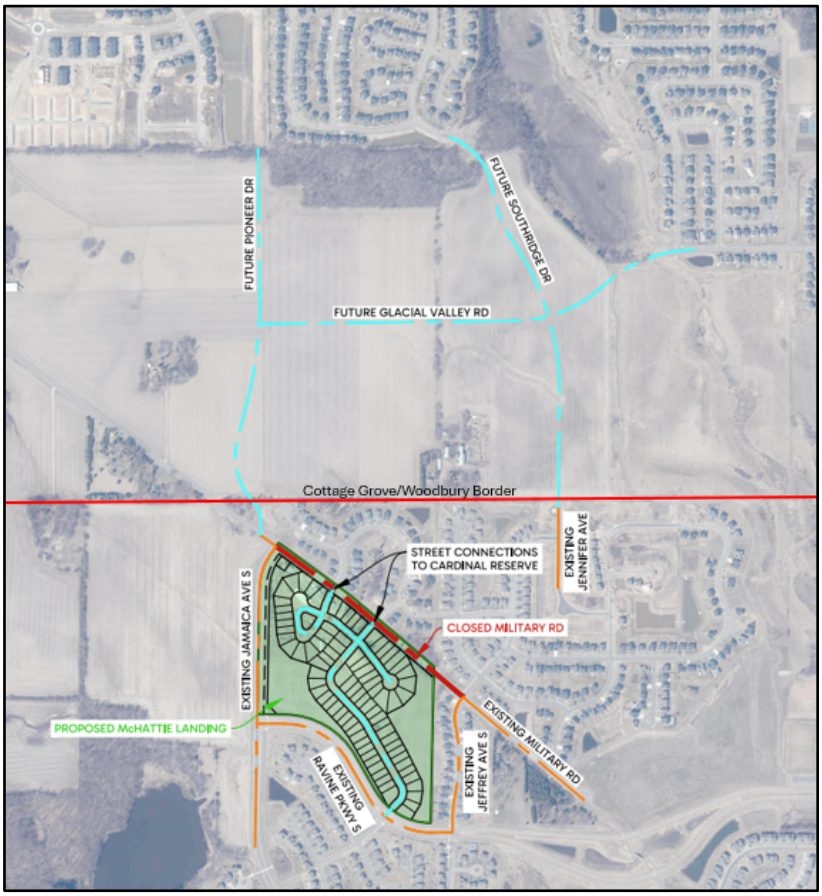
Access and Transportation

The site will have one primary access to the south on Ravine Parkway aligning with 66th Street. This will be a full access. A right-turn lane will be added on Ravine Parkway to accommodate the new development. When Ravine Parkway was constructed in 2018/2019, a left-turn lane was installed in anticipation of development on the McHattie Parcel. The developer will be required to adjust the existing striping now that the left turn lane will be in use. The singular connection on

Ravine Parkway will branch into two roadways to connect with Janero Avenue and Jarvis Avenue to the north.

A traffic study was completed by the Developer to evaluate the impact of the development traffic volumes at the Ravine Parkway and 66th Street intersections. Traffic operations at the Ravine Parkway and 66th Street intersection were reviewed with the proposed and potential McHattie Landing development traffic and traffic from the neighborhoods to the north. Operations are predicted to be acceptable in terms of vehicle delay and queuing during typical weekday AM and PM peak traffic hours. Additionally, traffic operations are predicted to be acceptable as background traffic volumes increase on Ravine Parkway.

As previously mentioned, the County plans to rebuild Jamaica Avenue and the Jamaica Avenue/ Military Road intersection in 2028. Preliminary plans call for a roundabout in this area that will connect Jamaica Avenue and Military Road to the northwest to Pioneer Trail in Woodbury. The County project is focused on realignment of the roadways to conform to long-range plans that staff from Washington County, City of Cottage Grove, and City of Woodbury have discussed. The County's 2015 reconstruction of Jamaica as a two-lane road was seen as an interim solution. The road section (pavement and gravel depth) was minimized with the knowledge that the road would be fully reconstructed before 2030. Future road connections are planned as development progresses in Woodbury, which will provide additional traffic flow to the north after the closure of Military Road between Jeffrey and Jamaica Avenues. Future roads shown in the image to the right are based on information from Woodbury's Comprehensive Plan. The blue lines are planned roads that would be built as part of future developments. Future Pioneer Drive would connect with Military/Jamaica at the County's planned roundabout. Future Southridge Drive would connect to Cottage Grove's Jennifer Avenue.

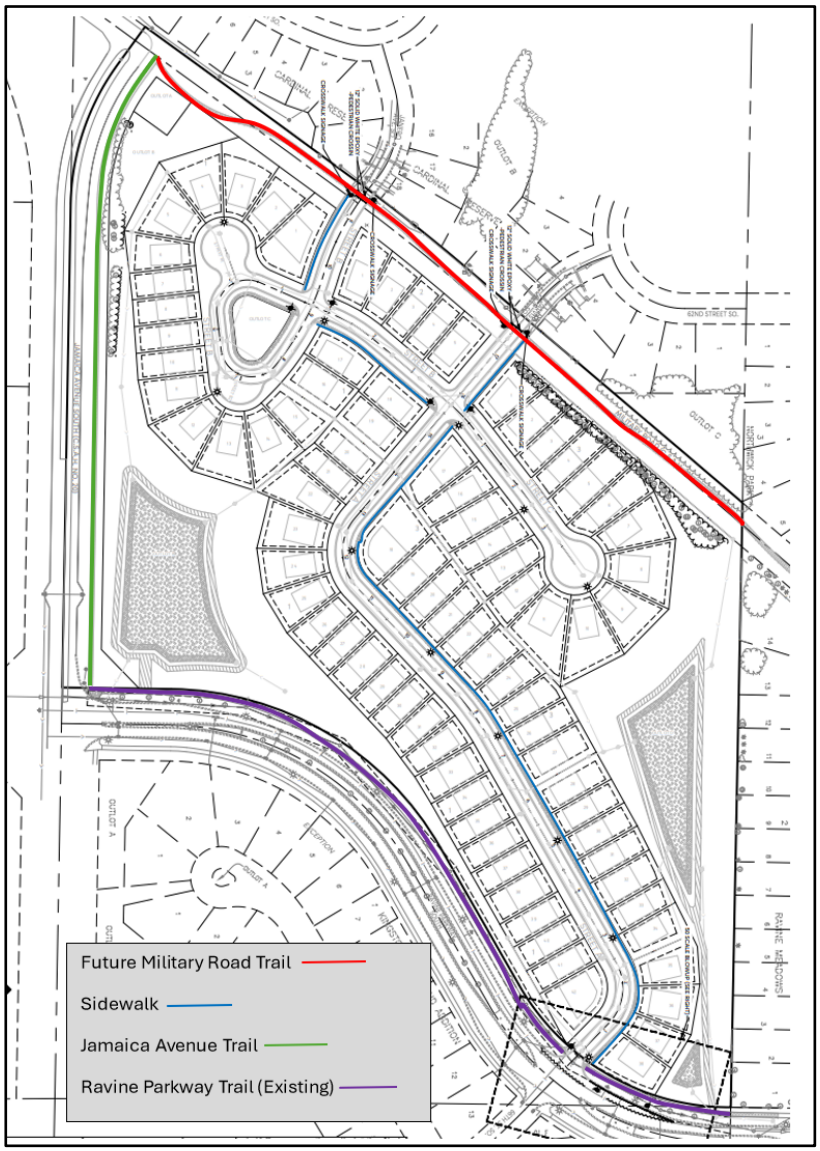


Future Road Connections

Sidewalks and Trails

The Developer is proposing five-foot-wide sidewalks on one side of all internal streets as depicted below. A sidewalk connection is proposed to connect this proposed development to the Cardinal Reserve development to the north at Jarvis and Janero Avenues. Crosswalk signage will be placed at the Military Road trail intersection where the sidewalks connect into Cardinal Reserve. The western terminus of the proposed Military Road trail will connect with a new 8-foot-wide

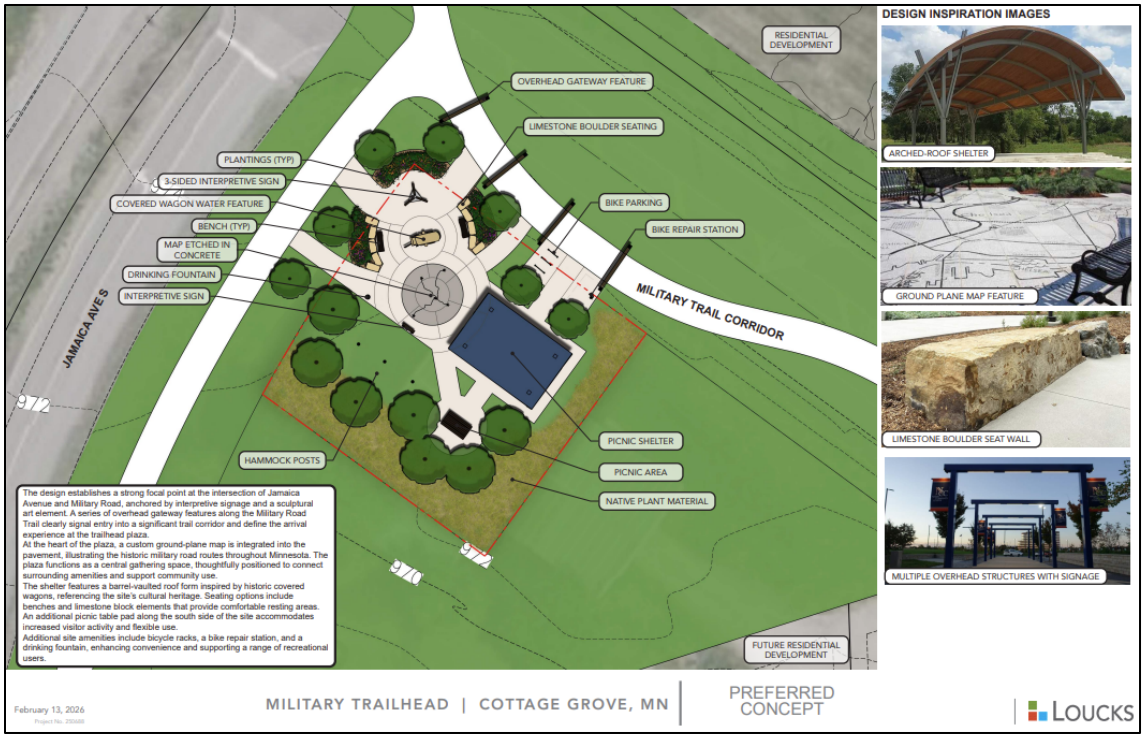
asphalt trail along Jamaica Avenue. The City will require the developer to deposit escrow funds that will be used for the construction of the asphalt trail along Jamaica Avenue, as the trail would be constructed in 2028 with the County's Jamaica Avenue reconstruction project. An existing 8-foot-wide asphalt trail runs along Ravine Parkway on the south side of the property and will remain as is.



Sidewalk and Trail Connections

Park Land and Open Space

A minimum of 10 percent of developable area shall be required to provide residents with public recreation facilities including parks and open spaces as a part of development projects per City Code Title 10-4-3 (2.9 acres in the McHattie development after subtracting 4.48 acres of right-of-way of Jamaica Avenue and Military Road and 3.2 acres of land below the high-water level of stormwater ponds). Outlot A (0.15 acres) is proposed to be established as a wayside park to serve as an entryway onto the new Military Road trail in the northwest corner of the plat. A preliminary park layout is included below. Dedication of Outlot A will account for 5 percent of developable area, so a combination of land and cash will be required. Cash payments shall be calculated using the current fee schedule and will be detailed in the development agreement.



Preliminary Plan – Outlot A Wayside Park

Tree Preservation and Landscaping

City Code Title 11-3-13 requires completion of a tree inventory (all qualifying trees) for the entire project area of a proposed development. The Applicant submitted a Tree Preservation Plan that included a tree survey of the existing trees on site. The existing site has 1,613 qualifying caliper inches of trees. There are 730 exempt inches on site, which include invasive species. The Applicant is proposing to remove 988 qualifying inches. The ordinance allows removal of 25 percent (403 inches) qualifying inches without replacement. The Applicant is proposing to remove 585 qualifying inches above the permitted removal of 403 qualifying inches; therefore, 293 inches (50 percent of excess removal) are required to be mitigated. The developer will propose trees to account for the required 293 inches of mitigation. If mitigation is not met with planting of trees, cash in lieu of mitigation will be required as part of the final plat.

A number of existing trees will remain along the Military Road trail corridor from Jarvis Avenue to the eastern edge of the development within Outlot E. The landscape plans shall be updated to remove all non-qualifying trees which include Ash and Elm trees from the project. Additional tree plantings have also been requested by staff along Jamaica Avenue at the corner of Jamaica Avenue and Ravine Parkway. Landscape plans shall be updated to reflect these trees. The Applicant will be required to provide updated tree mitigation calculations and landscaping plans prior to Council consideration of the final plat.

City Code Title 11-3-12 requires a minimum amount of landscape plantings to be installed as a part of development projects within the city. These required plantings include yard trees, building perimeter plantings, and landscape requirements. Lots less than 60 feet wide must have two yard trees, one of which must be a front yard tree outside of the public right-of-way. These smaller lots may have a small statured tree (maximum canopy spread of 30 feet and maximum height of 30 feet) in the front yard. Lots over 60 feet wide must have three yard trees, one of which must be

an overstory deciduous as the front yard tree. The required plantings per City Code Title 11-3-12 are detailed below.

Landscape Lot Performance Standards		
Standard	**Less than 60' Wide**	**60' Lot Width or Greater**
Lot Trees	2 per lot – one in the front yard	3 per lot, no less than 2 different species – one in the front yard
Shrubs	10 per lot	10 per lot

A buffer averaging 50 feet in width but no less than 30 feet wide must run parallel to the rear lot line along Major Roadways in R-2 through R-5 zoned districts. The buffer shall be a combination of trees, fences, and shrubs that create a minimum of 50 percent year-round opacity at maturity. Jamaica Avenue and Ravine Parkway are considered Major Roadways; therefore, the Applicant has provided a buffer that averages at least 50 feet in width along the boundary of each major roadway. The buffers must include a combination of evergreen and overstory deciduous trees to accomplish 50 percent year-round opacity. The buffer along Ravine Parkway is composed of land adjacent to the trail along Ravine Parkway and the landscaped areas within the rear yard of Lots 27 through 42 of Block 1. Lots 34 through 42, Block 1 shall have two coniferous trees in the rear yard to accomplish 50 percent year-round opacity. The buffer along Jamaica Avenue will be encompassed in Outlot B. The HOA shall be responsible for maintenance of the buffer areas along both roads.

Residential buffer plantings have been added along the east side of the plat to provide additional screening from the development to the east, Ravine Meadows.

Stormwater Management Plan
The developer's engineer submitted a stormwater management plan, which has been reviewed by the city. The plan calls for two ponds – one on the east and one on the west side of the development. Comments on stormwater are included in the plan review memo dated February 17, 2026. City engineering staff will continue to work with the developer's engineer to ensure the site meets water quality standards as well as rate and volume control rules. The developer will be required to deed Outlots C and F to the city for stormwater purposes. Slopes within these outlots shall be 4:1 slopes or less.

Grading
As with all new development projects, site grading is necessary to build the streets, provide proper drainage and ponding, and to create building pads, among other things. City staff and engineering consultants will review grading plans to ensure the plans meet city, state, and watershed district requirements for freeboard, drainage, erosion control, and vegetation establishment. The preliminary grading plan was reviewed by the city's engineering staff, and their review comments are included in the February 17, 2026, plan review memo. Additional grading review will be required upon submittal of final grading and utility plans for the site.

Utilities
The proposed development will connect to the existing watermain in three locations: Janero and Jarvis Avenues on the north side of the development and Ravine Parkway on the south. This will allow sufficient looping of the water main. The proposed sanitary sewer connects to existing

infrastructure in two locations. The northern part of the development will connect to sanitary main to the north in Cardinal Reserve. The southern part will connect at Ravine Parkway. Discharge from stormwater ponds will outlet to existing pipe in Ravine Parkway.

The engineering plan review memo dated February 17, 2026, contains comments from city staff and from consulting engineers regarding utility design that will be required to be addressed by the Applicant prior to approval of final plans.

Area Charges and Development Fees
Area charges and related development fees for this project will be based on the acreages shown on the final plat. These fees and charges will be accurately adjusted based on the final plat layout and be provided in the development agreement. Payment to the City will be required at the time the development agreement is fully executed by the City and Developer.

Public Hearing Notices
Public hearing notices were mailed to 158 property owners who are within 500 feet of the proposed subdivision and published in the *St. Paul Pioneer Press* on February 11, 2026.

Recommendation

The City Council is recommended to adopt Resolution 2026-047 approving the Preliminary Plat and Planned Unit Development for a subdivision to be called McHattie Landing, which will consist of 85 lots for single-family homes.

Attachments
A. Preliminary Plans dated 2/17/2026
B. Bolton & Menk Engineer Review Memorandum dated 2/17/2026
C. Landscaping Plans
D. Neighbor Comments
E. Narrative
F. Traffic Review Memo
G. Wetland Letter

CITY OF COTTAGE GROVE
CITY COUNCIL
RESOLUTION NO. 2026-047

RESOLUTION APPROVING THE PRELIMINARY PLAT NAMED MCHATTIE LANDING AND A PLANNED UNIT DEVELOPMENT

WHEREAS, M/I Homes of Minneapolis/St. Paul, LLC has applied for a Preliminary Plat and a PUD, Planned Unit Development; for a residential subdivision to be called McHattie Landing, which subdivides 36.35 acres of land into 85 lots for single-family homes and 7 outlots to be located on property legally described as:

That part of the West Half of the Northwest Quarter of Section 3 lying easterly of Jamaica Avenue, Except that portion lying Northeasterly of County Road No. 20; and except that part described as follows: Beginning at a point at the Centerline of County Road No. 20, said point being 368.01 feet west and 968.45 feet south of the Northeast corner of the West Half of the Northwest Quarter; thence South 39 degrees 8 minutes West perpendicular to the centerline of County Road No. 20 a distance of 272.25 feet to an iron stake; thence North 50 degrees 51 minutes West parallel with the centerline of County Road No. 20, a distance of 160 feet to an iron stake; thence North 39 degrees 8 minutes East parallel with the easterly line of this tract 272.25 feet to the centerline of County Road No. 20; thence South 50 degrees 51 minutes East 160 feet along the Centerline of County Road No. 20 to the point of beginning. Also except the property platted as Kingston Fields and Kingston Fields 2nd Addition, Washington County, Minnesota. Subject to County Road 20, Jamaica Avenue and Ravine Parkway South.

Abstract Property

That part of the West Half of the Northwest Quarter of Section 3, Township 27, Range 21, described as follows: Beginning at a point at the Centerline of County Road No. 20, said point being 368.01 feet west and 968.45 feet south of the Northeast corner of the West Half of the Northwest Quarter; thence South 39 degrees 8 minutes West perpendicular to the centerline of County Road No. 20 a distance of 272.25 feet to an iron stake; thence North 50 degrees 51 minutes West parallel with the centerline of County Road No. 20, a distance of 160 feet to an iron stake; thence North 39 degrees 8 minutes East parallel with the easterly line of this tract 272.25 feet to the centerline of County Road No. 20; thence South 50 degrees 51 minutes East 160 feet along the Centerline of County Road No. 20 to the point of beginning, Washington County, Minnesota.

Abstract Property

PIDS: 03.027.21.23.0003 and 03.027.21.23.0001

Commonly known as 9119 and 9165 Military Road South, Cottage Grove, Washington County, State of Minnesota.

WHEREAS, public hearing notices were mailed to surrounding property owners within 500 feet of the proposed development site and a public hearing notice was published in the Saint Paul Pioneer Press; and

WHEREAS, the Planning Commission held the public hearing on this application on February 23, 2026; and

WHEREAS, the public hearing was open for public testimony, and testimony from the applicant and the public was received and entered into the public record; and

WHEREAS, the Planning Commission, by a 4-to-0 vote, recommended approval of the Preliminary Plat to be called McHattie Landing, subject to certain conditions.

NOW, THEREFORE, BE IT RESOLVED, that the City Council of the City of Cottage Grove, Washington County, Minnesota, hereby approves the Preliminary Plat for a residential subdivision to be called Mchattie Landing, which subdivides 36.35 acres of land into 85 lots for single-family homes and 7 outlots, located on property legally described above. The approval of the Preliminary Plat is subject to the following conditions:

General Development

1. The Developer and builders must comply with all city ordinances and policies except as may be modified by agreement of the Applicant and City staff.

2. The Applicant must obtain appropriate building permits from the City, and permits or approvals from other regulatory agencies including, but not limited to: Minnesota Department of Health, Minnesota Department of Natural Resources, and Minnesota Pollution Control Agency.

3. The Applicant shall enter into a development agreement with the City. The development agreement shall be executed by the Applicant prior to City Council approval of the final plat.

4. The Applicant shall incorporate into the final plat the recommendations, requirements, and evaluations noted in the Bolton & Menk memorandum dated February 17, 2026, subject to modifications that are agreed to by the developer and City Engineer. All comments shall be adopted herein by reference.

5. This approval does not include monument signs. A separate sign permit is required for all proposed monument signage in accordance with the city's sign code requirements.

Platting, Land Dedication, and Easements

6. The project shall be completed in accordance with the plans submitted and as amended by the conditions of approval and as approved by the City Engineer. Any significant changes to the plans, as determined by Planning staff, shall require review and approval by the Planning Commission and City Council.

7. Outlots A, C, and F shall be deeded to the City at the time of recording of the final plat.

8. Outlots B, D, E, and G shall be owned and maintained by the HOA.

9. The park dedication requirements will be satisfied upon dedication of Outlot A and cash paid in lieu of dedication prior to the recording of the final plat.

10. The HOA will be responsible for maintenance of the sign located on Outlot G.

Construction and Grading

11. A grading permit and financial guarantee is required prior to beginning any site work.

12. Upon completing the installation of sanitary, water, and storm utilities, an as-built survey of these utilities must be submitted to the city. Electronic copies of site utilities must be submitted to the city.

Lot Performance Standards

13. The architectural standards of the homes shall be consistent with the following:

    a. Architectural design is required on all four sides of the principal structure.

    b. Architectural materials must be varying on the front façade of the principal structure (shakes, board and batten, accent siding, shutters, window boxes, etc.).

14. Once a house plan is approved for a given lot, no identical house plan may be constructed on the five lots surrounding it, i.e., the lots adjacent on either side, the lot most directly across the street, and the lots adjacent to the lot most directly across the street.

Utilities

15. The Developer is responsible for providing the necessary easements and for building the road and utility improvements serving the site. All drainage and utility easements, as recommended by the City Engineer, must be shown on the final plat and dedicated to the City for public purposes.

16. The Developer shall be responsible for obtaining the necessary permits and approvals to seal the existing wells onsite. The well sealing report shall be sent to the City once the existing wells are sealed.

Streets

17. The Developer shall be responsible for removing Military Road and building the proposed 8-foot-wide bituminous trail. The Developer will coordinate with City staff on the timing of this part of the project. The Developer shall include a provision within the closing documents for each lot to provide notice that Military Road will be removed at such a time as final streets in the development are complete.

Landscaping and Irrigation

18. Irrigation systems installed within city right-of-way are solely the responsibility and risk of the developers or individual. The City is not responsible or liable for any damage or costs related to installation, damage, or replacement of lawn irrigation systems placed in the boulevard as a result of city use of or future changes in the right-of-way.
19. Grading for stormwater ponds to be deeded to the City shall be no steeper than a 4:1 slope and shall be seeded with a seed mix approved by the City Engineer. Stormwater ponds will be maintained and mowed by the City twice a year.

20. The HOA will be responsible for vegetating outlots under HOA ownership with a seed mix approved by the City, and the HOA will provide maintenance of these outlots.

21. The HOA will be responsible for irrigation and maintenance of the boulevard along Ravine Parkway adjacent to this development. An irrigation system is in place but requires a water service to be installed.

22. The Developer is responsible for establishing the final grades, topsoil, and sodding of all the lots, outlots, and boulevards within the subdivision.

23. Two overstory deciduous or coniferous yard trees and ten shrubs shall be installed within each lot less than 60 feet wide. One yard tree shall be located in the front yard. Landscaping plans shall be updated to show overstory deciduous or coniferous trees in rear yards.

24. Three overstory deciduous or coniferous yard trees (no less than two different species), and ten shrubs shall be installed within each lot 60 feet wide or greater. One yard tree shall be located in the front yard. Landscaping plans shall be updated to show overstory deciduous or coniferous trees in rear yards.

25. Prior to releasing the plat for recording, a final landscaping plan shall be approved by planning staff in writing.

26. Additional trees are required along Jamaica Avenue at the corner of Jamaica and Ravine Parkway as part of the required buffer in Outlot C and shall be reflected on the final landscape plans. These trees may be planted after the County's reconstruction of Jamaica Avenue, on or before October 31, 2028.

27. Trees adjacent to the rear lots on Outlots C and F shall be relocated into the rear yards of the adjoining lots. Revised landscaping plans shall reflect this change.

28. Two coniferous trees shall be planted in the rear yards of Lots 33 through 42 Block 1 as the required vegetative buffer. These trees may count as required yard trees. The HOA shall be responsible for maintenance of these trees.

29. Maintenance of slopes greater than a 4:1 grade on individual lots or outlots shall be the responsibility of the private lot owner or Homeowner's Association.

30. If fencing is installed by any property owner adjoining Ravine Parkway (between Jamaica Avenue and the east boundary line for the McHattie Landing plat, Block 1, Lots 22-42) or adjoining Jamaica (Jamaica Avenue between Ravine Parkway and the northwest corner of the McHattie Landing plat, Block 1, Lots 3-13), they must use the same fence design, materials, and color. The fence must be placed on the house side of any earth-berm or buffer landscaping and must not encroach within the Ravine Parkway or Jamaica Avenue right-of-way. Fencing along Ravine Parkway must be a minimum of five feet away from the trail/sidewalk paralleling Ravine Parkway. The adjoining property owner must mow and maintain that five-foot area.

31. All non-qualifying trees shall be removed from the existing stand of trees proposed to remain on site south of Military Road. Updated tree mitigation calculations shall be provided to staff prior to Council consideration.

Onsite Infrastructure Improvements

32. A street lighting plan must be submitted by the Developer and approved by the City Engineer.

33. The Developer is responsible for the cost and installation of public land boundary markers at the corners of private properties abutting Outlots C and F, and the Military Road trail corridor. The open space markers must be installed before a building permit is issued for the lot that abuts the recommended marker location. The actual number and location of park boundary markers is subject to approval by the Parks Director.

34. The Developer must place iron monuments at all lot and block corners and at all other angle points on property lines. Iron monuments must be placed after all site and right-of-way grading has been completed in order to preserve the lot markers for future property owners.

35. The Developer shall contact the electric, telephone, gas, and cable companies that are authorized to provide service to the property to ascertain whether any of those utility providers intend to install underground lines within the development.

36. The Developer is responsible for all street maintenance; upkeep and repair of curbs, boulevards, and sod; and street sweeping until the project is complete. All streets must be maintained free of debris and soil until the subdivision is complete. The Developer hereby agrees to indemnify and hold the City harmless from any and all claims for damages of any nature whatsoever arising out of Developer's acts or omissions in performing the obligations imposed upon Developer by this paragraph.

37. The Developer will provide to the City copies of test results, suppliers, subcontractors, etc., relating to the work to be performed by the Developer. The

Developer agrees to furnish to the City a list of contractors being considered for retention by the Developer for the performance of the work described in the development agreement.

38. The Developer is responsible for the control of grass and weeds in excess of eight inches on vacant lots or boulevards within their development. Failure to control grass and weeds will be considered a developer's default, and the City may, at its option, perform the work and the Developer shall promptly reimburse the City for any expense incurred by the City.

39. The Developer will be required to conduct all major activities to construct the public improvements during the following hours of operation:

Monday through Friday	7:00 A.M. to 7:00 P.M.
Saturday	9:00 A.M. to 7:00 P.M. (with prior approval from the City Engineer)
Sunday/City Holidays	Not Allowed

This does not apply to activities that are required on a 24-hour basis such as dewatering or bi-pass pumping, etc. Any deviations from the above hours are subject to approval of the City Engineer.

40. All debris, including brush, vegetation, trees, and demolition materials, shall be properly disposed of off-site; burying construction debris, trees, and other vegetation is prohibited. Burning of trees and structures is prohibited, except for fire training only.

41. The Developer grants the City, its agents, employees, officers, and contractors permission to enter the site to perform all necessary work and/or inspections during grading and the installation of public improvements by the Developer.

42. The Developer is responsible to require each builder to provide an on-site dumpster to contain all construction debris, thereby preventing it from being blown off-site. It is the responsibility of the Developer to ensure no debris blows on or off site.

43. Adequate portable toilets must be on-site at all times during construction of utilities, roadways, and houses. At no time shall any house under construction be more than 250 feet away from any portable toilet. Toilets must be regularly emptied.

44. At all times during construction, the approved SWPPP must be followed. The City may impose additional erosion control requirements if it is determined that the methods implemented are insufficient to properly control erosion.

45. The Developer is responsible for erosion control inspection fees at the current rates. If the Developer does not reimburse the City for the costs the City incurred for such work within thirty (30) days, the City may draw down the letter of credit to pay such costs.

46. Temporary parking during construction shall be permitted on only one side of the street. No construction parking shall be allowed on Ravine Parkway, Jamaica Avenue, or Military Road.

Passed this 18th day of March 2026.

Myron Bailey, Mayor

Attest:

Tamara Anderson, City Clerk

McHATTIE LANDING

COTTAGE GROVE, MINNESOTA

PRELIMINARY PLAT

FOR

M/I HOMES OF MPLS/ST. PAUL, LLC.

5354 PARKDALE DRIVE #100, ST. LOUIS PARK, MN 55416

INDEX

TITLE SHEET	C1.0
SITE INFORMATION	C1.1-C1.2
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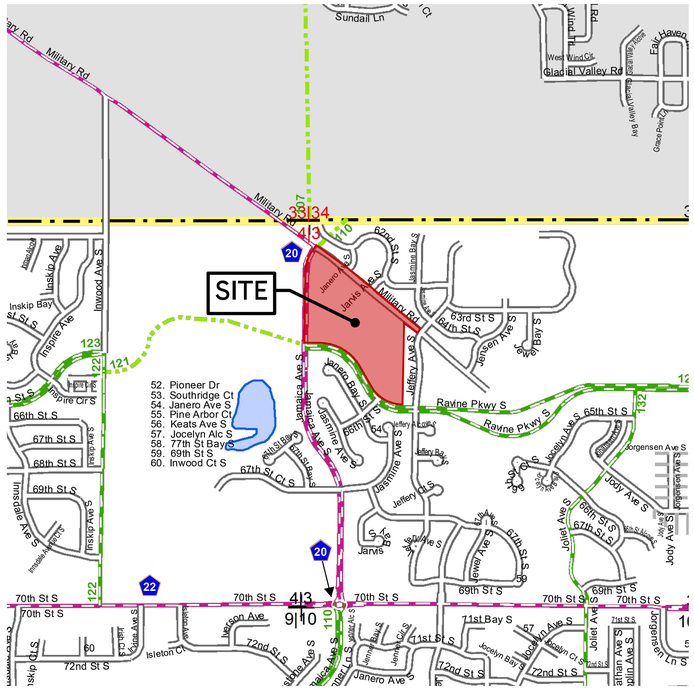
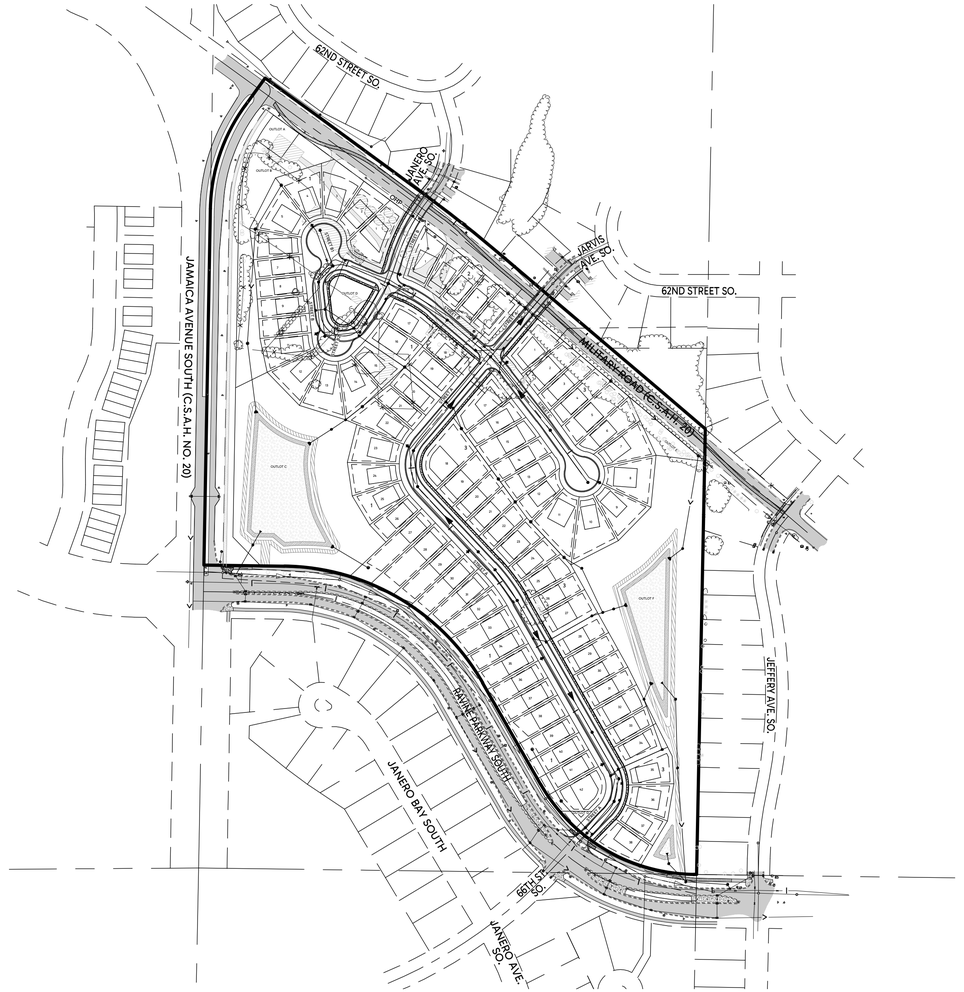
PRELIMINARY TREE PRESERVATION PLAN	C9.0-C9.4
PRELIMINARY LANDSCAPE PLAN	L1.0-L3.0



LOCATION MAP

1" = 1000'



BENCHMARKS

#1 TNH NW QUAD JARVIS AVE SO & MILITARY RD
ELEV=961.86

#2 TNH NE QUAD 66TH AVE SO & RAVINE PARKWAY SO
ELEV=939.92

PROJECT COORDINATES

N44° 51' 29.83"
W92° 55' 15.54"

SITE ADDRESS

PARCEL A: 9119 MILITARY ROAD, COTTAGE GROVE, MN 55016
PARCEL B: 9165 MILITARY ROAD, COTTAGE GROVE, MN 55016

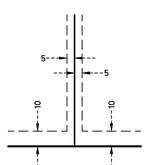
SITE AREA

36.35 ACRES

SCALE IN FEET
0 200 400

Know what's **below.** **Call** before you dig.

DRAINAGE AND UTILITY EASEMENTS ARE SHOWN THUS:



DRAINAGE AND UTILITY EASEMENTS BEING 5 FEET IN WIDTH, UNLESS OTHERWISE INDICATED, ADJOINING LOT LINES, AND BEING 10 FEET IN WIDTH, UNLESS OTHERWISE INDICATED, ADJOINING RIGHT OF WAY LINES, AS SHOWN ON THIS PLAT.

PROJECT CONTACTS

PROJECT ENGINEER:	KURT D. QUAINTANCE, P.E. - HILL, INC.	612-508-8890 (M)
DEVELOPER:	JASON BIEDERWOLF - M/I HOMES OF MPLS/ST. PAUL, LLC.	763-586-7283 (O)
CITY ENGINEER:	JOE FOX, P.E. - CITY OF COTTAGE GROVE	651-458-2826 (O)
NPDES OFFICER:	MATT HOSKINS - MPCA	651-757-2864
GENERAL CONTRACTOR REPRESENTATIVE:	TBD - TBD	xxx-xxx-xxxx

LEGEND

- EXISTING WATERMAIN
- EXISTING SANITARY SEWER
- EXISTING STORM SEWER
- EXISTING UNDERGROUND GAS
- EXISTING UNDERGROUND ELECTRIC
- EXISTING UNDERGROUND TELEPHONE
- EXISTING UNDERGROUND FIBER OPTIC
- EXISTING OVERHEAD POWER LINE
- EXISTING LIGHT POLE
- EXISTING TRANSFORMER
- EXISTING TELEPHONE PEDESTAL
- EXISTING TV PEDESTAL
- EXISTING CURB & GUTTER
- EXISTING RETAINING WALL
- EXISTING FENCE
- EXISTING CONTOUR
- APPROXIMATE EXISTING CONTOUR - ROCK (TOP OF WEATHERED)
- APPROXIMATE EDGE/DROPOFF - ROCK
- EXISTING SOIL BORING/TEST PIT LOCATION
- EXISTING TREELINE
- EXISTING AIR CONDITIONER
- EXISTING CLEANOUT
- EXISTING CURB STOP
- EXISTING ELECTRIC METER
- EXISTING ELECTRIC OUTLET POST
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- EXISTING SIGN
- EXISTING WELL
- EXISTING EMERGENCY SIREN
- EXISTING OVERHEAD POWER
- EXISTING OVERHEAD UTILITY
- EXISTING UNDERGROUND TELEVISION
- EXISTING ASPHALT
- EXISTING CONCRETE
- EXISTING GRAVEL
- EXISTING RIPRAP
- EXISTING BUILDING/SILO
- PROPOSED WATERMAIN
- PROPOSED SANITARY SEWER
- PROPOSED STORM SEWER
- PROPOSED CURB & GUTTER
- PROPOSED CONTOUR
- PROPOSED EMERGENCY OVERFLOW
- PROPOSED CONCRETE
- PROPOSED ASPHALT SURFACE
- PROPOSED SEDIMENT BASIN
- PROPOSED 10' AQUATIC BENCH
- PROPOSED 10' POND MAINTENANCE ACCESS
- FUTURE ASPHALT SURFACE
- PROPOSED FLOATING HEAD SKIMMER OUTLET
- PROPOSED SILT FENCE/TREE PRESERVATION FENCE
- PROPOSED SILT FENCE POST CONSTRUCTION
- PROPOSED WIMCO OR EQUAL POST STORM SEWER CONSTRUCTION
- PROPOSED REAR YARD CB INLET PROTECTION POST STORM SEWER CONSTRUCTION
- PROPOSED DITCH CHECK - POST GRADING/UTILITY CONSTRUCTION
- PROPOSED FES PROTECTION - PRE GRADING/UTILITY CONSTRUCTION
- PROPOSED WIMCO OR EQUAL PRE GRADING/UTILITY CONSTRUCTION
- PROPOSED REAR YARD CB INLET PROTECTION PRE GRADING/UTILITY CONSTRUCTION
- PROPOSED ROCK CONSTRUCTION ENTRANCE
- PROPOSED EROSION CONTROL BLANKET
- PROPOSED TEMPORARY SEDIMENT BASIN
- PROPOSED DEMOLITION
- PROPOSED DEMOLITION - SAWCUT
- PROPOSED DEMOLITION - PAVEMENT
- PROPOSED GENERAL SEED & MULCH MIX - SOUTHERN BOULEVARD (SB)
- PROPOSED STORMWATER SEED & MULCH MIX - WET DITCH (WD)
- PROPOSED UPLAND SEED & MULCH MIX - MNDOT 35-642
- PROPOSED 6" MIN. TOPSOIL RESPREAD AREA - MASS GRADING CONTRACTOR
- PROPOSED 12" MIN.TOPSOIL + 12" CLAY LINER RESPREAD AREA (POND AREA) - MASS GRADING CONTRACTOR
- PROPOSED TOPSOIL STOCKPILE - MASS GRADING CONTRACTOR (HOME CONSTRUCTION/BUILDER PILE)
- PROPOSED STREET LIGHT LOCATION (3' BOC)
- PROPOSED STREET & STOP SIGN LOCATION (6' BOC)
- PROPOSED CROSSWALK SIGNAGE
- PROPOSED TREE REMOVAL AREA

HILL INCORPORATED
2999 WEST C.R. 42, SUITE 100
BURNSVILLE, MN 55306
PHONE: 952-890-6044
Kurt@mnhill.com
www.mnhill.com

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KURT D. QUAINTANCE, P.E.

Date: 01/28/2026 Reg.No. 24670

PRELIMINARY

McHATTIE LANDING
COTTAGE GROVE, MINNESOTA

TITLE SHEET

FOR
M/I HOMES OF MPLS/ST. PAUL, LLC.
5354 PARKDALE DRIVE #100, ST. LOUIS PARK, MN 55416

DRAWN BY
CTY

DATE
01/28/2026

REVISIONS

2026-02-17 REV PER CITY COMMENTS

CAD FILE
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24310-00

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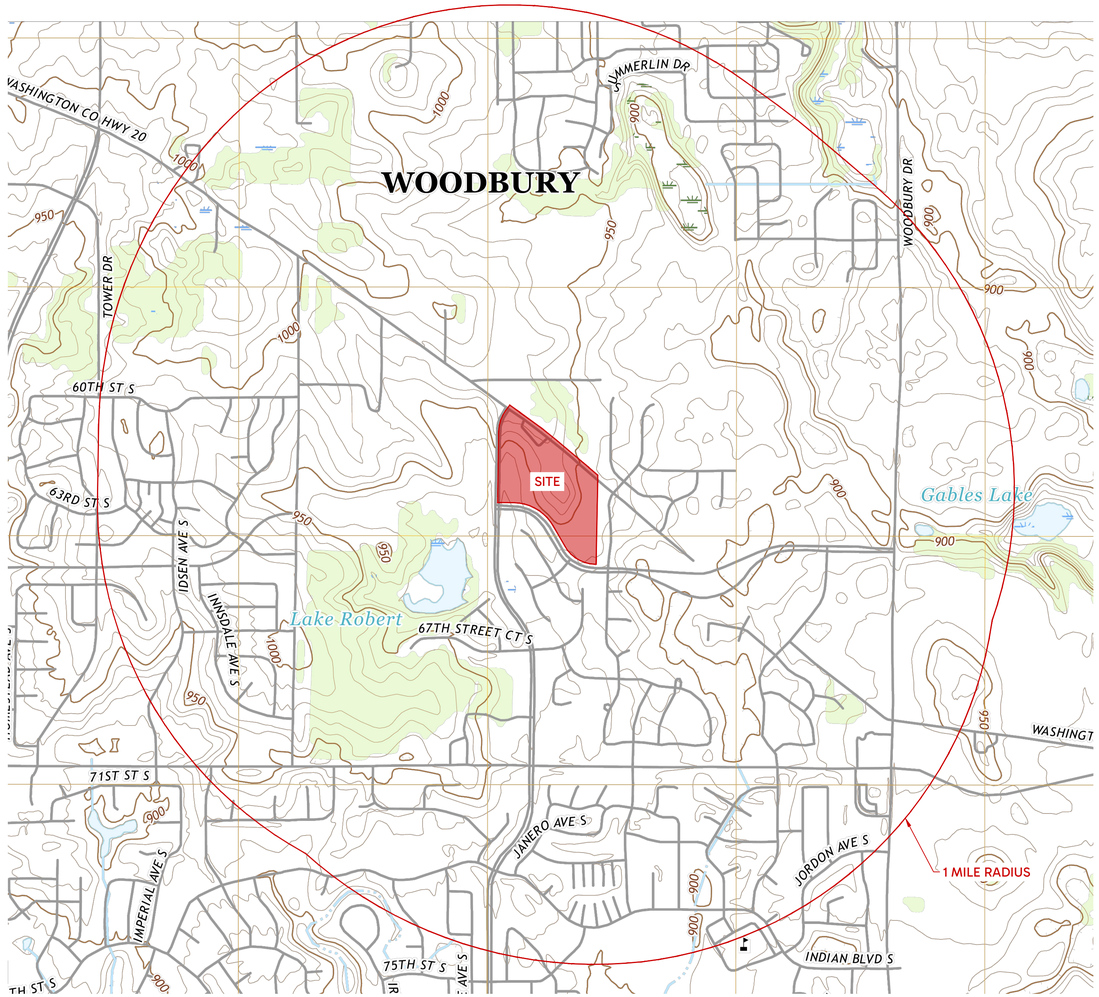
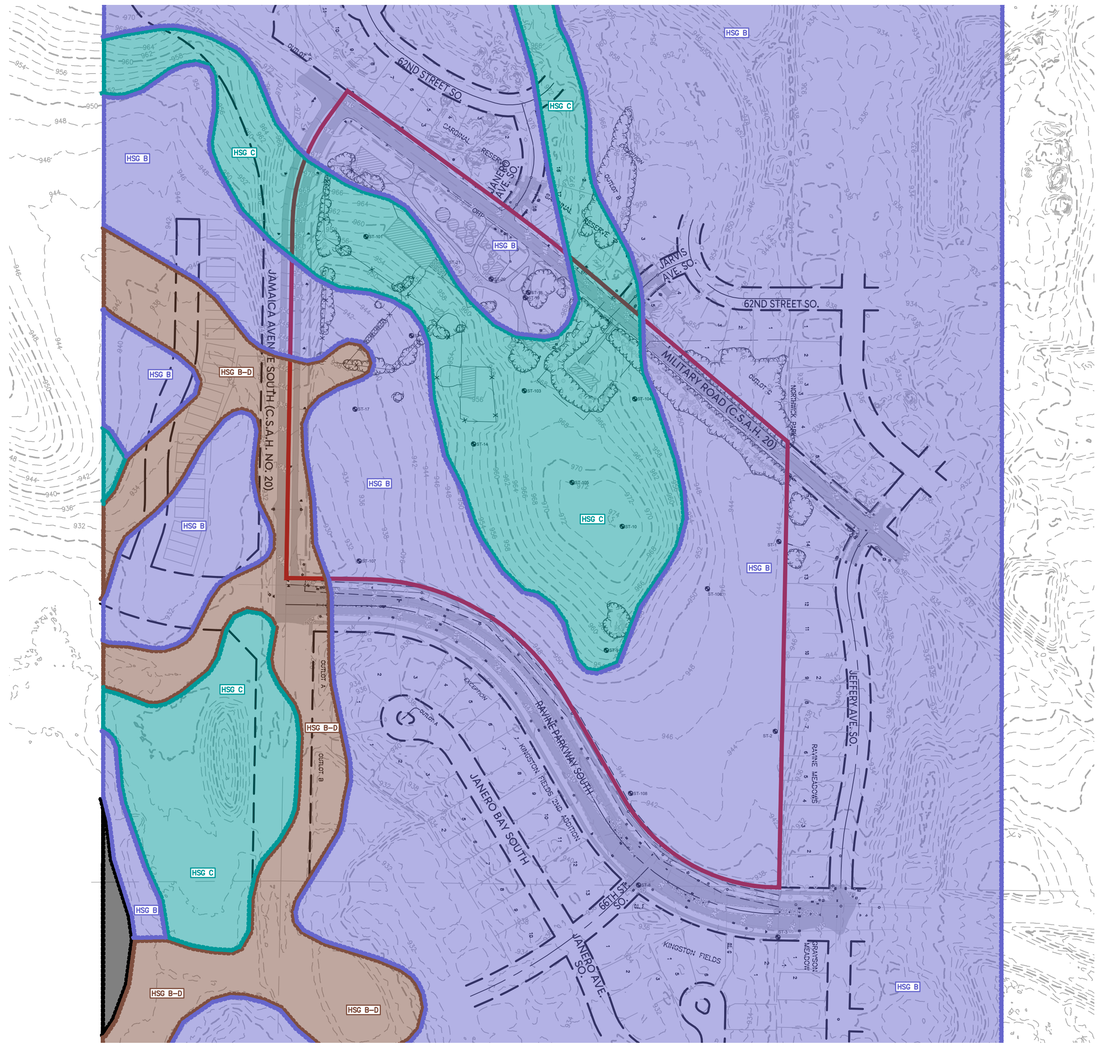


USGS MAP

1" = 1000'



SOILS MAP

1" = 200'

- HYDROLOGIC SOIL GROUP B
- HYDROLOGIC SOIL GROUP C
- HYDROLOGIC SOIL GROUP B/D
- HYDROLOGIC SOIL GROUP NOT RATED (WATER)

BENCHMARKS
#1 TNH NW QUAD JARVIS AVE SO & MILITARY RD
ELEV=961.86
#2 TNH NE QUAD 66TH AVE SO & RAVINE PARKWAY SO
ELEV=939.92

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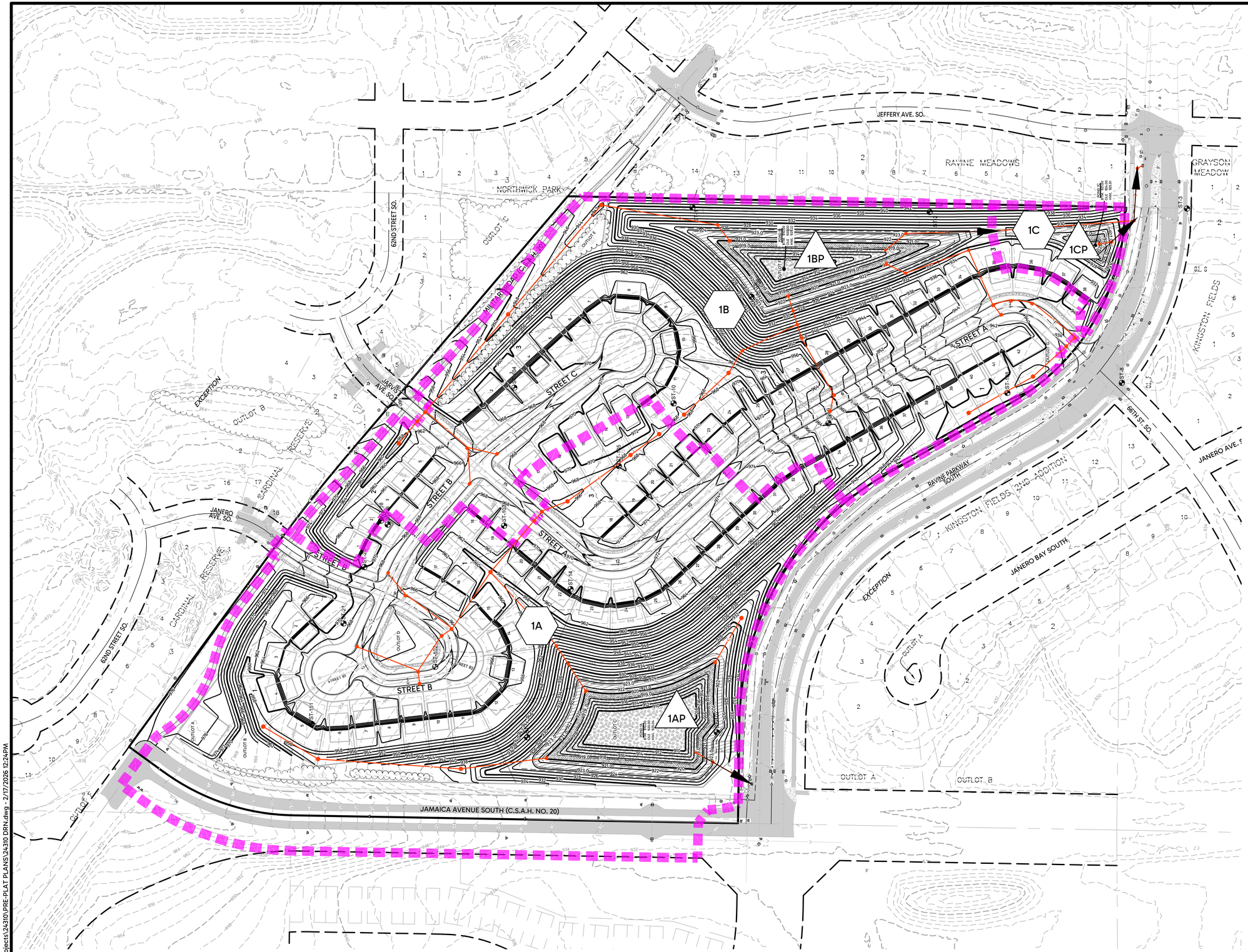

PROPOSED DRAINAGE MAP

LEGEND

- 1P — POND AREA
- 1S — DRAINAGE AREA
- 1R — REACH
- FLOW DIRECTION
- DRAINAGE BOUNDARY

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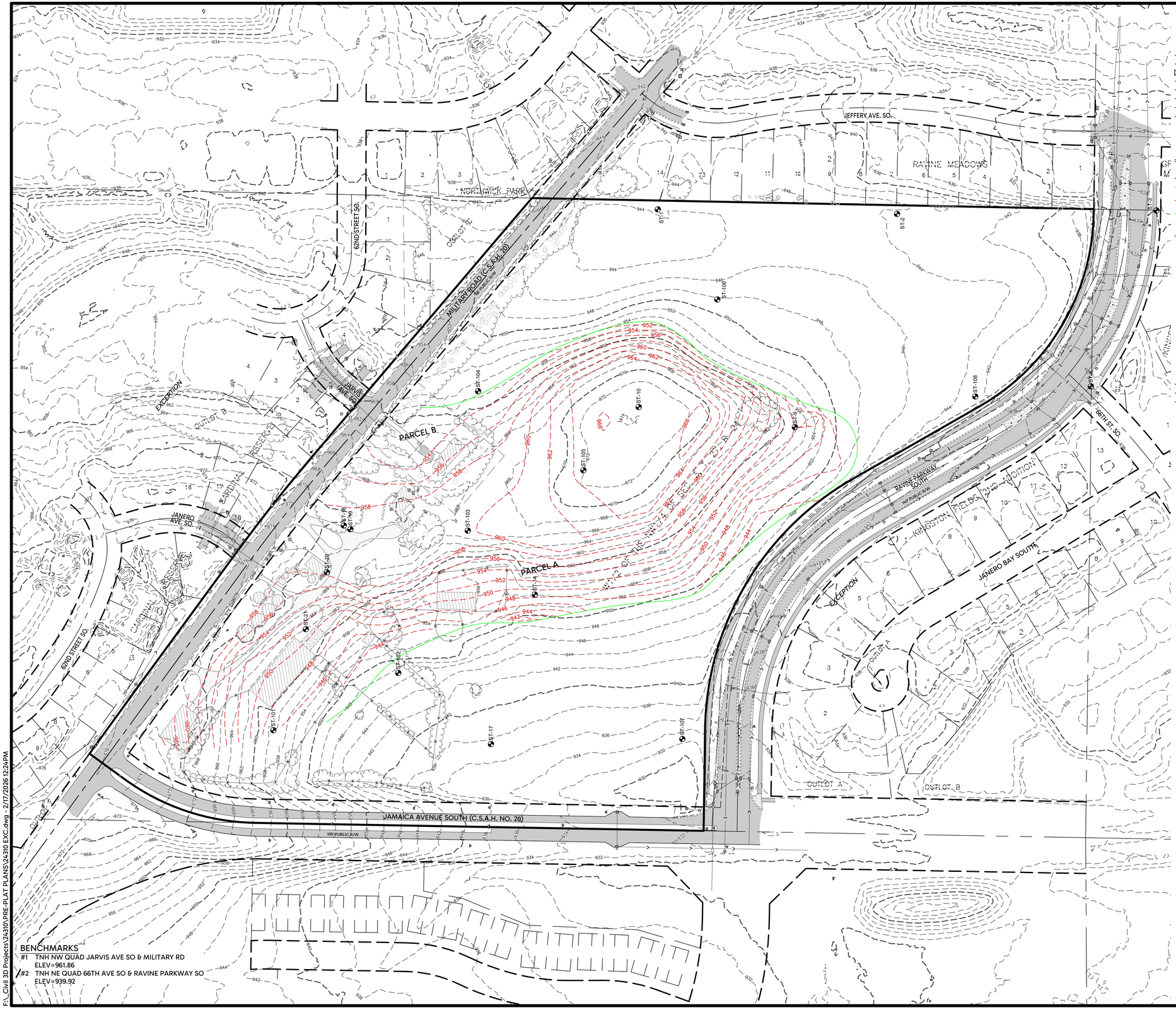

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PRELIMINARY

McHATTIE LANDING
COTTAGE GROVE, MINNESOTA

EXISTING CONDITIONS
FOR
M/I HOMES OF MPLS/ST. PAUL, LLC.
5354 PARKDALE DRIVE #100, ST. LOUIS PARK, MN 55416

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PROJECT NO.	24310-00
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EXISTING CONDITIONS

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PROJECT NO.
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COTTAGE GROVE, MINNESOTA

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DRAWN BY
CTY

DATE
01/28/2026

REVISIONS
2026-02-17 REV PER CITY COMMENTS

CAD FILE
24310 EXC

PROJECT NO.
24310-00

C1.5

SCALE IN FEET
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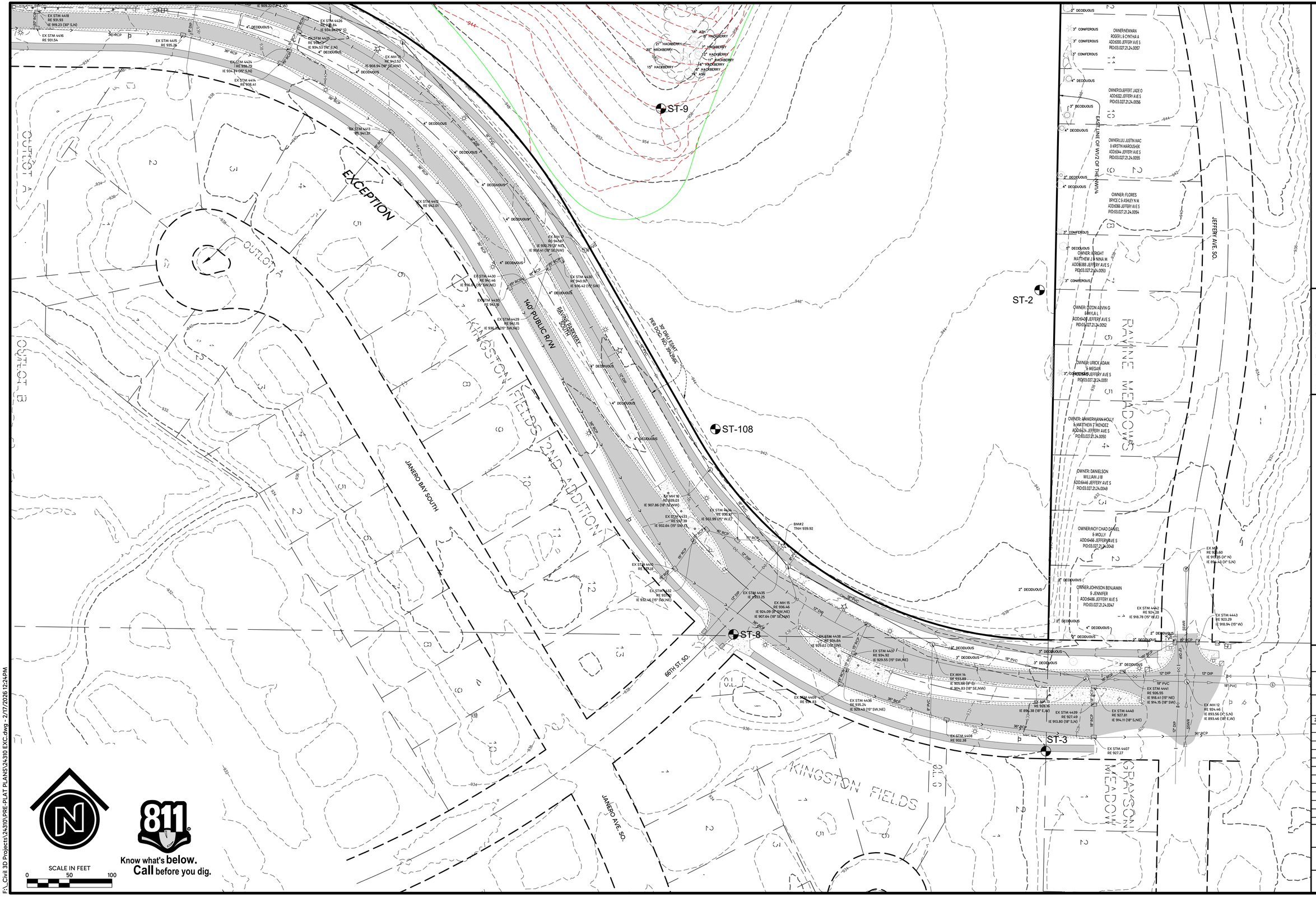

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Kurt@mnhill.com
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I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

KURT D. QUANRUD, P.E.

Date: 01/28/2026 Reg.No. 24670

PRELIMINARY

McHATTIE LANDING
COTTAGE GROVE, MINNESOTA

EXISTING CONDITIONS
FOR
M/I HOMES OF MPLS/ST. PAUL, LLC.
5354 PARKDALE DRIVE #100, ST. LOUIS PARK, MN 55416

DRAWN BY	CTY
DATE	01/28/2026
REVISIONS	
2026-02-17 REV PER CITY COMMENTS	
CAD FILE	24310 EXC
PROJECT NO.	24310-00
	C1.6

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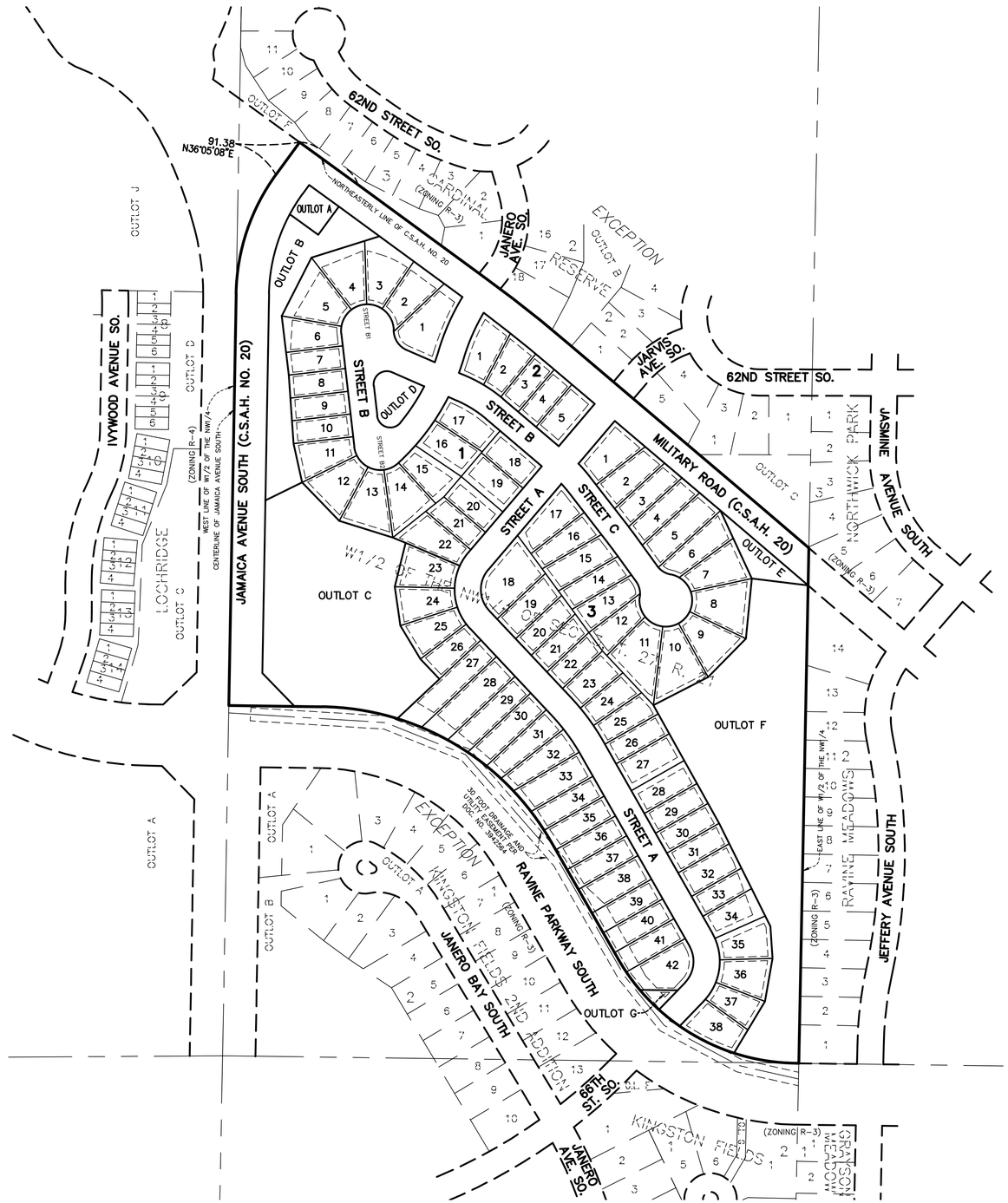

SCALE IN FEET
0 150 300

PROPERTY DESCRIPTION

That part of the West Half of the Northwest Quarter of Section 3 lying easterly of Jamaica Avenue, Except that portion lying Northeasterly of County Road No. 20.
Also except the property platted as Kingston Fields and Kingston Fields 2nd Addition, Washington County, Minnesota. Subject to County Road 20, Jamaica Avenue and Ravine Parkway South.

PID NOS. 0302721230003 & 0302721230001

ZONING INFORMATION

CURRENT ZONING:	R-4 (TRANSITIONAL RESIDENTIAL)
PROPOSED ZONING:	PUD

SITE DATA

GROSS AREA	36.35 ACRES
LOTS	85 LOTS
GROSS DENSITY (TOTAL UNITS/GROSS AREA)	2.3 D.U./ACRE
NET DENSITY (TOTAL UNITS/GROSS AREA-COUNTY ROADS-OUTLOTS(PARK & PONDING))	3.5 D.U./ACRE
LOTS	17.85 ACRES
R.O.W.	9.28 ACRES
EXISTING ROAD (JAMAICA AVENUE SOUTH)	(2.30 ACRES)
EXISTING ROAD (MILITARY ROAD)	(2.18 ACRES)
SUBDIVISION ROADS	(4.80 ACRES)
OUTLOTS	9.22 ACRES
OUTLOT A (PARK)	(0.15 ACRES)
OUTLOT B	(1.03 ACRES)
OUTLOT C (PONDING)	(3.35 ACRES)
OUTLOT D	(0.22 ACRES)
OUTLOT E	(0.22 ACRES)
OUTLOT F (PONDING)	(4.21 ACRES)
OUTLOT G	(0.04 ACRES)
TOTAL	36.35 ACRES

MINIMUM SETBACKS	
FRONT	25 FEET
SIDE (HOUSE & GARAGE)	6 FEET
SIDE (STREET)	20 FEET
REAR	30 FEET
MINIMUM LOT REQUIREMENTS	
LOT WIDTH	45 FEET
LOT DEPTH	120 FEET
MAXIMUM IMPERVIOUS COVERAGE	50%
LOT DATA	
NO. OF LOTS	85 LOTS
SMALLEST LOT SIZE	6,665 S.F.
LARGEST LOT SIZE	14,577 S.F.
AVERAGE LOT SIZE	9,149 S.F.

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MARCUS F. HILL

Date: 01/28/2026 Reg No. 47484

PRELIMINARY

McHATTIE LANDING
COTTAGE GROVE, MINNESOTA
PRELIMINARY PLAT
FOR
M/I HOMES OF MPLS/ST. PAUL, LLC.
5354 PARKDALE DRIVE #100, ST. LOUIS PARK, MN 55416

DRAWN BY
PLM

DATE
01/28/2026

REVISIONS

2026-02-17 REV PER CITY COMMENTS

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PROJECT NO.
24310-00

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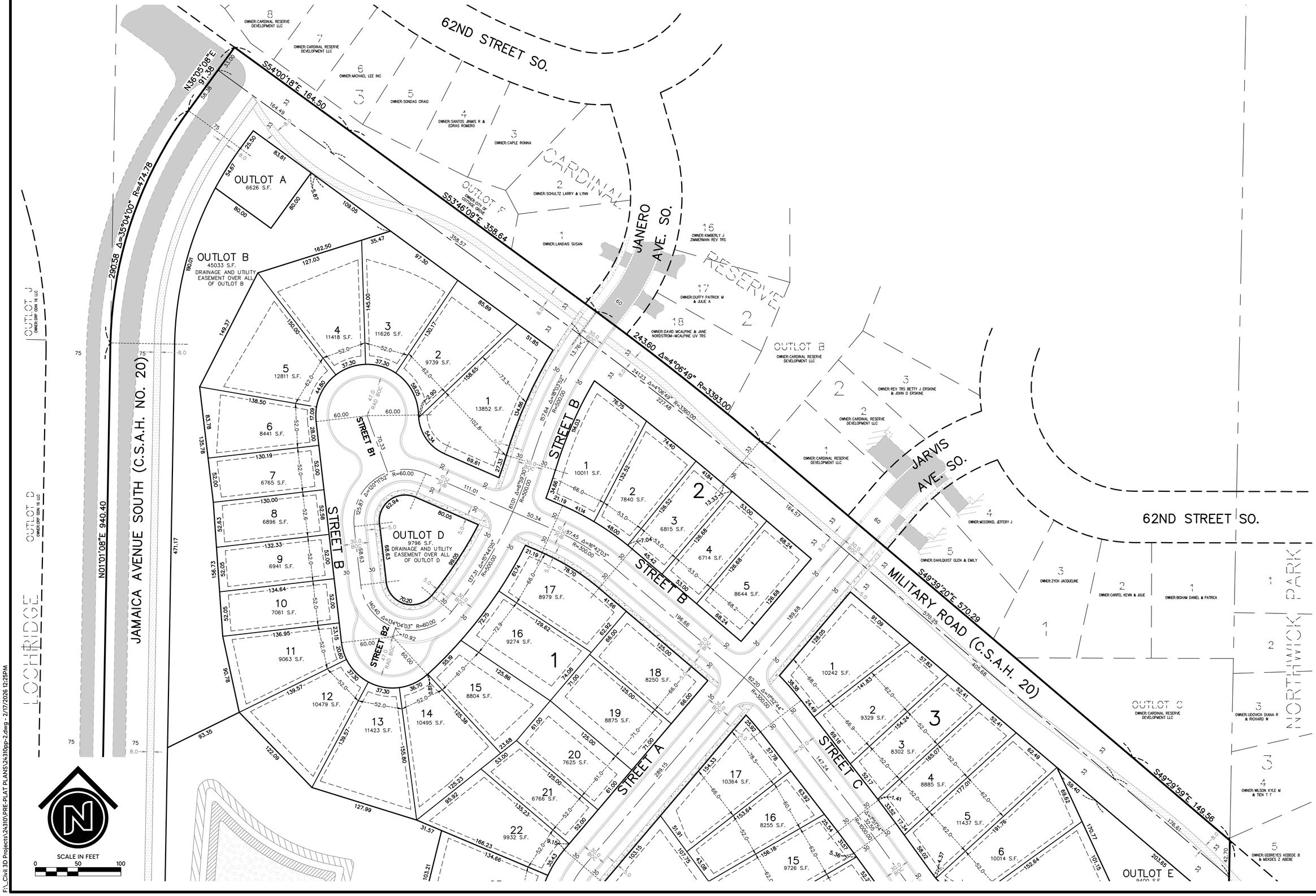
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N36°05'08"E 91.38
S54°00'18"E 164.50
290.58 Δ=35°04'00" R=474.78
S53°45'09"E 358.64
243.60 Δ=4°06'49" R=3393.00
CARDINAL RESERVE 2
OUTLOT A
6626 S.F.
OUTLOT B
45033 S.F.
DRAINAGE AND UTILITY EASEMENT OVER ALL OF OUTLOT B
OUTLOT C
OWNER:CITY OF COTTAGE GROVE
OUTLOT D
9796 S.F.
DRAINAGE AND UTILITY EASEMENT OVER ALL OF OUTLOT D
OUTLOT E
OUTLOT F
OUTLOT J
OWNER:DSP CDN 16 LLC
OUTLOT D
OWNER:DSP CDN 16 LLC
JANERO AVE. SO.
JARVIS AVE. SO.
RESERVE 2
OUTLOT B
OWNER:CARDINAL RESERVE DEVELOPMENT LLC
STREET B
STREET B1
STREET B2
STREET A
STREET C
MILITARY ROAD (C.S.A.H. 20)
S49°39'20"E 570.29
S49°29'59"E 149.56
JAMAICA AVENUE SOUTH (C.S.A.H. NO. 20)
N01°01'08"E 940.40
LOCUST RIDGE
NORTHWICK PARK
OWNER:CARDINAL RESERVE DEVELOPMENT LLC
OWNER:MICHAEL LEE INC
OWNER:SONDAG CRAIG
OWNER:SANTOS JINMS R & EDRAS ROMERO
OWNER:CAPLE RONNA
OWNER:SCHULTZ LARRY & LYNN
OWNER:LANDAIS SUSAN
OWNER:KIMBERLY J ZIMMERMAN REV TRS
OWNER:DUFFY PATRICK M & JULIE A
OWNER:DAVID MCALPINE & JANE NORDSTROM-MCALPINE LIV TRS
OWNER:REV TRS BETTY J ERSKINE & JOHN D ERSKINE
OWNER:MCCORKEL JEFFERY J
OWNER:DAHLQUIST GLEN & EMILY
OWNER:ZYCH JACQUELINE
OWNER:CARFEL KEVIN & JULIE
OWNER:BIGHAM DANIEL & PATRICA
OWNER:UDOVICH DIANA R & RICHARD W
OWNER:WILSON KYLE M & TIEN T T
OWNER:GEBREYES KEBEDE B & MEKDES Z ABEBE
OWNER:CARDINAL RESERVE DEVELOPMENT LLC
OWNER:CARDINAL RESERVE DEVELOPMENT LLC
OWNER:CARDINAL RESERVE DEVELOPMENT LLC

OUTLOT C
OWNER:CITY OF COTTAGE GROVE

JAMAICA AVENUE SOUTH (C.S.A.H. NO. 20)

N01°01'08"E 940.40

OUTLOT C
145776 S.F.
DRAINAGE AND UTILITY EASEMENT OVER ALL OF OUTLOT C

STREET A

STREET C

MILITARY ROAD (C.S.A.H. 20)

S49°29'59"E 149.56

OUTLOT E
9400 S.F.
DRAINAGE AND UTILITY EASEMENT OVER ALL OF OUTLOT E

OUTLOT F
183258 S.F.
DRAINAGE AND UTILITY EASEMENT OVER ALL OF OUTLOT F

N89°12'41"W 212.42

635.36 Δ=59°26'04" R=612.50

OUTLOT A
OWNER:KINGSTON FIELDS HOMEOWNERS ASSOC

O.L. A

OUTLOT B

30 FOOT DRAINAGE AND UTILITY EASEMENT PER DOC. NO. 3942564

RAVINE PARKWAY SOUTH

KINGSTON

N29°46'38"W 308.17

S01°06'59"W 1176.21

RAVINE MEADOWS

SCALE IN FEET
0 50 100

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MARCUS F. HILL

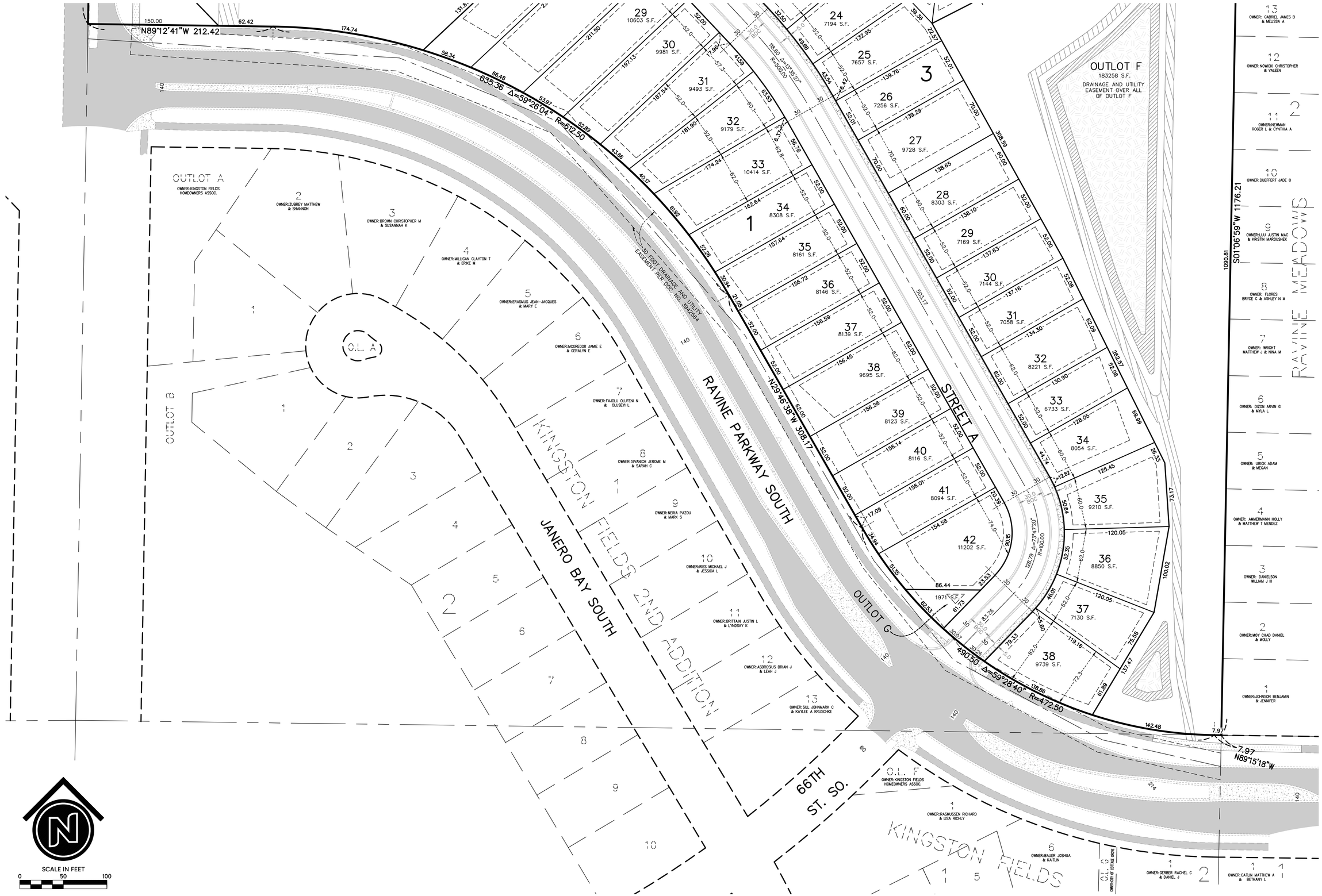
Reg No. 47684

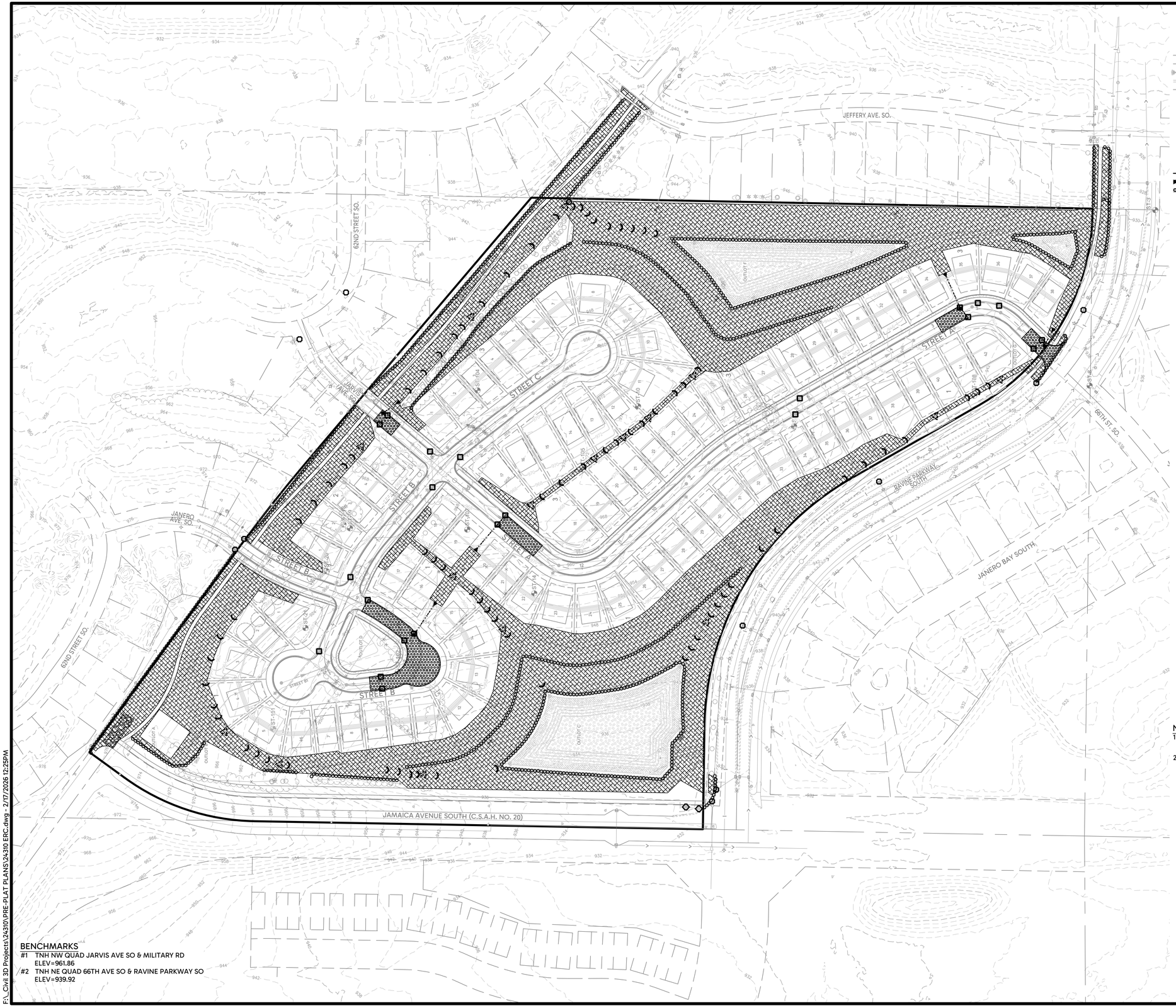
Date: 01/28/2026

PRELIMINARY

McHATTIE LANDING
COTTAGE GROVE, MINNESOTA
PRELIMINARY PLAT
FOR
M/I HOMES OF MPLS/ST. PAUL, LLC.
5354 PARKDALE DRIVE #100, ST. LOUIS PARK, MN 55416

DRAWN BY	PLM
DATE	01/28/2026
REVISIONS	
2026-02-17 REV PER CITY COMMENTS	
CAD FILE	24310PP-2.dwg
PROJECT NO.	24310-00
	C2.2


N89°12'41"W 212.42
635.36 Δ=59°26'04" R=612.50
N29°46'38"W 308.17
490.30 Δ=59°28'40" R=472.50
N89°15'18"W 7.97
S01°06'59"W 1176.21
1090.81
OUTLOT A
OWNER: KINGSTON FIELDS HOMEOWNERS ASSOC.
OUTLOT B
OUTLOT C
OUTLOT F
183258 S.F.
DRAINAGE AND UTILITY EASEMENT OVER ALL OF OUTLOT F
O.L. A
O.L. B
O.L. F
OWNER: KINGSTON FIELDS HOMEOWNERS ASSOC.
O.L. G
OWNER: CITY OF COTTAGE GROVE
RAVINE PARKWAY SOUTH
STREET A
JANERO BAY SOUTH
66TH ST. SO.
KINGSTON FIELDS 2ND ADDITION
KINGSTON FIELDS
RAVINE MEADOWS
30' TOOT DRAINAGE AND UTILITY EASEMENT PER DOC. NO. 3945464
1 OWNER: ZUBREY MATTHEW & SHANNON
2 OWNER: BROWN CHRISTOPHER M & SUSANNAH K
3 OWNER: MILLICAN CLAYTON T & ERIKE M
4 OWNER: ERASMUS JEAN-JACQUES & MARY E
5 OWNER: MCGREGOR JAMIE E & GERALYN E
6 OWNER: FAJOLU OLUFENI N & OLUSEYI L
7 OWNER: SIVANICH JEROME M & SARAH C
8 OWNER: NERIA PAZOU & MARK S
9 OWNER: RIES MICHAEL J & JESSICA L
10 OWNER: BRITTAIN JUSTIN L & LYNDSAY K
11 OWNER: ASBROSIUS BRIAN J & LEAH J
12 OWNER: SILL JOHNMARK C & KAYLEE A KRUSCHKE
13 OWNER: GABRIEL JAMES B & MELISSA A
12 OWNER: NOWOKI CHRISTOPHER & VALEEN
11 OWNER: NEWMAN ROGER L & CYNTHIA A
10 OWNER: DUEFFERT JADE O
9 OWNER: LUU JUSTIN MAC & KRISTIN MAROUSHEK
8 OWNER: FLORES BRYCE C & ASHLEY N M
7 OWNER: WRIGHT MATTHEW J & NINA M
6 OWNER: DIZON ARVIN G & MYLA L
5 OWNER: URICK ADAM & MEGAN
4 OWNER: AMMERMANN HOLLY & MATTHEW T MENDEZ
3 OWNER: DANIELSON WILLIAM J III
2 OWNER: MOY CHAD DANIEL & MOLLY
1 OWNER: JOHNSON BENJAMIN & JENNIFER
1 OWNER: RASMUSSEN RICHARD & LISA RICKLY
6 OWNER: BAUER JOSHUA & KAITLIN
1 OWNER: GERBER RACHEL C & DANIEL J
2 OWNER: CATLIN MATTHEW A & BETHANY L
1 OWNER: CATLIN MATTHEW A
1 OWNER: CATLIN MATTHEW A
1 OWNER: CATLIN MATTHEW A



LEGEND

- PROPOSED WATERMAIN
- PROPOSED SANITARY SEWER
- PROPOSED STORM SEWER
- PROPOSED CURB & GUTTER
- 923 PROPOSED CONTOUR
- PROPOSED CONCRETE
- PROPOSED ASPHALT SURFACE
- PROPOSED SEDIMENT BASIN
- PROPOSED 10' AQUATIC BENCH
- PROPOSED 10' POND MAINTENANCE ACCESS
- PROPOSED FLOATING HEAD SKIMMER OUTLET
- PROPOSED SILT FENCE/TREE PRESERVATION FENCE
- PROPOSED SILT FENCE POST CONSTRUCTION
- PROPOSED WIMCO OR EQUAL POST STORM SEWER CONSTRUCTION
- PROPOSED REAR YARD CB INLET PROTECTION POST STORM SEWER CONSTRUCTION
- PROPOSED DITCH CHECK - POST GRADING/UTILITY CONSTRUCTION
- PROPOSED FES PROTECTION - PRE GRADING/UTILITY CONSTRUCTION
- PROPOSED WIMCO OR EQUAL PRE GRADING/UTILITY CONSTRUCTION
- PROPOSED REAR YARD CB INLET PROTECTION PRE GRADING/UTILITY CONSTRUCTION
- PROPOSED ROCK CONSTRUCTION ENTRANCE
- PROPOSED EROSION CONTROL BLANKET
- PROPOSED TEMPORARY SEDIMENT BASIN

NOTES

1. PERIMETER EROSION CONTROL MEASURES MUST BE INSTALLED BY THE CONTRACTOR AND INSPECTED BY THE CITY PRIOR TO THE START OF WORK.
2. CONTRACTOR MUST PROVIDE CITY A MINIMUM 24-HOUR NOTICE PRIOR TO INSPECTION.

BENCHMARKS

#1 TNH NW QUAD JARVIS AVE SO & MILITARY RD
ELEV=961.86

#2 TNH NE QUAD 66TH AVE SO & RAVINE PARKWAY SO
ELEV=939.92

Know what's **below.** **Call** before you dig.

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0 100 200

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KURT D. QUANRUD, P.E.

PRELIMINARY

Date: 01/28/2026 Reg.No. 24670

McHATTIE LANDING

COTTAGE GROVE, MINNESOTA

PRELIMINARY EROSION & SEDIMENT CONTROL PLAN

FOR
M/I HOMES OF MPLS/ST. PAUL, LLC.
5354 PARKDALE DRIVE #100, ST. LOUIS PARK, MN 55416

DRAWN BY	CTY
DATE	01/28/2026
REVISIONS	
2026-02-17 REV PER CITY COMMENTS	
CAD FILE	24310 ERC
PROJECT NO.	24310-00
	C3.0

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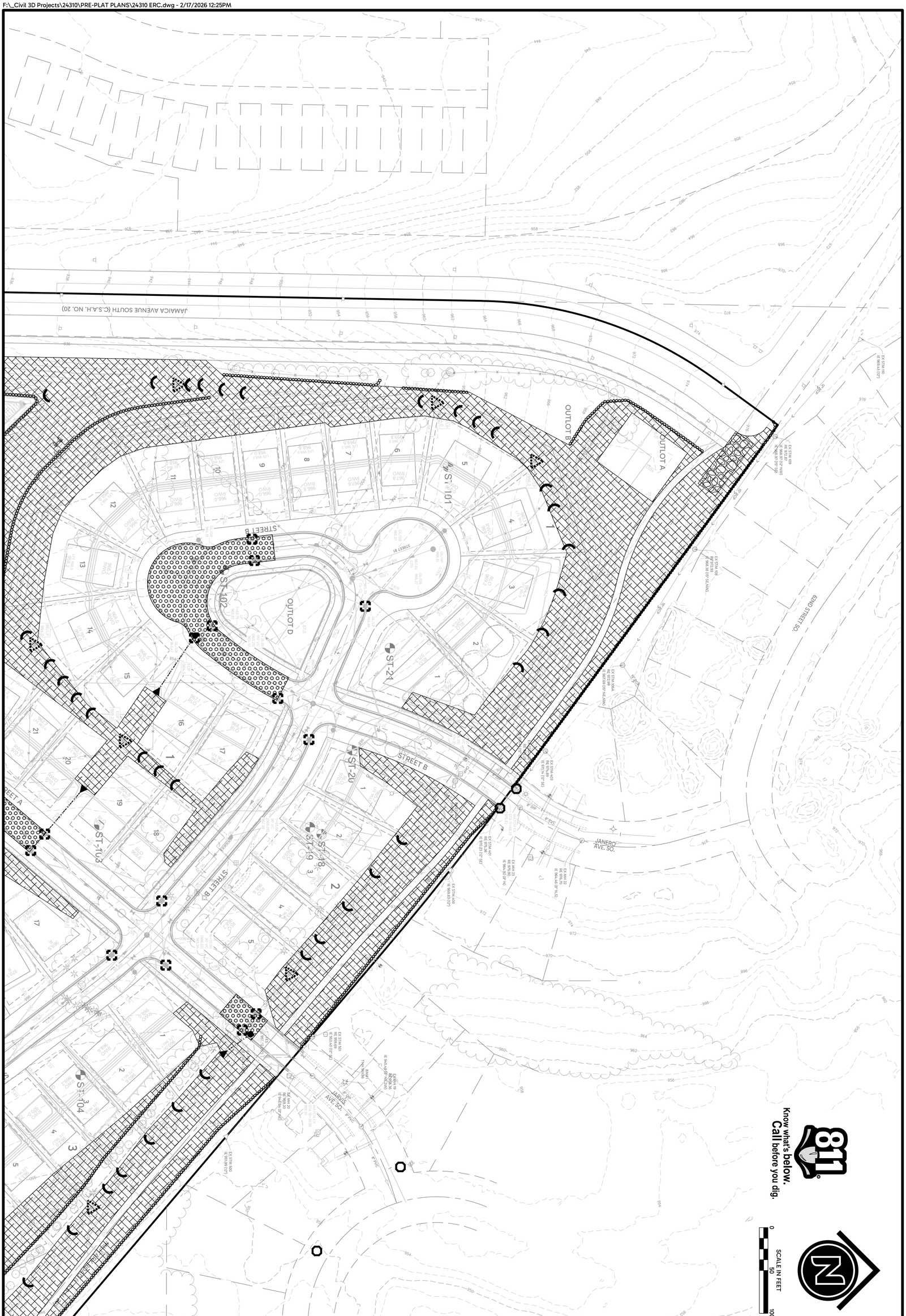

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PROJECT NO. 24310-00

CAD FILE 24310 ERC

DATE 01/28/2026

DRAWN BY CTY

REVISIONS

2026-02-09 REV PER CITY COMMENTS

McHATTIE LANDING

COTTAGE GROVE, MINNESOTA

PRELIMINARY EROSION & SEDIMENT CONTROL PLAN

FOR

M/I HOMES OF MPLS/ST. PAUL, LLC.

5354 PARKDALE DRIVE #100, ST. LOUIS PARK, MN 55416

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PRELIMINARY

KURT D. QUAINTANCE, P.E.

Date: 01/28/2026 Reg.No. 24678

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Date: 01/28/2026 Reg.No. 24670

PRELIMINARY

McHATTIE LANDING

COTTAGE GROVE, MINNESOTA

PRELIMINARY EROSION & SEDIMENT CONTROL PLAN

FOR

M/I HOMES OF MPLS/ST. PAUL, LLC.

5354 PARKDALE DRIVE #100, ST. LOUIS PARK, MN 55416

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PROJECT NO. 24310-00
C3.2

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KURT D. OUANES, P.E.

Date: 01/28/2026 Reg.No. 24670

PRELIMINARY

McHATTIE LANDING

COTTAGE GROVE, MINNESOTA

PRELIMINARY EROSION & SEDIMENT CONTROL PLAN

FOR

M/I HOMES OF MPLS/ST. PAUL, LLC.
5354 PARKDALE DRIVE #100, ST. LOUIS PARK, MN 55416

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PROJECT NO. 24310-00
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DEVELOPMENT SUMMARY

MCHATTIE LANDING - COTTAGE GROVE, MINNESOTA
-These plans shall be considered part of the project's SWPPP. A copy of the SWPPP shall remain on-site throughout active construction.

TYPE OF PROJECT: 85 Lots - Single-Family Construction

TYPE OF WORK: Mass Grading, Utility Installation, Street Construction. Subsequently, Joint Trench and Home construction will occur.

TOTAL PLATTED AREA: 36.35 AC

TOTAL DISTURBED AREA: 33.55 AC

EXISTING IMPERVIOUS AREA: 2.71 AC
(WITHIN DISTURBED AREA OF PROJECT)

POST CONSTRUCTION IMPERVIOUS AREA: 9.80 AC
(WITHIN DISTURBED AREA OF PROJECT)

CONSTRUCTION PHASING
The project is expected to be mass graded in one phase within one construction season, but developed with utility and street construction in two phases.

Three proposed stormwater basins will treat the project stormwater. The proposed basins can be constructed either partially or in whole at the early portion of the project grading to serve as temporary sedimentation basins. Upon completion of grading, the contractor may also utilize the street subgrade and the rear yard low points as temporary sediment basins prior to discharge to the proposed stormwater basins.

POTENTIONAL FOR EROSION AND DISCHARGE OF SEDIMENT
As the site will be disturbed for a period of several weeks during construction, the potential for erosion will increase. The overall gradients on the site are moderate. Certain portions of the site exceed 10% gradients and shall be closely monitored and managed to prevent erosion. The proposed street subcut and rear yard low points as well as the stormwater basins will serve as temporary sediment basins during construction.

The risk of discharge of sediment off of the site is moderate, due to the grade orientation, soil type, design, and discharge area. The highest potential for discharge off the site is to Ravine Parkway South. This area will be controlled by a cut-off swale, silt fence, ditch checks, and erosion control blanket.

Contractor will be required to manage completion of 3:1 slopes such that soil exposure is minimized. After excavation and embankments are completed, slopes shall be re-spread with on-site topsoil where specified (stockpiling in the remainder), the slope grades certified, and erosion blanket or seed and mulch installed as per the plan. Contractor shall coordinate these steps to be carried out in a timely manner such that active construction areas are minimized.

GENERAL CONSTRUCTION SEQUENCING
1. Install perimeter control and rock construction entrance.
2. Perform any clearing, as needed.
3. Perform demolition and debris removal, as needed.
4. Place topsoil stockpiles and stabilize with mulch.
5. Perform mass grading. As sheet drainage patterns develop, place ditch checks, silt fence, and temporary sediment basins as necessary to dissipate and control sediment transfer.
6. Stabilize disturbed areas (non-utility installation areas) with seed and mulch, erosion control blanket, or temporary mulch as needed.
7. Construct utilities and pavements.
8. Stabilize remaining disturbed areas with seed and mulch or erosion control blanket until final stabilization.
9. Install phone, cable, gas and electric utilities.
10. Construct buildings and structures.
11. Stabilize home areas with final permanent vegetation, landscaping or turf.

GUIDANCE FOR TIMING OF BMP INSTALLATION

Prior to Start of Construction
1. Install all perimeter control BMPs as specified on plans prior to start of construction.
2. Install or establish stabilized construction entrance.
3. Install protection devices on existing storm sewer inlets and flared ends prior to start of construction.

During Construction
1. Identify temporary topsoil stockpile locations and stabilize with temporary mulch.
2. Areas in which construction becomes inactive must have stabilization commence immediately and be completed no later than 14 days after construction activity in that area has either temporarily or permanently ceased.
3. Provide temporary or permanent energy dissipation at all pipe outlets within 24 hours of connection to a surface water.
4. Minimize active construction areas. Where possible, establish final grade and stabilize with permanent vegetation - particularly around stormwater basins.
5. During grading construction, utilize street subgrade and rear yard low points for stormwater management to the fullest extent practicable - establish temporary sediment basins and outlets as required.
6. Identify and establish where topsoil stockpiles will be placed for Home Construction/Builders. Stabilize with temporary seed and mulch and install perimeter control around stockpile base.
7. After construction is completed and grades are certified in a particular area of the site, establish permanent vegetation or other permanent cover.

During Inactivity or After Construction
1. Areas in which construction becomes inactive must have stabilization commence immediately and be completed no later than 14 days after construction activity in that area has either temporarily or permanently ceased.
2. Final stabilization cover types are shown on this sheet of the plan set. Final cover consists of vegetation, paved and gravel surfaces, sod, landscaping and buildings.
3. At the point where vegetated cover has achieved 70% of expected full growth density, vegetated areas can be considered fully stabilized. Removal of synthetic sediment control BMPs can be initiated.
4. Inlet protection devices can be removed from structures as the attributing drainage area becomes fully stabilized.
5. Maintain street sweeping activities until construction activities are fully completed.

EROSION CONTROL BMPs
The construction plans anticipate the use of, but are not limited to, the following Erosion Control BMPs:
1. Perimeter delineation to minimize disturbed areas
2. Temporary Rock Construction Entrance
3. Temporary straw mulch as needed.
4. Seed and mulch/Sod
5. Erosion Control Blanket
6. Minimize active or disturbed work areas
7. Horizontal slope grading
8. Rip rap

SEDIMENT CONTROL BMPs
The construction plans anticipate the use of, but are not limited to, the following Sediment Control BMPs:
1. Utilize street subcut, rear yard low points, and stormwater basins as Temporary Sediment Basins
2. Silt Fence at project perimeter and throughout site
3. Inlet protection after utility construction
4. Linear control along back of new curb and gutter (sod, erosion control blanket, bioroll, or silt fence)
5. Routine street sweeping adjacent to construction entrance.
6. Ditch checks
7. Post construction silt fence - stormwater basins, large slope areas, and topsoil stockpiles

Refer to plans for designated locations of BMPs, details and implementation notes. All BMP's selected and implemented shall be appropriate for the time of year, the current site conditions and for the estimated duration of use.

BASIN AND TRAP DEWATERING BMPs
Should the need arise for basin or trap dewatering, contractor shall utilize a floating skimmer pump intake, such that the water is drawn from the surface of the basin. Pumped effluent shall not be discharged into Surface Waters in a turbid state.
Turbid effluent shall be filtered with mechanical devices, chemical filtering, or a combination thereof, to prevent discharges with visual turbidity.

POLLUTION CONTROL BMPs
BMP's and good housekeeping should be implemented to prevent spills, pollutants or chemicals from entering the drainage system.
1. Fueling: A fixed fueling station is not anticipated. Contractor will be required to implement BMPs for onsite re-fueling of equipment.
2. Concrete Washout: A washout area will be specified on the plan for construction. The builder/developer has the ability to adjust location or to provide alternative washout containment.
3. There is not an anticipated need for storing chemicals, paints, solvents or other potentially toxic or hazardous materials on site.

SEED & MULCH SPECIFICATIONS
Seed placed for permanent cover or final stabilization requires the respread of 6" minimum existing/salvaged topsoil. Multiple site visits will be required to accommodate permanent or temporary stabilization as required during the phases of construction.

1. General
A. Seed: **MNDOT Southern Boulevard (SB)** at a rate of 160 lb/acre
B. Fertilzer: Type 3 slow release at a rate of 200 lb/acre
C. Mulch: MNDOT Type 1 at a rate of 2 tons/acre

2. Stormwater
A. Seed: **MNDOT Wet Ditch (WD)** at a rate of 20 lb/acre
B. Fertilzer: Type 3 slow release at a rate of 200 lb/acre
C. Mulch: MNDOT Type 3 at a rate of 2 tons/acre

3. Upland
A. Seed: **MNDOT 35-642** at a rate of 34.25 lb/acre
B. Fertilzer: Type 3 slow release at a rate of 200 lb/acre
C. Mulch: MNDOT Type 3 at a rate of 2 tons/acre

4. Temporary Cover Crop
A. Seed: **MNDOT 21-111 or 21-112** at a rate of 100 lb/acre
B. Fertilzer: Type 3 slow release at a rate of 200 lb/acre
C. Mulch: MNDOT Type 3 at a rate of 2 tons/acre

5. Temporary Mulch
A. Mulch: Type 1 (Non-Native Seed Areas) at a rate of 2 tons/ac
B. Mulch: Type 3 (Native Seed Areas) at a rate of 2 tons/ac

ADDITIONAL SWPPP NOTES
1. All Erosion and Sediment Control facilities shall be maintained by the contractor during the construction operations. Any temporary facilities which are to be removed as called for on these plans and specifications shall be removed by the contractor at the time directed by the engineer. The contractor shall then restore the subsequently disturbed areas in accordance with these plans and specifications.
2. Wherever practical and feasible, the contractor shall protect and preserve existing natural trees, grass and other vegetative cover in effort to provide natural buffering and filtering of runoff.
3. Contractor shall be adaptable in adjusting construction schedules in anticipation of weather forecasts of precipitation, in order to minimize risk of erosion and sediment transport.
4. It is the responsibility of the contractor to keep public streets, travel ways, parking lots and trails utilized for ingress to and egress from the construction site free of dirt, sediment and debris, resulting from construction activity.
5. Adequate control of dust shall be maintained by the contractor.
6. Perimeter controls shall not be removed until final stabilization of areas draining toward the control devices is achieved.
7. When temperatures do not exceed 40 degrees F, areas that require seed and mulch stabilization shall be dormant seeded. Application rate shall be two times the normal rate. No dormant seeding shall be done on ice or snow greater than 2" in depth.
8. Any areas that were seeded that do not achieve 70% coverage shall be reseeded at the contractor's expense.

STORMWATER BASIN MAINTENANCE
All stormwater basins within the project will be owned and maintained by the City. Suggested practices are as follows:
1. For the first three years after construction, basins should be inspected for obvious signs of erosion, such as gullies, rills or sediment plumes. Identify the cause and take corrective measures such that grades are restored and surfaces re-established with appropriate vegetation.
2. Inspect for sediment accumulation at the pipe outlets into the pond at the completion of sod installation of last lot in plat. Remove sediment. Re-inspect every 3-5 years.
3. Inspect inlets and outlets for blockage or debris buildup annually. Remove debris as necessary to allow for inlets and outlets to function as designed.
4. Verify basin design capacity after 15 to 20 years of service.

MPCA STORMWATER PERMIT - RESPONSIBILITY
The Contractor will be required to become the Permittee for the project, until final stabilization and transfer of responsibility is completed. Transfer of responsibility shall be completed with the Permit Modification Form. Contractor must provide trained individual(s) per Section 21.1 while responsible for NPDES permit and until transfer of responsibility is complete.

OWNER: JASON BIEDERWOLF - M/I HOMES OF MPLS/ST. PAUL, LLC. - 763-586-7283 (O)

PERMITTEE: TBD - TBD - XXX-XXX-XXXX

OPERATOR(S): Supt (TBD)

ENGINEER: KURT D. QUAINTANCE, P.E. - HILL, INC. - 612-508-8890(C)

TRAINING REQUIREMENTS
KURT D. QUAINTANCE, P.E.
DESIGN OF CONSTRUCTION SWPPP (CERTIFICATION(2023-2026))
UNIVERSITY OF MINNESOTA
INSTRUCTORS : JOHN CHAPMAN

LGU CONTACT: JOE FOX, P.E. - CITY OF COTTAGE GROVE - 651-458-2826 (O)

MPCA COMPLIANCE: MATT HOSKINS - MPCA - 651-757-2864

ESTIMATED EROSION AND SEDIMENT CONTROL QUANTITIES

ROCK CONSTRUCTION ENTRANCE	EA	1
SILT FENCE/TREE PRESERVATION FENCE - PRE CONSTRUCTION	LF	3,550
SILT FENCE - POST CONSTRUCTION	LF	4,100
SILT FENCE - TOPSOIL STOCKPILE - POST CONSTRUCTION	LF	1,800
SEED & MULCH - GENERAL (SB)	AC	19.3
SEED & MULCH - STORMWATER (WD)	AC	2.1
SEED & MULCH - UPLAND (MNDOT 35-642)	AC	7.7
SEED & MULCH - TEMPORARY CROP COVER (MNDOT 21-111 OR MNDOT 21-112)	AC	20.0
TEMPORARY MULCH - MNDOT TYPE 1	AC	15.0
TEMPORARY MULCH - MNDOT TYPE 3	AC	10.0
EROSION CONTROL BLANKET - MNDOT CATEGORY 3 "WILDLIFE FRIENDLY"	SY	56,800
DITCH CHECK	EA	75
INLET PROTECTION - STREET CB	EA	32
INLET PROTECTION - REAR YARD CB/FLARED END	EA	18
TEMPORARY SEDIMENT BASINS AND FLOATING HEAD SKIMMER OUTLET	EA	5

HILL INCORPORATED
2999 WEST C.R. 42, SUITE 100
BURNSVILLE, MN 55306
PHONE: 952-890-6044
Kurt@mnhill.com
www.mnhill.com

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
KURT D. QUAINTANCE, P.E.
Date: 01/28/2026 Reg.No. 24670

PRELIMINARY

McHATTIE LANDING
COTTAGE GROVE, MINNESOTA
PRELIMINARY EROSION & SEDIMENT CONTROL DETAILS
FOR
M/I HOMES OF MPLS/ST. PAUL, LLC.
5354 PARKDALE DRIVE #100, ST. LOUIS PARK, MN 55416

DRAWN BY
CTY

DATE
01/28/2026

REVISIONS
2026-02-17 REV PER CITY COMMENTS

CAD FILE
24310 ERD

PROJECT NO.
24310-00

C3.4

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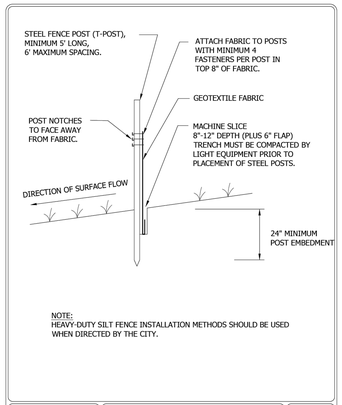
NPDES REQUIREMENTS

1.1 Permit Coverage. [Minn. R. 7090]
1.2 This permit is required for construction activity that results in land disturbance of equal to or greater than one (1) acre or if a project is part of a common plan of development or sale that ultimately will disturb greater than one (1) acre, and authorizes, subject to the terms and conditions of this permit, the discharge of stormwater associated with construction activity. [Minn. R. 7090]
1.3 Construction activity covered by this permit cannot commence until coverage under this permit is effective as described in item 3.3 through 3.4 or, if applicable, until the Minnesota Pollution Control Agency (MPCA) has issued an individual National Pollutant Discharge Elimination System (NPDES)/State Disposal System (SDS) construction stormwater permit for the project. [Minn. R. 7090]
1.4 This permit covers all areas of the State of Minnesota except land wholly within the boundaries of a federally recognized Indian Reservation owned by a tribe or a tribal member or land held in trust by the federal government for a tribe or tribal member. [Minn. R. 7090]
1.5 Coverage under this permit is not required when all stormwater from construction activity is routed directly to and treated by a "treatment works," as defined in Minn. Stat. Section 115.01, subd. 21, operated under an individual NPDES/SDS permit with a Total Suspended Solids (TSS) effluent limit. [Minn. R. 7090]
1.6 This permit covers ongoing projects covered under any previous construction stormwater permit that are not complete on the issuance date of this permit. Permittees must either remain in compliance with the previous permit and terminate coverage within 18 months of the issuance date of this permit or comply with this permit, including updating the Stormwater Pollution Prevention Plan (SWPPP), within the 18-month period. Permittees of previously permitted projects are not required to incorporate any additional requirements regarding the permanent stormwater treatment system included in this reissued permit. [Minn. R. 7090]
1.7 Coverage for projects that extend beyond the expiration date of this permit remains effective for a grace period of 18 months. If Permittees cannot complete projects during the grace period, the MPCA will extend coverage under the next permit and permittees must comply with the requirements of the new permit including updating the SWPPP. Permittees are not required to follow changes to the permanent stormwater treatment section of the next permit. [Minn. R. 7090]
2.1 Prohibitions and Limitations of Coverage. [Minn. R. 7090]
2.2 The owner must develop a complete and accurate SWPPP that complies with item 5.2 prior to submitting the application for coverage and starting construction activity. Failure to prepare a SWPPP prior to submitting the application may result in permit revocation. [Minn. R. 7090]
2.3 This permit prohibits discharges of any material other than stormwater treated in compliance with this permit and discharges from dewatering or basin draining activities in accordance with Section 10. Prohibited discharges include, but are not limited to, wastewater from washout of concrete, stucco, paint, form release oils, curing compounds and other construction materials; fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance; soaps or solvents used in vehicle and equipment washing and maintenance, and other hazardous substances or wastes. [Minn. R. 7090]
2.4 This permit does not authorize stormwater discharges related to the placement of fill into waters of the state requiring local, state or federal authorizations (such as U.S. Army Corps of Engineers Section 404 permits, Minnesota Department of Natural Resources (DNR) Public Waters Work permits or local governmental unit (LGU) Wetland Conservation Act replacement plans or determinations). [Minn. R. 7090]
2.5 This permit does not authorize stormwater discharges associated with industrial activity except for construction activity. Permittees must obtain coverage for discharges associated with industrial activity under a separate NPDES/SDS permit once day-to-day operational activities commence even if construction is ongoing. [Minn. R. 7090]
2.6 This permit does not authorize discharges from non-point source agricultural and silvicultural activities excluded from NPDES permit requirements under 40 CFR pt. 122.3(e). [Minn. R. 7090]
2.7 This permit does not authorize stormwater discharges to Prohibited, Restricted, Special or Impaired waters unless permittees follow the additional requirements in Section 23. [Minn. R. 7090]
2.8 This permit does not replace or satisfy any environmental review requirements including those under the Minnesota Environmental Policy Act or the National Environmental Policy Act. The owner must verify completion of any environmental review requirements by law, including any required Environmental Assessment Worksheets or Environmental Impact Statements, Federal environmental review, or other required review prior to applying for coverage under this permit. If any part of your common plan of development or sale requires environmental review, coverage under this permit cannot be obtained until such environmental review is complete. [Minn. R. 7090]
2.9 This permit does not regulate or satisfy any review requirements for discharges adversely impacting State or Federally designated endangered or threatened species or a designated critical habitat. The owner must comply with the National Historic Preservation Act and conduct all required review and coordination related to historic preservation, including significant anthropological sites and any burial sites, with the Minnesota Historic Preservation Officer. [Minn. R. 7090]
2.10 This permit does not authorize discharges to wetlands unless the permittee complies with the requirements in Section 22. Coverage under this permit cannot be issued until the requirements for wetland permits, decisions, other determinations, or the mitigative sequence required in section 22 have been finalized and documented. [Minn. R. 7050.0186]
3.1 Application and Coverage Effective Date. [Minn. R. 7090]
3.2 The owner must submit a complete and accurate on-line application with the appropriate fee to the MPCA for each project that disturbs one (1) or more acres of land or for a common plan of development or sale that will ultimately disturb one (1) or more acres. [Minn. R. 7090]
3.3 For projects or common plans of development or sale that disturb less than 50 acres or do not discharge stormwater within 1 mile (aerial radius measurement) of a special or impaired water, permittees do not need to submit the SWPPP with the application. Permit coverage for these projects is effective upon application and completing the payment process. [Minn. R. 7090]
3.4 For certain projects or common plans of development or sale disturbing 50 acres or more, the complete SWPPP must be included with the application and submitted at least 30 days before the start of construction activity. This applies if there is a discharge to or within one mile (aerial radius measurement) of, and flows to, a special water listed in item 23.3 through 23.6 or an impaired water as described in item 23.7. Permit coverage for these projects is effective upon submitting the application and complete SWPPP, completing the payment process and receiving a determination from the MPCA that the review of the SWPPP is complete. The determination may take longer than 30 days if the SWPPP is incomplete. If the MPCA fails to contact the permittee within 30 days of applicaiton receipt, coverage is effective 30 days after completing the payment process. [Minn. R. 7090]
3.5 The application requires listing all persons meeting the definition of owner and operator as permittees. The owner is responsible for compliance with all terms and conditions of this permit. The operator is responsible for compliance with Sections 3, 4, 5, 24 and applicable requirements for construction activity in Sections 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23. [Minn. R. 7090]
3.6 Permittees will receive coverage notification in a manner determined by the MPCA. [Minn. R. 7090]
3.7 For construction projects where the owner or operator changes (e.g., an original developer sells portions of the property to various homebuilders or sells the entire site to a new owner), the current owner and the new owner or operator must submit a complete permit modification form provided by the MPCA. The current owner and the new owner or operator must submit the form prior to the new owner or operator commencing construction activity or no later than 30 days after taking ownership of the property. [Minn. R. 7090]
3.8 For construction projects where the owner or operator changes, the current owner must provide a SWPPP to the new owner and operator that specifically addresses the remaining construction activity. The new owner or operator can implement the original SWPPP, modify the SWPPP, or develop a new SWPPP. Permittees must ensure their activities do not render another party's erosion and permanent stormwater control BMPs ineffective. [Minn. R. 7090]
4.1 Termination of Coverage. [Minn. R. 7090]
4.2 Permittees must submit a NOT within 30 days after all termination conditions listed in Section 13 are complete.[Minn. R. 7090]
4.3 Permittees must submit a NOT within 30 days after selling or otherwise legally transferring the entire site, including permit responsibility for roads (e.g., street sweeping) and stormwater infrastructure final clean out, or transferring portions of a site to another party. The permittees' coverage under this permit terminates at midnight on the submission date of the NOT.[Minn. R. 7090]
4.4 Permittees may terminate permit coverage prior to completion of all construction activity if they meet all of the following conditions:
a. construction activity has ceased for at least 90 days; and
b. at least 90 percent (by area) of all originally proposed construction activity has been completed and permanent cover has been established on those areas; and
c. on areas where construction activity is not complete, permanent cover has been established; and
d. the site complies with item 13.3 through 13.7.
After permit coverage is terminated under this item, any subsequent development on the remaining portions of the site will require permit coverage if the subsequent development itself or as part of the remaining common plan of development or sale will result in land disturbing activities of one (1) or more acres in size. [Minn. R. 7090]
4.5 Permittees may terminate coverage on less than MPCA approval after submitting information documenting the owner cancelled the project. [Minn. R. 7090]
5.1 Stormwater Pollution Prevention Plan (SWPPP) Content. [Minn. R. 7090]
5.2 The owner must develop and implement a SWPPP. The SWPPP must include items 5.3 through 5.26. [Minn. R. 7090]
5.3 The SWPPP must incorporate specific Best Management Practices (BMP) used to comply with the requirements of this permit. [Minn. R. 7090]
5.4 The SWPPP must include a narrative describing the timing for installation of all erosion prevention and sediment control BMPs and a description of the permanent stormwater treatment system. [Minn. R. 7090]
5.5 The SWPPP must include the location and type of all temporary and permanent erosion prevention and sediment control BMPs along with procedures used to establish additional temporary BMPs as necessary for the site conditions during construction. Standard details and/or specifications for BMPs must be included in the final plans and specifications for the project. [Minn. R. 7090]
5.6 The SWPPP must include the calculations and other information used for the design of temporary sediment basins and any of the permanent stormwater treatment systems required in Section 15. [Minn. R. 7090]
5.7 The SWPPP must include estimated quantities anticipated at the start of the project for the life of the project for all erosion prevention and sediment control BMPs (e.g., linear feet of silt fence or square feet of erosion control blanket). [Minn. R. 7090]
5.8 The SWPPP must include the number of acres of impervious surface for both pre- and post-construction. [Minn. R. 7090]
5.9 The SWPPP must include a site map with existing and final grades, including drainage area boundaries, directions of flow and all discharge points where stormwater is leaving the site or entering a surface water. The site map must indicate the areas of steep slopes. The site map must also include impervious surfaces, soil types and locations of potential pollutant-generating activities as identified in Section 12. [Minn. R. 7090]
5.10 The SWPPP must include a map of all surface waters, existing wetlands, and stormwater ponds or basins that can be identified on maps such as United States Geological Survey 7.5-minute quadrangle maps, the National Wetland Inventory map or equivalent maps and are within one mile (aerial radius measurement) from the project boundaries that will receive stormwater from the construction site, during or after construction. The SWPPP must identify if the surface waters are special or impaired waters. [Minn. R. 7090]
5.11 The SWPPP must include a site map showing construction activity areas that are adjacent to and drain to Public Waters for which the DNR has promulgated "work in water restrictions" during specified fish spawning time frames. [Minn. R. 7090]
5.12 Permittees must identify locations of 50' buffer zones as required in item 9.17 and 100' permanent buffer zones as required in item 23.11, on plan sheets in the SWPPP. [Minn. R. 7090]
5.13 If permittees determine compliance with the following requirements is infeasible, they must document the determination in the SWPPP:
a. temporary sediment basins as described in Section 14; and
b. for linear projects, if the permanent stormwater treatment system cannot be constructed within the right-of-way, a reasonable attempt must be made to obtain additional right-of-way [item 15.9); and
c. buffer zones as described in item 9.17 and item 23.11. [Minn. R. 7090]
5.14 If permittees determine that a temporary sediment basin is infeasible as described in item 14.10, the SWPPP must describe the alternative BMPs used. [Minn. R. 7090]
5.15 Where permittees cannot meet the full volume reduction requirement on-site, (e.g., the site has infiltration prohibitions, see item 16.14 through item 16.21) the permittee must document the reasons in the SWPPP. [Minn. R. 7090]
5.16 The SWPPP must include any stormwater mitigation measures proposed to be part of the final project in any environmental review document, endangered species review, archeological or other required local, state or federal review conducted for the project. For purposes of this permit, mitigation measures mean actions necessary to avoid, minimize, or mitigate for impacts related to erosion prevention, sediment control, the permanent stormwater treatment system, pollution prevention management measures and discharges associated with the project's construction activity. [Minn. R. 7090]
5.17 The SWPPP must describe the methods used for permanent cover of all exposed soil areas. [Minn. R. 7090]
5.18 Permittees must identify the locations of areas where construction will be phased to minimize the duration of exposed soil areas in the SWPPP. [Minn. R. 7090]
5.19 For projects with a discharge point on the project within one (1) mile (aerial radius measurement) of and which flows to an impaired water, permittees must identify the impaired water(s), and any United States Environmental Protection Agency (USEPA)-approved Total Maximum Daily Load (TMDL) for the pollutant(s) or stressor(s) described in item 23.7. Permittees' identification must include those TMDLs approved at any time prior to permit application submittal and are still in effect. [Minn. R. 7090]
5.20 Permittees must document in the SWPPP, all trained individuals identified in item 21.2. Documentation must include:
a. names of personnel required to be trained; and
b. dates of training and name of instructor(s) and entity providing training; and
c. content of training course.
If permittees do not know the names of the individuals at the time of application, permittees must ensure they document training before construction activity commences. [Minn. R. 7090]
5.21 The SWPPP must identify a person knowledgeable and experienced in the application of erosion prevention and sediment control BMPs who will coordinate with all contractors, subcontractors, and operators on-site to oversee the implementation of the SWPPP. [Minn. R. 7090]
5.22 The SWPPP must describe any specific chemicals and chemical treatment systems used for enhancing the sedimentation process and how it achieves compliance with item 9.19. [Minn. R. 7090]
5.23 The SWPPP must identify the person(s), organizations, or entities responsible for long-term operation and maintenance of permanent stormwater treatment systems. [Minn. R. 7090]
5.24 The SWPPP must describe methods to minimize soil compaction and preserve topsoil. Minimizing soil compaction is not required where the function of a specific area dictates compaction. [Minn. R. 7090]
5.25 The SWPPP must include any site assessments for groundwater or soil contamination required in item 16.15.[Minn. R. 7090]
5.26 The SWPPP must account for the following factors in designing temporary erosion prevention and sediment control BMPs:
a. the expected amount, frequency, intensity, and duration of precipitation; and
b. the nature of stormwater runoff and run-on at the site, including factors such as expected flow from impervious surfaces, slopes, and site drainage features; and
c. the stormwater volume, velocity, and peak flowrates to minimize discharge of pollutants in stormwater and to minimize channel and streambank erosion and scour in the immediate vicinity of discharge points; and
d. the range of soil particle sizes expected to be present. [Minn. R. 7090]
6.1 SWPPP Amendments. [Minn. R. 7090]
6.2 One of the individuals described in item 21.2.a or item 21.2.b or another qualified individual must complete all SWPPP changes. Changes involving the use of a less stringent BMP must include a justification describing how the replacement BMP is effective for the site characteristics. [Minn. R. 7090]
6.3 Permittees must amend the SWPPP within 7 days to include additional or modified BMPs whenever there is a change in design, construction, operation, maintenance, weather or seasonal conditions having a significant effect on the discharge of pollutants to surface waters or groundwater. [Minn. R. 7090]
6.4 Permittees must amend the SWPPP within 7 days to include additional or modified BMPs whenever inspections or investigations by the site owner or operator, USEPA or MPCA officials indicate the SWPPP is not effective in eliminating or significantly minimizing the discharge of pollutants to surface waters or groundwater or the discharges are causing water quality standard exceedances (e.g., nuisance conditions as defined in Minn. R. 7050.0210, subp. 2) or the SWPPP is not consistent with the objectives of a USEPA approved TMDL. [Minn. R. 7050.0210]
7.1 BMP Selection and Stormwater Management. [Minn. R. 7090]
7.2 Permittees must select, install, and maintain the BMPs identified in the SWPPP and in this permit in an appropriate and functional manner and in accordance with relevant manufacturer specifications and accepted engineering practices to minimize the discharge of pollutants in stormwater from construction activities. Examples of stormwater management practices for this section include but are not limited to wet sedimentation basins, temporary depressions to hold stormwater, stormwater routing, dikes, berms, pumping, and stormwater treatment BMPs. Permittees must phase and incorporate stormwater management principles as the construction progresses. Unless infeasible, temporary or permanent wet sedimentation basins (when required, see section 14 and 15) should be constructed as a first step in the process and stormwater routed to these. [Minn. R. 7090]
7.3 Permittees must not disturb more land (i.e., phasing) than can be effectively inspected and maintained in accordance with Section 11. [Minn. R. 7090]
7.4 If permittees will be using some type of erosion control netting on the site as part of the soil stabilization techniques, permittees are encouraged to use products that have been shown to minimize impacts on wildlife. The U.S. Fish & Wildlife Service recommends using types of netting practices that are considered "wildlife friendly," including those that use natural fiber or 100 percent biodegradable materials and that use a loose weave with a non-welded, movable grid netting. Products that are not wildlife friendly include square plastic netting that are degradable (e.g., photodegradable, UV-degradable, oxo-degradable), netting made from polypropylene, nylon, polyethylene, or polyester. Other recommendations include removing the netting product when it is no longer needed. More information may be found at: https://www.fws.gov/midwest/endangered/ecoservices/documents/WildlifeFriendlyErosionControlFactSheet.pdf or property edge. Permittees must complete stabilization of remaining portions of temporary or permanent ditches or swales within 14 calendar days (7 days for sites discharging to special or impaired waters, see section 24) after connecting to a surface water or property edge and construction in that portion of the ditch temporarily or permanently ceases. [Minn. R. 7090]
7.5 Temporary or permanent ditches or swales being used as a sediment containment system during construction (with properly designed rock-ditch checks, bio rolls, silt dikes, etc.) do not need to be stabilized. Permittees must stabilize these areas within 24 hours after their use as a sediment containment system ceases. [Minn. R. 7090]
8.8 Permittees must not use mulch, hydromulch, tackifier, polyacrylamide or similar erosion prevention practices within any portion of the normal wetted perimeter of a temporary or permanent drainage ditch or swale section with a continuous slope of greater than 2 percent. Examples of acceptable erosion prevention practices include blankets, poly, riprap, etc. [Minn. R. 7090]
8.9 Permittees must provide temporary or permanent energy dissipation at all pipe outlets within 24 hours after connection to a surface water or permanent stormwater treatment system. [Minn. R. 7090]
9.1 Sediment Control Practices. [Minn. R. 7090]
9.2 Permittees must establish sediment control BMPs on all downgradient perimeters of the site and downgradient areas of the site that drain to any surface water, including curb and gutter systems. Permittees must locate sediment control practices upgradient of any buffer zones. Permittees must establish sediment control BMPs on any upgradient land-disturbing activities begin and must keep the sediment control practices in place until they establish permanent cover. [Minn. R. 7090]
9.3 If downgradient sediment controls are overloaded, based on frequent failure or excessive maintenance requirements, permittees must install additional upgradient sediment control practices or other practices to eliminate the overloading and amend the SWPPP to identify these additional practices as required in item 6.3. [Minn. R. 7090]
9.4 Temporary or permanent drainage ditches and sediment basins designed as part of a sediment containment system (e.g., ditches with rock-check dams) require sediment control practices only as appropriate for site conditions. [Minn. R. 7090]
9.5 A floating silt curtain placed in the water is not a sediment control BMP to satisfy item 9.2 except when working on a shoreline or below the waterline. Immediately after the construction activity (e.g., installation of rip rap along the shoreline) in that area is complete, permittees must install an upland perimeter control practice if exposed soils still drain to a surface water. [Minn. R. 7090]
9.6 Permittees must re-install all sediment control practices adjusted or removed to accommodate short-term activities such as clearing or grubbing, or passage of vehicles, immediately after the short-term activity is completed. Permittees must re-install sediment control practices before the next precipitation event even if the short-term activity is not complete. [Minn. R. 7090]
9.7 Permittees must protect all storm drain inlets using appropriate BMPs during construction until they establish permanent cover on all areas with potential for discharging to the inlet. [Minn. R. 7090]
9.8 Permittees may remove inlet protection for a particular inlet if a specific safety concern (e.g. street flooding/freezing) is identified by the permittees or the jurisdictional authority (e.g., city/county/township/Minnesota Department of Transportation engineer). Permittees must document the need for removal in the SWPPP. [Minn. R. 7090]
9.9 Permittees must provide silt fence or other effective sediment controls at the base of stockpiles on the downgradient perimeter prior to the initiation of stockpiling. Sediment controls must be managed in accordance with section 9.6. [Minn. R. 7090]
9.10 Permittees must locate stockpiles outside of natural buffers or surface waters, including stormwater conveyances such as curb and gutter systems unless there is a bypass in place for the stormwater. [Minn. R. 7090]
9.11 Permittees must install a vehicle tracking BMP to minimize the track out of sediment from the construction site or onto paved roads within the site. [Minn. R. 7090]
9.12 Permittees must use street sweeping in addition to vehicle tracking BMPs if vehicle tracking BMPs alone are not adequate to prevent sediment tracking onto the street. [Minn. R. 7090]
9.13 Permittees must install temporary sediment basins as required in Section 14. [Minn. R. 7090]
9.14 In any areas of the site where final vegetative stabilization will occur, permittees must restrict vehicle and equipment use to minimize soil compaction. [Minn. R. 7090]
9.15 Permittees must preserve topsoil on the site, unless infeasible. [Minn. R. 7090]
9.16 Permittees must direct discharges from BMPs to vegetated areas unless infeasible. [Minn. R. 7090]
9.17 Permittees must preserve a 50-foot natural buffer or, if a buffer is infeasible on the site, provide redundant (double) perimeter sediment controls when a surface water is located within 50 feet of the project's earth disturbances and stormwater flows to the surface water. Permittees must install perimeter sediment controls at least 5 feet apart unless limited by lack of available space. Natural buffers are not required adjacent to road ditches, judicial ditches, county ditches, stormwater conveyance channels, storm drain inlets, and sediment basins. If preserving the buffer is infeasible, permittees must document the reasons in the SWPPP. Sheet piling and other impermeable barriers installed in a manner that retains all stormwater are considered redundant perimeter control. [Minn. R. 7090]
9.18 Any sediment control made of soil must be temporarily or permanently stabilized within 24 hours. [Minn. R. 7090]
9.19 Permittees must use polymers, flocculants, or other sedimentation chemicals in accordance with accepted engineering practices, dosing specifications and sediment removal design specifications provided by the manufacturer or supplier. The permittees must use conventional erosion and sediment controls prior to chemical addition and must direct treated stormwater to a sediment control system for filtration or settlement of the floc prior to discharge. [Minn. R. 7090]
10.1 Dewatering and Basin Draining. [Minn. R. 7090]
10.2 Permittees must not cause nuisance conditions (see Minn. R. 7050.0210, subp. 2) in surface waters from dewatering and basin draining (e.g., pumped discharges, trench/ditch cuts for drainage) discharges. Permittees must discharge turbid or sediment-laden waters related to dewatering or basin draining to a sediment control (e.g. sediment trap or basin, filter bag) designed to prevent discharges with visual turbidity. To the extent feasible, use well-vegetated (e.g., grassy or wooded), upland areas of the site to infiltrate dewatering water before discharge. Permittees are prohibited from using receiving waters as part of the treatment area. Permittees must visually check and photograph the discharge at the beginning and at least once every 24 hours of operation to ensure adequate treatment has been obtained and nuisance conditions will not result from the discharge. [Minn. R. 7050.0210]
10.3 If nuisance conditions result from the discharge, Permittees must cease dewatering immediately and corrective actions must occur before dewatering is resumed. Nuisance conditions includes, but is not limited to, a sediment plume in the discharge or the discharge appears cloudy, or opaque, or has a visible oil film, or has aquatic habitat degradation that can be identified by an observer. [Minn. R. 7050.0210]
10.4 If permittees must discharge water containing oil or grease, they must use an oil-water separator or suitable filtration device (e.g., cartridge filters, absorbents pads) prior to discharge. [Minn. R. 7090]
10.5 Permittees must discharge all water from dewatering or basin-draining activities in a manner that does not cause erosion or scour in the immediate vicinity of discharge points or inundation of wetlands in the immediate vicinity of discharge points that causes significant adverse impact to the wetland. [Minn. R. 7090]
10.6 If permittees use filters with backwash water, they must haul away the backwash water away for disposal, return the backwash water to the beginning of the treatment process, or incorporate the backwash water into the site in a manner that does not cause erosion. [Minn. R. 7090]
11.1 Inspections and Maintenance. [Minn. R. 7090]
11.2 Permittees must ensure a trained person, as identified in item 21.2.b, will inspect the entire construction site at least once every seven (7) days during active construction and within 24 hours after a rainfall event greater than 1/2 inch in 24 hours. [Minn. R. 7090]
11.3 Permittees must inspect and maintain all permanent stormwater treatment BMPs. [Minn. R. 7090]
11.4 Permittees must inspect all erosion prevention and sediment control BMPs and Pollution Prevention Management Measures to ensure integrity and effectiveness. Permittees must repair, replace or supplement all nonfunctional BMPs with functional BMPs by the end of the next business day after discovery unless another time frame is specified in item 11.5 or 11.6. Permittees may take additional time if field conditions prevent access to the area. [Minn. R. 7090]
11.5 During each inspection, permittees must inspect areas adjacent to the project, surface waters, including drainage ditches and conveyance systems but not curb and gutter systems, for evidence of erosion and sediment deposition. Permittees must remove all deltas and sediment deposited in areas adjacent to the project, surface waters, including drainage ways, catch basins, and other drainage systems and restabilize the areas where sediment removal results in exposed soil. Permittees must complete removal and stabilization within seven (7) calendar days of discovery unless precluded by legal, regulatory, or physical access constraints. Permittees must use all reasonable efforts to obtain access. If precluded, removal and stabilization must take place within seven (7) days of obtaining access. Permittees are responsible for contacting all local, regional, state and federal authorities and receiving any applicable permits, prior to conducting any work in surface waters. [Minn. R. 7090]
11.6 Permittees must inspect construction site vehicle exit locations, streets and curb and gutter systems within and adjacent to the project for sedimentation from erosion or tracked sediment from vehicles. Permittees must remove sediment from all paved surfaces within one (1) calendar day of discovery or, if applicable, within a shorter time to avoid a safety hazard to users of public streets. [Minn. R. 7090]
11.7 Permittees must repair, replace or supplement all perimeter control devices when they become nonfunctional or the sediment reaches 1/2 of the height of the device. [Minn. R. 7090]
11.8 Permittees must inspect temporary and permanent sediment basins and remove the sediment when the depth of sediment collected in the basin reaches 1/2 the storage volume within 72 hours of discovery. [Minn. R. 7090]
11.9 Permittee's must inspect and photograph dewatering discharges at the beginning and at least once every 24 hours during operation. Dewatering discharges that only last for minutes, as opposed to hours, and do not reach a surface water, do not require photographs or documentation. [Minn. R. 7090]
11.10 Permittees must ensure that at least one individual present on the site (or available to the project site in three (3) calendar days) is trained in the job duties described in item 21.2.b. [Minn. R. 7090]
11.11 Permittees may adjust the inspection schedule described in item 11.2 as follows:
a. inspections of areas with permanent cover can be reduced to once per month, even if construction activity continues on other portions of the site; or
b. where sites have permanent cover on all exposed soil and no construction activity is occurring anywhere on the site, inspections can be reduced to once per month and, after 12 months, may be suspended completely until construction activity resumes. The MPCA may require inspections to resume if conditions warrant; or
c. where construction activity has been suspended due to frozen ground conditions, inspections may be suspended. Inspections must resume within 24 hours of runoff occurring, or upon resuming construction, whichever comes first.
d. for grading projects that leave agricultural land or native prairie type vegetated areas undisturbed, inspections may be reduced to once per month if the site has temporary vegetation with a density of 70% temporary uniform cover. If after 24 months no significant erosion problems are observed, inspections may be suspended completely until the termination requirements in section 13 have been met. [Minn. R. 7090]
11.12 Permittees must document all inspections and maintenance activities within 24 hours of being conducted and these records must be retained with the SWPPP. These records must include:
a. date and time of inspections; and
b. name of persons conducting inspections; and
c. actual findings of inspections, including the specific location where corrective actions are needed; and
d. corrective actions taken (including dates, times, and party completing maintenance activities); and
e. date of all rainfall events greater than 1/2 inches in 24 hours, and the amount of rainfall for each event. Permittees must obtain rainfall amounts by either a properly maintained rain gauge installed on-site, a weather station that is within one (1) mile of your location, a weather reporting system that provides site specific rainfall data from radar summaries; and
f. if permittees observe a discharge during the inspection, they must record and should photograph and describe the location of the discharge (i.e., color, odor, settled or suspended solids, oil sheen, and other obvious indicators of pollutants); and
g. any amendments to the SWPPP proposed as a result of the inspection must be documented as required in Section 6 within seven (7) calendar days; and
h. all photographs of dewatering activities and documentation of nuisance conditions resulting from dewatering activities as described in section 10. [Minn. R. 7090]
12.1 Pollution Prevention Management Measures. [Minn. R. 7090]
12.2 Permittees must place construction materials and landscape materials under cover (e.g., plastic sheeting or temporary days) or protect them by similarly effective means designed to minimize contact with stormwater. Permittees are not required to cover or protect products which are either not a source of contamination to stormwater or are designed to be exposed to stormwater. [Minn. R. 7090]
12.3 Permittees must place pesticides, fertilizers and treatment chemicals under cover (e.g., plastic sheeting or temporary roofs) or protect them by similarly effective means designed to minimize contact with stormwater. [Minn. R. 7090]
12.4 Permittees must store hazardous materials and toxic waste, (including oil, diesel fuel, gasoline, hydraulic fluids, paint solvents, petroleum-based products, wood preservatives, additives, curing compounds, and acids) in sealed containers to prevent spills, leaks or other discharge. Storage and disposal of hazardous waste materials must be in compliance with Minn. R. ch. 7045 including secondary containment as applicable. [Minn. R. 7090]
12.5 Permittees must properly store, collect and dispose solid waste in compliance with Minn. R. ch. 7035. [Minn. R. 7035]
12.6 Permittees must position portable toilets so they are secure and will not tip or be knocked over. Permittees must properly dispose sanitary waste in accordance with Minn. R. ch. 7041. [Minn. R. 7041]
12.7 Permittees must take reasonable steps to prevent the discharge of spilled or leaked chemicals, including fuel, from any area where chemicals or fuel will be loaded or unloaded including the use of drip pans or absorbents unless infeasible. Permittees must ensure adequate supplies are available at all times to clean up discharged materials and that an appropriate disposal method is available for recovered spilled materials. Permittees must report and clean up spills immediately as required by Minn. Stat. 115.061, using dry clean up measures where possible. [Minn. Stat. 115.061]
12.8 Permittees must properly operate and maintain all equipment and vehicles used in vehicle and equipment washing and from the washing area in a sediment basin or other similarly effective controls and must dispose waste from the washing activity properly. Permittees must properly use and store soaps, detergents, or solvents. [Minn. R. 7090]
12.9 Permittees must provide effective containment for all liquid and solid wastes generated by washout operations (e.g., concrete, stucco, paint with latex additives, form release oils, curing compounds and other construction materials) related to the construction activity. Permittees must prevent liquid and solid washout wastes from contacting the ground and must design the containment so it does not result in runoff from the washout operations or areas. Permittees must properly dispose liquid and solid wastes in compliance with MPCA rules. Permittees must install a sign indicating the location of the washout facility. [Minn. R. 7035; Minn. R. 7090]
13.1 Permit Termination Conditions. [Minn. R. 7090]
13.2 Permittees must complete all construction activity and must install permanent cover over all areas prior to submitting the NOT. Vegetative cover must consist of a uniform perennial vegetation with a density of 70 percent of its expected final growth Vegetation is not required where the function of a specific area dictates no vegetation, such as impervious surfaces or the base of a sand filter. [Minn. R. 7090]
13.3 Permittees must clean the permanent stormwater treatment system of any accumulated sediment and must ensure the system meet all design requirements in Section 15 through 19 and is operating as designed. [Minn. R. 7090]
13.4 Permittees must remove all sediment from conveyance systems prior to submitting the NOT. [Minn. R. 7090]
13.5 Permittees must remove all temporary synthetic erosion prevention and sediment control BMPs prior to submitting the NOT. Permittees may leave BMPs designed to decompose on-site in place. [Minn. R. 7090]
13.6 For residential construction only, permit coverage terminates on individual lots if the lot is sold to the homeowner, structures are finished, and permanent cover has been established. For lots that are sold to the homeowner where permanent cover has not been established, coverage terminates if temporary erosion prevention and downgradient perimeter control is properly installed and the permittee distributes the MPCA's "Homeowner Fact Sheet" to the homeowner. [Minn. R. 7090]
13.7 For construction projects on agricultural land (e.g., pipelines across cropland), permittees must return the disturbed land to its preconstruction agricultural use prior to submitting the NOT. [Minn. R. 7090]
13.8 When submitting the NOT, Permittees must include either ground or aerial photographs showing the requirements of 13.2 have been met. Permittees must keep photographs of every distinct part of the site, however the photographs do not have to be portrayed must be substantially similar to those areas that are not photographed. Photographs must be clear and in focus and must include the date the photo was taken. [Minn. R. 7090]
14.1 Temporary Sediment Basins. [Minn. R. 7090]
14.2 Where ten (10) or more acres of disturbed soil (5 acres for sites discharging to special or impaired waters, see section 24) drain to a common location, permittees must provide a temporary sediment basin to provide treatment of the runoff before it leaves the construction site or enters surface waters. Permittees may convert a temporary sediment basin to a permanent basin after construction is complete. The temporary basin is no longer required when permanent cover has reduced the acreage of disturbed soil to less than ten (10) acres draining to a common location. [Minn. R. 7090]
14.3 The temporary basin must provide live storage for a calculated volume of runoff from a two (2)-year, 24-hour storm from each acre drained to the basin or 1,800 cubic feet of live storage per acre drained, whichever is greater. [Minn. R. 7090]
14.4 Where permittees have calculated the two (2)-year, 24-hour storm runoff amount, the temporary basin must provide 3,600 cubic feet of live storage per acre of the basins' drainage area. [Minn. R. 7090]
14.5 Permittees must design basin outlets to prevent short-circuiting and the discharge of floating debris. [Minn. R. 7090]
14.6 Permittees must design the outlet structure to withdraw water from the surface to minimize the discharge of pollutants. Permittees may temporarily suspend the use of a surface withdrawal method during frozen conditions. The basin must include a stabilized emergency overflow to prevent failure of pond integrity. [Minn. R. 7090]
14.7 Permittees must provide energy dissipation for the basin outlet within 24 hours after connection to a surface water. [Minn. R. 7090]
14.8 Permittees must locate temporary basins outside of surface waters and any buffer zone required in item 23.11.[Minn. R. 7090]
14.9 Permittees must construct the temporary basins prior to disturbing 10 or more acres of soil draining to a common location. [Minn. R. 7090]
14.10 Where a temporary sediment basin meeting the requirements of item 14.3 through 14.9 is infeasible, permittees must install effective sediment controls such as smaller sediment basins and/or sediment traps, silt fences, vegetative buffer strips or any appropriate combination of measures as dictated by individual site conditions. In determining whether installing a sediment basin is infeasible, permittees must consider public safety and may consider factors such as site soils, slope, and available area on-site. Permittees must document this determination of infeasibility in the SWPPP.[Minn. R. 7090]
15.1 Permanent Stormwater Treatment System. [Minn. R. 7090]
15.2 Permittees must design and implement the project so all stormwater discharged from the project during and after construction activities does not cause a violation of state water quality standards, including nuisance conditions, erosion in receiving channels or on downslope properties, or a significant adverse impact to wetlands caused by inundation or decrease of flow. [Minn. R. 7090]
15.3 Permittees must design and construct a permanent stormwater treatment system to treat the water quality volume if the project's ultimate development replaces vegetation and/or other pervious surfaces creating a net increase of one (1) or more acres of cumulative impervious surface. [Minn. R. 7090]
15.4 Permittees must calculate the water quality volume as one (1) inch times the net increase of impervious surfaces created by the project. [Minn. R. 7090]
15.5 Permittees must first consider volume reduction practices on-site (e.g., infiltration or other) when designing the permanent stormwater treatment system. If this permit prohibits infiltration as described in item 16.14 through item 16.21, permittees may consider a wet sedimentation basin, filtration basin or regional pond. This permit does not consider wet sedimentation basins and filtration systems to be volume reduction practices. [Minn. R. 7090]
15.6 For projects where the full volume reduction requirement cannot be met on-site, (e.g., the site has infiltration prohibitions), permittees must document the reasons in the SWPPP. [Minn. R. 7090]
15.7 Permittees must discharge the water quality volume to a permanent stormwater treatment system prior to discharge to a surface water. For purposes of this item, surface waters do not include man-made drainage systems that convey stormwater to a permanent stormwater treatment system. [Minn. R. 7090]
15.8 Where the proximity to bedrock precludes the installation of any of the permanent stormwater treatment practices required by Sections 15 through 19, permittees must install other treatment such as grassed swales, smaller ponds, or grit chambers, prior to the discharge of stormwater to surface waters. [Minn. R. 7090]
15.9 For linear projects where permittees cannot treat the entire water quality volume within the existing right-of-way, permittees must make a reasonable attempt to obtain additional right-of-way, easement or other permission for stormwater treatment during the project planning process. Documentation of these attempts must be in the SWPPP. Permittees must still consider volume reduction practices first as described in item 15.5. If permittees cannot obtain additional right-of-way, easement or other permission, they must maximize the treatment of the water quality volume prior to discharge to surface waters. [Minn. R. 7090]
16.1 Infiltration Systems. [Minn. R. 7090]
16.2 Infiltration options include, but are not limited to: infiltration basins, infiltration trenches, rainwater gardens, bioretention areas without underdrains, swales with impermeable check dams, and natural depressions. If permittees utilize an infiltration system to meet the requirements of this permit, they must incorporate the design parameters in item 16.3 through item 16.21. Permittees must follow the infiltration prohibition in item 16.14 anytime an infiltration system is designed, constructed or modified, including those not required by this permit. [Minn. R. 7090]
16.3 Permittees must design infiltration systems such that pre-existing hydrologic conditions of wetlands in the vicinity are not impacted (e.g., inundation or breaching a perched water table supporting a wetland). [Minn. R. 7090]
16.4 Permittees must not excavate infiltration systems to final grade, or within three (3) feet of final grade, until the contributing drainage area is completely stabilized and they construct and fully stabilize the contributing drainage area unless they provide rigorous erosion prevention and sediment controls (e.g., diversion berms) to keep sediment and runoff completely away from the infiltration area. [Minn. R. 7090]
16.5 When excavating an infiltration system to within three (3) feet of final grade, permittees must stake off and mark the



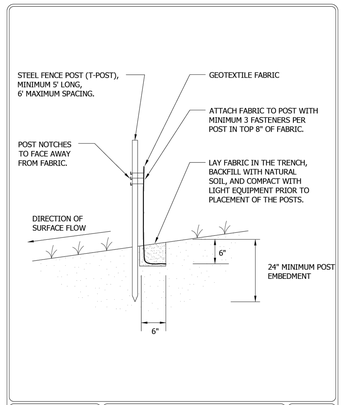
Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
MACHINE SLICED SILT FENCE
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. ERO-1

4B_ERO1.DWG



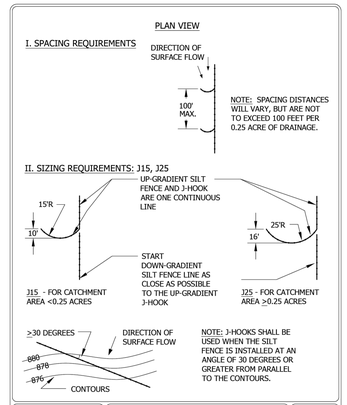
Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
HAND INSTALLED SILT FENCE
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. ERO-2

4B_ERO2.DWG



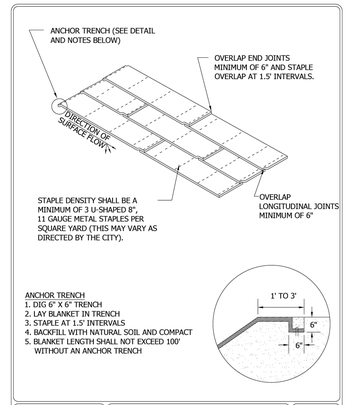
Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
J-HOOK SILT FENCE
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. ERO-4

4B_ERO4.DWG



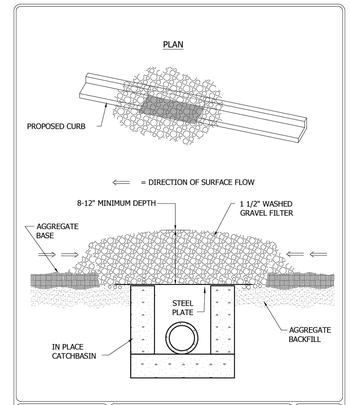
Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
ROLLED EROSION PREVENTION PRODUCTS INSTALLATION
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. ERO-5

4B_ERO5.DWG



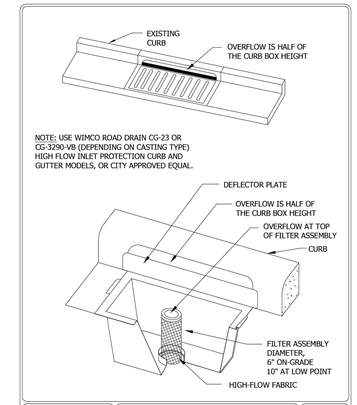
Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
INLET PROTECTION ROCK FILTER FOR CATCH BASIN
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. ERO-8

4B_ERO8.DWG



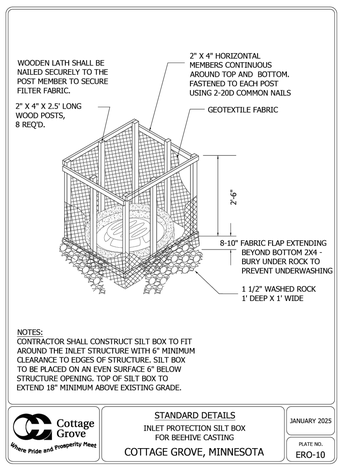
Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
INLET PROTECTION CATCH BASIN INSERT
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. ERO-9

4B_ERO9.DWG



NOTES:
CONTRACTOR SHALL CONSTRUCT SILT BOX TO FIT AROUND THE INLET STRUCTURE WITH 6" MINIMUM CLEARANCE TO EDGES OF STRUCTURE. SILT BOX TO BE PLACED ON AN EVEN SURFACE 6" BELOW STRUCTURE OPENING. TOP OF SILT BOX TO EXTEND 18" MINIMUM ABOVE EXISTING GRADE.

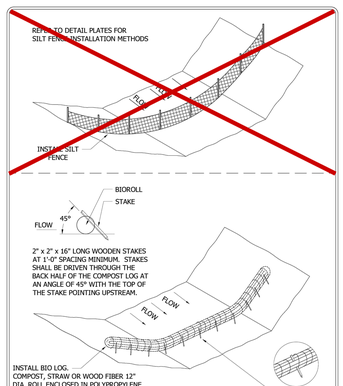
Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
INLET PROTECTION SILT BOX FOR BEEHIVE CASTING
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. ERO-10

4B_ERO10.DWG



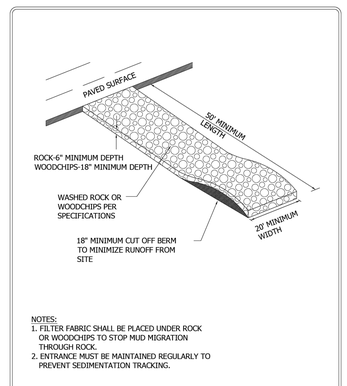
Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
FILTER BERMS
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. ERO-11

4B_ERO11.DWG



NOTES:
1. FILTER FABRIC SHALL BE PLACED UNDER ROCK OR WOODCHIPS TO STOP MUD MIGRATION THROUGH ROCK.
2. ENTRANCE MUST BE MAINTAINED REGULARLY TO PREVENT SEDIMENTATION TRACKING.

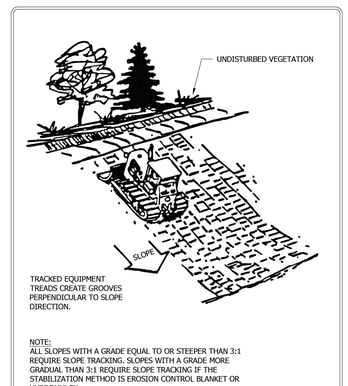
Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
CONSTRUCTION ENTRANCE ROCK AND WOODCHIP
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. ERO-12

4B_ERO12.DWG



NOTE:
ALL SLOPES WITH A GRADE EQUAL TO OR STEEPER THAN 3:1 REQUIRE SLOPE TRACKING. SLOPES WITH A GRADE MORE GRADUAL THAN 3:1 REQUIRE SLOPE TRACKING IF THE STABILIZATION METHOD IS EROSION CONTROL BLANKET OR HYDROMULCH.

Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
SLOPE TRACKING
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. ERO-13

4B_ERO13.DWG

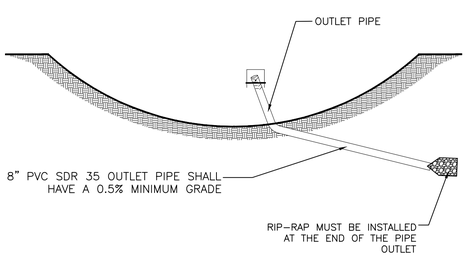
The basins must provide storage below the outlet pipe for a calculated volume of runoff from a 2 year, 24 hour storm from each acre drained to the basin, except that in no case shall the basin provide less than 1800 cubic feet of storage below the outlet pipe from each acre drained to the basin.

2. Where no such calculation has been performed, a temporary sediment basin providing 3,600 cubic feet of storage below the outlet pipe per acre drained tothe basin, shall be provided where attainable until final stabilization of the site.

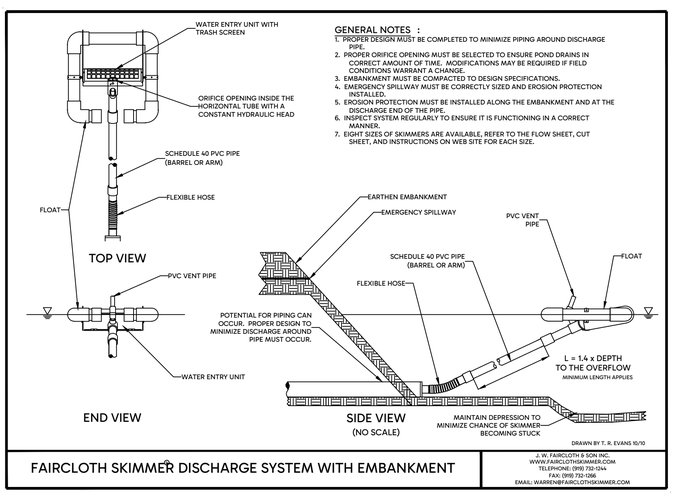
3. Temporary basin outlets must be designed to prevent short–circuiting and the discharge of floating debris. The basin must be designed with the ability to allow complete basin drawdown for maintenance activities, and provide a stabilized emergency overflow to prevent failure of pond integrity. Energy dissipation must be provided for the basin outlet.

4. The temporary basins must be constructed and made operational concurrent with the start of soil disturbance that is upgradient of the area and contributes runoff to the pond.

5. Outlet pipe must be installed with a floating head skimmer or equal – to allow complete basin drawdown and water withdraw from basin surface.



TEMPORARY SEDIMENTATION BASIN WITH OUTLET PIPE



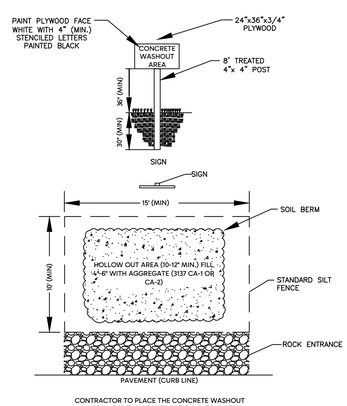
GENERAL NOTES :
1. PROPER DESIGN MUST BE COMPLETED TO MINIMIZE PIPING AROUND DISCHARGE PIPE.
2. PROPER ORIFICE OPENING MUST BE SELECTED TO ENSURE POND DRAINS IN CORRECT AMOUNT OF TIME. MODIFICATIONS MAY BE REQUIRED IF FIELD CONDITIONS WARRANT A CHANGE.
3. EMBANKMENT MUST BE COMPACTED TO DESIGN SPECIFICATIONS.
4. EMERGENCY SPILLWAY MUST BE CORRECTLY SIZED AND EROSION PROTECTION INSTALLED.
5. EROSION PROTECTION MUST BE INSTALLED ALONG THE EMBANKMENT AND AT THE DISCHARGE END OF THE PIPE.
6. INSPECT SYSTEM REGULARLY TO ENSURE IT IS FUNCTIONING IN A CORRECT MANNER.
7. EIGHT SIZES OF SKIMMERS ARE AVAILABLE, REFER TO THE FLOW SHEET, CUT SHEET, AND INSTRUCTIONS ON WEB SITE FOR EACH SIZE.

FAIRCLOTH SKIMMER® DISCHARGE SYSTEM WITH EMBANKMENT

J. W. FAIRCLOTH & SON INC.
WWW.FAIRCLOTHSKIMMER.COM
TELEPHONE: (919) 732-1244
FAX: (919) 732-1266
EMAIL: WARREN@FAIRCLOTHSKIMMER.COM

DRAWN BY T. R. EVANS 10/10

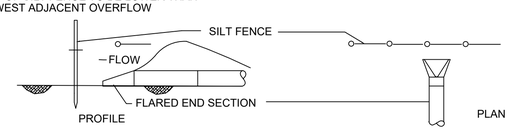
FLOATING HEAD SKIMMER



CONTRACTOR TO PLACE THE CONCRETE WASHOUT AREA NEAR THE CONSTRUCTION ENTRANCE

CONCRETE WASHOUT AREA

SILT FENCE AT FLARED END SECTION
TOP OF SILT FENCE TO BE LOWER THAN LOWEST ADJACENT OVERFLOW



INLET PROTECTION - FLARED END SECTION

HILL INCORPORATED
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Kurt@mnhill.com
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PRELIMINARY

KURT D. QUAINTANCE, P.E.

Date: 01/28/2026 Reg.No. 24670

McHATTIE LANDING
COTTAGE GROVE, MINNESOTA
PRELIMINARY EROSION & SEDIMENT CONTROL DETAILS
FOR
M/I HOMES OF MPLS/ST. PAUL, LLC.
5354 PARKDALE DRIVE #100, ST. LOUIS PARK, MN 55416

DRAWN BY
CTY

DATE
01/28/2026

REVISIONS

2026-02-17 REV PER CITY COMMENTS

CAD FILE
24310 ERD

PROJECT NO.
24310-00

C3.6

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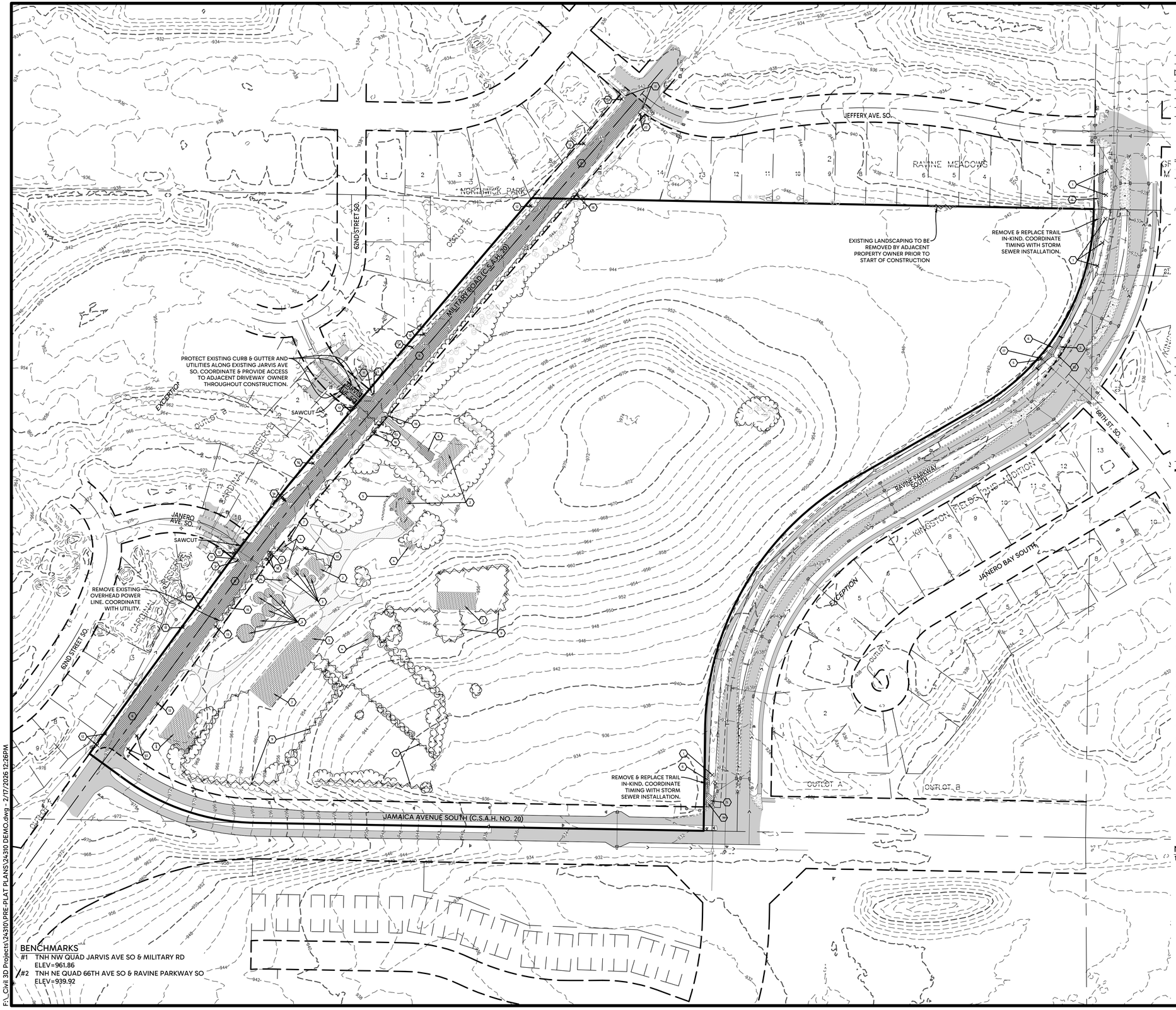

LEGEND

- EXISTING WATERMAIN
- EXISTING SANITARY SEWER
- EXISTING STORM SEWER
- EXISTING UNDERGROUND GAS
- EXISTING UNDERGROUND ELECTRIC
- EXISTING UNDERGROUND TELEPHONE
- EXISTING UNDERGROUND FIBER OPTIC
- EXISTING OVERHEAD POWER LINE
- EXISTING LIGHT POLE
- EXISTING TRANSFORMER
- EXISTING TELEPHONE PEDESTAL
- EXISTING TV PEDESTAL
- EXISTING CURB & GUTTER
- EXISTING RETAINING WALL
- EXISTING FENCE
- EXISTING CONTOUR
- EXISTING SOIL BORING/TEST PIT LOCATION
- EXISTING TREELINE
- EXISTING AIR CONDITIONER
- EXISTING CLEANOUT
- EXISTING CURB STOP
- EXISTING ELECTRIC METER
- EXISTING ELECTRIC OUTLET POST
- EXISTING GAS METER
- EXISTING GAS VALVE
- EXISTING GUY WIRE
- EXISTING GUY WIRE POLE
- EXISTING LIGHT POLE
- EXISTING MAILBOX
- EXISTING PROPANE TANK
- EXISTING SIGN
- EXISTING WELL
- EXISTING EMERGENCY SIREN
- EXISTING OVERHEAD POWER
- EXISTING OVERHEAD UTILITY
- EXISTING UNDERGROUND TELEVISION
- EXISTING ASPHALT
- EXISTING CONCRETE
- EXISTING GRAVEL
- EXISTING RIPRAP
- EXISTING BUILDING/SILO
- PROPOSED DEMOLITION
- PROPOSED DEMOLITION - SAWCUT
- PROPOSED DEMOLITION - PAVEMENT

REMOVAL QUANTITIES

1	BOULEVARD TREE	6 EA
2	BUILDINGS	6 EA
3	SILOS	10 EA
4	SHEDS	5 EA
5	CONCRETE	237 SY
6	ASPHALT	7,827 SY
7	WELLS	1 EA+
8	SEPTICS	1 EA+
9	FENCING	2,572 LF
10	CURB & GUTTER	113 LF
11	PEDESTRIAN RAMPS	5 EA
12	STREET SIGNS/BARRICADES	15 EA
13	POWER POLES (CONTACT GTE COMPANIES ABOUT RELOCATION)	5 EA
14	MAILBOXES	3 EA
15	OVERHEAD WIRE (CONTACT GTE COMPANIES ABOUT RELOCATION)	331 LF
16	UTILITY PEDESTALS (CONTACT GTE COMPANIES ABOUT RELOCATION)	3 EA
17	HYDRANT	1 EA
18	12" STORM SEWER (CMP)	34 LF
19	15" STORM SEWER (CMP)	30 LF

NOTES

1. REFER TO SHEETS C9.0 - C9.4 FOR SPECIFIC TREE REMOVAL/PRESERVATION INFORMATION.

BENCHMARKS

#1 TNH NW QUAD JARVIS AVE SO & MILITARY RD
ELEV=961.86

#2 TNH NE QUAD 66TH AVE SO & RAVINE PARKWAY SO
ELEV=939.92

Know what's **below.** **Call** before you dig.

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KURT D. QUAM, P.E.

Date: 01/28/2026 Reg.No. 24670

PRELIMINARY

McHATTIE LANDING

COTTAGE GROVE, MINNESOTA

PRELIMINARY DEMOLITION & REMOVALS PLAN

FOR

M/I HOMES OF MPLS/ST. PAUL, LLC.

5354 PARKDALE DRIVE #100, ST. LOUIS PARK, MN 55416

DRAWN BY
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01/28/2026

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2026-02-17 REV PER CITY COMMENTS

CAD FILE
24310 DEMO

PROJECT NO.
24310-00

C3.7

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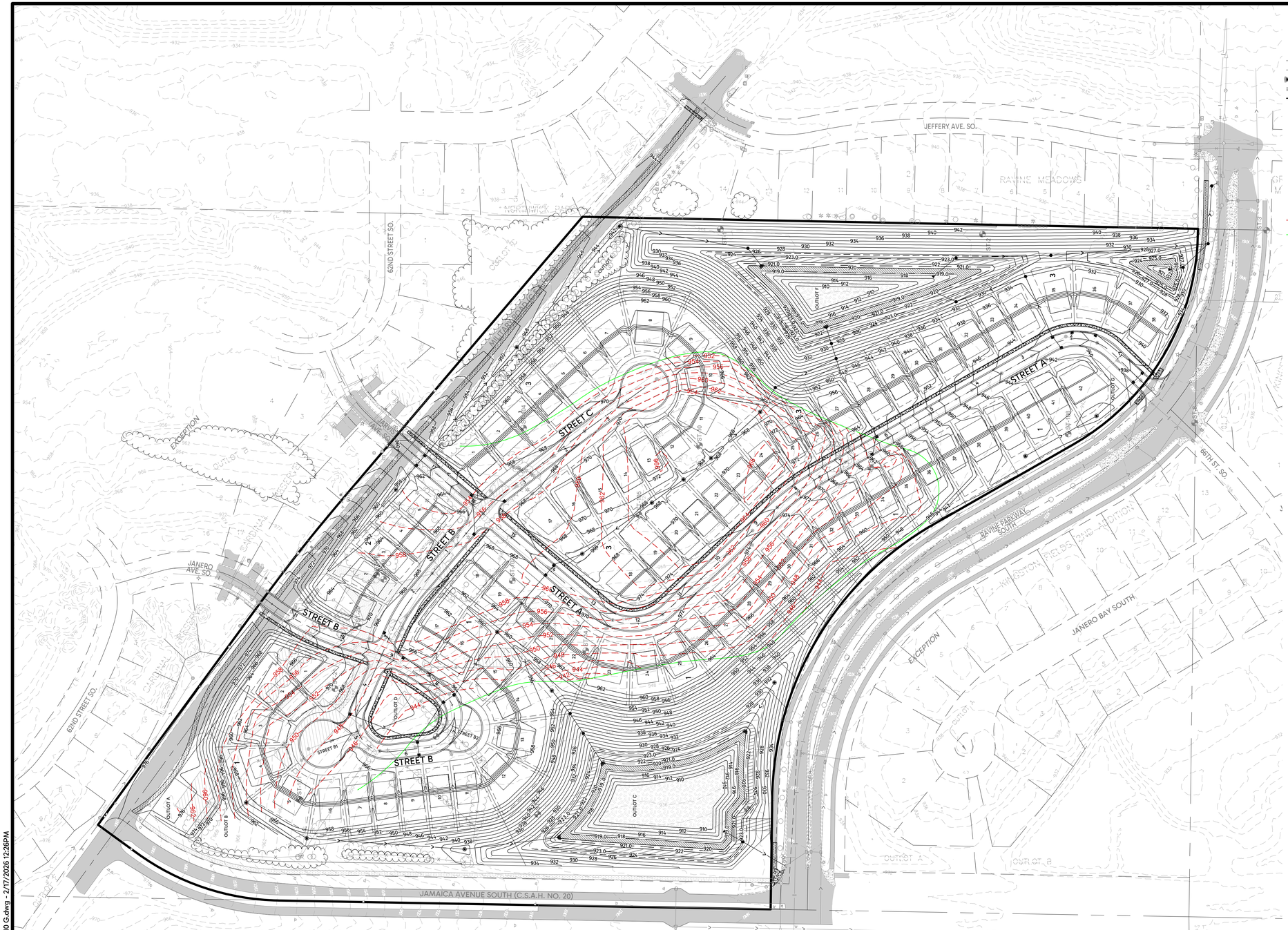

LEGEND

- PROPOSED WATERMAIN
- PROPOSED SANITARY SEWER
- PROPOSED STORM SEWER
- PROPOSED CURB & GUTTER
- PROPOSED CONTOUR
- PROPOSED EMERGENCY OVERFLOW
- PROPOSED CONCRETE
- PROPOSED ASPHALT SURFACE
- PROPOSED SEDIMENT BASIN
- PROPOSED 10' AQUATIC BENCH
- PROPOSED 10' POND MAINTENANCE ACCESS
- FUTURE ASPHALT SURFACE
- APPROXIMATE EXISTING CONTOUR - ROCK (TOP OF WEATHERED)
- APPROXIMATE EDGE/DROPOFF - ROCK

BENCHMARKS

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KURT D. QUAINTANCE, P.E.
Date: 01/28/2026 Reg.No. 24670

McHATTIE LANDING

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PRELIMINARY GRADING & DRAINAGE PLAN

FOR

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CAD FILE
24310 G

PROJECT NO.
24310-00

C4.0

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COTTAGE GROVE, MINNESOTA

PRELIMINARY GRADING & DRAINAGE PLAN

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CAD FILE 24310 G
PROJECT NO. 24310-00
C4.1

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COTTAGE GROVE, MINNESOTA

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C4.2

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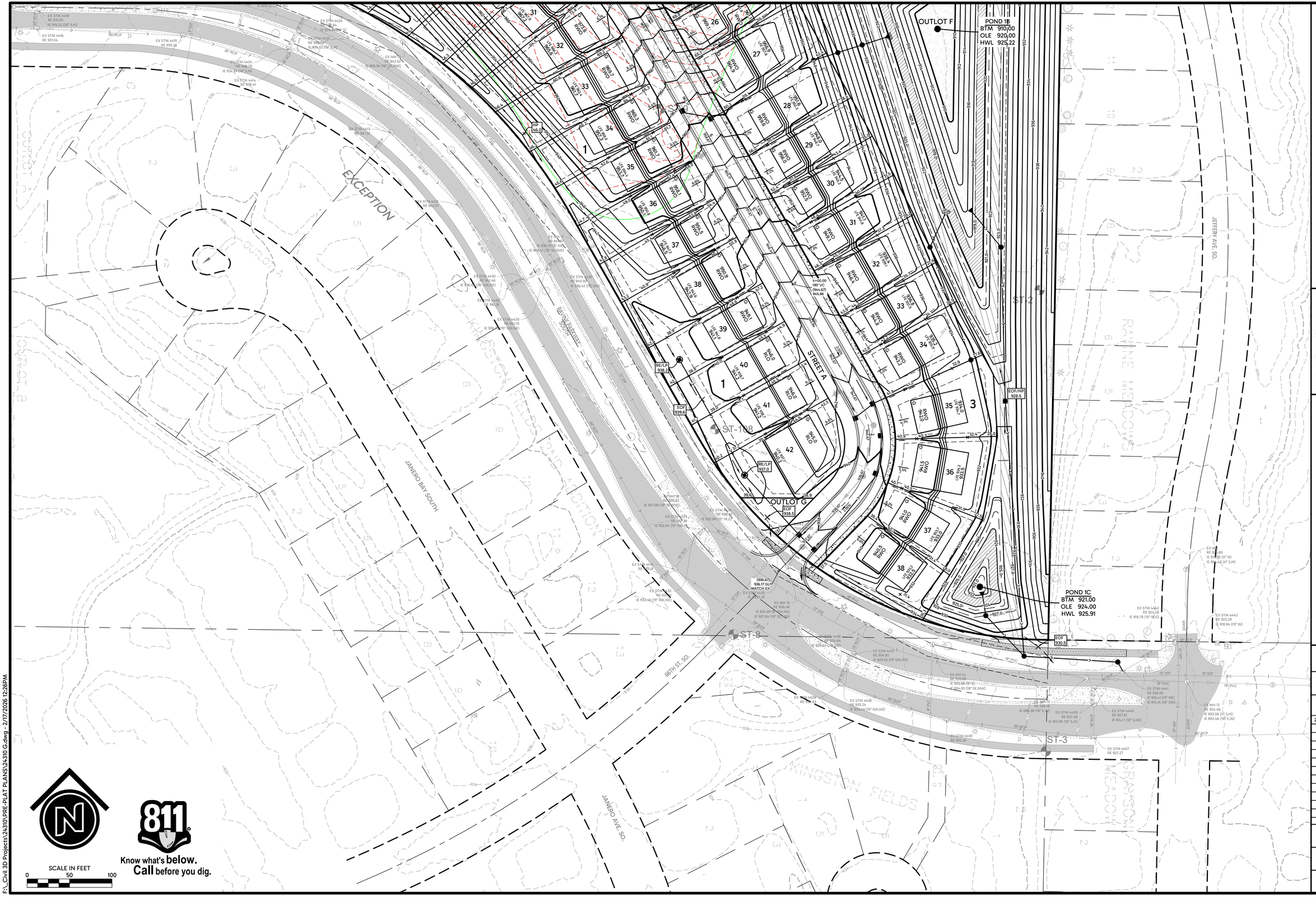

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PRELIMINARY GRADING & DRAINAGE PLAN

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24310 G

PROJECT NO.
24310-00

C4.3

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LEGEND

PROPOSED GENERAL SEED & MULCH MIX - MNDOT SOUTHERN BOULEVARD (SB)
PROPOSED STORMWATER SEED & MULCH MIX - MNDOT WET DITCH (WD)
PROPOSED UPLAND SEED & MULCH MIX - MNDOT 35-642

NOTES

1. REFER TO SHEET C3.4 FOR DETAILS ON SEEDING SPECIFICATIONS

ESTIMATED QUANTITIES

GENERAL SEED & MULCH MIX - MNDOT SOUTHERN BOULEVARD (SB)	19.3 AC
STORMWATER SEED & MULCH MIX - MNDOT WET DITCH (WD)	2.1 AC
UPLAND SEED & MULCH MIX - MNDOT 35-642	7.7 AC

BENCHMARKS

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Date: 01/28/2026 Reg.No. 24670

PRELIMINARY

McHATTIE LANDING
COTTAGE GROVE, MINNESOTA

PRELIMINARY SEEDING PLAN

FOR
M/I HOMES OF MPLS/ST. PAUL, LLC.
5354 PARKDALE DRIVE #100, ST. LOUIS PARK, MN 55416

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24310 SEED

PROJECT NO.
24310-00

C4.4

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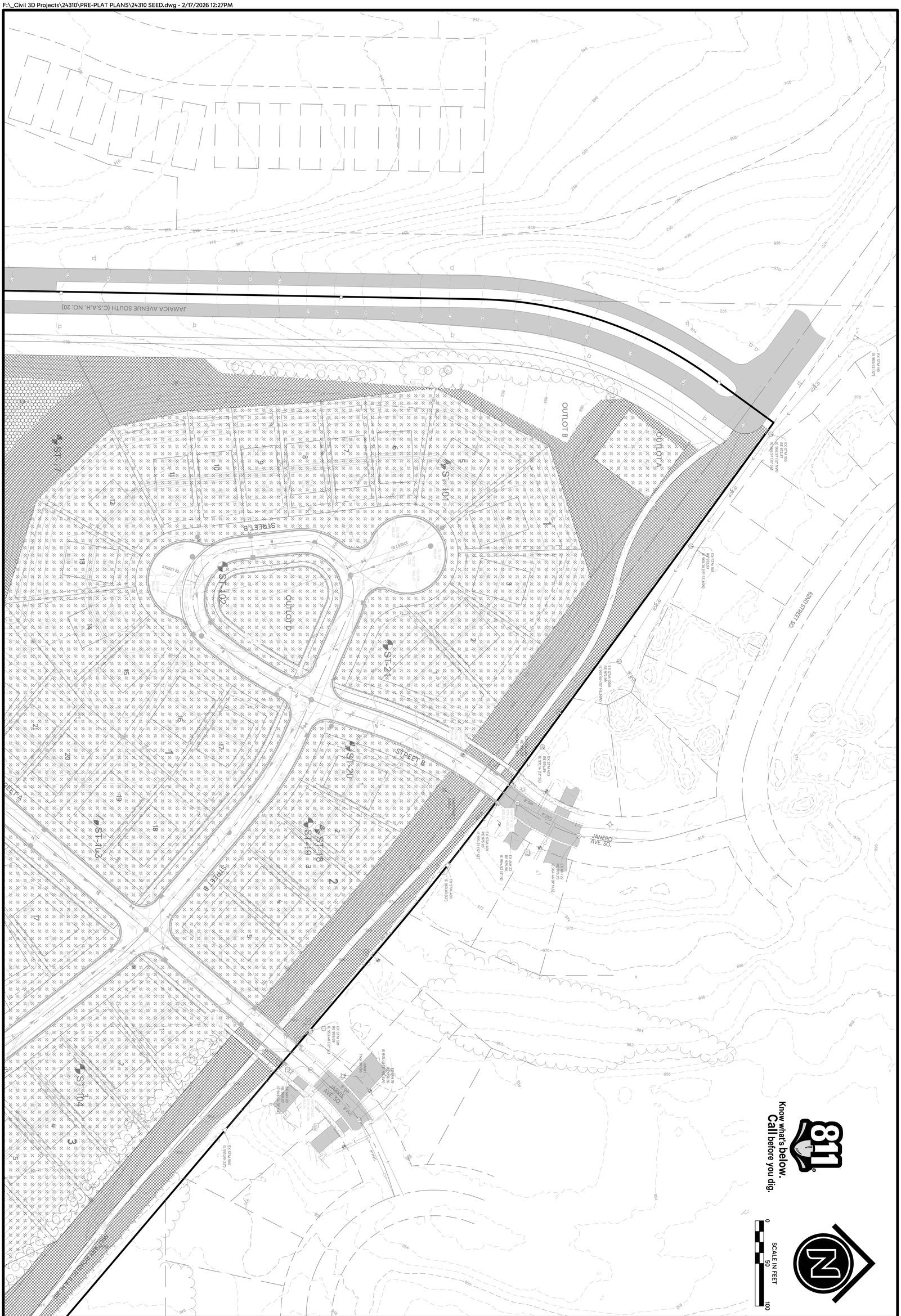

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PRELIMINARY

McHATTIE LANDING

COTTAGE GROVE, MINNESOTA

PRELIMINARY SEEDING PLAN

FOR

M/I HOMES OF MPLS/ST. PAUL, LLC.

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24310 SEED

PROJECT NO.
24310-00

C4.6

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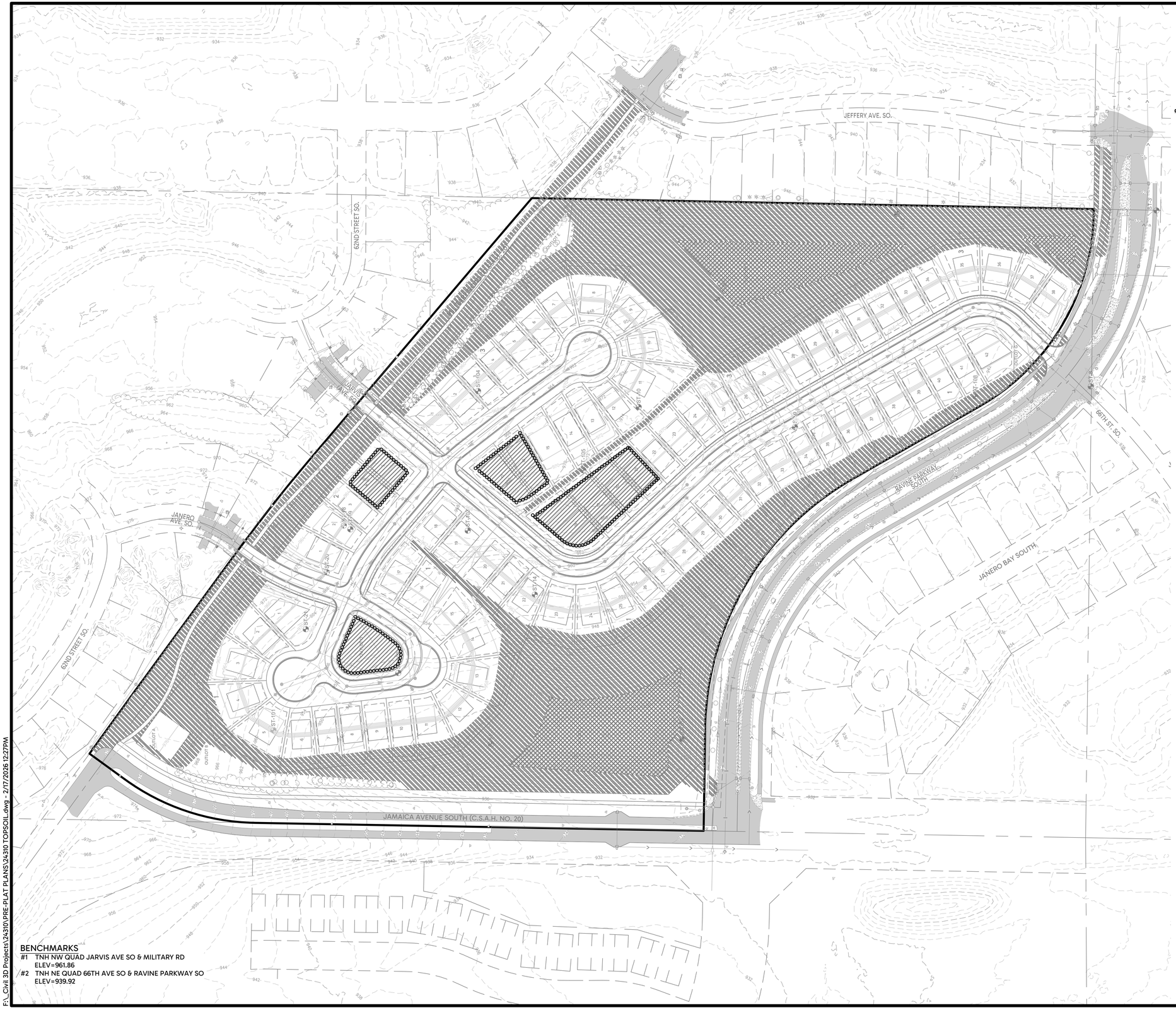

LEGEND

- PROPOSED 6" MIN. TOPSOIL RESPREAD AREA - MASS GRADING CONTRACTOR
- PROPOSED 12" MIN.TOPSOIL + 12" CLAY LINER RESPREAD AREA (POND AREA) - MASS GRADING CONTRACTOR
- PROPOSED TOPSOIL STOCKPILE - MASS GRADING CONTRACTOR (HOME CONSTRUCTION/BUILDER PILE)
- PROPOSED STOCKPILE SILT FENCE PERIMETER CONTROL BMP

NOTES

1. PERMANENT STOCKPILES ARE PROVIDED ON-SITE FOR NON-HATCHED AREAS. BUILDER TO USE STOCKPILED TOPSOIL FOR EACH LOT AND ADJACENT RIGHT OF WAY AT TIME OF FINISH GRADING FOR EACH HOUSE (6" MIN. THICKNESS).
2. A 6" MIN. THICKNESS OF TOPSOIL MUST BE PROVIDED IN ALL HATCHED AREAS, AS INDICATED ON THIS SHEET.
3. BUILDER MUST PROTECT HATCHED TOPSOIL RESPREAD AREAS DURING HOUSE CONSTRUCTION.
4. ALL PROPOSED TOPSOIL (RESPREAD/STOCKPILED) IS GENERATED FROM THE SALVAGING OF EXISTING TOPSOIL DURING MASS GRADING.

BENCHMARKS

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ELEV=961.86
#2 TNH NE QUAD 66TH AVE SO & RAVINE PARKWAY SO
ELEV=939.92

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Date: 01/28/2026 Reg.No. 24670

PRELIMINARY

McHATTIE LANDING
COTTAGE GROVE, MINNESOTA

PRELIMINARY TOPSOIL MANAGEMENT PLAN

FOR
M/I HOMES OF MPLS/ST. PAUL, LLC.
5354 PARKDALE DRIVE #100, ST. LOUIS PARK, MN 55416

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2026-02-17 REV PER CITY COMMENTS

CAD FILE
24310 TOPSOIL

PROJECT NO.
24310-00

C4.8

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TOPSOIL STOCKPILE LOCATION
APPROX. 2,000 CY
PROTECT STOCKPILE WITH SILT FENCE
OR OTHER PERIMETER CONTROL BMP

TOPSOIL STOCKPILE LOCATION
APPROX. 1,000 CY
PROTECT STOCKPILE WITH SILT FENCE
OR OTHER PERIMETER CONTROL BMP

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Date: 01/28/2026 Reg.No. 24670

PRELIMINARY

McHATTIE LANDING
COTTAGE GROVE, MINNESOTA

PRELIMINARY TOPSOIL MANAGEMENT PLAN

FOR
M/I HOMES OF MPLS/ST. PAUL, LLC.
5354 PARKDALE DRIVE #100, ST. LOUIS PARK, MN 55416

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DATE 01/28/2026
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2026-02-17 REV PER CITY COMMENTS
CAD FILE 24310 TOPSOIL
PROJECT NO. 24310-00
C4.9

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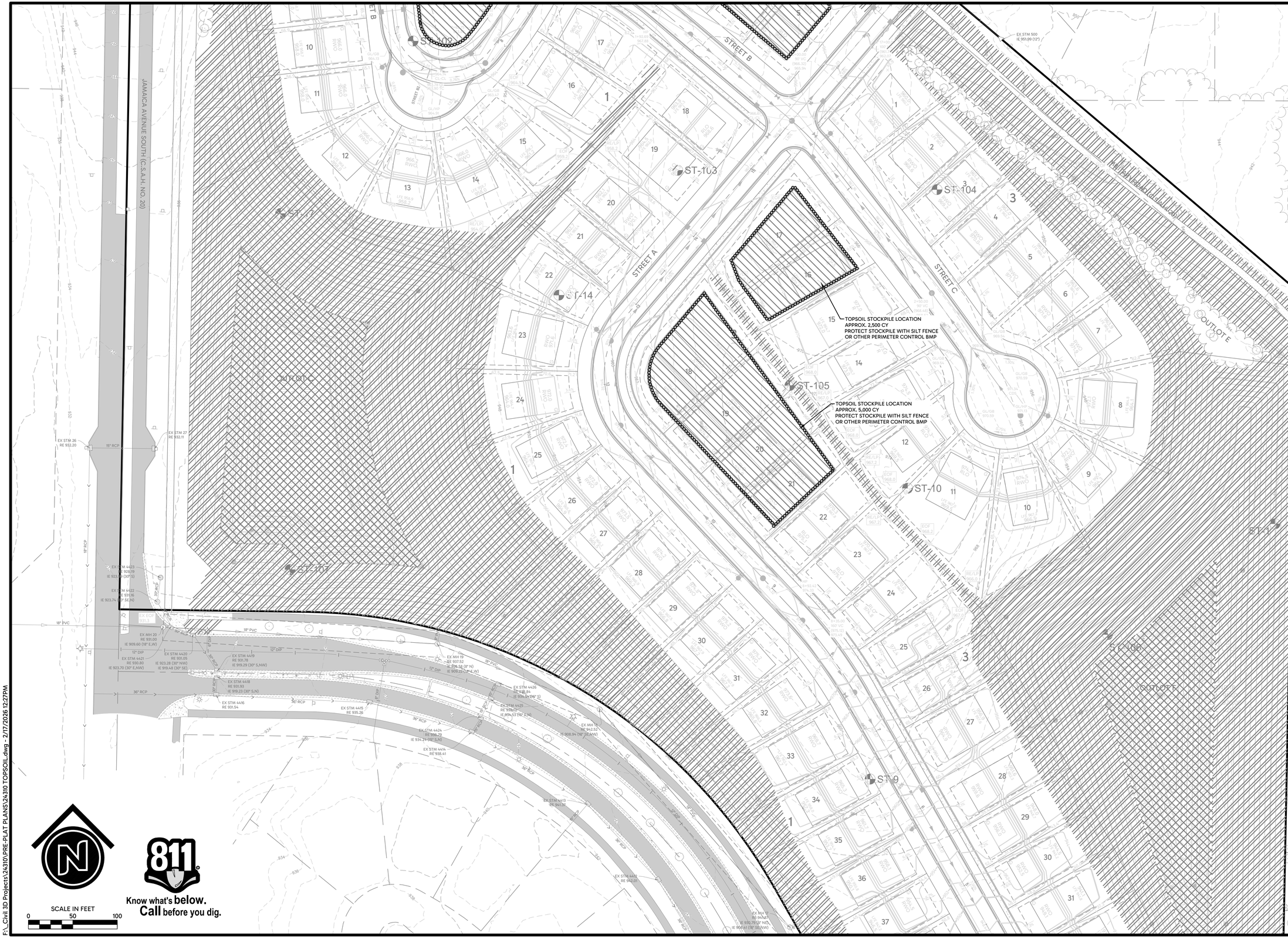

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24310 TOPSOIL

PROJECT NO.
24310-00

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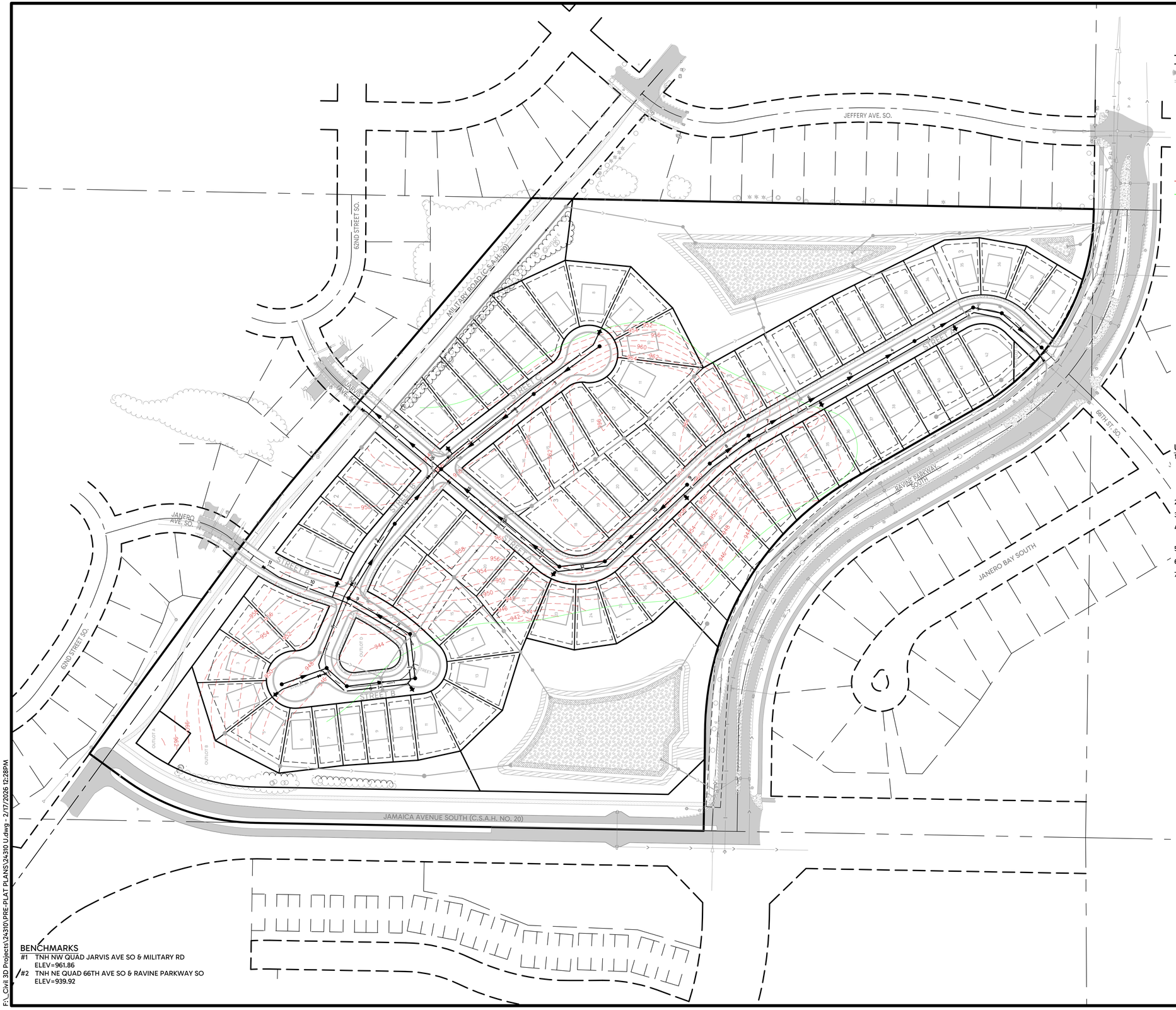
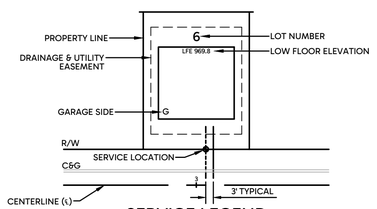


LEGEND

- PROPOSED WATERMAIN
- PROPOSED SANITARY SEWER
- PROPOSED STORM SEWER
- PROPOSED CURB & GUTTER
- PROPOSED CONCRETE
- PROPOSED ASPHALT SURFACE
- PROPOSED SEDIMENT BASIN
- PROPOSED 10' AQUATIC BENCH
- PROPOSED 10' POND MAINTENANCE ACCESS
- FUTURE ASPHALT SURFACE
- 923 — APPROXIMATE EXISTING CONTOUR - ROCK (TOP OF WEATHERED)
- APPROXIMATE EDGE/DROPOFF - ROCK

UTILITY NOTES

1. SANITARY SEWER PIPE TYPE & CLASS AS FOLLOWS:
   - A) 0' - 18' DEEP = PVC SDR 35
   - B) 18' - 28' DEEP = PVC SDR 26
2. SANITARY SEWER SERVICE PIPE AND RISER TO BE 4" PVC SCHEDULE 40.
3. ALL WATERMAIN TO BE INSTALLED WITH 7.5' MINIMUM COVER.
4. ALL 6" & 8" WATERMAIN TO BE CONSTRUCTED OF DIP CLASS 52 PIPE WITH POLYWRAP.
5. WATERMAIN SERVICE PIPE TO BE 1" TYPE K COPPER.
6. ALL FIRE HYDRANTS TO BE INSTALLED WITH CONCRETE HYDRANT PAD.
7. SANITARY/STORM SEWER AND WATERMAIN MUST MAINTAIN A 10' SEPARATION.



SERVICE LEGEND

BENCHMARKS

#1 TNH NW QUAD JARVIS AVE SO & MILITARY RD
ELEV=961.86

#2 TNH NE QUAD 66TH AVE SO & RAVINE PARKWAY SO
ELEV=939.92

Know what's **below.** **Call** before you dig.

SCALE IN FEET
0 100 200

HILL INCORPORATED
2999 WEST C.R. 42, SUITE 100
BURNSVILLE, MN 55306
PHONE: 952-890-6044
KurtQ@mnhill.com
www.mnhill.com

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

KURT D. QUANRUD, P.E.

Date: 01/28/2026 Reg.No. 24670

PRELIMINARY

McHATTIE LANDING

COTTAGE GROVE, MINNESOTA

PRELIMINARY UTILITY PLAN - SANITARY SEWER & WATERMAIN

FOR

M/I HOMES OF MPLS/ST. PAUL, LLC.

5354 PARKDALE DRIVE #100, ST. LOUIS PARK, MN 55416

DRAWN BY
CTY

DATE
01/28/2026

REVISIONS

2026-02-17 REV PER CITY COMMENTS

CAD FILE
24310 U

PROJECT NO.
24310-00

C5.0

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FOR
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24310 U

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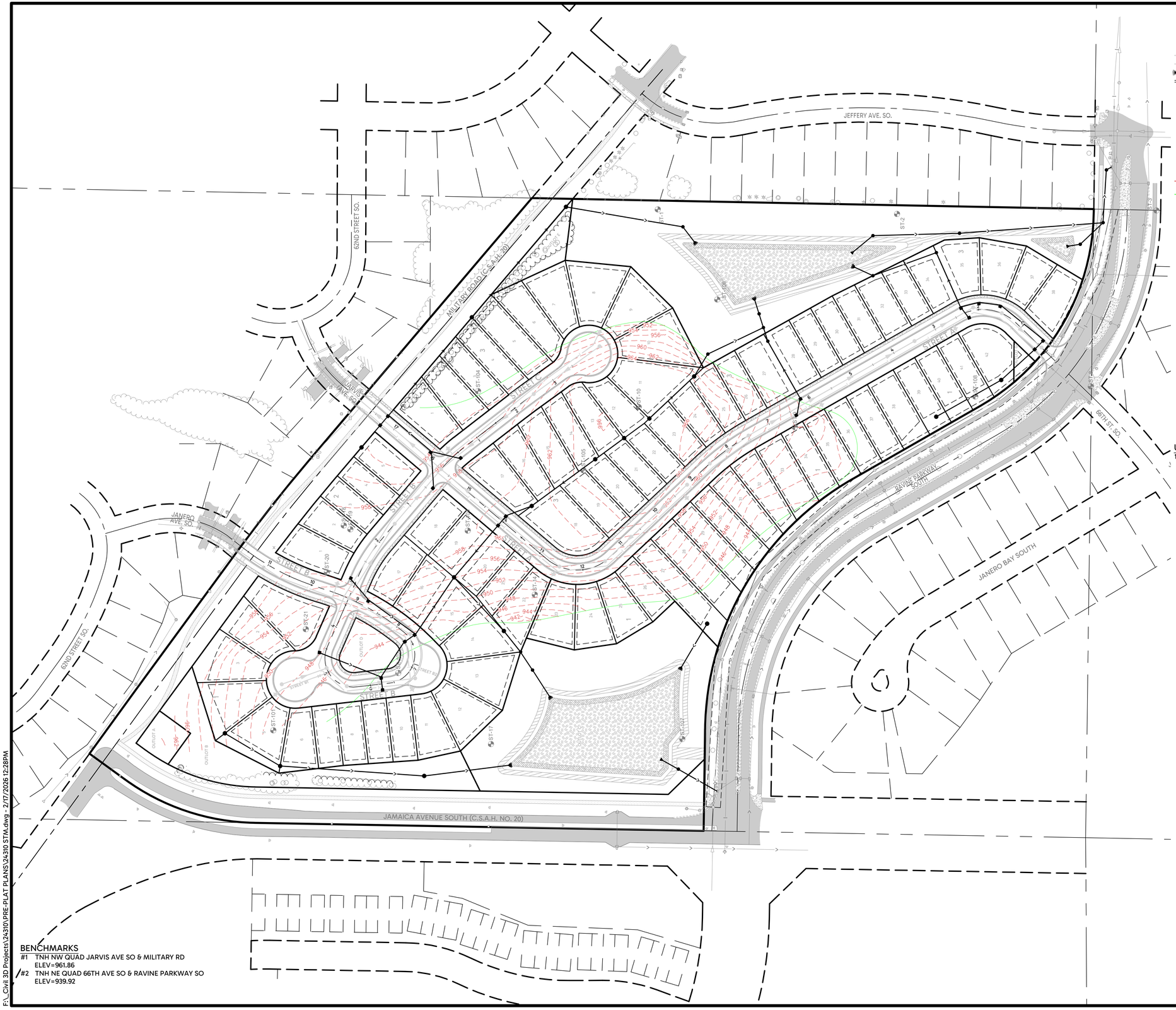

LEGEND

- PROPOSED WATERMAIN
- PROPOSED SANITARY SEWER
- PROPOSED STORM SEWER
- PROPOSED CURB & GUTTER
- PROPOSED CONCRETE
- PROPOSED ASPHALT SURFACE
- PROPOSED SEDIMENT BASIN
- PROPOSED 10' AQUATIC BENCH
- PROPOSED 10' POND MAINTENANCE ACCESS
- FUTURE ASPHALT SURFACE
- 923 — APPROXIMATE EXISTING CONTOUR - ROCK (TOP OF WEATHERED)
- APPROXIMATE EDGE/DROPOFF - ROCK

UTILITY NOTES

1. ALL REAR YARD CATCH BASINS TO BE INSTALLED WITH CONCRETE STOOL GRATE FRAME.

BENCHMARKS

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ELEV=961.86

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Reg.No. 24670
Date: 01/28/2026

PRELIMINARY

McHATTIE LANDING
COTTAGE GROVE, MINNESOTA
PRELIMINARY UTILITY PLAN - STORM SEWER
FOR
M/I HOMES OF MPLS/ST. PAUL, LLC.
5354 PARKDALE DRIVE #100, ST. LOUIS PARK, MN 55416

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McHATTIE LANDING
COTTAGE GROVE, MINNESOTA
PRELIMINARY UTILITY PLAN - STORM SEWER
FOR
M/I HOMES OF MPLS/ST. PAUL, LLC.
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KURT D. QUAM, P.E.

Date: 01/28/2026 Reg.No. 24670

PRELIMINARY

McHATTIE LANDING

COTTAGE GROVE, MINNESOTA

PRELIMINARY UTILITY PLAN - STORM SEWER

FOR

M/I HOMES OF MPLS/ST. PAUL, LLC.

5354 PARKDALE DRIVE #100, ST. LOUIS PARK, MN 55416

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2026-02-17 REV PER CITY COMMENTS
CAD FILE 24310 STM
PROJECT NO. 24310-00
C6.2

POND 1A
BTM 910.00
OLE 920.00
HWL 925.04

POND 1B
BTM 910.00
OLE 920.00
HWL 925.22

OUTLET CONTROL STRUCTURE 100 (OCS-100)

SCALE IN FEET
0 50 100

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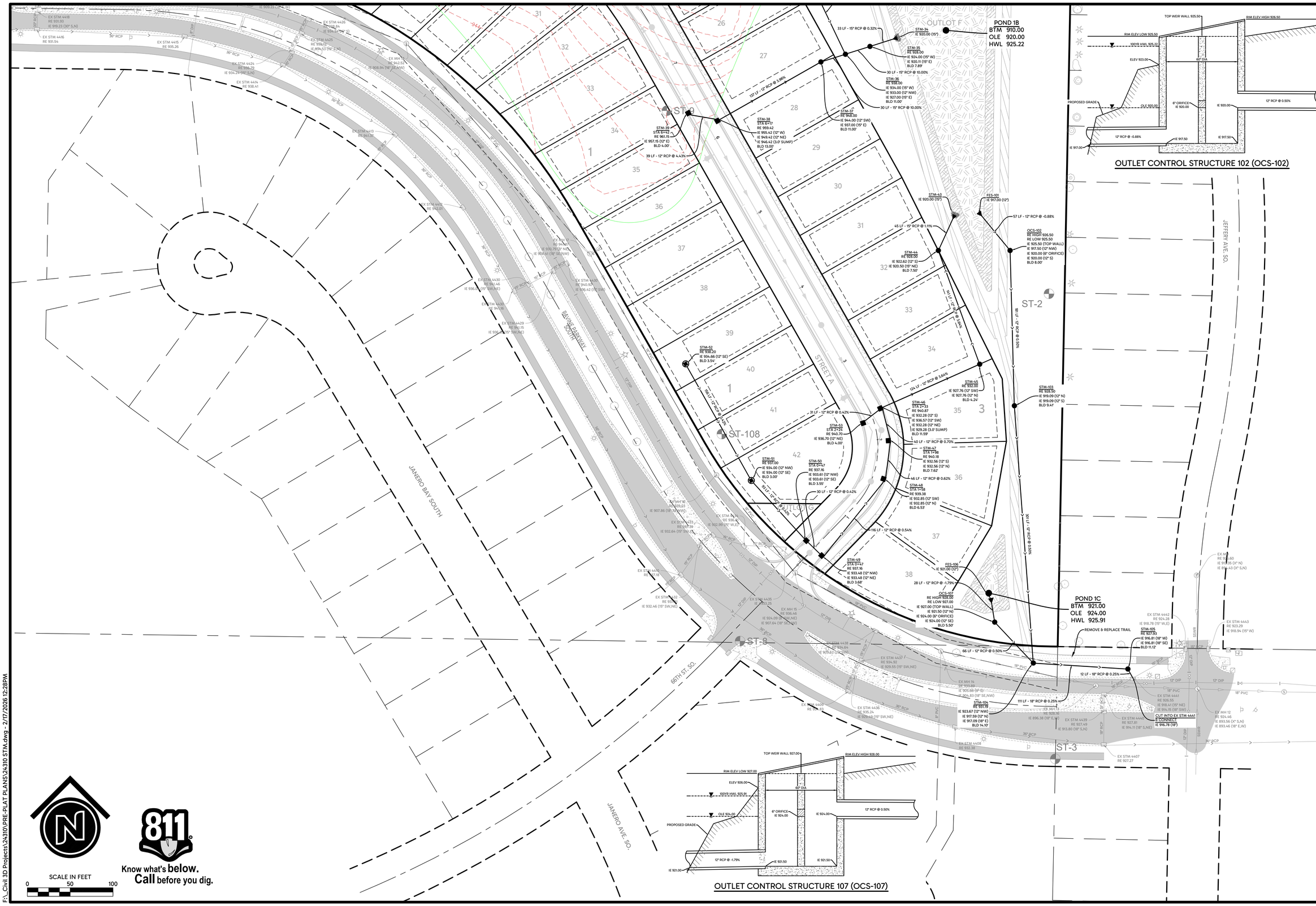

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PRELIMINARY

KURT D. QUAIN, P.E.

Date: 01/28/2026 Reg.No. 24676

McHATTIE LANDING

COTTAGE GROVE, MINNESOTA

PRELIMINARY UTILITY PLAN - STORM SEWER

FOR

M/I HOMES OF MPLS/ST. PAUL, LLC.

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CAD FILE
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PROJECT NO.
24310-00

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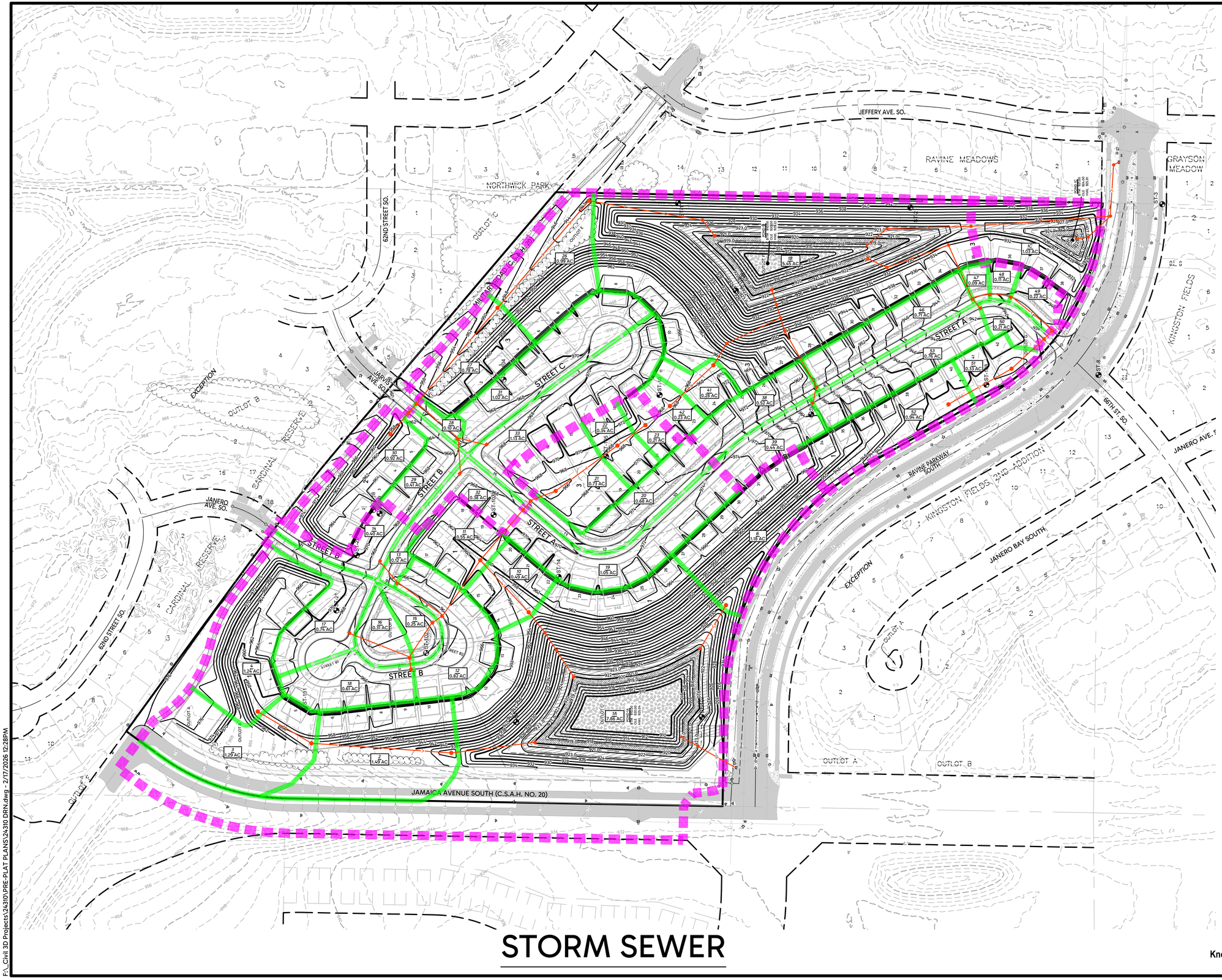

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Date: 01/28/2026 Reg.No. 24670

PRELIMINARY

McHATTIE LANDING

COTTAGE GROVE, MINNESOTA

PRELIMINARY UTILITY PLAN - STORM SEWER

FOR

M/I HOMES OF MPLS/ST. PAUL, LLC.

5354 PARKDALE DRIVE #100, ST. LOUIS PARK, MN 55416

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C6.4

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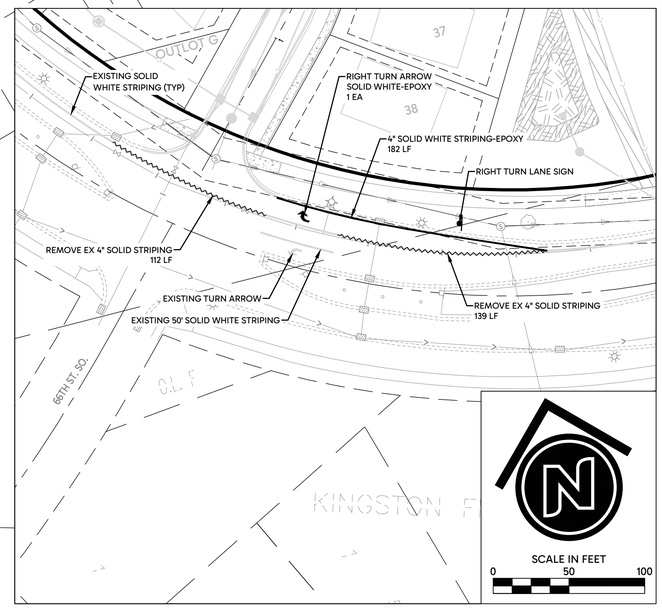
LEGEND

- EXISTING LIGHT POLE
- PROPOSED STREET LIGHT LOCATION (3' BOC)
- PROPOSED STREET & STOP SIGN LOCATION (6' BOC)
- PROPOSED SIGNAGE

50 SCALE BLOWUP (SEE RIGHT)

CROSSWALK SIGNAGE
12" SOLID WHITE EPOXY -PEDESTRIAN CROSSIN
CROSSWALK SIGNAGE

CROSSWALK SIGNAGE
12" SOLID WHITE EPOXY -PEDESTRIAN CROSSIN
CROSSWALK SIGNAGE



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BENCHMARKS

#1 TNH NW QUAD JARVIS AVE SO & MILITARY RD
ELEV=961.86

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ELEV=939.92

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PRELIMINARY

Date: 01/28/2026 Reg.No. 24670

McHATTIE LANDING

COTTAGE GROVE, MINNESOTA

PRELIMINARY STREET LIGHT, STRIPING, & SIGNAGE PLAN

FOR

M/I HOMES OF MPLS/ST. PAUL, LLC.

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CAD FILE
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PROJECT NO.
24310-00

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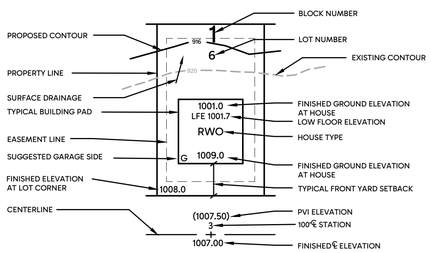
STANDARD GRADING NOTES:

1. SPECIFICATIONS WHICH APPLY ARE THE MOST RECENT EDITIONS OF THE MUNICIPALITY IN WHICH THE WORK IS LOCATED AND THE MINNESOTA DEPARTMENT OF TRANSPORTATION SPECIFICATIONS FOR HIGHWAY CONSTRUCTION UNLESS MODIFIED HEREIN ON THESE CONTRACT DOCUMENTS.
2. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO UTILIZE THE "GOPHER STATE ONE CALL" EXCAVATION NOTICE SYSTEM AS REQUIRED UNDER MINNESOTA STATUTE CHAPTER 216D, 48 HOURS PRIOR TO PERFORMING ANY EXCAVATION (PHONE 651-454-0002 IN THE TWIN CITIES METRO AREA OR TOLL FREE 1-800-252-1166).
3. GRADING CONTRACTOR SHALL VERIFY LOCATIONS AND ELEVATIONS OF ALL UNDERGROUND UTILITIES WITH THE RESPECTIVE UTILITY COMPANIES PRIOR TO CONSTRUCTION.
4. ALL CONSTRUCTION AS CALLED FOR ON THESE CONTRACT DOCUMENTS SHALL BE PERFORMED IN ACCORDANCE WITH ALL OSHA REQUIREMENTS.
5. ALL LOT AND EASEMENT DIMENSIONS ARE SUBJECT TO FINAL PLAT.
6. THE GRADING CONTRACTOR SHALL SCHEDULE THE SOILS ENGINEER SO THAT CERTIFICATION OF ALL CONTROLLED FILLS CAN BE FURNISHED TO THE OWNER DURING AND UPON COMPLETION OF THE PROJECT.
7. DENSITY TESTS SHALL BE TAKEN TO EVALUATE THE COMPACTION WITHIN THE STREETS, TRAVEL WAYS OR PARKING LOTS. WITHIN THE UPPER 3 FEET OF STREET, TRAVEL WAYS OR PARKING LOT SUBGRADE, THE CONTRACTOR SHALL INSURE THAT ALL SOILS BE NOT MORE THAN ONE PERCENTAGE POINT OVER THE SOIL'S STANDARD PROCTOR OPTIMUM MOISTURE CONTENT, AND THAT COMPACTION TO A MINIMUM OF 100% OF STANDARD PROCTOR DENSITY BE PROVIDED. IN AREAS BELOW THE UPPER THREE FEET OF SUBGRADE OF THE STREETS, TRAVEL WAYS OR PARKING LOTS, THE CONTRACTOR SHALL INSURE THAT ALL SOILS BE NOT MORE THAN THREE PERCENTAGE POINTS OVER THE SOIL'S STANDARD PROCTOR OPTIMUM MOISTURE CONTENT, AND THAT COMPACTION TO A MINIMUM OF 95% OF STANDARD PROCTOR DENSITY BE PROVIDED. THE GRADING TOLERANCE FOR THESE AREAS SHALL BE WITHIN ±.1'.
8. LOT GRADING AND/OR THE PREPARATION OF BUILDING/STRUCTURAL PADS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS. THE GRADING TOLERANCE SHALL BE ±0.3'. ALL EARTHWORK OPERATIONS SHALL BE PERFORMED IN ACCORDANCE WITH THE HUD-FHA DATA SHEET 79G "LAND DEVELOPMENT WITH CONTROLLED EARTHWORK", PROVIDING FOR A MINIMUM OF 95% STANDARD DENSITY, OR AS OTHERWISE SPECIFIED BY THE GEO-TECHNICAL ENGINEER.
9. IN AREAS WHERE RETAINING WALLS ARE PROPOSED ON CONTROLLED FILL AREAS, A MINIMUM 95% STANDARD DENSITY NEEDS TO BE ATTAINED. WHERE FILL THICKNESSES EXCEED 10' BELOW WALL FOUNDATION ELEVATIONS, A HIGHER MINIMUM OF 98% SHALL BE ATTAINED, OR AS OTHERWISE SPECIFIED BY THE GEOTECHNICAL ENGINEER.
10. BUILDING PADS SHOWN ON EACH LOT ARE TYPICAL ONLY. THE DEPTH OF THE PAD FROM FRONT TO BACK SHALL BE GRADED THROUGHOUT THE FULL WIDTH OF THE LOT OR AS NECESSARY TO ALLOW FOR CONSTRUCTION OF A BUILDING AT THE MINIMUM SIDE YARD SETBACKS. (REFER TO THE PLANS FOR SPECIFIC SETBACK DISTANCES.) IF UNSUITABLE SOIL CONDITIONS ARE ENCOUNTERED WITHIN A PROPOSED BUILDING PAD THAT CANNOT BE CORRECTED OR REMOVED, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE ENGINEER OF THE CONDITIONS AND TO LOCATE THE LIMITS OF THE UNSUITABLE AREAS.
11. THE GRADING TOLERANCE FOR THE SITE SHOULD BE ±0.1' FOR STREETS/PARKING LOTS AND ±0.3' FOR LANDSCAPED/OPEN/PAD AREAS.
12. THE CONTRACTOR SHALL BE RESPONSIBLE TO MAINTAIN ADEQUATE STORM DRAINAGE PROTECTION OF THE SITE IN ORDER TO PREVENT EROSION AND SILTING OF ON-SITE AND OFF-SITE AREAS. THIS SHALL BE ACCOMPLISHED BY PLACEMENT OF HAY BALES OR FILTER FABRIC FENCE AROUND THE DRAINAGE INLETS AND OUTLETS AND BY CONSTRUCTION OF DITCHES, BERMS, DEBRIS BASINS, FILTER FABRIC FENCING AND BY ANY OTHER ON-SITE PROTECTION AS DETERMINED BY THE ENGINEER. UNLESS SPECIFICALLY CALLED OUT AS A BID ITEM ON THE BID FORM, ANY TEMPORARY DITCHING, CULVERTS, HAY BALES, AND FILTER FABRIC FENCE NECESSARY TO ACCOMPLISH THIS SHALL BE AT THE CONTRACTOR'S EXPENSE.

SPECIFIC GRADING NOTES:

1. THE EXISTING TOPOGRAPHY AND CONTOUR ELEVATIONS ON THE PLANS WERE LIDAR AND SPOT CHECKED BY HILL, INC. ON NOVEMBER 11, 2025. THE DEGREE OF ACCURACY OF THE EXISTING CONTOURS SHOWN ON THE PLAN IS EQUAL TO ± ONE HALF THE CONTOUR INTERVAL.



TYPICAL LOT

RECOMMENDED SINGLE FAMILY LOT TYPES

R	STANDARD LOT - FINISHED GROUND ELEVATION IS THE SAME AT THE FRONT AND REAR OF HOUSE. LOT CAN ACCOMMODATE RAMBLER OR TWO STORY HOME. BASEMENT FLOOR ELEVATION IS 7.3' LOWER THAN FINISHED GROUND ELEVATION SHOWN AT FRONT OF HOUSE.
RWO	WALKOUT LOT - FINISHED GROUND ELEVATION FOR WALKOUT IS 8.0' LOWER THAN FINISHED GROUND ELEVATION SHOWN AT FRONT OF HOUSE. BASEMENT FLOOR ELEVATION/OPENING IS 0.7' ABOVE FINISHED GROUND ELEVATION SHOWN AT WALKOUT.
RLO	LOOKOUT LOT - FINISHED GROUND ELEVATION FOR LOOKOUT IS 4.8' LOWER THAN FINISHED GROUND ELEVATION SHOWN AT FRONT OF HOUSE. WINDOW OPENINGS ARE 0.7' ABOVE FINISHED GROUND ELEVATION SHOWN AT LOOKOUT.

NOTE: FOR ALL RECOMMENDED HOUSE TYPES, GARAGE FLOOR ELEVATION IS 0.3' ABOVE FINISHED GROUND ELEVATION SHOWN AT FRONT OF HOUSE. TOP OF BLOCK ELEVATION IS 0.7' ABOVE FINISHED GROUND ELEVATION SHOWN AT FRONT OF HOUSE.

GENERAL UTILITY CONSTRUCTION NOTES:

1. SPECIFICATIONS:
THE WORK SHALL BE DONE IN ACCORDANCE WITH THE CITY OF COTTAGE GROVE, MINNESOTA.

2. EXISTING FACILITIES:
IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE LOCATION OF ALL EXISTING UTILITIES BEFORE STARTING CONSTRUCTION. THIS INCLUDES, BUT IS NOT LIMITED TO SANITARY AND STORM SEWER, WATERMAIN, NATURAL GAS, ELECTRIC, TELEPHONE AND CABLE TELEVISION SERVICES.

THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY CONFLICT BETWEEN THE EXISTING UTILITIES AND THE PROPOSED CONSTRUCTION. THE ENGINEER IN COOPERATION WITH THE UTILITY COMPANIES, SHALL DETERMINE THE NECESSITY FOR ANY RELOCATION OF THESE FACILITIES.

THE CONTRACTOR SHALL PROTECT ALL EXISTING UTILITIES AND FACILITIES SO THAT THEY WILL CONTINUE TO FUNCTION IN THEIR PROPER MANNER BOTH DURING CONSTRUCTION AND IN THE FUTURE. ANY SUPPORTING STRUCTURE THAT MAY BE REQUIRED BECAUSE OF THE CONTRACTOR'S OPERATION SHALL BE PROVIDED BY HIM.

THE CONTRACTOR SHALL BRING TO THE ATTENTION OF THE ENGINEER ANY CONDITIONS SUCH AS SAND IN MANHOLES OR VALVE BOXES EXISTING PRIOR TO THE CONTRACTOR'S EXCAVATION. ONCE EXCAVATION HAS COMMENCED, IT WILL BE ASSUMED THAT ALL DAMAGE TO UNDERGROUND UTILITIES HAS BEEN CAUSED BY THE CONTRACTOR'S OPERATIONS AND IT WILL BE HIS RESPONSIBILITY TO MAKE THE NECESSARY REPAIRS.

3. CONTRACTOR RESPONSIBILITIES:
THE CONTRACTOR SHALL MAKE HIS OWN ARRANGEMENTS FOR RECEIVING WATER FROM PUBLIC OR PRIVATE SOURCES AND SECURE NECESSARY PERMITS AND PAY REGULAR CHARGES. ALL CITY WATER SHALL BE METERED. DISPOSAL OF ANY WASTE WATER OR ANY TEST WATER INTO THE CITY SANITARY SEWER SYSTEM IS SUBJECT TO CITY CHARGE. CONTRACTORS ARE NOT TO OPERATE GATE VALVES OR HYDRANTS ON CITY WATER SUPPLY.

THE CITY ENGINEER AND THE ENGINEER SHALL BE NOTIFIED 48 HOURS PRIOR TO COMMENCING WORK. CONTRACTORS SHALL BE SUBJECT TO SHUT DOWN IF PROPER NOTIFICATION IS NOT GIVEN TO THE ENGINEER.

CITY STREETS THAT ARE UTILIZED FOR INGRESS TO OR EGRESS FROM THE CONSTRUCTION SITE SHALL BE KEPT FREE OF DIRT AND OTHER DEBRIS RESULTING FROM SAID CONSTRUCTION.

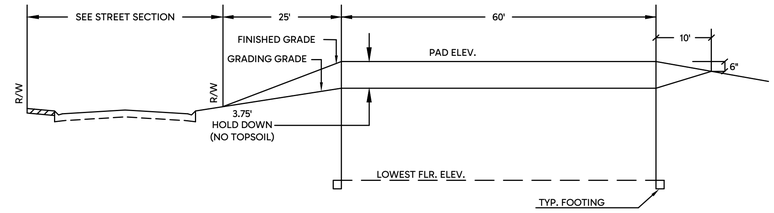
THE CONTRACTOR SHALL BE RESPONSIBLE TO MAINTAIN ADEQUATE STORM DRAINAGE PROTECTION OF THE SITE IN ORDER TO PREVENT EROSION AND SILTING OF ON-SITE AND OFF-SITE AREAS. THIS SHALL BE ACCOMPLISHED BY PLACEMENT OF HAY BALES OR FILTER FABRIC FENCE AROUND THE DRAINAGE INLETS AND OUTLETS AND BY CONSTRUCTION OF DITCHES, BERMS, DEBRIS BASINS, FILTER FABRIC FENCING AND BY ANY OTHER ON-SITE PROTECTION AS DETERMINED BY THE ENGINEER. UNLESS SPECIFICALLY CALLED OUT AS A BID ITEM ON THE BID FORM, ANY TEMPORARY DITCHING, CULVERTS, HAY BALES, AND FILTER FABRIC FENCE NECESSARY TO ACCOMPLISH THIS SHALL BE AT THE CONTRACTOR'S EXPENSE.

IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROTECT AND LEAVE UNDISTURBED THOSE MARKERS OR MONUMENTS SET FOR THE SUBDIVISION OF LAND.

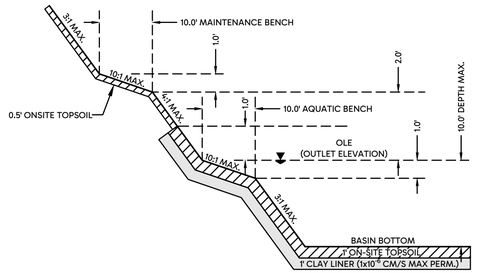
IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO UTILIZE THE "GOPHER STATE ONE CALL" EXCAVATION NOTICE SYSTEM AS REQUIRED UNDER MINNESOTA STATUTE CHAPTER 216D, 48 HOURS PRIOR TO PERFORMING ANY EXCAVATION (PHONE 651-454-0002 IN THE TWIN CITIES METRO AREA OR TOLL FREE 1-800-252-1166).

4. COMPACTION:
DENSITY TESTS SHALL BE TAKEN ON ALL TRENCHES WITHIN THE STREET/PARKING CROSS SECTION AND THE PAD AREAS TO EVALUATE THE COMPACTION ACHIEVED DURING UTILITY CONSTRUCTION. WITHIN THE UPPER 3 FEET OF STREET SUBGRADE THE CONTRACTOR SHALL INSURE THAT ALL SOILS BE NOT MORE THAN ONE PERCENTAGE POINT OVER THE SOILS STANDARD PROCTOR OPTIMUM MOISTURE CONTENT, AND THAT COMPACTION TO A MINIMUM OF 100 % OF STANDARD PROCTOR DENSITY (AASHTO T-99) BE PROVIDED. WITHIN UTILITY TRENCHES IN OPEN SPACE AREAS (PAD AREAS) AND AREAS BELOW THE UPPER 3 FEET OF STREET SUBGRADE, THE CONTRACTOR SHALL INSURE THAT ALL SOILS BE NOT MORE THAN THREE PERCENTAGE POINTS OVER THE SOIL'S STANDARD PROCTOR OPTIMUM MOISTURE CONTENT, AND THAT COMPACTION TO A MINIMUM OF 95 % OF STANDARD PROCTOR DENSITY BE PROVIDED. THE SURFACE OF ALL UTILITY TRENCHES SHALL BE FINISHED GRADED TO THE ELEVATIONS AS STAKED BY THE ENGINEER TO WITHIN A TOLERANCE OF ±0.3' IN OPEN SPACE AREAS AND ± 0.1' WITHIN STREET RIGHT OF WAYS. THE DENSITY WILL BE TESTED BY AN APPROVED TESTING LABORATORY. AN APPROVED TESTING METHOD WHICH UTILIZES A NUCLEAR DENSITY METER MAY BE USED FOR THE DENSITY TESTS. THE LOCATION OF THE TESTS WILL BE AT THE DIRECTION OF THE ENGINEER.

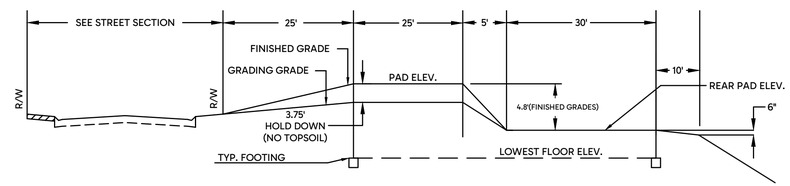
THE OWNER SHALL BEAR ALL COSTS OF THE TESTING. ANY AREAS WHICH FAIL TO MEET THE COMPACTION REQUIREMENTS OUTLINED IN THIS SECTION SHALL BE CORRECTED AT THE CONTRACTOR'S EXPENSE. ALL COSTS FOR ANY RE-TESTING ASSOCIATED WITH ANY CORRECTIVE WORK SHALL BE AT THE EXPENSE OF THE CONTRACTOR.



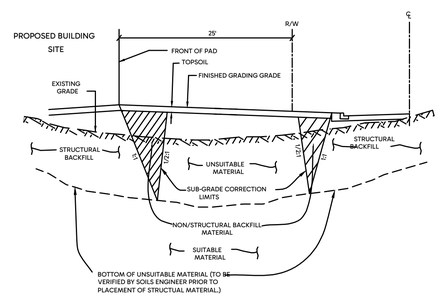
SINGLE FAMILY - RAMBLER SECTION (R)



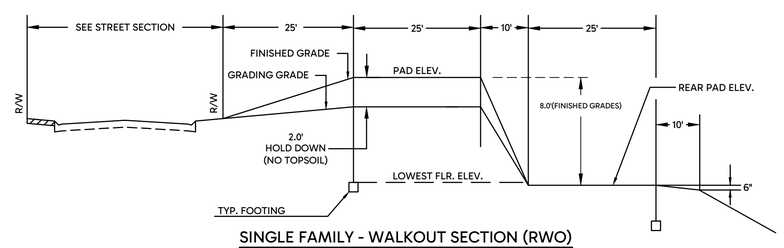
SEDIMENT BASIN



SINGLE FAMILY - LOOKOUT SECTION (RLO)



BUILDING SITE & STREET SUB-GRADE CORRECTION DETAIL



SINGLE FAMILY - WALKOUT SECTION (RWO)

HILL INCORPORATED
2999 WEST C.R. 42, SUITE 100
BURNSVILLE, MN 55306
PHONE: 952-890-6044
Kurt@mnhill.com
www.mnhill.com

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

KURT D. QUANRUD, P.E.

Date: 01/28/2026 Reg.No. 24670

PRELIMINARY

McHATTIE LANDING
COTTAGE GROVE, MINNESOTA

PRELIMINARY CONSTRUCTION DETAILS

FOR
M/I HOMES OF MPLS/ST. PAUL, LLC.
5354 PARKDALE DRIVE #100, ST. LOUIS PARK, MN 55416

DRAWN BY
CTY

DATE
01/28/2026

REVISIONS

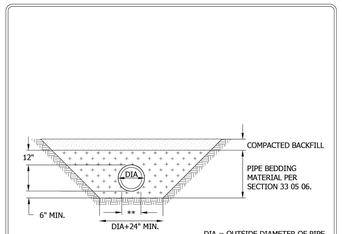
2026-02-17 REV PER CITY COMMENTS

CAD FILE
24310 D

PROJECT NO.
24310-00

C8.0

F:_Civil 3D Projects\24310\PRE-PLAT PLANS\24310 D.dwg - 2/17/2026 12:29PM



PVC AND POLYPROPYLENE PIPE FOUNDATION & BEDDING IN GOOD SOILS

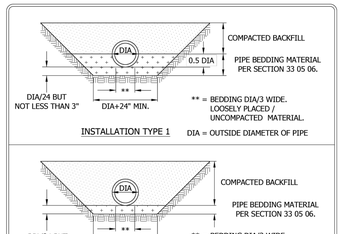
Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
PIPE FOUNDATION & BEDDING METHOD FOR PVC & POLYPROPYLENE PIPE
COTTAGE GROVE, MINNESOTA

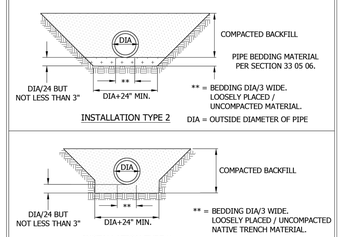
JANUARY 2025

PLATE NO. BED-1

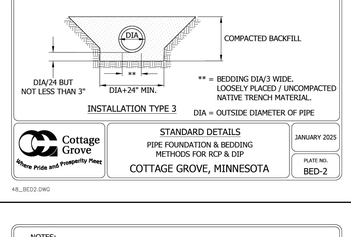
48_BED1.DWG



INSTALLATION TYPE 1



INSTALLATION TYPE 2



INSTALLATION TYPE 3

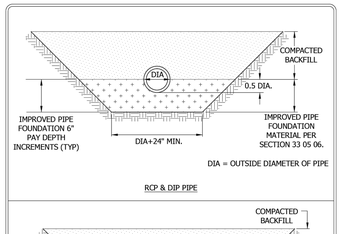
Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
PIPE FOUNDATION & BEDDING METHODS FOR RCP & DIP
COTTAGE GROVE, MINNESOTA

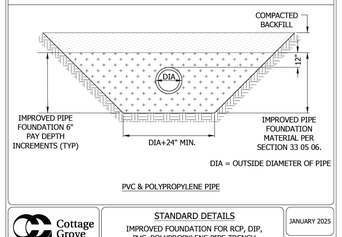
JANUARY 2025

PLATE NO. BED-2

48_BED2.DWG



RCP & DIP PIPE



PVC & POLYPROPYLENE PIPE

Cottage Grove — Where Pride and Prosperity Meet

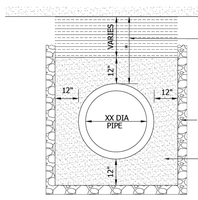
STANDARD DETAILS
IMPROVED FOUNDATION FOR RCP, DIP, PVC, POLYPROPYLENE PIPE TRENCH
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. BED-3

48_BED3.DWG

* USE GRANULAR BORROW WHEN TOP OF PIPE IS WITHIN 3 FEET OF SUBGRADE. IF GREATER THAN 3 FEET, USE SUITABLE EXISTING ONSITE BACKFILL.



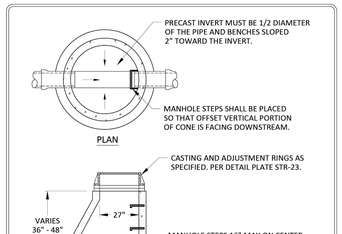
Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
PVC, POLYPROPYLENE, RCP AND DIP PIPE BEDDING IN ROCK
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. BED-4

48_BED4.DWG



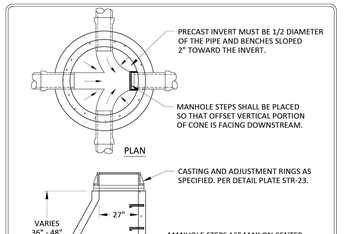
Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
SANITARY SEWER MANHOLE
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. SAN-1

48_SAN1.DWG



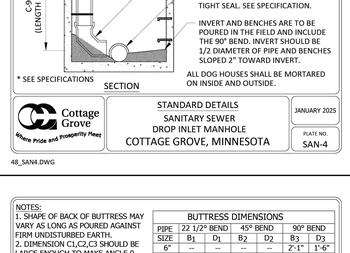
Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
SANITARY SEWER JUNCTION MANHOLE
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. SAN-2

48_SAN2.DWG



Cottage Grove — Where Pride and Prosperity Meet

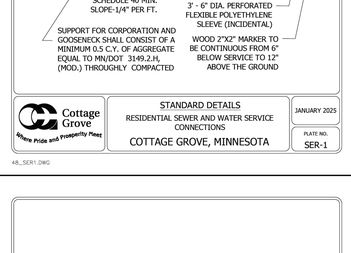
STANDARD DETAILS
SANITARY SEWER DROP INLET MANHOLE
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. SAN-4

48_SAN4.DWG

NOTES:
① REF. SER-11 FOR CURB STOP AND BOX THAT FALL WITHIN BITUMINOUS OR CONCRETE.
② *EXTEND CURB STOP 1' BEYOND R/W WHEN SIDEWALK IS PRESENT.



Cottage Grove — Where Pride and Prosperity Meet

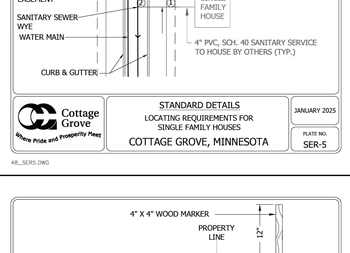
STANDARD DETAILS
RESIDENTIAL SEWER AND WATER SERVICE CONNECTIONS
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. SER-1

48_SER1.DWG

CONTRACTOR TO PROVIDE THE FOLLOWING DIMENSIONS:
① CURB STOP TO SANITARY SEWER PIPE (PERPENDICULAR TO COPPER).
② SANITARY SEWER PIPE TO COPPER WATER LINE (PERPENDICULAR TO COPPER ALONG SANITARY SEWER MAIN) OR CORPORATION STOP TO SANITARY SEWER SERVICE LINE (PERPENDICULAR TO COPPER WATER LINE).
③ EXTEND CURB STOP 1' BEYOND R/W WHEN SIDEWALK IS PRESENT.



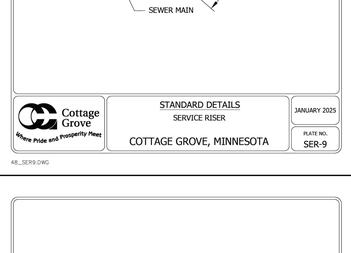
Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
LOCATING REQUIREMENTS FOR SINGLE FAMILY HOUSES
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. SER-5

48_SER5.DWG



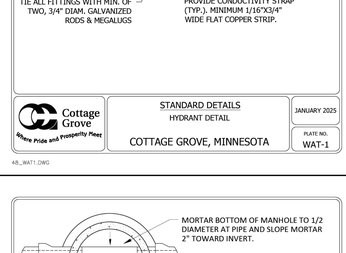
Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
SERVICE RISER
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. SER-9

48_SER9.DWG



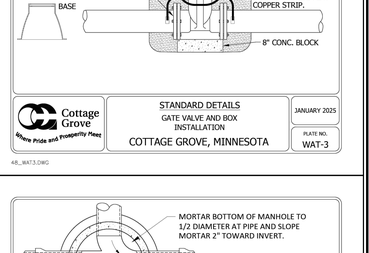
Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
HYDRANT DETAIL
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. WAT-1

48_WAT1.DWG



Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
GATE VALVE AND BOX INSTALLATION
COTTAGE GROVE, MINNESOTA

JANUARY 2025

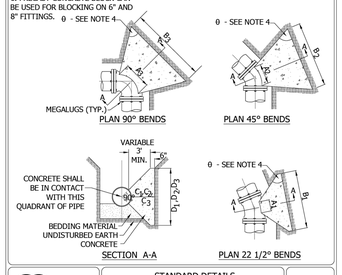
PLATE NO. WAT-3

48_WAT3.DWG

NOTES:
1. SHAPE OF BACK OF BUTTRESS MAY VARY AS LONG AS POURED AGAINST FIRM UNDISTURBED EARTH.
2. DIMENSION C1,C2,C3 SHOULD BE LARGE ENOUGH TO MAKE ANGLE θ EQUAL TO OR LARGER THAN 45°.
3. DIMENSION A1,A2,A3 SHOULD BE AS LARGE AS POSSIBLE WITHOUT INTERFERING WITH MJ BOLTS.
4. θ = 45° MINIMUM.
5. PLACE POLYETHYLENE BETWEEN CONCRETE & PIPE.
6. PRECAST CONCRETE BLOCK CAN BE USED FOR BLOCKING ON 6" AND 8" FITTINGS.

BUTTRESS DIMENSIONS

PIPE	22 1/2° BEND		45° BEND		90° BEND	
SIZE	B_1	D_1	B_2	D_2	B_3	D_3
6"	--	--	--	--	2'-1"	1'-6"
8"	--	--	--	--	2'-8"	2'-0"
12"	1'-10"	1'-10"	3'-4"	2'-0"	4'-9"	2'-6"
16"	3'-0"	2'-0"	3'-10"	3'-0"	6'-2"	3'-6"
20"	3'-6"	2'-8"	5'-6"	3'-4"	8'-4"	4'-0"
24"	4'-4"	3'-0"	6'-10"	3'-10"	9'-8"	5'-0"
30"	--	--	9'-3"	6'-0"	12'-0"	6'-0"



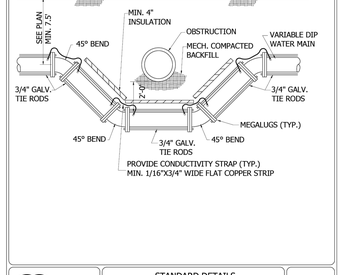
Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
CONCRETE THRUST BLOCKING
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. WAT-6

48_WAT6.DWG



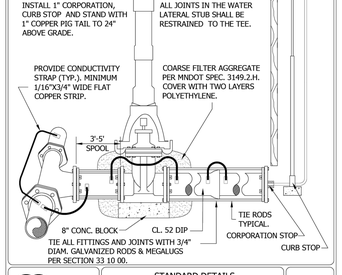
Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
WATER MAIN OFFSET
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. WAT-7

48_WAT7.DWG



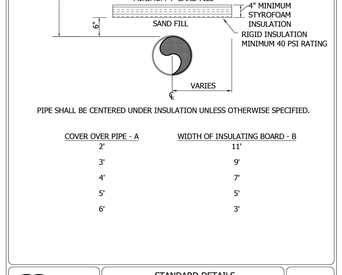
Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
DIP SERVICE OR DEAD END LINE
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. WAT-8

48_WAT8.DWG



COVER OVER PIPE - A	WIDTH OF INSULATING BOARD - B
2'	11'
3'	9'
4'	7'
5'	5'
6'	3'

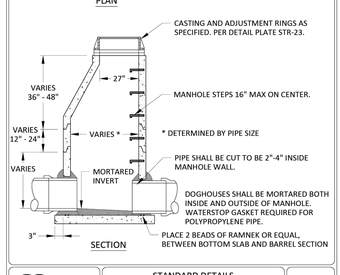
Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
INSULATION DETAIL
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. WAT-9

48_WAT9.DWG



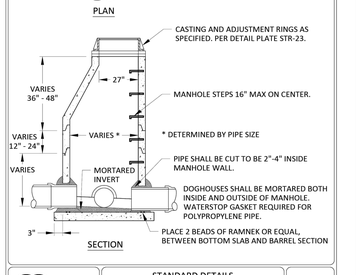
Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
STORM SEWER MANHOLE
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. STO-1

48_STO1.DWG



Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
STORM SEWER JUNCTION MANHOLE
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. STO-2

48_STO2.DWG

HILL INCORPORATED
2999 WEST C.R. 42, SUITE 100
BURNSVILLE, MN 55306
PHONE: 952-890-6044
Kurt@mnhill.com
www.mnhill.com

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

KURT D. QUANRUD

Date: 01/28/2026 Reg.No. 24670

PRELIMINARY

McHATTIE LANDING
COTTAGE GROVE, MINNESOTA

PRELIMINARY CONSTRUCTION DETAILS

FOR
M/I HOMES OF MPLS/ST. PAUL, LLC.
5354 PARKDALE DRIVE #100, ST. LOUIS PARK, MN 55416

DRAWN BY
CTY

DATE
01/28/2026

REVISIONS

2026-02-17 REV PER CITY COMMENTS

CAD FILE
24310 D

PROJECT NO.
24310-00

C8.1

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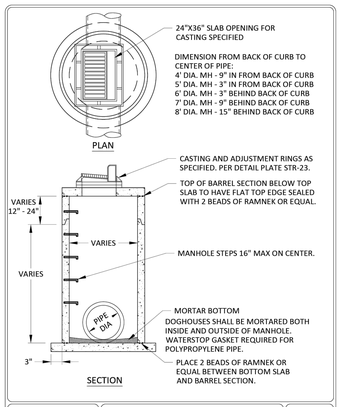


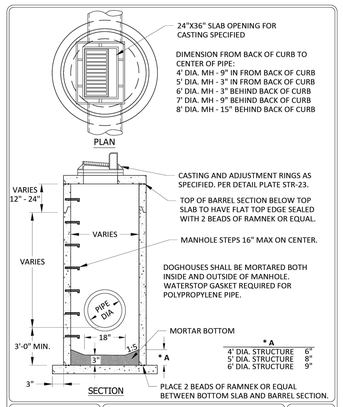
Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
CATCH BASIN MANHOLE
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. STO-5

48_STO5.DWG



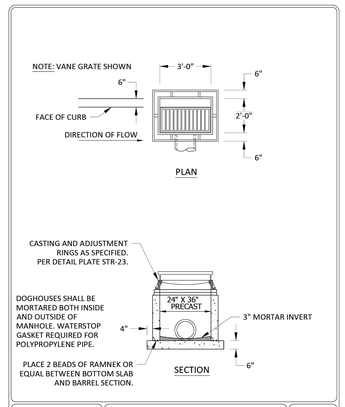
Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
CATCH BASIN MANHOLE WITH SUMP
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. STO-6

48_STO6.DWG



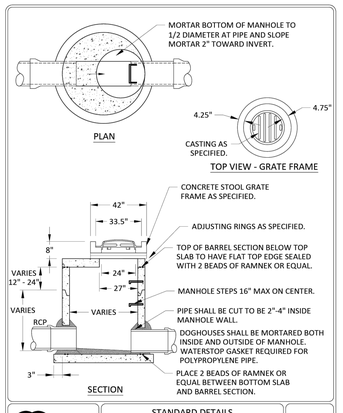
Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
CATCH BASIN
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. STO-7

48_STO7.DWG



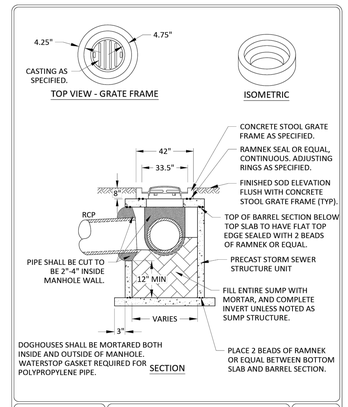
Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
OFF STREET CATCH BASIN
WITH CONCRETE STOOL GRATE FRAME
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. STO-9

48_STO9.DWG



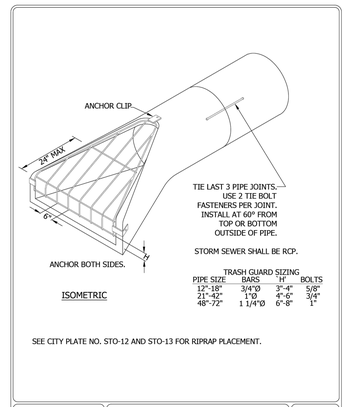
Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
SHALLOW OFF STREET CATCH BASIN
WITH CONCRETE STOOL GRATE FRAME
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. STO-10

48_STO10.DWG



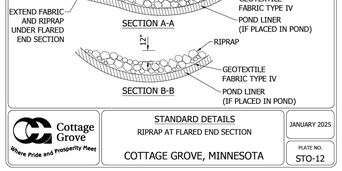
Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
FLARED END SECTION AND
TRASH GAURD
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. STO-11

48_STO11.DWG



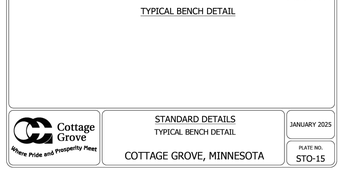
Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
RIPRAP AT FLARED END SECTION
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. STO-12

48_STO12.DWG



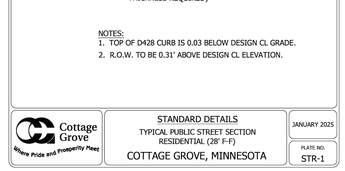
Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
TYPICAL BENCH DETAIL
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. STO-15

48_STO15.DWG



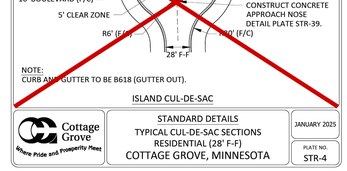
Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
TYPICAL PUBLIC STREET SECTION
RESIDENTIAL (28' F-F)
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. STR-1

48_STR1.DWG



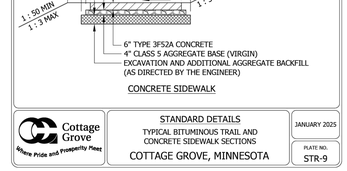
Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
TYPICAL CUL-DE-SAC SECTIONS
RESIDENTIAL (28' F-F)
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. STR-4

48_STR4.DWG



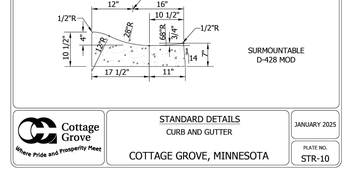
Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
TYPICAL BITUMINOUS TRAIL AND
CONCRETE SIDEWALK SECTIONS
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. STR-9

48_STR9.DWG



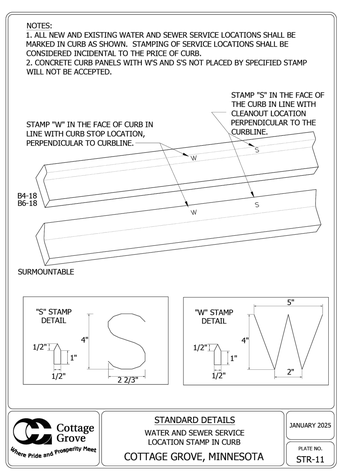
Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
CURB AND GUTTER
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. STR-10

48_STR10.DWG



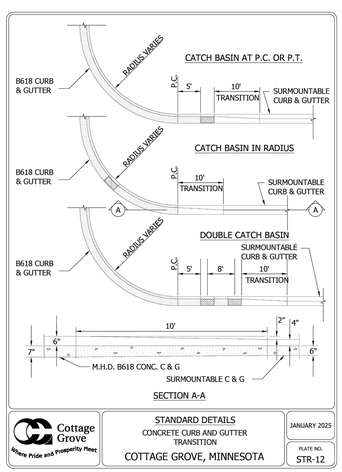
Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
WATER AND SEWER SERVICE
LOCATION STAMP IN CURB
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. STR-11

48_STR11.DWG



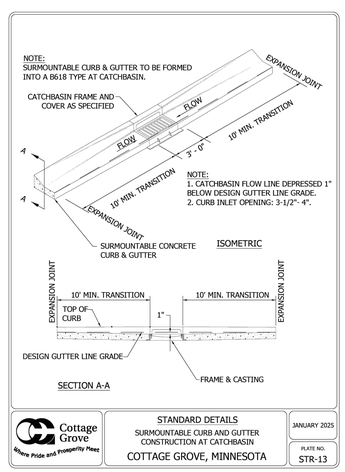
Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
CONCRETE CURB AND GUTTER
TRANSITION
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. STR-12

48_STR12.DWG



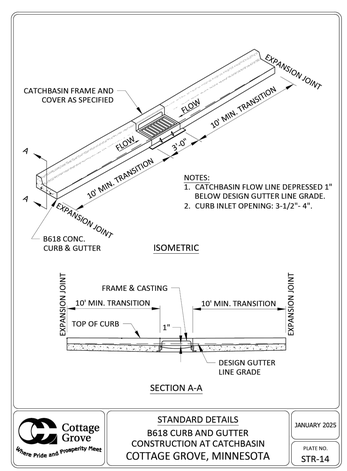
Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
SURMOUNTABLE CURB AND GUTTER
CONSTRUCTION AT CATCHBASIN
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. STR-13

48_STR13.DWG



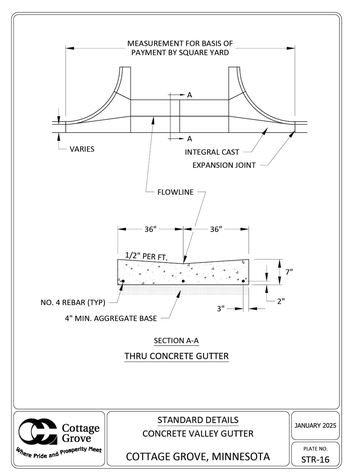
Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
B618 CURB AND GUTTER
CONSTRUCTION AT CATCHBASIN
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. STR-14

48_STR14.DWG



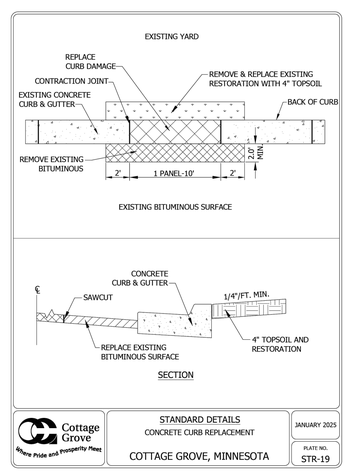
Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
CONCRETE VALLEY GUTTER
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. STR-16

48_STR16.DWG



Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
CONCRETE CURB REPLACEMENT
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. STR-19

48_STR19.DWG

HILL INCORPORATED
2999 WEST C.R. 42, SUITE 100
BURNSVILLE, MN 55306
PHONE: 952-890-6044
Kurt@mnhill.com
www.mnhill.com

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

KURT D. QUANRUD, P.E.

Date: 01/28/2026 Reg.No. 24670

PRELIMINARY

McHATTIE LANDING
COTTAGE GROVE, MINNESOTA
FOR
M/I HOMES OF MPLS/ST. PAUL, LLC.
5354 PARKDALE DRIVE #100, ST. LOUIS PARK, MN 55416

PRELIMINARY CONSTRUCTION DETAILS

DRAWN BY
CTY

DATE
01/28/2026

REVISIONS

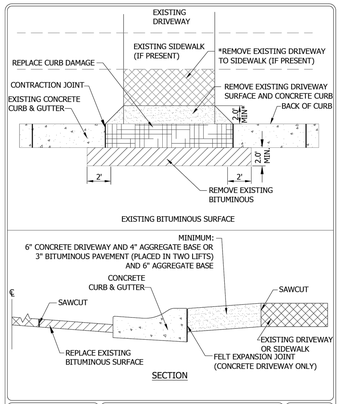
2026-02-17 REV PER CITY COMMENTS

CAD FILE
24310 D

PROJECT NO.
24310-00

C8.2

F:_Civil 3D Projects\24310\PRE-PLAT PLANS\24310 D.dwg - 2/17/2026 12:29PM



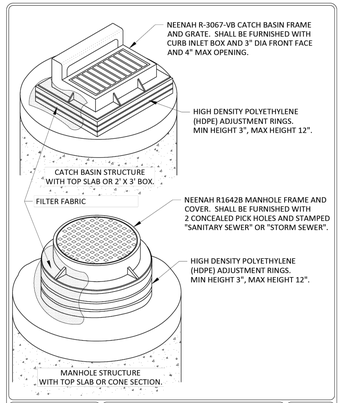
Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
CONCRETE CURB REPLACEMENT AT DRIVEWAY LOCATION
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. STR-20

48_STR20.DWG



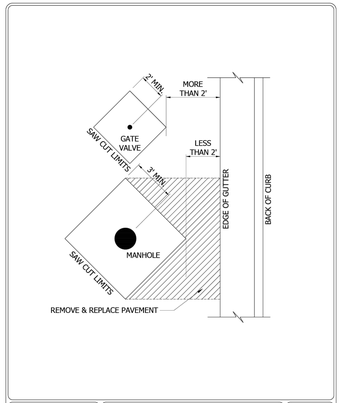
Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
CATCHBASIN AND MANHOLE ADJUSTMENT
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. STR-23

48_STR23.DWG



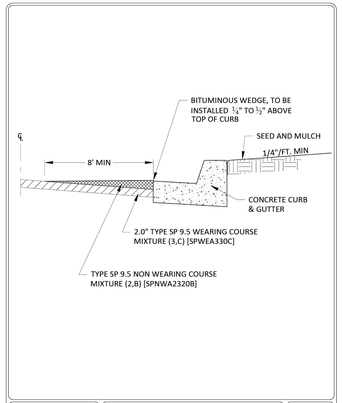
Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
STRUCTURE ADJUSTMENT PATCH (BITUMINOUS OR CONCRETE)
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. STR-25

48_STR25.DWG



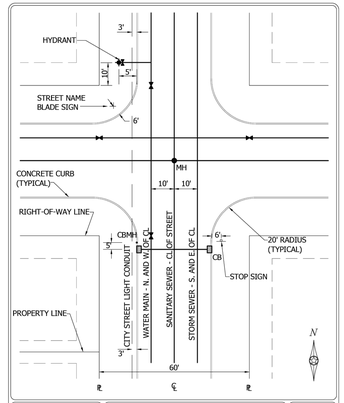
Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
CONCRETE CURB PROTECTION BITUMINOUS WEDGE
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. STR-26

48_STR26.DWG



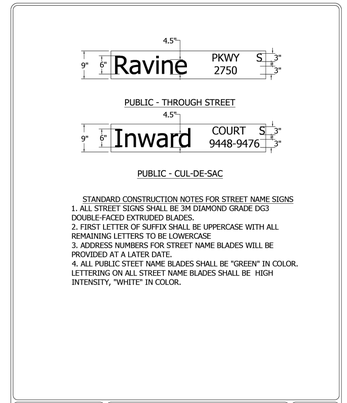
Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
TYPICAL UTILITY LOCATIONS
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. STR-28

48_STR28.DWG



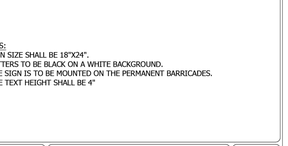
Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
STREET NAME BLADE SIGNS PUBLIC STREETS
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. STR-29

48_STR29.DWG



NOTES:
1. SIGN SIZE SHALL BE 18"X24".
2. LETTERS TO BE BLACK ON A WHITE BACKGROUND.
3. THE SIGN IS TO BE MOUNTED ON THE PERMANENT BARRICADES.
4. THE TEXT HEIGHT SHALL BE 4"

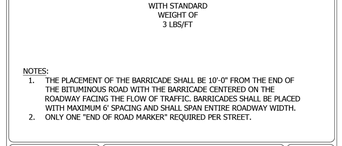
Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
FUTURE ROAD EXTENSION SIGN
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. STR-31

48_STR31.DWG



NOTES:
1. THE PLACEMENT OF THE BARRICADE SHALL BE 10'-0" FROM THE END OF THE BITUMINOUS ROAD WITH THE BARRICADE CENTERED ON THE ROADWAY FACING THE FLOW OF TRAFFIC. BARRICADES SHALL BE PLACED WITH MAXIMUM 6' SPACING AND SHALL SPAN ENTIRE ROADWAY WIDTH.
2. ONLY ONE "END OF ROAD MARKER" REQUIRED PER STREET.

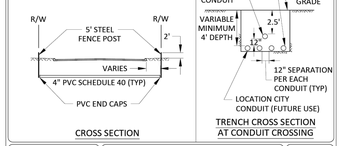
Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
PERMANENT BARRICADE
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. STR-32

48_STR32.DWG



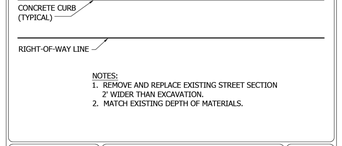
Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
PRIVATE UTILITY CONDUIT CROSSING
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. STR-34

48_STR34.DWG



NOTES:
1. REMOVE AND REPLACE EXISTING STREET SECTION 2' WIDER THAN EXCAVATION.
2. MATCH EXISTING DEPTH OF MATERIALS.

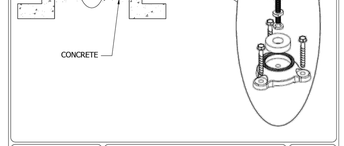
Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
BITUMINOUS REMOVAL LIMITS
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. STR-35

48_STR35.DWG



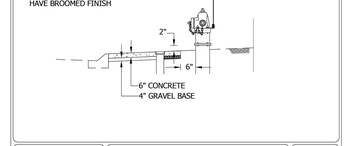
Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
TYPICAL TRAFFIC SIGN INSTALLATION MEDIAN
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. STR-36

48_STR36.DWG



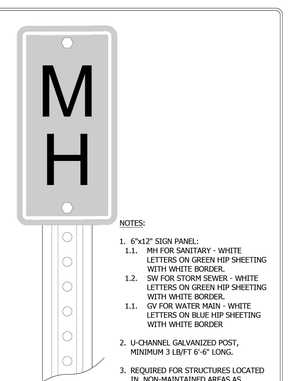
Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
CONCRETE HYDRANT PAD
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. STR-37

48_STR37.DWG



NOTES:
1. 6"x12" SIGN PANEL:
   1.1. MH FOR SANITARY - WHITE LETTERS ON GREEN HIP SHEETING WITH WHITE BORDER.
   1.2. SW FOR STORM SEWER - WHITE LETTERS ON GREEN HIP SHEETING WITH WHITE BORDER.
   1.1. GV FOR WATER MAIN - WHITE LETTERS ON BLUE HIP SHEETING WITH WHITE BORDER
2. U-CHANNEL GALVANIZED POST, MINIMUM 3 LB/FT 6'-6" LONG.
3. REQUIRED FOR STRUCTURES LOCATED IN NON-MAINTAINED AREAS AS DIRECTED BY ENGINEER.

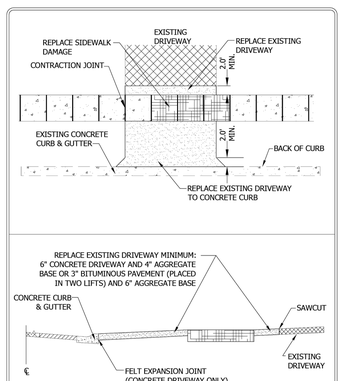
Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
STRUCTURE MARKER SIGN
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. STR-41

48_STR41.DWG



Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
CONCRETE SIDEWALK REPLACEMENT AT DRIVEWAY LOCATION
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. STR-42

48_STR42.DWG

HILL INCORPORATED
2999 WEST C.R. 42, SUITE 100
BURNSVILLE, MN 55306
PHONE: 952-890-6044
Kurt@mnhill.com
www.mnhill.com

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

KURT D. QUANSTROM, P.E.

Date: 01/28/2026 Reg.No. 24670

PRELIMINARY

McHATTIE LANDING
COTTAGE GROVE, MINNESOTA

PRELIMINARY CONSTRUCTION DETAILS

FOR
M/I HOMES OF MPLS/ST. PAUL, LLC.
5354 PARKDALE DRIVE #100, ST. LOUIS PARK, MN 55416

DRAWN BY
CTY

DATE
01/28/2026

REVISIONS

2026-02-17 REV PER CITY COMMENTS

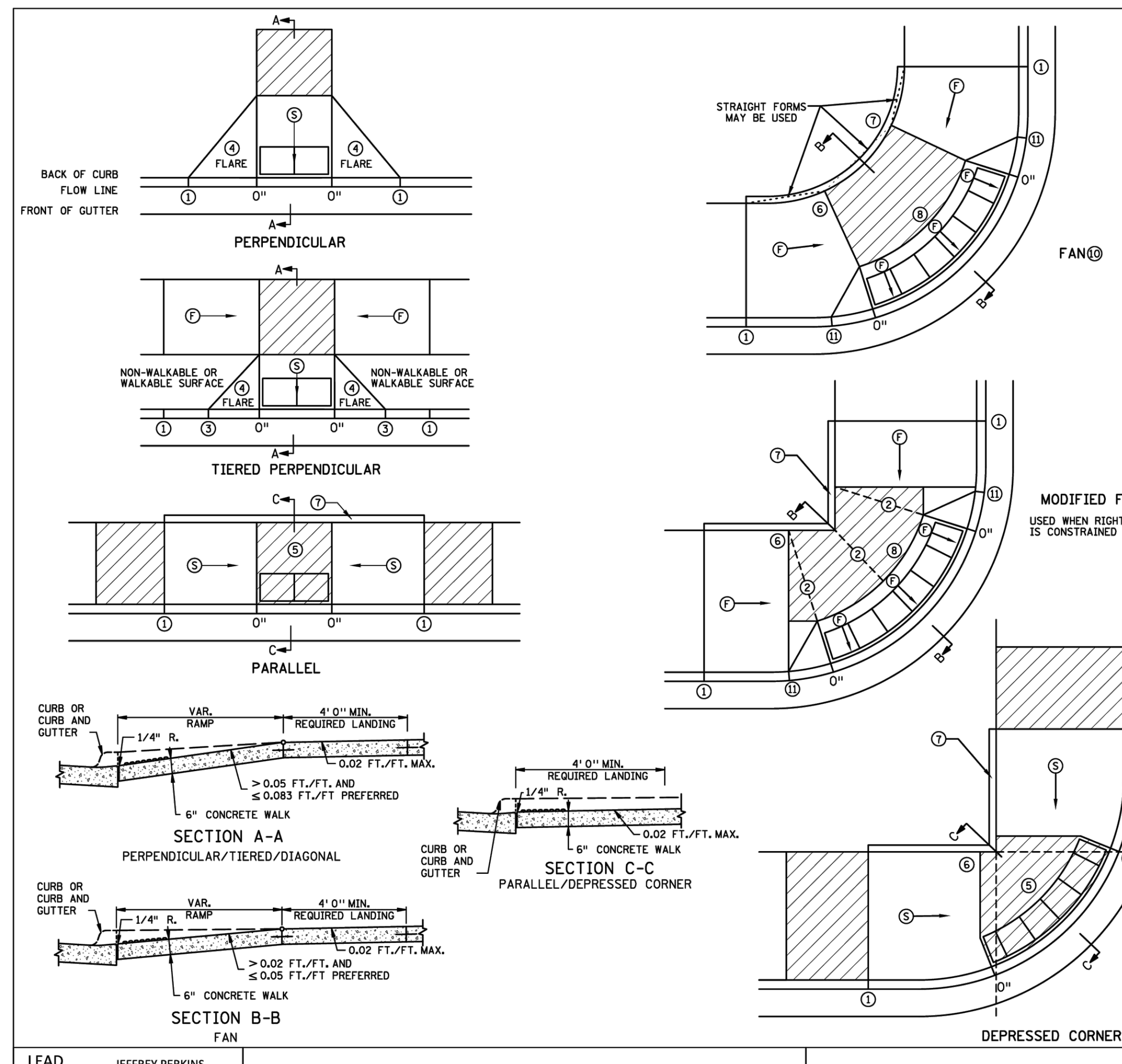
CAD FILE
24310 D

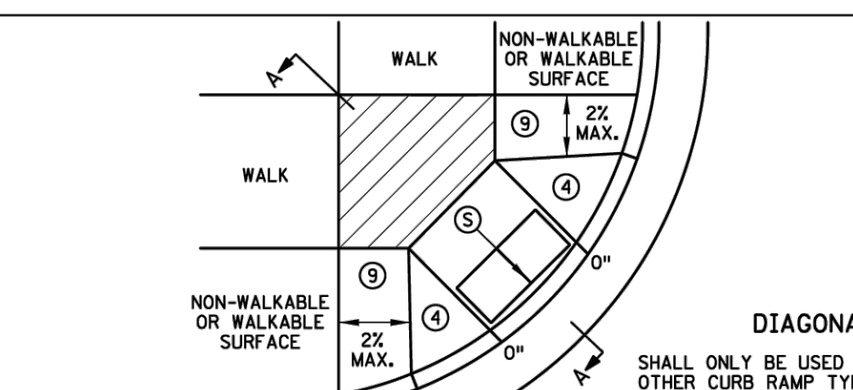
PROJECT NO.
24310-00

C8.3

F:_Civil 3D Projects\24310\PRE-PLAT PLANS\24310 D.dwg - 2/17/2026 12:29PM

PEDESTRIAN CURB RAMP DETAILS — STANDARD PLAN 5-297.250





NOTES:

LANDINGS SHALL BE LOCATED ANYWHERE THE PEDESTRIAN ACCESS ROUTE (PAR) CHANGES DIRECTION, AT THE TOP OF RAMPS THAT HAVE RUNNING SLOPES GREATER THAN 5.0%, AND IF THE APPROACHING WALK IS INVERSE GRADE GREATER THAN 2%.

INITIAL CURB RAMP LANDINGS SHALL BE CONSTRUCTED WITHIN 15' FROM THE BACK OF CURB, WITH 6' FROM THE BACK OF CURB BEING THE PREFERRED DISTANCE, ONLY APPLICABLE WHEN THE INITIAL RAMP RUNNING SLOPE IS OVER 5.0%.

SECONDARY CURB RAMP LANDINGS ARE REQUIRED FOR EVERY 30" OF VERTICAL RISE WHEN THE LONGITUDINAL RUNNING SLOPE IS GREATER THAN 5.0%.

CONTRACTION JOINTS SHALL BE CONSTRUCTED ALONG ALL GRADE BREAKS WITHIN THE PAR. 1/4" DEEP VISUAL JOINTS SHALL BE USED AT THE TOPS OF CONCRETE FLARES ADJACENT TO WALKABLE SURFACES.

ALL GRADE BREAKS WITHIN THE PAR SHALL BE PERPENDICULAR TO THE PATH OF TRAVEL, THUS BOTH SIDES OF A SLOPED WALKING SURFACE MUST BE EQUAL LENGTH. (EXCEPT AS STATED IN ⑥ BELOW.

TO ENSURE RAMPS AND LANDINGS ARE PROPERLY CONSTRUCTED, ALL INITIAL LANDINGS AT A TOP OF A RAMPED SURFACE (RUNNING SLOPE GREATER THAN 2%) SHALL BE FORMED AND PLACED SEPARATELY IN AN INDEPENDENT CONCRETE POUR. FOLLOW SIDEWALK REINFORCEMENT DETAILS ON SHEET 6 OF 6 FOR ALL SEPARATELY POURED INITIAL LANDINGS.

WHEN SIDEWALK IS AT BACK OF CURB, TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE.

MAINTAIN POSITIVE BOULEVARD DRAINAGE TO TOP OF CURB.

ALL RAMP TYPES SHOULD HAVE A MINIMUM 3' LONG RAMP LENGTH.

4' MINIMUM WIDTH OF DETECTABLE WARNING IS REQUIRED FOR ALL RAMPS. DETECTABLE WARNINGS SHALL CONTINUOUSLY EXTEND FOR A MIN. OF 24" IN THE PATH OF TRAVEL. DETECTABLE WARNING TO COVER THE ENTIRE PAR WIDTH OF SHARED-USE PATHS AND THE ENTIRE PAR WIDTH OF THE WALK WITH THE EXCEPTION OF 3" MAXIMUM ON EACH OUTSIDE EDGE WHICH ENSURES THE DETECTABLE WARNINGS ARE ENCASED IN CONCRETE WHEN ADJACENT TO TURF. WHEN ADJACENT TO CONCRETE FLARES 0" - 3" OFFSET IS ALLOWED.

WHEN DESIGNING OR ORDERING RECTANGULAR DETECTABLE WARNING SURFACES SHOULD BE 6" LESS THAN THE INCOMING PAR. ARC LENGTH OF THE RADIAL DETECTABLE WARNINGS SHOULD NOT BE GREATER THAN 20 FEET.

RECTANGULAR DETECTABLE WARNINGS SHALL BE SETBACK 3" FROM THE BACK OF CURB. RADIAL DETECTABLE WARNINGS SHALL BE SETBACK 3" MINIMUM TO 6" MAXIMUM FROM THE BACK OF CURB.

① MATCH FULL HEIGHT CURB.
② 4' MINIMUM DEPTH LANDING REQUIRED ACROSS TOP OF RAMP.
③ 3" HIGH CURB WHEN USING A 3' LONG RAMP, 4" HIGH CURB WHEN USING A 4' LONG RAMP.
④ SEE SHEET 4 OF 6, TYPICAL SIDE TREATMENT OPTIONS, FOR DETAILS ON FLARES AND RETURNED CURBS.
⑤ DETECTABLE WARNINGS MAY BE PART OF THE 4' X 4' MIN. LANDING AREA IF IT IS NOT FEASIBLE TO CONSTRUCT THE LANDING OUTSIDE OF THE DETECTABLE WARNING AREA.
⑥ THE GRADE BREAK SHALL BE PERPENDICULAR TO THE BACK OF WALK. THIS WILL ENSURE THAT THE GRADE BREAK IS PERPENDICULAR TO THE DIRECTION OF TRAVEL. (TYPICAL FOR ALL)
⑦ WHEN ADJACENT TO GRASS, GRADING SHALL ALWAYS BE USED WHEN FEASIBLE. V CURB, IF USED, SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS. WHEN ADJACENT TO PARKING LOTS, CONCRETE OR BITUMINOUS TAPERS LESS THAN 5% RUNNING SLOPE SHOULD BE USED OVER V CURB TO REDUCE TRIPPING HAZARDS AND FACILITATE SNOW & ICE REMOVAL.
⑧ A 7' MIN TOP RADIUS GRADE BREAK IS REQUIRED TO BE CONSTRUCTIBLE.
⑨ PAVE FULL WALK WIDTH.
⑩ "S" SLOPES ON FANS SHALL ONLY BE USED WHEN ALL OTHER FEASIBLE OPTIONS HAVE BEEN EVALUATED AND DEEMED IMPRACTICAL.
⑪ INTERMEDIATE CURB HEIGHTS TAPER SHALL RISE AT 8-10% TO A MINIMUM 3" CURB HEIGHT. REDUCE INTERMEDIATE CURB HEIGHT TO 2+ INCHES IF NECESSARY TO MATCH ADJACENT BOULEVARD OR SIDEWALK GRADES.

LEGEND

THESE LONGITUDINAL SLOPE RANGES SHALL BE THE STARTING POINT. IF SITE CONDITIONS WARRANT, LONGITUDINAL SLOPES UP TO 8.3% OR FLATTER ARE ALLOWED.

- Ⓢ INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND THE CROSS SLOPE SHALL NOT EXCEED 2.0%.
- Ⓕ INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%.
- (hatched) LANDING AREA - 4' X 4' MIN. (5' X 5' MIN. PREFERRED) DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS. LANDING SHALL BE FULL WIDTH OF INCOMING PARS.
- X" CURB HEIGHT

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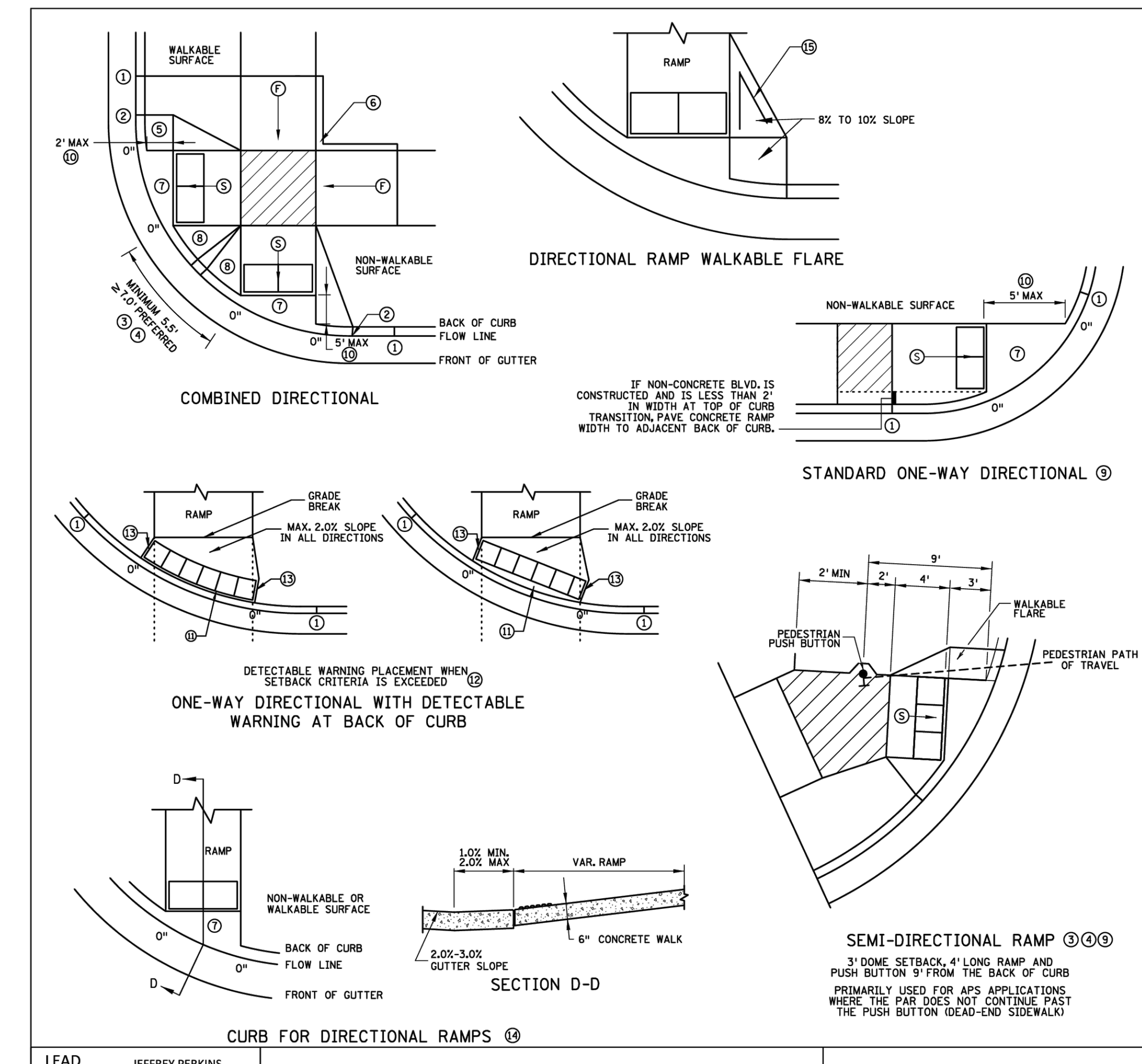

NOTES:

LANDINGS SHALL BE LOCATED ANYWHERE THE PEDESTRIAN ACCESS ROUTE (PAR) CHANGES DIRECTION, AT THE TOP OF RAMPS THAT HAVE RUNNING SLOPES GREATER THAN 5.0%, AND IF THE APPROACHING WALK IS INVERSE GRADE.

INITIAL CURB RAMP LANDINGS SHALL BE CONSTRUCTED WITHIN 15' FROM THE BACK OF CURB, WITH 6' FROM THE BACK OF CURB BEING THE PREFERRED DISTANCE, ONLY APPLICABLE WHEN THE INITIAL RAMP RUNNING SLOPE IS OVER 5.0%.

SECONDARY CURB RAMP LANDINGS ARE REQUIRED FOR EVERY 30" OF VERTICAL RISE WHEN THE LONGITUDINAL SLOPE IS GREATER THAN 5.0%.

CONTRACTION JOINTS SHALL BE CONSTRUCTED ALONG ALL GRADE BREAKS WITHIN THE PAR. 1/4" DEEP VISUAL JOINTS SHALL BE USED AT THE TOP GRADE BREAK OF CONCRETE FLARES ADJACENT TO WALKABLE SURFACES.

ALL GRADE BREAKS WITHIN THE PAR SHALL BE PERPENDICULAR TO THE PATH OF TRAVEL. THUS BOTH SIDES OF A SLOPED WALKING SURFACE MUST BE EQUAL LENGTH.

TO ENSURE INITIAL RAMPS AND INITIAL LANDINGS ARE PROPERLY CONSTRUCTED, LANDINGS SHALL BE CAST SEPARATELY. FOLLOW SIDEWALK REINFORCEMENT DETAILS ON SHEET 6 AND THE ADA SPECIAL PROVISION (PROSECUTION OF WORK).

TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE.

WHEN THE BOULEVARD IS 4' WIDE OR LESS, THE TOP OF CURB TAPER SHALL MATCH THE RAMP SLOPES TO REDUCE NEGATIVE BOULEVARD SLOPES FROM THE TOP BACK OF CURB TO THE PAR.

ALL RAMP TYPES SHOULD HAVE A MINIMUM 3' LONG RAMP LENGTH.

4' MINIMUM WIDTH OF DETECTABLE WARNING IS REQUIRED FOR ALL RAMPS. DETECTABLE WARNINGS SHALL CONTINUOUSLY EXTEND FOR A MIN. OF 24" IN THE PATH OF TRAVEL. DETECTABLE WARNING TO COVER THE ENTIRE PAR WIDTH OF SHARED-USE PATHS AND THE ENTIRE PAR WIDTH OF THE WALK WITH THE EXCEPTION OF 3" MAXIMUM ON EACH OUTSIDE EDGE WHICH ENSURES THE DETECTABLE WARNINGS ARE ENCASED IN CONCRETE WHEN ADJACENT TO TURF. WHEN ADJACENT TO CONCRETE FLARES 0" - 3" OFFSET IS ALLOWED.

WHEN DESIGNING OR ORDERING RECTANGULAR DETECTABLE WARNING SURFACES SHOULD BE 6" LESS THAN THE INCOMING PAR. ARC LENGTH OF THE RADIAL DETECTABLE WARNINGS SHOULD NOT BE GREATER THAN 20 FEET.

RADIAL DETECTABLE WARNINGS SHALL BE SETBACK 3" MINIMUM TO 6" MAXIMUM FROM THE BACK OF CURB. SEE NOTES ⑩ & ⑪ FOR INFORMATION REGARDING RECTANGULAR DETECTABLE WARNING PLACEMENT.

① MATCH FULL CURB HEIGHT.
② 3" HIGH CURB WHEN USING A 3' LONG RAMP. 4" HIGH CURB WHEN USING A 4' LONG RAMP.
③ 3" MINIMUM CURB HEIGHT (5.5' MIN. DISTANCE REQUIRED BETWEEN DOMES) 4" PREFERRED (7' MIN. DISTANCE REQUIRED BETWEEN DOMES).
④ THE "BUMP" IN BETWEEN THE RAMPS SHOULD NOT BE IN THE PATH OF TRAVEL FOR COMBINED DIRECTIONAL RAMPS. IF THIS OCCURS MODIFY THE RAMP LOCATION OR SWITCH RAMP TO A FAN/DEPRESSED CORNER.
⑤ WHEN USING CONCRETE PAVED FLARES ON THE OUTSIDE OF DIRECTIONAL RAMPS, AND ADJACENT TO A WALKABLE SURFACE, DIRECTIONAL RAMP FLARES SHALL BE USED. SEE THE DETAIL ON THIS SHEET.
⑥ GRADING SHALL ALWAYS BE USED WHEN FEASIBLE. V CURB, IF USED, SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS. WHEN ADJACENT TO PARKING LOTS, CONCRETE OR BITUMINOUS TAPERS SHOULD BE USED OVER V CURB TO REDUCE TRIPPING HAZARDS AND FACILITATE SNOW & ICE REMOVAL.
⑦ MAX. 2.0% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK AND DRAIN TO FLOW LINE. SHALL BE CONSTRUCTED INTEGRAL WITH CURB AND GUTTER.
⑧ 8% TO 10% WALKABLE FLARE.
⑨ PLACE DOMES AT THE BACK OF CURB WHEN ALLOWABLE SETBACK CRITERIA IS EXCEEDED.
⑩ FRONT EDGE OF DETECTABLE WARNING SHALL BE SET BACK 2' MAXIMUM WHEN ADJACENT TO WALKABLE SURFACE, AND 5' MAXIMUM WHEN ADJACENT TO NON-WALKABLE SURFACE WITH ONE CORNER SET 3" FROM BACK OF CURB. A WALKABLE SURFACE IS DEFINED AS A PAVED SURFACE ADJACENT TO A CURB RAMP WITHOUT RAISED OBSTACLES THAT COULD MISTAKENLY BE TRAVERSED BY A USER WHO IS VISUALLY IMPAIRED.
⑪ RECTANGULAR DETECTABLE WARNINGS MAY BE SETBACK UP TO 9" FROM THE BACK OF CURB WITH CORNERS SET 3" FROM BACK OF CURB. IF 9" SETBACK IS EXCEEDED USE RADIAL DETECTABLE WARNINGS.
⑫ FOR DIRECTIONAL RAMPS WITH THE DETECTABLE WARNINGS PLACED AT THE BACK OF CURB, THE DETECTABLE WARNINGS SHALL COVER THE ENTIRE WIDTH OF THE WALK/PATH. THIS ENSURES A DETECTABLE EDGE AND HELPS ELIMINATE THE CURB TAPER OBSTRUCTING THE PATH OF PEDESTRIAN TRAVEL.
⑬ THE CONCRETE WALK SHALL BE FORMED AND CONSTRUCTED PERPENDICULAR TO THE BACK OF CURB. MAINTAIN 3" BETWEEN EDGE OF DOMES AND EDGE OF CONCRETE.
⑭ TO BE USED FOR ALL DIRECTIONAL RAMPS, EXCEPT WHERE DOMES ARE PLACED ALONG THE BACK OF CURB.
⑮ PLACE 2 NO. 4 BARS 4 INCHES FROM SIDE OF FORMS WITH A MINIMUM 2 INCHES OF CONCRETE COVER ALONG EACH SIDE OF FLARE (INCIDENTAL).

LEGEND

THESE LONGITUDINAL SLOPE RANGES SHALL BE THE STARTING POINT. IF SITE CONDITIONS WARRANT, LONGITUDINAL SLOPES UP TO 8.3% OR FLATTER ARE ALLOWED.

- Ⓢ INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND THE CROSS SLOPE SHALL NOT EXCEED 2.0%.
- Ⓕ INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%.
- (hatched) LANDING AREA - 4' X 4' MIN. (5' X 5' MIN. PREFERRED) DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS. LANDING SHALL BE FULL WIDTH OF INCOMING PARS.
- X" CURB HEIGHT

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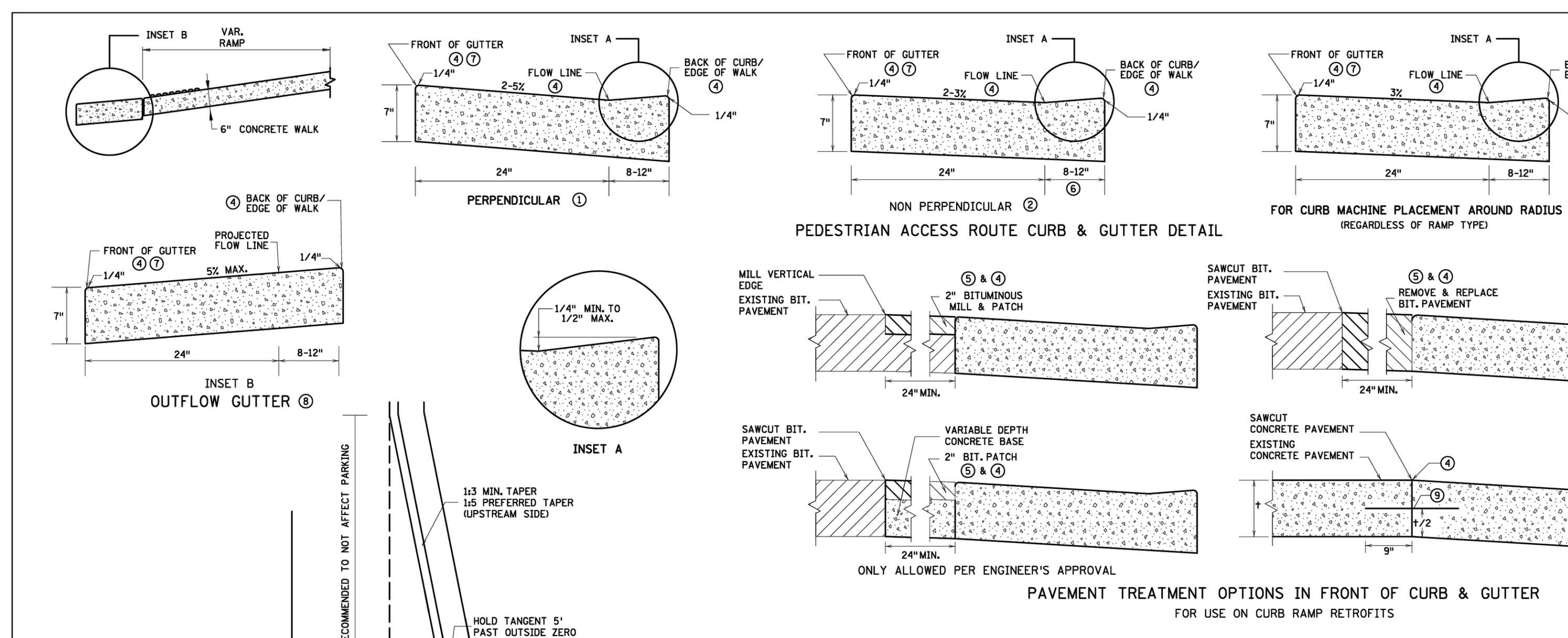

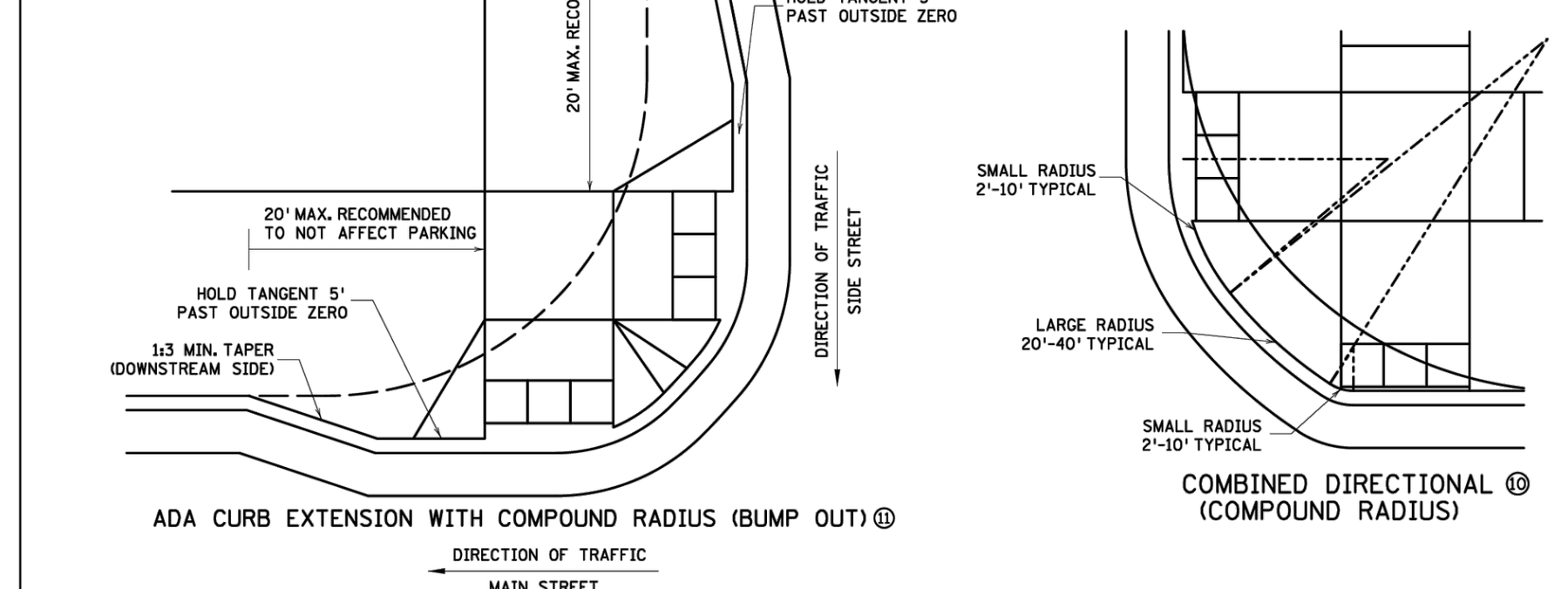

NOTES:

POSITIVE FLOW LINE DRAINAGE SHALL BE MAINTAINED THROUGH THE PEDESTRIAN ACCESS ROUTE (PAR) AT A 2% MAXIMUM.

NO PONDING SHALL BE PRESENT IN THE PAR.

ANY VERTICAL LIP THAT OCCURS AT THE FLOW LINE SHALL NOT BE GREATER THAN 1/4 INCH.

① FOR USE AT CURB CUTS WHERE THE PEDESTRIAN'S PATH OF TRAVEL IS ASSUMED PERPENDICULAR TO THE GUTTER FLOW LINE. RAMP TYPES INCLUDE: PERPENDICULAR, TIERED PERPENDICULAR, PARALLEL, AND DIAGONAL RAMPS.
② FOR USE AT CURB RAMPS WHERE THE PEDESTRIAN'S PATH OF TRAVEL IS ASSUMED NON PERPENDICULAR TO THE GUTTER FLOW LINE. RAMP TYPES INCLUDE: FANS & DEPRESSED CORNERS.
③ BEGIN GUTTER SLOPE TRANSITION 10' OUTSIDE OF ALL CURB RAMPS.
④ THERE SHALL BE NO VERTICAL DISCONTINUITIES GREATER THAN 1/4".
⑤ ELEVATION CHANGE TAKES PLACE FROM THE EXISTING TO NEW FRONT OF GUTTER. PATCH IS USED TO MATCH THE NEW GUTTER FACE INTO THE EXISTING ROADWAY.
⑥ VARIABLE WIDTH FOR DIRECTIONAL CURB APPLICATIONS. SEE SHEET 2 FOR DIRECTIONAL CURB SLOPE REQUIREMENTS.
⑦ TOP FRONT OF GUTTER SHALL BE CONSTRUCTED FLUSH WITH PROPOSED ADJACENT PAVEMENT ELEVATION. TOP 1.5" OF THE GUTTER FACE MUST BE A FORMED EDGE. PAR GUTTER SHALL NOT BE OVERLAID.
⑧ SHOULD BE USED AT VERTICALLY CONSTRAINED AREAS WHEN AT A DRAINAGE HIGH POINT OR SUPER ELEVATED ROADWAY SEGMENTS.
⑨ DRILL AND GROUT NO. 4 EPOXY-COATED 18" LONG TIE BARS AT 30" CENTER TO CENTER INTO EXISTING CONCRETE PAVEMENT 1' MINIMUM FROM ALL JOINTS.
⑩ HELPS PROVIDE TWO SEPARATE RAMPS, REDUCES THE DOME SETBACK LENGTH AND MINIMIZES DIRECTIONAL CURB. THIS RADIUS DESIGN CLOSELY FOLLOWS THE TURNING VEHICLE PATH WHILE OPTIMIZING CURB RAMP LENGTH.
⑪ CURB EXTENSIONS SHOULD BE USED IN VERTICALLY CONSTRAINED AREAS, USUALLY IN DOWNTOWN ROADWAY SEGMENTS WHERE ON-STREET PARKING IS AVAILABLE. CURB EXTENSIONS SHOULD BE CONSIDERED FOR APS INTERSECTIONS WHERE SPACE IS LIMITED. PUSH BUTTONS MUST MEET APS CRITERIA AS DESCRIBED IN THE PUSH BUTTON LOCATION DETAIL SHEET.

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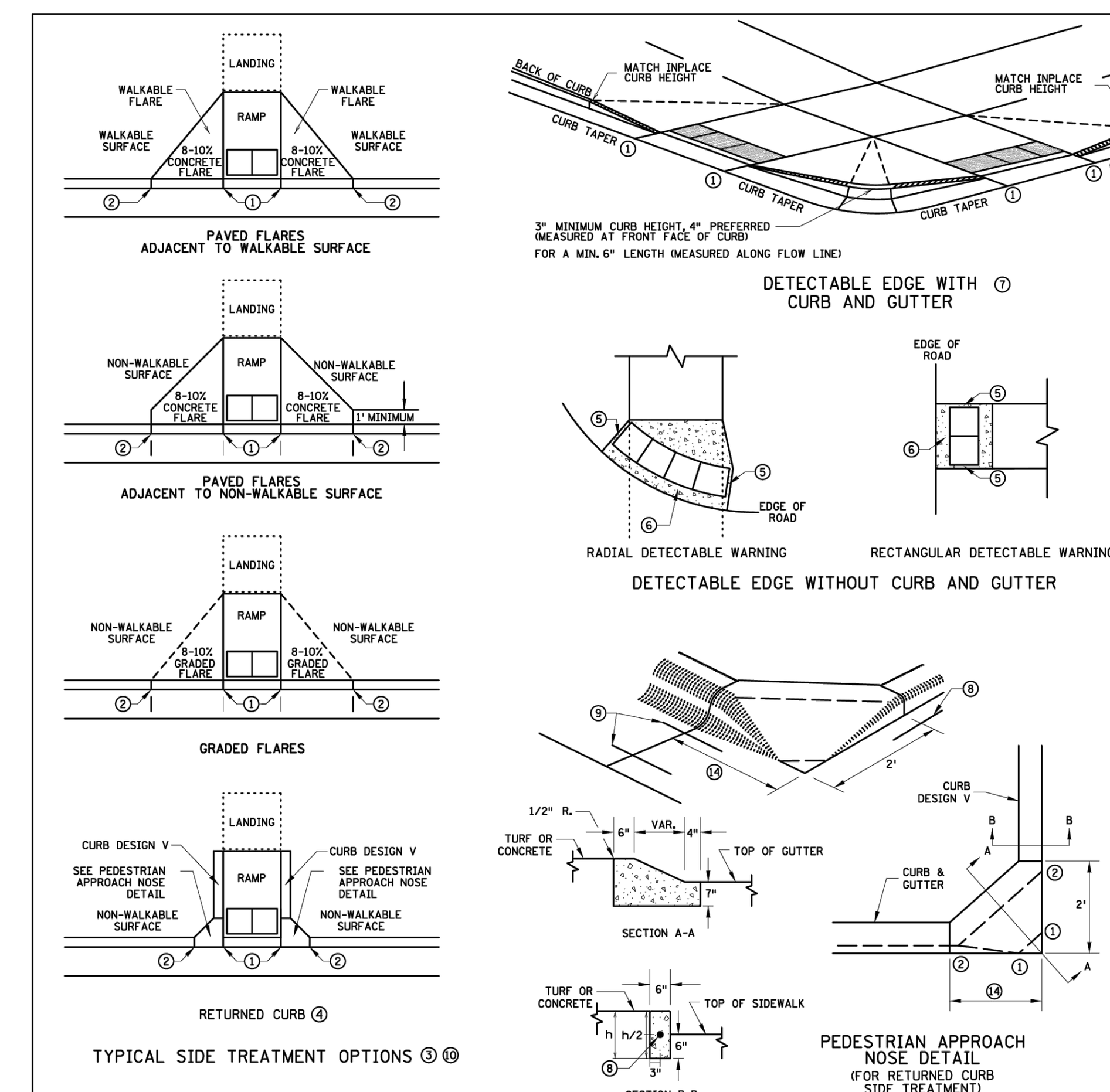

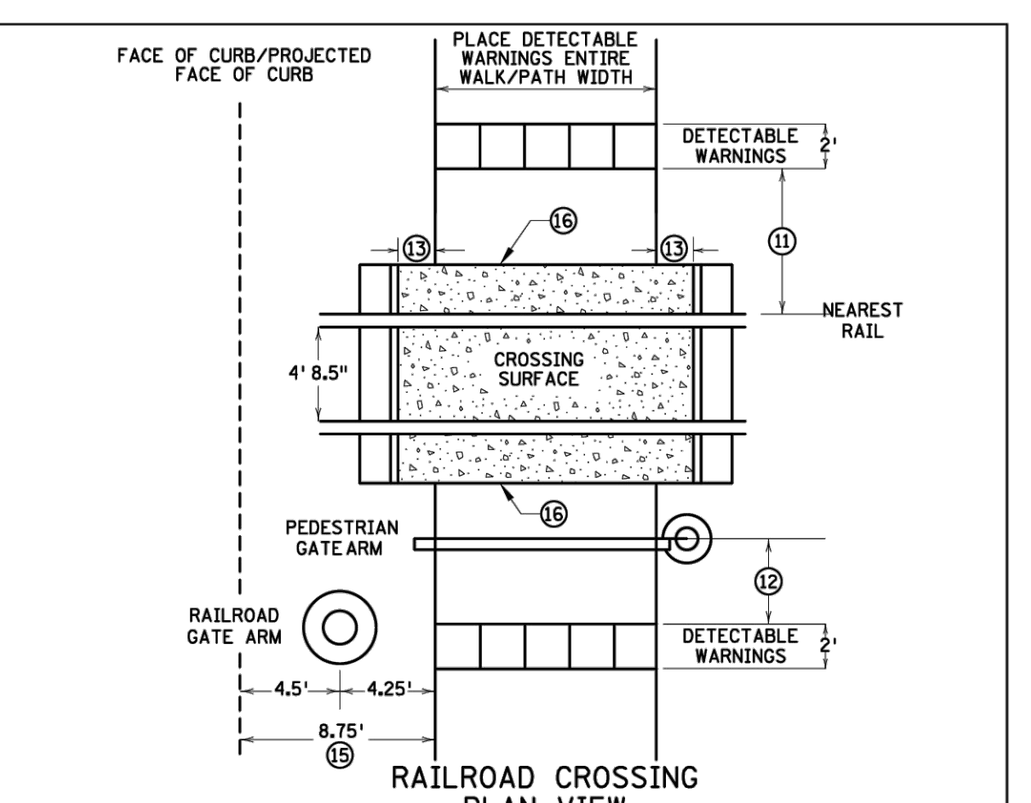

NOTES:

INTERMEDIATE CURB HEIGHTS TAPER SHALL RISE AT 8-10% TO A MINIMUM 3 INCH CURB HEIGHT. INCREASE CURB TAPER LENGTH AT LESS THAN 8% OR REDUCE INTERMEDIATE CURB HEIGHT TO 2+ INCHES IF NECESSARY TO MATCH ADJACENT BOULEVARD OR SIDEWALK GRADES.

SEE STANDARD PLATE 7038 AND THIS SHEET FOR ADDITIONAL DETAILS ON DETECTABLE WARNING.

A WALKABLE SURFACE IS DEFINED AS A PAVED SURFACE ADJACENT TO A CURB RAMP WITHOUT RAISED OBSTACLES THAT COULD MISTAKENLY BE TRAVERSED BY A USER WHO IS VISUALLY IMPAIRED.

CONCRETE FLARE LENGTHS ADJACENT TO NON-WALKABLE SURFACES SHOULD BE LESS THAN 8' LONG MEASURED ALONG THE RAMPS FROM THE BACK OF CURB.

① 0" CURB HEIGHT. SEE INSET A ON SHEET 3 OF 6.
② FULL CURB HEIGHT.
③ SIDE TREATMENTS ARE APPLICABLE TO ALL RAMP TYPES AND SHOULD BE IMPLEMENTED AS NEEDED AS FIELD CONDITIONS DICTATE. THE ENGINEER SHALL DETERMINE THE RAMP SIDE TREATMENTS BASED ON MAINTENANCE OF BOTH ROADWAY AND SIDEWALK, ADJACENT PROPERTY CONSIDERATIONS, AND MITIGATING CONSTRUCTION IMPACTS.
④ TYPICALLY USED FOR MEDIANS AND ISLANDS.
⑤ WHEN NO CONCRETE FLARES ARE PROPOSED, THE CONCRETE WALK SHALL BE FORMED AND CONSTRUCTED PERPENDICULAR TO THE EDGE OF ROADWAY. MAINTAIN 3" MAX. BETWEEN EDGE OF DOMES AND EDGE OF CONCRETE.
⑥ IF NO CURB AND GUTTER IS PLACED IN RURAL SECTIONS, DETECTABLE WARNINGS SHALL BE PLACED 1' FROM THE EDGE OF BITUMINOUS ROADWAY AND/OR BITUMINOUS SHARED-USE PATH TO PROVIDE VISUAL CONTRAST.
⑦ ALL CONSTRUCTED CURBS MUST HAVE A CONTINUOUS DETECTABLE EDGE FOR THE VISUALLY IMPAIRED. THIS DETECTABLE EDGE REQUIRES DETECTABLE WARNINGS WHEREVER THERE IS ZERO-INCH HIGH CURB. CURB TAPERS ARE CONSIDERED A DETECTABLE EDGE WHEN THE TAPER STARTS WITHIN 3" OF THE EDGE OF THE DETECTABLE WARNINGS, AND UNIFORMLY RISES TO A 3-INCH MINIMUM CURB HEIGHT. ANY CURB NOT PART OF A CURB TAPER AND LESS THAN 3 INCHES IN HEIGHT IS NOT CONSIDERED A DETECTABLE EDGE AND THEREFORE IS NOT COMPLIANT WITH ACCESSIBILITY STANDARDS.
⑧ DRILL AND GROUT 1 - NO. 4 12" LONG REINFORCEMENT BAR (EPOXY COATED) WITH 3" MIN. COVER. REINFORCEMENT BARS ARE NOT NEEDED IF THE APPROACH NOSE IS POURED INTEGRAL WITH THE V CURB.
⑨ DRILL AND GROUT 2 - NO. 4 12" LONG REINFORCEMENT BARS (EPOXY COATED) WITH 3" MIN. COVER. REINFORCEMENT BARS ARE NOT NEEDED IF THE APPROACH NOSE IS POURED INTEGRAL WITH THE CURB AND GUTTER.
⑩ SIDE TREATMENT EXAMPLES SHOWN ARE WHEN THE INITIAL LANDING IS APPROXIMATELY LEVEL WITH THE FULL HEIGHT CURB (I.E. 6' LONG RAMP FOR 6" HIGH CURB). WHEN THE INITIAL LANDING IS MORE THAN 1" BELOW FULL HEIGHT CURB REFER TO SHEETS 1 & 2 TO MODIFY THE CURB HEIGHT TAPERS AND MAINTAIN POSITIVE BOULEVARD DRAINAGE. CONSTRUCT THESE TAPERS AT 0"-3" AT 8-10%, THEN LESS THAN 5% FROM 3" CURB TO FULL CURB HEIGHT.
⑪ NEAREST EDGE OF DETECTABLE WARNING SURFACES SHALL BE PLACED 12' MINIMUM TO 15' MAXIMUM FROM THE NEAREST RAIL. FOR SKEWED RAILWAYS IN NO INSTANCE SHALL THE DETECTABLE WARNING BE CLOSER THAN 12' MEASURED PERPENDICULAR TO THE NEAREST RAIL.
⑫ WHEN PEDESTRIAN GATES ARE PROVIDED, DETECTABLE WARNING SURFACES SHALL BE PLACED ON THE SIDE OF THE GATES OPPOSITE THE RAIL, 2' FROM THE APPROACHING SIDE OF THE GATE ARM. THIS CRITERIA GOVERNS OVER NOTE ⑪.
⑬ CROSSING SURFACE SHALL EXTEND 2' MINIMUM PAST THE OUTSIDE EDGE OF WALK OR SHARED-USE PATH.
⑭ 3' FOR MEDIANS AND SPLITTER ISLANDS. NOSE CAN BE REDUCED TO 2' ON FREE RIGHT ISLANDS.
⑮ SIDEWALK TO BE PLACED 8.75' MIN. FROM THE FACE OF CURB/PROJECTED FACE OF CURB. THIS ENSURES MIN. CLEARANCE BETWEEN THE SIDEWALK AND GATE ARM COUNTERWEIGHT SUPPORTS.
⑯ CONSTRUCT WITH EXPANSION MATERIAL PER MNDOT SPECIFICATION 3702 TYPES A-E. EXPANSION MATERIAL SHALL MATCH FULL HEIGHT OF ADJACENT CONCRETE.

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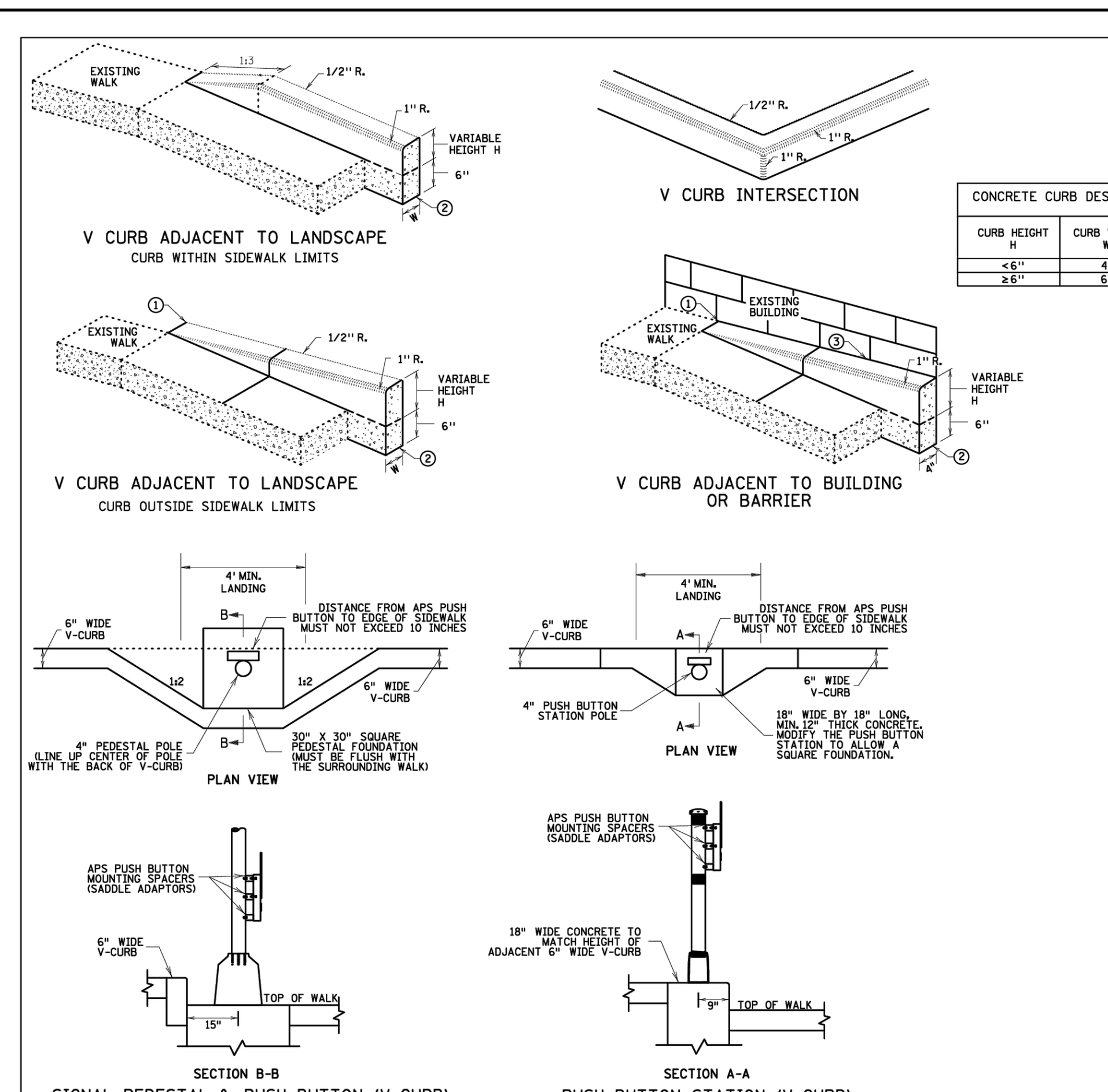
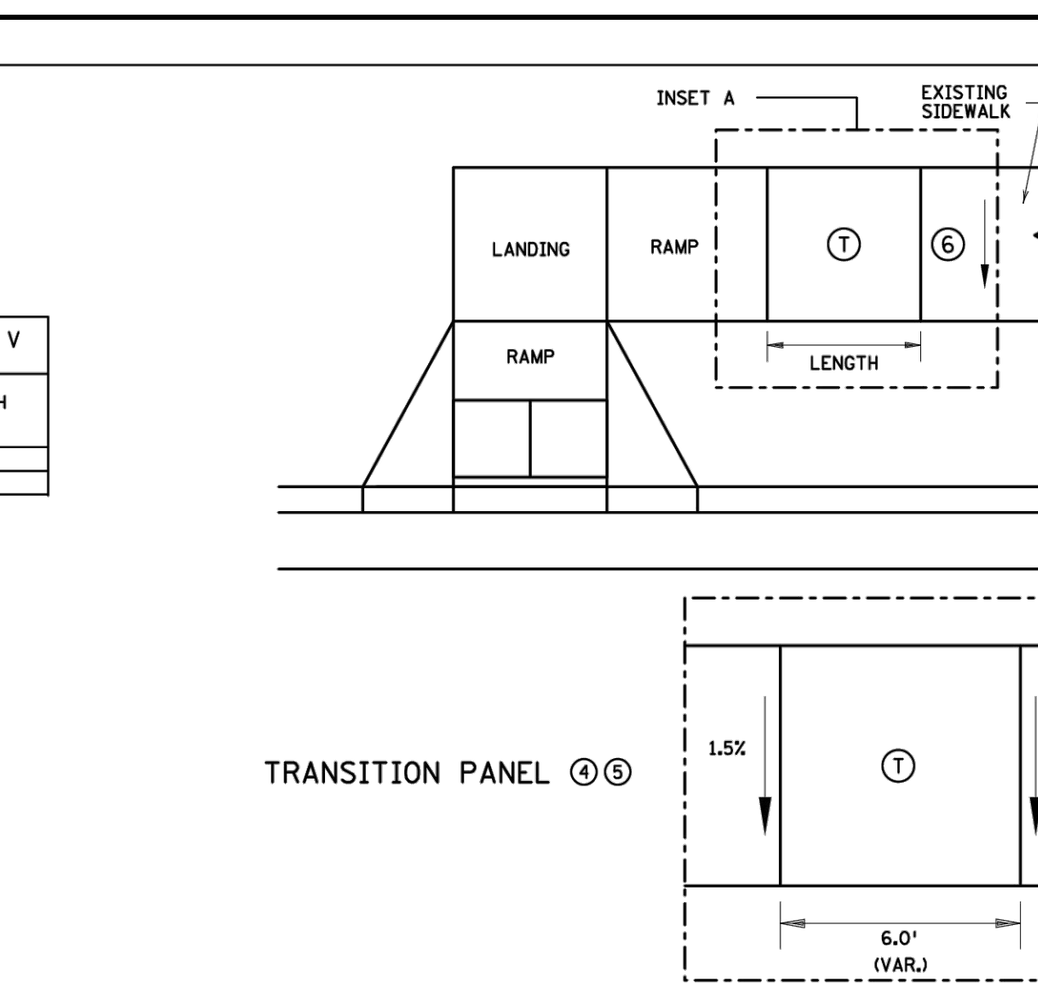


CONCRETE CURB DESIGN V	
CURB HEIGHT H	CURB WIDTH W
< 6"	4"
≥ 6"	6"



NOTES:

A WALKABLE FLARE IS AN 8-10% CONCRETE FLARE THAT IS REQUIRED WHEN THE FLARE IS ADJACENT TO A WALKABLE SURFACE, OR WHEN THE PEDESTRIAN PATH OF TRAVEL OF A PUSH BUTTON TRAVERSES THE FLARE.

ALL V CURB CONTRACTION JOINTS SHALL MATCH CONCRETE WALK JOINTS.

WHERE RIGHT-OF-WAY ALLOWS, USE OF V CURB SHOULD BE MINIMIZED. GRADING ADJACENT TURF OR SLOPING ADJACENT PAVEMENT IS PREFERRED.

V CURB SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS.

V CURB NEXT TO BUILDING SHALL BE A 4" WIDTH AND SHALL MATCH PREVIOUS TOP OF SIDEWALK ELEVATIONS.

① END TAPERS AT TRANSITION SECTION SHALL MATCH INPLACE SIDEWALK GRADES.
② ALL V CURB SHALL MATCH BOTTOM OF ADJACENT WALK.
③ CONSTRUCT USING APPROVED EXPANSION MATERIAL PER MNDOT TYPE A-E EXPANSION. LEAVE A MINIMUM ½" TOP GAP AND SEAL WITH MNDOT APPROVED SILICONE PER MNDOT SPEC 3722.
④ THE MAX. RATE OF CROSS SLOPE TRANSITIONING IS 1' LINEAR FOOT OF SIDEWALK PER HALF PERCENT CROSS SLOPE. WHEN PAR WIDTH IS GREATER THAN 6' OR THE RUNNING SLOPE IS GREATER THAN 5%, DOUBLE THE CALCULATED TRANSITION LENGTH.
⑤ TRANSITION PANELS ARE TO ONLY BE USED AFTER THE RAMP, OR IF NEEDED, LANDING ARE AT THE FULL CURB HEIGHT (TYPICAL SECTION).
⑥ EXISTING CROSS SLOPE GREATER THAN 2.0%.

LEGEND

THESE LONGITUDINAL SLOPE RANGES SHALL BE THE STARTING POINT. IF SITE CONDITIONS WARRANT, LONGITUDINAL SLOPES UP TO 8.3% OR FLATTER ARE ALLOWED.

- Ⓢ INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND THE CROSS SLOPE SHALL NOT EXCEED 2.0%.
- (hatched) LANDING AREA - 4' X 4' MIN. (5' X 5' MIN. PREFERRED) DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS. LANDING SHALL BE FULL WIDTH OF INCOMING PARS.
- Ⓣ TRANSITION PANEL(S) - TO BE USED FOR TRANSITIONING THE CROSS-SLOPE OF A RAMP TO THE EXISTING WALK CROSS-SLOPE. RATE OF TRANSITION SHOULD BE 0.5% PER 1 LINEAR FOOT OF WALK. SEE THIS SHEET FOR ADDITIONAL INFORMATION.

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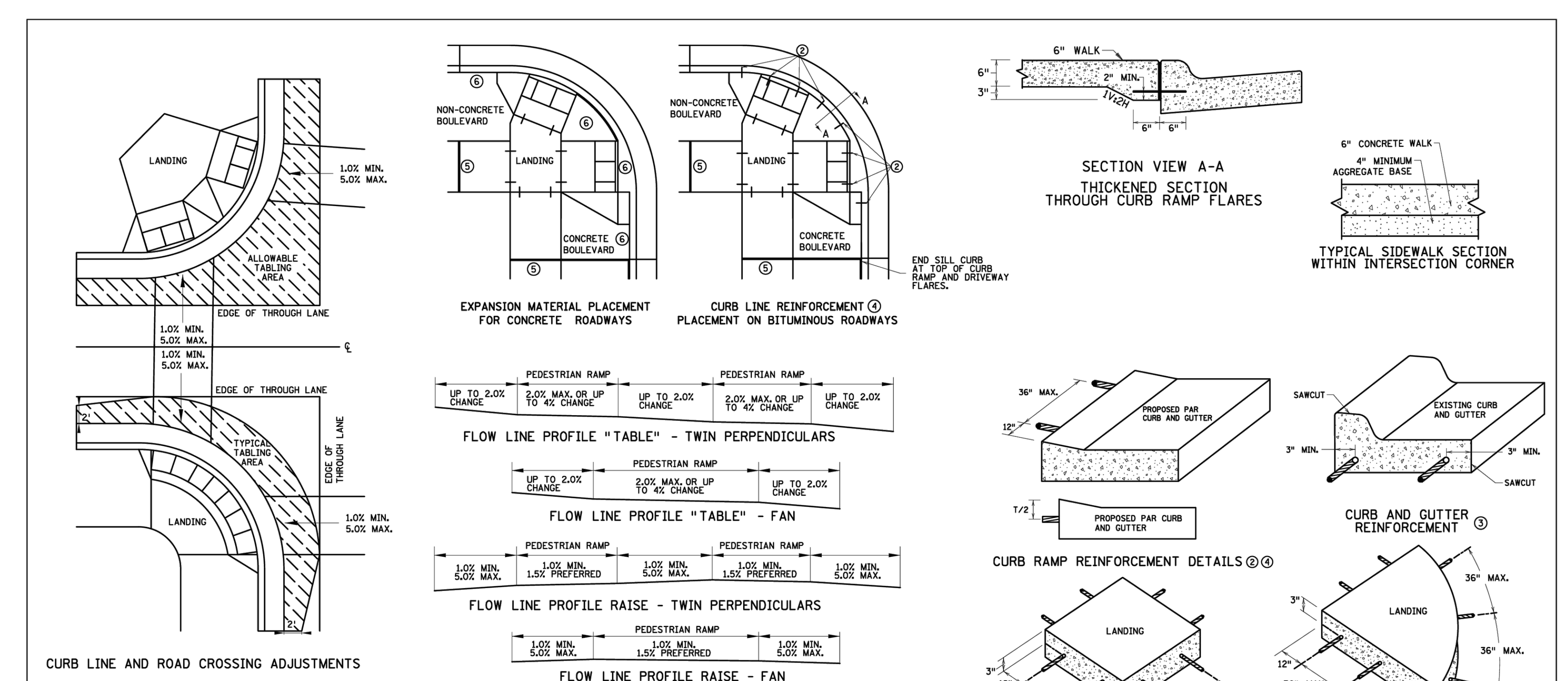

GENERAL NOTES:

"TABLING" OF CROSSWALKS MEANS MAINTAINING LESS THAN 2% CROSS SLOPE WITHIN A CROSSWALK, IS REQUIRED WHEN A ROADWAY IS IN A STOP OR YIELD CONDITION AND THE PROJECT SCOPE ALLOWS.

RECONSTRUCTION PROJECTS: ON FULL PAVEMENT REPLACEMENT PROJECTS "TABLING" OF ENTIRE CROSSWALK SHALL OCCUR WHEN FEASIBLE.

MILL & OVERLAY PROJECTS: "TABLING" OF FLOW LINES, IN FRONT OF THE PEDESTRIAN RAMP, IS REQUIRED WHEN THE EXISTING FLOW LINE IS GREATER THAN 2%. WARPING OF THE BITUMINOUS PAVEMENT CAN NOT EXTEND INTO THE THROUGH LANE. TABLE THE FLOW LINE TO 2% OR AS MUCH AS POSSIBLE WHILE ADHERING TO THE FOLLOWING CRITERIA:
1) 1.0% MIN. CROSS-SLOPE OF THE ROAD
2) 5.0% MAX. CROSS-SLOPE OF THE ROAD
3) "TABLE" FLOW LINE UP TO 4% CHANGE FROM EXISTING SLOPE IN FRONT OF PEDESTRIAN RAMP
4) UP TO 2% CHANGE IN FLOW LINE FROM EXISTING SLOPE BEYOND THE PEDESTRIAN CURB RAMP

STAND-ALONE ADA RETROFITS: FOLLOW MILL & OVERLAY CRITERIA ABOVE HOWEVER ALL PAVEMENT WARPING IS DONE WITH BITUMINOUS PATCHING ON BITUMINOUS ROADWAYS AND FULL-DEPTH APRON REPLACEMENT ON CONCRETE ROADWAYS.

RAISING OF CURB LINES SHOULD OCCUR IN VERTICALLY CONSTRAINED AREAS. RAISE THE CURB LINES ENOUGH TO ALLOW COMPLIANT RAMPS OR AS MUCH AS POSSIBLE WHILE ADHERING TO THE FOLLOWING CRITERIA:
1) 1.0% MIN. AND 5.0% MAXIMUM CROSS-SLOPE OF THE ROAD
2) 1.0% MIN. FLOW LINE (ON EITHER SIDE OF PEDESTRIAN RAMP) TO MAINTAIN POSITIVE DRAINAGE
3) 5.0% RECOMMENDED MAX. FLOW LINE
4) LONGITUDINAL THROUGH LANE ROADWAY TAPERS SHOULD BE 1" VERTICAL PER 15' HORIZONTAL

NOTES:

① TO ENSURE RAMPS AND LANDINGS ARE PROPERLY CONSTRUCTED, ALL INITIAL LANDINGS AT A TOP OF A RAMPED SURFACE (RUNNING SLOPE GREATER THAN 2%) SHALL BE FORMED AND PLACED SEPARATELY IN AN INDEPENDENT CONCRETE POUR. FOLLOW SIDEWALK REINFORCEMENT DETAILS ON THIS SHEET FOR ALL SEPARATELY POURED INITIAL LANDINGS.
② DRILL AND GROUT NO. 4 12" LONG REINFORCEMENT BARS (EPOXY COATED) AT 36" MAXIMUM CENTER TO CENTER MINIMUM 12" SPACING FROM CONSTRUCTION JOINTS. BARS TO BE ADJUSTED TO MATCH RAMP GRADE. BARS TO BE PAID BY EACH.
③ DRILL AND GROUT 2 - NO. 4 X 12'' LONG (6" EMBEDDED) REINFORCEMENT BARS (EPOXY COATED). REINFORCEMENT REQUIRED FOR ALL CONSTRUCTION JOINTS. BARS TO BE PAID BY EACH.
④ THIS CURB LINE REINFORCEMENT DETAIL SHALL BE USED ON BITUMINOUS ROADWAYS. FOR CONCRETE ROADWAYS, SEE NOTE 6.
⑤ CONSTRUCT WITH EXPANSION MATERIAL PER MNDOT SPECIFICATION 3702 TYPES A-E. EXPANSION MATERIAL SHALL MATCH FULL HEIGHT OF ADJACENT CONCRETE.
⑥ USE AN APPROVED TYPE F (1/4 INCH THICK) SEPARATION MATERIAL. SEPARATION MATERIAL SHALL MATCH FULL HEIGHT DIMENSION OF ADJACENT CONCRETE.

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I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

KURT D. QUAINTANCE, P.E.

Date: 01/28/2026 Reg.No. 24676

PRELIMINARY

McHATTIE LANDING
COTTAGE GROVE, MINNESOTA

PRELIMINARY CONSTRUCTION DETAILS

FOR

M/I HOMES OF MPLS/ST. PAUL, LLC.
5354 PARKDALE DRIVE #100, ST. LOUIS PARK, MN 55416

DRAWN BY	CTY
DATE	01/28/2026
REVISIONS	2026-02-17 REV PER CITY COMMENTS
CAD FILE	24310 D
PROJECT NO.	24310-00
SHEET	C8.4

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LEGEND

- SAVED TREE
- REMOVE TREE
- EXISTING TREE (OFF-SITE)
- PROPOSED TREE REMOVAL AREA

NOTES

1. REFER TO SHEET C9.4 FOR TREE DATA TABULATION
2. TREE PRESERVATION (QUALIFYING TREES, MITIGATION) BASED ON CITY CODE 11-3-13: TREE PRESERVATION.
3. ALLOWED REMOVAL = 25% OF EXISTING QUALIFYING TREES
4. TREE INCH MITIGATION = 50% OF QUALIFYING TREE INCHES BEYOND ALLOWED REMOVAL THRESHOLD.
5. TREE REMOVAL AREA = 1.9 AC

REMOVAL/MITIGATION SUMMARY	DBH (INCHES)	TREE (EACH)
TOTAL ONSITE	2343	148
EXEMPT (INVASIVE)	730	37
TOTAL QUALIFYING TREES	1613	111
ALLOWED REMOVAL (25%)	403	N/A
SAVED	625	49
NON-EXEMPT REMOVAL	988	62
EXCESS REMOVAL	585	N/A
MITIGATION REQUIRED (50%)	293	N/A

BENCHMARKS

#1 TNH NW QUAD JARVIS AVE SO & MILITARY RD
ELEV=961.86

#2 TNH NE QUAD 66TH AVE SO & RAVINE PARKWAY SO
ELEV=939.92

Know what's **below.** **Call** before you dig.

SCALE IN FEET
0 100 200

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KURT D. QUANRUD, P.E.
Reg.No. 24670
Date: 01/28/2026

PRELIMINARY

McHATTIE LANDING
COTTAGE GROVE, MINNESOTA

PRELIMINARY TREE PRESERVATION PLAN

FOR
M/I HOMES OF MPLS/ST. PAUL, LLC.
5354 PARKDALE DRIVE #100, ST. LOUIS PARK, MN 55416

DRAWN BY
CTY

DATE
01/28/2026

REVISIONS
2026-02-17 REV PER CITY COMMENTS

CAD FILE
24310 TP

PROJECT NO.
24310-00

C9.0

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C9.1	
PROJECT NO. 24310-00	
CAD FILE 24310 TP	
DATE 01/28/2026	
REVISIONS	2026-02-06 PER PER CITY COMMENTS
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McHATTIE LANDING

COTTAGE GROVE, MINNESOTA

PRELIMINARY TREE PRESERVATION PLAN

FOR

M/I HOMES OF MPLS/ST. PAUL, LLC.

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KURT D. QUAINTANCE, P.E.

Date: 01/28/2026 Reg.No. 24678

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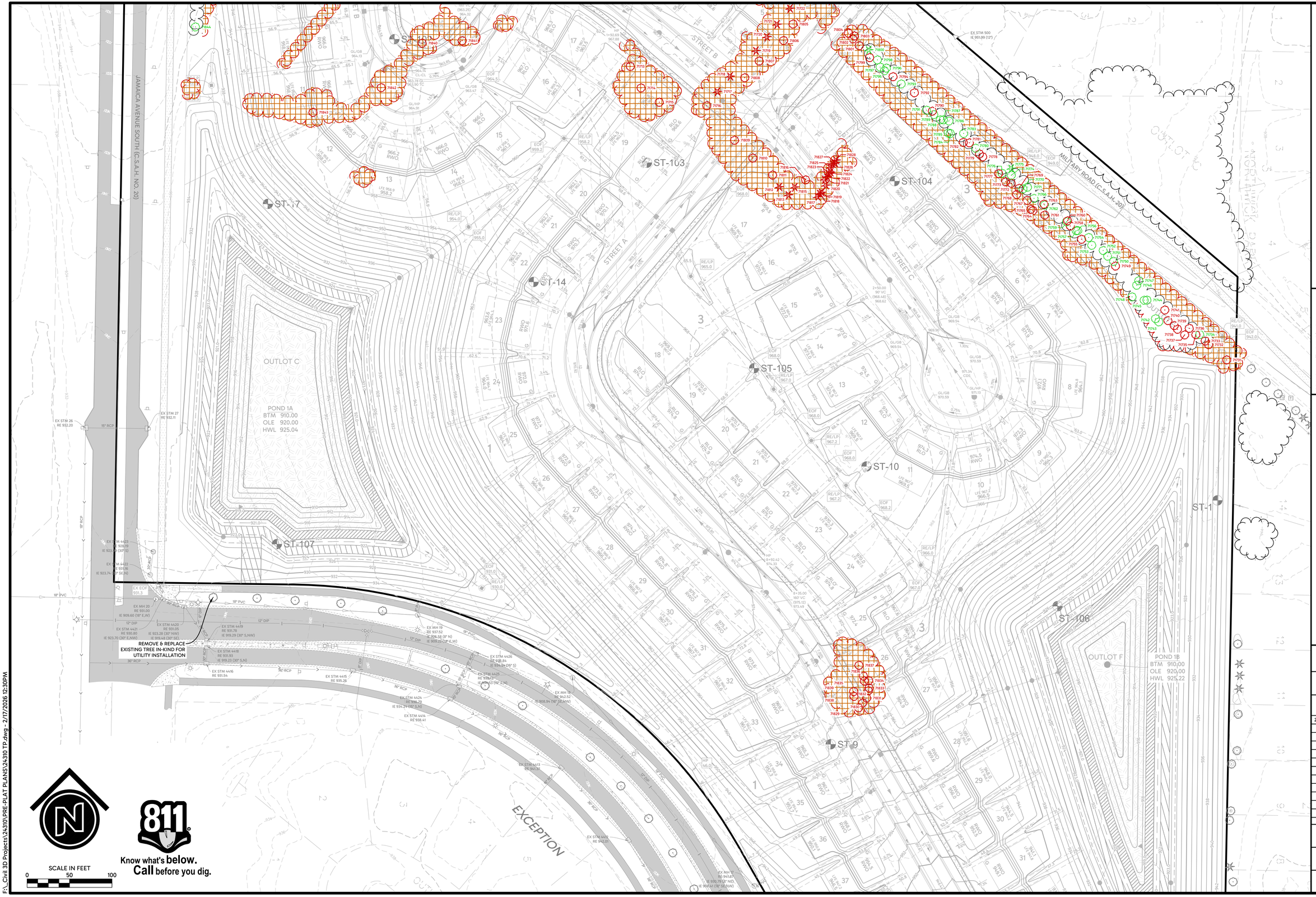

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KURT D. QUAINTANCE, P.E.

Date: 01/28/2026 Reg.No. 24670

PRELIMINARY

McHATTIE LANDING

COTTAGE GROVE, MINNESOTA

FOR

M/I HOMES OF MPLS/ST. PAUL, LLC.

5354 PARKDALE DRIVE #100, ST. LOUIS PARK, MN 55416

PRELIMINARY TREE PRESERVATION PLAN

DRAWN BY
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DATE
01/28/2026

REVISIONS

2026-02-17 REV PER CITY COMMENTS

CAD FILE
24310 TP

PROJECT NO.
24310-00

C9.2

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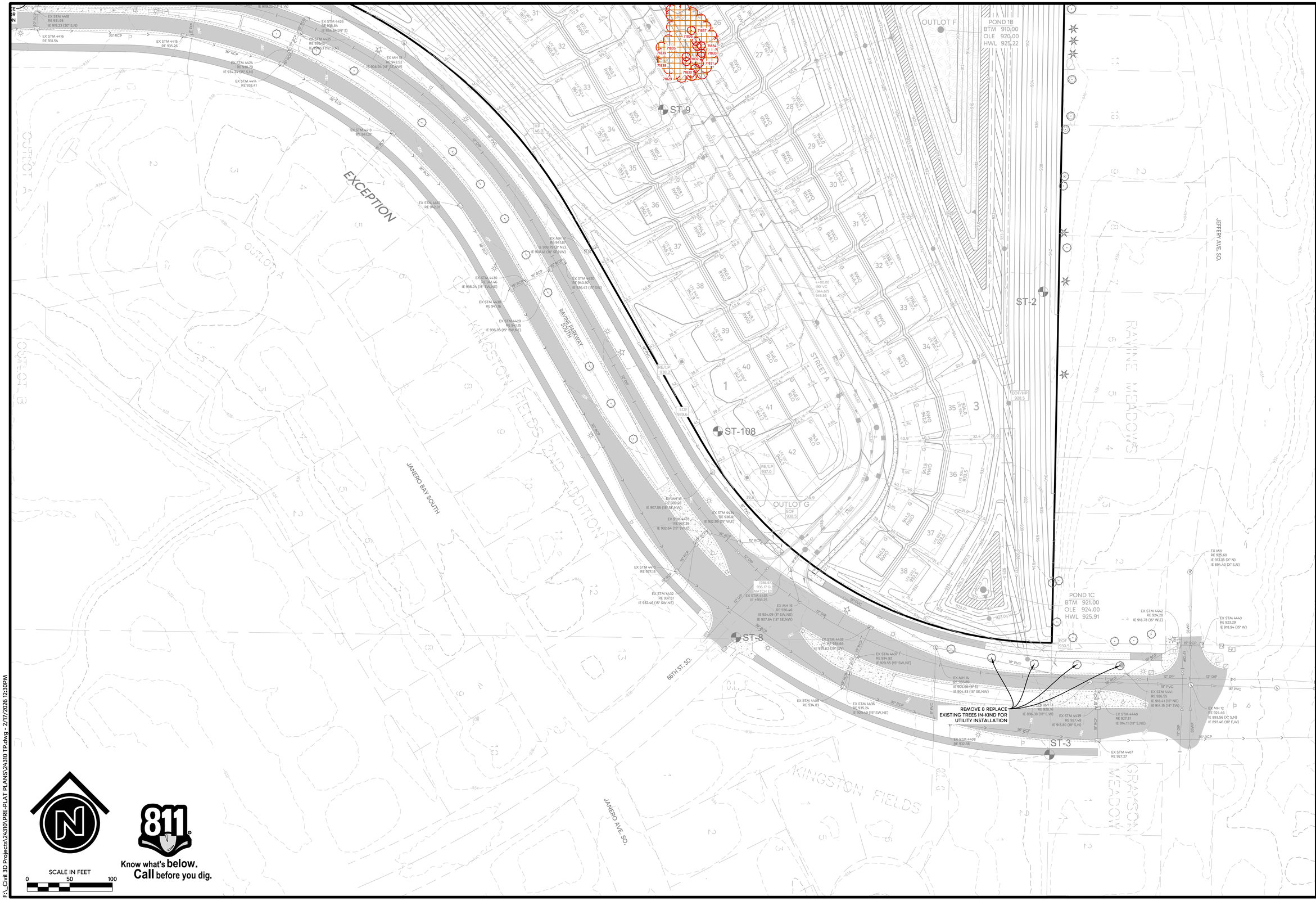

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KURT D. QUANRUD, P.E.

Date: 01/28/2026 Reg.No. 24670

PRELIMINARY

McHATTIE LANDING
COTTAGE GROVE, MINNESOTA

PRELIMINARY TREE PRESERVATION PLAN

FOR
M/I HOMES OF MPLS/ST. PAUL, LLC.
5354 PARKDALE DRIVE #100, ST. LOUIS PARK, MN 55416

DRAWN BY	CTY
DATE	01/28/2026
REVISIONS	
2026-02-17 REV PER CITY COMMENTS	
CAD FILE	24310 TP
PROJECT NO.	24310-00
	C9.3

TagID/Point #	DBH	Common Name	Scientific Name	Status	Notes
71712	10,11,13	Birch	*Betula*	REMOVE	
71713	16	Ash	*Fraxinus*	REMOVE - EXEMPT	
71714	19	Soft Maple	*Acer*	REMOVE	
71715	24	Ash	*Fraxinus*	REMOVE - EXEMPT	
71716	27	Ash	*Fraxinus*	REMOVE - EXEMPT	
71717	19	Spruce	*Picea*	REMOVE	
71718	19	Spruce	*Picea*	REMOVE	
71719	22	Spruce	*Picea*	REMOVE	
71720	19	Spruce	*Picea*	REMOVE	
71721	21	Spruce	*Picea*	REMOVE	
71722	19	Spruce	*Picea*	REMOVE	
71723	12	Crab Apple	*Malus*	REMOVE - EXEMPT	
71724	12	Crab Apple	*Malus*	REMOVE - EXEMPT	
71725	16	Spruce	*Picea*	REMOVE	
71726	18	Spruce	*Picea*	REMOVE	
71727	23	Pine	*Pinus*	REMOVE	
71728	12	Spruce	*Picea*	REMOVE	
71729	18	Maple	*Acer*	REMOVE	
71730	37	Maple	*Acer*	REMOVE	
71731	16	Hackberry	*Celtis occidentalis*	REMOVE	
71732	16,17	Ash	*Fraxinus*	REMOVE - EXEMPT	
71733	9	Ash	*Fraxinus*	REMOVE - EXEMPT	
71734	17	Hackberry	*Celtis occidentalis*	SAVE	
71735	11	Ash	*Fraxinus*	REMOVE - EXEMPT	
71736	12	Ash	*Fraxinus*	REMOVE - EXEMPT	
71737	19	Ash	*Fraxinus*	REMOVE - EXEMPT	
71738	7,8	Ash	*Fraxinus*	REMOVE - EXEMPT	
71739	15	Ash	*Fraxinus*	REMOVE - EXEMPT	
71740	13	Ash	*Fraxinus*	REMOVE - EXEMPT	
71741	11,12	Ash	*Fraxinus*	REMOVE - EXEMPT	
71742	6	Maple	*Acer*	SAVE	
71743	6	Maple	*Acer*	SAVE	
71744	9	Hackberry	*Celtis occidentalis*	SAVE	
71745	11	Hackberry	*Celtis occidentalis*	SAVE	
71746	10	Hackberry	*Celtis occidentalis*	SAVE	
71747	7	Hackberry	*Celtis occidentalis*	SAVE	
71748	11,12	Hackberry	*Celtis occidentalis*	SAVE	
71749	8	Ash	*Fraxinus*	REMOVE - EXEMPT	
71750	8	Hackberry	*Celtis occidentalis*	SAVE	
71751	18	Hackberry	*Celtis occidentalis*	SAVE	
71752	9	Hackberry	*Celtis occidentalis*	SAVE	
71753	26	Hackberry	*Celtis occidentalis*	SAVE	
71754	10,6	Hackberry	*Celtis occidentalis*	SAVE	
71755	9	Ash	*Fraxinus*	REMOVE - EXEMPT	
71756	9	Hackberry	*Celtis occidentalis*	SAVE	
71757	17	Hackberry	*Celtis occidentalis*	SAVE	
71758	13	Ash	*Fraxinus*	REMOVE - EXEMPT	
71759	9	Hackberry	*Celtis occidentalis*	SAVE	
71760	16	Ash	*Fraxinus*	REMOVE - EXEMPT	
71761	9	Hackberry	*Celtis occidentalis*	REMOVE	
71762	11	Hackberry	*Celtis occidentalis*	SAVE	
71763	15,12	Ash	*Fraxinus*	REMOVE - EXEMPT	
71764	7	Hackberry	*Celtis occidentalis*	REMOVE	
71765	11	Hackberry	*Celtis occidentalis*	REMOVE	
71766	9	Hackberry	*Celtis occidentalis*	SAVE	
71767	9	Hackberry	*Celtis occidentalis*	REMOVE	
71768	8	Hackberry	*Celtis occidentalis*	REMOVE	
71769	8	Hackberry	*Celtis occidentalis*	REMOVE	
71770	7	Hackberry	*Celtis occidentalis*	SAVE	
71771	8	Hackberry	*Celtis occidentalis*	SAVE	
71772	11	Hackberry	*Celtis occidentalis*	REMOVE	
71773	18	Hackberry	*Celtis occidentalis*	REMOVE	
71774	6	Hackberry	*Celtis occidentalis*	SAVE	
71775	18	Pine	*Pinus*	SAVE	
71776	9	Hackberry	*Celtis occidentalis*	SAVE	
71777	12	Elm	*Ulmus*	REMOVE - EXEMPT	
71778	14	Box Elder	*Acer negundo*	REMOVE - EXEMPT	
71779	17	Box Elder	*Acer negundo*	REMOVE - EXEMPT	
71780	12	Hackberry	*Celtis occidentalis*	SAVE	
71781	12	Box Elder	*Acer negundo*	REMOVE - EXEMPT	
71782	18,11	Box Elder	*Acer negundo*	REMOVE - EXEMPT	
71783	7	Hackberry	*Celtis occidentalis*	SAVE	
71784	9	Hackberry	*Celtis occidentalis*	SAVE	
71785	8	Hackberry	*Celtis occidentalis*	SAVE	
71786	8	Hackberry	*Celtis occidentalis*	SAVE	
71787	13	Hackberry	*Celtis occidentalis*	SAVE	
71788	11	Hackberry	*Celtis occidentalis*	SAVE	
71789	7	Hackberry	*Celtis occidentalis*	SAVE	
71790	12,6	Box Elder	*Acer negundo*	REMOVE - EXEMPT	
71791	11	Hackberry	*Celtis occidentalis*	SAVE	
71792	20,18	Box Elder	*Acer negundo*	REMOVE - EXEMPT	
71793	7,10,11,18	Hackberry	*Celtis occidentalis*	SAVE	
71794	10,11,12	Box Elder	*Acer negundo*	REMOVE - EXEMPT	
71795	6	Hackberry	*Celtis occidentalis*	SAVE	
71796	9	Hackberry	*Celtis occidentalis*	SAVE	
71797	7,7,7,5	Hackberry	*Celtis occidentalis*	SAVE	
71798	7	Hackberry	*Celtis occidentalis*	SAVE	
71799	19	Ash	*Fraxinus*	REMOVE - EXEMPT	
71800	21	Pine	*Pinus*	SAVE	

TagID/Point #	DBH	Common Name	Scientific Name	Status	Notes
71801	7,8	Hackberry	*Celtis occidentalis*	REMOVE	
71802	7,7,9,10	Hackberry	*Celtis occidentalis*	REMOVE	
71803	14	Hackberry	*Celtis occidentalis*	REMOVE	
71804	12	Hackberry	*Celtis occidentalis*	REMOVE	
71805	12	Hackberry	*Celtis occidentalis*	REMOVE	
71806	9	Hackberry	*Celtis occidentalis*	REMOVE	
71807	14,18	Maple	*Acer*	REMOVE	
71808	18	Birch	*Betula*	REMOVE	
71809	27	Maple	*Acer*	REMOVE	
71810	35	Maple	*Acer*	REMOVE	
71811	25	Maple	*Acer*	REMOVE	
71812	12	Spruce	*Picea*	REMOVE	
71813	17	Spruce	*Picea*	REMOVE	
71815	22	Spruce	*Picea*	REMOVE	
71816	33	Maple	*Acer*	REMOVE	
71817	12	Spruce	*Picea*	REMOVE	
71818	9	Spruce	*Picea*	REMOVE	
71819	12	Spruce	*Picea*	REMOVE	
71820	9	Spruce	*Picea*	REMOVE	
71821	6	Spruce	*Picea*	REMOVE	
71822	10	Spruce	*Picea*	REMOVE	
71823	11	Spruce	*Picea*	REMOVE	
71824	6	Spruce	*Picea*	REMOVE	
71825	14	Spruce	*Picea*	REMOVE	
71826	12	Spruce	*Picea*	REMOVE	
71827	8	Spruce	*Picea*	REMOVE	
71828	15	Spruce	*Picea*	REMOVE	
71829	14	Ash	*Fraxinus*	REMOVE - EXEMPT	
71830	8	Hackberry	*Celtis occidentalis*	REMOVE	
71831	6	Hackberry	*Celtis occidentalis*	REMOVE	
71832	11	Hackberry	*Celtis occidentalis*	REMOVE	
71833	12	Hackberry	*Celtis occidentalis*	REMOVE	
71834	7	Hackberry	*Celtis occidentalis*	REMOVE	
71835	21	Hackberry	*Celtis occidentalis*	REMOVE	
71836	8	Hackberry	*Celtis occidentalis*	REMOVE	
71837	16	Ash	*Fraxinus*	REMOVE - EXEMPT	
71838	15	Hackberry	*Celtis occidentalis*	REMOVE	
71839	25	Hackberry	*Celtis occidentalis*	REMOVE	
71840	17,10,14,11	Box Elder	*Acer negundo*	REMOVE - EXEMPT	
71841	8,7,7	Hackberry	*Celtis occidentalis*	REMOVE	
71842	19,12,11	Box Elder	*Acer negundo*	REMOVE - EXEMPT	
71843	19	Box Elder	*Acer negundo*	REMOVE - EXEMPT	
71844	7,7,7	Hackberry	*Celtis occidentalis*	SAVE	
71845	7,8,11,12	Hackberry	*Celtis occidentalis*	SAVE	
71846	7,6	Hackberry	*Celtis occidentalis*	SAVE	
71847	13	Hackberry	*Celtis occidentalis*	SAVE	
71848	9	Hackberry	*Celtis occidentalis*	SAVE	
71849	9,8	Hackberry	*Celtis occidentalis*	SAVE	
71850	12	Hackberry	*Celtis occidentalis*	SAVE	
71851	7	Hackberry	*Celtis occidentalis*	SAVE	
71852	11	Hackberry	*Celtis occidentalis*	SAVE	
71853	7	Hackberry	*Celtis occidentalis*	SAVE	
71854	7	Hackberry	*Celtis occidentalis*	SAVE	
71855	13	Box Elder	*Acer negundo*	REMOVE - EXEMPT	
71856	14	Box Elder	*Acer negundo*	REMOVE - EXEMPT	
71857	12	Box Elder	*Acer negundo*	REMOVE - EXEMPT	
71858	8	Hackberry	*Celtis occidentalis*	REMOVE	
71859	12	Hackberry	*Celtis occidentalis*	REMOVE	
71860	13,12,9,8	Box Elder	*Acer negundo*	REMOVE - EXEMPT	

SAVE
REMOVE
REMOVE - EXEMPT

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KURT D. QUANRUD, P.E.

Date: 01/28/2026 Reg.No. 24670

PRELIMINARY

McHATTIE LANDING

COTTAGE GROVE, MINNESOTA

PRELIMINARY TREE PRESERVATION PLAN

FOR

M/I HOMES OF MPLS/ST. PAUL, LLC.

5354 PARKDALE DRIVE #100, ST. LOUIS PARK, MN 55416

DRAWN BY
CTY

DATE
01/28/2026

REVISIONS

2026-02-17 REV PER CITY COMMENTS

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PROJECT NO.
24310-00

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Oakdale, MN 55128

Ph: (651) 704-9970
Bolton-Menk.com

MEMORANDUM

Date: 02/17/2026

To: Paul Sponholz, PE

From: Mike Boex, PE

Subject: McHattie Landing Plan Review
City of Cottage Grove, MN
Project No.: 26X.142253.000

This memo summarizes the review of the Mchattie Landing Preliminary Plat Submittal, submitted by Hill Incorporated, dated 1/28/2026.

Preliminary Plat Plans

Sheet C1.0:

1. On the final plans, identify the vertical datum of the benchmarks used on the project.
2. On the final plans, please add a note on the cover sheet that the City of Cottage Grove's Standard Specifications for Street and Utility Construction shall govern for all improvements within the public right-of-way, public easement, or public parcels.

Sheet C2.0:

3. Monument:
    a. The monument sign on Sheet L3.0 will require a separate HOA outlot to be dedicated. Similar to the adjacent lots, the monument outlot should have drainage and utility easement to allow for consistent private utility installation outside of right-of-way.
4. Denote ownership of the proposed outlots in the site data table (e.g. Outlot C = HOA).
5. Easement widths to be confirmed with final plan and profile sheets. The minimum easement width should be twice as wide as the maximum pipe depth to invert.

Sheet C2.1:

6. Remove the sidewalk around Outlot C. Pedestrian ramps should remain.
7. Where trails intersect, provide 10-ft min. radii.

Sheet C2.2:

8. City pond outlots should be graded to 4:1 or less steep. Non-ponding outlots would then be owned and maintained by the HOA (e.g. the area along Jamaica Avenue north of the pondFor homes along Ravine Parkway, extend the lots to right-of-way and obtain a vegetative buffer easement to the HOA to ensure property owners don't remove the necessary vegetative buffer.

Sheet C3.7:

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9. To clarify, the developer shall coordinate with private utilities and remove overhead utilities along the Military Road corridor and relocate underground, if needed. Relocation/replacement of overhead facilities will not be allowed. Please update notes accordingly.
10. Add a note to provide well sealing records to the city once complete.
11. Remove and replace the remaining section of trail (35-lf) by Jeffery Avenue to the existing pedestrian ramp.
12. Depict street and curb impacts of the proposed storm sewer connections to Ravine Parkway. Street patches should extend to lane lines or median.

Sheet C4.1:

13. Maximum intersection approach grade (all streets): provide a 2% maximum grade for the first 100-ft approaching an intersection (at a yield or stop condition), as measured from the intersecting street's curb line. This will be checked with final plans and profiles.
14. Depict driveway locations; the City would like to understand what is proposed for areas such as Lots 1 and 7 Block 1.
15. Public ponds should be designed to an 8-ft max. depth for maintenance.

Sheet C4.2:

16. Provide a 5-ft minimum horizontal distance at a 6H:1V maximum slope immediately adjacent to a pedestrian facility (trail) if the adjacent slopes are steeper than 4H:1V.
    a. Please confirm the trail along Ravie Parkway meets this standard relative to all the proposed pond grading. A separate detail in the final plans or additional notes would help clarify this.
17. It is acknowledged that the proposed 3H:1V slopes adjacent to ponds are proposed due to site constraints, however access to some storm structures will be difficult as depicted. Provide a secondary 10-ft maintenance bench at a higher elevation to access upper storm structures. The bench should run approximately as shown on the sketch attached to this memo, between STM-8/STRM-9, and along STM-36, STM-40, etc. The same maintenance bench grades should be provided (10H:1V max. cross slope, 6H:1V max. longitudinal slope).

Sheet C4.4:

18. MnDOT Seed Mix Mesic Inslope (MI), formerly 25-141 should be used within Military Road right-of-way along the Military trail corridor.

Sheet C4.8:

19. The city would prefer that the topsoil stockpile in Outlot C be moved over some lots to hopefully minimize the need to cross curb with equipment.

Sheet C5.1:

20. Where needed, irrigation services shall conform to city standard detail SER-12 (4" DIP and gate valve), such as Outlot C.
21. Attached are the as-built plans for irrigation along Ravine Parkway. An irrigation service should be provided to run the system adjacent to the development. The HOA will be responsible for irrigating this section of the boulevard and maintaining the system.

Sheet C6.0:

22. Avoid placing storm pipe behind the curb as that location typically conflicts with streetlight bases, signs, etc. This may require structures to be moved or additional structures to be added;

storm manholes can be used as necessary if catch basins aren't needed for drainage. This comment applies to all sheets.

23. Rear-yard storm sewer:
    a. Per the City's engineering standards, rear yard storm sewer should be limited to 300-lf maximum lengths as straight as possible, from the street for jetting.
        i. When modifying, there should only be a maximum overland drainage distance of 3-4 lots before providing a catch basin.

Sheet C6.3:

24. Evaluate options to reduce potential short-circuiting of treatment in Pond 1B by creating more separation between STM-43 and FES-101/OCS-102.
25. The city will allow submerged outlet pipes on this project to better fit outlet structures into pond slopes. The top of pipe should be 1-vf (min.) below the NWL, and the invert should be 2-ft (min.) above the bottom of the pond. A minimum adverse grade of 1% from submerged invert to outlet structure should be provided. It appears that the submitted design generally follows this guidance. Outlet structure location will be further reviewed with final plans.

Sheet C7.0:

26. With the removal of Military Rd, relocate the existing streetlights at Cardinal Reserve the 30 to 40-lf from the existing street intersection to the new trail crossing.
27. Pavement Markings: On Ravine Parkway only, message arrows and crosswalks shall be ground-in paint.
28. Midblock Crossings:
    a. Trail crossing signs (W11-2 & W16-7P) should be placed on both sides of the posts and visible from both directions.
    b. Per city standards, painted 12" crosswalk markings are no longer needed on typical residential streets.
29. The existing crosswalk across Ravine Parkway at 66th Street should be depicted to understand if the existing crosswalk will work with the new pedestrian ramp location. The ramp depicted on the east side of Street A should allow for a crossing to 66th Street as it does today.
30. In addition to the depicted right turn lane, restripe and sign for the eastbound left turn lane on Ravine Parkway to Jarvis Avenue/Street A.
31. Open space marker locations (city detail STR-40) have been determined by the City; please see location map attached to this memo.

Sheet C9.4:

32. The city forester has reviewed the tree preservation; please remove all Ash and Box Elder trees from the project.

Sheet L1.1:

33. Landscaping plans are identifying ornamental trees in the rear lot as the third tree on each lot greater than 60' wide. The three trees required per lot must be overstory deciduous or substituted with a coniferous tree. The landscape plans should also make note alongside the other landscaping standards listed on Sheet L1.1 that there must be one overstory coniferous tree as the front yard tree.

34. There are a couple trees near the entrance on Janero which will need to be moved outside of the drainage and utility easement.
35. No trees will be allowed in the public outlots.
36. The scalebar is incorrect; the text below the scale is correct, but the values above the bar are incorrect.

Sheet L1.4:

37. As previously mentioned, the proposed monument will require a separate HOA outlot to be dedicated.
    a. A maximum of 2 entrance monuments no more than 25 square feet per sign, may be permitted at each project entrance or subdivision entrance.

Traffic Study:

38. The following comments and edits are identified to provide clarification and further support the content shown in the report.
    a. Page 3: 3. Traffic Operations Review. Provide the existing operations for comparison to the proposed.
    b. Page 3: 3. Traffic Operations Review. Table 3. Build Conditions Operational Results.
        i. Identify if the queues are average, 95th percentile, or maximum. Provide average and 95th percentile queues.

Stormwater:

39. Drainage Areas and Impervious Surfaces:
    a. The proposed condition HydroCAD model simulates a drainage area of 37.43 acres including 12.61 acres of impervious surfaces. The proposed condition MIDS model simulates a drainage area of 35.53 acres including 10.71 acres of impervious surfaces. Sheet C3.4 lists the total platted area as 36.35 acres, the total disturbed area as 33.55 acres and existing and proposed impervious areas of 2.71 and 9.80 acres. Please label the acreages on the drainage area map (Sheet C1.2) and explain the differences in drainage areas and impervious surfaces between the models and platted areas (off-site areas for example).
    b. The Proposed Drainage Area Map of subwatershed 1A includes the area of the Jamaica Avenue South highway corridor extending from Old Military Road to the Ravine Parkway intersection. Please show the existing and proposed pervious and impervious acreages from the highway corridor right-of-way on the drainage area map and include these areas separately within the HydroCAD model and hydrologic design calculations (i.e. split into a separate subwatershed draining to Pond 1AP) for future reference by the City and County.
40. HydroCAD:
    a. The HydroCAD models simulate 6" Horizontal Orifices in Ponds A, B and C. Please update the model so these orifices are simulated as vertical orifices as shown on Sheets C6.2 and C6.3.
    b. Please include the inflow and outflow hydrograph plots in the HydroCAD report so we can review the model routings and stability.

c. Time of concentrations of 1, 2, 4 and 5 minutes are used in the HydroCAD model (Subwatershed 1CDIR, 1C, 1BDIR, 1ADIR). The City's surface water management plan recommends a minimum time of concentration of 8 minutes. Please consider revising the model Time of Concentrations.

41. MIDS Water Quality Model:

    a. MIDS model results were submitted for Proposed Conditions. Proposed Ponds were simulated as Design Level 2 with TSS 84% removal and TP 50% removal which seems appropriate and is compliant with City 50% and 80% TP and TSS removal requirements.

    b. The proposed condition MIDS model results indicate that the proposed TP Load is 15.58 lbs./year. To demonstrate SWWD compliance please provide an Existing Conditions MIDS model or other water quality estimate for comparison to the proposed load to demonstrate that the project is "maintaining existing" TP load. In this manner, identify whether the proposed conditions maintain the existing TP load from the project area or whether additional BMPs and/or purchase of mitigation credits will be required to achieve compliance.

42. Rational Stormdrain Design: Maximum storm sewer velocities should be kept at 10 feet per second or less. Several pipe reaches have design velocities of 12, 17, and 22 ft/s. Please work to reduce the design velocities.

43. Models and CAD Files: Please note that digital copies of the final version stormwater models (HydroCAD and MIDS) and shapefiles or CAD drawings of existing and proposed drainage areas are to be submitted to the city once the review and revision process is complete.

McHATTIE LANDING

PRELIMINARY LANDSCAPE PLANS

LANDSCAPE SHEET INDEX:

L1.0	Title Page
L1.1	Landscape Plan
L1.2	Landscape Plan
L1.3	Landscape Plan
L1.4	Landscape Plan
L1.5	Landscape Plan
L2.0	Details & Schedule
L3.0	Monument Sign

SURVEYOR + CIVIL ENGINEER:

HILL INCORPORATED

PLANNERS / ENGINEERS / SURVEYORS
2999 W. City Rd. 42, Suite 100, Burnsville, MN 55306
PHONE: (952)890-6044 FAX: (952)890-6244

LANDSCAPE CALCULATIONS:

Total No. of Single Family Dwelling Units:	85
Total Lot Trees Required: (85 Lots x 3 Trees):	255
Additional Trees Required for Corner Lots:	09
Total Trees Required:	264
Total Mitigation Trees Required:	246" (100 Trees)
Total Lot Trees Shown:	264
Mitigation Trees Shown:	100
Additional Buffer Trees Shown:	40
Total Trees Shown:	404

CITY OF Cottage Grove LANDSCAPE RESTRICTIONS:

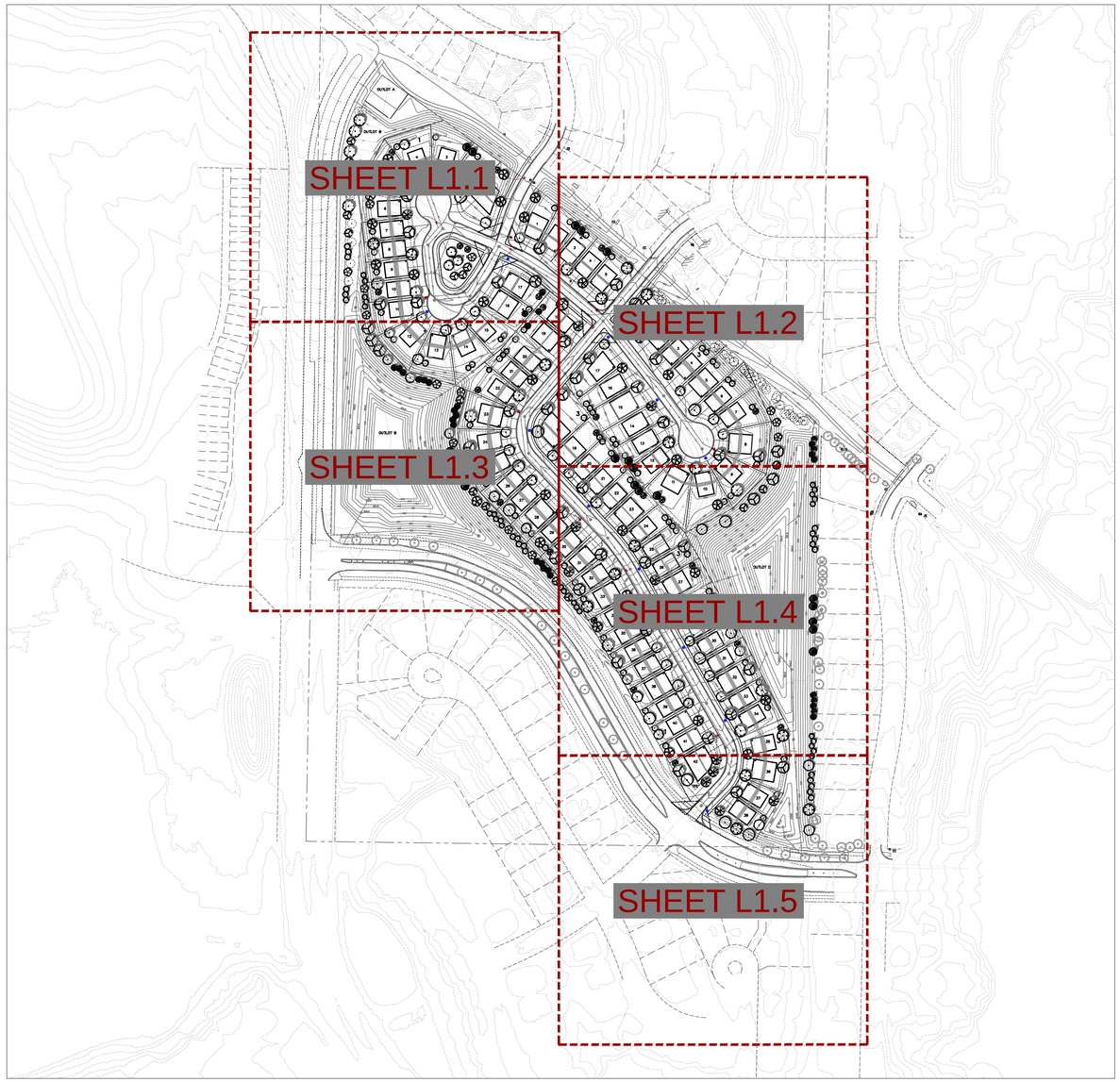
A. Deciduous trees should be located a minimum of 5' off any utility pipe
B. Coniferous trees should be located a minimum of 15' off any utility pipe
C. No trees should be located within 10' of a hydrant or 15' from a streetlight
D. No trees should be located within a storm pond HWL
E. No trees should be located within a storm pond's 20' access route, and no coniferous trees within 5' of the 20' pond access route
F. No coniferous trees within 20' of a proposed sidewalk/trail
G. No deciduous trees within 5' of sidewalk/ trail

CITY OF Cottage Grove LANDSCAPE REQUIREMENTS:

Zoning Designation: R-4 transitional Residential

Lot (Builder) Trees Required: (3) Trees Per Lot
- 1 Front yard tree required
- Up to (2) Coniferous Trees can be substituted for overstory trees per lot (maximum 2).
- 10 shrubs required per lot

see sheet L1.1 for additional landscape requirements



OVERALL LANDSCAPE PLAN:

CONSULTANT LOGO:

M/I HOMES

GENERAL NOTES:

1. Actual locations of trees may vary, depending on final location of driveways and utilities.
2. See Civil Engineer's plans for grading layout and requirements.
3. Contractor to coordinate all work in the city right-of-way with City of Cottage Grove Public Works Department.
4. Sod all disturbed areas except plant beds and areas noted to receive seed.
5. Place a minimum of 6" topsoil or slope dressing on all areas disturbed by construction, including right-of-way boulevards, unless specified otherwise.
6. Test tree pits to ensure sub-soils permeability of no less than .25" per hour of water infiltration.
7. See Sheet L2.0 for Landscape Details & Plant Schedule.

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Saint Paul, MN 55104
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PHONE: (952)890-6044 FAX: (952)890-6244

I certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Landscape Architect under the laws of the State of Minnesota.

Print Name: Brian Alton Hunters, PLA

Signature:

Date:

License No.: 55247

PRELIMINARY

MCHATTIE LANDING
COTTAGE GROVE, MINNESOTA
LANDSCAPE TITLE SHEET
FOR
M/I HOMES OF MPLS/ST. PAUL, LLC.
5354 PARKDALE DRIVE #100, ST. LOUIS PARK, MN 55416

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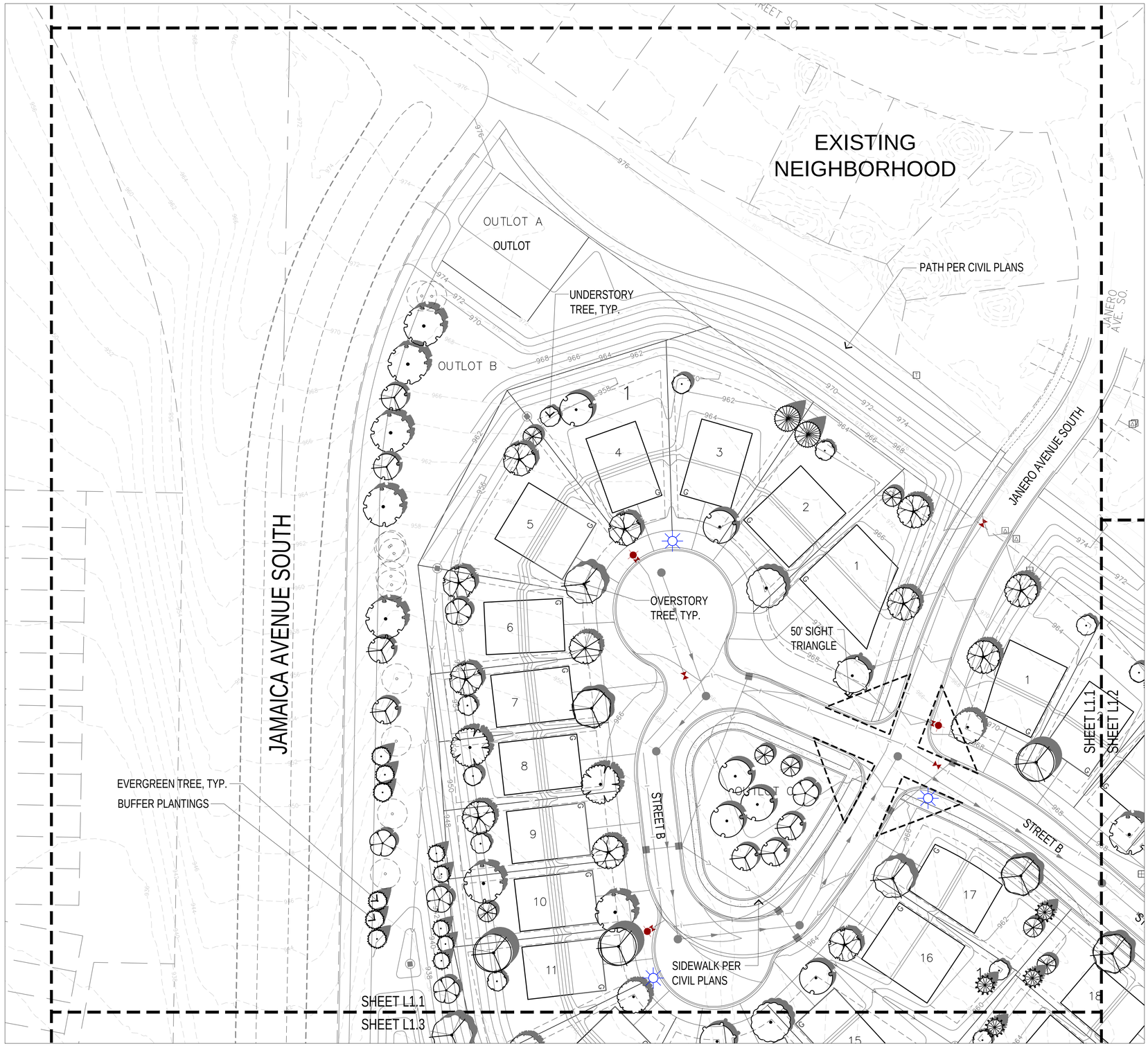
01/28/2026

REVISIONS
01/28/26 - INITIAL CITY SUBMITTAL SET

PROJECT NO.
25-164

SHEET NO.
L1.0



LANDSCAPE LEGEND:

Existing Tree To Remain

Fire Hydrants by Others

Street Lights by Others

CITY OF COTTAGE GROVE
LANDSCAPE REQUIREMENTS CONTINUED:

11-3-12: LANDSCAPING:
D. Residential Developments

Single Family Dwellings
- Coniferous Trees: May be substituted for any of the overstory deciduous trees (maximum of 2)
- Ornamental Deciduous Trees: No requirements
- Overstory Deciduous Trees: On lots 60 feet wide or less: 2 per lot On lots greater than 60 feet wide: 3 per lot, no less than 2 different species
- Shrubs: 10 per unit

3. Residential district landscape buffer along major roadways.
b. Requirements. For all residential and nonresidential developments within the R-2 through R-5 residentially zoned districts include frontage along a Major Roadway, the landscape plan must provide an average of a fifty-foot (50') buffer, but not less than a thirty-foot (30') buffer, running parallel to the rear lot line for the purposes of creating a barrier to the Major Roadway. The buffer shall be a combination of trees, fences and shrubs that create a minimum of fifty percent (50%) year-round opacity at maturity.

CITY OF COTTAGE GROVE
MINIMUM PLANT REQUIREMENTS:

11-3-12: LANDSCAPING:

Ornamental Tree: 1.5 Caliper Inch
Overstory Tree: 2.5 Caliper Inch
Coniferous Tree: 6 Feet in Height
Shrubs: 18 Inches in Height
Street Tree: 2.5 Caliper Inch

GENERAL NOTES:

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4. Sod all disturbed areas except plant beds and areas noted to receive seed.
5. Place a minimum of 6" topsoil or slope dressing on all areas disturbed by construction, including right-of-way boulevards, unless specified otherwise.
6. Test tree pits to ensure sub-soils permeability of no less than .25" per hour of water infiltration.
7. See Sheet L2.0 for Landscape Details & Plant Schedule.

SCALE IN FEET
0 100 200
1 inch = 40 feet

LANDSCAPE PLAN:

See Sheet L2.0 for Planting Details, Notes, and Schedule

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I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Landscape Architect under the laws of the State of Minnesota.

Print Name: Brian Aldrich, Hill Partners, P.A.
Signature:
Date:
License No.: 55416

PRELIMINARY

MCHATTIE LANDING
COTTAGE GROVE, MINNESOTA
LANDSCAPE PLAN
FOR
M/I HOMES OF MPLS/ST. PAUL, LLC.
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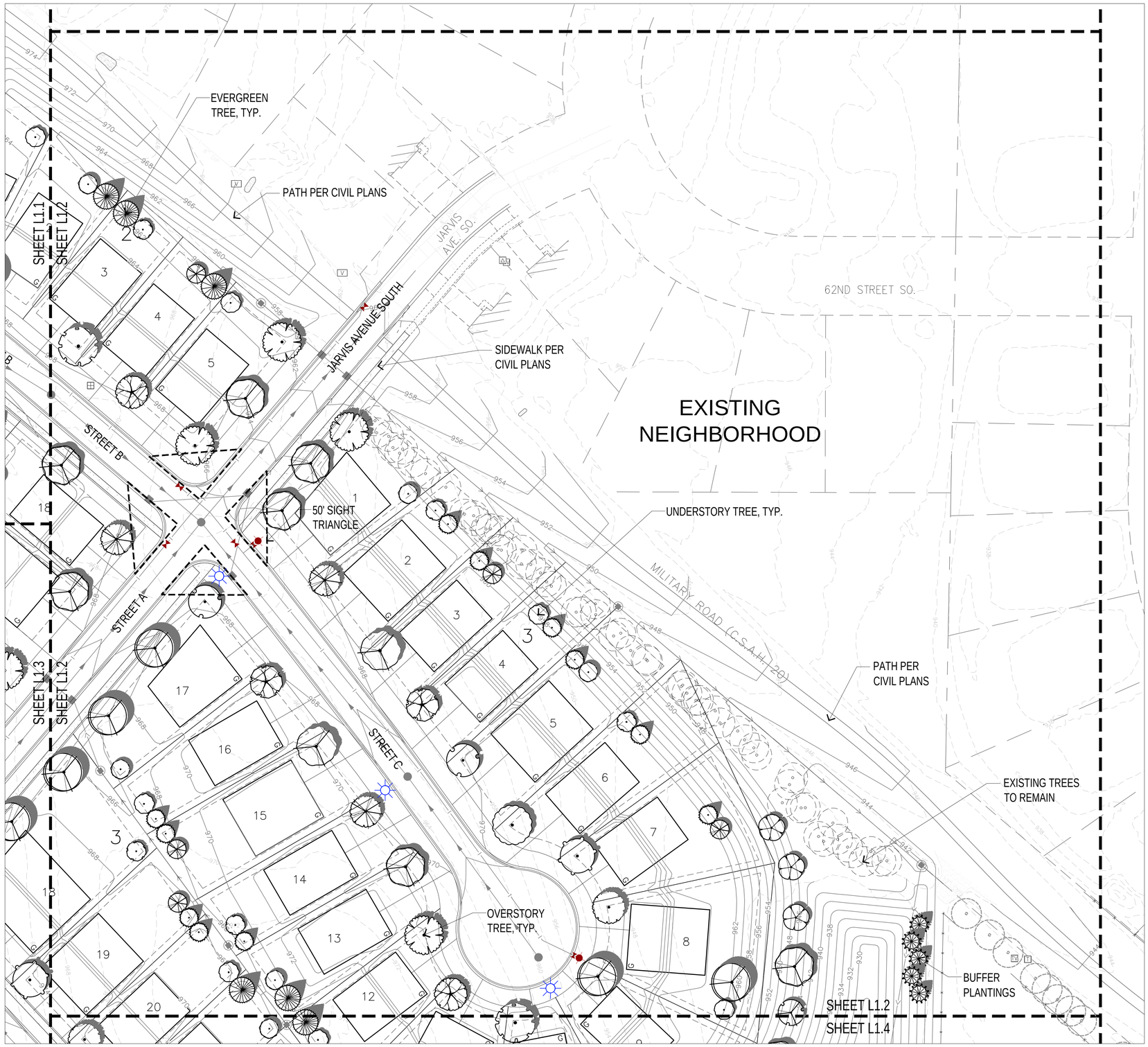
L1.1



LANDSCAPE LEGEND:

- Existing Tree To Remain
- Fire Hydrants by Others
- Street Lights by Others

GENERAL NOTES:

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LANDSCAPE PLAN:

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I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Landscape Architect under the laws of the State of Minnesota.

Print Name: Brad Engstrom, PLA
Signature:
Date:
License No.: 59247

PRELIMINARY

MCHATTIE LANDING
COTTAGE GROVE, MINNESOTA
LANDSCAPE PLAN
FOR
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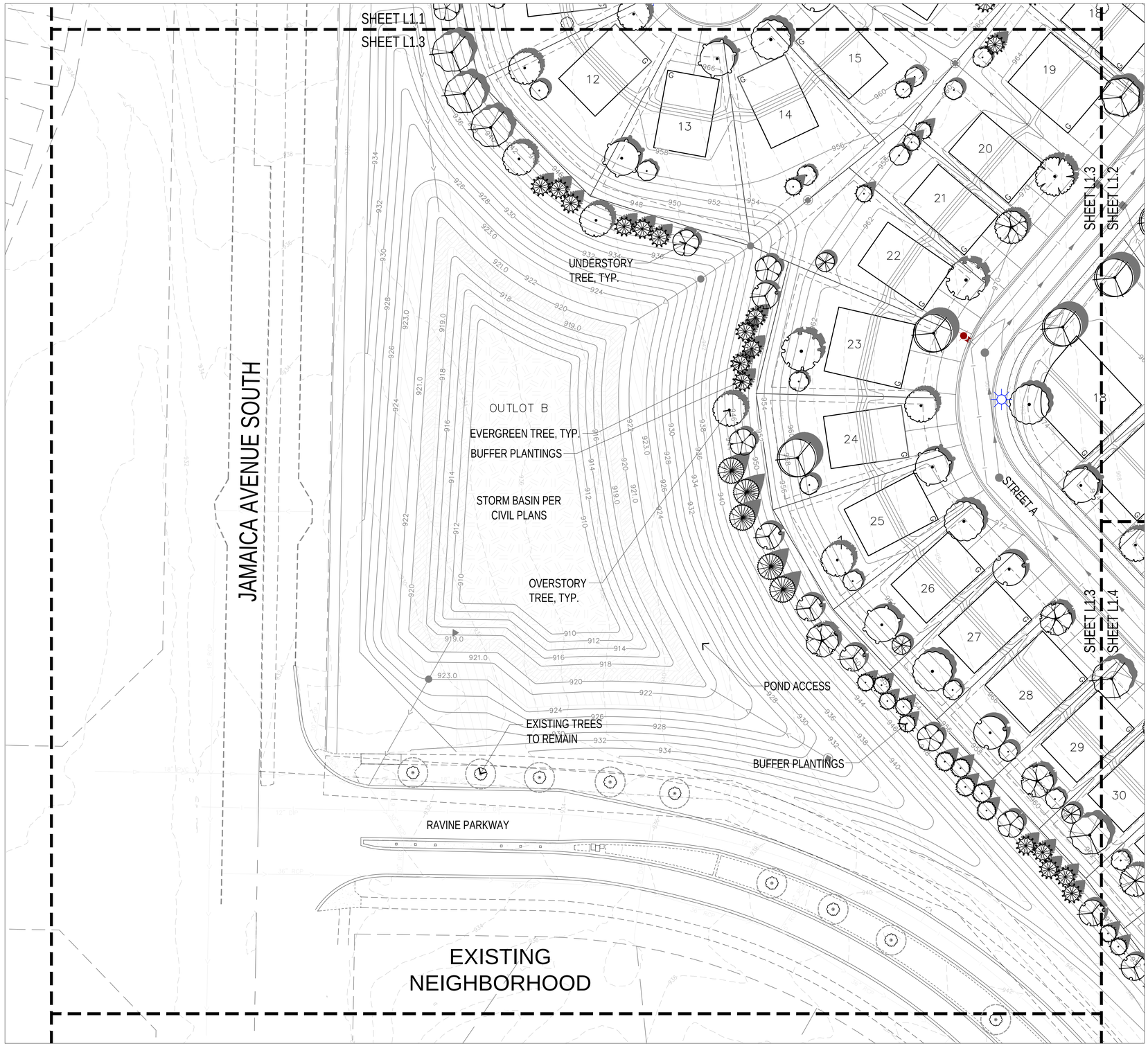
L1.2



LANDSCAPE PLAN:

See Sheet L2.0 for Planting Details, Notes, and Schedule

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N

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I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Landscape Architect under the laws of the State of Minnesota.

PRELIMINARY

Print Name: Brian Aanenson, Hilgers, P.A.
Signature:
Date:
License No.: 49477

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COTTAGE GROVE, MINNESOTA
LANDSCAPE PLAN
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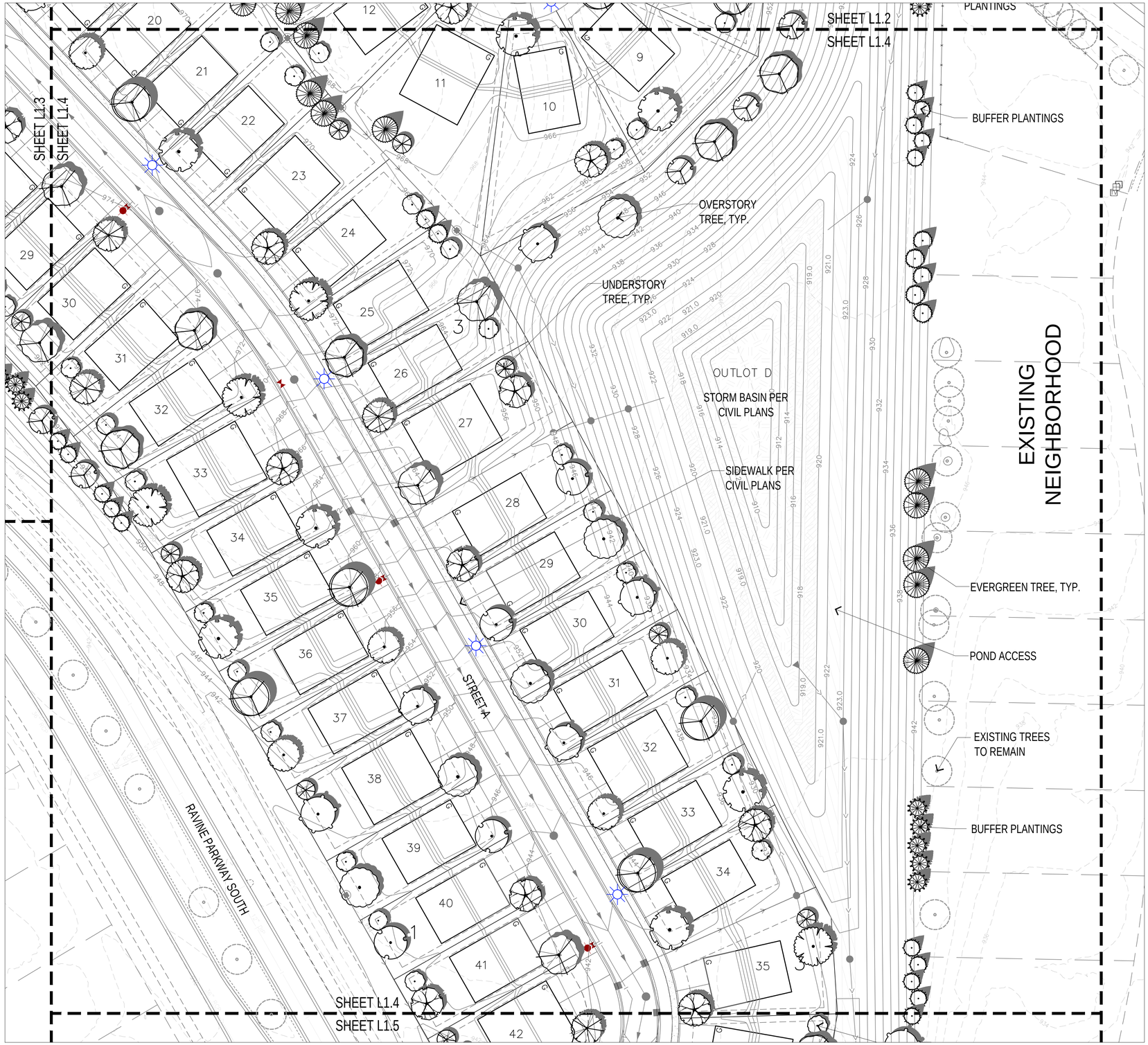

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LANDSCAPE PLAN:

See Sheet L2.0 for Planting Details, Notes, and Schedule

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PHONE (952)890-6044 FAX (952)890-8244

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Landscape Architect under the laws of the State of Minnesota.

PRELIMINARY

Print Name: Brad Engstrom, PLA
Signature:
Date:
License No. 49677

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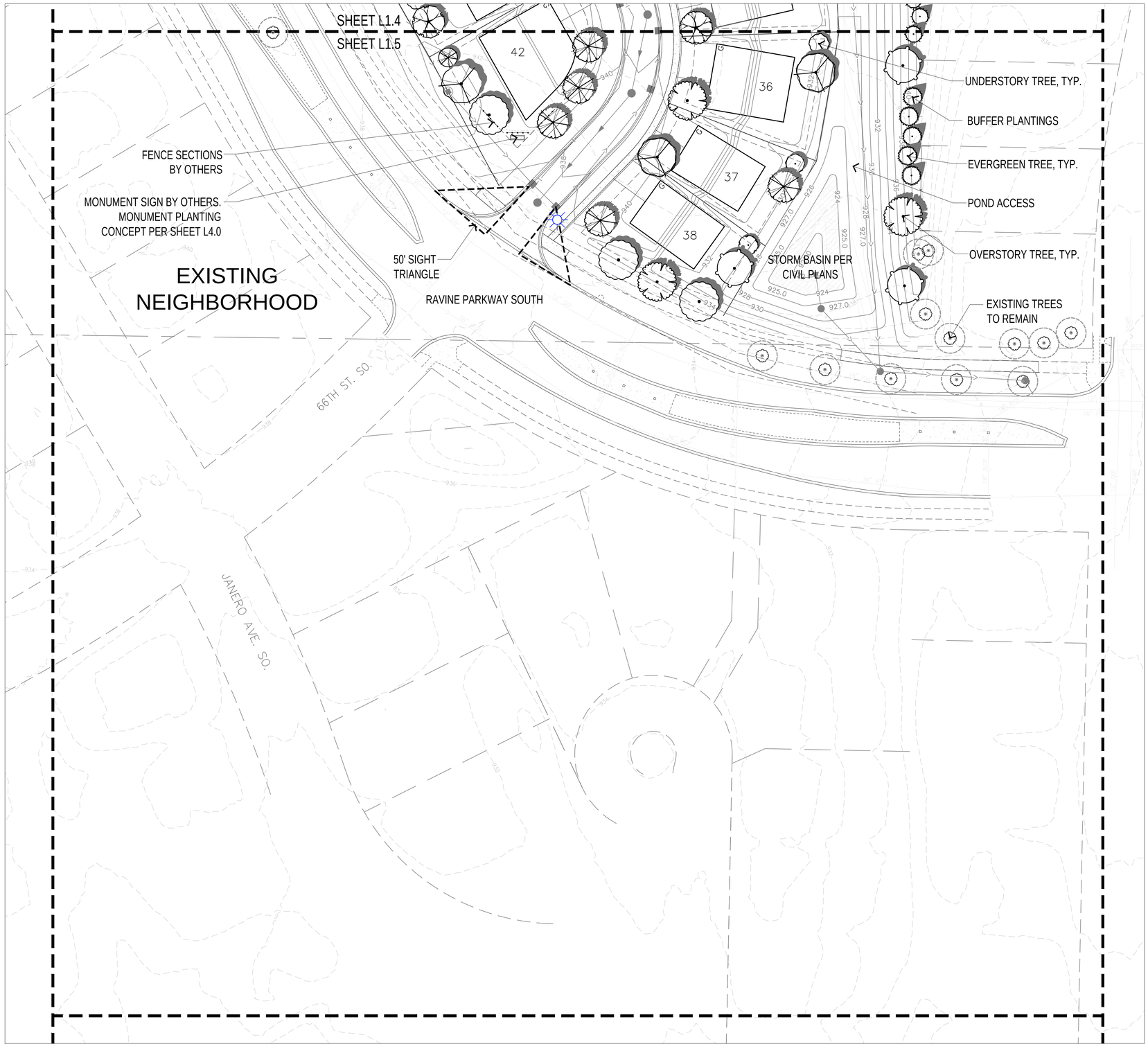

LANDSCAPE LEGEND:

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LANDSCAPE PLAN:

See Sheet L2.0 for Planting Details, Notes, and Schedule

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I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Landscape Architect under the laws of the State of Minnesota.

PRELIMINARY

Print Name: Brian Alton Slothers, PLA
Signature:
Date:
License No.: 60427

MCHATTIE LANDING
COTTAGE GROVE, MINNESOTA
LANDSCAPE PLAN
FOR
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LANDSCAPE NOTES:

1. Tree saucer mulch to be four inches (4") depth natural single-shred hardwood mulch for trees outside of a plant bed. Install per tree planting detail.

2. Refer to civil plan sheets for grading, drainage, site dimensions, survey, tree removal, proposed utilities & erosion control.

3. All plant material shall comply with the latest edition of the American Standard for Nursery Stock, American Association of Nurserymen. Unless noted otherwise, deciduous shrubs shall have at least 5 canes at the specified shrub height. Plant material shall be delivered as specified.

4. Plan takes precedence over plant schedule if discrepancies in quantities exist.

5. All proposed plants shall be located and staked as shown.

6. Adjustment in location of proposed plant material may be needed in field. Should an adjustment be required, the client will provide field approval. Significant changes may require city review and approval.

7. The project landscape contractor shall be held responsible for watering and properly handling all plant materials brought on the site both before and after installation. Schedule plant deliveries to coincide with expected installation time within 36 hours.

8. All plant materials shall be fertilized upon installation as specified.

9. The landscape contractor shall provide the owner with a watering schedule appropriate to the project site conditions and to plant material growth requirements.

10. If the landscape contractor is concerned or perceives any deficiencies in the plant selections, soil conditions, drainage or any other site condition that might negatively affect plant establishment, survival or guarantee, they must bring these deficiencies to the attention of the landscape architect & client prior to bid submission. Plant bed drainage concerns during plant installation shall be brought to the attention of the Owner and General Contractor immediately.

11. Contractor shall establish to his/ her satisfaction that soil and compaction conditions are adequate to allow for proper drainage at and around the building site.

12. Contractor is responsible for ongoing maintenance of all newly installed material until time of owner acceptance. Any acts of vandalism or damage which may occur prior to owner acceptance shall be the responsibility of the contractor. Contractor shall provide the owner with a maintenance program including, but not limited to, pruning, fertilization and disease/pest control.

13. The contractor shall guarantee newly planted material through one calendar year from the date of written owner acceptance. Plants that exhibit more than 10% die-back damage shall be replaced at no additional cost to the owner. The contractor shall also provide adequate tree wrap and deer/rodent protection measures for the plantings during the warranty period.

14. This layout plan constitutes our understanding of the landscape requirements listed in the ordinance. Changes and modifications may be requested by the city based on applicant information, public input, council decisions, etc.

15. The landscape contractor shall be responsible for obtaining any permits and coordinating inspections as required throughout the work process.

16. Plant size & species substitutions must be approved in writing prior to acceptance in the field.

17. The landscape contractor shall provide the builder with an irrigation design for common areas and individual lots as directed.

18. Landscape Contractor is responsible for coordination with the General Contractor, to protect the new improvements on and off-site during landscape work activities. Report any damage to the General Contractor immediately.

19. All planting, seeding, and sodded areas shall be prepared prior to installation activities with a harley power box rake or equal to provide a firm planting bed free of stones, sticks, construction debris, etc.

20. Turf installation activity shall conform to all rules and regulations as established in the MnDOT Seeding Manual, 2024 edition, for turf bed preparation, installation, maintenance, and warranty.

21. The Landscape Contractor shall furnish samples of all landscape materials for approval prior to installation.

22. The Landscape Contractor shall clear and grub the underbrush from within the work limits to remove dead branches, leaves, trash, weeds and foreign materials. Remove trees where noted on the plan, including the stump to 30" below grade.

23. The landscape contractor shall contact Gopher State One Call no less than 48 hours before digging for field utility locations.

24. The landscape contractor shall be responsible for the removal of erosion control measures once vegetation has been established to the satisfaction of the municipal staff. This includes silt curtain fencing and sediment logs placed in the landscape.

25. The landscape contractor shall be responsible for visiting the site to become familiar with the conditions prior to bidding and installation. Coordinate with the general contractors on matters such as fine grading, landscaped area conditions, staging areas, irrigation connection to building, etc.

26. See Site and Civil plans for grading, utilities, and additional information regarding the project.

27. All sub-cut areas of the site that are designated on the site plan as open space for landscape shall have no less than 4" of imported, pulverized topsoil. Place 16" of topsoil in tree pits. Always slope away from building.

28. Landscape contractor must prove the open sub-grade of all planting areas after their excavation is capable of infiltrating a minimum requirement of 1/4-inch of water per hour prior to installation of plant materials, topsoil, irrigation, weed mat, and mulch. Planting areas not capable of meeting this requirement shall have 4" diameter X 48" depth holes augured every 36" on-center and filled with MnDOT Free-Draining Coarse Filter Aggregate. Re-test sub-grade percolation for compliance to infiltration minimum requirement.

29. Fencing (if noted) per Architect's Plans and Specifications.

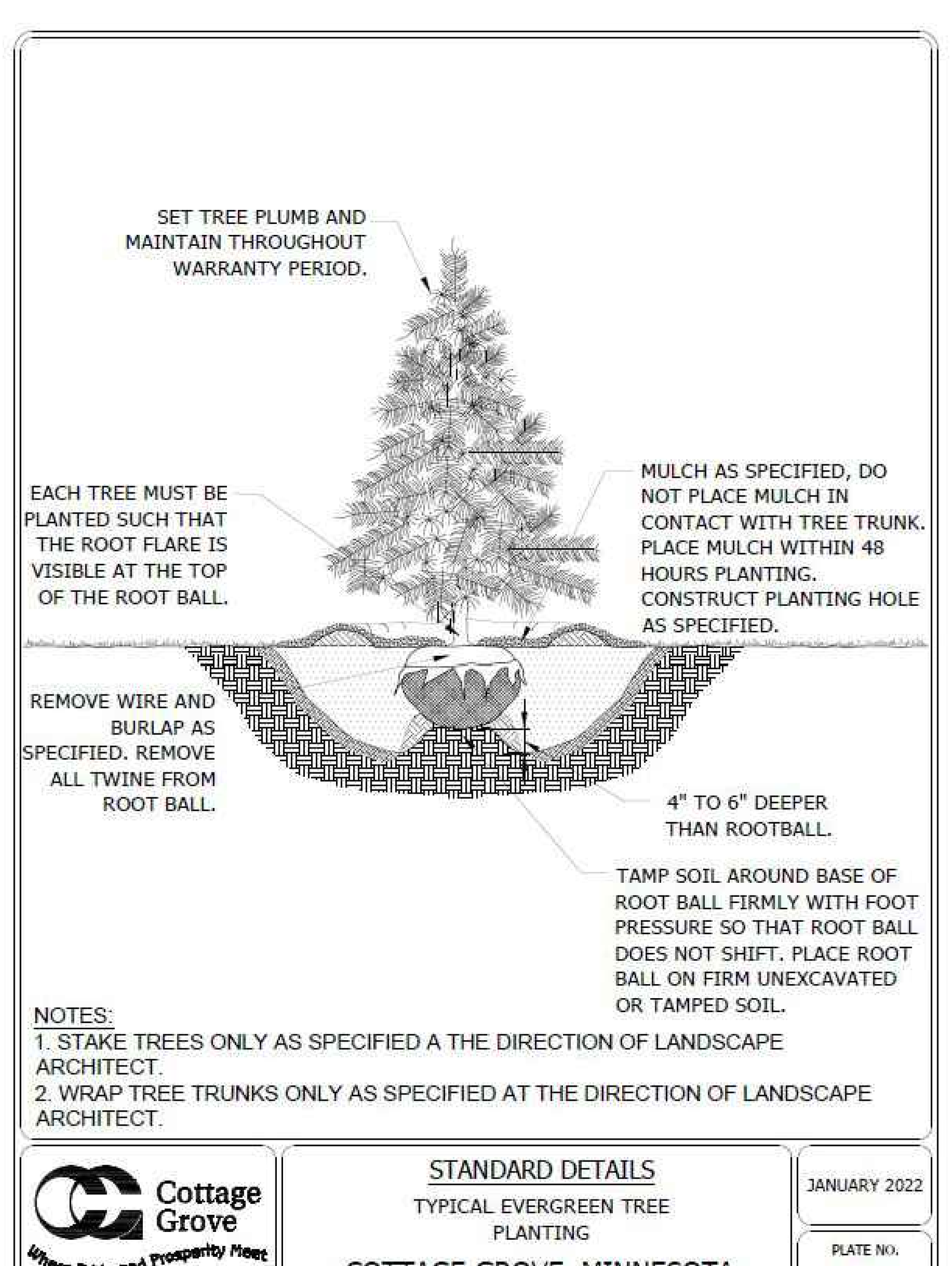
30. Landscape contractor shall coordinate tree removal activities (if required) and ensure all trees designated for removal are gone before start of landscape installation. Grind stump to 30" below grade and back-fill with topsoil.

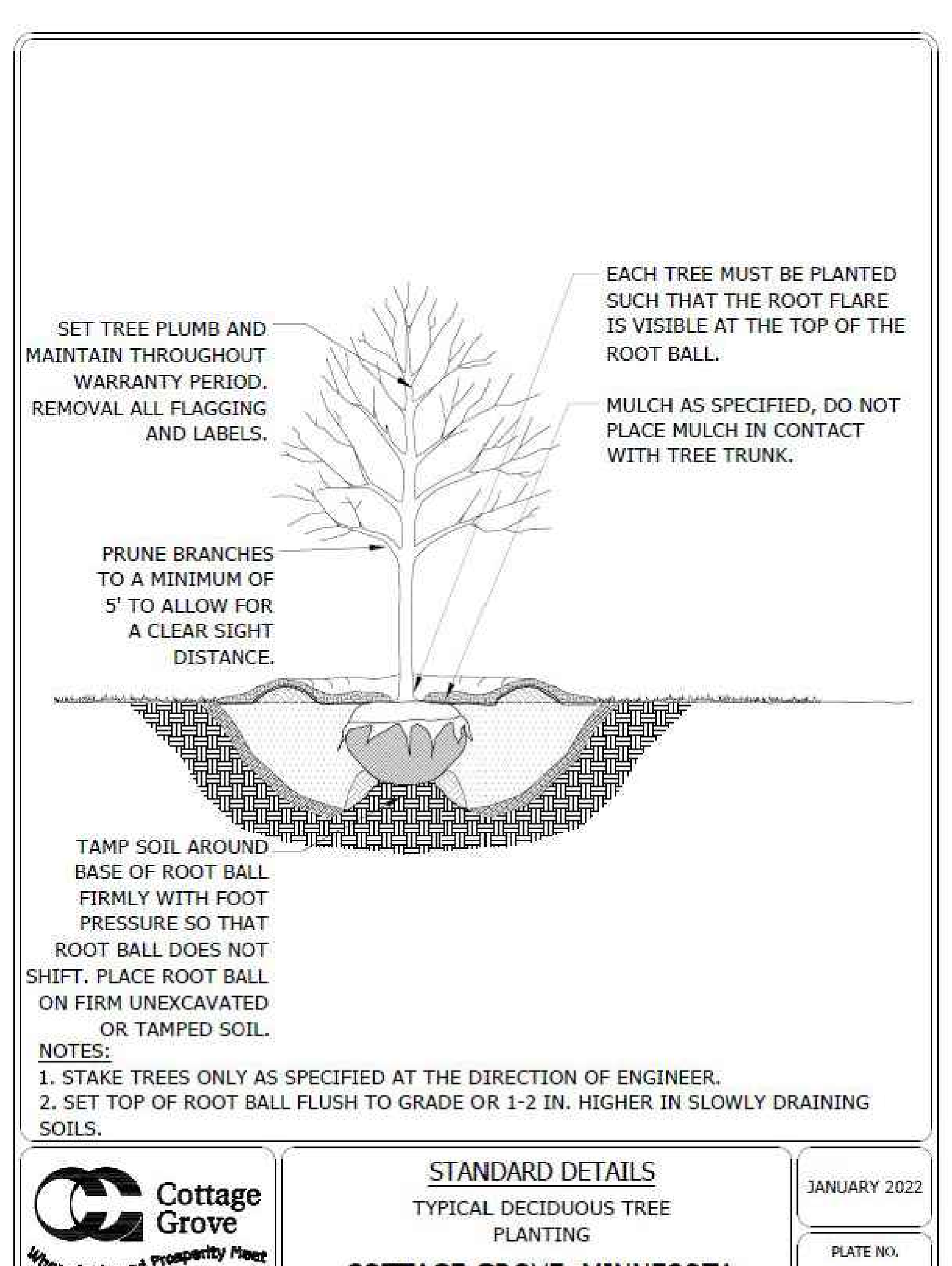
31. All disturbed areas are to receive turf sod or seed to establish final vegetation.

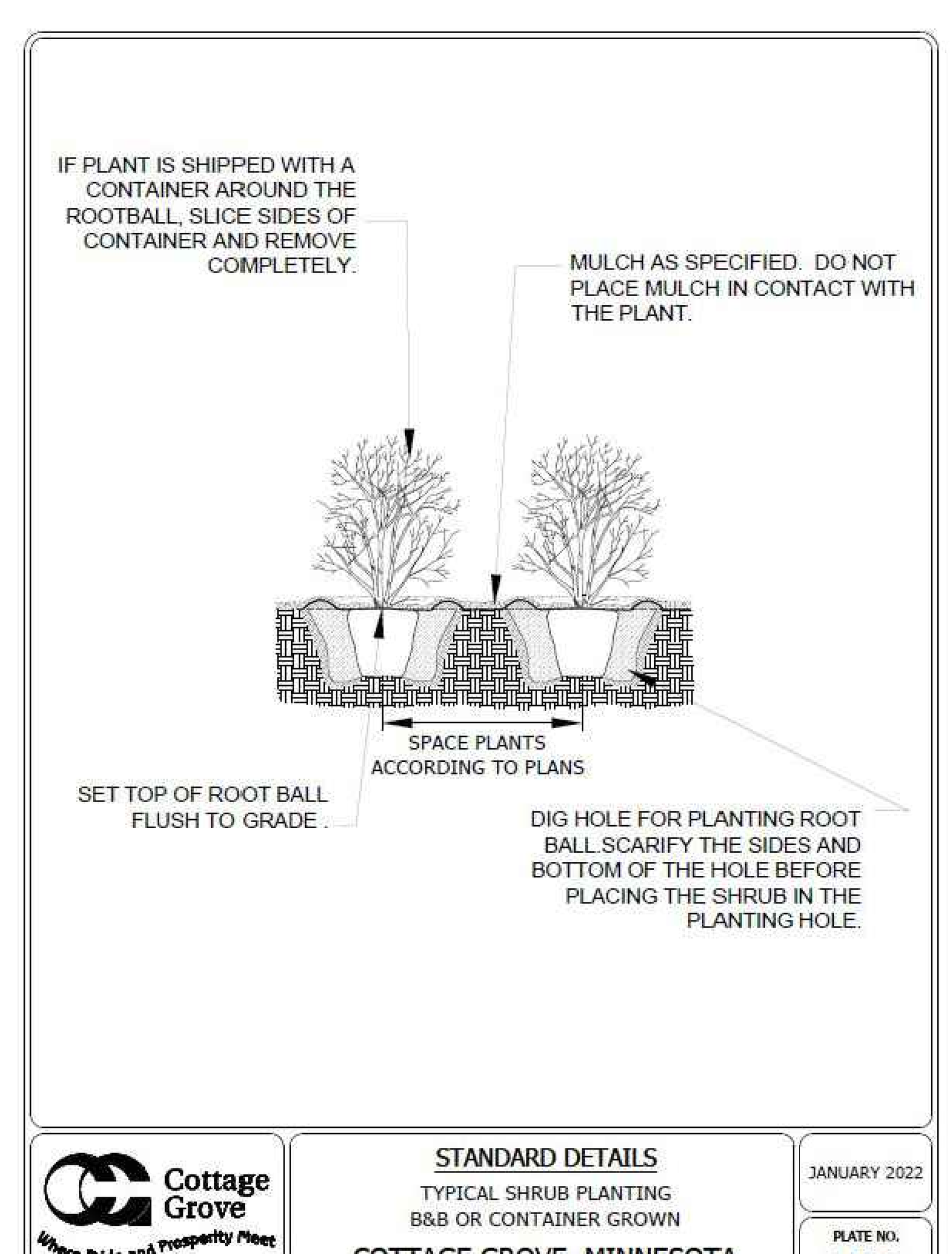
32. Retaining walls and stairs require structural engineering by others. Unless otherwise specified, retaining walls to be County Material 'County Block' straight face units, gray color with matching cap units.

33. Native Seed Areas (if called for on plans): Prairie seeding contractor is required to include a 1 year warranty with maintenance in base bid. Prairie contractor shall provide the Owner with a proposal for (2) additional years of prairie maintenance, in addition to the (3) year warranty. It shall be the Owner's option to continue maintenance of the native prairie areas after the 1 year warranty expires. Maintain under warranty per MnDOT Seeding Manual, 2024 edition. Warranty includes seeding contractor on-site maintenance visits for mowing, weeding, spot-spraying invasives, garbage removal, and re-seeding bare areas larger than 6"X6". Ensure cover crop achieves 80% germination and erosion is not evident. Maintenance requires no less than 4 visits for warranty work per year. An acceptable stand of seeding is full, lush, and free of invasive plants & weeds.

CITY OF COTTAGE GROVE REQUIRED STANDARD DETAIL PLATES:







LANDSCAPE DETAILS, NOTES, AND SCHEDULE

PLANT SCHEDULE

SYMBOL	CODE	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER	QTY
EVERGREEN TREES						
	AB	Abies balsamea	Balsam Fir	6` Hgt.	B&B	30
	JE	Juniperus virginiana	Eastern Redcedar	6` Hgt.	B&B	30
	PD	Picea glauca `Densata`	Black Hills Spruce	6` Hgt.	B&B	34
	PR	Pinus resinosa	Red Pine	6` Hgt.	B&B	21
ORNAMENTAL TREES						
	AO	Aesculus glabra	Ohio Buckeye	1.5" Cal.	B&B	13
	CC	Crataegus laevigata `Crimson Cloud`	Crimson Cloud Hawthorn	1.5" Cal.	B&B	21
	MA	Maackia amurensis	Amur Maackia	1.5" Cal.	B&B	21
	MP	Malus x 'Pink Spires'	Pink Spires Crabapple	1.5" Cal.	B&B	21
	OV	Ostrya virginiana	American Hophornbeam	1.5" Cal.	B&B	16
	SI	Syringa reticulata `Ivory Silk`	Ivory Silk Japanese Tree Lilac	1.5" Cal.	B&B	23
OVERSTORY TREE						
	Ar	Acer rubrum	Red Maple	2.5" Cal.	B&B	12
	AJ	Acer saccharum 'JFS-KW8' TM	Autumn Fest Sugar Maple	2.5" Cal.	B&B	14
	AS	Acer x freemanii `Sienna`	Sienna Glen Maple	2.5" Cal.	B&B	16
	BR	Betula nigra	River Birch	2.5" Cal.	B&B	16
	CO	Celtis occidentalis	Common Hackberry	2.5" Cal.	B&B	14
	GI	Gleditsia triacanthos inermis `Skycole` TM	Skyline Thornless Honey Locust	2.5" Cal.	B&B	15
	GI2	Gymnocladus dioica `McKBranched` TM	Kentucky Coffeetree	2.5" Cal.	B&B	14
	QA	Quercus alba	White Oak	2.5" Cal.	B&B	17
	QE	Quercus ellipsoidalis	Northern Pin Oak	2.5" Cal.	B&B	14
	QM	Quercus macrocarpa	Burr Oak	2.5" Cal.	B&B	14
	QR	Quercus rubra	Northern Red Oak	2.5" Cal.	B&B	13
	UN	Ulmus americana 'New Horizon'	New Horizon Elm	2.5" Cal.	B&B	15

Know what's below. Call before you dig.

CALYX
CALYX DESIGN GROUP
Landscape Architecture - Planning
475 Cleveland Ave. N | Suite 101A
Saint Paul, MN 55104
651.788.9018 | www.calyxdesigngroup.com

HILL INCORPORATED
PLANNERS / ENGINEERS / SURVEYORS
2999 W. Cty. Rd. 42, Suite 100, Burnsville, MN 55306
PHONE: (952)890-6044 FAX: (952)890-6244

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Landscape Architect under the laws of the State of Minnesota.
Print Name: Benjamin D. Hartberg, PLA
Signature:
Date: License No. 48064

PRELIMINARY

MCHATTIE LANDING
COTTAGE GROVE, MINNESOTA
LANDSCAPE DETAILS
FOR
M/I HOMES OF MPLS/ST. PAUL, LLC.
5354 PARKDALE DRIVE #100, ST. LOUIS PARK, MN 55416

DRAWN BY
AL

DATE
01/28/2026

REVISIONS
01/28/26 - INITIAL CITY SUBMITTAL SET

PROJECT NO.
25-164

SHEET NO.
L2.0



MAY NIGHT SALVIA



PRAIRIE DROPSEED



feather reed grass



DWARF GLOBE SRUCE



SENSATION SKY SALVIA



MIDNIGHT SUN WEIGELA



SHOWTIME CRABAPPLE



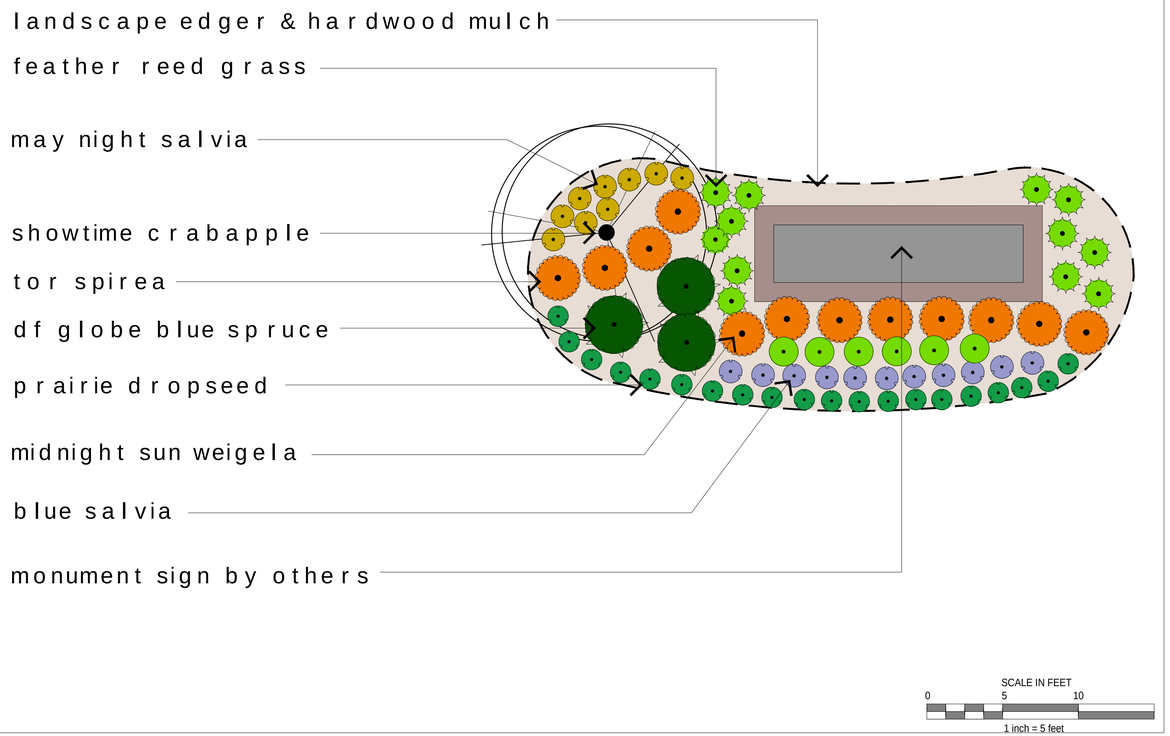
feather reed grass



TOR SPIREA

GENERAL NOTES:

1. Actual locations of trees may vary, depending on final location of driveways and utilities.
2. See Civil Engineer's plans for grading layout and requirements.
3. Contractor to coordinate all work in the city right-of-way with City of Cottage Grove Public Works Department.
4. Sod all disturbed areas except plant beds and areas noted to receive seed.
5. Place a minimum of 6" topsoil or slope dressing on all areas disturbed by construction, including right-of-way boulevards, unless specified otherwise.
6. Test tree pits to ensure sub-soils permeability of no less than .25" per hour of water infiltration.
7. See Sheet L2.0 for Landscape Details & Plant Schedule.



MONUMENT SIGN FOUNDATION PLANTING ENLARGEMENT:



CONCEPT MONUMENT SIGN ELEVATION:

811 Know what's below. Call before you dig.

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PHONE: (952)890-6044 FAX: (952)890-6244

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Landscape Architect under the laws of the State of Minnesota.

PRELIMINARY

Print Name: Jeffrey Northberg, P.L.A.
Signature:
Date:
License No. 41946

MCHATTIE LANDING
COTTAGE GROVE, MINNESOTA
MONUMENT SIGN CONCEPT
FOR
M/I HOMES OF MPLS/ST. PAUL, LLC.
5354 PARKDALE DRIVE #100, ST. LOUIS PARK, MN 55416

DRAWN BY
AL
DATE
01/28/2026
REVISIONS
01/28/26 - INITIAL CITY SUBMITTAL SET
PROJECT NO.
25-164
SHEET NO.
L3.0

Outlook

RE: Ravine Ridge/McHattie Landing Neighborhood meeting comments

From Kelly Becker <KBecker@cottagegrovemn.gov>
Date Tue 2/17/2026 8:01 AM
To Kelly Becker <KBecker@cottagegrovemn.gov>

-----Original Message-----
From: Adam Urick <adamurick@yahoo.com>
Sent: Thursday, February 12, 2026 9:24 PM
To: Emily Schmitz <ESchmitz@cottagegrovemn.gov>
Subject: Ravine Ridge/McHattie Landing Neighborhood meeting comments

[You don't often get email from adamurick@yahoo.com. Learn why this is important at https://aka.ms/LearnAboutSenderIdentification]

EXTERNAL EMAIL WARNING: This email originated from an outside organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi Emily,

Thanks for your time tonight. Here are my comments/requests for the city/MI homes:

1. Determine if Military Rd can remain open until the Woodbury roads to the north are fully built and connected with Cottage Grove roads.
2. Remove lots 34-38 from current position and adjust to fit lots closer to southwest corner storm basin, or extend street C lots by 2 more to keep total units at 85.
3. Place larger conifer trees (8+ ft) as buffers between Ravine Ridge and Ravine Meadows lots, especially near southern portion of Jeffery Ave S.

Thanks,
Adam Urick

MCHATTIE LANDING PRELIMINARY PLAT AND PLANNED UNIT DEVELOPMENT PLAN

INTRODUCTION

M/I Homes of Minneapolis/St. Paul, LLC (M/I Homes) is submitting an application for a Preliminary Plat and Planned Unit Development (PUD) plan for development of the property located at 9119 and 9165 Military Road. The proposed plan includes 85 homes on an approximately 34.3-acre site. The site had previously received preliminary plat and PUD approval in February of 2022 and a one-year extension of the preliminary plat approval in February of 2023. That approval and extension have since expired, requiring filing of a new preliminary plat application.

SITE PLAN

Lot Widths/Side Yard Setbacks. Since the former preliminary plat and PUD approval, the City of Cottage Grove has undergone a comprehensive Zoning Code update that went into effect in January of 2023. This resulted in a reduction of the allowable minimum lot width to 45 feet, which provided flexibility to reduce the lot widths from the previously approved development to 52 and 62 feet wide. We have selected homes for this development that we feel will meet market demand and complement the surrounding area. The current side yard setback requirement of the City's R-4 zoning district is 7.5 feet from the home and 5 feet from the garage, and we are proposing to average a 6-foot side yard setback on both sides of the home, which will result in 12-foot spacing between homes. This is similar to what was approved in Mississippi Landing (52.5-foot-wide lots with 6.25-foot side yard setbacks), another one of our developments in the City of Cottage Grove. The table below outlines the City's current lot standards for the zoning district in which this development is located as well as requested flexibility.

Standard	R-4 Zoning Standard	Proposed Standards
Minimum Lot Size	None outlined	6,665 square feet
Minimum Lot Width	45 feet	52 feet
Minimum Lot Depth	120 feet	120 feet
Minimum Front Setback	25 feet	25 feet
Minimum Side Setback	7.5 feet	6 feet
Minimum Side Setback, Garage	5 feet	6 feet
Minimum Corner Side Setback	20 feet	20 feet
Rear Setback	25 feet	25 feet
Impervious Surface	50%	50%
Maximum Structure Height	35 feet	35 feet
Setbacks Between Buildings	15 feet between dwelling structures, 10 feet for residential garages	12 feet between dwelling structures and residential garages

Street Connections. There are three proposed street connections. Two connect to the north from the Cardinal Reserve neighborhood as a continuation of Janero and Jarvis Avenues and one connecting to Military Road. The site plan strategically avoids areas with significant karst bedrock to minimize excavation challenges. While the previous plan showed two connection points to Ravine Parkway, we have reduced this to one access point because of the location of the bedrock and because right turn lanes were constructed for only one access point. We have provided a traffic analysis that shows that reducing to the one access point will not negatively impact traffic patterns.

Tree Preservation and Landscaping. We have provided a tree preservation and landscape plan with the submittal of this application. We will be removing 988 trees, of which 491 require mitigation. Mitigation is required at 50%. We are proposing to provide a total of 404 trees - 264 lot trees, 100 mitigation trees and 40 additional buffer trees. The buffer trees provide screening along Jamaica Avenue and Ravine Parkway.

Parks and Trails. With development of this property, Military Road will be converted into a trail. There is a proposed 0.15-acre trail head park at the northwest corner of the development. Staff have indicated that this will be sufficient to provide trail access to the future trail that will be located in the place of Military Road.

PLANNED UNIT DEVELOPMENT

As previously mentioned, we are looking for flexibility on side yard setbacks and therefore are requesting that the property be developed as a PUD. We believe that the proposed development meets the intent and purpose of the City's PUD ordinance in the following ways:

A. To facilitate the economical and efficient provision of streets and public utilities and to prevent development that would burden the existing tax base or in areas without adequate public improvements;
   - *Development of the property will help redirect Ravine Parkway South traffic traveling north to the Cardinal Reserve development to the new connection made to Jarvis Avenue South, easing the burden of traffic on Jeffrey Avenue South.*

B. To facilitate developments that provide a benefit to the City as a whole, through, but not limited to, higher standards of architectural and site design, enhanced or innovative public infrastructure, sustainable design, provision of life-cycle and/or affordable housing, redevelopment or expanded transportation options;
   - *The homes in this proposed development will include our Smart Series homes, which provide homeowners with energy efficiency, design and warranty that come with building a new construction home at a lower price and within a shorter time frame. Additionally, the new connection point from Ravine Parkway South will help ease traffic on Jeffrey Avenue South.*

C. Preservation of valuable natural resources and amenities to ensure a higher quality of environmental conservation;
   - *While there are not necessarily natural resources on the property to preserve, the design of the community takes into account bedrock on the site, avoiding the need to excavate it as much as possible.*

D. To increase public open space to ensure concentration of open space into more usable areas and restoration of natural resources.
   - *The proposed site plan concentrates homes toward the center of the property, creating wide buffers from the Ravine Meadows neighborhood and Jamaica Avenue South.*

E. High quality of design and design compatible with surrounding land uses, including both existing and planned;
   - *As previously mentioned, the site plan provides a wide buffer from the Ravine Meadows neighborhood and Jamaica Avenue South and creates connectivity from the Cardinal Reserve neighborhood south across Ravine Parkway South to the Kingston Fields neighborhood.*

F. Sensitive development in transitional areas located between different land uses and along significant transportation or scenic corridors within the City; and
   - *As previously mentioned, the proposed development provides a buffer from Jamaica Avenue South.*

G. Development which is consistent with the Comprehensive Plan.
   - *The proposed development meets density and land use requirements set forth in the Comprehensive Plan.*

DENSITY

With 85 units on a 36.35-acre site, and netting out of the parkland of 0.15 acres (with a net area of 36.2 acres), the proposed density is 2.34 units per acre. The area of the proposed development is guided for the Low-Density Residential land use category, which allows two to four units per acre. The proposed density is within the allowed density of the Low-Density Residential land use.

NEIGHBORHOOD MEETING

A neighborhood meeting is tentatively scheduled for February 12, 2026. A list of property owners to invite to this meeting has been provided by City Staff. Notes of the meeting will be shared with staff.

ELEVATIONS

Example elevations of our OriGen Smart Series homes have been provided. These elevations will vary based on material and color and may be slightly modified with each buyer. We also have anti-monotony requirements to ensure that very similar elevations are not adjacent to one another within the community to preserve visual interest.

TIMING

We plan to begin grading the site in late spring/early summer after approval of preliminary plat and other applicable agency approvals. We understand a grading-only development agreement will be required in order to accomplish this and therefore request that this agreement be reviewed concurrently with this Preliminary Plat and PUD application. Installation of utilities will occur after final plat has been approved and all conditions of final plat approval have been met. A phasing plan has been provided and is in draft form.

RESTRICTIVE COVENANTS

The development will have an HOA that will provide for the maintenance of the overall common elements in the community, including landscaping of the common areas as applicable. Additionally, restrictions will be placed on outdoor storage and parking (no boats, campers, or trailers) in order to keep the community looking orderly and well maintained.

EXAMPLE ELEVATIONS – ORIGEN

Augustine



Kingston



Richmond



Waterbury



EXAMPLE COMMUNITIES WITH REDUCED SETBACKS (PLEASE NOTE: THESE HOMES ARE SETBACK 5 FEET FROM THE SIDE PROPERTY LINE, AND WE ARE REQUESTING A 6-FOOT SIDE YARD SETBACK)






Shakopee - Valley Crest
40-foot Lots
5-foot Setbacks on Villas
and Carriage


Farmington - North Creek
40- and 50-foot Lots
5-foot Setback

SSTS LLC
www.s2traffic.com

Date: **February 10, 2026**

To: **Emily Becker, M/I Homes of Minneapolis, LLC**

From: **Katie Schmidt, PE (MN PE License #47147)**

Re: **Traffic Review – McHattie Landing Development, Cottage Grove, MN**

SSTS has conducted a high-level traffic review related to changes in access and residential unit count for the proposed McHattie Landing development in the City of Cottage Grove, Washington County, MN. In 2021, the initial McHattie Landing preliminary plat was approved with two accesses on Ravine Pkwy (a westerly right-in/right-out only access and an easterly full access) with 79 single-family home lots. Further site study revealed geotechnical constraints making the westerly right-in/right-out access and roadway cost-prohibitive. As a result, the updated site layout proposes one full access on Ravine Parkway with 85 single-family home lots as detailed in Figure 1. The proposed full access is side-street stop-controlled using existing turn lanes on Ravine Pkwy. Traffic from the neighborhood to the north will likely use the Janero Ave and Jarvis Ave connections and travel through the site to use the proposed access.

This traffic review estimates the site-generated traffic for 85 single-family homes, considers access through the site for the neighborhood to the north and provides a high-level peak-hour operational analysis of the proposed full access on Ravine Pkwy. Recommendations to improve traffic operations and safety are included, as necessary.



Figure 1. Proposed Site Layout

1. Trip Generation

Site generated trips for the proposed 85 single-family homes in McHattie Landing have been estimated for typical weekday AM and PM peak hours and on a daily basis using the data and methodology described in the Institute of Transportation Engineers' ***Trip Generation Manual***[1], which is a standard industry reference used by public agencies to estimate traffic generated by specific land uses. Residents in the neighborhood to the north are likely to travel through the McHattie Landing site for access. Figure 1 shows the potential area of 81 homes that could choose this travel route.

Table 1 summarizes the trip generation estimates for McHattie Landing and the homes in the neighborhood to the north that might use the proposed access.

Table 1. Trip Generation

Land Use	Land Use Code	Size	Trips Generated:				
			AM Peak		PM Peak		Weekday ADT
			Enter	Exit	Enter	Exit	
McHattie Landing Trips							
Single-Family Detached Housing	210	85 units	16	43	49	30	773
Neighborhood To The North Trips							
Single-Family Detached Housing	210	81 units	15	41	47	29	736
Totals			31	84	96	59	1,509
			115		155		

The McHattie Landing development is estimated to generate the following traffic:

- 59 new trips (16 entering and 43 exiting) during the morning traffic peak hour,
- 79 new trips (49 entering and 30 exiting) during the evening traffic peak hour, and
- 773 daily trips.

Traffic assumed to use the Ravine Pkwy/Proposed Access (McHattie Landing + Neighborhood to the north) is as follows:

- 115 trips (31 entering and 84 exiting) during the morning traffic peak hour,
- 155 trips (96 entering and 59 exiting) during the evening traffic peak hour, and
- 1,509 daily trips.

2. Traffic Volumes

2.1 Existing Traffic Volumes

Existing peak hour traffic volumes were estimated for the Ravine Pkwy and 66th St S/Access intersection from existing available data. Ravine Pkwy has an existing average daily traffic volume of 1,303 vehicles/day just east of Jamaica Ave (2024 ADT per MnDOT's Traffic Viewer Application). Peak hour traffic volumes are typically 10% of the ADT. This would equate to 130 total peak hour vehicles on Ravine Pkwy traveling east and west through the intersection. The AM peak hour split is assumed to be 60% westbound and 40% eastbound, and the PM peak hour split is the opposite with 40% westbound and 60% eastbound. Trip generation for 61 existing homes to/from the south on 66th St S is also assumed in the existing volume estimate on the south leg of the intersection. 61 homes is a high/conservative estimate based on lot locations in the neighborhood to the south.

2.2 Build Traffic Volumes

Distribution of new traffic (McHattie Landing + neighborhood to the north) on Ravine Pkwy is assumed to be 70% to/from Jamaica Ave and 30% to/from Keats Ave. These volumes were added to the north leg of the intersection. Figures 2 and 3 show the estimated Build traffic volumes for the AM and PM peak hours.

[1] ***Trip Generation Manual***, Institute of Transportation Engineers (ITE), 12th Edition



Figure 2 - AM Peak Hour Build Volumes



Figure 3 - PM Peak Hour Build Volumes

3. Traffic Operations Review

Operating conditions of intersections are evaluated based on the capacity versus the actual traffic volume. Industry standards for evaluating capacity are contained in the ***Highway Capacity Manual***[2]. Operating conditions are described in terms of driver delay represented as a Level of Service (LOS) grade with "A" as the best conditions and "F" as the worst. Typically, LOS "D" represents the threshold for acceptable overall intersection operations, and LOS "E" represents the acceptable individual movement threshold operating during a peak hour. Table 2 summarizes the LOS and delay criteria for unsignalized intersections.

Table 2. Level of Service Criteria – Unsignalized Intersections

LOS	A	B	C	D	E	F
Delay	0-10 seconds	>10-15 seconds	>15-25 seconds	>25-35 seconds	>35-50 seconds	>50 seconds
Description	*Free-flow operation*	*Unimpeded operation*	*Stable operation*	*Less stable & more delay*	*Unstable & high delay*	*Congested & back-ups*

Another component of operational analyses is a study of queuing. An intersection can operate with acceptable LOS, but if queues extend back to block adjacent intersections and/or entrances to turn lanes, unsafe conditions could result. The industry design standard 95th Percentile Queue Length is reported. Synchro software (12th Edition) was used for the operational analyses. LOS, delay, and queues are reported for each approach lane at the intersection. Synchro's HCM 7th Edition reports were used.

Operational analyses were completed for the estimated build volumes noted on Figure 2 and Figure 3 and for a future condition with Ravine Pkwy eastbound and westbound through traffic volumes increased by 50% to account for future traffic growth. Table 3 details the operational results. Operations are acceptable as LOS is B or better for all approach lanes, and queuing is minimal. Side-street delay increases as volumes on Ravine Pkwy increase, but operations remain acceptable with the longest delay of 11.3 seconds for the northbound shared left/through/right turn lane during the PM peak hour.

[2] ***Highway Capacity Manual (HCM)***, Transportation Research Board, 7th Edition

Table 3. Build Conditions Operational Results

Intersection	Lane	Build Volumes						Build Volumes w/50% Mainline Increase					
		AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour		
		LOS	Delay	Queue	LOS	Delay	Queue	LOS	Delay	Queue	LOS	Delay	Queue
Ravine Pkwy & 66th St/Access	*EBL*	A	7.4	0	A	7.5	5	A	7.5	3	A	7.6	5
	EBT	A	0.0	0	A	0.0	0	A	0.0	0	A	0.0	0
	EBR	A	0.0	0	A	0.0	0	A	0.0	0	A	0.0	0
	WBL	A	7.3	0	A	7.5	0	A	7.4	0	A	7.5	0
	WBT	A	0.0	0	A	0.0	0	A	0.0	0	A	0.0	0
	WBR	A	0.0	0	A	0.0	0	A	0.0	0	A	0.0	0
	NBLTR	A	9.9	3	B	10.7	3	B	10.4	5	B	11.3	3
	SBLTR	A	9.5	8	A	9.7	5	A	9.9	10	A	10.0	8

- Delay in seconds and queue in feet. Results from Synchro's HCM 7 TWSC Reports.

4. Summary & Recommendations

★ The number of new vehicle trips estimated to be generated by the McHattie Landing development is 59 AM peak hour trips, 79 PM peak hour trips, and 773 daily trips. The peak hour intensity is minimal, with around 1 additional vehicle anticipated every minute during the AM peak hour and 1.3 additional vehicles every minute during the PM peak hour.

★ Traffic operations at the Ravine Pkwy and 66th St S/Access intersection were reviewed with McHattie Landing development traffic and traffic from the neighborhood to the north. Operations are predicted to be acceptable in terms of vehicle delay and queuing during typical weekday AM and PM peak traffic hours. Additionally, traffic operations are predicted to be acceptable as background traffic volumes increase on Ravine Pkwy.

★ Development traffic is not expected to divert north via the 62nd St/Jeffery Ave route as an alternative to using the Ravine Pkwy and 66th St S/Access intersection.

SOUTH WASHINGTON WATERSHED DISTRICT

01/12/2024

Robert J. McHattie, MBA, CRPC
Financial Advisor* - Rob McHattie Financial
1412 Almond Avenue
St. Paul, Minnesota 55108-2536

RE: Wetland Review McHattie Cottge Grove property.

Dear Mr. McHattie:

The South Washington Watershed District has conducted an aireal photograph review of the property located in Cottage Grove, MN. Staff is familiar with the property and is confident in review with the Washington Conservation District that there are no wetland signatures on the property in question.

While there is some signatures during wet years there is not enough evidence to indicate that a Level 2 wetland invesigation is not required. Therefore we are confident that there are no wetlands on this property.

If you have any questions feel free to contact me at 651-249-7096 or matt.moore@woodburymn.gov.

Sincerely,

Matt Moore
SWWD Administrator

cc: Mr. Jay Riggs, Washington Conservation District

City Council Action Request

13.A.

Meeting Date	3/18/2026
Department	Public Safety
Agenda Category	Presentation
Title	Police Annual Report and Use of Force Data Presentation
Staff Recommendation	Receive Cottage Grove Police's 2025 use of force and annual report presentation.
Budget Implication	N/A

Attachments

1.	Annual Report and Use of Force Data Presentation March 2026
2.	2025 Annual Report 1 (2)
3.	2026 Strategic Priorities 1 (1)

To: Honorable Mayor and City Council
Jennifer Levitt, City Administrator

From: Peter J. Koerner, Director of Public Safety

Date: March 18, 2026

Subject: **POLICE ANNUAL REPORT AND USE OF FORCE DATA PRESENTATION**

INTRODUCTION

Annually, since 2019, the Cottage Grove Public Safety – Police Division has reported use of force information to Council in a workshop. Deputy Director Brad Petersen will present Cottage Grove Police Department's (CGPD) 2025 use of force data, trends, and related information to Council for discussion. Additionally, Deputy Director Petersen will present the highlights of CGPD's 2025 Annual Report. This discussion will promote transparency, identify trends, and demonstrate CGPD's strategic progress to establish a contextual basis for future decisions.

RECOMMENDATION

Receive Cottage Grove Police's 2025 use of force and annual report presentation.

Cottage Grove

Where Pride and Prosperity Meet

2025 ANNUAL REPORT

JAN 29, 2026





Peter Koerner
Director of Public Safety

12800 Ravine Pkwy.
Cottage Grove, MN 55016

(651) 458-2850

pkoerner@cottagegrovemn.gov

cottagegrovemn.gov/public-safety

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Chief's Message

I'm honored to present CGPD's 2025 Annual Report showcasing CGPD as a premier law enforcement agency with a steadfast commitment to community safety. This annual report is intended to promote transparency, trust, and progress in accordance with 21st Century Policing Strategies. Community-oriented policing, innovation, and analytics are key to our strategic success as we strive to meet the evolving needs of our growing community. I'm also excited to share a few of our major accomplishments.

In 2025, we...
launched a new CSO/Cadet Program and hired 6 police officers
added Therapy K9 Riggs;
added a grant-funded DWI-Traffic Safety Officer;
trained and equipped our Crime Scene Team;
implemented new technologies including ALPR cameras; and
were recognized as a model agency for officer wellness.

CGPD values every citizen interaction. Our pursuit of excellence is reflected in the 2025 National Community Survey, in which 90% of residents reported feeling safe in the community and 89% rated CGPD's service as excellent or good. Our own polling shows a satisfaction rating of 93% speaking to the exceptional level of service provided on a daily basis by our dedicated team.

Our focus on crime prevention, traffic safety, and community engagement continue to make Cottage Grove a safe place where everyone can thrive.

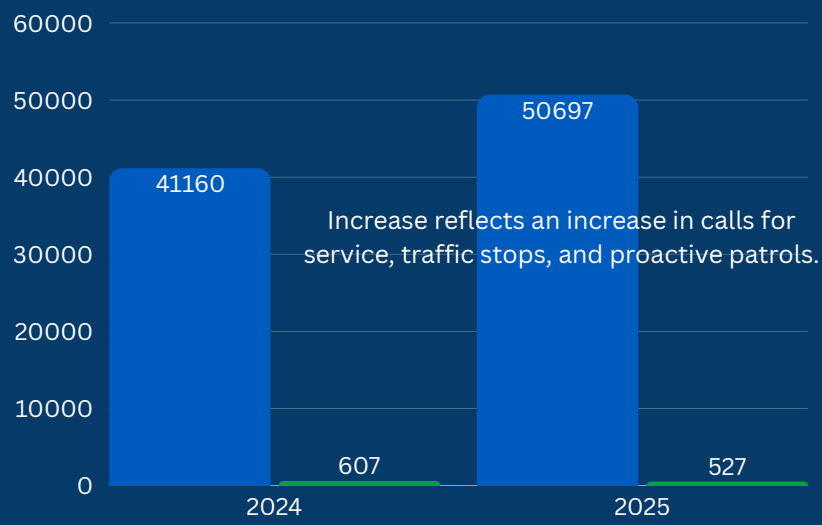
On behalf of CGPD, I thank you for the partnerships and support. We welcome your feedback and questions. We look forward to serving you with pride in 2026 and beyond.

Summary

- Cottage Grove is a remarkably safe community. Major violent crimes are rare, and crime rates have been trending down since 2019. The noticeable increase in Part 2 crimes in 2025 is explained by an almost twofold increase in DWI arrests, which was the outcome of adding a grant-funded DWI-Traffic Safety Officer to make our roads safer from impaired drivers. Secondly, we introduced an online crime reporting option in 2025, which has resulted in more reports from residents.
- As the city grows, we're experiencing an increased demand for police services.
- Due to some expected vacancies we started the year understaffed. Fortunately, we were able to quickly recruit new officers. Some overtime and organizational flexibility was required until we reached full staffing at the close of 2025. Despite the staffing shortage, the Patrol Division maintained a rapid response time and was intentional about crime prevention and traffic safety. Patrol officers logged significantly more proactive checks of our schools, parks, and businesses while making more traffic stops and issuing more citations in strategic and problematic areas. Also, we introduced technologies that enabled us to monitor, assess, and focus our enforcement efforts more efficiently. Comparatively, Cottage Grove's roads are very safe. However, we did witness a minor increase in traffic crashes which is likely attributed to the increase in traffic flow and distracted driving. While one fatal crash did occur on city streets, three fatalities occurred on state highways.
- The recent reorganization of the Investigative Division, which created the Community Impact Team, allowed us to maintain a very high closure and prosecution rate while simultaneously engaging the community to accomplish education, crime prevention, event planning, etc. The persistent problem of drug overdoses and mental health-related incidents remained a high priority.
- CGPD recognizes that a well trained and professional staff with proper oversight serves the community better. As such, we maintained a very high satisfaction rating. CGPD's training, emphasis on de-escalation and constitutional policing, and use of force oversight creates an environment in which our use of force is infrequent, necessary, reasonable, and just. In fact, CGPD officers used force only 91 times during +50,000 calls for service. The vast majority of this force was low level, often only a threat or display. There were no significant uses of force that involved major injury or deadly force. Each of the 91 incidents was reviewed and deemed reasonable and within policy. Although pursuits are sometimes necessary, we recognize they are inherently dangerous. Our efforts to mitigate this risk continues to reduce the frequency of pursuits while giving our officers the discretion to pursue criminals who pose a danger to the community.
- By all metrics and comparisons, CGPD continues to be a professional, high-performing, and efficient law enforcement agency that is keeping our community safe.

Patrol Division

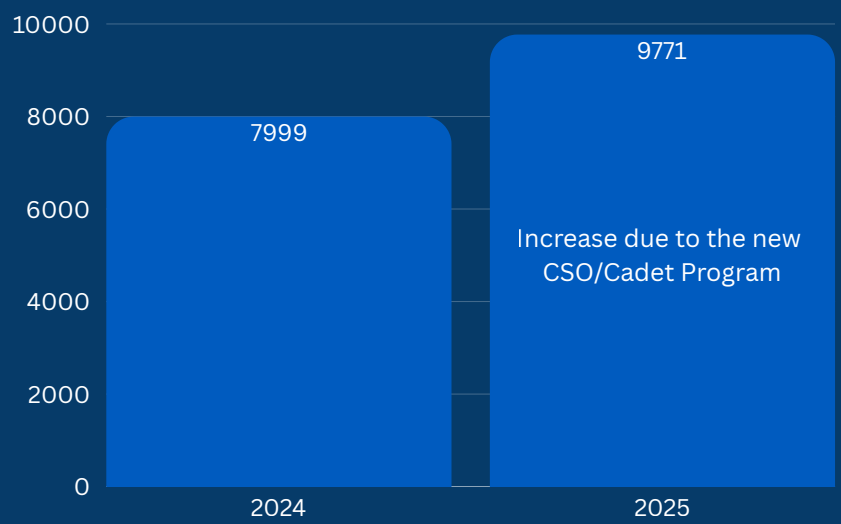
Calls For Service & Arrests



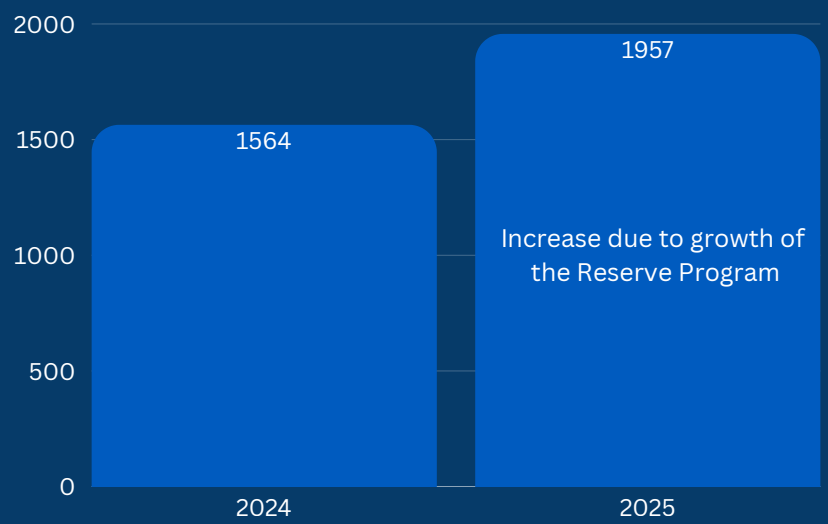
Average Priority 1 Response Time



Community Service Officer Hours

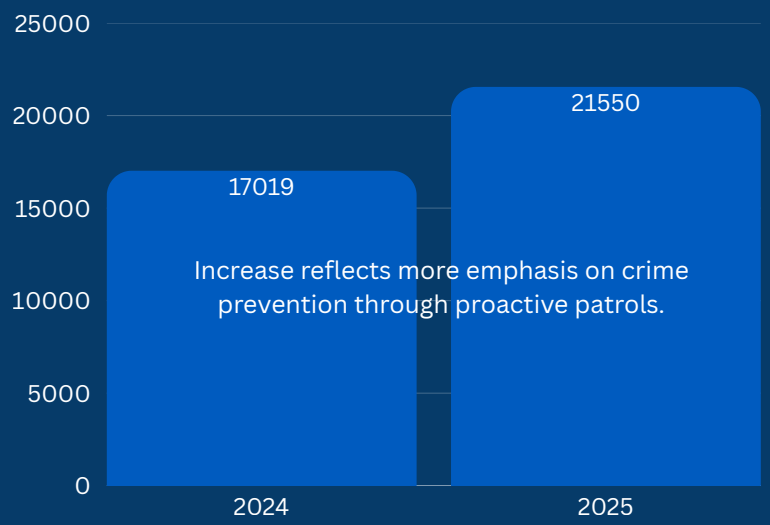


Reserve Officer Hours

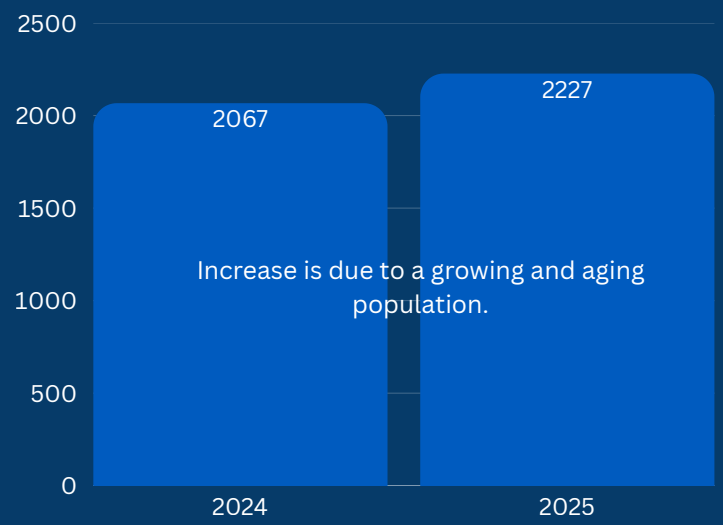


Patrol Division

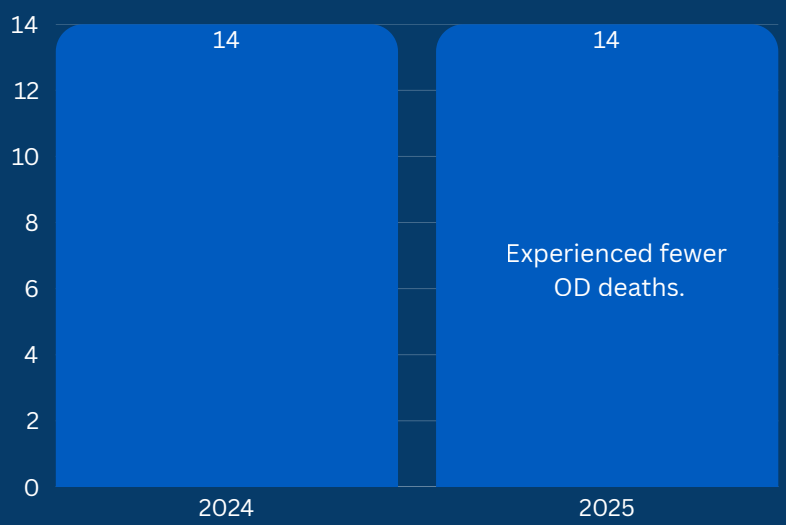
Proactive Checks



Medical Calls



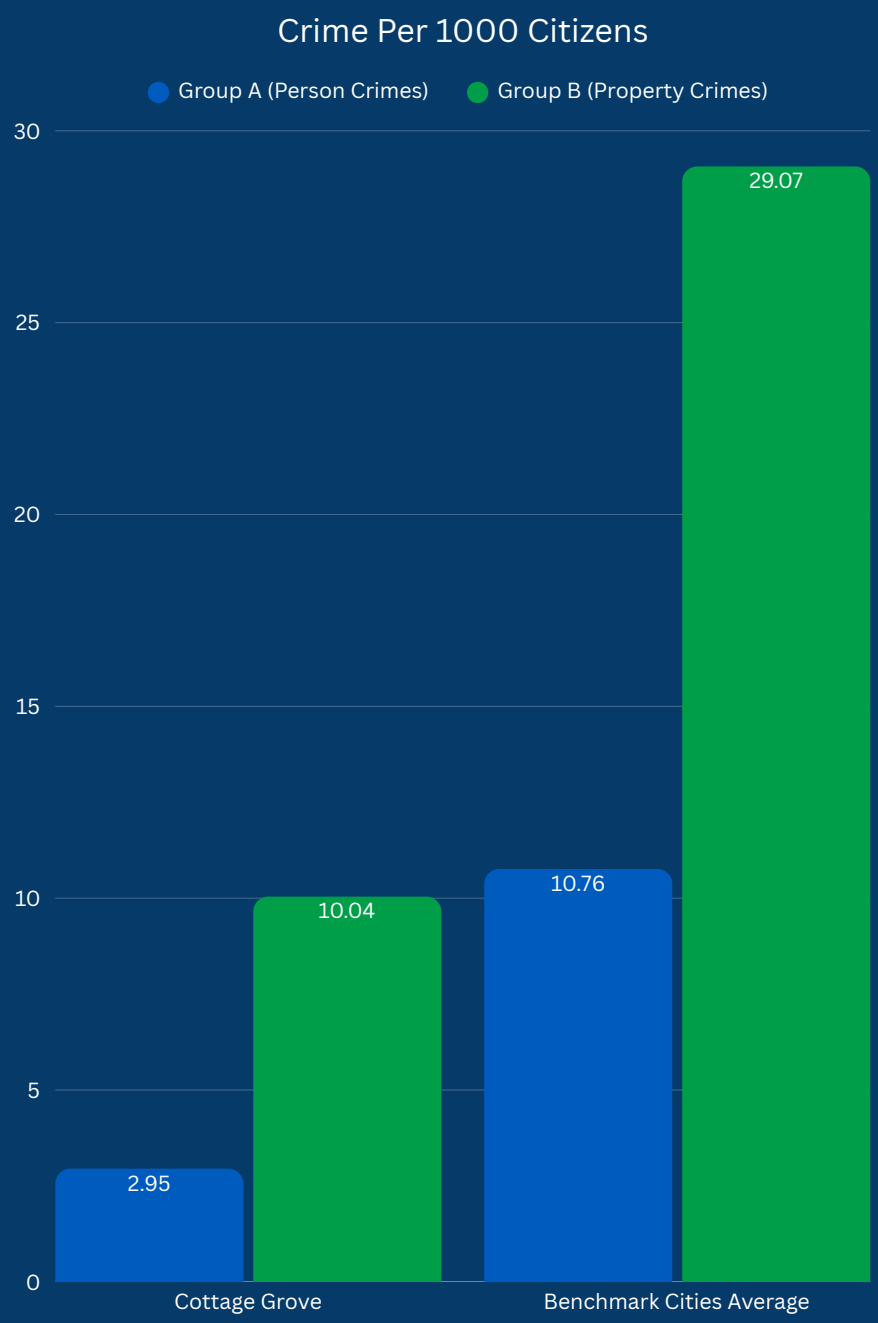
Overdose Calls

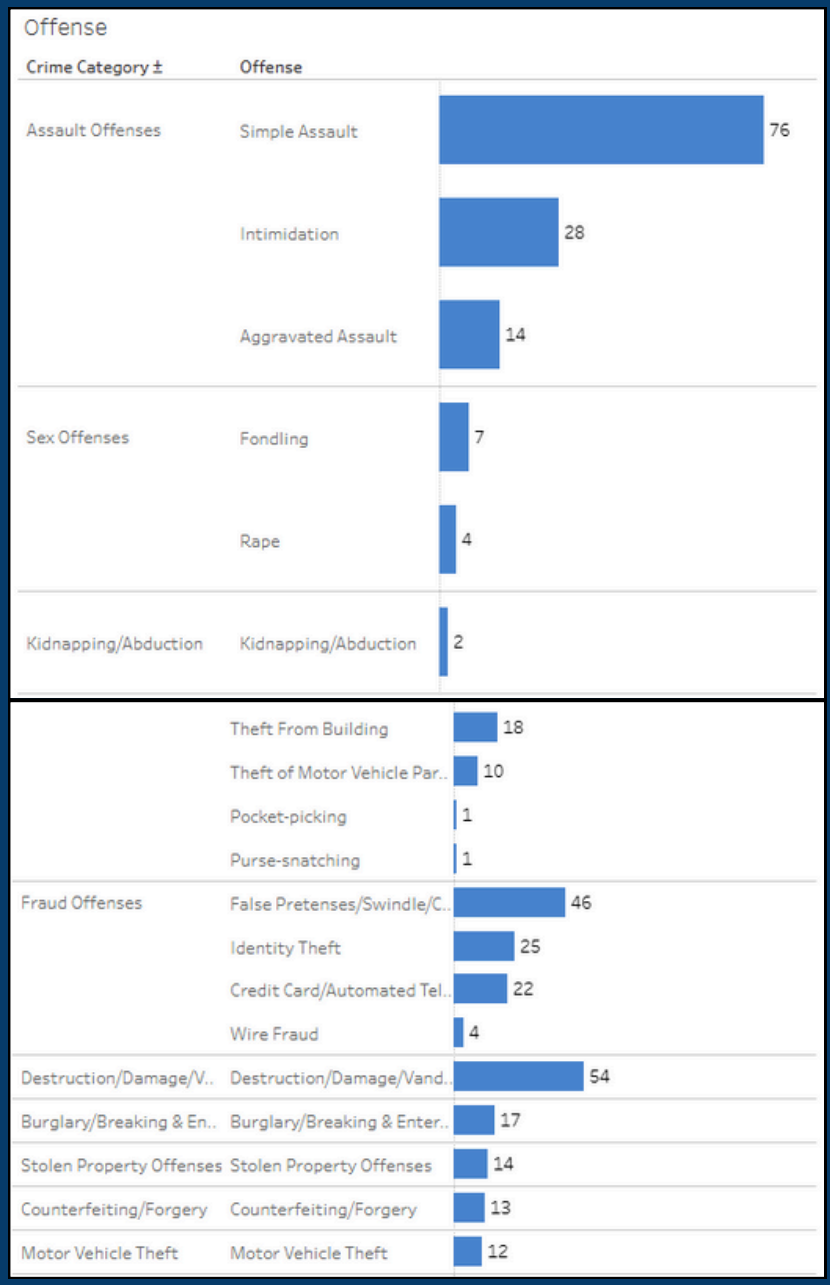


Mental Health Calls

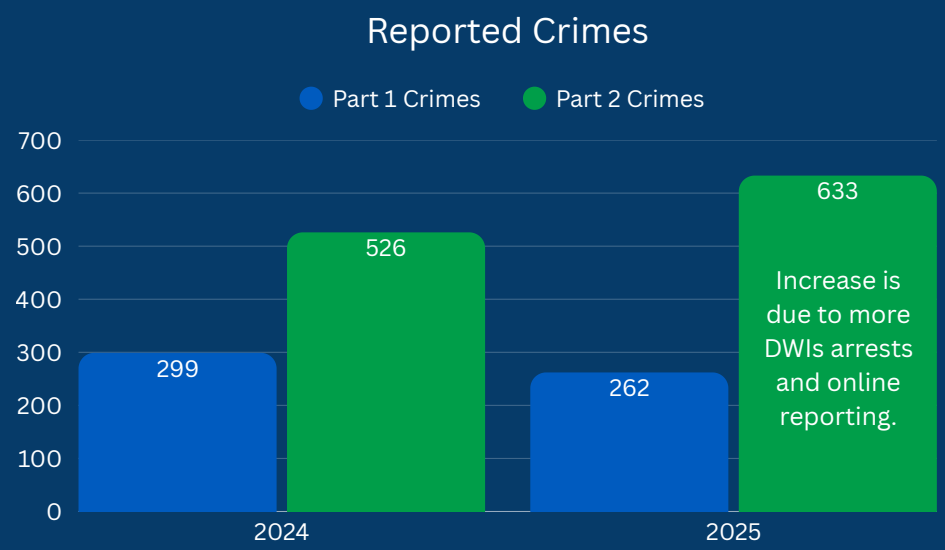


Crime


Crime Per 1000 Citizens
Group A (Person Crimes)
Group B (Property Crimes)
30
25
20
15
10
5
0
2.95
10.04
10.76
29.07
Cottage Grove
Benchmark Cities Average

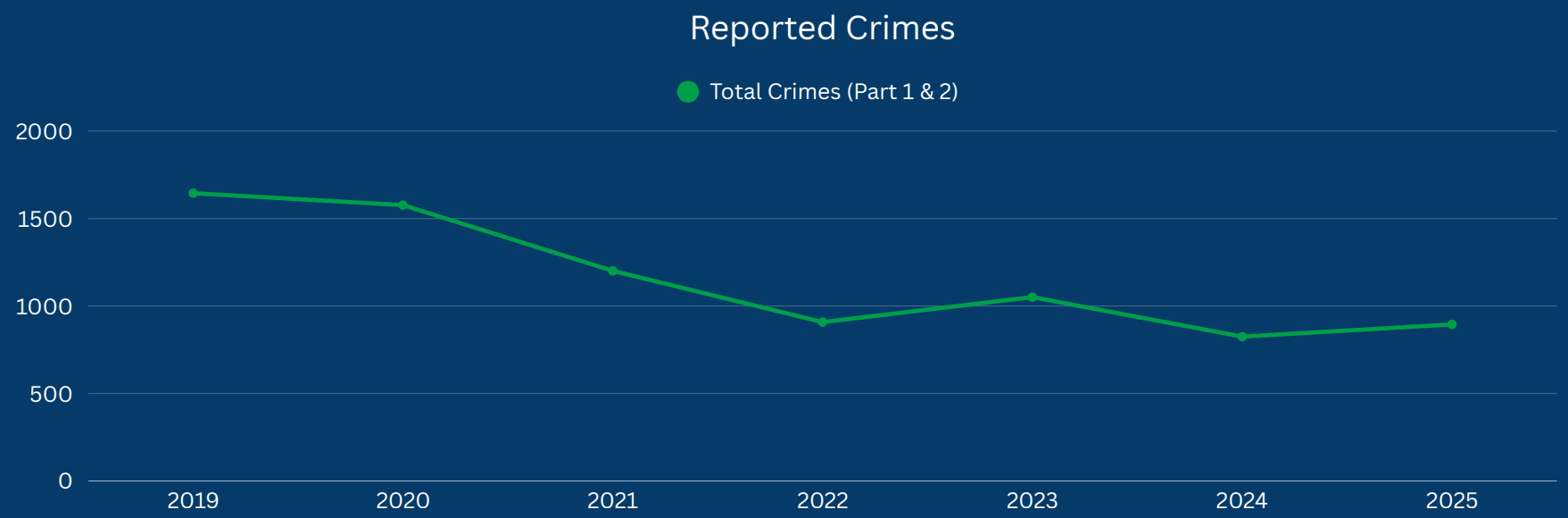

Offense
Crime Category ±
Offense
Assault Offenses
Simple Assault
76
Intimidation
28
Aggravated Assault
14
Sex Offenses
Fondling
7
Rape
4
Kidnapping/Abduction
Kidnapping/Abduction
2
Theft From Building
18
Theft of Motor Vehicle Par..
10
Pocket-picking
1
Purse-snatching
1
Fraud Offenses
False Pretenses/Swindle/C..
46
Identity Theft
25
Credit Card/Automated Tel..
22
Wire Fraud
4
Destruction/Damage/V..
Destruction/Damage/Vand..
54
Burglary/Breaking & En..
Burglary/Breaking & Enter..
17
Stolen Property Offenses
Stolen Property Offenses
14
Counterfeiting/Forgery
Counterfeiting/Forgery
13
Motor Vehicle Theft
Motor Vehicle Theft
12

Crime



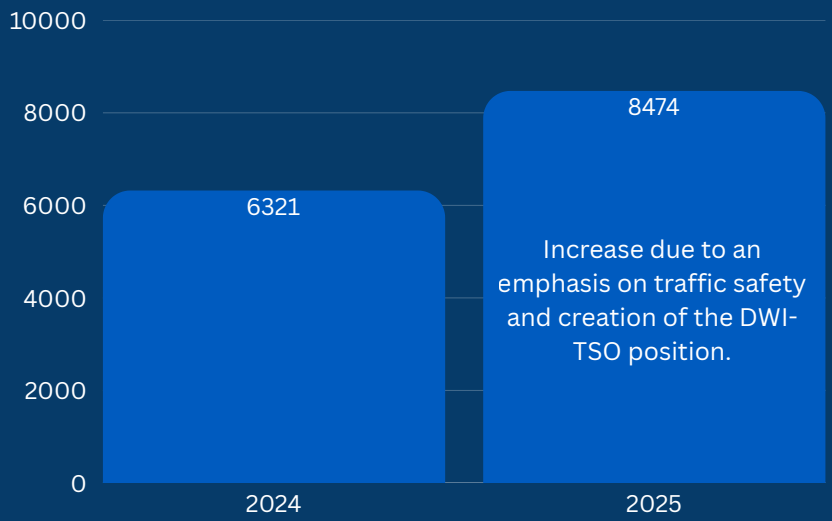
Part 1 Crimes
Murder
Forcible Rape
Robbery
Aggravated Assault
Burglary
Felony Theft
Vehicle Theft
Arson

Part 2 Crimes
Assault
Fraud & Forgery
Financial Crimes
Drug Crimes
Sex crimes
Vandalism
Driving While Impaired
Disorderly Conduct
And More

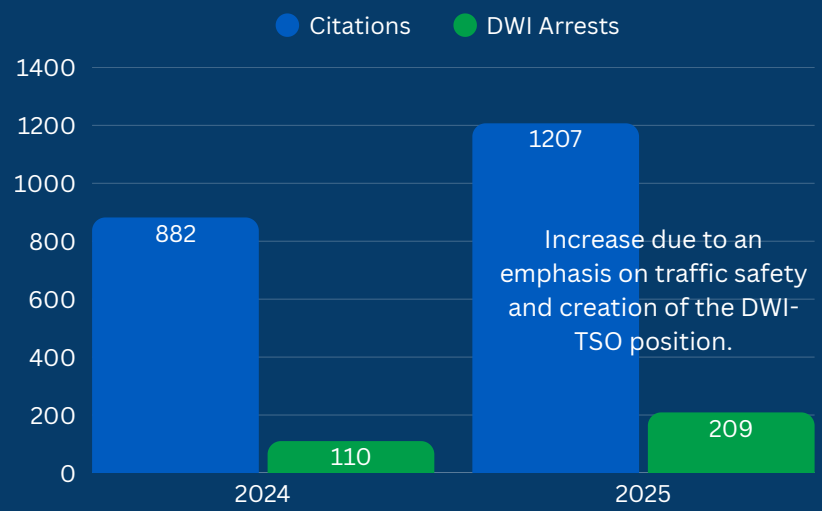


Traffic Safety

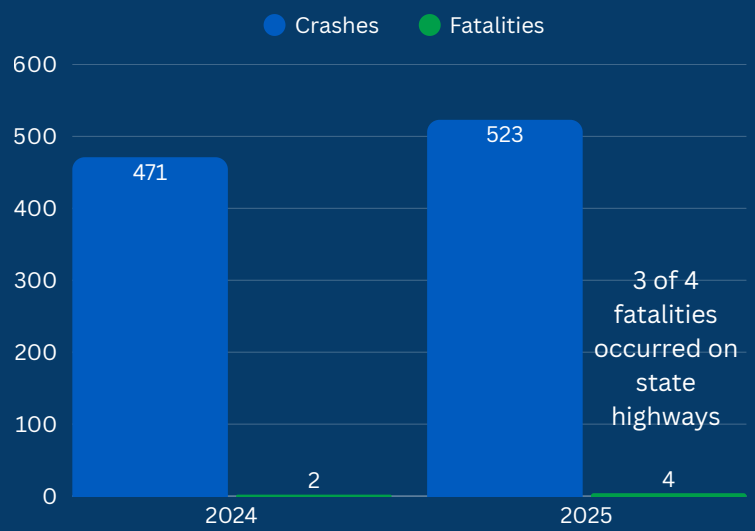
Traffic Stops



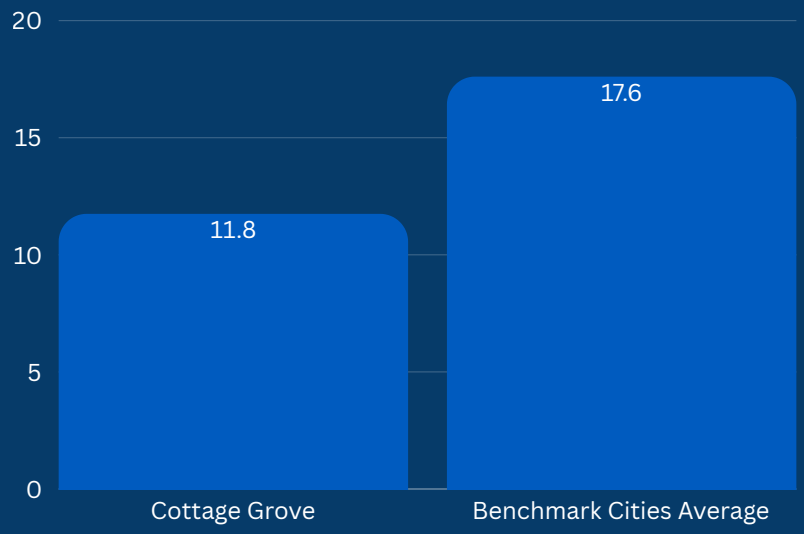
Citations



Crashes

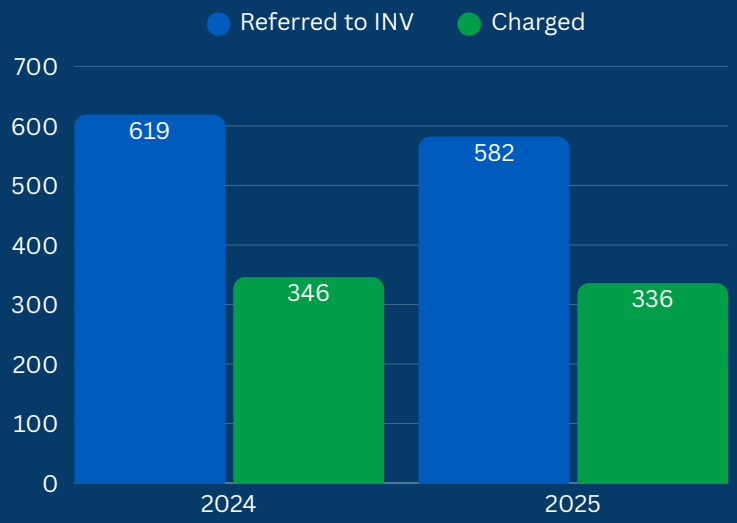


Traffic Crashes Per 1000 Citizens

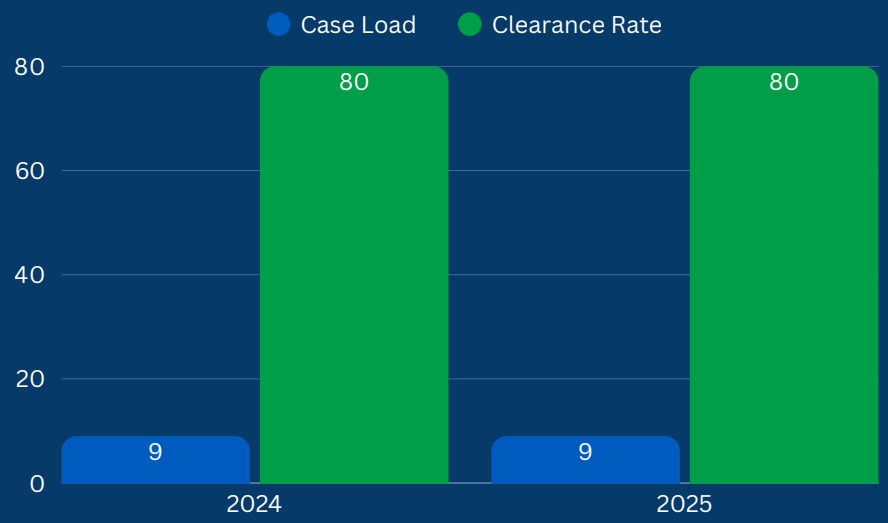


Investigative Division

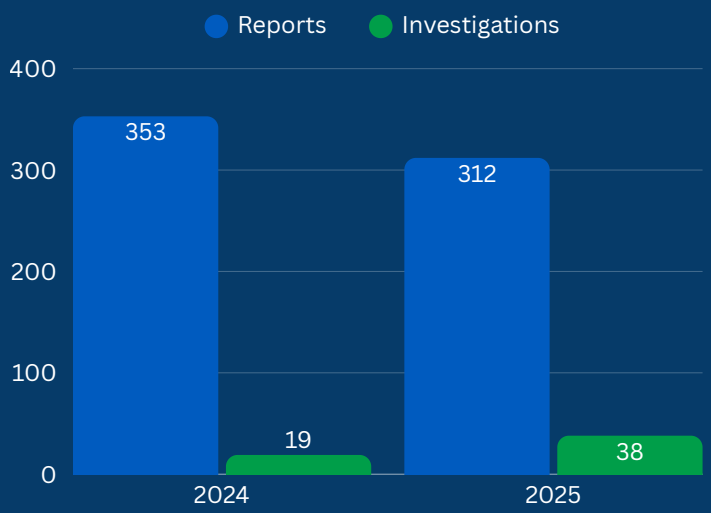
Criminal Case Referrals



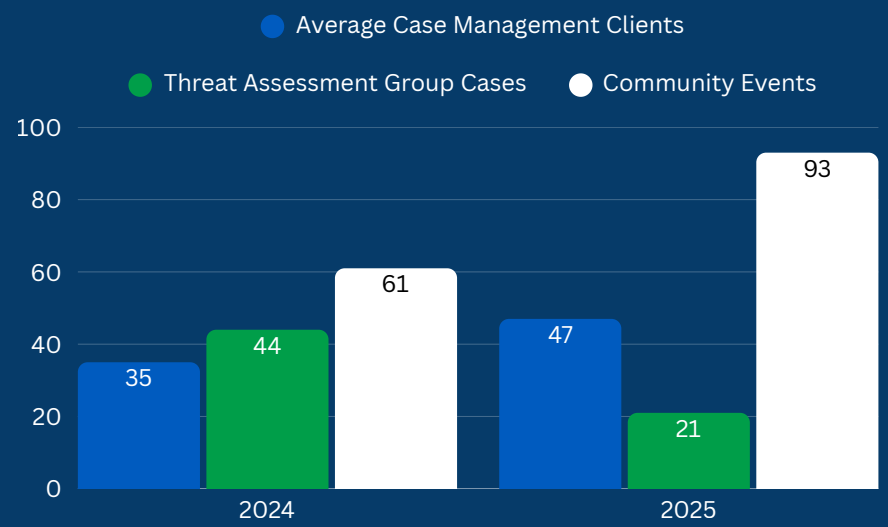
Average Case Load & Clearance Rate



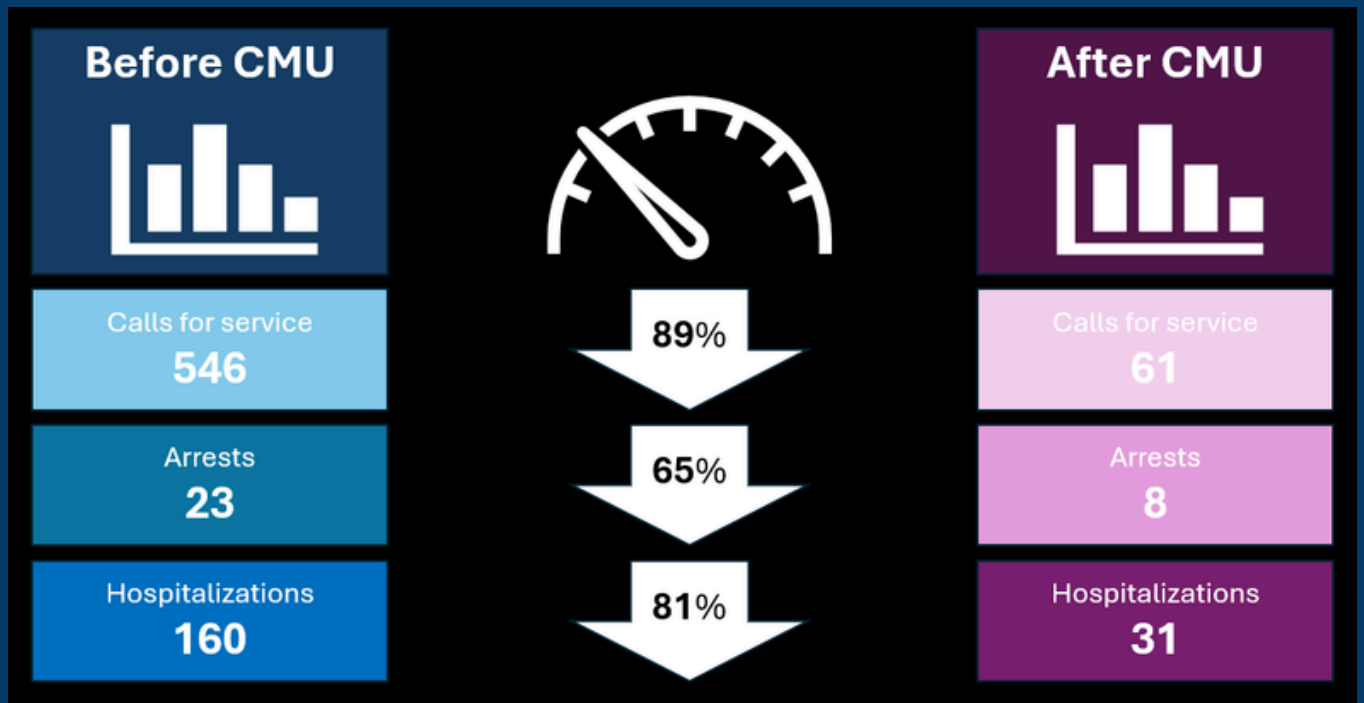
Abuse & Neglect Reports



Community Impact Team



Case Management Unit

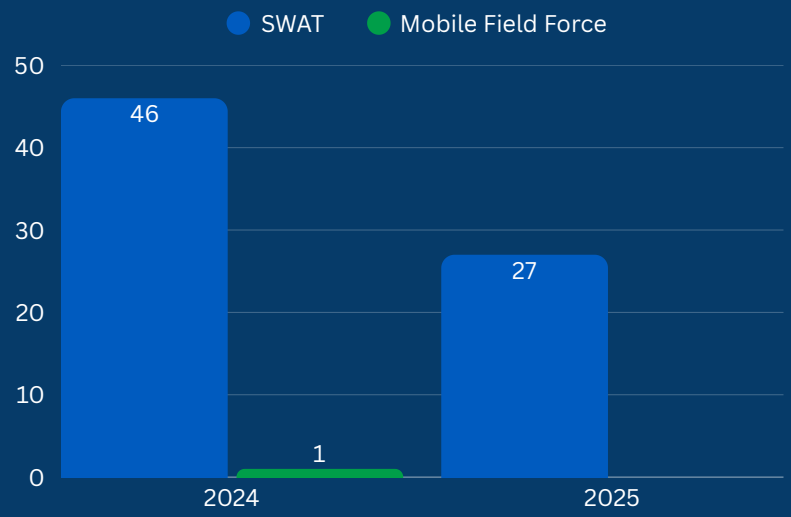


288 Subjects

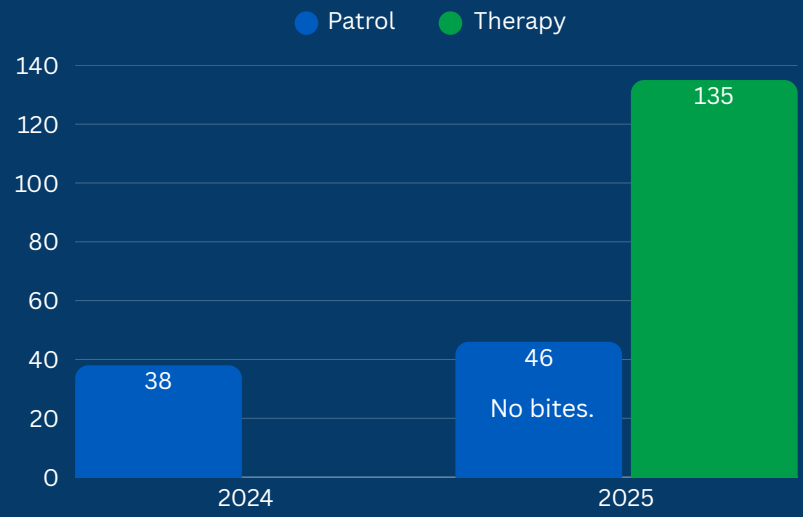
47 Active cases

Special Services

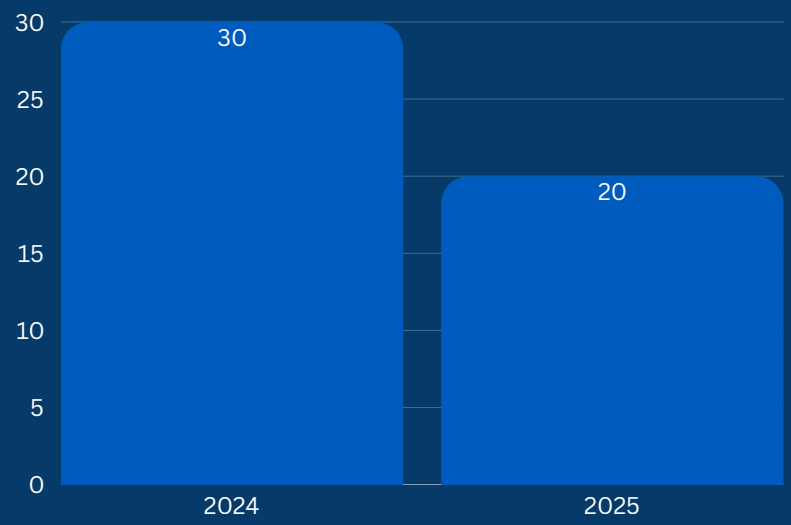
Tactical Missions



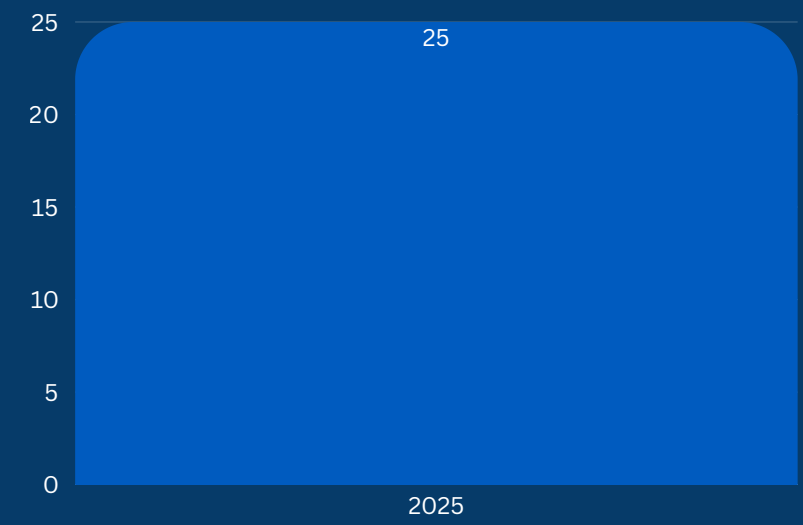
K9 Deployments



UAS Deployments

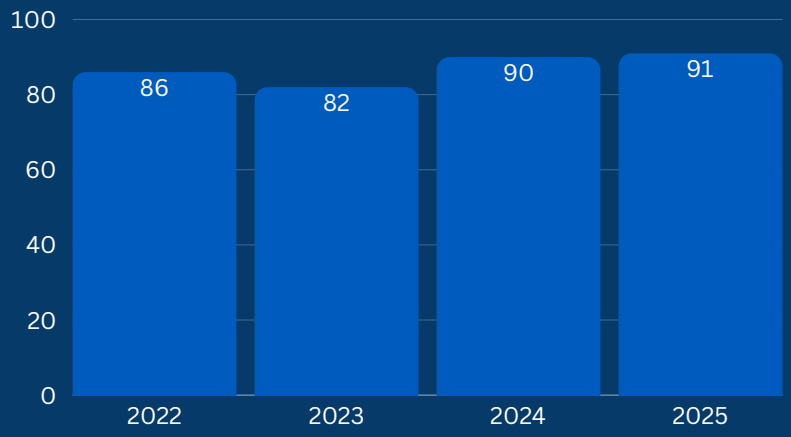


Crime Scene Team Deployments

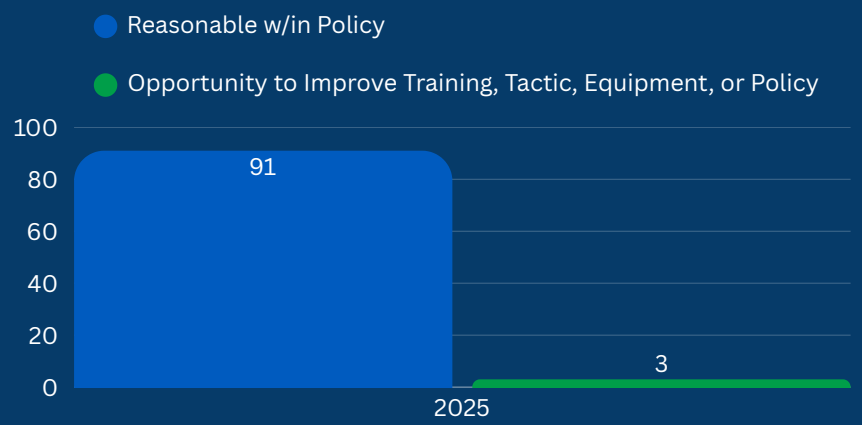


Use of Force

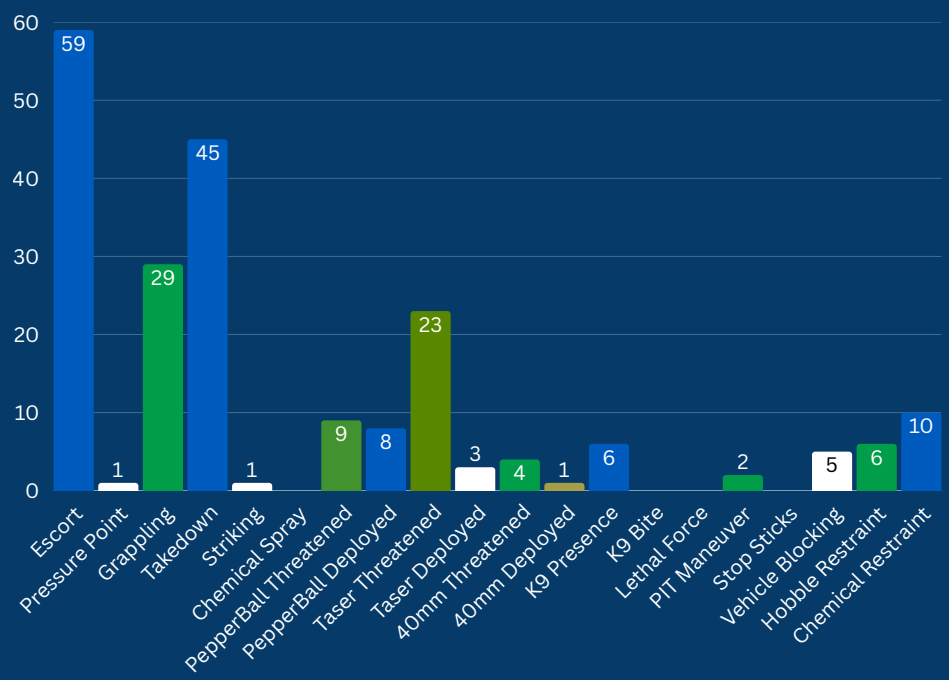
Reportable Use of Force Incidents



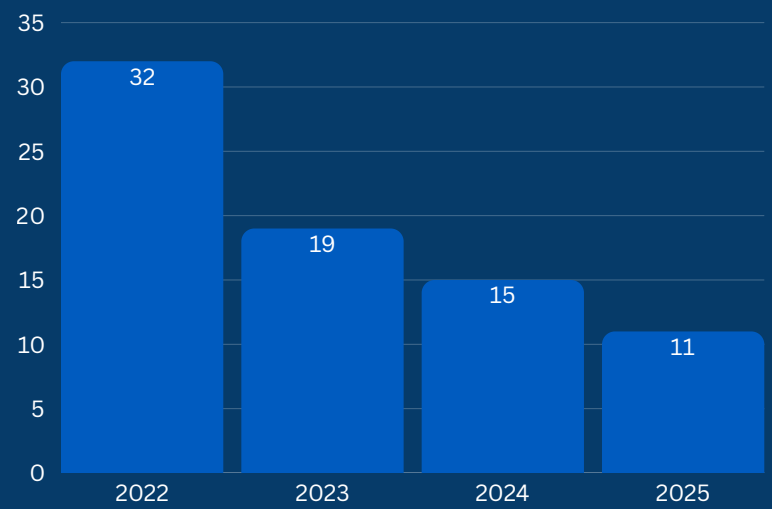
Review Determination



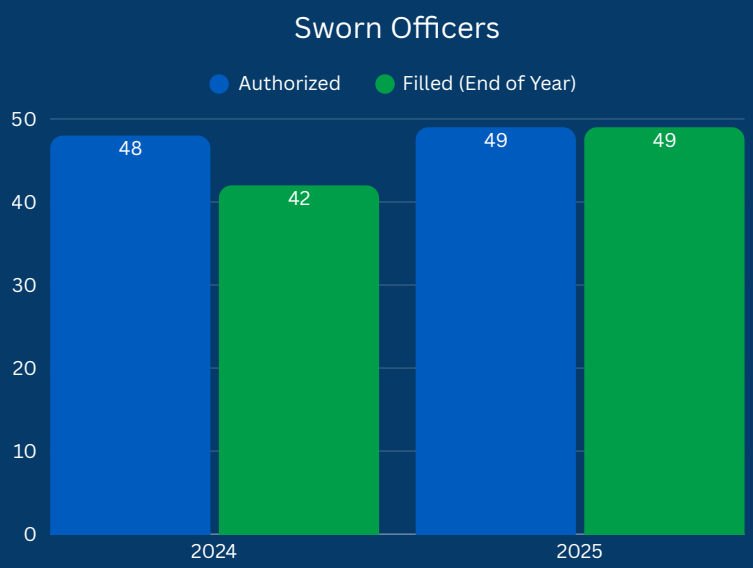
Force Options Reported

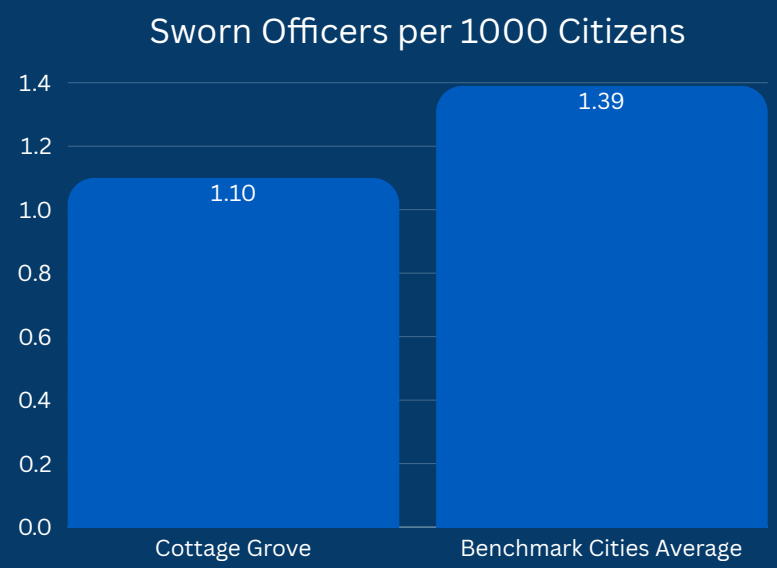


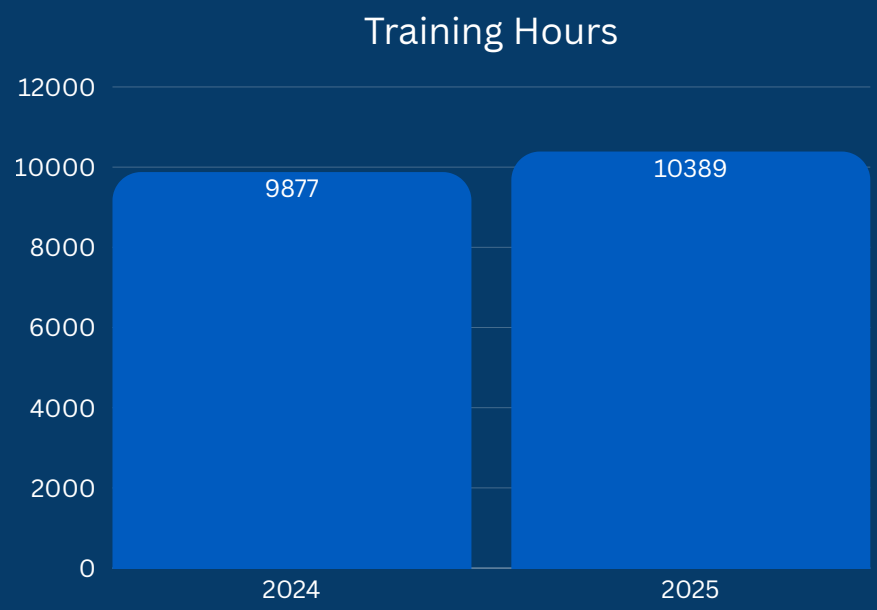
Pursuits

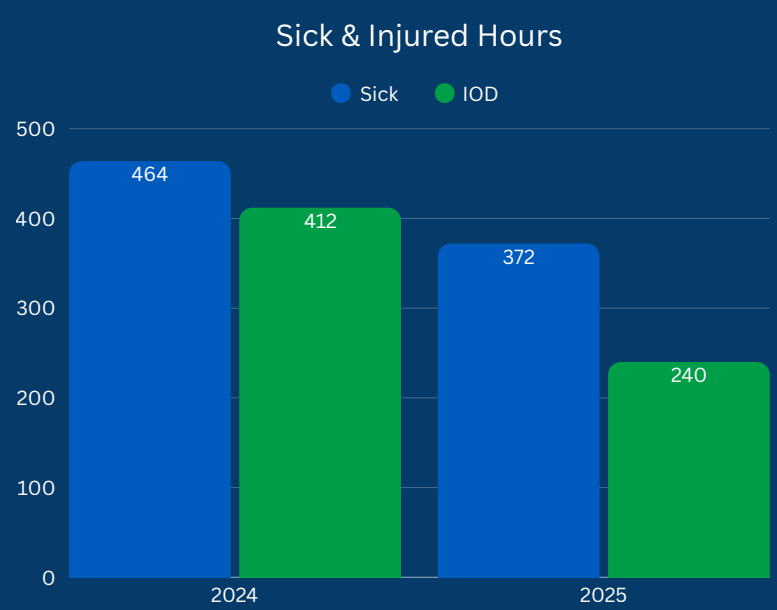


Sworn Staffing

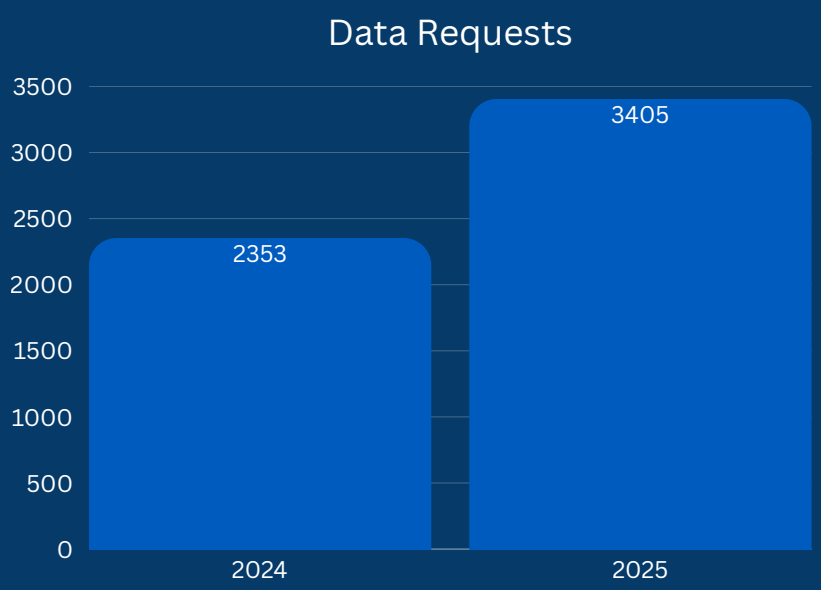


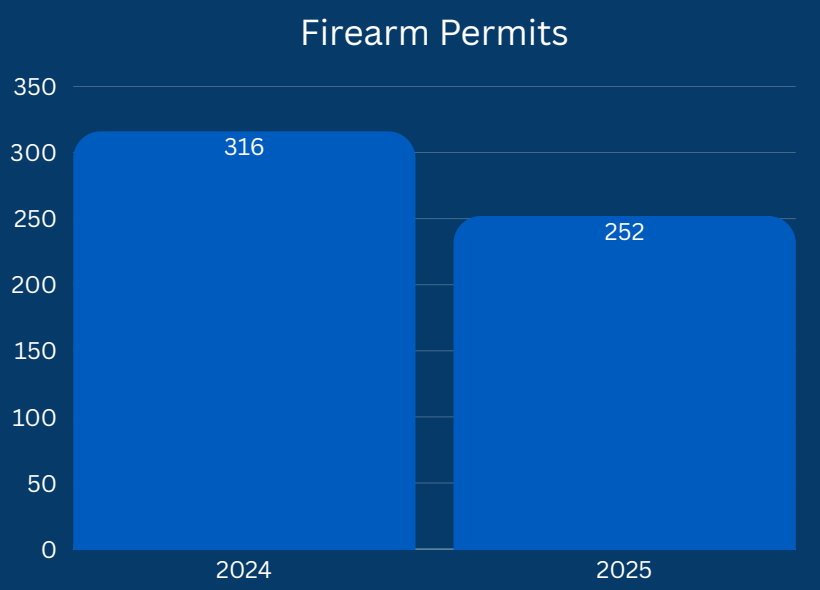


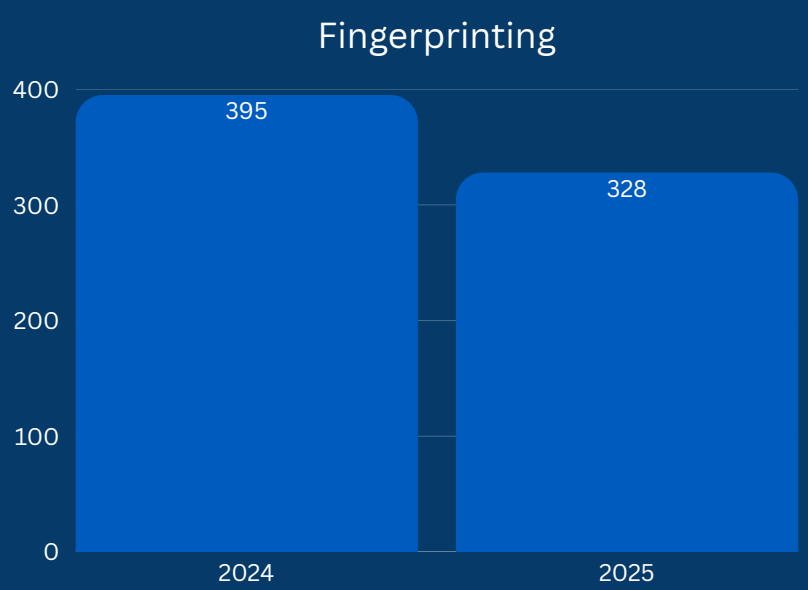




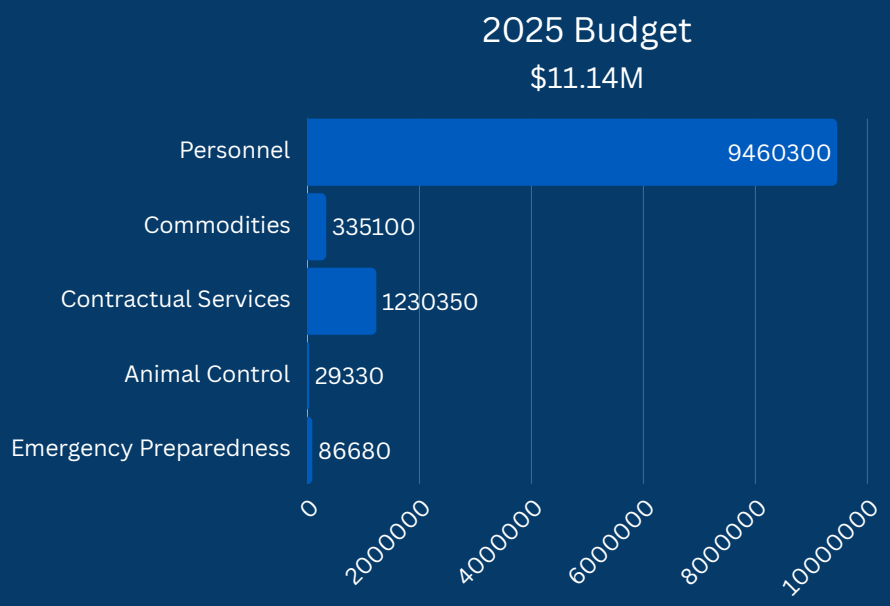
Admin Division

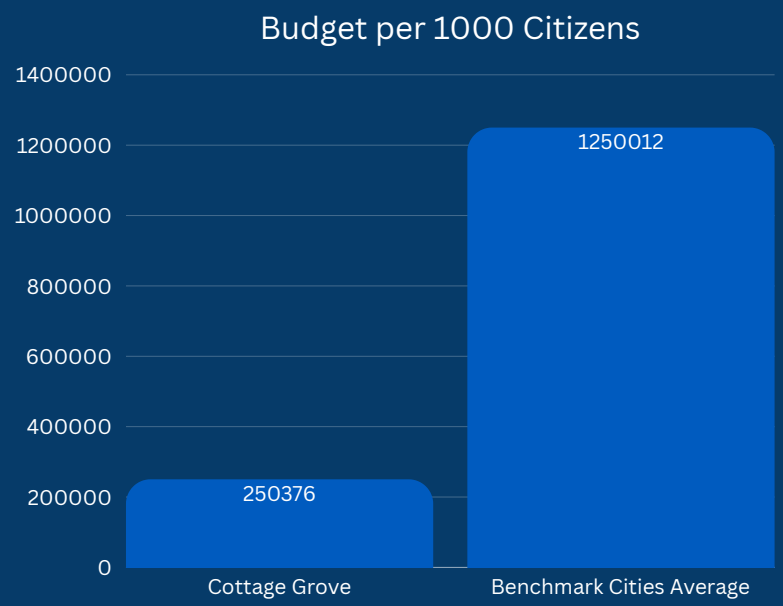


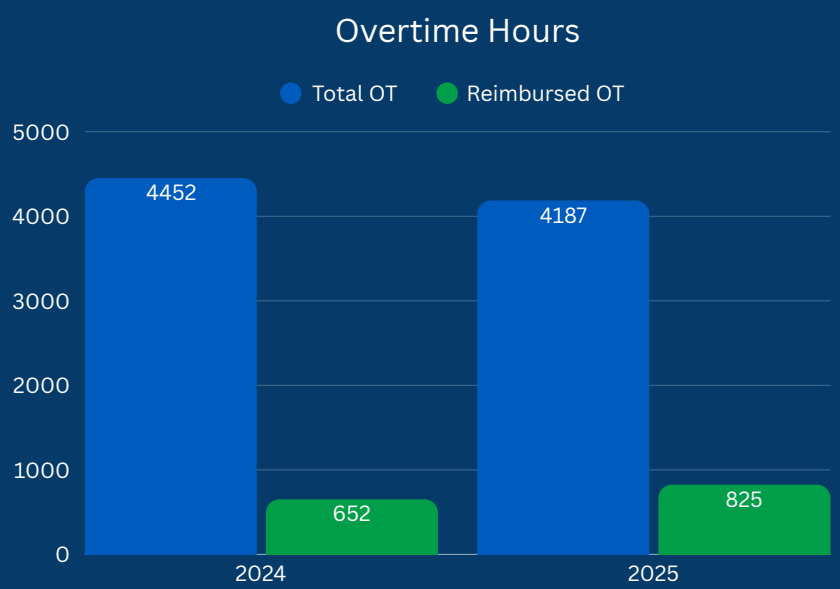


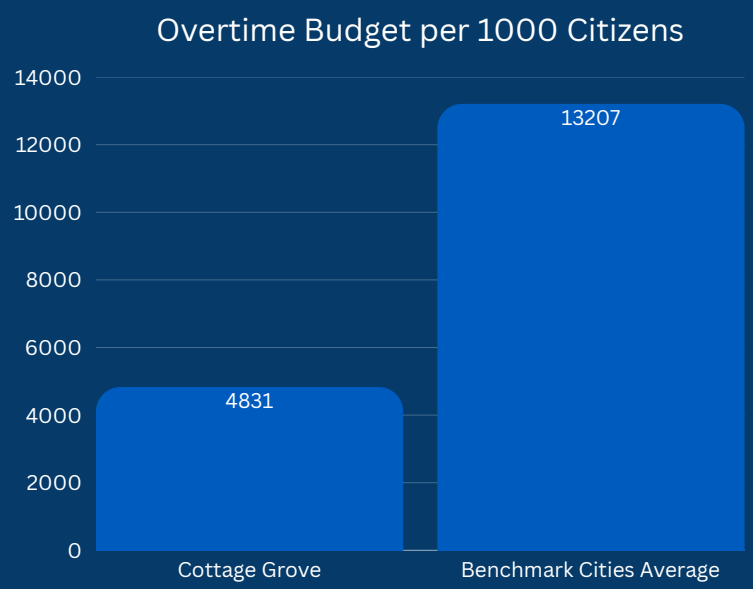


Budget


2025 Budget
$11.14M
Personnel
9460300
Commodities
335100
Contractual Services
1230350
Animal Control
29330
Emergency Preparedness
86680
0
2000000
4000000
6000000
8000000
10000000


Budget per 1000 Citizens
1400000
1200000
1000000
800000
600000
400000
200000
0
250376
1250012
Cottage Grove
Benchmark Cities Average


Overtime Hours
Total OT
Reimbursed OT
5000
4000
3000
2000
1000
0
4452
652
4187
825
2024
2025


Overtime Budget per 1000 Citizens
14000
12000
10000
8000
6000
4000
2000
0
4831
13207
Cottage Grove
Benchmark Cities Average

Awards

Employees of the Quarter



Det. Ryan Pierre



CPT Brad Petersen



Det. Jeff Rydeen



Aly Renschen

Volunteer of the Year



Chaplain Mark Wiggins

SWAT Tech Operator of the Year



Sam LeMay

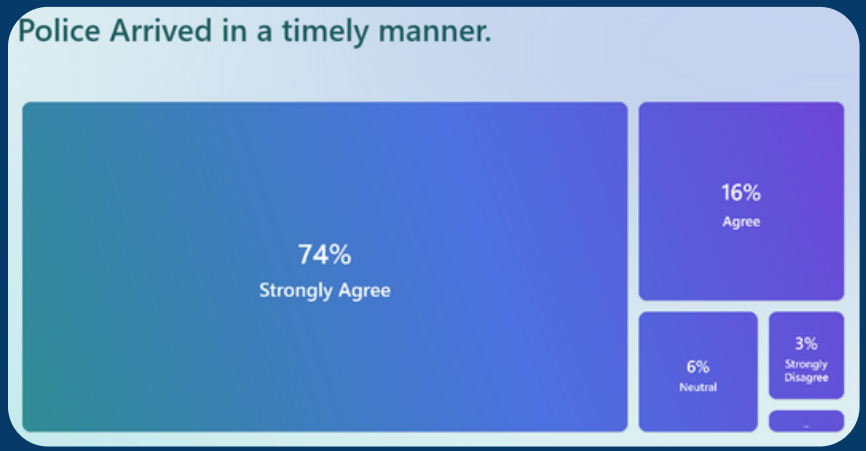
DWI Enforcer All Star



Lauden Rinzel

Police Services Survey









“The best experience I’ve ever had with police.”

“Very professional service. Concern for our safety was top-notch.”

“Excellent professionalism and promptness. Safe and protected feeling.”

“I’m proud to have CGPD serve my community.”

Vision

The Cottage Grove Police Department is dedicated to excellence through community-oriented policing and innovation. We'll provide safety and promote trust in our community using 21st century policing strategies. We'll invest in our culture, safety, wellness and training. We'll employ the best equipment, technology and practices. Our organization will be diverse and resilient. We'll plan, grow and adapt with our community. We'll collaborate with our community to create safe environments where everyone can thrive.

THANK YOU

COTTAGE GROVE POLICE

2026 STRATEGIC PRIORITIES

"Guardians Serving Our Community"

Core Values



Mission

The Cottage Grove Police Department proudly serves the community compassionately providing protection of life and property. We do this with honor, professionalism, empathy, and community partnerships.

Vision

The Cottage Grove Police Department is dedicated to excellence through community-oriented policing and innovation. We'll provide safety and promote trust in our community using 21st century policing strategies. We'll invest in our culture, safety, wellness and training. We'll employ the best equipment, technology and practices. Our organization will be diverse and resilient. We'll plan, grow and adapt with our community. We'll collaborate with our community to create safe environments where everyone can thrive.

PRIORITIES	STRATEGIES
1. Provide safety and security.	• Reduce crime through proactive, evidence-based policing, technology, and successful prosecutions. • Prevent crime and enhance quality of life through effective community engagement and case management. • Employ 21st Century Policing Strategies, deliver excellent customer service, and maintain effective communications.
2. Enhance traffic safety.	• Focus resources, technology, education, and enforcement on changing driving behaviors. • Amplify the Ride Safe Campaign, develop a diversion program, and allocate enforcement resources to improve e-bike and scooter safety.
3. Accelerate succession planning.	• Recruit and develop diverse talent to fill expected vacancies. • Train and mentor leaders. • Document and transfer organization knowledge.
4. Promote wellness and culture.	• Leverage the Positive Impact Team and community resources to expand wellness programming. • Promote a culture of excellence through core values, leadership, training, accountability, recognition, and organizational pride.

City Council Action Request

13.B.

Meeting Date	3/18/2026
Department	Public Safety
Agenda Category	Presentation
Title	MN Law Enforcement Support Office (MN-LESO) Participation
Staff Recommendation	Authorize Cottage Grove Public Safety to continue participating in the Minnesota Law Enforcement Support Office program and the State Plan of Operation (SPO).
Budget Implication	N/A

Attachments

1.	MN.LESO.Program.Participation.03.04.2026
2.	Authorization to participate in MN-LESO Program Signature

To: Honorable Mayor and City Council
Jennifer Levitt, City Administrator

From: Peter J Koerner, Director of Public Safety

Date: March 4, 2026

Subject: **MN LAW ENFORCEMENT SUPPORT OFFICE (MN-LESO) PARTICIPATION**

Minnesota Law Enforcement Support Office (MN-LESO) is a program which allows law enforcement agencies to obtain surplus Department of Defense (DOD) property at no cost. All items must have a direct application to the law enforcement agency's public safety mission. Homeland Security and Emergency Management (HSEM) is the administrator of the program in Minnesota.

Since enrolling in the MN-LESO program in November 2019, Cottage Grove Public Safety has acquired an armored vehicle, robots, night vision devices, personal protective equipment, first aid supplies, and many more items that have enhanced the capabilities and safety for our officers and the community we serve.

The vast majority of the items are considered DEMIL A, which means ownership is conditionally transferred to Cottage Grove Public Safety after one year. Controlled property, such as the armored vehicle and robots, are loaned to the department by the federal government. The State Plan of Operation (SPO) sets forth the terms and conditions, which will be binding on the parties with respect to excess DOD property in order to promote efficient transfer and accountability.

HSEM routinely audits participating agencies each year to ensure compliance with the program's regulations. One of the inspectable items is a document signed by the Chief Law Enforcement Official authorized by the governing body, i.e., Mayor and City Council, authorizing the agency to obtain controlled property.

In May 2022, Executive Order #14074 was signed, requiring annual notice given to City Council of the department's intent to acquire controlled property from federal sources. We must give annual notice to the community of our intent to acquire controlled property at a public council meeting or workshop. We need to demonstrate a commitment to constitutional and community-oriented policing and provide community engagement opportunities to get community input.

RECOMMENDATION
Authorize Cottage Grove Public Safety to continue participating in the Minnesota Law Enforcement Support Office program and the State Plan of Operation (SPO).

RE: Authorization to participate in MN-LESO Program

We, Mayor Myron Bailey and the City of Cottage Grove City Council, understand the Minnesota Law Enforcement Office (MN-LESO) Program allows law enforcement agencies to obtain surplus Department of Defense property at no cost and all requisitioned items must have a direct application to the law enforcement agency's public safety mission.

We authorize Director of Public Safety Peter Koerner to participate in the MN-LESO Program and sign the State Plan of Operation. Director Koerner and his designees are permitted to acquire controlled property, such as night vision, through the MN-LESO Program.

City of Cottage Grove

By:_____

Name: Myron Bailey_____

Title: Mayor_____

Date: March 4, 2026_____

By:_____

Name: Tamara Anderson_____

Title: City Clerk_____

Date: March 4, 2026_____

City Council Action Request

13.C.

Meeting Date	3/18/2026
Department	Administration
Agenda Category	Action Item
Title	Recreational Vehicles
Staff Recommendation	Receive information and recommend that staff proceed with a Council item of proposed amendments to Ordinance Chapter 5, governing recreational vehicles, neighborhood electric vehicles, and micro-mobility devices, including electric-assisted bicycles.
Budget Implication	N/A

Attachments

1.	Council Memo-Recreational Vehicle Ordinance Amendment Proposal
2.	Recreational Motor Vehicles 3-7-26 redline kll

To: Honorable Mayor and City Council
Jennifer Levitt, City Administrator

From: Peter J Koerner, Director of Public Safety

Date: March 9, 2026

Subject: **Recreational Vehicles Ordinance Amendment**

INTRODUCTION

Micro-mobility devices such as electric-assisted bicycles (e-bikes), motorized foot scooters, and personal-assistive mobility devices are changing how we move throughout our community. They offer convenience, affordability and sustainability, and recreational opportunities. But as their popularity grows, so do safety concerns. While Cottage Grove strives to be a recreation destination welcoming these new modes of transportation, we should promote safety for everyone sharing our roads, sidewalks, and trails.

BACKGROUND

Crashes and complaints are rising. Accounts of tragedy and near-misses followed by calls to action are commonplace in today's media. This dilemma is not unique to Cottage Grove. The National Transportation Safety Board (NTSB) found that e-bikes and scooters have a higher crash risk than traditional bicycles. While most metro communities are having this discussion, many are waiting for legislative change. However, at this moment, we do not expect the passage of impactful legislation in 2026.

Therefore, the Cottage Grove Police Department (CGPD) and the Public Safety Commission (PSC) have studied this topic for the past year to identify the challenges and recommend remedies. The challenges are summarized as:

1. Minnesota statute and city code define and regulate several vehicle categories, i.e. motor vehicle, recreational vehicle, bicycle, and electric-assisted bicycle. However, our city code does not adequately define or regulate micro-mobility devices, electric personal assistive devices, or neighborhood electric vehicles.
2. The vast variety of vehicles available to the public, along with complexity and shortcomings in our legislation and code, make it difficult to apply the pertinent rules and requirements.
3. Youth ridership is prevalent. Often, young riders have not been educated or trained to operate safely. Currently, there is no option for youth education or diversion.
4. There is no helmet requirement for youth.

5. Excessive/unreasonable speed is a significant safety concern. However, imposition of a speed limit would be costly to meet the legal requirements for signage and very challenging from an enforcement standpoint.
6. Another safety concern is failure to yield to motor vehicles at intersections or pedestrians on mixed-use paths and sidewalks.

Staff engaged stakeholders, PSC, the Youth Service Bureau (YSB), and our City Attorney while developing this 5-step plan:

1. CGPD and the communication team will launch an awareness and education campaign.
2. CGPD has engaged YSB and District 833 to promote awareness and safety in our youth population.
3. CGPD has collaborated with YSB to develop safety and diversion programming.
4. CGPD will be equipped with e-bikes to model safety while we patrol, educate, and enforce in our parks, trails, and events.
5. CGPD will lobby for legislative change and recommend the following ordinance amendments:

    a. Change the title of Ordinance Chapter 5 to “Recreational Motor Vehicles, Neighborhood Electric Vehicles, & Micro-Mobility Devices”.
    b. Add and modify definitions to align with Minnesota Statute 169.011.
    c. Require operators to comply with relevant Minnesota Statutes.
    d. Permit motorized foot scooters to operate on mixed-use paths (not sidewalks).
    e. Require operators to exercise due care and operate at a reasonable speed.
    f. Require operators to yield the right of way to pedestrians.
    g. Prohibit the operation of neighborhood electric vehicles on sidewalks, mixed-use paths, and bicycle paths.
    h. Omit 6-5-3(B) permitting vehicles to be left unattended.
    i. Require all operators and riders under the age of 18 to wear a helmet.
    j. Establish violations of this ordinance as a misdemeanor.

City Attorney Kori Land has reviewed the proposed ordinance changes. A redlined copy of the ordinance is attached for your review.

RECOMMENDATION

Receive information and recommend that staff proceed with a Council item of proposed amendments to Ordinance Chapter 5, governing recreational vehicles, neighborhood electric vehicles, and micro-mobility devices, including electric-assisted bicycles.

CHAPTER 5: RECREATIONAL MOTOR VEHICLES, NEIGHBORHOOD ELECTRIC VEHICLES, & MICRO-MOBILITY DEVICES

Section

6-5-1: Definitions
6-5-2: Operation ~~Restrictions~~
6-5-3: Storage and Parking of Recreational and Other Electric or Motorized Vehicles
~~6-5-4: Hours of Operation~~
6-5-4: Noise Limits
6-5-5 Helmets

§ 6-5-1: DEFINITIONS:

The following words, terms, and phrases when used in this Chapter shall have the meaning ascribed to them in this section except where the context clearly indicates a different meaning:

BICYCLE PATH: ~~a~~ A path designed for exclusive or preferential use by persons using bicycles.

CLASS 1 ELECTRIC-ASSISTED BICYCLE: ~~a~~An electric-assisted bicycle equipped with an electric motor that provides assistance only when the rider is pedaling and ceases to provide assistance when the bicycle reaches the speed of 20 miles per hour.

CLASS 2 ELECTRIC-ASSISTED BICYCLE: ~~a~~An electric-assisted bicycle equipped with an electric motor that is capable of propelling the bicycle without the rider pedaling and ceases to provide assistance when the bicycle reaches the speed of 20 miles per hour.

CLASS 3 ELECTRIC-ASSISTED BICYCLE: ~~a~~An electric-assisted bicycle equipped with an electric motor that provides assistance only when the rider is pedaling and ceases to provide assistance when the bicycle reaches the speed of 28 miles per hour.

ELECTRIC-ASSISTED BICYCLE: ~~a~~ A bicycle with two or three wheels that:

(1) has a saddle and fully operable pedals for human propulsion;

(2) meets the requirements for bicycles under Code of Federal Regulations, title 16, part 1512, or successor requirements;

(3) is equipped with an electric motor that has a power output of not more than 750 watts;

(4) meets the requirements of a Class 1, Class 2, Class 3, or multiple mode electric-assisted bicycle; and

(5) has a battery or electric drive system that has been tested to an applicable safety standard by a third-party testing laboratory.

~~**Class 1 electric-assisted bicycle:** an electric-assisted bicycle equipped with an electric motor that provides assistance only when the rider is pedaling and ceases to provide assistance when the bicycle reaches the speed of 20 miles per hour.~~

~~**Class 2 electric-assisted bicycle**: an electric-assisted bicycle equipped with an electric motor that is capable of propelling the bicycle without the rider pedaling and ceases to provide assistance when the bicycle reaches the speed of 20 miles per hour.~~

~~**Class 3 electric-assisted bicycle:** an electric-assisted bicycle equipped with an electric motor that provides assistance only when the rider is pedaling and ceases to provide assistance when the bicycle reaches the speed of 28 miles per hour.~~

ELECTRIC MOTO*:* ~~an electric~~ A 2-wheeled vehicle powered by a high-output electric motor typically greater than 750 watts and rechargeable batteries, designed to resemble~~resembling~~ a bicycle or dirt bike, but capable of exceeding speeds of 28 mph without ~~which has no~~ functional pedals ~~or a motor that exceeds 750 watts~~.

ELECTRIC **PERSONAL ASSISTIVE MOBILITY DEVICE:** ~~a~~ A self-balancing device with two nontandem wheels, designed to transport not more than one person, and operated by an electric propulsion system that limits the maximum speed of the device to 15 miles per hour.

MICRO-MOBILITY DEVICE: a vehicle that:

(1) is capable of:

(i) being propelled solely by human power;

(ii) being powered solely by an electric motor drawing current from rechargeable storage batteries, fuel cells, or other portable sources of electrical current; or

(iii) both (i) and (ii);

(2) when solely powered by an electric motor, is not capable of propelling the vehicle at a speed greater than 30 miles per hour on a paved level surface; and

(3) has an unloaded weight of up to 500 pounds.

(b) Micro-mobility device includes a bicycle, a motorized foot scooter, and an electric personal assistive mobility device. Micro-mobility device includes a motorized bicycle that meets the requirements under paragraph (1).

MIXED-USE PATH: ~~a~~ A paved or improved surface path designed for travel by pedestrians, bicycles, electric-assisted bicycles, micro-mobility devices, and personal assistive mobility devices.

MOTORIZED BICYCLE*:* ~~a~~ A bicycle that is propelled by an electric or a liquid fuel motor of a pi ston displacement capacity of 50 cubic centimeters or less, and a maximum of two brake horsepower, which is capable of a maximum speed of not more than 30 miles per hour on a flat surface with not more than one percent grade in any direction when the motor is engaged. Motorized bicycle does not include electric-assisted bicycles**.**

MOTORIZED FOOT SCOOTER: ~~a~~ A device with handlebars designed to be stood or sat upon by the operator, and powered by an internal combustion engine or electric motor that is capable of propelling the device with or without human propulsion, and that has no more than two 12-inch or smaller diameter wheels and has an engine or motor that is capable of a maximum speed of 15 miles per hour on a flat surface with not more than one percent grade in any direction when the motor is engaged. An electric personal assistive mobility device, a motorized bicycle, an electric-assisted bicycle, or a motorcycle is not a motorized foot scooter

NEIGHBORHOOD ELECTRIC VEHICLE: ~~an~~ An electrically powered motor vehicle that has three or four wheels, and has a speed attainable in one mile of at least 20 miles per hour but not more than 25 miles per hour on a paved level surface

PRIVATE PROPERTY*:* All lands other than public property.

PUBLIC PROPERTY*:* ~~Lands owned by the United States, the State, or any political subdivision thereof.~~ Property owned by the federal, state, or local government, or its agencies, which is available for community use.

RECREATIONAL MOTOR VEHICLE*:* Any motor vehicle designed for, used or capable of use for sport, amusement or recreation, whether or not eligible to be licensed for use upon streets and highways, including, but not limited to electric or liquid fuel powered scooters, minibikes, motorcycles, motorized bicycles, electric moto, golf carts, neighborhood electric vehicle, go-carts, hovercraft, snowmobiles converted to use with wheels, or all-terrain vehicles. ~~or dune buggies; but not including~~ Recreational Motor Vehicle does not include motor vehicles designed for commercial, industrial or agricultural use, snowmobiles propelled by tracks, motorized foot scooters ~~as defined by Minnesota Statutes Section 169.011, subdivision 46~~, electric-assisted bicycles ~~as defined by Minnesota Statutes Section 169.011, subdivision 27~~, electric personal assistive mobility devices ~~as defined by Minnesota Statutes Section 169.011, subdivision 26~~, micro-mobility devices or wheelchairs as defined herein or by Minnesota Statutes Section 169.011. ~~and snowmobiles propelled by tracks.~~

WHEELCHAIR: ~~any~~ Any manual or motorized wheelchair, scooter, tricycle, or similar device used by a disabled person as a substitute for walking.

§ 6-5-2: OPERATION ~~RESTRICTIONS~~:

A. It shall be unlawful to operate a recreational motor vehicle within the City:

1. Upon private property without the ~~written~~ expressed permission of the owner or person entitled to possession thereof. This restriction shall not apply to motor vehicles registered under Minnesota Statutes, Chapter 168 when operated by a driver licensed under Minnesota Statutes, Chapter 171 upon private driveways, roadways, lanes, ways, or parking lots where the operation of licensed motor vehicles is not expressly prohibited by posted notice.
2. Upon any school grounds, public park, playground, recreational area, golf course, or other public property, except at such times and places as the proper authorities may authorize or designate and subject to conditions imposed by such authorities. No operation whatsoever shall be allowed on the foregoing areas or places described in this subsection when the recreational motor vehicle does not bear a license plate evidencing registration as required under Minnesota Statutes, Chapter 168.
3. Upon any public sidewalk, walkway, mixed-use use path, bicycle path, or boulevard.
4. Upon the right of way of any public street or highway unless:
   a. The recreational motor vehicle is licensed under Minnesota Statutes, Chapter 168; and
   b. The operator is licensed under Minnesota Statutes, Chapter 171; and

c. The vehicle is operated upon the improved portion of the right of way.

~~5. Except for licensed vehicles operated upon streets or highways by licensed operators, no recreational motor vehicle shall be operated between the hours of nine o'clock (9:00) P.M. and eight o'clock (8:00) A.M. upon any public property, or within one-fourth (¼) mile of any platted area.~~

B. Exceptions: Recreational motor vehicles or other electric or motorized vehicles may be operated by a City employee or contractor in the performance of official duties.

C. Electric-assisted bicycles, motorized foot scooters, electric personal assistive mobility devices, and micro-mobility devices operated within the city shall comply with Minnesota State Statutes and the following requirements:

1. According to Minnesota Statute 169.225, it shall be unlawful to operate a motorized foot scooter upon a sidewalk. It is permissible to operate a motorized foot scooter upon a mixed-use path.

2. Operators must ~~Exercise~~ exercise due care and operate at a reasonable and prudent speed under the conditions as to not pose a hazard or nuisance to others.

3. Operators must ~~Yield~~ yield the right of way to pedestrians using crosswalk, sidewalk, and mixed-use path.

D. It shall be unlawful to operate a neighborhood electric vehicle on a sidewalk, mixed-use path, or bicycle path.

~~C. It shall be unlawful to operate a motorized foot scooter within the City in locations identified in City Code 6-5-2.A.2 and 3. These devices they may be operated upon any public right of way of any street or highway, in accordance with state law.~~

~~D. Electric personal assistive mobility devices are allowed on any public right of way or public property and must be operated in accordance with Minnesota Statutes Section 169.212.~~

§ 6-5-3: STORAGE AND PARKING OF RECREATIONAL AND OTHER ELECTRIC OR MOTORIZED VEHICLES:

A. No person shall park a recreational motor vehicle, ~~electric foot scooter or~~ electric-assisted bicycle, or other electric or motorized vehicle against any window or ~~parking meter or~~ on the main traveled portion of the sidewalk, nor in such a manner as to constitute a hazard to pedestrians, traffic, or property.

~~B. No recreational motor vehicle, electric foot scooter or electric-assisted bicycle, or other electric or motorized vehicle shall be left unattended on the streets, sidewalks, alleys, or other public grounds.~~

~~C. A violation of this section is a public nuisance and subject to the penalty provided in Title 4 Chapter 1 of this Code.~~

§ 6-5-4: HOURS OF OPERATION:

Except for licensed vehicles operated upon streets or highways by licensed operators, no recreational motor vehicle shall be operated between the hours of nine o'clock (9:00) P.M. and eight o'clock (8:00) A.M. upon any public property, or within one-fourth (¼) mile of any platted area.

§ 6-5-~~4~~5: NOISE LIMITS:

Recreational motor vehicles shall meet the noise limits established for motorcycles by Minnesota Statutes, Chapter 169.

§ 6-5-~~5~~6: HELMETS:

A. Persons operating a recreational motor vehicle within the City or riding upon such recreational motor vehicle shall wear a helmet that complies with standards established by the Minnesota Commissioner of Public Safety.
B. Persons under the age of 18 years operating or riding on an electric-assisted bicycle, motorized foot scooter, electric personal assistive mobility device, or micro-mobility device within the City shall wear a helmet approved for bicycle riding by the United States Department of Transportation or the American National Standards Institute.