COTTAGE GROVE PLANNING COMMISSION

August 25, 2025

12800 RAVINE PARKWAY SOUTH
COTTAGE GROVE, MN 55016

COUNCIL CHAMBER - 7:00 PM

1. Call to Order
2. Roll Call
3. Approval of the Agenda
4. Open Forum
5. Chair's Explanation of the Hearing Process
6. Public Hearing and Applications
   - 6.A Pine Hill Addition - Cases SP/CUP/V2025-016

     Discussion: Wold Architects and Engineers, on behalf of South Washington County School District ISD #833, has applied for a Conditional Use Permit and Site Plan Review for building additions at Pine Hill Elementary, 9015 Hadley Avenue South. The additions include approximately 13,300 square feet for a six-classroom addition with a storm shelter area, a small gym addition, and an enclosed freezer addition. Additional interior improvements include renovations to existing special education classrooms, accessibility-toilet upgrades, minor renovations to the kitchen, and long-term facility and maintenance work. The applicant also applied for a Variance to expand the classroom addition space into the required 50-foot property line setback.

   - 6.B Park Grove Library - SP2025-021

     Discussion: Alliiance, on behalf of Washington County, has applied for a Site Plan Review application for a building addition, façade remodel, and exterior site improvements at Park Grove Library, 7900 Hemingway Avenue South. The addition will be for a new second story for utility and mechanical equipment. Additional site improvements proposed include interior remodel, parking lot reconfiguration, and landscaping improvements.
7. Approval of Minutes
   - A Approval of Planning Commission Minutes of July 28, 2025

     Staff Recommendation:
8. Reports
   - A Recap of September 3 and 17, 2025, City Council Meetings
   - B Response to Planning Commission Inquiries
   - C Planning Commission Requests
9. Adjournment

STAFF REPORT CASE: SP/CUP/V2025-016

ITEM: 6.1

PUBLIC MEETING DATE: 8/25/25 TENTATIVE COUNCIL REVIEW DATE: 9/17/25

APPLICATION

APPLICANT: Wold Architects & Engineers, on behalf of South Washington County School District ISD #833

REQUEST: A Conditional Use Permit and Site Plan for additions onto the existing elementary school building. The additions include approximately 13,300 square feet for a six-classroom addition with a storm shelter area, a small gym addition, and an enclosed freezer addition. They also applied for a Variance to allow the classroom addition to expand into the required 50-foot property line setback to the north.

SITE DATA

LOCATION: 9015 Hadley Avenue S

ZONING: R-3, Single Family Residential

GUIDED LAND USE: Public/Semi-Public

LAND USE OF ADJACENT PROPERTIES:	CURRENT	GUIDED
NORTH:	Single Family Res.	Low-Density Res.
EAST:	Single Family Res.	Low-Density Res.
SOUTH:	Single Family Res.	Low-Density Res.
WEST:	Single Family Res.	Low-Density Res.

SIZE: 13.62 Acres

DENSITY: N/A

RECOMMENDATION

Approval, based on the findings of fact and subject to the conditions stipulated in this staff report.

Cottage Grove
Where Pride and Prosperity Meet

COTTAGE GROVE PLANNING DIVISION

Planning Staff Contact: Kelly Becker, Associate Planner; 651-458-2834; kbecker@cottagegrovemn.gov

Application Accepted: 7/30/2025 60-Day Review Deadline: 9/28/2025

Planning Staff Report
Pine Hill Elementary
Planning Case No. CUP, SP, V 2025-016
August 25, 2025

Proposal

Wold Architects and Engineers (Applicant), on behalf of South Washington School District ISD 833 (Property Owner), has submitted a Conditional Use Permit and Site Plan Review for building additions at Pine Hill Elementary, 9015 Hadley Avenue. The additions include approximately 13,300 square feet for a six-classroom addition with a storm shelter area, a small gym addition, and an enclosed freezer addition. Additional interior improvements proposed include renovations to existing special education classrooms, accessibility-toilet upgrades, minor renovations to the kitchen, and long-term facility and maintenance work. The applicant has also submitted a Variance application to expand the classroom addition space into the required 50-foot property line setback.

Site Location

Review Schedule

Application Received: July 29, 2025
Application Accepted: July 30, 2025
Planning Commission Meeting: August 25, 2025
Tentative City Council Meeting: September 17, 2025
60-Day Review Deadline: September 28, 2025

Background

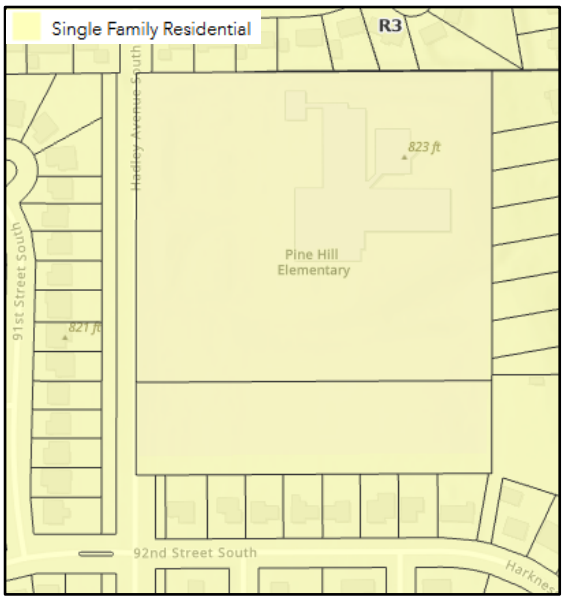
South Washington County School District had a successful referendum in 2023 for a total of 15 projects across the district including improvements at Cottage Grove buildings at Cottage Grove Middle School, Oltman Middle School, Grey Cloud Elementary, Pine Hill Elementary, and Park High School. There are currently about 520 students and 80 staff members, and the anticipated 5-year future capacity is approximately 650 students and up to 100 staff members.

Prior site modifications include parking lot reconfiguration and pavement rehabilitation in 2020, a classroom addition in 1970, and an addition for a computer lab media center in 2000 (Resolution No. 00-144).

Planning Considerations

Zoning and Comprehensive Plan

Pine Hill Elementary is zoned R-3, Single-Family Residential, and is guided as Public/Semi-Public on the 2040 Comprehensive Plan Land Use Map. Educational facilities are permitted within the R-3 zoning district with a Conditional Use Permit.



Current Zoning

2024 Future Land Use Designation

Site Plan

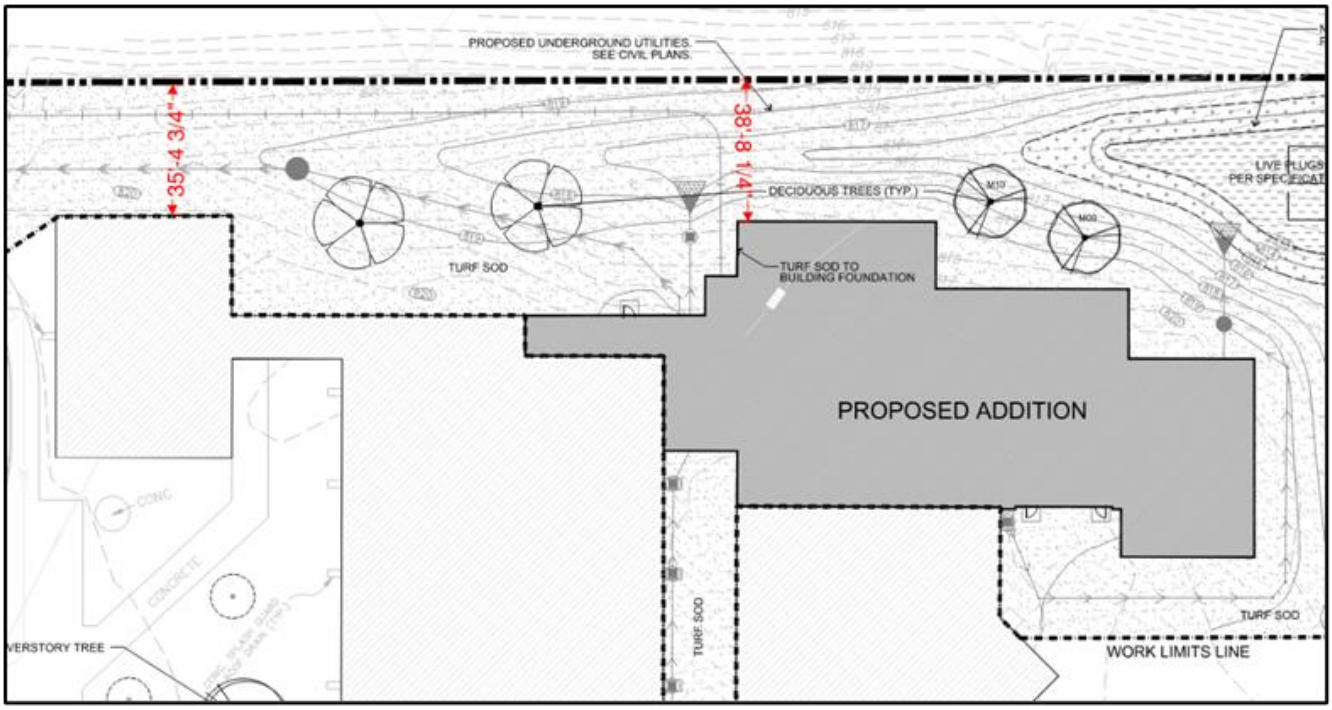
The Applicant is proposing three separate additions to the Pine Hill Elementary School building. An approximate 10,500 square foot addition at the northeast corner of the building for new class-room space and storm shelter space, a 2,400 square foot addition at the southeast corner of the building for a gym addition and storage space, and a 340 square foot addition for enclosed freezer space.

Variance Request – Property Line Setback

The purpose of a variance is to allow variation from the application of City Code Title 11 if there are characteristics of the property that cause practical difficulties for the landowner/applicant to meet minimum code standards. Variances require the Applicant to submit an official application form with all information outlined in City Code Title 11-2-5. City Code Title 11-7-3(D) lists educational facilities as subject to a Conditional Use Permit, provided that no building shall be located within 50 feet of any lot line abutting an R district. Additional applicable setbacks are shown below.

Building Setbacks	**Required Setbacks**	**Classroom Addition Proposed**	**Gym Addition Proposed**	**Freezer Addition Proposed**
Front Yard	25’	400’	437’	320’
Abutting residential (north)	50’	38’	325’	385’
Abutting residential (east)	50’	95’	200’	319’
Abutting residential (south)	50’	>600’	>400’	>400’

The proposed classroom addition on the northeast corner of the building will encroach into the required 50-foot setback with the residential property lines to the north; the property owner has submitted a variance request to allow the proposed classroom addition to be approximately 38.5 feet from the north property line. An existing non-conforming portion of the school housing the special education classrooms is approximately 35.5 feet from the north property line. All other setbacks will be met with each addition.



Building Setbacks

Variance Requirements

With all variance requests, the Planning Commission must look to the zoning ordinance for guidance and direction. City Code Title 11-2-5: Variances, states the following:

A. Purpose. The purpose of the variance is to allow variation from the strict application of the terms of this Title where, by reason of the exceptional physical characteristics of the property, the literal enforcement of the requirements of this Title would cause practical difficulties for the landowner.

F. Findings. A variance may be granted only when all of the following conditions are found:

1. *The variance is in harmony with the general purposes and intent of this Title.*
2. *The variance is consistent with the Comprehensive Plan.*
3. *The applicant for the variance establishes that there are practical difficulties in complying with this Title. "Practical difficulties," as used in connection with the granting of a variance, means that all of the following must be found to apply:*
    a. *The property owner proposes to use the land in a reasonable manner for a use permitted in the zone where the land is located, but the proposal is not permitted by other official controls;*
    b. *The plight of the landowner is due to circumstances unique to the property and that are not created by the landowner; and*
    c. *The variance, if granted, will not alter the essential character of the neighborhood.*
4. *Economic considerations alone do not constitute practical difficulties.*

The applicant has stated the following in response to the proposal meeting variance requirements:

- *The proposal put the property to a reasonable use.*
  - The project recommends the six-classroom addition be located on the North side of the building in order to connect to an existing offset corridor and functionally create a loop to the core of the building. This would be an efficient connection to utilize an existing circulation system and would subsequently connect two of the offset northwest classrooms back to the broader building. The proposed classroom addition would not exceed the northernmost limits/extents of the existing building but would cross the previously discussed 50-foot setback.

- *There are unique circumstances to the property not created by the landowner.*
  - The 1970 Kindergarten Addition added two classrooms to the northwestern corner of the property, which exceed beyond the present-day 50-foot property setback. The proposed classroom addition will connect to this existing corridor and would not exceed beyond the existing building extents but would similarly encroach upon the current 50-foot setback. Feasibility investigations have been conducted to study the classroom addition on the other sides of the building. Findings are noted below:

    - South: This project will include a new storm shelter through our classroom addition, which will require a dedicated water service. If we locate the storm shelter on the south side of the building, it will double the length of water required unless we remove and replace the recently installed pavement and playground. This pavement was provided in 2021, and we would like to avoid the disruption of any new and still functional material where possible. Similarly, the addition will require a sanitary sewer service, and we would intend to connect to the existing sewer that is on the northwest side of the site. The length of this run would present some challenges if the addition is located on the south side and would potentially require a lift station. There is an existing stormwater easement and stormwater pond on the south side of the building, and by providing the addition on the north, we would minimize the potential for any interference with this easement and stormwater pond.

    - East: The topography on the east side of the building is steep and will present some challenges with the proposed addition; as such, we have been advised that the grade change on the north is preferred for a new addition. An addition on this side of the building would impact the amount of daylight that is currently received in existing classrooms and in the Media Center. There is a higher concentration of trees on the east side of the building that we would like to avoid, both from a landscape perspective and in preserving the identity of "Pine Hill."

    - West: The west side of the building would potentially interfere with the recently renovated parking lot (2021). Similar to the previously noted sentiment of preserving recent work, we would like to avoid disrupting any new and functional components of the site as much as possible. The addition on the West side would have a greater impact on the amount of daylighting to existing classroom windows.

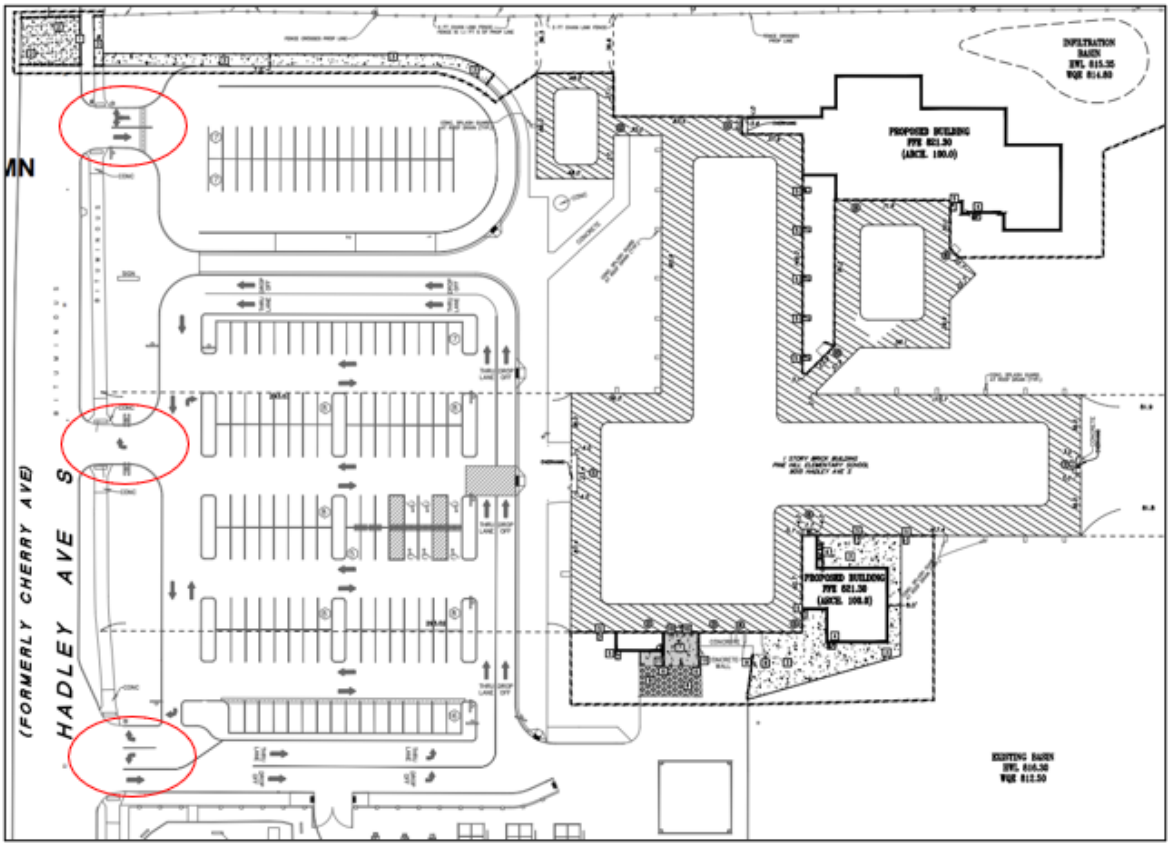
- *The conditions upon which an application for a variance is based are unique to the parcel of land for which the variance is sought and are not applicable, generally to other property within the same zoning classifications. Please list the conditions that are unique*

- Existing site forces recommend that the addition be located on the North side of the building to avoid incurred site work. See attached narrative with unique site conditions that led the design team to place the classroom addition where it is currently proposed.

- *The proposed variance will not impair an adequate supply of light and air to adjacent property, or substantially increase the congestion of the public streets, or increase the danger of fire, or endanger the public safety. Please identify any potential impact the requested variance may have.*
  - The project will not impede upon natural daylighting to adjacent properties, nor the existing classrooms of the school. An increased risk of fire or public safety endangerment is not anticipated with this work. The addition on the North side will mitigate major work to the recently implemented parking lot. Additionally, the anticipated student growth is less than 100 students and would not create major disruption/congestion to adjacent traffic systems. See attached traffic study for additional traffic information

Site Access

The site currently has three existing curb cuts off Hadley Avenue – north, central, and south locations. No changes or improvements to site access or circulation patterns are proposed; however, the Applicant will be required to provide a formalized drop-off and pick-up plan to be reviewed and approved by the city. This may also include modifications to crossing guard practices to minimize impacts of traffic on Hadley and in relation to the site access points (primarily the north entrance to the bus and employee parking area).



Site Access Locations

Traffic

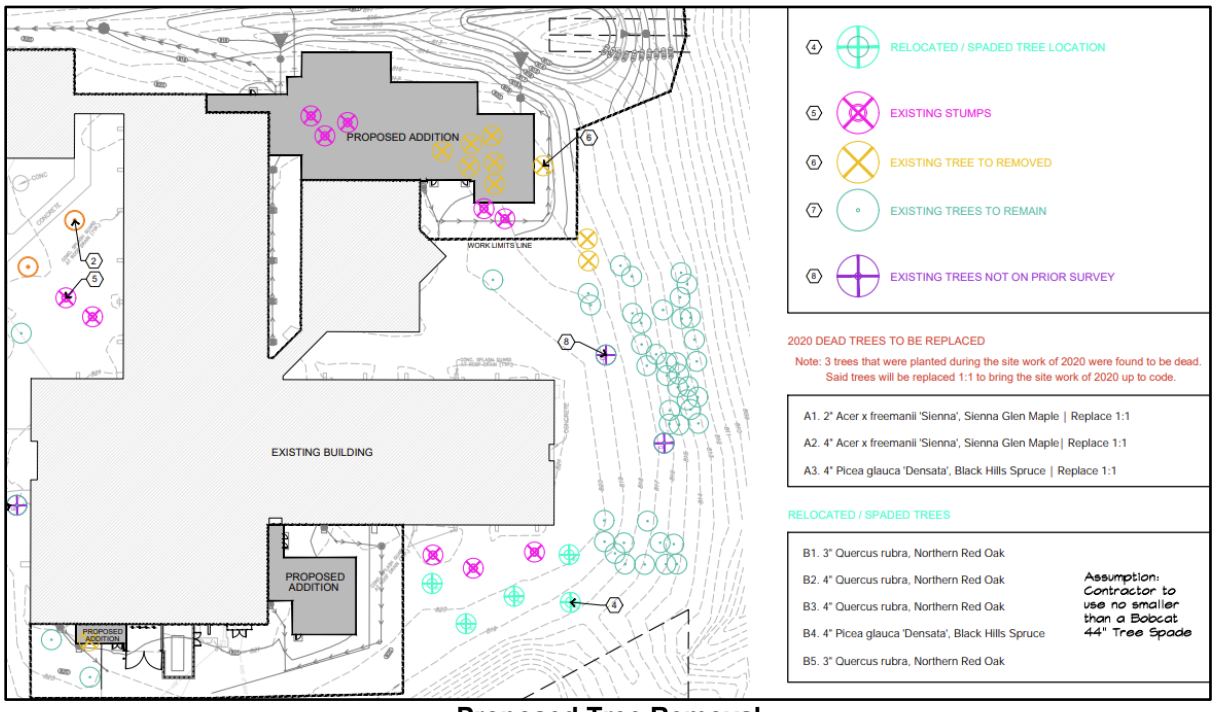
Traffic was documented to regularly back up on to Hadley Avenue during peak hours, drop off and pick up, at the schools. A traffic study was conducted by Transportation Collaborative & Consultants (TC2) to identify existing traffic operations, evaluate potential impacts of the proposed expansion, and recommend improvements if necessary for safe and efficient operations. A meeting between City staff and the school district was held to discuss the traffic study. Further follow-up is needed to resolve the issues discussed, such as internal stacking options, external stacking options and pedestrian improvements at Hadley Avenue and 92nd Street prior to City Council review of the applications.

Parking

The current school staff and student count is 520 students and approximately 80 staff. With the proposed improvements, the 5-year projected capacity is 634 students and 100 staff. City Code Title 11-3-4 requires elementary schools to have 1 parking space for each classroom, plus 1 space for each 100-student capacity. In 2020, the school received a building permit for pavement rehabilitation and reconfiguring the parking lot. After that project was completed, Pine Hill Elementary now has 159 parking spaces onsite and is only required to have 42 parking spaces. The property is currently exceeding parking requirements and is therefore not proposing any additional parking spaces.

Tree Preservation

City Code Title 11-3-13 requires completion of a tree inventory (all qualifying trees) for the project area of a proposed development. For projects in residential districts, 40 percent of the qualifying caliper inches on a site are permitted to be removed without required mitigation. The Applicant is proposing removal of 10 trees, which will not exceed 40 percent of the total qualifying trees onsite; therefore, a tree mitigation plan is not required. The applicant did note that 3 trees from a prior project in 2020 were found dead onsite and will be replaced with 3 new trees.



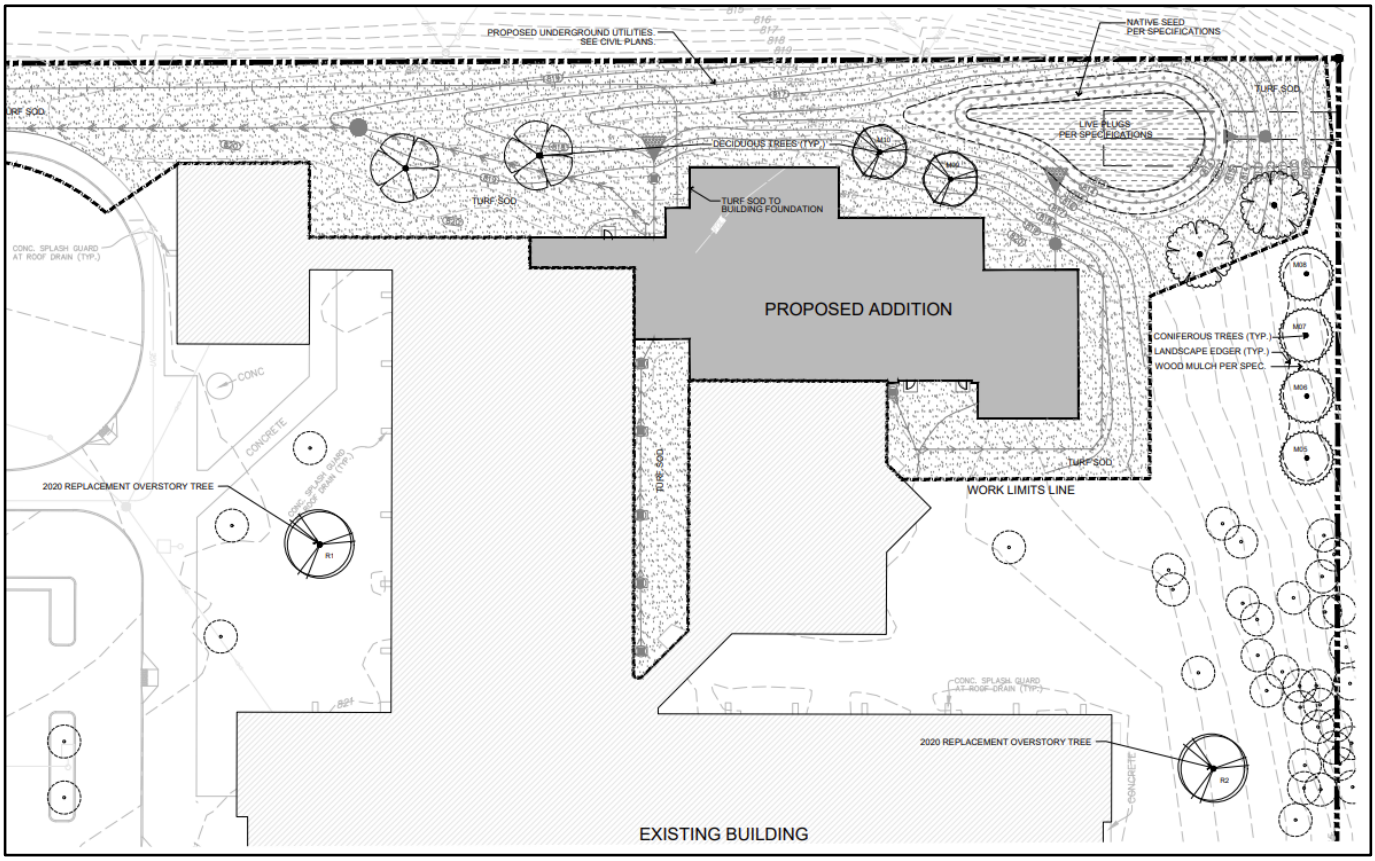
Proposed Tree Removal

Landscaping

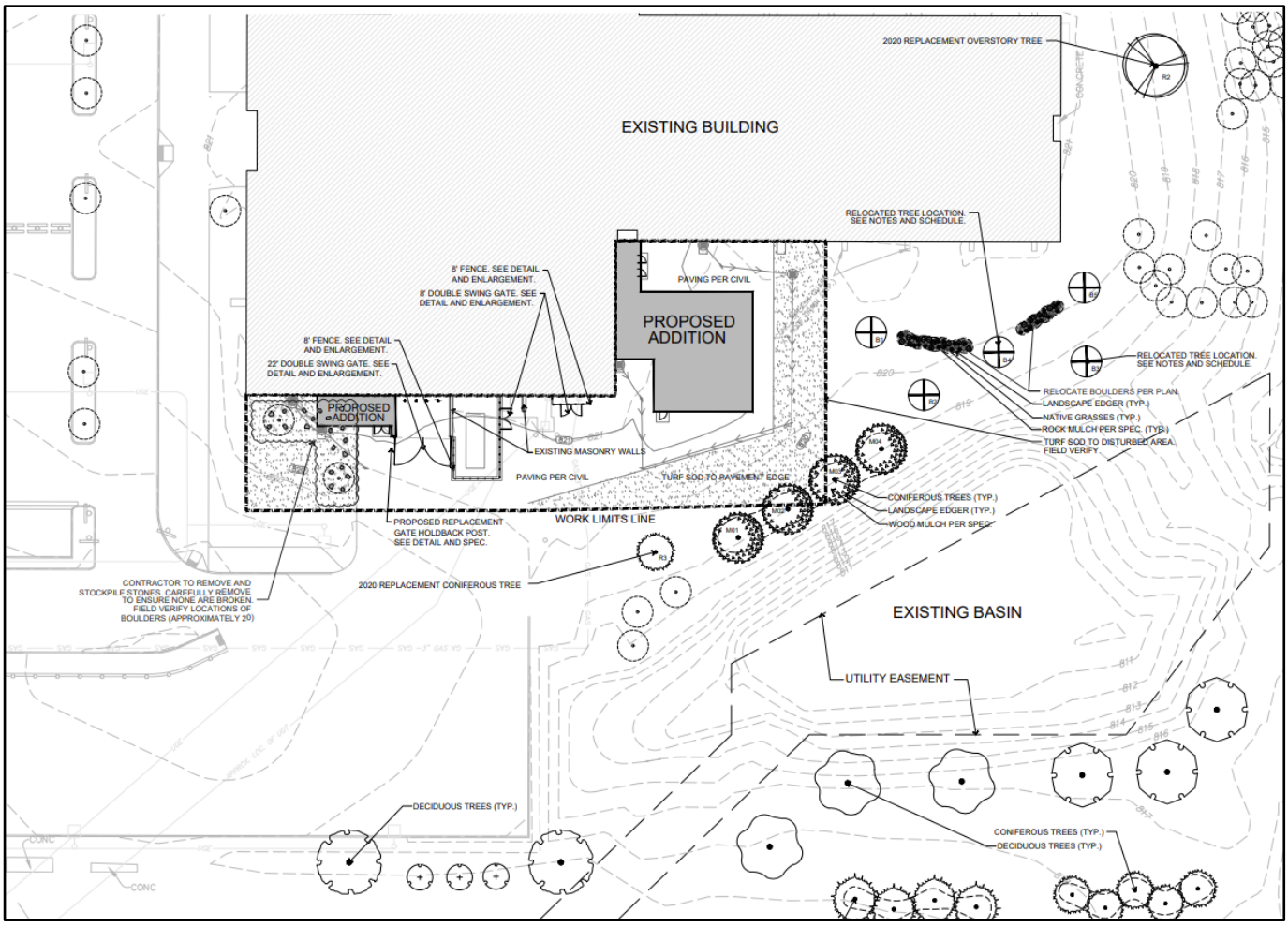
The Applicant has submitted a detailed landscape plan including proposed additional landscaping throughout the site. The required number of trees and shrubs for non-residential uses within a residential district is calculated with a coefficient rate found in Title 11-3-12 and multiped by the total disturbed site area. The total project disturbance area is approximately 69,932 square feet; therefore, 19 new deciduous trees, 18 new coniferous trees, and 41 shrubs are required. The applicant has proposed those exact numbers of plantings to be in compliance with ordinance requirements.

Nonresidential uses operating within a residential district are required to preserve 30 percent of the site area as green/open space. With the proposed additions, the site will still retain over 50 percent open space area, and it is therefore compliant with this standard. The proposed total impervious surface across the site is approximately 38 percent. The R-3 zoning district permits a maximum of 40 percent impervious surface.

No irrigation system exists on the site. The Applicant is not proposing to install an irrigation system; however, the applicant will be required to provide a plan for ensuring establishment and survivability of the proposed sod and landscaping items.



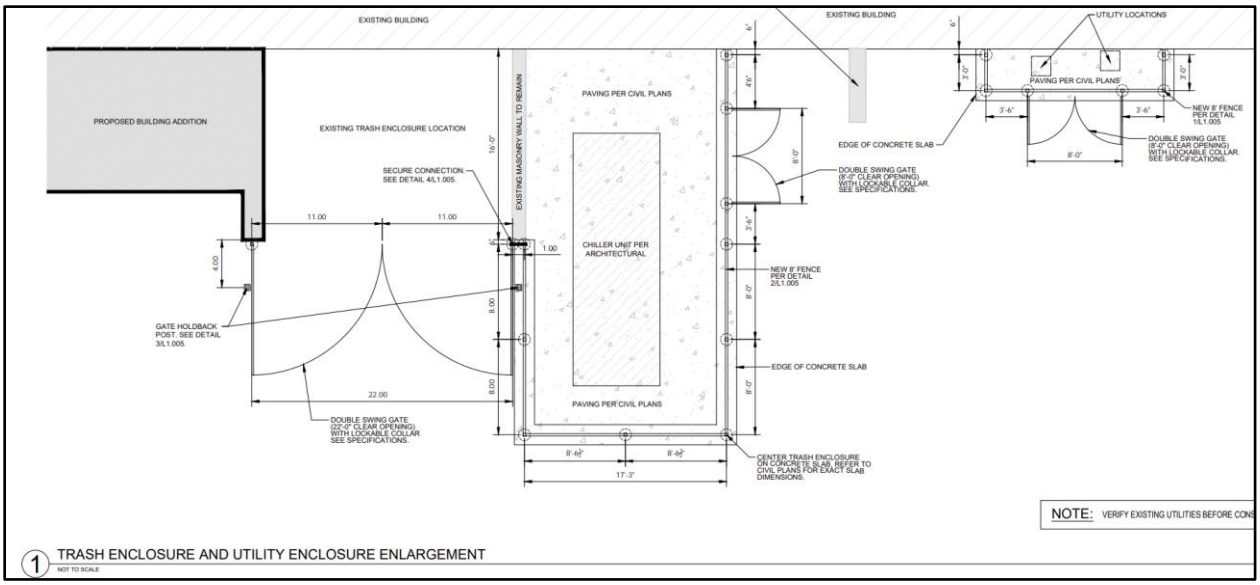
North Landscape Plan



South Landscape Plan

Screening and Mechanical Equipment

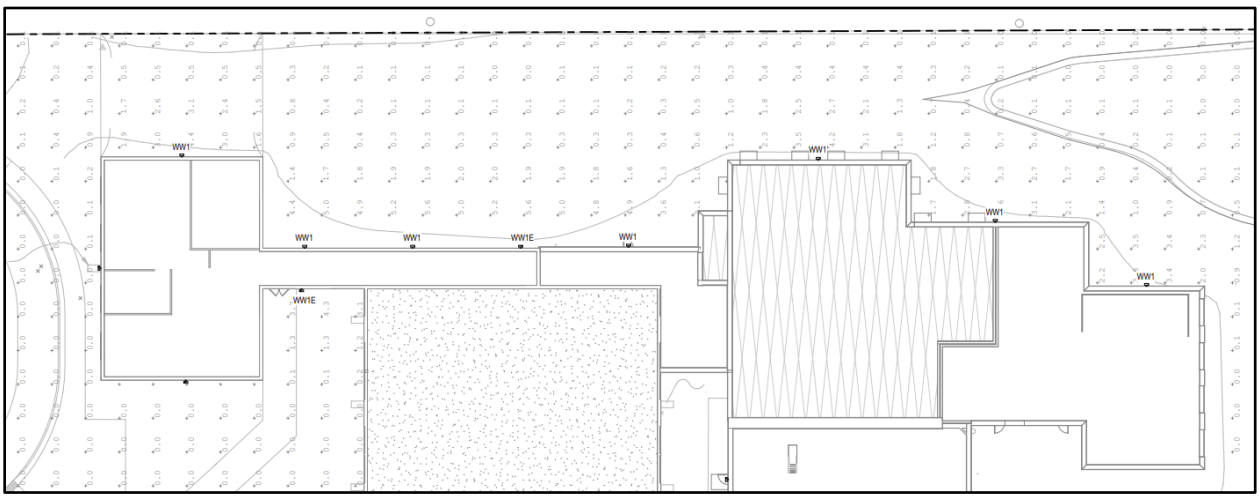
The current trash enclosure area will remain in its existing place with existing screening composed of a masonry wall and vinyl slated chain link gate. The gate and bollard may be temporarily removed as needed for construction. Per City Code Title 11-3-9, ground mount mechanical equipment accessory to the principal structure 30 inches or greater shall be screened from public views with landscaping, berm, or screen wall. The applicant will need to submit revised plans to staff showing screening around the new chiller unit and utility locations in compliance with the City code. No other fencing or retaining walls are proposed at any other locations on the site.



New rooftop mechanical equipment is planned over the classroom and gym additions and will be screened in the same style consistent with the screening on the existing building. The applicant will work with City staff to finalize exterior material selection. Per City Code Title 11-3-9, rooftop mechanical equipment as viewed from the centerline of all adjacent right of ways and from property lines of all adjacent residential properties must be screened by a raised parapet, or with comparable and compatible exterior building materials.

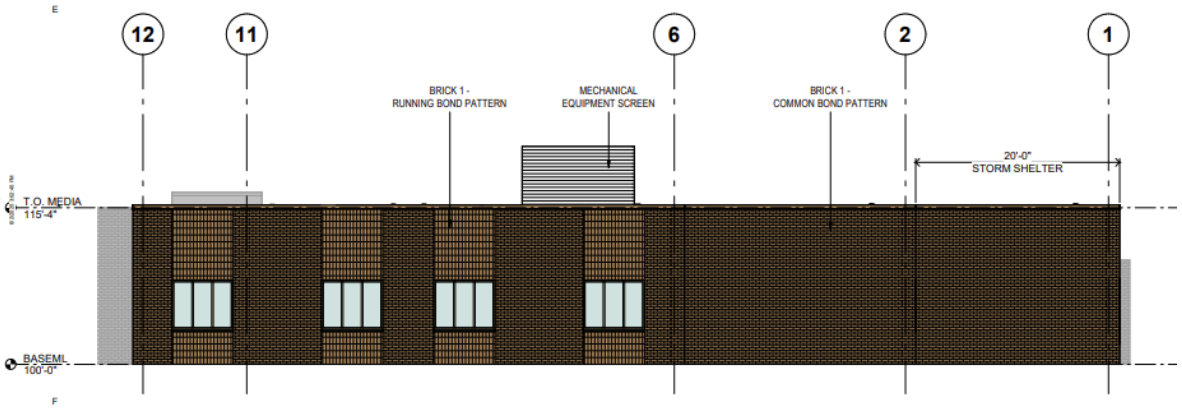
Photometric Plan

City code standard requires less than 0.5-foot candles to be measured at property lines for uses within residential zoning districts. No additional lighting is proposed in the parking lot area. Exterior lighting is proposed at exterior egress doors for the new additions. The Applicant has provided a photometric plan indicating new lighting is not intended to cast light into adjacent properties and will align with the requirements of 0.5 footcandles or less at the property line to the north. The south additions were not studied, as they are a significant distance further from the south property line. The light fixtures the applicant has shown on their photometric plan will direct light downwards.

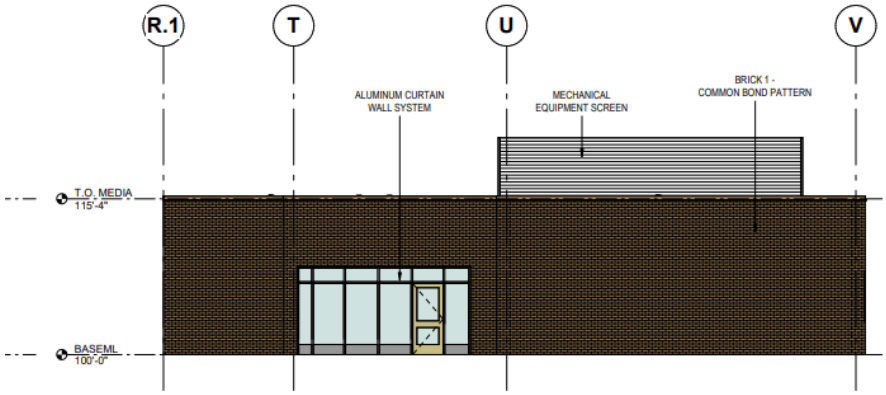


Architectural Materials

City Code Title 11-3-11 requires nonresidential buildings within residential districts use at least three (3) different Class 1 materials and be composed of at least sixty-five percent (65%) Class 1 or 2 materials and not more than ten percent (10%) of Class 4 materials. Class 1 and 2 materials include but are not limited to brick, stone, and glass. Class 4 materials include glass block, smooth concrete block, smooth scored concrete block, steel or aluminum siding, and wood. Currently almost 100 percent of the new addition walls are shown to be constructed of a class 1 material. The material above and below the windows is intended to be brick, but a different color to mimic the white stucco panels at these locations on the existing building. The only exterior materials that would not be considered class 1 material are the storm louvers below the windows at the classroom addition and the sheet metal coping at the top of the parapet walls. The storm louvers will be a hollow metal material, painted to match the window frames, and are required for storm shelter passive ventilation system, and the sheet metal coping is intended to match existing. The applicant has indicated a physical and digital exterior material board will be provided for all new additions once final selections are made. These will be reviewed and approved by the planning department prior to the issuance of a building permit.



F1 CLASSROOM ADDITION - EAST ELEVATION
1/8" = 1'-0"



F4 CLASSROOM ADDITION - SOUTH ELEVATION
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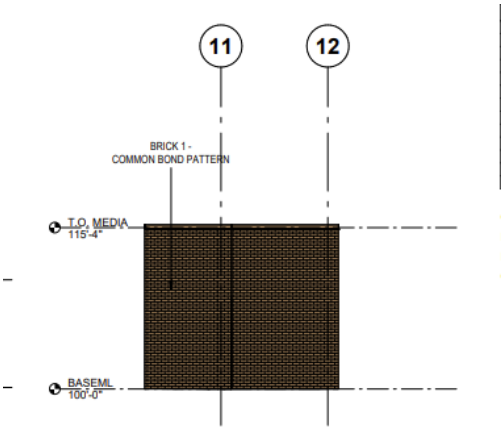
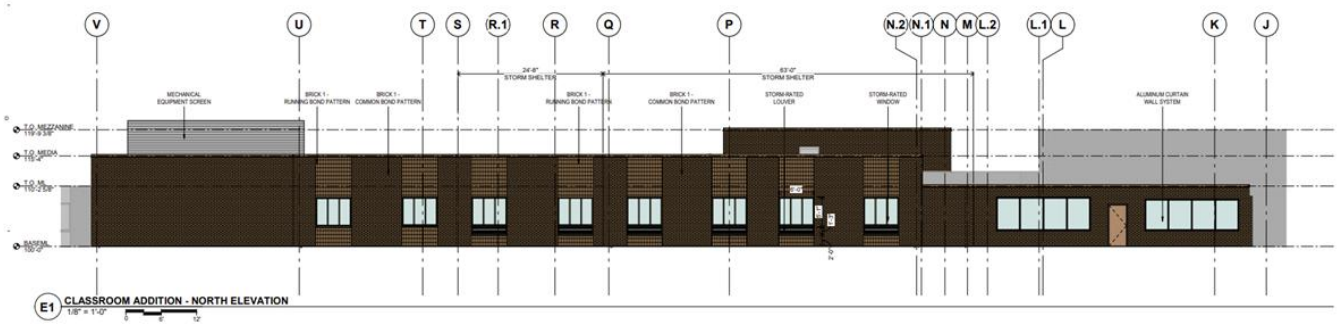


F7 CLASSROOM ADDITION - WEST ELEVATION
1/8" = 1'-0"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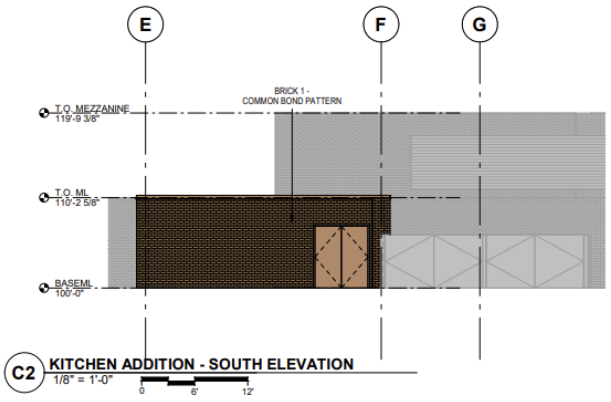
J
MECHANICAL EQUIPMENT SCREEN
BRICK 1 - RUNNING BOND PATTERN
BRICK 1 - COMMON BOND PATTERN
24'-8" STORM SHELTER
83'-0" STORM SHELTER
STORM-RATED LOUVER
STORM-RATED WINDOW
ALUMINUM CURTAIN WALL SYSTEM
T.O. MEZZANINE 119'-9 3/8"
T.O. MEDIA 116'-2"
T.O. ML 110'-2 5/8"
BASEML 100'-0"
E1 CLASSROOM ADDITION - NORTH ELEVATION
1/8" = 1'-0"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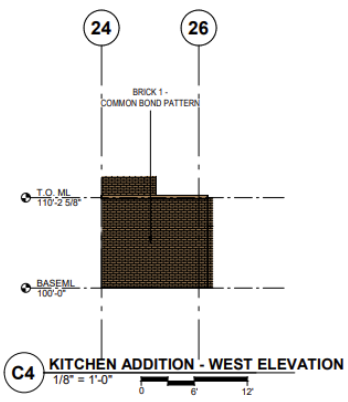
F
G
BRICK 1 - COMMON BOND PATTERN
T.O. MEZZANINE 119'-9 3/8"
T.O. ML 110'-2 5/8"
BASEML 100'-0"
C2 KITCHEN ADDITION - SOUTH ELEVATION
1/8" = 1'-0"
0
6'
12'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BRICK 1 - COMMON BOND PATTERN
T.O. ML 110'-2 5/8"
BASEML 100'-0"
C4 KITCHEN ADDITION - WEST ELEVATION
1/8" = 1'-0"
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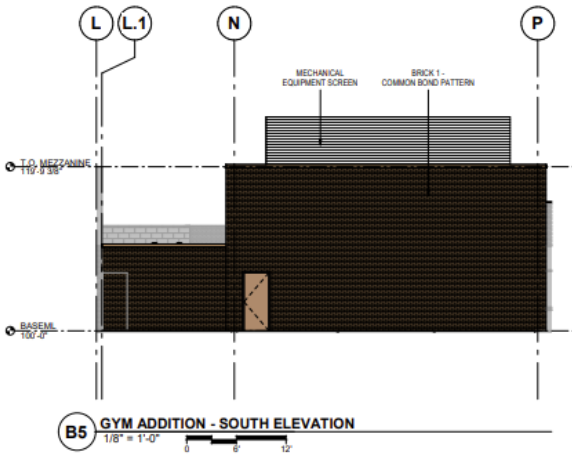
6'
12'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MECHANICAL EQUIPMENT SCREEN
BRICK 1 - COMMON BOND PATTERN
T.O. MEZZANINE 119'-9 3/8"
BASEML 100'-0"
B5 GYM ADDITION - SOUTH ELEVATION
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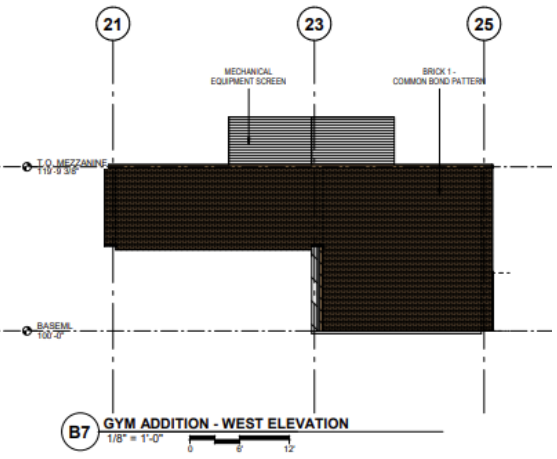
12'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MECHANICAL EQUIPMENT SCREEN
BRICK 1 - COMMON BOND PATTERN
T.O. MEZZANINE 119'-9 3/8"
BASEML 100'-0"
B7 GYM ADDITION - WEST ELEVATION
1/8" = 1'-0"
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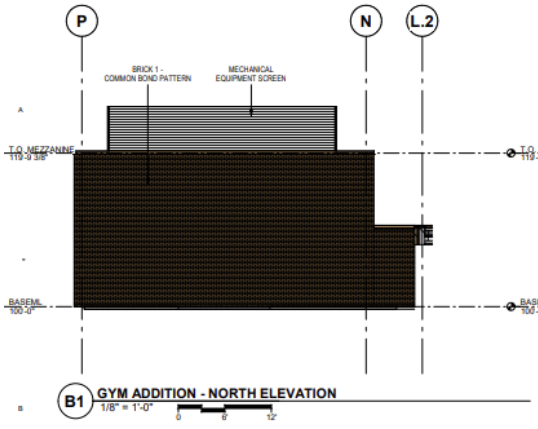
6'
12'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BRICK 1 - COMMON BOND PATTERN
MECHANICAL EQUIPMENT SCREEN
T.O. MEZZANINE 119'-9 3/8"
BASEML 100'-0"
B1 GYM ADDITION - NORTH ELEVATION
1/8" = 1'-0"
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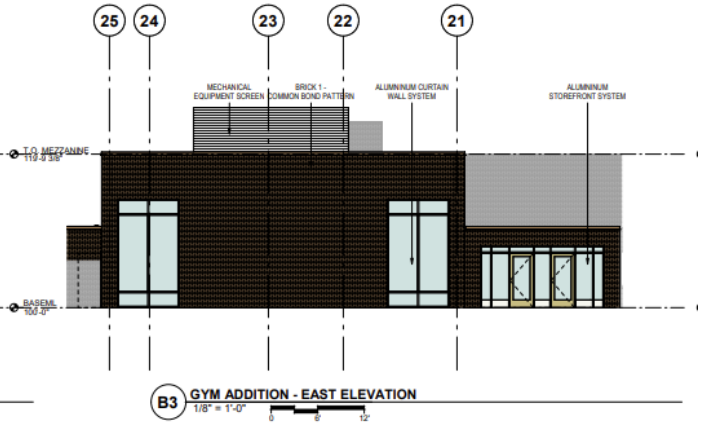
6'
12'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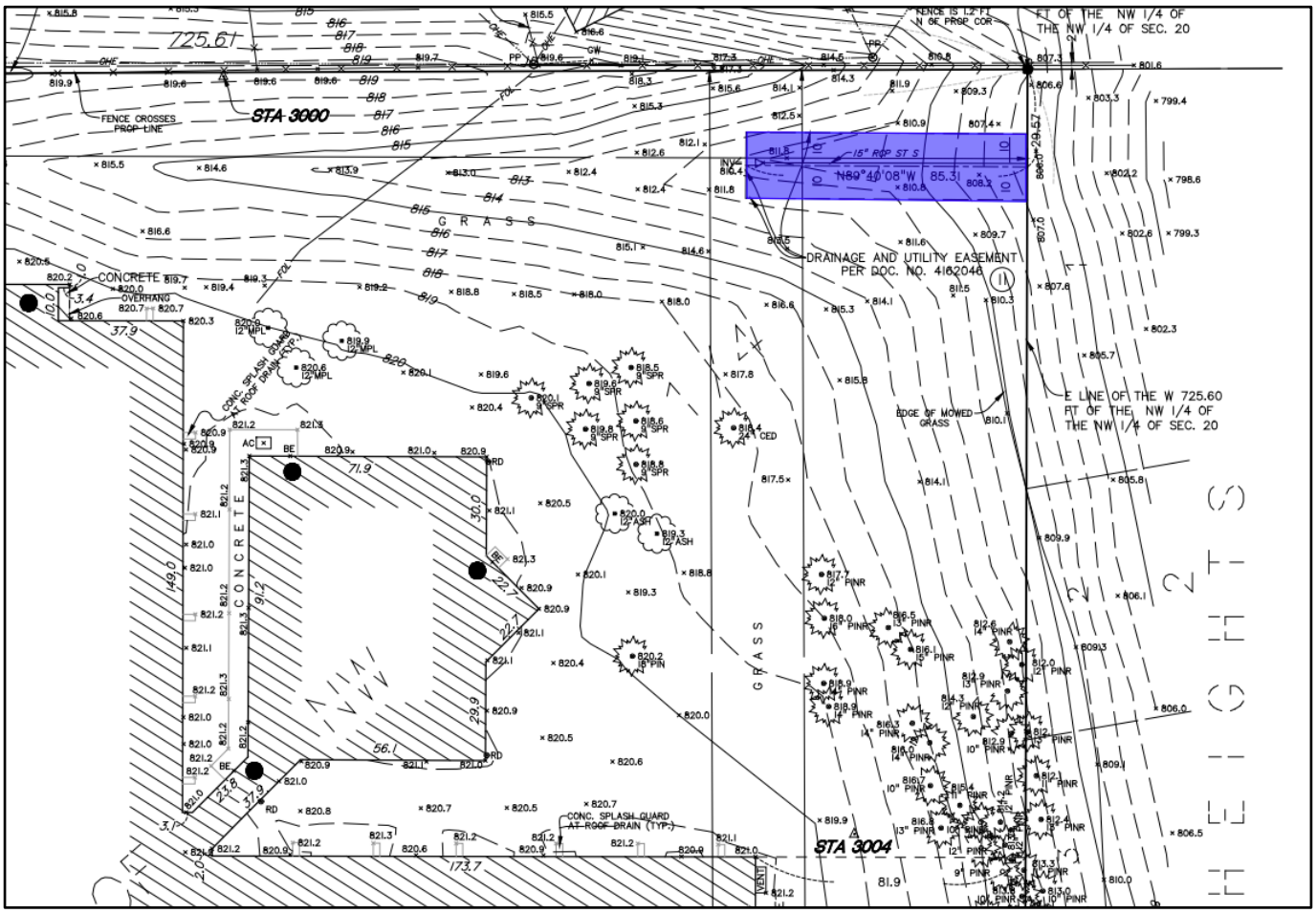
MECHANICAL EQUIPMENT SCREEN
BRICK 1 - COMMON BOND PATTERN
ALUMINUM CURTAIN WALL SYSTEM
ALUMINUM STOREFRONT SYSTEM
T.O. MEZZANINE 119'-9 3/8"
BASEML 100'-0"
B3 GYM ADDITION - EAST ELEVATION
1/8" = 1'-0"
0
6'
12'

Easement

There is an existing storm sewer easement and associated stormwater pipe in the northeast corner servicing the infiltration basin. A portion of this easement will be vacated, as the storm sewer is only serving the school site and is functioning as the outlet to the infiltration basin and will thus be considered private. The City does not need the ability to access the pipe as it will be the responsibility of the property owner to maintain the infrastructure as a private stormwater pipe.



Utilities

The project will require the extension of sanitary sewer and water service lines. The utility lines will connect to internal service lines to avoid disruption to Hadley Avenue. The applicant has submitted Civil plans with proposed utility work and shall comply with the City Engineer Review Memo dated 8/6/2025. Final utility layout must be submitted for review.

Grading and Storm Water Management

The Applicant is proposing grading in multiple areas of the site to account for the additions. A detailed stormwater management plan was submitted, and the Applicant shall comply with all comments included in the City Engineer Review Memo dated 8/6/2025 and Stormwater Rules Summary Memo dated 5/6/2025. An infiltration basin is proposed in the northeast corner of the property to handle the newly created impervious area. A grading LOC will be required to be submitted prior to the issuance of a grading permit.

Neighborhood Meeting
The applicant held a neighborhood meeting on August 20, 2025. Notice of the neighborhood meeting was sent to 163 surrounding property owners within 500 feet of the project area. The intent of the meeting was to give the neighboring property owners the opportunity to ask questions and present concerns they might have to the Applicant. One property owner was in attendance, as well as the Pine Hill Elementary School Principal and several team members from the School District, and Wold Architects and Engineers who gave an overview of the project. No concerns were expressed by the property owner in attendance.

Public Hearing Notices
The public hearing notice for the August 25, 2025, Planning Commission meeting was published in the *Saint Paul Pioneer Press* and mailed to 163 property owners within 500 feet of the proposed project on August 13, 2025. Staff have not received any written comments at the time of writing the report.

Variance Findings
The findings of fact for a favorable recommendation that were considered during the review are identified as follows:

A. The additions to the existing building will house several classrooms, associated mechanicals, and recreational gym area, which are necessary to serve the educational needs of the growing community.

B. The proposed building additions do not alter the character of the residential neighborhood, as the additions will closely match the appearance of the existing building.

C. The building has been designed to minimize the impacts to the residential neighborhood by constructing the addition on the north side of the property, no further to the property line than an existing portion of the building.

D. The location of the expansion on the north side of the building is guided by connection feasibility unique to the existing building and not created by the property owner.

E. The proposed use of the site requires additional site improvements as part of the CUP for an educational use. The proposed use is permitted in a residential district with a CUP and standards have been reviewed under the CUP and site plan review application.

Recommendation

That the Planning Commission recommend that the City Council take the following actions:

A. Approve a Conditional Use Permit for an educational facility within a residential district.

B. Approve a Variance to allow a six-classroom building addition to encroach within the required 50-foot setback to the residential property line to the north.

C. Approve a site plan review for three additions totaling approximately 13,300 square feet and associated site work at Pine Hill Elementary School

The approvals are subject to the following conditions:

1. The project shall be completed in accordance with the plans submitted by the conditions of approval. Any significant changes to the plans, as determined by planning staff, shall require review and approval by the Planning Commission and City Council.

2. Prior to the issuance of a building permit, the School District shall incorporate the recommendations, requirements, and evaluations noted in the comment letter dated 8/6/2025, and subject to modifications that are agreed to by the Applicant and City Engineer. All comments shall be adopted herein by reference.

3. An easement vacation shall be recorded for the portion of the stormwater sewer pipe in the northeast corner of the property prior to the issuance of a certificate of occupancy.

4. Resolution No. 00-144 shall be rescinded.

5. All applicable permits (i.e., building, demo, electrical, grading, right-of-way and mechanical) and a commercial plan review packet must be completed, submitted, and approved by the City prior to the commencement of any construction activities. Detailed construction plans must be reviewed and approved by the Building Official, City Engineer, and Fire Marshal.

6. Installation of landscaping shall occur in a timely fashion and be consistent with an approved plan. Prior to the issuance of a building permit, a letter of credit in the amount of 150 percent of the landscape estimate shall be submitted to the City as required by City ordinance. The financial guarantee shall be held until all required plantings are installed. At such time of installation, the Planning Department shall conduct an inspection to verify compliance with the landscape plan. If the inspection is approved, 50 percent of the financial guarantee shall be released. One year from the date of initial inspection a follow-up inspection shall be conducted to verify survivability. If the follow-up inspection is approved, the remainder of the financial guarantee shall be released.

7. The grading and erosion control plan for the site must comply with NPDES II permit requirements. Erosion control devices must be installed prior to commencement of any grading activity. Erosion control must be performed in accordance with the recommended practices of the “Minnesota Construction Site Erosion and Sediment Control Planning Handbook” and the conditions stipulated in Title 9-7-1, Erosion Control During Construction, of the City’s Subdivision Ordinance. The Applicant shall be responsible for the costs for the City to inspect the site in relation to erosion control conformance.

8. The Applicant must provide the City with an as-built survey of all utilities and grading plan.

9. The Applicant is responsible for removing debris from all adjacent public and private roadways during their grading and construction process. The adjacent streets shall be swept clean daily or as needed.

10. All areas of the site, where practical, shall be established and maintained per the approved final landscaping plan.

11. The applicant shall provide a plan for ensuring establishment and survivability of the proposed sod and landscape items.

12. The ground-mounted chiller unit and utility units shall be screened in compliance with City Code Title 11-3-9. Revised plans shall be submitted and reviewed for compliance by staff prior to the issuance of a building permit.

13. Any proposed fencing shall be submitted, reviewed, and approved by planning staff in compliance with City Code Title 11-3-6.

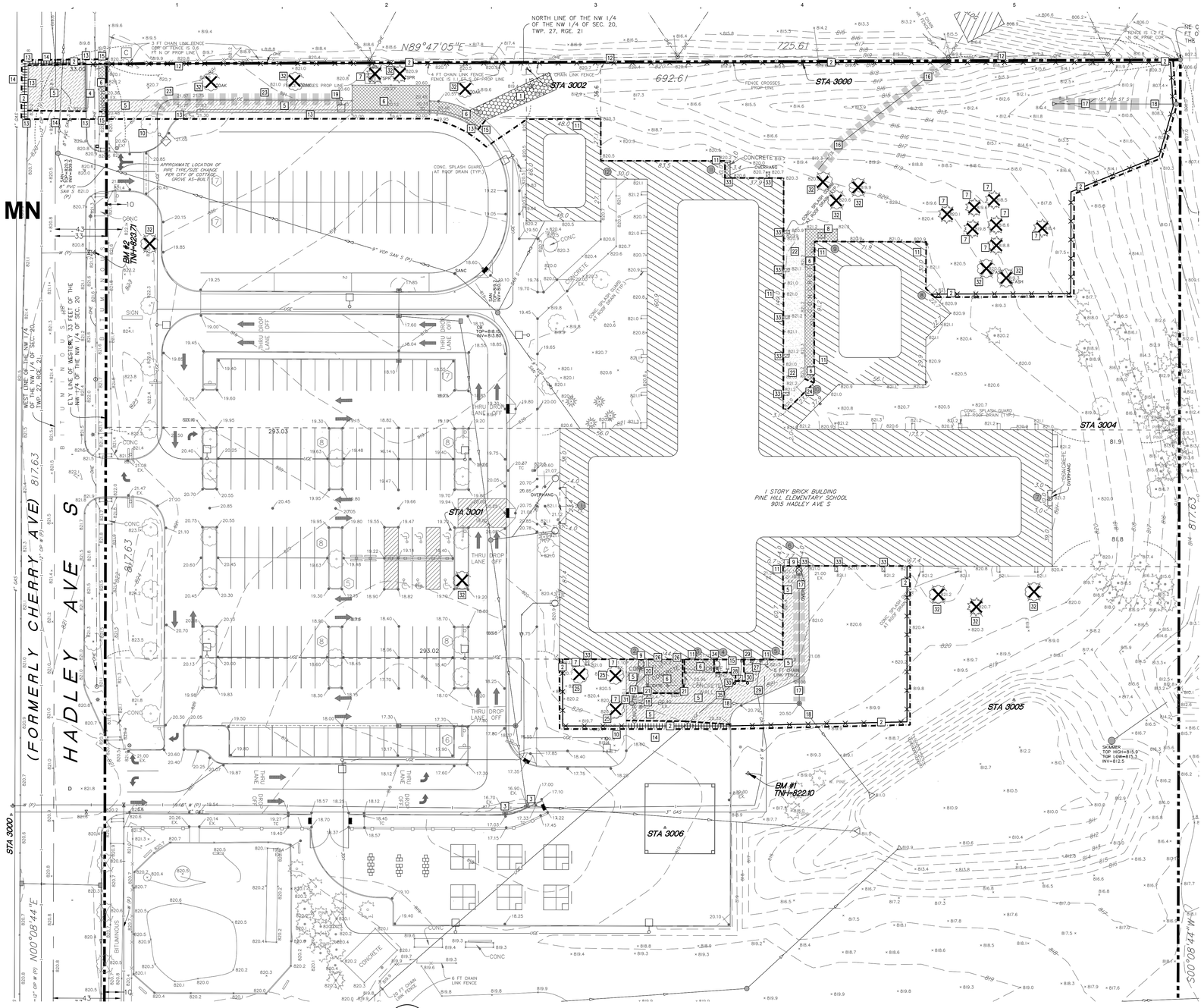
14. Signage is not approved as part of this application. Any proposed signage shall meet the requirements of the sign ordinance and require a separate building permit.

15. A grading LOC is required prior to the issuance of a grading permit.

16. A site improvement LOC will be required prior to the issuance of a building permit.

Prepared by
Kelly Becker
Associate Planner

Attachments
Civil Set dated 6/2/2025 (received 7/25/2025)
Site Photometric Plan dated 7/18/2025
Traffic Study dated 7/16/2025
Traffic Review dated 8/11/2025
Stormwater Summary 5/6/2025
Plan Review memo 8/6/2025
Pine Hill Project Narrative
Architectural Plans
Resolution No. 00-144



1 C1.000 SELECTIVE SITE DEMOLITION AND EROSION CONTROL PLAN 1" = 30'

PROPOSED PLAN SYMBOLS

- CONSTRUCTION LIMITS
- SILTATION FENCE
- SEDIMENT CONTROL LOG
- PROPERTY LINE
- SAWCUT LINE (APPROX.)
- CONSTRUCTION ENTRANCE
- BITUMINOUS REMOVAL
- CONCRETE REMOVAL
- GRAVEL REMOVAL
- CURB REMOVAL
- UTILITY REMOVAL
- PIPE REMOVAL
- TREE REMOVAL

*NOTE: CONSTRUCTION LIMITS ARE ANTICIPATED TO BE PROPERTY LINE UNLESS OTHERWISE SHOWN.

ABBREVIATIONS

BLDG	Building
BM	Bench Mark
CB	Catch Basin
CONC	Concrete
ELEV	Elevation
EX	Existing
INV	Invert
MAX	Maximum
MH	Manhole
PVC	Polyvinyl Chloride
RCP	Reinforced Concrete Pipe

NOTE:
STORM SEWER INLETS NOT SHOWN ON PLAN MAY RECEIVE RUNOFF FROM CONSTRUCTION ACTIVITIES. INSTALL INLET SEDIMENT PROTECTION PER DETAIL 4/C5.000 ON ALL STORM INLETS THAT MAY RECEIVE RUNOFF.

NOTE:
PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL POTHOLE AND DETERMINE THE LOCATION AND ELEVATION OF EXISTING UNDERGROUND UTILITIES. IMMEDIATELY CONTACT CIVIL ENGINEER IF EXISTING UTILITIES TO REMAIN WILL BE IMPACTED BY PROPOSED WORK.

KEYED NOTES

KEYED NOTES ARE DENOTED BY [NO] ON PLAN.

1. INSTALL CONSTRUCTION ENTRANCE. REFER TO DETAIL 1/C5.000.
2. INSTALL PERIMETER EROSION CONTROL. REFER TO DETAILS 2/C5.000 AND 3/5.000.
3. INSTALL INLET SEDIMENT PROTECTION. REFER TO DETAIL 4/C5.000.
4. REMOVE CURB AND GUTTER IN ITS ENTIRETY TO THE APPROXIMATE EXTENTS SHOWN. SAWCUT AND REMOVE AT NEAREST JOINT.
5. REMOVE BITUMINOUS PAVEMENT IN ITS ENTIRETY TO THE EXTENTS SHOWN.
6. REMOVE CONCRETE PAVEMENT IN ITS ENTIRETY TO THE APPROXIMATE EXTENTS SHOWN.
7. REMOVE TREE IN ITS ENTIRETY INCLUDING STUMP.
8. REMOVE EXISTING UNDERGROUND UTILITY BOX IN ITS ENTIRETY.
9. REMOVE EXISTING ROOF DRAIN COLLECTOR IN ITS ENTIRETY.
10. EXISTING TREE TO REMAIN. PROTECT AT ALL TIMES.
11. EXISTING BUILDING TO REMAIN. PROTECT AT ALL TIMES.
12. EXISTING FENCE TO REMAIN. PROTECT AT ALL TIMES.
13. EXISTING CURB AND GUTTER TO REMAIN. PROTECT AT ALL TIMES.
14. EXISTING BITUMINOUS PAVEMENT TO REMAIN. PROTECT AT ALL TIMES.
15. EXISTING CONCRETE TO REMAIN. PROTECT AT ALL TIMES.
16. EXISTING FIBER OPTIC LINE SHALL BE RELOCATED/LOWERED. CONTRACTOR SHALL COORDINATE TIMING AND EXTENTS OF REMOVAL WITH OWNER AND UTILITY OWNER PRIOR TO START OF CONSTRUCTION. NO ADDITIONAL COMPENSATION WILL BE PROVIDED FOR UTILITY RELOCATION.
17. REMOVE STORM SEWER IN ITS ENTIRETY TO THE EXTENTS SHOWN.
18. EXISTING STORM SEWER TO REMAIN. PROTECT AT ALL TIMES.
19. REMOVE AND SALVAGE EXISTING LIGHT POLE. CONTRACTOR SHALL REMOVE LIGHT BASE IN ITS ENTIRETY. REFER TO ELECTRICAL PLANS FOR LIGHT POLE REINSTALLATION.
20. REMOVE EXISTING CONCRETE WALL IN ITS ENTIRETY INCLUDING BELOW GRADE FOUNDATION.
21. REMOVE EXISTING BOLLARD, GATE, AND GATE STOP POST IN ITS ENTIRETY. SALVAGE GATE AND MOUNTING HARDWARE FOR REINSTALLATION.
22. REMOVE GRAVEL IN ITS ENTIRETY TO THE EXTENTS SHOWN.
23. REMOVE EXISTING ELECTRICAL LINES TO THE APPROXIMATE EXTENT SHOWN. CONTRACTOR SHALL COORDINATE EXACT LIMITS OF REMOVAL WITH THE ELECTRICAL CONTRACTOR. REFER TO ELECTRICAL PLANS FOR NEW ELECTRICAL LINES.
24. EXISTING STOOP TO REMAIN. PROTECT AT ALL TIMES.
25. REMOVE AND SALVAGE EXISTING ROCKS. REFER TO LANDSCAPE PLANS FOR NEW LOCATION.
26. REMOVE EXISTING BOLLARD IN ITS ENTIRETY.
27. REMOVE AND SALVAGE FENCE IN ITS ENTIRETY. POST AND FOOTINGS TO REMAIN.
28. EXISTING ELECTRICAL BOX TO REMAIN. PROTECT AT ALL TIMES.
29. EXISTING GAS METER AND GAS LINES TO REMAIN. PROTECT AT ALL TIMES.
30. EXISTING BOLLARD TO REMAIN. PROTECT AT ALL TIMES.
31. SEAL EXISTING MANHOLE OPENING WHERE PIPE IS REMOVED.
32. TREE PREVIOUSLY REMOVED BY OWNER BUT STUMP REMAINS. CONTRACTOR SHALL REMOVED REMAINING STUMP. REFER TO LANDSCAPE PLANS FOR ADDITIONAL DETAILS.
33. REMOVE EXISTING CONCRETE SPLASH BLOCK IN ITS ENTIRETY.
34. EXISTING ROOF DRAIN COLLECTOR TO REMAIN. PROTECT AT ALL TIMES.
35. EXISTING ELECTRICAL LINES TO REMAIN. PROTECT AT ALL TIMES.

DEMOLITION AND REMOVAL NOTES:

1. CONTRACTOR SHALL FOLLOW ALL CITY OF COTTAGE GROVE STANDARDS AND SPECIFICATIONS.
2. PRIOR TO START OF ANY CONSTRUCTION ACTIVITY, ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE INSTALLED BY THE CONTRACTOR AND INSPECTED BY THE CITY OF COTTAGE GROVE. PERIMETER SEDIMENT PROTECTION SHALL BE INSTALLED ALONG THE CONTOUR.
3. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ASCERTAIN THE LOCATION OF ALL EXISTING UTILITIES. THE CONTRACTOR SHALL VERIFY THE LOCATION AND ELEVATION AND MARK ALL EXISTING UTILITIES 48 HOURS BEFORE CONSTRUCTION STARTS. THE ENGINEER, ARCHITECT, OR OWNER DOES NOT GUARANTEE THAT ALL THE UTILITIES ARE MAPPED, OR, IF MAPPED, ARE SHOWN CORRECTLY. CONTACT GOPHER STATE ONE CALL AT 651-454-0002 FOR FIELD LOCATING EXISTING UTILITIES. CONTACT UTILITY OWNER IF DAMAGE OCCURS DUE TO CONSTRUCTION.
4. THERE MAY BE MISCELLANEOUS ITEMS TO BE REMOVED THAT ARE NOT IDENTIFIED ON THESE PLANS. THE CONTRACTOR SHALL VISIT THE SITE AND REVIEW THE DOCUMENTS TO OBTAIN A CLEAR UNDERSTANDING OF THE INTENDED SCOPE OF WORK.
5. REMOVE ALL GAS AND ELECTRIC LINES UNDER PROPOSED BUILDING FOOTPRINT. COORDINATE DISCONNECTION OF EACH UTILITY WITH THE UTILITY OWNER.
6. ANY UTILITIES NOT INDICATED FOR REMOVAL OR ABANDONMENT ARE TO BE PROTECTED AT ALL TIMES.
7. EXISTING CONCRETE PAVEMENT AND CURB AND GUTTER SHOWN TO BE REMOVED WITHIN THE SCOPE OF THE PROJECT SHALL BE REMOVED FROM THE SAW CUT LINES TO THE NEAREST JOINT.
8. THE BACKGROUND INFORMATION WAS PREPARED BY SUNDE LAND SURVEYING. (952) 881-2455.
9. ALL WORK IN THE PUBLIC RIGHT OF WAY IS TO BE COORDINATED WITH THE CITY OF COTTAGE GROVE. ROADWAY REPAIRS, BOULEVARD REPAIRS, AND TRAFFIC CONTROL ARE TO BE PER CITY OF COTTAGE GROVE STANDARDS AND SPECIFICATIONS.

GENERAL NOTES:

1. CONCRETE CURB AND GUTTER REMOVAL, PAVEMENT REMOVAL, AND UTILITY REMOVAL LIMITS ARE TO BE COORDINATED WITH THE CITY OF COTTAGE GROVE AND UTILITY OWNER.
2. THE CONTRACTOR SHALL DEVELOP AND IMPLEMENT A TRAFFIC CONTROL PLAN WHILE WORKING WITHIN THE RIGHT-OF-WAY. THE TRAFFIC CONTROL PLAN SHALL BE APPROVED BY THE CITY ENGINEERING DEPARTMENT PRIOR TO STREET ENCROACHMENT.
3. CONTRACTOR SHALL VISIT THE SITE PRIOR TO BIDDING AND REVIEW ALL CONSTRUCTION DOCUMENTS AND GEOTECHNICAL REPORTS. NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR ITEMS THAT SHOULD HAVE BEEN ANTICIPATED BY PERFORMING THE ABOVE.
4. THE CONSTRUCTION ENTRANCE INDICATED ON THE PLAN IS SHOWN IN AN APPROXIMATE LOCATION. PRIOR TO START OF CONSTRUCTION, THE CONTRACTOR IS TO COORDINATE WITH THE CITY OF COTTAGE GROVE FOR THE EXACT CONSTRUCTION ENTRANCE LOCATION.

N

30' 15' 0 30' 60'

SCALE 1" = 30'

Pine Hill Elementary School Addition and Renovation

9015 HADLEY AVE S,
COTTAGE GROVE,
MN 55016

ISD #833: SOUTH WASHINGTON COUNTY SCHOOLS
8400 E. Point Douglas Rd S.,
Cottage Grove, MN 55016

WOLD ARCHITECTS AND ENGINEERS
332 Minnesota Street, Suite W2000
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BKBM Project No. 24259.50

NOT FOR CONSTRUCTION

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**

Nathaniel P. Anderson
License Number: **59311** Date **06/02/2025**

Revisions		
Description	Date	Num

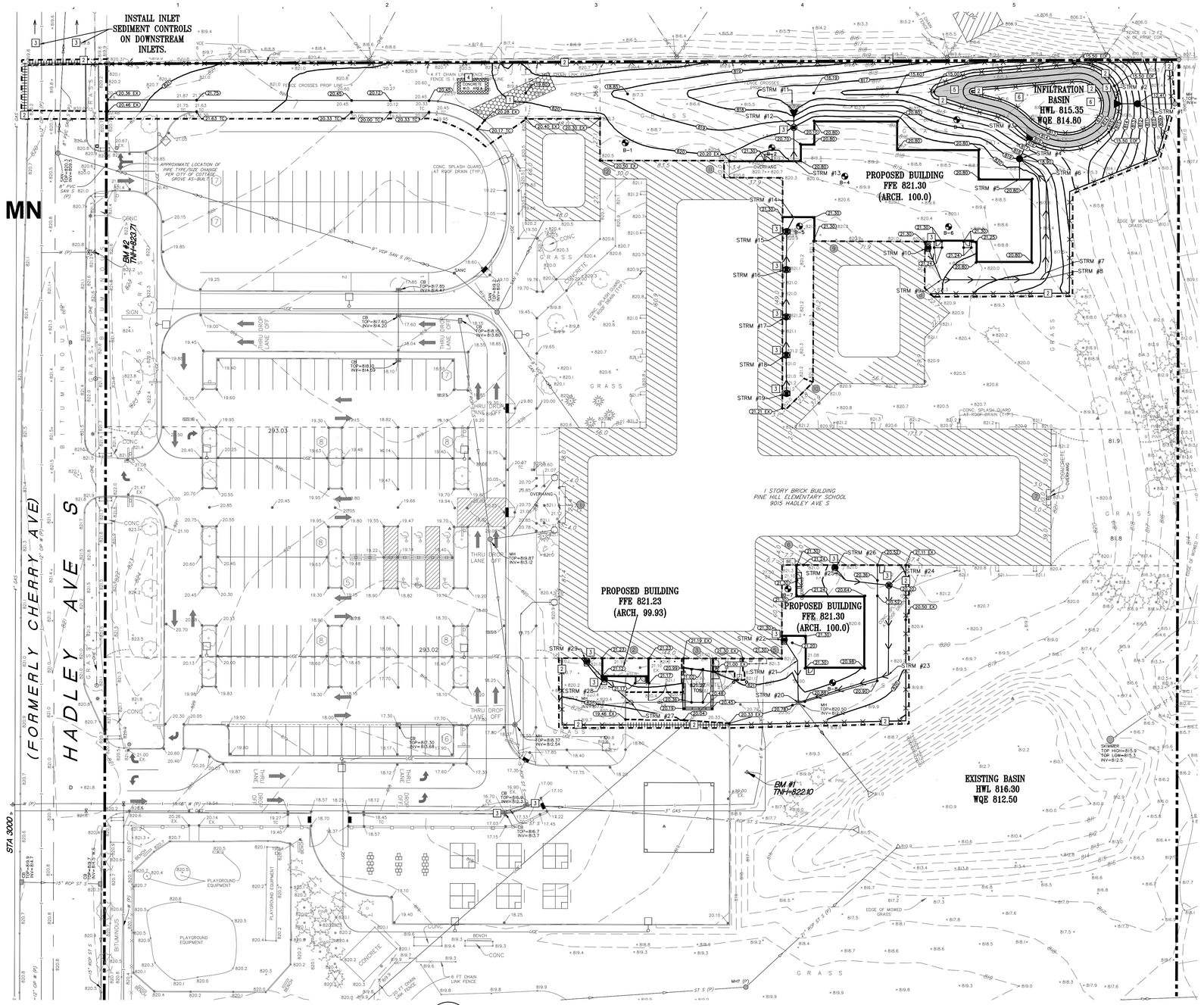
Comm: **242224**
Date: **06/02/2025**
Drawn: **AMY**
Check: **KAB**

North

SELECTIVE SITE DEMOLITION AND EROSION CONTROL PLAN

Scale:

C1.000



1 C2.000 GRADING, DRAINAGE, AND EROSION CONTROL
1"=30'

PROPOSED PLAN SYMBOLS

- CONSTRUCTION LIMITS
- SILTATION FENCE
- SEDIMENT CONTROL LOG
- PROPERTY LINE
- SAWCUT LINE (APPROX.)
- PROPOSED CONTOUR
- STORM SEWER
- CATCH BASIN
- MANHOLE
- FLARED END SECTION
- FLARED END SECTION WITH RIPRAP
- ROCK CONSTRUCTION ENTRANCE
- SPOT ELEVATION
- EROSION CONTROL BLANKET (TEMPORARY)
- SOIL BORING
- CONCRETE WASHOUT AREA

*NOTE: CONSTRUCTION LIMITS ARE ANTICIPATED TO BE PROPERTY LINE UNLESS OTHERWISE SHOWN.

ABBREVIATIONS

BLDG	Building
BM	Bench Mark
CB	Catch Basin
CONC	Concrete
ELEV	Elevation
EX	Existing
INV	Invert
MH	Manhole
PVC	Polyvinyl Chloride
RCP	Reinforced Concrete Pipe
W.O.	Washout

WALKWAY NOTES:

1. ALL SIDEWALK LONGITUDINAL AND TRANSVERSE SLOPES ARE TO BE PER CODE.

NOTE:
CONTRACTOR SHALL PROVIDE SOIL AMENDMENT TO IMPROVE TOPSOIL AND LOOSEN SUBSOIL FROM CONSTRUCTION ACTIVITIES. FOR ALL DISTURBED AREAS. INCORPORATE 3–INCHES OF COMPOST TO A DEPTH OF 8–INCHES. PROVIDE 10–INCHES OF SCARIFIED SUBSOIL BELOW THE TOPSOIL LAYER, FOR A TOTAL UNCOMPACTED DEPTH OF 18–INCHES. REFER TO LANDSCAPE PLANS FOR PERMANENT TURF RESTORATION.

N

30' 15' 0 30' 60'
SCALE 1" = 30'

NOTE:
STORM SEWER INLETS NOT SHOWN ON PLAN MAY RECEIVE RUNOFF FROM CONSTRUCTION ACTIVITIES. INSTALL INLET SEDIMENT PROTECTION PER DETAIL 4/C5.000 ON ALL STORM INLETS THAT MAY RECEIVE RUNOFF.

APPROXIMATE DISTURBED AREA IS 1.60 ACRES

KEYED NOTES

KEYED NOTES ARE DENOTED BY [NO] ON PLAN.

1. INSTALL ROCK CONSTRUCTION ENTRANCE. REFER TO DETAIL 1/C5.000.
2. INSTALL PERIMETER EROSION CONTROL. REFER TO DETAILS 2/C5.000 AND 3/5.000.
3. INSTALL INLET SEDIMENT PROTECTION. REFER TO DETAIL 4/C5.000.
4. APPROXIMATE LOCATION OF TEMPORARY CONTAINED CONCRETE WASH OUT BIN. REFER TO THE MINNESOTA'S NPDES/SDS GENERAL STORMWATER PERMIT FOR CONSTRUCTION ACTIVITY FOR MORE DETAILS. SELF CONTAINED CONCRETE WASHOUTS ON CONCRETE DELIVERY TRUCKS IS AN ACCEPTABLE ALTERNATIVE TO ON–SITE CONTAINMENT.
5. INSTALL MN/DOT 3885 CATEGORY 20 TEMPORARY STRAW FIBER EROSION CONTROL BLANKET.
6. INFILTRATION BASIN(S) AND WATER QUALITY TREATMENT POND(S) ARE TO BE CONSTRUCTED AT THE END OF GRADING OPERATIONS ONCE THE TRIBUTARY AREA'S FINAL STABILIZATION HAS BEEN INSTALLED. REFER TO DETAIL 5/C5.001 FOR INFILTRATION BASIN(S) CROSS SECTION. **CONSTRUCTION TRAFFIC IN INFILTRATION AREA(S) IS NOT ALLOWED AFTER AREA HAS BEEN EXCAVATED. PRIOR TO FINAL STABILIZATION, LOOSEN SOIL WITH MECHANICAL TILLER. INFILTRATION AREA(S) ARE NOT APPROVED BORROW SITES AND ARE NOT TO BE USED FOR TEMPORARY SEDIMENT BASIN(S) ONCE BASIN(S) SUBGRADE ELEVATION HAS BEEN EXCAVATED. CONTRACTOR SHALL ENSURE THAT BASIN(S) INFILTRATE AT A MINIMUM RATE OF 0.45–INCH PER HOUR USING A DOUBLE RING INFILTROMETER TEST BEFORE FINAL ACCEPTANCE. DOUBLE RING INFILTROMETER TEST SHALL BE SIGNED BY A REGISTERED GEOTECHNICAL ENGINEER AND SUBMITTED TO THE CITY AND ENGINEER FOR REVIEW BEFORE FINAL APPROVAL.**

EROSION CONTROL NOTES:

1. ALL EROSION CONTROL FACILITIES SHALL BE INSTALLED PRIOR TO ANY SITE GRADING OPERATIONS. THE CITY ENGINEERING DEPARTMENT MUST BE NOTIFIED UPON COMPLETION OF THE INSTALLATION OF THE REQUIRED EROSION CONTROL FACILITIES AND PRIOR TO ANY GRADING OPERATION BEING COMMENCED. THE CONTRACTOR IS RESPONSIBLE FOR SCHEDULING A PRE–CONSTRUCTION GRADING MEETING ON–SITE WITH THE CITY AND WATERSHED DISTRICT. IF DAMAGED OR REMOVED DURING CONSTRUCTION, ALL EROSION CONTROL FACILITIES SHALL BE RESTORED AND IN PLACE AT THE END OF EACH DAY.
2. ANY EROSION CONTROL FACILITIES DEEMED NECESSARY BY THE CITY OR WATERSHED DISTRICT, BEFORE, DURING, OR AFTER THE GRADING ACTIVITIES, SHALL BE INSTALLED AT THEIR REQUEST.
3. NO DEVIATIONS SHALL BE MADE FROM THE ELEVATIONS SHOWN ON THE APPROVED GRADING PLAN WITHOUT PRIOR APPROVAL FROM THE CIVIL ENGINEER.
4. FOR SITES GREATER THAN 1.0 ACRE, AS REQUIRED BY THE MPCA PERMIT REQUIREMENTS, THE PERMIT APPLICANT MUST KEEP AN EROSION CONTROL INSPECTION LOG. INSPECTION MUST BE MADE ONCE EVERY SEVEN DAYS AND WITHIN 24 HOURS AFTER EVERY RAIN EVENT. THE INSPECTION RECORD MUST BE MADE AVAILABLE TO THE CITY WITHIN 24 HOURS OF REQUEST.
5. FLOWS FROM DIVERSION CHANNELS OR PIPES (TEMPORARY OR PERMANENT) SHALL BE ROUTED TO SEDIMENTATION BASINS OR APPROPRIATE ENERGY DISSIPATERS TO PREVENT TRANSPORT OF SEDIMENT TO OUTFLOW TO LATERAL CONVEYORS AND TO PREVENT EROSION AND SEDIMENTATION WHEN RUNOFF FLOWS INTO THESE CONVEYORS.
6. SITE ACCESS ROADS SHALL BE GRADED OR OTHERWISE PROTECTED WITH SILT FENCES, DIVERSION CHANNELS, OR DIKES AND PIPES TO PREVENT SEDIMENT FROM EXITING THE SITE VIA THE ACCESS ROADS. SITE–ACCESS ROADS/DRIVEWAYS SHALL BE SURFACED WITH CRUSHED ROCK WHERE THEY ADJOIN EXISTING PAVED ROADWAYS.
7. SOILS TRACKED FROM THE SITE BY MOTOR VEHICLES OR EQUIPMENT SHALL BE CLEANED DAILY FROM PAVED ROADWAY SURFACES, OR MORE FREQUENTLY IF REQUESTED BY THE CITY, THROUGHOUT THE DURATION OF CONSTRUCTION.
8. DUST CONTROL MEASURES SHALL BE PERFORMED PERIODICALLY WHEN CONDITIONS REQUIRE AND/OR AS DIRECTED BY THE CITY.
9. ALL EROSION CONTROL MEASURES SHALL BE USED AND MAINTAINED FOR THE DURATION OF SITE CONSTRUCTION. IF CONSTRUCTION OPERATIONS OR NATURAL EVENTS DAMAGE OR INTERFERE WITH THESE EROSION CONTROL MEASURES, THEY SHALL BE RESTORED TO SERVE THEIR INTENDED FUNCTION AT THE END OF EACH DAY OR AS SOON AS FIELD CONDITIONS ALLOW ACCESS.
10. ALL AREAS DISTURBED DURING CONSTRUCTION SHALL BE RESTORED AS SOON AS POSSIBLE. ANY AREAS WHICH HAVE BEEN FINISHED GRADED OR AREAS THAT HAVE BEEN DISTURBED AND FOR WHICH GRADING OR SITE BUILDING CONSTRUCTION OPERATIONS ARE NOT ACTIVELY UNDERWAY SHALL BE SEEDED AND MULCHED AS SET FORTH IN THE FOLLOWING PARAGRAPHS WITHIN 14 DAYS.
    - A. ALL SEEDED AREAS SHALL BE EITHER MULCHED AND DISC–ANCHORED OR COVERED BY FIBROUS BLANKETS TO PROTECT SEEDS AND LIMIT EROSION. TEMPORARY STRAW MULCH SHALL BE DISC–ANCHORED AND APPLIED AT A UNIFORM RATE OF NOT LESS THAN TWO TONS PER ACRE AND NOT LESS THAN 80% COVERAGE.
    - B. IF THE GRADED AREA IS ANTICIPATED TO BE RE–DISTURBED/DEVELOPED WITHIN SIX MONTHS, PROVIDE A TEMPORARY VEGETATIVE COVER CONSISTING OF MINNESOTA DEPARTMENT OF TRANSPORTATION (MNDOT) SEED MIXTURE O (OATS), OR WW (WINTER WHEAT), AT A RATE OF 100 POUNDS PER ACRE.
    - C. IF GRADED AREA WILL NOT BE DEVELOPED FOR A PERIOD GREATER THAN SIX MONTHS, PROVIDE A SEMI–PERMANENT VEGETATIVE COVER OF SEED MIXTURE MNDOT TCC (TWO YEAR COVER) AT A RATE OF 25 POUNDS PER ACRE.
    - D. GRADING BONDS OR THE EQUIVALENT SECURITIES SHALL BE RETAINED UNTIL TURF HAS GERMINATED AND SURVIVED A 60–DAY GROWING PERIOD.
    - E. UNLESS SPECIFIED ELSEWHERE WITHIN THE CONSTRUCTION DOCUMENTS (I.E. ARCHITECTURAL SITE PLAN OR LANDSCAPE PLAN), PERMANENT TURF RESTORATION SHALL CONSIST OF SOD.
    - F. WHENEVER OTHER EROSION AND SEDIMENT CONTROL PRACTICES ARE INADEQUATE, TEMPORARY ON–SITE SEDIMENT BASINS THAT CONFORM TO THE CRITERIA FOR ON–SITE DETENTION BASINS SHALL BE PROVIDED.
    - G. MULCH, HYDROMULCH, AND TACKIFIERS MAY NOT BE USED FOR STABILIZATION IN SWALES OR DRAINAGE DITCHES UNLESS THE LONGITUDINAL SLOPE IS LESS THAN 2 PERCENT.
    - H. RUNOFF SHALL BE PREVENTED FROM ENTERING ALL STORM SEWER CATCH BASINS PROVIDING THEY ARE NOT NEEDED DURING CONSTRUCTION. WHERE STORM SEWER CATCH BASINS ARE NECESSARY FOR SITE DRAINAGE DURING CONSTRUCTION, SEDIMENT PROTECTION DEVICES AS DETAILED SHALL BE INSTALLED AND MAINTAINED AROUND ALL CATCH BASINS UNTIL THE TRIBUTARY AREA TO THE CATCH BASIN IS RESTORED.
11. GRADING ACTIVITIES PROPOSED TO BEGIN AFTER OCTOBER 15 WILL REQUIRE AN APPROVED PHASING SCHEDULE. THE AREA OF LAND THAT THE CITY WILL ALLOW TO BE DISTURBED AT THIS TIME OF YEAR WILL BE SEVERELY LIMITED. THE CITY WILL ALSO REQUIRE ADDITIONAL EROSION CONTROL DEVICES, I.E., TEMPORARY SEDIMENT BASINS, DORMANT SEEDING AND HIGH RATES OF APPLICATION OF BOTH SEED AND MULCH.
12. FILTER BLANKET AND RIPRAP SHALL BE INSTALLED ON THE DOWNSTREAM SIDES OF ALL STORM SEWER OUTLETS 24 HOURS AFTER CONSTRUCTION AS INDICATED AND DETAILED. ALL RIPRAP SHALL BE INSTALLED WITH A FILTER MATERIAL MEETING THE MNDOT SPECIFICATIONS FOR RIPRAP AND FILTER MATERIAL.
13. EROSION CONTROL FACILITIES SHALL BE INSTALLED AND MAINTAINED AROUND THE PERIMETER OF ALL LAKES, PONDS, AND WETLANDS WITHIN OR ADJACENT TO THE AREA TO BE GRADED UNTIL THE TRIBUTARY AREA TO THE LAKE, POND, OR WETLAND IS RESTORED.
14. TO MINIMIZE EROSION, ALL 3:1 SLOPES SHALL BE COVERED WITH A MN/DOT 3885 CATEGORY 20 STRAW EROSION CONTROL BLANKETS OR STAKED SOD.
15. ACCUMULATION OF ALL SEDIMENT OCCURRING IN LAKES, PONDS, WETLANDS, STORM SEWERS, AND DITCHES SHALL BE REMOVED PRIOR TO, DURING, AND AFTER COMPLETION OF GRADING ACTIVITIES.
16. EROSION CONTROL ITEMS AND DEVICES SHALL BE REMOVED ONLY AFTER THE AREA HAS RECEIVED FINAL STABILIZATION OR AS DIRECTED BY THE CITY.

GRADING NOTES:

1. THE CONTRACTOR SHALL VISIT THE SITE, REVIEW ALL CONSTRUCTION DOCUMENTS, AND FIELD VERIFY THE EXISTING CONDITIONS PRIOR TO BIDDING. NO ADDITIONAL COMPENSATION WILL BE GIVEN FOR WORK THAT COULD HAVE BEEN IDENTIFIED BY A SITE VISIT OR CONSTRUCTION DOCUMENT REVIEW.
2. THE BACKGROUND INFORMATION WAS PREPARED BY SUNDE LAND SURVEYING. CONTACT SUNDE LAND SURVEYING AT (952) 881–2455.
3. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ASCERTAIN THE LOCATION OF ALL EXISTING UTILITIES. THE CONTRACTOR SHALL VERIFY THE LOCATION AND ELEVATION AND MARK ALL EXISTING UTILITIES 48 HOURS BEFORE CONSTRUCTION STARTS. THE ENGINEER, ARCHITECT, OR OWNER DOES NOT GUARANTEE THAT ALL THE UTILITIES ARE MAPPED, OR, IF MAPPED, ARE SHOWN CORRECTLY. CONTACT GOPHER STATE ONE CALL AT 651–454–0002 FOR FIELD LOCATING EXISTING UTILITIES. CONTACT UTILITY OWNER IF DAMAGE OCCURS DUE TO CONSTRUCTION.
4. PROTECT ALL EXISTING STRUCTURES AND UTILITIES WHICH ARE NOT SCHEDULED FOR REMOVAL.
5. NOTIFY CITY BUILDING INSPECTOR BEFORE TRENCHING AND EXCAVATION WORK COMMENCES. THE CONTRACTOR SHALL OBTAIN ALL APPLICABLE PERMITS PRIOR TO START OF CONSTRUCTION.
6. ALL SPOT ELEVATIONS SHOWN AS 19.50, FOR EXAMPLE, ARE TO BE UNDERSTOOD TO MEAN 819.50.
7. NO LANDSCAPED SLOPES ARE TO EXCEED 3:1 (3 FEET HORIZONTAL TO 1 FOOT VERTICAL) UNLESS NOTED OTHERWISE.
8. PROVIDE POSITIVE DRAINAGE FROM BUILDINGS AT ALL TIMES.
9. **UPON COMPLETION OF THE GRADING AND UTILITY WORK, THE CONTRACTOR SHALL CERTIFY THAT ALL GRADING AND UTILITY WORK WAS PERFORMED IN ACCORDANCE WITH THE APPROVED GRADING AND UTILITY PERMITS. AN AS–BUILT GRADING AND UTILITY PLAN SHALL BE PERFORMED BY A REGISTERED LAND SURVEYOR HIRED BY THE CONTRACTOR. SURVEY SHALL BE PROVIDED TO CIVIL ENGINEER.**
10. PRIOR TO ISSUANCE OF BUILDING PERMITS, ALL NECESSARY EROSION CONTROL DEVICES MUST BE IN PLACE AND FUNCTIONING. THE CITY (AND WATERSHED DISTRICT) WILL INSPECT THE SITE TO DETERMINE ITS SUITABILITY FOR BUILDING ACTIVITIES. IF THE PUBLIC UTILITIES HAVE NOT BEEN INSTALLED AT THIS POINT, IT MAY BE NECESSARY TO WITHHOLD BUILDING PERMITS FOR VARIOUS LOTS TO ALLOW THE CONTRACTOR ADEQUATE SPACE TO PERFORM THIS WORK.
11. ALL DEBRIS CREATED IN THE PROCESS OF CLEARING AND GRADING THE SITE SHALL BE REMOVED FROM THE SITE. THIS INCLUDES TREES AND SHRUBS. UNDER NO CIRCUMSTANCES SHALL THIS TYPE OF MATERIAL BE BURIED OR BURNED ON THE SITE.
12. THE CONTRACTOR MAY STRIP AND SALVAGE TOPSOIL FOR POTENTIAL RE–SPREADING ON THE SITE, IF APPROVED BY THE LANDSCAPE ARCHITECT AND/OR SPECIFICATIONS. SIX INCHES OF TOPSOIL – AFTER COMPACTION – SHALL BE RE–SPREAD PRIOR TO SEEDING AND MULCHING. EXCESS TOPSOIL MAY BE REMOVED FROM THE SITE PROVIDED THERE IS ADEQUATE TOPSOIL REMAINING TO PROPERLY FINISH THE SITE AS NOTED ABOVE. THE TOPSOIL STRIPPING, STOCKPILING, AND RE–SPREADING SHALL BE DONE IN ACCORDANCE WITH, AND NOTED ON, THE APPROVED GRADING PLAN AND SPECIFICATIONS. THE CONTRACTOR SHALL REFER TO THE LANDSCAPE DRAWINGS AND SPECIFICATIONS FOR ANY SPECIAL TOPSOIL OR PLANTING REQUIREMENTS.
13. ALL GRADING OPERATIONS SHALL BE CONDUCTED IN A MANNER TO MINIMIZE THE POTENTIAL FOR SITE EROSION. EROSION CONTROL MEASURES SHALL BE INSTALLED TO PREVENT SEDIMENT FROM RUNNING OFF ONTO ADJACENT PROPERTIES. ANY DAMAGE TO ADJACENT PROPERTIES MUST BE CORRECTED AND RESTORED AS SOON AS PERMISSION IS GRANTED FROM THE ADJACENT PROPERTY OWNER(S).
14. IF CONSTRUCTION OF THE SITE WORK PROCEEDS THROUGH THE WINTER MONTHS, ANY DISTURBED AREAS OUTSIDE THE BUILDING FOOTPRINTS ARE TO BE MINIMALLY STABILIZED PRIOR TO MARCH 1 AS FOLLOWS: AREAS PLANNED TO RECEIVE PAVEMENTS ARE TO HAVE CLASS 5 BASE INSTALLED; ALL OTHER DISTURBED AREAS ARE TO BE SEEDED, STRAW MULCH PLACED, AND DISC–ANCHORED.
15. WINTER MULCHING:
    - 15.A. SNOW MULCHING SHALL BE DEFINED AS MULCH MATERIAL SPREAD OVER THE TOP OF SNOW SO THAT THE MULCH MELTS THROUGH THE SNOW AND STICKS TO THE EXPOSED SOILS.
    - 15.B. FROZEN GROUND MULCHING SHALL BE DEFINED AS MULCH MATERIAL SPREAD OVER FROZEN GROUND. MULCH MATERIALS THAT DO NOT REQUIRE DISC–ANCHORING INTO THE SOIL MAY BE PLACED WITHOUT MODIFICATION. MULCH MATERIALS THAT REQUIRE DISC–ANCHORING MAY BE ANCHORED WITH HYDRAULIC SOIL STABILIZERS OR MAY BE FROZEN TO THE SOIL BY APPLYING WATER AT A RATE OF 2000 GALLONS PER ACRE OVER THE MULCH AS A SUBSTITUTION FOR DISC–ANCHORING.
16. THE CONTRACTOR SHALL LIMIT THE DISTURBED AREA AS MUCH AS POSSIBLE.

Pine Hill Elementary School Addition and Renovation

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BKBM Project No. 24259.50

NOT FOR CONSTRUCTION

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**

Nathaniel P. Anderson
License Number: **59311** Date: **06/02/2025**

Revisions		
Description	Date	Num

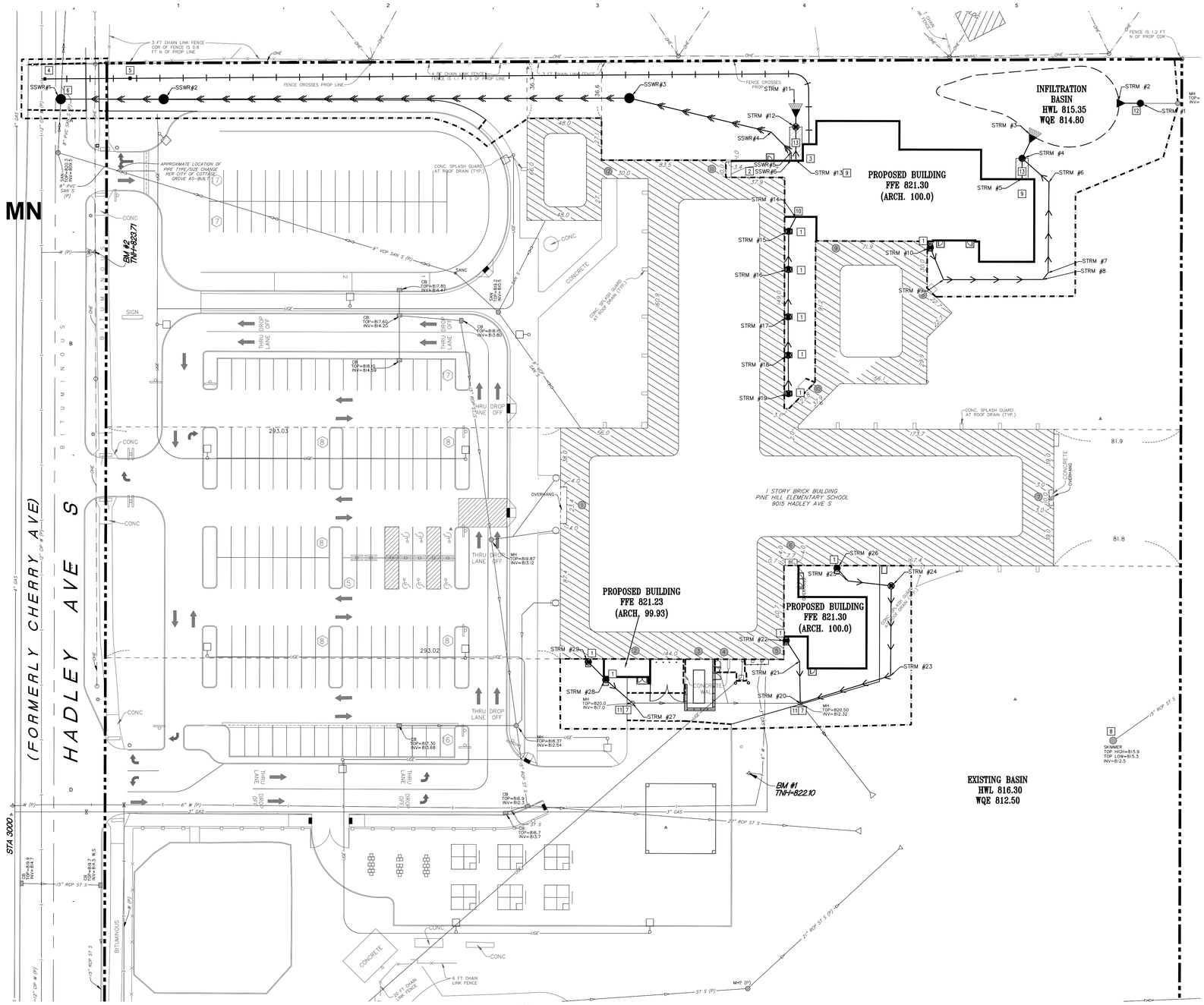
Comm: **242224**
Date: **06/02/2025**
Drawn: **AMY**
Check: **KAB**

North

GRADING, DRAINAGE, AND EROSION CONTROL PLAN

Scale:

C2.000



1 C3.000 UTILITY PLAN 1"=30'

SANITARY SEWER TABLE					
STRUCTURE ID	STRUCTURE DIMENSION (INCHES)	NEENAH CASTING TYPE	RIM ELEVATION	INVERT ELEVATION(S)	PIPE LENGTH, DIAMETER, SLOPE & NEXT UPSTREAM STRUCTURE
SSWR#1	48" MH	R-1733	819.80	S = 809.15 N = 809.15 E = 809.50	--------- --------- 66 L.F. OF 6" PVC @ 1.05%, SSWR#2
SSWR#2	48" MH	R-1733	821.22	W = 810.20 E = 810.30	--------- 300 L.F. OF 6" PVC @ 1.05%, SSWR#3
SSWR#3	48" MH	R-1733	818.92	W = 813.46 E = 813.56	--------- 94 L.F. OF 6" PVC @ 1.05%, SSWR#4
SSWR#4	6" 22.5° BEND	NA		W = 814.55 SE = 814.55	--------- 18 L.F. OF 6" PVC @ 1.05%, SSWR#5
SSWR#5	6" 45° BEND	NA		NW = 814.74 S = 814.74	--------- 5 L.F. OF 6" PVC @ 1.05%, SSWR#6
SSWR#6	BUILDING SERVICE CONNECTION	NA		N = 814.79	---------

PROPOSED PLAN SYMBOLS

- CONSTRUCTION LIMITS
- PROPERTY LINE
- SAWCUT LINE (APPROX.)
- SANITARY SEWER
- WATER PIPE
- STORM SEWER
- GATE VALVE
- CATCH BASIN
- MANHOLE
- FLARED END SECTION WITH RIPRAP
- PIPE INSULATION

*NOTE: CONSTRUCTION LIMITS ARE ANTICIPATED TO BE PROPERTY LINE UNLESS OTHERWISE SHOWN.

ABBREVIATIONS

BLDG	Building
BM	Bench Mark
CB	Catch Basin
CONC	Concrete
ELEV	Elevation
EX	Existing
INV	Invert
MH	Manhole
PVC	Polyvinyl Chloride
RCP	Reinforced Concrete Pipe

KEYED NOTES

KEYED NOTES ARE DENOTED BY [NO] ON PLAN.

1. LOCATION OF PROPOSED ROOF DRAIN CONNECTION. REFER TO STORM SEWER TABLE FOR INVERT ELEVATIONS AND PIPE SIZES. REFER TO DETAIL 4/C5.001. COORDINATE EXACT LOCATION AND SIZE WITH ARCHITECT PRIOR TO THE START OF CONSTRUCTION.
2. LOCATION OF PROPOSED SANITARY SEWER SERVICE. REFER TO SANITARY SEWER TABLE FOR INVERT ELEVATIONS AND PIPE SIZES. COORDINATE EXACT LOCATION, SIZE, AND INVERT ELEVATION WITH MECHANICAL CONTRACTOR PRIOR TO THE START OF CONSTRUCTION.
3. STUB 2-INCH TYPE K COPPER WATERLINE TO WITHIN 5-FEET OF THE PROPOSED BUILDING. TOP OF WATER SERVICE SHALL BE 7.5 FEET BELOW FINISHED GRADE AT THE PROPOSED CONNECTION POINT. COORDINATE EXACT LOCATION WITH MECHANICAL AND STRUCTURAL PLANS PRIOR TO THE START OF CONSTRUCTION.
4. INSTALL 2-INCH CORPORATION STOP. FOLLOW ALL CITY OF COTTAGE GROVE STANDARDS AND SPECIFICATIONS. COORDINATE ALL WORK WITH CITY OF COTTAGE GROVE. CONTRACTOR SHALL SUBMIT TRAFFIC CONTROL PLANS TO CITY OF COTTAGE GROVE PRIOR TO CONSTRUCTION.
5. INSTALL 2-INCH CURB STOP. FOLLOW ALL CITY OF COTTAGE GROVE STANDARDS AND SPECIFICATIONS.
6. CONTRACTOR SHALL INSTALL MANHOLE IN LINE WITH EXISTING 8-INCH PVC PIPE. APPROXIMATE INVERT OF EXISTING PIPE IS 809.15. PRIOR TO INSTALLATION OF MANHOLE, CONTRACTOR SHALL CONTACT CIVIL ENGINEER WITH EXACT INVERT ELEVATION. CONTRACTOR SHALL SUBMIT TRAFFIC CONTROL PLANS TO CITY OF COTTAGE GROVE PRIOR TO CONSTRUCTION.
7. CORE DRILL EXISTING MANHOLE FOR PROPOSED PIPE CONNECTION. PROVIDE WATERTIGHT SEAL WITH FLEXIBLE COMPRESSION JOINT. CEMENT MORTAR JOINTS ARE PERMITTED ONLY FOR REPAIRS AND CONNECTIONS OF EXISTING LINES CONSTRUCTED WITH SUCH JOINTS.
8. INSTALL 14.3-INCH DIAMETER ORIFICE PLATE OVER EXISTING 15-INCH OUTLET AT INVERT ELEVATION 812.50. REFER TO DETAIL 7/C5.001.
9. LOCATION OF PROPOSED ROOF DRAIN LEAD. REFER TO STORM SEWER TABLE FOR INVERT ELEVATIONS AND PIPE SIZES. COORDINATE EXACT LOCATION, SIZE, AND INVERT ELEVATION WITH MECHANICAL CONTRACTOR PRIOR TO THE START OF CONSTRUCTION.
10. LOCATION OF PROPOSED COURTYARD SEWER ROUTE BELOW PROPOSED BUILDING. COORDINATE EXACT LOCATION, SIZE, AND INVERT ELEVATION WITH MECHANICAL CONTRACTOR PRIOR TO THE START OF CONSTRUCTION.
11. RECONSTRUCT EXISTING MANHOLE TO MATCH PROPOSED GRADE. REFER TO GRADING PLAN C2.000.
12. CONTRACTOR SHALL INSTALL MANHOLE IN LINE WITH EXISTING 15-INCH RCP PIPE. APPROXIMATE INVERT OF EXISTING PIPE IS 805.59. PRIOR TO INSTALLATION OF MANHOLE, CONTRACTOR SHALL CONTACT CIVIL ENGINEER WITH EXACT INVERT ELEVATION.
13. INSTALL PIPE INSULATION. REFER TO DETAIL 11/C5.001.

UTILITY NOTES:

1. CONTRACTOR SHALL FOLLOW ALL CITY OF COTTAGE GROVE STANDARDS AND SPECIFICATIONS.
2. COORDINATE SERVICE CONNECTION LOCATIONS AND SIZES AT THE BUILDING WITH THE MECHANICAL CONTRACTOR PRIOR TO CONSTRUCTION. NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR UNCOORDINATED WORK.
3. COORDINATE UTILITY INSTALLATION WITH STRUCTURAL PRIOR TO START OF CONSTRUCTION. UTILITIES SHALL NOT BE INSTALLED WITHIN THE ZONE OF INFLUENCE OF ANY STRUCTURAL ELEMENTS. NO ADDITIONAL COMPENSATION WILL BE PROVIDED FOR UNCOORDINATED WORK.
4. ALL SEWER SERVICE CONNECTIONS WITH LESS THAN 5 FEET OF COVER OVER THE TOP OF PIPE SHALL BE INSULATED. INSULATION SHALL BE INSTALLED FROM THE CONNECTION OF THE SERVICE AT THE BUILDING TO THE POINT WHICH THE SERVICE ATTAINS 5 FEET OF COVER. CONTRACTOR SHALL OBTAIN WRITTEN PERMISSION FROM ARCHITECT OR ENGINEER PRIOR TO INSTALLATION OF INSULATION.
5. PROTECT ALL EXISTING STRUCTURES AND UTILITIES WHICH ARE NOT SCHEDULED TO BE REMOVED.
6. ALL SEWER AND WATER CROSSINGS SHALL HAVE A MINIMUM VERTICAL SEPARATION OF 1.5 FEET AND HORIZONTAL SEPARATION OF 10 FEET. FOLLOW ALL HEALTH DEPARTMENT AND CITY OF COTTAGE GROVE STANDARDS.
7. ALL WATER MAINS SHALL BE DUCTILE IRON PIPE, CLASS 52, UNLESS NOTED OTHERWISE.
8. ALL WATER MAIN SHALL HAVE A MINIMUM DEPTH OF COVER OF 7.5 FEET OVER TOP OF WATER MAIN.
9. PROVIDE THRUST BLOCKING ON ALL WATER MAIN PER CITY OF COTTAGE GROVE. PROVIDE MECHANICAL JOINT RESTRAINTS ON ALL BENDS, VALVES, TEES, PLUGS, AND HYDRANT LEADS.
10. SANITARY SEWER PIPING SHALL BE SDR 35 PVC UNLESS NOTED OTHERWISE.
11. STORM SEWER PIPING SHALL BE REINFORCED CONCRETE PIPE (RCP), UNLESS NOTED OTHERWISE. ALL 12-INCH THROUGH 18-INCH RCP STORM SEWER PIPE SHALL BE CLASS 5. RCP PIPE LARGER THAN 18-INCH SHALL BE CLASS 3 UNLESS NOTED OTHERWISE. ALL STORM SEWER PIPE THAT IS EXTENDED TO THE BUILDING FOR ROOF DRAIN SERVICES SHALL BE ASTM D1785 OR ASTM D2665 SCHEDULE 40 PVC.
12. ALL FLARED END SECTIONS SHALL HAVE TRASH GUARDS. ALL DOWNSTREAM FLARED END SECTIONS SHALL HAVE GEOTEXTILE FABRIC AND RIPRAP PER MNDOT STANDARDS, AS DETAILED.
13. CONTRACTORS SHALL COORDINATE ALL WORK WITH GAS, ELECTRIC, TELEVISION, AND TELEPHONE COMPANIES PRIOR TO START OF CONSTRUCTION.
14. WHERE PROPOSED GRADE OVER EXISTING SMALL UTILITIES IS PROPOSED TO BE LOWERED, CONTRACTOR SHALL COORDINATE WITH UTILITY OWNER FOR THE LOWERING OF THE EXISTING UTILITY TO PROVIDE THE MINIMUM COVER REQUIRED AT NO ADDITIONAL COST TO THE OWNER.
15. ALL PORTIONS OF THE STORM SEWER SYSTEM LOCATED WITHIN 10-FEET OF THE BUILDING OR WATER SERVICE LINE SHALL BE TESTED IN ACCORDANCE WITH MN PLUMBING CODE. PIPING MATERIAL SHALL BE SCHEDULE 40 PVC.
16. ALL JOINTS AND CONNECTIONS IN THE STORM SEWER SYSTEM SHALL BE GAS TIGHT OR WATER TIGHT IN ACCORDANCE TO MN PLUMBING CODE. APPROVED RESILIENT RUBBER JOINTS MUST BE USED TO MAKE WATER TIGHT CONNECTIONS TO MANHOLES, CATCH BASINS, AND OTHER STRUCTURES. RESILIENT WATER-STOP GROUTING RINGS ARE AN ACCEPTABLE ALTERNATIVE. CEMENT MORTAR JOINTS ARE PERMITTED ONLY FOR REPAIRS AND CONNECTIONS OF EXISTING LINES CONSTRUCTED WITH SUCH JOINTS.

STORM SEWER TABLE						
STRUCTURE ID	STRUCTURE DIMENSION (INCHES)	NEENAH CASTING TYPE	RIM ELEVATION	INVERT ELEVATION(S)	SUMP ELEVATION	PIPE LENGTH, DIAMETER, SLOPE & NEXT UPSTREAM STRUCTURE
STRM #1	48" MH	R-1733	812.41	E = 805.59 W = 809.41		--------- 16 L.F. OF 12" RCP @ 35.93%, STRM #2
STRM #2	12" FES	NA		E = 814.80		---------
STRM #3	12" FES	NA		SW = 815.00		16 L.F. OF 12" RCP @ 1.00%, STRM #4
STRM #4	48" SUMP MH	R-1733	818.90	NE = 815.16 S = 815.16 SE = 815.37	812.16	--------- 13 L.F. OF 10" PVC @ 1.00%, STRM #5 23 L.F. OF 8" PVC @ 0.50%, STRM #6
STRM #5	ROOF DRAIN COLLECTOR	NA		N = 815.29		---------
STRM #6	8" 45 DEGREE BEND	NA		NW = 815.49 S = 815.49		--------- 58 L.F. OF 8" PVC @ 0.50%, STRM #7
STRM #7	8" 45 DEGREE BEND	NA		N = 815.78 SW = 815.78		--------- 5 L.F. OF 10" PVC @ 0.50%, STRM #8
STRM #8	8" 45 DEGREE BEND	NA		NE = 815.81 W = 815.81		--------- 64 L.F. OF 8" PVC @ 0.50%, STRM #9
STRM #9	8" 45 DEGREE BEND	NA		E = 816.13 N = 816.13		--------- 22 L.F. OF 8" PVC @ 1.00%, STRM #10
STRM #10	ROOF DRAIN COLLECTOR	8" DURACAST IN-LINE GRATE	821.15	S = 816.35		---------
STRM #11	12" FES	R-1733		S = 816.88		11 L.F. OF 12" RCP @ 1.00%, STRM #12
STRM #12	48" SUMP CB MH	R-2390	820.10	N = 816.99 S = 816.99	813.99	--------- 21 L.F. OF 12" PVC @ 1.00%, STRM #13
STRM #13	ROOF DRAIN COLLECTOR	NA		N = 817.20		---------
STRM #14	ROOF DRAIN COLLECTOR	NA		SW = 817.59		10 L.F. OF 12" PVC @ 1.00%, STRM #15
STRM #15	ROOF DRAIN COLLECTOR	10" DURACAST IN-LINE GRATE	821.10	NE = 817.69 S = 817.69		--------- 25 L.F. OF 10" PVC @ 0.50%, STRM #16
STRM #16	ROOF DRAIN COLLECTOR	10" DURACAST IN-LINE GRATE	821.10	N = 817.81 S = 817.81		--------- 31 L.F. OF 10" PVC @ 0.50%, STRM #17
STRM #17	ROOF DRAIN COLLECTOR	10" DURACAST IN-LINE GRATE	821.10	N = 817.96 S = 817.96		--------- 25 L.F. OF 10" PVC @ 0.50%, STRM #18
STRM #18	ROOF DRAIN COLLECTOR	10" DURACAST IN-LINE GRATE	821.10	N = 818.08 S = 818.08		--------- 25 L.F. OF 10" PVC @ 0.50%, STRM #19
STRM #19	ROOF DRAIN COLLECTOR	10" DURACAST IN-LINE GRATE	821.10	N = 818.20		---------
STRM #20	EX. SUMP MH	EX.	823.27	SE = 812.32 N = 816.94 W = 812.32 E = 815.61		--------- 27 L.F. OF 8" PVC @ 2.00%, STRM #21 47 L.F. OF 10" PVC @ 8.07%, 61 L.F. OF 8" PVC @ 2.00%, STRM #23
STRM #21	8" 45 DEGREE BEND	NA		S = 817.48 NW = 817.48		--------- 16 L.F. OF 8" PVC @ 2.00%, STRM #22
STRM #22	ROOF DRAIN COLLECTOR	8" DURACAST IN-LINE GRATE	821.13	SE = 817.80		---------
STRM #23	8" 45 DEGREE BEND	NA		W = 816.83 N = 816.83		--------- 58 L.F. OF 8" PVC @ 1.00%, STRM #24
STRM #24	48" CB MH	R-2390	820.20	S = 817.41 W = 817.15		--------- 28 L.F. OF 8" PVC @ 1.04%, STRM #25
STRM #25	8" 45° BEND	NA		E = 817.44 NW = 817.44		--------- 11 L.F. OF 8" PVC @ 0.95%, STRM #26
STRM #26	DOWNSPOUT COLLECTOR	10" DURACAST IN-LINE GRATE	820.75	SE = 817.54		---------
STRM #27	EX. MH	EX.	821.27	E = 817.00 NW = 817.00		--------- 23 L.F. OF 10" PVC @ 1.53%, STRM #28
STRM #28	ROOF DRAIN COLLECTOR	8" DURACAST IN-LINE GRATE	822.14	SE = 817.35 NW = 817.35		--------- 16 L.F. OF 10" PVC @ 1.55%, STRM #29
STRM #29	DOWNSPOUT COLLECTOR	10" DURACAST IN-LINE GRATE	821.05	SE = 817.60		---------

N

30' 15' 0 30' 60'

SCALE 1" = 30'

Pine Hill Elementary School Addition and Renovation

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BKBM Project No. 24259.50

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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**

Nathaniel P. Anderson
License Number: **59311** Date: **06/02/2025**

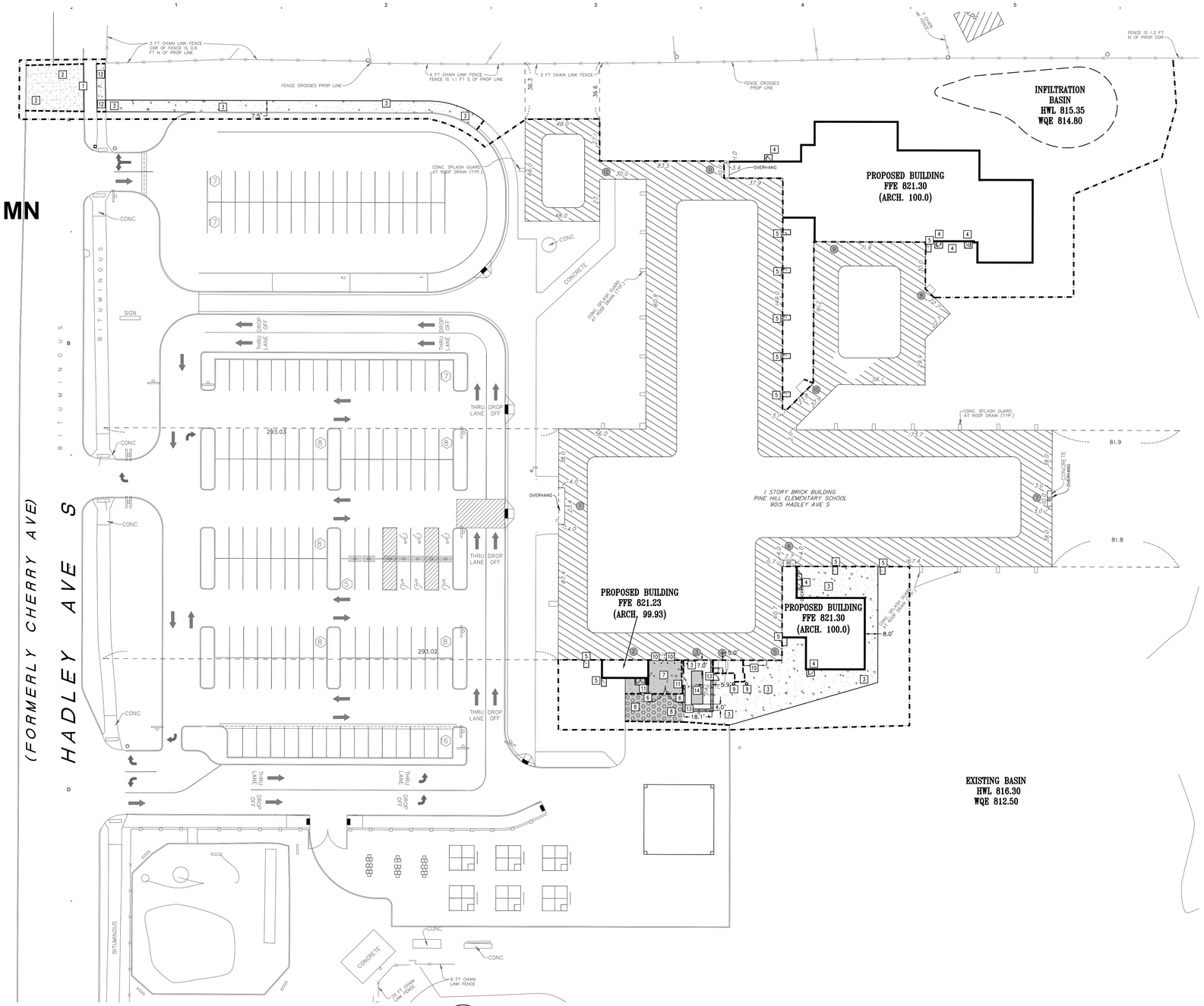
Revisions		
Description	Date	Num

Comm: 242224
Date: 06/02/2025
Drawn: AMY
Check: KAB
North

UTILITY PLAN

Scale:

C3.000



1 C4.000 PAVING AND GEOMETRIC PLAN 1"=30'

PROPOSED PLAN SYMBOLS

- CONSTRUCTION LIMITS
- PROPERTY LINE
- SAWCUT LINE (APPROX.)
- BITUMINOUS PAVEMENT
- HEAVY-DUTY BITUMINOUS PAVEMENT
- CONCRETE SIDEWALK
- CONCRETE PAVEMENT
- MECHANICAL PAD

*NOTE: CONSTRUCTION LIMITS ARE ANTICIPATED TO BE PROPERTY LINE UNLESS OTHERWISE SHOWN.

ABBREVIATIONS

BLDG	Building
BM	Bench Mark
CONC	Concrete
ELEV	Elevation
EX	Existing
FFE	Finished Floor Elevation
R	Radius
TYP.	Typical

N

30' 15' 0 30' 60'

SCALE 1" = 30'

KEYED NOTES

KEYED NOTES ARE DENOTED BY [NO] ON PLAN.

1. INSTALL CONCRETE CURB AND GUTTER. INTENT IS TO MATCH EXISTING CURB AND GUTTER STYLE AND SECTION. FOR BIDDING PURPOSES, REFER TO DETAIL 1/C.5001.
2. INSTALL BITUMINOUS PAVEMENT. INTENT IS TO MATCH EXISTING PAVEMENT SECTION. FOR BIDDING PURPOSES, REFER TO DETAIL 2/C5.001.
3. INSTALL CONCRETE WALK. REFER TO DETAIL 3/C5.001.
4. STOOP. REFER TO STRUCTURAL PLANS AND DETAILS.
5. INSTALL CONCRETE SPLASH PAD AROUND STORM SEWER GRATE. REFER TO DETAIL 4/C5.001.
6. INSTALL SALVAGED GATE ON BOLLARD USING SALVAGED HARDWARE. REFER TO LANDSCAPE PLANS FOR GATE HOLDBACK POST.
7. INSTALL CONCRETE PAVEMENT. REFER TO DETAIL 6/C5.001.
8. INSTALL HEAVY-DUTY BITUMINOUS PAVEMENT. REFER TO DETAIL 8/C5.001.
9. REPAINT EXISTING BOLLARD YELLOW IN COLOR.
10. INSTALL BOLLARD. REFER TO DETAIL 9/C5.001.
11. INSTALL GATE BOLLARD. REFER TO DETAIL 10/C5.001.
12. INSTALL CONCRETE SIDEWALK IN PUBLIC ROW. REFER TO DETAIL 12/C5.001.
13. INSTALL FENCE WITH CONCRETE MAINTENANCE STRIP. REFER TO DETAIL 15/C5.000 FOR MAINTENANCE STRIP. REFER TO LANDSCAPE PLANS AND SPECIFICATIONS FOR FENCING.
14. INSTALL CONCRETE EQUIPMENT PAD. REFER TO MECHANICAL DRAWINGS AND MANUFACTURERS' DETAILS. FOR BIDDING PURPOSES, REFER TO DETAIL 13/C5.001.
15. REINSTALL SALVAGED FENCE ON EXISTING POLES.

PAVING NOTES:

1. CONTRACTOR SHALL FOLLOW ALL CITY OF COTTAGE GROVE STANDARDS AND SPECIFICATIONS.
2. ALL DIMENSIONS ARE TO FACE OF CURB UNLESS NOTED OTHERWISE.
3. ALL CURB AND GUTTER IS TO BE B618 CONCRETE CURB AND GUTTER UNLESS NOTED OTHERWISE.
4. NO SIDEWALK IS TO HAVE MORE THAN A 2% CROSS SLOPE OR MORE THAN A 5% LONGITUDINAL SLOPE.
5. REFER TO ARCHITECTURAL PLANS FOR PROPOSED BUILDING LAYOUT.
6. FOLLOW ALL CITY OF COTTAGE GROVE, REGULATIONS, AND SPECIFICATIONS WHEN WORKING IN PUBLIC RIGHT OF WAY.
7. REFER TO STRUCTURAL PLANS FOR STOOP DETAILS. ALL WALKS ARE TO BE CENTERED ON THE DOORS.
8. INSTALL APPROPRIATE EXPANSION MATERIAL WHERE CONCRETE IS ADJACENT TO BUILDING FACE.
9. ALL EXPANSION AND ISOLATION JOINTS SHALL BE SEALED PER SPECIFICATIONS.
10. MATCH NEW PAVEMENT, CURB AND GUTTER, AND SIDEWALK INTO EXISTING. NO ABRUPT GRADE TRANSITIONS OR PONDING OF WATER WILL BE ALLOWED.
11. SAWCUT EXISTING PAVEMENT, SIDEWALK, AND CURB AND GUTTER TO NEAREST JOINT. COORDINATE REMOVAL LIMITS WITH SITE DEMOLITION CONTRACTOR AND CONSTRUCTION MANAGER.
12. REFER TO SPECIFICATIONS FOR GRADE VERIFICATION SURVEY REQUIREMENTS PRIOR TO PLACEMENT OF SUB-BASE MATERIAL, BASE MATERIAL, AND PAVEMENTS/SIDEWALKS.

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BKBM Project No. 24259.50

NOT FOR CONSTRUCTION

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**

Nathaniel P. Anderson
License Number: **59311** Date **06/02/2025**

Revisions		
Description	Date	Num

Comm: **242224**
Date: **06/02/2025**
Drawn: **AMY**
Check: **KAB**

North

PAVING AND GEOMETRIC PLAN

Scale:

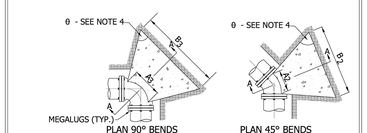
C4.000

MN

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.

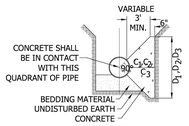
BUTTRESS DIMENSIONS

PIPE SIZE	22 1/2° BEND		45° BEND		90° BEND	
	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"	17'-0"	6'-0"



PLAN 90° BENDS

PLAN 45° BENDS



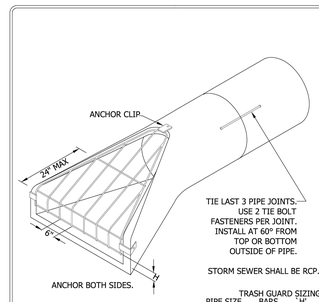
SECTION A-A

PLAN 22 1/2° BENDS

Cottage Grove — Where Pride and Prosperity Meet	STANDARD DETAILS CONCRETE THRUST BLOCKING COTTAGE GROVE, MINNESOTA	JANUARY 2024 PLATE NO. WAT-6

48_WAT6.DWG

13 C5.000 CONCRETE THRUST BLOCKING
NOT TO SCALE



ISOMETRIC

TIE LAST 3 PIPE JOINTS. USE 2 TIE BOLT FASTENERS PER JOINT. INSTALL AT 60° FROM TOP OR BOTTOM OUTSIDE OF PIPE.

STORM SEWER SHALL BE RCP.

TRASH GUARD SIZING

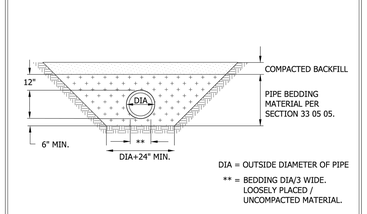
PIPE SIZE	BARS	H'	BOLTS
12"-18"	3/4"Ø	3'-4"	5/8"
21"-42"	1"Ø	4'-6"	3/4"
48"-72"	1 1/4"Ø	6'-8"	1"

SEE CITY PLATE NO. STO-12 AND STO-13 FOR RIPRAP PLACEMENT.

Cottage Grove — Where Pride and Prosperity Meet	STANDARD DETAILS FLARED END SECTION AND TRASH GAURD COTTAGE GROVE, MINNESOTA	JANUARY 2024 PLATE NO. STO-11

48_STO11.DWG

10 C5.000 FLARED END SECTION AND TRASH GAURD
NOT TO SCALE



COMPACTED BACKFILL

PIPE BEDDING MATERIAL PER SECTION 33 05 05.

DIA = OUTSIDE DIAMETER OF PIPE

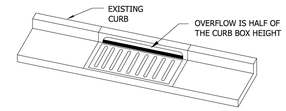
** = BEDDING DIA/3 WIDE. LOOSELY PLACED / UNCOMPACTED MATERIAL.

PVC PIPE FOUNDATION & BEDDING IN GOOD SOILS

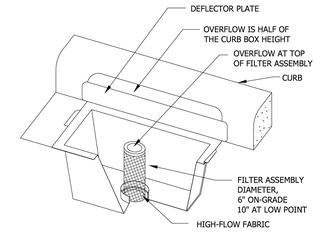
Cottage Grove — Where Pride and Prosperity Meet	STANDARD DETAILS PIPE FOUNDATION & BEDDING METHOD FOR PVC COTTAGE GROVE, MINNESOTA	JANUARY 2024 PLATE NO. BED-1

48_BED1.DWG

7 C5.000 PIPE FOUNDATION & BEDDING METHOD FOR PVC
NOT TO SCALE



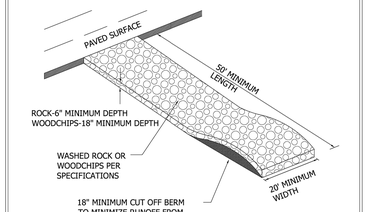
NOTE: USE WIMCO ROAD DRAIN CG-23 OR CG-3290-VB (DEPENDING ON CASTING TYPE) HIGH FLOW INLET PROTECTION CURB AND GUTTER MODELS, OR CITY APPROVED EQUAL.



Cottage Grove — Where Pride and Prosperity Meet	STANDARD DETAILS INLET PROTECTION CATCH BASIN INSERT COTTAGE GROVE, MINNESOTA	JANUARY 2024 PLATE NO. ERO-9

48_ERO9.DWG

4 C5.000 INLET PROTECTION CATCH BASIN INSERT
NOT TO SCALE



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 2024 PLATE NO. ERO-12

48_ERO12.DWG

1 C5.000 CONSTRUCTION ENTRANCE
NOT TO SCALE

DIMENSION FROM BACK OF CURB TO CENTER OF PIPE:
4' DIA. MH - 9" IN FROM BACK OF CURB
5' DIA. MH - 3" IN FROM BACK OF CURB
6' DIA. MH - 3" BEHIND BACK OF CURB
7' DIA. MH - 9" BEHIND BACK OF CURB
8' DIA. MH - 15" BEHIND BACK OF CURB

* A
4' DIA. STRUCTURE 6"
5' DIA. STRUCTURE 8"
6' DIA. STRUCTURE 9"

SECTION

Cottage Grove — Where Pride and Prosperity Meet	STANDARD DETAILS CATCH BASIN MANHOLE WITH SUMP COTTAGE GROVE, MINNESOTA	JANUARY 2024 PLATE NO. STO-6

48_STO6.DWG

14 C5.000 CATCH BASIN MANHOLE WITH SUMP
NOT TO SCALE

RIPRAP AREA SIZES

D	Q	R	S
12"	11'	15'	7'
24"	15'	15'	9'
36"	19'	15'	11'
48"	20'	16'	12'
54"	25'	22'	13'

RIPRAP REQUIREMENTS

D	CY	CLASS	DEPTH
12" TO 24"	15 TO 20	CL.3	3'
27" TO 33"	20 TO 25	CL.3	3'
36" TO 48"	25 TO 38	CL.3	3'
54" AND UP	72 AND UP	CL.4	4'

(ONE CUBIC YARD IS APPROX. 2,800 LBS.)

Cottage Grove — Where Pride and Prosperity Meet	STANDARD DETAILS RIPRAP AT FLARED END SECTION COTTAGE GROVE, MINNESOTA	JANUARY 2024 PLATE NO. STO-12

48_STO12.DWG

11 C5.000 RIPRAP AT FLARED END SECTION
NOT TO SCALE

Cottage Grove — Where Pride and Prosperity Meet	STANDARD DETAILS STORM SEWER JUNCTION MANHOLE COTTAGE GROVE, MINNESOTA	JANUARY 2024 PLATE NO. STO-2

48_STO2.DWG

8 C5.000 STORM SEWER MANHOLE
NOT TO SCALE

Cottage Grove — Where Pride and Prosperity Meet	STANDARD DETAILS IMPROVED FOUNDATION FOR RCP, DIP, PVC PIPE TRENCH COTTAGE GROVE, MINNESOTA	JANUARY 2024 PLATE NO. BED-3

48_BED3.DWG

5 C5.000 IMPROVED FOUNDATION FOR RCP, DIP, PVC PIPE TRENCH
NOT TO SCALE

Cottage Grove — Where Pride and Prosperity Meet	STANDARD DETAILS FILTER BERMS COTTAGE GROVE, MINNESOTA	JANUARY 2024 PLATE NO. ERO-11

48_ERO11.DWG

2 C5.000 BIO LOG
NOT TO SCALE

SECTION

PLAN

NOTE:
1) PROVIDE 6" MINIMUM CLASS 5 AGGREGATE BASE BENEATH CONCRETE MAINTENANCE STRIP.
2) PROVIDE CONTROL JOINTS AT EACH FENCE POST AND CENTERED BETWEEN FENCE POST, 5-FOOT MAXIMUM.

15 C5.000 CONCRETE MAINTENANCE STRIP
NOT TO SCALE

Cottage Grove — Where Pride and Prosperity Meet	STANDARD DETAILS DIP SERVICE OR DEAD END LINE COTTAGE GROVE, MINNESOTA	JANUARY 2024 PLATE NO. WAT-8

48_WAT8.DWG

12 C5.000 CORPORATION STOP AND CURB BOX
NOT TO SCALE

Cottage Grove — Where Pride and Prosperity Meet	STANDARD DETAILS SANITARY SEWER MANHOLE COTTAGE GROVE, MINNESOTA	JANUARY 2024 PLATE NO. SAN-1

48_SAN1.DWG

9 C5.000 SANITARY SEWER MANHOLE
NOT TO SCALE

Cottage Grove — Where Pride and Prosperity Meet	STANDARD DETAILS PIPE FOUNDATION & BEDDING METHODS FOR RCP & DIP COTTAGE GROVE, MINNESOTA	JANUARY 2024 PLATE NO. BED-2

48_BED2.DWG

6 C5.000 PIPE FOUNDATION & BEDDING METHODS FOR RCP & DIP
NOT TO SCALE

Cottage Grove — Where Pride and Prosperity Meet	STANDARD DETAILS HAND INSTALLED SILT FENCE COTTAGE GROVE, MINNESOTA	JANUARY 2024 PLATE NO. ERO-2

48_ERO2.DWG

3 C5.000 HAND INSTALLED SILT FENCE
NOT TO SCALE

Pine Hill Elementary School Addition and Renovation

9015 HADLEY AVE S,
COTTAGE GROVE,
MN 55016

ISD #833: SOUTH WASHINGTON COUNTY SCHOOLS
8400 E. Point Douglas Rd S.,
Cottage Grove, MN 55016

WOLD ARCHITECTS AND ENGINEERS
332 Minnesota Street, Suite W2000
Saint Paul, MN 55101

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BKBM Structural & Civil Engineers
6120 Earle Brown Drive
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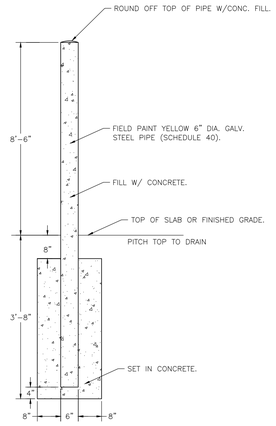
North

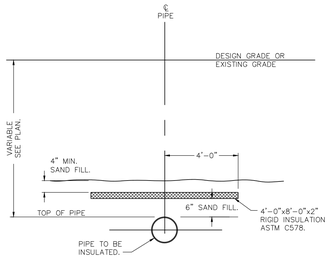
CIVIL DETAILS

Scale:

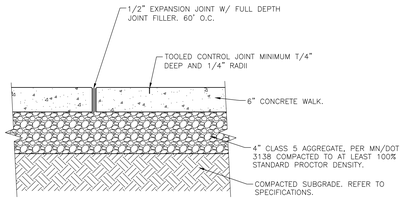
C5.000



10 C5.001 BOLLARD SECTION
NOT TO SCALE

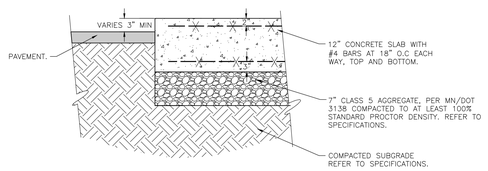


11 C5.001 PIPE INSULATION DETAIL
NOT TO SCALE

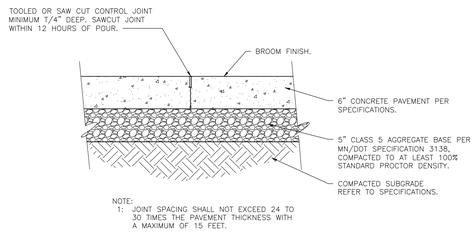


NOTE:
1: JOINT SPACING SHALL BE A MAXIMUM OF 6-FEET ON CENTER.

12 C5.001 CONCRETE SIDEWALK (PUBLIC ROW)
NOT TO SCALE

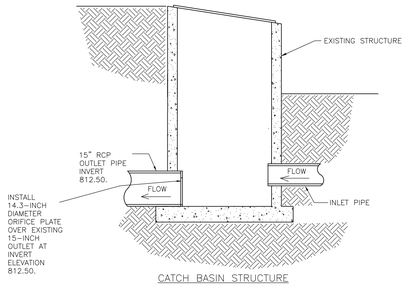


13 C5.001 MECHANICAL SLAB
NOT TO SCALE

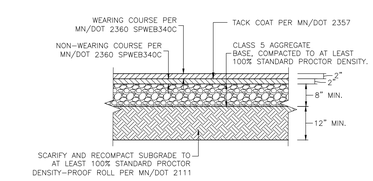


NOTE:
1: JOINT SPACING SHALL NOT EXCEED 24 TO 30 TIMES THE PAVEMENT THICKNESS WITH A MAXIMUM OF 15 FEET.

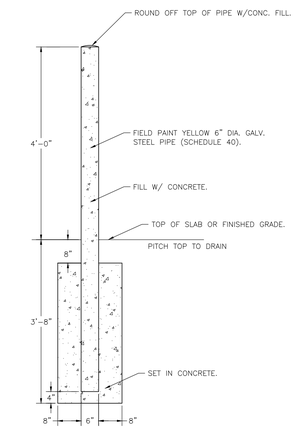
6 C5.001 CONCRETE PAVEMENT
NOT TO SCALE



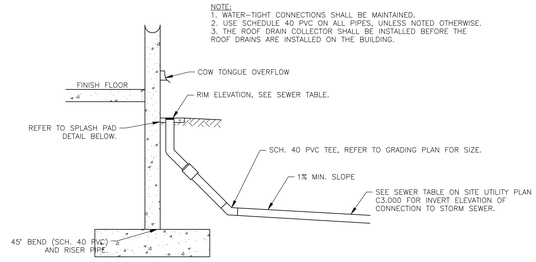
7 C5.001 EXISTING SKIMMER STRUCTURE
NOT TO SCALE

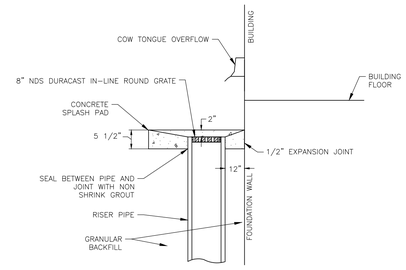


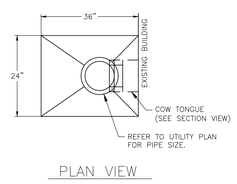
8 C5.001 HEAVY-DUTY BITUMINOUS PAVEMENT
NOT TO SCALE



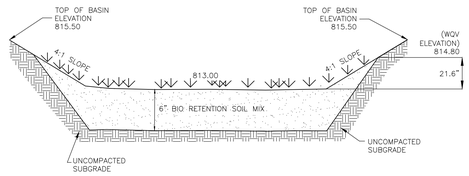
9 C5.001 BOLLARD SECTION
NOT TO SCALE







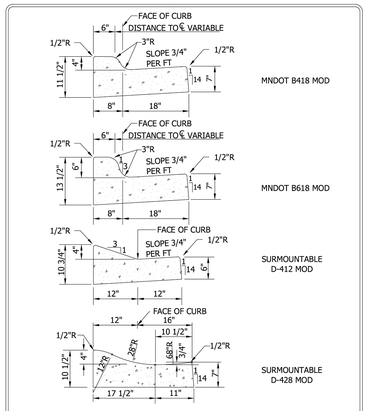
4 C5.001 ROOF DRAIN WITH SPLASH PAD AND CASTING
NOT TO SCALE



BIORETENTION SOIL MIX :
- 85-88% SAND BY VOLUME (ASTM C33)
- 8-12% FINES BY VOLUME (SILT AND CLAY, MAX CLAY CONTENT 5%)
- 3-5% MN/DOT 3890 GRADE 2 COMPOST BY VOLUME

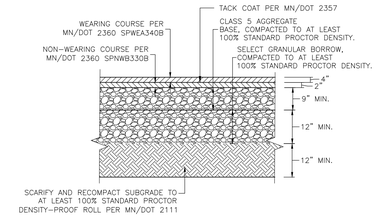
NOTES:
1. SUBMIT MIX DESIGN SHOP DRAWING FOR APPROVAL.
2. CONSTRUCTION TRAFFIC IN BASIN IS NOT ALLOWED AFTER AREA HAS BEEN EXCAVATED. PRIOR TO FINAL STABILIZATION, LOOSEN SOIL WITH MECHANICAL TILLER. BASINS ARE NOT APPROVED BORROW SITES AND ARE NOT TO BE USED AS TEMPORARY SEDIMENT BASIN ONCE BASIN SUBGRADE ELEVATION HAS BEEN EXCAVATED. CONTRACTOR SHALL ENSURE THAT BASIN INFILTRATES AT A MINIMUM RATE AS INDICATED ON PLAN USING A DOUBLE RING INFILTROMETER TEST BEFORE FINAL ACCEPTANCE. DOUBLE RING INFILTROMETER TEST SHALL BE SIGNED BY A REGISTERED GEOTECHNICAL ENGINEER AND SUBMITTED TO THE CITY AND ENGINEER FOR REVIEW BEFORE FINAL APPROVAL.
3. REFER TO LANDSCAPE ARCHITECTURAL PLANS FOR SEEDING.

5 C5.001 INFILTRATION BASIN SECTION
NOT TO SCALE

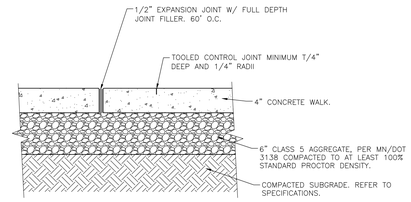


48_STR10.DWG

1 C5.001 CURB AND GUTTER - CITY ROW
NOT TO SCALE



2 C5.001 BITUMINOUS PAVEMENT (HADLEY AVENUE)
NOT TO SCALE



NOTE:
1: JOINT SPACING SHALL BE A MAXIMUM OF 6-FEET ON CENTER.

3 C5.001 CONCRETE SIDEWALK (TYP.)
NOT TO SCALE

14 C5.001 BITUMINOUS PAVEMENT (HADLEY AVENUE)
NOT TO SCALE

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CIVIL DETAILS

Scale:

C5.001

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9015 HADLEY AVE S,
COTTAGE GROVE,
MN 55016

ISD #833: SOUTH WASHINGTON COUNTY SCHOOLS
8400 E. Point Douglas Rd S.,
Cottage Grove, MN 55016

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BKBM Project No. 24259.50

MN

A

B

C

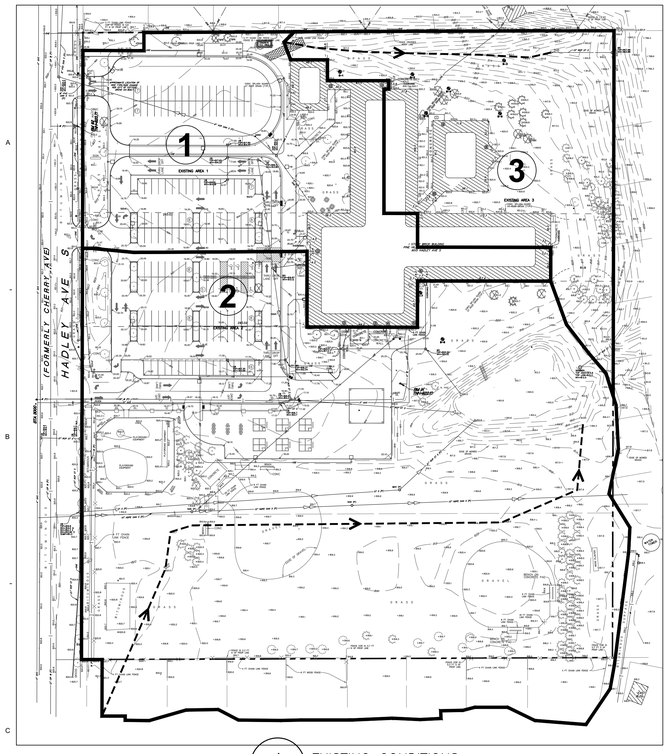
D

E

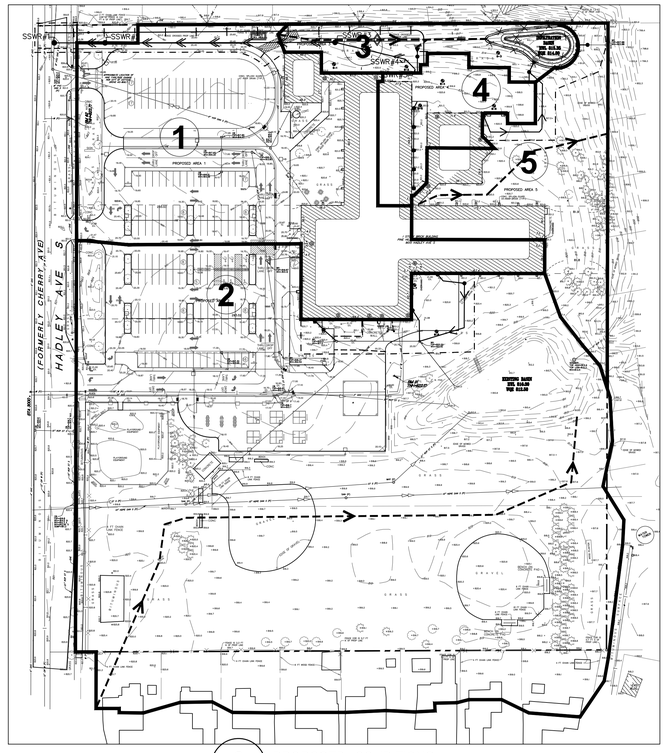
F

1 2 3 4 5 6 7 8

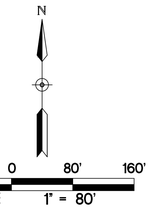
MN



1 C6.000 EXISTING CONDITIONS 1"=80'



2 C6.000 PROPOSED CONDITIONS 1"=80'



EXISTING DRAINAGE AREAS

DRAINAGE AREA	IMPERVIOUS AREA (ACRES)	PERVIOUS AREA (ACRES)	TOTAL AREA (ACRES)	Q OUT (CFS) STORM EVENT 2–YEAR (2.79")	10–YEAR (4.15")	100–YEAR (7.41")	ROUTING
1*	2.41	0.53	2.94	–	–	–	SHEET FLOWS TO SEWER ROUTED TO EXISTING POND
2*	2.75	6.21	8.96	–	–	–	SHEET FLOWS TO SEWER ROUTED TO EXISTING POND
3*	0.53	1.75	2.28	0.07	0.99	6.38	SHEET FLOWS OFF SITE EAST AND THEN HAMLET HEIGHTS POND
TG–P12 EXISTING BASIN*	–	–	–	0.18	3.81	12.19	HAMLET HEIGHTS POND
TOTAL	5.69	8.49	14.18	0.25	4.80	18.57	

*RUNOFF VALUES ARE BASED OFF OF CITY PROVIDED MODEL.

NOTE: REFER TO HYDROLOGY NARRATIVE FOR AN EXHIBIT SHOWING ALL DRAINAGE AREAS. THE ABOVE DRAINAGE AREAS REPRESENT THE TRIBUTARY AREA TO THE EXISTING BASIN AND AREAS WITHIN THE PINE HILL ELEMENTARY SCHOOL PROPERTY.

PROPOSED DRAINAGE AREAS

DRAINAGE AREA	IMPERVIOUS AREA (ACRES)	PERVIOUS AREA (ACRES)	TOTAL AREA (ACRES)	Q OUT (CFS) STORM EVENT 2–YEAR (2.79")	10–YEAR (4.15")	100–YEAR (7.41")	ROUTING
1*	2.40	0.54	2.94	–	–	–	SHEET FLOWS TO SEWER ROUTED TO EXISTING POND
2*	2.83	6.13	8.96	–	–	–	SHEET FLOWS TO SEWER ROUTED TO EXISTING POND
3*	0.00	0.49	0.49	–	–	–	INFILTRATION BASIN
4*	0.49	0.05	0.54	–	–	–	INFILTRATION BASIN
5*	0.27	0.98	1.25	0.03	0.42	2.98	SHEET FLOWS OFF SITE EAST AND THEN HAMLET HEIGHTS POND
TG–P12 EXISTING BASIN*	–	–	–	0.20	3.51	9.61	HAMLET HEIGHTS POND
INFILTRATION BASIN*	–	–	–	0.00	0.00	1.64	HAMLET HEIGHTS POND
TOTAL	5.99	8.19	14.18	0.23	3.93	14.23	

*RUNOFF VALUES ARE BASED OFF OF CITY PROVIDED MODEL.

NOTE: REFER TO HYDROLOGY NARRATIVE FOR AN EXHIBIT SHOWING ALL DRAINAGE AREAS, THE ABOVE DRAINAGE AREAS REPRESENT THE TRIBUTARY AREA TO THE EXISTING BASIN AND AREAS WITHIN THE PINE HILL ELEMENTARY SCHOOL PROPERTY.

STORMWATER RUNOFF SUMMARY

	2–YR STORM (2.79") RUNOFF (CFS)	10–YR STORM (4.15") RUNOFF (CFS)	100–YR STORM (7.41") RUNOFF (CFS)
EXISTING SITE	0.25	4.80	18.57
PROPOSED SITE	0.23	3.93	14.23

VICINITY MAP
GOOGLE MAPS

CONSTRUCTION ACTIVITY EROSION PREVENTION PRACTICES

CONTRACTOR SHALL STABILIZE ALL EXPOSED SOIL AREAS (INCLUDING STOCKPILES). STABILIZATION MUST BE INITIATED IMMEDIATELY TO LIMIT SOIL EROSION WHENEVER ANY CONSTRUCTION ACTIVITY HAS PERMANENTLY OR TEMPORARILY CEASED ON ANY PORTION OF THE SITE AND WILL NOT RESUME FOR A PERIOD EXCEEDING 14 CALENDAR DAYS. STABILIZATION MUST BE COMPLETED NO LATER THAN 14 CALENDAR DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED.

FOR PUBLIC WATER THAT THE DNR HAS PROMULGATED "WORK IN WATER RESTRICTIONS" DURING SPECIFIED FISH SPAWNING TIME FRAMES, ALL EXPOSED SOIL AREAS THAT ARE WITHIN 200 FEET OF THE WATER'S EDGE, AND DRAIN TO THESE WATERS MUST COMPLETE THE STABILIZATION ACTIVES WITHIN 24 HOURS DURING THE RESTRICTION PERIOD.

PIPE OUTLETS MUST BE PROVIDED WITH TEMPORARY OR PERMANENT ENERGY DISSIPATION WITHIN 24–HOURS AFTER CONNECTION TO A SURFACE WATER.

SEDIMENT CONTROL MEASURES MUST BE INSTALLED ON ALL DOWN GRADIENT PERIMETERS BEFORE ANY UPGRADIENT LAND DISTURBING ACTIVITIES BEGIN.

SEDIMENT AND EROSION CONTROL MAINTENANCE

PERIMETER SEDIMENT CONTROL PRACTICES: WHEN SEDIMENT REACHES 1/3 THE HEIGHT OF THE BMP, THE SEDIMENT MUST BE REMOVED WITHIN 24 HOURS. IF PERIMETER SEDIMENT CONTROL HAS BEEN DAMAGED OR IS NOT FUNCTIONING PROPERLY, IT MUST BE REPAIRED AND/OR REPLACED WITHIN 24 HOURS. PERIMETER BMP MEASURES MAY INCLUDE SILT FENCING.

CONSTRUCTION SITE VEHICLE EXIT LOCATIONS: ALL TRACKED SEDIMENT ONTO PAVED SURFACES MUST BE REMOVED WITHIN 24 HOURS OF DISCOVERY OR MORE FREQUENTLY IF REQUIRED BY CITY OR WATERSHED.

CONSTRUCTION SITE DEWATERING:
THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL DEWATERING PERMITS. DISCHARGE FROM ALL DEWATERING OPERATIONS SHALL BE DIRECTED TO ON–SITE DEPRESSIONS. NO DISCHARGE FROM DEWATERING OPERATIONS SHALL BE DIRECTED OFF–SITE TOWARDS A WATER OF THE STATE.

PORTABLE TOILET NOTES:

1. PORTABLE TOILETS POSE AN ENVIRONMENTAL HAZARD WHEN PLACED IN THE VICINITY OF STORM DRAINS OR BODIES OF WATER. PORTABLE TOILET CLEANING ACTIVITIES CAN ALSO GENERATE POLLUTANTS THAT CAN DEGRADE WATER QUALITY.
2. PORTABLE TOILET PLACEMENT:
   - 2.1. PLACE PORTABLE TOILETS ON FLAT STABLE GROUND WITH CLEAR ACCESS TO THE UNITS.
   - 2.2. LOCATE TOILETS A MINIMUM OF 20 FEET FROM ANY WATER BODY AND 10 FEET FROM ANY CURB AND GUTTER. IF UNFEASIBLE, AN EARTHEN BERM OR SAND BAG BERM SHALL BE PLACED AROUND THE UNIT FOR SPILL AND LEAK CONTAINMENT.
   - 2.3. AVOID PLACING TOILETS ON IMPERVIOUS SURFACES THAT WILL QUICKLY DRAIN TO STORM SEWERS.
   - 2.4. LOCATE TOILETS SO THAT EXPOSURE TO TRAFFIC AND MOVING EQUIPMENT IS MINIMIZED.
   - 2.5. SECURE TOILETS TO THE GROUND WITH STAKES OR CABLES.
   - 2.6. RINSE WATER FROM CLEANING ACTIVITIES SHALL NOT BE DISPOSED ON SITE.
3. REGULARLY CHECK TOILETS FOR DAMAGE, LEAKS AND SPILLS AS PART OF THE WEEKLY STORMWATER SITE INSPECTION.
4. OWNER IDENTIFICATION AND CONTACT INFORMATION SHALL BE DISPLAYED IN A PROMINENT LOCATION ON EACH UNIT.

NOTE:

THE STORM WATER POLLUTION PREVENTION PLAN FOR THIS PROJECT INCLUDES THE CIVIL ENGINEERING PLANS AND THE PROJECT MANUAL.

CONTRACTOR TO SUPPLY CONSTRUCTION PHASING NARRATIVE, ESTIMATED PRELIMINARY QUANTITIES OF ALL EROSION PREVENTION AND SEDIMENT CONTROL BMP'S ANTICIPATED AT THE START OF THE PROJECT AND FOR THE LIFE OF THE PROJECT, AND LOCATION OF AREAS WHERE CONSTRUCTION WILL BE PHASED TO MINIMIZE DURATION OF EXPOSED SOIL AREAS. CONTRACTOR IS TO REVIEW MINNESOTA POLLUTION CONTROL AGENCY'S INSTRUCTIONS FOR THE APPLICATION FOR MINNESOTA'S NPDES/SDS GENERAL STORMWATER PERMIT FOR CONSTRUCTION ACTIVITY PRIOR TO SUBMITTING APPLICATION.

FINAL STABILIZATION

STABILIZATION BY UNIFORM PERENNIAL VEGETATIVE COVER (70% DENSITY)

DRAINAGE DITCHES STABILIZED.

ALL TEMPORARY SYNTHETIC AND STRUCTURAL BMP'S REMOVED.

CLEAN OUT SEDIMENT FROM CONVEYANCES AND SEDIMENTATION BASINS (RETURN TO DESIGN CAPACITY).

GRADING & SOILS

BASED ON SOIL BORING(S) PROVIDED BY AMERICAN ENGINEERING TESTING, INC. SOILS TYPICALLY FOUND ON THIS PROJECT ARE: SP

REFER TO THE GEOTECHNICAL REPORT FOR ADDITIONAL INFORMATION.

SPECIAL AND IMPAIRED WATERS

THESE SPECIAL AND IMPAIRED WATERS ARE LOCATED WITHIN ONE MILE (AERIAL RADIUS) OF THE PROJECT LIMITS AND RECEIVE RUNOFF FROM THE PROJECT SITE. DUE TO THE PROXIMITY OF THESE SPECIAL AND IMPAIRED WATERS, THE BMPS DESCRIBED IN APPENDIX A OF THE NPDES PERMIT WILL APPLY TO ALL AREAS OF THE SITE.

WATERBODY	IMPAIRMENT(S)
NONE	NA

MINIMUM ESTIMATED QUANTITIES FOR EROSION CONTROL

ITEM DESCRIPTION	ESTIMATED QUANTITY	
DRAINAGE STRUCT. INLET FILTER	16	EACH
ROCK CONSTRUCTION ENTRANCE	1	EACH
CONCRETE WASHOUT	1	EACH
SILT FENCE	1783	LF
BIO LOG	139	LF
EROSION CONTROL BLANKET	9876	SY

NOTE: QUANTITIES SHOWN ARE THE MINIMUM REQUIRED, ADDITIONAL QUANTITIES MAY BE NEEDED IF REQUIRED BY THE MPCA, WATERSHED DISTRICT, OR CITY. CONTRACTOR IS RESPONSIBLE FOR FINAL DETERMINATION OF QUANTITIES PRIOR TO CONSTRUCTION.

OTHER NOTES:

1. LONG TERM MAINTENANCE OF THE SITE WILL BE PERFORMED BY THE SOUTH WASHINGTON WATERSHED DISTRICT. INCLUDED MAINTENANCE FOR STORMWATER DEVISES SHALL BE:
   - 1.1. CLEANING TRASH AND DEBRIS FROM RATE CONTROL POND ON A BIANNUAL BASIS.
   - 1.2. CLEAN SUMP MANHOLE ON AN ANNUAL BASIS OR WHEN SEDIMENT FILLS ½ OF SUMP DEPTH.
2. THIS SWPPP WAS PREPARED BY PERSONNEL THAT ARE CERTIFIED IN THE DESIGN OF CONSTRUCTION SWPPPS. COPIES OF THE CERTIFICATIONS ARE ON FILE WITH BKBM AND ARE AVAILABLE UPON REQUEST.
3. THIS SWPPP DOCUMENT MUST BE AMENDED AS NECESSARY DURING CONSTRUCTION IN ORDER TO KEEP IT CURRENT WITH THE POLLUTANT CONTROL MEASURES UTILIZED AS THE SITE. THE SITE MAP SHOWING LOCATIONS OF ALL STORM WATER CONTROLS MUST BE POSTED ON THE SITE AND UPDATED TO REFLECT THE PROGRESS OF CONSTRUCTION.

POLLUTION PREVENTION MANAGEMENT MEASURES

SOLID WASTE DISPOSED PROPERLY; COMPLY WITH MPCA REQUIREMENTS.

HAZARDOUS WASTE STORED (SECONDARY CONTAINMENT, RESTRICTED ACCESS) AND DISPOSED IN COMPLIANCE WITH MPCA REQUIREMENTS.

EXTERNAL WASHING OF TRUCKS AND OTHER CONSTRUCTION VEHICLES MUST BE LIMITED TO A DEFINED AREA OF THE SITE. RUNOFF MUST BE CONTAINED AND WASTE PROPERLY DISPOSED.

NO ENGINE DEGREASING ALLOWED ON–SITE.

CONCRETE WASHOUT ON–SITE: ALL LIQUID AND SOLID WASTES 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 LIQUIDS TO ENTER GROUND WATER IS CONSIDERED AN IMPERMEABLE LINER. THE LIQUID AND SOLID WASTES MUST NOT CONTACT THE GROUND, AND THERE MUST NOT BE RUNOFF FROM CONCRETE WASHOUT OPERATIONS OR AREAS. LIQUID AND SOLID WASTES 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. THE CONCRETE WASHOUT AREA INDICATED ON THE PLANS IS SHOWN IN AN APPROXIMATE LOCATION. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION IN ACCORDANCE WITH MPCA REQUIREMENTS.

STORAGE HANDLING AND DISPOSAL OF CONSTRUCTION PRODUCTS, MATERIALS, AND WASTES:

BUILDING PRODUCTS THAT HAVE THE POTENTIAL TO LEACH POLLUTANTS MUST BE UNDER COVER.

PESTICIDES, HERBICIDES, INSECTICIDES, FERTILIZERS, TREATMENT CHEMICALS, AND LANDSCAPE MATERIALS MUST BE UNDER COVER.

HAZARDOUS MATERIALS, TOXIC WASTE (INCLUDING OIL, DIESEL FUEL, GASOLINE, HYDRAULIC FLUIDS, PAINT SOLVENTS, PETROLEUM–BASED PRODUCTS, WOOD PRESERVATIVES, ADDITIVES, CURING COMPOUNDS, AND ACIDS MUST BE PROPERLY STORED IN SEALED CONTAINERS TO PREVENT SPILLS, LEAKS OR OTHER DISCHARGES.

HANDLING AND STORAGE OF HAZARDOUS MATERIALS:

IF THE CONTRACTOR INTENDS TO USE POLYMERS, FLOCCULANTS, OR OTHER SEDIMENTATION TREATMENT CHEMICALS ON THE PROJECT SITE, THE CONTRACTOR MUST COMPLY WITH THE FOLLOWING MINIMUM REQUIREMENTS:

1. THE CONTRACTOR MUST USE CONVENTIONAL EROSION AND SEDIMENT CONTROLS PRIOR TO CHEMICAL ADDITION TO ENSURE EFFECTIVE TREATMENT. CHEMICALS MAY ONLY BE APPLIED WHERE TREATED STORMWATER IS DIRECTED TO A SEDIMENT CONTROL SYSTEM WHICH ALLOWS FOR FILTRATION OR SETTLEMENT OF THE FLOC PRIOR TO DISCHARGE.
2. CHEMICALS MUST BE SELECTED THAT ARE APPROPRIATELY SUITED TO THE TYPES OF SOILS LIKELY TO BE EXPOSED DURING CONSTRUCTION, AND TO THE EXPECTED TURBIDITY, PH AND FLOW RATE OF STORMWATER FLOWING INTO THE CHEMICAL TREATMENT SYSTEM OR AREA.
3. CHEMICALS MUST BE USED IN ACCORDANCE WITH ACCEPTED ENGINEERING PRACTICES, AND WITH DOSING SPECIFICATIONS AND SEDIMENT REMOVAL DESIGN SPECIFICATIONS PROVIDED BY THE MANUFACTURER OR PROVIDER/SUPPLIER OF THE APPLICABLE CHEMICALS.

ON–SITE FUEL TANKS REQUIRE SECONDARY CONTAINMENT AS REQUIRED BY THE PERMIT. PORTABLE FUEL TRUCKS SHALL HAVE THEIR SPILL KITS AVAILABLE DURING FUELING. SPILLS GREATER THAN 5 GALLONS MUST BE REPORTED TO THE PROPER AUTHORITIES.

PROJECT NARRATIVE

EXISTING SITE DESCRIPTION –– THE SITE IS LOCATED IN THE CITY OF COTTAGE GROVE AND SOUTH WASHINGTON COUNTY WATERSHED DISTRICT. THE TOTAL SITE AREA IS 13.0 ACRES, OF WHICH 1.60 ACRES WILL DISTURBED AS PART OF THE PROPOSED PROJECT. THERE IS AN EXISTING SCHOOL BUILDING, PARKING LOTS, PLAYGROUNDS, AND BALL FIELDS ONSITE. CURRENTLY, THERE IS AN EXISTING INFILTRATION BASIN ONSITE THAT PROVIDES STORMWATER MANAGEMENT FOR THE EXISTING SITE.

PROPOSE SITE DESCRIPTION –– THE PROPOSED DEVELOPMENT CONSISTS OF THREE BUILDING ADDITIONS TO THE EXISTING SCHOOL. AN INFILTRATION BASIN WILL BE ADDED AND THE EXISTING PRIMARY OUTLET FOR THE EXISTING BASIN WILL BE MODIFIED TO PROVIDE STORMWATER MANAGEMENT FOR THE PROPOSED NEW AND REDEVELOPMENT IMPERVIOUS SURFACES.

AGENCY CONTACTS

CITY OF COTTAGE GROVE
ENGINEERING DEPARTMENT

PHONE: (651) 458–2800
MINNESOTA POLLUTION CONTROL AGENCY
PHONE: (651) 296–6300

SOUTH WASHINGTON WATERSHED DISTRICT
PHONE: (651) 714–3714

OWNER
SOUTH WASHINGTON COUNTY SCHOOLS, ISD #883
7362 E. POINT DOUGLAS ROAD
COTTAGE GROVE, MN 55016
PHONE: (651) 328–4013

NOTE:

THE CONTRACTOR MUST COMPLETE, SIGN, OBTAIN OWNERS SIGNATURE, PAY FEE, AND SEND IN THE NPDES PERMIT APPLICATION. CONTRACTOR SHALL PROVIDE A CERTIFIED EROSION CONTROL SUPERVISOR. SWPPP DOCUMENTATION, INCLUDING INSPECTION REPORTS SHALL BE RETAINED FOR A PERIOD OF THREE (3) YEARS. DESIGN CALCULATIONS ARE ON FILE AT BKBM.

THE OWNER AND CONTRACTOR ARE RESPONSIBLE FOR IMPLEMENTATION OF THE SWPPP AND INSTALLATION, INSPECTION, AND MAINTENANCE OF THE EROSION PREVENTION AND SEDIMENT CONTROL BMPS, BEFORE, DURING, AND AFTER CONSTRUCTION UNTIL THE NOTICE OF TERMINATION HAS BEEN FILED.

STOCKPILES:

ON–SITE STOCKPILES OF SOIL SHALL HAVE PERIMETER SEDIMENT CONTROL. STOCKPILES SHALL BE STABILIZED WITH BLANKETS, TARPS, OR HYDRO MULCH IF LEFT ON–SITE FOR MORE THAN 14 DAYS.

TEMPORARY SEDIMENT BASINS:

TEMPORARY SEDIMENT BASINS SHALL BE PROVIDED PER APPENDIX A, SECTION C.1.B OF THE MPCA GENERAL STORMWATER PERMIT.

ENGINEER ANTICIPATES THAT, PRIOR TO INSTALLATION OF FILTRATION MEDIA AND DRAIN TILE, CONTRACTOR WILL USE PROPOSED FILTRATION BASINS AS TEMPORARY SEDIMENT BASINS. CONTRACTOR SHALL EXCAVATE TEMPORARY BASINS AND CLAY LINE PRIOR TO USE. SURFACE WATER SHALL BE REMOVED BY SKIMMER DEVICE SUCH AS FAIRCLOTH SKIMMER OR THIRSTY DUCK, OR USING A PUMP WITH A FILTER. ALTERNATIVE TEMPORARY SEDIMENT BASINS SHALL BE APPROVED BY ENGINEER PRIOR TO USE.

NOTE:

AN AS–BUILT SURVEY OF ALL STORMWATER BMPS (FILTRATION BASIN, OUTLET STRUCTURES, DRAINTILE, CLEAN OUTS, SUMP CATCH BASINS, ETC...) SHALL BE SUBMITTED TO SOUTH WASHINGTON WATERSHED DISTRICT PRIOR TO PROJECT CLOSEOUT. THE AS–BUILT SURVEY SHALL INCLUDE THE FILTRATION BASIN TRAIN TILE INVERTS AND LAYOUT FOR VERIFICATION THE THE SYSTEM WAS INSTALLED PROPERLY AND THAT 18–INCHES OF SAND/FILTRATION MIX OVER THE TOP OF THE DRAIN TILE HAS BEEN PROVIDED.

SWPPP IMPLEMENTATION, INSTALLATION, INSPECTION, AND BMP MAINTENANCE SHALL BE PERFORMED BY THE CONTRACTOR.

NAME: _____

CERTIFICATION #:_____

DATE: _____

INSPECTIONS

EXPOSED SOIL AREAS: ONCE EVERY 7 DAYS AND WITHIN 24 HOURS FOLLOWING A 1/2 INCH OVER 24 HOURS RAIN EVENT.

STABILIZED AREAS: ONCE EVERY 30 DAYS.

FROZEN GROUND: AS SOON AS RUNOFF OCCURS OR PRIOR TO RESUMING CONSTRUCTION.

RECORDS: A COPY OF THE GRADING, DRAINAGE EROSION CONTROL PLAN AND WATERSHED DATA & SWPPP PLANS AS WELL AS THE INSPECTIONS/MAINTENANCE LOGS ARE TO BE KEPT EITHER IN THE FIELD OFFICE, INSPECTOR'S VEHICLE OR CONTRACTOR'S VEHICLE.

Pine Hill Elementary School Addition and Renovation

9015 HADLEY AVE S,
COTTAGE GROVE,
MN 55016

ISD #833: SOUTH WASHINGTON COUNTY SCHOOLS
8400 E. Point Douglas Rd S.,
Cottage Grove, MN 55016

WOLD ARCHITECTS AND ENGINEERS
332 Minnesota Street, Suite W2000
Saint Paul, MN 55101

woldac.com | 651 227 7773

BKBM Structural & Civil Engineers
6120 Earle Brown Drive
Suite 700 Minneapolis, MN 55430 Phone: 763.843.0420
bkbm.com

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BKBM Project No. 24259.50

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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

Nathaniel P. Anderson
License Number: 59311 Date: 06/02/2025

Revisions		
Description	Date	Num

Comm: 242224
Date: 06/02/2025
Drawn: AMY
Check: KAB

North

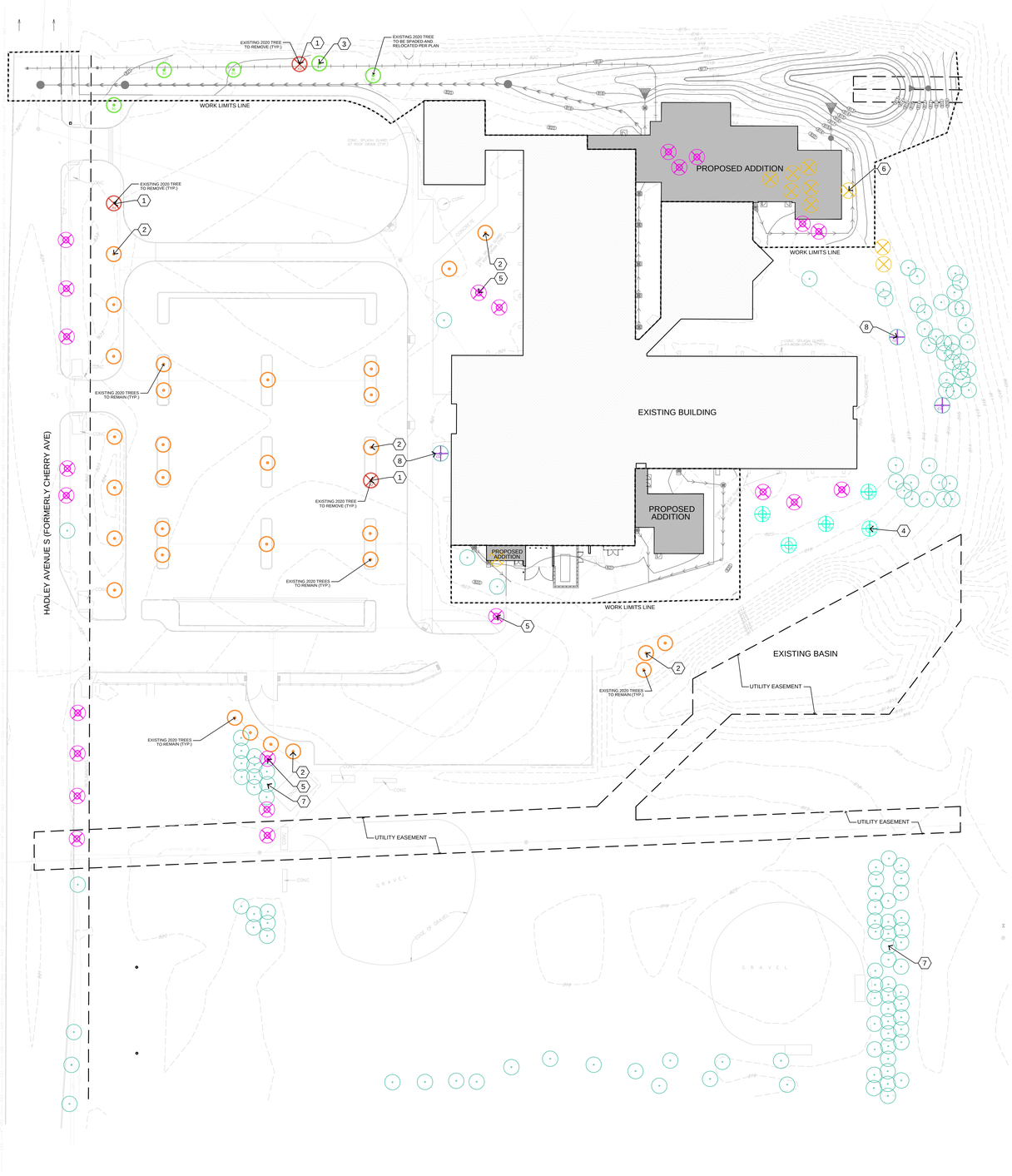
STORMWATER POLLUTION PREVENTION PLAN

Scale:

C6.000

pw:\240925_CG_Elementary\
9/5/2025 1:43:38 PM

MN



TREE INVENTORY AND MITIGATION LEGEND

1. 2020 DEAD TREE TO BE REPLACED
2. 2020 TREE TO REMAIN (INSIGNIFICANT)
3. 2020 TREE TO BE MOVED / SPADED
4. RELOCATED / SPADED TREE LOCATION
5. EXISTING STUMPS
6. EXISTING TREE TO REMOVED
7. EXISTING TREES TO REMAIN
8. EXISTING TREES NOT ON PRIOR SURVEY

2020 DEAD TREES TO BE REPLACED

Note: 3 trees that were planted during the site work of 2020 were found to be dead. Said trees will be replaced 1:1 to bring the site work of 2020 up to code.

A1. 2" Acer x freemanii 'Sienna', Sienna Glen Maple | Replace 1:1

A2. 4" Acer x freemanii 'Sienna', Sienna Glen Maple| Replace 1:1

A3. 4" Picea glauca 'Densata', Black Hills Spruce | Replace 1:1

RELOCATED / SPADED TREES

B1. 3" Quercus rubra, Northern Red Oak

B2. 4" Quercus rubra, Northern Red Oak

B3. 4" Quercus rubra, Northern Red Oak

B4. 4" Picea glauca 'Densata', Black Hills Spruce

B5. 3" Quercus rubra, Northern Red Oak

Assumption: Contractor to use no smaller than a Bobcat 44" Tree Spade

EXISTING TREES NOT ON PRIOR SURVEY

Note: Silver Maple to be considered significant, whereas the Siberian Elms considered insignificant.

C1. 13" Maple | Caliper inches to count towards credit

C2. 18" Siberian Elm | Caliper inches to not count towards credit

C3. 22" Siberian Elm | Caliper inches to not count towards credit

Landscape Symbols Legend:

Proposed Building

Existing Building

General Landscape Notes

1. Refer to Sheets L1.001 - L1.002 for Landscape Plans. Refer to Sheet L1.003-L1.004 for Landscape Notes, Details, & Schedules.
2. Refer to Sheet L1.005 for Fencing Enlargement, Details, and Notes.
3. Refer to Sheet L.0.000 for Existing Tree Conditions / Exhibit. Refer to Sheets L1.000 & L1.006 for Tree Preservation and Mitigation.
4. Refer to Civil Engineer's plans for site plan layout, dimensions, grading, drainage and concrete specifications.
5. Contractor to Coordinate all work with Owner.
6. Protect adjacent areas from damage during construction.
7. See written specifications for additional requirements.
8. Place topsoil or slope dressing on all areas disturbed by construction, including right-of-way boulevards, unless specified otherwise. See specifications.
9. All fine grading of turf areas shall be the responsibility of the sod sub-contractor(s), including sub-cut work. Field verify disturbance upon mobilization - actual sod areas may differ from anticipated limits shown on plan.
10. Existing Trees Removed: 10
    New Trees Proposed: 10
    2020 Trees Removed: 3
    2020 Replacement Trees Proposed: 3

NOTE: Refer to Civil 'Existing Conditions & Removals' Plan for Tree Removals. Unless otherwise noted on civil plans, grind stumps to a minimum of 24" below grade. Remove root debris and backfill hole with imported topsoil.

A

TREE PRESERVATION EXHIBIT AND EXISTING CONDITIONS:

811 Know what's below. Call before you dig.

SCALE: 1" = 40'-0" (0, 40', 80')

NORTH

Pine Hill Elementary School Addition and Renovation

9015 HADLEY AVE S,
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MN 55016

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BKBM Project No. 24259.50

CALYX DESIGN GROUP Landscape Architecture | Planning
475 Cleveland Ave. N,
Suite 101A
St. Paul, MN 55104
Phone: 651.788.9018
calyxdesigngroup.com

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I Hereby certify that this plans, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed
PROFESSIONAL LANDSCAPE ARCHITECT
under the laws of the State of MN

Benjamin D. Hartberg
License Number: 48084 Date: xx/xx/xxxx

Revisions		
Description	Date	Num

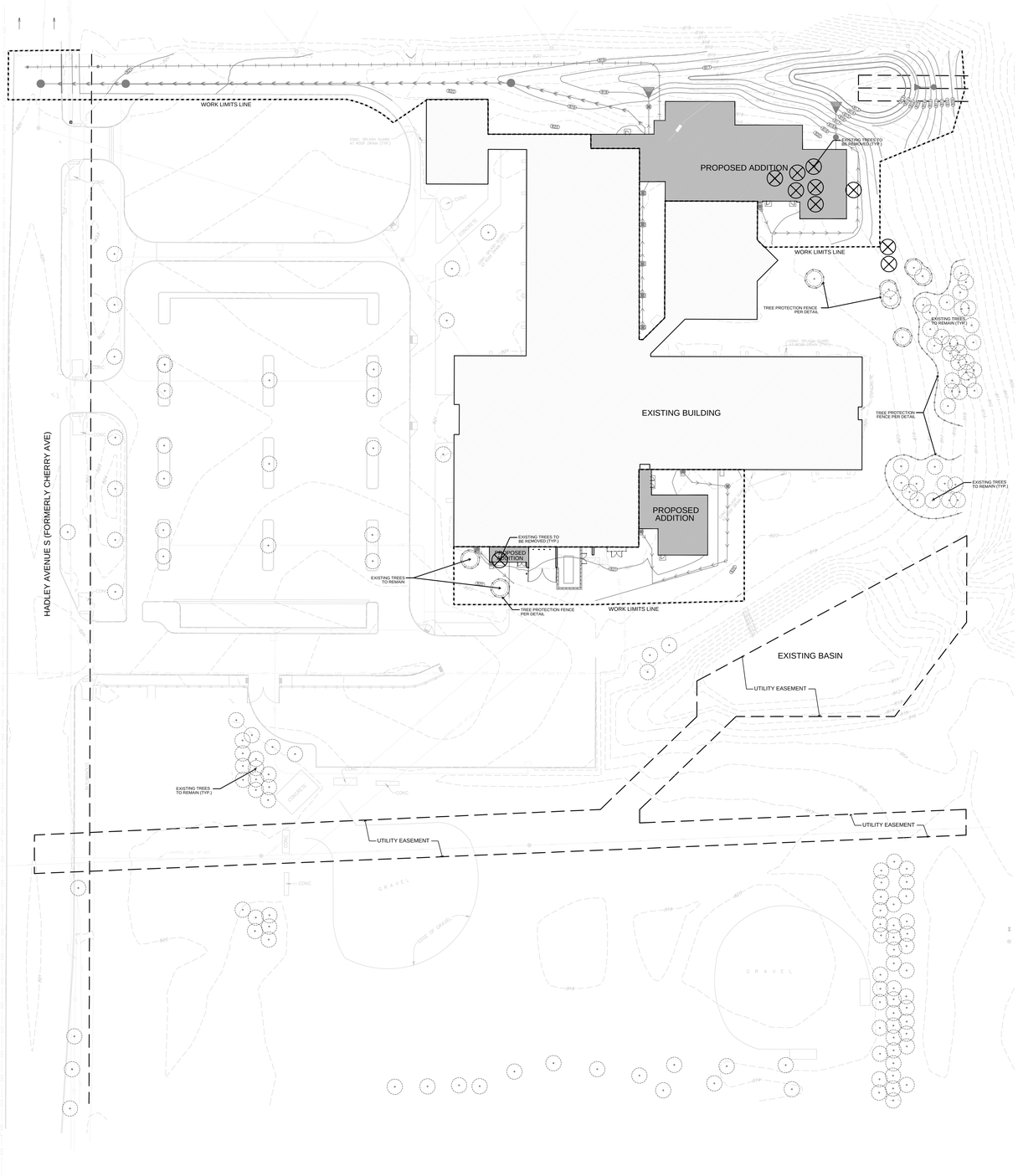
Comm: 242224
Date: 07/18/2025
Drawn: AL
Check: BH

North

TREE PRESERVATION EXHIBIT & EXISTING CONDITIONS

L0.000

MN



NOTE: Refer to Civil 'Existing Conditions & Removals' Plan for Tree Removals. Unless otherwise noted on civil plans, grind stumps to a minimum of 24" below grade. Remove root debris and backfill hole with imported topsoil.

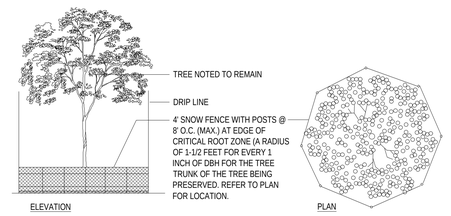
Landscape Legend:

Existing Tree To Remain

Proposed Building

Existing Tree To Be Removed

Tree Protection Fencing



NOTE: TREE PROTECTION SHALL BE PROVIDED BY CONTRACTOR AS REQUIRED TO AIDE IN SURVIVABILITY OF EXISTING TREES TO REMAIN. DO NOT STORE MATERIALS OR DRIVE EQUIPMENT WITHIN THE TREE DRIP LINE AS DESIGNATED ABOVE. MAINTAIN THE FENCE INTEGRITY AT ALL TIMES THROUGHOUT CONSTRUCTION.

TREE PROTECTION FENCE SHALL BE IN PLACE PRIOR TO THE START OF DEMOLITION.

1 / L1.0 TYPICAL TREE PROTECTION DETAIL

NOT TO SCALE

General Landscape Notes

1. Refer to Sheets L1.001 - L1.002 for Landscape Plans. Refer to Sheet L1.003-L1.004 for Landscape Notes, Details, & Schedules.
2. Refer to Sheet L1.005 for Fencing Enlargement, Details, and Notes.
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A

TREE PRESERVATION PLAN:

811 Know what's below. Call before you dig.

0 40' 80'

SCALE: 1" = 40'-0"

NORTH

Pine Hill Elementary School Addition and Renovation

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BKBM Project No. 24259.50

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Phone: 651.788.9018
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NOT FOR CONSTRUCTION

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 LANDSCAPE ARCHITECT
under the laws of the State of MN

Benjamin D. Hartberg
License Number: 48084 Date xx/xx/xxxx

Revisions		
Description	Date	Num

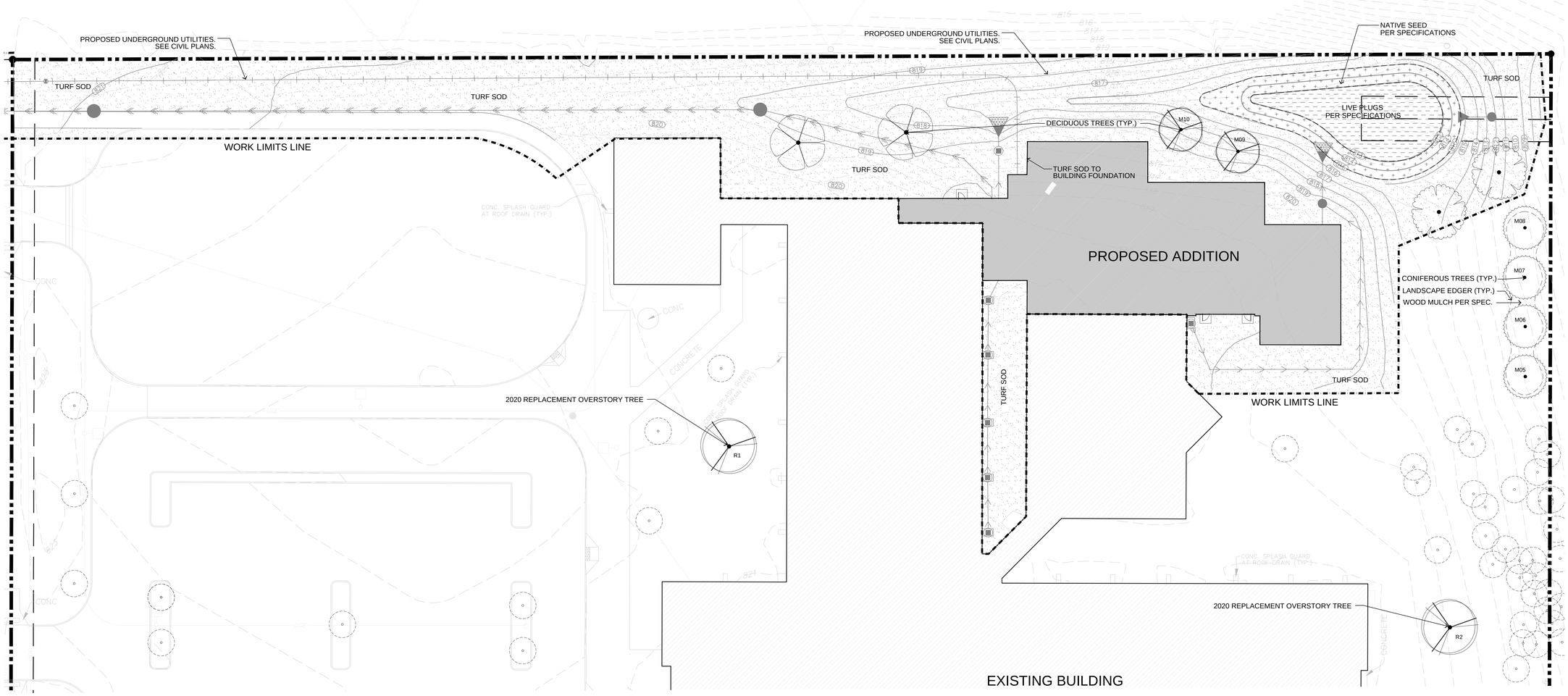
Comm: 242224
Date: 07/18/2025
Drawn: AL
Check: BH

North

TREE PRESERVATION PLAN

L1.000

MN



Landscape Symbols Legend:

Existing Deciduous Tree

Native Seed Per Specifications

Rock Mulch Per Specifications

Proposed Building

Turf Sod Per Specifications

Live Plugs Per Specifications

Landscape Edger Per Specification

Existing Building

General Landscape Notes

1. Refer to Sheets L1.001 - L1.002 for Landscape Plans. Refer to Sheet L1.003-L1.004 for Landscape Notes, Details, & Schedules.
2. Refer to Sheet L1.005 for Fencing Enlargement, Details, and Notes.
3. Refer to Sheet L 0.000 for Existing Tree Conditions / Exhibit. Refer to Sheets L1.000 & L1.006 for Tree Preservation and Mitigation.
4. Refer to Civil Engineer's plans for site plan layout, dimensions, grading, drainage and concrete specifications.
5. Contractor to Coordinate all work with Owner.
6. Protect adjacent areas from damage during construction.
7. See written specifications for additional requirements.
8. Place topsoil or slope dressing on all areas disturbed by construction, including right-of-way boulevards, unless specified otherwise. See specifications.
9. All fine grading of turf areas shall be the responsibility of the sod sub-contractor(s), including sub-cut work. Field verify disturbance upon mobilization - actual sod areas may differ from anticipated limits shown on plan.
10. Existing Trees Removed: 10
    New Trees Proposed: 10
    2020 Trees Removed: 3
    2020 Replacement Trees Proposed: 3

PLANT SCHEDULE

SYMBOL	CODE	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER	QTY
EVERGREEN TREES						
	Ab	Abies balsamea	Balsam Fir	6` Hgt.	B&B	4
	Pd	Picea glauca `Densata`	Black Hills Spruce	6` Hgt.	B&B	6
	Pw	Pinus alba	White Pine	6` Hgt.	B&B	4
	Pp2	Pinus ponderosa	Ponderosa Pine	6` Hgt.	B&B	4
OVERSTORY TREE						
	AS	Acer x freemanii `Sienna`	Sienna Glen Maple	2.5" Cal.	B&B	2
	AO	Aesculus glabra	Ohio Buckeye	2.5" Cal.	B&B	3
	BR	Betula nigra	River Birch	2` Ht.	B&B	2
	BJ2	Betula platyphylla 'Jefpark'	Parkland Pillar® Asian White Birch	2.5" Cal.	B&B	3
	CO	Celtis occidentalis	Common Hackberry	2.5" Cal.	B&B	2
	GD2	Gleditsia triacanthos inermis 'Draves' TM	Street Keeper Honey Locust	2.5" Cal.	B&B	2
	GD	Gymnocladus dioica `Espresso`	Kentucky Coffeetree	2.5" Cal.	B&B	2
	QB	Quercus bicolor	Swamp White Oak	2.5" Cal.	B&B	3

REPLACEMENT TREES PER 2020 PLAN | TOTAL: 3

R1. 2.5" Acer x freemanii 'Sienna', Sienna Glen Maple

R2. 2.5" Acer x freemanii 'Sienna', Sienna Glen Maple

R3. 6' Picea glauca 'Densata', Black Hills Spruce

PROPOSED MITIGATION TREES PER BUILDING ADDITIONS

M01. 6' H Pinus alba, White Pine

M02. 6' H Pinus alba, White Pine

M03. 6' H Pinus alba, White Pine

M04. 6' H Pinus alba, White Pine

M05. 6' H Pinus ponderosa, Ponderosa Pine

M06. 6' H Pinus ponderosa, Ponderosa Pine

M07. 6' H Pinus ponderosa, Ponderosa Pine

M08. 6' H Pinus ponderosa, Ponderosa Pine

M09. 10' H Betula nigra, River Birch

M10. 10' H Betula nigra, River Birch

NOTE: Trees shown on plan include both trees needed for mitigation as well as replacement trees for 2020 tree loss.

Landscape Requirements:

TOTAL SITE AREA = 68960 Square Feet
REQUIRED DECIDUOUS TREES: 19
PROPOSED DECIDUOUS TREES: 19

REQUIRED CONIFEROUS TREES: 18
PROPOSED CONIFEROUS TREES: 18

REQUIRED SHRUBS: 41
PROPOSED SHRUBS: 41

NOTE: Refer to Civil 'Existing Conditions & Removals' Plan for Tree Removals. Unless otherwise noted on civil plans, grind stumps to a minimum of 24" below grade. Remove root debris and backfill hole with imported topsoil.

811 Know what's below. Call before you dig.

SCALE: 1" = 20'-0"

NORTH

LANDSCAPE PLAN - NORTH:

A

Pine Hill Elementary School Addition and Renovation

9015 HADLEY AVE S,
COTTAGE GROVE,
MN 55016

ISD #833: SOUTH WASHINGTON COUNTY SCHOOLS
8400 E. Point Douglas Rd S.,
Cottage Grove, MN 55016

WOLD ARCHITECTS AND ENGINEERS
332 Minnesota Street, Suite W2000
Saint Paul, MN 55101

woldac.com | 651 227 7773

BKBM Structural & Civil Engineers
6120 Earle Brown Drive
Suite 700 Minneapolis,
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763.843.0420
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BKBM Project No. 24259.50

CALYX DESIGN GROUP Landscape Architecture | Planning
475 Cleveland Ave. N,
Suite 101A
St. Paul, MN 55104
Phone: 651.788.9018
calyxdesigngroup.com

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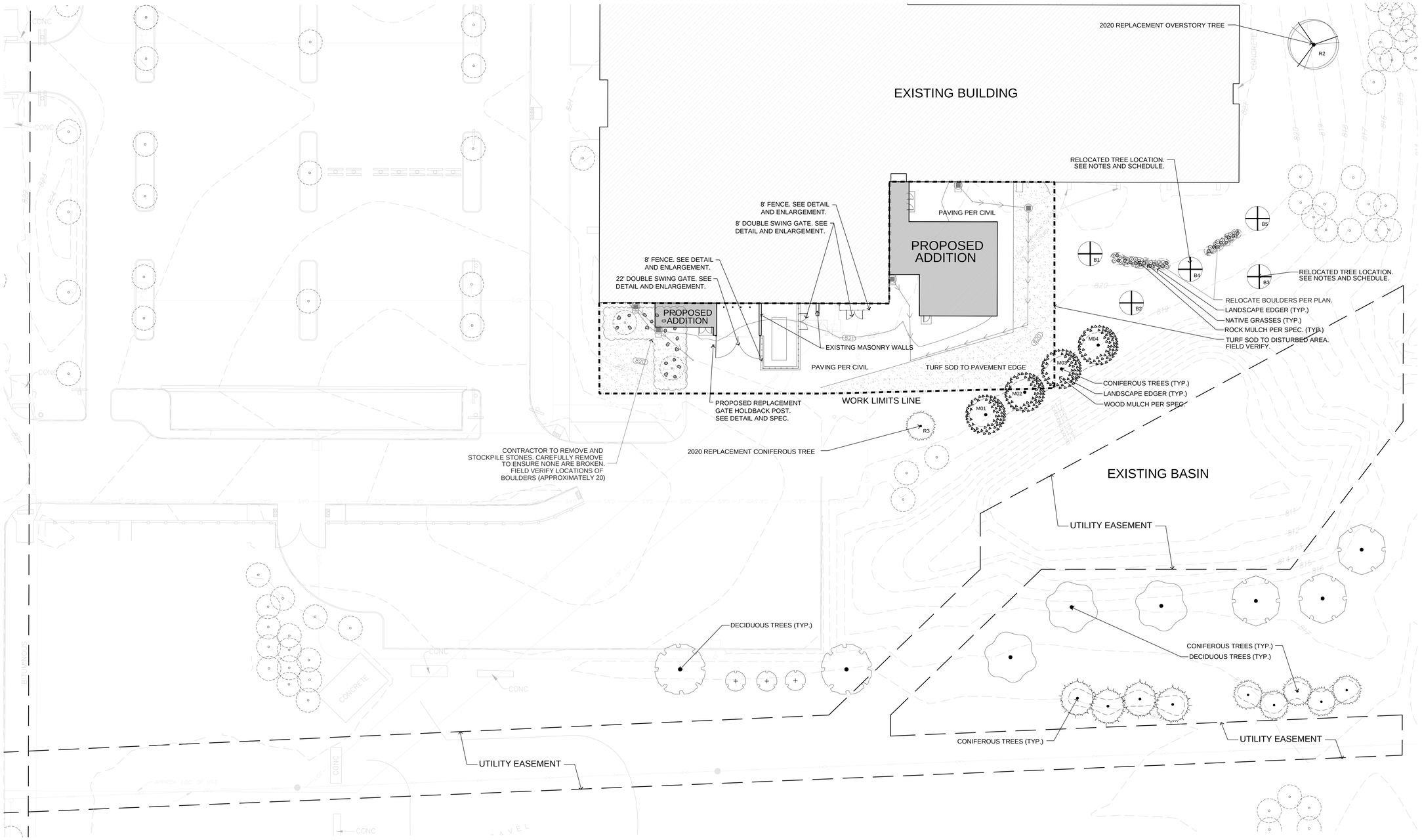
Comm: 242224
Date: 07/18/2025
Drawn: AL
Check: BH

North

LANDSCAPE PLAN NORTH

L1.001

MN



Landscape Symbols Legend:

Existing Deciduous Tree
Native Seed Per Specifications
Rock Mulch Per Specifications
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Existing Building

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PLANT SCHEDULE

SYMBOL	CODE	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER	QTY
ANNUALS/PERENNIALS						
	Nw	Nepeta x faassenii `Walkers Low`	Walkers Low Catmint	1 gal.	Pot	11
	Pl	Perovskia atriplicifolia `Little Spire`	Little Spire Russian Sage	1 gal.	Pot	18
GRASSES						
	Ck	Calamagrostis x acutiflora `Karl Foerster`	Feather Reed Grass	1 gal.	Pot	12

NOTE: Trees shown on plan include both trees needed for mitigation as well as replacement trees for 2020 tree loss.

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PROPOSED DECIDUOUS TREES: 19

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0 20' 40'
SCALE: 1" = 20'-0"
NORTH

LANDSCAPE PLAN - SOUTH:

A

Pine Hill Elementary School Addition and Renovation

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MN 55016

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License Number: 48084 Date xx/xx/xxxx

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Date: 07/18/2025
Drawn: AL
Check: BH

North

LANDSCAPE PLAN SOUTH

L1.002

Landscape Notes and Requirements:

1. Tree saucer for individual trees outside of a plant bed to be four inches (4") depth Western Red Cedar wood mulch. Install per tree planting detail. Do not place mulch against tree trunk. Remove wire and burlap from top third of root ball before final soil back-fill and mulch. Dyed or Colorized mulch is strictly prohibited.

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. Install 6" diameter perforated white PVC trunk guards on all new deciduous trees by November 1st. Remove tree watering bags at this time.

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, per specifications. 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. Warranty: The contractor shall guarantee newly planted material through one calendar year from the date of punch list inspection. Plants that exhibit more than 30% die-back damage shall be replaced at no additional cost to the owner. The contractor shall also provide 6" dia. PVC trunk guards on deciduous trees. Prune dead wood prior to the warranty review meeting.

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. Irrigation & Watering: The landscape contractor shall provide temporary irrigation. Refer to the Turf and Grasses Specification Section 32 92 00 for temporary irrigation requirements. Additionally, all trees planted outside of the irrigation coverage area shall receive tree watering bags. Tree watering bags to be installed and filled with water by the Contractor. Refer to spec section 32 93 00 for more information.

18. Landscape Edging: 5.5" Black Professional Grade Polyethylene Edging. See Specifications.

19. 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.

20. Unless otherwise noted/indicated, all new landscape beds to be 4" depth Western Red Cedar mulch with the exception of vegetable garden area, which will receive 3/8" trap rock chips over weed mat per specifications.

21. 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.

22. Turf Sodding and Seeding activity shall conform to all rules and regulations as established in the MnDOT Seeding Manual, 2024 edition, for turf bed preparation, installation, maintenance, acceptability, and warranty. An acceptable stand of seeded turf is lush, full, and weed-free. See specifications for maintenance requirements.

23. The Landscape Contractor shall furnish samples of all landscape materials for approval prior to installation.

24. The Landscape Contractor shall clear and grub the underbrush from within the work limits to remove dead branches, leaves, trash, weeds and foreign materials.

25. The landscape contractor shall contact Gopher State One Call no less than 48 hours before digging for field utility locations.

26. 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.

27. 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.

28. See Site and Civil plans for additional information regarding the project, including infiltration area soils and sub-surface drainage requirements and performance.

29. Topsoil Requirements: 4" (minimum) depth of topsoil is required on all projects. See Specifications for additional requirements. Specifications supersede this note if a deeper topsoil depth is listed.

30. 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.

31. Landscape contractor to provide nursery pull list (bill of lading) including plant species and sizes shipped to the site. Additionally, the landscape contractor shall provide nursery stock traceability, proving none of the materials provided contain or are genetic strains of the neonicotinoid family including acetamiprid, clothianidin, imidacloprid, nitenpyram, nithiazine, thiacloprid and thiamethoxam.

32. Garden Soil in At-Grade Garden Plot: The existing topsoil in the garden area indicated shall be raked, tilled, and amended with clean imported compost so that the topsoil achieves a 20% compost to 80% topsoil ratio. The garden beds shall be planting ready upon completion.

NATIVE SEED REQUIRED MAINTENANCE - 3 YRS:

Native Grass and Forb Mixtures (mixtures beginning with the number 3)

Year 1
Establishment (spring seeding):
1) Prepare site - Late April - May
2) Seed - May 1 - June 1

Maintenance:
1) Mow (6-8 inches) - every 30 days after planting until September 30.
2) Weed Control - mowing should help control annual weeds. Spot spray thistles, etc.

Establishment (fall seeding):
1) Prepare site - Late August - early September
2) Seed - late September to freeze-up

Maintenance (following season):
1) Mow (6-8 inches) - once in May, June, and July
2) Weed Control - mowing should keep annual weeds down. Spot spray thistles, etc.

Evaluation:
1) Cover crop growing within 2 weeks of planting (except dormant plantings).
2) Seedlings spaced 1-6 inches apart in drill rows.
3) Native grass seedlings may only be 4-6 inches tall.
4) If there is a flush of growth from foxtail etc., mow as necessary.

Year 2
Maintenance:
1) Mow (6-8 inches) one time between June 1 - August 15 before weeds set seed.
2) Weed Control - mowing should keep annual weeds down. Spot spray thistles, etc.
3) Some sites may not require much maintenance the second year.

Evaluation:
1) Cover crop will be gone unless winter wheat was used in a fall planting.
2) Grasses forming clumps 1-6 inches apart in drill rows, but still short.
3) Some flowers should be blooming (black-eyed Susans, bergamot, etc.).
4) If there is a flush of growth from foxtail etc., mow site.

Year 3
Maintenance:
1) Mow only if necessary.
2) Weed Control - Spot spray thistles, etc.
3) Sites usually do not require much maintenance the third year.

Evaluation:
1) Planting should begin looking like a prairie - tall grasses, flowers, etc.

Long-term
Maintenance:
1) Weed Control - Spot spray thistles, etc.
2) Burning (3-5 year rotation) alternate spring and fall if possible.
3) Haying (3-5 year rotation) late summer or early fall. Alternate with burning (may substitute for burning).
4) Burning two years in a row will really "clean up" rough-looking sites.

NATIVE SEEDING INSTALLATION METHOD:

Drop Seeding Onto Tilled Sites
This is the "standard" method for seeding on prepared sites such as those on construction projects.

a) **Site Preparation:** The site should be prepared by loosening topsoil to a minimum depth of 3 inches.
b) **Fertilizer:** Use a fertilizer analysis based on a soil test or a general recommendation is a 10-10-10 (NPK) commercial grade analysis at 200 lbs/acre.
c) **Seed Installation:** Seed should be installed with a drop seeder that will accurately meter the types of seed to be planted, keep all seeds uniformly mixed during the seeding and contain drop seed tubes for seed placement (Brillion-type). The drop seeder should be equipped with a cultipacker assembly to ensure seed-to-soil contact.
d) **Seeding Rates:** Rates are specified in the mixture tabulation for the specified mix.
e) **Packing:** If the drop seeder is not equipped with a cultipacker, the site should be cultipacked following the seeding to ensure seed-to-soil contact.
f) **Mulch:** Cover soil with a hydromulch consisting of natural wood fiber or paper fiber, water, and M-Binder at 100 lbs per acre.

Note: Heavy equipment is not allowed in the infiltration basins to keep soils from getting compacted. If any compaction occurs due to seeding operations, the soils must be uncompacted.

NATIVE SEED MIX:

Native Seed Areas noted per plan: (unless otherwise noted on civil plans), shall be:
Shooting Star Native Seeds 'Dry Short Prairie Mix', drop seeded into the topsoil layer at 30.0 lbs per acre, plus 10.0 lbs per acre of additional Annual Oats (Avena sativa). Add an additional 1.0 lb per acre of Shooting Star Native Seeds 'Dry Forbs Enhancement Mix'. Submit seed mix for approval. See specifications. Grading and Erosion Control per Civil Plans and Specifications.

Description: SSNS Dry Short Prairie Mix
Seeding Rate: 10 lb/acre (64.4 seeds/square foot)
Notes: Soil - Dry Mesic to Dry, Sun - Full

Common Name	Scientific Name	% of Mix	Seeds/ft²	Total
Grasses				
Sideoats Grama	Bouteloua curtipendula	32.00%	7.1	3.200 PLS lb
Blue Grama	Bouteloua gracilis	5.00%	7.3	0.500 PLS lb
Prairie Brome	Bromus kalmii	2.00%	0.6	0.200 PLS lb
Slender Wheatgrass	Elymus trachycaulus	5.00%	1.3	0.500 PLS lb
June Grass	Koeleria macrantha	1.00%	7.3	0.100 PLS lb
Little Bluestem	Schizachyrium scoparium	25.00%	13.8	2.500 PLS lb
Rough Dropseed	Sporobolus compositus	8.00%	8.8	0.800 PLS lb
Sedges & Rushes				
Bicknell's Sedge	Carex bicknellii	1.20%	0.7	0.120 PLS lb
Plains Oval Sedge	Carex brevior	0.80%	0.9	0.080 PLS lb
Forbs				
Prairie Onion	Allium stellatum	0.80%	0.3	0.080 PLS lb
Lead Plant	Amorpha canescens	2.00%	1.2	0.200 PLS lb
Common Milkweed	Asclepias syriaca	1.40%	0.2	0.140 PLS lb
Butterfly Milkweed	Asclepias tuberosa	0.80%	0.1	0.080 PLS lb
White Wild Indigo	Baptisia alba	1.00%	0.1	0.100 PLS lb
New Jersey Tea	Ceanothus americanus	0.40%	0.1	0.040 PLS lb
Partridge Pea	Chamaecrista fasciculata	4.00%	0.4	0.400 PLS lb
White Prairie Clover	Dalea candida	0.60%	0.4	0.060 PLS lb
Purple Prairie Clover	Dalea purpurea	1.60%	1.1	0.160 PLS lb
Prairie Cinquefoil	Drymocallis arguta	0.20%	1.7	0.020 PLS lb
Stiff Sunflower	Helianthus pauciflorus	0.40%	0.1	0.040 PLS lb
Round-headed Bush Clover	Lespedeza capitata	0.60%	0.2	0.060 PLS lb
Rough Blazing Star	Liatris aspera	0.40%	0.2	0.040 PLS lb
Wild Lupine	Lupinus perennis	0.40%	0.0	0.040 PLS lb
Wild Bergamot	Monarda fistulosa	0.40%	1.0	0.040 PLS lb
Wild Quinine	Parthenium integrifolium	0.40%	0.1	0.040 PLS lb
Foxglove Beardtongue	Penstemon digitalis	0.20%	1.0	0.020 PLS lb
Large-flowered Beardtongue	Penstemon grandiflorus	0.60%	0.3	0.060 PLS lb
Prairie Wild Rose	Rosa arkansana	0.80%	0.1	0.080 PLS lb
Black-eyed Susan	Rudbeckia hirta	0.60%	2.0	0.060 PLS lb
Gray Goldenrod	Solidago nemoralis	0.20%	2.2	0.020 PLS lb
Stiff Goldenrod	Solidago rigida	0.20%	0.3	0.020 PLS lb
Heath Aster	Symphyotrichum ericoides	0.20%	1.5	0.020 PLS lb
Sky Blue Aster	Symphyotrichum oolentangiense	0.40%	1.2	0.040 PLS lb
Ohio Spiderwort	Tradescantia ohiensis	0.40%	0.1	0.040 PLS lb
Hoary Vervain	Verbena stricta	0.60%	0.6	0.060 PLS lb
Heartleaf Alexanders	Zizia aptera	0.40%	0.2	0.040 PLS lb

Description: SSNS Dry Forbs Enhancement Mix
Seeding Rate: 1 lb/acre (4.9 seeds/square foot)
Notes: Soil - Dry Mesic to Dry, Sun - Full to Partial

Common Name	Scientific Name	% of Mix	Seeds/ft²	Total
Forbs				
Prairie Onion	Allium stellatum	10.00%	0.4	0.100 PLS lb
Butterfly Milkweed	Asclepias tuberosa	14.00%	0.2	0.140 PLS lb
Pale Purple Coneflower	Echinacea pallida	32.00%	0.6	0.320 PLS lb
Rough Blazing Star	Liatris aspera	10.00%	0.6	0.100 PLS lb
Large-flowered Beardtongue	Penstemon grandiflorus	12.00%	0.6	0.120 PLS lb
Black-eyed Susan	Rudbeckia hirta	4.00%	1.4	0.040 PLS lb
Sky Blue Aster	Symphyotrichum oolentangiense	2.00%	0.6	0.020 PLS lb
Ohio Spiderwort	Tradescantia ohiensis	16.00%	0.5	0.160 PLS lb

BASIN BOTTOM: LIVE PLUG SCHEDULE:

Plug Spacing:	Scientific Name	Common Name	Size	Root
24" On-Center	Bolboschoenus fluviatius	River Bullrush	FLAT	PLUG
(Provide a random and equal mixture of the plants listed)	Calamagrostis canadensis	Blue Joint Grass	FLAT	PLUG
	Carex pellita	Wooley Sedge	FLAT	PLUG
	Carex bebbi	Bebb's Sedge	FLAT	PLUG
	Carex vulpinoidea	Fox Sedge	FLAT	PLUG
	Carex comosa	Bottle Brush Sedge	FLAT	PLUG
	Carex lacustris	Lake Sedge	FLAT	PLUG
	Carex stricta	Tussock Sedge	FLAT	PLUG
	Juncus effusus	Common Rush	FLAT	PLUG
	Scirpus atrovirens	Green Bulrush	FLAT	PLUG
	Scirpus cyperinus	Woolgrass	FLAT	PLUG
	Spartina pectinata	Cord Grass	FLAT	PLUG

* Contractor is to evenly distribute the allocated amount of prairie plugs throughout the basin areas located within the site accordingly.

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License Number: 48084 Date xx/xx/xxxx

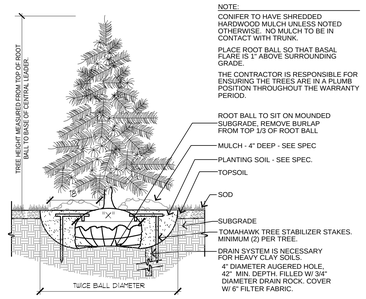
Revisions		
Description	Date	Num

Comm: 242224
Date: 07/18/2025
Drawn: AL
Check: BH
North

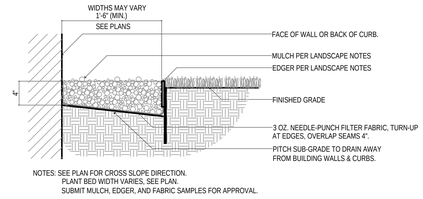
LANDSCAPE NOTES AND SCHEDULES

L1.003

MN

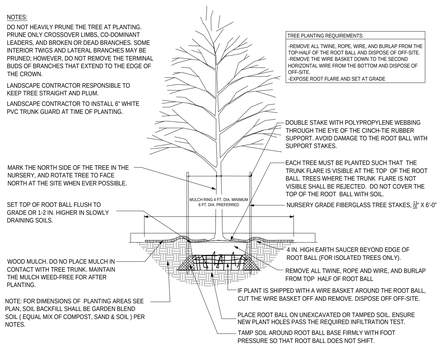


1 CONIFEROUS TREE PLANTING DETAIL
NOT TO SCALE

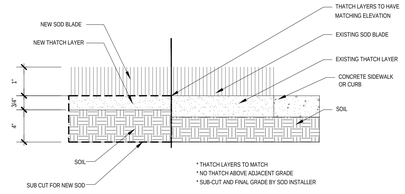


NOTES: SEE PLAN FOR CROSS SLOPE DIRECTION.
PLANT BED WIDTH VARIES, SEE PLAN.
SUBMIT MULCH, EDGER, AND FABRIC SAMPLES FOR APPROVAL.

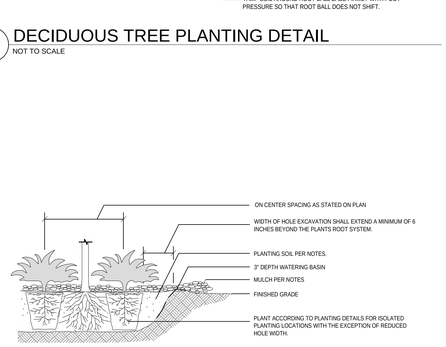
5 TYPICAL MULCH & EDGER DETAIL
NOT TO SCALE



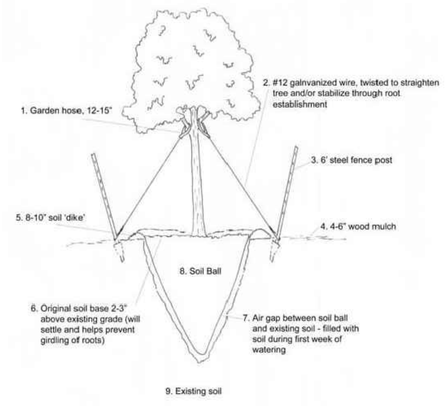
2 DECIDUOUS TREE PLANTING DETAIL
NOT TO SCALE



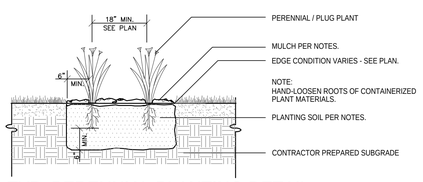
6 NEW SOD TO EXISTING SOD
NOT TO SCALE



3 TYP. SHRUB PLANTING DETAIL
NOT TO SCALE



7 PLANTING AND TRANSPLANTING (TREE SPADING)
NOT TO SCALE



4 TYP. PERENNIAL PLANTING DETAIL
NOT TO SCALE

A

LANDSCAPE DETAILS:

Pine Hill Elementary School Addition and Renovation

9015 HADLEY AVE S,
COTTAGE GROVE,
MN 55016

ISD #833: SOUTH WASHINGTON COUNTY SCHOOLS
8400 E. Point Douglas Rd S.,
Cottage Grove, MN 55016

WOLD ARCHITECTS AND ENGINEERS
332 Minnesota Street, Suite W2000
Saint Paul, MN 55101
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BKBM Structural & Civil Engineers
6120 Earle Brown Drive
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bkbm.com

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BKBM Project No. 24259.50

CALYX DESIGN GROUP
Landscape Architecture | Planning
475 Cleveland Ave. N,
Suite 101A
St. Paul, MN 55104
Phone: 651.788.9018
calyxdesigngroup.com

NOT FOR CONSTRUCTION

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 LANDSCAPE ARCHITECT
under the laws of the State of *MN*

Benjamin D. Hartberg
License Number: 48084 Date: xx/xx/xxxx

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Comm: 242224
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Check: BH

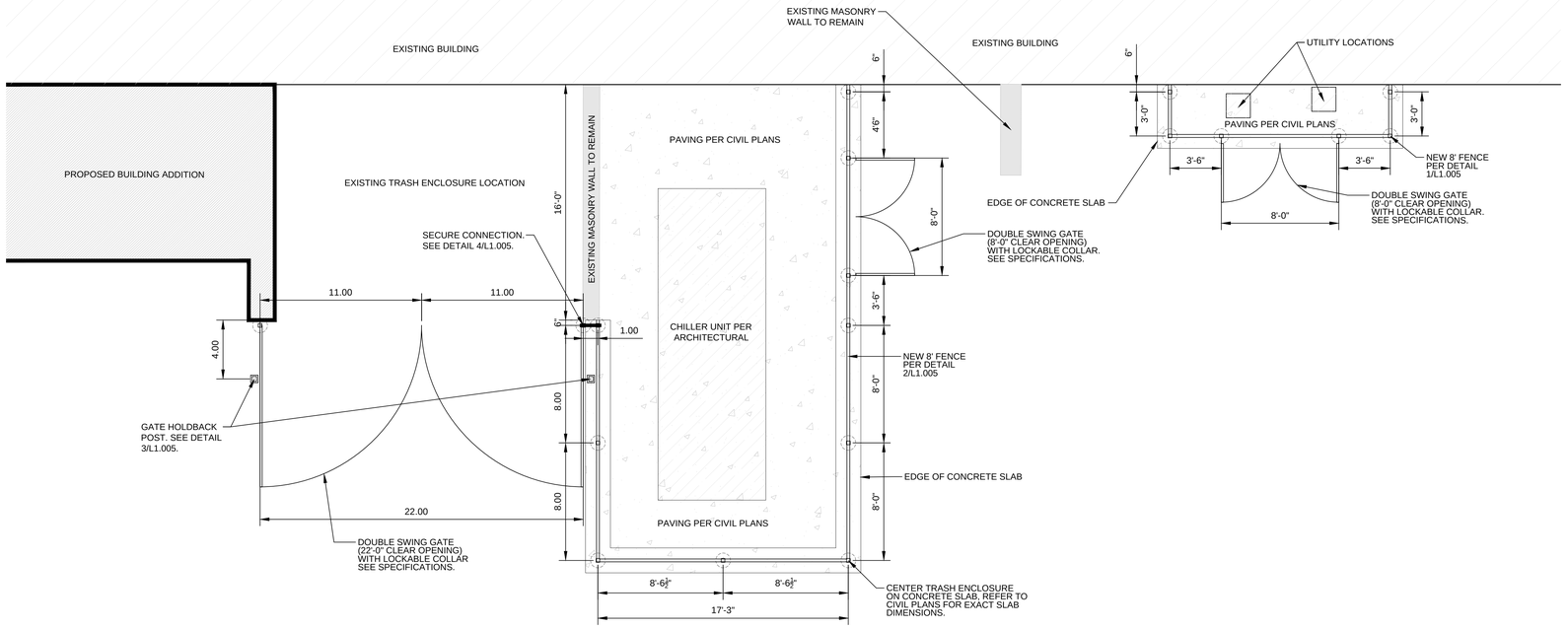
North

LANDSCAPE DETAILS

L1.004

Know what's below. Call before you dig.

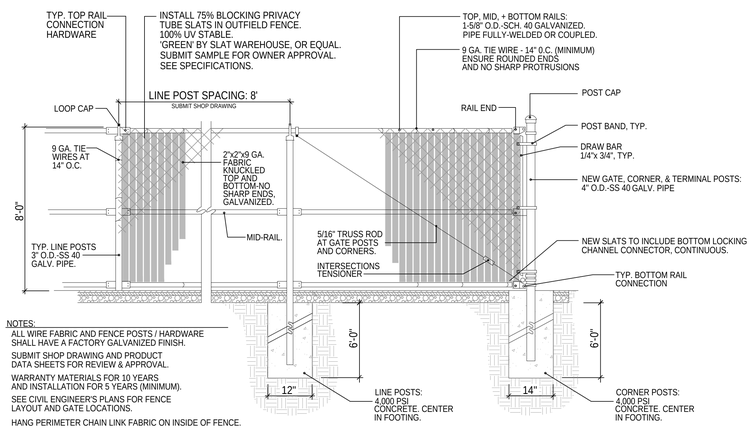
MN



NOTE: VERIFY EXISTING UTILITIES BEFORE CONSTRUCTION.

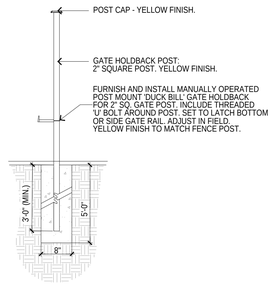
1 TRASH ENCLOSURE AND UTILITY ENCLOSURE ENLARGEMENT

NOT TO SCALE



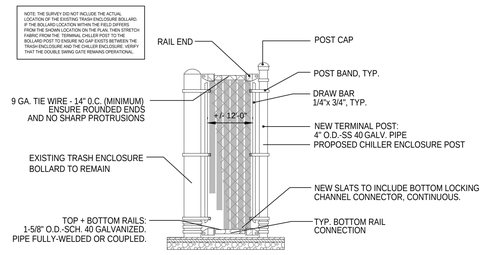
2 8' GALVANIZED CHAIN LINK FENCE WITH TUBE SLATS DETAIL

NOT TO SCALE



3 GATE HOLDBACK DETAIL

NOT TO SCALE



4 SECURE CONNECTION BETWEEN POSTS DETAIL

NOT TO SCALE

A

FENCING ENLARGEMENT, DETAILS, AND NOTES:

Pine Hill Elementary School Addition and Renovation

9015 HADLEY AVE S,
COTTAGE GROVE,
MN 55016

ISD #833: SOUTH WASHINGTON COUNTY SCHOOLS
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WOLD ARCHITECTS AND ENGINEERS
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bkbm.com

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BKBM Project No. 24259.50

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475 Cleveland Ave. N, Suite 101A
St. Paul, MN 55104
Phone: 651.788.9018
calyxdesigngroup.com

NOT FOR CONSTRUCTION

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 LANDSCAPE ARCHITECT
under the laws of the State of *MN*

Benjamin D. Hartberg
License Number: 48084 Date xx/xx/xxxx

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North

FENCING ENLARGEMENT, DETAILS, AND NOTES

L1.005

MN

Tree Preservation & Protection Notes:

Existing boundary, location, topographic, and utility information shown on this plan is from a field survey by others.

- Do not begin tree clearing work until tree protection measures are in place and to the permit approval of the City Forester has been granted.
- Critical Root Zone:
  Install high density polyethylene safety fence, 4 ft. high, international orange, at the Drip Line or at the Critical Root Zone whichever is greater, of trees to be preserved per detail, prior to commencement of earthwork activity. Field-staking of the fence location(s) subject to City approval.
- Where silt fence and proposed tree protection fence overlap, place the tree protection fence on the outside of the silt fence, double-staked at the break-point.
- Refer to Tree Protection Detail for fencing required around trees to remain.
- The contractor shall prune the canopy of existing trees to remain where the canopy is in jeopardy of damage due to the new improvements shown. It is recommended that the contractor hire a certified arborist to perform the pruning. Any branches broken during construction shall be immediately trimmed and wounds painted to prevent further damage.
- Perform work in accordance with the laws, ordinances, rules, regulations, and orders of public authority having jurisdiction. Secure and pay for permits, governmental fees and licenses necessary for the proper execution of the demolition work.
- Provide protective coverings and enclosures as necessary to prevent damage to existing work that is to remain. Existing work to remain may include items such as trees, shrubs, lawns, sidewalks, drives, curbs, utilities, buildings and/or other structures on or adjacent to the demolition site. Provide temporary fences and barricades as required for the safe and proper execution of the work and the protection of persons and property.
- Remove debris, waste, and rubbish promptly from the site. On-site burial of debris is not permitted. Burn no debris on the site. Salvage material not otherwise indicated to be reused shall become the Contractor's property and is to be removed promptly from the site and disposed of in strict accordance with all applicable laws, regulations, and/or statutes.
- Buildings, features, surfaces, and other descriptive references shown on this drawing are for informational purposes only. Field verify all information relevant to the project prior to proceeding with the work. Visit the site and determine all site conditions and hazards.
- This plan is a guide as to the anticipated amount of disturbance expected due to proposed improvements. The contractor is expected to take all necessary precautions to ensure trees noted to remain are not damaged during construction. Do not store material or drive within the drip line of existing trees to remain. Be aware of overhead branches for clearance of material and equipment.
- This plan is not a guarantee that existing trees will survive during/post construction, but rather a guide to help assure their protection and greatest chances of survival at the surface level. Further protection measures outside this scope could involve ecologists, foresters and arborists.
- Notify the Owner's Representative when tree protection fencing is taken down to perform work in conjunction with the new improvements noted in this plan set. The contractor is responsible for re-erecting the tree protection fence immediately after the work is complete, when ever possible
- Trees shown as existing to remain (be preserved) that are damaged / killed as a result of construction activities are subject to replacement per the City Tree Replacement penalty. Replacement trees are to be paid for at no additional expense to the Owner.

Evergreen Mitigation	
Evergreen Height (Total)	2190.0
Evergreen Height (Removed)	155
Evergreen Height (Preserved)	2,020
40% Permitted Removal	876
Mitigation Required (2" : 1")	-361

Table Key	
YES	Tree to be Removed
NO	Tree to be Preserved
YES	Tree Significant
NO	Tree Not Significant
	Standard Tree
	Specimen Tree
	Trees Not Surveyed

Evergreen Calculation (Approx.)	
DBH	HEIGHT
20"	32.5
18"	30
16"	27.5
14"	25
12"	22.5
10"	20
8"	17.5
6"	15
4"	12.5

City of Cottage Grove Tree Preservation Policy
§ 11-3-13: TREE PRESERVATION

Qualifying Tree: a healthy tree meeting one (1) of the following deffinitions; 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 leastten feet (10') in height, but no trees consisting of the following species: any trees on the Minnesota Department of Natural Resources invasive species list, ash, or elm. *(DBH: Diameter of a tree measured four and one-half feet (4-1/2') above the ground.)*

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.

Coniferous Tree: A wood plant which, at maturity, is at least 12' or more in height, and which retains its gren color year-round and does not drop its needles in the winter.

Healthy Tree: A healthy tree has:
1. A live top (live crown) that is greater than one-third (1/3) the total tree height,
2. Newly dead branches that make up less than fifteen percent (15%) of the total crown,
3. Less than fifteen percent (15%) of the tree crown with missing branches,
4. Foliage that is dense throughout the live portion of the crown,
5. A tree trunk with open wounds that are less than one-third (1/3) the diameter of the tree, no wounds in contact with the ground, and no wounds that have soft, punky wood or other indication of decay.

City of Cottage Grove Tree Preservation Policy
§ 11-3-13: TREE REPLACEMENT SCHEDULE

Quantity: 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.

Size: Deciduous trees planted in a mitigation of excessive tree loss shall have a minimum caliper of two and one-half inches (2-1/2") and coniferous trees shall be a minimum of six feet (6') tall.

Species: Coniferous trees or hardwood deciduous trees as defined and descibed in section B are the only tree species permitted to be used as replacement trees. one (1) new conifer six feet (6') in height shall be credited as contributing two (2) caliper inches to the total of required replacement inches. Where ten (10) or more replacement trees are required, not more than thirty-three percent (33%) or the replacement trees shall be of the same species of the tree. Applicants are encouraged to plant trees indigenous to the area. In no case shall a tree of a species listed on the DNR invasive species list to be planted as a replacement tree.

Coniferous Tree Calculation: Every two feet (2') in height of a removed qualifying coniferous tree is equal to one (1) qualifying inch.

	CLASSIFICATION	SPECIES	CALIPER	HEIGHT	SIGNIFICANT?	REMOVE?
	Standard	SPRUCE		15	YES	NO
	Standard	PINE		15	YES	NO
	Standard	PINE		15	YES	NO
	Standard	BIRCH	6		YES	NO
	Standard	BIRCH	6		YES	NO
	Standard	PINE		15	YES	NO
	Standard	PINE		15	YES	NO
	Standard	SPRUCE		17.5	YES	NO
	Standard	PINE		17.5	YES	NO
	Standard	MAPLE	8		YES	NO
	Standard	PINE		17.5	YES	NO
	Standard	PINE		17.5	YES	NO
	Standard	PINE		17.5	YES	NO
	Standard	PINE		17.5	YES	NO
	Standard	MAPLE	9		YES	NO
	Standard	MAPLE	9		YES	NO
	Standard	SPRUCE		17.5	YES	YES
	Standard	SPRUCE		17.5	YES	YES
	Standard	SPRUCE		17.5	YES	YES
	Standard	SPRUCE		17.5	YES	YES
	Standard	SPRUCE		17.5	YES	YES
	Standard	SPRUCE		17.5	YES	YES
	Standard	PINE		20	YES	NO
	Standard	PINE		20	YES	NO
	Standard	PINE		20	YES	NO
	Standard	PINE		20	YES	NO
	Standard	PINE		20	YES	NO
	Standard	PINE		20	YES	NO
	Standard	PINE		20	YES	NO
	Standard	PINE		20	YES	NO
	Standard	PINE		20	YES	NO
	Standard	MAPLE	10		YES	NO
	Standard	OAK	10		YES	NO
	Standard	PINE		20	YES	NO
	Standard	PINE		20	YES	NO
	Standard	PINE		20	YES	NO
	Standard	PINE		20	YES	NO
	Standard	PINE		20	YES	NO
	Standard	PINE		20	YES	NO
	Standard	PINE		20	YES	NO
	Standard	PINE		20	YES	NO
	Standard	PINE		20	YES	NO
	Standard	PINE		22.5	YES	YES
	Standard	PINE		22.5	YES	NO
	Standard	PINE		22.5	YES	NO
	Standard	BASSWOOD	12		YES	NO
	Standard	PINE		22.5	YES	NO
	Standard	PINE		22.5	YES	NO
	Standard	PINE		22.5	YES	NO
	Standard	PINE		22.5	YES	NO
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	Standard	PINE		22.5	YES	NO
	Standard	PINE		22.5	YES	NO
	Standard	PINE		22.5	YES	NO
	Standard	PINE		22.5	YES	NO
	Standard	PINE		22.5	YES	NO
	Standard	PINE		22.5	YES	NO
	Standard	PINE		22.5	YES	NO
	Standard	PIN

MN

d-series

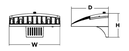
D-Series Size 1
LED Wall Luminaire

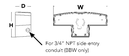
Specifications
Luminaire

Width: 13-3/4" (34.9 cm)
Weight: 12 lbs (5.4 kg)
Depth: 10" (25.4 cm)
Height: 6-3/8" (16.2 cm)

Back Box (BBW, E20WC)

Width: 13-3/4" (34.9 cm)
BBW Weight: 5 lbs (2.3 kg)
Depth: 4" (102.2 cm)
E20WC Weight: 10 lbs (4.5 kg)
Height: 6-3/8" (16.2 cm)





For 3/4" NPT side entry conduit (BBW only)

Catalog Number

Notes

Type

Use this field to provide more than page to spec an unbranded luminaire.

Introduction
The D-Series Wall luminaire is a stylish, fully integrated LED solution for building-mount applications. It features a sleek, modern design and is carefully engineered to provide long-lasting, energy-efficient lighting with a variety of optical and control options for customized performance.

With an expected service life of over 20 years of nighttime use and significant energy savings, the D-Series Wall is a reliable, low-maintenance lighting solution that produces sites that are exceptionally illuminated.

Ordering Information

EXAMPLE: DSXW1 LED P2 40K 70CRI T3M MVOLT SRM DDBTXD

DSXW1 LED

Series	Lumen Package	CCT	CRI	Distribution	Voltage	Mounting	Control Options
DSXW1 LED	P1 2000 Lumens P2 3000 Lumens P3 3500 Lumens P4 4300 Lumens P5 5200 Lumens P6 7200 Lumens P7 10000 Lumens	27K 2700K 30K 3000K 35K 3500K 40K 4000K 50K 5000K 57K 5700K AMBPC Amber PC [1] AMBLW Amber LW [1]	70CRI 70CRI 80CRI 80CRI AMCRI Amber CRI	T2S Type 2 Short T2M Type 2 Medium T3LG Type 3 Low Glare [2] T3M Type 3 Medium T4M Type 4 Medium TFTM Forward Throw Medium BLC3 Back Light Control Type 3 [2] BLC4 Back Light Control Type 4 [2]	MVOLT 120 [3] 208 [3] 240 [3] 277 [3] 347 [3,4] 480 [4] HVOLT	**Shipped included** SRM Surface mounting bracket. BBW Surface-mounted back box (for conduit entry) [5]	**Shipped installed** PE Photoelectric cell, button type [6] DMG 0-10v dimming wires pulled outside fixture (for use with an external control, ordered separately) PIR 180° motion/ambient light sensor, <15' mtg ht [7] PIRH 180° motion/ambient light sensor, 15-30' mtg ht [7] PIR1FC1V Motion/ambient sensor, 8-15' mounting height, ambient sensor enabled at 1fc [7] PIRH1FC1V Motion/ambient sensor, 15-30' mounting height, ambient sensor enabled at 1fc [7] E20WC 20 Watt Emergency battery backup (includes external component enclosure), CA Title 20 compliant [8] E10WH 10 Watt Emergency battery backup (includes external component enclosure), CA Title 20 compliant [8]

Other Options		Shipped separately [9]	
Shipped installed		BSW Bird-deterrent spikes	
SF Single fuse (120, 277 or 347V) [10]		VG Vandal guard	
DF Double fuse (208, 240 or 480V) [10]		DDL Diffused drop lens	
HS House-side shield [11]			
SPD Separate surge protection			

Finish (required)					
DDBXD Dark bronze	DSSXD Sandstone	DWHGXD Textured white
DBLXD Black	DDBTXD Textured dark bronze	DSSTXD Textured sandstone
DNAXD Natural aluminum	DBLBXD Textured black	
DWHXD White	DNATXD Textured natural aluminum	

Accessories
Ordered and shipped separately.

DSXW1LG House-side shield (use per light engine)
DSXW1BW U Bird-deterrent spikes
DSXW1VG U Vandal guard accessory

NOTES
1. Only available with P1 and P6 Packages.
2. Not available with 57K.
3. Only Available with AMCRI.
4. Not available with HS Option.
5. Single fuse (SF) requires 120, 277 or 347 voltage option. Double fuse (DF) requires 208, 240 or 480 voltage option.
6. Not available with P1 package. Not available with motion/ambient light sensors (PIR or PIRH). Not Available with DMG.
7. Back box ships installed on fixture. Cannot be field installed. Cannot be ordered as an accessory. Not Available with E20WC or E10WH.
8. Photocontrol (PE) requires 120, 208, 240, 277 or 347 voltage option. Not available with motion/ambient light sensors (PIR or PIRH).
9. Reference Motion Sensor table on page 3. Not available with DMG.
10. Not compatible with conduit entry applications. Not available with BBW mounting option. Not available with SF and DF fusing. Not available with E10WH or E20WC. Requires (2) separate emergency components located in back box housing. Not available with SPD.
11. Not available with E20WC and E10WH.
12. Also available as a separate accessory; see Accessories information.

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Performance Data

Lumen Output
Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Contact factory for performance data on any configurations not shown here.

Package	Dist. Type	System Watts	30K, 70CRI		40K, 70CRI		50K, 70CRI	
			Lumens	LPW	Lumens	LPW	Lumens	LPW
P1	T2M	12	1,840	149	1,965	159	1,993	161
	T3M	12	1,786	144	1,908	154	1,934	156
	T4M	12	1,821	147	1,946	157	1,973	159
	TFTM	12	1,816	147	1,940	157	1,967	159
	BLC4	12	1,382	112	1,476	119	1,497	121
P2	T2M	15	2,189	150	2,339	160	2,371	163
	T3M	15	2,126	146	2,271	156	2,302	158
	T4M	15	2,168	149	2,316	159	2,348	161
	TFTM	15	2,161	148	2,309	158	2,341	161
	BLC4	15	1,645	113	1,757	121	1,781	122
P3	T2M	21	3,064	146	3,273	155	3,318	158
	T3M	21	2,974	141	3,177	151	3,222	153
	T4M	21	3,033	144	3,240	154	3,285	156
	TFTM	21	3,024	144	3,231	153	3,275	156
	BLC4	21	2,302	109	2,459	117	2,493	118
P4	T2M	29	3,997	139	4,269	149	4,329	151
	T3M	29	3,880	135	4,145	145	4,203	147
	T4M	29	3,957	138	4,227	147	4,286	149
	TFTM	29	3,945	138	4,214	147	4,273	149
	BLC4	29	3,002	105	3,207	112	3,252	113
P5	T2M	37	4,977	134	5,317	143	5,391	145
	T3M	37	4,832	130	5,162	139	5,233	141
	T4M	37	4,928	132	5,264	142	5,337	144
	TFTM	37	4,913	132	5,248	141	5,321	143
	BLC4	37	3,739	101	3,994	107	4,050	109
P6	T2M	48	6,867	142	7,335	152	7,437	154
	T3M	48	6,667	138	7,122	148	7,220	150
	T4M	48	6,798	141	7,262	151	7,363	153
	TFTM	48	6,778	140	7,241	150	7,341	152
	BLC4	48	5,158	107	5,511	114	5,587	116
P7	T2M	73	9,819	135	10,490	145	10,635	147
	T3M	73	9,533	131	10,184	140	10,325	142
	T4M	73	9,722	134	10,385	143	10,529	145
	TFTM	73	9,693	134	10,354	143	10,498	145
	BLC4	73	7,377	102	7,880	109	7,989	110

LITHONIA LIGHTING. COMMERCIAL OUTDOOR
One Lithonia Way • Conyers, Georgia 30012 • Phone: 1-800-705-SERV (7378) • www.lithonia.com
DSXW1-LED Rev. 12/12/24
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Performance Data

Lumen Ambient Temperature (LAT) Multipliers
Use these factors to determine relative lumen output for average ambient temperatures from 0-40°C (32-104°F).

Ambient		Lumen Multiplier
0°C	32°F	1.04
10°C	50°F	1.02
20°C	68°F	1.01
25°C	77°F	1.00
30°C	86°F	0.99
40°C	104°F	0.98

Projected LED Lumen Maintenance
Data references the extrapolated performance projections for the **DSXW1 LED P7** platform in a **25°C ambient**, based on 10,000 hours of LED testing (tested per IESNA LM-80-08 and projected per IESNA TM-21-11).

To calculate L87, use the lumen maintenance factor that corresponds to the desired number of operating hours below. For other lumen maintenance values, contact factory.

Operating Hours	0	25,000	50,000	100,000
Lumen Maintenance Factor	1.0	0.95	0.91	0.82

Electrical Load

Performance Package	LEDs	Drive Current (mA)	System Watts	Current (A)				
				120V	208V	240V	277V	347V	480V
DSXW1 P1	10	375	12	0.10	0.06	0.05	0.04		
DSXW1 P2	10	450	15	0.12	0.07	0.06	0.05	0.04	0.03
DSXW1 P3	10	650	21	0.18	0.10	0.09	0.08	0.06	0.05
DSXW1 P4	10	875	29	0.24	0.14	0.12	0.10	0.08	0.06
DSXW1 P5	10	1125	37	0.30	0.18	0.16	0.14	0.11	0.08
DSXW1 P6	20	750	48	0.39	0.24	0.20	0.18	0.14	0.10
DSXW1 P7	20	1150	73	0.60	0.36	0.31	0.27	0.21	0.15

Motion Sensor Default Settings

Option	Dimmed State	High Level (when Occupancy Detected)	Photocell Operation	Dwell Time	Ramp-up Time	Ramp-down Time
PIR or PIRH	3V (37%) Output	10V (100%) Output	Disabled @ 5FC	5 min	3 sec	5 min
*PIR1FC1V or PIRH1FC1V	3V (37%) Output	10V (100%) Output	Disabled @ 1FC	5 min	3 sec	5 min

*For use when motion sensor is used as dusk to dawn control

Photometric Diagrams

To see complete photometric reports or download .ies files for this product, visit Lithonia Lighting's D-Series Wall Size 1 homepage.

Isofootcandle plots for the DSXW1 LED P4 40K. Distances are in units of mounting height (20').

Options and Accessories

T3M (left)

HS - House-side shields

BSW - Bird-deterrent spikes

VG - Vandal guard

DDL - Diffused drop lens

FEATURES & SPECIFICATIONS

INTENDED USE
The energy savings, long life and easy-to-install design of the D-Series Wall Size 1 make it the smart choice for building-mounted doorway and pathway illumination for nearly any facility.

CONSTRUCTION
Two-piece die-cast aluminum housing has integral heat sink fins to optimize thermal management through conductive and convective cooling. Modular design allows for ease of maintenance. The LED driver is mounted to the door to thermally isolate it from the light engines for low operating temperature and long life. IP66 rated light engines.

FINISH
Exterior parts are protected by a zinc-infused Super Durable TGIC thermoset powder coat finish that provides superior resistance to corrosion and weathering. A tightly controlled multi-stage process ensures a minimum 3 mils thickness for a finish that can withstand extreme climate changes without cracking or peeling. Available in textured and non-textured finishes.

OPTICS
Precision-molded proprietary acrylic lenses provide multiple photometric distributions tailored specifically to building-mounted applications. Light engines are available in multiple CCTs and CRIs including Amber for specialized applications.

ELECTRICAL
Light engine(s) consist of 10 high-efficacy LEDs mounted to a metal-core circuit board to maximize heat dissipation and promote long life (L88/100,000 hrs at 25°C). Class 1 electronic drivers have a power factor >90%, THD <20%, and a minimum 6kV surge rating. When ordering the SPD option, a separate surge protection device is installed within the luminaire which meets a minimum Category C Low (per ANSI/IEEE C62.41.2).

INSTALLATION
Included universal mounting bracket attaches securely to any 4" round or square outlet box for quick and easy installation. Luminaire has a slotted gasket wireway and attaches to the mounting bracket via corrosion-resistant screws.

LISTINGS
CSA certified to U.S. and Canadian standards. Rated for -40°C minimum ambient.

GOVERNMENT PROCUREMENT
BAA – Buy American Act: Product qualifies as a domestic end product under the Buy American Act as implemented in the FAR and DFARS. Product also qualifies as manufactured in the United States under DOT Buy America regulations.
BABA – Build America Buy America: Product qualifies as produced in the United States under the definitions of the Build America, Buy America Act.
Please refer to www.acuitybrands.com/buy-america-faq for additional information.

WARRANTY
Five-year limited warranty. This is the only warranty provided and no other statements in this specification sheet create any warranty of any kind. All other express and implied warranties are disclaimed. Complete warranty terms located at www.acuitybrands.com/support/warranty/terms-and-conditions.aspx.

Note: Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at 25°C. Specifications subject to change without notice.

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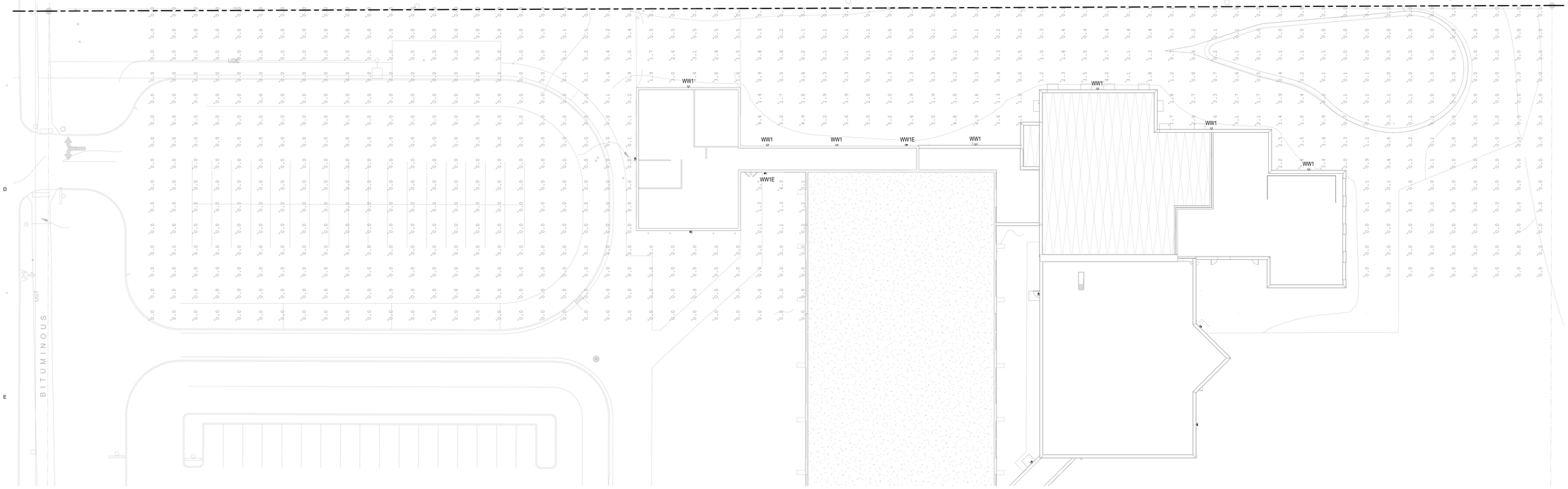


1 E0.12 SITE PLAN - PHOTOMETRY
1" = 20'-0"
0 10' 20' 40'

LUMINAIRE SCHEDULE (EXTERIORS)

TYPE	DESCRIPTION	CIRCUIT VOLTAGE	MOUNTING	LAMP	LUMENS	CRI	COLOR TEMPERATURE	CONNECTED (VA)	BALLAST/DRIVER	LENS/LOUVER	MANUFACTURER	CATALOG SERIES	NOTES
WW1	EXTERIOR WALL PACK, DIE-CAST ALUMINUM HOUSING, INTEGRAL HEAT SINK, SEALED, CORROSION AND WEATHERING RESISTANT, IP65 RATED	277 V	EXTERIOR, SURFACE - WALL	LED	5200 lm	80	4000 K	61 VA	0-10V DIMMING	TYPE 2 DISTRIBUTION, ACRYLIC LENS	LITHONIA, OR APPROVED EQUAL	DSXW1-LED-P5-40K-80CRI-T2M-MVOLT-PIR-DDBXD	
WW1E	EXTERIOR WALL PACK, DIE-CAST ALUMINUM HOUSING, INTEGRAL HEAT SINK, SEALED, CORROSION AND WEATHERING RESISTANT, IP65 RATED	277 V	EXTERIOR, SURFACE - WALL	LED	5200 lm	80	4000 K	61 VA	0-10V DIMMING	TYPE 2 DISTRIBUTION, ACRYLIC LENS	LITHONIA, OR APPROVED EQUAL	DSXW1-LED-P5-40K-80CRI-T2M-MVOLT-PIR-DDBXD	

CONSTRUCTION DOCUMENTS

Pine Hill Elementary School Addition and Renovation
9015 Hadley Ave S, Cottage Grove, MN 55016

ISD #833
11 PEAVEY ROAD
CHASKA, MN 55318

Wold

WOLD ARCHITECTS AND ENGINEERS
332 Minnesota Street, Suite W2000
Saint Paul, MN 55101
woldac.com | 651 227 7773

KRAUS-ANDERSON®
501 Eighth Street
Minneapolis, MN 55404
krausanderson.com | 612 332 7281

KFI ENGINEERS
670 County Road B West
St. Paul, Minnesota 55113
Tel: (651) 771-0880
Email: kfi@kfi-eng.com

KEY PLAN

I HEREBY CERTIFY THAT THIS CONSTRUCTION DOCUMENTS 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

NOT FOR CONSTRUCTION

PRINT NAME: MICHAEL M. RUSSELL
DATE: 07/18/2025 REG. NO.: 11111

Revisions		
Description	Date	Num

Comm: 23-1594.00
Date: 07/18/2025
Drawn: MMR
Check: NNA

North

SITE PLAN - PHOTOMETRY

Scale: 1" = 20'-0"

E0.12

Autodesk Docs://23-1594.00 - Pine Hill Elementary School Addition and Renovation/23-1594.00_Architect_Pine Hills ES Build Yourself.rvt
7/18/2025 11:32:06 AM

REPORT

To: Kyle Uecker, Director of Facilities
South Washington County School District

From: Matt Pacyna, PE, Principal
Transportation Collaborative & Consultants, LLC

Date: July 17, 2025

Subject: Pine Hill Elementary School Expansion Traffic Study

INTRODUCTION

TC2 completed a traffic study for the proposed Pine Hill Elementary School expansion in the City of Cottage Grove. The subject site, shown in Figure 1, is generally southeast of the Hadley Avenue and 90th Street intersection. The main objectives of the study are to identify existing traffic operations within the study area, evaluate potential impacts of the proposed expansion, and recommend improvements, if necessary, to ensure safe and efficient operations for all users. The following study assumptions, methodology, and findings are offered for consideration.

Figure 1 Subject Site

EXISTING CONDITIONS

Existing conditions were reviewed within the study area to establish current traffic conditions to help determine impacts associated with the proposed expansion. The evaluation of existing conditions included collecting traffic volumes, observing transportation characteristics, and analyzing crash history and intersection capacity, which are described in the following sections.

Traffic Volumes

Vehicular intersection turning movement and pedestrian / bicyclist counts were collected at the following locations on Tuesday, April 8, 2025. The data was collected from 7 to 9 a.m. and 2 to 6 p.m. Existing school hours of operation are generally from 8:40 a.m. to 3:10 p.m.

- Hadley Avenue and 90th Street
- Hadley Avenue and North School Access
- Hadley Avenue and Central School Access
- Hadley Avenue and South School Access
- Hadley Avenue and 92nd Street
- Hadley Avenue and 94th Street
- Hadley Avenue and 95th Street

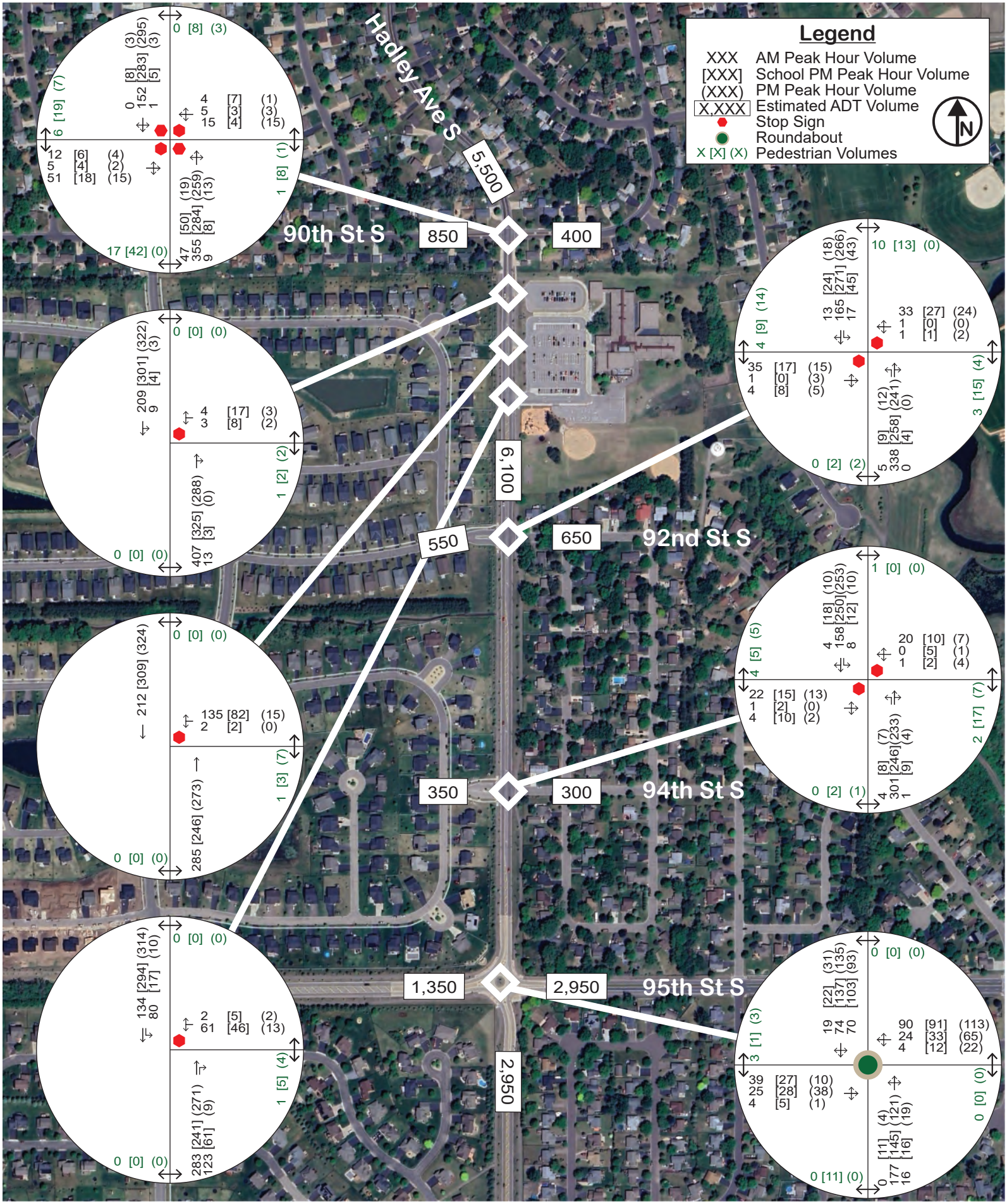
The a.m., school p.m., and p.m. peak hours within the study area represent 7:45 to 8:45 a.m., 2:45 to 3:45 p.m., and 4:00 to 5:00 p.m., respectively. Average daily traffic (ADT) volumes were provided by MnDOT and / or estimated based on the data collected.

Transportation Characteristics

Observations were conducted within the study area to identify various transportation characteristics such as roadway geometry, traffic controls, speed limits, and multimodal facilities. A general overview of key roadways within the study area is as follows:

- ***Hadley Avenue*** – a 2-lane undivided major collector with left turn lanes at most intersections south of 90th Street. There is a multi-use trail along both sides of the roadway south of 90th Street and no multimodal facilities to the north. The speed limit varies from 30-mph north of 92nd Street to 35-mph to the south; there is a 20-mph advisory school zone speed limit near Pine Hill Elementary School.
- ***90th Avenue*** – a 2-lane local roadway with no turn lanes. There are no multimodal facilities along the roadway and the speed limit is 30-mph.
- ***95th Avenue*** – a 2-lane local roadway to the west of Hadley Avenue and a major collector to the east. There is a multi-use trail along both sides of the roadway. The speed limit is 30-mph west of Hadley Avenue and 35-mph to the east.

The Hadley Avenue / 90th Street intersection has all-way stop control, while the Hadley Avenue / 95th Street intersection is controlled by a single-lane roundabout. All other study intersections have side-street stop control. Note that during the a.m. and school p.m. peak periods, there is a crossing guard present at the Hadley Avenue / 90th Street intersection. Existing geometrics, traffic controls, and volumes within the study area are in Figure 2.



Existing Conditions

Pine Hill Elementary School Expansion Traffic Study

Figure 2

Crash History

Five years of crash history within the study area (January 2020 through December 2024) was reviewed using data from *MnDOT's Crash Mapping Analysis Tool* (MnCMAT). There was a total of 13 crashes reported along Hadley Avenue during the review period. Eight (8) of the 13 crashes occurred at the Hadley Avenue / 95th Street intersection, including one (1) "severe" crash (i.e., a serious injury) which was a medical issue and not associated with the intersection design / configuration. There were three (3) left-turn / angle crashes reported at the Hadley Avenue / South Pine Hill School Access during the morning school arrival period; two (2) occurred in 2022 and one (1) in 2024; no crashes resulted in any severe injuries at this location. A review of crash and severity rates indicates that these intersections operate within the normal range for intersections with similar characteristics; detailed results are shown in the Appendix. Thus, there does not appear to be any safety issues within the study area from a crash history perspective.

Vehicle Speeds

As part of the data collection, vehicle speed data was recorded along Hadley Avenue at two (2) locations between Monday, April 7, 2025 and Wednesday, April 9, 2025. One (1) location was between the central and south Pine Hill Elementary School driveways and one (1) location was between 92nd Street and 94th Street. The recorded vehicle speed data was summarized into average and 85th percentile speeds in each location, which is shown in Table 1. This information is provided for informational purposes only.

Table 1 Existing Vehicle Speeds

Hadley Avenue Location	Posted Speed Limit	Southbound		Northbound	
		Average	85th %	Average	85th %
Near Pine Hill Elementary School	30 mph	32 mph	37 mph	31 mph	35 mph
92nd Street to 94th Street	35 mph	37 mph	41 mph	36 mph	41 mph

School Background / Observations

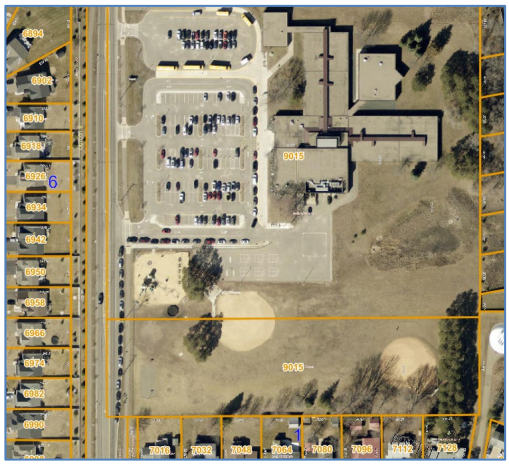
Pine Hill Elementary School was originally built in the 1960's, but has gone through several renovations including an update to the current site configuration in the summer of 2020. Minor adjustments to the South School Access were implemented in 2023 to allow for two (2) entering lanes and one (1) exiting lane. The purpose of this improvement was to improve pick-up / drop-off operations, which have been known to extend onto Hadley Avenue during the school p.m. peak period. In addition, school staff have implemented refined pick-up / drop-off guidance, which has improved overall pick-up / drop-off efficiency; the school continues to modify its guidance to minimize impacts to Hadley Avenue.

School observations were conducted as part of this study to better understand current operations, as well to identify potential improvements for consideration. The following observations were identified, while potential considerations are noted later in this report.

AM Peak Hour Observations:

- Internal school queues / operations did not significantly impact the adjacent roadway network.
- A crossing guard was at the Hadley Avenue / 90th Street intersection for about 30-minutes (i.e., 8:10 to 8:40 a.m.) to assist pedestrian / bicyclists through the intersection. Regardless of which intersection approach a pedestrian / bicyclist utilized, all motorists were stopped to allow for the crossings to occur, which resulted in longer northbound queues along Hadley Avenue.

- Northbound queues along Hadley Avenue extended to the north School Access for about 15-minutes, the Central School Access for about five (5) minutes, and the South School Access for one (1) minute; these queues quickly dissipated once the pedestrian / bicyclist activity ended and school began.
- No significant queues or operational issues were observed with either the southbound left-turn lane or the northbound right-turn lane at the South School Access; overall school operations were relatively slow and orderly.



School PM Peak Hour Observations:

- Pick-up / drop-off operations have historically resulted in queues regularly extending off-site and into the northbound right-turn lane along Hadley Avenue; these queues were observed extending into the northbound turn lane for about 10 minutes prior to school ending, but dissipate with approximately five (5) minutes following the end of school.
- The queuing issues are a result of several factors, including:
  - Motorists begin to arrive about 30 minutes before school ends and get into the pick-up queue.
  - Once motorists are in the queue, they are directed to stay within the line until all vehicles in front of them complete their pick-up, which results in additional delays.
  - Motorists wanting to park and pick-up can get stuck in the pick-up line along Hadley Avenue, further increasing the queues even though the inside lane is currently designated for park and pick-up users.
  - Motorists do not regularly pull up to the far north end of the pick-up area, rather waiting near the primary school entrance, which reduces the number of pick-ups that can occur at a time.
- No significant operational issues were observed with motorists exiting the school; overall school operations were relatively slow and orderly.
- New procedures for pick-up and drop-off operations are in the planning stages for next year.

<u>Intersection Capacity</u>

Intersection capacity was evaluated using Synchro / SimTraffic Software (version 11), which uses methods outlined in the *Highway Capacity Manual, 6th Edition*. The software is used to develop calibrated models that simulate observed traffic operations, account for peaking characteristics, and identify key metrics such as intersection Level of Service (LOS) and queues. These models incorporate collected traffic, pedestrian, and bicyclist volumes, traffic controls, heavy commercial vehicle activity (i.e., buses and trucks), and driver behavior factors. Level of Service (LOS) quantifies how an intersection is operating. Intersections are graded from LOS A to LOS F, which corresponds to the average delay per vehicle values shown. An overall intersection LOS A though LOS D is generally considered acceptable in the study area. LOS A indicates the best traffic operation, while LOS F indicates an intersection where demand exceeds capacity.

Level of Service	Average Delay / Vehicles	
	Unsignalized Intersections	Signalized Intersections
A	< 10 seconds	< 10 seconds
B	10 to 15 seconds	10 to 20 seconds
C	15 to 25 seconds	20 to 35 seconds
D	25 to 35 seconds	35 to 55 seconds
E	35 to 50 seconds	55 to 80 seconds
F	> 50 seconds	> 80 seconds

For side-street stop (SSS) controlled intersections, special emphasis is given to providing an estimate for the level of service of the side-street approach. Traffic operations at an unsignalized intersection with side-street stop control can be described in two ways. First, consideration is given to the overall intersection level of service, which takes into account the total number of vehicles entering the intersection and the capability of the intersection to support the volumes. Second, it is important to consider the delay on the minor approach. Since the mainline does not have to stop, most delay is attributed to the side-street approaches. It is typical of intersections with higher mainline traffic volumes to experience high-levels of delay (i.e., poor levels of service) on the side-street approaches, but an acceptable overall intersection level of service during peak hour conditions.

The existing intersection capacity analysis results, summarized in Table 2, indicate that all study intersections and approaches currently operate at LOS C or better during the typical a.m., school p.m., and p.m. peak hours. This includes the peak 15-minute pick-up / drop-off periods associated with the existing Pine Hill Elementary School. Note that these operations to do not account for any operational impacts associated with the crossing guard at the Hadley Avenue / 90th Street intersection or any internal pick-up / drop-off queuing impacts, which were identified earlier. Since these situations are difficult to model, the intersection capacity analysis is used to illustrate and compare operations under existing and future conditions. *Detailed capacity analysis results are shown in the Appendix.*

Table 2 Existing Intersection Capacity

Hadley Avenue Intersection	Traffic Control	Level of Service *(Delay in Seconds)**					
		AM Peak Hour		School PM Peak Hour		PM Peak Hour	
		Peak 15	Overall	Peak 15	Overall	Peak 15	Overall
90th Street	AWSC	A (8)	A (7)	A (8)	A (8)	A (7)	A (7)
North School Access	SSS	A / B (11)	A / A (7)	A / B (10)	A / A (9)	A / A (7)	A / A (6)
Central School Access	SSS	A / A (8)	A / A (6)	A / A (6)	A / A (5)	A / A (5)	A / A (4)
South School Access	SSS	A / C (17)	A / B (12)	A / B (12)	A / B (11)	A / B (11)	A / A (9)
92nd Street	SSS	A / B (12)	A / A (9)	A / B (11)	A / A (8)	A / A (8)	A / A (7)
94th Street	SSS	A / A (9)	A / A (8)	A / A (8)	A / A (6)	A / A (9)	A / A (7)
95th Street	RAB	A (5)	A (5)	A (5)	A (5)	A (5)	A (5)

AWSC – All Way Stop Control SSS – Side Street Stop RAB – Roundabout

** Note that for the all-way stop and roundabout controlled intersections, the results shown represent the overall intersection level of service and average delay. For the side-street stop controlled intersections, the overall intersection level of service is shown, followed by the worst-approach level of service and worst-approach average delay.*

PROPOSED EXPANSION

The proposed project includes a 12,860 square foot building expansion for additional classrooms, a storm shelter, and an expanded gym. Once completed, Pine Hill Elementary School would be a total of 75,060 square feet and is anticipated to have a future student capacity of approximately 650 students and up to 100 staff members. Note that there are currently about 520 students and 80 staff members. For purposes of this study, full-capacity of the school was assumed to occur by the year 2030. Note that to accommodate any additional students, another building expansion project would be needed and therefore was not evaluated as part of this study. No changes to the current access, parking, or circulation patterns are planned as part of the project.

TRAFFIC FORECASTS

Traffic forecasts were developed for year 2030 no build and build conditions. The traffic forecasts account for general background growth and trip generation from the proposed expansion. The following information summarizes the traffic forecast development process.

Background Growth

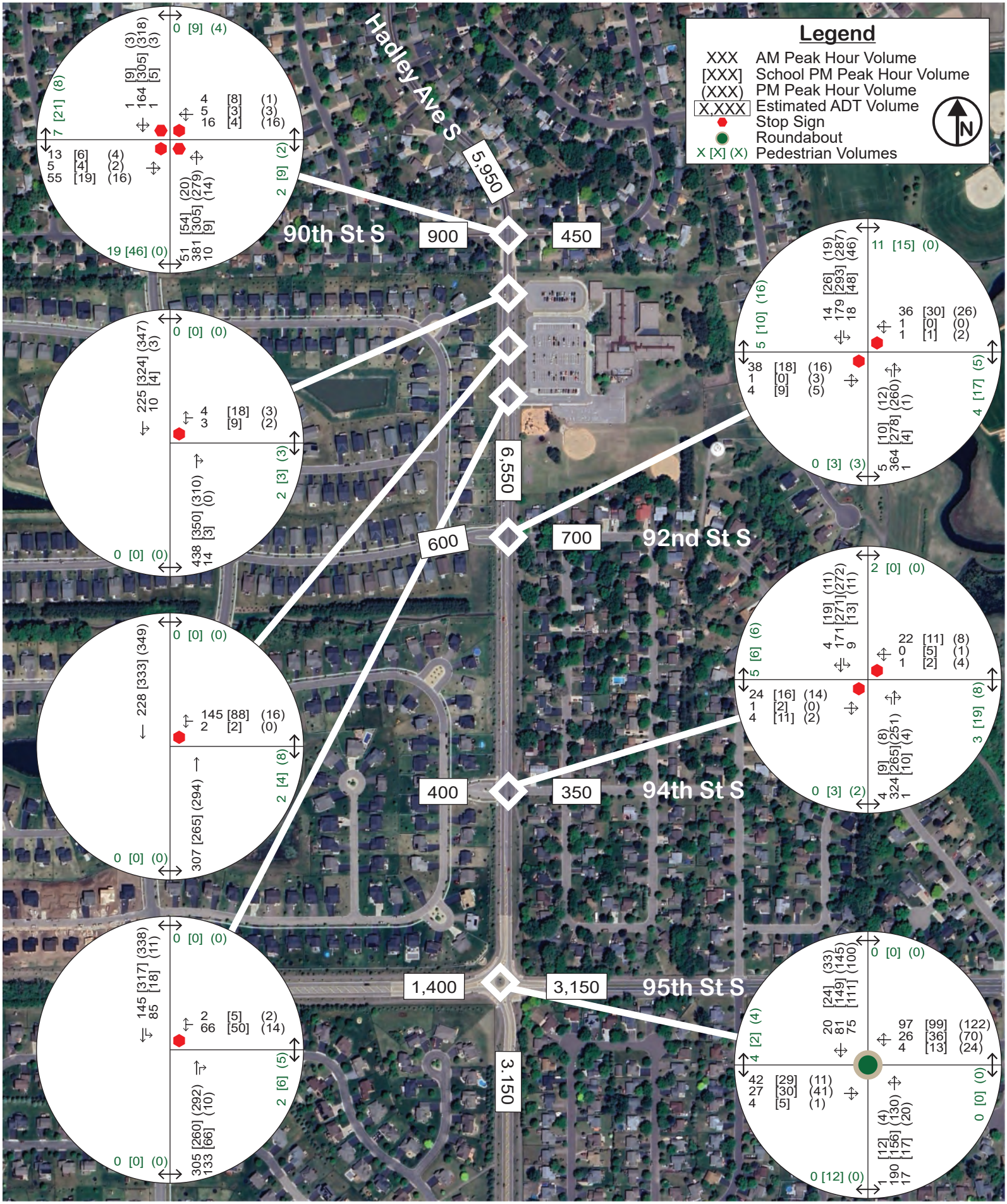
To account for general background growth in the study area, an annual growth rate of one and a half (1.5) percent was applied to the existing traffic volumes to develop year 2030 background traffic forecasts. This growth rate accounts for development outside of the study area and is consistent with historical growth trends and the *Cottage Grove 2040 Comprehensive Plan*. The resultant year 2030 no build conditions, which account for the background growth, is shown in Figure 3.

Proposed Expansion Trip Generation

To account for traffic associated with the proposed expansion and in particular, the anticipated increase in student capacity / staff members, a trip generation estimate was developed using a combination of the *ITE Trip Generation Manual, 11th Edition* and traffic count data collected at the school access locations. Results of the trip generation analysis, which are summarized in Table 3, indicate that Pine Hill Elementary School currently generates trips at a rate similar to the ITE trip generation rate, although there are relatively small differences in the magnitude and in / out travel patterns. Thus, for purposes of this study, the current trip generation rates (i.e., actual data) were used to estimate the future trip generation increase associated with the proposed expansion.

Table 3 Trip Generation Summary

Land Use Type	**Size (Students)**	**AM Pk Hr**		**School PM Pk Hr**		**PM Pk Hr**		**Daily**
		In	**Out**	**In**	**Out**	**In**	**Out**	
Existing School *(ITE Comparison)*	520	208	177	108	126	38	45	1,180
Existing School *(Actual Counts)*	520	224	207	85	160	22	35	1,200
Proposed School Expansion *(Actual)*	+130	+56	+52	+21	+40	+6	+9	+300
Total Future School Trips *(Year 2030)*	**650**	**280**	**259**	**21**	**40**	**6**	**9**	**1,500**



Year 2030 No Build Conditions

Pine Hill Elementary School Expansion Traffic Study

Figure 3

The trip generation estimate indicates that the proposed expansion is anticipated to generate an additional 108 a.m. peak hour (56 in / 52 out), 61 school p.m. peak hour (21 in / 40 out), 15 p.m. peak hour (6 in / 9 out), and 300 daily (150 in / 150 out) trips; three (3) additional buses are expected. These additional trips were distributed throughout the study area using the directional distribution shown in Figure 4, which is based on a combination of existing area travel patterns and engineering judgment. The resultant year 2030 build conditions, which accounts for both the general background growth and trips from the proposed expansion, are illustrated in Figure 5.

YEAR 2030 CONDITIONS

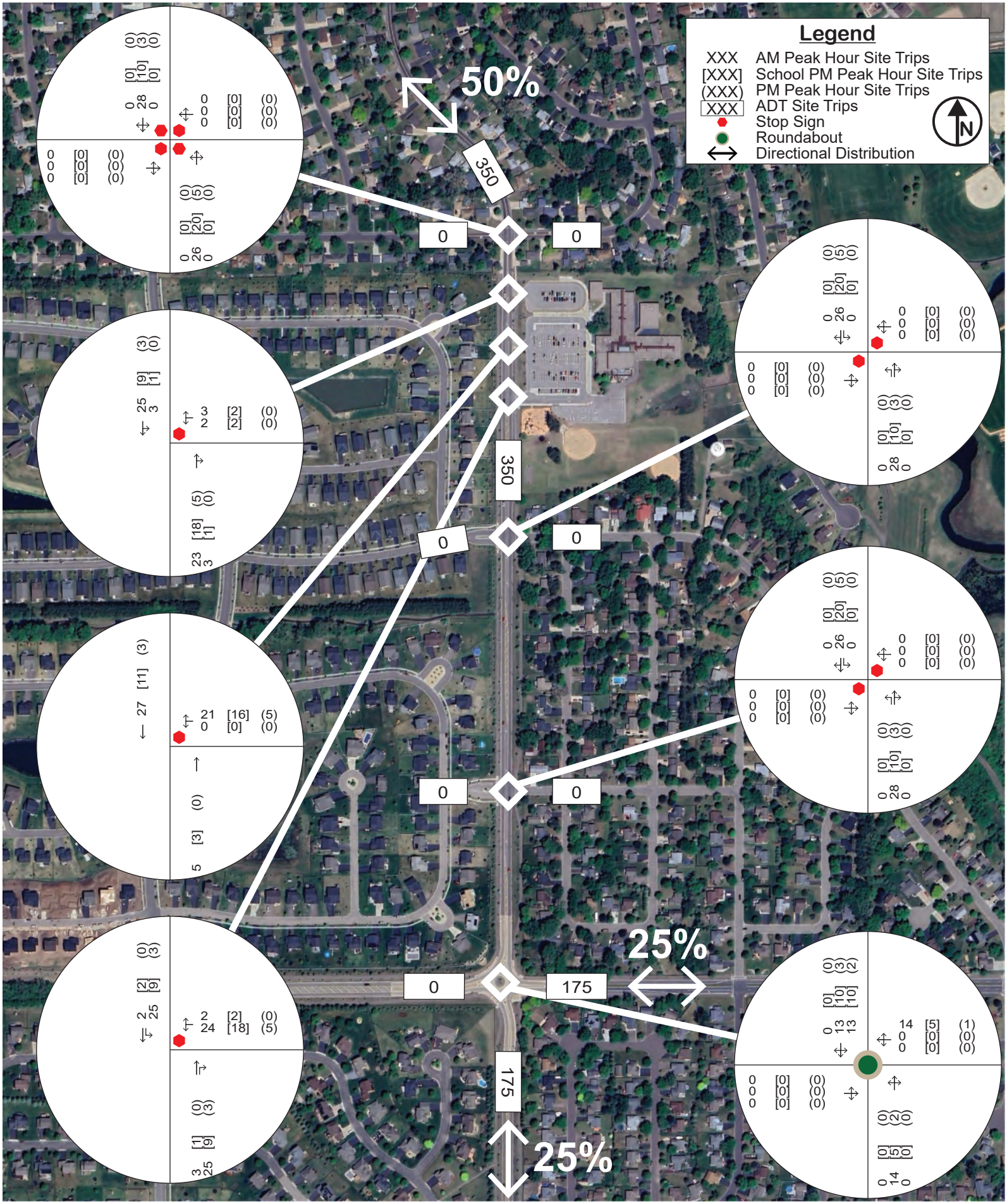
To understand impacts associated with the proposed expansion, an intersection capacity analysis was completed for year 2030 no build and build conditions, which are summarized in Table 4. Results of the year 2030 intersection capacity analysis indicate that all study intersections and approaches are expected to operate at LOS D or better during the typical a.m., school p.m., and p.m. peak hours except the westbound approach at the South School Access. This approach is expected to operate near the LOS D / LOS E threshold during the peak 15-minute a.m. arrival period, which is about a 10-second increase for this approach from the year 2030 no build condition. This is anticipated to result in queues of approximately five (5) to seven (7) vehicles during this peak 15-minute period but will quickly dissipate following the beginning of school. Note that in general, infrastructure is not typically warranted to address a peak 15-minute situation. Therefore, since the overall peak hour operations are within acceptable standards, no additional infrastructure is needed to support the proposed expansion from an intersection capacity perspective. *Detailed capacity analysis results are shown in the Appendix.*

However as noted earlier, these operations do not account for any operational impacts associated with the crossing guard at the Hadley Avenue / 90th Street intersection or any internal pick-up / drop-off queuing impacts, which were identified earlier. Since these situations are difficult to model, the intersection capacity analysis is used to illustrate and compare operations under no build and build conditions. Potential traffic management and infrastructure considerations are provided later in this report for further discussion between the project team, school, and area agencies.

Table 4 Year 2030 Intersection Capacity Summary (No Build and Build Conditions)

Hadley Avenue Intersection	**Level of Service *(No Build Left Column : Build Right Column)****											
	AM Peak Hour				**School PM Peak Hour**				**PM Peak Hour**			
	Peak 15		**Overall**		**Peak 15**		**Overall**		**Peak 15**		**Overall**	
90th Street	A	A	A	A	A	A	A	A	A	A	A	A
North School Access	A/C	A/C	A/B	A/C	A/B	A/B	A/B	A/B	A/A	A/A	A/A	A/A
Central School Access	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A
South School Access	A/D	A/**E**	A/C	A/D	A/B	A/C	A/B	A/B	A/B	A/B	A/A	A/A
92nd Street	A/B	A/C	A/A	A/B	A/B	A/A	A/A	A/A	A/B	A/B	A/A	A/A
94th Street	A/B	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A	A/A
95th Street	A	A	A	A	A	A	A	A	A	A	A	A

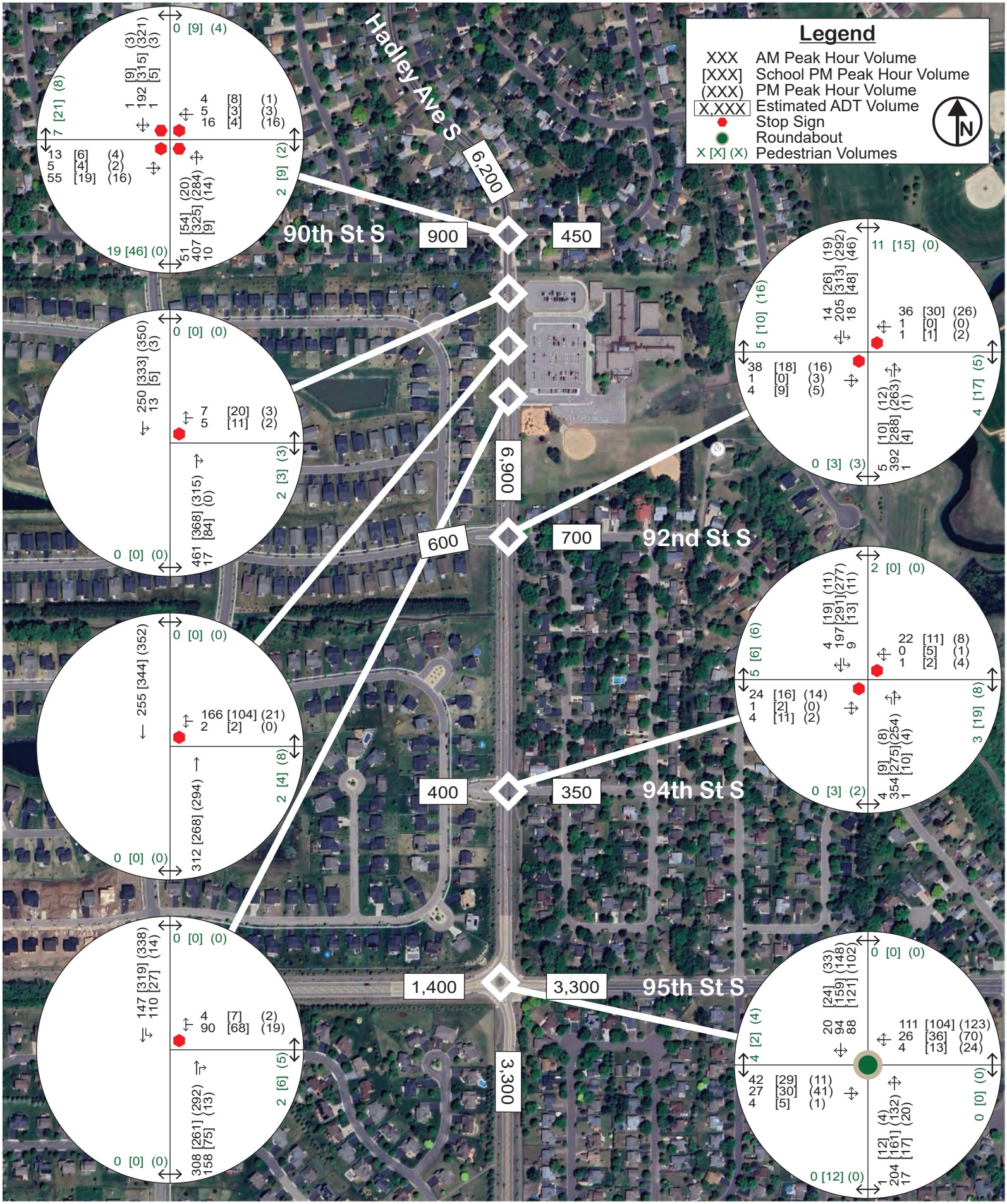
** Note that for the all-way stop and roundabout controlled intersections, the results shown represent the overall intersection level of service and average delay. For the side-street stop controlled intersections, the overall intersection level of service is shown, followed by the worst-approach level of service and worst-approach average delay.*



Site Generated Trips

Pine Hill Elementary School Expansion Traffic Study

Figure 4



Year 2030 Build Conditions

Pine Hill Elementary School Expansion Traffic Study

Figure 5

SITE PLAN REVIEW / OTHER CONSIDERATIONS

Although no significant issues were identified as part of the capacity analysis that warrant infrastructure mitigation given the relatively short-duration of impacts, the following management strategies and / or considerations are offered for further discussion between the project team, school, and area agencies.

- Promote and / or provide incentives to increase student use of the bus and alternatives transportation modes (i.e., walk, bike, roll).
- Restrict access to the pick-up / drop-off area before the end of school (i.e., 3:10 p.m.) along with providing education to guardians about the importance and safety benefits.
- Provide the ability to enter the site via the Central School Access, particularly for motorists who park on site and pick-up students in the "walk zone for parked cars."
- Investigate and / or implement additional strategies to improve the overall efficiency of drop-off / pick-up operations, such as:
    - Allow motorists to exit the lane once the drop-off / pick-up has occurred, while ensuring student safety is maintained.
    - Ensure motorists utilize the majority of the drop-off / pick-up area, including the far northern portion of the drive lane near the bus parking lot.
    - Utilize both driveway aisles at the South School Access to increase overall vehicle stacking on-site and reduce the possibility of queues extending along Hadley Avenue; a zipper merge strategy could be utilized if ingress to the Central School Access were able to be provided.

If these management strategies do not improve operations and / or eliminate the majority of the queues along Hadley Avenue, extension of the northbound right-turn lane could be considered. However, this should only be implemented as a last option given the higher benefit / lower cost strategies identified. The northbound right-turn lane extension could be implemented as part of a pedestrian ramp improvement project at the Hadley Avenue / 92nd Street intersection, which could improve the east-west crossings in this location to current ADA standards.

As part of a future pedestrian crossing improvement at the Hadley Avenue / 92nd Street intersection, further evaluation of an enhanced pedestrian crossing should be completed. A preliminary review indicates that a rectangular rapid flashing beacon (RRFB) could be a potential enhancement to consider, however existing pedestrian activity is less than 15 pedestrians during the peak hours. In addition, the current 85th percentile speeds in this location are over 40-mph, which may make the feasibility of future implementation less likely.

CONCLUSIONS

Based on the findings of the study, the following conclusions are offered for consideration.

1) There does not appear to be any safety issues within the study area from a crash history perspective.
2) All study intersections and approaches currently operate at LOS C or better during the typical a.m., school p.m., and p.m. peak hours; this includes the peak 15-minute pick-up / drop-off periods associated with the existing Pine Hill Elementary School.
3) The following school operational observations were identified:
    a. During the a.m. peak period, internal school queues / operations did not significantly impact the adjacent roadway network, while the crossing guard operations at the Hadley Avenue / 90th Street intersection resulted in longer northbound queues along Hadley Avenue, but provided improved pedestrian / bicyclist crossing safety.
    b. During the a.m. peak period, northbound queues along Hadley Avenue extended to the north School Access for about 15-minutes, the Central School Access for about five (5) minutes, and the South School Access for one (1) minute; these queues quickly dissipated once the pedestrian / bicyclist activity ended and school began; overall school operations were relatively slow and orderly.
    c. During the school p.m. peak period, pick-up / drop-off operations have historically resulted in queues regularly extending off-site and into the northbound right-turn lane along Hadley Avenue; these queues were observed extending into the northbound turn lane for about 10 minutes prior to school ending, but dissipated within about five (5) minutes following the end of school. These queues are a result of several factors, including:
        - Motorists arrive about 30 minutes before school ends and get into the pick-up queue.
        - Once motorists are in the queue, they are directed to stay within the line until all vehicles in front of them complete their pick-up, which results in additional delays.
        - Motorists wanting to park and pick-up can get stuck in the pick-up line along Hadley Avenue, further increasing the queues even though the inside lane is currently designated for park and pick-up users.
        - Motorists do not regularly pull up to the far north end of the pick-up area, rather waiting near the primary school entrance, which reduces the number of pick-ups that can occur.
    d. During the school p.m. peak period, no significant operational issues were observed with motorists exiting the school; overall school operations were relatively slow and orderly.
    e. New procedures for pick-up and drop-off operations are in the planning stages for next year.
4) The proposed project includes a 12,860 square foot building expansion for additional classrooms, a storm shelter, and an expanded gym; future school capacity is 650 students and 100 staff members.
5) Traffic forecasts were developed for year 2030 no build and build conditions, which included a 1.5 percent annual background growth rate and trip generation from the proposed expansion.
    a. The future expansion is expected to generate an additional 108 a.m. peak hour (56 in / 52 out), 61 school p.m. peak hour (21 in / 40 out), 15 p.m. peak hour (6 in / 9 out), and 300 daily (150 in/ 150 out) trips.

6) Under year 2030 conditions, all study intersections and approaches are expected to operate at LOS D or better during the typical a.m., school p.m., and p.m. peak hours, except the westbound approach at the South School Access; this approach is expected to operate near the LOS D/LOS E threshold during the peak 15-minute a.m. period, which is about a 10-second increase for this approach from the year 2030 no build condition.

   a. Infrastructure is not typically needed to address a peak 15-minute situation. Therefore, since the overall peak hour operations are within acceptable standards, no additional infrastructure is needed to support the proposed expansion from an intersection capacity perspective.

7) The following management strategies and / or considerations are offered for further discussion between the project team, school, and area agencies.

   - Promote and / or provide incentives to increase student use of the bus and alternatives transportation modes (i.e., walk, bike, roll).
   - Restrict access to the pick-up / drop-off area before the end of school (i.e., 3:10 p.m.) along with providing education to guardians about the importance and safety benefits.
   - Provide the ability to enter the site via the Central School Access, particularly for motorists who park on site and pick-up students in the "walk zone for parked cars."
   - Investigate and / or implement additional strategies to improve the overall efficiency of drop-off and pick-up operations, such as:
     - Allow motorists to exit the lane once the drop-off / pick-up has occurred, while ensuring student safety is maintained.
     - Ensure motorists utilize the majority of the drop-off / pick-up area, including the far northern portion of the drive lane near the bus parking lot.
     - Utilize both driveway aisles at the South School Access to increase overall vehicle stacking on-site and reduce the possibility of queues extending along Hadley Avenue; a zipper merge strategy could be utilized if ingress to the Central School Access were able to be provided.

   If these management strategies do not improve operations and / or eliminate the majority of the queues along Hadley Avenue, extension of the northbound right-turn lane could be considered.

8) A pedestrian ramp improvement project at the Hadley Avenue / 92nd Street intersection should be considered, which could improve the east-west crossings in this location to current ADA standards; preliminary review indicates that a rectangular rapid flashing beacon (RRFB) could be a potential enhancement to consider, however existing pedestrian activity is less than 15 pedestrians during the peak hours. In addition, the current 85th percentile speeds in this location are over 40-mph, which may make the feasibility of future implementation less likely. Thus, further discussion with the City should occur before determining if / when a pedestrian improvement should be implemented.

APPENDIX

Intersection Safety Screening

Intersection: Hadley Avenue & South School Access

Statewide Averages based on 2019-2023 crashes

Crashes by Crash Severity	
Fatal (K)	0
Incapacitating Injury (A)	0
Minor Injury (B)	0
Possible Injury (C)	1
Property Damage (PDO)	2
Total Crashes	3

Intersection Characteristics	
Entering Volume	6,600
Environment	Urban
Lighting	Lit
Traffic Control	Thru-Stop

Annual crash cost = $43,200

Statewide comparison = Thru/STOP, Urban

Total Crash Rate	
Observed	0.249
Statewide Average	0.145
Critical Rate	0.470
Critical Index	**0.53**

Fatal & Serious Injury Crash Rate	
Observed	0.000
Statewide Average	0.414
Critical Rate	6.940
Critical Index	**0.00**

The observed crash rate is the number of crashes per million entering vehicles (MEV). The critical rate is a statistical comparison based on similar intersections statewide. An observed crash rate greater than the critical rate indicates that the intersection operates outside the expected, normal range. The critical index reports the magnitude of this difference (i.e. observed crash rate ÷ critical crash rate).

The observed total crash rate for this period is 0.25 per MEV; this is 47% below the critical rate. Based on similar statewide intersections, an additional 3 crashes over the five years would indicate this intersection operates outside the normal range.

The observed fatal and serious injury crash rate for this period is 0.00 per 100 MEV; this is 100% below the critical rate. The intersection operates within the normal range.

Intersection Safety Screening

Intersection: Hadley Avenue & 95th Street

Statewide Averages based on 2019-2023 crashes

Crashes by Crash Severity	
Fatal (K)	0
Incapacitating Injury (A)	0
Minor Injury (B)	0
Possible Injury (C)	1
Property Damage (PDO)	6
Total Crashes	7

Intersection Characteristics	
Entering Volume	6,100
Environment	Urban
Lighting	Lit
Traffic Control	Roundabout

Annual crash cost = $57,600

Statewide comparison = Roundabout

Total Crash Rate	
Observed	0.628
Statewide Average	0.973
Critical Rate	1.780
Critical Index	**0.35**

Fatal & Serious Injury Crash Rate	
Observed	0.000
Statewide Average	0.460
Critical Rate	7.550
Critical Index	**0.00**

The observed crash rate is the number of crashes per million entering vehicles (MEV). The critical rate is a statistical comparison based on similar intersections statewide. An observed crash rate greater than the critical rate indicates that the intersection operates outside the expected, normal range. The critical index reports the magnitude of this difference (i.e. observed crash rate ÷ critical crash rate).

The observed total crash rate for this period is 0.63 per MEV; this is 65% below the critical rate. Based on similar statewide intersections, an additional 13 crashes over the five years would indicate this intersection operates outside the normal range.

The observed fatal and serious injury crash rate for this period is 0.00 per 100 MEV; this is 100% below the critical rate. The intersection operates within the normal range.

5: Hadley Ave S & 90th St S Performance by approach Interval #1 7:45

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.2	0.0	0.1	0.1
Total Del/Veh (s)	4.0	5.5	7.2	6.8	6.8

5: Hadley Ave S & 90th St S Performance by approach Interval #2 8:00

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.2	0.1
Total Del/Veh (s)	5.0	6.0	8.2	7.1	7.5

5: Hadley Ave S & 90th St S Performance by approach Interval #3 8:15

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.2	0.1
Total Del/Veh (s)	3.5	6.3	7.0	6.9	6.6

5: Hadley Ave S & 90th St S Performance by approach Interval #4 8:30

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.1	0.0
Total Del/Veh (s)	3.5	3.8	7.0	6.5	6.4

5: Hadley Ave S & 90th St S Performance by approach Entire Run

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.2	0.1
Total Del/Veh (s)	4.1	5.4	7.5	7.1	7.0

10: Hadley Ave S & North Access Performance by approach Interval #1 7:45

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Del/Veh (s)	5.2	0.7	2.1	1.2

10: Hadley Ave S & North Access Performance by approach Interval #2 8:00

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Del/Veh (s)	11.0	0.9	3.8	1.9

10: Hadley Ave S & North Access Performance by approach Interval #3 8:15

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Del/Veh (s)	5.4	0.7	2.3	1.3

10: Hadley Ave S & North Access Performance by approach Interval #4 8:30

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Del/Veh (s)	5.0	0.6	1.9	1.1

10: Hadley Ave S & North Access Performance by approach Entire Run

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Del/Veh (s)	7.0	0.8	2.7	1.5

15: Hadley Ave S & Central Access Performance by approach Interval #1 7:45

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Del/Veh (s)	3.9	0.3	0.2	0.8

15: Hadley Ave S & Central Access Performance by approach Interval #2 8:00

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.0	0.0	0.1
Total Del/Veh (s)	7.3	0.7	0.4	2.5

15: Hadley Ave S & Central Access Performance by approach Interval #3 8:15

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Del/Veh (s)	3.6	0.3	0.2	0.8

15: Hadley Ave S & Central Access Performance by approach Interval #4 8:30

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Del/Veh (s)	4.2	0.3	0.1	1.0

15: Hadley Ave S & Central Access Performance by approach Entire Run

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.0	0.0	0.0
Total Del/Veh (s)	5.6	0.4	0.2	1.4

20: Hadley Ave S & South Access Performance by approach Interval #1 7:45

Approach	WB	NB	SB	All
Denied Del/Veh (s)	4.0	0.0	0.0	0.3
Total Del/Veh (s)	6.3	0.4	0.9	1.0

20: Hadley Ave S & South Access Performance by approach Interval #2 8:00

Approach	WB	NB	SB	All
Denied Del/Veh (s)	3.9	0.1	0.0	0.5
Total Del/Veh (s)	16.1	0.7	2.5	3.0

20: Hadley Ave S & South Access Performance by approach Interval #3 8:15

Approach	WB	NB	SB	All
Denied Del/Veh (s)	4.1	0.0	0.0	0.4
Total Del/Veh (s)	7.9	0.4	1.0	1.2

20: Hadley Ave S & South Access Performance by approach Interval #4 8:30

Approach	WB	NB	SB	All
Denied Del/Veh (s)	4.2	0.0	0.0	0.3
Total Del/Veh (s)	6.1	0.4	1.1	1.0

20: Hadley Ave S & South Access Performance by approach Entire Run

Approach	WB	NB	SB	All
Denied Del/Veh (s)	4.0	0.0	0.0	0.4
Total Del/Veh (s)	11.3	0.5	1.5	1.8

25: Hadley Ave S & 92nd St S Performance by approach Interval #1 7:45

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	9.1	4.2	1.0	0.8	1.6

25: Hadley Ave S & 92nd St S Performance by approach Interval #2 8:00

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	11.4	5.4	1.0	0.8	1.7

25: Hadley Ave S & 92nd St S Performance by approach Interval #3 8:15

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	7.0	3.5	0.6	0.6	1.1

25: Hadley Ave S & 92nd St S Performance by approach Interval #4 8:30

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.1	0.0
Total Del/Veh (s)	7.2	3.5	0.7	0.7	1.2

25: Hadley Ave S & 92nd St S Performance by approach Entire Run

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	8.5	4.3	0.9	0.7	1.5

30: Hadley Ave S & 94th St S Performance by approach Interval #1 7:45

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	7.5	3.7	0.6	0.6	1.0

30: Hadley Ave S & 94th St S Performance by approach Interval #2 8:00

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	8.8	4.4	0.8	0.5	1.2

30: Hadley Ave S & 94th St S Performance by approach Interval #3 8:15

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	6.6	3.4	0.5	0.4	0.7

30: Hadley Ave S & 94th St S Performance by approach Interval #4 8:30

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	8.7	3.7	0.5	0.5	1.1

30: Hadley Ave S & 94th St S Performance by approach Entire Run

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	7.6	3.8	0.6	0.5	1.0

35: Hadley Ave S & 95th St S Performance by approach Interval #1 7:45

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.1	0.2	0.0	0.1
Total Del/Veh (s)	3.3	3.5	5.3	3.4	4.1

35: Hadley Ave S & 95th St S Performance by approach Interval #2 8:00

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.2	0.2	0.0	0.1
Total Del/Veh (s)	2.9	3.8	5.9	3.5	4.4

35: Hadley Ave S & 95th St S Performance by approach Interval #3 8:15

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.2	0.2	0.0	0.1
Total Del/Veh (s)	3.2	3.4	5.0	3.3	3.8

35: Hadley Ave S & 95th St S Performance by approach Interval #4 8:30

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.2	0.2	0.0	0.1
Total Del/Veh (s)	3.4	3.5	5.0	3.4	4.0

35: Hadley Ave S & 95th St S Performance by approach Entire Run

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.2	0.2	0.0	0.1
Total Del/Veh (s)	3.2	3.6	5.5	3.5	4.2

Total Network Performance By Interval

Interval Start	7:45	8:00	8:15	8:30	All
Denied Del/Veh (s)	0.4	0.5	0.4	0.4	0.4
Total Del/Veh (s)	10.9	12.7	10.0	10.5	11.9

Intersection: 5: Hadley Ave S & 90th St S, Interval #1

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	43	40	104	78
Average Queue (ft)	28	18	67	45
95th Queue (ft)	48	45	106	76
Link Distance (ft)	542	542	159	1014
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Hadley Ave S & 90th St S, Interval #2

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	59	44	119	79
Average Queue (ft)	36	23	76	50
95th Queue (ft)	65	50	116	84
Link Distance (ft)	542	542	159	1014
Upstream Blk Time (%)			0	
Queuing Penalty (veh)			0	
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Hadley Ave S & 90th St S, Interval #3

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	44	35	92	68
Average Queue (ft)	28	15	61	46
95th Queue (ft)	54	40	107	72
Link Distance (ft)	542	542	159	1014
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Hadley Ave S & 90th St S, Interval #4

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	40	35	102	65
Average Queue (ft)	28	14	62	45
95th Queue (ft)	48	40	90	67
Link Distance (ft)	542	542	159	1014
Upstream Blk Time (%)			0	
Queuing Penalty (veh)			0	
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Hadley Ave S & 90th St S, All Intervals

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	61	48	138	95
Average Queue (ft)	30	17	66	47
95th Queue (ft)	55	44	106	75
Link Distance (ft)	542	542	159	1014
Upstream Blk Time (%)			0	
Queuing Penalty (veh)			0	
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 10: Hadley Ave S & North Access, Interval #1

Movement	WB	NB	SB
Directions Served	LR	TR	LT
Maximum Queue (ft)	56	10	32
Average Queue (ft)	13	1	6
95th Queue (ft)	51	15	40
Link Distance (ft)	538	147	159
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 10: Hadley Ave S & North Access, Interval #2

Movement	WB	NB	SB
Directions Served	LR	TR	LT
Maximum Queue (ft)	62	17	116
Average Queue (ft)	19	3	34
95th Queue (ft)	65	21	107
Link Distance (ft)	538	147	159
Upstream Blk Time (%)			0
Queuing Penalty (veh)			1
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 10: Hadley Ave S & North Access, Interval #3

Movement	WB	NB	SB
Directions Served	LR	TR	LT
Maximum Queue (ft)	33	15	46
Average Queue (ft)	6	2	9
95th Queue (ft)	35	17	50
Link Distance (ft)	538	147	159
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 10: Hadley Ave S & North Access, Interval #4

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	48	21
Average Queue (ft)	12	3
95th Queue (ft)	51	23
Link Distance (ft)	538	159
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 10: Hadley Ave S & North Access, All Intervals

Movement	WB	NB	SB
Directions Served	LR	TR	LT
Maximum Queue (ft)	72	31	117
Average Queue (ft)	12	2	13
95th Queue (ft)	52	15	63
Link Distance (ft)	538	147	159
Upstream Blk Time (%)			0
Queuing Penalty (veh)			0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 15: Hadley Ave S & Central Access, Interval #1

Movement	WB
Directions Served	LR
Maximum Queue (ft)	69
Average Queue (ft)	36
95th Queue (ft)	60
Link Distance (ft)	534
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 15: Hadley Ave S & Central Access, Interval #2

Movement	WB
Directions Served	LR
Maximum Queue (ft)	109
Average Queue (ft)	66
95th Queue (ft)	107
Link Distance (ft)	534
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 15: Hadley Ave S & Central Access, Interval #3

Movement	WB
Directions Served	LR
Maximum Queue (ft)	52
Average Queue (ft)	34
95th Queue (ft)	55
Link Distance (ft)	534
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 15: Hadley Ave S & Central Access, Interval #4

Movement	WB
Directions Served	LR
Maximum Queue (ft)	65
Average Queue (ft)	37
95th Queue (ft)	64
Link Distance (ft)	534
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 15: Hadley Ave S & Central Access, All Intervals

Movement	WB
Directions Served	LR
Maximum Queue (ft)	109
Average Queue (ft)	43
95th Queue (ft)	80
Link Distance (ft)	534
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 20: Hadley Ave S & South Access, Interval #1

Movement	WB	WB	NB	SB
Directions Served	L	R	R	L
Maximum Queue (ft)	40	4	4	40
Average Queue (ft)	22	1	1	16
95th Queue (ft)	43	9	7	46
Link Distance (ft)		529		138
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	50		225	
Storage Blk Time (%)	0			
Queuing Penalty (veh)	0			

Intersection: 20: Hadley Ave S & South Access, Interval #2

Movement	WB	WB	NB	SB
Directions Served	L	R	R	L
Maximum Queue (ft)	72	44	35	66
Average Queue (ft)	44	13	10	42
95th Queue (ft)	79	70	40	71
Link Distance (ft)		529		138
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	50		225	
Storage Blk Time (%)	12	0		
Queuing Penalty (veh)	0	0		

Intersection: 20: Hadley Ave S & South Access, Interval #3

Movement	WB	SB
Directions Served	L	L
Maximum Queue (ft)	54	46
Average Queue (ft)	26	17
95th Queue (ft)	54	48
Link Distance (ft)		138
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	50	
Storage Blk Time (%)	2	
Queuing Penalty (veh)	0	

Intersection: 20: Hadley Ave S & South Access, Interval #4

Movement	WB	WB	NB	SB
Directions Served	L	R	R	L
Maximum Queue (ft)	32	8	4	40
Average Queue (ft)	20	1	1	19
95th Queue (ft)	42	9	7	48
Link Distance (ft)		529		138
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	50		225	
Storage Blk Time (%)	0			
Queuing Penalty (veh)	0			

Intersection: 20: Hadley Ave S & South Access, All Intervals

Movement	WB	WB	NB	SB
Directions Served	L	R	R	L
Maximum Queue (ft)	73	49	35	68
Average Queue (ft)	28	4	3	23
95th Queue (ft)	59	34	20	58
Link Distance (ft)		529		138
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	50		225	
Storage Blk Time (%)	4	0		
Queuing Penalty (veh)	0	0		

Intersection: 25: Hadley Ave S & 92nd St S, Interval #1

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	56	47	5	10	27	17
Average Queue (ft)	25	26	2	1	6	2
95th Queue (ft)	59	52	12	11	25	19
Link Distance (ft)	511	514		862		444
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			200		200	
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 25: Hadley Ave S & 92nd St S, Interval #2

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	47	39	11	9	22	12
Average Queue (ft)	25	22	2	2	5	2
95th Queue (ft)	54	47	12	16	21	13
Link Distance (ft)	511	514		862		444
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			200		200	
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 25: Hadley Ave S & 92nd St S, Interval #3

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	TR	L
Maximum Queue (ft)	40	34	10	16
Average Queue (ft)	25	17	1	2
95th Queue (ft)	50	45	15	15
Link Distance (ft)	511	514	862	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				200
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 25: Hadley Ave S & 92nd St S, Interval #4

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	L	L	TR
Maximum Queue (ft)	49	39	5	18	14
Average Queue (ft)	26	21	1	3	3
95th Queue (ft)	54	48	7	22	27
Link Distance (ft)	511	514			444
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			200	200	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 25: Hadley Ave S & 92nd St S, All Intervals

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	65	53	11	24	35	31
Average Queue (ft)	25	21	1	1	4	2
95th Queue (ft)	54	49	9	12	21	17
Link Distance (ft)	511	514		862		444
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			200		200	
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 30: Hadley Ave S & 94th St S, Interval #1

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	L	L
Maximum Queue (ft)	31	35	5	15
Average Queue (ft)	15	15	1	2
95th Queue (ft)	40	41	8	14
Link Distance (ft)	489	512		
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			200	200
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 30: Hadley Ave S & 94th St S, Interval #2

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	TR	L
Maximum Queue (ft)	41	31	5	11
Average Queue (ft)	25	20	1	2
95th Queue (ft)	52	42	7	14
Link Distance (ft)	489	512	600	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				200
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 30: Hadley Ave S & 94th St S, Interval #3

Movement	EB	WB	NB	NB	SB
Directions Served	LTR	LTR	L	TR	L
Maximum Queue (ft)	34	35	6	5	5
Average Queue (ft)	9	12	0	1	2
95th Queue (ft)	38	38	0	7	12
Link Distance (ft)	489	512		600	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			200		200
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 30: Hadley Ave S & 94th St S, Interval #4

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	L	L
Maximum Queue (ft)	41	38	5	10
Average Queue (ft)	19	17	1	2
95th Queue (ft)	51	44	8	14
Link Distance (ft)	489	512		
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			200	200
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 30: Hadley Ave S & 94th St S, All Intervals

Movement	EB	WB	NB	NB	SB
Directions Served	LTR	LTR	L	TR	L
Maximum Queue (ft)	60	42	16	5	21
Average Queue (ft)	17	16	0	0	2
95th Queue (ft)	47	42	5	5	13
Link Distance (ft)	489	512		600	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			200		200
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 35: Hadley Ave S & 95th St S, Interval #1

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	51	36	46	10
Average Queue (ft)	8	12	16	2
95th Queue (ft)	39	40	53	18
Link Distance (ft)	942	818	846	600
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 35: Hadley Ave S & 95th St S, Interval #2

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	25	52	72	29
Average Queue (ft)	4	23	26	7
95th Queue (ft)	22	58	70	29
Link Distance (ft)	942	818	846	600
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 35: Hadley Ave S & 95th St S, Interval #3

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	24	34	38	10
Average Queue (ft)	3	11	15	2
95th Queue (ft)	19	35	47	17
Link Distance (ft)	942	818	846	600
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 35: Hadley Ave S & 95th St S, Interval #4

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	31	39	30	12
Average Queue (ft)	10	9	14	2
95th Queue (ft)	33	36	38	13
Link Distance (ft)	942	818	846	600
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 35: Hadley Ave S & 95th St S, All Intervals

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	51	61	78	36
Average Queue (ft)	6	14	18	3
95th Queue (ft)	29	44	54	20
Link Distance (ft)	942	818	846	600
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty, Interval #1: 0
Network wide Queuing Penalty, Interval #2: 2
Network wide Queuing Penalty, Interval #3: 0
Network wide Queuing Penalty, Interval #4: 0
Network wide Queuing Penalty, All Intervals: 1

5: Hadley Ave S & 90th St S Performance by approach Interval #1 2:45

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.1	0.2	0.1
Total Del/Veh (s)	4.3	3.3	7.1	7.9	7.2

5: Hadley Ave S & 90th St S Performance by approach Interval #2 3:00

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.3	0.1
Total Del/Veh (s)	4.7	4.5	7.0	9.2	7.8

5: Hadley Ave S & 90th St S Performance by approach Interval #3 3:15

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.2	0.1
Total Del/Veh (s)	4.6	3.7	7.3	8.1	7.5

5: Hadley Ave S & 90th St S Performance by approach Interval #4 3:30

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.1	0.0	0.3	0.1
Total Del/Veh (s)	5.6	6.9	7.6	9.0	8.1

5: Hadley Ave S & 90th St S Performance by approach Entire Run

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.3	0.1
Total Del/Veh (s)	4.5	4.9	7.4	8.8	7.8

10: Hadley Ave S & North Access Performance by approach Interval #1 2:45

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Del/Veh (s)	4.5	0.6	2.4	1.4

10: Hadley Ave S & North Access Performance by approach Interval #2 3:00

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.0	0.0	0.0
Total Del/Veh (s)	9.2	0.7	2.5	2.0

10: Hadley Ave S & North Access Performance by approach Interval #3 3:15

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Del/Veh (s)	4.5	0.6	2.2	1.4

10: Hadley Ave S & North Access Performance by approach Interval #4 3:30

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Del/Veh (s)	10.2	0.6	2.4	1.6

10: Hadley Ave S & North Access Performance by approach Entire Run

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.0	0.0	0.0
Total Del/Veh (s)	8.2	0.6	2.4	1.7

15: Hadley Ave S & Central Access Performance by approach Interval #1 2:45

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Del/Veh (s)	2.9	0.2	0.1	0.4

15: Hadley Ave S & Central Access Performance by approach Interval #2 3:00

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.0	0.0	0.1
Total Del/Veh (s)	5.7	0.5	0.2	1.7

15: Hadley Ave S & Central Access Performance by approach Interval #3 3:15

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Del/Veh (s)	3.1	0.2	0.1	0.4

15: Hadley Ave S & Central Access Performance by approach Interval #4 3:30

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Del/Veh (s)	3.7	0.3	0.1	0.4

15: Hadley Ave S & Central Access Performance by approach Entire Run

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.0	0.0	0.0
Total Del/Veh (s)	4.8	0.3	0.2	0.9

20: Hadley Ave S & South Access Performance by approach Interval #1 2:45

Approach	WB	NB	SB	All
Denied Del/Veh (s)	3.5	0.0	0.0	0.1
Total Del/Veh (s)	5.4	0.3	0.1	0.4

20: Hadley Ave S & South Access Performance by approach Interval #2 3:00

Approach	WB	NB	SB	All
Denied Del/Veh (s)	3.6	0.1	0.0	0.5
Total Del/Veh (s)	11.8	0.4	0.6	2.0

20: Hadley Ave S & South Access Performance by approach Interval #3 3:15

Approach	WB	NB	SB	All
Denied Del/Veh (s)	3.5	0.0	0.0	0.1
Total Del/Veh (s)	7.3	0.4	0.1	0.6

20: Hadley Ave S & South Access Performance by approach Interval #4 3:30

Approach	WB	NB	SB	All
Denied Del/Veh (s)	3.8	0.0	0.0	0.1
Total Del/Veh (s)	8.0	0.3	0.1	0.5

20: Hadley Ave S & South Access Performance by approach Entire Run

Approach	WB	NB	SB	All
Denied Del/Veh (s)	3.6	0.0	0.0	0.3
Total Del/Veh (s)	10.3	0.4	0.3	1.0

25: Hadley Ave S & 92nd St S Performance by approach Interval #1 2:45

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.1	0.0
Total Del/Veh (s)	6.3	3.9	0.8	0.7	1.2

25: Hadley Ave S & 92nd St S Performance by approach Interval #2 3:00

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	11.0	3.6	0.8	1.0	1.3

25: Hadley Ave S & 92nd St S Performance by approach Interval #3 3:15

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.1	0.0	0.1	0.1
Total Del/Veh (s)	4.5	4.4	1.1	0.8	1.2

25: Hadley Ave S & 92nd St S Performance by approach Interval #4 3:30

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	7.6	3.9	0.8	0.8	1.1

25: Hadley Ave S & 92nd St S Performance by approach Entire Run

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	7.6	3.6	0.9	0.9	1.2

30: Hadley Ave S & 94th St S Performance by approach Interval #1 2:45

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	5.1	4.9	0.6	0.8	1.0

30: Hadley Ave S & 94th St S Performance by approach Interval #2 3:00

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	5.7	7.8	0.8	0.9	1.3

30: Hadley Ave S & 94th St S Performance by approach Interval #3 3:15

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.1	0.0	0.0	0.0
Total Del/Veh (s)	6.7	3.5	0.8	0.9	1.2

30: Hadley Ave S & 94th St S Performance by approach Interval #4 3:30

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	6.7	4.7	0.7	0.9	1.3

30: Hadley Ave S & 94th St S Performance by approach Entire Run

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	5.9	5.2	0.8	0.9	1.2

35: Hadley Ave S & 95th St S Performance by approach Interval #1 2:45

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.2	0.2	0.0	0.1
Total Del/Veh (s)	3.5	3.1	4.7	3.7	3.8

35: Hadley Ave S & 95th St S Performance by approach Interval #2 3:00

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.2	0.1	0.0	0.1
Total Del/Veh (s)	3.5	3.6	5.1	4.4	4.3

35: Hadley Ave S & 95th St S Performance by approach Interval #3 3:15

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.2	0.3	0.0	0.1
Total Del/Veh (s)	3.4	3.4	5.0	3.9	4.0

35: Hadley Ave S & 95th St S Performance by approach Interval #4 3:30

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.2	0.3	0.0	0.1
Total Del/Veh (s)	3.8	3.5	4.7	4.1	4.1

35: Hadley Ave S & 95th St S Performance by approach Entire Run

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.2	0.2	0.0	0.1
Total Del/Veh (s)	3.7	3.5	5.0	4.1	4.2

Total Network Performance By Interval

Interval Start	2:45	3:00	3:15	3:30	All
Denied Del/Veh (s)	0.3	0.5	0.3	0.3	0.4
Total Del/Veh (s)	10.8	11.7	11.1	12.2	12.1

Intersection: 5: Hadley Ave S & 90th St S, Interval #1

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	35	24	104	83
Average Queue (ft)	21	9	65	55
95th Queue (ft)	45	32	103	86
Link Distance (ft)	542	542	159	1014
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Hadley Ave S & 90th St S, Interval #2

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	35	30	114	113
Average Queue (ft)	20	12	70	69
95th Queue (ft)	47	36	115	117
Link Distance (ft)	542	542	159	1014
Upstream Blk Time (%)			0	
Queuing Penalty (veh)			0	
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Hadley Ave S & 90th St S, Interval #3

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	39	31	105	88
Average Queue (ft)	14	12	64	59
95th Queue (ft)	40	36	110	89
Link Distance (ft)	542	542	159	1014
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Hadley Ave S & 90th St S, Interval #4

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	40	30	106	116
Average Queue (ft)	17	13	68	67
95th Queue (ft)	41	36	108	118
Link Distance (ft)	542	542	159	1014
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Hadley Ave S & 90th St S, All Intervals

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	48	31	138	141
Average Queue (ft)	18	11	67	62
95th Queue (ft)	44	35	109	105
Link Distance (ft)	542	542	159	1014
Upstream Blk Time (%)			0	
Queuing Penalty (veh)			0	
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 10: Hadley Ave S & North Access, Interval #1

Movement	WB	NB	SB
Directions Served	LR	TR	LT
Maximum Queue (ft)	68	16	10
Average Queue (ft)	14	2	1
95th Queue (ft)	57	17	15
Link Distance (ft)	538	147	159
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 10: Hadley Ave S & North Access, Interval #2

Movement	WB	NB	SB
Directions Served	LR	TR	LT
Maximum Queue (ft)	99	4	64
Average Queue (ft)	60	1	10
95th Queue (ft)	114	6	50
Link Distance (ft)	538	147	159
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 10: Hadley Ave S & North Access, Interval #3

Movement	WB	NB	SB
Directions Served	LR	TR	LT
Maximum Queue (ft)	56	12	10
Average Queue (ft)	17	2	1
95th Queue (ft)	60	13	15
Link Distance (ft)	538	147	159
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 10: Hadley Ave S & North Access, Interval #4

Movement	WB	NB	SB
Directions Served	LR	TR	LT
Maximum Queue (ft)	62	4	20
Average Queue (ft)	14	1	0
95th Queue (ft)	57	7	0
Link Distance (ft)	538	147	159
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 10: Hadley Ave S & North Access, All Intervals

Movement	WB	NB	SB
Directions Served	LR	TR	LT
Maximum Queue (ft)	103	25	66
Average Queue (ft)	26	1	3
95th Queue (ft)	83	12	26
Link Distance (ft)	538	147	159
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 15: Hadley Ave S & Central Access, Interval #1

Movement	WB
Directions Served	LR
Maximum Queue (ft)	49
Average Queue (ft)	27
95th Queue (ft)	53
Link Distance (ft)	534
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 15: Hadley Ave S & Central Access, Interval #2

Movement	WB
Directions Served	LR
Maximum Queue (ft)	91
Average Queue (ft)	57
95th Queue (ft)	95
Link Distance (ft)	534
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 15: Hadley Ave S & Central Access, Interval #3

Movement	WB
Directions Served	LR
Maximum Queue (ft)	44
Average Queue (ft)	25
95th Queue (ft)	50
Link Distance (ft)	534
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 15: Hadley Ave S & Central Access, Interval #4

Movement	WB
Directions Served	LR
Maximum Queue (ft)	47
Average Queue (ft)	23
95th Queue (ft)	52
Link Distance (ft)	534
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 15: Hadley Ave S & Central Access, All Intervals

Movement	WB
Directions Served	LR
Maximum Queue (ft)	94
Average Queue (ft)	33
95th Queue (ft)	71
Link Distance (ft)	534
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 20: Hadley Ave S & South Access, Interval #1

Movement	WB	WB	SB
Directions Served	L	R	L
Maximum Queue (ft)	33	12	19
Average Queue (ft)	14	2	4
95th Queue (ft)	39	13	20
Link Distance (ft)		529	138
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	50		
Storage Blk Time (%)	0		
Queuing Penalty (veh)	0		

Intersection: 20: Hadley Ave S & South Access, Interval #2

Movement	WB	WB	NB	NB	SB
Directions Served	L	R	T	R	L
Maximum Queue (ft)	76	28	4	18	40
Average Queue (ft)	43	9	1	2	15
95th Queue (ft)	81	30	6	16	44
Link Distance (ft)		529	444		138
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	50			225	
Storage Blk Time (%)	8	0			
Queuing Penalty (veh)	1	0			

Intersection: 20: Hadley Ave S & South Access, Interval #3

Movement	WB	WB	SB
Directions Served	L	R	L
Maximum Queue (ft)	29	12	12
Average Queue (ft)	13	2	1
95th Queue (ft)	35	13	9
Link Distance (ft)		529	138
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	50		
Storage Blk Time (%)	0		
Queuing Penalty (veh)	0		

Intersection: 20: Hadley Ave S & South Access, Interval #4

Movement	WB	WB	SB
Directions Served	L	R	L
Maximum Queue (ft)	28	12	6
Average Queue (ft)	12	3	1
95th Queue (ft)	33	14	9
Link Distance (ft)		529	138
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	50		
Storage Blk Time (%)	0		
Queuing Penalty (veh)	0		

Intersection: 20: Hadley Ave S & South Access, All Intervals

Movement	WB	WB	NB	NB	SB
Directions Served	L	R	T	R	L
Maximum Queue (ft)	76	28	4	18	40
Average Queue (ft)	21	4	0	0	5
95th Queue (ft)	55	19	3	8	25
Link Distance (ft)		529	444		138
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	50			225	
Storage Blk Time (%)	2	0			
Queuing Penalty (veh)	0	0			

Intersection: 25: Hadley Ave S & 92nd St S, Interval #1

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	42	36	10	18	27	12
Average Queue (ft)	20	18	1	3	7	2
95th Queue (ft)	48	45	8	23	26	13
Link Distance (ft)	511	514		862		444
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			200		200	
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 25: Hadley Ave S & 92nd St S, Interval #2

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	43	42	16	9	27	28
Average Queue (ft)	18	24	2	1	12	6
95th Queue (ft)	47	50	14	10	34	27
Link Distance (ft)	511	514		862		444
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			200		200	
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 25: Hadley Ave S & 92nd St S, Interval #3

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	41	47	14	28	32	6
Average Queue (ft)	17	18	2	5	14	1
95th Queue (ft)	48	49	13	32	38	9
Link Distance (ft)	511	514		862		444
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			200		200	
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 25: Hadley Ave S & 92nd St S, Interval #4

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	31	36	11	9	27	6
Average Queue (ft)	15	20	3	1	9	1
95th Queue (ft)	39	45	16	14	30	9
Link Distance (ft)	511	514		862		444
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			200		200	
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 25: Hadley Ave S & 92nd St S, All Intervals

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	54	55	26	46	32	28
Average Queue (ft)	18	20	2	3	11	2
95th Queue (ft)	46	47	13	21	33	16
Link Distance (ft)	511	514		862		444
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			200		200	
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 30: Hadley Ave S & 94th St S, Interval #1

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	TR	L
Maximum Queue (ft)	39	31	4	15
Average Queue (ft)	14	16	1	2
95th Queue (ft)	39	41	7	14
Link Distance (ft)	489	512	600	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				200
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 30: Hadley Ave S & 94th St S, Interval #2

Movement	EB	WB	NB	NB	SB
Directions Served	LTR	LTR	L	TR	L
Maximum Queue (ft)	43	31	16	4	16
Average Queue (ft)	25	20	3	1	2
95th Queue (ft)	53	43	17	6	12
Link Distance (ft)	489	512		600	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			200		200
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 30: Hadley Ave S & 94th St S, Interval #3

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	36	31	20	15	20	6
Average Queue (ft)	19	12	4	2	3	1
95th Queue (ft)	45	36	18	14	16	9
Link Distance (ft)	489	512		600		862
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			200		200	
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 30: Hadley Ave S & 94th St S, Interval #4

Movement	EB	WB	NB	NB	SB
Directions Served	LTR	LTR	L	TR	L
Maximum Queue (ft)	44	31	15	5	15
Average Queue (ft)	20	14	3	1	2
95th Queue (ft)	49	38	16	7	14
Link Distance (ft)	489	512		600	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			200		200
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 30: Hadley Ave S & 94th St S, All Intervals

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	59	31	27	15	27	6
Average Queue (ft)	20	15	2	1	2	0
95th Queue (ft)	47	40	15	9	14	4
Link Distance (ft)	489	512		600		862
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			200		200	
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 35: Hadley Ave S & 95th St S, Interval #1

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	25	35	39	29
Average Queue (ft)	8	13	18	8
95th Queue (ft)	30	39	45	32
Link Distance (ft)	942	818	846	600
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 35: Hadley Ave S & 95th St S, Interval #2

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	40	44	62	68
Average Queue (ft)	12	14	22	21
95th Queue (ft)	39	45	52	65
Link Distance (ft)	942	818	846	600
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 35: Hadley Ave S & 95th St S, Interval #3

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	36	43	44	34
Average Queue (ft)	9	17	15	5
95th Queue (ft)	35	49	44	28
Link Distance (ft)	942	818	846	600
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 35: Hadley Ave S & 95th St S, Interval #4

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	34	43	35	29
Average Queue (ft)	12	13	14	8
95th Queue (ft)	42	44	40	31
Link Distance (ft)	942	818	846	600
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 35: Hadley Ave S & 95th St S, All Intervals

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	45	56	63	68
Average Queue (ft)	10	14	17	10
95th Queue (ft)	37	44	45	42
Link Distance (ft)	942	818	846	600
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty, Interval #1: 0
Network wide Queuing Penalty, Interval #2: 2
Network wide Queuing Penalty, Interval #3: 0
Network wide Queuing Penalty, Interval #4: 0
Network wide Queuing Penalty, All Intervals: 0

5: Hadley Ave S & 90th St S Performance by approach Interval #1 4:00

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.2	0.1
Total Del/Veh (s)	3.9	5.1	6.3	6.9	6.4

5: Hadley Ave S & 90th St S Performance by approach Interval #2 4:15

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.3	0.1
Total Del/Veh (s)	4.1	5.9	6.4	7.4	6.8

5: Hadley Ave S & 90th St S Performance by approach Interval #3 4:30

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.2	0.0	0.2	0.1
Total Del/Veh (s)	4.1	5.5	6.2	7.0	6.5

5: Hadley Ave S & 90th St S Performance by approach Interval #4 4:45

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.3	0.1
Total Del/Veh (s)	4.1	4.5	6.6	7.6	6.9

5: Hadley Ave S & 90th St S Performance by approach Entire Run

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.2	0.1
Total Del/Veh (s)	3.9	5.2	6.4	7.4	6.8

10: Hadley Ave S & North Access Performance by approach Interval #1 4:00

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Del/Veh (s)	3.7	0.4	2.1	1.2

10: Hadley Ave S & North Access Performance by approach Interval #2 4:15

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Del/Veh (s)	6.3	0.4	2.1	1.4

10: Hadley Ave S & North Access Performance by approach Interval #3 4:30

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Del/Veh (s)	6.8	0.4	2.1	1.3

10: Hadley Ave S & North Access Performance by approach Interval #4 4:45

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Del/Veh (s)	7.0	0.4	2.2	1.4

10: Hadley Ave S & North Access Performance by approach Entire Run

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Del/Veh (s)	5.9	0.4	2.1	1.3

15: Hadley Ave S & Central Access Performance by approach Interval #1 4:00

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Del/Veh (s)	2.8	0.1	0.0	0.1

15: Hadley Ave S & Central Access Performance by approach Interval #2 4:15

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Del/Veh (s)	3.5	0.2	0.0	0.2

15: Hadley Ave S & Central Access Performance by approach Interval #3 4:30

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Del/Veh (s)	3.3	0.1	0.0	0.1

15: Hadley Ave S & Central Access Performance by approach Interval #4 4:45

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Del/Veh (s)	4.4	0.2	0.0	0.2

15: Hadley Ave S & Central Access Performance by approach Entire Run

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Del/Veh (s)	3.5	0.1	0.0	0.1

20: Hadley Ave S & South Access Performance by approach Interval #1 4:00

Approach	WB	NB	SB	All
Denied Del/Veh (s)	3.7	0.0	0.0	0.1
Total Del/Veh (s)	12.9	0.3	0.1	0.4

20: Hadley Ave S & South Access Performance by approach Interval #2 4:15

Approach	WB	NB	SB	All
Denied Del/Veh (s)	3.7	0.0	0.0	0.1
Total Del/Veh (s)	6.9	0.3	0.2	0.5

20: Hadley Ave S & South Access Performance by approach Interval #3 4:30

Approach	WB	NB	SB	All
Denied Del/Veh (s)	4.5	0.0	0.0	0.1
Total Del/Veh (s)	10.8	0.3	0.1	0.4

20: Hadley Ave S & South Access Performance by approach Interval #4 4:45

Approach	WB	NB	SB	All
Denied Del/Veh (s)	5.0	0.0	0.0	0.1
Total Del/Veh (s)	7.6	0.3	0.1	0.3

20: Hadley Ave S & South Access Performance by approach Entire Run

Approach	WB	NB	SB	All
Denied Del/Veh (s)	3.8	0.0	0.0	0.1
Total Del/Veh (s)	8.2	0.3	0.1	0.4

25: Hadley Ave S & 92nd St S Performance by approach Interval #1 4:00

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	7.3	3.6	0.6	0.6	0.9

25: Hadley Ave S & 92nd St S Performance by approach Interval #2 4:15

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	6.2	4.6	0.7	0.7	1.0

25: Hadley Ave S & 92nd St S Performance by approach Interval #3 4:30

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	6.8	3.2	0.6	0.6	1.0

25: Hadley Ave S & 92nd St S Performance by approach Interval #4 4:45

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	6.5	3.5	0.6	0.6	0.9

25: Hadley Ave S & 92nd St S Performance by approach Entire Run

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	6.9	3.7	0.6	0.6	1.0

30: Hadley Ave S & 94th St S Performance by approach Interval #1 4:00

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	4.5	5.7	0.5	0.6	0.7

30: Hadley Ave S & 94th St S Performance by approach Interval #2 4:15

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	8.0	4.5	0.6	0.7	0.9

30: Hadley Ave S & 94th St S Performance by approach Interval #3 4:30

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	5.7	5.8	0.5	0.7	0.9

30: Hadley Ave S & 94th St S Performance by approach Interval #4 4:45

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.2	0.0	0.0	0.0
Total Del/Veh (s)	8.7	5.7	0.4	0.8	0.9

30: Hadley Ave S & 94th St S Performance by approach Entire Run

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	6.3	5.3	0.5	0.7	0.9

35: Hadley Ave S & 95th St S Performance by approach Interval #1 4:00

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.2	0.2	0.0	0.1
Total Del/Veh (s)	3.5	3.7	4.7	4.1	4.1

35: Hadley Ave S & 95th St S Performance by approach Interval #2 4:15

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.2	0.2	0.0	0.1
Total Del/Veh (s)	3.7	4.0	5.0	4.3	4.3

35: Hadley Ave S & 95th St S Performance by approach Interval #3 4:30

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.2	0.2	0.0	0.1
Total Del/Veh (s)	3.4	3.7	4.7	3.8	3.9

35: Hadley Ave S & 95th St S Performance by approach Interval #4 4:45

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.2	0.2	0.0	0.1
Total Del/Veh (s)	4.0	3.9	4.7	4.3	4.2

35: Hadley Ave S & 95th St S Performance by approach Entire Run

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.2	0.2	0.0	0.1
Total Del/Veh (s)	3.7	3.9	4.8	4.2	4.2

Total Network Performance By Interval

Interval Start	4:00	4:15	4:30	4:45	All
Denied Del/Veh (s)	0.2	0.3	0.2	0.3	0.2
Total Del/Veh (s)	10.7	11.4	10.5	11.4	11.8

Intersection: 5: Hadley Ave S & 90th St S, Interval #1

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	35	25	85	77
Average Queue (ft)	18	11	55	51
95th Queue (ft)	44	35	83	78
Link Distance (ft)	542	542	159	1014
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Hadley Ave S & 90th St S, Interval #2

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	34	31	81	79
Average Queue (ft)	18	15	55	58
95th Queue (ft)	44	40	82	82
Link Distance (ft)	542	542	159	1014
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Hadley Ave S & 90th St S, Interval #3

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	35	30	67	69
Average Queue (ft)	13	4	49	48
95th Queue (ft)	40	22	75	73
Link Distance (ft)	542	542	159	1014
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Hadley Ave S & 90th St S, Interval #4

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	31	31	75	73
Average Queue (ft)	16	14	54	55
95th Queue (ft)	40	38	78	75
Link Distance (ft)	542	542	159	1014
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Hadley Ave S & 90th St S, All Intervals

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	43	31	94	93
Average Queue (ft)	16	11	53	53
95th Queue (ft)	42	35	80	78
Link Distance (ft)	542	542	159	1014
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 10: Hadley Ave S & North Access, Interval #1

Movement	WB
Directions Served	LR
Maximum Queue (ft)	18
Average Queue (ft)	3
95th Queue (ft)	19
Link Distance (ft)	538
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 10: Hadley Ave S & North Access, Interval #2

Movement	WB
Directions Served	LR
Maximum Queue (ft)	23
Average Queue (ft)	5
95th Queue (ft)	24
Link Distance (ft)	538
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 10: Hadley Ave S & North Access, Interval #3

Movement	WB
Directions Served	LR
Maximum Queue (ft)	23
Average Queue (ft)	5
95th Queue (ft)	23
Link Distance (ft)	538
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 10: Hadley Ave S & North Access, Interval #4

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	23	12
Average Queue (ft)	4	2
95th Queue (ft)	20	13
Link Distance (ft)	538	159
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 10: Hadley Ave S & North Access, All Intervals

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	30	12
Average Queue (ft)	4	0
95th Queue (ft)	21	6
Link Distance (ft)	538	159
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 15: Hadley Ave S & Central Access, Interval #1

Movement	WB
Directions Served	LR
Maximum Queue (ft)	31
Average Queue (ft)	10
95th Queue (ft)	33
Link Distance (ft)	534
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 15: Hadley Ave S & Central Access, Interval #2

Movement	WB
Directions Served	LR
Maximum Queue (ft)	31
Average Queue (ft)	12
95th Queue (ft)	36
Link Distance (ft)	534
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 15: Hadley Ave S & Central Access, Interval #3

Movement	WB
Directions Served	LR
Maximum Queue (ft)	30
Average Queue (ft)	10
95th Queue (ft)	32
Link Distance (ft)	534
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 15: Hadley Ave S & Central Access, Interval #4

Movement	WB
Directions Served	LR
Maximum Queue (ft)	34
Average Queue (ft)	8
95th Queue (ft)	31
Link Distance (ft)	534
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 15: Hadley Ave S & Central Access, All Intervals

Movement	WB
Directions Served	LR
Maximum Queue (ft)	36
Average Queue (ft)	10
95th Queue (ft)	33
Link Distance (ft)	534
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 20: Hadley Ave S & South Access, Interval #1

Movement	WB	WB	SB
Directions Served	L	R	L
Maximum Queue (ft)	20	4	12
Average Queue (ft)	5	1	2
95th Queue (ft)	22	6	13
Link Distance (ft)		529	138
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	50		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 20: Hadley Ave S & South Access, Interval #2

Movement	WB	WB	SB
Directions Served	L	R	L
Maximum Queue (ft)	25	11	25
Average Queue (ft)	11	2	6
95th Queue (ft)	31	10	26
Link Distance (ft)		529	138
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	50		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 20: Hadley Ave S & South Access, Interval #3

Movement	WB	WB	SB
Directions Served	L	R	L
Maximum Queue (ft)	29	8	12
Average Queue (ft)	8	1	3
95th Queue (ft)	29	9	19
Link Distance (ft)		529	138
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	50		
Storage Blk Time (%)	1		
Queuing Penalty (veh)	0		

Intersection: 20: Hadley Ave S & South Access, Interval #4

Movement	WB	WB	SB
Directions Served	L	R	L
Maximum Queue (ft)	25	4	12
Average Queue (ft)	7	1	2
95th Queue (ft)	26	6	13
Link Distance (ft)		529	138
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	50		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 20: Hadley Ave S & South Access, All Intervals

Movement	WB	WB	SB
Directions Served	L	R	L
Maximum Queue (ft)	29	16	25
Average Queue (ft)	8	1	3
95th Queue (ft)	27	8	19
Link Distance (ft)		529	138
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	50		
Storage Blk Time (%)	0		
Queuing Penalty (veh)	0		

Intersection: 25: Hadley Ave S & 92nd St S, Interval #1

Movement	EB	WB	NB	NB	SB
Directions Served	LTR	LTR	L	TR	L
Maximum Queue (ft)	39	31	11	9	26
Average Queue (ft)	17	18	2	1	10
95th Queue (ft)	44	42	12	14	32
Link Distance (ft)	511	514		862	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			200		200
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 25: Hadley Ave S & 92nd St S, Interval #2

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	L	L	TR
Maximum Queue (ft)	35	35	21	32	12
Average Queue (ft)	18	18	4	12	1
95th Queue (ft)	43	44	20	35	9
Link Distance (ft)	511	514			444
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			200	200	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 25: Hadley Ave S & 92nd St S, Interval #3

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	L	L	TR
Maximum Queue (ft)	35	31	16	32	12
Average Queue (ft)	15	24	4	8	2
95th Queue (ft)	41	43	19	31	13
Link Distance (ft)	511	514			444
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			200	200	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 25: Hadley Ave S & 92nd St S, Interval #4

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	L	L	TR
Maximum Queue (ft)	35	31	16	20	6
Average Queue (ft)	16	17	4	4	1
95th Queue (ft)	41	42	19	23	9
Link Distance (ft)	511	514			444
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			200	200	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 25: Hadley Ave S & 92nd St S, All Intervals

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	48	36	27	9	40	12
Average Queue (ft)	16	19	3	0	8	1
95th Queue (ft)	43	43	18	7	31	9
Link Distance (ft)	511	514		862		444
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			200		200	
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 30: Hadley Ave S & 94th St S, Interval #1

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	L	L
Maximum Queue (ft)	31	24	10	6
Average Queue (ft)	10	5	1	1
95th Queue (ft)	33	23	8	8
Link Distance (ft)	489	512		
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			200	200
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 30: Hadley Ave S & 94th St S, Interval #2

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	L	L
Maximum Queue (ft)	35	30	16	16
Average Queue (ft)	17	11	2	2
95th Queue (ft)	43	34	14	15
Link Distance (ft)	489	512		
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			200	200
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 30: Hadley Ave S & 94th St S, Interval #3

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	L	L	TR
Maximum Queue (ft)	31	31	5	10	12
Average Queue (ft)	14	10	1	1	2
95th Queue (ft)	39	34	8	8	13
Link Distance (ft)	489	512			862
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			200	200	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 30: Hadley Ave S & 94th St S, Interval #4

Movement	EB	WB	SB
Directions Served	LTR	LTR	L
Maximum Queue (ft)	31	36	16
Average Queue (ft)	11	11	3
95th Queue (ft)	35	37	17
Link Distance (ft)	489	512	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			200
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 30: Hadley Ave S & 94th St S, All Intervals

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	L	L	TR
Maximum Queue (ft)	36	36	16	27	12
Average Queue (ft)	13	9	1	2	0
95th Queue (ft)	38	33	9	13	6
Link Distance (ft)	489	512			862
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			200	200	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 35: Hadley Ave S & 95th St S, Interval #1

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	32	44	24	45
Average Queue (ft)	6	16	11	15
95th Queue (ft)	31	49	34	51
Link Distance (ft)	942	818	846	600
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 35: Hadley Ave S & 95th St S, Interval #2

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	25	53	42	67
Average Queue (ft)	8	19	11	28
95th Queue (ft)	30	56	41	69
Link Distance (ft)	942	818	846	600
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 35: Hadley Ave S & 95th St S, Interval #3

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	31	35	34	29
Average Queue (ft)	8	12	11	8
95th Queue (ft)	30	40	35	32
Link Distance (ft)	942	818	846	600
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 35: Hadley Ave S & 95th St S, Interval #4

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	30	40	37	53
Average Queue (ft)	6	15	11	19
95th Queue (ft)	26	46	40	57
Link Distance (ft)	942	818	846	600
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 35: Hadley Ave S & 95th St S, All Intervals

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	39	58	47	72
Average Queue (ft)	7	16	11	17
95th Queue (ft)	29	48	38	55
Link Distance (ft)	942	818	846	600
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty, Interval #1: 0
Network wide Queuing Penalty, Interval #2: 0
Network wide Queuing Penalty, Interval #3: 0
Network wide Queuing Penalty, Interval #4: 0
Network wide Queuing Penalty, All Intervals: 0

5: Hadley Ave S & 90th St S Performance by approach Interval #1 7:45

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.1	0.0	0.2	0.1
Total Del/Veh (s)	4.5	6.6	7.2	6.8	6.8

5: Hadley Ave S & 90th St S Performance by approach Interval #2 8:00

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.2	0.1
Total Del/Veh (s)	4.3	7.1	8.7	7.4	7.9

5: Hadley Ave S & 90th St S Performance by approach Interval #3 8:15

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.2	0.1
Total Del/Veh (s)	4.2	5.7	8.2	7.4	7.6

5: Hadley Ave S & 90th St S Performance by approach Interval #4 8:30

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.1	0.2	0.1
Total Del/Veh (s)	4.2	5.7	7.6	6.9	7.0

5: Hadley Ave S & 90th St S Performance by approach Entire Run

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.2	0.1
Total Del/Veh (s)	4.3	5.6	8.1	7.4	7.5

10: Hadley Ave S & North Access Performance by approach Interval #1 7:45

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.3	0.1	0.0	0.0
Total Del/Veh (s)	9.7	0.7	2.1	1.3

10: Hadley Ave S & North Access Performance by approach Interval #2 8:00

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Del/Veh (s)	19.5	1.1	3.3	2.1

10: Hadley Ave S & North Access Performance by approach Interval #3 8:15

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Del/Veh (s)	10.9	0.9	2.3	1.4

10: Hadley Ave S & North Access Performance by approach Interval #4 8:30

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.0	0.0	0.0
Total Del/Veh (s)	11.1	0.7	2.0	1.2

10: Hadley Ave S & North Access Performance by approach Entire Run

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Del/Veh (s)	13.9	0.9	2.5	1.6

15: Hadley Ave S & Central Access Performance by approach Interval #1 7:45

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.0	0.0	0.0
Total Del/Veh (s)	4.1	0.3	0.1	1.0

15: Hadley Ave S & Central Access Performance by approach Interval #2 8:00

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.4	0.0	0.0	0.1
Total Del/Veh (s)	9.1	0.9	0.4	3.4

15: Hadley Ave S & Central Access Performance by approach Interval #3 8:15

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.0	0.0	0.0
Total Del/Veh (s)	4.5	0.4	0.2	1.0

15: Hadley Ave S & Central Access Performance by approach Interval #4 8:30

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.0	0.0	0.0
Total Del/Veh (s)	4.2	0.3	0.1	0.8

15: Hadley Ave S & Central Access Performance by approach Entire Run

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.3	0.0	0.0	0.1
Total Del/Veh (s)	6.7	0.5	0.2	1.8

20: Hadley Ave S & South Access Performance by approach Interval #1 7:45

Approach	WB	NB	SB	All
Denied Del/Veh (s)	4.0	0.0	0.0	0.3
Total Del/Veh (s)	9.2	0.4	1.1	1.2

20: Hadley Ave S & South Access Performance by approach Interval #2 8:00

Approach	WB	NB	SB	All
Denied Del/Veh (s)	3.9	0.0	0.1	0.5
Total Del/Veh (s)	24.8	0.9	4.0	4.3

20: Hadley Ave S & South Access Performance by approach Interval #3 8:15

Approach	WB	NB	SB	All
Denied Del/Veh (s)	3.9	0.0	0.0	0.2
Total Del/Veh (s)	10.6	0.5	1.2	1.4

20: Hadley Ave S & South Access Performance by approach Interval #4 8:30

Approach	WB	NB	SB	All
Denied Del/Veh (s)	4.0	0.0	0.0	0.3
Total Del/Veh (s)	7.7	0.4	0.8	1.1

20: Hadley Ave S & South Access Performance by approach Entire Run

Approach	WB	NB	SB	All
Denied Del/Veh (s)	3.9	0.0	0.0	0.3
Total Del/Veh (s)	16.5	0.6	2.0	2.3

25: Hadley Ave S & 92nd St S Performance by approach Interval #1 7:45

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	8.3	5.2	0.7	0.7	1.4

25: Hadley Ave S & 92nd St S Performance by approach Interval #2 8:00

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	11.0	5.8	1.2	1.3	2.0

25: Hadley Ave S & 92nd St S Performance by approach Interval #3 8:15

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	8.5	6.3	0.9	0.7	1.6

25: Hadley Ave S & 92nd St S Performance by approach Interval #4 8:30

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	7.7	4.7	0.7	0.7	1.4

25: Hadley Ave S & 92nd St S Performance by approach Entire Run

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	8.8	5.3	0.9	0.9	1.6

30: Hadley Ave S & 94th St S Performance by approach Interval #1 7:45

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	6.7	4.8	0.5	0.5	1.0

30: Hadley Ave S & 94th St S Performance by approach Interval #2 8:00

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	11.2	4.8	0.9	0.6	1.5

30: Hadley Ave S & 94th St S Performance by approach Interval #3 8:15

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	6.2	3.1	0.6	0.4	1.0

30: Hadley Ave S & 94th St S Performance by approach Interval #4 8:30

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	6.9	4.7	0.6	0.5	1.1

30: Hadley Ave S & 94th St S Performance by approach Entire Run

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	8.3	4.5	0.7	0.5	1.2

35: Hadley Ave S & 95th St S Performance by approach Interval #1 7:45

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.2	0.2	0.0	0.1
Total Del/Veh (s)	3.4	3.5	5.3	3.4	4.1

35: Hadley Ave S & 95th St S Performance by approach Interval #2 8:00

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.2	0.3	0.0	0.2
Total Del/Veh (s)	3.3	4.6	5.9	3.7	4.7

35: Hadley Ave S & 95th St S Performance by approach Interval #3 8:15

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.2	0.0	0.1
Total Del/Veh (s)	3.3	3.4	5.2	3.6	4.0

35: Hadley Ave S & 95th St S Performance by approach Interval #4 8:30

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.2	0.1	0.0	0.1
Total Del/Veh (s)	3.4	3.4	5.1	3.5	4.0

35: Hadley Ave S & 95th St S Performance by approach Entire Run

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.2	0.2	0.0	0.1
Total Del/Veh (s)	3.3	3.8	5.5	3.5	4.3

Total Network Performance By Interval

Interval Start	7:45	8:00	8:15	8:30	All
Denied Del/Veh (s)	0.4	0.5	0.3	0.4	0.4
Total Del/Veh (s)	11.0	14.8	12.1	11.1	13.3

Intersection: 5: Hadley Ave S & 90th St S, Interval #1

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	73	34	112	69
Average Queue (ft)	36	11	67	46
95th Queue (ft)	66	36	109	72
Link Distance (ft)	542	542	159	1014
Upstream Blk Time (%)			0	
Queuing Penalty (veh)			0	
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Hadley Ave S & 90th St S, Interval #2

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	63	44	133	89
Average Queue (ft)	39	19	82	52
95th Queue (ft)	68	49	133	85
Link Distance (ft)	542	542	159	1014
Upstream Blk Time (%)			0	
Queuing Penalty (veh)			1	
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Hadley Ave S & 90th St S, Interval #3

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	51	42	113	78
Average Queue (ft)	29	19	74	49
95th Queue (ft)	51	48	114	82
Link Distance (ft)	542	542	159	1014
Upstream Blk Time (%)			0	
Queuing Penalty (veh)			0	
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Hadley Ave S & 90th St S, Interval #4

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	51	36	107	68
Average Queue (ft)	33	21	67	46
95th Queue (ft)	55	46	105	73
Link Distance (ft)	542	542	159	1014
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Hadley Ave S & 90th St S, All Intervals

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	80	52	154	90
Average Queue (ft)	34	17	72	48
95th Queue (ft)	61	46	117	79
Link Distance (ft)	542	542	159	1014
Upstream Blk Time (%)			0	
Queuing Penalty (veh)			0	
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 10: Hadley Ave S & North Access, Interval #1

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	46	52
Average Queue (ft)	14	7
95th Queue (ft)	60	50
Link Distance (ft)	538	159
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 10: Hadley Ave S & North Access, Interval #2

Movement	WB	NB	SB
Directions Served	LR	TR	LT
Maximum Queue (ft)	72	22	105
Average Queue (ft)	31	6	40
95th Queue (ft)	90	29	107
Link Distance (ft)	538	147	159
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 10: Hadley Ave S & North Access, Interval #3

Movement	WB	NB	SB
Directions Served	LR	TR	LT
Maximum Queue (ft)	30	15	73
Average Queue (ft)	7	2	15
95th Queue (ft)	33	17	71
Link Distance (ft)	538	147	159
Upstream Blk Time (%)			0
Queuing Penalty (veh)			0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 10: Hadley Ave S & North Access, Interval #4

Movement	WB	NB	SB
Directions Served	LR	TR	LT
Maximum Queue (ft)	51	4	58
Average Queue (ft)	13	1	11
95th Queue (ft)	51	7	50
Link Distance (ft)	538	147	159
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 10: Hadley Ave S & North Access, All Intervals

Movement	WB	NB	SB
Directions Served	LR	TR	LT
Maximum Queue (ft)	97	35	117
Average Queue (ft)	16	2	18
95th Queue (ft)	62	17	75
Link Distance (ft)	538	147	159
Upstream Blk Time (%)			0
Queuing Penalty (veh)			0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 15: Hadley Ave S & Central Access, Interval #1

Movement	WB
Directions Served	LR
Maximum Queue (ft)	71
Average Queue (ft)	40
95th Queue (ft)	62
Link Distance (ft)	534
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 15: Hadley Ave S & Central Access, Interval #2

Movement	WB
Directions Served	LR
Maximum Queue (ft)	143
Average Queue (ft)	79
95th Queue (ft)	142
Link Distance (ft)	534
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 15: Hadley Ave S & Central Access, Interval #3

Movement	WB
Directions Served	LR
Maximum Queue (ft)	60
Average Queue (ft)	39
95th Queue (ft)	66
Link Distance (ft)	534
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 15: Hadley Ave S & Central Access, Interval #4

Movement	WB	SB
Directions Served	LR	T
Maximum Queue (ft)	49	7
Average Queue (ft)	34	1
95th Queue (ft)	54	10
Link Distance (ft)	534	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		75
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 15: Hadley Ave S & Central Access, All Intervals

Movement	WB	SB
Directions Served	LR	T
Maximum Queue (ft)	145	7
Average Queue (ft)	48	0
95th Queue (ft)	96	5
Link Distance (ft)	534	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		75
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 20: Hadley Ave S & South Access, Interval #1

Movement	WB	WB	NB	SB
Directions Served	L	R	R	L
Maximum Queue (ft)	56	4	13	47
Average Queue (ft)	23	1	2	23
95th Queue (ft)	52	6	12	56
Link Distance (ft)		529		138
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	50		225	
Storage Blk Time (%)	1			
Queuing Penalty (veh)	0			

Intersection: 20: Hadley Ave S & South Access, Interval #2

Movement	WB	WB	NB	NB	SB
Directions Served	L	R	T	R	L
Maximum Queue (ft)	85	66	19	42	82
Average Queue (ft)	47	15	1	12	48
95th Queue (ft)	90	78	9	39	76
Link Distance (ft)		529	444		138
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	50			225	
Storage Blk Time (%)	17	0			
Queuing Penalty (veh)	1	0			

Intersection: 20: Hadley Ave S & South Access, Interval #3

Movement	WB	WB	NB	SB
Directions Served	L	R	R	L
Maximum Queue (ft)	51	10	6	56
Average Queue (ft)	22	1	1	21
95th Queue (ft)	52	8	9	54
Link Distance (ft)		529		138
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	50		225	
Storage Blk Time (%)	2			
Queuing Penalty (veh)	0			

Intersection: 20: Hadley Ave S & South Access, Interval #4

Movement	WB	WB	SB
Directions Served	L	R	L
Maximum Queue (ft)	45	4	49
Average Queue (ft)	26	0	18
95th Queue (ft)	49	0	51
Link Distance (ft)		529	138
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	50		
Storage Blk Time (%)	1		
Queuing Penalty (veh)	0		

Intersection: 20: Hadley Ave S & South Access, All Intervals

Movement	WB	WB	NB	NB	SB
Directions Served	L	R	T	R	L
Maximum Queue (ft)	89	70	19	44	88
Average Queue (ft)	30	4	0	4	27
95th Queue (ft)	66	38	4	21	65
Link Distance (ft)		529	444		138
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	50			225	
Storage Blk Time (%)	5	0			
Queuing Penalty (veh)	0	0			

Intersection: 25: Hadley Ave S & 92nd St S, Interval #1

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	L	L	TR
Maximum Queue (ft)	40	42	5	16	12
Average Queue (ft)	22	26	1	4	2
95th Queue (ft)	50	50	7	19	13
Link Distance (ft)	511	514			444
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			200	200	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 25: Hadley Ave S & 92nd St S, Interval #2

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	57	40	11	6	39	16
Average Queue (ft)	32	23	2	1	11	2
95th Queue (ft)	61	48	12	7	38	18
Link Distance (ft)	511	514		862		444
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			200		200	
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 25: Hadley Ave S & 92nd St S, Interval #3

Movement	EB	WB	NB	NB	SB
Directions Served	LTR	LTR	L	TR	L
Maximum Queue (ft)	48	47	6	5	27
Average Queue (ft)	25	26	1	1	7
95th Queue (ft)	55	57	8	8	26
Link Distance (ft)	511	514		862	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			200		200
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 25: Hadley Ave S & 92nd St S, Interval #4

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	49	35	5	3	27	6
Average Queue (ft)	29	22	1	0	5	1
95th Queue (ft)	57	46	7	5	21	8
Link Distance (ft)	511	514		862		444
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			200		200	
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 25: Hadley Ave S & 92nd St S, All Intervals

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	68	51	21	8	39	33
Average Queue (ft)	27	24	1	1	7	1
95th Queue (ft)	56	50	9	6	27	12
Link Distance (ft)	511	514		862		444
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			200		200	
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 30: Hadley Ave S & 94th St S, Interval #1

Movement	EB	WB	NB	NB	SB
Directions Served	LTR	LTR	L	TR	L
Maximum Queue (ft)	43	44	5	9	5
Average Queue (ft)	19	13	1	0	1
95th Queue (ft)	48	45	7	0	8
Link Distance (ft)	489	512		600	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			200		200
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 30: Hadley Ave S & 94th St S, Interval #2

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	TR	L
Maximum Queue (ft)	52	36	5	21
Average Queue (ft)	27	20	1	4
95th Queue (ft)	59	45	11	20
Link Distance (ft)	489	512	600	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				200
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 30: Hadley Ave S & 94th St S, Interval #3

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	TR	L
Maximum Queue (ft)	40	31	3	20
Average Queue (ft)	25	16	0	3
95th Queue (ft)	52	41	5	16
Link Distance (ft)	489	512	600	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				200
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 30: Hadley Ave S & 94th St S, Interval #4

Movement	EB	WB	SB
Directions Served	LTR	LTR	L
Maximum Queue (ft)	39	39	11
Average Queue (ft)	19	18	1
95th Queue (ft)	48	47	8
Link Distance (ft)	489	512	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			200
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 30: Hadley Ave S & 94th St S, All Intervals

Movement	EB	WB	NB	NB	SB
Directions Served	LTR	LTR	L	TR	L
Maximum Queue (ft)	68	49	5	14	26
Average Queue (ft)	23	17	0	0	2
95th Queue (ft)	52	45	4	6	14
Link Distance (ft)	489	512		600	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			200		200
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 35: Hadley Ave S & 95th St S, Interval #1

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	31	38	43	29
Average Queue (ft)	9	11	13	4
95th Queue (ft)	31	42	43	24
Link Distance (ft)	942	818	846	600
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 35: Hadley Ave S & 95th St S, Interval #2

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	31	62	68	23
Average Queue (ft)	8	28	26	3
95th Queue (ft)	30	67	69	18
Link Distance (ft)	942	818	846	600
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 35: Hadley Ave S & 95th St S, Interval #3

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	40	39	40	12
Average Queue (ft)	10	17	15	3
95th Queue (ft)	37	46	43	16
Link Distance (ft)	942	818	846	600
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 35: Hadley Ave S & 95th St S, Interval #4

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	39	45	44	22
Average Queue (ft)	12	16	11	3
95th Queue (ft)	42	43	37	18
Link Distance (ft)	942	818	846	600
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 35: Hadley Ave S & 95th St S, All Intervals

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	49	75	71	35
Average Queue (ft)	10	18	16	3
95th Queue (ft)	35	51	50	19
Link Distance (ft)	942	818	846	600
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty, Interval #1: 0
Network wide Queuing Penalty, Interval #2: 2
Network wide Queuing Penalty, Interval #3: 1
Network wide Queuing Penalty, Interval #4: 0
Network wide Queuing Penalty, All Intervals: 1

5: Hadley Ave S & 90th St S Performance by approach Interval #1 2:45

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.2	0.1
Total Del/Veh (s)	4.3	4.6	7.1	8.1	7.3

5: Hadley Ave S & 90th St S Performance by approach Interval #2 3:00

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.1	0.3	0.2
Total Del/Veh (s)	3.7	4.3	7.2	9.7	8.1

5: Hadley Ave S & 90th St S Performance by approach Interval #3 3:15

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.1	0.0	0.2	0.1
Total Del/Veh (s)	4.9	7.1	7.6	8.5	7.9

5: Hadley Ave S & 90th St S Performance by approach Interval #4 3:30

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.1	0.3	0.1
Total Del/Veh (s)	4.8	4.1	7.6	7.9	7.5

5: Hadley Ave S & 90th St S Performance by approach Entire Run

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.3	0.1
Total Del/Veh (s)	4.6	4.6	7.4	8.8	7.8

10: Hadley Ave S & North Access Performance by approach Interval #1 2:45

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Del/Veh (s)	7.6	0.5	2.3	1.5

10: Hadley Ave S & North Access Performance by approach Interval #2 3:00

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.0	0.0	0.0
Total Del/Veh (s)	13.4	0.7	2.6	2.3

10: Hadley Ave S & North Access Performance by approach Interval #3 3:15

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Del/Veh (s)	7.4	0.6	2.2	1.4

10: Hadley Ave S & North Access Performance by approach Interval #4 3:30

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Del/Veh (s)	5.1	0.6	2.3	1.4

10: Hadley Ave S & North Access Performance by approach Entire Run

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.0	0.0	0.0
Total Del/Veh (s)	11.6	0.6	2.4	1.7

15: Hadley Ave S & Central Access Performance by approach Interval #1 2:45

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Del/Veh (s)	3.6	0.2	0.1	0.4

15: Hadley Ave S & Central Access Performance by approach Interval #2 3:00

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.0	0.0	0.0
Total Del/Veh (s)	6.7	0.5	0.3	1.8

15: Hadley Ave S & Central Access Performance by approach Interval #3 3:15

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Del/Veh (s)	3.3	0.2	0.1	0.4

15: Hadley Ave S & Central Access Performance by approach Interval #4 3:30

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Del/Veh (s)	3.6	0.2	0.1	0.3

15: Hadley Ave S & Central Access Performance by approach Entire Run

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.0	0.0	0.0
Total Del/Veh (s)	5.6	0.3	0.1	0.9

20: Hadley Ave S & South Access Performance by approach Interval #1 2:45

Approach	WB	NB	SB	All
Denied Del/Veh (s)	4.2	0.0	0.0	0.1
Total Del/Veh (s)	7.4	0.3	0.1	0.4

20: Hadley Ave S & South Access Performance by approach Interval #2 3:00

Approach	WB	NB	SB	All
Denied Del/Veh (s)	3.6	0.1	0.0	0.5
Total Del/Veh (s)	13.5	0.5	0.5	2.3

20: Hadley Ave S & South Access Performance by approach Interval #3 3:15

Approach	WB	NB	SB	All
Denied Del/Veh (s)	4.0	0.0	0.0	0.2
Total Del/Veh (s)	8.2	0.3	0.2	0.6

20: Hadley Ave S & South Access Performance by approach Interval #4 3:30

Approach	WB	NB	SB	All
Denied Del/Veh (s)	4.2	0.0	0.0	0.1
Total Del/Veh (s)	7.6	0.4	0.1	0.5

20: Hadley Ave S & South Access Performance by approach Entire Run

Approach	WB	NB	SB	All
Denied Del/Veh (s)	3.7	0.0	0.0	0.3
Total Del/Veh (s)	11.7	0.4	0.3	1.1

25: Hadley Ave S & 92nd St S Performance by approach Interval #1 2:45

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.2	0.0	0.1	0.0
Total Del/Veh (s)	6.3	4.5	0.8	0.9	1.2

25: Hadley Ave S & 92nd St S Performance by approach Interval #2 3:00

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	11.0	5.7	0.9	1.2	1.7

25: Hadley Ave S & 92nd St S Performance by approach Interval #3 3:15

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	8.8	5.0	0.8	0.8	1.3

25: Hadley Ave S & 92nd St S Performance by approach Interval #4 3:30

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.1	0.0
Total Del/Veh (s)	8.8	4.0	0.9	0.9	1.3

25: Hadley Ave S & 92nd St S Performance by approach Entire Run

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	9.1	4.7	0.9	1.0	1.4

30: Hadley Ave S & 94th St S Performance by approach Interval #1 2:45

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	5.3	5.1	0.7	1.1	1.3

30: Hadley Ave S & 94th St S Performance by approach Interval #2 3:00

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	7.2	6.1	0.8	1.0	1.4

30: Hadley Ave S & 94th St S Performance by approach Interval #3 3:15

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	5.6	4.7	0.5	0.9	1.0

30: Hadley Ave S & 94th St S Performance by approach Interval #4 3:30

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	6.8	6.6	0.5	0.8	1.1

30: Hadley Ave S & 94th St S Performance by approach Entire Run

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	6.9	5.5	0.7	1.0	1.2

35: Hadley Ave S & 95th St S Performance by approach Interval #1 2:45

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.2	0.2	0.0	0.1
Total Del/Veh (s)	3.8	3.9	5.2	4.1	4.3

35: Hadley Ave S & 95th St S Performance by approach Interval #2 3:00

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.2	0.3	0.0	0.1
Total Del/Veh (s)	3.4	3.9	5.5	4.2	4.4

35: Hadley Ave S & 95th St S Performance by approach Interval #3 3:15

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.2	0.2	0.0	0.1
Total Del/Veh (s)	3.6	3.4	5.7	4.0	4.4

35: Hadley Ave S & 95th St S Performance by approach Interval #4 3:30

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.2	0.2	0.0	0.1
Total Del/Veh (s)	3.3	3.4	4.9	4.3	4.1

35: Hadley Ave S & 95th St S Performance by approach Entire Run

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.2	0.2	0.0	0.1
Total Del/Veh (s)	3.5	3.7	5.5	4.2	4.4

Total Network Performance By Interval

Interval Start	2:45	3:00	3:15	3:30	All
Denied Del/Veh (s)	0.3	0.6	0.3	0.3	0.4
Total Del/Veh (s)	11.5	12.7	11.3	11.6	12.7

Intersection: 5: Hadley Ave S & 90th St S, Interval #1

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	47	30	86	86
Average Queue (ft)	19	15	60	61
95th Queue (ft)	50	39	89	90
Link Distance (ft)	542	542	159	1014
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Hadley Ave S & 90th St S, Interval #2

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	31	31	117	140
Average Queue (ft)	21	15	70	75
95th Queue (ft)	44	40	116	131
Link Distance (ft)	542	542	159	1014
Upstream Blk Time (%)			0	
Queuing Penalty (veh)			1	
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Hadley Ave S & 90th St S, Interval #3

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	34	30	99	86
Average Queue (ft)	21	10	62	58
95th Queue (ft)	45	33	100	97
Link Distance (ft)	542	542	159	1014
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Hadley Ave S & 90th St S, Interval #4

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	40	31	105	88
Average Queue (ft)	21	12	69	58
95th Queue (ft)	47	36	112	85
Link Distance (ft)	542	542	159	1014
Upstream Blk Time (%)			0	
Queuing Penalty (veh)			0	
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Hadley Ave S & 90th St S, All Intervals

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	48	31	134	148
Average Queue (ft)	21	13	66	63
95th Queue (ft)	47	37	106	104
Link Distance (ft)	542	542	159	1014
Upstream Blk Time (%)			0	
Queuing Penalty (veh)			0	
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 10: Hadley Ave S & North Access, Interval #1

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	62	14
Average Queue (ft)	20	2
95th Queue (ft)	64	21
Link Distance (ft)	538	159
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 10: Hadley Ave S & North Access, Interval #2

Movement	WB	NB	SB
Directions Served	LR	TR	LT
Maximum Queue (ft)	146	4	56
Average Queue (ft)	77	1	14
95th Queue (ft)	182	7	60
Link Distance (ft)	538	147	159
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 10: Hadley Ave S & North Access, Interval #3

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	38	11
Average Queue (ft)	10	2
95th Queue (ft)	48	17
Link Distance (ft)	538	159
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 10: Hadley Ave S & North Access, Interval #4

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	54	14
Average Queue (ft)	15	4
95th Queue (ft)	54	28
Link Distance (ft)	538	159
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 10: Hadley Ave S & North Access, All Intervals

Movement	WB	NB	SB
Directions Served	LR	TR	LT
Maximum Queue (ft)	146	4	71
Average Queue (ft)	30	0	5
95th Queue (ft)	108	3	35
Link Distance (ft)	538	147	159
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 15: Hadley Ave S & Central Access, Interval #1

Movement	WB
Directions Served	LR
Maximum Queue (ft)	31
Average Queue (ft)	24
95th Queue (ft)	42
Link Distance (ft)	534
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 15: Hadley Ave S & Central Access, Interval #2

Movement	WB
Directions Served	LR
Maximum Queue (ft)	115
Average Queue (ft)	58
95th Queue (ft)	106
Link Distance (ft)	534
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 15: Hadley Ave S & Central Access, Interval #3

Movement	WB
Directions Served	LR
Maximum Queue (ft)	40
Average Queue (ft)	25
95th Queue (ft)	48
Link Distance (ft)	534
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 15: Hadley Ave S & Central Access, Interval #4

Movement	WB
Directions Served	LR
Maximum Queue (ft)	35
Average Queue (ft)	21
95th Queue (ft)	44
Link Distance (ft)	534
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 15: Hadley Ave S & Central Access, All Intervals

Movement	WB
Directions Served	LR
Maximum Queue (ft)	115
Average Queue (ft)	32
95th Queue (ft)	71
Link Distance (ft)	534
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 20: Hadley Ave S & South Access, Interval #1

Movement	WB	WB	SB
Directions Served	L	R	L
Maximum Queue (ft)	25	4	6
Average Queue (ft)	12	1	1
95th Queue (ft)	32	6	9
Link Distance (ft)		529	138
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	50		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 20: Hadley Ave S & South Access, Interval #2

Movement	WB	WB	NB	SB
Directions Served	L	R	R	L
Maximum Queue (ft)	82	46	12	31
Average Queue (ft)	44	11	2	17
95th Queue (ft)	80	41	14	42
Link Distance (ft)		529		138
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	50		225	
Storage Blk Time (%)	11	0		
Queuing Penalty (veh)	1	0		

Intersection: 20: Hadley Ave S & South Access, Interval #3

Movement	WB	WB	SB
Directions Served	L	R	L
Maximum Queue (ft)	44	8	25
Average Queue (ft)	19	1	4
95th Queue (ft)	48	8	22
Link Distance (ft)		529	138
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	50		
Storage Blk Time (%)	1		
Queuing Penalty (veh)	0		

Intersection: 20: Hadley Ave S & South Access, Interval #4

Movement	WB	WB	SB
Directions Served	L	R	L
Maximum Queue (ft)	25	4	6
Average Queue (ft)	14	1	1
95th Queue (ft)	33	6	10
Link Distance (ft)		529	138
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	50		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 20: Hadley Ave S & South Access, All Intervals

Movement	WB	WB	NB	SB
Directions Served	L	R	R	L
Maximum Queue (ft)	82	46	12	31
Average Queue (ft)	22	3	0	6
95th Queue (ft)	57	21	6	26
Link Distance (ft)		529		138
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	50		225	
Storage Blk Time (%)	3	0		
Queuing Penalty (veh)	0	0		

Intersection: 25: Hadley Ave S & 92nd St S, Interval #1

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	31	44	17	5	32	28
Average Queue (ft)	14	24	3	1	8	5
95th Queue (ft)	39	50	17	8	30	25
Link Distance (ft)	511	514		862		444
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			200		200	
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 25: Hadley Ave S & 92nd St S, Interval #2

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	59	42	10	5	44	27
Average Queue (ft)	24	22	3	1	19	4
95th Queue (ft)	60	50	17	8	49	25
Link Distance (ft)	511	514		862		444
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			200		200	
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 25: Hadley Ave S & 92nd St S, Interval #3

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	38	35	27	5	22	20
Average Queue (ft)	17	16	7	1	8	3
95th Queue (ft)	43	42	25	11	28	22
Link Distance (ft)	511	514		862		444
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			200		200	
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 25: Hadley Ave S & 92nd St S, Interval #4

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	35	31	10	14	35	21
Average Queue (ft)	18	19	1	2	11	3
95th Queue (ft)	43	43	11	16	36	20
Link Distance (ft)	511	514		862		444
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			200		200	
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 25: Hadley Ave S & 92nd St S, All Intervals

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	59	47	27	24	49	51
Average Queue (ft)	18	20	4	1	11	4
95th Queue (ft)	47	47	18	11	37	23
Link Distance (ft)	511	514		862		444
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			200		200	
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 30: Hadley Ave S & 94th St S, Interval #1

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	L	L
Maximum Queue (ft)	31	36	5	11
Average Queue (ft)	21	15	1	2
95th Queue (ft)	44	42	8	12
Link Distance (ft)	489	512		
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			200	200
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 30: Hadley Ave S & 94th St S, Interval #2

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	L	L
Maximum Queue (ft)	49	31	16	25
Average Queue (ft)	28	17	4	7
95th Queue (ft)	52	41	19	26
Link Distance (ft)	489	512		
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			200	200
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 30: Hadley Ave S & 94th St S, Interval #3

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	L	L
Maximum Queue (ft)	31	35	16	21
Average Queue (ft)	17	14	4	3
95th Queue (ft)	42	41	18	16
Link Distance (ft)	489	512		
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			200	200
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 30: Hadley Ave S & 94th St S, Interval #4

Movement	EB	WB	SB	SB
Directions Served	LTR	LTR	L	TR
Maximum Queue (ft)	44	31	10	6
Average Queue (ft)	19	9	1	1
95th Queue (ft)	48	32	11	9
Link Distance (ft)	489	512		862
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			200	
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 30: Hadley Ave S & 94th St S, All Intervals

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	L	L	TR
Maximum Queue (ft)	49	40	22	27	6
Average Queue (ft)	21	14	2	3	0
95th Queue (ft)	48	40	13	17	4
Link Distance (ft)	489	512			862
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			200	200	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 35: Hadley Ave S & 95th St S, Interval #1

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	40	51	48	28
Average Queue (ft)	9	16	13	6
95th Queue (ft)	36	60	46	31
Link Distance (ft)	942	818	846	600
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 35: Hadley Ave S & 95th St S, Interval #2

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	34	41	49	44
Average Queue (ft)	10	18	21	13
95th Queue (ft)	39	46	52	43
Link Distance (ft)	942	818	846	600
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 35: Hadley Ave S & 95th St S, Interval #3

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	31	34	58	42
Average Queue (ft)	8	11	22	11
95th Queue (ft)	31	36	59	42
Link Distance (ft)	942	818	846	600
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 35: Hadley Ave S & 95th St S, Interval #4

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	51	44	34	53
Average Queue (ft)	11	16	9	19
95th Queue (ft)	40	45	31	55
Link Distance (ft)	942	818	846	600
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 35: Hadley Ave S & 95th St S, All Intervals

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	60	61	61	65
Average Queue (ft)	10	15	16	12
95th Queue (ft)	37	48	49	44
Link Distance (ft)	942	818	846	600
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty, Interval #1: 0
Network wide Queuing Penalty, Interval #2: 2
Network wide Queuing Penalty, Interval #3: 0
Network wide Queuing Penalty, Interval #4: 0
Network wide Queuing Penalty, All Intervals: 1

5: Hadley Ave S & 90th St S Performance by approach Interval #1 4:00

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.2	0.0	0.3	0.1
Total Del/Veh (s)	3.3	5.9	6.2	7.1	6.5

5: Hadley Ave S & 90th St S Performance by approach Interval #2 4:15

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.3	0.1
Total Del/Veh (s)	5.2	5.4	6.4	8.3	7.3

5: Hadley Ave S & 90th St S Performance by approach Interval #3 4:30

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.2	0.1
Total Del/Veh (s)	4.3	4.4	6.5	7.5	6.8

5: Hadley Ave S & 90th St S Performance by approach Interval #4 4:45

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.3	0.2
Total Del/Veh (s)	5.1	5.1	6.7	7.8	7.1

5: Hadley Ave S & 90th St S Performance by approach Entire Run

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.3	0.1
Total Del/Veh (s)	4.2	5.1	6.6	7.8	7.0

10: Hadley Ave S & North Access Performance by approach Interval #1 4:00

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.0	0.0	0.0
Total Del/Veh (s)	6.8	0.4	2.2	1.3

10: Hadley Ave S & North Access Performance by approach Interval #2 4:15

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Del/Veh (s)	6.5	0.4	2.2	1.5

10: Hadley Ave S & North Access Performance by approach Interval #3 4:30

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.0	0.0	0.0
Total Del/Veh (s)	5.1	0.5	2.2	1.4

10: Hadley Ave S & North Access Performance by approach Interval #4 4:45

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Del/Veh (s)	6.0	0.5	2.2	1.4

10: Hadley Ave S & North Access Performance by approach Entire Run

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Del/Veh (s)	6.2	0.5	2.2	1.4

15: Hadley Ave S & Central Access Performance by approach Interval #1 4:00

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Del/Veh (s)	2.9	0.1	0.0	0.1

15: Hadley Ave S & Central Access Performance by approach Interval #2 4:15

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Del/Veh (s)	4.0	0.2	0.0	0.2

15: Hadley Ave S & Central Access Performance by approach Interval #3 4:30

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Del/Veh (s)	3.2	0.2	0.0	0.2

15: Hadley Ave S & Central Access Performance by approach Interval #4 4:45

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Del/Veh (s)	3.8	0.2	0.0	0.2

15: Hadley Ave S & Central Access Performance by approach Entire Run

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Del/Veh (s)	3.4	0.2	0.0	0.2

20: Hadley Ave S & South Access Performance by approach Interval #1 4:00

Approach	WB	NB	SB	All
Denied Del/Veh (s)	4.0	0.0	0.0	0.1
Total Del/Veh (s)	7.7	0.3	0.1	0.3

20: Hadley Ave S & South Access Performance by approach Interval #2 4:15

Approach	WB	NB	SB	All
Denied Del/Veh (s)	4.4	0.0	0.0	0.1
Total Del/Veh (s)	8.1	0.3	0.1	0.4

20: Hadley Ave S & South Access Performance by approach Interval #3 4:30

Approach	WB	NB	SB	All
Denied Del/Veh (s)	3.9	0.0	0.0	0.1
Total Del/Veh (s)	7.5	0.3	0.2	0.4

20: Hadley Ave S & South Access Performance by approach Interval #4 4:45

Approach	WB	NB	SB	All
Denied Del/Veh (s)	3.4	0.0	0.0	0.1
Total Del/Veh (s)	11.8	0.4	0.1	0.7

20: Hadley Ave S & South Access Performance by approach Entire Run

Approach	WB	NB	SB	All
Denied Del/Veh (s)	3.6	0.0	0.0	0.1
Total Del/Veh (s)	8.8	0.3	0.1	0.4

25: Hadley Ave S & 92nd St S Performance by approach Interval #1 4:00

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.2	0.0	0.0	0.0
Total Del/Veh (s)	6.1	3.7	0.6	0.6	0.9

25: Hadley Ave S & 92nd St S Performance by approach Interval #2 4:15

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	11.8	4.1	0.7	0.7	1.2

25: Hadley Ave S & 92nd St S Performance by approach Interval #3 4:30

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.1	0.0	0.0	0.0
Total Del/Veh (s)	9.1	4.6	0.7	0.7	1.2

25: Hadley Ave S & 92nd St S Performance by approach Interval #4 4:45

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	4.8	3.1	0.7	0.7	0.9

25: Hadley Ave S & 92nd St S Performance by approach Entire Run

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	8.7	3.9	0.7	0.7	1.1

30: Hadley Ave S & 94th St S Performance by approach Interval #1 4:00

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	7.2	7.3	0.5	0.8	0.9

30: Hadley Ave S & 94th St S Performance by approach Interval #2 4:15

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	7.9	3.0	0.6	0.9	1.0

30: Hadley Ave S & 94th St S Performance by approach Interval #3 4:30

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	8.8	4.2	0.6	0.8	0.9

30: Hadley Ave S & 94th St S Performance by approach Interval #4 4:45

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	6.0	7.4	0.6	0.8	0.9

30: Hadley Ave S & 94th St S Performance by approach Entire Run

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	7.4	5.2	0.6	0.8	0.9

35: Hadley Ave S & 95th St S Performance by approach Interval #1 4:00

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.2	0.2	0.0	0.1
Total Del/Veh (s)	3.6	3.7	4.9	4.0	4.1

35: Hadley Ave S & 95th St S Performance by approach Interval #2 4:15

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.2	0.1	0.0	0.1
Total Del/Veh (s)	4.4	3.9	5.1	4.4	4.4

35: Hadley Ave S & 95th St S Performance by approach Interval #3 4:30

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.2	0.2	0.0	0.1
Total Del/Veh (s)	4.1	4.0	4.6	4.4	4.3

35: Hadley Ave S & 95th St S Performance by approach Interval #4 4:45

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.3	0.2	0.0	0.1
Total Del/Veh (s)	3.6	3.8	4.9	4.3	4.2

35: Hadley Ave S & 95th St S Performance by approach Entire Run

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.2	0.2	0.0	0.1
Total Del/Veh (s)	3.9	3.9	4.9	4.3	4.3

Total Network Performance By Interval

Interval Start	4:00	4:15	4:30	4:45	All
Denied Del/Veh (s)	0.2	0.3	0.2	0.3	0.3
Total Del/Veh (s)	10.8	12.4	11.5	11.7	12.4

Intersection: 5: Hadley Ave S & 90th St S, Interval #1

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	31	34	68	64
Average Queue (ft)	17	15	52	49
95th Queue (ft)	41	41	76	73
Link Distance (ft)	542	542	159	1014
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Hadley Ave S & 90th St S, Interval #2

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	35	31	70	100
Average Queue (ft)	19	18	55	66
95th Queue (ft)	45	42	74	98
Link Distance (ft)	542	542	159	1014
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Hadley Ave S & 90th St S, Interval #3

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	35	31	73	79
Average Queue (ft)	16	16	54	54
95th Queue (ft)	42	41	78	79
Link Distance (ft)	542	542	159	1014
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Hadley Ave S & 90th St S, Interval #4

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	31	31	85	88
Average Queue (ft)	18	10	59	56
95th Queue (ft)	42	34	91	87
Link Distance (ft)	542	542	159	1014
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Hadley Ave S & 90th St S, All Intervals

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	40	34	97	102
Average Queue (ft)	17	15	55	56
95th Queue (ft)	42	40	81	87
Link Distance (ft)	542	542	159	1014
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 10: Hadley Ave S & North Access, Interval #1

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	24	18
Average Queue (ft)	7	3
95th Queue (ft)	27	19
Link Distance (ft)	538	159
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 10: Hadley Ave S & North Access, Interval #2

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	23	18
Average Queue (ft)	5	3
95th Queue (ft)	23	17
Link Distance (ft)	538	159
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 10: Hadley Ave S & North Access, Interval #3

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	24	6
Average Queue (ft)	6	1
95th Queue (ft)	26	9
Link Distance (ft)	538	159
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 10: Hadley Ave S & North Access, Interval #4

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	17	6
Average Queue (ft)	2	2
95th Queue (ft)	16	12
Link Distance (ft)	538	159
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 10: Hadley Ave S & North Access, All Intervals

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	30	24
Average Queue (ft)	5	2
95th Queue (ft)	23	15
Link Distance (ft)	538	159
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 15: Hadley Ave S & Central Access, Interval #1

Movement	WB
Directions Served	LR
Maximum Queue (ft)	31
Average Queue (ft)	13
95th Queue (ft)	38
Link Distance (ft)	534
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 15: Hadley Ave S & Central Access, Interval #2

Movement	WB
Directions Served	LR
Maximum Queue (ft)	35
Average Queue (ft)	12
95th Queue (ft)	38
Link Distance (ft)	534
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 15: Hadley Ave S & Central Access, Interval #3

Movement	WB
Directions Served	LR
Maximum Queue (ft)	31
Average Queue (ft)	12
95th Queue (ft)	36
Link Distance (ft)	534
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 15: Hadley Ave S & Central Access, Interval #4

Movement	WB
Directions Served	LR
Maximum Queue (ft)	30
Average Queue (ft)	9
95th Queue (ft)	32
Link Distance (ft)	534
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 15: Hadley Ave S & Central Access, All Intervals

Movement	WB
Directions Served	LR
Maximum Queue (ft)	36
Average Queue (ft)	12
95th Queue (ft)	36
Link Distance (ft)	534
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 20: Hadley Ave S & South Access, Interval #1

Movement	WB	WB	SB
Directions Served	L	R	L
Maximum Queue (ft)	25	4	12
Average Queue (ft)	6	1	1
95th Queue (ft)	22	6	9
Link Distance (ft)		529	138
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	50		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 20: Hadley Ave S & South Access, Interval #2

Movement	WB	WB	SB
Directions Served	L	R	L
Maximum Queue (ft)	25	8	24
Average Queue (ft)	13	1	3
95th Queue (ft)	33	8	19
Link Distance (ft)		529	138
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	50		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 20: Hadley Ave S & South Access, Interval #3

Movement	WB	WB	SB
Directions Served	L	R	L
Maximum Queue (ft)	25	3	25
Average Queue (ft)	9	0	4
95th Queue (ft)	29	5	22
Link Distance (ft)		529	138
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	50		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 20: Hadley Ave S & South Access, Interval #4

Movement	WB	WB	SB
Directions Served	L	R	L
Maximum Queue (ft)	30	19	24
Average Queue (ft)	13	3	4
95th Queue (ft)	38	19	21
Link Distance (ft)		529	138
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	50		
Storage Blk Time (%)	2	0	
Queuing Penalty (veh)	0	0	

Intersection: 20: Hadley Ave S & South Access, All Intervals

Movement	WB	WB	SB
Directions Served	L	R	L
Maximum Queue (ft)	31	23	31
Average Queue (ft)	10	1	3
95th Queue (ft)	31	11	18
Link Distance (ft)		529	138
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	50		
Storage Blk Time (%)	0	0	
Queuing Penalty (veh)	0	0	

Intersection: 25: Hadley Ave S & 92nd St S, Interval #1

Movement	EB	WB	NB	NB	SB
Directions Served	LTR	LTR	L	TR	L
Maximum Queue (ft)	35	31	15	5	16
Average Queue (ft)	19	15	2	1	7
95th Queue (ft)	45	40	14	8	27
Link Distance (ft)	511	514		862	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			200		200
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 25: Hadley Ave S & 92nd St S, Interval #2

Movement	EB	WB	NB	NB	SB
Directions Served	LTR	LTR	L	TR	L
Maximum Queue (ft)	43	35	16	9	27
Average Queue (ft)	21	14	3	1	14
95th Queue (ft)	49	40	17	14	35
Link Distance (ft)	511	514		862	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			200		200
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 25: Hadley Ave S & 92nd St S, Interval #3

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	L	L	TR
Maximum Queue (ft)	39	39	16	31	15
Average Queue (ft)	20	19	2	11	2
95th Queue (ft)	50	45	15	35	17
Link Distance (ft)	511	514			444
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			200	200	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 25: Hadley Ave S & 92nd St S, Interval #4

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	L	L	TR
Maximum Queue (ft)	30	31	15	26	5
Average Queue (ft)	13	15	3	8	1
95th Queue (ft)	38	40	16	29	10
Link Distance (ft)	511	514			444
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			200	200	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 25: Hadley Ave S & 92nd St S, All Intervals

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	48	44	27	14	35	21
Average Queue (ft)	18	16	3	1	10	1
95th Queue (ft)	46	42	15	8	32	10
Link Distance (ft)	511	514		862		444
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			200		200	
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 30: Hadley Ave S & 94th St S, Interval #1

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	L	L
Maximum Queue (ft)	31	35	10	21
Average Queue (ft)	13	11	1	5
95th Queue (ft)	37	37	11	21
Link Distance (ft)	489	512		
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			200	200
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 30: Hadley Ave S & 94th St S, Interval #2

Movement	EB	WB	NB	NB	SB
Directions Served	LTR	LTR	L	TR	L
Maximum Queue (ft)	36	25	10	5	21
Average Queue (ft)	15	8	1	1	4
95th Queue (ft)	42	30	8	7	21
Link Distance (ft)	489	512		600	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			200		200
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 30: Hadley Ave S & 94th St S, Interval #3

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	L	L
Maximum Queue (ft)	35	31	15	15
Average Queue (ft)	12	11	1	4
95th Queue (ft)	38	36	11	18
Link Distance (ft)	489	512		
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			200	200
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 30: Hadley Ave S & 94th St S, Interval #4

Movement	EB	WB	NB	NB	SB
Directions Served	LTR	LTR	L	TR	L
Maximum Queue (ft)	31	31	3	10	10
Average Queue (ft)	15	8	0	1	1
95th Queue (ft)	40	30	4	11	11
Link Distance (ft)	489	512		600	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			200		200
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 30: Hadley Ave S & 94th St S, All Intervals

Movement	EB	WB	NB	NB	SB
Directions Served	LTR	LTR	L	TR	L
Maximum Queue (ft)	40	35	26	15	26
Average Queue (ft)	14	10	1	1	4
95th Queue (ft)	40	33	9	6	18
Link Distance (ft)	489	512		600	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			200		200
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 35: Hadley Ave S & 95th St S, Interval #1

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	24	42	25	47
Average Queue (ft)	9	16	13	12
95th Queue (ft)	31	46	37	46
Link Distance (ft)	942	818	846	600
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 35: Hadley Ave S & 95th St S, Interval #2

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	39	53	40	57
Average Queue (ft)	12	19	19	17
95th Queue (ft)	40	57	47	55
Link Distance (ft)	942	818	846	600
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 35: Hadley Ave S & 95th St S, Interval #3

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	31	53	43	49
Average Queue (ft)	13	20	13	19
95th Queue (ft)	38	56	44	56
Link Distance (ft)	942	818	846	600
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 35: Hadley Ave S & 95th St S, Interval #4

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	31	45	38	53
Average Queue (ft)	6	20	11	17
95th Queue (ft)	25	50	40	49
Link Distance (ft)	942	818	846	600
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 35: Hadley Ave S & 95th St S, All Intervals

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	39	67	58	77
Average Queue (ft)	10	19	14	16
95th Queue (ft)	34	53	42	52
Link Distance (ft)	942	818	846	600
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty, Interval #1: 0
Network wide Queuing Penalty, Interval #2: 0
Network wide Queuing Penalty, Interval #3: 0
Network wide Queuing Penalty, Interval #4: 0
Network wide Queuing Penalty, All Intervals: 0

5: Hadley Ave S & 90th St S Performance by approach Interval #1 7:45

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.1	0.0	0.2	0.1
Total Del/Veh (s)	4.2	4.9	8.0	7.3	7.4

5: Hadley Ave S & 90th St S Performance by approach Interval #2 8:00

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.2	0.1
Total Del/Veh (s)	4.4	6.8	9.2	7.8	8.3

5: Hadley Ave S & 90th St S Performance by approach Interval #3 8:15

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.1	0.0	0.2	0.1
Total Del/Veh (s)	4.2	6.0	7.9	7.3	7.3

5: Hadley Ave S & 90th St S Performance by approach Interval #4 8:30

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.1	0.2	0.1
Total Del/Veh (s)	4.0	4.9	7.5	6.7	6.9

5: Hadley Ave S & 90th St S Performance by approach Entire Run

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.2	0.1
Total Del/Veh (s)	4.3	5.4	8.3	7.6	7.6

10: Hadley Ave S & North Access Performance by approach Interval #1 7:45

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Del/Veh (s)	6.5	0.8	2.3	1.4

10: Hadley Ave S & North Access Performance by approach Interval #2 8:00

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.1
Total Del/Veh (s)	17.9	1.4	3.7	2.6

10: Hadley Ave S & North Access Performance by approach Interval #3 8:15

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Del/Veh (s)	10.3	0.8	2.3	1.4

10: Hadley Ave S & North Access Performance by approach Interval #4 8:30

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Del/Veh (s)	7.2	0.8	2.0	1.3

10: Hadley Ave S & North Access Performance by approach Entire Run

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Del/Veh (s)	15.6	1.0	2.7	1.8

15: Hadley Ave S & Central Access Performance by approach Interval #1 7:45

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.0	0.0	0.0
Total Del/Veh (s)	4.3	0.3	0.2	0.8

15: Hadley Ave S & Central Access Performance by approach Interval #2 8:00

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.3	0.0	0.0	0.1
Total Del/Veh (s)	9.1	0.9	0.5	3.4

15: Hadley Ave S & Central Access Performance by approach Interval #3 8:15

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.0	0.0	0.0
Total Del/Veh (s)	4.8	0.4	0.2	1.1

15: Hadley Ave S & Central Access Performance by approach Interval #4 8:30

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.0	0.0	0.0
Total Del/Veh (s)	4.0	0.4	0.1	1.0

15: Hadley Ave S & Central Access Performance by approach Entire Run

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.0	0.0	0.1
Total Del/Veh (s)	6.9	0.5	0.3	1.9

20: Hadley Ave S & South Access Performance by approach Interval #1 7:45

Approach	WB	NB	SB	All
Denied Del/Veh (s)	4.1	0.0	0.0	0.3
Total Del/Veh (s)	7.4	0.5	1.1	1.3

20: Hadley Ave S & South Access Performance by approach Interval #2 8:00

Approach	WB	NB	SB	All
Denied Del/Veh (s)	3.6	0.1	0.1	0.6
Total Del/Veh (s)	35.5	1.0	4.7	7.7

20: Hadley Ave S & South Access Performance by approach Interval #3 8:15

Approach	WB	NB	SB	All
Denied Del/Veh (s)	3.9	0.0	0.0	0.3
Total Del/Veh (s)	18.6	0.5	1.6	2.8

20: Hadley Ave S & South Access Performance by approach Interval #4 8:30

Approach	WB	NB	SB	All
Denied Del/Veh (s)	3.9	0.0	0.0	0.4
Total Del/Veh (s)	7.3	0.4	1.1	1.2

20: Hadley Ave S & South Access Performance by approach Entire Run

Approach	WB	NB	SB	All
Denied Del/Veh (s)	3.8	0.0	0.0	0.4
Total Del/Veh (s)	25.1	0.7	2.5	4.0

25: Hadley Ave S & 92nd St S Performance by approach Interval #1 7:45

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.1	0.0	0.1	0.0
Total Del/Veh (s)	9.9	5.2	1.1	0.7	1.8

25: Hadley Ave S & 92nd St S Performance by approach Interval #2 8:00

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.2	0.0	0.0	0.0
Total Del/Veh (s)	14.9	8.9	1.0	1.0	2.0

25: Hadley Ave S & 92nd St S Performance by approach Interval #3 8:15

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	8.5	5.9	0.9	0.9	1.6

25: Hadley Ave S & 92nd St S Performance by approach Interval #4 8:30

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	8.5	5.6	0.8	0.7	1.7

25: Hadley Ave S & 92nd St S Performance by approach Entire Run

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	10.6	6.5	1.0	0.9	1.8

30: Hadley Ave S & 94th St S Performance by approach Interval #1 7:45

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.2	0.0	0.0	0.0
Total Del/Veh (s)	7.8	4.3	0.9	0.6	1.2

30: Hadley Ave S & 94th St S Performance by approach Interval #2 8:00

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	7.1	5.0	1.0	0.6	1.2

30: Hadley Ave S & 94th St S Performance by approach Interval #3 8:15

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	6.9	3.5	0.8	0.6	1.1

30: Hadley Ave S & 94th St S Performance by approach Interval #4 8:30

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	6.4	4.2	0.6	0.4	0.9

30: Hadley Ave S & 94th St S Performance by approach Entire Run

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	6.8	4.5	0.8	0.5	1.1

35: Hadley Ave S & 95th St S Performance by approach Interval #1 7:45

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.2	0.2	0.0	0.1
Total Del/Veh (s)	3.1	3.4	5.6	3.5	4.2

35: Hadley Ave S & 95th St S Performance by approach Interval #2 8:00

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.2	0.3	0.0	0.2
Total Del/Veh (s)	3.8	4.6	6.2	3.6	4.7

35: Hadley Ave S & 95th St S Performance by approach Interval #3 8:15

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.2	0.2	0.0	0.1
Total Del/Veh (s)	3.6	3.9	5.2	3.9	4.3

35: Hadley Ave S & 95th St S Performance by approach Interval #4 8:30

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.2	0.0	0.1
Total Del/Veh (s)	3.2	3.3	5.4	3.4	4.0

35: Hadley Ave S & 95th St S Performance by approach Entire Run

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.2	0.2	0.0	0.1
Total Del/Veh (s)	3.4	3.9	5.7	3.7	4.4

Total Network Performance By Interval

Interval Start	7:45	8:00	8:15	8:30	All
Denied Del/Veh (s)	0.4	0.7	0.4	0.5	0.5
Total Del/Veh (s)	11.8	17.0	12.1	11.0	14.5

Intersection: 5: Hadley Ave S & 90th St S, Interval #1

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	50	40	119	82
Average Queue (ft)	29	23	80	50
95th Queue (ft)	55	48	125	81
Link Distance (ft)	542	542	159	1014
Upstream Blk Time (%)			0	
Queuing Penalty (veh)			0	
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Hadley Ave S & 90th St S, Interval #2

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	52	40	141	82
Average Queue (ft)	32	21	94	54
95th Queue (ft)	51	48	141	83
Link Distance (ft)	542	542	159	1014
Upstream Blk Time (%)			1	
Queuing Penalty (veh)			3	
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Hadley Ave S & 90th St S, Interval #3

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	56	47	122	79
Average Queue (ft)	33	23	73	53
95th Queue (ft)	55	55	117	79
Link Distance (ft)	542	542	159	1014
Upstream Blk Time (%)			0	
Queuing Penalty (veh)			1	
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Hadley Ave S & 90th St S, Interval #4

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	54	42	110	62
Average Queue (ft)	32	19	73	46
95th Queue (ft)	56	46	116	69
Link Distance (ft)	542	542	159	1014
Upstream Blk Time (%)			0	
Queuing Penalty (veh)			0	
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Hadley Ave S & 90th St S, All Intervals

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	70	52	147	95
Average Queue (ft)	32	21	80	51
95th Queue (ft)	54	50	127	79
Link Distance (ft)	542	542	159	1014
Upstream Blk Time (%)			0	
Queuing Penalty (veh)			1	
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 10: Hadley Ave S & North Access, Interval #1

Movement	WB	NB	SB
Directions Served	LR	TR	LT
Maximum Queue (ft)	34	32	45
Average Queue (ft)	6	6	8
95th Queue (ft)	36	35	58
Link Distance (ft)	538	147	159
Upstream Blk Time (%)			0
Queuing Penalty (veh)			0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 10: Hadley Ave S & North Access, Interval #2

Movement	WB	NB	SB
Directions Served	LR	TR	LT
Maximum Queue (ft)	86	69	134
Average Queue (ft)	43	13	42
95th Queue (ft)	96	73	124
Link Distance (ft)	538	147	159
Upstream Blk Time (%)		0	0
Queuing Penalty (veh)		1	1
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 10: Hadley Ave S & North Access, Interval #3

Movement	WB	NB	SB
Directions Served	LR	TR	LT
Maximum Queue (ft)	40	6	71
Average Queue (ft)	12	1	16
95th Queue (ft)	52	9	64
Link Distance (ft)	538	147	159
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 10: Hadley Ave S & North Access, Interval #4

Movement	WB	NB	SB
Directions Served	LR	TR	LT
Maximum Queue (ft)	63	22	48
Average Queue (ft)	17	4	10
95th Queue (ft)	60	25	46
Link Distance (ft)	538	147	159
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 10: Hadley Ave S & North Access, All Intervals

Movement	WB	NB	SB
Directions Served	LR	TR	LT
Maximum Queue (ft)	87	91	134
Average Queue (ft)	19	6	19
95th Queue (ft)	68	42	80
Link Distance (ft)	538	147	159
Upstream Blk Time (%)		0	0
Queuing Penalty (veh)		0	0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 15: Hadley Ave S & Central Access, Interval #1

Movement	WB
Directions Served	LR
Maximum Queue (ft)	64
Average Queue (ft)	39
95th Queue (ft)	62
Link Distance (ft)	534
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 15: Hadley Ave S & Central Access, Interval #2

Movement	WB	NB
Directions Served	LR	T
Maximum Queue (ft)	108	5
Average Queue (ft)	79	1
95th Queue (ft)	124	8
Link Distance (ft)	534	138
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 15: Hadley Ave S & Central Access, Interval #3

Movement	WB
Directions Served	LR
Maximum Queue (ft)	85
Average Queue (ft)	46
95th Queue (ft)	85
Link Distance (ft)	534
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 15: Hadley Ave S & Central Access, Interval #4

Movement	WB
Directions Served	LR
Maximum Queue (ft)	61
Average Queue (ft)	37
95th Queue (ft)	57
Link Distance (ft)	534
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 15: Hadley Ave S & Central Access, All Intervals

Movement	WB	NB
Directions Served	LR	T
Maximum Queue (ft)	116	5
Average Queue (ft)	50	0
95th Queue (ft)	94	4
Link Distance (ft)	534	138
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 20: Hadley Ave S & South Access, Interval #1

Movement	WB	WB	NB	SB
Directions Served	L	R	R	L
Maximum Queue (ft)	43	15	4	39
Average Queue (ft)	25	3	1	22
95th Queue (ft)	44	19	6	48
Link Distance (ft)		529		138
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	50		225	
Storage Blk Time (%)	2	0		
Queuing Penalty (veh)	0	0		

Intersection: 20: Hadley Ave S & South Access, Interval #2

Movement	WB	WB	NB	SB
Directions Served	L	R	R	L
Maximum Queue (ft)	108	172	40	103
Average Queue (ft)	77	54	14	62
95th Queue (ft)	121	177	44	110
Link Distance (ft)		529		138
Upstream Blk Time (%)				0
Queuing Penalty (veh)				0
Storage Bay Dist (ft)	50		225	
Storage Blk Time (%)	50	1		
Queuing Penalty (veh)	4	1		

Intersection: 20: Hadley Ave S & South Access, Interval #3

Movement	WB	WB	NB	NB	SB
Directions Served	L	R	T	R	L
Maximum Queue (ft)	87	66	9	28	64
Average Queue (ft)	36	10	1	4	32
95th Queue (ft)	80	81	10	25	69
Link Distance (ft)		529	444		138
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	50			225	
Storage Blk Time (%)	8	0			
Queuing Penalty (veh)	0	0			

Intersection: 20: Hadley Ave S & South Access, Interval #4

Movement	WB	WB	NB	SB
Directions Served	L	R	R	L
Maximum Queue (ft)	45	13	9	47
Average Queue (ft)	24	3	2	19
95th Queue (ft)	50	16	12	51
Link Distance (ft)		529		138
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	50		225	
Storage Blk Time (%)	1			
Queuing Penalty (veh)	0			

Intersection: 20: Hadley Ave S & South Access, All Intervals

Movement	WB	WB	NB	NB	SB
Directions Served	L	R	T	R	L
Maximum Queue (ft)	108	193	9	52	103
Average Queue (ft)	40	18	0	5	34
95th Queue (ft)	91	97	5	26	80
Link Distance (ft)		529	444		138
Upstream Blk Time (%)					0
Queuing Penalty (veh)					0
Storage Bay Dist (ft)	50			225	
Storage Blk Time (%)	15	0			
Queuing Penalty (veh)	1	0			

Intersection: 25: Hadley Ave S & 92nd St S, Interval #1

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	48	50	6	22	21	16
Average Queue (ft)	28	26	1	3	4	2
95th Queue (ft)	58	52	8	25	20	19
Link Distance (ft)	511	514		862		444
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			200		200	
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 25: Hadley Ave S & 92nd St S, Interval #2

Movement	EB	WB	NB	NB	SB
Directions Served	LTR	LTR	L	TR	L
Maximum Queue (ft)	57	44	10	24	21
Average Queue (ft)	35	25	1	4	5
95th Queue (ft)	67	56	11	21	21
Link Distance (ft)	511	514		862	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			200		200
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 25: Hadley Ave S & 92nd St S, Interval #3

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	L	L	TR
Maximum Queue (ft)	46	46	10	33	19
Average Queue (ft)	26	26	1	8	3
95th Queue (ft)	56	51	11	35	23
Link Distance (ft)	511	514			444
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			200	200	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 25: Hadley Ave S & 92nd St S, Interval #4

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	55	46	10	14	21	14
Average Queue (ft)	35	23	1	3	3	2
95th Queue (ft)	65	51	8	23	17	13
Link Distance (ft)	511	514		862		444
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			200		200	
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 25: Hadley Ave S & 92nd St S, All Intervals

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	74	65	16	45	39	34
Average Queue (ft)	31	25	1	2	5	2
95th Queue (ft)	62	53	10	20	24	16
Link Distance (ft)	511	514		862		444
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			200		200	
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 30: Hadley Ave S & 94th St S, Interval #1

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	TR	L
Maximum Queue (ft)	36	40	14	16
Average Queue (ft)	20	16	2	4
95th Queue (ft)	45	46	21	19
Link Distance (ft)	489	512	600	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				200
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 30: Hadley Ave S & 94th St S, Interval #2

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	TR	L
Maximum Queue (ft)	40	48	5	22
Average Queue (ft)	19	23	1	5
95th Queue (ft)	46	52	7	22
Link Distance (ft)	489	512	600	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				200
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 30: Hadley Ave S & 94th St S, Interval #3

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	L	L
Maximum Queue (ft)	39	44	5	5
Average Queue (ft)	23	20	1	1
95th Queue (ft)	51	50	8	8
Link Distance (ft)	489	512		
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			200	200
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 30: Hadley Ave S & 94th St S, Interval #4

Movement	EB	WB	SB
Directions Served	LTR	LTR	L
Maximum Queue (ft)	36	35	16
Average Queue (ft)	22	18	3
95th Queue (ft)	47	43	16
Link Distance (ft)	489	512	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			200
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 30: Hadley Ave S & 94th St S, All Intervals

Movement	EB	WB	NB	NB	SB
Directions Served	LTR	LTR	L	TR	L
Maximum Queue (ft)	47	63	5	18	27
Average Queue (ft)	21	19	0	1	3
95th Queue (ft)	47	48	4	11	17
Link Distance (ft)	489	512		600	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			200		200
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 35: Hadley Ave S & 95th St S, Interval #1

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	43	50	60	12
Average Queue (ft)	9	15	22	2
95th Queue (ft)	36	45	64	13
Link Distance (ft)	942	818	846	600
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 35: Hadley Ave S & 95th St S, Interval #2

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	48	84	63	24
Average Queue (ft)	18	27	29	4
95th Queue (ft)	51	76	64	21
Link Distance (ft)	942	818	846	600
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 35: Hadley Ave S & 95th St S, Interval #3

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	49	43	46	32
Average Queue (ft)	13	15	18	8
95th Queue (ft)	52	45	56	33
Link Distance (ft)	942	818	846	600
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 35: Hadley Ave S & 95th St S, Interval #4

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	38	35	55	24
Average Queue (ft)	6	15	15	8
95th Queue (ft)	34	45	55	29
Link Distance (ft)	942	818	846	600
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 35: Hadley Ave S & 95th St S, All Intervals

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	66	93	84	39
Average Queue (ft)	11	18	21	5
95th Queue (ft)	44	55	61	25
Link Distance (ft)	942	818	846	600
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty, Interval #1: 0
Network wide Queuing Penalty, Interval #2: 10
Network wide Queuing Penalty, Interval #3: 1
Network wide Queuing Penalty, Interval #4: 0
Network wide Queuing Penalty, All Intervals: 3

5: Hadley Ave S & 90th St S Performance by approach Interval #1 2:45

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.1	0.3	0.2
Total Del/Veh (s)	4.6	5.3	7.5	8.9	8.0

5: Hadley Ave S & 90th St S Performance by approach Interval #2 3:00

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.1	0.3	0.2
Total Del/Veh (s)	5.2	4.0	8.3	9.3	8.5

5: Hadley Ave S & 90th St S Performance by approach Interval #3 3:15

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.2	0.1	0.2	0.2
Total Del/Veh (s)	5.7	5.3	8.0	7.8	7.8

5: Hadley Ave S & 90th St S Performance by approach Interval #4 3:30

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.3	0.1
Total Del/Veh (s)	3.7	4.4	7.7	7.9	7.6

5: Hadley Ave S & 90th St S Performance by approach Entire Run

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.1	0.3	0.2
Total Del/Veh (s)	4.7	4.3	8.0	8.8	8.1

10: Hadley Ave S & North Access Performance by approach Interval #1 2:45

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Del/Veh (s)	7.9	0.7	2.4	1.6

10: Hadley Ave S & North Access Performance by approach Interval #2 3:00

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.0	0.1	0.1
Total Del/Veh (s)	12.7	0.9	3.5	2.6

10: Hadley Ave S & North Access Performance by approach Interval #3 3:15

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Del/Veh (s)	8.2	0.6	2.3	1.6

10: Hadley Ave S & North Access Performance by approach Interval #4 3:30

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Del/Veh (s)	10.0	0.7	2.3	1.7

10: Hadley Ave S & North Access Performance by approach Entire Run

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Del/Veh (s)	10.9	0.7	2.7	1.9

15: Hadley Ave S & Central Access Performance by approach Interval #1 2:45

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Del/Veh (s)	4.4	0.3	0.2	0.6

15: Hadley Ave S & Central Access Performance by approach Interval #2 3:00

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.3	0.0	0.0	0.1
Total Del/Veh (s)	6.5	0.7	0.4	2.1

15: Hadley Ave S & Central Access Performance by approach Interval #3 3:15

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Del/Veh (s)	4.0	0.2	0.1	0.5

15: Hadley Ave S & Central Access Performance by approach Interval #4 3:30

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Del/Veh (s)	4.0	0.3	0.1	0.5

15: Hadley Ave S & Central Access Performance by approach Entire Run

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.0	0.0	0.0
Total Del/Veh (s)	5.6	0.4	0.2	1.1

20: Hadley Ave S & South Access Performance by approach Interval #1 2:45

Approach	WB	NB	SB	All
Denied Del/Veh (s)	3.6	0.0	0.0	0.2
Total Del/Veh (s)	7.0	0.3	0.2	0.6

20: Hadley Ave S & South Access Performance by approach Interval #2 3:00

Approach	WB	NB	SB	All
Denied Del/Veh (s)	3.5	0.1	0.0	0.7
Total Del/Veh (s)	15.2	0.6	1.0	3.3

20: Hadley Ave S & South Access Performance by approach Interval #3 3:15

Approach	WB	NB	SB	All
Denied Del/Veh (s)	3.7	0.0	0.0	0.2
Total Del/Veh (s)	8.0	0.3	0.2	0.8

20: Hadley Ave S & South Access Performance by approach Interval #4 3:30

Approach	WB	NB	SB	All
Denied Del/Veh (s)	3.4	0.0	0.0	0.2
Total Del/Veh (s)	5.9	0.3	0.2	0.6

20: Hadley Ave S & South Access Performance by approach Entire Run

Approach	WB	NB	SB	All
Denied Del/Veh (s)	3.5	0.0	0.0	0.4
Total Del/Veh (s)	12.4	0.4	0.4	1.6

25: Hadley Ave S & 92nd St S Performance by approach Interval #1 2:45

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	7.0	4.8	0.8	0.9	1.2

25: Hadley Ave S & 92nd St S Performance by approach Interval #2 3:00

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	8.9	5.7	1.1	1.0	1.5

25: Hadley Ave S & 92nd St S Performance by approach Interval #3 3:15

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.2	0.0	0.1	0.1
Total Del/Veh (s)	7.4	4.4	0.7	0.8	1.2

25: Hadley Ave S & 92nd St S Performance by approach Interval #4 3:30

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	6.6	3.4	0.8	0.9	1.1

25: Hadley Ave S & 92nd St S Performance by approach Entire Run

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	8.0	4.6	0.9	0.9	1.3

30: Hadley Ave S & 94th St S Performance by approach Interval #1 2:45

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	6.2	6.1	0.5	0.9	1.1

30: Hadley Ave S & 94th St S Performance by approach Interval #2 3:00

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	7.7	5.0	0.9	1.0	1.4

30: Hadley Ave S & 94th St S Performance by approach Interval #3 3:15

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.1	0.0	0.0	0.0
Total Del/Veh (s)	5.6	4.8	0.5	0.8	1.1

30: Hadley Ave S & 94th St S Performance by approach Interval #4 3:30

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	5.3	4.6	0.9	0.9	1.2

30: Hadley Ave S & 94th St S Performance by approach Entire Run

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	6.6	5.1	0.7	0.9	1.2

35: Hadley Ave S & 95th St S Performance by approach Interval #1 2:45

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.2	0.2	0.0	0.1
Total Del/Veh (s)	3.5	3.7	5.0	4.2	4.3

35: Hadley Ave S & 95th St S Performance by approach Interval #2 3:00

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.2	0.3	0.0	0.1
Total Del/Veh (s)	4.3	3.7	5.9	4.1	4.5

35: Hadley Ave S & 95th St S Performance by approach Interval #3 3:15

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.2	0.2	0.0	0.1
Total Del/Veh (s)	3.3	3.1	4.5	4.0	3.9

35: Hadley Ave S & 95th St S Performance by approach Interval #4 3:30

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.2	0.0	0.1
Total Del/Veh (s)	3.5	3.4	5.4	4.0	4.1

35: Hadley Ave S & 95th St S Performance by approach Entire Run

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.2	0.2	0.0	0.1
Total Del/Veh (s)	3.7	3.6	5.5	4.1	4.3

Total Network Performance By Interval

Interval Start	2:45	3:00	3:15	3:30	All
Denied Del/Veh (s)	0.4	0.7	0.4	0.3	0.5
Total Del/Veh (s)	11.6	13.4	10.9	11.6	12.8

Intersection: 5: Hadley Ave S & 90th St S, Interval #1

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	34	29	104	103
Average Queue (ft)	17	13	69	64
95th Queue (ft)	42	40	119	103
Link Distance (ft)	542	542	159	1014
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Hadley Ave S & 90th St S, Interval #2

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	35	31	125	105
Average Queue (ft)	21	18	79	71
95th Queue (ft)	45	41	124	111
Link Distance (ft)	542	542	159	1014
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Hadley Ave S & 90th St S, Interval #3

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	43	30	111	78
Average Queue (ft)	19	12	63	60
95th Queue (ft)	48	36	113	86
Link Distance (ft)	542	542	159	1014
Upstream Blk Time (%)			0	
Queuing Penalty (veh)			1	
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Hadley Ave S & 90th St S, Interval #4

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	39	31	144	76
Average Queue (ft)	20	14	78	55
95th Queue (ft)	46	39	140	80
Link Distance (ft)	542	542	159	1014
Upstream Blk Time (%)			0	
Queuing Penalty (veh)			1	
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Hadley Ave S & 90th St S, All Intervals

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	48	36	159	120
Average Queue (ft)	19	14	72	62
95th Queue (ft)	46	39	126	97
Link Distance (ft)	542	542	159	1014
Upstream Blk Time (%)			0	
Queuing Penalty (veh)			1	
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 10: Hadley Ave S & North Access, Interval #1

Movement	WB
Directions Served	LR
Maximum Queue (ft)	64
Average Queue (ft)	24
95th Queue (ft)	70
Link Distance (ft)	538
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 10: Hadley Ave S & North Access, Interval #2

Movement	WB	NB	SB
Directions Served	LR	TR	LT
Maximum Queue (ft)	108	6	102
Average Queue (ft)	63	0	24
95th Queue (ft)	119	0	101
Link Distance (ft)	538	147	159
Upstream Blk Time (%)			1
Queuing Penalty (veh)			2
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 10: Hadley Ave S & North Access, Interval #3

Movement	WB	NB
Directions Served	LR	TR
Maximum Queue (ft)	64	15
Average Queue (ft)	24	3
95th Queue (ft)	70	19
Link Distance (ft)	538	147
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 10: Hadley Ave S & North Access, Interval #4

Movement	WB	NB	SB
Directions Served	LR	TR	LT
Maximum Queue (ft)	78	15	10
Average Queue (ft)	33	3	1
95th Queue (ft)	82	19	15
Link Distance (ft)	538	147	159
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 10: Hadley Ave S & North Access, All Intervals

Movement	WB	NB	SB
Directions Served	LR	TR	LT
Maximum Queue (ft)	108	21	102
Average Queue (ft)	36	1	6
95th Queue (ft)	92	13	49
Link Distance (ft)	538	147	159
Upstream Blk Time (%)			0
Queuing Penalty (veh)			1
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 15: Hadley Ave S & Central Access, Interval #1

Movement	WB
Directions Served	LR
Maximum Queue (ft)	56
Average Queue (ft)	34
95th Queue (ft)	56
Link Distance (ft)	534
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 15: Hadley Ave S & Central Access, Interval #2

Movement	WB
Directions Served	LR
Maximum Queue (ft)	104
Average Queue (ft)	66
95th Queue (ft)	108
Link Distance (ft)	534
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 15: Hadley Ave S & Central Access, Interval #3

Movement	WB
Directions Served	LR
Maximum Queue (ft)	43
Average Queue (ft)	25
95th Queue (ft)	50
Link Distance (ft)	534
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 15: Hadley Ave S & Central Access, Interval #4

Movement	WB
Directions Served	LR
Maximum Queue (ft)	44
Average Queue (ft)	27
95th Queue (ft)	50
Link Distance (ft)	534
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 15: Hadley Ave S & Central Access, All Intervals

Movement	WB
Directions Served	LR
Maximum Queue (ft)	104
Average Queue (ft)	38
95th Queue (ft)	78
Link Distance (ft)	534
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 20: Hadley Ave S & South Access, Interval #1

Movement	WB	WB	NB	SB
Directions Served	L	R	R	L
Maximum Queue (ft)	32	13	6	19
Average Queue (ft)	16	2	1	5
95th Queue (ft)	38	14	9	23
Link Distance (ft)		529		138
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	50		225	
Storage Blk Time (%)	0			
Queuing Penalty (veh)	0			

Intersection: 20: Hadley Ave S & South Access, Interval #2

Movement	WB	WB	NB	SB
Directions Served	L	R	R	L
Maximum Queue (ft)	73	66	4	48
Average Queue (ft)	49	25	1	26
95th Queue (ft)	87	77	7	52
Link Distance (ft)		529		138
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	50		225	
Storage Blk Time (%)	16	1		
Queuing Penalty (veh)	3	1		

Intersection: 20: Hadley Ave S & South Access, Interval #3

Movement	WB	WB	NB	SB
Directions Served	L	R	R	L
Maximum Queue (ft)	58	23	6	34
Average Queue (ft)	24	5	1	4
95th Queue (ft)	56	24	9	23
Link Distance (ft)		529		138
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	50		225	
Storage Blk Time (%)	1	0		
Queuing Penalty (veh)	0	0		

Intersection: 20: Hadley Ave S & South Access, Interval #4

Movement	WB	WB	NB	SB
Directions Served	L	R	R	L
Maximum Queue (ft)	25	8	6	18
Average Queue (ft)	16	1	1	6
95th Queue (ft)	35	8	9	26
Link Distance (ft)		529		138
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	50		225	
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 20: Hadley Ave S & South Access, All Intervals

Movement	WB	WB	NB	SB
Directions Served	L	R	R	L
Maximum Queue (ft)	81	66	18	48
Average Queue (ft)	26	8	1	10
95th Queue (ft)	63	41	9	36
Link Distance (ft)		529		138
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	50		225	
Storage Blk Time (%)	5	0		
Queuing Penalty (veh)	1	0		

Intersection: 25: Hadley Ave S & 92nd St S, Interval #1

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	31	31	15	20	27	6
Average Queue (ft)	14	16	2	3	14	1
95th Queue (ft)	39	41	14	19	36	9
Link Distance (ft)	511	514		862		444
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			200		200	
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 25: Hadley Ave S & 92nd St S, Interval #2

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	54	36	20	9	28	21
Average Queue (ft)	23	20	4	0	15	4
95th Queue (ft)	52	47	17	0	37	21
Link Distance (ft)	511	514		862		444
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			200		200	
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 25: Hadley Ave S & 92nd St S, Interval #3

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	52	42	16	5	31	12
Average Queue (ft)	24	20	2	1	7	3
95th Queue (ft)	56	49	14	8	29	19
Link Distance (ft)	511	514		862		444
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			200		200	
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 25: Hadley Ave S & 92nd St S, Interval #4

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	34	44	15	5	31	38
Average Queue (ft)	15	21	3	1	10	5
95th Queue (ft)	41	52	16	7	32	24
Link Distance (ft)	511	514		862		444
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			200		200	
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 25: Hadley Ave S & 92nd St S, All Intervals

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	67	55	26	24	35	41
Average Queue (ft)	19	19	3	1	12	3
95th Queue (ft)	48	47	15	11	34	19
Link Distance (ft)	511	514		862		444
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			200		200	
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 30: Hadley Ave S & 94th St S, Interval #1

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	L	L
Maximum Queue (ft)	31	31	5	21
Average Queue (ft)	23	14	1	5
95th Queue (ft)	45	39	8	21
Link Distance (ft)	489	512		
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			200	200
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 30: Hadley Ave S & 94th St S, Interval #2

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	45	40	10	5	16	30
Average Queue (ft)	28	18	1	1	4	4
95th Queue (ft)	57	46	11	7	18	34
Link Distance (ft)	489	512		600		862
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			200		200	
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 30: Hadley Ave S & 94th St S, Interval #3

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	TR	L	TR
Maximum Queue (ft)	44	31	10	16	6
Average Queue (ft)	23	13	1	2	1
95th Queue (ft)	50	38	15	14	8
Link Distance (ft)	489	512	600		862
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)				200	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 30: Hadley Ave S & 94th St S, Interval #4

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	31	31	6	14	10	5
Average Queue (ft)	16	11	1	2	1	1
95th Queue (ft)	41	35	8	13	11	8
Link Distance (ft)	489	512		600		862
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			200		200	
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 30: Hadley Ave S & 94th St S, All Intervals

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	54	40	11	24	27	35
Average Queue (ft)	23	14	1	1	3	1
95th Queue (ft)	49	40	8	10	17	17
Link Distance (ft)	489	512		600		862
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			200		200	
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 35: Hadley Ave S & 95th St S, Interval #1

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	25	43	34	48
Average Queue (ft)	7	15	16	18
95th Queue (ft)	28	44	41	54
Link Distance (ft)	942	818	846	600
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 35: Hadley Ave S & 95th St S, Interval #2

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	41	45	54	34
Average Queue (ft)	14	19	27	9
95th Queue (ft)	43	50	55	34
Link Distance (ft)	942	818	846	600
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 35: Hadley Ave S & 95th St S, Interval #3

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	31	29	35	53
Average Queue (ft)	7	7	13	9
95th Queue (ft)	28	27	38	36
Link Distance (ft)	942	818	846	600
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 35: Hadley Ave S & 95th St S, Interval #4

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	35	40	51	34
Average Queue (ft)	10	19	22	6
95th Queue (ft)	36	50	55	33
Link Distance (ft)	942	818	846	600
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 35: Hadley Ave S & 95th St S, All Intervals

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	45	54	58	66
Average Queue (ft)	10	15	19	11
95th Queue (ft)	35	44	49	41
Link Distance (ft)	942	818	846	600
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty, Interval #1: 0
Network wide Queuing Penalty, Interval #2: 6
Network wide Queuing Penalty, Interval #3: 1
Network wide Queuing Penalty, Interval #4: 1
Network wide Queuing Penalty, All Intervals: 2

5: Hadley Ave S & 90th St S Performance by approach Interval #1 4:00

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.3	0.1
Total Del/Veh (s)	3.0	5.9	6.5	7.2	6.7

5: Hadley Ave S & 90th St S Performance by approach Interval #2 4:15

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.2	0.0	0.3	0.2
Total Del/Veh (s)	3.0	5.4	6.4	7.7	6.9

5: Hadley Ave S & 90th St S Performance by approach Interval #3 4:30

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.3	0.1
Total Del/Veh (s)	4.1	4.7	6.3	7.3	6.7

5: Hadley Ave S & 90th St S Performance by approach Interval #4 4:45

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.2	0.1
Total Del/Veh (s)	3.3	5.4	6.6	7.8	7.0

5: Hadley Ave S & 90th St S Performance by approach Entire Run

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.3	0.1
Total Del/Veh (s)	3.3	5.5	6.5	7.6	6.9

10: Hadley Ave S & North Access Performance by approach Interval #1 4:00

Approach	WB	NB	SB	All
Denied Del/Veh (s)		0.0	0.0	0.0
Total Del/Veh (s)		0.4	2.2	1.3

10: Hadley Ave S & North Access Performance by approach Interval #2 4:15

Approach	WB	NB	SB	All
Denied Del/Veh (s)		0.0	0.0	0.0
Total Del/Veh (s)		0.4	2.2	1.4

10: Hadley Ave S & North Access Performance by approach Interval #3 4:30

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.0	0.0	0.0
Total Del/Veh (s)	7.2	0.4	2.2	1.4

10: Hadley Ave S & North Access Performance by approach Interval #4 4:45

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.0	0.0	0.0
Total Del/Veh (s)	6.4	0.4	2.2	1.4

10: Hadley Ave S & North Access Performance by approach Entire Run

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Del/Veh (s)	5.0	0.4	2.2	1.4

15: Hadley Ave S & Central Access Performance by approach Interval #1 4:00

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Del/Veh (s)	3.3	0.1	0.0	0.2

15: Hadley Ave S & Central Access Performance by approach Interval #2 4:15

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Del/Veh (s)	3.0	0.2	0.1	0.2

15: Hadley Ave S & Central Access Performance by approach Interval #3 4:30

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Del/Veh (s)	2.8	0.2	0.0	0.2

15: Hadley Ave S & Central Access Performance by approach Interval #4 4:45

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Del/Veh (s)	3.1	0.2	0.0	0.2

15: Hadley Ave S & Central Access Performance by approach Entire Run

Approach	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Del/Veh (s)	3.0	0.2	0.0	0.2

20: Hadley Ave S & South Access Performance by approach Interval #1 4:00

Approach	WB	NB	SB	All
Denied Del/Veh (s)	4.2	0.0	0.0	0.1
Total Del/Veh (s)	7.7	0.3	0.1	0.4

20: Hadley Ave S & South Access Performance by approach Interval #2 4:15

Approach	WB	NB	SB	All
Denied Del/Veh (s)	4.2	0.0	0.0	0.2
Total Del/Veh (s)	10.2	0.4	0.1	0.6

20: Hadley Ave S & South Access Performance by approach Interval #3 4:30

Approach	WB	NB	SB	All
Denied Del/Veh (s)	4.0	0.0	0.0	0.1
Total Del/Veh (s)	8.7	0.3	0.2	0.4

20: Hadley Ave S & South Access Performance by approach Interval #4 4:45

Approach	WB	NB	SB	All
Denied Del/Veh (s)	2.8	0.0	0.0	0.1
Total Del/Veh (s)	7.6	0.4	0.2	0.4

20: Hadley Ave S & South Access Performance by approach Entire Run

Approach	WB	NB	SB	All
Denied Del/Veh (s)	3.9	0.0	0.0	0.1
Total Del/Veh (s)	8.0	0.3	0.1	0.5

25: Hadley Ave S & 92nd St S Performance by approach Interval #1 4:00

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	7.9	3.8	0.6	0.7	1.1

25: Hadley Ave S & 92nd St S Performance by approach Interval #2 4:15

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	10.2	3.9	0.8	0.8	1.2

25: Hadley Ave S & 92nd St S Performance by approach Interval #3 4:30

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	8.2	3.3	0.6	0.6	0.9

25: Hadley Ave S & 92nd St S Performance by approach Interval #4 4:45

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	6.1	3.3	0.7	0.7	1.0

25: Hadley Ave S & 92nd St S Performance by approach Entire Run

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	8.6	3.7	0.7	0.7	1.1

30: Hadley Ave S & 94th St S Performance by approach Interval #1 4:00

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	9.1	4.5	0.5	0.7	0.8

30: Hadley Ave S & 94th St S Performance by approach Interval #2 4:15

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	7.4	4.8	0.6	0.9	1.0

30: Hadley Ave S & 94th St S Performance by approach Interval #3 4:30

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	7.7	4.4	0.4	0.7	0.7

30: Hadley Ave S & 94th St S Performance by approach Interval #4 4:45

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	6.6	3.4	0.6	0.8	0.8

30: Hadley Ave S & 94th St S Performance by approach Entire Run

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.1	0.0	0.0	0.0
Total Del/Veh (s)	6.4	4.1	0.5	0.8	0.9

35: Hadley Ave S & 95th St S Performance by approach Interval #1 4:00

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.3	0.1	0.0	0.1
Total Del/Veh (s)	4.4	3.7	4.8	4.2	4.2

35: Hadley Ave S & 95th St S Performance by approach Interval #2 4:15

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.2	0.2	0.0	0.1
Total Del/Veh (s)	3.6	4.4	5.1	4.2	4.4

35: Hadley Ave S & 95th St S Performance by approach Interval #3 4:30

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.2	0.2	0.0	0.1
Total Del/Veh (s)	4.3	3.6	4.5	4.0	4.0

35: Hadley Ave S & 95th St S Performance by approach Interval #4 4:45

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.2	0.2	0.2	0.0	0.1
Total Del/Veh (s)	3.6	3.7	5.4	4.2	4.3

35: Hadley Ave S & 95th St S Performance by approach Entire Run

Approach	EB	WB	NB	SB	All
Denied Del/Veh (s)	0.1	0.2	0.2	0.0	0.1
Total Del/Veh (s)	4.0	4.0	5.0	4.2	4.3

Total Network Performance By Interval

Interval Start	4:00	4:15	4:30	4:45	All
Denied Del/Veh (s)	0.3	0.3	0.3	0.3	0.3
Total Del/Veh (s)	11.1	11.6	10.7	11.4	12.0

Intersection: 5: Hadley Ave S & 90th St S, Interval #1

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	30	24	68	69
Average Queue (ft)	14	11	55	53
95th Queue (ft)	38	36	76	72
Link Distance (ft)	542	542	159	1014
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Hadley Ave S & 90th St S, Interval #2

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	30	35	69	96
Average Queue (ft)	19	15	53	60
95th Queue (ft)	42	42	75	92
Link Distance (ft)	542	542	159	1014
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Hadley Ave S & 90th St S, Interval #3

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	30	30	70	84
Average Queue (ft)	13	16	52	52
95th Queue (ft)	37	41	74	82
Link Distance (ft)	542	542	159	1014
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Hadley Ave S & 90th St S, Interval #4

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	31	31	72	85
Average Queue (ft)	15	15	54	60
95th Queue (ft)	39	40	75	91
Link Distance (ft)	542	542	159	1014
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Hadley Ave S & 90th St S, All Intervals

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	31	35	86	104
Average Queue (ft)	15	14	53	56
95th Queue (ft)	40	40	75	85
Link Distance (ft)	542	542	159	1014
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 10: Hadley Ave S & North Access, Interval #1

Movement	WB
Directions Served	LR
Maximum Queue (ft)	12
Average Queue (ft)	1
95th Queue (ft)	8
Link Distance (ft)	538
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 10: Hadley Ave S & North Access, Interval #2

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	18	6
Average Queue (ft)	3	1
95th Queue (ft)	17	9
Link Distance (ft)	538	159
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 10: Hadley Ave S & North Access, Interval #3

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	24	6
Average Queue (ft)	5	0
95th Queue (ft)	24	0
Link Distance (ft)	538	159
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 10: Hadley Ave S & North Access, Interval #4

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	30	6
Average Queue (ft)	8	2
95th Queue (ft)	29	14
Link Distance (ft)	538	159
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 10: Hadley Ave S & North Access, All Intervals

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	30	12
Average Queue (ft)	4	1
95th Queue (ft)	21	8
Link Distance (ft)	538	159
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 15: Hadley Ave S & Central Access, Interval #1

Movement	WB
Directions Served	LR
Maximum Queue (ft)	31
Average Queue (ft)	15
95th Queue (ft)	39
Link Distance (ft)	534
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 15: Hadley Ave S & Central Access, Interval #2

Movement	WB
Directions Served	LR
Maximum Queue (ft)	30
Average Queue (ft)	15
95th Queue (ft)	38
Link Distance (ft)	534
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 15: Hadley Ave S & Central Access, Interval #3

Movement	WB
Directions Served	LR
Maximum Queue (ft)	30
Average Queue (ft)	16
95th Queue (ft)	39
Link Distance (ft)	534
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 15: Hadley Ave S & Central Access, Interval #4

Movement	WB
Directions Served	LR
Maximum Queue (ft)	35
Average Queue (ft)	19
95th Queue (ft)	44
Link Distance (ft)	534
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 15: Hadley Ave S & Central Access, All Intervals

Movement	WB
Directions Served	LR
Maximum Queue (ft)	36
Average Queue (ft)	16
95th Queue (ft)	41
Link Distance (ft)	534
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 20: Hadley Ave S & South Access, Interval #1

Movement	WB	WB	SB
Directions Served	L	R	L
Maximum Queue (ft)	25	4	19
Average Queue (ft)	11	1	3
95th Queue (ft)	31	9	17
Link Distance (ft)		529	138
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	50		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 20: Hadley Ave S & South Access, Interval #2

Movement	WB	WB	SB
Directions Served	L	R	L
Maximum Queue (ft)	29	4	25
Average Queue (ft)	15	1	4
95th Queue (ft)	36	6	20
Link Distance (ft)		529	138
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	50		
Storage Blk Time (%)	0		
Queuing Penalty (veh)	0		

Intersection: 20: Hadley Ave S & South Access, Interval #3

Movement	WB	WB	NB	SB
Directions Served	L	R	R	L
Maximum Queue (ft)	25	3	4	23
Average Queue (ft)	12	0	1	5
95th Queue (ft)	32	5	7	26
Link Distance (ft)		529		138
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	50		225	
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 20: Hadley Ave S & South Access, Interval #4

Movement	WB	WB	SB
Directions Served	L	R	L
Maximum Queue (ft)	25	15	24
Average Queue (ft)	9	2	5
95th Queue (ft)	28	12	24
Link Distance (ft)		529	138
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	50		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 20: Hadley Ave S & South Access, All Intervals

Movement	WB	WB	NB	SB
Directions Served	L	R	R	L
Maximum Queue (ft)	29	20	4	36
Average Queue (ft)	12	1	0	4
95th Queue (ft)	32	9	3	22
Link Distance (ft)		529		138
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	50		225	
Storage Blk Time (%)	0			
Queuing Penalty (veh)	0			

Intersection: 25: Hadley Ave S & 92nd St S, Interval #1

Movement	EB	WB	NB	NB	SB
Directions Served	LTR	LTR	L	TR	L
Maximum Queue (ft)	33	36	16	5	36
Average Queue (ft)	16	17	5	1	14
95th Queue (ft)	44	44	21	8	40
Link Distance (ft)	511	514		862	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			200		200
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 25: Hadley Ave S & 92nd St S, Interval #2

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	43	38	22	5	44	6
Average Queue (ft)	21	22	7	1	12	1
95th Queue (ft)	53	50	25	7	41	9
Link Distance (ft)	511	514		862		444
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			200		200	
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 25: Hadley Ave S & 92nd St S, Interval #3

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	L	L
Maximum Queue (ft)	31	43	20	27
Average Queue (ft)	15	20	4	9
95th Queue (ft)	39	48	20	30
Link Distance (ft)	511	514		
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			200	200
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 25: Hadley Ave S & 92nd St S, Interval #4

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	L	L
Maximum Queue (ft)	35	44	10	27
Average Queue (ft)	14	23	1	11
95th Queue (ft)	40	53	11	32
Link Distance (ft)	511	514		
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			200	200
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 25: Hadley Ave S & 92nd St S, All Intervals

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	47	60	27	10	52	6
Average Queue (ft)	16	21	4	0	11	0
95th Queue (ft)	45	49	20	5	36	4
Link Distance (ft)	511	514		862		444
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			200		200	
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 30: Hadley Ave S & 94th St S, Interval #1

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	L	L	TR
Maximum Queue (ft)	31	36	10	10	6
Average Queue (ft)	9	8	2	1	1
95th Queue (ft)	33	32	14	11	8
Link Distance (ft)	489	512			862
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			200	200	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 30: Hadley Ave S & 94th St S, Interval #2

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	31	36	16	5	10	26
Average Queue (ft)	15	12	4	1	2	2
95th Queue (ft)	40	38	19	7	14	18
Link Distance (ft)	489	512		600		862
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			200		200	
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 30: Hadley Ave S & 94th St S, Interval #3

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	L	L
Maximum Queue (ft)	30	31	15	14
Average Queue (ft)	10	11	3	2
95th Queue (ft)	33	35	15	13
Link Distance (ft)	489	512		
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			200	200
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 30: Hadley Ave S & 94th St S, Interval #4

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	L	L
Maximum Queue (ft)	31	24	22	21
Average Queue (ft)	9	7	3	4
95th Queue (ft)	32	27	17	19
Link Distance (ft)	489	512		
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			200	200
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 30: Hadley Ave S & 94th St S, All Intervals

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	31	40	27	5	26	32
Average Queue (ft)	11	9	3	0	2	1
95th Queue (ft)	35	33	16	4	14	10
Link Distance (ft)	489	512		600		862
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			200		200	
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 35: Hadley Ave S & 95th St S, Interval #1

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	36	36	29	44
Average Queue (ft)	14	18	13	15
95th Queue (ft)	41	44	37	47
Link Distance (ft)	942	818	846	600
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 35: Hadley Ave S & 95th St S, Interval #2

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	25	59	45	44
Average Queue (ft)	8	21	18	14
95th Queue (ft)	30	60	45	45
Link Distance (ft)	942	818	846	600
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 35: Hadley Ave S & 95th St S, Interval #3

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	40	39	30	43
Average Queue (ft)	13	15	12	14
95th Queue (ft)	40	43	35	50
Link Distance (ft)	942	818	846	600
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 35: Hadley Ave S & 95th St S, Interval #4

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	19	34	39	44
Average Queue (ft)	5	9	15	15
95th Queue (ft)	25	35	44	48
Link Distance (ft)	942	818	846	600
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 35: Hadley Ave S & 95th St S, All Intervals

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	40	64	50	65
Average Queue (ft)	10	16	14	14
95th Queue (ft)	35	47	41	47
Link Distance (ft)	942	818	846	600
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty, Interval #1: 0
Network wide Queuing Penalty, Interval #2: 0
Network wide Queuing Penalty, Interval #3: 0
Network wide Queuing Penalty, Interval #4: 0
Network wide Queuing Penalty, All Intervals: 0

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MEMORANDUM

Date: 08/11/2025

To: Paul Sponholz, PE

From: Bryan T. Nemeth, PE, PTOE

Mike Boex, PE

Subject: Pine Hill Elementary School Addition
City of Cottage Grove, MN
Project No.: 24X139406

This memo summarizes the review of traffic study documents submitted by Wold Architects and BKBM Engineers, dated 7/17/25 (received 7/25/25).

Traffic Study Comments:

1. **Pedestrian Crossings:** Trail is provided along both sides of Hadley Avenue throughout the project area, however, there are no marked crossings of Hadley Avenue between 90th Street and 95th Street. It is understood that there have been requests from the public for another crossing location south of 90th Street.
    a. Page 12: Ped crossing at Hadley/92nd
        i. Considering the public comments, queue issues, and traffic increase concerns, would like the enhanced pedestrian crossing implemented at this time.
            1. Recommend ADA compliant curb ramps on NW and NE corner be implemented with the project
            2. Recommend marked and signed pedestrian crossing with RRFB at the north side crossing be implemented with the project
        ii. This would also be anticipated to reduce the number of students crossing further to the north.
    b. Page 14: Management strategies
        i. Recommendation above supports: “Promote and/or provide incentives to increase student use of the bus and alternative transportation modes”
    c. Page 14: This recommendation is consistent with “A pedestrian ramp improvement project at the Hadley Ave/92nd Street intersection should be considered….rectangular rapid flashing beacon (RRFB)…” Pedestrian volume and speed is considered to be acceptable by the city for an RRFB at this location.

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2. **School access queues extending to impact Hadley.** Considering the additional data and in recognition of the results provided, additional questions, concerns, and recommendations are identified by the city.
    a. Page 4: Internal School Queues.“Internal school queues / operations did not significantly impact the adjacent roadway network.”
        i. School identified that the entrance/exit configuration and procedures changed in the last year and it was indicated that this corrected the queues waiting on Hadley. This is something the city is still concerned about. Does the school have any additional information that the backups no longer occur?
        ii. What happens if the queues reoccur? Could the circulation be configured to handle more queue?
    b. Page 5: report mentions “No significant queues or operational issues with…..the northbound right turn lane at the South School Access”: Relates to above comment on Internal School Queues. Would like some additional ideas to reduce queues onto Hadley.
    c. Page 5: School PM Peak Hour observations (also mentioned in 2030 analysis on Page 9)
        i. Queue dissipation time of five minutes
            1. This seems awfully quick considering the number of cars and students. Concern is with how this impacts the queue on Hadley.
    d. Page 6 and 7: Student increase and traffic distribution
        i. Lots of additional students and parents dropping off
        ii. Most new housing is to the south so most new trips are likely from the south
            1. Was this taken into account as it seems like the new trips are 50/50 from north and south? Want to make sure we fully understand the backups/queues onto the city street.
            2. Can the study provide documentation on the attendance area and projections for where most new trips are coming from?
    e. Page 12: Extension of right turn lane could be considered.
        i. Recommend extending the northbound right turn lane at the access into the site be implemented with the project.
    f. Page 14: Central School Access
        i. Management strategies
            1. Recommendations in this section supports “Provide the ability to enter side via the Central School Access, particularly for the motorists who park on site and pick-up students in the “walk zone for parked cars”.”

a. Except do not like idea of having parents "park" and then students walking in and out between cars in the lot. Safety concern.

2. "Investigate and/or implement additional strategies to improve overall efficiency of drop-off and pickup operations…"

a. Agree on "Allow motorists to exit the lane once the drop-off/pick-up has occurred, while ensuring student safety is maintained." This does occur at other schools around the region but students cannot be allowed to walk through this area to the parking lot. Most schools require students to only be able to walk with parents and direct them to a "safe crossing" preferably with a crossing guard that is able to stop vehicles in all lanes while ensuring that traffic flows.

b. "Ensure motorists utilize the majority of the drop-off/pick-up area, including the far northern portion of the drive lane near the bus parking lot." Have found this issue in other school lots throughout the state and it is never utilized. Can keep this recommendation but it likely will not occur. The revised access recommendations in this section would provide more stacking space on-site without having to count on this occurring.

c. This section also mentions "If these management strategies do not improve operations and/or eliminate the majority of the queues along Hadley Avenue, extension of the northbound right-turn lane could be considered."

g. Based on the above information need to have some way to have more cars stack up on-site and not impact Hadley.

i. Recommend the south access be closed and have all inbound and outbound be from the middle access be implemented with the project

1. This would also increase the length of the northbound right turn lane.

2. Study indicates minimal southbound left traffic so that left turn lane could be shorter. Additionally, the additional traffic is more likely to be from the south with the school expansion based on residential growth areas.

3. All exiting traffic should be forced to go north during school pick-up and drop-off times, which most does anyways due to traffic blocking the westbound left out of the site. The access will need to be widened to allow for a wide westbound lane (prefer that the lane be wide enough to accommodate a left and right turning vehicle during off-peak school times) and 2 inbound lanes. Add signage to the plan that no left turn allowed during the school hours (actual hours listed on the sign to be determined in coordination with the school). Some

minor changes to the site circulation lanes may be needed on the west and south ends of the site.

3. **School traffic and crossing guard impacts to long queues northbound at Hadley/90th Street.** Considering the additional data and in recognition of the results provided, additional questions, concerns, and recommendations are identified by the city.
    a. Page 4 and 5: Crossing Guard at Hadley / 90th. Identified issue that causes significant queues for approximately 15 minutes. Can the school come up with some procedures or changes to eliminate or drastically reduce this issue? This is a continuing concern that is expected to increase with a traffic volume increase.
    b. Page 6: Northbound queues at 90th (also mentioned in 2030 analysis on Page 9)
        i. Operations do not account for operational impacts of the crossing guard. Any way that it can be?
            1. Recognize that this is a short event but it is a daily event and it does result in poor operations/queues for that 15-minute window 5 days a week when school is in session.
            2. Can something be done to reduce this impact? Especially since without the impact the operations appear to be acceptable from the analysis.

4. **Procedures for school drop off and pick up.**
    a. Page 5: New procedures for pick-up and drop-off
        i. Would think this would be intended to reduce queues onto the public roadway system. Please provide a formalized plan for pick-up and drop-off that can be submitted, finalized, and checked for compliance.
    b. Page 12: Restrict access to the pick-up/drop-off before the end of school
        i. Not sure how this can be enforced and do not think this is a good idea. This will just push the traffic to wait on Hadley, a public street. Remove this recommendation.
        ii. Prefer to try to find a way to stack more traffic on the school site (see previous comment on removing the south access). See other comments and recommendations.

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MEMORANDUM

Date: 5-06-2025

To: Crystal Raleigh, PE

From: Brent Johnson, PE

Subject: Stormwater Rules Summary; Pine Hill Elementary School Stormwater Summary
City of Cottage Grove
Project No.: N15.103963

Redevelopment is being planned at the Pine Hill Elementary School. The following notes regarding the Cottage Grove stormwater rules and standards are excerpts from the City's Surface Water Plan and the South Washington Watershed District rules. The future land use map for this parcel indicates Public/Semi Public.

The Pine Hill Elementary School addition project is anticipated to include:

- New impervious 0.349 acres.
- Redeveloped impervious 0.066 acres.
- Sum of new and reconstructed 0.415 acres.
- Disturbed area will be over 1 acre.

NPDES Permit and Total Phosphorus Load Limit: Because redevelopment will involve a disturbance of 1 acre or more, an NPDES Construction Stormwater Permit and SWPPP will be required, and the South Washington Watershed District total phosphorus (TP) load limits will apply.

a. **Volume Control:** Volume control is not required because the sum of new and fully reconstructed impervious surfaces is less than 1 acre. The Pine Hill Elementary School site lies outside of the 10-year Groundwater Capture Zone of city wells, so stormwater infiltration features are allowed by the city within this area (if not precluded by other requirements of the MPCA or Department of Health).

b. **TP Load Limit**: South Washington Watershed District rules call for 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. Submit a water quality analysis of existing and proposed TP loads using a method such as the P8 or MIDS models. If on-site BMPs are not sufficient to meet the water quality total phosphorus loading rates, the purchase of off-site mitigation credits is an option.

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Water Quality Treatment: For redeveloped areas the City requires a net reduction from pre-project conditions. Therefore, on an annual average basis, reductions shall be obtained for the stormwater discharge volume and the stormwater discharges of total suspended solids (TSS) and total phosphorus (TP). The net reduction will apply to impervious areas that are redeveloped.

The proposed new impervious surfaces on redevelopment projects will need to achieve post-development reductions in TP and TSS by 50% and 80%, respectively. New impervious surfaces are defined as the difference between the total impervious area of the site before the re-development activity and the total impervious area for the post-re-development condition.

Submit a water quality analysis to demonstrate compliance using a method such as the P8 or MIDS models.

For water quality analyses using the MIDS or P8 models, the South Washington Watershed District (SWWD) Standards Manual (November 2023) includes required adjustments to the MIDS and P8 models:

Model	*Parameter*	*Required*
MIDS	*Retention Requirement*	*1.0 inch*
MIDS	*Total Phosphorus EMC, Change from Default 0.3 mg/l*	*0.31 mg/l*
P8	*Precipitation and Temperature Files*	*Download modified .pcp and .tmp files from District website*
P8	*Start Date*	*1-1-1971*
P8	*Keep Date*	*1-1-1971*
P8	*Stop Date*	*12-31-2000*
P8	*Number of passes through the storm file*	*5*
P8	*Impervious Depression Storage*	*0.1*
P8	*Impervious Runoff Coefficient*	*0.9*
P8	*Max infiltration rate*	*0.8 inch/hour*
P8	*Phosphorus Event Mean Concentration*	*Nurp50 particle file*
P8	*Total Suspended Solids Event Mean Concentration*	*Nurp50 particle file*

The Standards Manual is available at the link below:
SWWD_Standards-Guidance-Manual_Final_11062023.pdf (swwdmn.org)

Rate Control: Peak flow rates after development shall not exceed pre-development peak flow rates for the critical 2-year, 10-year, and 100-year recurrence interval precipitation events. Use 24-hour NOAA Atlas 14 Precipitation events and MSE3 distribution for rate control analyses and pond storage design. More restrictive rate control criteria may be required to protect the integrity of downstream conveyance channels and ponds.

Curve Numbers: The South Washington Watershed District Standards Manual specifies: *Project proposers shall use runoff curve numbers (CN) based on land cover and HSG as published in the Minnesota Stormwater Manual: Stormwater runoff coefficients/curve numbers for different land uses – Minnesota Stormwater Manual (state.mn.us)* Section 6.1.2 of the city Surface Water Management Plan includes the following guidance on curve numbers for pervious areas:

Pervious Area Curve Numbers

Hydrologic Soils Group (HSG)	*Pervious Areas Land Use Type*	*Curve Number (CN)*
A	*Bluff/Ravine*	*55-58**
A	*Public/Park/Open Space*	*61**
A	*Rural Residential and ROW*	*66**
A	*Pervious Surfaces for Urban land Use Types (Urban Residential, Commercial/Industrial)*	*61*
B	*Bluff/Ravine*	*55-58*
B	*Public/Open Space (Lawns, Parks, etc.), Grass Cover>75%, Good*	*61*
B	*Rural Residential*	*66*
C	*Public/Open Space (Lawns, Parks, etc.), Grass Cover>75%, Good*	*74*
D	*Public/Open Space (Lawns, Parks, etc.), Grass Cover>75%, Good*	*80*

*-Note: For areas within the city containing primarily HSG A soils, the CN values within the table for Bluff/Ravine, Park/Open Space, Rural Residential and ROW may be lowered to reflect soils with higher infiltration rates. However, it is assumed that the pervious surfaces for more urban land use types (Urban Residential and Commercial/Industrial) and HSG A soils will actually generate runoff depths similar to that of HSG B soils, due to factors such as:

- Compaction of the soil surface layer during construction
- Placement of topsoil and sod to retain soil moisture and promote healthy turf establishment.
- Efficiently graded lots, limiting the amount of runoff allowed to pool on the landscape and infiltrate.

The site soils include primarily hydrologic soil group A and we expect that proposed conditions pervious areas for urban land use types will be simulated with curve numbers of 61.

Pretreatment: The city requires adequate pretreatment of stormwater runoff from development and redevelopment activities prior to discharge into all waterbodies. The city will require that infiltration and filtration basins be constructed to be “off-line” so that the basins fill along with their pretreatment basins, but higher flood flows are not routed through the infiltration or filtration basins, to have better long-term operation and less maintenance. If wet sediment ponds are used for pretreatment, they should include equalizer pipes to carry flow into the infiltration or filtration basins.

Permanent Pools in Stormwater Ponds:-In an effort to ensure that wet ponds are designed in a way to improve the probability of maintaining a normal water level, the following should be applied:

Permanent pool volume should be greater than or equal to the volume of runoff from a 2.5-inch rainstorm under full projected watershed development. This value has been derived from design criteria developed under National Urban Runoff Program (NURP), with a 25% increase in volume to allow for roughly 25 years of sediment accumulation. In the summer, this sizing rule provides a mean hydraulic residence time of about 15 days.

Additional items to help ponds achieve a normal water level:

1. Maximum depth of permanent pool shall be 8 feet or less.
2. 12" (minimum) of topsoil will be placed over the clay liner
3. 12" (minimum) clay liner shall be provided:
    a. Maximum permeability of $1x10^{-6}$ cm/s
    b. Liner to extend 1-foot vertically above the pond normal water level.
4. For ponds with permanent pools 1-2 times the volume of the 2.5" rain runoff:
    a. 3:1 slopes below the NWL will be allowed per city detail STO-15
5. For ponds with permanent pools 2-4 times the volume of the 2.5" rain runoff:
    a. 4:1 slopes below the NWL will be provided
6. No pond with a permanent pool greater than 4 times the volume of the 2.5" rain runoff will be allowed.

Wetlands: The South Washington Watershed District will act as the Local Government Unit (LGU) for administration of the Wetland Conservation Act (WCA). Please provide copies of wetland delineation and permitting correspondence to the city. The South Washington Watershed District rules call for wetland buffers and other requirements based on wetland management classification and size.

Freeboard standards: 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. 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.

Rational Storm Sewer Design: 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.

a. Pipe sizes and slopes should be selected to provide a minimum open channel velocity of 3 feet per second.
b. Maximum storm sewer velocities should be kept at 10 feet per second or less.
c. When changing pipe sizes in structure, match crown of pipe elevations instead of inverts.
d. Please show storm catch basin IDs, pipe sizes, grades, elevations, and drainage areas on the plans consistent with the rational design tables.
e. 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.

Soil Borings: Soil borings are required in the vicinity of proposed volume control BMPs. Borings are needed to identify soil conditions and the presence of groundwater or bedrock. Soil borings should extend a minimum of 5 feet below the lowest constructed elevation of proposed BMPs.

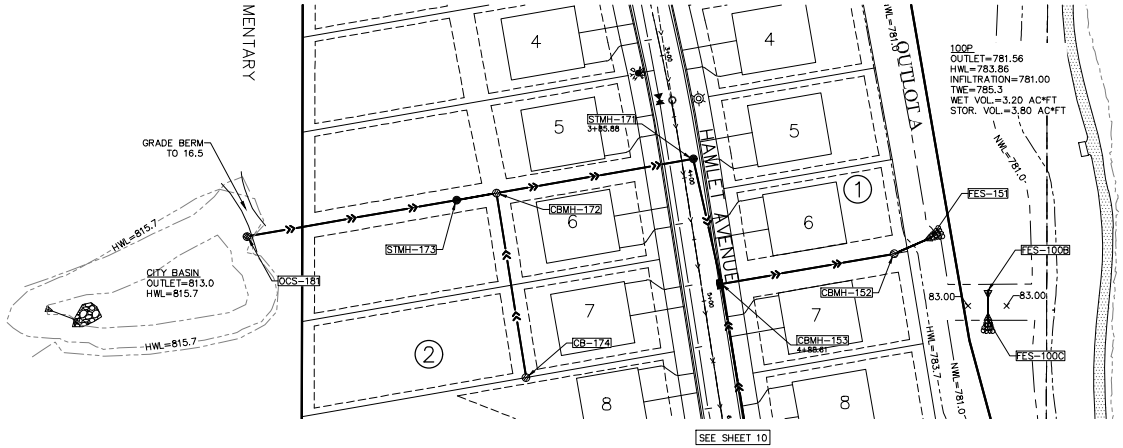
Control Erosion at Construction Sites:
The city requires that applications for new or redevelopment activity include in their applications for City review, a SWPPP as required under the NPDES construction permit in effect at the time of review. Construction sites will be inspected to ensure compliance with the existing erosion and sediment control ordinance, Watershed District requirements, and with the construction site permit under NPDES Phase II MS4 rules. The city completes quality assurance inspections on all NPDES permits in the city (where the city is not the owner) twice each month. Erosion and sediment control best management practices as outlined in the Minnesota Stormwater Manual will be required and must be shown on required submittals to the City for approval. Any street sweeping conducted by the City to remove erosional debris from streets will be charged to the owner of the property.

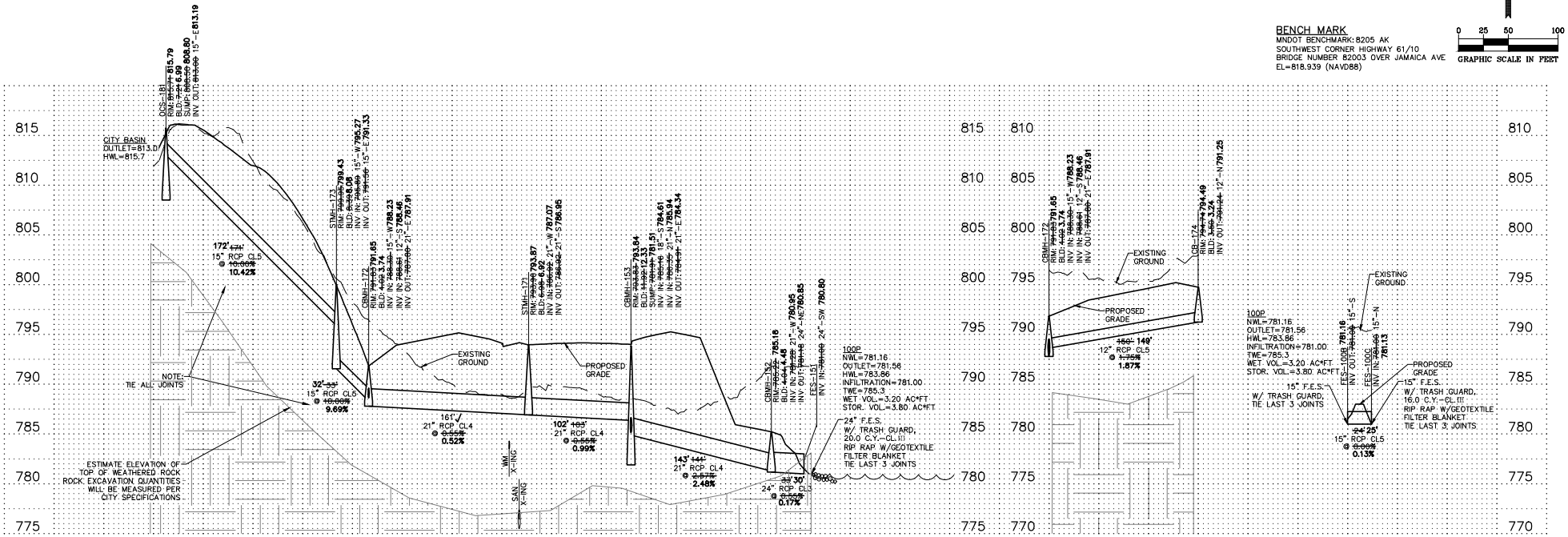
Testing: The city will require post-construction testing to verify the infiltration rates and drawdown periods of any infiltration basins.

Models: Please note that digital copies of the final version stormwater models 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.

NPDES Construction Stormwater Permit
When the disturbed area of development or redevelopment exceeds 1 acre, an NPDES Construction Stormwater Permit and SWPPP is required.

Record Drawings
As requested, attached are record drawings for two pipe outlets from Pine Hill School. Both of these pipe outlets carry runoff from the Pine Hill School parcels to the Hamlet Heights development stormwater ponds (see attached Hamlet Heights Hydrology map). It is important that improvements on the Pine Hill School parcels not increase the high water levels of the Hamlet Heights stormwater ponds; and the Hamlet Heights HydroCAD model is available for your use in simulating the effects.





BENCH MARK
MNDOT BENCHMARK: 8205 AK
SOUTHWEST CORNER HIGHWAY 61/10
BRIDGE NUMBER 82003 OVER JAMAICA AVE
EL=818.939 (NAVD88)

0 25 50 100
GRAPHIC SCALE IN FEET

RECORD PLAN 8-9-19 CONTRACTOR: FRIEDGES CONTRACTING

01-ENG-117345-SHEET-STX

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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 4/3/2018

Revisions
1. 5-7-2018 City Comments
2. 5-31-2018 City Comments
3. 6-13-2018 Final Grading
4. 10-17-2018 Move G.V.
5. 12-17-2020 Regrade Pond
6. 10-19-2021 As-Built Comments

Date 4-3-2018
Designed BNM/MAP
Drawn NSN

STORM SEWER CONSTRUCTION

ETERNITY HOMES, LLC
425 THIRD STREET
FARMINGTON, MINNESOTA 55024

HAMLET HEIGHTS
COTTAGE GROVE, MINNESOTA

9 OF 24

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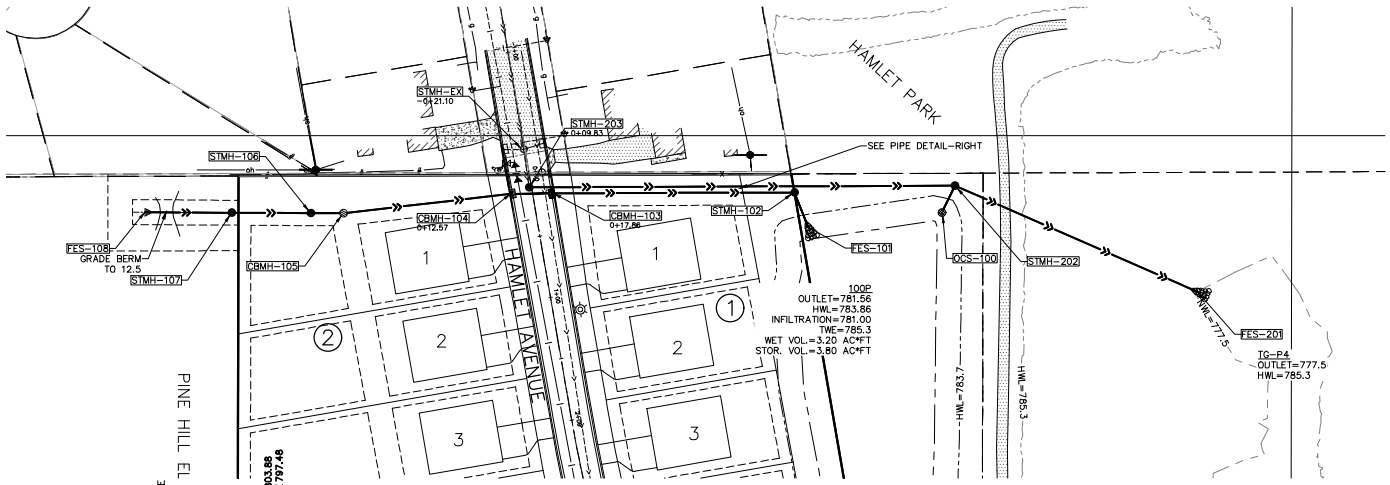
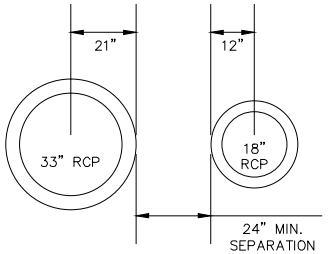
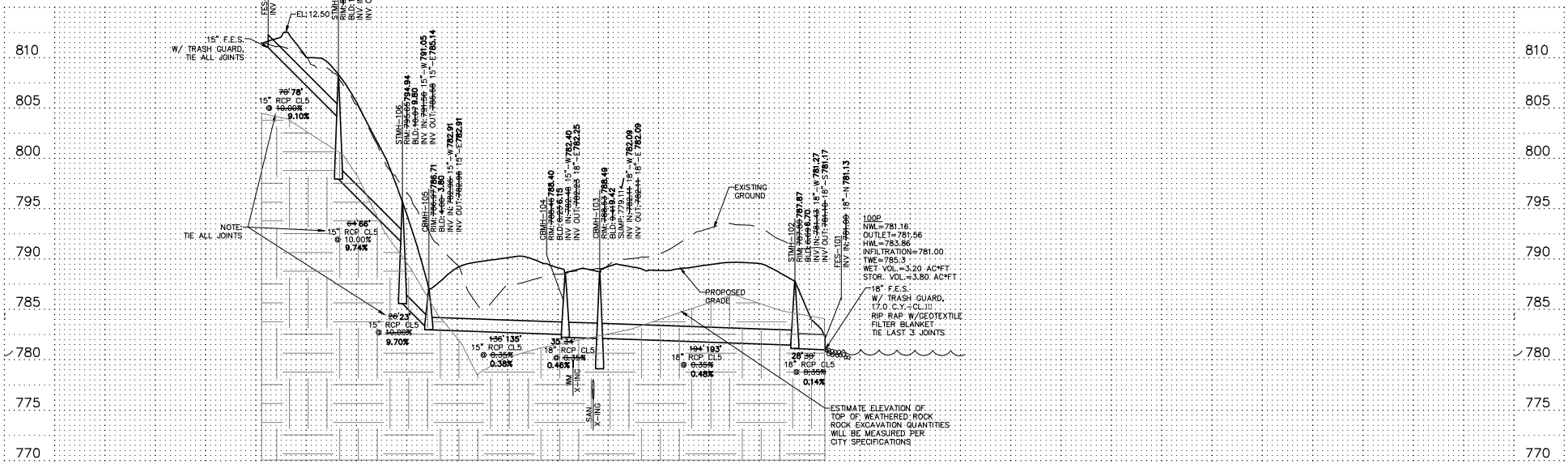




BENCH MARK
MNDOT BENCHMARK: 8205 AK
SOUTHWEST CORNER HIGHWAY 61/10
BRIDGE NUMBER 82003 OVER JAMAICA AVE
EL=818.939 (NAVD88)

0 25 50 100
GRAPHIC SCALE IN FEET



RECORD PLAN 8-9-19 CONTRACTOR: FRIEDGES CONTRACTING

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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 4/3/2018

Revisions
1. 3-7-2018 City Comments
2. 3-21-2018 City Comments
3. 4-13-2018 Final Grading
4. 10-7-2018 Move G.V.
5. 12-17-2020 Regrade Pond
6. 10-19-2021 As-Built Comments

Date 4-3-2018
Designed BNM/NAP
Drawn NSN

STORM SEWER CONSTRUCTION

ETERNITY HOMES, LLC
425 THIRD STREET
FARMINGTON, MINNESOTA 55024

HAMLET HEIGHTS
COTTAGE GROVE, MINNESOTA

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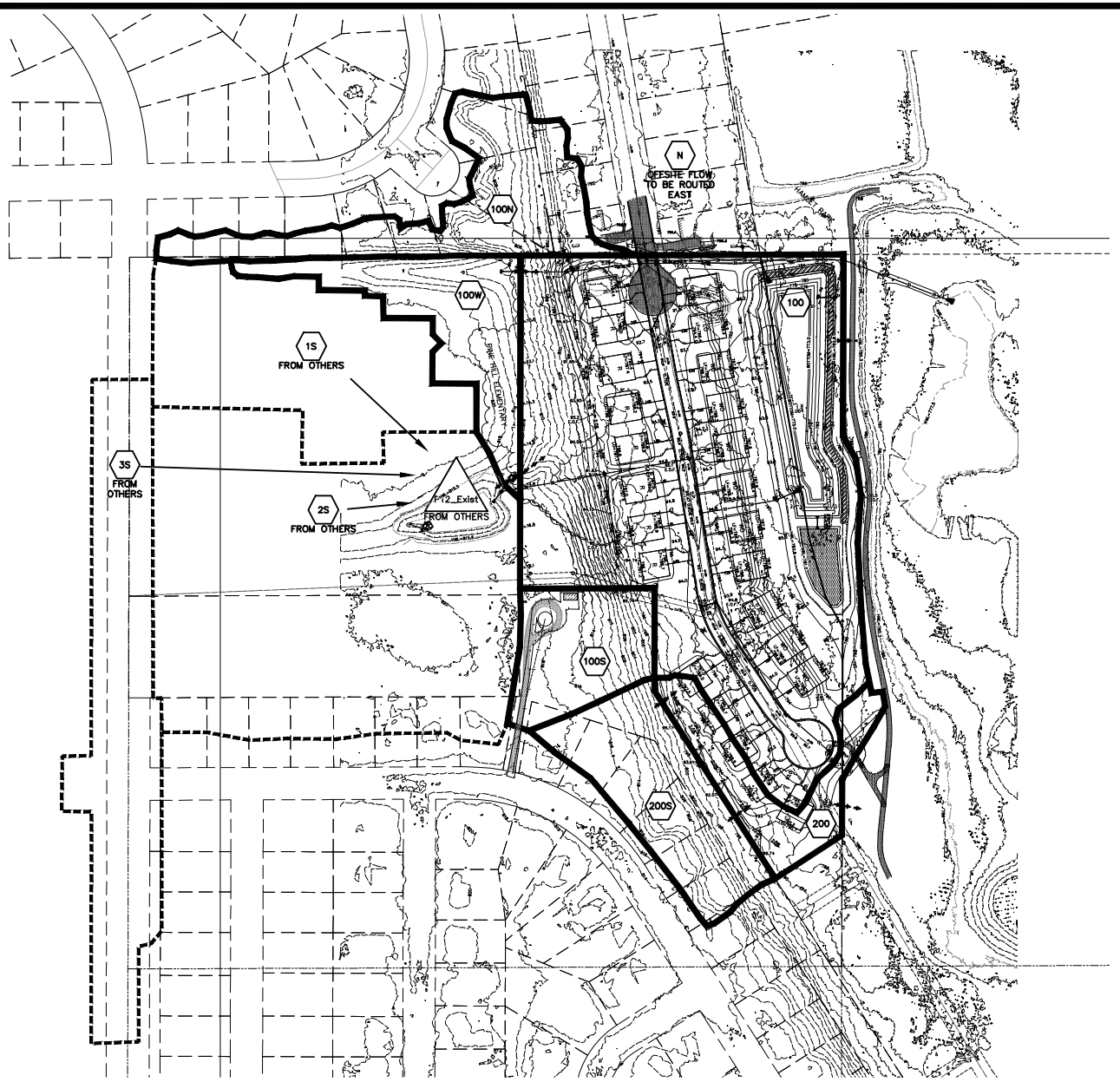

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Name: Brian N. Molinaro
Reg. No. 47504 Date 1/5/2018

Revisions

Date 1-5-2018
Designed BNM/NAP
Drawn BNM

PROPOSED HYDROLOGY

ETERNITY HOMES, LLC
425 THIRD STREET
FARMINGTON, MINNESOTA 55024

HAMLET AVENUE
COTTAGE GROVE, MINNESOTA

1 OF 1

003-ENG-117242-SHEET-PROP-HYDR

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MEMORANDUM

Date: 08/06/2025

To: Paul Sponholz, PE

From: Mike Boex, PE

Subject: Pine Hill Elementary School Addition
City of Cottage Grove, MN
Project No.: 24X139406

This memo summarizes the review of site plan documents submitted by Wold Architects and BKBM Engineers, dated 6/2/25 (received 7/25/25).

Sheet C1.000:

1. There is an existing utility easement in the northeast corner of the site. This existing conditions/removal sheet should identify this easement with a note that it will be vacated with this project.

Sheet C3.000:

2. An open cut of Hadley Avenue for the proposed utility connections should be avoided.
    a. The proposed sanitary sewer shall connect to the existing service pipe in the parking lot or drive apron. Instead of constructing a new manhole in Hadley Avenue, realign the pipe from SSWR#2 to SSWR#1 to the southwest and set new manhole #1 over the existing service pipe on private property.
    b. Alternative water service alignments should be evaluated to avoid Hadley Avenue impacts.
        i. Ideally, the proposed 2-inch service would be routed around the east side of the property from the existing 6-inch service on the south side of the existing building. Perhaps the street impacts of Hadley Avenue would offset the cost of the extra length of service pipe.
            1. The information on sheet C4.000 and C5.001 is incorrect; the paving for Hadley Avenue consists of the following:
                a. 4” SPWEA340C, 2” SPNWB330B, 9” Cl. 5 Aggregate Base, 12” Select Granular Borrow
                    i. The upper 4” should be depicted as two 2”-inch lifts. Additionally, the oil should be depicted as “C” vs “B” in the upper 4”.

Bolton & Menk is an equal opportunity employer.

Sheet C4.000:

3. The public sidewalk along Hadley Avenue shall conform to the section on City Standard Detail STR-9 (6" concrete over 4" Cl. 5 aggregate base). It's assumed this sidewalk will not be impacted if disruption to Hadley Avenue is avoided.
    a. If used, the detail 12/C5.001 should more closely conform (or directly use City Standard Detail STR-9), such as noting Type 3F52A concrete and virgin aggregate for the aggregate base, etc.

Sheet L1.001:

4. For clarity, property lines should be shown on all landscape sheets.

Stormwater Comments:

5. Soil Amendment:
    a. A soil amendment note was added to Sheet C2.00. However, there appears to be a potential contradiction between the bold soil amendment note and the general topsoil reuse/restoration identified in Grading Note #12. The bold note specifies incorporation of 3" of compost into the top 8" of soil and 10" of scarified subsoil below for a total 18" of uncompacted soil, which is consistent with MPCA soil amendment guidance. The second note, Grading Note #12, however, suggests the contractor may re-spread 6" of compacted topsoil prior to seeding, with no mention of compost amendment or subsoil loosening. This could conflict with the amendment goal if compacted topsoil is simply re-applied without further treatment. Please clarify whether the salvaged/re-spread topsoil will also be amended with compost and placed over scarified subsoil, consistent with the soil amendment note; and whether these notes can be consolidated or coordinated to avoid conflicting interpretation in the field. We also recommend that the limits of soil amendment be clearly shown on the plans (e.g., all disturbed pervious areas outside pavement/building footprints), or at a minimum, that the note references which areas the specification applies to (e.g., "all turf restoration areas" or "all landscaped areas").
6. Sheet C6.000 lists existing and proposed impervious acreages:
    a. Sheet C6.000 includes a note beneath the "Proposed Drainage Areas" table stating: "Refer to Hydrology Narrative for an exhibit showing all drainage areas. The above drainage areas represent the tributary area to the existing basin and areas within the Pine Hill Elementary School." However, upon review of the Hydrology Narrative, we were unable to locate an exhibit that clearly shows all modeled drainage areas. Please provide a comprehensive drainage area figure showing all areas included in both the existing and proposed HydroCAD and MIDS models, including both on-site and off-site drainage (e.g., City roadways, Area 100W). Improved documentation will help ensure consistent interpretation of modeling assumptions and confirm alignment between the plans, model inputs, and narrative.

Traffic Study Comments:

7. Additional comments will be provided in future correspondence.

PROJECT/COMM NO.: Pine Hill ES Addition and Renovation / 242224
SUBMITTAL DATE: 06/11/2025
LOCATION: 9015 Hadley Ave S, Cottage Grove, MN 55016

PROPERTY IDENTIFICATON NUMBER: 2002721220002
LEGAL DESCRIPTION: Section 20 Township 027 Range 021

Brief Description of Project:
The Pine Hill Elementary School project consists of a six-classroom addition, a small Gym addition, and an enclosed Freezer addition. The project includes a storm shelter designed through a portion of the classroom addition, which will accommodate the anticipated 5-year building capacity. Interior renovation through this project will address existing Special Education classrooms, accessibility-toilet upgrades, and minor renovations to the Kitchen.
Long-Term Facility and Maintenance (LTFM) work is included to address: VCT flooring removal and replacement; operable gym wall removal and replacement; Gym flooring removal and replacement; Boiler & Chiller Plant removal and replacement; Freezer/Cooler removal; RTU/AHU Replacement for the Cafeteria, Gym, and Main Office; 1:1 LED Lighting Replacement; and Building-wide data re-cabling.

Site and/or Design-Related Factors:
The Architect's recommendation is to locate the six-classroom addition on the North side of the existing building, which will encroach upon the 50'-0" property setback. A 1970 Kindergarten Addition created two classrooms that currently exceed beyond this property setback; as such, the proposed classroom addition will not exceed beyond the 1970 Addition but would encroach upon the 50'-0" property setback.

Feasibility investigations to study the classroom addition on the other sides of the building are noted below:
South:

- This project will include a new storm shelter through our classroom addition, which will require a dedicated water service. If we locate the storm shelter on the south side of the building, it will double the length of water required unless we remove and replace the recently installed pavement and playground. This pavement was provided in 2021, and we would like to avoid the disruption of any new and still functional material where possible.
- Similarly, the addition will require a sanitary sewer service, and we would intend to connect to the existing sewer that is on the NW side of the site. The length of this run would present some challenges if the addition is located on the South side and would potentially require a lift station.
- There is an existing stormwater easement and stormwater pond on the South side of the building, and by providing the addition on the North, we would minimize the potential for any interference with this easement and stormwater pond.

East:

- The topography on the East side of the building is steep and will present some challenges with the proposed addition; as such, we have been advised that the grade change on the North is preferred for a new addition.
- An addition on this side of the building would impact the amount of daylight that is currently received in existing classrooms and in the Media Center.
- There is a higher concentration of trees on the East side of the building that we would like to avoid - both from a landscape perspective and in preserving the identity of "Pine Hill."

West:

- The West side of the building would potentially interfere with the recently renovated parking lot (2021). Similar to the previously noted sentiment of preserving recent work, we would like to avoid disrupting any new and functional components of the site as much as possible.
- The addition on the West side would have a greater impact on the amount of daylighting to existing classroom windows.

Given these reasons, the current design recommends the classroom addition be located on the North side of the building. This location would connect to an existing offset corridor and functionally create a loop to the core of the building. This would be a more efficient connection to utilize an existing circulation system and would subsequently connect two of the offset NW classrooms back to the broader building. Our proposed addition would not exceed the northernmost limits/extents of the existing building but would cross the previously discussed 50'-0" setback. This has previously been reviewed with and supported by the city planning and engineering departments. Please refer to the variance application for additional information.

MN

EXISTING BUILDING SF:
62,260 SF

TOTAL NEW ADDITION SF:
13,300 SF

TOTAL NEW BUILDING SF:
75,560 SF

Pine Hill Elementary School Addition and Renovation
9015 Hadley Ave S,
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ISD #833
8400 E. Point Douglas Rd S.,
Cottage Grove, MN 55016

WOLD ARCHITECTS AND ENGINEERS
332 Minnesota Street, Suite W2000
St. Paul, Minnesota 55101
woldae.com | 651 227 7773

Revisions

Description	Date	Num

Comm: 242224
Date: Issue Date
Drawn: Author
Check: Checker

North

OVERALL BUILDING SF

A

F2 OVERALL BUILDING PLAN
1/16" = 1'-0"
0 12' 24'

CITY PLANNING SET
NOT FOR CONSTRUCTION

Scale: 1/16" = 1'-0"

A.01

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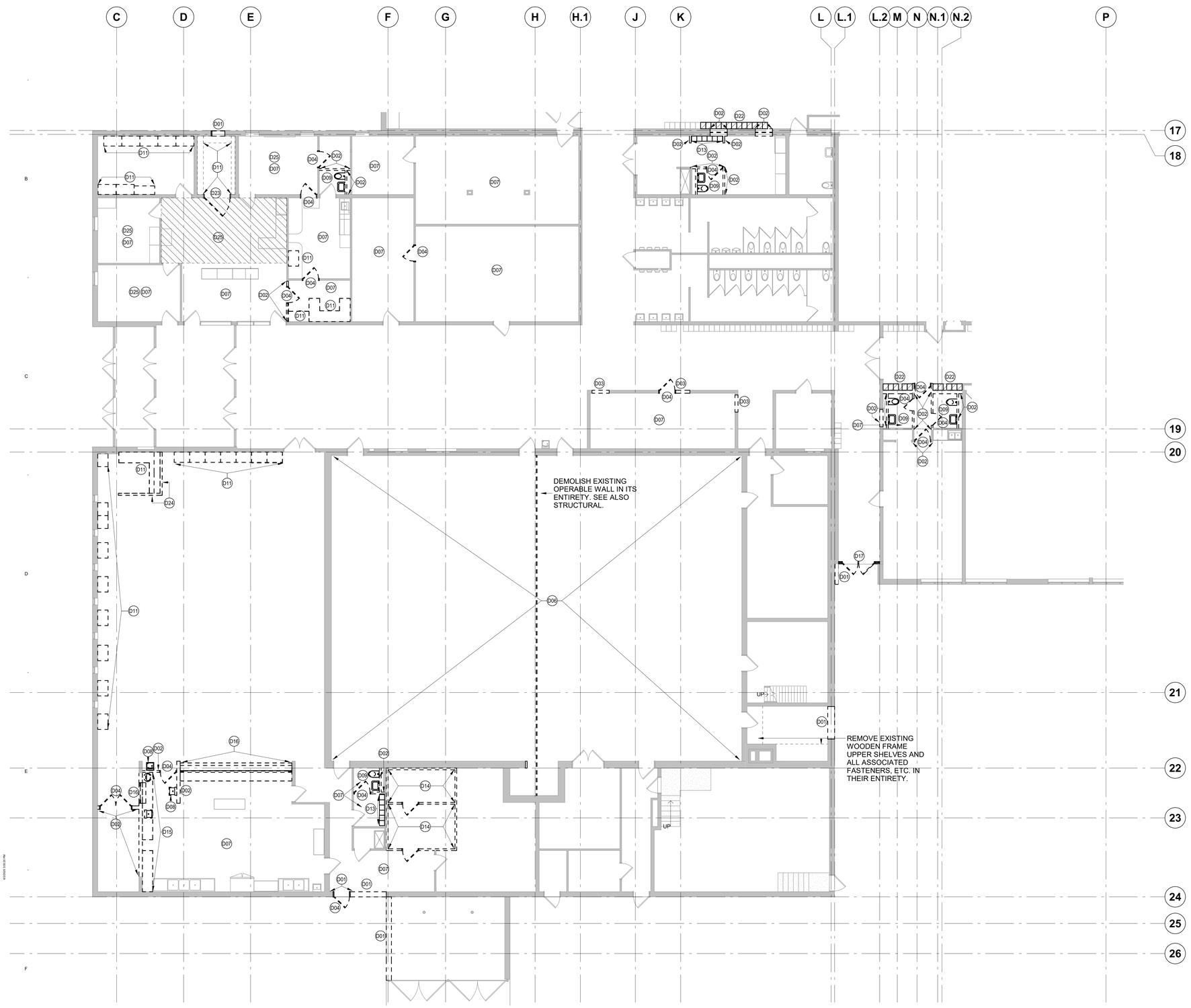
MN



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6. PROVIDE SMOOTH AND CLEAN SUBSTRATE TO ALL AREAS RECEIVING NEW FINISHES. COORDINATE WORK WITH PLANS AND THE ROOM FINISH SCHEDULE.
7. ALL RELATED WOOD BLOCKING SUPPORT STRUCTURE, HARDWARE CONNECTION DEVICES, ADHESIVES, AND/OR MASTIC SHALL BE REMOVED FROM SURFACES AT ITEMS NOTED FOR REMOVAL. PROVIDE SURFACES ACCEPTABLE FOR PATCHING AND/OR NEW WORK.
8. DEMOLITION NOTES WITHOUT ARROWS INDICATE THAT THE NOTE APPLIES TO THE ENTIRE ROOM.

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- WALL TO BE REMOVED
- DOOR TO REMAIN
- DOOR, FRAME, AND HARDWARE TO BE REMOVED UNLESS NOTED OTHERWISE
- DESIGNATED ITEM TO REMAIN
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DEMOLITION PLAN KEY NOTES:

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D02 REMOVE EXISTING MASONRY WALL FROM SLAB TO DECK, INCLUDING ANCHORS, BRACING, MORTAR, ETC COMPLETE TO THE APPROXIMATE EXTENTS SHOWN AND AS REQUIRED - COORDINATE EXTENTS WITH NEW WORK.

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D05 SAWCUT AND REMOVE EXISTING CONCRETE SLAB TO THE APPROXIMATE EXTENTS SHOWN AND AS REQUIRED - COORDINATE EXTENTS WITH NEW WORK. COORDINATE ALSO WITH MECHANICAL.

D06 REMOVE EXISTING VCT FLOORING, INCLUDING BASE, ADHESIVES, ETC COMPLETELY.

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D08 SEE MECHANICAL FOR REMOVAL OF EXISTING MECHANICAL FIXTURE, INCLUDING CARRIERS, ANCHORS, SEALANT, ETC IN ITS ENTIRETY.

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D10 WITH CLEAN GLOVES, CARFULLY REMOVE, PROTECT AND SALVAGE EXISTING LAY-IN (ACT) CEILING TILES AND PORTIONS OF GRID SYSTEM AS REQUIRED FOR NEW WORK - COORDINATE EXTENTS WITH NEW WORK. LABEL ITEMS FOR REINSTALLATION. SEE ALSO MECHANICAL AND ELECTRICAL.

D11 REMOVE EXISTING CASEWORK INCLUDING ALL WARDROBE, BASE CABINETS, UPPER CABINETS, COUNTERTOPS, AND ALL ASSOCIATED ANCHORS, ADHESIVES, ETC. IN THEIR ENTIRETY AS INDICATED BY DASHED LINE.

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D20 DEMOLISH EXISTING MARKERBOARDS, TACKBOARDS, SMTV, SMARTBOARDS AS INDICATED ON PLAN. RETURN ALL SMARTBOARDS AND SMTVS TO OWNER. SEE ALSO ELECTRICAL.

D21 CAREFULLY REMOVE AND PRESERVE ALL EXISTING MARKERBOARDS, TACKBOARDS, SMTV, SMARTBOARDS AS INDICATED ON PLAN FOR RE-INSTALLATION.

D22 REMOVE EXISTING METAL LOCKERS AND ASSOCIATED BASE AS OCCURS IN THEIR ENTIRETY.

D23 REMOVE EXISTING VAULT DOOR AND FRAME IN ITS ENTIRETY, INCLUDING GLAZING, HARDWARE, ANCHORS, ETC.

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D25 REMOVE EXISTING CARPET FLOORING, INCLUDING BASE, ADHESIVES, ETC COMPLETELY.

Pine Hill Elementary School Addition and Renovation

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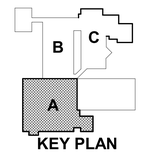

KEY PLAN

Revisions		
Description	Date	Num

Comm: 242224
Date: Issue Date
Drawn: Author
Check: Checker

North

MAIN LEVEL DEMOLITION PLAN - AREA A

Scale: 1/8" = 1'-0"

A1.01a

F1 MAIN LEVEL DEMOLITION PLAN - AREA A
1/8" = 1'-0"
0 6' 12'

CITY PLANNING SET
NOT FOR CONSTRUCTION

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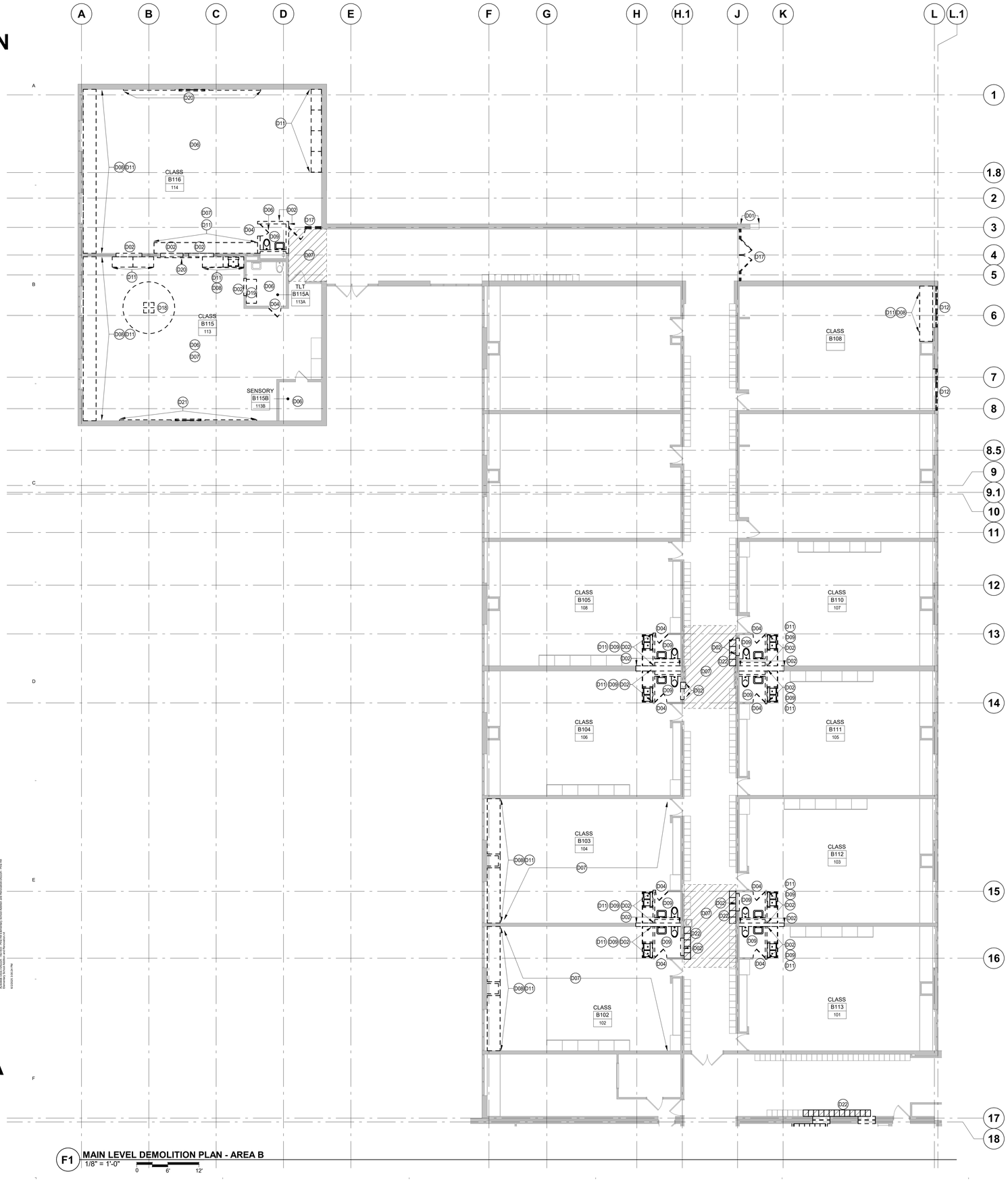

F1 MAIN LEVEL DEMOLITION PLAN - AREA B
1/8" = 1'-0"
0 6' 12'

A

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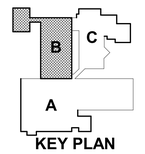


KEY PLAN

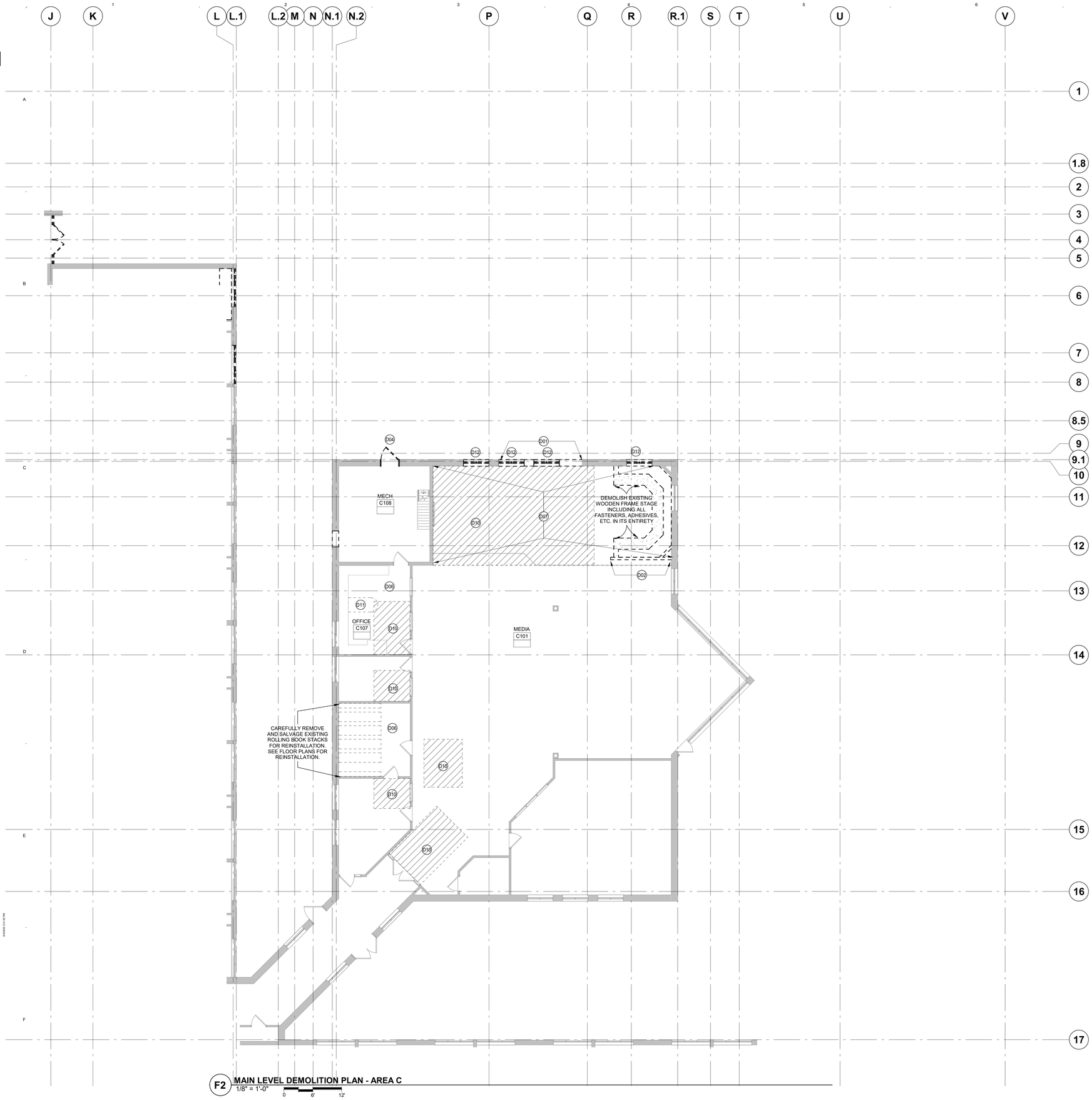
Revisions		
Description	Date	Num

Comm: 242224
Date: Issue Date
Drawn: Author
Check: Checker
North

MAIN LEVEL DEMOLITION PLAN - AREA B

Scale: 1/8" = 1'-0"

A1.01b



F2 **MAIN LEVEL DEMOLITION PLAN - AREA C**
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D03 REMOVE EXISTING GWB / METAL STUD PARTITION WALL FROM SLAB TO DECK, INCLUDING ANCHORS, SEALANT, ETC COMPLETE TO THE APPROXIMATE EXTENTS SHOWN AND AS REQUIRED - COORDINATE EXTENTS WITH NEW WORK.

D04 REMOVE EXISTING WOOD, HOLLOW METAL (HM), OR FRP FRAME AND DOOR, INCLUDING GLAZING, HARDWARE, ANCHORS, ETC. COMPLETE.

D05 SAWCUT AND REMOVE EXISTING CONCRETE SLAB TO THE APPROXIMATE EXTENTS SHOWN AND AS REQUIRED - COORDINATE EXTENTS WITH NEW WORK. COORDINATE ALSO WITH MECHANICAL.

D06 REMOVE EXISTING VCT FLOORING, INCLUDING BASE, ADHESIVES, ETC COMPLETELY.

D07 REMOVE EXISTING LAY-IN (ACT) CEILING ASSEMBLY, INCLUDING GRIDS, HANGERS, PERIMETER TRIM, ETC COMPLETE - COORDINATE WITH MECHANICAL AND ELECTRICAL.

D08 SEE MECHANICAL FOR REMOVAL OF EXISTING MECHANICAL FIXTURE, INCLUDING CARRIERS, ANCHORS, SEALANT, ETC IN ITS ENTIRETY.

D09 REMOVE EXISTING TOILET ACCCESSORIES, INCLUDING GRAB BARS, SOAP DISPENSERS, MIRRORS, PAPER TOWEL DISPENSERS, ETC COMPLETE. VERIFY REQUIRED SALVAGE WITH NEW WORK AND / OR COORDINATE SALVAGE AND TURN ITEMS OVER TO OWNER.

D10 WITH CLEAN GLOVES, CAREFULLY REMOVE, PROTECT AND SALVAGE EXISTING LAY-IN (ACT) CEILING TILES AND PORTIONS OF GRID SYSTEM AS REQUIRED FOR NEW WORK - COORDINATE EXTENTS WITH NEW WORK. LABEL ITEMS FOR REINSTALLATION. SEE ALSO MECHANICAL AND ELECTRICAL.

D11 REMOVE EXISTING CASEWORK INCLUDING ALL WARDROBE, BASE CABINETS, UPPER CABINETS, COUNTERTOPS, AND ALL ASSOCIATED ANCHORS, ADHESIVES, ETC. IN THEIR ENTIRETY AS INDICATED BY DASHED LINE.

D12 REMOVE EXISTING WINDOW, INCLUDING GLAZING, ANCHORS, ETC. IN ITS ENTIRETY.

D13 CAREFULLY REMOVE EXISTING LOCKERS AND PRESERVE FOR FUTURE REINSTALLATION.

D14 DEMOLISH EXISTING FREEZER AND COOLER IN THEIR ENTIRETY. SEE MECHANICAL AND ELECTRICAL FOR ADDITIONAL INFORMATION.

D15 REMOVE EXISTING KITCHEN EQUIPMENT IN ITS ENTIRETY. SEE ELECTRICAL AND MECHANICAL FOR ADDITIONAL INFORMATION.

D16 REMOVE EXISTING OVERHEAD SECTIONAL DOOR IN ITS ENTIRETY INLCUDING TRACK, SPRING, MOUNTING BRACKETS, SENSORS, AND MOTOR.

D17 DEMOLISH EXISTING STOREFRONT SYSTEM IN ITS ENTIRETY INCLUDING GLAZING, HARDWARE, ANCHORS, ETC.

D18 REMOVE EXISTING CEILING MOUNTED SWING, INCLUDING ALL HARDWARE, ANCHORS, STRUCTURAL ATTACHMENTS, MODIFIED CEILING TILES ETC. COMPLETELY.

D19 CAREFULLY REMOVE EXISTING ELECTRIC CHANGING TABLE AND PRESERVE FOR FUTURE REINSTALLATION. SEE ALSO ELECTRICAL.

D20 DEMOLISH EXISTING MARKERBOARDS, TACKBOARDS, SMTV, SMARTBOARDS AS INDICATED ON PLAN. RETURN ALL SMARTBOARDS AND SMTVS TO OWNER. SEE ALSO ELECTRICAL.

D21 CAREFULLY REMOVE AND PRESERVE ALL EXISTING MARKERBOARDS, TACKBOARDS, SMTV, SMARTBOARDS AS INDICATED ON PLAN FOR RE-INSTALLATION.

D22 REMOVE EXISTING METAL LOCKERS AND ASSOCIATED BASE AS OCCURS IN THEIR ENTIRETY.

D23 REMOVE EXISTING VAULT DOOR AND FRAME IN ITS ENTIRETY, INCLUDING GLAZING, HARDWARE, ANCHORS, ETC.

D24 REMOVE EXISTING DEMOUNTABLE PARTITION WALL, COMPLETE TO THE APPROXIMATE EXTENTS SHOWN AND AS REQUIRED - COORDINATE EXTENTS WITH NEW WORK.

D25 REMOVE EXISTING CARPET FLOORING, INCLUDING BASE, ADHESIVES, ETC COMPLETELY.

CITY PLANNING SET
NOT FOR CONSTRUCTION

Pine Hill Elementary School Addition and Renovation

9015 Hadley Ave S,
Cottage Grove, MN 55016

ISD #833
8400 E. Point Douglas Rd S.,
Cottage Grove, MN 55016

WOLD ARCHITECTS AND ENGINEERS
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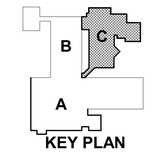

KEY PLAN

Revisions		
Description	Date	Num

Comm: 242224
Date: Issue Date
Drawn: Author
Check: Checker

North

Scale: 1/8" = 1'-0"

MAIN LEVEL DEMOLITION PLAN - AREA C

A1.01c

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MN

DOOR / OPENING SCHEDULE

DOOR NO	DOOR / OPENING TYPE	QTY	WIDTH	HEIGHT	MATL	LABEL/ RATING	OVERALL WIDTH	FRAME TYPE	FRAME DEPTH	FRAME MATL	GL	MOUNTING CONDITIONS HEAD	JAMB	SILL	HDW GRP	REMARKS
A103A	F	1	3'-0"	7'-0"	HM	--	3'-4"	FR1A	--	AL	--					
A104	MCDB	1	5'-0"	4'-2"	ST	--	5'-0"	MCDB	--	ST	--					
A105	MCDB	1	29'-0"	8'-0"	ST	--	29'-0"	MCDB	--	ST	--					
A110	F	2	3'-0"	7'-0"	FRP	--	6'-4"	FR 1	--	AL	--					
A112A	F	2	3'-0"	7'-0"	HM	--	6'-4"	FR 1	--	AL	--					
A118	G	1	3'-0"	7'-0"	WD	--	6'-3 3/8"	FR 2A	--	HM	--					
A120A	F	1	3'-0"	7'-0"	HM	--	3'-4"	FR 1	--	HM	--					
A120B	F	1	3'-0"	7'-0"	HM	--	3'-4"	FR 1	--	HM	--					
A120C	F	1	3'-0"	7'-0"	HM	--	3'-4"	FR 1	--	HM	--					
A120H	AL	1	3'-0"	7'-0"	AL	--	3'-0"	CW X	--	AL	--					
A124	F	1	3'-0"	7'-0"	HM	--	3'-4"	FR1A	--	AL	--					
A125	F	1	3'-0"	7'-0"	HM	--	3'-4"	FR1A	--	AL	--					
A126A	AL	1	3'-0"	7'-0"	AL	--	3'-0"	SF X	--	AL	--					
A126B	AL	1	3'-0"	7'-0"	AL	--	3'-0"	SF X	--	AL	--					

DOOR / OPENING SCHEDULE

DOOR NO	DOOR / OPENING TYPE	QTY	WIDTH	HEIGHT	MATL	LABEL/ RATING	OVERALL WIDTH	FRAME TYPE	FRAME DEPTH	FRAME MATL	GL	MOUNTING CONDITIONS HEAD	JAMB	SILL	HDW GRP	REMARKS
A126C	N	2	3'-0"	7'-0"	HM	--	6'-4"	FR 1	--	AL	--					
A127A	F	1	3'-0"	7'-0"	HM	--	3'-4"	FR1A	--	AL	--					
A127B	F	2	3'-0"	7'-0"	HM	--	6'-4"	FR 1	--	AL	--					
A128A	F	1	3'-0"	7'-0"	FRP	--	3'-4"	FR1A	--	AL	--					
A133	F	1	3'-0"	7'-0"	HM	--	3'-4"	FR 1	--	HM	--					
A134	F	1	3'-0"	7'-0"	HM	--	3'-4"	FR 1	--	HM	--					
A140	G	1	3'-0"	7'-0"	HM	--	5'-4 3/8"	FR 2A	--	HM	--					
A142A	N	1	3'-0"	7'-0"	HM	--	5'-6"	FR 2A	--	HM	--					
A142B	FG2	1	3'-7"	7'-0"			7'-4"	FR 3								
A152	F	2	3'-0"	7'-0"	HM	--	6'-4"	FR 1	--	AL	--					
A242	F	2	3'-0"	7'-0"	HM	--	6'-4"	FR 1	--	AL	--					
A402	F	2	4'-0"	7'-0"	HM	--	8'-4"	FR 1	--	AL	--					
A517	--	1	3'-0"	7'-0"	HM	--	3'-4"	FR X	--	HM	--					

FLOOR PLAN GENERAL NOTES

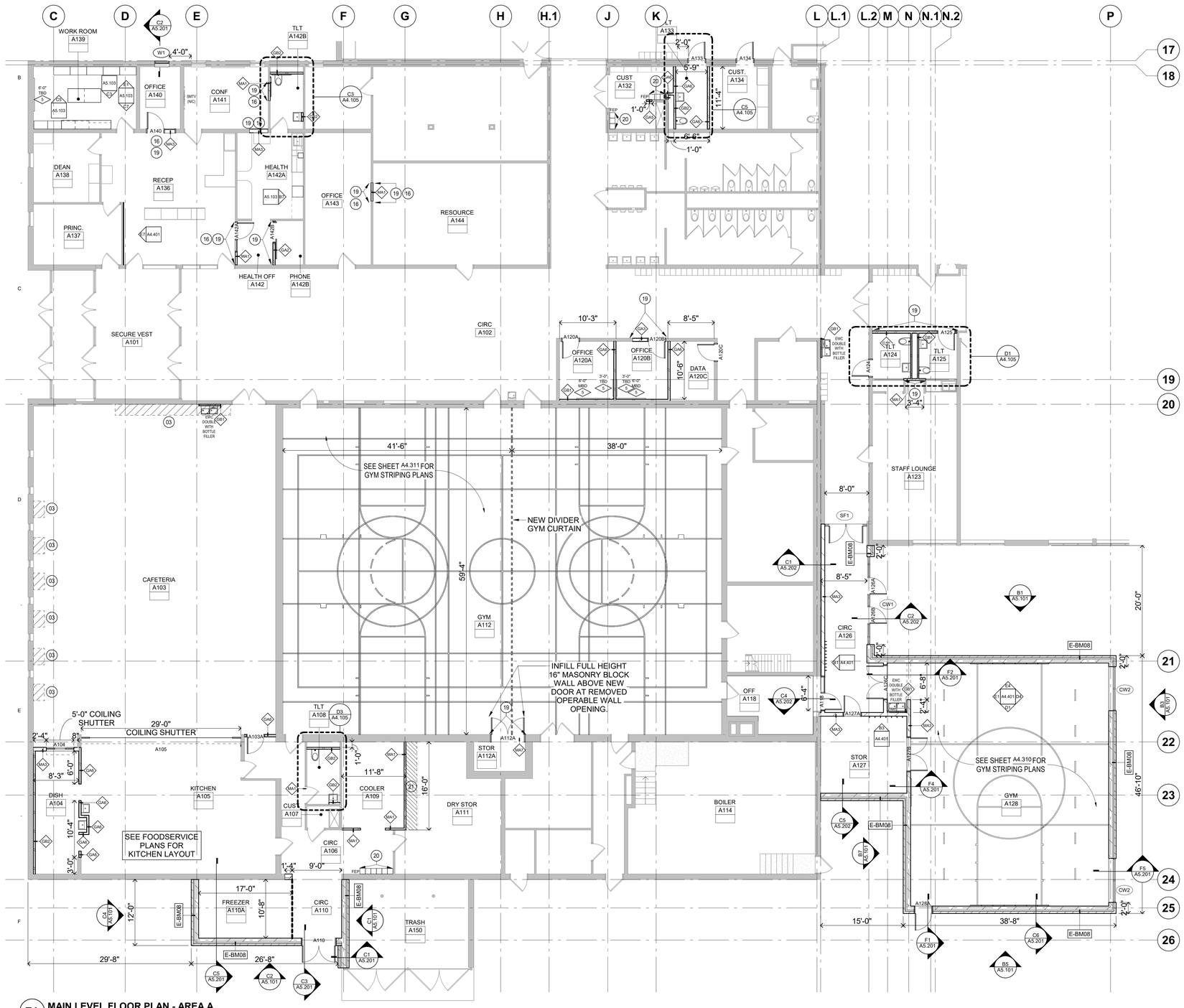
1. ALL PLAN DIMENSIONS ARE NOMINAL TO FACE OF WALL. WALL THICKNESSES ARE SHOWN NOMINAL, SEE WALL TYPES FOR ACTUAL THICKNESS.
2. ALL GWB / METAL STUD WALLS ARE TO BE 5 INCHES THICK UNLESS OTHERWISE NOTED.
3. ALL CONCRETE BLOCK WALLS ARE TO BE 8 INCHES THICK UNLESS OTHERWISE NOTED.
4. COORDINATE SIZE AND LOCATION OF ALL DUCT AND SHAFT OPENINGS IN WALLS AND FLOORS W/ MECH. AND ELEC. PROVIDE ALL REQUIRED LINTELS FOR OPENINGS. SEE LINTEL SCHEDULE.
5. FIELD VERIFY ALL MILLWORK OPENINGS.
6. SET FLOOR DRAINS 3/4" BELOW FINISHED CONCRETE FLOORS UNLESS OTHERWISE NOTED. PROVIDE CONSISTENT SLOPE FROM WALL TO DRAIN BY SLOPING CONCRETE, MIN. 1/4" PER FOOT.
7. VERIFY LOCATION, SIZE AND QUANTITY OF ALL EQUIPMENT PADS WITH MECHANICAL AND ELECTRICAL.
8. ALL DOOR / SIDELITE OPENINGS TO BEGIN 4" FROM ADJACENT WALL UNLESS OTHERWISE NOTED.
9. ALL GWB / METAL STUD WALLS ARE CENTERED ON GRID UNLESS OTHERWISE NOTED.
10. FIRE RATED WALLS ARE INDICATED ON CODE PLANS.

FLOOR PLAN KEY NOTES:

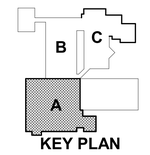
01 HCAP DOOR ACTUATOR - SEE ELECTRICAL FOR ROUGH-IN
02 STEEL PIPE BOLLARD - SEE DETAIL B3/A6.001
03 PATCH FLOOR AS INDICATED BY HATCH TO MATCH EXISTING FLOOR.
04 CAN WASH - SEE DETAIL D7/A4.706. SEE ALSO MECHANICAL
05 MOP SINK - SEE MECHANICAL
06 CABINET UNIT HEATER. SEE DETAIL 43046. SEE MECH. FOR SPECIFICATIONS, COORDINATE LOCATION WITH MECHANICAL
07 CARD READER - SEE ELECTRICAL
08 INSTALL EXISTING RE-LOCATED ELECTRIC CHANGING TABLE. SEE ELECTRICAL.
09 LOCATION OF STACKED WASHER AND DRYER (NIC) - SEE MECHANICAL AND ELECTRICAL FOR ROUGH-IN
10 RE-INSTALL EXISTING MARKERBOARDS, TACKBOARDS, SMTV, SMARTBOARDS AS INDICATED ON FLOOR PLAN. COORDINATE WITH DEMOLITION PLANS. SEE ALSO ELECTRICAL.
11 STEEL PIPE RAIL / RAILING, FIELD PAINTED
12 STEEL LADDER, FIELD PAINTED - SEE 61014 & 61025
13 EXTERIOR LIGHTING - SEE ELECTRICAL
14 EXTERIOR SIGNAGE
15 FIELD PAINTED MECHANICAL EQUIPMENT - SEE MECHANICAL
16 TOOTH-IN MASONRY AT REMOVED EXTENTS PER THE DEMOLITION PLAN TO MATCH EXISTING COURSING.
17 CORNER GUARD
18 DOCK BUMPER - SEE DETAIL D5/A6.001
19 PAINT TO MATCH EXISTING. REFER TO PLAN FOR EXTENTS INDICATED.
20 INSTALL EXISTING LOCKERS. PROVIDE NEW FINSHED END PANEL TO EXTENTS INDICATED ON PLAN, COLOR NOTED BY ARCHITECT.
21 INFILL EXISTING SLAB ON GRADE TO EXTENTS INDICATED BY HATCH. COORDINATE REMAINING SLAB DIMENSIONS WITH FOOD SERVICE EQUIPMENT.
22 PROVIDE BLACK LAMINATE COUNTERTOP TRIM AT AREA OF REMOVED COUNTERTOP.
23 STORM-RATED SHUTTER. SEE PLAN FOR WIDTH.

ROOM FINISH SCHEDULE - AREA A

ROOM NO	ROOM NAME	FLOOR	BASE	N WALL - TYP MATL	N WALL - TYP FIN	E WALL MATL	E WALL FIN	S WALL MATL	S WALL FIN	W WALL MATL	W WALL FIN	REMARKS
A101	SECURE VEST	EXIST.			EXIST							
A102	CIRC	EXIST.			EXIST							
A103	CAFETERIA	EXIST. TERR.			EXIST							
A104	DISH	QUARRY TILE			PT-6A							1
A105	KITCHEN	EXIST	EXIST		EXIST							
A106	CIRC	EXIST.			EXIST							
A107	CUST	EXIST.			EXIST							
A108	TLT	PTILE-1	CTILE-1		CTILE-1							1
A109	COOLER	CONC			--							
A110	CIRC	CONC.			PT-6A							
A110A	FREEZER	CONC.			--							
A111	DRY STOR	EXIST			EXIST							
A112	GYM	RAF-1			EXIST							
A112A	STOR	EXIST			EXIST							
A114	BOILER	EXIST.			EXIST							
A118	OFF	PT CONC.	VB-1		PT-6A							
A120A	OFFICE	EXIST. TERR.		GWB	PT-6A							
A120B	OFFICE	EXIST. TERR.		GWB	PT-6A							
A120C	DATA	EXIST. TERR.		GWB	PT-6A							
A123	STAFF LOUNGE	EXIST			EXIST							
A124	TLT	PTILE-1	CTILE-1		CTILE-1							1
A125	TLT	PTILE-1	CTILE-1		CTILE-1							1
A126	CIRC	TERR-1	VB-1		PT-6A							1
A127	STOR	CONC	VB-1		--							1
A128	GYM	RAF-1	VB-1		PT-6A							1
A132	CUST	EXIST			EXIST							
A133	TLT	PTILE-1	CTILE-1		CTILE-1							1
A134	CUST.	EXIST			EXIST							
A136	RECEP	TERR-1			EXIST						WP-1	
A137	PRINC.	TERR-1			EXIST							
A138	DEAN	TERR-1			EXIST							
A139	WORK ROOM	EXIST. TERR			PT-6A							1
A140	OFFICE	EXIST. TERR.			PT-6A							1
A141	CONF	TERR-1			EXIST							
A142	HEALTH OFF	EXIST. TERR.			PT-6A							
A142A	HEALTH	EXIST. TERR.			EXIST							
A142B	TLT	PTILE-1	CTILE-1		CTILE-1							1
A142B	PHONE	EXIST. TERR.			PT-6A							
A143	OFFICE	EXIST. TERR.			EXIST							
A144	RESOURCE	EXIST. TERR.			EXIST							
A145	RESOURCE	EXIST. TERR.			EXIST							
A150	TRASH	EXIST			EXIST							



F1 **MAIN LEVEL FLOOR PLAN - AREA A**
1/8" = 1'-0"



KEY PLAN

CITY PLANNING SET
NOT FOR CONSTRUCTION

Pine Hill Elementary School Addition and Renovation

9015 Hadley Ave S,
Cottage Grove, MN 55016

ISD #833
8400 E. Point Douglas Rd S.,
Cottage Grove, MN 55016

WOLD ARCHITECTS AND ENGINEERS
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St. Paul, Minnesota 55101
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Revisions		
Description	Date	Num

Comm: 242224
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MAIN LEVEL FLOOR PLAN - AREA A

Scale: 1/8" = 1'-0"

A2.01a

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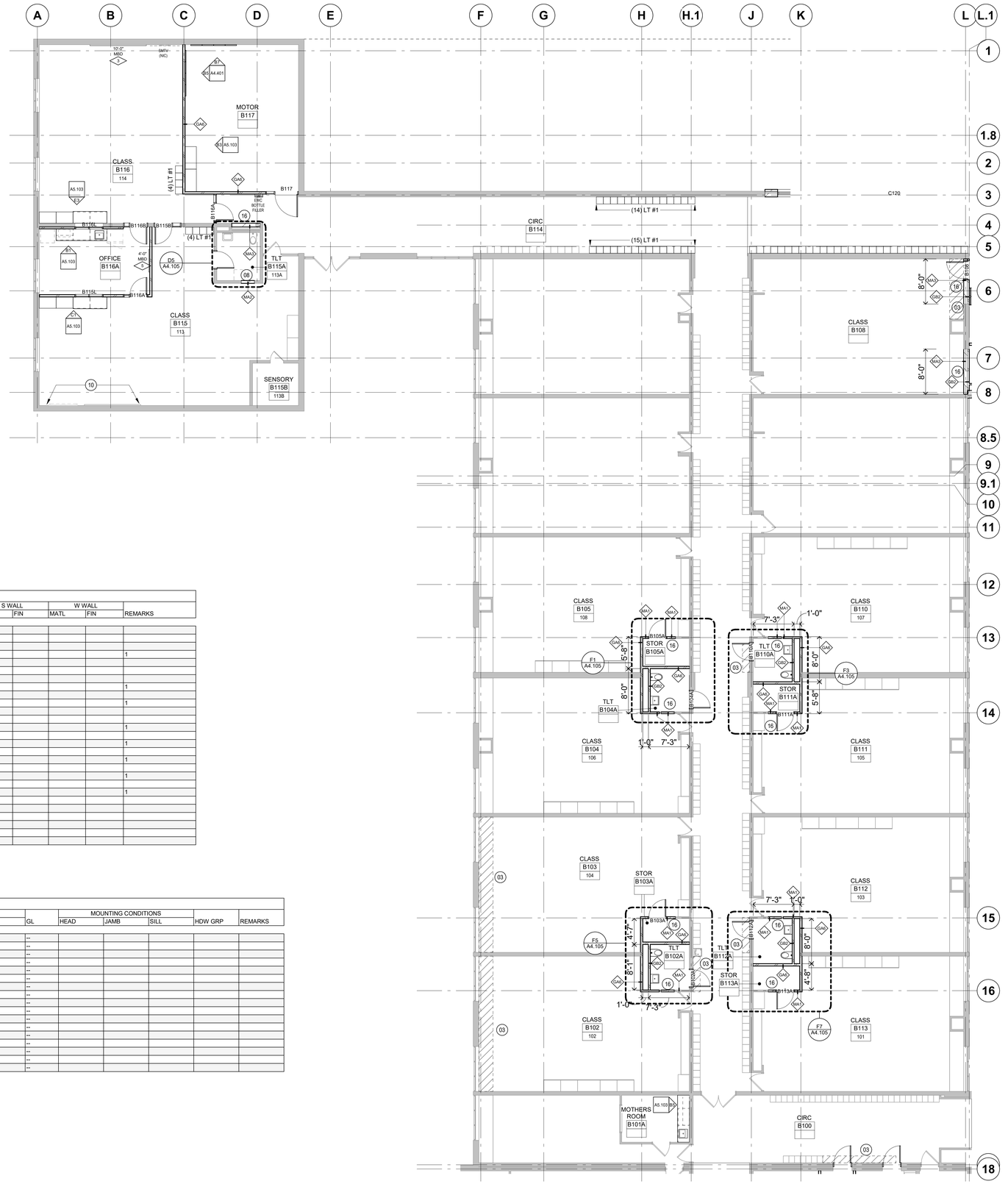

F5 **MAIN LEVEL FLOOR PLAN - AREA B**
1/8" = 1'-0"
0 6' 12'

ROOM FINISH SCHEDULE - AREA B

ROOM NO	ROOM NAME	FLOOR	BASE	N WALL - TYP MATL	N WALL - TYP FIN	E WALL MATL	E WALL FIN	S WALL MATL	S WALL FIN	W WALL MATL	W WALL FIN	REMARKS
B100	CIRC	EXIST. TERR.	EXIST		EXIST							
B101A	MOTHERS ROOM	EXIST. TERR.										
B102	CLASS	EXIST. TERR.			EXIST							
B102A	TLT	PTILE-1	CTILE-1		CTILE-1							1
B103	CLASS	EXIST. TERR.			EXIST							
B103A	STOR	EXIST. TERR.		EXIST	--							
B104	CLASS	EXIST. TERR.			EXIST							
B104A	TLT	PTILE-1	CTILE-1		CTILE-1							1
B105	CLASS	EXIST. TERR.		EXIST								
B105A	STOR	EXIST. TERR.			--							1
B108	CLASS	EXIST. TERR.		EXIST.								
B110	CLASS	EXIST. TERR.		EXIST								
B110A	TLT	PTILE-1	CTILE-1		CTILE-1							1
B111	CLASS	EXIST. TERR.		EXIST.								
B111A	STOR	EXIST. TERR.			--							1
B112	CLASS	EXIST. TERR.		EXIST.								
B112A	TLT	PTILE-1	CTILE-1		CTILE-1							1
B113	CLASS	EXIST. TERR.		EXIST.								
B113A	STOR	EXIST. TERR.			--							1
B114	CIRC	EXIST. TERR.		EXIST.								
B115	CLASS	TERR-1			PT-6A							1
B115A	TLT	EXIST.		EXIST.								
B115B	SENSORY	TERR-1		EXIST.								
B116	CLASS	TERR-1			PT-6A							
B116A	OFFICE	TERR-1			PT-6A							
B116B	CIRC	EXIST. TERR.		EXIST.								
B117	MOTOR	RUB-1			PT-6A							

DOOR / OPENING SCHEDULE

DOOR NO	DOOR / OPENING TYPE	QTY	WIDTH	HEIGHT	MATL	LABEL/ RATING	OVERALL WIDTH	FRAME TYPE	FRAME DEPTH	FRAME MATL	GL	MOUNTING CONDITIONS HEAD	JAMB	SILL	HDW GRP	REMARKS
B102A	F	1	3'-0"	7'-0"	HM	--	3'-4"	FR1A	--	AL	--					
B103A	F	1	3'-0"	7'-0"	HM	--	3'-4"	FR1A	--	AL	--					
B104A	F	1	3'-0"	7'-0"	HM	--	3'-4"	FR1A	--	AL	--					
B105A	F	1	3'-0"	7'-0"	HM	--	3'-4"	FR1A	--	AL	--					
B108	N	1	3'-0"	7'-0"	HM	--	3'-4"	FR1A	--	AL	--					
B110A	F	1	3'-0"	7'-0"	HM	--	3'-4"	FR1A	--	AL	--					
B111A	F	1	3'-0"	7'-0"	HM	--	3'-4"	FR1A	--	AL	--					
B112A	F	1	3'-0"	7'-0"	HM	--	3'-4"	FR1A	--	AL	--					
B113A	F	1	3'-0"	7'-0"	HM	--	3'-4"	FR1A	--	AL	--					
B115A	F	1	3'-0"	7'-0"	HM	--	3'-4"	FR1A	--	AL	--					
B115B	F	1	3'-0"	7'-0"	HM	--	4'-10"	FR 3A	--	AL	--					
B115L	--	--	5'-0"	4'-0"	--	--	5'-0"	FR 4B	--	HM	--					
B116A	G	1	3'-0"	7'-0"	HM	--	4'-10"	FR 3A	--	AL	--					
B116A1	G	1	3'-0"	7'-0"	HM	--	4'-4"	FR 3A	--	AL	--					
B116B	G	1	3'-0"	7'-0"	HM	--	4'-4"	FR 3A	--	AL	--					
B116L	--	--	5'-0"	4'-0"	--	--	5'-0"	FR 4B	--	HM	--					
B117	G	1	4'-0"	7'-0"	HM	--	5'-10"	FR 3A	--	AL	--					

FLOOR PLAN GENERAL NOTES

1. ALL PLAN DIMENSIONS ARE NOMINAL TO FACE OF WALL. WALL THICKNESSES ARE SHOWN NOMINAL, SEE WALL TYPES FOR ACTUAL THICKNESS.
2. ALL GWB / METAL STUD WALLS ARE TO BE 5 INCHES THICK UNLESS OTHERWISE NOTED.
3. ALL CONCRETE BLOCK WALLS ARE TO BE 8 INCHES THICK UNLESS OTHERWISE NOTED.
4. COORDINATE SIZE AND LOCATION OF ALL DUCT AND SHAFT OPENINGS IN WALLS AND FLOORS W/ MECH. AND ELEC. PROVIDE ALL REQUIRED LINTELS FOR OPENINGS. SEE LINTEL SCHEDULE.
5. FIELD VERIFY ALL MILLWORK OPENINGS.
6. SET FLOOR DRAINS 3/4" BELOW FINISHED CONCRETE FLOORS UNLESS OTHERWISE NOTED. PROVIDE CONSISTENT SLOPE FROM WALL TO DRAIN BY SLOPING CONCRETE, MIN. 1/4" PER FOOT.
7. VERIFY LOCATION, SIZE AND QUANTITY OF ALL EQUIPMENT PADS WITH MECHANICAL AND ELECTRICAL.
8. ALL DOOR / SIDELITE OPENINGS TO BEGIN 4" FROM ADJACENT WALL UNLESS OTHERWISE NOTED.
9. ALL GWB / METAL STUD WALLS ARE CENTERED ON GRID UNLESS OTHERWISE NOTED.
10. FIRE RATED WALLS ARE INDICATED ON CODE PLANS.

FLOOR PLAN KEY NOTES:

01. HCAP DOOR ACTUATOR - SEE ELECTRICAL FOR ROUGH-IN
02. STEEL PIPE BOLLARD - SEE DETAIL B3/A6.001
03. PATCH FLOOR AS INDICATED BY HATCH TO MATCH EXISTING FLOOR.
04. CAN WASH - SEE DETAIL D7/A4.706. SEE ALSO MECHANICAL
05. MOP SINK - SEE MECHANICAL
06. CABINET UNIT HEATER. SEE DETAIL 43046. SEE MECH. FOR SPECIFICATIONS, COORDINATE LOCATION WITH MECHANICAL
07. CARD READER - SEE ELECTRICAL
08. INSTALL EXISTING RE-LOCATED ELECTRIC CHANGING TABLE. SEE ELECTRICAL.
09. LOCATION OF STACKED WASHER AND DRYER (NIC) - SEE MECHANICAL AND ELECTRICAL FOR ROUGH-IN
10. RE-INSTALL EXISTING MARKERBOARDS, TACKBOARDS, SMTV, SMARTBOARDS AS INDICATED ON FLOOR PLAN. COORDINATE WITH DEMOLITION PLANS. SEE ALSO ELECTRICAL.
11. STEEL PIPE RAIL / RAILING, FIELD PAINTED
12. STEEL LADDER, FIELD PAINTED - SEE 61014 & 61025
13. EXTERIOR LIGHTING - SEE ELECTRICAL
14. EXTERIOR SIGNAGE
15. FIELD PAINTED MECHANICAL EQUIPMENT - SEE MECHANICAL
16. TOOTH-IN MASONRY AT REMOVED EXTENTS PER THE DEMOLITION PLAN TO MATCH EXISTING COURSING.
17. CORNER GUARD
18. DOCK BUMPER - SEE DETAIL D5/A6.001
19. PAINT TO MATCH EXISTING. REFER TO PLAN FOR EXTENTS INDICATED.
20. INSTALL EXISTING LOCKERS. PROVIDE NEW FINSHED END PANEL TO EXTENTS INDICATED ON PLAN, COLOR NOTED BY ARCHITECT.
21. INFILL EXISTING SLAB ON GRADE TO EXTENTS INDICATED BY HATCH. COORDINATE REMAINING SLAB DIMENSIONS WITH FOOD SERVICE EQUIPMENT.
22. PROVIDE BLACK LAMINATE COUNTERTOP TRIM AT AREA OF REMOVED COUNTERTOP.
23. STORM-RATED SHUTTER. SEE PLAN FOR WIDTH.

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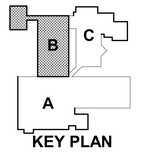

KEY PLAN

Revisions		
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Comm: 242224
Date: Issue Date
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North

MAIN LEVEL FLOOR PLAN - AREA B

Scale: 1/8" = 1'-0"

CITY PLANNING SET
NOT FOR CONSTRUCTION

A2.01b

Autodesk Docs://242224_ISD 833 - Pine Hill Elementary School Addition and Renovation/242224_Pine Hill Elementary School Addition and Renovation.rvt
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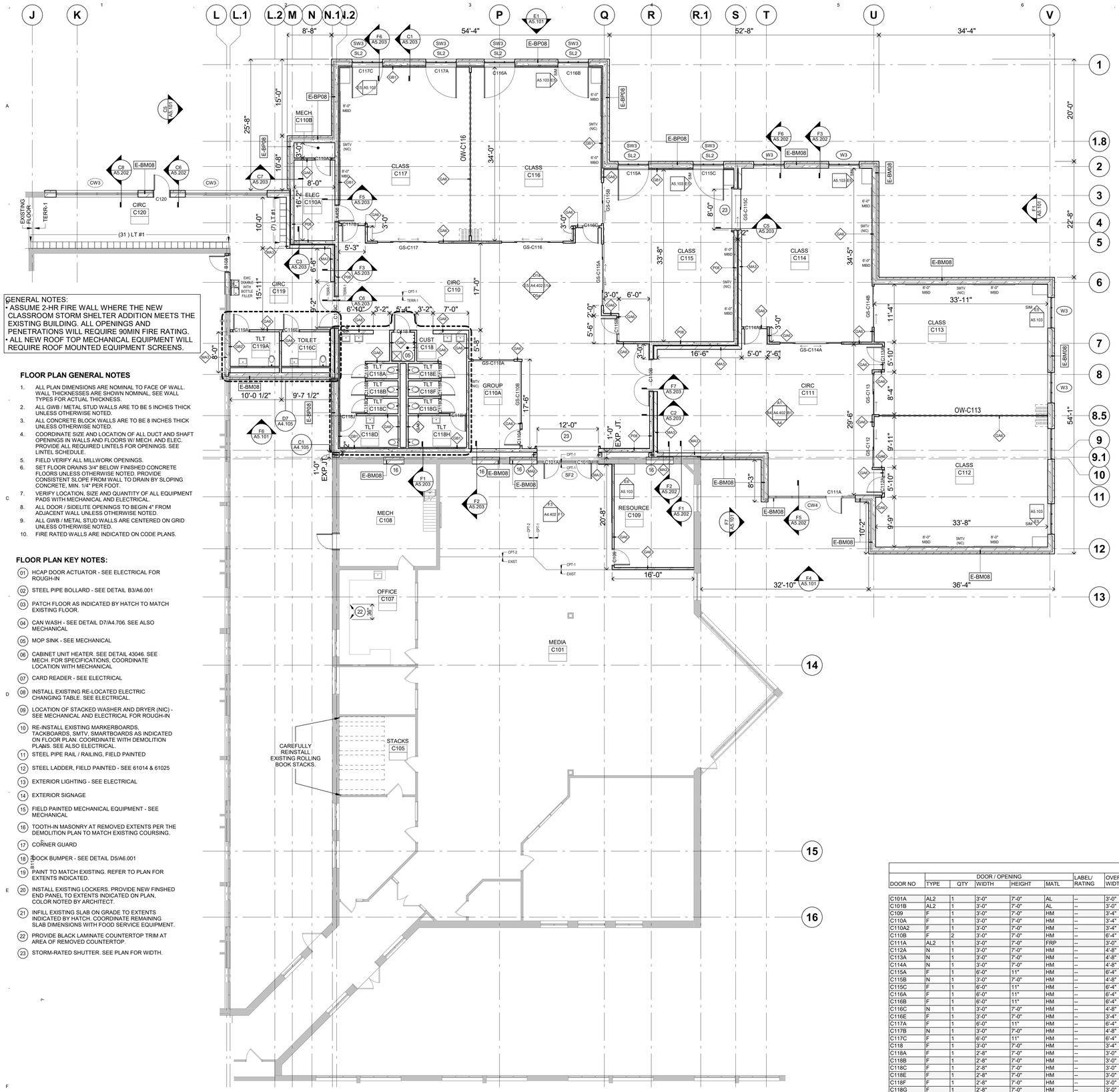
MN



GENERAL NOTES:
- ASSUME 2-HR FIRE WALL WHERE THE NEW CLASSROOM STORM SHELTER ADDITION MEETS THE EXISTING BUILDING. ALL OPENINGS AND PENETRATIONS WILL REQUIRE 90MIN FIRE RATING.
- ALL NEW ROOF TOP MECHANICAL EQUIPMENT WILL REQUIRE ROOF MOUNTED EQUIPMENT SCREENS.

FLOOR PLAN GENERAL NOTES

1. ALL PLAN DIMENSIONS ARE NOMINAL TO FACE OF WALL. WALL THICKNESSES ARE SHOWN NOMINAL, SEE WALL TYPES FOR ACTUAL THICKNESS.
2. ALL GWB / METAL STUD WALLS ARE TO BE 5 INCHES THICK UNLESS OTHERWISE NOTED.
3. ALL CONCRETE BLOCK WALLS ARE TO BE 8 INCHES THICK UNLESS OTHERWISE NOTED.
4. COORDINATE SIZE AND LOCATION OF ALL DUCT AND SHAFT OPENINGS IN WALLS AND FLOORS W/ MECH. AND ELEC. PROVIDE ALL REQUIRED LINTELS FOR OPENINGS. SEE LINTEL SCHEDULE.
5. FIELD VERIFY ALL MILLWORK OPENINGS.
6. SET FLOOR DRAINS 3/4" BELOW FINISHED CONCRETE FLOORS UNLESS OTHERWISE NOTED. PROVIDE CONSISTENT SLOPE FROM WALL TO DRAIN BY SLOPING CONCRETE. MIN. 1/4" PER FOOT.
7. VERIFY LOCATION, SIZE AND QUANTITY OF ALL EQUIPMENT PADS WITH MECHANICAL AND ELECTRICAL.
8. ALL DOOR / SIDELITE OPENINGS TO BEGIN 4" FROM ADJACENT WALL UNLESS OTHERWISE NOTED.
9. ALL GWB / METAL STUD WALLS ARE CENTERED ON GRID UNLESS OTHERWISE NOTED.
10. FIRE RATED WALLS ARE INDICATED ON CODE PLANS.

FLOOR PLAN KEY NOTES:

01. HCAP DOOR ACTUATOR - SEE ELECTRICAL FOR ROUGH-IN
02. STEEL PIPE BOLLARD - SEE DETAIL B3/A6.001
03. PATCH FLOOR AS INDICATED BY HATCH TO MATCH EXISTING FLOOR.
04. CAN WASH - SEE DETAIL D7/A4.706. SEE ALSO MECHANICAL
05. MOP SINK - SEE MECHANICAL
06. CABINET UNIT HEATER. SEE DETAIL 43046. SEE MECH. FOR SPECIFICATIONS. COORDINATE LOCATION WITH MECHANICAL
07. CARD READER - SEE ELECTRICAL
08. INSTALL EXISTING RE-LOCATED ELECTRIC CHANGING TABLE. SEE ELECTRICAL.
09. LOCATION OF STACKED WASHER AND DRYER (NIC) - SEE MECHANICAL AND ELECTRICAL FOR ROUGH-IN
10. RE-INSTALL EXISTING MARKERBOARDS, TACKBOARDS, SMTV, SMARTBOARDS AS INDICATED ON FLOOR PLAN. COORDINATE WITH DEMOLITION PLANS. SEE ALSO ELECTRICAL.
11. STEEL PIPE RAIL / RAILING, FIELD PAINTED
12. STEEL LADDER, FIELD PAINTED - SEE 61014 & 61025
13. EXTERIOR LIGHTING - SEE ELECTRICAL
14. EXTERIOR SIGNAGE
15. FIELD PAINTED MECHANICAL EQUIPMENT - SEE MECHANICAL
16. TOOTH-IN MASONRY AT REMOVED EXTENTS PER THE DEMOLITION PLAN TO MATCH EXISTING COURSING.
17. CORNER GUARD
18. DOCK BUMPER - SEE DETAIL D5/A6.001
19. PAINT TO MATCH EXISTING. REFER TO PLAN FOR EXTENTS INDICATED.
20. INSTALL EXISTING LOCKERS. PROVIDE NEW FINSHED END PANEL TO EXTENTS INDICATED ON PLAN, COLOR NOTED BY ARCHITECT.
21. INFILL EXISTING SLAB ON GRADE TO EXTENTS INDICATED BY HATCH. COORDINATE REMAINING SLAB DIMENSIONS WITH FOOD SERVICE EQUIPMENT.
22. PROVIDE BLACK LAMINATE COUNTERTOP TRIM AT AREA OF REMOVED COUNTERTOP.
23. STORM-RATED SHUTTER. SEE PLAN FOR WIDTH.

F1 MAIN LEVEL FLOOR PLAN - AREA C
1/8" = 1'-0"
0 6' 12'

Glass Systems Schedule

MARK	TYPE	OVERALL WIDTH	OVERALL HEIGHT	DOOR WIDTH	NUMBER OF FIXED PANELS	REMARKS
GS-C110A	151	8'-0"	8'-0"	8'-0"	2	
GS-C110B	151	12'-0"	8'-0"	12'-0"	3	
GS-C112	192	4'-6"	8'-0"	4'-0"	1	
GS-C113	192	4'-6"	8'-0"	4'-0"	1	
GS-C114A	191	12'-0"	8'-0"	3'-0"	1	
GS-C114B	192	3'-0"	8'-0"	4'-0"	1	
GS-C115A	191	12'-0"	8'-0"	3'-0"	1	
GS-C115B	192	3'-0"	8'-0"	4'-0"	1	
GS-C115C	192	3'-0"	8'-0"	4'-0"	1	
GS-C116	191	12'-0"	8'-0"	3'-0"	1	
GS-C117	191	12'-0"	8'-0"	3'-0"	1	

ROOM FINISH SCHEDULE - AREA B

ROOM NO	ROOM NAME	FLOOR	BASE	N WALL - TYP		E WALL		S WALL		W WALL		REMARKS
				MATL	FIN	MATL	FIN	MATL	FIN	MATL	FIN	
C101	MEDIA	EXIST. CPT-1			EXIST							
C105	STACKS	TERR-1		EXIST.								
C107	OFFICE	TERR-1		EXIST.								
C108	MECH	EXIST.		EXIST.								
C109	RESOURCE	TERR-1			PT-6A							1
C110	CIRC	CPT-1, CPT-2, CPT-3	VB-1		PT-6A	GWB/CONC	WP-1		WP-1			1
C110A	ELEC	PT CONC.	VB-1		--							1
C110A	GROUP	TERR-1		GWB	PT-6A							1
C110B	MECH	PT CONC.	VB-1		--							1
C111	CIRC	CPT-1, CPT-2, CPT-3	VB-1		PT-6A				WP-1		WP-1	1
C112	CLASS	TERR-1	VB-1		PT-6A							1
C113	CLASS	TERR-1	VB-1		PT-6A							1
C114	CLASS	TERR-1	VB-1		PT-6A							1
C115	CLASS	TERR-1	VB-1		PT-6A							1
C116	CLASS	TERR-1	VB-1		PT-6A							1
C116C	TOILET	PTILE-1	CTILE-1		CTILE-1							1
C117	CLASS	TERR-1	VB-1		PT-6A							1
C118	CUST	PT CONC.	FRP	CONC	PT-6A							1
C118A	TLT	PTILE-1	CTILE-1		CTILE-1							1
C118B	TLT	PTILE-1	CTILE-1		CTILE-1							1
C118C	TLT	PTILE-1	CTILE-1		CTILE-1							1
C118D	TLT	PTILE-1	CTILE-1		CTILE-1							1
C118E	TLT	PTILE-1	CTILE-1		CTILE-1							1
C118F	TLT	PTILE-1	CTILE-1		CTILE-1							1
C118G	TLT	PTILE-1	CTILE-1		CTILE-1							1
C118H	TLT	PTILE-1	CTILE-1		CTILE-1							1
C119	CIRC	TERR-1	VB-1	CONC	PT-6A							
C119A	TLT	PTILE-1	CTILE-1		CTILE-1							1
C120	CIRC	TERR-1	VB-1	CONC	PT-6A							1

Operable Partition Schedule

Number	Type	Height	Length	Panel Quantity	Panel Material

DOOR / OPENING SCHEDULE

DOOR NO	DOOR / OPENING TYPE	QTY	WIDTH	HEIGHT	MATL	LABEL/ RATING	OVERALL WIDTH	FRAME TYPE	FRAME DEPTH	FRAME MATL	FRAME GL	MOUNTING CONDITIONS HEAD	JAMB	SILL	HDW GRP	REMARKS
C101A	AL2	1	3'-0"	7'-0"	AL	--	3'-0"	CW X	--	AL	--					
C101B	AL2	1	3'-0"	7'-0"	AL	--	3'-0"	CW X	--	AL	--					
C109	F	1	3'-0"	7'-0"	HM	--	3'-4"	FR1A	--	AL	--					
C110A	F	1	3'-0"	7'-0"	HM	--	3'-4"	FR1A	--	AL	--					
C110A2	F	1	3'-0"	7'-0"	HM	--	3'-4"	FR1A	--	AL	--					
C110B	F	2	3'-0"	7'-0"	HM	--	6'-4"	FR 1	--	AL	--					
C111A	AL2	1	3'-0"	7'-0"	FRP	--	3'-0"	CW X	--	AL	--					
C112A	N	1	3'-0"	7'-0"	HM	--	4'-8"	FR 3A	--	AL	--					
C113A	N	1	3'-0"	7'-0"	HM	--	4'-8"	FR 3A	--	AL	--					
C114A	N	1	3'-0"	7'-0"	HM	--	4'-8"	FR 3A	--	AL	--					
C115A	F	1	6'-0"	11"	HM	--	6'-4"	FR 1	--	AL	--					
C115B	N	1	3'-0"	7'-0"	HM	--	4'-8"	FR 3A	--	AL	--					
C115C	F	1	6'-0"	11"	HM	--	6'-4"	FR 1	--	AL	--					
C116A	F	1	6'-0"	11"	HM	--	6'-4"	FR 1	--	AL	--					
C116B	F	1	6'-0"	11"	HM	--	6'-4"	FR 1	--	AL	--					
C116C	N	1	3'-0"	7'-0"	HM	--	4'-8"	FR 3A	--	AL	--					
C116E	F	1	3'-0"	7'-0"	HM	--	3'-4"	FR1A	--	AL	--					
C117A	F	1	6'-0"	11"	HM	--	6'-4"	FR 1	--	AL	--					
C117B	N	1	3'-0"	7'-0"	HM	--	4'-8"	FR 3A	--	AL	--					
C117C	F	1	6'-0"	11"	HM	--	6'-4"	FR 1	--	AL	--					
C118	F	1	3'-0"	7'-0"	HM	--	3'-4"	FR1A	--	AL	--					
C118A	F	1	2'-8"	7'-0"	HM	--	3'-0"	FR1A	--	AL	--					
C118B	F	1	2'-8"	7'-0"	HM	--	3'-0"	FR1A	--	AL	--					
C118C	F	1	2'-8"	7'-0"	HM	--	3'-0"	FR1A	--	AL	--					
C118E	F	1	2'-8"	7'-0"	HM	--	3'-0"	FR1A	--	AL	--					
C118F	F	1	2'-8"	7'-0"	HM	--	3'-0"	FR1A	--	AL	--					
C118G	F	1	2'-8"	7'-0"	HM	--	3'-0"	FR1A	--	AL	--					
C118H	F	1	3'-0"	7'-0"	HM	--	3'-4"	FR1A	--	AL	--					
C118J	F	1	3'-0"	7'-0"	HM	--	3'-4"	FR1A	--	AL	--					
C119A	F	1	3'-0"	7'-0"	HM	--	3'-4"	FR1A	--	AL	--					
C119C	F	2	3'-0"	7'-0"	HM	--	6'-4"	FR 1	--	AL	--					
C120	F	1	3'-0"	7'-0"	FRP	--	3'-4"	FR1A	--	HM	--					

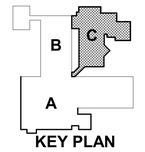
CITY PLANNING SET
NOT FOR CONSTRUCTION

Pine Hill Elementary School Addition and Renovation

9015 Hadley Ave S,
Cottage Grove, MN 55016

ISD #833
8400 E. Point Douglas Rd S.,
Cottage Grove, MN 55016

WOLD ARCHITECTS AND ENGINEERS
332 Minnesota Street, Suite W2000
St. Paul, Minnesota 55101
woldae.com | 651 227 7773



KEY PLAN

Revisions		
Description	Date	Num

Comm: 242224
Date: Issue Date
Drawn: Author
Check: Checker
North

MAIN LEVEL FLOOR PLAN - AREA C

Scale: 1/8" = 1'-0"

A2.01c

Author Date 2/7/2024 4:55:43 PM
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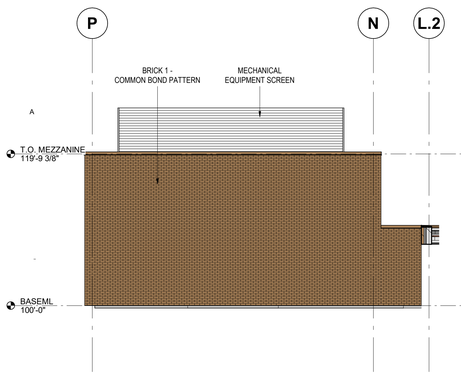
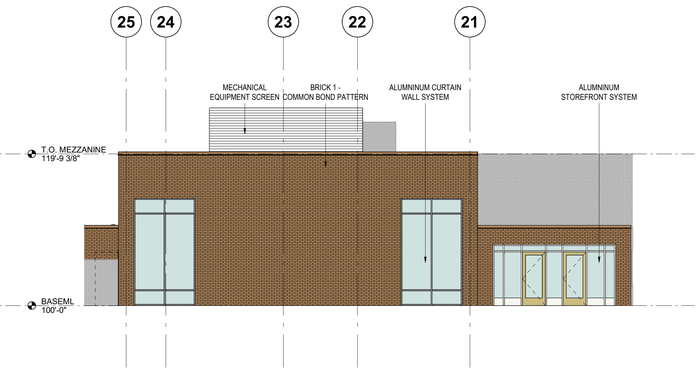
© 2020 D3 12:04:47 PM

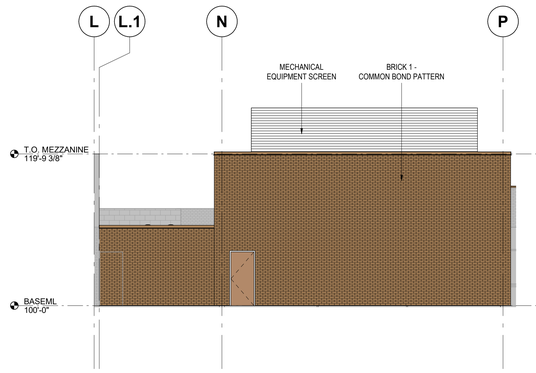
MN



B1 GYM ADDITION - NORTH ELEVATION
1/8" = 1'-0"



B3 GYM ADDITION - EAST ELEVATION
1/8" = 1'-0"



B5 GYM ADDITION - SOUTH ELEVATION
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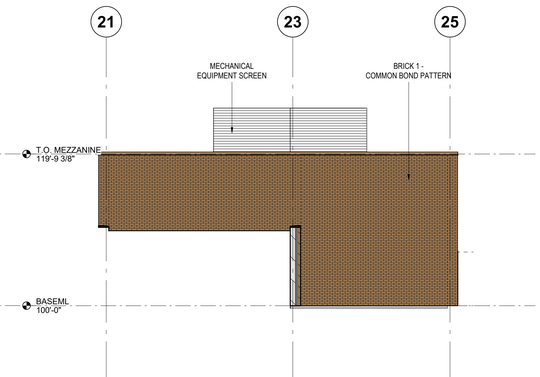
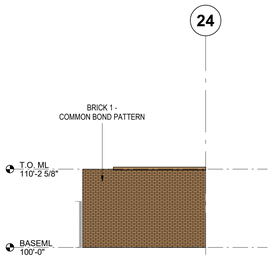
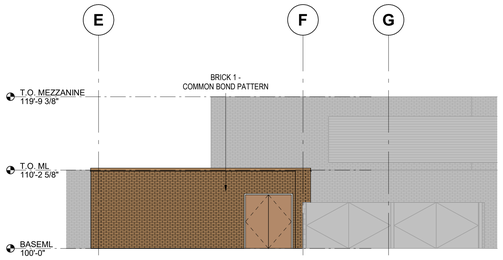


B7 GYM ADDITION - WEST ELEVATION
1/8" = 1'-0"



C1 KITCHEN ADDITION - EAST ELEVATION
1/8" = 1'-0"



C2 KITCHEN ADDITION - SOUTH ELEVATION
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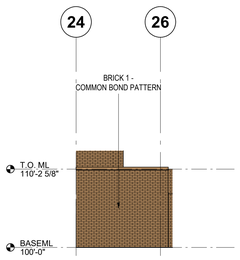

C4 KITCHEN ADDITION - WEST ELEVATION
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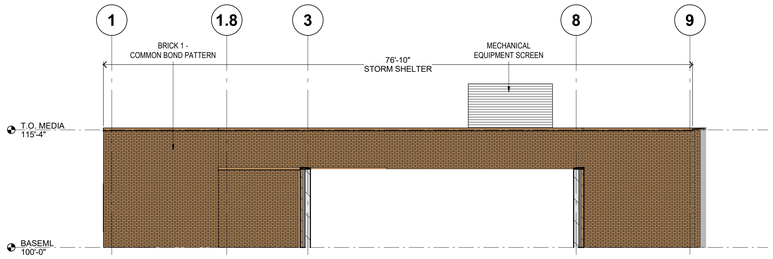
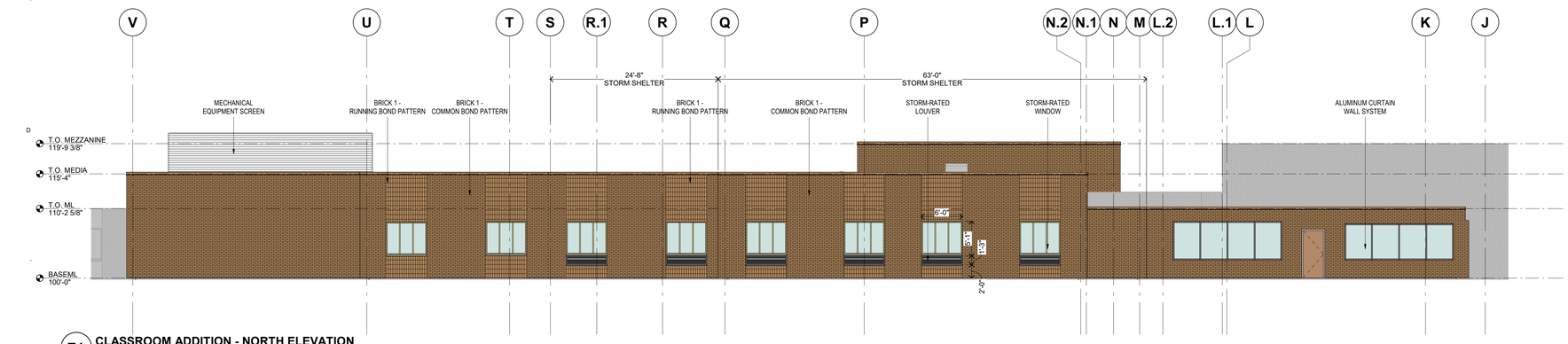
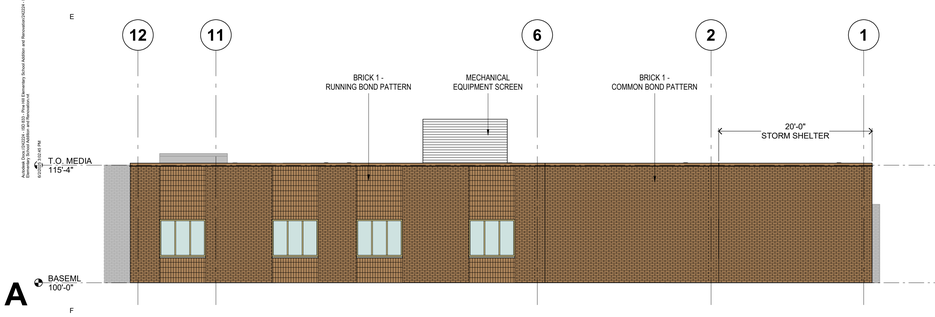


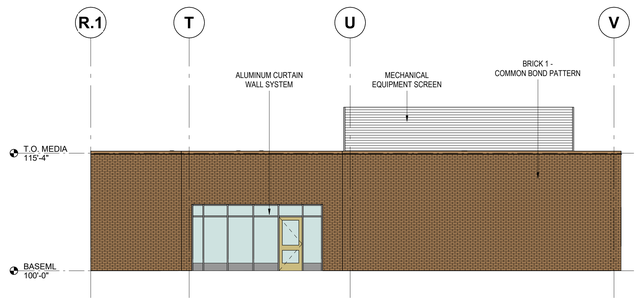
C5 CLASSROOM ADDITION - WEST ELEVATION
1/8" = 1'-0"



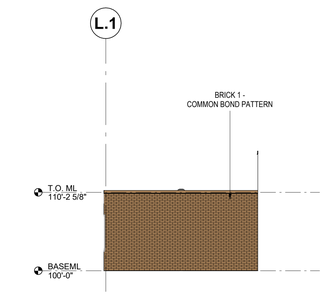
E1 CLASSROOM ADDITION - NORTH ELEVATION
1/8" = 1'-0"



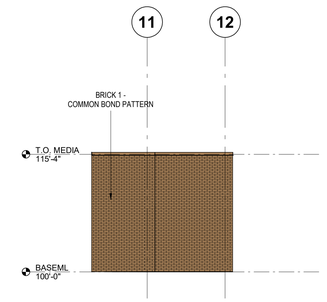
F1 CLASSROOM ADDITION - EAST ELEVATION
1/8" = 1'-0"



F4 CLASSROOM ADDITION - SOUTH ELEVATION
1/8" = 1'-0"



F6 COURTYARD - SOUTH ELEVATION
1/8" = 1'-0"



F7 CLASSROOM ADDITION - WEST ELEVATION
1/8" = 1'-0"

Pine Hill Elementary School Addition and Renovation

9015 Hadley Ave S,
Cottage Grove, MN 55016

ISD #833
8400 E. Point Douglas Rd S.,
Cottage Grove, MN 55016

WOLD ARCHITECTS AND ENGINEERS
332 Minnesota Street, Suite W2000
St. Paul, Minnesota 55101
woldae.com | 651 227 7773

Revisions		
Description	Date	Num

Comm: 242224
Date: Issue Date
Drawn: CL
Check: JPC

EXTERIOR ELEVATIONS

Scale: 1/8" = 1'-0"

CITY PLANNING SET
NOT FOR CONSTRUCTION

A5.101

RESOLUTION NO. 00-144

A RESOLUTION APPROVING A CONDITIONAL USE PERMIT FOR EXPANSION OF THE SCHOOL USE AND A SITE PLAN REVIEW FOR CONSTRUCTION OF AN ADDITION TO PINE HILL ELEMENTARY SCHOOL, 9015 HADLEY AVENUE SOUTH

WHEREAS, A T S & R Architects applied for a conditional use permit for expansion of the school use and a site plan review for construction of an addition to Pine Hill Elementary School, on property legally described as:

> The North 628.93 feet of the West 725.60 feet of the Northwest Quarter (NW1/4) of the Northwest Quarter (NW1/4) of Section Twenty (20), Township Twenty-seven (27) North, Range Twenty-one (21) West, subject to Cherry Avenue on and across the Westerly 33 feet thereof, containing 10.476 acres, more or less.
>
> The South 188.68 feet of the North 817.61 feet of the West 725.60 feet of the Northwest Quarter of the Northwest Quarter (NW1/4 of NW1/4) of Section Twenty (20), Township Twenty-seven (27) North, Range Twenty-one (21) West, subject to Cherry Avenue on and across the Westerly 33 feet thereof containing 3.143 acres, more or less.
>
> Commonly known as 9015 Hadley Avenue South, Cottage Grove, Washington County, State of Minnesota.

WHEREAS, public hearing notices were mailed to property owners within 500 feet of the property and a public hearing notice was published in the South Washington County Bulletin; and

WHEREAS, the Planning Commission held a public hearing on July 24, 2000; and

WHEREAS, the public hearing was open for public testimony and no one spoke for or against the proposal. The applicant was present at the meeting; and

WHEREAS, the Planning Commission unanimously approved the application, subject to certain conditions listed below.

NOW, THEREFORE, BE IT RESOLVED, the City Council of the City of Cottage Grove, Washington County, Minnesota hereby approves the conditional use permit application filed by A T S & R Architects for expansion of the school use and a site plan review for construction of an addition to Pine Hill Elementary School, subject to the following conditions:

1. A building permit and commercial plan review packet shall be completed, submitted, and approved by the City prior to the commencement of any construction activities. Detailed construction plans shall be reviewed and approved by the Building Official and Fire Marshall.

2. Silt fencing shall be installed around the entire perimeter of the building at the construction limits.

3. A cash contribution sufficient to create stormwater management mitigation elsewhere shall be required. The mitigation shall be in the amount equal to the total estimated cost of the construction of an infiltration basin that would meet the standards of the National Urban Runoff Program plus land costs. Said contribution shall be paid at the time of the building permit application.

4. A revised landscaping plan detailing the addition of 6 deciduous overstory trees and 6 six-foot coniferous trees to the area adjacent to the new addition is required. The revised landscaping plan shall be submitted to the City and approved prior to the release of a building permit. No financial guarantee will be required, but the required landscaping materials shall be replaced if they do not survive.

5. Any new roof top mechanical equipment on the site shall be screened prior to the certificate of occupancy for the addition.

6. A trash enclosure that meets the criteria established in Section 28-39 shall be provided for all exterior trash and recyclable containers. Construction of the enclosure shall be completed prior to the release of a certificate of occupancy.

7. All outdoor lighting shall be directed downward and away from abutting property.

8. Application for the extension of the interim conditional use permit for the two modular temporary buildings shall be made with the City prior to the issuance of a certificate of occupancy for the new addition.

Passed this 16th day of August, 2000.

John D. Denzer, Mayor

Cheryl A. Kohls, Mayor Pro Tem

Attest:

Caron M. Stransky, City Clerk

3119182

Office of the
County Recorder
Washington County, MN

Certified filed and/or recorded on:
2000/09/05 11:34:00 AM
3119182

Cindy Koosmann
County Recorder
By: Cindy Koosmann

City of Cottage Grove
$19.50 charge

STATE OF MINNESOTA)
COUNTY OF WASHINGTON)
CITY OF COTTAGE GROVE)

I, the undersigned, being the duly qualified and acting City Clerk of the City of Cottage Grove, Minnesota, DO HEREBY CERTIFY, that I have carefully compared the attached copy of Resolution No. 00-144 of the City of Cottage Grove with the original on file in my office and the same is a full, true and complete transcript therefrom.

WITNESS, my hand as such City Clerk and the corporate seal of the City this 18th day of August, 2000.

Caron M Stransky
Caron M. Stransky
City Clerk

CITY OF COTTAGE GROVE
SEAL
WASHINGTON COUNTY

F:\GROUPS\PLANNING\2000\Planning Cases\057CUP Pine Hill Add-jul24\057CUP Pine Hill Add Res No 00-144 recording cover.doc

STAFF REPORT CASE: SP2025-021

ITEM: 6.2

PUBLIC MEETING DATE: 8/25/25 TENTATIVE COUNCIL REVIEW DATE: 9/17/25

APPLICATION

APPLICANT: Alliiance, on behalf of Washington County

REQUEST: A site plan review application for a building addition, façade remodel, and exterior site improvements at Park Grove Library. The addition will be for a new second story for utility and mechanical equipment. Additional site improvements proposed include interior remodel, parking lot reconfiguration, and landscaping improvements.

SITE DATA

LOCATION: 7900 Hemingway Avenue South

ZONING: R-6, High Density Residential

GUIDED LAND USE: Mixed Use

LAND USE OF ADJACENT PROPERTIES:	CURRENT	GUIDED
NORTH:	Apartments	Medium Density Residential
EAST:	Commercial	Mixed Use
SOUTH:	Apartments	Mixed Use
WEST:	Apartments	Medium Density Residential

SIZE: N/A

DENSITY: N/A

RECOMMENDATION

Approval, subject to the conditions stipulated in this staff report.

COTTAGE GROVE PLANNING DIVISION

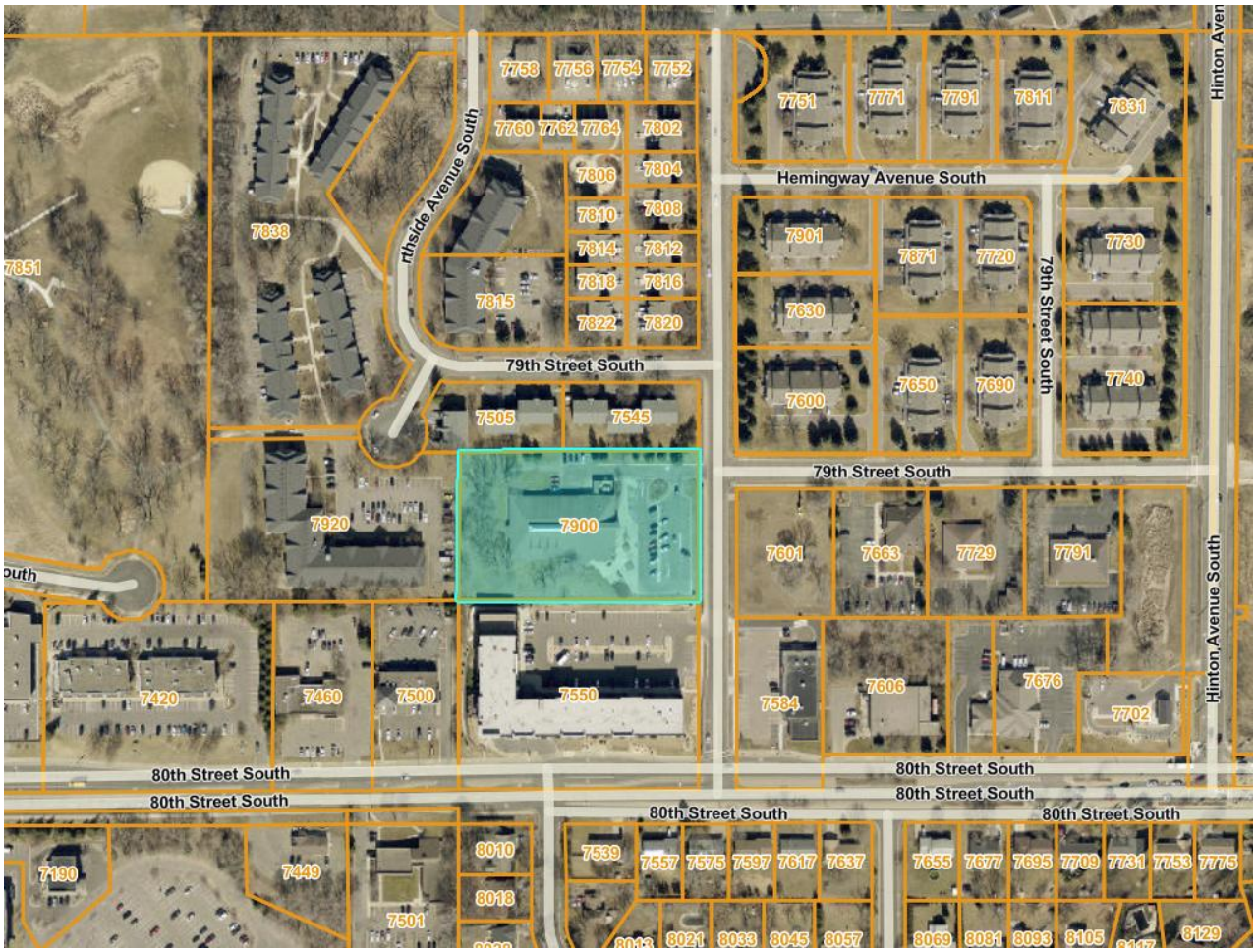
Planning Staff Contact: Samantha Pierret, Senior Planner; 651-458-2825; spierret@cottagegrovemn.gov

Application Accepted: 8/6/2025 60-Day Review Deadline: 10/5/2025

Planning Staff Report
Park Grove Library
Planning Case No. SP2025-021
August 25, 2025

Proposal

Alliiance (Applicant), on behalf of Washington County (Property Owner), has submitted a site plan review application for a building addition, façade remodel, and exterior site improvements at Park Grove Library (7900 Hemingway Avenue South). The addition will be a new second story over the entryway for utility and mechanical equipment. Additional site improvements proposed include interior remodel, parking lot reconfiguration and landscaping improvements.



Site Location

Review Schedule

Application Received: July 31, 2025
Application Accepted: August 6, 2025
Planning Commission Meeting: August 25, 2025
Tentative City Council Meeting: September 17, 2025
60-Day Review Deadline: October 5, 2025

Background

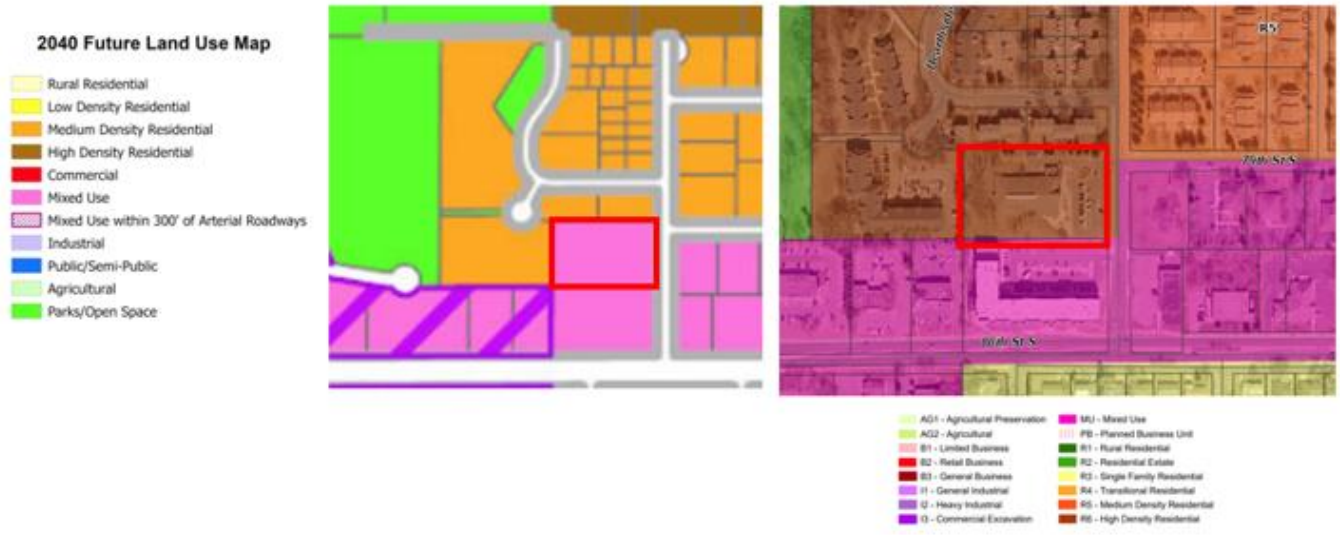
Washington County has proposed upgrading the existing Park Grove Library by remodeling the structure to improve flow and accommodate the diverse uses and users of the space. By moving mechanical and utility equipment to a new second story, space vacated by existing mechanical equipment will be used for staff workspace. The interior will be remodeled to improve meeting spaces; provide designated space for studying, meetings, and group activities; and improve patron and staff safety and security. The existing parking area will also be reconstructed to add additional spaces and improve traffic flow.

The library remodel will meet the Washington County Library's 2024-2028 Strategic Plan Priorities to improve library service delivery, enhance physical spaces and technology infrastructure, and expand the reach of the library. The building and grounds upgrades will allow the library to expand engagement opportunities, programs offered at the library, and library services while providing a refreshed and welcoming space for the community.

Planning Considerations

Zoning and Comprehensive Plan

The parcel is zoned R-6, High Density Residential District, and is guided Mixed Use in the 2040 Comprehensive Plan. Structures. Essential services for local, county, state, or federal government or public utility purposes are permitted uses within the R-6 zoning district.

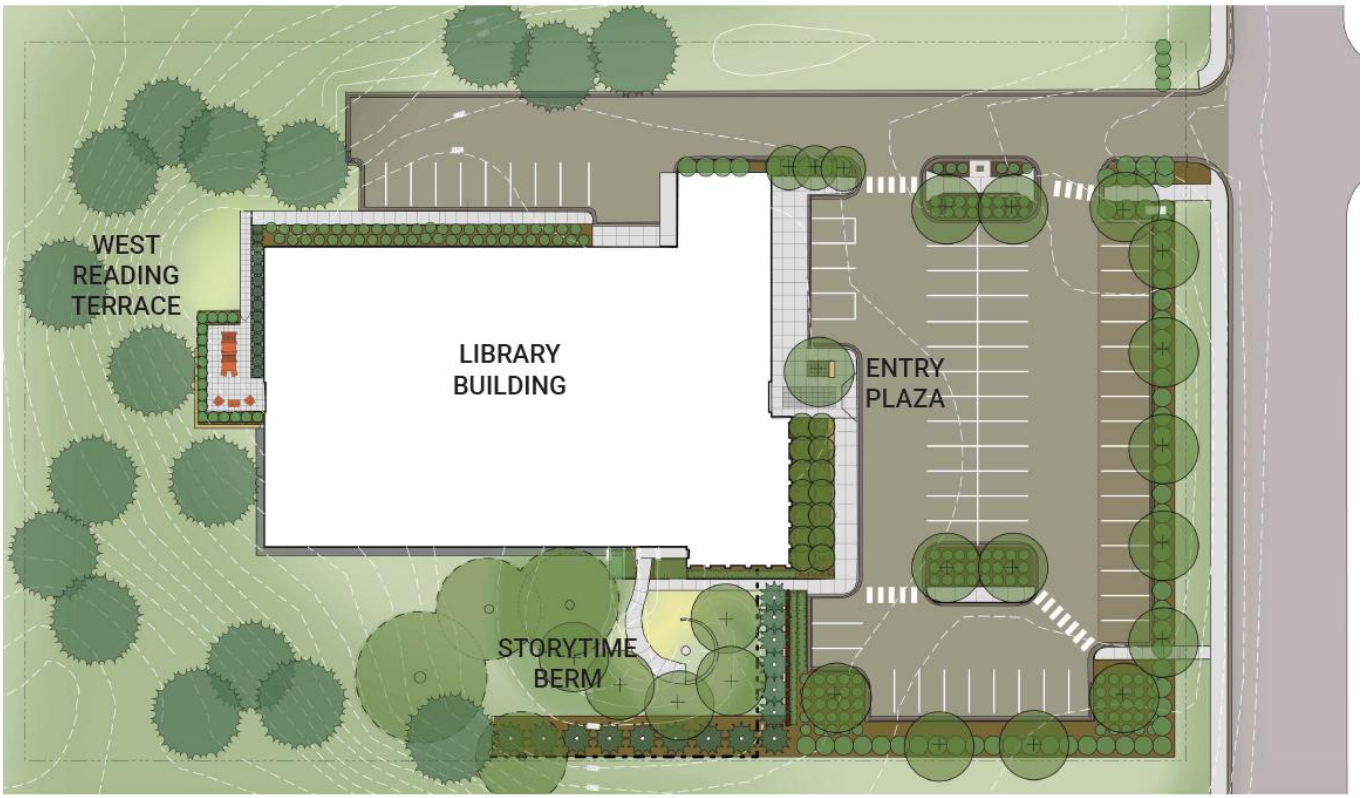


Future Land Use and Current Zoning

Site Plan

The Applicant is proposing a second story building addition on the front of the library. The addition will house utility and mechanical equipment to open space on the first floor for patrons and staff space. The parking lot will also be reconfigured to add parking spaces by realigning the parking stalls to 90 degrees from angled stalls and removing the one-way traffic flow within the parking lot. Various landscaping improvements are also proposed.

Front of Library



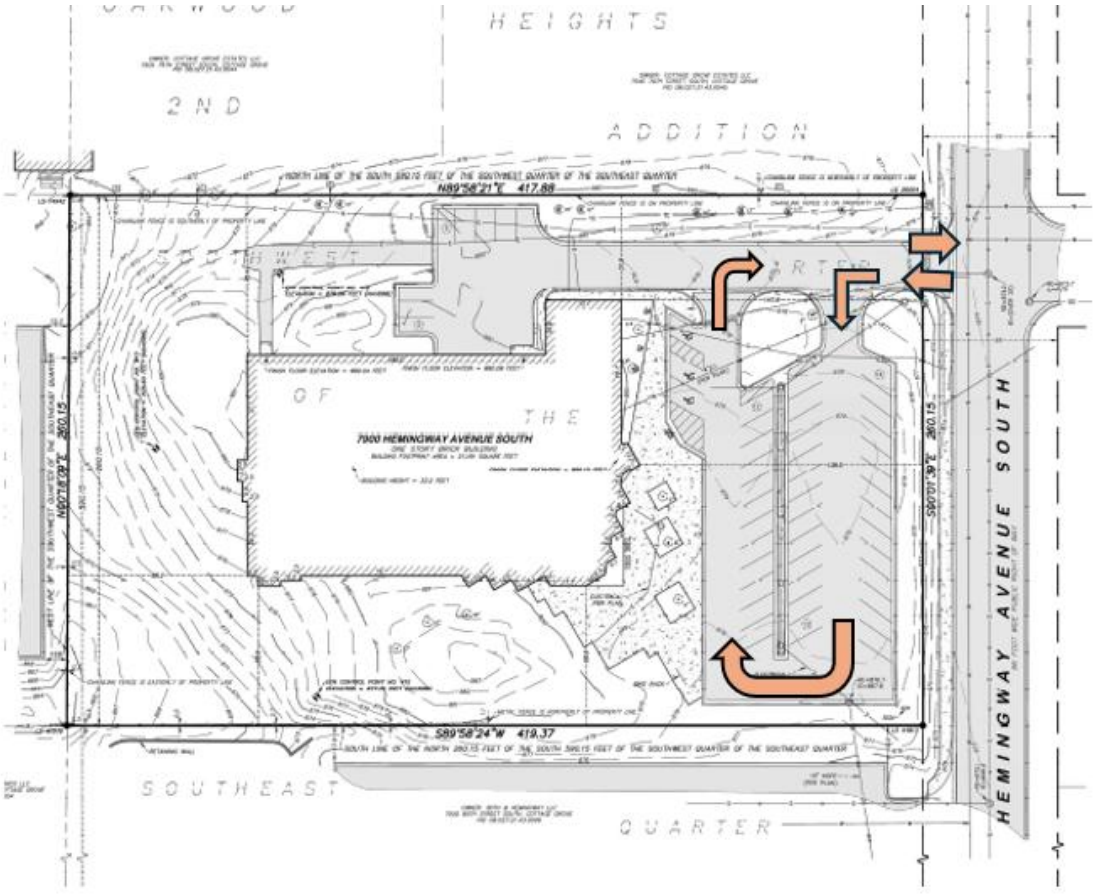
Exterior Layout

The existing building is 21,181 square feet. By updating the façade and removing building angles on the east and south sides of the building, the structure will be 20,355 square feet after renova-

tions. An enhanced children's area will be constructed on the south side of the building outside of the children's area inside the library, and an outdoor reading terrace will be added on the west side of the building.

Site Access

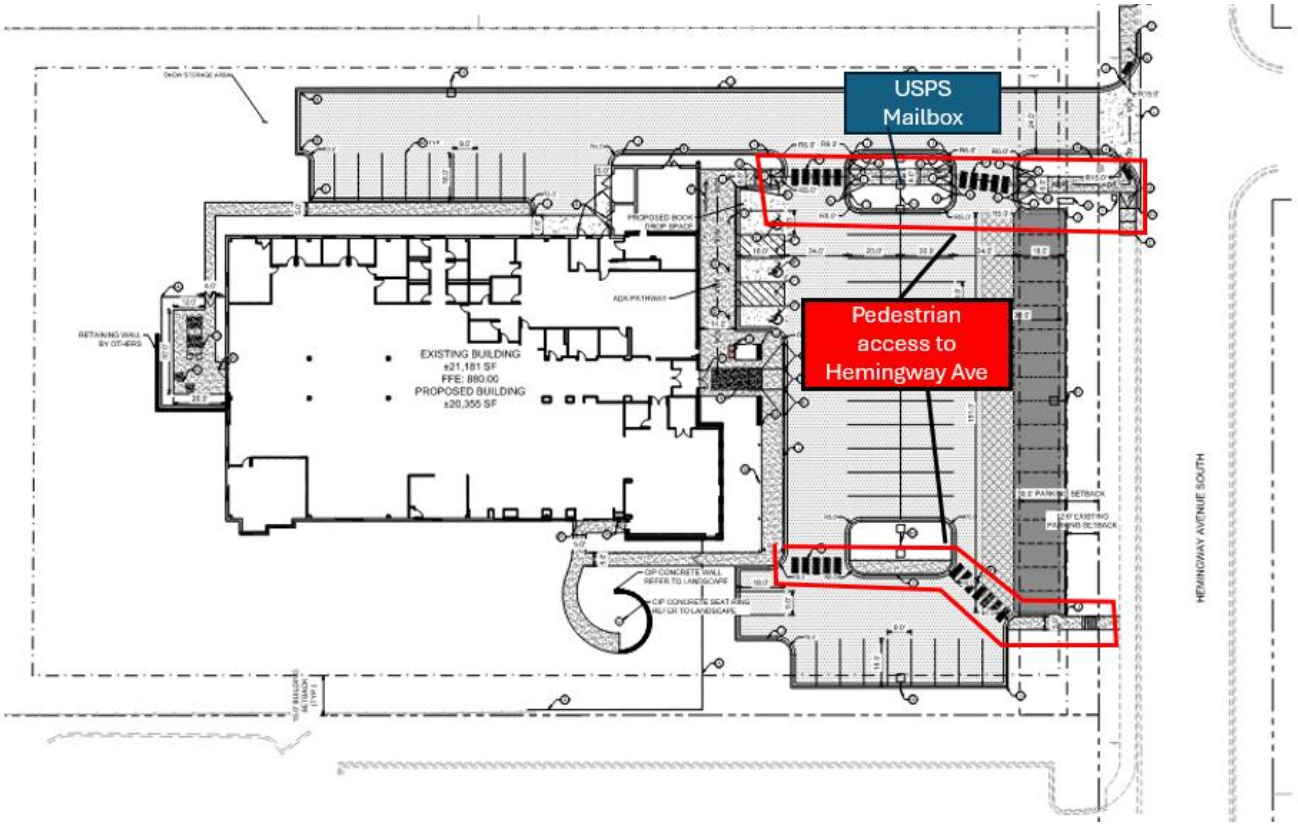
The site has one access point off Hemingway Avenue on the north side of the property, across from 79th Street. The parking lot currently utilizes a one-way traffic pattern with traffic entering the parking lot using the east entrance and driving south to loop around and exit on the west side to head south to the exit on the east side.



Existing Traffic Flow

After construction, traffic will be able to flow in both directions through the parking lot; however, the entrance and exit point to the parking lot will remain in the same location.

The site will also be more accessible for pedestrians along Hemingway Avenue via new sidewalk and stair connections to the sidewalk on Hemingway Avenue. Pedestrians will be able to utilize parking lot islands in the center of the parking lot as pedestrian refuge from vehicle traffic in the parking lot when moving to and from Hemingway Avenue. The north parking lot island will contain the USPS mailbox currently on site.

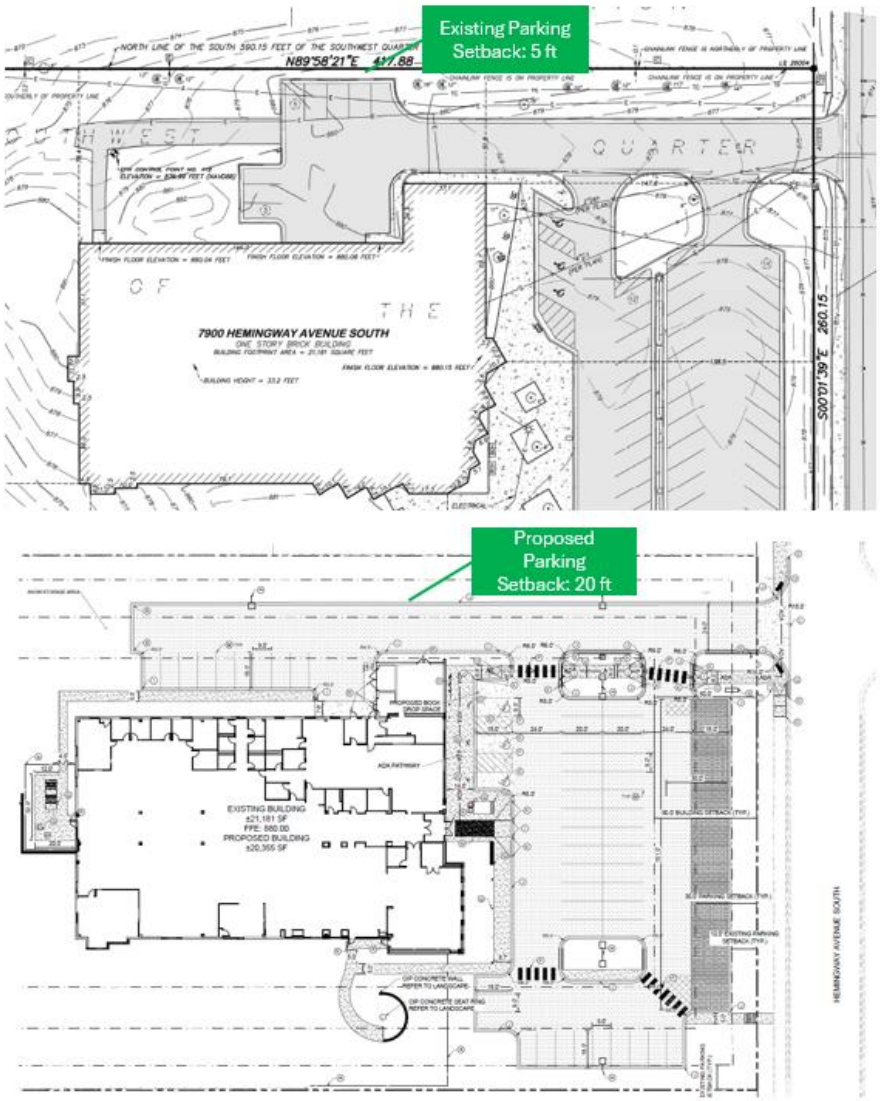


Access from Hemingway Avenue

Parking

Per City Code, libraries must have one space for each 300 square feet of floor area. The existing library is 21,181 square feet; therefore, 71 parking spaces are required. There are currently 50 spaces on site, most of which are angled spaces. The parking lot is proposed to be reconfigured to add parking spaces by realigning the parking spaces to 90-degree parking stalls and removing the one-way traffic flow within the parking lot. The remodeled library will be 20,355 square feet; therefore, 68 parking stalls are required. With the reconfiguration of the parking lot, 68 parking stalls will be provided on site.

Access drives, drive aisles, and parking spaces for municipal facilities in all zoning districts must be set back 30 feet from front, side, and rear property lines. The existing parking lot setbacks are existing nonconformities at less than 5 feet from the north property line and 12 feet from the east and south property lines. The drive aisle and parking lot on the north side of the property will be relocated to be approximately 20 feet from the north property line. The parking area on the east and south sides of the property will be reconstructed in the existing 12-foot setback. Since the non-conforming parking lot is not being expanded and setbacks are not being decreased, a variance is not required.

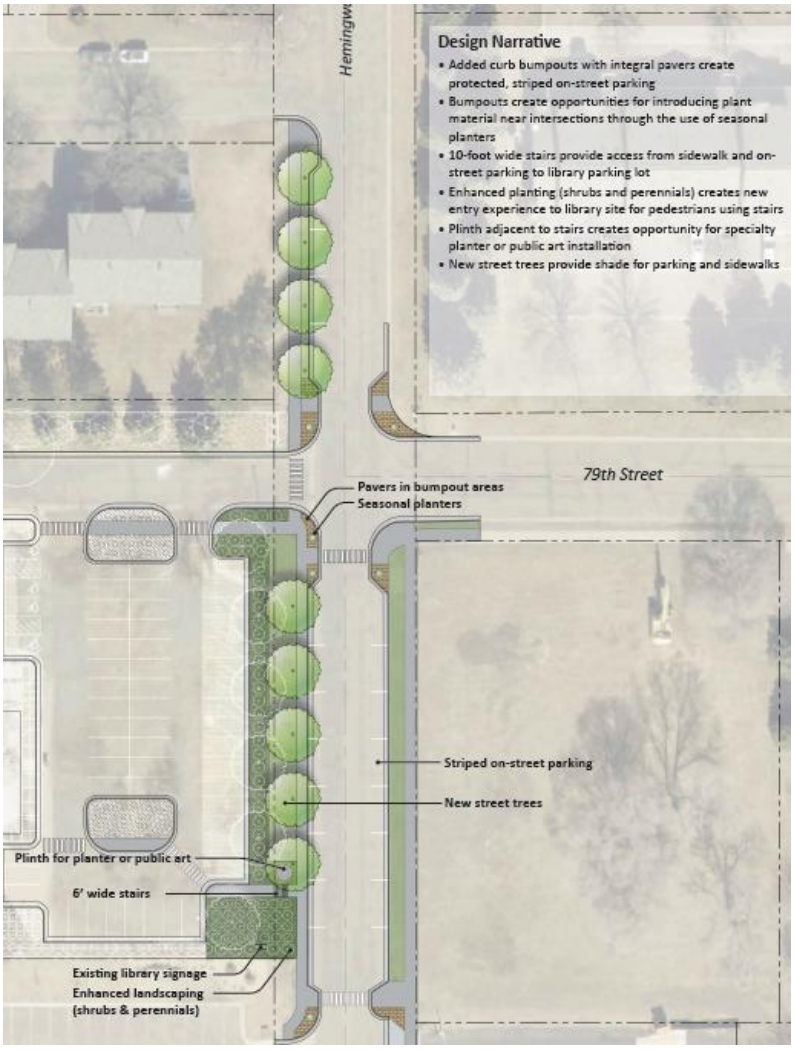


Proposed Parking Lot

Hemingway Avenue Improvements

In conjunction with the library upgrades and to improve pedestrian safety, Hemingway Avenue is proposed to be reconstructed in front of the library. The project is proposed to be designed and constructed by the City with a cost share agreement with the County.

Curb bump-outs with integral pavers will be added for safer pedestrian crossings and traffic calming at 79th Street and mid-block on Hemingway Avenue south of the proposed stairway connection to the library property. Additionally, on-street parking spaces will be striped on both sides of Hemingway between the proposed bump-outs. These additional on-street parking options are imperative given the limited parking expansion space on the library site and the need for additional parking area. The right-of-way is proposed to be improved with additional street trees and enhanced landscaping on the west side. The proposed bump-outs give the opportunity to introduce plant material near intersections using seasonal planters. Redesigning Hemingway to improve pedestrian access to the library will complement the other development and redevelopment projects that have been completed in the neighborhood to date, including the Dunkin/Baskin Robbins development, Grove 80, and Bluestem Apartments.



Hemingway Avenue

Tree Preservation

City Code Title 11-3-13 requires completion of a tree inventory (all qualifying trees) within the project area of a proposed development. For projects in residential districts, 40 percent of the qualifying caliper inches on a site are permitted to be removed without required mitigation. The completed tree inventory identified 257 qualifying inches on site. The Applicant is proposing removal of 47 qualifying inches, which is under the permitted 40 percent removal; therefore, no mitigation is required.

Landscaping

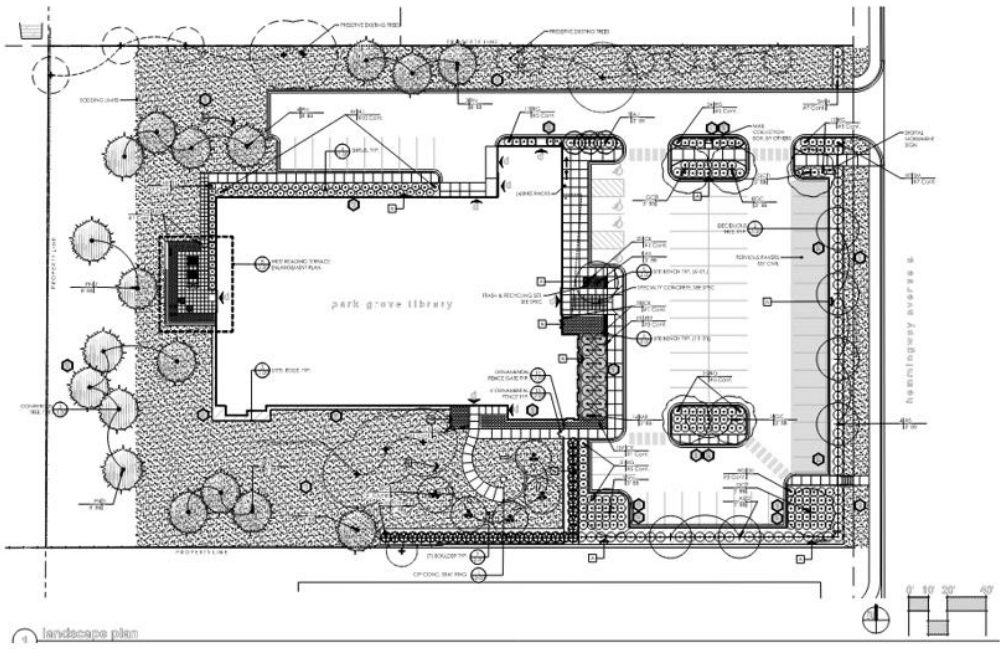
The Applicant has submitted a detailed landscape plan including proposed additional landscaping throughout the site. Landscaping will be installed around the parking lot and within parking lot islands. Deciduous and coniferous trees will be planted in open space around the site. Existing trees will be preserved on the north side of the property and three coniferous trees will be planted for additional screening from residential properties to the north.

The children's area will feature a concrete sitting ring and retaining wall. The existing boulder will remain in the area and additional limestone boulders will be added for additional seating. A concrete paved reading terrace with landscaping and seating will be added to the west side of the building with access from inside the library.

Sitting Ring

City Code Title 11-3-12 requires all non-residential uses in residential districts to meet minimum vegetation requirements for Business and Industrial zones. A minimum of 30 percent of the site must remain as open/green space. The site is proposed to have approximately 52 percent open/green space in compliance with City Code. The number of trees and shrubs required is calculated by multiplying newly disturbed areas by the coefficients found in City Code. The amount of newly disturbed area on the site is minimal; however, the applicant is proposing to add vegetation to the site that would equal the amount of vegetation required if the site were a vacant property with new development.

Vegetation Type	Proposed	Required (If Site Was Vacant)
Deciduous Overstory Trees	29	30
Coniferous Trees	51	28
Shrubs	244	65



Landscaping Plan

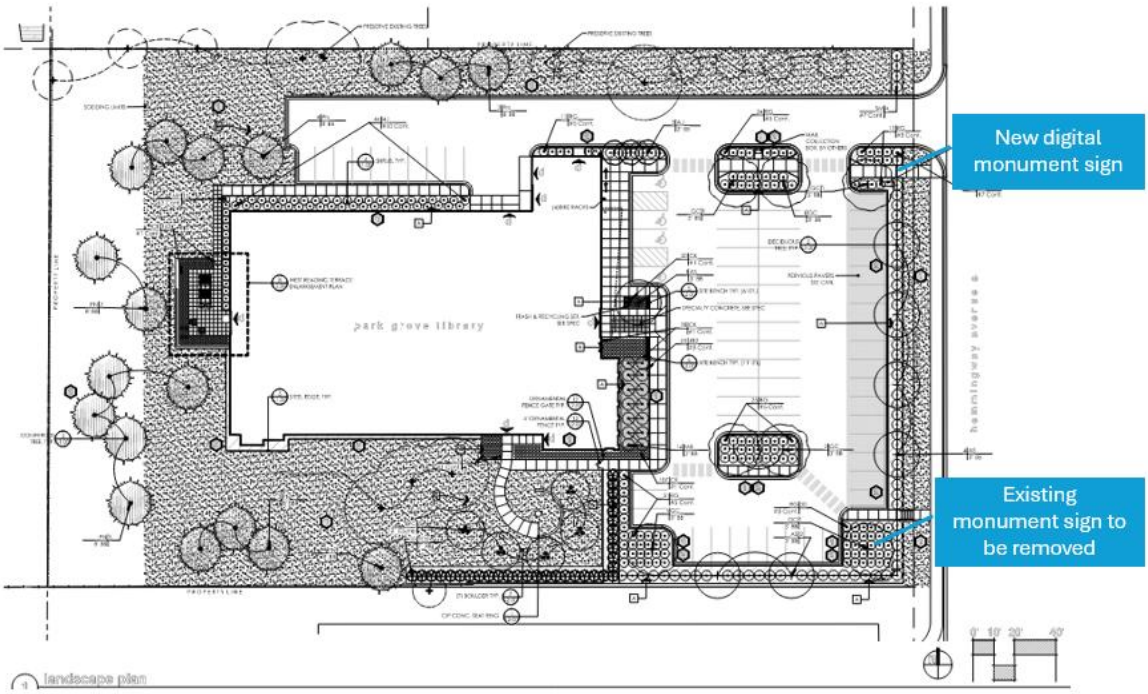
Fencing

The Applicant is proposing a four-foot-tall black ornamental fence around the outdoor reading terrace and on the south and east side of the children's area. An existing chain link fence along the west and north property lines will be removed after construction. Removal of the chain link fencing will increase accessibility to the library from existing residential properties to the north and the Woodland Park Apartments to the west.

Existing Chain Link Fence on West Side

Signage

A monument sign is currently located in the southeast corner of the property. This sign is proposed to be removed and replaced with a digital monument sign on the northeast side of the property. Digital monument signs and dynamic display signs are regulated by Title 12-1-7 H of City Code. Government buildings in the R-6 district are permitted to have dynamic display monument signs. The sign must be set back 10 feet from all property lines and not exceed 24 square feet. The images must be static and there is a one hour minimum between changes in display transition. A separate building permit is required prior to installation of signage.



Sign Locations

Photometric Plan

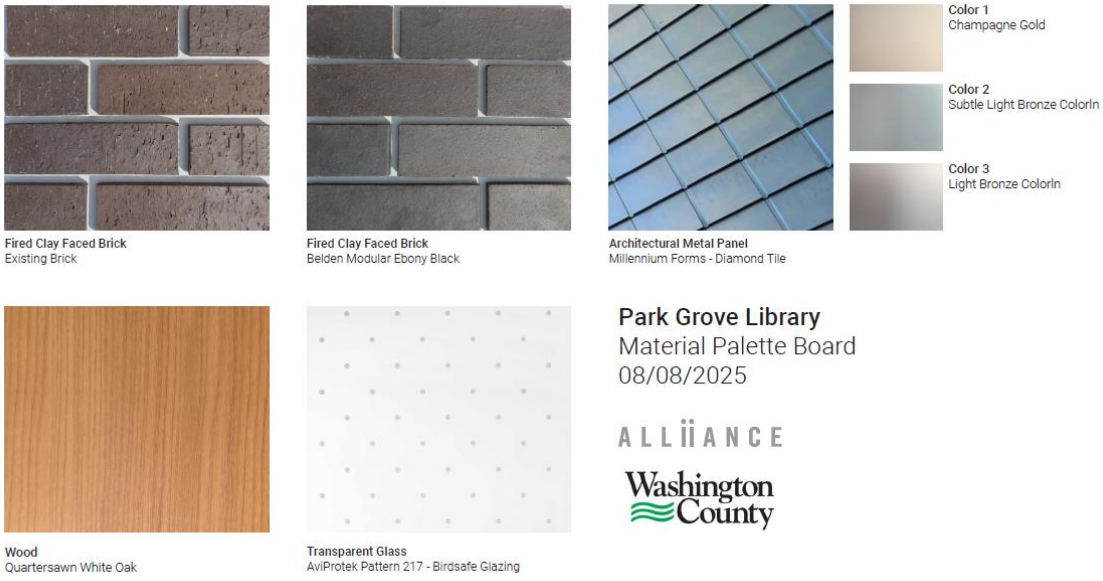
City code standard requires 0.5 foot candles or less when measured at property lines abutting any residential parcel. The Applicant has provided a photometric plan indicating a maximum 0.5 foot candles or less at all property lines.

Architectural Materials

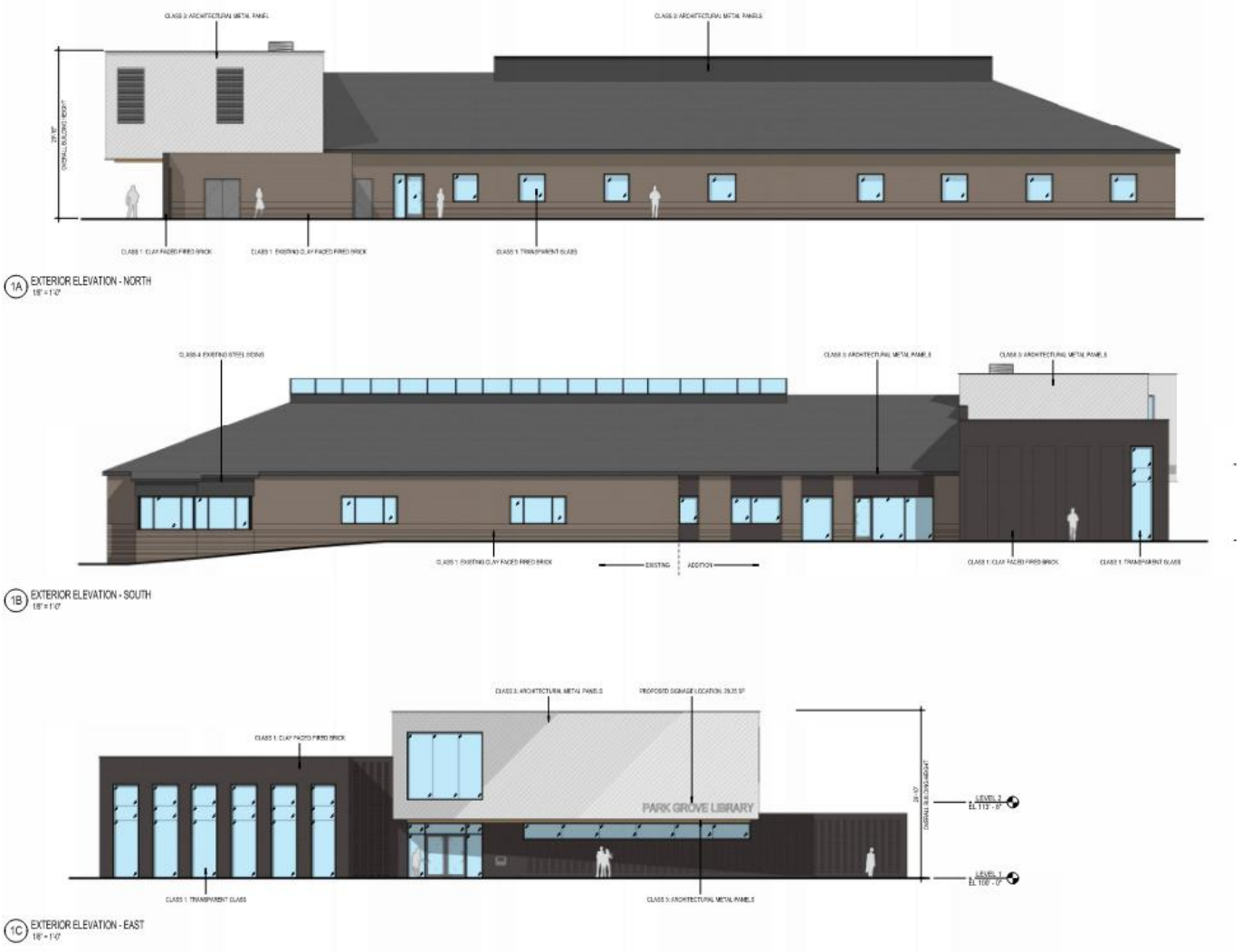
City code requires non-residential buildings within residential districts to use at least three different Class I materials and be composed of no less than 65 percent Class I and 2 materials. The existing building consists of brick and glass. The existing brick will remain towards the rear (west side) of the building and the new façade will consist of black smooth fired clay face brick, transparent glass, and architectural metal panels.

Material	Class	Percent
Belden Ebony Black Smooth Fired Clay Face Brick	1	79%
Existing Fired Clay Faced Brick	1	
Transparent Glass	1	
Architectural Metal Panels	3	20%
Steel Siding	4	1%

The dark brown-black brick will contrast with the existing brick on the remainder of the building and help to break up the original monolithic façade. There will be brick detailing with corbelling patterns to add interest to the walls near the entrance. The architectural metal panels will be installed in three colors to create a gradient effect across the building symbolizing water and the natural environment of Cottage Grove. Areas where multiple materials come together will highlight their differences. This design is inspired by the idea of a 'confluence,' reflecting the confluence of the St. Croix and Mississippi Rivers. Designers were also inspired by the Glacial Valley Park Building and future Mississippi Dunes Park Building.



Exterior Materials



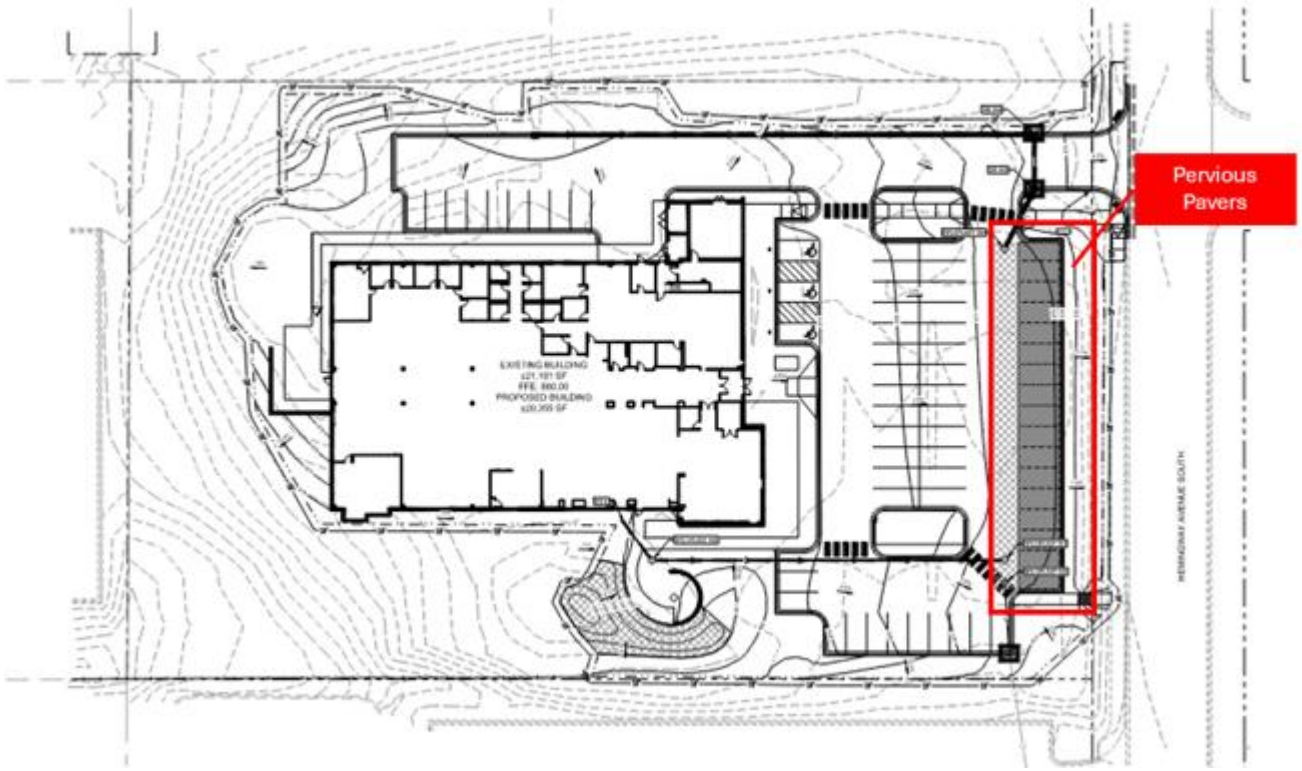
Elevations

Grading and Surface Water Management

The Applicant is proposing grading around the existing building and the addition of storm infrastructure to manage stormwater on-site. The current plan shows pervious pavers with underground stone for filtration "PaveDrain," catch basins, storm drains, and storm sewer pipe. They are proposing one direct outlet area of discharge by connecting to the private storm sewer on the Grove 80 site. This pipe has already been extended onto the library property and is currently in use. The proposed grading and associated drainage are proposed to meet the surface water management requirements established by the State, Watershed District, and the City's Surface Water Management Plan. An NPDES Construction Stormwater Permit and Stormwater Management Agreement will need to be executed for all stormwater infrastructure installed with the site.

Impervious Surface Coverage

Maximum impervious surface coverage in the R-6 District is 65 percent of the total lot area. There is currently 49.2 percent impervious surface coverage. After construction, there will be approximately 48 percent impervious surface coverage. The eastern area of the parking lot will consist of pervious pavers.



Grading Plan

Public Hearing Notices
The public hearing notice for the August 25, 2025, Planning Commission meeting was published in the *Saint Paul Pioneer Press* and mailed to 85 property owners within 500 feet of the proposed project on August 12, 2025. Staff has not received any comments at the time of writing the report.

Recommendation

That the Planning Commission recommend that the City Council approve the site plan review for a building addition, façade remodel, and exterior site improvements at Park Grove Library, subject to the conditions of approval listed below.

General Development

1. The project shall be completed in accordance with the plans submitted as amended by the conditions of approval. Any significant changes to the plans, as determined by planning staff, shall require review and approval by the Planning Commission and City Council.

2. All applicable permits (i.e., building, demo, electrical, grading, right-of-way, and mechanical) and a commercial plan review packet must be completed, submitted, and approved by the City prior to the commencement of any construction activities. Detailed construction plans must be reviewed and approved by the Building Official, City Engineer, and Fire Marshal. All applicable fees and letters of credit shall be received by the City prior to issuance of any permits.

3. Site Plan Review approval shall expire one year from the date of City Council approval unless a building permit has been requested or a time extension has been granted by the

City Council. The City Council may extend the expiration date of such approval upon written application by the entity to whom the approval was granted.

4. A Stormwater Management Agreement must be executed prior to issuance of a building permit with the City for all stormwater infrastructure installed within the site.

Landscaping

5. Installation of landscaping shall occur in a timely fashion and be consistent with an approved plan. Prior to the issuance of a building permit, a letter of credit in the amount of 150 percent of the landscape estimate shall be submitted to the City as required by City ordinance. The financial guarantee shall be held until all required plantings are installed. At such time of installation, the Planning Department shall conduct an inspection to verify compliance with the landscape plan. If the inspection is approved, 50 percent of the financial guarantee shall be released. One year from the date of initial inspection, a follow-up inspection shall be conducted to verify survivability. If the follow-up inspection is approved, the remainder of the financial guarantee shall be released.

6. Irrigation shall be provided for all landscaped areas. The irrigation system shall consist of an underground sprinkling system that is designed by a professional irrigation installer to meet the water requirements of the site's specific vegetation. The system shall be detailed on the final landscape plan.

Construction and Grading

7. The grading and erosion control plan for the site must comply with MPCA's SWWPP and NPDES Permit requirements. Erosion control devices must be installed prior to commencement of any grading activity. Erosion control must be performed in accordance with the recommended practices of the "Minnesota Construction Site Erosion and Sediment Control Planning Handbook" and the conditions stipulated in Title 9-7-1, Erosion Control During Construction, of the City's Subdivision Ordinance. The Applicant shall be responsible for the costs for the City to inspect the site in relation to erosion control conformance.

8. The Applicant must provide the City with an as-built survey of all utilities and grading plan.

9. The Applicant is responsible for removing debris from all adjacent public and private roadways during their grading and construction process. The adjacent streets shall be swept clean daily or as needed.

10. Applicant will be required to conduct all major activities to construct the 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.
Sunday	Not Allowed

Any deviations from the above hours are subject to approval of the City.

11. The Applicant shall within 24 hours, 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 Applicant 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.

Performance Standards

12. Rubbish, waste, and recycling containers shall be stored within an appropriately sized enclosed structure compliant with City ordinance screening requirements and shall always be maintained so as not cause odors or other public nuisances.

13. Signage is not approved as part of this application. Any proposed signage shall meet the requirements of the sign ordinance and require a separate building permit.

14. The developer shall enter into a sidewalk and stairway encroachment agreement with the City for sidewalk and stair connections within the Hemingway Avenue right-of-way prior to the issuance of a building permit.

15. The developer shall enter into a Development Agreement with the City prior to the issuance of any permits.

17. The Applicant grants the City, its agents, employees, officers, and contractors permission to enter the site to perform all necessary inspections during grading and construction activities.

18. 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.

Prepared by
Samantha Pierret, AICP
Senior Planner

Attachments
Submitted Plans
Engineering Memorandum – Bolton & Menk

ALLiANCE

DATE
2025.07.30

COMMISSION NO.
2025029

PROJECT
Park Grove Library
7900 Hemingway Ave S, Cottage Grove, MN 55016

PLANNING SUBMISSION

CLIENT
Washington County

GENERAL CONSTRUCTION NOTES

1. THE CONTRACTOR AND SUBCONTRACTORS SHALL OBTAIN A COPY OF THE LATEST EDITION OF THE STANDARD SPECIFICATIONS OF THE LOCAL JURISDICTION AND STATE DEPARTMENT OF TRANSPORTATION AND BECOME FAMILIAR WITH THE CONTENTS PRIOR TO COMMENCING WORK. UNLESS OTHERWISE NOTED, ALL WORK SHALL CONFORM AS APPLICABLE TO THESE STANDARDS AND SPECIFICATIONS.

3. PERFORM ALL WORK IN COMPLIANCE WITH APPLICABLE CITY REGULATIONS, STATE CODES, AND O.S.H.A. STANDARDS. THE CONTRACTOR IS RESPONSIBLE FOR FURNISHING THE NECESSARY MATERIALS & LABOR TO CONSTRUCT THE FACILITY AS SHOWN AND DESCRIBED IN THE CONSTRUCTION DOCUMENTS, AND IN ACCORDANCE WITH THE SPECIFICATIONS AND REQUIREMENTS OF THE APPROPRIATE APPROVING AUTHORITIES.

4. CONTRACTOR SHALL CLEAR AND GRUB ALL AREAS UNLESS OTHERWISE INDICATED, REMOVING TREES, STUMPS, ROOTS, MUCK, EXISTING PAVEMENT AND ALL OTHER DELETERIOUS MATERIAL.

5. THE EXISTING SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS QUALITY LEVEL "D" UNLESS OTHERWISE NOTED. THIS QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/ACSE 38/02, ENTITLED STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF SUBSURFACE QUALITY DATA BY THE FHA. EXISTING UTILITIES SHOWN ARE LOCATED ACCORDING TO THE INFORMATION AVAILABLE TO THE ENGINEER AT THE TIME OF THE TOPOGRAPHIC SURVEY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR THE ENGINEER. GUARANTEE IS NOT MADE THAT ALL EXISTING UNDERGROUND UTILITIES ARE SHOWN OR THAT THE LOCATION OF THOSE SHOWN ARE ENTIRELY ACCURATE. FINDING THE ACTUAL LOCATION OF ANY EXISTING UTILITIES IS THE CONTRACTOR'S RESPONSIBILITY AND SHALL BE DONE BEFORE COMMENCING ANY WORK IN THE VICINITY. FURTHERMORE, THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES DUE TO THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES. THE OWNER OR ENGINEER WILL ASSUME NO LIABILITY FOR ANY DAMAGES SUSTAINED OR COST INCURRED BECAUSE OF THE OPERATIONS IN THE VICINITY OF EXISTING UTILITIES OR STRUCTURES, NOR FOR TEMPORARY BRACING AND SHORING OF SAME. IF IT IS NECESSARY TO SHORE, BRACE, SWING OR RELOCATE A UTILITY, THE UTILITY COMPANY OR DEPARTMENT AFFECTED SHALL BE CONTACTED AND THEIR PERMISSION OBTAINED REGARDING THE METHOD TO USE FOR SUCH WORK.

6. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT THE VARIOUS UTILITY COMPANIES WHICH MAY HAVE BURIED OR AERIAL UTILITIES WITHIN OR NEAR THE CONSTRUCTION AREA BEFORE COMMENCING WORK. THE CONTRACTOR SHALL PROVIDE 48 HOURS MINIMUM NOTICE TO ALL UTILITY COMPANIES PRIOR TO BEGINNING CONSTRUCTION.

7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL REQUIRED CONSTRUCTION PERMITS AND BONDS IF REQUIRED PRIOR TO CONSTRUCTION.

8. THE CONTRACTOR SHALL HAVE AVAILABLE AT THE JOB SITE AT ALL TIMES ONE COPY OF THE CONSTRUCTION DOCUMENTS INCLUDING PLANS, SPECIFICATIONS, GEOTECHNICAL REPORT AND SPECIAL CONDITIONS AND COPIES OF ANY REQUIRED CONSTRUCTION PERMITS.

9. ANY DISCREPANCIES ON THE DRAWINGS SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE OWNER AND ENGINEER BEFORE COMMENCING WORK. NO FIELD CHANGES OR DEVIATIONS FROM DESIGN ARE TO BE MADE WITHOUT PRIOR APPROVAL OF THE OWNER AND NOTIFICATION TO THE ENGINEER.

10. ALL COPIES OF COMPACTION, CONCRETE AND OTHER REQUIRED TEST RESULTS ARE TO BE SENT TO THE OWNER DIRECTLY FROM THE TESTING AGENCY.

11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DOCUMENTING AND MAINTAINING AS-BUILT INFORMATION WHICH SHALL BE RECORDED AS CONSTRUCTION PROGRESSES OR AT THE COMPLETION OF APPROPRIATE CONSTRUCTION INTERVALS AND SHALL BE RESPONSIBLE FOR PROVIDING AS-BUILT DRAWINGS TO THE OWNER FOR THE PURPOSE OF CERTIFICATION TO JURISDICTIONAL AGENCIES AS REQUIRED. ALL AS-BUILT DATA SHALL BE COLLECTED BY A STATE PROFESSIONAL LAND SURVEYOR WHOSE SERVICES ARE ENGAGED BY THE CONTRACTOR.

12. ANY WELLS DISCOVERED ON SITE THAT WILL HAVE NO USE MUST BE PLUGGED BY A LICENSED WELL DRILLING CONTRACTOR IN A MANNER APPROVED BY ALL JURISDICTIONAL AGENCIES. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ANY WELL ABANDONMENT PERMITS REQUIRED.

13. ANY WELL DISCOVERED DURING EARTH MOVING OR EXCAVATION SHALL BE REPORTED TO THE APPROPRIATE JURISDICTIONAL AGENCIES WITHIN 24 HOURS AFTER DISCOVERY IS MADE.

14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THAT THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS DO NOT CONFLICT WITH ANY KNOWN EXISTING OR OTHER PROPOSED IMPROVEMENTS. IF ANY CONFLICTS ARE DISCOVERED, THE CONTRACTOR SHALL NOTIFY THE OWNER PRIOR TO INSTALLATION OF ANY PORTION OF THE SITE WORK THAT WOULD BE AFFECTED. FAILURE TO NOTIFY OWNER OF AN IDENTIFIABLE CONFLICT PRIOR TO PROCEEDING WITH INSTALLATION RELIEVES OWNER OF ANY OBLIGATION TO PAY FOR A RELATED CHANGE ORDER.

15. SHOULD CONTRACTOR ENCOUNTER ANY DEBRIS LADEN SOIL, STRUCTURES NOT IDENTIFIED IN THE DOCUMENTS, OR OTHER SOURCE OF POTENTIAL CONTAMINATION, THEY SHALL IMMEDIATELY CONTACT THE ENGINEER AND OWNER.

16. CONTRACTOR SHALL NOTIFY OWNER AND/OR ENGINEER 48 HOURS IN ADVANCE OF THE FOLLOWING ACTIVITIES: PRE-CONSTRUCTION MEETING, SUBGRADE PREPARATION, BASE INSTALLATION, ASPHALT INSTALLATION, UNDERGROUND PIPING AND UTILITIES INSTALLATION, INSTALLATION OF STRUCTURES, CHECK VALVES, HYDRANTS, METERS, ETC., SIDEWALK INSTALLATION, CONNECTIONS TO WATER AND SEWER MAINS, TESTS OF UTILITIES.

THIRD PARTY SUPPLEMENTAL INFORMATION

KIMLEY-HORN ASSUMES NO LIABILITY FOR ANY ERRORS, INACCURACIES, OR OMISSIONS CONTAINED WITHIN SUPPLEMENTAL INFORMATION PROVIDED BY THIRD PARTY CONSULTANTS.

1. **BOUNDARY & TOPOGRAPHIC SURVEY**
   PERFORMED BY: EGAN, FIELD & NOWAK, INC.
   ADDRESS: 475 OLD HIGHWAY 8 NW, SUITE 200, NEW BRIGHTON, MN 55112
   PHONE: 612-466-3300
   DATED: 04/21/2025

2. **GEOTECHNICAL EVALUATION REPORT**
   PERFORMED BY: BRAUN INTERTEC CORPORATION
   ADDRESS: 11001 HAMPSHIRE AVE S, MINNEAPOLIS, MN 55438
   PHONE: 952-995-2000
   DATED: 05/30/2025

3. **CONSTRUCTION TESTING**
   TEST REPORTS REQUIRED FOR CLOSE OUT INCLUDE, BUT ARE NOT LIMITED TO:
   - DENSITY TEST REPORTS
   - BACTERIOLOGICAL TESTS OF WATER SYSTEM
   - PRESSURE TEST OF WATER/SEWER
   - LEAK TESTS ON SEWER SYSTEM AND GREASE TRAPS
   - ANY OTHER TESTING REQUIRED BY THE AGENCY/MUNICIPALITY

EROSION CONTROL NOTES

1. THE STORM WATER POLLUTION PREVENTION PLAN ("SWPPP") IS COMPRISED OF THE EROSION CONTROL PLAN, THE STANDARD DETAILS, THE PLAN NARRATIVE, ATTACHMENTS INCLUDED IN THE SPECIFICATIONS OF THE SWPPP, PLUS THE PERMIT AND ALL SUBSEQUENT REPORTS AND RELATED DOCUMENTS.

2. ALL CONTRACTORS AND SUBCONTRACTORS INVOLVED WITH STORM WATER POLLUTION PREVENTION SHALL OBTAIN A COPY OF THE STORM WATER POLLUTION PREVENTION PLAN AND THE STATE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM GENERAL PERMIT (NPDES PERMIT) AND BECOME FAMILIAR WITH THEIR CONTENTS.

3. BEST MANAGEMENT PRACTICES (BMP'S) AND CONTROLS SHALL CONFORM TO FEDERAL, STATE, OR LOCAL REQUIREMENTS OF MANUAL OF PRACTICE, AS APPLICABLE. THE CONTRACTOR SHALL IMPLEMENT ADDITIONAL CONTROLS AS DIRECTED BY THE PERMITTING AGENCY OR OWNER.

4. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR COMPLYING WITH THE REQUIREMENTS OF THE AUTHORITIES HAVING JURISDICTION, AND SHALL MAINTAIN COMPLIANCE WITH APPLICABLE LAWS AND REGULATIONS FOR THE DURATION OF CONSTRUCTION.

5. THE CONTRACTOR SHALL FIELD ADJUST AND/OR PROVIDE ADDITIONAL EROSION CONTROL BMP'S AS NEEDED TO PREVENT EROSION AND OFF-SITE SEDIMENT DISCHARGE FROM THE CONSTRUCTION SITE. LOG AND RECORD ANY ADJUSTMENTS AND DEVIATIONS FROM THE APPROVED EROSION CONTROL PLANS WITHIN THE SWPPP DOCUMENTS STORED IN THE JOB SITE TRAILER.

6. BMPS SHOWN ON THE EROSION AND SEDIMENT CONTROL PLAN, AND IN THE STORM WATER POLLUTION PREVENTION PLAN, SHALL BE MAINTAINED IN FULLY FUNCTIONAL CONDITION AS REQUIRED BY ALL JURISDICTIONS UNTIL NO LONGER REQUIRED FOR A COMPLETED PHASE OF WORK OR FINAL STABILIZATION OF THE SITE. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE CHECKED BY A CERTIFIED PERSON AT LEAST ONCE EVERY 7 CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF A 0.5-INCH OR GREATER RAINFALL EVENT.

7. EROSION & SEDIMENT CONTROL BMPS SHALL BE MAINTAINED IN ACCORDANCE WITH THE FOLLOWING:

   7.1. INLET PROTECTION DEVICES AND BARRIERS SHALL BE REPAIRED OR REPLACED IF THEY SHOW SIGNS OF UNDERMINING OR DETERIORATION.

   7.2. ALL SEEDED AREAS SHALL BE CHECKED REGULARLY TO VERIFY THAT A HEALTHY STAND OF VEGETATION IS MAINTAINED. SEEDED AREAS SHOULD BE FERTILIZED, WATERED AND RE-SEEDED AS NEEDED. REFER TO THE LANDSCAPE PLAN AND PROJECT SPECIFICATIONS.

   7.3. SILT FENCES SHALL BE REPAIRED TO THEIR ORIGINAL CONDITIONS IF DAMAGED. SEDIMENT SHALL BE REMOVED FROM THE SILT FENCES WHEN IT REACHES ONE-THIRD THE HEIGHT OF THE SILT FENCE.

   7.4. THE ROCK CONSTRUCTION ENTRANCE(S) SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC ADDITIONS OF ROCK TOP DRESSING AS CONDITIONS DEMAND.

   7.5. THE TEMPORARY PARKING AND STORAGE AREA SHALL BE KEPT IN GOOD CONDITION (SUITABLE FOR PARKING AND STORAGE). THIS MAY REQUIRE PERIODIC ADDITIONS OF TOP DRESSING IF THE TEMPORARY PARKING CONDITIONS DEMAND.

   7.6. PERFORM ALL MAINTENANCE OPERATIONS IN A TIMELY MANNER BUT IN NO CASE LATER THAN 2 CALENDAR DAYS FOLLOWING THE INSPECTION.

PAVING AND STRIPING NOTES

1. ALL PAVING, CONSTRUCTION, MATERIALS, AND WORKMANSHIP WITHIN JURISDICTION'S RIGHT-OF-WAY SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE LOCAL CITY OR COUNTY SPECIFICATIONS AND STANDARDS, OR THE STATE DOT SPECIFICATIONS AND STANDARDS IF NOT COVERED BY LOCAL CITY OR COUNTY REGULATIONS.

2. ALL SIGNS, PAVEMENT MARKINGS, AND OTHER TRAFFIC CONTROL DEVICES SHALL CONFORM TO MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (M.U.T.C.D) AND CITY STANDARDS.

3. CONTRACTOR SHALL FURNISH ALL PAVEMENT MARKINGS FOR FIRE LANES, ROADWAY LANES, PARKING STALLS, ACCESSIBLE PARKING SYMBOLS, ACCESS AISLES, STOP BARS AND SIGNS, AND MISCELLANEOUS STRIPING WITHIN THE PARKING LOT AS SHOWN ON THE PLANS.

4. ALL EXPANSION JOINTS SHALL EXTEND THROUGH THE CURB.

5. THE MINIMUM LENGTH OF OFFSET JOINTS AT RADIUS POINTS SHALL BE 2 FEET.

6. ALL JOINTS, INCLUDING EXPANSION JOINTS WITH REMOVABLE TACK STRIPS, SHALL BE SEALED WITH JOINT SEALANT.

7. THE MATERIALS AND PROPERTIES OF ALL CONCRETE SHALL MEET THE APPLICABLE REQUIREMENTS IN THE A.C.I. (AMERICAN CONCRETE INSTITUTE) MANUAL OF CONCRETE PRACTICE.

8. CONTRACTOR SHALL APPLY A SECOND COATING OVER ALL PAVEMENT MARKINGS PRIOR TO ACCEPTANCE BY OWNER FOLLOWED BY A COAT OF GLASS BEADS AS APPLICABLE PER THE PROJECT DOCUMENTS.

9. ANY EXISTING PAVEMENT, CURBS AND/OR SIDEWALKS DAMAGED OR REMOVED WILL BE REPAIRED BY THE CONTRACTOR AT HIS EXPENSE TO THE SATISFACTION OF THE ENGINEER AND OWNER.

10. BEFORE PLACING PAVEMENT, CONTRACTOR SHALL VERIFY SUITABLE ACCESSIBLE ROUTES (PER A.D.A). GRADING FOR ALL SIDEWALKS AND ACCESSIBLE ROUTES INCLUDING CROSSING DRIVEWAYS SHALL CONFORM TO CURRENT ADA STATE/NATIONAL STANDARDS. IN NO CASE SHALL ACCESSIBLE RAMP SLOPES EXCEED 1 VERTICAL TO 12 HORIZONTAL. IN NO CASE SHALL SIDEWALK CROSS SLOPES EXCEED 2% . IN NO CASE SHALL LONGITUDINAL SIDEWALK SLOPES EXCEED 5%. IN NO CASE SHALL ACCESSIBLE PARKING STALLS OR AISLES EXCEED 2% (1.5% TARGET) IN ALL DIRECTIONS. SIDEWALK ACCESS TO EXTERNAL BUILDING DOORS AND GATES SHALL BE ADA COMPLIANT. CONTRACTOR SHALL NOTIFY ENGINEER IMMEDIATELY IF ADA CRITERIA CANNOT BE MET IN ANY LOCATION PRIOR TO PAVING. NO CONTRACTOR CHANGE ORDERS WILL BE ACCEPTED FOR A.D.A COMPLIANCE ISSUES.

11. MAXIMUM JOINT SPACING IS TWICE THE DEPTH OF THE CONCRETE PAVEMENT IN FEET.

GRADING AND DRAINAGE NOTES

1. GENERAL CONTRACTOR AND ALL SUBCONTRACTORS SHALL VERIFY THE SUITABILITY OF ALL EXISTING AND PROPOSED SITE CONDITIONS INCLUDING GRADES AND DIMENSIONS BEFORE START OF CONSTRUCTION. THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY OF ANY DISCREPANCIES.

2. THE CONTRACTOR SHALL GRADE THE SITE TO THE ELEVATIONS INDICATED AND SHALL ADJUST BMP'S AS NECESSARY AND REGRADE WASHOUTS WHERE THEY OCCUR AFTER EVERY RAINFALL UNTIL A GRASS STAND IS WELL ESTABLISHED OR ADEQUATE STABILIZATION OCCURS.

3. CONTRACTOR SHALL ENSURE THERE IS POSITIVE DRAINAGE FROM THE PROPOSED BUILDINGS SO THAT SURFACE RUNOFF WILL DRAIN BY GRAVITY TO NEW OR EXISTING DRAINAGE OUTLETS. CONTRACTOR SHALL ENSURE NO PONDING OCCURS IN PAVED AREAS AND SHALL NOTIFY ENGINEER IF ANY GRADING DISCREPANCIES ARE FOUND IN THE EXISTING AND PROPOSED GRADES PRIOR TO PLACEMENT OF PAVEMENT OR UTILITIES.

4. CONTRACTOR SHALL PROTECT ALL MANHOLE COVERS, VALVE COVERS, VAULT LIDS, FIRE HYDRANTS, POWER POLES, GUY WIRES, AND TELEPHONE BOXES THAT ARE TO REMAIN IN PLACE AND UNDISTURBED DURING CONSTRUCTION. EXISTING CASTINGS AND STRUCTURES TO REMAIN SHALL BE ADJUSTED TO MATCH THE PROPOSED FINISHED GRADES.

5. BACKFILL FOR UTILITY LINES SHALL BE PLACED PER DETAILS, STANDARDS, AND SPECIFICATIONS SO THAT THE UTILITY WILL BE STABLE. WHERE UTILITY LINES CROSS THE PARKING LOT, THE TOP 6 INCHES SHALL BE COMPACTED SIMILARLY TO THE REMAINDER OF THE LOT. UTILITY DITCHES SHALL BE VISUALLY INSPECTED DURING THE EXCAVATION PROCESS TO ENSURE THAT UNDESIRABLE FILL IS NOT USED.

6. CONTRACTOR IS RESPONSIBLE FOR THE REMOVAL AND REPLACEMENT OF 4" OF TOPSOIL AT COMPLETION OF WORK. ALL UNPAVED AREAS IN EXISTING RIGHTS-OF-WAY DISTURBED BY CONSTRUCTION SHALL BE REGRADED AND SODDED.

7. AFTER PLACEMENT OF SUBGRADE AND PRIOR TO PLACEMENT OF PAVEMENT, CONTRACTOR SHALL TEST AND OBSERVE PAVEMENT AREAS FOR EVIDENCE OF PONDING. ALL AREAS SHALL ADEQUATELY DRAIN TOWARDS THE INTENDED STRUCTURE TO CONVEY STORM RUNOFF. CONTRACTOR SHALL IMMEDIATELY NOTIFY OWNER AND ENGINEER IF ANY DISCREPANCIES ARE DISCOVERED.

8. WHERE EXISTING PAVEMENT IS INDICATED TO BE REMOVED AND REPLACED, THE CONTRACTOR SHALL SAW CUT FULL DEPTH FOR A SMOOTH AND STRAIGHT JOINT AND REPLACE THE PAVEMENT WITH THE SAME TYPE AND DEPTH OF MATERIAL AS EXISTING OR AS INDICATED.

9. THE CONTRACTOR SHALL INSTALL PROTECTION OVER ALL DRAINAGE STRUCTURES FOR THE DURATION OF CONSTRUCTION AND UNTIL ACCEPTANCE OF THE PROJECT BY THE OWNER. ALL DRAINAGE STRUCTURES SHALL BE CLEANED OF DEBRIS AS REQUIRED DURING AND AT THE END OF CONSTRUCTION TO PROVIDE POSITIVE DRAINAGE FLOWS.

10. IF DEWATERING IS REQUIRED, THE CONTRACTOR SHALL OBTAIN ANY APPLICABLE REQUIRED PERMITS. THE CONTRACTOR IS TO COORDINATE WITH THE OWNER AND THE DESIGN ENGINEER PRIOR TO ANY EXCAVATION.

11. FIELD DENSITY TESTS SHALL BE TAKEN AT INTERVALS IN ACCORDANCE WITH THE LOCAL JURISDICTIONAL AGENCY OR TO STATE DOT STANDARDS. IN THE EVENT THAT THE CONTRACT DOCUMENTS AND THE JURISDICTIONAL AGENCY REQUIREMENTS ARE NOT IN AGREEMENT, THE MOST STRINGENT SHALL GOVERN.

12. ALL SLOPES AND AREAS DISTURBED BY CONSTRUCTION SHALL BE GRADED AS PER PLANS. THE AREAS SHALL THEN BE SODDED OR SEEDED AS SPECIFIED IN THE PLANS, FERTILIZED, MULCHED, WATERED AND MAINTAINED UNTIL GROWTH IS ESTABLISHED TO MINIMUM COVERAGE OF 70% IN ALL AREAS. ANY AREAS DISTURBED FOR ANY REASON PRIOR TO FINAL ACCEPTANCE OF THE JOB SHALL BE CORRECTED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER. ALL EARTHEN AREAS WILL BE SODDED OR SEEDED AND MULCHED AS SHOWN ON THE LANDSCAPING PLAN.

13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONTROL OF DUST AND DIRT RISING AND SCATTERING IN THE AIR DURING CONSTRUCTION AND SHALL PROVIDE WATER SPRINKLING OR OTHER SUITABLE METHODS OF CONTROL. THE CONTRACTOR SHALL COMPLY WITH ALL GOVERNING REGULATIONS PERTAINING TO ENVIRONMENTAL PROTECTION.

14. SOD, WHERE CALLED FOR, MUST BE INSTALLED AND MAINTAINED ON EXPOSED SLOPES WITHIN 48 HOURS OF COMPLETING FINAL GRADING, AND AT ANY OTHER TIME AS NECESSARY, TO PREVENT EROSION, SEDIMENTATION OR TURBID DISCHARGES.

15. THE CONTRACTOR SHALL ENSURE THAT LANDSCAPE ISLAND PLANTING AREAS AND OTHER PLANTING AREAS ARE NOT COMPACTED AND DO NOT CONTAIN ROAD BASE MATERIALS. THE CONTRACTOR SHALL ALSO EXCAVATE AND REMOVE ALL UNDESIRABLE MATERIAL FROM ALL AREAS ON THE SITE TO BE PLANTED AND PROPERLY DISPOSED OF IN A LEGAL MANNER.

16. THE CONTRACTOR SHALL INSTALL ALL UNDERGROUND STORM WATER PIPING PER MANUFACTURER'S RECOMMENDATIONS AND STATE DOT SPECIFICATIONS.

17. PAVEMENTS SHALL BE INSTALLED IN ACCORDANCE WITH THE RECOMMENDATION OF THE SITE SPECIFIC GEOTECHNICAL EVALUATION REPORT AND CITY & STATE DOT SPECIFICATIONS.

18. SPOT ELEVATIONS REPRESENT THE FINISHED SURFACE GRADE OR FLOWLINE OF CURB UNLESS OTHERWISE NOTED.

19. LIMITS OF CONSTRUCTION ARE TO THE PROPERTY LINE UNLESS OTHERWISE SPECIFIED ON THE PLAN.

20. IMMEDIATELY REPORT TO THE OWNER ANY DISCREPANCIES FOUND BETWEEN ACTUAL FIELD CONDITIONS AND CONSTRUCTION DOCUMENTS.

21. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING AND PROTECTING EXISTING UTILITIES, AND SHALL REPAIR ALL DAMAGE TO EXISTING UTILITIES THAT OCCUR DURING CONSTRUCTION WITHOUT COMPENSATION.

22. BLEND NEW EARTHWORK SMOOTHLY TO TRANSITION BACK TO EXISTING GRADE.

23. ALL PROPOSED GRADES ONSITE SHALL BE 3:1 OR FLATTER UNLESS OTHERWISE INDICATED ON THE PLANS. ANY SLOPES STEEPER THAN 4:1 REQUIRE EROSION AND SEDIMENT CONTROL BLANKET.

24. ADHERE TO ALL TERMS AND CONDITIONS AS NECESSARY IN THE GENERAL N.P.D.E.S. PERMIT AND STORMWATER POLLUTION PREVENTION PLAN (SWPPP) FOR STORMWATER DISCHARGE ASSOCIATED WITH CONSTRUCTION ACTIVITIES.

25. ADJUST AND/OR CUT EXISTING PAVEMENT AS NECESSARY TO ASSURE A SMOOTH FIT AND CONTINUOUS GRADE.

WATER STORM SEWER & SANITARY SEWER NOTES

1. THE CONTRACTOR SHALL CONSTRUCT GRAVITY SEWER LATERALS, MANHOLES, GRAVITY SEWER LINES, AND DOMESTIC WATER AND FIRE PROTECTION SYSTEM AS SHOWN ON THESE PLANS. THE CONTRACTOR SHALL FURNISH ALL NECESSARY MATERIALS, EQUIPMENT, MACHINERY, TOOLS, MEANS OF TRANSPORTATION AND LABOR NECESSARY TO COMPLETE THE WORK IN FULL AND COMPLETE ACCORDANCE WITH THE SHOWN DESCRIBED AND REASONABLY INTENDED REQUIREMENTS OF THE CONTRACT DOCUMENTS AND JURISDICTIONAL AGENCY REQUIREMENTS. IN THE EVENT THAT THE CONTRACT DOCUMENTS AND THE JURISDICTIONAL AGENCY REQUIREMENTS ARE NOT IN AGREEMENT, THE MOST STRINGENT SHALL GOVERN.

2. ALL EXISTING UNDERGROUND UTILITY LOCATIONS SHOWN ARE APPROXIMATE. THE CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS FOR UTILITY LOCATION AND COORDINATION IN ACCORDANCE WITH THE NOTES CONTAINED IN THE GENERAL CONSTRUCTION SECTION OF THIS SHEET.

3. THE CONTRACTOR SHALL RESTORE ALL DISTURBED VEGETATION IN KIND, UNLESS SHOWN OTHERWISE.

4. DEFLECTION OF PIPE JOINTS AND CURVATURE OF PIPE SHALL NOT EXCEED THE MANUFACTURER'S SPECIFICATIONS. SECURELY CLOSE ALL OPEN ENDS OF PIPE AND FITTINGS WITH A WATERTIGHT PLUG WHEN WORK IS NOT IN PROGRESS. THE INTERIOR OF ALL PIPES SHALL BE CLEAN AND JOINT SURFACES WIPED CLEAN AND DRY AFTER THE PIPE HAS BEEN LOWERED INTO THE TRENCH. VALVES SHALL BE PLUMB AND LOCATED ACCORDING TO THE PLANS.

5. ALL PIPE AND FITTINGS SHALL BE CAREFULLY STORED FOLLOWING MANUFACTURER'S RECOMMENDATIONS. CARE SHALL BE TAKEN TO AVOID DAMAGE TO THE COATING OR LINING IN ANY D.I. PIPE FITTINGS. ANY PIPE OR FITTING WHICH IS DAMAGED OR WHICH HAS FLAWS OR IMPERFECTIONS WHICH, IN THE OPINION OF THE ENGINEER OR OWNER, RENDERS IT UNFIT FOR USE, SHALL NOT BE USED. ANY PIPE NOT SATISFACTORY FOR USE SHALL BE CLEARLY MARKED AND IMMEDIATELY REMOVED FROM THE JOB SITE, AND SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.

6. WATER FOR FIRE FIGHTING SHALL BE MADE AVAILABLE FOR USE BY THE CONTRACTOR PRIOR TO COMBUSTIBLES BEING BROUGHT ON SITE.

7. ALL UTILITY AND STORM DRAIN TRENCHES LOCATED UNDER AREAS TO RECEIVE PAVING SHALL BE COMPLETELY BACK FILLED IN ACCORDANCE WITH THE GOVERNING JURISDICTIONAL AGENCY'S SPECIFICATIONS. IN THE EVENT THAT THE CONTRACT DOCUMENTS AND THE JURISDICTIONAL AGENCY REQUIREMENTS ARE NOT IN AGREEMENT, THE MOST STRINGENT SHALL GOVERN.

8. UNDERGROUND UTILITY LINES SHALL BE SURVEYED BY A STATE LICENSED PROFESSIONAL LAND SURVEYOR PRIOR TO BACK FILLING.

9. CONTRACTOR SHALL PERFORM, AT THEIR OWN EXPENSE, ANY AND ALL TESTS REQUIRED BY THE SPECIFICATIONS AND/OR ANY AGENCY HAVING JURISDICTION. THESE TESTS MAY INCLUDE, BUT MAY NOT BE LIMITED TO, INFILTRATION AND EXFILTRATION, TELEVISION INSPECTION AND A MANDREL TEST ON GRAVITY SEWER. A COPY OF THE TEST RESULTS SHALL BE PROVIDED TO THE UTILITY PROVIDER, OWNER AND JURISDICTIONAL AGENCY AS REQUIRED.

10. BETWEEN WATER AND SEWER MANHOLES AND PIPES, CONTRACTOR SHALL PROVIDE FOR A MINIMUM HORIZONTAL CLEARANCE OF 10-FEET AND A MINIMUM VERTICAL SEPARATION OF 18-INCHES.

11. IF ANY EXISTING STRUCTURES TO REMAIN ARE DAMAGED DURING CONSTRUCTION IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO REPAIR AND/OR REPLACE THE EXISTING STRUCTURE AS NECESSARY TO RETURN IT TO EXISTING CONDITIONS OR BETTER.

12. ALL STORM PIPE ENTERING STRUCTURES SHALL BE GASKETED AND/OR GROUTED TO ASSURE CONNECTION AT STRUCTURE IS WATERTIGHT UNLESS OTHERWISE STATED BY CITY AND STATE DESIGN STANDARDS AND SPECIFICATIONS.

13. UNLESS OTHERWISE STATED IN CITY AND STATE DESIGN STANDARDS AND SPECIFICATIONS, ALL STORM SEWER MANHOLES IN PAVED AREAS SHALL BE FLUSH WITH PAVEMENT, AND SHALL HAVE TRAFFIC BEARING RING & COVERS. MANHOLES IN UNPAVED AREAS SHALL BE 6" ABOVE FINISH GRADE. LIDS SHALL BE LABELED "STORM SEWER". EXISTING CASTINGS AND STRUCTURES WITHIN PROJECT LIMITS SHALL BE ADJUSTED TO MEET THESE CONDITIONS AND THE PROPOSED FINISHED GRADE.

14. TOPOGRAPHIC INFORMATION IS TAKEN FROM A TOPOGRAPHIC SURVEY BY LAND SURVEYORS. IF THE CONTRACTOR DOES NOT ACCEPT EXISTING TOPOGRAPHY AS SHOWN ON THE PLANS, WITHOUT EXCEPTION, THEN THE CONTRACTOR SHALL SUPPLY, AT THEIR EXPENSE, A TOPOGRAPHIC SURVEY BY A REGISTERED LAND SURVEYOR TO THE OWNER FOR REVIEW.

15. CONSTRUCTION SHALL COMPLY WITH ALL APPLICABLE GOVERNING CODES AND BE CONSTRUCTED TO SAME.

16. ALL STORM STRUCTURES SHALL HAVE A SMOOTH UNIFORM POURED MORTAR FROM INVERT IN TO INVERT OUT.

17. ROOF DRAINS SHALL BE CONNECTED TO STORM SEWER BY PREFABRICATED WYES OR AT STORM STRUCTURES. ROOF DRAINS AND TRUCK WELL DRAIN SHALL RUN AT A MINIMUM 2.0% SLOPE, UNLESS NOTED OTHERWISE, AND TIE IN AT THE CENTERLINE OF THE STORM MAIN.

18. PROVIDE INSULATION OF UNDERGROUND ROOF DRAINS AND SANITARY SEWER SERVICES IF ADEQUATE FROST DEPTH CANNOT BE PROVIDED.

19. THE CONTRACTOR SHALL PROTECT EXISTING UNDERGROUND UTILITIES AND APPURTENANCES THAT ARE TO REMAIN FROM DAMAGE DURING CONSTRUCTION OPERATIONS.

20. THE LOCATION OF EXISTING UTILITIES, STORM DRAINAGE STRUCTURES AND OTHER ABOVE AND BELOW-GRADE IMPROVEMENTS ARE APPROXIMATE AS SHOWN. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE EXACT LOCATION, SIZE AND INVERT ELEVATIONS OF EACH PRIOR TO THE START OF CONSTRUCTION.

21. A MINIMUM SEPARATION OF 5-FEET IS REQUIRED BETWEEN UNDERGROUND UTILITIES AND TREES UNLESS A ROOT BARRIER IS UTILIZED.

22. GAS, PHONE AND ELECTRIC SERVICES SHOWN FOR INFORMATIONAL PURPOSES ONLY. DRY UTILITY COMPANIES MAY ALTER THE DESIGN LAYOUT DURING THEIR REVIEW. CONTRACTOR TO COORDINATE FINAL DESIGN AND INSTALLATION WITH UTILITY COMPANIES.

23. COORDINATE UTILITY INSTALLATION WITH IRRIGATION DESIGN AND INSTALLATION.

24. ALL DIMENSIONS ARE TO FLOW LINE OF CURB UNLESS OTHERWISE NOTED. PERIMETER WALL DIMENSIONS ARE TO INSIDE WALL FACE. REFERENCE ARCHITECTURAL PLANS FOR EXACT WALL WIDTH AND SPECIFICATIONS.

25. REFERENCE ARCHITECTURAL PLANS (BY OTHERS) FOR EXACT BUILDING DIMENSIONS, MATERIALS SPECIFICATIONS.

26. REFERENCE M.E.P. PLANS (BY OTHERS) FOR MECHANICAL EQUIPMENT DIMENSIONS AND SPECIFICATIONS.

27. CONTRACTOR SHALL REFERENCE STRUCTURAL PLANS (BY OTHERS) FOR FOOTING AND FOUNDATION PAD PREPARATION SPECIFICATIONS.

28. CONTRACTOR SHALL REFERENCE M.E.P PLANS (BY OTHERS) FOR ROUTING OF PROPOSED ELECTRICAL & COMMUNICATIONS SERVICES AND SITE LIGHTING LAYOUT.

PROJECT

Park Grove Library

CLIENT

Washington County

ARCHITECT

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612.874.4100

STRUCTURAL ENGINEER

Meyer Borgman Johnson
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Minneapolis, MN 55402
612.338.0713

MECHANICAL, ELECTRICAL, PLUMBING ENGINEERS

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7705 Bush Lake Rd
Edina, MN 55439
952.930.0050

CIVIL ENGINEER

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St. Paul, MN 55114
651.645.4197

LANDSCAPE ARCHITECT

Aune Fernandez Landscape Architects
755 Prior Ave N #104
St. Paul, MN 55104
661.341.3611

PRELIMINARY

NOT FOR CONSTRUCTION

ISSUED FOR	DATE
DESIGN DEVELOPMENT	07/25/2025
PLANNING SUBMISSION	07/30/2025

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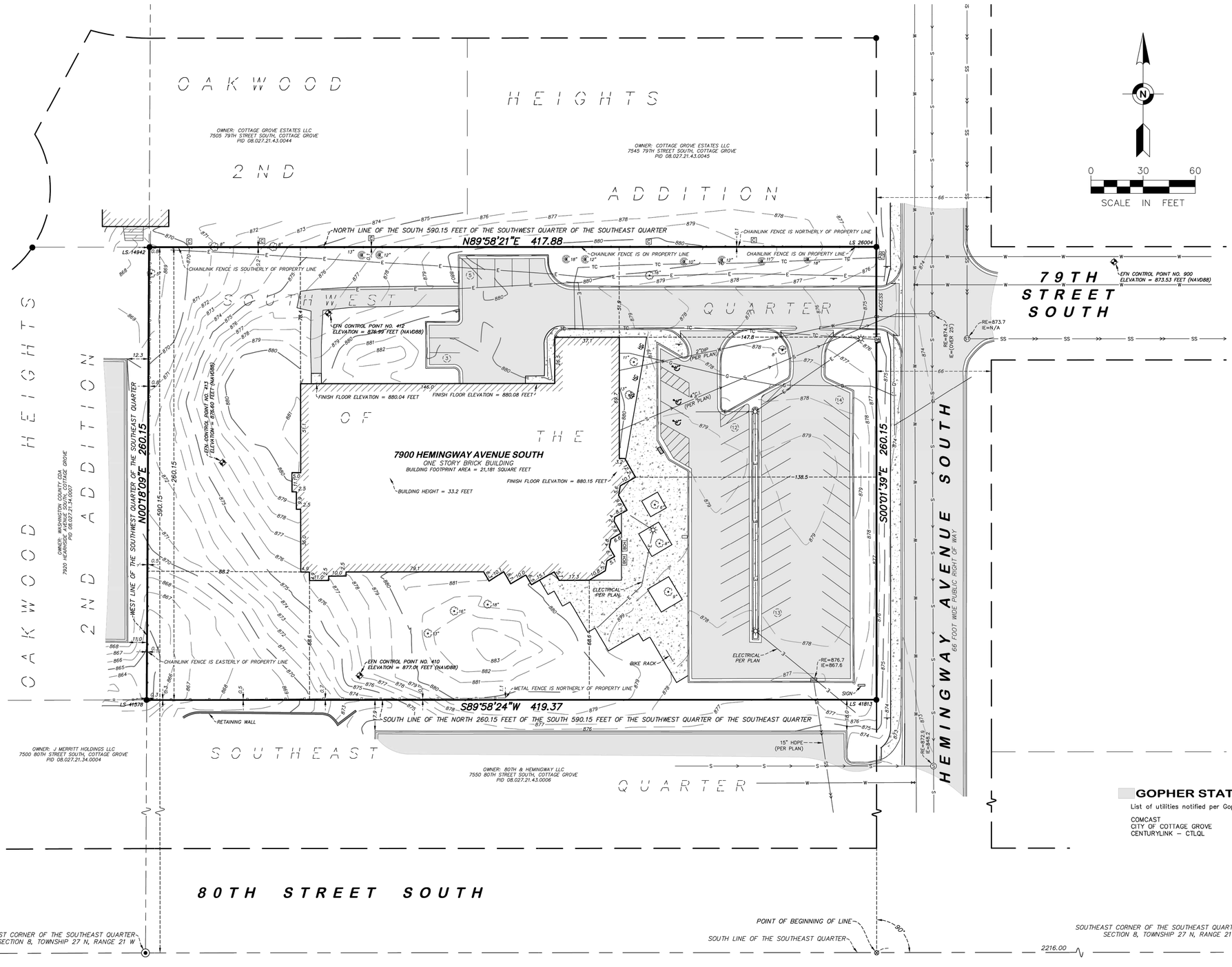


CERTIFICATE OF SURVEY FOR:
Alliance

LEGAL DESCRIPTION:

Per Document No. 439157

That part of the north 260.15 feet of the south 590.15 feet of the Southwest Quarter of the Southeast Quarter of Section 8, Township 27 North, Range 21 West, City of Cottage Grove, Washington County, Minnesota, which lies westerly of the following described line:

Beginning at a point on the south line of said Southeast Quarter distance 2216.00 feet west from the southeast corner of said Southeast Quarter; thence northerly perpendicular to said south line to the north line of said Southwest Quarter of the Southeast Quarter and there terminating.

GENERAL SURVEY NOTES:

1. The orientation of this bearing system is based on the Washington County coordinate grid (NAD 83-2011 Adj.).
2. Title work was not furnished to Egan, Field & Nowak, Inc. for the preparation of this survey to verify ownership, the legal description, or the existence of any easements or encumbrances.
3. The property described hereon lies within Flood Zone X (Areas determined to be outside the 0.2% annual chance floodplain) per Federal Insurance Rate Map No. 27163 C 0405 E, dated February 3, 2010.
4. The total area of the property described hereon is 108,904 square feet or 2.50009 acres.
5. The contours depicted hereon are per elevation data collected while conducting the fieldwork. The contour interval is 1 foot.

   BENCHMARK: Top of Minnesota Department of Transportation Geodetic Monument "8205 AJ" Elevation = 812.28 feet. (NAVD88)

   SITE BENCHMARKS: Top of EFN Control Point No. 900 Elevation = 873.53 feet. (NAVD88)

   Top of EFN Control Point No. 412 Elevation = 876.99 feet. (NAVD88)

   Top of EFN Control Point No. 413 Elevation = 876.60 feet. (NAVD88)

   Top of EFN Control Point No. 410 Elevation = 877.01 feet. (NAVD88)
6. Existing utilities, services and underground structures shown hereon were located either physically, from existing records made available to us, by resident testimony, or by locations provided by Gopher State One Call, per Ticket No. 250920745. However, lacking excavation, the exact location of underground features cannot be accurately, completely and reliably depicted. Where additional or more detailed information is required, the client is advised that excavation may be necessary. Other utilities and services may be present and verification and location of all utilities and services should be obtained from the owners of the respective utilities prior to any design, planning or excavation.
7. The surveyed property has direct access to Hemingway Avenue South, a public right of way.

LEGEND:

FOUND CAST IRON MONUMENT	CHAIN LINK FENCE
FOUND IRON MONUMENT	METAL FENCE
FOUND MASONRY NAIL	SANITARY SEWER
BENCHMARK	STORM SEWER
SANITARY MANHOLE	WATERMAIN
STORM MANHOLE	UNDERGROUND ELECTRIC
CATCH BASIN	UNDERGROUND TELECOMMUNICATION
GATE VALVE	UNDERGROUND GAS
LIGHT	RETAINING WALL
HANDHOLE	EXISTING CONTOUR LINE
COMMUNICATION BOX	TREE
SIGN	BITUMINOUS SURFACE
BENCH	CONCRETE SURFACE
MAILBOX	TRUNCATED DOME RAMP
HANDICAPPED PARKING SPACE	
HANDICAPPED PARKING SIGN	
PARKING COUNT	

CERTIFICATION:

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.

Date of survey: April 21, 2025.
Date of signature: April 24, 2025.

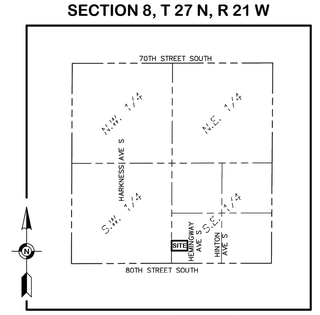
Christopher A. Terwedo
Minnesota License No. 53536
cterwedo@efnsurvey.com

GOPHER STATE ONE CALL NOTE:

List of utilities notified per Gopher State One Call Ticket No. 250920745.

COMCAST
CITY OF COTTAGE GROVE
CENTURYLINK – CTLQL
MCI
XCEL ENERGY
ZAYO BANDWIDTH

SECTION 8, T 27 N, R 21 W



VICINITY MAP
NO SCALE

FIELD BOOK	PAGE

DRAWING NAME: 42596.dwg
JOB NO. 42596
FILE NO.

FIELDWORK CHIEF: TAV
DRAWN BY: PMD
CHECKED BY: CAT

REVISIONS

NO.	DATE	DESCRIPTION
1	2025/06/24	UPDATED PER CLIENT COMMENTS

CERTIFICATE OF SURVEY

SURVEY FOR: Alliance

PROPERTY ADDRESS:
7900 Hemingway Avenue South
Cottage Grove, Minnesota 55016
Washington County Tax PID 08.027.21.43.0002

Egan, Field & Nowak, Inc.
land surveyors since 1872
475 Old Highway 8 NW, Suite 200
New Brighton, Minnesota 55112
PHONE: (612) 466-3300
WWW.EFNSURVEY.COM
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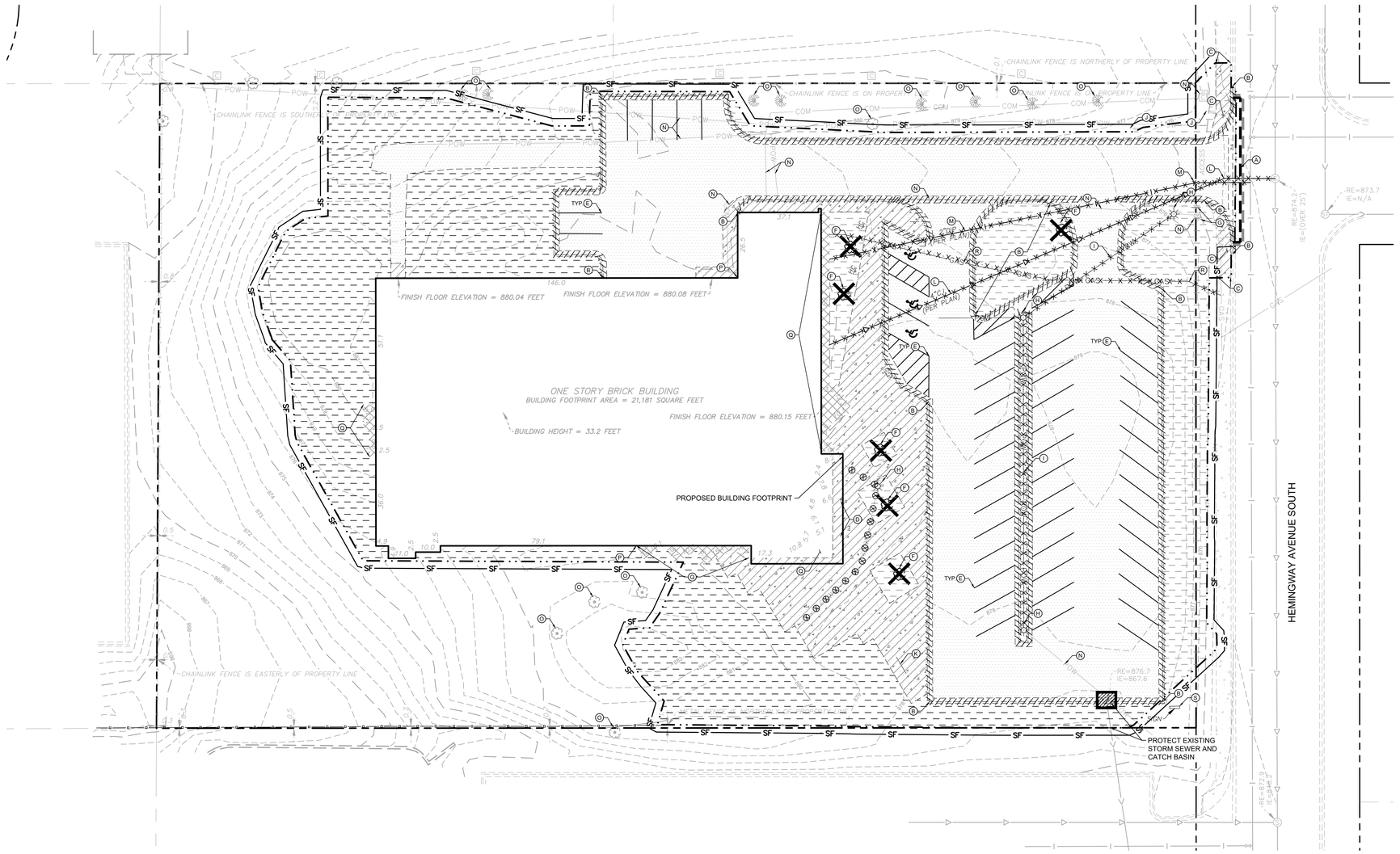

LEGEND

- PROPERTY LINE
- REMOVE BITUMINOUS SURFACE
- REMOVE CONCRETE SURFACE
- REMOVE BUILDING
- CLEARING & GRUBBING
- FULL DEPTH SAWCUT
- REMOVE TREE
- REMOVE CONCRETE CURB & GUTTER
- REMOVE UTILITY LINES
- FILL & ABANDON UTILITY LINES
- LIMITS OF CONSTRUCTION
- EXISTING OVERHEAD POWER LINE
- EXISTING SANITARY SEWER
- EXISTING STORM SEWER
- EXISTING WATERMAIN
- EXISTING GAS MAIN
- EXISTING CONTOUR
- EXISTING CURB & GUTTER
- EXISTING SIGN
- EXISTING STORM MANHOLE
- EXISTING STORM CATCHBASIN
- EXISTING HYDRANT
- EXISTING LIGHT POLE
- EXISTING TREE
- INLET PROTECTION
- SILT FENCE
- LIMITS OF DISTURBANCE
- BIOROLL

KEYNOTE LEGEND

A	SAWCUT EXISTING PAVEMENT
B	REMOVE EXISTING CURB
C	REMOVE EXISTING SIDEWALK
D	REMOVE EXISTING FURNITURE
E	REMOVE PAVEMENT MARKING
F	REMOVE EXISTING TREE
G	REMOVE AND SALVAGE EXISTING SIGN
H	REMOVE LIGHT POLE
I	REMOVE EXISTING ELECTRICAL LINE / EQUIPMENT
J	PROTECT EXISTING SIGN
K	REMOVE EXISTING BIKE RACK
L	REMOVE EXISTING SEWER LINE / STRUCTURE
M	REMOVE EXISTING WATER LINE / HYDRANT / VALVE
N	PROTECT EXISTING POWER / COMMUNICATIONS
O	PROTECT EXISTING TREE
P	PROTECT EXISTING BUILDING / STRUCTURE
Q	REMOVE EXISTING BUILDING / STRUCTURE
R	REMOVE EXISTING NATURAL GAS LINE
S	REMOVE EXISTING SIGN

DEMOLITION PLAN NOTES

1. THE CONTRACTOR IS RESPONSIBLE FOR THE DEMOLITION, REMOVAL, AND DISPOSAL (IN A LOCATION APPROVED BY ALL GOVERNING AUTHORITIES) OF ALL STRUCTURES, PADS, WALLS, FLUMES, FOUNDATIONS, PARKING, DRIVES, DRAINAGE STRUCTURES, UTILITIES, ETC. SUCH THAT THE IMPROVEMENTS ON THE PLANS CAN BE CONSTRUCTED. FACILITIES TO BE REMOVED SHALL BE UNDERCUT TO SUITABLE MATERIAL AND BROUGHT TO GRADE WITH SUITABLE COMPACTED FILL MATERIAL PER THE PROJECT DOCUMENTS.
2. THE CONTRACTOR IS RESPONSIBLE FOR REMOVING ALL DEBRIS FROM THE SITE AND DISPOSING OF THE DEBRIS IN A LAWFUL MANNER AND IN ACCORDANCE WITH LOCAL AND STATE REGULATIONS. THE CONTRACTOR SHALL OBTAIN ANY REQUIRED PERMITS FOR DEMOLITION AND DISPOSAL FROM THE APPROPRIATE LOCAL AND STATE AGENCIES. CONTRACTOR SHALL PROVIDE COPIES OF THE PERMIT AND RECEIPTS OF DISPOSAL OF MATERIALS TO THE OWNER AND OWNERS REPRESENTATIVE, INCLUDING THE TYPE OF DEBRIS AND LOCATION WHERE IT WAS DISPOSED.
3. THE CONTRACTOR SHALL MAINTAIN UTILITY SERVICES TO ADJACENT PROPERTIES AT ALL TIMES. UTILITY SERVICES SHALL NOT BE INTERRUPTED WITHOUT APPROVAL FROM THE CONSTRUCTION MANAGER AND COORDINATION WITH THE ADJACENT PROPERTIES AND/OR THE CITY.
4. THE CONTRACTOR SHALL COORDINATE WITH RESPECTIVE UTILITY COMPANIES PRIOR TO THE REMOVAL AND/OR RELOCATION OF UTILITIES. THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANY CONCERNING PORTIONS OF WORK WHICH MAY BE PERFORMED BY THE UTILITY COMPANY'S FORCES AND ANY FEES WHICH ARE TO BE PAID TO THE UTILITY COMPANY FOR THEIR SERVICES. THE CONTRACTOR IS RESPONSIBLE FOR PAYING ALL FEES AND CHARGES.
5. THE LOCATIONS OF EXISTING UTILITIES SHOWN ON THE PLAN HAVE BEEN DETERMINED FROM THE BEST INFORMATION AVAILABLE AND ARE GIVEN FOR THE CONVENIENCE OF THE CONTRACTOR. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THEIR ACCURACY. PRIOR TO THE START OF ANY DEMOLITION ACTIVITY, THE CONTRACTOR SHALL NOTIFY THE AFFECTED UTILITY COMPANIES TO PROVIDE LOCATIONS OF EXISTING UTILITIES WITHIN PROPOSED WORK AREA.
6. EXISTING SEWERS, PIPING AND UTILITIES SHOWN ARE BASED ON AVAILABLE RECORD PLAN DATA AND/OR FIELD UTILITY MARKINGS AND ARE NOT TO BE INTERPRETED AS THE EXACT LOCATION. ADDITIONAL UNMARKED OBSTACLES MAY EXIST ON THE SITE. VERIFY EXISTING CONDITIONS AND PROCEED WITH CAUTION AROUND ANY ANTICIPATED UNDERGROUND FEATURES. GIVE NOTICE TO AFFECTED UTILITY COMPANIES REGARDING REMOVAL OF SERVICE LINES AND CAP ANY ABANDONED LINES BEFORE PRECEDING WITH THE PROPOSED WORK.
7. ELECTRICAL, TELEPHONE, CABLE, WATER, FIBER OPTIC, AND/OR GAS LINES NEEDING TO BE REMOVED OR RELOCATED SHALL BE COORDINATED WITH THE AFFECTED UTILITY COMPANY. ADEQUATE TIME SHALL BE PROVIDED FOR RELOCATION AND CLOSE COORDINATION WITH THE UTILITY COMPANY IS NECESSARY TO PROVIDE A SMOOTH TRANSITION IN UTILITY SERVICE. CONTRACTOR SHALL PAY CLOSE ATTENTION TO EXISTING UTILITIES WITHIN ANY ROAD RIGHT-OF-WAY DURING CONSTRUCTION.
8. CONTRACTOR MUST PROTECT THE PUBLIC AT ALL TIMES WITH FENCING, BARRICADES, ENCLOSURES, ETC. (AND OTHER APPROPRIATE BEST MANAGEMENT PRACTICES) AS APPROVED BY THE CONSTRUCTION MANAGER. MAINTENANCE OF TRAFFIC CONTROL SHALL BE COORDINATED IN ACCORDANCE WITH THE CITY, COUNTY, AND STATE DOT AS NECESSARY.
9. CONTRACTOR SHALL MAINTAIN ACCESS TO ADJACENT PROPERTIES DURING CONSTRUCTION, AND SHALL NOTIFY ADJACENT PROPERTY OWNERS IF ACCESS WILL BE INTERRUPTED OR ALTERED AT ANY TIME DURING CONSTRUCTION.
10. PRIOR TO THE START OF DEMOLITION, INSTALL EROSION CONTROL BMP'S IN ACCORDANCE WITH THE EROSION & SEDIMENT CONTROL PLANS / SWPPP.
11. CONTRACTOR MAY LIMIT SAW-CUT AND PAVEMENT REMOVAL TO ONLY THOSE AREAS WHERE IT IS REQUIRED AS SHOWN ON THESE CONSTRUCTION PLANS BUT IF ANY DAMAGE IS INCURRED ON ANY OF THE SURROUNDING PAVEMENT OR CURB, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ITS REMOVAL AND REPAIR.
12. THE CONTRACTOR SHALL COORDINATE WATER MAIN WORK WITH THE CITY WATER AND FIRE DEPARTMENTS TO ENSURE ADEQUATE FIRE PROTECTION IS CONSTANTLY AVAILABLE TO THE SITE AND SURROUNDING PROPERTIES THROUGH ALL PHASES OF CONSTRUCTION. CONTRACTOR WILL BE RESPONSIBLE FOR ARRANGING/PROVIDING ANY REQUIRED WATER MAIN SHUT OFFS WITH THE CITY. ANY COSTS ASSOCIATED WITH WATER MAIN SHUT OFFS WILL BE THE RESPONSIBILITY OF THE CONTRACTOR AND NO EXTRA COMPENSATION WILL BE PROVIDED.
13. IN THE EVENT A WELL IS FOUND, THE CONTRACTOR SHALL CONTACT THE ENGINEER AND OWNER IMMEDIATELY. ALL WELLS SHALL BE SEALED BY A LICENSED WELL CONTRACTOR IN ACCORDANCE WITH STATE REQUIREMENTS.
14. IN THE EVENT THAT UNKNOWN CONTAINERS OR TANKS ARE ENCOUNTERED, THE CONTRACTOR SHALL CONTACT THE OWNER AND/OR OWNERS REPRESENTATIVE IMMEDIATELY. ALL CONTAINERS SHALL BE DISPOSED OF AT A PERMITTED LANDFILL PER THE PROJECT DOCUMENTS.
15. CONTRACTOR SHALL NOTIFY THE ENGINEER IF ANY EXISTING DRAINTILE IS ENCOUNTERED ON SITE; ACTIVE DRAINTILE SHALL NOT BE REMOVED WITHOUT APPROVAL FROM THE ENGINEER.
16. IF CONTAMINATED MATERIAL IS ENCOUNTERED ON THE PROJECT SITE, THE CONTRACTOR SHALL STOP WORK AND NOTIFY THE OWNER AND ENGINEER IMMEDIATELY.

EROSION CONTROL PLAN NOTES

1. THE STORM WATER POLLUTION PREVENTION PLAN ("SWPPP") IS COMPRISED OF THE EROSION CONTROL PLAN, THE STANDARD DETAILS, THE PLAN NARRATIVE, ATTACHMENTS INCLUDED IN THE SPECIFICATIONS OF THE SWPPP, PLUS THE PERMIT AND ALL SUBSEQUENT REPORTS AND RELATED DOCUMENTS.
2. ALL CONTRACTORS AND SUBCONTRACTORS INVOLVED WITH LAND DISTURBING ACTIVITIES SHALL OBTAIN A COPY OF THE SWPPP AND NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) GENERAL PERMIT, AND BECOME FAMILIAR WITH THEIR CONTENTS.
3. BEST MANAGEMENT PRACTICES (BMP'S) AND CONTROLS SHALL CONFORM TO FEDERAL, STATE AND LOCAL REQUIREMENTS, AS APPLICABLE. THE CONTRACTOR SHALL IMPLEMENT ADDITIONAL CONTROLS AS DIRECTED BY THE PERMITTING AGENCY, ENGINEER OR OWNER.
4. SITE ENTRY AND EXIT LOCATIONS SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT THE TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC ROADWAYS. SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED ONTO A PUBLIC ROADWAY FROM THE CONSTRUCTION SITE MUST BE REMOVED AS SOON AS PRACTICABLE. WHEN WASHING IS REQUIRED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO A PUBLIC ROADWAY, IT SHALL BE DONE IN AN AREA STABILIZED WITH CRUSHED STONE WHICH DRAINS INTO AN APPROVED SEDIMENT BASIN. ANY FINES IMPOSED FOR DISCHARGING SEDIMENT ONTO A PUBLIC RIGHT OF WAY SHALL BE PAID BY THE CONTRACTOR.
5. TEMPORARY SEEDING OR OTHER APPROVED METHODS OF STABILIZATION SHALL BE INITIATED WITHIN 7 DAYS OF THE LAST DISTURBANCE ON ANY AREA OF THE SITE.
6. THE CONTRACTOR SHALL MINIMIZE LAND DISTURBANCE AND CLEARING TO THE MAXIMUM EXTENT PRACTICAL OR AS REQUIRED BY THE GENERAL PERMIT.
7. CONTRACTOR SHALL DENOTE ON THE PLAN THE TEMPORARY PARKING AND STORAGE AREA WHICH SHALL ALSO BE USED AS THE EQUIPMENT MAINTENANCE AND CLEANING AREA, EMPLOYEE PARKING AREA, AND AREA FOR LOCATING PORTABLE FACILITIES, OFFICE TRAILERS, AND TOILET FACILITIES.
8. ALL WASH WATER FROM THE CONSTRUCTION SITE (CONCRETE TRUCKS, VEHICLE CLEANING, EQUIPMENT CLEANING, ETC.) SHALL BE DETAINED AND PROPERLY TREATED BEFORE DISPOSAL.
9. SUFFICIENT OIL AND GREASE ABSORBING MATERIALS AND FLOTATION BOOMS SHALL BE MAINTAINED ON SITE OR READILY AVAILABLE TO CONTAIN AND CLEAN-UP FUEL OR CHEMICAL SPILLS AND LEAKS.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DUST CONTROL ON SITE. THE USE OF MOTOR OILS AND OTHER PETROLEUM BASED OR TOXIC LIQUIDS FOR DUST SUPPRESSION OPERATIONS IS PROHIBITED.
11. RUBBISH, TRASH, GARBAGE, LITTER, OR OTHER SUCH MATERIALS SHALL BE DEPOSITED INTO SEALED CONTAINERS. MATERIALS SHALL BE PREVENTED FROM LEAVING THE PREMISES THROUGH THE ACTION OF WIND OR STORM WATER DISCHARGE INTO DRAINAGE DITCHES OR WATERS OF THE STATE.
12. STAGING AREAS, STOCKPILES, SPOILS, ETC. SHALL BE LOCATED OUTSIDE OF DRAINAGE WAYS SUCH THAT STORM WATER RUNOFF WILL NOT BE ADVERSELY AFFECTED. PROVIDE STABILIZATION MEASURES SUCH AS PERIMETER EROSION CONTROL BMP'S, SEEDING, OR OTHER COVERING AS NECESSARY TO PREVENT EROSION.
13. CONTRACTOR SHALL BE RESPONSIBLE FOR RE-ESTABLISHING ANY EROSION CONTROL BMP DISTURBED DURING CONSTRUCTION OPERATIONS. NOTIFY THE OWNER'S REPRESENTATIVE OF ANY DEFICIENCIES IN THE ESTABLISHED EROSION CONTROL MEASURES THAT MAY LEAD TO UNAUTHORIZED DISCHARGE OF STORM WATER POLLUTANTS. UNAUTHORIZED POLLUTANTS INCLUDE (BUT ARE NOT LIMITED TO) EXCESS CONCRETE DUMPING, CONCRETE RESIDUE, PAINTS, SOLVENTS, GREASES, FUELS, LUBRICANT OILS, PESTICIDES, AND SOLID WASTE MATERIALS.
14. EROSION CONTROL BMP'S SHOWN ON THESE PLANS SHALL BE INSTALLED PRIOR TO THE START OF LAND-DISTURBING ACTIVITIES ON THE PROJECT, AND INITIATED AS SOON AS PRACTICABLE.
15. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR COMPLYING WITH THE REQUIREMENTS OF THE AUTHORITIES HAVING JURISDICTION, AND SHALL MAINTAIN COMPLIANCE WITH APPLICABLE LAWS AND REGULATIONS FOR THE DURATION OF CONSTRUCTION.
16. THE CONTRACTOR SHALL FIELD ADJUST AND/OR PROVIDE ADDITIONAL EROSION CONTROL BMP'S AS NEEDED TO PREVENT EROSION AND OFF-SITE SEDIMENT DISCHARGE FROM THE CONSTRUCTION SITE. LOG AND RECORD ANY ADJUSTMENTS AND DEVIATIONS FROM THE APPROVED EROSION CONTROL PLANS WITHIN THE SWPPP DOCUMENTS STORED IN THE JOB SITE TRAILER.

PHASE 1 SEQUENCE OF CONSTRUCTION

1. INSTALL PERIMETER EROSION CONTROL (I.E. SILT FENCE) AND INLET PROTECTION AT EXISTING STORMWATER INLETS.
2. CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE AND CONCRETE WASHOUT
3. PREPARE TEMPORARY PARKING AND STORAGE AREA.
4. CONSTRUCT AND STABILIZE DIVERSIONS AND TEMPORARY SEDIMENT BASINS.
5. CLEAR AND GRUB THE SITE.
6. BEGIN MASS SITE GRADING AND ROUGH GRADE SITE SUFFICIENTLY TO ESTABLISH PROPOSED DRAINAGE PATTERNS.
7. START CONSTRUCTION OF THE BUILDING PAD AND STRUCTURES.
8. TEMPORARILY SEED, THROUGHOUT CONSTRUCTION, DISTURBED AREAS THAT WILL BE INACTIVE FOR 14 DAYS OR MORE OR AS REQUIRED BY THE NPDES AND/OR CITY GRADING PERMIT(S).

NOTE: THE SEQUENCE OF CONSTRUCTION IS INTENDED TO CONVEY THE GENERAL CONCEPTS OF THE EROSION CONTROL DESIGN AND SHOULD NOT BE RELIED UPON FOR CONSTRUCTION PURPOSES. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DETAILED PHASING AND CONSTRUCTION SEQUENCING NECESSARY TO CONSTRUCT THE PROPOSED IMPROVEMENTS. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING IMMEDIATELY, PRIOR TO AND/OR DURING CONSTRUCTION IF ANY ADDITIONAL INFORMATION ON THE CONSTRUCTION SEQUENCE IS NECESSARY.

PROPERTY SUMMARY

TOTAL PROPERTY AREA	2.50 AC / 108,904 SF
DISTURBED AREA	1.85 AC / 80,589 SF
EXISTING IMPERVIOUS AREA	1.23 AC / 53,570 SF / 49.2%
EXISTING PERVIOUS AREA	1.27 AC / 55,334 SF / 50.8%
PROPOSED IMPERVIOUS AREA	1.20 AC / 52,432 SF / 48%
PROPOSED PERVIOUS AREA	1.30 AC / 56,472 SF / 52%
NET INCREASE IN IMPERVIOUS AREA	0.0 AC / 0 SF

PHASE I BMP QUANTITIES

SILT FENCE	±1,240 LF
INLET PROTECTION	1 EA
BIO ROLL	70 LF

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SITE DEMOLITION AND EROSION CONTROL PH 1 PLAN

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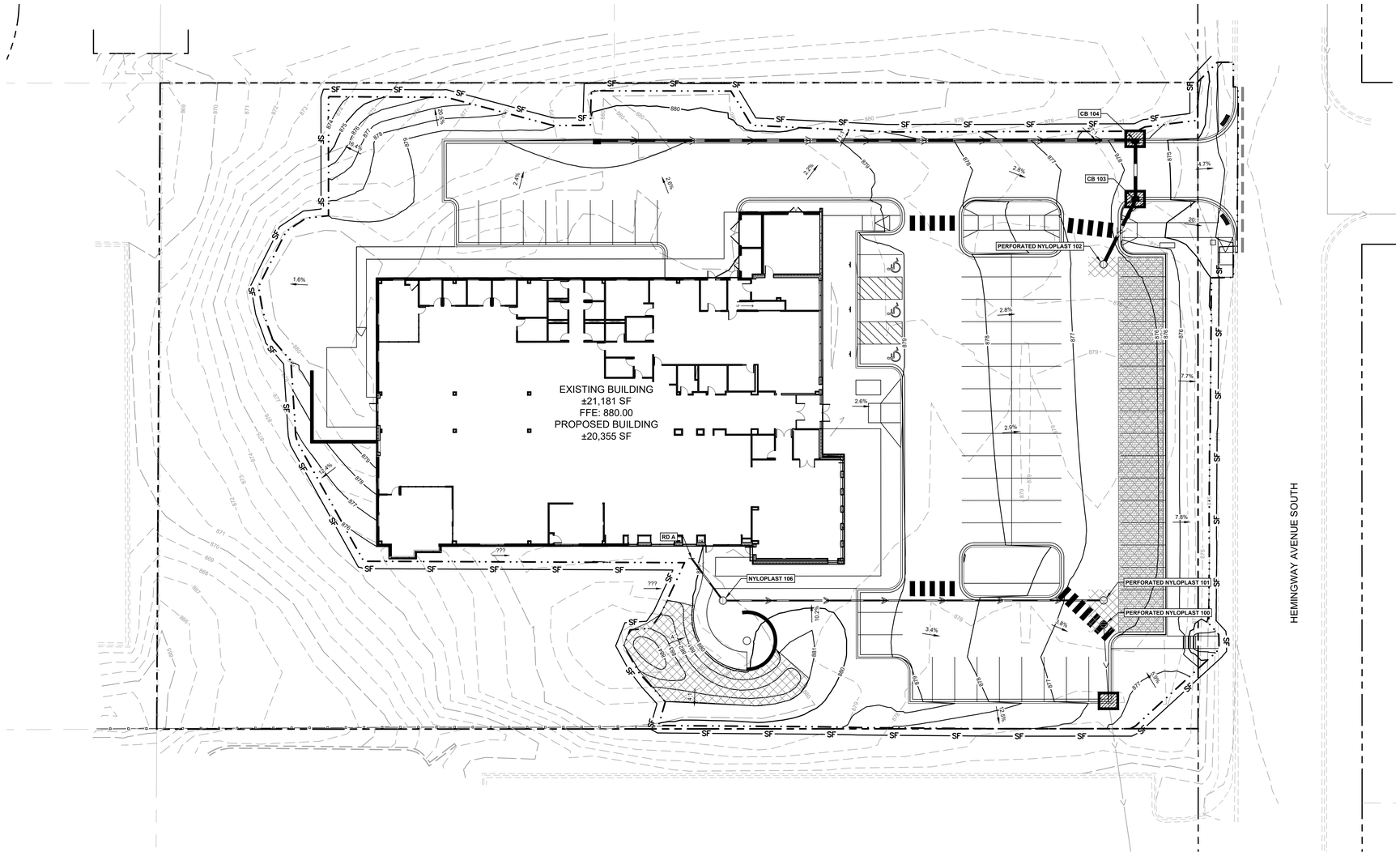

LEGEND

- EROSION CONTROL BLANKET
- INLET PROTECTION
- SF — SILT FENCE
- LIMITS OF DISTURBANCE
- x—x — SAFETY FENCE
- BIOROLL

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NET INCREASE IN IMPERVIOUS AREA	0.0 AC / 0 SF

PHASE I BMP QUANTITIES	
SILT FENCE	0 LF
INLET PROTECTION	2 EA
BIO ROLL	0 LF
EROSION CONTROL BLANKET	1,570 SF

EROSION CONTROL PLAN NOTES

1. THE STORM WATER POLLUTION PREVENTION PLAN ("SWPPP") IS COMPRISED OF THE EROSION CONTROL PLAN, THE STANDARD DETAILS, THE PLAN NARRATIVE, ATTACHMENTS INCLUDED IN THE SPECIFICATIONS OF THE SWPPP, PLUS THE PERMIT AND ALL SUBSEQUENT REPORTS AND RELATED DOCUMENTS.
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16. THE CONTRACTOR SHALL FIELD ADJUST AND/OR PROVIDE ADDITIONAL EROSION CONTROL BMP'S AS NEEDED TO PREVENT EROSION AND OFF-SITE SEDIMENT DISCHARGE FROM THE CONSTRUCTION SITE. LOG AND RECORD ANY ADJUSTMENTS AND DEVIATIONS FROM THE APPROVED EROSION CONTROL PLANS WITHIN THE SWPPP DOCUMENTS STORED IN THE JOB SITE TRAILER.

SWPPP UPDATES & AMENDMENTS

THE CONTRACTOR MUST UPDATE THE SWPPP BY NOTING ON THE SITE MAPS IN THE JOB SITE BINDER TO REFLECT THE PROGRESS OF CONSTRUCTION ACTIVITIES AND GENERAL CHANGES TO THE PROJECT SITE FOR THE DURATION OF LAND DISTURBING ACTIVITIES. AT A MINIMUM, UPDATES SHALL BE MADE DAILY TO TRACK CONSTRUCTION PROGRESS DESCRIBED IN THE SEQUENCE OF CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR NOTING THE LOCATION OF THE JOB SITE TRAILER, TEMPORARY PARKING & LAYDOWN AREAS, PORTA-POTTY, WHEEL WASH, CONCRETE WASHOUT, FUEL & MATERIAL STORAGE, SOLID WASTE CONTAINERS, AND OTHER CONSTRUCTION RELATED FACILITIES THAT MAY IMPACT STORMWATER RUNOFF.

PHASE 2 SEQUENCE OF CONSTRUCTION

1. TEMPORARILY SEED, THROUGHOUT CONSTRUCTION, DENUDED AREAS THAT WILL BE INACTIVE FOR 14 DAYS OR MORE.
2. CONSTRUCT UNDERGROUND SITE UTILITIES AND STORM SEWER, INCLUDING UNDERGROUND STORMWATER MANAGEMENT SYSTEM.
3. INSTALL APPROPRIATE INLET PROTECTION AT ANY NEW STORM SEWER STRUCTURES AS EACH STRUCTURE IS CONSTRUCTED.
4. COMPLETE SITE GRADING AND PERMANENTLY STABILIZE AREAS TO BE VEGETATED AS THEY ARE BROUGHT TO FINAL GRADE.
5. PLACE PAVEMENT BASE MATERIAL AND INSTALL SUBDRAINAGE SYSTEM.
6. CONSTRUCT PAVEMENTS, CURB & GUTTER, AND SIDEWALKS.
7. AS APPROPRIATE, REPLACE & MAINTAIN INLET PROTECTION DEVICES WITHIN PAVED AREAS AS WORK PROGRESSES.
8. COMPLETE FINAL GRADING AND INSTALL OF PERMANENT STABILIZATION (SEEDING, SODDING, ETC.) WITHIN LANDSCAPED AREAS.
9. WHEN THE SITE HAS ACHIEVED FINAL STABILIZATION AS DEFINED BY THE APPLICABLE EROSION CONTROL PERMITS, REMOVE ALL REMAINING TEMPORARY EROSION & SEDIMENT CONTROL BMP'S AND RE-STABILIZE ANY AREAS DISTURBED BY THE REMOVAL.

NOTE: THE SEQUENCE OF CONSTRUCTION IS INTENDED TO CONVEY THE GENERAL CONCEPTS OF THE EROSION CONTROL DESIGN AND SHOULD NOT BE RELIED UPON FOR CONSTRUCTION PURPOSES. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DETAILED PHASING AND CONSTRUCTION SEQUENCING NECESSARY TO CONSTRUCT THE PROPOSED IMPROVEMENTS. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING IMMEDIATELY, PRIOR TO AND/OR DURING CONSTRUCTION IF ANY ADDITIONAL INFORMATION ON THE CONSTRUCTION SEQUENCE IS NECESSARY.

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EROSION AND SEDIMENT CONTROL PLAN - PHASE 2

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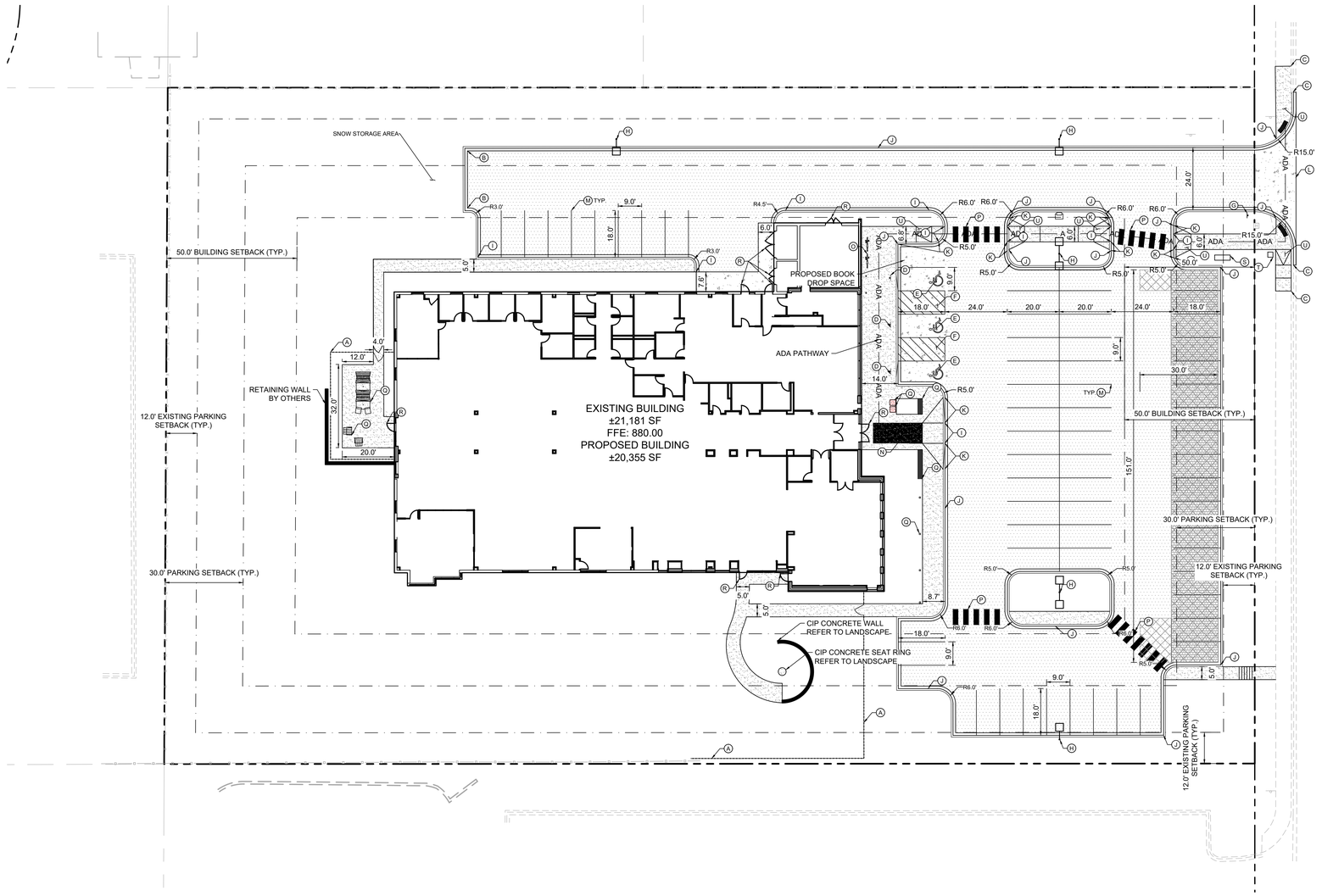

LEGEND

- PROPERTY LINE
- SETBACK LINE
- DRAINAGE AND UTILITY EASEMENT
- PROPOSED FENCE
- RETAINING WALL
- PROPOSED CURB AND GUTTER
- STANDARD DUTY ASPHALT PAVEMENT — SEE DETAILS FOR SECTION
- HEAVY DUTY CONCRETE PAVEMENT — SEE DETAILS FOR SECTION
- CONCRETE SIDEWALK — SEE DETAILS FOR SECTION
- PERVIOUS PAVERS — SEE DETAILS FOR SECTION
- UNDERGROUND STONE — SEE DETAILS FOR SECTION

SITE PLAN NOTES

1. REFER TO THE ARCHITECTURAL PLANS FOR EXACT LOCATIONS AND DIMENSIONS OF STOOPS, TRUCK DOCKS, TRASH ENCLOSURES & PRECISE BUILDING DIMENSIONS. REFER TO THE SITE ELECTRICAL PLAN FOR LOCATIONS OF PROPOSED LIGHT POLES, CONDUITS, AND ELECTRICAL EQUIPMENT.
2. REFER TO CERTIFIED SITE SURVEY OR PLAT FOR EXACT LOCATION OF EXISTING EASEMENTS, PROPERTY BOUNDARY DIMENSIONS, AND ADJACENT RIGHT-OF-WAY & PARCEL INFORMATION.
3. DIMENSIONS AND RADII ARE DRAWN TO THE FACE OF CURB, UNLESS OTHERWISE NOTED. DIMENSIONS ARE ROUNDED TO THE NEAREST TENTH FOOT, AND AREAS ARE ROUNDED TO THE NEAREST SQUARE FOOT.
4. UNLESS OTHERWISE NOTED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR RELOCATING EXISTING SITE IMPROVEMENTS THAT CONFLICT WITH THE PROPOSED WORK, INCLUDING BUT NOT LIMITED TO TRAFFIC SIGNS, LIGHT POLES, ABOVEGROUND UTILITIES, ETC. PERFORM WORK IN ACCORDANCE WITH GOVERNING AUTHORITIES REQUIREMENTS AND PROJECT SITE WORK SPECIFICATIONS. COST SHALL BE INCLUDED IN BASE BID.
5. TYPICAL PARKING STALL DIMENSIONS SHALL BE 9.0-FEET IN WIDTH AND 18-FEET IN LENGTH UNLESS OTHERWISE INDICATED.

PROPERTY SUMMARY	
TOTAL PROPERTY AREA	2.50 AC / 108,904 SF
DISTURBED AREA	1.85 AC / 80,589 SF
EXISTING IMPERVIOUS AREA	1.23 AC / 53,570 SF / 49.2%
EXISTING PERVIOUS AREA	1.27 AC / 55,334 SF / 50.8%
PROPOSED IMPERVIOUS AREA	1.20 AC / 52,432 SF / 48%
PROPOSED PERVIOUS AREA	1.30 AC / 56,472 SF / 52%
NET INCREASE IN IMPERVIOUS AREA	0.0 AC / 0 SF

SITE DATA	
EXISTING ZONING	HIGH DENSITY RESIDENTIAL
PROPOSED ZONING	HIGH DENSITY RESIDENTIAL
PROPOSED LAND USE	GOVERNMENTAL / PUBLIC USE
PARKING SETBACKS	EXISTING = 12' PROPOSED = 30'
BUILDING SETBACKS	FRONT = 50' SIDE = 50' REAR = 50'

BUILDING DATA	
TOTAL BUILDING AREA	20,927 SF
PERCENT OF TOTAL PROPERTY AREA	19.2%
MAXIMUM BUILDING HEIGHT	55 FT

PARKING SUMMARY	
REQUIRED PARKING	1 SPACE PER 300 SF
TOTAL PROPOSED PARKING	68 SPACES
REQUIRED ACCESSIBLE PARKING	3 STANDARD SPACES 3 VAN ACCESSIBLE
PROPOSED ACCESSIBLE PARKING	3 STANDARD SPACES 3 VAN ACCESSIBLE

KEYNOTE LEGEND

- (A) ORNAMENTAL FENCE - REFER TO LANDSCAPE PLANS
- (B) D-428 SURMOUNTABLE CURB - SEE SHEET C701
- (C) MATCH EXISTING EDGE OF PAVEMENT / CURB & GUTTER
- (D) ACCESSIBLE PARKING SIGN IN BOLLARD - SEE SHEET C700
- (E) ACCESSIBLE PARKING - SEE SHEET C700
- (F) ACCESS AREA STRIPING - SEE SHEET C700
- (G) STOP SIGN - SEE SHEET C700
- (H) LIGHT POLE - REFER TO ELECTRICAL PLANS
- (I) FLUSH CURB - SEE SHEET C700
- (J) B612 CURB & GUTTER (TYP.) - SEE SHEET C701
- (K) CURB TAPER - SEE SHEET C700
- (L) COMMERCIAL DRIVEWAY - SEE SHEET C701
- (M) PAVEMENT MARKING - SOLID STRIPING
- (N) DECORATIVE PAVERS - REFER TO LANDSCAPE PLANS
- (O) BIKE RACKS - REFER TO LANDSCAPE PLANS
- (P) PEDESTRIAN CROSSWALK - SEE SHEET C700
- (Q) SITE FURNITURE - REFER TO LANDSCAPE PLANS
- (R) AT-GRADE BUILDING ENTRY - REFER TO ARCHITECTURAL PLANS
- (S) DIGITAL MONUMENT SIGN - REFER TO LANDSCAPE PLANS
- (T) USPS POSTAL BOX (BLUE)
- (U) ACCESSIBLE PEDESTRIAN RAMP - SEE SHEET C700

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SITE DIMENSION PLAN

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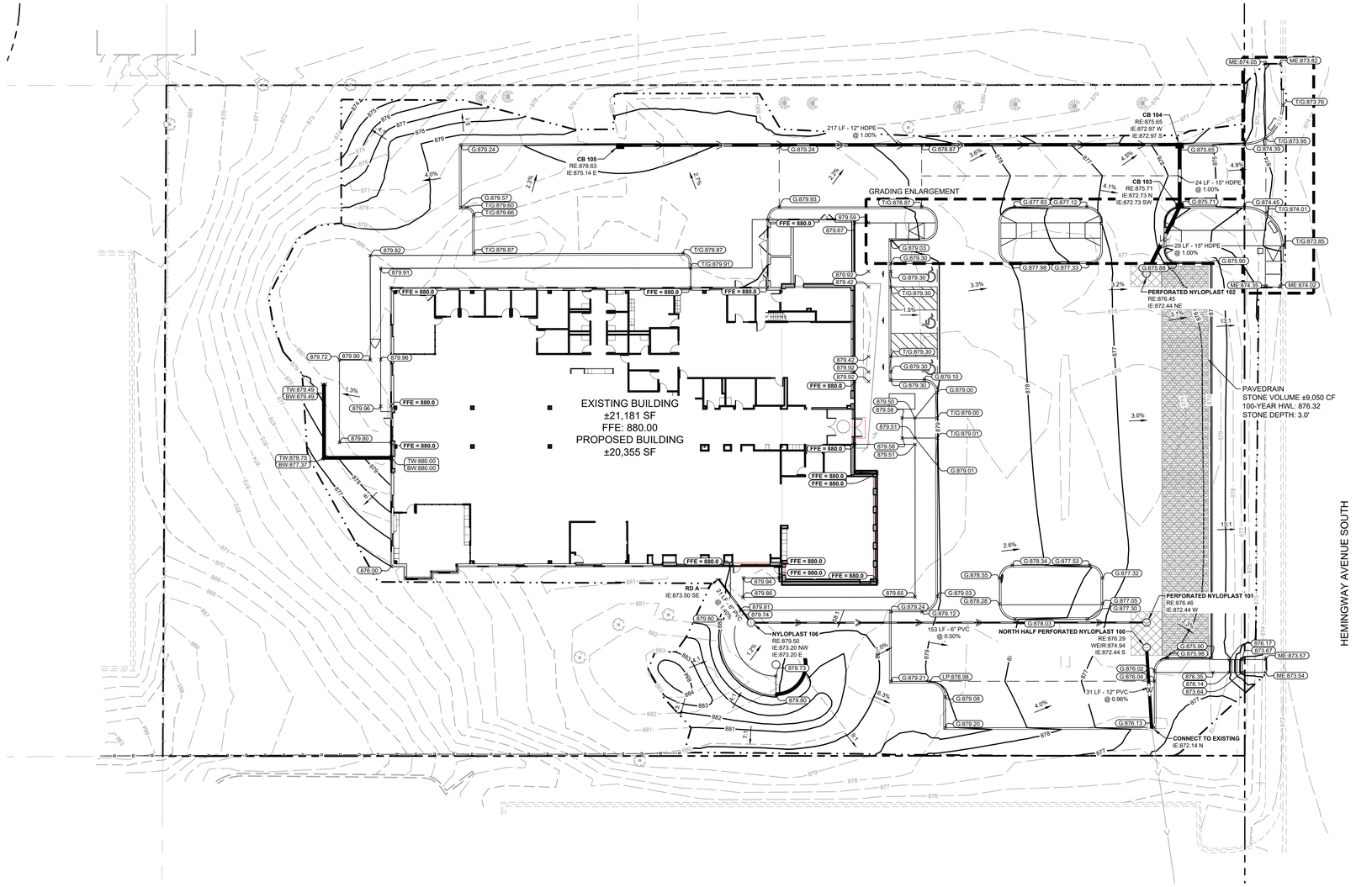

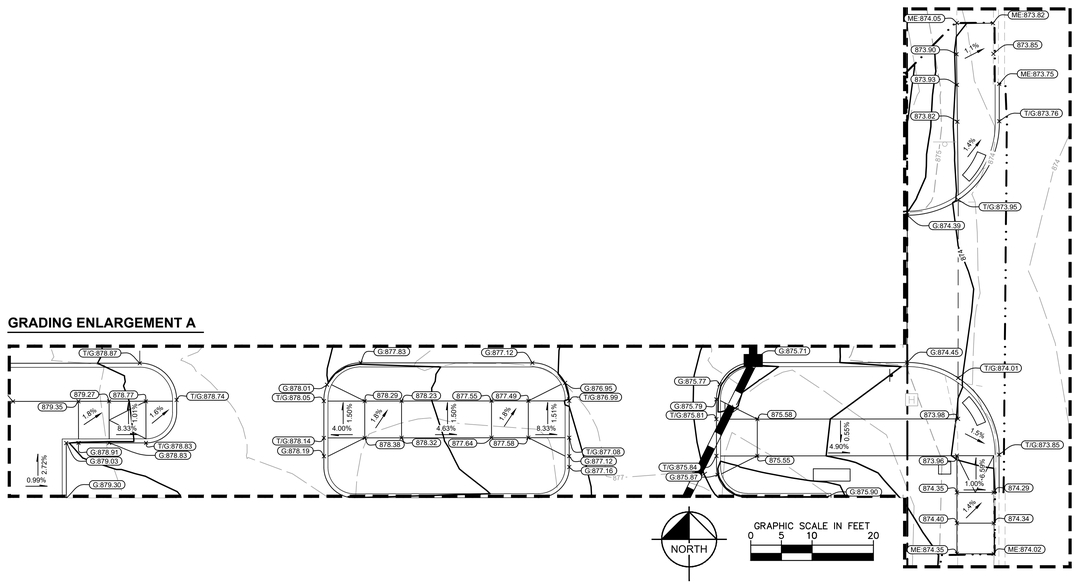

LEGEND

- PROPERTY LINE
- EXISTING CONTOUR
- PROPOSED CONTOUR
- PROPOSED RIDGE LINE
- PROPOSED SWALE
- PROPOSED STORM MANHOLE (SOLID CASTING)
- PROPOSED STORM MANHOLE (ROUND INLET CASTING)
- PROPOSED STORM MANHOLE/ CATCH BASIN (CURB INLET CASTING)
- PROPOSED STORM SEWER CLENOUT
- PROPOSED FLARED END SECTION
- PROPOSED RIPRAP
- PROPOSED STORM SEWER
- PROPOSED SPOT ELEVATION
- PROPOSED HIGH POINT ELEVATION
- PROPOSED LOW POINT ELEVATION
- PROPOSED GUTTER ELEVATION
- PROPOSED TOP OF CURB ELEVATION
- PROPOSED FLUSH PAVEMENT ELEVATION
- MATCH EXISTING ELEVATION
- PROPOSED EMERGENCY OVERFLOW ELEVATION
- PROPOSED GRADE AT TOP/BOTTOM OF WALL
- PROPOSED DRAINAGE DIRECTION
- PROPOSED GRADE BETWEEN POINTS
- PERVIOUS PAVERS SEE DETAILS FOR SECTION
- UNDERGROUND STONE SEE DETAILS FOR SECTION

GRADING PLAN NOTES

1. PERFORM GRADING WORK IN ACCORDANCE WITH APPLICABLE CITY SPECIFICATIONS AND BUILDING PERMIT REQUIREMENTS.
2. CONTACT STATE 811 CALL-BEFORE-YOU-DIG LOCATING SERVICE AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATION FOR UNDERGROUND UTILITY LOCATIONS.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL HORIZONTAL AND VERTICAL CONTROL.
4. FIELD VERIFY THE LOCATIONS AND ELEVATIONS OF EXISTING UTILITIES AND TOPOGRAPHIC FEATURES PRIOR TO THE START OF LAND DISTURBING ACTIVITIES. NOTIFY THE PROJECT ENGINEER OF ANY DISCREPANCIES OR VARIATIONS IMPACTING THE PROPOSED DESIGN OF THE PROJECT.
5. IN PAVED AREAS, ROUGH GRADE TO SUBGRADE ELEVATION AND LEAVE THE SITE READY FOR SUB-BASE.
6. SUBGRADE EXCAVATION SHALL BE BACKFILLED IMMEDIATELY AFTER EXCAVATION TO HELP OFFSET ANY STABILITY PROBLEMS DUE TO WATER SEEPAGE OR STEEP SLOPES. WHEN PLACING NEW SURFACE MATERIAL ADJACENT TO EXISTING PAVEMENT, THE EXCAVATION SHALL BE BACKFILLED PROMPTLY TO AVOID UNDERMINING OF EXISTING PAVEMENT.
7. ELEVATIONS SHOWN REPRESENT FINISHED SURFACE GRADES. SPOT ELEVATIONS ALONG CURB & GUTTER REPRESENT THE FLOW LINE UNLESS OTHERWISE NOTED
8. EXCESS MATERIAL, BITUMINOUS SURFACING, CONCRETE ITEMS, ABANDONED UTILITY ITEMS, AND OTHER UNSTABLE MATERIALS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF OFF THE CONSTRUCTION SITE.
9. CONTRACTOR IS RESPONSIBLE FOR CONSTRUCTION OF PAVEMENTS AND CURB AND GUTTER WITH SMOOTH UNIFORM SLOPES THAT PROVIDE POSITIVE DRAINAGE TO COLLECTION POINTS. MAINTAIN A MINIMUM SLOPE OF 1.25% IN ASPHALT PAVEMENT AREAS AND A MINIMUM SLOPE OF 0.50% IN CONCRETE PAVEMENT AREAS.
10. MAINTAIN A MINIMUM SLOPE OF 0.50% ALONG CURB & GUTTER. REVIEW PAVEMENT GRADIENT AND CONSTRUCT "INFALL" CURB WHERE PAVEMENT DRAINS TOWARD THE GUTTER, AND "OUTFALL" CURB WHERE PAVEMENT DRAINS AWAY FROM THE GUTTER.
11. INSTALL A MINIMUM OF 4-INCHES OF AGGREGATE BASE MATERIAL UNDER PROPOSED CONCRETE CURB & GUTTER, SIDEWALKS, AND TRAILS UNLESS OTHERWISE DETAILED.
12. GRADING FOR SIDEWALKS AND ACCESSIBLE ROUTES, INCLUDING CROSSING DRIVEWAYS, SHALL CONFORM TO CURRENT STATE & NATIONAL ADA STANDARDS:

    ACCESSIBLE RAMP SLOPES SHALL NOT EXCEED 8.3% (1:12).
    SIDEWALK CROSS-SLOPES SHALL NOT EXCEED 2.0%.
    LONGITUDINAL SIDEWALK SLOPES SHALL NOT EXCEED 5.0%.
    ACCESSIBLE PARKING STALLS AND ACCESS AISLES SHALL NOT EXCEED 2.0% IN ANY DIRECTION. A MAXIMUM SLOPE OF 1.50% IS PREFERED.

    SIDEWALK ACCESS TO EXTERNAL BUILDING DOORS AND GATES SHALL BE ADA COMPLIANT. NOTIFY ENGINEER IMMEDIATELY IF ADA CRITERIA CANNOT BE MET IN ANY LOCATION PRIOR TO PAVEMENT INSTALLATION. CHANGE ORDERS WILL NOT BE ACCEPTED FOR ADA COMPLIANCE ISSUES.
13. UPON COMPLETION OF LAND DISTURBING ACTIVITIES, RESTORE ADJACENT OFFSITE AREAS DISTURBED BY CONSTRUCTION TO MATCH OR EXCEED THE ORIGINAL CONDITION. LANDSCAPE AREAS SHALL BE RE-VEGETATED WITH A MINIMUM OF 4-INCHES OF TOPSOIL.
14. EXCAVATE DRAINAGE TRENCHES TO FOLLOW PROPOSED STORM SEWER ALIGNMENTS. REFER TO THE UTILITY PLANS FOR LAYOUT AND ELEVATIONS FOR PROPOSED SANITARY SEWER, WATER MAIN, AND OTHER BUILDING UTILITY SERVICE CONNECTIONS.

STORM SEWER NOTES

1. INSTALL STORM SEWER IN ACCORDANCE WITH APPLICABLE CITY OR STATE SPECIFICATIONS, STATE PLUMBING CODE, AND BUILDING PERMIT REQUIREMENTS.
2. CONTACT STATE 811 CALL-BEFORE-YOU-DIG LOCATING SERVICE AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATION FOR UNDERGROUND UTILITY LOCATIONS.
3. STORM SEWER PIPE SHALL BE AS FOLLOWS:
   - RCP: ASTM C-76
   - HDPE: ASTM F-714, F-894
   - PVC: ASTM D-2729
   - PVC SCH40: ASTM D-1785, D-2665, F-794

   DRAIN TILE SHALL BE AS FOLLOWS:
   - PE: ASTM F-6667
   - PVC: ASTM D-2729

   FITTINGS SHALL BE AS FOLLOWS:
   - RCP: ASTM C-76, JOINTS PER ASTM C-361, C-990, AND C-443
   - HDPE: ASTM D-3212
   - PVC: ASTM D-2729, JOINTS PER ASTM D-3212
   - PVC SCH40: ASTM D-2665, F-794, F-1866
4. CONTRACTOR IS RESPONSIBLE FOR ALL HORIZONTAL AND VERTICAL CONTROL.
5. FIELD VERIFY THE LOCATIONS AND ELEVATIONS OF EXISTING UTILITIES AND TOPOGRAPHIC FEATURES PRIOR TO THE START OF LAND DISTURBING ACTIVITIES. NOTIFY THE PROJECT ENGINEER OF ANY DISCREPANCIES OR VARIATIONS IMPACTING THE PROPOSED DESIGN OF THE PROJECT.
6. EXCAVATE DRAINAGE TRENCHES TO FOLLOW PROPOSED STORM SEWER ALIGNMENTS. REFER TO THE UTILITY PLANS FOR LAYOUT AND ELEVATIONS FOR PROPOSED SANITARY SEWER, WATER MAIN, AND OTHER BUILDING UTILITY SERVICE CONNECTIONS. REFER TO THE GRADING PLAN FOR DETAILED SURFACE ELEVATIONS.
7. EXCESS MATERIAL, BITUMINOUS SURFACING, CONCRETE ITEMS, ABANDONED UTILITY ITEMS, AND OTHER UNSTABLE MATERIALS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF OFF THE CONSTRUCTION SITE.
8. COORDINATE WITH THE PLUMBING PLANS FOR THE LOCATION, SIZE AND ELEVATION OF THE PROPOSED UNDERGROUND ROOF DRAIN CONNECTIONS.
9. WHERE STORM SEWER ROOF DRAINS HAVE LESS THAN 4-FEET OF COVER IN PAVED AREAS OR 3-FEET OF COVER IN LANDSCAPE AREAS, PROVIDE 3-INCH THICK INSULATION A MINIMUM OF 5-FEET IN WIDTH, CENTERED ON THE PIPE.
10. ALL STORM SEWER PIPE JOINTS SHALL BE WATER-TIGHT CONNECTIONS.
11. ALL STORM SEWER PIPE CONNECTIONS TO MANHOLES SHALL BE GASKETED AND WATER TIGHT. BOOTED COUPLERS AT THE STRUCTURE OR A WATER STOP WITH NON-SHRINK GROUT MAY BE USED IN ACCORDANCE WITH LOCAL CODES.
12. CONTRACTOR SHALL AIR TEST ALL STORM SEWER PIPE IN ACCORDANCE WITH LOCAL CODE REQUIREMENTS.

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GRADING AND DRAINAGE PLAN

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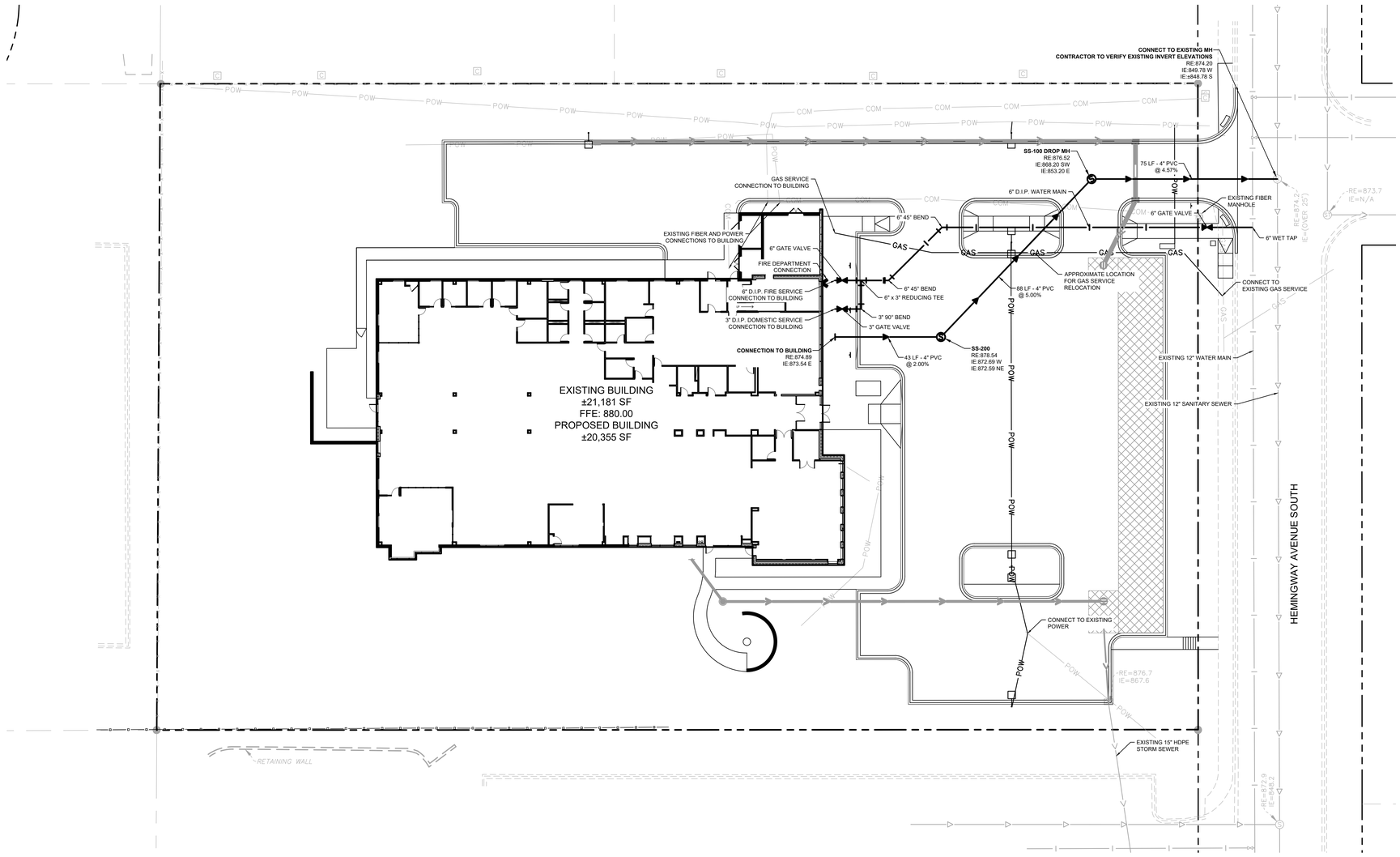

LEGEND

EXISTING	PROPOSED	
		GATE VALVE
		HYDRANT
		REDUCER
		TEE
		SANITARY SEWER MANHOLE
		SANITARY CLEANOUT
		WATERMAIN
		SANITARY SEWER
		STORM SEWER
POW	POW	UNDERGROUND ELECTRIC
COM	COM	TELEPHONE
GAS	GAS	GAS MAIN
		UNDERGROUND STONE SEE DETAILS FOR SECTION

UTILITY PLAN NOTES

1. INSTALL UTILITIES IN ACCORDANCE WITH APPLICABLE CITY SPECIFICATIONS, STATE PLUMBING CODE, AND BUILDING PERMIT REQUIREMENTS.
2. CONTACT STATE 811 CALL-BEFORE-YOU-DIG LOCATING SERVICE AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATION FOR UNDERGROUND UTILITY LOCATIONS.
3. CONTRACTOR IS RESPONSIBLE FOR ALL HORIZONTAL AND VERTICAL CONTROL.
4. SANITARY SEWER PIPE SHALL BE:
   PVC: ASTM D-2729, D-3034
   PVC SCH 40: ASTM D-1785, F-714, F-894
   SANITARY SEWER FITTINGS SHALL BE:
   PVC: ASTM D-2729, D-3034
   PVC SCH40: ASTM D-2665, F-2794, F-1866
5. WATER MAIN PIPE SHALL BE:
   DUCTILE IRON: AWWA C-151
   WATER MAIN FITTINGS SHALL BE:
   DUCTILE IRON: AWWA C-153, C-111, ASME 316.4
5. STORM SEWER PIPE SHALL BE:
   RCP: ASTM C-76
   HDPE: ASTM F-714, F-894
   PVC: ASTM D-2729
   PVC SCH40: ASTM D-1785, D-2665, F-794
   DRAIN TILE SHALL BE:
   PE: ASTM F-6667
   PVC: ASTM D-2729
   STORM SEWER FITTINGS SHALL BE:
   RCP: ASTM C-76, JOINTS PER ASTM C-361, C-990, AND C-443
   PVC: ASTM D-2729, JOINTS PER ASTM D-3212
   PVC SCH40: ASTM D-2665, F-794, F-1866
6. WHEN CONNECTING TO AN EXISTING UTILITY LINE, FIELD VERIFY THE LOCATION, DEPTH, AND SIZE OF THE EXISTING PIPE(S) PRIOR TO INSTALLATION OF THE NEW LINES. NOTIFY THE PROJECT ENGINEER OF ANY DISCREPANCIES OR VARIATIONS IMPACTING THE PROPOSED DESIGN OF THE PROJECT.
7. PLACE AND COMPACT ALL FILL MATERIAL PRIOR TO INSTALLATION OF PROPOSED UNDERGROUND UTILITIES. MINIMUM TRENCH WIDTH SHALL BE 2 FEET.
8. MAINTAIN A MINIMUM OF 7'-6" COVER ON ALL WATER LINES.
9. FOR WATER LINES AND STUB-OUTS UTILIZE MECHANICAL JOINTS WITH RESTRAINTS SUCH AS THRUST BLOCKING, WITH STAINLESS STEEL OR COBALT BLUE BOLTS, OR AS INDICATED IN THE CITY SPECIFICATIONS AND PROJECT DOCUMENTS.
10. MAINTAIN 18-INCH MINIMUM VERTICAL SEPARATION WHERE SEWER PIPE CROSSES WATER LINES (OUTSIDE EDGE OF PIPE TO OUTSIDE EDGE OF PIPE OR STRUCTURE). PROVIDE 10-FOOT HORIZONTAL SEPARATION BETWEEN SEWER PIPE AND WATER LINES.
11. IN THE EVENT OF A VERTICAL CONFLICT BETWEEN WATER LINES, SANITARY LINES, STORM LINES AND GAS LINES (OR ANY OBSTRUCTION EXISTING AND PROPOSED), THE SANITARY PIPE MATERIAL SHALL BE PVC SCHEDULE 40 OR PVC C900 AND HAVE MECHANICAL JOINTS AT LEAST 10 FEET ON EITHER SIDE OF THE CENTER LINE OF THE CROSSING. THE WATER LINE SHALL HAVE MECHANICAL JOINTS WITH APPROPRIATE FASTENERS AS REQUIRED TO PROVIDE A MINIMUM OF 18-INCH VERTICAL SEPARATION MEETING REQUIREMENTS OF ANSI A21.10 OR ANSI 21.11 (AWWA C-151) (CLASS 50).
12. ALL PVC & HDPE SEWER AND WATER PIPE SHALL HAVE A TRACER WIRE INSTALLED IN THE TRENCH AND TERMINATED PER THE DETAILS.
13. UNDERGROUND UTILITY LINES SHALL BE INSTALLED, INSPECTED AND APPROVED PRIOR TO PLACING BACKFILL.
14. IN PAVEMENT AREAS, RAISE MANHOLE CASTINGS TO BE FLUSH WITH PROPOSED FINISHED SURFACE GRADE. IN GREEN AREAS, RAISE MANHOLE CASTINGS TO BE ONE FOOT ABOVE FINISHED GROUND ELEVATION & INSTALL A WATERTIGHT LID.
15. REFER TO PLUMBING PLANS FOR LOCATION, SIZE AND ELEVATION OF UTILITY SERVICE CONNECTIONS AND ROOF DRAINS TO THE INTERIOR BUILDING SYSTEMS. BACKFLOW DEVICES (ODCV AND PRZ ASSEMBLIES) & METERS ARE LOCATED INSIDE THE BUILDING.
16. CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
17. CONTRACTOR IS RESPONSIBLE FOR ALL NECESSARY INSPECTIONS AND/OR CERTIFICATIONS REQUIRED BY CODES AND/OR UTILITY SERVICE COMPANIES. COORDINATE WITH ALL UTILITY COMPANIES FOR INSTALLATION REQUIREMENTS AND SPECIFICATIONS.
18. REFER TO THE SITE ELECTRICAL PLANS FOR SPECIFICATIONS OF THE PROPOSED SITE LIGHTING AND ELECTRICAL EQUIPMENT.
19. EXCAVATE DRAINAGE TRENCHES TO FOLLOW PROPOSED STORM SEWER ALIGNMENTS. REFER TO THE UTILITY PLANS FOR LAYOUT AND ELEVATIONS FOR PROPOSED SANITARY SEWER, WATER MAIN, AND OTHER BUILDING UTILITY SERVICE CONNECTIONS. REFER TO THE GRADING PLAN FOR DETAILED SURFACE ELEVATIONS.
20. EXCESS MATERIAL, ABANDONED UTILITY ITEMS, AND OTHER UNUSABLE MATERIALS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF OFF THE CONSTRUCTION SITE.
21. COORDINATE WITH THE PLUMBING PLANS FOR THE LOCATION, SIZE AND ELEVATION OF THE PROPOSED UNDERGROUND ROOF DRAIN CONNECTIONS.
22. WHERE STORM SEWER ROOF DRAINS HAVE LESS THAN 4-FEET OF COVER IN PAVED AREAS OR 3-FEET OF COVER IN LANDSCAPE AREAS, PROVIDE 3-INCH THICK INSULATION A MINIMUM OF 5-FEET IN WIDTH, CENTERED ON THE PIPE.
23. ALL STORM SEWER PIPE JOINTS SHALL BE WATER-TIGHT CONNECTIONS.
24. PER THE CITY OF COTTAGE GROVE, MINIMUM COVER ON STORM SEWER SHALL BE 3' WITHIN STREET, 2' IN GREEN SPACE.
25. ALL STORM SEWER PIPE CONNECTIONS TO MANHOLES SHALL BE GASKETED AND WATER TIGHT. BOOTED COUPLERS AT THE STRUCTURE OR A WATER STOP WITH NON-SHRINK GROUT MAY BE USED IN ACCORDANCE WITH LOCAL CODES.
26. CONTRACTOR SHALL AIR TEST ALL STORM SEWER PIPE IN ACCORDANCE WITH LOCAL CODE REQUIREMENTS.

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UTILITY PLAN

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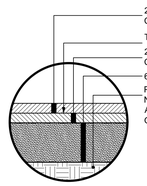
PAVEMENT SECTIONS SHOWN ARE PROVIDED AS A REFERENCE ONLY. REFER TO GEOTECHNICAL REPORT FOR ALL PAVEMENT, SUBGRADE PREPARATION AND COMPACTION REQUIREMENTS.



1 STANDARD DUTY ASPHALT PAVMENT SECTION

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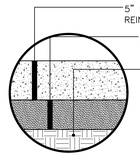

2 HEAVY DUTY CONCRETE PAVMENT SECTION

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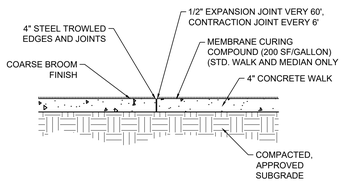
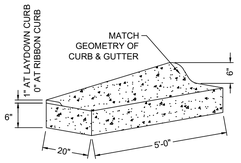


NOTES:
1. ALL EXCAVATION, COMPACTION AND BACKFILL INCIDENTAL TO UNIT PRICE BID FOR 4" SIDEWALK

3 CONCRETE SIDEWALK

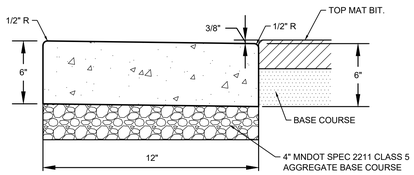
NO SCALE



NOTES:
1. REFER TO CONCRETE CURB & GUTTER DETAIL FOR SPECIFICATIONS AND AGGREGATE BASE COURSE DIMENSIONS

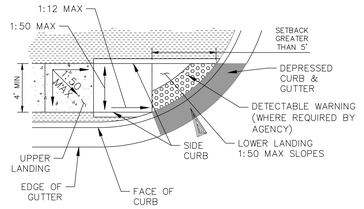
4 CONCRETE CURB TAPER

NO SCALE

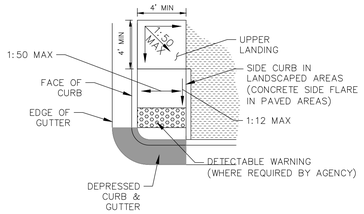


5 FLUSH CURB

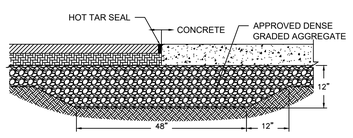
N.T.S.



RAMPS IN LANDSCAPED AREA
(SETBACK > 5)'



RAMPS ADJACENT TO PAVEMENT



9 CONCRETE TO ASPHALT TRANSITION DETAIL

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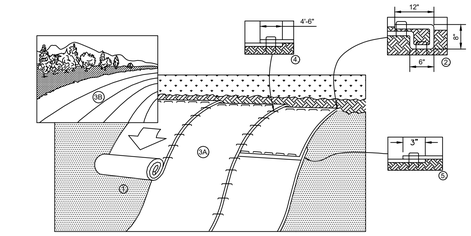


WITH APPROXIMATELY 12" OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH AS SHOWN IN DETAIL 2. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE BLANKET.

AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS PER MANUFACTURER'S RECOMMENDATION.

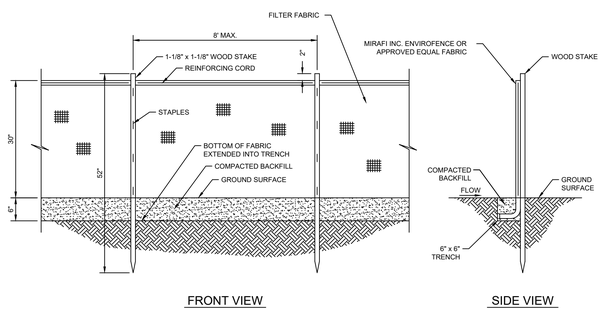
PLACE THE EDGE OF THE OVERLAPPING BLANKET (BLANKET BEING INSTALLED ON TOP) EVEN WITH THE SEAM STITCH ON THE PREVIOUSLY INSTALLED BLANKET.

3" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART ACROSS ENTIRE BLANKET WIDTH.

NOTES:
1. IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" MAY BE NECESSARY TO PROPERLY SECURE THE BLANKETS.
2. FOLLOW EROSION CONTROL TECHNOLOGY COUNCIL SPECIFICATION FOR PRODUCT SELECTION.
3. PERVIOUS LAND WITH SLOPES RUNNING GREATER THAN OR EQUAL TO 4:1 SHALL CONTAIN SLOPE STABILIZATION BLANKET

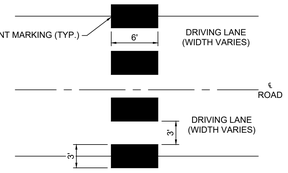
10 EROSION CONTROL BLANKET (SLOPE INSTALLATION)

SCALE: NTS



13 SILT FENCE

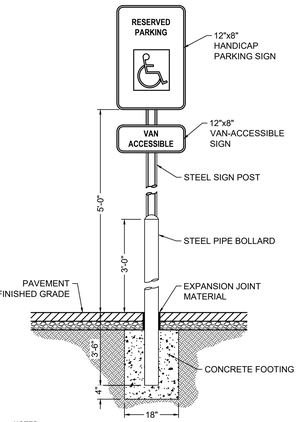
SCALE: NTS



NOTE:
1. TAPED AREAS TO BE CENTERED AND ALIGNED ON CENTER LINE AND LANE LINES. MAKE ADJUSTMENTS IN CENTER MEDIAN AREA.
2. ZEBRA CROSSWALKS SHALL BE WHITE POLYMER-PREFORMED TAPE OR AN ACCEPTABLE EQUALIVANT APPROVED BY THE ENGINEER.
3. A MINIMUM OF 1.5 FT. CLEAR DISTANCE MUST BE LEFT ADJACENT TO CURB. IF LAST STRIPED AREA FALLS INTO THIS DISTANCE, IT MUST BE OMITTED.
4. REMOVE ALL CONFLICTING PAVEMENT MARKINGS AS DIRECTED BY THE ENGINEER.
5. AT SKEWED CROSSWALKS, THE TAPED AREAS ARE TO REMAIN PARALLEL TO THE LANE LINES.
6. WHERE PAVEMENT MARKINGS CAN NOT BE INLAYED INTO THE HOT MAT, PAVEMENT SHALL BE GROOVED FOR THE INSTALLATION OF THE POLYMER-PREFORMED MARKINGS. SEE Mn/DOT STANDARD SPECIFICATION 2564.

6 CROSSWALK STRIPING

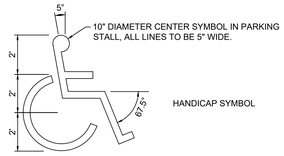
NO SCALE



NOTES:
1. SIGNS SHALL BE 18 GAUGE STEEL, WITH BAKED ENAMEL WHITE LETTERS AND BORDER ON BLUE BACKGROUND, WHERE APPLICABLE.
2. POST SHALL BE 3"x3" 11-GAUGE GALVANIZED SQUARE STEEL
3. BOLLARD SHALL BE 6"Ø SCH-40 STEEL PIPE FILLED WITH CONCRETE & PAINTED YELLOW
4. SIGNS SHALL COMPLY WITH LOCAL MUTCD REQUIREMENTS

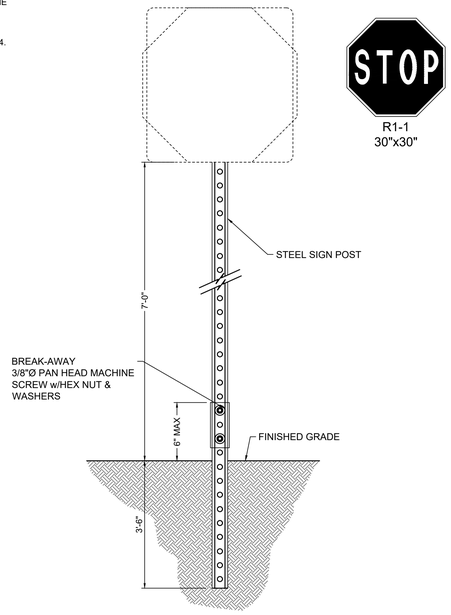
11 ACCESSIBLE PARKING SIGN IN BOLLARD

N.T.S.



7 HANDICAP ACCESSIBLE SIGNAGE AND STRPING

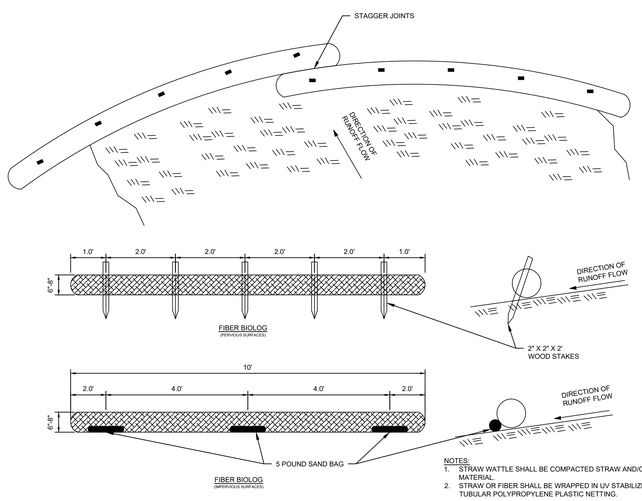
NO SCALE



NOTES:
1. SIGNS SHALL BE 18 GAUGE STEEL
2. POSTS SHALL BE GALVANIZED STEEL U-CHANNEL, PERFORATED WITH 3/8" HOLES AT 1" CENTERS
3. SIGNS SHALL COMPLY WITH LOCAL MUTCD REQUIREMENTS

12 TRAFFIC SIGN POST

SCALE: NTS

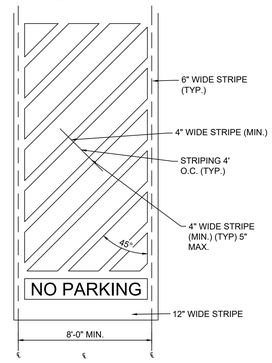


NOTES:
1. STRAW WATTLE SHALL BE COMPACTED STRAW AND/OR ORGANIC FIBER MATERIAL.
2. STRAW OR FIBER SHALL BE WRAPPED IN U/V STABILIZED DEGRADABLE TUBULAR POLYPROPYLENE PLASTIC NETTING.

14 BIOROLL

SCALE: NTS

NOTE:
1. LETTERING SHALL BE 12" HIGH, 6" WIDE, 2" THICK, SPACED 3" APART, OR AS APPROVED BY OWNER.
2. NOTIFY ENGINEER OF STENCIL BEING USED AND SUBMIT LAYOUT FOR APPROVAL.



NOTE: IS DIMENSION SHOWN ON SITE PLAN

8 ACCESS AISLE STRIPING LAYOUT

N.T.S.

PROJECT

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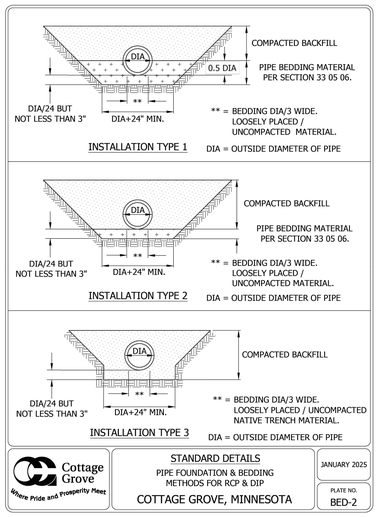


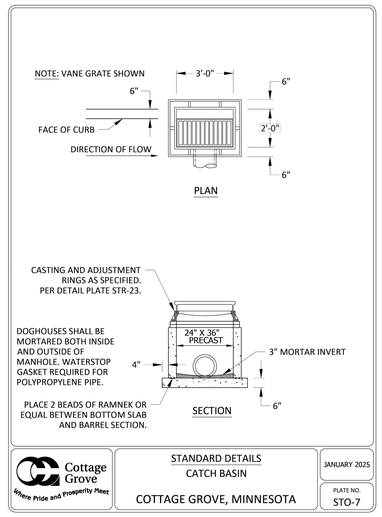
Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
PIPE FOUNDATION & BEDDING METHODS FOR RCP & DIP
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. BED-2

48_BED2.DWG



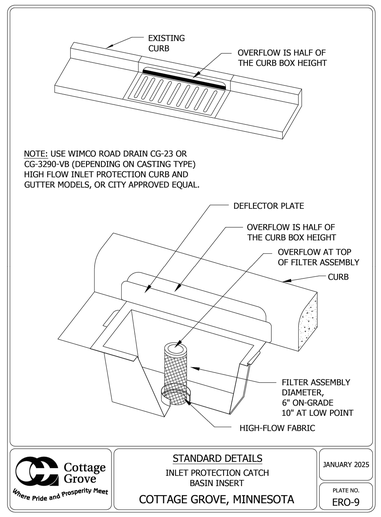
Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
CATCH BASIN
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. STO-7

48_STO7.DWG



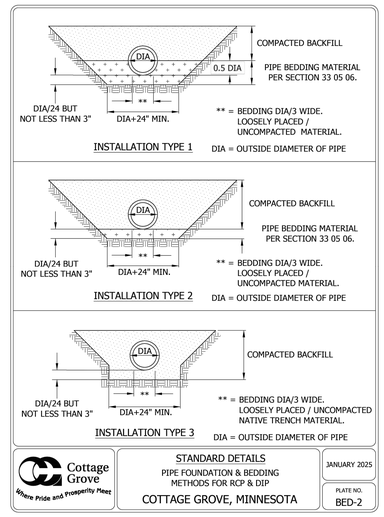
Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
INLET PROTECTION CATCH BASIN INSERT
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. ERO-9

48_ERO9.DWG



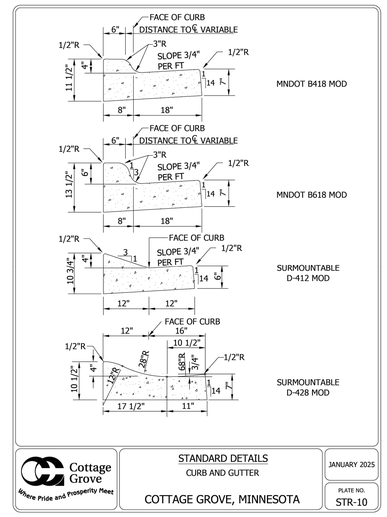
Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
PIPE FOUNDATION & BEDDING METHODS FOR RCP & DIP
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. BED-2

48_BED2.DWG



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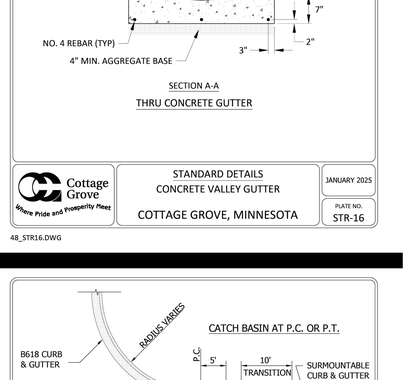
STANDARD DETAILS
CURB AND GUTTER
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. STR-10

48_STR10.DWG



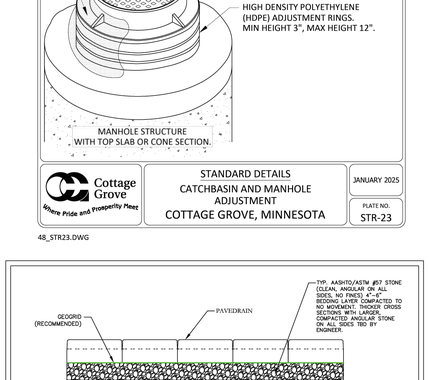
Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
CONCRETE VALLEY GUTTER
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. STR-16

48_STR16.DWG



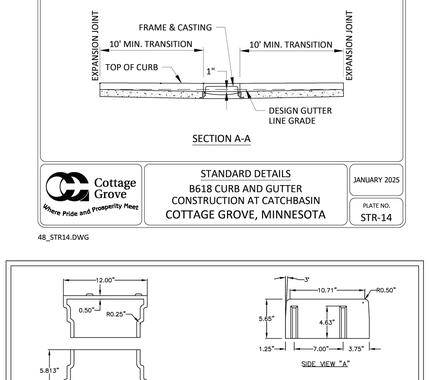
Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
CATCHBASIN AND MANHOLE ADJUSTMENT
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. STR-23

48_STR23.DWG



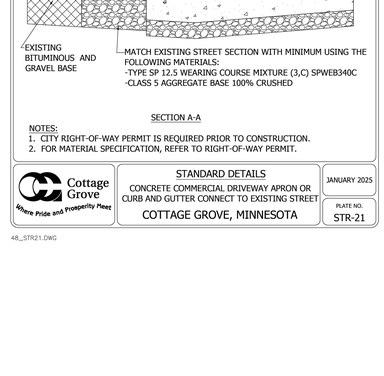
Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
B618 CURB AND GUTTER CONSTRUCTION AT CATCHBASIN
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. STR-14

48_STR14.DWG



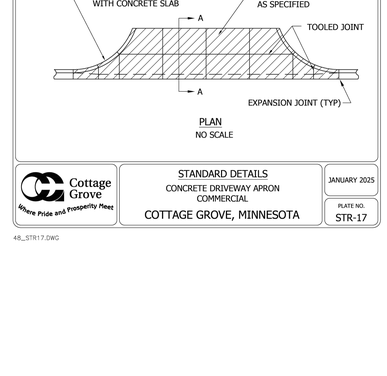
Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
CONCRETE COMMERCIAL DRIVEWAY APRON OR CURB AND GUTTER CONNECT TO EXISTING STREET
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. STR-21

48_STR21.DWG



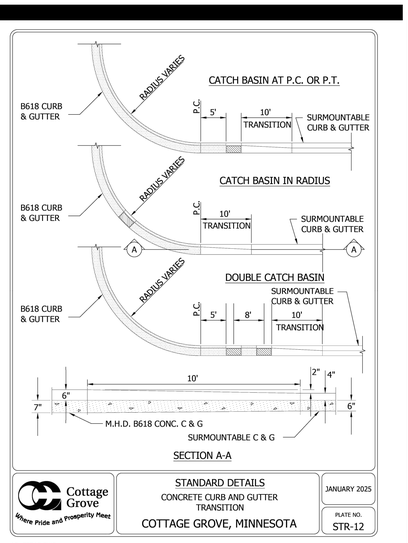
Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
CONCRETE DRIVEWAY APRON COMMERCIAL
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. STR-17

48_STR17.DWG



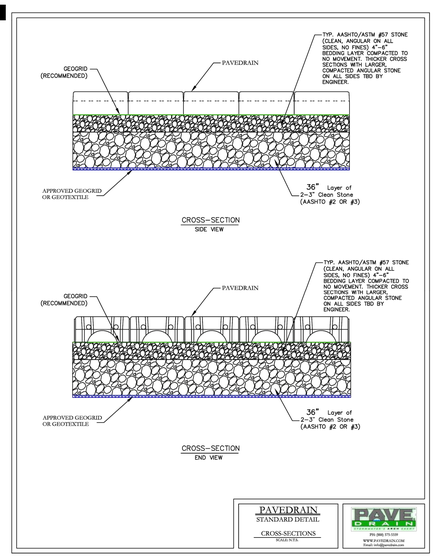
Cottage Grove — Where Pride and Prosperity Meet

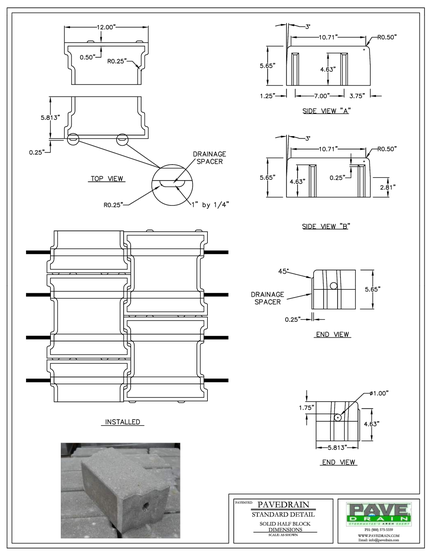
STANDARD DETAILS
CONCRETE CURB AND GUTTER TRANSITION
COTTAGE GROVE, MINNESOTA

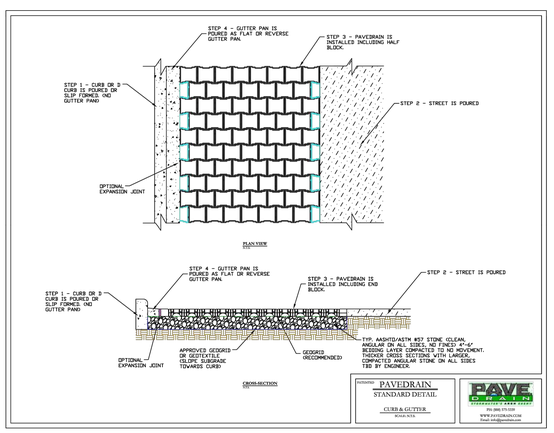
JANUARY 2025

PLATE NO. STR-12

48_STR12.DWG







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Park Grove Library

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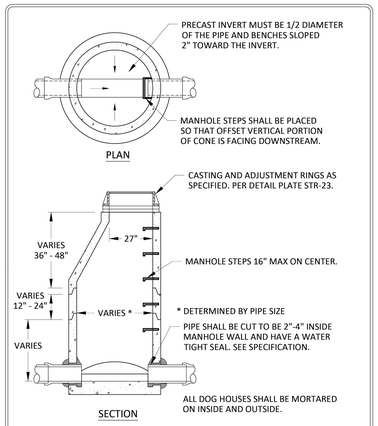
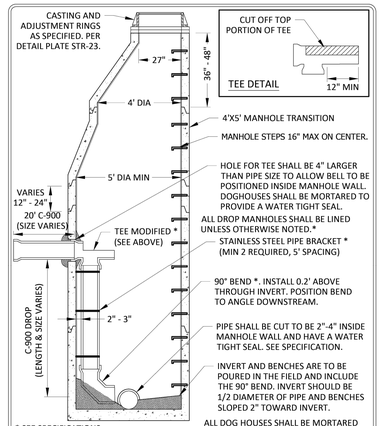


Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS	JANUARY 2025
SANITARY SEWER MANHOLE	PLATE NO. SAN-1
COTTAGE GROVE, MINNESOTA	

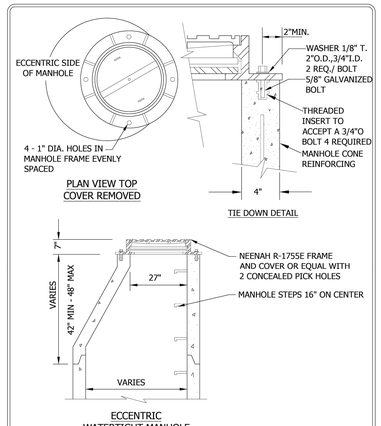
48_SAN1.DWG



Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS	JANUARY 2025
SANITARY SEWER DROP INLET MANHOLE	PLATE NO. SAN-4
COTTAGE GROVE, MINNESOTA	

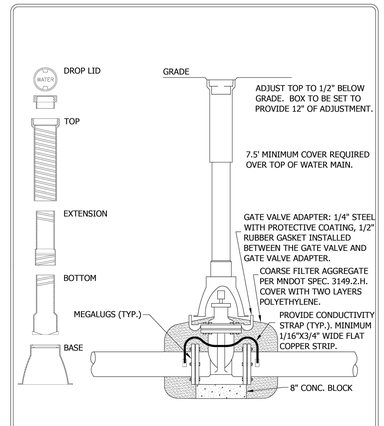
48_SAN4.DWG



Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS	JANUARY 2025
WATERTIGHT CASTING FOR SANITARY SEWER MANHOLE	PLATE NO. SAN-5
COTTAGE GROVE, MINNESOTA	

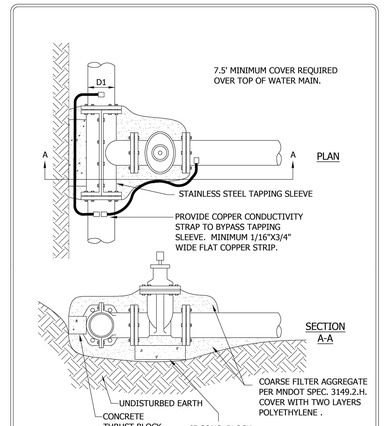
48_SAN5.DWG



Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS	JANUARY 2025
GATE VALVE AND BOX INSTALLATION	PLATE NO. WAT-3
COTTAGE GROVE, MINNESOTA	

48_WAT3.DWG



Cottage Grove — Where Pride and Prosperity Meet

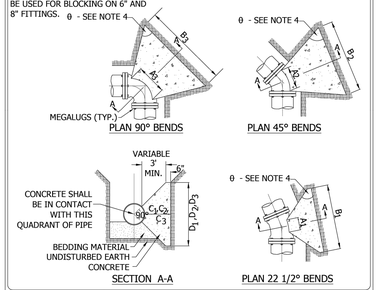
STANDARD DETAILS	JANUARY 2025
WATER MAIN WET TAP	PLATE NO. WAT-5
COTTAGE GROVE, MINNESOTA	

48_WAT5.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

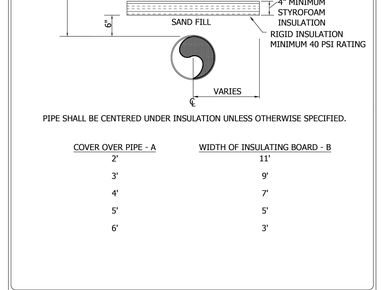
PIPE SIZE	22 1/2° BEND		45° BEND		90° BEND	
	B_1	D_1	B_2	D_2	B_3	D_3
6"	--	--	--	--	2'-1"	1'-6"
8"	--	--	--	--	2'-8"	2'-0"
12"	1'-10"	1'-10"	3'-4"	2'-0"	4'-9"	2'-6"
16"	3'-0"	2'-0"	3'-10"	3'-0"	6'-2"	3'-6"
20"	3'-6"	2'-8"	5'-6"	3'-4"	8'-4"	4'-0"
24"	4'-4"	3'-0"	6'-10"	3'-10"	9'-8"	5'-0"
30"	--	--	9'-3"	6'-0"	17'-0"	6'-0"



Cottage Grove — Where Pride and Prosperity Meet

CONCRETE THRUST BLOCKING	JANUARY 2025
COTTAGE GROVE, MINNESOTA	PLATE NO. WAT-6

48_WAT6.DWG



PIPE SHALL BE CENTERED UNDER INSULATION UNLESS OTHERWISE SPECIFIED.

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

INSULATION DETAIL	JANUARY 2025
COTTAGE GROVE, MINNESOTA	PLATE NO. WAT-9

48_WAT9.DWG

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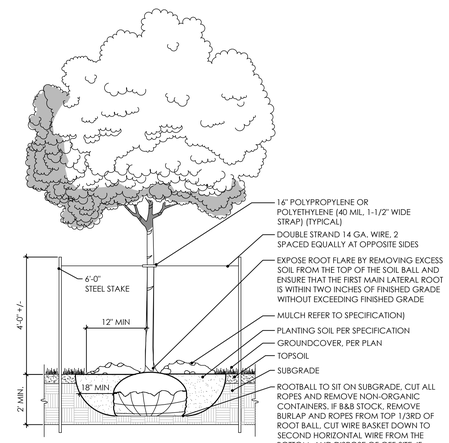
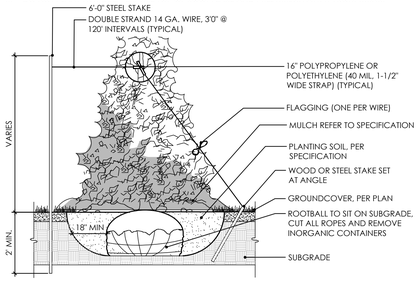


2 deciduous tree

scale: 1/4" = 1'

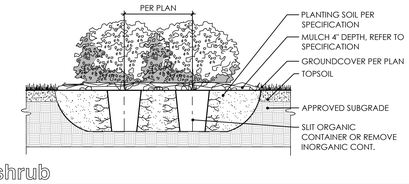
NOTES:
1. CONIFER TO HAVE SHREDDED HARDWOOD MULCH UNLESS NOTED OTHERWISE. NO MULCH TO BE IN CONTACT WITH TRUNK.
2. SCARIFY BOTTOM AND SIDES OF HOLE PRIOR TO PLANTING.
3. TWO ALTERNATE METHODS OF TREE STAKING ARE ILLUSTRATED.
4. IT IS THE CONTRACTORS OPTION TO STAKE TREES; HOWEVER, THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING TREES IN A PLUMB POSITION THROUGHOUT THE GUARANTEE PERIOD.
5. DO NOT PLANT TOO DEEP: EXPOSE TOP OF ROOT FLARE AND PULL MULCH AWAY FROM TRUNK.



3 coniferous tree

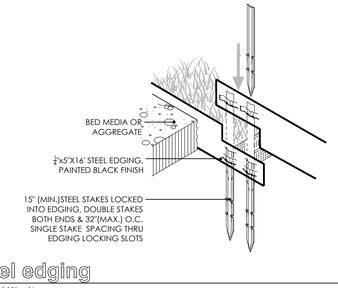
scale: 1/4" = 1'

NOTES:
1. HAND LOOSEN ROOTS OF CONTAINERIZED MATERIAL (TYPICAL).
2. SCARIFY BOTTOM AND SIDES OF HOLE PRIOR TO PLANTING.
3. SHRUBS TO SIT ON SUBGRADE.
4. APPLY PELLET WEED PREVENTER PRIOR TO MULCHING.



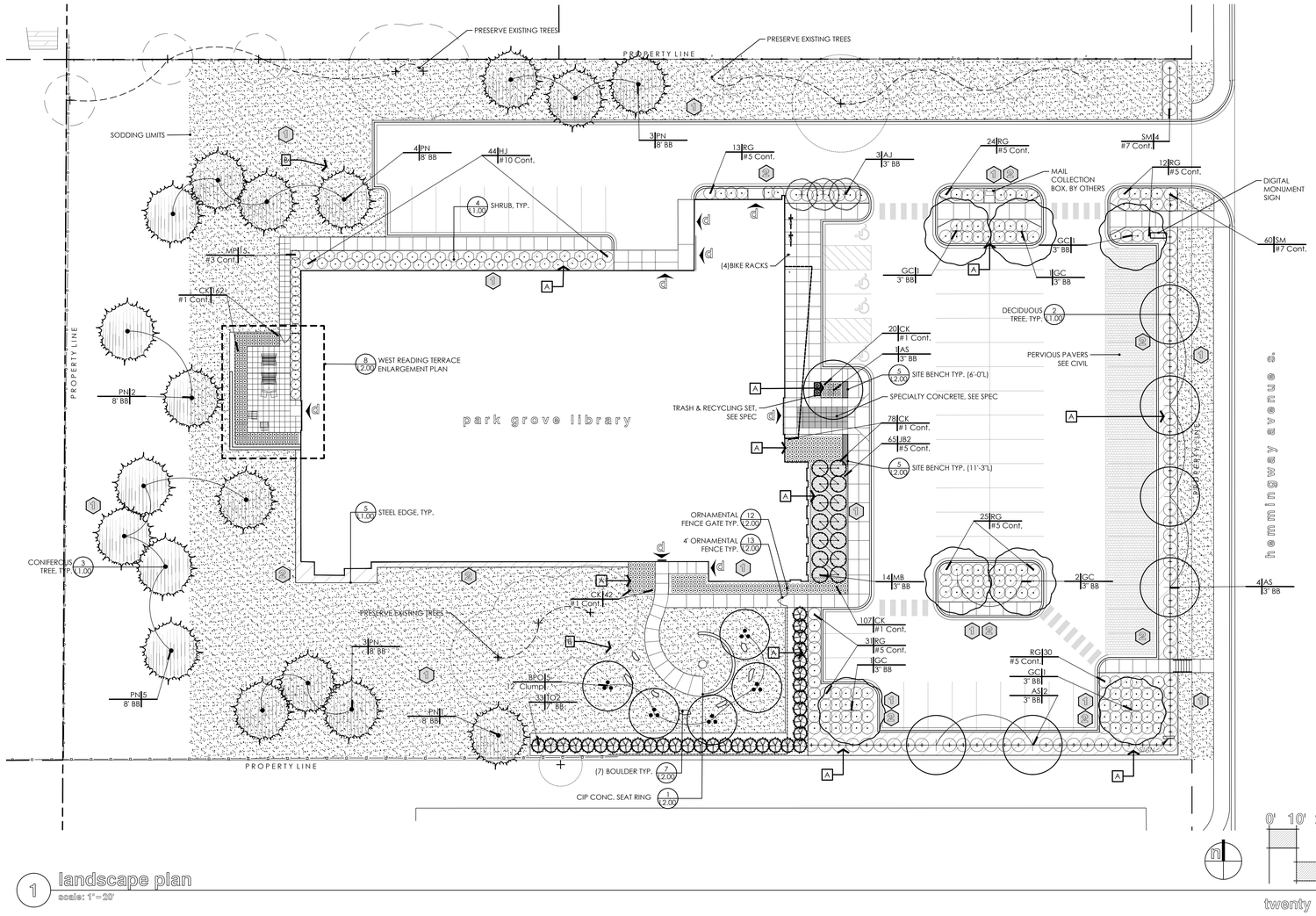
4 shrub

scale: 1/4" = 1'



5 steel edging

scale: 1/4" = 1'



1 landscape plan

scale: 1" = 20'

key notes

1. IRRIGATION: PROVIDE IRRIGATION FOR SOD AND PLANTING AREAS WITHIN THE PROJECT BOUNDARIES FOR 100 % COVERAGE. REFER TO DESIGN BUILD IRRIGATION SPECIFICATION. PROVIDE SHOP DRAWING FOR IRRIGATION SYSTEM INCLUDING HEAD LAYOUT, SPACING, TYPE, BACKFLOW PREVENTER LOCATIONS, POINT OF CONNECTION, SLEEVES, CONTROLLER, VALVE BOX LOCATIONS, ZONE INDICATIONS AND PIPE SIZING. PROVIDE ON-SITE OPERATION TUTORIAL FOR OWNER AN INCLUDE ALL MANUALS AND INFORMATION ON THE SYSTEM
2. ¾" TRAP ROCK MULCH INSTALLED TO A 4" DEPTH OVER NON WOVEN LANDSCAPE FABRIC (SEE HATCH)

soils notes

A — ALL PLANTING BEDS SHALL RECEIVE 12" PULVERIZED LOAM TOPSOIL BORROW MN DOT SPEC. 3877-2B ENHANCE WITH AGED AND SCREEN COMPOST

B — ALL SODDED(LAWN) AREA SHALL RECEIVE 6" MIN. COMMON TOPSOIL BORROW MN DOT SPEC. 3877-1A

planting notes

1. CONFIRM ALL QUANTITIES, SHAPES AND LOCATIONS OF BEDS, AND ADJUST AS REQUIRED TO CONFORM TO THE SITE CONDITIONS. CONFIRM ANY ADJUSTMENTS WITH THE LANDSCAPE ARCHITECT.
2. LOCATE ALL UTILITIES. NOTIFY THE LANDSCAPE ARCHITECT OF ANY CONFLICTS WITH NEW CONSTRUCTION.
3. ALL PLANTING BEDS SHALL RECEIVE 6" MIN. OF PLANTING SOIL. REFER TO SOIL NOTES FOR PLANTING SOIL MIX REQUIREMENTS.
4. ALL SOD AREAS SHALL RECEIVE 6" OF TOP SOIL. REFER TO SOIL NOTES FOR TOP SOIL MIX REQUIREMENTS.
5. ALL PLANTING AREAS SHALL RECEIVE HARDWOOD SHREDDED MULCH APPLIED TO 4" DEPTH WITH PELLET WEED PREVENTER UNDER ALL MULCH BEDS UNLESS INDICATED AS OTHER MULCH ON PLANS.
6. THE CONTRACTOR SHALL REMOVE FROM THE SITE ALL SOD/TURF WHICH HAS BEEN REMOVED FOR NEW PLANT BEDS. ANY PLANT STOCK NOT PLANTED ON DAY OF DELIVERY SHALL BE HEELED IN AND WATERED UNTIL INSTALLATION. PLANTS NOT MAINTAINED IN THIS MANNER WILL BE REJECTED.
7. THE PLAN TAKES PRECEDENCE OVER THE PLANT SCHEDULE IF DISCREPANCIES EXIST. ADVISE LANDSCAPE ARCHITECT OF ANY DISCREPANCIES.
8. THE CONTRACTOR SHALL AVOID DAMAGING EXISTING TREES. DO NOT STORE OR DRIVE HEAVY MATERIALS OVER TREE ROOTS. DO NOT DAMAGE TREE BARK OR BRANCHES.
9. THE CONTRACTOR SHALL KEEP PAVEMENTS, FIXTURES AND BUILDINGS CLEAN AND UNSTAINED. ANY DAMAGE TO EXISTING FACILITIES SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE. THE PROJECT SITE SHALL BE KEPT CLEAR OF CONSTRUCTION WASTES AND DEBRIS.
10. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR PLANTING SOIL QUANTITIES TO COMPLETE THE WORK SHOWN ON THE PLAN. MULCH, PLANTING SOIL AND OTHER MISCELLANEOUS PLANTING COMPONENTS SHALL BE CONSIDERED INCIDENTAL TO THE RELATED PLAN. VERIFY ALL QUANTITIES.
11. CONTRACTOR IS RESPONSIBLE FOR WATERING AND ALL PLANT CARE UNTIL FINAL ACCEPTANCE BY THE OWNER.
12. PLANT MATERIAL SHALL BE PROTECTED AND MAINTAINED UNTIL THE INSTALLATION OF PLANTINGS IS COMPLETE, INSPECTION HAS BEEN MADE AND PLANTING IS ACCEPTED EXCLUSIVE OF THE GUARANTEE
13. MAINTENANCE SHALL INCLUDE WATERING, WEEDING, MULCHING, REMOVAL OF DEAD MATERIAL PRIOR TO GROWING SEASON, RE-SETTING PLANTS AND PROPER GRADE, AND KEEPING PLANTS IN A PLUMB POSITION. AFTER ACCEPTANCE, THE OWNER SHALL ASSUME MAINTENANCE RESPONSIBILITIES. HOWEVER, THE CONTRACTOR SHALL CONTINUE TO BE RESPONSIBLE FOR KEEPING THE TREES PLUMB THROUGHOUT THE GUARANTEE PERIOD.
14. WATERING: MAINTAIN A WATERING SCHEDULE WHICH WILL THOROUGHLY WATER ALL PLANTS ONCE A WEEK AND SOD EVERY OTHER DAY UNTIL ACCEPTANCE BY THE OWNER, IN EXTREMELY HOT, DRY WEATHER, WATER MORE OFTEN AS REQUIRED BY INDICATIONS OF HEAT STRESS SUCH AS WILTING LEAVES. CHECK MOISTURE UNDER MULCH PRIOR TO WATERING TO DETERMINE NEED. CONTRACTOR SHALL MAKE THE NECESSARY ARRANGEMENTS FOR WATER.

planting schedule

SYMBOL	CODE	BOTANICAL / COMMON NAME	CONT	QTY
TREES				
	AJ	Acer rubrum `JFS-KW78` / Armstrong Gold Columnar Maple	3" BB	3
	AS	Acer x freemanii `Sienna` / Sienna Glen® Maple	3" BB	7
	BPO	Betula populifolia `Whitespire` / Whitespire Birch	12' Clump	5
	GC	Gymnocladus dioicus 'UMNSynergy' / True North™ Kentucky Coffeetree	3" BB	7
	MB	Malus x 'Red Barron' / Red Barron Crabapple	3" BB	14
	PN	Pinus nigra / Austrian Pine	8' BB	18
	TO2	Thuja occidentalis 'Techny' / Techny Arborvitae	7' BB	33
SYMBOL	**CODE**	**BOTANICAL / COMMON NAME**	**SIZE**	**QTY**
SHRUBS				
	HJ	Hydrangea paniculata 'Jane' / Little Lime® Panicle Hydrangea	#10 Cont.	44
	RG	Rhus aromatica 'Gro-Low' / Gro-Low Fragrant Sumac	#5 Cont.	135
	SM	Syringa meyeri 'Palibin' / Dwarf Korean Lilac	#7 Cont.	65
PERRENIALS				
	CK	Calamagrostis x acutiflora 'Karl Foerster' / Feather Reed Grass	#1 Cont.	409
	MP	Miscanthus sinensis 'Purpurescens' / Flame Grass	#3 Cont.	16
SYMBOL	**CODE**	**BOTANICAL / COMMON NAME**	**CONT**	**SPACING**	**QTY**
SHRUB AREAS					
	JB2	Juniperus sabina 'Buffalo' / Buffalo Juniper	#5 Cont.	36" o.c.	65
GROUND COVERS					
	PP	Poa pratensis / Kentucky Bluegrass	sod		31,159 sf

city of cottage grove calculations

TREE PRESERVATION CALCULATIONS	
TOTAL EXISTING TREE QUALIFYING INCHES (DBH)	257"
PERMITTED TREE REMOVAL THRESHOLD (DBH)	40%
PERMITTED INCHES (DBH) THAT CAN BE REMOVED	102"
TREES BEING REMOVED ON SITE (DBH)	47"
SITE CALCULATIONS	
PARCEL AREA	2.5 ACRES
BUILDING AREA	0.48 ACRES (19%)
PARKING AREA	0.57 ACRES (23%)
DRIVEWAY AREA	0.12 ACRES (4.8%)
SIDEWALK AREA	0.04 ACRES (1.6%)
LANDSCAPED AREA	1.29 ACRES (52%)

PROJECT
Park Grove Library

Phase Information (Optional)

CLIENT
Washington County

Client's Project Number (Optional)

ARCHITECT
Alliance
400 Clifton Avenue
Minneapolis, MN 55403
612.874.4100

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PLANNING SUBMISSION	07/30/2025

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ALLiiANCE

Landscape plan

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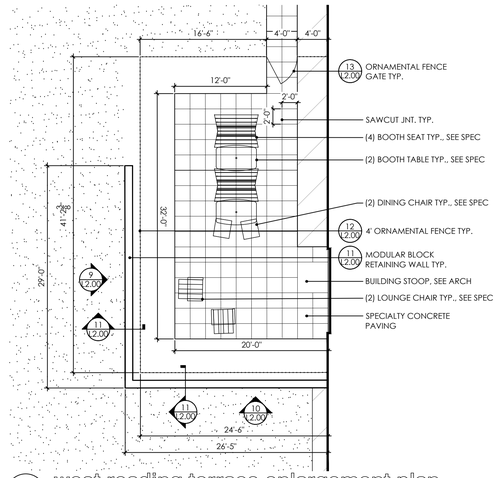
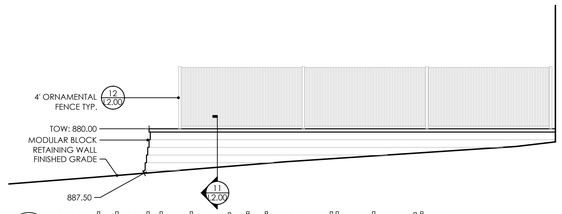


8 west reading terrace enlargement plan

scale: 1/8" = 1'-0"

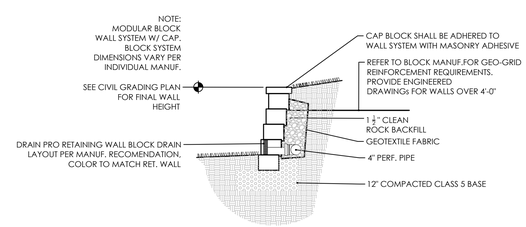
9 modular block retaining wall - elevation

scale: 1/2" = 1'-0"



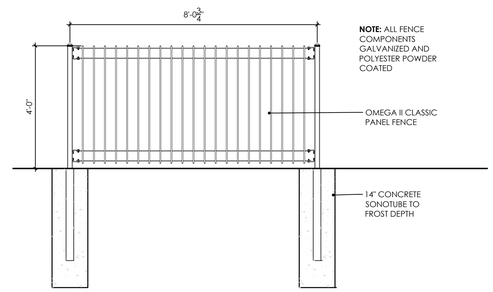
10 modular block retaining wall - elevation

scale: 1/2" = 1'-0"



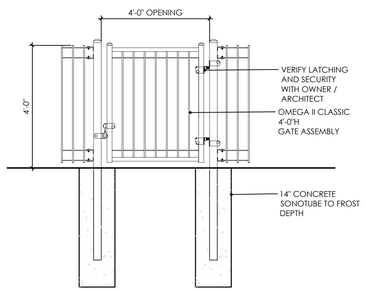
11 modular block retaining wall section typ.

scale: 1/2" = 1'-0"



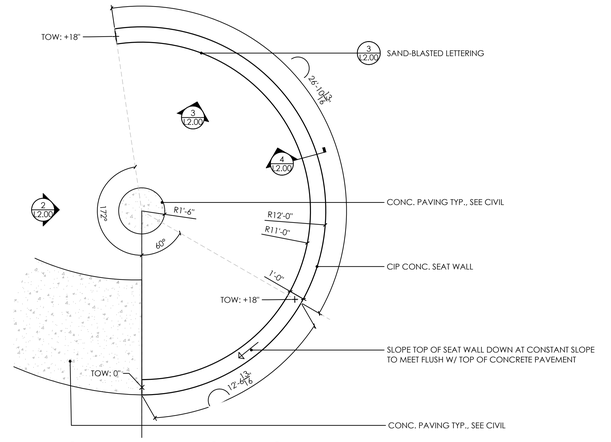
12 4' ornamental fence typ.

scale: 1/2" = 1'-0"



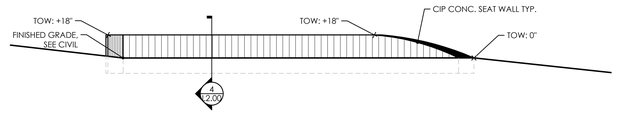
13 ornamental fence gate typ.

scale: 1/2" = 1'-0"



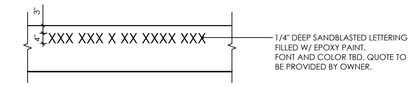
1 cip conc. seat ring - plan

scale: 1/4" = 1'-0"



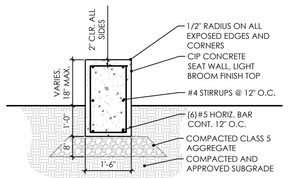
2 cip conc. seat ring - elevation

scale: 1/4" = 1'-0"



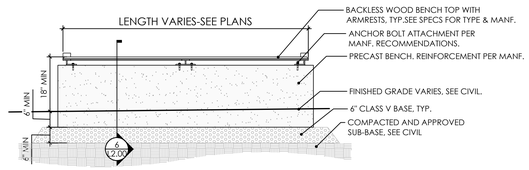
3 sand-blasted lettering

scale: 1/2" = 1'-0"



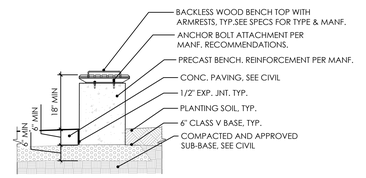
4 cip conc. seat ring typ.

scale: 1/2" = 1'-0"



5 site bench typ.

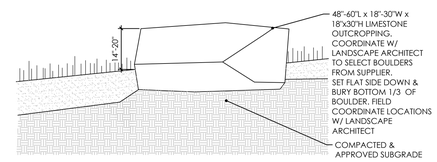
scale: 1/2" = 1'-0"



6 site bench typ.

scale: 1/2" = 1'-0"

NOTE: TYPICAL SECTION SHOWN FOR REFERENCE ONLY. ACTUAL CONDITIONS VARY. SEE PLAN FOR LAYOUT



7 boulder typ.

scale: 1/2" = 1'-0"

PROJECT

Park Grove Library

Phase Information (Optional)

CLIENT

Washington County

Client's Project Number (Optional)

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Details

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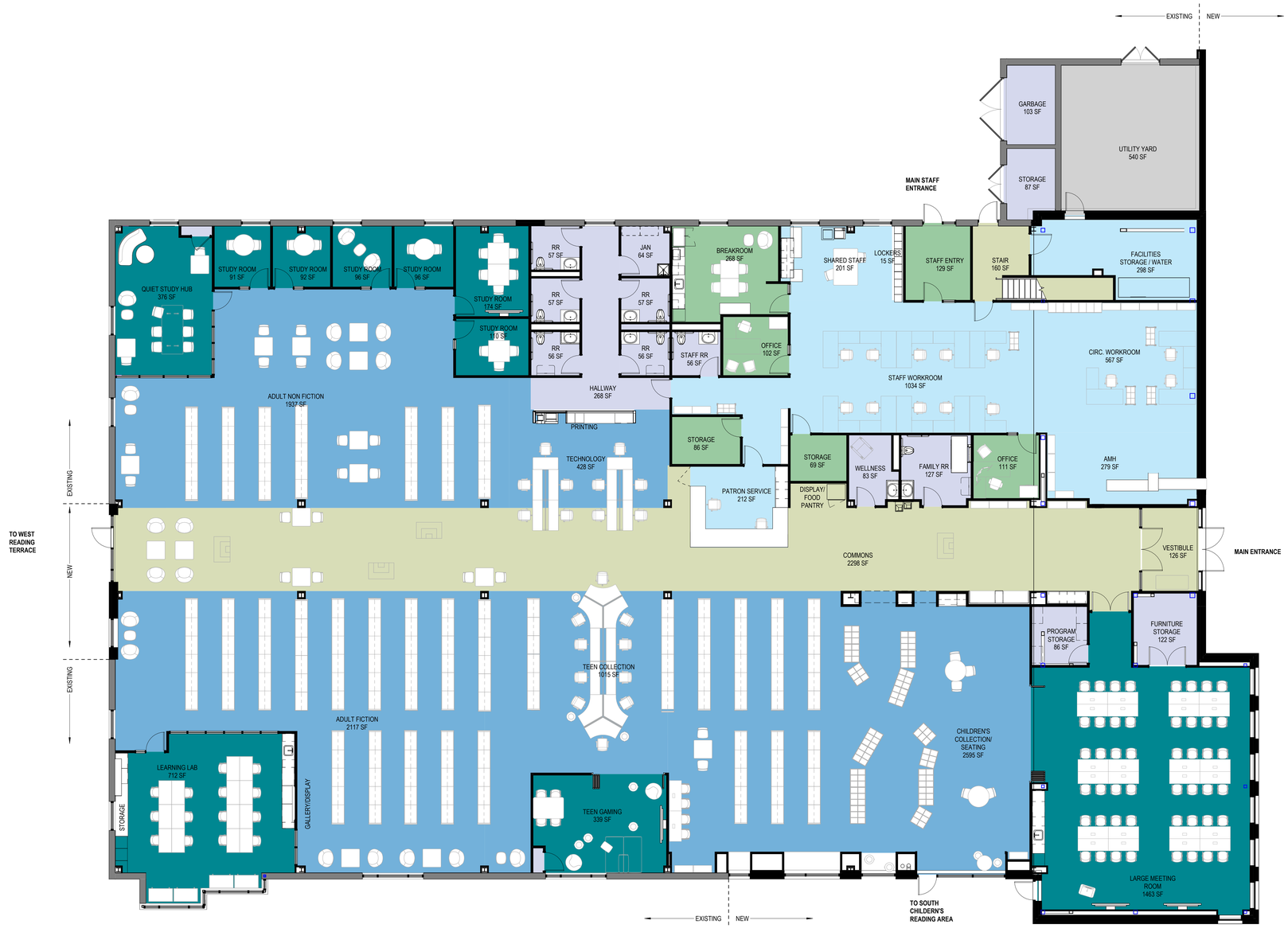

1D SCHEMATIC LEVEL 1 PLAN
1/8" = 1'-0"

Department Legend

- CIRCULATION
- COLLECTIONS
- COMMUNITY
- MECHANICAL
- STAFF CLOSED
- STAFF OPEN
- SUPPORT

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FLOOR PLAN

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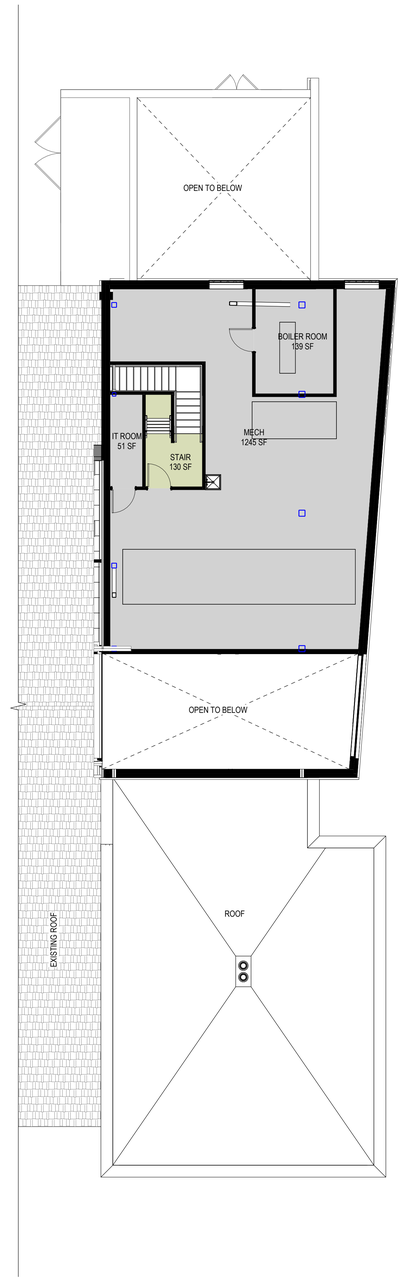

1D LEVEL 2 PLAN COLOR Copy 1
1/8" = 1'-0"

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FLOOR PLAN

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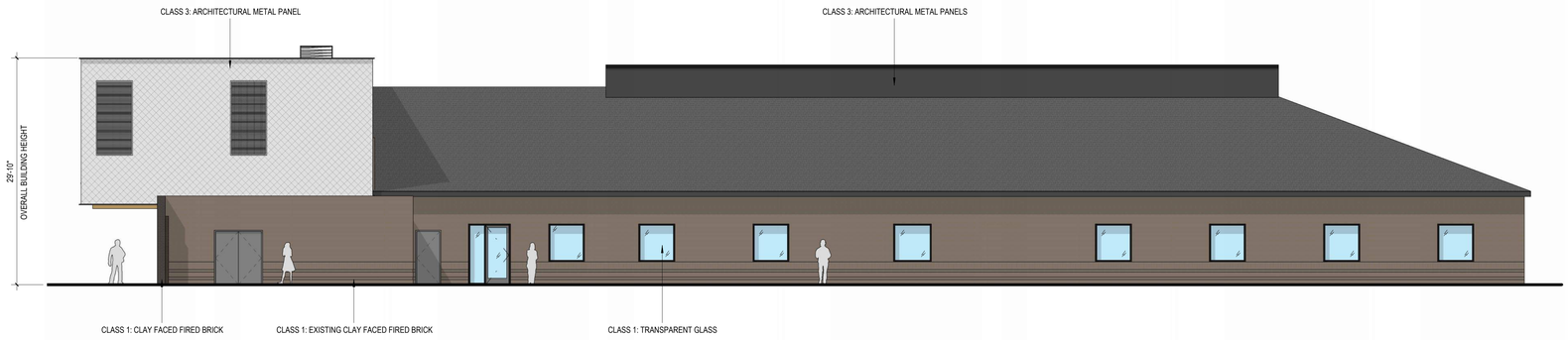
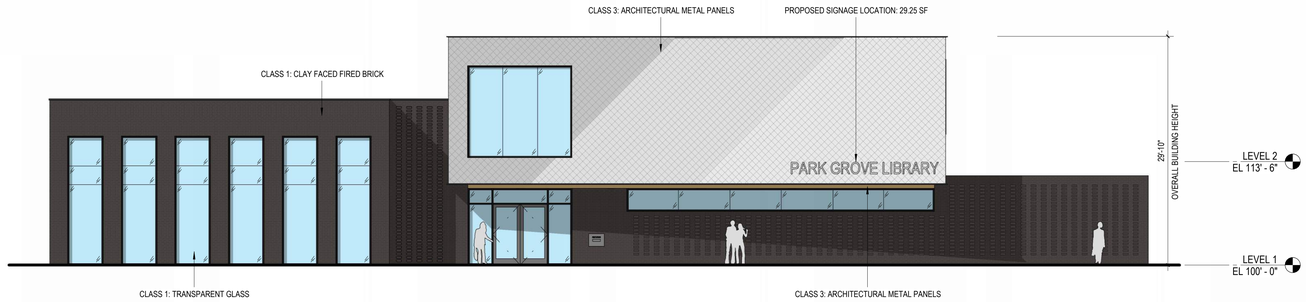
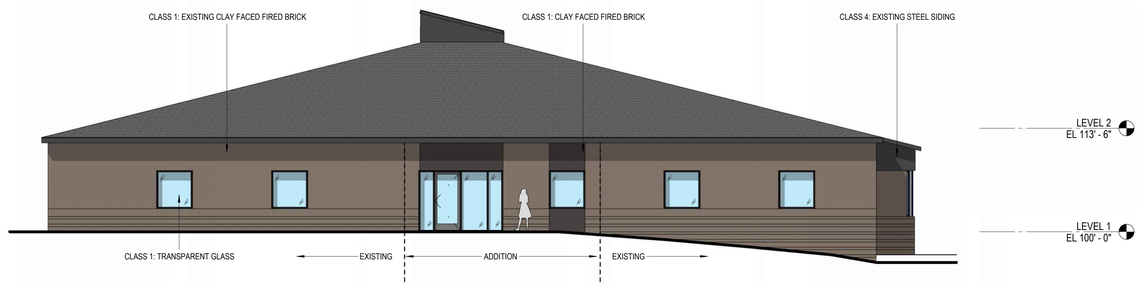


1A EXTERIOR ELEVATION - NORTH
1/8" = 1'-0"

1B EXTERIOR ELEVATION - SOUTH
1/8" = 1'-0"



1C EXTERIOR ELEVATION - EAST
1/8" = 1'-0"



1D EXTERIOR ELEVATION - WEST
1/8" = 1'-0"

City of Cottage Grove Material Requirements
11-3-11: Architectural Design Standards
Non Residential Building
(3) Different Class 1 Materials
Minimum of 65% Class 1 or 2 Materials
No more than 10% Class 4 Materials

Class 1 Materials:
Belden Ebony Black Smooth (Fired Clay Faced Brick)
Transparent Glass
Existing Fired Clay Faced Brick

Class 2 Materials:
N/A

Class 3 Materials:
Architectural Metal Panels

Class 4 Materials:
Steel Siding

Material Percentage Break Down

Class 1 Materials	8165 sf / 10,392 sf =	79%
Class 2 Materials	0 sf / 10,392 sf =	0%
Class 3 Materials	2116 sf / 10,392 sf =	20%
Class 4 Materials	110 sf / 10392 sf =	1%

Material Narrative
The primary façade material for the addition and main entry is a Fired Clay Faced Brick, Ebony Black Smooth by Belden. This dark brown-black brick contrasts the existing brick on the remainder of the building, breaking up the original monolithic facade and signals to patrons that this is a significant re-imagining of the original library. Special brick detailing with corbelling patterns adds pattern and interest to the walls near the entry.

The secondary facade material is an architectural metal panel, Anodized Diamond Tile by Millennium Forms. The small scale and installation pattern of the metal tile on the façade creates a playful, welcoming civic building. Three colors will be installed to create a gradient effect across the building, blending from a darker to lighter neutral color. This gradient symbolizes water and reflects the natural environment that is present in Cottage Grove.

Areas where multiple materials come together have been carefully considered to highlight the differences. We are inspired by the idea of 'The Confluence', similar to the nearby confluence of the St. Croix and Mississippi River. At the south and west sides of the building, brick patterning recalls the detailed brick patterns of the existing building in a new, modern way.

The remainder of the facade is dedicated to bird safe Transparent Glass, providing patrons with views and connections both into the library and to the landscape around the library.

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EXTERIOR ELEVATIONS

a3.02

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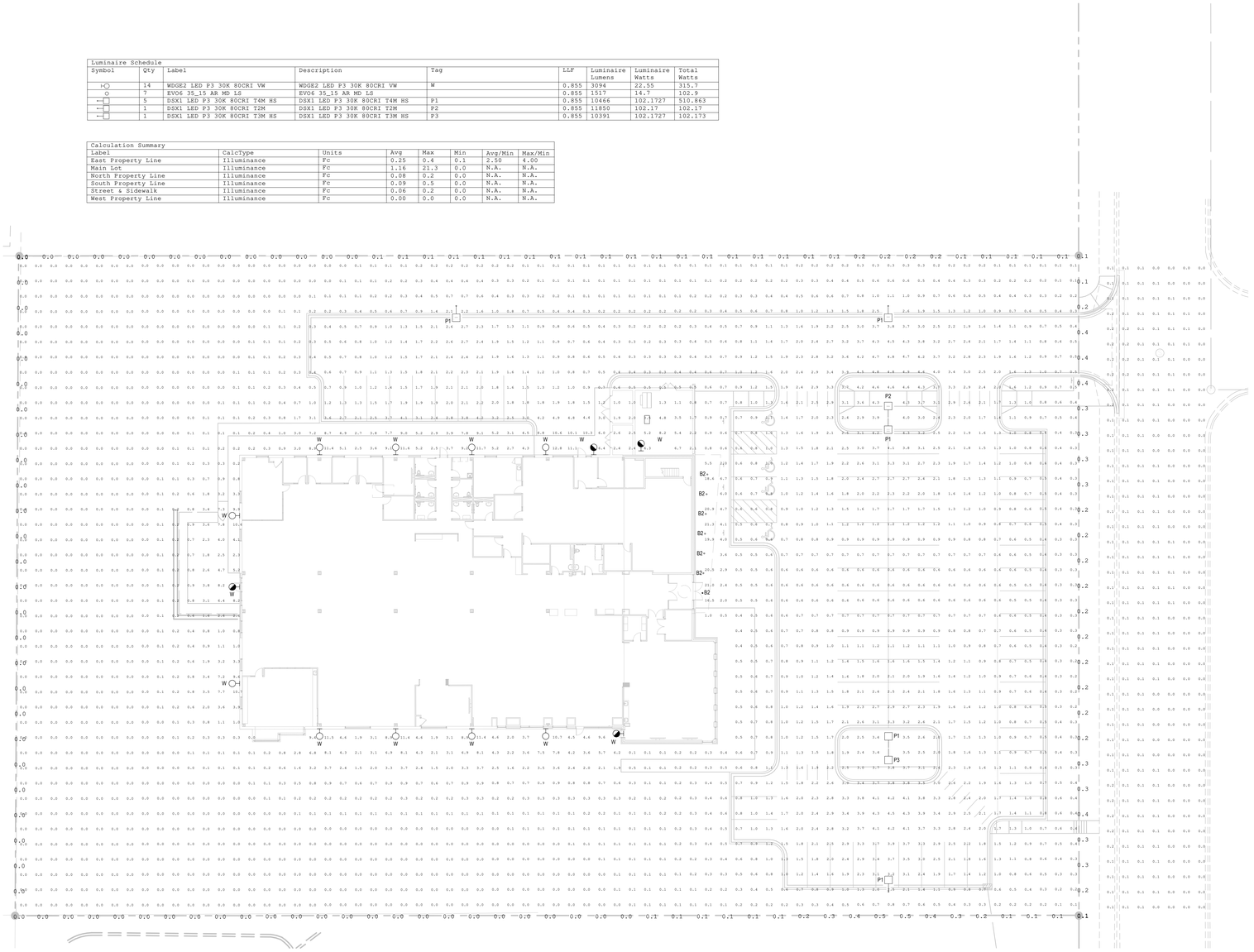
Luminaire Schedule								
Symbol	Qty	Label	Description	Tag	LLF	Luminaire Lumens	Luminaire Watts	Total Watts
	14	WDGE2 LED P3 30K 80CRI VW	WDGE2 LED P3 30K 80CRI VW	W	0.855	3094	22.55	315.7
	7	EVO6 35_15 AR MD LS	EVO6 35_15 AR MD LS		0.855	1517	14.7	102.9
	5	DSX1 LED P3 30K 80CRI T4M HS	DSX1 LED P3 30K 80CRI T4M HS	P1	0.855	10466	102.1727	510.863
	1	DSX1 LED P3 30K 80CRI T2M	DSX1 LED P3 30K 80CRI T2M	P2	0.855	11850	102.17	102.17
	1	DSX1 LED P3 30K 80CRI T3M HS	DSX1 LED P3 30K 80CRI T3M HS	P3	0.855	10391	102.1727	102.173

Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
East Property Line	Illuminance	Fc	0.25	0.4	0.1	2.50	4.00
Main Lot	Illuminance	Fc	1.16	21.3	0.0	N.A.	N.A.
North Property Line	Illuminance	Fc	0.08	0.2	0.0	N.A.	N.A.
South Property Line	Illuminance	Fc	0.09	0.5	0.0	N.A.	N.A.
Street & Sidewalk	Illuminance	Fc	0.06	0.2	0.0	N.A.	N.A.
West Property Line	Illuminance	Fc	0.00	0.0	0.0	N.A.	N.A.



1 ELECTRICAL SITE PHOTOMETRIC PLAN
SCALE: 1" = 20'-0"

PROJECT

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ISSUED FOR	DATE
DESIGN DEVELOPMENT	07/25/2025
PLANNING SUBMISSION	07/30/2025

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COMMISSION NO **5175.0000**

ALLiANCE

ELECTRICAL SITE PHOTOMETRIC PLAN

SHEET **sp0.01**

D-Series Size 1

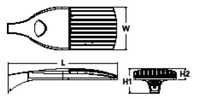
Legacy LED Area Luminaire

Catalog Number
Notes
Type P1, P2, P3

Fill the Tab key or mouse over the page to see all interactive elements

Specifications

EPA:	1.01 ft² (0.09 m²)
Length:	33" (838 mm)
Width:	13" (330 mm)
Height H1:	7-1/2" (190 mm)
Height H2:	3-1/2"
Weight (max):	27 lbs (12.2 kg)



Introduction

The modern styling of the D-Series is striking yet unobtrusive - making a bold, progressive statement even as it blends seamlessly with its environment. The D-Series distills the benefits of the latest in LED technology into a high performance, high efficacy, long-life luminaire.

The outstanding photometric performance results in sites with excellent uniformity, greater pole spacing and lower power density. It is ideal for replacing up to 750W metal halide in pedestrian and area lighting applications with typical energy savings of 65% and expected service life of over 100,000 hours.

Ordering Information

EXAMPLE: DSX1 LED P7 40K T3M MVOLT SPA NLTAIR2 PIRHN DDBXD G1

DSX1 LED

Series	LEDs	Color temperature	Distribution		Voltage	Mounting
DSX1 LED	**Forward optic** P1 P4[1] P7[1] P2 P5[1] P8 P3 P6[1] P9[1] **Rotated optic** P10[1] P12[1] P11[1] P13[1]	30K 3000K 40K 4000K 50K 5000K	TFTM Type F short (Automotive) TFM Type F short TFFM Type F medium TFL Type F long TFLM Type F long medium T1S Type I short T1M Type I medium T2S Type II short T2M Type II medium T2L Type II long T2M Type II medium T3S Type III short T3M Type III medium T3L Type III long T3LM Type III long medium T4S Type IV short T4M Type IV medium T4L Type IV long T4LM Type IV long medium TWFM Forward throw medium TWFL Forward throw long TWFXL Forward throw extra long TSVS Type V very short TSS Type V short TSM Type V medium TSW Type V wide BLC Backlight control[2] LCCO Left corner cutoff[2] RCCO Right corner cutoff[2]	MVOLT[3] 3VOLT (277V-480V)[3,4] 120[3] 208[3] 240[3] 277[3] 347[3] 480[3]	**Shipped included** SRA Square pole mounting RPA Round pole mounting[5] WBA Wall bracket[6] SPUMBA Square pole universal mounting adapter[7] RPUMBA Round pole universal mounting adapter[7] **Shipped separately** KMA8DDBXD U Mast arm mounting bracket adapter (specify finish)[8]

Control options	Other options	Finish (required)	Generation (required)
Shipped installed NLTAIR2 nLight AIR generation 2 enabled[9] PIRBHN Network, high/low motion/ambient sensor[9] PER NEMA (Wet location), receptacle only (controls ordered separately)[3] PERS Five-pin receptacle only (controls ordered separately)[3,10] PER7 Seven-pin receptacle only (controls ordered separately)[3,10] DMG 0-10V dimming wires pulled outside fixture (for use with an external control, ordered separately)[3] DS Dual switching[11,12,13] PIR High/low, motion/ambient sensor, 8-15' mounting height, ambient sensor enabled at dusk[14] PIRH High/low, motion/ambient sensor, 15-30' mounting height, ambient sensor enabled at dusk[14] PIR1FC3V High/low, motion/ambient sensor, 8-15' mounting height, ambient sensor enabled at 1fc[14] PIRH1FC3V High/low, motion/ambient sensor, 15-30' mounting height, ambient sensor enabled at 1fc[14] FAO Field adjustable output[15]	**Shipped installed** HS House-side shield[16] SF Single fuse (120, 277, 347V)[3] DF Double fuse (208, 240, 480V)[3] L90 Left rotated optics[17] R90 Right rotated optics[17] HA 50°C ambient operation[3] **Shipped separately** BS Bird spikes[18] EGS External glare shield	DDBXD Dark bronze DBLXD Black DNAXD Natural aluminum DWHXD White DDBTXD Textured dark bronze DBLBXD Textured black DNATXD Textured natural aluminum DWHGXD Textured white DSSTXD Textured sandstone	G1 Generation 1

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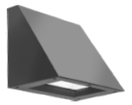


WDGE2 LED

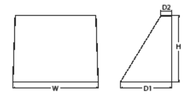
Architectural Wall Sconce
Visual Comfort Optic

Catalog Number
Notes
Type W

Fill the Tab key or mouse over the page to see all interactive elements

Specifications

Depth (D1):	7"
Depth (D2):	1.5"
Height:	9"
Width:	11.5"
Weight (without options)	13.5 lbs



Introduction

The WDGE LED family is designed to meet specifier's every wall-mounted lighting need in a widely accepted shape that blends with any architecture. The clean rectilinear design comes in four sizes with lumen packages ranging from 1,200 to 25,000 lumens, providing a true site-wide solution. Embedded with nLight® AIR wireless controls, the WDGE family provides additional energy savings and code compliance.

WDGE2 delivers up to 6,000 lumens with a soft, non-pixilated light source, creating a visually comfortable environment. When combined with multiple integrated emergency battery backup options, including an 1 8W cold temperature option, the WDGE2 becomes the ideal wall-mounted lighting solution for pedestrian scale applications in any environment.

design select Items marked by a shaded background qualify for the Design Select program and ship in 15 days or less. To learn more about Design Select, visit www.acuitybrands.com/designselect. *See ordering tree for details

WDGE LED Family Overview

Luminaire	Optics	Standard EM, 0°C	Cold EM, -20°C	Sensor	Approximate Lumens (4000K, 80CRI)						
					P0	P1	P2	P3	P4	P5	P6
WDGE1 LED	Visual Comfort	4W		--	750	1,200	2,000	--	--	--	--
WDGE2 LED	Visual Comfort	10W	18W	Standalone / nLight	--	1,200	2,000	3,000	4,500	6,000	--
WDGE2 LED	Precision Refraction	10W	18W	Standalone / nLight	700	1,200	2,000	3,200	4,200	--	--
WDGE3 LED	Precision Refraction	15W	18W	Standalone / nLight	6,000	7,500	8,500	10,000	12,000	--	--
WDGE4 LED	Precision Refraction			Standalone / nLight	--	12,000	16,000	18,000	20,000	22,000	25,000

Ordering Information

EXAMPLE: WDGE2 LED P3 40K 80CRI VF MVOLT SRM DDBXD

Series	Package	Color Temperature	CRI	Distribution	Voltage	Mounting
WDGE2 LED	P1[1] P13W P2[1] P23W P3[1] P32W P4[1] Door with small window (DWW) is required to accommodate sensors. See page 2 for more details. P5[1]	27K 2700K 30K 3000K 35K 3500K 40K 4000K 50K[2] 5000K	80CRI 90CRI	VF Visual comfort forward throw VW Visual comfort wide	MVOLT 347[3] 480[3]	**Shipped included** SRM Surface mounting bracket ICW Indirect Canopy Ceiling Washer bracket (dry-damp locations only)[4]

Shipped separately	Options	Finish
AWS 3/8 inch Architectural wall spacer[5] PBBW Surface-mounted back box (top, left, right conduit entry). Use when there is no junction box available.[6]	E4WH Emergency battery backup, Certified in CA Title 20 MAED, (4W, 3°C min) E10WH Emergency battery backup, Certified in CA Title 20 MAED, (10W, 3°C min) E20WC Emergency battery backup, Certified in CA Title 20 MAED, (18W, -20°C min)[7] PE Photocell, Button Type[8] DS Dual switching (comes with 2 drivers and 2 light engines; see page 3 for details)[9] DMG 0-10V dimming wires pulled outside fixture (for use with an external control, ordered separately)[9] BCE Bottom conduit entry for back box (PBBW). Total of 4 entry points. DSLL Dual Switching (1 Driver, 2 Light Engines) CCE Coastal Construction[10]	**Standalone Sensors/Controls** (order with fixture) (PIR or PIRH) PIR 8ft mixed (1000 sf) motion sensor for 8-15' mounting heights. Intended for use on switched circuits with external dusk to dawn switching. PIRH 8ft mixed (1000 sf) motion sensor for 15-30' mounting heights. Intended for use on switched circuits with external dusk to dawn switching. PIR1FC3V 8ft mixed (1000 sf) motion sensor for 8-15' mounting heights with photocell pre-programmed for dusk to dawn operation. PIRH1FC3V 8ft mixed (1000 sf) motion sensor for 15-30' mounting heights with photocell pre-programmed for dusk to dawn operation. **Networked Sensors/Controls** (order in accordance with PIR or PIRH or PIR1FC3V) NLTAIR2 PIR Embedded wireless controls by nLight with Passive Infrared Occ sensor and on/off photocell for 8-15' mounting heights. NLTAIR2 PIRH Embedded wireless controls by nLight with Passive Infrared Occ sensor and on/off photocell for 15-30' mounting heights. NLTAIRE2 PIR Embedded wireless controls by nLight with IEEE24 listed emergency operation, Passive Infrared Occ sensor and on/off photocell for 8-15' mounting heights* NLTAIRE2 PIRH Embedded wireless controls by nLight with IEEE24 listed emergency operation, Passive Infrared Occ sensor and on/off photocell for 15-30' mounting heights* See page 4 for more sPIRe functionality	DDBXD Dark bronze DBLXD Black DNAXD Natural aluminum DWHXD White DSSXD Sandstone DDBTXD Textured dark bronze DBLBXD Textured black DNATXD Textured natural aluminum DWHGXD Textured white DSSTXD Textured sandstone

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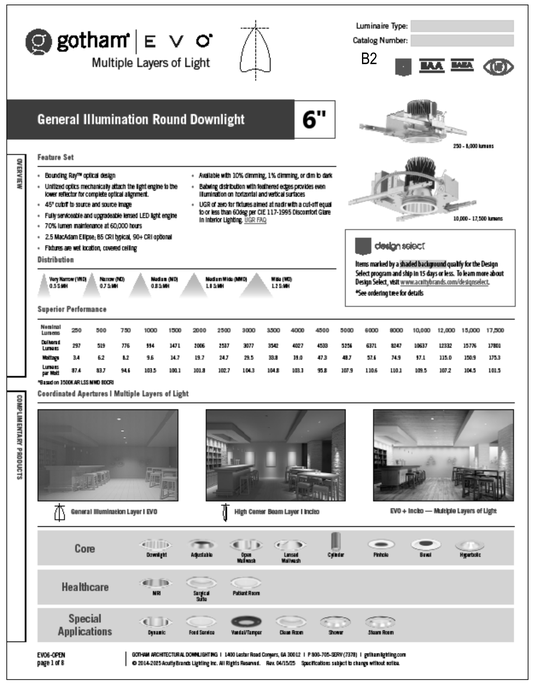

gotham® | E V O®
Multiple Layers of Light

Luminaire Type:
Catalog Number:
B2

General Illumination Round Downlight 6"

Feature Set

- Bounding Ray™ optical design
- Unitized optics mechanically attach the light engine to the lower reflector for complete optical alignment.
- 45° cutoff to source and source image
- Fully serviceable and upgradeable lensed LED light engine
- 70% lumen maintenance at 60,000 hours
- 2.5 MacAdam Ellipse, 85 CRI typical, 90+ CRI optional
- Fixtures are wet location, covered ceiling
- Available with 10% dimming, 1% dimming, or dim to dark
- Batwing distribution with feathered edges provides even illumination on horizontal and vertical surfaces
- UGR of zero for fixtures aimed at nadir with a cut-off equal to or less than 60deg per CIE 117-1995 Discomfort Glare in Interior Lighting. [PDF FAQ]

250 - 6,000 lumens

10,000 - 17,500 lumens

design select
Items marked by a shaded background qualify for the Design Select program and ship in 15 days or less. To learn more about Design Select, visit www.acuitybrands.com/designselect.
*See ordering tree for details

Distribution

Very Narrow (VN3) 0.3 S:MH | Narrow (ND) 0.7 S:MH | Medium (MD) 0.85 S:MH | Medium Wide (MW3) 1.0 S:MH | Wide (WD) 1.25 S:MH

Superior Performance

Nominal Lumens	250	500	750	1000	1500	2000	2500	3000	3500	4000	4500	5000	6000	8000	10,000	12,000	15,000	17,500
Delivered Lumens	297	519	776	994	1471	2006	2537	3077	3542	4027	4533	5256	6371	8247	10637	12332	15776	17881
Wattage	3.4	6.2	8.2	9.6	14.7	19.7	24.7	29.5	33.8	39.0	47.3	48.7	57.6	74.9	97.1	115.0	150.9	175.3
Lumens per Watt	87.4	83.7	94.6	103.5	100.1	101.8	102.7	104.3	104.8	103.3	95.8	107.9	110.6	110.1	109.5	107.2	104.5	101.5

*Based on 3500K ARLSS MIND 80CRI

Coordinated Apertures | Multiple Layers of Light

General Illumination Layer | EVO

High Corner Beam Layer | Incito

EVO + Incito — Multiple Layers of Light

Core

Healthcare

Special Applications

GOTHAM ARCHITECTURAL DOWNLIGHTING | 1400 Lester Road Conyers, GA 30012 | P 800-705-SERV (7378) | gothamlighting.com

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ELECTRICAL SITE LIGHTING CUTSHEETS

SHEET sp0.02

WASHINGTON COUNTY LIBRARY

City of Cottage Grove

Concept 1
July 2025

BOLTON & MENK

Design Narrative

- Added curb bumpouts with integral pavers create protected, striped on-street parking
- Bumpouts create opportunities for introducing plant material near intersections through the use of seasonal planters
- 10-foot wide stairs provide access from sidewalk and on-street parking to library parking lot
- Enhanced planting (shrubs and perennials) creates new entry experience to library site for pedestrians using stairs
- Plinth adjacent to stairs creates opportunity for specialty planter or public art installation
- New street trees provide shade for parking and sidewalks

Hemingway Ave S

79th Street

Pavers in bumpout areas

Seasonal planters

Striped on-street parking

New street trees

Plinth for planter or public art

6’ wide stairs

Existing library signage

Enhanced landscaping (shrubs & perennials)

HORZ. SCALE 0 20 40 FEET

H:\COTT_General\2025\Washington Co Library Streetscape\103963_L_BASE_N3.dwg

Perspective View

Exterior view of the addition - Southeast Corner

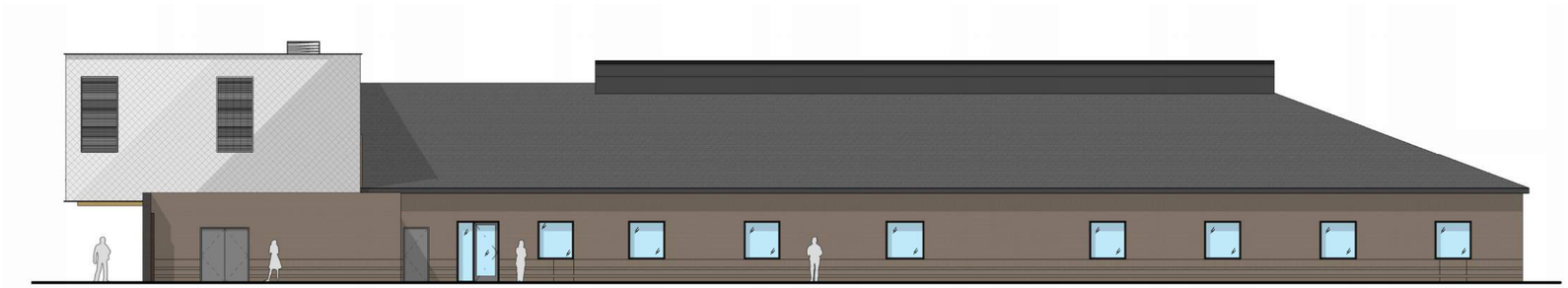
Perspective View

Interior view of main library stacks area

Design Development | Exterior Development

East Elevation

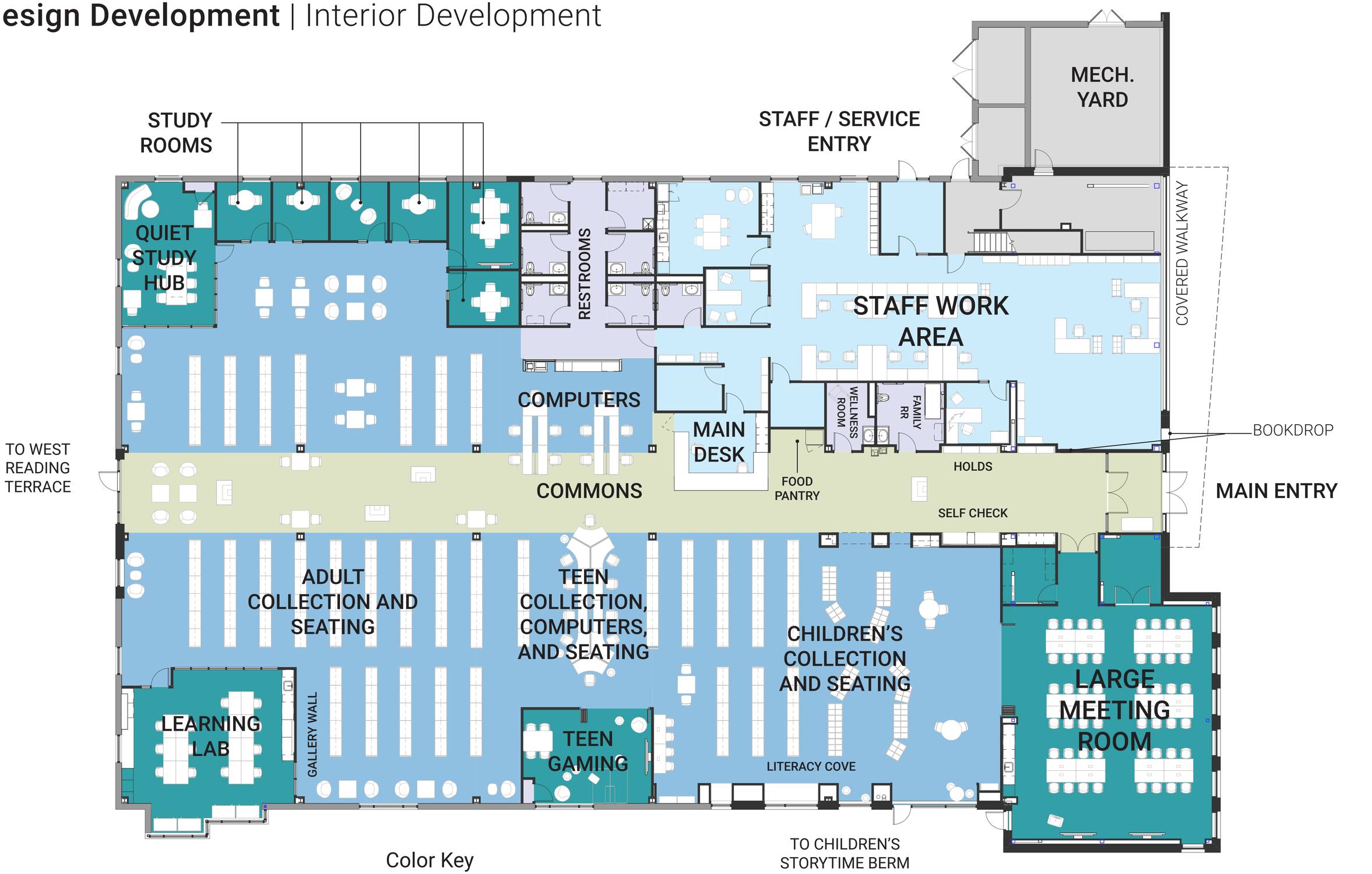
West Elevation



North Elevation

South Elevation

Design Development | Interior Development



Color Key

- Circulation
- Collections
- Community
- Staff
- Mechanical
- Restrooms

NORTH

0' 6' 12' 24'

SCALE: 1" = 12'-0"

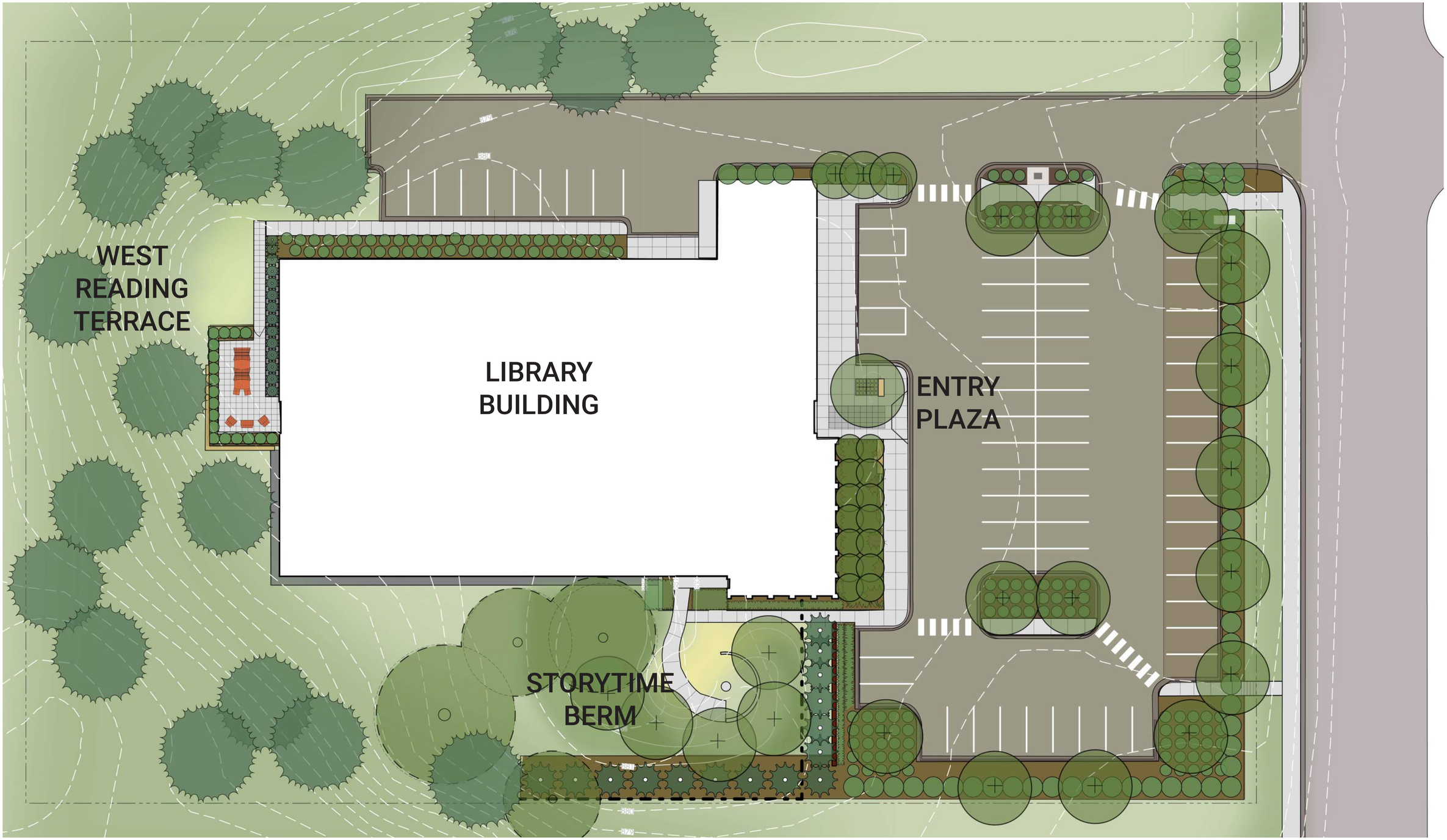
First Floor Plan

Plan view of the Library

ALLIANCE

Washington County

Design Development | Site Development



Landscape Plan

Plan view of the proposed landscape for the libary

NORTH

0' 7'-6" 15' 30'

SCALE: 1" = 15'-0"

ALLIANCE

Washington County

aune fernandez landscape architects

Perspective - South Children’s Storytime Berm

View of the outdoor reading area

Stormwater Management Plan

PARK GROVE LIBRARY
WASHINGTON COUNTY, MN

City of Cottage Grove, MN

Prepared for:
Alliiance

Prepared by:
Kimley-Horn
767 Eustis Street, Suite 100
St. Paul, MN 55114
Contact: Dan Elenbaas

Prepared On: August 4, 2025

Stormwater Management Report

for

Park Grove Library

Prepared for:

Alliiance

August 4, 2025

Prepared By:

Kimley-Horn and Associates, Inc.
767 Eustis Street, Suite 100
St. Paul, MN 55114

.

I hereby certify that this plan, specification, 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.

_____

Daniel L Elenbaas

Date: 08/04/2025 Registration No. 44614

Kimley»Horn

Table of Contents

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1.0 Introduction

Washington County is proposing to redevelop an existing library site located at 7900 Hemingway Avenue South in Cottage Grove, MN. The existing site has a parking lot with one way circulation and no stormwater treatment on site. The parking lot will be replaced and a portion of the building will be replaced with a flat roof. The adjacent properties consist of residential apartments. The total drainage study area consists of 2.538 acres. HydroCAD 10.2 and NOAA Atlas 14 runoff depths were used to analyze existing and proposed stormwater conditions of the redeveloped site. The proposed development has been evaluated to meet or exceed the guidelines set forth by the City of Cottage Grove, South Washington Watershed District, Minnesota Pollution Control Agency (MPCA), and the National Pollution Discharge Elimination System (NPDES).

2.0 Pre-development Conditions

The existing roof is sloped with no gutters or downspouts and runoff travels over the vegetated lawn. The existing parking lot sheet drains to a catch basin or to the city street.

A summary of the pervious and impervious coverage for existing conditions is included below:

- *Total project area = 2.538 acres*
    - *Existing Pervious Area = 1.222 acres (48.1%)*
    - *Existing Impervious Area = 1.316 acres (51.9%)*
    - *Weighted Curve Number (CN) = 86.6*

3.0 Post-development Conditions

The developed site drainage will collect the new roof stormwater through an internal drain routed to the perforated Nyloplast structure that will migrate to the storage stone and infiltrate into the natural soils. The parking lot will drain to the east where the row of parking will contain PaveDrain blocks that allow the stormwater to enter the storage stone through the joints.

A summary of the pervious and impervious coverage for proposed conditions is included below.

- *Total project area = 2.538 acres*
- *Disturbed area = 1.85 acres*
    - *Proposed Pervious Area = 1.225 acres (48.3%)*
    - *Proposed Impervious Area = 1.313 acres (51.7%)*
    - *Weighted Curve Number (CN) = 83.0*

4.0 Rate Attenuation Summary

An analysis was completed to ensure peak runoff rates were not increasing in the 2-, 10-, and 100-year 24-hour storm events for the discharge location on the site. The discharge location is an existing storm

sewer system located in the southeast corner of the parking lot. The outfall from the BMP will enter into the existing inlet or the new 12" pipe from the underground stone storage.

The proposed development achieves this requirement as outlined in the table below.

Table 1: Rate Attenuation

	2 Year (2.79 in.)	*10 Year (4.15 in.)*	*100 Year (7.40 in.)*
Pre-Development Rate (CFS)	5.57	10.43	22.75
Post-Development Rate (CFS)	1.72	8.10	20.38

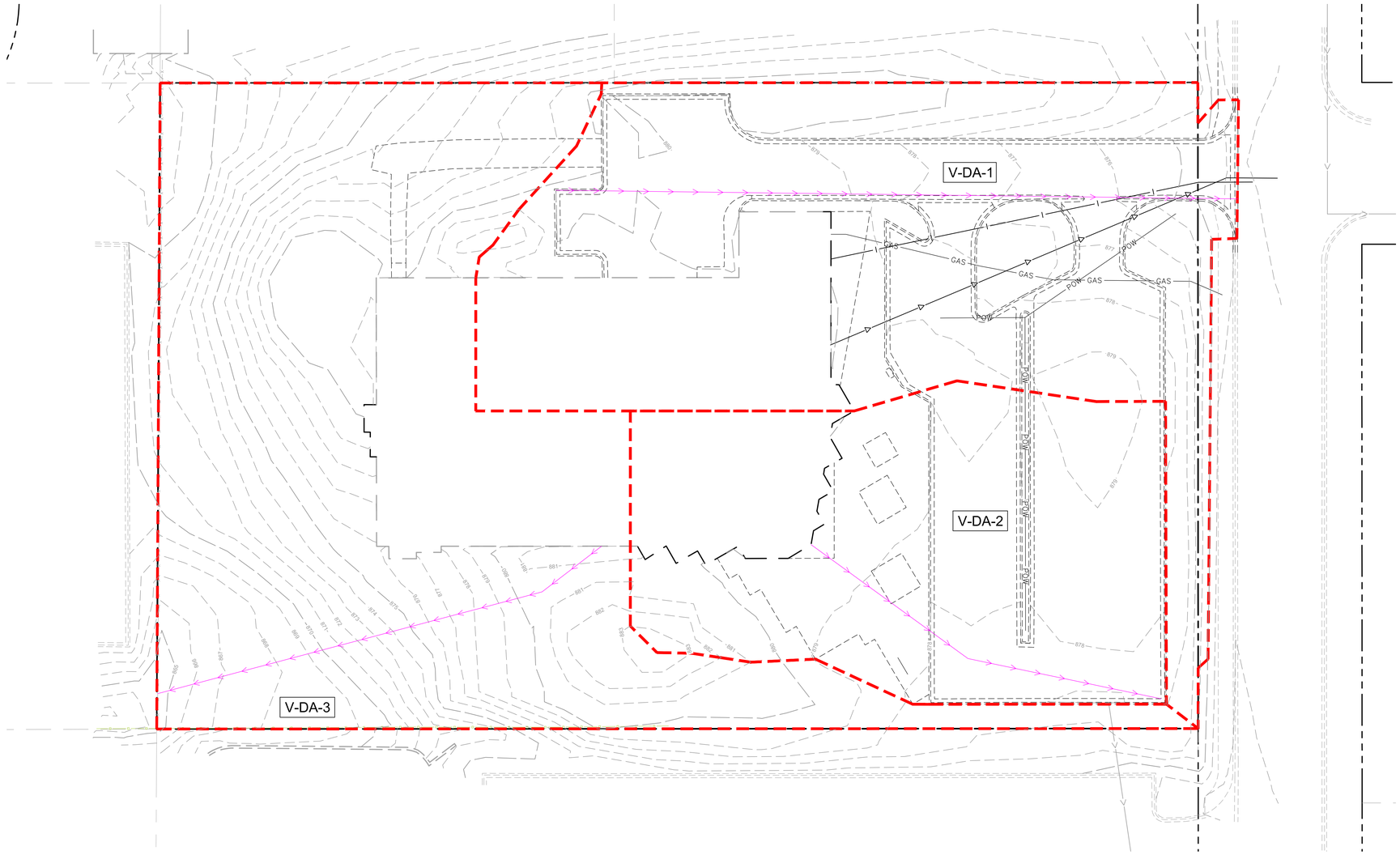
5.0 Water Quality Summary

The soils on site are predominantly poorly graded sand (SP) and no water or confining layer were encountered to the depth of all the borings performed. Infiltration is the ideal solution to meet the water quality requirements. The area is located near the groundwater DWSMA with high vulnerability and within the Cottage Grove wellhead protection area. However, the site is outside of an emergency response area. The Minnesota Stormwater Manual's wellhead flowchart leads to a higher level of review required. Under condition 2 a geologic assessment is not necessary. The city wells are located more than ½ mile away from the site.

The PaveDrain system is designed to infiltrate the runoff from a 1.1" event over the tributary impervious area. The proposed impervious area is calculated to be 0.77 acres of the total contributing drainage area of 1.146 acres which creates a water quality volume of 3,050 CF. The proposed weir set at 874.94' achieves 3,060 CF of infiltration before overtopping begins and the 12" pipe governs for rate control.

Exhibits

Exhibit 1. Existing Drainage Exhibit



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NORTH

GRAPHIC SCALE IN FEET
0 10 20 40

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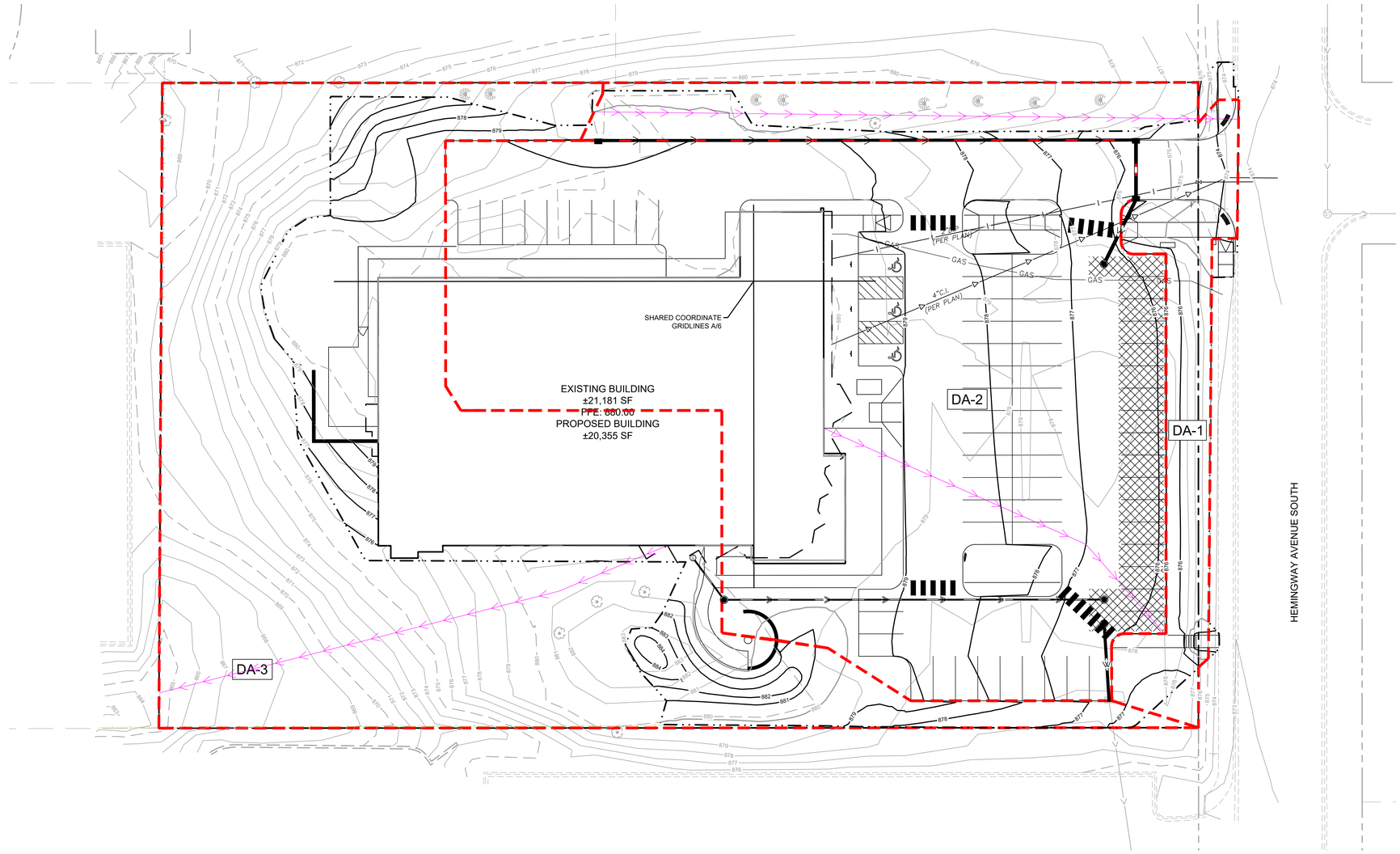
EXISTING DRAINAGE EXHIBIT

Exhibit 2. Proposed Drainage Exhibit



LEGEND

- PROPERTY LINE
- EXISTING CONTOUR
- PROPOSED CONTOUR
- TIME OF CONCENTRATION PATH
- PROPOSED BASIN BOUNDARY
- PROPOSED STORM SEWER
- PROPOSED STORM MANHOLE (SOLID CASTING)
- PROPOSED STORM MANHOLE (ROUND INLET CASTING)
- PROPOSED STORM MANHOLE/ CATCH BASIN (CURB INLET CASTING)

PROJECT

Park Grove Library

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NORTH

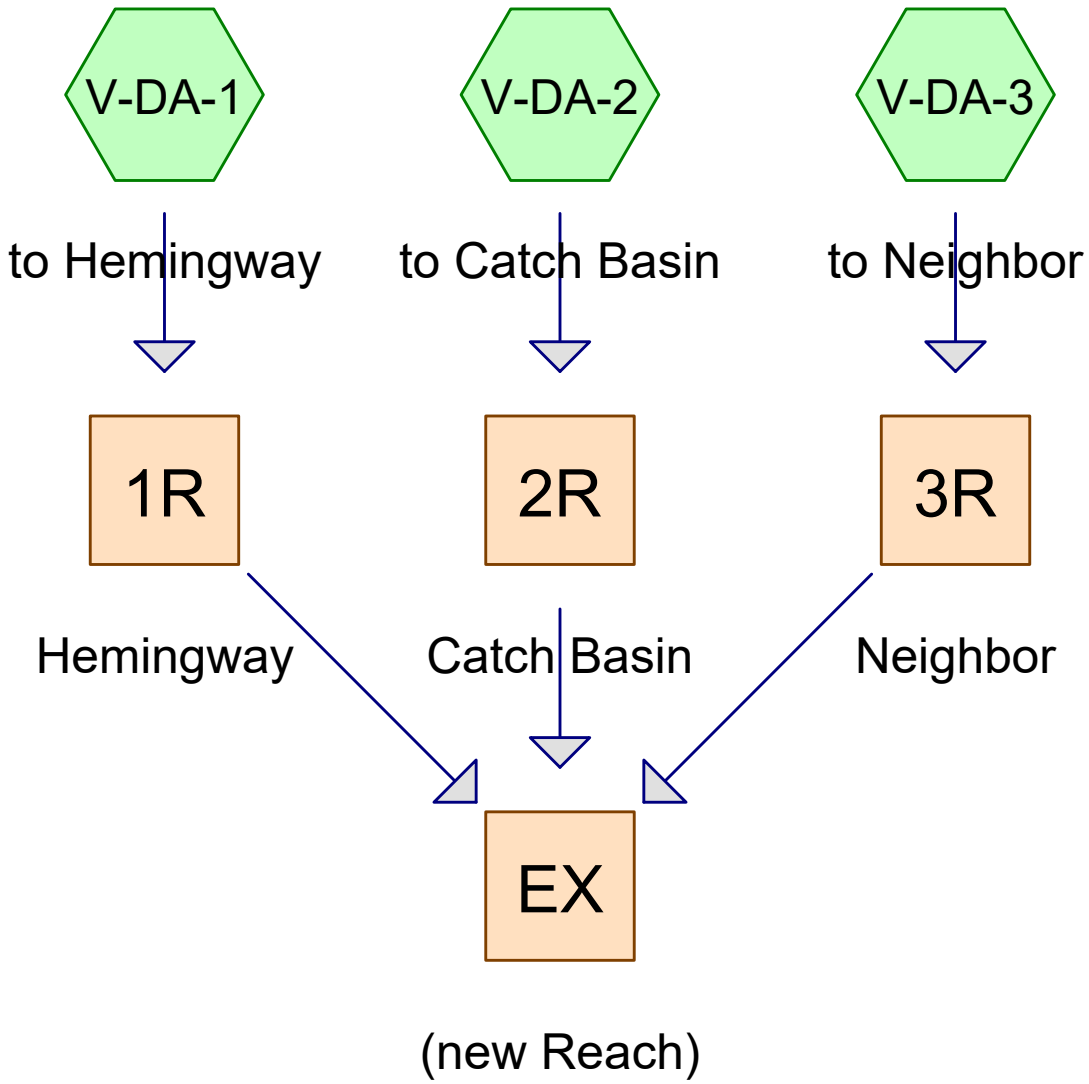
GRAPHIC SCALE IN FEET
0 10 20 40

ALLIANCE

PROPOSED DRAINAGE EXHIBIT

Appendices

Appendix 1. Pre-Development HydroCAD Model Analysis



Subcat Reach Pond Link

Routing Diagram for PGL
Prepared by Kimley-Horn & Associates, Printed 8/4/2025
HydroCAD® 10.20-5c s/n 02344 © 2023 HydroCAD Software Solutions LLC

Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-year	MSE 24-hr	3	Default	24.00	1	2.79	2
2	10-year	MSE 24-hr	3	Default	24.00	1	4.15	2
3	100-year	MSE 24-hr	3	Default	24.00	1	7.40	2

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.271	39	>75% Grass cover, Good, HSG A (V-DA-1)
0.072	61	>75% Grass cover, Good, HSG B (V-DA-2)
0.879	74	>75% Grass cover, Good, HSG C (V-DA-3)
0.419	98	Paved parking, HSG A (V-DA-1)
0.384	98	Paved parking, HSG B (V-DA-2)
0.200	98	Roofs, HSG A (V-DA-1)
0.105	98	Roofs, HSG B (V-DA-2)
0.181	98	Roofs, HSG C (V-DA-3)
0.027	98	Unconnected pavement, HSG C (V-DA-3)
2.538	**82**	**TOTAL AREA**

Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.890	HSG A	V-DA-1
0.561	HSG B	V-DA-2
1.087	HSG C	V-DA-3
0.000	HSG D	
0.000	Other	
2.538		**TOTAL AREA**

Ground Covers (selected nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.271	0.072	0.879	0.000	0.000	1.222	>75% Grass cover, Good	V-DA-1, V-DA-2, V-DA-3
0.419	0.384	0.000	0.000	0.000	0.803	Paved parking	V-DA-1, V-DA-2
0.200	0.105	0.181	0.000	0.000	0.486	Roofs	V-DA-1, V-DA-2, V-DA-3
0.000	0.000	0.027	0.000	0.000	0.027	Unconnected pavement	V-DA-3
0.890	**0.561**	**1.087**	**0.000**	**0.000**	**2.538**	**TOTAL AREA**	

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentV-DA-1: to Hemingway Runoff Area=38,765 sf 69.56% Impervious Runoff Depth=1.09"
Tc=7.0 min CN=80 Runoff=1.73 cfs 0.081 af

SubcatchmentV-DA-2: to Catch Basin Runoff Area=24,452 sf 87.16% Impervious Runoff Depth=2.05"
Tc=7.0 min CN=93 Runoff=1.96 cfs 0.096 af

SubcatchmentV-DA-3: to Neighbor Runoff Area=47,353 sf 19.13% Impervious Runoff Depth=0.98"
Tc=7.0 min UI Adjusted CN=78 Runoff=1.88 cfs 0.089 af

Reach 1R: Hemingway Inflow=1.73 cfs 0.081 af
Outflow=1.73 cfs 0.081 af

Reach 2R: Catch Basin Inflow=1.96 cfs 0.096 af
Outflow=1.96 cfs 0.096 af

Reach 3R: Neighbor Inflow=1.88 cfs 0.089 af
Outflow=1.88 cfs 0.089 af

Reach EX: (new Reach) Inflow=5.57 cfs 0.266 af
Outflow=5.57 cfs 0.266 af

Total Runoff Area = 2.538 ac Runoff Volume = 0.266 af Average Runoff Depth = 1.26"
48.15% Pervious = 1.222 ac 51.85% Impervious = 1.316 ac

Summary for Subcatchment V-DA-1: to Hemingway

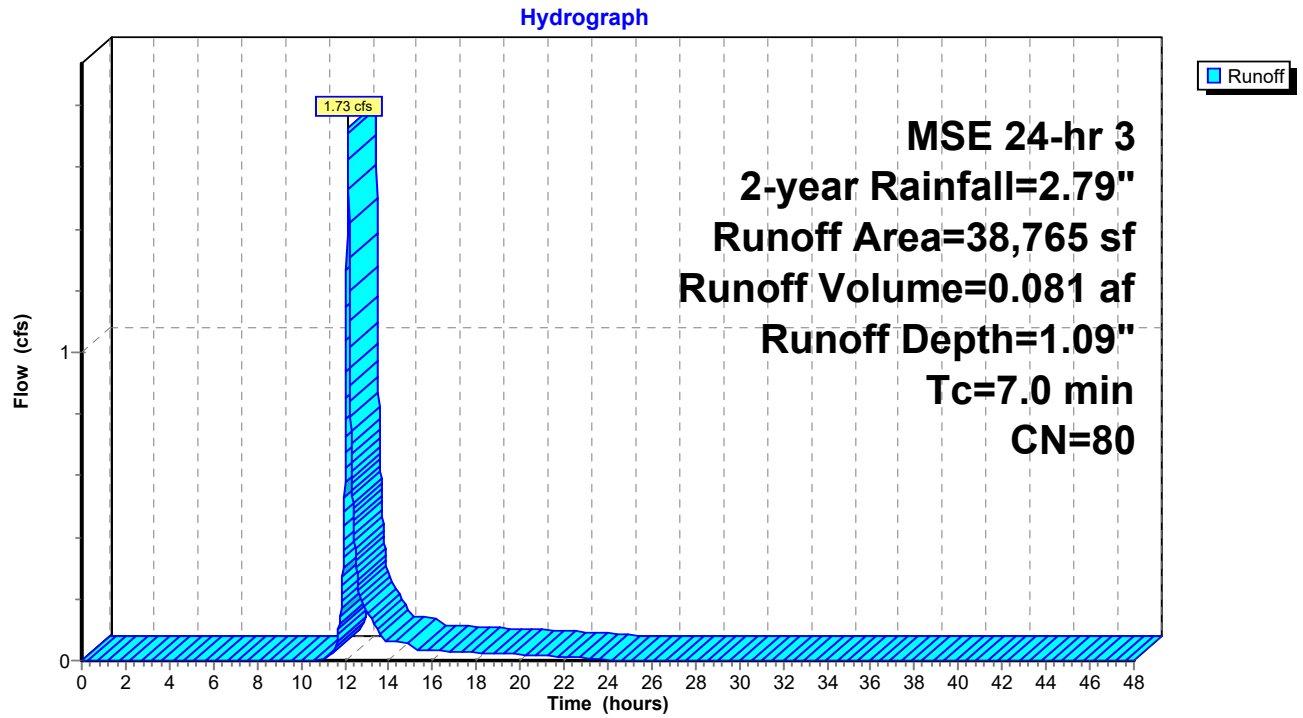
Runoff = 1.73 cfs @ 12.15 hrs, Volume= 0.081 af, Depth= 1.09"
Routed to Reach 1R : Hemingway

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 2-year Rainfall=2.79"

Area (sf)	CN	Description
11,800	39	>75% Grass cover, Good, HSG A
8,729	98	Roofs, HSG A
18,236	98	Paved parking, HSG A
38,765	80	Weighted Average
11,800		30.44% Pervious Area
26,965		69.56% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0					**Direct Entry,**

Subcatchment V-DA-1: to Hemingway



Summary for Subcatchment V-DA-2: to Catch Basin

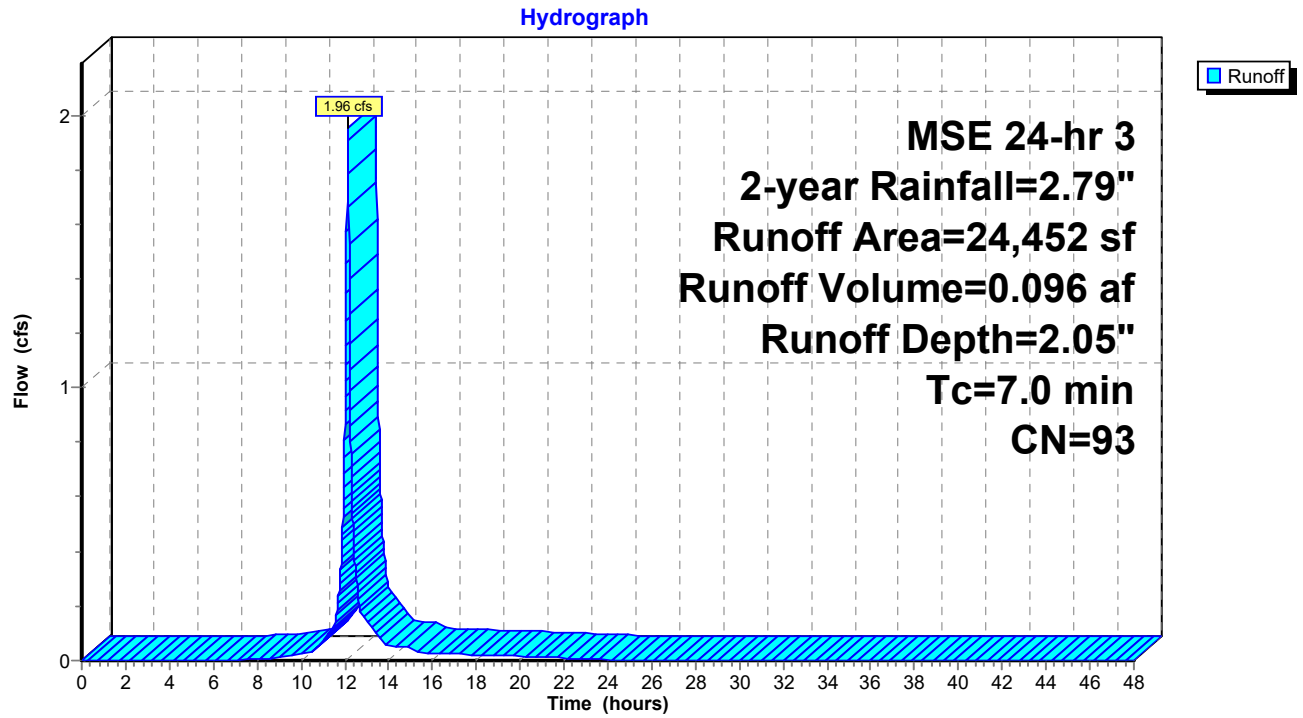
Runoff = 1.96 cfs @ 12.14 hrs, Volume= 0.096 af, Depth= 2.05"
Routed to Reach 2R : Catch Basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 2-year Rainfall=2.79"

Area (sf)	CN	Description
3,140	61	>75% Grass cover, Good, HSG B
4,578	98	Roofs, HSG B
16,734	98	Paved parking, HSG B
24,452	93	Weighted Average
3,140		12.84% Pervious Area
21,312		87.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0					**Direct Entry,**

Subcatchment V-DA-2: to Catch Basin



Summary for Subcatchment V-DA-3: to Neighbor

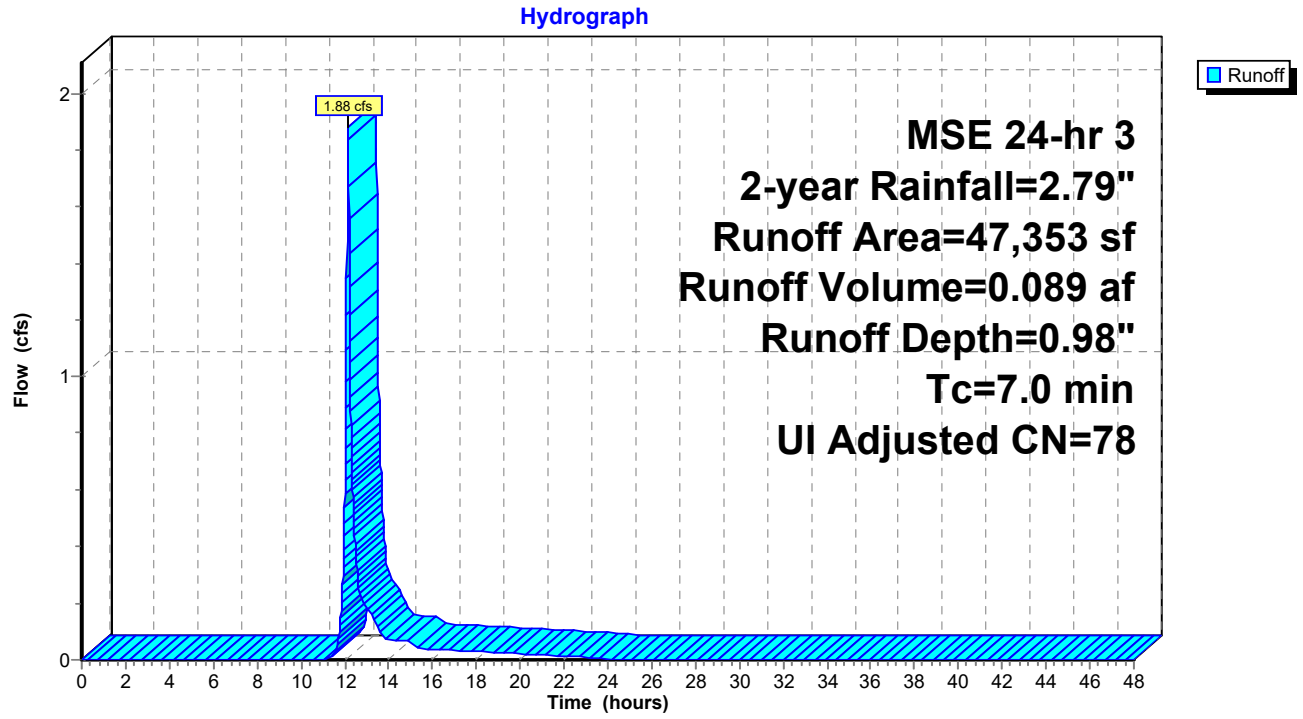
Runoff = 1.88 cfs @ 12.15 hrs, Volume= 0.089 af, Depth= 0.98"
Routed to Reach 3R : Neighbor

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 2-year Rainfall=2.79"

Area (sf)	CN	Adj	Description
38,296	74		>75% Grass cover, Good, HSG C
7,875	98		Roofs, HSG C
1,182	98		Unconnected pavement, HSG C
47,353	79	78	Weighted Average, UI Adjusted
38,296			80.87% Pervious Area
9,057			19.13% Impervious Area
1,182			13.05% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0					**Direct Entry,**

Subcatchment V-DA-3: to Neighbor



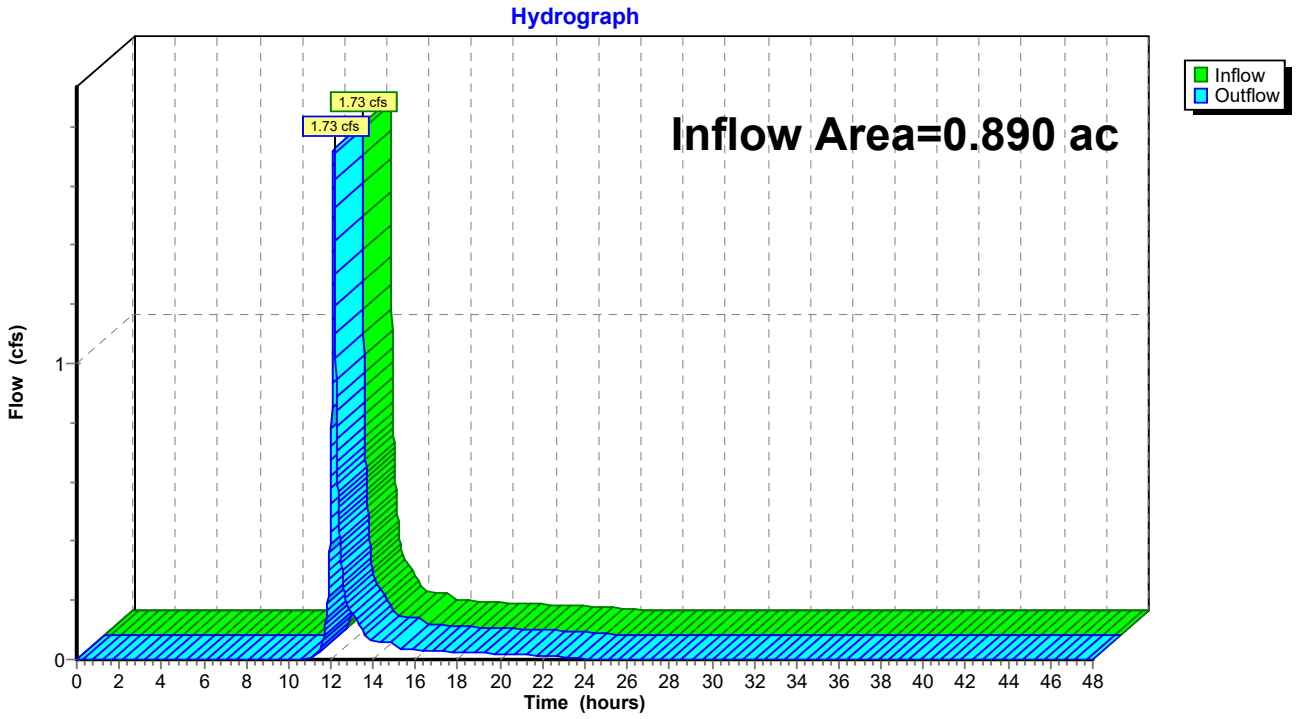
Summary for Reach 1R: Hemingway

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.890 ac, 69.56% Impervious, Inflow Depth = 1.09" for 2-year event
Inflow = 1.73 cfs @ 12.15 hrs, Volume= 0.081 af
Outflow = 1.73 cfs @ 12.15 hrs, Volume= 0.081 af, Atten= 0%, Lag= 0.0 min
Routed to Reach EX : (new Reach)

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Reach 1R: Hemingway



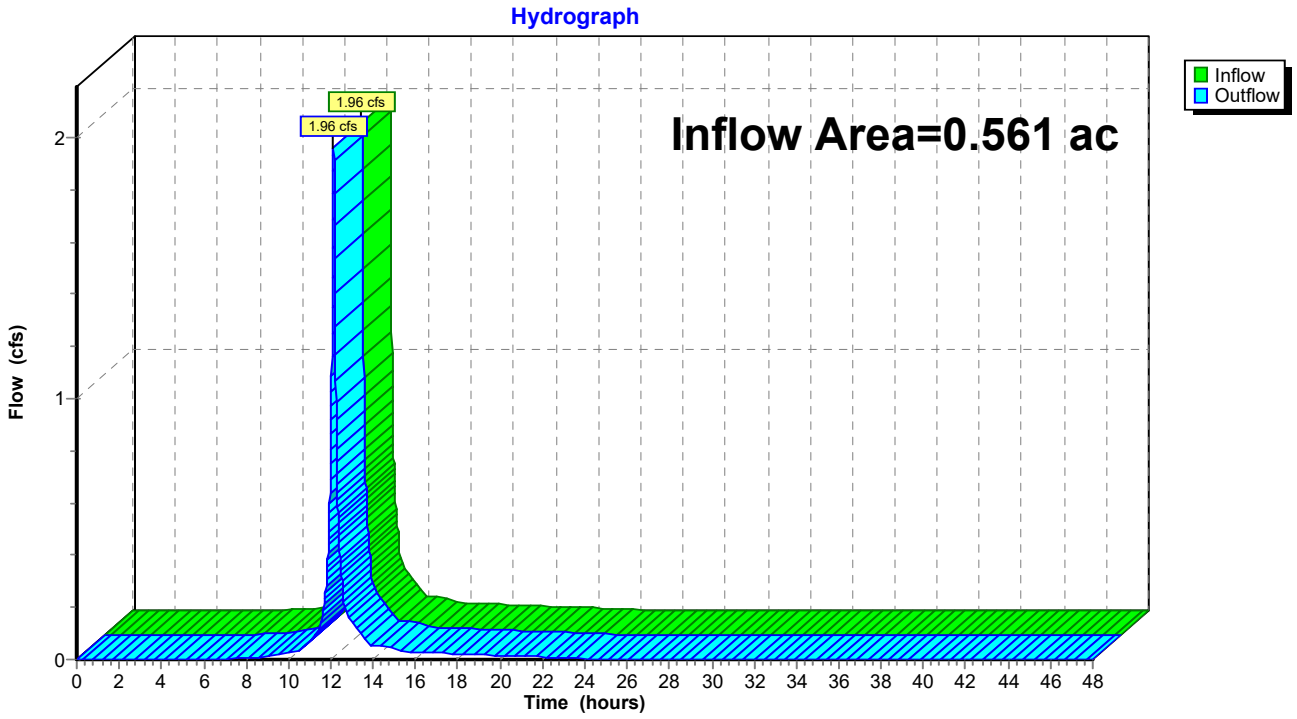
Summary for Reach 2R: Catch Basin

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.561 ac, 87.16% Impervious, Inflow Depth = 2.05" for 2-year event
Inflow = 1.96 cfs @ 12.14 hrs, Volume= 0.096 af
Outflow = 1.96 cfs @ 12.14 hrs, Volume= 0.096 af, Atten= 0%, Lag= 0.0 min
Routed to Reach EX : (new Reach)

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Reach 2R: Catch Basin



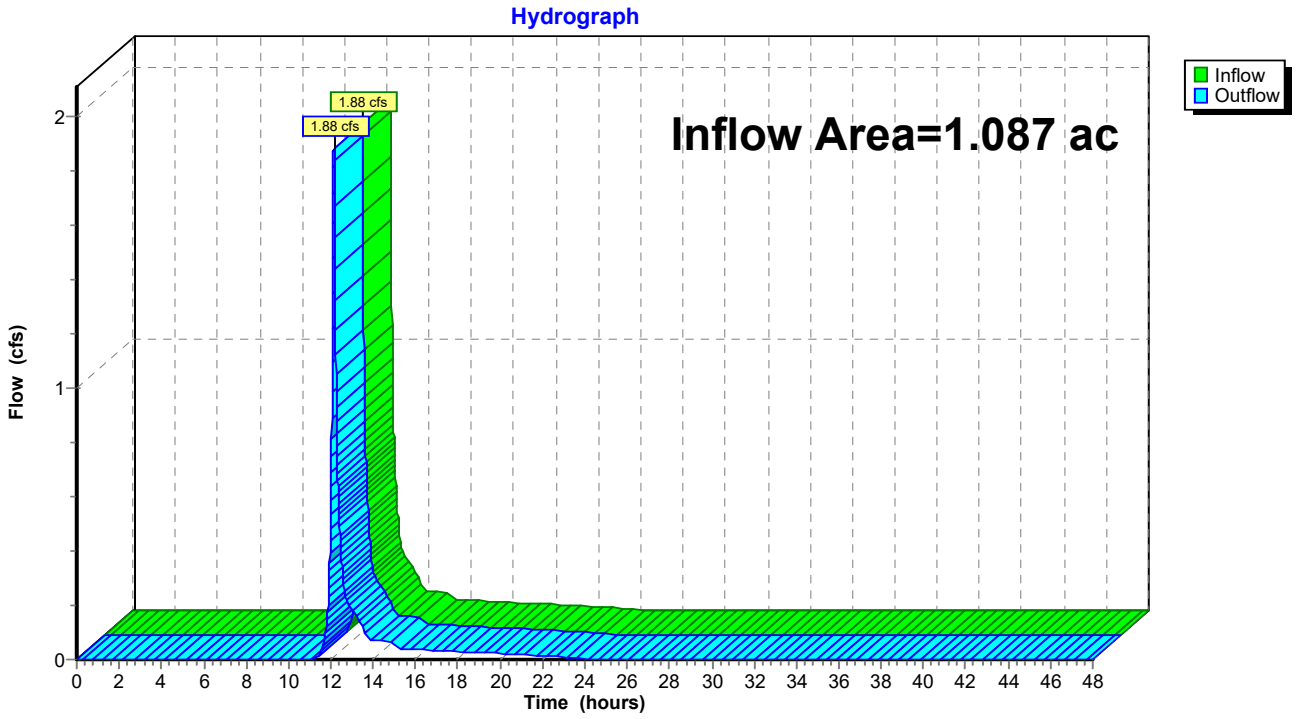
Summary for Reach 3R: Neighbor

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.087 ac, 19.13% Impervious, Inflow Depth = 0.98" for 2-year event
Inflow = 1.88 cfs @ 12.15 hrs, Volume= 0.089 af
Outflow = 1.88 cfs @ 12.15 hrs, Volume= 0.089 af, Atten= 0%, Lag= 0.0 min
Routed to Reach EX : (new Reach)

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Reach 3R: Neighbor



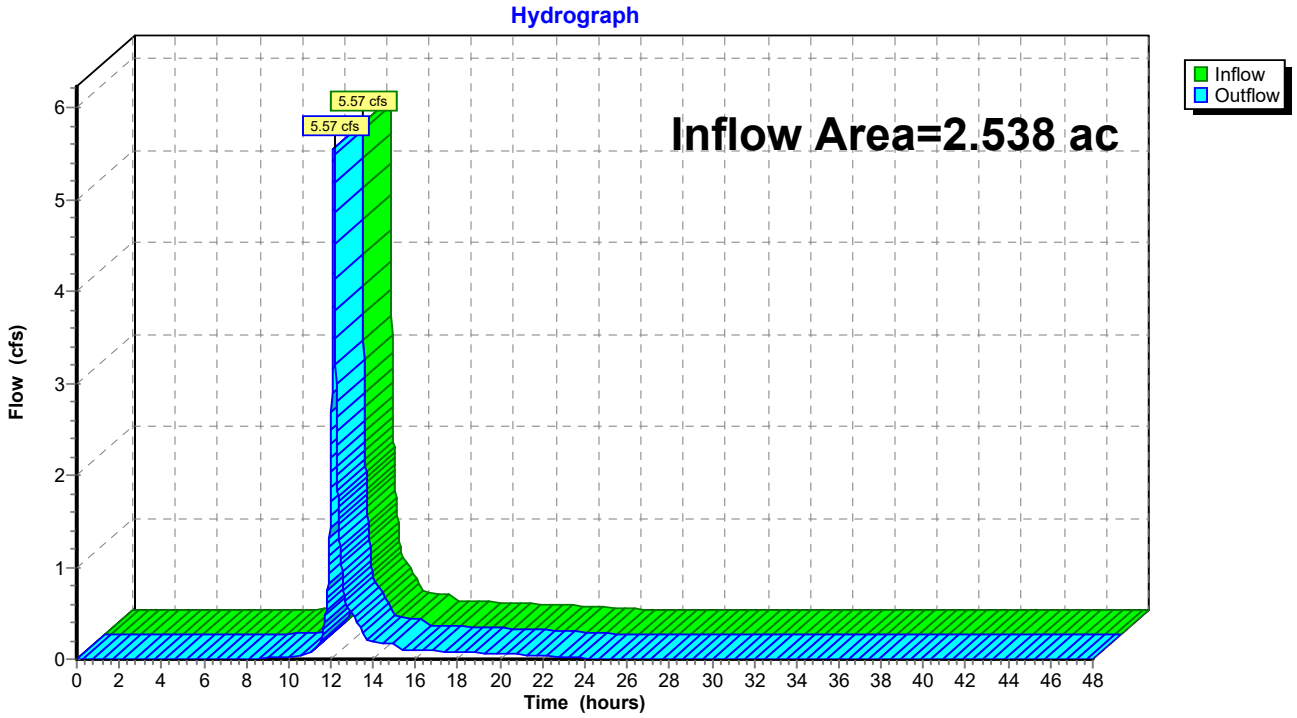
Summary for Reach EX: (new Reach)

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 2.538 ac, 51.85% Impervious, Inflow Depth = 1.26" for 2-year event
Inflow = 5.57 cfs @ 12.15 hrs, Volume= 0.266 af
Outflow = 5.57 cfs @ 12.15 hrs, Volume= 0.266 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Reach EX: (new Reach)



Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentV-DA-1: to Hemingway Runoff Area=38,765 sf 69.56% Impervious Runoff Depth=2.17"
Tc=7.0 min CN=80 Runoff=3.43 cfs 0.161 af

SubcatchmentV-DA-2: to Catch Basin Runoff Area=24,452 sf 87.16% Impervious Runoff Depth=3.37"
Tc=7.0 min CN=93 Runoff=3.11 cfs 0.157 af

SubcatchmentV-DA-3: to Neighbor Runoff Area=47,353 sf 19.13% Impervious Runoff Depth=2.01"
Tc=7.0 min UI Adjusted CN=78 Runoff=3.89 cfs 0.182 af

Reach 1R: Hemingway Inflow=3.43 cfs 0.161 af
Outflow=3.43 cfs 0.161 af

Reach 2R: Catch Basin Inflow=3.11 cfs 0.157 af
Outflow=3.11 cfs 0.157 af

Reach 3R: Neighbor Inflow=3.89 cfs 0.182 af
Outflow=3.89 cfs 0.182 af

Reach EX: (new Reach) Inflow=10.43 cfs 0.500 af
Outflow=10.43 cfs 0.500 af

Total Runoff Area = 2.538 ac Runoff Volume = 0.500 af Average Runoff Depth = 2.36"
48.15% Pervious = 1.222 ac 51.85% Impervious = 1.316 ac

Summary for Subcatchment V-DA-1: to Hemingway

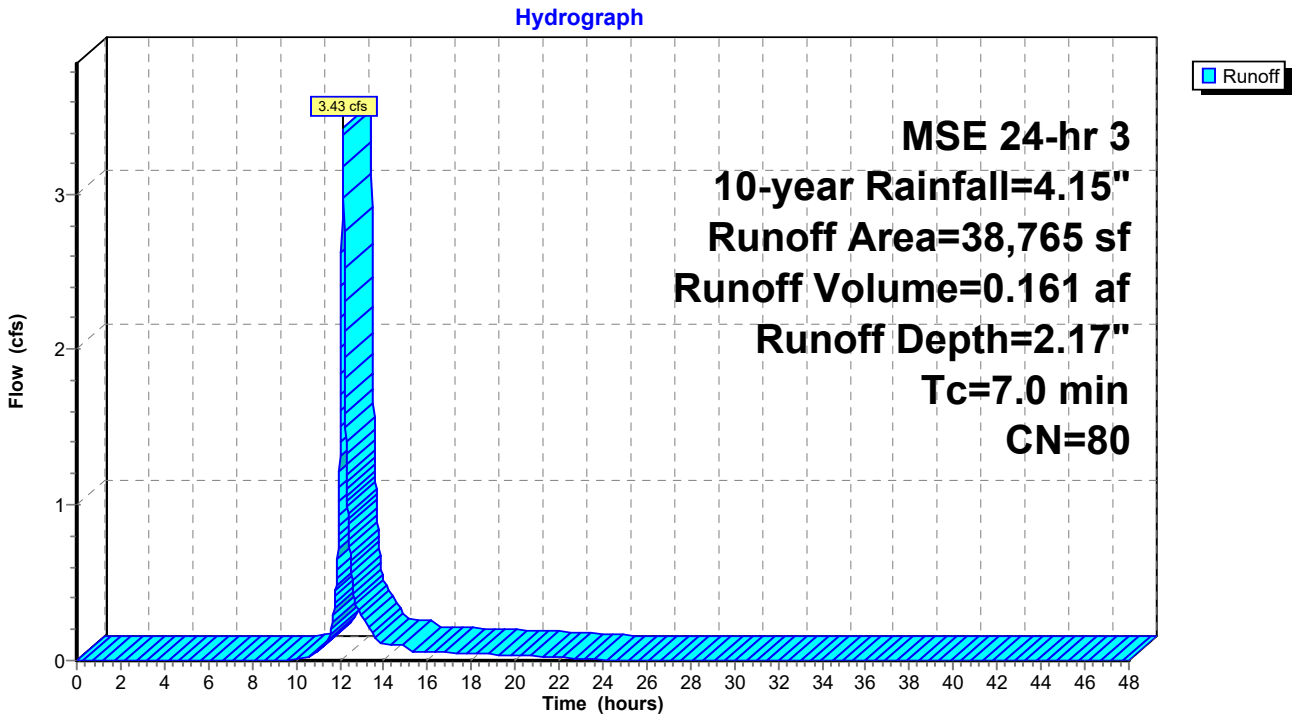
Runoff = 3.43 cfs @ 12.14 hrs, Volume= 0.161 af, Depth= 2.17"
Routed to Reach 1R : Hemingway

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 10-year Rainfall=4.15"

Area (sf)	CN	Description
11,800	39	>75% Grass cover, Good, HSG A
8,729	98	Roofs, HSG A
18,236	98	Paved parking, HSG A
38,765	80	Weighted Average
11,800		30.44% Pervious Area
26,965		69.56% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0					**Direct Entry,**

Subcatchment V-DA-1: to Hemingway



Summary for Subcatchment V-DA-2: to Catch Basin

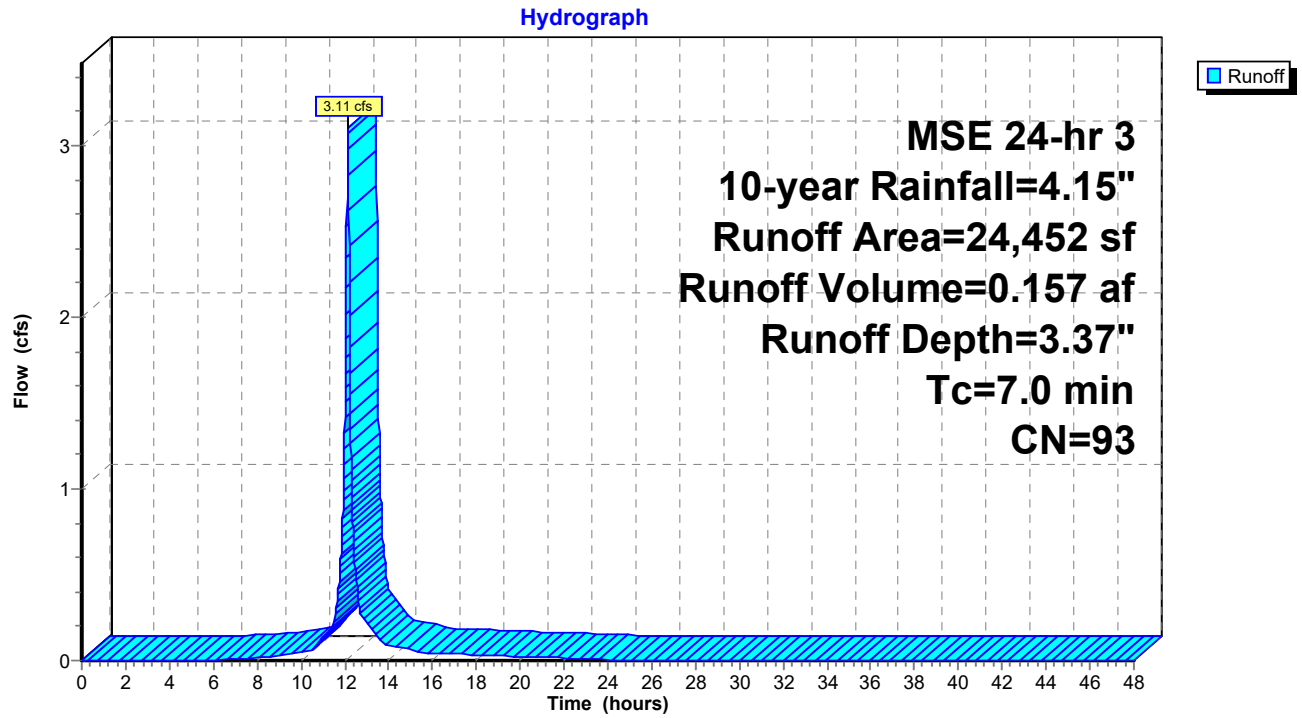
Runoff = 3.11 cfs @ 12.14 hrs, Volume= 0.157 af, Depth= 3.37"
Routed to Reach 2R : Catch Basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 10-year Rainfall=4.15"

Area (sf)	CN	Description
3,140	61	>75% Grass cover, Good, HSG B
4,578	98	Roofs, HSG B
16,734	98	Paved parking, HSG B
24,452	93	Weighted Average
3,140		12.84% Pervious Area
21,312		87.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0					**Direct Entry,**

Subcatchment V-DA-2: to Catch Basin



Summary for Subcatchment V-DA-3: to Neighbor

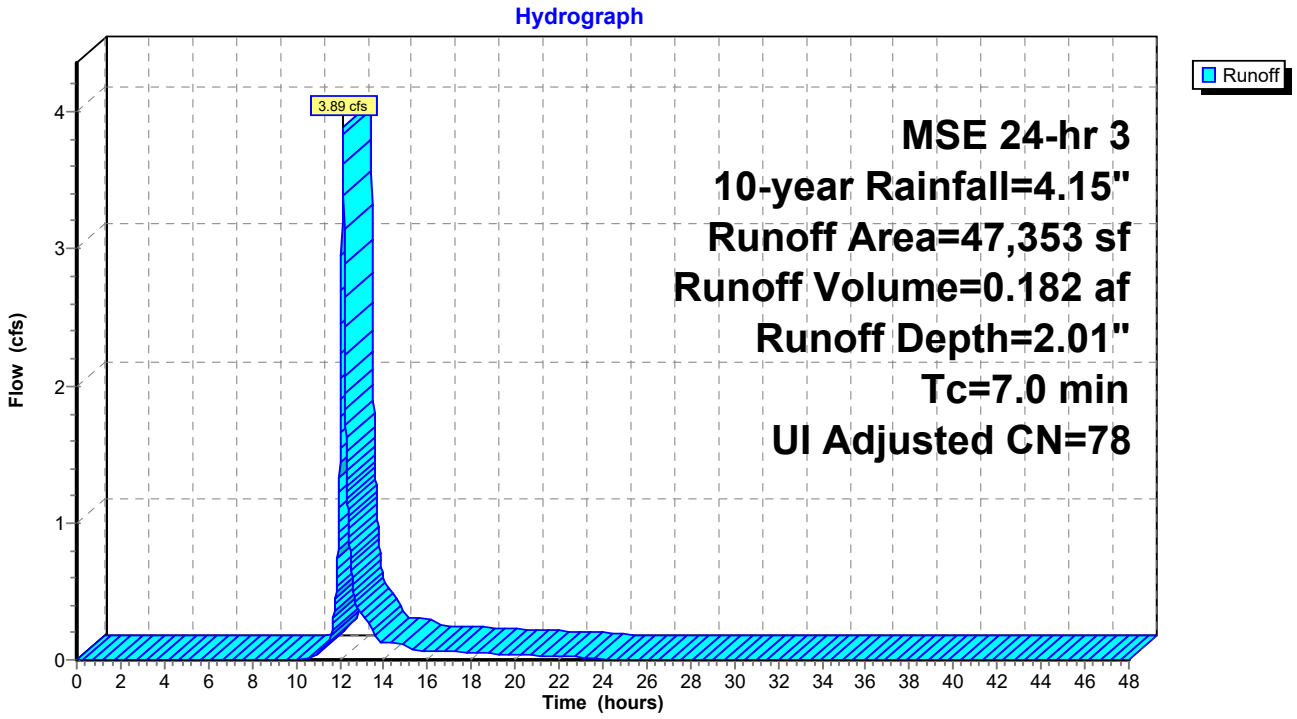
Runoff = 3.89 cfs @ 12.15 hrs, Volume= 0.182 af, Depth= 2.01"
Routed to Reach 3R : Neighbor

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 10-year Rainfall=4.15"

Area (sf)	CN	Adj	Description
38,296	74		>75% Grass cover, Good, HSG C
7,875	98		Roofs, HSG C
1,182	98		Unconnected pavement, HSG C
47,353	79	78	Weighted Average, UI Adjusted
38,296			80.87% Pervious Area
9,057			19.13% Impervious Area
1,182			13.05% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0					**Direct Entry,**

Subcatchment V-DA-3: to Neighbor



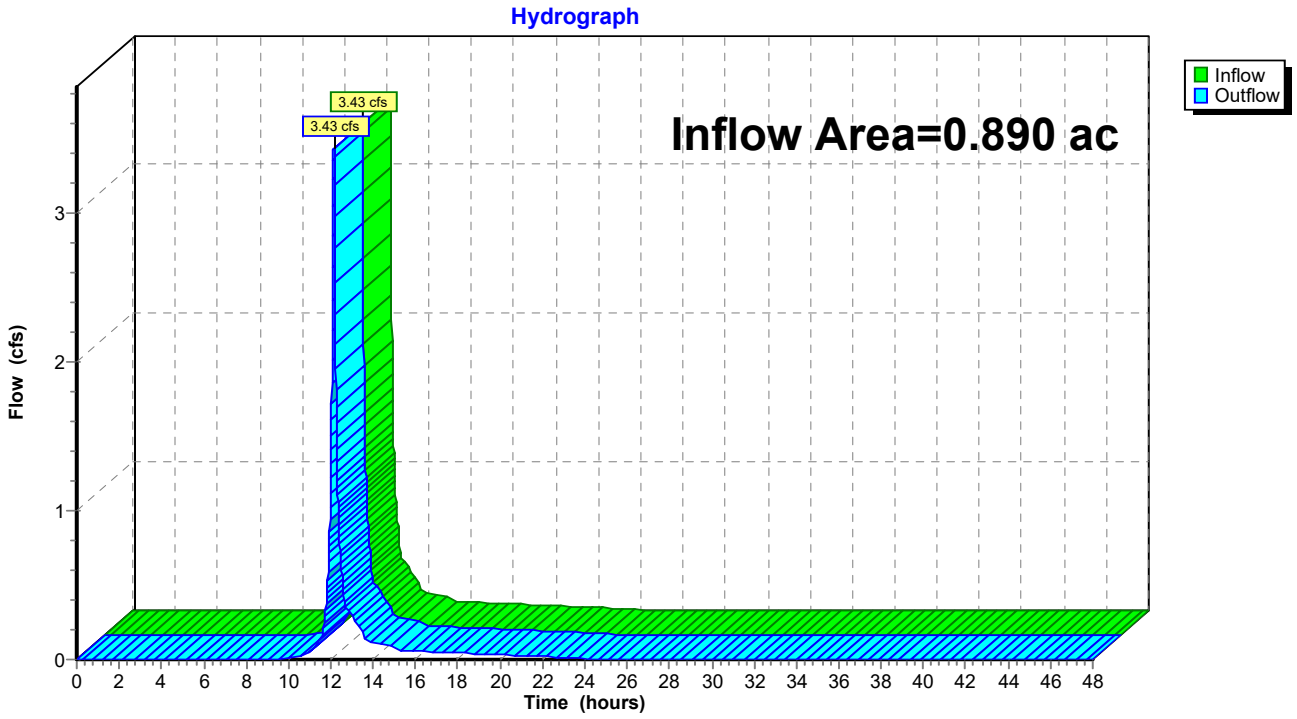
Summary for Reach 1R: Hemingway

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.890 ac, 69.56% Impervious, Inflow Depth = 2.17" for 10-year event
Inflow = 3.43 cfs @ 12.14 hrs, Volume= 0.161 af
Outflow = 3.43 cfs @ 12.14 hrs, Volume= 0.161 af, Atten= 0%, Lag= 0.0 min
Routed to Reach EX : (new Reach)

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Reach 1R: Hemingway



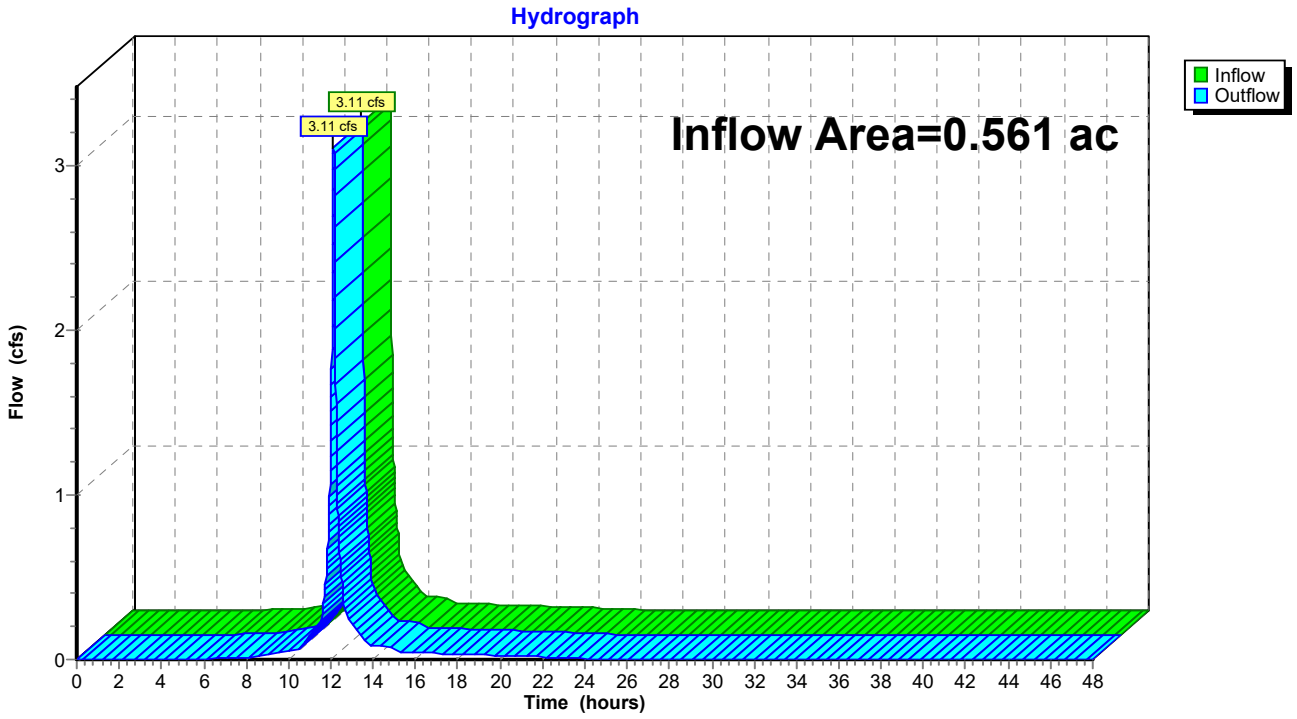
Summary for Reach 2R: Catch Basin

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.561 ac, 87.16% Impervious, Inflow Depth = 3.37" for 10-year event
Inflow = 3.11 cfs @ 12.14 hrs, Volume= 0.157 af
Outflow = 3.11 cfs @ 12.14 hrs, Volume= 0.157 af, Atten= 0%, Lag= 0.0 min
Routed to Reach EX : (new Reach)

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Reach 2R: Catch Basin



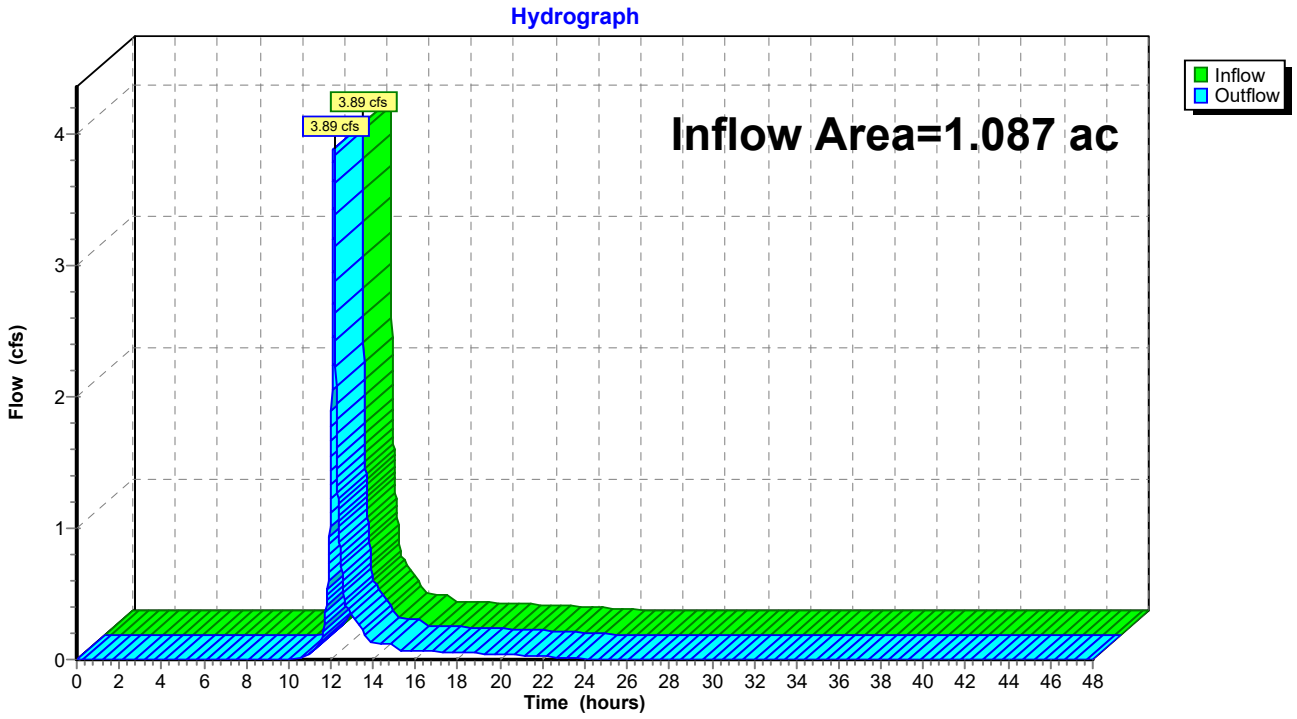
Summary for Reach 3R: Neighbor

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.087 ac, 19.13% Impervious, Inflow Depth = 2.01" for 10-year event
Inflow = 3.89 cfs @ 12.15 hrs, Volume= 0.182 af
Outflow = 3.89 cfs @ 12.15 hrs, Volume= 0.182 af, Atten= 0%, Lag= 0.0 min
Routed to Reach EX : (new Reach)

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Reach 3R: Neighbor



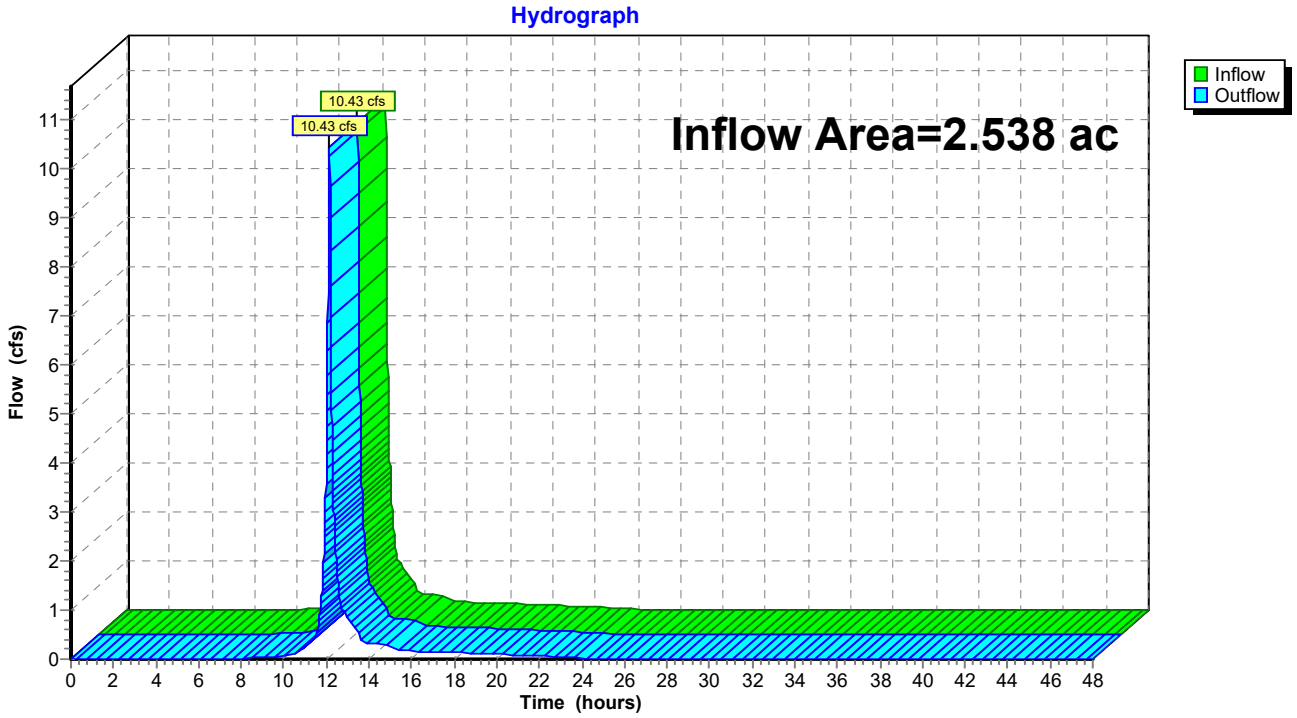
Summary for Reach EX: (new Reach)

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 2.538 ac, 51.85% Impervious, Inflow Depth = 2.36" for 10-year event
Inflow = 10.43 cfs @ 12.14 hrs, Volume= 0.500 af
Outflow = 10.43 cfs @ 12.14 hrs, Volume= 0.500 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Reach EX: (new Reach)



Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentV-DA-1: to Hemingway Runoff Area=38,765 sf 69.56% Impervious Runoff Depth=5.06"
Tc=7.0 min CN=80 Runoff=7.78 cfs 0.376 af

SubcatchmentV-DA-2: to Catch Basin Runoff Area=24,452 sf 87.16% Impervious Runoff Depth=6.57"
Tc=7.0 min CN=93 Runoff=5.82 cfs 0.307 af

SubcatchmentV-DA-3: to Neighbor Runoff Area=47,353 sf 19.13% Impervious Runoff Depth=4.84"
Tc=7.0 min UI Adjusted CN=78 Runoff=9.15 cfs 0.438 af

Reach 1R: Hemingway Inflow=7.78 cfs 0.376 af
Outflow=7.78 cfs 0.376 af

Reach 2R: Catch Basin Inflow=5.82 cfs 0.307 af
Outflow=5.82 cfs 0.307 af

Reach 3R: Neighbor Inflow=9.15 cfs 0.438 af
Outflow=9.15 cfs 0.438 af

Reach EX: (new Reach) Inflow=22.75 cfs 1.121 af
Outflow=22.75 cfs 1.121 af

Total Runoff Area = 2.538 ac Runoff Volume = 1.121 af Average Runoff Depth = 5.30"
48.15% Pervious = 1.222 ac 51.85% Impervious = 1.316 ac

Summary for Subcatchment V-DA-1: to Hemingway

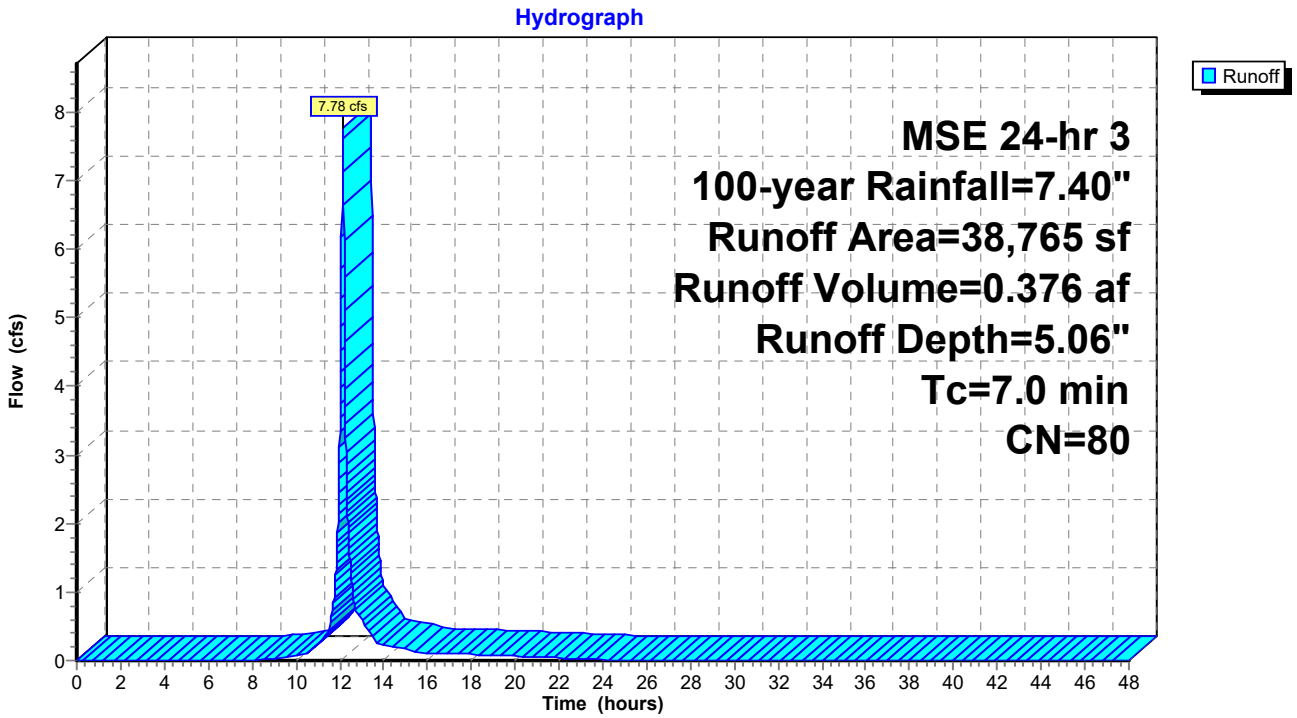
Runoff = 7.78 cfs @ 12.14 hrs, Volume= 0.376 af, Depth= 5.06"
Routed to Reach 1R : Hemingway

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 100-year Rainfall=7.40"

Area (sf)	CN	Description
11,800	39	>75% Grass cover, Good, HSG A
8,729	98	Roofs, HSG A
18,236	98	Paved parking, HSG A
38,765	80	Weighted Average
11,800		30.44% Pervious Area
26,965		69.56% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0					**Direct Entry,**

Subcatchment V-DA-1: to Hemingway



Summary for Subcatchment V-DA-2: to Catch Basin

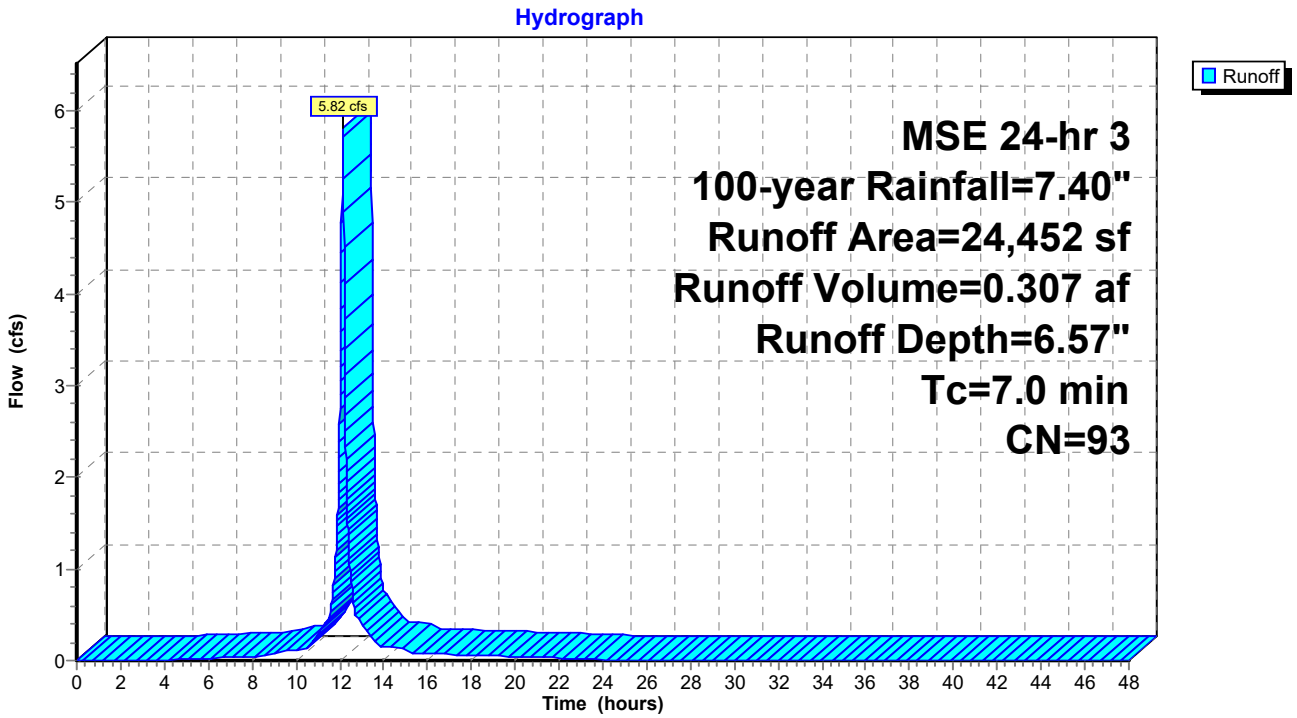
Runoff = 5.82 cfs @ 12.14 hrs, Volume= 0.307 af, Depth= 6.57"
Routed to Reach 2R : Catch Basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 100-year Rainfall=7.40"

Area (sf)	CN	Description
3,140	61	>75% Grass cover, Good, HSG B
4,578	98	Roofs, HSG B
16,734	98	Paved parking, HSG B
24,452	93	Weighted Average
3,140		12.84% Pervious Area
21,312		87.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0					**Direct Entry,**

Subcatchment V-DA-2: to Catch Basin



Summary for Subcatchment V-DA-3: to Neighbor

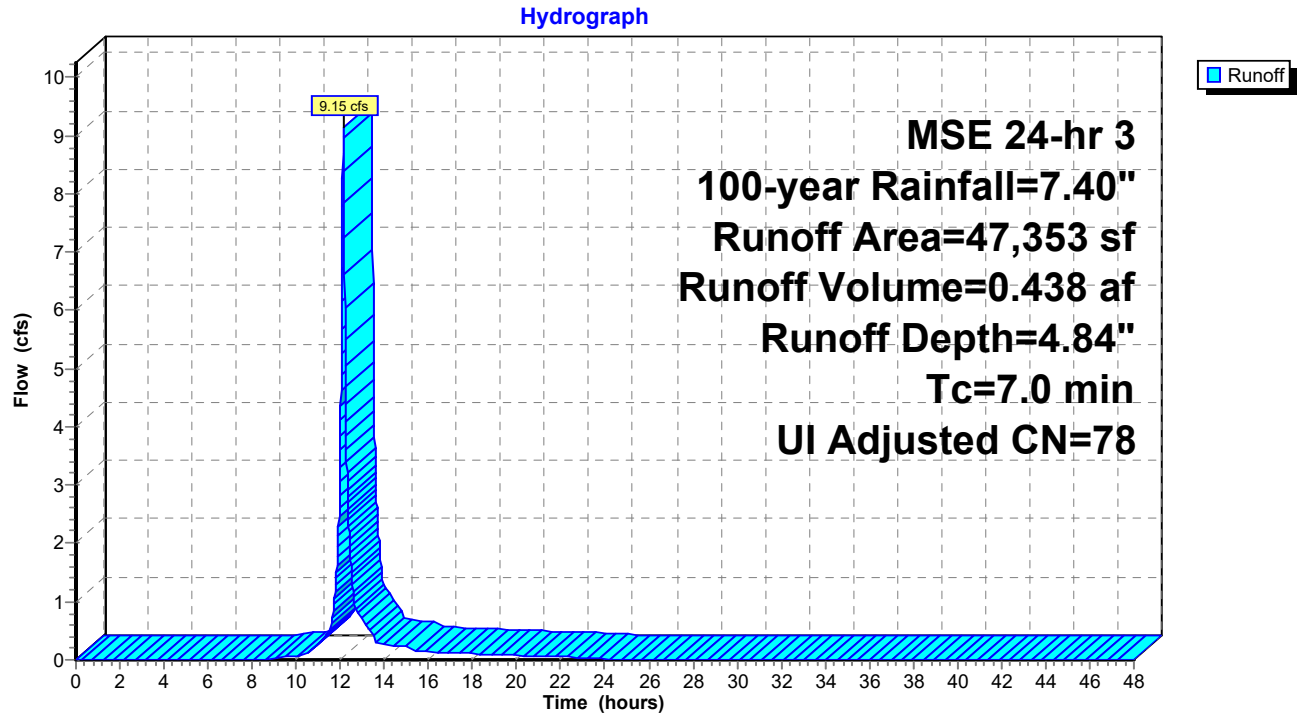
Runoff = 9.15 cfs @ 12.14 hrs, Volume= 0.438 af, Depth= 4.84"
Routed to Reach 3R : Neighbor

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 100-year Rainfall=7.40"

Area (sf)	CN	Adj	Description
38,296	74		>75% Grass cover, Good, HSG C
7,875	98		Roofs, HSG C
1,182	98		Unconnected pavement, HSG C
47,353	79	78	Weighted Average, UI Adjusted
38,296			80.87% Pervious Area
9,057			19.13% Impervious Area
1,182			13.05% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0					**Direct Entry,**

Subcatchment V-DA-3: to Neighbor



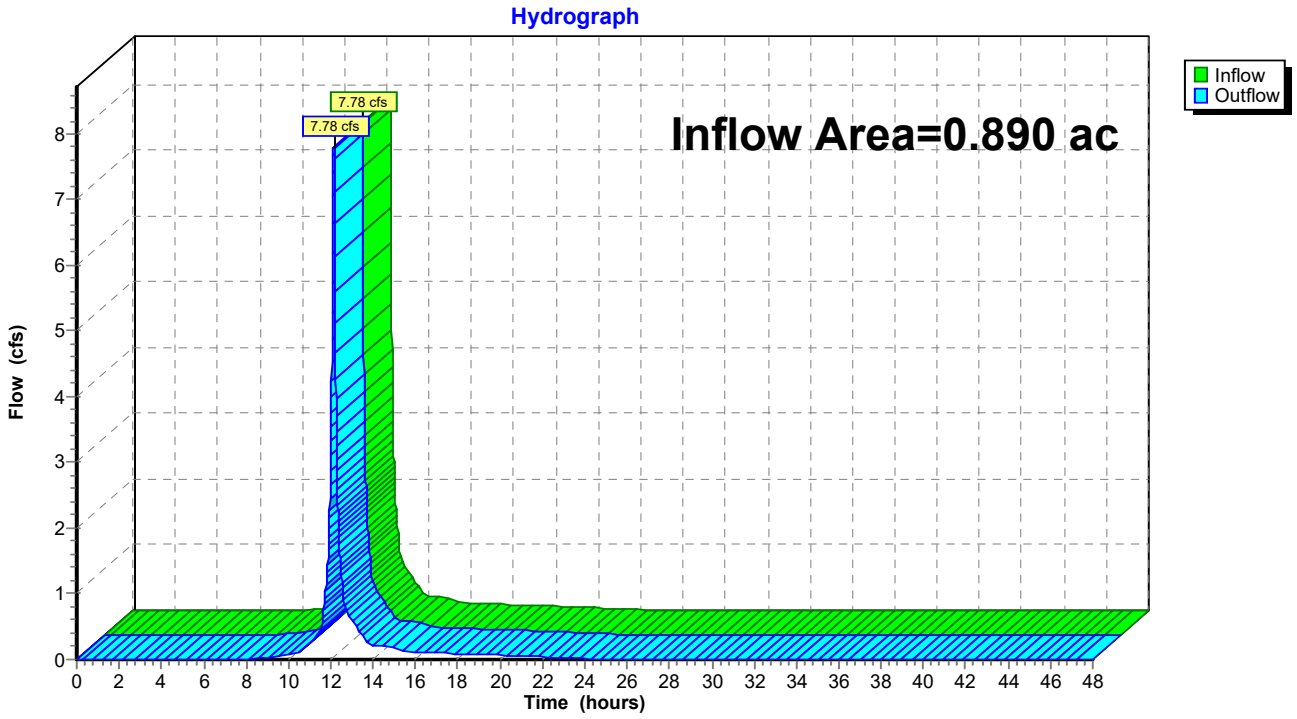
Summary for Reach 1R: Hemingway

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.890 ac, 69.56% Impervious, Inflow Depth = 5.06" for 100-year event
Inflow = 7.78 cfs @ 12.14 hrs, Volume= 0.376 af
Outflow = 7.78 cfs @ 12.14 hrs, Volume= 0.376 af, Atten= 0%, Lag= 0.0 min
Routed to Reach EX : (new Reach)

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Reach 1R: Hemingway



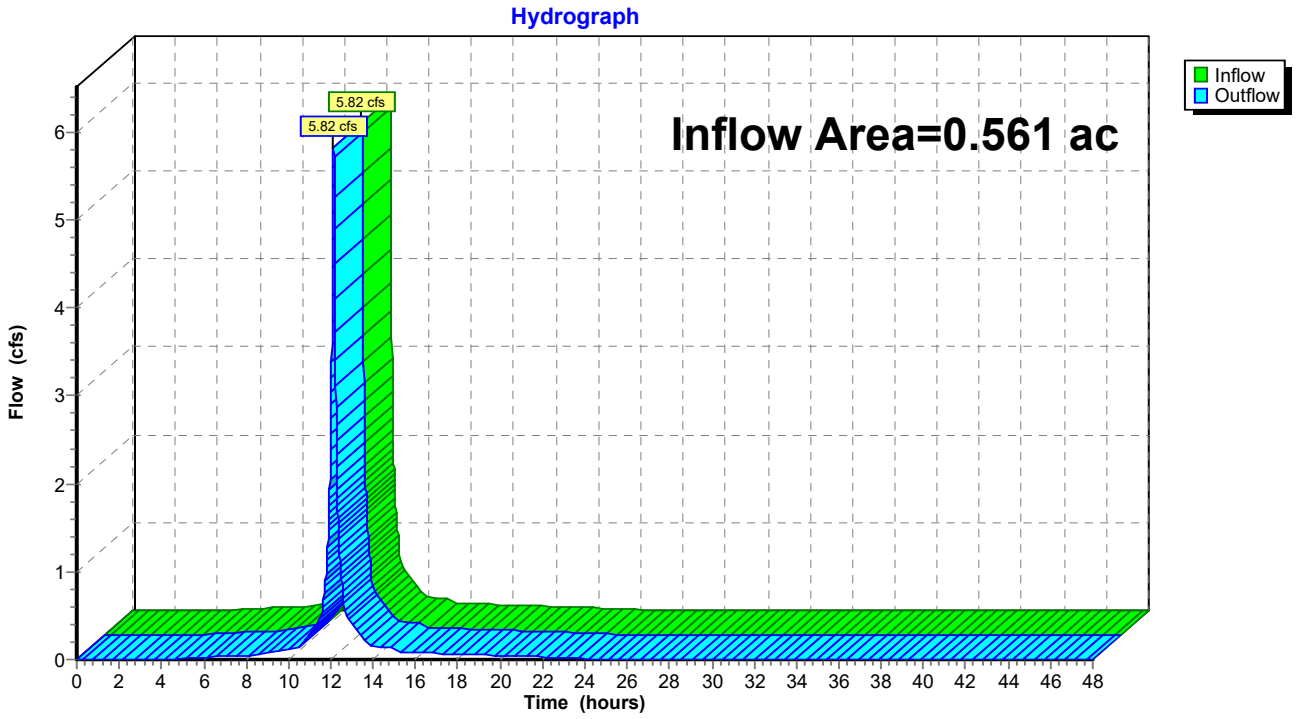
Summary for Reach 2R: Catch Basin

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.561 ac, 87.16% Impervious, Inflow Depth = 6.57" for 100-year event
Inflow = 5.82 cfs @ 12.14 hrs, Volume= 0.307 af
Outflow = 5.82 cfs @ 12.14 hrs, Volume= 0.307 af, Atten= 0%, Lag= 0.0 min
Routed to Reach EX : (new Reach)

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Reach 2R: Catch Basin



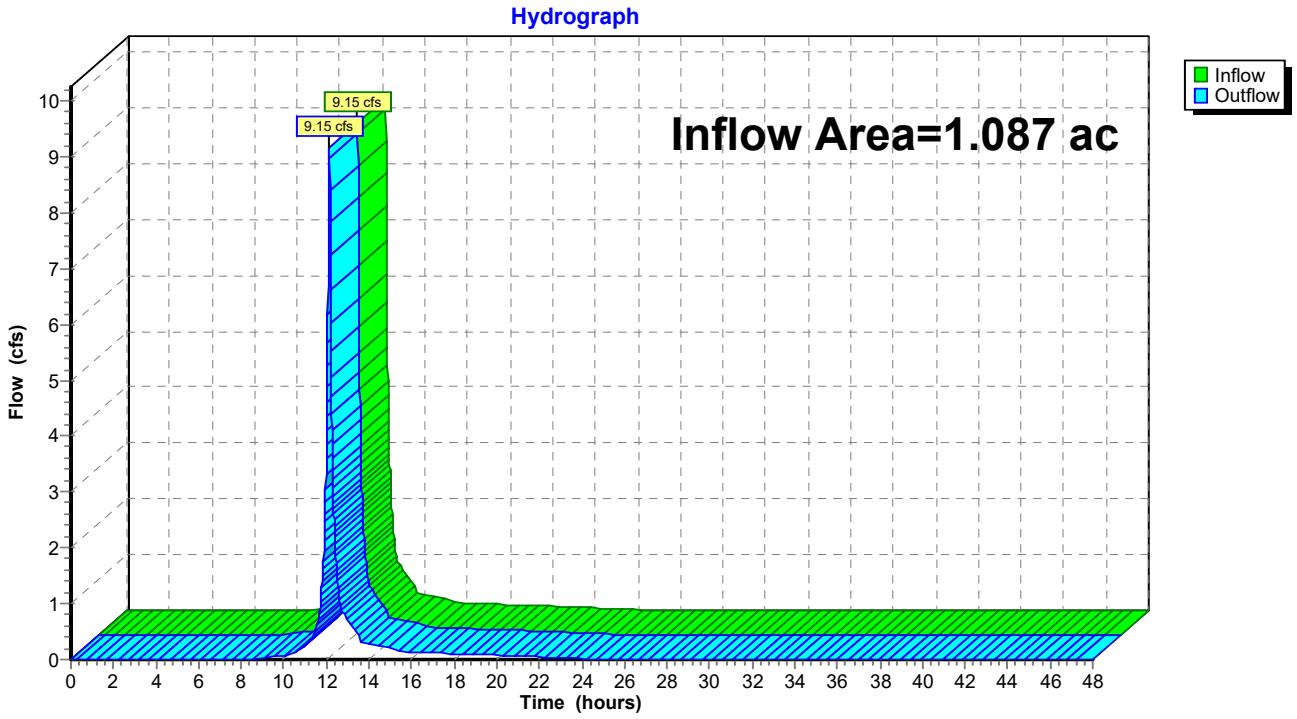
Summary for Reach 3R: Neighbor

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.087 ac, 19.13% Impervious, Inflow Depth = 4.84" for 100-year event
Inflow = 9.15 cfs @ 12.14 hrs, Volume= 0.438 af
Outflow = 9.15 cfs @ 12.14 hrs, Volume= 0.438 af, Atten= 0%, Lag= 0.0 min
Routed to Reach EX : (new Reach)

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Reach 3R: Neighbor



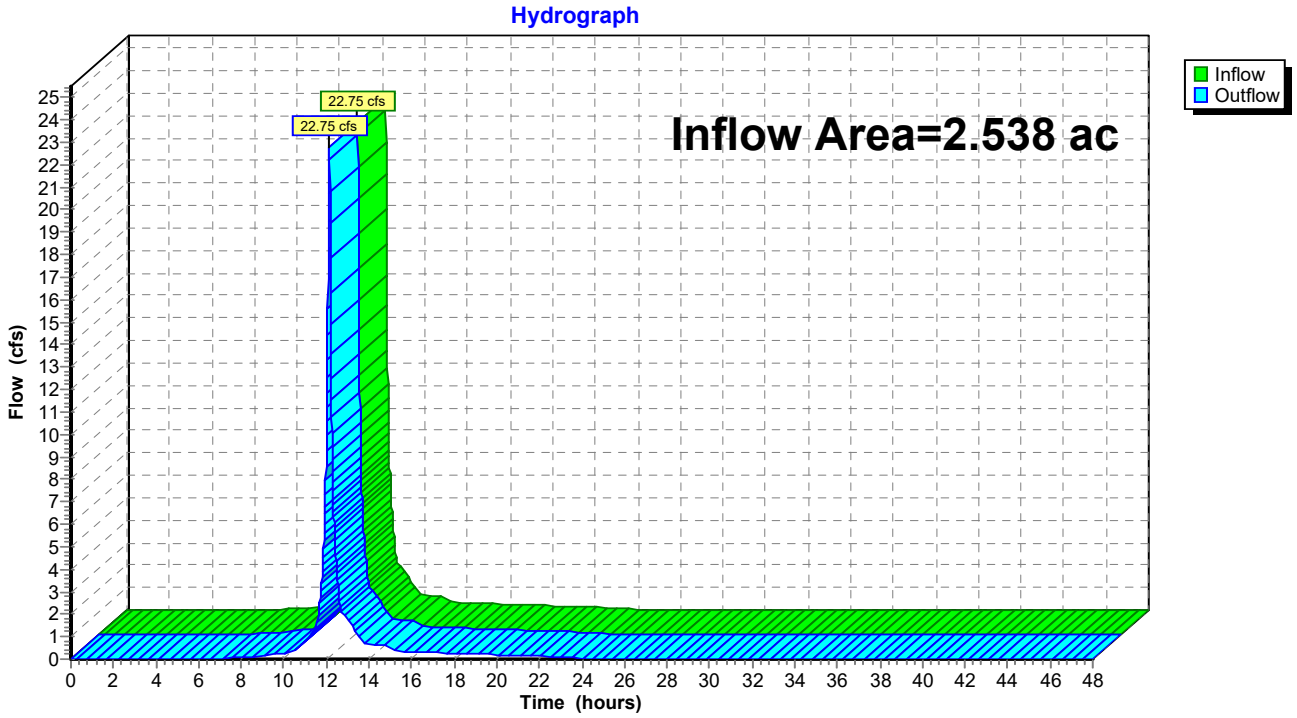
Summary for Reach EX: (new Reach)

[40] Hint: Not Described (Outflow=Inflow)

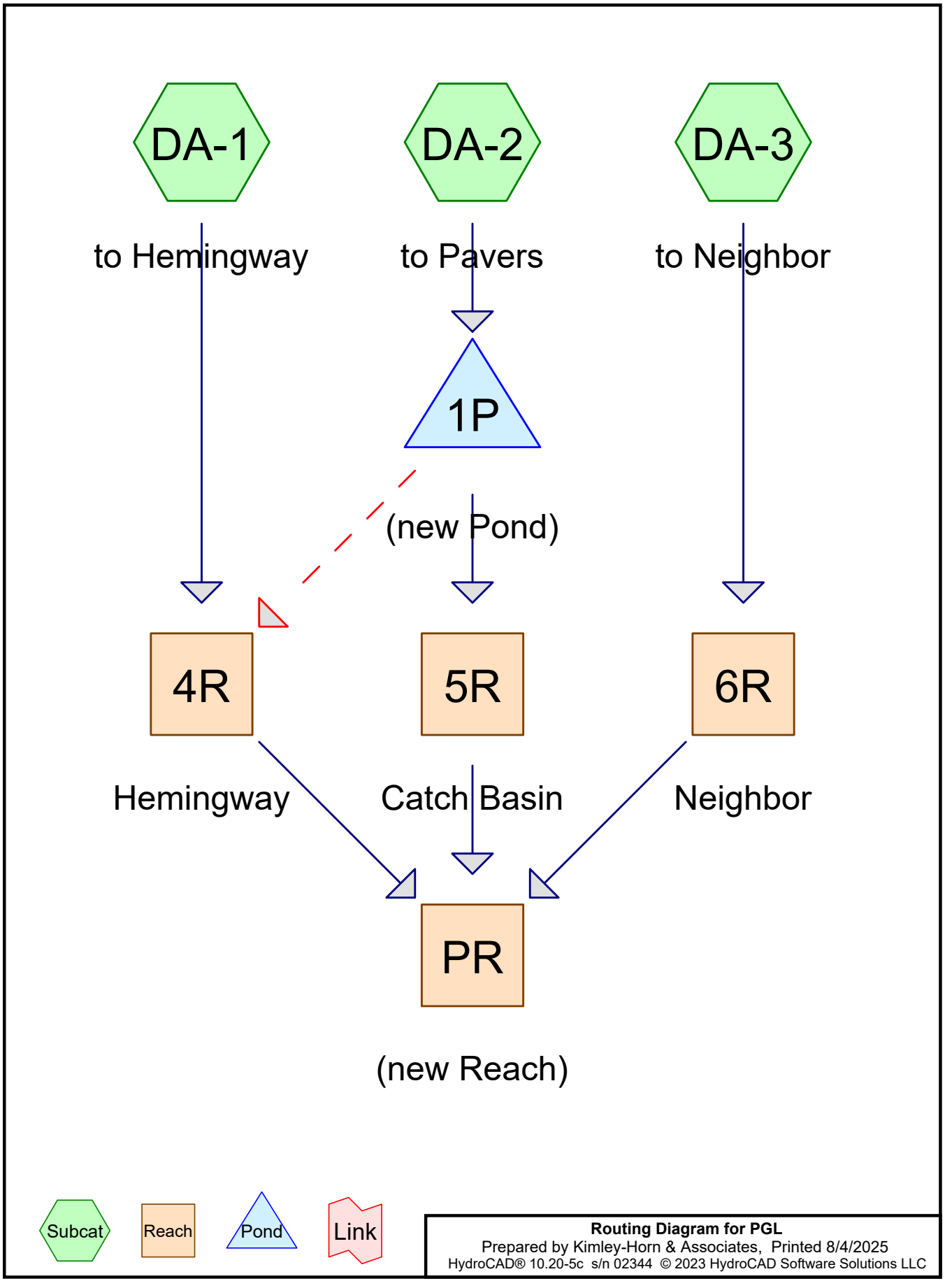
Inflow Area = 2.538 ac, 51.85% Impervious, Inflow Depth = 5.30" for 100-year event
Inflow = 22.75 cfs @ 12.14 hrs, Volume= 1.121 af
Outflow = 22.75 cfs @ 12.14 hrs, Volume= 1.121 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Reach EX: (new Reach)



Appendix 2. Post-Development HydroCAD Model Analysis



Routing Diagram for PGL
Prepared by Kimley-Horn & Associates, Printed 8/4/2025
HydroCAD® 10.20-5c s/n 02344 © 2023 HydroCAD Software Solutions LLC

Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-year	MSE 24-hr	3	Default	24.00	1	2.79	2
2	10-year	MSE 24-hr	3	Default	24.00	1	4.15	2
3	100-year	MSE 24-hr	3	Default	24.00	1	7.40	2

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.229	39	>75% Grass cover, Good, HSG A (DA-1)
0.094	61	>75% Grass cover, Good, HSG B (DA-2)
0.901	74	>75% Grass cover, Good, HSG C (DA-3)
0.040	98	Paved parking, HSG A (DA-1)
1.051	98	Paved parking, HSG B (DA-2)
0.014	98	Unconnected pavement, HSG C (DA-3)
0.207	98	Unconnected roofs, HSG C (DA-3)
2.538	**83**	**TOTAL AREA**

Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.270	HSG A	DA-1
1.146	HSG B	DA-2
1.123	HSG C	DA-3
0.000	HSG D	
0.000	Other	
2.538		**TOTAL AREA**

Ground Covers (selected nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.229	0.094	0.901	0.000	0.000	1.225	>75% Grass cover, Good	DA-1, DA-2, DA-3
0.040	1.051	0.000	0.000	0.000	1.092	Paved parking	DA-1, DA-2
0.000	0.000	0.014	0.000	0.000	0.014	Unconnected pavement	DA-3
0.000	0.000	0.207	0.000	0.000	0.207	Unconnected roofs	DA-3
0.270	**1.146**	**1.123**	**0.000**	**0.000**	**2.538**	**TOTAL AREA**	

Pipe Listing (selected nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)	Node Name
1	1P	867.60	867.35	25.0	0.0100	0.015	0.0	15.0	0.0	

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentDA-1: to Hemingway Runoff Area=11,743 sf 14.88% Impervious Runoff Depth=0.03"
Tc=7.0 min CN=48 Runoff=0.00 cfs 0.001 af

SubcatchmentDA-2: to Pavers Runoff Area=49,918 sf 91.76% Impervious Runoff Depth=2.24"
Tc=0.0 min CN=95 Runoff=4.98 cfs 0.214 af

SubcatchmentDA-3: to Neighbor Runoff Area=48,899 sf 19.70% Impervious Runoff Depth=0.88"
Tc=7.0 min UI Adjusted CN=76 Runoff=1.72 cfs 0.082 af

Reach 4R: Hemingway Inflow=0.00 cfs 0.001 af
Outflow=0.00 cfs 0.001 af

Reach 5R: Catch Basin Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Reach 6R: Neighbor Inflow=1.72 cfs 0.082 af
Outflow=1.72 cfs 0.082 af

Reach PR: (new Reach) Inflow=1.72 cfs 0.083 af
Outflow=1.72 cfs 0.083 af

Pond 1P: (new Pond) Peak Elev=874.67' Storage=2,719 cf Inflow=4.98 cfs 0.214 af
Discarded=0.80 cfs 0.214 af Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af Outflow=0.80 cfs 0.214 af

Total Runoff Area = 2.538 ac Runoff Volume = 0.297 af Average Runoff Depth = 1.40"
48.28% Pervious = 1.225 ac 51.72% Impervious = 1.313 ac

Summary for Subcatchment DA-1: to Hemingway

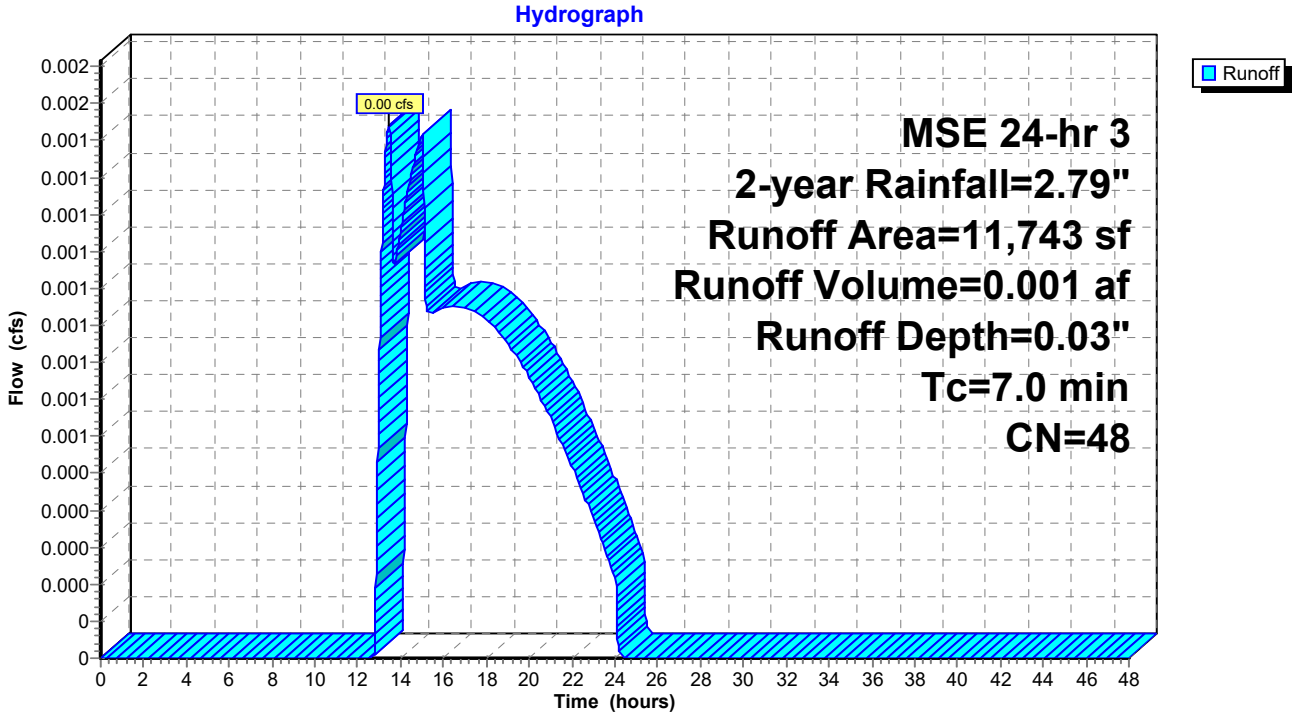
Runoff = 0.00 cfs @ 13.45 hrs, Volume= 0.001 af, Depth= 0.03"
Routed to Reach 4R : Hemingway

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 2-year Rainfall=2.79"

Area (sf)	CN	Description
1,747	98	Paved parking, HSG A
9,996	39	>75% Grass cover, Good, HSG A
11,743	48	Weighted Average
9,996		85.12% Pervious Area
1,747		14.88% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0					**Direct Entry,**

Subcatchment DA-1: to Hemingway



Summary for Subcatchment DA-2: to Pavers

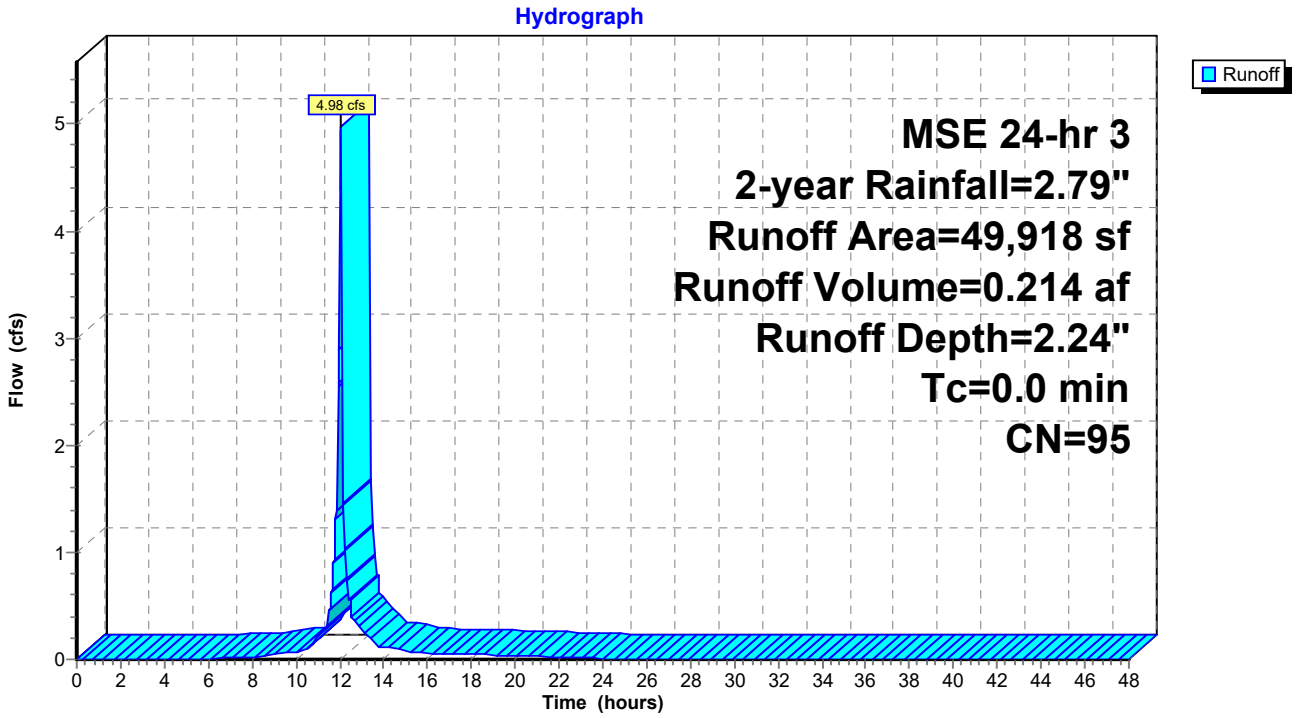
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 4.98 cfs @ 12.09 hrs, Volume= 0.214 af, Depth= 2.24"
Routed to Pond 1P : (new Pond)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 2-year Rainfall=2.79"

Area (sf)	CN	Description
11,320	98	Paved parking, HSG B
34,483	98	Paved parking, HSG B
4,115	61	>75% Grass cover, Good, HSG B
49,918	95	Weighted Average
4,115		8.24% Pervious Area
45,803		91.76% Impervious Area

Subcatchment DA-2: to Pavers



Summary for Subcatchment DA-3: to Neighbor

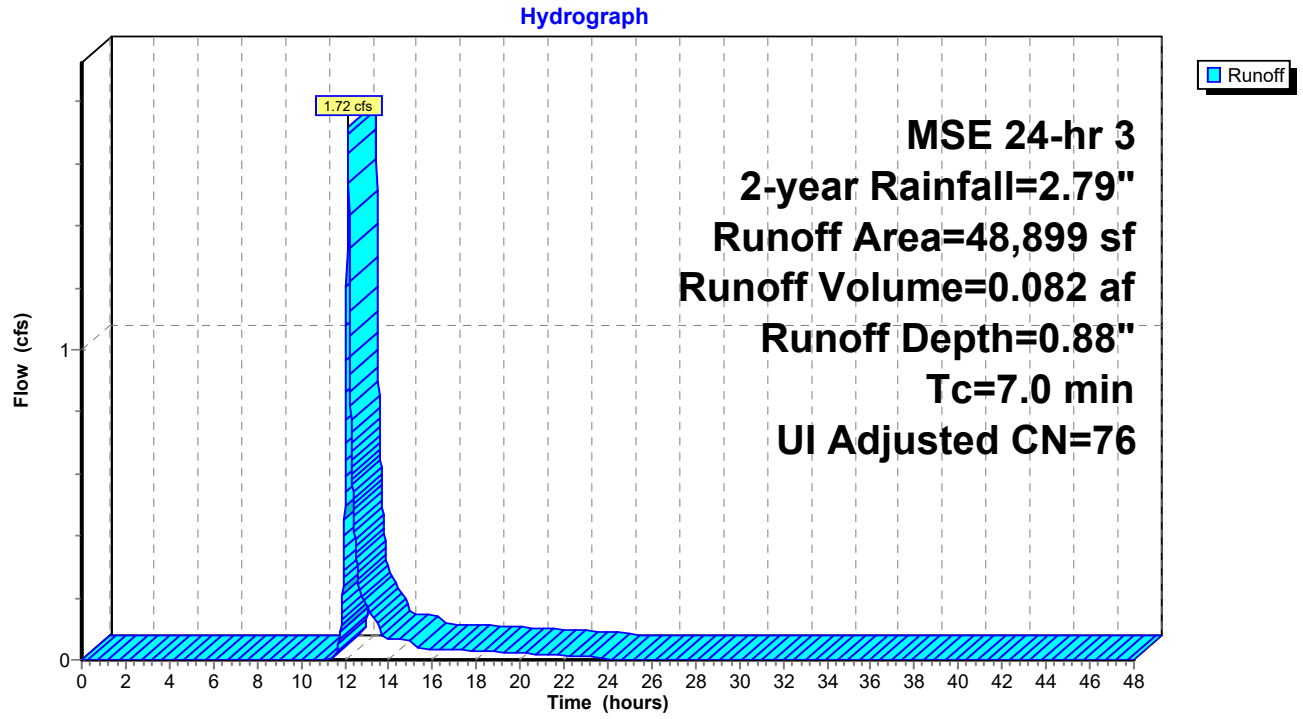
Runoff = 1.72 cfs @ 12.15 hrs, Volume= 0.082 af, Depth= 0.88"
Routed to Reach 6R : Neighbor

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 2-year Rainfall=2.79"

Area (sf)	CN	Adj	Description
9,034	98		Unconnected roofs, HSG C
598	98		Unconnected pavement, HSG C
39,267	74		>75% Grass cover, Good, HSG C
48,899	79	76	Weighted Average, UI Adjusted
39,267			80.30% Pervious Area
9,632			19.70% Impervious Area
9,632			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0					**Direct Entry,**

Subcatchment DA-3: to Neighbor



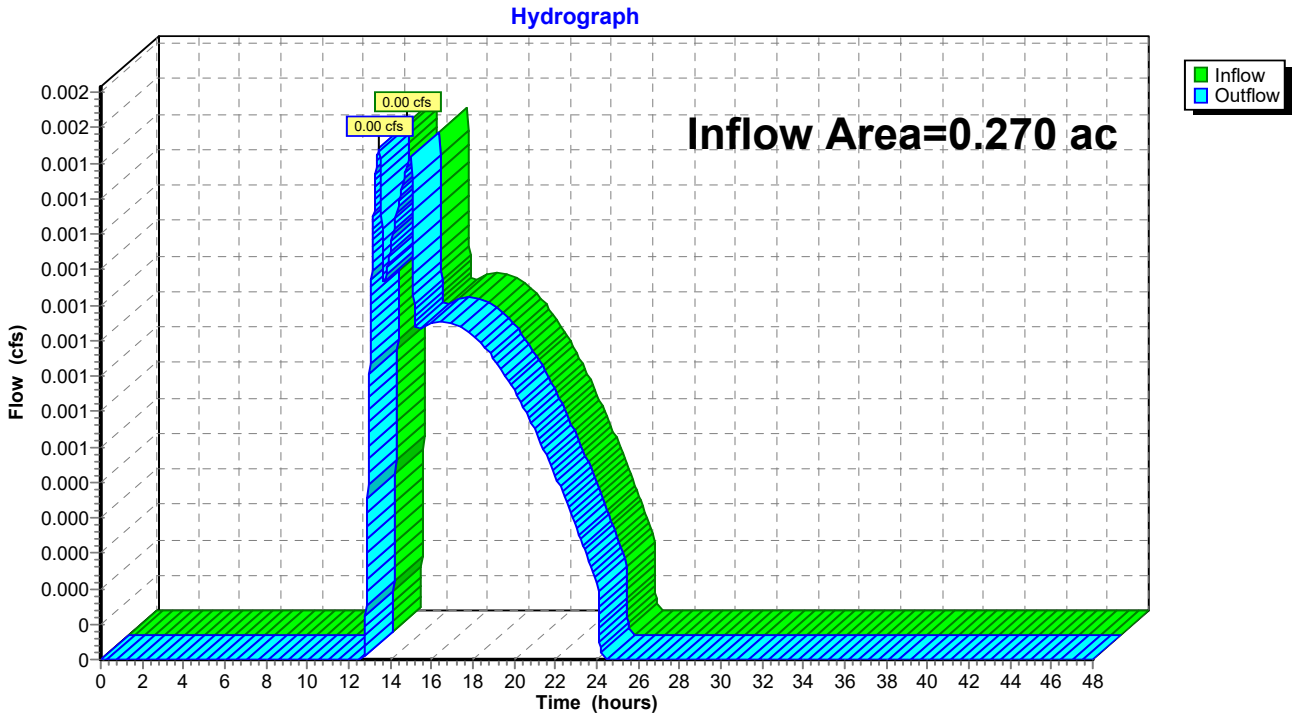
Summary for Reach 4R: Hemingway

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.270 ac, 14.88% Impervious, Inflow Depth = 0.03" for 2-year event
Inflow = 0.00 cfs @ 13.45 hrs, Volume= 0.001 af
Outflow = 0.00 cfs @ 13.45 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min
Routed to Reach PR : (new Reach)

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Reach 4R: Hemingway



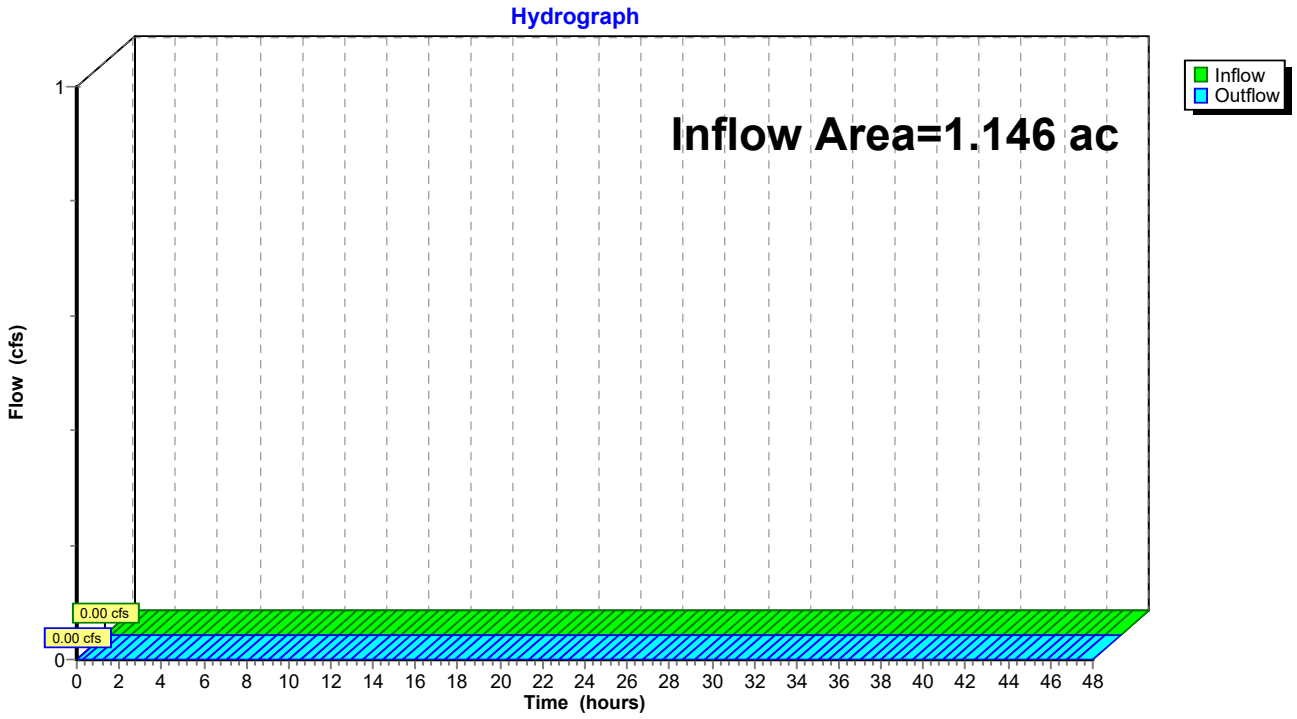
Summary for Reach 5R: Catch Basin

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.146 ac, 91.76% Impervious, Inflow Depth = 0.00" for 2-year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Routed to Reach PR : (new Reach)

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Reach 5R: Catch Basin



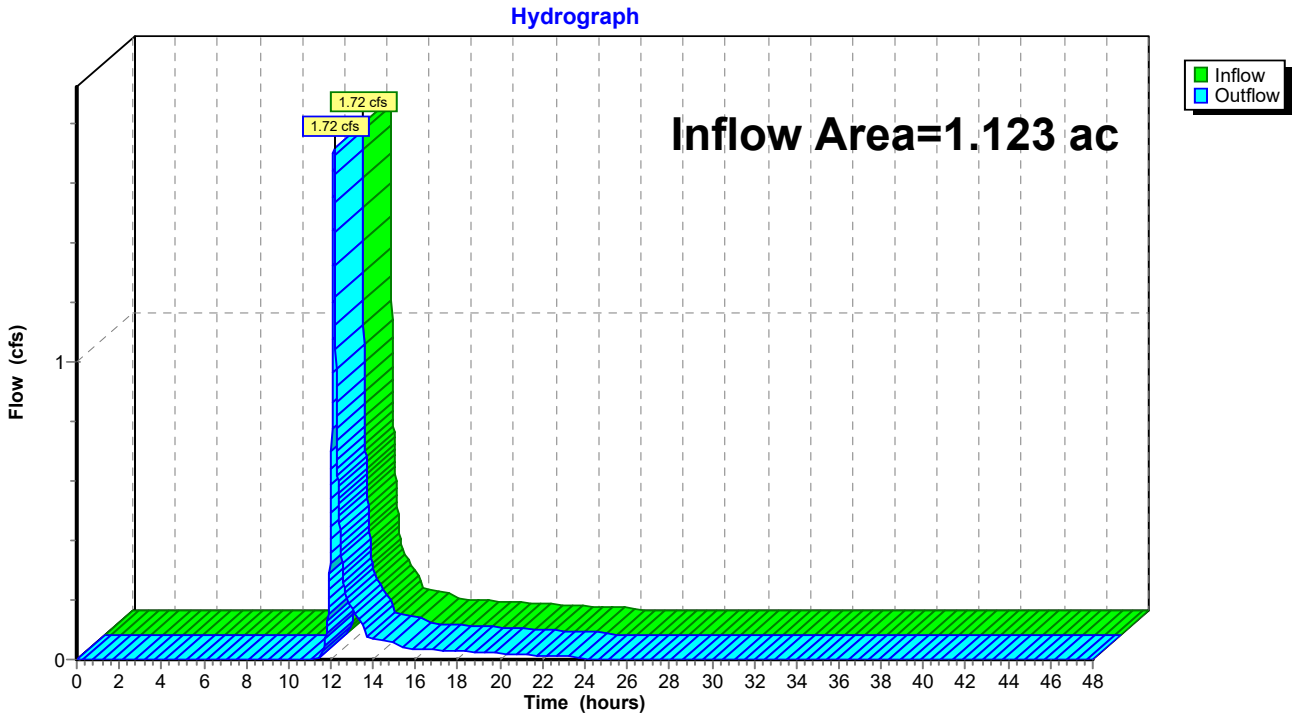
Summary for Reach 6R: Neighbor

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.123 ac, 19.70% Impervious, Inflow Depth = 0.88" for 2-year event
Inflow = 1.72 cfs @ 12.15 hrs, Volume= 0.082 af
Outflow = 1.72 cfs @ 12.15 hrs, Volume= 0.082 af, Atten= 0%, Lag= 0.0 min
Routed to Reach PR : (new Reach)

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Reach 6R: Neighbor



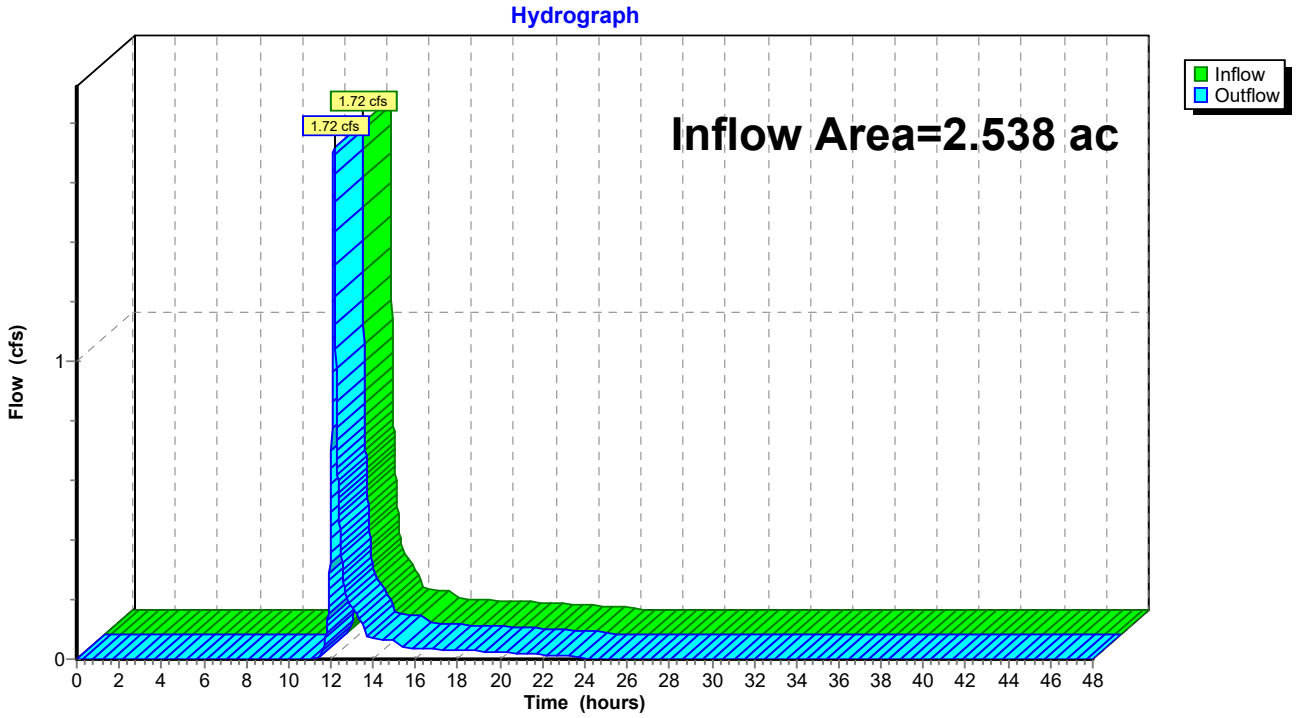
Summary for Reach PR: (new Reach)

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 2.538 ac, 51.72% Impervious, Inflow Depth = 0.39" for 2-year event
Inflow = 1.72 cfs @ 12.15 hrs, Volume= 0.083 af
Outflow = 1.72 cfs @ 12.15 hrs, Volume= 0.083 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Reach PR: (new Reach)



Summary for Pond 1P: (new Pond)

Inflow Area = 1.146 ac, 91.76% Impervious, Inflow Depth = 2.24" for 2-year event
Inflow = 4.98 cfs @ 12.09 hrs, Volume= 0.214 af
Outflow = 0.80 cfs @ 11.72 hrs, Volume= 0.214 af, Atten= 84%, Lag= 0.0 min
Discarded = 0.80 cfs @ 11.72 hrs, Volume= 0.214 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Reach 5R : Catch Basin
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Reach 4R : Hemingway

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 874.67' @ 12.31 hrs Surf.Area= 3,104 sf Storage= 2,719 cf

Plug-Flow detention time= 20.8 min calculated for 0.214 af (100% of inflow)
Center-of-Mass det. time= 20.8 min (788.8 - 768.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	872.44'	3,374 cf	**151.33'W x 18.50'L x 3.47'H Field A** 9,706 cf Overall - 1,271 cf Embedded = 8,435 cf x 40.0% Voids
#2A	875.44'	284 cf	**PaveDrain S6-45** x 2970 Inside #1 Inside= 7.1"W x 5.6"H => 0.10 sf x 1.00'L = 0.1 cf Outside= 12.0"W x 5.6"H => 0.43 sf x 1.00'L = 0.4 cf 2970 Chambers in 165 Rows
#3	875.90'	1,558 cf	**Above Ground Storage (Prismatic)** Listed below (Recalc)
#4	872.44'	326 cf	**Additional Stone (Prismatic)** Listed below (Recalc) x 0.15 815 cf Overall x 40.0% Voids
		5,542 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
875.90	0	0	0
876.00	768	38	38
876.10	1,357	106	145
876.20	1,957	166	310
876.30	2,540	225	535
876.40	3,106	282	817
876.50	3,700	340	1,158
876.60	4,300	400	1,558

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
872.44	1,359	0	0
875.44	2,265	5,436	5,436

Device	Routing	Invert	Outlet Devices
#1	Discarded	872.44'	**0.80 cfs Exfiltration when above 872.44'**
#2	Primary	867.60'	**15.0" Round Catch Basin Outlet Culvert**
			L= 25.0' RCP, square edge headwall, Ke= 0.500
			Inlet / Outlet Invert= 867.60' / 867.35' S= 0.0100 '/' Cc= 0.900
			n= 0.015 Concrete sewer w/manholes & inlets, Flow Area= 1.23 sf
#3	Device 2	876.13'	**24.0" x 36.0" Horiz. Catch Basin** C= 0.600
			Limited to weir flow at low heads
#4	Secondary	876.40'	**Overflow to Street X 0.00, Cv= 2.62 (C= 3.28)**
			Head (feet) 0.00 0.10 0.20
			Width (feet) 2.00 6.00 177.00
#5	Device 2	872.44'	**12.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#6	Device 5	874.94'	**Custom Weir/Orifice, Cv= 2.62 (C= 3.28)**
			Head (feet) 2.50 3.50
			Width (feet) 2.00 2.00

Discarded OutFlow Max=0.80 cfs @ 11.72 hrs HW=872.48' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.80 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=872.44' (Free Discharge)
└**2=Catch Basin Outlet Culvert** (Passes 0.00 cfs of 12.13 cfs potential flow)
  ├**3=Catch Basin** (Controls 0.00 cfs)
  └**5=Orifice/Grate** (Controls 0.00 cfs)
    └**6=Custom Weir/Orifice** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=872.44' (Free Discharge)
└**4=Overflow to Street** (Controls 0.00 cfs)

Pond 1P: (new Pond) - Chamber Wizard Field A

Chamber Model = PaveDrain S6-45 (PaveDrain 12x12 Block with gap storage)
Inside= 7.1"W x 5.6"H => 0.10 sf x 1.00'L = 0.1 cf
Outside= 12.0"W x 5.6"H => 0.43 sf x 1.00'L = 0.4 cf

12.0" Wide - 1.0" Nesting = 11.0" C-C Row Spacing

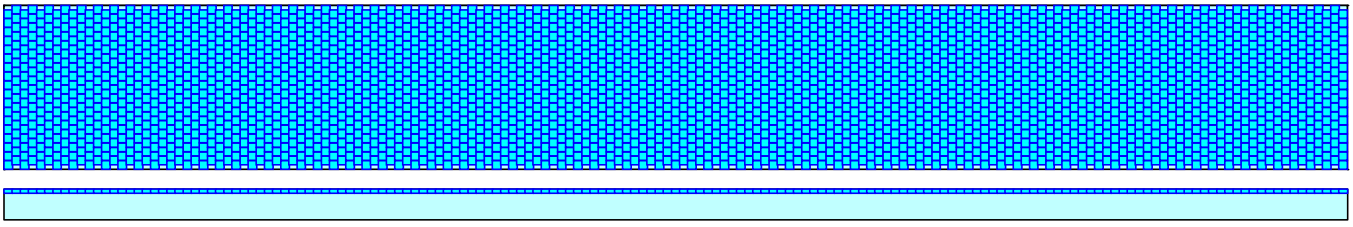
18 Chambers/Row x 1.00' Long = 18.00' Row Length +0.50' Row Offset = 18.50' Base Length
165 Rows x 12.0" Wide - 1.0" Nesting x 164 = 151.33' Base Width
36.0" Stone Base + 5.6" Chamber Height = 3.47' Field Height

2,970 Chambers x 0.1 cf = 283.6 cf Chamber Storage
2,970 Chambers x 0.4 cf = 1,270.5 cf Displacement

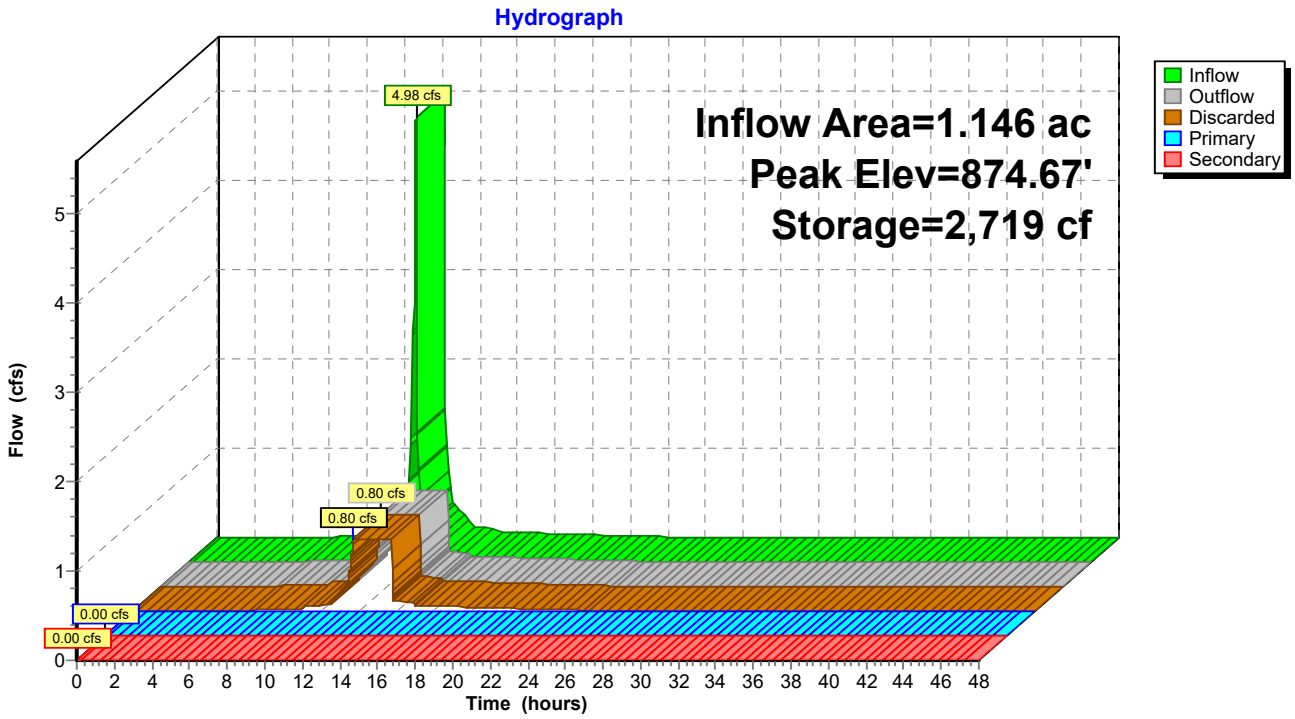
9,705.5 cf Field - 1,270.5 cf Chambers = 8,435.0 cf Stone x 40.0% Voids = 3,374.0 cf Stone Storage

Chamber Storage + Stone Storage = 3,657.6 cf = 0.084 af
Overall Storage Efficiency = 37.7%
Overall System Size = 18.50' x 151.33' x 3.47'

2,970 Chambers
359.5 cy Field
312.4 cy Stone



Pond 1P: (new Pond)



Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentDA-1: to Hemingway Runoff Area=11,743 sf 14.88% Impervious Runoff Depth=0.31"
Tc=7.0 min CN=48 Runoff=0.05 cfs 0.007 af

SubcatchmentDA-2: to Pavers Runoff Area=49,918 sf 91.76% Impervious Runoff Depth=3.58"
Tc=0.0 min CN=95 Runoff=7.65 cfs 0.342 af

SubcatchmentDA-3: to Neighbor Runoff Area=48,899 sf 19.70% Impervious Runoff Depth=1.85"
Tc=7.0 min UI Adjusted CN=76 Runoff=3.71 cfs 0.173 af

Reach 4R: Hemingway Inflow=0.05 cfs 0.007 af
Outflow=0.05 cfs 0.007 af

Reach 5R: Catch Basin Inflow=5.08 cfs 0.052 af
Outflow=5.08 cfs 0.052 af

Reach 6R: Neighbor Inflow=3.71 cfs 0.173 af
Outflow=3.71 cfs 0.173 af

Reach PR: (new Reach) Inflow=8.10 cfs 0.232 af
Outflow=8.10 cfs 0.232 af

Pond 1P: (new Pond) Peak Elev=875.78' Storage=3,966 cf Inflow=7.65 cfs 0.342 af
Discarded=0.80 cfs 0.290 af Primary=5.08 cfs 0.052 af Secondary=0.00 cfs 0.000 af Outflow=5.88 cfs 0.342 af

Total Runoff Area = 2.538 ac Runoff Volume = 0.522 af Average Runoff Depth = 2.47"
48.28% Pervious = 1.225 ac 51.72% Impervious = 1.313 ac

Summary for Subcatchment DA-1: to Hemingway

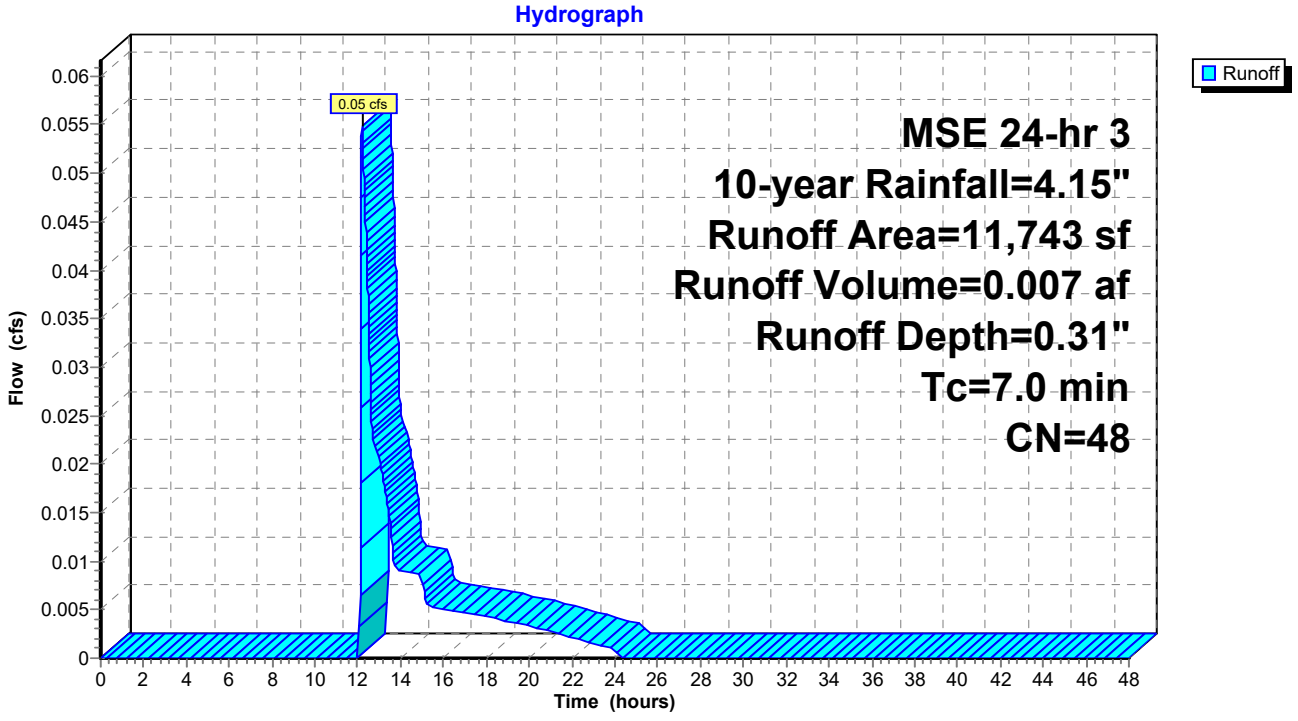
Runoff = 0.05 cfs @ 12.20 hrs, Volume= 0.007 af, Depth= 0.31"
Routed to Reach 4R : Hemingway

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 10-year Rainfall=4.15"

Area (sf)	CN	Description
1,747	98	Paved parking, HSG A
9,996	39	>75% Grass cover, Good, HSG A
11,743	48	Weighted Average
9,996		85.12% Pervious Area
1,747		14.88% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0					**Direct Entry,**

Subcatchment DA-1: to Hemingway



Summary for Subcatchment DA-2: to Pavers

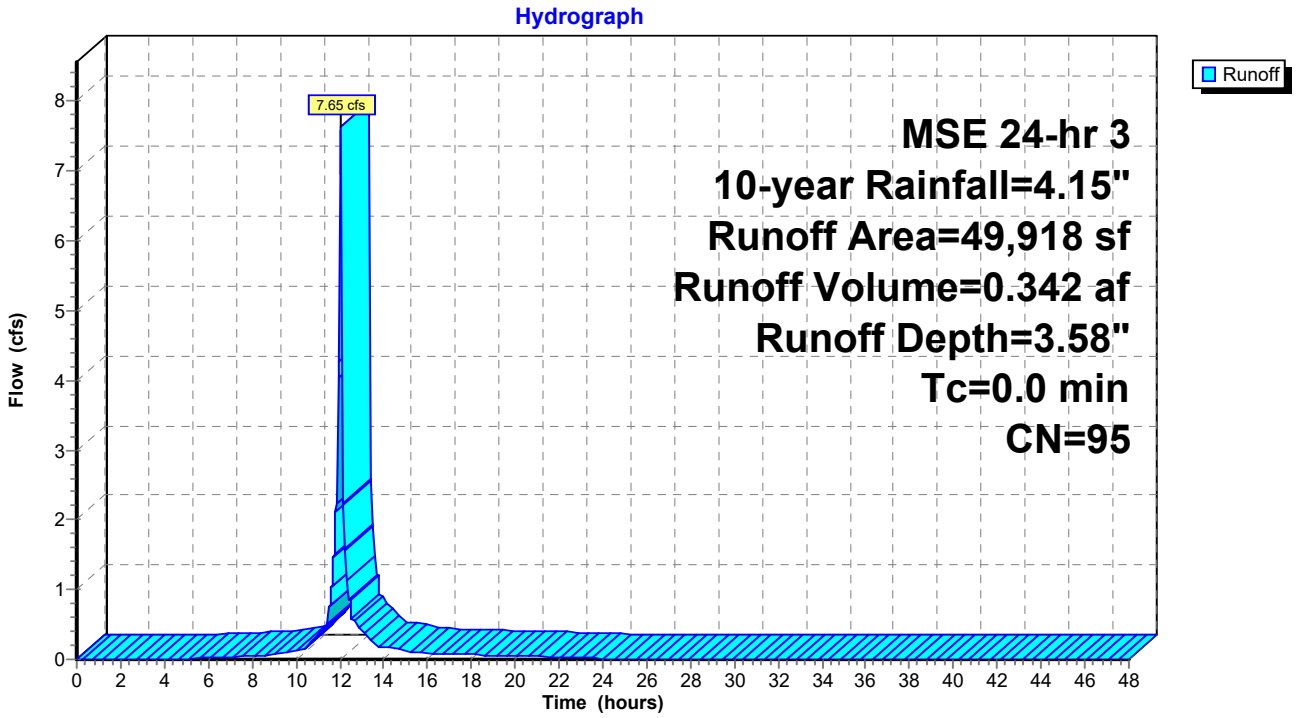
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 7.65 cfs @ 12.09 hrs, Volume= 0.342 af, Depth= 3.58"
Routed to Pond 1P : (new Pond)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 10-year Rainfall=4.15"

Area (sf)	CN	Description
11,320	98	Paved parking, HSG B
34,483	98	Paved parking, HSG B
4,115	61	>75% Grass cover, Good, HSG B
49,918	95	Weighted Average
4,115		8.24% Pervious Area
45,803		91.76% Impervious Area

Subcatchment DA-2: to Pavers



Summary for Subcatchment DA-3: to Neighbor

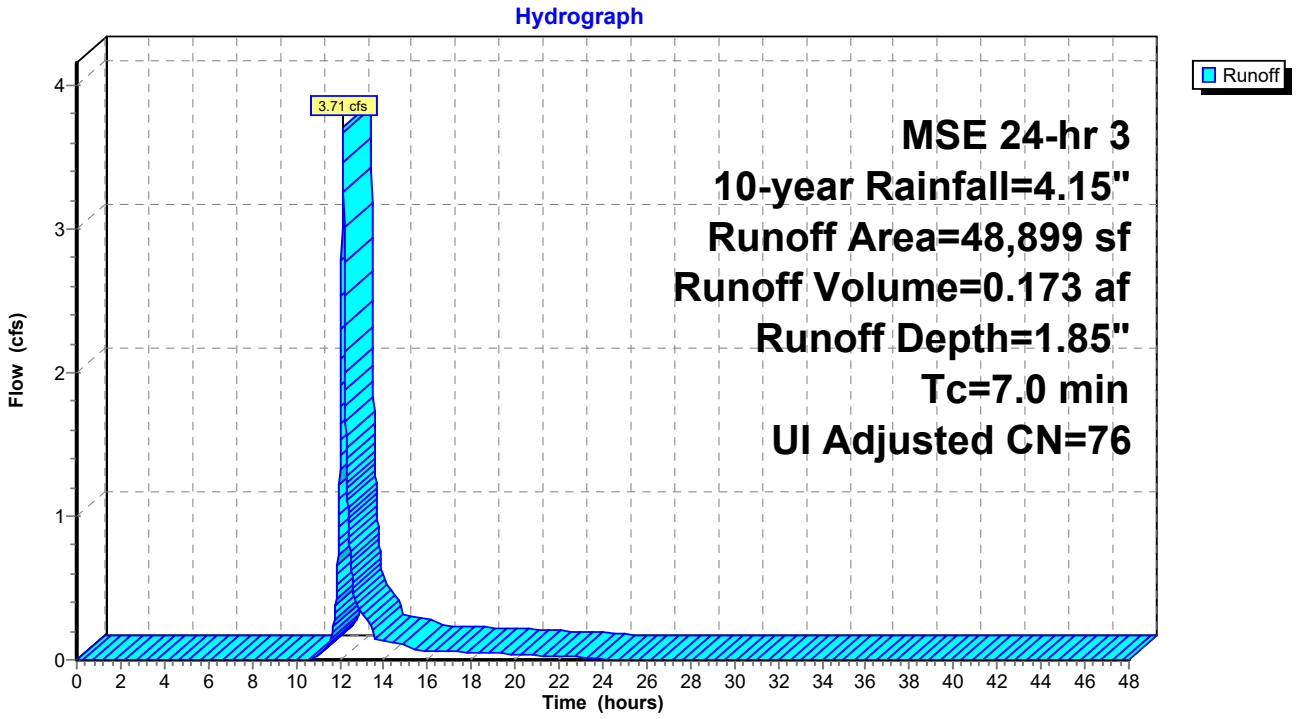
Runoff = 3.71 cfs @ 12.15 hrs, Volume= 0.173 af, Depth= 1.85"
Routed to Reach 6R : Neighbor

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 10-year Rainfall=4.15"

Area (sf)	CN	Adj	Description
9,034	98		Unconnected roofs, HSG C
598	98		Unconnected pavement, HSG C
39,267	74		>75% Grass cover, Good, HSG C
48,899	79	76	Weighted Average, UI Adjusted
39,267			80.30% Pervious Area
9,632			19.70% Impervious Area
9,632			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0					**Direct Entry,**

Subcatchment DA-3: to Neighbor



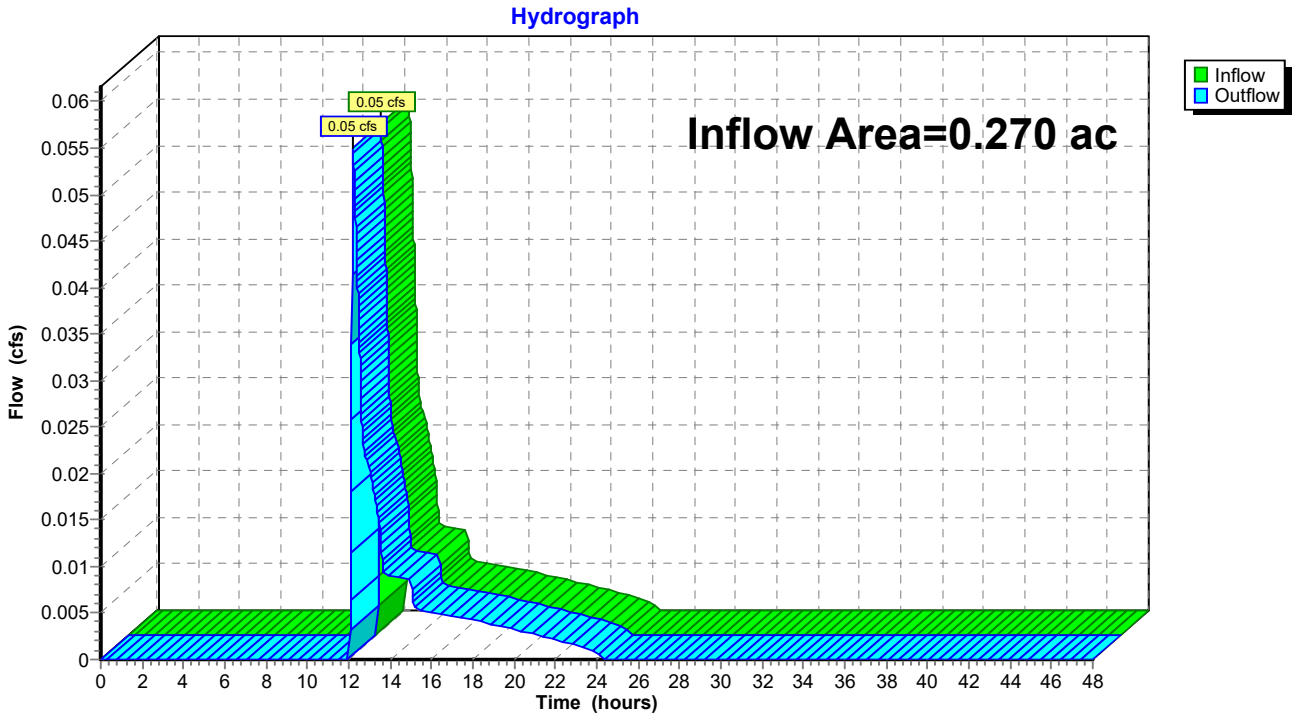
Summary for Reach 4R: Hemingway

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.270 ac, 14.88% Impervious, Inflow Depth = 0.31" for 10-year event
Inflow = 0.05 cfs @ 12.20 hrs, Volume= 0.007 af
Outflow = 0.05 cfs @ 12.20 hrs, Volume= 0.007 af, Atten= 0%, Lag= 0.0 min
Routed to Reach PR : (new Reach)

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Reach 4R: Hemingway



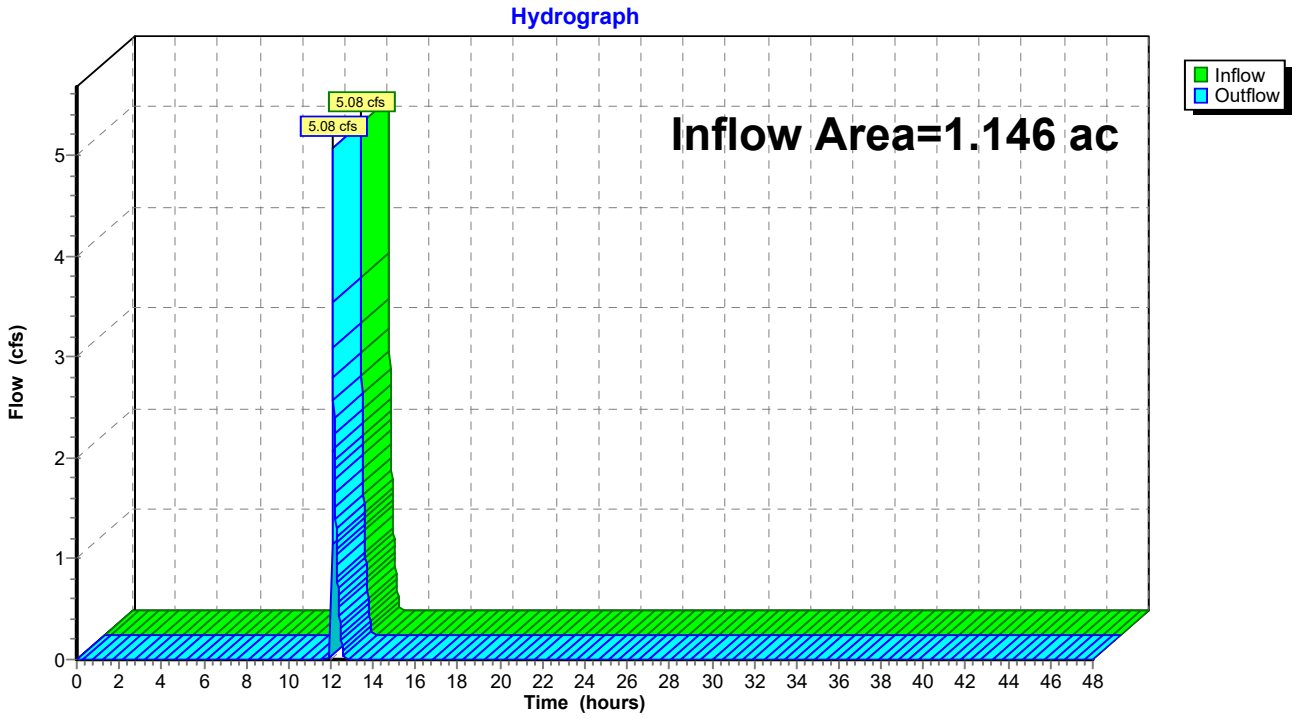
Summary for Reach 5R: Catch Basin

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.146 ac, 91.76% Impervious, Inflow Depth = 0.54" for 10-year event
Inflow = 5.08 cfs @ 12.10 hrs, Volume= 0.052 af
Outflow = 5.08 cfs @ 12.10 hrs, Volume= 0.052 af, Atten= 0%, Lag= 0.0 min
Routed to Reach PR : (new Reach)

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Reach 5R: Catch Basin



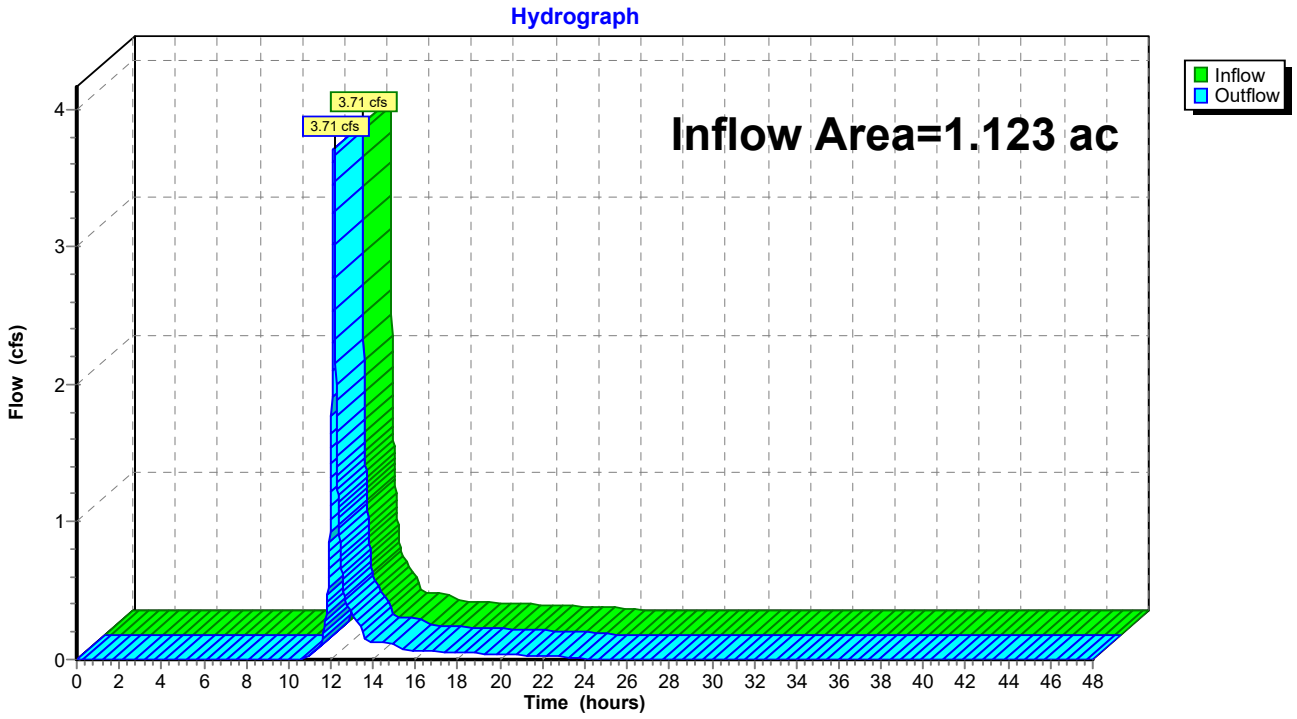
Summary for Reach 6R: Neighbor

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.123 ac, 19.70% Impervious, Inflow Depth = 1.85" for 10-year event
Inflow = 3.71 cfs @ 12.15 hrs, Volume= 0.173 af
Outflow = 3.71 cfs @ 12.15 hrs, Volume= 0.173 af, Atten= 0%, Lag= 0.0 min
Routed to Reach PR : (new Reach)

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Reach 6R: Neighbor



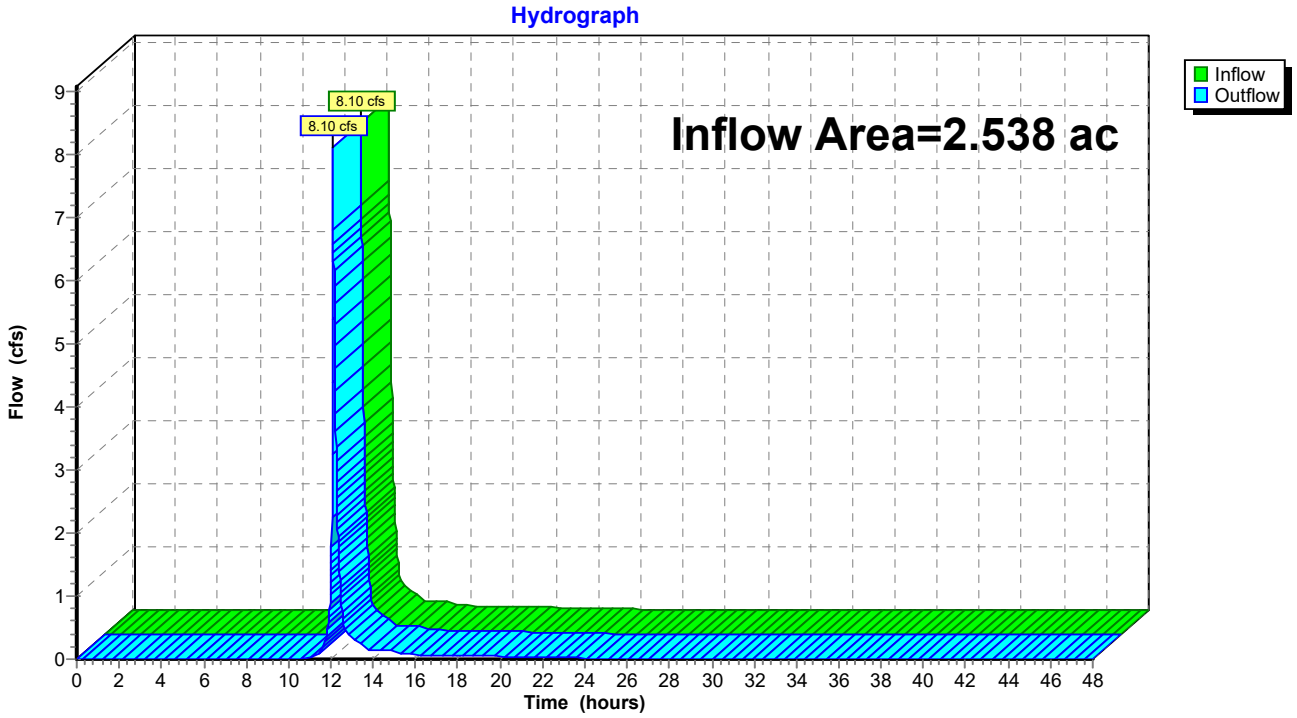
Summary for Reach PR: (new Reach)

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 2.538 ac, 51.72% Impervious, Inflow Depth = 1.10" for 10-year event
Inflow = 8.10 cfs @ 12.10 hrs, Volume= 0.232 af
Outflow = 8.10 cfs @ 12.10 hrs, Volume= 0.232 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Reach PR: (new Reach)



Summary for Pond 1P: (new Pond)

Inflow Area = 1.146 ac, 91.76% Impervious, Inflow Depth = 3.58" for 10-year event
Inflow = 7.65 cfs @ 12.09 hrs, Volume= 0.342 af
Outflow = 5.88 cfs @ 12.10 hrs, Volume= 0.342 af, Atten= 23%, Lag= 0.6 min
Discarded = 0.80 cfs @ 11.61 hrs, Volume= 0.290 af
Primary = 5.08 cfs @ 12.10 hrs, Volume= 0.052 af
Routed to Reach 5R : Catch Basin
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Reach 4R : Hemingway

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 875.78' @ 12.10 hrs Surf.Area= 3,139 sf Storage= 3,966 cf

Plug-Flow detention time= 21.6 min calculated for 0.342 af (100% of inflow)
Center-of-Mass det. time= 21.6 min (780.8 - 759.2)

Volume	Invert	Avail.Storage	Storage Description
#1A	872.44'	3,374 cf	**151.33'W x 18.50'L x 3.47'H Field A** 9,706 cf Overall - 1,271 cf Embedded = 8,435 cf x 40.0% Voids
#2A	875.44'	284 cf	**PaveDrain S6-45** x 2970 Inside #1 Inside= 7.1"W x 5.6"H => 0.10 sf x 1.00'L = 0.1 cf Outside= 12.0"W x 5.6"H => 0.43 sf x 1.00'L = 0.4 cf 2970 Chambers in 165 Rows
#3	875.90'	1,558 cf	**Above Ground Storage (Prismatic)** Listed below (Recalc)
#4	872.44'	326 cf	**Additional Stone (Prismatic)** Listed below (Recalc) x 0.15 815 cf Overall x 40.0% Voids
		5,542 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
875.90	0	0	0
876.00	768	38	38
876.10	1,357	106	145
876.20	1,957	166	310
876.30	2,540	225	535
876.40	3,106	282	817
876.50	3,700	340	1,158
876.60	4,300	400	1,558

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
872.44	1,359	0	0
875.44	2,265	5,436	5,436

Device	Routing	Invert	Outlet Devices
#1	Discarded	872.44'	**0.80 cfs Exfiltration when above 872.44'**
#2	Primary	867.60'	**15.0" Round Catch Basin Outlet Culvert**
			L= 25.0' RCP, square edge headwall, Ke= 0.500
			Inlet / Outlet Invert= 867.60' / 867.35' S= 0.0100 '/' Cc= 0.900
			n= 0.015 Concrete sewer w/manholes & inlets, Flow Area= 1.23 sf
#3	Device 2	876.13'	**24.0" x 36.0" Horiz. Catch Basin** C= 0.600
			Limited to weir flow at low heads
#4	Secondary	876.40'	**Overflow to Street X 0.00, Cv= 2.62 (C= 3.28)**
			Head (feet) 0.00 0.10 0.20
			Width (feet) 2.00 6.00 177.00
#5	Device 2	872.44'	**12.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#6	Device 5	874.94'	**Custom Weir/Orifice, Cv= 2.62 (C= 3.28)**
			Head (feet) 2.50 3.50
			Width (feet) 2.00 2.00

Discarded OutFlow Max=0.80 cfs @ 11.61 hrs HW=872.49' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.80 cfs)

Primary OutFlow Max=5.04 cfs @ 12.10 hrs HW=875.78' (Free Discharge)
└**2=Catch Basin Outlet Culvert** (Passes 5.04 cfs of 16.24 cfs potential flow)
  ├**3=Catch Basin** (Controls 0.00 cfs)
  └**5=Orifice/Grate** (Passes 5.04 cfs of 6.37 cfs potential flow)
    └**6=Custom Weir/Orifice** (Weir Controls 5.04 cfs @ 3.00 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=872.44' (Free Discharge)
└**4=Overflow to Street** (Controls 0.00 cfs)

Pond 1P: (new Pond) - Chamber Wizard Field A

Chamber Model = PaveDrain S6-45 (PaveDrain 12x12 Block with gap storage)
Inside= 7.1"W x 5.6"H => 0.10 sf x 1.00'L = 0.1 cf
Outside= 12.0"W x 5.6"H => 0.43 sf x 1.00'L = 0.4 cf

12.0" Wide - 1.0" Nesting = 11.0" C-C Row Spacing

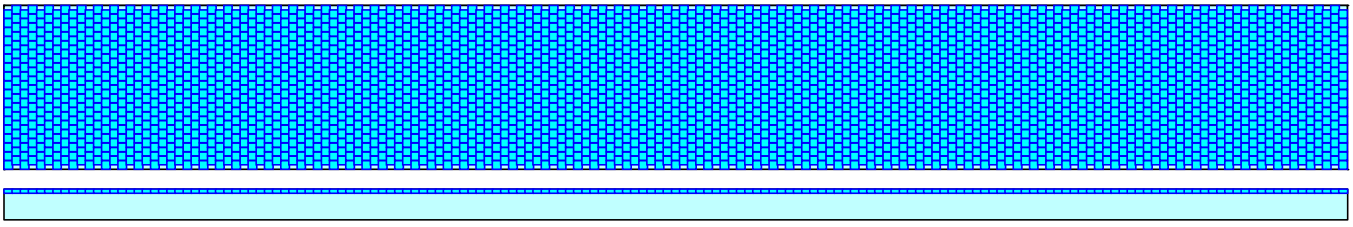
18 Chambers/Row x 1.00' Long = 18.00' Row Length +0.50' Row Offset = 18.50' Base Length
165 Rows x 12.0" Wide - 1.0" Nesting x 164 = 151.33' Base Width
36.0" Stone Base + 5.6" Chamber Height = 3.47' Field Height

2,970 Chambers x 0.1 cf = 283.6 cf Chamber Storage
2,970 Chambers x 0.4 cf = 1,270.5 cf Displacement

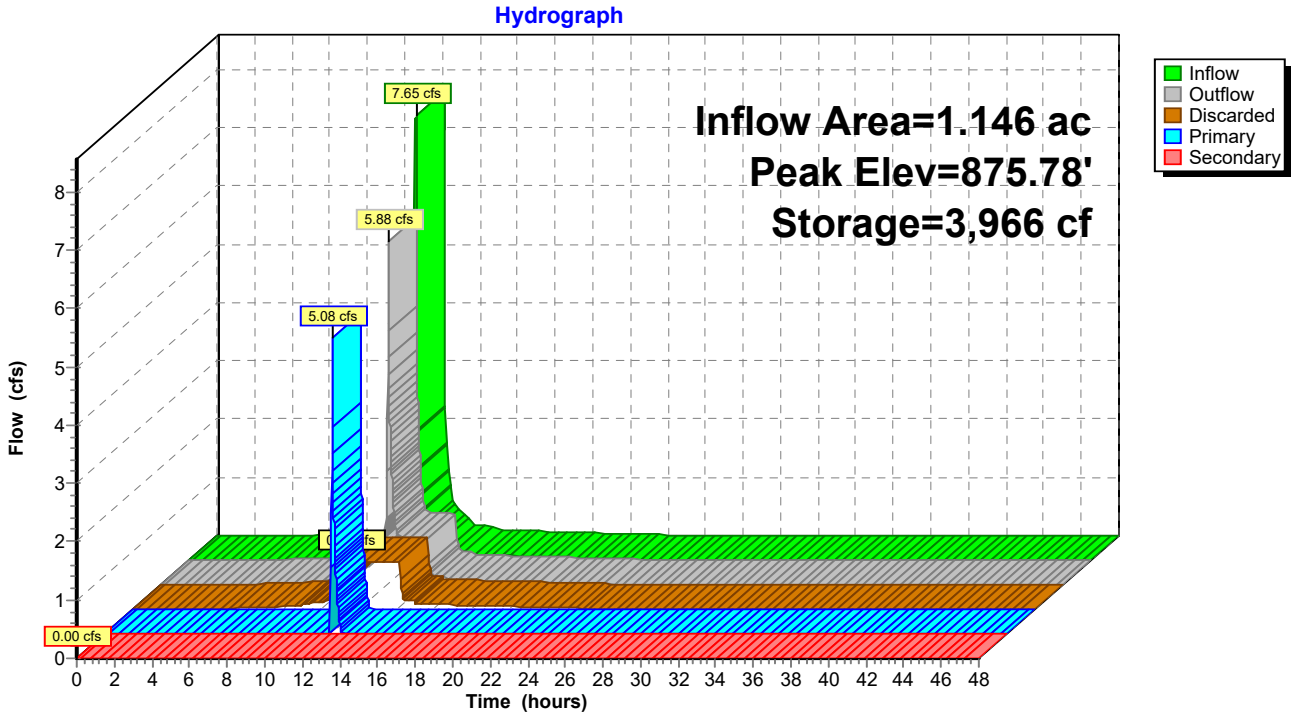
9,705.5 cf Field - 1,270.5 cf Chambers = 8,435.0 cf Stone x 40.0% Voids = 3,374.0 cf Stone Storage

Chamber Storage + Stone Storage = 3,657.6 cf = 0.084 af
Overall Storage Efficiency = 37.7%
Overall System Size = 18.50' x 151.33' x 3.47'

2,970 Chambers
359.5 cy Field
312.4 cy Stone



Pond 1P: (new Pond)



Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentDA-1: to Hemingway Runoff Area=11,743 sf 14.88% Impervious Runoff Depth=1.70"
Tc=7.0 min CN=48 Runoff=0.76 cfs 0.038 af

SubcatchmentDA-2: to Pavers Runoff Area=49,918 sf 91.76% Impervious Runoff Depth=6.80"
Tc=0.0 min CN=95 Runoff=13.92 cfs 0.650 af

SubcatchmentDA-3: to Neighbor Runoff Area=48,899 sf 19.70% Impervious Runoff Depth=4.62"
Tc=7.0 min UI Adjusted CN=76 Runoff=9.08 cfs 0.432 af

Reach 4R: Hemingway Inflow=0.76 cfs 0.038 af
Outflow=0.76 cfs 0.038 af

Reach 5R: Catch Basin Inflow=12.57 cfs 0.222 af
Outflow=12.57 cfs 0.222 af

Reach 6R: Neighbor Inflow=9.08 cfs 0.432 af
Outflow=9.08 cfs 0.432 af

Reach PR: (new Reach) Inflow=20.38 cfs 0.692 af
Outflow=20.38 cfs 0.692 af

Pond 1P: (new Pond) Peak Elev=876.43' Storage=4,913 cf Inflow=13.92 cfs 0.650 af
Discarded=0.80 cfs 0.428 af Primary=12.57 cfs 0.222 af Secondary=0.00 cfs 0.000 af Outflow=13.37 cfs 0.650 af

Total Runoff Area = 2.538 ac Runoff Volume = 1.120 af Average Runoff Depth = 5.29"
48.28% Pervious = 1.225 ac 51.72% Impervious = 1.313 ac

Summary for Subcatchment DA-1: to Hemingway

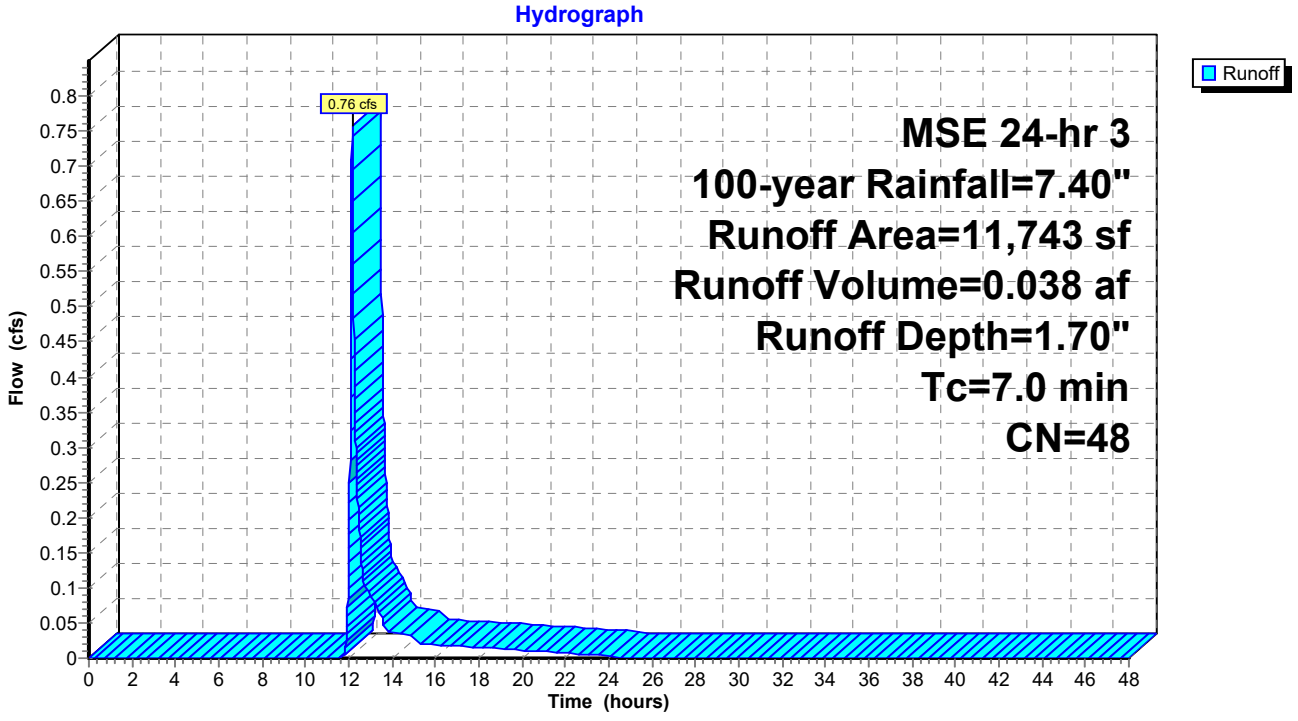
Runoff = 0.76 cfs @ 12.15 hrs, Volume= 0.038 af, Depth= 1.70"
Routed to Reach 4R : Hemingway

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 100-year Rainfall=7.40"

Area (sf)	CN	Description
1,747	98	Paved parking, HSG A
9,996	39	>75% Grass cover, Good, HSG A
11,743	48	Weighted Average
9,996		85.12% Pervious Area
1,747		14.88% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0					**Direct Entry,**

Subcatchment DA-1: to Hemingway



Summary for Subcatchment DA-2: to Pavers

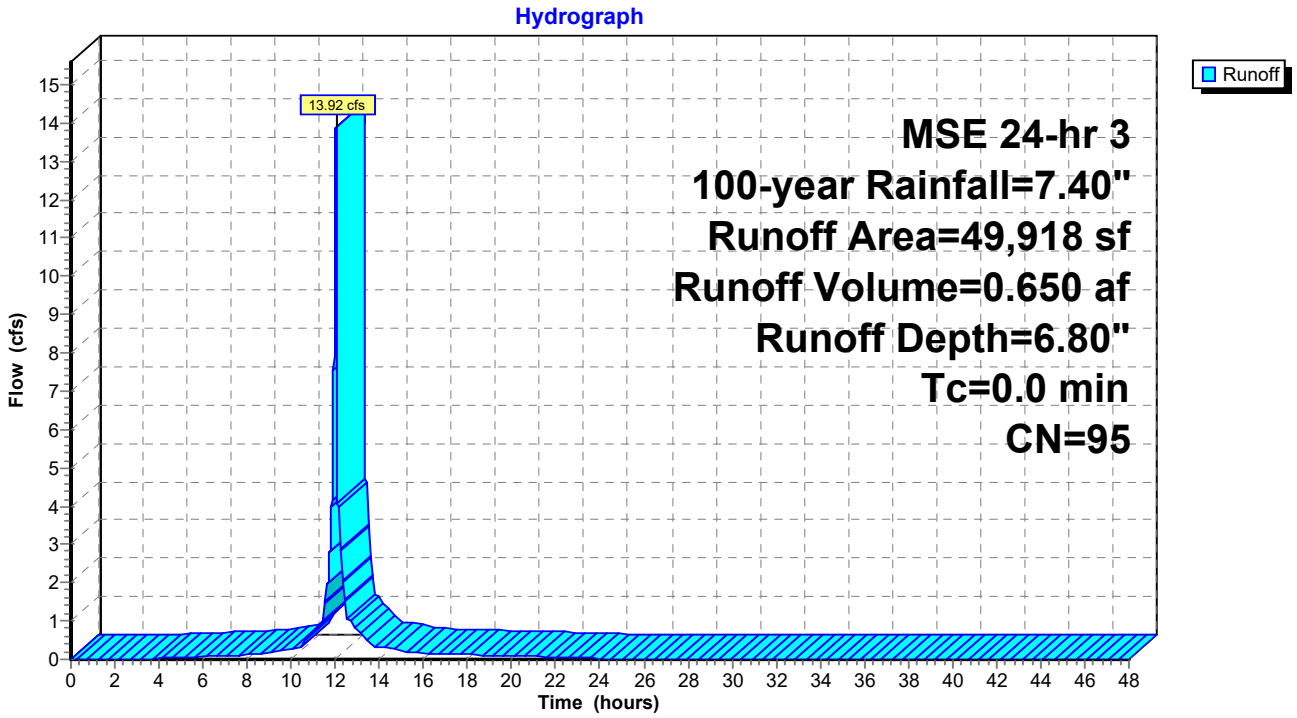
[46] Hint: Tc=0 (Instant runoff peak depends on dt)

Runoff = 13.92 cfs @ 12.09 hrs, Volume= 0.650 af, Depth= 6.80"
Routed to Pond 1P : (new Pond)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 100-year Rainfall=7.40"

Area (sf)	CN	Description
11,320	98	Paved parking, HSG B
34,483	98	Paved parking, HSG B
4,115	61	>75% Grass cover, Good, HSG B
49,918	95	Weighted Average
4,115		8.24% Pervious Area
45,803		91.76% Impervious Area

Subcatchment DA-2: to Pavers



Summary for Subcatchment DA-3: to Neighbor

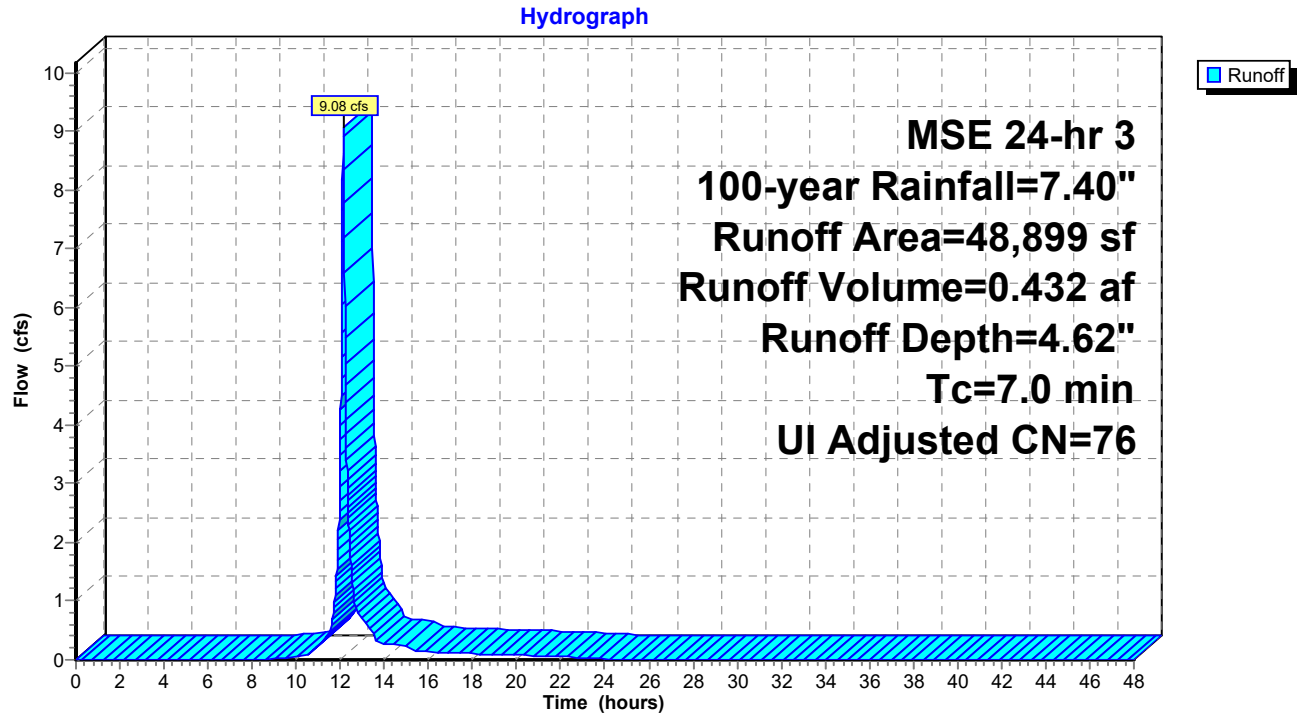
Runoff = 9.08 cfs @ 12.14 hrs, Volume= 0.432 af, Depth= 4.62"
Routed to Reach 6R : Neighbor

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 100-year Rainfall=7.40"

Area (sf)	CN	Adj	Description
9,034	98		Unconnected roofs, HSG C
598	98		Unconnected pavement, HSG C
39,267	74		>75% Grass cover, Good, HSG C
48,899	79	76	Weighted Average, UI Adjusted
39,267			80.30% Pervious Area
9,632			19.70% Impervious Area
9,632			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0					**Direct Entry,**

Subcatchment DA-3: to Neighbor



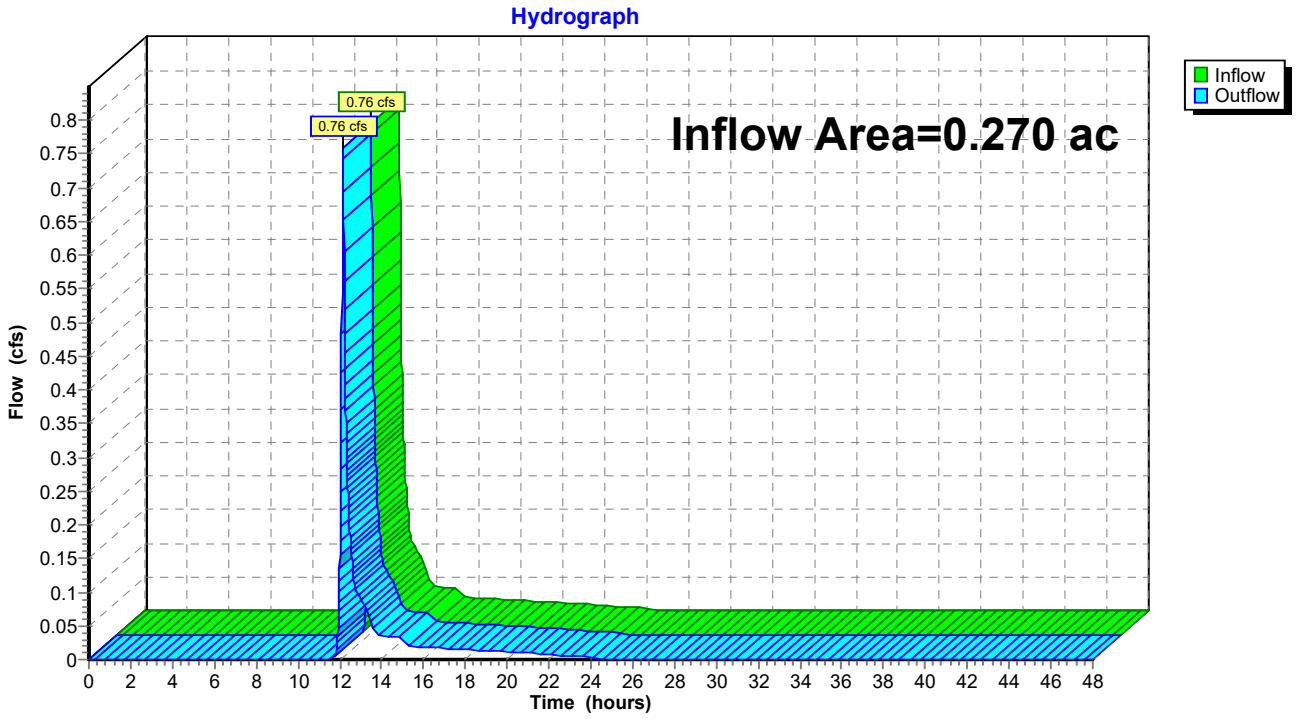
Summary for Reach 4R: Hemingway

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 0.270 ac, 14.88% Impervious, Inflow Depth = 1.70" for 100-year event
Inflow = 0.76 cfs @ 12.15 hrs, Volume= 0.038 af
Outflow = 0.76 cfs @ 12.15 hrs, Volume= 0.038 af, Atten= 0%, Lag= 0.0 min
Routed to Reach PR : (new Reach)

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Reach 4R: Hemingway



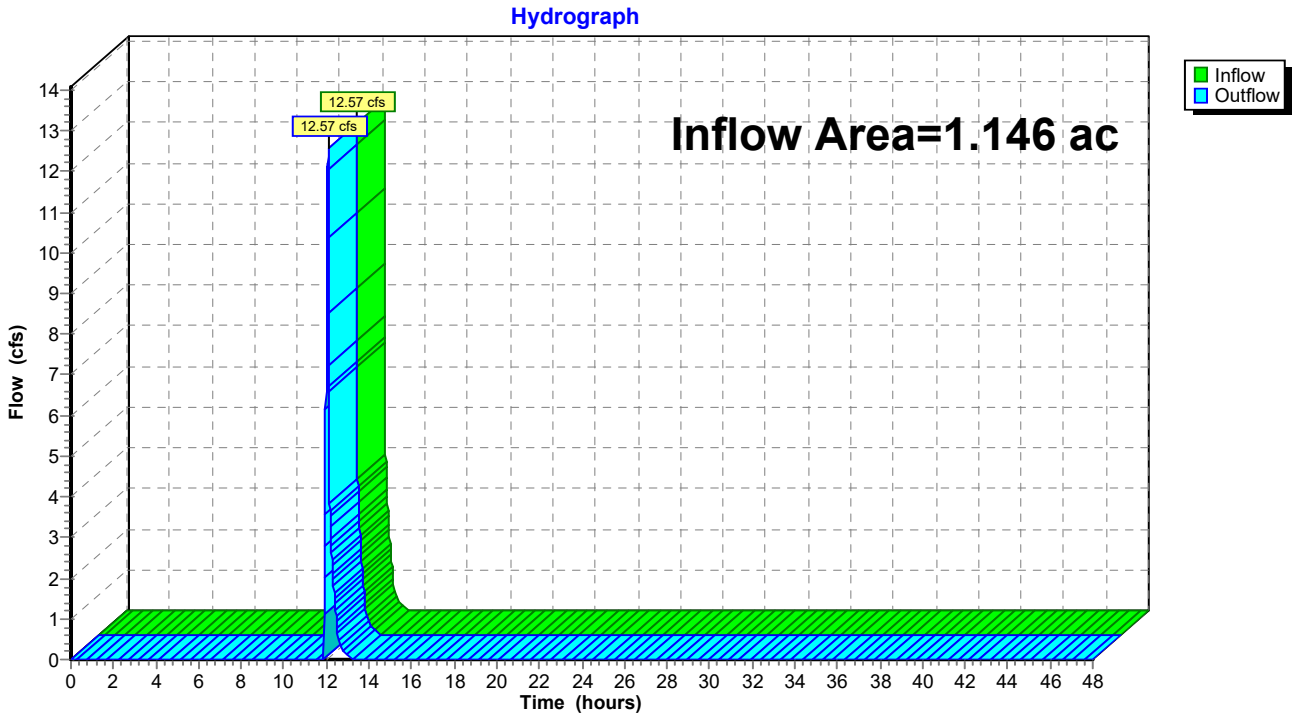
Summary for Reach 5R: Catch Basin

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.146 ac, 91.76% Impervious, Inflow Depth = 2.33" for 100-year event
Inflow = 12.57 cfs @ 12.09 hrs, Volume= 0.222 af
Outflow = 12.57 cfs @ 12.09 hrs, Volume= 0.222 af, Atten= 0%, Lag= 0.0 min
Routed to Reach PR : (new Reach)

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Reach 5R: Catch Basin



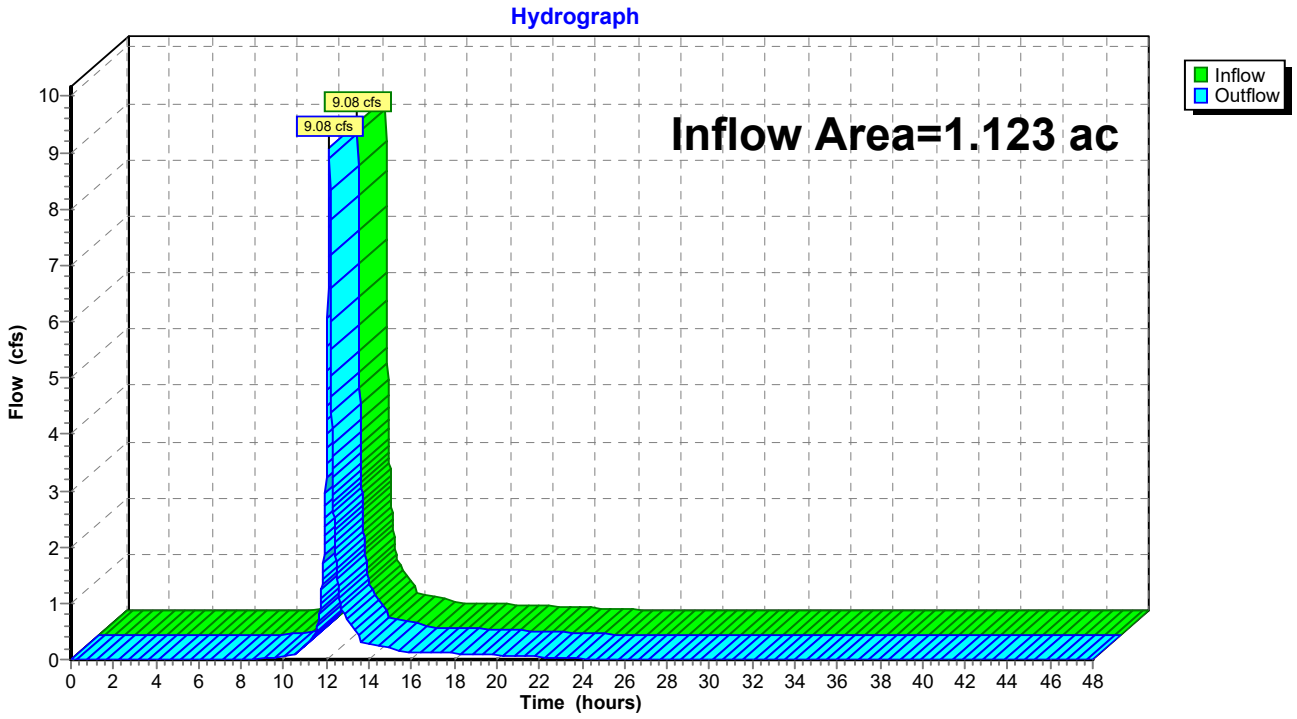
Summary for Reach 6R: Neighbor

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 1.123 ac, 19.70% Impervious, Inflow Depth = 4.62" for 100-year event
Inflow = 9.08 cfs @ 12.14 hrs, Volume= 0.432 af
Outflow = 9.08 cfs @ 12.14 hrs, Volume= 0.432 af, Atten= 0%, Lag= 0.0 min
Routed to Reach PR : (new Reach)

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Reach 6R: Neighbor



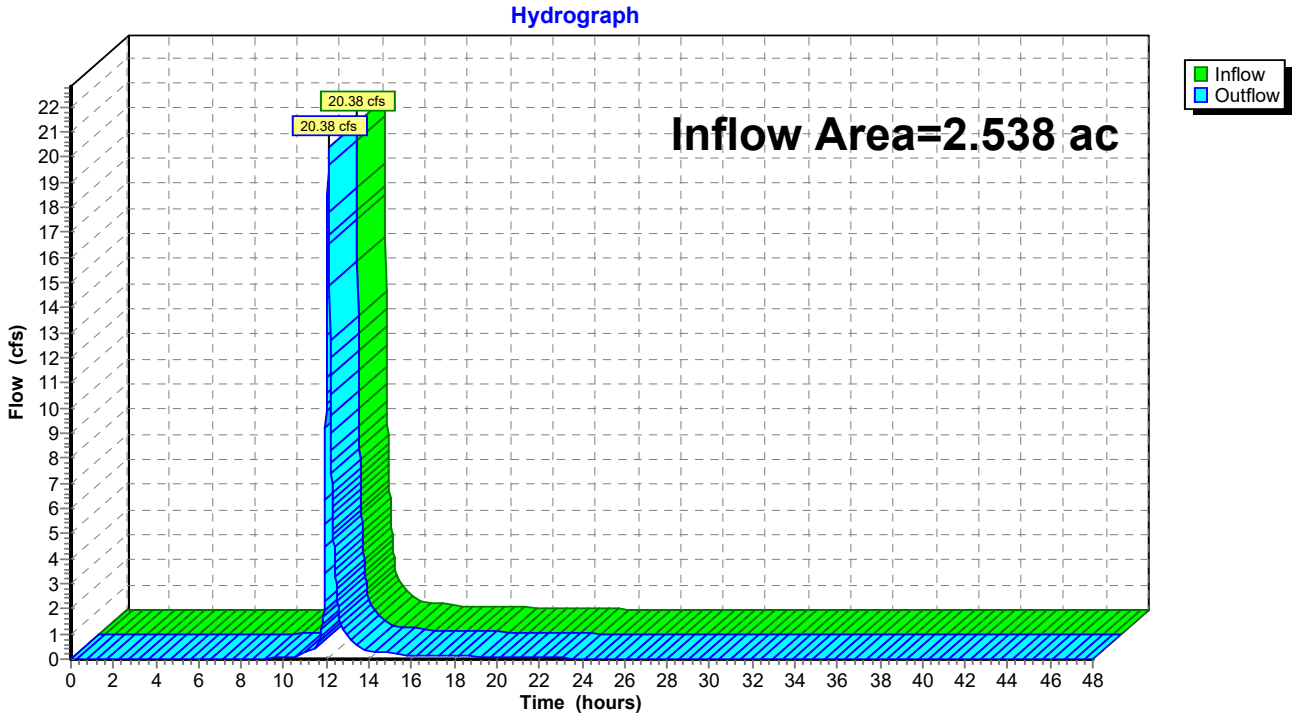
Summary for Reach PR: (new Reach)

[40] Hint: Not Described (Outflow=Inflow)

Inflow Area = 2.538 ac, 51.72% Impervious, Inflow Depth = 3.27" for 100-year event
Inflow = 20.38 cfs @ 12.10 hrs, Volume= 0.692 af
Outflow = 20.38 cfs @ 12.10 hrs, Volume= 0.692 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Reach PR: (new Reach)



Summary for Pond 1P: (new Pond)

[95] Warning: Outlet Device #6 rise exceeded

Inflow Area = 1.146 ac, 91.76% Impervious, Inflow Depth = 6.80" for 100-year event
Inflow = 13.92 cfs @ 12.09 hrs, Volume= 0.650 af
Outflow = 13.37 cfs @ 12.09 hrs, Volume= 0.650 af, Atten= 4%, Lag= 0.0 min
Discarded = 0.80 cfs @ 11.13 hrs, Volume= 0.428 af
Primary = 12.57 cfs @ 12.09 hrs, Volume= 0.222 af
Routed to Reach 5R : Catch Basin
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Reach 4R : Hemingway

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 876.43' @ 12.09 hrs Surf.Area= 6,452 sf Storage= 4,913 cf

Plug-Flow detention time= 17.4 min calculated for 0.650 af (100% of inflow)
Center-of-Mass det. time= 17.4 min (765.5 - 748.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	872.44'	3,374 cf	**151.33'W x 18.50'L x 3.47'H Field A** 9,706 cf Overall - 1,271 cf Embedded = 8,435 cf x 40.0% Voids
#2A	875.44'	284 cf	**PaveDrain S6-45** x 2970 Inside #1 Inside= 7.1"W x 5.6"H => 0.10 sf x 1.00'L = 0.1 cf Outside= 12.0"W x 5.6"H => 0.43 sf x 1.00'L = 0.4 cf 2970 Chambers in 165 Rows
#3	875.90'	1,558 cf	**Above Ground Storage (Prismatic)** Listed below (Recalc)
#4	872.44'	326 cf	**Additional Stone (Prismatic)** Listed below (Recalc) x 0.15 815 cf Overall x 40.0% Voids
		5,542 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
875.90	0	0	0
876.00	768	38	38
876.10	1,357	106	145
876.20	1,957	166	310
876.30	2,540	225	535
876.40	3,106	282	817
876.50	3,700	340	1,158
876.60	4,300	400	1,558

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
872.44	1,359	0	0
875.44	2,265	5,436	5,436

Device	Routing	Invert	Outlet Devices
#1	Discarded	872.44'	**0.80 cfs Exfiltration when above 872.44'**
#2	Primary	867.60'	**15.0" Round Catch Basin Outlet Culvert**
			L= 25.0' RCP, square edge headwall, Ke= 0.500
			Inlet / Outlet Invert= 867.60' / 867.35' S= 0.0100 '/' Cc= 0.900
			n= 0.015 Concrete sewer w/manholes & inlets, Flow Area= 1.23 sf
#3	Device 2	876.13'	**24.0" x 36.0" Horiz. Catch Basin** C= 0.600
			Limited to weir flow at low heads
#4	Secondary	876.40'	**Overflow to Street X 0.00, Cv= 2.62 (C= 3.28)**
			Head (feet) 0.00 0.10 0.20
			Width (feet) 2.00 6.00 177.00
#5	Device 2	872.44'	**12.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#6	Device 5	874.94'	**Custom Weir/Orifice, Cv= 2.62 (C= 3.28)**
			Head (feet) 2.50 3.50
			Width (feet) 2.00 2.00

Discarded OutFlow Max=0.80 cfs @ 11.13 hrs HW=872.48' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.80 cfs)

Primary OutFlow Max=12.51 cfs @ 12.09 hrs HW=876.43' (Free Discharge)
└**2=Catch Basin Outlet Culvert** (Passes 12.51 cfs of 16.93 cfs potential flow)
  ├**3=Catch Basin** (Weir Controls 5.45 cfs @ 1.80 fps)
  └**5=Orifice/Grate** (Orifice Controls 7.07 cfs @ 9.00 fps)
    └**6=Custom Weir/Orifice** (Passes 7.07 cfs of 9.68 cfs potential flow)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=872.44' (Free Discharge)
└**4=Overflow to Street** (Controls 0.00 cfs)

Pond 1P: (new Pond) - Chamber Wizard Field A

Chamber Model = PaveDrain S6-45 (PaveDrain 12x12 Block with gap storage)
Inside= 7.1"W x 5.6"H => 0.10 sf x 1.00'L = 0.1 cf
Outside= 12.0"W x 5.6"H => 0.43 sf x 1.00'L = 0.4 cf

12.0" Wide - 1.0" Nesting = 11.0" C-C Row Spacing

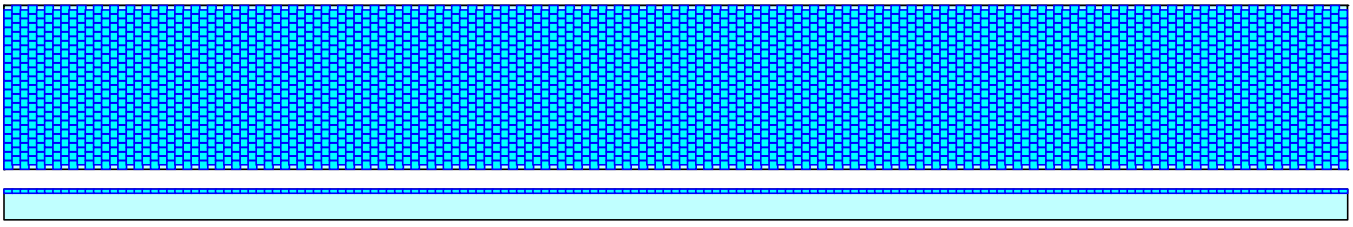
18 Chambers/Row x 1.00' Long = 18.00' Row Length +0.50' Row Offset = 18.50' Base Length
165 Rows x 12.0" Wide - 1.0" Nesting x 164 = 151.33' Base Width
36.0" Stone Base + 5.6" Chamber Height = 3.47' Field Height

2,970 Chambers x 0.1 cf = 283.6 cf Chamber Storage
2,970 Chambers x 0.4 cf = 1,270.5 cf Displacement

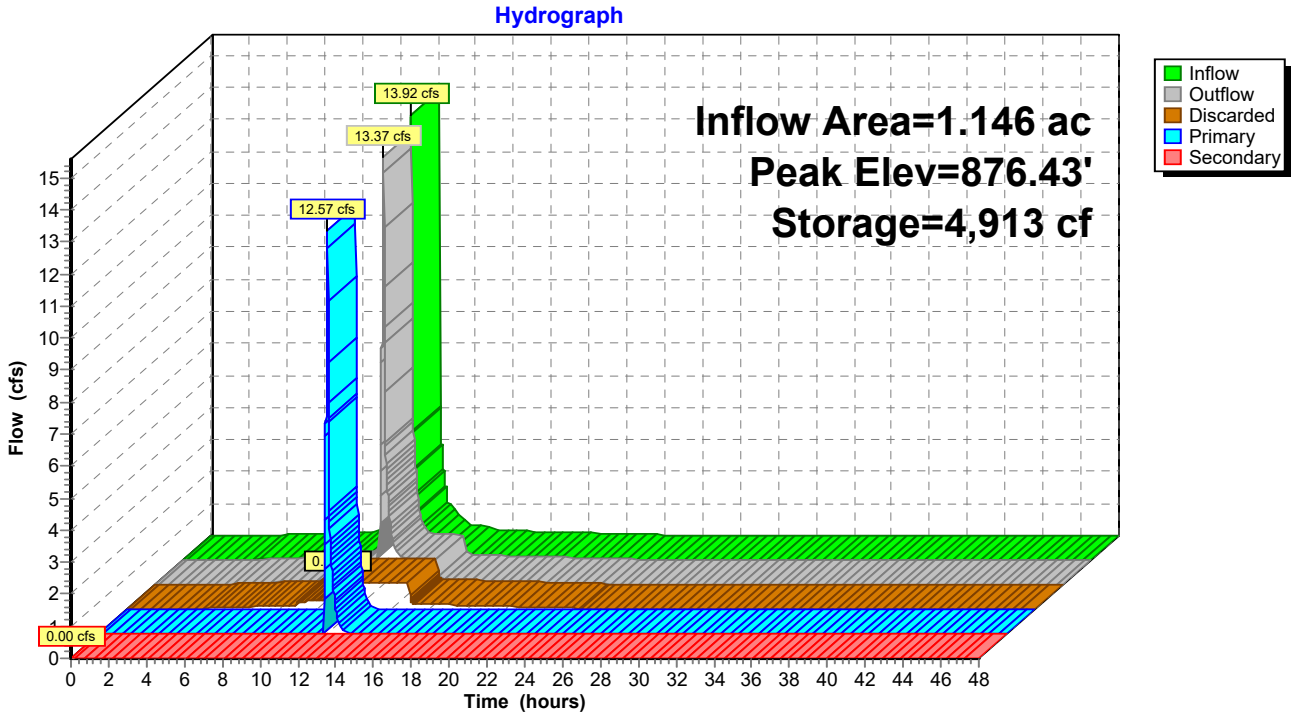
9,705.5 cf Field - 1,270.5 cf Chambers = 8,435.0 cf Stone x 40.0% Voids = 3,374.0 cf Stone Storage

Chamber Storage + Stone Storage = 3,657.6 cf = 0.084 af
Overall Storage Efficiency = 37.7%
Overall System Size = 18.50' x 151.33' x 3.47'

2,970 Chambers
359.5 cy Field
312.4 cy Stone



Pond 1P: (new Pond)



Appendix 3. Geotechnical Report

Geotechnical Evaluation Report

Park Grove Library Addition
7900 Hemmingway Avenue
Cottage Grove, Minnesota

Prepared for

Alliiance

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.

Timothy J. Schappa, PE
Project Engineer
License Number: 40159
May 30, 2025

BRAUN INTERTEC
The Science You Build On.

Project B2503502

Braun Intertec Corporation

BRAUN INTERTEC
The Science You Build On.

[redacted]

May 30, 2025 Project B2503502

Ms. Amber Sausen
Alliiance
400 Clifton Avenue
Minneapolis, MN 55107

Re: Geotechnical Evaluation
Park Grove Library Addition
7900 Hemmingway Avenue
Cottage Grove, MN

Dear Ms. Sausen:

We are pleased to present this Geotechnical Evaluation Report for the building addition project at the above referenced site.

Thank you for making 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 Tim Schappa at 651.319.3091 (tschappa@braunintertec.com) or Steve Martin at 612.221.2504 (smartin@braunintertec.com).

Sincerely,

BRAUN INTERTEC CORPORATION

Timothy J. Schappa, PE
Project Engineer

Steven B. Martin, PE
Senior Engineer

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Appendix

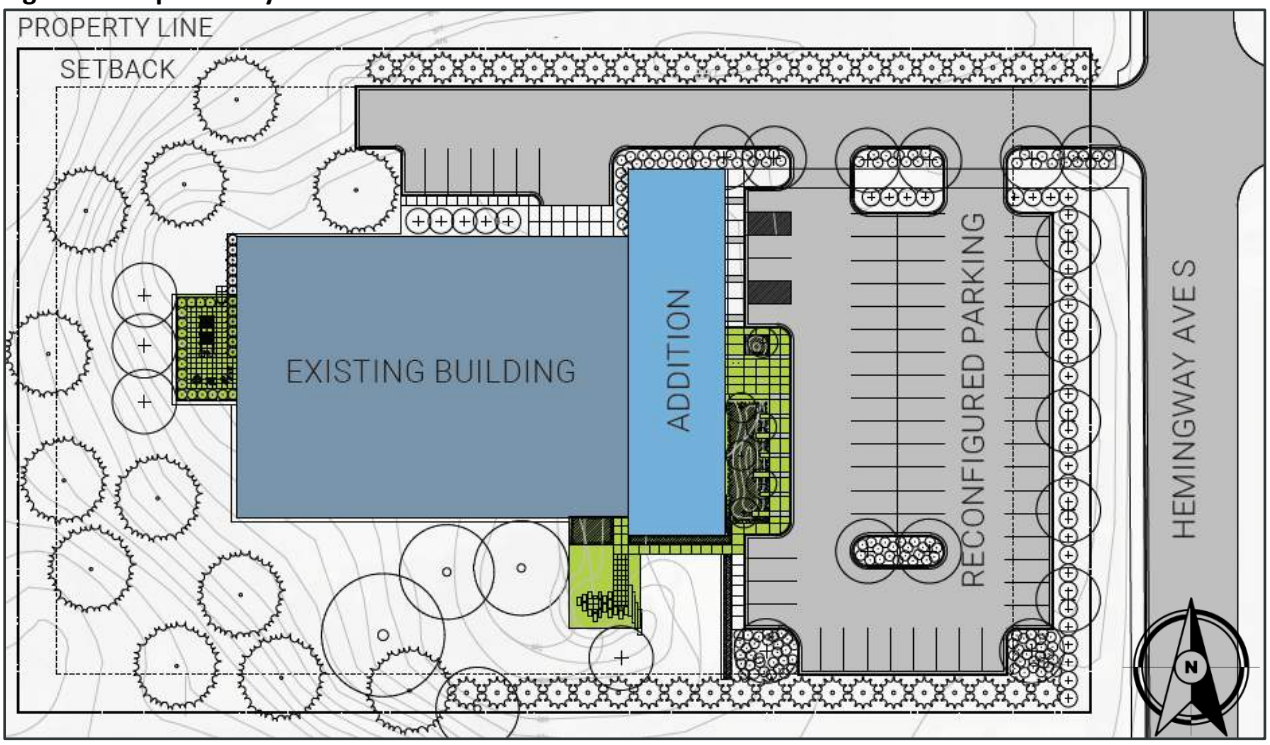
Soil Boring Location Sketch
Log of Boring Sheets ST-1 to ST-5
Descriptive Terminology of Soil

A. Introduction

A.1. Project Description

This Geotechnical Evaluation Report addresses the design and construction of a new entrance plaza and outdoor terrace additions to the existing public library. Additionally, reconstruction and expansion of the existing parking lot from a one-way circulation with angled parking to two-way 90 degree parking to meet future demand projects. Figure 1 shows the proposed site layout.

Figure 1. Proposed Layout



Obtained from the Washington County Park Grove Library Schematic Design Booklet prepared by Alliiance, dated April 18, 2025.

The building addition will consist of a two-story space that will replace the east bay of the existing structure and will consist of a two-story space in the northern portion for mechanical equipment and storage located on the second floor while the southern portion will have a two-story open volume space with grade level use only. Table 1 provides a summary of the Project details related to the proposed design. Note that design plans are not completed, and Project details may change in the future.

Table 1. Project Description

Aspect	Description
Below Grade Level	None
Above Grade Level	Two
Finished Floor Elevation (feet)	Match Existing, near 880
Maximum Wall Loads (kips/lineal foot)	10 (assumed)
Maximum Column Loads (kips/lineal foot)	150 (assumed)
Nature of Construction	Concrete slab-on-grade with steel framing and metal roof deck.
Site Grading	Minimal grade changes of less than about 1-foot within the building and pavement areas.
Pavement Type(s)	Bituminous surface drive lanes and parking with some concrete flatwork
Assumed Pavement Loads	Light-duty: 35,000 ESALs* (assumed) Cars only
	Medium-duty: 150,000 ESALs* (assumed) Frequent van and delivery box trucks

*Equivalent 18,000-lb single axle loads based on 20-year design.

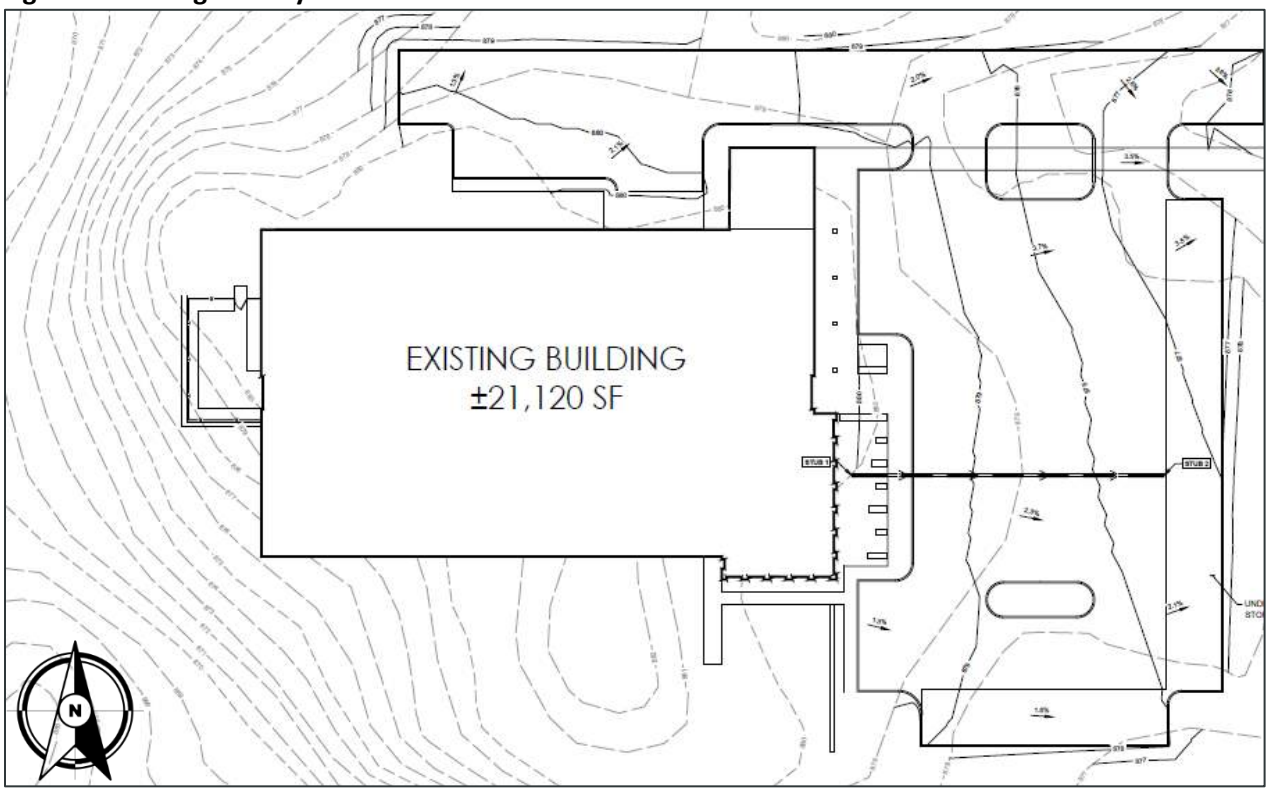
We have described our understanding of the proposed construction and site to the extent others reported it to us. Depending on the extent of available information, we may have made assumptions based on our experience with similar projects. If we have not correctly recorded or interpreted the project details, the project team should notify us. New or changed information could require additional evaluation, analyses and/or recommendations.

A.2. Existing Building and Site Conditions

The existing library is a single-story structure designed and constructed in 1983. The building has a structural steel and steel joist framed roof and super structure supported by reinforced concrete footings. The foundation walls extend to frost depth and are reinforced concrete masonry units (CMU), typically. The skylight framing is elevated from the roof structure with a light steel tube frame supporting gable-shaped steel beams.

Site grades to the north, south and east of the existing building are relatively flat with elevations sloping from 880 to about 877 away from the building. The west side of the building has a more significant change in grade, sloping steeply down to around elevation 866. Figure 2 shows the existing site layout.

Figure 2. Existing Site Layout



Obtained from the Washington County Park Grove Library Schematic Design Booklet prepared by Alliiance, dated April 18, 2025.

A.3. Purpose

The purpose of our geotechnical evaluation will be to characterize subsurface geologic conditions at selected exploration locations, evaluate their impact on the project, and provide geotechnical recommendations for the design and construction of the new building addition and parking lot.

A.4. Background Information and Reference Documents

We reviewed the following information:

- County Altas Series Atlas C-5, Plate 3 of 7 -Surface Geology for Washington County prepared by the Minnesota Geological Survey, dated 1990.
- Washington County Park Grove Library Schematic Design Booklet prepared by Alliiance, dated April 18, 2025.

A.5. Scope of Services

We performed our scope of services for the project in accordance with our Proposal for a Geotechnical Evaluation (QTB214391), dated May 1, 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. The design team selected and we staked the new exploration locations. We acquired the surface elevations and locations with GPS 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 six standard penetration test (SPT) borings, denoted as ST-1 to ST-5, to nominal depths of 10 to 20 feet below grade across the site.
- 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, 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.

B. Results

B.1. Geologic Overview

Based upon our review of available geologic resources and our previous experiences in the area, the natural soils in this area consist primarily of alluvial deposits.

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.

B.2. Boring Results

Table 2 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 Table 2.

Table 2. Subsurface Profile Summary*

Strata	Soil Type - ASTM Classification	Range of Penetration Resistances	Commentary and Details
Pavement Materials	Not Applicable (N/A)	N/A	▪ Bituminous thicknesses at Borings ST-2 and ST-3 were 3 inches. ▪ Apparent aggregate base materials were encountered below the bituminous with thicknesses of about 5 and 6 inches.
Topsoil Fill	ML	N/A	▪ Thicknesses were between 1/2- to 1-foot. ▪ Contained roots and organic materials. ▪ Dark brown in color ▪ Generally moist.
Existing Fill	SM, SP, SP-SM, ML, OL	3 to 25 BPF	▪ Encountered below the pavement materials and topsoil fill in Borings ST-1, ST-3, ST-4 and ST-5. ▪ The depths of the existing fill were between about 4 and 6 feet in Borings ST-1, ST-3 and ST-4, and extended to a depth of about 12 feet in Boring ST-5. ▪ Penetration resistances indicated the fill was variable, indicating the fill was not placed in a controlled manner designed to support buildings. ▪ Organic soils were encountered in Borings ST-3 and ST-5 and are not suitable for structural support and is further indication that the fill in these areas was not placed in a controlled manner. ▪ Dark brown in color ▪ Generally moist to wet.
Alluvial	SP, SP-SM, ML	3 to 19 BPF	▪ Predominantly SP and SP-SM, with an isolated area of embedded silt encountered in Boring ST-1 between depths of about 7 to 10 feet below the existing grades. ▪ The soils were typically very loose to medium dense in relative density. ▪ Moisture conditions were generally moist except for the silt layer encountered in Boring ST-1 which was wet.

B.3. Groundwater

We did not observe groundwater while advancing our borings and it appears that groundwater is below the depths explored. As noted in Table 2, however, the soil borings indicate a layered soil profile consisting of embedded silts that were wet, indicating the site is conducive to perched and trapped water conditions.

Project planning should expect groundwater will fluctuate seasonally and annually and perched/trapped water conditions could be present at varying elevations away from the boring locations.

B.4. Laboratory Test Results

The results of our general laboratory testing performed on select samples including moisture content (MC) tests per ASTM D2216, grain size tests per ASTM D1140 and organic content tests per ASTM D2974 to evaluate the percentage of particles passing the #200 sieve (P200) are presented below in Table 3.

Table 3. Laboratory Classification Test Results

Location	Sample Depth (ft)	Classification (USCS)	MC (%)	P200 (%)	OC (%)
ST-1	7 1/2	Silt (ML)	31	90	---
ST-3	2 1/2	Existing Fill: Organic Silt (OL)	27	90	5
	5	Existing Fill: Silt (ML)	27	97	---
ST-5	2 1/2	Existing Fill: Organic Sandy Lean Clay (OL)	19	---	5
	5		17	67	---
	10	Existing Fill: ML	24	90	---

The Log of Boring Sheets attached in the Appendix present the results of the MC tests in the “MC” column and list the results of the P200 and OC tests in the “Tests or Remarks” column.

C. Recommendations

C.1. Design and Construction Discussion

The site is suited for the proposed building addition supported on spread footings on native alluvial soils and/or engineered backfill. Notable considerations for development are (1) the site contains existing fill that are fine grained, variable relative densities and were typically wet and containing organic materials, and (2) fine-grained loose sands and silts present on the site. These results in several considerations:

- The existing fill materials are not considered suitable for building support or direct support of exterior slabs and pavements.
- The fine-grained existing fill consisting of silts and the organic soils are not considered suitable for re-use as structural backfill and fill.
- Surface compaction with larger vibratory plates or rollers is recommended to densify loose or disturbed soils.
- Silts are considered to be highly sensitive to moisture and construction related disturbances which may require partial sub-excavating below footing subgrades and replacement with coarse sand or crushed rock.
- The embedded silts within the sands are conducive to perched water conditions.

C.1.a. Building Foundation Support

The existing fill soils located within pavement areas of the present development are considered unsuitable for structural support as they were not placed and compacted in a manner suitable for structural support. Due to the variable soil consistency and composition, including containing zones of organic materials they pose a risk of detrimental amounts of post construction settlements. Soil corrections (removing and replacing the existing fill) are recommended for the proposed building addition to be supported utilizing conventional spread footings.

Silts, while stable when undisturbed, become unstable under construction traffic. Soils consisting primarily of silt have a very small range of moisture contents at which they will behave plastically (i.e., moldable and compactable). At moisture contents that are on the high side of this range (where deemed as being “wet”), these soils will behave more like a liquified material when they are disturbed/vibrated.

Even when adequately compacted or stabilized, the silts are judged to be highly susceptible to disturbance or loss of strength as a result of construction traffic.

C.1.b. Reuse of Onsite Soils

The non-organic on-site granular materials generally appear suitable for reuse as engineered fill at this site provided they can be properly placed, moisture conditioned and compacted. The silts will likely require extensive moisture conditioning as the in-place moisture contents are likely at or above the probable optimum moisture content. Even when adequately compacted or stabilized, the silts are judged to be highly susceptible to disturbance or loss of strength as a result of construction traffic. The contractor should be aware that previously stable subgrades can become disturbed and require more grading efforts.

Any materials to be used as engineered fill should be tested and approved by the engineer prior to placement.

C.2. Site Grading and Subgrade Preparation

C.2.a. Building Subgrade Excavations

Based on the borings, we do not anticipate soil corrections below the proposed footing elevations. 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.

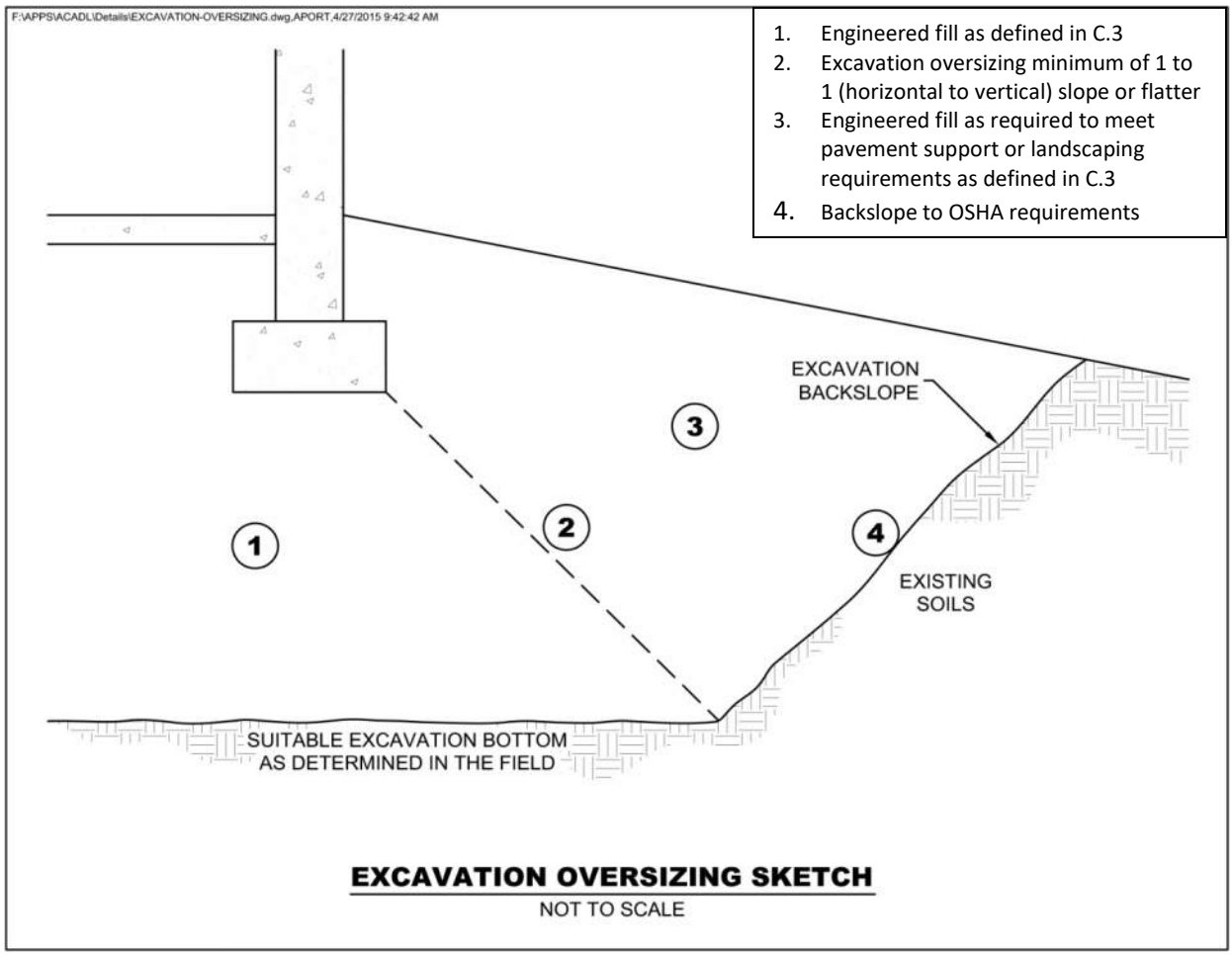
We recommend removing topsoil and existing fill if encountered below the proposed building pads and their oversize areas. However, if silts are encountered at footing subgrades, up to one foot of subcut below foundations to place coarse sand or crushed rock should be expected at the time of foundation construction. We also recommend having a geotechnical engineer, or an engineering technician working under the direction of a geotechnical engineer, (geotechnical representative) evaluate the suitability of exposed subgrade soils to support the proposed structure.

Loose soils in the subgrade may need surface compaction my larger vibratory compactors.

C.2.b. 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 for an illustration of excavation oversizing.

Figure 3. Generalized Illustration of Oversizing



C.2.c. Excavated Slopes

Based on the borings, we anticipate on-site soils in excavations will consist of sands. These soils are typically considered Type C Soil under OSHA (Occupational Safety and Health Administration) guidelines. OSHA guidelines indicate unsupported excavations in Type C soils should have a gradient no steeper than 1 1/2H:1V. Slopes constructed in this manner may still exhibit surface sloughing, especially when excavated to the groundwater table.

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 excavation safety is the responsibility of the contractor. The project specifications should reference these OSHA requirements.

C.2.d. Excavation Dewatering

Based on the soil boring data, we do not expect that excavation for the proposed addition foundations will encounter hydrostatic groundwater conditions. Although groundwater is generally anticipated to be present below the estimated excavation depths for the building construction, any perched and/or collected water should be removed from excavations to facilitate proper backfilling or concrete placement using sumps and pumps.

C.2.e. Pavement and Exterior Slab Subgrade Preparation

We recommend the following steps for pavement and exterior slab subgrade preparation, understanding the site will have a grade change of about 1-foot or less.

1. Strip any unsuitable soils consisting of topsoil, vegetation, existing structures and pavements from the pavement subgrade area. Existing fill outside of current pavement areas should be further subexcavated to a minimum of 3 feet below existing subgrades.

2. Prior to placement of fill or aggregate base materials we recommend thoroughly compacting the subgrade soils with at least 3 passes of a vibratory roller.

3. Place engineered fill and compact in accordance with Section C.2.g. to the subgrade elevation.

4. Proofroll the aggregate section as described in Section C.2.f.

C.2.f. 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.

C.2.g. Engineered Fill Materials and Compaction

Table 4 below contains our recommendations for engineered fill materials.

Table 4. Engineered Fill Materials*

Locations To Be Used	Engineered Fill Classification	Possible Soil Type Descriptions	Gradation	Additional Requirements
Below foundations as needed	Stabilization Aggregate	Crushed open graded rock	100% passing 2-inch sieve < 5% passing #4 sieve	Excludes shale and soft rock
▪ Below foundations ▪ Below interior slabs	▪ Structural fill ▪ Retained Fill	SP, SP-SM, SM	100% passing 2-inch sieve < 20% passing #200 sieve	< 2% Organic Content (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
Pavements	Pavement fill	SP, SP-SM, SM	100% passing 3-inch sieve < 50% passing #200 sieve	< 2% OC PI < 15%
Below landscaped surfaces, where subsidence is not a concern	Non-structural fill	SP, SP-SM, SM ML, SC, CL	100% passing 6-inch sieve	< 10% OC

*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.

We recommend spreading engineered fill in loose lifts of approximately 8 inches thick. We recommend compacting engineered fill in accordance with the criteria presented below in Table 5. 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.

The silts will likely require extensive moisture conditioning as the in-place moisture contents are likely at or above the probable optimum moisture content. Even when adequately compacted or stabilized, the silts are judged to be highly susceptible to disturbance or loss of strength as a result of construction traffic. The contractor should be aware that previously stable subgrades can become disturbed and require more grading efforts. Therefore, silts are preferred to be placed as backfill and fill in landscape areas.

Table 5. 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, SM)
Within building pad and oversizing zones	98	±3	N/A
Within 3 feet of pavement subgrade	100	±3	N/A
More than 3 feet below pavement subgrade	95	±3	±3

*Increase compaction requirement to meet compaction required for structure supported by this engineered fill.

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.

C.2.h. Special Inspections of Soils

We recommend including the site grading and placement of engineered fill within the building pad under the requirements of Special Inspections, as provided in Chapter 17 of the International Building Code, which is part of the Minnesota State Building Code. Special Inspection requires observation of soil conditions below engineered fill or footings, evaluations to determine if excavations extend to the anticipated soils, and if engineered fill materials meet requirements for type of engineered fill and compaction condition of engineered fill.

A licensed geotechnical engineer should direct the Special Inspections of site grading and engineered fill placement. The purpose of these Special Inspections is to evaluate whether the work is in accordance with the approved Geotechnical Report for the project. Special Inspections should include evaluation of the subgrade, observing preparation of the subgrade (surface compaction or dewatering, excavation oversizing, placement procedures and materials used for engineered fill, etc.) and compaction testing of the engineered fill.

C.3. Spread Footings

Table 6 below contains our recommended parameters for use in the design and construction of spread footings bearing on surface compacted native soils and/or new engineered fill.

Table 6. Recommended Spread Footing Design Parameters

Item	Description
Maximum net allowable bearing pressure (psf)	3,000
Minimum factor of safety for bearing capacity failure	3.0
Minimum embedment below final exterior grade (inches)	42 – heated structures 60 – unheated structures
Total and differential estimated settlement (inches)	Less than or equal to 1 and 2/3, respectively

*Actual differential settlement amounts will depend on final loads and foundation layout. When tying into the existing buildings, the total settlement of this new building will be differential to the existing building. We can evaluate differential settlement based on final foundation plans and loadings.

C.4. Interior Slabs

C.4.a. Subgrade Modulus

Anticipating the interior floor slabs will be placed on compacted granular soils, we recommend using a modulus of subgrade reaction, k, of 200 pounds per square inch per inch of deflection (pci) to design the slabs. If 6 inches of compacted aggregate base, such as Minnesota Department of Transportation (MnDOT) Class 5 aggregate base is placed immediately below the floor slab, the k-value can be increased by 50 pounds per square inch. The aggregate base will help provide a stable working platform during construction. We recommend the stabilizing aggregate consist of crushed rock meeting the requirements of MnDOT Specification 3138 for Class 5. No material containing recycled bituminous should be used under interior slabs.

C.4.b. 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.

C.5. Frost Protection

Due to the very fine-grained nature of the sands and silts prevalent near the surface frost heave can occur under below exterior slabs and pavements. When allowed to become saturated and 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 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.

One method to help limit the potential for heaving to occur is to remove frost-susceptible soils present below the overlying slab or pavement area down to bottom-of-footing grades, and replace the excavated material with non-frost-susceptible, engineered fill. We recommend providing drainage at the base of the subcut, as well as gradual transitions from this subcut (3H:1V or flatter gradient).

Figures 5a and 5b show illustrations summarizing some of the recommendations above.

Figure 5a. Frost Protection Geometry Illustration

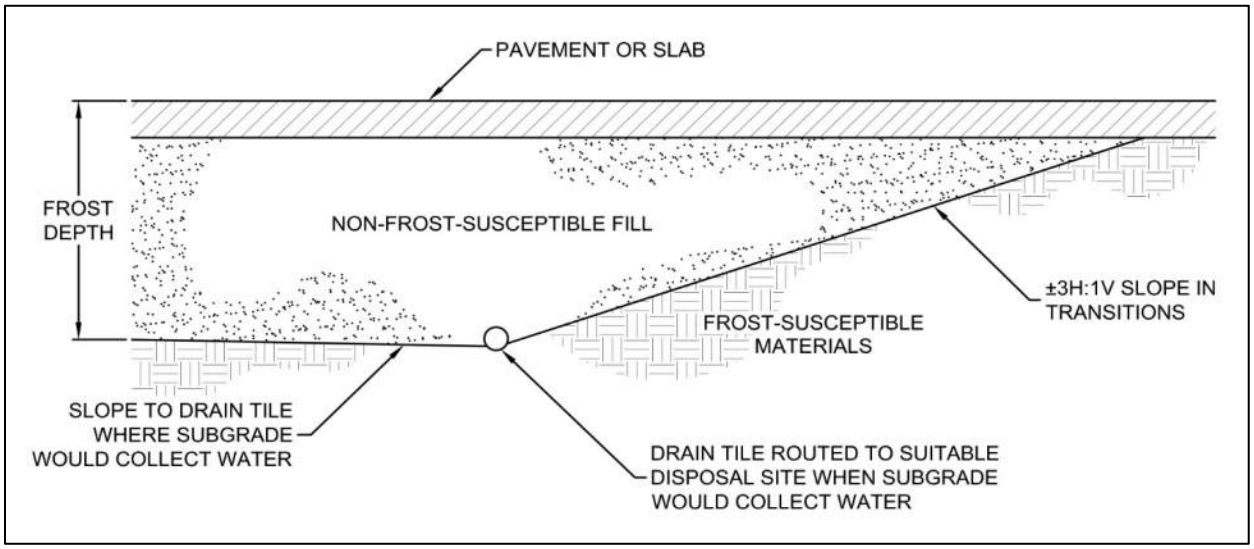
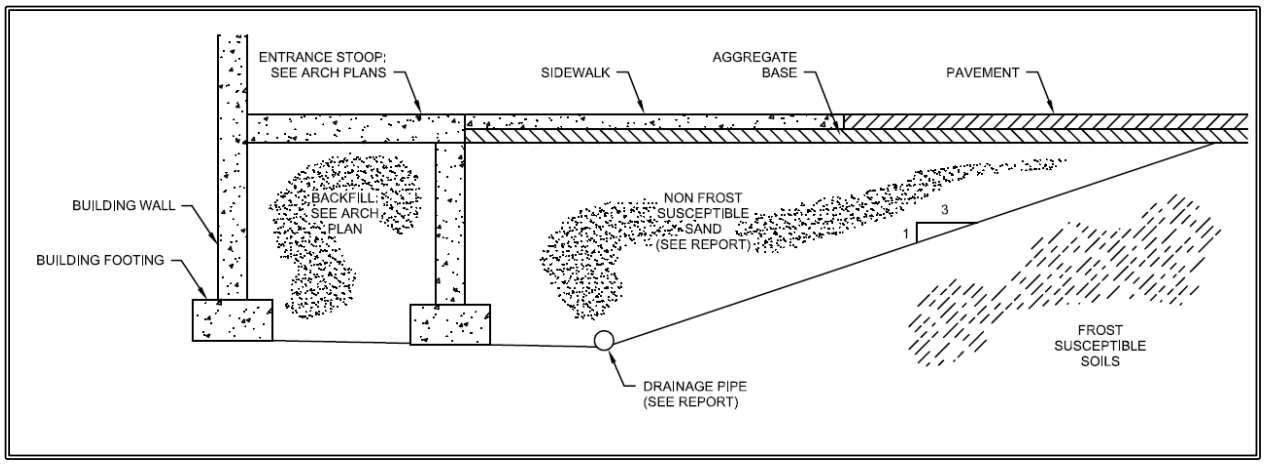


Figure 5b. Frost Protection Geometry Illustration with Stoop Alternative



Over the life of the pavement or slab, cracks may develop and joints may open up, which will expose the subgrade and allow water to enter the subgrade. This water entering the subgrade increases the likelihood of heave. It will be critical that the owner develop a detailed maintenance program to repair any cracks and joints that may develop during the useful life of the various surface features. The maintenance program should pay special attention to areas where dissimilar materials abut one another, where construction joints occur and where shrinkage cracks develop.

C.6. Pavements and Exterior Slabs

C.6.a. Design Sections

Laboratory tests to determine the Hveem Stabilometer R-value for pavement design were not included in our scope of services for this project. Assuming the upper 3 feet of the subgrade will consist of fine-grained SP and SP-SM sands, it is our opinion that an R-value of 40 can be assumed for design purposes. Note the contractor may need to perform limited removal of unsuitable or less suitable soils to achieve this value. With the anticipated subgrade soils and the assumed traffic loads, we recommend the following minimum bituminous pavement sections in Table 7 be used at this site.

Table 7. Recommended Bituminous Pavement Sections

Use	Light-Duty	Medium-Duty	Designation	Specification
Minimum bituminous thickness (inches)	3 1/2	4	SPWEA240C	2360
Minimum aggregate base thickness (inches)	6	6	Class 5 or 6	3135 or 3138

C.6.b. Concrete Pavements

For concrete pavements used in areas with higher traffic and turning loads, we recommend a minimum 5 inches of concrete overlying 4 inches of aggregate base. We assumed the concrete pavement sections will have edge support. We recommend placing an aggregate base below the pavement to provide a suitable subgrade for concrete placement, reduce faulting and help dissipate loads. Appropriate mix designs, panel sizing, jointing, doweling, and edge reinforcement are critical to performance of rigid pavements. We recommend you contact your civil engineer to determine the final design or consult with us for guidance on these items.

C.6.c. Subgrade Drainage

We recommend installing perforated drainpipes throughout pavement areas at low points, around catch basins, and behind curb in landscaped areas. We also recommend installing drainpipes along pavement and exterior slab edges where exterior grades promote drainage toward those edge areas. The contractor should place drainpipes in small trenches, extended at least 8 inches below the granular subbase layer, or below the aggregate base material where no subbase is present.

C.6.d. 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.

Many conditions affect the overall performance of the exterior slabs and pavements. Some of these conditions include the environment, loading conditions and the level of ongoing maintenance. With regard to bituminous pavements in particular, it is common to have thermal cracking develop within the first few years of placement, and continue throughout the life of the pavement. We recommend developing a regular maintenance plan for filling cracks in exterior slabs and pavements 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.

C.7. Utilities

C.7.a. Subgrade Stabilization

The predominantly sandy soils encountered at anticipated invert elevations generally appear suitable for pipe support and we anticipate that utilities can be installed per manufacturer bedding requirements. However, if zones of unstable soils are encountered at pipe invert elevations (i.e., waterbearing soils, very loose silts), they should be subcut about 1 to 2 feet, moisture conditioned and recompacted or replaced with engineered backfill or sand.

C.7.b. Excavation and Backfilling

We recommend trench excavation and selecting, placing, and compacting utility backfill in accordance with the recommendations provided above in Section C.2.g. Any silts removed from the utility trenches should be backfilled with on-site sandy soils.

C.7.c. Corrosion Potential

The soil borings at the site consist primarily of sandy soils, and to a lesser extent, silts at depth. The sandy soils are considered non-corrosive to metallic conduits. However, should silts be encountered in areas, they may require additional bedding requirements for utilities.

C.8. Equipment Support

The recommendations included in the report may not be applicable to equipment used for the construction and maintenance of this project. We recommend evaluating subgrade conditions in areas of shoring, scaffolding, cranes, pumps, lifts and other construction equipment prior to mobilization to determine if the exposed materials are suitable for equipment support, or require some form of subgrade improvement. We also recommend project planning consider the effect that loads applied by such equipment may have on structures they bear on or surcharge – including pavements, buried utilities, below-grade walls, etc. We can assist you in this evaluation.

D. Procedures

D.1. Penetration Test Borings

We drilled the penetration test borings with a truck-mounted core and auger drill equipped with hollow-stem auger. 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 to ASTM D1586. We collected thin-walled tube samples in general accordance with ASTM D1587 at selected depths. The boring logs show the actual sample intervals and corresponding depths. We also collected bulk samples of auger cuttings at selected locations for laboratory testing.

We sealed penetration test boreholes meeting the Minnesota Department of Health (MDH) Environmental Borehole criteria with an MDH-approved grout. We forwarded a sealing record (or sealing records) for those boreholes to the Minnesota Department of Health Well Management Section.

D.2. Exploration Logs

D.2.a. 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. 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.

D.2.b. 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 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.

D.3. Material Classification and Testing

D.3.a. 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.

D.3.b. Laboratory Testing

The exploration logs in the Appendix note most of the results of the laboratory tests performed on geologic material samples. We performed the tests in general accordance with ASTM procedures.

D.4. 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.

E. Qualifications

E.1. Variations in Subsurface Conditions

E.1.a. 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.

E.1.b. 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.

E.2. Continuity of Professional Responsibility

E.2.a. 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.

E.2.b. Construction Observations and Testing

We recommend retaining us 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.

E.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.

E.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.

Appendix

DENOTES APPROXIMATE LOCATION OF STANDARD PENETRATION TEST BORING

20' 0 40'

SCALE: 1"= 40'

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11001 Hampshire Avenue S
Minneapolis, MN 55438
952.995.2000
braunintertec.com

Drawing Information

Project No:	B2503502
Drawing No:	B2503502
Drawn By:	JAG
Date Drawn:	4/29/25
Checked By:	TJS
Last Modified:	5/15/25

Project Information

Park Grove Library

7900 Hemmingway Avenue

Cottage Grove, Minnesota

Soil Boring Location Sketch

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LOG OF BORING

See Descriptive Terminology sheet for explanation of abbreviations

Project Number B2503502
Geotechnical Evaluation
Park Grove Library
7900 Hemmingway Avenue
Cottage Grove, Minnesota

BORING: **ST-1**
LOCATION: Captured with RTK GPS.
DATUM: NAD 1983 HARN Adj MN Washington (US Feet)
NORTHING: 132568.0 EASTING: 468956.0
DRILLER: G Scallon/A Tross LOGGED BY: T Schappa START DATE: 05/06/25 END DATE: 05/06/25
SURFACE ELEVATION: 879.6 ft RIG: GP-4 METHOD: 3 1/4" HSA SURFACING: Vegetation WEATHER: Fair, 70°F

Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	q_p tsf	MC %	Tests or Remarks
879.0		SANDY SILT (ML), dark brown, moist (TOPSOIL FILL)		1-1-3 (4) 10"			
0.7		FILL: SILTY SAND (SM), fine to medium-grained, trace Gravel, brown with dark brown, moist		4-6-8 (14) 15"			
875.6							
4.0		POORLY GRADED SAND with SILT (SP-SM), fine to medium-grained, trace Gravel, brown, moist, medium dense (GLACIAL OUTWASH)	5	7-7-7 (14) 18"			
872.6							
7.0		SILT (ML), grayish brown, wet, very loose (GLACIAL OUTWASH)		0-1-2 (3) 18"		31	P200=90%
869.6							
10.0		POORLY GRADED SAND (SP), fine to medium-grained, trace Gravel, brown, moist, medium dense (GLACIAL OUTWASH)	10	2-8-9 (17) 18"			
				8-7-9 (16) 16"			
864.6				8-7-10 (17) 15"			
15.0		END OF BORING Boring immediately backfilled	15				Water not observed while drilling. Water not observed to cave-in depth of 14.5 feet immediately after withdrawal of auger.
			20				
			25				
			30				

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LOG OF BORING

See Descriptive Terminology sheet for explanation of abbreviations

Project Number B2503502
Geotechnical Evaluation
Park Grove Library
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Cottage Grove, Minnesota

BORING: **ST-2**
LOCATION: Captured with RTK GPS.
DATUM: NAD 1983 HARN Adj MN Washington (US Feet)
NORTHING: 132567.6 EASTING: 468956.3
DRILLER: G Scallon/A Tross LOGGED BY: T Schappa START DATE: 05/06/25 END DATE: 05/06/25
SURFACE ELEVATION: 877.0 ft RIG: GP-4 METHOD: 3 1/4" HSA SURFACING: Pavement WEATHER: Fair, 70°F

Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	q_p tsf	MC %	Tests or Remarks
876.3		PAVEMENT, 3 inches of bituminous over 6 inches of apparent aggregate base		12-9-9 (18) 15"			
0.8		POORLY GRADED SAND (SP), fine to medium-grained, trace Gravel, light brown, moist, medium dense (GLACIAL OUTWASH)		10-5-6 (11) 14"			
			5	6-6-8 (14) 15"			
				8-9-10 (19) 15"			
			10	4-9-6 (15) 14"			
866.0							
11.0		END OF BORING Boring immediately backfilled					Water not observed while drilling. Water not observed to cave-in depth of 8.0 feet immediately after withdrawal of auger.
			15				
			20				
			25				
			30				

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See Descriptive Terminology sheet for explanation of abbreviations

Project Number B2503502
Geotechnical Evaluation
Park Grove Library
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Cottage Grove, Minnesota

BORING: **ST-3**
LOCATION: Captured with RTK GPS.
DATUM: NAD 1983 HARN Adj MN Washington (US Feet)
NORTHING: 132423.9 EASTING: 469000.7
DRILLER: G Scallon/A Tross LOGGED BY: T Schappa START DATE: 05/06/25 END DATE: 05/06/25
SURFACE ELEVATION: 879.0 ft RIG: GP-4 METHOD: 3 1/4" HSA SURFACING: Pavement WEATHER: Fair, 70°F

Elev./ Depth ft	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	q_p tsf	MC %	Tests or Remarks
878.3	PAVEMENT, 3 inches of bituminous over 5 inches of apparent aggregate base		13-5-7 (12) 14"			
0.7	FILL: ORGANIC SILT (OL), trace roots, dark brown, wet		3-3-4 (7) 16"		27	P200=90% OC=5%
875.5						
3.5	FILL: SILT (ML), brown with dark brown, wet		0-2-2 (4) 16"		27	P200=97%
873.0						
6.0	POORLY GRADED SAND with SILT (SP-SM), fine to medium-grained, trace Gravel, brown, moist, very loose to medium dense (GLACIAL OUTWASH)		2-1-2 (3) 15"			
			5-6-4 (10) 16"			
867.0						
12.0	POORLY GRADED SAND (SP), fine to medium-grained, trace Gravel, brown, moist, loose to medium dense (GLACIAL OUTWASH)		16-11-5 (16) 12"			
864.0			5-4-5 (9) 13"			
15.0	END OF BORING Boring immediately backfilled					Water not observed while drilling. Water not observed to cave-in depth of 12.5 feet immediately after withdrawal of auger.

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LOG OF BORING

See Descriptive Terminology sheet for explanation of abbreviations

Project Number B2503502
Geotechnical Evaluation
Park Grove Library
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Cottage Grove, Minnesota

BORING: **ST-4**
LOCATION: Captured with RTK GPS.
DATUM: NAD 1983 HARN Adj MN Washington (US Feet)
NORTHING: 132367.1 EASTING: 468865.7
DRILLER: G Scallon/A Tross LOGGED BY: T Schappa START DATE: 05/06/25 END DATE: 05/06/25
SURFACE ELEVATION: 879.8 ft RIG: GP-4 METHOD: 3 1/4" HSA SURFACING: Vegetation WEATHER: Fair, 70°F

Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	q_p tsf	MC %	Tests or Remarks
878.8		SANDY SILT (ML), with roots, dark brown (TOPSOIL FILL)		1-10-13 (23) 13"			
1.0		FILL: POORLY GRADED SAND (SP), fine to medium-grained, intermixed with Sandy Silt, trace Gravel, brown with dark brown, moist		12-13-12 (25) 12"			
875.8							
4.0		POORLY GRADED SAND (SP), fine to medium-grained, trace Gravel, light brown, moist, medium dense to loose (GLACIAL OUTWASH)	5	15-8-6 (14) 10"			
				5-7-7 (14) 13"			
			10	7-5-6 (11) 15"			
				2-6-8 (14) 16"			
			15	8-5-6 (11) 11"			
			20	5-4-4 (8) 15"			
858.8							
21.0		END OF BORING Boring immediately grouted	25				Water not observed while drilling. Water not observed to cave-in depth of 16.5 feet immediately after withdrawal of auger.
			30				

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LOG OF BORING

See Descriptive Terminology sheet for explanation of abbreviations

Project Number B2503502
Geotechnical Evaluation
Park Grove Library
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Cottage Grove, Minnesota

BORING: **ST-5**
LOCATION: Captured with RTK GPS.
DATUM: NAD 1983 HARN Adj MN Washington (US Feet)
NORTHING: 132474.8 EASTING: 468689.2
DRILLER: G Scallon/A Tross LOGGED BY: T Schappa START DATE: 05/06/25 END DATE: 05/06/25
SURFACE ELEVATION: 880.6 ft RIG: GP-4 METHOD: 3 1/4" HSA SURFACING: Vegetation WEATHER: Fair, 70°F

Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	q_p tsf	MC %	Tests or Remarks
880.0		SANDY SILT (ML), dark brown, moist (TOPSOIL FILL)		1-2-3 (5) 12"			
0.7		FILL: SANDY ORGANIC CLAY (OL), dark brown with brown, moist		5-7-8 (15) 16"		19	OC=5%
			5	4-4-4 (8) 18"		17	P200=67%
873.6							
7.0		FILL: POORLY GRADED SAND with SILT (SP-SM), fine to medium-grained, trace Gravel, brown, moist		5-2-3 (5) 16"			
871.6							
9.0		FILL: SILT (ML), grayish brown with dark brown, wet	10	1-1-2 (3) 16"		24	P200=90%
868.6							
12.0		POORLY GRADED SAND (SP), fine to medium-grained, trace Gravel, brown, moist (GLACIAL OUTWASH)		8-6-7 (13) 15"			
865.6			15	2-7-9 (16) 13"			
15.0		END OF BORING Boring immediately backfilled					Water not observed while drilling. Water not observed to cave-in depth of 14.0 feet immediately after withdrawal of auger.
			20				
			25				
			30				

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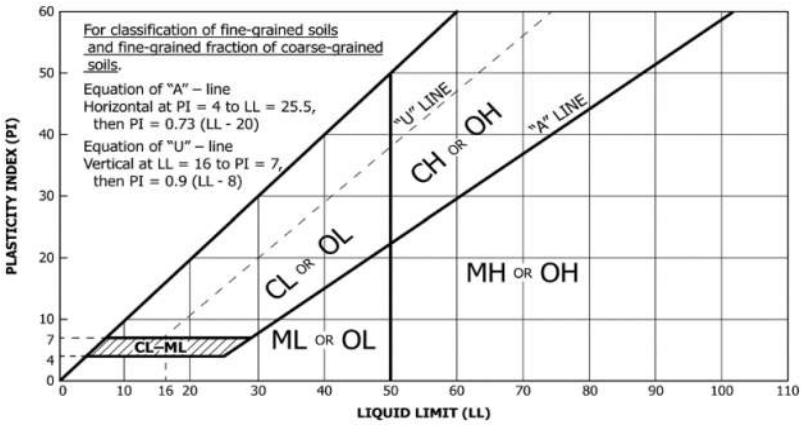
Descriptive Terminology of Soil

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.

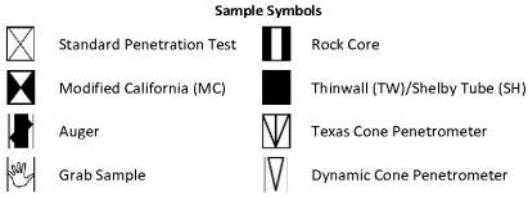
Recovery: Indicates the inches of sample recovered from the sampled interval. For a standard penetration test, full recovery is 18", and is 24" for a thinwall/shelby tube sample.

WOH: Indicates the sampler penetrated soil under weight of hammer and rods alone; driving not required.

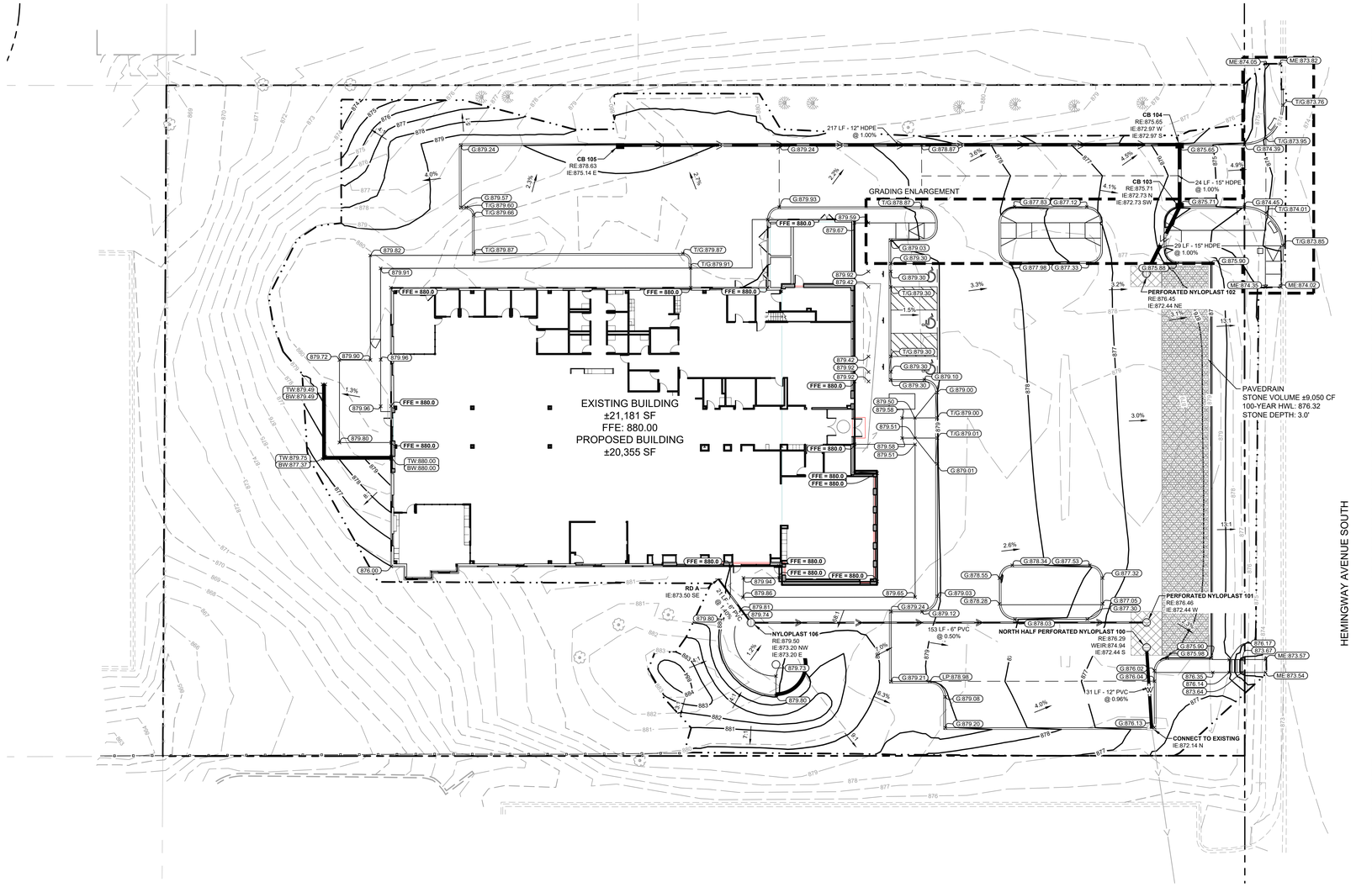
WOR: Indicates the sampler penetrated soil under weight of rods alone; hammer weight and driving not required.

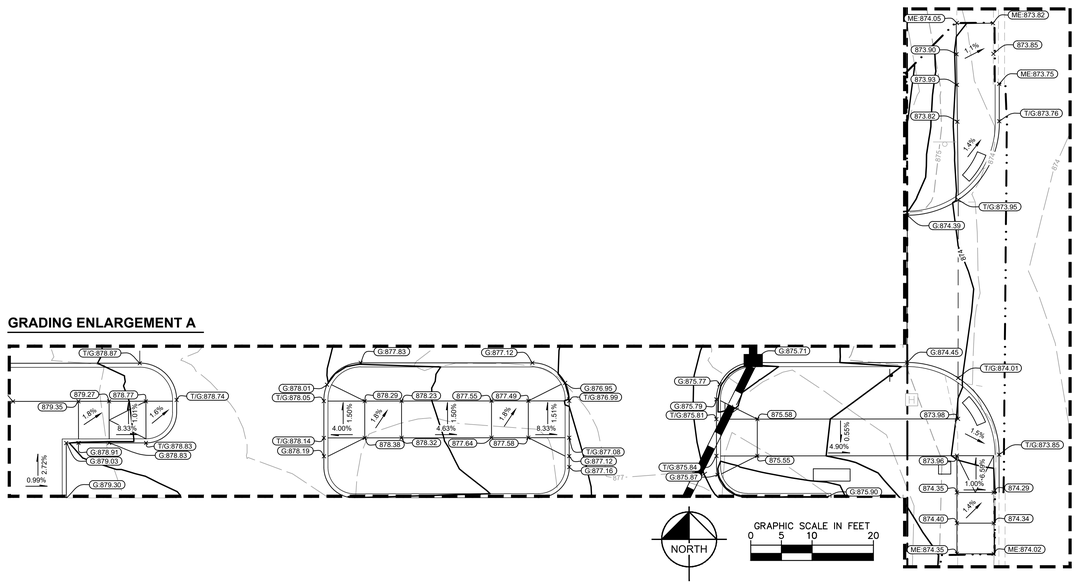
Water Level: Indicates the water level measured by the drillers either while drilling (▽), at the end of drilling (▼), or at some time after drilling (▼).

Sample Symbols



Appendix 4. Grading and Drainage Plan and Drainage Details





LEGEND

- PROPERTY LINE
- EXISTING CONTOUR
- PROPOSED CONTOUR
- PROPOSED RIDGE LINE
- PROPOSED SWALE
- PROPOSED STORM MANHOLE (SOLID CASTING)
- PROPOSED STORM MANHOLE (ROUND INLET CASTING)
- PROPOSED STORM MANHOLE/ CATCH BASIN (CURB INLET CASTING)
- PROPOSED STORM SEWER CLENOUT
- PROPOSED FLARED END SECTION
- PROPOSED RIPRAP
- PROPOSED STORM SEWER
- PROPOSED SPOT ELEVATION
- PROPOSED HIGH POINT ELEVATION
- PROPOSED LOW POINT ELEVATION
- PROPOSED GUTTER ELEVATION
- PROPOSED TOP OF CURB ELEVATION
- PROPOSED FLUSH PAVEMENT ELEVATION
- MATCH EXISTING ELEVATION
- PROPOSED EMERGENCY OVERFLOW ELEVATION
- PROPOSED GRADE AT TOP/BOTTOM OF WALL
- PROPOSED DRAINAGE DIRECTION
- PROPOSED GRADE BETWEEN POINTS
- PERVIOUS PAVERS SEE DETAILS FOR SECTION
- UNDERGROUND STONE SEE DETAILS FOR SECTION

GRADING PLAN NOTES

1. PERFORM GRADING WORK IN ACCORDANCE WITH APPLICABLE CITY SPECIFICATIONS AND BUILDING PERMIT REQUIREMENTS.
2. CONTACT STATE 811 CALL-BEFORE-YOU-DIG LOCATING SERVICE AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATION FOR UNDERGROUND UTILITY LOCATIONS.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL HORIZONTAL AND VERTICAL CONTROL.
4. FIELD VERIFY THE LOCATIONS AND ELEVATIONS OF EXISTING UTILITIES AND TOPOGRAPHIC FEATURES PRIOR TO THE START OF LAND DISTURBING ACTIVITIES. NOTIFY THE PROJECT ENGINEER OF ANY DISCREPANCIES OR VARIATIONS IMPACTING THE PROPOSED DESIGN OF THE PROJECT.
5. IN PAVED AREAS, ROUGH GRADE TO SUBGRADE ELEVATION AND LEAVE THE SITE READY FOR SUB-BASE.
6. SUBGRADE EXCAVATION SHALL BE BACKFILLED IMMEDIATELY AFTER EXCAVATION TO HELP OFFSET ANY STABILITY PROBLEMS DUE TO WATER SEEPAGE OR STEEP SLOPES. WHEN PLACING NEW SURFACE MATERIAL ADJACENT TO EXISTING PAVEMENT, THE EXCAVATION SHALL BE BACKFILLED PROMPTLY TO AVOID UNDERMINING OF EXISTING PAVEMENT.
7. ELEVATIONS SHOWN REPRESENT FINISHED SURFACE GRADES. SPOT ELEVATIONS ALONG CURB & GUTTER REPRESENT THE FLOW LINE UNLESS OTHERWISE NOTED
8. EXCESS MATERIAL, BITUMINOUS SURFACING, CONCRETE ITEMS, ABANDONED UTILITY ITEMS, AND OTHER UNSTABLE MATERIALS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF OFF THE CONSTRUCTION SITE.
9. CONTRACTOR IS RESPONSIBLE FOR CONSTRUCTION OF PAVEMENTS AND CURB AND GUTTER WITH SMOOTH UNIFORM SLOPES THAT PROVIDE POSITIVE DRAINAGE TO COLLECTION POINTS. MAINTAIN A MINIMUM SLOPE OF 1.25% IN ASPHALT PAVEMENT AREAS AND A MINIMUM SLOPE OF 0.50% IN CONCRETE PAVEMENT AREAS.
10. MAINTAIN A MINIMUM SLOPE OF 0.50% ALONG CURB & GUTTER. REVIEW PAVEMENT GRADIENT AND CONSTRUCT "INFALL" CURB WHERE PAVEMENT DRAINS TOWARD THE GUTTER, AND "OUTFALL" CURB WHERE PAVEMENT DRAINS AWAY FROM THE GUTTER.
11. INSTALL A MINIMUM OF 4-INCHES OF AGGREGATE BASE MATERIAL UNDER PROPOSED CONCRETE CURB & GUTTER, SIDEWALKS, AND TRAILS UNLESS OTHERWISE DETAILED.
12. GRADING FOR SIDEWALKS AND ACCESSIBLE ROUTES, INCLUDING CROSSING DRIVEWAYS, SHALL CONFORM TO CURRENT STATE & NATIONAL ADA STANDARDS:

    ACCESSIBLE RAMP SLOPES SHALL NOT EXCEED 8.3% (1:12).
    SIDEWALK CROSS-SLOPES SHALL NOT EXCEED 2.0%.
    LONGITUDINAL SIDEWALK SLOPES SHALL NOT EXCEED 5.0%.
    ACCESSIBLE PARKING STALLS AND ACCESS AISLES SHALL NOT EXCEED 2.0% IN ANY DIRECTION. A MAXIMUM SLOPE OF 1.50% IS PREFERED.

    SIDEWALK ACCESS TO EXTERNAL BUILDING DOORS AND GATES SHALL BE ADA COMPLIANT. NOTIFY ENGINEER IMMEDIATELY IF ADA CRITERIA CANNOT BE MET IN ANY LOCATION PRIOR TO PAVEMENT INSTALLATION. CHANGE ORDERS WILL NOT BE ACCEPTED FOR ADA COMPLIANCE ISSUES.
13. UPON COMPLETION OF LAND DISTURBING ACTIVITIES, RESTORE ADJACENT OFFSITE AREAS DISTURBED BY CONSTRUCTION TO MATCH OR EXCEED THE ORIGINAL CONDITION. LANDSCAPE AREAS SHALL BE RE-VEGETATED WITH A MINIMUM OF 4-INCHES OF TOPSOIL.
14. EXCAVATE DRAINAGE TRENCHES TO FOLLOW PROPOSED STORM SEWER ALIGNMENTS. REFER TO THE UTILITY PLANS FOR LAYOUT AND ELEVATIONS FOR PROPOSED SANITARY SEWER, WATER MAIN, AND OTHER BUILDING UTILITY SERVICE CONNECTIONS.

STORM SEWER NOTES

1. INSTALL STORM SEWER IN ACCORDANCE WITH APPLICABLE CITY OR STATE SPECIFICATIONS, STATE PLUMBING CODE, AND BUILDING PERMIT REQUIREMENTS.
2. CONTACT STATE 811 CALL-BEFORE-YOU-DIG LOCATING SERVICE AT LEAST TWO WORKING DAYS PRIOR TO EXCAVATION FOR UNDERGROUND UTILITY LOCATIONS.
3. STORM SEWER PIPE SHALL BE AS FOLLOWS:
   - RCP: ASTM C-76
   - HDPE: ASTM F-714, F-894
   - PVC: ASTM D-2729
   - PVC SCH40: ASTM D-1785, D-2665, F-794

   DRAIN TILE SHALL BE AS FOLLOWS:
   - PE: ASTM F-6667
   - PVC: ASTM D-2729

   FITTINGS SHALL BE AS FOLLOWS:
   - RCP: ASTM C-76, JOINTS PER ASTM C-361, C-990, AND C-443
   - HDPE: ASTM D-3212
   - PVC: ASTM D-2729, JOINTS PER ASTM D-3212
   - PVC SCH40: ASTM D-2665, F-794, F-1866
4. CONTRACTOR IS RESPONSIBLE FOR ALL HORIZONTAL AND VERTICAL CONTROL.
5. FIELD VERIFY THE LOCATIONS AND ELEVATIONS OF EXISTING UTILITIES AND TOPOGRAPHIC FEATURES PRIOR TO THE START OF LAND DISTURBING ACTIVITIES. NOTIFY THE PROJECT ENGINEER OF ANY DISCREPANCIES OR VARIATIONS IMPACTING THE PROPOSED DESIGN OF THE PROJECT.
6. EXCAVATE DRAINAGE TRENCHES TO FOLLOW PROPOSED STORM SEWER ALIGNMENTS. REFER TO THE UTILITY PLANS FOR LAYOUT AND ELEVATIONS FOR PROPOSED SANITARY SEWER, WATER MAIN, AND OTHER BUILDING UTILITY SERVICE CONNECTIONS. REFER TO THE GRADING PLAN FOR DETAILED SURFACE ELEVATIONS.
7. EXCESS MATERIAL, BITUMINOUS SURFACING, CONCRETE ITEMS, ABANDONED UTILITY ITEMS, AND OTHER UNSTABLE MATERIALS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF OFF THE CONSTRUCTION SITE.
8. COORDINATE WITH THE PLUMBING PLANS FOR THE LOCATION, SIZE AND ELEVATION OF THE PROPOSED UNDERGROUND ROOF DRAIN CONNECTIONS.
9. WHERE STORM SEWER ROOF DRAINS HAVE LESS THAN 4-FEET OF COVER IN PAVED AREAS OR 3-FEET OF COVER IN LANDSCAPE AREAS, PROVIDE 3-INCH THICK INSULATION A MINIMUM OF 5-FEET IN WIDTH, CENTERED ON THE PIPE.
10. ALL STORM SEWER PIPE JOINTS SHALL BE WATER-TIGHT CONNECTIONS.
11. ALL STORM SEWER PIPE CONNECTIONS TO MANHOLES SHALL BE GASKETED AND WATER TIGHT. BOOTED COUPLERS AT THE STRUCTURE OR A WATER STOP WITH NON-SHRINK GROUT MAY BE USED IN ACCORDANCE WITH LOCAL CODES.
12. CONTRACTOR SHALL AIR TEST ALL STORM SEWER PIPE IN ACCORDANCE WITH LOCAL CODE REQUIREMENTS.

Know what's **below.** **Call** before you dig.

GRAPHIC SCALE IN FEET
0 10 20 40

PROJECT

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ARCHITECT

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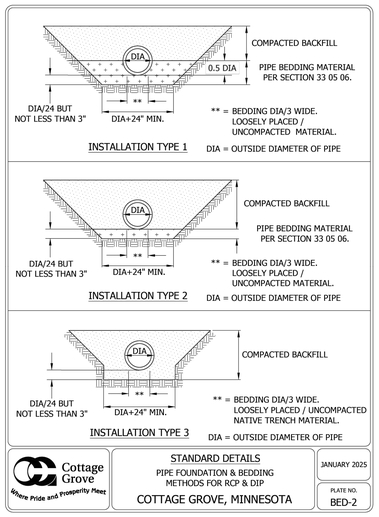
GRADING AND DRAINAGE PLAN

C500



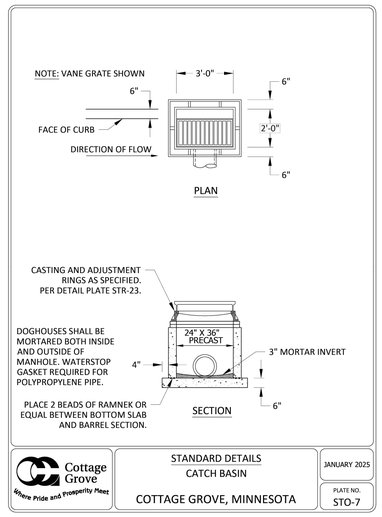
Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
PIPE FOUNDATION & BEDDING METHODS FOR RCP & DIP
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. BED-2

48_BED2.DWG



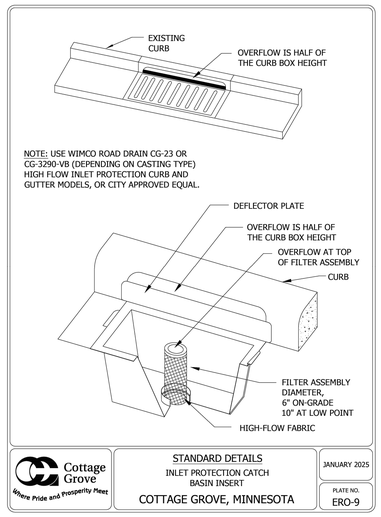
Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
CATCH BASIN
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. STO-7

48_STO7.DWG



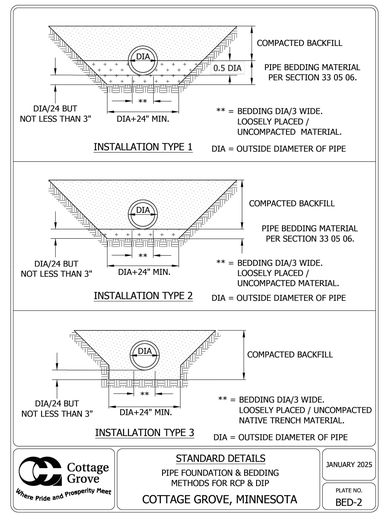
Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
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
PIPE FOUNDATION & BEDDING METHODS FOR RCP & DIP
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. BED-2

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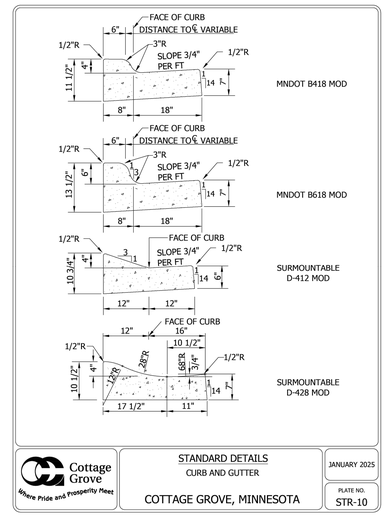


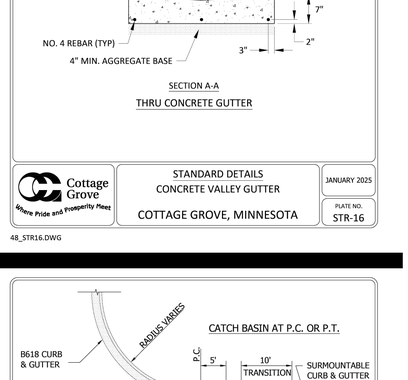
Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
CURB AND GUTTER
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. STR-10

48_STR10.DWG



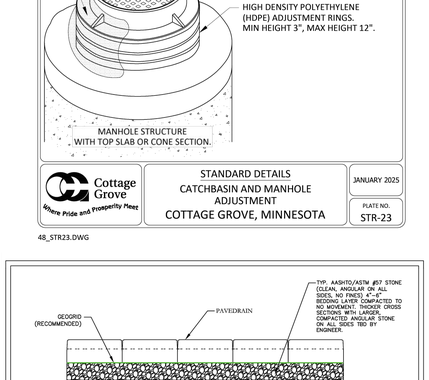
Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
CONCRETE VALLEY GUTTER
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. STR-16

48_STR16.DWG



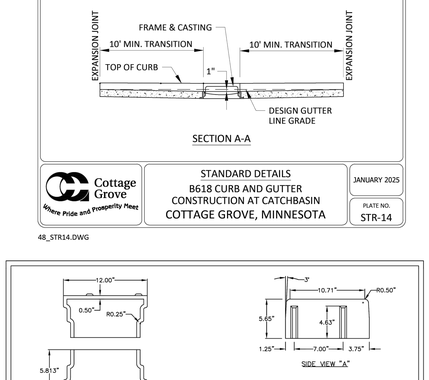
Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
CATCHBASIN AND MANHOLE ADJUSTMENT
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. STR-23

48_STR23.DWG



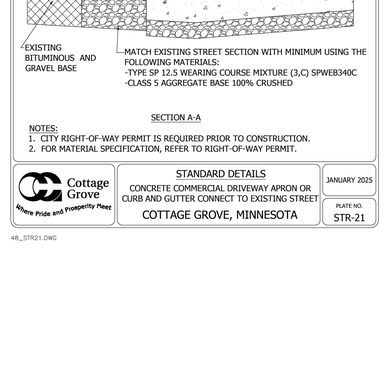
Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
B618 CURB AND GUTTER CONSTRUCTION AT CATCHBASIN
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. STR-14

48_STR14.DWG



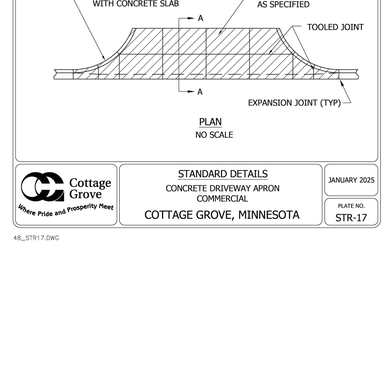
Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
CONCRETE COMMERCIAL DRIVEWAY APRON OR CURB AND GUTTER CONNECT TO EXISTING STREET
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. STR-21

48_STR21.DWG



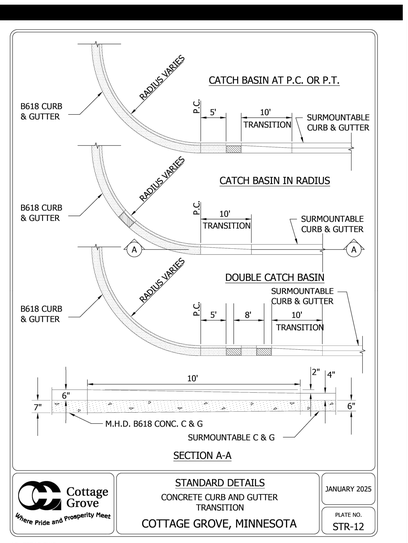
Cottage Grove — Where Pride and Prosperity Meet

STANDARD DETAILS
CONCRETE DRIVEWAY APRON COMMERCIAL
COTTAGE GROVE, MINNESOTA

JANUARY 2025

PLATE NO. STR-17

48_STR17.DWG



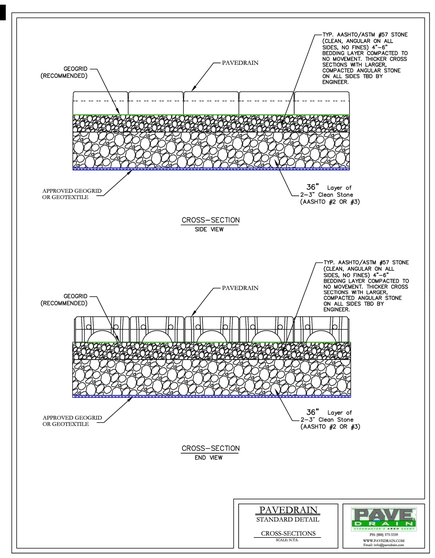
Cottage Grove — Where Pride and Prosperity Meet

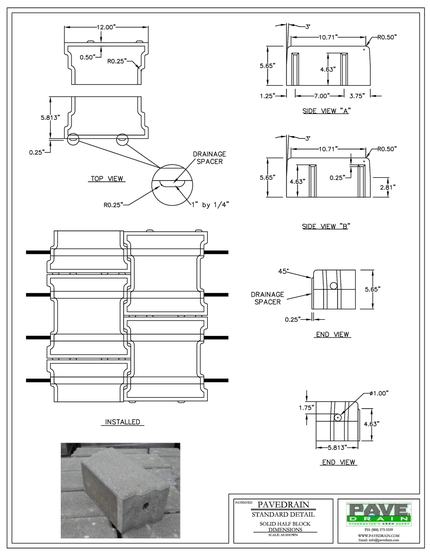
STANDARD DETAILS
CONCRETE CURB AND GUTTER TRANSITION
COTTAGE GROVE, MINNESOTA

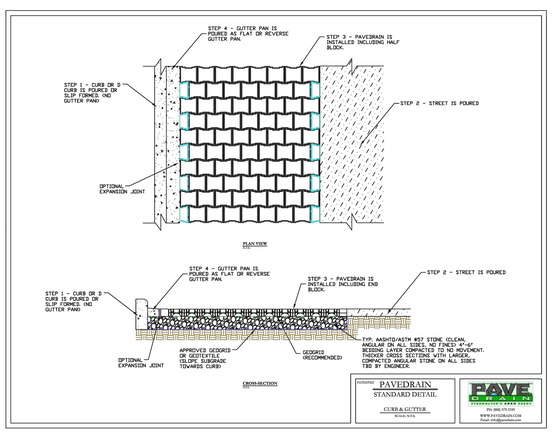
JANUARY 2025

PLATE NO. STR-12

48_STR12.DWG







PROJECT

Park Grove Library

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MEMORANDUM

Date: 08/15/2025

To: Paul Sponholz, PE

From: Mike Boex, PE

Subject: Park Grove Library
City of Cottage Grove, MN
Project No.: 24X140120

This memo summarizes the review of site plan documents submitted by Alliiance, dated 7/30/25 (received 8/1/25).

Certificate of Survey:

1. City records are attached to this memo related to sewer and water pipe sizes and materials:
    a. Records depict an existing 4" DIP water service within private property.
    b. It also appears there may be an additional valve that is paved over/buried, and approximately 30-lf of 8" DIP extending west of the City's 12" main. Care should be exercised during removals to determine the presence of the valve and/or the 8" main.
        i. Even if the valve is not present, connection to an existing stub, if present, is preferred. Additional notes should be provided on the utility sheets to confirm existing utilities and coordinate connections with the city.
    c. 30-lf of 8" VCP sewer pipe also appears to be present west of the city sewer manhole.

Sheet C200:

2. Pavement removal limits should reflect the anticipated utility removal limits (e.g. sewer service) in Hemingway Ave.
3. Based on the utility records previously mentioned, if present, consider leaving a portion of the 8" DIP watermain and 8" gate valve.

Sheet C300:

4. It is assumed that the table of "Phase 1 BMP Quantities" refers to Phase 2.

Sheet C400:

5. Keynote "T" along the south side of the entrance apron: The city does not want the USPS postal box within public right-of-way. Please evaluate options to locate the postal box somewhere within the site.
6. The City plans to prepare plans to improve Hemingway Avenue. Further plan coordination will be necessary as those are developed.

Bolton & Menk is an equal opportunity employer.

a. The Heavy-Duty Concrete Pavement Section (Detail 2/C700) is appropriate for the handicap parking stalls but not the commercial driveway apron. The apron is anticipated to be included in the City's plans, as are other surface improvements within the public right-of-way.

Sheet C500:

7. Freeboard Standards:

   b. 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.

   c. 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.

   d. Please label all pond and local drainage EOF locations and elevations, including those along curb lines or other areas where surface water would escape the site.

Sheet C600:

8. Add a note to the plans that the proposed 4" PVC sanitary sewer shall provide a booted connection to the city manhole.
9. As previously mentioned, the existing 8" DIP water stub to the site should be investigated, and therefore a new wet tap should be avoided.
10. The existing north-south sanitary sewer along Hemingway Avenue is expected to be 8" VCP, not 12".
11. Check pipe crossings and clearances. For example, it appears the water and sewer crossings are very close or in conflict. Where applicable, add appropriate notes as to when watermain will be lowered, etc. to maintain minimum vertical clearances. If necessary, the use of city standard detail WAT-7 is recommended.

    a. Based on previous comments, if the water service remains north of the sanitary service, that crossing may be eliminated.

12. All portions of a new building must be within 300 feet of a fire hydrant or 400 feet if the building is sprinkled. It appears an additional hydrant should be added onsite.

Sheet L100:

13. Consider depicting underground utilities to understand tree locations relative to underground piping. Sheet C100 Water/Storm/Sanitary Note #21 indicated 5-ft separation unless a root barrier is utilized.

Sheet L200:

14. Details 12 & 13: specify the intended color of the fencing material (e.g. black).

Stormwater Comments:

15. HydroCAD:

a. Subwatershed DA-2 includes a time of concentration of 0 minutes. Please adjust the time of concentration. The surface water management plan recommends a minimum time of concentration of 8 minutes.

b. HydroCAD Pond 1P is simulating 0.8 cfs exfiltration from a 2800 sq. ft. footprint, at a rate of about 12 inches per hour. Please check the exfiltration rate so the rate is in line with the design rates provided in the MN Stormwater Manual (e.g. 0.8 in/hr.).

c. Proposed Pond 1P simulates a 100-year high water level of 876.43 feet. The secondary outflow device (Overflow to Street) has a crest elevation of 876.4 feet but shows no outflow while overtopped in the 100-year flood. Please check that the device discharge multiplier is set to 1.

16. New and Fully Reconstructed Impervious Surfaces: The stormwater narrative report and HydroCAD models indicate existing and proposed impervious areas of 1.3 acres. Sheet C200, C300 and C400 indicate existing and proposed impervious areas of 1.2 acres. Please be consistent between the report, models and plans. Please also list the sum of new and fully reconstructed impervious surfaces and compare 1" of runoff from these surfaces to the proposed water quality treatment volume of 3,050 CF.

17. Infiltration System:

    a. Include notes on the plans indicating how to stage construction and use low-impact earth moving equipment to avoid compaction of the soils under the infiltration system in order to improve the likelihood of successful infiltration.

    b. Sheet C500 lists the HWL of 876.22 for the Pavedrain Infiltration Basin. The HydroCAD model indicates the Pond 1P (PaveDrain) 100-year peak elevation is 876.43 feet. Please update Sheet C500 to be consistent with the model and also please identify on the plans the EOF location and elevation.

18. Water Quality: The project disturbed area is 1.85 acres. 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. Submit a water quality analysis using a method such as the P8 or MIDS models to demonstrate compliance.

    a. For water quality analyses using the MIDS or P8 models, the South Washington Watershed District (SWWD) Standards Manual (November 2023) includes required adjustments to the MIDS and P8 models:

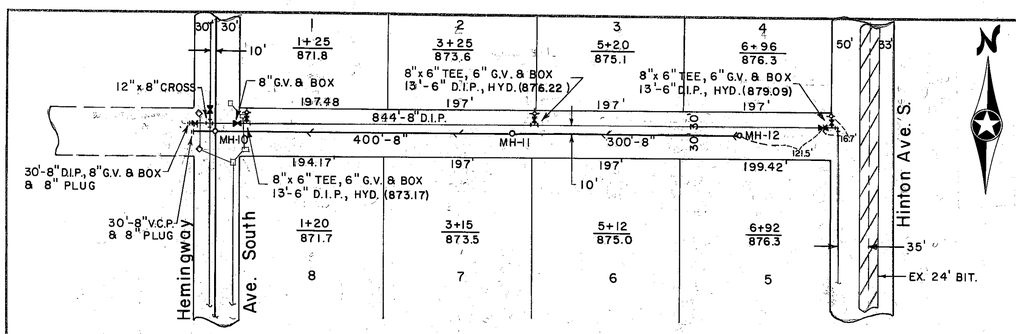
Model	*Parameter*	*Required*
MIDS	*Retention Requirement*	*1.0 inch*
MIDS	*Total Phosphorus EMC, Change from Default 0.3 mg/l*	*0.31 mg/l*
P8	*Precipitation and Temperature Files*	*Download modified .pcp and .tmp files from District website*
P8	*Start Date*	*1-1-1971*
P8	*Keep Date*	*1-1-1971*
P8	*Stop Date*	*12-31-2000*
P8	*Number of passes through the storm file*	*5*
P8	*Impervious Depression Storage*	*0.1*
P8	*Impervious Runoff Coefficient*	*0.9*

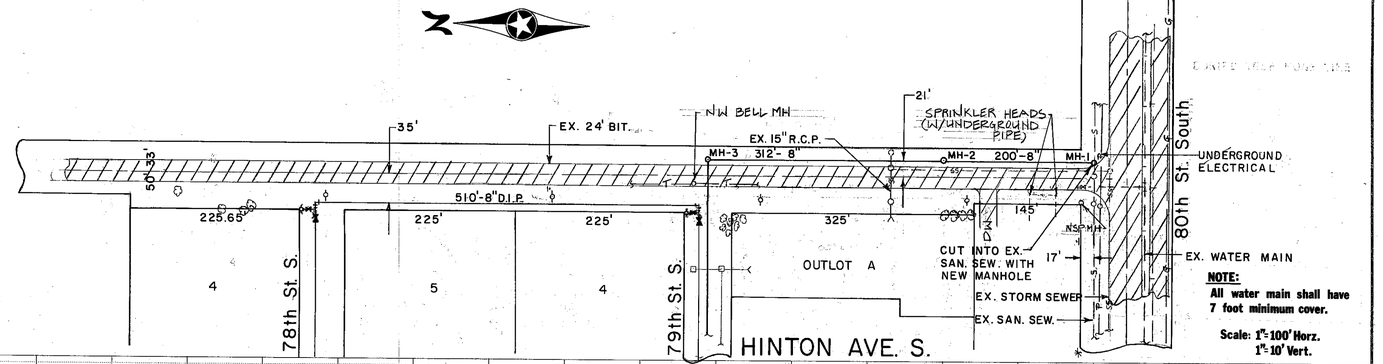
P8	*Max infiltration rate*	*0.8 inch/hour*
P8	*Phosphorus Event Mean Concentration*	*Nurp50 particle file*
P8	*Total Suspended Solids Event Mean Concentration*	*Nurp50 particle file*

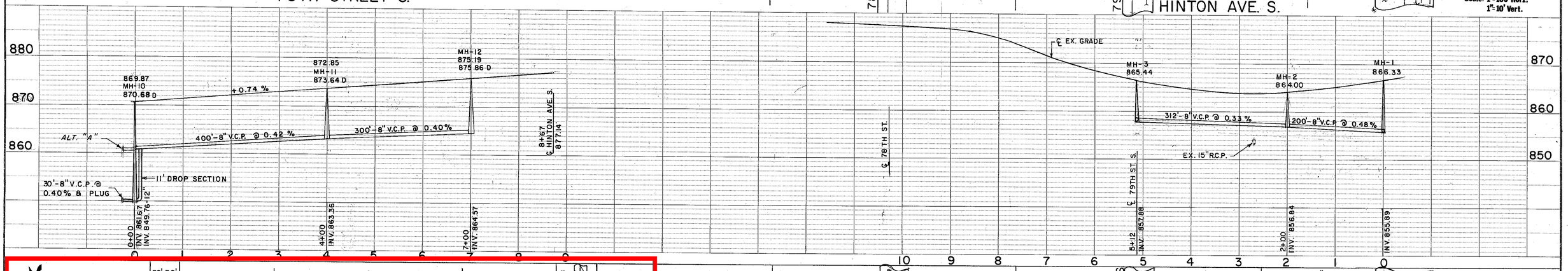
The Standards Manual is available at the link below:
SWWD_Standards-Guidance-Manual_Final_11062023.pdf (swwdmn.org)

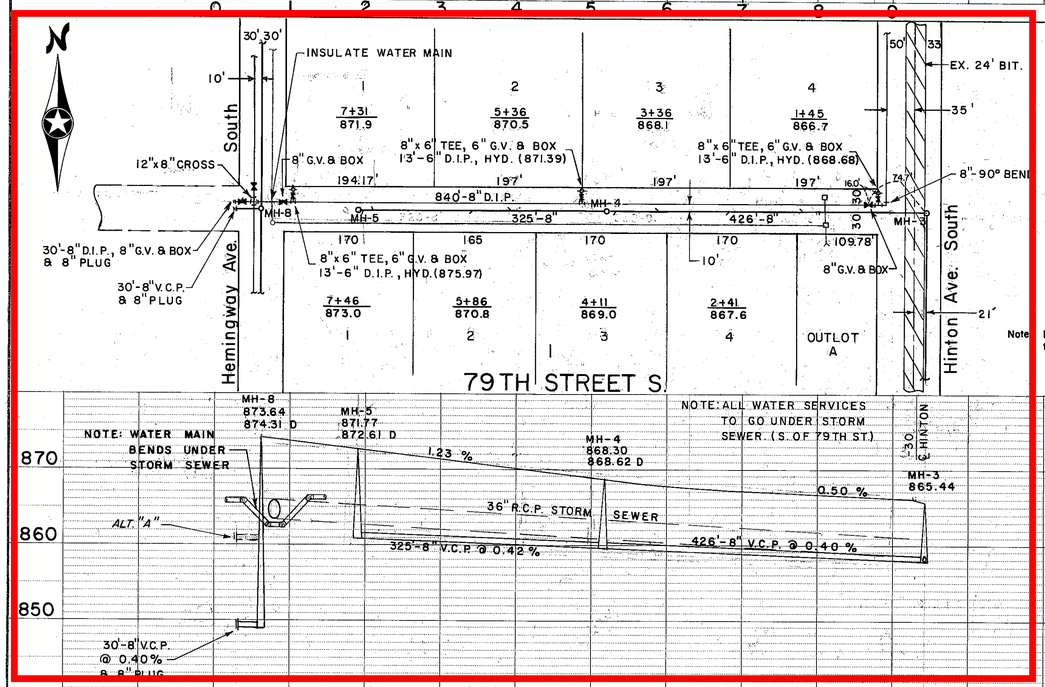
If on-site BMPs are not sufficient to meet the water quality total phosphorus loading rates, the purchase of off-site mitigation credits is an option.

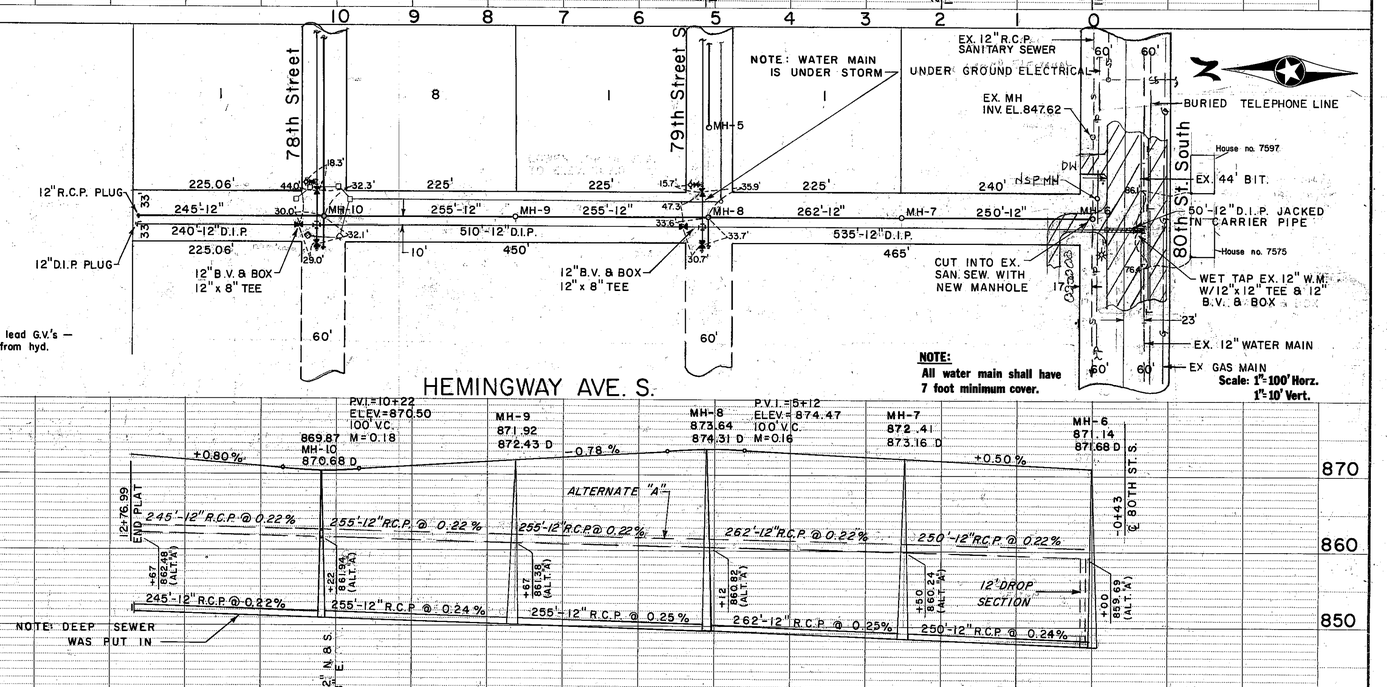
19. Rational Storm Sewer Design: On-site storm sewer should be sized to a minimum 5-year rational method design. Submit design calculations for the storm sewer system and a drainage area map showing each catchment with manholes and catch basins labeled. Include individual pipe segment velocities with calculations for review.
    a. Pipe sizes and slopes should be selected to provide a minimum open channel velocity of 3 feet per second.
    b. Maximum storm sewer velocities should be kept at 10 feet per second or less.
    c. When changing pipe sizes in structure, match crown of pipe elevations instead of inverts.
    d. Please show storm catch basin IDs, pipe sizes, grades, elevations, and drainage areas on the plans consistent with the rational design tables.
    e. 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.
20. SWPPP: The Erosion Control Sheets and SWPPP might be improved with the following:
    a. Identify the person(s) who will oversee the implementation of the SWPPP and perform the necessary inspections.
    b. Explain the entity responsible for long-term operation and maintenance of the stormwater BMPs.
    c. List the training and certifications of the SWPPP designers, inspectors and overseers.
    d. Sheet C200 Phase 1 note calls for stabilized construction entrance. Please show the construction entrance on plan sheets and list within BMP quantities.
21. Testing: Please add the following to the infiltration basin plan notes: “Post construction testing of the infiltration rate and drawdown period will be required.” Post construction testing should yield results of approximately twice the design rate, providing a safety factor consistent with Section 16.11 of the NPDES Construction Stormwater Permit. If test results exceed 8.3 inches per hour, Section 16.16 requires that soils be amended to slow the infiltration rate below 8.3 inches per hour.
22. Models: Please note that digital copies of the final version stormwater models 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.
23. A Stormwater Management Agreement will need to be executed for all BMPs installed with the site. The City will provide the agreement for signature prior to site grading.











I HEREBY CERTIFY THAT THIS PLAN 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

DATE Oct. 17, 1979 REG. NO. 9602 Otis Bonestroo

SURVEY	
DRAWN	
DESIGN	
APPROVED	

REVISIONS
3/11/80 T.P.

BONESTROO, ROSENE, ANDERLIK & ASSOC., INC.
ST. PAUL, MINNESOTA

COTTAGE GROVE, MINNESOTA
DATE: OCT. 1979 COMM. 4881

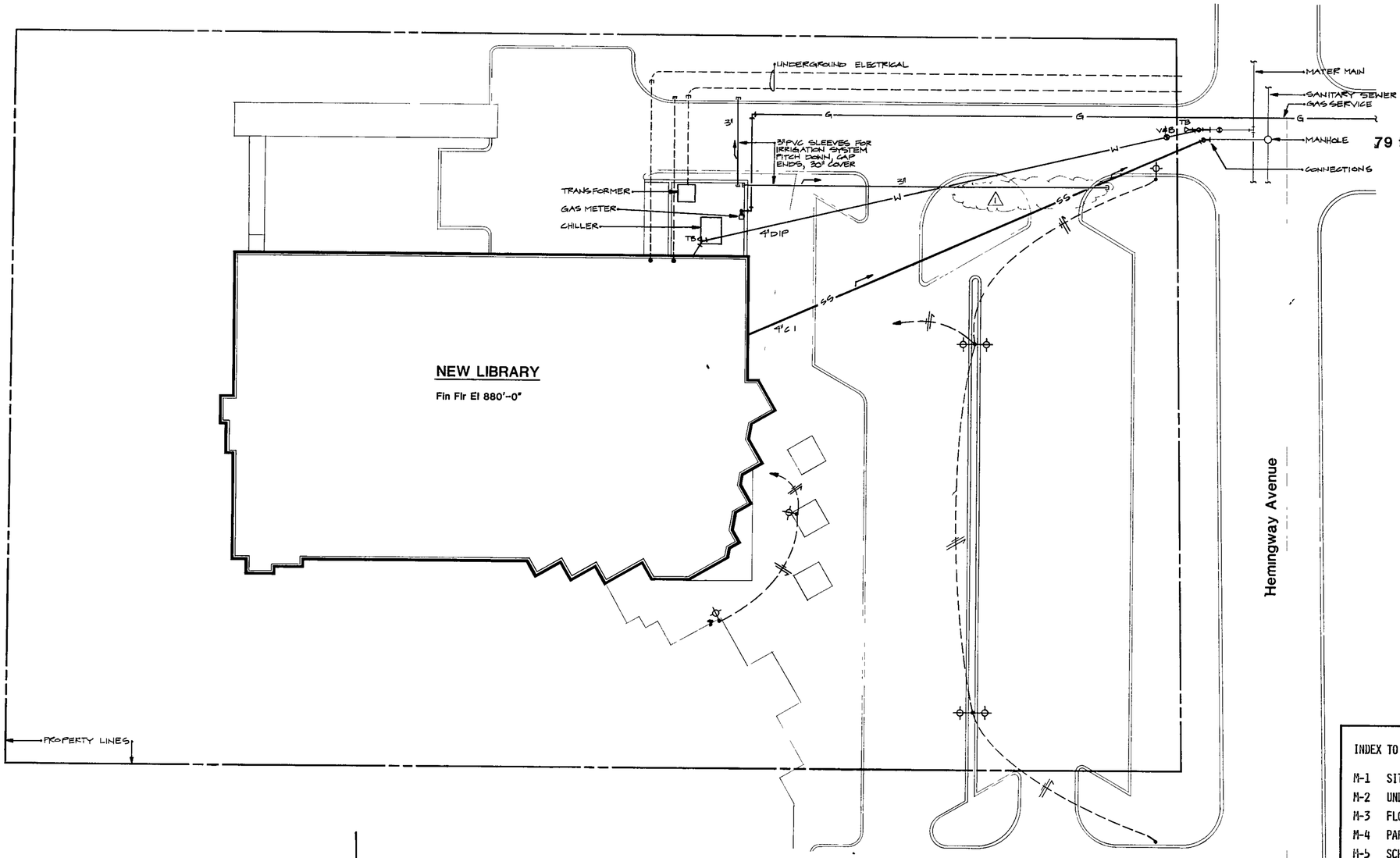
HINTON HEIGHTS 1ST. ADD.
SEWER & WATER

SHEET 4/11

RECORD PLAN

MICROFILMED

Park-Grove Library
MECHANICAL



SITE PLAN SYMBOLS		
ABBR	SYMBOL	DESCRIPTION
W	— W —	WATER MAIN OR SERVICE
SS	— SS —	SANITARY SEWER OR BUILDING DRAIN
STS	— STS —	STORM SEWER
G	— G —	GAS MAIN OR SERVICE
V&B	—	SHUT OFF VALVE AND BOX
TB	TB	THRUST BLOCK
CI	CI	CAST IRON PIPE
DIP	DIP	DUCTILE IRON PIPE
YH	YH	YARD HYDRANT
MH	MH/MH	NEW MANHOLE/EXISTING MANHOLE
CB	CB/CB	NEW CATCH BASIN/EXISTING CATCH BASIN
DW	DW	DRYWELL
FH	FH	FIRE HYDRANT AND VALVE
FDS	FDS	FIRE DEPT SIAMESE
LPG	LPG	LIQUID PROPANE GAS
IE		INVERT ELEVATION
RCP	RCP	REINFORCED CONCRETE PIPE
		LIGHT LINES SHOW EXISTING
EEA		HEAVY LINES SHOW NEW

M-303

SITE PLAN
SCALE 1"=20 FEET

INDEX TO MECHANICAL DRAWINGS

M-1 SITE PLAN
M-2 UNDERFLOOR PLAN
M-3 FLOOR PLAN
M-4 PARTIAL PLAN AND SECTIONS
M-5 SCHEDULES AND DETAILS
M-6 RISER DIAGRAMS AND DETAILS

Park-Grove Branch Library

Structural
Meyer Borgman and Johnson, Inc.
810 Plymouth Building
Minneapolis, Minnesota 55402
612 338-0713

Mechanical/Electrical
Ericksen Ellison and Associates, Inc.
1310 Randolph Avenue
Saint Paul, Minnesota 55105
612 698-0316

I hereby certify that this plan, specification or report was prepared by me or under my supervision and that I am a duly registered ENGINEER under the laws of the state of MINNESOTA
Registration Number 3448
Date 5 AUG 83

M S & R

10-17 83 - REVISION ADDENDUM #2

Architects
Meyer, Scherer & Rockcastle, Ltd
325 Second Avenue North
Minneapolis Minnesota 55401
612 375 0336

M-1
5 AUG 1983

COTTAGE GROVE PLANNING COMMISSION **July 28, 2025**
12800 Ravine Parkway South
Cottage Grove, MN 55016

COUNCIL CHAMBER - 7:00 P.M.

The Regular Meeting of the Planning Commission was held in the Council Chamber and telecast on Local Government Cable Channel 16.

1. CALL TO ORDER

Frazier called the Planning Commission meeting to order at 7:00 p.m.

2. ROLL CALL

Pradeep Bhat-Here; Ken Brittain-Here; Jessica Fisher-Here; Evan Frazier-Here; Eric Knable-Excused; John Stechmann-Here; Terrence Woodman-Excused.

Members Absent: Eric Knable, Terrence Woodman

Staff Present: Emily Schmitz, Community Development Director; Samantha Pierret, Senior Planner; Kelly Becker, Associate Planner; Crystal Raleigh, Assistant City Engineer; Justin Olsen, City Council Liaison.

3. APPROVAL OF AGENDA

Bhat made a motion to approve the agenda. Stechmann seconded. The motion was approved unanimously (5-to-0 vote).

4. OPEN FORUM

Frazier opened the Open Forum and asked if anyone wished to address the Planning Commission on any non-agenda item. No one spoke. Frazier closed the Open Forum.

5. CHAIR'S EXPLANATION OF THE PUBLIC HEARING PROCESS

Frazier explained the purpose of the Planning Commission, which serves in an advisory capacity to the City Council, and that the City Council makes all final decisions. In addition, he explained the process of conducting a public hearing and requested that any person wishing to speak should go to the podium and state their full name and address for the public record.

6. PUBLIC HEARINGS AND APPLICATIONS

A. Grove Tobacco - Case CUP2025-019

Royalty & Sons, Inc., DBA Grove Tobacco, has applied for a Conditional Use Permit (CUP) to sell low potency hemp edibles at their existing business located at 8599 West Point Douglas Road South, Suite 200.

Pierret summarized the staff report and recommended approval subject to the conditions stipulated in the staff report.

Frazier asked if there were any questions for staff.

Fisher said I have one. I know that there were some, I mean we're still trying to figure out all this cannabis stuff, right? But there was something about proximity to schools and things, and the bus garage is like right next door. Does that have any bearing on this at all? Pierret replied that's a very good question. So, the low-potency edibles do not need to meet those setbacks from schools, parks, treatment centers, all of that kind of stuff. Just kind of diving in even further here, the bus garage would not be considered a school structure by definition that a full-potency cannabis business would need to meet the distance requirements for, but that is not what the applicant is here for tonight, it's just that low potency.

There were no further questions, so Frazier thanked Pierret.

Frazier asked at this time if the applicant is present and would like to add anything additional.

My name is Mike **Tadal** and I'm a resident at 6419 Edgemont Circle North in Brooklyn Park; my business address is 8599 West Point Douglas Road, Suite 200, in Cottage Grove. I just wanted to explain a little bit more about the low potency, it doesn't seem like there was anybody on your member board that had any questions, but the low potency is not. Let me just explain about myself, I am a student at St. Paul College. That is, I'm in the process of getting certification for cannabis retail, and so they have classes that help us understand how to, what is in our product and how it affects people and how to best explain the effect to people. The product itself is probably controlled a lot more than a lot of other product that is available out there in the stores that is not regulated currently by the State, like for example, kratom or things like that that still need to be regulated. But, again, what I wanted to just share with you is that I'm not just somebody who has just decided hey, you know, I'm going to sell this product and make money off of it and then I don't care about the community. That's completely opposite, I really, truly believe that this product can help a lot of people that are taking medications; for example, I know from a recent study that the highest increase in consumption of low-potency hemp was in the senior population of Minnesota, 67% increase just last year, since its been passed. So, just basically just an intro about myself and that I really know what I'm doing with this product, and I'm not going to be reckless with it. So, that's about it, and if there's anybody that has questions for me, I'll be more than happy to explain a little further. I don't want to go on a rant here and nonstop, but yeah. So, does anybody have any questions?

Bhat said so my question is regarding, what's the difference here, what you refer to as hemp, is that cannabis in pure form, or its just an exception of? Mike replied great question. So, cannabis is the marijuana plant, and hemp is the plant itself, but there's levels of potency; so, for example, in alcohol, you know how they sell 3.2 beer at a gas station, and you get the regular beer at a liquor store. So, this low-potency hemp is that type of marijuana, a plant that you would find that's equivalent to the 3.2 beer that you would find at a gas station. Again, hemp is marijuana, but its not the, there are three types, the stuff you can buy from someone off the street; at the same time, to your question, there are different levels, not just levels, but like there are different types of hemp. So, there's the THC, the CBD is a form of hemp, but it's a very different plant and a different seed, a strain of seeds that is grown in the ground to give that potency. The average potency of a street marijuana plant is between 23% to 35%, so that's the THC that is contained in the flower, and with hemp, it could be 2%.

Stechmann said I was just curious, the lower-potency hemp, is that sometimes referred to as Delta-8 or Delta-9 or something along those lines? Mike replied great question, yes, it is referred to as Delta-8, sometimes referred to as Delta-9, and it also could be a combination of the two. So, it could be CBD plus the Delta-9 or Delta-8; I don't know if you remember, there was a Delta-7 back then. There are certain grams of that hemp that the State allows the maximum to be in a product. So, right now, you can't get any product that has more than 10 mg. of THC or hemp or Delta-8 or 9, and yeah, there's a Delta-8 plus so and so, so there's many acronyms to it. It can get a little confusing here, but you're right. Stechmann said thank you. Mike replied yeah, no problem.

There were no further questions, so Frazier said all right, thank you. Mike replied great, thank you very much.

Frazier opened the Public Hearing. No one spoke. Frazier closed the Public Hearing.

Frazier asked if there was any further discussion by the commission and there was none.

Fisher made a motion to approve the Conditional Use Permit subject to the conditions stipulated in the staff report. Stechmann seconded. The motion was approved unanimously (5-to-0 vote).

B. 61 Marine & Sports - Cases SP/CUP2025-018

61 Marine & Sports has applied for a Site Plan review for a 50-foot by 8-foot building addition and a Conditional Use Permit (CUP) for the display, hire, service, rental, leasing, and/or sale of boats and recreational vehicles conducted outside a building with servicing inside a building at 11730 Point Douglas Drive South.

Pierret summarized the staff report and recommended approval, subject to the conditions stipulated in the staff report.

Frazier asked if there were any questions for staff; none were asked. Frazier thanked Pierret.

Frazier asked at this time if the applicant would like to approach and add anything additional; Frazier said he's waving from the back that he's okay.

Frazier opened the Public Hearing. No one spoke. Frazier closed the Public Hearing.

Frazier asked if there was any discussion by commission.

Brittain said we have a letter that was given to us from Theresa Williams. Could you comment on the concern that they have about the lighting, how it exists, and how this may affect it or not? Pierret replied sure, of course. The letter was in reference to the residential houses that are across Highway 61 from the property. It seems that some lighting that is not downward directed, that is kind of flooding the parking lot, has been installed over the years. It is the City's Code that all lighting in the commercial districts not exceed a one-foot candle at properties adjoining commercial and industrial, and a half-foot candle adjoining residential; however, taking into consideration we do understand Highway 61, a four-lane road, is in between these two. However, all lights should be downward directed, and that is included in a condition in your packet that all lighting be installed to City standards, and we would require the applicant to do that with the existing lighting on the property at this time. Brittain said okay, thank you.

Frazier stated I did not see the front of that email that indicated it was an email, and so that will be part of the record for this application as well. And, Sam, the only other thing I was going to ask then about that is so there's a condition, I see Condition 15 that was added about outdoor lighting shall be directed downward as part of City Ordinance; going forward, has that been just incumbent on Code Enforcement then to make sure that City Code is being followed with respect to this issue? Pierret replied that would be correct. There also is the opportunity for us to require a Lighting Plan or a Photometric Plan where the applicant would show us that that half-foot candle is being met at property lines. So, there are other things that we can also look into as well. Frazier said okay, thank you.

Frazier asked if there was any further discussion from the commission.

Frazier said I guess I'll just add I've been on the Planning Commission now since 2018 and so I've seen 61 Marine & Sports come through several times, as we saw in the application. I'm glad they're a business in the community that's still growing and doing more business, and so, I'm glad to see them work out with the City this application.

Brittain made a motion to approve the Site Plan Review and Conditional Use Permit subject to conditions stipulated in the staff report. Fisher seconded. The motion was approved unanimously (5-to-0 vote).

C. Almar Village Parking - Case V2025-017

Curt Hoffman, on behalf of Almar Village, LLC, has applied for a variance to allow expansion of the existing parking lot at 7155 Jorgensen Lane South to be within two feet of the east property line and to increase the impervious surface coverage of the parcel beyond the 70 percent impervious surface allowed in the B-1, Limited Business District.

Pierret summarized the staff report and recommended approval based on the findings of fact and subject to the conditions stipulated in the staff report.

Frazier thanked Pierret, asked if there were any questions for staff.

Brittain said the parking spaces that are in the southeast corner of the property, which is not part of the 2.4 acres, if that parcel were to develop at some point in time, I know its kind of small, how would that impact if whatever business were to go on that parcel required the entire site have more parking spaces? What would happen? Pierret replied that's a very good question. So,

we're discussing this box in the red, down in the southeast corner. Should a business or something come in there that requires more parking spaces than is currently provided on their individual piece, as you can see there is less fewer parking spaces than our required on the site today. So, what we do is we look at their use and we look at things like peak hours of business. For example, the two restaurants on site are going to need these parking spaces roughly at the same time of the day vs. a hair salon or nail salon that is in there if that were to go on this vacant parcel, they need the parking spaces at a different time of the day. We are able to kind of look at peak hours and things like that, but technically, each tenant space needs to have parking to satisfy their particular use. So, without knowing what somebody would come in and ask for, it's hard to say, it's very much a situation-based request. Brittain replied so, if there was a high parking need, then it probably couldn't go in there, but it wouldn't prevent some type of use from going in there if it had a balance between the hours and that use. Pierret replied yes. Brittain said okay, thank you.

Frazier said if we can go back to that photo, so this is a rendering then of what it would look like, or what the approval was back when it was first approved. So, the green circle is kind of these are the parking spots that they want to add, and I know you said it was two feet from the property line is where these spots end, which Pierret confirmed. Frazier said and then there is the Right-of-Way, and within the Right-of-Way there is a walking trail that does bend towards the parking lot. Do we know how close the parking spots are going to be to the walking trail at its closest spot? Pierret replied Mr. Chair, very good question. I did not measure that, however the two feet plus, I would only be guessing if I had to say the trail is maybe four-or-five feet off of that property line there, so at least five feet, but that would only be a guess. Frazier said okay, thank you, and I appreciate it. I don't like to play stump the planner, but just a concern of mine that it does bend towards the parking lot right where those spots are going to go; and it doesn't sound like we're going to get any screening or any fencing or anything, which makes sense because it would not fit the rest of the character of the area, but just a concern of mine that that's going to be pretty close to that walking trail.

Fisher said I was trying to find in here, I read that there's like a shared parking agreement amongst all of the businesses there. Is that going to change anything about that agreement? Because I know that there are other places that I won't name, but one near me where I know that there are like kind of fights between the establishments with parking, right, and if anyone's on the Facebook page, they know all about the drama. I'm just wondering with two restaurants there and you think about peak time and you think about all of that, is the City going to require some sort of agreement amongst all of them to play nice or how does that work? Because I could see that becoming an issue. Pierret replied that's a very good question, and I am not on the Facebook page. So, like I kind of mentioned, this owner owns the two restaurants or will own the two restaurants, which are the major parking gatherers if you will of the property, with the gas station being the second one; however, it's kind of, as we all know, more a transient come and go, and then the retail space, which is, as I mentioned before, the peak hours are going to be different. In my conversations with the owner, unfortunately he couldn't make it tonight, they all work well together with this shared parking agreement, they all understand that you can park on any of these parcels. You'll be able to park in his new spaces and go to the gas station if you really wanted to walk that far, and there's been no issues with them as of yet with the current owners, I'll say. Fisher said okay.

Bhat said regarding the vacant parcel, it seems to have some parking areas in it, so why is it called vacant then? Pierret replied good question. I considered it vacant since there's not a commercial use or structure on the site; right now, its solely being used for parking and mostly people who are visiting the Carbone's restaurant, I would say, are parking in that space. So, right now, there's not a structure or a commercial use taking place on the property, it's solely at-grade parking. Bhat asked so if there is going to be a structure coming up there, can it occupy any of those parking areas? Pierret replied so, they would be able to count those few parking spaces towards their use; however, then we would be taking away those parking spaces from the Carbone's, this restaurant use, and it kind of leads back to Commissioner Brittain's question where we're talking about what type of use would go here; and without just spitballing various ideas, we would need to be looking at what are the peak hours of operation for such a use, how much parking are they needed based on the use, based on our ordinance. It's very hard to kind of imagine what could ever possibly go there, and as mentioned, it is a fairly small parcel as well. Bhat said I guess my question was can in that vacant parcel, can they build anything on the existing parking area so that those will be no longer parking spaces, something else will come up on them? So, then you're short of parking areas. Pierret replied okay, so that would kind of be like they'd be taking away the parking from not only themselves, but also from the other uses on the site. So, technically, if they met all of the setbacks, all of our City ordinance requirements, you could construct a building that meets setbacks and everything like that on that vacant parcel; however, again, it's just hard to envision something that isn't in front of us right now as a proposal. Yes, somebody could construct a building over those parking stalls, and those would then be removed from the site. Bhat said thank you.

Frazier said I have a question about stormwater maintenance. So, maybe our City Engineering Department and since Commissioner Stephens isn't here, I will talk about the stormwater. I know Sam pointed out that the retaining basin that's on the other side of Jorgensen Lane was set up to accommodate 6.3 acres, and this is going to get us to 6.3 acres. I'm assuming that is like a, is that based on like the 100-year estimates that would keep the 6.3-acre amount of water that would be diverted from the site, or? Pierret replied yeah, that's a great question. The stormwater design for this site is based on several different storms based on our Surface Water Management Plan. So, yes, the 100-year storm is evaluated in those conditions, and that additional impervious acreage that would be included from these parking stalls was accounted for in that 100-year calculation for the current stormwater pond that's on the site. Frazier said okay. So, even though we are getting up to the 6.3-acre limit, that's not a concern because it is built to handle a very unlikely scenario with respect to that area. Pierret replied yeah, Mr. Chair, that is correct. We're getting up to what it was designed to accommodate in the first place. Frazier said okay, thank you.

Fisher said and I don't know if you guys, because the applicant isn't here, so you may not be able to answer, but would there ever be a time when instead of considering expanding the parking lot, the capacity of the restaurant that's coming in would be less? Because, I mean, that might be, and like I said, you may not be able to answer it because he's not here. Pierret replied good question. So, the capacity of the restaurant of course is how we calculate the needed parking spaces. It was brought up to the applicant that the restaurant could reduce the number of seats to hit or get much closer to that required parking number without adding these parking spaces; however, as most of us from a business standpoint, reducing the number of seats it was a very large number of seats they would've needed to reduce by, almost half, just to get to the required parking number on site where they wouldn't need to add these. Fisher said sure, it makes sense. It's just the part of the variance thing, the economic part of it, is I guess what I'm hung up on; like, you know, when we grant a variance, economics are not supposed to be factored in, right? When you have a restaurant coming in and you have to have X amount of capacity in order for it to be economically viable, you just have to consider that. Pierret replied yeah, so, I'll just kind of piggyback; restaurants are a permitted use, and so, had this met all the parking standards and everything, staff would have said go forth and open your restaurant and everything. We are just really trying, because we know as staff and as commissioners, parking in this lot is quite challenging; and, so, now seemed like the time to with this 2016 variance to let's get that added because we're going to be having another restaurant on the site. Fisher asked is there any plan, because there's a residential area immediately to the west of there, are there No Parking signs on that street already, or are there going to be measures taken to not hinder the residents either? Because I would assume that this parking lot would overflow at some point. Pierret replied I don't think that there are any No Parking signs on Jorgensen. Fisher replied I'm just thinking about where is the overflow gong to go? It's going to go on those residential streets that are. Council Member Justin Olsen said I can answer that question for you. There is nothing posted on Jorgensen that says No Parking. There actually are overflow parkers who use that now, and one of the concerns under consideration is the space that that would leave for emergency vehicles should they need to access that area. If you think about a bar and a restaurant, sometimes that's something that you have to think about. But there's no posting on it now; it's certainly something that could be recommended. Fisher replied right, I was just going to say maybe that's something that can be considered if it becomes a problem, if things get jammed up there. I don't know how the City would go about keeping an eye on that or whatever, but it's just a thought.

Bhat said I have a quick question. So, where is the Mexican restaurant going to come; is it in the big building or the one in front of the Holiday station? Pierret replied yes, it is in the big building. It's going to take up two tenant spaces right on the north side of the building here, so they will have the outdoor patio area accessible for them as well out there. Bhat replied okay, thank you.

Stechmann asked so, when exiting onto 70th Street from Jorgensen there, before, at some point in time, there was a porkchop that prevented people from turning left to head westbound on 70th Street, right? Council Member Olsen replied that's correct. Stechmann said okay, and that is since removed, so now that restriction has kind of been removed and so people can turn either left or right onto 70th Street, that's probably true? Council Member Olsen replied yes, the County took that out. Stechmann said so, with the increased number of parking spaces and the increased demand for this space with the new restaurant coming in, are there going to be concerns about increased traffic spilling out onto 70th Street, especially with respect to the property that abuts it to the north? Pierret replied yes, I will allow Crystal Raleigh, the Assistant City Engineer, to come up; I know she was preparing for these questions. Raleigh said yeah, this is a situation that will continue to be monitored by the County as additional developments go in and change the way that this is used. Currently, their guidance regarding this intersection has been, and we'll get to it with the Cedarhurst discussion, but to align this access from Jorgensen to the north with the Cedarhurst driveway; that makes that intersection safer for a variety of reasons by aligning that. Those left-turning movements can operate much more freely. We also have the benefit of having a left-turn lane into both of these properties, so that stacking isn't on the main throughway. The County does have the ability to limit this access if it does become problematic in the future, so they could limit it to that right in, right out in the future. Stechmann said thank you.

Frazier said Sam, I do have just one more question for you, and I have not been to this parking lot in a while, so I don't remember. I think, correct me if I'm wrong, but I think the entire lot is kind of surrounded by curb. So, my question is, if that is the case, are these new spots going to have curb to prevent them from going onto the grass and the Right-of-Way, where Keats is? Or is it just going to be pavement right up to, like basically at level with the grass? Pierret replied very good question. So, they would need to be installing the curb and everything like that per the City standards for parking lots and everything. Frazier said okay, all right, thank you.

Frazier asked and you said the applicant is not here tonight? Pierret replied correct.

Frazier opened the Public Hearing. No one spoke. Frazier closed the Public Hearing.

Frazier asked if there was any further discussion by commission.

Frazier said I guess I have to highlight it, I have some real concerns with the parking abutting the walking trail and just how close its going to be. I think as Council Member Olsen indicated, you know, bars and restaurants are sometimes places that emergency vehicles need to get to; bars and restaurants are also places that serve alcohol and people then drive away from, and when they do that, they're not always the most careful drivers. And, so, I think getting that close to the public Right-of-Way, especially where there is a device designed for people to be walking on, I think is a concern that I have about extending this parking into that area. So, that is my personal concern about it. Does anyone else wish to discuss?

Fisher said I actually was going to say that. I'm wondering if there's any sort of, instead of just a curb, if this does go through, like is there some sort of something, I don't know, like outside Target there's the big red balls, right? Like, is there something that can be put along that side of the parking lot to maybe help protect from cars going too far, or? Pierret replied sure, something like bollards or something like that. Fisher said I don't know what they're called, something, a stake or something that would stop a vehicle that's going where it's not supposed to be, maybe that could be something added to it. I don't know. Pierret replied that is, the commission's purview could be to add that as a possible condition for the overall safety. Brittain said in regards to that, I can see there being some issues with something along those lines, even though there might be value added in it, and I would think that we'd want to evaluate whether moving the trail would be a better solution for that than putting in a guard rail, so to speak, whether it's bollards or not. Maybe have staff evaluate what the best option for safety is there vs. forcing them into something with the particular application. Fisher replied you can't put that trail closer to Keats, though. Brittain said well, it is closer to Keats on 50% of it, this is significantly farther in than the rest of it. So, it's just a thought. Frazier said yeah, I mean, I understand the commercial realities of the parking and needing it; if you're now going to have two restaurants in there in what is already a busy parking lot, obviously, you need to have places for people to park legally because then I think the issue on Jorgensen gets worse if you don't. Because people are just going to not go there, they're just going to find other places to put their car that are probably not as great a place to put it. So, I think if it does go through and the commission votes to recommend City Council approve it, I would ask if staff and the applicant to work together on what is a workable way to make sure that pedestrians and people who are on the walking trail are protected. Because I agree that putting bollards, obviously that's the one that they stop cars because they're either metal or they're concrete, but in this area, I think they would look odd. You know, I don't know how effective they would be, but I think there should be some kind of consideration that the applicant should put forward in making sure that this is not going to become a nuisance or a problem.

Brittain said I agree, and another option may be some of the standardized fencing that we have around patios and things along those lines. While it wouldn't forcibly stop a vehicle from moving forward, but it would be an additional optical recognition from anybody getting in their car that there's something in front of them and maybe subconsciously have them think about that. But just to consider the different options that are available for making it as safe as possible.

Brittain made a motion to approve based on the findings of fact and subject to the conditions stipulated in the staff report with the additional request that staff review the trail placement and safety of that parking area and what can be done, if anything, to make it as safe as possible as it moves forward and then present that to the City Council to get their consideration on that as well. Stechmann seconded. The motion was approved unanimously (5-to-0 vote).

D. Cedarhurst - Cases ZA/HCUP/SP2025-020

Bellagala has applied for a Zoning Amendment to rezone the property at 6940 Keats Avenue from AG-2, Agricultural, to M-U, Mixed Use District; a Historical Conditional Use Permit to operate an event center in the M-U, Mixed Use District; a Site Plan Review; a Zoning Amendment to rezone the property at 9912 70th Street from AG-2 to R-3, Single

Family Residential; and a Historical Conditional Use Permit for associated business uses in conjunction with the event center.

Schmitz summarized the staff report and recommended approval subject to the conditions stipulated in the staff report. She stated the applicant with Bellagala, J.J., is also here and he is going to share some more details of the improvements, as I had promised, to understand better that restoration effort to the mansion. Brittain asked Emily, can we do questions to you before we, sorry, J.J., and Schmitz replied yeah.

Brittain said question one, Caretaker Cottage and Gardener's House, are those the same thing? Schmitz replied technically, yes. Brittain said so if you could maybe be consistent because it got a little confusing in there, it almost sounded like the Gardener's House somebody just owned it and they were going to stay living there; but then this Caretaker thing was going to potentially be utilized for some sort of function, even though it wasn't owned. So, there was a little bit of confusion there in regards to that. So, that's a separate property that has the Gardener's House on it, has some potential use for it, and is not owned by this entity that is buying the Cedarhurst part of it? Schmitz replied the current landowner owns both parcels, and the applicant is proposing to purchase both parcels. Brittain replied okay, I didn't get that from the staff report, so that is a good clarification. Brittain asked with respect to the drainage, is that a little pond that's to the right, a little holding area to the right of the impervious parking lot? So, that's for water storage there as well, okay. Brittain said so I was going to ask about ghost platting that other property, but if you're going to own it all and there isn't somebody that's living there that's going to do something else with it, then I don't have a concern with that. So, that satisfies my questions at this time. Thank you.

Frazier asked if there were any other questions for staff.

Bhat said so why are these two parcels zoned differently, like in the Comprehensive Plan, and is there, I mean, can we amend it and then call both of them as Mixed Use? I'm having that confusion. Schmitz replied long term, it was always envisioned that this would remain as a single-family home likely due to its historic nature, it would give us the ability to preserve it as the home and preserve the home itself. However, yes, we could reevaluate long term, as we think about our 2050 Comprehensive Plan, to align both of those parcels with the same guidance of Mixed Use.

Fisher said so about the Cottage House only being used as like a staff, it sounds like a lunchroom kind of thing, but is there going to be a capacity assigned to that building because its now going to become a commercial use capacity, what about like Fire Code things? Are they going to be able to rent that out for let's say somebody wants to have a meeting? Like, what are, because that house is changing from a dwelling, basically, into a commercial business use, are any of those things being considered? Schmitz replied so that would be specific to the Building Code. So, from a Zoning perspective, we recognize that it is still a single-family home, but we allow for this commercial use as they apply for permits to do the improvements and what that use looks like and how they evaluate it from the State Building Code side. They will align with those standards. Fisher said okay.

Brittain said so, in regards to that, if the Gardener's Cottage is still zoned as low residential, how does that fit into a business use? Schmitz replied so zoning is one standard, right, for how it can be utilized? But when you look at the Building Code, and I am no building official, but I can tell you they do look at how it is being utilized and there are standards that align, even though it is technically a single-family home if its being used for a different type of use it does need to meet those standards. Brittain asked and at some point, would they have the ability to, not that they would want to do this, but just so that we're prepared, to subdivide that under its current zoning classification as low residential into more than one structure? Schmitz replied that is possible, they could submit for that application. Brittain asked with the extension of the water and sewer from the cul-de-sac to the west, I'm assuming that would preclude building on that area? Schmitz replied it likely would impact how those lots may lay out. Brittain said okay, all right, thank you.

Bhat said so the stormwater pond that is proposed, that is for the additional impervious land coming from the parking lot and just the parking lot alone, or does it account for all the impervious land there? Schmitz replied I am going to turn it over to Assistant City Engineer Crystal Raleigh to give just a little bit more of a detailed general overview of how the stormwater is laid out and evaluated on the site. Bhat said thank you. Raleigh replied so, the stormwater that is proposed on the site, which is just to the east of that new proposed impervious parking, that stormwater is to take care of any additional impervious that's being added to the site. So, that would include the parking lot, the additional area on the driveway that's being added, as well as the roof for the 4,000 square-foot addition. So, that stormwater pond would be to accommodate all of the stormwater from the additional impervious for the whole site. Bhat said thank you.

Fisher said I don't know how to ask my question, I'm trying to figure out how to word it. So, with the Cottage House, now Ken's got me thinking about developing it in the future. So, it's going from AG-2 to R-3; is there an different R we can put it under to kind of keep it? I don't know, I'm still trying to learn the new. Schmitz replied sure. So, it is a unique scenario in that we are proposing to rezone to R-3, which is single-family residential. We want to make sure that aligns with the Comprehensive Plan. Now, hypothetically, a new property owner says I would like to sell it, it would be a single-family residence, right, someone could live there; is there the potential for redevelopment? Certainly. The Historical Conditional Use Permit (HCUP) is what gives us the ability to say hey, we want to use it in conjunction with this other historic use, which lays over top of it, right? It does run with the land, so that opportunity is there, but we did want to be specific in our conditions that the commercial use was just that, limited within the Gardener's Cottage. Fisher said got you, okay, thank you.

Brittain said all right, I'm going to ask another question there because it's burned a thought. So, the driveway or the Gardener's Cottage is now coming off of the new drive line. If, for some unforeseen reason, that parcel was sold off and developed as something, would that require an access point on 70th Street, or would they still continue to use that shared new driveway access with the commercial use? Schmitz replied likely if that parcel were to potentially I'm going to say redevelop, it would take its access from 69th Street, the cul-de-sac to the west. Brittain said all right, thank you. Brittain said all right, I'm going to ask another one. So, access from 70th Street, I have some concern with; well, let me just ask you this. Coming east on 70th Street, we currently have a dedicated right into Almar, correct, and a through to go to the roundabout, and then going west, we currently have a dedicated left into Almar and a through, so two lanes going both directions. What's going to happen with people going east on 70th Street since we don't have a dedicated left coming from that direction coming into the property and because you no longer have a through. If traffic stops, in order to enter this property and there's a backup on 70th, you know waiting for people coming through the roundabout, then that's going to mean that traffic would potentially back up on 70th, correct? Schmitz replied so, there's currently, if folks are headed east on 70th and they're going to take a left into the site, there is currently a turn lane. Brittain said so there is currently a dedicated left and right going east? Schmitz replied correct. Brittain said okay, good, that's one of the things that I wanted to clarify, so that's great. Now, going the other way, going west, is there going to potentially be a need for a right-hand dedicated turn? Because we have a dedicated left into Almar and a through, and my concern is if there might be a need for a dedicated right-hand turn lane into the property and the storm holding area that we currently have there could potentially preclude if that were necessary to move the trail over to add a dedicated right-hand turn lane. So, I guess I would phrase it this way: If we feel that there's a safety concern from a traffic perspective that would require a right-hand turn lane, does that automatically trigger the north entrance point being invoked as an in and out from the Military cul-de-sac? Or is there a way to do this in such that if we don't feel we need a right-hand turn lane right now, which I'm concerned about, because people whipping around that roundabout might not see people stopped or slowing down in order to turn right into this property. So, I have a concern about that, so I see two solutions: One is a dedicated right-hand turn lane, and is there a way that we can make it feasible to add that if we don't feel that its added now but enable us to do it later? Keeping in mind that storm portion on the south part of the parking lot, the stormwater pond, if you put something there, there might be a problem with moving the trail so that you can put in the turn lane. Or if we see that there's a problem automatically, we're going to have to put a new road in from the north? Schmitz replied two things: First, 70th is a County Roadway, and it will be up to the County to identify when this particular intersection needs to be limited to that right in, right out, on both the north and the south side. Second, folks heading into the site, taking a right, they're not limited by anything as they're pulling into that site, right, so that's a free flow of traffic into the Cedarhurst site. No, there is not a dedicated right-turn lane as folks are headed west, turning into the site; however, there is nothing that stops them so likely that backup wouldn't be an issue on 70th Street. Brittain replied I'm not necessarily worried about a backup, I'm worried about you're traveling at say 35 MPH by the time you're at that point, and then you're slowing down to 0 to make the turn; there's that transition point of I was flowing at one speed through the roundabout and it's like oh, now I've got to turn right. It's the guy behind him that you're not stopped, but you also may not be paying attention because you're not, and so, I just have a concern with the proximity distance from the entrance to the roundabout; and I understand it's the County's decision, but we can squeak enough that if we feel that it's important that they would at least evaluate it. I guess what I'm trying to do here is what I see is a potential solution being prevented by the current location of the southern portion of that holding pond, maybe, I don't know, the City Engineer would be able to say better, but my concern is that we might need something there. If the simple solution is it's just going to trigger a road through the woods up to the Military thing, then okay, you know that would be the way to go, but it would be nice to preserve the option of not forcing it to have to happen right now. If we felt it was necessary to add one later, that you could add one later without putting infrastructure in place that would prevent that from moving. So, that would be my thought on that particular part of it, and granted, I would expect it to be fully evaluated by staff because you guys do a great job about that, but this may not have been considered up to this point in time. Schmitz replied I would also add if at such time a right-turn lane in were to be warranted, I imagine likely at that point it would be warranted to shift the driveway to the full access to be on Keats Avenue, and so that right-turn lane wouldn't be necessary. But we will follow the guidance of the County absolutely. Brittain said okay, thank you.

Stechmann said just to follow up, do I understand correctly that the County has kind of like the exclusive jurisdiction to decide whether or not this has become a safety hazard on 70th Street? Because I thought that I read somewhere in the packet that it could be either the County Engineer or the City Engineer that could initiate whatever is necessary, a traffic study or reporting of the number of crashes, or other types of evidence to establish that there needs to be some measures taken to improve the safety. I drove this today and it was during my lunch hour, so it wasn't a big deal for me to go around the roundabout and come back, heading westbound on 70th Street. I didn't encounter that and of course it wasn't open so nobody was turning right into the property. But I can foresee on a Saturday at 6:00 p.m., you know, people coming through there, and like Commissioner Brittain said, you know that people are accelerating from this roundabout, heading westbound; then suddenly they encounter brake lights in front of them, and they have to then like decelerate, perhaps after they've had a few while at some other establishment. So, that's my concern, I guess is the County the exclusive arbiter of whether or not there needs to be either a dedicated right-turn lane or if there needs to be the northern access to Military? Raleigh replied the City and the County will continue to work together on the safety of this intersection into its future. We're frequently communicating with them and we communicate our concerns on County corridors often, and they are taken seriously. We will continue to work with them. I think Emily was correct in saying that the second option really is that Military access if we get into a situation where a right-turn lane would be needed, I do think we'd be going up to Military rather than constructing that right-turn lane, but this will continue to be worked on with the County. One thing I also wanted to mention is that the internal site itself has a significant amount of stacking in the driveway, so it's not like they're turning right and then they're waiting for somebody to back out of a parking stall before they can get into the parking lot. There's a significant amount of stacking within the driveway, before they're turning down into the parking lot as well. So, we don't anticipate traffic sitting out there on 70th Street, but there are some unknowns here with this type of use and exactly how many people we're going to have coming in here. We know we don't anticipate that it's going to cause stacking out on 70th, but that's the reason why we'll continue to plan for that access at Military, if needed. Stechmann said I did notice in maybe one of the other figures that was included in the packet, not this one, that the entrance to the proposed parking lot was awfully close to the driveway entrance on 70th Street, but it appears now in this drawing that the entrance into the parking lot is further north. Is that the additional buffer zone or distance that would allow this stacking to occur on site instead of on 70th Street? Raleigh replied I don't really understand your question, can you state that again? Stechmann said when I was looking through the packet, I saw that a motorist that would drive from 70th Street and enter to the property, using the driveway, I thought on one of the diagrams it showed that in order to go from the driveway into the parking lot was on what would be the south side of the parking lot instead of the north side of the parking lot. So, is it in fact the case that the entrance to the parking lot will be on the north side of the parking lot and not the south, thereby to prevent the stacking from occurring on 70th Street? Raleigh replied you're correct, the entrance has moved to the north side of that parking lot, and we've required that alignment with the driveway to the Gardener's Cottage. It was I guess a later change in the Site Plan when the County guided us to align the driveway with Jorgensen. With that in mind, we needed to move the driveway to the Gardener's Cottage, and the best design then is to have those two coming together at the same point, on the north side of the parking lot. Stechmann said great, thank you.

Frazier said all right, I think that's it for questions for staff. If the applicant would like to approach and add anything additional.

Good Evening, my name's J.J. Maleitzke, 6940 Keats Avenue South, Cottage Grove, Minnesota, 55016, hopefully. Emily, great job, a tough crowd to follow here, but she kind of took a lot of my thunder here. I'm just going to tell you a little bit about who we are to just kind of show you the behind the screen here, behind the curtain: 28 years in business, not me, I've just been with the company for three years, Tim George started this business as a DJ company almost three decades ago, and we're up to six venues, this could be number seven. As you stated, we're in 12 other cities, actually outside of here, so lucky number 13, technically here. We've got an old historic mansion, VanDusen Mansion, in downtown Minneapolis, A'BULAE, Le' Venere, also a historic building in downtown St. Paul. We've also got over 200 acres in Chaska with three locations out there, Edward Anne Estate, Equestria West, and Woodland Glasshaus. The part of the business that is actually in the other markets, as well as here, where we do all the wedding services, wedding, photo, video, DJ, etc., is called Bellagala. Our goal is to host world-class events; we consider ourselves one of the premier wedding venues in the State of Minnesota and hoping to expand that a bit here, too. You kind of hit all the highlights of what the mansion is all about, built in the 1860s, expanded once in 1917, multiple remodels since then. It is on the Historic Registry, so its kind of unique; this is basically the spiel that I gave a few weeks back to the neighborhood to try to educate them about us. I'll try to go a little more high level since you guys are knowledgeable on it, but the biggest notable historic things are not only ABA significance, but also the people who stayed there: Cordenio Severance, Cass Gilbert, and the mansion hosted on occasions U.S. Presidents, Teddy Roosevelt, William H. Taft, Warren Harding, Calvin Coolidge, and so on. Our plan is simply to mirror what we did at the Van Dusen Mansion:

1) Respect the history of Cedarhurst. We want to keep as much green space as possible, do as little disruption as we can; obviously, adding a 4,000 square-foot building, the Atrium, is not a small disruption, but knowing that, we're trying to limit it as much as possible, focusing on important pieces like the Rose Garden, focusing on that Cass Gilbert building as soon as we can, kind of in a Phase 2, and trying to get the grounds, the yard, the inside spaces as original as possible.
2) Again, rehabilitate wherever we can and whatever we can.
3) Create a luxury wedding experience with a rich history and with modern amenities, ADA compliance, proper restrooms, new elevators, all those things.
4) Bellagala gives our couples an all-inclusive wedding experience. Marketing would kill me, but it's kind of a one-stop shop, if you want; you have the ability to get all those services, the location, the food, the beverage, everything on site.
5) Be a steward of our community and be a great neighbor, not just our neighborhood, the people that live right around us, but Cottage Grove, the cities that we obviously have business in.

You'll notice a lot has happened in the last five years since they have not done business. These are just a few lowlights of what the place looks like, but our plan is to again keep as much as we can: Windows, siding, all of these things, but obviously bringing it back to life. If this thing sits for too many more years, I'm afraid its going to turn to rubble, and so our goal is to reverse that. Inside, as much of the flooring as we can keep, as much of the original lighting that's 100 and some odd years old, we want to keep. We want to rewire, we want to bring back and bring back to life. The basement is scary, probably haunted, but we're going to definitely go in there, I'm not going to, he's going to go in there, and do everything that we can from new wiring, new plumbing, HVAC, everything, bring it up to Code again to keep the life of this building going.

The Build

1) This is pretty darn high level, but we're hoping for approval here and the next couple of hoops we've got to jump through, too. The plan is to potentially start in mid-to-late August, if possible.
2) The goal would be to get a lot of the outdoor heavy work done in 2025, then in winter, spring, and then mid-summer next year to kind of help it grow and help it settle.
3) In the wintertime, a lot of the indoor remodeling.
4) Spring, 2026: Plantings, all the finishes, all the fine details that those couples really, really fall in love with.
5) Our goal is opening August, 2026. This is at or around probably an 11-month project that it would take to actually get this thing to the finish line; he says 12, but I bet you we can get them at 11, so, it's on the record now.
6) Grand opening would be a few weeks after the first event, we said that in the neighborhood, we would love the City, we'd love everybody to come join and be part of it. As we said, we want to be stewards of the community and let you guys come and enjoy something on us, too.

J.J. said Emily had kind of shown the vibe, the picture, the view of this. Part of what we're attempting to do here is you'll notice the shed-style addition; our goal, especially from the recommendations of the historic channels, is we don't want to match this, we don't want to make it look like Cedarhurst Mansion, we want to make it look a little bit different and obviously, that is what we have chosen to do here. What you'll also notice kind of in that top-right picture, notice the floor-to-ceiling windows, basically. In that little area that you see those little mini people walking around, that is the Rose Garden. Our goal is to make that Rose Garden really the centerpiece of this entire thing. It is one of the most beautiful things about this history, and our goal is to kind of bring that outdoor space inside as well. What you'll notice, too, is our neighborhoods are kind of going west and north, for the most part; this area is where the majority of the activity is actually going to take place, which really acts as a physical barrier when it comes to sound, when it comes to light, noise pollution, and stuff like that. So, that was by no mistake, that was by design, to again make sure our neighbors love us not only today but years from now as well.

Again, this is just kind of a high-level overview of what this is going to look like, and Emily had already gone through some of this, but you will notice like our goal on the inside of this building is to do whatever we can to maintain. Obviously, we're going to have to rehabilitate a lot, but whatever we can do to sand down floors, whatever we can do to keep existing original wallpaper, lighting, etc. we're going to do. Some of that stuff is a little TBD, we've had a lot of construction. PMI has brought in tons of contractors to make sure that they can give it the best assessment, and from the current approach, it feels like we're going to be able to save a lot of it, which is awesome, same thing for the upstairs and the addition.

Traffic Management and Parking

Something that's always important is traffic, parking, and how do we manage it, obviously, a controlled entry and exit. Our goal from a business standpoint, from location to the parking lot, the ideal is going to be off of 70th, it just makes the most sense. It's going to allow for that grand entrance when people go into the parking lot, walk through the really nice pathway to get them to

either the mansion, the Rose Garden, or the Atrium. We do understand that who knows what's to come in the future, and that's why we're working with Emily and the City to determine a Plan B, hopefully Plan Z, but way down there if we do have to make something happen, we want to make it happen. What we're also pros at is we've got three locations on 200 acres in Chaska, all of which come in the same single-road driveway. We've got what we call air traffic controllers out there that are actually getting people in and out, we escort them, we do this thing for being a high end, for lack of a better term, exclusive wedding experience, and our clients come to expect that. So, on the face it shows as high-end luxury, but at the same time, too, it's also protecting the little things; I don't want people sitting and waiting in parking lots, not knowing where they're going, backing up traffic on the main road. So, the cosmetic beauty up front is cool, high-end luxury, the reality on the back end is we're doing it because we've got flow, we've got function, we've got things that we need to do from an operations standpoint, too. Obviously, designated areas for staffing, vendor parking, client parking, which you would see all the way in the bottom right; so, we would have over here in our, it's not necessarily overflow, the 24 spots is 1A and then 1B is the spot I'm highlighting right here. You know, if you ever go to Home Depot or whatever, everybody parks in the back; that's kind of the same thing that we would do, so the people that are coming in for the event would obviously filter into the front area. We do also from a parking standpoint build relationships, we're not there yet, we wait obviously until everything is done, but local hotels, local shuttles, local limousines, etc. to identify opportunities for people to do more than the average three person per car typical usage. Also, internally, when we see extremely high guest counts, more towards the max of our capacity, there are times that we'll actually implement inhouse valet parking, which would allow us to in those 23 spots, you can usually get close to three times, actually, if you're kind of parking them like sardines, if you will, but we'd have licensed, insured valet parkers bring that in, which would alleviate that parking issue. I don't have the updated one, because I sent this before, you were so kind to adjust that, but Emily had shown the updated parking is actually going to be here, not here. This is the Code Red, though, 911 parking stuff that we don't plan to use; we would only use it in a situation that we had to make it happen.

Managing Sound and Light

How do we manage sound and light? These are two of those pollutions, too, that obviously I think really impact the neighbors. The building itself, as I showed, is a massive blocking agent, I guess, for both sound and light. Emily had also mentioned that any amplified sound from us wouldn't be after 10:00 p.m.; that would include the Rose Garden, that would be included on any of our porches or patios. The majority of our ceremonies are typically like that 4:00 to 5:30, give or take, so usually any of those things that she had stated were 150+ feet away from any of the other properties, would usually be done by dinnertime. So, then they would move back into the mansion and spend the majority of their time in that Rose Garden area. Again, the parking lot is a little bit more, its closer to the 70th area, and what she had shown and with the amount of trees that we're bringing in, this is also one of those two-part things. Clients love it, but it's also really, really functional. Our goal is, you know, we are still going to be taking out a decent amount of stuff, expanding the driveway, obviously adding a 4,000 square-foot establishment, we want to make it beautiful. We also know from a functional standpoint that these are great sound barriers when we're putting up trees, we're putting up bushes, removing actually some of the dirt; if there are any other areas where we want to actually make any of those type of sound barriers, you know, little four-foot slopes on the exterior, especially to the north and potentially to the west, blocking those homes, we've actually considered that as well.

Again, just another little high view overview; Emily did a great job about talking about trees and all that fun stuff, and if you really want to get crazy granular, these are actually a great deal of the things that we plan to add in. And then just a little overview, you know we've been working with the same designer for the last 15 years, his goal at Oxford is to really embody I think the history of what Cedarhurst is all about. So, our goal is to bring in as much old-fashioned furniture, utilizing a lot of the stuff that still is there because a lot of it is actually decent and in good shape.

This is just a sketch of the Bridal Suite or one of our getting ready suites, and the Groom Suite, the other getting ready suite, is going to be a little bit more interactive; you know, a pool table, the bathtub that President Roosevelt actually apparently bathed in. We have no photos to prove this, but we're going to have that actually in the Groom's Suite as kind of a photo opp thing; it won't be functioning, but more of a piece of art. Even the elevators, the inserts of the elevators, our plan is to find a really cool wall to kind of place those on; they will not be functioning, but we want to pay homage to a lot of these things that maybe aren't going to work anymore but can still tell that story. The bar, this is probably the biggest addition or change inside the mansion itself. The current bar just isn't going to work functionally, that flow isn't going to be possible. There used to be actually a hole behind the bar, historically, that was filled in, in one of those 1917 to whenever expansions or renovations. So, we're actually just going to reopen that wall, having the same entrance to where it used to be before, and then close to where the kitchen is, that's where that bar is going to be. So, from a functionality standpoint, it's going to make a lot more sense, but also from a flow standpoint, just the safety of congestion and stuff it's also going to make a lot more sense. What this will allow people to do is head out to the Atrium, head back into the mansion, and so on, creating a great flow and obviously a good experience for our

clients. We're keeping all those fireplaces that were built 100+ years ago, as you can see one in the sketch on the left there. The Atrium, kind of our ballroom if you will. You know, we do want to bring just a tiny bit of that history in here, you'll see some of the lattice, etc. We're actually toying with bringing an actual fountain in there, not a plumbed one, so we're not going to have to go there, but something that can be decorated, something that people can put floral and things like that on, and finding something that is from that period of the late 1800s, early 1900s, to really back the history of that location. The Cedarhurst Mansion, we want to keep the name; we did update, just a touch, the logo, but that's about it. Questions? And thank you for your consideration. Frazier replied absolutely.

Frazier asked if there were any questions.

Bhat said so, I do see that in some of these pictures or diagrams you had the driveway not aligned with the Jorgensen street, and in some, you have it aligned with the Jorgensen street, so which one is it going to be? J.J. replied aligned. So, we had about nine emergency meetings I feel like in the last ten days, and I had gotten this, prior to Thursday over to these ladies for you guys to be prepared, and on Thursday, Tim, one of our architects, was able to provide the updated version to Emily so that could be added. So, it would be aligned, and we actually hadn't had County confirmation prior to me submitting this as well. So, she's right, I'm wrong. Bhat said thank you; J.J. replied you're welcome, thank you.

Fisher said I don't have a question, but I just think it's really cool to see this thing renovated. I'm a big house geek, and I just cannot wait to see this done, I think it's going to be awesome. J.J. replied very cool, I'll take that, very nice. Commissioner Bhat, do you want to second that? Stechmann said I will.

Stechmann said I'm very happy that this property is coming into a greater use, and its a beautiful property and I'm happy to see this. And, you now, that's all I have to say. J.J. replied thank you, Commissioner Stechmann.

Frazier said all right, thank you very much. J.J. replied I appreciate you, thank you.

Frazier opened the Public Hearing. No one spoke. Frazier closed the Public Hearing.

Frazier asked if there was any further discussion by commission.

Fisher said I do have one question. It was mentioned that there was a community meeting, and it said mostly unobjectionable. I'm wondering why it doesn't say 100% unobjectionable. What were the concerns, if any, that were brought up by the people surrounding the property? J.J. replied so, full transparency, you know, there was one couple that was in there that was kind of busting me up a little bit and asking every single question; it was a lot like what Emily had to go through up here a few minutes ago. At the end of it, they were one of the first groups there and they stayed the entire time, and they were on board. Every single person, multiple people were talking, which you said, and it's like we witnessed, we saw what this place was going to become; it was a shopping center, it was a strip mall, it was apartment complexes, it was our neighboring on the west were nervous about, the entire staff aren't going to come here through the cul-de-sac, correct? And, so, they saw what this place could be and what this place still might be, and they were so happy with this. I think they were appreciative, so to me, from my aspect, I felt like 100% of the people; 90% were happy when they got there, 100% were happy when they left. And, so, I don't want to say even for that last 10%, it was the lesser of two evils, maybe, but they liked what we talked about, they investigated what our brand was about, who we were, they read our reviews, and they said, you know, if I have to have a neighbor that's going to do something here, I'd like it to be you. Fisher said okay, thank you. I would agree, I mean, the lack of public comment right now, too, says that it sounds like the meeting was well attended and lots of questions were answered. J.J. replied my estimate was closer to 40 people, by the way, just throwing it out there. Thank you.

Frazier said I guess I'll add in my two cents. I'm thankful that someone is willing to take on what sounds like a very big job, and it's going to be closer to 12 months, I agree, to do this work because I think this is a very important piece of the City's history that we want to make sure we can keep; and the best way to do that is by having somebody come in and be able to use it for a commercial venture and make money off it, because that means they'll take care of it. So, I'm excited to see how it turns out. I think this is a very good proposal to have in the community, and it sounds like the applicant is willing to keep the historical aspect of this property intact so that we can remember what it was like, but also use it going on in the future.

Brittain said I'll say that from a planning perspective, I think you guys are dotting all the I's and crossing the T's, and you know, that's what goes into a recommendation, yea or nay. From a personal perspective, I've seen what's been proposed here in the

past, and I've seen what's been implemented here in the past, and I haven't seen anybody take it to the level that you're proposing to take it. And it's exciting to see what you're proposing, it's something, it's never our purview to consider whether or not you're going to be successful, that's just not our job; our job is just to focus on the zoning, but from what I've seen in the past, there's never been enough investment in what was trying to be done in order to make it successful and therefore it was never sustainable. So, I am excited to see the Atrium, the Rose Garden, and all the things that you're adding; that, in my opinion, from seeing all these other things, give it a very high chance of success vs. what we've seen happen in the past.

Fisher made a motion to approve the Zoning Amendment for both parcels, the HCUP for both parcels, as well as the Site Plan Review subject to the conditions stipulated in the staff report. Stechmann seconded. The motion was approved unanimously (5-to-0 vote).

7. APPROVAL OF MINUTES

A. Approval of the June 23, 2025 Planning Commission Meeting Minutes
Staff Recommendation: Approve the June 23, 2025 Planning Commission Meeting Minutes.

Bhat made a motion to Approve the June 23, 2025 Planning Commission Meeting Minutes. Brittain seconded. Motion passed unanimously (5-to-0 vote).

8. REPORTS

A. RECAP OF JULY 16, 2025 CITY COUNCIL MEETING

Schmitz summarized the actions taken at the July 16, 2025 City Council Meeting.

Council Member Olsen said the only thing I would add is we are neck-deep now in budget, so you know, we're meeting every week at this point. We'll meet again this coming Wednesday, last week was Public Safety and Emily's department and General Government and some other things, and this week will be Public Works and Equipment, and then we'll revisit some of the things that we talked about last week. And then the week after that, we have a regular Council Meeting, but we have a before Council Meeting Workshop and an after Council Meeting Workshop; the after Council Meeting Workshop is for the Capital Improvement Plan (CIP), which is where we put in big projects, you know, park buildings and road projects and those kind of things. We have a five-year CIP that we work on, and of course, that's a moving five-year plan, but we reevaluate it every year so that we can slot in what we need to do, when we need to do it, based upon when we can afford it; then we have to circulate that amongst our partners, particularly the County, as you mentioned earlier, to make sure that they're CIP and ours merge. So, it's a heavy lift, but it's sort of the most important thing we do, so we're in the midst of that right now and hopefully we'll have a budget for the next two years put to bed here by the end of August.

With respect to your question, Commissioner Stechmann, about is the County the sole arbiter on County Roads, the answer to that question is yes. We have the ability to make noise or squeak, I think as Commissioner Brittain said, and we're pretty good at it, and we're lucky that we have a County Commissioner who works very closely with us and is responsive to our requests and our needs and things like that; that isn't always the case, sometimes you have that and sometimes you don't. The County staff is very good and their County Engineer, Wayne Sandberg, is exceptional. To give you a perfect example of your question in real life, there was a porkchop that was on that road that was removed, and it was removed at the behest of the City in partnership with the County, and we had a County Commissioner who didn't really work with us too closely on that, but the County staff, Engineer Wayne Sandberg, worked closely with us on that. The caveat when that was taken out is that if anything were to change in terms of the demographic of that intersection and/or traffic patterns, to your point, Commissioner Brittain, we may relook at that. So, I would not be surprised if there is some additional dialogue if the Cedarhurst project continues to progress with regard to that access point and some of the details that you mentioned here tonight, and you did a great job with that, thank you. Those are lots of questions that we as a City Council will also ask, and so, since they've been asked and answered already, we'll just simply follow up on those. So, thank you for that. But yes, the County is in charge, its their road.

The last thing I wanted to mention is if you haven't already heard, this was a year where we did a Community Survey; we do these every three-to-five years, and we did a different type of survey this year. We went with a national survey organization, Polco, and the reason we chose to do that is Polco does community surveys across the country. And, so, we were able to

benchmark Cottage Grove's responses to responses from across the country, different demographics, different states, different cities, different climates, etc. So, I'll just give you a few highlights:

- 79% of the residents in the City of Cottage Grove rank their quality of life as excellent or good; that was great to see, that's 8 in 10.
- 86% gave a very positive rating to our path and trail system, people being able to walk and use the pathways and the trails.
- This one will be good for you, Commissioner Fisher, a variety of housing options was 63% positive and availability of affordable housing options was 89% positive. Now, keep in mind, you and I think of affordable housing differently perhaps than a standard person would because there are definitions to that, but still, that's a pretty impressive response, I think.
- Overall government, are you ready, 56%, I'll take it, gave us a positive response, although 68% said they were happy with their level of taxes, good or excellent, so that was good.
- Public Safety got an unbelievably positive rating, which doesn't surprise me because we spend a lot of time, energy, effort, and investment on Public Safety in this community, 86% positive, which I was gratified to see; if you don't have Public Safety, you don't have a community, it's just the way it is.
- We also had 86% rate the community as a good place to raise a family.

So, some really nice highlights there; there's more information on the survey on the City's website. There was also a lot of information that was shared on the City's social media, Facebook page, etc. If you go to the City's website, you can download the PDF of the entire survey, and the survey was done in two separate ways: So, it was targeted to certain residents, we did direct mailings and things like that, and then there was an open survey where anybody who lived in the community could respond. And, so, they blended those together, which is something that Polco does that I've never seen done before, and the representative sample size was about 493 residents between the two who responded. So, according to Polco, that's a statistically relevant number, I would have liked to see more, but they're the experts, so we're going to go with that. And then they extrapolate those answers out across the entirety of the community's population by demographic. So, all in all, good news there.

Like I said before, there's not going to be a lot of sleep in the next month or so until we get through the budget, but this is the time of year we live for, it's very important, and these survey results are a direct correlation to what we put as priorities in our budget, so it was good to have this information going into the budget dialogue.

Council Member Olsen said with that, Mr. Chair, I'll turn it back to you; if there are any questions, I'm happy to answer them.

Frazier said thank you, Council Member Olsen, and I know in a year in the climate that we're in right now that the budget is going to be probably tricky than ever to try to make sure we balance levy vs. getting services to the people who are in the City. Council Member Olsen replied it's tough, yeah, we've had a lot of Federal government funds that have been committed to us over the last couple of years for different projects that we're not certain we're going to get; so, we're trying to find different ways to balance the budget while still funding those major projects that we have been planning for, like the 80th Street reconstruction and those kind of things. So, I appreciate your acknowledgement of that, it's a very difficult period for local government at the minute.

Bhat said I'm just curious, so when was this survey conducted? Council Member Olsen replied it started in March and it went through the end of May. Bhat said okay, and do they have a statistic showing which areas were picked for the survey? Council Member Olsen replied absolutely, yep, it's all available on the PDF report that's available on the City's website. And if you'd like it emailed to you, send me a note on my City email and I'll happily get it to you. Bhat said okay, thank you. Council Member Olsen said our Communications Department, Phil Jents, whom some of you have met, he's ultimately the one who was responsible for executing that.

Bhat said and one last follow-up question on the management of roads and who is the arbiter, so that's just on the County roads, and we just have City roads, and there's nothing in between? Council Member Olsen replied yeah, the City operates all of the City streets, the City roadways, the collectors, those kind of things. We have the County that also operates County roads, like County State Aid Highway 22 is 70th Street; so, that's a County road. Sometimes, believe it or not, we trade. So, a few years ago, we traded a portion of 65th Street from the County to the City for the City to operate because it wasn't really feasible for the County to continue operating it when it was being used for City traffic; but don't forget, we also have State Highway 61, so if you look at Highway 61 that intersects the City, that's a State highway. So, anything we do with that road has to be done through

MnDOT; the City does not control that, and the same is true of the bridge decks. Bhat replied okay, and the side roads in the neighborhood, they're City owned or are they neighborhood owned, the sidewalks? Council Member Olsen replied so, if you have a community in your neighborhood where you have sidewalks, and you have a Homeowners Association (HOA), your HOA may actually be responsible for your sidewalks. So, if you live in a neighborhood like mine where I don't have an HOA and there are sidewalks, then the City maintains those. Bhat said okay, thank you; Council Member Olsen replied you're welcome.

No further questions were asked, so Frazier thanked Council Member Olsen.

B. RESPONSE TO PLANNING COMMISSION INQUIRIES

Frazier said we had two inquiries that were both answered at the last meeting, so we didn't have any more to follow up on.

C. PLANNING COMMISSION REQUESTS

Frazier asked if there were any requests for staff; there were none.

9. ADJOURNMENT

Fisher made a motion to adjourn the meeting. Brittain seconded. Motion passed unanimously (5-to-0 vote). The meeting was adjourned at 9:00 p.m.