AGENDA

Rogers Planning Commission

January 5, 2026 - 7:00 PM

1. CALL TO ORDER AND PLEDGE OF ALLEGIANCE

2. APPROVE AGENDA

Council members may add items to the agenda for discussion purposes or staff direction only. The Council will not normally take official action on items added to the agenda.

3. CONSENT AGENDA

These items are considered to be routine and will be enacted by one motion. There will be no separate discussion of these items unless a Councilmember so requests, in which event the item will be removed from the Consent Agenda and placed elsewhere on the agenda.

3.1 Approve Minutes from November 3, 2025

4. PUBLIC HEARINGS

4.1 Consider Application by Pulte Homes for Preliminary Plat for Wexley Park Subdivision

4.2 Consider Applications by Pulte Homes for Comprehensive Plan Amendment, PUD, and Preliminary Plat for Edgewater Cove Subdivision

5. NEW BUSINESS

5.1 Consider Application by New Look Contracting for Site Plan for Building Addition at 14450 Northdale Blvd

6. OTHER BUSINESS

6.1 Conduct Interviews for Vacant Planning Commission Seats

7. CORRESPONDENCE AND REPORTS

7.1 Past Planning Commission Items Review

8. ADJOURN

STAFF REPORT

ROGERS PLANNING COMMISSION

Meeting Date: January 5, 2026

Agenda Item: 3.1

Subject: Approve Minutes from November 3, 2025
Prepared By: Alec Henderson, City Planner

Overview / Background / Analysis
Attached are the minutes from the November 3rd Planning Commission.

Staff Recommendation
Approve minutes from previous meeting.

Financial Impact: Not applicable. **Source Fund**: Not applicable.

Budgeted? N/A

Supporting Documentation
A. 11-03-2025 Planning Commission Minutes

1. CALL TO ORDER AND PLEDGE OF ALLEGIANCE

The regular meeting of the Planning Commission of the City of Rogers was called to order by Chair Lohr on Monday, November 3, 2025, at 7:00 PM at Rogers Community Room, 21201 Memorial Drive, Rogers, MN, 55374 and online in the Zoom application.

Commissioners present: Clark Lohr, Peter Mullin, Aaron Sattersten, Todd Kussman, Jan Cartwright, Adam Hunt, Sarah Larson
Commissioners absent: Brett Carlson

Staff present: Brett Angell, Community Development Director; Alec Henderson, City Planner; Eric Burtness, Community Development Specialist.

Council Liason: Amy Enga

2. APPROVE AGENDA

No changes were made to the agenda.

3. CONSENT AGENDA

Commission Member Mullin moved, Commission Member Hunt seconded a motion to approve October 6th, 2025 Meeting Minutes. Motion carried 7-0.

3.1 Approve Minutes from the October 6th, 2025 Meeting

4. PUBLIC HEARINGS

4.1 Consider Amendments to City of Rogers Sign Code

City Planner Henderson detailed the proposed changes to allow electronic message centers as a permitted sign type in the GI district and remove electronic message centers from the SB district.

The Public Hearing was opened and closed.

Commission Member Hunt moved, Commission Member Mullin seconded a motion to approve the sign code amendments as presented. Motion carried 7-0.

4.2 Consider Application by Miller Chevrolet for Variance to Sign Code to Replace a Pylon Sign with a larger Sign Face.

City Planner Henderson summarized the request by Miller Chevrolet to increase the sign size, height, and use an electronic message center on a non-conforming sign.

The Commission discussed the merits of the request, as well as nearby signs which are of similar size as the request. Mullin commented other signage in the corridor is similar. Lohr expressed hesitance with a variance due to how recently the code was updated and felt that more information on corridor needs should be studied and implemented if necessary as an overlay.

The public hearing was opened and closed.

Commission Member Larson moved, Commission Member Cartwright seconded a motion to approve the variance. Motion carried 5-2.

5. NEW BUSINESS

5.1 Consideration of a Concept Plan for the Redevelopment of the Property 21601 John Deere Lane into Multifamily Residential by Bader Companies and Ebert Companies

Community Development Director, Angell provided a summary of the concept plan requested by Bader Companies and Ebert Construction for an apartment at 21601 John Deere Lane. The proposed apartment is 181 units of market rate units, 39 units/acre, and meets the required structure setbacks. The developer may be requesting a future variance for parking, however, the interior parking provided exceeds the 1 enclosed parking stall per unit ratio, while the outdoor parking count is slightly deficient.

Lohr commented that the parking code make create over parked apartments and the City may want to explore parking ratios that better fit the type of units an apartment is constructing.
The commission did express the importance of connections to Main St and the importance of understanding traffic impacts and what the needs are for intersection improvements or future improvements along the corridor.

5.2 Consideration of a Site Plan Application for the Commerce Boulevard Small Bay Warehouse Development

Community Development Specialist, Eric Burtness summarized the small bay warehouse development by CRCL Group for the property with PID 2312023110016. The proposal includes the construction of two small bay warehouses on a vacant parcel. The property is guided as mixed use regional and zoned RC. THe development would ad 65,000 sq ft total square footage split between 36 indivudial bays which may be used for office, warehouse, and storage uses with access to Commerce Blvd.

Lohr commented that the type of doors proposed do not really support semi truck deliveries. Burtness confirmed that that it is not the type of use the development is geared for.

The applicant architect, Ken Piper detailed the architectural plans.
The owner representative from CRCL Group explained the need for this type of use as a small business incubator and provide smaller operations a space in proximity to this 94/101 corridor.

Commission Member Mullin moved, Commission Member Larson seconded a motion to approve Resolution 2025-85. Motion carried 7-0.

6. OTHER BUSINESS

7. CORRESPONDENCE AND REPORTS

7.1 Past Planning Commission Items

8. ADJOURN

Commission Member Lohr moved, Commission Member Hunt seconded a motion to adjourn at 8:08 PM. Motion carried 7-0.

Respectfully Submitted,

Alec Henderson, City Planner

STAFF REPORT

ROGERS PLANNING COMMISSION

Meeting Date: January 5, 2026

Agenda Item: 4.1

Subject: Consider Application by Pulte Homes for Preliminary Plat for Wexley Park Subdivision
Prepared By: Alec Henderson, City Planner

Overview / Background / Analysis
Pulte Homes has submitted a Preliminary Plat application, requesting City review and approval for proposed residential subdivision on the south side of Territorial Road, west of Lennar's Skye Meadows subdivision on the Gmach family property with PID 21-120-23-44-0006. The proposed development would have access to Tucker Road with future stub to property to the south. The development site will be approximately 21 acres.

The plan currently proposes a by-right R2, Single Family development consisting of 33 single family lots, public infrastructure to be constructed by the developer, and stormwater management improvements. The proposed development is consistent with the current R2 zoning and proposes no deviations to lot sizes, nor setbacks. That being said, the County has recently supplied comments and is requesting additional right of way and/or easements which would impact the site plan. This could require variance to the rear setbacks from county roads.

A public hearing was published in the paper and mailed to nearby properties. The Commission could table action and provide time for the applicant to revise plans per county feedback or recommend approval conditioned on additional applications to resolve the county road right of way setback issues.

Primary Issues to Consider

1. Land Use and Zoning Compliance
2. Site Development Plans

Analysis of Primary Issues

1. **Land Use and Zoning**

The entire development area is guided as **Low Density Residential** and **Single-Family Residential (R2)**. Land guided as **Low Density Residential** has a net density range of 2.0 to 5.0 units per net acre.

The proposed unit count of 33 units would create a development density of between 2 u/ac. The proposed density would be in line with the guided and zoned use and has little room for dropping lots without falling below the net density requirement.

Single-family homes are the only permitted residential dwelling types by **R2** zoning. The proposed development consists of single-family homes which are on average 11,500 square feet in size. Additionally, the standard lot width in the development is 70 ft wide at setback width 145 ft of depth, exceeding the 65 ft minimum of the R2 district and 10,000 sq ft lot size. The subdivision also adheres to the front (25 ft), rear (20 ft) and side setback (10 ft) requirements. The development also requires a County Road setback of 50 ft from the edge of right-of-way. The current site plan does meet the required setbacks. However, recent county correspondence requires additional ROW which may impact either the product proposed on site, or possibly require the applicant to request a variance to the required county road setbacks (which is a city requirement not a county requirement).

The project also aligns with the comprehensive plan. The subdivision is consistent with the Low-Density Residential land use and addresses demand for single-family homes in the city, conserves wetlands and provides wetland buffers, and includes stormwater management facilities. Additionally, the development proposes internal sidewalks and future stubs to vacant property to the south for future development potential.

Wexley Park is compliant with the existing zoning, and existing land use plan/comprehensive plan. However, the site plan may change in response to county comments and staff would recommend tabling action until we know more about the impact(s) the county comments have on the site plan.

2. **Site Development Plans**

The proposed development plans' approvals are contingent on meeting engineering standards in the City of Rogers, review by Hennepin County, and stormwater management review by Elm Creek Watershed Management Commission. These are typical of residential subdivision approvals at this stage as the Preliminary Plat plans are preliminary drawings of the development. Final Construction Plans are submitted with Final Plat applications and are subject to further review by the City Engineer and must be consistent with the Preliminary Plans. At this stage, the only outstanding item is understanding the applicant's revisions based on county feedback. The developer may request variances to county road setbacks which could impact the lots on the north side of the development along territorial road (possibly 16 lots).

<u>Landscaping and Tree Preservation</u>
Tree preservation plans and landscaping plans have been submitted. The proposed tree removals are consistent with City Code and minimize removals based on required improvements. The proposed landscape plan also conforms to code and proposes a variety of overstory and understory trees of adequate size or height. Additionally, wetland buffers and perimeter landscaping meet buffer and screening standards.

Territorial Road screening is provided and should continue to be provided should setbacks change due to county comments.

Access and Transportation
The proposed main entrance is at Tucker Road. The plan provides internal circulation with public roads and provides one road stub for properties to the south. The upland of the property to the east is provided a route to redevelopment with the inclusion of utility access, and private road access.

Utilities
The developer proposes to construct sewer and water utilities throughout the development and to the stubs of developable adjacent property. Utilities are coming from Big Woods across Territorial Road. Construction costs for offsite or trunk improvements are eligible for credit against development fees.

Grading and Stormwater
Plans have been submitted to the Elm Creek Watershed Management Commission and will be subject to review and approval by ECWMC. Wetland impacts are proposed in Block 1 and a portion of Block 2. Engineering is requesting additional information on drain tiling on site.

Fire review
No outstanding comments currently remain for fire department review. Updated plans will still require review and approval by the Fire Marshall.

Revised Civil Plans shall be consistent with Departments' Review.

Staff Recommendation
This is a public hearing.

Staff Recommends continuing the public hearing and tabling the item for additional time for the application to respond to County comments. An additional variance application for county road setback deviations may be submitted.

Common conditions include:

1. The Developer shall comply with the plat opinion and complete revisions to the Plat as may be required by the City Attorney prior to the recording of the future final plat.
2. The subdivision will be subject to the review, comments by Hennepin County.
3. The Developer shall adequately address comments from the City Engineer and make plans changes as deemed necessary by the City Engineer and Public Works department.
4. The Developer shall satisfy comments from the Fire Chief and/or Fire Marshal.
5. The Stormwater and Grading Plans shall be subject to review and approval by

the Elm Creek Watershed Commission and City Engineer.

6. The Developer and City of Rogers shall execute a Subdivision Agreement for the development, identifying the terms and conditions of the development and fees, escrows, and financial security obligations required of the Developer at time of Final Plat.
7. A stormwater maintenance agreement may be required by the Public Works Department and/or Elm Creek Watershed Commission to determine the disposition and maintenance of the stormwater ponds.

Financial Impact: NA **Source Fund**: NA

Budgeted? N/A

Supporting Documentation

A. Rogers Emerson Grove Pre Plat and Rezoning Narrative 11-24-2025 CD MArkup
B. Emerson Grove - Rogers - Preliminary Plat 11-21-2025
C. Emerson Grove Subdivision - Landscape Plan 2025-21-2025

Emerson Grove

City of Rogers

APPLICATION FOR:
Preliminary Plat

ROGERS, MINNESOTA
November 24, 2025

Introduction

Pulte Homes of Minnesota, LLC ("Pulte") is pleased to be submitting this application.

Our company mission statement is ***"Building Incredible Places Where People Can Live Their Dreams."*** We currently operate under three distinct brands of homebuilding throughout the country: Pulte Homes, Centex Homes, and Del Webb. The office for Pulte's Minnesota Division is in Bloomington. We will sell and build over 700 homes in the Twin Cities a year under the Pulte Homes and Del Webb brands.

Pulte will act as both developer of the property and builder of the homes. The primary contact for Pulte is:

Dean R. Lotter, Director of Land Planning & Entitlement
1650 West 82nd Street
Suite 300
Bloomington, MN 55431
952-219-9082
Dean.Lotter@PulteGroup.com

The owners of the property:

Daniel T. Gmach
(John P. Gmach, Mary Lin Gmach, Robert Gmach, Mary Gmach, Cynthia Gmach, Stephen Gmach, Mary Ann Gmach)
2360 145th Lane NE
Ham Lake, MN 55304

The planner, surveyor, civil engineer, and landscape architect are:

MNHill – John Bender
2999 County Road 42 W
Ste. 100
Burnsville, MN 55306-5904
United States

The Property

Legal Description:

UNPLATTED 21 120 23 THAT PART OF THE EAST HALF OF THE SOUTHEAST QUARTER OF SECTION 21, TOWNSHIP 120, RANGE 23, HENNEPIN

Property Identification Number

(1) 21-120-23-44-0006

Key Facts

R2, no change needed. Existing use is ag

• Existing zoning	Agricultural
• Guided zoning	~~Low Density~~ Residential
• Proposed zoning	R-2
• Proposed use	33 single family homes
• Gross calculations:	
○ Gross area	23.46 acres
○ Wetland	6.69 acres
○ Net Acres	16.77 acres
○ Net Density	2 units/acre
• Dimensions/Setbacks – 70' Single Family Lots	
○ Front setback	25 feet
○ Corner setback	25 feet
○ Rear setback	30 feet
○ County Road	50 feet
○ Side setback	10 feet and 10 feet
○ Minimum lot width	70 feet
○ Minimum lot depth	145 feet

The Homes

Pulte Homes is known for the extraordinary steps that we take to ensure that we are designing and building homes that meet the needs and desires of home buyers. You can click on this link to learn more about Pulte's homebuilding process https://www.pulte.com/design/life-tested. We continually reach out to home buyers and Pulte homeowners to get feedback to improve our home designs. It is what we call Life Tested®. Through this intensive process, we have conceived of and incorporated innovative features such as the Pulte Planning Center, the Everyday Entry, Super Laundry, Oversized Pantry, and the Owner's Retreat. This exhaustive process has played a major part in Pulte's success in **"*Building Incredible Places Where People Can Live Their Dreams*."**

In striving to continually be in lock step with the home buying public, we update the design of our homes frequently. These changes are driven by the desires and tastes of the home buying

public through the process described above. The homes that will be built are outlined below. They will range in price from the low $500k's to the high $600k's for the single-family homes.

Single Family – 70' Lots

- Base square footage: 2,390 to 3,290
- Bedrooms: 2 to 4
- Bathrooms: 2 to 2.5
- 3-stall garages
- basements



The Site Plan

This 23.46 gross acre site is challenged by more than 6 acres of wetlands. Overall, the site is relatively flat, drains to the north and has significant wetlands existing on it. The City of Rogers has guided this land for low density residential, and Pulte is proposing a larger single-family lot development that is consistent with the City’s low-density guidance. No comprehensive plan amendment is needed for this site and since the site is already zoned R-2 no rezoning is

required either. The individual lots are a minimum of 70’ wide with 10’ and 10’ side yard setbacks.

Comp Plan Amendment

A comprehensive plan amendment is not needed for this proposal.

Rezoning

This site is already zoned R-2.

Park Dedication

While our site plan provides a significant amount of open space, we would plan on meeting our park dedication obligations through payment of park dedication fees.

Energy Efficiency

The homes that Pulte will be constructing will have extremely high energy efficiency. Each home is tested using the Home Energy Rating System (HERS) index, which is the industry standard for measuring energy efficiency. Heating, cooling, and water heating constitute the largest cost of homeownership outside of the mortgage. The U.S. Department of Energy has determined that a typical resale home scores 130 on the HERS Index while a home built to the 2004 International Energy Conservation Code is awarded a rating of 100 (lower is more energy efficient). Pulte Homes measures the HERS score of every new home constructed. The average HERS score for our homes runs in the range of 47 to 53. We are building extremely energy efficient homes that dramatically exceed the International Energy Conservation Code threshold.

Phasing & Schedule

The City of Roger’s application schedule suggests that staff review, and possible planning commission and council consideration would occur as follows:

Preliminary plat	February 2026
Site development	Spring 2026
Model home opens	late 2026
Full build of homes	2028/2029

EMERSON GROVE

ROGERS, MINNESOTA

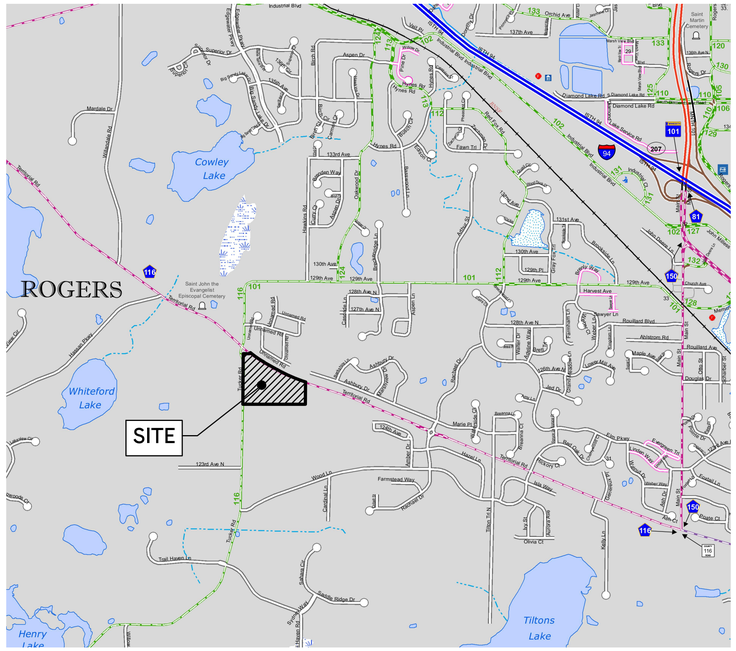
PRELIMINARY PLAT EXHIBITS

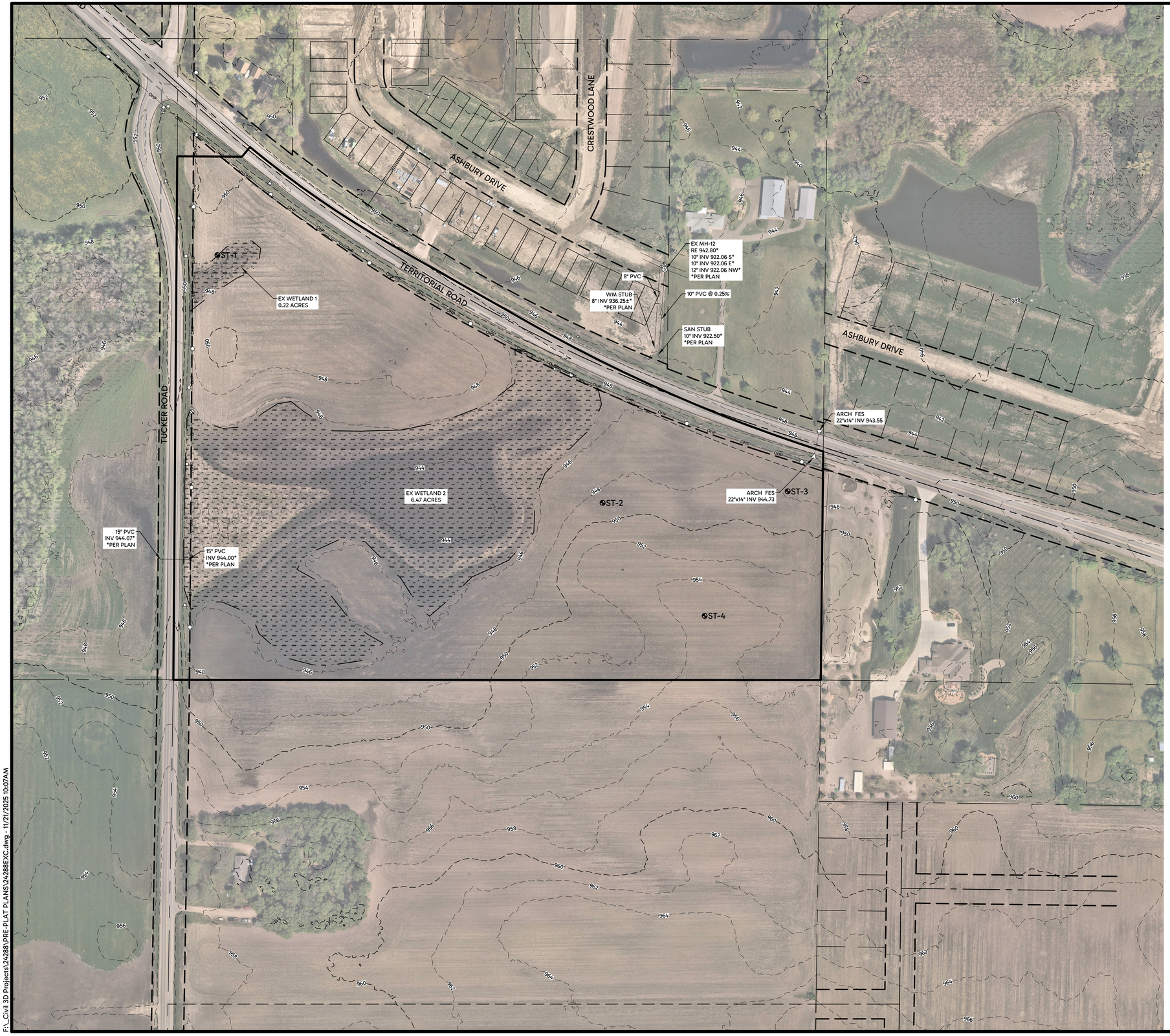
FOR

PULTE GROUP

1650 W. 82ND STREET, SUITE 300, BLOOMINGTON, MN 55431

PHONE: (952) 219-9082


ROGERS
SITE
Cowley Lake
Whiteford Lake
Henry Lake
Tiltons Lake
Diamond Lake Rd
Harvest Ave
Boulevard Blvd
123rd Ave N
Wood Ln
Farmstead Way
Tall Haven Ln
Olivia Ct
Maple Ct
Sandy Ridge Dr
Meadow Ridge Rd
Aspen Dr
Mardale Dr
Hillsdale Rd
Industrial Blvd
Orchid Ave
Saint Martin Cemetery
Saint John the Evangelist Episcopal Cemetery
Rogers Blvd
Main St
Jason St
Brockton Ln
Fawn Trl
Hemlock Ln
Ash Ln
Maple Ln
Oak Ln
Aspen Ln
Meadow Ln
Meadow Ridge Rd
Rogers Dr
Fremont Ln
Fremont Ct
Douglas Dr
Abrahams Rd
Abrahams Ave
Abrahams Dr
Nevada Ave
Nevada Ct
Nevada Cir
Maple Ave
Maple Ln
Maple Ct
Maple Grove Ln
Maple Grove Ct
Maple Grove Cir
Maple Grove Dr
Maple Grove Pkwy
Maple Grove Rd
Maple Grove Trl
Maple Grove Way



LEGEND

- EXISTING WATERMAIN
- EXISTING SANITARY SEWER
- EXISTING STORM SEWER
- EXISTING DRAINTILE
- EXISTING OVERHEAD POWER
- EXISTING GUY WIRE
- EXISTING POWER POLE
- EXISTING CONTOUR
- EXISTING WETLAND EDGE
- EXISTING SIGN
- SB-1 EXISTING SOIL BORING LOCATION
- EXISTING ASPHALT
- EXISTING WETLAND

NOTE

IMAGE SOURCE: HENNEPIN COUNTY GIS, YEAR 2024

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

SCALE IN FEET
0 100 200

HILL INCORPORATED
2999 WEST C.R. 42, SUITE 100
BURNSVILLE, MN 55306
PHONE: 952-890-6044
jbender@mnhill.com
www.mnhill.com

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

PRELIMINARY

Date: _____ Reg.No. _____

EMERSON GROVE
ROGERS, MINNESOTA

EXISTING CONDITIONS

FOR
PULTE GROUP
1650 W. 82ND STREET, SUITE 300, BLOOMINGTON, MN 55431

DRAWN BY
JSO

DATE
11/21/2025

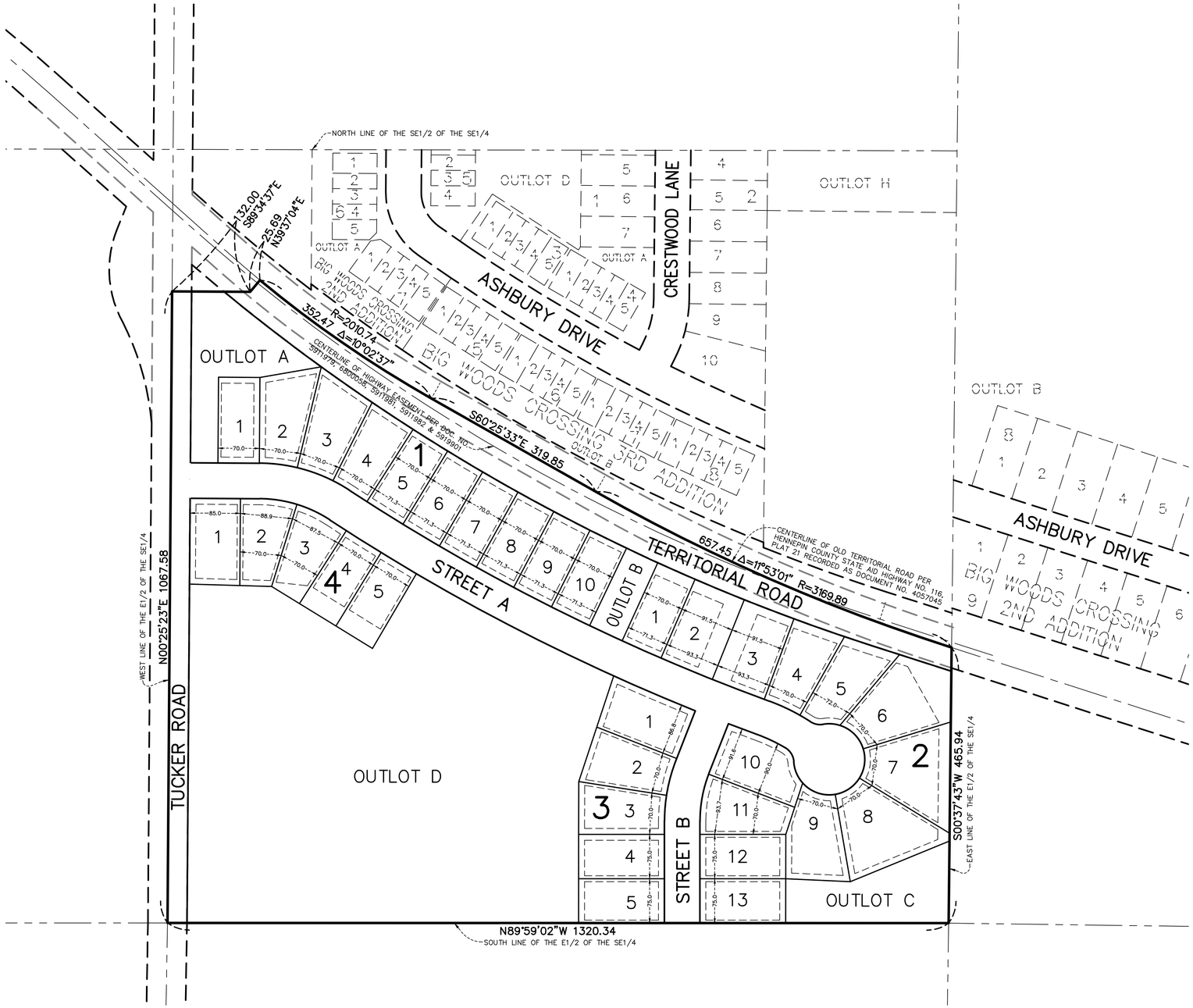
REVISIONS

CAD FILE
24288EXC

PROJECT NO.
24288

1.1

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SURVEYED PROPERTY

Legal Description:

That part of the East Half of the Southeast Quarter of Section 21, Township 120, Range 23, Hennepin County, Minnesota, lying southerly of the centerline of Territorial Road per HENNEPIN COUNTY STATE AID HIGHWAY NO. 116, PLAT 21 recorded as Document No. 4057045, EXCEPT that part commencing at the point on the West line of said above described land which is 9 rods South of the intersection of said West line with the center line of said Territorial Road; thence East 8 rods; thence Northeasterly at right angles with the center line of said road 9 rods, more or less, to the center of said road; thence Northwesterly along the center line of said road, 9 1/2 rods, more or less, to the intersection of said center line with the West line of said above described land; thence South along the said West line 9 rods to point of commencement.

ZONING INFORMATION

CURRENT ZONING:	R2 (Single Family Residential)
PROPOSED ZONING:	R2 (Single Family Residential)

SITE DATA

GROSS AREA	23.46 ACRES
LOTS	33 LOTS
GROSS DENSITY (TOTAL UNITS/GROSS AREA)	1.4 D.U./ACRE
LOTS	9.10 ACRES
R.O.W.	4.81 ACRES
EXISTING TERRITORIAL ROAD	(1.68 ACRES)
EXISTING TUCKER ROAD	(0.81 ACRES)
SUBDIVISION ROADS	(2.32 ACRES)
OUTLOTS	9.55 ACRES
TOTAL	23.46 ACRES

MINIMUM SETBACKS	
FRONT	25 FEET
SIDE (HOUSE & GARAGE)	10 FEET
SIDE (STREET)	20 FEET
REAR	20 FEET

MINIMUM LOT REQUIREMENTS	
LOT SIZE	10,150 S.F.
LOT WIDTH	70 FEET
LOT DEPTH	145 FEET

LOT DATA	
NO. OF LOTS	33 LOTS
SMALLEST LOT SIZE	10,150 S.F.
LARGEST LOT SIZE	18,390 S.F.
AVERAGE LOT SIZE	12,012 S.F.

SCALE IN FEET
0 100 200

HILL INCORPORATED
2999 WEST C.R. 42, SUITE 100
BURNSVILLE, MN 55306
PHONE: 952-890-6044
marcus@mnhill.com
www.mnhill.com

I hereby certify that this survey, plan or report was prepared by me or under my direct supervision and that I am a duly licensed Land Surveyor under the laws of the State of Minnesota.

Date: _____ Reg.No. _____

PRELIMINARY

EMERSON GROVE
ROGERS, MINNESOTA
PRELIMINARY PLAT
FOR
PULTE GROUP
1650 W. 82ND STREET, SUITE 300, BLOOMINGTON, MN 55431

DRAWN BY
PLM

DATE
11/18/2025

REVISIONS

CAD FILE
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PROJECT NO.
24288

2.0

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OUTLOT A
26965 S.F.

OUTLOT D

OUTLOT H

CRESTWOOD LANE

ASHBURY DRIVE

BIG WOODS CROSSING 2ND ADDITION

BIG WOODS CROSSING 3RD ADDITION

OUTLOT A

OUTLOT A

OUTLOT B
80018 S.F.

S89°34'37"E 132.00

25.69
N39°37'04"E

R=2010.74
352.47 Δ=10°02'37"

S60°25'33"E 319.85

1202.45 Δ=2°02'35" R=3274.05

CENTERLINE OF OLD TERRITORIAL ROAD PER HENNEPIN COUNTY STATE AID HIGHWAY NO. 116 PLAT 27, RECORDED AS DOCUMENT NO. 4057045

CENTERLINE OF HIGHWAY EASEMENT PER DOC. NO. 5911978, 5800058, 5911982 & 5919901

657.45 Δ=11°53'01" R=3169.89

TERRITORIAL ROAD

STREET A

802.97 Δ=13°09'35" R=3496.05
721.65 Δ=11°49'37"

143.18 Δ=32°48'49" R=250.00

N00°25'23"E 1067.58

TUCKER ROAD

1 10150 S.F.
2 13029 S.F.
3 13186 S.F.
4 10932 S.F.
5 10203 S.F.
6 10203 S.F.
7 10203 S.F.
8 10203 S.F.
9 10203 S.F.
10 10203 S.F.

1 12408 S.F.
2 11053 S.F.
3 10978 S.F.
4 10357 S.F.
5 10356 S.F.

1 10203 S.F.
2 13337 S.F.
3 13337 S.F.
4 11496 S.F.

SCALE IN FEET
0 50 100

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www.mnhill.com

I hereby certify that this survey, plan or report was prepared by me or under my direct supervision and that I am a duly licensed Land Surveyor under the laws of the State of Minnesota.

PRELIMINARY

Reg.No.

Date:

EMERSON GROVE
ROGERS, MINNESOTA
PRELIMINARY PLAT
FOR
PULTE GROUP
1650 W. 82ND STREET, SUITE 300, BLOOMINGTON, MN 55431

DRAWN BY
PLM

DATE
11/18/2025

REVISIONS

CAD FILE
24288PP-2.dwg

PROJECT NO.
24288

2.1

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Consider platting through.

TUCKER ROAD

N00°25'23"E 1067.58

748.08

572.83

TERRITORIAL ROAD

657.45 Δ=11°53'01" R=3169.89

S25°33'33"E 319.85

CENTERLINE OF OLD TERRITORIAL ROAD PER HENNEPIN COUNTY STATE AID HIGHWAY NO. 116, PLAT 21 RECORDED AS DOCUMENT NO. 4057045

CENTERLINE OF HIGHWAY EASEMENT 47 PER DOC. NO. 5911979, 6800058, 5911981, 5911982 & 5919901

1202.45 Δ=21°02'35" R=3274.05

BIG WOODS CROSSING 3RD ADDITION

OUTLOT B

STREET A

802.97 Δ=13°09'35" R=3496.05

721.65 Δ=11°49'37"

143.18 Δ=32°48'49" R=250.00

OUTLOT D
355008 S.F.

STREET B

OUTLOT C
25298 S.F.

S00°37'43"W 465.94

N89°59'02"W 1320.34

SCALE IN FEET
0 50 100

F:_Civil 3D Projects\24288\PRE-PLAT PLANS\24288pp-2.dwg - 11/21/2025 10:07AM

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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.

Reg.No.

Date:

PRELIMINARY

EMERSON GROVE
ROGERS, MINNESOTA

PRELIMINARY PLAT
FOR
PULTE GROUP
1650 W. 82ND STREET, SUITE 300, BLOOMINGTON, MN 55431

DRAWN BY
PLM

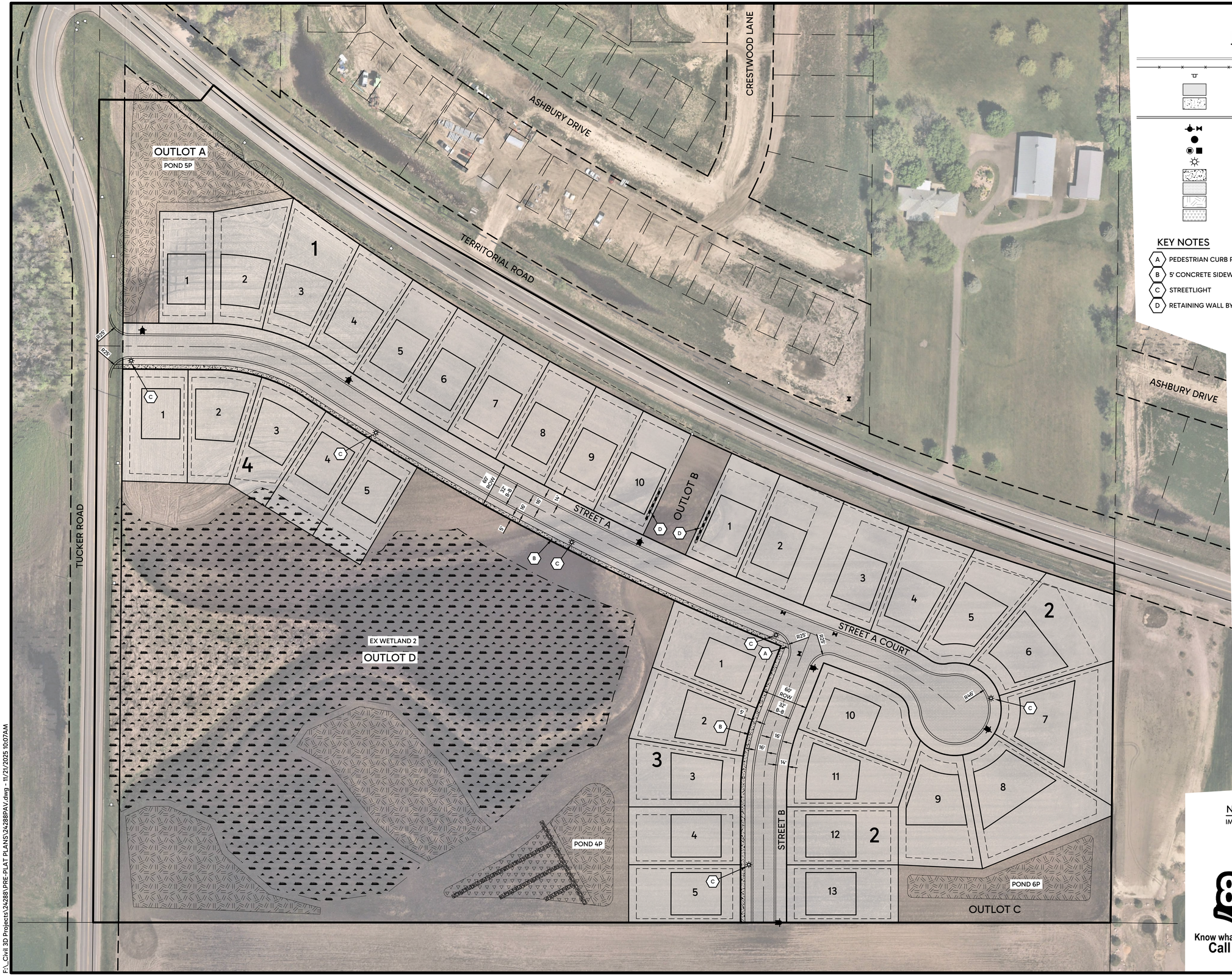
DATE
11/18/2025

REVISIONS

CAD FILE
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PROJECT NO.
24288

2.2



LEGEND

- EXISTING CURB & GUTTER
- EXISTING FENCE
- EXISTING SIGN
- EXISTING ASPHALT
- EXISTING CONCRETE
- PROPOSED CURB & GUTTER
- PROPOSED WATERMAIN STRUCTURE
- PROPOSED SANITARY SEWER STRUCTURE
- PROPOSED STORM SEWER STRUCTURE
- PROPOSED STREETLIGHT
- PROPOSED CONCRETE
- PROPOSED BITUMINOUS SURFACE
- PROPOSED SEDIMENT BASIN
- PROPOSED FILTRATION BASIN

KEY NOTES

- A PEDESTRIAN CURB RAMP
- B 5' CONCRETE SIDEWALK
- C STREETLIGHT
- D RETAINING WALL BY HOME BUILDER - MAX 4' HEIGHT

ZONING INFORMATION

CURRENT ZONING:	R2 (Single Family Residential)
PROPOSED ZONING:	R2 (Single Family Residential)

SITE DATA

GROSS AREA	23.46 ACRES
LOTS	33 LOTS
GROSS DENSITY (TOTAL UNITS/GROSS AREA)	1.4 D.U./ACRE
LOTS	9.10 ACRES
R.O.W.	4.81 ACRES
EXISTING TERRITORIAL ROAD	(1.68 ACRES)
EXISTING TUCKER ROAD	(0.81 ACRES)
SUBDIVISION ROADS	(2.32 ACRES)
OUTLOTS	9.55 ACRES
TOTAL	23.46 ACRES

MINIMUM SETBACKS

FRONT	25 FEET
SIDE (HOUSE & GARAGE)	10 FEET
SIDE (STREET)	20 FEET
REAR	20 FEET

MINIMUM LOT REQUIREMENTS

LOT SIZE	10,150 S.F.
LOT WIDTH	70 FEET
LOT DEPTH	145 FEET

LOT DATA

NO. OF LOTS	33 LOTS
SMALLEST LOT SIZE	10,150 S.F.
LARGEST LOT SIZE	18,390 S.F.
AVERAGE LOT SIZE	12,012 S.F.

NOTE

IMAGE SOURCE: HENNEPIN COUNTY GIS, YEAR 2024

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PHONE: 952-890-6044
jbender@mnhill.com
www.mnhill.com

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PRELIMINARY

Date: _____ Reg.No. _____

EMERSON GROVE
ROGERS, MINNESOTA

OVERALL SITE PLAN

FOR
PULTE GROUP
1650 W. 82ND STREET, SUITE 300, BLOOMINGTON, MN 55431

DRAWN BY
JSO

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11/21/2025

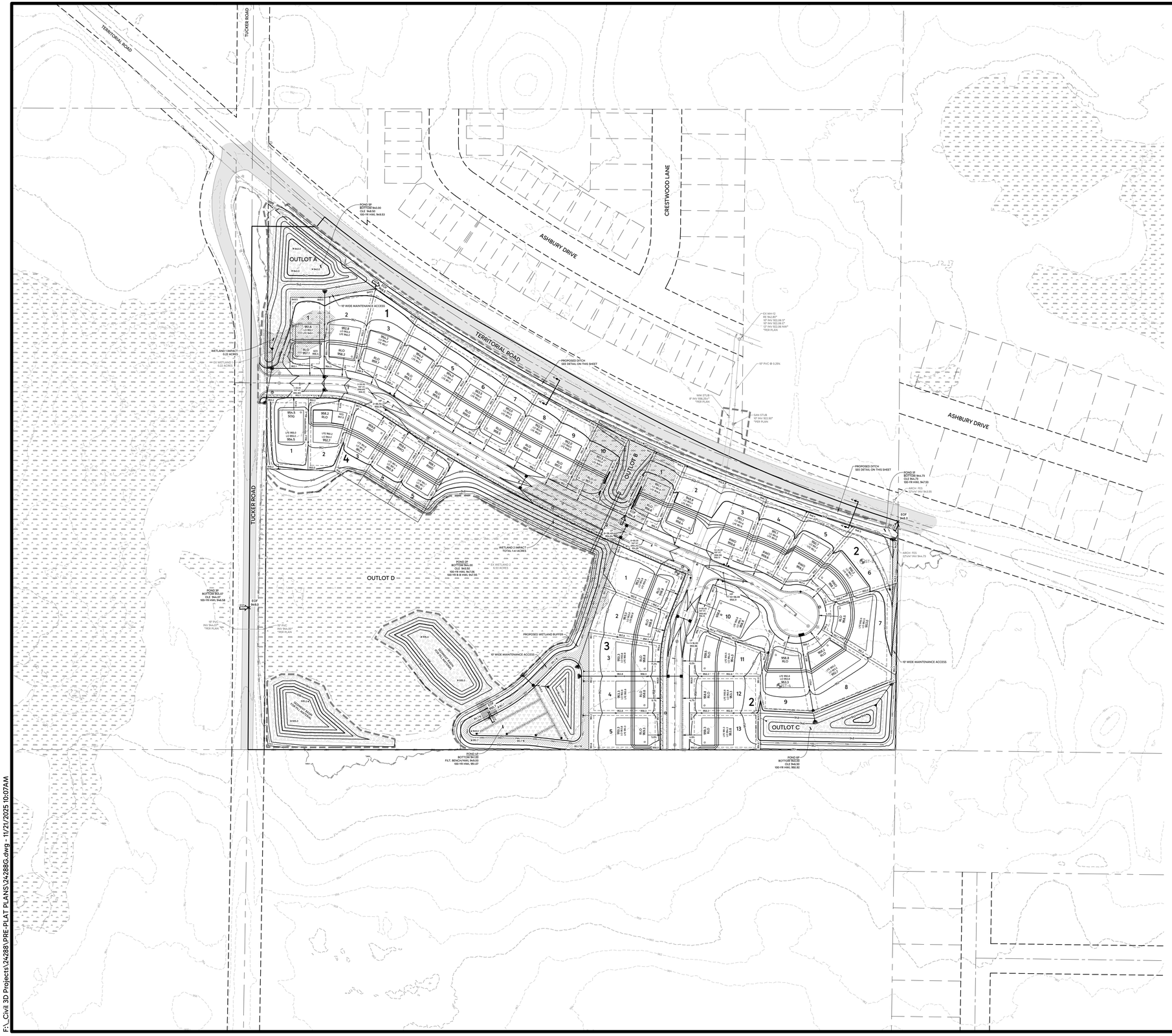
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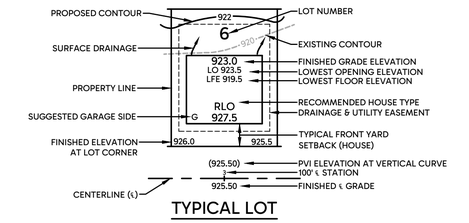
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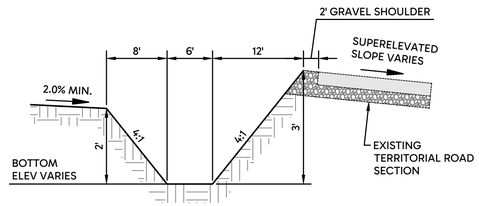


LEGEND

- EXISTING WATERMAIN
- EXISTING SANITARY SEWER
- EXISTING STORM SEWER
- EXISTING DRAINTILE
- EXISTING OVERHEAD POWER
- EXISTING GUY WIRE
- EXISTING POWER POLE
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- EXISTING SOIL BORING LOCATION
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- PROPOSED FILTRATION BASIN
- PROPOSED WETLAND IMPACT
- PROPOSED POND MAINTENANCE ACCESS



TYPICAL LOT



TERRITORIAL ROAD SOUTH DITCH
TYPICAL SECTION A-A

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PRELIMINARY

Date: _____ Reg.No. _____

EMERSON GROVE
ROGERS, MINNESOTA

GRADING & DRAINAGE PLAN

FOR
PULTE GROUP
1650 W. 82ND STREET, SUITE 300, BLOOMINGTON, MN 55431

DRAWN BY
JSO

DATE
11/21/2025

REVISIONS

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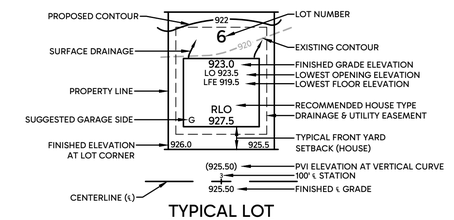
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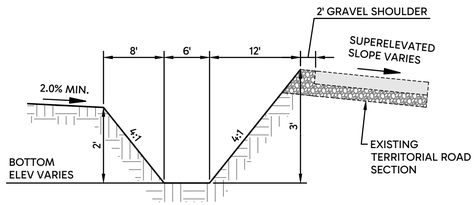
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LEGEND

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TYPICAL LOT



TERRITORIAL ROAD SOUTH DITCH
TYPICAL SECTION A-A

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Date: _____

EMERSON GROVE
ROGERS, MINNESOTA

GRADING & DRAINAGE PLAN

FOR
PULTE GROUP
1650 W. 82ND STREET, SUITE 300, BLOOMINGTON, MN 55431

DRAWN BY
JSO

DATE
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REVISIONS

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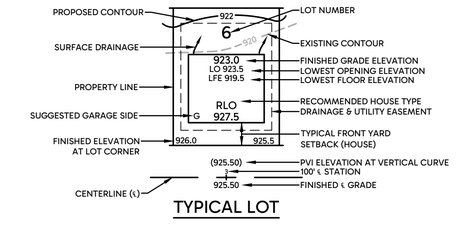
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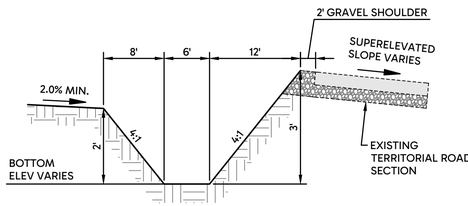
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LEGEND

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TYPICAL LOT



TERRITORIAL ROAD SOUTH DITCH
TYPICAL SECTION A-A

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PRELIMINARY

Date: _____ Reg.No. _____

EMERSON GROVE

ROGERS, MINNESOTA

GRADING & DRAINAGE PLAN

FOR
PULTE GROUP
1650 W. 82ND STREET, SUITE 300, BLOOMINGTON, MN 55431

DRAWN BY
JSO

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TERRITORIAL ROAD

ASHBURY DRIVE

OUTLOT B

OUTLOT C

EX MH-12
RE 942.80*
10" INV 922.06 S*
10" INV 922.06 E*
12" INV 922.06 NW*
*PER PLAN

10" PVC @ 0.25%

WM STUB
8" INV 936.25s*
*PER PLAN

SAN STUB
10" INV 922.50*
*PER PLAN

PROPOSED DITCH
SEE DETAIL ON THIS SHEET

WETLAND 2 IMPACT
TOTAL 1.41 ACRES

EX WETLAND 2
6.53 ACRES

POND 2P
BOTTOM 944.00
OLE 945.50
100-YR HWL 947.06
100-YR B-B HWL 947.93

POND 1P
BOTTOM 944.73
OLE 944.73
100-YR HWL 947.53

ARCH FES
22"x14" INV 943.55

EOF 948.0

ARCH FES
22"x14" INV 944.73

PROPOSED WETLAND BUFFER

10' WIDE MAINTENANCE ACCESS

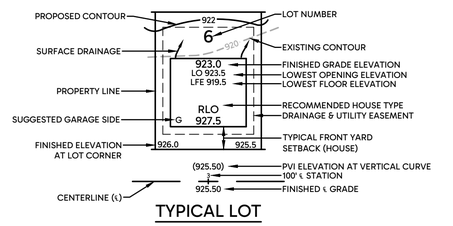
SEDIMENT BASIN
FOR FILL MATERIAL

POND 4P
BOTTOM 941.00
FILT. BENCH/NWL 949.00
100-YR HWL 951.07

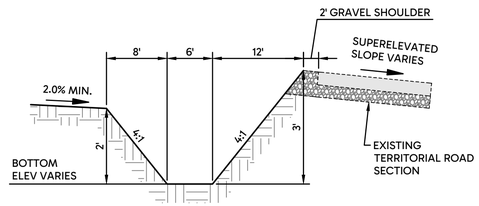
POND 6P
BOTTOM 940.00
OLE 946.50
100-YR HWL 950.92

LEGEND

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TYPICAL LOT



TERRITORIAL ROAD SOUTH DITCH
TYPICAL SECTION A-A

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PRELIMINARY

Date: _____ Reg.No. _____

EMERSON GROVE
ROGERS, MINNESOTA

GRADING & DRAINAGE PLAN

FOR
PULTE GROUP
1650 W. 82ND STREET, SUITE 300, BLOOMINGTON, MN 55431

DRAWN BY
JSO

DATE
11/21/2025

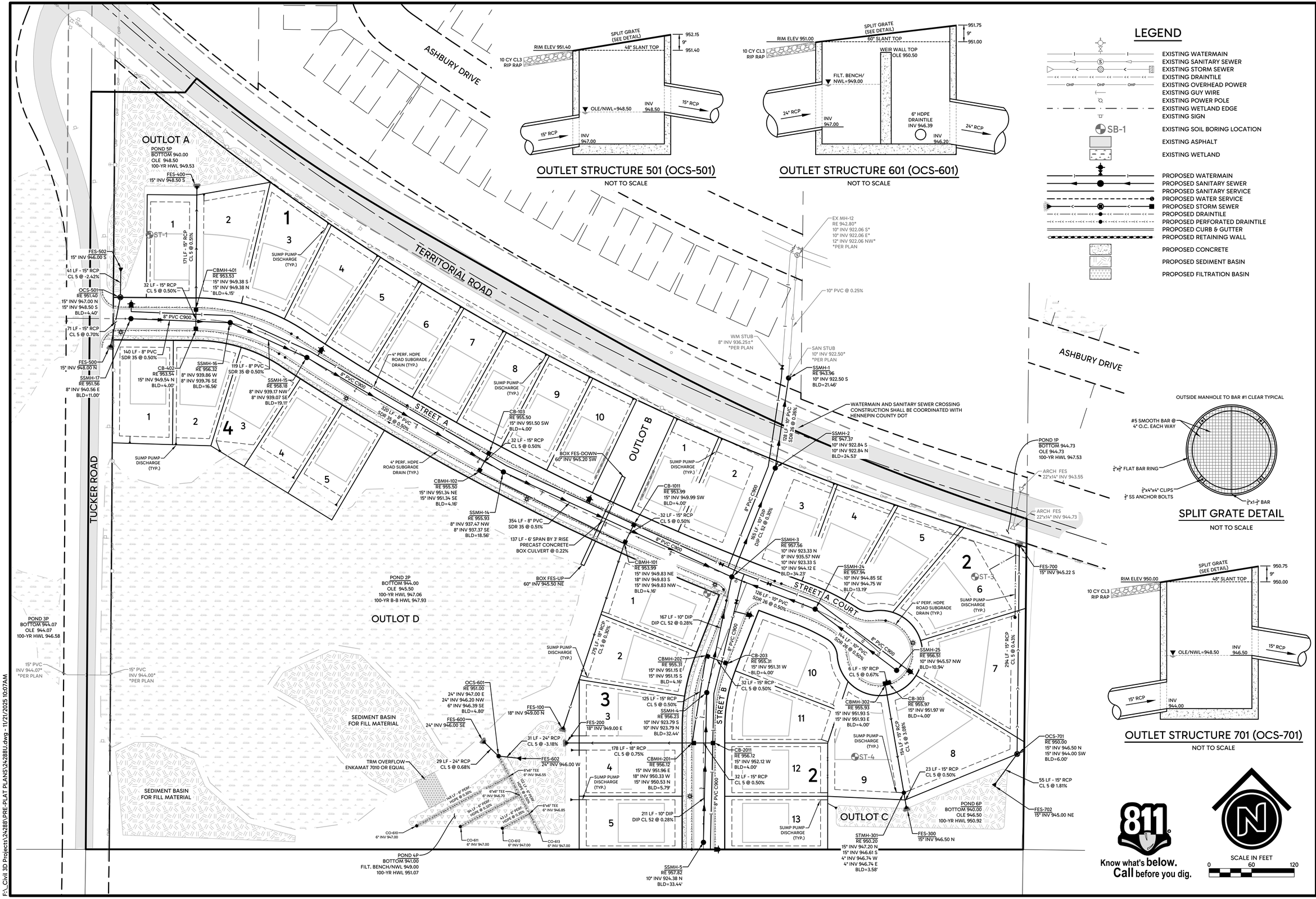
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LEGEND

- EXISTING WATERMAIN
- EXISTING SANITARY SEWER
- EXISTING STORM SEWER
- EXISTING DRAINTILE
- EXISTING OVERHEAD POWER
- EXISTING GUY WIRE
- EXISTING POWER POLE
- EXISTING WETLAND EDGE
- EXISTING SIGN
- SB-1 EXISTING SOIL BORING LOCATION
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PRELIMINARY

Date: _____ Reg.No. _____

EMERSON GROVE
ROGERS, MINNESOTA
UTILITY PLAN
FOR
PULTE GROUP
1650 W. 82ND STREET, SUITE 300, BLOOMINGTON, MN 55431

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PROJECT NO.
24288

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NOTES

1. ALL DISTURBED GREEN SPACE AREAS NOT NOTED ON THE PLAN SHALL BE SEEDED & MULCH WITH MNDOT "MESIC INSLOPE" SEED MIX (FKA GENERAL ROADSIDE MIX 25-141).
2. OUTLOTS AND PREVIOUSLY FARMED AREAS OUTSIDE OF GRADING LIMITS SHALL BE RESTORED WITH BWSR SEED MIX 33-261 OR 34-263. SEE PLAN FOR LOCATIONS.
3. REDUNDANT PERIMETER CONTROL REQUIRED FOR ALL DISTURBANCES WITHIN 50' OF THE EXISTING WETLAND EDGE, SUCH AS DOUBLE ROW OF SILT FENCE. A SLASH MULCH BERM AT LEAST 12" HIGH IS ACCEPTABLE AS A SECONDARY PERIMETER CONTROL.

LEGEND

- EXISTING WATERMAIN
- EXISTING SANITARY SEWER
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- PROPOSED SEDIMENT BASIN
- PROPOSED FILTRATION BASIN
- PROPOSED WETLAND IMPACT
- PROPOSED POND MAINTENANCE ACCESS
- PROPOSED SILT FENCE
- PROPOSED SILT FENCE POST CONSTRUCTION
- PROPOSED WIMCO OR EQUAL POST STORM SEWER CONSTRUCTION
- PROPOSED YARD CB INLET PROTECTION POST STORM SEWER CONSTRUCTION
- PROPOSED DITCH CHECK - POST GRADING/UTILITY CONSTRUCTION
- PROPOSED TEMPORARY ROCK CONSTRUCTION ENTRANCE
- DIRECTION OF DRAINAGE

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Date: _____ Reg.No. _____

EMERSON GROVE
ROGERS, MINNESOTA

EROSION & SEDIMENT CONTROL PLAN

FOR
PULTE GROUP
1650 W. 82ND STREET, SUITE 300, BLOOMINGTON, MN 55431

DRAWN BY
JSO

DATE
11/21/2025

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NOTES

1. ALL DISTURBED GREEN SPACE AREAS NOT NOTED ON THE PLAN SHALL BE SEEDED & MULCH WITH MNDOT "MESIC INSLOPE" SEED MIX (FKA GENERAL ROADSIDE MIX 25-141).
2. OUTLOTS AND PREVIOUSLY FARMED AREAS OUTSIDE OF GRADING LIMITS SHALL BE RESTORED WITH BWSR SEED MIX 33-261 OR 34-263. SEE PLAN FOR LOCATIONS.
3. REDUNDANT PERIMETER CONTROL REQUIRED FOR ALL DISTURBANCES WITHIN 50' OF THE EXISTING WETLAND EDGE, SUCH AS DOUBLE ROW OF SILT FENCE. A SLASH MULCH BERM AT LEAST 12" HIGH IS ACCEPTABLE AS A SECONDARY PERIMETER CONTROL.

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- PROPOSED SEDIMENT BASIN
- PROPOSED FILTRATION BASIN
- PROPOSED WETLAND IMPACT
- PROPOSED POND MAINTENANCE ACCESS
- A — PROPOSED MNBWSR SEED MIX 32-231 TOTAL 1.5X AREA = 1.46 AC
- B — PROPOSED MNBWSR SEED MIX 33-261 TOTAL 1.5X AREA = 3.80 AC
- C — PROPOSED MNDOT MESIC INSLOPE SEED MIX TOTAL 1.5X AREA = 13.91 AC
- D — PROPOSED MNBWSR SEED MIX 34-266 TOTAL 1.5X AREA = 6.24 AC

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Date: _____ Reg.No. _____

EMERSON GROVE
ROGERS, MINNESOTA
EROSION & SEDIMENT CONTROL PLAN
SEEDING PLAN
FOR
PULTE GROUP
1650 W. 82ND STREET, SUITE 300, BLOOMINGTON, MN 55431

DRAWN BY
JSO

DATE
11/21/2025

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PROJECT NO.
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EMERSON GROVE - ROGERS, MN
These plans shall be considered part of the project Storm Water Pollution Prevention Plan (SWPPP.) A copy of the SWPPP shall remain on site throughout active construction.

PROJECT SUMMARY
Emerson Grove is a single-family residential development project. The project includes construction of building pads, streets, utilities and stormwater management basins.

TYPE OF PROJECT: Platting and development of 33 Single-family Residential Lots

TYPE OF WORK: Clearing and grubbing, demolition of existing houses, mass grading, utility and street construction and installation of phone, communication, gas and electric utilities.

TOTAL SITE AREA: 23.46 AC

TOTAL DISTURBED AREA: 16.65 AC

EXISTING IMPERVIOUS AREA: 1.080 AC

PROPOSED (DESIGN) IMPERVIOUS AREA: 4.084 AC

IMPAIRED WATERS: Cowley Lake has an EPA-approved impairment for: Nutrients.

These impairment(s) are considered to be construction related parameters and require the additional best management practices (BMPs) found in items 23.9 and 23.10 of the permit if the project has a discharge point on the project within 1 mile (aerial radius measurement) of, and flows to the impaired water.

23.9:
Permittees must immediately initiate stabilization of exposed soil areas, as described in item 8.4, and complete the stabilization within seven (7) calendar days after the construction activity in that portion of the site temporarily or permanently ceases.

23.10:
Permittees must provide a temporary sediment basin as described in Section 14 for common drainage locations that serve an area with five (5) or more acres disturbed at one time.

A mandatory Stormwater Pollution Prevention Plan (SWPPP) review is required by the MPCA if the project will disturb over 50 acres and has a discharge point on the project within 1 mile (aerial radius measurement) of, and flows to the impaired water. Owners must submit the application for coverage and the SWPPP at least 30-days before the construction start date. The SWPPP can be attached electronically when using the online application.

ENVIRONMENTAL REVIEW
No environmental reviews were performed for the site, nor were any required by the City of Rogers or for other agency approvals.

CONSTRUCTION PHASING
Mass grading will be one phase. Site grading and demolition may occur simultaneously. Mass grading is anticipated to take 3-4 weeks, which will include the construction of the stormwater basins. Utility installation will immediately follow grading. Upon completion of utilities, street construction will take place. Final construction work prior to home construction includes installation of phone, cable, gas and electric utilities, as well as retaining wall construction.

MPCA STORMWATER PERMIT - RESPONSIBILITY
Pulte Group is the Owner for the development. The owner will apply for the Stormwater Permit and shall remain responsible for implementation of the SWPPP until final stabilization and filing of the N.O.T. or Subdivision Registration Form.

OWNER/DEVELOPER:
Dean Lotter - Pulte Group - 952-219-9082

PERMITTEE:
Dean Lotter - Pulte Group - 952-219-9082

OPERATOR(S):
TBD

ENGINEER:
John Bender, PE - Hill Incorporated - 952-890-6044

LGU CONTACT:
Doran Cote - City of Rogers - 763-428-8580

MPCA COMPLIANCE:
Matt Hoskins - 651-757-2864

The Contractor shall follow the implementation sequence as described on these plans. Amendments shall be made as site conditions change. Amendments shall be reviewed by the engineer.

IMPLEMENTATION OF THE SWPPP
The GENERAL CONTRACTOR (GC) or their subcontractor is responsible for implementation of the SWPPP. Contractor has or will provide trained personnel responsible for inspection of erosion and sediment control BMPs. Either the Contractor or their subcontractor will provide trained personnel responsible for installing and maintaining erosion and sediment control BMPs.

Long term operation and maintenance of the permanent stormwater management system will the responsibility of City of Rogers.

DOCUMENTATION OF TRAINED INDIVIDUALS
Prior to start of construction, GC and/or their subcontractors shall ensure they have proper documentation for all individuals involved in implementing the SWPPP, as well as all involved individuals as described in section 21 of the General Stormwater Permit.

SWPPP Design: Josh Olson, PE, training by University of Minnesota "Design of Construction SWPPP, 6/1/2023-5/31/2026. Instructor: Online.

SWPPP Contact for Contractor:

Alternate SWPPP Contact for Contractor:

REQUIREMENTS FOR NOTICE OF TERMINATION (NOT)
Before the submitting the NOT, the permittee must meet the following requirements:

1. All construction activity associated with the project must be completed.
2. All pervious surfaces must be stabilized with permanent vegetative cover having a growth density of 70% of the expected full growth density (unless a specific area of the site specifies no vegetation.)
3. The stormwater treatment system (basins, pipes, structures, ditches, swales, etc.) is cleaned, removing all accumulation of sediment and debris.
4. All synthetic erosion and sediment prevention BMPs have removed.

RECORD RETENTION
During construction, the Contractor must retain a copy of the SWPPP and any amendments thereto on site at all times (or on the portion of the site for which the Contractor has control.) The SWPPP may be kept in a designated repository, in the construction field office or in an on-site vehicle during normal working hours. Copies of all maintenance records, inspection reports shall also be retained on site with the SWPPP.

Upon completion of all construction and submittal of the NOT, the Owner shall retain the SWPPP documents for no less than three years, including the final SWPPP, other stormwater related permits, inspection and maintenance records, SWMP operational and maintenance agreements, and any other documents or binding agreements that relate to the operation and maintenance of the SWMP.

GC and/or their subcontractors shall ensure they have proper documentation for all individuals involved.

POTENTIAL FOR EROSION AND DISCHARGE OF SEDIMENT
There is moderate potential for erosion to occur. Certain portions of the site have grades exceeding 5% and shall be closely managed to prevent erosion. Temporary sediment traps or basins shall be considered in the final SWPPP implementation. Redundant protection is required along all wetlands. Contractor shall be required to appropriately manage individual erosion-prone areas, using BMP's suitable for the particular application.

GENERAL CONSTRUCTION SEQUENCING
1. Install perimeter control. Install inlet protection on existing structures.
2. Perform any clearing, as needed.
3. Perform demolition and debris removal.
4. Place topsoil perimeter berms and stabilize with seed and mulch.
5. Grade stormwater basins. Perform mass grading. As sheet drainage patterns develop, place silt fence or filter dikes as necessary to dissipate sediment transfer.
6. Construct utilities and pavements.
7. Construct buildings and structures.
8. Install phone, cable, gas and electric utilities.
9. Stabilize basins and swales with final stabilization. Stabilize landscape areas with final permanent vegetation, landscaping or turf. Stabilize future development areas with temp seed and mulch until final site development stage.

GUIDANCE FOR TIMING OF BMP INSTALLATION
Prior to Start of Construction
1. Install all new perimeter control BMPs as specified on plans prior to start of construction. Ensure that all existing perimeter control BMPs are functional.
2. Install or establish stabilized construction entrance.
3. Install protection devices on existing ponds, outlets, storm sewer inlets, etc. prior to start of construction.
4. Install sediment control practices on down gradient site perimeters.

During Construction
1. Identify topsoil stockpile locations and stabilize with temporary seed and mulch.
2. Areas in which construction becomes inactive must have stabilization commence immediately and be completed no later than 7 days after construction activity in that area has either temporarily or permanently ceased.
3. Provide temporary or permanent energy dissipation at all pipe outlets within 24 hours of connection to a Surface Water.
4. Minimize active construction areas. Where possible, establish final grade and stabilize with permanent vegetation, particularly around stormwater basins, filter strips, berms, etc.
5. During grading construction, utilize street "hold down" areas for sediment trapping. Direct overland construction runoff towards stormwater basins to the fullest extent practicable.
6. After construction is completed and grades are certified in a particular area of the site, review that the area is ready for permanent vegetation or other permanent cover.
7. Identify locations where topsoil stockpiles will be placed for builders. Stabilize with temporary seed and mulch and install perimeter control around stockpile circumference. Stockpiles shall be located outside of natural buffers or surface waters, included stormwater conveyances, unless there is a bypass in place.

During Inactivity or After Construction
1. Areas in which construction becomes inactive must have stabilization commence immediately and be completed no later than **7 days** after construction activity in that area has either temporarily or permanently ceased.
2. Final stabilization cover types are shown on **Sheet X** of the plan set. Final cover consists of vegetation, paved or gravel surfaces, sod, landscaping and buildings.
3. At the point where vegetated cover has achieved 70% of expected full growth density, vegetated areas can be considered fully stabilized. Removal of synthetic sediment control BMPs can be initiated.
4. Basins that have received sediment deposits shall be re excavated to plan grade, removing accumulated sediment. Verify final grade and basin capacities.
5. Inlet protection devices can be removed from structures as the attributing drainage area becomes fully stabilized.
6. Maintain street and drive sweeping activities until construction activities are fully completed.

EROSION CONTROL BMPs
The construction plans anticipate the use of, but are not limited to, the following Erosion Control BMPs:
1. Stabilized Construction Entrance
2. Temporary straw mulch as needed.
3. Seed and mulch
4. Erosion Control Blanket
5. Turf Reinforcement Mat (TRM)
6. Rip rap
7. Minimize active or disturbed work areas

SEDIMENT CONTROL BMPs
The construction plans anticipate the use of, but are not limited to, the following Sediment Control BMPs
1. Sediment traps constructed in street subcut or other strategic locations.
2. Rock filter dikes in street subcut.
3. Utilize permanent stormwater basins as Temporary Sediment Basins.
4. Silt fence at project perimeter or toe of slopes.
5. Inlet protection on existing catch basins.
6. Inlet protection on existing culverts.
7. Inlet protection after utility construction.
8. Rock checks or bio roll checks.
9. Linear control along back of new curb and gutter or concrete (bio-roll or silt fence).
10. Post construction silt fence along normal wetted perimeters of basins and filter strips.
11. Routine street sweeping adjacent to construction entrance.

Refer to plans for designated locations of BMPs, details and implementation notes.
All BMP's selected and implemented shall be appropriate for the time of year, the current site conditions and for the estimated duration of use.

Enhancing sedimentation with the use chemicals and chemical treatment systems is NOT anticipated for this project.

BASIN AND TRAP DEWATERING BMPs
Should the need arise for basin or trap dewatering, Contractor shall utilize a floating skimmer pump intake, such that the water is drawn from the surface of the basin. Pumped effluent shall be discharged, to the extent feasible, over well-vegetated upland areas. Effluent shall not be discharged into Surface Waters in a visually turbid state. Turbid effluent shall be filtered with mechanical devices, chemical filtering, or a combination thereof, until it is no longer visually turbid.

POLLUTION CONTROL BMPs
BMP's and good housekeeping should be implemented to prevent spills, pollutants or chemicals from entering the drainage system.

1. Fueling: A fixed fueling station is not anticipated. Contractor will be required to implement BMPs for onsite re-fueling of equipment.
2. Concrete Washout: Refer to MPCA's recommendation for concrete washouts. The developer has the ability to adjust location or to provide alternative washout containment.
3. There is not an anticipated need for storing chemicals, paints, solvents or other potentially toxic or hazardous materials on site. If at some point there is a need to store them on site, they must be stored in a receptacle or container capable of retaining spills. The container must be fenced and locked from unauthorized access.
4. Portable toilets shall be positioned and secured to prevent tipping over.

SEED & MULCH SPECIFICATIONS
Seed placed for permanent cover or final stabilization requires 6" minimum topsoil cover. Exception: Infiltration basins - see basin details for soil type). Multiple site visits will be required to accommodate permanent or temporary stabilization as required during the phases of construction. Refer to MnDOT Seeding Manual, Latest Edition for more details.

1) General Mix
A. Seed: Mesic Inslope at a rate of 65 lb/acre
B. Fertilizer: Type 1 20-10-20 NPK at a rate of 200 lb/acre
C. Mulch: MNDOT Type 1 at a rate of 2 tons/acre
2) Native Mix
A. Seed: BWSR Mix 32-231 Mesic to Dry Buffer at a rate of 37.5 lb/acre
B. Fertilizer: Type 1 20-10-20 NPK at a rate of 200 lb/acre
C. Mulch: MNDOT Type 3 at a rate of 2 tons/acre
3) Stormwater Basins/Wet Soils
A. Seed: BWSR Mix 33-261 Stormwater at a rate of 35.0 lb/acre
B. Fertilizer: Type 3 slow release 22-5-10 NPK at a rate of 200 lb/acre
C. Mulch: MNDOT Type 3 at a rate of 2 tons/acre
4) Wetlands
A. Seed: BWSR Mix 34-266 Wet Prairie at a rate of 32.5 lb/acre
B. Fertilizer: Type 3 slow release 22-5-10 NPK at a rate of 200 lb/acre
C. Mulch: MNDOT Type 3 at a rate of 2 tons/acre

INSPECTION AND MAINTENANCE OF BMPs
Routine Inspection
1. Rock Entrances - Inspect weekly. If rock becomes filled with sediment and tracked material to the extent the purpose ceases to function, remove the contaminated rock and replace with new rock.
2. Stabile Concrete Entrance - Inspect weekly. Remove dirt and debris and sweep regularly to control dust.
3. Silt fence - Inspect weekly, particularly for damaged sections, breaches, down-gradient areas, flow concentration points, scour areas and sections adjacent to sensitive areas. Where capacity is filled to more than 50% of depth, sediment shall be removed to restore capture capacity.
4. Sediment traps and basins - Inspect weekly. Where capacity is filled to more than 50% of depth, sediment shall be removed to restore capture capacity within 72 hours of discovery.
5. Inlet Protection - Inspect weekly or more frequently as needed after multiple rainfalls less than 0.5". Verify intake capacity is not compromised. Where capacity is filled to more than 50% of depth, sediment shall be removed to restore capture capacity.
6. Slope - inspect steep slopes for rills and gullies, often forming after placement of topsoil, seed and erosion control blanket. As a guide, repair and re stabilize eroded areas where rills exceed 6" in depth.
7. Inspect other site-specific BMP's on a weekly basis minimum.

Rain Event Inspection - Mandatory, within 24 hours after a rain event 0.5" or greater. Complete all items associated with Routine Inspection. Furthermore, inspect site for breaches, failures, scours and gullying. Take corrective actions as necessary to restore functionality to the BMP's. If a given situation is discovered to be prone to repetitive failure, advise the Engineer and Contractor for SWPPP and BMP amendments.

ADDITIONAL SWPPP NOTES
1. All Erosion and Sediment Control facilities shall be maintained by the Contractor during the construction operations. Any temporary facilities which are to be removed as called for on these plans and specifications shall be removed by the Contractor at the time directed by the engineer. The Contractor shall then restore the subsequently disturbed areas in accordance with these plans and specifications.
2. Wherever practical and feasible, the Contractor shall protect and preserve existing natural trees, grass and other vegetative cover in effort to provide natural buffering and filtering of runoff.
3. Contractor shall be adaptable in adjusting construction schedules in anticipation of weather forecasts of precipitation, in order to minimize risk of erosion and sediment transport.
4. It is the responsibility of the Contractor to keep public streets, travel ways, parking lots and trails utilized for ingress to and egress from the construction site free of dirt, sediment and debris, resulting from construction activity. Cost for this shall be considered incidental to the contract.
5. Adequate control of dust shall be maintained by the Contractor. Cost for dust control shall be considered incidental to the contract.
6. Perimeter controls shall not be removed until final stabilization of areas draining toward the control devices.
7. When temperatures do not exceed 40° F, areas that require seed and mulch stabilization shall be dormant seeded. Application rate shall be two times the normal rate. No dormant seeding shall be done on ice or snow greater than 2" in depth.
8. Any areas that were seeded that do not achieve 70% coverage shall be reseeded at the Contractor's expense, where coverage limitation is caused by lack of seed germination and growth.

STORMWATER BASIN MAINTENANCE
All stormwater basins within the project will be owned and maintained by the City. Suggested practices are as follows:

1. For the first three years after construction, basins should be inspected for obvious signs of erosion, such as gullies, rills or sediment plumes. Identify the cause and take corrective measures such that grades are restored and surfaces re-established with appropriate vegetation.

2. During the first year after final stabilization, mow the slopes of stormwater basins, approximately 30-day intervals, 6"-8" high. Over-seed any areas not fully established.
3. Inspect for sediment accumulation at the pipe outlets into the pond at the completion of sod installation of last lot in plat. Remove sediment. Re-inspect every 3-5 years.
4. Inspect inlets and outlets for blockage or debris buildup annually. Remove debris as necessary to allow for inlets and outlets to function as designed.
5. Verify basin design capacity after 15 to 20 years of service.

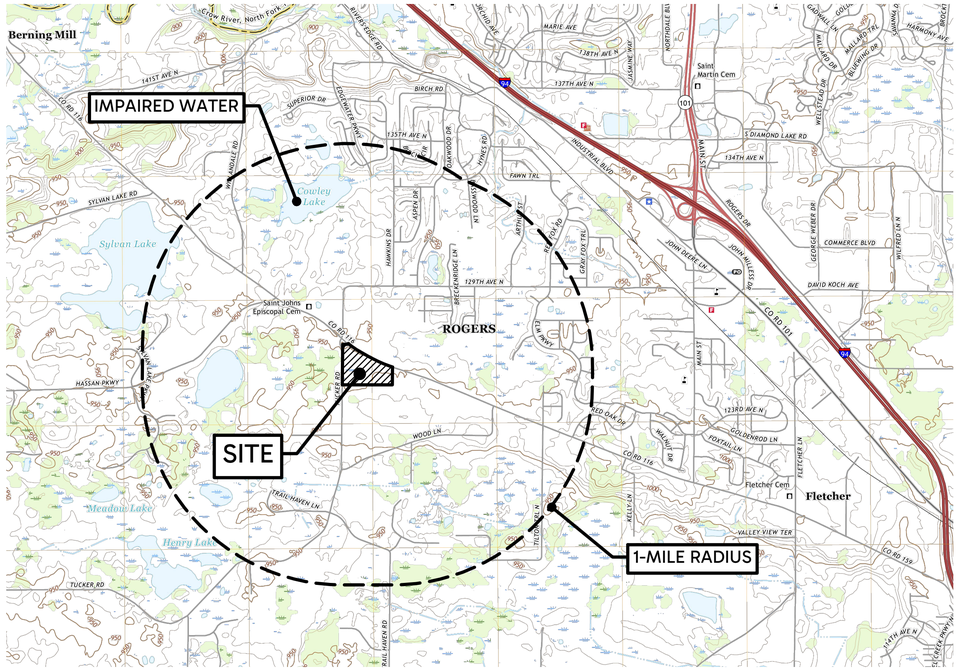
TURF AND VEGETATION MAINTENANCE
Year 1
a. Establishment (spring seeding)
1. Prepare site: Late April-May
2. Seed: April 15th - July 20th
b. Maintenance
1. When vegetation reaches 10-14 inches tall, mow down to 6-8 inches. The site shall be mowed at least 3 times from the planting date until September 30th. Mowings will be approximately 30 days apart.
2. Weed Control - mowing should help control annual weeds.
c. Establishment (fall seeding)
1. Prepare site: Late August - early September
2. Seed: September 20th - October 20th
3. The following spring is Year 1 in the maintenance plan.
d. 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
a. Maintenance:
1. When vegetation reaches 10-14 inches tall, mow down to 6-8 inches. The site shall be mowed twice between June 1st and July 31st. Mowings will be approximately 30 days apart.
2. Weed control - Mowing should help control annual weeds. Spot spray thistles, etc. 1 time between August 1st and September 30th once vegetation has grown back after the second mowing.
b. Evaluation
1. Cover crop will be gone unless winter wheat is used in 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, Wild Bergamot, etc.)
4. If there is a flush of growth from foxtail, etc., mow site to a height of 6-8 inches.
Year 3
a. Maintenance:
1. Spot spray perennial and first-year biennial weeds. Spot mow annual and second-year biennial weeds. Spot treatments must occur once every 3 to 5 weeks from June 1st to September 30th. At least three treatment cycles must be completed during this date window. Treatments must occur before weeds set seed.
b. Evaluation:
2. Planting should begin to resemble a prairie, with tall grasses, flowers, etc.

ESTIMATED EROSION AND SEDIMENT CONTROL QUANTITIES

CONSTRUCTION ROCK ENTRANCE	EA	1
STANDARD DUTY SILT FENCE	LF	7,100
MNBWSR SEED MIX 32-231 MESIC TO DRY BUFFER - 1.5X	AC	1.46
MNBWSR SEED MIX 33-261 STROMWATER - 1.5X	AC	3.80
MNDOT SEED MIX MESIC INSLOPE (GENERAL MIX) - 1.5X	AC	13.91
MNBWSR SEED MIX 34-266 WET PRAIRIE - 1.5X	AC	6.24
BIOROLL DITCH CHECKS	EA	21
WIMCO OR APPROVED EQUAL INLET PROTECTION	EA	12

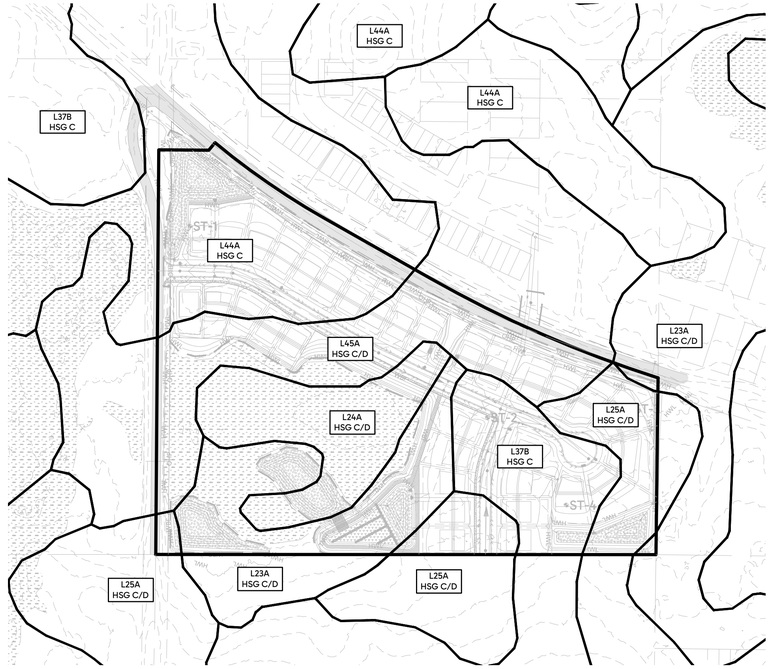
GENERAL PERMIT NOTE

VISIT THE MPCA WEB SITE FOR THE LATEST INFORMATION ON THE CONSTRUCTION STORMWATER PERMIT:
https://www.pca.state.mn.us/business-with-us/construction-stormwater



USGS MAP

1" = 2000'



USDA SOIL MAP

1" = 200'

HILL INCORPORATED
2999 WEST C.R. 42, SUITE 100
BURNSVILLE, MN 55306
PHONE: 952-890-6044
jbender@mnhill.com
www.mnhill.com

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

Date: _____ Reg.No. _____

PRELIMINARY

EMERSON GROVE
ROGERS, MINNESOTA
EROSION & SEDIMENT CONTROL PLAN
SWPPP NOTES
FOR
PULTE GROUP
1650 W. 82ND STREET, SUITE 300, BLOOMINGTON, MN 55431

DRAWN BY: JSO

DATE: 11/21/2025

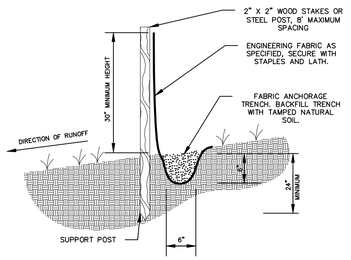
REVISIONS

CAD FILE: 24288ERD

PROJECT NO.: 24288

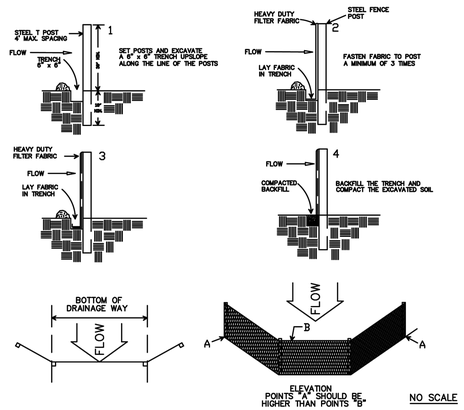
6.2

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DOUBLE SILT FENCE TO BE REQUIRED NEAR WETLANDS

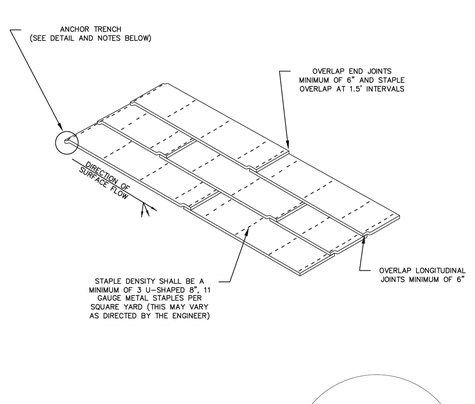
		Standard Details	
CITY OF ROGERS	STANDARD SILT FENCE	Date: SEPTEMBER, 2020 Revised:	EROS–1



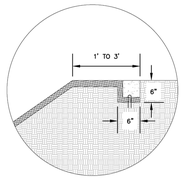
Maintenance

1. FILTER BARRIERS SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.
2. SHOULD THE FABRIC DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USEABLE LIFE AND THE BARRIER STILL BE NECESSARY. THE FABRIC SHALL BE REPLACED PROMPTLY.
3. WETLANDS ARE TO BE PROTECTED BY TWO ROWS OF H.D. SILT FENCE. DOUBLE H.D. SILT FENCE IS REQUIRED AROUND WATER BODIES, STEEP SLOPES AND HIGHLY ERODIBLE SOILS.
3. SEDIMENT DEPOSITS MUST BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY 1/3 HEIGHT OF THE BARRIER, OR AS DIRECTED BY THE ENGINEER.
4. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE OR FILTER BARRIER IS NO LONGER REQUIRED, SHALL BE DRESSED TO CONFORM WITH THE EXISTING GRADE, PREPARED AND SEEDED.
6. ALL MATERIAL & INSTALLATION MUST CONFORM TO THE REQUIREMENTS OF THE CURRENT EDITION OF THE MNDOT CONSTRUCTION SPECIFICATIONS TABLE 3886-1.

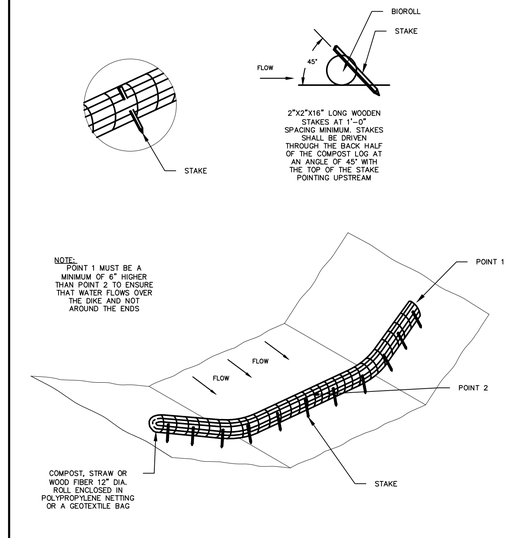
		Standard Details	
CITY OF ROGERS	SILT FENCE ALONG WETLAND	Date: SEPTEMBER, 2020 Revised:	EROS–4



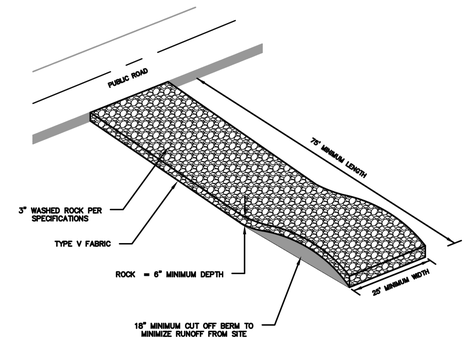
ANCHOR TRENCH
1. DIG 6" X 6" TRENCH
2. LAY BLANKET IN TRENCH
3. STAPLE AT 1.5' INTERVALS
4. BACKFILL WITH NATURAL SOIL AND COMPACT
5. BLANKET LENGTH SHALL NOT EXCEED 100' WITHOUT AN ANCHOR TRENCH



		Standard Details	
CITY OF ROGERS	EROSION CONTROL BLANKET INSTALLATION	Date: SEPTEMBER, 2020 Revised:	EROS–5



		Standard Details	
CITY OF ROGERS	BIOLOG DITCH CHECK	Date: SEPTEMBER, 2020 Revised:	EROS–8



NOTE:
TYPE V FILTER FABRIC SHALL BE PLACED UNDER ROCK TO STOP MUD MIGRATION THROUGH MATERIAL.

THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OF FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEAN OUT OF ANY MEASURES USED TO TRAP SEDIMENT.

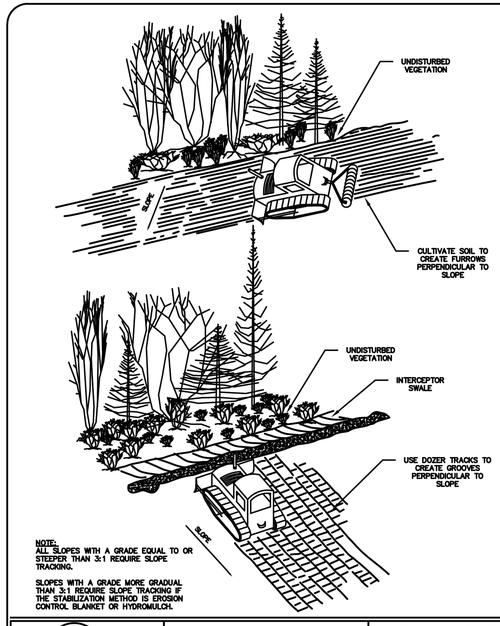
WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY.

WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.

WHERE RUNOFF CONTAINING SEDIMENT LADEN WATER IS LEAVING THE SITE VIA THE CONSTRUCTION ENTRANCE, OTHER MEASURES SHALL BE IMPLEMENTED TO DIVERT RUNOFF THROUGH AN APPROVED FILTERING SYSTEM

IN AREAS WITH CONCRETE WALK THERE SHALL BE 6" OF SAND PLACED OVERTOP THE SIDEWALK PRIOR TO PLACEMENT OF THE 3" WASHED ROCK.

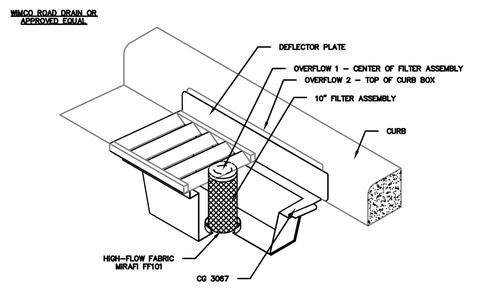
		Standard Details	
CITY OF ROGERS	CONSTRUCTION ROCK ENTRANCE	Date: SEPTEMBER, 2020 Revised:	EROS–10

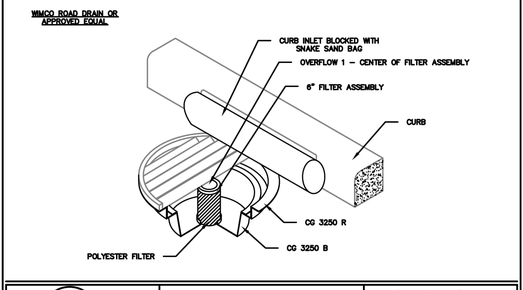


NOTE:
ALL SLOPES WITH A GRADE EQUAL TO OR STEEPER THAN 3:1 REQUIRE SLOPE TRACKING.

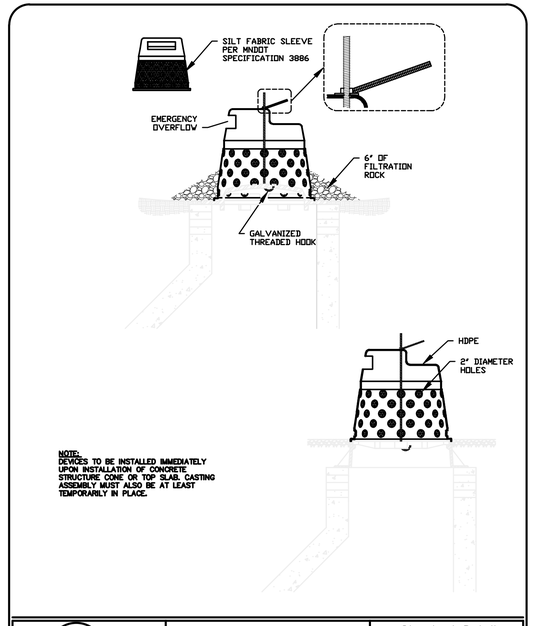
SLOPES WITH A GRADE MORE GRADUAL THAN 3:1 REQUIRE SLOPE TRACKING IF THE STABILIZATION METHOD IS EROSION CONTROL BLANKET OR HYDROMULCH.

		Standard Details	
CITY OF ROGERS	SLOPE TRACKING	Date: SEPTEMBER, 2020 Revised:	EROS–12





		Standard Details	
CITY OF ROGERS	CURB INLET PROTECTION	Date: SEPTEMBER, 2020 Revised:	EROS–15



NOTE:
DEVICES TO BE INSTALLED IMMEDIATELY UPON INSTALLATION OF CONCRETE STRUCTURE CONE OR TOP SLAB. CASTING ASSEMBLY MUST ALSO BE AT LEAST TEMPORARILY IN PLACE.

		Standard Details	
CITY OF ROGERS	INFRASAFE – SEDIMENT CONTROL BARRIER	Date: SEPTEMBER, 2020 Revised:	EROS–16

HILL INCORPORATED
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BURNSVILLE, MN 55306
PHONE: 952-890-6044
jbender@mnhill.com
www.mnhill.com

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

PRELIMINARY

Reg.No. _____

Date: _____

EMERSON GROVE

ROGERS, MINNESOTA

EROSION & SEDIMENT CONTROL PLAN DETAILS

FOR

PULTE GROUP

1650 W. 82ND STREET, SUITE 300, BLOOMINGTON, MN 55431

DRAWN BY
JSO

DATE
11/21/2025

REVISIONS

CAD FILE
24288ERD

PROJECT NO.
24288

6.3

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NPDES REQUIREMENTS

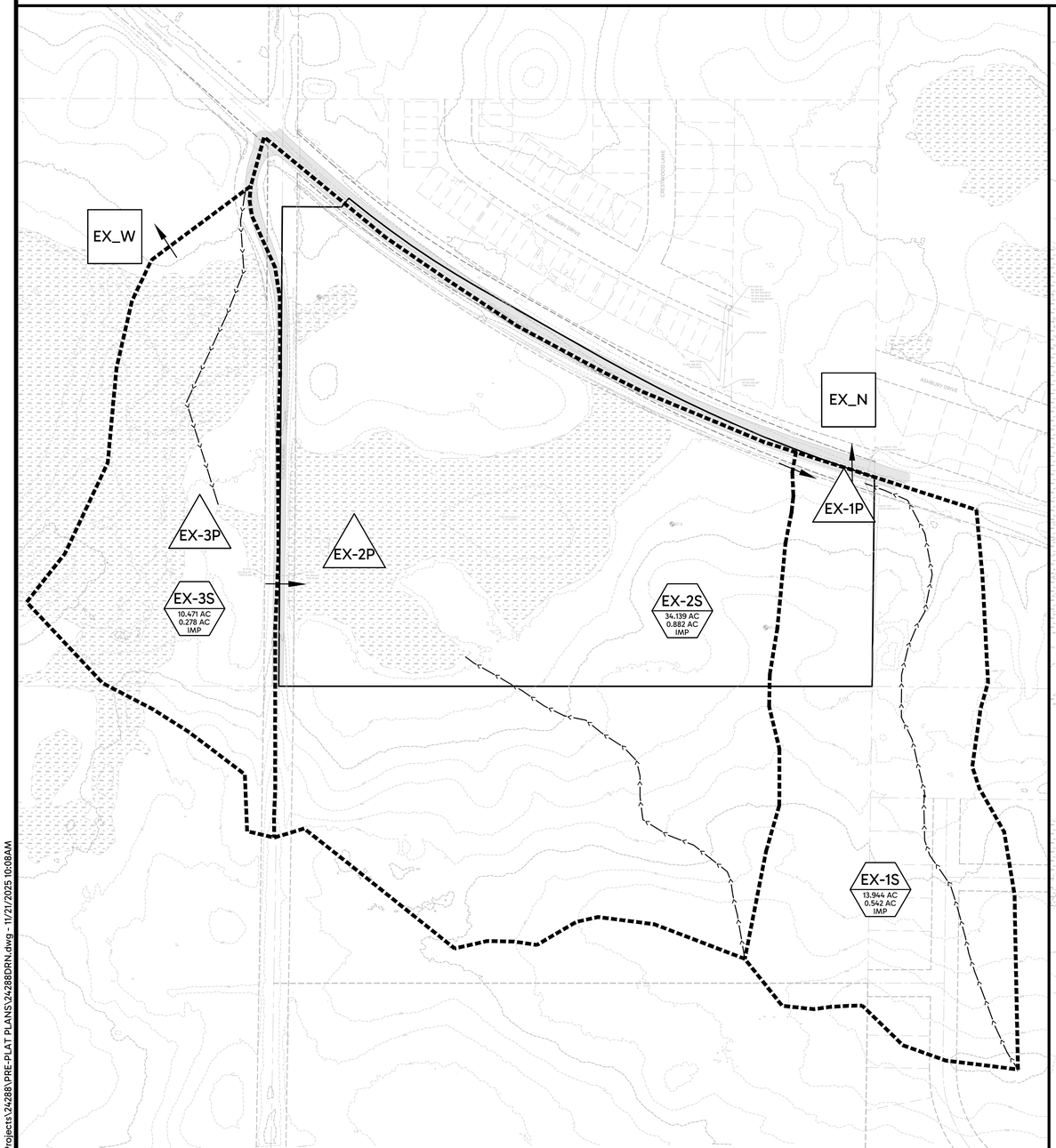
1.1 Permit Coverage. [Minn. R. 7090]
1.2 This permit is required for construction activity that results in land disturbance of equal to or greater than one (1) acre or if a project is part of a common plan of development or sale that ultimately will disturb greater than one (1) acre, and authorizes, subject to the terms and conditions of this permit, the discharge of stormwater associated with construction activity. [Minn. R. 7090]
1.3 Construction activity covered by this permit cannot commence until coverage under this permit is effective as described in Item 3.3 through 3.4 or, if applicable, until the Minnesota Pollution Control Agency (MPCA) has issued an individual National Pollutant Discharge Elimination System (NPDES)/State Disposal System (SDS) construction stormwater permit for the project. [Minn. R. 7090]
1.4 This permit covers all areas of the State of Minnesota except land wholly within the boundaries of a federally recognized Indian Reservation owned by a tribe or a tribal member or land held in trust by the federal government for a tribe or tribal member.[Minn. R. 7090]
1.5 Coverage under this permit is not required when all stormwater from construction activity is routed directly to and treated by a "treatment works," as defined in Minn. Stat. Section 115.01, subd. 21, operated under an individual NPDES/SDS permit with a Total Suspended Solids (TSS) effluent limit. [Minn. R. 7090]
1.6 This permit covers ongoing projects covered under any previous construction stormwater permit that are not complete on the issuance date of this permit. Permittees must either remain in compliance with the previous permit and terminate coverage within 18 months of the issuance date of this permit or comply with this permit, including updating the Stormwater Pollution Prevention Plan (SWPPP), within the 18-month period. Permittees of previously permitted projects are not required to incorporate any additional requirements regarding the permanent stormwater treatment system included in this reissued permit. [Minn. R. 7090]
1.7 Coverage for projects that extend beyond the expiration date of this permit remains effective for a grace period of 18 months. If Permittees cannot complete projects during the grace period, the MPCA will extend coverage under the next permit and permittees must comply with the requirements of the new permit including updating the SWPPP. Permittees are not required to follow changes to the permanent stormwater treatment section of the next permit. [Minn. R. 7090]
2.1 Prohibitions and Limitations of Coverage. [Minn. R. 7090]
2.2 The owner must develop a complete and accurate SWPPP that complies with item 5.2 prior to submitting the application for coverage and starting construction activity. Failure to prepare a SWPPP prior to submitting the application may result in permit revocation. [Minn. R. 7090]
2.3 This permit prohibits discharges of any material other than stormwater treated in compliance with this permit and discharges from dewatering or basin draining activities in accordance with Section 10. Prohibited discharges include, but are not limited to, wastewater from washout of concrete, stucco, paint, form release oils, curing compounds and other construction materials, fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance, soaps or solvents used in vehicle and equipment washing and maintenance, and other hazardous substances or wastes. [Minn. R. 7090]
2.4 This permit does not authorize stormwater discharges related to the placement of fill into waters of the state requiring local, state or federal authorizations (such as U.S. Army Corps of Engineers Section 404 permits, Minnesota Department of Natural Resources (DNR) Public Waters Work permits or local governmental unit (LGU) Wetland Conservation Act replacement plans or determinations). [Minn. R. 7090]
2.5 This permit does not authorize stormwater discharges associated with industrial activity except for construction activity. Permittees must obtain coverage for discharges associated with industrial activity under a separate NPDES/SDS permit once day-to-day operational industrial activities commence even if construction is ongoing. [Minn. R. 7090]
2.6 This permit does not authorize discharges from non-point source agricultural and silvicultural activities excluded from NPDES permit requirements under 40 CFR pt. 122.3(e). [Minn. R. 7090]
2.7 This permit does not authorize stormwater discharges to Prohibited, Restricted, Special or Impaired waters unless permittees follow the additional stormwater requirements in Section 23. [Minn. R. 7090]
2.8 This permit does not replace or satisfy any environmental review requirements including those under the Minnesota Environmental Policy Act or the National Environmental Policy Act. The owner must verify completion of any environmental review required by law, including any required Environmental Assessment Work Sheets or Environmental Impact Statements, Federal, or Minnesota Pollution Control Agency review, or other required reviews, prior to applying for coverage under this permit. If any part of your common plan of development or sale requires environmental review, coverage under this permit cannot be obtained until such environmental review is complete. [Minn. R. 7090]
2.9 This permit does not replace or satisfy any review requirements for discharges adversely impacting State or Federally designated endangered or threatened species or a designated critical habitat. The owner must comply with the National Historic Preservation Act and conduct all required review and coordination related to historic preservation, including significant anthropological sites and any burial sites, with the Minnesota Historic Preservation Officer. [Minn. R. 7090]
2.10 This permit does not authorize discharges to wetlands unless compliance with the requirements in Section 22. Coverage under this permit cannot be issued until the requirements for wetland permits, decisions, other determinations, or the mitigative sequence required in section 22 have been finalized and documented. [Minn. R. 7050.0186]
3.1 Application and Coverage Effective Date. [Minn. R. 7090]
3.2 The owner must submit a complete and accurate on-line application with the appropriate fee to the MPCA for each project that disturbs one (1) or more acres of land or for a common plan of development or sale that will ultimately disturb one (1) or more acres. [Minn. R. 7090]
3.3 For projects or common plans of development or sale that disturb less than 50 acres or do not discharge stormwater within 1 mile (aerial radius measurement) of a public water or impaired water, permittees do not need to submit the SWPPP with the application. Permit coverage for these projects is effective upon application and completing the payment process. [Minn. R. 7090]
3.4 For certain projects or common plans of development or sale disturbing 50 acres or more, the complete SWPPP must be included with the application and submitted at least 30 days before the start of construction activity. This applies if there is a discharge point on the project within one mile (aerial radius measurement) of, and flows to, a special water listed in item 23.3 through 23.6 or an impaired water as described in item 23.7. Permit coverage for these projects is effective upon submitting the application and complete SWPPP, completing the payment process and receiving a determination from the MPCA that the review of the SWPPP is complete. The determination may take longer than 30 days if the SWPPP is incomplete. If the MPCA fails to contact the permittee(s) within 30 days of application receipt, coverage is effective 30 days after completing the payment process. [Minn. R. 7090]
3.5 The application requires listing all persons meeting the definition of owner and operator as permittees. The owner is responsible for compliance with all terms and conditions of this permit. The operator is responsible for compliance with Sections 3, 4, 5, 7, 22, 24 and any applicable requirements for construction activity in Sections 23. [Minn. R. 7090]
3.6 Permittees will receive coverage notification in a manner determined by the MPCA. [Minn. R. 7090]
3.7 For construction projects where the owner or operator changes (e.g., an original developer sells portions of the property to various homebuilders or sells the entire site to a new owner), the current owner and the new owner or operator must submit a complete permit termination form provided by the MPCA. The current owner and the new owner or operator must submit the form prior to the new owner or operator commencing construction activity or no later than 30 days after taking ownership of the property. [Minn. R. 7090]
3.8 For construction projects where the owner or operator changes, the current owner must provide a SWPPP to the new owner and operator that specifically addresses the remaining construction activity. The new owner or operator can implement the original SWPPP, modify the SWPPP, or develop a new SWPPP. Permittees must ensure their activities do not render another party's erosion prevention and sediment control BMPs ineffective. [Minn. R. 7090]
4.1 Termination of Coverage. [Minn. R. 7090]
4.2 Permittees must submit a NOT within 30 days after all termination conditions listed in Section 13 are complete.[Minn. R. 7090]
4.3 Permittees must submit a NOT within 30 days after selling or otherwise legally transferring the entire site, including permit responsibility for roads (e.g., street sweeping) and stormwater infrastructure final clean out, or transferring portions of a site to another party. The permittees' coverage under this permit terminates at midnight on the submission date of the NOT.[Minn. R. 7090]
4.4 Permittees may terminate permit coverage prior to completion of all construction activity if they meet all of the following conditions:
a. construction activity has ceased for at least 90 days; and
b. at least 90 percent (by area) of all originally proposed construction activity has been completed and permanent cover has been established on those areas; and
c. on areas where construction activity is not complete, permanent cover has been established; and
d. the site complies with item 13.3 through 13.7.
After permit coverage is terminated under this item, any subsequent development on the remaining portions of the site will require permit coverage if the subsequent development itself or as part of the remaining common plan of development or sale will result in land disturbing activities of one (1) or more acres in size. [Minn. R. 7090]
4.5 Permittees may terminate coverage on MPCA approval after submitting information documenting the owner cancelled the project. [Minn. R. 7090]
5.1 Stormwater Pollution Prevention Plan (SWPPP) Content. [Minn. R. 7090]
5.2 The owner must develop and implement a SWPPP. The SWPPP must include items 5.3 through 5.26. [Minn. R. 7090]
5.3 The SWPPP must incorporate specific Best Management Practices (BMP) used to comply with the requirements of this permit. [Minn. R. 7090]
5.4 The SWPPP must include a narrative describing the timing for installation of all erosion prevention and sediment control BMPs and a description of the permanent stormwater treatment systems. [Minn. R. 7090]
5.5 The SWPPP must include the location and type of all temporary and permanent erosion prevention and sediment control BMPs along with procedures used to establish additional temporary BMPs as necessary for the site conditions during construction. Standard details and/or specifications for BMPs must be included in the final plans and specifications for the project. [Minn. R. 7090]
5.6 The SWPPP must include the calculations and other information used for the design of temporary sediment basins and any of the permanent stormwater treatment systems required in Section 15. [Minn. R. 7090]
5.7 The SWPPP must include estimated quantities anticipated at the start of the project for the life of the project for all erosion prevention and sediment control BMPs (e.g., linear feet of silt fence or square feet of erosion control blanket). [Minn. R. 7090]
5.8 The SWPPP must include the number of acres of impervious surface for both pre- and post-construction. [Minn. R. 7090]
5.9 The SWPPP must include a site map with existing and final grades, including drainage area boundaries, directions of flow and all discharge points where stormwater is leaving the site or entering a surface water. The site map must indicate the areas of steep slopes. The site map must also include impervious surfaces, soil types and locations of potential pollutant-generating activities as identified in Section 12. [Minn. R. 7090]
5.10 The SWPPP must include a map of all surface waters, existing wetlands, and stormwater ponds or basins that can be identified on maps such as United States Geological Survey 7.5-minute quadrangle maps, the National Wetland Inventory map or county plat maps and are within one mile (aerial radius measurement) from the project boundaries that will receive stormwater from the construction site, during or after construction. The SWPPP must identify if the surface waters are special or impaired waters. [Minn. R. 7090]
5.11 The SWPPP must include a site map showing construction activity areas that are adjacent to and drain to Public Waters for which the DNR has promulgated "work in water restrictions" during specified fish spawning time frames. [Minn. R. 7090]
5.12 Permittees must identify locations of 50' buffer zones as required in item 9.17 and 100' permanent buffer zones as required in item 23.11, on plan sheets in the SWPPP. [Minn. R. 7090]
5.13 If permittees determine compliance with the following requirements is infeasible, they must document the determination in the SWPPP:
a. temporary sediment basins as described in Section 14; and
b. for linear projects, if the permanent stormwater treatment system cannot be constructed within the right-of-way, a reasonable attempt must be made to obtain additional right-of-way (item 15.9); and
c. buffer zones as described in item 9.17 and item 23.11. [Minn. R. 7090]
5.14 If permittees determine that a temporary sediment basin is infeasible as described in item 14.10, the SWPPP must describe the alternative BMPs used. [Minn. R. 7090]
5.15 If permittees determine they cannot meet the full volume reduction requirement on-site, (e.g., the site has infiltration prohibitions, see item 16.14 through item 16.21) the permittee must document the reasons in the SWPPP. [Minn. R. 7090]
5.16 The SWPPP must include any stormwater mitigation measures proposed to be part of the final project in any environmental review document, endangered species review, archeological or other required local, state or federal review conducted for the project. For purposes of this permit, mitigation measures mean actions necessary to avoid, minimize, or mitigate for impacts related to erosion prevention, sediment control, the permanent stormwater treatment system, pollution prevention management measures and discharges associated with the project's construction activity. [Minn. R. 7090]
5.17 The SWPPP must describe the methods used for permanent cover of all exposed soil areas. [Minn. R. 7090]
5.18 Permittees must identify the locations of areas where construction will be phased to minimize the duration of exposed soil areas in the SWPPP. [Minn. R. 7090]
5.19 For projects with a discharge point on the project within one (1) mile (aerial radius measurement) of and which flows to an impaired water, permittees must identify the impaired water(s), and any United States Environmental Protection Agency (USEPA)-approved Total Maximum Daily Load (TMDL) for the pollutant(s) or stressor(s) described in item 23.7. Permittees' identification must include those TMDLs approved at any time prior to permit application submittal and are still in effect. [Minn. R. 7090]
5.20 Permittees must document in the SWPPP, all trained individuals identified in item 21.2. Documentation must include:
a. names of personnel required to be trained; and
b. dates of training and name of instructor(s) and entity providing training; and
c. content of training course.
If permittees do not know the names of the individuals at the time of application, the permittees must ensure they document training before construction activity commences. [Minn. R. 7090]
5.21 The SWPPP must identify a person knowledgeable and experienced in the application of erosion prevention and sediment control BMPs who will coordinate with all contractors, subcontractors, and operators on-site to oversee the implementation of the SWPPP. [Minn. R. 7090]
5.22 The SWPPP must describe any specific chemicals and chemical treatment systems used for enhancing the sedimentation process and how it achieves compliance with item 9.19. [Minn. R. 7090]
5.23 The SWPPP must identify the person(s), organizations, or entities responsible for long-term operation and maintenance of permanent stormwater treatment systems. [Minn. R. 7090]
5.24 The SWPPP must describe methods to minimize soil compaction and preserve topsoil. Minimizing soil compaction is not required where the function of a specific area dictates compaction. [Minn. R. 7090]
5.25 The SWPPP must include any site assessments for groundwater or soil contamination required in item 16.15.[Minn. R. 7090]
5.26 The SWPPP must account for the following factors in designing temporary erosion prevention and sediment control BMPs:
a. the expected amount, frequency, intensity, and duration of precipitation; and
b. the nature of stormwater runoff and run-on at the site, including factors such as expected flow from impervious surfaces, slopes, and site drainage features; and
c. the stormwater volume, velocity, and peak flowrates to minimize discharge of pollutants in stormwater and to minimize channel and streambank erosion and scour in the immediate vicinity of discharge points; and
d. the range of soil particle sizes expected to be present. [Minn. R. 7090]
6.1 SWPPP Amendments. [Minn. R. 7090]
6.2 One of the individuals described in item 21.2.a or item 21.2.b or another qualified individual must complete all SWPPP changes. Changes involving the use of a less stringent BMP must include a justification describing how the replacement BMP is effective for the site characteristics. [Minn. R. 7090]
6.3 Permittees must amend the SWPPP within 7 days to include additional or modified BMPs whenever there is a change in design, construction, operation, maintenance, weather or seasonal conditions having a significant effect on the discharge of pollutants to surface waters or groundwater. [Minn. R. 7090]
6.4 Permittees must amend the SWPPP within 7 days to include additional or modified BMPs whenever inspections or investigations by the site owner or operator, USEPA or MPCA officials indicate the SWPPP is not effective in eliminating or significantly minimizing the discharge of pollutants to surface waters or groundwater or the discharges are causing water quality standard exceedances (e.g., nuisance conditions as defined in Minn. R. 7050.0210, subp. 2) or the SWPPP is not consistent with the objectives of a USEPA approved TMDL. [Minn. R. 7050.0210]
7.1 BMP Selection and Stormwater Management. [Minn. R. 7090]
7.2 Permittees must select, install, and maintain the BMPs identified in the SWPPP and in this permit in an appropriate and functional manner and in accordance with relevant manufacturer specifications and accepted engineering practices to minimize the discharge of pollutants in stormwater from construction activities. Examples of stormwater management practices for this section include but are not limited to wet sedimentation basins, temporary depressions to hold stormwater, stormwater routing, dikes, berms, pumping, and stormwater treatment BMPs. Permittees must phase and incorporate stormwater management practices as the construction progresses. Unless infeasible, temporary or permanent wet sedimentation basins (however, see section 14 and 15) should be constructed as a first step in the process and stormwater routed to these. [Minn. R. 7090]
7.3 Permittees must not disturb more land (i.e., phasing) than can be effectively inspected and maintained in accordance with Section 11. [Minn. R. 7090]
7.4 If permittees propose using some type of erosion control netting on the site as part of the soil stabilization techniques, permittees are encouraged to use products that have been shown to minimize impacts on wildlife. The U.S. Fish & Wildlife Service recommends using types of netting practices that are considered "wildlife friendly," including those that use natural fiber or 100 percent biodegradable materials and that use a loose weave with a non-welded, movable jointed netting. Products that are not wildlife friendly include square plastic netting that is not biodegradable, UV-degradable, oxo-degradable), netting made from polypropylene, nylon, polyethylene, or polyester. Other recommendations include removing the netting product when it is no longer needed. More information may be found at: https://www.fws.gov/initiative/protecting-wildlife/make-change-wildlife-friendly-erosion-control-products. There also may be State, Tribal, or local requirements about using wildlife friendly erosion control products. See Minnesota Department of Transportation requirements at: https://www.mndot.gov/environment/erosion/rolled-erosion-prevention-products.html. [Minn. R. 7050]
8.1 Erosion Prevention Practices. [Minn. R. 7090]
8.2 Before work begins, permittees must delineate the location of areas not to be disturbed. [Minn. R. 7090]
8.3 Permittees must minimize the need for disturbance of portions of the project with steep slopes. When steep slopes must be disturbed, permittees must use techniques such as phasing and stabilization practices designed for steep slopes (e.g., slope draining and terracing). [Minn. R. 7090]
8.4 Permittees must stabilize all exposed soil areas, including stockpiles. Stabilization must be initiated immediately to limit soil erosion when construction activity has permanently or temporarily ceased on any portion of the site and will not resume for a period exceeding 14 calendar days (7 days for sites discharging to special or impaired waters, see section 24). Stabilization must be completed no later than 14 calendar days after the construction activity has ceased. Stabilization is not required on constructed base components of roads, parking lots and similar surfaces. Stabilization of temporary stockpiles without significant silt, clay or organic components (e.g., clean aggregate stockpiles, demolition concrete stockpiles, sand stockpiles) but permittees must provide sediment controls at the base of the stockpile. [Minn. R. 7090]
8.5 For Public Waters that the Minnesota DNR has promulgated "work in water restrictions" during specified fish spawning time frames, permittees must complete stabilization of all exposed soil areas within 200 feet of the water's edge, and that drain to these waters, within 24 hours during the restriction period. [Minn. R. 7090]
8.6 Permittees must stabilize the normal wetted perimeter of the last 200 linear feet of temporary or permanent drainage ditches or swales that discharge to surface waters or stormwater conveyance systems to a surface water or property edge. Permittees must complete stabilization of remaining portions of temporary or permanent ditches or swales within 14 calendar days (7 days for sites discharging to special or impaired waters, see section 24) after connecting to a surface water or property edge and construction in that portion of the ditch temporarily or permanently ceases. [Minn. R. 7090]
8.7 Temporary or permanent ditches or swales being used as a sediment containment system during construction (with properly designed rock-ditch checks, bio rolls, silt dikes, etc.) do not need to be stabilized. Permittees must stabilize these areas within 24 hours after their use as a sediment containment system ceases. [Minn. R. 7090]
8.8 Permittees must not use mulch, hydromulch, tackifier, polyacrylamide or similar erosion prevention practices within any portion of the normal wetted perimeter of a temporary or permanent drainage ditch or swale section with a continuous slope of greater than 2 percent. Examples of acceptable erosion prevention practices include blankets, poly, riprap, etc. [Minn. R. 7090]
8.9 Permittees must provide temporary or permanent energy dissipation at all pipe outlets within 24 hours after connection to a surface water or permanent stormwater treatment system. [Minn. R. 7090]
9.1 Sediment Control Practices. [Minn. R. 7090]
9.2 Permittees must establish sediment control BMPs on all downgradient perimeters of the site and downgradient areas of the site that drain to any surface water, including curb and gutter systems. Permittees must locate sediment control practices upgradient of any buffer zones. Permittees must establish sediment control BMPs on any upgradient land-disturbing activities begin and must keep the sediment control practices in place until they establish permanent cover. [Minn. R. 7090]
9.3 If downgradient sediment controls are overloaded, based on frequent failure or excessive maintenance requirements, permittees must install additional upgradient sediment control practices or redundant BMPs to eliminate the overloading and amend the SWPPP to identify these additional practices as required in item 6.3. [Minn. R. 7090]
9.4 Temporary or permanent drainage ditches and sediment basins designed as part of a sediment containment system (e.g., ditches with rock-check dams) require sediment control practices only as appropriate for site conditions. [Minn. R. 7090]
9.5 A floating silt curtain placed in the water is not a sediment control BMP to satisfy item 9.2 except when working on a shoreline or below the waterline. Immediately after the construction activity (e.g., installation of rip rap along the shoreline) in that area is complete, permittees must install an upland perimeter control practice if exposed soils still drain to a surface water. [Minn. R. 7090]
9.6 Permittees must re-install all sediment control practices adjusted or removed to accommodate short-term activities such as clearing or grubbing, or passage of vehicles, immediately after the short-term activity is completed. Permittees must re-install sediment control practices before the next precipitation event even if the short-term activity is not complete. [Minn. R. 7090]
9.7 Permittees must protect all storm drain inlets using appropriate BMPs during construction until they establish permanent cover on all areas with potential for discharging to the inlet. [Minn. R. 7090]
9.8 Permittees may remove inlet protection for a particular inlet if a specific safety concern (e.g. street flooding/freezing) is identified by the permittees or the jurisdictional authority (e.g., city/county/township/Minnesota Department of Transportation engineer). Permittees must document the need for removal in the SWPPP. [Minn. R. 7090]
9.9 Permittees must provide silt fence or other effective sediment controls at the base of stockpiles on the downgradient perimeter prior to the initiation of stockpiling. Sediment controls must be managed in accordance with section 9.6. [Minn. R. 7090]
9.10 Permittees must locate stockpiles outside of natural buffers or surface waters, including stormwater conveyances such as curb and gutter systems unless there is a bypass in place for the stormwater. [Minn. R. 7090]
9.11 Permittees must install a vehicle tracking BMP to minimize the track out of sediment from the construction site or onto paved roads within the site. [Minn. R. 7090]
9.12 Permittees must use street sweeping in addition to vehicle tracking BMPs if vehicle tracking BMPs alone are not adequate to prevent sediment tracking onto the street. [Minn. R. 7090]
9.13 Permittees must install temporary sediment basins as required in Section 14. [Minn. R. 7090]
9.14 In any area of the site where final vegetative stabilization will occur, permittees must restrict vehicle and equipment use to minimize soil compaction. [Minn. R. 7090]
9.15 Permittees must preserve topsoil on the site, unless infeasible. [Minn. R. 7090]
9.16 Permittees must direct discharges from BMPs to vegetated areas unless infeasible. [Minn. R. 7090]
9.17 Permittees must preserve a 50-foot natural buffer or, if a buffer is infeasible on the site, provide redundant (double) perimeter sediment controls when a surface water is located within 50 feet of the project's earth disturbances and stormwater flows to the surface water. Permittees must install perimeter sediment controls at least 5 feet apart unless limited by lack of available space. Natural buffers are not required adjacent to road ditches, judicial ditches, county ditches, stormwater conveyance channels, storm drain inlets, and sediment basins. If preserving the buffer is infeasible, permittees must document the reasons in the SWPPP. Sheet piling and other impermeable barriers installed in a manner that retains all stormwater are considered redundant perimeter control. [Minn. R. 7090]
9.18 Any sediment control made of soil must be temporarily or permanently stabilized within 24 hours. [Minn. R. 7090]
9.19 Permittees must use polymers, flocculants, or other sedimentation treatment chemicals only in accordance with accepted engineering practices, dosing specifications and sediment removal design specifications provided by the manufacturer or supplier. The permittees must use conventional erosion and sediment controls prior to chemical addition and must direct treated stormwater to a sediment control system for filtration or settlement of the floc prior to discharge. [Minn. R. 7090]
10.1 Dewatering and Basin Draining. [Minn. R. 7090]
10.2 Permittees must not cause nuisance conditions (see Minn. R. 7050.0210, subp. 2) in surface waters from dewatering and basin draining (e.g., pumped discharges, trench/ditch cuts for drainage) discharges. Permittees must discharge turbid or sediment-laden waters related to dewatering or basin draining to a sediment control (e.g. sediment trap or basin, filter bag) designed to prevent discharges with visual turbidity. To the extent practicable, use well-vegetated (e.g., grassy or wooded), upland areas of the site to infiltrate dewatering water before discharge. Permittees are prohibited from using receiving waters as part of the treatment area. Permittees must visually check and photograph the discharge at the beginning and at least once every 24 hours of operation to ensure adequate treatment has been obtained and nuisance conditions will not result from the discharge. [Minn. R. 7050.0210]
10.3 If nuisance conditions result from the discharge, Permittees must cease dewatering immediately and corrective actions must occur before dewatering is resumed. Nuisance conditions includes, but is not limited to, a sediment plume in the discharge or the discharge appears cloudy, or opaque, or has a visible contrast, or has a visible oil film, or has aquatic habitat degradation that can be identified by an observer. [Minn. R. 7050.0210]
10.4 If permittees must discharge water containing oil or grease, they must use an oil-water separator or suitable filtration device (e.g., cartridge filters, absorbents pads) prior to discharge. [Minn. R. 7090]
10.5 Permittees must discharge all water from dewatering or basin-draining activities in a manner that does not cause erosion or scour in the immediate vicinity of discharge points or inundation of wetlands in the immediate vicinity of discharge points that causes significant adverse impact to the wetland. [Minn. R. 7090]
10.6 If permittees must discharge with backwash water, they must haul the backwash water away for disposal, return the backwash water to the beginning of the treatment process, or incorporate the backwash water into the site in a manner that does not cause erosion. [Minn. R. 7090]
11.1 Inspections and Maintenance. [Minn. R. 7090]
11.2 Permittees must ensure a trained person, as identified in item 21.2.b, will inspect the entire construction site at least once every seven (7) days during active construction and within 24 hours after a rainfall event greater than 1/2 inch in 24 hours. [Minn. R. 7090]
11.3 Permittees must inspect and maintain all permanent stormwater treatment BMPs. [Minn. R. 7090]
11.4 Permittees must inspect all erosion prevention and sediment control BMPs and Pollution Prevention Management Measures to ensure integrity and effectiveness. Permittees must repair, replace or supplement all nonfunctional BMPs with functional BMPs by the end of the next business day after discovery unless another time frame is specified in item 11.5 or 11.6. Permittees may take additional time if field conditions prevent access to the area. [Minn. R. 7090]
11.5 During each inspection, permittees must inspect areas adjacent to the project, surface waters, including drainage ditches and conveyance systems but not curb and gutter systems, for evidence of erosion and sediment deposition. Permittees must remove all deltas and sediment deposited in areas adjacent to the project, surface waters, including drainage ways, catch basins, and other drainage systems and restabilize the areas where sediment removal results in exposed soil. Permittees must complete removal and stabilization within seven (7) calendar days of discovery unless precluded by legal, regulatory, or physical access constraints. Permittees must use all reasonable efforts to obtain access. If precluded, removal and stabilization must take place within seven (7) days of obtaining access. Permittees are responsible for contacting all local, regional, state and federal authorities and receiving any applicable permits, prior to conducting any work in surface waters. [Minn. R. 7090]
11.6 Permittees must inspect construction site vehicle exit locations, streets and curb and gutter systems within and adjacent to the project for sedimentation from erosion or tracked sediment from vehicles. Permittees must remove sediment from all paved surfaces within one (1) calendar day of discovery or, if applicable, within a shorter time to avoid a safety hazard to users of public streets. [Minn. R. 7090]
11.7 Permittees must repair, replace or supplement all perimeter control devices when they become nonfunctional or the sediment reaches 1/2 of the height of the device. [Minn. R. 7090]
11.8 Permittees must drain temporary and permanent sedimentation basins and remove the sediment when the depth of sediment collected in the basin reaches 1/2 the storage volume within 72 hours of discovery. [Minn. R. 7090]
11.9 Permittee's must inspect and photograph dewatering discharges at the beginning and at least once every 24 hours during operation. Dewatering discharges that only last for minutes, as opposed to hours, and do not reach a surface water, do not require photographs or documentation. [Minn. R. 7090]
11.10 Permittees must ensure that at least one individual present on the site (or available to the project site in three (3) calendar days) is trained in the job duties described in item 21.2.b. [Minn. R. 7090]
11.11 Permittees may adjust the inspection schedule described in item 11.2 as follows:
a. inspections of areas with permanent cover can be reduced to once per month, even if construction activity continues on other portions of the site; or
b. where sites have permanent cover on all exposed soil and no construction activity is occurring anywhere on the site, inspections can be reduced to once per month and, after 12 months, may be suspended completely until construction activity resumes. Permittees must resume inspections to ensure if conditions warrant; or
c. where construction activity has been suspended due to frozen ground conditions, inspections may be suspended. Inspections must resume within 24 hours of runoff occurring, or upon resuming construction, whichever comes first.
d. for projects where a pollinator habitat or native prairie type vegetated cover is being established, inspections may be reduced to once per month for the duration of the establishment period of 70% temporary uniform perennial vegetative cover. If after 24 months no significant erosion problems are observed, inspections may be suspended completely until the termination requirements in section 13 have been met. [Minn. R. 7090]
11.12 Permittees must document all inspections and maintenance activities within 24 hours of being conducted and these records must be retained with the SWPPP. These records must include:
a. date and time of inspections; and
b. name of persons conducting inspections; and
c. accurate findings of inspections, including the specific location where corrective actions are needed; and
d. corrective actions taken (including dates, times, and party completing maintenance activities); and
e. date of all rainfall events greater than 1/2 inches in 24 hours, and the amount of rainfall for each event. Permittees must obtain rainfall amounts by either a properly maintained rain gauge installed on-site, a weather station that is within one (1) mile of your location, or a weather reporting system that provides site specific rainfall data from radar summaries; and
f. if permittees observe a discharge during the inspection, they must record and should photograph and describe the location of the discharge (i.e., color, odor, settled or suspended solids, oil sheen, and other obvious indicators of pollutants); and
g. any amendments to the SWPPP proposed as a result of the inspection must be documented as required in Section 6 within seven (7) calendar days; and
h. all photographs of dewatering activities and documentation of nuisance conditions resulting from dewatering activities as described in section 10. [Minn. R. 7090]
12.1 Pollution Prevention Management Measures. [Minn. R. 7090]
12.2 Permittees must place construction materials and landscape materials under cover (e.g., plastic sheeting or temporary days) or protect them by similarly effective means designed to minimize contact with stormwater. Permittees are not required to cover or protect products which are either not a source of contamination to stormwater or are designed to be exposed to stormwater. [Minn. R. 7090]
12.3 Permittees must place pesticides, fertilizers and treatment chemicals under cover (e.g., plastic sheeting or temporary roofs) or protect them by similarly effective means designed to minimize contact with stormwater. [Minn. R. 7090]
12.4 Permittees must store hazardous materials and toxic waste, (including oil, diesel fuel, gasoline, hydraulic fluids, paint solvents, petroleum-based products, scrap metal, pesticides, additives, curing compounds, and acids) in sealed containers to prevent spills, leaks or other discharge. Storage and disposal of hazardous waste materials must be in compliance with Minn. R. ch. 7045 including secondary containment as applicable. [Minn. R. 7090]
12.5 Permittees must properly store, collect and dispose solid waste in compliance with Minn. R. ch. 7035. [Minn. R. 7035]
12.6 Permittees must position portable toilets so they are secure and will not tip or be knocked over. Permittees must properly dispose sanitary waste in accordance with Minn. R. ch. 7041. [Minn. R. 7041]
12.7 Permittees must take reasonable steps to prevent the discharge of spilled or leaked chemicals, including fuel, from any area where chemicals or fuel will be loaded or unloaded including the use of drip pans or absorbents unless infeasible. Permittees must ensure adequate supplies are available at all times to clean up discharged materials and that an appropriate disposal method is available for recovered spilled materials. Permittees must report and clean up spills immediately as required by Minn. Stat. 115.061, using dry clean up measures where possible. [Minn. Stat. 115.061]
12.8 Permittees must limit vehicle and equipment washing and must provide and equipment to a defined area of the site. Permittees must contain runoff from the washing area in a sediment basin or other similarly effective controls and must dispose waste from the washing activity properly. Permittees must properly use and store soaps, detergents, or solvents. [Minn. R. 7090]
12.9 Permittees must provide effective containment for all liquid and solid wastes generated by washout operations (e.g., concrete, stucco, paint, form release oils, curing compounds and other construction materials) related to the construction activity. Permittees must prevent liquid and solid washout wastes from contacting the ground and must design the containment so it does not result in runoff from the washout operations or areas. Permittees must properly dispose liquid and solid wastes in compliance with MPCA rules. Permittees must install a sign indicating the location of the washout facility. [Minn. R. 7035, Minn. R. 7090]
13.1 Permit Termination Conditions. [Minn. R. 7090]
13.2 Permittees must complete all construction activity and must install permanent cover over all areas prior to submitting the NOT. Vegetative cover must consist of a uniform perennial vegetation with a density of 70 percent of its expected final growth Vegetation is not required where the function of a specific area dictates no vegetation, such as impervious surfaces or the base of a sand filter. [Minn. R. 7090]
13.3 Permittees must clean the permanent stormwater treatment system of any accumulated sediment and must ensure the system meets all applicable requirements in Section 15 through 17 and is operating as designed. [Minn. R. 7090]
13.4 Permittees must remove all sediment from conveyance systems prior to submitting the NOT. [Minn. R. 7090]
13.5 Permittees must remove all temporary synthetic erosion prevention and sediment control BMPs prior to submitting the NOT. Permittees may leave BMPs designed to decompose on-site in place. [Minn. R. 7090]
13.6 For residential construction only, permit coverage terminates on individual lots if the lot is sold to the homeowner, structures are finished, and permanent cover has been established. For lots that are sold to the homeowner where permanent cover has not been established, coverage terminates if temporary erosion prevention and downgradient perimeter control is properly installed and the permittee distributes the MPCA's "Homeowner Fact Sheet" to the homeowner. [Minn. R. 7090]
13.7 For construction projects on agricultural land (e.g., pipelines across cropland), permittees must return the disturbed land to its preconstruction agricultural use prior to submitting the NOT. [Minn. R. 7090]
13.8 When submitting the NOT, Permittees must include either ground or aerial photographs showing the requirements of 13.2 have been met. Photographs must be taken after the last construction activity ceases and the site has been stabilized. If conditions at the site portrayed must be substantially similar to those areas that are not photographed. Photographs must be clear and in focus and must include the date the photo was taken. [Minn. R. 7090]
14.1 Temporary Sediment Basins. [Minn. R. 7090]
14.2 Where ten (10) or more acres of disturbed soil (5 acres for sites discharging to special or impaired waters, see section 24) drain to a common location, permittees must provide a temporary sediment basin to provide treatment of the runoff before it leaves the construction site or enters surface waters. Permittees may convert a temporary sediment basin to a permanent basin after construction is complete. The temporary basin is no longer required when permanent cover has reduced the rate of disturbed soil to less than ten (10) acres draining to a common location. [Minn. R. 7090]
14.3 The temporary basin must provide live storage for a calculated volume of runoff from a two (2)-year, 24-hour storm from each acre drained to the basin or 1,800 cubic feet of live storage per acre drained, whichever is greater. [Minn. R. 7090]
14.4 Where permittees have not calculated the two (2)-year, 24-hour storm runoff amount, the temporary basin must provide 3,600 cubic feet of live storage per acre of the basins' drainage area. [Minn. R. 7090]
14.5 Permittees must design basin outlets to prevent short-circuiting and the discharge of floating debris. [Minn. R. 7090]
14.6 Permittees must design the outlet structure to withdraw water from the surface to minimize the discharge of pollutants. Permittees may temporarily suspend the use of a surface withdrawal structure during frozen conditions. The basin must include a stabilized emergency overflow to prevent failure of pond integrity. [Minn. R. 7090]
14.7 Permittees must provide energy dissipation for the basin outlet within 24 hours after connection to a surface water. [Minn. R. 7090]
14.8 Permittees must locate temporary basins outside of surface waters and any buffer zone required in item 23.11.[Minn. R. 7090]
14.9 Permittees must construct the temporary basins prior to disturbing 10 or more acres of soil draining to a common location. [Minn. R. 7090]
14.10 Where a temporary sediment basin meeting the requirements of item 14.3 through 14.9 is infeasible, permittees must install effective sediment controls such as smaller sediment basins and/or sediment traps, silt fences, vegetative buffer strips or any appropriate combination of measures as dictated by individual site conditions. In determining whether installing a sediment basin is infeasible, permittees must consider public safety and may consider factors such as site soils, slope, and available area on-site. Permittees must document this determination of infeasibility in the SWPPP.[Minn. R. 7090]
15.1 Permanent Stormwater Treatment System. [Minn. R. 7090]
15.2 Permittees must design and implement the project so all stormwater discharged from the project during and after construction activities does not cause a violation of state water quality standards, including nuisance conditions, erosion in receiving channels or on downslope properties, or a significant adverse impact to wetlands caused by inundation or decrease of flow. [Minn. R. 7090]
15.3 Permittees must design and construct a permanent stormwater treatment system to treat the water quality volume if the project's ultimate development replaces vegetation and/or other pervious surfaces creating a net increase of one (1) or more acres of cumulative impervious surface. [Minn. R. 7090]
15.4 Permittees must calculate the water quality volume as one (1) inch times the net increase of impervious surfaces created by the project. [Minn. R. 7090]
15.5 Permittees must first consider volume reduction practices on-site (e.g., infiltration or other) when designing the permanent stormwater treatment system. If this permit prohibits infiltration as described in item 16.14 through item 16.21, permittees may consider a wet sedimentation basin, filtration basin or regional pond. This permit does not consider wet sedimentation basins and filtration systems to be volume reduction practices. [Minn. R. 7090]
15.6 For projects where the full volume reduction requirement cannot be met on-site, (e.g., the site has infiltration prohibitions), permittees must document the reasons in the SWPPP. [Minn. R. 7090]
15.7 Permittees must discharge the water quality volume to a permanent stormwater treatment system prior to discharge to a surface water. For purposes of this item, surface waters do not include man-made drainage systems that convey stormwater to a permanent stormwater treatment system. [Minn. R. 7090]
15.8 Where the proximity to bedrock precludes the installation of any of the permanent stormwater treatment practices required by Sections 15

LEGEND

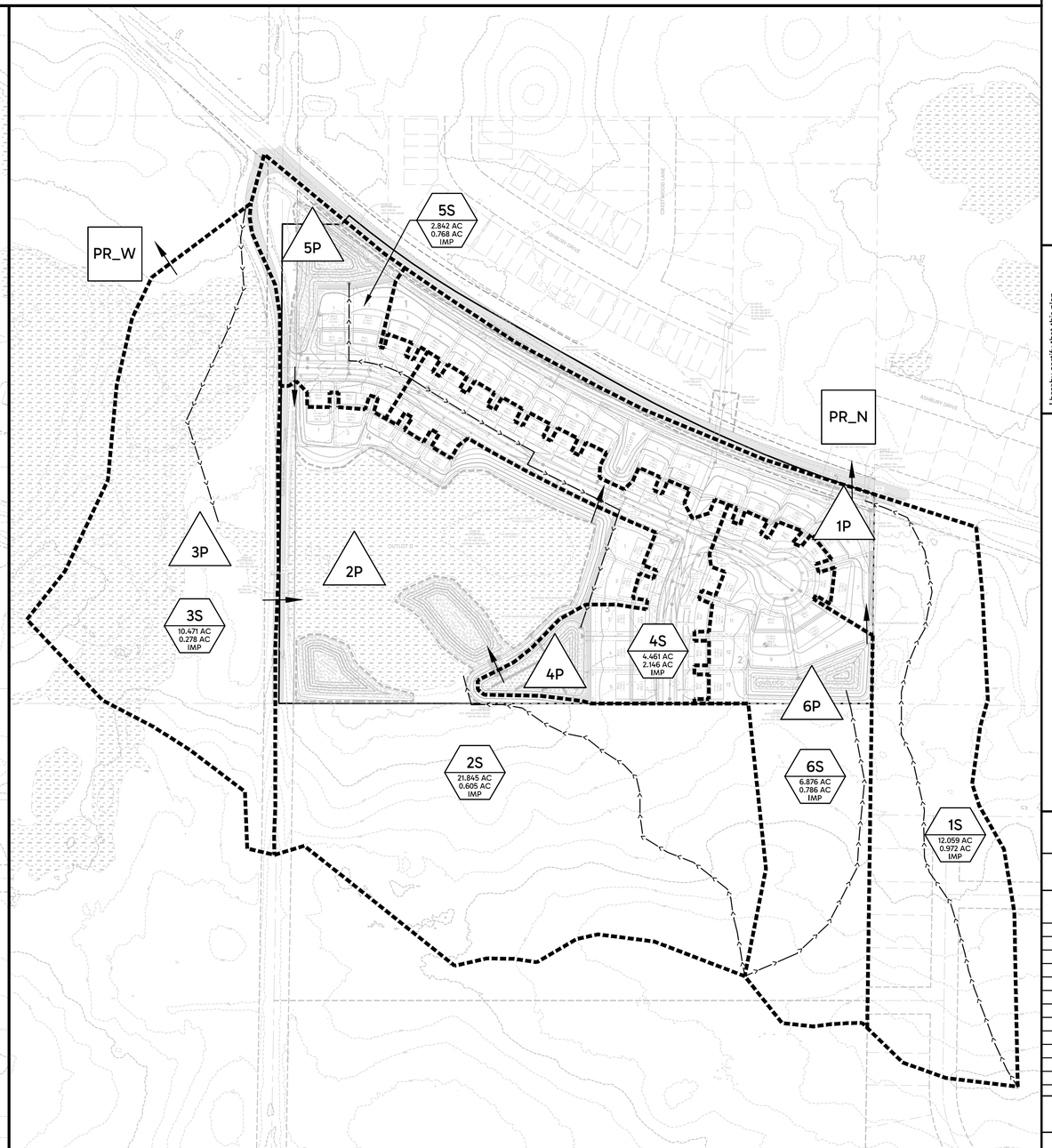
- POND AREA (1P)
- REACH (1R)
- DRAINAGE AREA (1S; TOTAL DRAINAGE AREA 1.234 AC; IMPERVIOUS AREA 0.123 AC IMP)
- FLOW DIRECTION
- ToC PATH
- DRAINAGE BOUNDARY

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

SCALE IN FEET 0 150 300



EXISTING DRAINAGE MAP



PROPOSED DRAINAGE MAP

HILL INCORPORATED
2999 WEST C.R. 42, SUITE 100
BURNSVILLE, MN 55306
PHONE: 952-890-6044
jbender@mnhill.com
www.mnhill.com

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

PRELIMINARY

Reg.No.

Date:

EMERSON GROVE
ROGERS, MINNESOTA
DRAINAGE MAPS
FOR
PULTE GROUP
1650 W. 82ND STREET, SUITE 300, BLOOMINGTON, MN 55431

DRAWN BY	JSO
DATE	11/21/2025
REVISIONS	
CAD FILE	24288DRN
PROJECT NO.	24288
	6.5

F:_Civil 3D Projects\24288\PRE-PLAT PLANS\24288DRN.dwg - 11/21/2025 10:08AM

LEGEND

- EXISTING WETLAND
- PROPOSED WETLAND IMPACT
- REQUIRED WETLAND BUFFER
- PROPOSED WETLAND BUFFER

WETLAND SUMMARY

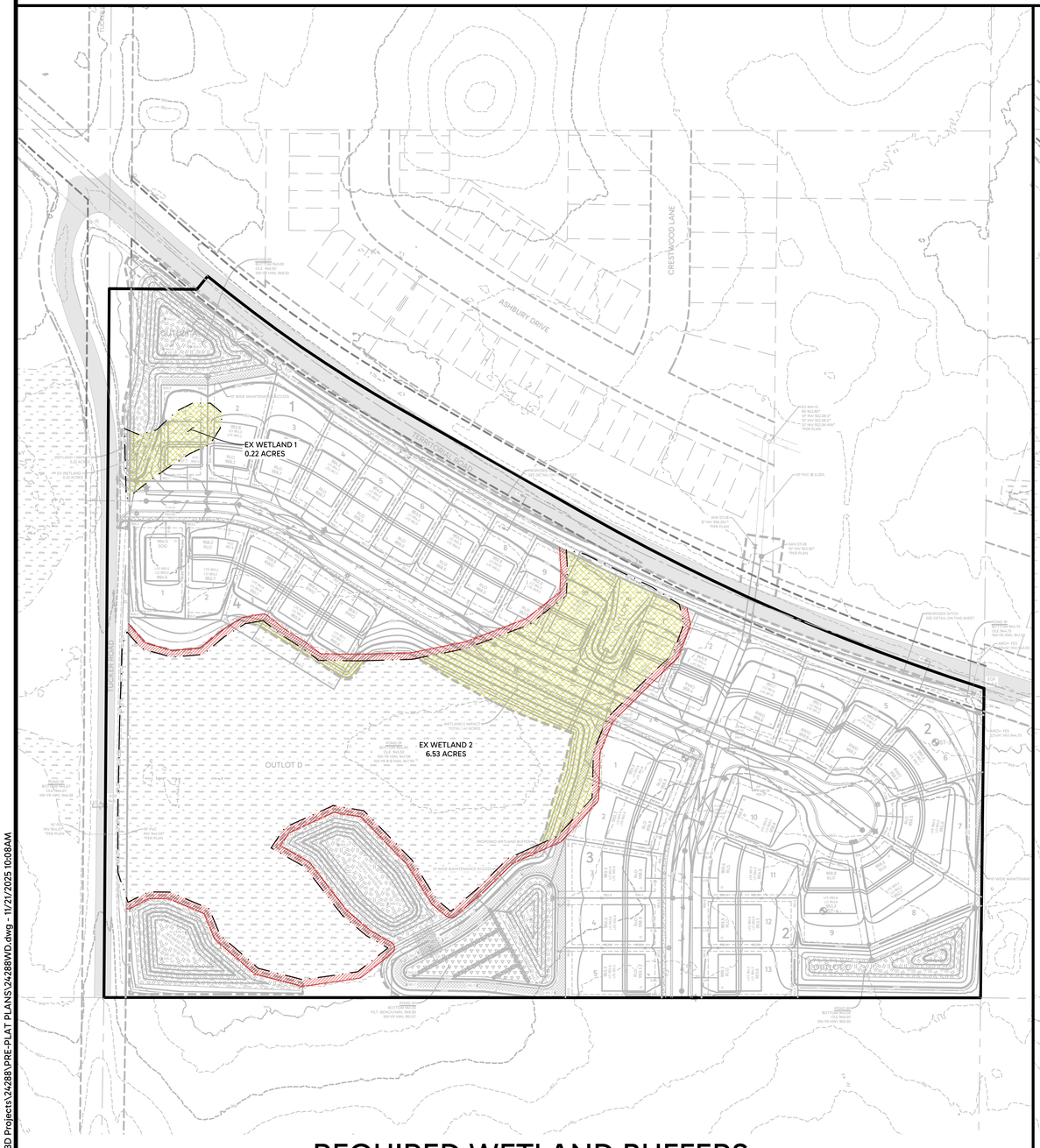
TOTAL PROPOSED WETLAND IMPACT AREA	72,414 SF (1.63 AC)
REQUIRED BUFFER AREA	24,770 SF (0.57 AC)
PROPOSED BUFFER AREA	102,255 SF (2.35 AC)

NOTES

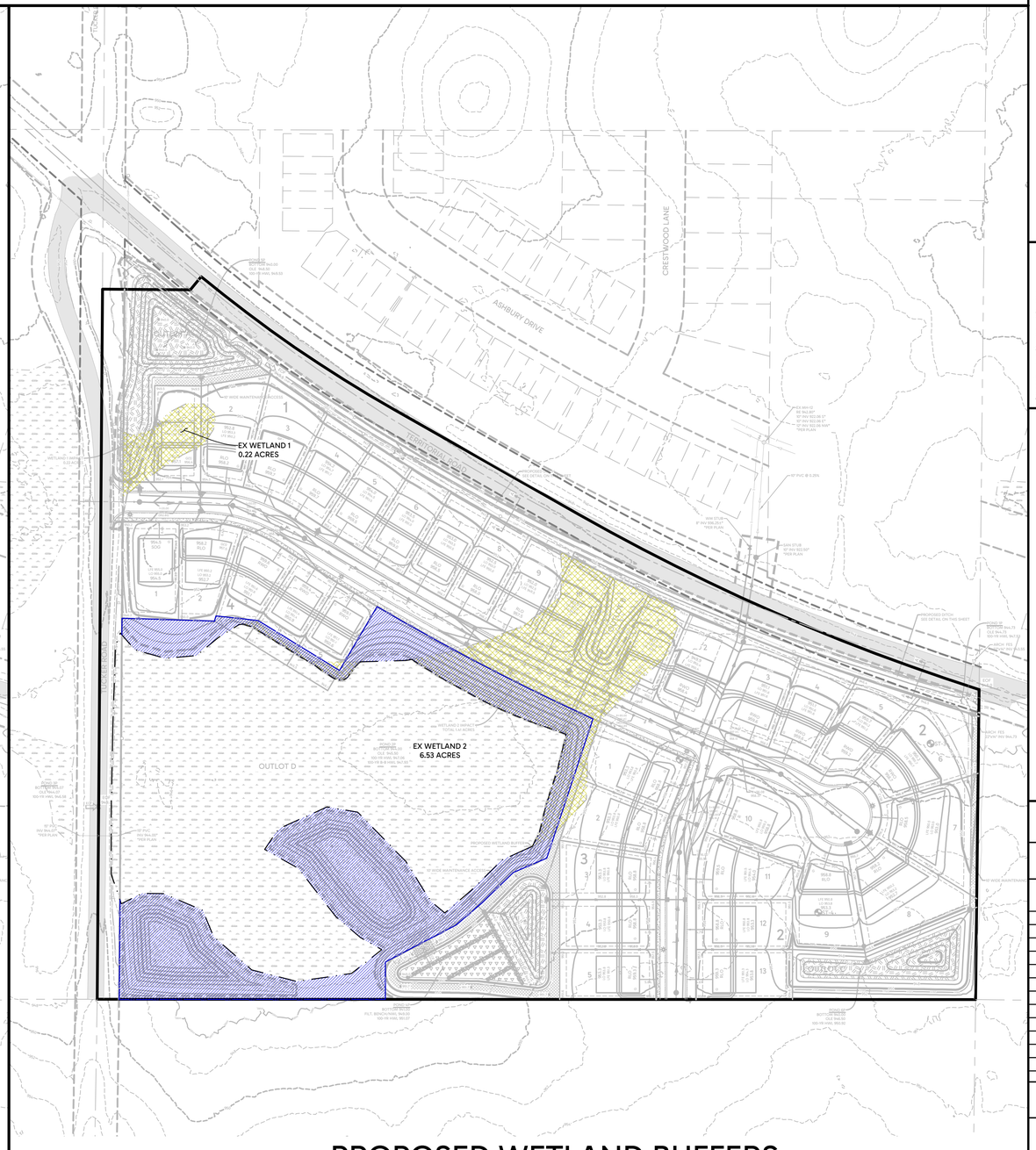
1. WETLANDS 1 AND 2 WERE DELINEATED BY MIDWEST NATURAL RESOURCES, INC. ON 7/25/2025 WITH AN UPDATE ON 10/29/2025. THESE WETLANDS ARE CLASSIFIED AS LOW QUALITY.
2. PER CITY OF ROGERS REQUIRED WETLAND BUFFER STRIPS IS 40 FEET AVERAGE WIDTH, 25 FEET MINIMUM FOR HIGH QUALITY WETLANDS AND 10 FEET MINIMUM FOR ALL OTHER WETLANDS.
3. WETLAND IMPACT AND BUFFER AREAS ARE COMPUTED WITHIN THE PLATTED BOUNDARY, EXCLUDING RIGHT-OF-WAY AREAS.
4. REQUIRED BUFFER AREA EXCLUDES WETLAND 1.

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

SCALE IN FEET
0 100 200



REQUIRED WETLAND BUFFERS



PROPOSED WETLAND BUFFERS

2999 WEST C.R. 42, SUITE 100
BURNSVILLE, MN 55306
PHONE: 952-890-6044
jbender@mnhill.com
www.mnhill.com

HILL INCORPORATED

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.

PRELIMINARY

Reg.No.

Date:

EMERSON GROVE

ROGERS, MINNESOTA

WETLAND IMPACTS AND BUFFERS

FOR

PULTE GROUP

1650 W. 82ND STREET, SUITE 300, BLOOMINGTON, MN 55431

DRAWN BY
JSO

DATE
11/21/2025

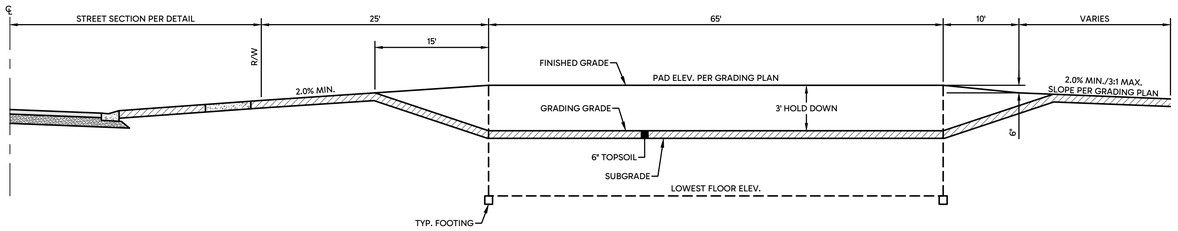
REVISIONS

CAD FILE
24288WD

PROJECT NO.
24288

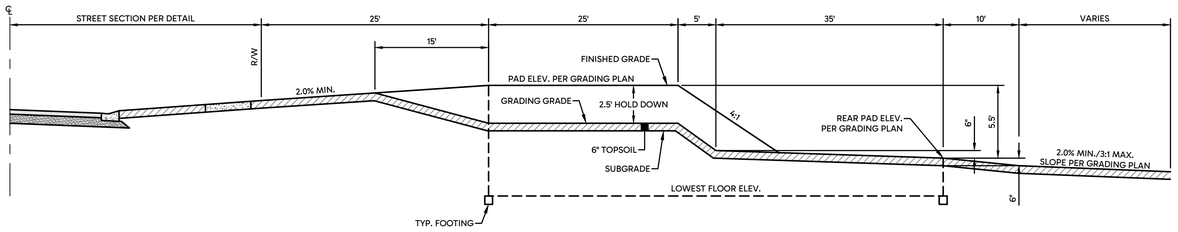
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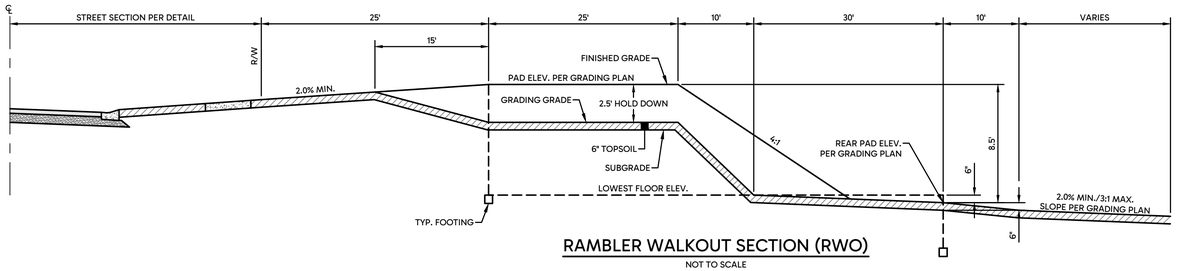
RAMBLER SECTION (R)

NOT TO SCALE



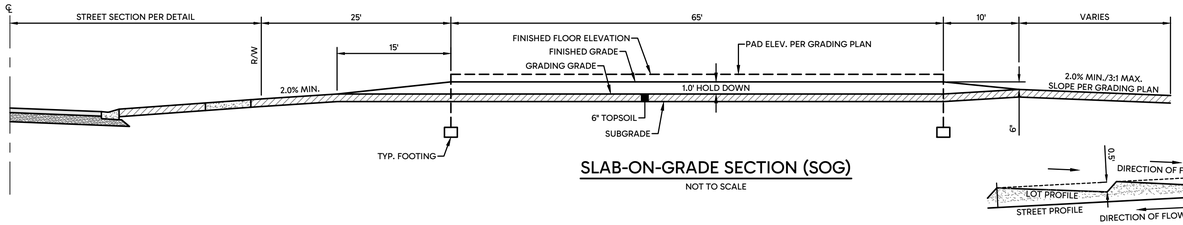
RAMBLER LOOKOUT SECTION (RLO)

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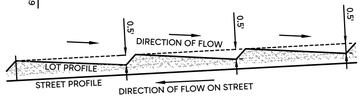
RAMBLER WALKOUT SECTION (RWO)

NOT TO SCALE



SLAB-ON-GRADE SECTION (SOG)

NOT TO SCALE



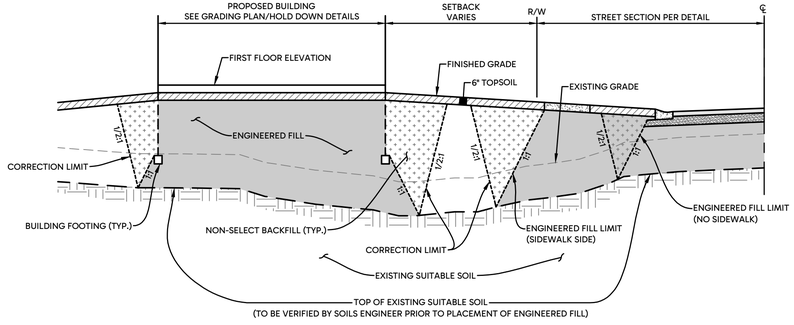
LOT BENCHING DETAIL

NOT TO SCALE

RECOMMENDED HOUSE TYPES

R	STANDARD LOT - FINISHED GROUND ELEVATION IS THE SAME AT THE FRONT AND REAR OF HOUSE. LOT CAN ACCOMMODATE RAMBLER, SPLIT ENTRY OR TWO STORY HOME. BASEMENT FLOOR ELEVATION IS 8.0' LOWER THAN FINISHED GROUND ELEVATION SHOWN AT FRONT OF HOUSE.
RLO	LOOKOUT LOT - FINISHED GROUND ELEVATION FOR LOOKOUT IS 5.0' LOWER THAN FINISHED GROUND ELEVATION SHOWN AT FRONT OF HOUSE. WINDOW OPENINGS ARE 0.5' ABOVE FINISHED GROUND ELEVATION SHOWN AT LOOKOUT.
RWO	WALKOUT LOT - FINISHED GROUND ELEVATION FOR WALKOUT IS 8.0' LOWER THAN FINISHED GROUND ELEVATION SHOWN AT FRONT OF HOUSE. BASEMENT FLOOR ELEVATION/OPENING IS 0.5' ABOVE FINISHED GROUND ELEVATION SHOWN AT WALKOUT.
SOG	SLAB ON GRADE LOT - ELEVATION IS THE SAME AT THE FRONT AND REAR OF THE HOUSE. LOT CAN ACCOMODATE A SLAB ON GRADE HOME. LOWEST FLOOR ELEVATION/OPENING IS 0.5' ABOVE FINISHED GROUND ELEVATION SHOWN.

NOTE: FOR ALL RECOMMENDED HOUSE TYPES, GARAGE FLOOR ELEVATION IS 0.3' ABOVE FINISHED GROUND ELEVATION SHOWN AT FRONT OF HOUSE. TOP OF BLOCK ELEVATION IS 0.7' ABOVE FINISHED GROUND ELEVATION SHOWN AT FRONT OF HOUSE.



SUBGRADE CORRECTION DETAIL

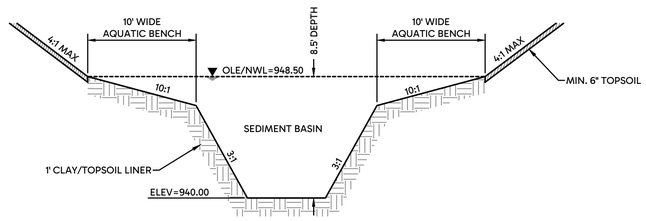
NOT TO SCALE

STANDARD GRADING NOTES:

1. SPECIFICATIONS WHICH APPLY ARE THE MOST RECENT EDITIONS OF THE MUNICIPALITY IN WHICH THE WORK IS LOCATED AND THE MINNESOTA DEPARTMENT OF TRANSPORTATION SPECIFICATIONS FOR HIGHWAY CONSTRUCTION UNLESS MODIFIED HEREIN ON THESE CONTRACT DOCUMENTS.
2. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO UTILIZE THE "GOPHER STATE ONE CALL" EXCAVATION NOTICE SYSTEM AS REQUIRED UNDER MINNESOTA STATUTE CHAPTER 216D. CALL 811 OR SUBMIT A TICKET AT gopherstateonecall.org AT LEAST 48 HOURS PRIOR TO PERFORMING ANY EXCAVATION.
3. GRADING CONTRACTOR SHALL VERIFY LOCATIONS AND ELEVATIONS OF ALL UNDERGROUND UTILITIES WITH THE RESPECTIVE UTILITY COMPANIES PRIOR TO CONSTRUCTION.
4. ALL CONSTRUCTION AS CALLED FOR ON THESE CONTRACT DOCUMENTS SHALL BE PERFORMED IN ACCORDANCE WITH ALL OSHA REQUIREMENTS.
5. ALL LOT AND EASEMENT DIMENSIONS ARE SUBJECT TO FINAL PLAT.
6. IT IS THE RESPONSIBILITY OF THE GRADING CONTRACTOR TO DISPOSE OFF-SITE ALL TREES, STUMPS, BRUSH, OR OTHER DEBRIS THAT EXISTS WITHIN THE CONSTRUCTION AREAS. TREES TO REMAIN SHALL BE DESIGNATED BY THE ENGINEER.
7. THE GRADING CONTRACTOR SHALL SCHEDULE THE SOILS ENGINEER SO THAT CERTIFICATION OF ALL CONTROLLED FILLS CAN BE FURNISHED TO THE OWNER DURING AND UPON COMPLETION OF THE PROJECT.
8. DENSITY TESTS SHALL BE TAKEN TO EVALUATE THE COMPACTION WITHIN THE STREETS, TRAVEL WAYS OR PARKING LOTS. WITHIN THE UPPER 3 FEET OF STREET, TRAVEL WAYS OR PARKING LOT SUBGRADE, THE CONTRACTOR SHALL INSURE THAT ALL SOILS BE NOT MORE THAN ONE PERCENTAGE POINT OVER THE SOIL'S STANDARD PROCTOR OPTIMUM MOISTURE CONTENT, AND THAT COMPACTION TO A MINIMUM OF 100% OF STANDARD PROCTOR DENSITY BE PROVIDED. IN AREAS BELOW THE UPPER THREE FEET OF SUBGRADE OF THE STREETS, TRAVEL WAYS OR PARKING LOTS, THE CONTRACTOR SHALL INSURE THAT ALL SOILS BE NOT MORE THAN THREE PERCENTAGE POINTS OVER THE SOIL'S STANDARD PROCTOR OPTIMUM MOISTURE CONTENT, AND THAT COMPACTION TO A MINIMUM OF 95% OF STANDARD PROCTOR DENSITY BE PROVIDED. THE GRADING TOLERANCE FOR THESE AREAS SHALL BE WITHIN 0.1'±.
9. LOT GRADING AND/OR THE PREPARATION OF BUILDING PADS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS. THE GRADING TOLERANCE SHALL BE 0.30'±. ALL EARTHWORK OPERATIONS SHALL BE PERFORMED IN ACCORDANCE WITH THE HUD-FHA DATA SHEET 79G "LAND DEVELOPMENT WITH CONTROLLED EARTHWORK", PROVIDING FOR A MINIMUM OF 95% STANDARD DENSITY, OR AS OTHERWISE SPECIFIED BY THE GEO-TECHNICAL ENGINEER.
10. IN AREAS WHERE RETAINING WALLS ARE PROPOSED ON CONTROLLED FILL AREAS, A MINIMUM 95% STANDARD DENSITY NEEDS TO BE ATTAINED WHERE FILL THICKNESS EXCEEDS 10' BELOW WALL FOUNDATION ELEVATIONS, A HIGHER MINIMUM OF 98% SHALL BE ATTAINED
11. BUILDING PADS SHOWN ON EACH LOT ARE TYPICAL ONLY. THE DEPTH OF THE PAD FROM FRONT TO BACK SHALL BE GRADED THROUGHOUT THE FULL WIDTH OF THE LOT OR AS NECESSARY TO ALLOW FOR CONSTRUCTION OF A BUILDING AT THE MINIMUM SIDE YARD SETBACKS. (REFER TO THE PLANS FOR SPECIFIC SETBACK DISTANCES.) IF UNSUITABLE SOIL CONDITIONS ARE ENCOUNTERED WITHIN A PROPOSED BUILDING PAD THAT CANNOT BE CORRECTED OR REMOVED, IT IS THE RESPSONSIBILITY OF THE CONTRACTOR TO NOTIFY THE ENGINEER OF THE CONDITIONS AND TO LOCATE THE LIMITS OF THE UNSUITABLE AREAS.
12. THE SITE GRADING TOLERANCE FOR THE SITE SHOULD BE ±0.1' FOR STREETS AND ±0.30' FOR LANDSCAPED/OPEN AREAS.
13. TOPSOIL SHALL BE RE-SPREAD AT A MINIMUM DEPTH OF 6" ON ALL DISTURBED AREAS TO BE VEGETATED.

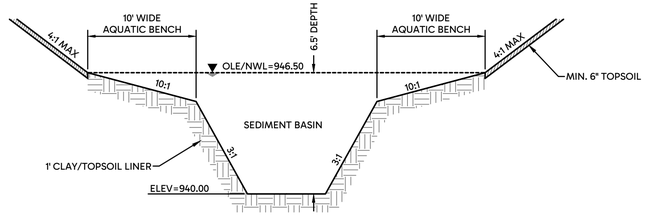
SPECIFIC GRADING NOTES:

1. THE EXISTING TOPOGRAPHY AND CONTOUR ELEVATIONS ON THE PLANS WERE PROVIDED BY HILL INCORPORATED ON JUNE 20TH, 2025. THE DEGREE OF ACCURACY OF THE EXISTING CONTOURS SHOWN ON THE PLAN IS EQUAL TO ± ONE HALF THE CONTOUR INTERVAL. ADDITIONAL TOPOGRAPHY OBTAINED FROM USGS LIDAR COLLECTED BETWEEN MAY 4TH-24TH, 2022.



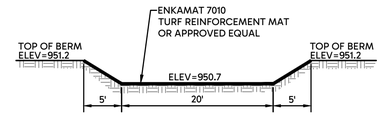
POND 5P CROSS SECTION

NOT TO SCALE

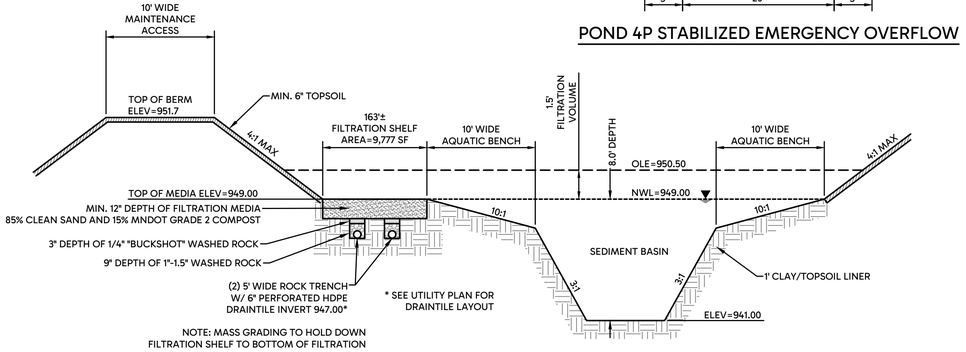


POND 6P CROSS SECTION

NOT TO SCALE



POND 4P STABILIZED EMERGENCY OVERFLOW



POND 4P W/ FILTRATION SHELF CROSS SECTION

NOT TO SCALE

HILL INCORPORATED
2999 WEST C.R. 42, SUITE 100
BURNSVILLE, MN 55306
PHONE: 952-890-6044
jbender@mnhill.com
www.mnhill.com

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

PRELIMINARY

Date: _____ Reg.No. _____

EMERSON GROVE
ROGERS, MINNESOTA
CONSTRUCTION DETAILS
FOR
PULTE GROUP
1650 W. 82ND STREET, SUITE 300, BLOOMINGTON, MN 55431

DRAWN BY
JSO

DATE
11/21/2025

REVISIONS

CAD FILE
24288D

PROJECT NO.
24288

8.0

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GENERAL UTILITY CONSTRUCTION NOTES:

1. SPECIFICATIONS: THE WORK SHALL BE DONE IN ACCORDANCE WITH THE LATEST EDITION OF THE CITY OF ROGERS GENERAL SPECIFICATIONS AND STANDARD DETAIL PLATES FOR STREET AND UTILITY CONSTRUCTION.

2. EXISTING FACILITIES: IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE LOCATION OF ALL EXISTING UTILITIES BEFORE STARTING CONSTRUCTION. THIS INCLUDES, BUT IS NOT LIMITED TO SANITARY AND STORM SEWER, WATERMAIN, NATURAL GAS, ELECTRIC, TELEPHONE AND CABLE TELEVISION SERVICES.

   THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY CONFLICT BETWEEN THE EXISTING UTILITIES AND THE PROPOSED CONSTRUCTION. THE ENGINEER IN COOPERATION WITH THE UTILITY COMPANIES, SHALL DETERMINE THE NECESSITY FOR ANY RELOCATION OF THESE FACILITIES.

   THE CONTRACTOR SHALL PROTECT ALL EXISTING UTILITIES AND FACILITIES SO THAT THEY WILL CONTINUE TO FUNCTION IN THEIR PROPER MANNER BOTH DURING CONSTRUCTION AND IN THE FUTURE. ANY SUPPORTING STRUCTURE THAT MAY BE REQUIRED BECAUSE OF THE CONTRACTOR'S OPERATION SHALL BE PROVIDED BY THE CONTRACTOR.

   THE CONTRACTOR SHALL BRING TO THE ATTENTION OF THE ENGINEER ANY CONDITIONS SUCH AS SAND IN MANHOLES OR VALVE BOXES EXISTING PRIOR TO THE CONTRACTOR'S EXCAVATION. ONCE EXCAVATION HAS COMMENCED, IT WILL BE ASSUMED THAT ALL DAMAGE TO UNDERGROUND UTILITIES HAS BEEN CAUSED BY THE CONTRACTOR'S OPERATIONS AND IT WILL BE HIS RESPONSIBILITY TO MAKE THE NECESSARY REPAIRS.

3. CONTRACTOR RESPONSIBILITIES:
   THE CONTRACTOR SHALL MAKE HIS OWN ARRANGEMENTS FOR RECEIVING WATER FROM PUBLIC OR PRIVATE SOURCES AND SECURE NECESSARY PERMITS AND PAY REGULAR CHARGES. ALL CITY WATER SHALL BE METERED. DISPOSAL OF ANY WASTEWATER OR ANY TEST WATER INTO THE CITY SANITARY SEWER SYSTEM IS SUBJECT TO CITY CHARGE. CONTRACTORS ARE NOT TO OPERATE GATE VALVES OR HYDRANTS ON CITY WATER SUPPLY.

   THE CITY ENGINEER AND THE ENGINEER SHALL BE NOTIFIED 48 HOURS PRIOR TO COMMENCING WORK. CONTRACTORS SHALL BE SUBJECT TO SHUT DOWN IF PROPER NOTIFICATION IS NOT GIVEN TO THE ENGINEER.

   CITY STREETS THAT ARE UTILIZED FOR INGRESS TO OR EGRESS FROM THE CONSTRUCTION SITE SHALL BE KEPT FREE OF DIRT AND OTHER DEBRIS RESULTING FROM SAID CONSTRUCTION. COST FOR THIS SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT.

   THE CONTRACTOR SHALL BE RESPONSIBLE TO MAINTAIN ADEQUATE STORM DRAINAGE PROTECTION OF THE SITE IN ORDER TO PREVENT EROSION AND SILTING OF ON-SITE AND OFF-SITE AREAS. THIS SHALL BE ACCOMPLISHED BY PLACEMENT OF HAY BALES OR FILTER FABRIC FENCE AROUND THE DRAINAGE INLETS AND OUTLETS AND BY CONSTRUCTION OF DITCHES, BERMS, DEBRIS BASINS, FILTER FABRIC FENCING AND BY ANY OTHER ON-SITE PROTECTION AS DETERMINED BY THE ENGINEER. UNLESS SPECIFICALLY CALLED OUT AS A BID ITEM ON THE BID FORM, ANY TEMPORARY DITCHING, CULVERTS, HAY BALES, AND FILTER FABRIC FENCE NECESSARY TO ACCOMPLISH THIS SHALL BE AT THE CONTRACTOR'S EXPENSE.

   IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROTECT AND LEAVE UNDISTURBED THOSE MARKERS OR MONUMENTS SET FOR THE SUBDIVISION OF LAND.

   IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO UTILIZE THE "GOPHER STATE ONE CALL" EXCAVATION NOTICE SYSTEM AS REQUIRED UNDER MINNESOTA STATUTE CHAPTER 216D. CALL 811 OR SUBMIT A TICKET AT gopherstateonecall.org AT LEAST 48 HOURS PRIOR TO PERFORMING ANY EXCAVATION.

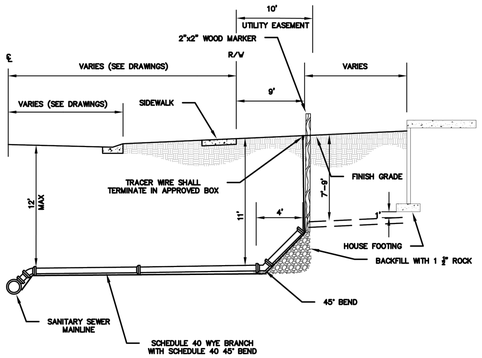
2. COMPACTION: DENSITY TESTS SHALL BE TAKEN ON ALL TRENCHES WITHIN THE STREET CROSS SECTION AND THE PAD AREAS TO EVALUATE THE COMPACTION ACHIEVED DURING UTILITY CONSTRUCTION. WITHIN THE UPPER 3 FEET OF STREET SUBGRADE THE CONTRACTOR SHALL INSURE THAT ALL SOILS BE NOT MORE THAN ONE PERCENTAGE POINT OVER THE SOIL'S STANDARD PROCTOR OPTIMUM MOISTURE CONTENT, AND THAT COMPACTION TO A MINIMUM OF 100% OF STANDARD PROCTOR DENSITY (AASHTO T-99) BE PROVIDED. WITHIN UTILITY TRENCHES IN OPEN SPACE AREAS (PAD AREAS) AND AREAS BELOW THE UPPER 3 FEET OF STREET SUBGRADE, THE CONTRACTOR SHALL INSURE THAT ALL SOILS BE NOT MORE THAN THREE PERCENTAGE POINTS OVER THE SOIL'S STANDARD PROCTOR OPTIMUM MOISTURE CONTENT, AND THAT COMPACTION TO A MINIMUM OF 95% OF STANDARD PROCTOR DENSITY BE PROVIDED. THE SURFACE OF ALL UTILITY TRENCHES SHALL BE FINISHED GRADED TO THE ELEVATIONS AS STAKED BY THE ENGINEER TO WITHIN A TOLERANCE OF ±0.3' IN OPEN SPACE AREAS AND ± 0.1' WITHIN STREET RIGHT OF WAYS. THE DENSITY WILL BE TESTED BY AN APPROVED TESTING LABORATORY. AN APPROVED TESTING METHOD WHICH UTILIZES A NUCLEAR DENSITY METER MAY BE USED FOR THE DENSITY TESTS. THE LOCATION OF THE TESTS WILL BE AT THE DIRECTION OF THE ENGINEER.

   THE OWNER SHALL BEAR ALL COSTS OF THE TESTING. FAILURE TO MEET THE COMPACTION REQUIREMENTS OUTLINED IN THIS SECTION SHALL BE CORRECTED AT THE CONTRACTOR'S EXPENSE. ALL COSTS FOR ANY RE-TESTING ASSOCIATED WITH ANY CORRECTIVE WORK SHALL BE AT THE EXPENSE OF THE CONTRACTOR.

3. ALL PVC WATERMAIN TO BE INSTALLED WITH 8.5' MINIMUM COVER. ALL DIP WATERMAIN TO BE INSTALLED WITH 7.5' MINIMUM COVER.

4. ALL 8" WATERMAIN TO BE CONSTRUCTED OF CLASS C900 PVC W/ TRACER WIRE.

5. SANITARY SEWER PIPE TYPE & CLASS AS FOLLOWS:
   a. 0' - 18' DEEP = PVC SDR 35
   b. 18' - 28' DEEP = PVC SDR 26
   c. 28' - 32' DEEP = PVC SDR 18, AWWA C900
   d. 32' + DEEP = POLYBOND LINED DIP, ASTM A746



NOTES:

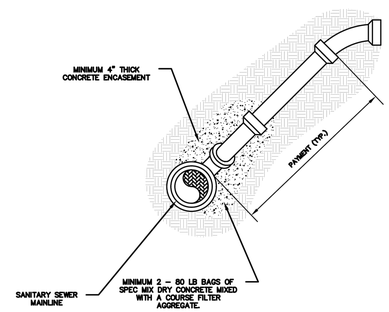
SEWER SERVICE, PVC SCHEDULE 40 4" OR 6" AS SPECIFIED

2% MINIMUM SLOPE OR 12% MAXIMUM SLOPE, ½" PER FOOT

ALL PIPE SHALL BE BEDDED IN GRANULAR BORROW 3149 B.1 OR COURSE FILTER AGGREGATE 3149H

END OF SERVICE SHALL BE 7' TO 8' DEEP AT END OF SERVICE. THE END SHALL BE A FACTORY JOINT WITH PLUG, USING A FACTORY MANUFACTURED ADAPTOR WHERE NECESSARY

CITY OF ROGERS	SANITARY SEWER SERVICE	Standard Details	SAN–1
		Date: SEPTEMBER, 2020	
		Revised:	



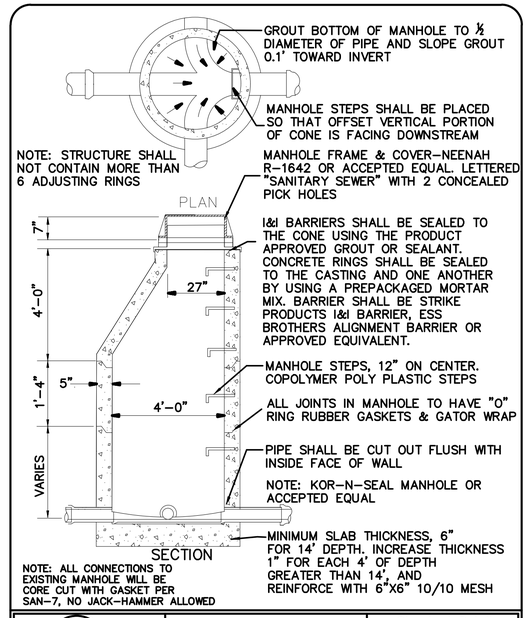
NOTES:

SERVICE CONNECTION TO BE AT 2:00 OR 10:00 WITH APPROVED FACTORY INSTALLED SCHEDULE 40 WYE.

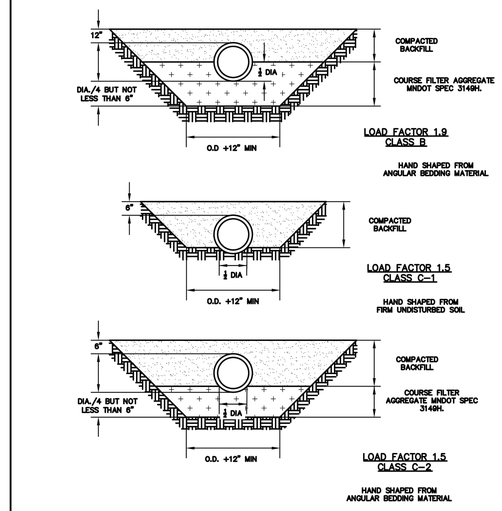
4" OR 6" SANITARY SEWER SERVICE RISER SUPPORT ON TRENCH SLOPE 1:1 MAX

SCHEDULE 40 PVC SERVICES

CITY OF ROGERS	SANITARY SEWER SERVICE RISER	Standard Details	SAN–2
		Date: SEPTEMBER, 2020	
		Revised:	



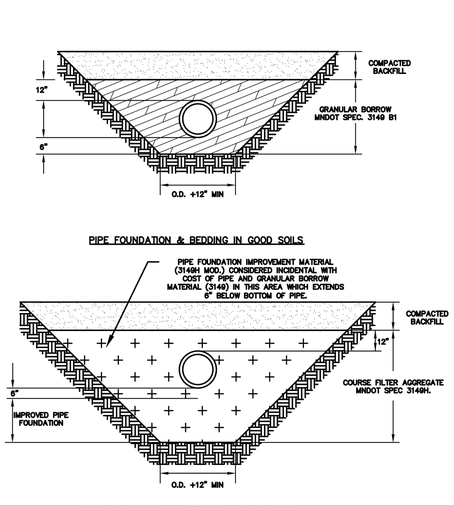
CITY OF ROGERS	STANDARD SANITARY MANHOLE	Standard Details	SAN–4
		Date: SEPTEMBER, 2020	
		Revised:	



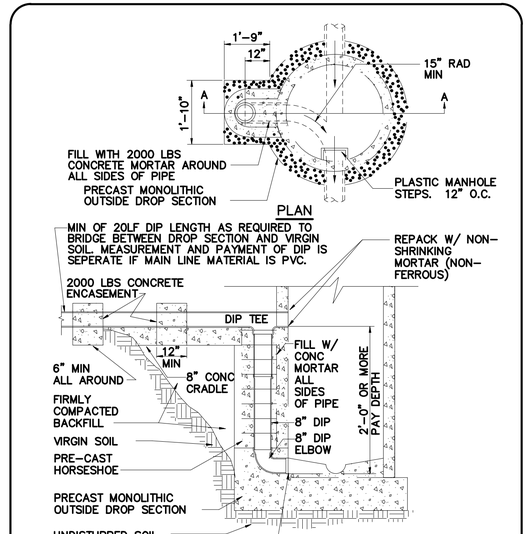
NOTES:

"DIA" DENOTES OUTSIDE DIAMETER OF PIPE

CITY OF ROGERS	PIPE BEDDING METHODS FOR RCP OR DIP	Standard Details	SAN–11
		Date: SEPTEMBER, 2020	
		Revised:	



CITY OF ROGERS	PIPE BEDDING METHODS FOR PVC	Standard Details	SAN–12
		Date: SEPTEMBER, 2020	
		Revised:	



CITY OF ROGERS	SANITARY MANHOLE OUTSIDE DROP SECTION	Standard Details	SAN–13
		Date: SEPTEMBER, 2020	
		Revised:	

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EMERSON GROVE
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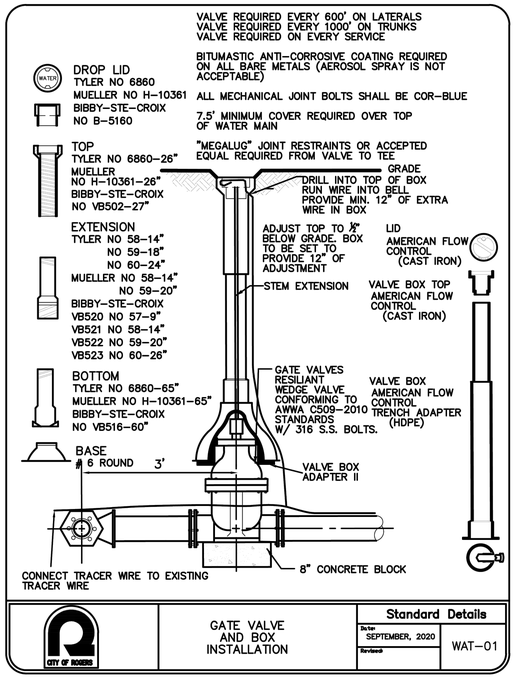
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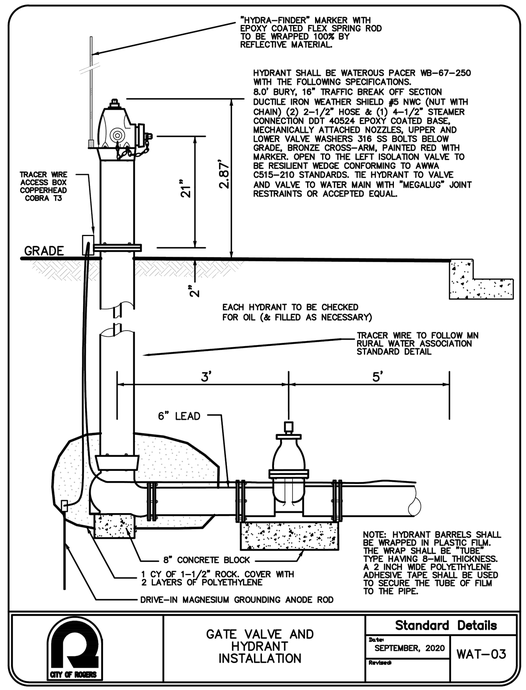
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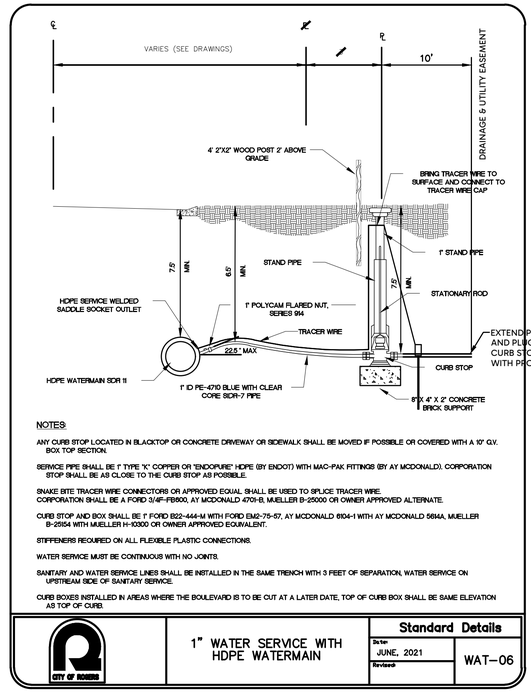
GATE VALVE AND BOX INSTALLATION

Standard Details
Date: SEPTEMBER, 2020
Revised:
WAT-01



GATE VALVE AND HYDRANT INSTALLATION

Standard Details
Date: SEPTEMBER, 2020
Revised:
WAT-03



NOTES:

ANY CURB STOP LOCATED IN BLACKTOP OR CONCRETE DRIVEWAY OR SIDEWALK SHALL BE MOVED IF POSSIBLE OR COVERED WITH A 10" GV. BOX TOP SECTION.

SERVICE PIPE SHALL BE 1" TYPE "K" COPPER OR "ENDOPURE" HDPE (BY ENDOT) WITH MAC-PAK FITTINGS (BY AY MCDONALD). CORPORATION STOP SHALL BE AS CLOSE TO THE CURB STOP AS POSSIBLE.

SNAKE BITE TRACER WIRE CONNECTORS OR APPROVED EQUAL SHALL BE USED TO SPLICE TRACER WIRE. CORPORATION SHALL BE A FORD 3/4F-FB500, AY MCDONALD 4701-B, MUELLER B-25000 OR OWNER APPROVED ALTERNATE.

CURB STOP AND BOX SHALL BE 1" FORD B22-444-M WITH FORD EM2-75-57, AY MCDONALD 6104-1 WITH AY MCDONALD 56HA, MUELLER B-20254 WITH MUELLER H-10300 OR OWNER APPROVED EQUIVALENT.

STIFFENERS REQUIRED ON ALL FLEXIBLE PLASTIC CONNECTIONS.

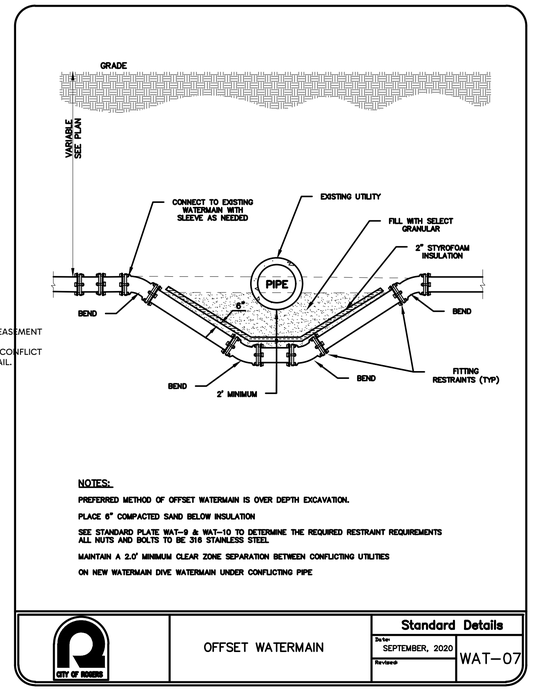
WATER SERVICE MUST BE CONTINUOUS WITH NO JOINTS.

SANITARY AND WATER SERVICE LINES SHALL BE INSTALLED IN THE SAME TRENCH WITH 3 FEET OF SEPARATION. WATER SERVICE ON UPSTREAM SIDE OF SANITARY SERVICE.

CURB BOXES INSTALLED IN AREAS WHERE THE BOULEVARD IS TO BE CUT AT A LATER DATE, TOP OF CURB BOX SHALL BE SAME ELEVATION AS TOP OF CURB.

1" WATER SERVICE WITH HDPE WATERMAIN

Standard Details
Date: JUNE, 2021
Revised:
WAT-06



NOTES:

PREFERRED METHOD OF OFFSET WATERMAIN IS OVER DEPTH EXCAVATION.

PLACE 6" COMPACTED SAND BELOW INSULATION

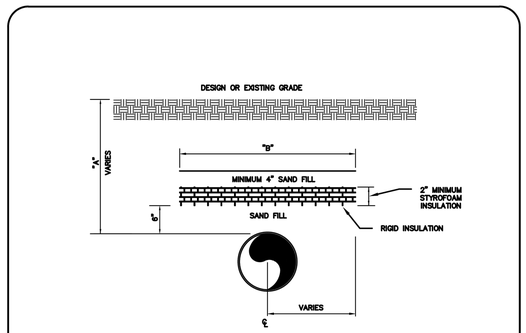
SEE STANDARD PLATE WAT-9 & WAT-10 TO DETERMINE THE REQUIRED RESTRAINT REQUIREMENTS ALL NUTS AND BOLTS TO BE 316 STAINLESS STEEL.

MAINTAIN A 2.0' MINIMUM CLEAR ZONE SEPARATION BETWEEN CONFLICTING UTILITIES

ON NEW WATERMAIN DIVE WATERMAIN UNDER CONFLICTING PIPE

OFFSET WATERMAIN

Standard Details
Date: SEPTEMBER, 2020
Revised:
WAT-07



NOTES:

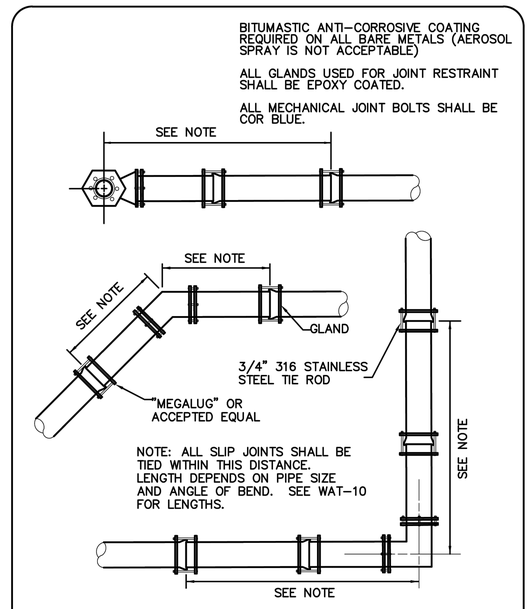
PIPE SHALL BE CENTERED UNDER INSULATION UNLESS OTHERWISE SPECIFIED

COVER OVER PIPE - "A"	WIDTH OF INSULATION BOARD - "B"
2'	12'
3'	10'
4'	8'
5'	6'
6'	4'

2" OF INSULATION = 2' OF COVER

INSULATION DETAIL

Standard Details
Date: SEPTEMBER, 2020
Revised:
WAT-08



WATERMAIN TYING DETAIL

Standard Details
Date: SEPTEMBER, 2020
Revised:
WAT-09

TRACER WIRE

TRACER WIRE SHALL BE COPPERHEAD #12 AWG CCS COMPLYING WITH ASTM-D-1248, 30 VOLT RATING, GREEN FOR SEWER SERVICES AND FORCEMAIN AND BLUE FOR WATER MAIN
- #1230HS HIGH STRENGTH FOR OPEN CUT
- #1245EHS EXTRA HIGH STRENGTH FOR HORIZONTAL DIRECTIONAL DRILLING AND JACK/BORING
- SPLICING 2 WIRES, DRYCONN KING 6 BLUE
- SPLICING 3 OR MORE, DRYCONN DIRECT BURY LUG YELLOW
- WIRE SPLICING WILL BE ALLOWED WHEN APPROVED ONLY

ALL NEW TRACER WIRE INSTALLATIONS SHALL BE LOCATED USING TYPICAL LOW FREQUENCY (512 HZ) LINE TRACING EQUIPMENT, WITNESSED BY THE CONTRACTOR, ENGINEER AND FACILITY OWNER AS APPLICABLE, PRIOR TO ACCEPTANCE OF OWNERSHIP.

POLYVINYL CHLORIDE PIPE (PVC) - C900

PVC WATER DISTRIBUTION PIPE AND JOINTS SHALL CONFORM TO: AWWA C-900 (DR) ASTM D3139

NOTE: TRACER WIRE ACCESSES SHALL NOT EXCEED 500-FT

DUCTILE IRON PIPE

DIP WATER DISTRIBUTION PIPE SHALL BE PRESSURE CLASS 350 AWWA C150/151.

PLASTIC FILM WRAP FOR DIP

WATER DISTRIBUTION PIPE, RISER PIPE, AND HYDRANT BARRELS SHALL BE WRAPPED IN PLASTIC FILM. THE WRAP SHALL BE "TUBE" TYPE HAVING 8-MIL THICKNESS. A 2 INCH WIDE POLYETHYLENE ADHESIVE TAPE SHALL BE USED TO SECURE THE TUBE OF FILM TO THE PIPE.

DUCTILE IRON FITTINGS

WATER MAIN FITTINGS SHALL CONFORM TO ANSI A21.53, A21.11 & A21.4. FITTINGS SHALL BE COATED WITH 6 - 8 MM MINIMUM THICKNESS FUSION BONDED EPOXY CONFORMING TO ANSI/AWWA C550 AND C116/A21.16.

THRUST RESTRAINT

ALL WATER MAIN, VALVES, SERVICES, FITTINGS, STUBS, EXTENSIONS, BLIND FLANGES, AND PLUGS USED FOR RETAINING WATER PRESSURE MUST BE TIED WITH "MEGALUG" JOINT RESTRAINTS OR ACCEPTED EQUAL. BASED UPON A 150 PSI TEST PRESSURE AND 7.5' COVER, THE FOLLOWING SHOWS THE MINIMUM LENGTH OF PIPE EACH WAY OF A FITTING TO BE RESTRAINED. JOINT RESTRAINTS TO BE EPOXY COATED AS REQUIRED ON WATER MAIN FITTINGS.

PIPE DIAMETER	DEAD END TEE BRANCH OR 90^BEND	45^BEND	22-1/2^BEND
4" (SERVICE)	22 LF	5 LF	2 LF
6"	23 LF	7 LF	3 LF
8"	30 LF	10 LF	5 LF
10"	39 LF	12 LF	5 LF
12"	50 LF	16 LF	5 LF

ALL TEES WITH A VALVE IMMEDIATELY AFTER A TEE BRANCH SHOULD BE TREATED AS A 90 DEGREE BEND.

WHERE RESTRAINED JOINTS ARE REQUIRED AND THE PIPE IS IN A CASING NEAR THE FITTING TO BE RESTRAINED, THE LENGTH OF PIPE IN THE CASING SHALL NOT BE INCLUDED IN THE LENGTH OF PIPE NECESSARY TO DEVELOP SUFFICIENT SOIL FRICTION TO OVERCOME THRUST.

ALL BARE METALS SHALL HAVE TWO COATS OF BITUMASTIC OR ACCEPTED EQUAL (AEROSOL SPRAY IS NOT ACCEPTABLE) ALL MECHANICAL JOINT BOLTS SHALL BE COR-BLUE. ALL JOINT TIE RODS AND NUTS SHALL BE 316 STAINLESS STEEL.

WATER MAIN DETAILS AND TIE SCHEDULE TABLE

Standard Details
Date: SEPTEMBER, 2020
Revised:
WAT-10

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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.

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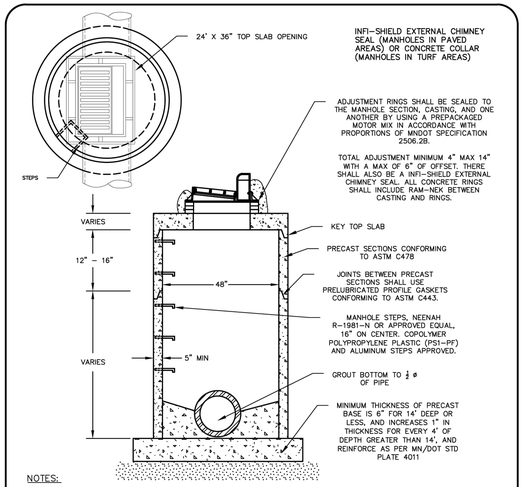
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PROJECT NO.
24288

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NOTES:

FRAME AND GRATE FOR BULKHEAD STYLE CURB SHALL BE A NEENAH R-3067-V OR NEENAH R-3067-VB

FRAME AND GRATE FOR SURMOUNTABLE STYLE CURB OR DRIVEWAYS SHALL BE A NEENAH R-3501-TR OR R-3501-TL LOW POINTS 3501-TB

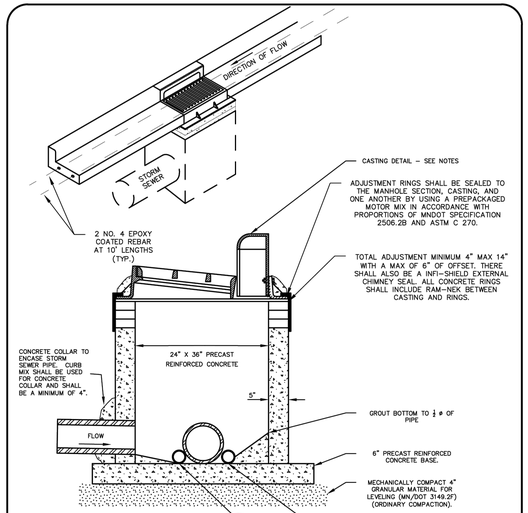
FRAME AND GRATE FOR OFF ROAD LOCATION (DITCH GRATE, STOOL TYPE) R-4342

ALL MANHOLES WITH FRAME AND LID IN A PAVED AREA SHALL USE A NEENAH R-1642 WITH SOLID B LID WITH 2 CONCEALED PICK HOLES OR APPROVED EQUAL. LID SHALL BE LETTERED "STORM SEWER" WITH 2" RAISED LETTERS

DOG HOUSES SHALL BE GROUTED ON BOTH THE OUTSIDE AND INSIDE OF THE STRUCTURE

DRAINTILE OPENING MUST BE CORE-DRILLED OR PRECAST AND GROUTED INSIDE AND OUTSIDE OF THE STRUCTURE.

CITY OF ROGERS	STORM SEWER MANHOLE	Standard Details	STO-1
		Date: SEPTEMBER, 2020	
		Revised:	



NOTES:

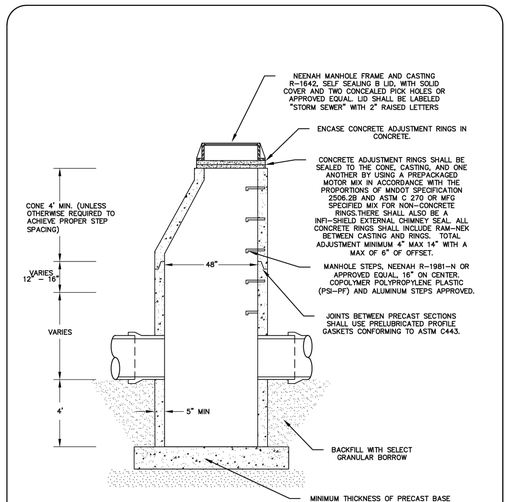
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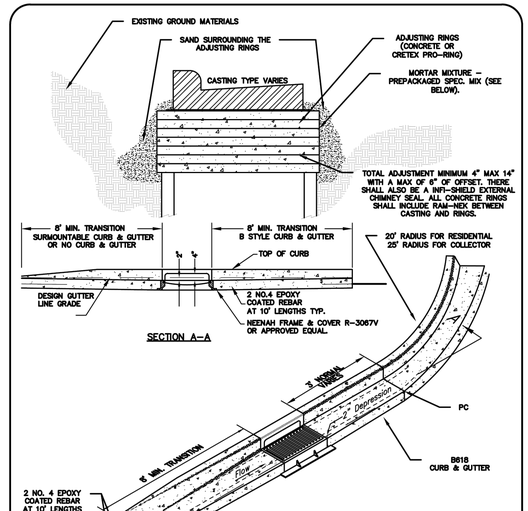
FRAME AND GRATE FOR OFF ROAD LOCATION (DITCH GRATE, STOOL TYPE) R-4342

DOG HOUSES AND RINGS SHALL BE GROUTED ON BOTH THE OUTSIDE AND INSIDE OF THE STRUCTURE

CITY OF ROGERS	STORM SEWER JUNCTION MANHOLE	Standard Details	STO-2
		Date: JUNE, 2021	
		Revised:	



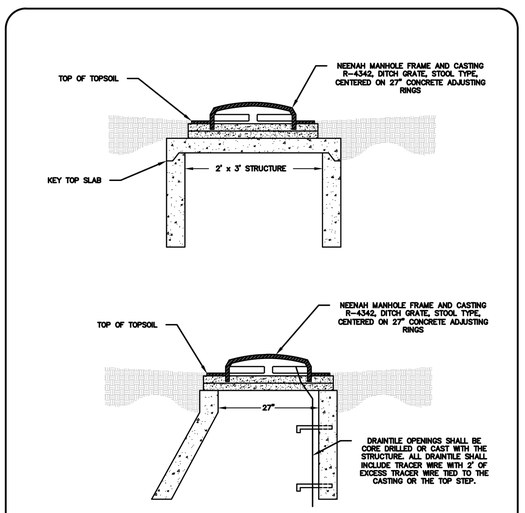
CITY OF ROGERS	STANDARD MANHOLE WITH SUMP	Standard Details	STO-3
		Date: SEPTEMBER, 2020	
		Revised:	



NOTES:

THE CONCRETE ADJUSTMENT RINGS SHALL BE SEALED TO THE CONE, CASTING AND ONE ANOTHER BY USING A PREPACKAGED MORTAR MIX IN ACCORDANCE WITH PROPORTIONS OF MNDOT SPECIFICATION 2506.2B AND ASTM C 270. THIS WILL ALSO BE USED FOR ALL "MUD WORK" INSIDE OF CONCRETE STRUCTURES

CITY OF ROGERS	CB ADJUSTMENT AND CB PLACEMENT IN CONCRETE CURB AND GUTTER	Standard Details	STO-5
		Date: SEPTEMBER, 2020	
		Revised:	



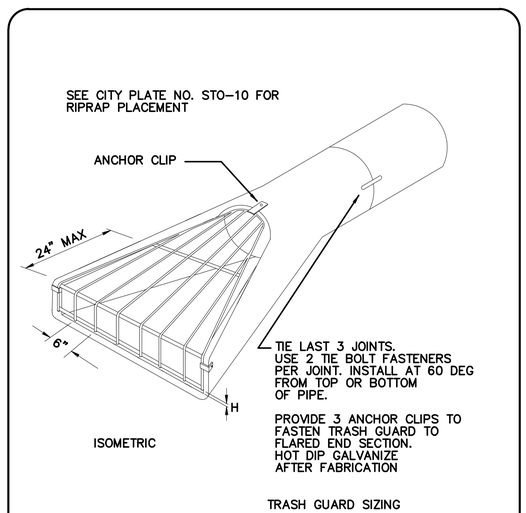
NOTES:

THE CONCRETE ADJUSTING RINGS SHALL BE SEALED TO THE CONE AND ONE ANOTHER BY USING MORTAR MIX IN ACCORDANCE WITH THE PROPORTIONS OF MNDOT SPECIFICATION 2506.2B AND ASTM C 270.THERE SHALL ALSO BE A INFI-SHIELD EXTERNAL CHIMNEY SEAL

THIS WILL ALSO BE USED FOR ALL "MUD WORK" INSIDE OF CONCRETE STRUCTURES

THE CASTING SHALL NOT BE SEALED TO THE ADJUSTMENT RINGS TO FACILITATE IN THE REMOVAL OF THE CASTING IF NECESSARY.

CITY OF ROGERS	CATCH BASIN FOR R-4342 CASTING	Standard Details	STO-6
		Date: SEPTEMBER, 2020	
		Revised:	

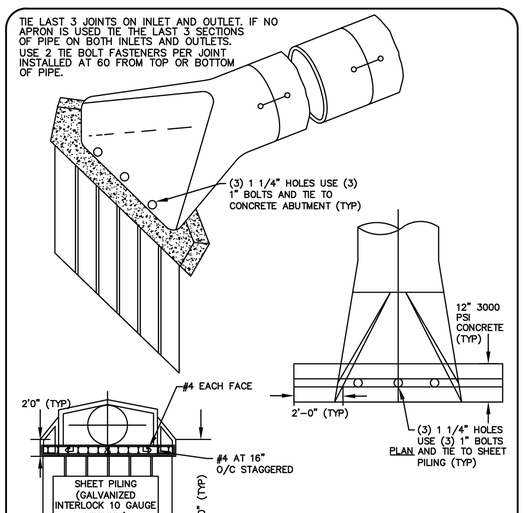


ISOMETRIC

TRASH GUARD SIZING

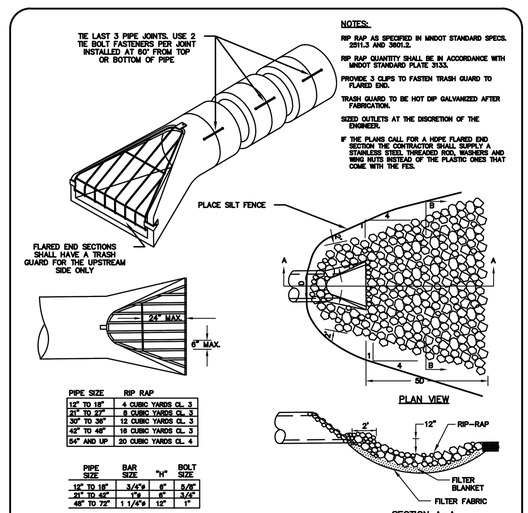
PIPE SIZE	BARS	"H"	BOLTS
12"-18"	¾" DIA	4"	⅝"
21"-42"	1" DIA	6"	¾"
48"-72"	1-1/4" DIA	12"	1"

CITY OF ROGERS	FLARED END SECTION AND TRASH GUARD	Standard Details	STO-7
		Date: SEPTEMBER, 2020	
		Revised:	



NOTE:
THIS DRAWING IS TYPICAL FOR ALL FLARED END SECTIONS 30 INCHES IN DIAMETER OR LARGER.

CITY OF ROGERS	OUTLET SHEET PILING	Standard Details	STO-9
		Date: SEPTEMBER, 2020	
		Revised:	



PIPE SIZE	RIP RAP
12" TO 18"	4 CUBIC YARDS CL. 3
21" TO 27"	8 CUBIC YARDS CL. 3
30" TO 36"	12 CUBIC YARDS CL. 3
42" TO 48"	16 CUBIC YARDS CL. 3
54" AND UP	20 CUBIC YARDS CL. 4

PIPE SIZE	BAR SIZE	"H"	BOLT SIZE
12" TO 18"	3/4"ø	6"	5/8"
21" TO 42"	1"ø	6"	3/4"
48" TO 72"	1 1/4"ø	12"	1"

CITY OF ROGERS	RIPRAP AT OUTLETS	Standard Details	STO-10
		Date: SEPTEMBER, 2020	
		Revised:	

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BURNSVILLE, MN 55306
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jbender@mnhill.com
www.mnhill.com

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

PRELIMINARY

Date: _____ Reg.No. _____

EMERSON GROVE
ROGERS, MINNESOTA
CONSTRUCTION DETAILS
FOR
PULTE GROUP
1650 W. 82ND STREET, SUITE 300, BLOOMINGTON, MN 55431

DRAWN BY
JSO

DATE
11/21/2025

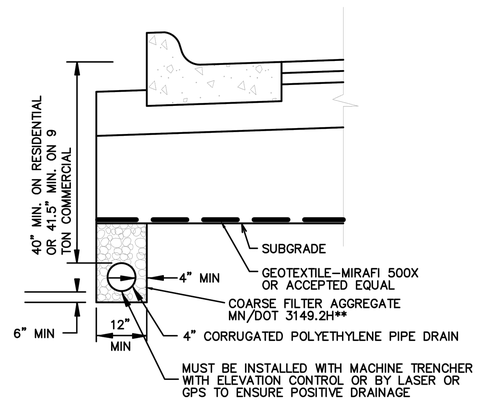
REVISIONS

CAD FILE
24288D

PROJECT NO.
24288

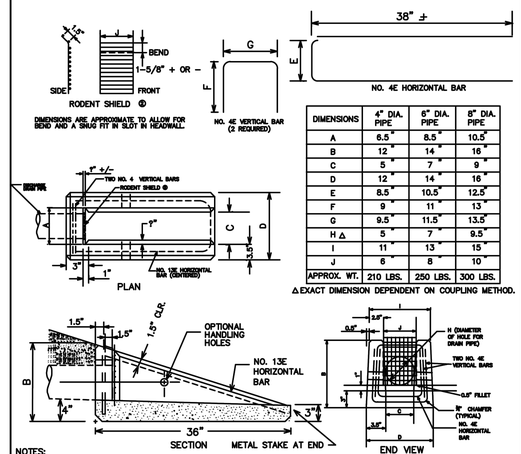
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** COURSE FILTER AGGREGATE INCIDENTAL TO 4" CORRUGATED POLYETHYLENE PIPE

CITY OF ROGERS	POLYETHYLENE PERFORATED PIPE	Standard Details	STO–11
		Date: SEPTEMBER, 2020 Revised:	

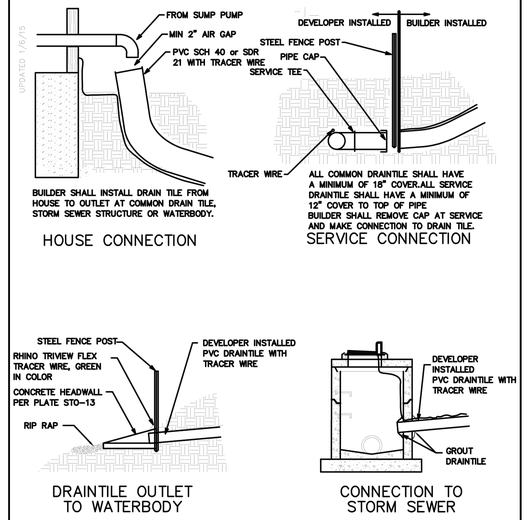


DIMENSIONS	4" DIA. PIPE	6" DIA. PIPE	8" DIA. PIPE
A	6.5"	8.5"	10.5"
B	12"	14"	16"
C	5"	7"	9"
D	12"	14"	16"
E	8.5"	10.5"	12.5"
F	9"	11"	13"
G	9.5"	11.5"	13.5"
H △	5"	7"	9.5"
I	11"	13"	15"
J	6"	8"	10"
APPROX. WT.	210 LBS.	250 LBS.	300 LBS.

△ EXACT DIMENSION DEPENDENT ON COUPLING METHOD.

NOTES:
1. ALL CONCRETE MATERIALS SHALL BE MN/DOT MIX DESIGNATION 3W46 AND/OR OTHER MIX AS APPROVED BY THE STATE MATERIALS ENGINEER. HEADWALLS SHALL NOT BE SHIPPED UNTIL CONCRETE HAS REACHED A COMPRESSIVE STRENGTH OF 5000 PSI. THE EPOXY BARS SHALL BE SECURELY RETAINED SO THEY ARE NOT DISPLACED DURING CONCRETE PLACEMENT. TIE WIRE SHALL BE EPOXY COATED. WELDING WILL NOT BE PERMITTED. THE FABRICATOR SHALL PROVIDE A QUALITY CONTROL PROGRAM APPROVED BY THE MATERIALS ENGINEER.
2. THE RODENT SHIELD SHALL BE FABRICATED FROM CARBON STEEL FLATTENED EXPANDED METAL STYLE 3/4 NO 4F. IT SHALL BE HOT DIPPED GALVANIZED AFTER FABRICATION. ACTUAL SCREEN DIMENSIONS SHALL BE SUCH AS WILL SNUGLY FIT THE PROVIDED SLOT (TAPERED IF NECESSARY), WITH THE SCREEN LIP FITTING FLUSH WITH THE CASTING TOP AND THE BOTTOM FITTING TIGHT TO THE FLOW LINE.
3. THE MANUFACTURER'S NAME AND DATE OF PRODUCTION (MONTH AND YEAR) SHALL BE CLEARLY CAST (NOT INK STAMPED) INTO EITHER THE BOTTOM OF EACH HEADWALL OR NEAR THE BOTTOM OF THE LARGE END. IF A MANUFACTURER HAS MORE THAN ONE PLANT, THEY SHALL BE APPROPRIATELY CODED.

CITY OF ROGERS	PRECAST CONCRETE HEADWALL FOR SUBSURFACE DRAINS	Standard Details	STO–13
		Date: SEPTEMBER, 2020 Revised:	



CITY OF ROGERS	SUMP PUMP DISCHARGE REQUIREMENTS	Standard Details	STO–14
		Date: SEPTEMBER, 2020 Revised:	

CITY OF ROGERS MINIMUM DRAIN TILE REQUIREMENTS

(REQUIREMENTS FOR ALL NEW HOMES AS OF JANUARY, 2016)

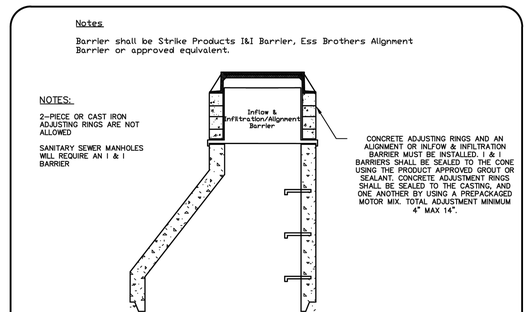
- PIPE SIZE – 4" PVC
- TYPE OF PIPE – SCH 40 OR ASTM 1785, OR SDR 21
- DEPTH OF PIPE – 12" TO TOP OF PIPE FROM FINISH GRADE
- TRACER WIRE – MINIMUM GAUGE #12 COPPERHEAD COPPER CLAD STEEL TRACER WIRE, GREEN IN COLOR.

NOTE: ALL STORM SEWER PIPE CROSSINGS THAT PENETRATE THE TYPICAL SECTION SHALL INCLUDE DRAINTILE THAT RUNS PARALLEL TO THE CROSSING. THIS DRAINTILE SHALL TIE INTO BOTH DRAINAGE STRUCTURES AND BE PLACED AT THE BOTTOM OF THE PIPE TRENCH.

NOTE: CORRECT FITTINGS MUST BE USED WITH ALL PIPE, NO TAPING OR SPLICING WILL BE ACCEPTED. A TRACER WIRE SHALL BE INSTALLED ALONG WITH THE PIPE, THIS WIRE MUST BE COPPERHEAD #12 AWG CCS #1230HS COMPLYING WITH ASTM–D–1248, 30 VOLT RATING BE EXPOSED A MINIMUM LENGTH OF 12 INCHES AT THE HOUSE AND SHALL DEAD END AT THE CONNECTION OR TILE DISCHARGE. NO WIRE SHALL BE ACCEPTED EXCEPT AS SPECIFIED ABOVE.

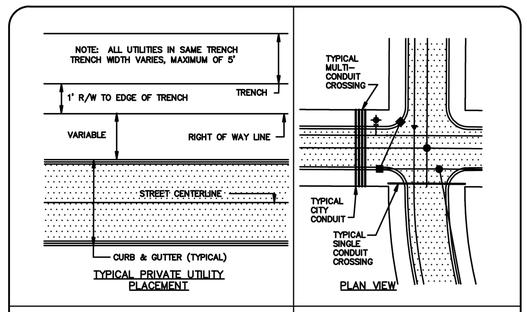
NOTE: THE TRENCH MUST BE LEFT OPEN AT ALL CONNECTIONS FOR INSPECTION PURPOSES. IF A TILE LINE IS TO DEAD END INTO A POND OR WET LAND A FENCE POST SHALL CLEARLY MARK ITS END. ALL INSPECTIONS SHALL REQUIRE A 24 HOUR NOTICE. ALL TRENCHES MUST BE BACK FILLED WITHIN 24 HOURS. IT IS RECOMMENDED THAT A REPRESENTATIVE OF THE BUILDER BE PRESENT AT ALL INSPECTIONS.

CITY OF ROGERS	SUMP PUMP DISCHARGE REQUIREMENTS	Standard Details	STO–14A
		Date: SEPTEMBER, 2020 Revised:	

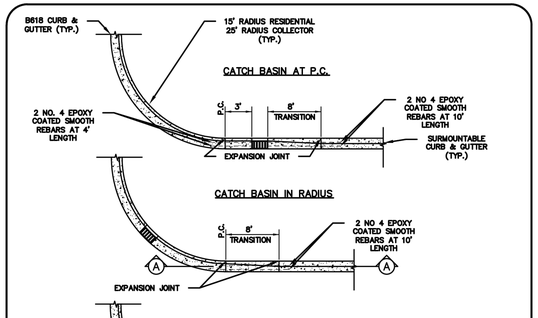


BITUMINOUS WEAR COURSE ADJUSTMENT DETAIL

CITY OF ROGERS	MANHOLE CASTING ADJUSTMENT DETAIL	Standard Details	STR–10
		Date: SEPTEMBER, 2020 Revised:	



CITY OF ROGERS	PRIVATE UTILITY CONDUIT CROSSING	Standard Details	STR–11
		Date: SEPTEMBER, 2020 Revised:	



NOTES:
EXPANSION JOINT MATERIAL SHALL BE CLOSED CELL POLYETHYLENE

CITY OF ROGERS	CURB RADIUS	Standard Details	CON–2
		Date: SEPTEMBER, 2020 Revised:	

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2999 WEST C.R. 42, SUITE 100
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www.mnhill.com

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

PRELIMINARY

Date: _____ Reg.No. _____

EMERSON GROVE
ROGERS, MINNESOTA
CONSTRUCTION DETAILS

FOR
PULTE GROUP
1650 W. 82ND STREET, SUITE 300, BLOOMINGTON, MN 55431

DRAWN BY
JSO

DATE
11/21/2025

REVISIONS

CAD FILE
24288D

PROJECT NO.
24288

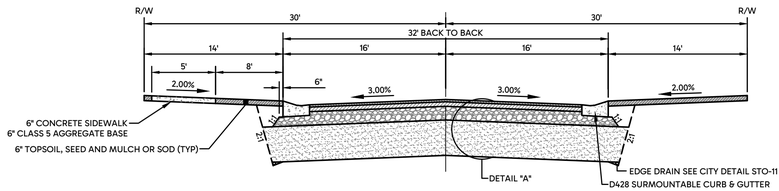
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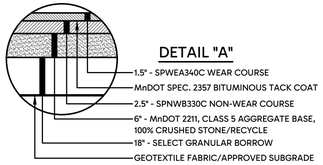
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60' R-O-W STREET A & B TYPICAL SECTION

NOT TO SCALE

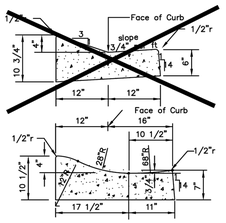
TYPICAL EQUATION
D428 SURMOUNTABLE: TC=CL-0.14'

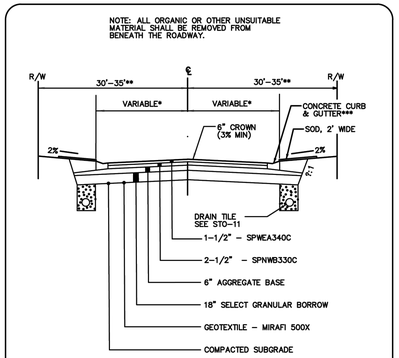




DETAIL "A"

- 1.5" - SPWEA340C WEAR COURSE
- MnDOT SPEC. 2357 BITUMINOUS TACK COAT
- 2.5" - SPNWB330C NON-WEAR COURSE
- 6" - MnDOT 2211, CLASS 5 AGGREGATE BASE, 100% CRUSHED STONE/RECYCLE
- 18" - SELECT GRANULAR BORROW
- GEOTEXTILE FABRIC/APPROVED SUBGRADE





* 16' FOR RESIDENTIAL URBAN
19.5' FOR LOW VOLUME MINOR COLLECTOR
21' FOR HIGH VOLUME MINOR COLLECTOR
** 30' FOR RESIDENTIAL URBAN
35' FOR MINOR COLLECTORS
*** SURMOUNTABLE FOR RESIDENTIAL URBAN B618 OR SURMOUNTABLE FOR MINOR COLLECTORS

BITUMINOUS STREET WITH CONCRETE CURB AND GUTTER

CITY OF ROGERS	CURB RADIUS	Standard Details Date: SEPTEMBER, 2020 Revised:	CON-1A

CITY OF ROGERS	TYPICAL SECTION FOR COLLECTOR & RESIDENTIAL STREETS –URBAN SECTION	Standard Details Date: SEPTEMBER, 2019 Revised:	STR-7A

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jbender@mnhill.com
www.mnhill.com

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

PRELIMINARY

Date: _____ Reg.No. _____

EMERSON GROVE
ROGERS, MINNESOTA

FOR PULTE GROUP
1650 W. 82ND STREET, SUITE 300, BLOOMINGTON, MN 55431

CONSTRUCTION DETAILS

DRAWN BY
JSO

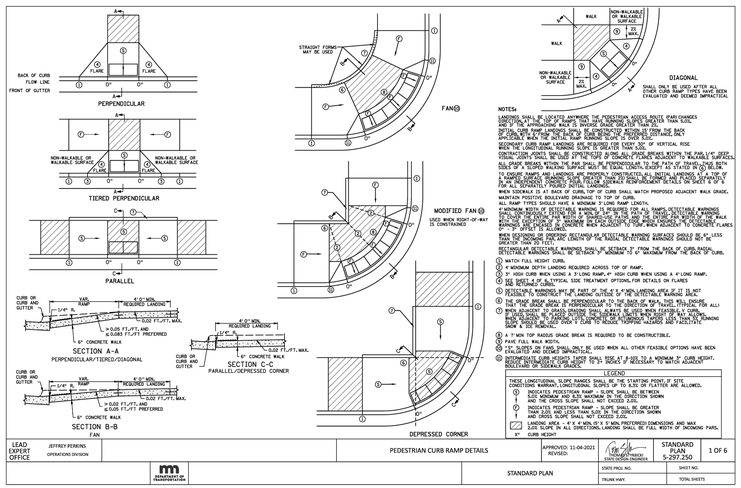
DATE
11/21/2025

REVISIONS

CAD FILE
24288D

PROJECT NO.
24288

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NOTES:

LANDING SHALL BE LOCATED AWHERE THE PEDESTRIAN ACCESS ROUTE (PAR) CHANGES DIRECTION OR USE A RAMP. LANDING AREA IS DEFINED AS NOT LESS THAN 5.0%.

DIRECTIONAL CURB RAMP LANDINGS SHALL BE CONSTRUCTED WITHIN 5% FROM THE BACK OF CURB TO THE BACK OF WALK. LANDING SHALL BE CONSTRUCTED WITHIN 2% FROM THE BACK OF WALK TO THE OUTLET RAMP SURMOUNTABLE CURB IF THERE IS CURBING ONLY.

SECONDARY CURB RAMP LANDINGS ARE REQUIRED FOR EVERY 30" OF VERTICAL RISE WHEN THE LONGITUDINAL RUNNING SLOPE IS GREATER THAN 5.0%.

CONSTRUCTION JOINTS SHALL BE CONSTRUCTED SO THAT ALL SURFACES WITHIN THE PAR 1/4" (MAX.) VERTICAL JOINTS SHALL BE FILLED WITH A SELF LEVELING SEALANT.

ALL GRADE BREAKS WITHIN THE PAR SHALL BE PERPENDICULAR TO THE PATH OF TRAVEL. GRADE BREAKS BETWEEN RAMP AND LANDING SURFACES MUST BE FLUSH.

TO ENSURE RAMPS AND LANDINGS ARE PROPERLY CONSTRUCTED ALL INITIAL LANDINGS AT TOP OF A RAMP SURFACE SHALL CONSTRUCTED WITH A CONCRETE PAVER. SEE DETAILS ON SHEET 6 OF 6.

WHEN SIDEWALK IS AT BACK OF CURB, TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE. MAINTAIN POSITIVE BOULEVARD DRAINAGE TO TOP OF CURB.

ALL RAMP TYPES SHOULD HAVE A MINIMUM 5'LONG RAMP LENGTH.

A MINIMUM WIDTH OF DETECTABLE WARNING IS REQUIRED FOR ALL RAMPS.DETECTABLE WARNINGS SHALL BE PLACED SO THAT THE EDGE NEAREST THE CURB LINE IS LOCATED WITHIN 6" OF THE BACK OF CURB. DETECTABLE WARNINGS SHALL BE PLACED SO THAT THE EDGE NEAREST THE WALK IS WITHIN 6" OF THE BACK OF WALK. DETECTABLE WARNINGS SHALL BE CONSTRUCTED PERPENDICULAR TO THE PATH OF TRAVEL. DETECTABLE WARNINGS SHALL BE 2'-0" WIDE IN THE DIRECTION OF TRAVEL.

WHEN DIAGONAL OR INWARD RETARDED AR DETECTABLE WARNING SURFACES SHOULD BE NO LESS THAN 2'-0" AND NO GREATER THAN 3'-0" IN THE DIRECTION OF TRAVEL.

DETECTABLE AR DETECTABLE WARNINGS SHALL BE SETBACK 3" MINIMUM TO 6" MAXIMUM FROM THE BACK OF CURB. SEE NOTES ⑤ & ⑥ FOR INFORMATION REGARDING RECTANGULAR DETECTABLE WARNING PLACEMENT.

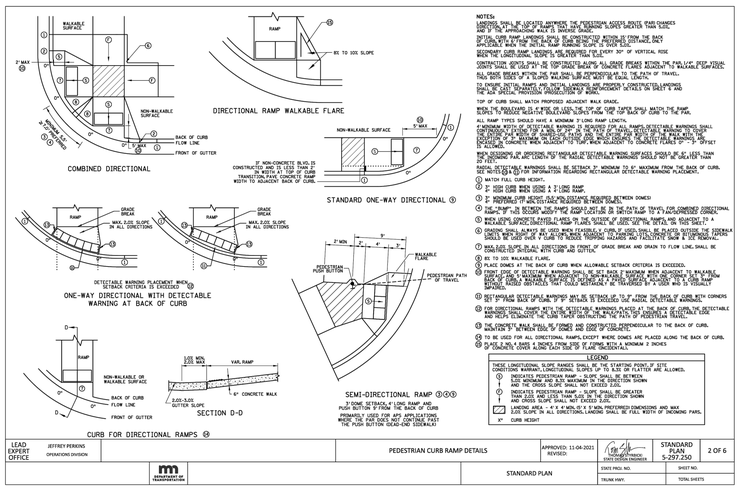
① MATCH FULL CURB HEIGHT.
② 3" HIGH CURB WHEN USING A 3'LONG RAMP.
③ 2" HIGH CURB WHEN USING A 2'LONG RAMP.
④ 1" MINIMUM CURB HEIGHT AND MAX DISTANCE REQUIRED BETWEEN DOMES!
⑤ THE "RAMP" IN BETWEEN THE RAMPS SHOULD NOT BE IN THE PATH OF TRAVEL FOR COMBINED DIRECTIONAL RAMP. IF THIS OCCURS THE RAMP SHALL BE CONSTRUCTED TO A MAXIMUM 2% SLOPE.
⑥ WHEN USING CONCRETE PAVER FLARES ON THE OUTSIDE OF DIRECTIONAL RAMPS, AND ADJACENT TO A WALKABLE SURFACE, DIRECTIONAL RAMP FLARE SHALL BE CONSTRUCTED AT A 10% SLOPE.
⑦ WHEN USING CONCRETE PAVER FLARES ON THE OUTSIDE OF DIRECTIONAL RAMPS, AND ADJACENT TO A WALKABLE SURFACE, DIRECTIONAL RAMP FLARE SHALL BE CONSTRUCTED AT A 10% SLOPE.
⑧ RECTANGULAR DETECTABLE WARNINGS MAY BE SETBACK UP TO 3" FROM THE BACK OF CURB WITH CORNERS SET AT 45 DEGREES TO THE PATH OF TRAVEL TO ACCOMMODATE CURVED CURB RETURNS.
⑨ FOR DIRECTIONAL RAMPS WITH THE DETECTABLE WARNINGS PLACED AT THE BACK OF CURB, THE DETECTABLE WARNINGS SHALL BE CONSTRUCTED TO A MAXIMUM 2% SLOPE TO ADDITIONAL DETECTABLE WARNINGS.
⑩ THE CONCRETE WALK SHALL BE FORMED AND CONSTRUCTED PERPENDICULAR TO THE BACK OF CURB. THE WALK SHALL NOT BE CONSTRUCTED AT A SKEW.
⑪ TO BE USED FOR 4 DIRECTIONAL RAMPS,EXCEPT WHERE DOMES ARE PLACED ALONG THE BACK OF CURB.
⑫ IF CONCRETE PAVER FLARES ARE USED, THE FLARE SHALL BE A MAXIMUM 2 INCHES

LEGEND

THESE LONGITUDINAL SLOPE RANGES SHALL BE THE STARTING POINT, IF SITE CONDITIONS WARRANT, LONGITUDINAL SLOPES SHALL BE FLATTER AND ARE ALLOWED.

① INDICATES PEDESTRIAN RAMP – SLOPE SHALL BE BETWEEN 5.0% AND 8.33% WITH 8.33% BEING THE MAXIMUM SLOPE ALLOWED
② INDICATES PEDESTRIAN RAMP – SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN
③ LANDING AREA – 4'-5' X 4'-5' MIN.,5' X 5' MIN.PREFERRED DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS,LANDING SHALL BE FULL WIDTH OF INCOMING PARS.
④ X" CURB HEIGHT

LEAD EXPERT OFFICE	JEFFREY PERKINS OPERATIONS DIVISION	PEDESTRIAN CURB RAMP DETAILS	APPROVED: 11-04-2021 REVISED:	STANDARD PLAN 5-297.250	1 OF 6
DEPARTMENT OF TRANSPORTATION	STANDARD PLAN	STATE PROJ. NO.	SHEET NO.	TOTAL SHEETS	
		TRUNK HWY.			



NOTES:

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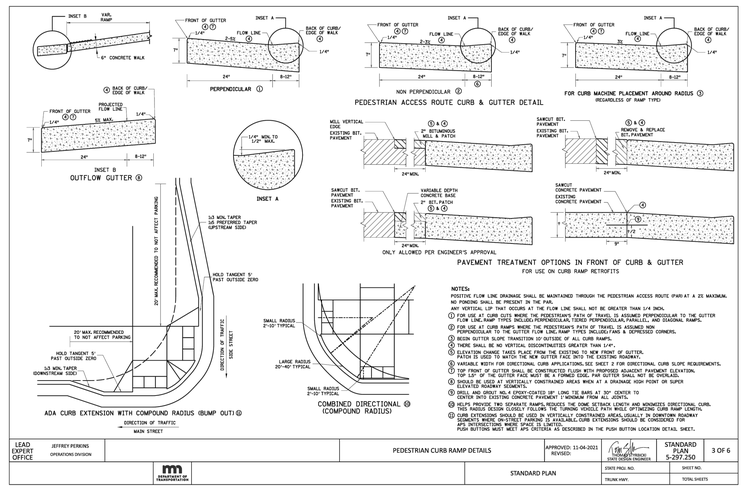
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⑫ IF CONCRETE PAVER FLARES ARE USED, THE FLARE SHALL BE A MAXIMUM 2 INCHES

LEGEND

THESE LONGITUDINAL SLOPE RANGES SHALL BE THE STARTING POINT, IF SITE CONDITIONS WARRANT, LONGITUDINAL SLOPES SHALL BE FLATTER AND ARE ALLOWED.

① INDICATES PEDESTRIAN RAMP – SLOPE SHALL BE BETWEEN 5.0% AND 8.33% WITH 8.33% BEING THE MAXIMUM SLOPE ALLOWED
② INDICATES PEDESTRIAN RAMP – SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN
③ LANDING AREA – 4'-5' X 4'-5' MIN.,5' X 5' MIN.PREFERRED DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS,LANDING SHALL BE FULL WIDTH OF INCOMING PARS.
④ TRANSITION PANEL(S) - TO BE USED FOR TRANSITIONING THE CROSS-SLOPE OF A WALKABLE SURFACE TO MATCH THE CROSS-SLOPE OF A CURB RAMP WHEN THE EXISTING FLOW LINE OF WALK DOES NOT ALIGN WITH THE CALCULATED TRANSITION LOCATION.
⑤ EXISTING CROSS SLOPE GREATER THAN 2.0%

LEAD EXPERT OFFICE	JEFFREY PERKINS OPERATIONS DIVISION	PEDESTRIAN CURB RAMP DETAILS	APPROVED: 11-04-2021 REVISED:	STANDARD PLAN 5-297.250	2 OF 6
DEPARTMENT OF TRANSPORTATION	STANDARD PLAN	STATE PROJ. NO.	SHEET NO.	TOTAL SHEETS	
		TRUNK HWY.			



GENERAL NOTES:

"TURNLANE" OR CROSSWALKS MEANS MAINTAINING LESS THAN 2% CROSS SLOPE WITHIN A CROSSWALK IS REQUIRED WHEN A ROADWAY IS IN A STOP OR YIELD CONDITION AND THE PROJECT SCOPE ALLOWS.

RECONSTRUCTION PROJECTS OR FULL PAVEMENT REPLACEMENT PROJECTS "TARLONG" OF ENTIRE CROSSWALK SHALL OCCUR WHEN FEASIBLE.

MILL & OVERLAY PROJECTS "TARLONG" OF FLOW LINE(S) IN FRONT OF THE PEDESTRIAN RAMP IS REQUIRED WHEN THE EXISTING FLOW LINE IS GREATER THAN 2%. THE NEW FLOW LINE PAVEMENT CAN NOT EXTEND INTO THE THROUGH LANE. THE FLARE TYPE FLOW LINE TO 2% OR AS MUCH AS POSSIBLE WHILE ADHERING TO THE FOLLOWING:

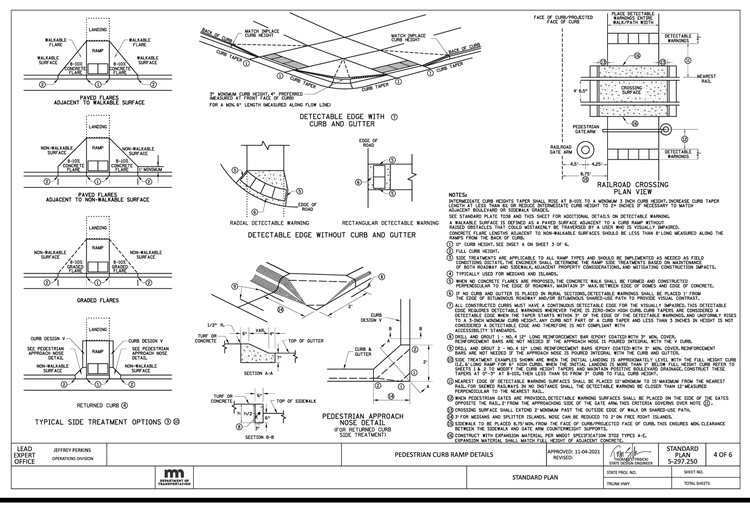
- 5.00% MIN CROSS-SLOPE OF THE ROAD
- 5.00% MAX CROSS-SLOPE OF THE ROAD
- UP TO 2% CHANGE IN FLOW LINE FROM EXISTING SLOPE IN FRONT OF PEDESTRIAN RAMP
- UP TO 2% CHANGE IN FLOW LINE FROM EXISTING SLOPE BEHIND THE PEDESTRIAN CURB RAMP

STAND-ALONE ADA RETROFITS/FILL/OR MILL & OVERLAY OBSTRUCTION ABOVE HOWEVER ALL PAVEMENT MARKING IS DONE WITH BITUMINOUS PATCHING ON BITUMINOUS ROADWAYS AND FULL-DEPTH APRON REPLACEMENT ON CONCRETE ROADWAYS.

RAISING OF CURB LINES SHOULD occur IN VERTICALLY CONSTRAINED AREAS RAISE THE CURB LINES ENOUGH TO ALLOW COMPLIANT RAMPS OR AS MUCH AS POSSIBLE WHILE MAINTAINING THE FOLLOWING:

- FLOW LINE MIN SLOPE 2.00% MAXIMUM CROSS-SLOPE OF THE ROAD
- 5.00% MAXIMUM AND 2.00% MINIMUM CROSS-SLOPE OF THE ROAD
- CURB MIN HEIGHT 6" MAX HEIGHT 8" TO ALLOW FOR ADEQUATE MATERIAL, SEPARATION MATERIAL SHALL MATCH FULL HEIGHT DIMENSION OF ADJACENT CONCRETE.
- USE AN APPROVED TYPE F G/4 INCH THICK SEPARATION MATERIAL, SEPARATION MATERIAL SHALL MATCH FULL HEIGHT DIMENSION OF ADJACENT CONCRETE.
- LONGITUDINAL THROUGH LANE ROADWAY TAPERS SHOULD BE 1" VERTICAL PER 15' HORIZONTAL

LEAD EXPERT OFFICE	JEFFREY PERKINS OPERATIONS DIVISION	PEDESTRIAN CURB RAMP DETAILS	APPROVED: 11-04-2021 REVISED:	STANDARD PLAN 5-297.250	3 OF 6
DEPARTMENT OF TRANSPORTATION	STANDARD PLAN	STATE PROJ. NO.	SHEET NO.	TOTAL SHEETS	
		TRUNK HWY.			



NOTES:

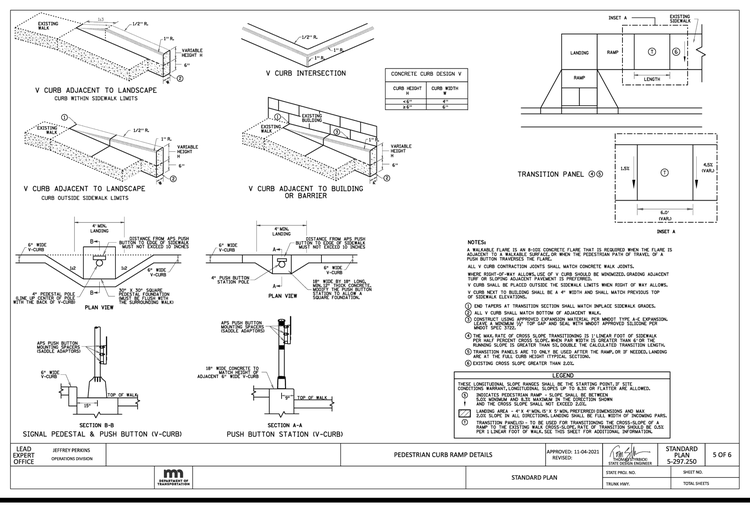
INTERMEDIATE CURB HEIGHTS, TAPER SHALL RISE AT 8-10D TO A MINIMUM 3 INCH CURB HEIGHT, INCREASE CURB TAPER RATE AS NEEDED TO ACCOMMODATE INTERMEDIATE CURB HEIGHT TO 7" INCHES IF NECESSARY TO MATCH ADJACENT BOULEVARD OR SIDEWALK GRADES.

SEE STANDARD PLATE T038 AND THIS SHEET FOR ADDITIONAL DETAILS ON DETECTABLE WARNING.

A WALKABLE SURFACE IS DEFINED AS A PAVED SURFACE ADJACENT TO A CURB RAMP WITHOUT RAISED OBSTACLES THAT COULD MISTAKENLY BE TRAVERSED BY A USER WHO IS VISUALLY IMPAIRED. DETECTABLE WARNINGS SHALL BE PLACED ADJACENT TO NON-WALKABLE SURFACES SHOULD BE LESS THAN 6 INCHES MEASURED ALONG THE RAMPS FROM THE BACK OF CURB.

① 3" CURB HEIGHT,SEE INSET A ON SHEET 3 OF 6.
② FULL CURB HEIGHT.
③ SIDE TREATMENTS ARE APPLICABLE TO ALL RAMP TYPES AND SHOULD BE IMPLEMENTED AS NEEDED AS FIELD CONDITIONS DICTATE.THE ENGINEER SHALL EVALUATE THE RAMP SIDE TREATMENTS BASED ON MAINTENANCE, DRAINAGE, RIGHT-OF-WAY, PROPERTY CONSIDERATIONS,AND MITIGATING CONSTRUCTION IMPACTS.
① TYPICALLY USED FOR MEDIANS AND ISLANDS.
MEDIAN AS SHOWN SHALL BE PROPOSED AND CONSTRUCTED WITH THE CONCRETE WALK SHALL BE CONSTRUCTED PERPENDICULAR TO THE FLOW OF ROADWAY. MAINTAIN 3" MAX.BETWEEN EDGE OF DOMES AND EDGE OF CONCRETE.
② IF NO CURB AND GUTTER IS PLACED ON RURAL SECTIONS,DETECTABLE WARNINGS SHALL BE 4'-0" FROM THE EDGE OF BITUMINOUS ROADWAY AND/OR BITUMINOUS SHARED-USE PATH TO PROVIDE VISUAL CONTRAST.
③ ALL CONSTRUCTED CURBS MUST HAVE A CONTINUOUS DETECTABLE EDGE FOR THE VISUALLY IMPAIRED.THIS DETECTABLE EDGE REQUIRES DETECTABLE WARNINGS WHEREVER THERE IS ZERO-INCH HIGH CURB.CURB TAPERS ARE CONSIDERED A DETECTABLE EDGE AND THEREFORE IS NOT COMPLIANT WITH DETECTABLE WARNING PLACEMENT.CURB TAPERS RISES TO A 3-INCH MINIMUM CURB HEIGHT,AND CURB NOT PART OF A CURB TAPER AND LESS THAN 3 INCHES IN HEIGHT IS NOT CONSIDERED A DETECTABLE EDGE AND THEREFORE IS NOT COMPLIANT WITH DETECTABLE WARNINGS.
④ DRILL AND GROUT 2 - NO. 4 12" LONG REINFORCEMENT BARS EPOXY COATED WITH 3" MIN. COVER. REINFORCEMENT BARS ARE NOT NEEDED IF THE APPROACH NOSE IS POURED INTEGRAL WITH THE CURB AND GUTTER.
⑤ SIDE TREATMENT FOR RETURNED CURB AND WHERE THE INITIAL LANDING IS APPROXIMATELY LEVEL WITH THE FULL HEIGHT CURB RETURN TO THE NEAREST CURB JOINT.THE DETECTABLE WARNING IS APPROXIMATELY LEVEL WITH THE FULL HEIGHT CURB RETURN TO THE NEAREST CURB JOINT.THE CURB HEIGHT TAPERS AND MAINTAIN POSITIVE BOULEVARD DRAINAGE.CONSTRUCT THESE TAPERS AT 0"-2"-3" AT 8-10D,THEN LESS THAN 3" TAPER TO FULL CURB HEIGHT.
⑥ NEAREST EDGE OF DETECTABLE WARNING SURFACES SHALL SHALL BE PLACED 12'-WINDOW TO 15'-MAXIMUM FROM THE NEAREST EDGE OF THE CROSSWALK LINE.THE DETECTABLE WARNING SHALL BE CLOSED THAN 12' MEASURED PERPENDICULAR TO THE NEAREST RAIL.
⑦ WHEN PEDESTRIAN GATES ARE PROVIDED,DETECTABLE WARNING SURFACES SHALL BE PLACED ON THE SIDE OF THE GATES OPPOSITE THE RAIL,2'-0"FROM THE APPROACHING SIDE OF THE GATE ARM.THIS CRITERIA GOVERNS OVER NOTE ⑥.
⑧ CROSSING SURFACE SHALL EXTEND 2' WINDOW PAST THE OUTSIDE EDGE OF WALK OR SHARED-USE PATH.
⑨ 3'-0 FOR MEDIANS AND SPLITTER ISLANDS; WIDE CAN BE REDUCED TO 2'-0N FREE RIGHT ISLANDS.
⑩ SIDEWALK TO BE PLACED 8.75'-MIN.FROM THE FACE OF CURB/PROJECTED FACE OF CURB.THIS ENSURES MIN. CLEARANCE BETWEEN THE SIDEWALK AND GATE ARM COUNTERWEIGHT SUPPORTS.
⑪ CONSTRUCT WITH EXPANSION MATERIAL PER MNDOT SPECIFICATION 3722 TYPES A-C. EXPANSION MATERIAL SHALL MATCH FULL HEIGHT OF ADJACENT CONCRETE.

LEAD EXPERT OFFICE	JEFFREY PERKINS OPERATIONS DIVISION	PEDESTRIAN CURB RAMP DETAILS	APPROVED: 11-04-2021 REVISED:	STANDARD PLAN 5-297.250	4 OF 6
DEPARTMENT OF TRANSPORTATION	STANDARD PLAN	STATE PROJ. NO.	SHEET NO.	TOTAL SHEETS	
		TRUNK HWY.			



NOTES:

A WALKABLE FLARE IS AN 8-10D CONCRETE FLARE THAT IS REQUIRED WHEN THE FLARE IS ADJACENT TO A WALKABLE SURFACE OR WHEN THE PEDESTRIAN PATH OF TRAVEL OF A WALKABLE SURFACE.

ALL V CURB CONTRACTION JOINTS SHALL MATCH CONCRETE WALK JOINTS.

WHERE RIGHT-OF-WAY ALLOWS,USE OF V CURB SHOULD BE MINIMIZED.GRADING ADJACENT TURF OR SLOPING ADJACENT PAVEMENT IS PREFERRED.

V CURB SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS.

V CURB NEXT TO BUILDING SHALL BE PLACED AT LEAST 6" HIGHER THAN PREVIOUS TOP OF SIDEWALK ELEVATIONS.

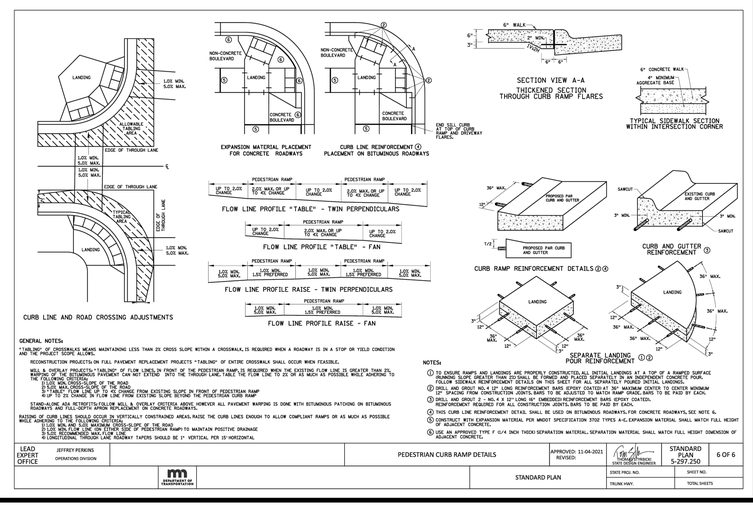
① END TAPERS AT TRANSITION SECTION SHALL MATCH INFLACE SIDEWALK GRADES.
② ALL V CURB SHALL MATCH BOTTOM CURB OF ADJACENT WALK.
③ CONSTRUCT USING APPROVED EXPANSION MATERIAL THAT MEETS MNDOT TYPE A-C EXPANSION. LEAVE A MINIMUM 1/2" TOP GAP AND SEAL WITH MNDOT APPROVED SILICONE PER MNDOT 3723.
④ THE MAX RATE OF CROSS SLOPE CHANGE FOR EITHER CONCRETE OR BITUMINOUS IS 4.0% PER HALF PERCENT CROSS SLOPE.WHEN PAIR WIDTH IS GREATER THAN 6' OR THE RUNNING SLOPE IS GREATER THAN 5.0% THE CALCULATED TRANSITION LENGTH.
⑤ TRANSITION PANELS ARE TO ONLY BE USED AFTER THE RAMP,OR IF NEEDED,LANDING HAS BEEN BUILT AND THE EXISTING FLOW LINE IDENTIFIED.
⑥ EXISTING CROSS SLOPE GREATER THAN 2.0%.

LEGEND

THESE LONGITUDINAL SLOPE RANGES SHALL BE THE STARTING POINT, IF SITE CONDITIONS WARRANT, LONGITUDINAL SLOPES SHALL BE FLATTER AND ARE ALLOWED.

① INDICATES PEDESTRIAN RAMP – SLOPE SHALL BE BETWEEN 5.0% AND 8.33% WITH 8.33% BEING THE MAXIMUM SLOPE ALLOWED
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LEAD EXPERT OFFICE	JEFFREY PERKINS OPERATIONS DIVISION	PEDESTRIAN CURB RAMP DETAILS	APPROVED: 11-04-2021 REVISED:	STANDARD PLAN 5-297.250	5 OF 6
DEPARTMENT OF TRANSPORTATION	STANDARD PLAN	STATE PROJ. NO.	SHEET NO.	TOTAL SHEETS	
		TRUNK HWY.			



NOTES:

① TO ENSURE RAMPS AND LANDINGS ARE PROPERLY CONSTRUCTED, ALL INITIAL LANDINGS AT A TOP OF A RAMPED SURFACE (RAMPED SLOPE GREATER THAN 5%) SHALL BE FORMED AND PLACED SEPARATELY IN AN INDEPENDENT CONCRETE POUR. FOLLOW SIDEWALK REINFORCEMENT DETAILS ON THIS SHEET FOR ALL SEPARATELY POURED INITIAL LANDINGS.

② DRILL AND GROUT 2 - NO. 4 12" LONG REINFORCEMENT BARS EPOXY COATED TO CENTER OF CURB WITH MINIMUM 3" COVER. REINFORCEMENT BARS ARE NOT NEEDED IF THE APPROACH NOSE IS POURED INTEGRAL WITH THE CURB AND GUTTER.

③ DRILL AND GROUT 2 - NO. 4 X 12" LONG 90° EMBEDDED REINFORCEMENT BARS EPOXY COATED. REINFORCEMENT REQUIRED FOR ALL CONSTRUCTION JOINTS.BARS TO BE PAID BY EACH.

④ THIS CURB LINE REINFORCEMENT DETAIL SHALL BE USED ON BITUMINOUS ROADWAYS.FOR CONCRETE ROADWAYS,SEE NOTE 6.

⑤ CONSTRUCT WITH E

EMERSON GROVE

PRELIMINARY LANDSCAPE PLANS

Landscape Sheet Index:

L1.0	Title Page
L1.1	Landscape Layout Plan
L1.2	Landscape Plan 'West'
L1.3	Landscape Plan 'East'
L2.0	Details & Schedule

Surveyor + Civil Engineer:

HILL INOORPORATED

PLANNERS / ENGINEERS / SURVEYORS
2999 W. City Rd. 42, Suite 100, Burnsville, MN 55306
PHONE: (952)890-6044 FAX: (952)890-6244

Landscape Calculations:

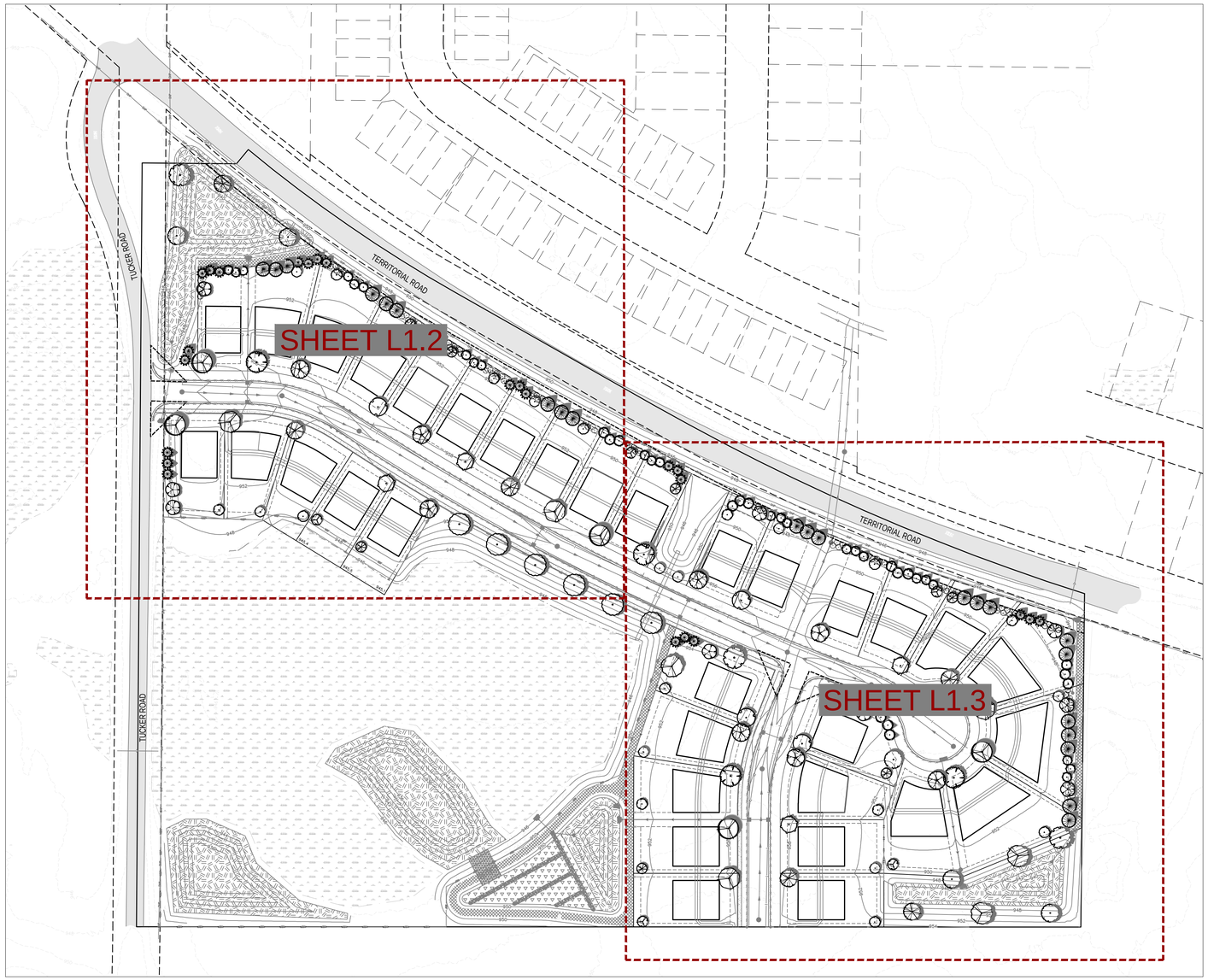
Total No. of Single Family Dwelling Units:	33
Total Front Yard Trees Required:	33
Total Rear Yard Trees Required:	33
Total Lot Trees Required:	66
Additional Trees Required for Corner Lots:	8
Total Lot Trees Shown:	74
Buffer Trees Shown:	110
Buffer Shrubs Shown:	88
Total Trees Shown:	184

CITY OF ROGERS LANDSCAPE REQUIREMENTS:

Each STANDARD single family lot shall have a minimum of two TREES AND CORNER LOTS SHALL HAVE 4 TREES.

Sod shall be placed in the front yard; and

The side yards and rear yard shall be sodded or seeded.



OVERALL LANDSCAPE PLAN:

General Notes:

1. Actual locations of trees may vary, depending on final location of driveways and utilities.
2. See Civil Engineer's plans for grading layout and requirements
3. Contractor to coordinate all work in the city right-of-way with City of Rogers Public Works Department.
4. Sod all disturbed areas except plant beds and areas noted to receive seed.
5. Place a minimum of 6" topsoil or slope dressing on all areas disturbed by construction, including right-of-way boulevards, unless specified otherwise.
6. See Sheet L2.0 for Landscape Details & Plant Schedule.

Know what's below. Call before you dig.

CALYX
CALYX DESIGN GROUP
Landscape Architecture - Planning
475 Cleveland Ave. N | Suite 101A
Saint Paul, MN 55104
651.788.9018 | www.calyxdesigngroup.com

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PHONE: (952)890-6044 FAX: (952)890-6244

PRELIMINARY

EMERSON GROVE
ROGERS, MINNESOTA
LANDSCAPE TITLE SHEET
FOR
PULTE GROUP
1650 W. 82ND STREET, SUITE 300, BLOOMINGTON, MN 55431

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AL

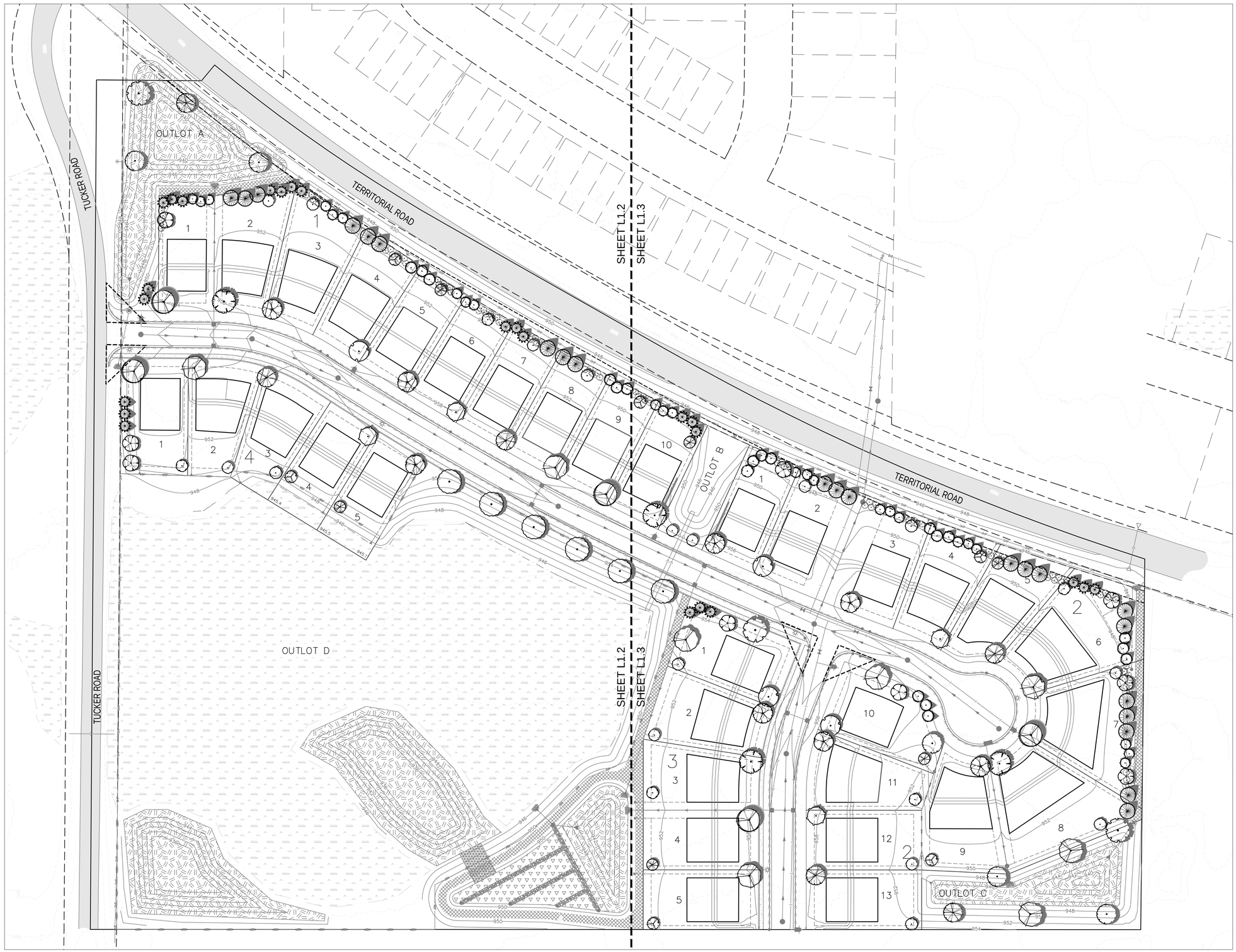
DATE
11/21/25

REVISIONS

11/21/25 – INITIAL CITY SUBMITTAL SET

PROJECT NO.
25–170

SHEET NO.
L1.0



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

General Notes:

1. Actual locations of trees may vary, depending on final location of driveways and utilities.
2. See Civil Engineer's plans for grading layout and requirements
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6. See Sheet L2.0 for Landscape Details & Plant Schedule.

N

SCALE IN FEET
0 60 120
1 inch = 60 feet

LANDSCAPE LAYOUT PLAN:

See Sheet L2.0 for Planting Details, Notes, and Schedule

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Plans prepared by this professional are not to be used for bidding or construction purposes unless signed, dated and sealed.
Print Name:
Signature: License No.:
Date:

EMERSON GROVE
ROGERS, MINNESOTA
LANDSCAPE LAYOUT PLAN
FOR
PULTE GROUP
1650 W. 82ND STREET, SUITE 300, BLOOMINGTON, MN 55431

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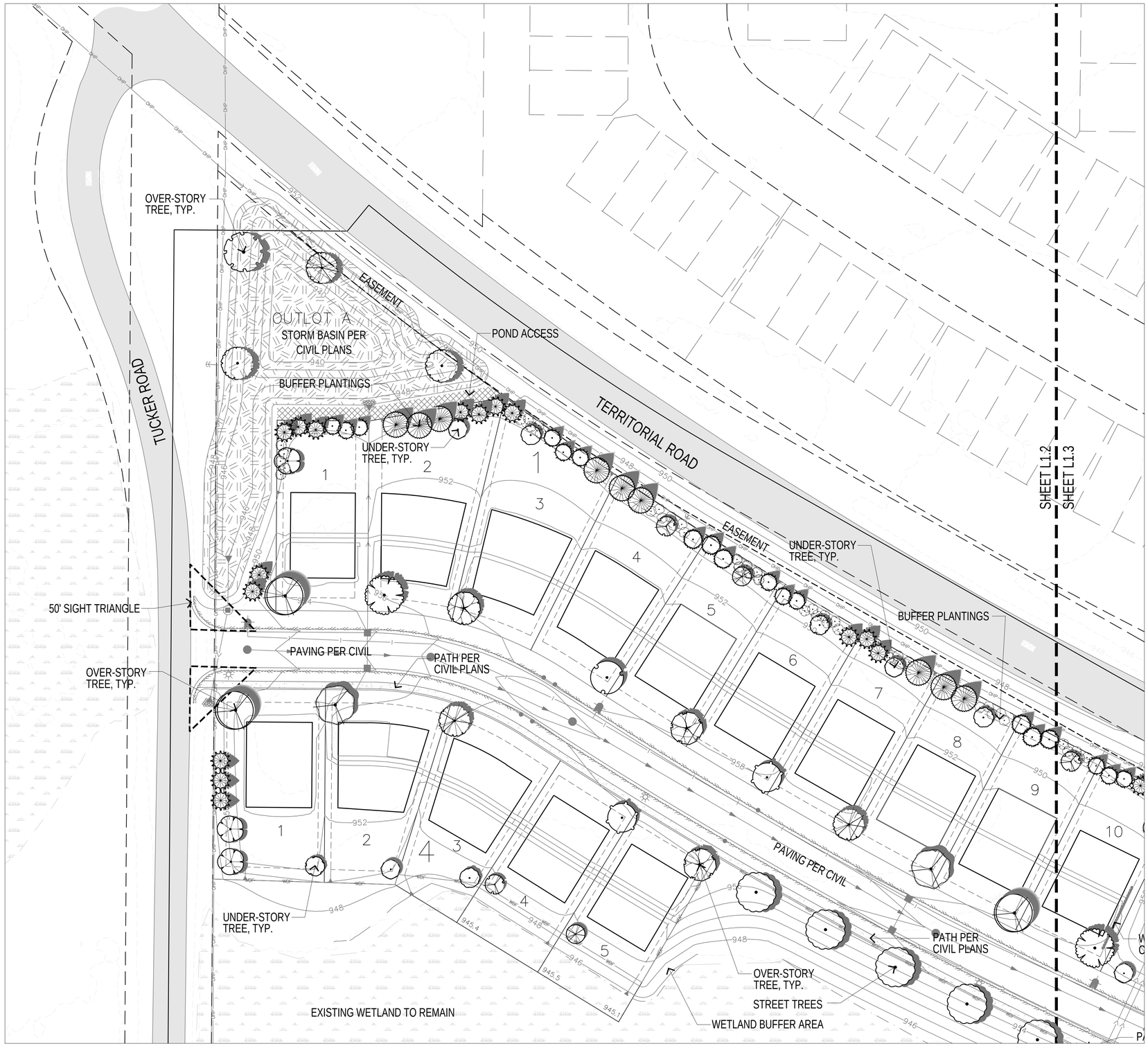
DATE
11/21/25

REVISIONS

11/21/25 – INITIAL CITY SUBMITTAL SET

PROJECT NO.
25–170

SHEET NO.
L1.1



General Notes:

1. Actual locations of trees may vary, depending on final location of driveways and utilities.
2. See Civil Engineer's plans for grading layout and requirements
3. Contractor to coordinate all work in the city right-of-way with City of Rogers Public Works Department.
4. Sod all disturbed areas except plant beds and areas noted to receive seed.
5. Place a minimum of 6" topsoil or slope dressing on all areas disturbed by construction, including right-of-way boulevards, unless specified otherwise.
6. See Sheet L2.0 for Landscape Details & Plant Schedule.

N

SCALE IN FEET
0 40 80
1 inch = 40 feet

LANDSCAPE PLAN 'WEST':

See Sheet L2.0 for Planting Details, Notes, and Schedule

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PRELIMINARY

Plans and/or specifications prepared by me or under my direct supervision and that I am a duly Licensed Professional under the laws of the State of Minnesota.
Print Name:
Signature: License No.
Date:

EMERSON GROVE
ROGERS, MINNESOTA
LANDSCAPE PLAN 'WEST'
FOR
PULTE GROUP
1650 W. 82ND STREET, SUITE 300, BLOOMINGTON, MN 55431

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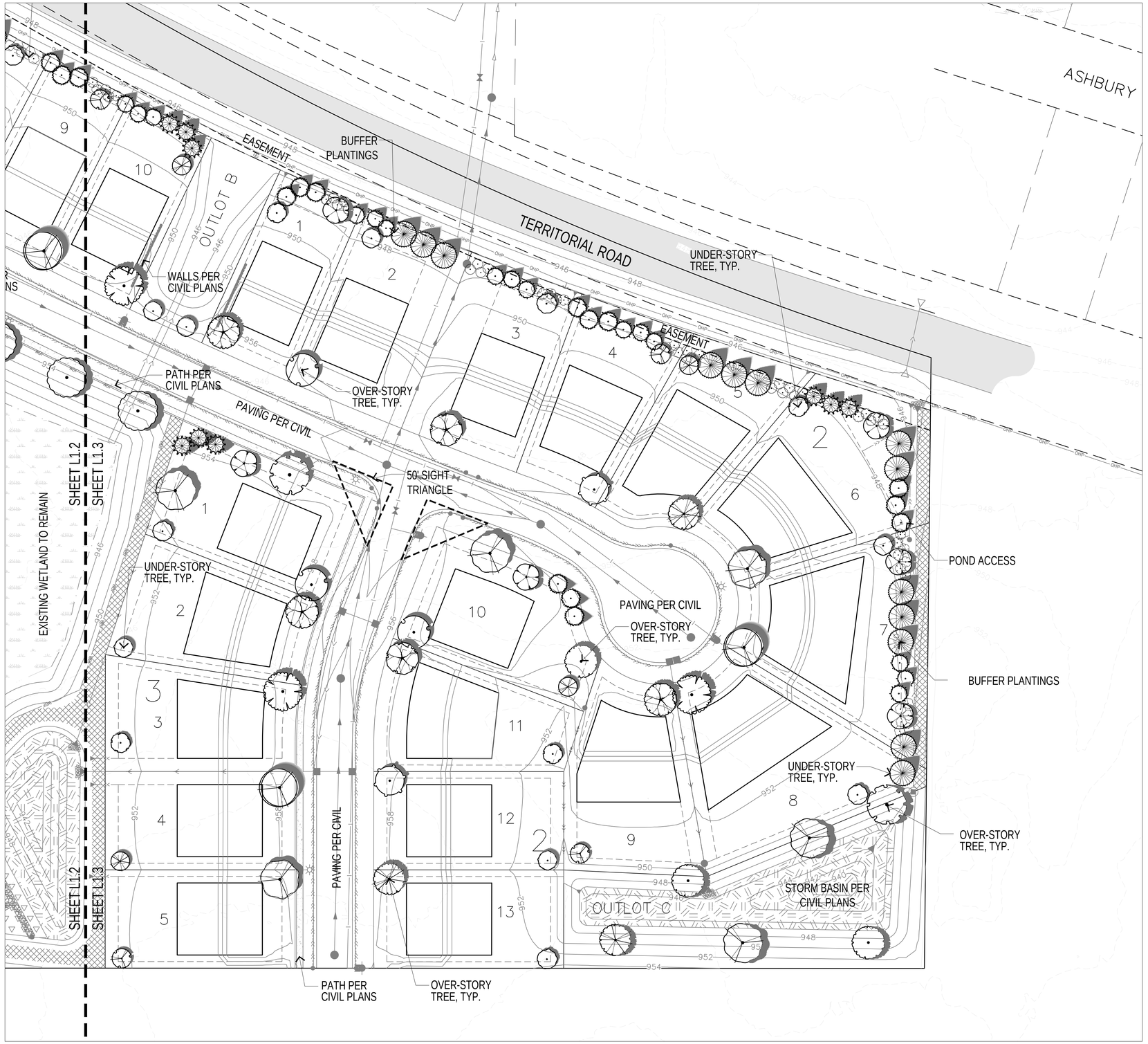
DATE
11/21/25

REVISIONS

11/21/25 – INITIAL CITY SUBMITTAL SET

PROJECT NO.
25–170

SHEET NO.
L1.2



General Notes:

1. Actual locations of trees may vary, depending on final location of driveways and utilities.
2. See Civil Engineer's plans for grading layout and requirements
3. Contractor to coordinate all work in the city right-of-way with City of Rogers Public Works Department.
4. Sod all disturbed areas except plant beds and areas noted to receive seed.
5. Place a minimum of 6" topsoil or slope dressing on all areas disturbed by construction, including right-of-way boulevards, unless specified otherwise.
6. See Sheet L2.0 for Landscape Details & Plant Schedule.

N

SCALE IN FEET
0 40 80
1 inch = 40 feet

LANDSCAPE PLAN 'EAST':

See Sheet L2.0 for Planting Details, Notes, and Schedule

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PRELIMINARY

Plans, specifications, and ideas contained herein are the property of Hill Incorporated and shall not be used in whole or part for any other project without written permission of Hill Incorporated.
Prepared by: [illegible]
License No. [illegible]
Date: [illegible]

EMERSON GROVE
ROGERS, MINNESOTA
LANDSCAPE PLAN 'EAST'
FOR
PULTE GROUP
1650 W. 82ND STREET, SUITE 300, BLOOMINGTON, MN 55431

DRAWN BY
AL

DATE
11/21/25

REVISIONS

11/21/25 – INITIAL CITY SUBMITTAL SET

PROJECT NO.
25–170

SHEET NO.
L1.3

Landscape Notes:

1. Tree saucer mulch to be four inches (4") depth natural single-shred hardwood mulch for trees outside of a plant bed. Install per tree planting detail.

2. Refer to civil plan sheets for grading, drainage, site dimensions, survey, tree removal, proposed utilities & erosion control.

3. All plant material shall comply with the latest edition of the American Standard for Nursery Stock, American Association of Nurserymen. Unless noted otherwise, deciduous shrubs shall have at least 5 canes at the specified shrub height. Plant material shall be delivered as specified.

4. Plan takes precedence over plant schedule if discrepancies in quantities exist.

5. All proposed plants shall be located and staked as shown.

6. Adjustment in location of proposed plant material may be needed in field. Should an adjustment be required, the client will provide field approval. Significant changes may require city review and approval.

7. The project landscape contractor shall be held responsible for watering and properly handling all plant materials brought on the site both before and after installation. Schedule plant deliveries to coincide with expected installation time within 36 hours.

8. All plant materials shall be fertilized upon installation as specified.

9. The landscape contractor shall provide the owner with a watering schedule appropriate to the project site conditions and to plant material growth requirements.

10. If the landscape contractor is concerned or perceives any deficiencies in the plant selections, soil conditions, drainage or any other site condition that might negatively affect plant establishment, survival or guarantee, they must bring these deficiencies to the attention of the landscape architect & client prior to bid submission. Plant bed drainage concerns during plant installation shall be brought to the attention of the Owner and General Contractor immediately.

11. Contractor shall establish to his/ her satisfaction that soil and compaction conditions are adequate to allow for proper drainage at and around the building site.

12. Contractor is responsible for ongoing maintenance of all newly installed material until time of owner acceptance. Any acts of vandalism or damage which may occur prior to owner acceptance shall be the responsibility of the contractor. Contractor shall provide the owner with a maintenance program including, but not limited to, pruning, fertilization and disease/pest control.

13. The contractor shall guarantee newly planted material through one calendar year from the date of written owner acceptance. Plants that exhibit more than 10% die-back damage shall be replaced at no additional cost to the owner. The contractor shall also provide adequate tree wrap and deer/rodent protection measures for the plantings during the warranty period.

14. This layout plan constitutes our understanding of the landscape requirements listed in the ordinance. Changes and modifications may be requested by the city based on applicant information, public input, council decisions, etc.

15. The landscape contractor shall be responsible for obtaining any permits and coordinating inspections as required throughout the work process.

16. Plant size & species substitutions must be approved in writing prior to acceptance in the field.

17. The landscape contractor shall provide the builder with an irrigation design for common areas and individual lots as directed.

18. Landscape Contractor is responsible for coordination with the General Contractor, to protect the new improvements on and off-site during landscape work activities. Report any damage to the General Contractor immediately.

19. All planting, seeding, and sodded areas shall be prepared prior to installation activities with a harley power box rake or equal to provide a firm planting bed free of stones, sticks, construction debris, etc.

20. Turf installation activity shall conform to all rules and regulations as established in the MnDOT Seeding Manual, 2014 edition, for turf bed preparation, installation, maintenance, and warranty.

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

22. The Landscape Contractor shall clear and grub the underbrush from within the work limits to remove dead branches, leaves, trash, weeds and foreign materials. Remove trees where noted on the plan, including the stump to 30" below grade.

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

24. The landscape contractor shall be responsible for the removal of erosion control measures once vegetation has been established to the satisfaction of the municipal staff. This includes silt curtain fencing and sediment logs placed in the landscape.

25. The landscape contractor shall be responsible for visiting the site to become familiar with the conditions prior to bidding and installation. Coordinate with the general contractors on matters such as fine grading, landscaped area conditions, staging areas, irrigation connection to building, etc.

26. See Site and Civil plans for grading, utilities, and additional information regarding the project.

27. All sub-cut areas of the site that are designated on the site plan as open space for landscape shall have no less than 4" of imported, pulverized topsoil. Place 16" of topsoil in tree pits. Always slope away from building.

28. Landscape contractor must prove the open sub-grade of all planting areas after their excavation is capable of infiltrating a minimum requirement of 1/4-inch of water per hour prior to installation of plant materials, topsoil, irrigation, weed mat, and mulch. Planting areas not capable of meeting this requirement shall have 4" diameter X 48" depth holes augured every 36" on-center and filled with MnDOT Free-Draining Coarse Filter Aggregate. Re-test sub-grade percolation for compliance to infiltration minimum requirement.

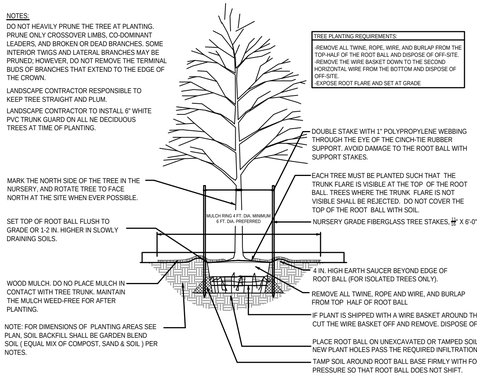
29. Fencing (if noted) per Architect's Plans and Specifications.

30. Landscape contractor shall coordinate tree removal activities (if required) and ensure all trees designated for removal are gone before start of landscape installation. Grind stump to 30" below grade and back-fill with topsoil.

31. All disturbed areas are to receive turf sod or seed to establish final vegetation.

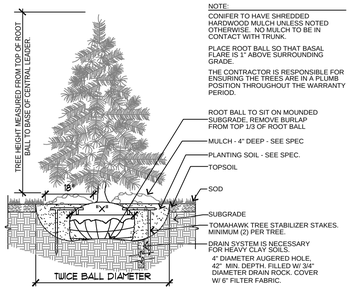
32. Retaining walls and stairs require structural engineering by others. Unless otherwise specified, retaining walls to be County Material 'County Block' straight face units, gray color with matching cap units.

33. Native Seed Areas (if called for on plans): Prairie seeding contractor is required to include a 3 year warranty with maintenance in base bid. Prairie contractor shall provide the Owner with a proposal for (2) additional years of prairie maintenance, in addition to the (3) year warranty. It shall be the Owner's option to continue maintenance of the native prairie areas after the 1 year warranty expires. Maintain under warranty per MnDOT Seeding Manual, 2014 edition. Warranty includes seeding contractor on-site maintenance visits for mowing, weeding, spot-spraying invasives, garbage removal, and re-seeding bare areas larger than 6"X6". Ensure cover crop achieves 80% germination and erosion is not evident. Maintenance requires no less than 4 visits for warranty work per year. An acceptable stand of seeding is full, lush, and free of invasive plants & weeds.



1 L2.0 DECIDUOUS TREE PLANTING - SECTION

NOT TO SCALE



2 L2.0 CONIFEROUS TREE PLANTING - SECTION

NOT TO SCALE

PLANT SCHEDULE

SYMBOL	CODE	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER	QTY
EVERGREEN TREES						
	AB	Abies balsamea	Balsam Fir	6` Hgt.	B&B	24
	JE	Juniperus virginiana	Eastern Redcedar	6` Hgt.	B&B	24
	PD	Picea glauca `Densata`	Black Hills Spruce	6` Hgt.	B&B	18
	PR	Pinus resinosa	Red Pine	6` Hgt.	B&B	22
ORNAMENTAL TREES						
	AO	Aesculus glabra	Ohio Buckeye	1.5" Cal.	B&B	9
	CC	Crataegus laevigata `Crimson Cloud`	Crimson Cloud Hawthorn	1.5" Cal.	B&B	6
	MA	Maackia amurensis	Amur Maackia	1.5" Cal.	B&B	9
	MP	Malus x 'Pink Spires'	Pink Spires Crabapple	1.5" Cal.	B&B	7
	OV	Ostrya virginiana	American Hophornbeam	1.5" Cal.	B&B	6
	SI	Syringa reticulata `Ivory Silk`	Ivory Silk Japanese Tree Lilac	1.5" Cal.	B&B	6
OVERSTORY TREE						
	Ar	Acer rubrum	Red Maple	2.5" Cal.	B&B	6
	AJ	Acer saccharum 'JFS-KW8' TM	Autumn Fest Sugar Maple	2.5" Cal.	B&B	6
	AS	Acer x freemanii `Sienna`	Sienna Glen Maple	2.5" Cal.	B&B	5
	BR	Betula nigra	River Birch	2.5" Cal.	B&B	4
	CO	Celtis occidentalis	Common Hackberry	2.5" Cal.	B&B	4
	GI	Gleditsia triacanthos inermis `Skycole` TM	Skyline Thornless Honey Locust	2.5" Cal.	B&B	4
	GI2	Gymnocladus dioica `McKBranched` TM	Kentucky Coffeetree	2.5" Cal.	B&B	4
	QA	Quercus alba	White Oak	2.5" Cal.	B&B	3
	QE	Quercus ellipsoidalis	Northern Pin Oak	2.5" Cal.	B&B	4
	QM	Quercus macrocarpa	Burr Oak	2.5" Cal.	B&B	5
	QR	Quercus rubra	Northern Red Oak	2.5" Cal.	B&B	4
	UN	Ulmus americana 'New Horizon'	New Horizon Elm	2.5" Cal.	B&B	4
BUFFER PLANT						
	Cg	Cornus racemosa	Gray Dogwood	5 gal. (Min. 24" Hgt.)	Pot	29
	Cl	Cotoneaster lucidus	Cotoneaster	5 gal. (Min. 24" Hgt.)	Pot	21
	Sv	Syringa vulgaris	Common Lilac	5 gal. (Min. 24" Hgt.)	Pot	24
	Vl	Viburnum lentago	Nannyberg	5 gal. (Min. 24" Hgt.)	Pot	14

LANDSCAPE DETAILS, NOTES, AND SCHEDULE

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

CALYX
CALYX DESIGN GROUP
Landscape Architecture - Planning
475 Cleveland Ave. N | Suite 101A
Saint Paul, MN 55104
651.788.9018 | www.calyxdesigngroup.com

HILL INCORPORATED
PLANNERS / ENGINEERS / SURVEYORS
2999 W. City Rd. 42, Suite 100, Burnsville, MN 55306
PHONE (952)890-6044 FAX (952)890-8244

PRELIMINARY

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Landscape Architect under the laws of the State of Minnesota.
Print Name: ...
Signature: ...
Date: ...
License No. ...

EMERSON GROVE
ROGERS, MINNESOTA
LANDSCAPE DETAILS
FOR
PULTE GROUP
1650 W. 82ND STREET, SUITE 300, BLOOMINGTON, MN 55431

DRAWN BY
AL

DATE
11/21/25

REVISIONS

11/21/25 – INITIAL CITY SUBMITTAL SET

PROJECT NO.
25–170

SHEET NO.
L2.0

STAFF REPORT

ROGERS PLANNING COMMISSION

Meeting Date: January 5, 2026

Agenda Item: 4.2

Subject: Consider Applications by Pulte Homes for Comprehensive Plan Amendment, PUD, and Preliminary Plat for Edgewater Cove Subdivision
Prepared By: Alec Henderson, City Planner

Overview / Background / Analysis
Pulte Homes has applied for a Comprehensive Plan amendment, Preliminary Plat and Planned Unit Development for a residential subdivision consisting of 57 lots. The development proposes detached single-family home styles (currently four models). The Applicant also requests a Planned Unit Development Rezoning deviating from the Standard R2 Zoning Performance standards. The proposed density is 3.04 units/acre

Concept Plan
The developer previously went through concept plan review in June of 2025. The Concept Plan was very similar to the proposed preliminary plat except the right-of-way of the internal road network was increased from 50 to 60 feet. The lot widths are the same, and the developer is maintaining a 10 ft wide interior side setback. During this time, the developer requested feedback on a potential comprehensive plan amendment from Mixed Residential down to Low Density Residential with a Planned Unit Development deviating from R2 zoning. The Commission and Council both voiced support for the concept plan and future submission.

Pulte submitted their application on October 20, 2025. Preliminary Plats follow a 120-day timeline per state statute and the PUD and Comprehensive Plan amendment are tied to the preliminary plat applications. The applications have a mandatory deadline of February 17, 2026.

Primary Issues to Consider

1. Land Use & Zoning
2. Development Plan
3. Other Considerations

Analysis of Primary Issues

1. **Land Use & Zoning**

Land Use

The development consists of one existing parcel (1612023140078). The subject area falls within the Mixed Residential guidance, permitting 4-15 units/acre. The developer is requesting to re-guide the land use to Low Density Residential (LDR). The LDR designation permits **2-5 units per acre** and allows for single-family development.

Comprehensive Plan Goals
The Comprehensive Plan also contains goals beyond just simply meeting land use density thresholds. The Edgewater Cove development is consistent with the Rogers 2040 Comprehensive Plan and advances the city's goals in the following ways:

Land Use – Orderly Growth and Compatibility
Land Use Element, Goal 1; Policies LU-1.1, LU-1.3, and LU-1.6
The Comprehensive Plan supports orderly and predictable growth that occurs within planned service areas and is compatible with surrounding land uses. The subject property is located within the City's current utility staging area and is bordered by existing residential development and public roadway infrastructure. The proposed redevelopment of the former mining site represents an orderly extension of residential land use consistent with surrounding development patterns and available infrastructure.

Land Use – Transitions Between Densities
Land Use Element, Goal 2; Policies LU-2.2 and LU-2.4
The Plan encourages appropriate transitions between differing land uses and residential densities. Re-guiding the property from Mixed Residential to Low Density Residential and developing the site with single-family detached homes provides a logical transition between the lower-density Edgewater neighborhoods to the south and the slightly denser residential development to the north. The proposed ten-foot side yard setbacks and enhanced landscaping further reinforce compatibility with adjacent neighborhoods.

Housing – Housing Supply and Neighborhood Character
Housing Element, Goal 1; Policies H-1.1 and H-1.3
The Comprehensive Plan supports the provision of housing that meets community needs while maintaining established neighborhood character. Edgewater Cove contributes additional single-family housing opportunities consistent with the surrounding area and does not introduce housing types or densities that would be inconsistent with the Low-Density Residential land use designation.

Natural Resources – Protection of Sensitive Areas
Natural Resources Element, Goal 1; Policies NR-1.2 and NR-1.5
The Plan emphasizes the protection of environmentally sensitive features, including steep slopes and natural drainage areas. The subject property contains significant steep slopes resulting from prior mining operations. The proposed development preserves these constrained areas, limits grading impacts, and utilizes the Planned Unit Development process to accommodate site limitations while maintaining compliance with City standards.

Land Use – Redevelopment of Previously Disturbed Sites
Land Use Element, Goal 3; Policy LU-3.1
The Comprehensive Plan encourages reinvestment and redevelopment of underutilized or previously disturbed properties. The Edgewater Cove proposal represents the planned transition of a former sand and gravel mining operation into a permanent residential neighborhood, consistent with the City's long-term vision for the reclamation and reuse of extractive sites.

Transportation – Access Management and Connectivity
Transportation Element, Goal 1; Policies T-1.2 and T-1.4
The Plan supports development patterns that align with existing transportation networks and promote safe and efficient access. The proposed street layout meets City design standards, limits access points to Industrial Boulevard, and aligns new intersections with existing roadway connections to the north. This approach supports efficient traffic operations and minimizes potential impacts to the surrounding transportation system.

Zoning
The subject area currently falls within the R4 district which permits, by right (meaning without additional land use approvals), 50 ft wide lots and 5 ft setbacks and a density range of 4-15 units/acre. With the steep slopes and site constraints, the developer had difficulty meeting the existing zoning and is requesting a PUD with a base of R2 (eg. a Low Density development rather than a Mixed Residential development).

The R2 district allows 10,000 square foot lots (65 ft wide minimum), 10 ft side setbacks, 25 ft front and corner setbacks and 20 ft rear setbacks and 35 ft setbacks to City collector streets. The developer proposes two deviations from R2 in lot size and setback from city collector streets. The Developer proposes a minimum of 6,875 sq ft lots, 10 ft side setbacks, 25 ft front and corner, 20 ft rear, and 30 ft setbacks from City collector Streets.

Proposed Zoning PUD
The developer is requesting a Planned Unit Development (PUD) to deviate from the R2 zoning requirements for their development area. PUDs can be requested and reviewed by the City. PUDs are typically an exchange where the developer proposes different performance standards and the city reviews the particulars of the development and how it would be in the public interest (or what the benefits are) to approve deviations. The benefits can be development specific, are usually related to comprehensive plan goals, and can include offsite improvements. The theory behind PUDs is that the design/development outcomes proposed by the developer outweigh the benefits of keeping to the by right zoning district standards. PUDs effectively rezoning property to allow different standards. Because PUDs rezoning the property, this is a legislative or policy decision for the council with high discretion. PUDs have previously been approved for other residential developments within the community, including Cowley Lake Preserve, Skye Meadows, Grass Lake Preserve, and Laurel Creek.

The applicant is requesting PUD approval to deviate from R-2 standards in accordance

with Section 125-29 of the Rogers Zoning Code. The proposal is generally consistent with the stated purposes of the PUD ordinance, including the preservation of desirable site characteristics and sensitive environmental features. Steep slopes present on the site are largely preserved and incorporated into the overall design.

The PUD also provides an appropriate transition between differing land uses and development intensities. The proposed single-family development represents a moderate-density transition between the lower-density original Edgewater neighborhood to the south and slightly denser residential development to the north. In addition, the development incorporates enhanced landscaping along Industrial Boulevard and Edgewater Parkway, as well as between adjacent neighborhoods, which contributes to compatibility with surrounding land uses.

Staff finds that the proposed PUD meets the additional requirements of Section 125-29(i), assuming approval of the proposed Comprehensive Plan Amendment. The development remains within the applicable land use guidance, does not increase density beyond what would otherwise be permitted, and does not create undue impacts on public services beyond those anticipated under a by-right R2 subdivision.

2. **Development Plan**

Transportation
The development plan includes two accesses to Industrial Boulevard which match up with Edgewater Drive and Rivers Edge Road. The internal streets are standard roadways with 60 ft ROW and 32 ft curb to curb.

Utilities
The Plan includes the construction of water, sewer, and stormwater facilities consistent with the Comprehensive Plan goals and engineering requirements. The utility plans are under review by the Engineer and will require approval prior to final plat application and ultimately construction. The stormwater plans indicate that pre-construction and post-construction stormwater runoff rates and filtration are the same or improved as compared to the existing conditions. Additionally, the Elm Creek Watershed Management Commission reviews the development plans to ensure compliance with watershed rules.

Park and Trails
Park dedication is expected through fees in lieu of land dedication. Sidewalks are proposed.

Landscaping
The development proposes significant landscaping throughout the site, including buffering along Industrial Boulevard and supplemental screening where feasible along steep slope areas adjacent to the neighborhood to the south. Due to the similarity in land use guidance and underlying zoning between the subject site and adjacent residential areas, extensive screening treatments such as berming are not required. Additionally, berming along steep slopes would present construction challenges and

may be infeasible.

Staff finds that proposed planting sizes, quantities, and locations meet the requirements of the City's landscaping ordinance.

Housing Types
The development consists of single-family detached homes with two-stall garages. Anticipated home models include the Macalester, Dayton, Merriam, and Lowry models offered by the applicant, with a mix of one- and two-story designs. Proposed homes include full basements, lookout basements, and walkout basements, where topography allows.

The Development adequately plans for utility and infrastructure delivery consistent with the needs for the development and meeting the goals of the Comprehensive Plan.

3. **Other considerations**

A portion of the property is technically subject to the Shoreland Overlay District. However, the overlay area is located entirely within the southwest portion of the site, which corresponds to steep slope areas intended to remain undeveloped. As a result, no direct impacts to shoreland resources are anticipated, and the overlay does not affect the proposed development layout.

Staff Recommendation
Based on feedback from the Concept Plan and the goals and the Commission and City Council, staff recommends approval of the Comprehensive Plan Amendment to Low Density Residential, Rezoning to PUD, and Preliminary Plat Approval. The following motions are requested.

- Motion to Approve Resolution 2026-03 – Resolution Approving Comprehensive Plan Amendment for Edgewater Cove
- Motion to Approve Ordinance 2026-01, Approving a Rezoning from R4 to PUD for Edgewater Cove.
- Motion to Approve Resolution 2026-04, Authorizing Summary Publication of Ord. 2026-01.
- Motion to Approve Resolution 2026-05, Approval of the Preliminary Plat and Master Development Plan for the Edgewater Cove Subdivision.

The following are recommended conditions by staff and the commission and are found in the resolution.

1. The Applicant shall revise the preliminary plans (the development, civil plans, and preliminary plat) to the satisfaction of the Public Works Department, City Engineer, and City Planner.
2. The Applicant shall receive approval for the Stormwater Management Plan from Elm Creek Watershed Management Commission, and shall address and conform to all requirements of the Elm Creek Watershed Management Commission, including but not limited to the requisite wetland approvals and delineations, and other conditions as established.
3. The Development shall conform to the PUD rezoning, Ord. No. 2026-01, as approved by Council on January 27, 2026.
4. The Applicant shall submit current title work for the Preliminary Plat and shall conform to any requirements resulting from City staff and the City Attorney's review of the title work and plat opinion.
5. The applicant shall enter into a Stormwater Maintenance Agreement for the development that shall identify the terms and conditions of the Development.
6. The applicant shall enter into and execute a Subdivision Development Agreement with the City governing each phase of development in conjunction with final plat approval, of which said Subdivision Development Agreement shall outline the terms and conditions and financial obligations of the Applicant for each phase of development.
7. The Applicant shall pay to the City all applicable fees and expenses incurred by the City as related to the development.
8. Except as otherwise expressly authorized by City resolution or ordinance, all aspects of the development shall comply with all applicable state laws, city codes, ordinances, and regulations.

Financial Impact: NA **Source Fund**: NA

Budgeted? N/A

Supporting Documentation

A. Resolution No. 2026-03-Rogers 2040 Comprehensive Plan Amendment
B. Ordinance 2026-01 Rezoning Edgewater Cove to PUD
C. Resolution 2026-04 Authorizing Summary Publication of Ordinance 2026-01
D. Resolution No. 2026-05_Preliminary Plat_Edgewater Cove
E. Hassan Sand - Preliminary Plat Plans - 10-17-2025
F. Pulte Hassan del NOD+
G. Rogers Hassan Sand Pre Plat Narrative for 10-17-2025 CD Markup
H. Wetland Delineation Report_Hassan Property_Rogers, Hennepin County, 6.3.2025
I. Hassan Sand - SWMP - 10-17-2025

CITY OF ROGERS
RESOLUTION NO. 2026-06

A RESOLUTION AMENDING THE 2040 ROGERS COMPREHENSIVE PLAN LAND USE MAP FOR THE CITY OF ROGERS

WHEREAS, on April 28, 2020, the City Council approved Resolution No. 2020-33, adopting the 2040 Comprehensive Plan ("2040 Plan") for the City of Rogers ("City"), its decennial update as required by Minnesota Statute §473.864; and,

WHEREAS, an application was received by Pulte Homes to Amend the Comprehensive Plan Land Use Map for subject property described in Exhibit A proposing the following Land Use map amendments:

1. Map Amendment: Change the land use designation for the property, as shown on the map in Exhibit B, from Mixed Residential to Low Density Residential. The PID # for the properties are: 16-120-23-14-0078; and,

WHEREAS, the proposed amendments, if approved, would decrease the community-wide average residential minimum density from 3.28 units per net acre to 3.27 units per net acre; and,

WHEREAS, pursuant to Minnesota Statute §473.858, the proposed amendments to the 2040 Plan a waiver for adjacent jurisdiction review was received; and,

WHEREAS, the Planning Commission on January 5, 2026 conducted a public hearing to consider the proposed amendments to the 2040 Plan and public comments, and thereafter submitted its recommendations of approval of all amendments to the City Council; and,

WHEREAS, on January 27, 2026, the City Council received the recommendation from the Planning Commission regarding the proposed amendments to the 2040 Plan, and approved the proposed amendments to the 2040 Plan, pending review and approval by the Metropolitan Council; and,

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIIL OF THE CITY OF ROGERS, MINNESOTA, that the proposed amendment is hereby approved contingent on Metropolitan Review and Approval and the City Planner is hereby directed to submit the proposed amendments to the 2040 Comprehensive Plan to the Metropolitan Council.

Moved by Councilmember , seconded by Councilmember

The following voted in favor of said resolution:

The following voted against the same:

The following abstained:

Whereupon said resolution was declared duly passed and adopted, and was signed by the Mayor and attested by the Clerk dated this 27th day of January, 2026.

_____
Shannon Klick, Mayor

ATTEST:

_____
Stacie Brown, Clerk

EXHIBIT A
Subject Property

Outlot B, Edgewater Second Addition, according to the recorded plat thereof, Hennepin County, Minnesota;

Less and Except that portion as conveyed in that certain Warranty Deed filed of record on November 1, 2023, as Document No. 11242623**.**

Note: Property is Abstract.

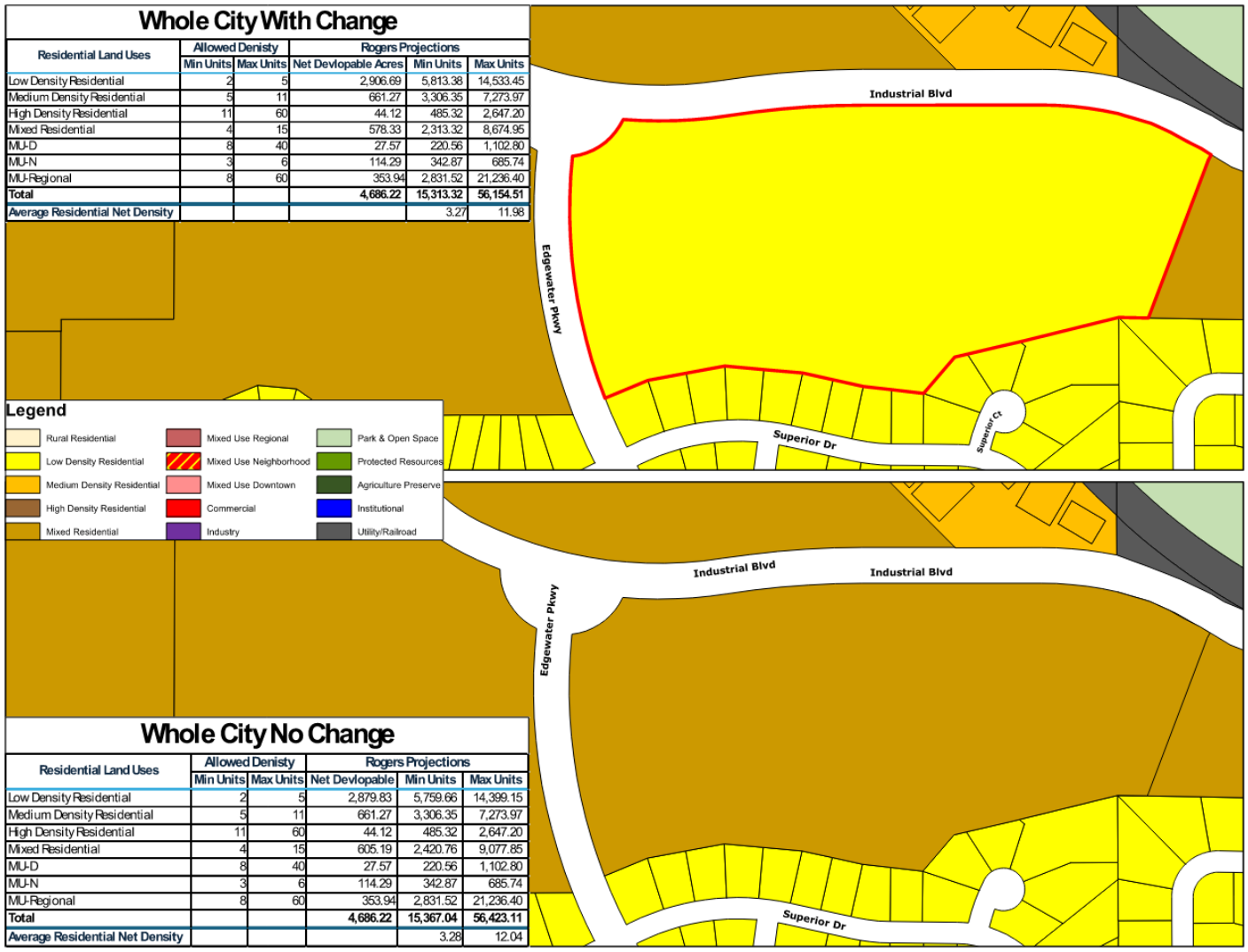
(Abstract Property)

EXHIBIT B

2040 COMPREHENSIVE PLAN AMENDMENT
MIXED RESIDENTIAL TO LOW DENSITY RESIDENTIAL

Whole City With Change

Residential Land Uses	Allowed Denisty		Rogers Projections		
	Min Units	Max Units	Net Devlopable Acres	Min Units	Max Units
Low Density Residential	2	5	2,906.69	5,813.38	14,533.45
Medium Density Residential	5	11	661.27	3,306.35	7,273.97
High Density Residential	11	60	44.12	485.32	2,647.20
Mixed Residential	4	15	578.33	2,313.32	8,674.95
MU-D	8	40	27.57	220.56	1,102.80
MU-N	3	6	114.29	342.87	685.74
MU-Regional	8	60	353.94	2,831.52	21,236.40
Total			**4,686.22**	**15,313.32**	**56,154.51**
Average Residential Net Density				3.27	11.98



Whole City No Change

Residential Land Uses	Allowed Denisty		Rogers Projections		
	Min Units	Max Units	Net Devlopable	Min Units	Max Units
Low Density Residential	2	5	2,879.83	5,759.66	14,399.15
Medium Density Residential	5	11	661.27	3,306.35	7,273.97
High Density Residential	11	60	44.12	485.32	2,647.20
Mixed Residential	4	15	605.19	2,420.76	9,077.85
MU-D	8	40	27.57	220.56	1,102.80
MU-N	3	6	114.29	342.87	685.74
MU-Regional	8	60	353.94	2,831.52	21,236.40
Total			**4,686.22**	**15,367.04**	**56,423.11**
Average Residential Net Density				3.28	12.04

ORDINANCE NO. 2026 - 01

AN ORDINANCE AMENDING THE ZONING MAP OF THE CITY OF ROGERS; REZONING THE SUBJECT PROPERTIES FROM MIXED RESIDENTIAL (R4) TO PLANNED UNIT DEVELOPMENT (PUD) FOR THE EDGEWATER COVE DEVELOPMENT

The City Council hereby ordains as follows:

Section 1. Zoning Map Amendment

The official zoning map of the City of Rogers is hereby amended as follows:

The Subject Properties legally described in Exhibit A are hereby rezoned from Mixed Residential (R4) to Planned Unit Development (PUD).

Section 2. Permitted Uses

Pursuant to the Planned Unit Development (PUD) zoning of the Subject Properties legally described in Exhibit A, the permitted uses shall be as follows:

Permitted Uses

Single-Family Detached Residential Dwellings and uses established in the R2 district

Section 3. PUD District Standards

Pursuant to the Planned Unit Development (PUD) zoning of the Subject Properties legally described in Exhibit A, the following standards shall be applicable (shown in Exhibit B):

All Lots

Lot Standards					
Housing Type: Single-Family Residential					
Lots: all lots in Edgewater Cove					
	Setbacks (Min)				
	Front Yard	Rear Yard	Side Yard	Corner Yard	Height (Max)
55’ Minimum	25 ft	20 ft	10 ft	25 ft	35 ft
Lot Area	Minimum of 6,875 square feet				
Impervious Surface	75% maximum				
Local Collector/Arterial Street Setback	30 ft				

All other performance standards not altered by this PUD shall follow the requirements of an R2 district lot.

Section 4. Effective

The City Clerk is directed to revise the official zoning map consistent with this ordinance. This ordinance shall have full force effect upon its passage and publication as required by law.

Passed by the City Council of the City of Rogers, Hennepin County, Minnesota, this 27th day of January, 2026.

_____
Shannon Klick, Mayor

ATTEST:

_____
Stacie Brown, City Clerk

EXHIBIT A

EDGEWATER COVE
LEGAL DESCRIPTIONS

Existing Legal Descriptions

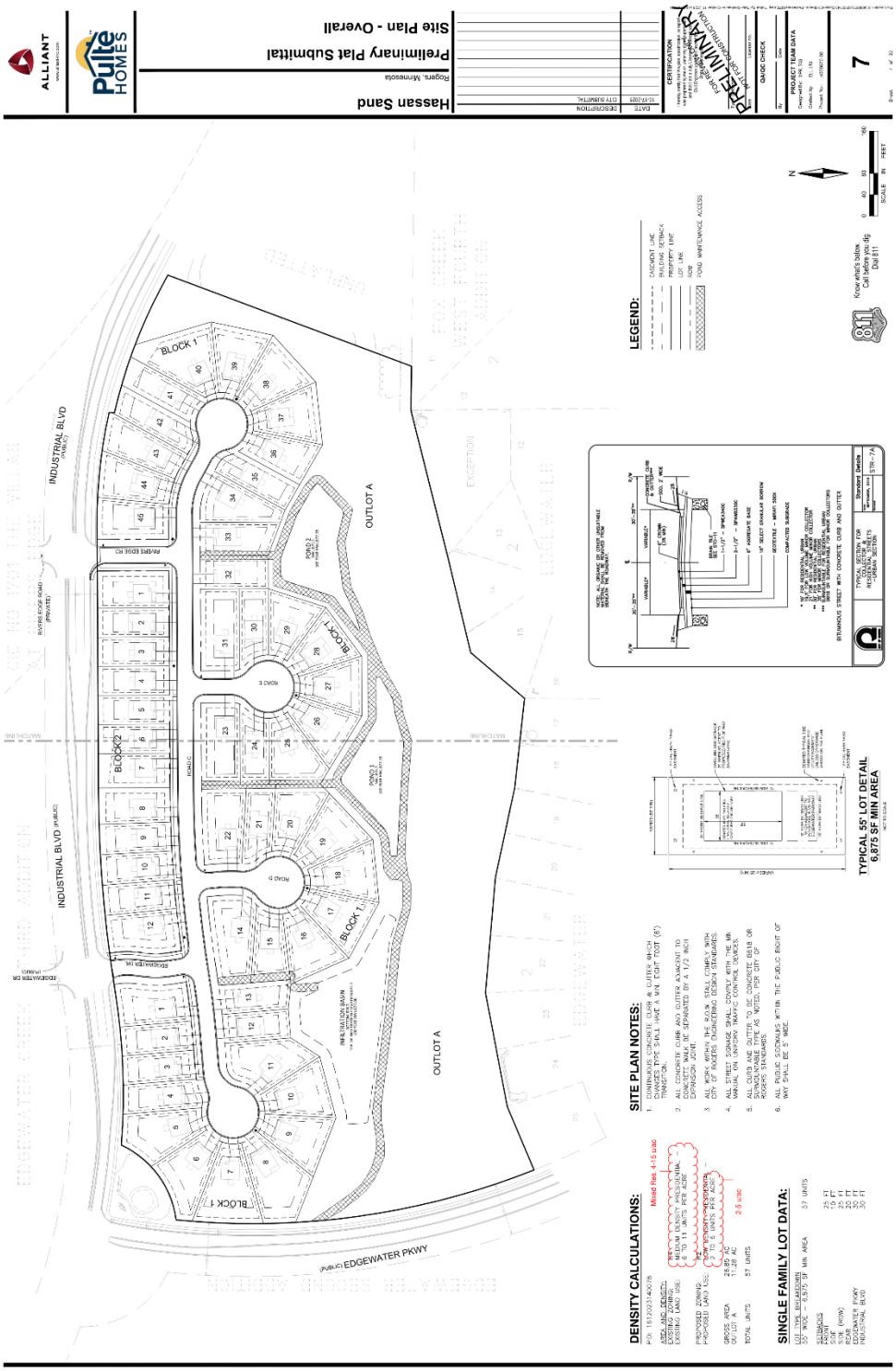
Outlot B, Edgewater Second Addition, according to the recorded plat thereof, Hennepin County, Minnesota;

Less and Except that portion as conveyed in that certain Warranty Deed filed of record on November 1, 2023, as Document No. 11242623**.**

Note: Property is Abstract.

EXHIBIT B

EDGEWATER COVE
MASTER DEVELOPMENT PLAN



RESOLUTION 2026-04

A RESOLUTION AUTHORIZING SUMMARY PUBLICATION OF ORDINANCE NO. 2026-01

WHEREAS, the City Council of the City of Rogers adopted Ordinance No. 2025-03 titled "AN ORDINANCE AMENDING THE ZONING MAP OF THE CITY OF ROGERS; REZONING THE SUBJECT PROPERTIES FROM MIXED RESIDENTIAL (R4) TO PLANNED UNIT DEVELOPMENT (PUD) FOR THE EDGEWATER COVE DEVELOPMENT", and

WHEREAS, in the case of lengthy ordinances or those containing charts or maps, Minnesota state law allows the City Council to approve, by a four-fifths vote, the publication of an Ordinance by title and summary only; and

WHEREAS, the expense to publish the complete text of Ordinance No. 2026-01 is not justified; and

WHEREAS, the following summary clearly informs the public of the intent and effect of the ordinance.

NOW THEREFORE, IT IS HEREBY RESOLVED, by the City Council of the City of Rogers, Hennepin County, Minnesota, that the following summary is hereby approved for official publication:

Summary of Ordinance 2025-03

AN ORDINANCE OF THE CITY OF ROGERS, MINNESOTA, REZONING PROPERTY FROM R2 TO PUD

On the 27th day of January, 2026, the Rogers City Council passed Ordinance No. 2026-01, An Ordinance of the City of Rogers, Minnesota Amending the Zoning Map for the City of Rogers; Rezoning the Subject Properties from Mixed Residential (R4) to Planned Unit Development (PUD) for the Edgewater Cove Development. The ordinance approves deviations from the R2 district for Edgewater Cove and establishes single-family lot performance standards specific to the 57-lot single-family subdivision proposed by Pulte Homes.

The full text of the Ordinance and figures may be reviewed at City Hall, located at 22350 South Diamond Lake Road, Rogers, MN 55374. The ordinance can also be viewed online at our website http://rogersmn.gov.

Moved by Councilmember , seconded by Councilmember ;

The following voted in favor of said resolution:

The following voted against the same:

The following abstained:

Whereupon said resolution was declared duly passed and adopted, and was signed by the Mayor, and attested by the City Clerk dated this 27th day of January, 2026.

ATTEST:

Shannon Klick, Mayor

Stacie Brown, City Clerk

RESOLUTION NO. 2026 – 05

A RESOLUTION GRANTING APPROVAL OF THE PRELIMINARY PLAT AND MASTER DEVELOPMENT PLAN FOR THE EDGEWATER COVE SUBDIVISION

WHEREAS, Pulte Homes of Minnesota ("Applicant"), has submitted application to the City of Rogers ("City"), requesting Preliminary Plat ("Plat") approval and Planned Unit Development for Cowley Lake Preserve ("Development"); and,

WHEREAS, the Development is a 57-lot residential development, located on one (1) property (PIDs: 16-120-23-14-0078) ("Subject Property) at the southeast corner of Industrial Blvd and Edgewater Pkwy legally described in Exhibit A; and,

WHEREAS, the City Approved a Land Use Amendment for the property by Resolution 2026-03 for the development. The Rogers 2040 Comprehensive Plan ("2040 Plan") guides the Subject Property as Low Density Residential with a required residential density of 2.0 to 5.0 units per net acre; and,

WHEREAS, the Development proposes an approximate residential density of 3 units per net acre; and,

WHEREAS, the Development proposes a rezoning to Planned Unit Development ("PUD") to deviate from a base zoning of R2, single-family residential; and,

WHEREAS, PUDs are regulated by Section 125-29, Planned Unit Developments; and,

WHEREAS, pursuant to Minnesota Statute §462.357 the Planning Commission ("Commission") held a Public Hearing ("Hearing") on January 5, 2026 to consider and receive public comment regarding the proposed Plat and PUD, as well as the accompanying Comprehensive Plan Amendment; and,

WHEREAS, notice of the Hearing was posted, published in the City's official newspaper, and mailed to any and all owners of affected properties, as required by State Statute; and,

WHEREAS, verbal and written comments were received and considered by the Commission regarding traffic, stormwater, parks, lot sizes and development density; and recommended approval of the Plat and Development's PUD request with conditions outlined by staff and directed staff to forward the recommendation to Council; and,

WHEREAS, the Council reviewed the Plat and Development at its January 27th, 2026 meeting; and,

WHEREAS, on January 27th, 2027, the City Council also considered Ordinance No. 2026-01, Rezoning the Subject Property from Mixed Residential (R4) to Planned Unit Development (PUD) with a base zoning of R2 establishing the master development plan (attached as Exhibit B) and PUD district standards for the Development, thereby making the Plat consistent with the Comprehensive Plan and Zoning and make the following findings related to the Plat and Development:

i. The PUD enables preservation of key natural resources (wetlands and natural drainage features and steep slopes) that could not be achieved under strict R-2 compliance. The Development also includes.
ii. The project achieves the Low-Density Residential net density range (3.04 units/acre) and reflects goals for housing variety, natural resource stewardship, and infrastructure efficiency.
iii. The development provides appropriate transitions to adjacent uses, maintains tree buffers, and supports regional planning objectives without creating adverse impacts; and,

WHEREAS, the City Council concludes that the Edgewater Cove Preliminary Plat and Planned Unit Development are consistent with the goals and policies of the Rogers 2040 Comprehensive Plan and meet the intent and criteria of Section 125-29 of the Zoning Code and the Subdivision Code,

NOW THEREFORE, BE IT RESOLVED, BY THE CITY COUNCIL OF THE CITY OF ROGERS, MINNESOTA, that the Preliminary Plat and Master Development Plan for Edgewater Cove is hereby approved with the following conditions:

1. The Applicant shall revise the preliminary plans (the development, civil plans, and preliminary plat) to the satisfaction of the Public Works Department, City Engineer, and City Planner.
2. The Applicant shall receive approval for the Stormwater Management Plan from Elm Creek Watershed Management Commission, and shall address and conform to all requirements of the Elm Creek Watershed Management Commission, including but not limited to the requisite wetland approvals and delineations, and other conditions as established.
3. The Development shall conform to the PUD rezoning, Ord. No. 2026-01, as approved by Council on January 27, 2026.
4. The Applicant shall submit current title work for the Preliminary Plat and shall conform to any requirements resulting from City staff and the City Attorney's review of the title work and plat opinion.
5. The applicant shall enter into a Stormwater Maintenance Agreement for the development that shall identify the terms and conditions of the Development.
6. The applicant shall enter into and execute a Subdivision Development Agreement with the City governing each phase of development in conjunction with final plat approval, of which said Subdivision Development Agreement shall outline the terms and conditions and financial obligations of the Applicant for each phase of development.
7. The Applicant shall pay to the City all applicable fees and expenses incurred by the City as related to the development.
8. Except as otherwise expressly authorized by City resolution or ordinance, all aspects of the development shall comply with all applicable state laws, city codes, ordinances, and regulations.

BE IT FURTHER RESOLVED, the City Council authorizes City staff and City consultants to take any appropriate action necessary and convenient in order to accomplish the intent of this Resolution, and to prepare any appropriate documents to facilitate the directives of the City Council as set forth in this Resolution.

Moved by Councilmember , seconded by Councilmember

The following voted in favor of said resolution:

The following voted against the same:

The following abstained:

Whereupon said resolution was declared duly passed and adopted, and was signed by the Mayor, and attested by the Clerk dated this 27th day of January, 2026.

_____
Shannon Klick, Mayor

ATTEST:

_____
Stacie Brown, City Clerk

EXHIBIT A

EDGEWATER COVE
LEGAL DESCRIPTIONS

Existing Legal Descriptions

Outlot B, Edgewater Second Addition, according to the recorded plat thereof, Hennepin County, Minnesota;

Less and Except that portion as conveyed in that certain Warranty Deed filed of record on November 1, 2023, as Document No. 11242623**.**

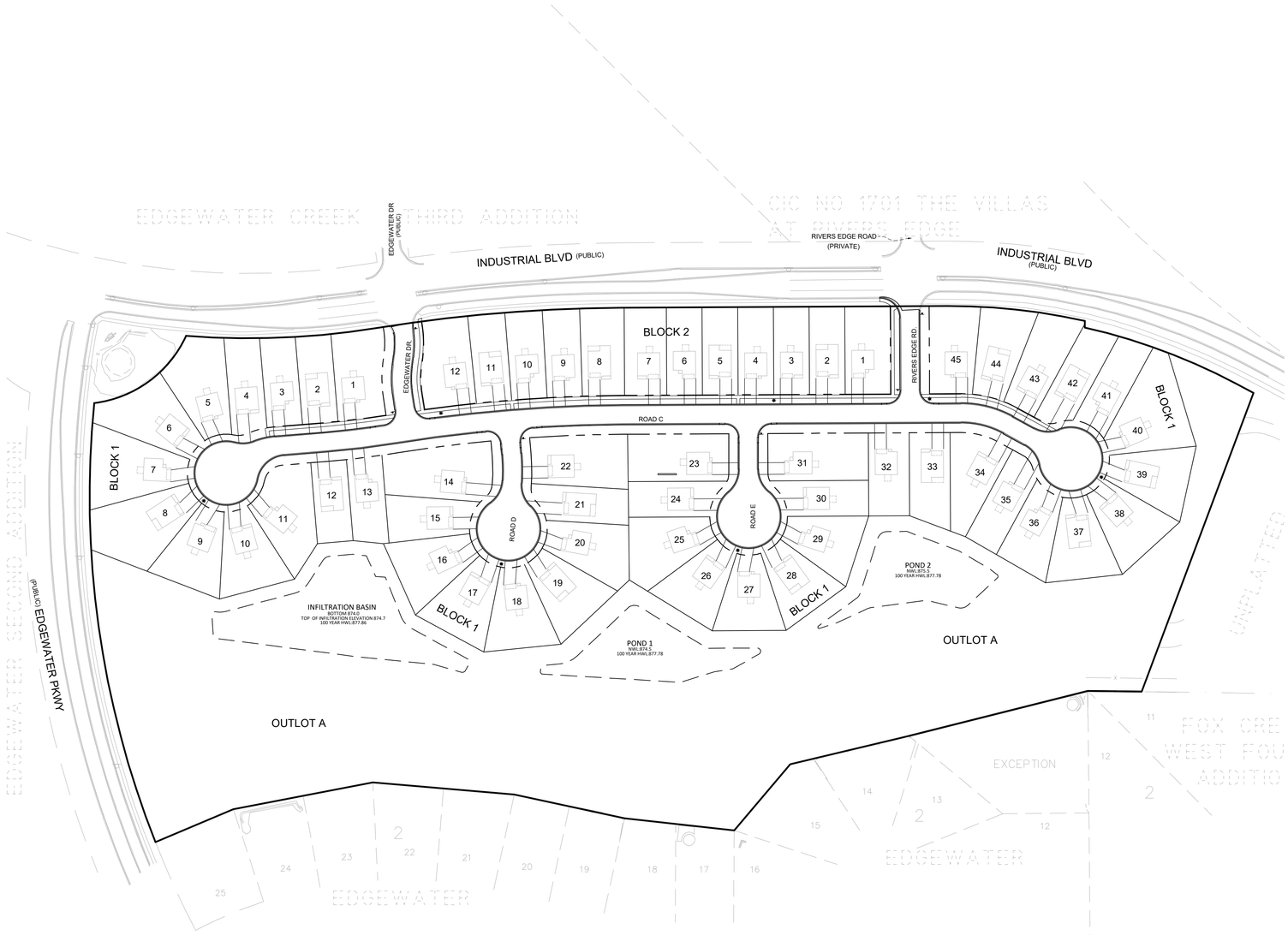
Note: Property is Abstract.

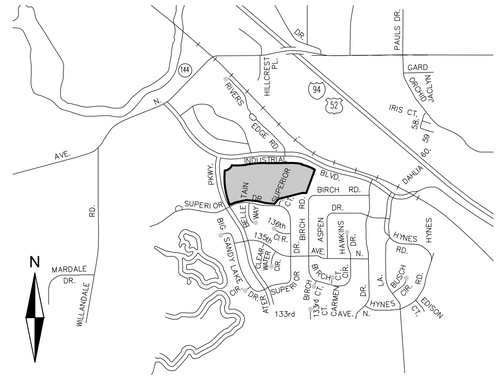
EXHIBIT B

EDGEWATER COVE
MASTER DEVELOPMENT PLAN

Hassan Sand

Rogers, Minnesota





VICINITY MAP

Scale: 1"=1500'

CONTACT LIST

DEVELOPER
Pulte Homes
1650 W. 82nd Street, Suite 300
Bloomington, MN 55431
Email: Dean.Lotter@PulteGroup.com
Contact: Dean Lotter

CONSULTANT
Alliant Engineering, Inc.
Marquette Avenue South, Suite 700
Minneapolis, MN 55402
Phone: 612.758.3080
Fax: 612.758.3099

ENGINEER
Tyler Stricherz
License No. 61993
Email: TStricherz@alliant-inc.com

SURVEYOR
Dan Ekrem
License No. 57366
Email: dekrem@alliant-inc.com

LANDSCAPE ARCHITECT
John Gronhovd
License No. 59233
Email: jgronhovd@alliant-inc.com

PLAN SUBMISSION/REVISION MATRIX

#	SHEET DESCRIPTION	2025-08-06
1	Cover Sheet	X
2	Existing Conditions Survey (West Side)	X
3	Existing Conditions Survey (East Side)	X
4	Preliminary Plat - Overall	X
5	Preliminary Plat - View A	X
6	Preliminary Plat - View B	X
7	Site Plan - Overall	X
8	Site Plan - View A	X
9	Site Plan - View B	X
10	Grading And Drainage Plan - Overall	X
11	Grading And Drainage Plan - View A	X
12	Grading And Drainage Plan - View B	X
13	Grading Profiles - Roads A, B, D, E	X
14	Grading Profile - Road C	X
15	Infiltration Basin Details	X
16	Pond 1 Details	X
17	Pond 2 Details	X
18	Erosion & Sediment Control Plan - Overall	X
19	Erosion & Sediment Control Plan - View A	X
20	Erosion & Sediment Control Plan - View B	X
21	Erosion & Sediment Control Notes & Details	X
22	Sanitary Sewer & Watermain Plan - Overall	X
23	Sanitary Sewer & Watermain Plan - View A	X
24	Sanitary Sewer & Watermain Plan - View B	X
25	Storm Sewer Plan - Overall	X
26	Storm Sewer Plan - View A	X
27	Storm Sewer Plan - View B	X
28	Landscape Plan	X
29	Landscape Plan - View A	X
30	Landscape Plan - View B	X

ALLIANT
www.alliant-inc.com

Pulte HOMES

Hassan Sand
Rogers, Minnesota
Preliminary Plat Submittal
Cover Sheet

DESCRIPTION	DATE
CITY SUBMITTAL	10.17.2025

CERTIFICATION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Civil Engineer under the laws of the State of Minnesota.

PRELIMINARY
FOR REVIEW ONLY
NOT FOR CONSTRUCTION

Tyler A. Stricherz
Date License no.

QA/QC CHECK

By Date

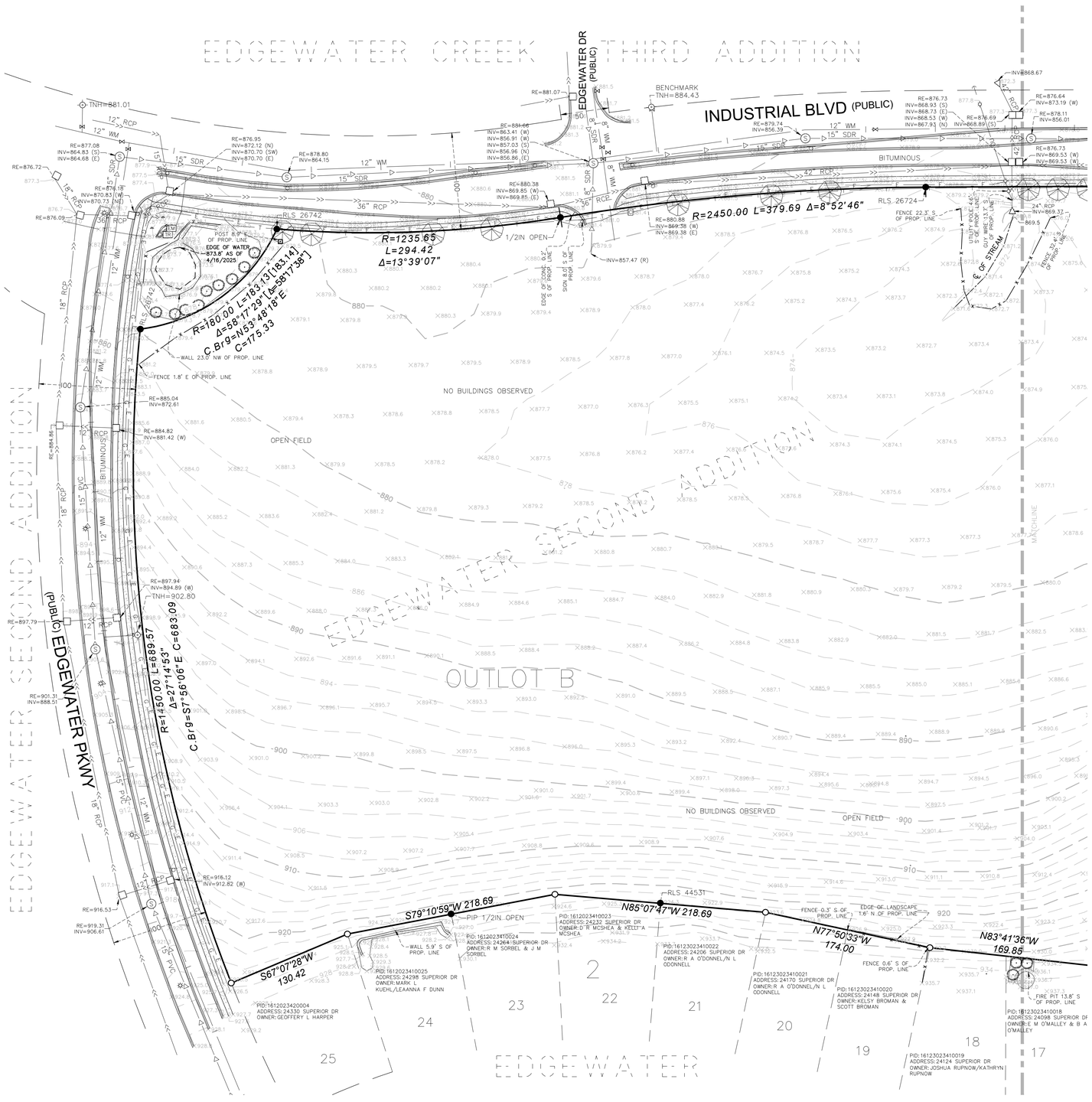
PROJECT TEAM DATA

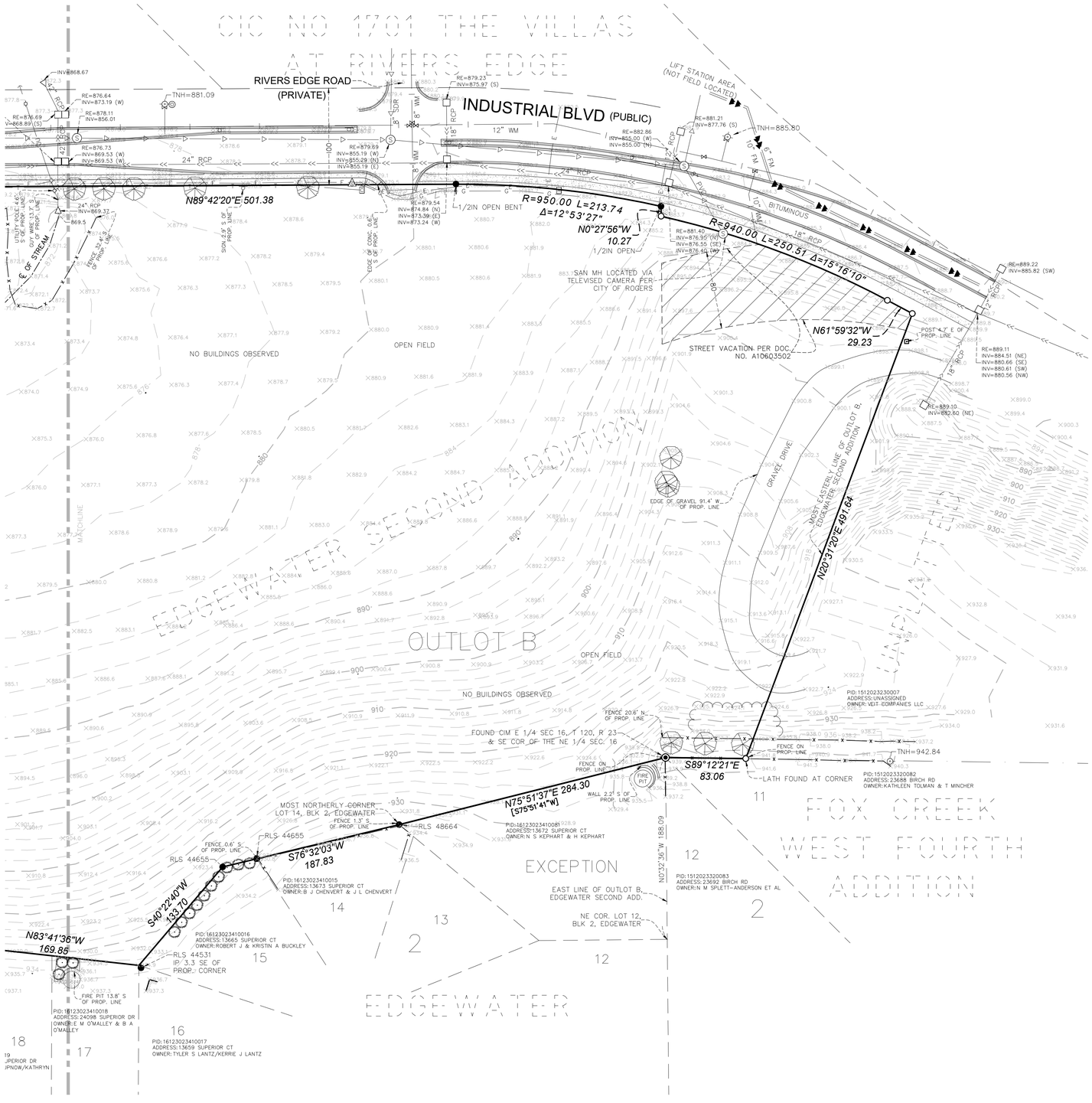
Designed By: MPR, TAS
Drafted By: ELL, LRJ
Project No.: 4000670-00

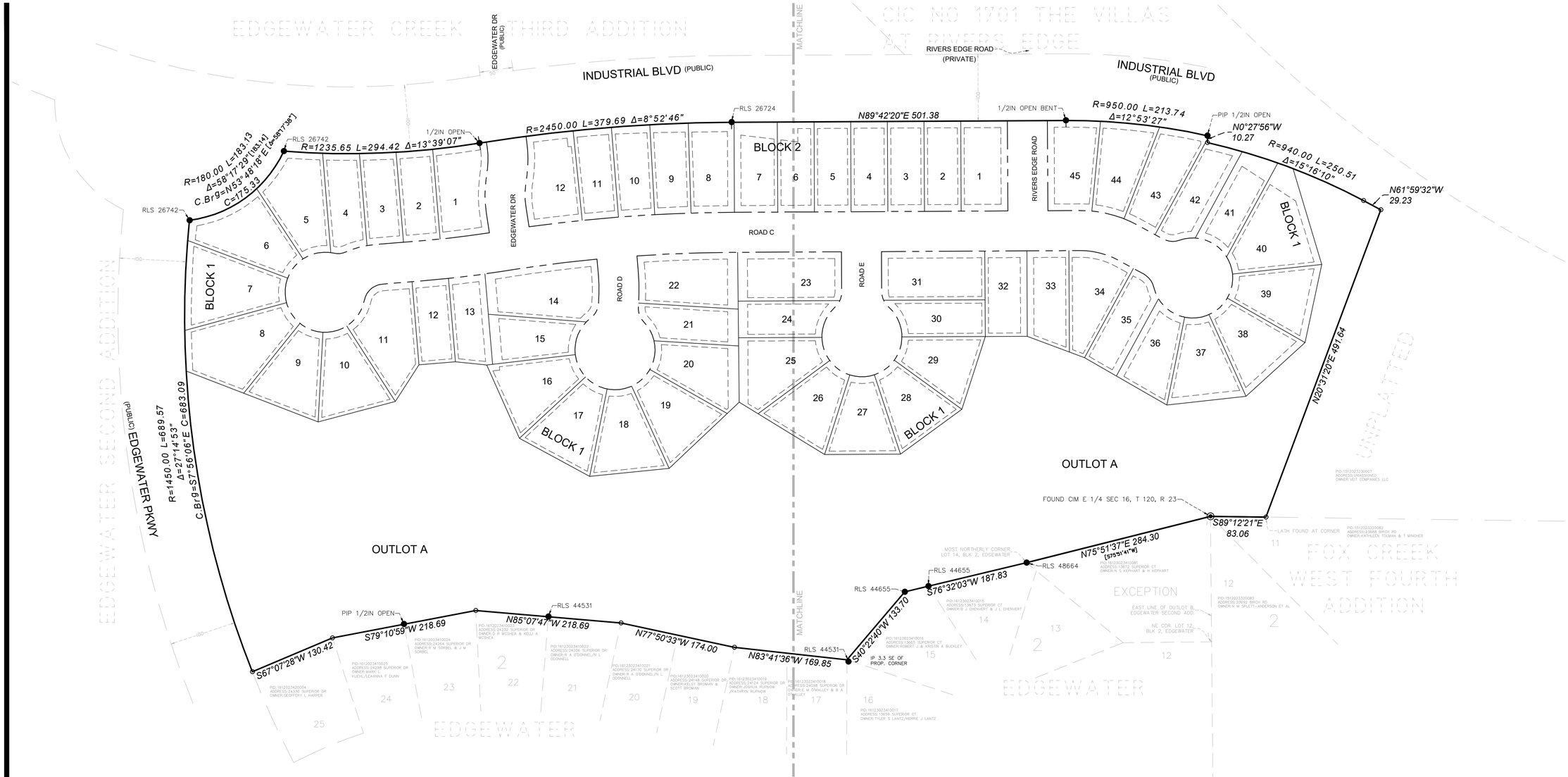
1

Sheet 1 of 30

File Location: X:\4000670-00\001\40 Design\00 Sheets - Preliminary\COVER.dwg Plotted By: Tyler Stricherz on October 17, 2025 - 7:48 AM


EDGEWATER DR (PUBLIC)
INDUSTRIAL BLVD (PUBLIC)
(PUBLIC) EDGEWATER PKWY
OUTLOT B
BENCHMARK
TNH=884.43
TNH=881.01
TNH=902.80
R=2450.00 L=379.69 Δ=8°52'46"
R=1235.65
L=294.42
Δ=13°39'07"
R=180.00 L=183.13[183.14]
Δ=58°17'29"[Δ=58°17'36"]
C.Brg=N53°48'18"E
C=175.33
R=1450.00 L=689.57
Δ=27°14'53"
C.Brg=S7°56'06"E C=683.09
S79°10'59"W 218.69
N85°07'47"W 218.69
N77°50'33"W
174.00
N83°41'36"W
169.85
S67°07'28"W
130.42
RLS 26742
RLS 44531
1/2IN OPEN
PIP 1/2IN OPEN
NO BUILDINGS OBSERVED
OPEN FIELD
EDGE OF WATER
873.8' AS OF
4/16/2025
WALL 23.0' NW OF PROP. LINE
FENCE 1.8' E OF PROP. LINE
WALL 5.9' S OF
PROP. LINE
FENCE 0.3' S OF
PROP. LINE
EDGE OF LANDSCAPE
1.6' N OF PROP. LINE
FENCE 0.6' S OF
PROP. LINE
FIRE PIT 13.8' S
OF PROP. LINE
FENCE 22.3' S
OF PROP. LINE
FENCE 57.4' S
OF PROP. LINE
℄ OF STREAM
BITUMINOUS
MATCHLINE
PID:161202341002
ADDRESS: 24330 SUPERIOR DR
OWNER: GEOFFERY L HARPER
PID:161202341002
ADDRESS: 24298 SUPERIOR DR
OWNER: MARK L
KUEHL/LEAANNA F DUNN
PID:161202341002
ADDRESS: 24264 SUPERIOR DR
OWNER:R M SORBEL & J M
SORBEL
PID:161202341002
ADDRESS: 24232 SUPERIOR DR
OWNER: D R MCSHEA & KELLY A
MCSHEA
PID:161202341002
ADDRESS: 24206 SUPERIOR DR
OWNER:R A O'DONNEL/N L
ODONNELL
PID:161202341002
ADDRESS: 24170 SUPERIOR DR
OWNER:R A O'DONNEL/N L
ODONNELL
PID:161202341002
ADDRESS: 24148 SUPERIOR DR
OWNER:KELSY BROMAN &
SCOTT BROMAN
PID:161202341001
ADDRESS: 24098 SUPERIOR DR
OWNER:E M O'MALLEY & B A
O'MALLEY
PID:161202341001
ADDRESS: 24124 SUPERIOR DR
OWNER: JOSHUA RUPNOW/KATHRYN
RUPNOW
RE=877.08
INV=864.83 (S)
INV=864.68 (E)
RE=876.72
RE=876.09
RE=876.18
INV=870.83 (W)
INV=870.73 (NE)
RE=876.95
INV=872.12 (N)
INV=870.70 (SW)
INV=870.70 (E)
RE=878.80
INV=864.15
RE=881.07
RE=881.66
INV=863.41 (W)
INV=856.91 (W)
INV=857.03 (S)
INV=856.96 (N)
INV=856.86 (E)
RE=880.38
INV=869.85 (W)
INV=869.85 (E)
RE=880.88
INV=869.58 (W)
INV=869.38 (E)
INV=857.47 (R)
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INV=856.39
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INV=868.73 (E)
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INV=867.93 (N)
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INV=868.89 (S)
INV=868.67
RE=876.64
INV=873.19 (W)
RE=878.11
INV=856.01
RE=876.73
INV=869.53 (W)
INV=869.53 (R)
INV=869.37
RE=884.86
RE=885.04
INV=872.61
RE=884.82
INV=881.42 (W)
RE=897.94
INV=894.89 (W)
RE=897.79
RE=901.31
INV=888.51
RE=916.12
INV=912.82 (W)
RE=916.53
RE=919.31
INV=906.61
12" RCP
15" RCP
18" RCP
24" RCP
36" RCP
42" RCP
12" WM
8" WM
15" SDR
8" SDR
15" PVC
18" PVC
12" PVC
50
100
200
400
600
800
880
890
900
910
920
930
940
950
960
970
980
990
1000
1010
1020
1030
1040
1050
1060
1070
1080
1090
1100
1110
1120
1130
1140
1150
1160
1170
1180
1190
1200
1210
1220
1230
1240
1250
1260
1270


RIVERS EDGE ROAD
(PRIVATE)
INDUSTRIAL BLVD (PUBLIC)
LIFT STATION AREA
(NOT FIELD LOCATED)
TNH=881.09
TNH=885.80
TNH=942.84
INV=868.67
RE=876.64
INV=873.19 (W)
RE=878.11
INV=856.01
RE=876.69
INV=868.89 (S)
RE=876.73
INV=869.53 (W)
INV=869.53 (W)
RE=879.23
INV=875.97 (S)
RE=879.69
INV=855.19 (W)
INV=855.29 (N)
INV=855.19 (E)
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INV=874.84 (N)
INV=873.39 (E)
INV=873.24 (W)
RE=882.86
INV=855.00 (W)
INV=855.00 (N)
RE=881.21
INV=877.76 (S)
RE=881.40
INV=876.95 (W)
INV=876.55 (SE)
INV=876.45 (W)
RE=889.22
INV=885.82 (SW)
RE=889.11
INV=884.51 (NE)
INV=880.66 (SE)
INV=880.61 (SW)
INV=880.56 (NW)
RE=889.10
INV=882.60 (NE)
N89°42'20"E 501.38
R=950.00 L=213.74
Δ=12°53'27"
N0°27'56"W
10.27
1/2IN OPEN
1/2IN OPEN BENT
R=940.00 L=250.51 Δ=15°16'10"
N61°59'32"W
29.23
POST 4.7' E OF PROP. LINE
STREET VACATION PER DOC.
NO. A10603502
SAN MH LOCATED VIA
TELEVISED CAMERA PER
CITY OF ROGERS
NO BUILDINGS OBSERVED
OPEN FIELD
OUTLOT B
EDGE OF GRAVEL 91.4' W
OF PROP. LINE
GRAPPE DRIVE
MOST EASTERLY LINE OF OUTLOT B,
EDGEWATER SECOND ADDITION
N20°31'20"E 491.64
FENCE 20.6' N
OF PROP. LINE
FENCE ON
PROP. LINE
FOUND CIM E 1/4 SEC 16, T 120, R 23
& SE COR OF THE NE 1/4 SEC 16
S89°12'21"E
83.06
LATH FOUND AT CORNER
FIRE PIT
WALL 2.2' S OF
PROP. LINE
PID:1512023230007
ADDRESS: UNASSIGNED
OWNER:VEIT COMPANIES LLC
PID:1512023320082
ADDRESS:23688 BIRCH RD
OWNER:KATHLEEN TOLMAN & T MINCHER
MOST NORTHERLY CORNER
LOT 14, BLK 2, EDGEWATER
FENCE 1.3' S
OF PROP. LINE
RLS 48664
N75°51'37"E 284.30
[S75°51'41"W]
PID:161230234100081
ADDRESS:13672 SUPERIOR CT
OWNER:N S KEPHART & H KEPHART
FENCE 0.6' S
OF PROP. LINE
RLS 44655
S76°32'03"W
187.83
PID:161230234100015
ADDRESS:13673 SUPERIOR CT
OWNER:B J CHENVERT & J L CHENVERT
EXCEPTION
EAST LINE OF OUTLOT B,
EDGEWATER SECOND ADD.
NE COR. LOT 12,
BLK 2, EDGEWATER
N0°32'36"W 188.09
PID:1512023320083
ADDRESS: 23692 BIRCH RD
OWNER:N M SPLETT-ANDERSON ET AL
S40°22'40"W
133.70
N83°41'36"W
169.85
PID:161230234100016
ADDRESS: 13665 SUPERIOR CT
OWNER:ROBERT J & KRISTIN A BUCKLEY
RLS 44531
IP 3.3 SE OF
PROP. CORNER
FIRE PIT 13.8' S
OF PROP. LINE
PID:161230234100018
ADDRESS:24098 SUPERIOR DR
OWNER:E M O'MALLEY & B A
O'MALLEY
PID:161230234100017
ADDRESS:13659 SUPERIOR CT
OWNER: TYLER S LANTZ/KERRIE J LANTZ
JPERIOR DR
JPNOW/KATHRYN
MATCHLINE
24" RCP
18" RCP
12" WM
8" WM
10" FM
8" FM
12" RCP
18" RCP
24" RCP
UTILITY POLE 4.6'
S OF PROP. LINE
6' OF STREAM
FENCE 0.4'
OF PROP. LINE
SIGN 0.4' S OF
PROP. LINE
CONC. 0.6'
S OF PROP. LINE
BITUMINOUS
12" RCP
18" RCP
24" RCP
INV=869.37
869.5
INV=879.54
INV=873.39
INV=873.24
INV=869.37
INV=869.53
INV=869.53
INV=876.73
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INV=889.11
INV=884.51
INV=880.66
INV=880.61
INV=880.56
INV=889.10
INV=882.60



PARCEL AREA TABLE		
PARCEL	AREA SF	AREA AC
B1-L1	10,292	0.24
B1-L2	7,423	0.17
B1-L3	7,501	0.17
B1-L4	8,000	0.18
B1-L5	11,601	0.27
B1-L6	11,680	0.27
B1-L7	13,096	0.30
B1-L8	13,899	0.32
B1-L9	9,948	0.23
B1-L10	9,948	0.23
B1-L11	11,931	0.27
B1-L12	6,878	0.16
B1-L13	7,218	0.17
B1-L14	13,081	0.30
B1-L15	8,180	0.19

PARCEL AREA TABLE		
PARCEL	AREA SF	AREA AC
B1-L16	9,984	0.23
B1-L17	9,950	0.23
B1-L18	9,950	0.23
B1-L19	9,950	0.23
B1-L20	9,856	0.23
B1-L21	7,737	0.18
B1-L22	11,752	0.27
B1-L23	11,342	0.26
B1-L24	7,393	0.17
B1-L25	10,740	0.25
B1-L26	9,373	0.22
B1-L27	8,898	0.20
B1-L28	8,898	0.20
B1-L29	8,916	0.20
B1-L30	7,385	0.17

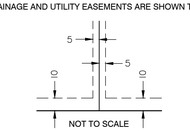
PARCEL AREA TABLE		
PARCEL	AREA SF	AREA AC
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B1-L32	8,064	0.19
B1-L33	8,818	0.20
B1-L34	9,748	0.22
B1-L35	8,109	0.19
B1-L36	8,531	0.20
B1-L37	9,922	0.23
B1-L38	9,934	0.23
B1-L39	9,952	0.23
B1-L40	13,668	0.31
B1-L41	8,233	0.19
B1-L42	8,676	0.20
B1-L43	9,849	0.23
B1-L44	9,654	0.22
B1-L45	9,826	0.23

PARCEL AREA TABLE		
PARCEL	AREA SF	AREA AC
B2-L1	9,450	0.22
B2-L2	7,425	0.17
B2-L3	7,425	0.17
B2-L4	7,425	0.17
B2-L5	7,425	0.17
B2-L6	7,425	0.17
B2-L7	8,769	0.20
B2-L8	9,028	0.21
B2-L9	7,577	0.17
B2-L10	7,577	0.17
B2-L11	7,577	0.17
B2-L12	10,367	0.24
OUTLOT A	491,185	11.28
ROW	143,984	3.31
TOTAL	1,169,727	26.85

LEGEND:

- PROPERTY LINE
- LOT LINE
- R.O.W
- EASEMENT LINE
- FOUND IRON MONUMENT

DRAINAGE AND UTILITY EASEMENTS ARE SHOWN THUS:



Being 5 feet in width and adjoining lot lines and 10 feet in width and adjoining right of way lines, unless otherwise indicated on the plat.

N

0 40 80 160

SCALE IN FEET

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

ALLIANT
www.alliant-inc.com

PULTE HOMES

Hassan Sand
Rogers, Minnesota

Preliminary Plat Submittal
Preliminary Plat - Overall

DESCRIPTION	DATE
CITY SUBMITTAL	10.17.2025

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.

PRELIMINARY
FOR REVIEW
NOT FOR CONSTRUCTION

Typed or Printed Name

Date License no.

QA/QC CHECK

By Date

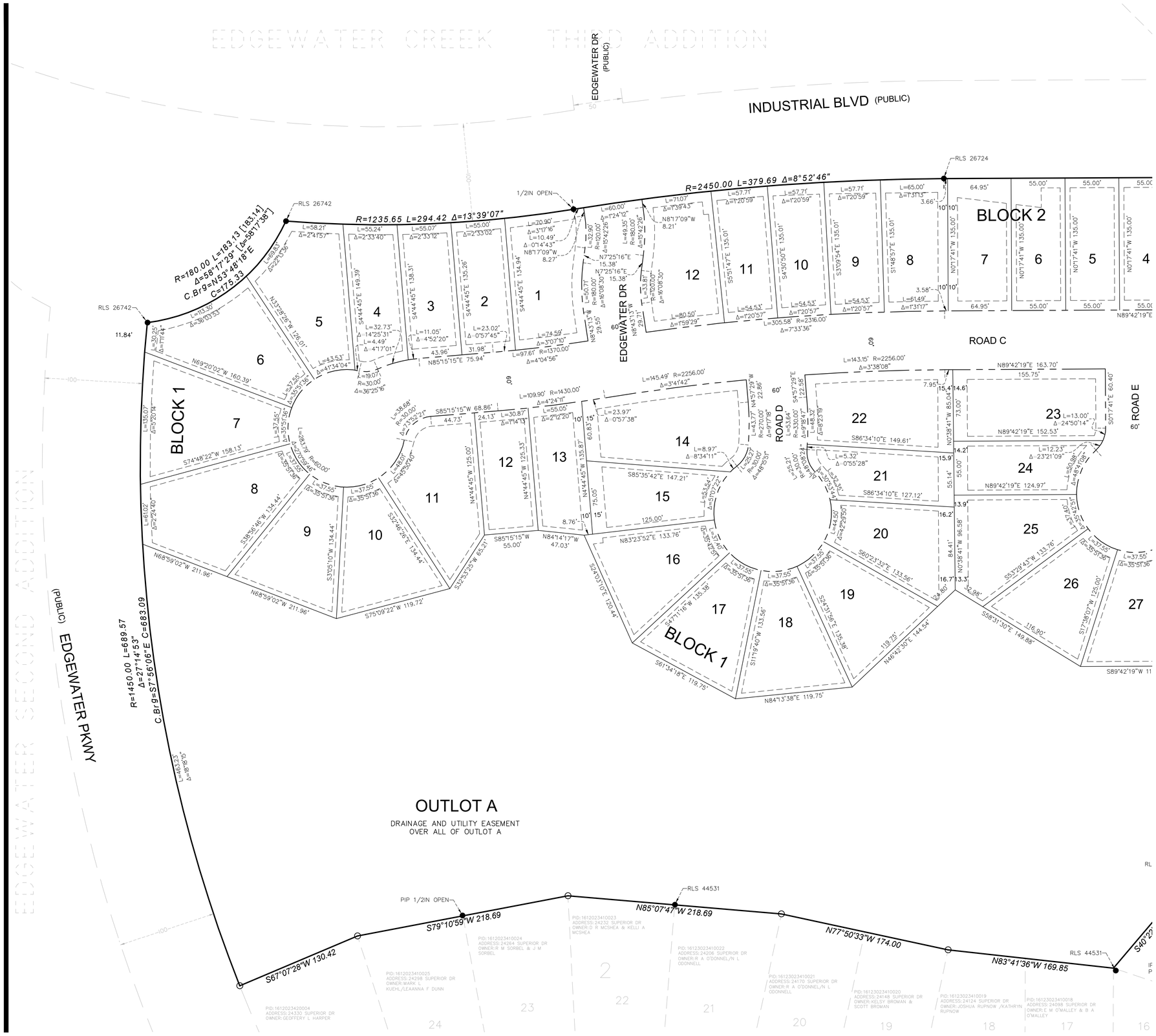
PROJECT TEAM DATA

Designed By: MPR, TAS
Drafted By: ELL, LRJ
Project No.: 4000670-00

4

Sheet 4 of 30

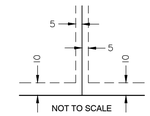
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LEGEND:

- PROPERTY LINE
- LOT LINE
- R.O.W
- EASEMENT LINE
- FOUND IRON MONUMENT

DRAINAGE AND UTILITY EASEMENTS ARE SHOWN THUS:



Being 5 feet in width and adjoining lot lines and 10 feet in width and adjoining right of way lines, unless otherwise indicated on the plat.

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

0 25 50 100
SCALE IN FEET

ALLIANT
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Pulte HOMES

Hassan Sand

Rogers, Minnesota

Preliminary Plat Submittal

Preliminary Plat - View A

DATE	DESCRIPTION
10-17-2025	CITY SUBMITTAL

CERTIFICATION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

Signature

Typed or Printed Name

Date License no.

PRELIMINARY
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QA/QC CHECK

By Date

PROJECT TEAM DATA

Designed By: MPR, TAS

Drafted By: ELL, LRJ

Project No.: 4000670-00

5

Sheet 5 of 30

File Location: X:\4000670-00\00140 Design\00 Sheets - Preliminary\PRELIMINARY PLAT.dwg Posted By: Tyler Stichter on Oct 17, 2025 at 7:59:49 AM

CIC NO 1701 THE VILLAS AT RIVERS EDGE

RIVERS EDGE ROAD
(PRIVATE)

INDUSTRIAL BLVD
(PUBLIC)

RLS 26724

N89°42'20"E 501.38

1/2IN OPEN BENT

R=950.00 L=213.74
Δ=12°53'27"

PIP 1/2IN OPEN

N0°27'56"W
10.27

R=940.00 L=250.51
Δ=15°16'10"

N61°59'32"W
29.23

BLOCK 2

7 6 5 4 3 2 1

64.95' 55.00' 55.00' 55.00' 55.00' 55.00' 55.00' 70.00'

N89°42'19"E 413.54'

ROAD C

RIVERS EDGE ROAD

45 44 43 42 41 40 39 38 37 36 35 34 33 32 31 30 29 28 27 26 25 24 23

BLOCK 1

ROAD E

N89°42'19"E 163.70'

N89°42'19"E 297.65'

N89°42'19"E 124.97'

S89°42'19"W 125.00'

S89°42'19"W 63.00'

S89°42'19"W 113.91'

N83°55'48"E 134.60'

S60°12'36"E 134.30'

N12°05'34"E 119.75'

S47°41'05"W 119.62'

S83°45'09"W 119.52'

N0°05'59"W 142.21'

N20°31'20"E 491.64

OUTLOT A

DRAINAGE AND UTILITY EASEMENT
OVER ALL OF OUTLOT A

FOUND CIM E 1/4 SEC 16, T 120, R 23

S89°12'21"E
83.06

LATH FOUND AT CORNER

N75°51'37"E 284.30
(S75°51'41"W)

MOST NORTHERLY CORNER
LOT 14, BLK 2, EDGEWATER

RLS 48664

RLS 44655

S76°32'03"W 187.83

RLS 44655

S40°22'40"W 133.70

RLS 44531

N83°41'36"W 169.85

IP 3.3 SE OF
PROP. CORNER

EXCEPTION

EAST LINE OF OUTLOT B,
EDGEWATER SECOND ADD.

NE COR. LOT 12,
BLK 2, EDGEWATER

UNPLATTED

FOX CREEK
WEST FOURTH
ADDITION

EDGEWATER

PID:151202323007
ADDRESS: UNASSIGNED
OWNER: VDT COMPANIES LLC

PID:151202323082
ADDRESS: 23688 BIRCH RD
OWNER: KATHLEEN TOLMAN & T MINCHER

PID:161230234100081
ADDRESS: 13672 SUPERIOR CT
OWNER: N S KEPHART & H KEPHART

PID:161230234100015
ADDRESS: 13673 SUPERIOR CT
OWNER: B J CHENVERT & J L CHENVERT

PID:161230234100016
ADDRESS: 13665 SUPERIOR CT
OWNER: ROBERT J & KRISTIN A BUCKLEY

PID:151202323008
ADDRESS: 23632 BIRCH RD
OWNER: N M SPLETT--ANDERSON ET AL

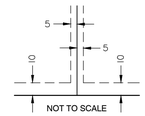
PID:161230234100019
ADDRESS: 24124 SUPERIOR DR
OWNER: JOSHUA RUPNOW /KATHRYN RUPNOW

PID:161230234100018
ADDRESS: 24098 SUPERIOR DR
OWNER: E M O'MALLEY & B A O'MALLEY

LEGEND:

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- LOT LINE
- R.O.W
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- FOUND IRON MONUMENT

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Pulte HOMES

Hassan Sand
Rogers, Minnesota

Preliminary Plat Submittal
Preliminary Plat - View B

DATE	DESCRIPTION
10-17-2025	CITY SUBMITTAL

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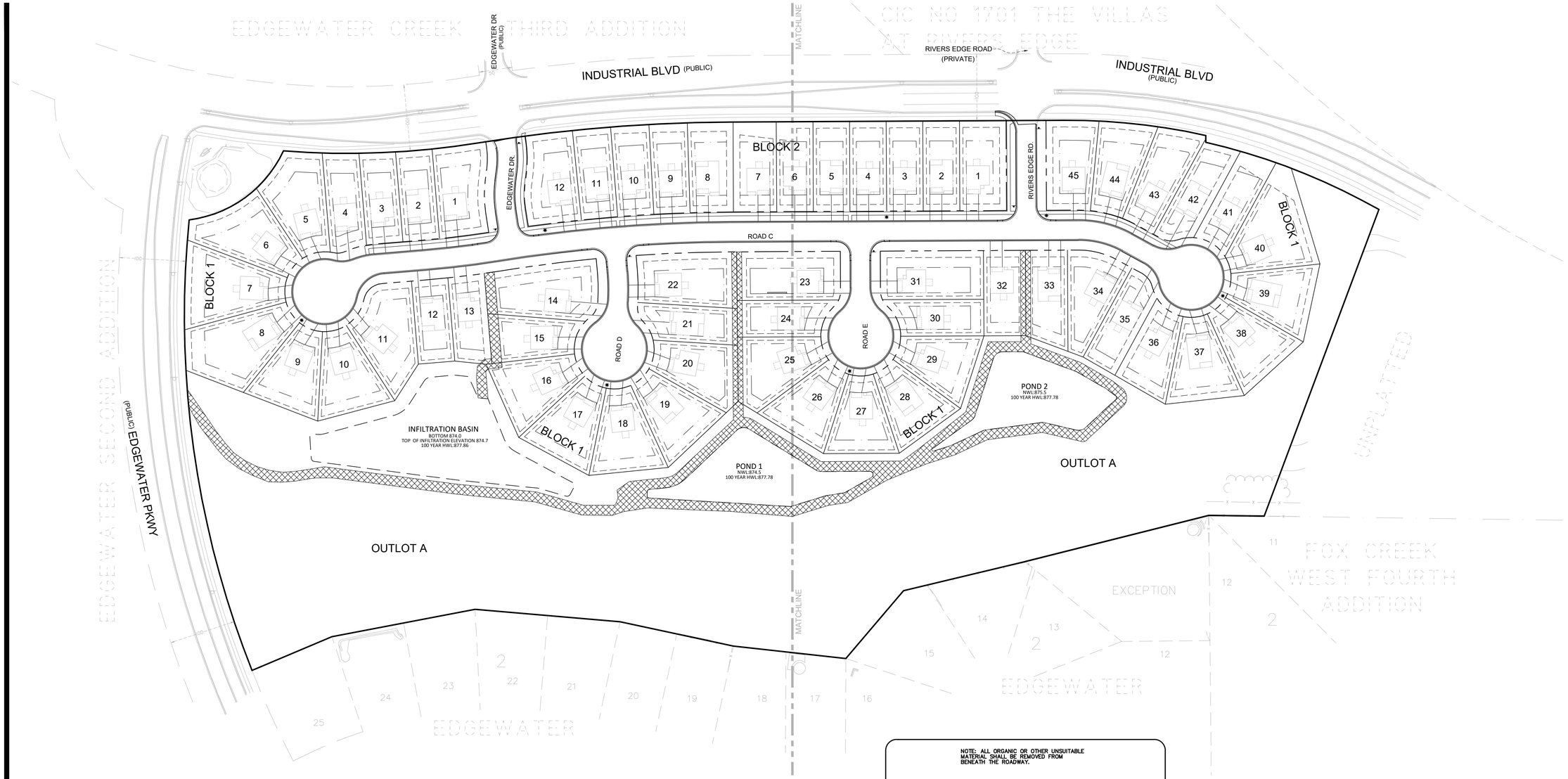
PROJECT TEAM DATA

Designed By: MPR, TAS
Drafted By: ELL, LRJ
Project No.: 4000670-00

6

Sheet 6 of 30

File Location: X:\4000670-00\001140 Design\00 Sheets - Preliminary\PRELIMINARY PLAT.dwg Plotted By: Tyler Strichen on Oct 17, 2025 at 7:39:54 AM



DENSITY CALCULATIONS:

PID: 1612023140078

Mixed Res. 4-15 u/ac

AREA AND DENSITY:
EXISTING ZONING: R4
EXISTING LAND USE: MEDIUM DENSITY PRESIDENTIAL – 6 TO 11 UNITS PER ACRE

PROPOSED ZONING: R2
PROPOSED LAND USE: LOW DENSITY PRESIDENTIAL – 2 TO 6 UNITS PER ACRE

2-5 u/ac

GROSS AREA	26.85 AC
OUTLOT A	11.28 AC
TOTAL UNITS	57 UNITS

SINGLE FAMILY LOT DATA:

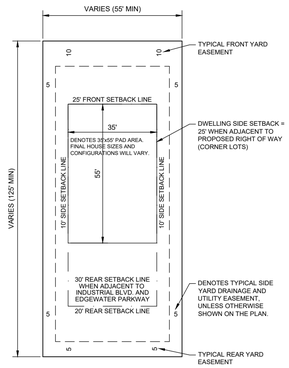
LOT TYPE BREAKDOWN
55' WIDE – 6,875 SF MIN AREA — 57 UNITS

SETBACKS

FRONT	25 FT
SIDE	10 FT
SIDE (ROW)	25 FT
REAR	20 FT
EDGEWATER PKWY	30 FT
INDUSTRIAL BLVD	30 FT

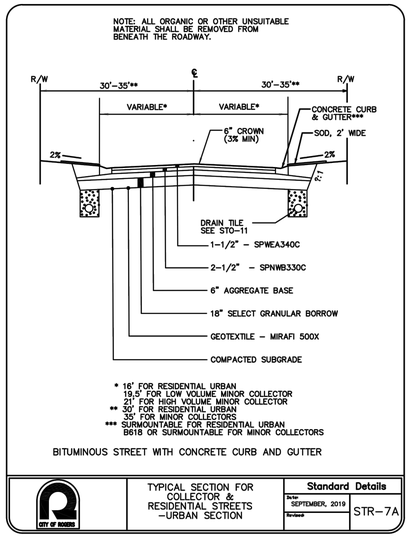
SITE PLAN NOTES:

1. CONTINUOUS CONCRETE CURB & GUTTER WHICH CHANGES TYPE SHALL HAVE A MIN. EIGHT FOOT (8') TRANSITION.
2. ALL CONCRETE CURB AND GUTTER ADJACENT TO CONCRETE WALK BE SEPARATED BY A 1/2 INCH EXPANSION JOINT.
3. ALL WORK WITHIN THE R.O.W. STALL COMPLY WITH CITY OF ROGERS ENGINEERING DESIGN STANDARDS.
4. ALL STREET SIGNAGE SHALL COMPLY WITH THE MN MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
5. ALL CURB AND GUTTER TO BE CONCRETE B618 OR SURMOUNTABLE TYPE AS NOTED, PER CITY OF ROGERS STANDARDS.
6. ALL PUBLIC SIDEWALKS WITHIN THE PUBLIC RIGHT OF WAY SHALL BE 5' WIDE.



TYPICAL 55' LOT DETAIL
6,875 SF MIN AREA

NOT TO SCALE



LEGEND:

- EASEMENT LINE
- BUILDING SETBACK
- PROPERTY LINE
- LOT LINE
- ROW
- POND MAINTENANCE ACCESS

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PULTE HOMES

Hassan Sand
Rogers, Minnesota

Preliminary Plat Submittal

Site Plan - Overall

DESCRIPTION	DATE
CITY SUBMITTAL	10.17.2025

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Signature

Date License no.

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By Date

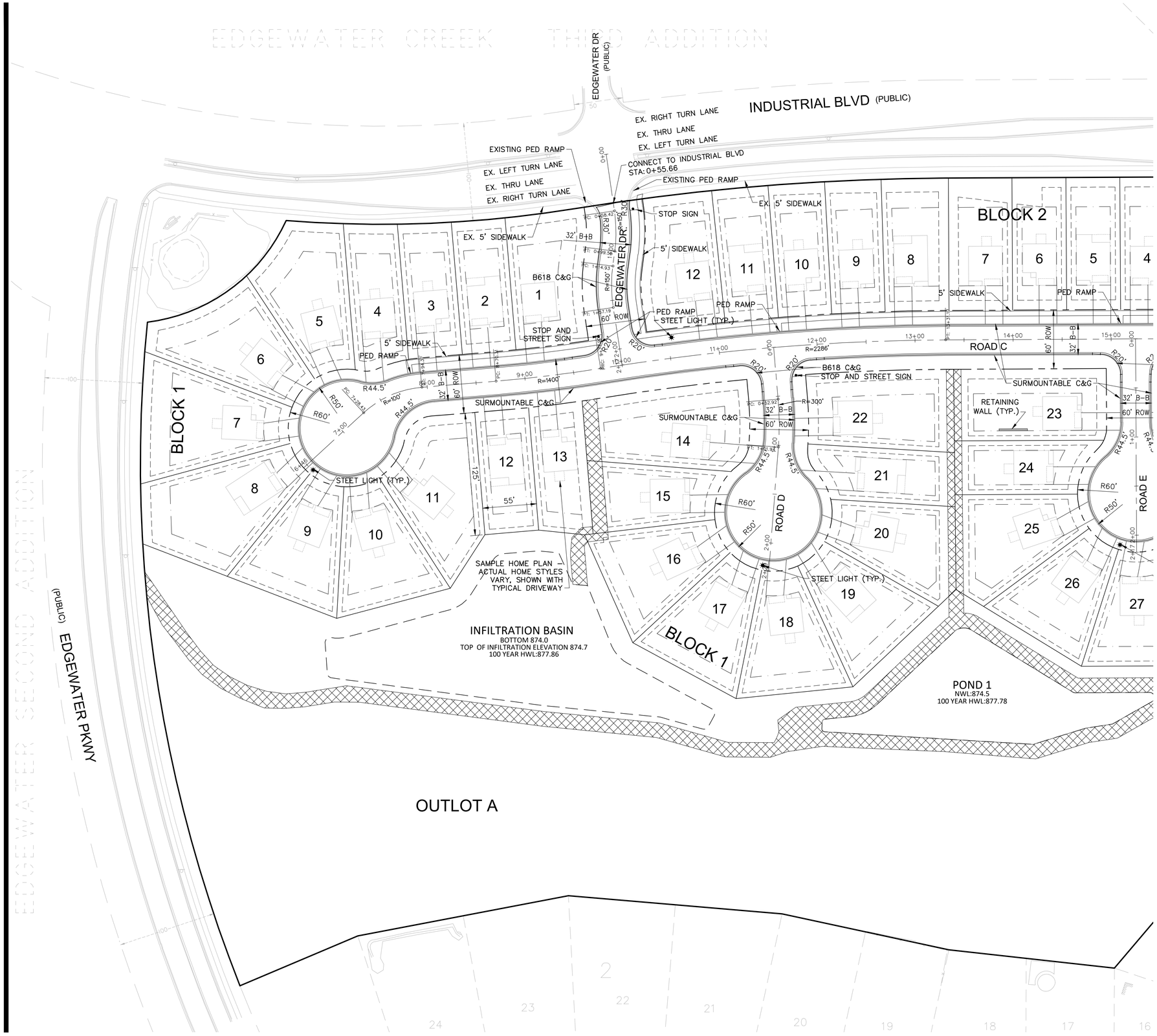
PROJECT TEAM DATA

Designed By: MPR, TAS
Drafted By: ELL, LRJ
Project No.: 4000670-00

7

Sheet 7 of 30

File Location: X:\4000670\3-50\001\40 Drawings\0 Sheets - Preliminary\SITE.dwg Plotted By: Tyler Stichter on October 17, 2025 at 11:40 AM



LEGEND:

- EASEMENT LINE
- BUILDING SETBACK
- PROPERTY LINE
- LOT LINE
- ROW
- POND MAINTENANCE ACCESS

N

0 25 50 100
SCALE IN FEET

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Pulte HOMES

Hassan Sand
Rogers, Minnesota

Preliminary Plat Submittal

Site Plan - View A

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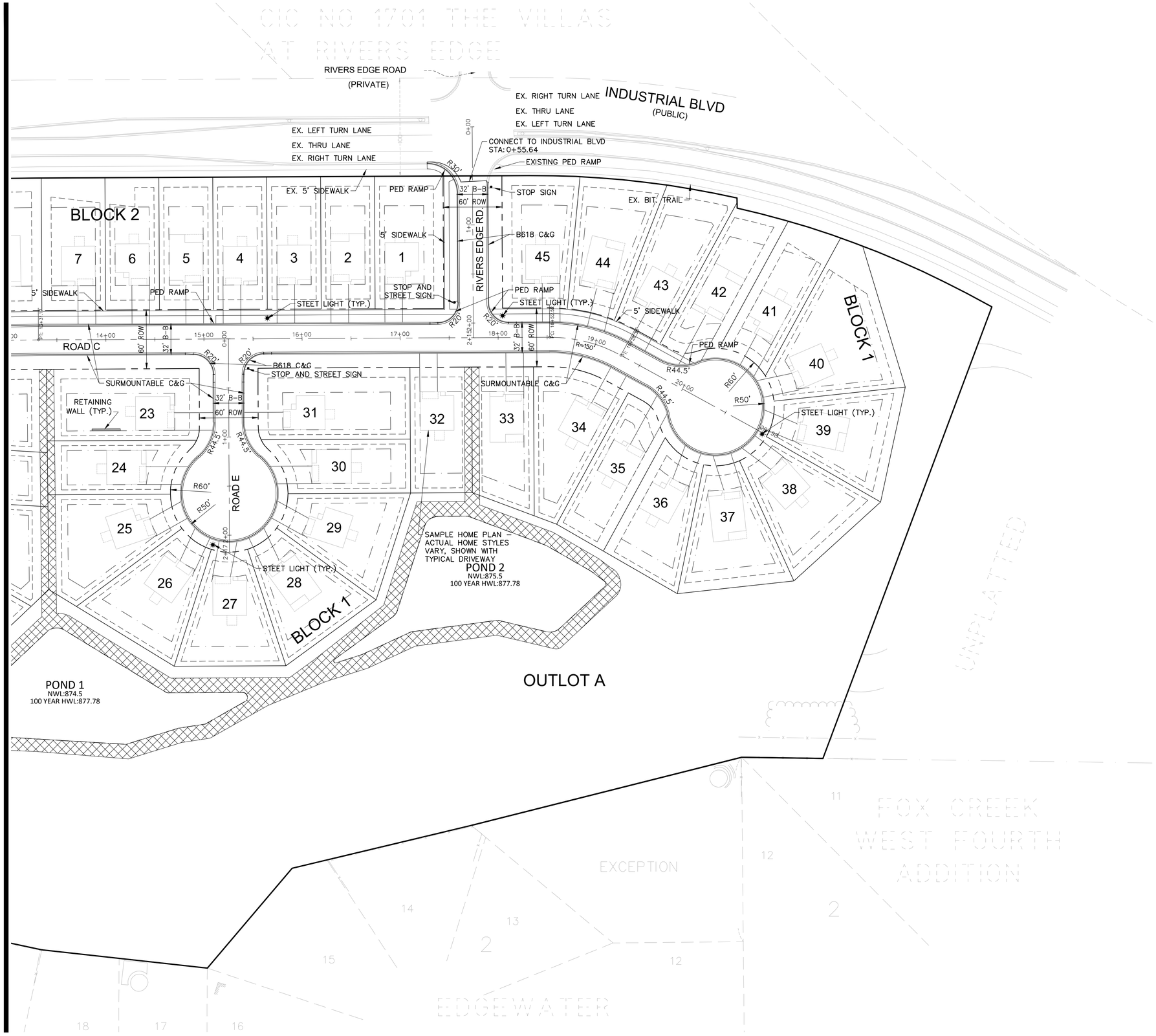
PROJECT TEAM DATA

Designed By: MPR, TAS
Drafted By: ELL, LRJ
Project No.: 4000670-00

8

Sheet 8 of 30

File Location: X:\4000670-00\01\40 Design\00 Sheets - Preliminary\SITE.dwg Plotted By: Tyler Stricherz on October 17, 2025 at 7:40 AM



LEGEND:

- EASEMENT LINE
- BUILDING SETBACK
- PROPERTY LINE
- LOT LINE
- ROW
- POND MAINTENANCE ACCESS

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Hassan Sand
Rogers, Minnesota

Preliminary Plat Submittal

Site Plan - View B

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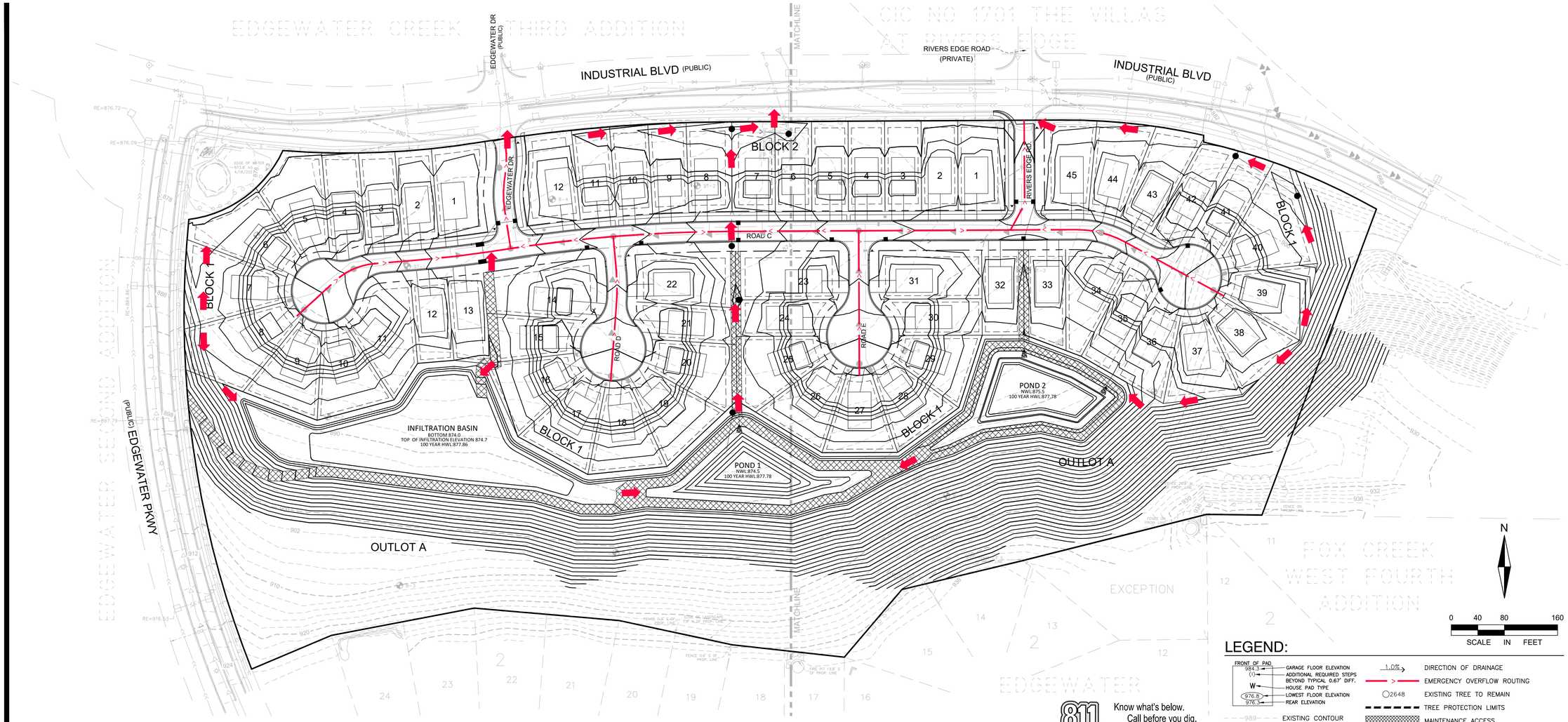
PROJECT TEAM DATA

Designed By: MPR, TAS
Drafted By: ELL, LRJ
Project No.: 4000670-00

9

Sheet 9 of 30

File Location: X:\4000670-00\001s\0 Design\03 Sheets - Preliminary\SITE.dwg Plotted By: Tyler Stolchez on October 17, 2025 at 7:39 AM



GRADING NOTES:

1. ALL FINISHED GRADES SHALL SLOPE AWAY FROM PROPOSED BUILDINGS AT MINIMUM GRADE OF 2.0%. ALL SWALES SHALL HAVE A MINIMUM SLOPE OF 2.00% UNLESS NOTED OTHERWISE.
2. THE CONTRACTOR SHALL KEEP THE ADJACENT ROADWAYS FREE OF DEBRIS AND PREVENT THE OFF-SITE TRACKING OF SOIL IN ACCORDANCE WITH THE REQUIREMENTS OF THE CITY, WATERSHED AND NPDES PERMIT.
3. NOTIFY GOPHER STATE ONE CALL AT (800) 252-1166 48 HOURS PRIOR TO START OF CONSTRUCTION.
4. ALL IMPROVEMENTS TO CONFORM WITH CITY OF ROGERS STANDARD CONSTRUCTION SPECIFICATIONS, LATEST EDITION.
5. ROCK CONSTRUCTION ENTRANCES SHALL BE PROVIDED AT ALL CONSTRUCTION ACCESS POINTS.
6. REFER TO GEOTECHNICAL REPORT AND PROJECT MANUAL FOR SOIL CORRECTION REQUIREMENTS AND TESTING REQUIREMENTS.
7. STRIP TOPSOIL PRIOR TO ANY CONSTRUCTION. REUSE STOCKPILE ON SITE. STOCKPILE PERIMETERS MUST BE PROTECTED WITH SILT FENCE. ON SITE TOPSOIL CAN BE USED IF IT MEETS CITY SPECIFICATIONS AS DETERMINED BY CITY ENGINEER OR THEIR REPRESENTATIVE.
8. PRIOR TO STARTING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE TO MAKE SURE THAT ALL REQUIRED PERMITS AND APPROVALS HAVE BEEN OBTAINED. NO CONSTRUCTION OR FABRICATION SHALL BEGIN UNTIL THE CONTRACTOR HAS RECEIVED AND THOROUGHLY REVIEWED ALL PLANS AND OTHER DOCUMENTS APPROVED BY ALL OF THE PERMITTING AUTHORITIES.
9. IMMEDIATELY FOLLOWING GRADING OF (3:1 OR GREATER) SIDE SLOPES AND DRAINAGE SWALES, WOOD FIBER BLANKET OR OTHER APPROVED SOIL STABILIZING METHOD (APPROVED BY ENGINEER) SHALL BE APPLIED OVER APPROVED SEED MIXTURE AND A MINIMUM OF 4" TOPSOIL.
10. THE GENERAL CONTRACTOR MUST DISCUSS DEWATERING PLANS WITH ALL SUBCONTRACTORS TO VERIFY NPDES PERMIT REQUIREMENTS. IF DEWATERING IS REQUIRED DURING CONSTRUCTION, CONTRACTOR SHOULD CONSULT WITH EROSION CONTROL INSPECTOR AND ENGINEER TO DETERMINE APPROPRIATE METHOD. CONTRACTOR RESPONSIBLE FOR DEWATERING PERMIT FROM THE DNR AS REQUIRED.
11. REFER TO GRADING AND DRAINAGE AND EROSION AND SEDIMENT CONTROL PLAN FOR ALL EROSION AND SEDIMENT CONTROL DEVICE LOCATIONS.
12. PROPOSED DRIVEWAY GRADES ARE 3% MINIMUM AND 10% MAXIMUM.
13. ANY MODIFICATION TO HOMES AT TIME OF BUILDING PERMIT APPLICATION THAT DEVIATES FROM THIS GRADING PLAN MUST BE SUBMITTED TO AND APPROVED BY THE CITY OF ROGERS.
14. ONE STEP IS EQUAL TO 0.67 FEET.
15. A GRADING AS-BUILT SURVEY MUST BE SUBMITTED TO CITY STAFF (PER LAND DISTURBANCE REQUIREMENTS) PRIOR TO ANY UTILITY AND STREET IMPROVEMENT CONSTRUCTION.
16. 4" OF TOPSOIL TO BE SPREAD OVER DISTURBED AREAS TO REDUCE LONG TERM WATER USE FOR IRRIGATION AND IMPROVE STORMWATER RUNOFF QUALITY.

GRADING EOF/FREEBOARD NOTES:

1. THE LOWEST BUILDING OPENING ELEVATION SHALL BE MINIMUM OF 2 FEET ABOVE THE ADJACENT STORMWATER BASIN HWL.
2. THE LOWEST BUILDING OPENING ELEVATION SHALL BE MINIMUM 1.0' ABOVE THE EMERGENCY OVERFLOW (EOF).
3. THE LOW FLOOR MUST BE AT MINIMUM 1 FOOT ABOVE THE NORMAL WATER LEVEL.

INFILTRATION BASIN NOTES:

1. PROPOSED INFILTRATION AND PONDING AREAS SHALL BE PROTECTED THROUGHOUT CONSTRUCTION TO PREVENT COMPACTION OF SOILS AND SEDIMENTATION.
2. INFILTRATION BASIN TO BE HELD 2' HIGH DURING MASS GRADING AND ROUTE DRAINAGE TO POND 1.
3. CLEAR OUT MATERIAL TO SAND LAYER IN INFILTRATION BASIN.
4. SEE SHEET 15 FOR MORE INFILTRATION BASIN GUIDANCE.
5. GEOTECHNICAL ENGINEER TO BE ONSITE FOR CONSTRUCTION OF INFILTRATION BASIN. CONTRACTOR TO ENSURE MINIMUM INFILTRATION RATE OF 0.8"/HOUR.

RETAINING WALL NOTES:

1. ALL RETAINING WALLS SHALL BE ROUGH GRADED AT A 2:1 SLOPE WITH BASE OF SLOPE AT PROPOSED WALL FACE.
2. THE RETAINING WALL SLOPE AREAS ARE TO BE MAINTAINED UNTIL RETAINING WALL CONSTRUCTION OCCURS. ANY EROSION SHALL BE REMEDIED AND RESTORED.
3. BUILDING PERMITS ARE REQUIRED FOR ALL RETAINING WALLS 4 FEET IN HEIGHT OR GREATER AND THE WALLS SHALL BE DESIGNED BY A STRUCTURAL ENGINEER WITH DESIGN REVIEWED AND APPROVED BY THE CITY PRIOR TO INSTALLATION. ANY QUESTIONS REGARDING THE BUILDING PERMITS SHALL BE DIRECTED TO THE CITY BUILDING INSPECTOR.
4. A SAFETY RAILING IS REQUIRED ATOP ALL WALLS PER BUILDING CODE.
5. RETAINING WALL CONTRACTOR AND/OR RETAINING WALL STRUCTURAL ENGINEER ARE RESPONSIBLE TO REVIEW CIVIL SITE ENGINEERING DRAWINGS. ANY OBSERVED CONCERNS WITH CIVIL SITE ENGINEERING DESIGN ELEMENTS RELATED TO RETAINING WALLS THAT REQUIRE MODIFICATIONS TO THE CIVIL SITE DESIGN IS THEIR RESPONSIBILITY TO COORDINATE WITH PROJECT OWNER AND CIVIL SITE ENGINEER. IF NO COORDINATION IS REQUESTED IT SHALL BE UNDERSTOOD THAT ALL CONDITIONS WITHIN THE CIVIL SITE DESIGN AND PLANS ARE ACCEPTABLE AND ABLE TO BE PROVIDED FOR IN THE RETAINING WALL DESIGN AND CONSTRUCTION.
6. RETAINING WALLS ARE TO BE FINAL DESIGNED AND PERMITTED BY OTHERS.

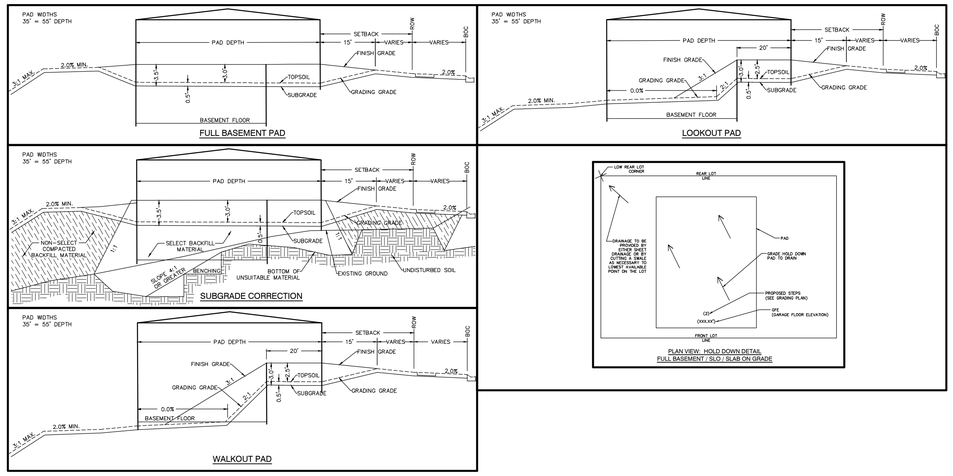
LEGEND:

FRONT OF PAD 984.3	GARAGE FLOOR ELEVATION
(i)	ADDITIONAL REQUIRED STEPS BEYOND TYPICAL 0.67' DIFF.
W	HOUSE PAD TYPE
976.8 / 976.5	LOWEST FLOOR ELEVATION / REAR ELEVATION
989	EXISTING CONTOUR
989	PROPOSED CONTOUR
xEOF 972.44	EOF SPOT ELEVATION
1.0%	DIRECTION OF DRAINAGE
>	EMERGENCY OVERFLOW ROUTING
2648	EXISTING TREE TO REMAIN
	TREE PROTECTION LIMITS
	MAINTENANCE ACCESS
ST-1 / B-1	SOIL BORING (SEE GEOTECHNICAL REPORT)
	EMERGENCY OVERFLOW

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SINGLE FAMILY HOME HOLD DOWN DETAILS

NOT TO SCALE



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PULTE HOMES

Hassan Sand
Rogers, Minnesota

Preliminary Plat Submittal
Grading And Drainage Plan - Overall

DATE	DESCRIPTION
10-17-2025	CITY SUBMITTAL

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Date License no.

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QA/QC CHECK

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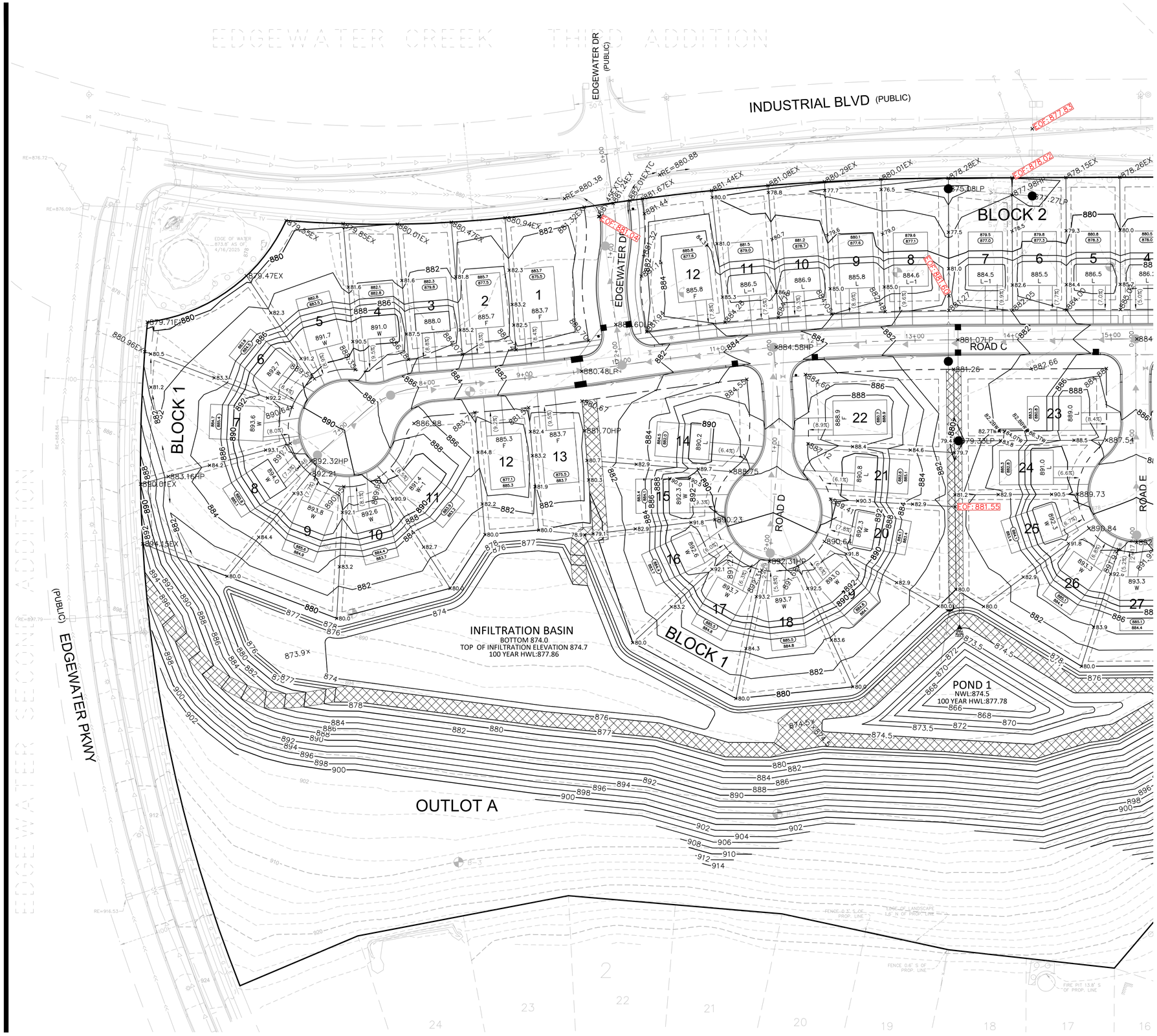
PROJECT TEAM DATA

Designed By: MPR, TAS
Drafted By: ELL, LRJ
Project No.: 4000670-00

10

Sheet 10 of 30

File Location: X:\4000670-00\00140 Design\00 Sheets - Preliminary\GRADING.dwg Plotted By: Tyler Strichert on October 17, 2025 - 1:37 PM



LEGEND:

FRONT OF PAD 984.3 / (1) / W / 976.8 / 976.3	GARAGE FLOOR ELEVATION; ADDITIONAL REQUIRED STEPS BEYOND TYPICAL 0.67' DIFF.; HOUSE PAD TYPE; LOWEST FLOOR ELEVATION; REAR ELEVATION
989	EXISTING CONTOUR
989	PROPOSED CONTOUR
xEOF 972.44	EOF SPOT ELEVATION
1.0%	DIRECTION OF DRAINAGE
2648	EXISTING TREE TO REMAIN
	TREE PROTECTION LIMITS
	MAINTENANCE ACCESS
ST-1	SOIL BORING (SEE GEOTECHNICAL REPORT)

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Pulte HOMES

Hassan Sand
Rogers, Minnesota

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By Date

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Designed By: MPR, TAS
Drafted By: ELL, LRJ
Project No.: 4000670-00

11

Sheet 11 of 30

File Location: X:\4000670-00\001-40 Design\00 Sheets - Preliminary\GRADING.dwg Plotted By: Tyler Strickland on October 17, 2025 - 10:40 AM

CIC NO 1701 THE VILLAS AT RIVERS EDGE

RIVERS EDGE ROAD (PRIVATE)

INDUSTRIAL BLVD (PUBLIC)

RIVERS EDGE ROAD

ROAD C

ROAD E

BLOCK 1

BLOCK 2

POND 1
NWL:874.5
100 YEAR HWL:877.78

POND 2
NWL:875.5
100 YEAR HWL:877.78

OUTLOT A

OFFSITE GRADING TO BE COORDINATED WITH PROPERTY OWNER

FOX CREEK WEST FOURTH ADDITION

EXCEPTION

EDGEWATER

LEGEND:

FRONT OF PAD 984.3 / (I) / W / 976.8 / 976.3	GARAGE FLOOR ELEVATION ADDITIONAL REQUIRED STEPS BEYOND TYPICAL 0.67" DIFF. HOUSE PAD TYPE LOWEST FLOOR ELEVATION REAR ELEVATION
989	EXISTING CONTOUR
989	PROPOSED CONTOUR
xEOF 972.44	EOF SPOT ELEVATION
1.0%	DIRECTION OF DRAINAGE
2648	EXISTING TREE TO REMAIN
	TREE PROTECTION LIMITS
	MAINTENANCE ACCESS
ST-1	SOIL BORING (SEE GEOTECHNICAL REPORT)

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Hassan Sand

Rogers, Minnesota

Preliminary Plat Submittal

Grading And Drainage Plan - View B

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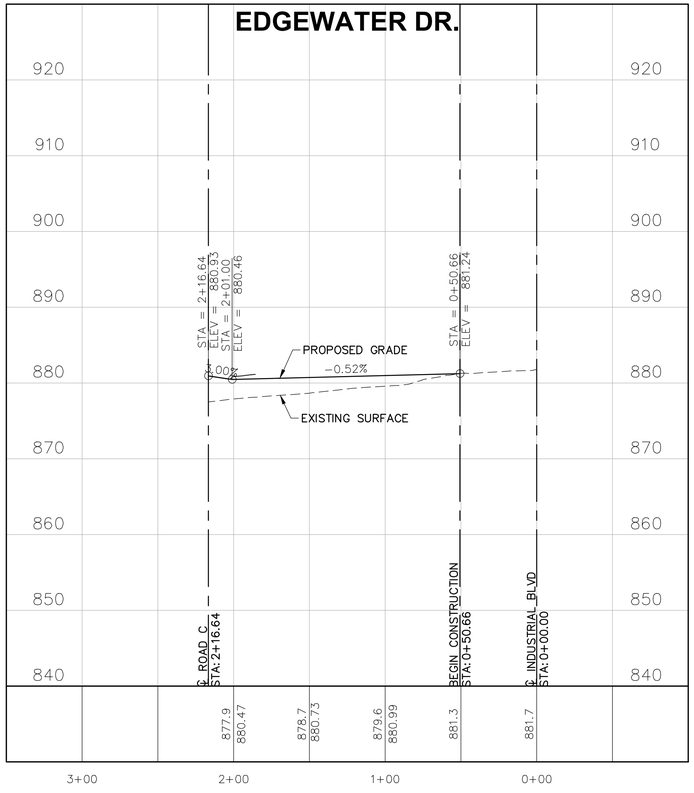
Drafted By: ELL, LRJ

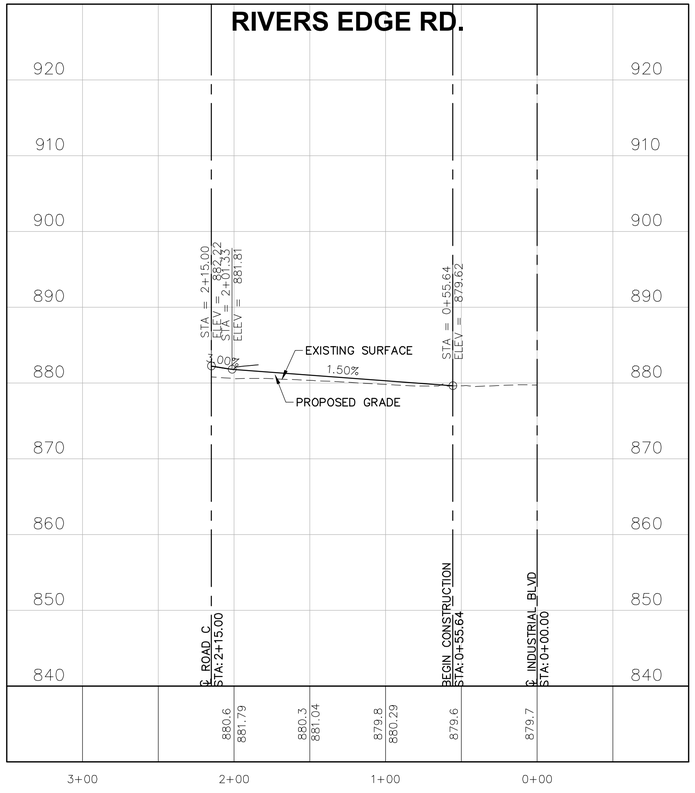
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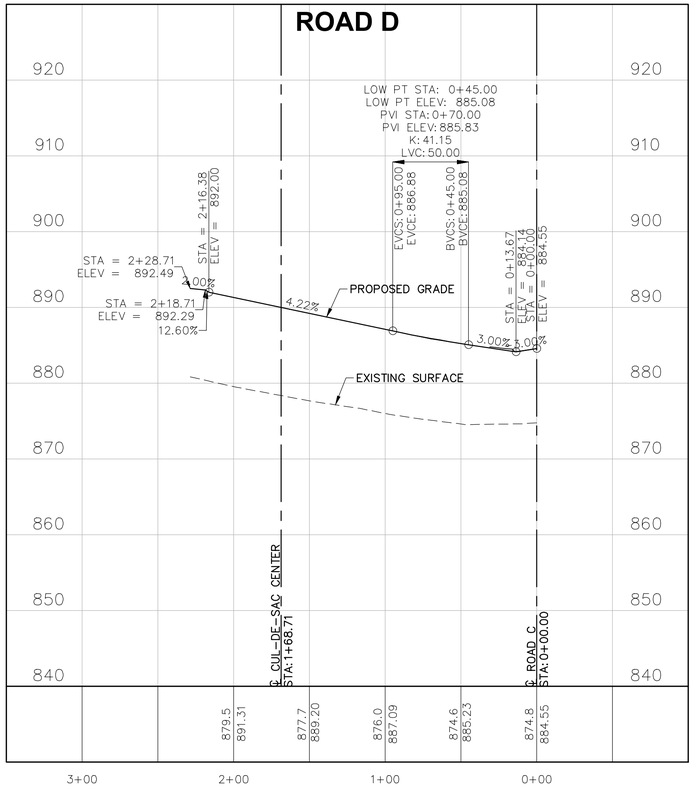
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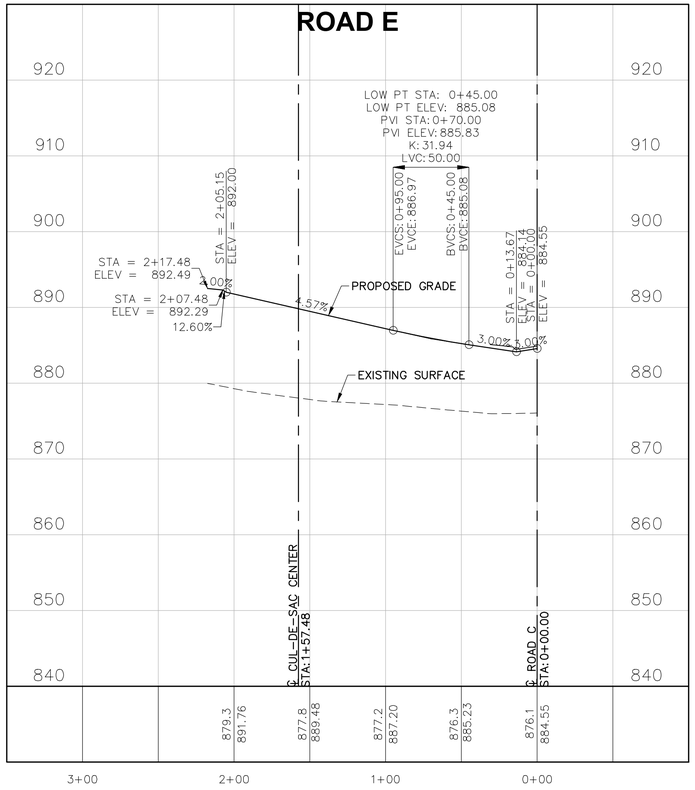
Sheet 12 of 30

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Pulte HOMES

Hassan Sand
Rogers, Minnesota

Preliminary Plat Submittal
Grading Profiles - Roads A, B, D, E

DATE	DESCRIPTION
10-17-2025	CITY SUBMITTAL

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Date License no.

QA/QC CHECK

By Date

PROJECT TEAM DATA

Designed By: MPR, TAS
Drafted By: ELL, LRJ
Project No.: 4000670-00

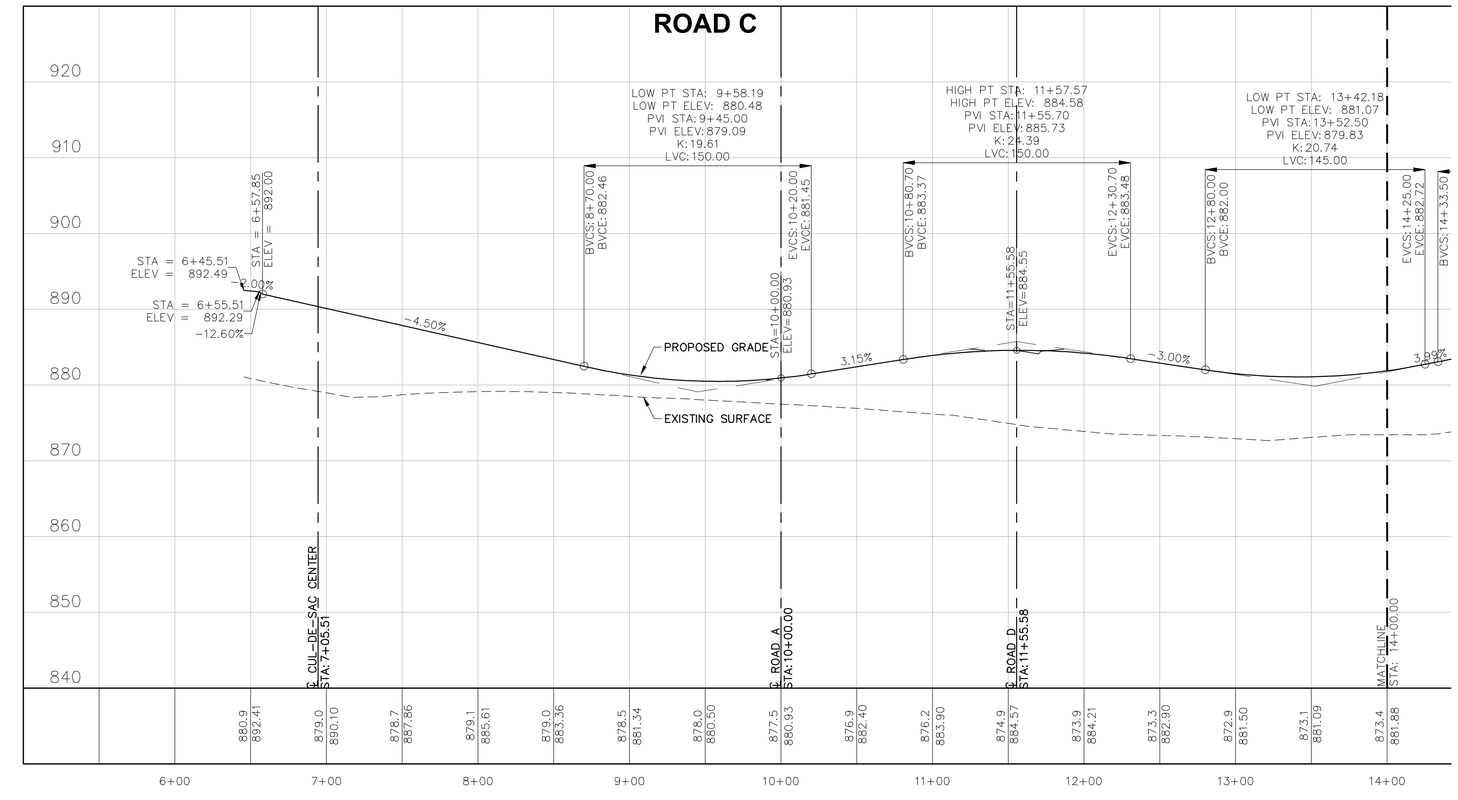
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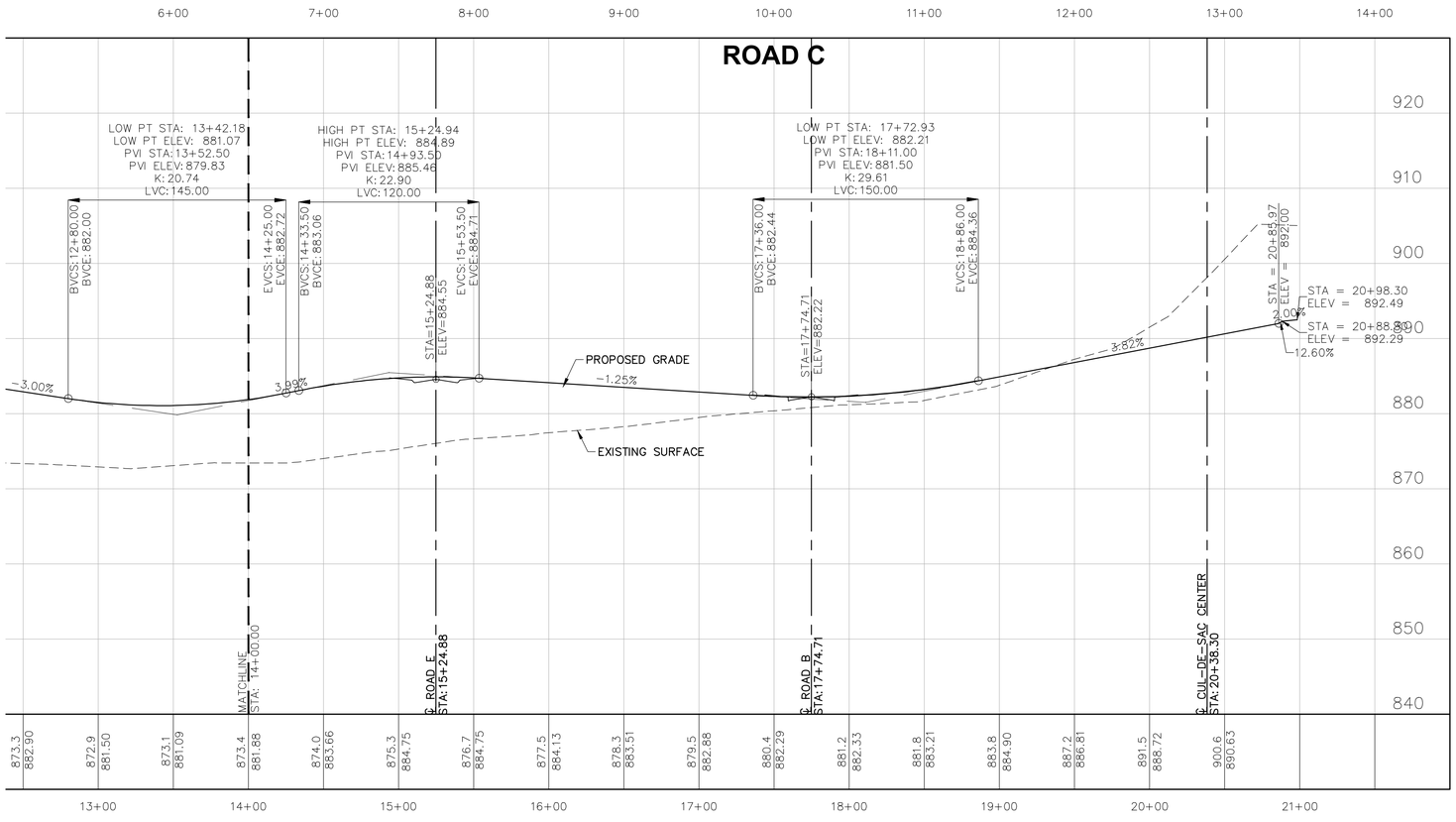
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Preliminary Plat Submittal
Grading Profile - Road C

DATE	DESCRIPTION
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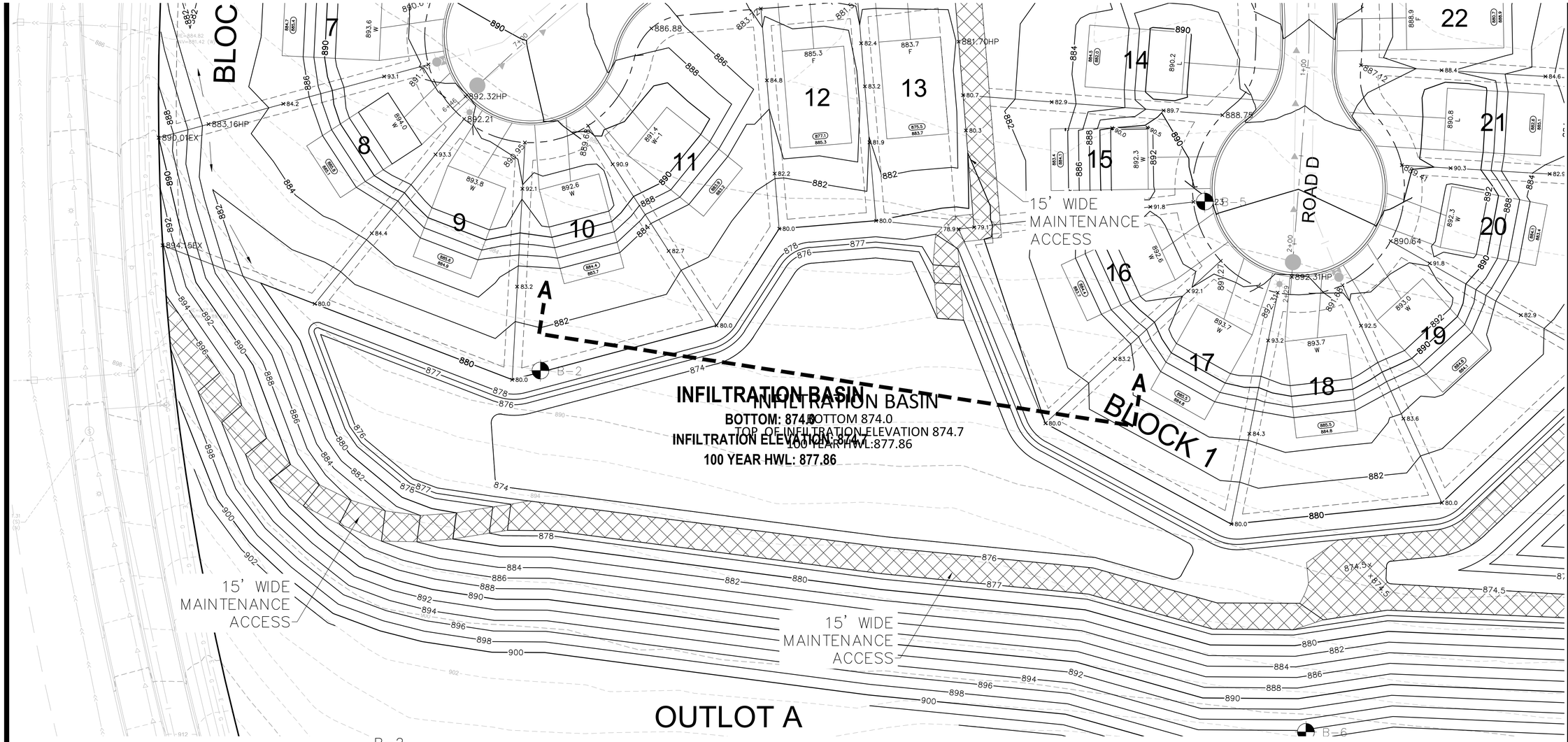
PROJECT TEAM DATA

Designed By: MPR, TAS
Drafted By: ELL, LRJ
Project No.: 4000670-00

14

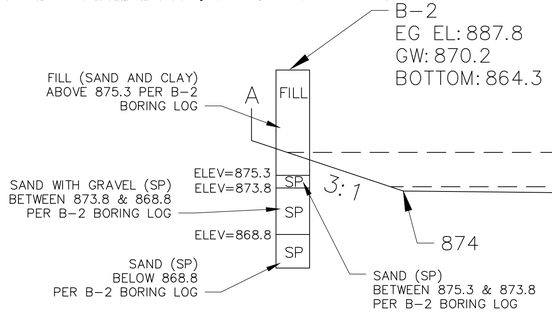
Sheet 14 of 30

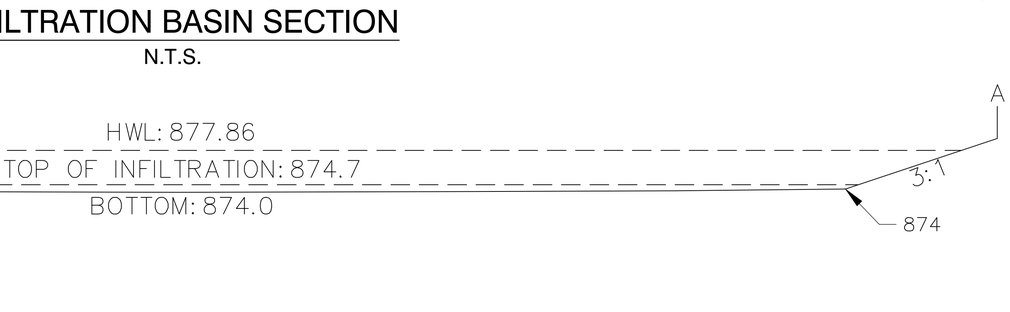
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INFILTRATION BASIN SECTION

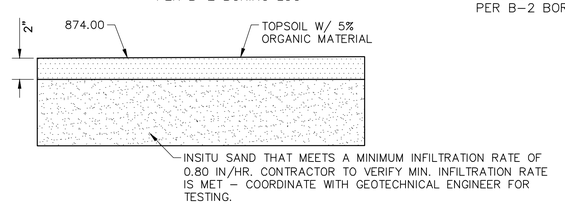
N.T.S.





GRADING LEGEND:

- 789 — EXISTING CONTOUR
- 789 — PROPOSED CONTOUR
- x962.44 / x62.44 — PROPOSED SPOT ELEVATION
- PROPOSED CATCH BASINS
- PROPOSED STORM SEWER
- PROPOSED EASEMENT
- PROPERTY LINE
- LOT LINE
- RIGHT-OF-WAY
- POND MAINTENANCE ACCESS



INFILTRATION INSET

NOT TO SCALE

INFILTRATION BASIN NOTES:

1. IF INFILTRATION BASIN TO BE UTILIZED AS TEMPORARY SEDIMENT BASINS, 2' ABOVE 874.50 ELEVATION OR EXCAVATION ELEVATION TO BE LEFT IN PLACE DURING CONSTRUCTION.
2. IF COMPACTION OCCURS AT THE BASE OF THE BASIN, THE SOIL SHALL BE REFRACTURED TO A DEPTH AT LEAST 36". IF SMEARING OCCURS, THE SMEARED AREAS OF THE INTERFACE SHALL BE CORRECTED BY RAKING OR ROTO-TILLING.
3. ON SITE MATERIAL TO BE UTILIZED FOR BACKFILL IN REMOVAL OF UNSUITABLE INFILTRATION MATERIAL LAYERS AS APPROVED BY THE GEOTECHNICAL ENGINEER.
4. INFILTRATION RATE TO BE A MINIMUM OF 0.80 IN/HR AND A MAXIMUM OF 8.3 IN/HR. A INFILTRATION TEST IS REQUIRED UPON COMPLETION OF BASIN CONSTRUCTION TO ENSURE INFILTRATION RATES ARE BEING MET. CONTRACTOR TO COORDINATE INFILTRATION TEST WITH GEOTECHNICAL ENGINEER.
5. DO NOT PLACE TOPSOIL UNLESS IT WILL IMMEDIATELY BE SEEDED. SEE LANDSCAPE PLAN FOR SEED TIMING. PLANT GROWTH CRITICAL IN TOPSOIL VOID CREATION. DO NOT COMPACT TOPSOIL

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Infiltration Basin Details

DATE	DESCRIPTION
10-17-2025	CITY SUBMITTAL

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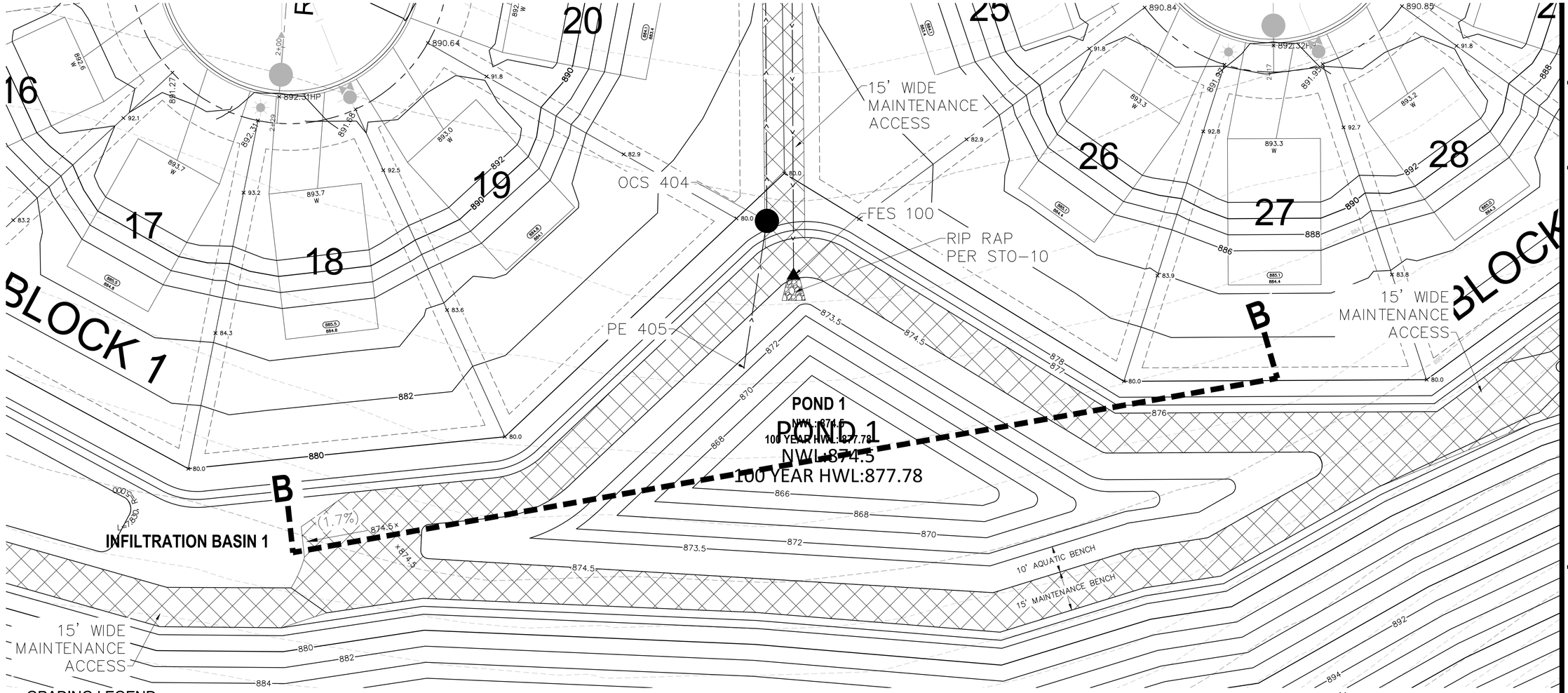
Drafted By: ELL, LRJ

Project No.: 4000670-00

15

Sheet 15 of 30

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GRADING LEGEND:

- EXISTING CONTOUR (789)
- PROPOSED CONTOUR (789)
- PROPOSED SPOT ELEVATION (×62.44 ×962.44)
- EMERGENCY OVERFLOW ROUTING
- RETAINING WALL
- PROPOSED CATCH BASINS
- PROPOSED STORM SEWER
- PROPOSED EASEMENT
- PROPERTY LINE
- LOT LINE
- RIGHT-OF-WAY
- POND MAINTENANCE ACCESS

IMPERMEABLE DIRT LINER REQUIREMENTS.

1. CLAYEY SOIL W / 50% PASSING THE NO. 200 SIEVE.
2. MINIMUM PLASTICITY INDEX (PI) OF 10
3. ASSUMED PERMEABILITY RATE. 1X10-6 CM/SEC

CONTRACOR TO COORDINATE MINIMUM TESTING REQUIREMENTS.

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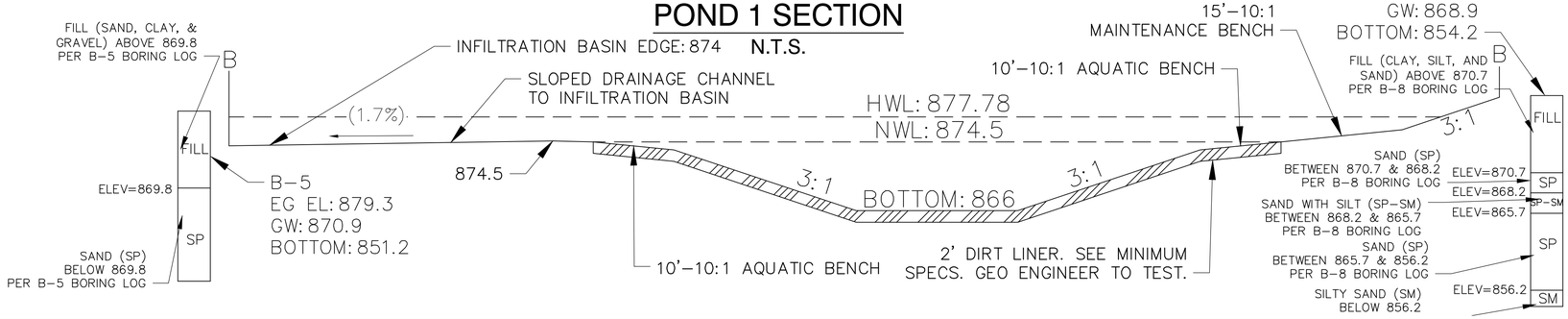
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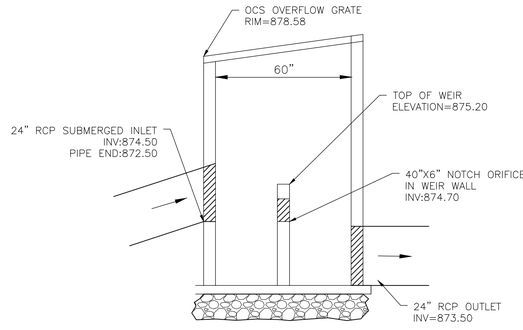
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POND 1 SECTION

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OUTLET CONTROL STRUCTURE 404

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Pond 1 Details

DATE	DESCRIPTION
10-17-2025	CITY SUBMITTAL

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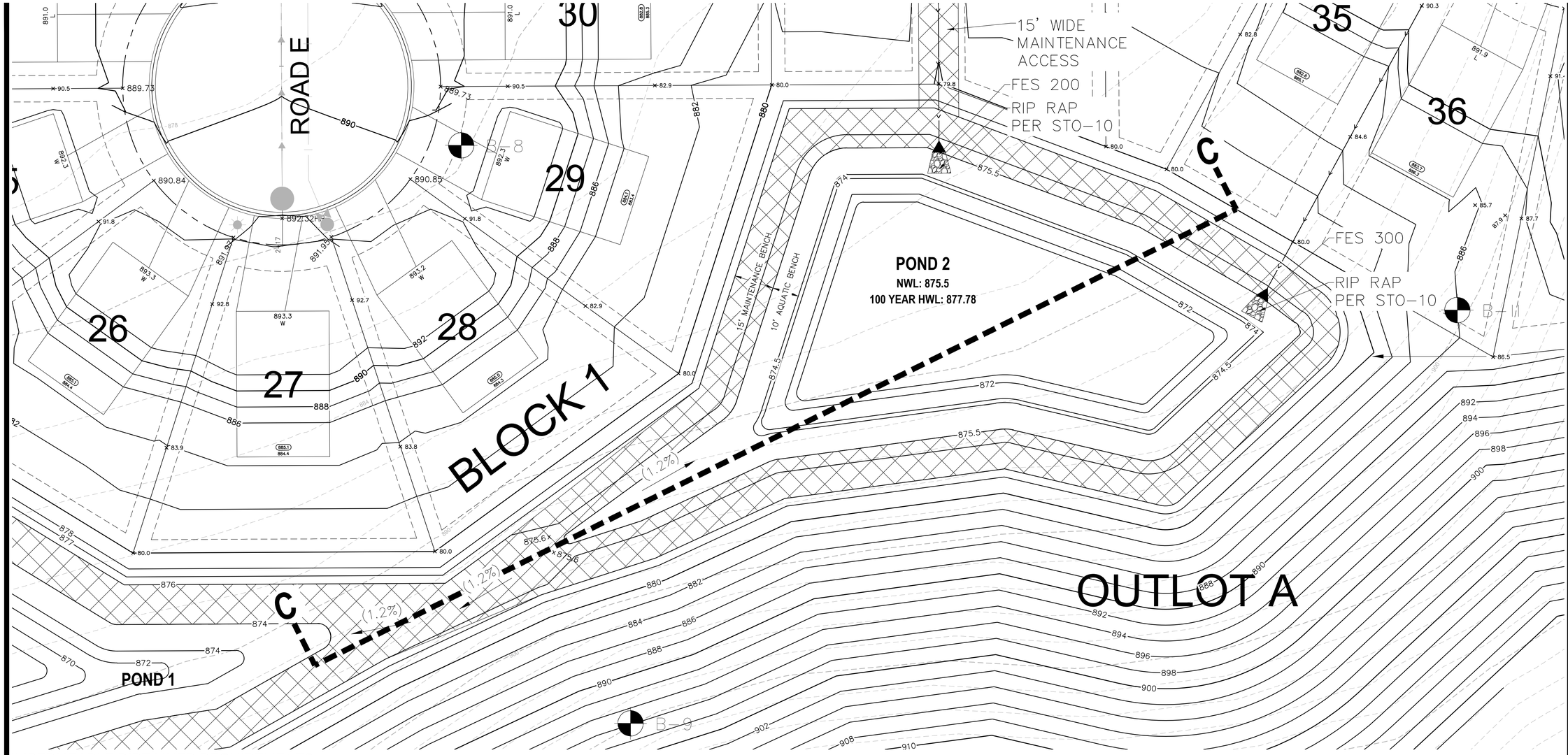
Drafted By: ELL, LRJ

Project No.: 4000670-00

16

Sheet 16 of 30

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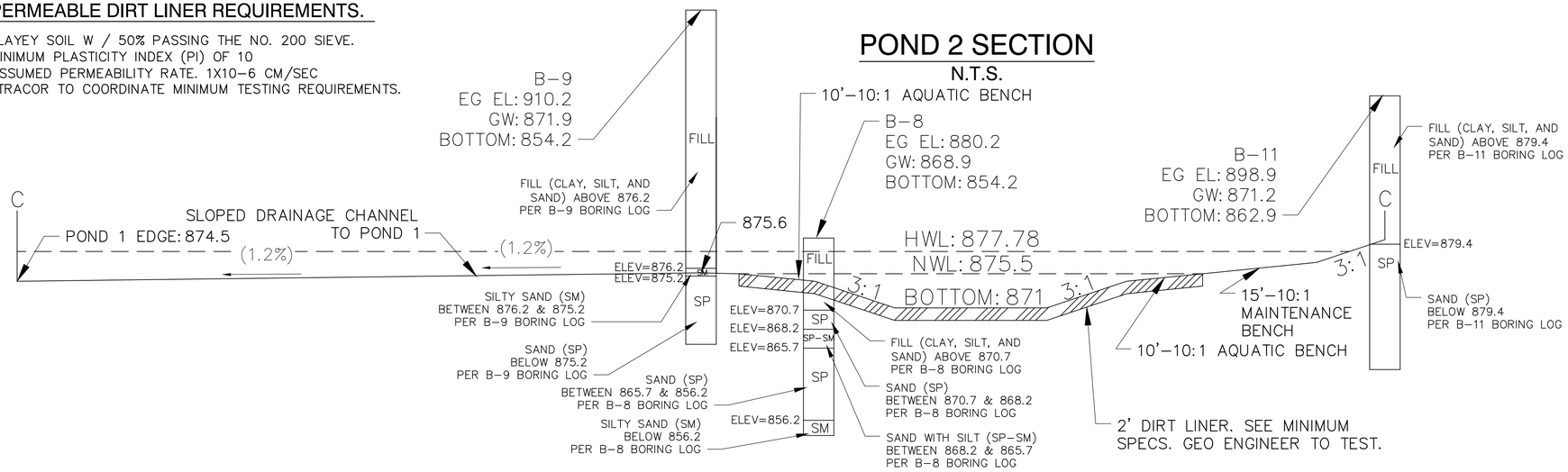
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2. MINIMUM PLASTICITY INDEX (PI) OF 10
3. ASSUMED PERMEABILITY RATE. 1X10-6 CM/SEC

CONTRACOR TO COORDINATE MINIMUM TESTING REQUIREMENTS.

POND 2 SECTION

N.T.S.



GRADING LEGEND:

- EXISTING CONTOUR
- PROPOSED CONTOUR
- PROPOSED SPOT ELEVATION
- EMERGENCY OVERFLOW ROUTING
- RETAINING WALL
- PROPOSED CATCH BASINS
- PROPOSED STORM SEWER
- PROPOSED EASEMENT
- PROPERTY LINE
- LOT LINE
- RIGHT-OF-WAY
- POND MAINTENANCE ACCESS

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Pond 2 Details

DESCRIPTION	DATE
CITY SUBMITTAL	10-17-2025

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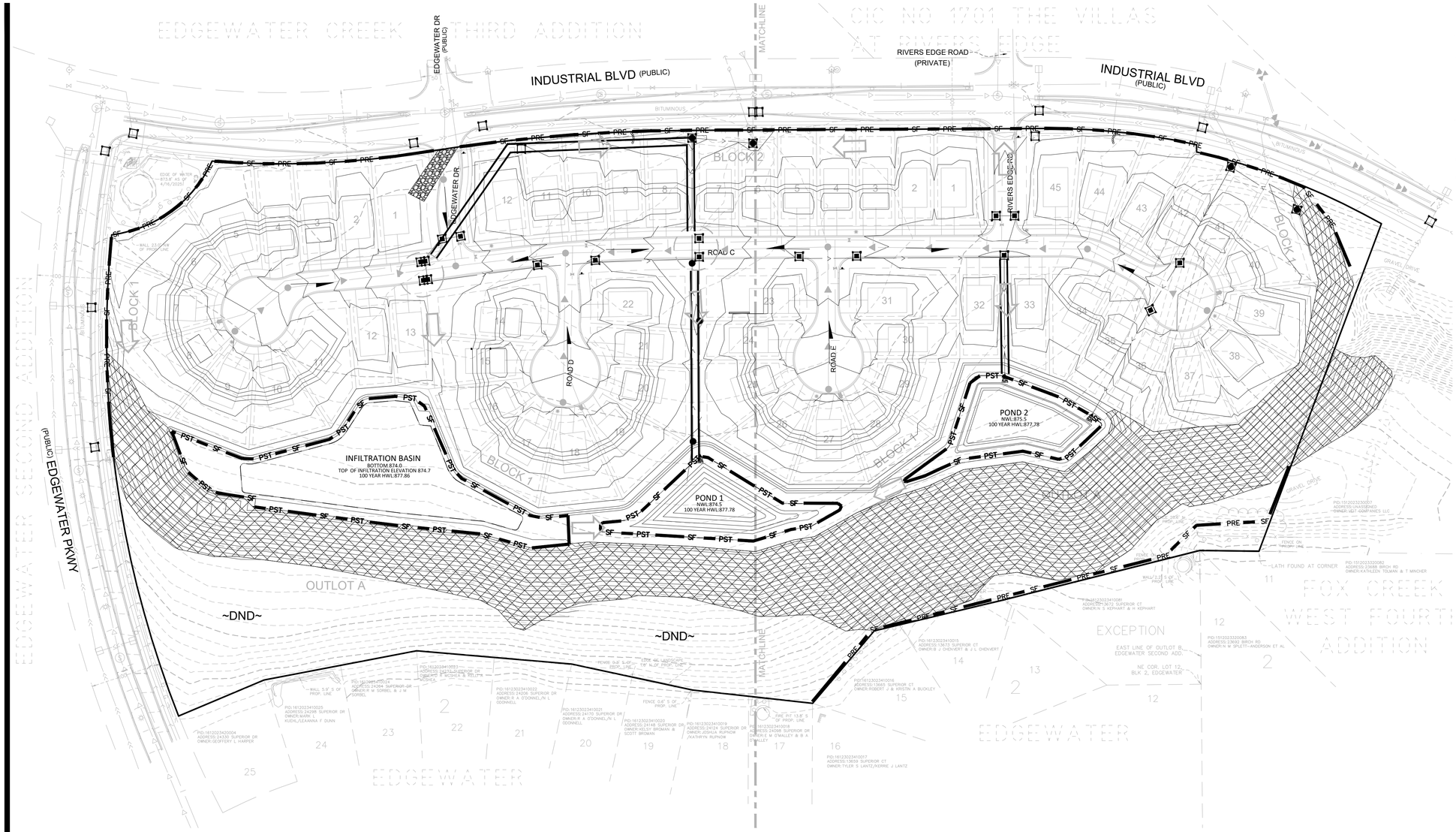
PROJECT TEAM DATA

Designed By: MPR, TAS
Drafted By: ELL, LRJ
Project No.: 4000670-00

17

Sheet 17 of 30

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LEGEND:

- EXISTING CONTOUR
- PROPOSED CONTOUR
- DIRECTION OF DRAINAGE
- PROPOSED CATCH BASINS
- PROPOSED STORM SEWER
- PROPOSED EASEMENT
- PROPERTY LINE
- LOT LINE
- RIGHT-OF-WAY
- PRE — SF — PROPOSED SILT FENCE (PRE GRADING)
- PST — SF — PROPOSED SILT FENCE (POST GRADING)
- INLET PROTECTION
- DND — DO NOT DISTURB AREAS
- TEMPORARY DRAINAGE ROUTING DURING MASS GRADING
- ROCK CONSTRUCTION ENTRANCE
- EXISTING TREE TO REMAIN
- EROSION CONTROL BLANKET
- BIO-ROLLS/LOGS

SWPPP BMP QUANTITIES (PER PLAN):

DISTURBED AREA	TBD
SILT FENCE	TBD
INLET PROTECTION	TBD
BIOROLL	TBD
SEED/SOD POST GRADING AREA	TBD

SEE FINAL PLAT SET

NOTE:

1. SEE SHEET 21 FOR ALL EROSION AND SEDIMENT CONTROL NOTES AND DETAILS.

EROSION CONTROL RESPONSIBLE PARTY:

PULTE HOMES
1650 W. 82ND STREET, SUITE 300
BLOOMINGTON, MN 55431
CONTACT: CHAD ONSGARD

CONTRACTOR:

TBD

ACTIVE SWPPP MAP LEGEND

* FIELD MANAGER TO COLOR CODE DURING CONSTRUCTION AS NECESSARY

- CURB LOGS / MULCH SOCKS
- PAVEMENT (DRIVEWAY/ROADS)
- TEMPORARY HYDROMULCH
- SILT FENCE
- SOD
- EROSION CONTROL BLANKET
- TEMPORARY MULCH COVER
- STOCKPILES
- ROCK DRIVEWAY / ROCK PADS
- INLET PROTECTION DEVICES
- BIFF/PORT-O-POTTY
- SWP SIGN/MAILBOX

SEDIMENT BARRIERS
1. SILT FENCE (MnDOT 3886)
2. CURB LOG
3. ROCK WEEPER

INLET PROTECTION DEVICES
1. WIMCO (MnDOT TYPE A & C)
2. INFRASAFE STORM DRAIN/CULVERT
3. SILT SACK (MnDOT TYPE A)
4. DANDY BAG (MnDOT TYPE B)

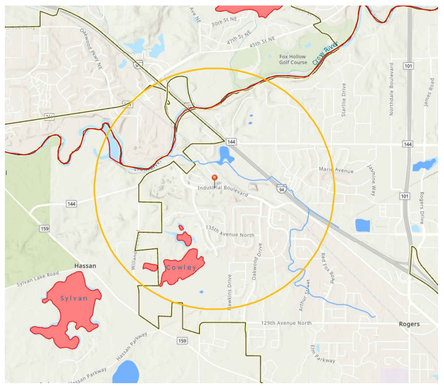
STABILIZATION BMP'S
1. STRAW/HAY MnDOT TYPE I MULCH
2. EROSION CONTROL BLANKET MnDOT CAT. 3
3. HYDROMULCH MnDOT TYPE 5
4. TURF REINFORCEMENT MAT SC250 NORTH AMERICAN GREEN OR EQUAL-MNDOT CAT 6

ANTI-TRACKING CONTROL
1. 2" CRUSHED CLEAR ROCK

TEMPORARY SEED MIX
1. MnDOT-21-111 (OATS 21-120 DAY STABILIZATION)
2. MnDOT-22-111 (1-2 YR. STABILIZATION)

PERMANENT SEED MIX/STABILIZATION
1. MnDOT 25-151 (RESIDENTIAL TURF)
2. SOD

GRADING ACTIVITY
1. CONCRETE WASHOUT IS DONE BY TRUCK WITH A MOBILE WASHOUT SYSTEM PROVIDED AND COMPLETED BY THE CONCRETE CONTRACTOR.



VICINITY MAP

NTS

NOTE TO CONTRACTOR:

THE MASS GRADING CONTRACTOR IS RESPONSIBLE FOR INSTALLATION OF ALL EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES (BMPS) AS SHOWN IN THE SHORES MASS GRADING SWPPP (EXCEPT FOR POST GRADE BMPS NEEDED AFTER UTILITY CONSTRUCTION ACTIVITY). THE BMPS ARE TO BE INSTALLED AT A MINIMUM AS SHOWN IN THE PLAN. IF CONDITIONS ARISE, ADDITIONAL BMP SUPPLEMENTATION TO PREVENT SITE EROSION OR SEDIMENT TRANSPORT MAY BE NECESSARY. THE MASS GRADING CONTRACTOR IS RESPONSIBLE FOR ALL BMPS REQUIRED TO COMPLETE THE MASS GRADING ACTIVITIES AND SUBSEQUENT TEMPORARY SOIL STABILIZATION NECESSARY TO PREPARE SITE FOR STREET AND UTILITY CONSTRUCTION AND HOME BUILDING. AT THE COMPLETION OF MASS GRADING WORK AND SATISFACTORY SITE SOIL STABILIZATION, THE DEVELOPER AND MASS GRADING CONTRACTOR SHALL COORDINATE THE TRANSFER OF NPDES PERMIT RESPONSIBILITIES TO THE STREET AND UTILITY CONTRACTOR AND THE CITY.

THE STREET AND UTILITY CONTRACTOR AND CITY WILL THEN ASSUME THE RESPONSIBILITY TO PROVIDE INSPECTION AND MAINTENANCE OF ANY IN-PLACE BMPS AS WELL AS INSTALL THE ADDITIONAL BMPS REQUIRED IN THE STREET AND UTILITY CONSTRUCTION DOCUMENT SWPPP. UPON COMPLETION OF STREET AND UTILITY CONSTRUCTION, THE STREET AND UTILITY CONTRACTOR SHALL REMOVE ANY BMPS INSTALLED DURING THE STREET AND UTILITY PHASE THAT ARE NO LONGER REQUIRED AND COORDINATE THE TRANSFER OF NPDES PERMIT RESPONSIBILITIES BACK TO THE DEVELOPER OR TERMINATE THE PORTION OF THE NPDES PERMIT TRANSFERRED TO THE CITY AND THEIR CONTRACTOR.

IMPAIRED WATER REQUIREMENT DURING CONSTRUCTION:

A. ALL EXPOSED SOIL AREAS MUST BE STABILIZED AS SOON AS POSSIBLE TO LIMIT SOIL EROSION BUT IN NO CASE LATER THAN SEVEN (7) DAYS AFTER CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARY OR PERMANENTLY CEASED.

B. TEMPORARY SEDIMENT BASIN REQUIREMENTS DESCRIBED IN PART III, B.1.5 MUST BE USED FOR COMMON DRAINAGE LOCATIONS THAT SERVE AN AREA WITH FIVE (5) OF MORE ACRES AT A TIME.

CONSTRUCTION SEQUENCING:

MASS GRADING PHASE:

1. INSTALL STABILIZED CONSTRUCTION ENTRANCES.
2. PREPARE TEMPORARY PARKING AND STORAGE AREA.
3. INSTALL THE PRE-GRADING SILT FENCES AND INLET PROTECTION BMPs ON THE SITE.
4. CONSTRUCT ALL PRE-GRADING EROSION AND SEDIMENTATION CONTROL BMPs.
5. COMPLETE MASS GRADING AND INSTALL TEMPORARY AND PERMANENT SEEDING AND PLANTING.
6. CONSTRUCT POST-GRADING SILT FENCE ON THE SITE.

STREET & UTILITY PHASE:

1. INSTALL UTILITIES, UNDERDRAINS, STORM SEWERS, CURBS AND GUTTERS.
2. INSTALL RIP RAP AROUND OUTLET STRUCTURES.
3. INSTALL INLET PROTECTION AROUND ALL STORM SEWER STRUCTURES.
4. PREPARE SITE FOR PAVING.
5. PAVE SITE.
6. INSTALL INLET PROTECTION DEVICES.
7. INSTALL POST STREET AND UTILITY SILT FENCE.
8. INSTALL PRIVATE SMALL UTILITIES.
9. REMOVE ALL TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES (ONLY IF SITE IS STABILIZED), IF REQUIRED BY THE CONTRACT

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Hassan Sand
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Preliminary Plat Submittal

Erosion & Sediment Control Plan - Overall

DESCRIPTION	DATE
CITY SUBMITTAL	10-17-2025

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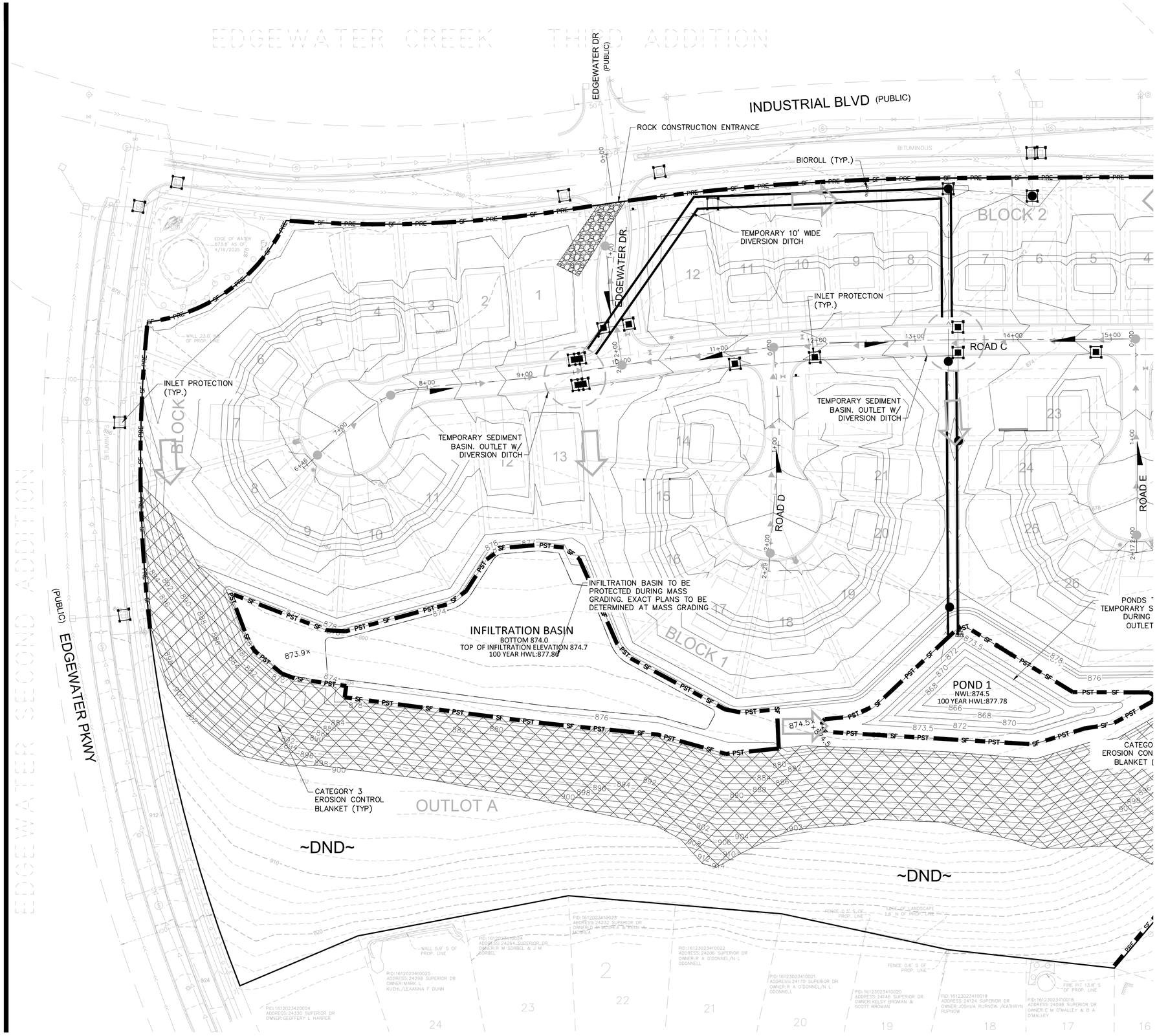
PROJECT TEAM DATA

Designed By: MPR, TAS
Drafted By: ELL, LRJ
Project No.: 4000670-00

18

Sheet 18 of 30

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LEGEND:

- EXISTING CONTOUR
- PROPOSED CONTOUR
- DIRECTION OF DRAINAGE
- PROPOSED CATCH BASINS
- PROPOSED STORM SEWER
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- INLET PROTECTION
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- EXISTING TREE TO REMAIN
- EROSION CONTROL BLANKET
- BIO-ROLLS/LOGS

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Erosion & Sediment Control Plan - View A

DATE	DESCRIPTION
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QA/QC CHECK

By Date

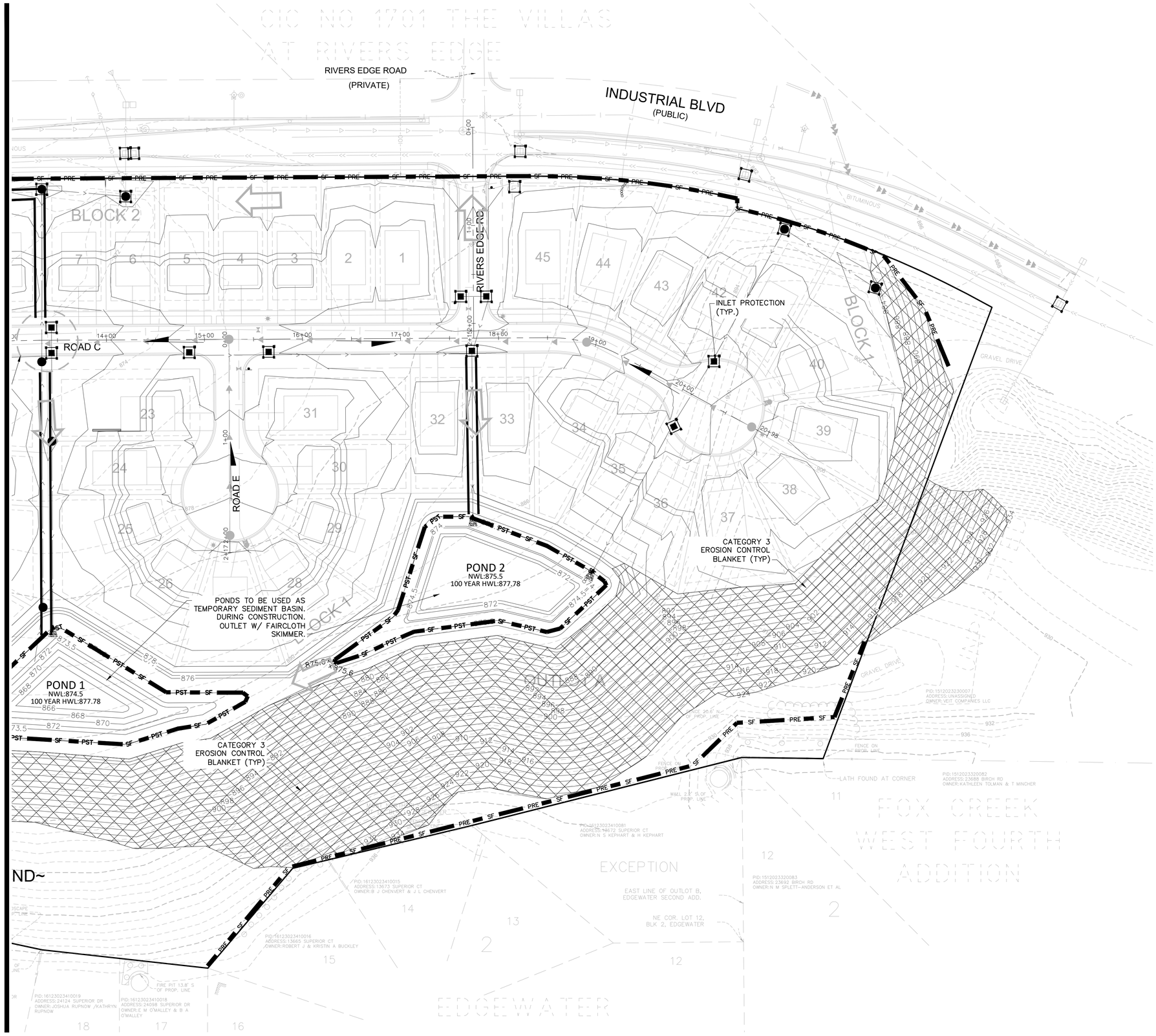
PROJECT TEAM DATA

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Drafted By: ELL, LRJ
Project No.: 4000670-00

19

Sheet 19 of 30

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LEGEND:

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- EXISTING TREE TO REMAIN
- EROSION CONTROL BLANKET
- BIO-ROLLS/LOGS

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Rogers, Minnesota

Preliminary Plat Submittal

Erosion & Sediment Control Plan - View B

DATE	DESCRIPTION
10-17-2025	CITY SUBMITTAL

CERTIFICATION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Civil Engineer under the laws of the State of Minnesota.

PRELIMINARY
FOR REVIEW PURPOSES ONLY
NOT FOR CONSTRUCTION

Type or Print Name

Date License no.

QA/QC CHECK

By Date

PROJECT TEAM DATA

Designed By: MPR, TAS

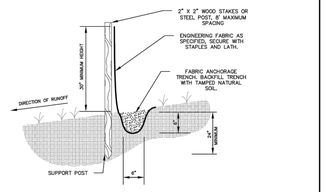
Drafted By: ELL, LRJ

Project No.: 4000670-00

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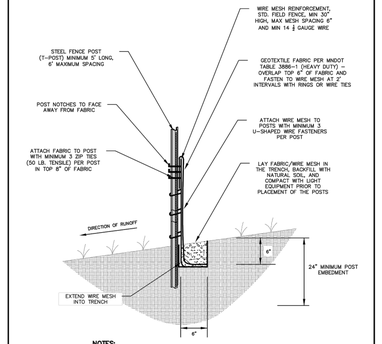
Sheet 20 of 30

File Location: X:\4000\670-00\00140 Design\00 Sheets - Preliminary\EROSION CONTROL.dwg Plotted By: Tyler Sinchek on Oct 17, 2025 at 10:11:59 AM



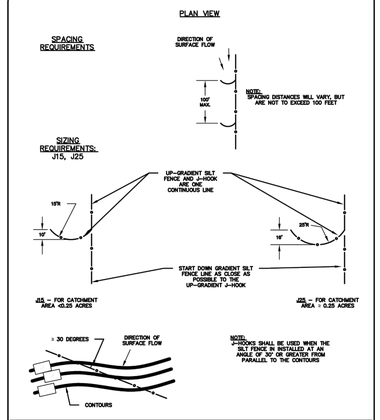
DOUBLE SILT FENCE TO BE REQUIRED NEAR WETLANDS

CITY OF ROGERS	STANDARD SILT FENCE	Standard Details	
		Date: SEPTEMBER, 2020	EROS-1
		Revised:	

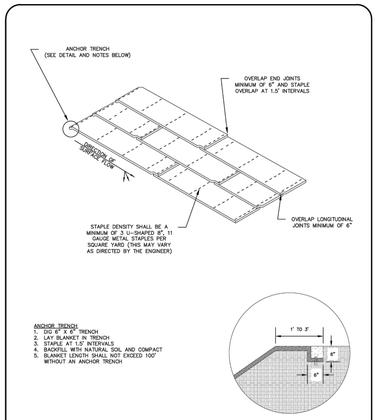


NOTES:
HEAVY DUTY SILT FENCE IS FOR USE ON SLOPES GREATER THAN OR EQUAL TO A 4:1 OR WITHIN 200 FT OF ANY TYPE OF WATER OR STREAM.

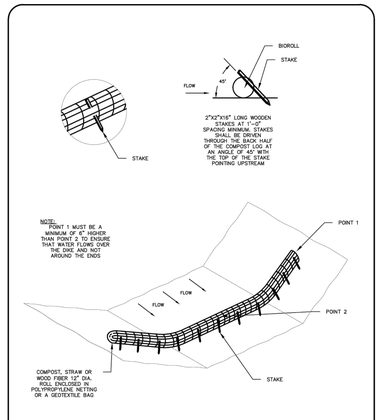
CITY OF ROGERS	HEAVY DUTY SILT FENCE	Standard Details	
		Date: SEPTEMBER, 2020	EROS-2
		Revised:	



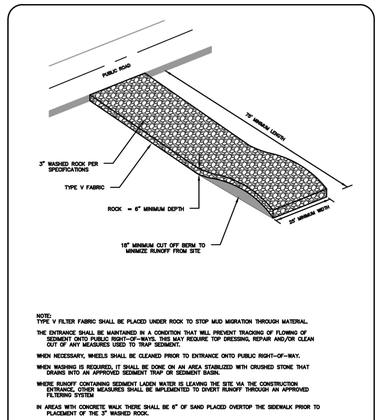
CITY OF ROGERS	SILT FENCE J-HOOK	Standard Details	
		Date: SEPTEMBER, 2020	EROS-3
		Revised:	



CITY OF ROGERS	EROSION CONTROL BLANKET INSTALLATION	Standard Details	
		Date: SEPTEMBER, 2020	EROS-5
		Revised:	



CITY OF ROGERS	BIOLOG DITCH CHECK	Standard Details	
		Date: SEPTEMBER, 2020	EROS-8
		Revised:	



NOTE:
TYPE V FILTER FABRIC SHALL BE PLACED UNDER ROCK TO STOP MUD MIGRATION THROUGH MATERIAL.

THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OF FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEAN OUT OF ANY MEASURES USED TO TRAP SEDIMENT.

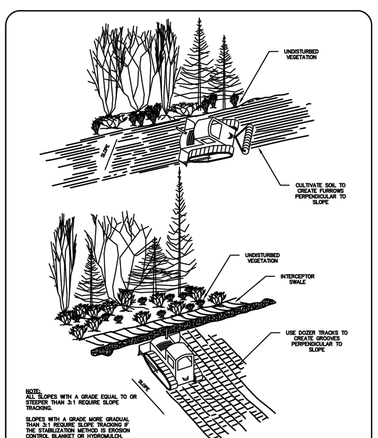
WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY.

WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.

WHERE RUNOFF CONTAINING SEDIMENT LADEN WATER IS LEAVING THE SITE VIA THE CONSTRUCTION ENTRANCE, OTHER MEASURES SHALL BE IMPLEMENTED TO DIVERT RUNOFF THROUGH AN APPROVED FILTERING SYSTEM.

IN AREAS WITH CONCRETE WALK THERE SHALL BE 6" OF SAND PLACED OVERTOP THE SIDEWALK PRIOR TO PLACEMENT OF THE 3" WASHED ROCK.

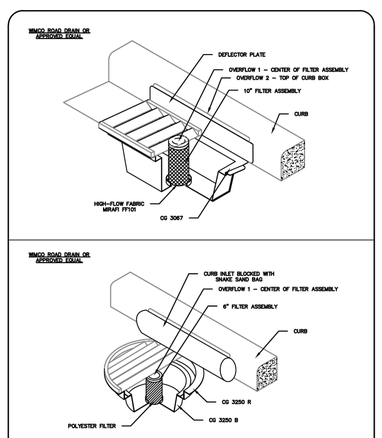
CITY OF ROGERS	CONSTRUCTION ROCK ENTRANCE	Standard Details	
		Date: SEPTEMBER, 2020	EROS-10
		Revised:	



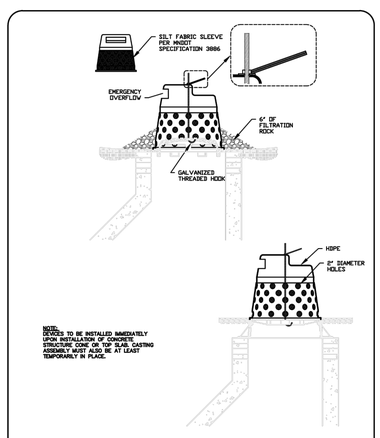
NOTE:
1. SLOPES WITH A GRADE EQUAL TO OR STEEPER THAN 3:1 REQUIRE SLOPE TRACKING.

SLOPES WITH A GRADE MORE GRADUAL THAN 3:1 SHALL BE TRACKED IF THE STABILIZATION METHOD IS EROSION CONTROL BLANKET OR HYDROMULCH.

CITY OF ROGERS	SLOPE TRACKING	Standard Details	
		Date: SEPTEMBER, 2020	EROS-12
		Revised:	



CITY OF ROGERS	CURB INLET PROTECTION	Standard Details	
		Date: SEPTEMBER, 2020	EROS-15
		Revised:	



NOTE:
SLEEVES TO BE INSTALLED IMMEDIATELY UPON INSTALLATION OF CONCRETE STRUCTURE COVE OR TOP SLAB. CASTING ASSEMBLY MUST ALSO BE AT LEAST TEMPORARILY IN PLACE.

CITY OF ROGERS	INFRASAFE – SEDIMENT CONTROL BARRIER	Standard Details	
		Date: SEPTEMBER, 2020	EROS-16
		Revised:	

EROSION CONTROL GENERAL NOTES:

1. NO LAND DISTURBING ACTIVITY SHALL OCCUR UNTIL A GRADING PERMIT HAS BEEN ISSUED FROM THE CITY OF ROGERS AND THE WATERSHED DISTRICT.

2. BEST MANAGEMENT PRACTICES (BMP'S) REFER TO EROSION AND SEDIMENT CONTROL PRACTICES DEFINED IN THE MPCA PROTECTING WATER QUALITY IN URBAN AREAS AND THE MINNESOTA CONSTRUCTION SITE EROSION AND SEDIMENT CONTROL PLANNING HANDBOOK.

3. ALL BMP'S SELECTED SHALL BE APPROPRIATE FOR THE TIME OF YEAR, SITE CONDITIONS, AND ESTIMATED DURATION OF USE.

4. THE SWPPP MAY BE REVISED AT ANYTIME OF THE PROJECT TIMELINE AS LONG AS THE BMP'S ARE SELECTED, INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE MANUFACTURER SPECIFICATION AND ACCEPTED ENGINEERING PRACTICES (SECTION 7 OF MPCA NPDES PERMIT).

- ALL SWPPP CHANGES MUST BE DONE BY A QUALIFIED INDIVIDUAL (21.2A OR 21.2B OF MPCA NPDES PERMIT).

5. A COPY OF THESE PLANS MUST BE ON THE JOB SITE WHENEVER CONSTRUCTION IS IN PROGRESS.

6. THE BOUNDARIES OF THE LAND DISTURBANCE LIMITS SHOWN ON THE PLANS SHALL BE CLEARLY FLAGGED IN THE FIELD PRIOR TO CONSTRUCTION. NO DISTURBANCE BEYOND THE DISTURBED LIMITS.

7. WHEREVER POSSIBLE, PRESERVE THE EXISTING TREES, GRASS AND OTHER VEGETATIVE COVER TO HELP FILTER RUNOFF.

8. ESTABLISH A PERMANENT VEGETATIVE COVER ON ALL EXPOSED SOILS WHERE LAND IS COMING OUT OF AGRICULTURAL PRODUCTION. PLANT AS SOON AS POSSIBLE TO ESTABLISH DENSE GRASS FILTER PRIOR TO CONSTRUCTION AND TO MINIMIZE WEED GROWTH.

9. ALL TREES NOT LISTED FOR REMOVAL SHALL BE PROTECTED. DO NOT OPERATE EQUIPMENT WITHIN THE DRIPLINE, ROOT ZONES OR WITHIN TREE PROTECTION FENCE AREAS.

10. ALL EROSION AND SEDIMENT CONTROL FACILITIES (BMP'S) SHALL BE INSTALLED AND IN OPERATION PRIOR TO LAND DISTURBANCE ACTIVITIES AND THEY SHALL BE SATISFACTORILY MAINTAINED UNTIL CONSTRUCTION IS COMPLETED AND THE POTENTIAL FOR EROSION HAS PASSED.

11. SILT FENCE IS REQUIRED AT DOWN GRADIENT PERIMETER OF DISTURBED AREAS AND STOCKPILES. PROTECT WETLANDS, WATERCOURSES AND ADJACENT PROPERTIES FROM SEDIMENTATION AND STORMWATER RUNOFF.

12. THE BMP'S SHOWN ON THE PLANS ARE THE MINIMUM REQUIREMENTS FOR THE ANTICIPATED SITE CONDITIONS. AS CONSTRUCTION PROGRESSES AND UNEXPECTED OR SEASONAL CONDITIONS DICTATE, THE PERMITTEE/CONTRACTOR SHALL ANTICIPATE THAT MORE BMP'S WILL BE NECESSARY TO ENSURE EROSION AND SEDIMENT CONTROL ON THE SITE. DURING THE COURSE OF CONSTRUCTION, IT IS THE RESPONSIBILITY OF THE PERMITTEE/CONTRACTOR TO ADDRESS ANY NEW CONDITIONS THAT MAY BE CREATED BY CONSTRUCTION ACTIVITIES AND/OR CLIMATIC EVENTS AND TO PROVIDE ADDITIONAL BMP'S OVER AND ABOVE THE MINIMUM REQUIREMENTS SHOWN ON THE PLANS, AS MAY BE NEEDED TO PROVIDE EFFECTIVE PROTECTION OF WATER AND SOIL RESOURCES.

13. THE BMP'S SHALL BE INSPECTED DAILY BY THE PERMITTEE/CONTRACTOR AND MAINTAINED AS NECESSARY TO ENSURE THEIR CONTINUED FUNCTIONING. SILT FENCES CLEANED OR REPLACED AT SEDIMENT BUILDUP OF 1/2 OF THE FENCE HEIGHT.

14. LAND DISTURBING ACTIVITIES SHALL OCCUR IN INCREMENTS OF WORKABLE SIZE SUCH THAT ADEQUATE BMP CONTROL CAN BE PROVIDED THROUGHOUT ALL PHASES OF CONSTRUCTION. THE SMALLEST PRACTICAL AREA SHALL BE EXPOSED OR OTHERWISE DISTURBED AT ANY ONE TIME.

15. OPERATE TRACK EQUIPMENT (DOZER) UP AND DOWN EXPOSED SOIL SLOPES ON FINAL PASS, LEAVING TRACK GROOVES PERPENDICULAR TO THE SLOPE. DO NOT BACK-BLADE. LEAVE A SURFACE ROUGH TO MINIMIZE EROSION.

16. ALL AREAS DISTURBED BY CONSTRUCTION SHALL BE STABILIZED FROM EROSION WITHIN 7 DAYS OF SUBSTANTIAL COMPLETION OF GRADING IN THAT AREA. TEMPORARY SEED AND MULCH SHALL COVER ALL EXPOSED SOILS IF GRADING COMPLETION IS DELAYED LONGER THAN 7 DAYS. PERMANENT SEED AND MULCH OR SOD IS REQUIRED WITHIN 3 DAYS OF COMPLETION OF FINAL GRADING.

17. GENERAL TEMPORARY SEED SHALL BE MNDOT MIX 22-112 @ 100 LBS. PER ACRE OR APPROVED EQUAL. PERMANENT SEED SHALL BE MNDOT MIX 25-151 @ 120 LBS. PER ACRE OR APPROVED EQUAL. (PLANTING DATES PER SPEC 2575) MULCH SHALL BE MNDOT TYPE 1 (CLEAN OAT STRAW) @ 2 TONS PER ACRE AND DISK ANCHORED IN PLACE OR APPROVED EQUAL. FERTILIZER SHALL BE 80-80-80 NPK PER ACRE (UNLESS P RESTRICTIONS APPLY) AND INCORPORATED INTO THE SEED BED.

18. POND AND BASIN AREAS SHALL BE SEEDED IN ACCORDANCE WITH LANDSCAPE PLAN.

19. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE PROPERLY DISPOSED OF WITHIN THIRTY (30) DAYS AFTER FINAL SITE STABILIZATION IS ACHIEVED OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED.

20. AN ALTERNATE EROSION & SEDIMENT CONTROL PLAN SHALL BE REQUIRED FOR LAND DISTURBANCES ON EACH LOT AS PART OF ANY FUTURE BUILDING PERMIT FOR THE CONSTRUCTION OF STRUCTURES AND DRIVEWAYS.

EROSION CONTROL SCHEDULE:

1. THE CITY OF ROGERS SHALL INSPECT THAT ALL SEDIMENT AND EROSION CONTROL BMP'S ARE IN PLACE PRIOR TO AND LAND DISTURBANCE AS IDENTIFIED ON THE APPROVED GRADING PLAN.

2. PRIOR TO ANY CONSTRUCTION OR DEMOLITION, SILT FENCE AND FILTERS SHALL BE INSTALLED AS SHOWN TO INTERCEPT RUNOFF.

3. ALL EROSION CONTROL INSTALLATIONS SHALL REMAIN IN PLACE AND BE MAINTAINED IN GOOD CONDITION BY THE CONTRACTOR UNTIL THE SITE HAS BEEN RE-VEGETATED. CONTRACTOR MAY REMOVE NECESSARY SILT FENCING/FILTERS TO CONSTRUCT ROADWAYS, WHILE MAINTAINING ADEQUATE EROSION CONTROL IN ADJACENT AREA.

4. SUFFICIENT TOPSOIL SHALL BE STOCKPILED TO ALLOW FOR THE REPLACEMENT OF 4" OF TOPSOIL FOR DISTURBED AREAS TO BE RE-VEGETATED.

5. THE CONTRACTOR SHALL SCHEDULE SITE GRADING, UTILITY INSTALLATION AND PAVEMENT CONSTRUCTION SO THAT THE GENERAL SITE CAN BE MULCHED AND RE-SEEDED SOON AFTER DISTURBANCE. AREAS THAT WILL NOT BE SUBJECT TO CONSTRUCTION TRAFFIC SHALL BE SEEDED (MnDOT MIX 22-112 @ 100#/AC AND MULCHED OR SODDED WITHIN SEVEN (7) DAYS OF BEING DISTURBED.

6. CONTRACTOR SHALL INSTALL EROSION CONTROL DEVICES AS INDICATED ON THIS EROSION CONTROL PLAN AND ANY ADDITIONAL REQUIRED BASED ON MEANS, METHODS AND SEQUENCES OF CONSTRUCTION.

SEDIMENT CONTROL PRACTICES:

1. SEDIMENT CONTROL PRACTICES MUST MINIMIZE SEDIMENT FROM ENTERING SURFACE WATERS, INCLUDING CURB AND GUTTER SYSTEMS AND STORM SEWER INLETS.

2. SEDIMENT CONTROL PRACTICES MUST BE ESTABLISHED ON ALL DOWN GRADIENT PERMITERS BEFORE ANY UPGRADIENT LAND DISTURBING ACTIVITIES BEGIN. THESE PRACTICES SHALL REMAIN IN PLACE UNTIL PERMANENT COVER HAS BEEN ESTABLISHED.

3. THE TIMING OF THE INSTALLATION OF SEDIMENT CONTROL PRACTICES MAY BE ADJUSTED TO ACCOMMODATE SHORT-TERM ACTIVITIES SUCH AS CLEARING OR GRUBBING, OR PASSAGE OF VEHICLES. ANY SHORT-TERM ACTIVITY MUST BE COMPLETED AS QUICKLY AS POSSIBLE AND THE SEDIMENT CONTROL PRACTICES MUST BE INSTALLED IMMEDIATELY AFTER THE ACTIVITY IS COMPLETED. HOWEVER, SEDIMENT CONTROL PRACTICES MUST BE INSTALLED BEFORE THE NEXT PRECIPITATION EVENT EVEN IF THE ACTIVITY IS NOT COMPLETE.

4. ALL STORM DRAIN INLETS MUST BE PROTECTED BY APPROPRIATE BMPS DURING CONSTRUCTION UNTIL ALL SOURCES WITH POTENTIAL FOR DISCHARGING TO THE INLET HAVE BEEN STABILIZED.

5. TEMPORARY SOIL STOCKPILES MUST HAVE SILT FENCES OR OTHER EFFECTIVE SEDIMENT CONTROLS, AND CANNOT BE PLACED IN SURFACE WATERS, INCLUDING STORM WATER CONVEYANCES SUCH AS CURB AND GUTTER SYSTEMS, OR CONDUITS AND DITCHES.

6. SITE CONSTRUCTION ENTRANCES WILL BE AS SHOWN ON THE PLAN. ROCK CONSTRUCTION ENTRANCES SHALL BE INSTALLED AT EACH ENTRANCE.

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EROSION AND SEDIMENT CONTROL MAINTENANCE PROGRAM:

1. INSPECT SILT FENCES IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. IMMEDIATELY REPAIR FAILED OR FAILING SILT FENCE.

2. REPLACEMENT/REPAIR – BMP'S SHALL BE REPAIRED, REPLACED OR SUPPLEMENT OF ALL NONFUNCTIONAL BMP'S WITH FUNCTIONAL BMP'S BY THE END OF THE NEXT BUSINESS DAY AFTER DISCOVERY UNLESS ANOTHER TIME FRAME IS SPECIFIED IN SECTION 11.5 OR 11.6.

3. SEDIMENT REMOVAL – SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH STORM EVENT. THEY MUST BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY ONE-THIRD THE HEIGHT OF THE BARRIER. ANY SEDIMENT REMAINING IN PLACE AFTER THE SILT FENCE OR FILTER FABRIC IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM WITH EXISTING GRADE, PREPARED, AND SEEDED WITH THE APPROPRIATE SEED MIX, OR SODDED AS DIRECTED BY THE ENGINEER.

4. REMOVAL OF SILT FENCE – SILT FENCES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFUL PURPOSE, BUT NOT BEFORE THE UPWARD SLOPING AREA HAS BEEN PERMANENTLY STABILIZED. IF THE UPWARD SLOPING AREA IS TO BE EXPOSED LONGER THAN SIX (6) MONTHS, THAT AREA SHALL BE COVERED WITH TEMPORARY VEGETATION WHEN FIRST EXPOSED.

5. THE CONTRACTOR MUST ROUTINELY INSPECT THE CONSTRUCTION SITE ONCE EVERY SEVEN (7) DAYS DURING ACTIVE CONSTRUCTION AND WITHIN 24 HOURS AFTER A RAINFALL EVENT GREATER THAN 0.5 INCHES IN 24 HOURS. IF EVIDENCE OF EROSION AND SEDIMENT BMP DEPOSITION IS DISCOVERED CONTRACTOR MUST COMPLETE REMOVAL OR STABILIZATION WITHIN (7) CALENDER DAYS OF DISCOVERY.

6. ALL INSPECTIONS AND MAINTENANCE CONDUCTED DURING CONSTRUCTION MUST BE RECORDED IN WRITING AND THESE RECORDS MUST BE RETAINED WITH THE SWPPP RECORDS OF EACH INSPECTION AND

MAINTENANCE ACTIVITY SHALL INCLUDE:

A. DATE AND TIME OF INSPECTIONS;
B. NAME OF PERSON(S) CONDUCTING INSPECTIONS;
C. FINDINGS OF INSPECTIONS, INCLUDING RECOMMENDATIONS FOR CORRECTIVE ACTIONS;
D. CORRECTIVE ACTIONS TAKEN (INCLUDING DATES, TIMES, AND PARTY COMPLETING MAINTENANCE ACTIVIES.
E. DATE AND AMOUNT OF ALL RAINFALL EVENTS GREATER THAN 1/2 INCH (0.5 INCHES) IN 24 HOURS:
F. DOCUMENTS OF CHANGES MADE TO THE SWPPP AS REQUIRED IN SECTION 6.

7. WHERE PARTS OF THE CONSTRUCTION SITE HAVE UNDERGONE FINAL STABILIZATION, BUT WORK REMAINS ON OTHER PARTS OF SITE, INSPECTIONS OF THE STABILIZED AREAS MAY BE REDUCED TO ONCE PER MONTH. WHERE WORK HAS BEEN SUSPENDED DUE TO FROZEN GROUND CONDITIONS, THE REQUIRED INSPECTIONS AND MAINTENANCE MUST TAKE PLACE AS SOON AS RUNOFF OCCURS AT THE SITE OR PRIOR TO RESUMING CONSTRUCTION, WHICHEVER COMES FIRST.

POLLUTION PREVENTION MANAGEMENT MEASURES:

THE CONTRACTOR SHALL IMPLEMENT THE FOLLOWING POLLUTION PREVENTION MANAGEMENT MEASURES ON THE SITE:

1. SOLID WASTE: COLLECTED SEDIMENT, ASPHALT AND CONCRETE MILLINGS, FLOATING DEBRIS, PAPER, PLASTIC, FABRIC, CONSTRUCTION AND DEMOLITION DEBRIS AND OTHER WASTES MUST BE DISPOSED OF PROPERLY AND MUST COMPLY WITH MPCA DISPOSAL REQUIREMENTS.

2. HAZARDOUS MATERIAL: OIL, GASOLINE, PAINT AND ANY HAZARDOUS SUBSTANCES MUST BE PROPERLY STORED, INCLUDING SECONDARY CONTAINMENT, TO PREVENT SPILLS, LEAKS OR OTHER DISCHARGE. STORAGE AND DISPOSAL OF HAZARDOUS WASTE MUST BE IN COMPLIANCE WITH MPCA REGULATIONS.

3. CONCRETE WASHOUT IS DONE TRUCK BY TRUCK WITH A MOBILE WASHOUT SYSTEM PROVIDED AND COMPLETED BY THE CONCRETE CONTRACTOR. RUNOFF MUST BE CONTAINED AND WASTE PROPERLY DISPOSED OF.

4. NO ENGINE DEGREASING IS ALLOWED ON SITE.

PERMANENT COVER:

THE CONTRACTOR MUST ENSURE COMPLETE COVER OF THE SITE. THE CONTRACTOR MUST SUBMIT A NOTICE OF TERMINATION (NOT) WITHIN 30 DAYS AFTER PERMANENT COVER IS COMPLETE, OR ANOTHER OWNER/OPERATOR (PERMITTEE) HAS ASSUMED CONTROL OF ALL AREAS OF THE SITE THAT HAVE NOT UNDERGONE PERMANENT COVER. PERMANENT COVER CAN BE ACHIEVED IN THE FOLLOWING WAY:

ALL SOIL DISTURBING ACTIVITIES AT THE SITE HAVE BEEN COMPLETED AND ALL SOILS MUST BE STABILIZED BY A UNIFORM PERENNIAL VEGETATIVE COVER WITH A DENSITY OF 70 PERCENT OVER THE ENTIRE PERVIOUS SURFACE AREA, OR OTHER EQUIVALENTMEANS NECESSARY TO PREVENT SOIL FAILURE UNDER EROSIVE CONDITIONS AND;

A. ALL DRAINAGE DITCHES, CONSTRUCTED TO DRAIN WATER FROM THE SITE AFTER CONSTRUCTION IS COMPLETE, MUST BE STABILIZED TO PRECLUDE EROSION;
B. ALL TEMPORARY SYNTHETIC, AND STRUCTURAL EROSION PREVENTION AND SEDIMENT CONTROL BMPS (SUCH AS SILT FENCE) MUST BE REMOVED AS PART OF THE SITE PERMANENT COVER; AND
C. THE CONTRACTORS MUST CLEAN OUT ALL SEDIMENT FROM CONVEYANCES AND FROM TEMPORARY SEDIMENTATION BASINS THAT ARE TO BE USED AS PERMANENT WATER QUALITY MANAGEMENT BASINS. SEDIMENT MUST BE STABILIZED TO PREVENT IT FROM BEING WASHEDBACK INTO THE BASIN, CONVEYANCES OR DRAINAGE WAYS DISCHARGING OFF-SITE OR TO SURFACE WATERS. THE CLEAN OUT OF PERMANENT BASINS MUST BE SUFFICIENT TO RETURN THE BASIN TO DESIGN CAPACITY.

THE CITY OF ROGERS MUST INSPECT AND APPROVE ALL VEGETATION COVER FOR ACCEPTANCE.

DEWATERING:

1. IF UTILITY INSTALLATION WORK ENCOUNTERS GROUNDWATER, THE CONTRACTOR SHALL PROVIDE A PLAN TO THE CITY AND PROJECT ENGINEER FOR REVIEW. THE PLAN AT MINIMUM SHALL BE A DEWATERING PLAN INCLUDING WATER ROUTING, STORAGE, AND DISCHARGE LOCATION.

2. IF ANY TEMPORARY DEWATERING IS REQUIRED ONSITE THE CONTRACTOR SHALL DISPOSE OF STORMWATER OR GROUND WATER BY USE OF PUMPS AND HOSES TO ACCEPTABLE DISCHARGE POINTS APPROVED BY THE CITY AND PROJECT ENGINEER.

3. ANY ACCUMULATED SEDIMENT ALONG EXISTING CURB AND GUTTER THAT HAS COLLECTED AS A RESULT OF DISCHARGING DEWATERING HOSES SHALL BE IMMEDIATELY REMOVED AND PROPERLY DISPOSED OF AFTER EACH DISCHARGING EVENT.

FINAL STABILIZATION:

THE CONTRACTOR MUST ENSURE FINAL STABILIZATION OF THE SITE. THE CONTRACTOR MUST SUBMIT A NOTICE OF TERMINATION (NOT) WITHIN 30 DAYS AFTER FINAL STABILIZATION IS COMPLETE, OR ANOTHER OWNER/OPERATOR (PERMITTEE) HAS ASSUMED CONTROL OF ALL AREAS OF THE SITE THAT HAVE NOT UNDERGONE FINAL STABILIZATION. FINAL STABILIZATION CAN BE ACHIEVED IN THE FOLLOWING WAY:

ALL SOIL DISTURBING ACTIVITIES AT THE SITE HAVE BEEN COMPLETED AND ALL SOILS MUST BE STABILIZED BY A UNIFORM PERENNIAL VEGETATIVE COVER WITH A DENSITY OF 70 PERCENT OVER THE ENTIRE PERVIOUS SURFACE AREA, OR OTHER EQUIVALENT MEANS NECESSARY TO PREVENT SOIL FAILURE UNDER EROSIVE CONDITIONS AND;

A. ALL DRAINAGE DITCHES, CONSTRUCTED TO DRAIN WATER FROM THE SITE AFTER CONSTRUCTION IS COMPLETE, MUST BE STABILIZED TO PRECLUDE EROSION;
B. ALL TEMPORARY SYNTHETIC, AND STRUCTURAL EROSION PREVENTION AND SEDIMENT CONTROL BMPS (SUCH AS SILT FENCE) MUST BE REMOVED AS PART OF THE SITE FINAL STABILIZATION; AND
C. THE CONTRACTORS MUST CLEAN OUT ALL SEDIMENT FROM CONVEYANCES AND FROM TEMPORARY SEDIMENTATION BASINS THAT ARE TO BE USED AS PERMANENT WATER QUALITY MANAGEMENT BASINS. SEDIMENT MUST BE STABILIZED TO PREVENT IT FROM BEING WASHED BACK INTO THE BASIN, CONVEYANCES OR DRAINAGE WAYS DISCHARGING OFF-SITE OR TO SURFACE WATERS. THE CLEAN OUT OF PERMANENT BASINS MUST BE SUFFICIENT TO RETURN THE BASIN TO DESIGN CAPACITY.

ALLIANT
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PULTE HOMES

Hassan Sand
Rogers, Minnesota

Preliminary Plat Submittal

Erosion & Sediment Control Notes & Details

DATE	DESCRIPTION
10.17.2025	CITY SUBMITTAL

CERTIFICATION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Civil Engineer under the laws of the State of Minnesota.

PRELIMINARY
FOR REVIEW ONLY
NOT FOR CONSTRUCTION

Typed or Printed Name

Signature

Date License no.

QA/QC CHECK

By Date

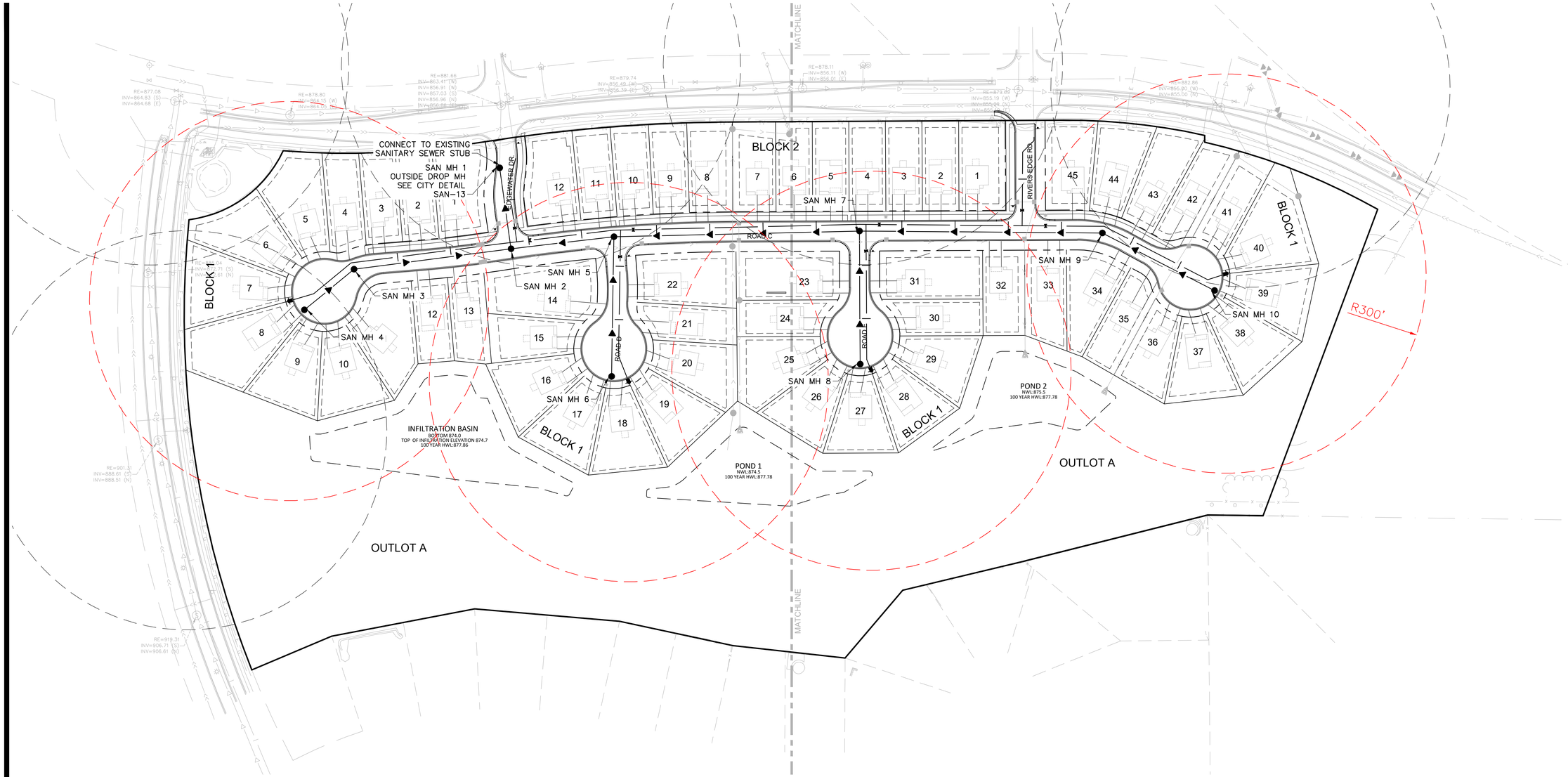
PROJECT TEAM DATA

Designed By: MPR, TAS
Drafted By: ELL, LRJ
Project No.: 4000670-00

21

Sheet 21 of 30

File Location: X:\4000670-00\011-043 Drawings\0 Sheets - Preliminary\EROSION CONTROL.dwg Plotted By: Tyler Strosnider on Oct 17, 2025 at 8:02:04 AM



SANITARY SEWER SCHEDULE

MH FROM	MH TO	PIPE O.D. [IN]	PIPE SLOPE [FT/FT]	PIPE LENGTH	INVERT FROM	INVERT TO	RIM ELEV	STRUCTURE SIZE [IN]	MANHOLE BUILD [FT]	PIPE TYPE
SAN MH 10	SAN MH 9	8	0.040	189.3	879.77	872.20	891.77	48	12.00	SDR-35
SAN MH 9	SAN MH 7	8	0.004	365.2	872.10	870.64	884.47	48	12.37	SDR-35
SAN MH 8	SAN MH 7	8	0.035	200.0	879.76	872.76	891.76	48	12.00	SDR-35
SAN MH 7	SAN MH 5	8	0.004	369.2	870.54	869.06	884.47	48	13.93	SDR-35
SAN MH 6	SAN MH 5	8	0.035	209.9	879.75	872.40	891.75	48	12.00	SDR-35
SAN MH 5	SAN MH 2	8	0.004	155.6	868.96	868.34	884.50	48	15.54	SDR-35
SAN MH 4	SAN MH 3	8	0.050	96.4	879.71	874.89	891.71	48	12.00	SDR-35
SAN MH 3	SAN MH 2	8	0.027	238.1	874.79	868.36	887.52	48	12.73	SDR-35
SAN MH 2	SAN MH 1	8	0.020	122.7	868.24	865.79	880.80	48	12.56	SDR-35
SAN MH 1	EX STUB	8			857.67	857.67	880.69	48	23.02	SDR-26

UTILITY NOTES:

1. EXISTING UTILITIES, SERVICE LOCATIONS AND ELEVATIONS SHALL BE VERIFIED IN FIELD PRIOR TO CONSTRUCTION.
2. MAINTAIN A MIN 18" VERTICAL SEPARATION AT ALL PIPE CROSSINGS, LOWER WATERMAIN AS NECESSARY. WATER AND SANITARY SEWER LINES TO MAINTAIN 10' HORIZONTAL SEPARATION.
3. CONTRACTOR IS RESPONSIBLE FOR ALL PERMITS PRIOR TO THE START OF CONSTRUCTION.
4. PROVIDE POLYSTYRENE INSULATION FOR ALL STORM SEWER AND WATERMAIN CROSSINGS WHERE VERTICAL OR HORIZONTAL SEPARATION IS LESS THAN 2'.
5. ALL UTILITY WORK WITHIN THE R.O.W. SHALL COMPLY WITH THE CITY OF ROGERS ENGINEERING GUIDELINES.
6. NOTIFY GOPHER STATE ONE CALL 48 HOURS IN ADVANCE OF ANY UTILITY WORK.
7. PROVIDE TEMPORARY TRAFFIC CONTROL IN COMPLIANCE WITH MNDOT "TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS–FIELD MANUAL" LATEST REVISION, FOR ANY CONSTRUCTION WITHIN PUBLIC R.O.W.
8. ALL SANITARY MANHOLES TO BE 48" DIAMETER CONCRETE W/NEENAH R–1642 CASTING, UNLESS NOTED OTHERWISE.
9. WATERMAIN, SERVICES, AND VALVES SHALL BE INSTALLED WITH MINIMUM 7.5' OF COVER.
10. WATER SERVICES SHALL BE 1" DIA. ENDOPRENE W/ 1" CORP. STOP AND 1" CURB BOX.
11. SEWER SERVICES SHALL BE 4" PVC, SCH 40 W/ MINIMUM 2% SLOPE UNLESS OTHERWISE NOTED ON THE PLANS.
12. WATER SERVICES MAY BE PLACED IN SAME TRENCH AS SEWER SERVICES PROVIDED THAT A 18" VERTICAL & A 36" HORIZONTAL SEPARATION ARE MAINTAINED AND PIPE MATERIALS MEET THE CITY AND BUILDING CODES.
13. ALL CURB BOXES SHALL BE ADJUSTED TO AN ELEVATION OF 1" BELOW FINISHED GRADE.
14. ALL WATERMAIN SHALL BE C900 PVC.
15. THE MAXIMUM DISTANCE BETWEEN FIRE HYDRANTS SHALL NOT EXCEED 300 FT.

LEGEND:

- EASEMENT LINE
- LOT LINE
- PROPERTY LINE
- ROW
- EXISTING GATE VALVE
- EXISTING HYDRANT
- EXISTING WATERMAIN
- EXISTING CATCH BASIN
- EXISTING STORM MANHOLE
- EXISTING STORM SEWER
- EXISTING SANITARY MANHOLE
- EXISTING SANITARY SEWER
- PROPOSED GATE VALVE
- PROPOSED HYDRANT
- PROPOSED WATERMAIN
- PROPOSED CATCH BASIN
- PROPOSED STORM MANHOLE
- PROPOSED STORM SEWER
- PROPOSED SANITARY MANHOLE
- PROPOSED SANITARY SEWER
- HYDRANT RADIUS
- EXISTING HYDRANT RADIUS

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Preliminary Plat Submittal
Sanitary Sewer & Watermain Plan - Overall

DATE	DESCRIPTION
10.17.2025	CITY SUBMITTAL

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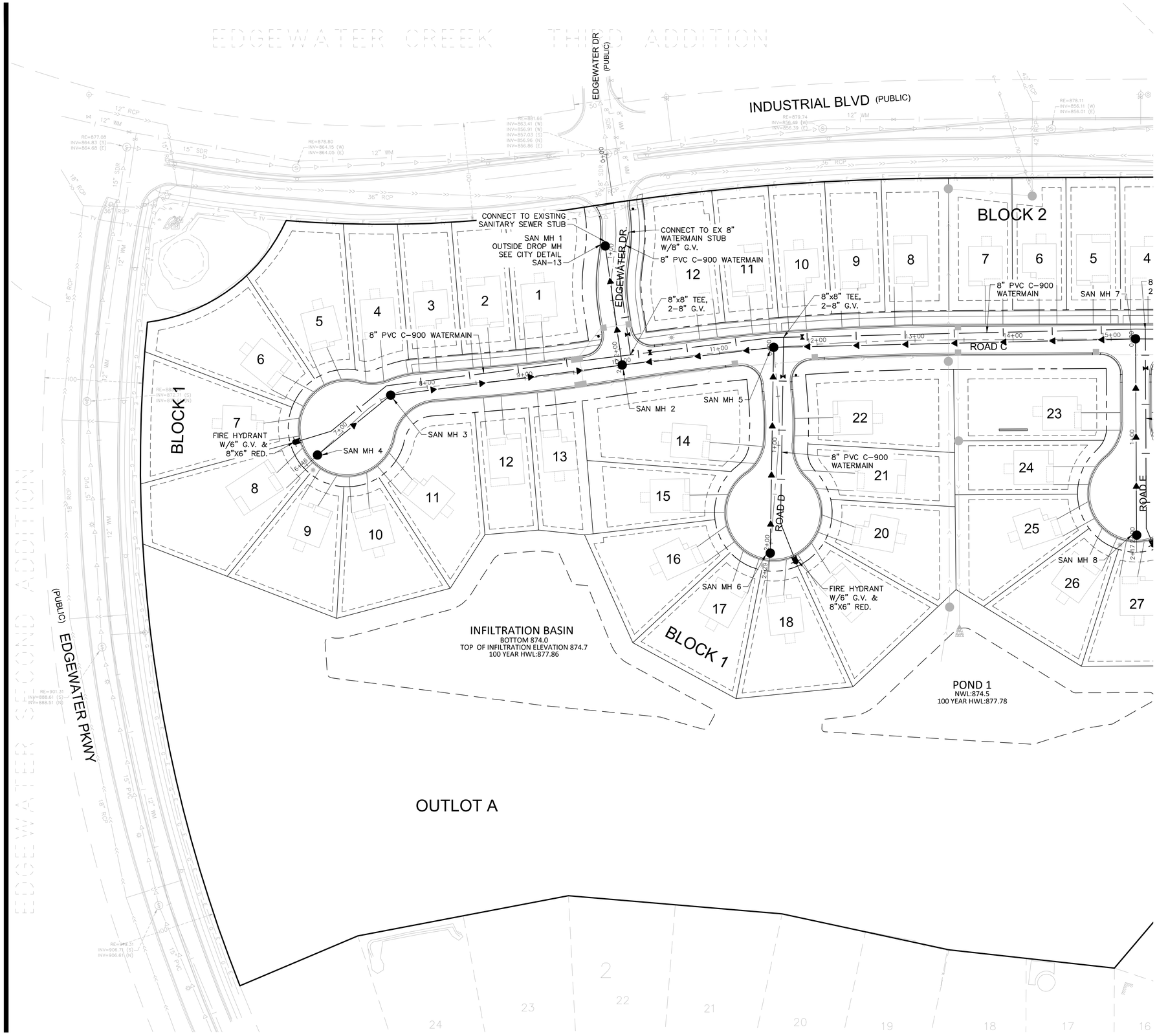
PROJECT TEAM DATA

Designed By: MPR, TAS
Drafted By: ELL, LRJ
Project No.: 4000670-00

22

Sheet 22 of 30

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LEGEND:

- EASEMENT LINE
- LOT LINE
- PROPERTY LINE
- ROW
- EXISTING GATE VALVE
- EXISTING HYDRANT
- EXISTING WATERMAIN
- EXISTING CATCH BASIN
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- PROPOSED CATCH BASIN
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- PROPOSED STORM SEWER
- PROPOSED SANITARY MANHOLE
- PROPOSED SANITARY SEWER

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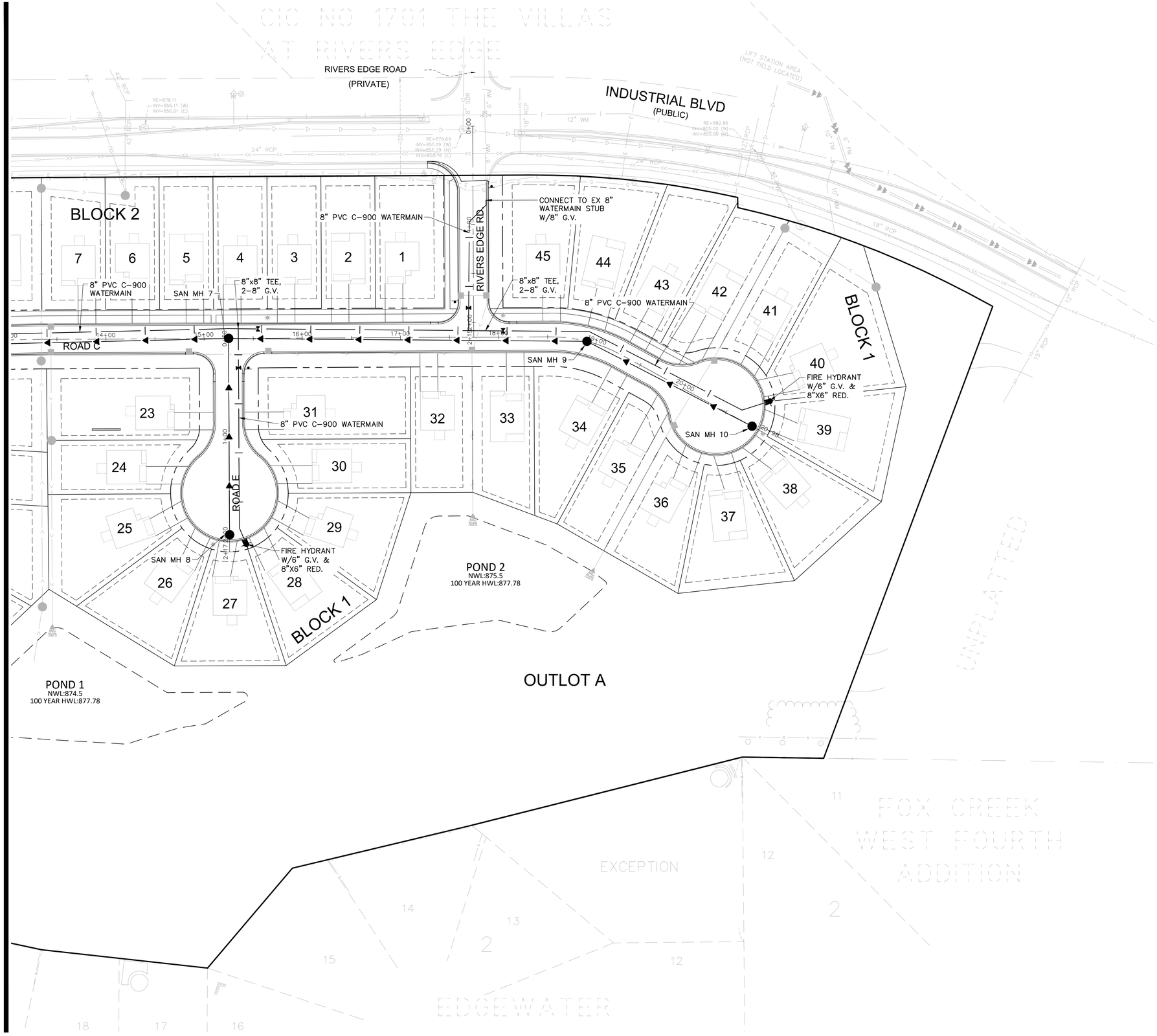
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23

Sheet 23 of 30

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LEGEND:

- EASEMENT LINE
- LOT LINE
- PROPERTY LINE
- ROW
- EXISTING GATE VALVE
- EXISTING HYDRANT
- EXISTING WATERMAIN
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- PROPOSED SANITARY SEWER

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Name

State License no.

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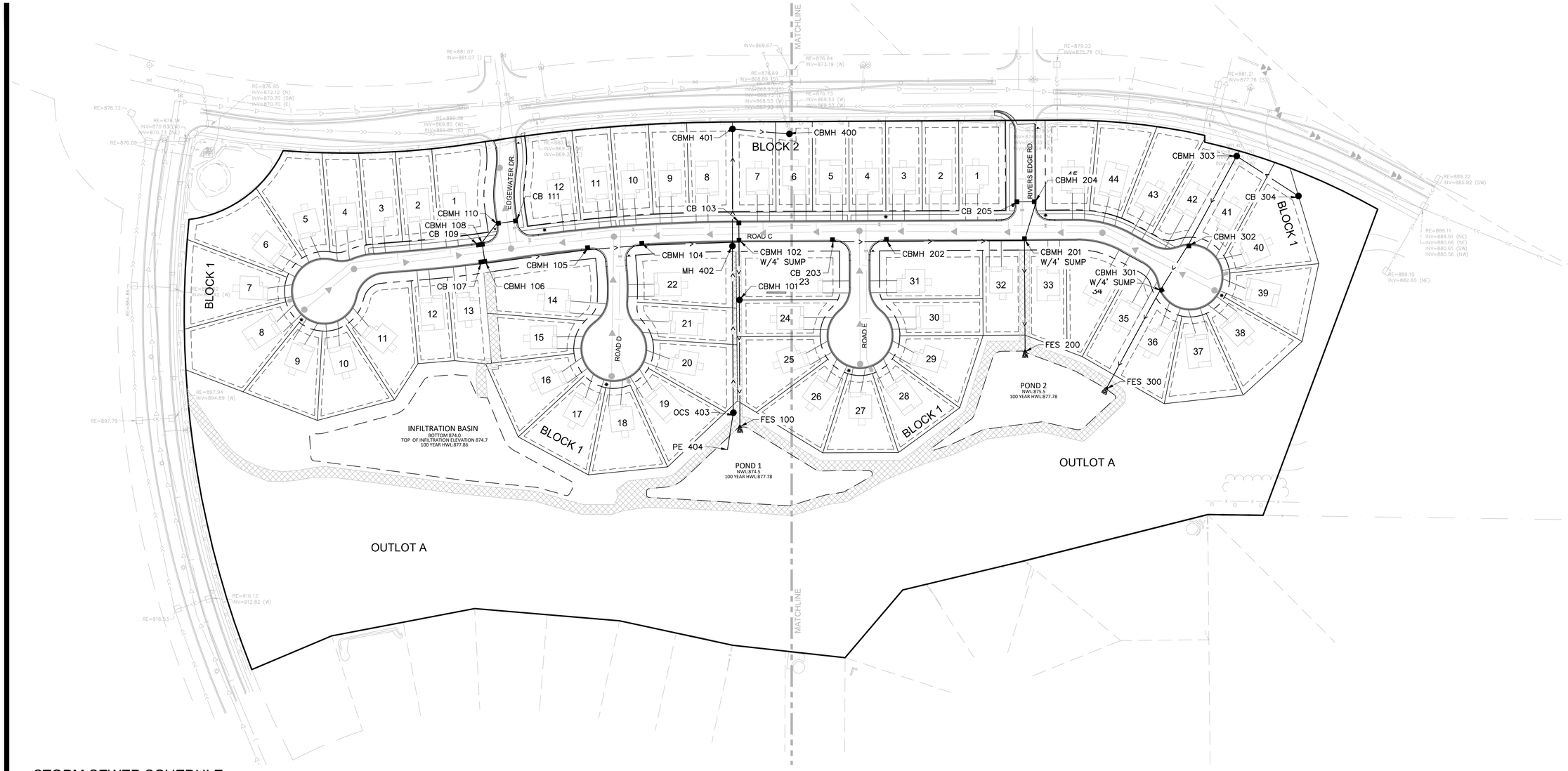
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Sheet 24 of 30

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STORM SEWER SCHEDULE

MH/CB		P. DIA	P. SLOPE	PIPE	PIPE	PIPE VEL.	FROM	TO	RIM	STR.	CAST	BUILD
FROM	TO	[IN]	[FT/FT]	MAT'L	LENGTH [FT]	[FT/S]	INVERT	INVERT	ELEV.	TYPE	TYPE	[FT]
CB 111	CBMH 110	15	0.0033	RCP	32.00	3.02	876.38	876.27	880.38	2X3	R-3067-VB	4.00
CBMH 110	CBMH 108	15	0.0033	RCP	35.50	3.02	876.27	876.16	880.28	48"	R-3067-VB	4.01
CB 109	CBMH 108	15	0.0033	RCP	6.00	3.02	876.05	876.03	880.05	2X3	R-3067-V	4.00
CBMH 108	CBMH 106	18	0.0026	RCP	32.00	3.03	876.03	875.95	880.04	48"	R-3067-V	4.01
CB 107	CBMH 106	15	0.0033	RCP	6.00	3.02	876.05	876.03	880.05	2X3	R-3067-V	4.00
CBMH 106	CBMH 105	21	0.0025	RCP	155.60	3.29	875.95	875.56	880.04	60"	R-3067-V	4.09
CBMH 105	CBMH 104	24	0.0018	RCP	81.60	3.06	875.56	875.41	883.76	48"	R-3067-V	8.20
CBMH 104	CBMH 102	24	0.0023	RCP	146.00	3.45	875.41	875.08	883.83	48"	R-3067-V	8.42
CB 103	CBMH 102	15	0.0033	RCP	32.00	3.02	876.61	876.50	880.61	2X3	R-3067-VB	4.00
CBMH 102	CBMH 101	27	0.0020	RCP	87.00	3.48	875.08	874.90	880.61	72"	R-3067-VB	9.53
CBMH 101	FES 100	27	0.0021	RCP	191.40	3.57	874.90	874.50	879.45	48"	R-4342	4.55
CB 205	CBMH 204	15	0.0033	RCP	32.00	3.02	876.36	876.25	880.36	2X3	R-3067-V	4.00
CBMH 204	CBMH 201	15	0.0057	RCP	61.20	3.97	876.25	875.91	880.87	48"	R-3067-V	4.62
CB 203	CBMH 202	15	0.0033	RCP	81.00	3.02	879.77	879.50	883.77	27"	R-3067-V	4.00
CBMH 202	CBMH 201	15	0.0160	RCP	207.50	6.66	879.50	876.18	883.82	60"	R-3067-V	4.32
CBMH 201	FES 200	24	0.0022	RCP	167.70	3.38	875.91	875.54	881.79	60"	R-3067-VB	9.88
CB 304	CBMH 303	15	0.0033	HDPE	110.40	3.28	878.83	878.47	882.83	27"	R-4342	4.00
CBMH 303	CBMH 302	15	0.0033	HDPE	150.20	3.28	878.47	877.97	883.60	48"	R-4342	5.13
CBMH 302	CBMH 301	15	0.0033	RCP	83.10	3.02	877.97	877.70	888.45	48"	R-3067-V	10.48
CBMH 301	FES 300	15	0.0033	RCP	167.90	3.02	876.06	875.50	888.28	48"	R-3067-V	16.22
PE 404	OCS 403	24	0.0356	RCP	56.20		872.50	874.50				
OCS 403	MH 402	24	0.0077	HDPE	250.60	6.85	873.50	871.57	878.58	60"	OCS	5.08
MH 402	CBMH 401	24	0.0077	RCP	176.00	6.32	871.57	870.22	883.60	48"	R-1642	12.03
CBMH 401	CBMH 400	24	0.0110	HDPE	85.90	8.18	870.22	869.27	875.08	48"	R-4342	4.86
CBMH 400	EX STUB						869.04	869.04	877.27	48"	R-4343	8.23

UTILITY NOTES:

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- PROPOSED STORM SEWER
- PROPOSED SANITARY MANHOLE
- PROPOSED SANITARY SEWER

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Storm Sewer Plan - Overall

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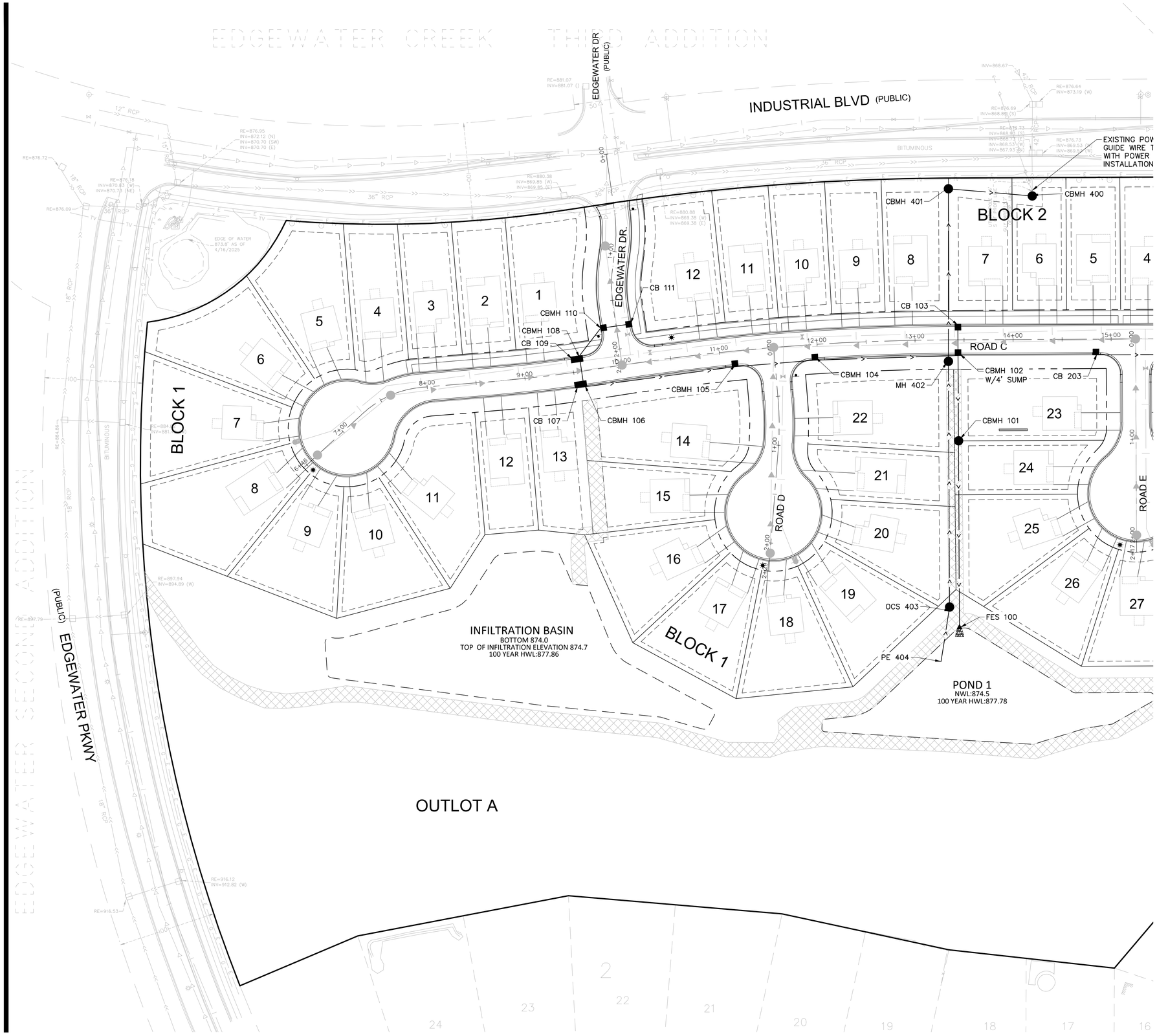
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Designed By: MPR, TAS
Drafted By: ELL, LRJ
Project No.: 4000670-00

25

Sheet 25 of 30

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LEGEND:

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- EXISTING GATE VALVE
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- EXISTING WATERMAIN
- EXISTING CATCH BASIN
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- EXISTING SANITARY MANHOLE
- EXISTING SANITARY SEWER
- PROPOSED GATE VALVE
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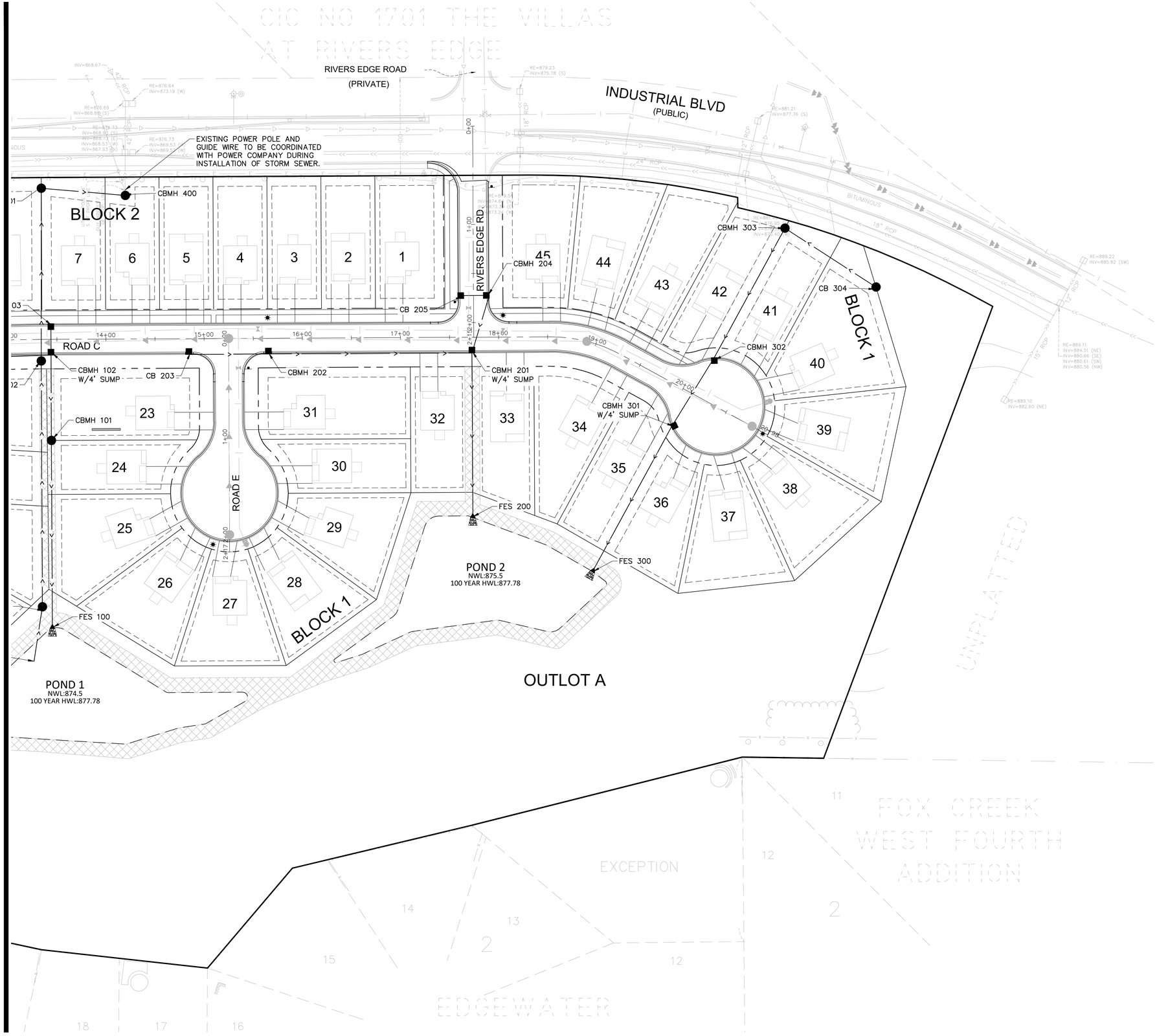
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LEGEND:

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- LOT LINE
- PROPERTY LINE
- ROW
- EXISTING GATE VALVE
- EXISTING HYDRANT
- EXISTING WATERMAIN
- EXISTING CATCH BASIN
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- EXISTING STORM SEWER
- EXISTING SANITARY MANHOLE
- EXISTING SANITARY SEWER
- PROPOSED GATE VALVE
- PROPOSED HYDRANT
- PROPOSED WATERMAIN
- PROPOSED CATCH BASIN
- PROPOSED STORM MANHOLE
- PROPOSED STORM SEWER
- PROPOSED SANITARY MANHOLE
- PROPOSED SANITARY SEWER

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CITY SUBMITTAL	10.17.2025

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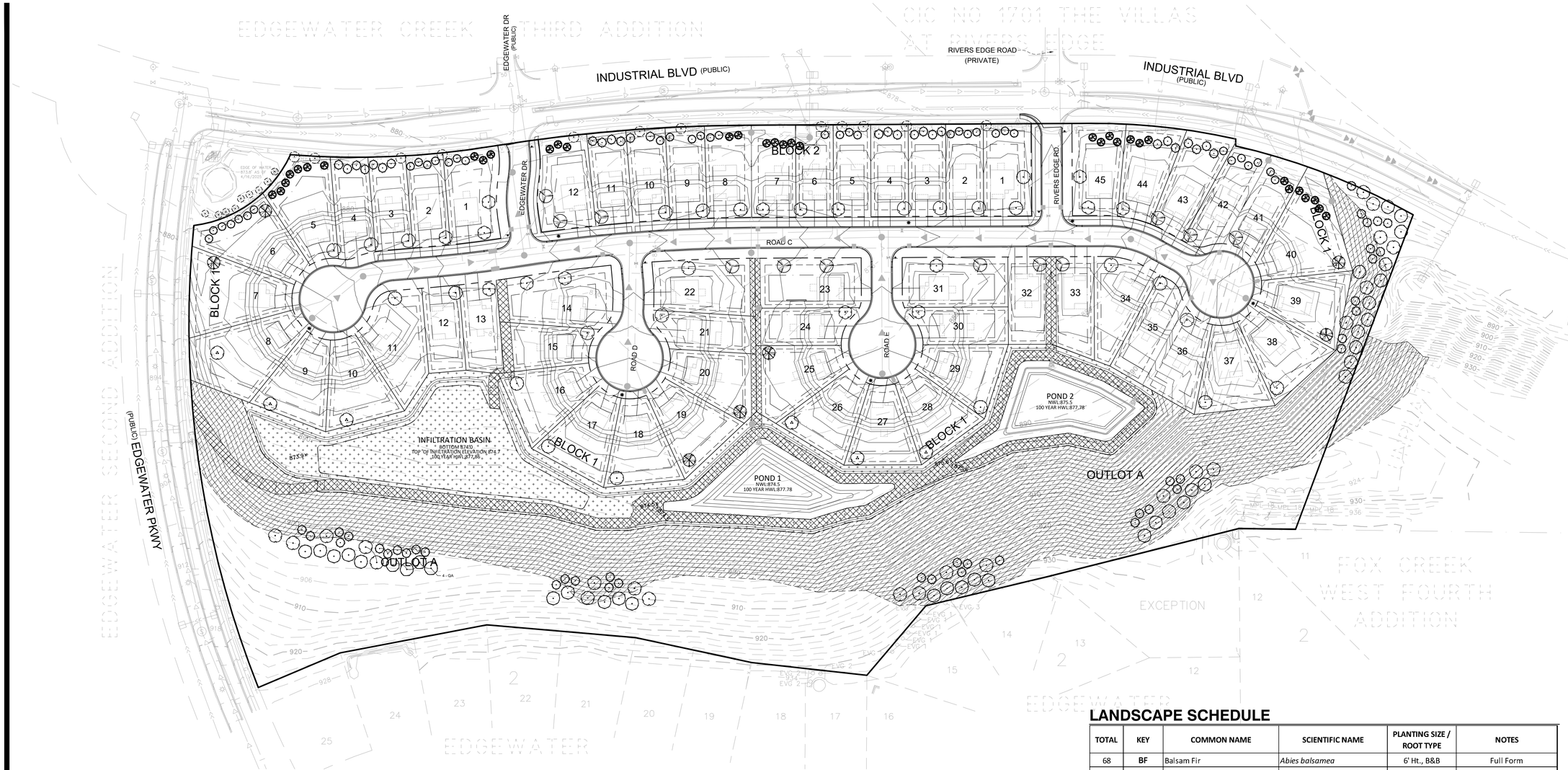
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Sheet 27 of 30

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LANDSCAPE NOTES

1. CALL GOPHER STATE ONE CALL AT 651–454–0002 FOR LOCATING ALL UNDERGROUND UTILITIES AND TO AVOID DAMAGE TO UTILITIES DURING THE COURSE OF THE WORK.
2. INSTALL 4" MIN. TOP SOIL TO ALL SOD AREAS. FINE GRADE ALL SOD AREAS. INSTALL 12" PLANTING (TOP) SOIL TO ALL ANNUAL/PERENNIAL AREAS.
3. STAKE OR MARK ALL PLANT MATERIAL LOCATIONS PRIOR TO INSTALLATION. HAVE OWNERS REPRESENTATIVE APPROVE ALL STAKING PRIOR TO INSTALLATION.
4. ALL MULCH TO BE APPROVED BY OWNER AND/OR LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
5. INSTALL 4–6" DEPTH SHREDDED HARDWOOD MULCH AROUND ROOT SAUCER OF ALL TREES ISOLATED FROM PLANT BEDS.
6. PLANTING SOIL SHALL BE 1:1:1 CONSISTING OF 33% SELECT LOAMY TOPSOIL, 33% PEAT MOSS, 33% PIT RUN SAND. SEE FILTRATION BASIN DETAILS & NOTES FOR SOIL WITHIN FILTRATION BASIN AREAS.
7. COMPLETELY GUARANTEE ALL WORK FOR A PERIOD OF TWO YEARS BEGINNING AT THE DATE OF ACCEPTANCE. MAKE ALL REPLACEMENTS PROMPTLY (AS PER DIRECTION OF OWNER).
8. ALL MATERIAL SHALL COMPLY WITH THE LATEST EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK, AMERICAN ASSOCIATION OF NURSERYMEN.
9. ALL TREE TRUNKS SHALL BE WRAPPED WITH BROWN CREPE TREE WRAP. APPLY WRAP IN NOVEMBER AND REMOVE IN APRIL.
10. MAINTAIN ALL PLANT MATERIALS, INCLUDING WATERING, UNTIL THE TIME OF ACCEPTANCE.
11. COORDINATE LANDSCAPE INSTALLATION WITH GENERAL CONTRACTOR.
12. STAKING AND GUYING OF TREES OPTIONAL: MAINTAIN PLUMBNESS OF TREES FOR DURATION OF WARRANTY PERIOD.
13. SWEEP AND WASH ALL PAVED SURFACES AND REMOVE ALL DEBRIS RESULTING FROM LANDSCAPE OPERATIONS DAILY.
14. INFILTRATION BASINS SHALL NOT BE COMPACTED. SEE SHEET 15–17 FOR INFILTRATION BASIN NOTES.

OVERALL REQUIREMENTS

REQUIRED MITIGATION TREES:	2
PROVIDED LOT TREES:	65
PROVIDED INDUSTRIAL BLVD BUFFER TREES:	99
PROVIDED OUTLOT TREES:	100
PROVIDED TOTAL TREES:	264

SEEDING NOTES

BASIN/SIDE–SLOPE MIX: MN STATE SEED MIX 33–261 STORMWATER SOUTH & WEST MIX SEEDING RATE TO BE 35 LBS/ACRE (PURE LIVE SEED).

DRY PRAIRIE MIX: SHOOTING STAR NATIVE SEEDS, SSNS DRY PRAIRIE MIX. SEEDING RATE TO BE 10 LBS/ACRE (PURE LIVE SEED).

APPLY SEED PER THE FOLLOWING: MULCH SEEDED AREAS WITH Mn/DOT TYPE 3 (MCIA CERTIFIED WEED FREE) MULCH AT A RATE OF 1 TON PER ACRE WITHIN 48 HOURS OF SEEDING. MULCH SHOULD THEN BE DISC ANCHORED TO KEEP IT FROM BLOWING AWAY.

SEEDING SHALL BE APPLIED FROM APRIL 15 – JULY 20 OR SEPTEMBER 20 – FREEZE UP. IF HYDROSEEDING UTILIZE APPROXIMATELY 500 GALLONS OF WATER PER ACRE. REFER TO MN/DOT SPEC 3884 FOR PROPER INSTALLATION OF HYDRO–SEED. ALL NATIVE SEEDS USED ON THIS PROJECT SHALL BE CERTIFIED TO BE OF MINNESOTA ORIGIN BY THE MINNESOTA CROP IMPROVEMENT ASSOCIATION (MCIA). SITE TO BE PREPARED BY LOOSENING TOPSOIL TO A MINIMUM DEPTH OF 3 INCHES. THE SITE TO BE HARROWED OR RAKED FOLLOWING SEEDING, AND THEN PACKED USING A CULTI–PACKER OR EQUIVALENT. SEE MNDOT SEEDING MANUAL FOR REFERENCE.

MAINTAIN SEEDED AREAS BY WATERING, REMULCHING AND REPLANTING AS NECESSARY TO ESTABLISH A UNIFORMLY DENSE STAND OF THE SPECIFIED GRASSES UNTIL ACCEPTED. ANY AREAS FAILING TO ESTABLISH A STAND SHALL BE RESEEDED, REFERTILIZED AND REMULCHED WHENEVER 70% VEGETATIVE COVER IS NOT ACHIEVED. RESEEDING SHALL CONFORM IN ALL RESPECTS TO THESE SPECIFICATIONS. THE CONTRACTOR SHALL REPAIR ANY DAMAGE TO THE WORK AREAS RESULTING FROM EROSION AND/OR EQUIPMENT. THE CONTRACTOR SHALL REPAIR DAMAGE, INCLUDING REGRADING, RESEEDING, ETC. AS NECESSARY, BEFORE SIGNIFICANT DAMAGE OCCURS.

LANDSCAPE SCHEDULE

TOTAL	KEY	COMMON NAME	SCIENTIFIC NAME	PLANTING SIZE / ROOT TYPE	NOTES
68	**BF**	Balsam Fir	*Abies balsamea*	6' Ht., B&B	Full Form
38	**BS**	Black Hills White Spruce	*Picea glauca 'Densata'*	6' Ht., B&B	Full Form
34	**NS**	Norway Spruce	*Picea abies*	6' Ht., B&B	Full Form
140	**CONIFER TREES TOTAL**				
25	**AS**	Fall Fiesta Sugar Maple	*Acer saccarum 'Bailsta'*	2.5" cal. B&B	Straight Trunk, No V-Crotch
13	**HB**	Common Hackberry	*Celtis occidentalis*	2.5" cal. B&B	Straight Trunk, No V-Crotch
11	**PE**	Patriot Elm	*Ulmus 'Patriot'*	2.5" cal. B&B	Straight Trunk, No V-Crotch
30	**QA**	Quaking Aspen	*Populus tremuloides*	2.5" cal. B&B	Straight Trunk, No V-Crotch
6	**RB**	River Birch	*Betula nigra*	2.5" cal. B&B	Straight Trunk, No V-Crotch
15	**RM**	Autumn Blaze Red Maple	*Acer x freemanii 'Jeffersred'*	2.5" cal. B&B	Straight Trunk, No V-Crotch
12	**SO**	Swamp White Oak	*Quercus bicolor*	2.5" cal. B&B	Straight Trunk, No V-Crotch
12	**RO**	Red Oak	*Quercus rubra*	2.5" cal. B&B	Straight Trunk, No V-Crotch
124	**OVERSTORY TREES TOTAL**				
264	**GRAND TOTAL**				

Note: Quantities on plan supersede list quantities in a discrepancy

LEGEND

PROPOSED DECIDUOUS OVERSTORY TREE

SIDE–SLOPE MIX (SEE SEEDING NOTES)

DRY PRAIRIE MIX (SEE SEEDING NOTES)

N

0 40 80 160

SCALE IN FEET

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

ALLIANT
www.alliant-inc.com

Pulte HOMES

Hassan Sand
Rogers, Minnesota

Preliminary Plat Submittal
Landscape Plan

DATE	DESCRIPTION
10-17-2025	CITY SUBMITTAL

CERTIFICATION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Landscape Architect under the laws of the State of Minnesota.

PRELIMINARY
FOR REVIEW ONLY
NOT FOR CONSTRUCTION

Signature
Typed or Printed Name
Date License no.

QA/QC CHECK

By Date

PROJECT TEAM DATA

Designed By:
Drafted By:
Project No.: 4000670-00

28

Sheet 28 of 30

File Location: X:\4000670-0001\40-Design\00 Sheets - Preliminary\LANDSCAPE.dwg Printed By: Tyler Stichter on October 17, 2025 11:03:17 AM



LEGEND

- PROPOSED DECIDUOUS OVERSTORY TREE
- SIDE–SLOPE MIX (SEE SEEDING NOTES)
- DRY PRAIRIE MIX (SEE SEEDING NOTES)

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

N

0 25 50 100

SCALE IN FEET

ALLIANT
www.alliant-inc.com

PULTE HOMES

Hassan Sand

Rogers, Minnesota

Preliminary Plat Submittal

Landscape Plan - View A

DATE	DESCRIPTION
10.17.2025	CITY SUBMITTAL

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Typed or printed name

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QA/QC CHECK

By Date

PROJECT TEAM DATA

Designed By:

Drafted By:

Project No.: 4000670-00

29

Sheet 29 of 30

File Location: X:\4000670-00\01\dd\Design\00 Sheets - Preliminary\LANDSCAPE.dwg Plotted By: Tyler Strichterz on October 17, 2025 8:03:31 AM

CIC NO 1701 THE VILLAS AT RIVERS EDGE

RIVERS EDGE ROAD
(PRIVATE)

INDUSTRIAL BLVD
(PUBLIC)

RIVERS EDGE RD.

BLOCK 2

7 6 5 4 3 2 1

BLOCK 1

45 44 43 42 41 40 39 38 37 36 35 34 33 32 31 30 29 28 27 26 25 24 23

ROAD C

ROAD E

POND 1
NWL:874.5
100 YEAR HWL:877.78

POND 2
NWL:875.5
100 YEAR HWL:877.78

BASIN/SIDE SLOPE MIX
(SEE LEGEND)

DRY PRAIRIE MIX
(SEE LEGEND)

OUTLOT A

7 - NS
4 - BS
7 - BF
7 - BS
2 - HB
3 - RM
3 - SO
3 - RO
1 - RM
1 - PE
1 - RB
1 - HB
2 - AS
4 - BF
3 - BF
1 - AS
10 - QA
2 - BF
6 - BF
5 - QA
4 - AS
EVG 1
EVG 2
EVG 3

FOX CREEK WEST FOURTH ADDITION

EXCEPTION

EDGEWATER

LEGEND

- PROPOSED DECIDUOUS OVERSTORY TREE
- SIDE-SLOPE MIX (SEE SEEDING NOTES)
- DRY PRAIRIE MIX (SEE SEEDING NOTES)

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

N

0 25 50 100
SCALE IN FEET

ALLIANT
www.alliant-inc.com

Pulte HOMES

Hassan Sand

Rogers, Minnesota

Preliminary Plat Submittal

Landscape Plan - View B

DATE	DESCRIPTION
10-17-2025	CITY SUBMITTAL

CERTIFICATION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly licensed Landscape Architect under the laws of the State of Minnesota.

Signature

PRELIMINARY
FOR REVIEW ONLY
NOT FOR CONSTRUCTION

Typed or Printed Name

Date License no.

QA/QC CHECK

By Date

PROJECT TEAM DATA

Designed By:

Drafted By:

Project No.: 4000670-00

30

Sheet 30 of 30

File Location: X:\4000670-00\0140 Design\00 Sheets - Preliminary\LANDSCAPE.dwg Plotted By: Tyler Stitched on October 17, 2025 10:03:25 AM

BOARD OF WATER AND SOIL RESOURCES

Minnesota Wetland Conservation Act
Notice of Decision

Local Government Unit: City of Rogers	**County:** Hennepin
Applicant Name: Pulte Group c/o Haley Daily	**Applicant Representative:** Alliant c/o Keara Fehr
Project Name: Hassan Property	**LGU Project No. (if any):**
Date Complete Application Received by LGU: 6/3/2025	
Date of LGU Decision: 7/7/2025	
Date this Notice was Sent: 7/10/2025	

WCA Decision Type - check all that apply

☒ Wetland Boundary/Type ☐ Sequencing ☐ Replacement Plan ☐ Bank Plan (not credit purchase)
☐ No-Loss (8420.0415) ☐ Exemption (8420.0420)
Part: ☐ A ☐ B ☐ C ☐ D ☐ E ☐ F ☐ G ☐ H Subpart: ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8 ☐ 9

Replacement Plan Impacts (replacement plan decisions only)

Total WCA Wetland Impact Area:
Wetland Replacement Type: ☐ Project Specific Credits: ☐ Bank Credits:
Bank Account Number(s):

Technical Evaluation Panel Findings and Recommendations (attach if any)

☒ Approve ☐ Approve w/Conditions ☐ Deny ☐ No TEP Recommendation

LGU Decision

☐ Approved with Conditions (specify below)[1] ☒ Approved[1] ☐ Denied
List Conditions:

Decision-Maker for this Application: ☐ Staff ☐ Governing Board/Council ☒ Other: WCA Agent

Decision is valid for: ☒ 5 years (default) ☐ Other (specify):

[1] *Wetland Replacement Plan approval is not valid until BWSR confirms the withdrawal of any required wetland bank credits. For project-specific replacement a financial assurance per MN Rule 8420.0522, Subp. 9 and evidence that all required forms have been recorded on the title of the property on which the replacement wetland is located must be provided to the LGU for the approval to be valid.*

LGU Findings – Attach document(s) and/or insert narrative providing the basis for the LGU decision[1].

☐ Attachment(s) (specify):
☒ Summary: A site visit/delineation review was completed on June 17, 2025 by Mark Kjolhaug with Keara Fehr of Alliant Engineering. Based on observations made during the field review and information provided in the Delineation Report, the LGU concurs that there are no WCA regulated wetlands on the parcel

[1] *Findings must consider any TEP recommendations.*

Attached Project Documents

☒ Site Location Map ☒ Aquatic Resources Map

Appeals of LGU Decisions

If you wish to appeal this decision, you must provide a written request within 30 calendar days of the date you received the notice. All appeals must be submitted to the Board of Water and Soil Resources Executive Director along with a check payable to BWSR for $500 *unless* the LGU has adopted a local appeal process as identified below. The check must be sent by mail and the written request to appeal can be submitted by mail or e-mail. The appeal should include a copy of this notice, name and contact information of appellant(s) and their representatives (if applicable), a statement clarifying the intent to appeal and supporting information as to why the decision is in error. Send to:

Appeals & Regulatory Compliance Coordinator
Minnesota Board of Water & Soils Resources
520 Lafayette Road North
St. Paul, MN 55155
travis.germundson@state.mn.us

Does the LGU have a local appeal process applicable to this decision?

☐ Yes[1] ☒ No

[1]*If yes, all appeals must first be considered via the local appeals process.*

Local Appeals Submittal Requirements (LGU must describe how to appeal, submittal requirements, fees, etc. as applicable)

n/a

Notice Distribution (include name)

Required on all notices:

☒ SWCD TEP Member: Stacey Lijewski	☒ BWSR TEP Member: Jed Chesnut
☐ LGU TEP Member (if different than LGU contact):	
☒ DNR Representative: Wes Saunders-Pearce	
☒ Watershed District or Watershed Mgmt. Org.: judie@jass.biz	
☒ Applicant: Pulte Group c/o Haley Daily	☒ Agent/Consultant: Alliant Engineering c/o Keara Fehr

Optional or As Applicable:

☒ Corps of Engineers: USACE_Requests_MN@usace.army.mil <usace_requests_mn@usace.army.mil>	
☐ BWSR Wetland Mitigation Coordinator (required for bank plan applications only):	
☐ Members of the Public (notice only):	☐ Other:

Signature:	**Date:** July 10, 2025

This notice and accompanying application materials may be sent electronically or by mail. The LGU may opt to send a summary of the application to members of the public upon request per 8420.0255, Subp. 3.



Hassan Property

Legend

Study Area

ALLIANT

N

0 300 600 US Feet

Figure 1
Project Location

Date Exported: 5/9/25





Legend

- Study Area

LiDAR Contours

- 10ft Contours
- 2ft Contours

Wetland Delineation

- Drainge Swale
- Sample Point

Hassan Property

Figure 4

Wetland Delineation and LiDAR Contours

N

0 75 150 Feet

Source: Hennepin County Aerial 2024

ALLIANT

Date Exported: 5/22/2025

X:\4000670-00\40 Design\65 Environmental\GIS\APRX\Hassan_Figure_4_Wetland_Delineation_Contours\Hassan_Figure_4_Wetland_Delineation_Contours.aprx

Rogers Hassan Sand

APPLICATION FOR:
Preliminary Plat
PUD
Rezoning
Comprehensive Plan Amendment

ROGERS, MINNESOTA
October 17, 2025

Introduction

Pulte Homes of Minnesota, LLC ("Pulte") is pleased to be submitting this application.

Our company mission statement is **"*Building Incredible Places Where People Can Live Their Dreams*."** We currently operate under three distinct brands of homebuilding throughout the country: Pulte Homes, Centex Homes, and Del Webb. The office for Pulte's Minnesota Division is in Bloomington. We will sell and build over 700 homes in the Twin Cities a year under the Pulte Homes and Del Webb brands.

Pulte will act as both developer of the property and builder of the homes. The primary contact for Pulte is:

Dean R. Lotter, Director of Land Planning & Entitlement
1650 West 82nd Street
Suite 300
Bloomington, MN 55431
952-219-9082
Dean.Lotter@PulteGroup.com

The owners of the property:

(1) Dale and Marlene Scherber Family Limited Partnership
Attention Kevin Scherber
13405 Mardale Drive
Rogers, MN 55374
Telephone: 612-597-6243
Email: kevin@hassanssand.com

The planner, surveyor, civil engineer, and landscape architect are:

Alliant Engineering, Attn: Mark Rausch
733 S Marquette Ave, Unit 700
Minneapolis, MN 55402
612-767-9339
mrausch@alliant-inc.com

The Property

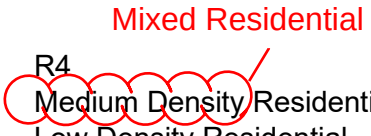
Legal Description:

Outlot B, Edgewater Second Addition, according to the recorded plat thereof, Hennepin County, Minnesota;
LESS AND EXCEPT that portion as conveyed in that certain Warranty Deed filed of record on November 1, 2023 as Document No. 11242623.

Property Identification Number

(1) 16-120-23-14-0058

Key Facts



- Existing zoning — R4
- Guided zoning — Medium Density Residential
- Proposed Comp Plan Guidance — Low Density Residential
- Proposed zoning — PUD R2
- Proposed use — 57 single family homes

- Gross calculations:
  - Gross area — 26.85 acres
  - Gross density — 2.19 units/acre
  - Sloped area — 8.09 acres
  - Net Acres — 18.76 acres
  - Net Density — 3.04 units/acre

- Dimensions/Setbacks – 55’ Single Family Lots
  - Front setback — 25 feet
  - Front setback Industrial Blvd. — 30 feet
  - Corner setback — 25 feet
  - Rear setback — 20 feet
  - Side setback — 10 feet and 10 feet
  - Minimum lot width — 55 feet
  - Minimum lot depth — 125 feet

The Homes

Pulte Homes is known for the extraordinary steps that we take to ensure that we are designing and building homes that meet the needs and desires of home buyers. You can click on this link to learn more about Pulte's homebuilding process https://www.pulte.com/design/life-tested. We continually reach out to home buyers and Pulte homeowners to get feedback to improve our home designs. It is what we call Life Tested®. Through this intensive process, we have conceived of and incorporated innovative features such as the Pulte Planning Center, the Everyday Entry, Super Laundry, Oversized Pantry, and the Owner's Retreat. This exhaustive process has played a major part in Pulte's success in **"*Building Incredible Places Where People Can Live Their Dreams*."**

In striving to continually be in lock step with the home buying public, we update the design of our homes frequently. These changes are driven by the desires and tastes of the home buying public through the process described above. The homes that will be built are outlined below. They will range in price from the low $400k's to the high $400k's for the single-family homes.

Single Family – 55' Lots

- Base square footage: 1,565 to 2,169
- Bedrooms: 2 to 4
- Bathrooms: 2 to 2.5
- 2-stall garages
- basements

The Site Plan

As discussed at the meeting where the City Council reviewed our concept plan, Pulte's proposed site plan attempts to thread the needle on a variety of issues and challenges. This site was previously mined and then had fill brought into the site that range from structural to non-structural soils. Pulte has reviewed the previous Geotech work performed by AET and this information has helped inform the site plan's layout. Pulte will do additional geotechnical work. Dramatic grade changes from south to north on this site have also been contemplated in our site layout. Pulte is proposing to build 57 single family homes on the northern half of this site.

There are existing homes to the south, and our site plan proposes to leave the southern half of our site to stormwater ponding/open space. Additionally, the steeply graded land on the southern half of our site will be left undeveloped and provide for a buffer between the new Pulte homes and the existing single family. Pulte is proposing to provide some landscaping in the sloped area for some additional buffering and beautification of the site.

Additional thoughts to consider about the site plan. Industrial Boulevard runs along the north side of the site. North of Industrial Boulevard are single family homes on 50' wide lots. What Pulte is proposing fits in with the nature of existing neighborhoods to the north and south in terms of housing type which is single family. Medium density residential is how the site Hassan Sand Site is guided in the City's comprehensive plan. Pulte would be respectfully asking for this guidance to be changed to low density residential. Pulte would also be asking for a rezoning to

PUD with R2 zoning be used as the underlying zoning. This request was well received at during the concept plan review by staff and the city council.

Comp Plan Amendment

Currently guided as medium density residential which requires 6 to 11 units per acre. The site is a challenging site to develop due to past use and the grades on the site; meeting the density requirements of medium density residential isn't feasible. Pulte would be respectfully asking for a comprehensive plan amendment to re-guide the site to low density residential. This site does have single family homes to the north and to the south. It seems a more consistent use for the site is single family residential. During the concept plan review the planning commission and city council both supported this request. Exhibits showing this change from medium to lower density have been included in our packet.

Rezoning

Pulte's proposal for this site is to build single family homes. Currently zoned R4 medium residential we believe that the only way this site will effectively develop is to be rezoned to a PUD with R2 as the underlying zoning. Our plan is to have 55' wide lots that will have 10'/10' side yard setbacks. Staff has informed us that having 10'/10' side yard setbacks is important to the City Council so we have designed our plan accordingly. The flexibility granted by a PUD with underlying zoning being the R2 zoning is what will allow Pulte's proposal to work efficiently. Flexibility on the lot sizing is needed to make this development proposal work efficiently.

Park Dedication

While our site plan provides a significant amount of open space, we would plan on meeting our park dedication obligations through payment of park dedication fees.

Energy Efficiency

The homes that Pulte will be constructing will have extremely high energy efficiency. Each home is tested using the Home Energy Rating System (HERS) index, which is the industry standard for measuring energy efficiency. Heating, cooling, and water heating constitute the largest cost of homeownership outside of the mortgage. The U.S. Department of Energy has determined that a typical resale home scores 130 on the HERS Index while a home built to the 2004 International Energy Conservation Code is awarded a rating of 100 (lower is more energy efficient). Pulte Homes measures the HERS score of every new home constructed. The average HERS score for our homes runs in the range of 47 to 53. We are building extremely energy efficient homes that dramatically exceed the International Energy Conservation Code threshold.

Phasing & Schedule

The City of Roger's application schedule suggests that staff review, and possible planning commission and council consideration would occur as follows:

Concept Plan Review	June 2025
Preliminary plat approval	January 2026
Site development	Spring 2026
Model home opens	late 2026
Full build of homes	early 2029

Fees Paid
PUD Fee $500 + $285 ($5 per lot) + $3,500 escrow

Rezoning Fee $400 + $2,000 escrow

CPA Fee $500 + $3,000 escrow

Total - $10,185

Conceptual Home Elevations

Macalester



Dayton



Merriam



Lowry





Wetland Delineation Report

HASSAN PROPERTY

Rogers, Hennepin County, Minnesota

Prepared for:
Pulte Group

Prepared by:
ALLIANT

June 2025

1. Table of Contents

1. Table of Contents i
List of Tables ii
List of Figures ii
Appendices ii
1. Introduction 1
1.1 Site Location and Project Need/Description 1
1.1.1 Site Location 1
1.1.2 Project Description 2
2. Methodology 3
2.1 Desktop Evaluation 3
2.2 Field Review 3
3. Results and Discussion 4
3.1 Water Resource Mapping Results 4
3.2 Weather Conditions and Growing season indicators 4
3.2.1 Weather Conditions for May 13, 2025 Survey 4
3.3 Historic aerial photo review 5
3.4 Field Results 6
3.4.1 Drainage Swale 6
4. Conclusions 6
5. References 7

LIST OF TABLES

Table 3-1. Soils Summary Table 4

LIST OF FIGURES

Figure 1. Project Location
Figure 2. National Wetland Inventory and Hennepin County Soil Survey
Figure 3. DNR Public Waters Inventory and FEMA 100 Year Floodplain
Figure 4. Wetland Delineation

APPENDICES

Appendix A. Joint Application Form
Appendix B. Figures
Appendix C. Wetland Determination Form
Appendix D. Photo Log
Appendix E. Historic Aerial Photo Review

1. Introduction

A Level 2 wetland and waterbody survey was conducted for the approximate 26.85 acre property in the City of Rogers, Hennepin County, Minnesota.

The City of Rogers is the Local Government Units (LGU) that administers the Minnesota Wetland Conservation Act (WCA). This delineation report provides the required documentation for the wetland boundary determinations in conformance with the United States Army Corps of Engineers (USACE) Wetland Delineation Manual (Environmental Laboratory, 1987) and the Regional Supplement to the USACE Wetland Delineation Manual: Midwest (USACE, 2010). The Joint Application Form for Activities Affecting Water Resources in Minnesota is included in **Appendix A**.

The survey was conducted to address requirements under the current regulatory framework concerning wetlands and waterbodies. A wetland delineation is the identification of the jurisdictional boundary of a wetland. There are three major wetland regulatory programs of statewide importance in Minnesota. Under the Minnesota Wetland Conservation Act and the Corps of Engineers Section 404 Program, delineations are conducted using the USACE Wetlands Delineation Manual, Technical Report Y-87-1 (Environmental Laboratory, 1987). Under the Minnesota Department of Natural Resources (DNR) Public Waters Permit Program, the jurisdictional boundary of a wetland is the Ordinary High Water Level (OHWL), which is determined using the DNR Guidelines for Ordinary High Water Level (OHWL) Determinations (Scherek & Yakel, 1993).

1.1 SITE LOCATION AND PROJECT NEED/DESCRIPTION

1.1.1 Site Location

The study area includes one parcel, 1612023140078, which is bordered by Industrial Boulevard to the north and Edgewater Parkway to the west. The predominant land use on the site includes early successional herbaceous vegetation with a small gravel mining operation located on the eastern end of the project area. The topography on site ranges from approximately 930 on the southern part of the site to 874 on the northern part of the site with the majority of the site draining to the drainage swale at the northern part of the study area. Based on historic aerial imagery from Hennepin County, the site was previously a gravel mining site until 2011 (**Appendix E**). Since 2011, the site has been vacant and undisturbed. The study area is located in the City of Rogers, Hennepin County, Minnesota. See **Appendix B, Figure 1** for the project location figure.

The land use surrounding the study area includes low and medium density residential properties to the north and south, gravel mining site to the west and to the east. There is a manmade stormwater pond located on the northwest corner of the site and to the north. Both stormwater features were constructed in 2006.

The study area is located in the following Sections, Townships, and Ranges:

- Section 15, Township 120 N, Range 23 W
- Section 16, Township 120 N, Range 23 W

1.1.2 Project Description

Project Description:

The client seeks to understand what jurisdictional aquatic features are present within the study area in order to avoid and minimize impacts to these features during the design phase of this project.

The client proposes to develop the entire site for the purpose of residential use.

2. Methodology

2.1 DESKTOP EVALUATION

Prior to the wetland delineation survey in the field, desktop data was reviewed that included:

- National Wetlands Inventory (NWI)
- Minnesota Department of Natural Resources (MN DNR) National Wetlands Inventory
- 3D Hydrography Program (3HDP)
- Minnesota Department of Natural Resources (MN DNR) Public Waters and Wetland Inventory (PWI)
- Natural Resource Conservation Service (NRCS) Soil Survey Geographic database (SSURGO2).
- LiDAR Data
- Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps
- Historic Aerial Photo Review

2.2 FIELD REVIEW

A Level 2 wetland delineation was conducted by Keara Fehr, CMWP, and Zoe Quisenberry, on May 13, 2025. The wetland delineation was completed in accordance with the criteria and methods outlined in:

- USACE Wetland Delineation Manual, Technical Report Y-87-1 (Environmental Laboratory 1987);
- Midwest Supplement to the USACE Wetland Delineation Manual
- Subsequent guidance documents (USACE 1991, 1992)

The delineation was conducted using the three criteria technical approach (i.e., vegetation, soil, and hydrology) as defined in the 1987 Wetlands Delineation Manual and the Midwest Regional Supplement. According to procedures described in the 1987 Manual and Midwest Supplement, an area was determined to be a wetland if under normal circumstances it reflects a predominance of:

- Hydrophytic vegetation;
- Hydric soils; and
- Wetland hydrology (e.g. inundated or saturated soils)

An upland point was taken near the drainage swale identified within the study area. Data was recorded on the USACE Midwest Regional Supplement wetland determination form for the sample point. This datasheet is provided in **Appendix C**. Additionally, photos of the site were collected and are provided in **Appendix D**.

3. Results and Discussion

3.1 WATER RESOURCE MAPPING RESULTS

There are no NWI wetland complexes, DNR PWI wetlands, basins, or watercourses, USGS waterways, or FEMA mapped floodplain within the study area. There is one NWI wetland mapped approximately 25 feet from the northwest corner the parcel boundary that corresponds to a man-made stormwater pond (See **Appendix B**, **Figure 2** and **Figure 3**).

The NRCS SSURGO2 for Hennepin County indicates that the soils listed in **Table 3-1** are mapped within the site. Based on the NRCS Web Soil Survey Hydric Rating, there are no mapped hydric soils on site. The percent hydric soil in **Table 3-1** indicates what percent of the soils major and minor components are hydric.

Table 3-1. Soils Summary Table

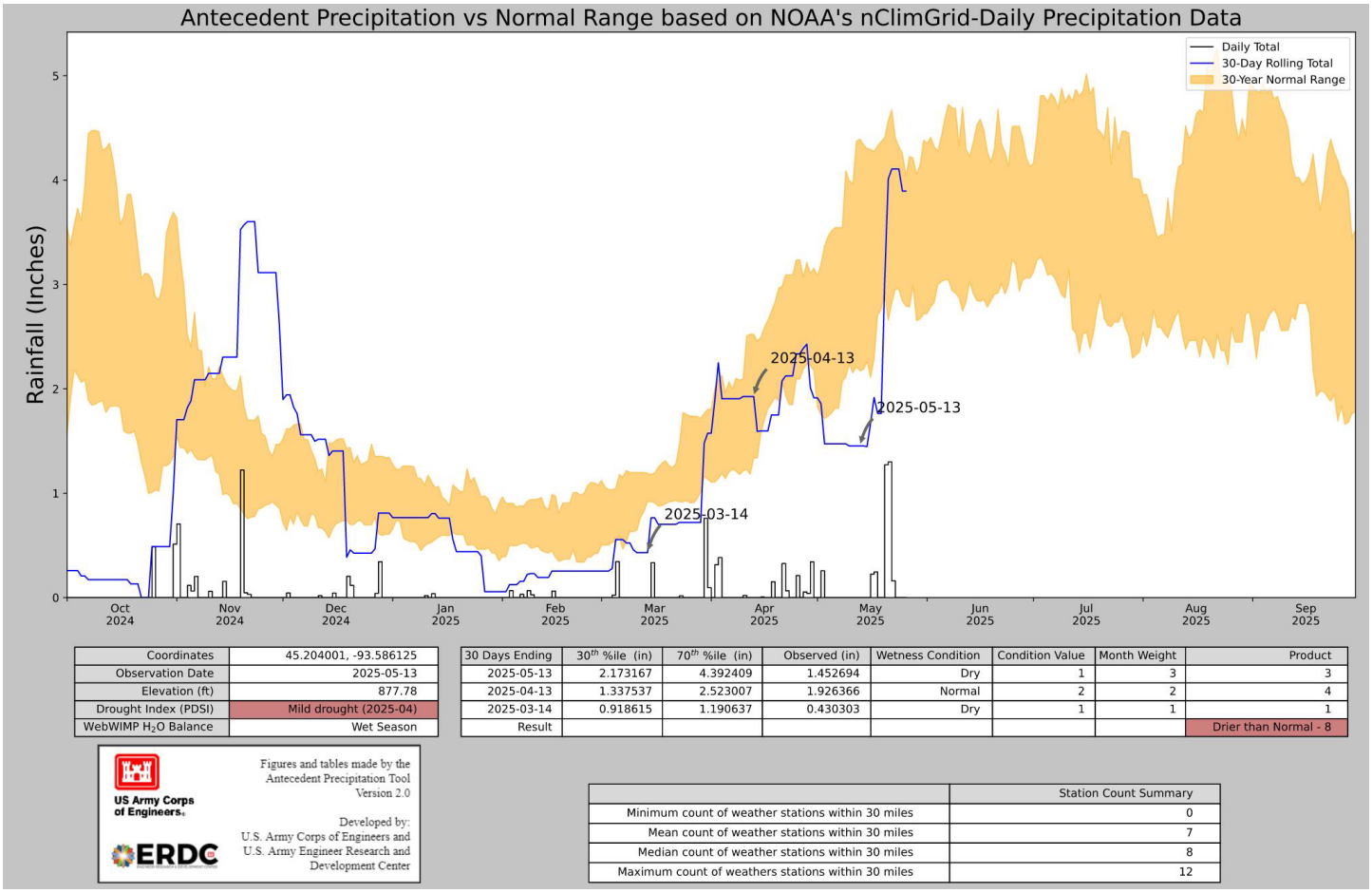
Map Unit Name (Map Unit Symbol) [1]	Rating [2]	Percent Hydric Soil [3]
Anoka and Zimmerman soils, terrace, 2 to 6 percent slopes (D1B)	Nonhydric	0
Anoka and Zimmerman soils, terrace, 6 to 12 percent slopes (D1C)	Nonhydric	0
Soderville loamy fine sand, terrace, 0 to 3 percent slopes (D25A)	Predominantly nonhydric	10
Pits, gravel-Udipsamments complex (GP)	Nonhydric	0
Lester loam, 10 to 16 percent slopes, moderately eroded (L22D2)	Nonhydric	0
Lester-Metea complex, 6 to 12 percent slopes, eroded (L61C2)	Predominantly nonhydric	3

1 – Soils determined using GIS geospatial query clipping the NRCS Soil Survey Geographic (SSURGO2) spatial data by Project boundaries.
2 – As indicated in the SSURGO2 database
3 – As indicated in the SSURGO2 database. Where percentages are small (e.g. < 15 %) the hydric soil is likely an inclusion that is not recognized in the map unit name.

3.2 WEATHER CONDITIONS AND GROWING SEASON INDICATORS

3.2.1 Weather Conditions for May 13, 2025 Survey

The weather during the time of the May 13, 2025 survey was partially sunny and approximately 84°F. The antecedent precipitation for the three-month period before the field work was drier than normal. The antecedent precipitation data was taken from the U.S. Army Corps of Engineers Antecedent Precipitation Tool shown in **Figure 3-1**.



Coordinates	45.204001, -93.586125
Observation Date	2025-05-13
Elevation (ft)	877.78
Drought Index (PDSI)	Mild drought (2025-04)
WebWIMP H_2O Balance	Wet Season

30 Days Ending	30th %ile (in)	70th %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2025-05-13	2.173167	4.392409	1.452694	Dry	1	3	3
2025-04-13	1.337537	2.523007	1.926366	Normal	2	2	4
2025-03-14	0.918615	1.190637	0.430303	Dry	1	1	1
Result							Drier than Normal - 8

	Station Count Summary
Minimum count of weather stations within 30 miles	0
Mean count of weather stations within 30 miles	7
Median count of weather stations within 30 miles	8
Maximum count of weathers stations within 30 miles	12

Figure 3-1. Antecedent Precipitation at Hassan Property

3.3 HISTORIC AERIAL PHOTO REVIEW

A historic aerial review was conducted to examine previous disturbance from the gravel mining operation that occurred on site and determine when the drainage swale began to appear (**Appendix E**).

- **Overview of the historic photos:**
  - **Before 2002:** Area was actively a gravel mine.
  - **2006:** Site continues to be mined with development occurring to the north and south which includes the creation of northern stormwater pond.
  - **2009:** Site continues to be mined, and development occurs in the north and south.
  - **2012:** Mining operation has stopped, and drainage swale begins to appear.
  - **2018:** Site is undisturbed, and drainage swale remains. Residential development continues to the south of the site.
  - **2024:** Site remains undisturbed, and drainage swale is still apparent. Mining operation occurs to the west of the site.

3.4 FIELD RESULTS

3.4.1 Drainage Swale

During the Level 2 field delineation, one drainage swale was identified within the study area. There were no other aquatic resources present within the study area.

The drainage swale is approximately 114 linear feet (0.03 acres) and is located in the north central part of the study area. The drainage swale has a linear erosional channel that is bordered by sandbar willow *(Salix interior)*, peach-leaved willow *(Salix amygdaloides),* smooth brome (*Bromus inermis)*, Kentucky bluegrass (Poa pratensis), and alfalfa *(Medicagto sativa)*. During the field review, there was water present within the drainage swale only near the culvert pipe. From the site's topography and drainage areas, it appears that water drains from the site through this swale and road culvert into the stormwater pond north of Industrial Boulevard. A sample point was taken, SP-01-UPL, adjacent to the drainage swale to confirm the upland conditions present near the swale.

4. Conclusions

The Level 2 field delineation conducted by Alliant Engineering identified one drainage swale within the study area. On behalf of the client, Alliant Engineering requests the City of Rogers as the WCA LGUs, and the USACE to review and process this report and the enclosed Joint Application Form (**Appendix A**) for the study area located in the City of Rogers, Hennepin County, MN. Please consider this report a formal Wetland Boundary and Type Determination request pursuant to Minn. Rules 8420.0405.

The final regulatory authority of these wetlands is determined by the USACE and the WCA LGU based on their understanding of the wetland determinations made in this report.

5. References

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U.S. Geological Survey (USGS). 2025. 3D Hydrography Program (3DGP). Available online at https://apps.nationalmap.gov/viewer

Appendix A

JOINT APPLICATION FORM

ALLIANT

PART ONE: Applicant Information

If applicant is an entity (company, government entity, partnership, etc.), an authorized contact person must be identified. If the applicant is using an agent (consultant, lawyer, or other third party) and has authorized them to act on their behalf, the agent's contact information must also be provided.

Applicant/Landowner Name: Haley Daily - Pulte Group
Mailing Address: 1650 W 82nd Street, Suite 300, Bloomington, MN 55431
Phone: 952-219-9001
E-mail Address: haley.daily@pultegroup.com

Authorized Contact (do not complete if same as above):
Mailing Address:
Phone:
E-mail Address:

Agent Name: Keara Fehr
Mailing Address: 733 Marquette Ave, Suite 700, Minneapolis, MN 55402
Phone: 612-718-6880
E-mail Address: kfehr@alliant-inc.com

PART TWO: Site Location Information

County: Hennepin **City/Township:** City of Rogers
Parcel ID and/or Address: 1612023140078
Legal Description (Section, Township, Range):

Section	Twp	Range
15	120 N	23 W
16	120 N	23 W

Lat/Long (decimal degrees): 45.204001, -93.586125
Attach a map showing the location of the site in relation to local streets, roads, highways.
Approximate size of site (acres) or if a linear project, length (feet): 26.85 acres

If you know that your proposal will require an individual Permit from the U.S. Army Corps of Engineers, you must provide the names and addresses of all property owners adjacent to the project site. This information may be provided by attaching a list to your application or by using block 25 of the Application for Department of the Army permit which can be obtained at:

http://www.mvp.usace.army.mil/Portals/57/docs/regulatory/RegulatoryDocs/engform_4345_2012oct.pdf

An individual permit is not required for this project.

PART FIVE: Applicant Signature

☐ Check here if you are requesting a pre-application consultation with the Corps and LGU based on the information you have provided. Regulatory entities will not initiate a formal application review if this box is checked.

By signature below, I attest that the information in this application is complete and accurate. I further attest that I possess the authority to undertake the work described herein.

Signature:  Date: 6/2/25

I hereby authorize Alliant Engineering to act on my behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this application.

Attachment A
Request for Delineation Review, Wetland Type Determination, or Jurisdictional Determination

By submission of the enclosed wetland delineation report, I am requesting that the U.S. Army Corps of Engineers, St. Paul District (Corps) and/or the Wetland Conservation Act Local Government Unit (LGU) provide me with the following (check all that apply):

☐ **Wetland Type Confirmation**

☒ **Delineation Concurrence**. Concurrence with a delineation is a written notification from the Corps and a decision from the LGU concurring, not concurring, or commenting on the boundaries of the aquatic resources delineated on the property. Delineation concurrences are generally valid for five years unless site conditions change. Under this request alone, the Corps will not address the jurisdictional status of the aquatic resources on the property, only the boundaries of the resources within the review area (including wetlands, tributaries, lakes, etc.).

☐ **Preliminary Jurisdictional Determination**. A preliminary jurisdictional determination (PJD) is a non-binding written indication from the Corps that waters, including wetlands, identified on a parcel may be waters of the United States. For purposes of computation of impacts and compensatory mitigation requirements, a permit decision made on the basis of a PJD will treat all waters and wetlands in the review area as if they are jurisdictional waters of the U.S. PJDs are advisory in nature and may not be appealed.

☐ **Approved Jurisdictional Determination**. An approved jurisdictional determination (AJD) is an official Corps determination that jurisdictional waters of the United States are either present or absent on the property. AJDs can generally be relied upon by the affected party for five years. An AJD may be appealed through the Corps administrative appeal process.

In order for the Corps and LGU to process your request, the wetland delineation must be prepared in accordance with the 1987 Corps of Engineers Wetland Delineation Manual, any approved Regional Supplements to the 1987 Manual, and the *Guidelines for Submitting Wetland Delineations in Minnesota* (2013).
http://www.mvp.usace.army.mil/Missions/Regulatory/DelineationJDGuidance.aspx

Appendix B

FIGURES

ALLIANT



Hassan Property

ALLIANT

Legend

Study Area

N

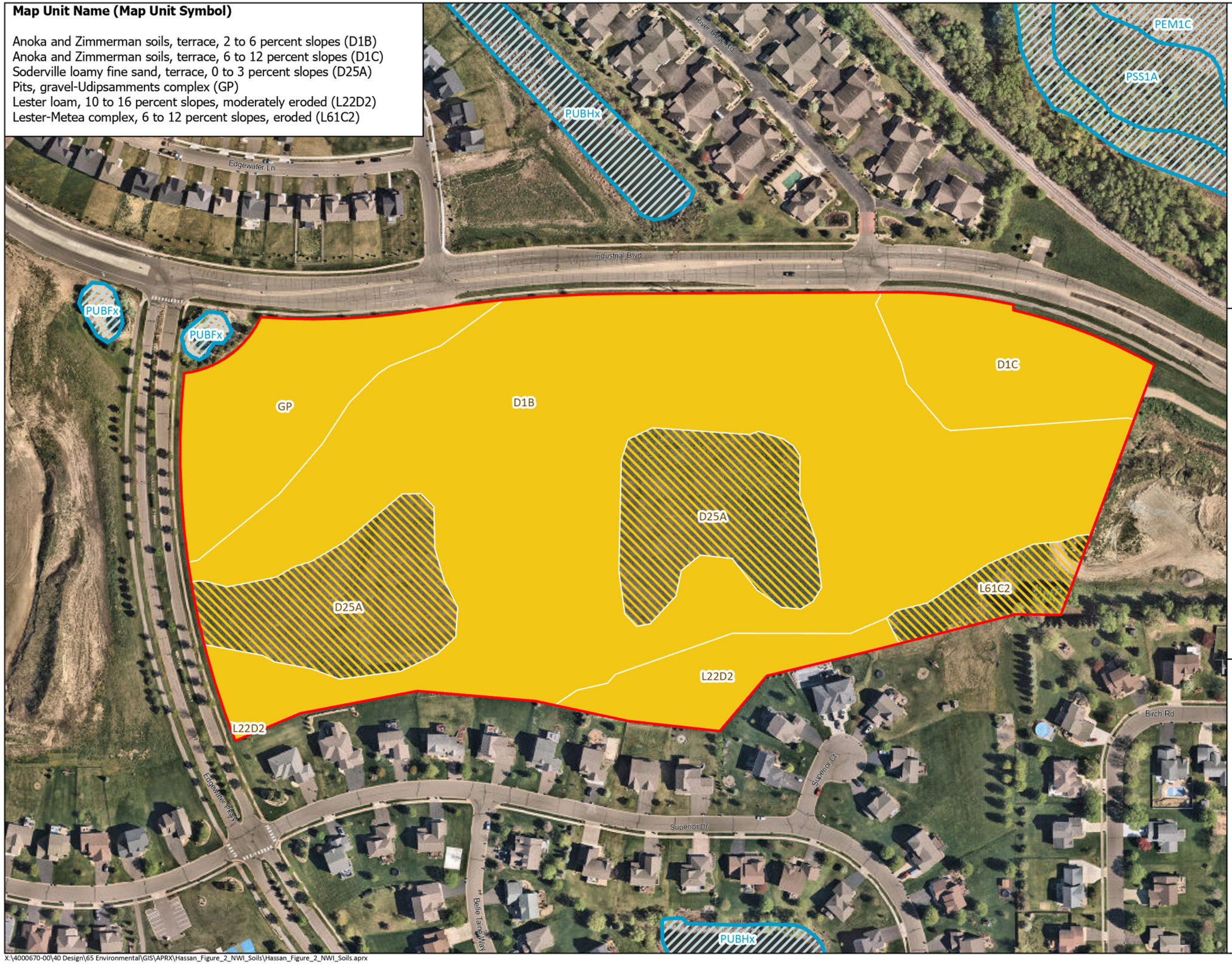
0 300 600 US Feet

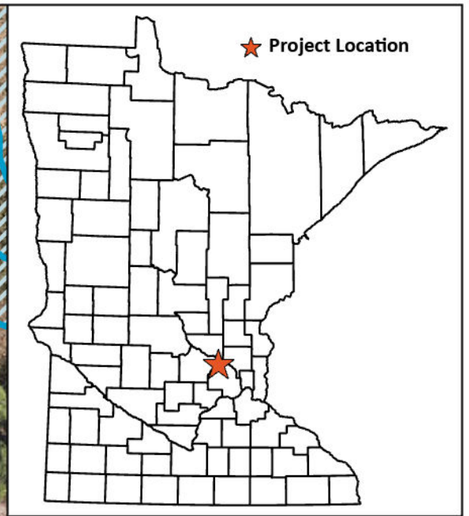
Figure 1
Project Location

Date Exported: 5/9/25

Map Unit Name (Map Unit Symbol)

Anoka and Zimmerman soils, terrace, 2 to 6 percent slopes (D1B)
Anoka and Zimmerman soils, terrace, 6 to 12 percent slopes (D1C)
Soderville loamy fine sand, terrace, 0 to 3 percent slopes (D25A)
Pits, gravel-Udipsamments complex (GP)
Lester loam, 10 to 16 percent slopes, moderately eroded (L22D2)
Lester-Metea complex, 6 to 12 percent slopes, eroded (L61C2)





Legend

- Study Area
- National Wetland Inventory

Hydric Rating

- Nonhydric
- Predominantly Nonhydric

Hassan Property

Figure 2

National Wetland Inventory and Hennepin County Soil Survey

N

0 70 140 US Feet

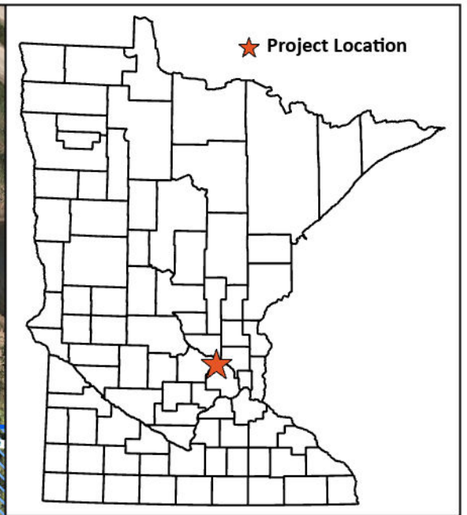
Source: Hennepin County Aerial 2024

ALLIANT

Date Exported: 5/22/2025

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Legend

- Study Area
- DNR Public Waters - Wetland
- DNR Public Waters - Watercourse
- DNR Public Waters - Basin

FEMA 100 Year Floodplain

- AE

Hassan Property

Figure 3

DNR Public Waters and

FEMA 100 Year Floodplain

N

0 150 300 US Feet

Source: Hennepin County Aerial 2024

ALLIANT

Date Exported: 5/22/2025





Legend

- Study Area

LiDAR Contours

- 10ft Contours
- 2ft Contours

Wetland Delineation

- Drainge Swale
- Sample Point

Hassan Property

Figure 4

Wetland Delineation and LiDAR Contours

N

0 75 150 Feet

Source: Hennepin County Aerial 2024

ALLIANT

Date Exported: 5/22/2025

X:\4000670-00\40 Design\65 Environmental\GIS\APRX\Hassan_Figure_4_Wetland_Delineation_Contours\Hassan_Figure_4_Wetland_Delineation_Contours.aprx

Appendix C

WETLAND DETERMINATION FORMS

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WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Hassan Property | City/County: Rogers/Hennepin | Sampling Date: 05-13-2025
Applicant/Owner: Pulte/Hassan | State: MN | Sampling Point: SP-01-UPL
Investigator(s): Keara Fehr & Zoe Quisenberry | Section, Township, Range: 16, 120N, 23W
Landform (hillslope, terrace, etc.): Gradual slope | Local relief (concave, convex, none): None
Slope (%): 1 | Lat: 45.204815 | Long: -93.585988 | Datum: NAD83
Soil Map Unit Name: Anoka and Zimmerman soils, terrace, 2-6% slopes (D1B) | NWI Classification: None
Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
Are vegetation ____, soil ____, or hydrology ____ significantly disturbed? Are "normal circumstances" present? Yes
Are vegetation ____, soil ____, or hydrology ____ naturally problematic? (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic vegetation present?	Y
Hydric soil present?	N
Indicators of wetland hydrology present?	N

Is the sampled area within a wetland? N
If yes, optional wetland site ID:

Remarks: (Explain alternative procedures here or in a separate report.)

Upland point taken adjacent to drainage swale

VEGETATION -- Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
	0	= Total Cover	
Sapling/Shrub stratum (Plot size: 15')			
1 *Salix interior*	5	Y	FACW
2			
3			
4			
5			
	5	= Total Cover	
Herb stratum (Plot size: 5')			
1 *Poa pratensis*	80	Y	FAC
2 *Bromus inermis*	20	N	FACU
3 *Solidago canadensis*	3	N	FACU
4 *Solidago gigantea*	3	N	FACW
5 *Medicago sativa*	2	N	FACU
6 *Taraxacum officinale*	2	N	FACU
7			
8			
9			
10			
	110	= Total Cover	
Woody vine stratum (Plot size: 30')			
1			
2			
	0	= Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across all Strata: 2 (B)
Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	0	x 1 =	0
FACW species	8	x 2 =	16
FAC species	80	x 3 =	240
FACU species	27	x 4 =	108
UPL species	0	x 5 =	0
Column totals	115 (A)		364 (B)

Prevalence Index = B/A = 3.17

Hydrophytic Vegetation Indicators:

- ____ Rapid test for hydrophytic vegetation
- X Dominance test is >50%
- ____ Prevalence index is ≤3.0*
- ____ Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ____ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic vegetation present? Y

Remarks: (Include photo numbers here or on a separate sheet)

SOIL **Sampling Point:** SP-01-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-3	10YR 2/1	100					Loam	
3-15	10YR 5/3	100					Sand	Gravel fill present
15-22	10YR 4/3	97	7.5YR 4/6	3	C	M	Loamy sand	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L)**
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (explain in remarks)

*Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):
Type: _____
Depth (inches): _____

Hydric soil present? N

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface water present?	Yes	___	No	X	Depth (inches): ___
Water table present?	Yes	___	No	X	Depth (inches): ___
Saturation present? (includes capillary fringe)	Yes	___	No	X	Depth (inches): ___

Indicators of wetland hydrology present? N

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Appendix D

PHOTO LOG

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	**Hassan Property** **5/13/2025** **Photo 1.** Drainage swale facing west. Photo taken adjacent to the drainage swale.
	**Hassan Property** **5/13/2025** **Photo 2.** Drainage swale facing north. Culvert pipe drains water from the property north to a stormwater basin.



Hassan Property

5/13/2025

Photo 3. Typical upland conditions throughout the entire property. Photo is taken on top of a hill located on the northeast corner of the property facing west.

Appendix E

HISTORIC AERIAL REVIEW

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Hassan Property – Hennepin County
Historic Aerial Photos

	Hennepin County Aerial Imagery - 2024 Present condition
	Hennepin County Aerial Imagery - 2018

	Rice County Aerial Imagery - 2012 Mining operation has stopped. Drainage swale becomes visible.
	Hennepin County Aerial Imagery - 2009 Mining continues and development continues in the north and south.

	Hennepin County Aerial Imagery - 2006 Site continues to be mined with development to the north and south. Aerial taken prior to the development of the stormwater pond on the northwest corner.
	Hennepin County Aerial Imagery - 2002 Site was actively being mined.

Stormwater Management
Hydrologic and Hydraulic Study

Hassan Sand
Rogers, MN

City of Rogers
Elm Creek Watershed Management Commission
October 17, 2025

ALLIANT ENGINEERING

733 Marquette Ave Ste 700
Minneapolis, MN 55402
612.758.3080 MAIN
612.758.3099 FAX
www.alliant-inc.com

Introduction

Included in this report are the materials necessary to review the stormwater management plan for the proposed "Hassan Sand" project in Rogers, Minnesota. The following information is included:

- Study Narrative
- Drainage Area Maps
- Rate Control HydroCAD Calculation Reports
- Water Quality Calculations:
  - Existing MIDS
  - Proposed MIDS
- Storm Sewer Calculations
- NOAA Rainfall Data
- Geotechnical Soil Borings

Background

This study was conducted to analyze the stormwater treatment requirements for a proposed residential subdivision in Rogers, MN and within Elm Creek Watershed Management Commission boundary. The study will show that the proposed stormwater management system will nullify the effects of the increased impervious cover resulting from the new development. The study assumes the following two scenarios:

- Existing conditions – Old mining site now covered in grass.
- Proposed conditions – Development of the residential single family subdivision.
  - Installation of storm sewer.

	Project Area
Total Site Area based on boundary (acres)	26.853
Total Proposed SWMP Area including Offsite Area (acres)	35.280
Existing Site Impervious (acres)	0.656
Post Construction Site Impervious (acres)	5.587
Site Impervious Area Routed to BMP (acres)	5.073
Site Impervious Area Sheeting offsite (acres)	0.514 (9.19%)
Offsite Area Directed to Onsite BMPS (acres)	0.869

Runoff Rate Control

All rate control calculations have been performed using the method via HydroCAD software. Three events were modeled including: the 2-year, 10-year and 100-year, MSE Type 3 24-hour storm events, AMC 2, with ATLAS-14 precipitation amounts of 2.86", 4.26", and 7.10", used respectively. All existing and proposed curve numbers are based on estimations of land cover and soil type from attached geotechnical report. Based on the soil borings from Geotechnical Analysis, an aggregate hydrologic soil group of "D" was assumed throughout the site. Times of concentrations were typically estimated and modeled using direct entry and lag method.

Existing Conditions

The project site is currently 1 parcel covered in grass as it was a previously mined site. The development site is located South of Crow River. The site consists of grassed areas, existing gravel road, and part of a dirt stockpile. The property has variable slopes from flat to more than 3:1, sloping generally south to north. The site is bound by public road on the North and West boundaries. There is an existing single family development to the South. There is existing construction/dirt stockpile area to the east of the site. Nearly all of the site drains via overland to an existing flared end section on the north side that goes north into Industrial Blvd storm sewer. The existing culvert outlets via 24" pipe to the Industrial BLVD storm sewer. The Industrial BLVD. storm outlets north to an existing stormwater pond in the Edgewater development. A small portion of the site NE drains to a low point catch basin offsite that drains to the same connected Industrial BLVD storm that outlets north to the Edgewater development. A small portion of the NE part of the site sheet drains north to Industrial BLVD and follows same storm sewer routing.

- E-1 – Onsite area that drains overland to the existing onsite low area and to the 24" flared end section.
- E-2 – Onsite area that drains overland to existing Industrial BLVD Storm sewer.
- E-3 – Onsite area that drains overland to an offsite catch basin, that connects to the same Industrial BLVD storm sewer.
- OFF-1 – Offsite Edge Water Phase 1 residential single family homes draining overland on site to the north low area and 24" flared end section.
- OFF-2 – Offsite Construction / dirt stock pile area that drains NE to existing Storm sewer offsite to Industrial BLVD. Reason for including in existing, drains to proposed BMPs in proposed scenario.

To compare peak discharge rates for the existing and proposed conditions, flows were analyzed compositely. Refer to the existing conditions drainage map and HydroCAD report for additional information and detailed calculations.

Site composite existing runoff rate as calculated by HydroCAD are listed in the table below:

Event	Industrial BLVD Storm Sewer (cfs)
2 year (2.87" 24hr)	23.44
10 year (4.28" 24hr)	35.81
100 year (7.33" 24hr)	57.17

Proposed Conditions

The proposed development area is made up of 1 existing parcel totaling in 26.85 acres. The site is bound by public road on the North and West boundaries. There is an existing single family development to the South. There is existing construction/dirt stockpile area to the east of the site. The total site area included to be platted with new ROW is **26.85 AC**. Pulte Homes is proposing 57 new residential single-family homes. There will be one large outlot that encompasses the stormwater management areas. Drainage maps provided show delineations based on site development. The site is capturing and treating 90.8% of new created imperious from the site. Portions of the rear yards that back up to North public Road, Industrial BLVD, will sheet off into the road storm sewer. The existing rear yard impervious from Edge Water Phase 1, single family residential development is not currently being treated at all. The rear yards and homes are draining overland to the newly constructed proposed BMps. The new offsite area now being treated is 41% greater than the area of the proposed development that is running un-treated offsite.

The stormwater management plan for the proposed conditions will meet the guidelines required by the City of Rogers and Elm Creek Watershed Management Commission (ECWMC) for stormwater rate and volume control. The following criterion was used in designing the stormwater management system:

- Post-development peak runoff rate from the site for the 2, 10 and 100-year 24-hour MSE 3 24-hour storm events set forth by NOAA Precipitation Frequency Data Server with 2.86", 4.26", and 7.10", used respectively. See attached data.
- There shall be no net increase in runoff rate from the site.
- There shall be no net increase in total phosphorus (TP) or total suspended solids (TSS) from pre-development to post-development.
- Provide volume control equivalent to 1.1" of runoff from all proposed impervious surface, in accordance with ECWMC volume control requirements
- The low floor must be at minimum 1 foot above the Normal water level.
- Freeboard, the lowest building opening must be at minimum 1' above the emergency over flow elevation.
- Freeboard, the lowest building opening adjacent to stormwater basin shall be 2' above the 100 year high water level (HWL).

The proposed residential development will consist of 57 single family homes and associated roadways as shown in the plan set. The project will include two wet ponds and one infiltration basin. to provide rate and volume control, for treatment of the stormwater runoff.

Stormwater runoff from the new roadways, and all front yards and several rear yards will be collected by storm sewer and piped to the proposed ponds. Some of the rear yards will run directly into the BMPs. The ponds will act as pre-treatment for the infiltration basins and act as a treatment train. The ponds will overtop and run into the infiltration basin in rain events. There are a few rear yards that grade and drain offsite to Industrial Blvd. without being treated. This accounts for 7.3% of the total impervious area. There is 0.869 ac of impervious rear yards that drain to the site. These rear yards currently do not have any volume treatment. The proposed stormwater system will take this in and treat that effective area. The following HydroCAD sub catchments were used in the proposed conditions model:

- S-1 - Onsite area that drains overland and unconnected to the proposed Infiltration basin.
- S-2 - Onsite area that drains to storm sewer, additional rear yard drainage that drains to proposed Pond 1.
- S-3 – Onsite area that drains to storm sewer, additional rear yard drainage that drains to proposed Pond 2.
- S-4 – Onsite area that drains overland offsite North to Industrial BLVD storm sewer.
- S-5 - Onsite area that drains overland offsite North to Industrial BLVD storm sewer.
- S-6 - Onsite area that drains overland offsite NW to an existing BMP then to Industrial BLVD storm sewer.
- OFF-1 – Offsite Edge Water Phase 1 residential single family homes draining overland on site directly to Infiltration basin.
- OFF-2 – Offsite Edge Water Phase 1 residential single family homes draining overland on site to Pond 1.
- OFF-3 – Offsite Edge Water Phase 1 residential single family homes draining overland on site to Pond 2
- OFF-4 – Offsite Construction / dirt stock pile area that drains to pond 2.

Most of the runoff from the site's developed area will be routed to the proposed Infiltration basin. The infiltration basin will provide the required 1.1 inch volume control required by the city and watershed. The proposed BMP "Pond 1" has an OCS that dictates the Infiltration volume level. Pond 2 has a 0.1' broad crested weir channel that will overtop and flow west towards Pond 1. Pond 1 NWL is set by the channel towards the infiltration basin. The wier wall in the OCS sets the infiltration volume level.

The proposed stormwater management plan decreases the composite peak discharge rate for all stormwater events to below existing conditions.
Refer to the proposed conditions drainage map and HydroCAD report sheets for additional information.

Site composite proposed runoff rate as calculated by HydroCAD are listed in the table below:

Event	Industrial BLVD Storm Sewer (cfs)
2 year (2.87" 24hr)	7.55
10 year (4.28" 24hr)	14.74
100 year (7.33" 24hr)	35.29

Stormwater Volume Control

Required Volume
The project is required to provide volume control in accordance with the ECWMC criteria. Volume control equivalent to **1.1" over the proposed impervious surface is required**. ECWMC requirements for volume control can be found in revised rules 5-11-2022. See section 3.c. The site is a historical sand mine with fill placed over the sand. The site fill soils are primarily made up of Hydraulic Soil Group D soils. Below the fill soils, there is sand. The project is proposing an infiltration basin be constructed with onsite materials per the construction documents. There shall be minimum of 3' of pervious soil with minimum 0.8" infiltration rate above the observed water level. The observed water level is between 870 and 871. The bottom of the basin is proposed to be at 874.0.

The total new proposed impervious surface from proposed roadways, driveways, buildings, is 243,355.63 sf (5.587 AC). The new proposed site impervious is the actual new road impervious, and the building pad (35'x55') with driveway . Conservatively, the building pad was used to determine the required treatment volume, not what is shown by sample footprint in the plans. **Required** treatment volume for the site is equal to **22,307.60** cubic feet.

Proposed Volume
The Infiltration basin total treatment volume provided is equal to **36,026.00 CF**.

Infiltration Systems Draw Down Calculation
The infiltration basin will draw down within 48 hours per MPCA guidelines. The assumed infiltration rate onsite sand has been assumed at 0.8 in/hr. The infiltration rate is a reasonably conservative estimate and will likely be the filtration rate over time. Per the MPCA an infiltration rate of 1.63in/hr can be used for sand. This will have to be verified and measured in the field during construction.

Basin	Filtration Volume (cf)	Filtration Depth	Infiltration Surface Area (sf)	Effective Infiltration Depth (in)*	Draw Down Time
Infiltration Basin	36,026	1.1'	37,169	11.63	14.5 hr

* Effective filtration depth is used for estimating draw down timeframe.

$$\textbf{\textit{Maximum Allowable Draw Down computation.}}\ 38.4\ in \div 0.8\ \frac{in}{hr} = 48\ hr$$

Stormwater Quality

The stormwater management system has been designed with 2 detention ponds. They detention ponds have been designed to meet the city and watershed design regulations to NURP standards. The ponds must provide a dead pool storage volume that meets or exceeds the runoff from the 2.5" NURP rainfall event. Only runoff created within the property is considered for the required NURP rainfall event.

NURP required vs. proposed by HydroCAD is outlined in the table below:

Pond	2.5" Runoff Volume (cf)	Provided Dead Pool Volume (cf)
Pond 1	56,584	67,297
Pond 2	37,287	50,009

The watershed requires that there be no net increase in total phosphorus (TP) or total suspended solids (TSS). MIDS calculator was used to determine the existing and the proposed TP and TSS loadings for the site. See below the results of the

Existing TSS and TP loadings as calculated by MIDS Calculator:

Total	TSS Loading (lbs)	TP Loading lbs
Site	2,352.4	12.949

Proposed TSS and TP loadings as calculated by MIDS Calculator:

Total	TSS Loading (lbs)	TP Loading lbs
Site	362.0	2.09

Conclusion

Alliant Engineering believes that the proposed design is acceptable for all parties involved. The peak discharge rates for the 2-year, 10-year and 100-year 24-hour storm events will be decreased in aggregate from existing rates for the proposed conditions. Sufficient runoff volume control has been provided by the stormwater management system to mitigate the proposed impervious surface additions. The proposed stormwater management system meets the no net increase in TSS and TP removals. Finally, the proposed grading and SWPPP plans will utilize Best Management Practices whenever possible to provide adequate erosion control measures to contain sediment during construction.

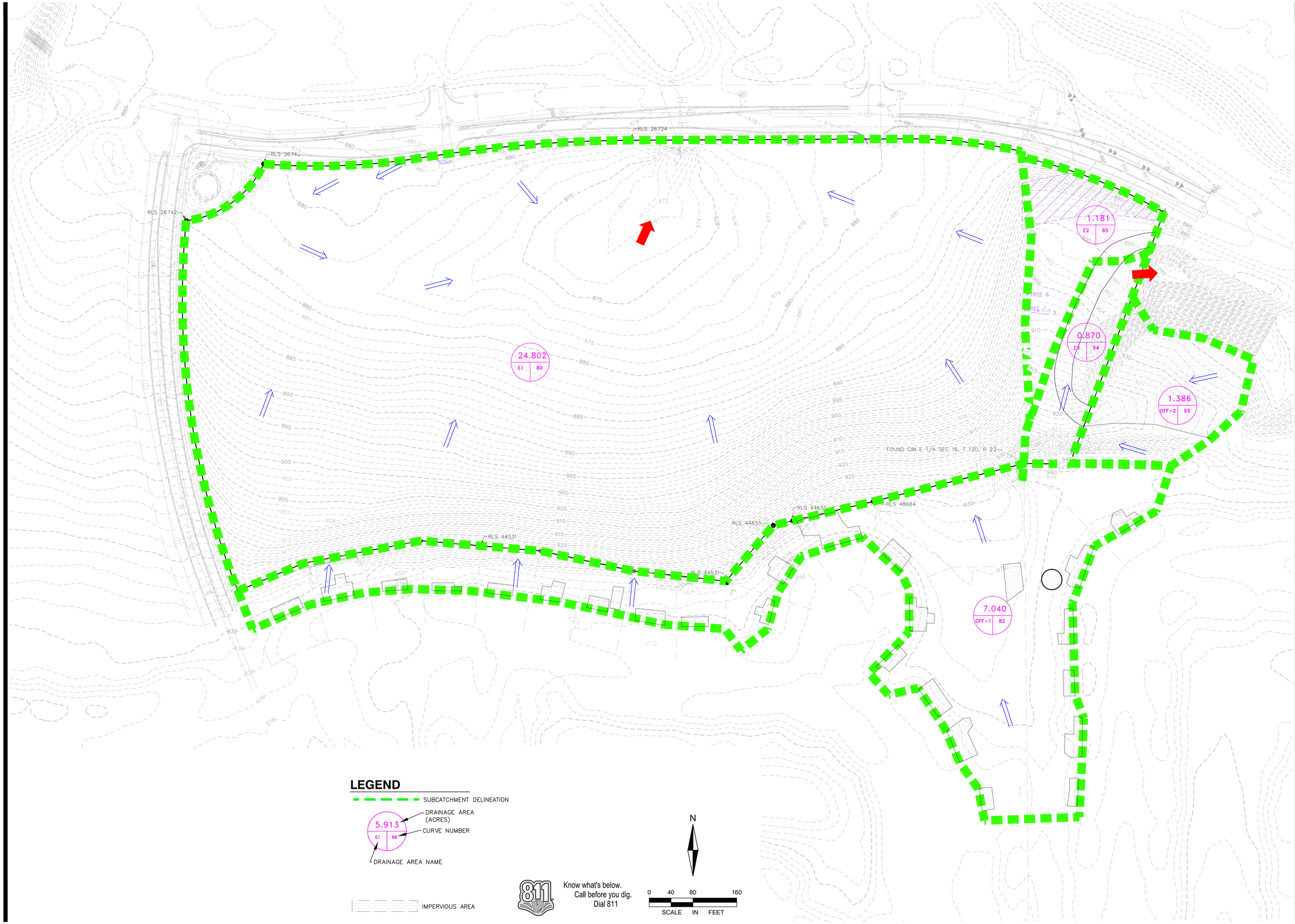
Please call 612-767-9330 with any questions or comments regarding stormwater issues for the Hassan Sand subdivision.

Tyler Stricherz, PE
Alliant Engineering, Inc.

CC: File 4000670

APPENDIX

- Rate Control Supporting Documents
  - Drainage Delineation Maps
    - Existing Conditions
    - Proposed Conditions
  - Rate Control HydroCAD Reports
    - Existing Conditions
    - Proposed Conditions
- Water Quality Supporting Calculations
    - Proposed MIDS Calculator
    - Proposed Volume Calculations HydroCAD
- Storm Sewer Calculations
- Geotechnical Analysis
- Watershed Stormwater Guidelines



LEGEND

- SUBCATCHMENT DELINEATION
- 5.913 — DRAINAGE AREA (ACRES)
- E1 | 98 — CURVE NUMBER
- DRAINAGE AREA NAME
- IMPERVIOUS AREA

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EXISTING DRAINAGE MAP

DESCRIPTION	DATE
PRELIMINARY PLAT SUBMITTAL	10-16-2025

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.

Signature

FOR REVIEW ONLY
PRELIMINARY
NOT FOR CONSTRUCTION

Date License no.

QA/QC CHECK

By Date

PROJECT TEAM DATA

Designed By:

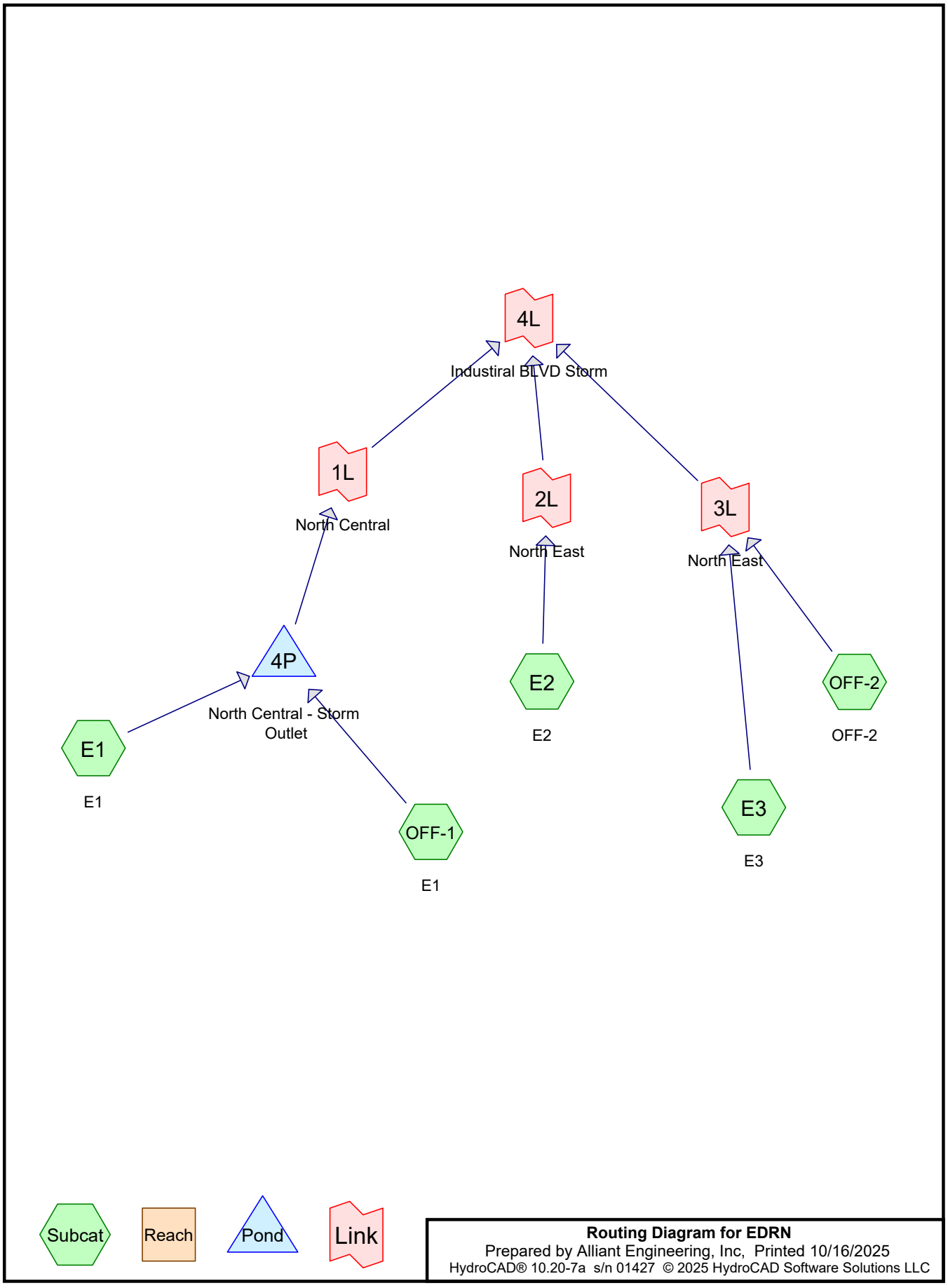
Drafted By:

Project No.:

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Sheet 1 of 1

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4L
Industiral BLVD Storm
1L
North Central
2L
North East
3L
North East
4P
North Central - Storm Outlet
E1
E1
E2
E2
OFF-2
OFF-2
OFF-1
E1
E3
E3
Subcat
Reach
Pond
Link
Routing Diagram for EDRN
Prepared by Alliant Engineering, Inc, Printed 10/16/2025
HydroCAD® 10.20-7a s/n 01427 © 2025 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
1.458	84	50-75% Grass cover, Fair, HSG D (E2, OFF-2)
0.280	89	<50% Grass cover, Poor, HSG D (E3)
30.948	80	>75% Grass cover, Good, HSG D (E1, OFF-1)
1.699	96	Gravel surface, HSG D (E2, E3, OFF-2)
0.894	98	Unconnected roofs, HSG D (OFF-1)
35.280	**81**	**TOTAL AREA**

Summary for Subcatchment E1: E1

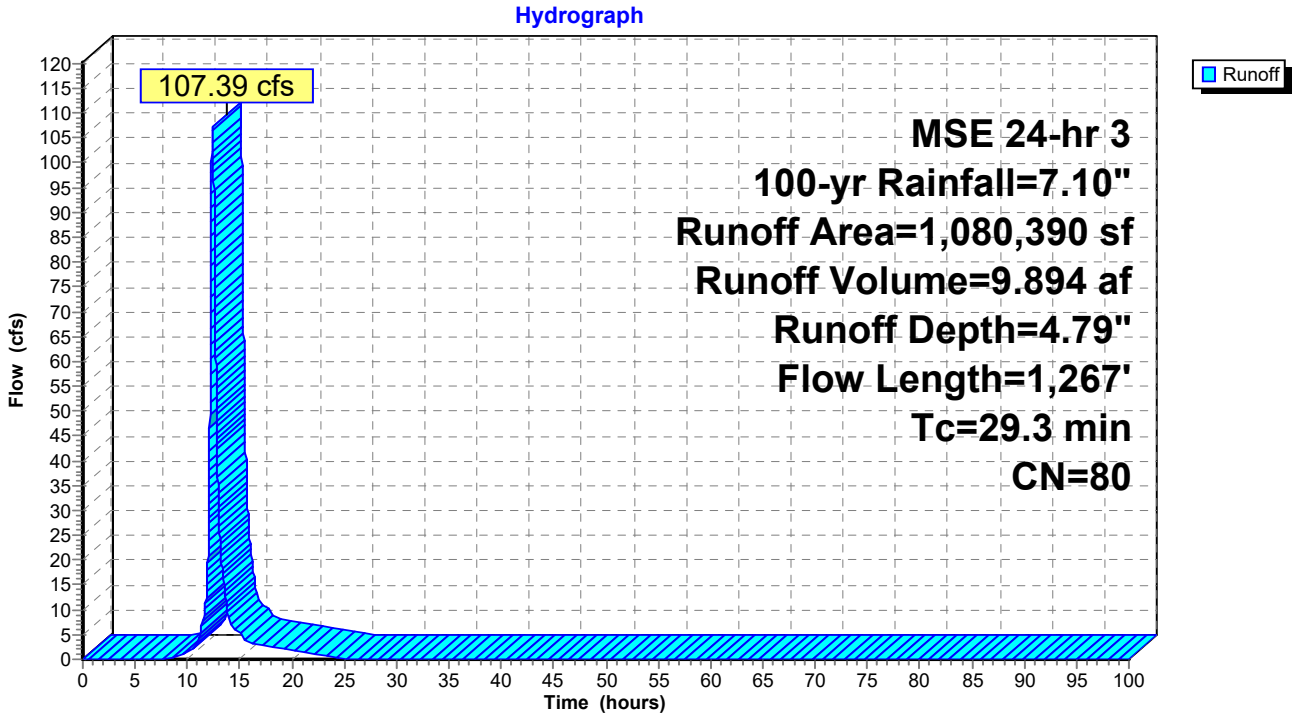
Runoff = 107.39 cfs @ 12.40 hrs, Volume= 9.894 af, Depth= 4.79"
Routed to Pond 4P : North Central - Storm Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 100-yr Rainfall=7.10"

Area (sf)	CN	Description
1,080,390	80	>75% Grass cover, Good, HSG D
1,080,390		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.4	260	0.1038	1.29		**Lag/CN Method,**
4.2	277	0.0722	1.09		**Lag/CN Method,**
21.7	730	0.0130	0.56		**Lag/CN Method,**
29.3	1,267	Total			

Subcatchment E1: E1



Summary for Subcatchment E2: E2

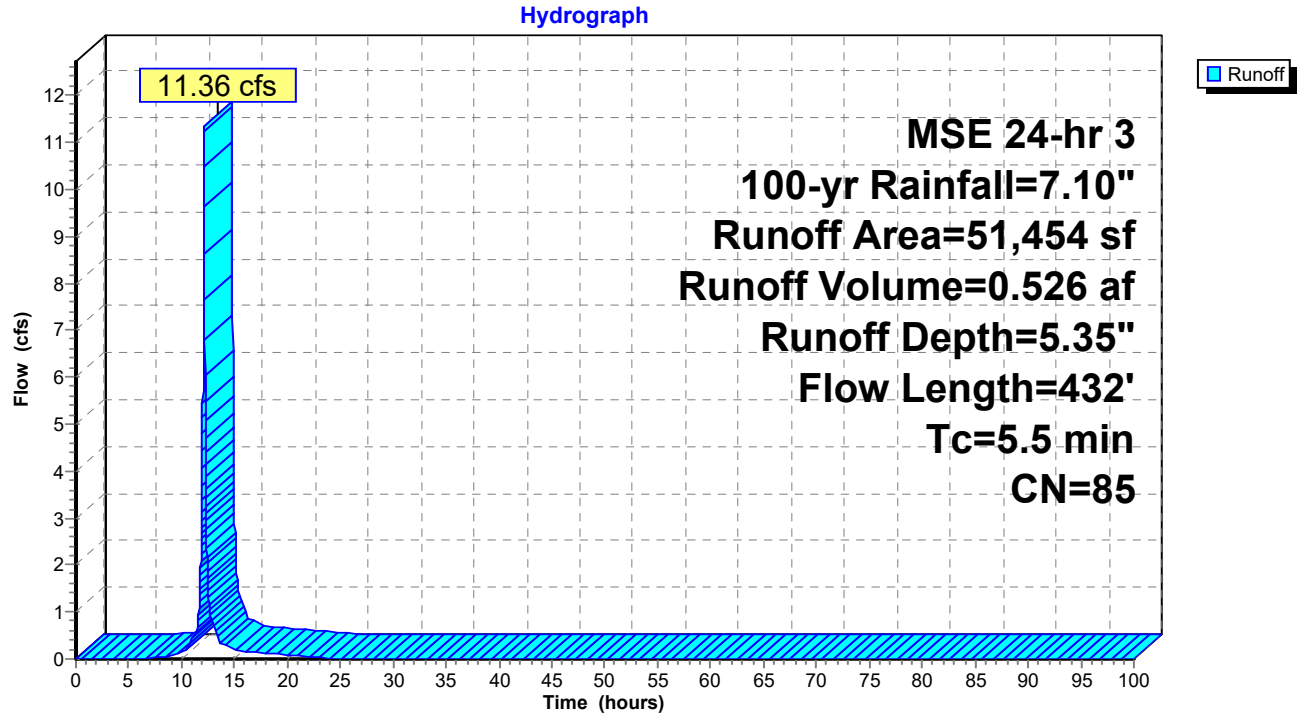
Runoff = 11.36 cfs @ 12.13 hrs, Volume= 0.526 af, Depth= 5.35"
Routed to Link 2L : North East

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 100-yr Rainfall=7.10"

Area (sf)	CN	Description
48,569	84	50-75% Grass cover, Fair, HSG D
2,885	96	Gravel surface, HSG D
51,454	85	Weighted Average
51,454		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.1	397	0.0630	1.29		**Lag/CN Method,**
0.4	35	0.2428	1.56		**Lag/CN Method,**
5.5	432	Total			

Subcatchment E2: E2



Summary for Subcatchment E3: E3

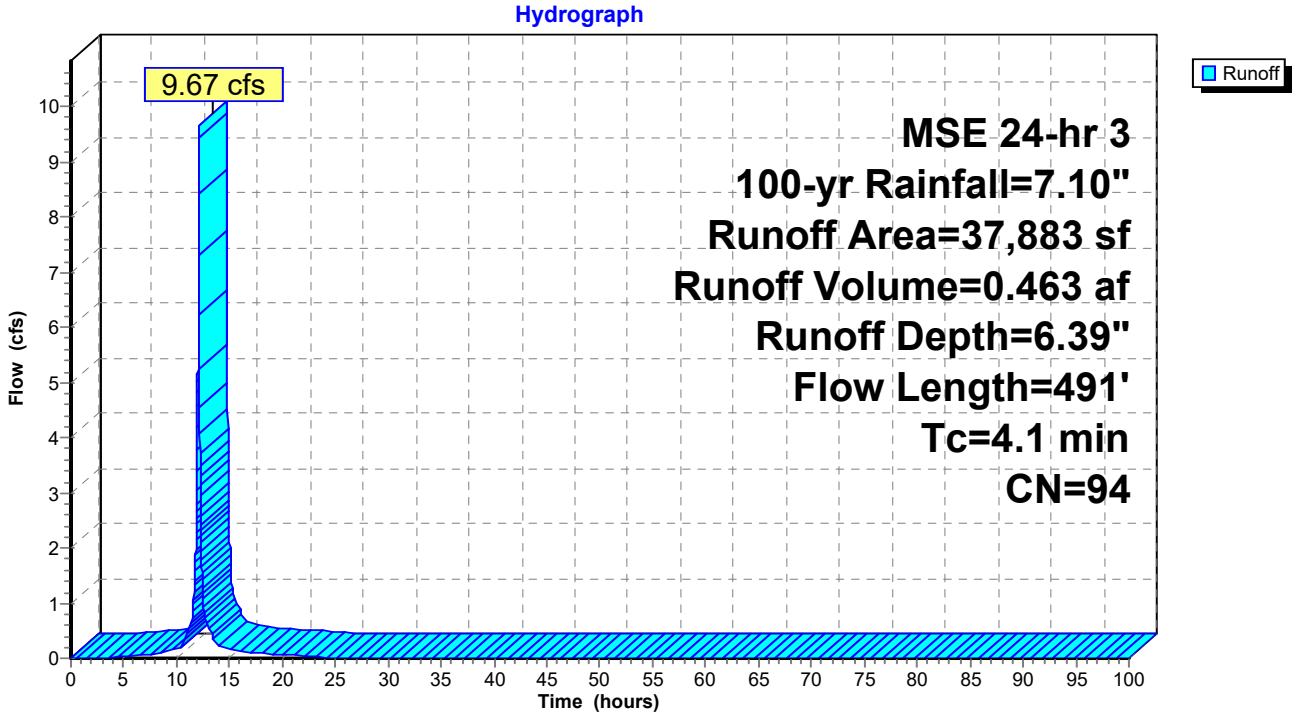
Runoff = 9.67 cfs @ 12.11 hrs, Volume= 0.463 af, Depth= 6.39"
Routed to Link 3L : North East

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 100-yr Rainfall=7.10"

Area (sf)	CN	Description
12,186	89	<50% Grass cover, Poor, HSG D
25,697	96	Gravel surface, HSG D
37,883	94	Weighted Average
37,883		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.3	52	0.3076	2.74		**Lag/CN Method,**
3.5	385	0.0623	1.84		**Lag/CN Method,**
0.3	54	0.3407	2.91		**Lag/CN Method,**
4.1	491	Total			

Subcatchment E3: E3



Summary for Subcatchment OFF-1: E1

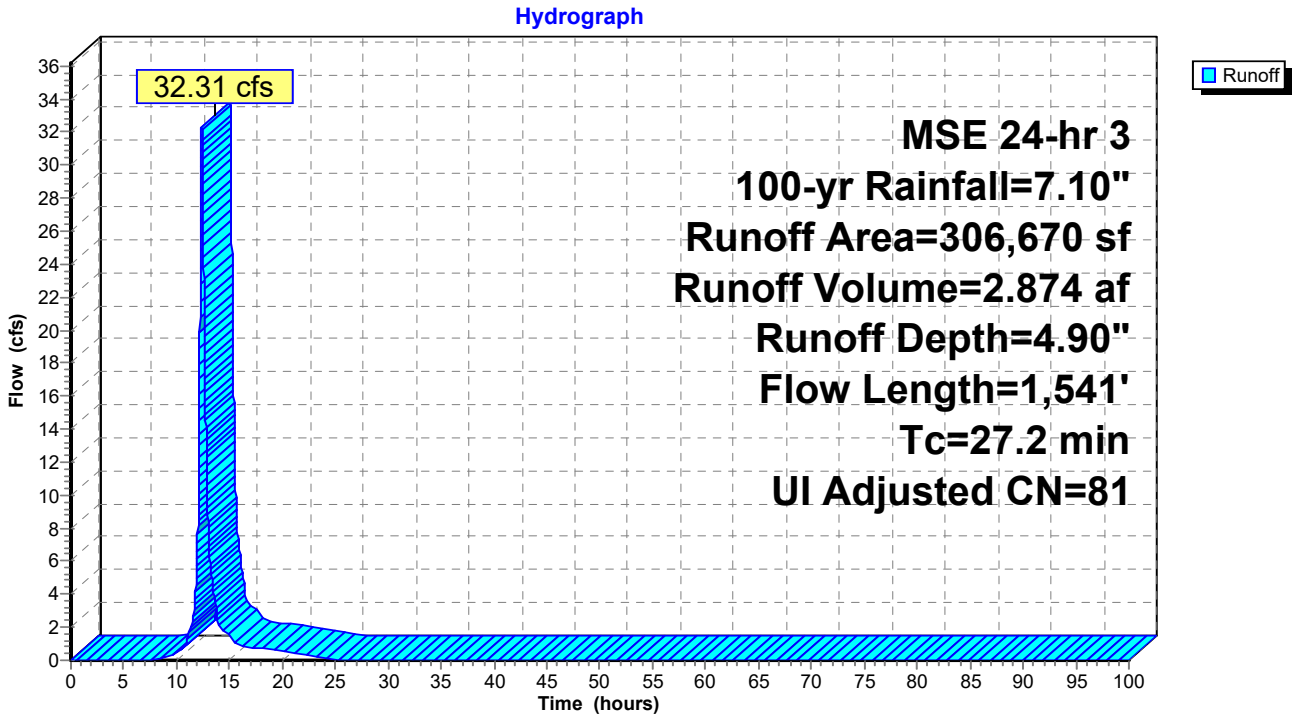
Runoff = 32.31 cfs @ 12.37 hrs, Volume= 2.874 af, Depth= 4.90"
Routed to Pond 4P : North Central - Storm Outlet

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 100-yr Rainfall=7.10"

Area (sf)	CN	Adj	Description
267,708	80		>75% Grass cover, Good, HSG D
38,962	98		Unconnected roofs, HSG D
306,670	82	81	Weighted Average, UI Adjusted
267,708			87.30% Pervious Area
38,962			12.70% Impervious Area
38,962			100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.0	663	0.0271	0.85		**Lag/CN Method,**
2.5	244	0.1516	1.64		**Lag/CN Method,**
11.7	634	0.0315	0.91		**Lag/CN Method,**
27.2	1,541	Total			

Subcatchment OFF-1: E1



Summary for Subcatchment OFF-2: OFF-2

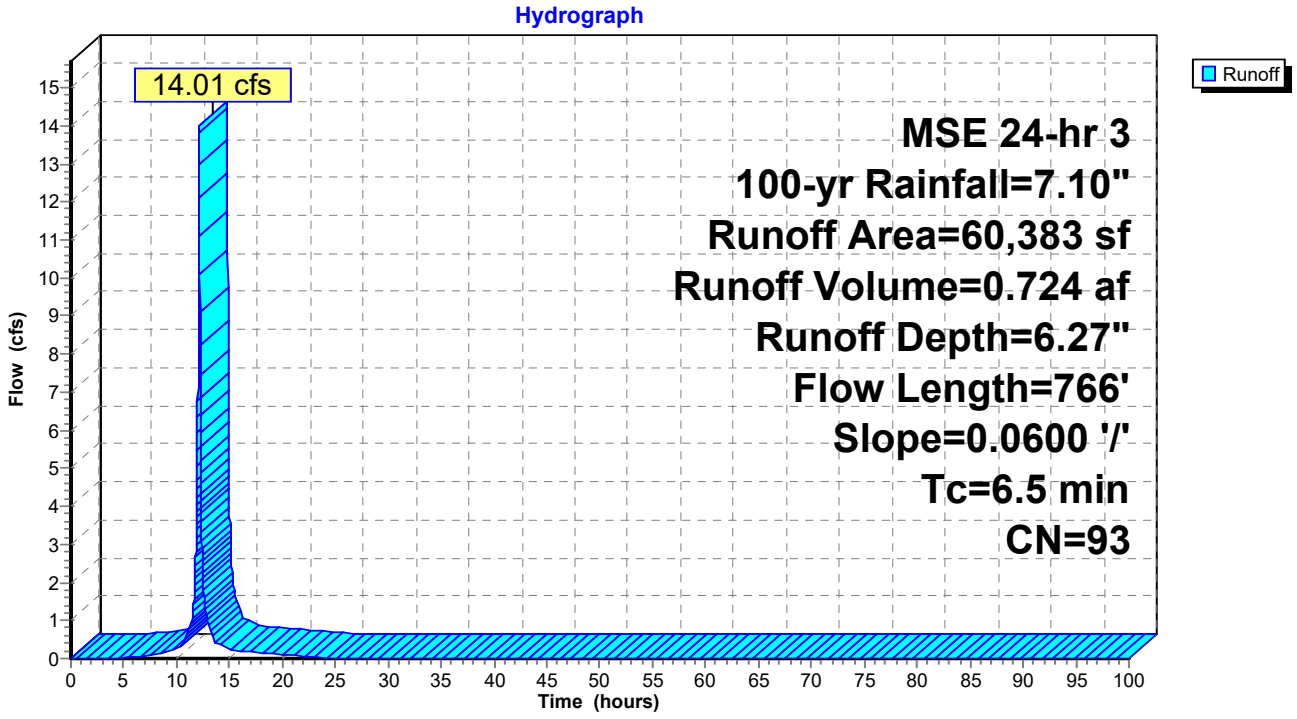
Runoff = 14.01 cfs @ 12.13 hrs, Volume= 0.724 af, Depth= 6.27"
Routed to Link 3L : North East

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 100-yr Rainfall=7.10"

Area (sf)	CN	Description
14,939	84	50-75% Grass cover, Fair, HSG D
45,444	96	Gravel surface, HSG D
60,383	93	Weighted Average
60,383		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.5	766	0.0600	1.98		**Lag/CN Method,**

Subcatchment OFF-2: OFF-2



Summary for Pond 4P: North Central - Storm Outlet

Inflow Area = 31.843 ac, 2.81% Impervious, Inflow Depth = 4.81" for 100-yr event
Inflow = 139.53 cfs @ 12.40 hrs, Volume= 12.767 af
Outflow = 32.44 cfs @ 13.08 hrs, Volume= 12.767 af, Atten= 77%, Lag= 40.5 min
Primary = 32.44 cfs @ 13.08 hrs, Volume= 12.767 af
Routed to Link 1L : North Central

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 876.41' @ 13.08 hrs Surf.Area= 115,002 sf Storage= 210,861 cf

Plug-Flow detention time= 53.8 min calculated for 12.767 af (100% of inflow)
Center-of-Mass det. time= 53.5 min (863.7 - 810.2)

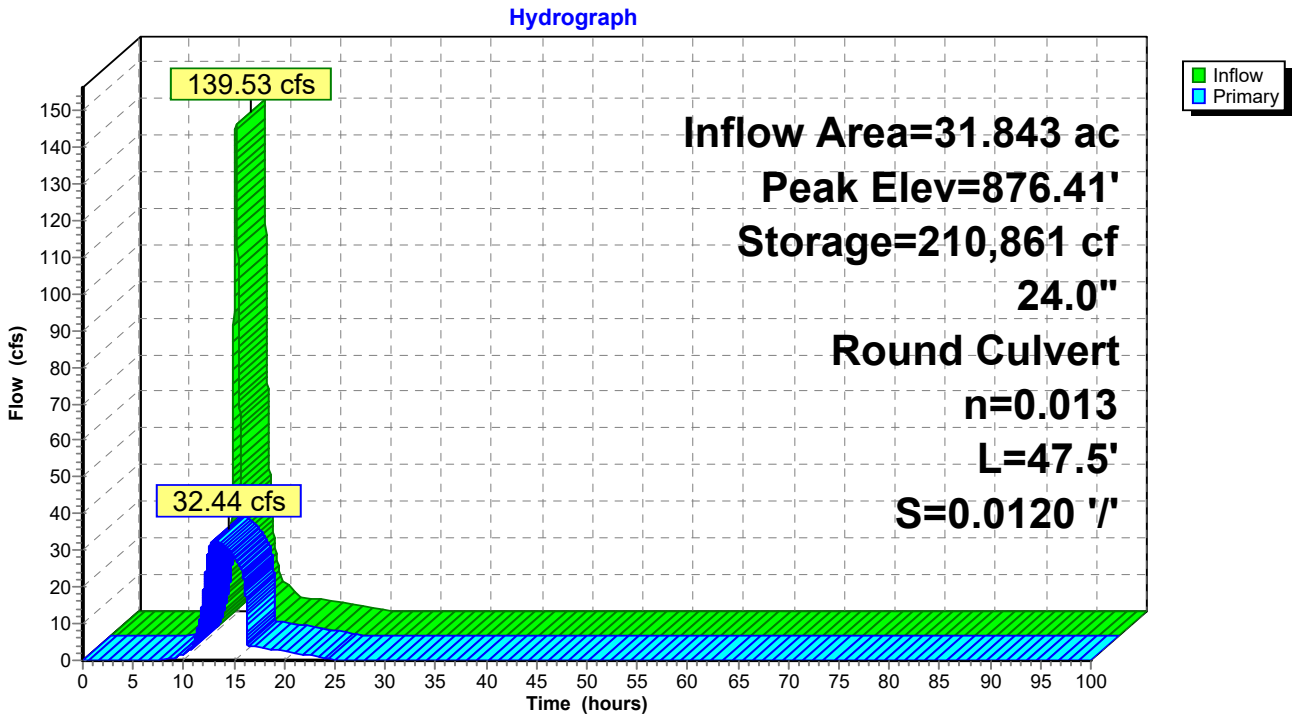
Volume	Invert	Avail.Storage	Storage Description
#1	869.50'	453,616 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
869.50	10	0	0
870.00	152	41	41
871.00	1,052	602	643
872.00	3,236	2,144	2,787
873.00	12,900	8,068	10,855
874.00	38,042	25,471	36,326
875.00	63,837	50,940	87,265
876.00	96,975	80,406	167,671
877.00	141,215	119,095	286,766
878.00	192,484	166,850	453,616

Device	Routing	Invert	Outlet Devices
#1	Primary	869.50'	**24.0" Round Culvert** L= 47.5' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 869.50' / 868.93' S= 0.0120 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 3.14 sf

Primary OutFlow Max=32.44 cfs @ 13.08 hrs HW=876.41' TW=0.00' (Dynamic Tailwater)
1=Culvert (Inlet Controls 32.44 cfs @ 10.33 fps)

Pond 4P: North Central - Storm Outlet

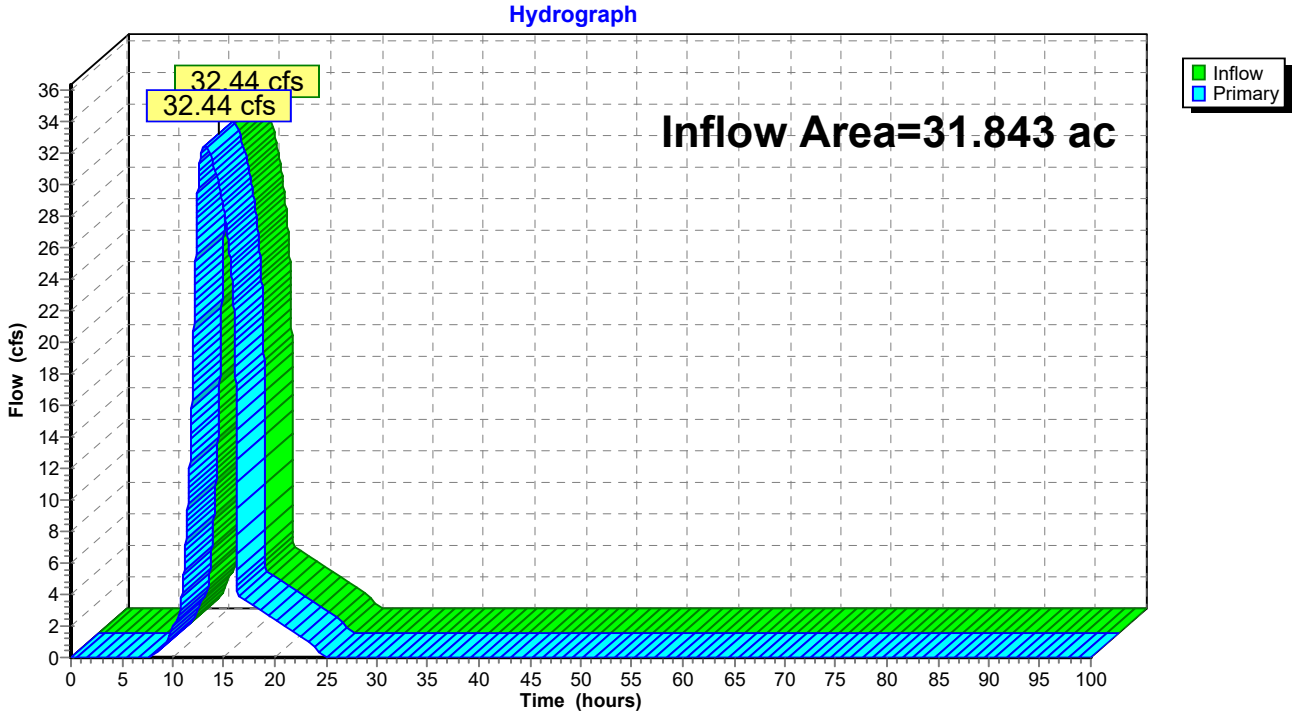


Summary for Link 1L: North Central

Inflow Area = 31.843 ac, 2.81% Impervious, Inflow Depth = 4.81" for 100-yr event
Inflow = 32.44 cfs @ 13.08 hrs, Volume= 12.767 af
Primary = 32.44 cfs @ 13.08 hrs, Volume= 12.767 af, Atten= 0%, Lag= 0.0 min
Routed to Link 4L : Industiral BLVD Storm

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.01 hrs

Link 1L: North Central

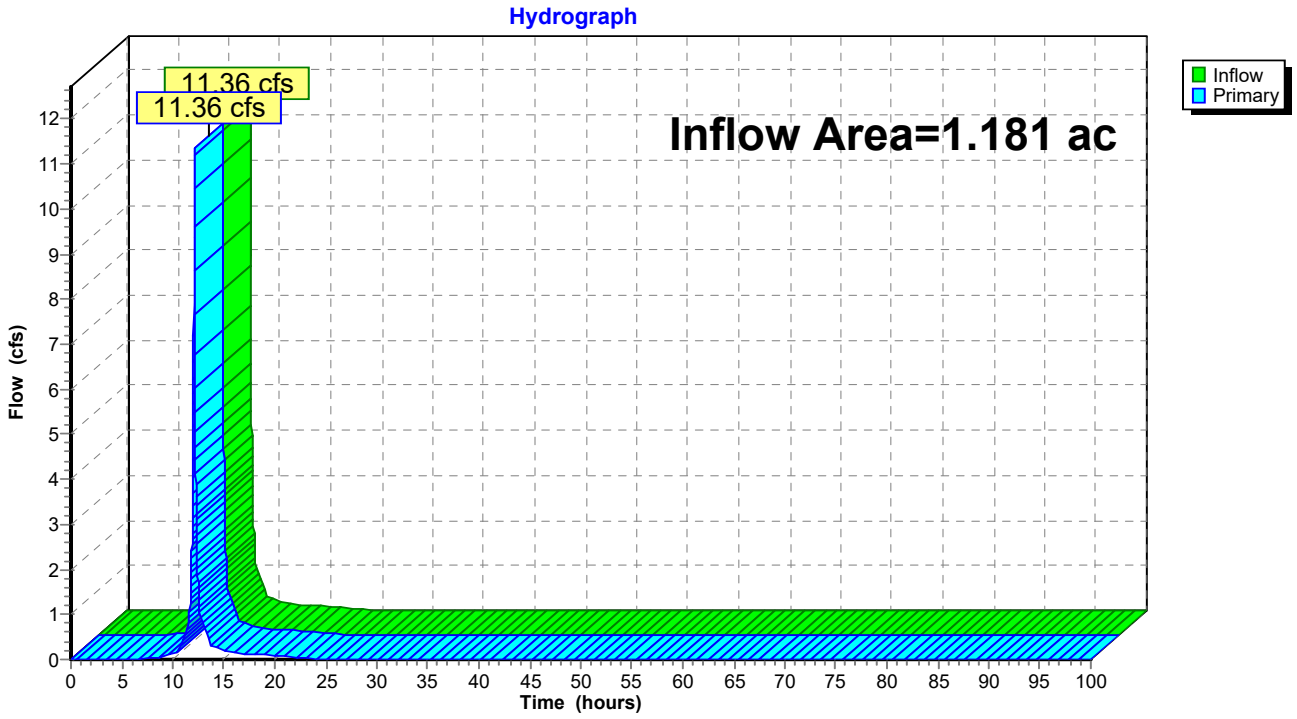


Summary for Link 2L: North East

Inflow Area = 1.181 ac, 0.00% Impervious, Inflow Depth = 5.35" for 100-yr event
Inflow = 11.36 cfs @ 12.13 hrs, Volume= 0.526 af
Primary = 11.36 cfs @ 12.13 hrs, Volume= 0.526 af, Atten= 0%, Lag= 0.0 min
Routed to Link 4L : Industiral BLVD Storm

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.01 hrs

Link 2L: North East

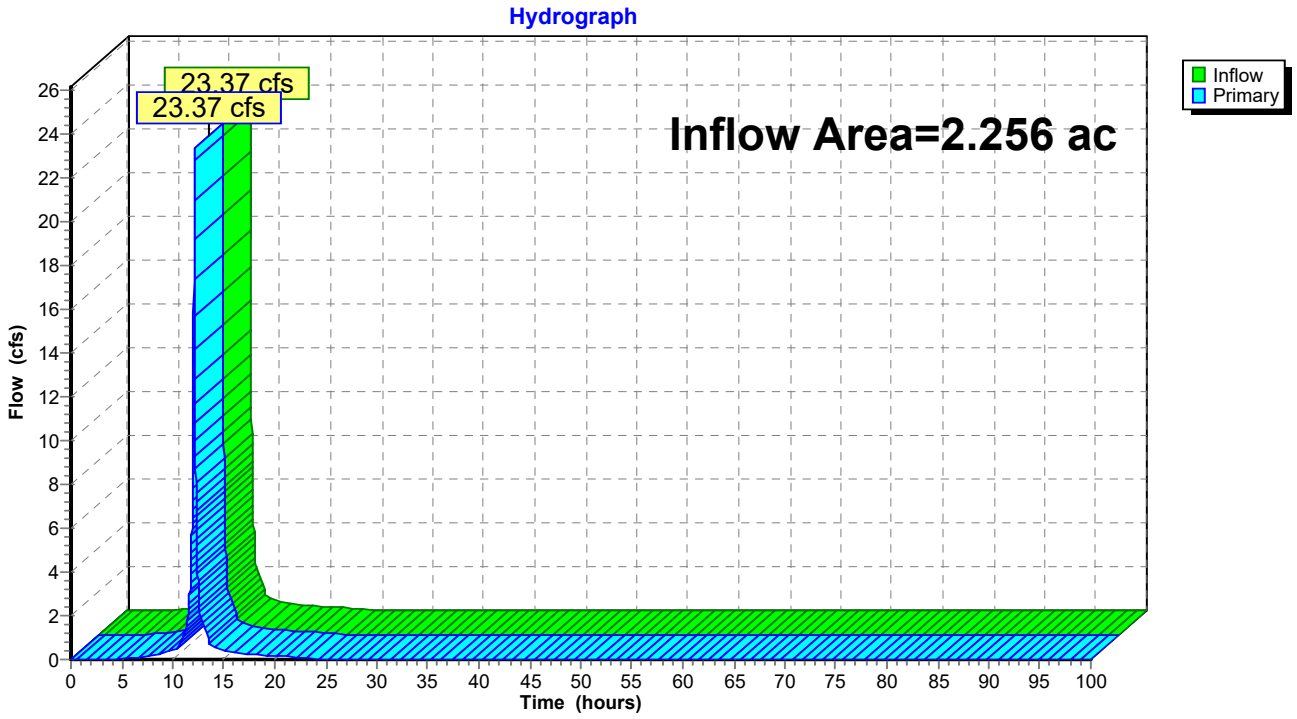


Summary for Link 3L: North East

Inflow Area = 2.256 ac, 0.00% Impervious, Inflow Depth = 6.32" for 100-yr event
Inflow = 23.37 cfs @ 12.12 hrs, Volume= 1.187 af
Primary = 23.37 cfs @ 12.12 hrs, Volume= 1.187 af, Atten= 0%, Lag= 0.0 min
Routed to Link 4L : Industiral BLVD Storm

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.01 hrs

Link 3L: North East

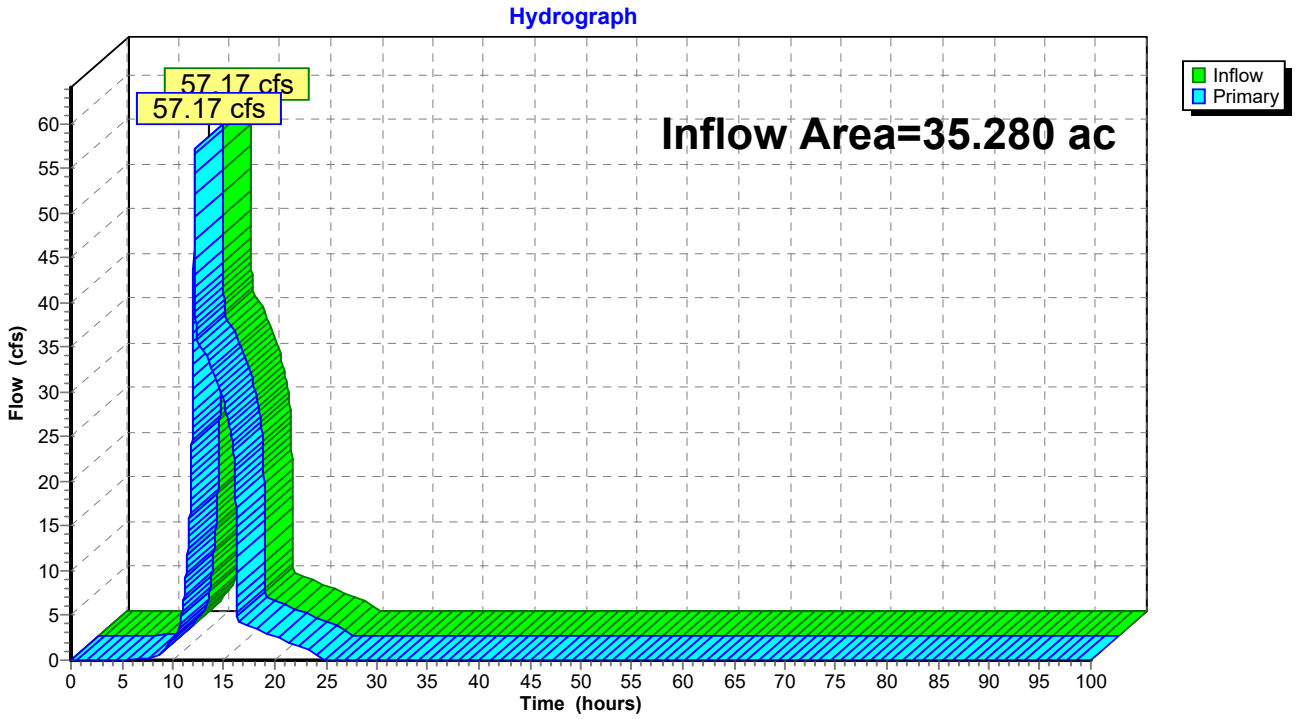


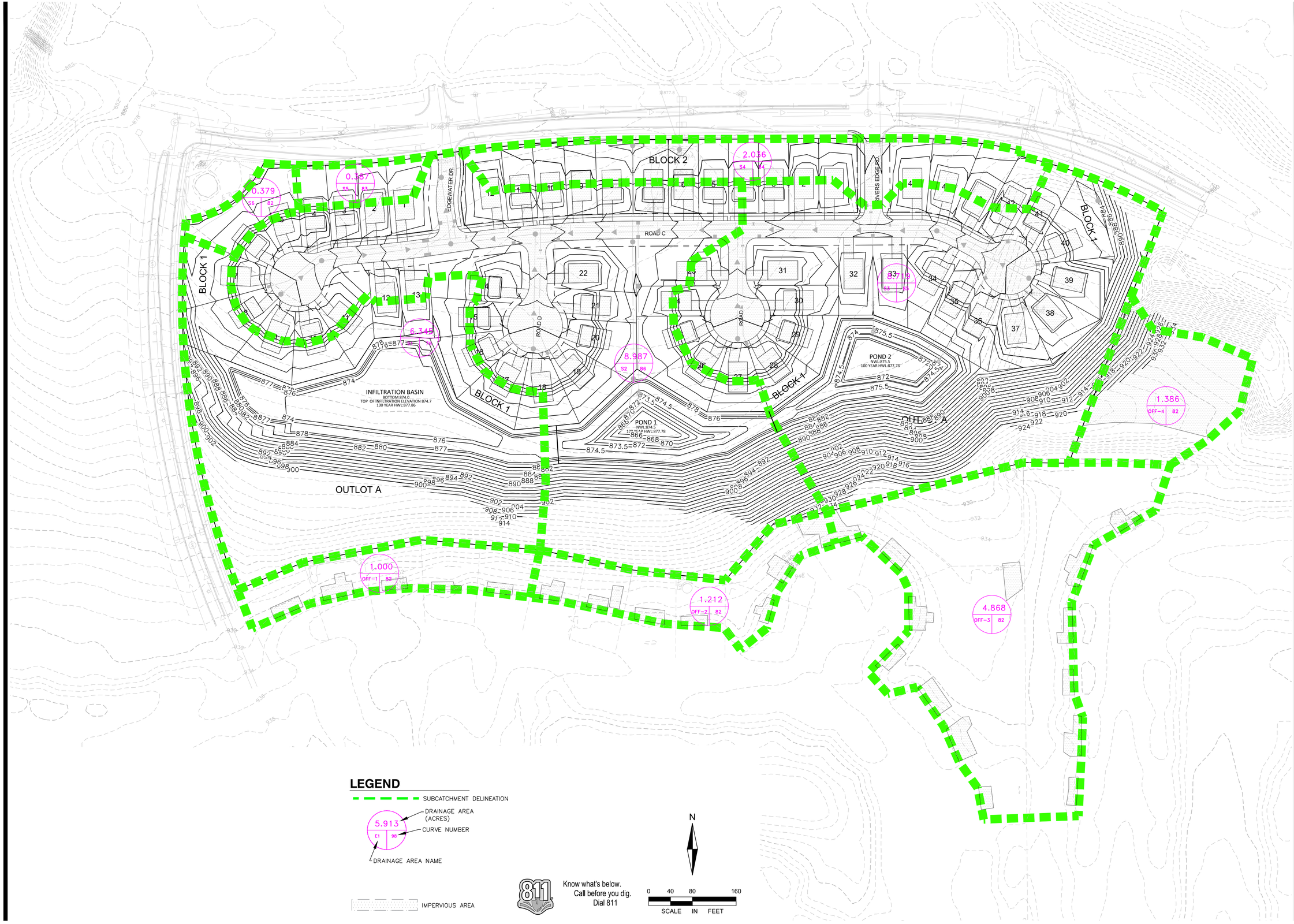
Summary for Link 4L: Industiral BLVD Storm

Inflow Area = 35.280 ac, 2.54% Impervious, Inflow Depth = 4.93" for 100-yr event
Inflow = 57.17 cfs @ 12.13 hrs, Volume= 14.481 af
Primary = 57.17 cfs @ 12.13 hrs, Volume= 14.481 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-100.00 hrs, dt= 0.01 hrs

Link 4L: Industiral BLVD Storm





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PROPOSED DRAINAGE MAP

DATE	DESCRIPTION
10-16-2025	PRELIMINARY PLAT SUBMITTAL

CERTIFICATION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly licensed Professional Engineer under the laws of the State of Minnesota.

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NOT FOR CONSTRUCTION

Date License no.

QA/QC CHECK

By Date

PROJECT TEAM DATA

Designed By: TAS

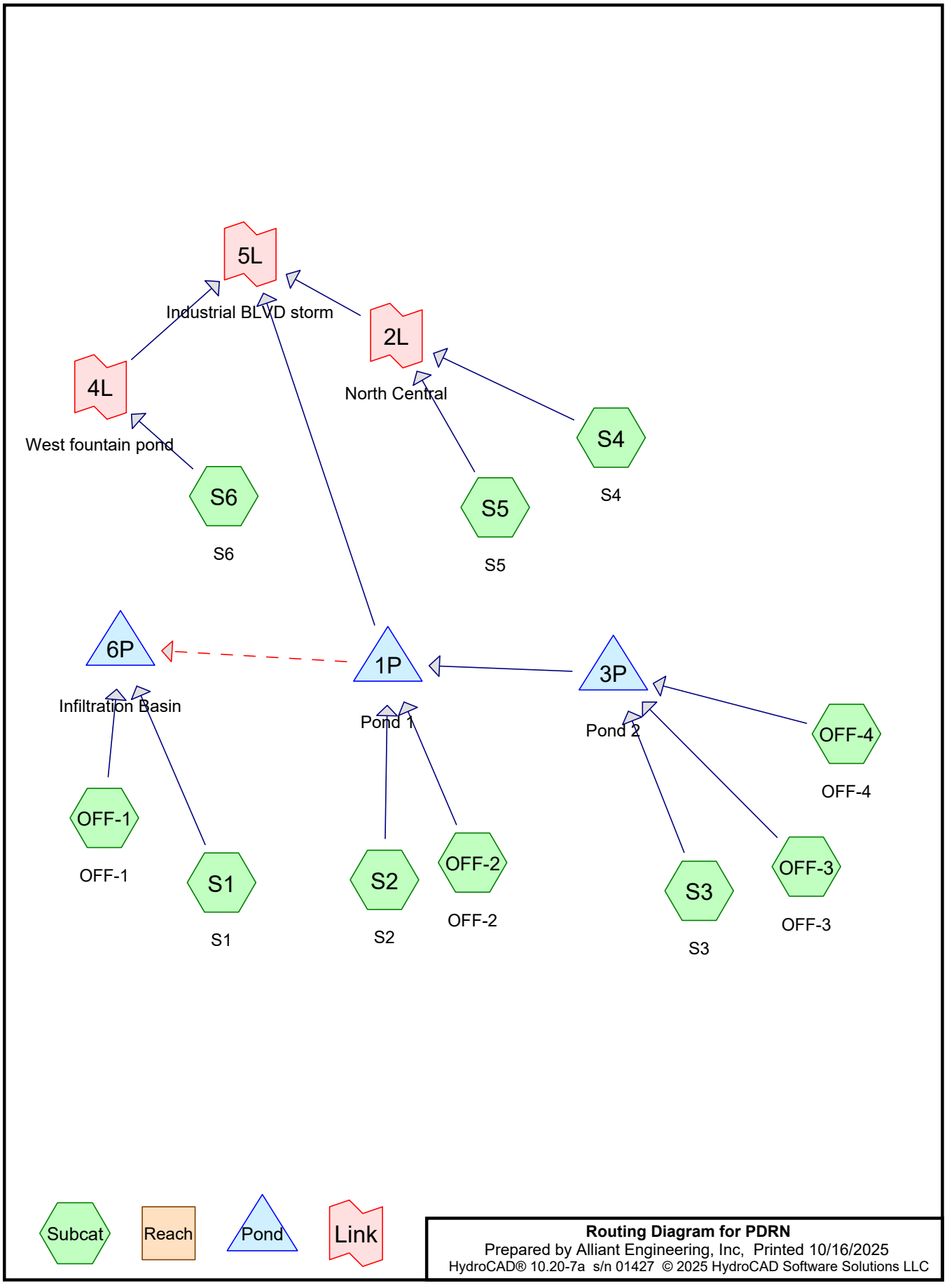
Drafted By:

Project No.: 4000670-00

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Sheet 1 of 1

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5L
Industrial BLVD storm
2L
North Central
4L
West fountain pond
S4
S4
S6
S6
S5
S5
6P
Infiltration Basin
1P
Pond 1
3P
Pond 2
OFF-4
OFF-4
OFF-1
OFF-1
S1
S1
S2
S2
OFF-2
OFF-2
S3
S3
OFF-3
OFF-3
Subcat
Reach
Pond
Link
Routing Diagram for PDRN
Prepared by Alliant Engineering, Inc, Printed 10/16/2025
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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.936	49	50-75% Grass cover, Fair, HSG A (S1)
25.978	80	>75% Grass cover, Good, HSG D (OFF-1, OFF-2, OFF-3, OFF-4, S1, S2, S3, S4, S5, S6)
4.881	98	Paved roads w/curbs & sewers, HSG D (S2, S3)
2.618	98	Roofs, HSG D (OFF-1, OFF-2, OFF-3, OFF-4, S1, S4, S5, S6)
0.867	98	Water Surface, HSG D (S2, S3)
35.280	**83**	**TOTAL AREA**

Summary for Subcatchment OFF-1: OFF-1

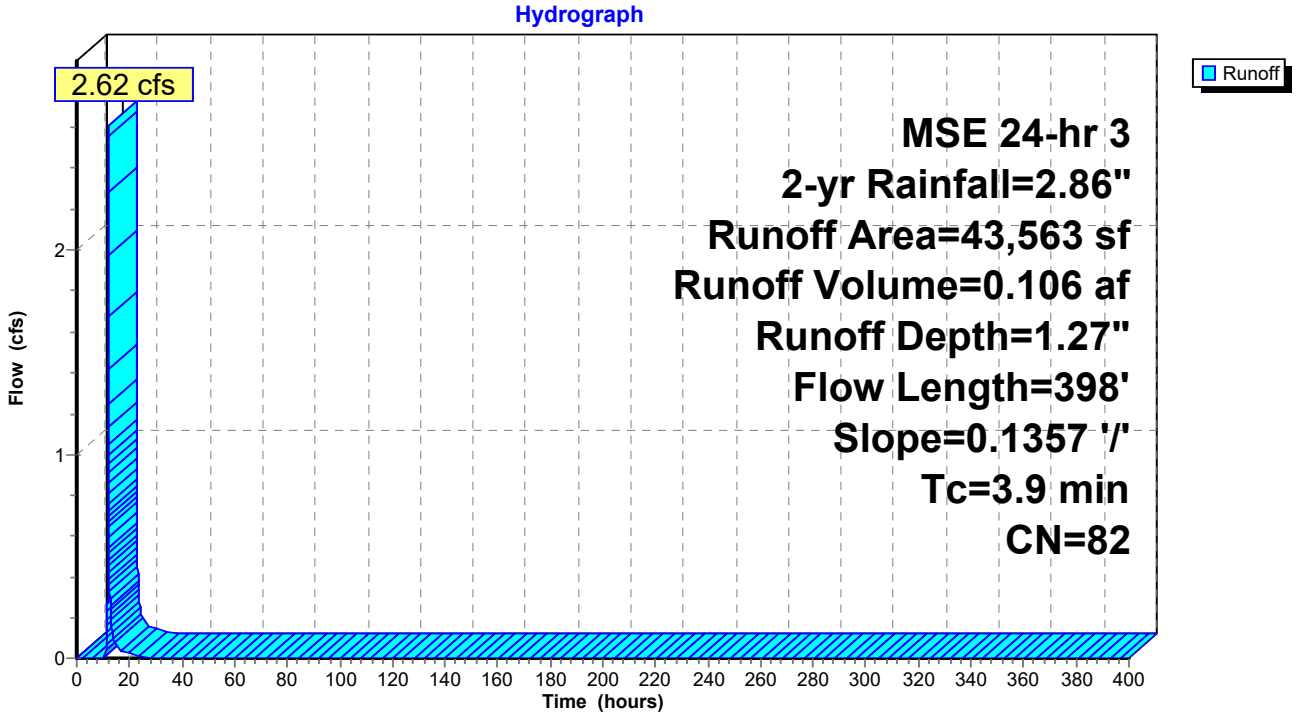
Runoff = 2.62 cfs @ 12.12 hrs, Volume= 0.106 af, Depth= 1.27"
Routed to Pond 6P : Infiltration Basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-400.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 2-yr Rainfall=2.86"

Area (sf)	CN	Description
38,068	80	>75% Grass cover, Good, HSG D
5,495	98	Roofs, HSG D
43,563	82	Weighted Average
38,068		87.39% Pervious Area
5,495		12.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.9	398	0.1357	1.71		**Lag/CN Method,**

Subcatchment OFF-1: OFF-1



Summary for Subcatchment OFF-2: OFF-2

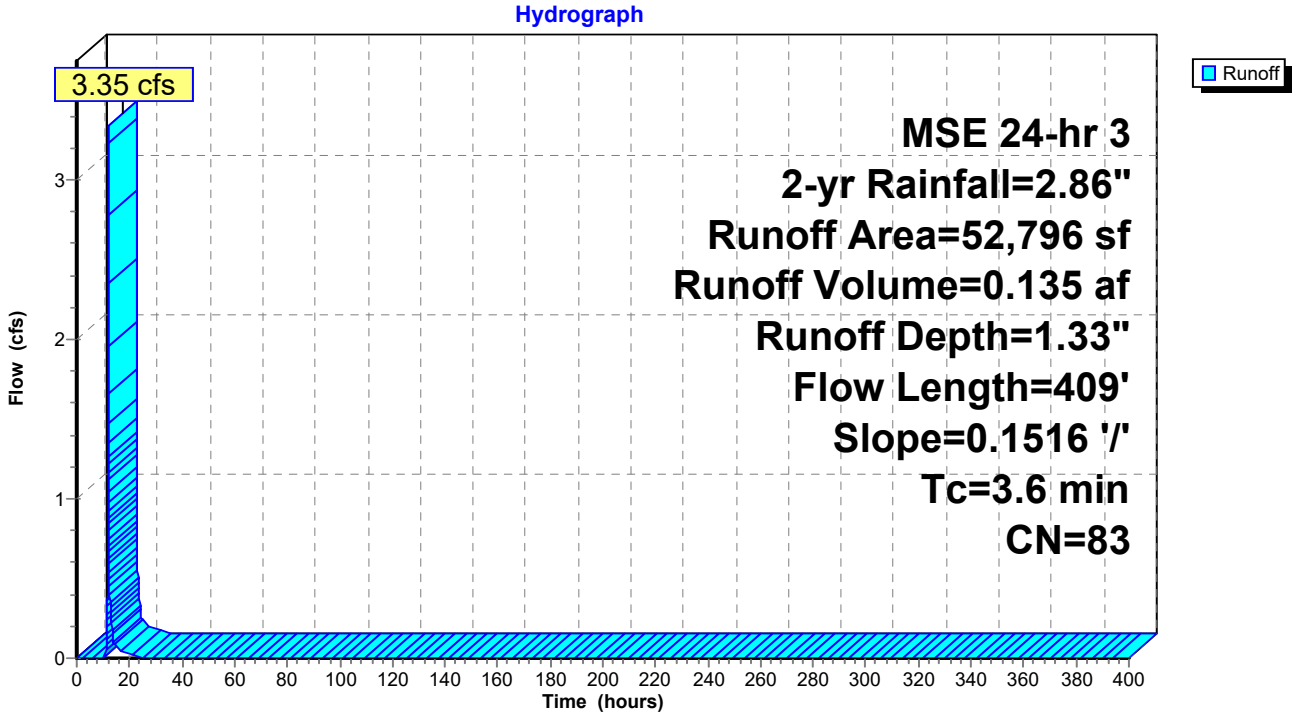
Runoff = 3.35 cfs @ 12.11 hrs, Volume= 0.135 af, Depth= 1.33"
Routed to Pond 1P : Pond 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-400.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 2-yr Rainfall=2.86"

Area (sf)	CN	Description
42,879	80	>75% Grass cover, Good, HSG D
9,917	98	Roofs, HSG D
52,796	83	Weighted Average
42,879		81.22% Pervious Area
9,917		18.78% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.6	409	0.1516	1.88		**Lag/CN Method,**

Subcatchment OFF-2: OFF-2



Summary for Subcatchment OFF-3: OFF-3

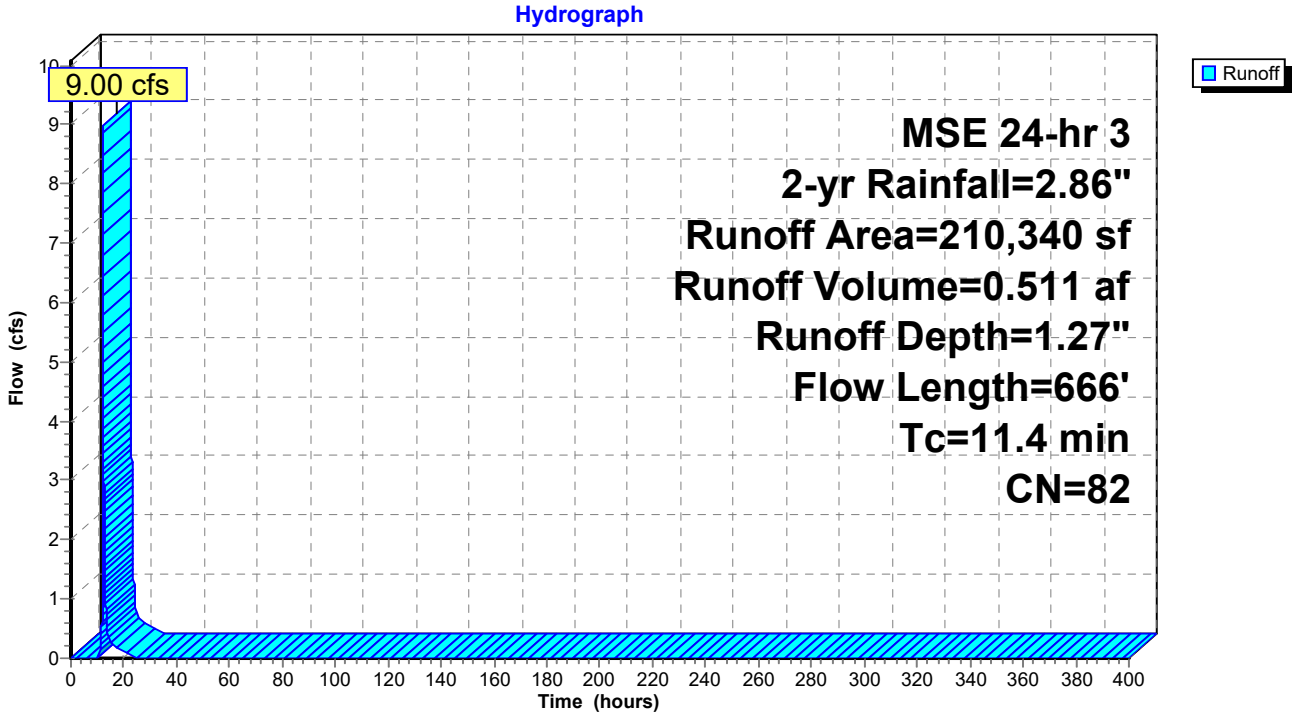
Runoff = 9.00 cfs @ 12.20 hrs, Volume= 0.511 af, Depth= 1.27"
Routed to Pond 3P : Pond 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-400.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 2-yr Rainfall=2.86"

Area (sf)	CN	Description
187,901	80	>75% Grass cover, Good, HSG D
22,439	98	Roofs, HSG D
210,340	82	Weighted Average
187,901		89.33% Pervious Area
22,439		10.67% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.2	409	0.0249	0.74		**Lag/CN Method,**
2.2	257	0.2042	1.93		**Lag/CN Method,**
11.4	666	Total			

Subcatchment OFF-3: OFF-3



Summary for Subcatchment OFF-4: OFF-4

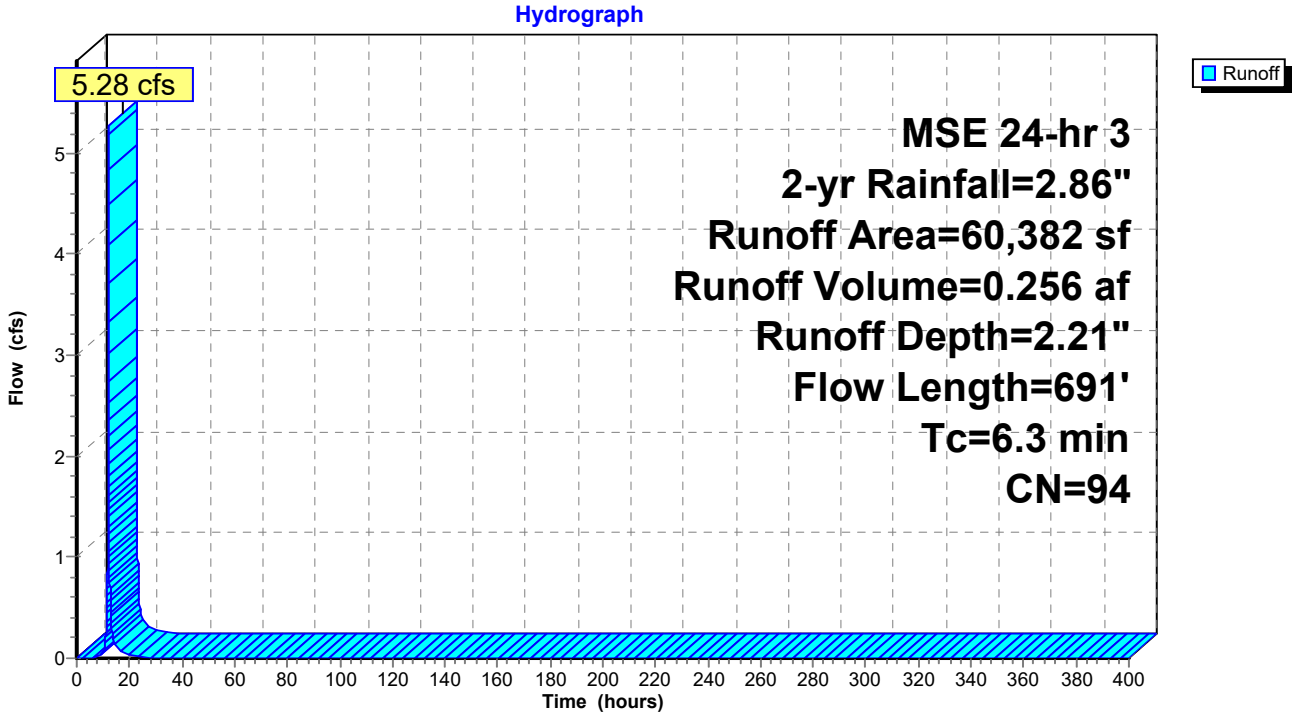
Runoff = 5.28 cfs @ 12.13 hrs, Volume= 0.256 af, Depth= 2.21"
Routed to Pond 3P : Pond 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-400.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 2-yr Rainfall=2.86"

Area (sf)	CN	Description
14,938	80	>75% Grass cover, Good, HSG D
45,444	98	Roofs, HSG D
60,382	94	Weighted Average
14,938		24.74% Pervious Area
45,444		75.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.2	359	0.0390	1.44		**Lag/CN Method,**
2.1	332	0.1400	2.68		**Lag/CN Method,**
6.3	691	Total			

Subcatchment OFF-4: OFF-4



Summary for Subcatchment S1: S1

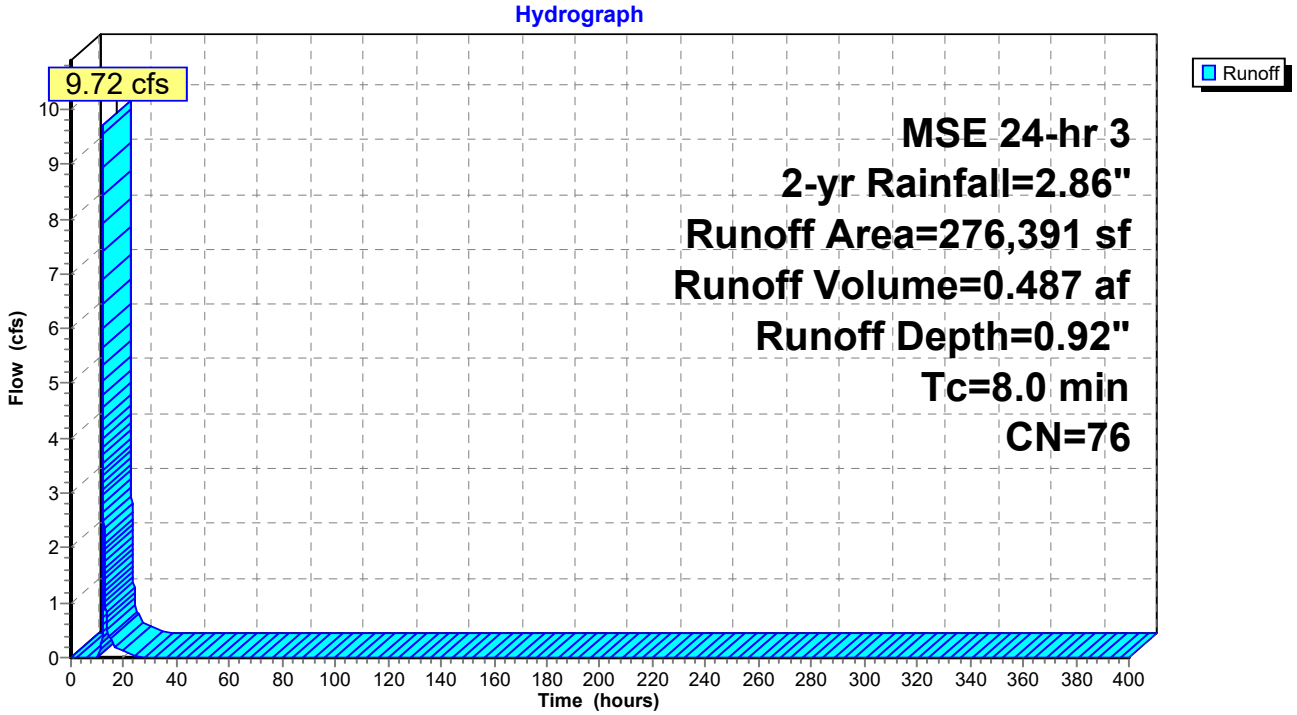
Runoff = 9.72 cfs @ 12.16 hrs, Volume= 0.487 af, Depth= 0.92"
Routed to Pond 6P : Infiltration Basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-400.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 2-yr Rainfall=2.86"

Area (sf)	CN	Description
227,257	80	>75% Grass cover, Good, HSG D
40,774	49	50-75% Grass cover, Fair, HSG A
8,360	98	Roofs, HSG D
276,391	76	Weighted Average
268,031		96.98% Pervious Area
8,360		3.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment S1: S1



Summary for Subcatchment S2: S2

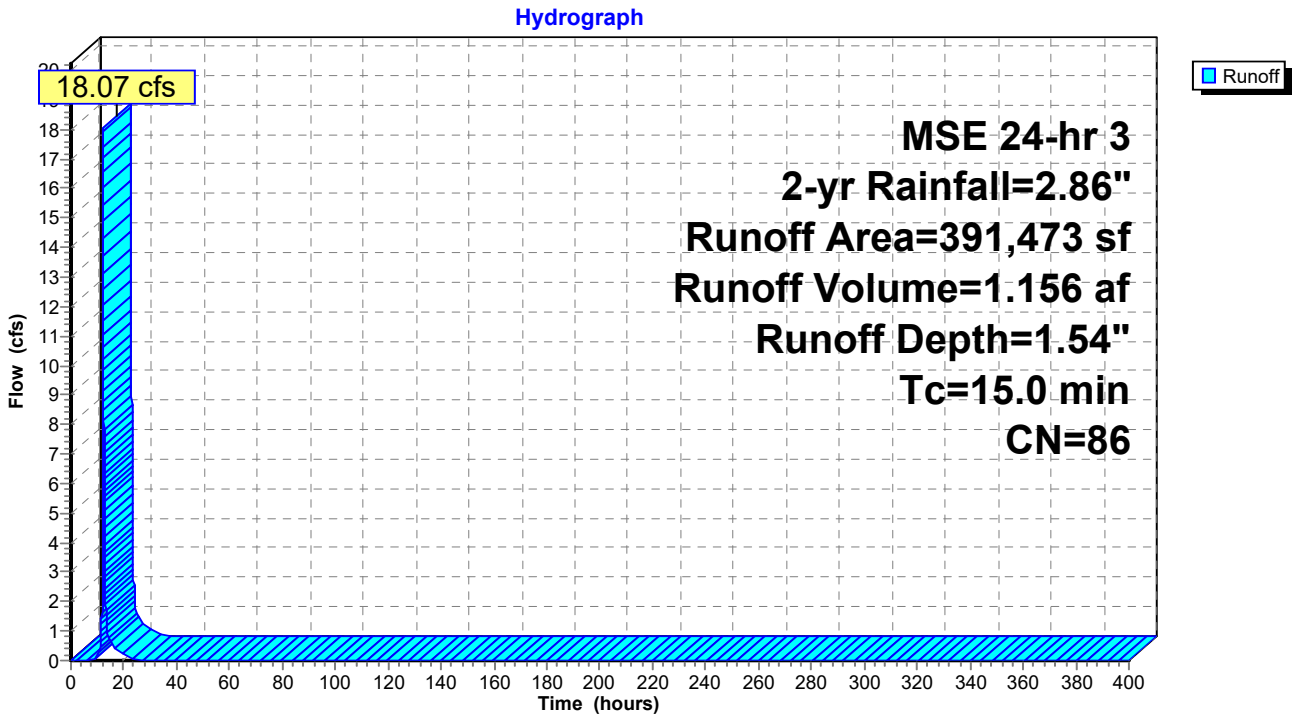
Runoff = 18.07 cfs @ 12.23 hrs, Volume= 1.156 af, Depth= 1.54"
Routed to Pond 1P : Pond 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-400.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 2-yr Rainfall=2.86"

Area (sf)	CN	Description
254,252	80	>75% Grass cover, Good, HSG D
19,253	98	Water Surface, HSG D
117,968	98	Paved roads w/curbs & sewers, HSG D
391,473	86	Weighted Average
254,252		64.95% Pervious Area
137,221		35.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0					**Direct Entry, STORM SEWER**

Subcatchment S2: S2



Summary for Subcatchment S3: S3

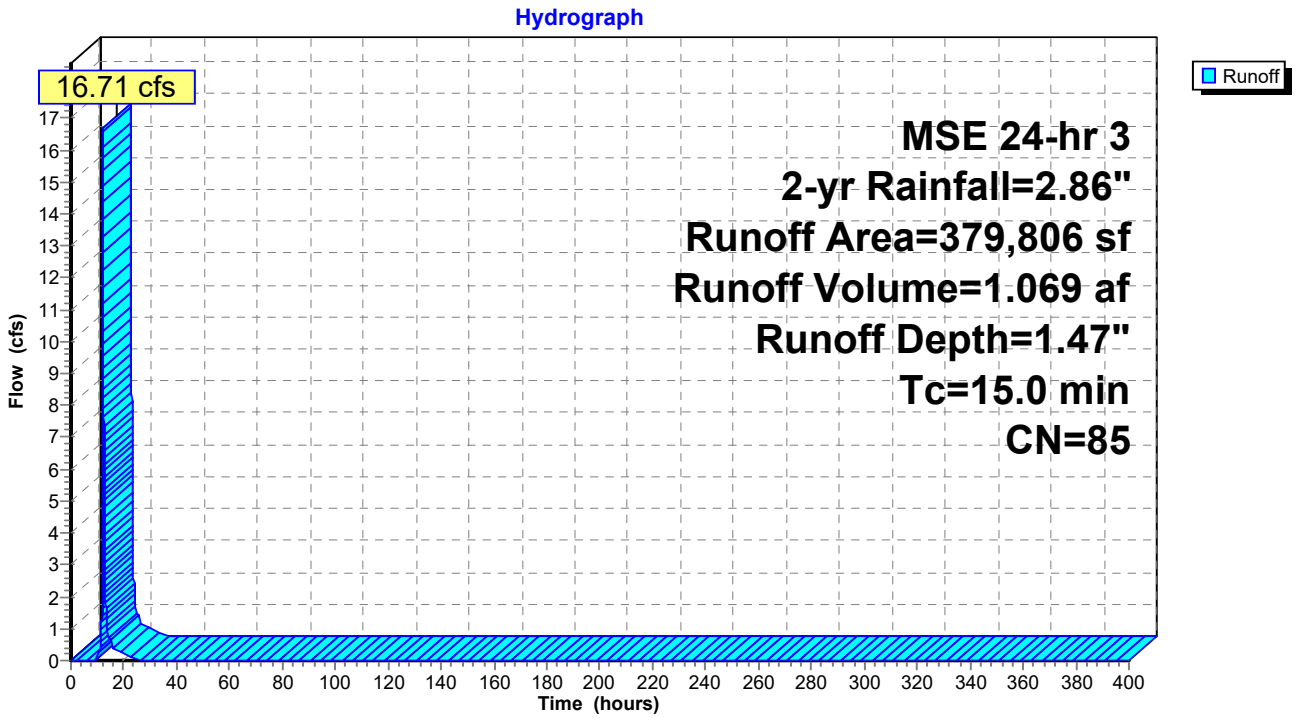
Runoff = 16.71 cfs @ 12.23 hrs, Volume= 1.069 af, Depth= 1.47"
Routed to Pond 3P : Pond 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-400.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 2-yr Rainfall=2.86"

Area (sf)	CN	Description
266,637	80	>75% Grass cover, Good, HSG D
18,513	98	Water Surface, HSG D
94,656	98	Paved roads w/curbs & sewers, HSG D
379,806	85	Weighted Average
266,637		70.20% Pervious Area
113,169		29.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0					**Direct Entry, STORM SEWER**

Subcatchment S3: S3



Summary for Subcatchment S4: S4

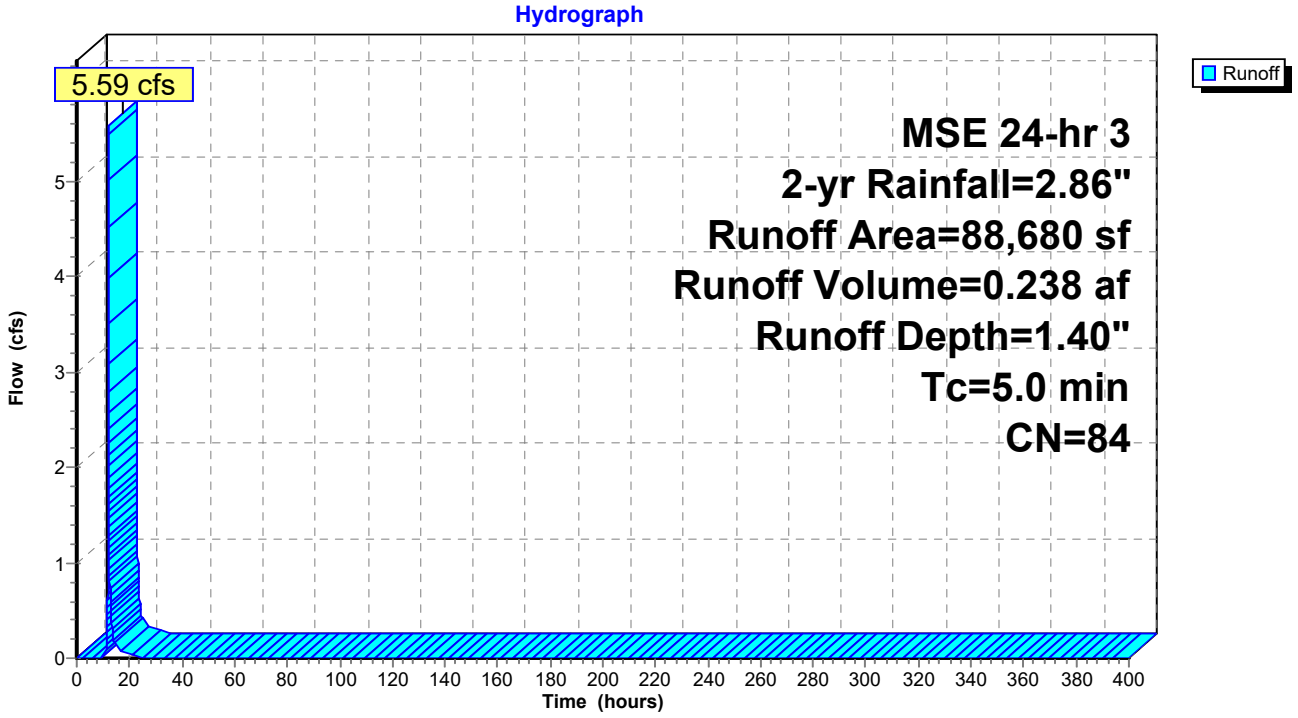
Runoff = 5.59 cfs @ 12.13 hrs, Volume= 0.238 af, Depth= 1.40"
Routed to Link 2L : North Central

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-400.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 2-yr Rainfall=2.86"

Area (sf)	CN	Description
70,233	80	>75% Grass cover, Good, HSG D
18,447	98	Roofs, HSG D
88,680	84	Weighted Average
70,233		79.20% Pervious Area
18,447		20.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, SHEET**

Subcatchment S4: S4



Summary for Subcatchment S5: S5

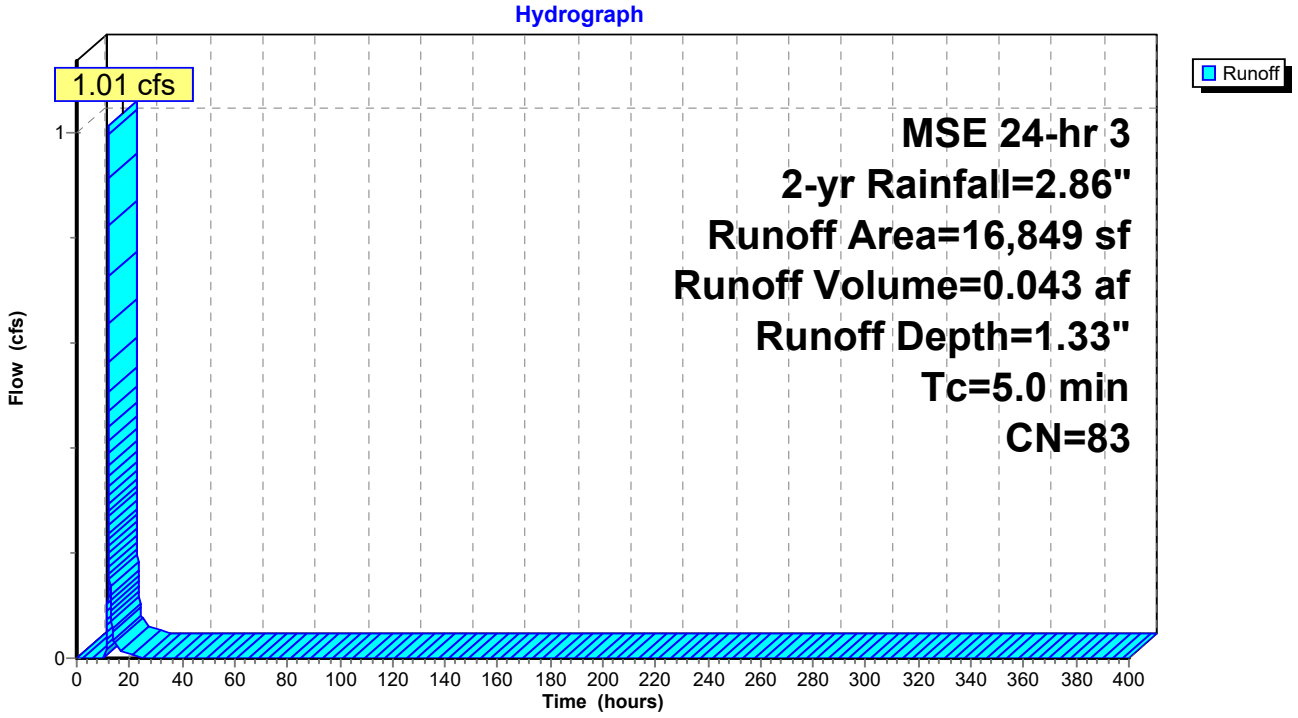
Runoff = 1.01 cfs @ 12.13 hrs, Volume= 0.043 af, Depth= 1.33"
Routed to Link 2L : North Central

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-400.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 2-yr Rainfall=2.86"

Area (sf)	CN	Description
14,460	80	>75% Grass cover, Good, HSG D
2,389	98	Roofs, HSG D
16,849	83	Weighted Average
14,460		85.82% Pervious Area
2,389		14.18% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, SHEET**

Subcatchment S5: S5



Summary for Subcatchment S6: S6

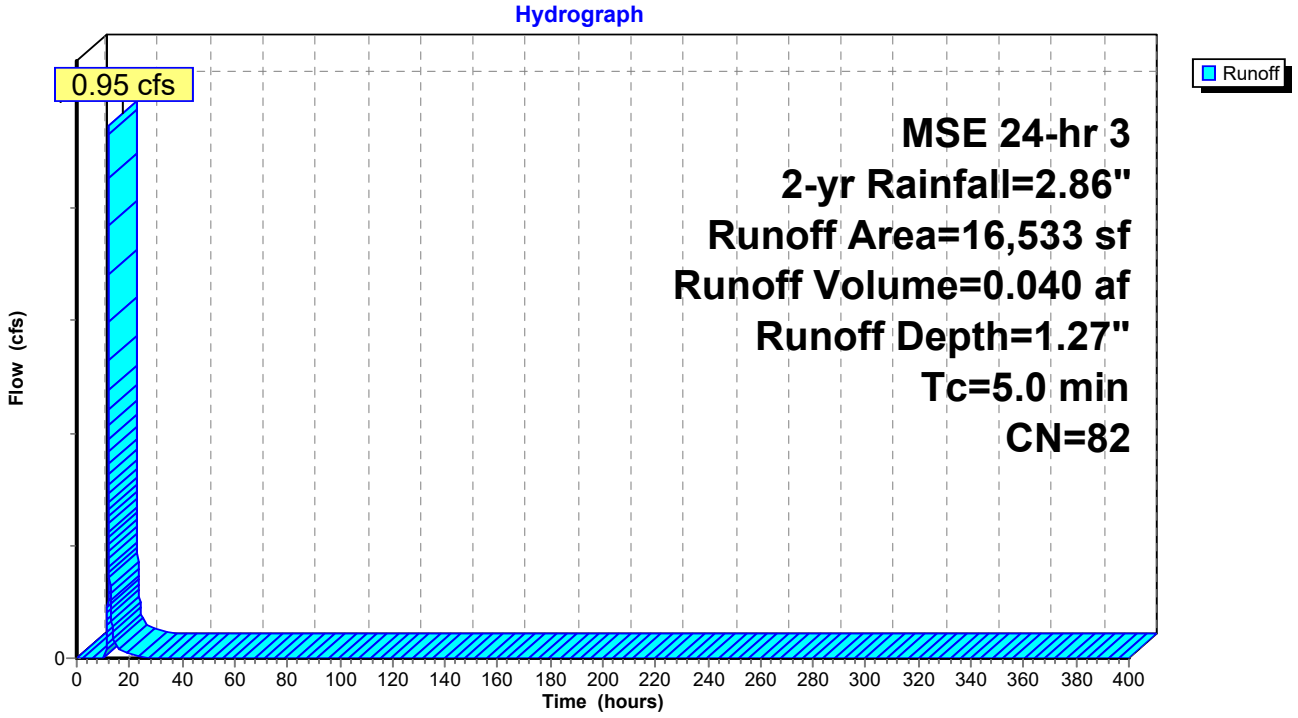
Runoff = 0.95 cfs @ 12.13 hrs, Volume= 0.040 af, Depth= 1.27"
Routed to Link 4L : West fountain pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-400.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 2-yr Rainfall=2.86"

Area (sf)	CN	Description
14,993	80	>75% Grass cover, Good, HSG D
1,540	98	Roofs, HSG D
16,533	82	Weighted Average
14,993		90.69% Pervious Area
1,540		9.31% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, SHEET**

Subcatchment S6: S6



Summary for Pond 1P: Pond 1

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=235)

Inflow Area = 25.133 ac, 29.98% Impervious, Inflow Depth = 1.47" for 2-yr event
Inflow = 38.12 cfs @ 12.27 hrs, Volume= 3.083 af
Outflow = 23.50 cfs @ 12.30 hrs, Volume= 3.083 af, Atten= 38%, Lag= 2.3 min
Primary = 4.54 cfs @ 13.40 hrs, Volume= 1.485 af
Routed to Link 5L : Industrial BLVD storm
Secondary = 22.72 cfs @ 12.30 hrs, Volume= 1.600 af
Routed to Pond 6P : Infiltration Basin

Routing by Dyn-Stor-Ind method, Time Span= 0.00-400.00 hrs, dt= 0.01 hrs / 3
Starting Elev= 874.50' Surf.Area= 78,467 sf Storage= 67,297 cf
Peak Elev= 875.28' @ 13.40 hrs Surf.Area= 64,143 sf Storage= 108,056 cf (40,759 cf above start)

Plug-Flow detention time= 445.0 min calculated for 1.538 af (50% of inflow)
Center-of-Mass det. time= 147.5 min (973.2 - 825.7)

Volume	Invert	Avail.Storage	Storage Description
#1	866.00'	67,297 cf	**DEAD STORAGE (Prismatic)** Listed below (Recalc)
#2	874.50'	216,654 cf	**LIVE STORAGE (Prismatic)** Listed below (Recalc)
		283,951 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
866.00	2,804	0	0
868.00	4,619	7,423	7,423
870.00	6,827	11,446	18,869
872.00	9,572	16,399	35,268
873.50	12,179	16,313	51,581
874.50	19,253	15,716	67,297

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
874.50	59,214	0	0
876.00	31,775	68,242	68,242
877.00	34,343	33,059	101,301
878.00	36,911	35,627	136,928
880.00	42,815	79,726	216,654

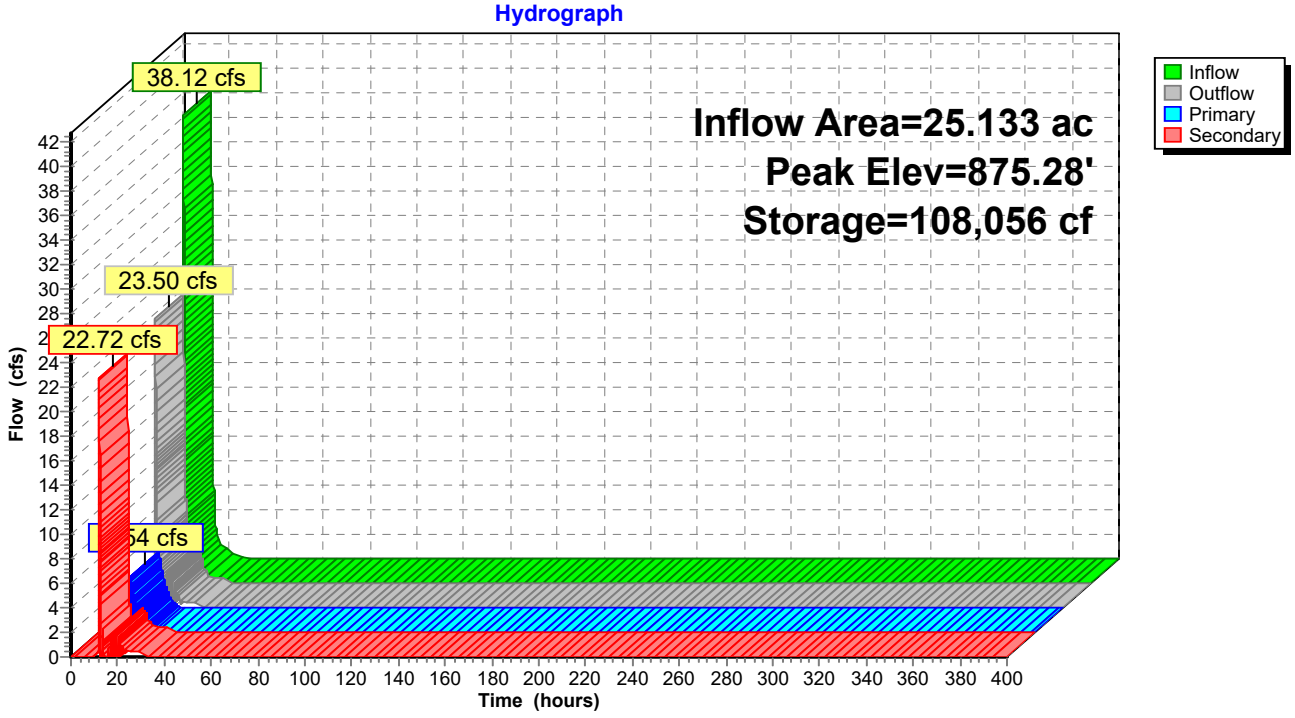
Device	Routing	Invert	Outlet Devices
#1	Primary	869.50'	**24.0" Round Culvert** L= 41.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 869.50' / 868.93' S= 0.0139 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 3.14 sf
#2	Device 1	873.50'	**24.0" Round Culvert** L= 520.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 873.50' / 869.50' S= 0.0077 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 3.14 sf
#3	Device 2	874.70'	**40.0" W x 6.0" H Vert. Orifice/Grate** C= 0.600

			Limited to weir flow at low heads
#4	Device 2	875.20'	**0.5' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88
#5	Secondary	874.50'	**45.0' long x 28.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=4.54 cfs @ 13.40 hrs HW=875.28' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Passes 4.54 cfs of 29.19 cfs potential flow)
└─**2=Culvert** (Passes 4.54 cfs of 11.86 cfs potential flow)
└─**3=Orifice/Grate** (Orifice Controls 4.51 cfs @ 2.70 fps)
└─**4=Broad-Crested Rectangular Weir** (Weir Controls 0.03 cfs @ 0.67 fps)

Secondary OutFlow Max=22.72 cfs @ 12.30 hrs HW=874.87' TW=874.70' (Dynamic Tailwater)
└─**5=Broad-Crested Rectangular Weir** (Weir Controls 22.72 cfs @ 1.36 fps)

Pond 1P: Pond 1



Summary for Pond 3P: Pond 2

Inflow Area = 14.934 ac, 27.83% Impervious, Inflow Depth = 1.48" for 2-yr event
Inflow = 28.31 cfs @ 12.20 hrs, Volume= 1.836 af
Outflow = 20.68 cfs @ 12.32 hrs, Volume= 1.792 af, Atten= 27%, Lag= 7.1 min
Primary = 20.68 cfs @ 12.32 hrs, Volume= 1.792 af
Routed to Pond 1P : Pond 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-400.00 hrs, dt= 0.01 hrs / 3
Starting Elev= 875.50' Surf.Area= 37,026 sf Storage= 50,009 cf
Peak Elev= 876.27' @ 12.32 hrs Surf.Area= 43,502 sf Storage= 66,889 cf (16,880 cf above start)

Plug-Flow detention time= 276.0 min calculated for 0.644 af (35% of inflow)
Center-of-Mass det. time= 25.3 min (835.8 - 810.5)

Volume	Invert	Avail.Storage	Storage Description
#1	871.00'	50,009 cf	**Dead Storage (Prismatic)** Listed below (Recalc)
#2	875.50'	140,398 cf	**Live Storage (Prismatic)** Listed below (Recalc)
		190,407 cf	Total Available Storage

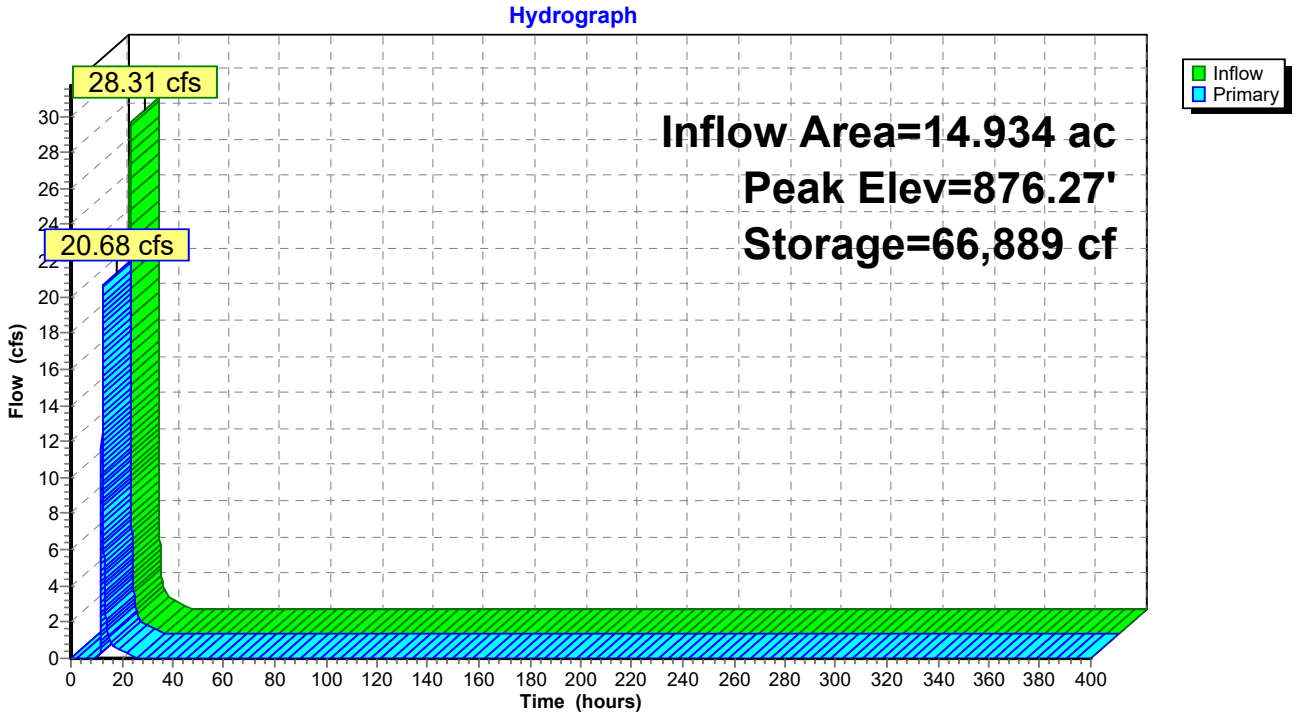
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
871.00	7,613	0	0
872.00	8,852	8,233	8,233
874.00	11,561	20,413	28,646
874.50	12,289	5,963	34,608
875.50	18,513	15,401	50,009

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
875.50	18,513	0	0
876.00	22,895	10,352	10,352
877.00	30,577	26,736	37,088
878.00	33,102	31,840	68,928
880.00	38,368	71,470	140,398

Device	Routing	Invert	Outlet Devices
#1	Primary	875.60'	**14.0' long x 96.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=20.68 cfs @ 12.32 hrs HW=876.27' TW=874.89' (Dynamic Tailwater)
1=Broad-Crested Rectangular Weir (Weir Controls 20.68 cfs @ 2.20 fps)

Pond 3P: Pond 2



Summary for Pond 6P: Infiltration Basin

[80] Warning: Exceeded Pond 1P by 0.03' @ 14.86 hrs (22.43 cfs 4.045 af)

Inflow Area = 7.345 ac, 4.33% Impervious, Inflow Depth = 3.58" for 2-yr event
Inflow = 28.31 cfs @ 12.27 hrs, Volume= 2.193 af
Outflow = 1.46 cfs @ 13.39 hrs, Volume= 2.193 af, Atten= 95%, Lag= 67.1 min
Discarded = 1.46 cfs @ 13.39 hrs, Volume= 2.193 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-400.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 875.28' @ 13.39 hrs Surf.Area= 78,869 sf Storage= 47,541 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 389.2 min (1,366.3 - 977.1)

Volume	Invert	Avail.Storage	Storage Description
#1	874.00'	24,549 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
#2	874.70'	301,862 cf	**Live Storage (Prismatic)** Listed below (Recalc)
		326,411 cf	Total Available Storage

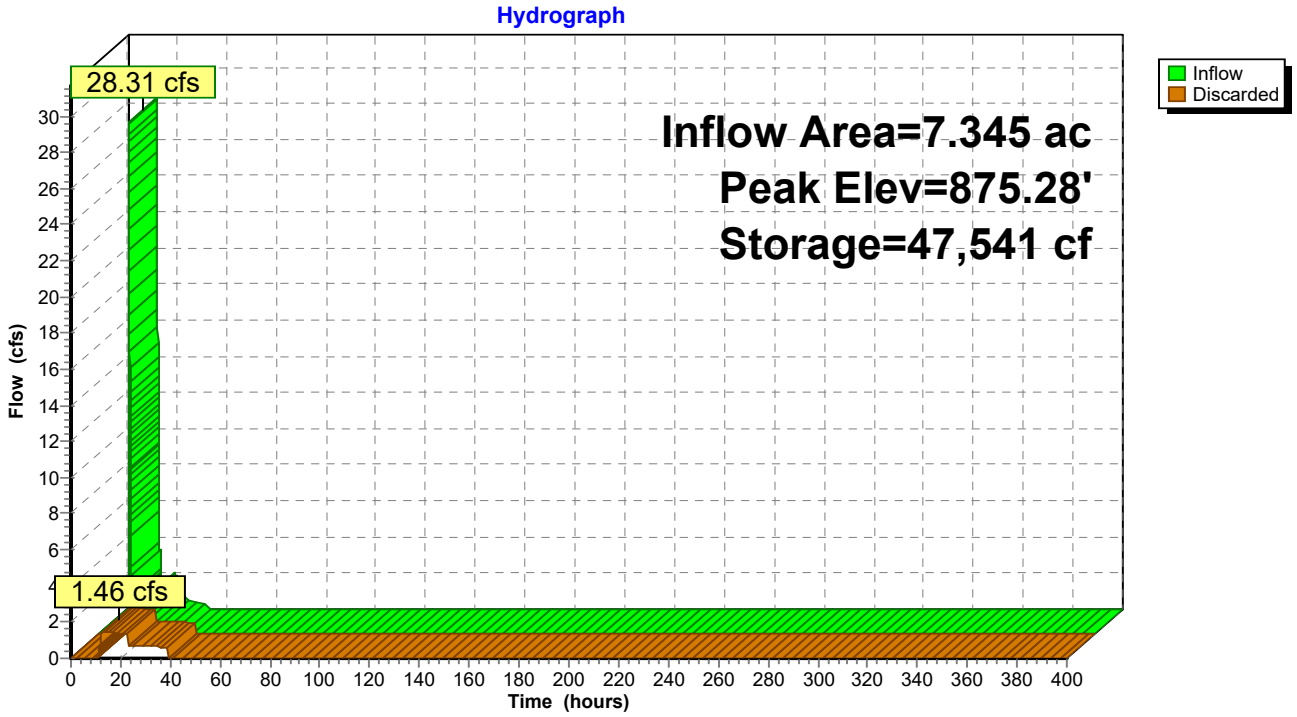
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
874.00	32,972	0	0
874.70	37,169	24,549	24,549

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
874.70	37,169	0	0
876.00	47,272	54,887	54,887
877.00	57,050	52,161	107,048
878.00	61,577	59,314	166,361
880.00	73,924	135,501	301,862

Device	Routing	Invert	Outlet Devices
#1	Discarded	874.00'	**0.800 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=1.46 cfs @ 13.39 hrs HW=875.28' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 1.46 cfs)

Pond 6P: Infiltration Basin

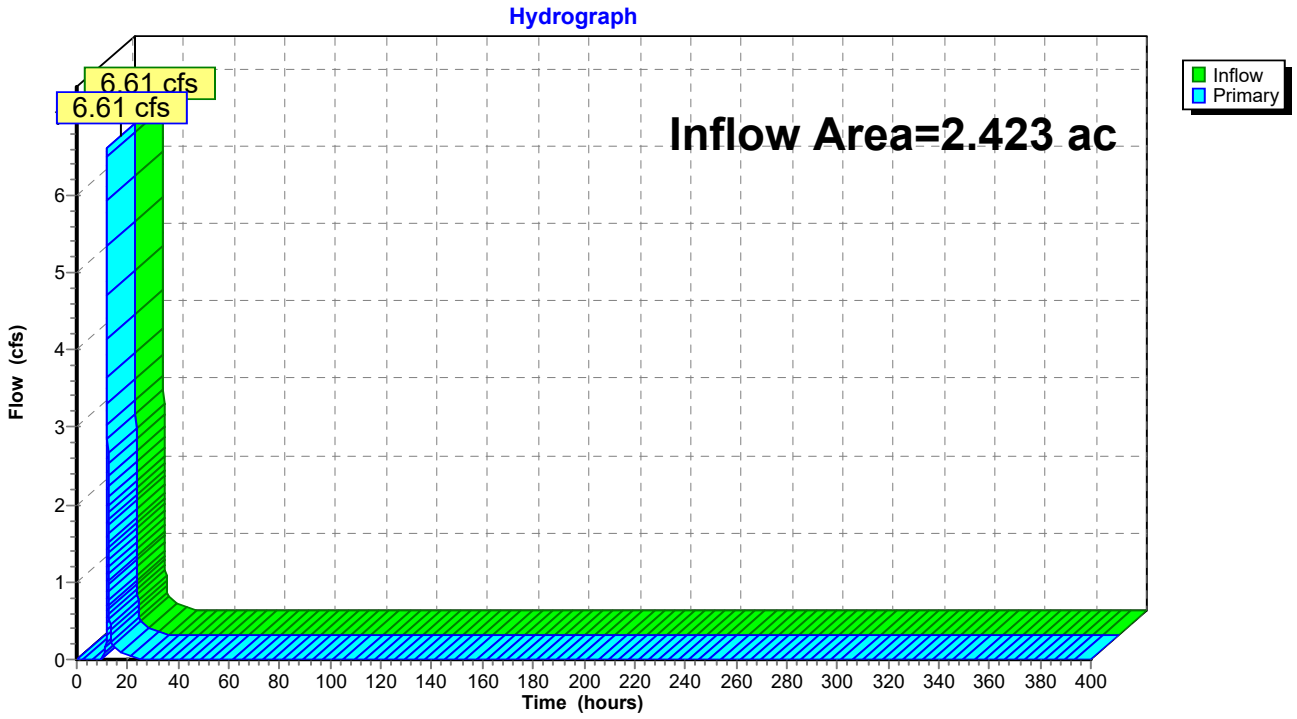


Summary for Link 2L: North Central

Inflow Area = 2.423 ac, 19.74% Impervious, Inflow Depth = 1.39" for 2-yr event
Inflow = 6.61 cfs @ 12.13 hrs, Volume= 0.281 af
Primary = 6.61 cfs @ 12.13 hrs, Volume= 0.281 af, Atten= 0%, Lag= 0.0 min
Routed to Link 5L : Industrial BLVD storm

Primary outflow = Inflow, Time Span= 0.00-400.00 hrs, dt= 0.01 hrs

Link 2L: North Central

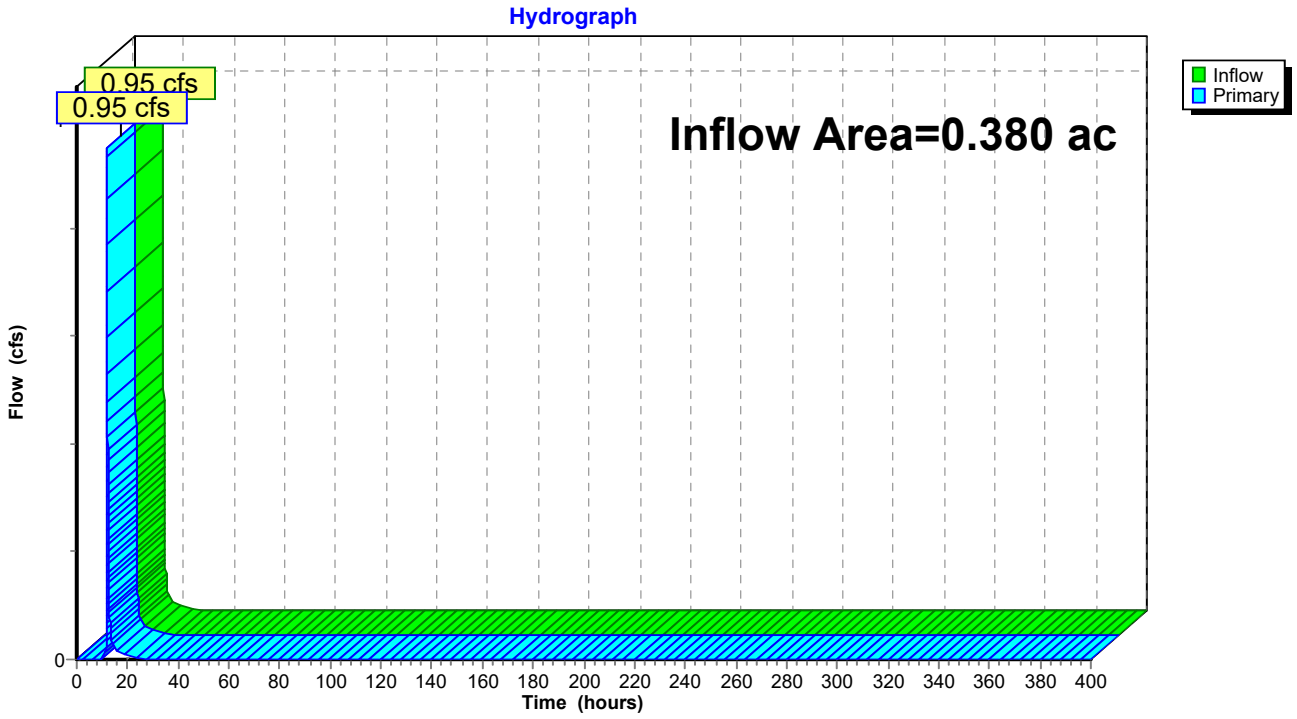


Summary for Link 4L: West fountain pond

Inflow Area = 0.380 ac, 9.31% Impervious, Inflow Depth = 1.27" for 2-yr event
Inflow = 0.95 cfs @ 12.13 hrs, Volume= 0.040 af
Primary = 0.95 cfs @ 12.13 hrs, Volume= 0.040 af, Atten= 0%, Lag= 0.0 min
Routed to Link 5L : Industrial BLVD storm

Primary outflow = Inflow, Time Span= 0.00-400.00 hrs, dt= 0.01 hrs

Link 4L: West fountain pond

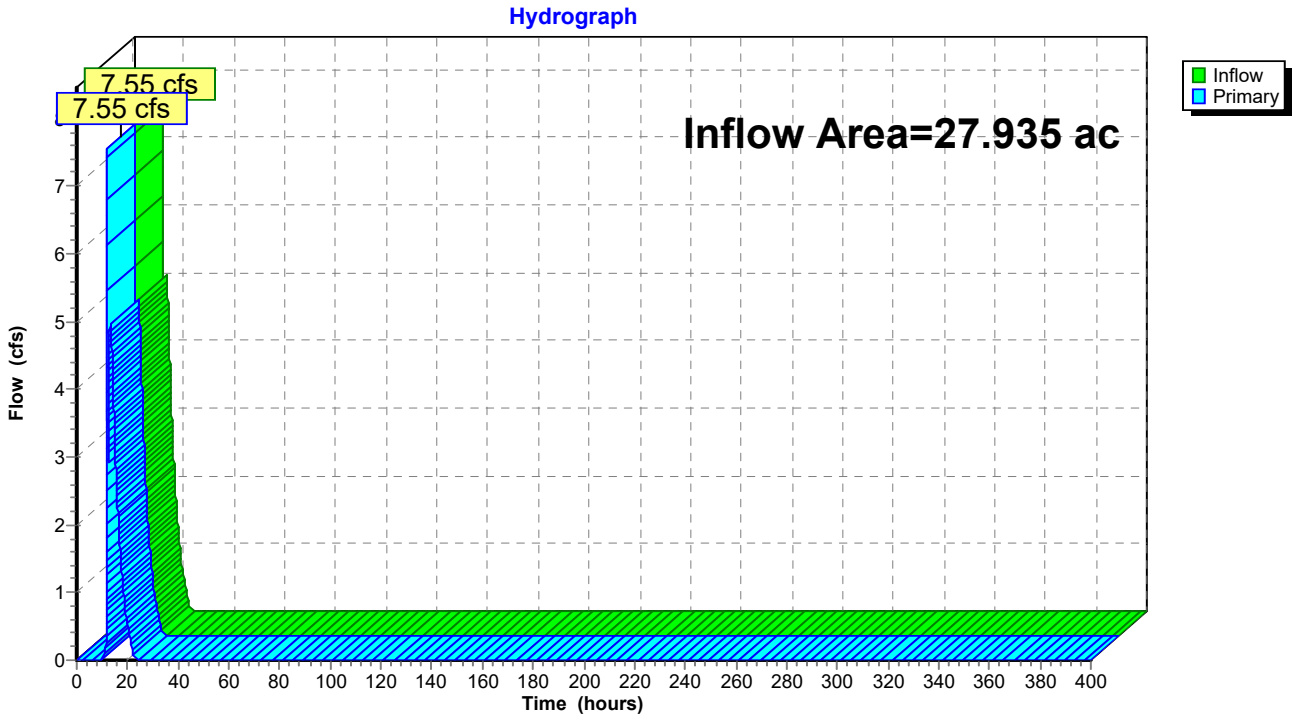


Summary for Link 5L: Industrial BLVD storm

Inflow Area = 27.935 ac, 28.81% Impervious, Inflow Depth = 0.78" for 2-yr event
Inflow = 7.55 cfs @ 12.13 hrs, Volume= 1.806 af
Primary = 7.55 cfs @ 12.13 hrs, Volume= 1.806 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-400.00 hrs, dt= 0.01 hrs

Link 5L: Industrial BLVD storm



Summary for Subcatchment OFF-1: OFF-1

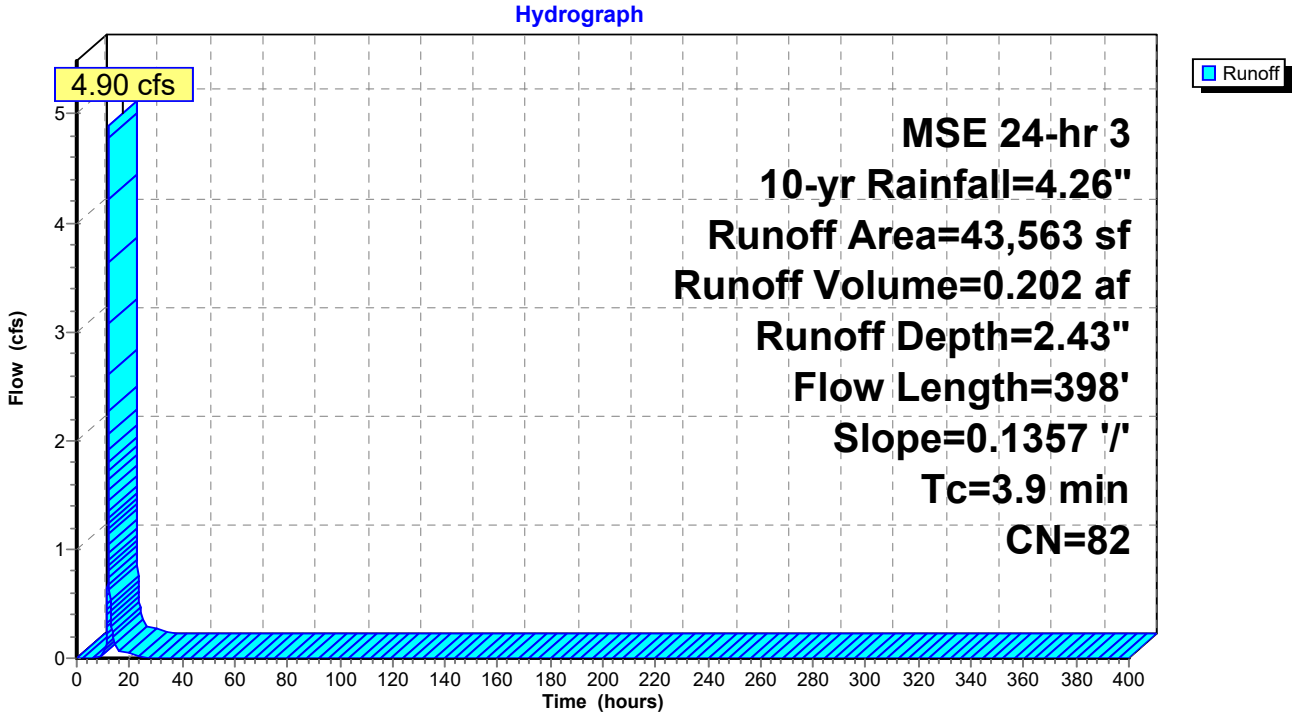
Runoff = 4.90 cfs @ 12.12 hrs, Volume= 0.202 af, Depth= 2.43"
Routed to Pond 6P : Infiltration Basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-400.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 10-yr Rainfall=4.26"

Area (sf)	CN	Description
38,068	80	>75% Grass cover, Good, HSG D
5,495	98	Roofs, HSG D
43,563	82	Weighted Average
38,068		87.39% Pervious Area
5,495		12.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.9	398	0.1357	1.71		**Lag/CN Method,**

Subcatchment OFF-1: OFF-1



Summary for Subcatchment OFF-2: OFF-2

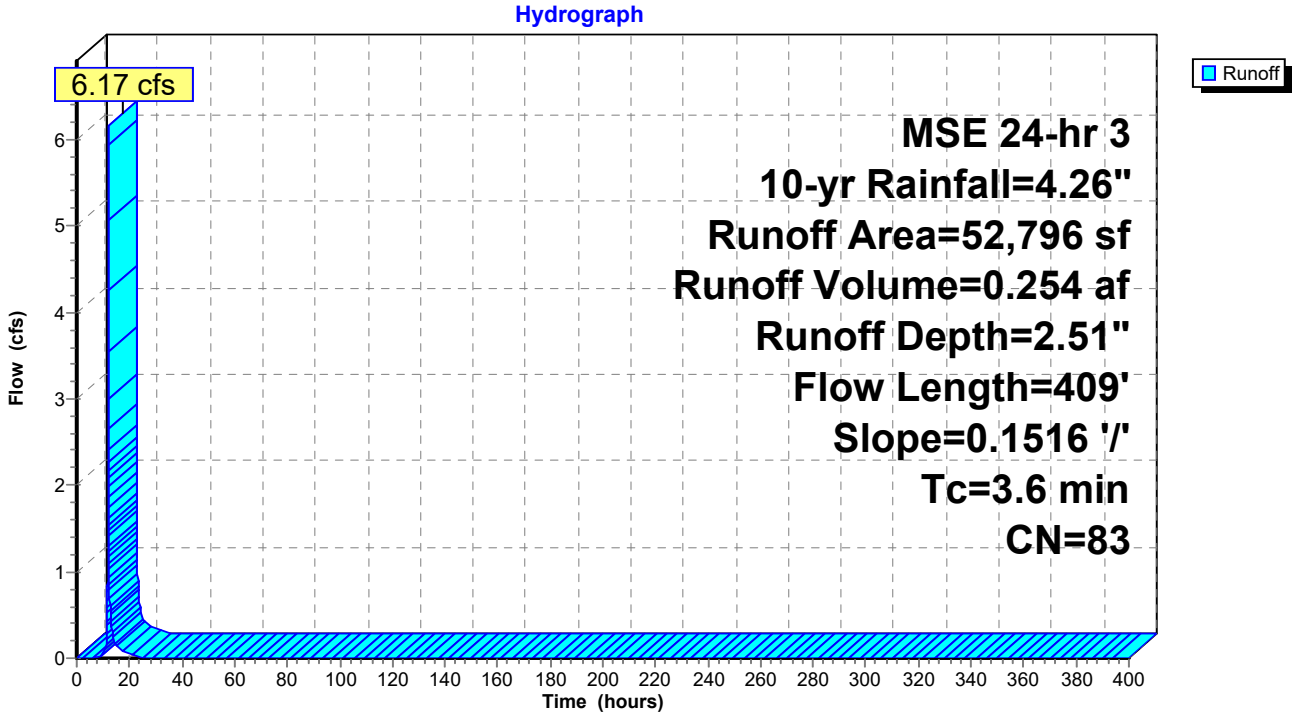
Runoff = 6.17 cfs @ 12.11 hrs, Volume= 0.254 af, Depth= 2.51"
Routed to Pond 1P : Pond 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-400.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 10-yr Rainfall=4.26"

Area (sf)	CN	Description
42,879	80	>75% Grass cover, Good, HSG D
9,917	98	Roofs, HSG D
52,796	83	Weighted Average
42,879		81.22% Pervious Area
9,917		18.78% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.6	409	0.1516	1.88		**Lag/CN Method,**

Subcatchment OFF-2: OFF-2



Summary for Subcatchment OFF-3: OFF-3

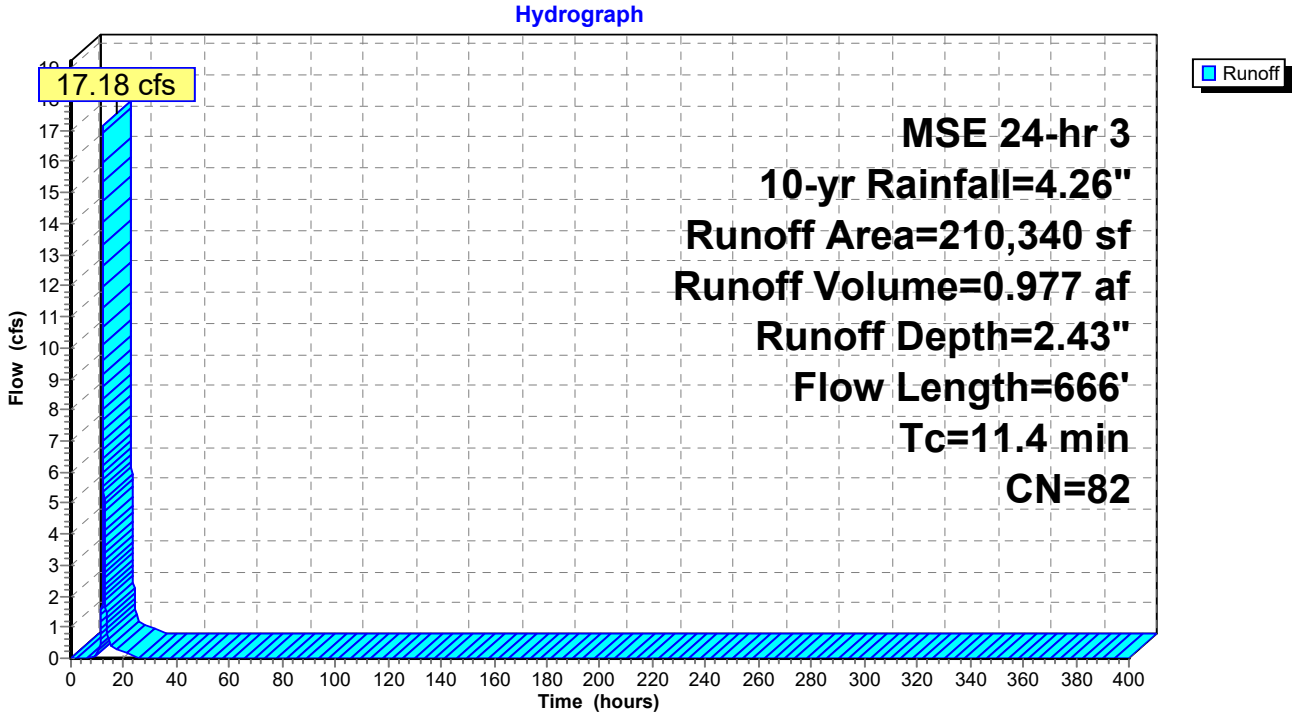
Runoff = 17.18 cfs @ 12.19 hrs, Volume= 0.977 af, Depth= 2.43"
Routed to Pond 3P : Pond 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-400.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 10-yr Rainfall=4.26"

Area (sf)	CN	Description
187,901	80	>75% Grass cover, Good, HSG D
22,439	98	Roofs, HSG D
210,340	82	Weighted Average
187,901		89.33% Pervious Area
22,439		10.67% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.2	409	0.0249	0.74		**Lag/CN Method,**
2.2	257	0.2042	1.93		**Lag/CN Method,**
11.4	666	Total			

Subcatchment OFF-3: OFF-3



Summary for Subcatchment OFF-4: OFF-4

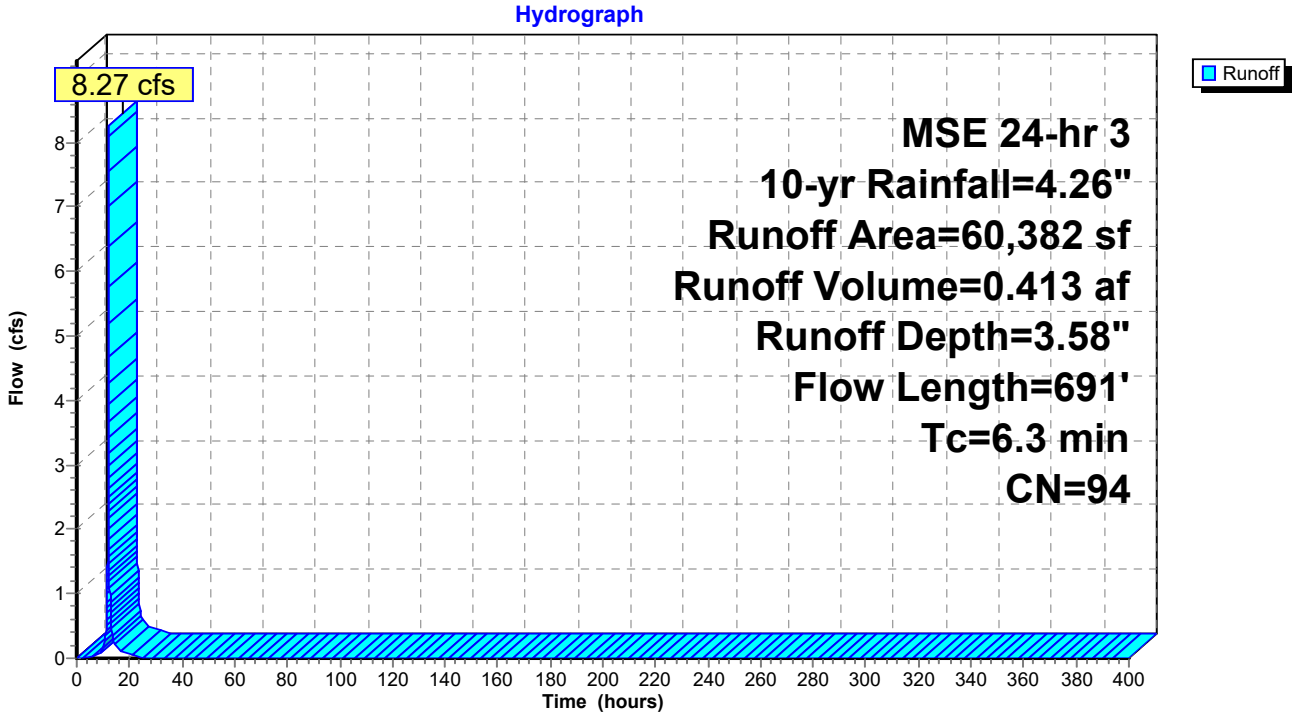
Runoff = 8.27 cfs @ 12.13 hrs, Volume= 0.413 af, Depth= 3.58"
Routed to Pond 3P : Pond 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-400.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 10-yr Rainfall=4.26"

Area (sf)	CN	Description
14,938	80	>75% Grass cover, Good, HSG D
45,444	98	Roofs, HSG D
60,382	94	Weighted Average
14,938		24.74% Pervious Area
45,444		75.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.2	359	0.0390	1.44		**Lag/CN Method,**
2.1	332	0.1400	2.68		**Lag/CN Method,**
6.3	691	Total			

Subcatchment OFF-4: OFF-4



Summary for Subcatchment S1: S1

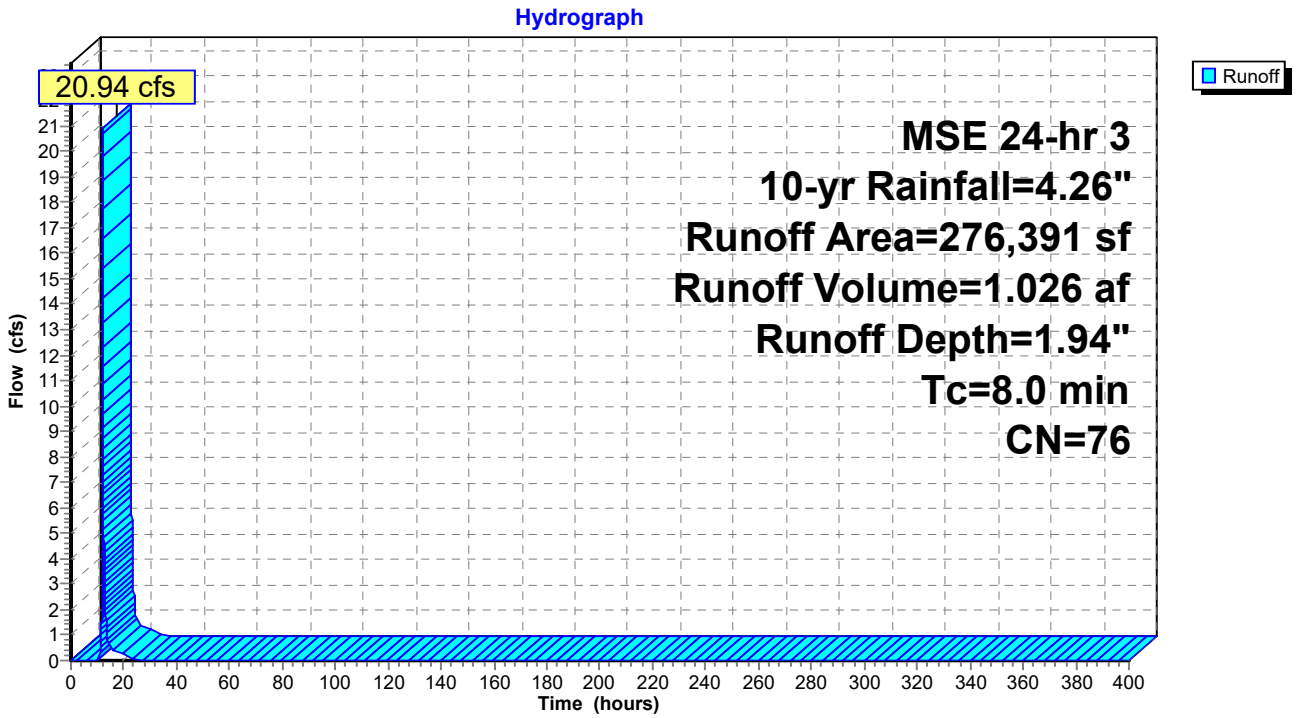
Runoff = 20.94 cfs @ 12.16 hrs, Volume= 1.026 af, Depth= 1.94"
Routed to Pond 6P : Infiltration Basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-400.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 10-yr Rainfall=4.26"

Area (sf)	CN	Description
227,257	80	>75% Grass cover, Good, HSG D
40,774	49	50-75% Grass cover, Fair, HSG A
8,360	98	Roofs, HSG D
276,391	76	Weighted Average
268,031		96.98% Pervious Area
8,360		3.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment S1: S1



Summary for Subcatchment S2: S2

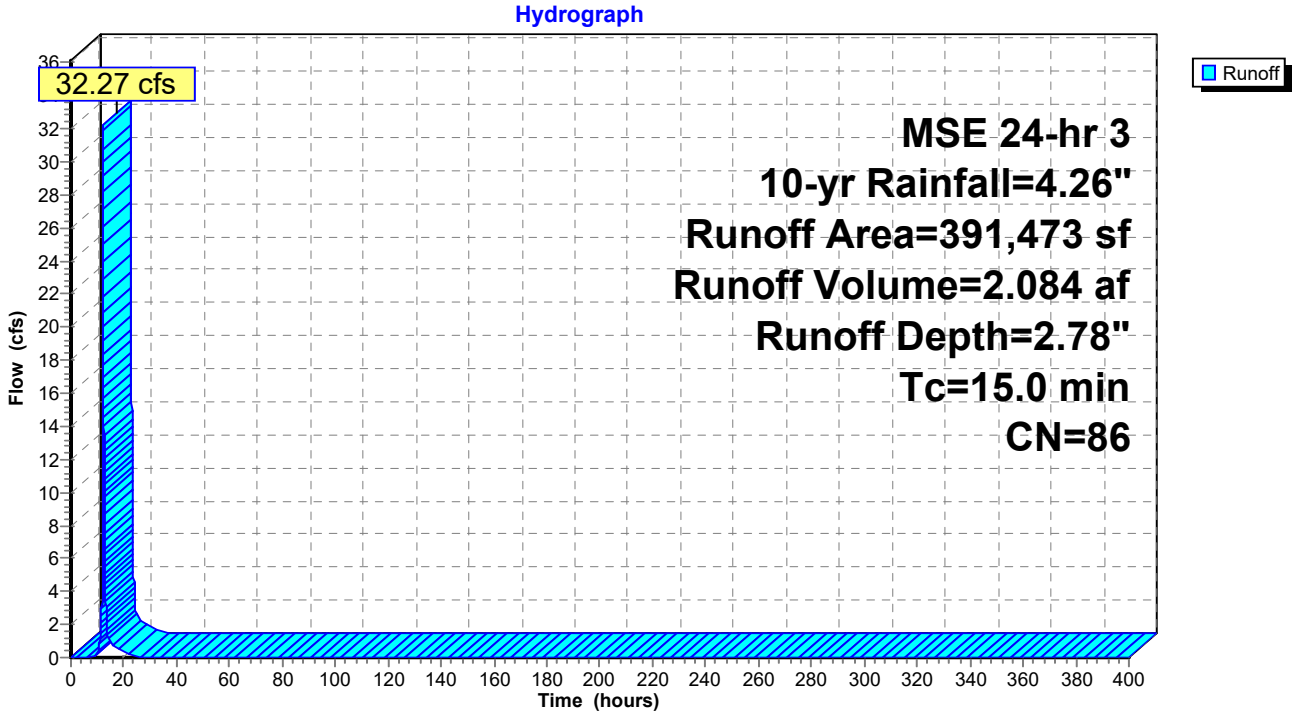
Runoff = 32.27 cfs @ 12.23 hrs, Volume= 2.084 af, Depth= 2.78"
Routed to Pond 1P : Pond 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-400.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 10-yr Rainfall=4.26"

Area (sf)	CN	Description
254,252	80	>75% Grass cover, Good, HSG D
19,253	98	Water Surface, HSG D
117,968	98	Paved roads w/curbs & sewers, HSG D
391,473	86	Weighted Average
254,252		64.95% Pervious Area
137,221		35.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0					**Direct Entry, STORM SEWER**

Subcatchment S2: S2



Summary for Subcatchment S3: S3

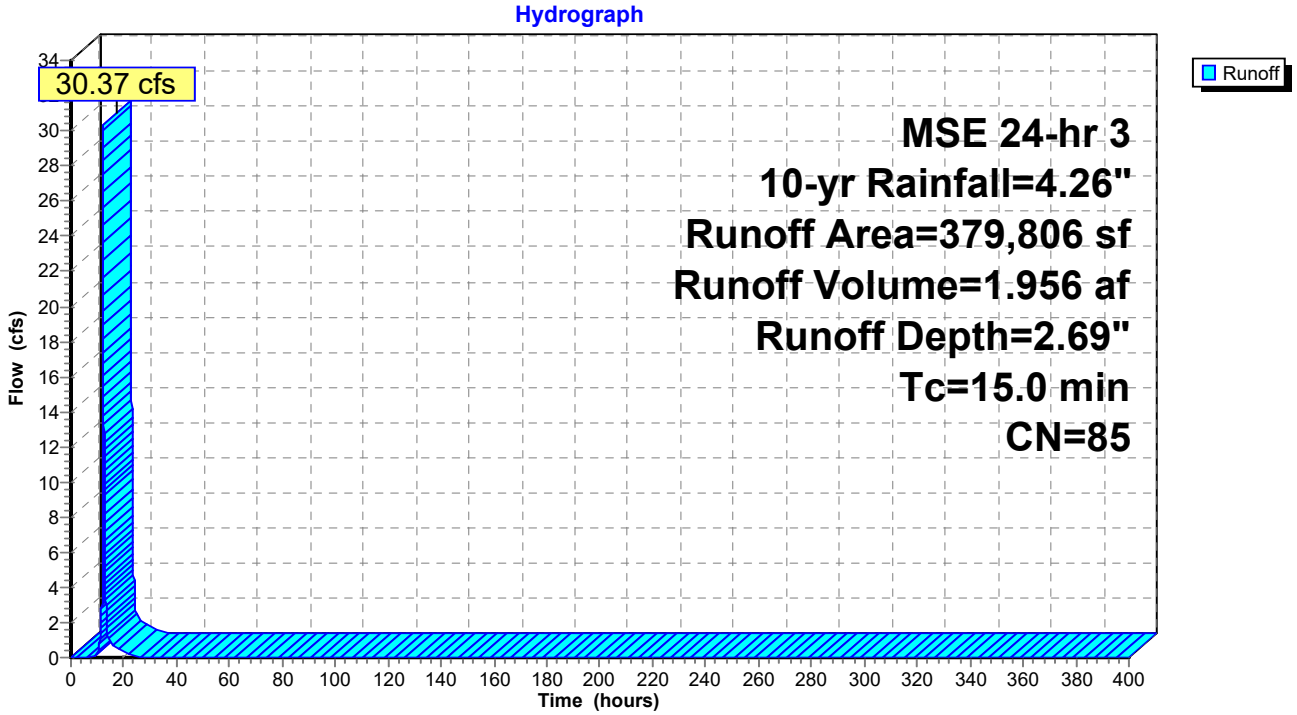
Runoff = 30.37 cfs @ 12.23 hrs, Volume= 1.956 af, Depth= 2.69"
Routed to Pond 3P : Pond 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-400.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 10-yr Rainfall=4.26"

Area (sf)	CN	Description
266,637	80	>75% Grass cover, Good, HSG D
18,513	98	Water Surface, HSG D
94,656	98	Paved roads w/curbs & sewers, HSG D
379,806	85	Weighted Average
266,637		70.20% Pervious Area
113,169		29.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0					**Direct Entry, STORM SEWER**

Subcatchment S3: S3



Summary for Subcatchment S4: S4

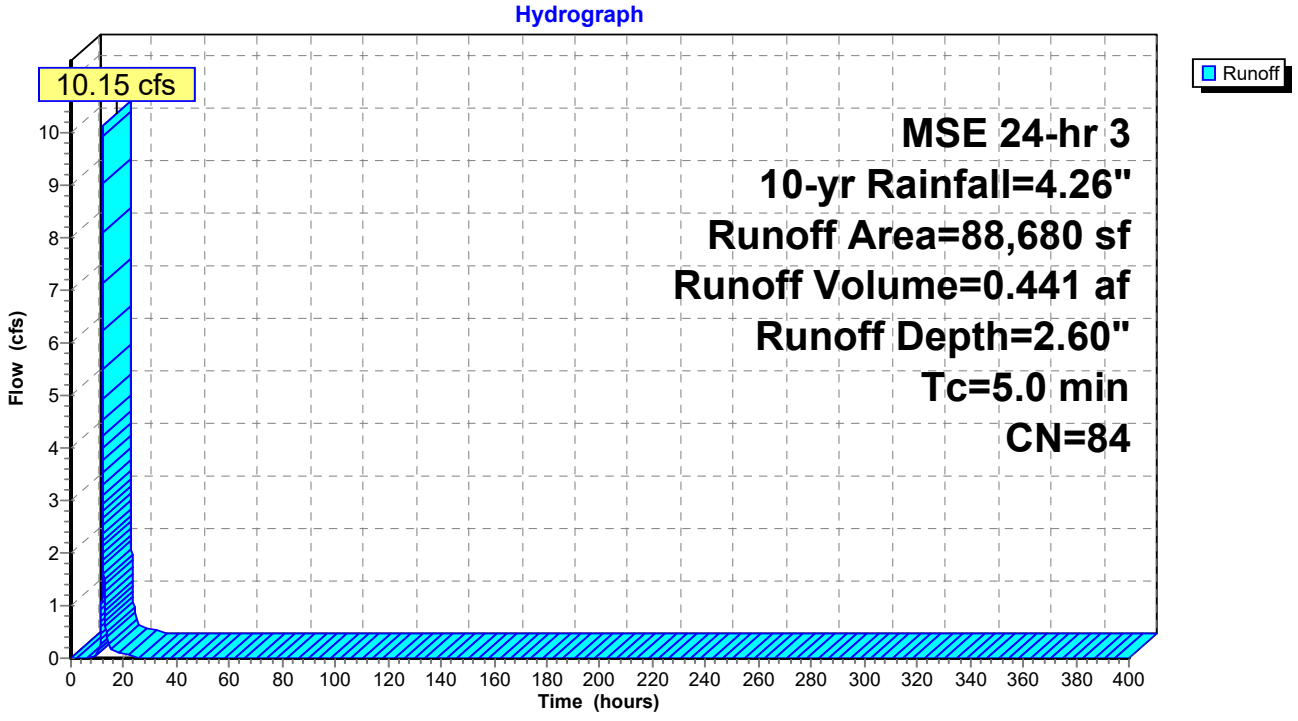
Runoff = 10.15 cfs @ 12.12 hrs, Volume= 0.441 af, Depth= 2.60"
Routed to Link 2L : North Central

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-400.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 10-yr Rainfall=4.26"

Area (sf)	CN	Description
70,233	80	>75% Grass cover, Good, HSG D
18,447	98	Roofs, HSG D
88,680	84	Weighted Average
70,233		79.20% Pervious Area
18,447		20.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, SHEET**

Subcatchment S4: S4



Summary for Subcatchment S5: S5

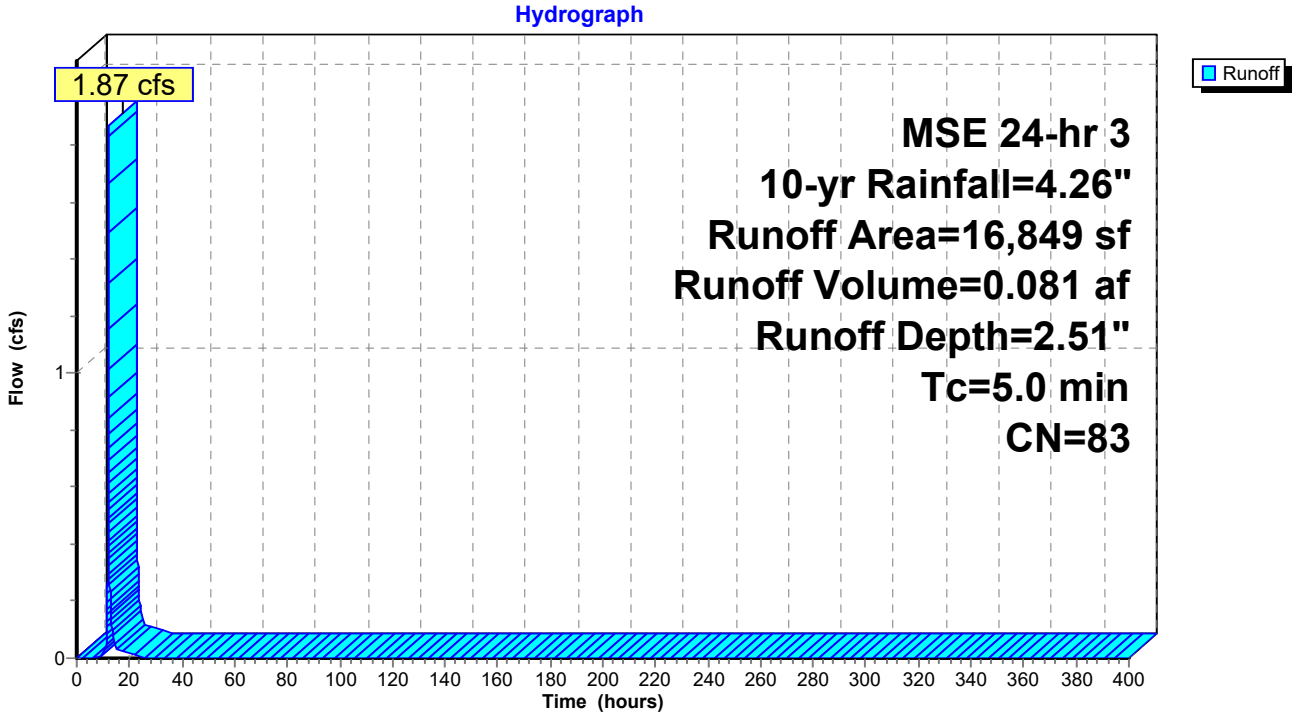
Runoff = 1.87 cfs @ 12.12 hrs, Volume= 0.081 af, Depth= 2.51"
Routed to Link 2L : North Central

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-400.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 10-yr Rainfall=4.26"

Area (sf)	CN	Description
14,460	80	>75% Grass cover, Good, HSG D
2,389	98	Roofs, HSG D
16,849	83	Weighted Average
14,460		85.82% Pervious Area
2,389		14.18% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, SHEET**

Subcatchment S5: S5



Summary for Subcatchment S6: S6

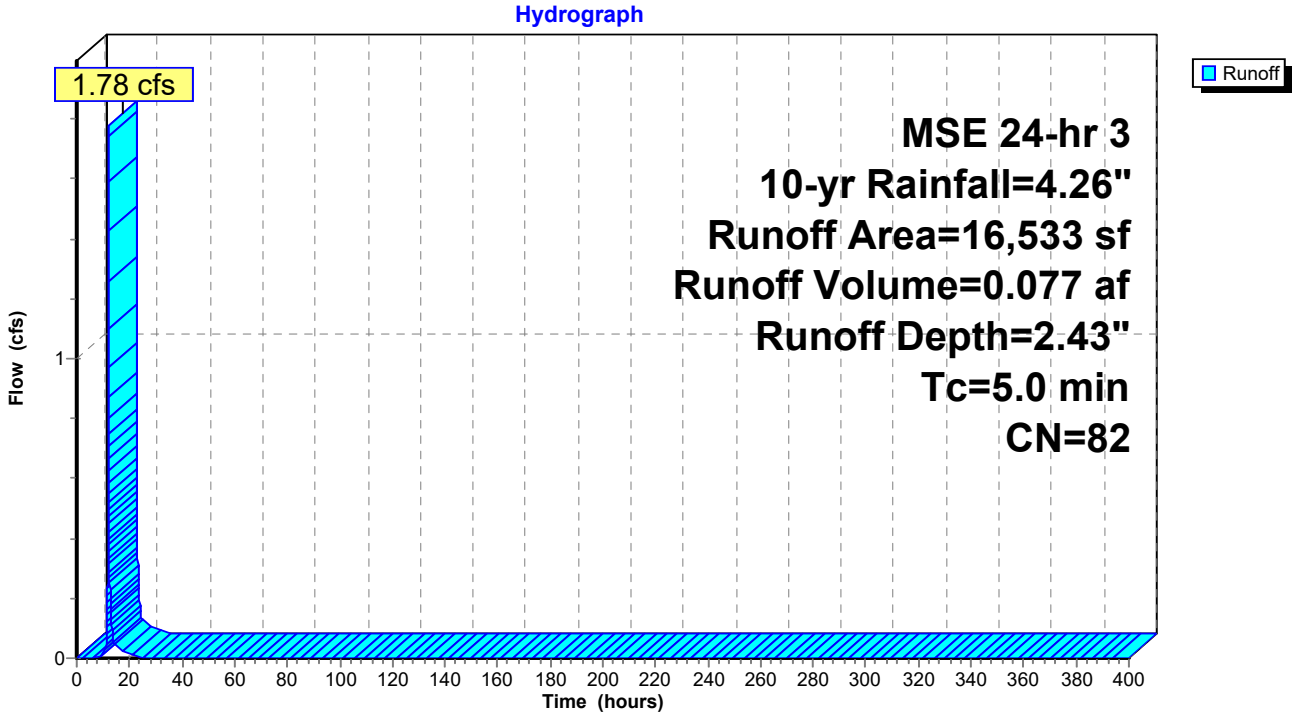
Runoff = 1.78 cfs @ 12.12 hrs, Volume= 0.077 af, Depth= 2.43"
Routed to Link 4L : West fountain pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-400.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 10-yr Rainfall=4.26"

Area (sf)	CN	Description
14,993	80	>75% Grass cover, Good, HSG D
1,540	98	Roofs, HSG D
16,533	82	Weighted Average
14,993		90.69% Pervious Area
1,540		9.31% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, SHEET**

Subcatchment S6: S6



Summary for Pond 1P: Pond 1

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=123)

Inflow Area = 25.133 ac, 29.98% Impervious, Inflow Depth = 2.69" for 10-yr event
Inflow = 71.10 cfs @ 12.26 hrs, Volume= 5.640 af
Outflow = 34.62 cfs @ 12.32 hrs, Volume= 5.640 af, Atten= 51%, Lag= 3.5 min
Primary = 10.11 cfs @ 13.03 hrs, Volume= 3.892 af
Routed to Link 5L : Industrial BLVD storm
Secondary = 28.70 cfs @ 12.30 hrs, Volume= 1.755 af
Routed to Pond 6P : Infiltration Basin

Routing by Dyn-Stor-Ind method, Time Span= 0.00-400.00 hrs, dt= 0.01 hrs / 3
Starting Elev= 874.50' Surf.Area= 78,467 sf Storage= 67,297 cf
Peak Elev= 876.17' @ 13.03 hrs Surf.Area= 51,456 sf Storage= 140,868 cf (73,570 cf above start)

Plug-Flow detention time= 303.3 min calculated for 4.095 af (73% of inflow)
Center-of-Mass det. time= 143.6 min (957.7 - 814.0)

Volume	Invert	Avail.Storage	Storage Description
#1	866.00'	67,297 cf	**DEAD STORAGE (Prismatic)** Listed below (Recalc)
#2	874.50'	216,654 cf	**LIVE STORAGE (Prismatic)** Listed below (Recalc)
		283,951 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
866.00	2,804	0	0
868.00	4,619	7,423	7,423
870.00	6,827	11,446	18,869
872.00	9,572	16,399	35,268
873.50	12,179	16,313	51,581
874.50	19,253	15,716	67,297

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
874.50	59,214	0	0
876.00	31,775	68,242	68,242
877.00	34,343	33,059	101,301
878.00	36,911	35,627	136,928
880.00	42,815	79,726	216,654

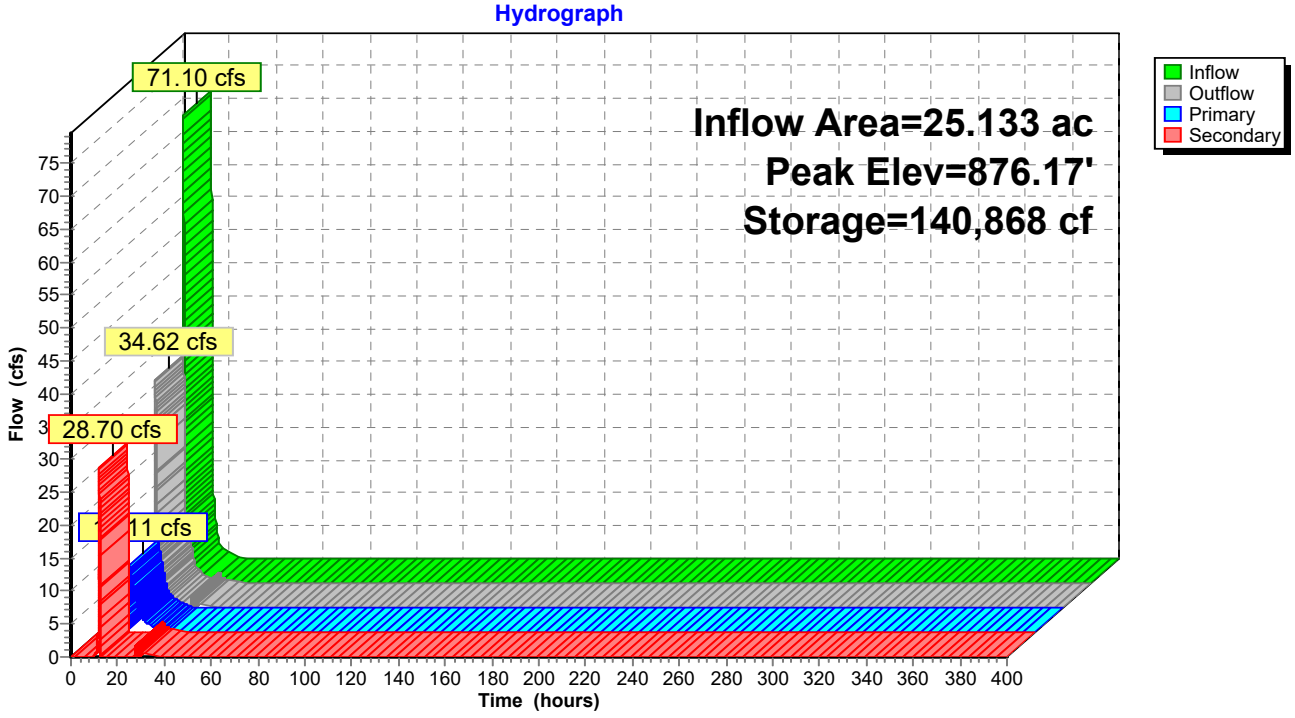
Device	Routing	Invert	Outlet Devices
#1	Primary	869.50'	**24.0" Round Culvert** L= 41.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 869.50' / 868.93' S= 0.0139 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 3.14 sf
#2	Device 1	873.50'	**24.0" Round Culvert** L= 520.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 873.50' / 869.50' S= 0.0077 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 3.14 sf
#3	Device 2	874.70'	**40.0" W x 6.0" H Vert. Orifice/Grate** C= 0.600

			Limited to weir flow at low heads
#4	Device 2	875.20'	**0.5' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88
#5	Secondary	874.50'	**45.0' long x 28.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=10.11 cfs @ 13.03 hrs HW=876.17' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Passes 10.11 cfs of 31.77 cfs potential flow)
└─**2=Culvert** (Passes 10.11 cfs of 17.23 cfs potential flow)
└─**3=Orifice/Grate** (Orifice Controls 8.84 cfs @ 5.30 fps)
└─**4=Broad-Crested Rectangular Weir** (Weir Controls 1.27 cfs @ 2.63 fps)

Secondary OutFlow Max=28.01 cfs @ 12.30 hrs HW=875.46' TW=875.44' (Dynamic Tailwater)
└─**5=Broad-Crested Rectangular Weir** (Weir Controls 28.01 cfs @ 0.65 fps)

Pond 1P: Pond 1



Summary for Pond 3P: Pond 2

Inflow Area = 14.934 ac, 27.83% Impervious, Inflow Depth = 2.69" for 10-yr event
Inflow = 51.66 cfs @ 12.20 hrs, Volume= 3.346 af
Outflow = 39.50 cfs @ 12.31 hrs, Volume= 3.302 af, Atten= 24%, Lag= 6.3 min
Primary = 39.50 cfs @ 12.31 hrs, Volume= 3.302 af
Routed to Pond 1P : Pond 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-400.00 hrs, dt= 0.01 hrs / 3
Starting Elev= 875.50' Surf.Area= 37,026 sf Storage= 50,009 cf
Peak Elev= 876.65' @ 12.31 hrs Surf.Area= 46,381 sf Storage= 76,790 cf (26,781 cf above start)

Plug-Flow detention time= 154.2 min calculated for 2.154 af (64% of inflow)
Center-of-Mass det. time= 25.1 min (824.2 - 799.1)

Volume	Invert	Avail.Storage	Storage Description
#1	871.00'	50,009 cf	**Dead Storage (Prismatic)** Listed below (Recalc)
#2	875.50'	140,398 cf	**Live Storage (Prismatic)** Listed below (Recalc)
		190,407 cf	Total Available Storage

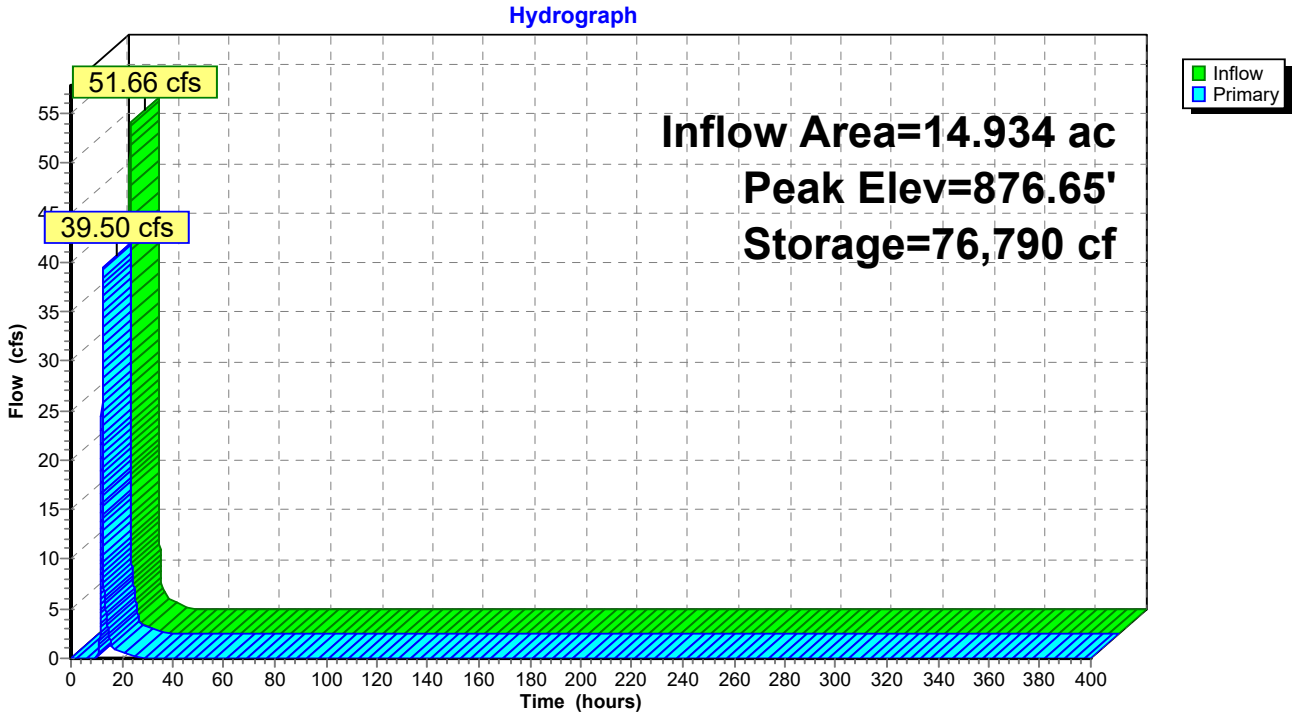
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
871.00	7,613	0	0
872.00	8,852	8,233	8,233
874.00	11,561	20,413	28,646
874.50	12,289	5,963	34,608
875.50	18,513	15,401	50,009

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
875.50	18,513	0	0
876.00	22,895	10,352	10,352
877.00	30,577	26,736	37,088
878.00	33,102	31,840	68,928
880.00	38,368	71,470	140,398

Device	Routing	Invert	Outlet Devices
#1	Primary	875.60'	**14.0' long x 96.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=39.48 cfs @ 12.31 hrs HW=876.65' TW=875.46' (Dynamic Tailwater)
1=Broad-Crested Rectangular Weir (Weir Controls 39.48 cfs @ 2.69 fps)

Pond 3P: Pond 2



Summary for Pond 6P: Infiltration Basin

[80] Warning: Exceeded Pond 1P by 0.79' @ 17.43 hrs (171.90 cfs 128.506 af)

Inflow Area = 7.345 ac, 4.33% Impervious, Inflow Depth = 4.87" for 10-yr event
Inflow = 39.60 cfs @ 12.27 hrs, Volume= 2.983 af
Outflow = 1.60 cfs @ 13.43 hrs, Volume= 2.983 af, Atten= 96%, Lag= 69.2 min
Discarded = 1.60 cfs @ 13.43 hrs, Volume= 2.983 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-400.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 876.18' @ 13.43 hrs Surf.Area= 86,181 sf Storage= 88,003 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 558.6 min (1,460.6 - 902.0)

Volume	Invert	Avail.Storage	Storage Description
#1	874.00'	24,549 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
#2	874.70'	301,862 cf	**Live Storage (Prismatic)** Listed below (Recalc)
		326,411 cf	Total Available Storage

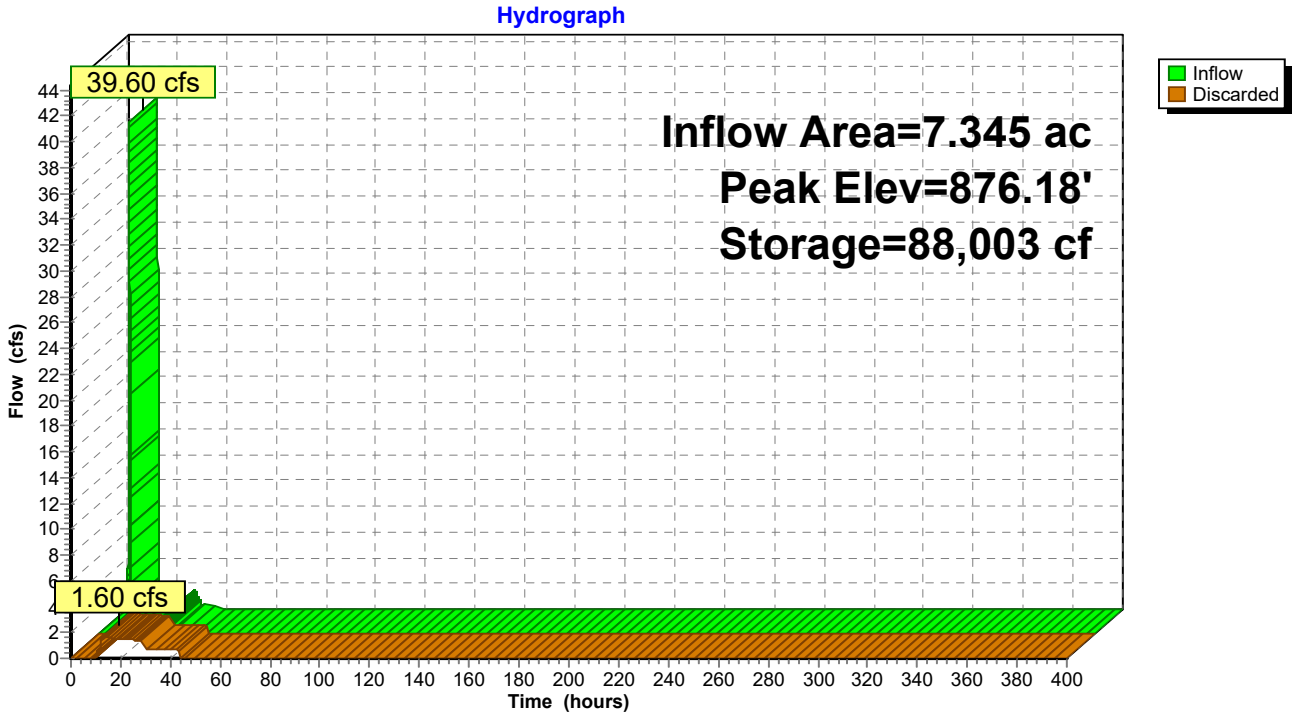
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
874.00	32,972	0	0
874.70	37,169	24,549	24,549

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
874.70	37,169	0	0
876.00	47,272	54,887	54,887
877.00	57,050	52,161	107,048
878.00	61,577	59,314	166,361
880.00	73,924	135,501	301,862

Device	Routing	Invert	Outlet Devices
#1	Discarded	874.00'	**0.800 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=1.60 cfs @ 13.43 hrs HW=876.18' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 1.60 cfs)

Pond 6P: Infiltration Basin

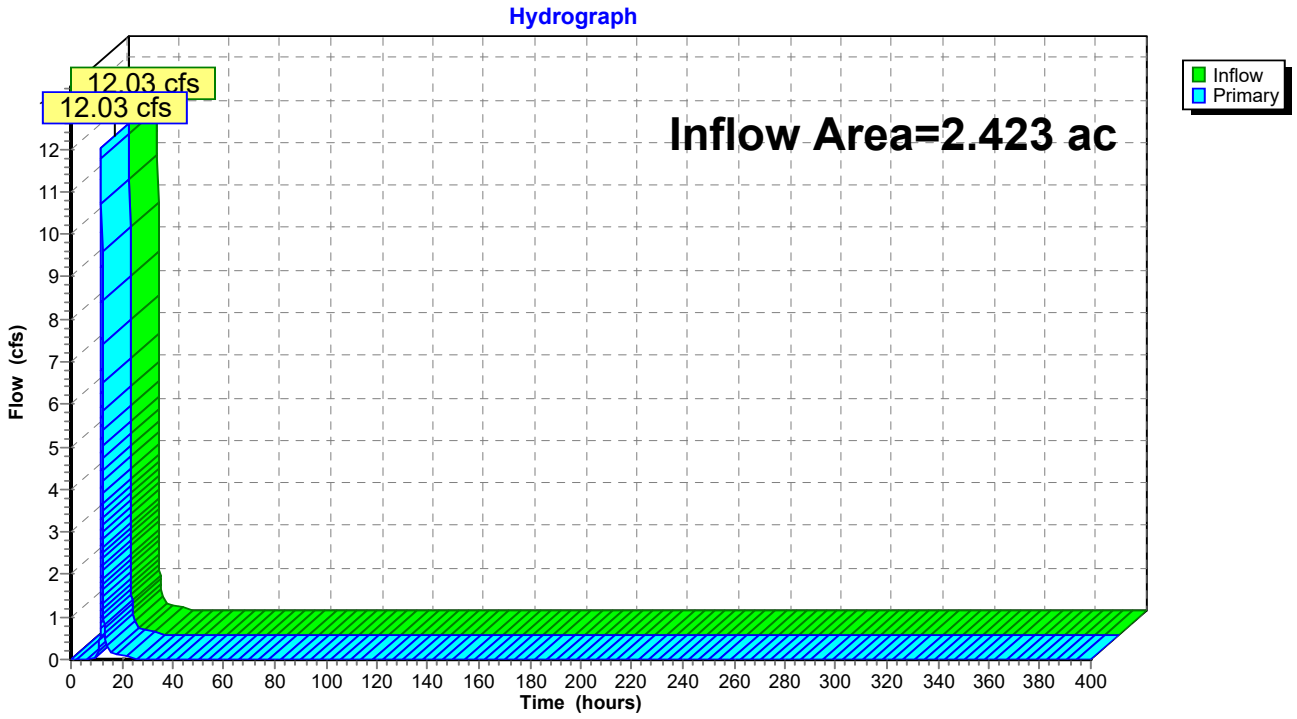


Summary for Link 2L: North Central

Inflow Area = 2.423 ac, 19.74% Impervious, Inflow Depth = 2.59" for 10-yr event
Inflow = 12.03 cfs @ 12.12 hrs, Volume= 0.522 af
Primary = 12.03 cfs @ 12.12 hrs, Volume= 0.522 af, Atten= 0%, Lag= 0.0 min
Routed to Link 5L : Industrial BLVD storm

Primary outflow = Inflow, Time Span= 0.00-400.00 hrs, dt= 0.01 hrs

Link 2L: North Central

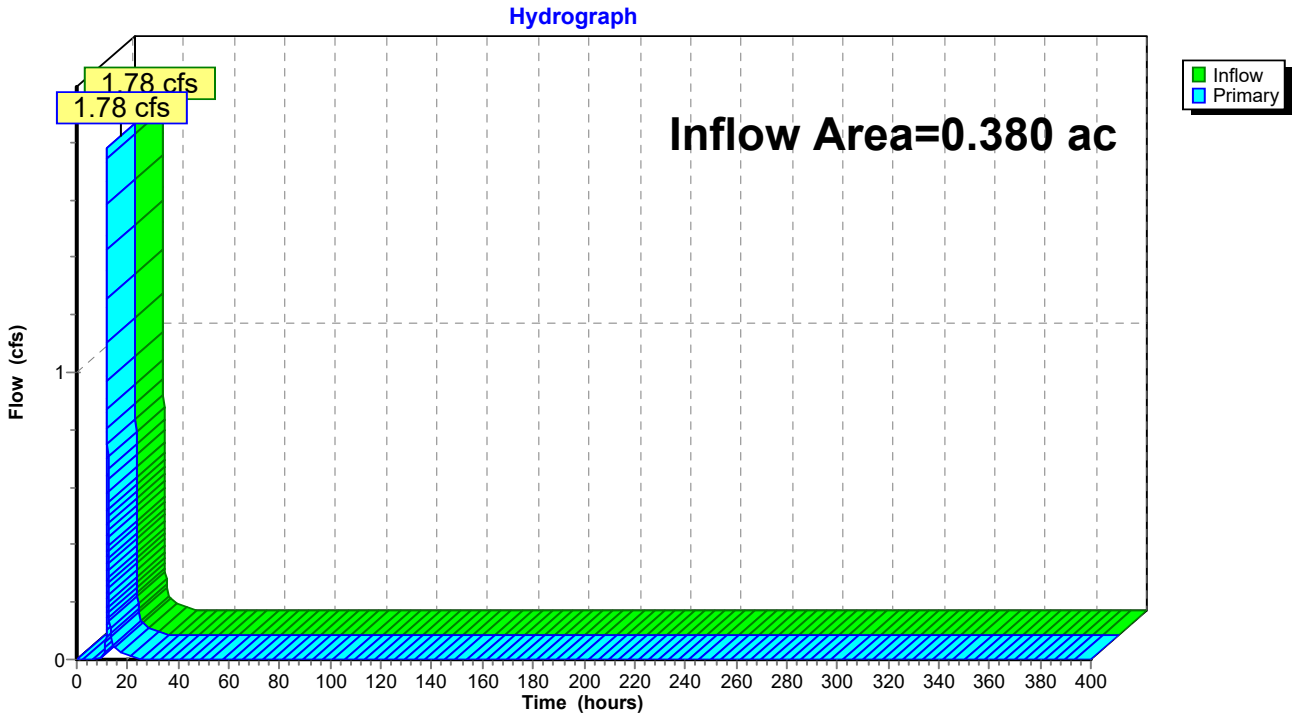


Summary for Link 4L: West fountain pond

Inflow Area = 0.380 ac, 9.31% Impervious, Inflow Depth = 2.43" for 10-yr event
Inflow = 1.78 cfs @ 12.12 hrs, Volume= 0.077 af
Primary = 1.78 cfs @ 12.12 hrs, Volume= 0.077 af, Atten= 0%, Lag= 0.0 min
Routed to Link 5L : Industrial BLVD storm

Primary outflow = Inflow, Time Span= 0.00-400.00 hrs, dt= 0.01 hrs

Link 4L: West fountain pond

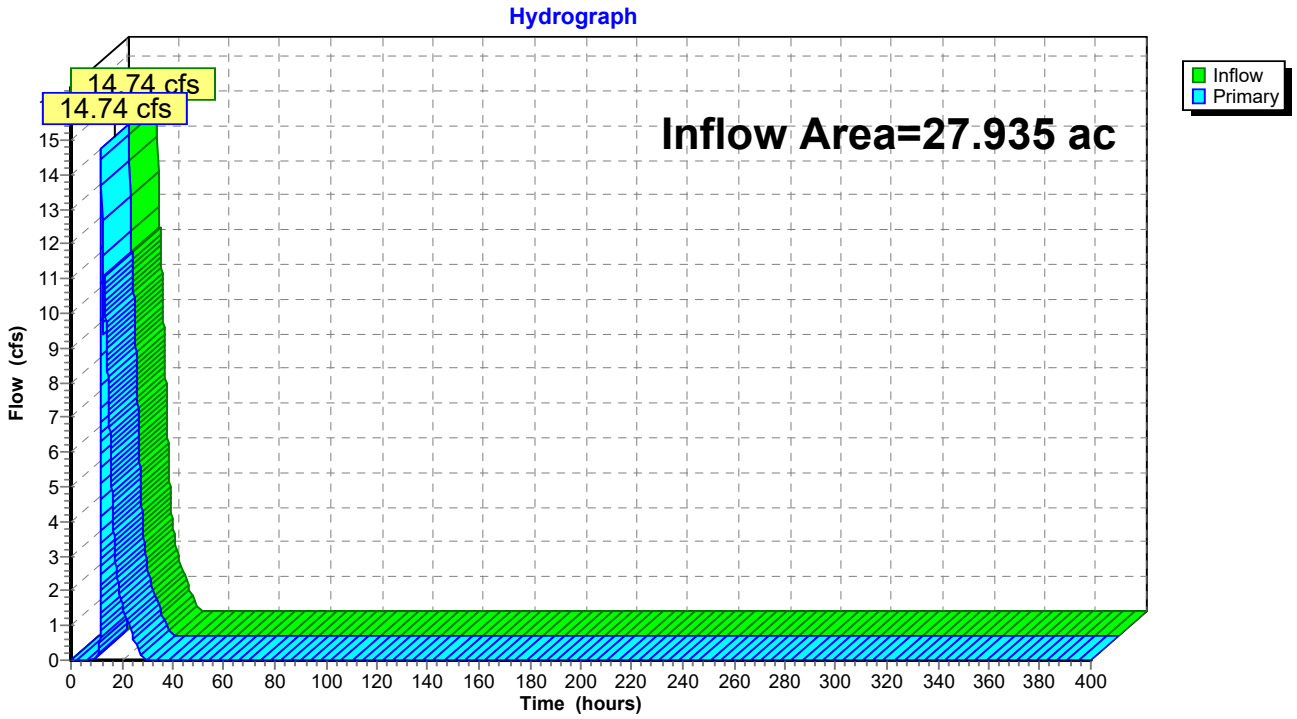


Summary for Link 5L: Industrial BLVD storm

Inflow Area = 27.935 ac, 28.81% Impervious, Inflow Depth = 1.93" for 10-yr event
Inflow = 14.74 cfs @ 12.13 hrs, Volume= 4.491 af
Primary = 14.74 cfs @ 12.13 hrs, Volume= 4.491 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-400.00 hrs, dt= 0.01 hrs

Link 5L: Industrial BLVD storm



Summary for Subcatchment OFF-1: OFF-1

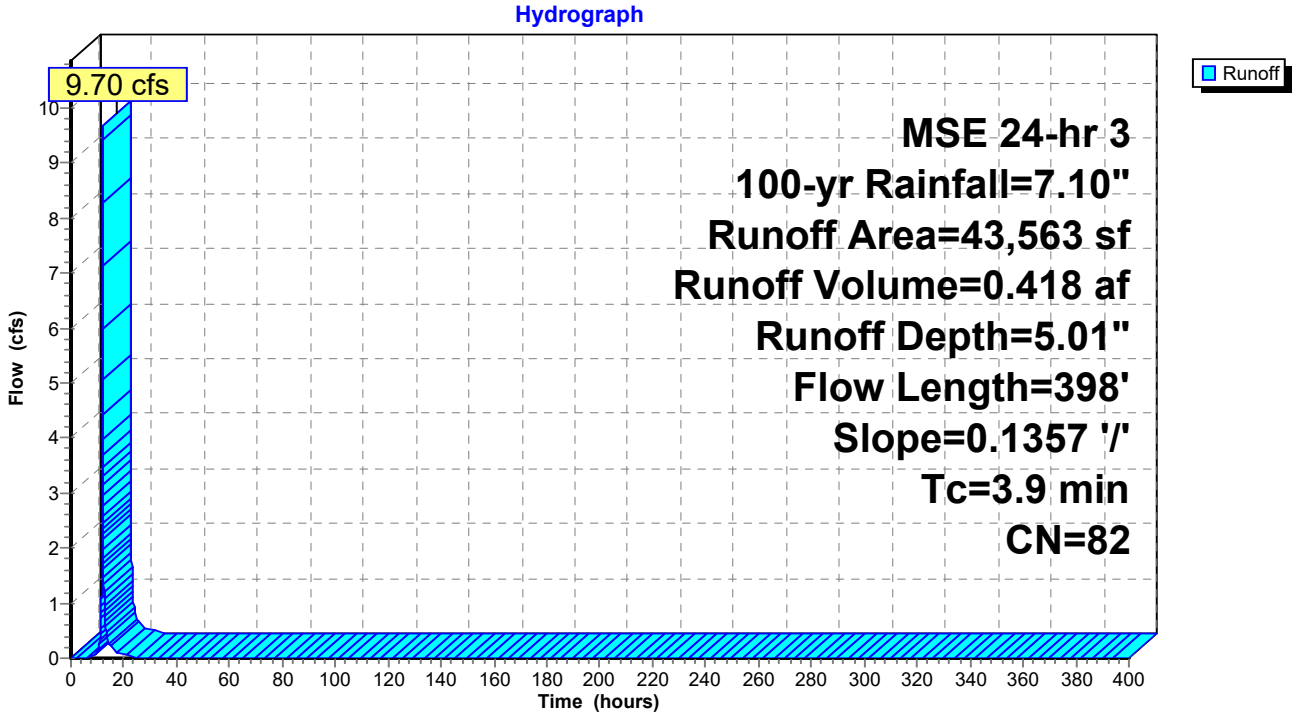
Runoff = 9.70 cfs @ 12.11 hrs, Volume= 0.418 af, Depth= 5.01"
Routed to Pond 6P : Infiltration Basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-400.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 100-yr Rainfall=7.10"

Area (sf)	CN	Description
38,068	80	>75% Grass cover, Good, HSG D
5,495	98	Roofs, HSG D
43,563	82	Weighted Average
38,068		87.39% Pervious Area
5,495		12.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.9	398	0.1357	1.71		**Lag/CN Method,**

Subcatchment OFF-1: OFF-1



Summary for Subcatchment OFF-2: OFF-2

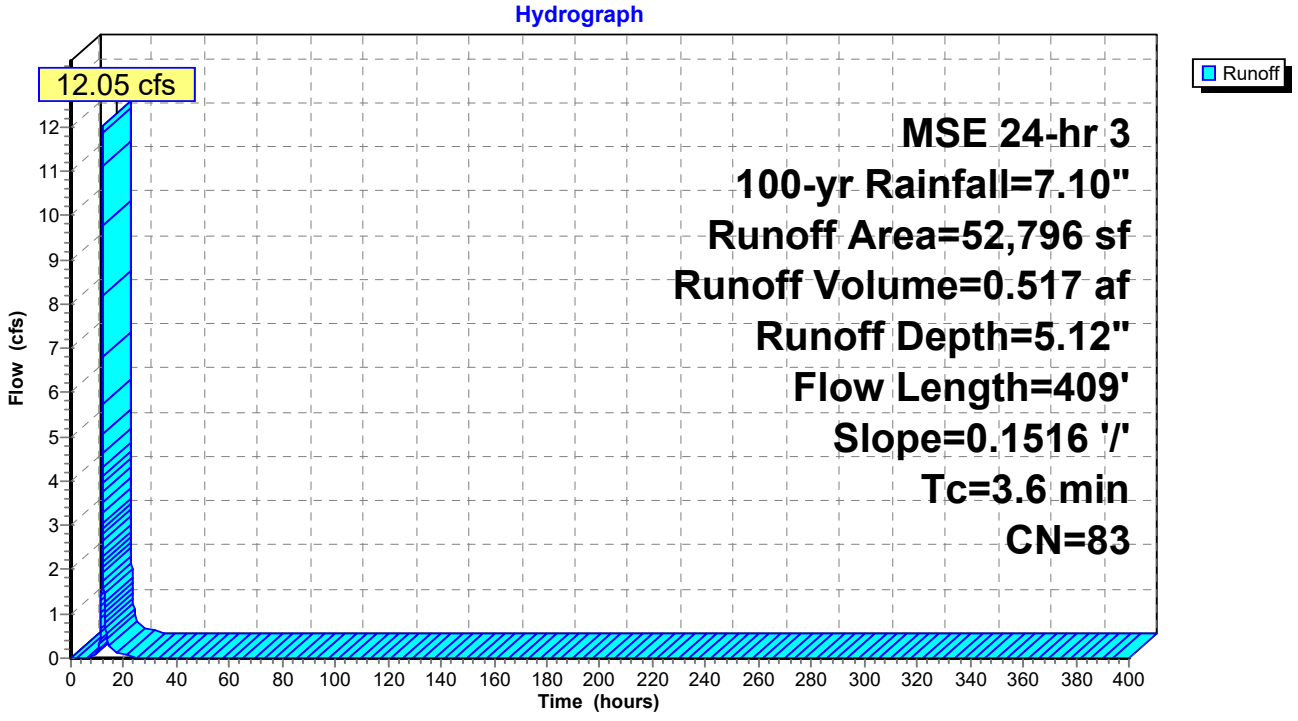
Runoff = 12.05 cfs @ 12.11 hrs, Volume= 0.517 af, Depth= 5.12"
Routed to Pond 1P : Pond 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-400.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 100-yr Rainfall=7.10"

Area (sf)	CN	Description
42,879	80	>75% Grass cover, Good, HSG D
9,917	98	Roofs, HSG D
52,796	83	Weighted Average
42,879		81.22% Pervious Area
9,917		18.78% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.6	409	0.1516	1.88		**Lag/CN Method,**

Subcatchment OFF-2: OFF-2



Summary for Subcatchment OFF-3: OFF-3

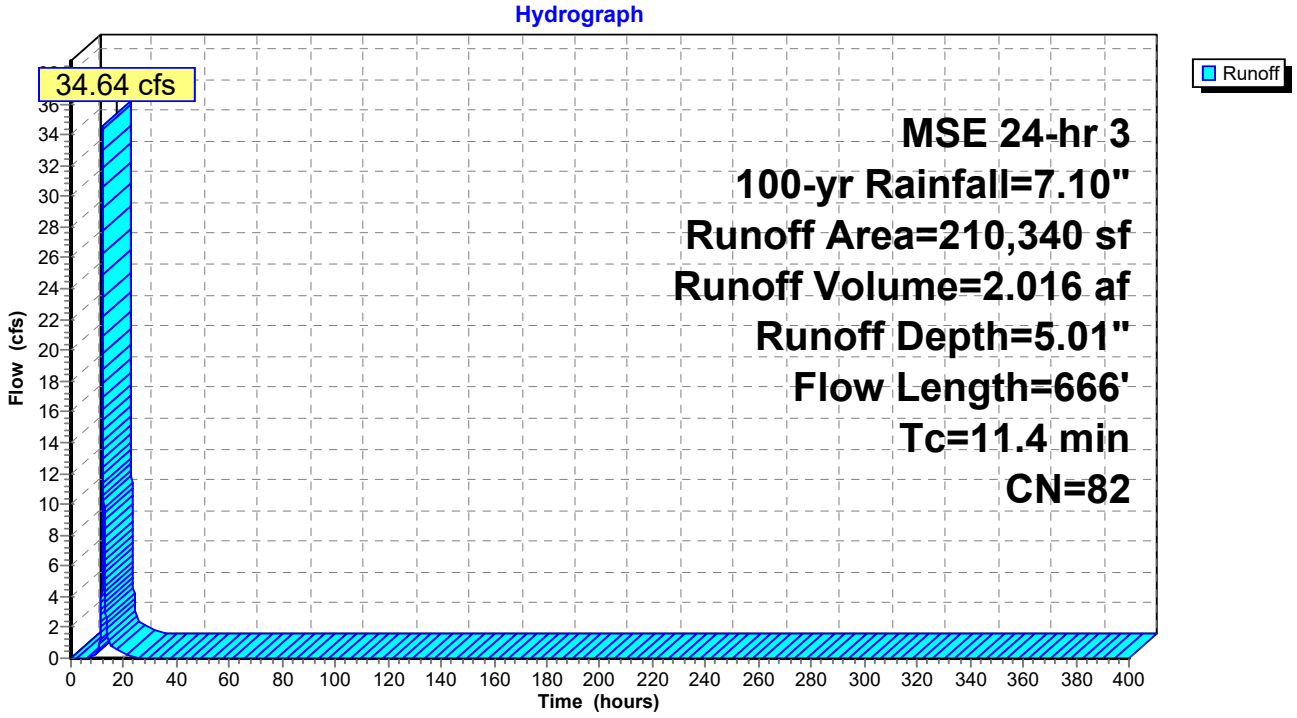
Runoff = 34.64 cfs @ 12.19 hrs, Volume= 2.016 af, Depth= 5.01"
Routed to Pond 3P : Pond 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-400.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 100-yr Rainfall=7.10"

Area (sf)	CN	Description
187,901	80	>75% Grass cover, Good, HSG D
22,439	98	Roofs, HSG D
210,340	82	Weighted Average
187,901		89.33% Pervious Area
22,439		10.67% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.2	409	0.0249	0.74		**Lag/CN Method,**
2.2	257	0.2042	1.93		**Lag/CN Method,**
11.4	666	Total			

Subcatchment OFF-3: OFF-3



Summary for Subcatchment OFF-4: OFF-4

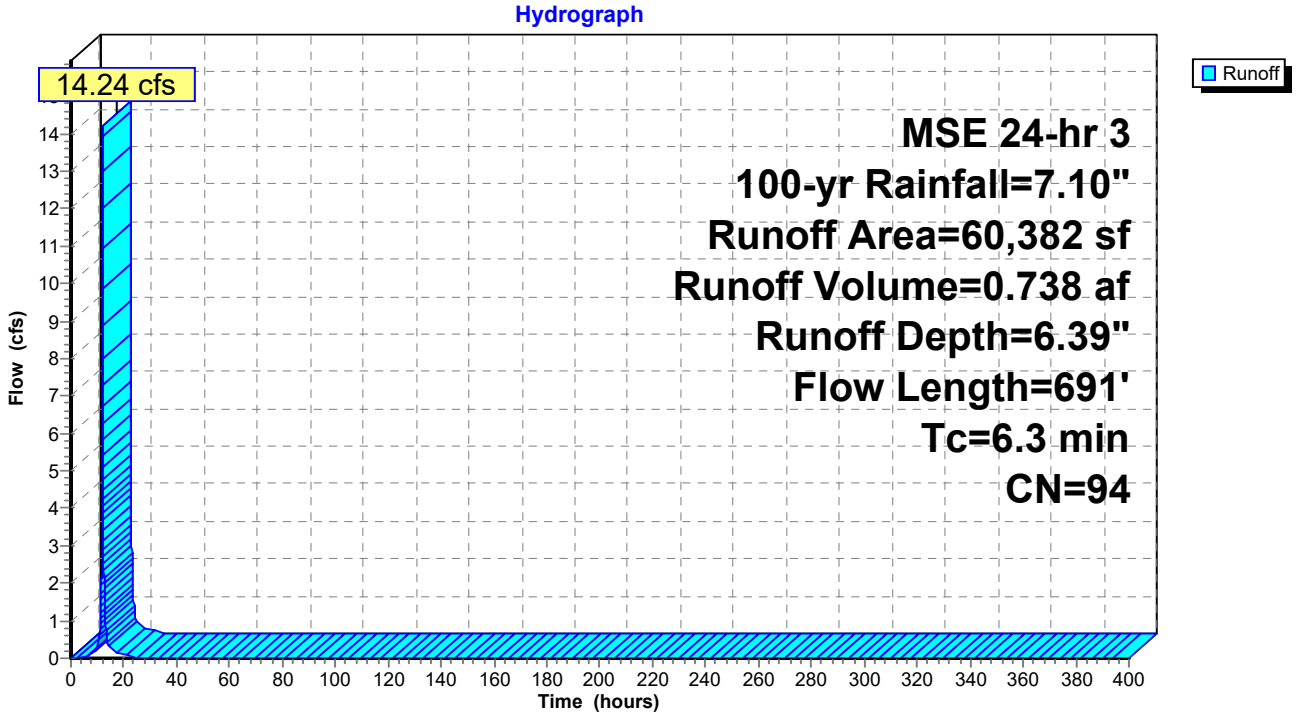
Runoff = 14.24 cfs @ 12.13 hrs, Volume= 0.738 af, Depth= 6.39"
Routed to Pond 3P : Pond 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-400.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 100-yr Rainfall=7.10"

Area (sf)	CN	Description
14,938	80	>75% Grass cover, Good, HSG D
45,444	98	Roofs, HSG D
60,382	94	Weighted Average
14,938		24.74% Pervious Area
45,444		75.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.2	359	0.0390	1.44		**Lag/CN Method,**
2.1	332	0.1400	2.68		**Lag/CN Method,**
6.3	691	Total			

Subcatchment OFF-4: OFF-4



Summary for Subcatchment S1: S1

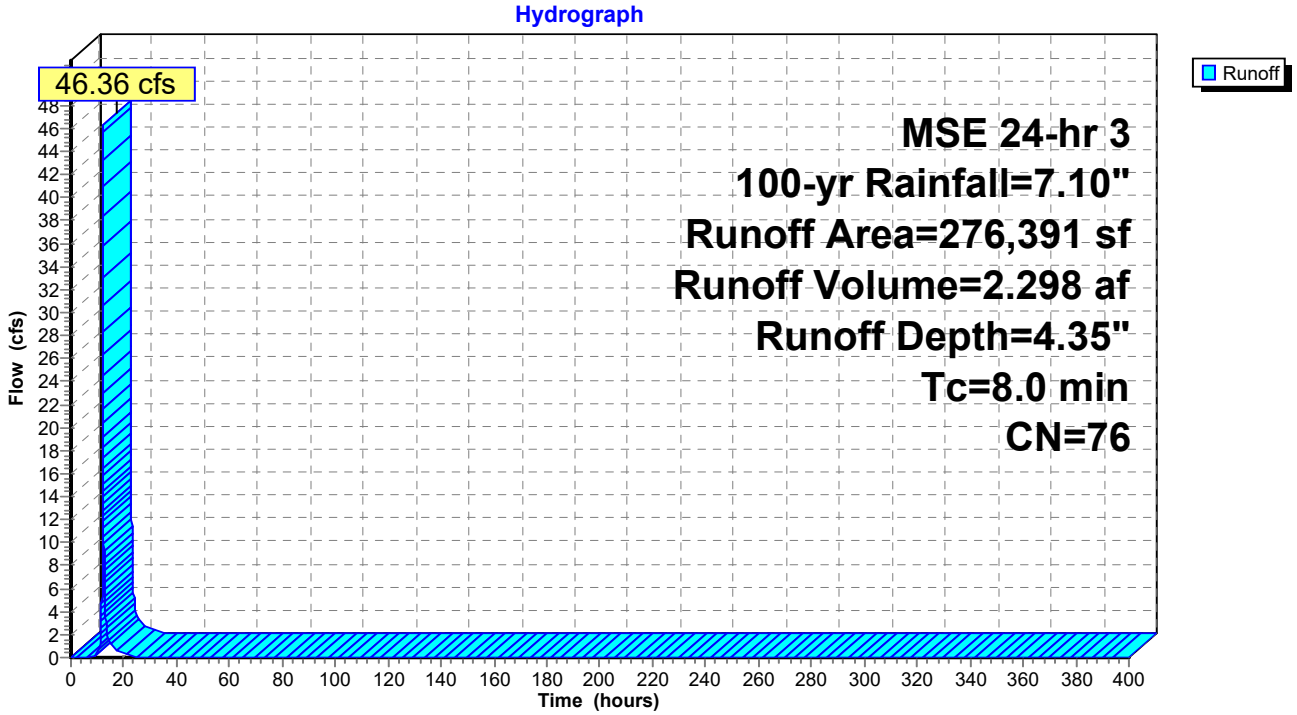
Runoff = 46.36 cfs @ 12.15 hrs, Volume= 2.298 af, Depth= 4.35"
Routed to Pond 6P : Infiltration Basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-400.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 100-yr Rainfall=7.10"

Area (sf)	CN	Description
227,257	80	>75% Grass cover, Good, HSG D
40,774	49	50-75% Grass cover, Fair, HSG A
8,360	98	Roofs, HSG D
276,391	76	Weighted Average
268,031		96.98% Pervious Area
8,360		3.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment S1: S1



Summary for Subcatchment S2: S2

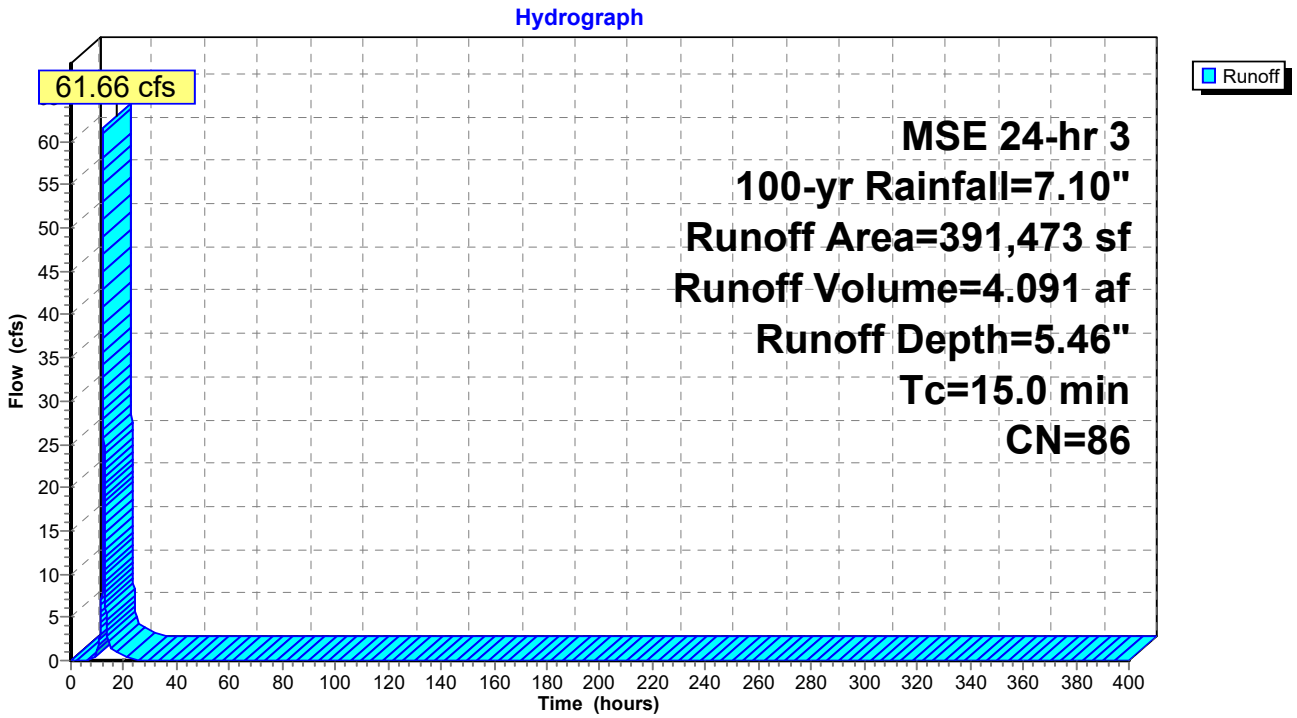
Runoff = 61.66 cfs @ 12.22 hrs, Volume= 4.091 af, Depth= 5.46"
Routed to Pond 1P : Pond 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-400.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 100-yr Rainfall=7.10"

Area (sf)	CN	Description
254,252	80	>75% Grass cover, Good, HSG D
19,253	98	Water Surface, HSG D
117,968	98	Paved roads w/curbs & sewers, HSG D
391,473	86	Weighted Average
254,252		64.95% Pervious Area
137,221		35.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0					**Direct Entry, STORM SEWER**

Subcatchment S2: S2



Summary for Subcatchment S3: S3

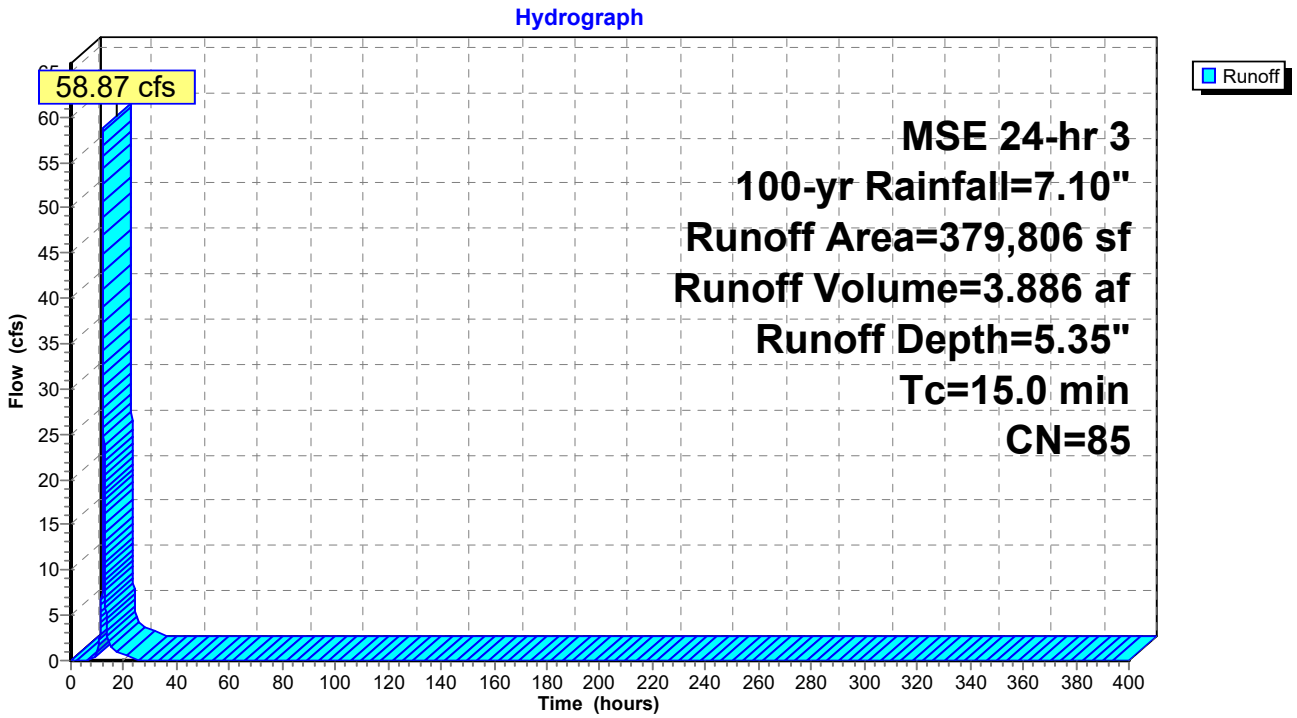
Runoff = 58.87 cfs @ 12.22 hrs, Volume= 3.886 af, Depth= 5.35"
Routed to Pond 3P : Pond 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-400.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 100-yr Rainfall=7.10"

Area (sf)	CN	Description
266,637	80	>75% Grass cover, Good, HSG D
18,513	98	Water Surface, HSG D
94,656	98	Paved roads w/curbs & sewers, HSG D
379,806	85	Weighted Average
266,637		70.20% Pervious Area
113,169		29.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0					**Direct Entry, STORM SEWER**

Subcatchment S3: S3



Summary for Subcatchment S4: S4

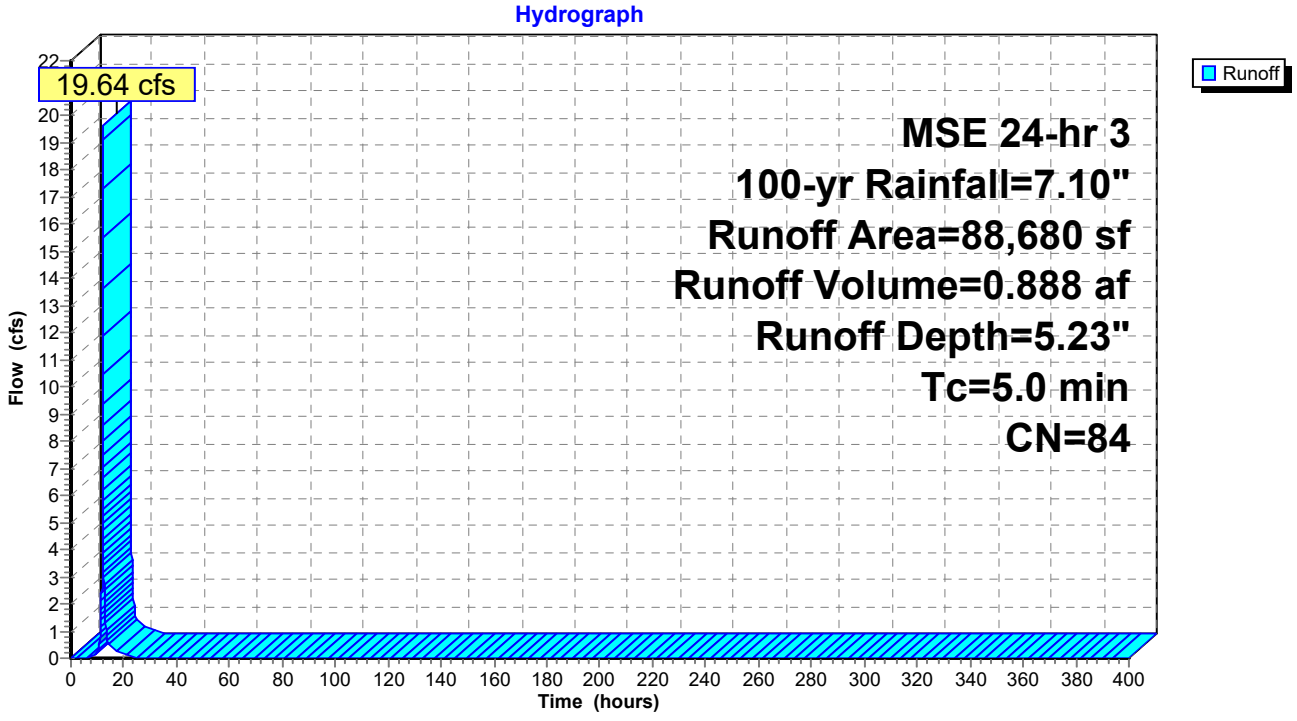
Runoff = 19.64 cfs @ 12.12 hrs, Volume= 0.888 af, Depth= 5.23"
Routed to Link 2L : North Central

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-400.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 100-yr Rainfall=7.10"

Area (sf)	CN	Description
70,233	80	>75% Grass cover, Good, HSG D
18,447	98	Roofs, HSG D
88,680	84	Weighted Average
70,233		79.20% Pervious Area
18,447		20.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, SHEET**

Subcatchment S4: S4



Summary for Subcatchment S5: S5

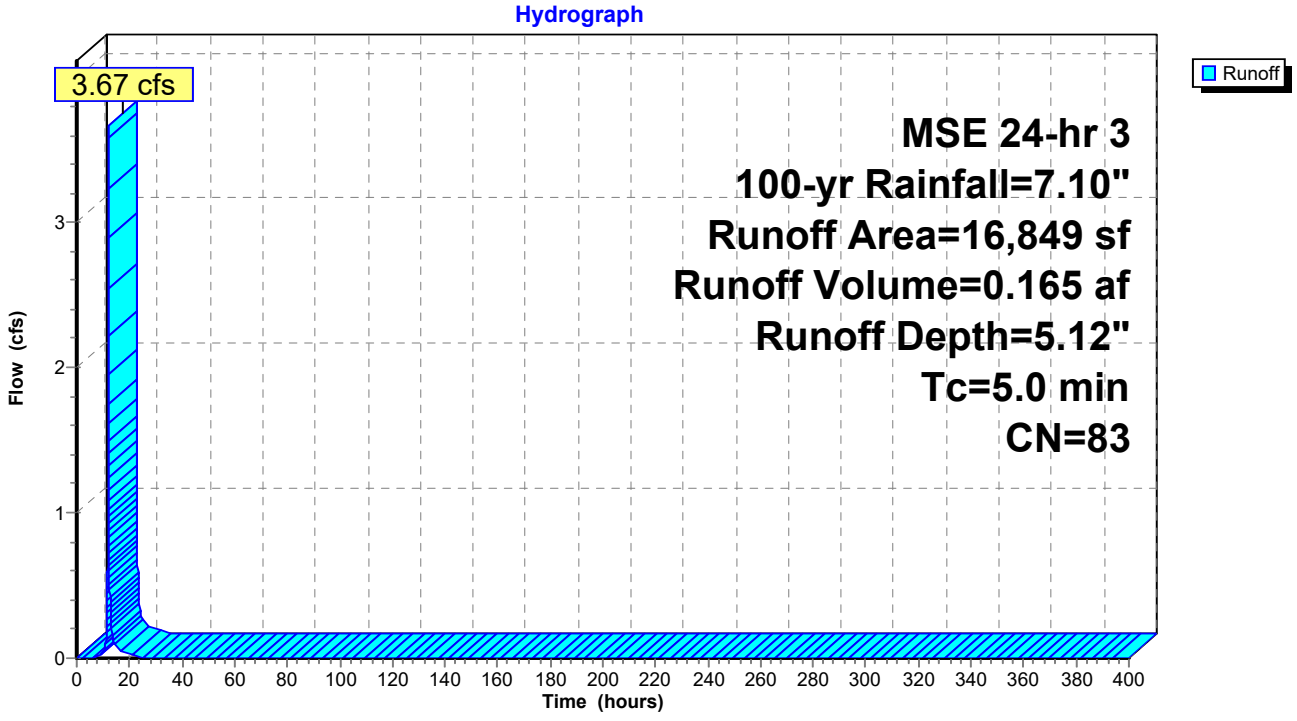
Runoff = 3.67 cfs @ 12.12 hrs, Volume= 0.165 af, Depth= 5.12"
Routed to Link 2L : North Central

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-400.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 100-yr Rainfall=7.10"

Area (sf)	CN	Description
14,460	80	>75% Grass cover, Good, HSG D
2,389	98	Roofs, HSG D
16,849	83	Weighted Average
14,460		85.82% Pervious Area
2,389		14.18% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, SHEET**

Subcatchment S5: S5



Summary for Subcatchment S6: S6

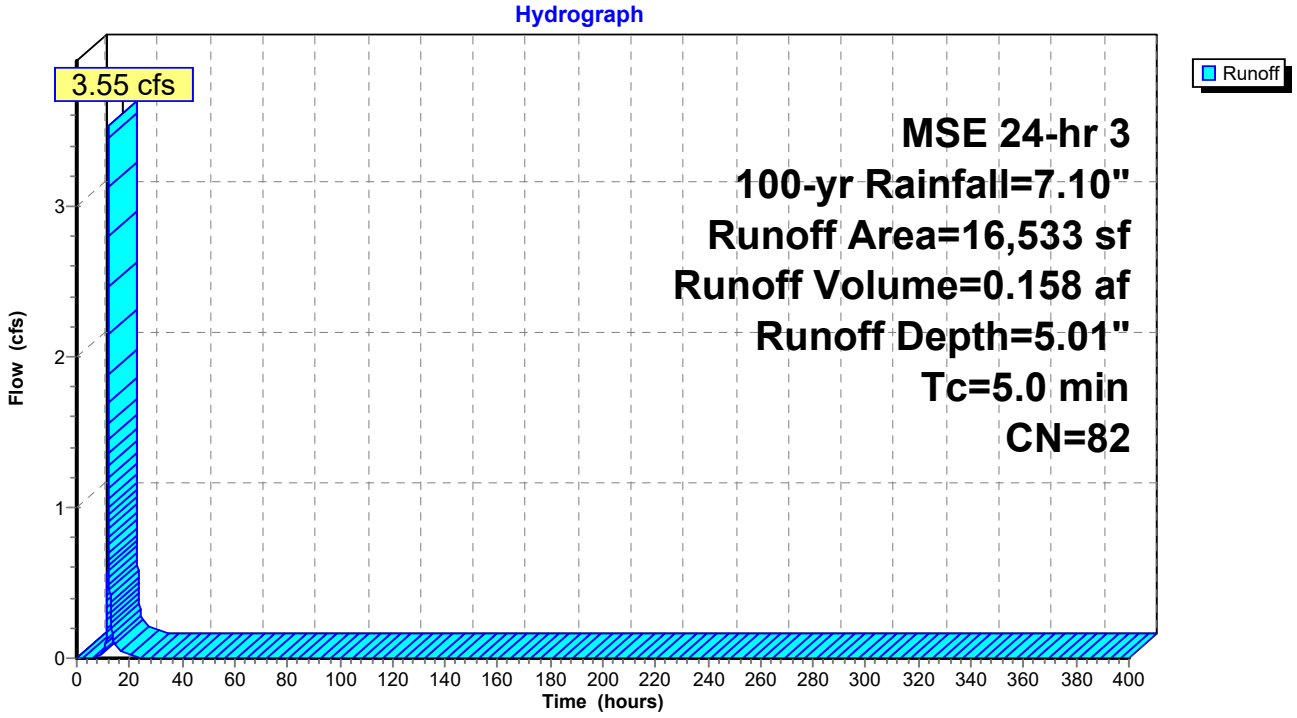
Runoff = 3.55 cfs @ 12.12 hrs, Volume= 0.158 af, Depth= 5.01"
Routed to Link 4L : West fountain pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-400.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 100-yr Rainfall=7.10"

Area (sf)	CN	Description
14,993	80	>75% Grass cover, Good, HSG D
1,540	98	Roofs, HSG D
16,533	82	Weighted Average
14,993		90.69% Pervious Area
1,540		9.31% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry, SHEET**

Subcatchment S6: S6



Summary for Pond 1P: Pond 1

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=54)

Inflow Area = 25.133 ac, 29.98% Impervious, Inflow Depth = 5.35" for 100-yr event
Inflow = 129.15 cfs @ 12.24 hrs, Volume= 11.204 af
Outflow = 75.20 cfs @ 12.27 hrs, Volume= 11.204 af, Atten= 42%, Lag= 1.6 min
Primary = 19.02 cfs @ 12.96 hrs, Volume= 8.406 af
Routed to Link 5L : Industrial BLVD storm
Secondary = 61.81 cfs @ 12.26 hrs, Volume= 2.821 af
Routed to Pond 6P : Infiltration Basin

Routing by Dyn-Stor-Ind method, Time Span= 0.00-400.00 hrs, dt= 0.01 hrs / 3
Starting Elev= 874.50' Surf.Area= 78,467 sf Storage= 67,297 cf
Peak Elev= 877.78' @ 12.96 hrs Surf.Area= 55,597 sf Storage= 196,139 cf (128,842 cf above start)

Plug-Flow detention time= 232.7 min calculated for 9.659 af (86% of inflow)
Center-of-Mass det. time= 139.0 min (952.4 - 813.4)

Volume	Invert	Avail.Storage	Storage Description
#1	866.00'	67,297 cf	**DEAD STORAGE (Prismatic)** Listed below (Recalc)
#2	874.50'	216,654 cf	**LIVE STORAGE (Prismatic)** Listed below (Recalc)
		283,951 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
866.00	2,804	0	0
868.00	4,619	7,423	7,423
870.00	6,827	11,446	18,869
872.00	9,572	16,399	35,268
873.50	12,179	16,313	51,581
874.50	19,253	15,716	67,297

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
874.50	59,214	0	0
876.00	31,775	68,242	68,242
877.00	34,343	33,059	101,301
878.00	36,911	35,627	136,928
880.00	42,815	79,726	216,654

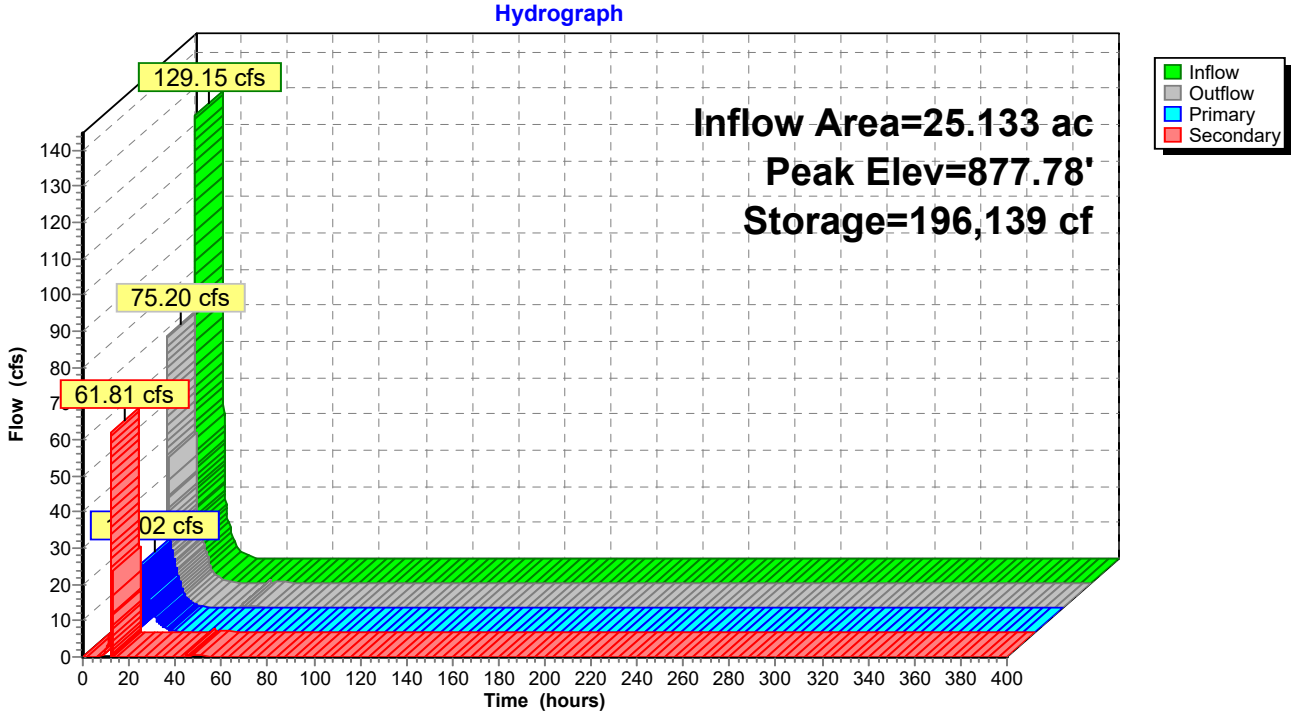
Device	Routing	Invert	Outlet Devices
#1	Primary	869.50'	**24.0" Round Culvert** L= 41.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 869.50' / 868.93' S= 0.0139 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 3.14 sf
#2	Device 1	873.50'	**24.0" Round Culvert** L= 520.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 873.50' / 869.50' S= 0.0077 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 3.14 sf
#3	Device 2	874.70'	**40.0" W x 6.0" H Vert. Orifice/Grate** C= 0.600

			Limited to weir flow at low heads
#4	Device 2	875.20'	**0.5' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88
#5	Secondary	874.50'	**45.0' long x 28.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=19.02 cfs @ 12.96 hrs HW=877.78' TW=0.00' (Dynamic Tailwater)
└─**1=Culvert** (Passes 19.02 cfs of 36.01 cfs potential flow)
└─**2=Culvert** (Passes 19.02 cfs of 22.09 cfs potential flow)
└─**3=Orifice/Grate** (Orifice Controls 13.49 cfs @ 8.10 fps)
└─**4=Broad-Crested Rectangular Weir** (Weir Controls 5.53 cfs @ 4.29 fps)

Secondary OutFlow Max=43.35 cfs @ 12.26 hrs HW=876.75' TW=876.75' (Dynamic Tailwater)
└─**5=Broad-Crested Rectangular Weir** (Weir Controls 43.35 cfs @ 0.43 fps)

Pond 1P: Pond 1



Summary for Pond 3P: Pond 2

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=12)

Inflow Area = 14.934 ac, 27.83% Impervious, Inflow Depth = 5.34" for 100-yr event
Inflow = 100.59 cfs @ 12.20 hrs, Volume= 6.640 af
Outflow = 65.38 cfs @ 12.27 hrs, Volume= 6.596 af, Atten= 35%, Lag= 4.0 min
Primary = 65.38 cfs @ 12.27 hrs, Volume= 6.596 af
Routed to Pond 1P : Pond 1

Routing by Dyn-Stor-Ind method, Time Span= 0.00-400.00 hrs, dt= 0.01 hrs / 3
Starting Elev= 875.50' Surf.Area= 37,026 sf Storage= 50,009 cf
Peak Elev= 877.78' @ 12.96 hrs Surf.Area= 51,066 sf Storage= 111,793 cf (61,784 cf above start)

Plug-Flow detention time= 135.4 min calculated for 5.448 af (82% of inflow)
Center-of-Mass det. time= 46.5 min (832.5 - 786.0)

Volume	Invert	Avail.Storage	Storage Description
#1	871.00'	50,009 cf	**Dead Storage (Prismatic)** Listed below (Recalc)
#2	875.50'	140,398 cf	**Live Storage (Prismatic)** Listed below (Recalc)
		190,407 cf	Total Available Storage

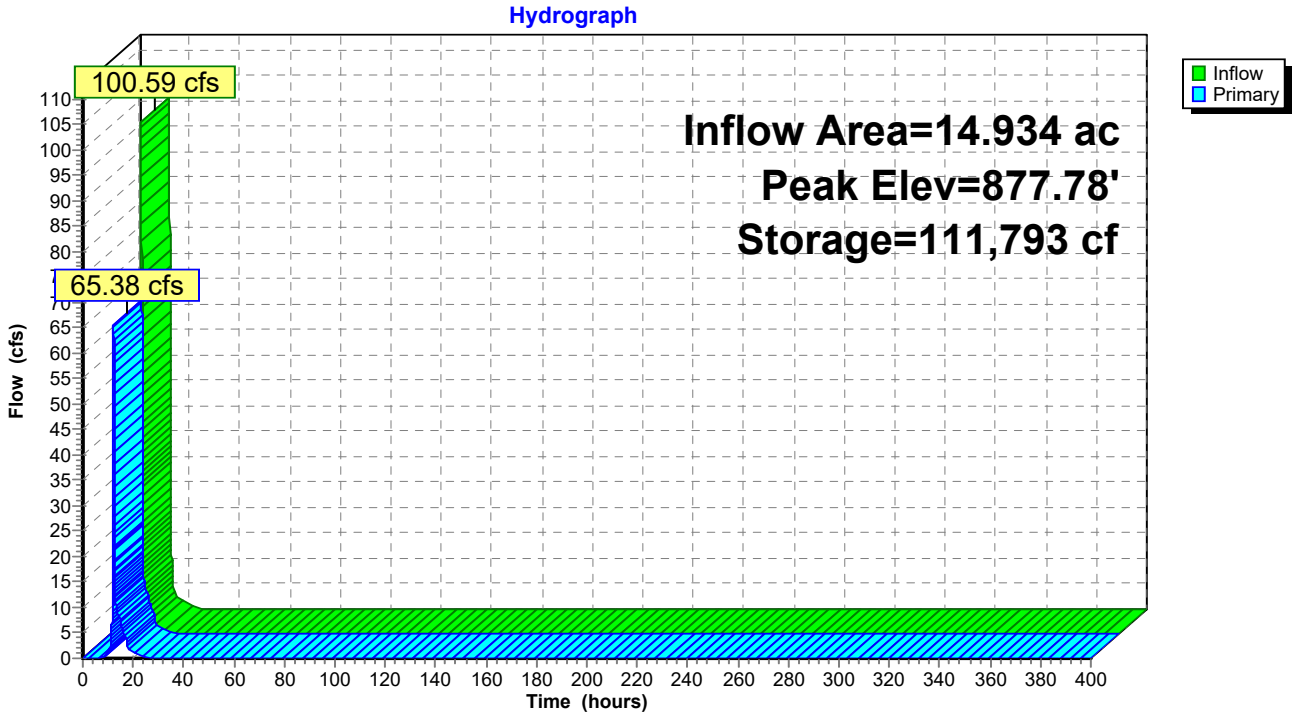
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
871.00	7,613	0	0
872.00	8,852	8,233	8,233
874.00	11,561	20,413	28,646
874.50	12,289	5,963	34,608
875.50	18,513	15,401	50,009

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
875.50	18,513	0	0
876.00	22,895	10,352	10,352
877.00	30,577	26,736	37,088
878.00	33,102	31,840	68,928
880.00	38,368	71,470	140,398

Device	Routing	Invert	Outlet Devices
#1	Primary	875.60'	**14.0' long x 96.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=65.81 cfs @ 12.27 hrs HW=877.39' TW=876.77' (Dynamic Tailwater)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 65.81 cfs @ 2.63 fps)

Pond 3P: Pond 2



Summary for Pond 6P: Infiltration Basin

[80] Warning: Exceeded Pond 1P by 2.38' @ 20.49 hrs (589.91 cfs 877.976 af)

Inflow Area = 7.345 ac, 4.33% Impervious, Inflow Depth = 9.05" for 100-yr event
Inflow = 94.24 cfs @ 12.20 hrs, Volume= 5.537 af
Outflow = 1.82 cfs @ 13.72 hrs, Volume= 5.537 af, Atten= 98%, Lag= 91.0 min
Discarded = 1.82 cfs @ 13.72 hrs, Volume= 5.537 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-400.00 hrs, dt= 0.01 hrs / 3
Peak Elev= 877.86' @ 13.72 hrs Surf.Area= 98,119 sf Storage= 182,432 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 972.7 min (1,835.8 - 863.1)

Volume	Invert	Avail.Storage	Storage Description
#1	874.00'	24,549 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)
#2	874.70'	301,862 cf	**Live Storage (Prismatic)** Listed below (Recalc)
		326,411 cf	Total Available Storage

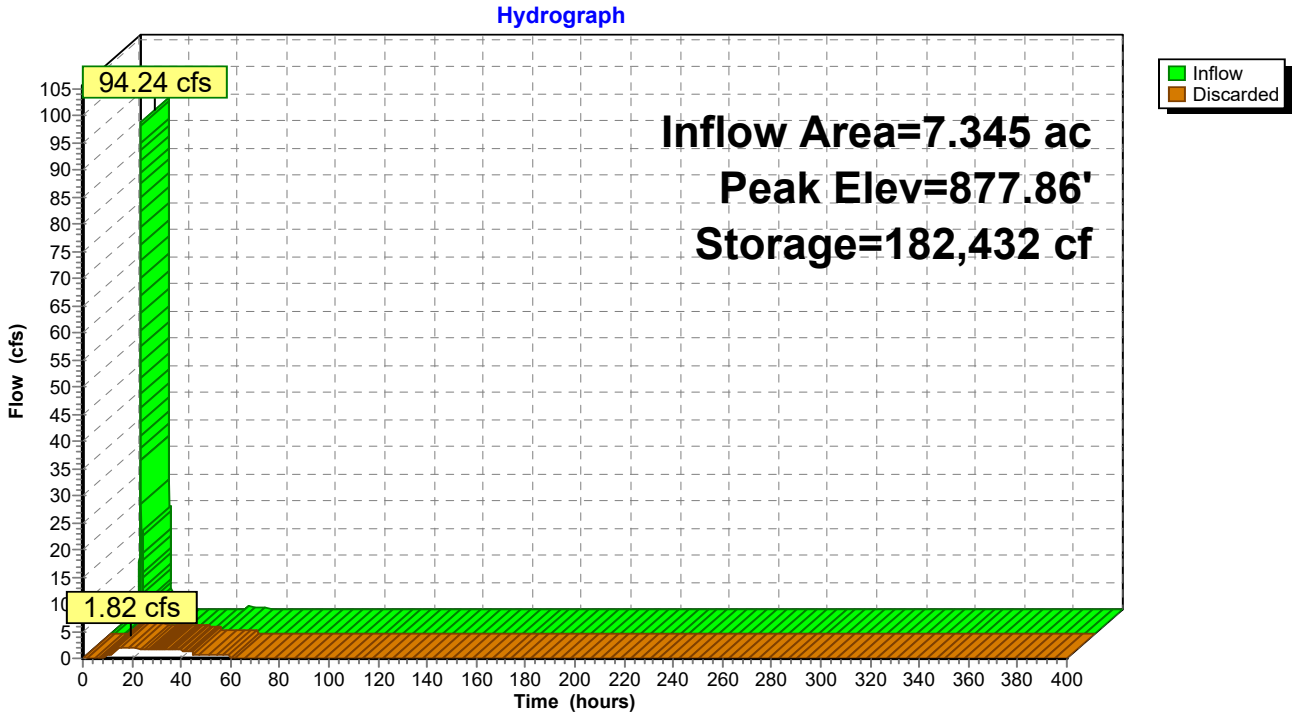
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
874.00	32,972	0	0
874.70	37,169	24,549	24,549

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
874.70	37,169	0	0
876.00	47,272	54,887	54,887
877.00	57,050	52,161	107,048
878.00	61,577	59,314	166,361
880.00	73,924	135,501	301,862

Device	Routing	Invert	Outlet Devices
#1	Discarded	874.00'	**0.800 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=1.82 cfs @ 13.72 hrs HW=877.86' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 1.82 cfs)

Pond 6P: Infiltration Basin

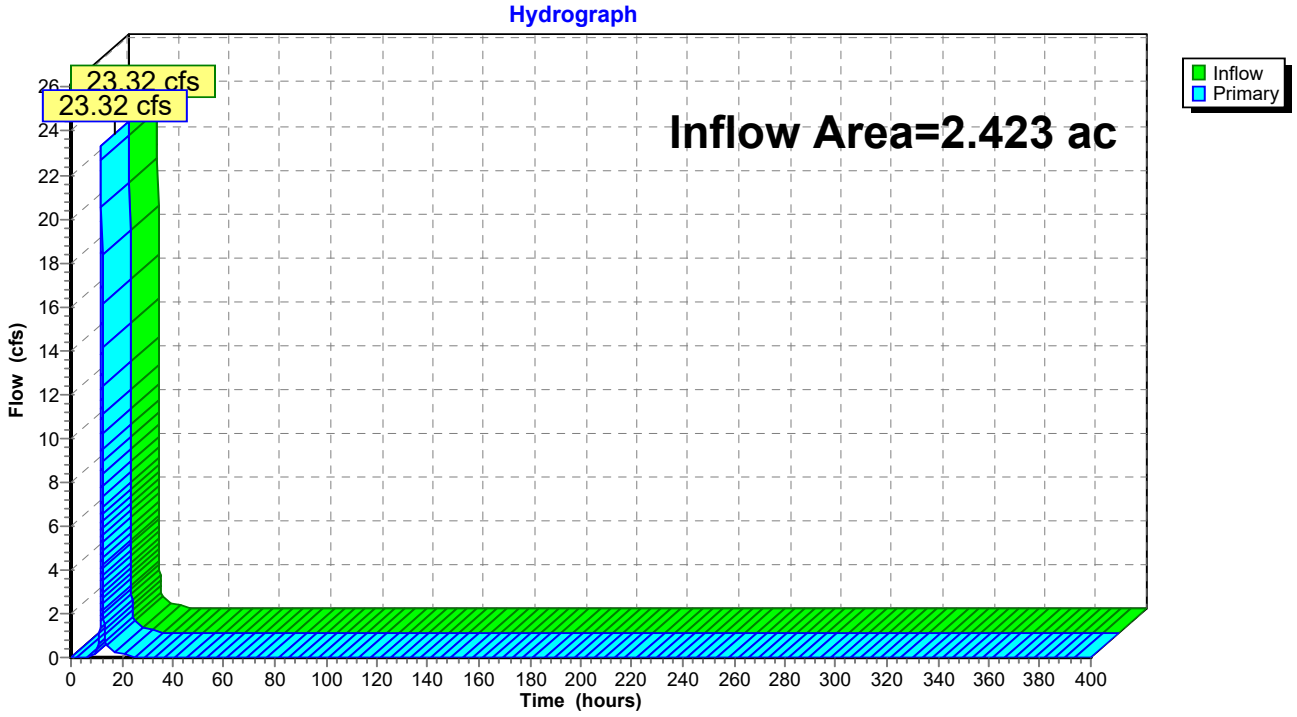


Summary for Link 2L: North Central

Inflow Area = 2.423 ac, 19.74% Impervious, Inflow Depth = 5.22" for 100-yr event
Inflow = 23.32 cfs @ 12.12 hrs, Volume= 1.053 af
Primary = 23.32 cfs @ 12.12 hrs, Volume= 1.053 af, Atten= 0%, Lag= 0.0 min
Routed to Link 5L : Industrial BLVD storm

Primary outflow = Inflow, Time Span= 0.00-400.00 hrs, dt= 0.01 hrs

Link 2L: North Central

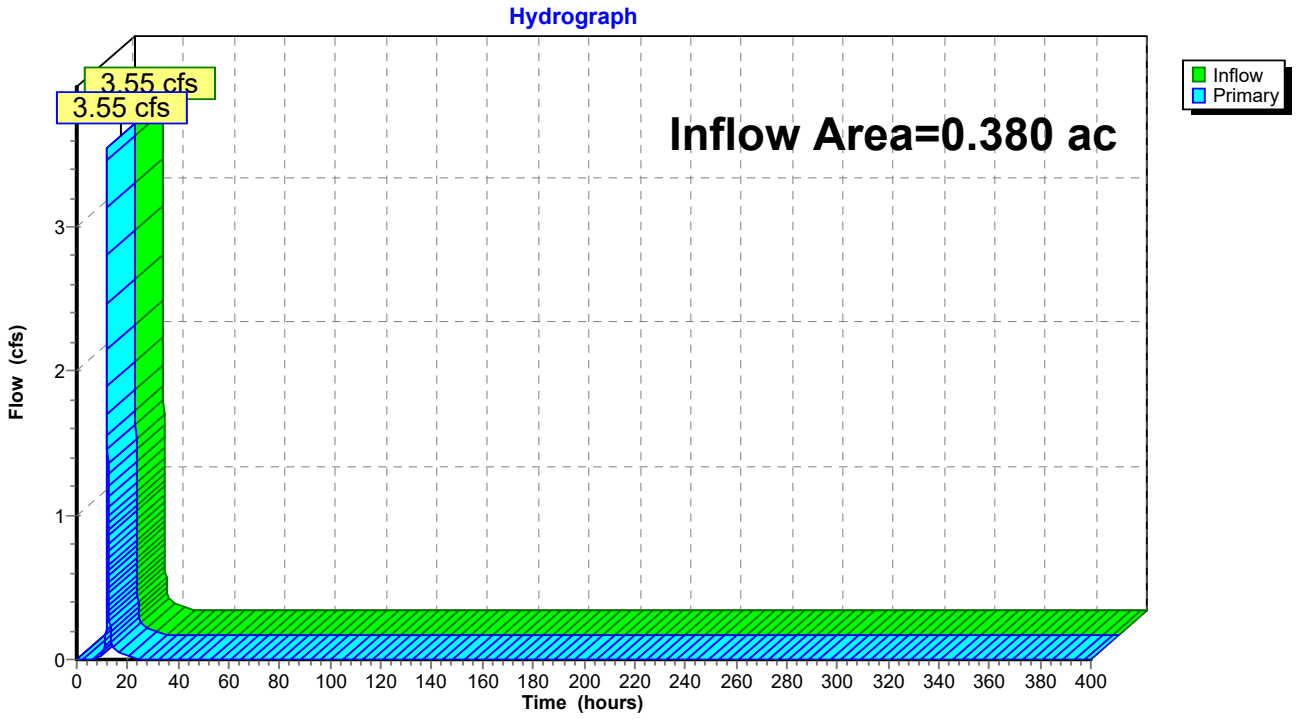


Summary for Link 4L: West fountain pond

Inflow Area = 0.380 ac, 9.31% Impervious, Inflow Depth = 5.01" for 100-yr event
Inflow = 3.55 cfs @ 12.12 hrs, Volume= 0.158 af
Primary = 3.55 cfs @ 12.12 hrs, Volume= 0.158 af, Atten= 0%, Lag= 0.0 min
Routed to Link 5L : Industrial BLVD storm

Primary outflow = Inflow, Time Span= 0.00-400.00 hrs, dt= 0.01 hrs

Link 4L: West fountain pond

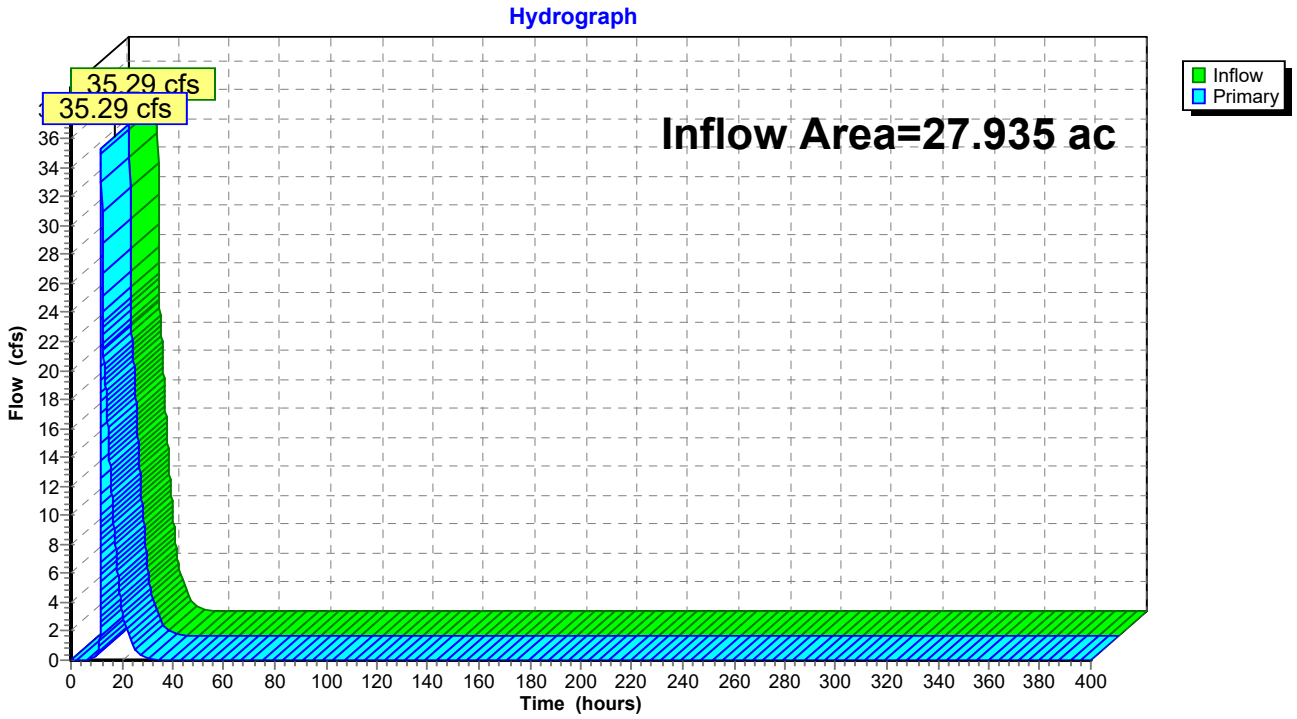


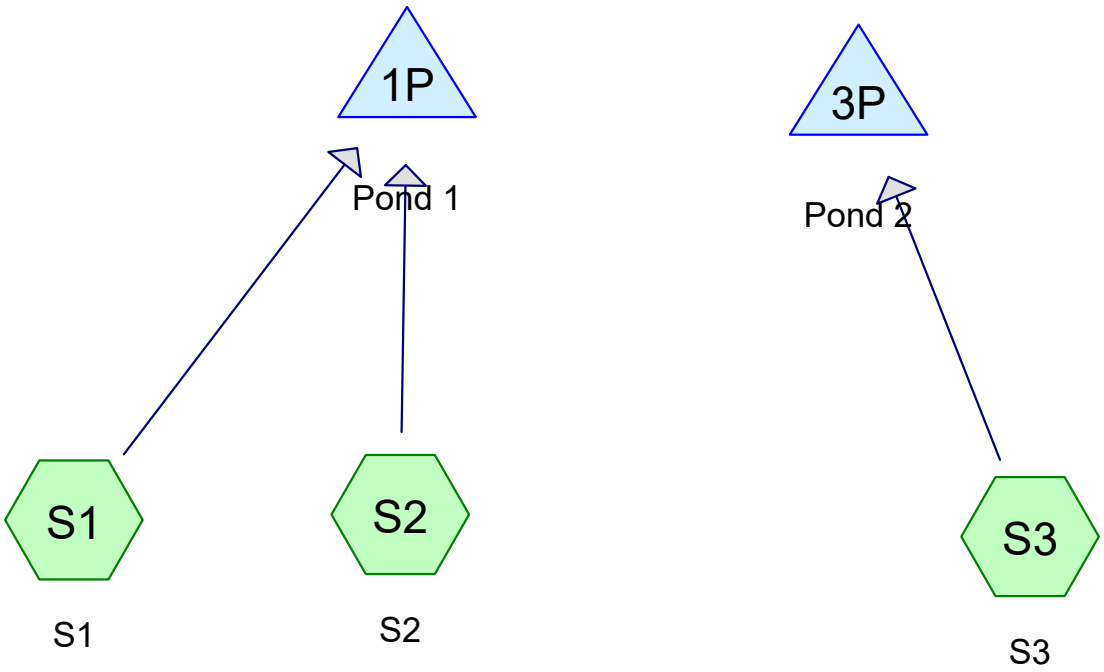
Summary for Link 5L: Industrial BLVD storm

Inflow Area = 27.935 ac, 28.81% Impervious, Inflow Depth = 4.13" for 100-yr event
Inflow = 35.29 cfs @ 12.13 hrs, Volume= 9.618 af
Primary = 35.29 cfs @ 12.13 hrs, Volume= 9.618 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-400.00 hrs, dt= 0.01 hrs

Link 5L: Industrial BLVD storm





Subcat Reach Pond Link

Routing Diagram for PDRN - NURP
Prepared by Alliant Engineering, Inc, Printed 10/16/2025
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Summary for Subcatchment S1: S1

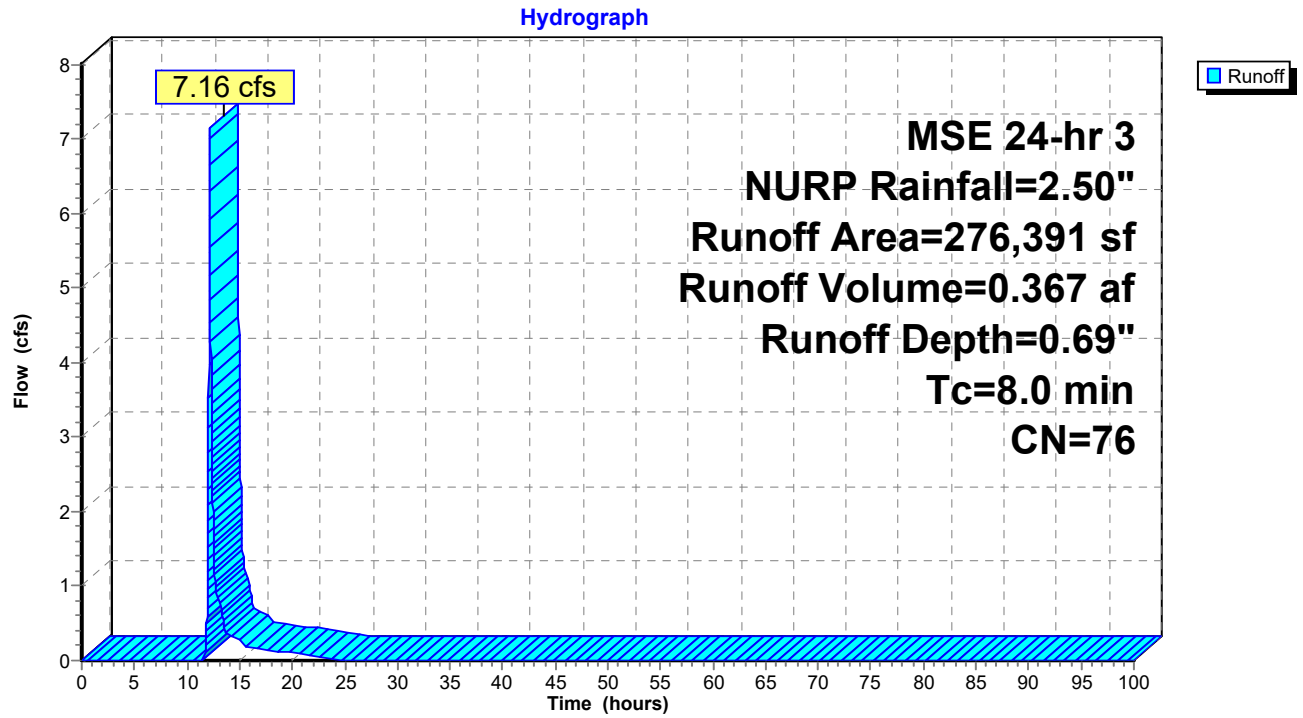
Runoff = 7.16 cfs @ 12.16 hrs, Volume= 0.367 af, Depth= 0.69"
Routed to Pond 1P : Pond 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 NURP Rainfall=2.50"

Area (sf)	CN	Description
227,257	80	>75% Grass cover, Good, HSG D
40,774	49	50-75% Grass cover, Fair, HSG A
8,360	98	Roofs, HSG D
276,391	76	Weighted Average
268,031		96.98% Pervious Area
8,360		3.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0					**Direct Entry,**

Subcatchment S1: S1



Summary for Subcatchment S2: S2

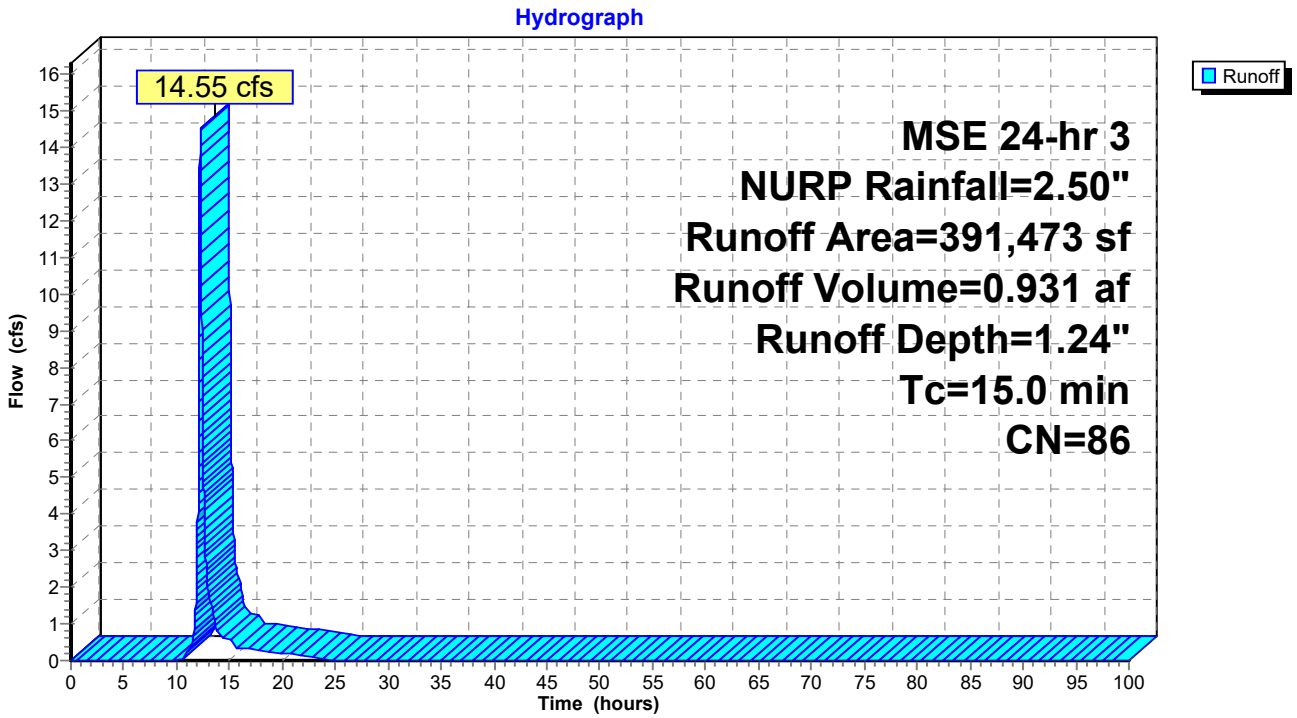
Runoff = 14.55 cfs @ 12.24 hrs, Volume= 0.931 af, Depth= 1.24"
Routed to Pond 1P : Pond 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 NURP Rainfall=2.50"

Area (sf)	CN	Description
254,252	80	>75% Grass cover, Good, HSG D
19,253	98	Water Surface, HSG D
117,968	98	Paved roads w/curbs & sewers, HSG D
391,473	86	Weighted Average
254,252		64.95% Pervious Area
137,221		35.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0					**Direct Entry, STORM SEWER**

Subcatchment S2: S2



Summary for Subcatchment S3: S3

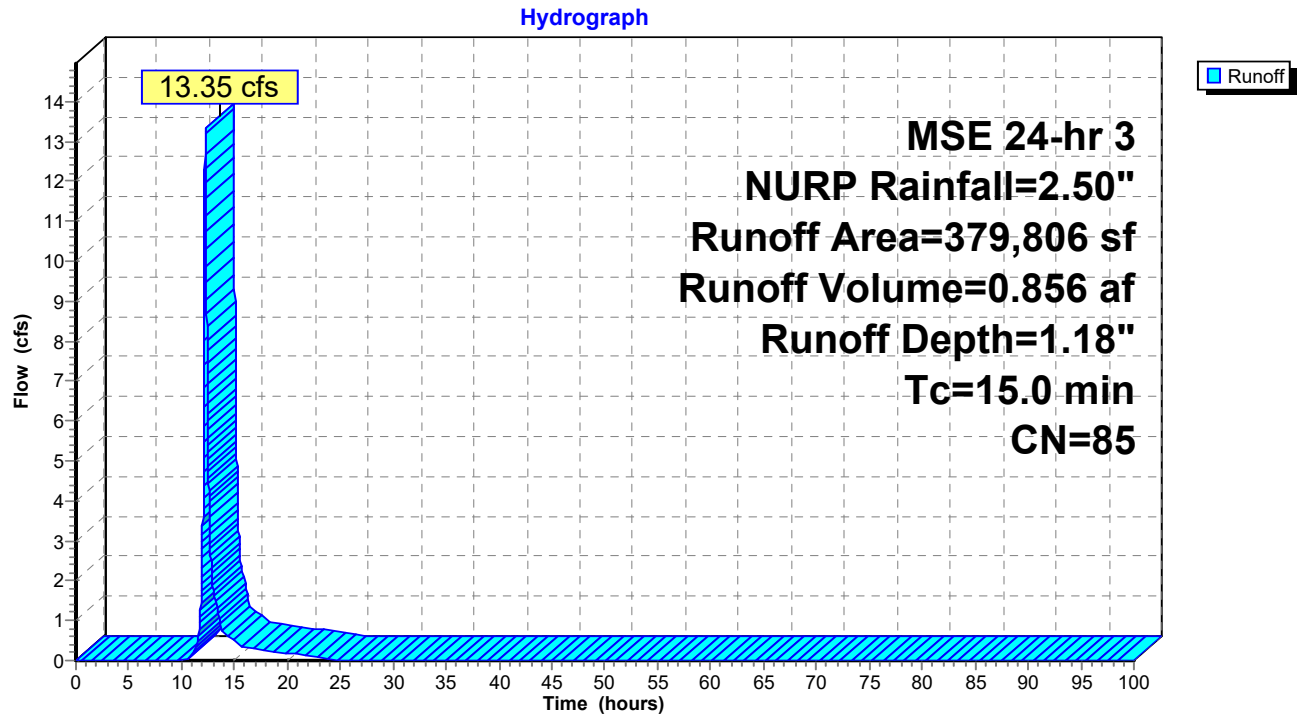
Runoff = 13.35 cfs @ 12.24 hrs, Volume= 0.856 af, Depth= 1.18"
Routed to Pond 3P : Pond 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-100.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 NURP Rainfall=2.50"

Area (sf)	CN	Description
266,637	80	>75% Grass cover, Good, HSG D
18,513	98	Water Surface, HSG D
94,656	98	Paved roads w/curbs & sewers, HSG D
379,806	85	Weighted Average
266,637		70.20% Pervious Area
113,169		29.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0					**Direct Entry, STORM SEWER**

Subcatchment S3: S3



Summary for Pond 1P: Pond 1

Inflow Area = 15.332 ac, 21.80% Impervious, Inflow Depth = 1.02" for NURP event
Inflow = 20.18 cfs @ 12.20 hrs, Volume= 1.299 af
Outflow = 13.06 cfs @ 12.36 hrs, Volume= 1.299 af, Atten= 35%, Lag= 9.4 min
Primary = 0.05 cfs @ 12.36 hrs, Volume= 0.001 af
Routed to nonexistent node 5L
Secondary = 13.01 cfs @ 12.36 hrs, Volume= 1.298 af
Routed to nonexistent node 6P

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.01 hrs
Starting Elev= 874.50' Surf.Area= 78,467 sf Storage= 67,297 cf
Peak Elev= 874.73' @ 12.36 hrs Surf.Area= 74,323 sf Storage= 80,241 cf (12,944 cf above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= 31.5 min (853.7 - 822.2)

Volume	Invert	Avail.Storage	Storage Description
#1	866.00'	67,297 cf	**DEAD STORAGE (Prismatic)** Listed below (Recalc)
#2	874.50'	216,654 cf	**LIVE STORAGE (Prismatic)** Listed below (Recalc)
		283,951 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
866.00	2,804	0	0
868.00	4,619	7,423	7,423
870.00	6,827	11,446	18,869
872.00	9,572	16,399	35,268
873.50	12,179	16,313	51,581
874.50	19,253	15,716	67,297

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
874.50	59,214	0	0
876.00	31,775	68,242	68,242
877.00	34,343	33,059	101,301
878.00	36,911	35,627	136,928
880.00	42,815	79,726	216,654

Device	Routing	Invert	Outlet Devices
#1	Primary	869.50'	**24.0" Round Culvert** L= 41.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 869.50' / 868.93' S= 0.0139 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 3.14 sf
#2	Device 1	873.50'	**24.0" Round Culvert** L= 520.0' RCP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 873.50' / 869.50' S= 0.0077 '/' Cc= 0.900 n= 0.013 Concrete pipe, bends & connections, Flow Area= 3.14 sf
#3	Device 2	874.70'	**40.0" W x 6.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 2	875.20'	**0.5' long x 5.0' breadth Broad-Crested Rectangular Weir**

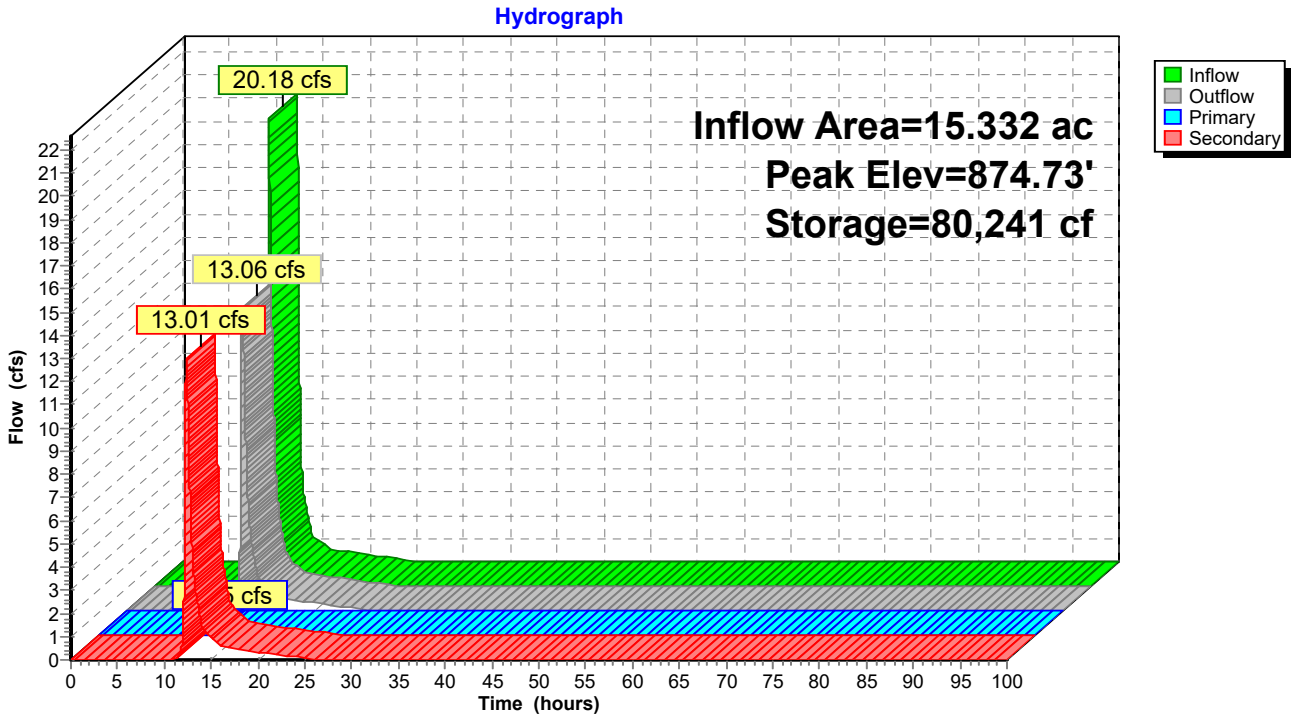
Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50
Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

#5 Secondary 874.50' **45.0' long x 28.0' breadth Broad-Crested Rectangular Weir**
Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=0.05 cfs @ 12.36 hrs HW=874.73' (Free Discharge)
└─**1=Culvert** (Passes 0.05 cfs of 27.44 cfs potential flow)
└─**2=Culvert** (Passes 0.05 cfs of 6.72 cfs potential flow)
└─**3=Orifice/Grate** (Orifice Controls 0.05 cfs @ 0.52 fps)
└─**4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Secondary OutFlow Max=13.01 cfs @ 12.36 hrs HW=874.73' (Free Discharge)
└─**5=Broad-Crested Rectangular Weir** (Weir Controls 13.01 cfs @ 1.28 fps)

Pond 1P: Pond 1



Summary for Pond 3P: Pond 2

Inflow Area = 8.719 ac, 29.80% Impervious, Inflow Depth = 1.18" for NURP event
Inflow = 13.35 cfs @ 12.24 hrs, Volume= 0.856 af
Outflow = 8.68 cfs @ 12.38 hrs, Volume= 0.813 af, Atten= 35%, Lag= 8.6 min
Primary = 8.68 cfs @ 12.38 hrs, Volume= 0.813 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-100.00 hrs, dt= 0.01 hrs
Starting Elev= 875.50' Surf.Area= 37,026 sf Storage= 50,009 cf
Peak Elev= 875.98' @ 12.38 hrs Surf.Area= 41,191 sf Storage= 59,797 cf (9,788 cf above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= 33.6 min (852.6 - 819.0)

Volume	Invert	Avail.Storage	Storage Description
#1	871.00'	50,009 cf	**Dead Storage (Prismatic)** Listed below (Recalc)
#2	875.50'	140,398 cf	**Live Storage (Prismatic)** Listed below (Recalc)
		190,407 cf	Total Available Storage

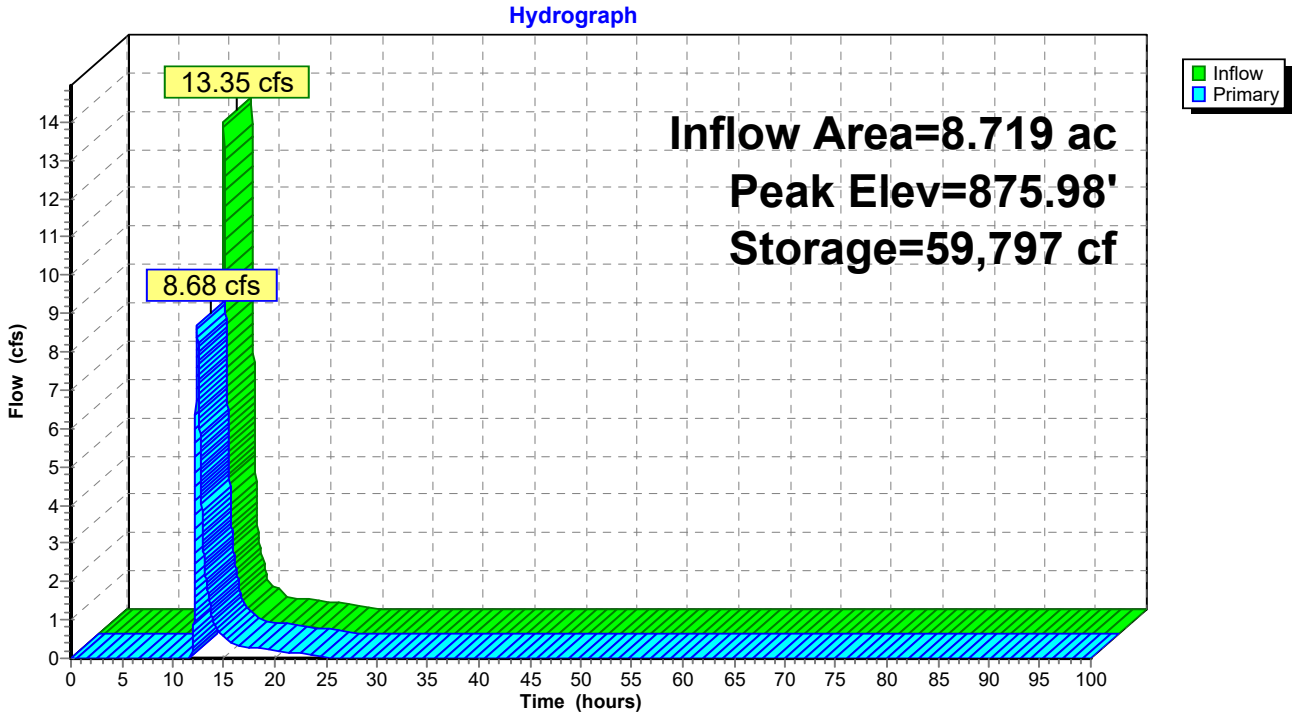
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
871.00	7,613	0	0
872.00	8,852	8,233	8,233
874.00	11,561	20,413	28,646
874.50	12,289	5,963	34,608
875.50	18,513	15,401	50,009

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
875.50	18,513	0	0
876.00	22,895	10,352	10,352
877.00	30,577	26,736	37,088
878.00	33,102	31,840	68,928
880.00	38,368	71,470	140,398

Device	Routing	Invert	Outlet Devices
#1	Primary	875.60'	**14.0' long x 96.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=8.68 cfs @ 12.38 hrs HW=875.98' (Free Discharge)
1=Broad-Crested Rectangular Weir (Weir Controls 8.68 cfs @ 1.65 fps)

Pond 3P: Pond 2



Stage-Area-Storage for Pond 1P: Pond 1 (continued)

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
873.80	55,553	874.32	63,946	874.84	86,373
873.81	55,697	874.33	64,126	874.85	86,902
873.82	55,841	874.34	64,307	874.86	87,429
873.83	55,985	874.35	64,489	874.87	87,954
873.84	56,131	874.36	64,671	874.88	88,478
873.85	56,277	874.37	64,854	874.89	89,000
873.86	56,424	874.38	65,038	874.90	89,519
873.87	56,572	874.39	65,222	874.91	90,037
873.88	56,720	874.40	65,407	874.92	90,554
873.89	56,869	874.41	65,593	874.93	91,068
873.90	57,019	874.42	65,780	874.94	91,581
873.91	57,169	874.43	65,967	874.95	92,091
873.92	57,320	874.44	66,155	874.96	92,600
873.93	57,472	874.45	66,343	874.97	93,107
873.94	57,625	874.46	66,533	874.98	93,613
873.95	57,778	874.47	66,723	874.99	94,116
873.96	57,932	874.48	66,914	875.00	94,618
873.97	58,087	874.49	67,105	875.01	95,117
873.98	58,242	874.50	67,297	875.02	95,615
873.99	58,398	874.51	67,888	875.03	96,111
874.00	58,555	874.52	68,478	875.04	96,606
874.01	58,713	874.53	69,065	875.05	97,098
874.02	58,871	874.54	69,651	875.06	97,589
874.03	59,030	874.55	70,235	875.07	98,078
874.04	59,189	874.56	70,817	875.08	98,565
874.05	59,350	874.57	71,397	875.09	99,050
874.06	59,511	874.58	71,976	875.10	99,533
874.07	59,672	874.59	72,552	875.11	100,014
874.08	59,835	874.60	73,127	875.12	100,494
874.09	59,998	874.61	73,700	875.13	100,972
874.10	60,162	874.62	74,271	875.14	101,448
874.11	60,327	874.63	74,840	875.15	101,922
874.12	60,492	874.64	75,408	875.16	102,394
874.13	60,658	874.65	75,974	875.17	102,865
874.14	60,825	874.66	76,537	875.18	103,334
874.15	60,992	874.67	77,099	875.19	103,800
874.16	61,160	874.68	77,659	875.20	104,265
874.17	61,329	874.69	78,218	875.21	104,729
874.18	61,498	874.70	78,774	875.22	105,190
874.19	61,669	874.71	79,329	875.23	105,649
874.20	61,840	874.72	79,882	875.24	106,107
874.21	62,011	874.73	80,433	875.25	106,563
874.22	62,184	874.74	80,982	875.26	107,017
874.23	62,357	874.75	81,529	875.27	107,469
874.24	62,531	874.76	82,075	875.28	107,920
874.25	62,705	874.77	82,618	875.29	108,368
874.26	62,880	874.78	83,160	875.30	108,815
874.27	63,056	874.79	83,700	875.31	109,260
874.28	63,233	874.80	84,238	875.32	109,703
874.29	63,410	874.81	84,775	875.33	110,144
874.30	63,588	874.82	85,309	875.34	110,583
874.31	63,767	874.83	85,842	875.35	111,021

Pond 1 Provides
0.2' Volume Control

78,774 - 67,297 =

11,477 cf.

Stage-Area-Storage for Pond 6P: Infiltration Basin

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
874.00	32,972	0	874.52	36,090	17,956
874.01	33,032	330	874.53	36,150	18,317
874.02	33,092	661	874.54	36,210	18,679
874.03	33,152	992	874.55	36,270	19,041
874.04	33,212	1,324	874.56	36,330	19,404
874.05	33,272	1,656	874.57	36,390	19,768
874.06	33,332	1,989	874.58	36,450	20,132
874.07	33,392	2,323	874.59	36,509	20,497
874.08	33,452	2,657	874.60	36,569	20,862
874.09	33,512	2,992	874.61	36,629	21,228
874.10	33,572	3,327	874.62	36,689	21,595
874.11	33,632	3,663	874.63	36,749	21,962
874.12	33,691	4,000	874.64	36,809	22,330
874.13	33,751	4,337	874.65	36,869	22,698
874.14	33,811	4,675	874.66	36,929	23,067
874.15	33,871	5,013	874.67	36,989	23,437
874.16	33,931	5,352	874.68	37,049	23,807
874.17	33,991	5,692	874.69	37,109	24,178
874.18	34,051	6,032	874.70	74,338	24,549
874.19	34,111	6,373	874.71	74,416	24,921
874.20	34,171	6,714	874.72	74,493	25,294
874.21	34,231	7,056	874.73	74,571	25,668
874.22	34,291	7,399	874.74	74,649	26,042
874.23	34,351	7,742	874.75	74,727	26,418
874.24	34,411	8,086	874.76	74,804	26,793
874.25	34,471	8,430	874.77	74,882	27,170
874.26	34,531	8,775	874.78	74,960	27,548
874.27	34,591	9,121	874.79	75,037	27,926
874.28	34,651	9,467	874.80	75,115	28,305
874.29	34,711	9,814	874.81	75,193	28,685
874.30	34,771	10,161	874.82	75,271	29,066
874.31	34,831	10,509	874.83	75,348	29,447
874.32	34,891	10,858	874.84	75,426	29,829
874.33	34,951	11,207	874.85	75,504	30,212
874.34	35,011	11,557	874.86	75,581	30,596
874.35	35,071	11,907	874.87	75,659	30,980
874.36	35,130	12,258	874.88	75,737	31,366
874.37	35,190	12,610	874.89	75,815	31,752
874.38	35,250	12,962	874.90	75,892	32,139
874.39	35,310	13,315	874.91	75,970	32,526
874.40	35,370	13,668	874.92	76,048	32,915
874.41	35,430	14,022	874.93	76,125	33,304
874.42	35,490	14,377	874.94	76,203	33,694
874.43	35,550	14,732	874.95	76,281	34,084
874.44	35,610	15,088	874.96	76,359	34,476
874.45	35,670	15,444	874.97	76,436	34,868
874.46	35,730	15,801	874.98	76,514	35,261
874.47	35,790	16,159	874.99	76,592	35,655
874.48	35,850	16,517	875.00	76,669	36,050
874.49	35,910	16,876	875.01	76,747	36,445
874.50	35,970	17,235	875.02	76,825	36,841
874.51	36,030	17,595	875.03	76,903	37,238

Project Information

Calculator Version:	Version 4: July 2020
Project Name:	Hassan Sand Property Existing
User Name / Company Name:	Alliant Engineering
Date:	7-18-25
Project Description:	
Construction Permit?:	Yes

Site Information

Retention Requirement (inches):	1.1
Site's Zip Code:	55374
Annual Rainfall (inches):	29.5
Phosphorus EMC (mg/l):	0.3
TSS EMC (mg/l):	54.5

Total Site Area

Land Cover	A Soils (acres)	B Soils (acres)	C Soils (acres)	D Soils (acres)	Total (acres)
Forest/Open Space - Undisturbed, protected forest/open space or reforested land					0
Managed Turf - disturbed, graded for yards or other turf to be mowed/managed				26.197	26.197
				Impervious Area (acres)	0.656
				Total Area (acres)	26.853

Site Areas Routed to BMPs

Land Cover	A Soils (acres)	B Soils (acres)	C Soils (acres)	D Soils (acres)	Total (acres)
Forest/Open Space - Undisturbed, protected forest/open space or reforested land					0
Managed Turf - disturbed, graded for yards or other turf to be mowed/managed					0
				Impervious Area (acres)	
				Total Area (acres)	0

Summary Information

Performance Goal Requirement

Performance goal volume retention requirement:	2619	ft3
Volume removed by BMPs towards performance goal:		ft^3
Percent volume removed towards performance goal		**%**

Annual Volume and Pollutant Load Reductions

Post development annual runoff volume	15.869	acre-ft
Annual runoff volume removed by BMPs:		acre-ft
Percent annual runoff volume removed:		**%**
Post development annual particulate P load:	7.122	lbs
Annual particulate P removed by BMPs:		lbs
Post development annual dissolved P load:	5.827	lbs
Annual dissolved P removed by BMPs:	0	lbs
Total P removed by BMPs	0	lbs
Percent annual total phosphorus removed:		**%**
Post development annual TSS load:	2352.4	lbs
Annual TSS removed by BMPs:		lbs
Percent annual TSS removed:		**%**

BMP Summary

Performance Goal Summary

BMP Name	BMP Volume Capacity (ft3)	Volume Recieved (ft3)	Volume Retained (ft3)	Volume Outflow (ft3)	Percent Retained (%)

Annual Volume Summary

BMP Name	Volume From Direct Watershed (acre-ft)	Volume From Upstream BMPs (acre-ft)	Volume Retained (acre-ft)	Volume outflow (acre-ft)	Percent Retained (%)

Particulate Phosphorus Summary

BMP Name	Load From Direct Watershed (lbs)	Load From Upstream BMPs (lbs)	Load Retained (lbs)	Outflow Load (lbs)	Percent Retained (%)

Dissolved Phosphorus Summary

BMP Name	Load From Direct Watershed (lbs)	Load From Upstream BMPs (lbs)	Load Retained (lbs)	Outflow Load (lbs)	Percent Retained (%)

Total Phosphorus Summary

BMP Name	Load From Direct Watershed (lbs)	Load From Upstream BMPs (lbs)	Load Retained (lbs)	Outflow Load (lbs)	Percent Retained (%)

TSS Summary

BMP Name	Load From Direct Watershed (lbs)	Load From Upstream BMPs (lbs)	Load Retained (lbs)	Outflow Load (lbs)	Percent Retained (%)

BMP Schematic

Project Information

Calculator Version:	Version 4: July 2020
Project Name:	Hassan Sand Property Proposed
User Name / Company Name:	Alliant Engineering
Date:	10-17-25
Project Description:	
Construction Permit?:	No

Site Information

Retention Requirement (inches):	1.1
Site's Zip Code:	55374
Annual Rainfall (inches):	29.5
Phosphorus EMC (mg/l):	0.3
TSS EMC (mg/l):	54.5

Total Site Area

Land Cover	A Soils (acres)	B Soils (acres)	C Soils (acres)	D Soils (acres)	Total (acres)
Forest/Open Space - Undisturbed, protected forest/open space or reforested land	0.936			0.867	1.803
Managed Turf - disturbed, graded for yards or other turf to be mowed/managed				19.464	19.464
				Impervious Area (acres)	5.586
				Total Area (acres)	26.853

Site Areas Routed to BMPs

Land Cover	A Soils (acres)	B Soils (acres)	C Soils (acres)	D Soils (acres)	Total (acres)
Forest/Open Space - Undisturbed, protected forest/open space or reforested land	0.936			0.867	1.803
Managed Turf - disturbed, graded for yards or other turf to be mowed/managed				19.464	19.464
				Impervious Area (acres)	5.586
				Total Area (acres)	26.853

Summary Information

Performance Goal Requirement

Performance goal volume retention requirement:	22305	ft3
Volume removed by BMPs towards performance goal:	20252	ft^3
Percent volume removed towards performance goal	**91**	**%**

Annual Volume and Pollutant Load Reductions

Post development annual runoff volume	22.6444	acre-ft
Annual runoff volume removed by BMPs:	19.9704	acre-ft
Percent annual runoff volume removed:	**88**	**%**
Post development annual particulate P load:	10.1628	lbs
Annual particulate P removed by BMPs:	9.051	lbs
Post development annual dissolved P load:	8.315	lbs
Annual dissolved P removed by BMPs:	7.333	lbs
Total P removed by BMPs	16.384	lbs
Percent annual total phosphorus removed:	**89**	**%**
Post development annual TSS load:	3356.8	lbs
Annual TSS removed by BMPs:	2994.8	lbs
Percent annual TSS removed:	**89**	**%**

BMP Summary

Performance Goal Summary

BMP Name	BMP Volume Capacity (ft3)	Volume Recieved (ft3)	Volume Retained (ft3)	Volume Outflow (ft3)	Percent Retained (%)
1 - Infiltration basin/Infiltration trench (abc	44851	19868	19868	0	100
North Off-site	0	2052	0	2052	0
2 - Stormwater disconnection (Impervious	384	763	384	379	50
Central Pond	0	19490	0	19490	0
East Pond	0	8677	0	8677	0

Annual Volume Summary

BMP Name	Volume From Direct Watershed (acre-ft)	Volume From Upstream BMPs (acre-ft)	Volume Retained (acre-ft)	Volume outflow (acre-ft)	Percent Retained (%)
1 - Infiltration basin/Infiltration trench (abc	0	20.123	19.7948	0.3282000000	98
North Off-site	2.3459	0	0	2.3459	0
2 - Stormwater disconnection (Impervious	3.3291	0	0.1755	3.1536	5
Central Pond	8.9694	8.0001	0	16.9695	0
East Pond	8.0001	0	0	8.0001	0

Particulate Phosphorus Summary

BMP Name	Load From Direct Watershed (lbs)	Load From Upstream BMPs (lbs)	Load Retained (lbs)	Outflow Load (lbs)	Percent Retained (%)
1 - Infiltration basin/Infiltration trench (abc	0	3.6	3.5413	0.0587	98
North Off-site	1.0528	0	0	1.0528	0
2 - Stormwater disconnection (Impervious	1.4941	0	0.0788	1.4153	5
Central Pond	4.0255	1.4362	3.277	2.1847	60
East Pond	3.5904	0	2.1542	1.4362	60

Dissolved Phosphorus Summary

BMP Name	Load From Direct Watershed (lbs)	Load From Upstream BMPs (lbs)	Load Retained (lbs)	Outflow Load (lbs)	Percent Retained (%)
1 - Infiltration basin/Infiltration trench (abc	0	7.3892	7.2687	0.1205	98
North Off-site	0.8614	0	0	0.8614	0
2 - Stormwater disconnection (Impervious	1.2224	0	0.0644	1.158	5
Central Pond	3.2936	2.9376	0	6.2312	0
East Pond	2.9376	0	0	2.9376	0

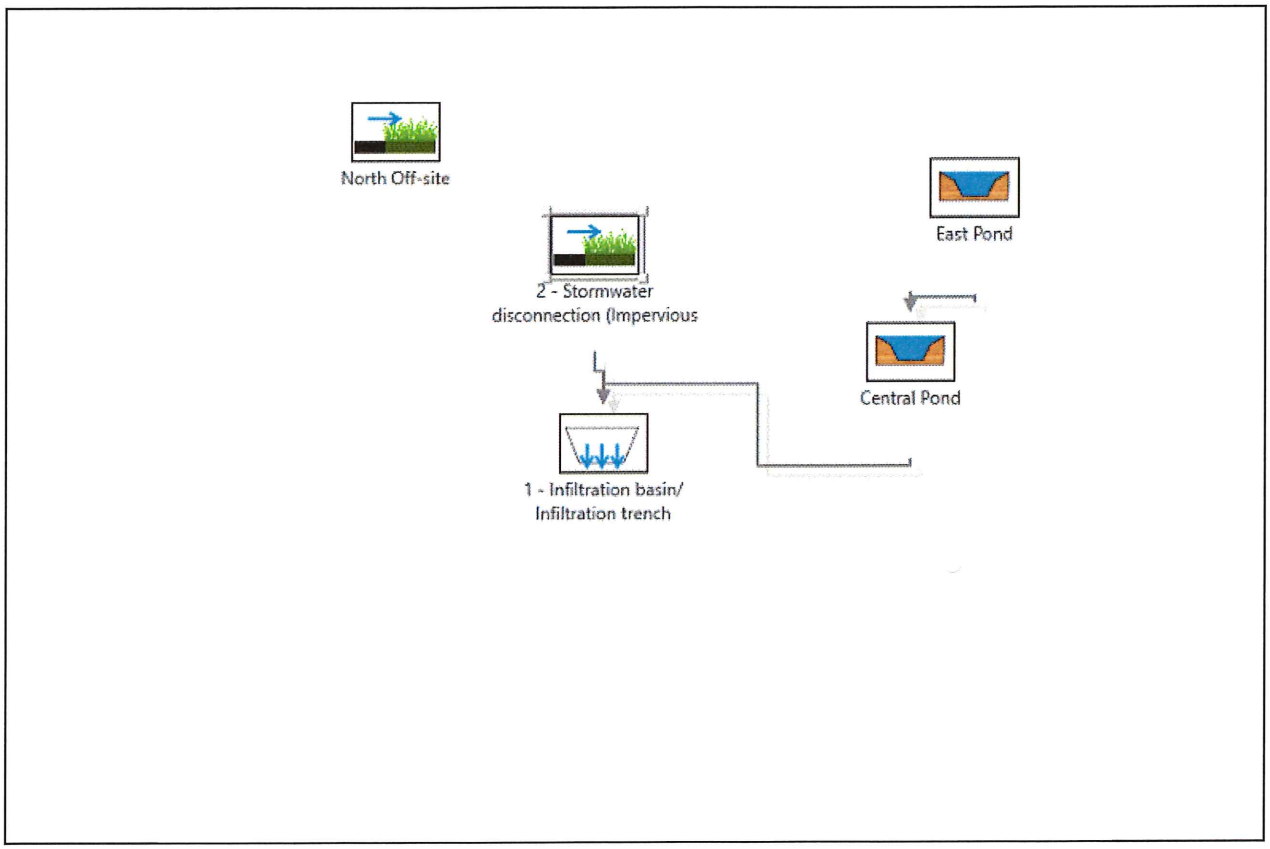
Total Phosphorus Summary

BMP Name	Load From Direct Watershed (lbs)	Load From Upstream BMPs (lbs)	Load Retained (lbs)	Outflow Load (lbs)	Percent Retained (%)
1 - Infiltration basin/Infiltration trench (abc	0	10.9892	10.81	0.1792	98
North Off-site	1.9142	0	0	1.9142	0
2 - Stormwater disconnection (Impervious	2.7165	0	0.1432	2.5733	5
Central Pond	7.3191	4.3738	3.277	8.4159	30
East Pond	6.528	0	2.1542	4.3738	30

TSS Summary

BMP Name	Load From Direct Watershed (lbs)	Load From Upstream BMPs (lbs)	Load Retained (lbs)	Outflow Load (lbs)	Percent Retained (%)
1 - Infiltration basin/Infiltration trench (abc	0	871.19	856.98	14.209999999	98
North Off-site	347.76	0	0	347.76	0
2 - Stormwater disconnection (Impervious	493.5	0	343.91	149.59	70
Central Pond	1329.62	474.37	1082.39	721.6	60
East Pond	1185.93	0	711.56	474.37	60

BMP Schematic



DESIGN STORM FREQUENCY = 10 YEARS

y = -1.738ln(x) + 9.3874

MH/CB FROM	MH/CB TO	AREA [SF] TOTAL	AREA [SF] IMPERVIOUS	AREA [AC] INCR.	AREA [AC] CUM.	IMP %	RUNOFF C	A*C INCR.	A*C CUM.	TIME OF CONC. [MIN] PIPE	TIME OF CONC. [MIN] CUM.	INTENSITY i	Q [CFS] INCR.	Q [CFS] CUM.	P. DIA. D [IN]	P. SLOPE S [FT/FT]	PIPE MATERIAL	MANNING'S n	P. CAP. Q [CFS]	P. VELOCITY MAX [FT/S]	PIPE LENGTH [FT]	CAP. OVER Q [CFS]	FROM INVERT	TO INVERT	RIM ELEV	COVER [FT]	STR. TYPE	CAST TYPE	BUILD [FT]
CB 111	CBMH 110	16866	9525	0.387	0.387	56%	0.60	0.231	0.231	8.00	8.00	5.773	1.331	1.331	15	0.0033	RCP	0.013	3.71	3.02	32.0	2.3801	876.38	876.27	880.38	2.55	2X3	R-3067-VB	4.00
CBMH 110	CBMH 108	5593	2047	0.128	0.516	37%	0.46	0.059	0.289	0.18	8.18	5.735	0.336	1.658	15	0.0033	RCP	0.013	3.71	3.02	35.5	2.0529	876.27	876.16	880.28	2.56	48"	R-3067-VB	4.01
CB 109	CBMH 108	17181	11202	0.394	0.394	65%	0.66	0.259	0.259	8.00	8.00	5.773	1.495	1.495	15	0.0033	RCP	0.013	3.71	3.02	6.0	2.2162	876.05	876.03	880.05	2.55	2X3	R-3067-V	4.00
CBMH 108	CBMH 106	17181	11202	0.394	1.304	65%	0.66	0.259	0.807	0.03	8.21	5.728	1.483	4.622	18	0.0026	RCP	0.013	5.36	3.03	32.0	0.7341	876.03	875.95	880.04	2.31	48"	R-3067-V	4.01
CB 107	CBMH 106	17987	9011	0.413	0.413	50%	0.55	0.227	0.227	8.00	8.00	5.773	1.313	1.313	15	0.0033	RCP	0.013	3.71	3.02	6.0	2.3981	876.05	876.03	880.05	2.55	2X3	R-3067-V	4.00
CBMH 106	CBMH 105	17987	9011	0.413	2.130	50%	0.55	0.227	1.262	0.03	8.24	5.721	1.301	7.218	21	0.0025	RCP	0.013	7.92	3.29	155.6	0.7041	875.95	875.56	880.04	2.14	60"	R-3067-V	4.09
CBMH 105	CBMH 104	22482	13128	0.516	2.646	58%	0.61	0.314	1.576	0.79	9.03	5.563	1.748	8.766	24	0.0018	RCP	0.013	9.60	3.06	81.6	0.8317	875.56	875.41	883.76	6.00	48"	R-3067-V	8.20
CBMH 104	CBMH 102	23329	14722	0.536	3.182	63%	0.64	0.344	1.920	0.45	9.48	5.479	1.883	10.518	24	0.0023	RCP	0.013	10.85	3.45	146.0	0.3318	875.41	875.08	883.83	6.22	48"	R-3067-V	8.42
CB 103	CBMH 102	29474	17621	0.677	0.677	60%	0.62	0.418	0.418	8.00	8.00	5.773	2.416	2.416	15	0.0033	RCP	0.013	3.71	3.02	32.0	1.2948	876.61	876.50	880.61	2.55	2X3	R-3067-VB	4.00
CBMH 102	CBMH 101	12132	4584	0.279	4.137	38%	0.46	0.129	2.467	0.18	9.65	5.447	0.705	13.440	27	0.0020	RCP	0.013	13.85	3.48	87.0	0.4101	875.08	874.90	880.61	2.66	72"	R-3067-VB	9.53
CBMH 101	FES 100	21325	3820	0.490	4.627	18%	0.33	0.159	2.627	0.42	10.07	5.374	0.856	14.115	27	0.0021	RCP	0.013	14.19	3.57	191.4	0.0771	874.90	874.50	879.45	2.10	48"	R-4342	4.55
																								874.50					
CB 205	CBMH 204	24971	14117	0.573	0.573	57%	0.60	0.342	0.342	8.00	8.00	5.773	1.972	1.972	15	0.0033	RCP	0.013	3.71	3.02	32.0	1.7392	876.36	876.25	880.36	#REF!	2X3	R-3067-V	4.00
CBMH 204	CBMH 201	22579	13809	0.518	1.092	61%	0.63	0.326	0.667	0.18	8.18	5.735	1.867	3.826	15	0.0057	RCP	0.013	4.88	3.97	61.2	1.0510	876.25	875.91	880.87	3.17	48"	R-3067-V	4.62
CB 203	CBMH 202	21483	13751	0.493	0.493	64%	0.65	0.320	0.320	8.00	8.00	5.773	1.845	1.845	15	0.0033	RCP	0.013	3.71	3.02	81.0	1.8656	879.77	879.50	883.77	2.55	27"	R-3067-V	4.00
CBMH 202	CBMH 201	21510	13400	0.494	0.987	62%	0.64	0.314	0.634	0.45	8.45	5.679	1.784	3.599	15	0.0160	RCP	0.013	8.17	6.66	207.5	4.5723	879.50	876.18	883.82	2.87	60"	R-3067-V	4.32
CBMH 201	FES 200	29951	14396	0.688	2.766	48%	0.54	0.369	1.670	0.26	8.70	5.627	2.076	9.395	24	0.0022	RCP	0.013	10.61	3.38	167.7	1.2159	875.91	875.54	881.79	3.68	60"	R-3067-VB	9.88
																								875.50					
CB 304	CBMH 303	31763	1925	0.729	0.729	6%	0.24	0.177	0.177	8.00	8.00	5.773	1.021	1.021	15	0.0033	HDPE	0.012	4.02	3.28	110.4	2.9996	878.83	878.47	882.83	2.55	27"	R-4342	4.00
CBMH 303	CBMH 302	5520	963	0.127	0.856	17%	0.32	0.041	0.218	0.56	8.56	5.655	0.231	1.231	15	0.0033	HDPE	0.012	4.02	3.28	150.2	2.7896	878.47	877.97	883.60	3.68	48"	R-4342	5.13
CBMH 302	CBMH 301	11729	8022	0.269	1.125	68%	0.68	0.183	0.400	0.76	9.33	5.507	1.006	2.205	15	0.0033	RCP	0.013	3.71	3.02	83.1	1.5062	877.97	877.70	888.45	9.03	48"	R-3067-V	10.48
CBMH 301	FES 300	12825	8191	0.294	1.420	64%	0.65	0.191	0.591	0.46	9.78	5.423	1.033	3.205	15	0.0033	RCP	0.013	3.71	3.02	167.9	0.5063	876.06	875.50	888.28	9.13	48"	R-3067-V	16.22
																								875.50					
PE 404	OCS 403														24	0.0356	RCP				56.2		872.50	874.50					
OCS 403	MH 402												10.110		24	0.0077	HDPE	0.012	21.51	6.85	250.6	11.3953	873.50	871.57	878.58	878.58	60"	OCS	5.08
MH 402	CBMH 401												10.110		24	0.0077	RCP	0.013	19.85	6.32	176.0	9.7411	871.57	870.22	883.60	9.83	48"	R-1642	12.03
CBMH 401	CBMH 400	25671	4813	0.589	0.589	19%	0.33	0.195	0.195	8.00	8.00	5.773	1.127	11.237	24	0.0110	HDPE	0.012	25.70	8.18	85.9	14.4668	870.22	869.27	875.08	2.66	48"	R-4342	4.86
CBMH 400	EX STUB																						869.04	869.04	877.27		48"	R-4343	8.23

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Geotechnical Evaluation Report

Proposed Residential Development - Hassan Sand Gravel Pit
SE of Edgewater Pkwy. and Industrial Blvd.
Rogers, Minnesota

Prepared for

PulteGroup, Inc.

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.

Daniel J. Leffler, PE
Project Engineer
License Number: 58736
July 29, 2025

Project B2504662

Braun Intertec Corporation

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July 29, 2025 Project B2504662

Ms. Haley Daily
PulteGroup, Inc.
1650 W 82nd Street, Suite 300
Bloomington, MN 55431

Re: Geotechnical Evaluation
Proposed Residential Development - Hassan Sand Gravel Pit
SE of Edgewater Pkwy and Industrial Blvd.
Rogers, Minnesota

Dear Ms. Daily:

We are pleased to present this Geotechnical Evaluation Report for the proposed residential development in Rogers, Minnesota. Please read the entire report for the results of our soil borings and our recommendations.

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 Dan Leffler at 612.501.4546 (dleffler@braunintertec.com) or Joe Westphal at 952.995.2238 (jwestphal@braunintertec.com).

Sincerely,

BRAUN INTERTEC CORPORATION

Daniel J. Leffler, PE
Project Engineer

Joseph L. Westphal, PE
Director, Senior Engineer

c: Mr. Dean Lotter, PulteGroup, Inc.
Brandon Brayfield, Braun Intertec

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Table of Contents

Description **Page**

A. Introduction 1
A.1. Project Description 1
A.1.a. Structural Loads 1
A.1.b. Pavement and Traffic Loads 2
A.2. Site Conditions and History 2
A.3. Purpose 3
A.4. Background Information and Reference Documents 3
A.5. Scope of Services 3
B. Results 4
B.1. Geologic Overview 4
B.2. Previous Geotechnical Information 4
B.3. Current Soil Boring Results 5
B.4. Groundwater 6
B.5. Laboratory Test Results 6
C. Recommendations 7
C.1. Design and Construction Discussion 7
C.1.a. Building Subgrade Preparation 7
C.1.b. Reuse of On-Site Soils 7
C.1.c. Groundwater 8
C.2. Site Grading and Subgrade Preparation 8
C.2.a. Building Subgrade Excavations 8
C.2.b. Excavation Oversizing 9
C.2.c. Excavated Slopes 10
C.2.d. Filling on Slopes 10
C.2.e. Excavation Dewatering 10
C.2.f. Pavement and Exterior Slab Subgrade Preparation 10
C.2.g. Pavement Subgrade Proofroll 11
C.2.h. Engineered Fill Materials and Compaction 11
C.3. Spread Footings 13
C.3.a. Embedment Depth 13
C.3.b. Subgrade Improvements 13
C.3.c. Net Allowable Bearing Pressure 14
C.3.d. Settlement 14
C.4. Below-Grade Walls 14
C.4.a. Drainage Control 14
C.4.b. Configuring and Resisting Lateral Loads 16
C.5. Interior Slabs 17
C.5.a. Moisture Vapor Protection 17
C.5.b. Radon 17
C.6. Frost Protection 17
C.6.a. General 17
C.6.b. Frost Heave Mitigation 17
C.7. Pavements and Exterior Slabs 19
C.7.a. Design Sections 19
C.7.b. Bituminous Pavement Materials 19

DRAFT

Table of Contents (continued)

Description **Page**

C.7.c. Subgrade Drainage 19
C.7.d. Performance and Maintenance 20
C.8. Utilities 20
C.8.a. Subgrade Stabilization 20
C.8.b. Corrosion Potential 21
C.9. Stormwater 21
D. Procedures 21
D.1. Penetration Test Borings 21
D.2. Exploration Logs 22
D.2.a. Log of Boring Sheets 22
D.2.b. Organic Vapor Screening 22
D.2.c. Geologic Origins 22
D.3. Material Classification and Testing 22
D.3.a. Visual and Manual Classification 22
D.3.b. Laboratory Testing 23
D.4. Groundwater Measurements 23
E. Qualifications 23
E.1. Variations in Subsurface Conditions 23
E.1.a. Material Strata 23
E.1.b. Groundwater Levels 23
E.2. Continuity of Professional Responsibility 24
E.2.a. Plan Review 24
E.2.b. Construction Observations and Testing 24
E.3. Use of Report 24
E.4. Standard of Care 24

Appendix

Soil Boring Location Sketch
Log of Boring Sheets ST-1 through ST-4
Log of Previous Boring Sheets B-1 through B-11 (Performed by Others)
Descriptive Terminology of Soil
Sieve analysis of Soil, ST-2

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A. Introduction

A.1. Project Description

This Geotechnical Evaluation Report addresses the proposed design and construction of the proposed single-family residential development, located at the southeastern quadrant of Edgewater Parkway and Industrial Boulevard in Rogers, Minnesota. This site is located at a previous gravel pit, Hassan Sand. The preliminary development plans provided indicate that you plan to construct 57 single-family house pads, along with associated streets, underground utilities and stormwater management areas.

The figure below shows an illustration of the proposed site layout.

Figure 1. Site Layout – Concept B

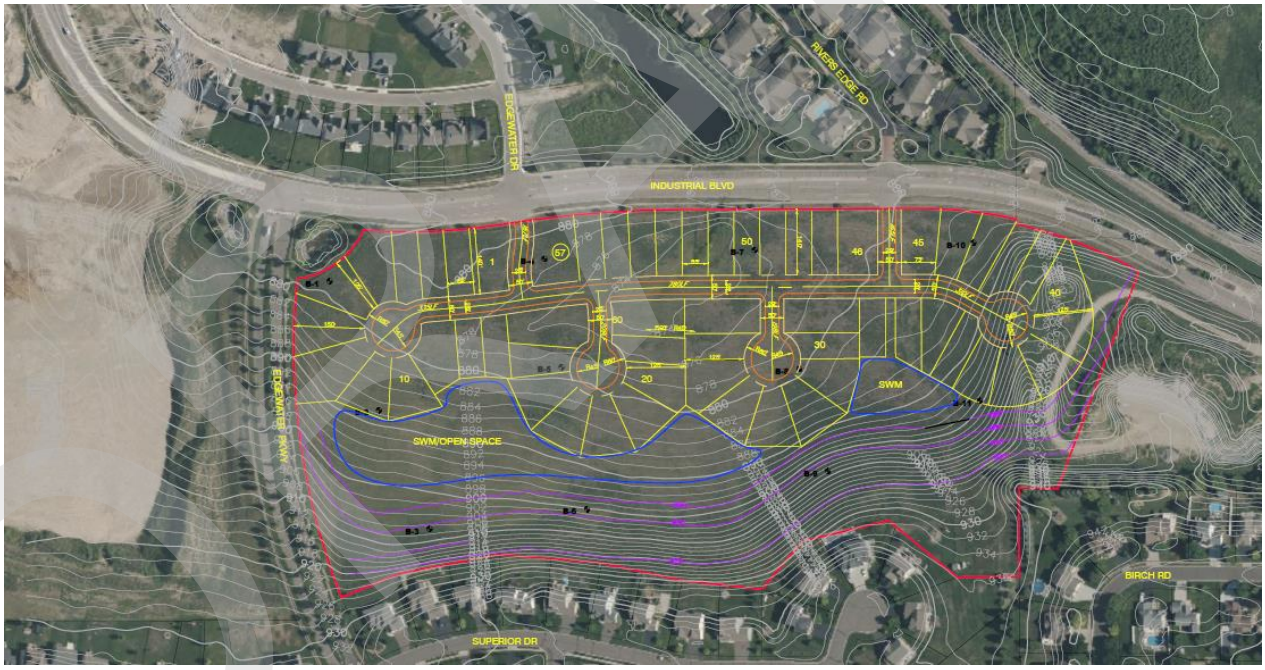


Figure provided by Alliant Engineering dated January 13, 2025.

A.1.a. Structural Loads

We have assumed that the residential construction will likely consist of one or two-story, wood-framed houses supported by poured concrete foundations. We assume the houses will be slab-on-grade or have partial to full-depth basements. We have assumed that bearing wall loads associated with the proposed residential construction will range from 1 to 2 kips (1,000 to 2,000 pounds) per linear foot and column loads, if any, will be no greater than 50 kips per column.

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A.1.b. Pavement and Traffic Loads

We have assumed that bituminous pavements, typical of residential neighborhoods, will be subject to normal traffic conditions, such as passenger vehicles, school buses, light delivery and garbage pickup, over an assumed design life of 20 years.

A.2. Site Conditions and History

The site is comprised of about 27 acres and is currently vacant with grass and weeds. Historically, this site has been subjected to mining sand and gravel. Based on historical aerial photographs, it appeared that the mining operation began sometime between 1978 and 1984 and wrapping up around 2012.

Current site grades are generally sloping downward from the south to the north with elevations ranging from about 874 feet to 940 feet, Mean Sea Level (MSL).

The following recent aerial photograph shows the current site conditions, as obtained from the Hennepin County website.

Figure 2. Aerial Photograph of the Site in 2024



Photograph provided by Hennepin County.

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A.3. Purpose

The purpose of our geotechnical evaluation will be to characterize subsurface geologic conditions at selected exploration locations and evaluate their impact on the feasibility to design and construct a new single-family residential development at this site.

A.4. Background Information and Reference Documents

We reviewed the following information:

- Hassan Sand Property Concept Plan B, prepared by Alliant Engineering, dated January 13, 2025.
- Current and historic aerial photos from Google Earth, for information on site history.
- Existing topographic map prepared by MnTOPO.
- Previous preliminary geotechnical report prepared by American Engineering Testing Inc. (AET), dated May 21, 2018. This includes 11 soil borings numbered B-1 through B-11.

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.5. Scope of Services

We performed our scope of services for the project in accordance with our Proposal QTB215662 to PulteGroup, Inc., dated May 21, 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. We collaborated with the design team to provide approximate exploration locations, which we subsequently staked on-site. We acquired surface elevations and soil boring 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.

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- Performing four standard penetration test (SPT) borings, denoted as ST-1 to ST-4, to nominal depths of 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, stormwater improvements and pavements.

We performed this geotechnical evaluation concurrently with a Phase I and Phase II Environmental Assessment (ESA) which we will submit separately. The project team should review both the Phase I and Phase II ESA reports in conjunction with this geotechnical evaluation report to understand both the geotechnical and environmental aspects of the site and how they may impact one another.

B. Results

B.1. Geologic Overview

Upon our review of the surficial geology for this site, native soils across this site should mostly consist of outwash sands overlain by a maximum of 4 feet of loess soils (wind-blown). However, this site has previously been mined so the near surface soils consist of previously placed fill soils. Our soil borings encountered native outwash sands below the fill soils.

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 of the site.

B.2. Previous Geotechnical Information

AET performed a preliminary geotechnical evaluation report for this site in 2018 under report Number 01-07536. The soil borings performed generally encountered previously placed fill soils overlying native,

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waterbearing outwash sands. The fill soils consisted of a mixture of lean clay, sandy lean clay, clayey sand, and silty sand. Water in the AET borings was observed at about elevation 870 MSL. These soil boring results are similar to those encountered by our most recent soil borings. AET also completed three soil borings in the south part of the previous gravel pit, which will not be part of the proposed residential development.

B.3. Current Soil Boring Results

Table 1 provides a summary of the current 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 sheet in the Appendix includes definitions of abbreviations used in Table 1.

Table 1. Subsurface Profile Summary*

Strata	Soil Type - ASTM Classification	Range of Penetration Resistances	Commentary and Details
Topsoil fill	SC, SM	---	▪ Predominantly clayey sand and silty sand. ▪ Thicknesses at boring locations about 1/2 foot. ▪ Generally brown to black in color. ▪ Moisture condition generally moist.
Fill	SP, SP-SM, SC, CL	4 to 13 Blows per Foot (BPF)	▪ Encountered by all the borings and consisted of clayey sand and lean clay with lesser amounts of sand. ▪ Thicknesses at boring locations varied from about 9 to 18 feet. ▪ Variable amounts of gravel. ▪ Occasional layers of slightly organic soils throughout ▪ Generally brown to gray in color. ▪ Moisture condition generally moist except Boring ST-2 which is moist to wet.
Glacial deposits	SP	5 to 19 BPF	▪ Encountered in all four borings below the fill soils. ▪ Variable amounts of gravel; may contain cobbles and boulders. ▪ Generally reddish brown to brown in color. ▪ Moisture condition generally wet.

*Abbreviations defined in the attached Descriptive Terminology sheet.

For simplicity in this report, we define existing fill to mean existing, uncontrolled or undocumented fill.

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B.4. Groundwater

Table 2 summarizes the depths where we observed groundwater; the attached Log of Boring sheets in the Appendix also include this information and additional details.

Table 2. Groundwater Summary

Location	Measured Surface Elevation (ft)	Measured Depth to Groundwater (ft)	Corresponding Groundwater Elevation (ft)
ST-1	878.9	9	870
ST-2	874.2	4	870 1/2
ST-3	882.0	12	870
ST-4	890.1	19	871

At the time of our observation (May of 2025), the groundwater surface elevation appeared to be about elevation 870 to 871 feet. Similarly, the previous investigation (April of 2018) found water level generally in the range of 869 to 872 feet across the site. Most of the borings encountered water at about the same elevation which indicates that they represent the approximate groundwater level. Project planning should expect groundwater will fluctuate in relation to seasonal and annual factors.

B.5. Laboratory Test Results

A number of laboratory tests were completed on selected soil samples and were completed according to the requirements of American Society for Testing and Materials (ASTM) procedures. The Log of Boring sheets show the results of moisture content tests (ASTM D2216), percent passing the #200 sieve tests (ASTM C117), and organic content tests (ASTM D2974), next to the tested sample depth.

The moisture tests that were performed on selected granular samples ranged from 7 to 21 percent, indicating the sandy soils were generally below to above their probable optimum moisture content. Please note, the higher moisture content sands were generally encountered below the water table. The moisture contents performed on the selected clayey samples ranged from 14 to 25 percent, indicating the clay soils were generally near to well above their probable optimum moisture content.

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The mechanical analysis test on one selected granular soil sample from Boring ST-4 indicated that the granular sample contained 8 percent silt and clay, by weight, passing the #200 sieve. This test result correlates to a soil type of poorly graded sand with silt.

We performed an organic content test on a selected soil sample from Boring ST-1. The test indicated that the selected sample contained 3 percent organic material, indicating that this soil sample was slightly organic.

C. Recommendations

C.1. Design and Construction Discussion

The site generally appears suitable for the proposed residential development following typical mass grading construction. Soil corrections will be more extensive due to the previous use as a sand and gravel pit. We are unaware of any existing documentation of the fill placed, therefore we assume the existing fill should not be relied upon for the foundation support.

C.1.a. Building Subgrade Preparation

Based on the results of our subsurface exploration and evaluation, spread footing foundations bearing on engineered fill and/or native soils can support the proposed houses after performing typical subgrade preparation. Typical subgrade preparation includes removing existing vegetation, topsoil, organic soils, existing fill, soft clay, debris and any other unsuitable soils, along with proper compaction of the required engineered fill soils to establish proposed site grade. Based on the previous use of a sand and gravel pit, the existing fill depths are extensive, more than a typical virgin site.

C.1.b. Reuse of On-Site Soils

The on-site soils, free of organic materials and debris, appear suitable for reuse as engineered fill below the proposed building pads and roadways. Please note, the on-site soils will likely require moisture conditioning (wetting and drying) prior to reuse and compaction.

A Phase II ESA report is being prepared for this site by Braun Intertec. The Phase II ESA Report may limit the reuse of some of the on-site soils. Please refer to the Phase II report for additional information regarding the re-use of on-site soils.

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C.1.c. Groundwater

Water bearing sands were encountered below the existing ground surface between depths of about 4 to 19 feet at the boring locations, corresponding to elevations of about 870 feet to 872 feet MSL. Project planning should include dewater of high-permeability soils (e.g. sands) from within the excavations with well points or dewater wells. Any underground utility planned to be installed near or below an elevation of 872 should expect to include temporary dewatering. Based on the previously placed fill depths, some soils corrections will extend below the groundwater table as well.

C.2. Site Grading and Subgrade Preparation

C.2.a. Building Subgrade Excavations

We recommend removing unsuitable materials from beneath house pads and oversize areas. We define unsuitable materials vegetation, topsoil, fill, organic soils, existing structures, existing utilities, debris and soft or loose soils. Table 3 shows the anticipated excavation depths and bottom elevations at each of the current and pertinent previous (AET) soil boring locations. The table only excludes previous Borings B-3, B-6, and B-9 which were taken well outside of the project site.

Table 3. Recommended Excavation Depths Below Building Pads and Streets

Location	Measured Surface Elevation (ft)	Anticipated Excavation Depth (ft)	Anticipated Bottom of Excavation Elevation (ft)
ST-1	878.9	9	870
ST-2*	874.2	11	863
ST-3	882.0	12	870
ST-4*	890.1	14 to 18	876 to 872
B-1	878.8	9 1/2	869
B-2	887.8	12 1/2	875
B-4	877.6	9 1/2	868
B-5	879.3	9 1/2	870
B-7	876.4	7	869 1/2
B-8	880.2	9 1/2	870 1/2
B-10	883.5	9 1/2	874
B-11	898.9	19 1/2	879 1/2

*If existing fill is all sand, and test pits during construction there is no buried organic or debris material with, some sand fill could potential remain in place and be surface compacted, generally no more than 5 feet thick.

Because of the depth below groundwater, soil correction work may not be possible in the area of Boring ST-2 without extensive dewatering. This area should be further investigated by test pits at the time of construction.

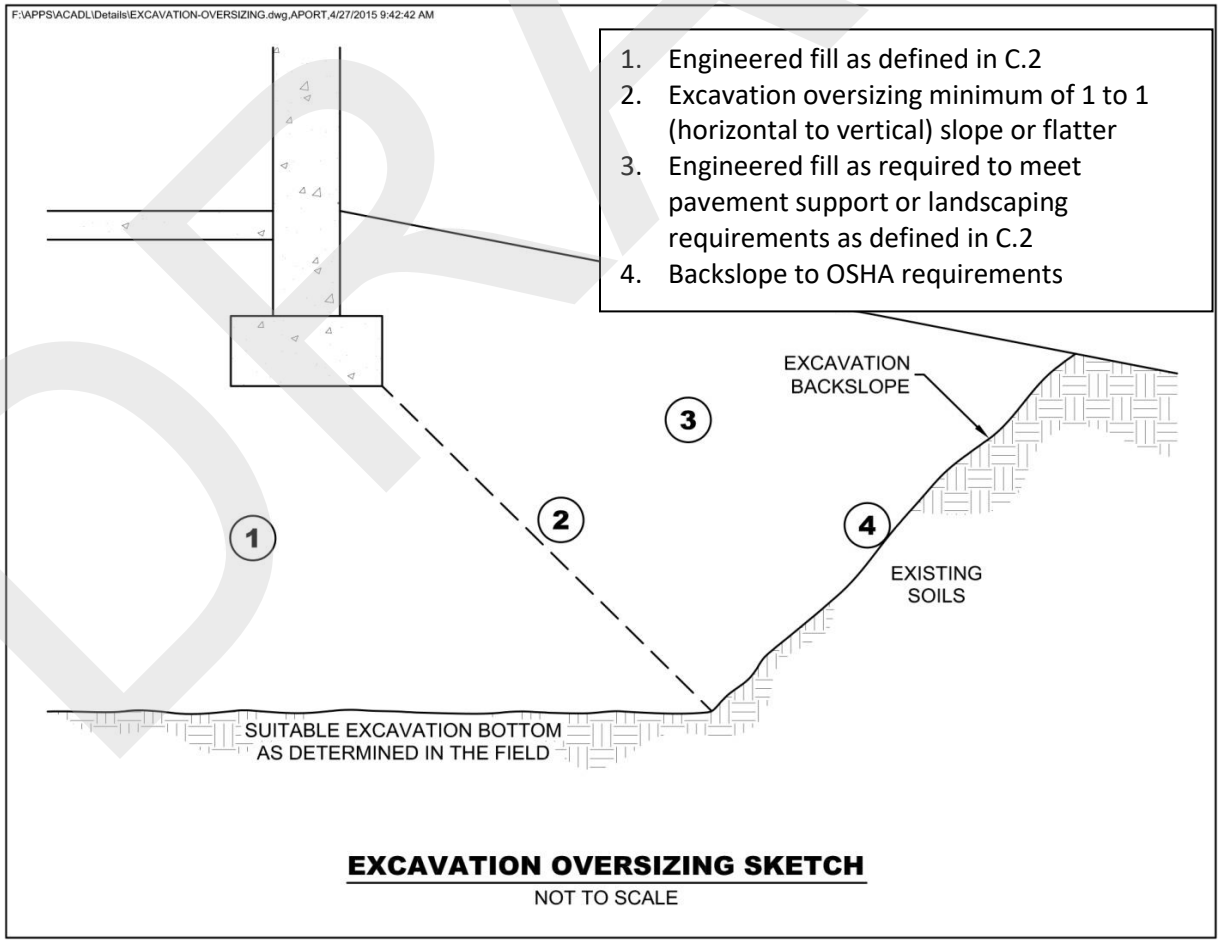
Excavation depths will vary between the borings. Portions of the excavations may also extend deeper than indicated by the borings. A geotechnical representative should observe the excavations to make the necessary field judgments regarding the suitability of the exposed soils.

The contractor should use equipment and techniques to minimize soil disturbance. If soils become disturbed or wet, we recommend excavation and replacement.

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



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C.2.c. Excavated Slopes

Based on the borings, we anticipate on-site soils in excavations will consist of mainly previously placed fill soils and sandy soils. 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. OSHA requires an engineer to evaluate slopes or excavations over 20 feet in depth.

An OSHA-approved qualified person should review the soil classification in the field. Excavations must comply with the requirements of OSHA 29 CFR, Part 1926, Subpart P, "Excavations and Trenches." This document states, excavation safety is the responsibility of the contractor. The project specifications should reference these OSHA requirements.

C.2.d. Filling on Slopes

Where existing or excavated grades are steeper than 4H:1V, we recommend placing fill from low to high elevations on horizontal benches cut into the native soils so that successive lifts are spread and compacted on level surfaces, and a potential failure surface is not created along the fill's lower boundary. Depending on fill requirements, the contractor can construct benches by cutting into existing grades while placing fill (the composition of the exposed soil, thus being in compliance with fill specifications), or by cutting the benches in advance of fill (to prevent mixing with soils not in compliance with fill specifications). The height of a given bench may vary but the width should consistently be great enough to accommodate large, self-propelled compaction equipment.

C.2.e. Excavation Dewatering

We recommend removing groundwater from the excavations. Project planning should include temporary sumps and pumps for excavations in low-permeability soils, such as clays. Dewatering of high-permeability soils (e.g., sands) from within the excavation with conventional pumps has the potential to loosen the soils, due to upward flow. A well contractor should develop a dewatering plan; the design team should review this plan. We anticipate any site excavations or any underground utility placed below an elevation of 872feet MSL to encounter groundwater.

C.2.f. Pavement and Exterior Slab Subgrade Preparation

We recommend the following steps for pavement and exterior slab subgrade preparation. Note that project planning may require additional subcuts to limit frost heave.

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1. Strip unsuitable soils consisting of topsoil, organic soils, vegetation, and existing structures from proposed roadways. We anticipate extensive previously placed fill soil, which should be removed and recompacted with the upper 5 feet from the proposed roadway elevation.

2. Have a geotechnical representative observe the excavated subgrade to evaluate if additional subgrade improvements are necessary.

3. Slope subgrade soils to areas of sand or drain tile to allow the removal of accumulating water.

4. Scarify, moisture condition and surface compact the subgrade with at least five passes of a large roller with a minimum drum diameter of 3 1/2 feet.

5. Place pavement engineered fill to grade and compact in accordance with Section C.2.h to bottom of pavement and exterior slab section.

6. Proofroll the pavement or exterior slab subgrade as described in Section C.2.g.

C.2.g. 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 re-compaction, 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.h. 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 ▪ Below interior slabs	Structural fill**	SP, SP-SM, SM, SC, CL	100% passing 2-inch sieve	< 2% Organic Content (OC) Plasticity Index (PI) < 20%

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Locations To Be Used	Engineered Fill Classification	Possible Soil Type Descriptions	Gradation	Additional Requirements
▪ 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, SC, CL	100% passing 3-inch sieve	< 2% OC PI < 20%
Below landscaped surfaces, where subsidence is not a concern	Non-structural fill	SP, SP-SM, SM, SC, CL	100% passing 6-inch sieve	< 10% OC

*Engineered fill materials should satisfy the approved Response Action Plan (RAP) or applicable environmental regulations.

**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.

If there are building pads that will require more than 10 feet of compacted fill under the lowest floor slabs, a construction delay may be needed if only clay fill is used to fill these building pads. Depending on the amount of soil correction, a construction delay could range from 3 to 12 months, depending on the final depths of clay fill used. We recommend that settlements plates be installed to monitor the consolidation of the deeper fill soils. The settlement plates should be monitored until readings show the settlement of the compacted fill soils has been mostly completed.

As an alternative, on lots where deep fill soils are needed, clean sand fill (less than 12 percent passing the number #200 sieve) could be used to initially fill the excavations below these house pads. The clean sand fill should be placed in thin, compacted lifts, up to an elevation of 10 feet or less from finished floor grades. Based on the soil borings results, the sand will likely need to be imported to this site or borrowed from the pond area as most of the surficial soil is clayey. On-site clay can then be used to complete construction of the building pads.

We recommend spreading engineered fill in loose lifts of approximately 8 to 12 inches thick. We recommend compacting each lift of engineered fill with a full-size vibratory or sheepsfoot compactor, 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.

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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 CL, SC, SM)
Below building pads, less than 10 feet of fill	95	**---	-1 to +3
Below building pads, greater than 10 feet of fill	98	**---	-1 to +3
Within 3 feet of pavement subgrade	100	**---	-2 to +1
More than 3 feet below pavement subgrade	95	**---	-1 to +3
Below landscaped surfaces	92	**---	-1 to +5

**The moisture content of the clean sand fill should be greater than 5 percent, but no more than 3 percentage points over optimum.

The project documents should not allow the contractor to use frozen material as engineered fill or to place engineered fill on frozen material. Frost should not penetrate under foundations during construction.

We recommend performing density tests in engineered fill to evaluate if the contractors are effectively compacting the soil and meeting project requirements.

C.3. Spread Footings

C.3.a. Embedment Depth

For frost protection, we recommend embedding perimeter footings of the structures, including attached and tuck-under garages, a minimum of 42 inches below the lowest exterior grade. Interior footings may be placed directly below floor slabs unless they will be subjected to freezing. We recommend embedding building footings, not heated during winter construction, and other unheated footings associated with porches, decks, or stoops 60 inches below the lowest exterior grade.

C.3.b. Subgrade Improvements

If a small amount of groundwater is present within the footing excavation, or if the footing subgrade soils become disturbed prior to placing forms or reinforcement, we recommend subcutting the very loose or wet soil and placing a 6- to 8-inch layer of clear rock, which should be compacted into the subgrade. The clear rock will provide a stable working surface and will allow for the flow of water to a drain tile or sump pump.

C.3.c. Net Allowable Bearing Pressure

We recommend sizing house spread footings to exert a net allowable bearing pressure of up to 2,000 pounds per square foot (psf). This value includes a safety factor of at least 3.0 with regard to bearing capacity failure.

C.3.d. Settlement

We estimate that total and differential settlements among the footings will amount to less than 1- and 1/2-inch, respectively, under the assumed loads. If there are areas where more than 10 feet of fill is required, higher settlements could occur, unless the deeper fill areas are only filled with granular fill (consisting of SP or SP-SM soils).

C.4. Below-Grade Walls

The following sections address soil parameters for basement wall design. Although construction of retaining walls has not been specified for this project to date, the following recommendations can also be used for preliminary retaining wall design. We recommend that additional soil borings be completed for final retaining wall design.

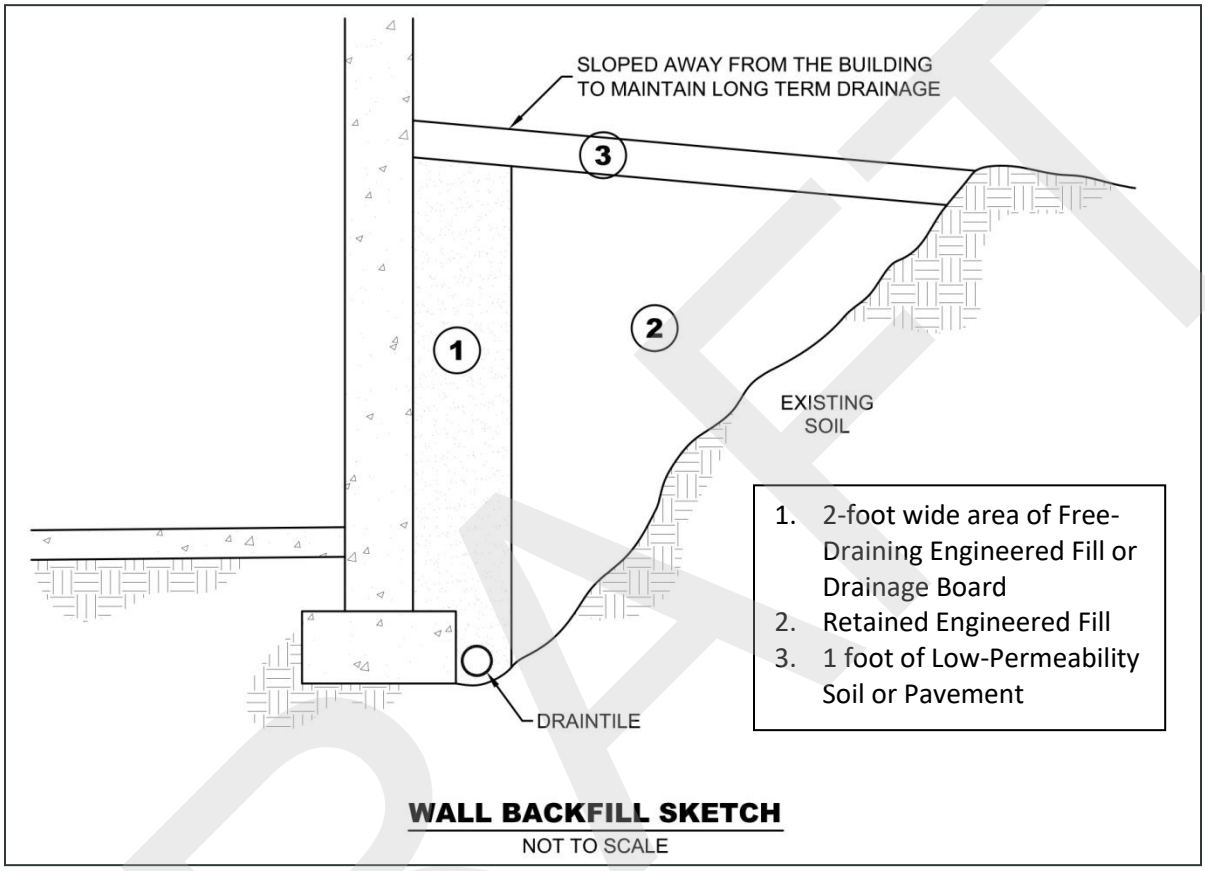
C.4.a. Drainage Control

We recommend installing drain tile to remove water behind the below-grade walls, at the location shown in Figure 4. The below-grade wall drainage system should also incorporate free-draining, engineered fill soil, or a drainage board placed against the wall and connected to the drain tile.

Even with the use of free-draining, engineered fill, we recommend general waterproofing of below-grade walls that surround occupied or potentially occupied areas because of the potential cost impacts related to seepage after construction is complete.

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Figure 4. Generalized Illustration of Wall Engineered Fill



The materials listed in the sketch should meet the definitions in Section C.2.h. Low-permeability material is capable of directing water away from the wall, like clay, topsoil or pavement, should cap the granular wall backfill. The project documents should indicate if the contractor should brace the walls prior to filling and the allowable unbalanced fill heights.

As shown in Figure 4, we recommend Zone 2 consist of retained, engineered fill, and this material will control lateral pressures on the wall. However, we are also providing design parameters for using other engineered fill material. If final design uses non-sand material for engineered fill, project planning should account for the following items:

- Other engineered fill material may result in higher lateral pressure on the wall.
- Other engineered fill material may be more difficult to compact.

- Post-construction consolidation of other engineered fill material may result in settlement-related damage to the structures or slabs supported on the engineered fill. Post-construction settlement of other engineered fill material may also cause drainage towards the structure. The magnitude of consolidation could be up to about 3 percent of the wall fill thickness.

C.4.b. Configuring and Resisting Lateral Loads

Below-grade wall design can use active earth pressure conditions, if the walls can rotate slightly. If the wall design cannot tolerate rotation, then design should use at-rest earth pressure conditions. Rotation up to 0.002 times the wall height is generally required for walls supporting sand. Rotation up to 0.02 times the wall height is required when wall supports clay.

Table 6 presents our recommended lateral coefficients and equivalent fluid pressures for wall design of active, at-rest and passive earth pressure conditions. The table also provides recommended wet unit weights and internal friction angles. Designs should also consider the slope of any engineered fill and dead or live loads placed behind the walls within a horizontal distance that is equal to the height of the walls. Our recommended values assume the wall design provides drainage so water cannot accumulate behind the walls. The construction documents should clearly identify what soils the contractor should use for engineered fill of walls.

Table 6. Recommended Below-Grade Wall Design Parameters – Drained Conditions

Retained Soil	Wet Unit Weight (pcf)	Friction Angle (degrees)	Equivalent Active Fluid Pressure (pcf)	Equivalent At-Rest Fluid Pressure (pcf)	Equivalent Passive Fluid Pressure* (pcf)
Imported Sand (SP, SP-SM)	120	33	35	55	N/A
Clayey Soils (SC, CL)	125	26	50	70	320

*Based on Rankine model for soils in a region behind the wall extending at least 2 horizontal feet beyond the bottom outer edges of the wall footings and then rising up and away from the wall at an angle no steeper than 60 degrees from horizontal.

Sliding resistance between the bottom of the footing and the soil can also resist lateral pressures. We recommend assuming a sliding coefficient equal to 0.30 between the concrete and soil.

The values presented in this section are un-factored.

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C.5. Interior Slabs

C.5.a. 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.b. Radon

We recommend installing a radon mitigation system in occupied spaces in accordance with local building code. Our certified and licensed radon mitigation professionals can assist in this design, at your request.

C.6. Frost Protection

C.6.a. General

Clayey soils will likely underlie a majority of the exterior slabs, as well as pavements. We consider clayey soils to be moderately to highly frost susceptible. Soils of this type can retain moisture and heave upon freezing. In general, this characteristic is not an issue unless these soils become saturated, due to surface runoff or infiltration, or are excessively wet in situ. Once frozen, unfavorable amounts of general and isolated heaving of the soils and the surface structures supported on them could develop. This type of heaving could affect design drainage patterns and the performance of exterior slabs and pavements, as well as any isolated exterior footings and piers.

Note that general runoff and infiltration from precipitation are not the only source 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.

C.6.b. Frost Heave Mitigation

To address most of the heave related issues, we recommend setting general site grades and grades for exterior surface features to direct surface drainage away from buildings, across large, paved areas and away from walkways. Such grading will limit the potential for saturation of the subgrade and subsequent heaving. General grades should also have enough “slope” to tolerate potential larger areas of heave, which may not fully settle after thawing.

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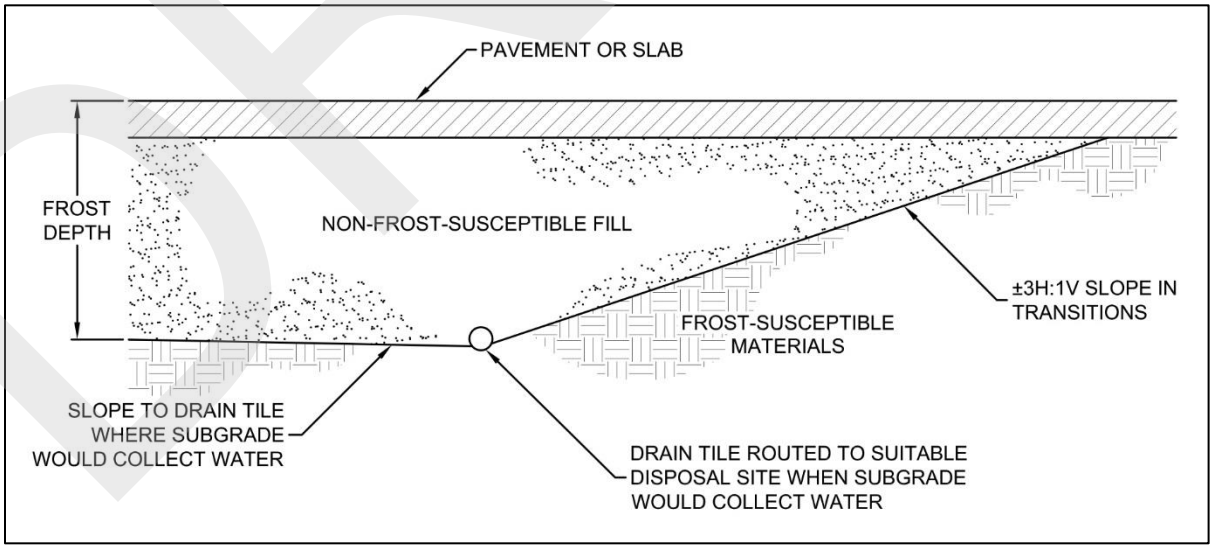
Even small amounts of frost-related differential movement at walkway joints or cracks can create tripping hazards. Project planning can explore several subgrade improvement options to address this condition.

One of the more conservative subgrade improvement options to mitigate potential heave is removing any frost-susceptible soils present below the exterior slab areas down to a minimum depth of 4 feet below subgrade elevations. We recommend filling the resulting excavation with non-frost-susceptible fill. We also recommend sloping the bottom of the excavation toward one or more collection points to remove any water entering the engineered fill. This approach will not be effective in controlling frost heave without removing the water.

An important geometric aspect of the excavation and replacement approach described above is sloping the banks of the excavations to create a more gradual transition between the unexcavated soils considered frost susceptible and the engineered fill in the excavated area, which is not frost susceptible. The slope allows attenuation of differential movement that may occur along the excavation boundary. We recommend slopes that are 3H:1V, or flatter, along transitions between frost-susceptible and non-frost-susceptible soils.

Figure 5 shows an illustration summarizing some of the recommendations.

Figure 5. Frost Protection Geometry Illustration



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Another option is to limit frost heave in critical areas, such as doorways and entrances, via frost-depth footings or localized excavations with sloped transitions between frost-susceptible and non-frost-susceptible soils, as described above.

Over the life of slabs and pavements, cracks will develop and joints open, which will expose the subgrade and allow water to enter from the surface and either saturate or perch atop the subgrade soils. This water intrusion increases the potential for frost heave or moisture-related distress near the crack or joint. Therefore, we recommend implementing a detailed maintenance program to seal and/or fill any cracks and joints. The maintenance program should give special attention to areas where dissimilar materials abut one another, where construction joints occur and where shrinkage cracks develop.

C.7. Pavements and Exterior Slabs

C.7.a. Design Sections

Our scope of services for this project did not include laboratory tests on subgrade soils to determine an R-value for pavement design. Based on our experience with similar clay soils anticipated at the pavement subgrade elevation, we recommend pavement design assume an R-value of 12. We assumed the pavements will be designed in accordance with the local government standard pavement sections.

The ongoing performance of bituminous pavements is impacted by conditions under which the pavements is asked to perform in. These conditions include the environmental conditions, the actual use conditions and the level of ongoing maintenance performed. Because of normal thermal-expansion and contraction, it is not unusual to have cracking develop within the first few years of placement and for the cracking to continue throughout the life of the pavement. A regular maintenance plan should be developed for filling cracks to lessen the potential impacts for cold weather distress due to frost heave or warm weather distress due to wetting and softening of the subgrade. It is also not unusual for the pavement to require a seal coat within the first 5 to 10 years to increase the long-term performance of the bituminous pavement.

C.7.b. Bituminous Pavement Materials

Appropriate mix designs are critical to the performance of flexible pavements. We can provide recommendations for pavement material selection during final pavement design.

C.7.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, at the base of the granular subbase layer, or below the aggregate base material where no subbase is present.

C.7.d. Performance and Maintenance

We based the above pavement designs on a 20-year performance life for bituminous pavement. 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.8. Utilities

C.8.a. Subgrade Stabilization

Earthwork activities associated with utility installation located inside the building area should adhere to the recommendations in Section C.2.h. Project planning should include dewatering of high-permeability soils (e.g. , sands) from within the excavations with well points or dewatering well. If utilities are placed below an elevation of 870 feet to 871 feet MSL, we anticipate that dewatering will be necessary.

For exterior utilities, we anticipate the soils at typical invert elevations will be suitable for utility support. However, if construction encounters unfavorable conditions such as soft clay, organic soils or perched water at invert grades, the unsuitable soils may require some additional subcutting and replacement with sand or crushed rock to prepare a proper subgrade for pipe support. Project design and construction should not place utilities within the 1H:1V oversizing of foundations.

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C.8.b. Corrosion Potential

Based on our experience, the clayey soils encountered by the borings are moderately corrosive to metallic conduits, but only marginally corrosive to concrete. We recommend specifying non-corrosive materials or providing corrosion protection, unless project planning chooses to perform additional tests to demonstrate the soils are not corrosive.

C.9. Stormwater

Unless the proposed stormwater management systems will be deep, we do not recommend infiltrating water within this site as existing clay fill soils are generally encountered above the water table. The clay soils encountered across this site are considered type D soils according to the Minnesota Stormwater Manual. If infiltration basins are proposed, we recommend excavating through the clay soils, exposing the clean sands and backfilling with clean sands until the bottom of the basin elevation is attained.

Fine-grained soils (silts and clays), topsoil or organic matter that mixes into or washes onto the soil will lower the permeability. The contractor should maintain and protect infiltration areas during construction. Furthermore, organic matter and silt washed into the system after construction can fill the soil pores and reduce permeability over time. Proper maintenance is important for long-term performance of infiltration systems.

This geotechnical evaluation does not constitute a review of site suitability for stormwater infiltration or evaluate the potential impacts, if any, from infiltration of large amounts of stormwater.

D. Procedures

D.1. Penetration Test Borings

We drilled the penetration test borings with an all-terrain, 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 with ASTM D1586. The boring logs show the actual sample intervals and corresponding depths.

We sealed penetration test boreholes meeting the Minnesota Department of Health (MDH) Environmental Borehole criteria with an MDH-approved grout. We will forward 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. Organic Vapor Screening

We conducted the geotechnical evaluation concurrently with a Phase II Environmental Site Assessment (ESA) and provided the results of the ESA under separate cover. The project team should review the Phase II ESA report in conjunction with this geotechnical evaluation report to understand both the geotechnical and environmental aspects of the site and how they may impact one another.

An environmental technician examined soil samples from the soil borings for staining, odors, and other apparent signs of contamination. In addition, the environmental technician screened the soil samples for the presence of organic vapors using a photoionization detector (PID). The boring logs in the Appendix include the PID results, which we discuss further in the companion Phase II ESA.

D.2.c. 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 in-situ testing performed for the project, (4) laboratory test results, and (5) available common knowledge of the geologic processes and environments that have impacted the site and surrounding area in the past.

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 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.

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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 Braun Intertec to perform the required observations and testing during construction as part of the ongoing geotechnical evaluation. This will allow us to correlate the subsurface conditions exposed during construction with those encountered by the borings and provide professional continuity from the design phase to the construction phase. If we do not perform observations and testing during construction, it becomes the responsibility of others to validate the assumption made during the preparation of this report and to accept the construction-related geotechnical engineer-of-record responsibilities.

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.

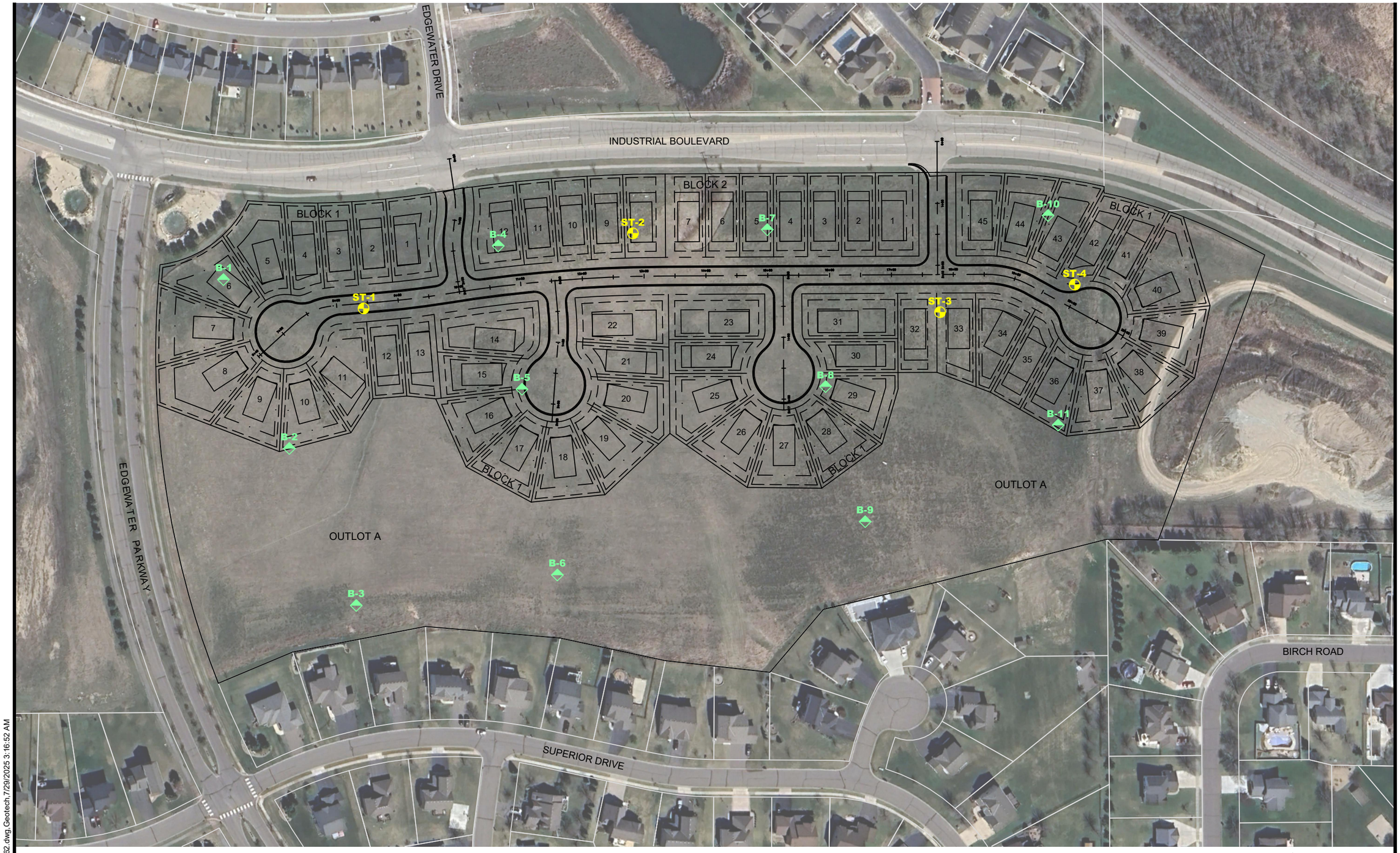
E.4. Standard of Care

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.

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Appendix

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DENOTES APPROXIMATE LOCATION OF STANDARD PENETRATION TEST BORING

DENOTES APPROXIMATE LOCATION OF PREVIOUSLY PERFORMED AET BORING

75' 0 150'

SCALE: 1"= 150'

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11001 Hampshire Avenue S
Minneapolis, MN 55438
952.995.2000
braunintertec.com

Drawing Information

Project No:	B2504662
Drawing No:	B2504662
Drawn By:	JAG
Date Drawn:	5/21/25
Checked By:	DJL
Last Modified:	7/29/25

Project Information

Hassan Sand Gravel Pit

Southeast of Edgewater Parkway and Industrial Boulevard

Rogers, Minnesota

Soil Boring Location Sketch

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LOG OF BORING

See Descriptive Terminology sheet for explanation of abbreviations

Project Number B2504662
Geotechnical Evaluation
Hassan Sand Gravel Pit
Southeast of Edgewater Pkwy & Industrial Blvd
Rogers, Minnesota

BORING: **ST-1**
LOCATION: Captured with RTK GPS.
DATUM: NAD 1983 HARN Adj MN Hennepin (US Feet)
NORTHING: 250764.4 EASTING: 447226.8
START DATE: 05/30/25 END DATE: 05/30/25
SURFACING: Soil WEATHER: Cloudy

DRILLER: M. Hoppe LOGGED BY: D. Leffler
SURFACE ELEVATION: 878.9 ft RIG: 7504 METHOD: 3 1/4" HSA

Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	PID ppm	MC %	Tests or Remarks
878.4		CLAYEY SAND (SC), black, moist (TOPSOIL FILL)			0.6		
0.5		FILL: CLAYEY SAND (SC), trace Gravel, brown, moist *Organic lenses at 2 1/2 feet*		2-3-2 (5) 18"	0.6		
			5	3-4-6 (10) 18"	2.1	15	
871.9							
7.0		FILL: LEAN CLAY with SAND (CL), trace Gravel, slightly organic lenses, gray, moist		3-2-2 (4) 16"	0.7	25	OC=3%
869.9	▽						
9.0		POORLY GRADED SAND (SP), fine to medium-grained, trace Gravel, reddish brown to brown, wet, medium dense to loose (GLACIAL OUTWASH)	10	6-9-10 (19) 16"	2.9		
				3-5-3 (8) 18"	0.9		
			15	2-2-4 (6) 22"	0.9		
			20	2-2-3 (5) 22"	1.1		
857.9							
21.0		END OF BORING Boring immediately backfilled with bentonite grout					Water observed at 9.0 feet while drilling.
			25				
			30				

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LOG OF BORING

See Descriptive Terminology sheet for explanation of abbreviations

Project Number B2504662
Geotechnical Evaluation
Hassan Sand Gravel Pit
Southeast of Edgewater Pkwy & Industrial Blvd
Rogers, Minnesota

BORING: **ST-2**
LOCATION: Captured with RTK GPS.
DATUM: NAD 1983 HARN Adj MN Hennepin (US Feet)
NORTHING: 250885.9 EASTING: 447662.4
START DATE: 05/30/25 END DATE: 05/30/25
DRILLER: M. Hoppe LOGGED BY: D. Leffler
SURFACE ELEVATION: 874.2 ft RIG: 7504 METHOD: 3 1/4" HSA
SURFACING: Soil WEATHER: Cloudy

Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	PID ppm	MC %	Tests or Remarks
873.7							
0.5		SILTY SAND (SM), brown, moist (TOPSOIL FILL)			1.4		
		FILL: SANDY LEAN CLAY (CL), with Gravel, dark gray, moist		3-2-3 (5) 16"		14	
870.2					0.8		
4.0	▽	FILL: POORLY GRADED SAND (SP), fine to medium-grained, brown, wet *Contains seams of Clayey Sand at 5 feet*	5	3-4-5 (9) 16"	1.0		
				4-7-6 (13) 20"	1.3		
		Trace fibers at 10 feet	10	5-4-5 (9) 20"	0.7		
863.2							
11.0		POORLY GRADED SAND (SP), fine to medium-grained, trace Gravel, brown, wet, medium dense to loose (GLACIAL OUTWASH)		3-5-7 (12) 20"	0.9	21	
			15	4-4-3 (7) 20"			
					0.9		
			20	4-5-5 (10) 20"	1.1		
853.2							
21.0		END OF BORING					Water observed at 4.0 feet while drilling.
		Boring immediately backfilled with bentonite grout					
			25				
			30				

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LOG OF BORING

See Descriptive Terminology sheet for explanation of abbreviations

Project Number B2504662
Geotechnical Evaluation
Hassan Sand Gravel Pit
Southeast of Edgewater Pkwy & Industrial Blvd
Rogers, Minnesota

BORING: **ST-3**
LOCATION: Captured with RTK GPS.
DATUM: NAD 1983 HARN Adj MN Hennepin (US Feet)
NORTHING: 250758.4 EASTING: 448159.0
START DATE: 05/30/25 END DATE: 05/30/25
SURFACE ELEVATION: 882.0 ft RIG: 7504 METHOD: 3 1/4" HSA
SURFACING: Soil WEATHER: Cloudy
DRILLER: M. Hoppe LOGGED BY: D. Leffler

Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	PID ppm	MC %	Tests or Remarks
881.5		CLAYEY SAND (SC), dark brown, moist (TOPSOIL FILL)			0.8		
0.5		FILL: SANDY LEAN CLAY (CL), with Gravel, brown, moist		3-4-4-5 (8) 16"			
878.0					1.4	16	Soil sample ST-3 (2-4') @ 11:19 collected for analytical testing
4.0		FILL: LEAN CLAY with SAND (CL), brown, moist		2-3-3-2 (6) 18"	1.2	18	
			5	3-3-3-3 (6) 16"	1.4		
					1.8		
			10	2-2-2 (4) 10"	1.1		
870.0	▽						
12.0		POORLY GRADED SAND (SP), fine to medium-grained, trace Gravel, brown, wet, loose (GLACIAL OUTWASH)		3-4-4 (8) 16"	1.2		
			15	3-4-4 (8) 16"	1.3		
			20	4-6-4 (10) 20"	1.7		
861.0							
21.0		END OF BORING					Water observed at 12.0 feet while drilling.
		Boring immediately backfilled with bentonite grout					
			25				
			30				

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LOG OF BORING

See Descriptive Terminology sheet for explanation of abbreviations

Project Number B2504662
Geotechnical Evaluation
Hassan Sand Gravel Pit
Southeast of Edgewater Pkwy & Industrial Blvd
Rogers, Minnesota

BORING: **ST-4**
LOCATION: Captured with RTK GPS.
DATUM: NAD 1983 HARN Adj MN Hennepin (US Feet)
NORTHING: 250802.9 EASTING: 448376.8
DRILLER: M. Hoppe LOGGED BY: D. Leffler START DATE: 05/30/25 END DATE: 05/30/25
SURFACE ELEVATION: 890.1 ft RIG: 7504 METHOD: 3 1/4" HSA SURFACING: Soil WEATHER: Cloudy

Elev./ Depth ft	Water Level	Description of Materials (Soil-ASTM D2488 or 2487; Rock-USACE EM 1110-1-2908)	Sample	Blows (N-Value) Recovery	PID ppm	MC %	Tests or Remarks
889.6							
0.5		CLAYEY SAND (SC), dark brown, moist (TOPSOIL FILL)		2-3-3-3 (6) 14"	1.1		Soil sample ST-4 (0-2') @ 11:38 collected for analytical testing
		FILL: SANDY LEAN CLAY (CL), with Gravel, contains seams of Sand, brown, moist		3-2-2-4 (4) 16"	1.4		
			5	3-4-5-5 (9) 18"	1.3	17	
				6-7-6-8 (13) 14"	1.1	18	
					1.0		
		Contains seams of Silty Sand at 10 feet	10	4-5-5 (10) 16"	1.7		
		Contains seams of Silty Sand at 12 1/2 feet		3-3-6 (9) 14"	1.7		
876.1							
14.0		FILL: POORLY GRADED SAND with SILT (SP-SM), fine to medium-grained, brown, moist	15	4-4-5 (9) 16"		7	P200=8%
872.1					1.2		
18.0	▽	POORLY GRADED SAND (SP), fine to medium-grained, reddish brown, moist to wet, medium dense (GLACIAL OUTWASH)	20	6-7-8 (15) 18"	1.4		
869.1							
21.0		END OF BORING					Water observed at 19.0 feet while drilling.
		Boring immediately backfilled with bentonite grout					
			25				
			30				

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AMERICAN ENGINEERING TESTING, INC.

SUBSURFACE BORING LOG

AET JOB NO: **01-07536** LOG OF BORING NO. **B-1 (p. 1 of 2)**

PROJECT: **Proposed Redevelopment Site; Industrial Boulevard & Edgewater Parkway; Rogers, MN**

SURFACE ELEVATION: **878.8** LATITUDE: **45.204538** LONGITUDE: **-93.588939**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS WC	DEN	LL	PL	%-#200
1	FILL, mostly clayey sand, a little gravel, brown, frozen	FILL		F	SS	19	15				
3	FILL, mixture of clayey sand and sandy lean clay, a little gravel, gray, dark brown and brown		16	M	SS	10	10				
5			10	M	SS	12	16				
8	FILL, mostly clayey sand, slightly organic, a little gravel, gray and light gray		5	M ▼	SS	8	19				
10	SAND, fine grained, light brown to gray, waterbearing, medium dense (SP)	COARSE ALLUVIUM	12	W	SS	13					
13			13	W	SS	15					
15			18	W	SS	18					
20			19	M	SS	10					

DEPTH: DRILLING METHOD	WATER LEVEL MEASUREMENTS						
	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL
0-14½' 3.25" HSA							
14½-24½' RD w/DM	**4/10/18**	**9:37**	**8.5**	**7.0**	**9.4**		**9.0**
	4/10/18	**9:45**	**8.5**	**7.0**	**9.4**		**8.3**
BORING COMPLETED: **4/10/18**							
DR: **TA** LG: **DJO** Rig: **69C**							

NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG

AET_CORP W-LAT-LONG 01-07536.GPJ AET+CPT+WELL.GDT 4/23/18

AMERICAN ENGINEERING TESTING, INC.

SUBSURFACE BORING LOG

AET JOB NO: 01-07536 LOG OF BORING NO. B-1 (p. 2 of 2)

PROJECT: Proposed Redevelopment Site; Industrial Boulevard & Edgewater Parkway; Rogers, MN

LATITUDE: 45.204538 LONGITUDE: -93.588939

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS				
							WC	DEN	LL	PL	%-#200
23	SAND, fine grained, light brown to gray, waterbearing, medium dense (SP) *(continued)*	COARSE ALLUVIUM *(continued)*									
24											
25			29	W	SS	18					
26	**END OF BORING**										

AET_CORP W-LAT-LONG 01-07536.GPJ AET+CPT+WELL.GDT 4/23/18

AMERICAN ENGINEERING TESTING, INC.

SUBSURFACE BORING LOG

AET JOB NO: **01-07536** LOG OF BORING NO. **B-2 (p. 1 of 2)**

PROJECT: **Proposed Redevelopment Site; Industrial Boulevard & Edgewater Parkway; Rogers, MN**

SURFACE ELEVATION: **887.8** LATITUDE: **45.203790** LONGITUDE: **-93.588523**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS WC	DEN	LL	PL	%-#200
1	FILL, mixture of silty sand, sandy lean clay and clayey sand, a little gravel, dark brown and gray	FILL	21	M	SS	24	16				
2											
3			18	M	SS	18	10				
4											
5			22	M	SS	14	18				
6											
7											
8			9	M	SS	10	20				
9											
10	FILL, mixture of clayey sand and silty sand, a little gravel, dark brown and dark gray		42	M	SS	18	16				
11											
12							14				
13	SAND, fine grained, light brown, moist, dense (SP)	COARSE ALLUVIUM	37	M	SS	12					
14											
15	SAND WITH GRAVEL, fine to medium grained, light brown, moist, medium dense (SP)		24	M	SS	12					
16											
17											
18	SAND WITH GRAVEL, medium to coarse grained, brown, waterbearing, dense (SP)		36	W	SS	14					
19											
20	SAND, a little gravel, medium to coarse grained, brown, waterbearing, medium dense (SP)		16	W	SS	18					
21											

DEPTH: DRILLING METHOD	WATER LEVEL MEASUREMENTS						
	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL
0-22' 3.25" HSA	**4/12/18**	**11:16**	**21.0**	**19.5**	**19.5**		**18.0**
	4/12/18	**11:32**	**23.5**	**22.0**	**21.8**		**17.6**
BORING COMPLETED: **4/12/18**							
DR: **SG** LG: **SD** Rig: **70**							

NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG

AET_CORP W-LAT-LONG 01-07536.GPJ AET+CPT+WELL.GDT 4/23/18

AMERICAN ENGINEERING TESTING, INC.

SUBSURFACE BORING LOG

AET JOB NO: 01-07536 LOG OF BORING NO. B-2 (p. 2 of 2)

PROJECT: Proposed Redevelopment Site; Industrial Boulevard & Edgewater Parkway; Rogers, MN

LATITUDE: 45.203790 LONGITUDE: -93.588523

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS				
							WC	DEN	LL	PL	%-#200
23	SAND, a little gravel, fine to medium grained, gray, waterbearing, loose (SP)	COARSE ALLUVIUM *(continued)*	8	W	SS	12					
	END OF BORING										

AET_CORP W-LAT-LONG 01-07536.GPJ AET+CPT+WELL.GDT 4/23/18

AMERICAN ENGINEERING TESTING, INC.

SUBSURFACE BORING LOG

AET JOB NO: **01-07536** LOG OF BORING NO. **B-3 (p. 1 of 2)**

PROJECT: **Proposed Redevelopment Site; Industrial Boulevard & Edgewater Parkway; Rogers, MN**

SURFACE ELEVATION: **909.5** LATITUDE: **45.203095** LONGITUDE: **-93.588101**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS WC	DEN	LL	PL	%-#200
	FILL, mostly silt, trace roots, dark brown, frozen	FILL		F	SU						
1	FILL, mostly clayey sand, a little gravel and silty sand, dark brown, frozen to about 2'			F	SS	24	22				
2							18				
3	FILL, mostly silty sand, a little sand with silt and lean clay, brown		12	M	SS	18					
4	FILL, mostly clayey sand, a little gravel, brown										
5			13	M	SS	18	17				
6											
7	FILL, mostly sandy lean clay, a little gravel, dark brown and gray		5	M	SS	18	16				
8											
9											
10			4	M	SS	8	21				
11											
12	FILL, mixture of sandy lean clay and clayey sand, a little sand and gravel, black, dark brown and dark gray		9	M	SS	18	20				
13											
14											
15			10	M	SS	18	19				
16											
17											
18			16	M	SS	18	21				
19	FILL, mostly silty sand, a little gravel, brown										
20			20	M	SS	18					
21											

DEPTH: DRILLING METHOD	WATER LEVEL MEASUREMENTS						
	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL
0-39½' 3.25" HSA	**4/12/18**	**2:00**	**41.0**	**39.5**	**39.5**		**38.8**
BORING COMPLETED: **4/12/18**							
DR: **SG** LG: **SD** Rig: **70**							

NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG

AET_CORP W-LAT-LONG 01-07536.GPJ AET+CPT+WELL.GDT 4/23/18

AMERICAN ENGINEERING TESTING, INC.

SUBSURFACE BORING LOG

AET JOB NO: 01-07536 LOG OF BORING NO. B-3 (p. 2 of 2)

PROJECT: Proposed Redevelopment Site; Industrial Boulevard & Edgewater Parkway; Rogers, MN

LATITUDE: 45.203095 LONGITUDE: -93.588101

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS WC	DEN	LL	PL	%-#200
23	FILL, mostly silty sand, a little gravel, brown *(continued)*	FILL *(continued)*	20	M	SS	18					
24											
25	FILL, mixture of sand and clayey sand, trace roots, brown		21	M	SS	14					
26											
27	FILL, mostly silty sand, a little gravel and clayey sand, brown		9	M	SS	18	20				
28											
29											
30	FILL, mostly sandy lean clay, a little gravel and sand, black, dark brown and brown		72	M	SS	18	22				
31	SAND WITH GRAVEL, fine to medium grained, brown, moist, very dense (SP)	COARSE ALLUVIUM									
32											
33	SAND, a little gravel, fine grained, light brown, moist, very dense (SP)		57	M	SS	14					
34											
35	**N-value = 51/.5 + 55/.2 + 50/.2*		*	M	SS	2					
36											
37	SAND, fine grained, brown, moist to about 38½' then waterbearing, very dense (SP)										
38				▼							
39											
40			51	W	SS	18					
41	**END OF BORING**										

AET_CORP W-LAT-LONG 01-07536.GPJ AET+CPT+WELL.GDT 4/23/18

AMERICAN ENGINEERING TESTING, INC.

SUBSURFACE BORING LOG

AET JOB NO: **01-07536** LOG OF BORING NO. **B-4 (p. 1 of 1)**

PROJECT: **Proposed Redevelopment Site; Industrial Boulevard & Edgewater Parkway; Rogers, MN**

SURFACE ELEVATION: **877.6** LATITUDE: **45.204690** LONGITUDE: **-93.587216**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS WC	DEN	LL	PL	%-#200
1	FILL, mostly clayey sand, a little gravel, trace roots, dark brown and gray	FILL		M/F	SS	24	20				
2	FILL, mostly silty sand, a little gravel, trace roots, dark brown, frozen										
3	FILL, mostly clayey sand, a little gravel, brown		9	M	SS	12	15				
4											
5	FILL, mostly silty sand, a little gravel, gray		9	M	SS	14	22				
6				▼							
7											
8	FILL, mostly sandy lean clay, pieces of wood, a little sand, gray		7	M	SS	10	26				
9											
10	SAND, fine grained, brown to light gray, waterbearing, medium dense (SP)	COARSE ALLUVIUM	21	W	SS	14					
11											
12											
13			22	W	SS	10					
14											
15			30	W	SS	10					
16											
17											
18											
19											
20			27	W	SS	14					
21	**END OF BORING**										

DEPTH: DRILLING METHOD	WATER LEVEL MEASUREMENTS						
	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL
0-19½' 3.25" HSA	**4/12/18**	**12:03**	**11.0**	**9.5**	**9.1**		**8.8**
	4/12/18	**12:11**	**11.0**	**9.5**	**8.6**		**6.8**
BORING COMPLETED: **4/12/18**							
DR: **SG** LG: **SD** Rig: **70**							

NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG

AET_CORP W-LAT-LONG 01-07536.GPJ AET+CPT+WELL.GDT 4/23/18

AMERICAN ENGINEERING TESTING, INC.

SUBSURFACE BORING LOG

AET JOB NO: **01-07536** LOG OF BORING NO. **B-5 (p. 1 of 1)**

PROJECT: **Proposed Redevelopment Site; Industrial Boulevard & Edgewater Parkway; Rogers, MN**

SURFACE ELEVATION: **879.3** LATITUDE: **45.204055** LONGITUDE: **-93.587065**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS WC	DEN	LL	PL	%-#200
1	FILL, mostly silty sand, a little gravel, trace roots, brown, frozen from ½' to 2'	FILL		M/F	SS	24					
3	FILL, mostly sandy lean clay, a little gravel and clayey sand, dark brown		18	M	SS	18	15				
5	FILL, mostly silty sand, a little gravel, brown		4	M	SS	14					
8	FILL, mostly clayey sand, dark brown		4	M/W	SS	16	14				
10	SAND, fine grained, brown, waterbearing, medium dense to dense (SP)	COARSE ALLUVIUM	11	W	SS	18					
13			30	W	SS	12					
15			46	W	SS	14					
20			33	W	SS	14					
21	**END OF BORING**										

DEPTH: DRILLING METHOD	WATER LEVEL MEASUREMENTS						
	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL
0-19½' 3.25" HSA	**4/12/18**	**9:27**	**11.0**	**9.5**	**9.6**		**9.0**
	4/12/18	**9:37**	**11.0**	**9.5**	**9.3**		**8.4**
BORING COMPLETED: **4/12/18**							
DR: **SG** LG: **SD** Rig: **70**							

NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG

AET_CORP W-LAT-LONG 01-07536.GPJ AET+CPT+WELL.GDT 4/23/18

AMERICAN ENGINEERING TESTING, INC.

SUBSURFACE BORING LOG

AET JOB NO: 01-07536 LOG OF BORING NO. B-6 (p. 1 of 2)

PROJECT: Proposed Redevelopment Site; Industrial Boulevard & Edgewater Parkway; Rogers, MN

SURFACE ELEVATION: 902.0 LATITUDE: 45.203232 LONGITUDE: -93.586840

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS WC	DEN	LL	PL	%-#200
1	FILL, mostly silty with sand, a little gravel, trace roots, dark brown, frozen	FILL		F	SS	24					
2	FILL, mixture of silty sand and sand with gravel, brown, frozen to about 2'										
3			19	M	SS	18					
4											
5	FILL, mostly lean clay, a little sand with silt, brown and gray		11	M	SS	18	19				
6											
7	FILL, mostly clayey sand, a little silty sand, dark brown		7	M	SS	18	19				
8											
9	FILL, mostly lean clay, brown										
10			6	M	SS	8	23				
11	FILL, mostly clayey sand, a little gravel and sandy lean clay, trace roots, gray and grayish brown, a little black						14				
12											
13			7	M	SS	18	17				
14											
15			7	M	SS	18	23				
16											
17											
18			15	M	SS	18	17				
19	FILL, mostly sandy lean clay, a little gravel, brown and black										
20			12	M	SS	18	17				
21											

DEPTH: DRILLING METHOD	WATER LEVEL MEASUREMENTS						
	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL
0-29½' 3.25" HSA	4/12/18	11:39	31.0	29.5	29.5		29.4
	4/12/18	11:44	31.0	29.5	29.5		29.4
BORING COMPLETED: 4/12/18							
DR: SG LG: SD Rig: 70							

NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG

AET_CORP W-LAT-LONG 01-07536.GPJ AET+CPT+WELL.GDT 4/23/18

AMERICAN ENGINEERING TESTING, INC.

SUBSURFACE BORING LOG

AET JOB NO: 01-07536 LOG OF BORING NO. B-6 (p. 2 of 2)

PROJECT: Proposed Redevelopment Site; Industrial Boulevard & Edgewater Parkway; Rogers, MN

LATITUDE: 45.203232 LONGITUDE: -93.586840

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS WC	DEN	LL	PL	%-#200
	FILL, mostly silty sand, a little gravel, gray	FILL *(continued)*									
23	SILTY SAND, a little gravel, fine to medium grained, brown, moist, medium dense (SM)	COARSE ALLUVIUM	12	M	SS	18	17				
24											
25	SAND, fine grained, light brown, moist to wet, very dense (SP)		92	M	SS	18					
26											
27											
28											
29				▼							
30	SAND, fine to medium grained, light brown, waterbearing, very dense (SP)		57	W	SS	16					
31	**END OF BORING**										

AET_CORP W-LAT-LONG 01-07536.GPJ AET+CPT+WELL.GDT 4/23/18

AMERICAN ENGINEERING TESTING, INC.

SUBSURFACE BORING LOG

AET JOB NO: **01-07536** LOG OF BORING NO. **B-7 (p. 1 of 2)**

PROJECT: **Proposed Redevelopment Site; Industrial Boulevard & Edgewater Parkway; Rogers, MN**

SURFACE ELEVATION: **876.4** LATITUDE: **45.204765** LONGITUDE: **-93.585528**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS WC	DEN	LL	PL	%-#200
1	FILL, mixture of clayey sand and sandy lean clay, a little gravel, dark brown, frozen to about 2'	FILL		F	SS	24	12				
3			8	M	SS	8	13				
5	FILL, mostly silty sand, a little gravel and clayey sand, brown and gray		5	M ▼	SS	12	16				
7	SAND, fine to medium grained, brown, waterbearing, medium dense (SP)	COARSE ALLUVIUM	11	W	SS	16					
10	SAND WITH GRAVEL, fine to medium grained, brown, waterbearing, medium dense (SP)		29	W	SS	18					
12	SAND, fine grained, brown to gray, waterbearing, medium dense to dense (SP)		22	W	SS	10					
15			24	W	SS	12					
20			28	W	SS	14					

DEPTH: DRILLING METHOD

0-12' 3.25" HSA

12-24½' RD w/DM

BORING COMPLETED: **4/10/18**

DR: **TA** LG: **DJO** Rig: **69C**

WATER LEVEL MEASUREMENTS

DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL
4/10/18	**11:37**	**11.0**	**9.5**	**9.0**		**6.5**
4/10/18	**12:10**	**11.0**	**9.5**	**9.0**		**6.0**

NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG

AET_CORP W-LAT-LONG 01-07536.GPJ AET+CPT+WELL.GDT 4/23/18

AMERICAN ENGINEERING TESTING, INC.

SUBSURFACE BORING LOG

AET JOB NO: **01-07536** LOG OF BORING NO. **B-7 (p. 2 of 2)**

PROJECT: **Proposed Redevelopment Site; Industrial Boulevard & Edgewater Parkway; Rogers, MN**

LATITUDE: **45.204765** LONGITUDE: **-93.585528**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS				
							WC	DEN	LL	PL	%-#200
23	SAND, fine grained, brown to gray, waterbearing, medium dense to dense (SP) *(continued)*	COARSE ALLUVIUM *(continued)*									
24											
25			48	W	SS	15					
26	**END OF BORING**										

AET_CORP W-LAT-LONG 01-07536.GPJ AET+CPT+WELL.GDT 4/23/18

AMERICAN ENGINEERING TESTING, INC.

SUBSURFACE BORING LOG

AET JOB NO: **01-07536** LOG OF BORING NO. **B-8 (p. 1 of 2)**

PROJECT: **Proposed Redevelopment Site; Industrial Boulevard & Edgewater Parkway; Rogers, MN**

SURFACE ELEVATION: **880.2** LATITUDE: **45.204070** LONGITUDE: **-93.585160**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS WC	DEN	LL	PL	%-#200
1	FILL, mixture of silty sand and clayey sand, a little gravel, trace roots, dark brown, frozen from 1'-2'	FILL		M/F	SS	18	17				
2											
3	FILL, mixture of clayey sand and sandy lean clay, a little gravel, dark brown and brown		12	M	SS	13	15				
4											
5											
6			4	M	SS	16	18				
7											
8			4	M/W	SS	15	16				
9											
10	SAND, a little gravel, fine to medium grained, brown, wet to waterbearing, loose, lenses of clayey sand (SP)	COARSE ALLUVIUM									
11			8	M/W ▼	SS	17	18				
12											
13	SAND WITH SILT, a little gravel, fine to medium grained, brown, waterbearing, very loose, a lens of lean clay (SP-SM)		4	W	SS	12					
14											
15	SAND, a little gravel, fine to medium grained, light brown, waterbearing, medium dense to dense (SP)		15	W	SS	15					
16											
17											
18											
19											
20			46	W	SS	16					
21											

DEPTH: DRILLING METHOD	WATER LEVEL MEASUREMENTS						
	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL
0-14½' 3.25" HSA							
14½-24½' RD w/DM	**4/12/18**	**1:25**	**14.0**	**12.0**	**13.1**		**11.6**
	4/12/18	**1:30**	**14.0**	**12.0**	**12.9**		**11.3**
BORING COMPLETED: **4/12/18**							
DR: **DS** LG: **DA** Rig: **1C**							

NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG

AET_CORP W-LAT-LONG 01-07536.GPJ AET+CPT+WELL.GDT 4/23/18

AMERICAN ENGINEERING TESTING, INC.

SUBSURFACE BORING LOG

AET JOB NO: **01-07536** LOG OF BORING NO. **B-8 (p. 2 of 2)**

PROJECT: **Proposed Redevelopment Site; Industrial Boulevard & Edgewater Parkway; Rogers, MN**

LATITUDE: **45.204070** LONGITUDE: **-93.585160**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS				
							WC	DEN	LL	PL	%-#200
23	SAND, a little gravel, fine to medium grained, light brown, waterbearing, medium dense to dense (SP) *(continued)*	COARSE ALLUVIUM *(continued)*									
24	SILTY SAND, a little gravel, fine grained, wet, very dense (SM)	TILL									
25			88	W/M	SS	16					
26	**END OF BORING**										

AET_CORP W-LAT-LONG 01-07536.GPJ AET+CPT+WELL.GDT 4/23/18

AMERICAN ENGINEERING TESTING, INC.

SUBSURFACE BORING LOG

AET JOB NO: **01-07536** LOG OF BORING NO. **B-9 (p. 1 of 2)**

PROJECT: **Proposed Redevelopment Site; Industrial Boulevard & Edgewater Parkway; Rogers, MN**

SURFACE ELEVATION: **910.2** LATITUDE: **45.203472** LONGITUDE: **-93.584910**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS WC	DEN	LL	PL	%-#200
1	FILL, mixture of sandy lean clay, lean clay and clayey sand, a little gravel, trace roots, brown, dark brown and gray, frozen to about 2'	FILL	29	F	SS	24	17				
3			10	M	SS	18	21				
5			6	M	SS	3	17				
8			5	M	SS	4	34				
10			7	M	SS	10	19				
12	FILL, mostly lean clay, trace roots, gray and brown		5	M	SS	6	21				
15	FILL, mostly sandy lean clay, a little gravel, brown		6	M	SS	17	23				
18	FILL, mostly sandy lean clay, a little gravel, brown, brownish gray and dark brown		9	M	SS	16	20				
20			9	M	SS	12	24				

DEPTH: DRILLING METHOD	WATER LEVEL MEASUREMENTS							NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG
	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL	
0-44½' 3.25" HSA	**4/13/18**	**9:40**	**41.0**	**39.5**	**39.5**		**38.3**	
	4/13/18	**9:58**	**46.0**	**44.5**	**44.5**		**40.4**	
BORING COMPLETED: **4/13/18**								
DR: **SG** LG: **SD** Rig: **70**								

AET_CORP W-LAT-LONG 01-07536.GPJ AET+CPT+WELL.GDT 4/23/18

AMERICAN ENGINEERING TESTING, INC.

SUBSURFACE BORING LOG

AET JOB NO: 01-07536 LOG OF BORING NO. B-9 (p. 2 of 2)

PROJECT: Proposed Redevelopment Site; Industrial Boulevard & Edgewater Parkway; Rogers, MN

LATITUDE: 45.203472 LONGITUDE: -93.584910

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS WC	DEN	LL	PL	%-#200
23	FILL, mostly sandy lean clay, a little gravel, brown, brownish gray and dark brown *(continued)*	FILL *(continued)*	9	M	SS	18	21				
24											
25			16	M	SS	18	21				
26											
27											
28			11	M	SS	18	21				
29	FILL, mostly silty sand, a little gravel, brown and dark brown										
30			14	M	SS	18	15				
31											
32											
33			13	M	SS	12	14				
34	SILTY SAND, a little gravel, fine grained, brown, moist, medium dense, lenses of lean clay (SM)	COARSE ALLUVIUM									
35			29	M	SS	18	8				
36	SAND, a little gravel, fine to medium grained, light brown, moist, medium dense (SP)										
37	SAND, a little gravel, medium to coarse grained, brown, moist to wet, dense (SP)										
38			38	M/W	SS	10					
39	SAND, a little gravel, fine to medium grained, brown, waterbearing, dense to medium dense (SP)										
40			12	W	SS	12					
41											
42											
43	SAND, fine to medium grained, light brown, waterbearing, dense (SP)										
44											
45			40	W	SS	16					
46	**END OF BORING**										

AET_CORP W-LAT-LONG 01-07536.GPJ AET+CPT+WELL.GDT 4/23/18

AMERICAN ENGINEERING TESTING, INC.

SUBSURFACE BORING LOG

AET JOB NO: **01-07536** LOG OF BORING NO. **B-10 (p. 1 of 2)**

PROJECT: **Proposed Redevelopment Site; Industrial Boulevard & Edgewater Parkway; Rogers, MN**

SURFACE ELEVATION: **883.5** LATITUDE: **45.204831** LONGITUDE: **-93.583767**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS WC	DEN	LL	PL	%-#200
0	FILL, mostly lean clay with roots, dark brown	FILL					42				
1	FILL, mixture silty sand and clayey sand, a little gravel, brown, frozen from 1'-2'			M/F	SS	16	18				
2	FILL, mostly clayey sand, a little gravel, brown										
3			15	M	SS	16	15				
4											
5	FILL, mixture of sandy lean clay and silty sand, a little gravel, brown										
6			10	M	SS	18	15				
7											
8	FILL, mostly sandy lean clay, a little gravel, dark brown and black		12	M	SS	18	20				
9											
10	SILTY SAND, a little gravel, fine to medium grained, moist, very dense (SM) (hit rock)	COARSE ALLUVIUM	50/.4	M	SS	2					
11	*N-value influenced by gravel*										
12	SAND, a little gravel, medium to coarse grained, brown, waterbearing, dense (SP)			▼							
13			34	W	SS	17					
14											
15	SAND, a little gravel, fine to medium grained, light brown, waterbearing, medium dense (SP)		26	W	SS	14					
16											
17											
18											
19											
20			25	W	SS	15					
21											

DEPTH:	DRILLING METHOD
0-14½'	**3.25" HSA**
14½-24½'	**RD w/DM**
BORING COMPLETED:	**4/12/18**
DR: **DS**	LG: **DA** Rig: **1C**

WATER LEVEL MEASUREMENTS

DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL
4/12/18	**10:00**	**16.0**	**14.5**	**14.0**		**12.7**
4/12/18	**10:05**	**16.0**	**14.5**	**14.0**		**12.6**

NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG

AET_CORP W-LAT-LONG 01-07536.GPJ AET+CPT+WELL.GDT 4/23/18

AMERICAN ENGINEERING TESTING, INC.

SUBSURFACE BORING LOG

AET JOB NO: 01-07536 LOG OF BORING NO. B-10 (p. 2 of 2)

PROJECT: Proposed Redevelopment Site; Industrial Boulevard & Edgewater Parkway; Rogers, MN

LATITUDE: 45.204831 LONGITUDE: -93.583767

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS				
							WC	DEN	LL	PL	%-#200
23	SAND, a little gravel, fine to medium grained, light brown, waterbearing, medium dense (SP) *(continued)*	COARSE ALLUVIUM *(continued)*									
24	SAND, fine grained, gray, waterbearing, medium dense (SP)										
25			28	W	SS	14					
26	**END OF BORING**										

AET_CORP W-LAT-LONG 01-07536.GPJ AET+CPT+WELL.GDT 4/23/18

AMERICAN ENGINEERING TESTING, INC.

SUBSURFACE BORING LOG

AET JOB NO: **01-07536** LOG OF BORING NO. **B-11 (p. 1 of 2)**

PROJECT: **Proposed Redevelopment Site; Industrial Boulevard & Edgewater Parkway; Rogers, MN**

SURFACE ELEVATION: **898.9** LATITUDE: **45.203902** LONGITUDE: **-93.583701**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS WC	DEN	LL	PL	%-#200
1	FILL, mixture of silty sand and clayey sand, a little gravel, trace roots, dark brown and brown, frozen to 18"	FILL		F/M	SS	16	16				
3	FILL, mostly silty sand, a little clayey sand, trace roots, brown		8	M	SS	18	15				
5	FILL, mostly clayey sand, a little gravel, brown		11	M	SS	18	16				
8	FILL, mixture of clayey sand and sand, brown		8	M	SS	17	12				
10	FILL, mostly sandy lean clay, a little gravel and clayey sand, gray and brown		8	M	SS	18	18				
13			13	M	SS	18	14				
15	FILL, mostly sandy lean clay, a little gravel and silty sand, gray and brown		17	M	SS	18	17				
18			10	M	SS	18	15				
20	SAND, a little gravel, fine grained, brown, moist, medium dense (SP)	COARSE ALLUVIUM	15	M	SS	18					

DEPTH: DRILLING METHOD	WATER LEVEL MEASUREMENTS						
	DATE	TIME	SAMPLED DEPTH	CASING DEPTH	CAVE-IN DEPTH	DRILLING FLUID LEVEL	WATER LEVEL
0-29½' 3.25" HSA							
29½-34½' RD w/DM	**4/12/18**	**11:55**	**28.5**	**27.0**	**28.0**		**27.8**
	4/12/18	**12:00**	**28.5**	**27.0**	**28.0**		**27.7**
BORING COMPLETED: **4/12/18**							
DR: **DS** LG: **DA** Rig: **1C**							

NOTE: REFER TO THE ATTACHED SHEETS FOR AN EXPLANATION OF TERMINOLOGY ON THIS LOG

AET_CORP W-LAT-LONG 01-07536.GPJ AET+CPT+WELL.GDT 4/23/18

AMERICAN ENGINEERING TESTING, INC.

SUBSURFACE BORING LOG

AET JOB NO: **01-07536** LOG OF BORING NO. **B-11 (p. 2 of 2)**

PROJECT: **Proposed Redevelopment Site; Industrial Boulevard & Edgewater Parkway; Rogers, MN**

LATITUDE: **45.203902** LONGITUDE: **-93.583701**

DEPTH IN FEET	MATERIAL DESCRIPTION	GEOLOGY	N	MC	SAMPLE TYPE	REC IN.	FIELD & LABORATORY TESTS				
							WC	DEN	LL	PL	%-#200
23	SAND, a little gravel, fine grained, light brown, moist, medium dense, lenses of clayey sand (SP)	COARSE ALLUVIUM *(continued)*	17	M	SS	16					
24											
25	SAND, fine grained, light brown to brown, moist to about 27½' then waterbearing, medium dense (SP)		28	M	SS	16					
26											
27											
28			15	~~W~~	SS	14					
29											
30			21	W	SS	15					
31											
32											
33											
34											
35	SAND, fine grained, gray, waterbearing, dense (SP)		36	W	SS	16					
36	**END OF BORING**										

AET_CORP W-LAT-LONG 01-07536.GPJ AET+CPT+WELL.GDT 4/23/18

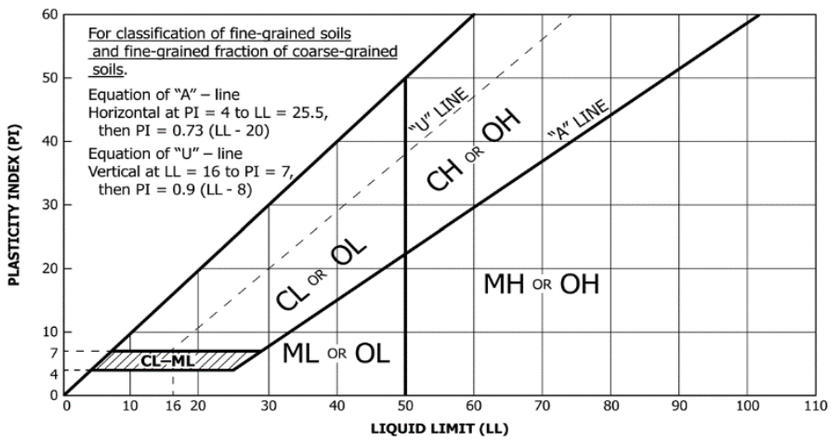
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Descriptive Terminology of Soil

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

Standard Penetration Test
Modified California (MC)
Auger
Grab Sample
Rock Core
Thinwall (TW)/Shelby Tube (SH)
Texas Cone Penetrometer
Dynamic Cone Penetrometer

5/2021

BRAUN INTERTEC
The Science You Build On.

Sieve Analysis Of Soil

ASTM D6913

06/16/2025

11001 Hampshire Avenue S
Minneapolis, MN 55438
Phone: 952-995-2000

Client:

PulteGroup, Inc.
1650 W 82nd Street, Suite 300
PO Box 3660
Bloomington, MN 55431

Project:

B2504662
Hassan Sand Gravel Pit
Southeast of Edgewater Parkway and Industrial...
Rogers, MN 55374

Sample Information

Sample Number:	661716	**Depth (ft):**	12.5
Boring Number:	ST-2	**Sampled By:**	Drill Crew
Sample Date:	06/16/2025		
Received Date:	06/16/2025	**Lab:**	11001 Hampshire Ave S, Bloomington, MN
Tested Date:	06/16/2025	**Tested By:**	Streier, Jim

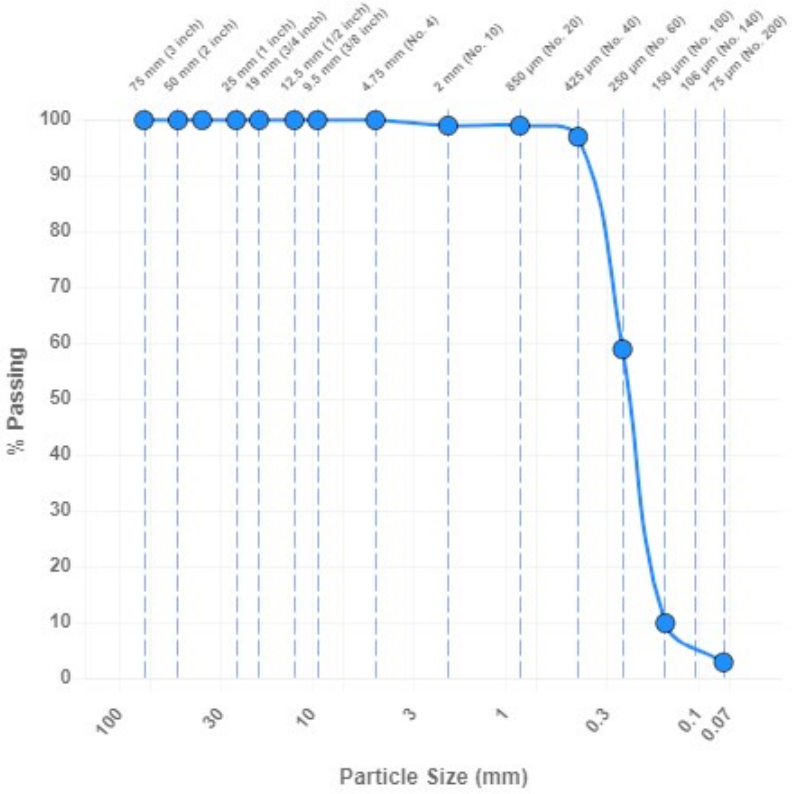
Laboratory Data

Sieve Size	Passing (%)	Specification
9.5 mm (3/8 inch)	100	
4.75 mm (No. 4)	100	
2 mm (No. 10)	99	
850 µm (No. 20)	99	
425 µm (No. 40)	97	
250 µm (No. 60)	59	
150 µm (No. 100)	10	
75 µm (No. 200)	3	

Sand (%)	Silt & Clay (%)
97.0	3.0

D10	D30	D60
0.150	0.191	0.255

C_U	C_C
1.70	0.95



Classification: SP Poorly graded sand

General

Results: The test is for informational purposes.

Uncertainty was not taken into account in determining whether the test results meet the requirements. The results included in this report relate only to the items inspected or tested. Sampled per project specifications or industry standards. Also, this report is for the exclusive use of the addressed parties. We assume no responsibility to other parties regarding this report. The information indicated in this report shall not be reproduced, except in full, without prior written approval.

Elm Creek
Watershed Management Commission

Rules and Standards

Adopted: October 8, 2014
Effective: January 1, 2015
Revised: October 14, 2015
Revised: May 11, 2022

Record of Rules Revisions

October 14, 2015:
Minor housekeeping revisions concurrent with the adoption of the Third Generation Watershed Management Plan

May 11, 2022:

- Added definitions for Fully Reconstructed Impervious Surface, Linear Projects, and Low Opening
- Added a stepwise process in Rule D.3.b.i.7 to determine how the minimum Low Floor Elevation would be determined for each project
- Revised Rule D.3.c to add a new requirement for and specify how runoff abstraction volume would be calculated for linear projects
- Other minor housekeeping revisions
- Low floor elevation revisions effective June 1, 2022 and linear project rules revisions effective November 30, 2022.

ELM CREEK
WATERSHED MANAGEMENT COMMISSION
RULES AND STANDARDS

RULE A. DEFINITIONS 2

RULE B. PROCEDURAL REQUIREMENTS 7

RULE C. GENERAL STANDARDS 9

RULE D. STORMWATER MANAGEMENT 10

RULE E. EROSION AND SEDIMENT CONTROL 18

RULE F. FLOODPLAIN ALTERATION 19

RULE G. WETLAND ALTERATION 20

RULE H. BRIDGE AND CULVERT CROSSINGS 21

RULE I. BUFFER STRIPS 22

RULE J. FEES 27

RULE K. VARIANCES 28

RULE L. ENFORCEMENT 28

RULE M. AMENDMENT OF THESE RULES 29

Appendix A – Wet Pond Design Standards

POLICY STATEMENT

The Elm Creek Watershed Management Commission is a Joint Powers Association of the State under the Minnesota Watershed Act, and a watershed management organization as defined in the Metropolitan Surface Water Management Act. These acts provide the Commission with power to accomplish its statutory purpose: the conservation, protection, and management of water resources in the boundaries of the watershed through sound scientific principles. The Commission has adopted a water resources management plan pursuant to the Acts. These Rules implement the plan's principles and objectives.

Land alteration and utilization can affect the rate and volume and degrade the quality of surface water runoff. Sedimentation from ongoing erosion and construction activities can reduce hydraulic capacity of waterbodies and degrade water quality. Water quality problems already exist in many waterbodies in the watershed. Most of these waterbodies have been designated by the State of Minnesota as Impaired Waters, and do not meet state water quality standards.

Activities that increase the rate or volume of stormwater runoff will aggravate existing flooding problems and contribute to new ones. Activities that degrade runoff quality will cause quality problems in receiving water. Activities that fill floodplain or wetland areas will reduce flood storage and hydraulic capacity of waterbodies, and will degrade water quality by eliminating the filtering capacity of such areas.

These Rules and Standards protect the public health, welfare, and natural resources of the watershed by regulating the alteration of land and waters in the watershed to 1) reduce the severity and frequency of high water, 2) preserve floodplain and wetland storage capacity, 3) improve the chemical and physical quality of surface waters, 4) reduce sedimentation, 5) preserve the hydraulic and navigational capacities of waterbodies, 6) promote and preserve natural infiltration areas, and 7) preserve natural shoreline features. In addition to protecting natural resources, these Rules and Standards are intended to minimize future public expenditures on problems caused by land and water alterations.

RELATIONSHIP WITH MUNICIPALITIES AND COUNTY

The Commission recognizes that the control and determination of appropriate land use is the responsibility of the municipalities. The Commission will review projects involving land-disturbing activities in accordance with these Rules and Standards. The Commission intends to be active in the regulatory process to ensure that water resources are managed in accordance with its goals and policies.

The Commission desires to provide technical advice to the municipalities in the preparation of local stormwater management plans and the review of projects that may affect water resources prior to investment of significant public or private funds.

RULE A. DEFINITIONS

For the purposes of these Rules, unless the context otherwise requires, the following words and terms shall have the meanings set forth below. References in these Rules to specific sections of the Minnesota Statutes or Rules include amendments, revisions or recodifications of such sections. The words "shall" and "must" are mandatory; the word "may" is permissive.

100 Year Event. The rainfall depth with a 1 percent chance of occurring in a given year.

Abstraction. Removal of stormwater from runoff, by such methods as infiltration, evaporation, transpiration by vegetation, and capture and reuse, such as capturing runoff for use as irrigation water.

Agricultural Activity. The use of land for the production of agronomic, horticultural or silvicultural crops, including dairy animals, food animals, nursery stock, sod, fruits, vegetables, flowers, cover crops, grains, Christmas trees, and for grazing.

Alteration or Alter. When used in connection with public waters or wetlands, any activity that will change or diminish the course, current, or cross-section of public waters or wetlands.

Applicant. Any person or political subdivision that submits an application to the Commission for a project review under these Rules.

Best Management Practices (BMPs). Techniques proven to be effective in controlling runoff, erosion and sedimentation including those documented in the Minnesota Construction Site Erosion and Sediment Control Planning Handbook (BWSR 1988), Protecting Water Quality in Urban Areas (MPCA 2000), and the Minnesota Stormwater Manual (MPCA 2005) as revised.

Biofiltration. Using living material to capture and/or biologically degrade or process pollutants prior to discharging stormwater, such as directing runoff through a vegetated buffer or to a rain garden or vegetated basin with an underdrain.

Bioretention. A terrestrial-based (upland, as opposed to wetland) water quality and water quantity control process. Bioretention employs a simplistic, site-integrated design that provides opportunity for runoff infiltration, filtration, storage and water uptake by vegetation.

Buffer Strip. An area of natural, unmaintained, vegetated ground cover abutting or surrounding a watercourse or wetland.

BWSR. The Minnesota Board of Water and Soil Resources.

Commission. The Elm Creek Watershed Management Commission.

Commissioners. The Board of Commissioners of the Elm Creek Watershed Management Commission.

Compensatory Storage. Excavated volume of material below the floodplain elevation required to offset floodplain fill.

County. Hennepin County, Minnesota.

Dead Storage. The permanent pool volume of a water basin or the volume below the runout elevation of a water basin.

Detention Basin. Any natural or manmade depression for the temporary storage of runoff.

Development. Any proposal to subdivide land, any land-disturbing activity or creation of impervious surface.

Directly Connected Impervious Surface. Any hard surface (rooftop, driveway, sidewalk, roadway, etc.) from which runoff is not subject to loss beyond initial abstraction before being routed to the downstream collection and conveyance system.

Disturbance. See Land Disturbing Activity.

Drain or Drainage. Any method for removing or diverting water from waterbodies, including excavation of an open ditch, installation of subsurface drainage tile, filling, diking, or pumping.

Erosion. The wearing away of the ground surface as a result of wind, flowing water, ice movement, or land disturbing activities.

Erosion and Sediment Control Plan. A plan of BMPs or equivalent measures designed to control runoff and erosion and to retain or control sediment on land during the period of land disturbing activities in accordance with the standards set forth in these Rules.

Excavation. The artificial removal of soil or other earth material.

Fill. The deposit of soil or other material by artificial means.

Filtration. A process by which stormwater runoff is captured, temporarily stored, and routed through a filter bed to improve water quality and slow down stormwater runoff.

Floodplain. The area adjacent to a waterbody that is inundated during a 1% chance (100-year) flood as defined by the FEMA Flood Insurance Study for the member city or the Commission's flood study.

Fully reconstructed impervious surface. Areas where impervious surfaces have been removed down to the underlying soils. Activities such as structure renovation, mill and overlay projects, and other pavement rehabilitation projects that do not expose the underlying soils beneath the structure, pavement, or activity are not considered fully reconstructed. Maintenance activities such as catch basin repair/replacement, utility repair/replacement, pipe repair/replacement, lighting, and pedestrian ramp improvements are not considered fully reconstructed.

Impaired Water. A waterbody that does not meet state water quality standards and that has been included on the MPCA Section 303(d) list of Impaired Waters of the state.

Impervious Surface. A surface compacted or covered with material so as to be highly resistant to infiltration by runoff. Impervious surface shall include roads, driveways and parking areas, whether or not paved, sidewalks greater than 3 feet wide, patios, tennis and basketball courts, swimming pools, covered decks and other structures. Open decks with joints at least ¼ inch wide, areas beneath overhangs less than 2 feet wide, and sidewalks 3 feet or less wide shall not constitute impervious surfaces under these Rules.

Infiltration. The passage of water into the ground through the soil.

Infiltration Area. Natural or constructed depression located in permeable soils that capture, store and infiltrate the volume of stormwater runoff associated with a particular design event.

Interested Party. A person or political subdivision with an interest in the pending subject matter.

Land Disturbing Activity. Any change of the land surface to include removing vegetative cover, excavation, fill, grading, and the construction of any structure that may cause or contribute to erosion or the movement of sediment into waterbodies. The use of land for agricultural activities, or improvements such as mill and overlay or concrete rehabilitation projects that do not disturb the underlying soil shall not constitute a land disturbing activity under these Rules.

Landlocked Basin. A basin that is 1 acre or more in size and does not have a natural outlet at or below the 1% chance (100-year) flood elevation as determined by the 1% chance (100-year), 10-day runoff event.

Linear project. Linear projects are projects with construction of new or fully reconstructed roads, trails, sidewalks, or rail lines that are not part of a common plan of development or sale.

Low Floor. The finished surface of the lowest floor of a structure.

Low Opening. The low opening is the lowest elevation of an enclosed area, such as a basement, that allows surface water to into the enclosed area. Examples of low openings, include but are not limited to doors and windows. Foundation wall cracks, drainage seepage through drain tile, and sewer backup elevations are not low openings.

Member City. Any city wholly or partly within the Commission's boundary that has executed the Joint Powers Agreement.

MnDOT. The Minnesota Department of Transportation.

MPCA. The Minnesota Pollution Control Agency.

Municipality. Any city wholly or partly within the Commission's boundary.

NPDES. National Pollutant Discharge Elimination System.

NURP. The Nationwide Urban Runoff Program developed by the Environmental Protection Agency to study stormwater runoff from urban development.

Ordinary High Water Level (OHW). The elevation delineating the highest water level which has been maintained for a sufficient period of time to leave evidence upon the landscape, commonly that point where the natural vegetation changes from predominantly aquatic to predominantly terrestrial. For watercourses, the OHW level is the elevation of the top of the bank of the channel. An OHW established for a waterbody by the Minnesota Department of Natural Resources will constitute the OHW under this definition.

Owner. The owner of a parcel of land or the purchaser under a contract for deed.

Parcel. A parcel of land designated by plat, metes, and bounds, registered land survey, auditor's subdivision, or other accepted means and separated from other parcels or portions by its designation.

Person. Any individual, trustee, partnership, unincorporated association, limited liability company or corporation.

Political Subdivision. A municipality, county or other political division, agency or subdivision of the state.

Project. A space, parcel, or parcels of real property owned by one or more than one person which is being or is capable of being developed or redeveloped as a single project.

Public Health and General Welfare. Defined in Minnesota Statutes, Section 103D.011, Subdivisions 23 and 24.

Public Waters. Any waters as defined in Minnesota Statutes, Section 103G.005, Subdivision 15.

Public Waters Wetland. Any wetland as defined in Minnesota Statutes, Section 103G.005, Subdivision 15a.

Redevelopment. Any proposal to re-subdivide land, or any land-disturbing activity or addition of impervious surface to a developed site.

Runoff. Rainfall, snowmelt or irrigation water flowing over the ground surface.

Sediment. Soil or other surficial material transported by surface water as a product of erosion.

Sedimentation. The process or action of depositing sediment.

Shoreland Protection Zone. Land located within a floodplain or within 1,000 feet of the OHW of a public water or public waters wetland or 300 feet of a public waters watercourse.

Site. A space, parcel, or parcels of real property owned by one or more than one person which is being or is capable of being developed or redeveloped as a single project.

Standard. A required level of quantity, quality, or value.

Stormwater Management Plan. A plan for the permanent management and control of runoff prepared and implemented in accordance with the standards set forth in these Rules.

Structure. Anything manufactured, constructed or erected which is normally attached to or positioned on land, including portable structures, earthen structures, walls, roads, water and storage systems, drainage facilities and parking lots.

Subdivision or Subdivide. The separation of a parcel of land into two or more parcels.

TMDL. A Total Maximum Daily Load is the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards. "TMDL" can also refer to a study that calculates that load, or to the allocation of that allowable load to its various sources. An Implementation Plan may be part of the TMDL study or it may be a separate document that sets forth the steps that will be taken to achieve the TMDL.

Volume Management. The retention and abstraction of a certain volume of stormwater runoff onsite through techniques such as infiltration, evapotranspiration, and capture and reuse.

Water Basin. An enclosed natural depression with definable banks capable of containing water that may be partly filled with public waters.

Waterbody. All water basins, watercourses and wetlands as defined in these Rules.

Watercourse. Any natural or improved stream, river, creek, ditch, channel, culvert, drain, gully, swale, or wash in which waters flow continuously or intermittently in a definite direction.

Water Resources Management Plan. The watershed management plan for the Commission adopted and implemented in accordance with Minnesota Statutes, Section 103B.231.

Watershed. Region draining to a specific watercourse or water basin.

Wetland. Land transitional between terrestrial and aquatic systems as defined in Minnesota Statutes, Section 103G.005, Subdivision 19.

Wetland Conservation Act (WCA). Minnesota Wetland Conservation Act of 1991 as amended.

RULE B. PROCEDURAL REQUIREMENTS

1. **APPLICATION REQUIRED**. Any person or political subdivision undertaking an activity for which a project review is required by these Rules shall first submit to the Commission a project review application, design data, plans, specifications, fees, and such other information and exhibits as may be required by these Rules. Applications shall be signed by the owner, or the owner's authorized agent, except for activities of a political subdivision which may be signed by either the owner or the general contractor. All project review applications must be authorized by the municipality where the proposed project is located.

2. **FORMS**. Project review applications shall be submitted on forms provided by the Commission. Forms are available at the Commission office or Web site.

3. **ACTION BY COMMISSION**. The Commission shall act within 60 days after receipt of a complete application, including all required information, exhibits and fees. If a state or federal law or court order requires a process to occur before the Commission acts on an application, or if an application requires prior approval of a state or federal agency, the deadline for the Commission to act is extended to 60 days after completion of the required process or the required prior approval is granted. The Commission may extend the initial 60-day period by providing written notice of the extension to the applicant. The extension may not exceed 60 days unless approved by the applicant.

4. **SUBMITTAL**. A complete project review application with all required information and exhibits shall be filed with the Commission at least 14 calendar days prior to the scheduled meeting date of the Commission. Late or incomplete submittals will be scheduled to a subsequent meeting date.

5. **CONDITIONS**. A project review may be approved subject to reasonable conditions to assure compliance with these Rules. The conditions may include a requirement that the applicant and owner enter into an agreement with the member city in a form acceptable to the Commission to a) specify responsibility for the construction and future maintenance of approved structures or facilities, b) document other continuing obligations of the applicant or owner, c) grant reasonable access to the proper authorities for inspection, monitoring and enforcement purposes, d) affirm that the Commission or other political subdivisions can require or perform necessary repairs or reconstruction of such structures or facilities, e) require indemnification of the Commission for claims arising from issuance of the approved project review or construction and use of the approved structures or facilities, and f) reimburse the reasonable costs incurred to enforce the agreement. Project reviews and agreements may be filed for record to provide notice of the conditions and continuing obligations.

6. **ISSUANCE OF PROJECT REVIEWS**. The Commission will issue a project review approval only after the applicant has satisfied all requirements of these Rules and paid all required fees.

7. **VALIDITY**. Issuance of a project review approval based on plans, specifications, or other data shall not prevent the Commission from thereafter requiring the correction of errors in the approved plans, specifications and data, or from preventing any activity being carried on thereunder in violation of these Rules.

8. **MODIFICATIONS**. The applicant shall not modify the approved activity or plans and specifications on file with the Commission without the prior approval of the Commission.

9. **INSPECTION AND MONITORING**. With permission of the property owner and under the authority of the member city, the Commission may perform such field inspections and monitoring of the approved activity as the Commission deems necessary to determine compliance with the conditions of the project review and these Rules. Any portion of the activity not in compliance shall be promptly corrected. In applying for a project review, the applicant consents to entry upon the land for field inspections and monitoring, or for performing any work necessary to bring the activity into compliance.

10. **SUSPENSION OR REVOCATION**. The Commission may suspend or revoke a project review approved under these Rules whenever the project review approval is issued in error or on the basis of incorrect information supplied, or in violation of any provision of these Rules, or if the preliminary and final project approvals received from the municipality or county are not consistent with the conditions of the approved project review.

11. **EXPIRATION OF COMMISSION APPROVALS.** An approved project review shall expire and become null and void if the approved activity is not commenced within one year from date of approval, or if the approved activity is suspended or abandoned for a period of one year from the date the activity originally commenced. With the approval of the affected member city, applicants may apply for an extension of that period if the city review process is extended beyond the usual review period. Before an activity delayed for one year or more can recommence, the project approval must be renewed. Any applicant may apply for an extension of time to commence the approved activity under an unexpired project review approval.

    An application for renewal or extension must be in writing, and state the reasons for the renewal or extension. Any plan changes and required fees must be included with the application. There must be no unpaid fees or other outstanding violations of the approval being renewed or extended. An application for extension must be received by the Commission at least 30 days prior to the approval's expiration. The Commission shall consider the application for renewal or extension on the basis of the Rules in effect on the date the application is being considered. The Commission may extend the time for commencing the approved activity for a period not exceeding one year upon finding that circumstances beyond the control of the applicant have prevented action from being taken.

12. SEVERABILITY. If any provision of these Rules is adjudged unconstitutional or invalid by a court of competent jurisdiction, the remainder of these Rules shall not be affected thereby.

RULE C. GENERAL STANDARDS

1. POLICY. It is the policy of the Commission to protect the water resources of the watershed by requiring that all activities within the watershed comply with minimum standards for the protection of water quality and the environment.

2. REGULATION.

a) All land disturbing activities, whether requiring a project review under these Rules or otherwise, shall be undertaken in conformance with BMPs.

b) Project reviews are required of any land disturbing activity meeting the review thresholds set forth in Rule D Section 2.

c) In areas that drain to Impaired Waters, TMDL Implementation Plans may include site-specific requirements for any land-disturbing activities that are in addition to these rules and standards.

d) No person shall conduct land-disturbing activities without protecting adjacent property and waterbodies from erosion, sedimentation, flooding, or other damage.

e) Development shall be planned and conducted to minimize the extent of disturbed area, runoff velocities, and erosion potential, and to reduce and delay runoff volumes. Disturbed areas shall be stabilized and protected as soon as possible and facilities or methods used to retain sediment on-site.

f) Existing natural watercourses and vegetated soil surfaces shall be used to convey, store, filter, and retain runoff before discharge into public waters or a stormwater conveyance system.

g) Runoff from roof gutter systems shall discharge onto lawns or other pervious surfaces to promote infiltration where possible.

h) Use of fertilizers and pesticides in the shoreland protection zone shall be so done as to minimize runoff into public waters by the use of earth material, vegetation, or both. No phosphorus fertilizer shall be used unless a soil nutrient analysis shows a need for phosphorus or in the establishment of new turf.

i) When development density, topographic features, and soil and vegetation conditions are not sufficient to adequately handle runoff using natural features and vegetation, various types of constructed facilities such as diversions, settling basins, skimming devices, dikes, waterways, and ponds may be used. The Commission encourages designs using surface drainage, vegetation and infiltration rather than buried pipes and man-made materials and facilities.

j) Whenever the Commission determines that any land disturbing activity has become a hazard to any person or endangers the property of another, adversely affects water quality or any waterbody, increases flooding, or otherwise violates these Rules, the Commission shall notify the member city where the problem occurs and the member city shall require the owner of the land upon which the land disturbing activity is located, or other person or agent in control of such land, to repair or eliminate such condition within the time period specified therein. The owner of the land upon which a land disturbing activity is located shall be responsible for the cleanup and any damages from sediment that has eroded from such land. The Commission may require the owner to submit a project review application under these Rules before undertaking any repairs or restoration.

RULE D. STORMWATER MANAGEMENT

1. **POLICY**. It is the policy of the Commission to control excessive rates and volumes of runoff by:

a) Requiring that peak runoff rates not exceed existing conditions or the capacity of downstream conveyance facilities or contribute to flooding or streambank erosion.

b) Managing subwatershed discharge rates and flood storage volumes to be consistent with the goals of the Commission's water resources management plan and the local water resources management plans.

c) Controlling runoff rates by the use of on-site or if feasible regional detention or infiltration facilities.

d) Reviewing stormwater management structures based on the 1% (100-year) critical storm event for the drainage area.

e) Routing runoff to water treatment ponds or other acceptable facilities before discharging into waterbodies.

f) Promoting the use of natural resources for storing runoff and improving water quality and other amenities where appropriate.

g) Promoting natural infiltration of runoff.

2. **REGULATION**. No person or political subdivision shall commence a land disturbing activity or the development or redevelopment of land for the following types of projects without first submitting to and obtaining approval of a project review from the Commission that incorporates a stormwater management plan for the activity, development or redevelopment. This review mush be coordinate though the city in which the project is located.

a) Plans of any land development or site development that disturbs more than 1 acre of land.

b) Plans of any land development or individual site development adjacent to or containing a lake, wetland, or a natural or altered watercourse as listed in the Hennepin County wetland inventory or the final inventory of Protected Waters and Wetlands for Hennepin County, as prepared by the DNR.

c) Any culvert installation or replacement, bridge construction, stream cross-section alteration, or activity requiring a DNR Waters Permit on Elm, Rush, North Fork Rush, or Diamond Creeks or their tributaries.

d) Plans for any land development or site development within the 1% chance (100-year) floodplain as defined by the Flood Insurance Study for the member city or the Commission's flood study.

e) Plans of any land development or site development regardless of size, if such review is requested by a member city.

f) Land disturbing activity that drains to more than one watershed, for that portion of the site draining into the Elm Creek Watershed.

3. **CRITERIA**. Stormwater management plans shall comply with the following criteria regarding runoff rate restrictions, volume control requirements, and water quality requirements.

a) A hydrograph method based on sound hydrologic theory will be used to analyze runoff for the design or analysis of flows, volumes, water quality, and water levels.

b) *Runoff rates* for the proposed activity shall not exceed existing runoff rates for the 2-year, 10-year, and 100-year critical storm events and rainfall distribution for the project location as set forth in NOAA Atlas 14 Volume 8, published June 2013, or its successor, using the online NOAA Precipitation Frequency Data Server or a similar data source. Applicant must document the location and event depths used. If an approved local water management plan requires more restrictive rate control, then the more restrictive rate shall govern. Runoff rates may be restricted to less than the existing rates when necessary for the public health and general welfare of the watershed.

   i) If detention basins are used to control rate of runoff they shall be designed to provide:

      (1) An outlet structure to control the 2-year, 10-year, and 100-year critical storm events to predevelopment runoff rates. Said outlet structure will be required to control critical storm events to less than predevelopment runoff rates if downstream facilities have insufficient capacity to handle the increased flow.

      (2) Alternative to (1), runoff may be directed to a downstream facility within the same hydrologic subwatershed that has sufficient capacity to provide the required rate control. This means that no rate control may be required for an individual development provided there is a regional facility designed and constructed to accommodate the flow from this property.

(3) An identified overflow spillway sufficiently stabilized to convey a 1% (100-year) critical storm event.

(4) A normal water elevation above the OHW of adjacent waterbodies.

(5) Access for future maintenance.

(6) An outlet skimmer to prevent migration of floatables and oils for at least the two year storm event.

(7) Structures shall be elevated according to the following criteria based on the flooding source:

(a) Structures that are within the closed basin of naturally landlocked waterbodies and outside of the effective Federal Emergency Management Agency floodplain as shown on the Flood Insurance Rate Map and outside of the Commission's floodplain shall meet the following criteria:

(i) The low floor must be at minimum one foot above the normal water level and

(ii) The low floor must be at least two feet above the back-to-back 100-year 24-hour flood elevation.

(b) Structures within the proposed Federal Emergency Management Agency and/or within the Commission's floodplain (excluding FEMA Zone A areas) shall meet the following criteria:

(i) The low floor must be at minimum two feet above the 100-year flood elevation and at least one foot above the emergency overflow

(c) Structures that are within the closed basin of naturally landlocked waterbodies and the Federal Emergency Management Agency and/or Commission's floodplain shall have a low floor elevation at whichever elevation highest elevation calculated from the following:

(i) The low floor must be at minimum one foot above the normal water level and

(ii) The low floor must be at least two feet above the back-to-back 100-year 24-hour flood elevation.

(iii) The low floor must be at minimum two feet above the 100-year flood elevation.

(d) Structures near the maximum inundation extents caused during the high-water level of nearby stormwater ponds and/or waterbodies that are outside of a naturally landlocked waterbody basin, Federal Emergency Management Agency floodplain, and the Commission's floodplain shall meet the following criteria:

(i) The low floor must be at minimum one foot above the normal water level of hydraulically or hydrologically connected waterbodies (as determined by paragraph d. below) and

(ii) The low opening must be at least two feet above the 100-year flood elevation and

(iii) The low opening should be at least one foot above the emergency overflow and

(iv) Hydrogeological analyses demonstrating a structure is outside of the lateral transmissivity zone of groundwater flow mounding caused by the 100-year event on hydraulically or hydrologically connected waterbodies and based on the duration of the flood hydrograph in those hydraulically or hydrologically connected waterbodies, to the satisfaction of the Commission's engineer, may be used to exempt structures from the above rules.

(v) Structures located greater than 200-feet away from the high- water level inundation of hydraulically or hydrologically connected waterbodies (as determined by paragraph d. above) are exempt from the above rules.

(vi) The emergency overflow should be an overland flow section, where possible, but piped outlets with appropriate conveyance capacity that are designed to limit clogging may be used as determined by the Commission's Engineer

(e) Structures adjacent to localized depressions use to route stormwater to waterbodies and stormwater ponds are exempt from these requirements.

ii) Regional detention basins may be used to manage peak flow rates and meet water quality objectives when feasible.

iii) Analysis of flood levels, storage volumes and flow rates for waterbodies and detention basins shall be based on the range of rainfall and snow melt duration producing the critical flood levels and discharges, whichever is most critical.

iv) Landlocked water basins may be provided with outlets that:

(1) Retain a hydrologic regime complying with floodplain and wetland alterations.

(2) Provide sufficient storage below the outlet run-out elevation to retain back-to-back 100-year, 24-hour rainfalls and runoff above the highest anticipated groundwater elevation and prevent damage to property adjacent to the basin.

(3) Do not create adverse downstream flooding or water quality conditions.

c) Stormwater runoff volume must be *infiltrated/abstracted* onsite. For non-linear projects, stormwater runoff volume must be *infiltrated/abstracted* onsite in the amount equivalent to 1.1 inch of runoff from the sum of the new or fully reconstructed impervious surfaces.

Linear projects that create one acre or more of new or fully reconstructed impervious surfaces must meet all Commission requirements for 1.1 inches of runoff from the new impervious surface or 0.55-inches from the combination of new and fully reconstructed

impervious surfaces, whichever is greater. When this volume cannot be treated within the existing right-of-way, a reasonable attempt to obtain additional right-of-way, easement, or other permission to treat the stormwater during the project planning process must be made. Volume reduction practices must be considered first. Volume reduction practices are not required if the practices cannot be provided cost effectively. If additional right-of-way, easements, or other permission cannot be obtained, owners of construction activity must maximize the treatment of the water quality volume.

i) Applicant must minimize the creation of new impervious surface, reduce existing impervious surfaces where possible, and minimize the amount of directly connected impervious surface.

ii) When using infiltration for volume reduction, runoff must be infiltrated within 48 hours. Infiltration volumes and facility sizes shall be calculated based on the measured infiltration rate determined by a double-ring infiltrometer test(s) conducted to the requirements of ASTM Standard D3385 at the proposed bottom elevation of the infiltration area. Other testing methods may be used with the approval of the Commission's Engineer. The measured infiltration rate shall be divided by the appropriate correction factor selected from the Minnesota Stormwater Manual. This site investigation must be conducted by a licensed soil scientist or engineer.

iii) A post-construction percolation test must be performed on each infiltration practice and must demonstrate that the constructed infiltration rate meets or exceeds the design infiltration rate prior to project acceptance by the city.

iv) Infiltration areas will be limited to the horizontal areas subject to prolonged wetting.

v) Areas of permanent pools tend to lose infiltration capacity over time and will not be accepted as an infiltration practice.

vi) Stormwater runoff must be pretreated to remove solids before discharging to infiltration areas to maintain the long term viability of the infiltration areas.

vii) Design and placement of infiltration BMPs shall be done in accordance with the Minnesota Department of Health guidance "Evaluating Proposed Stormwater Infiltration Projects in Vulnerable Wellhead Protection Areas," as amended.

viii) Constructed bioretention and infiltration practices such as rain gardens, infiltration trenches, and infiltration benches shall not be used in:

(1) Fueling and vehicle maintenance areas;

(2) Areas with less than 3 feet separation from the bottom of the infiltration system to the elevation of seasonal high groundwater;

(3) Areas with runoff from industrial, commercial and institutional parking lots and roads and residential arterial roads with less than 5 feet separation distance from the bottom of the infiltration system to the elevation of seasonal high groundwater;

(4) Areas within 400 feet of a community water well, within 100 feet of a private well, or within a delineated 1-year time of travel zone in a wellhead protection area;

(5) Sites documented to contain contaminated soils or groundwater.

ix) Credit towards compliance with the abstraction requirement in (c) may be achieved by:

(1) Meeting post construction soil quality and amendment depth requirements. Areas that will be subjected to clearing, grading, or compaction that will not be covered by impervious surface, incorporated into a drainage facility, or engineered as structural fill or slope may be included in the credit calculation if they meet post construction soil quality and amendment depth requirements. Soil amendment areas become part of the site's storm drainage system, and must be protected by a utility and drainage easement and be included in the site's utility maintenance agreement. The applicant may compute a credit of 0.5 inches over the soil amendment area and apply that toward the abstraction volume requirement.

(a) A minimum 8-inch depth of compost amended soil or imported topsoil shall be placed in all areas of the project site being considered for the abstraction credit. Before the soil is placed, the subsoil must be scarified (loosened) at least 4 inches deep, with some incorporation of the amended soil into the existing subsoil to avoid stratified layers.

(b) Soil amendment may be achieved by either mixing 2 inches of approved compost into the 8 inches of soil depth, or by mixing a custom-calculated amount of compost to achieve 8 inches of uncompacted soil depth with a minimum organic content of five percent.

(c) The amended areas must pass a 12-inch probe test during the site final inspection, in accordance with the Commission's testing procedure. Once amended, soil areas must be protected from recompaction.

(2) Preserving undisturbed forest or grassland conservation areas. Conservation areas must remain undisturbed during construction and must be protected by a permanent conservation easement prescribing allowable uses and activities on the parcel and preventing future development. A long-term vegetation management plan describing methods of maintaining the conservation area in a natural vegetative condition must be submitted with the stormwater management plan. The applicant may compute a credit of 0.5 inches over the conservation area and apply that toward the abstraction volume requirement.

(3) Providing wetland buffers in excess of minimum requirements. Areas eligible for credit must meet all wetland buffer requirements, must be monumented and shown on the construction plans. The applicant may compute a credit of 0.5 inches over the excess buffer area and apply that toward the abstraction volume requirement.

(4) Disconnecting impervious surface by redirecting runoff across a pervious surface or into an engineered bioinfiltration facility. Impervious disconnection must be designed to prevent any reconnection of runoff with the storm drain system. The applicant may subtract the disconnected impervious surface area from the total impervious surface area used to compute the required abstraction volume.

x) Alternative to (c), runoff may be directed to a downstream facility within the same hydrologic subwatershed that has sufficient capacity to provide the required volume management. This means that no volume management may be required for an individual development provided there is a regional facility designed and constructed to accommodate the volume from this property.

b) Where infiltration is not advisable or infeasible due to site conditions, *biofiltration* must be provided for that part of the abstraction volume that is not abstracted by other BMPs. Where biofiltration is infeasible, at a minimum filtration through a medium that incorporates organic material, iron fillings, or other material to reduce soluble phosphorus must be provided.

c) There shall be *no net increase in total phosphorus (TP) or total suspended solids (TSS)* from pre-development land cover to post-development land cove. Pre-development land cover is defined as the predominant land cover over the previous 10 years. The TP and TSS export coefficients to be used to calculate predevelopment and post-development land use loadings are set forth in Commission project review guidance.

i) Full infiltration of one point one (1.1) inches of runoff from all impervious surface will satisfy (e).

ii) If it is not feasible to achieve the full 1.1 inch infiltration requirement, a combination of BMPs may be used to achieve the no-net-increase requirement.

iii) If permanent sedimentation and water quality ponds are used they shall be designed to the Wet Pond Design Standards set forth on Appendix A to these Rules and provide:

(1) Water quality features consistent with NURP criteria and best management practices.

(2) A permanent wet pool with dead storage of at least the runoff from a 2.5-inch storm event.

iv) Alternative to (e), runoff may be directed to a downstream facility within the same hydrologic subwatershed that has sufficient capacity to provide the required treatment. This means that no treatment may be required for an individual development provided there is a regional facility designed and constructed to accommodate the flow from this property.

4. WAIVERS.

a) The Commission may waive the on-site runoff rate, volume and water quality control design criteria as noted above, if a municipality has an off-site stormwater facility that provides equivalent control and treatment of runoff that conforms to Commission standards.

b) The design criteria for infiltration may be waived for sites with total impervious surface of less than one acre if infiltration BMPs have been incorporated to the maximum extent possible.

5. EXHIBITS. The following exhibits shall accompany the project review application (one set full size, one set reduced to a maximum size of 11" x 17", and one electronic set in pdf format). All plans must be signed by a licensed professional engineer registered in Minnesota.

a) Property lines and delineation of lands under ownership of the applicant.

b) Delineation of the subwatershed contributing runoff from off-site, proposed and existing subwatersheds on-site, emergency overflows and watercourses.

c) Proposed and existing stormwater facilities location, alignment and elevation.

d) Delineation of existing on-site wetland, marsh, shoreland and floodplain areas.

e) Where infiltration or filtration is used as a stormwater management practice, identification, description, results of double-ring infiltrometer tests, and permeability and approximate delineation of site soils and seasonal high groundwater elevation in both existing and proposed as-developed condition.

f) Existing and proposed ordinary high and 1% chance (100-year) water elevations on-site.

g) Existing and proposed site contour elevations at 2-foot intervals, referenced to NAVD (1988 datum). If NAVD 1988 is not used, applicant must specify the datum used and the appropriate conversion factor.

h) Construction plans and specifications of all proposed stormwater management facilities, including design details for outlet controls.

i) Runoff volume and rate analysis for the 2-year, 10-year, and 100-year critical storm events, existing and proposed.

j) Pre-construction and post-construction annual runoff volume (ac-ft), annual total phosphorus (lbs/yr), and annual total suspended solids (lb/yr).

k) All hydrologic, water quality and hydraulic computations made in designing the proposed stormwater management facilities.

l) A narrative describing the pre-and post-construction drainage conditions and the post-construction BMPs incorporated in the plans.

m) Applications requesting a soil management credit must include a Soil Management Plan (SMP) that shall include an 11” x 17” or larger site map indicating areas where soils will be amended, and calculations for soil volumes to be stockpiled and amounts and

specifications of amendment or topsoil to be imported to achieve specified minimum organic matter content.

n) Delineation of any ponding, flowage or drainage easements, or other property interests, to be dedicated for stormwater management purposes.

6. **MAINTENANCE**. All stormwater management structures and facilities shall be maintained in perpetuity to assure that the structures and facilities function as originally designed. The owner of any water quality treatment device if not a governmental unit shall provide to the member city, in a form acceptable to the Commission, a recordable agreement detailing an operations and maintenance plan that assures that the structure(s) will be operated and maintained as designed.

7. **EASEMENTS**. The member city shall obtain from the applicant, in form acceptable to the Commission, recordable temporary and perpetual easements for ponding, flowage and drainage purposes over hydrologic features such as waterbodies, wetlands, buffers, floodplain, and stormwater basins and other permanent BMPs. The easements shall include the right of reasonable access for inspection, monitoring, maintenance and enforcement purposes.

8. **COVENANTS**. The Commission may require as a condition of project review approval that the member city shall require that the land be subjected to restrictive covenants or a conservation easement, in form acceptable to the Commission, to prevent the future expansion of impervious surface and the loss of infiltration capacity.

RULE E. EROSION AND SEDIMENT CONTROL

1. **POLICY**. It is the policy of the Commission to control runoff and erosion and to retain or control sediment on land during land disturbing activities by requiring the preparation and implementation of erosion and sediment control plans.

2. **REGULATION**. No person or political subdivision shall commence a land disturbing activity or the development or redevelopment of land for which a project review is required under Rule D without first submitting to and obtaining approval of a project review from the Commission that incorporates an erosion and sediment control plan for the activity, development or redevelopment.

3. **CRITERIA**. Erosion and sediment control plans shall comply with the following criteria:

a) Erosion and sediment control measures shall be consistent with best management practices as demonstrated in the most current version of the MPCA manual “Protecting Water Quality in Urban Areas,” and shall be sufficient to retain sediment on-site.

b) Erosion and sediment controls shall meet the standards for the General Permit Authorization to Discharge Storm Water Associated with Construction Activity Under the National Pollutant Discharge Elimination System/State Disposal System Permit

Program Permit MN R100001 (NPDES General Construction Permit) issued by the Minnesota Pollution Control Agency, except where more specific requirements are required.

c) All erosion and sediment controls shall be installed before commencing the land disturbing activity, and shall not be removed until completion.

d) The activity shall be phased when possible to minimize disturbed areas subject to erosion at any one time.

4. **EXHIBITS**. The following exhibits shall accompany the project review application (one set full size, one set reduced to a maximum size of 11" x 17", and one electronic set in pdf format). Erosion and sediment control plans must be prepared by a qualified professional.

a) An existing and proposed topographic map showing contours on and adjacent to the land, property lines, all hydrologic features, the proposed land disturbing activities, and the locations of all runoff, erosion and sediment controls and soil stabilization measures.

b) Plans and specifications for all proposed runoff, erosion and sediment controls, and temporary and permanent soil stabilization measures.

c) Detailed schedules for implementation of the land disturbing activity, the erosion and sediment controls, and soil stabilization measures.

d) Detailed description of the methods to be employed for monitoring, maintaining and removing the erosion and sediment controls, and soil stabilization measures.

e) Soil borings if requested by the Commission.

5. **MAINTENANCE**. The project review applicant shall be responsible for proper operation and maintenance of all erosion and sediment controls and soil stabilization measures, in conformance with best management practices and the NPDES permit. The project review applicant shall, at a minimum, inspect and maintain all erosion and sediment controls and soil stabilization measures daily during construction, weekly thereafter, and after every rainfall event exceeding 0.5 inches, until vegetative cover is established.

RULE F. FLOODPLAIN ALTERATION

1. **POLICY**. It is the policy of the Commission to prevent and control flooding damage by:

a) Preserving existing water storage capacity below the 100-year critical flood elevation on all waterbodies in the watershed to minimize the frequency and severity of high water.

b) Minimizing development in the floodplain that will unduly restrict flood flows or aggravate known high water problems.

c) Requiring compensatory storage for floodplain fill.

2. **REGULATION**. No person or political subdivision shall alter or fill land below the 100-year critical flood elevation of any public waters watercourse, public waters wetland, or other wetland without first obtaining an approved project review from the Commission.

3. **CRITERIA**.

a) Floodplain alteration or filling shall not cause a net decrease in flood storage capacity below the projected 1% (100-year) critical flood elevation or alter the timing of flooding unless it is shown that the proposed alteration or filling, together with the alteration or filling of all other land on the affected reach of the waterbody to the same degree of encroachment as proposed by the applicant, will not cause high water or aggravate flooding on other land and will not unduly restrict flood flows.

b) Structures shall be elevated to reduce flood risk as specified in Rule D.3.b.i.7.

4. **EXHIBITS**. The following exhibits shall accompany the project review` application (one set full size, one set reduced to a maximum size of 11" x 17", and one electronic set in pdf format):

a) Site plan showing boundary lines, delineation and existing elevation contours of the work area, ordinary high water level, and 1% (100-year) critical flood elevation. All elevations shall be referenced to the NAVD 1988 datum. If NAVD 1988 is not used, applicant must specify the datum used and the appropriate conversion factor.

b) Grading plan showing any proposed elevation changes.

c) Preliminary plat of any proposed subdivision.

d) Determination by a registered professional engineer of the 100-year critical flood elevation before and after the proposed activity.

e) Computation of the change in flood storage capacity as a result of the proposed alteration or fill.

f) Erosion and sediment control plan which complies with these Rules.

g) Soil boring logs and report if available.

5. **EXCEPTIONS**. If a municipality has adopted a floodplain ordinance that prescribes an allowable degree of floodplain encroachment, the applicable ordinance shall govern the allowable degree of encroachment and no project review will be required under this Floodplain Alteration Rule.

RULE G. WETLAND ALTERATION

1. **POLICY**. It is the policy of the Commission to preserve and protect wetlands for their water quality, stormwater storage, habitat, aesthetic, and other attributes by:

a) Achieving no net loss in the quantity, quality and biological diversity of wetlands in the watershed.

b) Increasing the quantity, quality and biological diversity of wetlands in the watershed by restoring or enhancing diminished or drained wetlands.

c) Enforcing mitigation of direct or indirect impacts from activities that destroy or diminish the quantity, quality and biological diversity of watershed wetlands.

d) Replacing affected wetlands where sequencing demonstrates that avoidance is not feasible.

2. REGULATION. No person or political subdivision shall drain, fill, excavate or otherwise alter a wetland without first obtaining the approval of a wetland replacement plan from the local government unit with jurisdiction over the activity. Mitigation of wetland impacts will be considered in the following sequence: 1) mitigated by enhancing the impacted wetland; 2) mitigated within the subcatchment of the impacted wetland; 3) mitigated in the drainage area of the impacted wetland; 4) mitigated in the watershed of the impacted wetland; 5) mitigated through purchase of wetland bank credits.

3. CRITERIA.

a) Any drainage, filling, excavation or other alteration of a wetland shall be conducted in compliance with Minnesota Statutes, section 103G.245, the Wetland Conservation Act, and regulations adopted thereunder.

b) A wetland may be used for stormwater storage and treatment only if pre-treatment is provided and the use will not adversely affect the function and public value of the wetland as determined by the local government unit.

c) Other activities which would change the character of a wetland shall not diminish the quantity, quality or biological diversity of the wetland.

4. LOCAL GOVERNMENT UNIT. The Commission will serve as the local government unit (LGU) for administration of the Wetland Conservation Act (WCA) for those cities that have designated the Commission to serve in that capacity. If a member city has not designated the Commission as the LGU for the administration of the WCA, they shall be responsible for administering the WCA. MnDOT serves as the LGU on its right of way.

RULE H. BRIDGE AND CULVERT CROSSINGS

1. POLICY. It is the policy of the Commission to maintain channel profile stability and conveyance capacity by regulating crossings of watercourses for driveways, roads and utilities.

2. **REGULATION**. No person or political subdivision shall construct or improve a road, driveway or utility crossing across any public waters watercourse or county ditch without first submitting to the Commission and receiving approval of a project review.

3. **CRITERIA**. Crossings shall:

a) Retain adequate hydraulic capacity to pass the 100-year flow and maintain the 100-year flow profile, if available.

b) Mimic the existing base flow (1-year, 2-year) conditions.

c) Not adversely affect water quality.

d) Represent the "minimal impact" solution to a specific need with respect to all reasonable alternatives.

e) Allow for future erosion, scour, and sedimentation maintenance considerations.

f) If the project proposes changing the FEMA FIS profile, a FEMA map revision must be obtained.

g) If the project requires a DNR Work in Public Waters permit, the conditions of that permit must be satisfied.

4. **EXHIBITS**. The following exhibits shall accompany the project review application (one set full size, one set reduced to a maximum size of 11" x 17", and one electronic set in pdf format):

a) Construction plans and specifications.

b) Analysis prepared by a registered professional engineer showing the effect of the project on hydraulic capacity and water quality.

c) An erosion and sediment control plan that complies with these Rules.

5. **MAINTENANCE**.

a) The maintenance, reconstruction and stabilization of any public crossing shall be the responsibility of the political subdivision with jurisdiction over the crossing.

b) The maintenance, reconstruction and stabilization of any private crossing shall be the responsibility of the owner of the crossing.

c) If a crossing over any public waters watercourse is determined by the Commission to be causing significant erosion, the Commission may notify the member city where said crossing is located and the member city may order the owner of the crossing to make necessary repairs or modifications to the crossing and outlet channel.

RULE I. BUFFER STRIPS

1. **POLICY**. It is the policy of the Commission to maintain the water quality and ecological functions provided by watercourses, lakes and wetlands by requiring the development of vegetated buffers around watercourses, lakes and wetlands where development and redevelopment occurs, and to encourage the installation of vegetated buffers around all watercourses and wetlands. Vegetative buffers reduce the impact of surrounding development and land use on watercourse, lake and wetland functions by stabilizing soil to prevent erosion, filtering sediment from runoff, and moderating water level fluctuations during storms. Buffers provide essential habitat for wildlife. Requiring buffers recognizes that watercourse, lake and wetland quality and function are related to the surrounding upland.

2. **REGULATION**. No person or political subdivision shall commence a land disturbing activity or the development or redevelopment of land for which a project review is required under Rule D on land that contains or is adjacent to a watercourse, lake or wetland without first submitting to and obtaining approval of a project review from the Commission that incorporates a vegetated buffer strip between the development or redevelopment and the watercourse or wetland.

3. **GENERAL PROVISIONS**.

a) This Rule shall apply to all lands containing or abutting watercourses, lakes or wetlands that are subject to a project review under these Rules. Watercourses, lakes and wetlands shall be subject to the requirements established herein, and other applicable federal, state and local ordinances and regulations. If a municipality has a buffer strip requirement that has been reviewed and approved by the Commission, the municipal regulation shall have precedence over the Commission's Rules.

b) An applicant shall determine whether any watercourse, lake or wetland exists, and shall delineate the boundary for any wetland on the land. An applicant shall not be required to delineate wetlands on adjacent property, but must review available information to estimate the wetland boundary.

c) Documentation identifying the presence of any watercourse, lake or wetland on the applicant’s land, including wetland delineation and buffer strip vegetation evaluation, must be provided to the Commission with a project review application.

d) Wetland and buffer strip identifications and delineations shall be prepared in accordance with state and federal regulations.

4. **CRITERIA**. The following standards apply to all lands that contain or abut a watercourse, lake or wetland:

a) BMPs shall be followed to avoid erosion and sedimentation during land disturbing activities.

b) When a buffer strip is required the applicant shall, as a condition to issuance of an approved project review:

i) Submit to the member city, in a form acceptable to the Commission, a recordable conservation easement for protection of approved buffer strips. The easement shall describe the boundaries of the watercourse or wetland and buffer strips, identify the monuments and monument locations, and prohibit any of the alterations set forth in Paragraph 5(e) below and the removal of the buffer strip monuments within the buffer strip or the watercourse or wetland.

ii) Submit to the member city, in a form acceptable to the Commission, an executed buffer maintenance plan and agreement for the first two growing seasons following establishment, and providing an escrow or an alternate surety to assure successful vegetation establishment.

iii) Install the wetland monumentation required by Paragraph 7 below.

c) All open areas within the buffer strip shall be seeded or planted in accordance with Paragraph 8 below. All seeding or planting shall be completed prior to removal of any erosion and sediment control measures. If construction is completed after the end of the growing season, erosion and sediment control measures shall be left in place and all disturbed areas shall be mulched for protection over the winter season.

5. BUFFER STRIPS.

a) A buffer strip shall be maintained around the perimeter of all watercourses, lakes or wetlands. The buffer strip provisions of this Rule shall not apply to any parcel of record as of the date of this Rule until such parcel is developed or redeveloped or unless required by a previous project review. The Commission does, however, strongly encourage the installation of buffer strips on all parcels in the watershed.

b) Buffer strips on Elm Creek, Rush Creek, North Fork Rush Creek, and Diamond Creek shall be an average of 50 feet wide and a minimum of 25 feet wide, measured from the top of bank. Buffer strips on other watercourses, lakes, and wetlands shall be an average 25 feet wide and a minimum of 10 feet wide. It is recommended that all structures have a minimum 15 foot setback from the buffer strip.

c) Buffer strips shall apply whether or not the watercourse or wetland is on the same parcel as a proposed development.

d) Buffer areas disturbed by grading operations must be finish graded to a slope of 6:1 or less or an increase in width of five (5) feet for each one (1) foot decrease in horizontal width (i.e., a 25 required foot buffer width at a 5:1 slope must be 30 feet wide, 4:1 must be 35 feet wide, and 3:1 must be 40 feet wide.)

e) Buffer strip vegetation shall be established and maintained in accordance with Paragraph 8 below. Buffer strips shall be identified within each parcel by permanent monumentation in accordance with Paragraph 7 below.

f) Subject to Paragraph 5(g) below, alterations including building, storage, paving, mowing, plowing, introduction of noxious vegetation, cutting, dredging, filling, mining, dumping,

grazing livestock, agricultural production, yard waste disposal or fertilizer application, are prohibited within any buffer strip. Noxious vegetation shall be removed to meet state standards. Alterations would not include plantings that enhance the natural vegetation or selective clearing or pruning of trees or vegetation that are dead, diseased or pose similar hazards.

g) The following activities shall be permitted within any buffer strip, and shall not constitute prohibited alterations under Paragraph 5(f) above:

   i) Use and maintenance of an unimproved access strip through the buffer, not more than 20 feet in width, for recreational access to the watercourse, lake or wetland and the exercise of riparian rights.

   ii) Placement, maintenance, repair or replacement of utility and drainage systems that exist on creation of the buffer strip or are required to comply with any subdivision approval or building permit obtained from the municipality or county, so long as any adverse impacts of utility or drainage systems on the function of the buffer strip have been avoided or minimized to the extent possible.

   iii) Construction, maintenance, repair, reconstruction, or replacement of existing and future public roads crossing the buffer strip, so long as any adverse impacts of the road on the function of the buffer strip have been avoided or minimized to the extent possible.

6. ALTERNATE WETLAND PROTECTION METHODS.

a) Should application of the buffer standards in Paragraph 5 above render a parcel of record as of the date of this Rule unbuildable based on current city ordinances, the Watershed engineer may allow alternative methods to protect the wetland. Such methods must include a buffer strip no less than ten feet wide, supplemented by redirection of drainage to a wider area of buffer, or to a Best Management Practice such as a rain garden or vegetated swale.

b) The use of alternative wetland protection methods will be evaluated as part of the review of a stormwater management plan under these Rules. Alternative wetland protection methods must be in keeping with the spirit and intent of this Rule.

7. MONUMENTATION. A monument shall be required at each parcel line where it crosses a buffer strip and shall have a maximum spacing of 200 feet along the edge of the buffer strip. Additional monuments shall be placed as necessary to accurately define the edge of the buffer strip. A monument shall consist of a post and a buffer strip sign meeting Commission standards. The signs shall include warnings about mowing, disturbing or developing the buffer strip.

8. VEGETATION.

a) Where acceptable natural vegetation exists in buffer strip areas, the retention of such vegetation in an undisturbed state is required unless an applicant receives approval to replace such vegetation. A buffer strip has acceptable natural vegetation if it:

   i) Has a continuous, dense layer of native vegetation that has been uncultivated or unbroken for at least 5 consecutive years; or

   ii) Has an overstory of native trees and/or shrubs that has been uncultivated or unbroken for at least 5 consecutive years; or

   iii) Contains a mixture of the plant communities described in Subparagraphs 8(a)(i) and (ii) above that has been uncultivated or unbroken for at least 5 years.

b) Notwithstanding the performance standards set forth in Paragraph 8(a), the Commission may determine existing buffer strip vegetation to be unacceptable if:

   i) It contains undesirable plant species including but not limited to common buckthorn, reed canary grass, or species on the Minnesota State Noxious Weeds List; or

   ii) It has topography that tends to channelize the flow of runoff; or

   iii) For some other reason it is unlikely to retain nutrients and sediment.

   iv) Where buffer strips are not vegetated or have been cultivated or otherwise disturbed within 5 years of the project review application, such areas shall be replanted and maintained with native vegetation. The buffer strip plantings must be identified on the project review application. Acceptable buffer strip design and planting methods are detailed in the reference document "Restoring and Managing Native Wetland and Upland Vegetation" (Jacobson 2006, prepared for BWSR and MnDOT).

c) Buffer strip vegetation shall be established and maintained in accordance with the requirements found in this Paragraph. During the first two full growing seasons, the owner must replant any buffer strip vegetation that does not survive. The owner shall be responsible for reseeding and/or replanting if the buffer strip changes at any time through human intervention or activities. At a minimum the buffer strip must be maintained as a "no mow" area.

9. ENCROACHMENT.

a) Buffer strips must be kept free of all materials, equipment and structures, including fences and play equipment. Buffer strips must not be grazed, cropped, logged or mown except as approved by the Commission. The topography of the buffer strips shall not be altered by any means, including paving, plowing, cutting, dredging, filling, mining, or dumping.

b) Variances.

   i) Only variances meeting the standards and criteria set forth in Rule K shall be granted.

ii) Variances shall not be granted that would circumvent the intent and purposes of this Rule.

RULE J. FEES

1. **POLICY**. The Commission finds that it is in the public interest to require applicants to pay the cost of administering and reviewing project review applications, and inspecting approved activities to assure compliance with these Rules, rather than using the Commission's annual administrative levy for such purposes. The Commission shall by resolution establish a schedule of fees that may be amended from time to time to reflect the cost of providing each service.

2. **APPLICATION**. Each application for the issuance, transfer or renewal of a project review recommendation under these Rules shall be accompanied by an application fee to defray the cost of processing the application.

3. **REVIEW**. A project review applicant under these Rules shall pay a fee for the cost of the review and analysis of the proposed activity, including services of engineering, legal, and other consultants. The review fee shall be payable upon the submission of the project review application.

4. **WETLAND MITIGATION PLAN**. A project review applicant under these rules shall pay a fee for the cost of the review and analysis of a proposed activity involving a wetland mitigation plan in a municipality where the Commission is the LGU. The fee is to cover the costs of engineering, legal, and other consultants, and shall be payable upon the submission of the project review application. Should the cost of said wetland mitigation plan review exceed the review fee, the application shall deposit such additional sums as are needed to pay such costs. Failure to pay such costs is grounds to deny the application or suspend review.

5. **WETLAND MITIGATION PLAN MONITORING**. A project review applicant under these rules in a municipality where the Commission is the LGU shall deposit an escrow to cover the cost of Commission monitoring and annual monitoring plan review for the five-year period. If the escrow amount is insufficient to cover the costs the Commission may require additional funds from the applicant.

6. **WETLAND MITIGATION SECURITY DEPOSIT**. A project review applicant under these rules in a municipality where the Commission is the LGU shall provide a security to assure that the replacement plan is followed. The amount of the security shall be calculated on a case-by-case basis based on the estimated cost of construction, follow up and contingency. The security may also include an amount determined by the Commission to be sufficient to protect the public in the event the replacement plan does not succeed.

7. **DEPOSITS**. The Commission will maintain an accounting for all deposits made under this Rule. No interest will be paid to applicants for funds held in deposit.

RULE K. VARIANCES

1. **WHEN AUTHORIZED**. The Commission may grant variances from the literal provisions of these Rules. A variance shall only be granted when in harmony with the general purpose and intent of the Rules in cases where strict enforcement of the Rules will cause practical difficulties or particular hardship, and when the terms of the variance are consistent with the Commission's water resources management plan and Minnesota Statutes, chapter 103D.

2. **HARDSHIP**. "Hardship" as used in connection with the granting of a variance means the land in question cannot be put to a reasonable use if used under the conditions allowed by these Rules; the plight of the applicant is due to circumstances unique to the land and not created by the applicant; and the variance, if granted, will not adversely affect the essential character of the locality and other adjacent land. Economic considerations alone shall not constitute a hardship if a reasonable use for the land exists under the terms of these Rules. Conditions may be imposed in the granting of a variance to insure compliance and to protect adjacent land and the public health and general welfare of the Commission.

3. **PROCEDURE**. An application for a variance shall describe the practical difficulty or particular hardship claimed as the basis for the variance. The application shall be accompanied with such surveys, plans, data and other information as may be required by the Commission to consider the application.

4. **VIOLATION**. A violation of any condition imposed in the granting of a variance shall be a violation of these Rules and shall automatically terminate the variance.

RULE L. ENFORCEMENT

1. **ADMINISTRATION**. These Rules shall be administered by the Commission. The Commission shall consider applications required under these Rules and determine whether such applications should be approved, approved with conditions, or denied. Such determination shall be communicated to the member city in which the project lies and to the applicant.

2. **IMPLEMENTATION BY MEMBER CITIES**. It shall be the duty of each city to enforce and implement such determinations by the Commission under the various permitting processes and regulations of the city. Each city shall make such amendments to its official controls, regulations, and permitting processes as are necessary to provide it with the authority to enforce and implement the determinations of the Commission.

3. **FAILURE BY CITY TO IMPLEMENT**. Upon a determination by the Commission that a city has not enforced or implemented a decision of the Commission in the administration of these Rules, the Commission shall notify the city of such determination and direct that

appropriate action be taken by the city. If the city does not take such action, the Commission may take such legal steps as are available to it to effect such enforcement or implementation.

RULE M. AMENDMENT OF THESE RULES

1. **AMENDMENT.** These rules may be amended from time to time by the Commission. Proposed amendments shall be reviewed by the member cities prior to adoption unless the Commission determines that said amendment is of a minor or technical nature. Minor or technical amendments include recodifying or streamlining the rules, clarifying policies, or other actions that do not adversely affect a member city or impact the Commission's or member cities' ability to meet their water management plan goals.

2. **PROCEDURE.** Proposed major amendments to these rules shall be first considered by the Commission and then forwarded to the member cities for a 45-day comment period. Following that comment period, the Commission shall consider the proposed amendment and the comments received for approval. All amendments shall be made by resolution.

ELM CREEK WATERSHED MANAGEMENT COMMISSION
RULES APPENDIX A
WET POND DESIGN STANDARDS

Permanent Pool Depth	Average 4', maximum 10'
Permanent Pond Surface Area	Greater of 2% of watershed's impervious area and 1% of the watershed
Permanent Pool Length to Width Ratio	3:1 or greater with an irregularly shaped shoreline
Side Slopes	10:1 for 10-foot bench centered on the normal water elevation and between 3:1 and 20:1 elsewhere
Side Slope Stabilization	Native seed with mix 33-261 (MnDOT 310), 34-271 (BWSR W2) or equivalent between NWL and HWL, provide 10' buffer where possible with mix 35-221 (MnDOT 330 (dry)) or mix 35-241 (MnDOT 350 (mesic))
Floatable Removal	Skimming device discharging at no greater than 0.5 fps during the 2-year event or a submerged outlet with a minimum 0.5 feet from the normal water level to the crown of the outlet pipe
Sediment Accumulation Area	Provide maintenance pads to remove sediment deltas at inlets
Permanent Pool Volume	A 4-foot mean depth and equal to 2.5-inch rain over the watershed
Source	Protecting Water Quality in Urban Areas (MPCA 2000)

SUMMARY

Elm Creek Watershed Management Commission
Management Rules and Standards*

	Standard	Purpose	Applicability
Project Reviews Required	A Stormwater Management Plan consistent with all applicable management rules and standards* must be reviewed and approved prior to commencement of land disturbing activities.	To control excessive rates and volumes of runoff; manage subwatershed discharge rates and flood storage volumes; improve water quality; protect water resources; and promote natural infiltration of runoff.	All development or redevelopment projects of the following types: • Projects disturbing more than one acre of land • Projects within the 100-year floodplain • Projects adjacent to or within a lake, wetland, or watercourse • Any land disturbing activity requested by a member city to be reviewed regardless of project size • Linear projects creating more than one acre of new impervious surface
Rate Control	Peak runoff rates may not exceed existing rates for the 2-year, 10-year, and 100-year critical storm event; or the capacity of downstream conveyance facilities; or contribute to flooding	To control excessive rates and volumes of runoff; manage subwatershed discharge rates and flood storage volumes	All projects disturbing more than one acre of land. Redevelopment projects disturbing less than 50 percent of the site must meet the requirement only for the disturbed area.
Volume Manage-ment	Non-linear projects: 1.1 inch of impervious surface runoff must be abstracted on site within 48 hours Linear projects: abstract the greater of 1.1 inch from new impervious or 0.55 inches from new and/or fully reconstructed impervious	To control excessive rates and volumes of runoff; manage discharge rates and flood storage volumes; protect stream channels from erosion; and promote natural infiltration of runoff.	All projects disturbing more than one acre of land. Redevelopment projects disturbing less than 50 percent of the site must meet the requirement only for the disturbed area.
Erosion and Sediment Control	Erosion control plan using Best Management Practices (BMPs) and consistent with the NPDES General Construction Permit is required	To control erosion and sediment so as to protect conveyance systems and water quality	All projects requiring a project review
Floodplain Alteration	Compensating storage is required to mitigate floodplain fill	To prevent and control flooding damage	All development or redevelopment projects within the 100-year floodplain regardless of project size
Water Quality	No net increase in total phosphorus and total suspended sediment annual load	To protect water quality	All projects disturbing more than one acre of land. Redevelopment projects disturbing less than 50 percent of the site must meet the requirement only for the disturbed area.
Buffer Strips	Vegetated buffer strips average 50 foot, minimum 25 foot wide adjacent to Elm, Diamond, Rush, and North Fork Rush Creeks; average 25 foot, minimum 10 foot wide adjacent to lakes, wetlands and other watercourses	To protect water quality; reduce erosion and sedimentation; reduce pollutants from runoff and debris; and provide habitat	All projects requiring a project review that contain or abut a wetland or watercourse
Wetland	Wetlands may not be drained, filled, excavated, or otherwise altered without an approved wetland replacement plan from the local government unit (LGU) with jurisdiction	To preserve and protect wetlands for their water quality, stormwater storage, habitat, aesthetic, and other attributes	All land disturbing activity impacting a wetland as defined by the Wetland Conservation Act (WCA)

*Important Note: Approved TMDL Implementation Plans may have additional site-specific requirements.

May 2022

STAFF REPORT

ROGERS PLANNING COMMISSION

Meeting Date: January 5, 2026

Agenda Item: 5.1

Subject: Consider Application by New Look Contracting for Site Plan for Building Addition at 14450 Northdale Blvd
Prepared By: Alec Henderson, City Planner

Overview / Background / Analysis
The applicant, New Look Contracting, Inc., is requesting site plan approval for improvements to an existing developed site located at 14450 Northdale Boulevard. The proposal includes an addition to an existing outbuilding on the property, connected by a breezeway, along with related site, utility, and grading improvements. The addition is intended for storage purposes only and does not include new office space or changes to the principal contractor's operation.
The subject property has a long-established contractor's shop with storage yard use that was approved under prior Conditional Use Permits (CUPs) issued by the Town of Hassan prior to incorporation into the City of Rogers. The current request represents reinvestment in and modernization of existing facilities and does not propose a change in use, expansion of outdoor storage areas, or intensification of operations.

Primary Issues to Consider

1. Site and Surrounding Area
2. Zoning and Land use History
3. Proposed Improvements
4. Applicable Code (Nonconforming uses, Accessory structures, RC District)
5. Engineering and Stormwater Review

Analysis of Primary Issues

1. **Site and Surrounding Area**

The subject property is located on the west side of Northdale Boulevard (State Highway 101 corridor) within an established commercial and industrial area. Surrounding land uses consist primarily of contractor services, industrial operations, and commercial uses consistent with the RC zoning district.

The site is fully developed with existing buildings, paved parking and drive areas, utilities, and stormwater infrastructure. Access to the site is taken from Northdale Boulevard. Existing stormwater management is provided via on-site infiltration basins.

2. **Zoning and Land Use History**

The contractor operation on the property was originally approved through a series of Conditional Use Permits dating back to 1984 and 1990. These approvals authorized a contractor's shop and storage yard use, associated buildings, outdoor storage, and related site improvements. Subsequent amendments and consolidations recognized the continued operation of the use and permitted reinvestment in site facilities.

As a result of these historic approvals, the contractor's shop with storage yard use is a lawfully established use on the property. Certain site characteristics, including building placement and layout, predate the current zoning ordinance and are governed by the City's nonconformity regulations.

3. **Proposed improvements**

The current application proposes:

- A 90 ft by 150 ft (13,500 sq ft) **addition to an existing outbuilding** on the site;
- A 17 ft by 10 ft **breezeway connection** between the existing outbuilding and the new addition;
- Interior use of the addition for **storage only**;
- Associated grading, utility connections, and erosion control measures related to the construction of the addition;
- No increase in employee count;
- No expansion of outdoor storage areas;
- No net increase in impervious surface;
- No additional parking demand.

Fire suppression for the new addition will be extended from the existing building, and all improvements are designed to comply with applicable building, fire, engineering, and stormwater standards.

4. **Applicable Codes**

<u>Section 125-41 Non-Conforming Uses and Structures</u>
Section 125-41 of the Zoning Ordinance governs the continuation and modification of lawfully established nonconforming uses and structures. The contractor's shop with storage yard use on the subject property was lawfully established under prior CUP approvals and is therefore permitted to continue.

The proposed improvements do not constitute an unlawful expansion or intensification of the nonconforming use. The addition is accessory in nature, does not expand outdoor storage, does not increase traffic or parking demand, and does not introduce new external impacts. The proposal represents reasonable reinvestment in an existing, lawful use and is consistent with the intent of Section 125-41.

Section 125-84 – Accessory Buildings and Structures
Section 125-84 allows accessory buildings and structures that are subordinate and incidental to a principal use. The existing outbuilding on the site functions as an accessory structure to the principal contractor operation. The proposed addition is an expansion of this existing accessory structure and will continue to serve a storage function directly related to the principal use.

The breezeway connection further reinforces the functional integration of the accessory structure with the overall site operations. The proposed improvements are consistent with Section 125-84 and do not introduce a new or separate accessory use.

The existing CUPs do contemplate additional structures and outline approval of new accessory structures or structures through site plan and building permit review.

Section 125-57 (b) – RC District
Section 125-57(b) establishes both the purpose and intent of the RC zoning district as well as applicable dimensional and setback standards. The RC district is intended to accommodate contractor services, commercial operations, and similar uses that require flexibility in building and site design while minimizing impacts on surrounding properties.

The proposed addition and breezeway are consistent with the intent of the RC district and comply with applicable setback standards, or, where existing conditions predate current requirements, remain consistent with legally established setbacks governed by Section 125-41. The project does not create new setback nonconformities.

5. **Engineering and Stormwater Review**

Engineering plans, grading, utility details, and the Stormwater Pollution Prevention Plan (SWPPP) have been submitted and reviewed. The project will disturb approximately 1.15 acres and will not result in a net increase in impervious surface. Existing infiltration basins will continue to provide stormwater treatment.

All engineering, erosion control, and utility improvements are subject to review and approval by the City Engineer and must comply with City standards and MPCA requirements.

Staff Recommendation
Staff recommends approval of the Site Plan for New Look Contracting, Inc., subject to the following conditions:

1. The project shall be constructed in substantial conformance with the approved site plans and elevations.
2. All engineering, utility, grading, and erosion control improvements shall be subject to review and approval by the City Engineer.

3. The applicant shall obtain all required building, fire, and stormwater permits prior to construction.
4. Any future expansion of outdoor storage areas or change in use intensity shall require additional City review.

Financial Impact: NA **Source Fund**: NA

Budgeted? N/A

Supporting Documentation

A. Resolution No. 2026-07 Site Plan - New Look Contracting
B. NEW LOOK UPDATED_10-22-2025
C. NLC - SWPPP 103125
D. NLC- DRAFT Plan Set - 102725

RESOLUTION NO. 2026-07

APPROVING A SITE PLAN FOR ADDITION AT 14550 NORTHDALE BLVD FOR NEW LOOK CONTRACTING

WHEREAS, New Look Contracting, Inc. ("Applicant") have submitted applications to the City of Rogers ("City"), requesting approval of a Site Plan an addition at the property located at 14450 Northdale Blvd (PID 1112023310013). The proposed improvements includes a 13,500 square foot addition to the building existing outbuilding with a 17 ft by 10 ft breezeway; and

WHEREAS, the property is 10.01 acres and zoned Regional Employment Center (RC), located at 14450 Northdale Blvd and legally described in Exhibit A ("Subject Property"); and

WHEREAS, section 125-27 – Site Plan governs the procedures around site plan review processes, and subsection (b) states: "the Planning Commission shall evaluate the effects of the proposed site plans. This review shall be based upon, but not be limited to, compliance with the City's Comprehensive Plan and provisions of this Ordinance"; and

WHEREAS, the Subject Property has a long-established contractor's shop with storage yard use that was lawfully approved under prior Conditional Use Permits issued in 1984 and 1990, as subsequently recognized by the City of Rogers, and such approvals contemplated multiple buildings and future reinvestment subject to site plan review; and

WHEREAS, the proposed development consists of an addition to an existing accessory outbuilding, connected by a breezeway, to be used for enclosed storage purposes only, with no expansion of outdoor storage areas, no increase in employee count, no net increase in impervious surface, and no increase in parking demand as shown in Exhibit B (Site Plan); and

WHEREAS, at their January 5th, 2025 meeting, the Planning Commission reviewed the site plan and finds that the proposed improvements are consistent with: Section 125-41, Section 125-84, Section 125-57 (b), Section 125-83, Section 125-85, and Section 125-86; and

NOW THEREFORE, BE IT RESOLVED, BY THE CITY COUNCIL OF THE CITY OF ROGERS, MINNESOTA, the Site Plan requests from New Look Contracting are hereby approved for the addition and site plan changes to 14450 Northdale Blvd, subject to the following conditions:

1. The project shall be constructed in substantial conformance with the approved site plan, building elevations, and engineering plans as submitted and approved by the City.
2. The Applicant shall obtain all required building, fire, stormwater, and utility permits prior to commencement of construction.
3. All grading, erosion control, utility, and stormwater improvements shall be subject to review and approval by the City Engineer and shall comply with City standards and MPCA requirements.
4. Fire protection features, including fire department connections, hydrant spacing, and access, shall be reviewed and approved by the Fire Department prior to issuance of building permits.

5. No expansion of outdoor storage areas or increase in use intensity shall occur without further City review and approval.
6. Compliance with all applicable City Code provisions, Building Code requirements, and state regulations shall be required at all times.

Moved by Councilmember , seconded by Councilmember

The following voted in favor of said resolution:

The following voted against the same:

The following abstained:

Whereupon said resolution was declared duly passed and adopted, and was signed by the Mayor, and attested by the City Clerk dated this 13th day of January, 2026.

_____
Shannon Klick, Mayor

ATTEST:

_____
Stacie Brown, City Clerk

EXHIBIT A

LEGAL DESCRIPTION

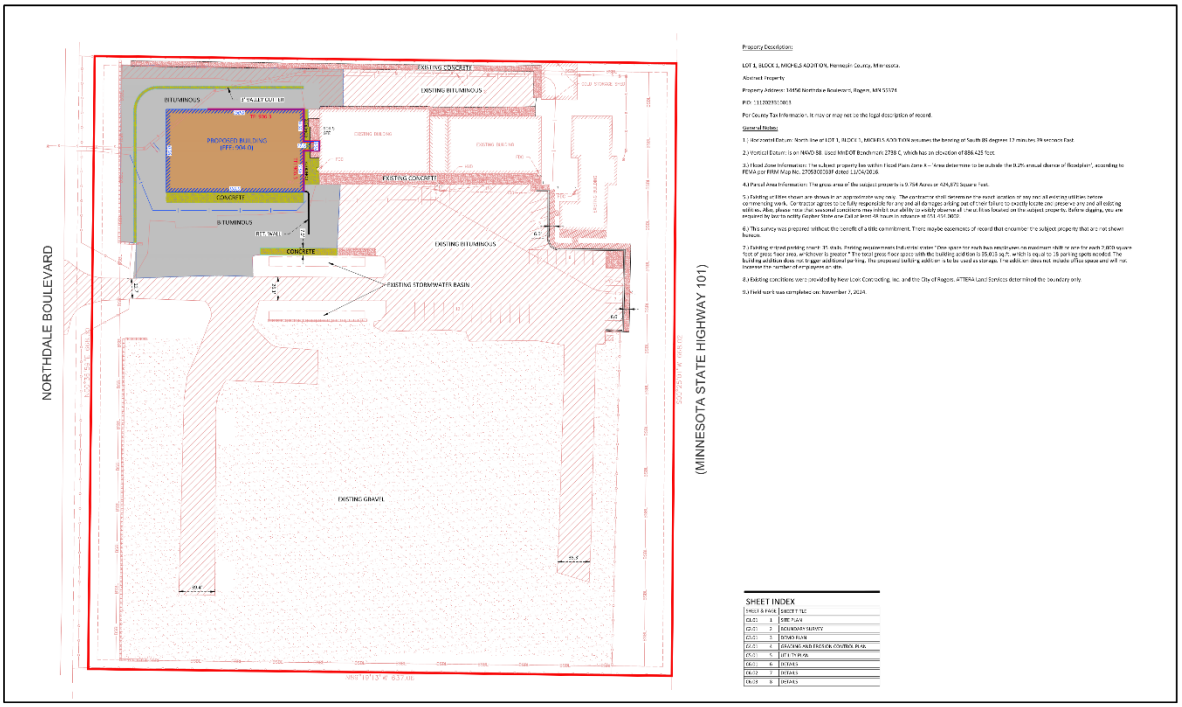
Subject Property

LOT 1, BLOCK 1, MICHELS ADDITION, HENNEPIN COUNTY, MINNESOTA

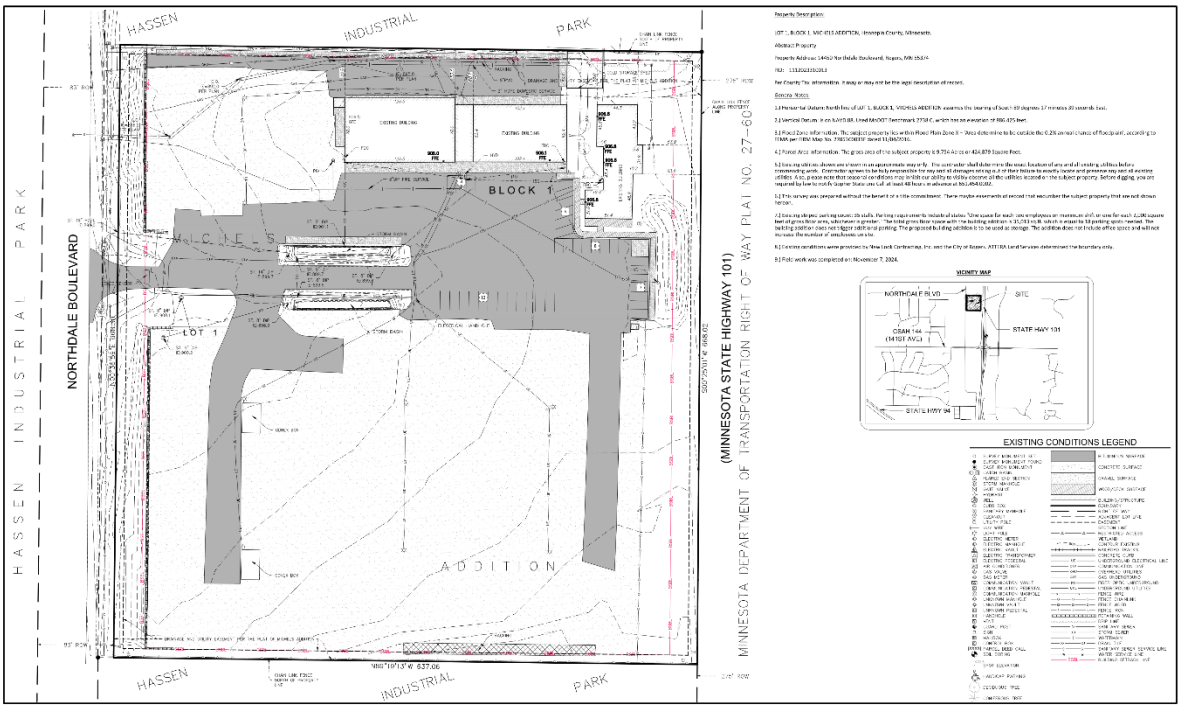
Abstract Property

PID #1112023310013

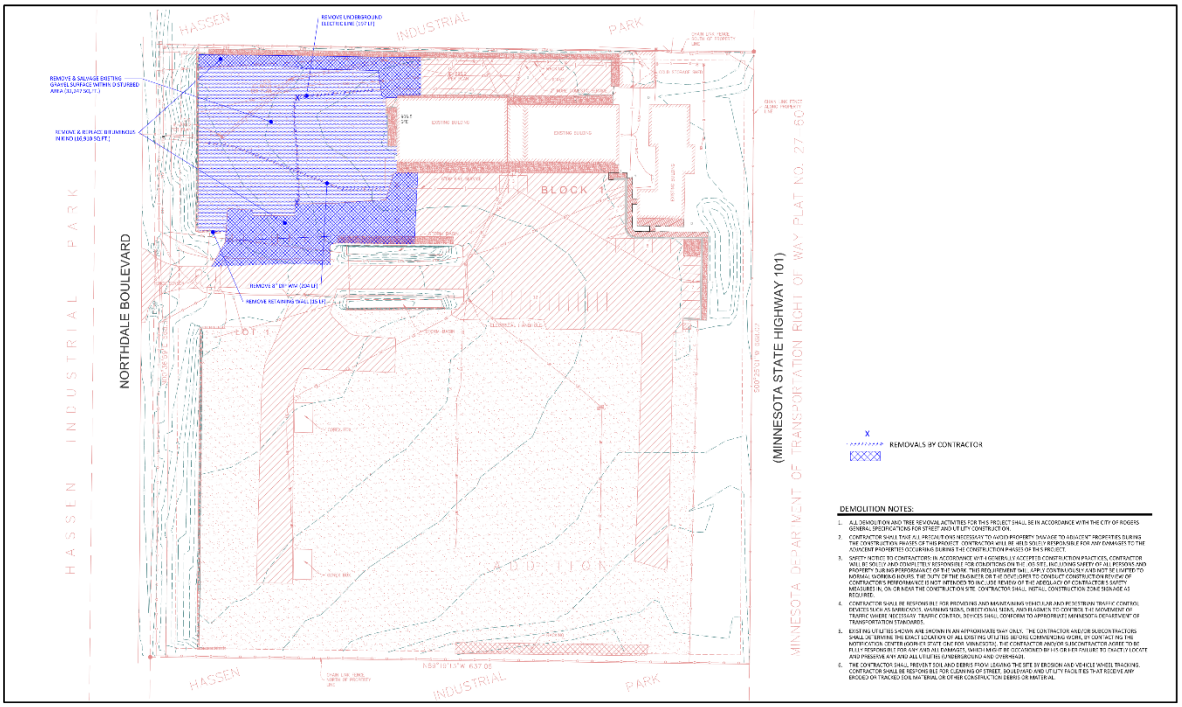
EXHIBIT B
SITE PLAN

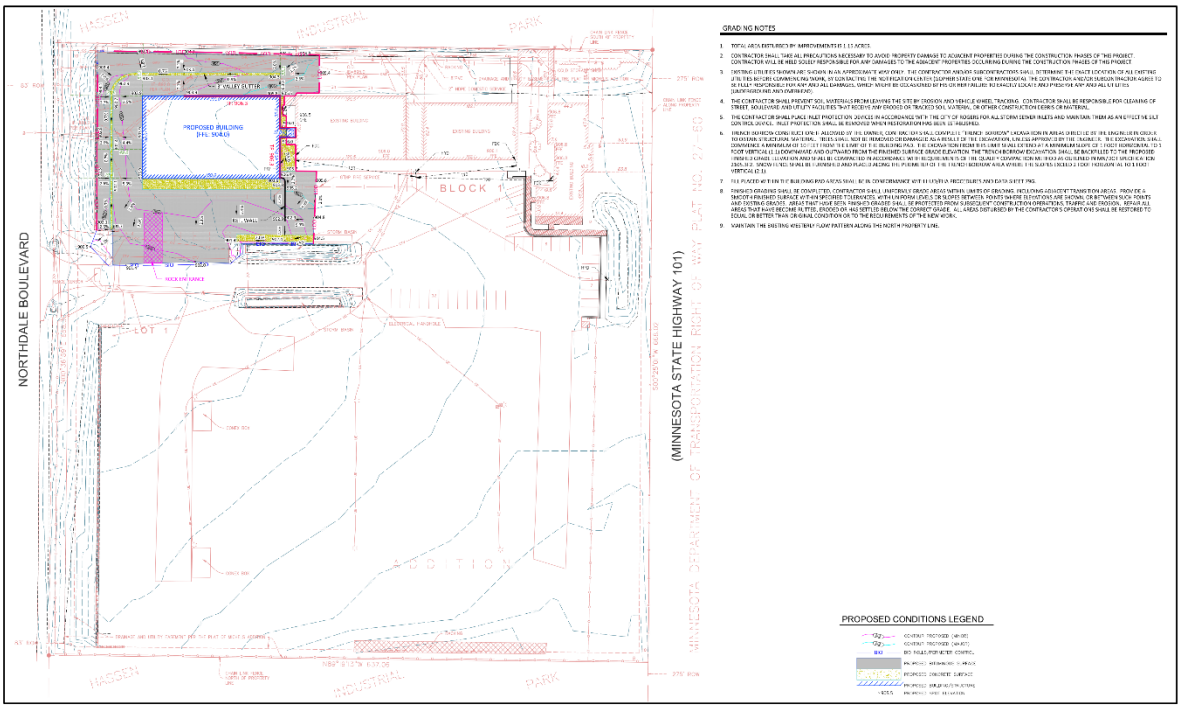


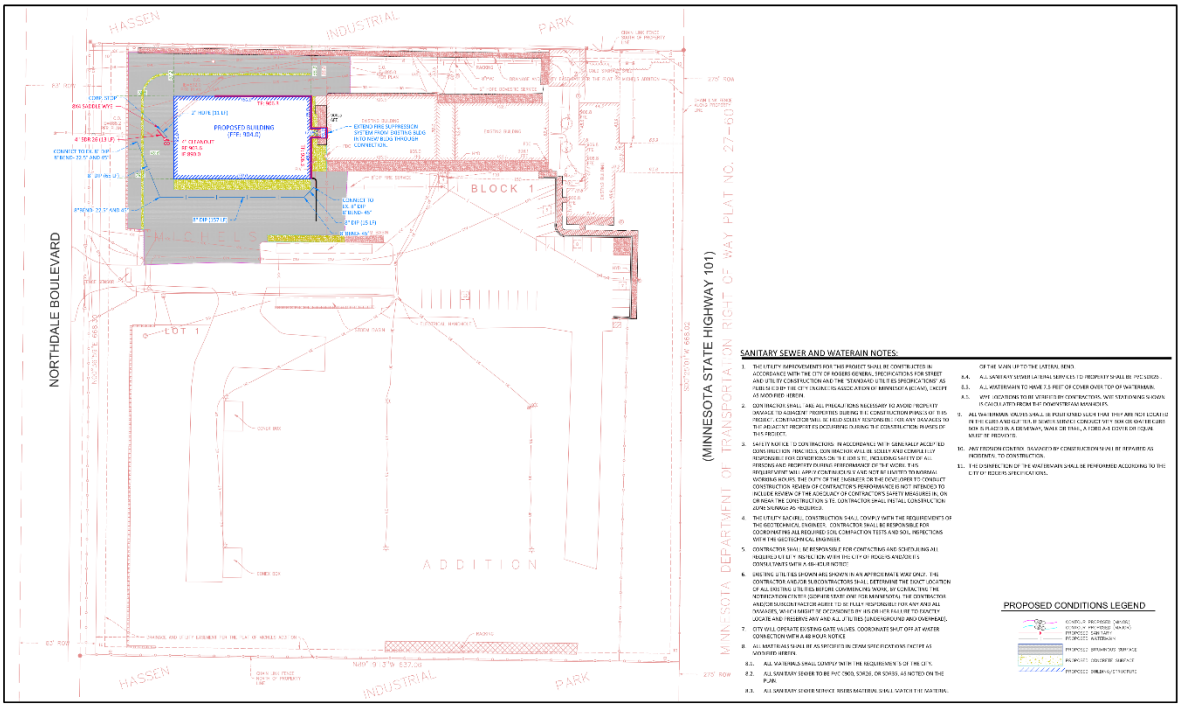
SUBMITTALS & REVISIONS								
Rev.	Date	By	Description					
				ATERRA LAND SERVICES 18219 78th Pl N, Maple Grove MN 55311 763.860.1307 | nate@aterraland.com	PRELIMINARY	NLC - BLDG ADDITION ROGERS, MN NEW LOOK CONTRACTING	SITE PLAN	SHEET C1.01	PAGE # 1	REV.



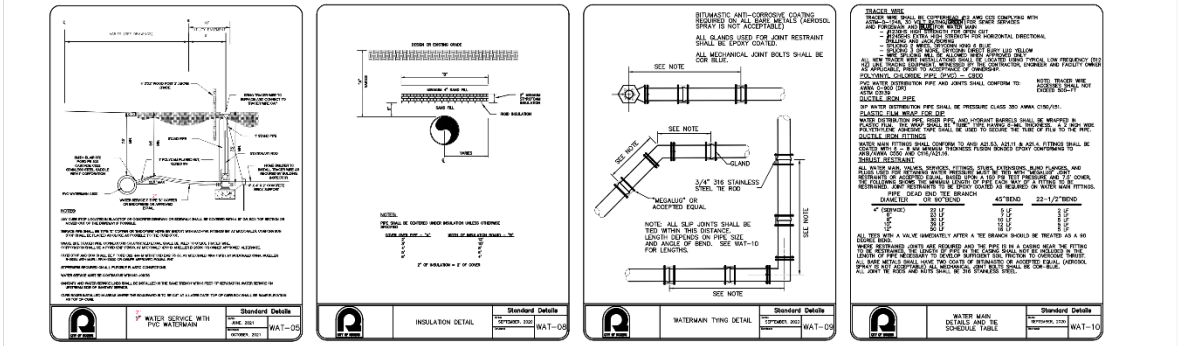
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Rev.	Date	By	Description					
				ATERRA LAND SERVICES 18219 78th Pl N, Maple Grove MN 55311 763.860.1307 | nate@aterraland.com	PRELIMINARY	NLC - BLDG ADDITION ROGERS, MN NEW LOOK CONTRACTING	BOUNDARY SURVEY	SHEET C2.01	PAGE # 2	REV.


HASSEN
INDUSTRIAL
PARK
NORTHDALE BOULEVARD
(MINNESOTA STATE HIGHWAY 101)
MINNESOTA DEPARTMENT OF TRANSPORTATION RIGHT OF WAY PLAT NO. 27 65
BLOCK 1
LOT 1
REMOVE UNDERGROUND ELECTRIC LINE (107 LF)
REMOVE & SALVAGE EXISTING GRAVEL SURFACE WITHIN DISTURBED AREA (30,297 SQ FT.)
REMOVE & SALVAGE BITUMINOUS PATCH (10,918.50 SF)
REMOVE 6" DIP WM (204 LF)
REMOVE RETAINING WALL (35 LF)
REMOVALS BY CONTRACTOR
DEMOLITION NOTES:
1. ALL DEMOLITION AND TREE REMOVAL ACTIVITIES FOR THIS PROJECT SHALL BE IN ACCORDANCE WITH THE CITY OF ROGERS GENERAL SPECIFICATIONS FOR STREET AND UTILITY CONSTRUCTION.
2. CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO AVOID PROPERTY DAMAGE TO ADJACENT PROPERTIES DURING THE CONSTRUCTION PHASES OF THIS PROJECT. CONTRACTOR WILL BE HELD SOLELY RESPONSIBLE FOR ANY DAMAGES TO THE ADJACENT PROPERTIES OCCURRING DURING THE CONSTRUCTION PHASES OF THIS PROJECT.
3. SAFETY NOTICE TO CONTRACTORS: IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, CONTRACTOR WILL BE SOLELY AND EXCLUSIVELY RESPONSIBLE FOR CONDITIONS ON THE JOB SITE, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF THAT WORK. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS. THE DUTY OF THE ENGINEER OR IT'S CONSULTANTS TO CONDUCT CONSTRUCTION REVIEW OF CONTRACTORS PERFORMANCE IS NOT INTENDED TO INCLUDE REVIEW OF THE ADEQUACY OF CONTRACTOR'S SAFETY MEASURES IN, ON OR NEAR THE CONSTRUCTION SITE. CONTRACTOR SHALL INSTALL CONSTRUCTION ZONE SIGNAGE AS REQUIRED.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND MAINTAINING VEHICULAR AND PEDESTRIAN TRAFFIC CONTROL DEVICES SUCH AS BARRICADES, WARNING SIGNS, DIRECTIONAL SIGNS, AND FLAGMEN TO CONTROL THE MOVEMENT OF TRAFFIC WHERE NECESSARY. TRAFFIC CONTROL DEVICES SHALL CONFORM TO APPROPRIATE MINNESOTA DEPARTMENT OF TRANSPORTATION STANDARDS.
5. EXISTING UTILITIES SHOWN ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR AND/OR SUBCONTRACTORS SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, BY CONTACTING THE NOTIFICATION CENTER (GOPHER STATE ONE CALL FOR VERIFICATION). THE CONTRACTOR AND/OR SUBCONTRACTOR AGREE TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES, WHICH MIGHT BE OCCASIONED BY HIS OR HER FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UTILITIES (UNDERGROUND AND OTHERWISE).
6. THE CONTRACTOR SHALL PREVENT SOIL AND DEBRIS FROM LEAVING THE SITE BY EROSION AND VEHICLE WHEEL TRACKING. CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING OF STREET, BOULEVARD AND UTILITY FACILITIES THAT RECEIVE MUD OR TRACKED SOIL MATERIAL OR OTHER CONSTRUCTION DEBRIS OR MATERIAL.
SUBMITTALS & REVISIONS
Rev. Date By Description
ATERRA LAND SERVICES
18219 78th St N, Maple Grove MN 55311
763.360.1107 | kate@aterraland.com
PRELIMINARY
Nathan R. Hermon
License No. 47932
DATE: 11/18/2024
PROJECT #:
DRAWN: NRH
CHECKED: JML
PLAN DATE: 11/15/2024
NLC - BLDG ADDITION
ROGERS, MN
NEW LOOK CONTRACTING
DEMO PLAN
SHEET C3.01
PAGE # 3
REV.

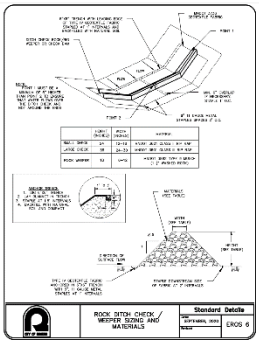

HASSEN
INDUSTRIAL
PARK
NORTHDALE BOULEVARD
(MINNESOTA STATE HIGHWAY 101)
MINNESOTA DEPARTMENT OF TRANSPORTATION RIGHT OF WAY PLAT NO. 27 65
PROPOSED BUILDING (+/- 50,450)
BLOCK 1
LOT 1
ADDITION
GRADING NOTES
1. TOTAL AREA DISTURBED BY IMPROVEMENTS IS 1.15 ACRES.
2. CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO AVOID PROPERTY DAMAGE TO ADJACENT PROPERTIES DURING THE CONSTRUCTION PHASES OF THIS PROJECT. CONTRACTOR WILL BE HELD SOLELY RESPONSIBLE FOR ANY DAMAGES TO THE ADJACENT PROPERTIES OCCURRING DURING THE CONSTRUCTION PHASES OF THIS PROJECT.
3. EXISTING UTILITIES SHOWN ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR AND/OR SUBCONTRACTORS SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, BY CONTACTING THE NOTIFICATION CENTER (GOPHER STATE ONE CALL FOR VERIFICATION). THE CONTRACTOR AND/OR SUBCONTRACTOR AGREE TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES, WHICH MIGHT BE OCCASIONED BY HIS OR HER FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UTILITIES (UNDERGROUND AND OTHERWISE).
4. THE CONTRACTOR SHALL PREVENT SOIL MATERIALS FROM LEAVING THE SITE BY EROSION AND VEHICLE WHEEL TRACKING. CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING OF STREET, BOULEVARD AND UTILITY FACILITIES THAT RECEIVE MUD OR TRACKED SOIL MATERIAL, OR OTHER CONSTRUCTION DEBRIS OR MATERIAL.
5. THE CONTRACTOR SHALL PLACE INLET PROTECTION DEVICES IN ACCORDANCE WITH THE CITY OF ROGERS PLAN AT STORM SEWER INLETS AND MAINTAIN THEM AS AN INLET SHALL BE USE CONTROL DEVICE. INLET PROTECTION SHALL BE REMOVED WHEN RESPONSIBILITY HAS BEEN TRANSFERRED.
6. FRENCH DRAINAGE CONSTRUCTION IS ALLOWED BY THE OWNER'S CONSTRUCTION ENGINEER. CONSTRUCTION SHALL COMPLY WITH ALL STATE AND LOCAL REGULATIONS AND ORDINANCES. TRENCH DRAINAGE CONSTRUCTION SHALL COMPLY WITH ALL STATE AND LOCAL REGULATIONS AND ORDINANCES. TRENCH DRAINAGE CONSTRUCTION SHALL COMPLY WITH ALL STATE AND LOCAL REGULATIONS AND ORDINANCES. TRENCH DRAINAGE CONSTRUCTION SHALL COMPLY WITH ALL STATE AND LOCAL REGULATIONS AND ORDINANCES.
7. FILL PLACED WITHIN THE BUILDING PAD AREAS SHALL BE IN CONFORMANCE WITH THE GEOTECHNICAL REPORT SUBMITTED AND ANY SITE PREPARATION RECOMMENDATIONS CONTAINED THEREIN.
8. FINISHED GRADING SHALL BE CONSISTENT WITH THE GRADES SHOWN ON THE PLANS. CONTRACTOR SHALL UNIFORMLY GRADE AREAS WITHIN LIMITS OF GRADING, INCLUDING ADJACENT TRANSITION AREAS. PROVIDE A SMOOTH FINISHED SURFACE WITHIN SPECIFIED TOLERANCES, WITH UNIFORM LEVELS OR SLOPES BETWEEN POINTS WHERE ELEVATIONS ARE SHOWN, OR BETWEEN SUCH POINTS AND EXISTING GRADES. AREAS THAT HAVE BEEN FINISHED GRADED SHALL BE PROTECTED FROM SUBSEQUENT CONSTRUCTION OPERATIONS, TRAFFIC AND EROSION. REPAIR ALL AREAS THAT HAVE BECOME RUTTED, ERODED OR HAS SETTLED BELOW THE CORRECT GRADE. ALL AREAS DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED TO EQUAL OR BETTER THAN ORIGINAL CONDITION OR TO THE REQUIREMENTS OF THE NEW WORK.
9. MAINTAIN THE EXISTING WESTERLY FLOW PATTERN ALONG THE NORTH PROPERTY LINE.
PROPOSED CONDITIONS LEGEND
SUBMITTALS & REVISIONS
Rev. Date By Description
ATERRA LAND SERVICES
18219 78th St N, Maple Grove MN 55311
763.360.1107 | kate@aterraland.com
PRELIMINARY
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PLAN DATE: 11/15/2024
NLC - BLDG ADDITION
ROGERS, MN
NEW LOOK CONTRACTING
GRADING AND EROSION CONTROL PLAN
SHEET C4.01
PAGE # 4
REV.

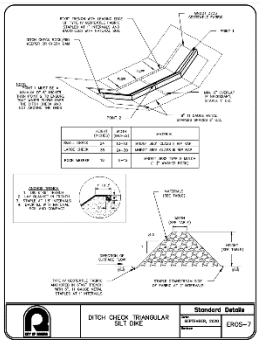


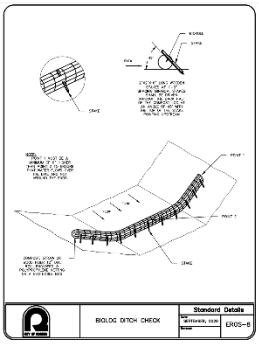
SUBMITTALS & REVISIONS						SHEET	PAGE #	REV.
Rev. Date By Description		ATERRA LAND SERVICES	PRELIMINARY	NLC - BLDG ADDITION	UTILITY PLAN	C5.01	5	
		18219 70th Pl N, Maple Grove MN 55311		ROGERS, MN				
		763.860.1307 | kate@aterraland.com		NEW LOOK CONTRACTING				

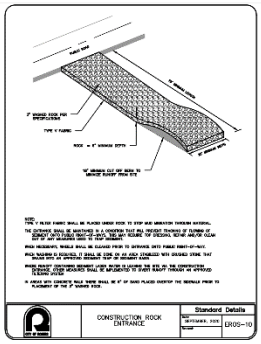


SUBMITTALS & REVISIONS						SHEET	PAGE #	REV.
Rev. Date By Description		ATERRA LAND SERVICES	PRELIMINARY	NLC - BLDG ADDITION	DETAILS	C6.01	6	
		18219 70th Pl N, Maple Grove MN 55311		ROGERS, MN				
		763.860.1307 | kate@aterraland.com		NEW LOOK CONTRACTING				

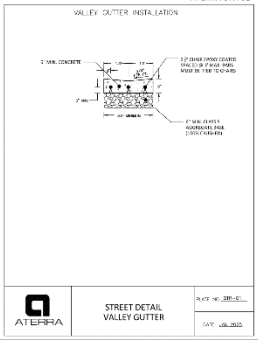




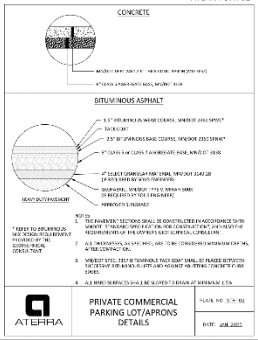




ATERRA-STR-01



ATERRA-STR-02



SUBMITTALS & REVISIONS							
Rev.	Date	By	Description				
1	09/23/25	MRH	REVISED PER PRELIMINARY PLANS FOR CITY COMMENTS				
2	10/22/25	MRH	REVISED PRELIMINARY PLANS FOR CITY COMMENTS				

ATERRA LAND SERVICES
18219 75th Pl N, Maple Grove MN 55311
763.860.1337 | nate@aterraland.com

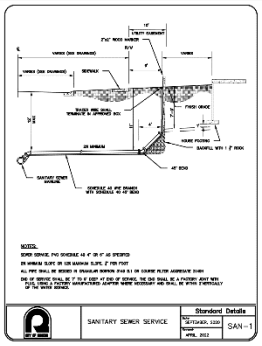
PRELIMINARY
Nathan R Hermes
LICENSE NO. 47932
DATE: 11/13/2024

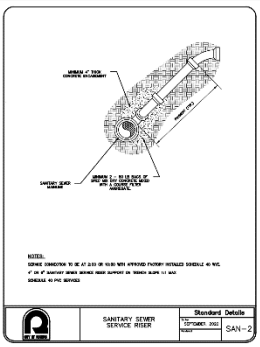
PROJECT #
DRAWN: MRH
CHECKED: JML
PLAN DATE: 11/13/2024

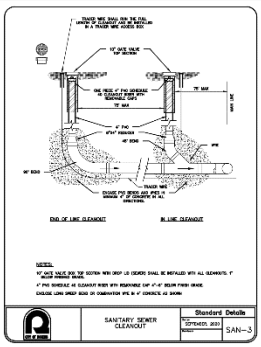
NLC - BLDG ADDITION
ROGERS, MN
NEW LOOK CONTRACTING

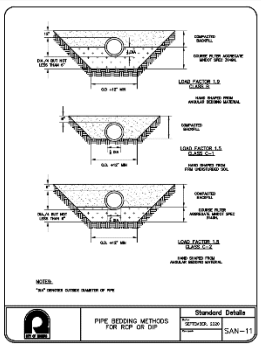
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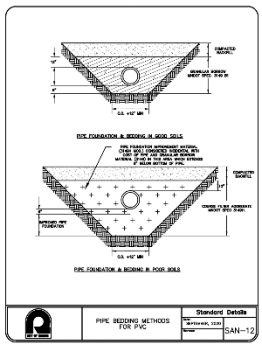
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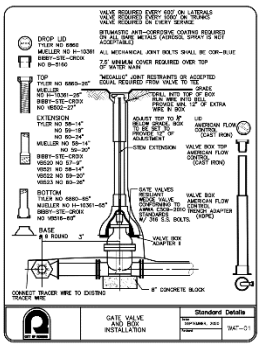


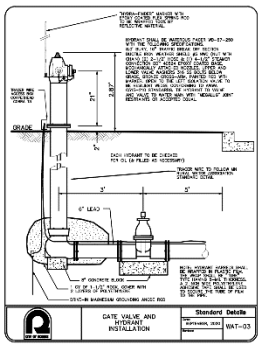


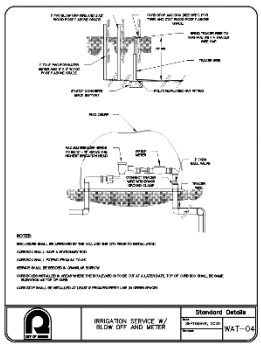












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PRELIMINARY
Nathan R Hermes
LICENSE NO. 47932
DATE: 11/13/2024

PROJECT #
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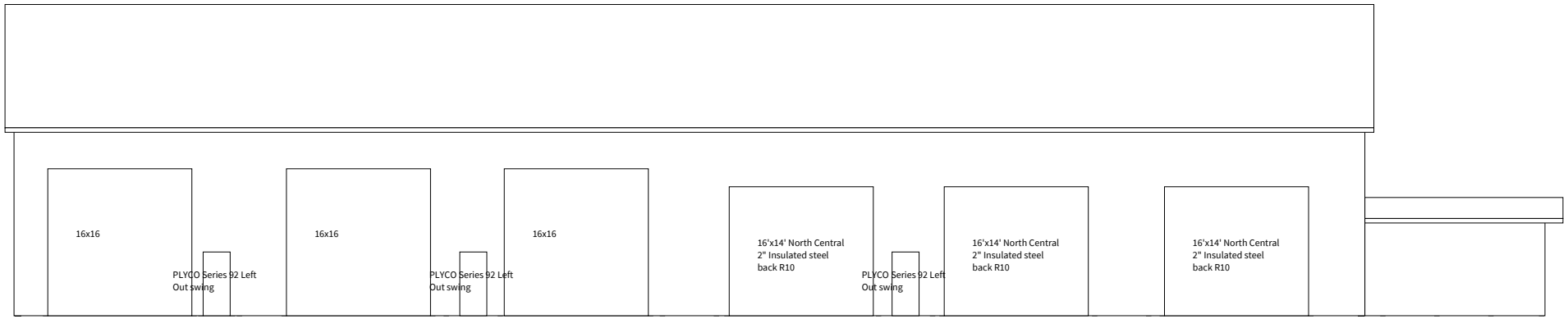
NLC - BLDG ADDITION
ROGERS, MN
NEW LOOK CONTRACTING

DETAILS

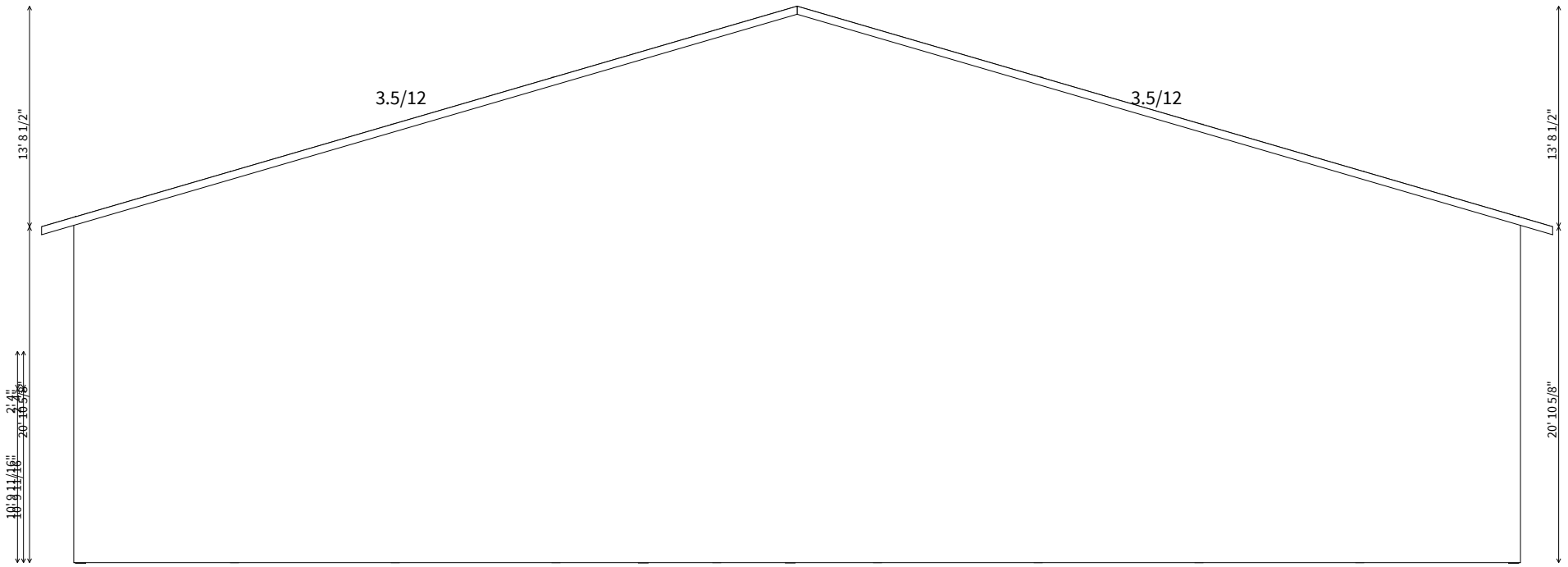
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Left Elevation

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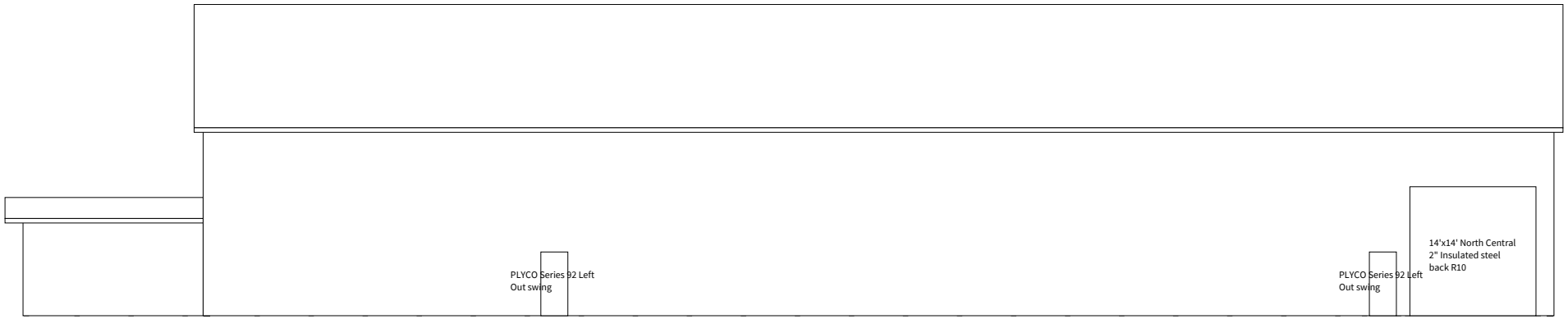


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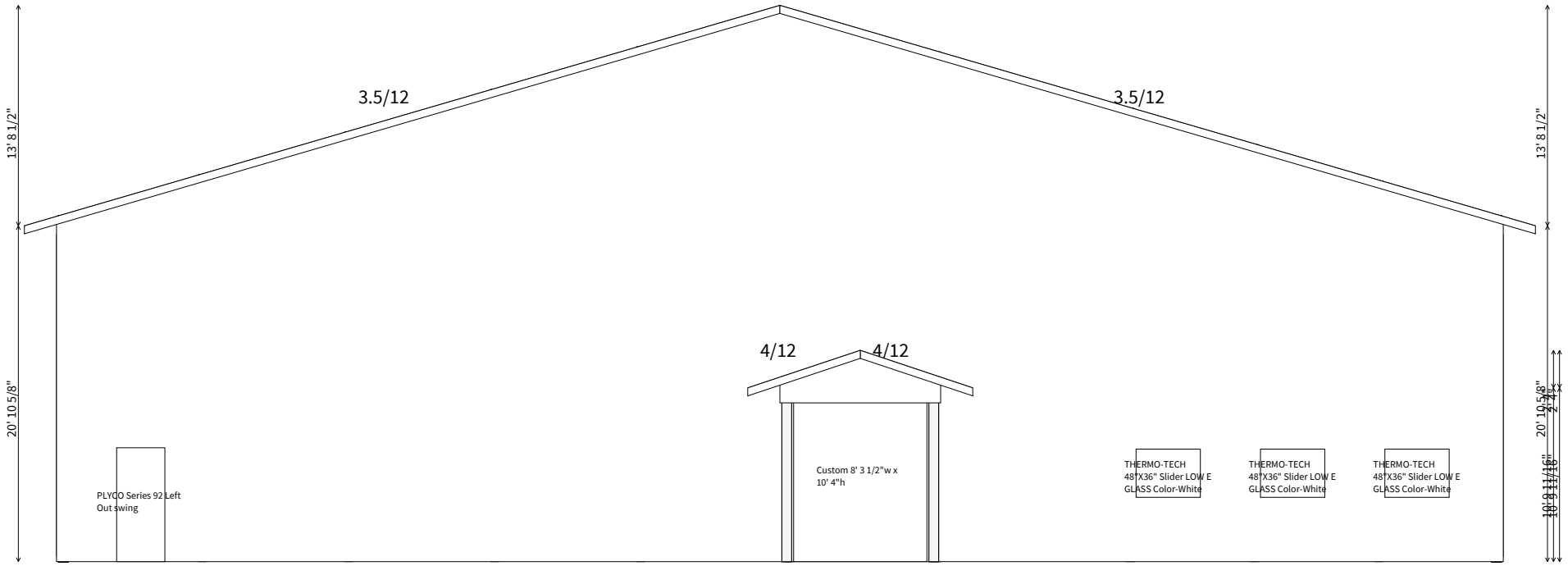
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Back Elevation

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Wall Layout

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Date: 10/22/2025
Time: 9:47 AM



STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

NEW LOOK CONTRACTING NEW BUILDING ADDITION- CITY OF ROGERS - HENNEPIN COUNTY, MINNESOTA

THE WORK DESCRIBED TO IMPLEMENT THE FOLLOWING STORM WATER POLLUTION PREVENTION PLAN (SWPPP) SHALL BE PERFORMED BY THE OPERATOR AS APPOINTED BY THE OWNER. THE WORK TO INSTALL, INSPECT, AND MAINTAIN THE BEST MANAGEMENT PRACTICES (BMPs) FOR EROSION PREVENTION AND SEDIMENT CONTROL SHALL BE IN ACCORDANCE WITH THE MPCA, AND SHALL INCLUDE, BUT IS NOT LIMITED TO, THE REQUIREMENTS CONTAINED WITHIN THIS SWPPP.
THE NPDES PERMIT APPLICATION CAN BE FOUND AT https://www.pca.state.mn.us/sites/default/files/wq-strm2-80a.pdf

1.1 CONSTRUCTION ACTIVTY INFORMATION

PROJECT NAME: NLC BUILDING ADDITION

PROJECT LOCATION/ADDRESS: 14450 Northdale Boulevard
ROGERS, MN 55374

PROJECT TYPE: RESIDENTIAL [COMMERCIAL/INDUSTRIAL] ROAD CONSTRUCTION
RESIDENTIAL & ROAD CONSTRUCTION OTHER:_____

PROJECT AREAS:

TOTAL AREA DISTURBED:	1.15 ACRES
PRE-DEVELOPMENT IMPERVIOUS SURFACE:	7.73 ACRES
POST-DEVELOPMENT IMPERVIOUS SURFACE:	7.73 ACRES
TOTAL NEW IMPERVIOUS SURFACE:	0.00 ACRES

PLANNED CONSTRUCTION START DATE: 10/31/2025

ESTIMATED COMPLETION DATE: 12/31/2026

1.2 RESPONSIBLE PARTIES

THE OWNER, OPERATOR, OR CONSULTANT MUST APPLY FOR COVERAGE UNDER THE MPCA'S GENERAL STORMWATER PERMIT FOR CONSTRUCTION ACTIVITY AS REQUIRED BY THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PHASE II PROGRAM. COVERAGE UNDER THE PERMIT WILL BEGINAUTOMATICALLY 1 WORKING CALENDAR DAY AFTER THE ELECTRONIC SUBMITTAL DATE.

THIS SWPPP AND PLANS MUST BE SUBMITTED TO THE MPCA FOR REVIEW AT LEAST 30 DAYS PRIOR TO CONSTRCTION ACTIVITY FOR PROJECTS THAT DISTURB MORE THAN 50 ACRES AND DRAIN TO AN IMPAIRED/SPECIAL WATER WITH A 1-MILE RADIUS.

THE OPERATOR SHALL PROVIDE ONE OR MORE TRAINED CONSTRUCTION SWPPP MANAGER(S) KNOWLEDGEABLE AND EXPERIENCED IN THE APPLICATION OF EROSION PREVENTION AND SEDIMENT CONTROL BMPS THAT WILL OVERSEE THE IMPLEMENTATION OF THE SWPPP, AND THE INSTALLATION, INSPECTION AND MAINTENANCE OF THE EROSION PREVENTION AND SEDIMENT CONTROL BMPS. A CONSTRUCTION SWPPP MANAGER MUST BE AVAILABLE FOR AN ON-SITE INSPECTION WITHIN 72 HOURS UPON REQUEST BY THE MPCA.

OWNER: NEW LOOK CONTRACTING
CONTACT: JESSE BOWEN
PHONE: 612.368.9664
EMAIL: JBOWEN@SUMMITBUSINESSGROUP.NET

OPERATOR: NEW LOOK CONTRACTING
CONTACT: JESSE BOWEN
PHONE: 612.368.9664
EMAIL: JBOWEN@SUMMITBUSINESSGROUP.NET

DESIGNER: ATERRA LAND SERVICES
CONTACT: JASON LEMPOLA
PHONE: 612.990.0976
EMAIL: JASON@ATERRALAND.COM

OPERATOR IS RESPONSIBLE FOR SWPPP IMPLEMENTATION, INSPECTIONS, AND BMP INSTALLATION & MAINTENANCE.

THE SWPPP DESIGNER AND CONSTRUCTION SWPPP MANAGER/INSPECTOR MUST HAVE APPROPRIATE TRAINING. TRAINING DOCUMENTATION IS REQUIRED TO BE INCLUDED IN THE SWPPP PRIOR TO ANY WORK BEGINNING ON THE SITE.

TRAINING DOCUMENTATION FOR THE SWPPP DESIGNER IS INCLUDED WITH THIS SWPPP. THE OPERATOR SHALL ATTACH TRAINING DOCUMENTATION TO THIS SWPPP FOR THE CONSTRUCTION SWPPP MANAGER PRIOR TO THE START OF CONSTRUCTION. THIS INFORMATION SHALL BE KEPT UP TO DATE UNTIL THE *NOTICE OF TERMINATION (NOT)* HAS BEEN FILED.



1.3 DESCRIPTION OF CONSTRUCTION ACTIVITIES

THIS PROJECT INCLUDES DEVELOPMENT OF AN EXISTING COMMERCIAL SITE DOING A BUILDING ADDITION, INCLUDING PRIVATE IMPROVEMENTS OF GRADING, UTILITIES AND PARKING LOT.

BUILDING ADDITION CONSTRUCTION ACTIVITIES INCLUDE: INSTALLATION OF SEDIMENT CONTROL BMPS, EXCAVATION & BACKFILL FOR FOUNDATIONS, EQUIPMENT NEEDED TO CONSTRUCT ADDITION, PARKING LOT CONSTRUCTION, AND FINAL SITE STABILIZATION.

2.1 SWPPP AMENDMENTS

SWPPP MUST BE AMENDED AS NECESSARY TO INCLUDE ADDITIONAL REQUIREMENTS TO CORRECT PROBLEMS IDENTIFIED OR ADDRESS THE FOLLOWING SITUATIONS.

1. THERE IS A CHANGE IN DESIGN, CONSTRUCTION, OPERATION, MAINTENANCE, WEATHER OR SEASONAL CONDITIONS THAT HAS SIGNIFICANT EFFECT ON THE POLLUTANT DISCHARGE TO SURFACE OR GROUND WATERS.
2. INSPECTIONS OR INVESTIGATIONS BY SITE OWNER OR OPERATORS, USEPA OR MPCA OFFICIALS DETERMINE THE SWPPP IS NOT MINIMIZING DISCHARGE OF POLLUTANTS TO SURFACE WATERS OR UNDERGROUND WATERS OR DISCHARGES ARE CAUSING WATER QUALITY STANDARD EXCEEDANCES.
3. THE SWPPP IS NOT ACHIEVING THE OBJECTIVES OF MINIMIZING POLLUTANTS IN STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY, OR THE SWPPP IS NOT CONSISTENT WITH THE TERMS AND CONDITIONS OF THE PERMIT.
4. THE MPCA DETERMINES THAT THE PROJECT'S STORMWATER DISCHARGES MAY CAUSE, HAVE REASONABLE POTENTIAL TO CAUSE, OR CONTRIBUTE TO NON-ATTAINMENT OF ANY APPLICABLE WATER QUALITY STANDARD, OR THE SWPPP DOES NOT INCORPORATE THE APPLICABLE REQUIREMENTS OF THE PERMIT.

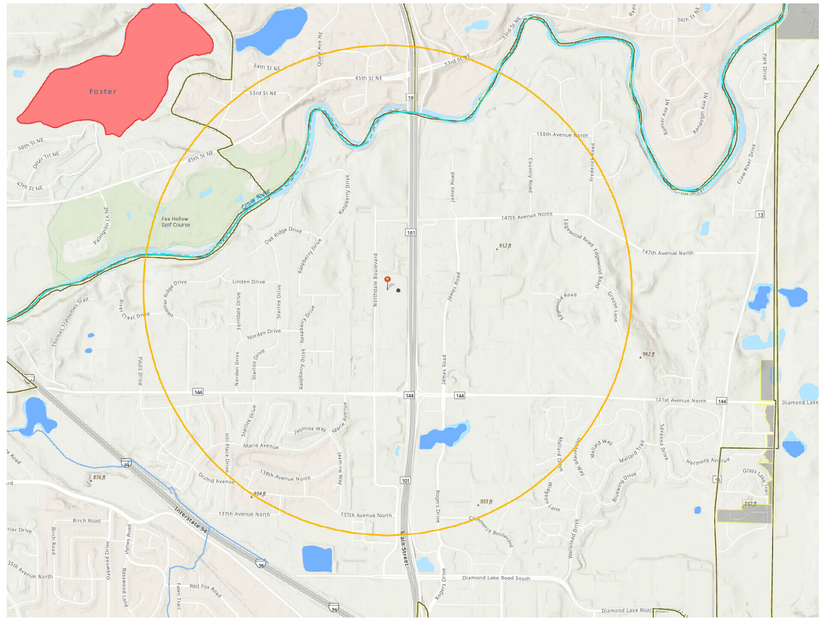
3.1 RECEIVING WATERS

RECEIVING WATERS, INCLUDING SURFACE WATER, WETLANDS, PUBLIC WATERS, AND STORMWATER PONDS, ARE IDENTIFIED ON THE USGS 7.5 MIN QUAD MAP WITHIN ONE MILE OF THE PROJECT BOUNDARY. RECEIVING WATERS THAT ARE IMPAIRED, THE IMPAIRMENT, AND WLA ARE LISTED AS FOLLOWS. ALL SPECIFIC BMPS RELATIVE TO CONSTRUCTION ACTIVITIES LISTED IN THIS PERMIT FOR SPECIAL AND IMPAIRED WATERS HAVE BEEN INCORPORATED INTO THIS PLAN.

NAME OF WATER BODY	TYPE (DITCH, POND, WETLAND, LAKE, ETC.)	APPENDIX A SPECIAL WATER?	FLOWS TO IMPAIRED WATER WITHIN 1-MILE?	USPEA APPROVED TMDL
CROW RIVER	RIVER	NO	NO	NO

IMPAIRMENTS BY: NO IMPAIRMENTS WITH 1-MILE OF THIS SITE

THE MPCA "SPECIAL AND IMPAIRED WATER SEARCH TOOL" WAS USED TO LOCATION RECEIVING WATERS. THIS TOOL CAN BE FOUND AT...
https://mpca.maps.arcgis.com/apps/webappviewer/index.html?id=e03ef170fa3e41f6be92f9fafec100cc



3.2 SPECIAL ENVIRONMENTAL CONSIDERATIONS

DOES THIS PROJECT DISCHARGE TO A "SPECIAL" WATER WITH A ONE-MILE RADIUS?	NO	**DOES NOT** DISCHARE TO A "SPECIAL" OR "IMPAIRED" WATER STABILIZATION WITHIN **14** DAYS OF INACTIVITY OR GRADING COMPLETION. TEMP SEDIMENT BASIN REQUIRED FOR LOCATIONS THAT SERVE AN AREA WITH **10** OR MORE ACRES DISTURBED AT ONE TIME.
DOES THIS PROJECT DISCHARGE TO A "IMPAIRED" WATER WITH A ONE-MILE RADIUS?	NO	**DOES** DISHCHARGE TO A "SPECIAL" OR "IMPAIRED" WATER STABILIZATION WITHIN **7** DAYS OF INACTIVITY OR GRADING COMPLETION. TEMP SEDIMENT BASIN REQUIRED FOR LOCATIONS THAT SERVE AN AREA WITH **5** OR MORE ACRES DISTURBED AT ONE TIME.
WAS AN ENVIRONMENTAL REVIEW REQUIRED FOR THIS PROJECT OR ANY PART OF A COMMON PLAN OF DEVELOPMENT OR SALE THAT INCLUDES ALL OR ANY PORTION OF THIS PROJECT?	NO	THIS PERMIT DOES NOT REPLACE OR SATISFY ANY ENVIRONMENTAL REVIEW REQUIREMENTS INCLUDING THOSE UNDER THE MINNESOTA ENVIRONMENTAL POLICY ACT OR THE NATIONAL ENVIRONMENTAL POLICY ACT. THE OWNER MUST VERIFY COMPLETION OF ANY ENVIRONMENTAL REVIEW REQUIRED BY LAW, INCLUDING ANY REQUIRED ENVIRONMENTAL ASSESSMENT WORK SHEETS OR ENVIRONMENTAL IMPACT STATEMENTS, FEDERAL ENVIRONMENTAL REVIEW, OR OTHER REQUIRED REVIEW PRIOR TO APPLYING FOR COVERAGE UNDER THIS PERMIT.
DO ANY PORTION OF THE SITE HAVE ANY POTENTIAL TO AFFECT THREATENED OR ENDANGERED SPECIES OR THEIR CRITICAL HABITAT?	NO	THIS PERMIT DOES NOT REPLACE OR SATISFY ANY REVIEW REQUIREMENTS FOR DISCHARGES ADVERSELY IMPACTING STATE OR FEDERALLY DESIGNATED ENDANGERED OR THREATENED SPECIES OR A DESIGNATED CRITICAL HABITAT. THE OWNER MUST COMPLY WITH THE NATIONAL HISTORIC PRESERVATION ACT AND CONDUCT ALL REQUIRED REVIEW AND COORDINATION RELATED TO HISTORIC PRESERVATION, INCLUDING SIGNIFICANT ANTHROPOLOGICAL SITES AND ANY BURIAL SITES, WITH THE MINNESOTA HISTORIC PRESERVATION OFFICER.
DOES ANY PORTION OF THIS SITE DISCHARGE TO A CALCAREOUS FEN?	NO	CALCAREOUS FENS ARE CLASSIFIED AS A SPECIAL WATER. DISCHARGES TO FENS MUST BE STABILIZED WITHIN 7 DAYS OF INACTIVITY & PROVIDE A TEMPORARY SEDIMENT BASIN FOR LOCATIONS WITH A DRAINAGE AREA WITH 5 OR MORE ACRES DISTURBED AT ONE TIME.
WILL ANY PORTION OF THE SITE POTENTIALLY AFFECT PROPERTIES LISTED ON THE NATIONAL REGISTER OF HISTORIC PLACES OR A KNOWN OR DISCOVERED ARCHEOLOGICAL SITE?	NO	IF YES, TAKE ACTIONS NECESSARY TO AVOID, MINIMIZE, OR MITIGATE FOR IMPACTS RELATED TO EROSION PREVENTION, SEDIMENT CONTROL, THE PERMANENT STORMWATER TREATMENT SYSTEM, POLLUTION PREVENTION MANAGEMENT MEASURES AND DISCHARGES ASSOCIATED WITH THE PROJECT'S CONSTRUCTION ACTIVITY.
HAVE KARST FEATURES BEEN IDENTIFIED IN THE PROJECT VICINITY?	NO	NO INFILTRATION SYSTEMS WITHIN 1,000 FT UP GRADIENT OR 100 FEET DOWN GRADIENT OF ACTIVE KARST FEATURES
IS COMPLIANCE WITH TEMPORARY OR PERMANENT STORMWATER MANAGEMENT DESIGN REQUIREMENTS INFEASIBLE FOR THIS PROJECT?	NO	IF YES, DEFINE REASONS FOR INFEASIBILITY.
HAS THE MN DNR PROMULGATED "WORK IN WATER RESTRICTIONS" FOR ANY PUBLIC WATER THIS SITE DISCHARGES TO DURING FISH SPAWNING?	NO	COMPLETE STABILIZATION OF ALL EXPOSED SOIL AREAS WITHIN 200 FEET OF THE WATER'S EDGE, AND THAT DRAIN TO THESE WATERS, WITHIN 24 HOURS DURING THE RESTRICTION PERIOD.

4.1 PERMANENT STORMWATER TREATMENT SYSTEM

PERMITTEES MUST DESIGN AND CONSTRUCT A PERMANENT STORMWATER TREATMENT SYSTEM TO TREAT THE WATER QUALITY VOLUME IF THE PROJECT'S ULTIMATE DEVELOPMENT REPLACES VEGETATION AND/OR OTHER PERVIOUS SURFACES CREATING A NET INCREASE OF ONE (1) OR MORE ACRES OF CUMULATIVE IMPERVIOUS SURFACE. [MINN. R. 7090]
NO NEW IMPERVIOUS IS BEING ADDED TO THIS SITE. STORMWATER TREATMENT IS BEING PROVIDED IN THE TWO EXISTING INFILTRATION BASINS.

WET SEDIMENTATION BASIN	NO
INFILTRATION SYSTEM - (UTILTIZE EXISTING INFILTRATION BASINS)	YES
FILTRATION SYSTEM	NO
REGIONAL WET SEDIMENTATION BASIN	NO

5.1 TEMPORARY BMP SELECTION AND INSTALLATION

THE FOLLOWING TABLE SUMMARIZES THE BMPS AND ESTIMATED QUANTITIES ON THIS PROJECT.

SILT FENCE - (BEFORE GRADING)	0	LF
BIO ROLLS	330	LF
SILT FENCE - MACHINE SLICED (AFTER GRADING)	0	LF
SLASHED MULCH	0	CY
ROCK ENTRANCE BERM (INSTALL & MAINTAIN)	1	EA
ENERGY DISSIPATION BMP	0	EA
INLET PROTECTION (YARD)	0	EA
SEED & MULCH (PERMANENT MIX WET DITCH)(33-261)	0	AC
SEED & MULCH (PERMANENT MIX SOUTHERN TALLGRASS ROADSIDE)(35-241)	0	AC
SEED MIX SOUTHERN TALLGRASS ROADSIDE (33-262)	0	AC
SEED MIX RESIDENTIAL TURFGRASS (RT)	0	AC
SEED & BLANKET (CAT.20 W/ MIX HIGH-TRAFFIC INSLOPE SITE STABILIZATION)	0	SY

5.2 EROSION PREVENTION PRACTICES

DISTURBED AREAS
NON DISTURBED AREAS MUST BE DELINEATED ON SITE BEFORE SITE WORK BEGINS.

SEE GRADING PLAN AND EROSION CONTROL PLAN FOR DESIGNED DISTURBED AREAS. THE LOCATION OF AREAS NOT TO BE DISTURBED IS OUTSIDE THE "BIO" (BIO ROLLS) AND "LOD" (LIMITS OF DISTURBANCE).

STEEP SLOPES
ALL SLOPES GREATER THAN 3:1 (>33.3%) SHALL BE STABILIZED WITH SEED AND EROSION BLANKET AS DEFINED IN THE FINAL EROSION CONTROL PLAN.

SEE EROSION CONTROL AND SEDIMENT CONTROL PLAN FOR BLANKETED SLOPES.

STABILIZATION REQUIREMENTS
SEE SECTION 3.2 OF THIS SWPPP FOR SPECIAL ENVIRONMENTAL CONSIDERATIONS. EXTRA REQUIREMENTS FOR THESE AREAS ARE REQUIRED AND MUST BE MET.

THIS PROJECT DOES NOT DISCHARGE WITHIN ONE MILE TO A "SPECIAL" OR "IMPAIRED" WATER BODY, ALL EXPOSED SOILS MUST BE STABILIZED AS SOON AS POSSIBLE BUT IN NO CASE LATER THAN 14 DAYS AFTER THE CONSTRUCTION ACTIVITY HAS TEMPORARILY OR PERMANENTLY CEASED.

SEE EROSION CONTROL AND SEEDING PLAN FOR SPECIFICS ON STABILIZATION METHODS AND SEED CHOICES.

WORK IN WATER RESTRICTIONS
FOR PUBLIC WATERS THAT HAVE BEEN PROMULGATED "WORK IN WATER RESTRICTIONS" DURING 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 STABILIZATION WITHIN 24-HOURS DURING THE TIME PERIOD.

THIS PROJECT DOES NOT QUALIFY FOR WORK IN WATER CONDITIONS.

DITCH/SWALE STABILIZATION
THE NORMAL WETTED PERIMETER OF ALL DITCHES OR SWALES, INCLUDING STORM WATER MANAGEMENT POND SLOPES, THAT DRAIN WATERS FROM THE SITE MUST BE STABILIZED WITHIN 200' OF ANY PROPERTY EDGE OR DISCHARGE POINT, INCLUDING STORM SEWER INLETS, WITHIN 24 HOURS OF CONNECTION.

TEMPORARY OR PERMANENT DITCHES OR SWALES USED AS SEDIMENT CONTAINMENT DURING CONSTRUCTION DO NOT NEED TO BE STABILIZED DURING TEMPORARY PERIOD OF USE AND SHALL BE STABILIZED WITHIN 24 HOURS AFTER NO LONGER USED AS SEDIMENT CONTAINMENT.

MULCH, HYDROMULCH, TACKIFIER, OR SIMILAR PRACTICE SHALL NOT BE USED IN ANY PORTION OF A TEMPORARY OR PERMANENT DRAINAGE DITCH.

SEE GRADING PLAN, AND EROSION CONTROL AND SEDIMENT CONTROL PLAN FOR TEMPORARY AND PERMANENT STABILIZATION MEASURES FOR DITCHES AND SWALES.

POINT DISCHARGE
STORMWATER DISCHARGES SHALL BE DIRECTED TO VEGETATED AREAS WHERE FEASIBLE. VELOCITY DISSIPATION DEVICES SHALL BE USED AT DISCHARGE POINT.

TEMPORARY OR PERMANENT ENERGY DISSIPATION IS REQUIRED AT ALL PIPE OUTLETS WITHIN 24 HOURS AFTER CONSTRUCTION TO A SURFACE WATER OR PERMANENT STORMWATER TREATMENT SYSTEM.

MINIMIZE DISTURBED AREA
GRADING CONTRACTOR SHALL NOT DISTURB MORE LAND THAN CAN BE EFFECTIVELY INSPECTED AND MAINTAIN TO MEET STABILIZATION REQUIREMENTS.

ATERRA LAND SERVICES
18219 70th Pl N, Maple Grove MN 55311
763.360.1307 | nate@aterraland.com

PROJECT #: 25018
DESIGNER: JML

NEW LOOK CONTRACTING
ROGERS, MN

SWPPP DATE & AMENDMENTS

Date	By	Description
10/30/25	JML	PREPARE SWPPP

SWPPP 1 OF 2

5.3 SEDIMENT CONTROL PRACTICES

PERIMETER CONTROL
PERIMETER CONTROL MUST BE ESTABLISHED PRIOR TO ANY EARTH DISTURBING ACTIVITIES PLACED ON ALL DOWN GRADIENT PERIMETERS OF THE SITE AND UPGRADIENT OF ANY BUFFER ZONE. PERIMETER CONTROL SHALL BE MAINTAINED AND STAY IN PLACE UNTIL PERMANENT STABILZATION IS ESTABLISHED.

SEE GRADING PLAN, AND EROSION CONTROL AND SEDIMENT CONTROL PLAN FOR DESIGNED PERIMETER CONTROL LOCATIONS. THIS SITE PROPOSES TO BIO-ROLLS/CURB LOGS FOR PERIMETER CONTROL.

NATURAL BUFFER
A 50 FOOT UNDISTURBED NATURAL BUFFER IS DESIRED FOR EARTH DISTURBING ACTIVITIES WHEN STORMWATER FLOWS TO A SURFACE WATER. WHEN A 50 FOOT NATURAL BUFFER IS INFEASIBLE, REDUNANT BMPs CAN BE USED AND MUST BE MAINTAINED WHEN A SURFACE WATER IS WITHIN 50 FEET OF EARTH DISTURBING ACTIVITIES. REDUNDANT BMPs SHALL BE 5 FEET APART.

NO WETLAND SURFACE WATERS ARE PRESENT ON THIS SITE.

DRAINAGE DITCHES
TEMPORARY OR PERMANENT DRAINAGE DITCHES OR BASINS MAY BE DESIGNED AS PART OF THE SEDIMENT CONTAINMENT SYSTEM. PROPER SEDIMENT CONTROL BMPs SHALL BE USED AS NECESSARY FOR SITE CONDITIONS.

THE EXPECTED DURATION FOR GRADING THIS SITE IS LESS THAN 4 WEEKS. THIS SITE DOES NOT PROPOSE ANY TEMPORARY DRAINAGE DITCHES.

SHORT TERM SEDIMENT CONTROL REMOVAL
ANY SEDIMENT CONTROL BMP REQUIRED TO BE REMOVED FOR CONSTRUCTION ACTIVITIES MUST BE SHORT TERM. THE BMP MUST BE RE-INSTALLED BEFORE THE NEXT RAIN EVENT, EVEN IF THE CONSTRUCTION ACTIVITY IS NOT COMPLETE.

INLET PROTECTION
ALL STORM DRAIN INLETS MUST BE PROTECTED USING APPROPRIATE BMPs DURING CONSTRUCTION UNTIL PERMANENT VEGETATION IS ESTABLISHED FOR THE CONTRIBUTING DRAINAGE AREA.

SITE DOES NOT HAVE ANY STORM INLETS THAT WILL RECEIVE RUNOFF FROM THE PROPOSED IMPROVEMENTS.

INLET PROTECTION SHALL REMAIN IN-PLACE THROUGH THE WINTER MONTHS. INLET PROTECTION FOR SPECIFIC INLETS MAY BE ALLOWED TO BE REMOVED TO PREVENT A SAFETY CONCERN (IE. FLOODING OR FREEZING). THIS SWPPP SHALL DOCUMENT THE NEED FOR REMOVAL.

STOCKPILES
EFFECTIVE SEDIMENT CONTROL SHALL BE PLACED AT THE BASE OF STOCKPILES ALONG THE DOWN GRADIENT PERIMETER.

STOCKPILES MUST BE LOCATED OUTSIDE NATURAL BUFFER ZONES AND SURFACE WATERS INCLUDING CURB AND GUTTER UNLESS THERE IS A BYPASS IN PLACE FOR STORMWATER.

VEHICLE TRACKING
A VEHICLE TRACKING BMP MUST BE INSTALLED TO MINIMIZE THE TRACK OUT OF SEDIMENT FROM THE CONSTRUCTION SITE.

THIS PROJECT CALLS FOR A ROCK ENTRANCE BERM TO BE INSTALLED AND MAINTAINED TO REMAIN A FUNCTIONING BMP. IF TRACKING OCCURS ONTO PAVED STREETS, STREET SWEEPING SHALL OCCUR BY THE END OF THE DAY TO PROPERLY CLEAN THE STREETS FROM SEDIMENT.

FINAL GRADING & TOPSOIL
TOPSOIL SHALL BE PRESERVED ON SITE AND INITIALLY STOCKPILED DURING GRADING OPERATIONS. GRADING WILL BE HELD DOWN 0.5' TO ALLOW FOR TOPSOIL RE-SPREAD.

THE CONTRACTOR SHALL RESTRICT VEHICLE USE ONCE FINAL GRADE AND TOPSOIL RE-SPREAD HAS OCCURRED TO PREVENT TOPSOIL COMPACTION.

COAGULANTS
IF CONVENTIONAL EROSION AND SEDIMENT CONTROLS ARE NOT ADEQUATE, POLYMERS, FLOCCULANTS, OR OTHER CHEMICAL TREATMENTS MAY BE USED AS LONG AS THEY ARE USED IN ACCORDANCE WITH ACCEPTED ENGINEERING PRACTICES, AND DOSING SPECIFICATIONS PROVIDED BY THE MANUFACTURER.
CHEMICALS SHALL BE CHOSEN BASED ON SOIL TYPES AND EXPECTED TURBIDITY, pH, AND FLOW RATE OF THE INCOMING STORMWATER FLOWS.
ANY CHEMICALLY TREATED WATER MUST BE DIRECTED TO A SEDIMENT CONTROL SYSTEM FOR FILTRATION OR SETTLEMENT OF THE FLOC PRIOR TO DISCHARGE.

5.4 TEMPORARY SEDIMENT BASINS

A TEMPORARY SEDIMENT BASIN...
1. SHALL BE CONSTRUCTED PRIOR TO DISTURBING 10 OR MORE ACRES OF SOIL DRAINING TO A COMMON LOCATION.
2. MUST BE LOCATED OUTSIDE OF SURFACE WATERS AND ANY BUFFER ZONES.
3. MUST PROVIDE TREATMENT OF RUNOFF BEFORE LEAVING THE CONSTRUCTION OR ENTERING SURFACE WATERS.
4. MUST BE SIZED TO TREAT THE 2-YEAR, 24-HOUR STORM RUNOFF AMOUNT OR 1,800 CUBIC FEET OF LIVE STORAGE PER ACRE DRAINED, WHICHEVER IS GREATER.
5. MUST BE SIZED TO 3,600 CUBIC FEET OF LIVE STORAGE PER ACRE WHEN THE 2-YEAR RUNOFF VOLUME WAS NOT CALCULATED.
6. SHALL BE DESIGNED TO PREVENT SHORT CIRCUITING AND THE DISCHARGE OF FLOATING DEBRIS.
7. MUST USE AN OUTLET DESIGNED TO WITHDRAW FROM THE WATER'S SURFACE.
8. MUST PROVIDE ENERGY DISSIPATION WITHIN 24 HOURS AFTER CONNECTION TO A SURFACE WATER.
9. IS NO LONGER REQUIRED WHEN VEGETATION HAS REDUCED THE DISTURBED ACREAGE TO LESS THAN 10 ACRES.
10. SHALL NOT DISCHARGE EXCESSIVE SEDIMENT-LADEN WATER THAT IS NOT PROPERLY FILTERED.

SITE IS DISTURBING LESS THAN 10 ACRES.

5.5 DEWATERING & BASIN DRAINING

DEWATERING AND BASIN DRAINING...
1. MUST DISCHARGE TURBID OR SEDIMENT-LADEN WATER TO A TEMPORARY OR PERMANENT SEDIMENT BASIN.
2. MAY DISCHARGE TO SURFACE WATERS IF THE BASIN WATER IS VISUALLY INSPECTED TO ENSURE ADEQUATE TREATMENT AND SETTLING HAS OCCURRED TO ENSURE NUISANCE CONDITIONS WILL NOT RESULT FROM THE DISCHARGE.
3. PRACTICES MUST NOT CAUSE EROSION OR SCOUR AT THE DISCHARGE POINT OR INUNDATION OF ANY WETLANDS.
4. MAY USE FILTERS WITH BACKWATER WATER, AS LONG AS THE BACKWASH WATER IS...
   - 4.1. HAULED AWAY FOR DISPOSAL
   - 4.2. RETURNED T THE BEGINNING OF THE TREATMENT PROCESS
   - 4.3. INCORPORATED INTO THE SITE IN A MANNER THAT DOES NOT CAUSE EROSION

FOR NEW LOOK CONTRACTING BUILDING ADDITION, DEWATERING IS NOT EXPECTED.

6.1 POLLUTION PREVENTION

POLLUTION PREVENTION MANAGEMENT MEASURES MUST...
1. PLACE BUILDING PRODUCTS AND LANDSCAPE MATERIALS UNDER COVER TO MINIMIZE CONTACT WITH STORMWATER FOR ANY MATERIALS MAY CAUSE CONTAMINATION AND NOT DESIGNED TO BE EXPOSED TO STORMWATER. THIS INCLUDES BUT NOT LIMITED TO PESTICIDES, FERTILIZERS, AND OTHER TREATMENT CHEMICALS.
2. STORE HAZARDOUS MATERIALS (OIL, DIESEL, GASOLINE, HYDRAULIC FLUIDS, PAINT SOLVENTS, PETROLEUM BASED PRODUCTS, WOOD PRESERVATIVES, ADDITIVES, CURING COMPOUNDS, AND ACIDS) IN SEALED CONTAINERS TO PREVENT SPILLS OR LEAKS.
3. INCLUDE SECONDARY CONTAINMENT.
4. PROPERLY STORE, COLLECT, AND DISPOSE SOLID WASTE IN COMPLIANCE WITH MINN. R. 7035.
5. POSITION PORTABLE TOILETS SO THEY ARE SECURE AND NOT EASILY TIPPED OVER BY WIND OR EQUIPMENT.
6. DISPOSE OF SANITARY WASTE IN ACCORDANCE WITH MINN. R. 7041.
7. PREVENT DISCHARGE OF SPILLED OR LEAKED CHEMICALS, INCLUDING FUEL, FROM ANY AREA WHERE CHEMICALS OR FUEL WILL BE LOADED OR UNLOADED BY USING DRIP PANS OR ABSORBENTS. SUPPLIES SHALL BE AVAILABLE AT ALL TIMES TO CLEAN UP DISCHARGED MATERIALS AND THAT AN APPROPRIATE DISPOSAL METHOD MUST BE AVAILABLE FOR RECOVERED SPILLED MATERIALS.
8. LIMIT EXTERIOR VEHICLE OR EQUIPMENT WASHING ON THE PROJECT SITE SHALL BE TO A DEFINED AREA OF THE SITE. RUNOFF FROM THE WASHING AREA SHALL BE CONTAINED IN A SEDIMENT BASIN OR OTHER SIMILARLY EFFECTIVE CONTROLS AND WASTE FROM THE WASHING ACTIVITY MUST BE PROPERLY DISPOSED OF. NO ENGINE DEGREASING IS ALLOWED ON SITE.
9. PROVIDE EFFECTIVE CONTAINMENT FOR ALL LIQUID AND SOLID WASTES GENERATED BY CONCRETE AND OTHER WASHOUT OPERATIONS RELATED TO CONSTRUCTION ACTIVITIES. LIQUID AND SOLID WASHOUT WASTE SHALL NOT CONTACT THE GROUND, AND CONTAINMENT MUST BE DESIGNED SO THAT IT DOES NOT RESULT IN RUNOFF FROM THE WASHOUT OPERATIONS OR AREAS. A SIGN MUST BE INSTALLED ADJACENT TO EACH WASHOUT FACILITY THAT REQUIRES SITE PERSONNEL TO UTILIZE THE PROPER FACILITIES FOR DISPOSAL OF CONCRETE AND OTHER WASHOUT WASTES.

COMMON MATERIALS TO BE FOUND ON SITE THAT WILL NEED TO MANAGED PROPERLY ARE...
- PORTABLE TOILETS
- DIESEL FUEL
- GASOLINE
- ENGINE OIL
- HYDRAULIC FLUID
- COOLANT/ANTI-FREEZE

7.1 INFESTED WATERS

MN DNR PERMITS ARE NOT VALID FOR WORK IN WATERS THAT ARE DESIGNATED AS INFESTED WATERS UNLESS ACCOMPANIED BY AN INFESTED WATERS PERMIT OR WRITTEN NOTIFICATION HAS BEEN OBTAINED FROM MN DNR STATING THAT SUCH PERMIT IS NOT REQUIRED. THERE IS NO EXCEPTION FOR PRE-EXISTING PERMITS. IF A MN DNR PERMIT HAS BEEN ISSUED FOR THE PROJECT AND THE WATER IS LATER DESIGNATED AS INFESTED, THE CONTRACTOR SHALL HALT ALL WORK COVERED BY THE MN DNR PERMIT UNTIL SUCH TIME AS AN INFESTED WATERS PERMIT IS OBTAINED OR THAT WRITTEN NOTIFICATION IS OBTAINED STATING THAT SUCH PERMIT IS NOT REQUIRED.

SITE DOES NOT INCLUDE ANY WORK IN WATERS. NO KNOWN INFESTED WATERS ARE IN THE VICINITY.

8.1 INSPECTIONS & MAINTENANCE

ALL SWPPP INSPECTIONS MUST...
1. ENSURE A TRAINED PERSON WILL ROUTINELY INSPECT THE ENTIRE CONSTRUCTION SITE AT LEAST ONCE EVERY 7 DAYS DURING ACTIVE CONSTRUCTION AND WITHIN 24 HOURS AFTER A RAIN EVEN GREATER THAN 0.5 INCH IN 24 HOURS.
2. INSPECT ALL EROSION AND SEDIMENT CONTROL BMPs, AS WELL AS ALL TEMPORARY AND PERMANENT STORMWATER BASIN BMPs.
3. INCLUDE INSPECTIONS OF SURFACE WATERS, INCLUDING DRAINAGE DITCHES AND CONVEYANCE SYSTEMS FOR EVIDENCE OF SEDIMENT DEPOSITS OR EROSION SCARS.
4. INSPECT SITE VEHICLE EXIT LOCATIONS AND STREETS WITHIN AND ADJACENT TO THE PROJECT FOR ANY VEHICLE TRACKING.
5. VERIFY PERMANENT INFILTRATION AND FILTRATION BASINS ARE BEING CONSTRUCTED IN SEQUENCE AS DESIGNED BY THE ENGINEER.
6. INCLUDE A RECORD OF ALL INSPECTIONS AND MAINTENANCE ACTIVITIES WITHIN 24 HOURS OF BEING CONDUCTED. THESE RECORDS MUST BE RETAINED WITH THE SWPPP. THE RECORDS MUST INCLUDE ALL ITEMS LISTED IN SECTION 11.11 OF THE MPCA NPDES PERMIT.

INSPECTION SCHEDULE MAY BE ADJUSTED UNDER THE FOLLOWING CONDITIONS...
7. INSPECTIONS OF AREAS WITH PERMANENT COVER CAN BE REDUCED TO ONCE PER MONTH, EVEN IF CONSTRUCTION IS OCCURRING ELSEWHERE ON THE SITE.
8. WHERE SITES HAVE PERMANENT COVER ON ALL EXPOSED SOIL AND NO CONSTRUCTION ACTIVITY IS OCCURRING ANYWHERE ON THE SITE, INSPECTIONS CAN BE REDUCED TO ONCE PER MONTH AND, AFTER 12 MONTHS, MAY BE SUSPENDED COMPLETELY UNTIL CONSTRUCTION ACTIVITY RESUMES. THE MPCA MAY REQUIRE INSPECTIONS TO RESUME IF CONDITIONS WARRANT.
9. WHERE CONSTRUCTION ACTIVITY HAS BEEN SUSPENDED DUE TO FROZEN GROUND CONDITIONS, INSPECTIONS MAY BE SUSPENDED. INSPECTIONS MUST RESUME WITHIN 24 HOURS OF RUNOFF OCCURRING, OR UPON RESUMING CONSTRUCTION, WHICHEVER COMES FIRST.

ALL BMP MAINTENANCE MUST...
10. REPAIR, REPLACE, OR SUPPLEMENT ALL NONFUNCTIONAL BMP BY THE END OF THE NEXT BUSINESS DAY AFTER DISCOVERY UNLESS ANOTHER TIMEFRAME IS SPECIFIED. ADDITIONAL TIME MAY BE NEEDED IF FIELD CONDITIONS PREVENT ACCESS TO THE AREA.
11. INCLUDE REMOVAL OF ALL DELTAS AND SEDIMENT DEPOSITS IN SURFACE WATERS, INCLUDING DRAINAGE WAYS AND CATCH BASINS.
12. RE-STABILIZE THE AREAS WHERE SEDIMENT REMOVAL WAS NECESSARY.
13. COMPLETE REMOVAL AND STABILIZATION WITHIN 7 CALENDAR DAYS OF DISCOVERY, UNLESS PRECLUDED BY LEGAL, REGULATORY, OR PHYSICAL ACCESS CONSTRAINTS.
14. CONTACT ALL LOCAL, REGIONAL, STATE, AND FEDERAL AUTHORITIES TO OBTAIN NECESSARY PERMITS PRIOR TO CONDUCTING WORK IN SURFACE WATERS.
15. REMOVE SEDIMENT FROM ALL PAVED SURFACES WITHIN ONE CALENDAR DAY OF DISCOVERY, OR SOONER TO AVOID A SAFETY HAZARD.
16. REPAIR, REPLACE, OR SUPPLEMENT ALL PERIMETER CONTROL DEVICES WHEN THEY BECOME NON-FUNCTIONAL OR BECOME HALF FULL.
17. DRAIN TEMPORARY AND PERMANENT SEDIMENT BASINS WHEN THE DEPTH OF SEDIMENT REACHES HALF THE STORAGE VOLUME.
18. HAVE A TRAINED INDIVIDUAL ON-SITE OR AVAILABLE WITH 3 CALENDAR DAYS.

9.1 BUILDING ACTIVITIES & BMPs

HOME CONSTRUCTION PHASING & TYPICAL SWPPP MANAGEMENT BMPs..
1. **ESTABLISH PERIMETER CONTROL**
   - 1.1. REDUNDANT PERIMETER CONTROL NECESSARY IF GRADING CANNOT MAINTAIN A 50' NATURAL BUFFER FOR RUNOFF DRAINING TO A SURFACE WATER
   - 1.2. INSTALL ROCK ENTRANCE BERM
2. **SELECT LOCATION FOR PORTABLE TOILET**
   - 2.1. DO NOT PLACE TOILET IN THE PATH OF A SURFACE WATER
   - 2.2. PROVIDE SECONDARY CONTAINMENT
   - 2.3. ENSURE TOILET IS PROPERLY SECURED TO THE GROUND TO PREVENT TIPPING
3. **STRIP TOPSOIL AND STOCKPILE FOR USE WHEN FINAL GRADING**
   - 3.1. PROVIDE PERIMETER CONTROL AROUND TOPSOIL STOCKPILE
4. **EXCAVATE AND CONSTRUCT FOUNDATION**
   - 4.1. PROVIDE PERIMETER CONTROL FOR ANY STOCKPILES IN PLACE LONGER THAN 14 DAYS
   - 4.2. PROPERLY DISPOSE OF CONCRETE WASHOUT
5. **BACKFILL FOUNDATION AND BEGIN FRAMING**
   - 5.1. ENSURE STREETS ARE CLEAN AT THE END OF THE DAY
   - 5.2. INSPECT PERIMETER CONTROL TO ENSURE BMPs ARE PROPERLY FUNCTIONING.
   - 5.3. MAINTAIN ROCK ENTRANCE BERM
6. **INSTALL DRIVEWAY**
   - 6.1. ROCK ENTRANCE BERM TO BE MAINTAINED UNTIL DRIVEWAY IS INSTALLED
   - 6.2. PROPERLY DISPOSE OF CONCRETE WASHOUT
7. **COMPLETE BUIDLING CONSTRUCTION & BEGIN LANDSCAPING**
   - 7.1. DO NOT STORE LANDSCAPE MATERIALS IN CURB & GUTTER
   - 7.2. PERIMETER CONTROL TO REMAIN IN PLACE AND MAINTAINED
   - 7.3. ENSURE STREETS ARE CLEAN AT END OF EACH DAY
   - 7.4. PROPERLY DISPOSE ANY OF HAZARDOUS WASTE (PAINT, DRYWALL, SOLVENTS)
   - 7.5. ENSURE DUMPSTER IS NOT FILLED ABOVE TOP OF DUMPSTER
8. **FINAL GRADING AND STABILIZATION**
   - 8.1. DO NOT DISTURB NATURAL BUFFERS SUCH AS WETLAND BUFFERS
   - 8.2. PERIMETER CONTROL TO STAY IN PLACE UNTIL DAY OF SOD
   - 8.3. BUILDER RESPONSIBLE TO ESTABLISH FINAL STABILIZATION FOR ENTIRE LOT (SOD, SEED, MULCH, ROCK)
9. **POST CONSTRUCTION**
   - 9.1. REMOVE PERIMETER CONTROL
   - 9.2. REMOVE ALL CONSTRUCTION DEBRIS AND TRASH
   - 9.3. INLET PROTECTION TO REMAIN IN PLACE IF THE CATCH BASIN RECEIVES RUNOFF FROM OTHER LOTS THAT DO NOT HAVE FINAL STABILIZATION
   - 9.4. FILE NOTICE OF TERMINATION (NOT) FOR THE INDIVIDUAL LOT ONCE FINAL STABILIZATION IS ESTABLISHED AND ALL SYNTHETIC EROSION AND SEDIMENT CONTROL BMPs HAVE BEEN REMOVED.

10.1 FINAL STABILIZATION & PERMIT TERMINATION

FINAL STABILIZATION IS NOT COMPLETE UNTIL ALL OF THE FOLLOWING REQUIREMENTS HAVE BEEN MET...

1. ALL SOIL DISTURBING ACTIVITIES AT THE SITE HAVE BEEN COMPLETED AND ALL SOILS ARE STABILIZED BY A UNIFORM PERENNIAL VEGETATIVE COVER WITH A DENSITY OF 70% OF ITS EXPECTED FINAL GROWTH DENSITY OVER THE ENTIRE PERVIOUS SURFACE AREA, OR OTHER EQUIVALENT MEANS NECESSARY TO PREVENT SOIL FAILURE UNDER EROSIVE CONDITIONS.
2. PERMANENT STORMWATER MANAGEMENT SYSTEM IS CONSTRUCTED, MEETS ALL REQUIREMENTS OF THE PERMIT, AND IS OPERATING AS DESIGNED. TEMPORARY OR PERMANENT SEDIMENTATION BASINS THAT ARE TO BE USED AS PERMANENT WATER QUALITY MANAGEMENT BASINS HAVE BEEN CLEANED OF ANY ACCUMULATED SEDIMENT. ALL SEDIMENT HAS BEEN REMOVED FROM CONVEYANCE SYSTEMS, AND DITCHES ARE STABILIZED WITH PERMANENT COVER.
3. ALL TEMPORARY SYNTHETIC AND STRUCTURAL EROSION PREVENTION AND SEDIMENT CONTROL BMPS HAVE BEEN REMOVED. BMPS DESIGNED TO DECOMPOSE ON SITE MAY BE LEFT IN PLACE.
4. FOR RESIDENTIAL CONSTRUCTION ONLY, INDIVIDUAL LOTS ARE CONSIDERED FINALLY STABILIZED IF THE STRUCTURE(S) ARE FINISHED, TEMPORARY EROSION PROTECTION AND DOWN GRADIENT PERIMETER CONTROL HAS BEEN COMPLETED AND THE RESIDENCE HAS BEEN SOLD TO THE HOMEOWNER. ALSO, THE "HOMEOWNER FACT SHEET" HAS BEEN PROVIDED TO THE HOMEOWNER.

ONCE ALL THESE CONDITIONS ARE MET AND ALL THE SUBDIVISION PERMITS HAVE BEEN TERMINATED, THEN THE NOTICE OF TERMINATION MAY BE SUBMITTED.

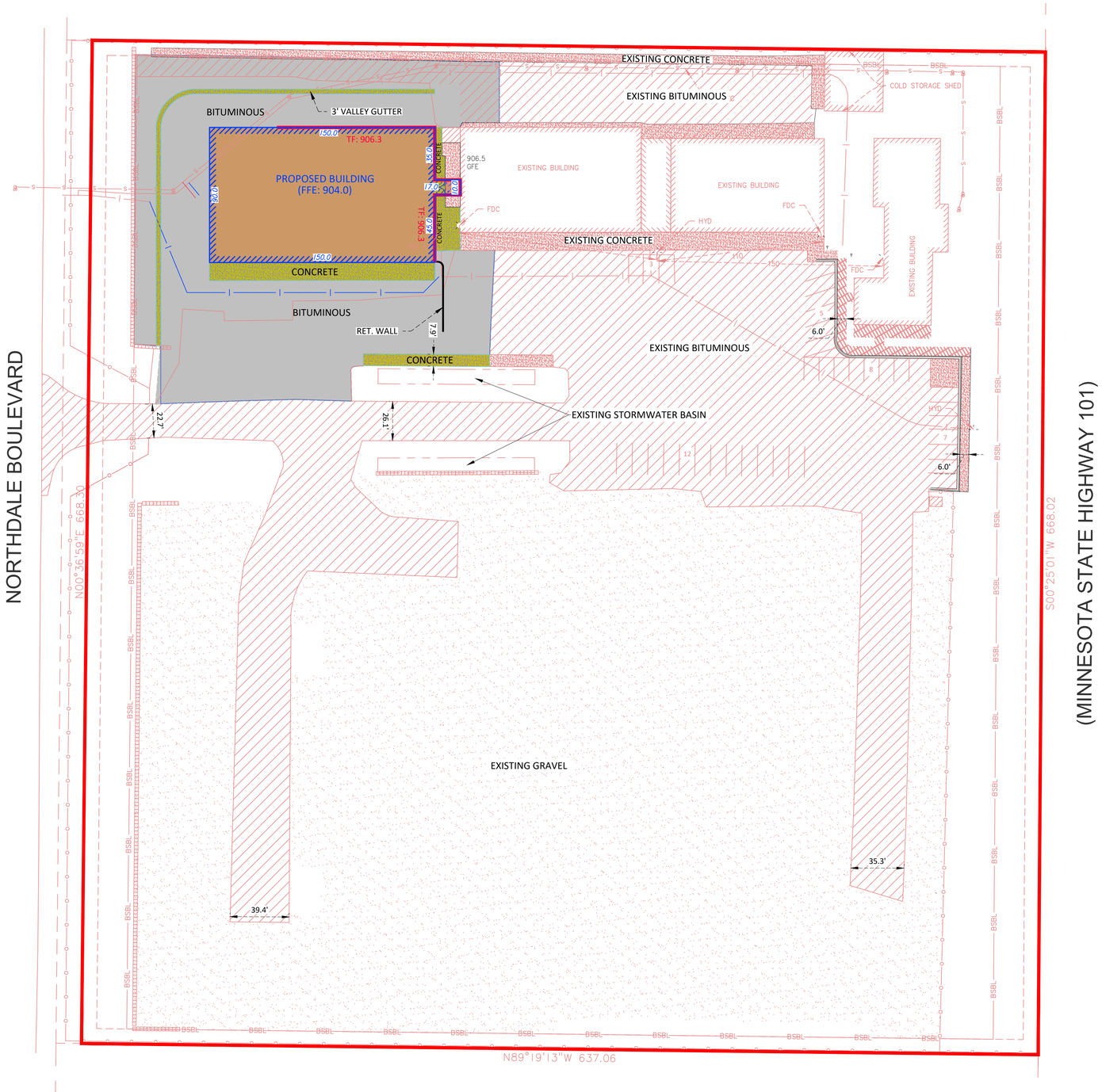
ATERRA LAND SERVICES
18219 70th Pl N, Maple Grove MN 55311
763.360.1307 | nate@aterraland.com

PROJECT #: 25018
DESIGNER: JML

NEW LOOK CONTRACTING
ROGERS, MN

SWPPP DATE & AMENDMENTS

Date	By	Description
10/30/25	JML	PREPARE SWPPP



Property Description:

LOT 1, BLOCK 1, MICHELS ADDITION, Hennepin County, Minnesota.

Abstract Property

Property Address: 14450 Northdale Boulevard, Rogers, MN 55374

PID: 1112023310013

Per County Tax Information. It may or may not be the legal description of record.

General Notes:

1.) Horizontal Datum: North line of LOT 1, BLOCK 1, MICHELS ADDITION assumes the bearing of South 89 degrees 17 minutes 39 seconds East.

2.) Vertical Datum: is on NAVD 88. Used MnDOT Benchmark 2738 C, which has an elevation of 886.425 feet.

3.) Flood Zone Information: The subject property lies within Flood Plain Zone X – 'Area determine to be outside the 0.2% annual chance of floodplain', according to FEMA per FIRM Map No. 27053C0033F dated 11/04/2016.

4.) Parcel Area Information: The gross area of the subject property is 9.754 Acres or 424,879 Square Feet.

5.) Existing utilities shown are shown in an approximate way only. The contractor shall determine the exact location of any and all existing utilities before commencing work. Contractor agrees to be fully responsible for any and all damages arising out of their failure to exactly locate and preserve any and all existing utilities. Also, please note that seasonal conditions may inhibit our ability to visibly observe all the utilities located on the subject property. Before digging, you are required by law to notify Gopher State one Call at least 48 hours in advance at 651.454.0002.

6.) This survey was prepared without the benefit of a title commitment. There maybe easements of record that encumber the subject property that are not shown hereon.

7.) Existing striped parking count: 35 stalls. Parking requirements Industrial states "One space for each two employees on maximum shift or one for each 2,000 square feet of gross floor area, whichever is greater." The total gross floor space with the building addition is 35,013 sq.ft. which is equal to 18 parking spots needed. The building addition does not trigger additional parking. The proposed building addition is to be used as storage. The addition does not include office space and will not increase the number of employees on site.

8.) Existing conditions were provided by New Look Contracting, Inc. and the City of Rogers. ATTERA Land Services determined the boundary only.

9.) Field work was completed on: November 7, 2024.

SHEET INDEX

SHEET & PAGE		SHEET TITLE
C1.01	1	SITE PLAN
C2.01	2	BOUNDARY SURVEY
C3.01	3	DEMO PLAN
C4.01	4	GRADING AND EROSION CONTROL PLAN
C5.01	5	UTILITY PLAN
C6.01	6	DETAILS
C6.02	7	DETAILS
C6.03	8	DETAILS

SUBMITTALS & REVISIONS

Rev.	Date	By	Description
	09/19/25	NRH	REVISED PRELIMINARY PLANS PER CITY COMMENTS
	10/27/25	NRH	REVISED PRELIMINARY PLANS PER CITY COMMENTS

N

0 40 80

SCALE IN FEET

ATERRA LAND SERVICES
18219 70th Pl N, Maple Grove MN 55311
763.360.1307 | nate@aterraland.com

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRELIMINARY

Nathan R. Herman
LICENSE NO: 47982 DATE: 11/19/2024

PROJECT #:
DRAWN: NRH
CHECKED: JML
PLAN DATE: 11/19/2024

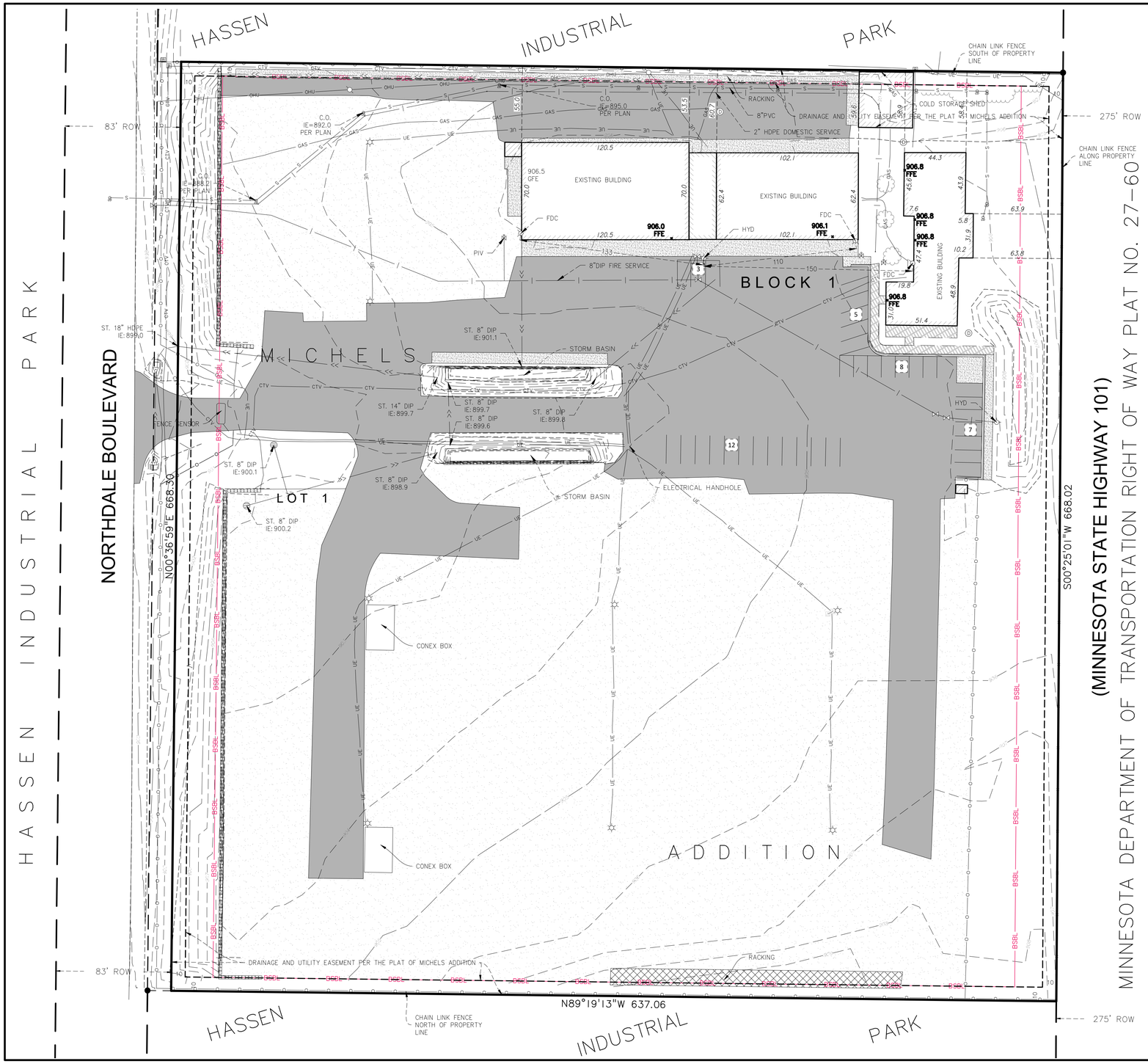
NLC - BLDG ADDITION

ROGERS, MN

NEW LOOK CONTRACTING

SITE PLAN

SHEET	PAGE #	REV.
C1.01	1	



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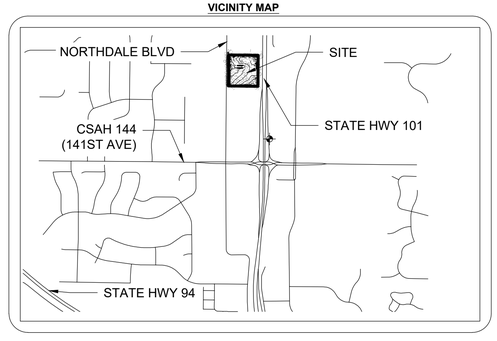
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VICINITY MAP



EXISTING CONDITIONS LEGEND

- SURVEY MONUMENT SET
- SURVEY MONUMENT FOUND
- CAST IRON MONUMENT
- CATCH BASIN
- FLARED END SECTION
- STORM MANHOLE
- GATE VALVE
- HYDRANT
- WELL
- CURB BOX
- SANITARY MANHOLE
- CLEANOUT
- UTILITY POLE
- GUY WIRE
- LIGHT POLE
- ELECTRIC METER
- ELECTRIC MANHOLE
- ELECTRIC VAULT
- ELECTRIC TRANSFORMER
- ELECTRIC PEDESTAL
- AIR CONDITIONER
- GAS VALVE
- GAS METER
- COMMUNICATION VAULT
- COMMUNICATION PEDESTAL
- COMMUNICATION MANHOLE
- UNKNOWN MANHOLE
- UNKNOWN VAULT
- UNKNOWN PEDESTAL
- HANDHOLE
- VENT
- GUARD POST
- SIGN
- MAILBOX
- CONTROL BOX
- (XXXX) PARCEL DEED CALL
- SOIL BORING
- 972.5 SPOT ELEVATION
- HANDICAP PARKING
- DECIDUOUS TREE
- CONIFEROUS TREE

- BITUMINOUS SURFACE
- CONCRETE SURFACE
- GRAVEL SURFACE
- WOOD/DECK SURFACE
- BUILDING/STRUCTURE
- BOUNDARY
- RIGHT OF WAY
- ADJACENT LOT LINE
- EASEMENT
- SECTION LINE
- RESTRICTED ACCESS
- WETLAND
- 960 CONTOUR EXISTING
- RAILROAD TRACKS
- CONCRETE CURB
- UE UNDERGROUND ELECTRICAL LINE
- CTV COMMUNICATION LINE
- OHU OVERHEAD UTILITIES
- GAS UNDERGROUND
- FO FIBER OPTIC UNDERGROUND
- UTIL UNDERGROUND UTILITIES
- FENCE WIRE
- FENCE CHAINLINK
- FENCE WOOD
- FENCE IRON
- RETAINING WALL
- DRIP LINE
- SANITARY SEWER
- STORM SEWER
- WATERMAIN
- DT DRAIN TILE
- SANITARY SEWER SERVICE LINE
- WATER SERVICE LINE
- BSBL BUILDING SETBACK LINE

SUBMITTALS & REVISIONS

Rev.	Date	By	Description
	09/19/25	NRH	REVISED PRELIMINARY PLANS PER CITY COMMENTS
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N

0 40 80
SCALE IN FEET

ATERRA LAND SERVICES
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763.360.1307 | nate@aterraland.com

I hereby certify that this survey, plan, or report was prepared by me or under my direct supervision and that I am a duly Licensed Land Surveyor under the laws of the State of Minnesota.

Dated this 19th day of November, 2024.

PRELIMINARY

Robert B. Sikich Minnesota License No. 14891

PROJECT #:

DRAWN: NRH

CHECKED: JML

PLAN DATE: 11/19/2024

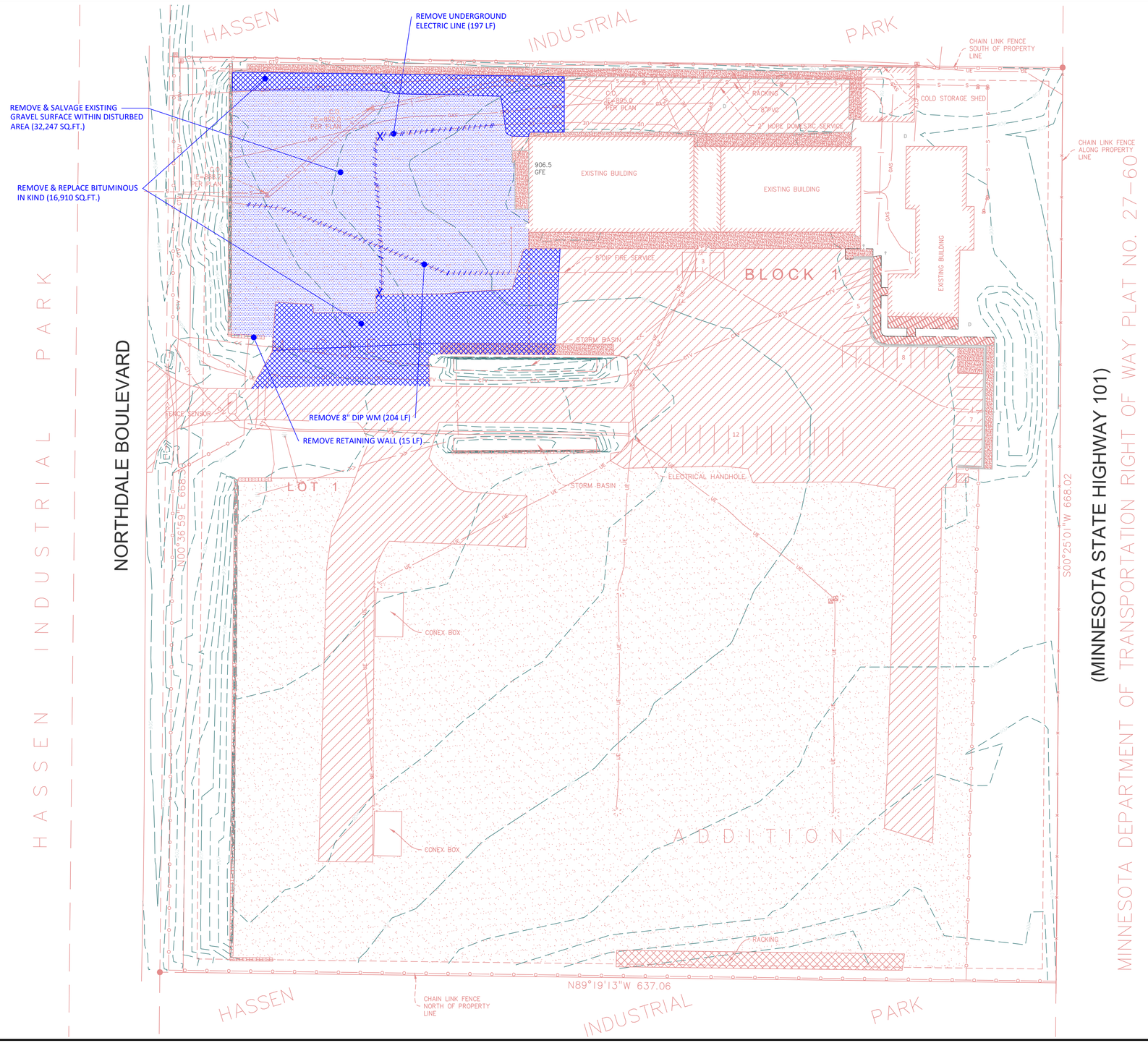
NLC - BLDG ADDITION

ROGERS, MN

NEW LOOK CONTRACTING

BOUNDARY SURVEY

SHEET	PAGE #	REV.
C2.01	2	



X REMOVALS BY CONTRACTOR

DEMOLITION NOTES:

1. ALL DEMOLITION AND TREE REMOVAL ACTIVITIES FOR THIS PROJECT SHALL BE IN ACCORDANCE WITH THE CITY OF ROGERS GENERAL SPECIFICATIONS FOR STREET AND UTILITY CONSTRUCTION.
2. CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO AVOID PROPERTY DAMAGE TO ADJACENT PROPERTIES DURING THE CONSTRUCTION PHASES OF THIS PROJECT. CONTRACTOR WILL BE HELD SOLELY RESPONSIBLE FOR ANY DAMAGES TO THE ADJACENT PROPERTIES OCCURRING DURING THE CONSTRUCTION PHASES OF THIS PROJECT.
3. SAFETY NOTICE TO CONTRACTORS: IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, CONTRACTOR WILL BE SOLELY AND COMPLETELY RESPONSIBLE FOR CONDITIONS ON THE JOB SITE, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF THE WORK. THIS REQUIREMENT WILL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS. THE DUTY OF THE ENGINEER OR THE DEVELOPER TO CONDUCT CONSTRUCTION REVIEW OF CONTRACTOR'S PERFORMANCE IS NOT INTENDED TO INCLUDE REVIEW OF THE ADEQUACY OF CONTRACTOR'S SAFETY MEASURES IN, ON OR NEAR THE CONSTRUCTION SITE. CONTRACTOR SHALL INSTALL CONSTRUCTION ZONE SIGNAGE AS REQUIRED.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND MAINTAINING VEHICULAR AND PEDESTRIAN TRAFFIC CONTROL DEVICES SUCH AS BARRICADES, WARNING SIGNS, DIRECTIONAL SIGNS, AND FLAGMEN TO CONTROL THE MOVEMENT OF TRAFFIC WHERE NECESSARY. TRAFFIC CONTROL DEVICES SHALL CONFORM TO APPROPRIATE MINNESOTA DEPARTMENT OF TRANSPORTATION STANDARDS.
5. EXISTING UTILITIES SHOWN ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR AND/OR SUBCONTRACTORS SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, BY CONTACTING THE NOTIFICATION CENTER (GOPHER STATE ONE FOR MINNESOTA). THE CONTRACTOR AND/OR SUBCONTRACTOR AGREE TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES, WHICH MIGHT BE OCCASIONED BY HIS OR HER FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UTILITIES (UNDERGROUND AND OVERHEAD).
6. THE CONTRACTOR SHALL PREVENT SOIL AND DEBRIS FROM LEAVING THE SITE BY EROSION AND VEHICLE WHEEL TRACKING. CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING OF STREET, BOULEVARD AND UTILITY FACILITIES THAT RECEIVE ANY ERODED OR TRACKED SOIL MATERIAL OR OTHER CONSTRUCTION DEBRIS OR MATERIAL.

SUBMITTALS & REVISIONS

Rev.	Date	By	Description
	09/19/25	NRH	REVISED PRELIMINARY PLANS PER CITY COMMENTS
	10/27/25	NRH	REVISED PRELIMINARY PLANS PER CITY COMMENTS

N

0 40 80
SCALE IN FEET

ATERRA LAND SERVICES
18219 70th Pl N, Maple Grove MN 55311
763.360.1307 | nate@aterraland.com

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PRELIMINARY

Nathan R. Herman
LICENSE NO: 47982 DATE: 11/19/2024

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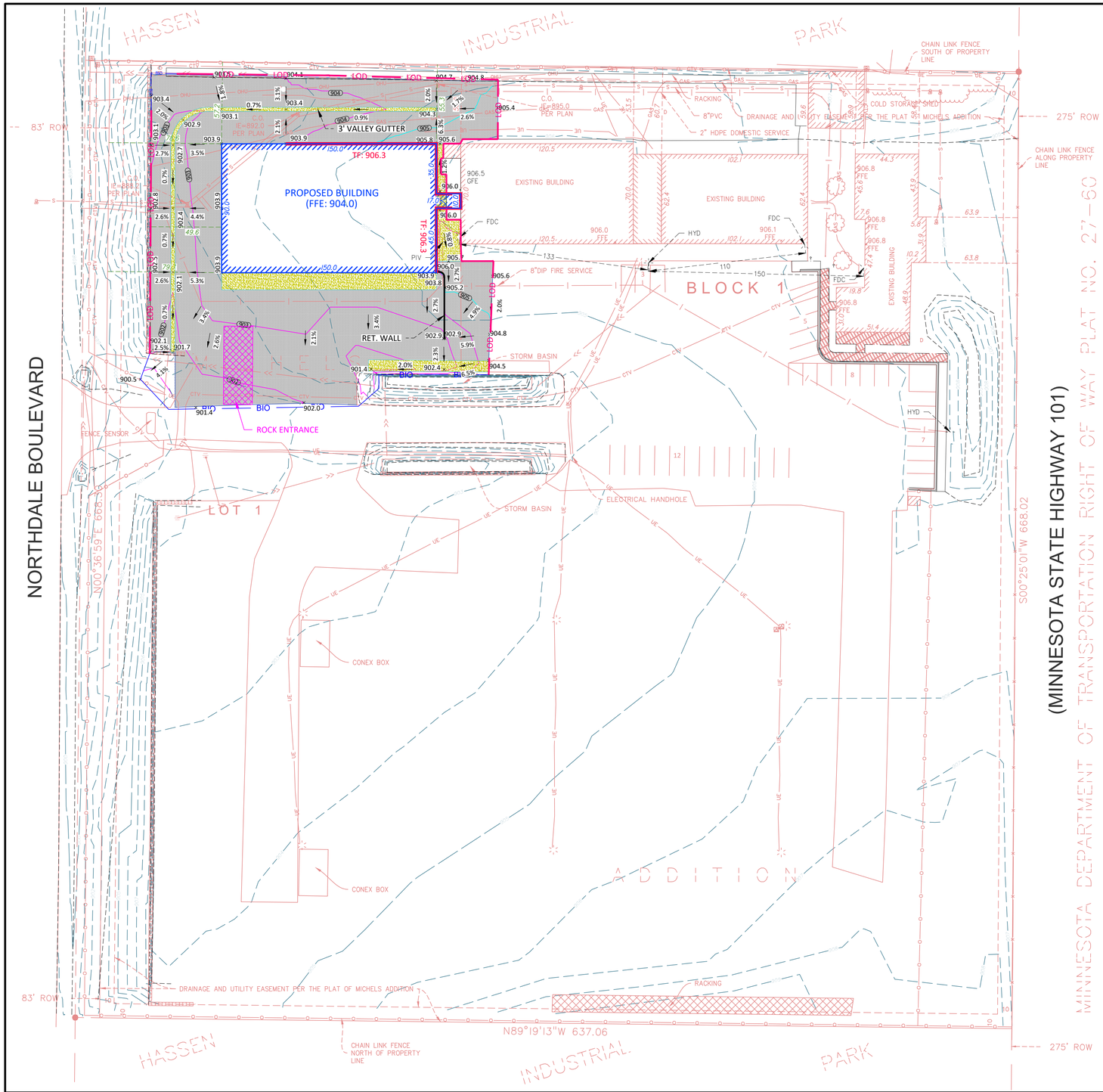
NLC - BLDG ADDITION

ROGERS, MN

NEW LOOK CONTRACTING

DEMO PLAN

SHEET	PAGE #	REV.
C3.01	3	



GRADING NOTES

1. TOTAL AREA DISTURBED BY IMPROVEMENTS IS 1.15 ACRES.
2. CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO AVOID PROPERTY DAMAGE TO ADJACENT PROPERTIES DURING THE CONSTRUCTION PHASES OF THIS PROJECT. CONTRACTOR WILL BE HELD SOLELY RESPONSIBLE FOR ANY DAMAGES TO THE ADJACENT PROPERTIES OCCURRING DURING THE CONSTRUCTION PHASES OF THIS PROJECT.
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4. THE CONTRACTOR SHALL PREVENT SOIL MATERIALS FROM LEAVING THE SITE BY EROSION AND VEHICLE WHEEL TRACKING. CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING OF STREET, BOULEVARD AND UTILITY FACILITIES THAT RECEIVE ANY ERODED OR TRACKED SOIL MATERIAL OR OTHER CONSTRUCTION DEBRIS OR MATERIAL.
5. THE CONTRACTOR SHALL PLACE INLET PROTECTION DEVICES IN ACCORDANCE WITH THE CITY OF ROGERS FOR ALL STORM SEWER INLETS AND MAINTAIN THEM AS AN EFFECTIVE SILT CONTROL DEVICE. INLET PROTECTION SHALL BE REMOVED WHEN RESTORATION HAS BEEN ESTABLISHED.
6. TRENCH BORROW CONSTRUCTION: IF ALLOWED BY THE OWNER, CONTRACTOR SHALL COMPLETE "TRENCH BORROW" EXCAVATION IN AREAS DIRECTED BY THE ENGINEER IN ORDER TO OBTAIN STRUCTURAL MATERIAL. TREES SHALL NOT BE REMOVED OR DAMAGED AS A RESULT OF THE EXCAVATION, UNLESS APPROVED BY THE ENGINEER. THE EXCAVATION SHALL COMMENCE A MINIMUM OF 10 FEET FROM THE LIMIT OF THE BUILDING PAD. THE EXCAVATION FROM THIS LIMIT SHALL EXTEND AT A MINIMUM SLOPE OF 1 FOOT HORIZONTAL TO 1 FOOT VERTICAL (1:1) DOWNWARD AND OUTWARD FROM THE FINISHED SURFACE GRADE ELEVATION. THE TRENCH BORROW EXCAVATION SHALL BE BACKFILLED TO THE PROPOSED FINISHED GRADE ELEVATION AND SHALL BE COMPACTED IN ACCORDANCE WITH REQUIREMENTS OF THE QUALITY COMPACTION METHOD AS OUTLINED IN MN/DOT SPECIFICATION 2105.3F2. SNOW FENCE SHALL BE FURNISHED AND PLACED ALONG THE PERIMETER OF THE TRENCH BORROW AREA WHERE THE SLOPES EXCEED 2 FOOT HORIZONTAL TO 1 FOOT VERTICAL (2:1).
7. FILL PLACED WITHIN THE BUILDING PAD AREAS SHALL BE IN CONFORMANCE WITH HUD/FHA PROCEDURES AND DATA SHEET 79G.
8. FINISHED GRADING SHALL BE COMPLETED, CONTRACTOR SHALL UNIFORMLY GRADE AREAS WITHIN LIMITS OF GRADING, INCLUDING ADJACENT TRANSITION AREAS. PROVIDE A SMOOTH FINISHED SURFACE WITHIN SPECIFIED TOLERANCES, WITH UNIFORM LEVELS OR SLOPES BETWEEN POINTS WHERE ELEVATIONS ARE SHOWN, OR BETWEEN SUCH POINTS AND EXISTING GRADES. AREAS THAT HAVE BEEN FINISHED GRADED SHALL BE PROTECTED FROM SUBSEQUENT CONSTRUCTION OPERATIONS, TRAFFIC AND EROSION. REPAIR ALL AREAS THAT HAVE BECOME RUTTED, ERODED OR HAS SETTLED BELOW THE CORRECT GRADE. ALL AREAS DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED TO EQUAL OR BETTER THAN ORIGINAL CONDITION OR TO THE REQUIREMENTS OF THE NEW WORK.
9. MAINTAIN THE EXISTING WESTERLY FLOW PATTERN ALONG THE NORTH PROPERTY LINE.

PROPOSED CONDITIONS LEGEND

- CONTOUR PROPOSED (MINOR)
- CONTOUR PROPOSED (MAJOR)
- BIO — BIO ROLLS/PERIMETER CONTROL
- PROPOSED BITUMINOUS SURFACE
- PROPOSED CONCRETE SURFACE
- PROPOSED BUILDING/STRUCTURE
- ×905.5 PROPOSED SPOT ELEVATION

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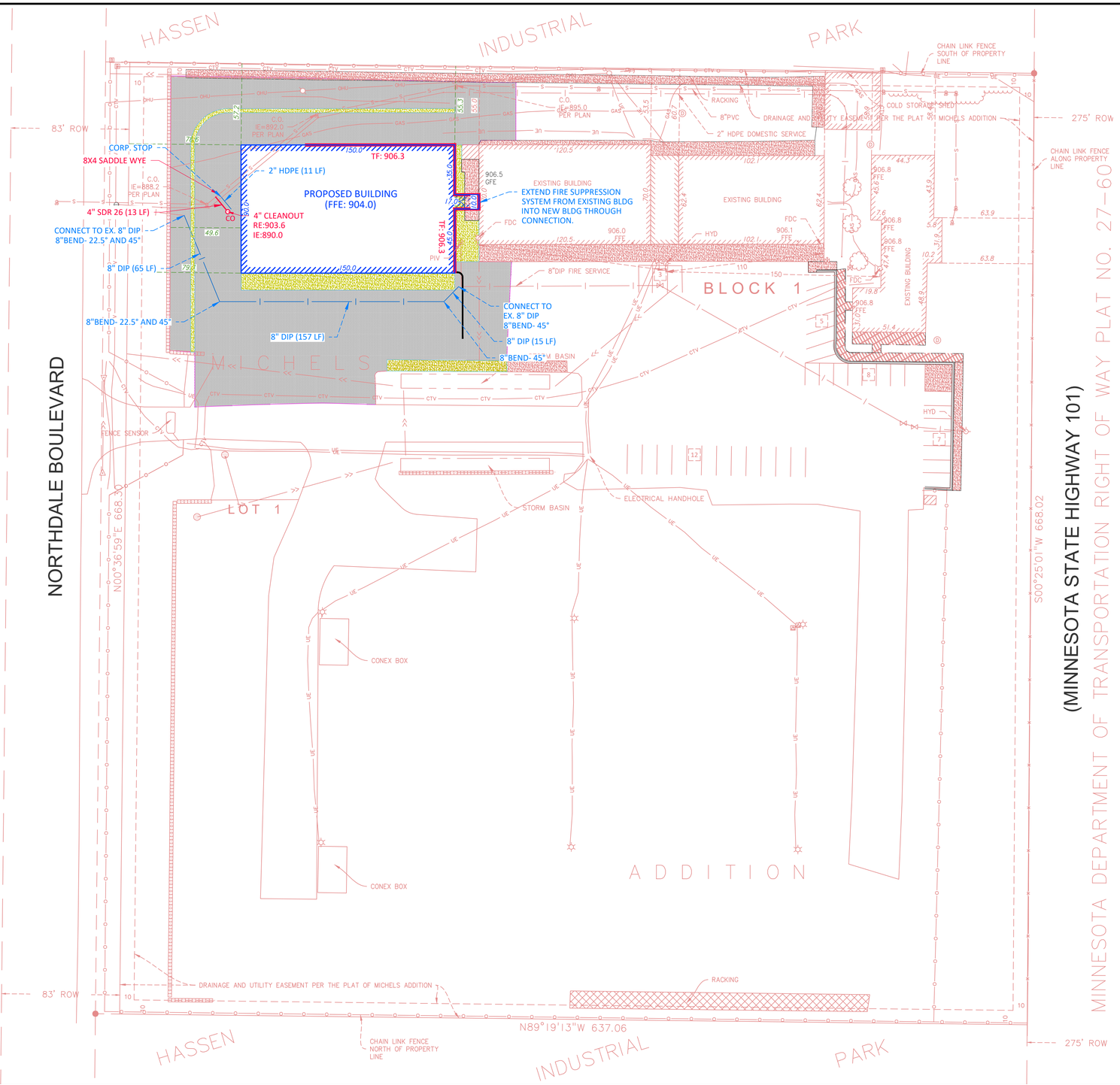
NLC - BLDG ADDITION

ROGERS, MN

NEW LOOK CONTRACTING

GRADING AND EROSION CONTROL PLAN

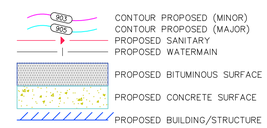
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SANITARY SEWER AND WATERAIN NOTES:

1. THE UTILITY IMPROVEMENTS FOR THIS PROJECT SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF ROGERS GENERAL SPECIFICATIONS FOR STREET AND UTILITY CONSTRUCTION AND THE "STANDARD UTILITIES SPECIFICATIONS" AS PUBLISHED BY THE CITY ENGINEERS ASSOCIATION OF MINNESOTA (CEAM), EXCEPT AS MODIFIED HEREIN.
2. CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO AVOID PROPERTY DAMAGE TO ADJACENT PROPERTIES DURING THE CONSTRUCTION PHASES OF THIS PROJECT. CONTRACTOR WILL BE HELD SOLELY RESPONSIBLE FOR ANY DAMAGES TO THE ADJACENT PROPERTIES OCCURRING DURING THE CONSTRUCTION PHASES OF THIS PROJECT.
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4. THE UTILITY BACKFILL CONSTRUCTION SHALL COMPLY WITH THE REQUIREMENTS OF THE GEOTECHNICAL ENGINEER. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL REQUIRED SOIL COMPACTION TESTS AND SOIL INSPECTIONS WITH THE GEOTECHNICAL ENGINEER.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING AND SCHEDULING ALL REQUIRED UTILITY INSPECTION WITH THE CITY OF ROGERS AND/OR ITS CONSULTANTS WITH A 48-HOUR NOTICE
6. EXISTING UTILITIES SHOWN ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR AND/OR SUBCONTRACTORS SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, BY CONTACTING THE NOTIFICATION CENTER (GOPHER STATE ONE FOR MINNESOTA). THE CONTRACTOR AND/OR SUBCONTRACTOR AGREE TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES, WHICH MIGHT BE OCCASIONED BY HIS OR HER FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UTILITIES (UNDERGROUND AND OVERHEAD).
7. CITY WILL OPERATE EXISTING GATE VALVES. COORDINATE SHUT OFF AT WATER CONNECTION WITH A 48 HOUR NOTICE
8. ALL MATERIALS SHALL BE AS SPECIFIED IN CEAM SPECIFICATIONS EXCEPT AS MODIFIED HEREIN.
   - 8.1. ALL MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE CITY.
   - 8.2. ALL SANITARY SEWER TO BE PVC C900, SDR26, OR SDR35, AS NOTED ON THE PLAN.
   - 8.3. ALL SANITARY SEWER SERVICE RISERS MATERIAL SHALL MATCH THE MATERIAL OF THE MAIN UP TO THE LATERAL BEND.
   - 8.4. ALL SANITARY SEWER LATERAL SERVICES TO PROPERTY SHALL BE PVC SDR26 .
   - 8.5. ALL WATERMAIN TO HAVE 7.5-FEET OF COVER OVER TOP OF WATERMAIN.
   - 8.6. WYE LOCATIONS TO BE VERIFIED BY CONTRACTORS. WYE STATIONING SHOWN IS CALCULATED FROM THE DOWNSTREAM MANHOLES.
9. ALL WATERMAIN VALVES SHALL BE POSITIONED SUCH THAT THEY ARE NOT LOCATED IN THE CURB AND GUTTER. IF SEWER SERVICE CONDUCTIVITY BOX OR WATER CURB BOX IS PLACED IN A DRIVEWAY, WALK OR TRAIL, A FORD A-1 COVER OR EQUAL MUST BE PROVIDED.
10. ANY EROSION CONTROL DAMAGED BY CONSTRUCTION SHALL BE REPAIRED AS INCIDENTAL TO CONSTRUCTION.
11. THE DISINFECTION OF THE WATERMAIN SHALL BE PERFORMED ACCORDING TO THE CITY OF ROGERS SPECIFICATIONS.

PROPOSED CONDITIONS LEGEND



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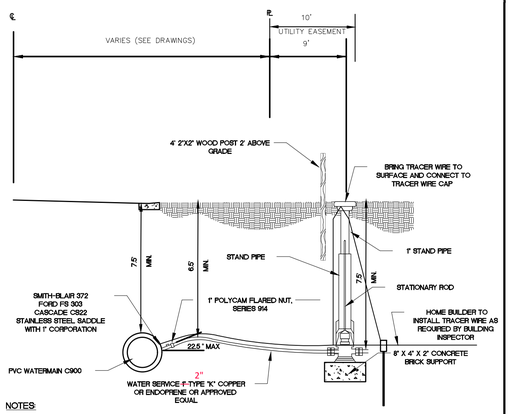
NLC - BLDG ADDITION

ROGERS, MN

NEW LOOK CONTRACTING

UTILITY PLAN

SHEET	PAGE #	REV.
C5.01	5	



NOTES:

ANY CURB STOP LOCATED IN BLACKTOP OR CONCRETE DRIVEWAY OR SIDEWALK SHALL BE COVERED WITH A 10" G.V. BOX TOP SECTION OR MOVED OUT OF THE DRIVEWAY IF POSSIBLE.

SERVICE PIPE SHALL BE TYPE "K" COPPER OR "ENDOPURE" HOPE (BY ENDOT) WITH MAC-PAK FITTINGS (BY AY MCDONALD). CORPORATION STOP SHALL BE PLACED AS CLOSE AS POSSIBLE TO THE CURB STOP.

SNAKE BITE TRACER WIRE CONNECTORS OR APPROVED EQUAL SHALL BE USED TO SPLICE TRACER WIRE. CORPORATION SHALL BE A FORD 3/4"-FB600, AY MCDONALD 4701-B, MUELLER B-25000 OR OWNER APPROVED ALTERNATE.

CURB STOP AND BOX SHALL BE 1" FORD B22-444-M WITH FORD EM2-75-57, AY MCDONALD 6104-1 WITH AY MCDONALD 5614A, MUELLER B-25154 WITH MUELLER H-10300 OR OWNER APPROVED EQUIVALENT.

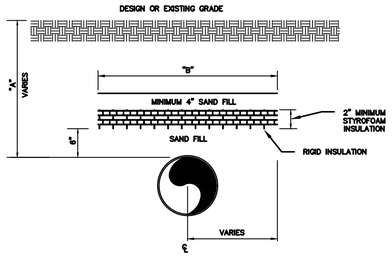
STIFFENERS REQUIRED ON ALL FLEXIBLE PLASTIC CONNECTIONS.

WATER SERVICE MUST BE CONTINUOUS WITH NO JOINTS.

SANITARY AND WATER SERVICE LINES SHALL BE INSTALLED IN THE SAME TRENCH WITH 3 FEET OF SEPARATION. WATER SERVICE ON UPSTREAM SIDE OF SANITARY SERVICE.

CURB BOXES INSTALLED IN AREAS WHERE THE BOULEVARD IS TO BE CUT AT A LATER DATE, TOP OF CURB BOX SHALL BE SAME ELEVATION AS TOP OF CURB.

CITY OF ROGERS	2" 1" WATER SERVICE WITH PVC WATERMAIN	Standard Details	
		Date: JUNE, 2021	WAT–05
		Revised: OCTOBER, 2021	



NOTES:

PIPE SHALL BE CENTERED UNDER INSULATION UNLESS OTHERWISE SPECIFIED

COVER OVER PIPE – "A"	WIDTH OF INSULATION BOARD – "B"
2'	12'
3'	10'
4'	8'
5'	6'
6'	4'

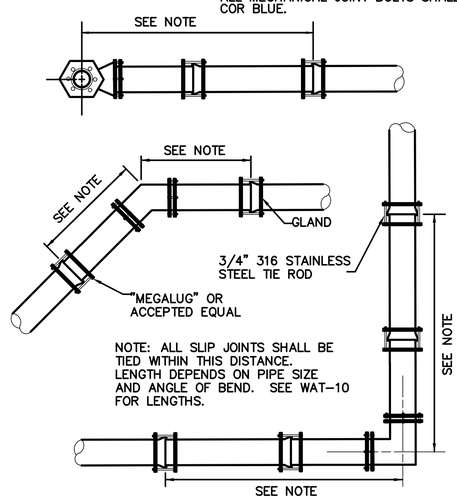
2" OF INSULATION = 2' OF COVER

CITY OF ROGERS	INSULATION DETAIL	Standard Details	
		Date: SEPTEMBER, 2020	WAT–08
		Revised:	

BITUMASTIC ANTI–CORROSIVE COATING REQUIRED ON ALL BARE METALS (AEROSOL SPRAY IS NOT ACCEPTABLE)

ALL GLANDS USED FOR JOINT RESTRAINT SHALL BE EPOXY COATED.

ALL MECHANICAL JOINT BOLTS SHALL BE COR BLUE.



CITY OF ROGERS	WATERMAIN TYING DETAIL	Standard Details	
		Date: SEPTEMBER, 2020	WAT–09
		Revised:	

TRACER WIRE

TRACER WIRE SHALL BE COPPERHEAD #12 AWG CCS COMPLYING WITH ASTM–D–1248, 30 VOLT RATING, GREEN FOR SEWER SERVICES AND FORCEMAIN AND BLUE FOR WATER MAIN
- #1230HS HIGH STRENGTH FOR OPEN CUT
- #1245EHS EXTRA HIGH STRENGTH FOR HORIZONTAL DIRECTIONAL DRILLING AND JACK/BORING
- SPLICING 2 WIRES, DRYCONN KING 6 BLUE
- SPLICING 3 OR MORE, DRYCONN DIRECT BURY LUG YELLOW
- WIRE SPLICING WILL BE ALLOWED WHEN APPROVED ONLY

ALL NEW TRACER WIRE INSTALLATIONS SHALL BE LOCATED USING TYPICAL LOW FREQUENCY (512 HZ) LINE TRACING EQUIPMENT, WITNESSED BY THE CONTRACTOR, ENGINEER AND FACILITY OWNER AS APPLICABLE, PRIOR TO ACCEPTANCE OF OWNERSHIP.

POLYVINYL CHLORIDE PIPE (PVC) – C900

PVC WATER DISTRIBUTION PIPE AND JOINTS SHALL CONFORM TO: AWWA C–900 (DR) ASTM D3139

NOTE: TRACER WIRE ACCESSES SHALL NOT EXCEED 500–FT

DUCTILE IRON PIPE

DIP WATER DISTRIBUTION PIPE SHALL BE PRESSURE CLASS 350 AWWA C150/151.

PLASTIC FILM WRAP FOR DIP

WATER DISTRIBUTION PIPE, RISER PIPE, AND HYDRANT BARRELS SHALL BE WRAPPED IN PLASTIC FILM. THE WRAP SHALL BE "TUBE" TYPE HAVING 8–MIL THICKNESS. A 2 INCH WIDE POLYETHYLENE ADHESIVE TAPE SHALL BE USED TO SECURE THE TUBE OF FILM TO THE PIPE.

DUCTILE IRON FITTINGS

WATER MAIN FITTINGS SHALL CONFORM TO ANSI A21.53, A21.11 & A21.4. FITTINGS SHALL BE COATED WITH 6 – 8 MM MINIMUM THICKNESS FUSION BONDED EPOXY CONFORMING TO ANSI/AWWA C550 AND C116/A21.16.

THRUST RESTRAINT

ALL WATER MAIN, VALVES, SERVICES, FITTINGS, STUBS, EXTENSIONS, BLIND FLANGES, AND PLUGS USED FOR RETAINING WATER PRESSURE MUST BE TIED WITH "MEGALUG" JOINT RESTRAINTS OR ACCEPTED EQUAL. BASED UPON A 150 PSI TEST PRESSURE AND 7.5' COVER, THE FOLLOWING SHOWS THE MINIMUM LENGTH OF PIPE EACH WAY OF A FITTING TO BE RESTRAINED. JOINT RESTRAINTS TO BE EPOXY COATED AS REQUIRED ON WATER MAIN FITTINGS.

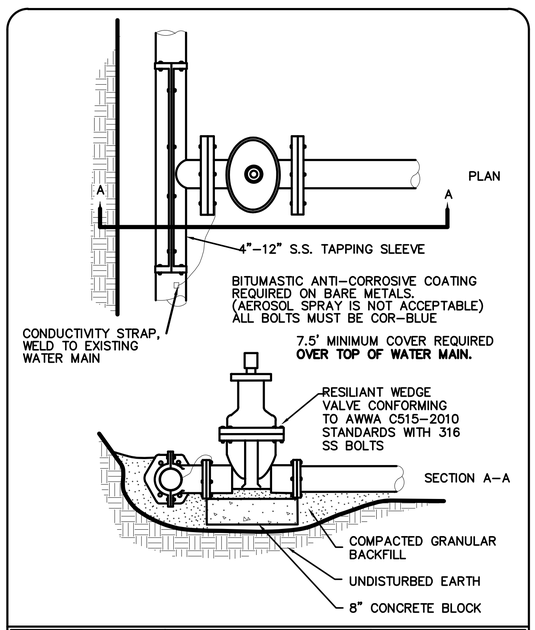
PIPE DIAMETER	DEAD END OR 90^BEND	TEE BRANCH 45^BEND	TEE BRANCH 22–1/2^BEND
4" (SERVICE)	22 LF	5 LF	2 LF
6"	23 LF	7 LF	3 LF
8"	30 LF	10 LF	5 LF
10"	39 LF	12 LF	5 LF
12"	50 LF	16 LF	5 LF

ALL TEES WITH A VALVE IMMEDIATELY AFTER A TEE BRANCH SHOULD BE TREATED AS A 90 DEGREE BEND.

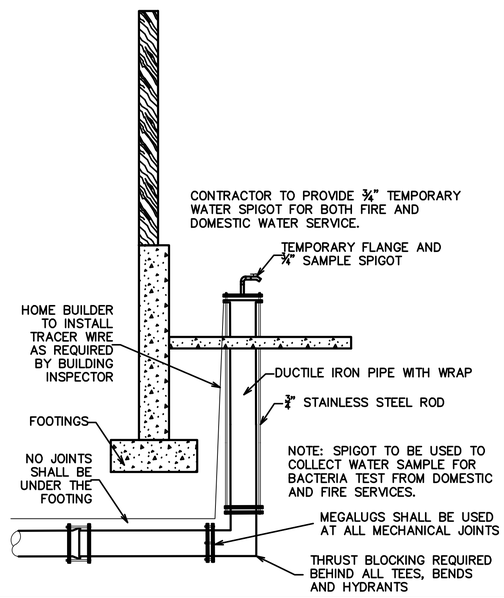
WHERE RESTRAINED JOINTS ARE REQUIRED AND THE PIPE IS IN A CASING NEAR THE FITTING TO BE RESTRAINED, THE LENGTH OF PIPE IN THE CASING SHALL NOT BE INCLUDED IN THE LENGTH OF PIPE NECESSARY TO DEVELOP SUFFICIENT SOIL FRICTION TO OVERCOME THRUST.

ALL BARE METALS SHALL HAVE TWO COATS OF BITUMASTIC OR ACCEPTED EQUAL. (AEROSOL SPRAY IS NOT ACCEPTABLE) ALL MECHANICAL JOINT BOLTS SHALL BE COR–BLUE.
ALL JOINT TIE RODS AND NUTS SHALL BE 316 STAINLESS STEEL.

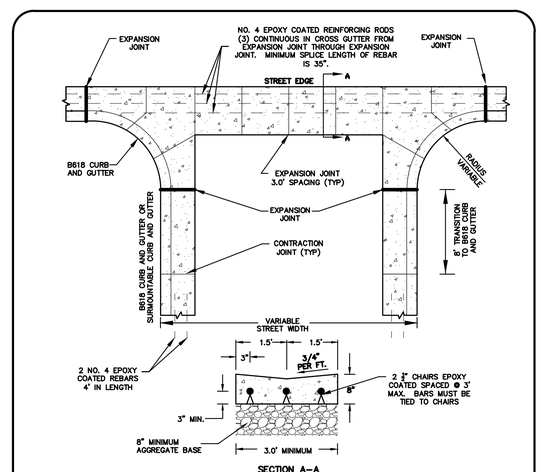
CITY OF ROGERS	WATER MAIN DETAILS AND TIE SCHEDULE TABLE	Standard Details	
		Date: SEPTEMBER, 2020	WAT–10
		Revised:	



CITY OF ROGERS	WATERMAIN WET TAP	Standard Details	
		Date: SEPTEMBER, 2020	WAT–11
		Revised:	



CITY OF ROGERS	COMMERCIAL WATER SERVICE TESTING DETAIL	Standard Details	
		Date: SEPTEMBER, 2020	WAT–12
		Revised: OCTOBER, 2021	



SECTION A–A

NOTES:

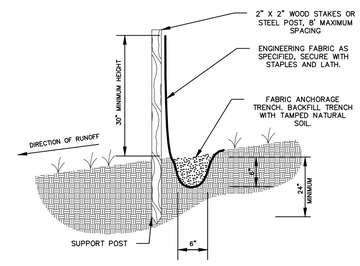
WHEN INSTALLING A VALLEY GUTTER NEXT TO EXISTING BITUMINOUS ROADWAY, THE CONTRACTOR MUST SAWCUT AND REPLACE A MINIMUM 18" STRIP OF STREET SECTION WITH THE SAME PAVEMENT TYPE TO MATCH EXISTING STREET SECTION

VALLEY GUTTER TO BE PAID BY THE SQUARE YARD FROM RADII TO RADII OF B618 CURB AND GUTTER

WHEN INSTALLING A VALLEY GUTTER OVER A CATCH BASIN USING NEENAH FRAME AND CASTING R–3290–A

EXPANSION JOINT MATERIAL SHALL BE CLOSED CELL POLYETHYLENE

CITY OF ROGERS	CONCRETE VALLEY GUTTER	Standard Details	
		Date: JUNE, 2021	CON–9
		Revised:	



DOUBLE SILT FENCE TO BE REQUIRED NEAR WETLANDS

CITY OF ROGERS	STANDARD SILT FENCE	Standard Details	
		Date: SEPTEMBER, 2020	EROS–1
		Revised:	

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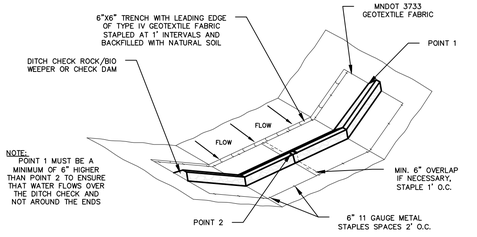
NLC - BLDG ADDITION

ROGERS, MN

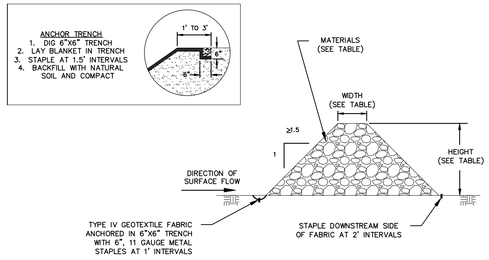
NEW LOOK CONTRACTING

DETAILS

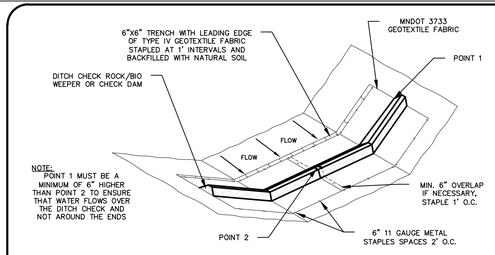
SHEET	PAGE #	REV.
C6.01	6	



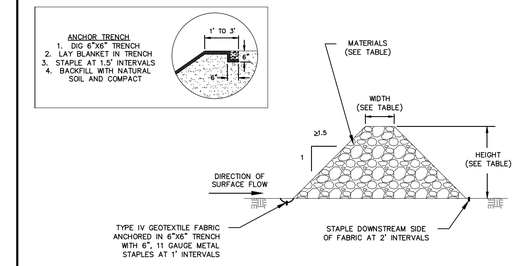
	HEIGHT (INCHES)	WIDTH (INCHES)	MATERIAL
SMALL CHECK	24	12–18	MNDOT 3601 CLASS II RIP RAP
LARGE CHECK	36	24–30	MNDOT 3601 CLASS III RIP RAP
ROCK WEEPER	18	6–12	MNDOT 3882 TYPE 9 MULCH (1 ½" WASHED ROCK)



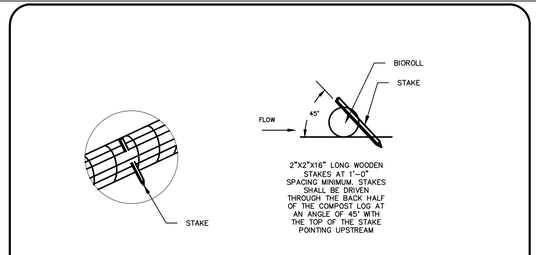
CITY OF ROGERS	ROCK DITCH CHECK / WEEPER SIZING AND MATERIALS
	Standard Details
	Date: SEPTEMBER, 2020
	Revised:
	EROS 6



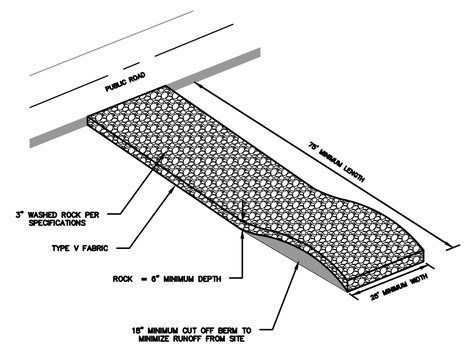
	HEIGHT (INCHES)	WIDTH (INCHES)	MATERIAL
SMALL CHECK	24	12–18	MNDOT 3601 CLASS II RIP RAP
LARGE CHECK	36	24–30	MNDOT 3601 CLASS III RIP RAP
ROCK WEEPER	18	6–12	MNDOT 3882 TYPE 9 MULCH (1 ½" WASHED ROCK)



CITY OF ROGERS	DITCH CHECK TRIANGULAR SILT DIKE
	Standard Details
	Date: SEPTEMBER, 2020
	Revised:
	EROS–7



CITY OF ROGERS	BIOLOG DITCH CHECK
	Standard Details
	Date: SEPTEMBER, 2020
	Revised:
	EROS–8



NOTE:
TYPE V FILTER FABRIC SHALL BE PLACED UNDER ROCK TO STOP MUD MIGRATION THROUGH MATERIAL.

THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OF FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEAN OUT OF ANY MEASURES USED TO TRAP SEDIMENT.

WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY.

WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.

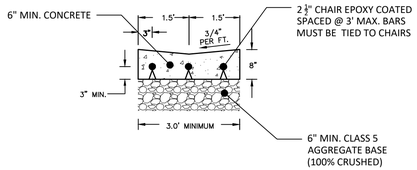
WHERE RUNOFF CONTAINING SEDIMENT LADEN WATER IS LEAVING THE SITE VIA THE CONSTRUCTION ENTRANCE, OTHER MEASURES SHALL BE IMPLEMENTED TO DIVERT RUNOFF THROUGH AN APPROVED FILTERING SYSTEM

IN AREAS WITH CONCRETE WALK THERE SHALL BE 6" OF SAND PLACED OVERTOP THE SIDEWALK PRIOR TO PLACEMENT OF THE 3" WASHED ROCK.

CITY OF ROGERS	CONSTRUCTION ROCK ENTRANCE
	Standard Details
	Date: SEPTEMBER, 2020
	Revised:
	EROS–10

ATERRA-STR-01

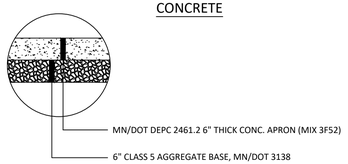
VALLEY GUTTER INSTALLATION



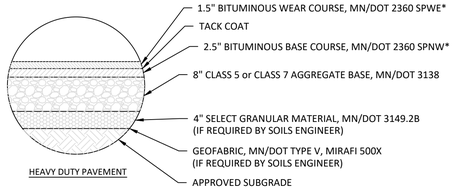
ATERRA	STREET DETAIL VALLEY GUTTER
	PLATE NO. STR–01
	DATE: JAN 2025

ATERRA-STR-02

CONCRETE



BITUMINOUS ASPHALT



HEAVY DUTY PAVEMENT

* REFER TO BITUMINOUS MIX DESIGN REQUIREMENT PROVIDED BY THE GEOTECHNICAL CONSULTANT

NOTES:
1. THE PAVEMENT SECTIONS SHALL BE CONSTRUCTED IN ACCORDANCE WITH MNDOT "STANDARD SPECIFICATION FOR CONSTRUCTION", AND ALSO THE REQUIREMENTS OF THE OWNER'S GEOTECHNICAL CONSULTANT.
2. ALL THICKNESSES, AS SPECIFIED, ARE TO BE CONSIDERED MINIMUM DEPTHS, AFTER COMPACTION.
3. MN/DOT SPEC. 2357 BITUMINOUS TACK COAT SHALL BE PLACED BETWEEN SUCCESSIVE BITUMINOUS LIFTS AND AGAINST ABUTTING CONCRETE CURB EDGES.
4. ALL HARD SURFACES SHALL BE SLOPED TO DRAIN AT MINIMUM 1.5%

ATERRA	PRIVATE COMMERCIAL PARKING LOT/APRONS DETAILS
	PLATE NO. STR–02
	DATE: JAN 2025

SUBMITTALS & REVISIONS

Rev.	Date	By	Description
	09/19/25	NRH	REVISED PRELIMINARY PLANS PER CITY COMMENTS
	10/27/25	NRH	REVISED PRELIMINARY PLANS PER CITY COMMENTS

ATERRA LAND SERVICES
18219 70th Pl N, Maple Grove MN 55311
763.360.1307 | nate@aterraland.com

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRELIMINARY

Nathan R. Herman
LICENSE NO: 47982 DATE: 11/19/2024

PROJECT #:
DRAWN: NRH
CHECKED: JML
PLAN DATE: 11/19/2024

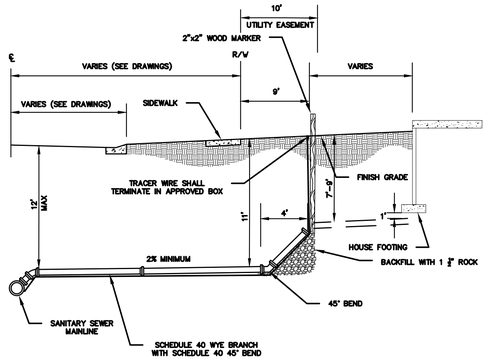
NLC - BLDG ADDITION

ROGERS, MN

NEW LOOK CONTRACTING

DETAILS

SHEET	PAGE #	REV.
C6.02	7	



NOTES:

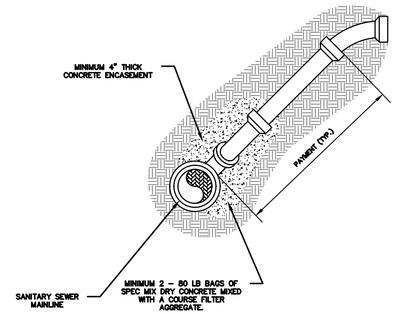
SEWER SERVICE, PVC SCHEDULE 40 4" OR 6" AS SPECIFIED

2% MINIMUM SLOPE OR 12% MAXIMUM SLOPE, ¼" PER FOOT

ALL PIPE SHALL BE BEDDED IN GRANULAR BORROW 3149 B.1 OR COURSE FILTER AGGREGATE 3149H

END OF SERVICE SHALL BE 7' TO 9' DEEP AT END OF SERVICE. THE END SHALL BE A FACTORY JOINT WITH PLUG, USING A FACTORY MANUFACTURED ADAPTOR WHERE NECESSARY AND SHALL BE WITHIN 2'VERTICALLY OF THE WATER SERVICE.

CITY OF ROGERS	SANITARY SEWER SERVICE	Standard Details	SAN–1
		Date: SEPTEMBER, 2020	
		Revised: APRIL, 2022	



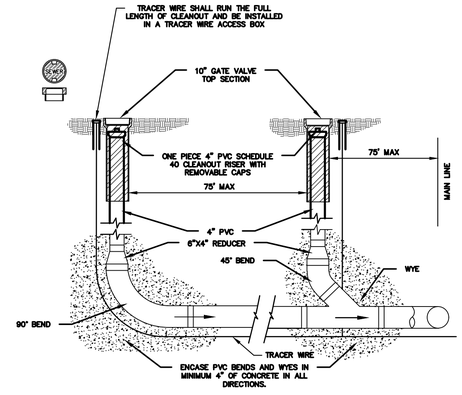
NOTES:

SERVICE CONNECTION TO BE AT 2:00 OR 10:00 WITH APPROVED FACTORY INSTALLED SCHEDULE 40 WYE.

4" OR 6" SANITARY SEWER SERVICE RISER SUPPORT ON TRENCH SLOPE 1:1 MAX

SCHEDULE 40 PVC SERVICES

CITY OF ROGERS	SANITARY SEWER SERVICE RISER	Standard Details	SAN–2
		Date: SEPTEMBER, 2020	
		Revised:	



END OF LINE CLEANOUT IN LINE CLEANOUT

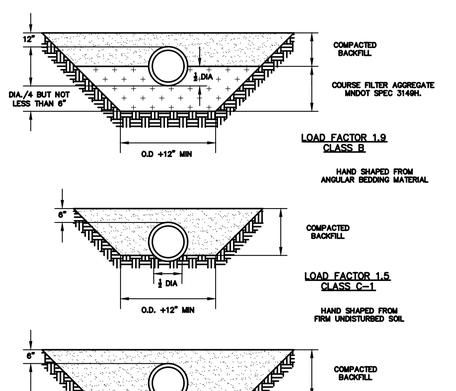
NOTES:

10" GATE VALVE BOX TOP SECTION WITH DROP LID (SEWER) SHALL BE INSTALLED WITH ALL CLEANOUTS. 1" BELOW FINISHED GRADE.

4" PVC SCHEDULE 40 CLEANOUT RISER WITH REMOVABLE CAP 4"–6" BELOW FINISH GRADE.

ENCLOSE LONG SWEEP BEND OR COMBINATION WYE IN 4" CONCRETE AS SHOWN

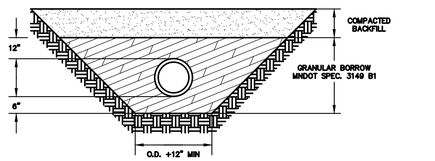
CITY OF ROGERS	SANITARY SEWER CLEANOUT	Standard Details	SAN–3
		Date: SEPTEMBER, 2020	
		Revised:	



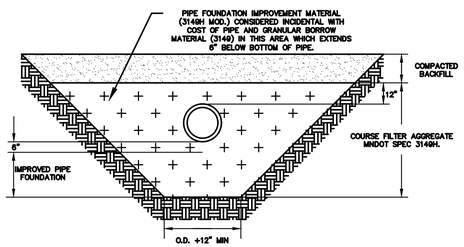
NOTES:

"DIA" DENOTES OUTSIDE DIAMETER OF PIPE

CITY OF ROGERS	PIPE BEDDING METHODS FOR RCP OR DIP	Standard Details	SAN–11
		Date: SEPTEMBER, 2020	
		Revised:	

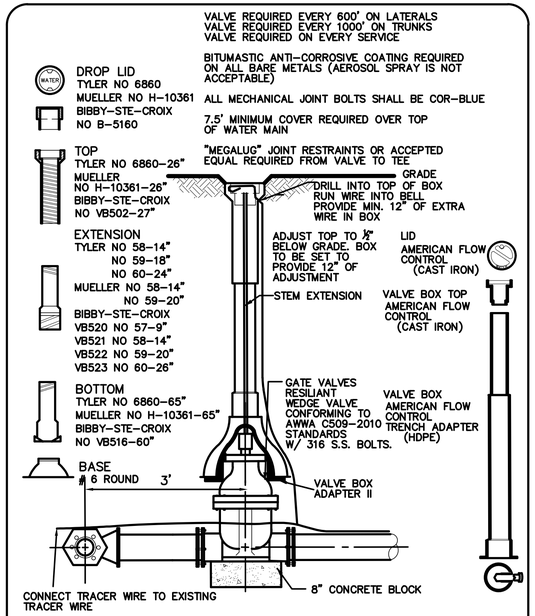


PIPE FOUNDATION & BEDDING IN GOOD SOILS

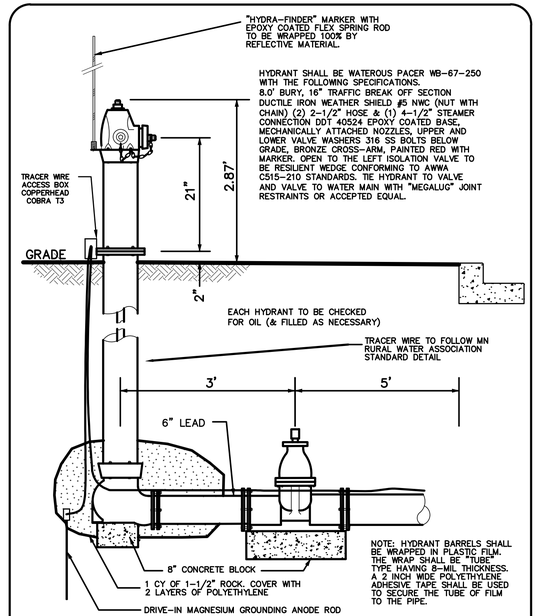


PIPE FOUNDATION & BEDDING IN POOR SOILS

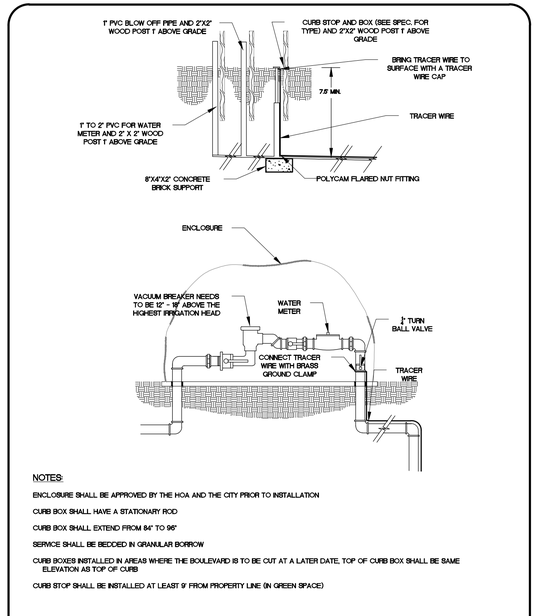
CITY OF ROGERS	PIPE BEDDING METHODS FOR PVC	Standard Details	SAN–12
		Date: SEPTEMBER, 2020	
		Revised:	



CITY OF ROGERS	GATE VALVE AND BOX INSTALLATION	Standard Details	WAT–01
		Date: SEPTEMBER, 2020	
		Revised:	



CITY OF ROGERS	GATE VALVE AND HYDRANT INSTALLATION	Standard Details	WAT–03
		Date: SEPTEMBER, 2020	
		Revised:	



NOTES:

ENCLOSURE SHALL BE APPROVED BY THE HOA AND THE CITY PRIOR TO INSTALLATION

CURB BOX SHALL HAVE A STATIONARY ROD

CURB BOX SHALL EXTEND FROM 84" TO 96"

SERVICE SHALL BE BEDDED IN GRANULAR BORROW

CURB BOXES INSTALLED IN AREAS WHERE THE BOULEVARD IS TO BE CUT AT A LATER DATE, TOP OF CURB BOX SHALL BE SAME ELEVATION AS TOP OF CURB

CURB STOP SHALL BE INSTALLED AT LEAST 9' FROM PROPERTY LINE (IN GREEN SPACE)

CITY OF ROGERS	IRRIGATION SERVICE W/ BLOW OFF AND METER	Standard Details	WAT–04
		Date: SEPTEMBER, 2020	
		Revised:	

SUBMITTALS & REVISIONS

Rev.	Date	By	Description
	09/19/25	NRH	REVISED PRELIMINARY PLANS PER CITY COMMENTS
	10/27/25	NRH	REVISED PRELIMINARY PLANS PER CITY COMMENTS

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PRELIMINARY

Nathan R. Herman
LICENSE NO: 47982 DATE: 11/19/2024

PROJECT #:
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PLAN DATE: 11/19/2024

NLC - BLDG ADDITION

ROGERS, MN

NEW LOOK CONTRACTING

DETAILS

SHEET	PAGE #	REV.
C6.03	8	

STAFF REPORT

ROGERS PLANNING COMMISSION

Meeting Date: January 5, 2026

Agenda Item: 6.1

Subject: Conduct Interviews for Vacant Planning Commission Seats
Prepared By: Brett Angell, Community Development Director

Overview / Background / Analysis
Beginning on January 1, 2026, there are currently three (3) vacant seats on the Planning Commission. Of these openings, one member whose term has expired has expressed interest in a re-appointment to the Commission. Additionally, there is one (1) alternate vacancy.

Solicitation for individuals interested in joining the planning commission was published on the city website, city social media pages, and within the winter city newsletter. The city received applications from multiple individuals that expressed interest in joining the commission. The applications, resumes, and interview questions will be provided to the Commission in advance of the meeting.

This item pertains to interviewing the applicants who have expressed interest in the commission with the ultimate decision of selected individuals to be seated on the planning commission for a three (3) year term. It is anticipated that the selected individuals will have their first meeting on the Commission in February. The February meeting will also include the selection of Chair and Vice Chair.

Staff Recommendation
Staff recommends the Commission hold interviews with the interested candidates for the vacancies on the Planning Commission. Following the interviews, the Commission should provide staff with their recommended individuals for the vacancies. Staff will seek to have the recommended individuals placed on the January 13th City Council meeting for appointment by the City Council.

Financial Impact: Not applicable. **Source Fund**: Not applicable.

Budgeted? N/A

Supporting Documentation
None

STAFF REPORT

ROGERS PLANNING COMMISSION

Meeting Date: January 5, 2026

Agenda Item: 7.1

Subject: Past Planning Commission Items Review
Prepared By: Brett Angell, Community Development Director

Overview / Background / Analysis
The Planning Commission last met on November 3rd, 2025, which included two public hearings and two items of new business. Details related to these items can be found below.

Sign Code Amendments
The Planning Commission held a public hearing and reviewed a minor amendment to the sign code related to the allowable districts for electronic message boards. The commission recommended approval of the proposed amendment. This item was reviewed and ultimately approved by the City Council in late November.

Miller Chevrolet Variance Request
The Commission held a public hearing and reviewed a variance request by Miller Chevrolet related to the size of their proposed freestanding electronic message center sign along I-94. The Commission recommended approval of this item, which was subsequently reviewed and approved by the City Council in late November. The sign has since been installed at the property.

Willis Trucking Site Redevelopment - Bader/Ebert
The Commission reviewed a proposed 181-unit market rate concept plan for the property located at 21601 John Deere Lane, commonly referred to as the Willis Trucking Site. Being that it was a concept plan application, there was not a formal recommendation or motion for this item but rather an opportunity for the Commission to provide the applicant with feedback in advance of future applications. Following the Planning Commission, the concept was also reviewed by the City Council. Primary item of concern that was expressed related to the potential for traffic impacts. The developer is in the process of completing a traffic analysis as part of their future applications. Separately, the City Council also approved a tax increment financing (TIF) term sheet for the proposed development.

Commerce Boulevard Small Bay Warehouse
The Commission reviewed a site plan application corresponding to a small bay warehouse development of approximately 60,000 square feet (combined between two buildings) along Commerce Blvd. The item was recommended for approval and was later reviewed and approved by the City Council. With the approvals, the applicant is

anticipating beginning construction in Spring 2026 with phase I. The development will be constructed in two phases.

Other Relevant Items
The items below correspond to previous and/or future items that will come before the Planning Commission.

Main Street Master Plan
The Main Street Master Plan continues to move forward. In mid-November, a 2nd Open House event took place where residents had the ability to comment on two different plan alternatives. Following this event and the online survey, the consultant has been generating a singular plan option and the full master plan document. It is expected the draft version of this document will be available for review by the end of January. This item will include a Planning Commission and City Council review prior to adoption.

2050 Comprehensive Plan
As we begin 2026, work will begin on the 2050 Comprehensive Plan. A Request for Proposals (RFP) will be issued in January to solicit consultant proposals for the drafting and engagement elements of the plan. In total, this item is expected to take approximately two years and will come before the Planning Commission likely on multiple occasions.

Staff Recommendation
No action or recommendation is required.

Financial Impact: Not applicable. **Source Fund**: Not applicable.

Budgeted? N/A

Supporting Documentation
None