Permit Application Review

Permit No. 2022-155
Received complete: January 12, 2023

Applicant:	Constantine Contolatis; Gyropolis Investments, LLC
Consultant:	Brian Field; Anderson Engineering, LLC
Project:	Gyropolis Redevelopment
Location:	2325 West 90th Street and 9000 Penn Avenue South: Bloomington
Applicable Rule(s):	4 and 5
Reviewer(s):	Parker Brown and Louise Heffernan; Barr Engineering Co.

General Background & Comments

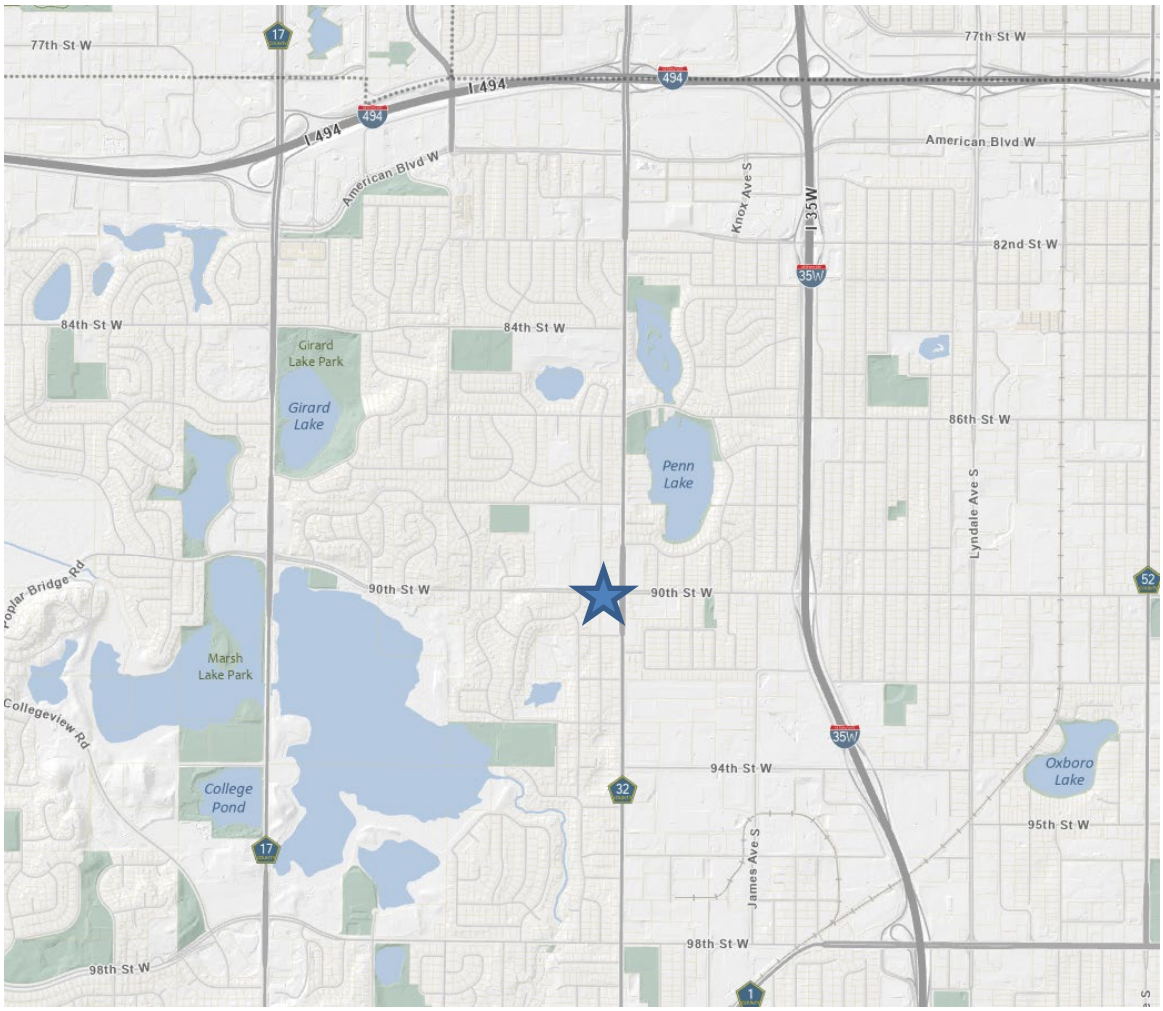
The applicant proposes the redevelopment of the 0.7-acre Gryopolis site in Bloomington. The two existing lots, 2325 West 90th Street and 9000 Penn Avenue South, are proposed to be replated and combined into a single parcel. Demolition of the existing eastern commercial building and foundation, base materials, existing parking lot pavement, and site amenities are proposed. The project proposes two additions to the existing Gryopolis building proposed to remain, utilities, landscaping, site amenities and a stormwater management facility.

The project site information includes the following:

- Total Site Area: 0.74 acres (32,063 square feet)
- Disturbed Area: 0.74 acres (32,063 +/- square feet)
- Existing Site Impervious Area: 0.71 acres (30,840) square feet)
- Proposed Site Impervious Area: 0.62 acres (27,007 square feet)
- Disturbed Impervious Area: 29,384 square feet (95.3% of the existing impervious surface is to be disturbed)
- Change in Impervious Area: 3,833 square feet (12.4% decrease in the site impervious area)
- Regulated Impervious Area: 0.62 acres (30,840 square feet)

The project site is shown in Figure 1 below.

Figure 1. Site Location.



Exhibits Reviewed:

1. Signed Permit Application dated December 6, 2022. Email correspondence dated December 7, 2022, outlining modeling items required to complete the application. Email correspondence dated December 20, 2022, outlining seven items required to complete the application.
2. Plans dated December 5, 2022 (received December 6, 2022), and revised January 12, 2023, prepared by Anderson Engineering, LLC.
3. Stormwater Management Report dated December 5, 2022, revised January 2023, prepared by Anderson Engineering, LLC.
4. Electronic MIDS model files received December 8, 2022, revised January 12, 2023, prepared by Anderson Engineering, LLC.
5. Electronic HydroCAD model files received December 8, 2022, revised January 12, 2023, prepared by Anderson Engineering, LLC.

6. Geotechnical Evaluation dated May 1991, prepared by EnecoTech Environmental Consultants, Inc.
7. Permeable Paver Drainage Area Map received January 12, 2022, prepared by Anderson Engineering, LLC.

The application with the submittal items above is complete.

4.0 Stormwater Management

The district's requirements for stormwater management apply to the project because more than 50 cubic yards of material will be disturbed and 5,000 square feet or more of surface area is altered, Rules 4.2.1a and b.

The NMCWD's Rule for Redevelopment, Rule 4.2.3, states, if a proposed activity will disturb more than 50% of the existing impervious surface on the site or will increase the site imperviousness by more than 50%, stormwater management will apply to the entire project site. Otherwise, the stormwater requirements will apply only to the disturbed, replaced and net additional impervious surface on the project site. Since the project will disturb more than 50% of the existing site impervious surface (95.3% to be disturbed), the district's stormwater management criteria apply to the entire site, including the 30,840 square feet of regulated impervious surface.

Stormwater management for compliance with Rules 4.3.1a, b and c will be provided by a proposed permeable pavement system with an underground rock trench beneath the pavers. The permeable pavement will receive stormwater runoff generated from the permeable pavement surface and a contributing drainage area not to exceed twice the surface area of the permeable pavement (1.9:1 ratio proposed), in accordance with Minnesota Stormwater Manual design guidance. The remaining site area will be directed to the underground rock trench below the permeable pavement system via 12-inch HDPE inlet pipes.

Rule 4.3.1b requires the 2-, 10-, and 100-year post development peak runoff rates be equal to or less than the existing discharge rates for all collection points where stormwater leaves the site. The applicant used a HydroCAD hydrologic model to simulate runoff rates at the collection point where stormwater discharge leaves the site. The existing and proposed 2-, 10- and 100-year frequency discharges from the site are summarized in the tables below.

Existing Conditions			
Modeled Discharge Location	2-year (c.f.s.)	10- year (c.f.s.)	100-year (c.f.s.)
To Penn Ave S and 90th St W Intersection	2.8	4.4	7.7

Proposed Conditions			
Modeled Discharge Location	2-year (c.f.s.)	10- year (c.f.s.)	100- year (c.f.s.)
To Penn Ave S and 90th St W Intersection	<1.0	3.4	6.3

The proposed stormwater management facility will provide rate control in compliance with the NMCWD requirements for the 2-, 10-, and 100-year events. Rule 4.3.1b is met.

The EnecoTech Environmental Consultants geotechnical report identifies the underlying soil within the area of the underground stormwater management facility as poorly graded sand (SP). The Minnesota Stormwater Manual recommends a design infiltration rate of 0.8 inches per hour for poorly graded sand. A design infiltration rate of 0.45 inches per hour has been used for the underground stormwater management facility for a conservative approach. The NMCWD engineer agrees with the design infiltration rate.

A retention volume of 2,476 cubic feet is required from the 27,007 square feet of proposed impervious area. A retention volume of 2,502 cubic feet is proposed to be provided (2,476 cubic feet required) with an infiltration area of 2,018 square feet (1,375 square feet required). With a proposed infiltration area of 2,018 square feet, the required volume retention provided below the weir elevation of the outlet control structure is drawn down within 34 hours complying with Rule 4.3.1a (ii).

Rule 4.5.4d (i) requires at least three feet of separation between the bottom of an infiltration facility and groundwater. The geotechnical evaluation completed in 1991 indicates that groundwater was encountered at a depth of 40 feet in soil boring SB-02, approximately elevation 793.0 M.S.L. The bottom of the underground stormwater management facility is 827.5 M.S.L., providing a separation of 34.5 feet between the bottom of the facility and groundwater. Because groundwater table fluctuations have likely occurred since the time the soil borings were completed onsite, the soil conditions within three feet of the bottom of the stormwater facility must be verified during the course of construction and submitted to NMCWD.

The district's water quality criterion requires a 60% annual removal efficiency for total phosphorus (TP) and 90% annual removal efficiency for total suspended solids (TSS). The results from the MIDS model provided show that the underground stormwater management facility will provide an annual removal efficiency of 90% for TSS (191.4 lbs.) and an annual removal efficiency of 90% for TP (1.0 lb.). The NMCWD engineer agrees with the modeling results and the project is in conformance with Rule 4.3.1c criteria.

Rule 4.3.3 states that all new and reconstructed buildings must be constructed such that the low floor is at least two feet above the 100-year high-water elevation or one foot above the emergency overflow of a constructed facility. Additionally, Rule 4.3.3 states that all new and reconstructed buildings must be constructed such that no opening where surface flow can enter the structure is less than two feet above the 100-year high-water elevation of an adjacent facility. Rule 4.3.3 also states that a stormwater management facility must be constructed at an elevation ensure no adjacent habitable building will be brought into noncompliance with a standard in subsection 4.3.3. As shown on the plans, the low floor and low opening elevation of the existing Gryopolis structure to remain, and the two proposed building additions is elevation 835.2 M.S.L. The calculated 100-year high-water elevation of the underground stormwater management facility is 831.3 M.S.L., providing a separation of 3.9 feet. The project is in conformance with Rule 4.3.3 criteria. In accordance with Rule 4.3.1a (i), where infiltration or filtration facilities, practices or systems are proposed, pre-treatment of runoff must be provided. Two sump-manholes within the 12-inch drain tile system will provide the required

pretreatment of runoff prior to discharging to the underground stormwater management facility, complying with Rule 4.3.1a (i).

In accordance with Rule 4.3.4, a post-project chloride management plan must be provided that will, 1) designate an individual authorized to implement the chloride-use plan and 2) designate a MPCA certified salt applicator engaged in the implementation of the chloride-use plan for the site.

Subsection 4.3.5 requires the submission of a maintenance plan. All stormwater management structures and facilities must be designed for maintenance access and properly maintained in perpetuity to assure that they continue to function as designed. The applicant must provide a receipt showing recordation of a maintenance declaration for the operation and maintenance of the stormwater management facilities.

5.0 Erosion and Sediment Control

The district's requirements for erosion and sediment control apply to the project because more than 50 cubic yards of material will be disturbed and 5,000 square feet or more of surface area is altered, Rules 5.2.1a and b.

The erosion control plan prepared by Anderson Engineering, LLC. includes installation of silt fence, sediment control logs, a stabilized rock construction entrance and storm drain inlet protection.

The contractor for the project will need to designate a contact who will remain liable to the district for performance under the District's Erosion and Sediment Control Rule 5.0 from the time the permitted activities commence until vegetative cover is established, in accordance with subsection 5.4.1e. NMCWD must be notified if the responsible individual changes during the permit term.

11.0 Fees

Fees for the project are:

Rules 4.0-5.0	$1,500

12.0 Financial Assurances

Financial Assurances for the project are:

Rule 5: Perimeter Control: 770 L.F. x $2.50/L.F. =	$1,925
Inlet Protection: 9 x $100 =	$900
Site Restoration: 0.7 acres x $2,500/acre =	$1,750
Rule 4: Stormwater Management Facility: 1,375 S.F. x $12/S.F.=	$16,500
Chloride Management	$5,000
Contingency and Administration	$9,125

Findings

1. The proposed project includes the information necessary, plan sheets and erosion control plan for review.

2. Rules 4 and 5 will be met with the fulfilment of the conditions identified below.
3. The proposed stormwater management facility will provide volume retention, rate control and water quality management in accordance with subsections 4.3.1a-c criteria.
4. In accordance with NMCWD Rule 4.3.5, the applicant must provide a maintenance and inspection plan that identifies and protects the design, capacity, and functionality of the stormwater management facility.

Recommendation

Approval, contingent upon:

Compliance with the General Provisions (attached).

Financial Assurance in the amount of $35,200, including 30,200 for stormwater management, erosion control, and site restoration, and $5,000 for compliance with the chloride management requirements.

The applicant providing a name and contact information for the individual responsible for the erosion and sediment control at the site. NMCWD must be notified if the responsible individual changes during the permit term.

Per Rule 4.3.5, a receipt showing recordation of a maintenance declaration for the operation and maintenance of the stormwater management facility is required. A draft of the declaration must be approved by the district prior to recordation.

The stormwater narrative and HydroCAD modeling indicates the weir elevation of the outlet control structure is 830.6 M.S.L. The outlet control structure detail plan view on Sheet C6 indicates a controlling outlet elevation of 830.4 M.S.L. These inconsistencies must be rectified.

By accepting the permit, when issued, the applicant agrees to the following stipulations for closeout of the permit and release of the financial assurance after the project:

The work for Gyropolis Redevelopment under the terms of Permit 2022-155 must have an impervious surface area and configuration materially consistent with the approved plans. Design that differs materially from the approved plans will need to be the subject of a request for a permit modification or new permit, which will be subject to review for compliance with all applicable regulatory requirements.

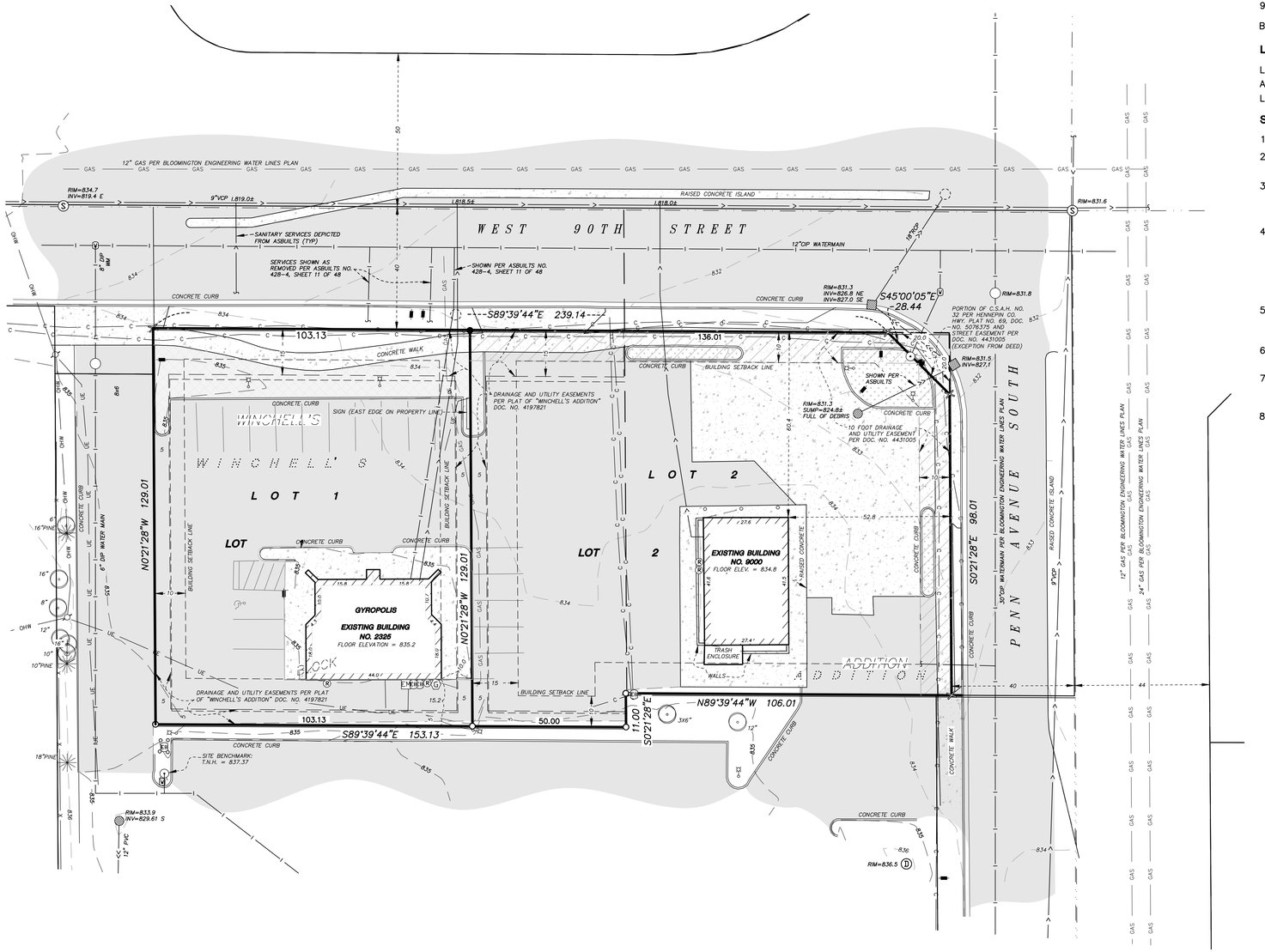
Submit soil conditions within three feet of the bottom of the proposed underground stormwater facility including data showing no evidence of groundwater within three feet of the bottom of the facility. The soil analysis may be completed during the course of construction for the purpose of verifying the 1991 soil boring information

Per Rule 4.5.6, an as-built drawing of the stormwater management facility conforming to the design specifications, including a stage volume relationship in tabular form for the underground stormwater management facility, as approved by the district, must be provided.

Submission of a plan for post-project management of Chloride use on the site. The plan must include 1) the designation of an individual authorized to implement the chloride use plan and 2) the designation of a Minnesota Pollution Control Agency certified salt applicator engaged in the implementation of the chloride-use plan for the site. The release of the $5,000 of the

financial assurance required for the chloride-management plan requires that chloride-management plan has been provided and approved by the District's Administrator.

Per Rule 12.4.1b, demonstration and confirmation that the stormwater management facility has been constructed or installed and are functioning as designed and permitted. Verification, through daily observation logs and photographs, must be provided showing the stormwater management facility used for volume retention have drawn down within 48 hours from the completion of two 1-inch (approximate) separate rainfall events.



N
W E
S

0 20 40
SCALE IN FEET

EXISTING CONDITIONS SURVEY
FOR: HTG ARCHITECTS

SITE ADDRESSES:

2325 90th Street West, (Lot 1)
AND
9000 Penn Avenue South, (Lot 2)

Bloomington, Minnesota.

LEGAL DESCRIPTION:

Lot 1 Block 1, WINCHELL'S ADDITION, Hennepin County County, Minnesota.
AND
Lot 2 Block 1, WINCHELL'S ADDITION, Except Road, Hennepin County County, Minnesota.

SURVEY NOTES:

1. The horizontal datum and bearings are based on the Hennepin County Coordinate System NAD83(2011).
2. The vertical datum is NAVD 88. The site benchmark is the top nut of the hydrant located near the southwest corner of Lot 1 (depicted hereon). Elevation = 837.37 feet.
3. The area of Lot 1 is 13,304 square feet or 0.3054 acres.

   The area of Lot 2 is 18,958 square feet or 0.4352 acres. The area of Lot 2, less the lands per HENNEPIN COUNTY HIGHWAY RIGHT-OF-WAY PLAT NO. 69, is 18,758 square feet or 0.4306 acres.
4. The location and extent of underground utilities, if shown, are based upon existing drawings provided by the utility companies, above ground evidence and Gopher State One Call markings per ticket number 220060272 and 220060275. Exclusive of excavation, there is no guarantee as to the accuracy or the completeness of this information. The size and location should be considered approximate. Additional underground utilities may be present. Verification of the existence and location of all utilities should be obtained from the utility owners prior to any planning or design. In accordance with State Statute, the location of utilities shall be confirmed prior to any demolition or construction.
5. The tree information shown hereon was collected during the field survey by non-forestry trained Anderson Engineering of Minnesota survey personnel. Tree sizes are estimates and locations are accurate to plus or minus three feet.
6. No title work was provided for the preparation of this survey to verify the legal description or the existence of any easements or encumbrances.
7. At the time of this survey, portions of the subject property were covered in significant amounts of snowfall, snow piles and ice. Some catch basins were observed to be full of ice and snow. Some improvements may not be depicted.
8. According to the City of Bloomington, the subject property is zoned B-4 (Neighborhood Commercial Center) and has the building setback requirements listed below. It is recommended that the property owner obtain a zoning letter from the City to verify all conditions that affect the property through the city zoning ordinance. This survey does not purport to describe all conditions contained in said ordinance.

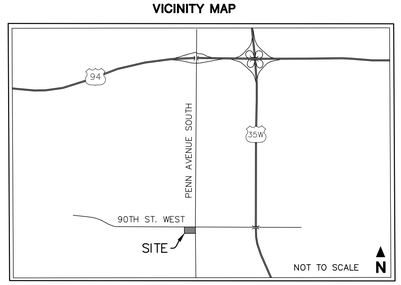
BUILDING SETBACKS

Front	=	10 feet
Side	=	10 feet
Rear	=	15 feet

LEGEND

- CATCH BASIN
- ELECTRIC BOX
- ELECTRIC METER
- GAS METER
- GUARD POST
- HANDICAP PARKING
- HYDRANT
- LIGHT POLE
- MANHOLE
- MANHOLE NOT FIELD VERIFIED
- POWER POLE
- POWER POLE ANCHOR
- ROOF DRAIN
- SANITARY MANHOLE
- SEMAPHORE
- SIGN
- WATER VALVE
- FOUND IRON MONUMENT
- SET 1/2"X14" IRON PIPE MARKED L.S. NO. 43501
- SCRIBED "X" IN SURFACE
- CONIFEROUS TREE
- DECIDUOUS TREE
- COMMUNICATION
- FENCE
- GAS MAIN
- OVERHEAD WIRES
- SANITARY SEWER
- STORM SEWER
- UNDERGROUND ELECTRIC
- WATER MAIN
- BITUMINOUS SURFACE
- CONCRETE SURFACE
- LANDSCAPE ROCK
- LANDSCAPE WOODCHIPS
- DEPRESSION CONTOUR
- CIP CAST IRON PIPE
- VCP VITRIFIED CLAY PIPE

VICINITY MAP



HTG architects
www.htg-architects.com
Minneapolis Tampa Bismarck

9300 Hennepin Town Road
Minneapolis, MN 55347
Tel: 952.278.8880
Fax: 952.278.8822

PROJECT

GYROPOLIS

ADDITION/REMODELING

2325 W 90TH ST
BLOOMINGTON, MINNESOTA

ISSUED SET
REVISIONS

DATE	NO.	
9/27/22	1	CITY SUBMITTAL
10/13/22	2	BOUNDARY ADJUSTMENT
12/5/22	3	WATERSHED SUBMITTAL

I HEREBY CERTIFY THAT THIS SURVEY 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.

DAVID ANDERSON, LS

43501 — MN. REG. NO.
1/28/22 — DATE

ANDERSON
13605 1st Avenue N. #100
Plymouth, MN 55441 | ae-mn.com
P 763.412.4000 | F 763.412.4090
Anderson Engineering of Minnesota, LLC

EXISTING CONDITIONS SURVEY

DRAWN BY: BF CHECKED BY: BF

C1

16318 (AEMN)

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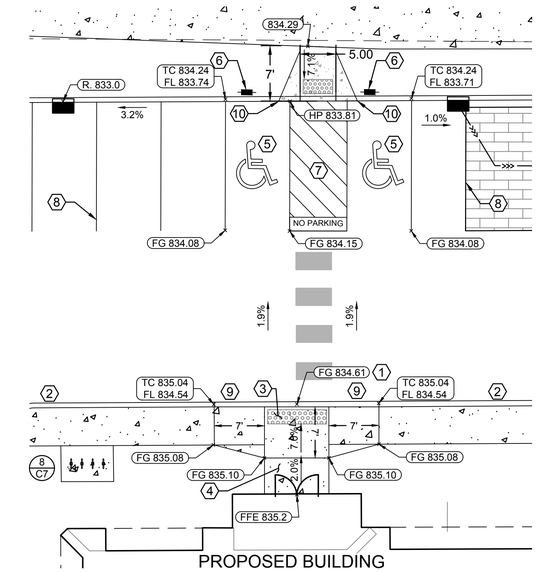


1 PEDESTRIAN CURB RAMP ENLARGEMENT

SCALE: 1"=10'

0 10' 20'

KEY NOTES

1. 0" CURB HEIGHT FOR FULL LENGTH OF CONCRETE WALK.
2. FULL CURB HEIGHT
3. DETECTABLE WARNING MAY BE PART OF 4'X4' LANDING AREA IF IT IS NOT FEASIBLE TO CONSTRUCT THE LANDING OUTSIDE OF THE DETECTABLE WARNING AREA.
4. 4' BY 4' MIN. LANDING WITH MAX. 2.0% SLOPE IN ALL DIRECTIONS
5. WHITE REFLECTIVE PAINT RECTANGLE CENTERED AROUND ACCESSIBILITY PARKING SYMBOL. LINE TO BE 3 INCHES WIDE, OVER A WIDTH OF 36 INCHES AND HEIGHT OF 41 INCHES PER 2009 MUTCD CODE FIGURE 3B.20.
6. HANDICAP STALL SIGN TO COMPLY WITH 2020 MN ACCESSIBILITY CODE 502.7
7. 4" PAINTED DIAGONAL LINES 45° - 3' CENTER TO CENTER.
8. 4" PAINTED PARKING STALL LINES.
9. VARIABLE HEIGHT CURB
10. 3' VERTICAL TAPER TO FLUSH CURB

CONTRACTOR NOTES

1. PROPOSED SPOT ELEVATIONS ARE TO TOP OF FINISHED SURFACE UNLESS OTHERWISE NOTED IN LEGEND.
2. ALL CONSTRUCTION OF HANDICAP STALLS, ROUTES, & CURB RAMPS TO COMPLY WITH THE 2020 MN ACCESSIBILITY CODE.
3. CONTRACTION JOINTS SHALL BE CONSTRUCTION ALONG ALL GRADE BREAKS. ALL GRADE BREAKS SHALL BE PERPENDICULAR TO THE PATH OF TRAVEL.
4. TO ENSURE RAMPS & LANDINGS ARE PROPERLY CONSTRUCTED, LANDINGS MAY BE CAST SEPARATELY.
5. ALL SLOPES ARE ABSOLUTE, RATHER THAN RELATIVE TO SIDEWALK/ROADWAY GRADES.
6. TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE.
7. FOUR FOOT MIN WIDTH OF DETECTABLE WARNING IS REQUIRED FOR ALL RAMPS. DETECTABLE WARNINGS SHALL CONTINUOUSLY EXTEND FOR A MIN. OF 24" IN THE PATH OF TRAVEL.
8. ALL CONSTRUCTION, POST-CONSTRUCTION PARKING, STORAGE OF EQUIPMENT AND MATERIALS MUST BE ON SITE. USE OF PUBLIC STREETS FOR PRIVATE CONSTRUCTION PARKING. LOADING/UNLOADING AND STORAGE WILL NOT BE ALLOWED.

SPOT ELEVATION KEY

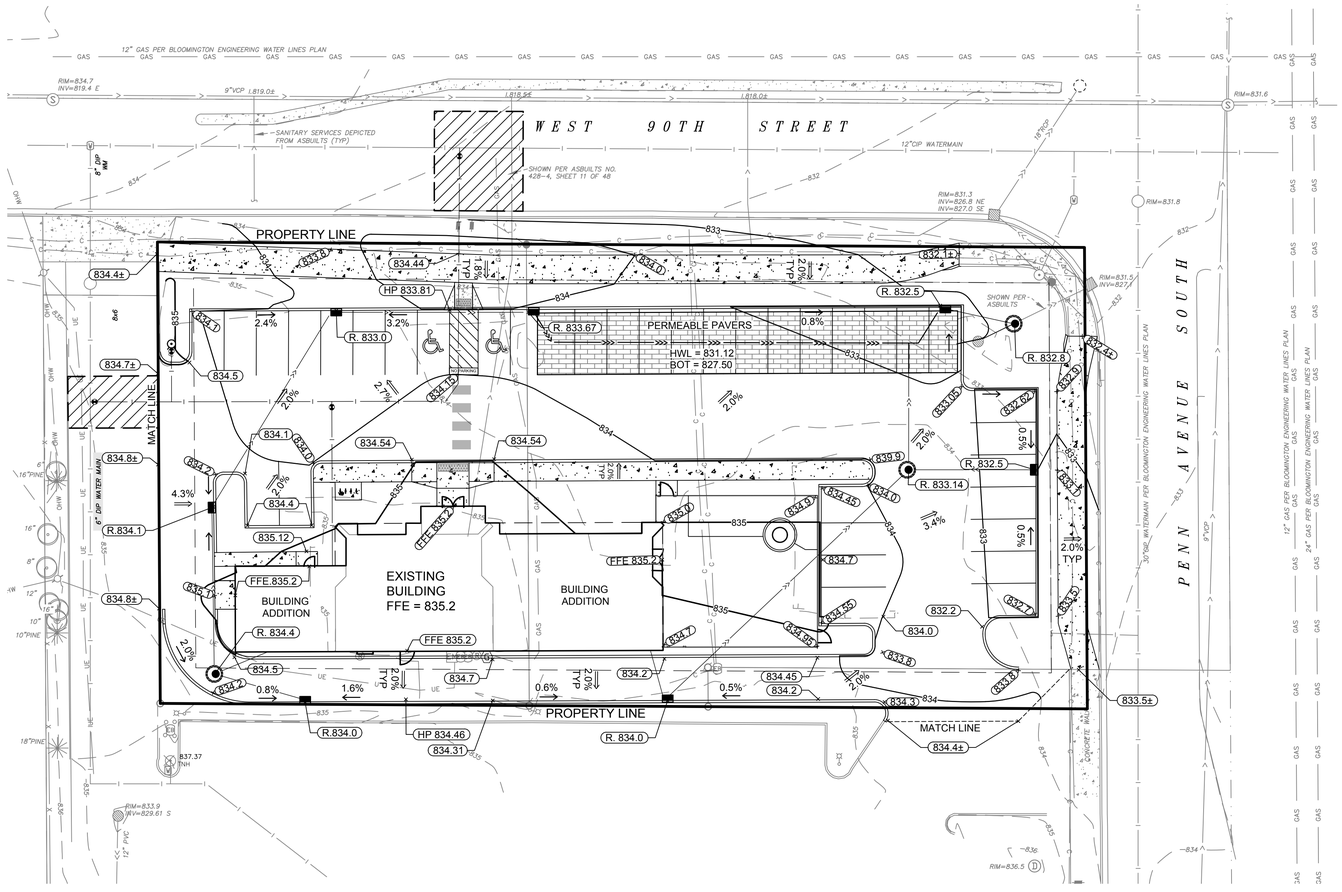
±	EXISTING GRADE
HP	HIGH POINT ELEVATION
TC	TOP OF CURB ELEVATION
R.	RIM ELEVATION
I.	INVERT ELEVATION

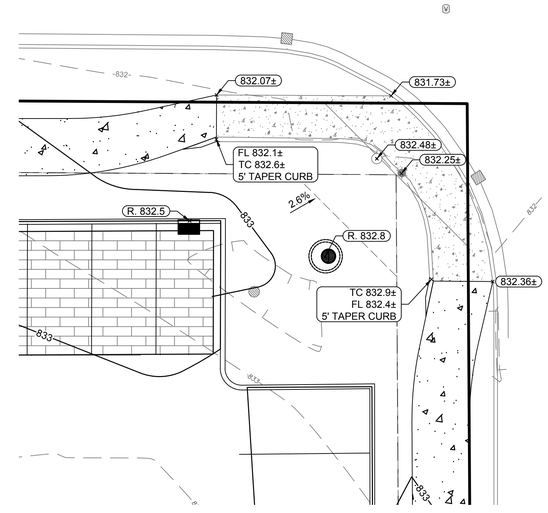
N

0 20' 40'

LEGEND

- PROPERTY LIMITS
- 966 EXISTING MINOR CONTOUR
- 965 EXISTING MAJOR CONTOUR
- 966 PROPOSED MINOR CONTOUR
- 965 PROPOSED MAJOR CONTOUR
- × 959.4 EXISTING SPOT ELEVATION
- ⟹ DRAINAGE ARROW
- PROPOSED CONCRETE C&G





2 NE CORNER ENLARGEMENT

SCALE: 1"=10'

0 10' 20'

CALL 48 HOURS BEFORE DIGGING
Utilities Underground Location Center
DIAL 811
811.
Know what's below,
Call before you dig.

HTG architects
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REVISIONS

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10/13/22	2	BOUNDARY ADJUSTMENT
12/5/22	3	WATERSHED SUBMITTAL

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION, AND THAT I AM A DULY LICENSED CIVIL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA

NOT FOR CONSTRUCTION

Brian Field, PE

56013 REG. NO. 12/5/2022 DATE

ANDERSON
13605 1st Avenue N. #100
Plymouth, MN 55441 | ae-mn.com
P 763.412.4000 | F 763.412.4090
Anderson Engineering of Minnesota, LLC

GRADING & DRAINAGE PLAN

DRAWN BY: BF CHECKED BY: BF

C3

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GENERAL NOTES

1. ALL CONSTRUCTION SHALL COMPLY WITH RECOMMENDATIONS OF THE SOIL ENGINEER UNLESS DIRECTED OTHERWISE.
2. ALL CONSTRUCTION SHALL COMPLY WITH THE MOST CURRENT CITY OF BLOOMINGTON CODE AND STANDARDS, AND THE 2016 EDITION OF MNDOT STANDARD CONSTRUCTION SPECIFICATIONS (INCLUDING SUPPLEMENTS) AND THE C.E.A.M. STANDARD SPECIFICATIONS-2013 EDITION UNLESS DIRECTED OTHERWISE.
3. ALL CONSTRUCTION SHALL COMPLY WITH APPLICABLE MUNICIPAL, WATERSHED DISTRICT, COUNTY, MPCA, DEPT. OF HEALTH, AND MNDOT PERMITS.
4. THE LOCATION AND TYPE OF EXISTING UTILITIES SHOWN ON THE PLANS ARE FOR GENERAL INFORMATION ONLY. THE INFORMATION IS NOT WARRANTED TO BE ACCURATE OR COMPLETE. THE CONTRACTOR, IN COOPERATION WITH THE APPROPRIATE UTILITY COMPANY OR MUNICIPALITY, IS RESPONSIBLE FOR VERIFYING THE LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES.
5. PROVIDE MINIMUM 10' HORIZONTAL & 18" VERTICAL SEPARATION OF ALL WATERMAIN CROSSINGS FROM STORM OR SANITARY SEWER.
6. ALL WATER SERVICE SHALL BE INSTALLED WITH 8' MINIMUM COVER FROM FINISHED GRADE, MAX 10 FEET.
7. HDPE PIPE CONNECTIONS INTO ALL CONCRETE STRUCTURES MUST BE MADE WITH WATER TIGHT MATERIALS UTILIZING AN A-LOK OR WATERSTOP GASKET OR BOOT, CAST-IN-PLACE RUBBER BOOT, OR APPROVED EQUAL. WHERE THE ALIGNMENT PRECLUDES THE USE OF THE ABOVE APPROVED WATERTIGHT METHODS, CONSEAL 231 WATERSTOP SEALANT, OR APPROVED EQUAL WILL ONLY BE ALLOWED AS APPROVED BY THE ENGINEER.
8. ALL NEW NON METALLIC SANITARY AND WATER SERVICE PIPE SHALL HAVE TRACER WIRE, PER SPECIFICATIONS.
9. LOCATE AND PROTECT EXISTING UTILITIES UNLESS OTHERWISE NOTED.
10. SUBSTITUTIONS FROM INFO. SHOWN HEREON SHALL BE REVIEWED AND APPROVED BY THE ENGINEER OF RECORD AND CITY ENGINEER.
11. ALL PORTIONS OF THE STORM SEWER SYSTEM LOCATED WITHIN 10 FEET OF A BUILDING OR WATER SERVICE LINE MUST BE TESTED IN ACCORDANCE WITH MINNESOTA RULES, CHAPTER 4714 , SECTION 1109.0. TESTING OF WATER AND SEWER SHALL COMPLY WITH 2013 CEAM REQUIREMENTS.
12. PVC SANITARY SEWER MUST MEET ASTM STANDARDS LISTED IN MINNESOTA RULES, CHAPTER 4714,TABLE 701.1 AND INSTALLATION STANDARD 1. FITTINGS 4 T 15 INCHES IN DIAMETER, SHALL CONFORM TO ASTM D3034, TYPE PSM, SDR 26. PIPE AND FITTINGS SHALL HAVE ELASTOMERIC GASKET JOINTS PROVIDING A WATERTIGHTS SEAL WHEN TESTED IN ACCORDANCE WITH ASTM D3212. JOINTS SEALS ARE TO BE MECHANICAL CLAMP RING TYPE, STAINLESS STEEL EXPANDING AND CONTRACTING SLEEVE NEOPRENE RIPPED GASKET FOR POSITIVE SEAL. GASKETS SHALL CONFORM TO ASTM F477.
13. HDPE STORM SEWERS MUST MEET ASTM F714 (SEE MINNESOTA RULES, CHAPTER 4714 SECTION 1102.4 AND INSTALLATION STANDARD 1). WATER TIGHT JOINTS MUST BE USED AT ALL CONNECTION INCLUDING STRUCTURES. THE INSTALLATION MUST COMPLY WITH ASTM D2321.
14. ALL COMPONENTS OF WATER SYSTEM, UP TO THE WATER METER OR FIRE SERVICE EQUIPMENT MUST UTILIZE PROTECTIVE INTERNAL COATINGS MEETING CURRENT ANSI/AWWA STANDARDS FOR CEMENT MORTAR LINING OR SPECIAL COATING. THE USE OF UNLINED OR UNCOATED PIPE IS NOT ALLOWED. PROVIDE 8 MIL POLYWRAP ON DIP WATERMAIN PER CITY STANDARDS.
15. COMBINATION FIRE AND DOMESTIC SERVICES MUST TERMINATE WITH A THREAD ON FLANGE OR AN MJ TO FLANGE ADAPTER.
16. UTILITY AND MECHANICAL CONTRACTORS MUST COORDINATE THE INSTALLATION OF ALL WATER AND SEWER SERVICE PIPES INTO THE BUILDING TO ACCOMMODATE CITY INSPECTION AND TESTING.
17. CONTRACTOR TO PROVIDE UTILITY AS-BUILTS TO CITY OF BLOOMINGTON PRIOR TO CERTIFICATE OF OCCUPANCY.
18. CONTRACTOR SHALL OBTAIN A PUBLIC WORKS PERMIT FOR UNDERGROUND WORK WITHIN THE RIGHT OF WAY. PERMIT IS REQUIRED PRIOR TO REMOVALS OR INSTALLATION. CONTACT UTILITIES (952-563-4568) FOR PERMIT INFORMATION.
19. ALL CONSTRUCTION, POST-CONSTRUCTION PARKING, STORAGE OF EQUIPMENT AND MATERIALS MUST BE ON SITE. USE OF PUBLIC STREETS FOR PRIVATE CONSTRUCTION PARKING. LOADING/UNLOADING AND STORAGE WILL NOT BE ALLOWED.

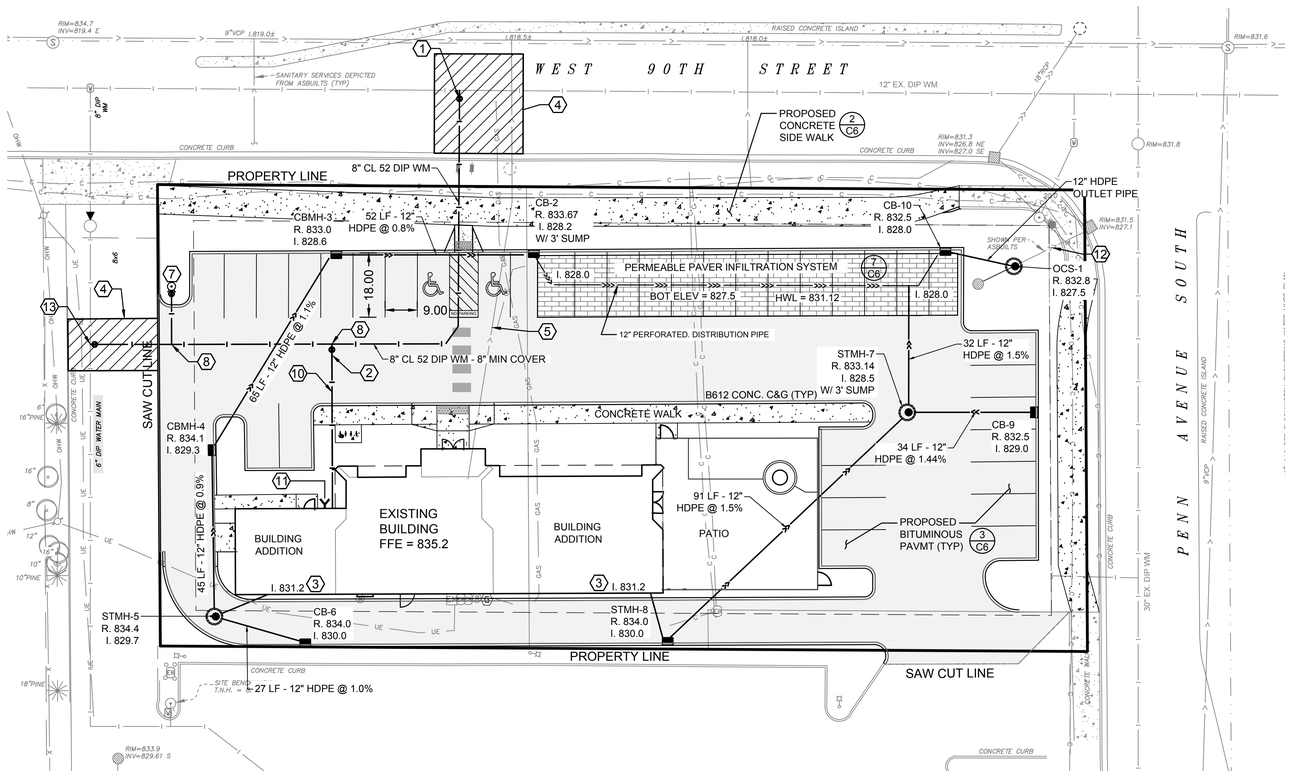
CALL 48 HOURS BEFORE DIGGING
Utilities Underground Location Center
DIAL 811
811.
Know what's **below**, Call before you dig.

STRUCTURE SCHEDULE

STRUCTURE NUMBER	SIZE	CASTING	NOTES
OSC–1	60"–DIA	R–1642	SOLID "STORM"
CB–2	48"–DIA	R–3067	–
CBMH–3	48"–DIA	R–3067	–
CBMH–4	48"–DIA	R–3067	–
STMH–5	48"–DIA	R–1642	SOLID "STORM"
CB–6	2'X3' REC	R–3067	–
STMH–7	48" DIA	R–1642	SOLID "STORM"
CB–8	2'X3' REC	R–3067	–
CB–9	2'X3' REC	R–3067	–
CB–10	2'X3' REC	R–3067	–

KEY NOTES

1. WET TAP EXISTING 12" WATER MAIN WITH SADDLE AND 8" GATE VALVE. REMOVE EXISTING SERVICE PER CITY OF BLOOMINGTON STANDARDS. TAPS OF LIVE WATERMAINS ARE DONE BY CITY FORCES. CONTRACTOR TO PAY AND COORDINATE THIS WORKS.
2. INSTALL 6" GATE VALVE AND RISER BOX.
3. INSTALL 6" - HDPE INTERNAL ROOF DRAIN FOR BUILDING ADDITION. COORDINATE FINAL LOCATION AND TYPE WITH MASTER PLUMBER.
4. REMOVE AND REPLACE IN- KIND FOR UTILITY CONNECTION PROVIDE STAGE APPROPRIATE VEHICLE AND PEDESTRIAN TRAFFIC CONTROL MEASURES PER MUTCD.
5. PROTECT EXISTING SANITARY SERVICE IN PLACE.
6. ABANDONED WATER SERVICE AT MAIN PER CITY STANDARDS.
7. INSTALL 6" HYDRANT LEAD WITH GATE VALVE (10/C6)
8. INSTALL 8X6 TEE
9. INSTALL 6X6 TEE WITH 8X6 REDUCER
10. 6" CL 52 DIP WATERMAIN COMBINED DOMESTIC AND FIRE SERVICE.
11. FDC LOCATION CONTRACTOR TO CONFIRM FINAL LOCATION WITH ARCHITECTURAL PLANS AND MASTER PLUMBER.
12. CONTRACTOR TO INSPECT EXISTING STORM PIPE. REMOVE DEBRIS AS-NEEDED
13. WET TAP EXISTING 6" WATERMAIN. INSTALL 6X6 TEE WITH 6X8 REDUCER AND 8" GATE VALVE. TAPS OF LIVE WATERMAINS ARE DONE BY CITY FORCES. CONTRACTOR TO PAY AND COORDINATE THIS WORKS.



LEGEND

- PROPERTY LIMITS
- EXISTING WATERMAIN
- EXISTING SANITARY SEWER
- EXISTING STORM SEWER
- PROPOSED WATERMAIN
- PROPOSED STORM SEWER
- PROPOSED DRAIN TILE
- PROPOSED STORM INLETS
- PROPOSED CONCRETE WALK
- PROPOSED BITUMINOUS ASPHALT
- PROPOSED GATE VALVE
- PROPOSED HYDRANT

N

0 20' 40'

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PROJECT

GYROPOLIS

ADDITION/REMODELING

2325 W 90TH ST
BLOOMINGTON, MINNESOTA

ISSUED SET
REVISIONS

DATE	NO.	
9/27/22	1	CITY SUBMITTAL
10/13/22	2	BOUNDARY ADJUSTMENT
12/5/22	3	WATERSHED SUBMITTAL

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION, AND THAT I AM A DULY LICENSED CIVIL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA

NOT FOR CONSTRUCTION

Brian Field, PE

56013 REG. NO. 12/5/2022 DATE

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UTILITY & PAVING PLAN

DRAWN BY: BF CHECKED BY: BF

C4

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STORM WATER POLLUTION PREVENTION PLAN NOTES:

1. GRADING CONTRACTORS SHALL VERIFY LOCATIONS AND ELEVATIONS OF ALL UNDERGROUND UTILITIES WITH THE RESPECTIVE UTILITY COMPANIES PRIOR TO CONSTRUCTION.

2. ALL EROSION CONTROL MEASURES CALLED FOR ON THESE PLANS AND SPECIFICATIONS, WHICH MAY INCLUDE SILT FENCE, SEDIMENTATION BASINS OR TEMPORARY SEDIMENT TRAPS, SHALL BE CONSTRUCTED AND SERVICEABLE IN THE FOLLOWING ORDER:

   A. ROCK CONSTRUCTION ENTRANCES A MINIMUM OF 50 FEET
   B. SILT FENCE
   C. TEMPORARY CULVERTS
   D. TEMPORARY SEDIMENTATION BASINS AND OUTFALL FACILITIES
   E. SORMWATER POND CONSTRUCTION
   F. COMMON EXCAVATION AND EMBANKMENT (GRADING)
   G. SEED AND MULCH OR SOD
   H. BIO-ROLL BARRIERS IN FINISHED GRADED AREAS
   I. INLET AND OUTLET FACILITIES SUBSEQUENT TO STORM SEWER WORK

3. GRADING CONTRACTOR SHALL PROVIDE AND MAINTAIN ALL EROSION CONTROL MEASURES IN ACCORDANCE WITH CITY AND NPDES PHASE II PERMITTING REQUIREMENTS AS WELL AS EROSION CONTROL MEASURES AS MAY BE SHOWN ON THESE PLANS OR SPECIFICATIONS. GRADING CONTRACTOR SHALL IMPLEMENT ANY ADDITIONAL EROSION CONTROL MEASURES AS MAY BE REQUIRED TO PROTECT ADJACENT PROPERTY.

4. ALL EROSION CONTROL FACILITIES SHALL BE MAINTAINED BY THE CONTRACTOR DURING GRADING OPERATIONS. ANY TEMPORARY FACILITIES WHICH ARE TO BE REMOVED AS CALLED FOR ON THESE PLANS AND SPECIFICATIONS SHALL BE REMOVED BY THE GRADING CONTRACTOR WHEN DIRECTED BY THE ENGINEER. THE GRADING CONTRACTOR SHALL RESTORE THE SUBSEQUENTLY DISTURBED AREA IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS.

5. THE GRADING CONTRACTOR SHALL SCHEDULE THE SOILS ENGINEER SO THAT CERTIFICATION OF ALL CONTROLLED FILLS WILL BE FURNISHED TO THE OWNER DURING AND UPON COMPLETION OF THE PROJECT.

6. ALL DISTURBED AREAS, EXCEPT AREAS TO BE PAVED AND/OR SPECIFICALLY DESIGNED BY A LANDSCAPE PLAN, SHALL BE COVERED WITH A MINIMUM 6" OF TOP SOIL OR AS INDICATED IN SPECIFICATIONS OR LANDSCAPING PLAN. ALL DISTURBED AREAS SHALL BE SEEDED & MULCHED AT THE PRESCRIBED RATES WITHIN 72 HOURS OF FINAL GRADING UNLESS OTHERWISE NOTED.

   SEED MIX: MNDOT NO. 25-141 59# / ACRE
   MULCH: TYPE 1 2 TONS / ACRE (DISK ANCHORED)
   FERTILIZER: TYPE 3 22-5-10 350# / ACRE

   ALL EXPOSED SOIL AREAS WITH A CONTINUOUS POSITIVE SLOPE WITHIN 200 LINEAL FEET OF ANY SURFACE WATER, MUST HAVE TEMPORARY EROSION PROTECTION OR PERMANENT COVER FOR THE EXPOSED SOIL AREAS YEAR ROUND, ACCORDING TO THE FOLLOWING TABLE OF SLOPES AND TIME FRAMES:

   TYPE OF SLOPE **TIME** (Maximum time an area can remain open when the area is not actively being worked)
   STEEPER THAN 3:1 7 DAYS
   10:1 TO 3:1 4 DAYS
   FLATTER THAN 10:1 21 DAYS

7. THE EXISTING TOPOGRAPHY AND CONTOUR ELEVATIONS SHOWN ON THE PLAN WERE TAKEN FROM A PLAN FURNISHED BY OWNER.

8. CONTRACTORS GRADING AND EROSION CONTROL OPERATIONS SHALL TAKE PLACE WITHIN THE CONSTRUCTION LIMITS.

9. IT IS REQUIRED THAT SOILS TRACKED FROM THE SITE BY MOTOR VEHICLES BE CLEANED DAILY FROM PAVED ROADWAY SURFACES THROUGHOUT THE DURATION OF CONSTRUCTION.

10. PROVIDE TEMPORARY SEDIMENTATION BASINS AS DIRECTED BY THE ENGINEER.

11. ALL REQUIREMENTS OF THE LOCAL WATERSHED DISTRICT SHALL BE SATISFIED PER THE APPROVED PERMIT.

12. ALL EROSION & SEDIMENT CONTROL MEASURES SHOWN ON THIS PLAN AND IMPLEMENTED IN THE FIELD AS DIRECTED BY THE ENGINEER SHALL CONFORM TO THE MPCA'S "PROTECTING WATER QUALITY IN URBAN AREAS: BEST MANAGEMENT PRACTICES FOR MINNESOTA".

13. DEWATERING AND / OR BASIN DRAINING DISCHARGE SHALL BE DIRECTED TO SEDIMENTATION BASINS WHEREVER POSSIBLE. ALL DISCHARGE POINTS SHALL BE ADEQUATELY PROTECTED FROM EROSION & SCOUR THROUGH USE OF APPROVED ENERGY DISSIPATION DEVICES.

14. ALL SOLID WASTE / CONSTRUCTION DEBRIS SHALL BE DISPOSED OF IN ACCORDANCE WITH MPCA REQUIREMENTS. HAZARDOUS MATERIALS SHALL BE STORED / DISPOSED OF IN COMPLIANCE WITH MPCA REGULATIONS.

15. CONTRACTOR SHALL USE RAPID STABILIZATION METHODS PER MNDOT 2575 AS NEEDED DURING THE COURSE OF THE WORK TO MAINTAIN CONFORMANCE WITH THE CITY AND NPDES II PERMIT REQUIREMENTS. THIS WORK SHALL CONSIST OF OPERATIONS NECESSARY TO RAPIDLY STABILIZE SMALL CRITICAL AREA, TO PREVENT OFF SITE SEDIMENTATION AND / OR TO COMPLY WITH PERMIT REQUIREMENTS. THE WORK MAY BE PERFORMED AT ANY TIME DURING THE CONTRACT AND DURING NORMAL WORKING HOURS. THIS WORK WILL BE CONDUCTED ON SMALL AREAS THAT MAY OR MAY NOT BE ACCESSIBLE WITH NORMAL EQUIPMENT. THIS WORK SHALL BE DONE IN ACCORDANCE WITH THE APPLICABLE MNDOT STANDARDS SPECIFICATIONS, THE DETAILS SHOWN IN THE PLANS, AND THE FOLLOWING:

   THERE ARE FIVE STABILIZATION METHODS APPROVED FOR THESE OPERATIONS. THESE METHODS MAY BE CONDUCTED INDEPENDENTLY OR IN COMBINATION.

   METHOD **RAPID STABILIZATION**
   1 TYPE 1 MULCH WITH DISC ANCHORING
   2 TYPE 3 MULCH WITH TYPE HYDRAULIC MULCH
   3 TYPE HYDRAULIC MULCH WITH SEED MIXTURE 22-11
   4 CATEGORY 3 EROSION CONTROL BLANKET WITH SEED MIXTURE
   5 RIPRAP CLASS II WITH GEOTEXTILE TYPE III

   THESE EFFORTS WILL BE INCIDENTAL TO THE EROSION CONTROL BID ITEM.

16. CHANGE OF COVERAGE: FOR STORM WATER DISCHARGES FROM CONSTRUCTION PROJECTS WHERE THE OWNER OR OPERATOR CHANGES, (E.G., AN ORIGINAL DEVELOPER SELLS PORTIONS OF THE PROPERTY TO VARIOUS BUILDERS) THE NEW OWNER OR OPERATOR MUST SUBMIT A SUBDIVISION REGISTRATION WITHIN 7 DAYS OF ASSUMING TRANSFERS, SALE OR CLOSING ON THE PROPERTY.

17. INDIVIDUAL SITE BUILDERS SHALL BE RESPONSIBLE FOR PROVIDING ANY AND ALL NECESSARY EROSION CONTROL MEASURES AS MAY BE REQUIRED. REQUIRED ECM'S SHALL CONSIST OF BUT NOT BE LIMITED TOT HE FOLLOWING:

   A. STAKED FIBER LOG ROLLS AT BACK OF ALL CURB EXCEPT AT CONSTRUCTION / DRIVEWAY ENTRANCE.
   B. SILT FENCE ON ALL DOWN GRADIENT SLOPES FROM CONSTRUCTION AREA. SILT FENCE SHALL HAVE THE BOTTOM DUG IN WITH SOIL FIRMLY COMPACTED.
   C. ROCK CONSTRUCTION ENTRANCE HAVING 1" TO 2" CLEAR ROCK OVER GEOTEXTILE FABRIC.
   D. STREET CLEANING AS MAY BE REQUIRED SHOULD VEHICLE TRACKING OCCUR.

   INDIVIDUAL SITE BUILDERS ARE REQUIRED TO MAINTAIN ECM'S UNTIL SUCH TIME AS INDIVIDUAL YARDS/VEGETATION ARE ESTABLISHED.

18. CONTRACTOR SHALL PROVIDE A TEMPORARY SEDIMENTATION BASIN ON SITE FOR CONSTRUCTION WASH OUT USE. TEMPORARY BASIN SHALL BE LOCATED AS TO PROVIDE EASY ACCESS FOR CONSTRUCTION VEHICLES AND CONCRETE TRUCKS AS NECESSARY.

19. INLET SEDIMENTATION CONTROL IS TO BE PROVIDED TO ALL STORM SEWER CATCH BASIN THROUGHOUT CONSTRUCTION . MEASURES APPLIED SHALL COMPLY WITH BEST MANAGEMENT PRACTICES FOR MINNESOTA AND APPLICATION OF NPDES PHASE II AS APPROPRIATE FOR PHASE OF CONSTRUCTION.

20. CONTRACTOR SHALL PREVENT SOIL LOSS DURING CONSTRUCTION DUE TO WIND EROSION THROUGHOUT CONSTRUCTION. DUST SHALL BE SUPPRESSED THOUGH THE APPLICATIONS OF WATER, AS DEEMED NECESSARY BY THE CONTRACTOR, OR THROUGH EQUIVALENT BMP'S AS APPROVED BY THE ENGINEER.

21. IF LEED ACCREDITATION IS APPLICABLE, CONTRACTOR SHALL DOCUMENT THE IMPLEMENTATION OF THE EROSION AND SEDIMENTATION CONTROL PLAN THROUGH DATE-STAMPED PHOTOS AND INSPECTION LOGS / REPORTS. REPORTS SHALL INCLUDE AT A MINIMUM DESCRIPTION OF ALL EMPLOYED BMP'S (INCLUDING BOTH MEASURES TO PREVENT SOIL LOSS DUE TO RUNOFF AND SOIL LOSS DUE TO WIND EROSION), BMP'S DEEMED UNNECESSARY DUE TO SITE CONDITIONS, CORRECTIVE ACTIONS TAKEN IN RESPONSE TO PROBLEMS, AND ANY ADDITIONAL INFORMATION RELEVANT TO THE CONDITION OF THE EROSION AND SEDIMENT CONTROL PLAN AS IT WAS ESTABLISHED AT THE TIME OF CONSTRUCTION.

STORMWATER POLLUTION PREVENTION PLAN SCHEDULE OF INSTALLATION & MAINTENANCE

ITEM	INSTALLATION	INSPECTION & MAINTENANCE	REMOVAL
SILT FENCE	PRIOR TO COMMENCEMENT OF EARTHWORK OPERATIONS.	INSPECT & MAINT. AFTER EACH RUN-OFF EVENT. REMOVE SEDIMENTS AS REQUIRED.	AFTER TRIBUTARY DRAINAGE AREA IS RESTORED.
ROCK CONST. ENTRANCE	PRIOR TO COMMENCEMENT OF EARTHWORK OPERATIONS.	INSPECT REGULARLY. MAINTAIN AS NEEDED.	PRIOR TO PAVING.
INLET PROTECTION	UPON INLET CONSTRUCTING	WHEN 1/3 CAPACITY OF BMP IS REACHED	AFTER TRIBUTARY AREAS ARE FULLY RESTORED

KEY NOTES

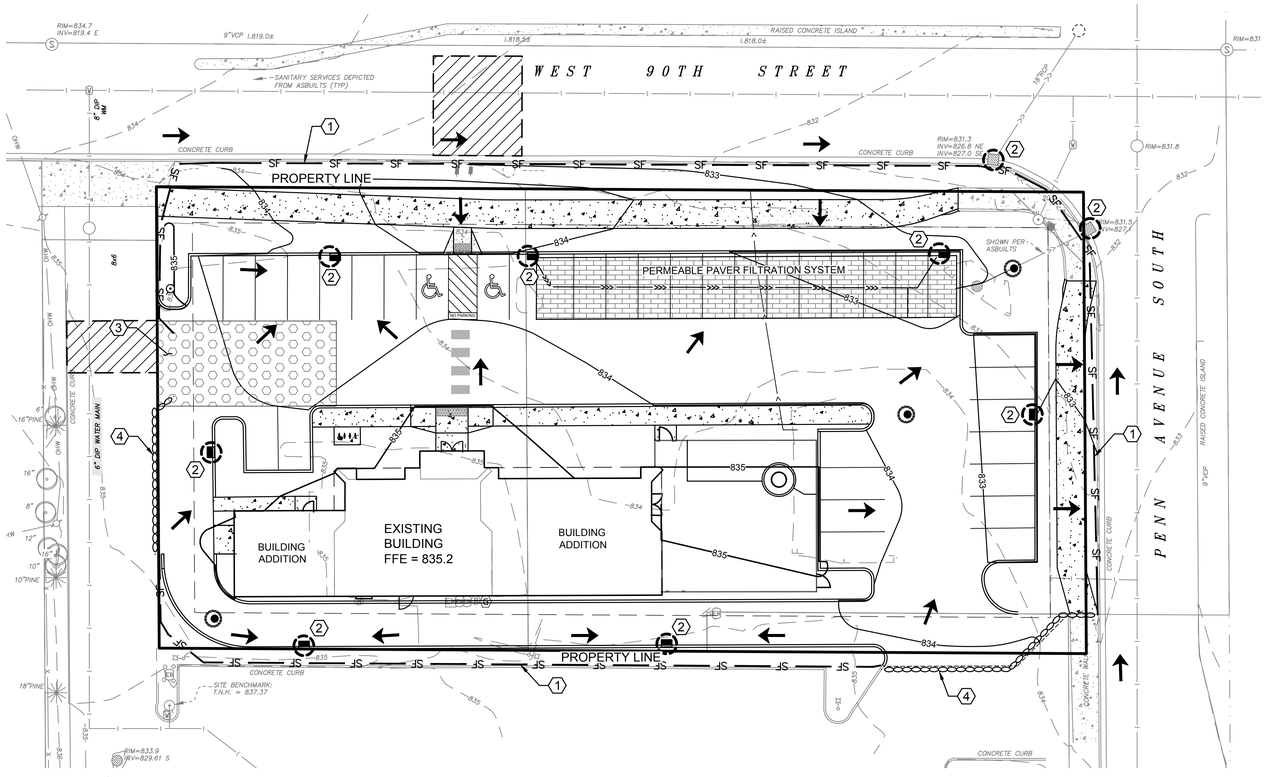
1. INSTALL AND MAINTAIN SILT FENCE PERIMETER SEDIMENT PROTECTION IN TURF AREAS. USE BIO-ROLLS AS NEEDED IN PAVED AREAS FOR PHASING PURPOSES. (3 / C5)
2. INSTALL AND MAINTAIN SEDIMENT PROTECTION. (2 / C5)
3. INSTALL TEMPORARY ROCK ENTRANCE AT ALL CONSTRUCTION INGRESS AND EGRESS LOCATIONS PRIOR TO EXCAVATION AND TO BE MAINTAINED THROUGHOUT THE ENTIRE CONSTRUCTION PROCESS. (1 / C5)
4. INSTALL SEDIMENT CONTROL LOG PER MNDOT SPECIFICATION SECTION 2573.

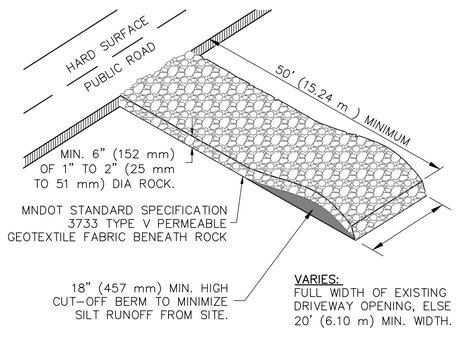
GENERAL NOTES

1. CONTRACTOR IS RESPONSIBLE FOR INSTALLATION, MAINTENANCE AND REMOVAL OF ALL APPLICABLE EROSION & SEDIMENT CONTROL ITEMS.
2. SPECIFIED EROSION/SEDIMENT CONTROL MEASURES ARE THE MINIMUM. ADDITIONAL PRACTICES MAY BE REQUIRED DURING THE COURSE OF CONSTRUCTION.
3. THE TOTAL DISTURBED AREA IS EQUAL TO 0.80 ACRES. THIS IS BELOW THE 1.0 ACRE THRESHOLD, AND THEREFORE AN MPCA PERMIT IS NOT REQUIRED.

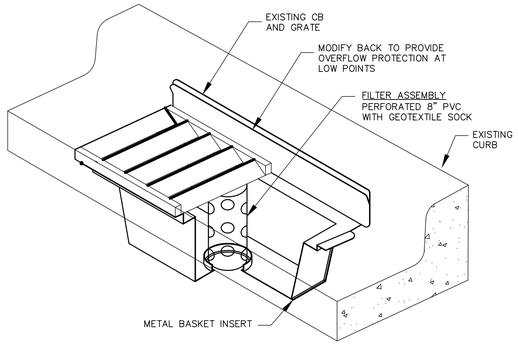
LEGEND

- PROPERTY LIMITS
- CONSTRUCTION LIMITS
- 966 EXISTING MINOR CONTOUR
- 965 EXISTING MAJOR CONTOUR
- 966 PROPOSED MINOR CONTOUR
- 965 PROPOSED MAJOR CONTOUR
- DRAINAGE ARROW
- SF SILT FENCE
- INLET SEDIMENT PROTECTION
- ROCK CONSTRUCTION ENTRANCE



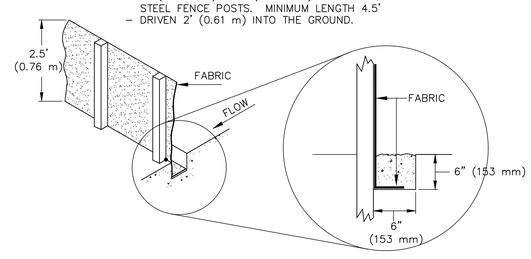


1 ROCK CONSTRUCTION ENTRANCE DETAIL
SCALE: N.T.S.



2 INLET PROTECTION DETAIL
SCALE: N.T.S.

NOTES:
- PLACE BOTTOM EDGE OF FENCE INTO 6" (153 mm) DEEP TRENCH AND BACKFILLED IMMEDIATELY.
- POSTS SHALL BE:
  - 4' (1.22 m) ON CENTER
  - 2" (50.8 mm) X 2" (50.8 mm) HARDWOOD, PINE OR STEEL FENCE POSTS. MINIMUM LENGTH 4.5'
  - DRIVEN 2' (0.61 m) INTO THE GROUND.



3 SILT FENCE INSTALLATION DETAIL
SCALE: N.T.S.

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PROJECT

GYROPOLIS

ADDITION/REMODELING

2325 W 90TH ST
BLOOMINGTON, MINNESOTA

ISSUED SET
REVISIONS

DATE	NO.	
9/27/22	1	CITY SUBMITTAL
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NOT FOR CONSTRUCTION

Brian Field, PE

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EROSION & SEDIMENT CONTROL PLAN

DRAWN BY: BF CHECKED BY: BF

C5

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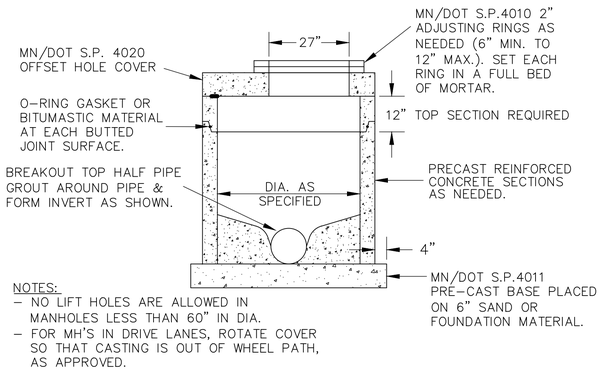

1 STANDARD MANHOLE DETAIL
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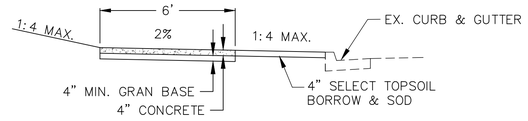

2 CONCRETE WALK SECTION DETAIL
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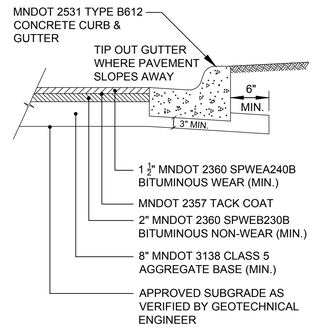
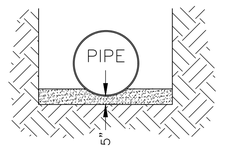
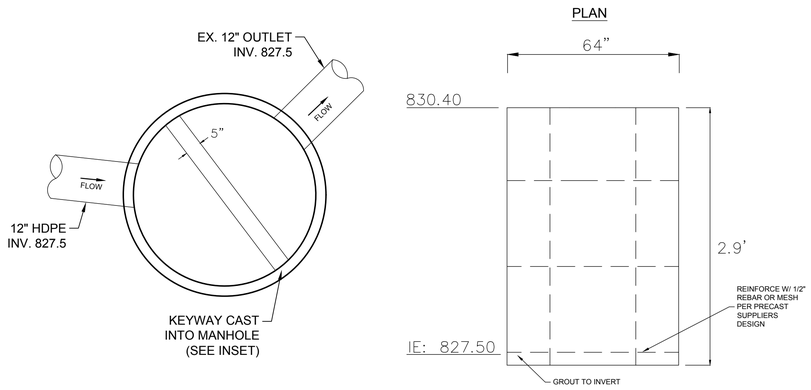


3 BITUMINOUS PAVEMENT SECTION
SCALE: N.T.S.



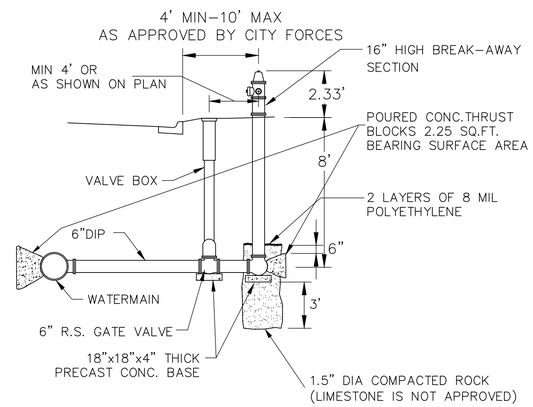
PIPE BEDDED IN GRANULAR BEDDING TO DEPTH OF 5 INCHES. BACKFILL COMPACTED TO FINISHED GRADE.

4 PVC OR HDPE PIPE BEDDING
SCALE: N.T.S.



5 OUTLET CONTROL STRUCTURE - 1 DETAIL
SCALE: N.T.S.

- HYDRANT TO BE:
  - WATEROUS PACER CLASSIC.
  - MUELLER SUPERCENTURION 250 MODEL A-423.
  - OR APPROVED EQUAL.
- EQUIP WITH THREE HOSE NOZZLES/CONNECTIONS AS FOLLOWS:
  - ONE - FACTORY INSTALLED 5 INCH STORZ-TYPE, QUARTER TURN PUMPER NOZZLE/CONNECTOR, INCLUDING A MANUFACTURER SUPPLIED AND INSTALLED ANODIZED ALUMINUM NOZZLE CAP WITH A 1.5 INCH PENTAGON NUT AND NO ROCKER LUG.
  - TWO - 2.5 INCH HOSE NOZZLES/CONNECTIONS (WITH NATIONAL STANDARD THREADS) AND STANDARD NOZZLE CAPS WITH 1.5 INCH PENTAGON NUTS, AND NO ROCKER LUGS.
- USE SS NUTS AND BOLTS AS APPROVED BY THE ENGINEER.
- ALL EXPOSED WATERMAIN SHALL BE WRAPPED WITH POLYETHYLENE IN ACCORDANCE WITH AWWA C-105.
- BARREL TO BE BRIGHT RED.
- ALL VALVES TO OPEN COUNTER-CLOCKWISE.
- SEE TYPICAL VALVE INSTALLATION DETAIL FOR VALVE DETAILS.
- WATEROUS PACER CLASSIC HYDRANTS SHALL INCLUDE INSTALLATION OF THE MANUFACTURERS MOST CURRENT ANTI-CHATTER BRASS UPPER VALVE WASHER.



10 HYDRANT INSTALLATION DETAIL
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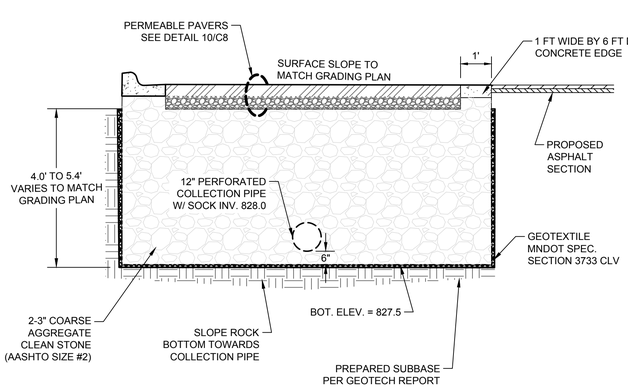
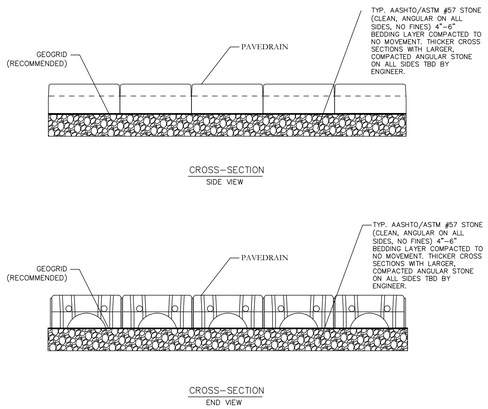


7 PERMEABLE INFILTRATION SECTION
SCALE: N.T.S.



8 PERMEABLE PAVER SECTION
SCALE: N.T.S.

INSTALLATION NOTES

1. **EXISTING SUBGRADE UNDER BED AREAS SHALL NOT BE SUBJECT TO EXCESSIVE CONSTRUCTION EQUIPMENT TRAFFIC PRIOR TO GEOTEXTILE AND STONE BED PLACEMENT.**
2. **BRING SUBGRADE OF STONE INFILTRATION BED TO LINE, GRADE, AND ELEVATION INDICATED. FILL AND LIGHTLY REGRADE ANY AREAS DAMAGED BY EROSION, PONDING, OR TRAFFIC COMPACTION BEFORE PLACING OF STONE. TRANSVERSE SUBGRADE SLOPE TO BE 1.0% MIN, SEE GRADING PLAN FOR LONGITUDINAL SUBGRADE SLOPE.**
3. **PLACE GEOTEXTILE IN ACCORDANCE WITH MANUFACTURER'S STANDARDS AND RECOMMENDATIONS. ADJACENT TRIPS OF GEOTEXTILE SHALL OVERLAP A MINIMUM OF 16-INCHES. SECURE GEOTEXTILE AT LEAST FOUR (4) FEET OUTSIDE OF BED AND TAKE ANY STEPS NECESSARY TO PREVENT ANY RUNOFF OR SEDIMENT FROM ENTERING THE STORAGE BED.**
4. **INSTALL COURSE AGGREGATE IN 8-INCH MAXIMUM LIFTS. LIFTS OF 12-INCHES ARE ALLOWED OVER PIPE TO PREVENT DAMAGE. LIGHTLY COMPACT EACH LAYER WITH EQUIPMENT, KEEPING EQUIPMENT MOVEMENT OVER STORAGE BED SUBGRADES TO A MINIMUM. INSTALL AGGREGATE TO GRADES INDICATED ON DRAWINGS.**
5. **INSTALL STABILIZER BASE COURSE AGGREGATE EVENLY OVER SURFACE OF STONE BED, SUFFICIENT TO ALLOW PLACEMENT OF PAVEMENT, AND NOTIFY ENGINEER FOR APPROVAL.**
6. **FOLLOWING PLACEMENT OF BED AGGREGATE, THE GEOTEXTILE SHALL BE FOLDED BACK ALONG ALL BED EDGES TO PROTECT FROM SEDIMENT WASHOUT ALONG BED EDGES. AT LEAST A FOUR (4) FOOT EDGE STRIP SHALL BE USED TO PROTECT BEDS FROM ADJACENT BARE SOIL. THIS EDGE STRIP SHALL REMAIN IN PLACE UNTIL ALL BARE SOILS CONTIGUOUS TO BEDS ARE STABILIZED AND VEGETATED. IN ADDITION, TAKE ANY OTHER NECESSARY STEPS TO PREVENT SEDIMENT FROM WASHING INTO BEDS DURING SITE DEVELOPMENT. WHEN THE SITE IS FULLY STABILIZED, TEMPORARY SEDIMENT CONTROL DEVICES SHALL BE REMOVED.**

9 PERMEABLE PAVER NOTES
SCALE: N.T.S.

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REVISIONS		
DATE	NO.	
9/27/22	1	CITY SUBMITTAL
10/13/22	2	BOUNDARY ADJUSTMENT
12/5/22	3	WATERSHED SUBMITTAL

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION, AND THAT I AM A DULY LICENSED CIVIL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA

NOT FOR CONSTRUCTION

Brian Field, PE

56013 12/5/2022
REG. NO. DATE

ANDERSON
13605 1st Avenue N. #100
Plymouth, MN 55441 | ae-mn.com
P 763.412.4000 | F 763.412.4090
Anderson Engineering of Minnesota, LLC

CIVIL DETAILS

DRAWN BY: BF CHECKED BY: BF

C6

16318 (AEMN)

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