RILEY PURGATORY BLUFF CREEK WATERSHED DISTRICT

18681 Lake Drive East
Chanhassen, MN 55317
952-607-6512
www.rpbcwd.org

Riley Purgatory Bluff Creek Watershed District Permit Application Review

Permit No: 2024-004

Considered at Board of Managers Meeting: March 13, 2024

Received complete: February 07, 2024

Applicant: Minnetonka Public Schools

Representative: Inspec Inc., Clifford W. Buhman,PE

Project: Clear Springs Elementary School Parking Lot Addition - The applicant proposes the construction of a new parking lot. The proposed new parking lot will include the construction of new underground storm chambers for rate, volume, and water quality control.

Location: 5701 County Rd 101, Minnetonka, Minnesota 55345

Reviewer: Annie Brunton, EIT; and Scott Sobiech, PE; Barr Engineering Co.

Proposed Board Action

Manager _____ moved and Manager _____ seconded adoption of the following resolutions based on the permit report that follows and the presentation of the matter at the March 13, 2024 meeting of the managers:

Resolved that the application for Permit 2024-004 is approved, subject to the conditions and stipulations set forth in the Recommendations section of the attached report;

Resolved that on determination by the RPBCWD administrator that the conditions of approval of the permit have been affirmatively resolved, the RPBCWD president or administrator is authorized and directed to sign and deliver Permit 2024-004 to the applicant on behalf of RPBCWD.

Upon vote, the resolutions were adopted, _____ [VOTE TALLY].

Applicable Rule Conformance Summary

Rule	Issue		Conforms to RBPCWD Rules?	Comments
C	**Erosion Control Plan**		See comment.	See rule-specific permit conditions C1 related to name of individual responsible for on-site erosion control.
J	**Stormwater Management**	Rate	Yes	
		Volume	See Comment	See stipulation 4 related to verifying the infiltration capacity of the soils and that the volume control capacity is calculated using the measured infiltration rate.
		Water Quality	Yes	
		Low Floor Elev.	Yes	
		Maintenance	See Comment	See rule-specific permit condition J1 related to revisions to the draft agreement (language and exhibit).
		Chloride Management	Yes	
		Wetland Protection	Yes	
L	**Permit Fee Deposit**		N/A	Governmental entity
M	**Financial Assurance**		N/A	Governmental entity

Background

Minnetonka Public Schools proposes construction of a new parking lot on what is currently a wood-chipped play area. The project includes an underground stormwater infiltration system to provide volume control, water quality, and rate control. Because the property owner has undertaken three prior redevelopment projects triggering the RPBCWD stormwater requirements since January 1, 2015 (i.e., when RPBCWD reinstituted a regulatory program) on the adjacent parcels under common ownership to the north and south, the presently proposed redevelopment must be analyzed in aggregate with prior changes under the common scheme of development provision of Rule J.

While there are no on-site or adjacent Wetland Conservation Act (WCA) protected wetlands for which wetland buffers would be required, the treated runoff leaving the site is conveyed via storm sewer directly to an off-site protected wetland.

Three prior permits were issued for work at the Minnetonka School district property. Relevant project site information is provided below.

Project site information

Site Information	Permit 2015-005[1]	Permit 2017-063	Permit 2022-002	Permit 2024-004 (Current)	Site Aggregate Total (Includes Three Projects)
Total Site Area[3] (acres)	15.29	15.29	18.14[2]	18.14[2]	18.14[2]
Existing Site Impervious Area (acres)	6.43	6.43	6.82[2]	6.82[2]	6.82[2]
New (increase) in Site Impervious Area (acres)	0.3	0.19	0.76	0.13	1.38
Percent Increase in Impervious Surface	4.6	3.0	11.1	1.9	20.2
Disturbed Site Impervious Area (acres)	0.96	0.13	0.39	0.04	1.52
Percent Disturbance of Existing Impervious Surface	14.9	2.0	5.7	0.5	22.3[4]
Total Disturbed Area (acres)	1.31	0.35	1.48	0.18	3.32

[1]Permit 2015-005 was for work on Highway 101, city of Minnetonka street and on school district property. The information presented in the table only represents work on school district property.
[2]School district acquired an adjacent parcel, adding 2.85 acres and 0.39 acres of existing imperviousness to the site.
[3]Minnetonka School property now consists of four adjacent parcels under common or related ownership.
[4]Calculated based on pre-2015 project existing conditions (Common Scheme of Development Rule J, Subsection 2.5)

The following materials were reviewed in support of the permit request:

1. Permit application received on January 17, 2024 (Incomplete notice was sent on January 24, 2024; materials submitted to complete application on February 07, 2024)
2. Parking Lot Project Plan Set (6 sheets) dated January 12, 2024 (revised Grading and Drainage Plan and Underground Storm Chamber Details received February 7, 2024)
3. Parking Lot Stormwater Management Plan dated January 16, 2024
4. Existing and Proposed Drainage Areas dated February 2, 2024 and received February 7, 2024
5. Existing and Proposed HydroCAD models received February 7, 2024
6. Geotechnical Report from Braun Intertec dated February 6, 2024
7. Draft Maintenance Agreement, unsigned, received February 7, 2024
8. Existing and Proposed MIDS models received February 7, 2024
9. Volume Control Analysis dated February 2, 2024 and received February 7, 2024

Rule Specific Permit Conditions

Rule C: Erosion Prevention and Sediment Control

Because the project will involve 0.18 acres, i.e., more than 5,000 square feet of land-disturbing activities, the project must conform to the erosion prevention and sediment control requirements established in Rule C.

The erosion control plan prepared by Inspec, Inc. includes installation of perimeter control (bio-logs), a rock construction entrance, inlet protection, daily street sweeping, placement of a minimum of 6 inches of

topsoil (at least 5% organic matter), and decompaction of areas compacted during construction. To conform to RPBCWD Rule C requirements, the following revisions are needed:

C1. The Applicant must provide the name, address and phone number of the individual who will remain liable to the District for performance under this rule and maintenance of erosion and sediment-control measures from the time the permitted activities commence until vegetative cover is established.

Rule J: Stormwater Management

Because the project will involve 0.18 acres of land-disturbing activity (i.e., more than 5,000 square feet), the project must meet the criteria of RPBCWD's Stormwater Management rule (Rule J). Under paragraph 2.5 of Rule J, Common Scheme of Development, activities subject to Rule J on a parcel or adjacent parcels under common or related ownership will be considered in the aggregate, and the requirements applicable to the activity under this rule will be determined with respect to all redevelopment that has occurred on the site and on adjacent sites under common or related ownership since the date this rule took effect (January 1, 2015). Because three projects have been permitted since the rules took effect (RPBCWD Permit 2015-005,2017-063, and 2022-002), the current activities proposed must be considered in aggregate with the activities proposed under the prior applications.

The criteria listed in Subsection 3.1 only apply to the disturbed areas on the project site because the project, when considered in aggregate with the other permitted activities at the site, increases the imperviousness by 20.2 percent and disturbs a combined 22.3 percent of the existing impervious surface on the site (Rule J, Subsection 2.3) (see project site information table above). The aggregate extent of disturbance is less than 50 percent of the impervious area of the site, and the four projects, in aggregate, expand the impervious area of the site by less than 50 percent, therefore RPBCWD's stormwater management requirements apply only to the increased and disturbed and reconstructed impervious areas of the site proposed for this project.

The applicant is proposing construction of an underground infiltration system to provide the rate control, volume abstraction and water quality management.

Rate Control

In order to meet the rate control criteria listed in Subsection 3.1.a, the 2-, 10-, and 100-year post-development peak runoff rates must be equal to or less than the existing discharge rates at all locations where stormwater leaves the site. The applicant used a HydroCAD hydrologic model to simulate runoff rates for pre- and post-development conditions for the 2-, 10-, and 100-year frequency storm events using a nested rainfall distribution, and a 100-year frequency, 10-day snowmelt event. The existing and proposed 2-, 10-, and 100-year frequency discharges from the site are summarized in the below table. The proposed project is in conformance with RPBCWD Rule J, Subsection 3.1.a.

Existing and Proposed Peak Runoff Rates

Modeled Discharge Location	2-Year Discharge (cfs)		10-Year Discharge (cfs)		100-Year Discharge (cfs)		10-Day Snowmelt (cfs)	
	Ex	Prop	Ex	Prop	Ex	Prop	Ex	Prop
Existing Stormwater Pond	0.5	0.1	0.9	0.3	1.6	1.0	0.1	0.1

Volume Abstraction

Subsection 3.1.b of Rule J requires the abstraction onsite of 1.1 inches of runoff from the regulated impervious surface of the site. An abstraction volume of 651 cubic feet is required from the 0.17 acres of regulated impervious area. Pretreatment for runoff entering the underground infiltration system is being provided by a manhole and an isolator row in the underground system to conform to Rule J, Subsection 3.1.b.1.

The two soil borings (ST-1 and ST-2) performed by Braun Intertec under the proposed underground infiltration system show that soils in the project area are primarily clayey sand underlain with organic clay and sandy lean clay. The Engineer concurs that because of the clay soils onsite, the abstraction standard in Subsection 3.1 of Rule J cannot practicably be met, and the site is considered restricted and stormwater runoff volume must be managed in accordance with Subsection 3.3 of Rule J.

For restricted sites, subsection 3.3 of Rule J requires rate control in accordance with subsection 3.1.a and that abstraction and water-quality protection be provided in accordance with the following sequence: (a) Abstraction of 0.55 inches of runoff from site impervious surface determined in accordance with paragraphs 2.3, 3.1 or 3.2, as applicable, and treatment of all runoff to the standard in paragraph 3.1c; or (b) Abstraction of runoff onsite to the maximum extent practicable and treatment of all runoff to the standard in paragraph 3.1c; or (c) Off-site abstraction and treatment in the watershed to the standards in paragraph 3.1b and 3.1c. The applicant's proposed underground infiltration system provides 382 cubic feet of abstraction, meeting the standard in subsection 3.3.a.

Groundwater was not observed at the soil borings under the proposed underground infiltration system. The subsurface investigation information summarized below shows that groundwater is at least 3 feet below the bottom of the proposed underground infiltration system (Rule J, Subsection 3.1.b.2.a).

Groundwater Separation Analysis

Proposed BMP	Nearest Subsurface Investigation	Boring is within footprint?	Groundwater Elevation (feet)	BMP Bottom Elevation (feet)	Separation (feet)
Underground Infiltration System	ST-2	Yes	No groundwater observed at boring bottom (approx. el 912.9)	922.12	9.22

The engineer concurs with the applicant's design infiltration rates of 0.06 inches per hour for clayey sand and organic clay based on the guidelines provided in the Mn Stormwater Manual. Based on the design infiltration rate, the engineer concurs that the underground infiltration system will draw down within 48 hours (Rule J, subsection 3.1b.3). Per Rule J, Subsection 3.1.b.2.c measured infiltration capacity of the soils at the bottom of the infiltration systems must be provided. However, the applicant has chosen to wait until construction to conduct infiltration testing. The applicant must submit documentation verifying the infiltration capacity of the soils and that the volume control capacity is calculated using the measured infiltration rate. If infiltration capacity is less than needed to conform with the volume abstraction requirement in subsection 3.3a or there is inadequate separation to groundwater, design modifications to achieve compliance with RPBCWD requirements will need to be submitted (in the form of an application for a permit modification or new permit).

The table below summarizes the volume abstraction for the site based on the design infiltration capacity of the underground infiltration system. With the conditions noted above regarding verification of subsurface conditions, the engineer concurs with the submitted information and finds that the proposed project will conform with Rule J, Subsection 3.3.a.

Volume Abstraction Summary

Required Abstraction Depth (inches)	Required Abstraction Volume (cubic feet)	Provided Abstraction Depth (inches)	Provided Abstraction Volume (cubic feet)
0.55	325	0.59	382

Water Quality Management

Subsection 3.1.c of Rule J requires the Applicant provide for at least 60 percent annual removal efficiency for total phosphorus (TP), and at least 90 percent annual removal efficiency for total suspended solids (TSS) from site runoff, and no net increase in TSS or TP loading leaving the site from existing conditions. The Applicant is proposing to use an underground infiltration system to achieve the required TP and TSS removals. A P8 model was used to estimate the TP and TSS removals. The results of this modeling are summarized in tables below showing the annual TSS and TP removal requirements are achieved. The modeling also indicates and that there is no net increase in TSS and TP leaving the site. The Engineer finds the proposed project to be in conformance with Rule J, Subsection 3.1.c.

Annual TSS and TP removal summary

Pollutant of Interest	Regulated Site Loading (lbs/yr)	Required Load Removal (lbs/yr)	Provided Load Reduction (lbs/yr)
Total Suspended Solids (TSS)	117.4	105.7 (90%)	109.3 (97.6%)
Total Phosphorus (TP)	0.38	00.29 (75%)	0.32 (88.6%)

Summary of net change in TSS and TP leaving the site

Pollutant of Interest	Existing Site Loading (lbs/yr)	Proposed Site Load after Treatment (lbs/yr)	Change (lbs/yr)
Total Suspended Solids (TSS)	46.6	2.8	-43.8
Total Phosphorus (TP)	0.15	0.04	-0.11

Low floor Elevation

No structure may be constructed or reconstructed such that its lowest floor elevation is less than 2 feet above the 100-year event flood elevation according to Rule J, Subsection 3.6a. Because the applicant does not propose to construct or reconstruct structures that have low-floor elevations, subsection 3.6a does not impose requirements on the project. Additionally, stormwater management facilities must be constructed at an elevation and location that ensure no habitable structure will be brought into noncompliance with the low floor criteria according to Rule J, subsection 3.6b. The following table summarizes the low floor analysis for the existing habitable structures adjacent to the proposed stormwater facilities. Because the provided freeboard is greater than 2 feet, the elevation and location of the proposed stormwater facility meets the existing habitable structure requirement in Rule J, Subsection 3.6.b.

Adjacent Habitable Structure	Low Floor Elevation of Building (feet)	100-year Event Flood Elevation of Adjacent Stormwater Facility (feet)	Freeboard (feet)
Clear Springs Elementary School	931.20	924.02	7.18

Maintenance

Subsection 3.7 of Rule J requires the submission of 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. While the applicant provided a draft post construction maintenance agreement for review, the following revisions are needed:

J1. The applicant must work with RPBCWD to revise the submitted maintenance and inspection agreement to include the required exhibits and the applicant must execute the revised agreement after approval by RPBCWD.

Chloride Management

Subsection 3.8 of Rule J requires the submission of chloride management plan that designates the individual authorized to implement the chloride management plan and the MPCA-certified salt applicator engaged in implementing the plan. A compliant chloride management plan was provided by the applicant on March 19, 2021.

Wetland Protection

Because runoff from the redeveloped site is tributary to a downstream, high value wetland, the project must comply with RPBCWD's wetland protection criteria in Rule J, subsection 3.10. In accordance with Rule J, subsection 3.10a, the proposed land-disturbing activities will not increase the bounce in water level, duration of inundation, or change the runout elevation in the subwatershed, for the receiving wetland. Because the applicant's HydroCAD model results demonstrate, and the engineer concurs, that the proposed flow rate and volumes flowing towards the off-site wetland are less than the under existing conditions, the bounce and inundation will not increase, thus the project meets the Bounce and Inundation criterion.

Rule J, Subsection 3.10b requires that treatment of runoff to high value wetlands archive 90 percent total suspended solids removal and 75 percent total phosphorus removal. The off-site wetland is a high value wetland. P8 modeling results show the proposed underground infiltration system provides 97.6% TSS and 88.6% TP removals, thus the engineer finds that the proposed project is in conformance with Rule J, Subsection 3.10b

Applicable General Requirements:

1. The RPBCWD Administrator and Engineer shall be notified at least three days prior to commencement of work.
2. Construction shall be consistent with the plans and specifications approved by the District as a part of the permitting process. The date of the approved plans and specifications is listed on the permit.
3. Construction must be consistent with the plans, specifications, and models that were submitted by the applicant that were the basis of permit approval. The date(s) of the approved plans, specifications, and modeling are listed on the permit. The grant of the permit does not in any way relieve the permittee, its engineer, or other professional consultants of responsibility for the permitted work.
4. The grant of the permit does not relieve the permittee of any responsibility to obtain approval of any other regulatory body with authority.
5. The issuance of this permit does not convey any rights to either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state, or local laws or regulations.
6. In all cases where the doing by the permittee of anything authorized by this permit involves the taking, using or damaging of any property, rights or interests of any other person or persons, or of any publicly owned lands or improvements or interests, the permittee, before proceeding therewith, must acquire all necessary property rights and interest.
7. RPBCWD's determination to issue this permit was made in reliance on the information provided by the applicant. Any substantive change in the work affecting the nature and extent of applicability of RPBCWD regulatory requirements or substantive changes in the methods or means of compliance with RPBCWD regulatory requirements must be the subject of an application for a permit modification to the RPBCWD.

8. If the conditions herein are met and the permit is issued by RPBCWD, the applicant, by accepting the permit, grants access to the site of the work at all reasonable times during and after construction to authorized representatives of the RPBCWD for inspection of the work.

Findings

1. The proposed project includes the information necessary, plan sheets and erosion control plan for review.
2. The proposed project will conform to Rules C and J if the Rule Specific Permit Conditions listed above are met.

Recommendation:

Approval of the permit contingent upon:

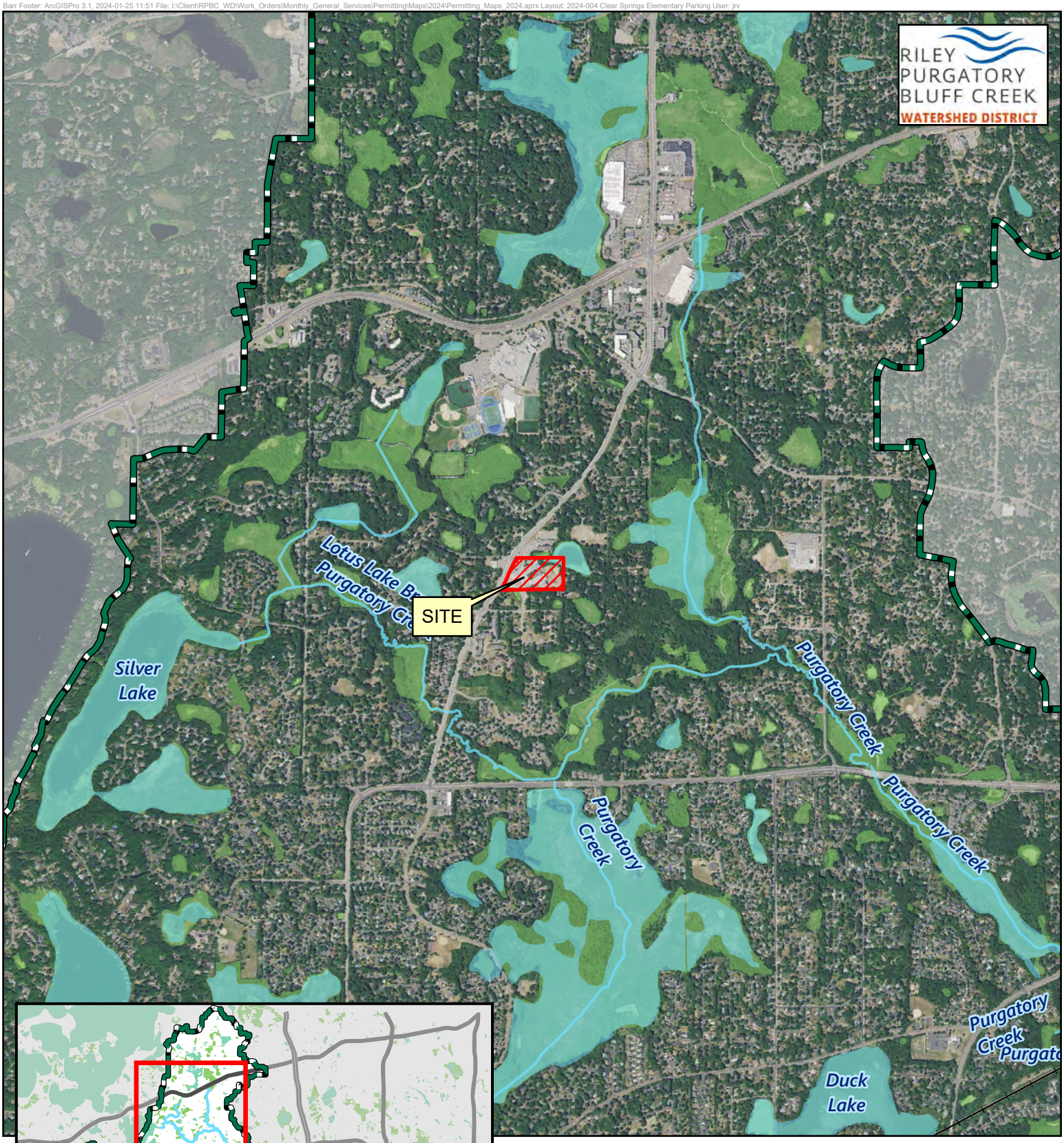
1. Permit applicant must provide the name and contact information of the general contractor responsible for erosion and sediment control at the site. RPBCWD must be notified if the responsible party changes during the permit term.
2. The applicant must work with RPBCWD to revise the maintenance and inspection agreement to include the required exhibits. Drafts of all revised documents must be submitted for RPBCWD review and approval prior to execution. The applicant must execute the revised agreement after approval by RPBCWD.

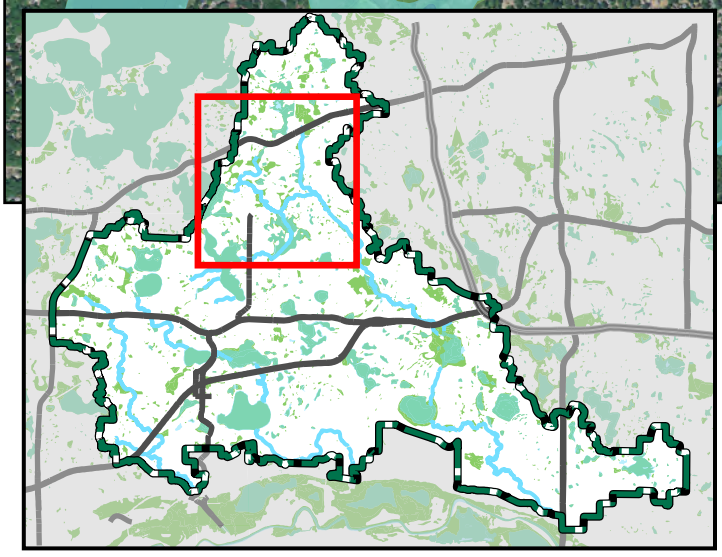
By accepting the permit, when issued, the applicant agrees to the following stipulations:

1. Continued compliance with General Requirements.
2. Per Rule J Subsection 5.6, upon completion of the site work, the permittee must submit as-built drawings demonstrating that at the time of final stabilization the stormwater management facility conform to design specifications and functions as intended and approved by the District. As-built/record drawings must be signed by a professional engineer licensed in Minnesota and include, but not limited to:
    a) the surveyed bottom elevations, water levels, and general topography of all facilities;
    b) the size, type, and surveyed invert elevations of all stormwater facility inlets and outlets;
    c) the surveyed elevations of all emergency overflows including stormwater facility, street, and other;
    d) other important features to show that the project was constructed as approved by the Managers and protects the public health, welfare, and safety.
3. Providing the following additional close-out materials:
    a) Documentation that constructed stormwater facilities perform as designed. This may include infiltration testing, flood testing, or other with prior approval from RPBCWD
    b) Documentation that disturbed pervious areas remaining pervious have been decompacted per Rule C Subsection 3.2c criteria
4. Per Rule J, Subsection 3.1.b.ii measured infiltration capacity of the soils at the bottom of the underground infiltration system must be provided. The applicant must submit documentation

verifying the infiltration capacity of the soils and that the volume control capacity is calculated using the measured infiltration rate. In addition, subsurface soil investigation is needed to verify adequate separation to groundwater (Rule J subsection 3.1.b.2). If infiltration capacity is less than needed to conform with the volume abstraction requirement in subsection 3.1b or there is inadequate separation to groundwater, design modifications to achieve compliance with RPBCWD requirements will need to be submitted (in the form of an application for a permit modification or new permit).

Barr Footer: ArcGISPro 3.1, 2024-01-25 11:51 File: I:\Client\RPBC_WD\Work_Orders\Monthly_General_Services\Permitting\Maps\2024\Permitting_Maps_2024.aprx Layout: 2024-004 Clear Springs Elementary Parking User: jrv





N

Feet

0 2,000

Permit Location Map

CLEAR SPRING ELEMENTARY PARKING

Permit 2024-004

Riley Purgatory Bluff Creek Watershed District

ACCEPTABLE FILL MATERIALS: STORM WATER CHAMBER SYSTEMS

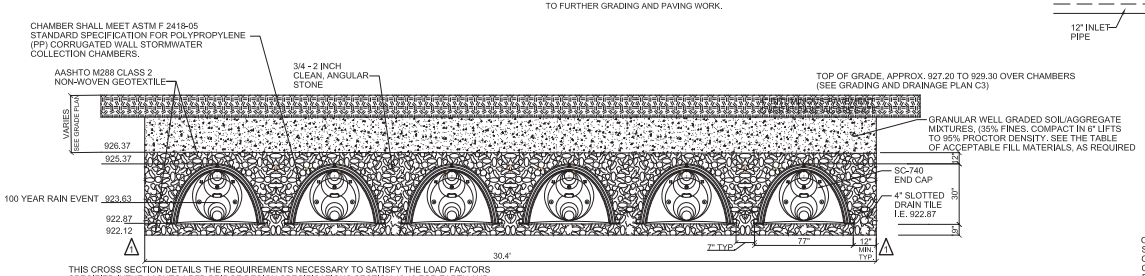
MATERIAL LOCATION	DESCRIPTION	AASHTO M43 DESIGNATION	AASHTO M145 DESIGNATION	COMPACTION/DENSITY REQUIREMENT
FILL MATERIAL FROM 18" TO GRADE ABOVE CHAMBERS	ANY SOIL/ROCK MATERIALS, NATIVE SOILS OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	N/A	PREPARE PER SPECIFICATIONS.
FILL MATERIAL FOR 6" TO 18" ELEVATION ABOVE CHAMBERS (24" FOR UNPAVED INSTALLATIONS)	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, < 35% FINES.	3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	A-1 A-2 A-3	COMPACT IN 6" LIFTS TO A MINIMUM 95% STANDARD PROCTOR DENSITY. ROLLER GROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 LBS. DYNAMIC FORCE NOT TO EXCEED 20,000 LBS.
EMBEDMENT STONE SURROUNDING AND TO A MIN. 6" ELEVATION ABOVE CHAMBERS	CLEAN ANGULAR STONE WITH THE MAJORITY OF PARTICLES BETWEEN 3/4 - 2 INCH INCH	3, 357, 4, 457, 5, 56, 57	N/A	NO COMPACTION REQUIRED.
FOUNDATION STONE BELOW CHAMBERS	CLEAN ANGULAR STONE WITH THE MAJORITY OF PARTICLES BETWEEN 3/4 - 2 INCH INCH	3, 35, 4, 467, 5, 56, 57	N/A	PLATE COMPACT OR ROLL TO ACHIEVE A 95% STANDARD PROCTOR DENSITY.

PLEASE NOTE: THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, ANGULAR. FOR EXAMPLE, THE STONE MUST BE SPECIFIED AS CLEAN, CRUSHED, ANGULAR NO. 4 STONE. STORMTECH RECOMMENDS HARDNESS AND DURABILITY CRITERIA FOR USE OF RECYCLED CONCRETE IN A AND B LOCATIONS.

STORM WATER CHAMBERS ACCEPTABLE MATERIALS

NO SCALE

THE UNDERGROUND FACILITY WILL BE INSPECTED BY A QUALIFIED THIRD PARTY DURING INSTALLATION AND THAT PARTY WILL VERIFY THAT THE PRESSURE REQUIREMENTS ARE ADEQUATELY MET. EVIDENCE THAT THE UNDERGROUND SYSTEM WILL BE ABLE TO SUPPORT 83,000 POUNDS AND 10,800 PER SQUARE FOOT OUTRIGGER LOAD HAS BEEN MET WILL BE SUBMITTED TO THE ENGINEER BEFORE PROCEEDING TO FURTHER GRADING AND PAVING WORK.

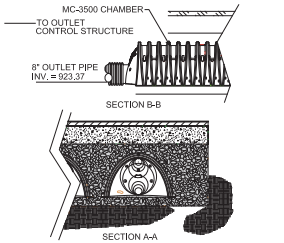


THIS CROSS SECTION DETAILS THE REQUIREMENTS NECESSARY TO SATISFY THE LOAD FACTORS SPECIFIED INTHE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS SECTION 12.12 FOR EARTH AND LIVE LOADS WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.

STANDARD SC-740 CROSS SECTION

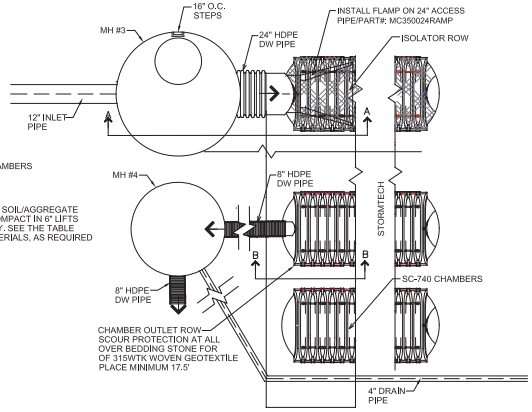
2 C5 NO SCALE

SPECIFICATIONS.



OUTLET ELEVATIONS

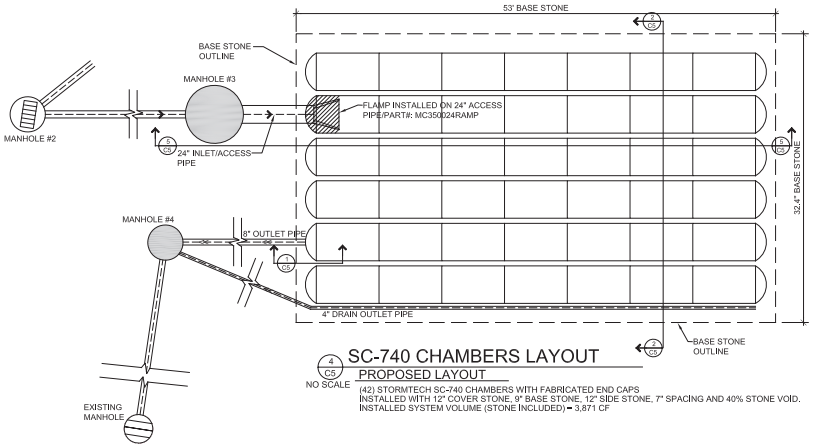
1 C5 NO SCALE



INLET AND OUTLET DETAILS

3 C5 NO SCALE

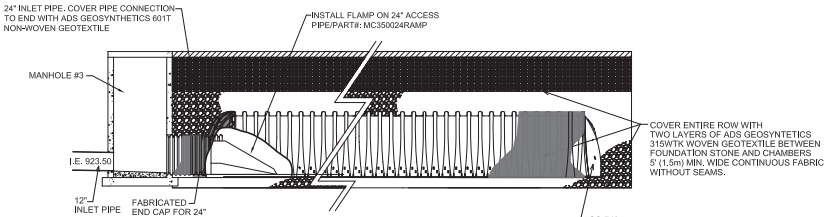
ONLY LIGHT DUTY EQUIPMENT WILL BE ALLOWED IN THE UNDERGROUND STORM CHAMBERS EXCAVATION AREA. DECOMPACTION WILL BE REQUIRED IF THE BED IS COMPACTED, AS REQUIRED UNDER RPBCWD RULE C, 4.3I. THE ENGINEER WILL DIRECT THE DECOMPACTION METHOD TO BE USED.



SC-740 CHAMBERS LAYOUT PROPOSED LAYOUT

4 C5 NO SCALE

(42) STORMTECH SC-740 CHAMBERS WITH FABRICATED END CAPS
INSTALLED WITH 12" COVER STONE, 9" BASE STONE, 12" SIDE STONE, 7" SPACING AND 40% STONE VOID.
INSTALLED SYSTEM VOLUME (STONE INCLUDED) = 3,871 CF



SC-740 ISOLATOR ROW PROFILE VIEW

5 C5 NO SCALE

INSPEC
5801 Duluth Street
Minneapolis, MN
55422
Ph. 763-546-3434

© 2022

MINNEAPOLIS | ROCHESTER | MILWAUKEE | CHICAGO

Consultants:

Signature:

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: Clifford W. Burman
TYPED OR PRINTED NAME: CLIFFORD W. BURMAN
DATE: 1-12-24 REGISTRATION NO. 17024

Issues and revisions:

ISSUE LEVEL / REVISION:	DATE:	No.:
ADDENDUM 2 REVISED WIDTH OF UNDERGROUND STORM CHAMBERS BASE STONE	2-5-24	1

THIS LINE SCALES 1" ON FULL SIZE SHEETS

Client:

MINNETONKA PUBLIC SCHOOLS

5621 COUNTY RD 101
MINNETONKA, MINNESOTA 55345

CLEAR SPRINGS ELEMENTARY SCHOOL

5701 COUNTY RD 101
MINNETONKA, MINNESOTA 55345

Project title:

2024 PARKING LOT ADDITION

5701 COUNTY RD 101
MINNETONKA, MINNESOTA 55345

Sheet content:

UNDERGROUND STORM CHAMBER DETAILS

DATE: 1-12-24
CLIENT PROJECT No.:
INSPEC PROJECT No.:
PROJECT MGR: CB
DRAWN BY: BT
CHECKED BY: BB

Sheet No.:

C5

SHEET SIZE: 24x36
2/7/2024 9:51 AM BRAIN TYHAT

GENERAL NOTES:

1. LOCATIONS AND SIZES OF ALL UNDERGROUND UTILITIES SHOWN ARE APPROXIMATE ONLY. VERIFY ALL UTILITIES. CONTRACTOR RESPONSIBLE FOR REPAIR TO ANY DAMAGED UNDERGROUND UTILITIES, INCLUDING BUT NOT LIMITED TO, LAWN IRRIGATION SYSTEMS AND DRAIN TILE.
2. CONTRACTOR RESPONSIBLE FOR LOCATING AND PROTECTING ALL SITE UTILITIES. CONTACT GOPHER STATE ONE CALL AND PRIVATE LOCATOR PRIOR TO ANY DEMOLITION/EXCAVATION.
3. ALL CONSTRUCTION MUST COMPLY WITH APPLICABLE ORDINANCES.
4. CONTRACTOR SHALL OBTAIN AND PAY FOR ALL CONTRUCTION PERMITS.
5. PROTECT EXISTING FACILITIES AND VEGETATION WHICH ARE TO REMAIN. RESTORE ALL DISTURBED AREAS, INCLUDING, BUT NOT LIMITED TO UTILITIES, IRRIGATION SYSTEMS, PAVEMENT, TREES LANDSCAPING, AND GRASSLAND/LAWN AREAS. GRASSLAND/LAWN AREAS TO BE DECOMPACTED AND RESTORED WITH 6" TOPSOIL, FERTILIZER AND STAKED SOD.
6. CONTRACTOR TO SWEEP SITE PAVEMENTS AND ADJACENT STREETS AT CONSTRUCTION VEHICLE ACCESS POINTS EACH WORK DAY WITH PICK UP SWEEPER OR EQUAL TO REMOVE ANY DEBRIS.
7. CONTRACTOR SHALL BE RESPONSIBLE FOR EROSION CONTROL THROUGHOUT PROJECT, INCLUDING, BUT NOT LIMITED TO, STORM WATER STRUCTURES INLET PROTECTION.
8. ALL DIMENSIONS AND OR QUANTITIES ARE APPROXIMATE. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING.
9. CONTRACTOR TO PROVIDE ALL CONSTRUCTION STAKING.

KEYED NOTES:

1. NEW 48" CONCRETE MONOLITHIC CATCH BASIN/MANHOLE #1, SEE CB/MH SCHEDULE AND DETAIL 6/C6.
2. NEW 48" CONCRETE MONOLITHIC CATCH BASIN/MANHOLE #2, SEE CB/MH SCHEDULE AND DETAIL 6/C6.
3. NEW 60" CONCRETE MONOLITHIC CATCH BASIN/MANHOLE #3, SEE CB/MH SCHEDULE AND DETAIL 6/C6.
4. NEW 48" CONCRETE MONOLITHIC CATCH BASIN/MANHOLE #4, SEE CB/MH SCHEDULE AND DETAIL 6/C6.
5. NEW 12" DIA. HDPE PIPE, APPROX. 7 L.F., SEE DETAIL 7/C6.
6. NEW 24" DIA. HDPE PIPE, APPROX. 6 L.F., SEE DETAIL 7/C6.
7. NEW 12" DIA. HDPE PIPE, APPROX. 18 L.F., SEE DETAIL 7/C6.
8. NEW 8" DIA. HDPE PIPE, APPROX. 25 L.F., SEE DETAIL 7/C6.
9. NEW 4" DIA. SLOTTED HDPE PIPE, APPROX. 52 L.F., SEE DETAIL 7/C6.
10. NEW 4" DIA. PVC PIPE, APPROX. 30 L.F., SEE DETAIL 7/C6.
11. NEW 8" DIA. HDPE PIPE, APPROX. 31 L.F., SEE DETAIL 7/C6.
12. NEW BITUMINOUS PAVEMENT, APPROX. 615 SQ. YDS. SEE DETAIL 2/C6.
13. NEW UNDERGROUND STORM CHAMBERS, SEE PLAN SHEET C5.
14. MATCH NEW PAVEMENT TO EXISTING. REMOVE AND REPLACE EXISTING PAVEMENT AS REQUIRED FOR NEW PAVEMENT.
15. NEW DISABILITY ACCESS RAMP, SEE DETAIL 8/C6.
16. NEW SURMOUNTABLE INPUT CURB AND GUTTER, APPROX. 330 L.F. SEE DETAIL 4/C6.
17. NEW SURMOUNTABLE OUTPUT CURB AND GUTTER, APPROX. 120 L.F. SEE DETAIL 5/C6.
18. NEW CURB AND GUTTER TRANSITION POINT.
19. NEW CONCRETE SIDEWALK, APPROX. 780 SQ.FT. SEE DETAL 3/C6. MAXIMUM CROSS SLOPE 2%.
20. PERIMETER OF BASE STONE FOR NEW UNDERGROUND STORM CHAMBERS.
21. TRANSITION FROM SLOTTED DRAIN PIPE TO PVC PIPE.

CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL QUANTITIES

INDICATES NEW BITUMINOUS PAVEMENT

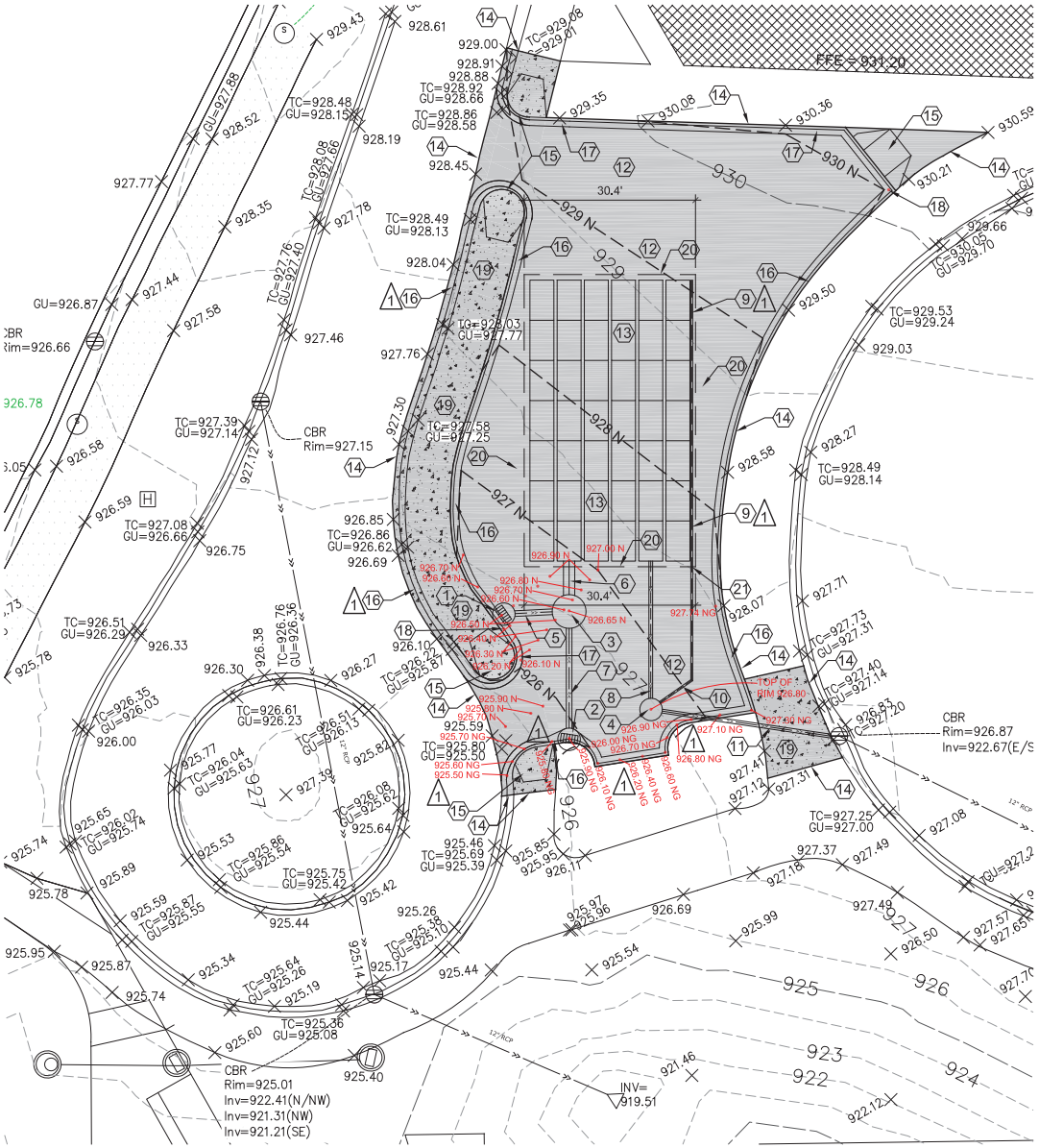
INDICATES NEW CONCRETE PAVEMENT

925.50 N NEW SPOT ELEVATION

"N" DENOTES NEW TOP OF GRADE ELEVATION.
ALL OTHER ELEVATIONS ARE EXISTING UNLESS NOTED OTHERWISE.

CATCH BASIN/MANHOLE SCHEDULE

MH #	TYPE	INLET FRAME/GRATE	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	INV. ELEV. BOTTOM
MH #1	48" DIA. CONC. MONOLITHIC	NEENAH R-3067-L CURB INLET FRAME AND GRATE AND ADS FLEXSTORM PURE PERMANENT INLET PROTECTION	926.50	-	923.65	923.65
MH #2	48" DIA. CONC. MONOLITHIC	NEENAH R-3067-L CURB INLET FRAME AND GRATE AND ADS FLEXSTORM PURE PERMANENT INLET PROTECTION	925.90	-	923.50	923.50
MH #3	60" DIA. CONC. MONOLITHIC	NEENAH R-3067-L CURB INLET FRAME AND GRATE AND ADS FLEXSTORM PURE PERMANENT INLET PROTECTION	926.65	923.50	923.40	923.40
MH #4	48" DIA. CONC. MONOLITHIC	NEENAH R-2270 WITH R-2580-A FRAME AND SOLID LID STAMPED "STORM SEWER" WITH TWO PICK HOLES	926.80	923.00 8" PIPE 922.80 4" PIPE	922.80	922.80



GRADING AND DRAINAGE PLAN

0 5' 10' 20'

SCALE: 1" = 10'

NORTH

INSPEC
5801 Duluth Street
Minneapolis, MN
55422
Ph. 763-546-3434

© 2022

MINNEAPOLIS | ROCHESTER | MILWAUKEE | CHICAGO

Consultants:

Signature:

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: CLIFFORD W. BORMAN
DATE 1-12-24 REGISTRATION NO. 17094

Issues and revisions:

ISSUE LEVEL / REVISION:	DATE:	No.:
LEVEL	DATE	
ADDENDUM 2 ADDED UNDERDRAIN KEYED NOTE SYMBOL REVISED NEW TOP OF GRADE ELEVATIONS. REVISED KEYED NOTE 5 PIPE LOCATION.	2-5-24	1

THIS LINE SCALES 1" ON FULL SIZE SHEETS

Client:

MINNETONKA PUBLIC SCHOOLS

5621 COUNTY RD 101
MINNETONKA, MINNESOTA 55345

CLEAR SPRINGS ELEMENTARY SCHOOL

5701 COUNTY RD 101
MINNETONKA, MINNESOTA 55345

Project title:

2024 PARKING LOT ADDITION

5701 COUNTY RD 101
MINNETONKA, MINNESOTA 55345

Sheet content:

GRADING AND DRAINAGE PLAN

DATE: 1-12-24
CLIENT PROJECT No.:
INSPEC PROJECT No.:
PROJECT MGR: CB
DRAWN BY: BT
CHECKED BY: BB

Sheet No.:

C3

SHEET SIZE: 24x36
2/7/2024 7:53 AM BRANN THYAT