Applicant:	Kevin Neuman; Independent School District #270
Consultant:	Neil Tessier, SAFEngineering, PLLC.
Project:	Glen Lake Elementary School Parking Lot and Site Improvements
Location:	4801 Woodridge Road, Minnetonka, MN
Applicable Rule(s):	4, 5
Reviewer(s):	Gabrielle Campagnola and Louise Heffernan; Barr Engineering Co.

## **General Background & Comments**

The applicant proposes the reconstruction of surface parking lots and driving lanes, concrete and bituminous sidewalk improvements, landscaping, playground improvements, utility improvements, and the construction of an underground stormwater management facility at Glen Lake Elementary School. The 13.9-acre site located at 4801 Woodridge Road in Minnetonka is occupied by a school building that includes a prior building addition, surface parking, athletic fields, tennis courts, and playgrounds.

Two permits have previously been issued by the NMCWD for work at Glen Lake Elementary School (site). Relevant project site information is provided in the table below.

Site Information	Permit 2015-010	Permit 2018-040	Permit 2023-041 (current)	Site Aggregate Total (Includes Three Projects)
Total Site Area (acres)	13.9	13.9	13.9	13.9
Existing Site Impervious Area (acres)	4.83 <sup>2</sup>	4.92	5.09	4.83 <sup>1</sup>
Change (increase/ decrease) in Site Impervious Area (acres)	0.09	0.17	0.01	0.27
Percent Change in Impervious Area (%)	1.9%	3.5%	0.2%	5.6%
Disturbed and Reconstructed Site Impervious Area (acres)	0.03	0.64	2.33	3.00
Percent Disturbance of Existing Impervious Area (%)	0.6%	13.0%	45.8%	62.1%

<sup>1</sup>Pre-2015 project existing conditions

<sup>2</sup>Information compiled or received under previously permitted activities, including #2015-10 and #2018-040, identify an existing impervious area of 4.83 acres. The description of property, work and permits issued are based on the information in NMCWD's files. Adjustment in the context of an overall stormwater management plan for the Glen Lake Elementary School may be completed, if new information is submitted to support a detailed analysis of the redevelopment projects undertaken in the last 10 years.

The district's requirements for both stormwater management and 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 4.2.1a and b and 5.2.1a and b.

Exhibits Reviewed:

- Signed Permit Application dated April 4, 2023, (received April 5, 2023). Email correspondence dated April 26, 2023, outlining 4 review comments and items required to complete the application. Email correspondence dated May 11, 2023, outlining 2 review comments and items required to complete the application. Email correspondence dated June 4, 2023 outlining 6 items required to complete the application. Email correspondence dated June 5, 2023, June 6, 2023, and June 7, 2023, identifying items needed to complete the application. The application with the submittal items is complete.
- Plans received April 5, 2023 (dated March 15, 2023), with revisions received May 18, 2023, June 1, 2023 (dated May 31, 2023), and June 6, 2023, prepared by SAFEngineering, PLLC.
- 3. Geotechnical Evaluation Report dated January 17, 2023, prepared by American Engineering Testing, Inc.
- 4. Stormwater Management Report dated February 2023 (received April 5, 2023), May 2023 (received May 16, 2023), June 5, 2023, and June 6, 2023, prepared by SAFEngineering, PLLC.
- 5. Electronic HydroCAD modeling received on April 28, 2023, with revised models received on May 16, 2023, June 1, 2023, and June 5, 2023, prepared by SAFEngineering, PLLC.
- 6. Electronic MIDS Calculator files received on April 28, 2023, with revised models received on May 16, 2023, June 1, 2023, and June 5, 2023, prepared by SAFEngineering, PLLC.
- 7. Comment Response Memorandum received April 27, 2023, prepared by SAFEngineering, PLLC.
- 8. Comment Response email received June 4, 2023 and June 5, 2023 from prepared by SAFEngineering, PLLC.
- 9. Impervious Surface Breakdown Exhibit received April 28, 2023, prepared by SAFEngineering, PLLC.
- 10. Low Opening Evaluation received on April 28, 2023, prepared by SAFEngineering, PLLC.

## 4.0 Stormwater Management

NMCWD'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 imperviousness of the site 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. NMCWD Permits 2015-010 and 2018-040 were permitted after Rule 4.2.5 took effect in 2008, therefore, the proposed work under the current application is considered in aggregate with activities subject to Rule 4.2.5 Common Scheme of Development.

The project activities under the current application (Permit 2023-041), considered in aggregate with the two previous projects permitted at the site, result in 62.1% combined disturbance of the existing impervious surface (defined as the existing conditions prior to NMCWD permit 2015-010), greater than 50%. The project will not increase the imperviousness at the site by more than 50% (5.6% combined increase). Because the combined disturbance results in more than 50% disturbance of the existing impervious area (62.1% disturbance proposed), stormwater management is required for the entire site, including the 5.09 acres of impervious surface resulting from the 2023 project.

Currently stormwater management is provided by two existing stormwater management facilities, including a rain garden expanded as part of the permitted activities under Permit 2015-010, and an underground stormwater management facility (UGSWMF) constructed as part of permitted activities under Permit 2018-040.

Stormwater management for compliance with subsection 4.3.1 for the site is proposed to be provided by the existing UGSWMF, and a proposed UGSWMF to provide rate control, volume retention and water quality management for the remaining regulated areas. The existing rain garden will be removed, and the proposed UGSWMF will receive the runoff from the tributary drainage area to the existing basin. The table below summarizes the impervious area managed by the existing UGSWMF permitted under Permit 2018-040 and the proposed UGSWMF under the current application. The two systems combined will provide stormwater management for compliance with subsection 4.3.1. Changes to the existing UGSWMF tributary drainage area or characteristics is not proposed.

Permit	Tributary Impervious Area Managed by UGSWMF (Acres)
Permit 2018-040	0.81
Permit 2023-041	4.28
Total	5.09

The approximate locations of the existing UGSWMF (in red) to remain in-place for stormwater treatment and the proposed UGSWMF (in blue) are shown in the figure below.

Figure 1. Existing (red) and Proposed (blue) Stormwater Management Facilities



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 for the two collection points where stormwater discharge leaves the site. The existing and proposed 2-, 10- and 100-year frequency discharge rates are summarized in the tables below.

Existing Conditions				
Discharge Location	2- year (c.f.s.)	10- year (c.f.s.)	100- year (c.f.s.)	
To Storm Sewer Along Woodridge Road	11.7	21.1	44.3	
To East (To Adjacent Property)	<1.0	<1.0	1.5	

Proposed Conditions				
Discharge Location	2- year (c.f.s.)	10- year (c.f.s.)	100- year (c.f.s.)	
To Storm Sewer Along Woodridge Road	<1.0	4.2	12.0	
To East (To Adjacent Property)	<1.0	<1.0	<1.0	

Compliance with Rule 4.3.1b criteria for the existing UGSWMF to remain was demonstrated with the Permit #2018-040. The proposed stormwater management plan provides rate control in compliance with the NMCWD requirements for the 2-, 10-, and 100-year events. Rule 4.3.1b is met.

The American Engineering Testing, Inc. geotechnical report identifies the underlying soil within the area of the bottom of the proposed UGSWMF as sand with gravel (SP). An infiltration rate of 0.80 inches per hour has been used for design, conforming with infiltration rates identified in the Minnesota Storm Water Manual for SP soils.

A retention volume of 20,324 cubic feet is required from the 5.09 acres (221,720 square feet) of regulated site impervious area (post-2023 project impervious surface at the site). The UGSWMF constructed as part of the activities permitted under 2018-040 provides a volume of 5,368 cubic feet<sup>1</sup> for the tributary area including the 0.81 acres (35,284 square feet) of impervious surface at the northwest parking lot and drop off loop.

A retention volume of 17,090 cubic feet with an infiltration area of 5,341 square feet is required from the remaining 4.28 acres of regulated site impervious area (impervious area not managed by the existing facility). The table below summarizes the volume retention required and volume retention provided for the remaining 4.28 acres of regulated impervious surface.

Stormwater Management Facility	Required Volume Retention Depth (inches)	Provided Footprint (square feet)	Required Volume Under Current Permit (Cubic feet)	Volume Provided by Proposed Facility (Cubic feet)	Maximum Infiltration Depth Allowable* (feet)	Provided Infiltration Depth (feet)
Proposed UGSWMF	1.1	13,793	17,090	17,889	3.2	1.9

## Volume Retention Summary

\*Maximum inundation depth allowable for the basin to draw down within 48-hours based on an infiltration rate of 0.8 inches/hour.

With an infiltration area of 13,793 square feet to be provided, the required 17,090 cubic feet of volume retention is drawn down within the required 48-hours, complying with Rule 4.3.1a (ii).

NMCWD's water quality criterion requires 60% annual removal efficiency for total phosphorus (TP) and 90% annual removal efficiency for total suspended solids (TSS) from the regulated site runoff. A MIDS model was used to evaluate the proposed UGSWMF annual pollutant removal efficiency. The results of the MIDS modeling are summarized in table below. Compliance with Rule 4.3.1c criteria for the existing UGSWMF to remain was demonstrated under Permit #2018-040. We agree with the modeling results and the project is in conformance with Rule 4.3.1c criteria.

<sup>&</sup>lt;sup>1</sup> Based on information submitted to the NMCWD. Verification and adjustment of the provided volume retention from the previously regulated area in the context of an overall stormwater management plan may need to be verified at a future date based on as-built information. Verification with as-built information will not change the requirements as part of the current application.

Pollutant of Interest	Regulated Site Loading (Ibs./year)	Required Load Removal (Ibs./year)	Provided Load Reduction (Ibs./year)
Total Suspended Solids (TSS)	1,333	1,200 (90%)	1,262 (95%)
Total Phosphorus (TP)	7.3	4.4 (60%)	7.0 (95%)

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 also states that a stormwater management facility must be constructed at an elevation that ensures no adjacent habitable building will be brought into noncompliance with a standard in subsection 4.3.3.

The low floor and low opening elevation of the existing structure in relation to the proposed UGSWMF's 100-year high-water elevation is summarized in the table below. Rule 4.3.3 is met.

## Low Floor and Low Opening Elevation Summary

Low Floor Elevation of School	100-year Frequency Flood Elevation	Low Floor and Low Opening Elevation
Building (M.S.L.)	of Proposed UGSWMF (M.S.L.)	Freeboard (feet)
1003.7 <sup>2</sup>	989.8	13.9

Rule 4.5.4d (i) requires at least three feet of separation between the bottom of an infiltration facility and groundwater. The American Engineering Testing, Inc. geotechnical evaluation indicates that groundwater was not encountered to the bottom of the boring taken near the proposed UGSWMF, elevation of 981.3 M.S.L. The following table provides a comparison of the bottom elevation of the UGSWMF relative to the bottom of the soil boring where groundwater was not encountered.

Proposed Facility	roposed Facility Bottom Elevation M.S.L.		Separation Provided (feet)
Underground Stormwater Management Facility	984.5	981.3	3.2

The required three (3) feet of separation is provided between the bottom of the infiltration area and groundwater. Rule 4.5.4d (i) is met.

If not previously submitted in the calendar year of closeout, 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.

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. Sump manholes will provide the

<sup>&</sup>lt;sup>2</sup> Provided by the Low Floor Evaluation received on April 28, 2023, prepared by SAFEngineering, PLLC.

required pretreatment of runoff for stormwater entering the proposed UGSWMF, complying with Rule 4.3.1a (i).

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 SAFEngineering, PLLC. includes installation of silt fence, storm sewer inlet protection, and construction entrances. 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

Because the property owner is a public entity, no fees are charged.

Rules 4.0 and 5.0

## **12.0 Financial Assurances**

Because the property owner is a public entity, the district's financial assurance requirements do not apply.

\$0

\$0

Sureties for the project are:

## **Findings**

- 1. The proposed project includes the information necessary, plan sheets and erosion control plan for review.
- 2. The proposed project will conform to Rule 5 with the fulfilment of the conditions identified below.
- 3. The existing and proposed stormwater management facilities 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).

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.

## By accepting the permit, when issued, the applicant agrees to the following stipulations for closeout of the permit:

The work for the Glen Lake Elementary School Improvements project under the terms of Permit 2023-041 must have an impervious surface area, stormwater infrastructure design, and grading plans 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.

Per Rule 4.3.5, it is required to execute an agreement for the operation and maintenance of the proposed stormwater management facility. A draft of the agreement must be approved by the district. A public entity assuming the maintenance obligation may do so by filing with the district a document signed by an official with authority.

If not previously submitted in the calendar year of closeout, submission of a plan for postproject 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.

Per Rule 4.5.6, an as-built drawing of the proposed stormwater management facility conforming to the design specifications based on surveyed as-built information, including a stage volume relationship in tabular form for the underground stormwater management facility, as approved by the district, must be provided. As-built surveyed elevations must identify relevant information including but limited to the outlet control structure weir elevation and bottom of the facility.

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.

# ISD #270 Glen Lake Elementary School Parking Lot Improvements Minnetonka, Minnesota

## CONSULTANT CONTACT LIST:

DEVELOPER/OWNER INDEPENDENT SCHOOL DISTRICT NO. 270 1001 HIGHWAY 7 HOPKINS, MN 55305 TEL 952-988-4000 FAX 952-988-4092 CONTACT:

ELECTRICAL MUSCO 20892 HARTFORD WAY LAKEVILLE, MN 55044 TEL 612-368-9286 CONTACT: SCOTT PEITZ

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CIVIL ENGINEER SAFENGINEERING 3200 122ND AVENUE NE BLAINE, MN 55449 TEL 612-213-9859 CONTACT: NEIL TESSIER, PE.

SURVEYOR SUNDE LAND SURVEYING 9001 EAST BLOOMINGTON FREEWAY, SUITE 118 BLOOMINGTON, MN 55420 TEL 952-881-2455 FAX 952-888-9526 CONTACT: LEONARD F. CARLSON, P.L.S.

# Presented by: SAFEngineering



SHEET	
SHEET	
C1.01	TITLE
-	ALTA SURVEY
C2.02	DEMO PLAN
C3.01	SITE PLAN
C4.01	GRADING PLAN
C5.01	EROSION CONTROL PI
C5.02	SWPPP
C5.03	SWPPP
C6.01	UTILITY PLAN
C7.01	LANDSCAPING PLAN
C9.01	DETAILS
C9.02	DETAILS
C9.03	DETAILS
C9.04	DETAILS
C9.05	DETAILS
C9.06	DETAILS
-	ADS SYSTEM
-	LIGHTING PLANS

SAFEngineering, PLLC

Site and Athletic Facility Engineering

3200 122nd Ave. NE Blaine, MN 55449 612-213-9859 nrtessier@gmail.com

## Client ISD # 270

## Project GLEN LAKE ELEMENTARY PARKING LOT IMPROVEMENTS

## Location MINNETONKA, MN

4801 WOODRIDGE DRIVE

## Certification

I HEREBY CERTIFY THAT THIS SET OF PLANS AND SPECIFICATIONS 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.



U3/15/2023 2636

Summary Designed: NT Dr Approved: NT BC

Approved: NTDrawn. 5Phase: PRELIM.Initial Iss

Drawn: JRW Book / Page: Initial Issue: xx/xx/xxxx

## Revision History No. Date By Submittal / Revision

1 04/06/23 2 05/18/23 3 05/31/23 4 06/06/23

Addendum One NMCWD Revisions MNDLI Revisions NMCWD Revisions

Sheet Title TITLE

Sheet No. Revision **C1.01** 

Project No.

51540

DESCRIPTION
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TROL PLAN
PLAN



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THE EROSION CONTROL PLAN SHEETS ALONG WITH THE REST OF THE SWPPP MUST BE KEPT ONSITE UNTIL THE NOTICE OF TERMINATION IS FILED WITH THE MPCA, THE CONTRACTOR MUST UPDATE THE SWPPP, INCLUDING THE EROSION CONTROL PLAN SHEETS AS NECESSARY TO INCLUDE ADDITIONAL REQUIREMENTS, SUCH AS ADDITIONAL OR MODIFIED BMPS DESIGNED TO CORRECT PROBLEMS IDENTIFIED. AFTER FILING THE NOTICE OF TERMINATION, THE SWPPP, INCLUDING THE EROSION CONTROL PLAN SHEETS, AND ALL REVISIONS TO IT MUST BE SUBMITTED TO THE OWNER, TO BE KEPT ON FILE IN ACCORDANCE WITH THE RECORD RETENTION REQUIREMENTS DESCRIBED IN THE SWPPP NARRATIVE.



SAFEngineering, PLLC

Site and Athletic Facility Engineering

3200 122nd Ave. NE Blaine, MN 55449 612-213-9859 nrtessier@gmail.com

Client ISD # 270
Project GLEN LAKE ELEMENTARY PARKING LOT IMPROVEMENTS
Location MINNETONKA, MN 4801 WOODRIDGE DRIVE
Certification I HEREBY CERTIFY THAT THIS SET OF PLANS AND SPECIFICATIONS 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.



Summary Designed: NT Drawn: JRW Approved: NT Book / Page:

Phase: PRELIM. Initial Issue: xx/xx/xxxx

# **Revision History** No.Date By Submittal / Revision

1 04/06/23 2 05/18/23 3 05/31/23 4 06/06/23

Addendum One NMCWD Revisions MNDLI Revisions NMCWD Revisions

## Sheet Title EROSION **CONTROL PLAN**



## SECTION 1: SITE EVALUATION, ASSESSMENT, AND PLANNING

1.1 PROJECT/SITE INFORMATION

ILEN LAKE ELEMENTARY 4801 WOODRIDGE ROAD ITY: MINNETONKA TATE: MN ZIP CODE: 55345 COUNTY: HENNEPIN

ROJECT PROPOSES THE RECONSTRUCTION OF PARKING LOTS, SIDEWALKS, AND UTILITIES FOR I FN LAKF FLEMENTARY

NPDES PERMIT NUMBER:

## **1.2 CONTACT INFORMATION/RESPONSIBLE PARTIES**

OMPANY/ORGANIZATION NAME: SAFENGINEERING, PLLC ONTACT NAME: NEIL TESSIER DDRESS:3200 122 AVE NE ITY, STATE, ZIP CODE: BLAINE, MN, 55449 ELEPHONE NUMBER: 612-213-9859

GENERAL CONTRACTOR (TO BE COMPLETED BY GENERAL CONTRACTOR): OMPANY/ORGANIZATION NAME: CONTACT NAME:

DDRESS: ITY, STATE, ZIP CODE: ELEPHONE NUMBER: AX/FMAIL:

NSERT AREA OF CONTROL (IF MORE THAN ONE OPERATOR AT SITE):

THE GENERAL CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF THE MINNESOTA GENERAL PERMIT AUTHORIZATION TO DISCHARGE STORM WATER ASSOCIATED WITH ONSTRUCTION ACTIVITY UNDER THE NATIONAL POLLUTION DISCHARGE ELIMINATION YSTEM/STATE DISPOSAL SYSTEM PERMIT PROGRAM (GENERAL PERMIT). THE GENERAL ONTRACTOR MUST COMPLY WITH ANY LOCAL GOVERNING AGENCY (LGU) HAVING URISDICTION CONCERNING EROSION AND SEDIMENT CONTROL. THE GENERAL CONTRACTOR HALL BE REQUIRED TO BE A CO-APPLICANT WITH THE OWNER. THE GENERAL CONTRACTOR HALL BE RESPONSIBLE FOR MAINTENANCE OF THE EROSION AND SEDIMENT CONTROL DEVICES. HE "APPLICATION FOR GENERAL STORM-WATER PERMIT FOR CONSTRUCTION ACTIVITY (MN (100001)" SHALL BE COMPLETED BY THE GENERAL CONTRACTOR AND SUBMITTED ONLINE, ALONG WITH THE REQUIRED APPLICATION FEE, THROUGH THE MPCA'S WEBSITE.

JNLESS NOTIFIED BY THE MINNESOTA POLLUTION CONTROL AGENCY (MPCA) TO THE CONTRARY, APPLICANTS WHO SUBMIT A COMPLETE APPLICATION FORM IN ACCORDANCE WITH THE REQUIREMENTS OF THE GENERAL PERMIT ARE AUTHORIZED TO DISCHARGE STORM WATER FROM THE CONSTRUCTION SITE UNDER THE TERMS AND CONDITIONS OF THIS PERMIT SEVEN 7) CALENDAR DAYS THE ONLINE APPLICATION PROCESS IS COMPLETE(HTTPS://NETWEB.PCA.STATE.MN.US/PRIVATE/)

(NOTE: ALL PROJECTS UNDER 50 ACRES MUST SUBMIT THE PERMIT APPLICATION USING THE ONLINE PROCESS. MAILED APPLICATIONS ARE ONLY ACCEPTED FOR PROJECTS THAT DISTURB 50 OR MORE ACRES, AND HAVE A DISCHARGE POINT WITHIN 1 MILE OF A PROTECTED WATER.)

ADDITIONALLY, AUTHORIZATION WILL BE DELAYED UNDER THE FOLLOWING CIRCUMSTANCES:

- IF THE PROJECT DISTURBS 50 ACRES OR MORE AND HAS A DISCHARGE POINT WITHIN 1 MILE AND FLOWS TO AN IMPAIRED OR SPECIAL WATER WHOSE DISCHARGE MAY REACH AN IMPAIRED OR SPECIAL WATER LISTED IN SECTION 23 OF THE GENERAL PERMIT THE APPLICANT SHALL SUBMIT THE STORM WATER POLLUTION PREVENTION PLAN AND A COMPLETED APPLICATION AT LEAST 30 CALENDAR DAYS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION ACTIVITIES. UNLESS NOTIFIED BY THE MPCA TO THE CONTRARY, COVERAGE BECOMES EFFECTIVE 30 CALENDAR DAYS AFTER THE POSTMARKED DATE OF THE COMPLETED APPLICATION.
- IF THE PROJECT INCLUDES ALTERNATIVE METHODS THE APPLICATION AND TWO ALTERNATIVE TREATMENT PLANS MUST BE SUBMITTED A MINIMUM OF 90 DAY BEFORE CONSTRUCTION STARTS.

**ROSION & SEDIMENT CONTROL SUBCONTRACTOR (RESPONSIBLE FOR IMPLEMENTING &** PDATING SWPPP - TO BE COMPLETED BY CONTRACTOR

OMPANY/ORGANIZATION NAME: CONTACT NAME: ADDRESS: CITY, STATE, ZIP CODE ELEPHONE NUMBER:

AX/EMAIL:

ROSION & SEDIMENT CONTROL INSPECTOR (SEE PART 6.1 OF THIS SWPPP FOR MORE NFORMATION ON INSPECTION RESPONSIBILITIES- TO BE COMPLETED BY CONTRACTOR):

OMPANY/ORGANIZATION NAME: ONTACT NAME: DDRESS: CITY, STATE, ZIP CODE **FELEPHONE NUMBER:** AX/EMAIL:

## GROUND DISTURBING SUBCONTRACTOR(S):

OMPANY/ORGANIZATION NAME: CONTACT NAME: DDRESS: ITY, STATE, ZIP CODE ELEPHONE NUMBER: AX/EMAIL:

THE GENERAL CONTRACTOR SHALL PROVIDE A CHAIN OF RESPONSIBILITY WITH ALL OPERATORS IN THE SITE TO ENSURE THAT THE SWPPP WILL BE IMPLEMENTED AND STAY IN EFFECT UNTIL HE CONSTRUCTION PROJECT IS COMPLETE AND THE NOT SUBMITTED.

## THIS SWPPP WAS PREPARED BY:

OMPANY/ORGANIZATION NAME: SAMBATEK ONTACT NAME: ALESSANDRA STUTZ DDRESS: 12800 WHITEWATER DRIVE, SUITE 300 ITY, STATE, ZIP CODE: MINNETONKA, MN, 55343 ELEPHONE NUMBER:763-520-8460 AX/EMAIL:

## WPPP DESIGNER CERTIFICATION CARD:

UNIVERSITY OF MINNESOTA **Alessandra Stutz** 

Construction Installer (May 31 2024) sign of Construction SWPPP (May 31 202

**1.3 NATURE OF CONSTRUCTION ACTIVITY** 

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## NATURE OF CONSTRUCTION:

THIS SWPPP HAS BEEN PREPARED FOR MAJOR ACTIVITIES ASSOCIATED WITH RECONSTRUCTION OF PARKING LOTS, SIDEWALKS, UTILITIES, AND INSTALLATION OF ONE UNDERGROUND INFILTRATION SYSTEM.

## ANTICIPATED APPROXIMATE TIMELINES

ESTIMATED PROJECT START DATE: ESTIMATED PROJECT COMPLETION DATE:

XX/XX/XX

06/12/2023

1.4 SOILS, SLOPES, VEGETATION, AND CURRENT DRAINAGE PATTERNS SOIL TYPE(S):

SOILS BRINGS ONSITE GENERALLY CONSIST OF SAND WITH GRAVEL AND SAND WITH SILT. SOILS IN THE AREA OF PROPOSED STORMWATER FACILITIES CONSIST OF SAND. SAND WITH GRAVEL, AND SAND WITH SILT. THESE SOILS ARE CLASSIFIED AS SP SOILS WHICH ARE ELIGIBLE FOR INFILTRATION AT A RATE OF 0.8 IN/HR.

#### SLOPES:

EXISTING SLOPES ON SITE RANGE FROM 2-10% ON BITUMINOUS SURFACES AND 5-33% ON GRASS SURFACES.

## **DRAINAGE PATTERNS**

IN EXISTING CONDITIONS, THE MAJORITY OF RUNOFF FROM THE PROJECT AREA DRAINS TO EXISTING STORM SEWER ALONG WOODRIDGE DRIVE WHICH EVENTUALLY DISCHARGES INTO AN EXISTING STORMWATER POND LOCATED AT THE SOUTH END OF THE PROPERTY. THE MAJORITY OF THE PARKING LOT AREA DRAINS SOUTH TO AN EXISTING CATCH BASIN AND INTO EXISTING STORM SEWER. A PORTION OF THE DROP OFF ZONE DRAINS TO THE EXISTING RAIN GARDEN WHICH OVERLAND FLOWS TO WOODRIDGE DRIVE WHEN FULL. A SMALL PLAYGROUND AREA DRAINS EAST ONTO THE NEIGHBORING PROPERTY. THE EXISTING SCHOOL DISCHARGES TO WOODRIDGE DRIVE VIA AN EXISTING ROOF DRAIN. ALL THE EXISTING STORM SEWER ULTIMATELY DISCHARGES TO ONE EXISTING POND LOCATED SOUTH OF THE PROJECT AREA. STORMWATER RUNOFF FROM THE DISTURBED PARKING & PLAYGROUND AREAS, SCHOOL ROOF, AND AREAS LOCATED NORTH OF THE SCHOOL BUILDING WILL BE ROUTED THROUGH THE INFILTRATION SYSTEM BEFORE DISCHARGING TO EXISTING STORM SEWER ALONG WOODRIDGE ROAD THE DISTURBED AREAS PROPOSED FOR REDEVELOPMENT IN 2023 AND FUTURE REDEVELOPMENT OF ONE PLAYGROUND LOCATED SOUTH OF THE SCHOOL WILL FLOW THROUGH A NEW STORM SEWER TO THE PROPOSED SUBSURFACE SYSTEM. ONE EXISTING ROOF DRAIN LINE, WHICH DISCHARGES UNCONTROLLED TO WOODBRIDGE DRIVE IN EXISTING CONDITIONS, WILL BE ROUTED TO DISCHARGE INTO THE PROPOSED INFILTRATION SYSTEM. RECONSTRUCTED IMPERVIOUS ON WOODRIDGE DRIVE TO PROVIDE UTILITY

IMPROVEMENTS WILL CONTINUE TO FLOW SOUTH AS IN EXISTING CONDITIONS. THE REMAINING ROOF RUNOFF AND EXISTING AREAS LOCATED NORTH OF THE SCHOOL BUILDING WILL BE COLLECTED IN STORM SEWERS AND ROUTED THROUGH THE SUBSURFACE SYSTEM. AS IN EXISTING CONDITIONS, THE EXISTING STORM SEWER ULTIMATELY DISCHARGES TO ONE EXISTING POND LOCATED SOUTH OF THE PROJECT AREA. **VEGETATION:** 

DISTURBED PERVIOUS AREAS OF THE SITE WILL BE SODDED OR LANDSCAPED.

#### **RAINFALL INFORMATION:**

RAINFALL INFORMATION - THE AVERAGE TOTAL ANNUAL PRECIPITATION IS ABOUT 28.32 INCHES. OF THIS ABOUT 17.31 INCHES, OR 61 PERCENT, USUALLY FALLS IN MAY THROUGH SEPTEMBER. THE AVERAGE ANNUAL SNOWFALL IS 57.3 INCHES.

## **1.5 CONSTRUCTION SITE ESTIMATES**

**PROJECT AREA SUMMARY** TOTAL PROJECT AREA: 14.93 ACRES

CONSTRUCTION SITE AREA TO BE DISTURBED: 3.61 ACRES

## **IMPERVIOUS AREAS:**

CONSTRUCTION SITE AREA IMPERVIOUS BEFORE CONSTRUCTION (ACRES): 3.95 CONSTRUCTION SITE AREA IMPERVIOUS AFTER CONSTRUCTION (ACRES): 3.96

## **1.6 RECEIVING WATERS**

CONSTRUCTION PHASE STORM WATER SYSTEM DESCRIPTION: DURING CONSTRUCTION, EROSION CONTROL AND SEDIMENT CONTROL MEASURES WILL LIMIT DISTURBANCE AND MOVEMENT OF EXISTING SITE SOILS IN ORDER TO PROTECT DOWNSTREAM RECEIVING WATERS.

#### **DESCRIPTION OF RECEIVING WATERS:**

STORMWATER RUNOFF FROM THE SITE DISCHARGES TO EXISTING STORM SEWER ALONG WOODRIDGE ROAD AND BELLEVUE DRIVE WHCH ULTIMATELY ROUTE SOUTH TO GLEN LAKE. THERE ARE NO IMPAIRED WATERS WITHIN ONE MILE OF THE SITE.

1.7 SITE FEATURES AND SENSITIVE AREAS TO BE PROTECTED EXISTING SP SOILS IN THE AREA OF PROPOSED UNDERGROUND INFILTRATION ARE TO BE PROTECTED FROM COMPACTION ACTIVITIES DURING CONSTRUCTION.

## **1.8 POTENTIAL SOURCES OF POLLUTION**

POTENTIAL SOURCES OF SEDIMENT AND OTHER POLLUTANTS TO STORMWATER RUNOFF: CONSTRUCTION PHASE POLLUTANT SOURCES ANTICIPATED AT THE SITE ARE DISTURBED (BARE) SOIL, VEHICLE FUELS AND LUBRICANTS, CHEMICALS ASSOCIATED WITH BUILDING CONSTRUCTION, AND BUILDING MATERIALS. WITHOUT ADEQUATE CONTROL THERE IS THE POTENTIAL FOR EACH TYPE OF POLLUTANT TO BE TRANSPORTED BY STORM WATER.

## **1.9 ENDANGERED/THREATENED SPECIES**

THE SITE HAS POTENTIAL OF CONTAINING THE RUSTY PATCH BUMBLE BEE. THE UNITED STATES FISH AND WILDLIFE SERVICE CONSIDERS THE RUSTY PATCH BUMBLE BEF AS ENDANGERED IN HENNEPIN COUNTY. IT IS NOT ANTICIPATED THE PROJECT WILL IMPACT HABITAT OF THE RUSTY PATCH BUMBLE BEE. IF THE RUSTY PATCH BUMBLE BEE IS OBSERVED WITHIN THE PROJECT AREA THE CONTRACTOR IS TO STOP WORK IMMEDIATELY AND CONTACT THE ENGINEER OF RECORD.

#### 1.10 HISTORIC PRESERVATION

1.11 APPLICABLE FEDERAL, TRIBAL, STATE OR LOCAL PROGRAMS

THERE ARE NO KNOWN HISTORIC SITES ON OR NEAR THE CONSTRUCTION SITE.

## LOCAL GOVERNING UNIT (LGU) REQUIREMENTS:

THE PROJECT IS LOCATED WITHIN THE JURISDICTION OF THE NINE MILE CREEK WATERSHED DISTRICT (NMCWD). ONSITE STORMWATER MANAGEMENT HAS BEEN DESIGNED TO MEET THE REQUIREMENTS OF THE CITY OF MINNETONKA AND NMCWD. THE STORMWATER MANAGEMENT REQUIREMENTS FOR THIS PROJECT ARE:

- VOLUME CONTROL PROVIDE RETENTION OF 1.1 INCHES OF RUNOFF FROM THE REGULATED IMPERVIOUS SURFACE ON SITE (NMCWD).
- •• PROVIDE PRETREATMENT FOR INFILTRATION FACILITIES. •• DRAWDOWN OF WATER LEVELS IN INFILTRATION FACILITIES MUST BE WITHIN
- 48 HOURS. RATE CONTROL - LIMIT PEAK RUNOFF FLOW RATES TO THAT FROM EXISTING CONDITIONS FOR THE 2-, 10-, AND 100-YEAR FREQUENCY STORM EVENTS USING A
- NESTED 24-HOUR RAINFALL DISTRIBUTION (NMCWD, CITY) • WATER QUALITY - PROVIDE AT LEAST 60% ANNUAL REMOVAL EFFICIENCY FOR TOTAL PHOSPHOROUS AND 90% ANNUAL REMOVAL EFFICIENCY FOR TOTAL
- SUSPENDED SOLIDS (NMCWD, CITY). • IF THE PROPOSED ACTIVITY DISTURBS OVER 50% OF THE EXISTING IMPERVIOUS
- SURFACE ONSITE, STORMWATER RULES SHALL APPLY TO THE ENTIRE SITE (NMCWD).

**INSTALLATION SCHEDULE:** INSTALL TEMPORARY DIVERSION DITCHES AS SHOWN ON THE SWPPP PLAN SHEETS, AND AS NEEDED THROUGHOUT CONSTRUCTION, PRIOR TO UP GRADIENT GROUND DISTURBING ACTIVITIES

## **1.12 MITIGATION MEASURES FROM ENVIRONMENTAL REVIEWS/TMDLS/IMPAIRED WATERS**

## 1.13 MAPS

**EROSION AND SEDIMENT CONTROL PLANS:** 

(REVISE THE FOLLOWING AS NECESSARY)

THE FOLLOWING SITE DEVELOPMENT PLAN SHEETS ARE AN INTEGRAL PART OF THIS SWPPP: C-C5.01 - PHASE I EROSION AND SEDIMENTATION CONTROL PLAN/"SITE MAP" C-C5.01 - PHASE II EROSION AND SEDIMENTATION CONTROL PLAN/"SITE MAP" C-C9.01, C9.02, C9.05 - EROSION AND SEDIMENTATION CONTROL DETAILS

## **SECTION 2: EROSION AND SEDIMENT CONTROL BMPS**

## EROSION CONTROL BMPS:

THE PURPOSE OF EROSION CONTROL IS TO PREVENT SOIL PARTICLES FROM BECOMING SUSPENDED IN WATER AND BEING TRANSPORTED TO EITHER DOWNSTREAM SURFACE WATERS OR DOWNSTREAM PROPERTIES.

APPROPRIATE CONSTRUCTION PHASING, VEGETATIVE BUFFER STRIPS, HORIZONTAL SLOPE GRADING, AND OTHER CONSTRUCTION PRACTICES THAT MINIMIZE EROSION MUST BE PLANNED FOR AND IMPLEMENTED.

IN THE NATURAL CONDITION, SOIL IS STABILIZED BY NATIVE VEGETATION. THE PRIMARY TECHNIQUE TO BE USED AT THIS PROJECT FOR FINAL STABILIZATION OF SITE SOIL WILL BE TO PROVIDE A PROTECTIVE COVER OF VEGETATION, PAVEMENT, OR BUILDING.

ALL EXPOSED AREAS MUST BE STABILIZED AS SOON AS POSSIBLE (BUT NO LATER THAN THE NEXT WORK DAY) TO LIMIT SOIL EROSION, BUT IN NO CASE LATER THAN 14 DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED. TEMPORARY SOIL STOCKPILES WITHOUT SIGNIFICANT SILT, CLAY OR ORGANIC COMPONENTS (E.G. CLEAN AGGREGATED STOCKPILES, DEMOLITION CONCRETE STOCKPILES, SAND STOCKPILES) AND THE CONSTRUCTED BASE COMPONENTS OF ROADS, PARKING LOTS AND SIMILAR SURFACES ARE EXEMPT FROM THIS REQUIREMENT, BUT MUST COMPLY WITH SECTION 2.7 OF THIS SWPPP (SECTION 8.4, 9.9, 9.10, AND 23.9 OF THE GENERAL PERMIT)

#### SEDIMENT CONTROL BMPS:

THE PURPOSE OF SEDIMENT CONTROL IS TO PREVENT SOIL PARTICLES THAT HAVE BEEN SUSPENDED IN WATER FROM ENTERING SURFACE WATERS, INCLUDING CURB AND GUTTER SYSTEMS AND STORM SEWER INLETS. SEDIMENT CONTROL BMPS HAVE BEEN DESIGNED AS PART OF THIS SWPPP.

IF THE DOWN GRADIENT TREATMENT SYSTEM IS OVERLOADED, THE CONTRACTOR IS RESPONSIBLE FOR IMPLEMENTING ADDITIONAL UP GRADIENT SEDIMENT CONTROL PRACTICES OR REDUNDANT BMPS TO ELIMINATE THE OVERLOADING AND MUST AMEND THE SWPPP TO IDENTIFY THE ADDITIONAL PRACTICES.

SEDIMENT CONTROL PRACTICES MUST ALWAYS BE ESTABLISHED ON ALL DOWN GRADIENT PERIMETERS AND BE LOCATED UPGRADIENT OF ANY BUFFER ZONES. THE PERIMETER SEDIMENT CONTROL PRACTICES MUST BE IN PLACE BEFORE ANY UP GRADIENT LAND DISTURBING ACTIVITIES BEGIN. THESE PRACTICES MUST REMAIN IN PLACE UNTIL FINAL STABILIZATION IS ACHIEVED (SEE SECTION 8 OF THIS SWPPP).

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 RE-INSTALLED IMMEDIATELY AFTER THE ACTIVITY IS COMPLETED. SEDIMENT CONTROL PRACTICES MUST BE INSTALLED BEFORE THE NEXT RAIN EVENT EVEN IF THE ACTIVITY IS NOT COMPLETE

## 2.1 MINIMIZE DISTURBED AREA AND PROTECT NATURAL FEATURES

AND SOIL

1. INSTALL CONSTRUCTION ENTRANCE

2. INSTALL SILT FENCE/EROSION CONTROL 3. COMPLETE DEMOLITION AS NEEDED

4. ROUGH GRADE THE PROJECT AREAS

5. CONSTRUCT STORMWATER MANAGEMENT SYSTEMS

6. CONSTRUCT BUILDING PADS AND STRUCTURES AS APPLICABLE

TEMPORARY SEED AS REQUIRED

8. INSTALL UTILITIES

9. INSTALL BASE AGGREGATE, CURB AND GUTTER, CONCRETE, AND FIRST BITUMINOUS LIFT 10. COMPLETE SITE GRADING, TOPSIL PLACEMENT, SOD, SEED, TREES AND SHRUBS, AND ALL REQUIRED LANDSCAPE ELEMENTS. SOD AND SEED MUST BE INSTALLED WITHIN SEVEN DAYS OF FINAL GRADING

11. REMOVE ALL EROSION CONTROL MEASURES ONCE SITE IS STABILIZED.

12. PAVE WEAR COURSE.

## 2.2 PRESERVE 50 FOOT NATURAL BUFFER

THE CONTRACTOR MUST PRESERVE A 50 FOOT NATURAL BUFFER (OR IF A BUFFER IS INFEASIBLE ON THE SITE PROVIDE REDUNDANT SEDIMENT CONTROLS) WHEN A SURFACE WATER IS LOCATED WITHIN 50 FEET OF THE PROJECTS EARTH DISTURBANCES AND STORMWATER FLOWS TO THE SURFACE WATER. THE CONTRACTOR IS NOT REQUIRED TO ENHANCE THE QUALITY OF THE VEGETATION THAT ALREADY EXISTS IN THE BUFFER OR PROVIDE VEGETATION IF NONE EXISTS.

## 2.3 CONTROL STORMWATER FLOWING ONTO AND THROUGH THE PROJECT

MEASURES SHOULD BE TAKEN TO ENSURE THAT "CLEAN" RUNOFF FROM OFF SITE IS DIVERTED AROUND DISTURBED AREAS ON SITE. CARE SHOULD BE TAKEN THAT RE-ROUTING OFF SITE RUNOFF DOES NOT RESULT IN FLOODING OR OTHER ISSUES ON ADJACENT PROPERTIES. **BMP DESCRIPTION:** SILT FENCE, DANDY SACK, TEMPORARY DIVERSION DITCH

MAINTENANCE AND INSPECTION REQUIREMENTS: THE WETTED PERIMETER OF ANY TEMPORARY OR PERMANENT DRAINAGE DITCH MUST BE STABILIZED WITHIN 200 LINEAL FEET FROM THE PROPERTY EDGE OR FROM THE POINT OF DISCHARGE INTO ANY SURFACE WATER. THIS STABILIZATION MUST BE COMPLETED WITHIN 24 HOURS OF CONNECTING TO A SURFACE WATER. THE REMAINDER OF THE DITCH MUST BE STABILIZED WITHIN 14 DAYS OF CONNECTING TO A SURFACE WATER AND AFTER CONSTRUCTION HAS CEASED.

TEMPORARY OR PERMANENT DITCHES THAT ARE BEING USED AS A SEDIMENT CONTAINMENT SYSTEM DO NOT NEED TO BE STABILIZED, BUT MUST BE STABILIZED WITHIN 24 HOURS AFTER NO LONGER BEING USED AS A SEDIMENT CONTAINMENT SYSTEM.

DITCHES MUST BE INSPECTED EVERY 7 DAYS, AND WITHIN 24 HOURS AFTER A 0.5" 24-HOUR RAIN EVENT. ANY SEDIMENT DEPOSITED IN DIVERSION DITCHES MUST BE REMOVED AND ANY EXPOSED SOILS STABILIZED WITHIN 7 DAYS OF DISCOVERY UNLESS PRECLUDED BY LEGAL, REGULATORY, OR PHYSICAL ACCESS CONSTRAINTS. IF PRECLUDED, NOTE REASON FOR DELAY ON MAINTENANCE LOG.

**RESPONSIBLE STAFF (CONTRACTOR TO COMPLETE):** 

TEMPORARY SEEDING - DISTURBED AREAS THAT ARE NOT YET AT FINAL GRADE BUT THAT WILL NOT BE ACTIVELY WORKED FOR 14 DAYS OR MORE MUST BE TEMPORARILY STABILIZED. TEMPORARY STABILIZATION MUST BE INITIATED IMMEDIATELY WHERE WORK HAS TEMPORARILY CEASED AND MUST BE COMPLETED NO LATER THAN 14 CALENDAR DAYS AFTER WORK IN THAT PORTION OF THE SITE HAS TEMPORARILY CEASED. TEMPORARY SEEDING SHALL BE IN ACCORDANCE WITH MN/DOT SEED MIXTURE NUMBER 21-111 OR 21-112 DEPENDING ON THE SEASON OF PLANTING (SEE MN/DOT SPECIFICATION SECTION 2575.3) SEEDING METHOD AND APPLICATION RATE SHALL CONFORM TO MN/DOT SPECIFICATION SECTION 2575.3. TEMPORARY MULCH SHALL BE APPLIED IN ACCORDANCE WITH MN/DOT SPECIFICATION SECTION 2575.3C. ALTERNATIVELY, HYDRAULIC SOIL STABILIZER IN ACCORDANCE WITH MN/DOT SPECIFICATION SECTION 2575.3E MAY BE USED IN PLACE OF TEMPORARY MULCH.

PERMANENT STABILIZATION - ALL AREAS AT FINAL GRADE MUST BE STABILIZED WITHIN 14 DAYS AFTER COMPLETION OF THE MAJOR CONSTRUCTION ACTIVITY. PERMANENT STABILIZATION MUST BE INITIATED IMMEDIATELY WERE WORK HAS PERMANENTLY CEASED AND MUST BE COMPLETED NO LATER THAN 14 CALENDAR DAYS AFTER CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS PERMANENTLY CEASED. SEEDED AREAS SHALL BE PROTECTED WITH MULCH. PERMANENT MULCH SHALL CONFORM TO MN/DOT SPECIFICATION 3882. TYPE 3 AT 2 TONS/ACRE AND SHALL BE DISK ANCHORED. HYDRAULIC SOIL STABILIZER MAY BE USED IN PLACE OF MULCH IF APPROVED BY CIVIL ENGINEER. IF HYDRAULIC SOIL STABILIZER IS USED, IT SHALL BE MN/DOT TYPE 6.

#### 2.5 PROTECT SLOPES

STEEP SLOPE AREAS - THE CONTRACTOR MUST MINIMIZE THE NEED FOR DISTURBANCE OF PORTIONS OF THE PROJECT THAT HAVE STEEP SLOPES (3:1 OR STEEPER). FOR THOSE SLOPED AREAS WHICH MUST BE DISTURBED, THE CONTRACTOR MUST USE TECHNIQUES SUCH AS PHASING AND STABILIZATION PRACTICES DESIGNED FOR STEEP SLOPES, SUCH AS DRAINING AND TERRACING. SLOPES STEEPER THAN 3:1 MUST BE PROTECTED BY EROSION CONTROL BLANKETS.

**BMP DESCRIPTION:** EROSION CONTROL BLANKET

**INSTALLATION SCHEDULE:** INSTALL EROSION CONTROL BLANKETS AS SHOWN ON THE SWPPP PLAN SHEETS, AND AS NEEDED THROUGHOUT CONSTRUCTION, WITHIN THE TIMEFRAME ALLOWED FOR STABILIZATION AFTER WORK HAS CEASED IN AN AREA, DEPENDING ON THE LOCATION (I.E. 24 HOURS, 7 DAYS, 14 DAYS)

MAINTENANCE AND INSPECTION REQUIREMENTS: TO FUNCTION PROPERLY, EROSION CONTROL BLANKETS MUST BE IN CONTACT WITH THE SOIL BENEATH THE BLANKET. BLANKETS MUST BE SECURED PER THE CONSTRUCTION DETAIL PROVIDED WITH THE SWPPP PLAN SHEETS INSPECT BLANKETS EVERY 7 DAYS OR WITHIN 24 HOURS AFTER A 0.5" 24-HOUR RAIN EVENT. REPAIR, REPLACE, OR SUPPLEMENT NON-FUNCTIONAL BLANKETS WITHIN 3 DAYS OR BY THE NEXT RAIN EVENT, WHICHEVER COMES FIRST

**RESPONSIBLE STAFF (CONTRACTOR TO COMPLETE):** 

## 2.6 PROTECT STORM DRAIN INLETS

ALL STORM DRAIN INLETS MUST BE PROTECTED BY APPROPRIATE MEANS DURING CONSTRUCTION UNTIL ALL SOURCES WITH POTENTIAL FOR DISCHARGING TO THE INLET HAVE BEEN STABILIZED. INLET PROTECTION MAY BE REMOVED FOR A PARTICULAR INLET IF A SPECIFIC SAFETY CONCERN (STREET FLOODING/FREEZING) HAS BEEN IDENTIFIED AND PERMITTEE(S) HAVE RECEIVED WRITTEN CORRESPONDENCE FROM THE JURISDICTIONAL AUTHORITY (E.G. CITY/COUNTY/TOWNSHIP/MNDOT/ETC.) VERIFYING THE NEED FOR REMOVAL. THE WRITTEN CORRESPONDENCE MUST BE DOCUMENTED IN THIS SWPPP.

**BMP DESCRIPTION:** SILT FENCE INLET PROTECTION

**INSTALLATION SCHEDULE:** INSTALL INLET PROTECTION IN EXISTING STRUCTURES AS DIRECTED ON THE SWPPP PLAN SHEETS, AND AS NEEDED THROUGHOUT CONSTRUCTION, PRIOR TO BEGINNING GROUND DISTURBING ACTIVITIES UP GRADIENT OF THE INLET. INSTALL INLET PROTECTION ON NEW STRUCTURES AS SOON AS THE STRUCTURES ARE PUT INTO USE.

MAINTENANCE AND INSPECTION REQUIREMENTS: INSPECT SILT FENCE EVERY 7 DAYS OR WITHIN 24 HOURS AFTER A 0.5" 24-HOUR RAIN EVENT. SEDIMENT ACCUMULATIONS SHOULD BE REMOVED WHEN SEDIMENT BUILD-UP REACHES 1/2 THE HEIGHT OF THE SILT FENCE. THIS MAINTENANCE MUST BE COMPLETED WITHIN 24 HOURS OF DISCOVERY.

#### **RESPONSIBLE STAFF (CONTRACTOR TO COMPLETE):**

**BMP DESCRIPTION:** INLET PROTECTION (INLET INSERT DEVICE) **INSTALLATION SCHEDULE:** INSTALL INLET PROTECTION IN EXISTING STRUCTURES AS DIRECTED ON THE SWPPP PLAN SHEETS, AND AS NEEDED THROUGHOUT CONSTRUCTION, PRIOR TO BEGINNING GROUND DISTURBING ACTIVITIES UP GRADIENT OF THE INLET. INSTALL INLET PROTECTION ON NEW STRUCTURES AS SOON AS THE STRUCTURES ARE PUT INTO USE.

MAINTENANCE AND INSPECTION REQUIREMENTS: INSPECT INLET PROTECTION EVERY 7 DAYS OR WITHIN 24 HOURS AFTER A 0.5" 24-HOUR RAIN EVENT. SEDIMENT ACCUMULATIONS SHOULD BE REMOVED WHEN SEDIMENT BUILD-UP REACHES 1/2 THE CAPACITY OF THE DEVICE, OR, IF MORE STRINGENT, IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS. THIS MAINTENANCE MUST BE COMPLETED WITHIN 24 HOURS OF DISCOVERY.

**RESPONSIBLE STAFF (CONTRACTOR TO COMPLETE):** 

## 2.7 ESTABLISH PERIMETER CONTROLS AND SEDIMENT BARRIERS

ALL STRUCTURAL SEDIMENT CONTROLS INTENDED TO RECEIVE AND TREAT CONSTRUCTION RUNOFF MUST BE IN PLACE BEFORE ANY UP GRADIENT LAND ALTERATION CAN BEGIN AND MUST STAY IN OPERATION UNTIL FINAL STABILIZATION OF THE SITE HAS BEEN ACHIEVED.

TEMPORARY SOIL STOCKPILES MUST HAVE SILT FENCE OR OTHER EFFECTIVE SEDIMENT CONTROLS, AND CANNOT BE PLACED IN ANY NATURAL BUFFERS OR SURFACE WATERS, INCLUDING STORMWATER CONVEYANCES SUCH AS CURB AND GUTTER SYSTEMS, OR CONDUITS AND DITCHES UNLESS THERE IS A BYPASS IN PLACE FOR THE STORMWATER.

#### **BMP DESCRIPTION: SILT FENCE**

INSTALLATION SCHEDULE: INSTALL SILT FENCE AS DIRECTED ON THE SWPPP PLAN SHEETS, AND AS NEEDED THROUGHOUT CONSTRUCTION, PRIOR TO COMMENCING UP GRADIENT LAND DISTURBING ACTIVITIES.

MAINTENANCE AND INSPECTION REQUIREMENTS: INSPECT SILT FENCE EVERY 7 DAYS OR WITHIN 24 HOURS AFTER A 0.5" 24-HOUR RAIN EVENT. SEDIMENT ACCUMULATIONS SHOULD BE REMOVED WHEN SEDIMENT BUILD-UP REACHES 1/2 THE HEIGHT OF THE SILT FENCE. THIS MAINTENANCE MUST BE COMPLETED WITHIN 24 HOURS OF DISCOVERY.

**RESPONSIBLE STAFF (CONTRACTOR TO COMPLETE):** 

## **BMP DESCRIPTION:** BIOLOGS

INSTALLATION SCHEDULE: INSTALL BIOLOGS AS DIRECTED ON THE SWPPP PLAN SHEETS, AND AS NEEDED THROUGHOUT CONSTRUCTION, PRIOR TO COMMENCING UP GRADIENT LAND DISTURBING ACTIVITIES.

MAINTENANCE AND INSPECTION REQUIREMENTS: INSPECT BIOLOGS EVERY 7 DAYS OR WITHIN 24 HOURS AFTER A 0.5" 24-HOUR RAIN EVENT. SEDIMENT ACCUMULATIONS SHOULD BE REMOVED WHEN SEDIMENT BUILD-UP REACHES 1/2 THE HEIGHT OF THE BIOLOG. THIS MAINTENANCE MUST BE COMPLETED WITHIN 24 HOURS OF DISCOVERY.

**RESPONSIBLE STAFF (CONTRACTOR TO COMPLETE):** 

## 2.8 RETAIN SEDIMENT ON-SITE

ANY OFF-SITE ACCUMULATIONS OF SEDIMENT MUST BE REMOVED IN A MANNER AND AT A FREQUENCY SUFFICIENT TO MINIMIZE OFF-SITE IMPACT (E.G. FUGITIVE SEDIMENT IN STREETS COULD BE WASHED INTO STORM SEWERS BY THE NEXT RAIN AND/OR POSE A SAFETY HAZARD TO USERS OF PUBLIC STREETS.

**BMP DESCRIPTION:** TEMPORARY SEDIMENTATION BASIN **INSTALLATION SCHEDULE:** INSTALL TEMPORARY SEDIMENTATION BASIN PRIOR TO BEGINNING UPSLOPE LAND DISTURBING ACTIVITIES. IF THIS IS NOT POSSIBLE DUE TO EXISTING TOPOGRAPHY, LIMIT DISTURBANCE TO ONLY THOSE AREAS NECESSARY TO INSTALL

MAINTENANCE AND INSPECTION REQUIREMENTS: INSPECT TEMPORARY SEDIMENTATION BASINS EVERY 7 DAYS OR WITHIN 24 HOURS AFTER A 0.5" 24-HOUR RAIN EVENT. TEMPORARY AND PERMANENT SEDIMENTATION BASINS MUST BE DRAINED AND THE SEDIMENT REMOVED WHEN THE VOLUME OF SEDIMENT COLLECTED IN THE BASIN REACHES 3/ THE STORAGE VOLUME. THIS MAINTENANCE MUST BE COMPLETED WITHIN 72 HOURS OF DISCOVERY, OR AS SOON AS FIELD CONDITIONS ALLOW ACCESS. IF CONDITIONS DO NOT ALLOW MAINTENANCE TO BE PERFORMED WITHIN 72 HOURS, DOCUMENT THE CAUSE OF DELAY ON THE MAINTENANCE FORM. REFER TO SECTION 3.1 OF THIS SWPPP FOR BASIN DRAINING GUIDELINES.

**RESPONSIBLE STAFF (CONTRACTOR TO COMPLETE):** 

TEMPORARY SEDIMENTATION BASIN.

## 2.9 ESTABLISH VEHICLE TRACKING PADS

VEHICLE TRACKING PADS HAVE BEEN DESIGNED TO PREVENT SEDIMENT TRACK OFF. IF THERE IS EVIDENCE OF SEDIMENT TRACKING FROM VEHICLES IN PAVED AREAS, THE SEDIMENT MUST BE REMOVED BY STREET SWEEPING OR OTHER METHOD AS SOON AS FEASIBLY POSSIBLE, BUT NO LONGER THAN 24 HOURS AFTER DISCOVERY. (SECTION 9.11 AND 9.12 OF THE GENERAL PERMIT)

**BMP DESCRIPTION:** VEHICLE TRACKING PAD

INSTALLATION SCHEDULE: INSTALL VEHICLE TRACKING PAD AS SHOWN ON THE SWPPP PLAN SHEETS AS SOON AS POSSIBLE AT THE BEGINNING OF CONSTRUCTION ACTIVITIES. INSTALL ADDITIONAL VEHICLE TRACKING PADS AS NEEDED THROUGHOUT CONSTRUCTION.

MAINTENANCE AND INSPECTION REQUIREMENTS: INSPECT VEHICLE TRACKING PADS EVERY 7 DAYS OR WITHIN 24 HOURS AFTER A 0.5" 24-HOUR RAIN EVENT. VEHICLE TRACKING PADS MUST BE PERIODICALLY 'REFRESHED' TO ENSURE PROPER FUNCTIONALITY. MAINTENANCE SHOULD BE PERFORMED WHEN THE EXIT APPEARS SMOOTH AND COMPACTED OR WHEN THE VEHICLE TRACKING PAD CEASES TO FUNCTION PROPERLY. VEHICLE TRACKING PAD LOCATIONS SHOULD BE INSPECTED FOR SIGNS OF OFF-SITE SEDIMENT TRACKING. TRACKED SEDIMENT MUST BE REMOVED FROM ALL PAVED SURFACES WITHIN 24 HOURS OF DISCOVERY. STREET SWEEPING MUST BE USED IF VEHICLE TRACKING PADS ARE NOT ADEQUATE TO PREVENT SEDIMENT FROM BEING TRACKED ONTO THE STREET.

**RESPONSIBLE STAFF (CONTRACTOR TO COMPLETE):** 

**BMP DESCRIPTION: (ADD BMPS OR DELETE THIS SECTION)** INSTALLATION SCHEDULE:

MAINTENANCE AND INSPECTION REQUIREMENTS

**RESPONSIBLE STAFF (CONTRACTOR TO COMPLETE** 

## SAFEngineering, PLLC

Site and Athletic Facility Engineering

3200 122nd Ave. NE Blaine, MN 55449 612-213-9859 nrtessier@gmail.com

## Client ISD # 270

Project **GLEN LAKE ELEMENTARY PARKING LOT IMPROVEMENTS** 

## Location **MINNETONKA** MN

4801 WOODRIDGE DRIVE

## Certification

I HEREBY CERTIFY THAT THIS SET OF PLANS AND SPECIFICATIONS 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.



03/15/2023 Summary Designed: NT

Approved: NT Phase: PRELIM.

Drawn: JRW Book / Page: Initial Issue: xx/xx/xxxx

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1 04/06/23 2 05/18/23 3 05/31/23 4 06/06/23

Addendum One NMCWD Revisions MNDLI Revisions NMCWD Revisions

## **Sheet Title SWPPP**

Sheet No. Revision **C5.02** 

**Project No.** 

51540

## 2.10 CONTROL STORMWATER DISCHARGE POINTS

- PIPE OR OTHER TEMPORARY OR PERMANENT OUTLETS MUST BE STABILIZED WITH TEMPORARY OR PERMANENT ENERGY DISSIPATION WITHIN 24 HOURS AFTER
- CONNECTION TO A SURFACE WATER
- STABILIZE THE NORMAL WETTED PERIMETER OF A DRAINAGE DITCH OR SWALE WITHIN 200 FEET OF THE PROPERTY EDGE WITHIN 24 HOURS OF CONNECTION TO A SURFACE WATER. THE REMAINDER OF THE DITCH MUST BE STABILIZED WITHIN 14 CALENDAR DAYS OF CONNECTION

#### **BMP DESCRIPTION:** RIPRAP

**INSTALLATION SCHEDULE:** INSTALL RIPRAP AS SHOWN ON SWPPP PLANS AND/OR GRADING LANS. INSTALLATION MUST BE COMPLETED WITHIN 24 HOURS OF CONNECTING TO A URFACE WATER.

MAINTENANCE AND INSPECTION REQUIREMENTS: INSPECT OUTLETS EVERY 7 DAYS OR WITHIN 24 HOURS AFTER A 0.5" 24-HOUR RAIN EVENT. REPAIR, REPLACE OR SUPPLEMENT NON-FUNCTIONING RIPRAP ENERGY DISSIPATION WITHIN 3 DAYS OR BY THE NEXT RAIN EVENT, WHICHEVER COMES FIRST. ANY OFF SITE ACCUMULATION OF SEDIMENT MUST BE REMOVED N MANNER AND AT A FREQUENCY TO MINIMIZE OFF-SITE IMPACTS. **RESPONSIBLE STAFF (CONTRACTOR TO COMPLETE):** 

## 2.11 CHEMICAL EROSION AND SEDIMENT CONTROL BMPS

OLYMERS, FLOCCULANTS, OR OTHER SEDIMENTATION TREATMENT CHEMICALS MUST BE APPLIED AFTER CONVENTIONAL EROSION AND SEDIMENT CONTROL DEVICES ARE UTILIZED. CHEMICALS MAY ONLY BE APPLIED WHERE TREATED STORMWATER IS DIRECTED TO A SEDIMENT CONTROL SYSTEM WHICH ALLOWS FOR FILTRATION OR SETTLEMENT OF THE FLOC PRIOR TO DISCHARGE. CONSIDERATION MUST BE GIVEN WHEN SELECTING CHEMICALS TO THE EXPECTED SOIL TYPES TO BE EXPOSED DURING CONSTRUCTION, AND TO THE EXPECTED TURBIDITY, PH AND FLOW RATE OF STORMWATER FLOWING INTO THE CHEMICAL TREATMENT SYSTEM OR AREA. IF CHEMICALS ARE PART OF THE EROSION CONTROL PLAN, THEY MUST BE USED IN ACCORDANCE WITH ACCEPTED ENGINEERING PRACTICES, AND WITH DOSING SPECIFICATION AND SEDIMENT REMOVAL DESIGN SPECIFICATIONS PROVIDED BY THE MANUFACTURER OR PROVIDER/SUPPLIER OF THE APPLICABLE CHEMICALS

## SECTION 3: DEWATERING & BASIN DRAINING

## 3.1 DEWATERING AND BASIN DRAINING

ALLOWABLE NON-STORMWATER DISCHARGES, AS DEFINED BY THE GENERAL PERMIT, ARE LIMITED TO DEWATERING AND BASIN DRAINING. DEWATERING OR BASIN DRAINING THAT MAY HAVE TURBID OR SEDIMENT LADEN DISCHARGE WATER MUST BE DISCHARGED TO A TEMPORARY OR PERMANENT SEDIMENTATION BASIN ON THE PROJECT SITE WHENEVER POSSIBLE. IF THE WATER CANNOT BE DISCHARGED TO A SEDIMENTATION BASIN PRIOR TO ENTERING THE SURFACE WATER, IT MUST BE TREATED WITH THE APPROPRIATE BMPS, SUCH THAT THE DISCHARGE DOES NOT ADVERSELY AFFECT THE RECEIVING WATER OR DOWNSTREAM LANDOWNERS. THE CONTRACTOR MUST ENSURE THAT DISCHARGE POINTS ARE ADEQUATELY PROTECTED FROM EROSION AND SCOUR. THE DISCHARGE MUST BE DISPERSED OVER NATURAL ROCK RIPRAP, SAND BAGS, PLASTIC SHEETING OR OTHER ACCEPTED ENERGY DISSIPATION MEASURES. ADEQUATE SEDIMENTATION CONTROL MEASURES ARE REQUIRED FOR DISCHARGE WATER THAT CONTAINS SUSPENDED SOLIDS. ALL WATER FROM DEWATERING OR BASIN DRAINING MUST BE DISCHARGED IN A MANNER THAT DOES NOT CAUSE NUISANCE CONDITIONS, EROSION IN RECEIVING CHANNELS OR ON DOWNSLOPE PROPERTIES. OR INUNDATION IN WETLANDS CAUSING SIGNIFICANT ADVERSE IMPACT TO THE WETLAND. IF THE CONTRACTOR ELECTS TO UTILIZE FILTERS WITH BACKWASH WATER, THE CONTRACTOR MUST HAUL THE BACKWASH WATER AWAY FOR DISPOSAL, RETURN THE BACKWATER TO THE BEGINNING OF THE TREATMENT PROCESS, OR INCORPORATE THE BACKWASH WATER INTO THE SITE IN A MANNER THAT DOES NOT CAUSE EROSION. THE CONTRACTOR MUST REPLACE AND CLEAN THE FILTER MEDIA USED IN DEWATERING DEVICES WHEN REQUIRED TO RETAIN ADEQUATE FUNCTION. CONTRACTOR SHALL OBTAIN A WATER USE (APPROPRIATION) PERMIT FROM THE MINNESOTA DNR FOR DEWATERING ACTIVITIES THAT WILL WITHDRAW MORE THAN 10,000 GALLONS OF WATER PER DAY OR 1 MILLION GALLONS PER YEAR.

## SECTION 4: GOOD HOUSEKEEPING BMPS

## 4.1 MATERIAL HANDLING AND WASTE MANAGEMENT

- . SOLID WASTE DISPOSAL NO SOLID MATERIALS, INCLUDING CONSTRUCTION AND DEMOLITION MATERIALS, COLLECTED SEDIMENT, ASPHALT AND CONCRETE MILLINGS, SHALL BE ALLOWED TO BE CARRIED FROM THE SITE WITH STORM WATER. ALL SOLID WASTE, INCLUDING DISPOSABLE MATERIALS INCIDENTAL TO THE MAJOR CONSTRUCTION ACTIVITIES, MUST BE COLLECTED AND PLACED IN CONTAINERS. THE CONTAINERS WILL BE EMPTIED PERIODICALLY BY A CONTRACT TRASH DISPOSAL SERVICE AND HAULED AWAY FROM THE SITE. DISPOSAL OF SOLID WASTES MUST COMPLY WITH MPCA REQUIREMENTS.
- **GROUNDWATER PROTECTION -** SUBSTANCES THAT HAVE THE POTENTIAL FOR POLLUTING SURFACE AND/OR GROUNDWATER MUST BE CONTROLLED BY WHATEVER MEANS NECESSARY IN ORDER TO ENSURE THAT THEY DO NOT DISCHARGE FROM THE SITE. AS AN EXAMPLE, SPECIAL CARE MUST BE EXERCISED DURING EQUIPMENT FUELING AND SERVICING OPERATIONS. IF A SPILL OCCURS, IT MUST BE CONTAINED AND DISPOSED OF SO THAT IT WILL NOT FLOW FROM THE SITE OR ENTER GROUNDWATER, EVEN IF THIS REQUIRES REMOVAL, TREATMENT, AND DISPOSAL OF SOIL. IN THIS REGARD, POTENTIALLY POLLUTING SUBSTANCES SHOULD BE HANDLED IN A MANNER CONSISTENT WITH THE IMPACT THEY REPRESENT.
- 3. SANITARY FACILITIES ALL PERSONNEL INVOLVED WITH CONSTRUCTION ACTIVITIES MUST COMPLY WITH STATE AND LOCAL SANITARY SEPTIC SYSTEM REGULATIONS. PORTABLE TOILETS MUST BE POSITIONED SO THAT THEY ARE SECURE AND WILL NOT BE TIPPED OR KNOCKED OVER. TEMPORARY SANITARY FACILITIES WILL BE PROVIDED AT THE SITE THROUGHOUT THE CONSTRUCTION PHASE WHERE REQUIRED BY STATE OR LOCAL REGULATIONS. THEY MUST BE UTILIZED BY ALL CONSTRUCTION PERSONNEL AND BE SERVICED BY A COMMERCIAL OPERATOR.

## 4.2 ESTABLISH PROPER STORAGE, HANDLING & DISPOSAL PRACTICES

HAZARDOUS MATERIALS & TOXIC WASTE (INCLUDING OIL, DIESEL FUEL, GASOLINE, HYDRAULIC FLUIDS, PAINT SOLVENTS, PETROLEUM-BASED PRODUCTS, WOOD PRESERVATIVES, ADDITIVES, CURING COMPOUNDS, AND ACIDS) MUST BE STORED IN WATERPROOF CONTAINERS WITH SECONDARY CONTAINMENT, AND THEIR LOCATION(S) MUST BE NOTED ON THE SWPPP MAP. EXCEPT DURING APPLICATION, THE CONTENTS MUST BE KEPT IN TRUCKS OR WITHIN STORAGE FACILITIES IN ACCORDANCE WITH SECTION 12.4 OF THE GENERAL PERMIT. STORAGE AND DISPOSAL OF HAZARDOUS WASTE MUST BE IN COMPLIANCE WITH MCPA REGULATIONS. RUNOFF CONTAINING SUCH MATERIAL MUST BE COLLECTED, REMOVED FROM THE SITE, TREATED, AND DISPOSED AT AN APPROVED SOLID WASTE OR CHEMICAL DISPOSAL FACILITY.

BUILDING PRODUCTS THAT HAVE THE POTENTIAL TO LEACH POLLUTANTS AND PESTICIDES, HERBICIDES, INSECTICIDES, FERTILIZERS, TREATMENT CHEMICALS AND LANDSCAPE MATERIALS MUST BE UNDER COVER BY PLASTIC SHEETING OR TEMPORARY ROOFS TO PREVENT DISCHARGE, OR PROTECTED BY SIMILAR EFFECTIVE MEANS TO PREVENT CONTACT WITH STORMWATER.

## **4.3 DESIGNATE WASHOUT AREAS**

THE CONTRACTOR SHALL DESIGNATE AREAS FOR CONCRETE AND OTHER (STUCCO, PAINT, FOR RELEASE OILS, CURING COMPOUNDS AND OTHER CONSTRUCTION MATERIALS RELATED TO THE CONSTRUCTION ACTIVITY) WASHOUTS, AND NOTE THE LOCATIONS ON THE SITE MAP. ALL LIQUID AND SOLID WASTES GENERATED BY WASHOUT OPERATIONS MUST BE CONTAINED

IN A LEAK PROOF CONTAINMENT FACILITY OR IMPERMEABLE LAYER. A COMPACTED CLAY LINER IS NOT AN ACCEPTABLE IMPERMEABLE LAYER. THE LIQUID AND SOLID WASTES MUST NOT CONTACT THE GROUND, AND THERE MUST NOT BE RUNOFF FROM THE WASHOUT OPERATIONS OR AREAS. LIQUID AND SOLID WASTE MUST BE DISPOSED OF PROPERLY AND IN COMPLIANCE WITH MPCA REGULATIONS. A SIGN MUST BE INSTALLED ADJACENT TO EACH WASHOUT FACILITY TO INFORM SITE WORKERS TO UTILIZE PROPER FACILITIES FOR DISPOSAL OF CONCRETE AND OTHER WASTES.

**BMP DESCRIPTION: CONCRETE WASHOUT** 

**INSTALLATION SCHEDULE:** PRIOR TO CONCRETE WORK

MAINTENANCE AND INSPECTION REQUIREMENTS: INSPECT CONCRETE WASHOUTS FOR EVIDENCE OF DISCHARGE EVERY 7 DAYS OR WITHIN 24 HOURS AFTER A 0.5" 24-HOUR RAIN EVENT. REPAIR, REPLACE OR SUPPLEMENT NON-FUNCTIONING CONCRETE WASHOUTS WITHIN 3 DAYS OR BY THE NEXT USE. WHICHEVER COMES FIRST. **RESPONSIBLE STAFF (CONTRACTOR TO COMPLETE):** 

## 4.4 ESTABLISH PROPER EQUIPMENT/VEHICLE FUELING AND **MAINTENANCE PRACTICES**

THE CONTRACTOR SHALL DESIGNATE AREAS FOR EQUIPMENT FUELING, CLEANING, MAINTENANCE AND REPAIR, AND NOTE THE LOCATION(S) ON THE SWPPP SITE MAPS. RUNOFF MUST BE CONTAINED WITHIN THE DESIGNATED AREAS (I.E. THROUGH USE OF A TEMPORARY BERM). THE AREAS MUST NOT BE LOCATED IN ANY SURFACE WATER. SPECIAL CARE MUST BE EXERCISED DURING EQUIPMENT FUELING AND SERVICING OPERATIONS. IF A SPILL OCCURS, IT MUST BE CONTAINED AND DISPOSED OF SO THAT IT WILL NOT FLOW FROM THE SITE OR ENTER GROUNDWATER, EVEN IF THIS REQUIRES REMOVAL, TREATMENT, AND DISPOSAL OF SOIL. IT IS THE CONTRACTORS RESPONSIBILITY TO ENSURE THAT ADEQUATE SUPPLIES ARE AVAILABLE AT ALL TIMES TO CLEAN UP DISCHARGED MATERIALS AND THAT AN APPROPRIATE DISPOSAL METHOD IS AVAILABLE FOR RECOVERED SPILLED MATERIALS. NO ENGINE DEGREASING IS ALLOWED ON SITE.

## 4.5 CONTROL EQUIPMENT/VEHICLE WASHING

THE CONTRACTOR SHALL DESIGNATE LOCATION(S) FOR VEHICLE WASHING, AND NOTE THE LOCATION(S) ON THE SWPPP SITE MAP. RUNOFF FROM THE WASHING AREA MUST BE CONTAINED IN A SEDIMENT BASIN OR OTHER SIMILARLY EFFECTIVE CONTROLS AND WASTE FROM THE WASHING ACTIVITY MUST BE PROPERLY DISPOSED OF. THE CONTRACTOR MUST PROPERLY USE AND STORE SOAPS, DETERGENTS AND SOLVENTS. ENGINE DEGREASING OF TRUCKS AND OTHER CONSTRUCTION VEHICLES IS ALSO PROHIBITED.

## 4.6 SPILL PREVENTION AND CONTROL PLAN

- 1. ACCIDENTAL SPILL DISCHARGE OF OIL OR OTHER HAZARDOUS SUBSTANCES IS SUBJECT TO REPORTING AND CLEAN UP REQUIREMENTS. IN CASE OF AN ACCIDENTAL SPILL, THE MINNESOTA POLLUTION CONTROL AGENCY IS TO BE NOTIFIED AT THEIR **24-HOUR** TELEPHONE NUMBER: 651-649-5451. REFER TO SECTION 12 OF THE GENERAL PERMIT.
- 2. GROUNDWATER PROTECTION SUBSTANCES THAT HAVE THE POTENTIAL FOR POLLUTING SURFACE AND/OR GROUNDWATER MUST BE CONTROLLED BY WHATEVER MEANS NECESSARY IN ORDER TO ENSURE THAT THEY DO NOT DISCHARGE FROM THE SITE. AS AN EXAMPLE, SPECIAL CARE MUST BE EXERCISED DURING EQUIPMENT FUELING AND SERVICING OPERATIONS. IF A SPILL OCCURS, IT MUST BE CONTAINED AND DISPOSED OF SO THAT IT WILL NOT FLOW FROM THE SITE OR ENTER GROUNDWATER. EVEN IF THIS REQUIRES REMOVAL, TREATMENT, AND DISPOSAL OF SOIL. IN THIS REGARD, POTENTIALLY POLLUTING SUBSTANCES SHOULD BE HANDLED IN A MANNER CONSISTENT WITH THE IMPACT THEY REPRESENT.

## SECTION 5: POST-CONSTRUCTION BMPS

PERMANENT STORMWATER MANAGEMENT FOR THE SITE IS PROPOSED THROUGH UNDERGROUND INFILTRATION. PRETREATMENT IS PROVIDED THROUGH AN ADS STORMTECH ISOLATOR ROW. PLEASE REFER TO THE DETAIL SHEETS FOR MANUFACTURER DETAILS OF THE SYSTEM.

## **BMP DESCRIPTION: UNDERGROUND INFILTRATION BASIN**

**INSTALLATION SCHEDULE:** DURING GRADING ACTIVITIES

MAINTENANCE AND INSPECTION REQUIREMENTS: PRACTICE SHOULD BE INSPECTED SEMI-ANNUALLY TO ENSURE THE DRAWDOWN TIME OF 48-HOURS IS MAINTAINED. REFER TO MANUFACTURER'S RECOMMENDATIONS FOR INSPECTION AND MAINTENANCE

**RESPONSIBLE STAFF (CONTRACTOR TO COMPLETE):** 

## **BMP DESCRIPTION:** SUMP MANHOLE

**INSTALLATION SCHEDULE:** ALONG WITH STORM SEWER NETWORK

MAINTENANCE AND INSPECTION REQUIREMENTS: PRACTICE SHOULD BE INSPECTED (AND CLEANED OUT IF DEEMED NECESSARY) SEMI-ANNUALLY TO ENSURE THAT SEDIMENT IS NOT BEGINNING TO WASH OUT DURING STORM EVENTS. DEVICES SHOULD BE CLEANED OUT AT LEAST ONCE PER YEAR OR AS NEEDED.

**RESPONSIBLE STAFF (CONTRACTOR TO COMPLETE):** 

## BMP DESCRIPTION: INFILTRATION BASIN

**INSTALLATION SCHEDULE:** AFTER SITE IS STABILIZED

MAINTENANCE AND INSPECTION REQUIREMENTS: NO HEAVY EQUIPMENT TO BE PLACED IN THESE AREAS, MINIMIZING THE COMPACTION. PERIODIC CHECK OF FLOW CONDITIONS TO TRACK DRAWDOWN OF THE WATER IN THE BASIN.

THE DEVICE WILL BE INSPECTED AND CLEARED OF SEDIMENT BUILD UP TWICE PER YEAR AND AS NEEDED. PLANTED VEGETATION ALSO NEEDS TO BE INSPECTED PERIODICALLY AND REPLACED AS NECESSARY. INSPECTION WILL ALSO INCLUDE CHECKING FOR ANY PROBLEMATIC EROSION TAKING PLACE ON THE SLOPES OF THE BASIN. EROSION ISSUES WILL BE REPAIRED AS THEY ARE FOUND.

**RESPONSIBLE STAFF (CONTRACTOR TO COMPLETE):** 

## **BMP DESCRIPTION:** FILTRATION BASIN

**INSTALLATION SCHEDULE:** THE FILTRATION BASIN WILL BE INSTALLED DURING THE INITIAL GRADING FOR THE SITE. THE STORM SEWER SYSTEM WILL THEN BE CONNECTED INTO THE FILTRATION BASIN.

MAINTENANCE AND INSPECTION REQUIREMENTS: ONCE CONSTRUCTION IS COMPLETE, THE BASIN WILL BE INSPECTED AND CLEARED OF ANY SEDIMENT BUILD-UP TWICE PER YEAR AND AS NEEDED. INSPECTION WILL ALSO INCLUDE CHECKING FOR EROSION ISSUES ALONG THE SLOPES OF THE BASIN AND CLEANING ANY DEBRIS FROM THE INLET PIPES.

**RESPONSIBLE STAFF (CONTRACTOR TO COMPLETE):** 

## **SECTION 6: INSPECTIONS**

6.1 INSPECTIONS

1. INSPECTION FREQUENCY AND RESPONSIBILITY [OPTION 1 - CONTRACTOR RESPONSIBLE FOR INSPECTIONS]

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BETWEEN THE TIME THIS SWPPP IS IMPLEMENTED AND FINAL SITE STABILIZATION IS ACHIEVED AND THE NOTICE OF TERMINATION FILED WITH THE MPCA. ALL DISTURBED AREAS AND POLLUTANT CONTROLS MUST BE INSPECTED AT LEAST ONCE EVERY SEVEN CALENDAR DAYS AND WITHIN 24 HOURS FOLLOWING A RAINFALL OF 0.5 INCHES OR GREATER. THE PURPOSE OF SITE INSPECTIONS IS TO ASSESS PERFORMANCE OF POLLUTANT CONTROLS. THE INSPECTIONS WILL BE CONDUCTED BY THE CONTRACTOR'S DESIGNATED REPRESENTATIVE. BASED ON THESE INSPECTIONS, THE CONTRACTOR WILL DECIDE WHETHER IT IS NECESSARY TO MODIFY THIS SWPPP, ADD OR RELOCATE STRUCTURAL BMPS, OR WHATEVER ELSE MAY BE NEEDED IN ORDER TO PREVENT POLLUTANTS FROM LEAVING THE SITE VIA STORM WATER RUNOFF. IF THE SWPPP REQUIRES MODIFICATION, THOSE CHANGES TO THE SWPPP MUST BE DOCUMENTED. THE CONTRACTOR HAS THE DUTY TO CAUSE POLLUTANT CONTROL MEASURES TO BE REPAIRED, MODIFIED. MAINTAINED. SUPPLEMENTED. OR WHATEVER ELSE IS NECESSARY IN ORDER TO ACHIEVE EFFECTIVE POLLUTANT CONTROL.

2. INSPECTION PROCEDURES - EXAMPLES OF PARTICULAR ITEMS TO EVALUATE DURING SITE NSPECTIONS ARE LISTED BELOW. THIS LIST IS NOT INTENDED TO BE COMPREHENSIVE. DURING EACH INSPECTION THE INSPECTOR MUST EVALUATE OVERALL POLLUTANT CONTROL SYSTEM PERFORMANCE AS WELL AS PARTICULAR DETAILS OF INDIVIDUAL SYSTEM COMPONENTS. ADDITIONAL FACTORS SHOULD BE CONSIDERED AS APPROPRIATE TO THE CIRCUMSTANCES.

A. PRE-INSPECTION PREPARATION:

1. INSPECTORS SHOULD BE FAMILIAR WITH THE SWPPP, INCLUDING THE EROSION AND SEDIMENT CONTROL PLANS, PAST INSPECTION REPORTS, AND MAINTENANCE LOGS.

B. SITE ENTRY

- 1. BEFORE ENTERING THE SITE, OBSERVE THE SURROUNDINGS AND VARIOUS STAGES OF CONSTRUCTION. NOTE AREAS FOR IN-DEPTH REVIEW AND ANY POTENTIAL
- 2. THIS IS A GOOD TIME TO VIEW CONSTRUCTION SITE VEHICLE TRACKING PAD LOCATIONS AND PERIMETER CONTROLS.
- C. RECORDS REVIEW:
- 1. VERIFY THAT A COPY OF THE SWPPP AND APPLICATION FOR THE NPDES STORM WATER PERMIT, AND COPIES OF ALL CONSTRUCTION SITE INSPECTIONS ARE ON SITE.
- 2. VERIFY THAT THE TIMING FOR INSTALLATION OF ALL EROSION PREVENTION AND SEDIMENT CONTROL BMPS. AS WELL AS CONSTRUCTION PHASING, IS GENERALLY BEING FOLLOWED.
- 3. SWPPPS ARE INTENDED TO BE DYNAMIC DOCUMENTS, VERIFY THAT AMENDMENTS OR CHANGES TO THE SWPPP ARE BEING MADE WHEN:
- A. A CHANGE IN DESIGN, CONSTRUCTION, OPERATION, MAINTENANCE, WEATHER OR SEASONAL CONDITIONS HAVE A SIGNIFICANT EFFECT ON STORM WATER DISCHARGES
- B. INSPECTIONS INDICATE THE SWPPP IS NOT EFFECTIVE

C. THE SWPPP IS NOT CONSISTENT WITH THE TERMS OF THE GENERAL PERMIT D. SITE INSPECTION (NOTE TIMELINES FOR MAINTENANCE INCLUDED IN

- INSPECTION/MAINTENANCE REPORT) 1. INSPECT DISCHARGE POINTS DOWNSTREAM AND OFF-SITE AREAS FOR SIGNS OF IMPACT.
  - 2. INSPECT PERIMETER CONTROLS: A. HAVE PERIMETER CONTROLS BEEN PROPERLY INSTALLED AND
  - MAINTAINED?
  - B. ARE VEHICLE TRACKING PADS FUNCTIONING PROPERLY? ARE ADDITIONAL ENTRANCES/EXITS BEING USED THAT ARE NOT STABILIZED? C. ALL STORM DRAINS MUST BE PROTECTED AND TEMPORARY STOCKPILES
  - MUST HAVE SEDIMENT CONTROLS INSTALLED. D. ALL EXPOSED SOILS MUST HAVE TEMPORARY OR PERMANENT EROSION
  - PROTECTION WITHIN 14 DAYS OF INACTIVITY. COMPARE BMPS IN THE SWPPP WITH CONSTRUCTION SITE CONDITIONS: ARE
  - REQUIRED BMPS IN PLACE: ARE ADDITIONAL BMPS NEEDED: ARE BMPS IN PLACE PROPERLY INSTALLED AND MAINTAINED?
  - 4. INSPECT AREAS THAT HAVE BEEN DISTURBED AND ARE NOT CURRENTLY BEING WORKED. ANY UNSEEDED OR UNMULCHED BARE AREAS THAT HAVE BEEN IDLE FOR 14 DAYS SHOULD BE NOTED.
  - 5. INSPECT AREAS WITH FINAL STABILIZATION. IN ORDER FOR FINAL STABILIZATION TO BE ACHIEVED. AREAS MUST HAVE A UNIFORM COVER WITH A DENSITY OF 70% OVER ENTIRE AREA. TEMPORARY BMPS SHOULD BE REMOVED AND AREAS DISTURBED BY REMOVAL SEEDED AS NECESSARY.
- E. EXIT INTERVIEW: 1. DEBRIEF THE PERSON IN CHARGE. EXPLAIN THE IDENTIFIED DEFICIENCIES
- AND ANY AREAS OF CONCERN. F. A COPY OF THE COMPLETED INSPECTION REPORT MUST BE KEPT WITH THE SWPPP ON SITE.
- THE INSPECTION REPORT USED SHOULD INCLUDE, AT A MINIMUM, THE
- FOLLOWING DATE & TIME OF INSPECTION
- NAME OF INSPECTOR(S)
- FINDINGS OF INSPECTIONS AND RECOMMENDATIONS FOR CORRECTIVE
- ACTIONS CORRECTIVE ACTIONS TAKEN, INCLUDING DATES, TIMES AND NAMES OF
- PARTY COMPLETING MAINTENANCE
- DATE & AMOUNT OF RAINFALL
- RECORD OF ALL POINTS OF DISCHARGE FROM THE PROPERTY AND
- DESCRIPTION OF DISCHARGE NOTE TO UPDATE THE SWPPP

## 6.2 DELEGATION OF AUTHORITY

**DULY AUTHORIZED REPRESENTATIVE(S) OR POSITION(S):** 

COMPANY OR ORGANIZATION NAME:

- NAME
- POSITION: ADDRESS:
- CITY, STATE, ZIP CODE:
- TELEPHONE NUMBER:
- FAX/EMAIL:

## 6.3 CORRECTIVE ACTION LOG

THE INSPECTION/MAINTENANCE FORM, AVAILABLE UPON REQUEST, INCORPORATES BOTH INSPECTION AND MAINTENANCE REPORTING INTO A SINGLE FORM. THIS FORM ALSO SPECIFIES THE TIME ALLOWED FOR CORRECTIONS TO BE PERFORMED. IF THE PARTY PERFORMING INSPECTIONS CHOOSES TO USE ANOTHER INSPECTION FORM, A SEPARATE CORRECTIVE ACTION LOG MUST BE PROVIDED.

## **SECTION 7: RECORD KEEPING AND TRAINING**

## 7.1 RECORDKEEPING

**RECORD RETENTION** - THE OWNER MUST KEEP THE SWPPP INCLUDING ALL CHANGES MADE TO IT DURING CONSTRUCTION (SEE SECTION 7.2 OF THIS SWPPP), ALONG WITH THE FOLLOWING ADDITIONAL RECORDS ON FILE FOR THREE YEARS AFTER COMPLETION OF THE CONSTRUCTION PROJECT (FINAL STABILIZATION AND NOTICE OF TERMINATION):

1. ANY OTHER STORMWATER RELATED PERMITS REQUIRED FOR THE PROJECT 2. RECORDS OF ALL INSPECTIONS AND MAINTENANCE CONDUCTED DURING CONSTRUCTION

- 3. ALL PERMANENT OPERATION AND MAINTENANCE AGREEMENTS THAT HAVE BEEN IMPLEMENTED, INCLUDING ALL RIGHT OF WAY, CONTRACTS, COVENANTS AND OTHER
- BINDING REQUIREMENTS REGARDING PERPETUAL MAINTENANCE
- 4. ALL REQUIRED CALCULATIONS FOR DESIGN OF THE TEMPORARY AND PERMANENT STORM WATER MANAGEMENT SYSTEMS

## 7.2 AMENDMENTS

THE CONTRACTOR SHALL KEEP A RECORD LOG OF ALL MODIFICATIONS TO THE SWPPP. AN EXAMPLE OF A SWPPP UPDATE LOG FORM CAN BE PROVIDED UPON REQUEST.

MODIFICATIONS TO THE SWPPP - THIS SWPPP INTENDS TO CONTROL WATER-BORNE AND LIQUID POLLUTANT DISCHARGES BY SOME COMBINATION OF INTERCEPTION, FILTRATION, AND CONTAINMENT. THE GENERAL CONTRACTOR AND SUBCONTRACTORS IMPLEMENTING THIS SWPPP MUST REMAIN ALERT TO THE NEED TO PERIODICALLY REFINE AND UPDATE THE SWPPP IN ORDER TO ACCOMPLISH THE INTENDED GOALS. THIS SWPPP MUST BE AMENDED AS NECESSARY DURING THE COURSE OF CONSTRUCTION IN ORDER TO KEEP IT CURRENT WITH THE POLLUTANT CONTROL MEASURES UTILIZED AT THE SITE. AMENDING THE SWPPP DOES NOT MEAN THAT IT HAS TO BE REPRINTED. IT IS ACCEPTABLE TO ADD ADDENDA, SKETCHES, NEW SECTIONS, AND/OR REVISED DRAWINGS, THIS SWPPP MUST BE UPDATED AS NECESSARY TO INCLUDE ADDITIONAL REQUIREMENTS, SUCH AS ADDITIONAL OR MODIFIED BMPS, DESIGNED TO CORRECT PROBLEMS IDENTIFIED OR ADDRESS SITUATIONS WHENEVER:

- . THERE IS A CHANGE IN DESIGN, CONSTRUCTION, OPERATION, MAINTENANCE, WEATHER OR SEASONAL CONDITIONS THAT HAS A SIGNIFICANT EFFECT ON THE DISCHARGE OF POLLUTANTS TO SURFACE WATERS OR UNDERGROUND WATERS.
- 2. INSPECTIONS OR INVESTIGATIONS BY SITE OPERATORS, LOCAL, STATE OR FEDERAL OFFICIALS INDICATE THE SWPPP IS NOT FEFECTIVE IN FLIMINATING OR SIGNIFICANTLY MINIMIZING THE DISCHARGE OF POLLUTANTS TO SURFACE WATERS OR UNDERGROUND WATERS OR THAT THE DISCHARGES ARE CAUSING WATER QUALITY STANDARD EXCEEDANCES.
- 3. THE SWPPP IS NOT ACHIEVING THE GENERAL OBJECTIVES OF CONTROLLING POLLUTANTS IN STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY, OR THE SWPPP IS NOT CONSISTENT WITH THE TERMS AND CONDITIONS OF THE GENERAL PERMIT.
- 4. THE MPCA HAS DETERMINED THAT THE PROJECT'S STORM WATER DISCHARGES MAY CAUSE OR CONTRIBUTE TO NON-ATTAINMENT OF ANY APPLICABLE WATER STANDARD, OR THAT THE SWPPP DOES NOT INCORPORATE REQUIREMENTS RELATED TO AN APPROVED TOTAL MAXIMUM DAILY LOAD (TMDL) IMPLEMENTATION PLAN. IN THIS CASE, THE SWPPE MUST BE UPDATED OR A SUPPLEMENTAL BMP ACTION PLAN DEVELOPED TO ADDRESS THE IDENTIFIED CONCERNS.

## 7.3 TRAINING

THE PERMITTEE(S) MUST FULFILL TRAINING REQUIREMENTS AND INCLUDE RECORDS OF TRAINING IN THE SWPPP. REFRESHER TRAINING MUST BE ATTENDED EVERY THREE YEARS STARTING THREE YEARS, FROM THE ISSUANCE OF THE 2018 GENERAL PERMIT (ISSUED 8/1/18). INDIVIDUALS REQUIRED TO BE TRAINED INCLUDE:

- 1. INDIVIDUALS PREPARING THE SWPPP
- 2. INDIVIDUALS OVERSEEING IMPLEMENTATION OF, REVISING, AND AMENDING THE SWPPP AND INDIVIDUALS PERFORMING INSPECTIONS. ONE OF THESE INDIVIDUALS MUST BE AVAILABLE FOR AN ON SITE INSPECTION WITHIN 72 HOURS UPON REQUEST BY THE MPCA. 3. INDIVIDUALS PERFORMING OR SUPERVISING THE INSTALLATION, MAINTENANCE AND REPAIR
- OF BMPS. AT LEAST ONE INDIVIDUAL ON A PROJECT MUST BE TRAINED IN THESE JOB DUTIES.

THE CONTENT AND EXTENT OF TRAINING MUST BE COMMENSURATE WITH THE INDIVIDUAL'S JOB DUTIES AND RESPONSIBILITIES WITH REGARD TO ACTIVITIES COVERED UNDER THE GENERAL PERMIT. AT LEAST ONE INDIVIDUAL TRAINED IN THE JOB DUTIES LISTED ABOVE MUST BE PRESENT ON THE SITE OR AVAILABLE TO THE SITE IN 72 HOURS.

TRAINING DOCUMENTATION MUST INCLUDE:

- 1. NAMES OF PERSONNEL ASSOCIATED WITH THE PROJECT THAT ARE REQUIRED TO BE TRAINED
- 2. DATES OF TRAINING AND NAMES OF INSTRUCTOR AND ENTITY PROVIDING TRAINING
- 3. CONTENT OF TRAINING COURSE, INCLUDING NUMBER OF HOURS OF TRAINING
- 4. DOCUMENTATION MUST BE KEPT WITH THE SWPPP. TRAINING RECORD/CERTIFICATION TEMPLATE IS AVAILABLE UPON REQUEST.

NDIVIDUALS MUST BE TRAINED BY LOCAL, STATE, FEDERAL AGENCIES, PROFESSIONAL ORGANIZATIONS, OR OTHER ENTITIES WITH EXPERTISE IN EROSION PREVENTION, SEDIMENT CONTROL, OR PERMANENT STORMWATER MANAGEMENT SUCH AS THE UNIVERSITY OF MINNESOTA, MINNESOTA EROSION CONTROL ASSOCIATION, SOIL AND WATER CONSERVATION DISTRICTS, OR THE MPCA.

## **SECTION 8: FINAL STABILIZATION / PERMIT TERMINATION**

FINAL STABILIZATION - TO ACHIEVE FINAL STABILIZATION OF THE SITE. THE CONTRACTOR WILL IMPLEMENT THE FOLLOWING MEASURES AFTER ALL SOIL DISTURBING ACTIVITIES AT THE SITE HAVE BEEN COMPLETED.

- 1. ALL SOILS MUST BE STABILIZED BY A UNIFORM PERENNIAL VEGETATIVE COVER WITH A DENSITY OF 70 PERCENT OVER THE ENTIRE PERVIOUS SURFACE AREA. OR BY OTHER EQUIVALENT MEANS NECESSARY TO PREVENT SOIL FAILURE UNDER EROSIVE CONDITIONS. REFER TO LANDSCAPING PLANS/SPECIFICATIONS FOR TYPE OF VEGETATIVE COVER.
- 2. THE PERMANENT STORMWATER MANAGEMENT SYSTEM IS CONSTRUCTED, MEETS ALL REQUIREMENTS IN SECTIONS 15, 16, 17, 18, AND 19 OF THE GENERAL PERMIT AND IS OPERATING AS DESIGNED. ALL SEDIMENT HAS BEEN REMOVED FROM CONVEYANCE SYSTEMS AND DITCHES ARE STABILIZED WITH PERMANENT COVER.ALL TEMPORARY EROSION PREVENTION AND SEDIMENT CONTROL BMPS MUST BE REMOVED.
- 3. FOR CONSTRUCTION PROJECTS ON LAND USED FOR AGRICULTURAL PURPOSES FINAL STABILIZATION MAY BE ACCOMPLISHED BY RETURNING THE DISTURBED LAND TO ITS PRECONSTRUCTION AGRICULTURAL USE.
- 4. FOR RESIDENTIAL CONSTRUCTION ONLY, INDIVIDUAL LOTS ARE CONSIDERED FINALLY STABILIZED IF THE STRUCTURE(S) ARE FINISHED AND TEMPORARY EROSION PROTECTION AND DOWNGRADIENT PERIMETER CONTROL HAS BEEN COMPLETED AND THE RESIDENCE HAS BEEN SOLD TO THE HOMEOWNER, ADDITIONALLY, THE PERMITTEE HAS DISTRIBUTED THE MPCA'S "HOMEOWNER FACT SHEET" TO THE HOMEOWNER TO INFORM THE HOMEOWNER OF THE NEED FOR, AND BENEFITS OF, PERMANENT COVER.

PERMIT TERMINATION - TO ACHIEVE PERMIT TERMINATION FOR THE SITE, PERMITTEES MUST COMPLY WITH SECTIONS 4 & 13 OF THE GENERAL PERMIT.

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Client ISD # 270

Project **GLEN LAKE** ELEMENTARY PARKING LOT IMPROVEMENTS

Location **MINNETONKA** MN

4801 WOODRIDGE DRIVE

## Certification

I HEREBY CERTIFY THAT THIS SET OF PLANS AND SPECIFICATIONS WAS PREPARED BY ME OR LINDER MY DIRECT SUPERVISION, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.



03/15/2023 Summary Designed: NT Drawn: JRW

Approved: NT Phase: PRELIM.

Book / Page: Initial Issue: xx/xx/xxxx

## **Revision History** No. Date By Submittal / Revisior

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Addendum One NMCWD Revisions MNDLI Revisions NMCWD Revisions

## **Sheet Title SWPPP**

Sheet No. Revision **C5.03** 

**Project No.** 



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	EXISTING	STANDARD DUTY ASPHALT PAVING SAND FILTER UNDER PAVING CONCRETE PAVING STOOP		SAFEngineering, PLLC Site and Athletic Facility Engineering 3200 122nd Ave. NE Blaine, MN 55449 612-213-9859 nrtessier@gmail.com
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			FECI	<b>Project NO.</b> 51540

**ENGINEERED PRODUCT** MANAGER

ADS SALES REP

PROJECT NO.

# **MC-3500 STORMTECH CHAMBER SPECIFICATIONS**

- CHAMBERS SHALL BE STORMTECH MC-3500.
- CHAMBERS SHALL BE ARCH-SHAPED AND SHALL BE MANUFACTURED FROM VIRGIN. IMPACT-MODIFIED POLYPROPYLENE COPOLYMERS.
- CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 45x76 DESIGNATION SS.
- CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORTS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
- THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES
- CHAMBERS SHALL BE DESIGNED, TESTED AND ALLOWABLE LOAD CONFIGURATIONS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS". LOAD CONFIGURATIONS SHALL INCLUDE: 1) INSTANTANEOUS (<1 MIN) AASHTO DESIGN TRUCK LIVE LOAD ON MINIMUM COVER 2) MAXIMUM PERMANENT (75-YR) COVER LOAD AND 3) ALLOWABLE COVER WITH PARKED (1-WEEK) AASHTO DESIGN TRUCK.
- **REQUIREMENTS FOR HANDLING AND INSTALLATION:** 
  - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
  - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 3".
  - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT SHALL BE • GREATER THAN OR EQUAL TO 450 LBS/FT/%. THE ASC IS DEFINED IN SECTION 6.2.8 OF ASTM F2418. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.
- ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. UPON REQUEST BY THE SITE DESIGN ENGINEER OR OWNER. THE CHAMBER MANUFACTURER SHALL SUBMIT A STRUCTURAL EVALUATION FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE AS FOLLOWS:
  - THE STRUCTURAL EVALUATION SHALL BE SEALED BY A REGISTERED PROFESSIONAL ENGINEER.
  - THE STRUCTURAL EVALUATION SHALL DEMONSTRATE THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.95 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD. THE MINIMUM REQUIRED BY ASTM F2787 AND BY SECTIONS 3 AND 12.12 OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR THERMOPLASTIC PIPE.
  - THE TEST DERIVED CREEP MODULUS AS SPECIFIED IN ASTM F2418 SHALL BE USED FOR PERMANENT DEAD LOAD DESIGN EXCEPT THAT IT SHALL BE THE 75-YEAR MODULUS USED FOR DESIGN.
- CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.



# GLEN LAKE ES 5-26-23

# MINNETONKA, MN, USA

## **IMPORTANT - NOTES FOR THE BIDDING AND INSTALLATION OF MC-3500 CHAMBER SYSTEM**

- STORMTECH MC-3500 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
- 2. STORMTECH MC-3500 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
- CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR AN EXCAVATOR SITUATED OVER THE CHAMBERS. STORMTECH RECOMMENDS 3 BACKFILL METHODS:
  - STONESHOOTER LOCATED OFF THE CHAMBER BED.
  - BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE.
  - BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR.
- THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS
- JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE. 5.
- MAINTAIN MINIMUM 6" (150 mm) SPACING BETWEEN THE CHAMBER ROWS. 6.
- INLET AND OUTLET MANIFOLDS MUST BE INSERTED A MINIMUM OF 12" (300 mm) INTO CHAMBER END CAPS.
- EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE MEETING THE AASHTO M43 DESIGNATION OF #3 8. OR #4.
- STONE MUST BE PLACED ON THE TOP CENTER OF THE CHAMBER TO ANCHOR THE CHAMBERS IN PLACE AND PRESERVE ROW SPACING. 9.
- THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIALS BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
- 11. ADS RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.

## NOTES FOR CONSTRUCTION EQUIPMENT

- STORMTECH MC-3500 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
- 2. THE USE OF EQUIPMENT OVER MC-3500 CHAMBERS IS LIMITED:
  - NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
  - NO RUBBER TIRED LOADER, DUMP TRUCK, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE
  - WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE". WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
- 3. FULL 36" (900 mm) OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING.

## USE OF A DOZER TO PUSH EMBEDMENT STONE BETWEEN THE ROWS OF CHAMBERS MAY CAUSE DAMAGE TO CHAMBERS AND IS NOT AN ACCEPTABLE BACKFILL METHOD. ANY CHAMBERS DAMAGED BY USING THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH STANDARD WARRANTY.

CONTACT STORMTECH AT 1-888-892-2694 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.







ISOLATOR ROW PLUS SEE DETAIL(/TYP 2 PLACES)

PLACE MINIMUM 17.50' OF ADSPLUS175 WOVEN GEOTEXTILE OVER BEDDING STONE AND UNDERNEATH CHAMBER FEET FOR SCOUR PROTECTION AT ALL CHAMBER INLET ROWS

![](_page_14_Picture_3.jpeg)

—— BED LIMITS

	997.00	PART TYPE		DESCRIPTION
	991.00			24" BOTTOM CORED END CAP. PART#: MC3500IEPP24BC / TYP OI
	990.50	PREFABRICATED END CAP	A	CONNECTIONS AND ISOLATOR PLUS ROWS
	990.50	PREEABRICATED END CAP	B	15" BOTTOM CORED END CAP_PART# MC3500JEPP15B / TYP OF
	990.50	PREFABRICATED END CAP	C.	15" TOP CORED END CAP_PART#: MC3500IEPP15T / TYP OF ALL
4	990.00			INSTALL FLAMP ON 24" ACCESS PIPE / PART# MCFLAMP (TYP 4 I
$\dashv$	989.00		F	15" x 15" TOP MANIFOLD, ADS N-12
$\dashv$	987.20			15" x 15" TOP MANIFOLD, ADS N-12
$\dashv$	907.20		G	(DESIGN BY ENGINEER / PROVIDED BY OTHERS)
+	985.42	CONCRETE STRUCTURE	Н	(DESIGN BY ENGINEER / PROVIDED BY OTHERS)
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	985.38	CONCRETE STRUCTURE	ĸ	(DESIGN BY ENGINEER / PROVIDED BY OTHERS)
	985.38	CONCRETE STRUCTURE		(DESIGN BY ENGINEER / PROVIDED BY OTHERS)
	985.25			
	984.50			

## 181.65'

- 175.75'

MANIFOLD SIZE TO BE DETERMINED BY SITE DESIGN ENGINEER. SEE TECH NOTE #6.32 FOR MANIFOLD SIZING GUIDANCE. DUE TO THE ADAPTATION OF THIS CHAMBER SYSTEM TO SPECIFIC SITE AND DESIGN CONSTRAINTS, IT MAY BE NECESSARY TO CUT AND COUPLE ADDITIONAL PIPE TO STANDARD MANIFOLD THE SITE DESIGN ENGINEER MUST REVIEW ELEVATIONS AND IF NECESSARY ADJUST GRADING TO ENSURE THE CHAMBER COVER REQUIREMENTS ARE MET. THIS CHAMBER SYSTEM WAS DESIGNED WITHOUT SITE-SPECIFIC INFORMATION ON SOIL CONDITIONS OR BEARING CAPACITY. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR THE SUITABILITY OF THE SOIL AND PROVIDING THE BEARING CAPACITY OF THE INSITU SOILS. THE BASE STONE DEPTH MAY BE INCREASED OR DECREASED ONCE THIS INFORMATION IS

![](_page_14_Figure_10.jpeg)

# **ACCEPTABLE FILL MATERIALS: STORMTECH MC-3500 CHAMBER SYSTEMS**

	MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMP
D	FINAL FILL: FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPA INSTA
С	<b>INITIAL FILL:</b> FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 24" (600 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145 <sup>1</sup> A-1, A-2-4, A-3 OR AASHTO M43 <sup>1</sup> 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN CO THE CHAM 12" (300 mi WELL GF
В	<b>EMBEDMENT STONE:</b> FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43 <sup>1</sup> 3, 4	
A	FOUNDATION STONE: FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE	AASHTO M43 <sup>1</sup> 3, 4	PLATE C

PLEASE NOTE:

- 2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 9" (230 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR. 3.
- COMPACTION REQUIREMENTS.

![](_page_15_Figure_7.jpeg)

## **NOTES:**

- DESIGNATION SS.
- MC-3500 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- 3. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
- PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS. 5. REQUIREMENTS FOR HANDLING AND INSTALLATION:
  - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
  - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 3". •
  - COLORS.

THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE". WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR

4. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.

CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 45x76

• TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT SHALL BE GREATER THAN OR EQUAL TO 450 LBS/FT/%. THE ASC IS DEFINED IN SECTION 6.2.8 OF ASTM F2418. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW

## N Ō 5-2( PACTION / DENSITY REQUIREMENT Ö CHECKEI $\supset$ DRAWN: S Ш ARE PER SITE DESIGN ENGINEER'S PLANS. PAVED LLATIONS MAY HAVE STRINGENT MATERIAL AND AKE MINNETONK PREPARATION REQUIREMENTS. Z Ш MPACTIONS AFTER 24" (600 mm) OF MATERIAL OVER IBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN Ъ # m) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR PROJECT RADED MATERIAL AND 95% RELATIVE DENSITY FOR DATE PROCESSED AGGREGATE MATERIALS. NO COMPACTION REQUIRED. COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE.<sup>2,3</sup> SCRIPTI $\overline{O}$ DRW ш DA (2.4 m) MAX $\bigotimes$ 20 stem đ Ś Storm Chamber DEPTH OF STONE TO BE DETERMINED BY SITE DESIGN ENGINEER 9" (230 mm) MIN BLVD 3026 4640 TRUEMAN E HILLIARD, OH 43 1-800-733-7473 SHEET 3 OF 5

![](_page_16_Figure_0.jpeg)

## **INSPECTION & MAINTENANCE**

#### INSPECT ISOLATOR ROW PLUS FOR SEDIMENT STEP 1)

- A. INSPECTION PORTS (IF PRESENT)
- A.1. REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
- A.2. REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
- A.3. USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
- A.4. LOWER A CAMERA INTO ISOLATOR ROW PLUS FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
- A.5. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- B. ALL ISOLATOR PLUS ROWS B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW PLUS
- B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW PLUS THROUGH OUTLET PIPE i) MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY ii) FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
- B.3. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- STEP 2) CLEAN OUT ISOLATOR ROW PLUS USING THE JETVAC PROCESS A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45" (1.1 m) OR MORE IS PREFERRED B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
  - C. VACUUM STRUCTURE SUMP AS REQUIRED
- REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS. STEP 3)
- STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

## NOTES

- INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS 1 OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
- 2. CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.

## **MC-3500 ISOLATOR ROW PLUS DETAIL**

NTS

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![](_page_17_Figure_1.jpeg)

![](_page_17_Figure_2.jpeg)

12" (300 mm) MIN SEPARATION

• MANIFOLD HEADER MANIFOLD STUB