



**Title:** Permit 20-455: St. Stephen's Episcopal Church - 4439 West 50th St., Edina

**Prepared by:** Name: Tom Dietrich  
Phone: 952-473-2855  
tdietrich@minnehahacreek.org

**Recommendation:**

Approval of the MCWD permit application on the following condition and stipulation:

Condition:

1. Reimbursement of fees; and,

Stipulation:

1. Submission of a survey prepared by a registered land surveyor identifying the location and elevations of the finished wall.

**Background:**

St. Stephen's Episcopal Church (Applicant) has applied for a Minnehaha Creek Watershed District (MCWD or District) permit to replace an existing retaining wall immediately adjacent to Minnehaha Creek at 4439 West 50<sup>th</sup> Street, Edina. The project proposes to replace 145 ft. of the existing, failing, stone retaining wall with a 0.4 inch-thick steel sheet pile wall. The replacement sheet pile wall will be installed immediately in front of the existing stone wall, and the top 1 – 2 ft. of stone blocks will be removed after installation is complete, and backfilled with sand and top soil material. The remaining stone wall and associated footings will be abandoned in-place. The new sheet pile wall will be supplemented with hard armoring at its base, installed at existing grade, to prevent scouring and undercutting associated with high creek flow velocities.

The Applicant's stated project goal is the replacement of the failing wall, with a hearty material that sufficiently protects the foundation and structural integrity of the church, prevents soil loss, and has a long functional lifespan, compared to the existing condition.

St. Stephen's Episcopal Church submitted an application for a District permit on September 14, 2020. The project triggers the District's Erosion Control, Floodplain Alteration, and Shoreline and Streambank Stabilization rules. Additional requests for information were provided to the Applicant on October 5, October 15, and November 6, 2020. The permit was deemed complete on November 19, 2020. As proposed, the project will not result in any loss of floodplain storage on Minnehaha Creek, nor will it impact the Creek's hydraulic capacity. All applicable District rule requirements will have been satisfied once MCWD application-review costs are reimbursed, and a survey is submitted identifying the location of the finished wall.

This permit application is before the Board of Managers for consideration by request from members of the public. A public notice was provided to all property owners within 600 feet of the project on October 27, 2020. Staff received a request for Board Consideration on November 9, 2020 and met with concerned members of the public on November 20, 2020 and December 14, 2020 to discuss their concerns regarding the project. Written comments provided by concerned members of the public have been included as part of this packet, and are listed under the 'supporting documents'

section at the end of this report. A notice that the board would consider the permit application at the January 14, 2021, regular meeting was provided to all residents within 600 feet of the project area on December 30, 2020.

### **District Rule Analysis:**

#### Erosion Control:

The District's Erosion Control rule is applied to projects proposing 5,000 square feet of disturbance or 50 cubic yards of excavation, fill, or stockpiling on-site. The project will not create disturbance meeting the numerical criteria in the rule, but work triggering MCWD's floodplain requirements must submit an erosion control plan compliant with the substantive requirements of MCWD's Erosion Control Rule (Floodplain Alteration Rule paragraph 4(g)). Analysis of such compliance is provided here. The Applicant has submitted an erosion control plan that includes floating silt curtain, a rock construction entrance, and truck contained concrete washout. Additionally, a vegetative stabilization plan including the incorporation of six-inches of topsoil, will be enacted upon completion of the primary work.

The Applicant has also identified a responsible contractor for maintaining its erosion control plan. Based upon staff's review of the material submitted by the Applicant, the criteria of the Erosion Control rule have been met.

#### Floodplain Alteration:

The District's Floodplain Alteration rule is applicable whenever land altering activity is proposed below the 100-year high water level (HWL) of any waterbody. This is to ensure that flood storage capacity is not lost and that any fill does not aggravate high water conditions upstream or downstream of the project site. The 100-year HWL for this reach of Minnehaha Creek has been identified as 872.1 ft (NGVD 29). Because the Applicant is proposing land altering activity below the 100-yr HWL of 872.1 ft, the rule is triggered. A section by section review and analysis of the rule has been provided below.

Per section 3(a) of the rule, "fill shall not cause a net decrease in the storage capacity below the projected 100-year high water elevation of a waterbody." The Applicant has supplied plans and calculations showing that 9.9 cubic yards of floodplain fill will be placed below the 100-yr HWL. To offset the fill, the Applicant will be grading their property to provide 9.9 cubic yards of floodplain mitigation. District Staff and the District Engineer have reviewed the plans and calculations and have determined that no net floodplain loss will occur. Therefore, section 3(a) has been met.

Because no net floodplain fill is proposed, and the work will not cause hydraulic restriction there is no increase to the 100-yr HWL of Minnehaha Creek. Therefore, section 3(b) of the rule has been met.

Section 3(c) of the rule is not applicable as the project takes place on Minnehaha Creek, which is a watercourse.

Section 3(d) of the rule is not applicable as no new impervious surface is proposed.

Section 3(e) of the rule is not applicable as no ice ridge grading is proposed.

Section 3(f) of the rule requires that the low-entry openings to all new residential, commercial, and institutional structures be a minimum of 2 feet above the 100 year high-water level. The project does not propose any new residential, commercial, or institutional structures, therefore this section of the rule is not applicable.

In summary, all applicable criteria of the Floodplain Alteration rule have been met.

#### Shoreline and Streambank Stabilization:

The District's Shoreline and Streambank Stabilization rule regulates alterations and improvements to the banks of a watercourse. The project is proposing to replace approximately 145 feet of stone retaining wall with 0.4 inch-thick sheet pile wall. Additionally, the Applicant is proposing to place hard armoring at the base of the wall to protect the new structure from future scouring and potential damage. Because the replacement of an existing shoreline stabilization practice is proposed, the rule is triggered. For clarity, analysis of the shoreline practices has been separated into two sections – 'hard armoring' and 'retaining wall replacement', detailed below.



### *Retaining Wall Replacement*

As noted above, the Applicant is proposing to replace 145 feet of existing stone retaining wall with 0.4-inch-thick sheet piling. Installation of the sheet piling will occur immediately in front of the existing stone wall. Once the sheet piling is in place, the top 1 – 2' of the existing stone blocks will be removed, and backfilled with sand and top-soil. Section 10 of the District's Shoreline and Stabilization rule outlines four primary provisions when evaluating retaining wall proposals.

Per section 10(a) of the District's rule, a new retaining wall, or repair/reconstruction of an existing retaining wall that increases floodplain encroachment beyond that required by technically sound and accepted repair/reconstruction methods, is permitted only pursuant to a variance or an exception, and the applicant must demonstrate that there is no adequate stabilization alternative. Based on the geotechnical reports, structural analysis, calculations, and plans the Applicant has provided, the proposed sheet pile wall will increase floodplain encroachment, however, the District Engineer has found that the encroachment proposed does not exceed that which is required by technically sound and accepted reconstruction methods. Given this, approval of the sheet-pile installation need not be the subject of a variance or exception request.

The placement of the sheet pile wall in front of the existing stone retaining wall, will on average, reduce the channel width by one foot. The existing channel width is approximately 38 feet wide, and will be reduced to 37 feet in width. The reduction would reduce the effective flow area by about 2.5% in this section of the creek. Although there is a 2.5% reduction in the effective flow area at the project location, the channel maintains a greater than 200% effective flow area comparative to the Wooddale Ave. bridge opening, immediately upstream of this location. The bridge opening at 17.5 feet wide, is the restricting hydraulic constriction for this section of Minnehaha Creek. Therefore, the reduction in channel width at the project location will not represent a hydraulic constraint, and will maintain 100-yr high water levels both upstream and downstream of the project location. Additionally, the encroachment within the floodplain will be offset by grading directly downstream of the wall to provide a 1:1 floodplain mitigation volume, which ensures that no floodplain storage is lost in this section of the creek. Based on this information and the District Engineer's review and analysis, the reduction of channel width in this area will have no effect on upstream or downstream 100-year high-water levels. Therefore, section 10(a) of the rule has been met.

Section 10(b) of the District's rule outlines that wooden seawalls and/or sheet pile retaining walls shall comply with accepted engineering principles. The District Engineer has reviewed the structural analysis provided by the Applicant and concluded that the analysis, safety factors, and methods utilized are consistent with generally accepted engineering principles. Therefore, this section of the rule has been met.

Section 10(c) of the District's rule outlines that the applicant must submit a structural analysis prepared by a professional engineer registered in the State of Minnesota, in the practice of civil engineering, showing that the wall will withstand expected ice and wave action and earth pressures. Based on the District Engineers review of the structural analysis provided by the Applicant, a satisfactory analysis, signed by a licensed engineer, has been provided that demonstrates the wall will withstand expected earth pressures (ice and wave pressures are not applicable in streambank scenarios). Using the proper safety factors, the wall has been designed with a minimum embedment depth 20% deeper than required in order to account for the expected earth pressures. Therefore, this section of the rule has been met.

Section 10(d) of the District's rule outlines that the applicant must submit a survey prepared by a registered land surveyor location the finished wall and shall file a certificate of survey with the District. This requirement has been included as a stipulation at the top of this report.

All applicable criteria of Section 10 of the Shoreline and Streambank Stabilization rule have been met.

### *Hard Armoring*

As a component of the project, the Applicant is proposing to utilize hard armoring at the base of the sheet pile retaining wall to protect the structure from scouring and associated damage. An analysis of the proposed hard armoring under the District rule is outlined below.

Per section 4(a) of the District's rule, the Applicant has provided bankful stream velocity and shear stress calculations to characterize the erosive stress the streambank experiences, and to outline acceptable, commensurate streambank stabilization practices. Based on the information supplied by the Applicant, the shear stress is 0.6 lbs per square foot, which, under section 4(b)(1) of the District's rule, outlines biological stabilization practices.

The Applicant has requested Design Flexibility under Section 5 of the District's rule, citing that the site specific conditions and shear stress results do not adequately characterize the shoreline erosion intensity present. The Applicant has supplied evidence of scouring occurring at the base of the existing wall, and provided flow information and calculations sufficient to show that the velocities experienced in this area of the creek (5 feet per second), make biological and/or bio-engineering practices infeasible, and inviable alternatives. The District Engineer has concurred that the proposed application of hard armoring is the minimal impact solution. Based on the information and evidence supplied, Staff and the District Engineer have determined that Design Flexibility is warranted in this case.

Per section 6(a) of the rule, the Applicant must satisfy the following general criteria:

- 6(a)(1) – stabilization practices are only permitted where there is a demonstrated need to prevent erosion or restore eroded streambank.
  - Based on the review of Staff and the District Engineer, the evidence supplied shows flow velocities of 5 feet per second in this section of the creek. Velocities of this magnitude will have erosive effects on the streambank, unless adequately stabilized. Staff and the District Engineer have concluded that this information demonstrates a need to restore and prevent further erosion on the streambank.
- 6(a)(2) – removal of native vegetation within the shoreline/streambank stabilization zone is to be limited.
  - Based on the plans and specifications supplied, no vegetation will be removed in the vicinity of the streambank. Therefore, this criteria has been satisfied.
- 6(a)(3) – stabilization practices must be installed at a 3:1 slope or flatter where practical and feasible.
  - Based on the plans and specifications supplied by the Applicant, the hard armoring will be installed at a 3:1 slope. Therefore, this criteria has been satisfied.
- 6(a)(4) – horizontal encroachment from streambanks shall be minimized to the greatest extent practical to limit hydraulic impacts.
  - Based on the District Engineer's review of the plans, specifications, and calculations provided by the Applicant, encroachment will be limited to approximately 5 feet or less, and will not result in hydraulic impacts to the creek. Based on the District Engineer's assessment, the hard armoring encroachment has been limited to the extent necessary to accomplish the goal of the project. Therefore, this criteria has been satisfied.
- 6(a)(5) – streambank stabilization shall not reduce the cross-sectional area of the channel, unless it can be demonstrated to not exacerbate existing high-water conditions.
  - As noted previously, the Applicant has supplied plans, specifications, and calculations which demonstrate that no impacts to flood stage, nor high water conditions, will occur with the stabilization practices proposed. The District Engineer has reviewed the materials supplied by the Applicant and has concurred with this assessment. Therefore, this criteria has been satisfied.
- 6(a)(6) – streambank stabilization practices shall conform to the natural alignment of the bank.
  - The proposed project is a replacement of an existing retaining wall that follows the natural alignment of the bank. No deviations from this alignment are proposed. Therefore, this criteria has been satisfied.
- 6(a)(7) – the design shall reflect the engineering properties of the underlying soils and any soil corrections and reinforcements. The design shall conform to engineering principles for the hydraulic behavior of open-channel flow.
  - Geotechnical and structural analyses have been submitted by the Applicant, characterizing the underlying soils/streambank materials. The District Engineer has reviewed both the analyses and the hard armor design, and has confirmed that the design will withstand the expected 5 feet per second flow velocities. Therefore, this criteria has been satisfied.
- 6(a)(8) – appropriate Department of Natural Resource (DNR) permits must be secured if aquatic plant removal is proposed.
  - No aquatic plant removal is proposed, therefore, this criteria is not applicable.

- 6(a)(9) – any work below the ordinary high water level requires encirclement by a floating silt curtain.
  - The Applicant has provided an erosion control plan outlining floating silt/sedimentation curtain sufficient to protect the creek. Therefore, this criteria has been satisfied.

All plans, specifications, calculations, and supplemental materials have been submitted to sufficiently assess conformance with Section 6(a) of the rule. The criteria of Section 6(a) have been satisfied.

As no biological or bio-engineering techniques are proposed, Section 6(b) of the rule is not applicable.

Hard armoring or structural stabilization techniques are subject to Section 6(c) of the rule. The Applicant has provided sufficient plans, specifications, and information to determine that:

- Per section 6(c)(1), no hard armor material is being placed in a wetland;
- Per section 6(c)(2), proposed hard armoring, does not extend beyond the top of the bank of Minnehaha Creek;
- Per section 6(c)(3), all hard armor materials proposed meet MnDOT Class III specifications for rip-rap, with toe boulders buried a minimum of 50%;
- Per section 6(c)(4), transitional granular filter materials meet MnDOT 3601.B specifications, are at least 6 inches in depth, and are accompanied by geotextile fabric meeting MnDOT 3733, type 5 specifications.
- Per section 6(c)(5), and as noted earlier in this report, stream flow velocities do not allow for biological or bio-engineered means of stabilization in between boulders. Therefore, no in-stream stabilization plantings have been proposed.

The Applicant has demonstrated, and staff and the District Engineer concur, that all applicable aspects of Section 6(a) and Section 6(c) of the rule have been met.

The Applicant has met all applicable criteria of the Shoreline and Streambank Stabilization rule.

### **Summary**

St. Stephen's Episcopal Church (Applicant) has applied for a Minnehaha Creek Watershed District (MCWD or District) permit to replace an existing retaining wall immediately adjacent to Minnehaha Creek at 4439 West 50<sup>th</sup> Street, Edina. The project triggers the District's Erosion Control, Floodplain Alteration, and Shoreline and Streambank Stabilization rules. As proposed, the project meets all applicable rules. Staff recommends approval of the permit with the conditions listed at the top of this report.

### **Supporting documents (list attachments):**

1. Application Form
2. Erosion Control Supplemental Form
3. Plans and Specifications
4. Supplemental Streambank Information
5. Existing Site Condition Photos
6. Geo-technical Analysis
7. Structural Analysis
8. Email – Project Commentary from Mr. Chris Kellick
9. Email – Project Commentary from Mr. Tom Rose

**WATER RESOURCE PERMIT APPLICATION FORM**

Use this form to notify/apply to the Minnehaha Creek Watershed District (MCWD) of a proposed project or work which may fall within their jurisdiction. Fill out this form completely and submit with your site plan, maps, etc. to the MCWD at:  
15320 Minnetonka Blvd. Minnetonka, MN 55345.

Keep a copy for your records.

**YOU MUST OBTAIN ALL REQUIRED AUTHORIZATIONS BEFORE BEGINNING WORK.**

1. Name of each property owner: St. Stephen's Episcopal Church (Attn: Thomas Weigel)  
 Mailing Address: 4439 W. 50th Street City: Edina State: MN Zip: 55434  
 Email Address: tomweigel1@comcast.net Phone: 952-920-0595 Fax: \_\_\_\_\_

2. Property Owner Representative Information (not required) (licensed contractor, architect, engineer, etc...)  
 Business Name: Pierce Pini & Associates, Inc. Representative Name: Kevin Gardner  
 Business Address: 9298 Central Ave. NE, Suite 312 City: Blaine State: MN Zip: 55434  
 Email Address: kevin@piercepini.com Phone: 763-537-1311 Fax: 763-537-1354

3. Project Address: 4439 W. 50th Street City: Edina  
 State: MN Zip: 55424 Qtr Section(s): \_\_\_\_\_ Section(s): 18 Township(s): 28N Range(s): 24W  
 Lot: \_\_\_\_\_ Block: \_\_\_\_\_ Subdivision: \_\_\_\_\_ PID: 1802524420002

4. Size of project parcel (square feet or acres): 1.24 acres  
 Area of disturbance (square feet): 3,000 sq. ft. Volume of excavation/fill (cubic yards): n/a  
 Area of existing impervious surface: \_\_\_\_\_ Area of proposed impervious surface: (no net increase)  
 Length of shoreline affected (feet): 145 ft. Waterbody (& bay if applicable): Minnehaha Creek

5. Type of permit being applied for (Check all that apply):  
 EROSION CONTROL  WATERBODY CROSSINGS/STRUCTURES  
 FLOODPLAIN ALTERATION  STORMWATER MANAGEMENT  
 WETLAND PROTECTION  APPROPRIATIONS  
 DREDGING  ILLICIT DISCHARGE  
 SHORELINE/STREAMBANK STABILIZATION

6. Project purpose (Check all that apply):  
 SINGLE FAMILY HOME  MULTI FAMILY RESIDENTIAL (apartments)  
 ROAD CONSTRUCTION  COMMERCIAL or INSTITUTIONAL  
 UTILITIES  SUBDIVISIONS (include number of lots)  
 DREDGING  LANDSCAPING (pools, berms, etc.)  
 SHORELINE/STREAMBANK STABILIZATION  OTHER (DESCRIBE): \_\_\_\_\_

7. NPDES/SDS General Stormwater Permit Number (if applicable): \_\_\_\_\_

8. Waterbody receiving runoff from site: Minnehaha Creek

9. Project Timeline: Start Date: Fall/Winter 2020 Completion Date: Summer 2021

Permits have been applied for: City  County  MN Pollution Control Agency  DNR  COE   
 Permits have been received: City  County  MN Pollution Control Agency  DNR  COE

By signing below, I hereby request a permit to authorize the activities described herein. I certify that I am familiar with MCWD Rules and that the proposed activity will be conducted in compliance with these Rules. I am familiar with the information contained in this application and, to the best of my knowledge and belief, all information is true, complete and accurate. I understand that proceeding with work before all required authorizations are obtained may be subject to federal, state and/or local administrative, civil and/or criminal penalties.



Signature of Each Property Owner Jr. Warden, St. Stephen's Church

2020 Sep 15  
Date

# EROSION CONTROL SUPPLEMENTAL INFORMATION FORM

## INSPECTION PLAN REQUIREMENTS

### 1. Routine Inspections:

- Once every seven days during active construction
- Within 24 hours of a half inch or more precipitation

### 2. Completed Field Inspection Reports:

- Reports available within 24 hours of request until MCWD determines project is complete & stabilized

*Failure to submit requested inspection information will result in a site inspection and may be subject to reimbursement for MCWD staff time.*

### Who will inspect your site regularly?

NAME:	<u>Mike Moeller</u>	ORGANIZATION:	<u>Atlas Foundation Co.</u>
PHONE:	<u>763-428-2261</u>	ALTERNATE PHONE:	_____
EMAIL:	<u>mike.moeller@atlasfoundation.com</u>		

### Where is the concrete washout location?

<input checked="" type="checkbox"/> OFF SITE OR CONTAINED ON TRUCK
<input type="checkbox"/> INDICATED ON SITE PLAN (with required impermeable liner)
<input type="checkbox"/> N/A


### What is the final stabilization method?

(seed, sod, etc.): <u>Seed / mulch</u>
<i>6 inches of topsoil must be added/replaced prior to final stabilization</i>

### Will protective fencing for retained vegetation be installed?

<input checked="" type="checkbox"/> YES
<input type="checkbox"/> NOT APPLICABLE
<input type="checkbox"/> OTHER (describe) _____

I certify that I am familiar with the requirements of the MCWD Erosion Control Rule and that the proposed activity will be conducted in compliance with this rule.

  
Signature of Applicant or Authorized Agent

2020 Oct 6

\_\_\_\_\_  
Date



**MINNEHAHA CREEK**  
WATERSHED DISTRICT  
QUALITY OF WATER, QUALITY OF LIFE

# ST. STEPHEN'S EPISCOPAL CHURCH RETAINING WALL REPLACEMENT

4439 WEST 50th STREET  
EDINA, MINNESOTA

PIERCE PINI &  
ASSOCIATES, INC.  
Consulting Civil Engineers

9298 CENTRAL AVENUE NE  
SUITE 312  
BLAINE, MN 55434  
TEL 763-537-1311

## DEMOLITION, REPLACEMENT AND RESTORATION PLANS

ST. STEPHEN'S EPISCOPAL CHURCH  
RETAINING WALL REPLACEMENT

4439 W. 50th STREET  
EDINA, MINNESOTA



LOCATION MAP

### CONTACT INFORMATION

**CIVIL ENGINEER**  
PIERCE PINI & ASSOCIATES, INC.  
9298 CENTRAL AVENUE NE, SUITE 312  
BLAINE, MN 55434  
CONTACT: Kevin Gardner  
TEL: 763-537-1311

**SURVEYOR**  
SUNDE LAND SURVEYING  
9001 E. BLOOMINGTON FREEWAY, SUITE 118  
BLOOMINGTON, MN 55420  
CONTACT: Lenny Carlson  
TEL: 952-881-2455

**STRUCTURAL ENGINEER**  
KRECH OJARD & ASSOCIATES  
101 PUTNAM STREET  
EAU CLAIRE, WI 54703  
CONTACT: Laurant Larson  
TEL: 715-552-7374

**CONTRACTOR**  
ATLAS FOUNDATION COMPANY  
11730 BROCKTON LANE  
OSSEO, MN 55369  
CONTACT: Mike Moeller  
TEL: 763-428-2261

### PROPERTY INFORMATION

PARCEL IDENTIFICATION: 1802824420002  
ADDRESS: 4439 50th STREET WEST, EDINA  
LOT AREA: 53,969 SQ. FT. (1.24 ACRES)  
WATERSHED: MINNEHAHA CREEK

### DRAWING INDEX

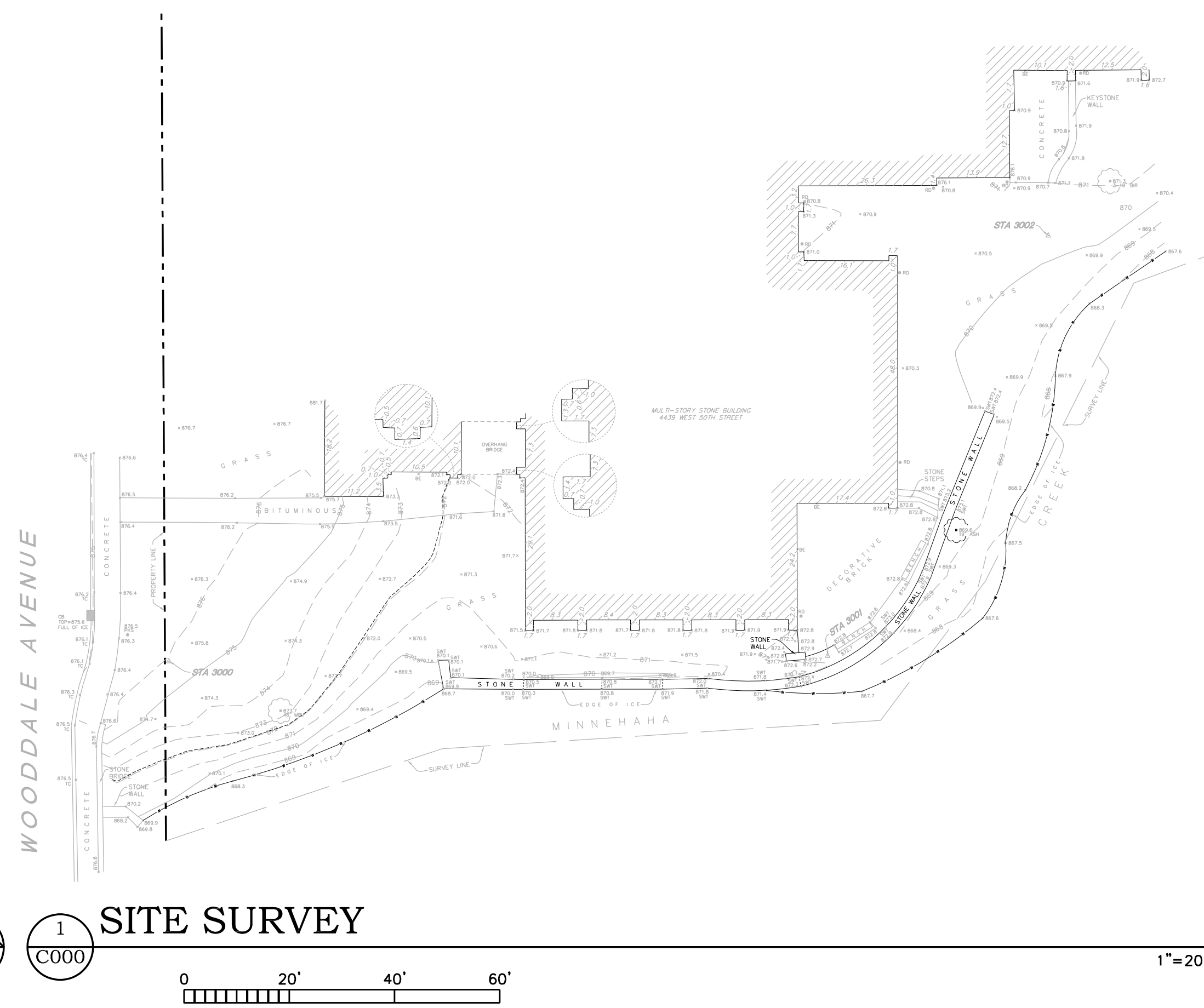
C000 - COVER SHEET  
C100 - DEMOLITION AND EROSION CONTROL PLAN  
C200 - STORMWATER POLLUTION PREVENTION NOTES  
C300 - STORMWATER POLLUTION PREVENTION DETAILS  
C400 - RETAINING WALL REPLACEMENT PLAN  
C500 - SITE IMPROVEMENTS PLAN

### CONSTRUCTION NOTES

- ALL EXISTING INFORMATION TAKEN FROM SURVEY BY SUNDE LAND SURVEYING, DATED FEBRUARY 18, 2020.
- CONTRACTOR TO FIELD VERIFY ALL EXISTING CONDITIONS INCLUDING LOCATIONS OF EXISTING UTILITIES, AND NOTIFY ENGINEER OF ANY DISCREPANCIES PRIOR TO STARTING CONSTRUCTION.
- CONTRACTOR TO PREVENT DIRT AND/OR DEBRIS FROM ENTERING MINNEHAHA CREEK OR BEING TRANSPORTED OFF-SITE IN AN UNCONTROLLED MANNER.
- ALL DEMOLITION TO BE PERFORMED IN ACCORDANCE WITH CITY OF EDINA AND STATE OF MINNESOTA REGULATIONS AND STANDARDS.
- EXISTING UTILITIES ARE SHOWN IN THEIR APPROXIMATE LOCATIONS. CONTRACTOR TO FIELD VERIFY THE LOCATION OF ALL EXISTING UTILITIES WHICH MAY INCLUDE BUT IS NOT LIMITED TO: ELECTRIC, TELEPHONE, GAS, CABLE TV, COMPUTER CABLE, FIBER OPTIC CABLE, SANITARY SEWER, STORM SEWER AND WATER MAIN. CONTRACTOR TO CONTACT THE GOPHER STATE ONE CALL BEFORE EXCAVATING.
- ALL EXISTING SITE IMPROVEMENTS ARE TO REMAIN UNLESS NOTED OTHERWISE. CONTRACTOR TO PROTECT FROM DAMAGE ALL EXISTING IMPROVEMENTS, LANDSCAPING, STRUCTURES AND UTILITIES THAT ARE TO REMAIN. CONTRACTOR TO STORE AND PROTECT EXISTING SITE FEATURES WHICH NEED TO BE REMOVED AND REPLACED. CONTRACTOR TO PREVENT DAMAGE OR THEFT OF THESE ITEMS AND TO REPAIR AND REPLACE AT OWN EXPENSE.
- ALL WORK TO CONFORM WITH CITY OF EDINA, MINNEHAHA CREEK WATERSHED DISTRICT AND STATE OF MINNESOTA STANDARDS AND REGULATIONS.
- ALL EXCAVATIONS MUST COMPLY WITH THE REQUIREMENTS OF OSHA 29 CFR, PART 1926, SUBPART P "EXCAVATIONS AND TRENCHES". THIS DOCUMENT STATES THAT EXCAVATION SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
- DRAWINGS DO NOT INDICATE AREAS OF TEMPORARY SUPPORT SYSTEMS. THE CONTRACTOR IS RESPONSIBLE FOR ALL MEANS AND METHODS AND WILL HAVE TOTAL CONTROL OVER THE TYPES AND DESIGN OF ALL SHORING, SHEETING, BRACING, ANCHORAGES, EXCAVATION SUPPORT WALLS, DIRECTIONAL BORING, AUGER JACKING, SOIL STABILIZATION AND OTHER METHODS OF PROTECTING EXISTING IMPROVEMENTS. SEE SPECIFICATIONS FOR SUBMITTAL REQUIREMENTS.
- CONTRACTOR TO RECORD EXISTING CONDITIONS AS NEEDED (PHOTOGRAPHS, VIDEO PHOTOGRAPHY, FIELD SURVEYING, ETC.) TO ENABLE RECONSTRUCTION TO MATCH EXISTING CONDITIONS. CONTRACTOR TO DOCUMENT EXISTING CONDITIONS SO THAT RECONSTRUCTED AREAS WILL HAVE POSITIVE DRAINAGE SIMILAR TO EXISTING OR AS REQUIRED BY THESE DOCUMENTS. SEE SPECIFICATIONS.
- CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS PRIOR TO STARTING CONSTRUCTION.
- ALL MATERIALS FOR PROPOSED CONSTRUCTION SHALL BE NEW PRODUCTS DIRECT FROM THE FACTORY AND FREE FROM DEFECTS.
- WASTE MATERIALS REMOVED DURING CONSTRUCTION, CONSTRUCTION DEBRIS AND EXCESS EXCAVATED MATERIAL SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE PROJECT SITE AND DISPOSED OF PROPERLY BY THE CONTRACTOR.
- AS A CONDITION OF THE APPROVED SITE PLAN, THE APPLICANT MUST PROVIDE AS-BUILT DRAWINGS (PAPER OR PDF) OF ALL WATERMAIN, SANITARY AND STORM SEWER LINES AND ALL APPURTENANCES WHICH WERE INSTALLED ON A SITE FOR WHICH A FINAL SITE PLAN WAS APPROVED. AS-BUILT CHANGES TO TEXT INCLUDING: INVERT ELEVATIONS, DIMENSIONS, NOTES, ETC. SHALL BE LINED OUT WITH THE RECORD DRAWING TEXT PLACED NEAR IT. DO NOT ALTER, MODIFY OR ERASE ORIGINAL APPROVED CONSTRUCTION DRAWING TEXT. THE CONSTRUCTION AS-BUILT DRAWINGS SHALL SHOW, BUT ARE NOT LIMITED TO, SUCH INFORMATION AS THE EXACT SIZE, LENGTH, TYPE AND LOCATION OF PIPES; LOCATION AND SIZE OF MANHOLES AND CATCH BASINS; DEPTH AND SLOPES OF RETENTION SYSTEMS. THE CONSTRUCTION AS-BUILT DRAWINGS SHALL SHOW ALL WORK AS ACTUALLY INSTALLED AND AS FIELD VERIFIED BY GENERAL CONTRACTOR. A SIGNED LETTER ON COMPANY LETTERHEAD ATTESTING TO ACCURACY OF THE AS-BUILTS SHALL BE SUBMITTED TO THE CIVIL ENGINEER WITHIN 30 DAYS OF COMPLETING ALL UTILITY SYSTEMS.

### EROSION CONTROL NOTES

- BEFORE BEGINNING CONSTRUCTION, INSTALL A TEMPORARY ROCK CONSTRUCTION ENTRANCE AT EACH POINT WHERE VEHICLES EXIT THE CONSTRUCTION SITE. USE 2 INCH OR GREATER DIAMETER ROCK IN A LAYER AT LEAST 12 INCHES THICK ACROSS THE ENTIRE WIDTH OF THE ENTRANCE. EXTEND THE ROCK ENTRANCE AT LEAST 50 FEET INTO THE CONSTRUCTION ZONE USING A GEOTEXTILE FABRIC BENEATH THE AGGREGATE TO PREVENT MIGRATION OF SOIL INTO THE ROCK FROM BELOW.
- REMOVE ALL SOILS AND SEDIMENTS TRACKED OR OTHERWISE DEPOSITED ONTO PUBLIC AND PRIVATE PAVEMENT AREAS. REMOVAL SHALL BE ON A DAILY BASIS WHEN TRACKING OCCURS AND MAY BE ORDERED BY CITY INSPECTORS AT ANY TIME IF CONDITIONS WARRANT. SWEEPING SHALL BE MAINTAINED THROUGHOUT THE DURATION OF THE CONSTRUCTION AND DONE IN A MANNER TO PREVENT DUST BEING BLOWN TO ADJACENT PROPERTIES.
- CATCH BASIN INSERTS OR OTHER APPROVED PRODUCTS ARE REQUIRED IN UNDISTURBED AREAS THAT MAY RECEIVE RUNOFF FROM THE PROJECT AREA. HAY BALES OR FILTER FABRIC WRAPPED GRATES ARE NOT ALLOWED FOR INLET PROTECTION.
- LOCATE SOIL OR DIRT STOCKPILES NO LESS THAN 25 FEET FROM ANY PUBLIC OR PRIVATE ROADWAY OR DRAINAGE CHANNEL. TEMPORARY STOCKPILES LOCATED ON PAVED SURFACES MUST BE NO LESS THAN TWO FEET FROM THE DRAINAGE/GUTTER LINE AND SHALL BE COVERED IF LEFT MORE THAN 24 HOURS.
- MAINTAIN ALL TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES IN PLACE UNTIL THE CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED. INSPECT TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES ON A DAILY BASIS AND REPLACE DETERIORATED, DAMAGED, OR ROTTED EROSION CONTROL DEVICES IMMEDIATELY.
- DISTURBED SOIL STABILIZATION SHALL USE SEED AND MULCH, EROSION CONTROL MATTING, AND/OR SODDING AND STAKING IN GREEN SPACE AREAS. SEED WITH ANNUAL RYE SEED AT 60 LBS PER ACRE AND WOOD MULCH FIBER AT 45 LBS PER 1,000 SF. AN EARLY APPLICATION OF GRAVEL BASE ON AREAS TO BE PAVED IS RECOMMENDED TO MINIMIZE EROSION POTENTIAL.
- READY MIXED CONCRETE AND CONCRETE BATCH PLANTS ARE PROHIBITED WITHIN THE PUBLIC RIGHT OF WAY. ALL CONCRETE RELATED PRODUCTION, CLEANING AND MIXING ACTIVITIES SHALL BE DONE IN THE DESIGNATED CONCRETE MIXING/WASHOUT LOCATIONS.
- CHANGES TO EROSION CONTROL PLAN MUST BE APPROVED BY THE EROSION CONTROL INSPECTOR PRIOR TO IMPLEMENTATION. CONTRACTOR TO PROVIDE INSTALLATION AND DETAILS FOR ALL PROPOSED ALTERNATE TYPE DEVICES.
- ALL EROSION CONTROL ELEMENTS ARE TEMPORARY. CONTRACTOR TO INSTALL EROSION CONTROL ELEMENTS PRIOR TO START OF LAND DISTURBING ACTIVITIES. MAINTAIN IN GOOD CONDITION DURING CONSTRUCTION AND REMOVE FROM THE SITE UPON COMPLETION OF FINAL PAVING AND TURF ESTABLISHMENT.
- EROSION CONTROL SHALL BE PLACED SO IT DOES NOT DISTURB THE EXISTING SITE FEATURES THAT ARE TO REMAIN. MANY METHODS OF EROSION CONTROL WILL WORK AND IT IS THE CONTRACTOR'S RESPONSIBILITY TO INSTALL THE MEASURE MOST APPROPRIATE TO THE SITE CONDITIONS AND THAT WHICH MEETS THE CITY OF EDINA STANDARDS. EROSION CONTROL IS GRAPHICALLY SHOWN ON THE PLANS FOR CLARITY BUT SHALL BE PLACED IN THE MOST APPROPRIATE LOCATIONS IN THE FIELD.



I hereby certify that this plan or drawing 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.

Company: PIERCE PINI & ASSOCIATES

Signed: *Kevin Gardner*

Name: Kevin Gardner

Date: 10/19/2020 Reg. No: 45815

Issued for \_\_\_\_\_ Date \_\_\_\_\_

Permit Set \_\_\_\_\_ 10/19/2020

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Copyright 2020 Pierce Pini & Associates, Inc.

Comm. No. 19-057

Drawn DM

Checked KG

Date 10/19/2020

Permit Set

Drawing Title

COVER SHEET

C000



ST. STEPHEN'S EPISCOPAL CHURCH  
RETAINING WALL REPLACEMENT

4439 W. 50th STREET  
EDINA, MINNESOTA

EROSION CONTROL NOTES

- BEFORE BEGINNING CONSTRUCTION, INSTALL A TEMPORARY ROCK CONSTRUCTION ENTRANCE AT EACH POINT WHERE VEHICLES EXIT THE CONSTRUCTION SITE. USE 2 INCH OR GREATER DIAMETER ROCK IN A LAYER AT LEAST 12 INCHES THICK ACROSS THE ENTIRE WIDTH OF THE ENTRANCE. EXTEND THE ROCK ENTRANCE AT LEAST 50 FEET INTO THE CONSTRUCTION ZONE USING A GEOTEXTILE FABRIC BENEATH THE AGGREGATE TO PREVENT MIGRATION OF SOIL INTO THE ROCK FROM BELOW.
- REMOVE ALL SOILS AND SEDIMENTS TRACKED OR OTHERWISE DEPOSITED ONTO PUBLIC AND PRIVATE PAVEMENT AREAS. REMOVAL SHALL BE ON A DAILY BASIS WHEN TRACKING OCCURS AND MAY BE ORDERED BY CITY INSPECTORS AT ANY TIME IF CONDITIONS WARRANT. SWEEPING SHALL BE MAINTAINED THROUGHOUT THE DURATION OF THE CONSTRUCTION AND DONE IN A MANNER TO PREVENT DUST BEING BLOWN TO ADJACENT PROPERTIES.
- CATCH BASIN INSERTS OR OTHER APPROVED PRODUCTS ARE REQUIRED IN UNDISTURBED AREAS THAT MAY RECEIVE RUNOFF FROM THE PROJECT AREA. HAY BALES OR FILTER FABRIC WRAPPED GRATES ARE NOT ALLOWED FOR INLET PROTECTION.
- LOCATE SOIL OR DIRT STOCKPILES NO LESS THAN 25 FEET FROM ANY PUBLIC OR PRIVATE ROADWAY OR DRAINAGE CHANNEL. TEMPORARY STOCKPILES LOCATED ON PAVED SURFACES MUST BE NO LESS THAN TWO FEET FROM THE DRAINAGE/GUTTER LINE AND SHALL BE COVERED IF LEFT MORE THAN 24 HOURS.
- MAINTAIN ALL TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES IN PLACE UNTIL THE CONTRIBUTING DRAINAGE AREA HAS BEEN STABILIZED. INSPECT TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES ON A DAILY BASIS AND REPLACE DETERIORATED, DAMAGED, OR ROTTED EROSION CONTROL DEVICES IMMEDIATELY.
- DISTURBED SOIL STABILIZATION SHALL USE SEED AND MULCH, EROSION CONTROL MATTING, AND/OR SODDING AND STAKING IN GREEN SPACE AREAS. SEED WITH ANNUAL RYE SEED AT 60 LBS PER ACRE AND WOOD MULCH FIBER AT 45 LBS PER 1,000 SF. AN EARLY APPLICATION OF GRAVEL BASE ON AREAS TO BE PAVED IS RECOMMENDED TO MINIMIZE EROSION POTENTIAL.
- READY MIXED CONCRETE AND CONCRETE BATCH PLANTS ARE PROHIBITED WITHIN THE PUBLIC RIGHT OF WAY. ALL CONCRETE RELATED PRODUCTION, CLEANING AND MIXING ACTIVITIES SHALL BE DONE IN THE DESIGNATED CONCRETE MIXING/WASHOUT LOCATIONS.
- CHANGES TO EROSION CONTROL PLAN MUST BE APPROVED BY THE EROSION CONTROL INSPECTOR PRIOR TO IMPLEMENTATION. CONTRACTOR TO PROVIDE INSTALLATION AND DETAILS FOR ALL PROPOSED ALTERNATE TYPE DEVICES.
- ALL EROSION CONTROL ELEMENTS ARE TEMPORARY. CONTRACTOR TO INSTALL EROSION CONTROL ELEMENTS PRIOR TO START OF LAND DISTURBING ACTIVITIES, MAINTAIN IN GOOD CONDITION DURING CONSTRUCTION AND REMOVE FROM THE SITE UPON COMPLETION OF FINAL PAVING AND TURF ESTABLISHMENT.
- EROSION CONTROL SHALL BE PLACED SO IT DOES NOT DISTURB THE EXISTING SITE FEATURES THAT ARE TO REMAIN. MANY METHODS OF EROSION CONTROL WILL WORK AND IT IS THE CONTRACTOR'S RESPONSIBILITY TO INSTALL THE MEASURE MOST APPROPRIATE TO THE SITE CONDITIONS AND THAT WHICH MEETS THE CITY OF EDINA STANDARDS. EROSION CONTROL IS GRAPHICALLY SHOWN ON THE PLANS FOR CLARITY BUT SHALL BE PLACED IN THE MOST APPROPRIATE LOCATIONS IN THE FIELD.

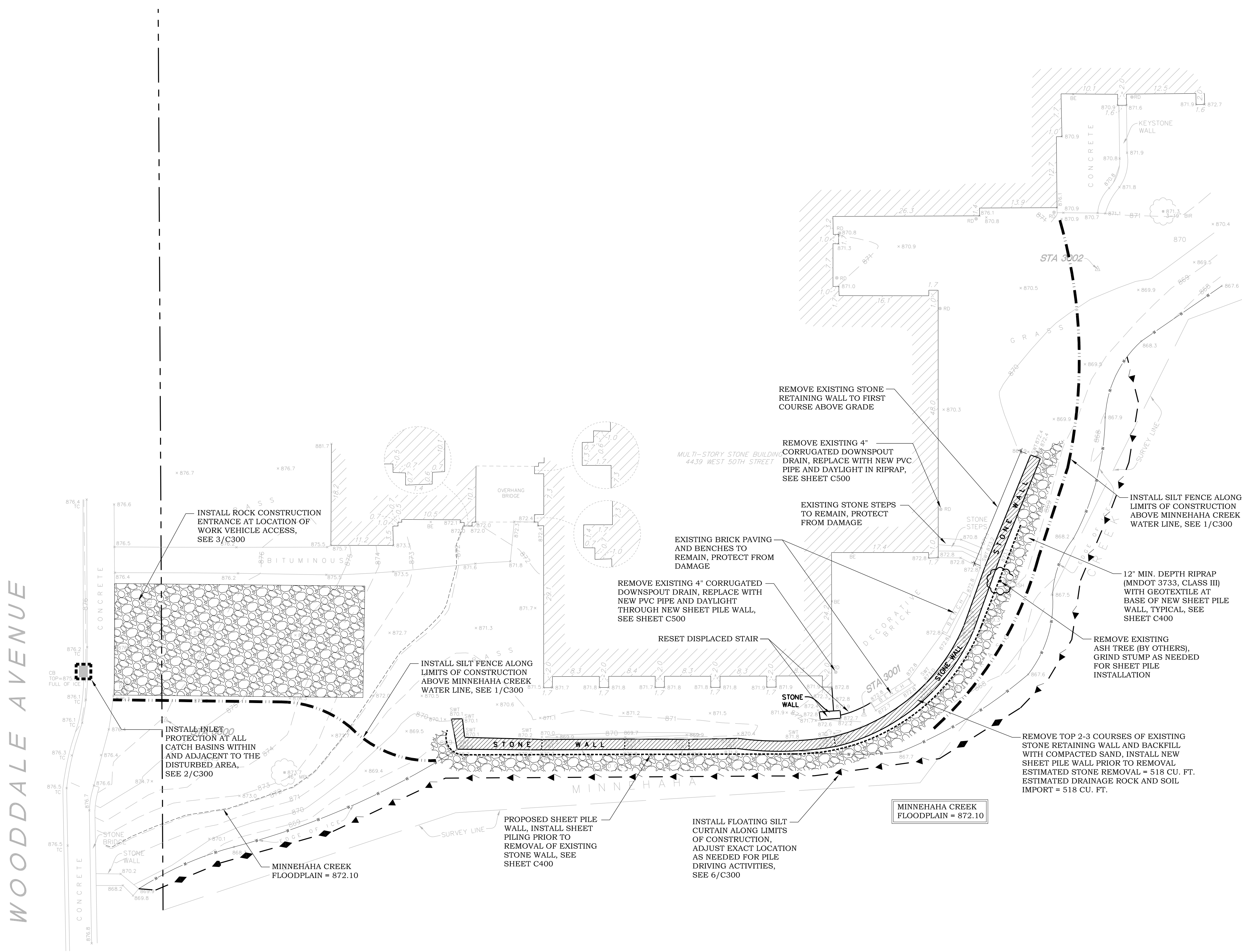
LEGEND

- EXISTING CREEK EDGE
- PROPOSED SILT FENCE
- PROPOSED SILT CURTAIN
- PROPOSED SHEET PILING
- PROPOSED CONSTRUCTION ENTRANCE
- PROPOSED WALL REMOVAL

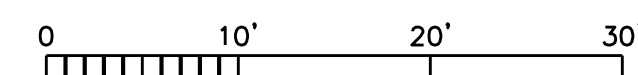
ESTIMATED BMP QUANTITIES

ROCK CONSTRUCTION ENTRANCE	1 EACH
CONCRETE WASHOUT AREA	1 EACH
TEMPORARY SEEDING	500 SY
SILT FENCE	165 LF
FLOATING SILT CURTAIN	235 LF

NOTE: QUANTITIES ARE FOR INFORMATIONAL PURPOSES ONLY. CONTRACTOR SHALL DETERMINE FOR THEMSELVES THE EXACT QUANTITIES FOR BIDDING AND CONSTRUCTION. CONTRACTOR SHALL NOT RELY ON THESE QUANTITIES FOR THEIR BID AND CIVIL ENGINEER IS NOT RESPONSIBLE FOR COST ESTIMATES OR ACTUAL CONSTRUCTION COSTS.



1 DEMOLITION AND EROSION CONTROL PLAN



1"=10'

Permit Set

Drawing Title

DEMOLITION AND  
EROSION CONTROL PLAN

C100

I hereby certify that this plan or drawing 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.

Company: PIERCE PINI & ASSOCIATES

Signed: *Kevin Gardner*

Name: Kevin Gardner

Date: 10/19/2020 Reg. No: 45815

Issued for \_\_\_\_\_ Date \_\_\_\_\_

Permit Set \_\_\_\_\_ 10/19/2020

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Copyright 2020 Pierce Pini & Associates, Inc.

Comm. No. \_\_\_\_\_ 19-057

Drawn \_\_\_\_\_ DM

Checked \_\_\_\_\_ KG

Date \_\_\_\_\_ 10/19/2020



**PROJECT DESCRIPTION:**

ALL SITE WORK SHALL FOLLOW THE GENERAL PERMIT AUTHORIZATION TO DISCHARGE STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITY UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)/STATE DISPOSAL SYSTEM (SDS) CONSTRUCTION STORMWATER PERMIT FOR THE PROJECT.

THE GOAL OF POLLUTION PREVENTION EFFORTS DURING PROJECT CONSTRUCTION IS TO CONTROL SOIL AND POLLUTANTS ON THE SITE AND PREVENT THEM FROM LEAVING THE PROJECT SITE AND FLOWING TO SURFACE WATERS. THE PURPOSE OF THIS SWPPP IS TO PROVIDE GUIDELINES FOR ACHIEVING THAT GOAL. THE SWPPP MUST BE KEPT ON-SITE AND UPDATED AS NECESSARY DURING THE COURSE OF CONSTRUCTION TO KEEP IT CURRENT WITH ANY MODIFICATIONS TO THE POLLUTION CONTROL MEASURES BEING UTILIZED.

THIS PROJECT CONSISTS OF THE REMOVAL AND REPLACEMENT OF THE EXISTING RETAINING WALL ADJACENT TO MINNEHAHA CREEK AT THE ST. STEPHEN'S EPISCOPAL CHURCH IN EDINA.

THE PROPOSED STORMWATER MANAGEMENT DESIGN WILL MEET THE REQUIREMENTS OF THE CITY OF EDINA AND THE MINNEHAHA CREEK WATERSHED DISTRICT. THIS PROJECT IS NOT REQUIRED TO MEET THE MPCA PERMANENT STORMWATER MANAGEMENT REQUIREMENTS BECAUSE THE DISTURBED AREA IS LESS THAN ONE ACRE.

**REGULATORY CONTEXT:**

**DISCHARGE TO SPECIAL OR IMPAIRED WATERS WITHIN ONE MILE OF SITE:**

-THIS PROJECT DISCHARGES TO MINNEHAHA CREEK - THIS LAKE IS IDENTIFIED AS AN IMPAIRED WATER ON THE MPCA'S 301D IMPAIRED WATERS LIST FOR BENTHIC MACROINVERTEBRATE BIOASSESSMENT, CHLORIDE, DISSOLVED OXYGEN, FECAL COLIFORM, AND FISH BIOASSESSMENTS. THESE IMPAIRMENTS ARE CONSIDERED CONSTRUCTION RELATED AND REQUIRE BEST MANAGEMENT PRACTICES FOUND IN APPENDIX 'A' OF THE MPCA STORMWATER PERMIT.

**PLACEMENT OF FILL IN WATERS OF THE STATE:**

-N/A

**DRINKING WATER SUPPLY MANAGEMENT AREA:**

-N/A

THE PROJECT STORMWATER DISCHARGE IS NOT ANTICIPATED TO IMPACT ANY OF THE FOLLOWING:

- OUTSTANDING RESOURCE VALUE WATERS, TROUT WATERS, WETLANDS, CALCAREOUS FENS, PROPERTIES LISTED BY THE NATIONAL REGISTER OF HISTORIC PLACES OR ARCHAEOLOGICAL SITES

THE PROJECT STORMWATER DISCHARGE IS NOT SUBJECT TO ADDITIONAL REGULATION DUE TO ANY OF THE FOLLOWING:

- OTHER FORMAL ENVIRONMENTAL REVIEWS, ENDANGERED OR THREATENED SPECIES

**STORMWATER POLLUTION PREVENTION PLAN (SWPPP) IMPLEMENTATION RESPONSIBILITIES:**

1. THE OWNER AND CONTRACTOR ARE PERMITTEE(S) AS IDENTIFIED BY THE NPDES PERMIT (IF REQUIRED).
2. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ON-SITE IMPLEMENTATION OF THE SWPPP, INCLUDING THE ACTIVITIES OF ALL OF THE CONTRACTOR'S SUBCONTRACTORS.
3. CONTRACTOR SHALL PROVIDE A PERSON(S) KNOWLEDGEABLE AND EXPERIENCED IN THE APPLICATION OF EROSION PREVENTION AND SEDIMENT CONTROL BMPs TO OVERSEE ALL INSTALLATION AND MAINTENANCE OF BMPs AND IMPLEMENTATION OF THE SWPPP.
4. CONTRACTOR SHALL PROVIDE PERSON(S) MEETING THE TRAINING REQUIREMENTS OF THE NPDES PERMIT TO CONDUCT INSPECTION AND MAINTENANCE OF ALL EROSION PREVENTION AND SEDIMENT CONTROL BMPs IN ACCORDANCE WITH THE REQUIREMENTS OF THE PERMIT. ONE OF THESE INDIVIDUAL(S) MUST BE AVAILABLE FOR AN ONSITE INSPECTION WITHIN 72 HOURS UPON REQUEST BY MPCA. CONTRACTOR SHALL PROVIDE TRAINING DOCUMENTATION FOR THESE INDIVIDUAL(S) AS REQUIRED BY THE NPDES PERMIT. THIS TRAINING DOCUMENTATION SHALL BE RECORDED IN OR WITH THE SWPPP BEFORE THE START OF CONSTRUCTION OR AS SOON AS THE PERSONNEL FOR THE PROJECT HAVE BEEN DETERMINED. DOCUMENTATION SHALL INCLUDE:
  - 4.1. NAMES OF THE PERSONNEL ASSOCIATED WITH THE PROJECT THAT ARE REQUIRED TO BE TRAINED PER PART III.F.1 OF THE PERMIT.
  - 4.2. DATES OF TRAINING AND NAME OF INSTRUCTOR AND ENTITY PROVIDING TRAINING.
  - 4.3. CONTENT OF TRAINING COURSE OR WORKSHOP INCLUDING THE NUMBER OF HOURS OF TRAINING.
5. FOLLOWING FINAL STABILIZATION AND THE TERMINATION OF COVERAGE FOR THE NPDES PERMIT, THE OWNER IS EXPECTED TO FURNISH LONG TERM OPERATION AND MAINTENANCE (O & M) OF THE PERMANENT STORM WATER MANAGEMENT SYSTEM.

**STORMWATER DISCHARGE DESIGN REQUIREMENTS:**

THE FOLLOWING SIZING CRITERIA APPLY TO THE DESIGN OF STORMWATER TREATMENT FACILITIES. N/A INDICATES NOT APPLICABLE OR NOT CONSTRUCTED AS PART OF THIS PROJECT.

1. TEMPORARY SEDIMENTATION BASINS: N/A
2. PERMANENT WET SEDIMENTATION BASINS: N/A
3. PERMANENT INFILTRATION/FILTRATION : N/A
4. PERMANENT REGIONAL PONDS: N/A
5. ALTERNATIVE METHODS: N/A

**SEQUENCE OF CONSTRUCTION:**

THE FOLLOWING SEQUENCE DESCRIBES, IN GENERAL, THE WORK ON THE SITE:

1. CONTRACTOR SHALL VERIFY THAT ALL PERMITS HAVE BEEN OBTAINED AND/OR OBTAIN THE NECESSARY PERMITS.
2. CONTRACTOR SHALL PERFORM SITE INSPECTIONS, RECORD KEEPING AND RECORD RETENTION IN ACCORDANCE WITH ALL PERMITS.
3. CONTRACTOR SHALL INSTALL ALL PERIMETER AND DOWN-GRADIENT EROSION CONTROL AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES (BMPs), CONSTRUCTION ENTRANCES AND INLET PROTECTION DEVICES PRIOR TO SITE GRADING, EXCAVATION, STOCKPILING OR DISTURBING EXISTING VEGETATIVE COVER.
4. CONTRACTOR SHALL PERFORM SITE GRADING, EXCAVATION, STOCKPILING WORK IN ACCORDANCE WITH THE STORMWATER POLLUTION PREVENTION PLAN (SWPPP).
5. CONTRACTOR SHALL INSTALL, INSPECT, MONITOR AND MAINTAIN TEMPORARY AND PERMANENT EROSION CONTROL BMPs AS SHOWN ON PLANS & IN CONFORMANCE WITH NPDES PERMIT, CONTINUOUSLY DURING THE WORK. CONTRACTOR SHALL STABILIZE ALL EXPOSED SOILS NO LATER THAN 7 DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED.
6. CONTRACTOR SHALL REPLACE OR REPAIR EROSION CONTROL AND SEDIMENT CONTROL BMPs THAT ARE NOT FUNCTIONING PROPERLY.
7. CONTRACTOR SHALL PERFORM SITE RESTORATION ACTIVITIES FOR PERMANENT VEGETATIVE ESTABLISHMENT.
8. CONTRACTOR SHALL REMOVE SEDIMENT CONTROL DEVICES PRIOR TO SUBMITTING NOTICE OF TERMINATION (NOT).
9. SUBMIT NOTICE OF TERMINATION TO MPCA WITHIN 30 DAYS OF FINAL STABILIZATION.

**1. CONSTRUCTION ACTIVITY FIELD REQUIREMENTS:**

- ALL FIELD REQUIREMENTS SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF THE NPDES PERMIT AND STORMWATER POLLUTION PREVENTION PLAN (SWPPP).
- A. THE CONTRACTOR MUST IMPLEMENT THE SWPPP AND PROVIDE BMPs IDENTIFIED IN THE SWPPP IN AN APPROPRIATE AND FUNCTIONAL MANNER.
  - B. THE CONTRACTOR SHALL RESPOND TO CHANGING SITE CONDITIONS AND IMPLEMENT/SUPPLEMENT EROSION PREVENTION AND SEDIMENT CONTROL MEASURES UTILIZED TO PROVIDE ADEQUATE PROTECTION OF DISTURBED SOILS AND ADEQUATE PREVENTION OF SEDIMENT TRANSPORT OFF-SITE. AT A MINIMUM, THE FOLLOWING STORM WATER POLLUTION PREVENTION CONSTRUCTION ACTIVITY FIELD REQUIREMENTS SHALL BE FURNISHED BY THE CONTRACTOR.

**2. EROSION PREVENTION PRACTICES**

CONTRACTOR SHALL BE RESPONSIBLE FOR THE FOLLOWING EROSION PREVENTION PRACTICES:

- A. THE CONTRACTOR SHALL ATTEMPT TO PHASE ALL WORK TO MINIMIZE EROSION AND MAINTAIN VEGETATIVE COVER TO THE EXTENT POSSIBLE. THE LOCATION OF AREAS NOT TO BE DISTURBED MUST BE DELINEATED ON THE SITE BEFORE CONSTRUCTION BEGINS.
- B. STABILIZATION ON ALL EXPOSED SOILS MUST BE INITIATED IMMEDIATELY WHENEVER CONSTRUCTION ACTIVITY HAS PERMANENTLY OR TEMPORARILY CEASED ON ANY PORTION OF THE SITE AND WILL NOT RESUME FOR A PERIOD EXCEEDING 7 CALENDAR DAYS, INCLUDING STOCKPILES WITH SIGNIFICANT SILT, CLAY OR ORGANIC COMPONENTS. STABILIZATION MUST BE COMPLETED WITHIN 7 CALENDAR DAYS.
- C. THE NORMAL WETTED PERIMETER OF ANY TEMPORARY OR PERMANENT DRAINAGE DITCH THAT DRAINS WATER FROM A CONSTRUCTION SITE OR DIVERTS WATER AROUND A SITE MUST BE STABILIZED BY CONTRACTOR WITHIN 200 FEET FROM THE PROPERTY EDGE, OR FROM THE POINT OF DISCHARGE TO ANY SURFACE WATER WITHIN 24 HOURS OF CONNECTING TO A SURFACE WATER. TEMPORARY OR PERMANENT DITCH SWALES BEING USED AS A SEDIMENT CONTAINMENT SYSTEM DO NOT NEED TO BE STABILIZED UNTIL THEY ARE NO LONGER USED AS A SEDIMENT CONTAINMENT SYSTEM, AFTER WHICH THEY MUST BE STABILIZED WITHIN 24 HOURS.
- D. TEMPORARY OR PERMANENT ENERGY DISSIPATION AT PIPE OUTLETS MUST BE PROVIDED WITHIN 24

HOURS OF CONNECTING TO A SURFACE WATER.

- E. THE CONTRACTOR MUST DIRECT DISCHARGES FROM BMPs TO VEGETATED AREAS OF THE SITE IN ORDER TO INCREASE SEDIMENT REMOVAL AND MAXIMIZE INFILTRATION UNLESS INFESIBLE. THE CONTRACTOR MUST UTILIZE VELOCITY DISSIPATION DEVICES IF NECESSARY TO PREVENT EROSION WHEN DIRECTING STORMWATER TO VEGETATED AREAS.

**3. SEDIMENT CONTROL PRACTICES**

CONTRACTOR SHALL BE RESPONSIBLE FOR THE FOLLOWING SEDIMENT CONTROL PRACTICES:

- A. CONTRACTOR MUST INSTALL ALL DOWN GRADIENT PERIMETER CONTROLS BEFORE ANY UP GRADIENT DISTURBANCE BEGINS. CONTRACTOR SHALL MAINTAIN PERIMETER CONTROLS UNTIL FINAL STABILIZATION HAS BEEN ESTABLISHED.
- B. CONTRACTOR SHALL PROVIDE GRADING AND BMP INSTALLATION TO LIMIT ALL SLOPES OF 3H:1V OR STEEPER TO AN UNBROKEN LENGTH OF 75 FEET OR LESS.
- C. IF DOWN GRADIENT SEDIMENT CONTROLS ARE OVERLOADED, THE CONTRACTOR MUST INSTALL ADDITIONAL UPGRADIENT SEDIMENT CONTROL PRACTICES OR REDUNDANT BMPs TO ELIMINATE OVERLOADING. THE SWPPP MUST BE AMENDED TO IDENTIFY THESE ADDITIONAL PRACTICES.
- D. TIMING AND INSTALLATION OF SEDIMENT CONTROL DEVICES CAN BE ADJUSTED BY CONTRACTOR TO ACCOMMODATE SHORT-TERM ACTIVITIES SUCH AS CLEARING AND GRUBBING OR VEHICLE PASSAGE. ANY SHORT-TERM ACTIVITY MUST BE COMPLETED AS QUICKLY AS POSSIBLE AND THE SEDIMENT CONTROL PRACTICES MUST BE INSTALLED IMMEDIATELY AFTER THE ACTIVITY IS COMPLETED AND IN ALL CASES PRIOR TO THE NEXT PRECIPITATION EVENT.
- E. ALL PUBLIC AND PRIVATE STORM SEWER INLETS AND OUTLETS SHALL BE PROTECTED BY CONTRACTOR WITH APPROPRIATE BMPs DURING THE WORK. THESE PRACTICES SHALL REMAIN IN PLACE UNTIL THE POTENTIAL SOURCES FOR DISCHARGING SEDIMENT TO INLETS HAVE BEEN STABILIZED BY CONTRACTOR.
- F. TEMPORARY SOIL STOCKPILES MUST HAVE SILT FENCE OR OTHER EFFECTIVE SEDIMENT CONTROLS. SOIL STOCKPILES SHALL NOT BE PLACED IN SURFACE WATERS OR STORMWATER CONVEYANCES. ACCEPTABLE PROTECTION INCLUDES COVER OF MULCH, EROSION CONTROL MATS, OR PLASTIC SHEETING.
- G. ROCK CONSTRUCTION ENTRANCES OR EQUIVALENT SYSTEM MUST BE INSTALLED BY CONTRACTOR TO MINIMIZE TRACKING FROM SITE. CONTRACTOR SHALL PROVIDE STREET SWEEPING AS NECESSARY IF BMPs ARE NOT ADEQUATE TO PREVENT SEDIMENT FROM BEING TRACKED ONTO THE STREET.
- H. CONTRACTOR SHALL PROVIDE TEMPORARY SEDIMENTATION BASINS AS REQUIRED BY THE PERMIT.
- I. CONTRACTOR MUST MINIMIZE SOIL COMPACTION AND PRESERVE TOPSOIL, UNLESS INFESIBLE. MINIMIZING SOIL COMPACTION IS NOT REQUIRED WHERE THE FUNCTION OF A SPECIFIC AREA OF THE SITE DICTATES THAT IT BE COMPACTED.
- J. THE CONTRACTOR MUST PRESERVE A 50 FOOT NATURAL BUFFER OR PROVIDE REDUNDANT SEDIMENT CONTROLS WHEN A SURFACE WATER IS LOCATED WITHIN 50 FEET OF THE PROJECT DISTURBANCE LIMITS AND STORMWATER FLOWS TO THE SURFACE WATER.
- K. IF POLYMERS, FLOCCULANTS, OR OTHER SEDIMENTATION TREATMENT CHEMICALS ARE USED ON SITE, THE CONTRACTOR MUST COMPLY WITH THE FOLLOWING REQUIREMENTS:
  - a. THE CONTRACTOR MUST USE CONVENTIONAL EROSION AND SEDIMENT CONTROLS PRIOR TO CHEMICAL ADDITION TO ENSURE EFFECTIVE TREATMENT. CHEMICALS MAY ONLY BE APPLIED WHERE TREATED STORMWATER IS DIRECTED TO A SEDIMENT CONTROL SYSTEM WHICH ALLOWS FOR THE SETTLEMENT OF THE FLOC PRIOR TO DISCHARGE.
  - b. CHEMICALS MUST BE SELECTED THAT ARE APPROPRIATELY SUITED TO THE TYPES OF SOILS LIKELY TO BE EXPOSED DURING CONSTRUCTION. CHEMICALS MUST BE USED IN ACCORDANCE WITH ACCEPTED ENGINEERING PRACTICES, AND WITH DOSING SPECIFICATION AND SEDIMENT REMOVAL DESIGN SPECIFICATION PROVIDED BY THE MANUFACTURER.

**4. DEWATERING AND BASIN DRAINING**

CONTRACTOR SHALL BE RESPONSIBLE FOR THE FOLLOWING DEWATERING REQUIREMENTS:

- A. CONTRACTOR'S DEWATERING ACTIVITIES THAT HAVE SEDIMENT-LADEN DISCHARGE WATER MUST BE DISCHARGED INTO A TEMPORARY OR PERMANENT SEDIMENTATION BASIN WHENEVER POSSIBLE, OTHERWISE IT MUST BE DISCHARGED THROUGH SOME FORM OF BEST MANAGEMENT PRACTICE (BMP) BY CONTRACTOR TO LIMIT SEDIMENT FROM LEAVING THE SITE. PRIOR TO DISCHARGE, THE CONTRACTOR SHALL PERFORM A VISUAL TEST TO ENSURE ADEQUATE TREATMENT IS OBTAINED IN THE BASIN OR BMP AND APPLY ADDITIONAL TREATMENT AS REQUIRED TO ENSURE ADEQUATE TREATMENT.
- B. THE CONTRACTOR SHALL DISCHARGE WATER FROM DEWATERING IN A MANNER THAT DOES NOT CAUSE NUISANCE CONDITIONS. THE DISCHARGE WATER SHALL BE DISPERSED OVER AN ACCEPTED ENERGY DISSIPATION MEASURE AND NOT ADVERSELY AFFECT THE RECEIVING WATER OR DOWNSTREAM LANDOWNERS OR WETLANDS.
- C. IF CONTRACTOR IS USING FILTERS WITH BACKWASH WATER, THE CONTRACTOR SHALL HAUL THE BACKWASH WATER AWAY FOR DISPOSAL, RETURN THE BACKWASH WATER TO THE BEGINNING OF THE TREATMENT PROCESS, OR INCORPORATE THE BACKWASH WATER INTO THE SITE IN A MANNER THAT DOES NOT CAUSE EROSION.

**5. INSPECTIONS AND MAINTENANCE**

CONTRACTOR SHALL BE RESPONSIBLE FOR PERFORMING THE FOLLOWING INSPECTIONS AND MAINTENANCE:

- A. WHEN INSPECTIONS FIND EROSION PREVENTION AND SEDIMENT CONTROL BMPs THAT ARE NONFUNCTIONAL, ALL NONFUNCTIONAL BMPs MUST BE REPAIRED, REPLACED, OR SUPPLEMENTED WITH FUNCTIONAL BMPs WITHIN 24 HOURS AFTER DISCOVERY OR OTHERWISE IN ACCORDANCE WITH THE NPDES PERMIT REQUIREMENTS. THE CONTRACTOR SHALL ALSO PLACE ANY ADDITIONAL EROSION CONTROL MEASURES DEEMED NECESSARY BY MPCA WITHIN 24 HOURS OF NOTICE FROM MPCA.
- B. THE CONTRACTOR MUST ROUTINELY INSPECT THE SITE ONCE EVERY 7 DAYS DURING ACTIVE CONSTRUCTION AND WITHIN 24 HOURS AFTER A RAINFALL EVENT GREATER THAN 0.5 INCHES IN 24 HOURS.
- C. ALL INSPECTIONS AND MAINTENANCE CONDUCTED DURING CONSTRUCTION MUST BE RECORDED IN WRITING BY CONTRACTOR AND RETAINED WITH THE SWPPP BY CONTRACTOR. MAINTENANCE MUST BE COMPLETED BY CONTRACTOR IN CONFORMANCE WITH NPDES PERMIT. CONTRACTOR'S RECORDS MUST INCLUDE:
  - a. DATE AND TIME OF INSPECTION.
  - b. NAME OF PERSON CONDUCTING INSPECTION.
  - c. FINDING OF INSPECTION INCLUDING RECOMMENDATIONS FOR CORRECTIVE ACTION.
  - d. DETAILS OF CORRECTIVE ACTION TAKEN (DATE, TIME, PARTY COMPLETING MAINTENANCE ACTIVITIES).
  - e. DATE AND AMOUNT OF RAINFALL GREATER THAN 0.5 INCHES IN 24 HOURS.
  - f. IF ANY DISCHARGE IS OBSERVED TO BE OCCURRING DURING THE INSPECTION, A RECORD OF ALL POINTS OF THE PROPERTY FROM WHICH THERE IS A DISCHARGE MUST BE MADE, AND THE DISCHARGE SHALL BE DESCRIBED (COLOR, ODOR, FLOATING, SETTLED, OR SUSPENDED SOLIDS, FOAM, OIL SHEEN, AND OTHER INDICATORS) AND PHOTOGRAPHIED.
  - g. DOCUMENTATION OF CHANGES MADE TO SWPPP.
- D. IN AREAS OF PROJECT WHERE FINAL STABILIZATION IS COMPLETE INSPECTIONS CAN BE REDUCED TO ONCE A MONTH. THESE AREAS SHALL BE INSPECTED BY CONTRACTOR FOR MINIMUM PERIOD OF 12 NON-WINTER MONTHS AND WITHIN 24 HOURS OF FIRST SPRING RUNOFF OR PRIOR TO RESUMING CONSTRUCTION FOLLOWING ANY WINTER STOPPAGE, WHICHEVER COMES FIRST.
- E. THE CONTRACTOR IS RESPONSIBLE FOR THE INSPECTION AND MAINTENANCE OF BMPs UNTIL ANOTHER PERMITTEE HAS OBTAINED COVERAGE, OR THE PROJECT HAS UNDERGONE FINAL STABILIZATION AND AN NOT HAS BEEN SUBMITTED TO THE MPCA.
- F. ALL EROSION CONTROL MEASURES MUST BE INSTALLED AND MAINTAINED BY CONTRACTOR ACCORDING TO THE DETAILS INCLUDED IN THE CONSTRUCTION DOCUMENTS AND IN ACCORDANCE WITH THE PRODUCT MANUFACTURER'S RECOMMENDATIONS.
- G. ALL PERIMETER CONTROL DEVICES MUST BE REPAIRED, REPLACED OR SUPPLEMENTED BY THE CONTRACTOR WHEN THEY BECOME NON-FUNCTIONAL OR THE SEDIMENT REACHES ONE-HALF THE HEIGHT OF THE DEVICE. CONTRACTOR SHALL REPAIR OR REPLACE DEVICE THAT IS NONFUNCTIONAL BY THE END OF THE NEXT BUSINESS DAY AFTER DISCOVERY, OR THEREAFTER AS SOON AS FIELD CONDITIONS ALLOW.
- H. TEMPORARY AND PERMANENT SEDIMENTATION BASINS MUST BE DRAINED AND SEDIMENT REMOVED BY CONTRACTOR ONCE THE SEDIMENT COLLECTED REACHES ONE HALF THE STORAGE VOLUME WITH 72 HOURS OF DISCOVERY, OR AS SOON AS FIELD CONDITIONS ALLOW.
- I. ALL SEDIMENT DEPOSITS WITHIN SURFACE WATERS OR STORMWATER CONVEYANCES MUST BE REMOVED AND RESTABILIZED BY CONTRACTOR WITHIN 7 DAYS OF DISCOVERY OR SOONER IF IT PRESENTS A FLOOD RISK, INCLUDING DELTAS AND STORM SEDIMENT DEPOSITS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS REQUIRED, IF NECESSARY, FOR SUCH SEDIMENT REMOVAL.
- J. CONTRACTOR SHALL BE RESPONSIBLE FOR KEEPING EXISTING PAVED SURFACES CLEAN OF SEDIMENT. CONSTRUCTION ENTRANCES SHALL BE CHECKED DAILY BY CONTRACTOR. IF THE ENTRANCE BECOMES INUNDATED WITH SEDIMENT, THE ENTRANCE WILL BE CLEANED OR REPLACED AS APPROPRIATE BY CONTRACTOR. STREETS LEADING TO AND FROM THE CONSTRUCTION ENTRANCE SHALL BE CHECKED DAILY BY CONTRACTOR FOR OFF-SITE SEDIMENT TRACKING ONTO PAVED SURFACES. THESE AREAS WILL BE SWEEPED CLEAN OF ANY TRACKED MATERIALS BY CONTRACTOR AS SOON AS POSSIBLE AND WITHIN 24 HOURS OF DISCOVERY AND AS DIRECTED BY THE CITY. CONTRACTOR SHALL EXTEND SWEEPING TO THE EXTREMITY OF ANY SEDIMENT TRACKING THAT OCCURS OFF-SITE.
- K. CONTRACTOR SHALL BE RESPONSIBLE TO REMOVE ANY OFF-SITE SEDIMENT ACCUMULATIONS IN A MANNER AND AT A FREQUENCY SUFFICIENT TO MINIMIZE OFF-SITE IMPACTS.
- L. ALL INFILTRATION/FILTRATION AREAS MUST BE INSPECTED BY CONTRACTOR TO ENSURE THAT NO

SEDIMENT FROM ONGOING CONSTRUCTION IS ACCUMULATING OVER THE INFILTRATION/FILTRATION AREA. SEDIMENT ACCUMULATED OVER INFILTRATION /FILTRATION MUST BE REMOVED BY CONTRACTOR.

- M. CONTRACTOR SHALL PROTECT INFILTRATION/FILTRATION AREAS FROM SEDIMENTATION AND OVER-COMPACTION. DURING EXCAVATION, SEDIMENT AND EROSION CONTROL DEVICES MUST BE UTILIZED BY CONTRACTOR TO PREVENT SEDIMENTATION AND THE AREA MUST BE STAKED OFF AND MARKED SO THAT HEAVY CONSTRUCTION EQUIPMENT WILL NOT COMPACT THE SOIL.
- N. INSPECTIONS CAN BE SUSPENDED DUE TO FROZEN GROUND CONDITIONS UNTIL FIRST RUNOFF OCCURS OR CONSTRUCTION ACTIVITIES RESUME.

**6. POLLUTION PREVENTION MEASURES**

CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTING THE FOLLOWING POLLUTION PREVENTION MANAGEMENT MEASURES ON THE SITE:

- A. THE CONTRACTOR SHALL MINIMIZE THE EXPOSURE OF ALL PRODUCTS, MATERIALS, AND WASTES FROM STORMWATER WHICH MAY BE A SOURCE OF CONTAMINATION TO STORMWATER OR ARE NOT DESIGNED TO BE EXPOSED TO STORMWATER.
- B. BUILDING PRODUCTS THAT MAY LEACH POLLUTANTS MUST BE UNDER COVER (PLASTIC SHEETING, TEMPORARY ROOFS, ETC.) TO PREVENT THE DISCHARGE OF POLLUTANTS OR PROTECTED BY A SIMILARLY EFFECTIVE MEANS DESIGNED TO MINIMIZE CONTACT WITH STORMWATER.
- C. PESTICIDES, HERBICIDES, INSECTICIDES, FERTILIZERS, TREATMENT CHEMICALS, AND LANDSCAPE MATERIALS MUST BE UNDER COVER (PLASTIC SHEETING, TEMPORARY ROOFS, ETC.) TO PREVENT THE DISCHARGE OF POLLUTANTS OR PROTECTED BY A SIMILARLY EFFECTIVE MEANS DESIGNED TO MINIMIZE CONTACT WITH STORMWATER.
- D. 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 SEALED CONTAINERS TO PREVENT SPILLS, LEAKS OR OTHER DISCHARGE. RESTRICTED ACCESS STORAGE AREAS MUST BE PROVIDED TO PREVENT VANDALISM. STORAGE AND DISPOSAL OF HAZARDOUS MATERIALS MUST COMPLY WITH ALL STATE REQUIREMENTS.
- E. SOLID WASTE MUST BE STORED, COLLECTED, AND DISPOSED IN COMPLIANCE WITH ALL STATE REQUIREMENTS.
- F. PORTABLE TOILETS MUST BE POSITIONED SO THAT THEY ARE SECURE AND WILL NOT BE TIPPED OVER. SANITARY WASTE MUST BE DISPOSED OF IN ACCORDANCE WITH ALL STATE REQUIREMENTS.
- G. THE CONTRACTOR SHALL TAKE REASONABLE STEPS TO PREVENT THE DISCHARGE OF SPILLED OR LEAKED CHEMICALS, INCLUDING FUEL, FROM ALL AREAS WHERE CHEMICALS OR FUEL WILL BE LOADED OR UNLOADED. THE CONTRACTOR MUST CONDUCT FUELING IN A CONTAINED AREA UNLESS INFESIBLE. THE CONTRACTOR MUST ENSURE ADEQUATE SUPPLIES ARE AVAILABLE AT ALL TIMES TO CLEAN UP DISCHARGED MATERIALS AND THAT AN APPROPRIATE DISPOSAL METHOD IS AVAILABLE FOR RECOVERED SPILLED MATERIALS. ALL SPILLS MUST BE CLEANED UP AND REPORTED IN ACCORDANCE WITH STATE REQUIREMENTS. DRY CLEAN UP MEASURES SHALL BE USED WHERE POSSIBLE.
- H. THE CONTRACTOR MUST LIMIT VEHICLE AND EQUIPMENT WASHING TO A DEFINED AREA WHEN COMPLETED ON THE PROJECT SITE. 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, OR SOLVENTS. NO ENGINE DEGREASING IS ALLOWED ONSITE.
- I. THE CONTRACTOR MUST PROVIDE EFFECTIVE CONTAINMENT FOR ALL LIQUID AND SOLID WASTES GENERATED BY WASHOUT OPERATIONS (CONCRETE, STUCCO, PAINT, FORM RELEASE OILS, CURING COMPOUNDS, AND OTHER CONSTRUCTION MATERIALS) RELATED TO THE PROJECT CONSTRUCTION ACTIVITY. NO WASHOUT WASTES MAY CONTACT THE GROUND, AND THE CONTAINMENT MUST BE DESIGNED SO THAT IT DOES NOT RESULT IN RUNOFF FROM THE WASHOUT OPERATIONS OR ARE LIQUID AND SOLID WASTES MUST BE DISPOSED OF PROPERLY AND IN COMPLIANCE WITH ALL MPCA RULES. A SIGN MUST BE INSTALLED ADJACENT TO EACH WASHOUT FACILITY THAT REQUIRES SITE PERSONNEL TO UTILIZE PROPER FACILITIES FOR DISPOSAL OF CONCRETE AND OTHER WASHOUT WASTES.

**7. FINAL STABILIZATION**

THE CONTRACTOR SHALL ENSURE FINAL STABILIZATION OF THE SITE. FINAL STABILIZATION REQUIRES THE FOLLOWING:

- A. ALL SOIL DISTURBING ACTIVITIES ARE COMPLETE AND A UNIFORM PERENNIAL VEGETATIVE COVER WITH A DENSITY OF 70% OVER THE ENTIRE PREVIOUS SURFACE HAS BEEN ACHIEVED, INCLUDING STABILIZATION OF ALL DITCHES AND SWALES.
- B. CONTRACTOR SHALL ENSURE THAT ALL PERMANENT STORMWATER TREATMENT SYSTEMS ARE CONSTRUCTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE NPDES PERMIT.
- C. CONTRACTOR SHALL REMOVE ALL TEMPORARY SYNTHETIC AND STRUCTURAL BMPs.

**RECORD AVAILABILITY AND RETENTION:**

THE CONTRACTOR SHALL MAKE THE SWPPP, INCLUDING ALL CERTIFICATES, REPORTS, RECORDS, OR OTHER INFORMATION OF THE PERMIT, AVAILABLE TO FEDERAL, STATE, OR LOCAL OFFICIALS WITHIN 72 HOURS UPON REQUEST FOR THE DURATION OF THE PERMIT AND FOR THREE YEARS FOLLOWING THE SUBMITAL OF THE NOTICE OF TERMINATION.

-THE CONTRACTOR SHALL MAKE THE RESPONSIBLE PERSON, TRAINED AS REQUIRED BY THIS PERMIT, AVAILABLE ON SITE WITHIN 72 HOURS WHEN REQUESTED BY THE MPCA FOR AN ONSITE INSPECTION.

**INSPECTION AND ENTRY:**

-THE CONTRACTOR MUST ALLOW ACCESS AS REQUIRED BY STATE REGULATIONS FOR REPRESENTATIVES OF THE MPCA OR ANY MEMBER THEREOF WHEN AUTHORIZED BY IT, TO ENTER UPON THE PROJECT SITE FOR THE PURPOSE OF OBTAINING INFORMATION, EXAMINATION OF RECORDS, OR CONDUCTING SURVEYS OR INVESTIGATIONS.

**NOTICE OF TERMINATION:**

-PERMITTEE MUST SUBMIT A NOTICE OF TERMINATION (NOT) WITHIN 30 DAYS IF ONE OR MORE OF THE FOLLOWING CONDITIONS HAVE BEEN MET:

1. FINAL STABILIZATION HAS BEEN ACHIEVED ON ALL PORTIONS OF THE SITE FOR WHICH PERMITTEE IS RESPONSIBLE INCLUDING THE REMOVAL OF ALL TEMPORARY MEASURES SUCH AS SILT FENCE.
2. ANOTHER OWNER HAS ASSUMED CONTROL OVER ALL PORTIONS OF THE SITE THAT HAVE NOT ACHIEVED FINAL STABILIZATION.

**8. CHANGES TO SWPPP**

-THE PERMITTEE MUST AMEND THE SWPPP AS NECESSARY TO INCLUDE ADDITIONAL REQUIREMENTS, SUCH AS ADDITIONAL OR MODIFIED BMPs, DESIGNED TO CORRECT PROBLEMS IDENTIFIED OR ADDRESS SITUATIONS WHENEVER:

1. THERE IS A CHANGE IN DESIGN, CONSTRUCTION, OPERATION OR MAINTENANCE, WEATHER OR SEASONAL CONDITIONS THAT HAVE SIGNIFICANT EFFECT ON DISCHARGE. INSPECTION IS REQUIRED WITHIN 24 HOURS OF A RAINFALL EVENT GREATER THAN ONE-HALF INCH.
2. INSPECTION OR INVESTIGATION BY SITE OPERATORS, LOCAL, STATE OR FEDERAL OFFICIALS INDICATE THE SWPPP IS NOT EFFECTIVE.
3. THE SWPPP IS NOT ACHIEVING THE GENERAL OBJECTIVES OF CONTROLLING POLLUTANTS OR THE SWPPP IS NOT CONSISTENT WITH THE TERMS AND CONDITIONS OF THIS PERMIT.
4. THE MPCA DETERMINES THAT DISCHARGE MAY CAUSE OR CONTRIBUTE TO NON-ATTAINMENT OF ANY APPLICABLE WATER QUALITY STANDARDS OR THE SWPPP DOES NOT INCORPORATE THE REQUIREMENTS RELATED TO AN APPROVED TOTAL MAXIMUM DAILY LOAD (TMDL).

**9. SWPPP CERTIFICATION:**

- THIS STORMWATER POLLUTION PREVENTION PLAN WAS PREPARED BY INDIVIDUAL(S) TRAINED IN ACCORDANCE WITH THE PERMIT'S TRAINING REQUIREMENTS FOR PREPARATION OF SWPPPS. INDIVIDUAL(S) PREPARING THIS SWPPP:

**PREPARED BY:**

KEVIN GARDNER, P.E.  
PIERCE PINI AND ASSOCIATES  
KEVIN@PIERCEPINI.COM  
763-537-1311

**TRAINING/CERTIFICATION:**

DATE OF TRAINING/CERTIFICATION: 2020  
CERTIFICATION PROGRAM: UNIVERSITY OF MINNESOTA - DESIGN OF CONSTRUCTION SWPPP  
ARDEN HILLS, MN  
INSTRUCTOR(S): DWAYNE STENLUND  
CERTIFICATION EXPIRATION: 2023

**PIERCE PINI & ASSOCIATES, INC.**  
**Consulting Civil Engineers**

9298 CENTRAL AVENUE NE  
SUITE 312  
BLAINE, MN 55434  
TEL 763-537-1311

**ST. STEPHEN'S EPISCOPAL CHURCH  
RETAINING WALL REPLACEMENT**

4439 W. 50th STREET  
EDINA, MINNESOTA

I hereby certify that this plan or drawing 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.

Company: PIERCE PINI & ASSOCIATES

Signed: *Kevin Gardner*

Name: Kevin Gardner

Date: 10/19/2020 Reg. No: 45815

Issued for: \_\_\_\_\_ Date: \_\_\_\_\_

Permit Set: 10/19/2020

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Copyright 2020 Pierce Pini & Associates, Inc.

Comm. No. 19-057

Drawn DM

Checked KG

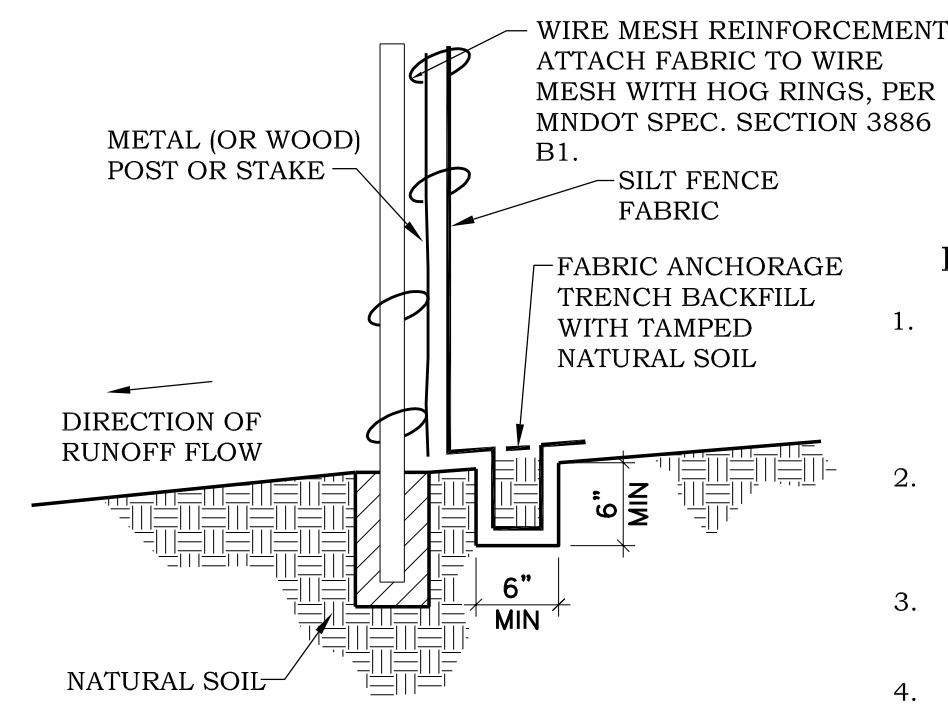
Date 10/19/2020

Drawing Title

**STORMWATER  
POLLUTION  
PREVENTION NOTES**

**C200**





NOTE: SILT FENCE SHALL FOLLOW MNDOT SPEC. SECTION 3886.

FIGURE 1 TYPICAL INSTALLATION FOR SILT FENCE

TABLE 1 MAXIMUM SLOPE LENGTH AND SLOPE FOR WHICH SILT FENCE IS APPLICABLE

SLOPE H:V	PERCENT	BY CALCULATION	BY CALCULATION	BY ACCEPTED DESIGN PRACTICES
		SILT FENCE STORAGE EQUALS 2 FT FOR A 100-YEAR EVENT	SILT FENCE STORAGE EQUALS 2 FT FOR A 2-YEAR EVENT OR 3 FT FOR A 100-YEAR EVENT	MAXIMUM SLOPE LENGTH
100:1	1%	400 FT	900 FT	100 FT
50:1	2%	200 FT	450 FT	75 FT
25:1	4%	100 FT	225 FT	75 FT
20:1	5%	80 FT	180 FT	75-50 FT
17:1	6%	67 FT	150 FT	50 FT
12.5:1	8%	50 FT	112 FT	50 FT
10:1	10%	40 FT	90 FT	50-25 FT
5:1	20%	20 FT	45 FT	25-15 FT
4:1	25%	16 FT	36 FT	15 FT
3:1	33%	12 FT	27 FT	15 FT
2:1	50%	8 FT	18 FT	15 FT

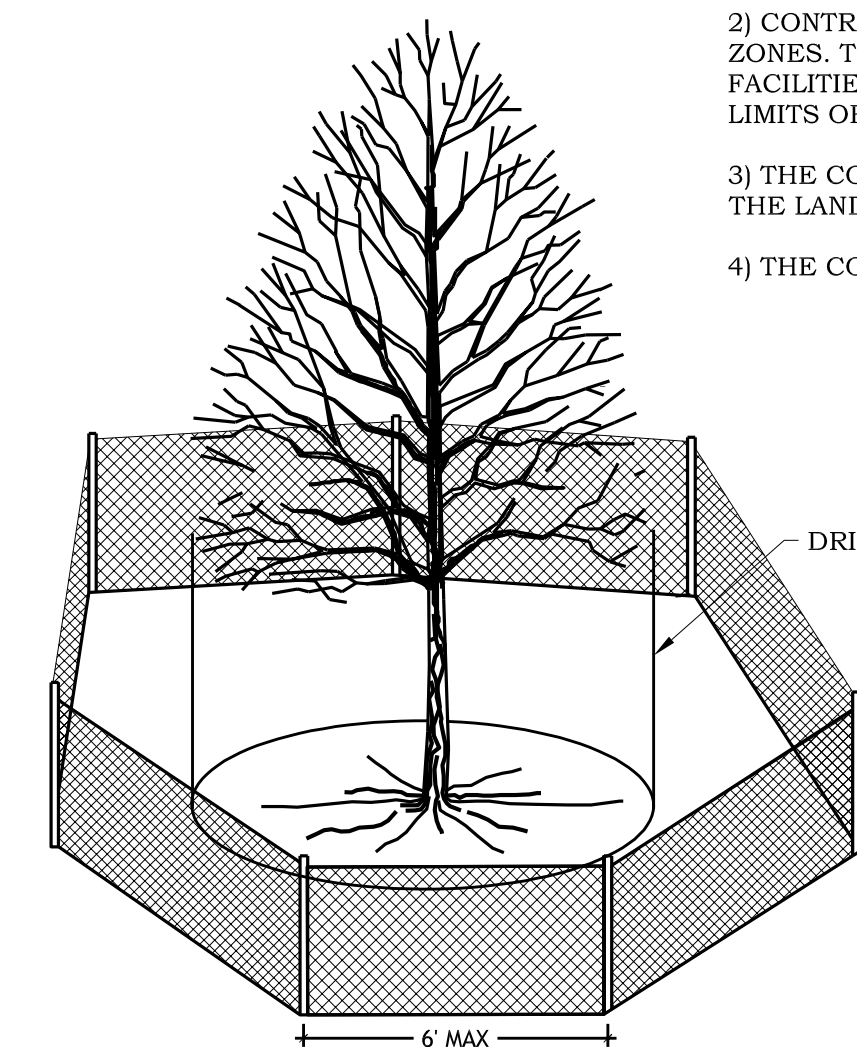
**DESIGN RECOMMENDATIONS**

- SILT FENCES SHOULD BE INSTALLED ON THE CONTOUR (AS OPPOSED TO UP AND DOWN A HILL) AND CONSTRUCTED SO THAT FLOW CANNOT BYPASS THE ENDS.
- ENSURE THAT THE DRAINAGE AREA IS NO GREATER THAN 1/4 ACRE PER 100 FT OF FENCE.
- MAKE THE FENCE STABLE FOR THE 10-YEAR PEAK STORM RUNOFF.
- WHERE ALL RUNOFF IS TO BE STORED BEHIND THE SILT FENCE, ENSURE THAT THE MAXIMUM SLOPE LENGTH BEHIND THE FENCE DOES NOT EXCEED THE SPECIFICATIONS SHOWN IN TABLE 1.

**1 HEAVY DUTY SILT FENCE**

C300

NO SCALE



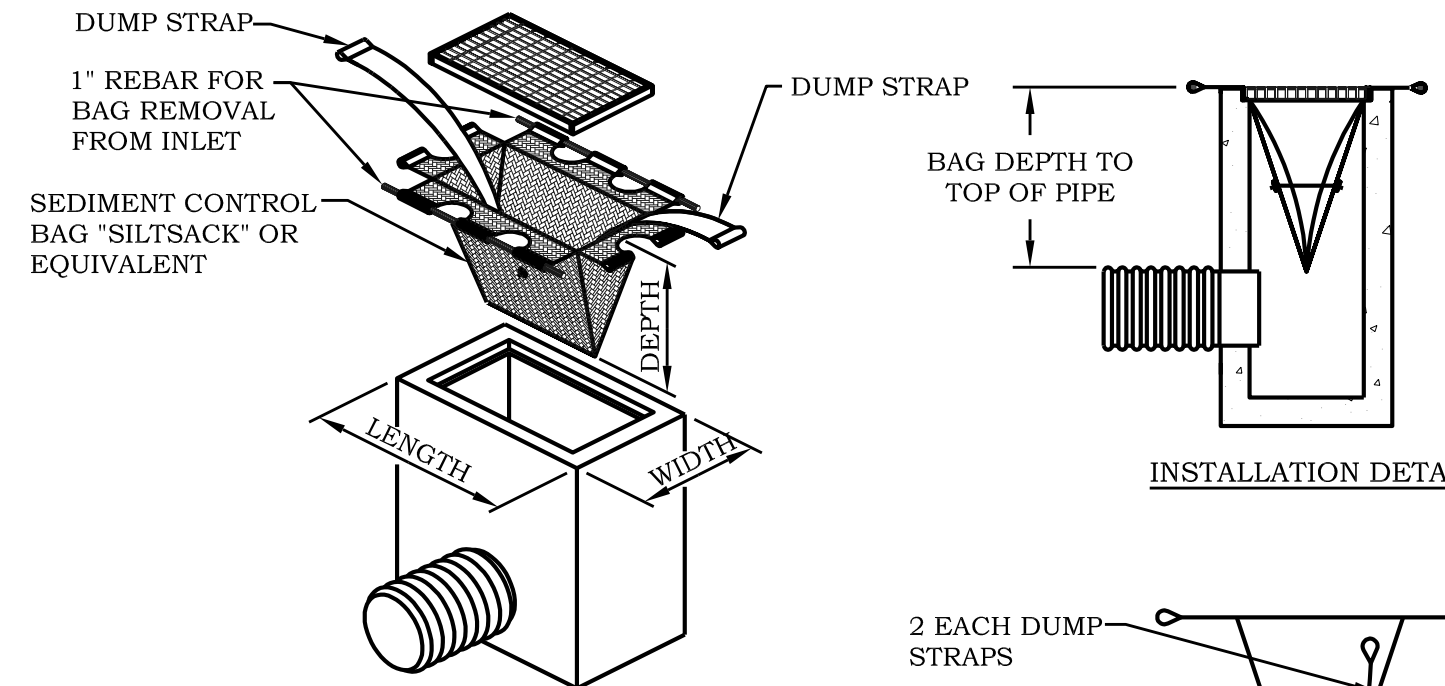
**5 TREE PROTECTION FENCING**

C300

**2 INLET PROTECTION**

C300

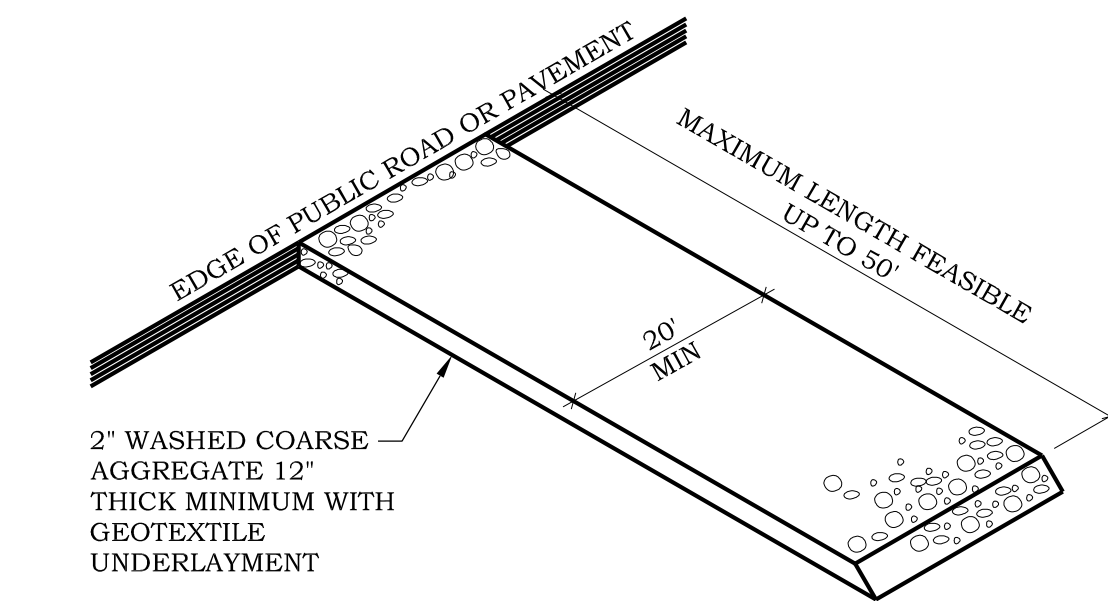
NO SCALE



CB STYLE	LENGTH	WIDTH	DEPTH
TYPE 1 CB	24"	20"	VARIES
TYPE 1 CCI	29.5"	24"	VARIES
USA G2	32.5"	27.5"	VARIES

**NOTES:**

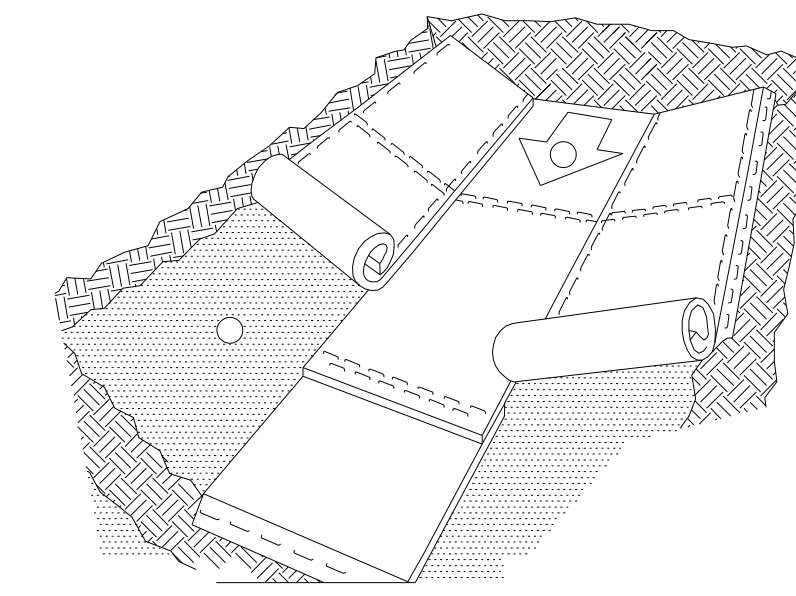
- THE DIMENSION CHART IS FOR STANDARD CATCH BASINS AND INLETS ONLY. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING THE CORRECT SIZE DEVICE FOR EACH INLET.
- FOR NON-STANDARD CATCH BASINS AND INLETS, THE CONTRACTOR SHALL MEASURE DIMENSIONS IN THE FIELD AND ORDER THE APPROPRIATE SIZE(S).
- THE INLET SEDIMENT CONTROL DEVICE SHALL BE OF HIGH FLOW DESIGN (200 GAL/MIN/FT), AS PER THE MANUFACTURER'S SPECS.
- THE SEDIMENT CONTROL DEVICE SHALL BE INSPECTED DAILY BY THE CONTRACTOR AND MAINTAINED A MINIMUM ONCE PER MONTH OR WITHIN THE 48 HOURS FOLLOWING A STORM EVENT. FILTER SHALL BE CLEANED IN A MANNER WHICH ENSURES THAT ALL SEDIMENT REMAINS ON SITE.
- SUBSTITUTION OF A SHEET OF FILTER FABRIC PLACED OVER THE OPENING OF THE INLET IS NOT APPROVED.
- RECESSED CURB INLET CATCH BASINS MUST BE BLOCKED WHEN USING FILTER FABRIC INLET SACKS, SIZE OF FILTER INLET SACK TO BE DETERMINED BY MANUFACTURER.
- THE FILTER SHALL BE REPLACED OR CLEANED WHEN THE BAG BECOMES HALF FULL.



**3 GRAVEL CONSTRUCTION ENTRANCE**

C300

NO SCALE



- BEFORE INSTALLATION APPLY TOPSOIL, FERTILIZER AND SEED TO SURFACE.
- BEGIN AT THE TOP OF THE CHANNEL, INSTALL MATS BY ANCHORING IN A 6" DEEP BY 6" WIDE TRENCH WITH APPROXIMATELY 12" OF MAT EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR WITH A ROW OF STAPLES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" PORTION OF MAT BACK OVER SEED AND SOIL. SECURE MATS WITH A WITH A ROW OF STAPLES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE MATS.
- ROLL CENTER MATS IN DIRECTION OF WATER FLOW IN BOTTOM OF CHANNEL.
- PLACE CONSECUTIVE AND ADJACENT MATS END OVER END (SHINGLE STYLE) WITH A MINIMUM 6" OVERLAP. USE A DOUBLE ROW OF STAPLES STAGGERED 4" APART AND 4" ON CENTER TO SECURE OVERLAPPED MATS.
- FULL LENGTH EDGE OF MATS AT TOP OF SIDE SLOPES MUST BE ANCHORED WITH A ROW OF STAPLES APPROXIMATELY 12" APART IN A 6" DEEP BY 6" WIDE TRENCH.
- THE TERMINAL END OF MATS MUST BE ANCHORED WITH A ROW OF STAPLES APPROXIMATELY 12" APART IN A 6" DEEP BY 6" WIDE TRENCH.
- BACKFILL AND SEED AFTER STAPLING.
- FOLLOW MANUFACTURER'S RECOMMENDATIONS FOR PROPER INSTALLATION.

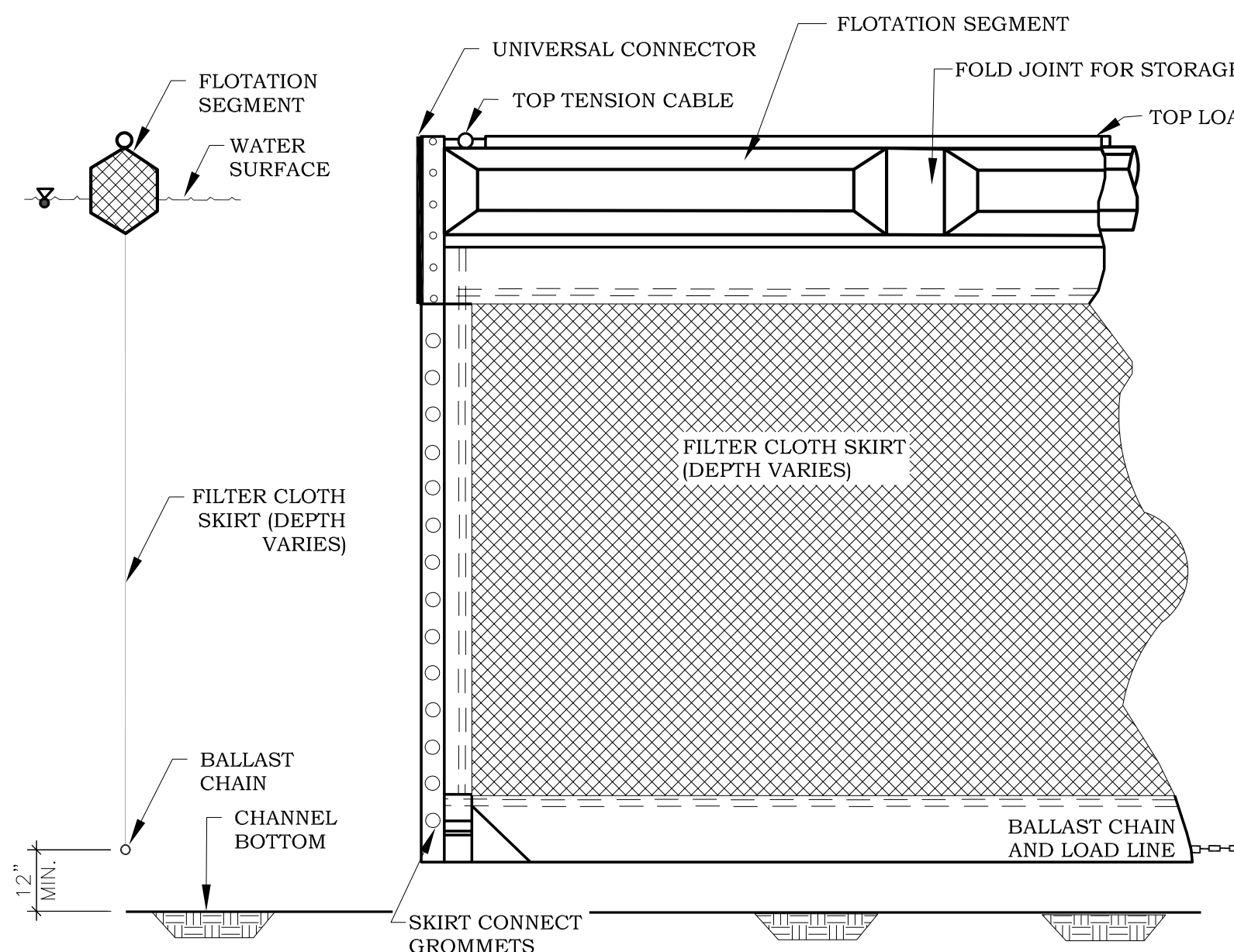
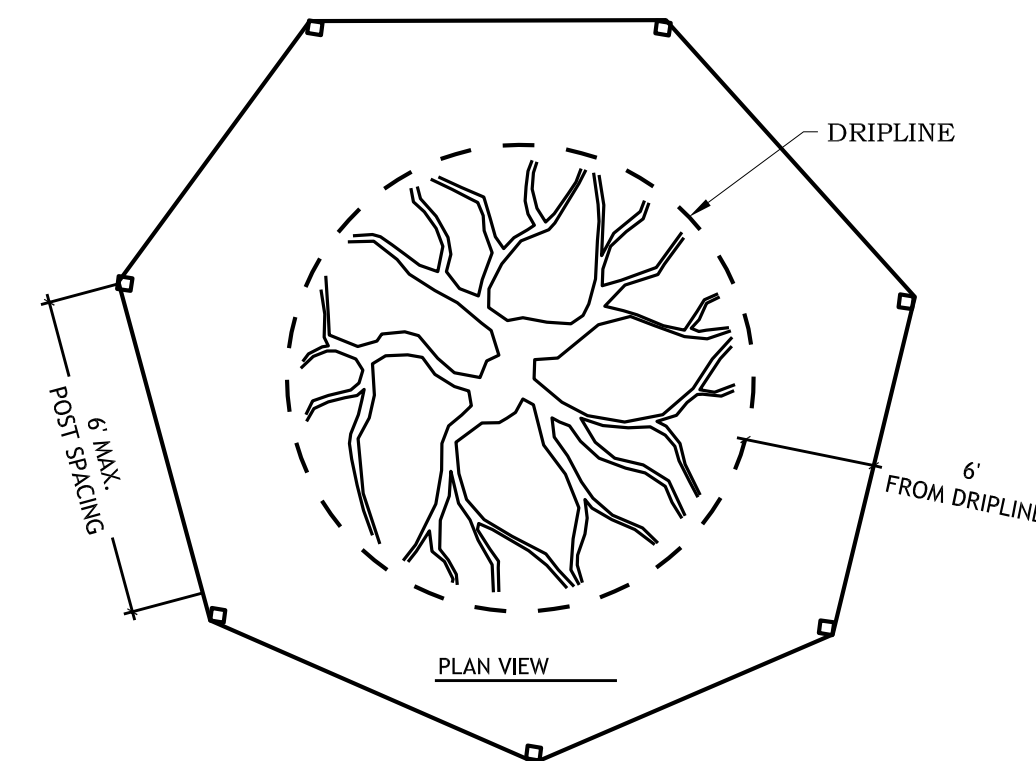
**4 EROSION STABILIZATION MAT**

C300

NO SCALE

**NOTES:**

- ALL TREE PROTECTION FENCING AND EROSION CONTROL FENCING SHALL BE INSTALLED ACCORDING TO THE PLANS PRIOR TO ANY DEMOLITION. AFTER DEMOLITION OR AS NECESSARY, TREE PROTECTION FENCING MAY BE RELOCATED WITH APPROVAL FROM THE LANDSCAPE ARCHITECT. ALL TREE PROTECTION FENCING AND EROSION CONTROL DEVICES SHALL BE MAINTAINED FOR THE DURATION OF THE CONSTRUCTION PERIOD.
- CONTRACTOR SHALL NOT STORE ANY MATERIALS OR PARK ANY VEHICLES IN TREE PROTECTION ZONES. THE FENCE SHALL PREVENT TRAFFIC MOVEMENT AND THE PLACEMENT OF TEMPORARY FACILITIES, EQUIPMENT, STOCKPILES AND SUPPLIES FROM HARMING VEGETATION WITHIN THE LIMITS OF PROTECTION.
- THE CONTRACTOR SHALL CLEANLY CUT ALL ROOTS EXPOSED BY GRADING AS DIRECTED BY THE LANDSCAPE ARCHITECT.
- THE CONTRACTOR SHALL USE DESIGNATED CONSTRUCTION ENTRANCES AND STAGING AREAS.



**6 FLOATING SILT CURTAIN**

C300

NO SCALE

I hereby certify that this plan or drawing 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.

Company: PIERCE PINI & ASSOCIATES

Signed: *Kevin Gardner*

Name: Kevin Gardner

Date: 10/19/2020 Reg. No: 45815

Issued for: \_\_\_\_\_ Date: \_\_\_\_\_

Permit Set: \_\_\_\_\_ 10/19/2020

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Copyright 2020 Pierce Pini & Associates, Inc.

Comm. No. 19-057

Drawn DM

Checked KG

Date 10/19/2020

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Permit Set

Drawing Title

STORMWATER POLLUTION PREVENTION DETAILS

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

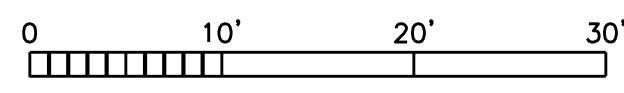
C300

WODDALE AVENUE

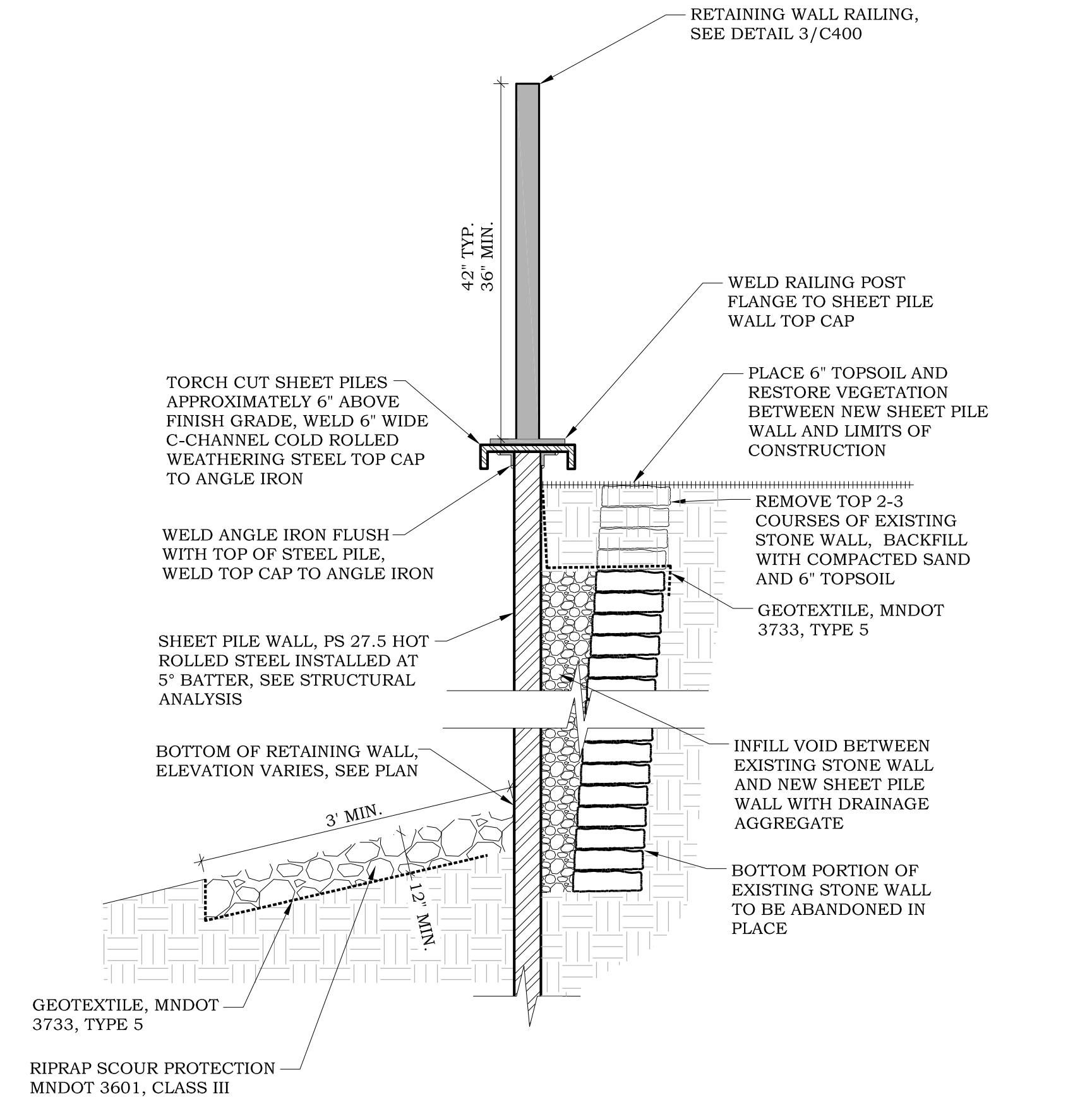
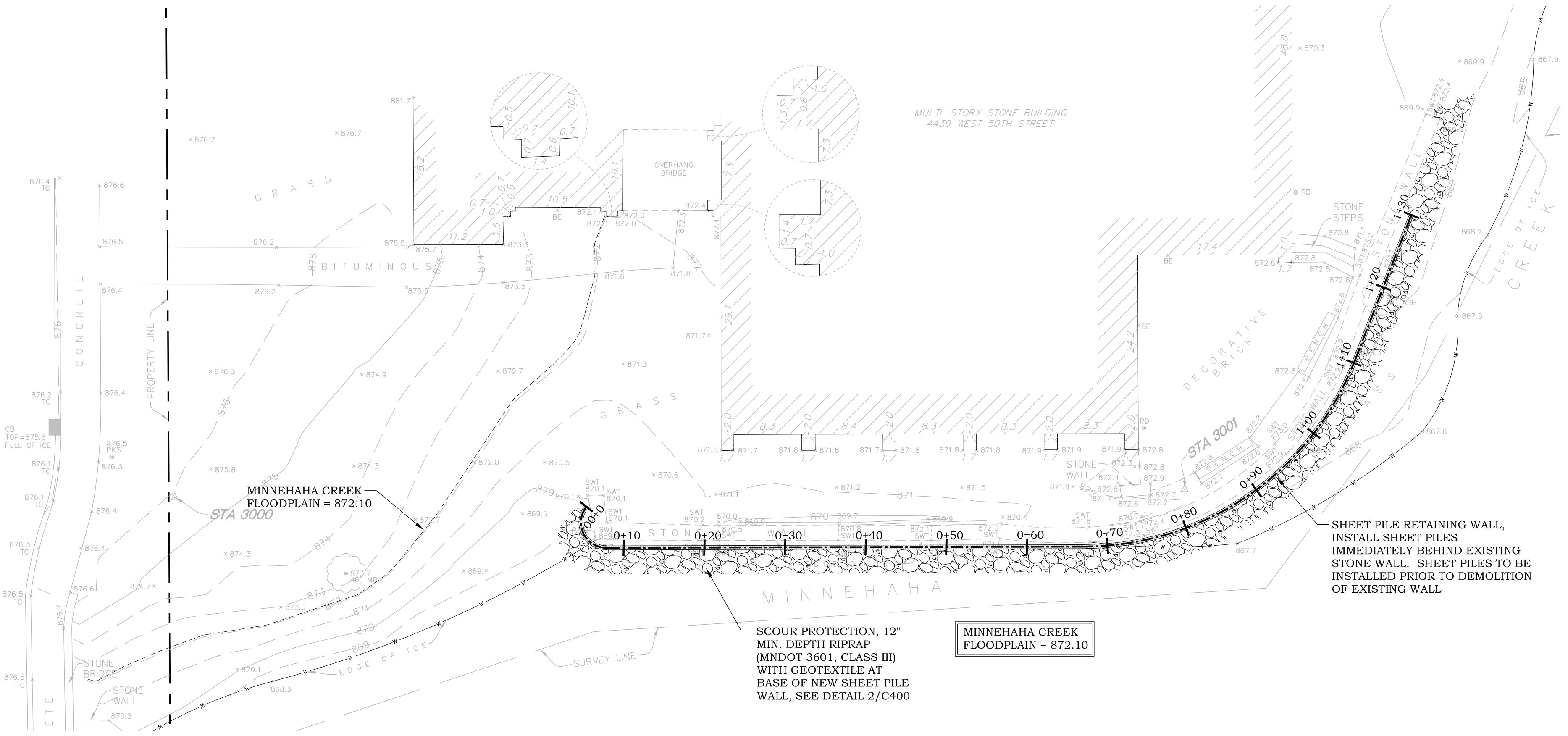


1  
C400

### RETAINING WALL REPLACEMENT PLAN

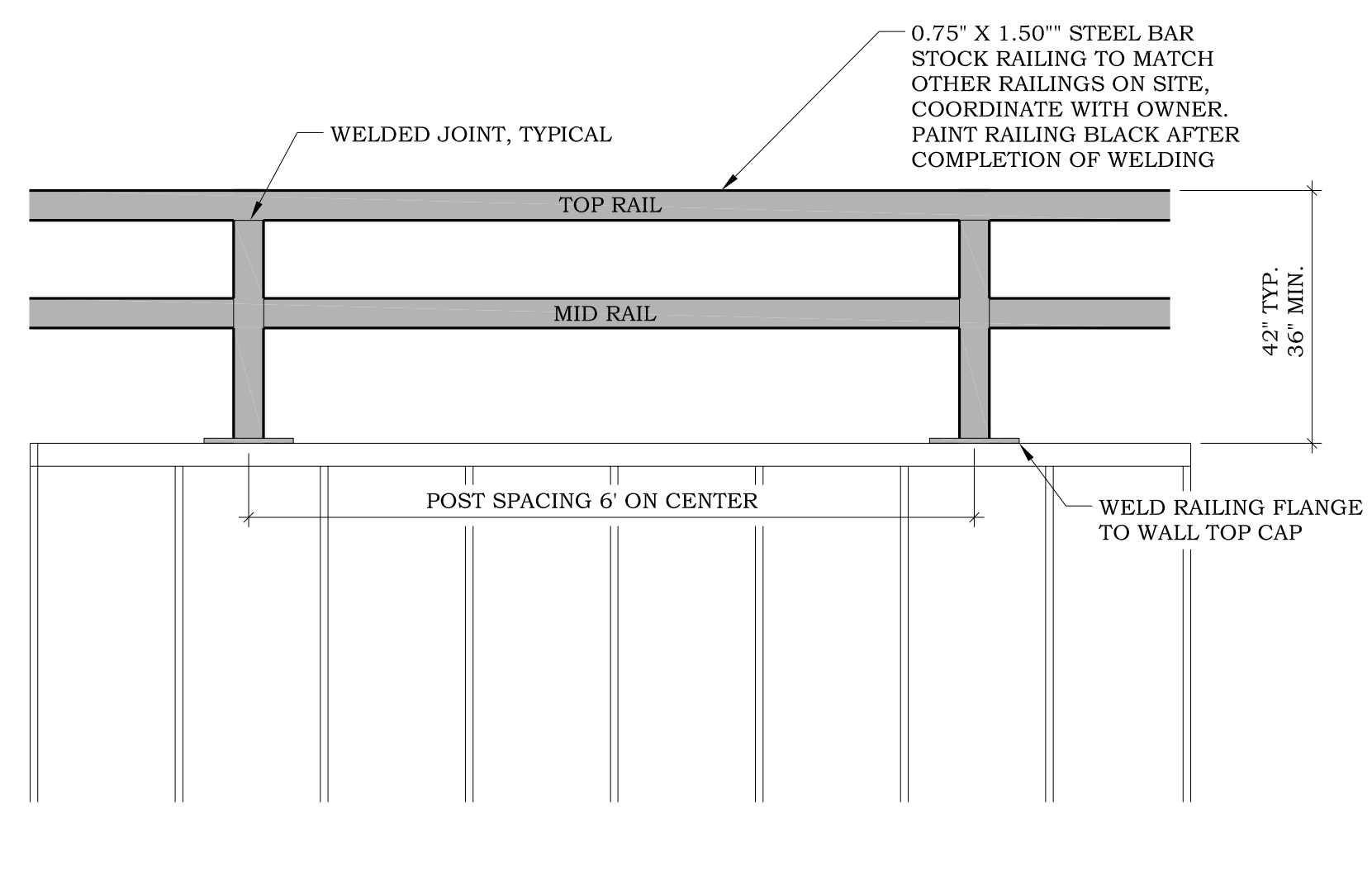
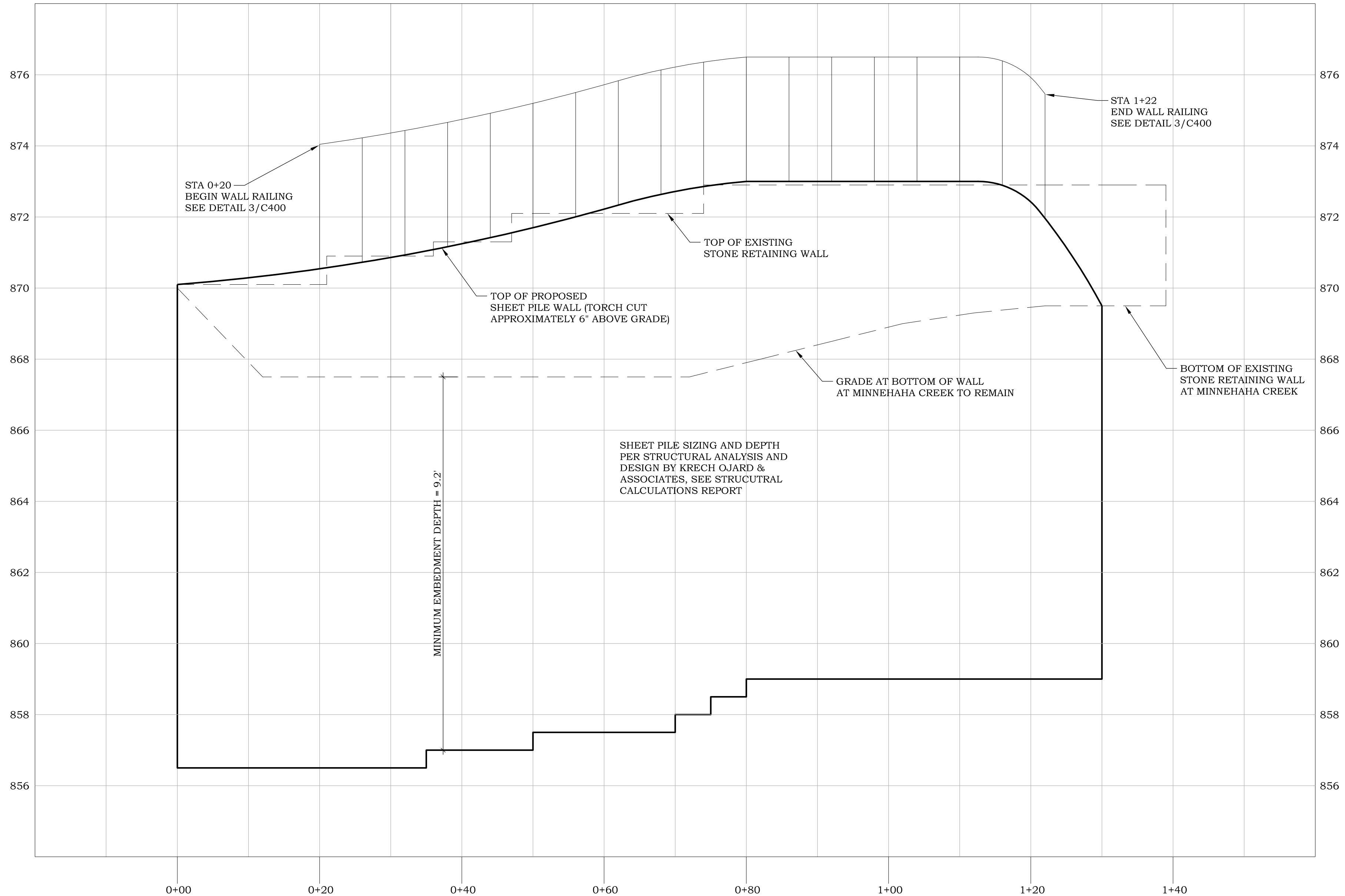


1"=10'



### 2 RETAINING WALL SECTION

NO SCALE



### 3 RETAINING WALL RAILING

NO SCALE

PIERCE PINI &  
ASSOCIATES, INC.  
Consulting Civil Engineers

9298 CENTRAL AVENUE NE  
SUITE 312  
BLAINE, MN 55434  
TEL 763-537-1311

## ST. STEPHEN'S EPISCOPAL CHURCH RETAINING WALL REPLACEMENT

4439 W. 50th STREET  
EDINA, MINNESOTA

I hereby certify that this plan or drawing 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.

Company: PIERCE PINI & ASSOCIATES

Signed: *Kevin Gardner*

Name: Kevin Gardner

Date: 10/19/2020 Reg. No: 45815

Issued for: Permit Set Date: 10/19/2020

Drawn: DM

Checked: KG

Date: 10/19/2020

Copyright 2020 Pierce Pini & Associates, Inc.

Comm. No. 19-057

Permit Set

Drawing Title

RETAINING WALL REPLACEMENT PLAN

Permit Set

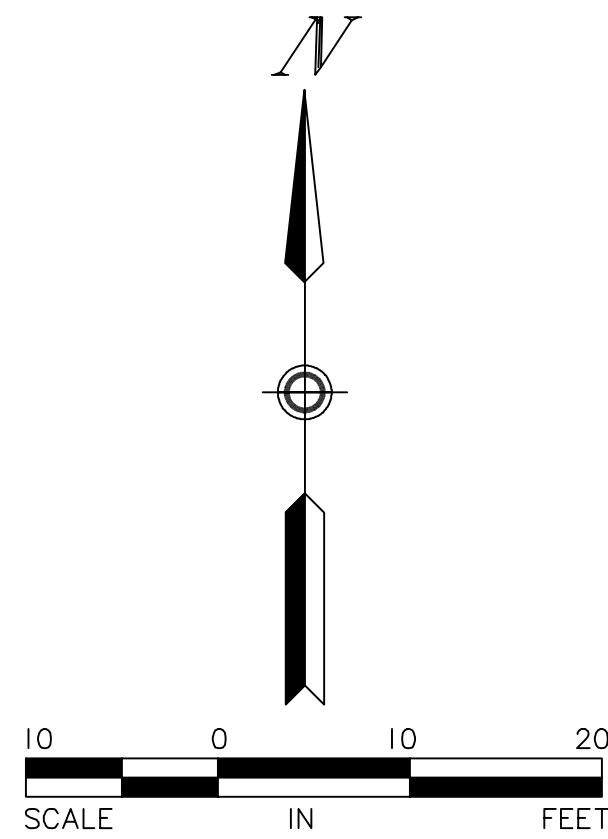
Drawing Title

RETAINING WALL REPLACEMENT PLAN

# C400



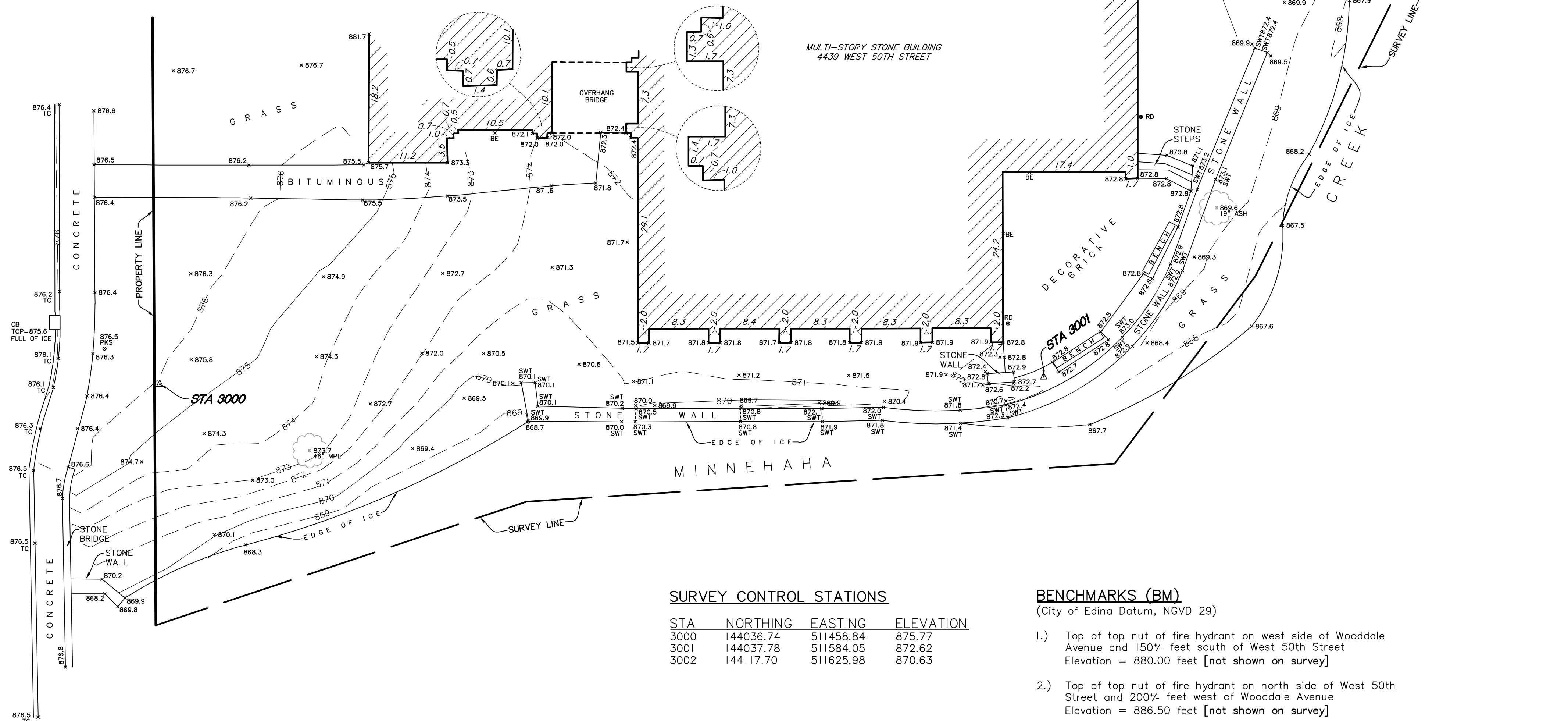




**LEGEND**

- BE Denotes building entrance
- CB Denotes catch basin
- PKS Denotes parking sign
- RD Denotes roof drain
- STA Denotes control station
- SWT Denotes top of stone wall
- TC Denotes top of concrete curb
- BIR Denotes Birch tree
- MPL Denotes Maple tree

**WOODDALE AVENUE**



**SURVEY CONTROL STATIONS**

STA	NORTHING	EASTING	ELEVATION
3000	144036.74	511458.84	875.77
3001	144037.78	511584.05	872.62
3002	144117.70	511625.98	870.63

**BENCHMARKS (BM)**

(City of Edina Datum, NGVD 29)

- 1.) Top of top nut of fire hydrant on west side of Wooddale Avenue and 150'- feet south of West 50th Street  
Elevation = 880.00 feet [not shown on survey]
- 2.) Top of top nut of fire hydrant on north side of West 50th Street and 200'- feet west of Wooddale Avenue  
Elevation = 886.50 feet [not shown on survey]
- 3.) Top of top nut of fire hydrant on north side of West 50th Street off east leg of Edina Court  
Elevation = 885.45 [not shown on survey]

**DESCRIPTION OF PROPERTY PARTIALLY SURVEYED**

(Per Deed Doc. No. 1978668)

Beginning at the center of Section 18, Township 28 North, Range 24 West of the 4th Principal Meridian; thence running South 89 degrees 40 minutes East along the East and West quarter line of said Section 393 feet; thence South and parallel with the North and South quarter line of said Section 97 feet to the center of Minnehaha Creek; thence running along the center line of said Creek as follows: South 48 degrees 48 minutes West 103 feet; South 84 degrees 56 minutes West 88 feet; South 48 degrees 03 minutes West 44 feet; South 22 degrees 50 minutes West 66 feet; South 83 degrees 48 minutes West 137.3 feet; thence West 33 feet to said North and South quarter line of Section 18; thence North along said North and South quarter line to the point of beginning; excepting therefrom the right of way of State Trunk Highway No. 90, Wooddale Avenue and West 50th Street, as some are not located and established over and across said tract, according to United States government survey thereof.

Property is located in Hennepin County, Minnesota.

**TITLE COMMITMENT**

This survey was prepared without the benefit of current title work. Easements, appurtenances, and encumbrances may exist in addition to those shown hereon. This survey is subject to revision upon receipt of a current title insurance commitment or attorney's title opinion.

**GENERAL NOTES**

- 1.) Survey coordinate basis: Hennepin County Coordinate System
- 2.) At the time fieldwork was performed for this survey, there was a significant amount of snow on the ground. Physical features were located to the best of our ability, but there may be additional features that were not visible and, therefore, not shown hereon.

**UTILITY NOTES**

- 1.) Utility information from plans and markings was combined with observed evidence of utilities to develop a view of the underground utilities shown hereon. However, lacking excavation, the exact location of underground features cannot be accurately, completely and reliably depicted. In addition, Gopher State One Call locate requests from surveyors may be ignored or result in an incomplete response. Where additional or more detailed information is required, excavation and/or a private utility locate request may be necessary.
- 2.) Other underground utilities of which we are unaware may exist. Verify all utilities critical to construction or design.
- 3.) Some underground utility locations are shown as marked onsite by those utility companies whose locators responded to our Gopher State One Call, ticket number 200360974.
- 4.) Contact GOPHER STATE ONE CALL at 651-454-0002 (800-252-1166) for precise onsite location of utilities prior to any excavation.

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

Dated this 18th day of February, 2020

SUNDE LAND SURVEYING, LLC.

By: *Leonard F. Carlson*  
Leonard F. Carlson, P.L.S. Minn. Lic. No. 44890

Revision	By	Date
	MT2	

Drawing Title:  
**PARTIAL BOUNDARY, LOCATION, TOPOGRAPHIC and UTILITY SURVEY FOR:**  
**ST. STEPHEN'S EPISCOPAL CHURCH**  
EDINA, MN

**SUNDE LAND SURVEYING**  
www.sunde.com

Main Office: 9001 East Bloomington Freeway (35W) • Suite 118  
Bloomington, Minnesota 55420-3435  
952-881-2455 (Fax: 952-888-9526)

Project: 2020-010	Bk/Pg: 1092/08	Date: 02/18/2020
Township: 28	Range: 24	Section: 18
File: 20200100001.dwg		Sheet: 1 of 1

PIERCE PINI & ASSOCIATES, INC.  
CONSULTING CIVIL ENGINEERS

October 19, 2020

Minnehaha Creek Watershed District  
Attn: Heidi Quinn  
15320 Minnetonka Boulevard  
Minnetonka, MN 55345

RE: St. Stephen's Church – Retaining Wall Replacement

Ms. Quinn,

St. Stephen's Episcopal Church, located at 4439 W. 50<sup>th</sup> Street in Edina, currently has a stacked stone retaining wall immediately adjacent to Minnehaha Creek that is failing and requires replacement. The church is proposing to replace the existing stacked stone wall with a new sheet pile wall in the same location and alignment in conformance with the documents dated October 19, 2020.

As part of the new wall design, scout protection in the form of riprap has been included as the base of the wall where the sheet piles interface with the creek bed. The MCWD Shoreline and Streambank Stabilization Rule requires that streambank areas be appropriately stabilized to encourage preservation of natural vegetation and the ecological integrity of riparian environments. As such, the streambank erosion intensity calculations help dictate appropriate stabilization methods.

Information from the MCWD District Engineer has been provided for the proposed wall replacement project that shows that the creek velocity during the 100-year event is approximately 5 fps and, based on a creek slope of 0.19%, a resultant shear stress of 0.6 lbs/sf. This placed the stream bank adjacent to the retaining wall in the low intensity category and would typically require biological stabilization practices.

Under the design flexibility portion of the streambank stabilization rule, where an applicant believes that, as a result of site specific conditions, the erosion intensity as calculated in the Streambank Erosion Intensity Calculation may inaccurately predict the degree of erosion, the District may approve alternative stabilization techniques if the applicant provides sufficient evidence to demonstrate that the proposed stabilization practice represents the minimal impact solution with respect to all other reasonable alternatives.

The retaining wall replacement project is requesting the use of the design flexibility rule mentioned above. The basis for the biological stabilization is to incorporate living plants into the shoreline or streambank. The use of such biological stabilization is not believed to be applicable or appropriate for this portion of the creek. The interface of the retaining wall with the creek bed is almost entirely below the water, even in periods of low water levels. Establishment of vegetation in such conditions would be very difficult and almost completely reliant on a period of drought to achieve water levels low enough. In addition, most biological species typically used for streambank stabilization would not sustain long periods of inundation or the forces from the constant stream velocity. The use of the proposed riprap for scour protection is believed to be a better long-term solution for under water applications.

If you have any questions, please feel free to give me a call at 763-537-1311.

Sincerely,



Kevin Gardner, PE



PIERCE PINI & ASSOCIATES, INC.  
CONSULTING CIVIL ENGINEERS



Photo #1 – Interface of retaining wall and creek



Photo #2 – Interface of retaining wall and creek






















**Legend**

 Approximate Soil Boring Location



**GPS Boring Locations**

Boring Number	Elevation (US Survey Feet)	Northing Coordinate	Easting Coordinate
SB-1	870.7	144046.961	511515.863

Referencing Minnesota County Coordinates Basis – Hennepin County (GEOID09 Conus model)

Disclaimer: Map and parcel data are believed to be accurate, but accuracy is not guaranteed. This is not a legal document and should not be substituted for a title search, appraisal, survey, or for zoning verification.

Haugo GeoTechnical  
 Services, LLC  
 2825 Cedar Avenue S.  
 Minneapolis, MN 55407

Soil Boring Location Sketch  
 4439 W. 50th Street  
 Edina, Minnesota

Figure #: 1  
 Drawn By: RD  
 Date: 5/5/20  
 Scale: None  
 Project #: 20-0235



Haugo GTS  
 2825 Cedar Ave South  
 Minneapolis, MN 55407  
 Telephone: 612-729-2959

# BORING NUMBER SB-1

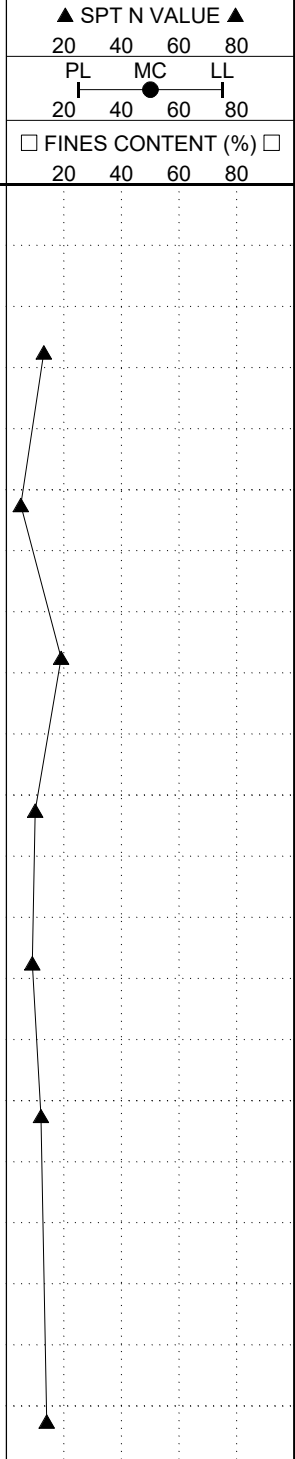
**CLIENT** St. Stephens Episcopal Church  
**PROJECT NUMBER** 20-0235  
**DATE STARTED** 4/30/20 **COMPLETED** 4/30/20  
**DRILLING CONTRACTOR** HGTS - 45  
**DRILLING METHOD** Hollow Stem Auger/Split Spoon  
**LOGGED BY** CP **CHECKED BY** PG  
**NOTES** Borehole grouted.

**PROJECT NAME** 4439 W. 50th Street  
**PROJECT LOCATION** Edina, MN  
**GROUND ELEVATION** 870.7 ft **HOLE SIZE** 3 1/4 inches  
**GROUND WATER LEVELS:**  
 ▽ **AT TIME OF DRILLING** 2.00 ft / Elev 868.70 ft  
**AT END OF DRILLING** ---  
**AFTER DRILLING** ---

GEOTECH BH PLOTS - GINT STD US LAB.GDT - 5/15/20 10:26 - C:\USERS\PUBLIC\DOCUMENTS\BENTLEY\GINT\PROJECTS\20-0235 4439 W. 50TH STREET.GPJ

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	MOISTURE CONT. (%)	NOTES	▲ SPT N VALUE ▲		
								20	40	60
0		Sandy Lean Clay, black, moist. (Topsoil)	AU 1							
	▽	Silty Sand, trace Gravel, dark brown, wet. (Possible FILL)	SS 2		1-6-7 (13)					
5		(CL) Sandy Lean Clay, trace Gravel, grey, moist, rather soft to very stiff. (Glacial Till)	SS 3		1-2-3 (5)					
			SS 4		4-9-10 (19)					
10			SS 5		3-4-6 (10)					
		(CH) Lean to Fat Clay, brown, wet, rather stiff. (Alluvium)	SS 6		3-4-5 (9)					
15			SS 7		2-4-8 (12)					
20		(SP) Poorly Graded Sand, medium to coarse grained, brown, waterbearing, medium dense. (Alluvium)	SS 8		4-7-7 (14)					

Bottom of borehole at 21.0 feet.







Criteria for Assigning Group Symbols and Group Names Using Laboratory Tests <sup>a</sup>				Soils Classification	
				Group Symbol	Group Name <sup>b</sup>
Coarse-grained Soils more than 50% retained on No. 200 sieve	Gravels More than 50% of coarse fraction retained on No. 4 sieve	Clean Gravels 5% or less fines <sup>e</sup>	$C_u \geq 4$ and $1 \leq C_c \leq 3$ <sup>c</sup>	GW	Well-graded gravel <sup>d</sup>
		Gravels with Fines More than 12% fines <sup>e</sup>	$C_u < 4$ and/or $1 > C_c > 3$ <sup>c</sup>	GP	Poorly graded gravel <sup>d</sup>
			Fines classify as ML or MH	GM	Silty gravel <sup>d f g</sup>
		Sands 50% or more of coarse fraction passes No. 4 sieve	Clean Sands 5% or less fines <sup>i</sup>	$C_u \geq 6$ and $1 \leq C_c \leq 3$ <sup>c</sup>	SW
	Sands with Fines More than 12% <sup>i</sup>		$C_u < 6$ and/or $1 > C_c > 3$ <sup>c</sup>	SP	Poorly graded sand <sup>h</sup>
			Fines classify as CL or CH	SM	Silty sand <sup>f g h</sup>
	Fines classify as CL or CH		SC	Clayey sand <sup>f g h</sup>	
	Fine-grained Soils 50% or more passed the No. 200 sieve	Silts and Clays Liquid limit less than 50	Inorganic	PI $> 7$ and plots on or above "A" line <sup>j</sup>	CL
PI $< 4$ or plots below "A" line <sup>j</sup>				ML	Silt <sup>k i m</sup>
Silts and clays Liquid limit 50 or more		Inorganic	Liquid limit - oven dried $< 0.75$	OL	Organic clay <sup>k i m n</sup>
			Liquid limit - not dried $< 0.75$	OH	Organic silt <sup>k i m o</sup>
		Organic	PI plots on or above "A" line	CH	Fat clay <sup>k i m</sup>
			PI plots below "A" line	MH	Elastic silt <sup>k i m</sup>
Highly Organic Soils	Primarily organic matter, dark in color and organic odor		PT	Peat	

**Particle Size Identification**

Boulders ..... over 12"  
Cobbles ..... 3" to 12"  
Gravel  
Coarse ..... 3/4" to 3"  
Fine ..... No. 4 to 3/4"  
Sand  
Coarse ..... No. 4 to No. 10  
Medium ..... No. 10 to No. 40  
Fine ..... No. 40 to No. 200  
Silt .....  $< \text{No. 200}$ , PI  $< 4$  or below "A" line  
Clay .....  $< \text{No. 200}$ , PI  $\geq 4$  and on or above "A" line

**Relative Density of Cohesionless Soils**

Very loose ..... 0 to 4 BPF  
Loose ..... 5 to 10 BPF  
Medium dense ..... 11 to 30 BPF  
Dense ..... 31 to 50 BPF  
Very dense ..... over 50 BPF

**Consistency of Cohesive Soils**

Very soft ..... 0 to 1 BPF  
Soft ..... 2 to 3 BPF  
Rather soft ..... 4 to 5 BPF  
Medium ..... 6 to 8 BPF  
Rather stiff ..... 9 to 12 BPF  
Stiff ..... 13 to 16 BPF  
Very stiff ..... 17 to 30 BPF  
Hard ..... over 30 BPF

- a. Based on the material passing the 3-in (75mm) sieve.
- b. If field sample contained cobbles or boulders, or both, add "with cobbles or boulders or both" to group name.
- c.  $C_u = D_{60} / D_{10}$ ,  $C_c = \frac{(D_{30})^2}{D_{10} \times D_{60}}$
- d. If soil contains  $\geq 15\%$  sand, add "with sand" to group name.
- e. Gravels with 5 to 12% fines require dual symbols:  
GW-GM well-graded gravel with silt  
GW-GC well-graded gravel with clay  
GP-GM poorly graded gravel with silt  
GP-GC poorly graded gravel with clay
- f. If fines classify as CL-ML, use dual symbol GC-GM or SC-SM.
- g. If fines are organic, add "with organic fines" to group name.
- h. If soil contains  $\geq 15\%$  gravel, add "with gravel" to group name.
- i. Sands with 5 to 12% fines require dual symbols:  
SW-SM well-graded sand with silt  
SW-SC well-graded sand with clay  
SP-SM poorly graded sand with silt  
SP-SC poorly graded sand with clay
- j. If Atterberg limits plot in hatched area, soil is a CL-ML, silty clay.
- k. If soil contains 10 to 29% plus No. 200, add "with sand" or "with gravel" whichever is predominant.
- l. If soil contains  $\geq 30\%$  plus No. 200, predominantly sand, add "sandy" to group name.
- m. If soil contains  $\geq 30\%$  plus No. 200 predominantly gravel, add "gravelly" to group name.
- n. PI  $\geq 4$  and plots on or above "A" line.
- o. PI  $< 4$  or plots below "A" line.
- p. PI plots on or above "A" line.
- q. PI plots below "A" line.

**Drilling Notes**

Standard penetration test borings were advanced by 3 1/4" or 6 1/4" ID hollow-stem augers unless noted otherwise. Jetting water was used to clean out auger prior to sampling only where indicated on logs. Standard penetration test borings are designated by the prefix "ST" (Split Tube). All samples were taken with the standard 2" OD split-tube sampler, except where noted.

Power auger borings were advanced by 4" or 6" diameter continuous-flight, solid-stem augers. Soil classifications and strata depths were inferred from disturbed samples augered to the surface and are, therefore, somewhat approximate. Power auger borings are designated by the prefix "B."

Hand auger borings were advanced manually with a 1 1/2" or 3 1/4" diameter auger and were limited to the depth from which the auger could be manually withdrawn. Hand auger borings are indicated by the prefix "H."

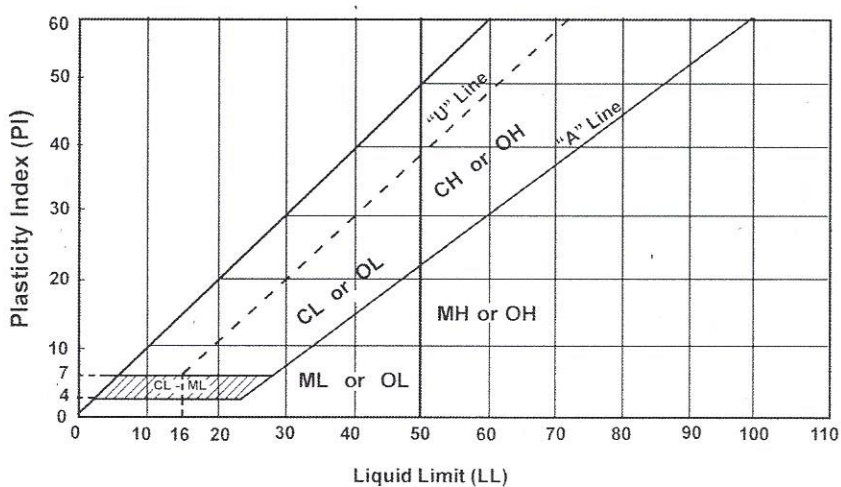
BPF: Numbers indicate blows per foot recorded in standard penetration test, also known as "N" value. The sampler was set 6" into undisturbed soil below the hollow-stem auger. Driving resistances were then counted for second and third 6" increments and added to get BPF. Where they differed significantly, they are reported in the following form: 2/12 for the second and third 6" increments, respectively.

WH: WH indicates the sampler penetrated soil under weight of hammer and rods alone; driving not required.

WR: WR indicates the sampler penetrated soil under weight of rods alone; hammer weight and driving not required.

TW indicates thin-walled (undisturbed) tube sample.

Note: All tests were run in general accordance with applicable ASTM standards.



Liquid Limit (LL)  
**Laboratory Tests**

DD	Dry density, pcf	OC	Organic content, %
WD	Wet density, pcf	S	Percent of saturation, %
MC	Natural moisture content, %	SG	Specific gravity
LL	Liquid limit, %	C	Cohesion, psf
PL	Plastic limit, %	$\phi$	Angle of internal friction
PI	Plasticity index, %	qu	Unconfined compressive strength, psf
P200	% passing 200 sieve	qp	Pocket penetrometer strength, tsf

**Krech Ojard & Associates, Inc.**

101 Putnam St.  
Eau Claire, WI  
715-552-7374

JOB TITLE St. Stephens Episcopal Church

sheet pile wall

JOB NO. 202020.01

SHEET NO. \_\_\_\_\_

CALCULATED BY LBL

DATE \_\_\_\_\_

CHECKED BY EMB

DATE 9/11/20

## STRUCTURAL CALCULATIONS

FOR

### St. Stephens Episcopal Church sheet pile wall

4439 W 50th St.  
Edina, MN 55424

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 ENGINEER UNDER THE LAWS  
OF THE STATE OF MINNESOTA.

NAME: EVAN M. BERGLUND

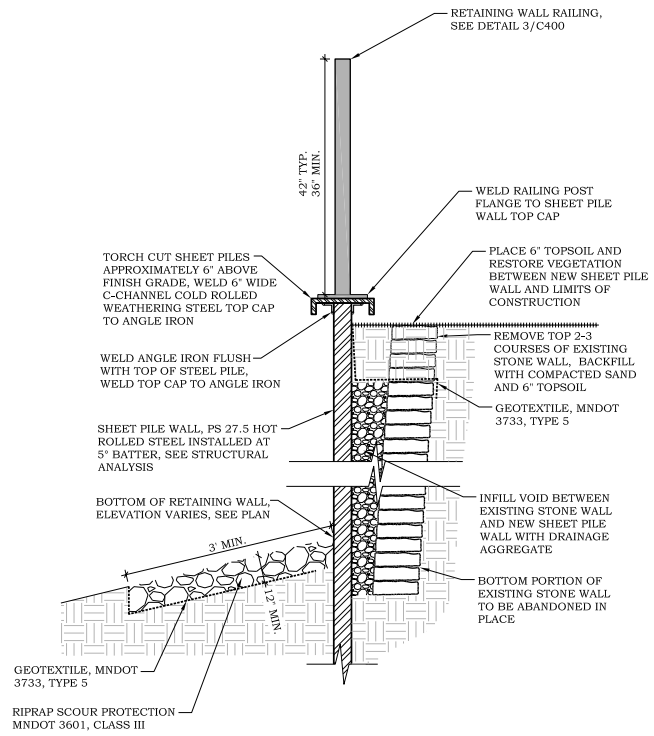
SIGNATURE: 

DATE: 9/11/20

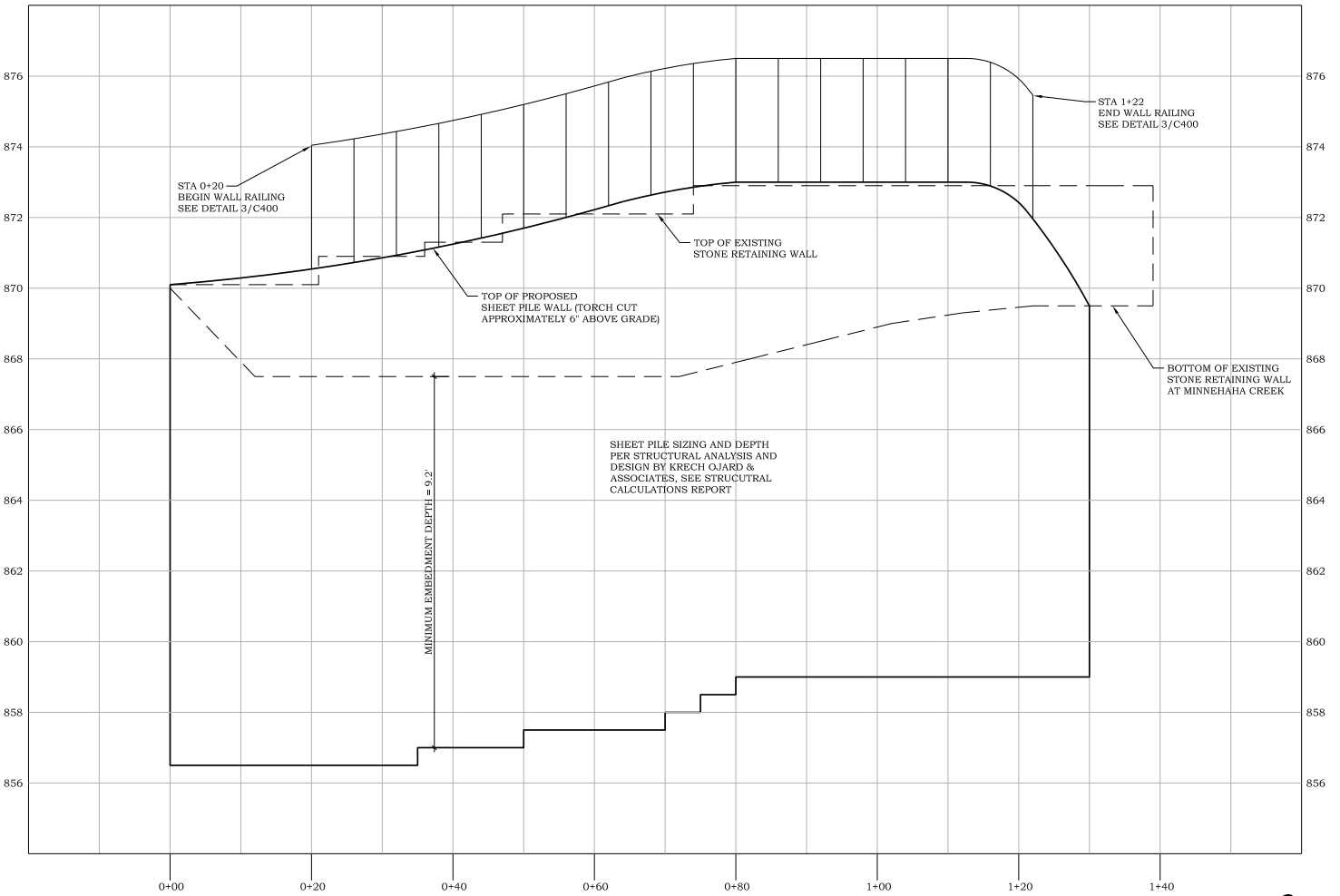
REG. No: 46769

Eight (8) total calculation  
package sheets, including this  
cover sheet

Wall profile and Retaining Wall  
 Section from sheet C400  
 Retaining Wall Replacement  
 Plan dated 09/11/2020  
 Issued For Permit set  
 Pierce Pini & Associates, Inc.  
 Consulting Civil Engineers



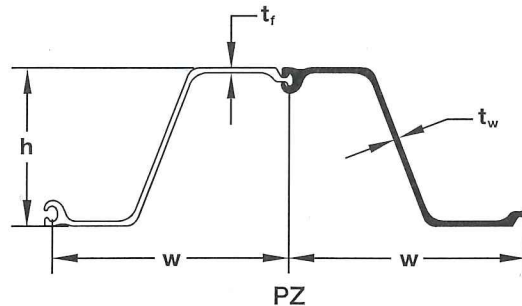
2  
 C400 **RETAINING WALL SECTION** NO SCALE



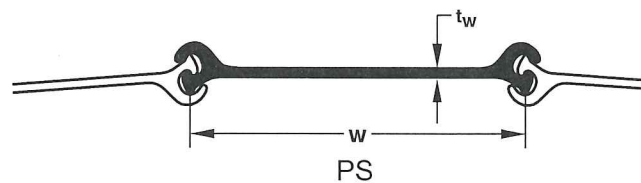


# PZ/PS

## PZ/PS Hot Rolled Steel Sheet Pile



SECTION	Width (w) in (mm)	Height (h) in (mm)	THICKNESS		Cross Sectional Area in <sup>2</sup> /ft (cm <sup>2</sup> /m)	WEIGHT		SECTION MODULUS		Moment of Inertia in <sup>4</sup> /ft (cm <sup>4</sup> /m)	COATING AREA	
			Flange (t <sub>f</sub> ) in (mm)	Wall (t <sub>w</sub> ) in (mm)		Pile lb/ft (kg/m)	Wall lb/ft <sup>2</sup> (kg/m <sup>2</sup> )	Elastic in <sup>3</sup> /ft (cm <sup>3</sup> /m)	Plastic in <sup>3</sup> /ft (cm <sup>3</sup> /m)		Both Sides ft <sup>2</sup> /ft of single (m <sup>2</sup> /m)	Wall Surface ft <sup>2</sup> /ft <sup>2</sup> of wall (m <sup>2</sup> /m <sup>2</sup> )
PZ 22	22.0 559	9.0 229	0.375 9.50	0.375 9.50	6.47 136.9	40.3 60.0	22.0 107.4	18.1 973	21.79 1171.4	84.38 11500	4.48 1.37	1.22 1.22
PZ 27	18.0 457	12.0 305	0.375 9.50	0.375 9.50	7.94 168.1	40.5 60.3	27.0 131.8	30.2 1620	36.49 1961.9	184.20 25200	4.48 1.37	1.49 1.49
PZ 35	22.6 575	14.9 378	0.600 15.21	0.500 12.67	10.29 217.8	66.0 98.2	35.0 170.9	48.5 2608	57.17 3073.5	361.22 49300	5.37 1.64	1.42 1.42
PZ 40	19.7 500	16.1 409	0.600 15.21	0.500 12.67	11.77 249.1	65.6 97.6	40.0 195.3	60.7 3263	71.92 3866.7	490.85 67000	5.37 1.64	1.64 1.64



SECTION	Width (w) in (mm)	Web (t <sub>w</sub> ) in (mm)	Maximum Interlock Strength k/in (kN/m)	Minimum Cell Diameter* ft (m)	Cross Sectional Area in <sup>2</sup> /ft (cm <sup>2</sup> /m)	WEIGHT		Elastic Section Modulus in <sup>3</sup> /sheet (cm <sup>3</sup> /sheet)	Moment of Inertia in <sup>4</sup> /sheet (cm <sup>4</sup> /sheet)	COATING AREA	
						Pile lb/ft (kg/m)	Wall lb/ft <sup>2</sup> (kg/m <sup>2</sup> )			Both Sides ft <sup>2</sup> /ft of single (m <sup>2</sup> /m)	Wall Surface ft <sup>2</sup> /ft <sup>2</sup> of wall (m <sup>2</sup> /m <sup>2</sup> )
PS 27.5	19.69 500	0.4 10.2	20 3500	30 9.14	8.09 171.2	45.1 67.1	27.5 134.3	3.3 54	5.3 221	3.65 1.11	1.11 1.11
PS 31	19.69 500	0.5 12.7	20 3500	30 9.14	9.12 193.0	50.9 75.7	31.0 151.4	3.3 54	5.3 221	3.65 1.11	1.11 1.11

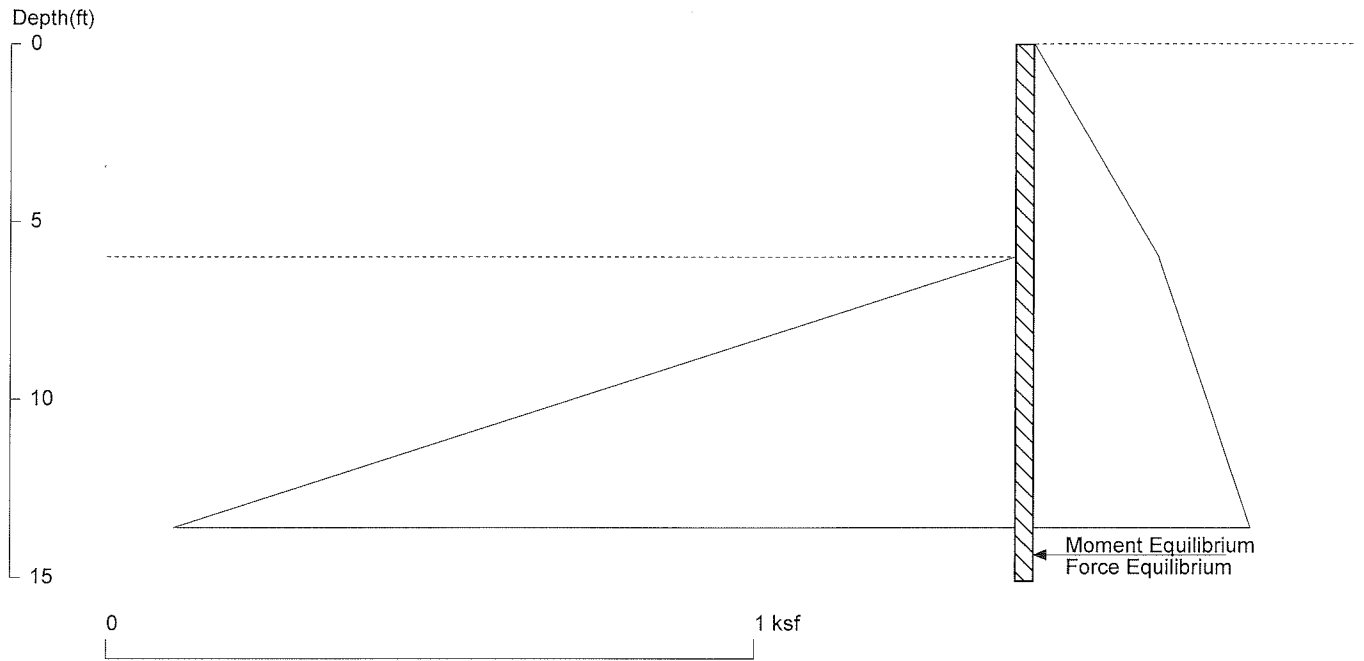
\* Minimum cell diameter cannot be guaranteed for piles over 65 feet (19.81 m) in length, or if piles are spliced. 58 Piles are needed to make a 30 foot diameter cell.



v2.sh

# St. Stephens

## Version 2 - 6 ft diff



<ShoringSuite> CIVILTECH SOFTWARE USA www.civiltech.com

Licensed to LBL Krech Ojard & Associates, Inc. Date: 6/29/2020  
 File: G:\Shoring8\New folder\StStevV2.sh8

Wall Height=6.0 Pile Diameter=1.0 Pile Spacing=1.0 Wall Type: 1. Sheet Pile

PILE LENGTH: Min. Embedment=9.13 Min. Pile Length=15.13 (in graphics and analysis)  
 MOMENT IN PILE: Max. Moment=3.42 per Pile Spacing=1.0 at Depth=10.31

**PILE SELECTION:**

Request Min. Section Modulus = 1.2 in<sup>3</sup>/ft=66.88 cm<sup>3</sup>/m, Fy= 50 ksi = 345 MPa, Fb/Fy=0.66  
 -> Piles meet Min. Section Requirements: Top Deflection is shown in (in)  
 AS59-5 (19.08) AS511-0 (17.41) AS512-0 (16.68) AS512-5 (16.28) PS28 (17.04)  
 PS32 (16.45) AS512-7 (15.96) PSA23 (11.64) PSX32 (12.89) PSA28 (10.60)  
 CL42 (10.60) CL47 (9.37) CL57 (7.67) LZ8 (5.88)

**DRIVING PRESSURES (ACTIVE, WATER, & SURCHARGE):**

Z1	P1	Z2	P2	Slope
*	Above	Base		
0.000	0.000	6.000	0.193	0.032185
*	Below	Base		
6.000	0.193	54.000	1.083	0.018550

**PASSIVE PRESSURES:**

Z1	P1	Z2	P2	Slope
*	Below	Base		
6.000	0.000	54.000	8.183	0.170473

**ACTIVE SPACING:**

No.	Z depth	Spacing
1	0.00	1.00
2	6.00	1.00

**PASSIVE SPACING:**

No.	Z depth	Spacing
1	0.00	1.00

UNITS: Width, Spacing, Diameter, Length, and Depth - ft; Force - kip; Moment - kip-ft

VZ.sh

\*\*\*\*\*

SHORING WALL CALCULATION SUMMARY  
The leading shoring design and calculation software  
Software Copyright by CivilTech Software  
www.civiltech.com

\*\*\*\*\*

ShoringSuite Software is developed by CivilTech Software, Bellevue, WA, USA.  
The calculation method is based on the following references:

1. FHWA 98-011, FHWA-RD-97-130, FHWA SA 96-069, FHWA-IF-99-015
2. STEEL SHEET PILING DESIGN MANUAL by Pile Buck Inc., 1987
3. DESIGN MANUAL DM-7 (NAVFAC), Department of the Navy, May 1982
4. TRENCHING AND SHORING MANUAL Revision 12, California Department of Transportation, January 2000
6. EARTH SUPPORT SYSTEM & RETAINING STRUCTURES, Pile Buck Inc. 2002
5. DESIGN OF SHEET PILE WALLS, EM 1110-2-2504, U.S. Army Corps of Engineers, 31 March 1994
7. EARTH RETENTION SYSTEMS HANDBOOK, Alan Macnab, McGraw-Hill. 2002
8. AASHTO HB-17, American Association of State and Highway Transportation Officials, 2 September 2002

UNITS: Width/Spacing/Diameter/Length/Depth - ft, Force - kip, Moment - kip-ft,  
Friction/Bearing/Pressure - ksf, Pres. Slope - kip/ft<sup>3</sup>, Deflection - in

-----  
Licensed to LBL Krech Ojard & Associates, Inc.  
Date: 6/29/2020 File: G:\Shoring8\New folder\StStevV2.sh8

Title: St. Stephens  
Subtitle: Version 2 - 6 ft diff

\*\*\*\*\*INPUT DATA\*\*\*\*\*

Wall Type: 1. Sheet Pile  
 Wall Height: 6.00  
 Pile Diameter: 1.00  
 Pile Spacing: 1.00  
 Factor of Safety (F.S.): 1.00  
 Lateral Support Type (Braces): 1. No  
 Top Brace Increase (Multi-Bracing): Add 15%\*  
 Embedment Option: 1. Yes  
 Friction at Pile Tip: No  
 Pile Properties:  
 Steel Strength, Fy: 50 ksi = 345 MPa  
 Allowable Fb/Fy: 0.66  
 Elastic Module, E: 29000.00  
 Moment of Inertia, I: 881.00  
 User Input Pile: W14X82

\* DRIVING PRESSURE (ACTIVE, WATER, & SURCHARGE) \*  
 No. Z1 top Top Pres. Z2 bottom Bottom Pres. Slope

1	*	Above	Base		
2	0.000	0.000	6.000	0.193	0.032185
3	*	Below	Base		
4	6.000	0.193	54.000	1.083	0.018550

\* PASSIVE PRESSURE \*

No.	Z1 top	Top Pres.	Z2 bottom	Bottom Pres.	Slope
1	*	Below	Base		
2	6.000	0.000	54.000	8.183	0.170473

\* ACTIVE SPACE \*

No.	Z depth	Spacing
1	0.00	1.00
2	6.00	1.00

\* PASSIVE SPACE \*

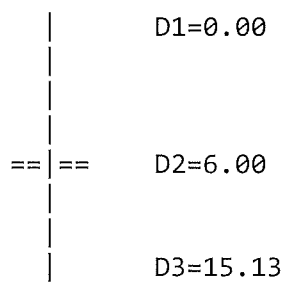
No.	Z depth	Spacing
1	0.00	1.00

- \*For Tieback: Input1 = Diameter; Input2 = Bond Strength
- \*For Plate: Input1 = Diameter; Input2 = Allowable Pressure
- \*For Deadman: Input1 = Horz. Width; Input2 = Passive Pressure;
- \*For Sheet Pile Anchor: Input1 = Horz. Width; Input2 = Passive Slope;

\*\*\*\*\*CALCULATION\*\*\*\*\*

The calculated moment and shear are per pile spacing. Sheet piles are per one foot or meter; Soldier piles are per pile.

Top Pressures start at depth = 0.00



D1 - TOP DEPTH

D2 - EXCAVATION BASE

D3 - PILE TIP (20% increased, see EMBEDMENT Notes below)

MOMENT BALANCE:  $M=0.00$  AT DEPTH=13.61 WITH EMBEDMENT OF 7.61

FORCE BALANCE:  $F=0.00$  AT DEPTH=15.13 WITH EMBEDMENT OF 9.13

The program calculates an embedment for moment equilibrium, then increase the embedment by 20% to reach force equilibrium.

A Balance Force=2.36 is developed from depth=13.61 to depth=15.13

Total Passive Pressure = Total Active Pressure, OK!

\*\*\*\*\*RESULTS\*\*\*\*\*

\* EMBEDMENT Notes \*

Based on USS Design Manual, first calculate embedment for moment equilibrium, then increased by 20 to 40 % to get the total design depth.

The embedment for moment equilibrium is 7.61

\* The 20% increased the total design depth is 9.13 (Used by Program) ←

The 30% increased the total design depth is 9.89

The 40% increased the total design depth is 10.65

Based on AASHTO 2002 Standard Specifications, first calculate embedment for moment equilibrium, then add safety factor of 30% for temporary shoring; add safety factor of 50% for permanent shoring.

The embedment for moment equilibrium is 7.61

Add 30% embedment for temporary shoring is 9.89

Add 50% embedment for permanent shoring is 11.41

\* BASED ON USS DESIGN MANUAL (20% increased), PROGRAM CALCULATED MINIMUM EMBEDMENT = 9.13

TOTAL MINIMUM PILE LENGTH = 15.13

\* MOMENT IN PILE (per pile spacing)\*

Pile Spacing: sheet piles are one foot or one meter; soldier piles are one pile.

Overall Maximum Moment = 3.42 at 10.31

Maximum Shear = 2.34

Moment and Shear are per pile spacing: 1.0 foot or meter

\* VERTICAL LOADING \*

Vertical Loading from Braces = 0.00

Vertical Loading from External Load = 0.00

Total Vertical Loading = 0.00

\*\*\*\*\*SHEET PILE SELECTION\*\*\*\*\*

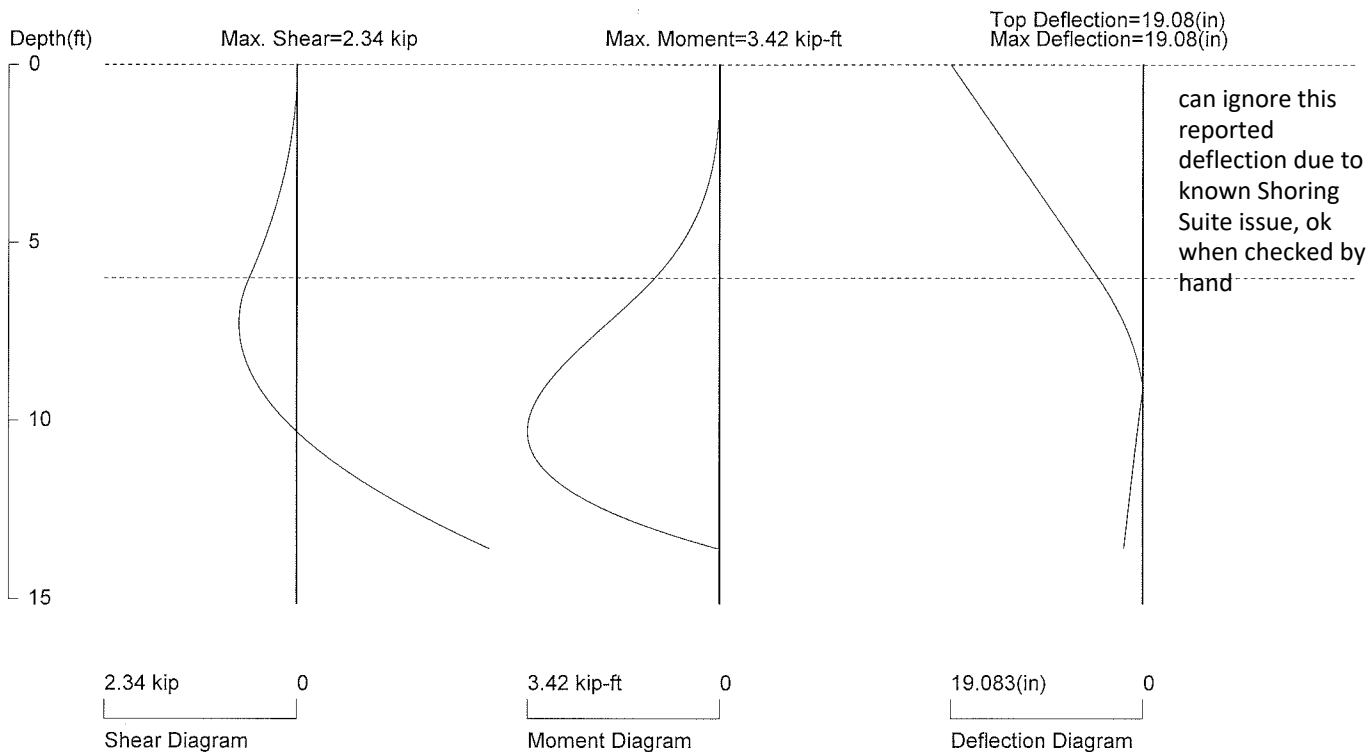
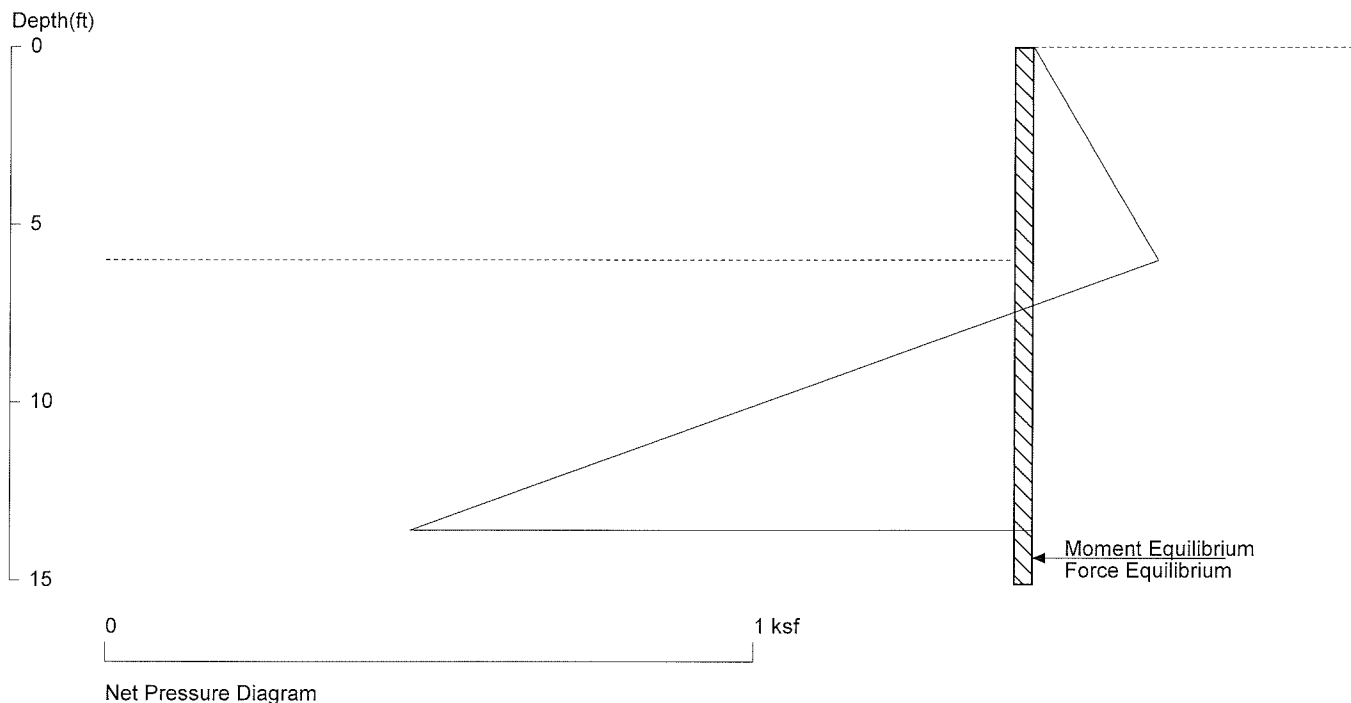
Overall Maximum Moment = 3.42 at 10.31

Request Min. Section Modulus = 1.24 in<sup>3</sup>/ft = 66.88 cm<sup>3</sup>/m,  $F_y= 50 \text{ ksi} = 345 \text{ MPa}$ ,

$F_b/F_y=0.66$

V2.sh

# St. Stephens Version 2 - 6 ft diff



## PRESSURE, SHEAR, MOMENT, AND DEFLECTION DIAGRAMS

Based on pile spacing: 1.0 foot or meter

First Suitable Pile: AS59-5: E (ksi)=29000.0, I (in<sup>4</sup>)/foot=2.5

File: G:\Shoring8\New folder\StStevV2.sh8

**From:** [Chris Kellick](#)  
**To:** [Thomas Dietrich](#)  
**Subject:** Letter About St. Stephens, Board Meeting 83  
**Date:** Monday, January 11, 2021 10:09:34 AM

---

What to say?

Nothing actionable, that's for sure. So I enter into the record this "writ of helplessness", words of record for how a neighbor feels let down by another neighbor.

St. Stephen's has made the decision to replace what is clearly a failing wall in an attempt to solve an engineering problem; the mitigation of creek-shore degradation in order to preserve the structural integrity of their infrastructure, a building, grandfathered into the future by its existence prior to rules that would have prevented its very construction. Engineers have evaluated an engineering problem and proscribed an engineering solution that will, presumably, slow, to the greatest extent possible, the sinking of a building built on sponge earth and sugar sand.

As this design will be evaluated on its engineering viability and environmental impact, there is little to be said that will have any bearing on this committee's process; of that I am certain.

But Aesthetics matter...to some of us. I'm sure, from the church's perspective, this design will have little or no aesthetic impact, as what little pokes above grade from their vantage point can be camouflaged with stone and flora.

But what of the vertical rise from the creek to "grade" that will be thrust in our faces? Though it's pictured in the engineering spec sheet, there is no mention of its impact on those that will live with the change from an architecturally appropriate stone wall to a grey steel and rust colored billboard.

When putting up a fence in Edina, one has to place the "good side" toward one's neighbor. This is a peace-keeping gesture that works in many a neighborhood across the country. But here, a structure that has the same height and impact on its neighbors as any fence, is simply allowed to shove its aesthetically blind ugliness outward with complete disregard for its impact.

I hope this engineering solution has the desired effect of minimizing creek-shore degradation in order to maintain the viability of St. Stephen's infrastructure. The church believes it is doing what it "has to do" relative to the time and money it has to work with. That said, the impact of this project on their neighbors has not been considered, and now we are expected to live with it.

Chris Kellick  
5013 Wooddale Ln  
Edina, MN 55424  
(612) 787-6104

**From:** [Tom Rose](#)  
**To:** [Thomas Dietrich; CityCouncil@EdinaMN.gov](mailto:Thomas.Dietrich@CityCouncil@EdinaMN.gov)  
**Cc:** [amanda rose](#); [Tom Rose](#); [Andrea Kellick](#)  
**Subject:** FW: St. Stephens Replacement Retaining Wall  
**Date:** Monday, January 11, 2021 11:29:39 AM

---

**To: MCWD Operations and Programs Committee Meeting Member and Minnehaha Creek Board of Managers**

As a 19 year resident of Edina and a 15 year resident at 5011 Wooddale Lane, my family and I have enjoyed the lovely Minnehaha Creek meandering through our back yard.

The setting is lovely with the stone wall complimenting the WPA-era stone Wooddale Avenue bridge over Minnehaha Creek.

Additionally during the dark winter months, the scene is quite beautiful with the moonlight interacting with the snow, trees and gentle flow of water.

Very nice.

Very beautiful.

A true Currier and Ives moment.

A wonderful benefit to the purchase of this home. A consideration in the value of a home.

Now the time is upon us to have the failing stone retaining wall replaced. It has done a very good job in its lifetime.

It has been a good neighbor.

I would naturally hope that it would be replaced with an exact copy. However that may not be possible due to costs.

Perhaps with something that is not quite exactly the same but with a much similar aesthetic and feel.

Mmmmm.....sorry. Still too expensive.

The wall submitted before the Creek District is a metal sheet.....soon to be rusted.....an enticing target for graffiti. I know people will say no one would tag the wall.....people also said no one would jump off the Wooddale Avenue Bridge into the creek for good old summer time fun.

This retaining wall is front and center to our backyard experience.

No one sees the wall except those paddling the creek and those who live on the creek.

The church never sees the wall except for a couple of rows of stones with a cap on top.

May I also add that originally planned upgrades to the Wooddale Avenue Bridge over Minnehaha Creek at Utley Park were derailed due to the historical (and beautiful) nature of the bridge.

I would wish the committee take into consideration that this eyesore of a replacement retaining wall

will remain an eyesore long after we all have moved on. Affecting property values as well. I think it is prudent not to look at this project as being accepted solely upon meeting hydrological and engineering considerations but by taking into consideration how it fits holistically with the natural beauty of the creek.

This is Edina.

This is the Minnehaha Creek.

This is a special city.

This is a beautiful waterway we are lucky to have in our city.

We are proud of our architectural heritage.

We are proud of how nature intertwines with this city.

That is shown everyday in the building requirements in the Country Club District.

Homeowners come and go. Parishioners come and go. Employees of the MCWD come and go.

The Creek and it's beauty lives forever.....

I believe St. Stephens as well as the MCWD should take these considerations into account prior to approving this retaining wall design.

Best Regards

Tom Rose

5011 Wooddale Avenue

310-871-5962