RILEY PURGATORY BLUFF CREEK WATERSHED DISTRICT

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

Riley Purgatory Bluff Creek Watershed District Permit Application Review

Permit No: 2025-001

Considered at Board of Managers Meeting: February 5, 2025

Received complete: January 22, 2025

Applicant: Hennepin County Regional Railroad Authority

Consultant: Stonebrooke, Jessica Griffen

Project: Bluff 16 Culvert Replacement– The proposed project includes replacing the existing cast-in-place culvert conveying Riley Creek under the Minnesota River Bluffs LRT Regional Trail just north of Pioneer Trail.

Location: Between Lake Riley and Pioneer Trail, Eden Prairie, MN

Reviewer: Scott Sobiech, PE, Barr Engineering

Proposed Board Action

Manager _____ moved and Manager _____ seconded adoption of the following resolutions based on the permit report that follows and the presentation of the matter at the February 5, 2025 meeting of the managers. Resolved that the application for Permit 2025-001 is approved, subject to the conditions and stipulations set forth in the Recommendations section of the attached report;

Resolved that on determination by the RPBCWD administrator that the conditions of approval have been affirmatively resolved, the RPBCWD president or administrator is authorized and directed to sign and deliver Permit 2025-001 to the applicant on behalf of RPBCWD.

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

Rule Conformance Summary

Rule	Issue	Conforms to RBPCWD Rules?	Comments
B	**Floodplain Management and Drainage Alterations**	Yes	
C	**Erosion Control Plan**	See Comment	See rule-specific permit condition C1 related to providing name and contact information for the individual responsible for erosion control.
D	**Wetland and Creek Buffer**	See Comment	See rule-specific permit condition D1 related to maintenance agreement execution.
G	**Waterbody Crossing and Structures**	See Comment	see rule-specific permit condition G1 related maintenance agreement execution.
L	**Permit Fee**	NA	Governmental Entity
M	**Financial Assurance**	NA	Governmental Entity

Project Background

An existing, deteriorating cast in place 5.8' by 4.8' concrete box culvert carries Riley Creek underneath the 10' wide regional recreational trail. The channel bottom in the culvert consists of natural stone and cobbles. The applicant proposes to replace the deteriorating culvert, which conveys Riley Creek flows under the Minnesota River Bluffs LRT Regional Trail just north of Pioneer Trail. The project proposes no new impervious surface and does not propose alteration of stormwater flows at the site boundary, so the RPBCWD stormwater-management criteria do not apply.

The project site information is summarized below:

Description	
Total Site Area (acres)	8.95
Existing Site Impervious (acres)	0.02
Post Construction Site Impervious (acres)	0.02
New (Increase) in Site Impervious Area (acres)	0
Disturbed impervious surface (acres)	0
Total Disturbed Area (acres)	0.19
Length of streambank affected (feet)	215

Exhibits:

1. Permit Application received January 3, 2025 (Notified applicant on January 14, 2025 that submittal was incomplete, materials completing the application received January 22, 2025)
2. HCRRA CulvertBluff_16 watershed permit application memo dated January 3, 2025 (revised January 22, 2025
3. Hydraulics Memo dated January 3, 2025 (updated summary table received January 23, 2025)
4. Wetland Assessment Report dated September 2023
5. Design Plans Sheets (23 sheets) dated January 3, 2025 (revision dated January 22, 2025 and January 23, 2025)
6. Existing and proposed conditions SWMM Models for 2, 10, 100-year events received January 3, 2025
7. HEC-RAS modeling received January 3, 2025 (revision received January 22, 2025).
8. Cut/Fill analysis dated January 22, 2025

9. Response to HEC-RAS review comments received January 22, 2025

Rule Specific Permit Conditions

Rule B: Floodplain Management and Drainage Alterations

Because the project disturbs land below the 100-year flood elevation of Riley Creek (El. 860.23 ft upstream and El. 859.21 ft downstream) to replace the culvert under the regional trail, the project must conform to the requirements in the RPBCWD Floodplain Management and Drainage Alteration rule (Rule B, Subsection 2.1).

The proposed culvert replacement project conforms to Rule B, Subsections 3.1 because no buildings are proposed to be constructed or reconstructed as part of the project. Because the proposed project is a culvert replacement regulated under Rule G and no impervious other than the culvert is proposed, the restriction on creekside imperviousness in Rule B, Subsection 3.4, is met. Placement of fill below the 100-year flood elevation is prohibited unless fully compensatory storage at the same elevation (+/- 1 foot) and within the floodplain of the same waterbody is provided (Rule B, Subsection 3.2). The RPBCWD Engineer concurs with the earthwork tables provided on the floodplain impact exhibit demonstrating that 26 cubic yards of fill will be placed, and 50.6 cubic yards of compensatory storage will be created below the 100-year floodplain, thus providing a net increase in the floodplain storage. The earthwork tables also confirm the compensatory storage is provided at the same elevation (+/- 1 foot) below the 100-year floodplain. The RPBCWD engineer concurs with the hydraulic analysis conducted by the applicant's engineer which demonstrates that the project will not materially alter surface flows. The analysis also demonstrates that the flow velocities for the 2-, 10-, and 100-year events will be slightly lower than existing conditions. The analysis also confirms that the flood elevations will be unchanged under proposed conditions. These factors indicate that the proposed replacement project is not reasonably likely to have adverse impact (Rule B, Subsection 3.3). The applicant provided an erosion control plan that meets the standards in Rule C (see rule C analysis), thus conforming to Rule B, subsection 3.5. A note on the plans requires activities be conducted to minimize the potential transfer of aquatic invasive species conforming to Rule B, Subsection 3.6.

The proposed project conforms to the floodplain management and drainage alteration requirements of Rule B.

Rule C: Erosion and Sediment Control

Because the applicant proposes to disturb more than 50 cubic yards of material the project must conform to the requirements in the RPBCWD Erosion and Sediment Control rule (Rule C, Subsection 2.1).

The erosion control/turf restoration plan prepared by the Bolton and Menk includes installation of silt fence, inlet protection for storm sewer catch basins, rock berm construction entrances, daily inspection, placement of a minimum of 6 inches of topsoil with 5 percent organic matter, decompaction of areas

compacted during construction, and retention of native topsoil onsite. To conform to the RPBCWD Rule C requirements the following revisions are needed:

C1. The Applicant must provide the name and contact information of the individual responsible for erosion control at the site. RPBCWD must be notified if the responsible individual changes during the permit term.

Rule D: Wetland and Creek Buffers

Because the proposed work triggers a permit under RPBCWD Rule B, F, and G for the crossing replacement work and Riley Creek is a public waters watercourse, Rule D, Subsections 2.1a and 3.1c requires buffer adjacent to this watercourse. (There are no regulated wetlands on the project site.)

Riley Creek flows through the project site and requires an average buffer width of 50 feet from the creek centerline, minimum 30 feet in accordance with Rule D, Subsection 3.2.b.v for a public waters watercourse. The erosion control/turf restoration plan shows the buffer zone and marker locations. Per Rule D, subsection 3.2c, the buffer must encompass all or part of a slope averaging 18% or greater. Because the drawing shows the buffer area extends to the top of slopes that average steeper than 18% the project conforms to Rule B, subsection 3.2c. As shown in the table below, the provided average buffer width to conform to the steep slopes provision (Rule B, subsection 3.2c) is greater than the required average buffer width to conform to Rule D, subsection 3.2.b.v, indicating that both requirements are met.

Regulated Feature	Required Minimum Width (ft)	Required Average Width (ft)	Required Area for 50-foot Average Width (sq ft)	Required Area Accounting for Steep Slope (sq ft)	Provided Area (sq ft)	Provided Minimum Width (ft)	Provided Average Width (ft)
Riley Creek	30	50	11,530	19,377	19,585	50	85

A note on the erosion control/turf restoration plan indicates the Applicant is proposing revegetating disturbed areas within the proposed buffer with native vegetation in conformance with Rule D, Subsection 3.3. A note is included on the plan sheet indicating the project will be constructed so as to minimize the potential transfer of aquatic invasive species (e.g., zebra mussels, Eurasian watermilfoil, etc.) to the maximum extent possible conforming to Rule D, Subsection 3.5.

To conform to the RPBCWD Rule D the following revisions are needed:

D1. Buffer areas and maintenance requirements must be documented in an agreement approved by RPBCWD. As a public entity, HCRRA may comply with this requirement by entering into a maintenance agreement with the RPBCWD.

Rule G: Waterbody Crossings and Structures

Because the project will replace the existing culvert conveying Riley Creek, a public watercourse, under the Minnesota River Bluffs LRT Regional Trail, the project requires conformance with RPBCWD's Waterbody Crossings and Structures Rule (Rule G). The criteria in subsections 3.1, 3.2 and 3.7 apply to the project. The proposed work falls within the scope of Minnesota Department of Natural Resources General Permit #2015-1192. (Rule F: Stormwater and Streambank Stabilization is not triggered because the riprap being installed in bank of the creek is to prevent erosion more so than stabilize the bank.)

This work represents a public benefit by replacing a deteriorating culvert to reduce erosion and maintain public-use trail connectivity (Rule G, Subsection 3.1a)

The proposed crossing was modeled in HEC-RAS by the applicant. The analysis shows that the proposed 100-year frequency flood elevation upstream of the crossing (El. 860.23 ft) will match the existing elevation 860.23 feet. and the downstream flood elevation will also match the existing flood elevation of 859.21 feet, thus confirming the project will not increase the flood stage of the existing water body conforming to Rule G, Subsection 3.2a.

This portion of Riley Creek is not used for navigation, thus the requirement of Rule G, Subsection 3.2b does not apply to this project. Because the proposed riprap can withstand flow velocities of 10 fps, which is great than the modeled velocity leaving the culvert (7.1 fps) the project will not adversely affect water quality or cause increased scour, erosion or sedimentation and will provide a stable creek system consistent with the criteria in Rule G, Subsection 3.2c. Because this is a replacement of the existing crossing in place, wildlife will continue to be able to use Riley Creek as it is used under existing conditions, thus preserving wildlife passage. The proposed layer of sediment/riprap in the bottom of the replaced culvert will be provided for aquatic organism passage, consistent with Rule G, Subsection 3.2d.

A no-build option would result in flows through the existing deteriorating culvert continuing to cause erosion along the culvert. The feasibility efforts conducted by the applicant considered repairing the culvert in place or a full culvert replacement by open cutting the crossing. Repairing the culvert in place was dismissed because it did not represent a long-term solution. In addition, a repair in place would not address the steep side slopes and likely require similar site disturbance to the full replacement option. Because the replacement option addresses the structural integrity of the culvert and underlying foundation, trail stability, and steep side slope concerns while maintaining existing flow characteristics, this option is the minimal-impact solution, complying with Rule G, Subsection 3.2e.

The stormwater pollution prevention plan includes a note directing the contractor that no work affecting the creek bed shall occur between March 15 and June 15 which is consistent with watercourse requirement in Rule G, Subsection 3.7a. Banks will be immediately stabilized after completion of permitted work and revegetated as soon as growing conditions allow (Rule G, Subsection 3.7b). A note is included on the plan sheet indicating the project will be constructed so as to minimize the potential

transfer of aquatic invasive species (e.g., zebra mussels, Eurasian watermilfoil, etc.) to the maximum extent possible (Rule G, Subsection 3.7c).

Rule G, Subsection 3.7d requires compliance with the applicable criteria in subsections 3.3 of Rule F. Construction drawings submitted confirm that riprap is sized appropriately in relation to the erosion potential. The project proposes the use field stone riprap having an average size of 9 inches in diameter (MNDOT Class III Riprap). Because the proposed riprap can withstand flow velocities of 10 fps, which is great than the anticipated velocity leaving the culvert (7.1 fps), the riprap design is consistent with the erosion intensity for the flow in Riley Creek at this location, thus conforming to Rule F, Subsection 3.3b (i). Drawings confirm the proposed crossing will follow the existing alignment of the watercourse (Rule F, Subsection 3.3b (ii) and 3.3b (iv)). The standard riprap detail included with the drawings indicates that a granular transitional layer and a geotextile fabric will be placed, thus conforming to Rule F, Subsection 3.3b (iii). The drawing illustrate that the proposed riprap will extend to the top of bank, which is lower than the 100-year flood elevation, thus conforming to Ruel F Subsection 3.3b (v). The riprap design reflects energy dissipation and stabilization necessary to minimize erosion at the watercourse and is not placed for cosmetic purposes per Rule F, Subsection 3.3b (vi).

To conform to the RPBCWD Rule G the following revisions are needed:

G1. Permit applicant must provide a draft maintenance agreement for the waterbody crossing for RPBCWD approval, in accordance with Rule G, Section 5. As a public entity, HCRRA may comply with this requirement by entering into a maintenance agreement with the RPBCWD.

Applicable General Requirements:

1. The RPBCWD Administrator and Engineer shall be notified at least three days prior to commencement of work.
2. Construction must be consistent with the plans, specifications, and models that were submitted by the applicant that were the basis of permit approval. The date(s) of the approved plans, specifications, and modeling are listed above and on the permit. The granting of the permit does not in any way relieve the permittee, its engineer, or other professional consultants of responsibility for the permitted work.
3. The grant of the permit does not relieve the permittee of any responsibility to obtain approval of any other regulatory body with authority.
4. The issuance of this permit does not convey any rights to either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state, or local laws or regulations.
5. In all cases where the doing by the permittee of anything authorized by this permit involves the taking, using or damaging of any property, rights or interests of any other person or persons, or of any publicly owned lands or improvements or interests, the permittee, before proceeding therewith, must acquire all necessary property rights and interest.

6. RPBCWD's determination to issue this permit was made in reliance on the information provided by the applicant. Any substantive change in the work affecting the nature and extent of applicability of RPBCWD regulatory requirements or substantive changes in the methods or means of compliance with RPBCWD regulatory requirements must be the subject of an application for a permit modification to the RPBCWD.
7. If the conditions herein are met and the permit is issued by RPBCWD, the applicant, by accepting the permit, grants access to the site of the work at all reasonable times during and after construction to authorized representatives of the RPBCWD for inspection of the work.

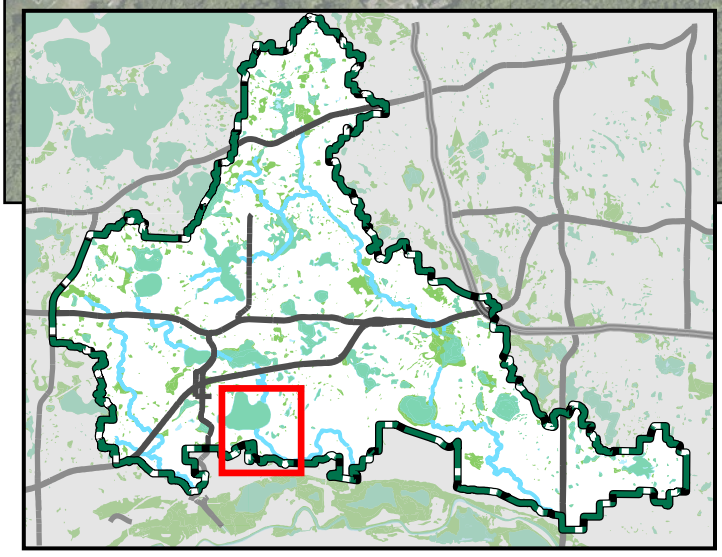
Findings

1. The proposed project includes the information necessary, plan sheets and erosion control plan for review.
2. The proposed project conforms to Rule B.
3. The proposed project will conform to Rules C, D, and G if the conditions listed above are met.
4. Under Minnesota Department of Natural Resources General Permit 2015-1192 (attached to this report), approval of work under RPBCWD rule(s) G constitutes approval under applicable DNR work in waters rules. Compliance with conditions on approval and payment of applicable fees, if any, are necessary to benefit from general permit approval and the responsibility of the applicants.

Recommendation:

Approval of the permit contingent upon:

1. Continued compliance with General Requirements.
2. The Applicant must provide the name and contact information of the individual responsible for erosion control at the site. RPBCWD must be notified if the responsible individual changes during the permit term.
3. Permit applicant must provide a draft maintenance agreement and inspection plan for the waterbody crossings and buffer areas. Once approved by RPBCWD, the HCRRA must enter an agreement with RPBCWD to maintain the project facilities in accordance with the plan.



N

Feet

0 1,000

Permit Location Map

HCRRA BLUFF 16 CULVERT

Permit 2025-001

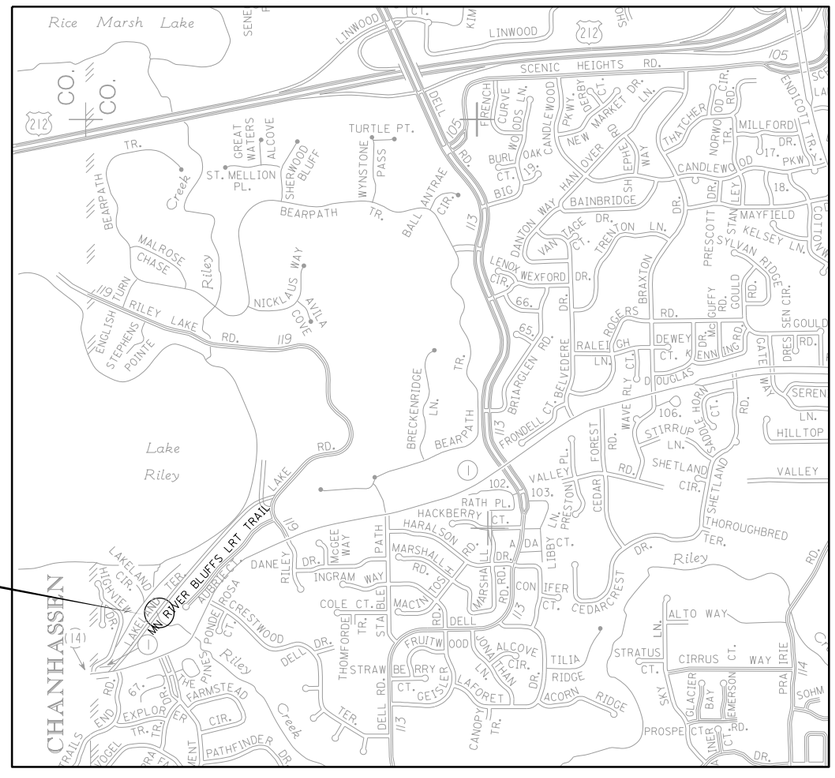
Riley Purgatory Bluff Creek Watershed District

HENNEPIN COUNTY REGIONAL RAILROAD AUTHORITY

CONSTRUCTION PLAN FOR HCRRA BLUFF_16 CULVERT REPLACEMENT AND GRADING

LOCATED ON MN RIVER BLUFFS LRT REGIONAL TRAIL, 0.1 MILES NORTHEAST OF PIONEER TRAIL.

R 20 W



T 31 N

BLUFF_16 CULVERT
C.P. 1010811
BEG. PROJECT: STA 10+35.91
END PROJECT: STA 11+12.36

THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D.
THIS UTILITY QUALITY LEVEL WAS DETERMINED ACCORDING TO GUIDELINES OF CI/ASCE 38-22, ENTITLED, "STANDARD GUIDELINES FOR INVESTIGATING AND DOCUMENTING EXISTING UTILITIES."

SCALES

PLAN	50'	
PROFILE	50' HORIZONTAL	10' VERTICAL
INDEX MAP	1 MILE	

PLAN REVISIONS		
DATE	SHEET NO.	APPROVER

PROJECT LOCATION

COUNTY: HENNEPIN
DISTRICT : METRO

Stonebrooke

C.P. 1010811

SHEET NO. 1 OF 23 SHEETS

GOVERNING SPECIFICATIONS

THE 2020 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN.

ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MN MUTCD, INCLUDING "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".

INDEX

THIS PLAN CONTAINS 23 SHEETS

I HEREBY CERTIFY THAT THIS PLAN 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.

PRINT NAME: JESSICA L. GRIFFIN LICENSE # 59503

DATE: 1/23/2025 SIGNATURE: Jessica Griffin

DESIGN SQUAD S. SCHWIEGER, B. VITEK, B. MCDONALD

I HEREBY CERTIFY THAT THE FINAL FIELD REVISIONS, IF ANY, WERE 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.

PRINT NAME: LICENSE #

DATE: SIGNATURE:

PLOT DRIVER: pdf_bw_11x17.pltcfg
PLOT DATE: 1/23/2025 6:24:33 PM
PEN TABLE: T-01237_planset.tbl
FILE: S:\PROJECTS\TRANS\County\Hennepin\T-01237\Road_Design\Sheets\T-01237_tsh.dgn
USER: jgriffin
MODEL: MnDOT District State Aid

STATEMENT OF ESTIMATED QUANTITIES

NOTES	ITEM NO.	ITEM DESCRIPTION	UNIT	TOTAL ESTIMATED QUANTITIES
	2021.501	MOBILIZATION	LUMP SUM	1
	2101.501	CLEARING AND GRUBBING	LUMP SUM	1
	2104.501	REMOVE BOX CULVERT	LUMP SUM	1
	2104.503	REMOVE FENCE	LIN FT	121
	2104.507	REMOVE RIPRAP	CU YD	10
(1)	2106.507	EXCAVATION - COMMON (P)	CU YD	260
	2106.507	COMMON EMBANKMENT (CV) (P)	CU YD	211
	2118.607	AGGREGATE SURFACING (CV) CLASS SPECIAL	CU YD	10
	2211.507	AGGREGATE BASE (CV) CLASS 5	CU YD	12
	2412.502	6X6 PRECAST CONCRETE BOX CULVERT END SECTION	EACH	2
	2412.503	6X6 PRECAST CONCRETE BOX CULVERT	LIN FT	24
	2451.507	COARSE FILTER AGGREGATE (CV)	CU YD	67
	2451.607	STRUCTURAL BACKFILL (P)	CU YD	468
	2511.504	GEOTEXTILE FILTER TYPE 5	SQ YD	92
	2511.504	GEOTEXTILE FILTER TYPE 7	SQ YD	138
	2511.507	RANDOM RIPRAP CLASS III	CU YD	48
	2511.607	RANDOM RIPRAP CLASS SPECIAL	CU YD	13
	2557.503	WIRE FENCE DESIGN 60V-9322	LIN FT	120
	2563.601	TRAFFIC CONTROL	LUMP SUM	1
	2564.602	INSTALL SIGN SPECIAL	EACH	9
	2573.503	SILT FENCE; TYPE HI	LIN FT	234
	2573.501	STABILIZED CONSTRUCTION EXIT	LUMP SUM	1
	2573.503	FLOTATION SILT CURTAIN TYPE MOVING WATER	LIN FT	78
	2573.503	SEDIMENT CONTROL LOG TYPE COMPOST	LIN FT	244
	2574.505	SOIL BED PREPARATION	ACRE	0.1
	2574.508	FERTILIZER TYPE 4	POUND	12
	2575.504	ROLLED EROSION PREVENTION CATEGORY 25	SQ YD	550
	2575.504	RAPID STABILIZATION METHOD 4	SQ YD	550
	2575.505	SEEDING	ACRE	0.11
	2575.505	WEED SPRAYING	ACRE	0.11
	2575.506	WEED SPRAY MIXTURE	GALLON	0.02
	2575.608	SEED SOUTHERN BOULEVARD	POUND	1.7
	2575.608	SEED SOUTHERN TALLGRASS ROADSIDE	POUND	2.1
	2575.608	SEED WET DITCH	POUND	0.4

(P) DENOTES PLAN QUANTITY

NOTE

(1) QUANTITY INCLUDES TOPSOIL STRIPPING.
EXISTING TOPSOIL DEPTH ASSUMED TO BE 6".

REV. NO.	DATE	BY	CHK	DESCRIPTION

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

NAME JESSICA L. GRIFFIN LIC. NO. 59503 DATE 1/23/2025

DESIGNED SRS
DRAWN SRS
CHECKED JLG

Stonebrooke

STATEMENT OF ESTIMATED QUANTITIES

C.P. 1010811

SHEET 2 OF 23

PLOT DRIVER: pdf_bw_11x17.pltcfg
PLOT DATE: 1/23/2025 6:24:43 PM
PEN TABLE: T-01237_planset.tbl
FILE: S:\PROJECTS\TRANS\County\Hennepin\T-01237\Road_Design\Sheets\T-01237_est.dgn
USER: jgriffin
MODEL: Default

CONSTRUCTION NOTES:

THE 2020 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN.

CONSTRUCTION SHALL BE IN ACCORDANCE WITH SPEC. 2411 AND 2412, EXCEPT AS NOTED.

SEE SPECIAL PROVISIONS FOR ALL XXXX.6XX SERIES PAY ITEMS FOR ADDITIONAL REQUIREMENTS.

THE BAR SIZES SHOWN IN THIS PLAN ARE IN U.S. CUSTOMARY DESIGNATIONS.

BARS MARKED WITH THE SUFFIX "E" SHALL BE EPOXY COATED IN ACCORDANCE WITH SPEC. 3301.

RIPRAP CONSTRUCTION AT OUTLET SHALL BE AS SHOWN IN THE PLANS AND STANDARD PLATE 3139. RIPRAP CONSTRUCTION AT INLET SHALL BE AS SHOWN IN THE PLANS. EXACT PLACEMENT SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.

USE CLAY OR OTHER IMPERMEABLE MATERIAL AVAILABLE AT THE JOB SITE TO BACKFILL AROUND END SECTIONS. INCLUDED IN THE BID PRICE FOR CULVERT ITEMS. IF IMPERMEABLE MATERIAL IS NOT AVAILABLE, EXCAVATION MATERIAL MAY BE USED IF APPROVED BY THE ENGINEER IN THE FIELD.

THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D. THIS UTILITY QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/ASCE 38-22, ENTITLED, "STANDARD GUIDELINES FOR INVESTIGATING AND DOCUMENTING EXISTING UTILITIES."

ENGINEER IN THE FIELD SHALL VERIFY PROPER POSITIONING OF THE CULVERT PRIOR TO COMMENCEMENT OF CONSTRUCTION. IF THE POSITION IS NOT COMPATIBLE WITH THE STREAM WHEN STAKING IS COMPLETE THE ENGINEER SIGNING THESE PLANS SHALL BE NOTIFIED.

THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING EXISTING PAVEMENT SURFACING, INCLUDING ALL ADA RAMPS, DURING ACCESS TO THE PROJECT SITE. ANY DAMAGE TO THE EXISTING PAVEMENT, INCLUDING ADA RAMPS, AND AGGREGATE SURFACING, SHALL BE REPAIRED TO THE SATISFACTION OF THE COUNTY.

ALL ACTIVITIES MUST BE CONDUCTED SO AS TO MINIMIZE THE POTENTIAL TRANSFER OF AQUATIC INVASIVE SPECIES TO THE MAXIMUM EXTENT POSSIBLE.

STANDARD PLATES

The following standard plates approved by the Federal Highway Administration shall apply on this project.

MnDOT PLATE NO.	DESCRIPTION
3139B	RIPRAP AT PRECAST CONCRETE END SECTIONS (1:4 AND 1:6 SLOPES)
8000K	TEMPORARY CHANNELIZERS (3 SHEETS)

PLOT DRIVER: pdf_bw_11x17.pltcfg
PLOT DATE: 1/23/2025 6:25:03 PM
PEN TABLE: T-01237_planset.tbl
FILE: S:\PROJECTS\TRANS\County\Hennepin\T-01237\Road_Design\Sheets\T-01237_gpe.dgn
USER: jgriffin
MODEL: GPE

REV. NO.	DATE	BY	CHK	DESCRIPTION

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

NAME JESSICA L. GRIFFIN LIC. NO. 59503 DATE 1/23/2025

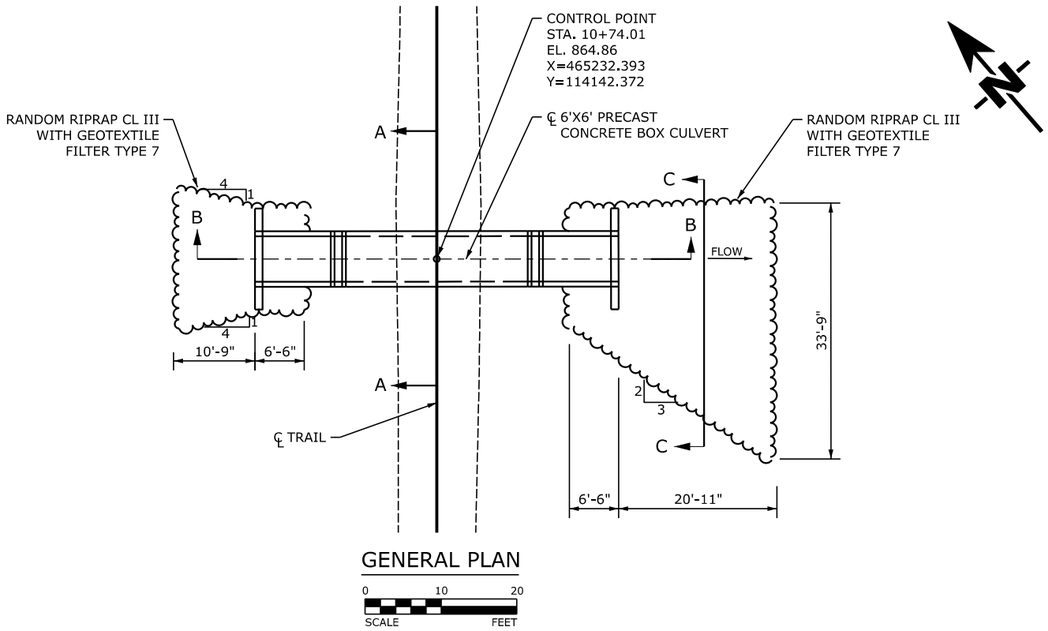
DESIGNED SRS
DRAWN SRS
CHECKED JLG

Stonebrooke

CONSTRUCTION NOTES

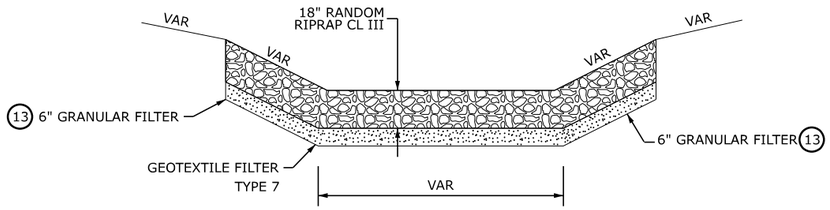
C.P. 1010811

SHEET 3 OF 23

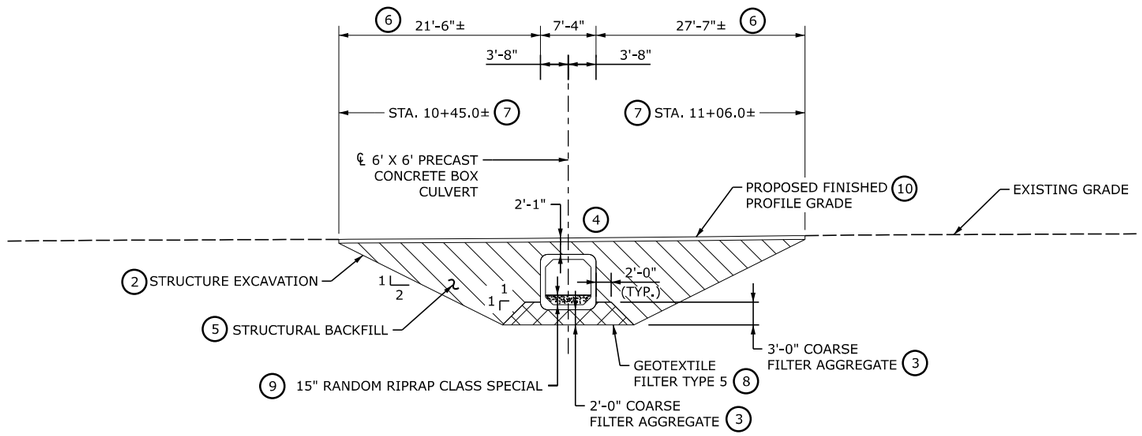


GENERAL PLAN

SCALE 0 10 20 FEET



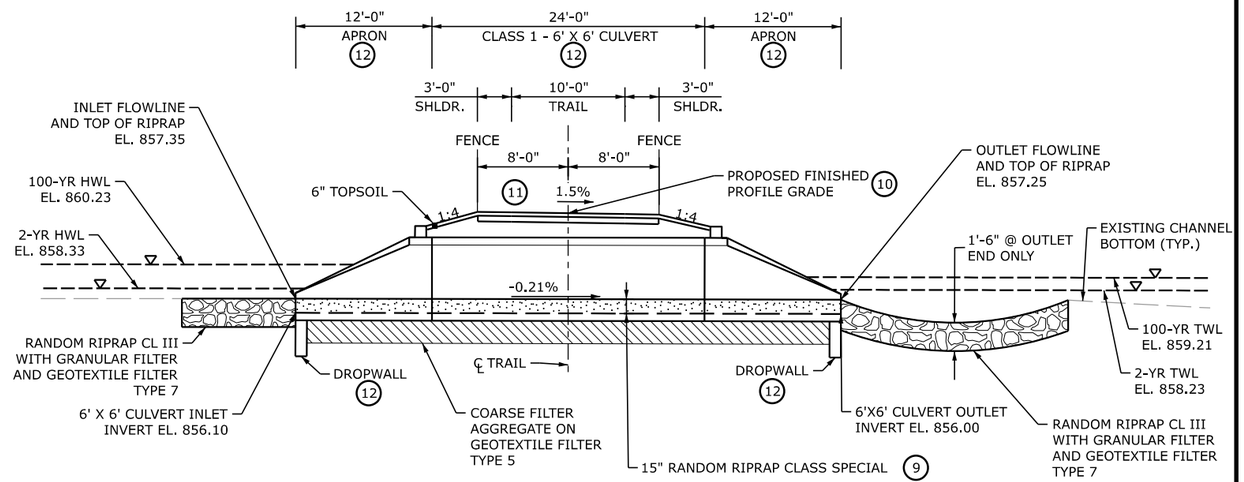
SECTION THROUGH RIPRAP - SECTION C-C



SECTION THROUGH CULVERT - SECTION A-A 1

NOTES:

1. SEE SHEET 3 FOR CONSTRUCTION NOTES.
2. STRUCTURE EXCAVATION SHALL BE INCLUDED IN PRICE BID FOR "6X6 PRECAST CONCRETE BOX CULVERT" AND SHALL INCLUDE ALL EXCAVATION NECESSARY FOR CONSTRUCTION OF THE PROPOSED STRUCTURE. IT ALSO INCLUDES THE DISPOSAL OF SURPLUS MATERIAL.
3. COARSE FILTER AGGREGATE SHALL CONFORM TO SPEC. 3149.2.H AND THE DENSITY OF THE COARSE FILTER AGGREGATE SHALL BE ATTAINED BY THE METHOD OF QUALITY COMPACTION IN ACCORDANCE WITH THE REQUIREMENTS OF SPEC. 2106.3.6.2. CONTRACTOR MAY USE COARSE AGGREGATE BEDDING AS AN OPTION AND SHALL CONFORM TO SPEC. 3149.2.G.2 AS APPROVED BY THE ENGINEER IN THE FIELD. EXCAVATE TO 2 FEET BELOW CULVERTS OR BOTTOM OF UNSUITABLE SOIL, WHICHEVER IS GREATER. THE ENGINEER IN THE FIELD SHALL INSPECT THE BOTTOM OF EXCAVATION AND ALL LOOSE, SOFT, OR OTHERWISE UNSUITABLE SOILS SHALL BE REMOVED.
4. NO VEHICLE TRAFFIC SHALL BE PERMITTED ABOVE CULVERT UNLESS CULVERT HAS AT LEAST 2 FEET OF FILL ABOVE TOP OF CULVERT.
5. CULVERT BACKFILL TO LIMITS SHOWN SHALL BE STRUCTURAL BACKFILL AND PAID FOR UNDER ITEM 2451.607. STRUCTURAL BACKFILL SHALL COMPLY WITH SPEC. 3149.2.D.2. STRUCTURAL BACKFILL DENSITY SHALL BE ATTAINED BY THE QUALITY COMPACTION METHOD IN ACCORDANCE WITH SPEC. 2106.3.6.2.
6. MEASURED ALONG ℄ TRAIL AT SECTION A-A CUT LINE.
7. CENTERLINE TRAIL STATION FOR TOP OF EXCAVATION AT EXISTING GRADE.
8. GEOTEXTILE FILTER TYPE 5 PER SPEC. 3733 SHALL BE PLACED ON BOTTOM OF EXCAVATION PRIOR TO BACKFILLING WITH COARSE FILTER AGGREGATE (SEE NOTE 3). ALL COARSE FILTER AGGREGATE SHALL BE PLACED ON GEOTEXTILE FILTER.
9. CONTRACTOR SHALL CONSTRUCT TOP OF RIPRAP AT INLET AND OUTLET TO FLOWLINE ELEVATION SHOWN. PLACE CLASS II SIZED RIPRAP INSIDE THE BOX CULVERT FROM THE FLOOR ELEVATION TO 15" DEPTH. FILL VOIDS IN RIPRAP WITH SALVAGED NATURAL CHANNEL BOTTOM MATERIAL FROM THE SITE EXCAVATION. IF ADEQUATE NATURAL MATERIAL FROM SITE IS NOT AVAILABLE, FILL REMAINER OF VOIDS WITH COARSE FILTER AGGREGATE IN ACCORDANCE WITH SPEC. 3149.2.H. PAYMENT FOR ALL MATERIALS AND PLACEMENT INCLUDED IN ITEM "RANDOM RIPRAP CLASS SPECIAL". RIPRAP AND SALVAGED NATURAL BOTTOM MATERIAL SHALL NOT BE DOLOMITE OR LIMESTONE.
10. SEE CONSTRUCTION PLAN FOR PROPOSED TRAIL PROFILE ELEVATIONS.
11. SEE SHEET 10 FOR TRAIL TYPICAL SECTION.
12. SEE SHEETS 5 - 6 FOR PRECAST CONCRETE CULVERT AND APRON DETAILS.
13. GRAVEL TRANSITIONAL LAYER SHALL BE PLACED 6" BELOW RIPRAP. TRANSITIONAL LAYER SHALL BE 6" DEPTH OF GRANULAR FILTER WITH GEOTEXTILE FILTER TYPE 7. COST OF GRANULAR FILTER SHALL BE INCIDENTAL TO THE COST OF RANDOM RIPRAP CL III.



ELEVATION - SECTION B-B

SCALE 0 15 30 FEET

REV. NO.	DATE	BY	CHK	DESCRIPTION

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

NAME JESSICA L. GRIFFIN LIC. NO. 59503 DATE 1/23/2025

DESIGNED SRS
DRAWN SRS
CHECKED JLG

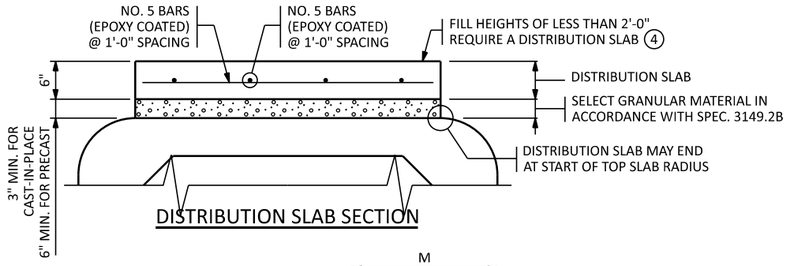
Stonebrooke

GENERAL PLAN, ELEVATION, AND SECTION

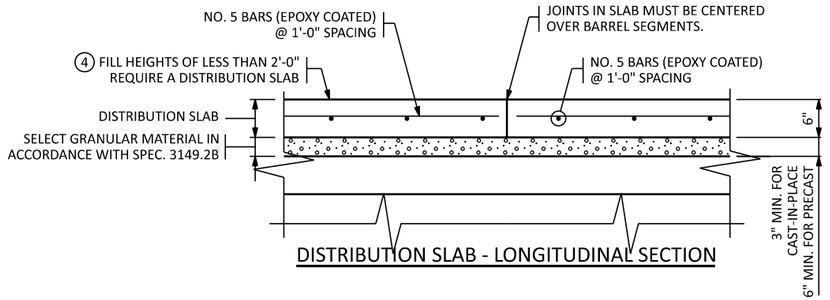
C.P. 1010811

SHEET 4 OF 23

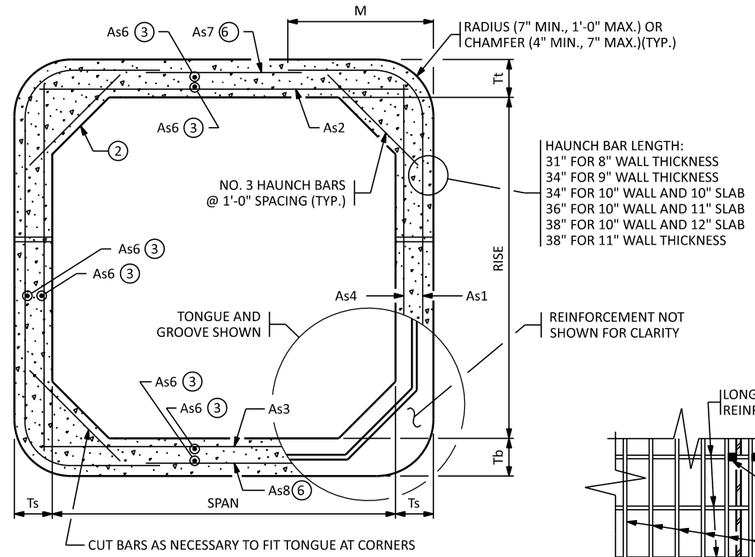
PLOT DRIVER: pdf_bw_11x17.pltcfg
PLOT DATE: 1/23/2025 6:25:04 PM
USER: jgriffin
PEN TABLE: T-01237_planset.tbl
FILE: S:\PROJECTS\TRANS\County\Hennepin\T-01237\Road_Design\Sheets\T-01237_gpe.dgn
MODEL: SSQ



DISTRIBUTION SLAB SECTION

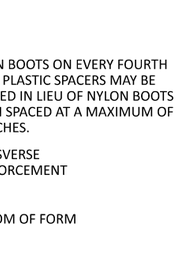


DISTRIBUTION SLAB - LONGITUDINAL SECTION

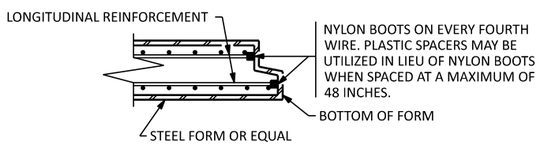


TRANSVERSE BARREL SECTION

BAR REINFORCEMENT OPTION SHOWN



PLAN

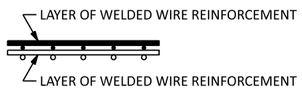


SECTION

FORMING DETAIL

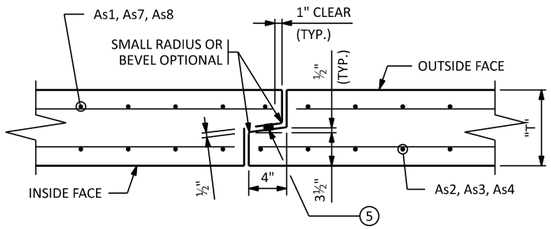
LONGITUDINAL BARREL SECTION

BAR REINFORCEMENT OPTION SHOWN



REINFORCEMENT LAYER DETAIL

WHEN MORE THAN ONE LAYER OF WELDED WIRE REINFORCEMENT IS USED TO OBTAIN THE REQUIRED REINFORCEMENT AREAS, PLACE THE WIRES OF THE WELDED WIRE REINFORCEMENT AS SHOWN



TONGUE AND GROOVE JOINT DETAIL

CONSTRUCTION NOTES

CONSTRUCT CULVERTS IN ACCORDANCE WITH SPEC. 2412 EXCEPT AS NOTED.

REFER TO THE GENERAL PLAN AND ELEVATION SHEET FOR THE DISTANCE BETWEEN BARRELS OF ADJACENT BOXES AND TO STANDARD FIGURE 5-395.115 FOR MATERIAL REQUIREMENTS FOR FILL BETWEEN ADJACENT BOXES.

PROVIDE WELDED WIRE REINFORCEMENT, SHEAR REINFORCEMENT AND REINFORCEMENT BARS IN ACCORDANCE WITH THE APPLICABLE REQUIREMENTS OF AASHTO M259.

PROVIDE 1½" MIN. AND 2" MAX. CONCRETE COVER ON ALL REINFORCEMENT, INCLUDING SHEAR REINFORCEMENT, EXCEPT FOR TONGUE AND GROOVE DETAIL. PROVIDE 1" MIN. CONCRETE COVER FOR REINFORCEMENT IN TONGUE AND GROOVE DETAIL.

ANY OF THE FOLLOWING COMBINATIONS OF STEEL REINFORCEMENT MAY BE USED:
(a) 1 OR 2 LAYERS OF WELDED WIRE REINFORCEMENT OR
(b) 1 LAYER OF WELDED WIRE REINFORCEMENT AND 1 LAYER OF REINFORCEMENT BARS OR
(c) 1 LAYER OF REINFORCEMENT BARS.
DEVELOP REINFORCEMENT IN ACCORDANCE WITH AASHTO "LRFD BRIDGE DESIGN SPECIFICATIONS". IF BAR REINFORCEMENT IS SUBSTITUTED FOR WELDED WIRE REINFORCEMENT, INCREASE THE AREA OF REINFORCEMENT BY 8%, AND SUBMIT DESIGN CALCULATIONS VERIFYING COMPLIANCE WITH AASHTO 5.7.3.4. "CONTROL OF CRACKING BY DISTRIBUTION OF REINFORCEMENT".

MAXIMUM SIZE OF REINFORCEMENT BARS IS NO. 6. THE MAXIMUM WELDED WIRE REINFORCEMENT SIZE IS W23 PER LAYER (MAXIMUM OF 2 LAYERS).

SPACE CENTER TO CENTER OF TRANSVERSE WIRES NOT LESS THAN 2" NOR MORE THAN 4". SPACE CENTER TO CENTER OF LONGITUDINAL WIRES NOT MORE THAN 8".

WHEN USING As1, As7, AND As8 REINFORCEMENT AS ONE CONTINUOUS CAGE WITH SPLICES OCCURRING IN THE CENTER OF THE TOP AND BOTTOM OF THE BOX SECTION, THE MIN. LAP LENGTH FOR THE As7 AND As8 IS 15".

WELDING IS NOT PERMITTED ON REINFORCEMENT BARS OR WELDED WIRE REINFORCEMENT, EXCEPT THAT THE ORIGINAL WELDING REQUIRED TO MANUFACTURE WIRE REINFORCEMENT IS ACCEPTABLE.

WHEN REINFORCEMENT IS CUT, PLACE ADDITIONAL REINFORCEMENT ON BOTH SIDES OF THE CUT MEMBER TO REPLACE OR EXCEED THE CUT REINFORCEMENT.

USE CONCRETE MIX NO. 3W82 WITH NO CALCIUM CHLORIDE ALLOWED.

SHOP DRAWING APPROVAL IN ACCORDANCE WITH SPEC. 3238.2A IS NOT REQUIRED UNLESS OPENINGS OR ATTACHMENTS ARE PLACED ON A BARREL SEGMENT.

COMPACT THE FIRST 1.5' (LOOSE) OF FILL ABOVE THE BOX WITH LIGHT COMPACTION EQUIPMENT SUCH AS PLATE COMPACTORS OR WALK BEHIND ROLLERS.

TRANSVERSE REINFORCEMENT IS PARALLEL TO THE CULVERT SPAN.
LONGITUDINAL REINFORCEMENT IS PERPENDICULAR TO THE CULVERT SPAN.

(1) USE 1" DIAMETER CULVERT TIES. REFER TO STANDARD PLATE NO. 3145 FOR DETAILS.

(2) USE 12" VERTICAL, 12" HORIZONTAL HAUNCHES ON ALL BOX SIZES.

(3) PLACE LONGITUDINAL REINFORCEMENT IN ALL SLABS AND WALLS WITH A MINIMUM OF 0.06 SQ. IN./FT.

(4) ROADWAY OR SHOULDER FILL HEIGHTS OF LESS THAN 2'-0" REQUIRE A 6" THICK DISTRIBUTION SLAB WITH CONCRETE MIX 3S52.

PLACE CAST-IN-PLACE DISTRIBUTION SLAB WITH 3" MIN. SELECT GRANULAR MATERIAL IN ACCORDANCE WITH SPEC. 3149.2B BETWEEN BARREL AND DISTRIBUTION SLAB.

PRECAST DISTRIBUTION SLABS MAY BE USED FOR FILL HEIGHTS OVER 1'-0". PROVIDE 6" MINIMUM SELECT GRANULAR MATERIAL IN ACCORDANCE WITH SPEC. 3149.2B BETWEEN BARREL AND DISTRIBUTION SLAB.

EXTEND THE WIDTH OF THE DISTRIBUTION SLAB TO THE OUTSIDE EDGES OF THE ROADWAY SHOULDERS UNLESS DIRECTED BY THE ENGINEER.

REDESIGN THE DISTRIBUTION SLAB PER THE MnDOT PAVEMENT DESIGN MANUAL IF IT IS USED AS PAVEMENT SURFACE.

PAYMENT FOR THE DISTRIBUTION SLAB AND SELECT GRANULAR MATERIAL BENEATH THE SLAB IS INCLUDED IN THE PRECAST CONCRETE BOX CULVERT PAY ITEM.

(5) REFER TO SPEC. 2412 FOR SEALANT REQUIREMENTS.

(6) As7 AND As8 REINFORCEMENT MAY BE PLACED INSIDE OR OUTSIDE OF As1.

BARREL INFORMATION TABLE * * *

LOCATION	SIZE	CLASS	f'c (P.S.I.)	FILL HEIGHT RANGE (FT.)	DISTRIBUTION SLAB REQUIRED *	RECESSED TIE RODS REQUIRED * *	DIMENSIONS					WEIGHT (LBS./FT.)	WELDED WIRE REINFORCEMENT											
													As1			As2		As3		As4		As7		As8	
							SPAN (FT.)	RISE (FT.)	Tt (IN.)	Tb (IN.)	Ts (IN.)		AREA (IN.²/FT.)	LENGTH (FT.)	M (FT.)	AREA (IN.²/FT.)	LENGTH (FT.)	AREA (IN.²/FT.)	LENGTH (FT.)	AREA (IN.²/FT.)	LENGTH (FT.)	AREA (IN.²/FT.)	LENGTH (FT.)	AREA (IN.²/FT.)	LENGTH (FT.)
10+74.01	6X6	1	5000	<3	NO	NO	6	6	8	8	8	2975	0.24	12'-2"	2'-8"	0.43	6'-6"	0.39	6'-6"	0.20	6'-6"	0.20	4'-6"	0.20	4'-6"

* ALL CLASS 1 CULVERTS WITH FILL HEIGHTS OF LESS THAN 2'-0" REQUIRE A DISTRIBUTION SLAB. IF A DISTRIBUTION SLAB IS NOT REQUIRED, INDICATE "NO" IN THIS BOX.

* * FOR PEDESTRIAN CULVERT APPLICATIONS HIDE-AWAY OR RECESSED TIE CONNECTIONS ARE REQUIRED, REFER TO STANDARD PLATE 3145. IF REQUIRED, INDICATE "YES" IN THIS BOX.

* * * BOX CULVERTS WITH SPANS FROM 6 TO 14 FT. ARE DESIGNED FOR HL-93 LIVE LOADS (AASHTO LRFD 3.6.2.1) NOT INCLUDING THE DESIGN LANE LOAD. BOXES WITH SPANS OF 16 FT. OR GREATER ARE DESIGNED FOR HL-93 LIVE LOADS INCLUDING THE DESIGN LANE LOAD.

REVISION: AUGUST 21, 2024

APPROVED: MARCH 24, 2011
Nancy Daubenberger
STATE BRIDGE ENGINEER

REV. NO.	DATE	BY	CHK	DESCRIPTION

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
Jessica Griffin
NAME JESSICA L. GRIFFIN LIC. NO. 59503 DATE 1/23/2025

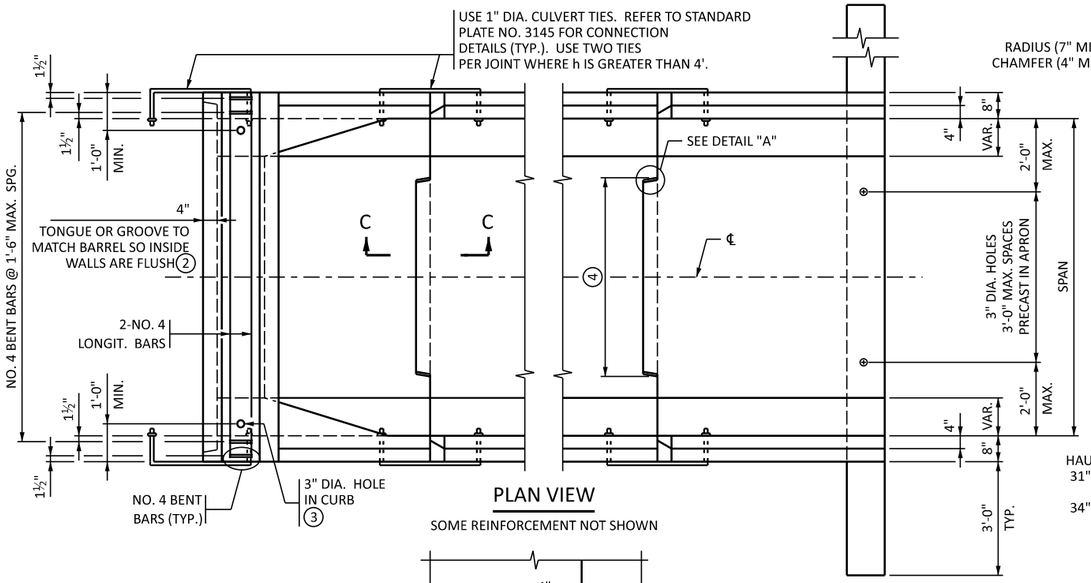
DESIGNED SRS
DRAWN SRS
CHECKED JLG

Stonebrooke

PRECAST CONCRETE DETAILS
FIG. 5-395.101(A) PLAN PAGE 1 of 2
C.P. 1010811

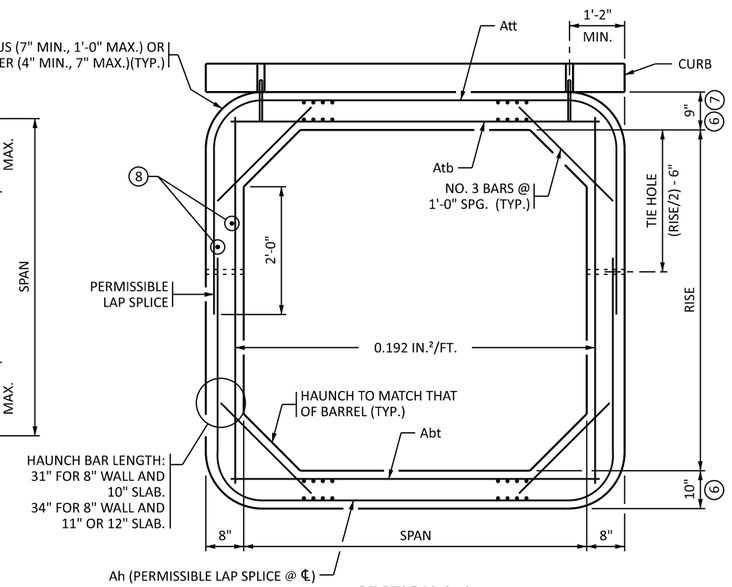
SHEET 5 OF 23

PLOT DRIVER: pdf_bw_11x17.pltcfg
PLOT DATE: 1/23/2025 6:25:14 PM
USER: jgriffin
PEN TABLE: T-01237_planset.tbl
FILE: S:\PROJECTS\TRANS\County\Hennepin\T-01237\Road_Design\Sheets\T-01237_stp.dgn
MODEL: 1-Barrel

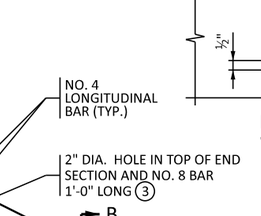


PLAN VIEW

SOME REINFORCEMENT NOT SHOWN

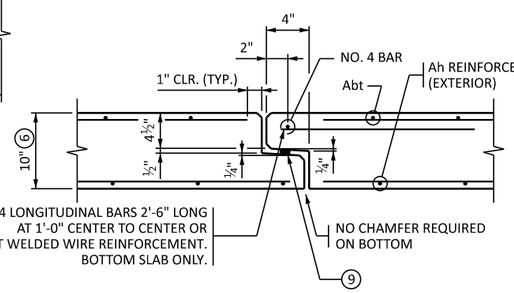


SECTION A-A

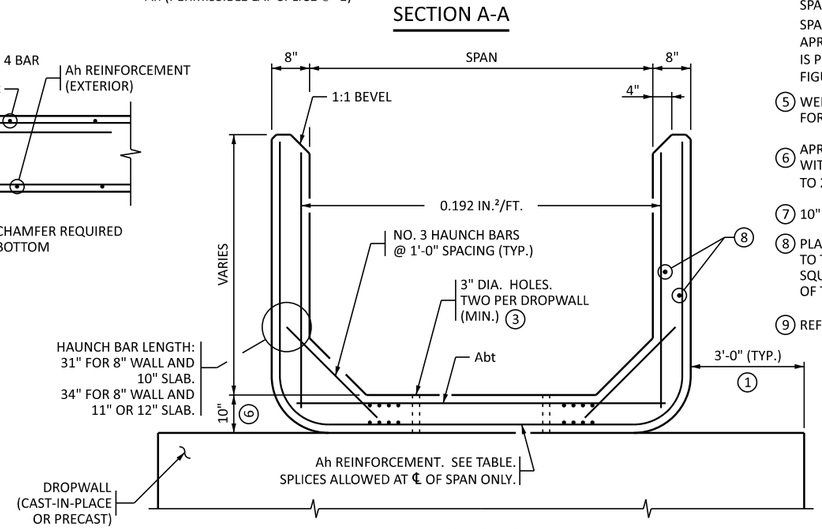


DETAIL "A"

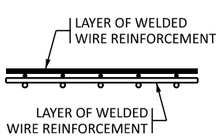
SIDE ELEVATION



SECTION C-C



SECTION B-B



REINFORCEMENT LAYER DETAIL

WHEN MORE THAN ONE LAYER OF WELDED WIRE REINFORCEMENT IS USED TO OBTAIN THE REQUIRED REINFORCEMENT AREAS, PLACE THE WIRES OF THE WELDED WIRE REINFORCEMENT AS SHOWN.

CONSTRUCTION NOTES

REFER TO STANDARD FIG. 5-395.101(A) AND FIG. 5-395.101(B) FOR ADDITIONAL DIMENSIONS AND CONSTRUCTION NOTES.

USE CONCRETE MIX NO. 3W82 WITH NO CALCIUM CHLORIDE ALLOWED.

ALL END SECTIONS REQUIRE CURB ON LINTEL BEAM.

ON ALL END SECTIONS FOR WATERWAYS, USE DROPWALLS ON INLET AND OUTLET ENDS.

REFER TO STANDARD FIG. 5-395.115 FOR EMBANKMENT PROTECTION.

FINISH ALL EXPOSED EDGES OF CONCRETE WITH ½" OR ¾" CHAMFER OR RADIUS UNLESS OTHERWISE NOTED.

MAXIMUM SIZE OF REINFORCEMENT BARS IS NO. 6, EXCEPT NO. 7 OR 8 BARS MAY BE USED FOR Atb ON SPANS GREATER THAN 14'. THE MAXIMUM WELDED WIRE REINFORCEMENT SIZE IS W23 PER LAYER (MAXIMUM OF 2 LAYERS).

(1) WITH DOUBLE BOXES LOCATE DROPWALL JOINTS BETWEEN END SECTIONS. REFER TO STANDARD FIG. 5-395.111 FOR ALTERNATE DROPWALLS. LIMITS OF EXCAVATION FOR DROPWALL ARE APPROXIMATELY THE SAME AS DROPWALL DIMENSIONS. DROPWALL CONCRETE MIX IS 3G52, OR 3W82 IF PRECAST. FURNISHING AND INSTALLATION OF DROPWALL TO BE INCLUDED IN PRICE BID FOR END SECTIONS. DROPWALL NOT REQUIRED FOR NON-WATERWAY USE.

(2) CHECK LOCATION TO DETERMINE WHETHER A TONGUE OR A GROOVE IS USED.

(3) FILL HOLE WITH GROUT. PROVIDE GROUT IN ACCORDANCE WITH THE MnDOT APL "PRE-BLENDED, DRY, AIR-ENTRAINED, BAGGED MORTAR MIX FOR UTILITY/SEWER APPLICATIONS". PREVENT BLEEDOUT.

(4) 3'-6" MIN. TONGUE AND 3'-7" MIN. GROOVE FOR CULVERTS WITH 6'-0" SPANS. 5'-0" MIN. TONGUE AND 5'-1" MIN. GROOVE FOR CULVERTS WITH SPANS GREATER THAN 6'-0". CENTER TONGUE AND GROOVE ON ℄ OF EACH APRON JOINT. TONGUE AND GROOVE JOINT ON ALL THREE SIDES OF APRON IS PERMISSIBLE. REFER TO TONGUE AND GROOVE JOINT DETAIL ON STANDARD FIGURE 5-395.101(A) AND 5-395.101(B) WHEN THIS OPTION IS USED.

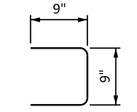
(5) WELDED WIRE REINFORCEMENT OF EQUAL AREA MAY BE SUBSTITUTED FOR REBAR.

(6) APRON TOP AND BOTTOM SLAB THICKNESS MAY BE 8" FOR CULVERTS WITH 6' SPANS ONLY. BOTTOM SLAB THICKNESS MAY BE INCREASED UP TO 2" MAX. PROVIDED CONCRETE COVER IS 1½" MIN., 2" MAX.

(7) 10" MINIMUM TOP SLAB FOR 14' AND 16' SPANS.

(8) PLACE LONGITUDINAL REINFORCEMENT PERPENDICULAR TO THE CULVERT SPAN WITH A MINIMUM OF 0.06 SQUARE INCHES PER PERIPHERAL FOOT ON ALL FACES OF THE BARREL.

(9) REFER TO SPEC, 2412 FOR SEALANT REQUIREMENTS.



NO. 4 BENT BAR

Att, Atb REINFORCEMENT

SPAN (FT.)	Att (IN²/FT.)	Atb (IN²/FT.)
6	0.27	0.44
8	0.47	0.60
10	0.62	0.74
12	0.88	1.06
14	1.20	1.58
16	1.52	2.09

Abt REINFORCEMENT

SPAN (FT.)	Abt (IN²/FT.)
6-10	0.20
12	0.30
14	0.39
16	0.39

APRON DIMENSIONS & Ah REINFORCEMENT

RISE FT.	L FT.	SECTION 1 X	SECTION 1 Ah	h2	SECTION 2 Y	SECTION 2 Ah	h3	SECTION 3 Z	SECTION 3 Ah	h4	SECTION 4 ZZ	SECTION 4 Ah	h5	SECTION 5 ZZZ	SECTION 5 Ah	h6
4	8	8' (4')	0.192	1'-9"(3'-9")	(4')	(0.192)	(1'-9")									
5	10	6'	0.192	3'-9"	4'	0.192	1'-9"									
6	12	6'	0.192	4'-9"	6'	0.192	1'-9"									
7	14	6'	0.192	5'-9"	8' (4')	0.192	1'-9"(3'-9")	(4')	(0.192)	(1'-9")						
8	16	6'	0.20	6'-9"	6'	0.192	3'-9"	4'	0.192	1'-9"						
9	18	6'	0.29	7'-9"	6'	0.20	4'-9"	6'	0.192	1'-9"						
10	20	6'	0.42	8'-9"	6'	0.29	5'-9"	8' (4')	0.192	1'-9"(3'-9")	(4')	(0.192)	(1'-9")			
11	22	6'	0.60	9'-9"	6'	0.42	6'-9"	6'	0.192	3'-9"	4'	0.192	1'-9"			
12	24	6'	0.78	10'-9"	6'	0.60	7'-9"	6'	0.20	4'-9"	6'	0.192	1'-9"			
13	26	6'	1.03	11'-9"	6'	0.78	8'-9"	6'	0.28	5'-9"	8' (4')	0.192	1'-9"(3'-9")	(4')	(0.192)	(1'-9")
14	28	6'	1.38	12'-9"	6'	1.03	9'-9"	6'	0.40	6'-9"	6'	0.192	3'-9"	4'	0.192	1'-9"

NOTE: Ah IS AREA OF REINFORCEMENT PER FOOT OF LENGTH (IN²/FT.)
VALUES IN ( ) MAY BE USED FOR END SECTIONS WITH SPANS OF 14' AND 16' ONLY.

REVISION: AUGUST 21, 2024

APPROVED: MARCH 24, 2011
Nancy Daubenberger
STATE BRIDGE ENGINEER

REV. NO.	DATE	BY	CHK	DESCRIPTION

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
Jessica Griffin
NAME JESSICA L. GRIFFIN LIC. NO. 59503 DATE 1/23/2025

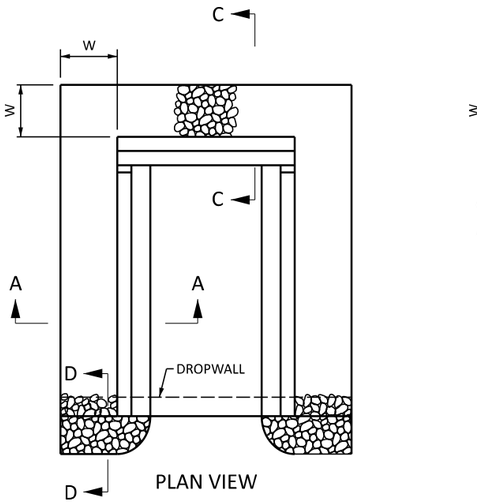
DESIGNED SRS
DRAWN SRS
CHECKED JLG

Stonebrooke

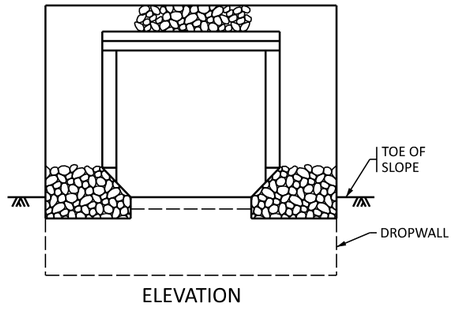
PRECAST CONCRETE DETAILS
FIG. 5-395.102 PLAN PAGE 2 of 2
C.P. 1010811

SHEET 6 OF 23

PLOT DRIVER: pdf_bw_11x17.pltcfg
PLOT DATE: 1/23/2025 6:25:16 PM
FILE: S:\PROJECTS\TRANS\County\Hennepin\T-01237\Road_Design\Sheets\T-01237_stp.dgn
PEN TABLE: T-01237_planset.tbl
USER: jgriffin
MODEL: 2-Apron



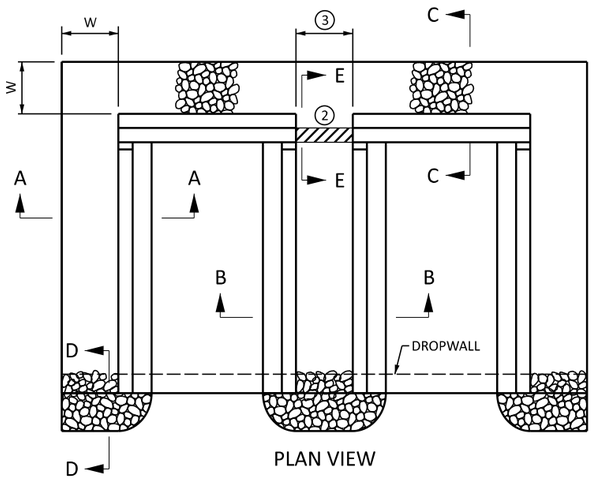
PLAN VIEW



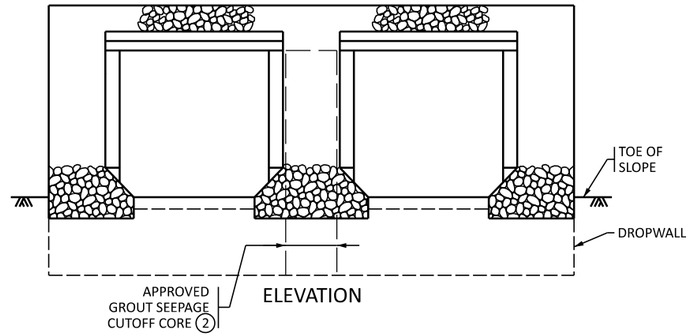
ELEVATION

SINGLE BARREL

CLASS III OR IV SHOWN
FOR SKEWS UP TO 7½°



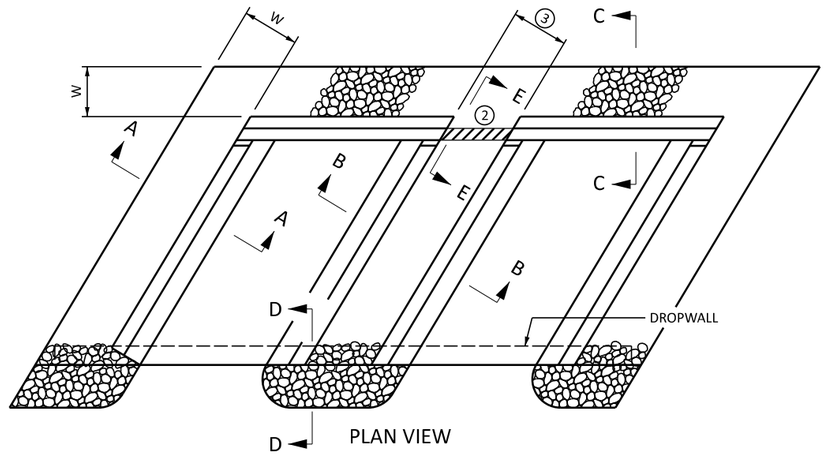
PLAN VIEW



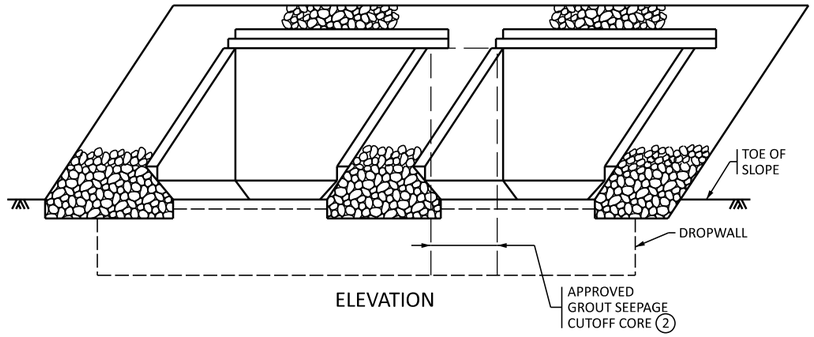
ELEVATION

MULTIPLE BARREL

FOR SKEWS UP TO 7½ °
CLASS III OR IV SHOWN
DOUBLE BARREL SHOWN



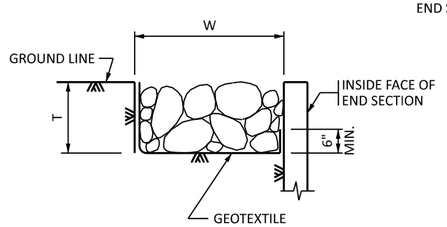
PLAN VIEW



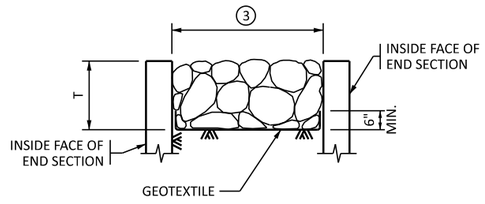
ELEVATION

MULTIPLE BARREL

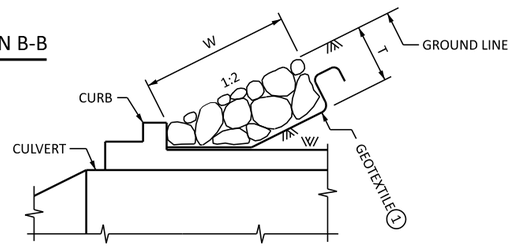
FOR SKEWS OVER 7½°
CLASS III OR IV SHOWN
DOUBLE BARREL SHOWN,
OTHER BARREL CONFIGURATIONS SIMILAR.



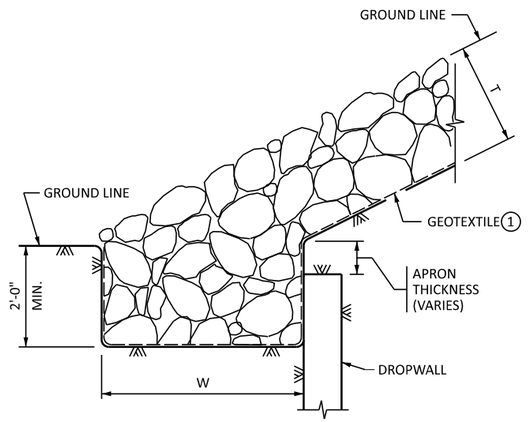
SECTION A-A



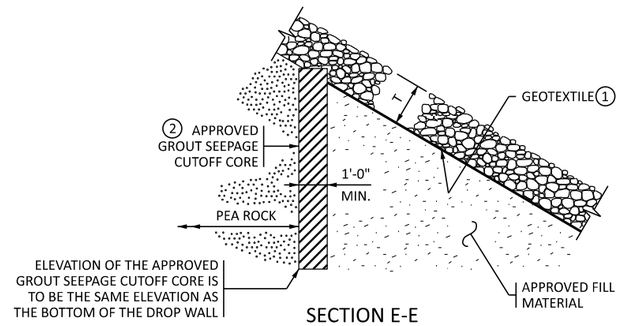
SECTION B-B



SECTION C-C



SECTION D-D



SECTION E-E

CONSTRUCTION NOTES

THIS PLAN SHEET IS FOR CULVERT EMBANKMENT PROTECTION ONLY. REFER TO THE GRADING PLANS FOR ADDITIONAL RIPRAP OR OTHER SCOUR PROTECTION MEASURES.

PROVIDE RIPRAP IN ACCORDANCE WITH SPECS. 2511 AND 3601.

EMBANKMENT PROTECTION, INCLUDING MATERIAL PLACED BETWEEN BARRELS THAT ARE LESS THAN 2'-0" APART, IS INCLUDED IN THE PRECAST CONCRETE BOX CULVERT PAY ITEMS.

(1) PROVIDE TYPE 7 GEOTEXTILE IN ACCORDANCE WITH SPEC. 3733. PROVIDE GEOTEXTILE STRIPS CONTINUOUS WITHOUT OVERLAPS, EXCEPT FOR THE TOP STRIP, WHICH SHOULD SHINGLE VERTICAL STRIPS. BURY THE TOP EDGE TO PREVENT UNDERMINING.

(2) IF THE DISTANCE BETWEEN MULTIPLE BARRELS IS LESS THAN 2'-0" USE EITHER PEA ROCK OR LEAN MIX BACKFILL (SPEC. 2520) BETWEEN THE CULVERTS AS APPROVED BY THE ENGINEER. IF PEA ROCK IS USED PROVIDE APPROVED GROUT SEEPAGE CUTOFF CORE, MINIMUM 12" THICK BETWEEN THE CULVERT'S TWO ENDS AND PROVIDE CLASS I GROUTED RIPRAP IN LIEU OF CLASS III RIPRAP.

(3) REFER TO THE GENERAL PLAN AND ELEVATION SHEET FOR THE DISTANCE BETWEEN BARRELS OF ADJACENT BOXES.

RIPRAP CLASS

RIPRAP CLASS	RIPRAP CLASS	T	W
☒	III	1'-6"	3'-0"
☐	IV	2'-0"	4'-0"

REVISION: AUGUST 21, 2024

APPROVED: SEPTEMBER 11, 2014
Nancy Daubenberger
STATE BRIDGE ENGINEER

REV. NO.	DATE	BY	CHK	DESCRIPTION

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
Jessica Griffin
NAME JESSICA L. GRIFFIN LIC. NO. 59503 DATE 1/23/2025

DESIGNED SRS
DRAWN SRS
CHECKED JLG

Stonebrooke

EMBANKMENT PROTECTION FOR BOX CULVERTS
FIG. 5-395.115
C.P. 1010811

SHEET 7 OF 23

PLOT DRIVER: pdf_bw_11x17.pltcfg
PLOT DATE: 1/23/2025 6:25:19 PM
USER: jgriffin
PEN TABLE: T-01237_planset.tbl
FILE: S:\PROJECTS\TRANS\County\Hennepin\T-01237\Road_Design\Sheets\T-01237_stp.dgn
MODEL: 3-Embankment

TEMPORARY STREAM DIVERSION FOR STRUCTURE CONSTRUCTION

TO FACILITATE CONSTRUCTION, IT MAY BE NECESSARY THAT PORTIONS OF THE WORKSITE BE RELATIVELY DRY. THERE ARE SEVERAL OPTIONS AVAILABLE FOR PROVIDING A STABLE, DRY WORK AREA DURING CONSTRUCTION.

NOTE:
1) INSTREAM DIVERSION WORK WILL REQUIRE PRIOR WRITTEN APPROVAL FROM THE APPLICABLE DNR HYDROLOGIST.

2) USE OF DEWATERING PUMPS MAY REQUIRE THE CONTRACTOR TO APPLY FOR A DNR APPROPRIATIONS PERMIT (GP 1997-0005 TEMPORARY DEWATERING).

* INSTREAM PUMP INTAKES SHALL BE FITTED WITH SCREENS, FILTER GEOTEXTILES, ROCK BERMS, OR WIRE MESHES TO PREVENT FISH FROM BEING DRAWN INTO THE SYSTEM.

* DISCHARGE POINTS SHALL BE ADEQUATELY PROTECTED FROM EROSION AND SCOUR BY USE OF RIPRAP, PLASTIC SHEETING, GEOTEXTILES, PLYWOOD, OR EXISTING VEGETATION.

* SEDIMENT CONTROL DEVICES CAN BE BY-PASSED WHEN DISCHARGE WATER APPEARS CLEAR.

3) SEE MANUAL CHAPTER 3, PAGE 8 FOR NPDES CONSTRUCTION SITE PERMIT REQUIREMENTS.

4) USE MnDOT SPEC. 1717 SITE PLAN REQUIREMENTS.

5) USE MnDOT SPEC. 1717 EROSION CONTROL SCHEDULE.

6) PUMPS ARE RECOMMENDED TO BE SIZED FOR 2 YEAR - 24 HOUR EVENT.

7) A SECOND PUMP OF THE SAME SIZE SHOULD BE ON SITE FOR CONTINGENCY PURPOSES.

8) ANY DIVERSION STRUCTURES OR COFFERDAM CONSTRUCTION PLACED IN THE WATER SHOULD BE CONSTRUCTED AND MAINTAINED IN SUCH A MANNER AS TO NOT ALLOW EROSION.

9) ALL INSTREAM MATERIALS SHALL BE REMOVED UPON PROJECT COMPLETION.

OPTION 1: TEMPORARY STREAM BLOCK

CONSTRUCT TEMPORARY DIKES UPSTREAM AND DOWNSTREAM OF THE PROPOSED STRUCTURE IN ORDER TO BLOCK OFF WATER FROM THE CONSTRUCTION AREA. INSTALL PUMPS TO DIRECT WATER AROUND THE CONSTRUCTION SITE TO PROVIDE DOWNSTREAM FLOW. IN ADDITION, ANY WATER PUMPED FROM WITHIN THE CONSTRUCTION AREA MUST BE DIRECTED TO A SEDIMENT POND PRIOR TO DISCHARGE BACK TO THE STREAM.

TO INSTALL STRUCTURES IN THIS MANNER REQUIRES A MINIMUM OF THREE PUMPS, A STREAM TRANSFER PUMP, A STANDBY STREAM TRANSFER PUMP AND A WORK AREA PUMP.

THE DRAWING ILLUSTRATING THIS CONSTRUCTION SHOWS A ROCK BERM / SAND BAGS FOR BLOCKING OFF THE STREAM ON EITHER END OF THE PROPOSED CONSTRUCTION. OTHER METHODS SUCH AS USING PORTABLE PRECAST CONCRETE BARRIERS OR SHEET PILING MAY BE USED TO BLOCK OFF THE STREAM.

THIS METHOD COULD BE APPLICABLE TO LOW FLOW STREAM CHARACTERISTICS EXPECTED DURING THE CONSTRUCTION PERIOD.

SEE PAGE 3-3 (NEXT SHEET) FOR DETAILS.

OPTION 2: CULVERT BY-PASS

CONSTRUCT DIKES OF SAND BAGS, GEOTEXTILE LINED RIPRAP OR SHEET PILING UPSTREAM AND DOWNSTREAM OF THE PROPOSED STRUCTURE IN ORDER TO BLOCK OFF WATER FROM THE CONSTRUCTION AREA. INSTALL TEMPORARY DIVERSION TUBE / CULVERT IN OR ADJACENT TO THE DIKES TO PASS WATER AROUND OR THROUGH THE CONSTRUCTION SITE. ANY WATER PUMPED FROM WITHIN THE CONSTRUCTION AREA MUST BE DIRECTED TO A SEDIMENT POND PRIOR TO DISCHARGE TO THE STREAM.

THIS METHOD MAY NOT BE ALLOWED DURING PERIODS OF FISH MIGRATION UNLESS VELOCITY CRITERIA THROUGH THE CULVERT TO FACILITATE FISH PASSAGE IS MET. (COMMONLY 2 FPS FOR 2 YEAR - 24 HOUR EVENTS)

SEE MANUAL CHAPTER 3, PAGE 16 FOR DETAILS.

OPTION 3: BY-PASS CHANNEL

CONSTRUCT A BY-PASS CHANNEL AROUND THE CONSTRUCTION AREA. CONSTRUCT DIKES UPSTREAM AND DOWNSTREAM OF THE PROPOSED STRUCTURE IN ORDER TO BLOCK OFF WATER FROM THE CONSTRUCTION AREA. CONSTRUCT A BY-PASS CHANNEL AROUND THE CONSTRUCTION AREA. THIS BY-PASS CHANNEL MUST BE DESIGNED AND CONSTRUCTED TO WITHSTAND EROSION AND BED SHEAR POTENTIAL. ANY WATER PUMPED FROM WITHIN THE CONSTRUCTION AREA MUST BE DIRECTED TO A SEDIMENT POND OR OTHER ENGINEERED DEVICE PRIOR TO DISCHARGE TO THE STREAM.

THIS METHOD DOES PROVIDE FOR BETTER ACCOMMODATION FOR FISH PASSAGE DURING CONSTRUCTION.

SEE MANUAL CHAPTER 3, PAGE 16 FOR DETAILS. THE BY-PASS CHANNEL WOULD BE CONSTRUCTED IN LIEU OF PLACING THE TEMPORARY CULVERT.

OPTION 4: PARTIAL STREAM DIVERSION

CONSTRUCT A CENTER DIKE (SHEET PILE, PRECAST CONCRETE PORTABLE BARRIER, PORTADAM, AQUA TUBE) PARALLEL TO THE STREAM FLOW. THEN BLOCK ONE SIDE WHILE WORK IS COMPLETED ON THE OTHER SIDE. THEN SHIFT THE UPSTREAM AND DOWNSTREAM ENDS IN ORDER TO CONSTRUCT ON THE OTHER SIDE OF THE STREAM.

SEE MANUAL CHAPTER 3, PAGES 17 FOR DETAILS. THIS PARTIAL STREAM DIVERSION COULD BE USED FOR CULVERT, OPEN-BOTTOM STRUCTURE, AND BRIDGE CONSTRUCTION.

WHERE CONDITIONS ALLOW, DIVERSIONS MAY BE PLACED ALONG BOTH SIDES OF THE STREAM TO ALLOW CONSTRUCTION TO OCCUR SIMULTANEOUSLY ON EACH SIDE OF THE STREAM. THIS METHOD COULD BE USED FOR OPEN-BOTTOM AND BRIDGE CONSTRUCTION.

OPTION 5: SPEED BMP

NOT APPLICABLE.

OPTION 6: WINTER WORK

CONSTRUCT PROJECT WHEN CONDITIONS ARE FROZEN OR AT LOW FLOW.

THE SPECIFIED CONTRACT TIME SHALL BE ADHERED TO. THIS OPTION CAN ONLY BE CONSIDERED WHEN ALLOWED BY THE SPECIFIED PROJECT SCHEDULE.

OPTION 7: TEMPORARY FILL FOR WORKPADS, ISOLATING WORKSITES, COFFERDAMS, AND STAGING AREAS

NOT APPLICABLE.

FOR INFORMATIONAL PURPOSES ONLY

MnDNR GENERAL PERMIT 2004-0001 - BEST PRACTICES MANUAL - CHAPTER 3
TEMPORARY ACCESS OR CHANNEL DIVERSIONS
NOTES FOR TEMPORARY ROADS OR CHANNEL DIVERSIONS

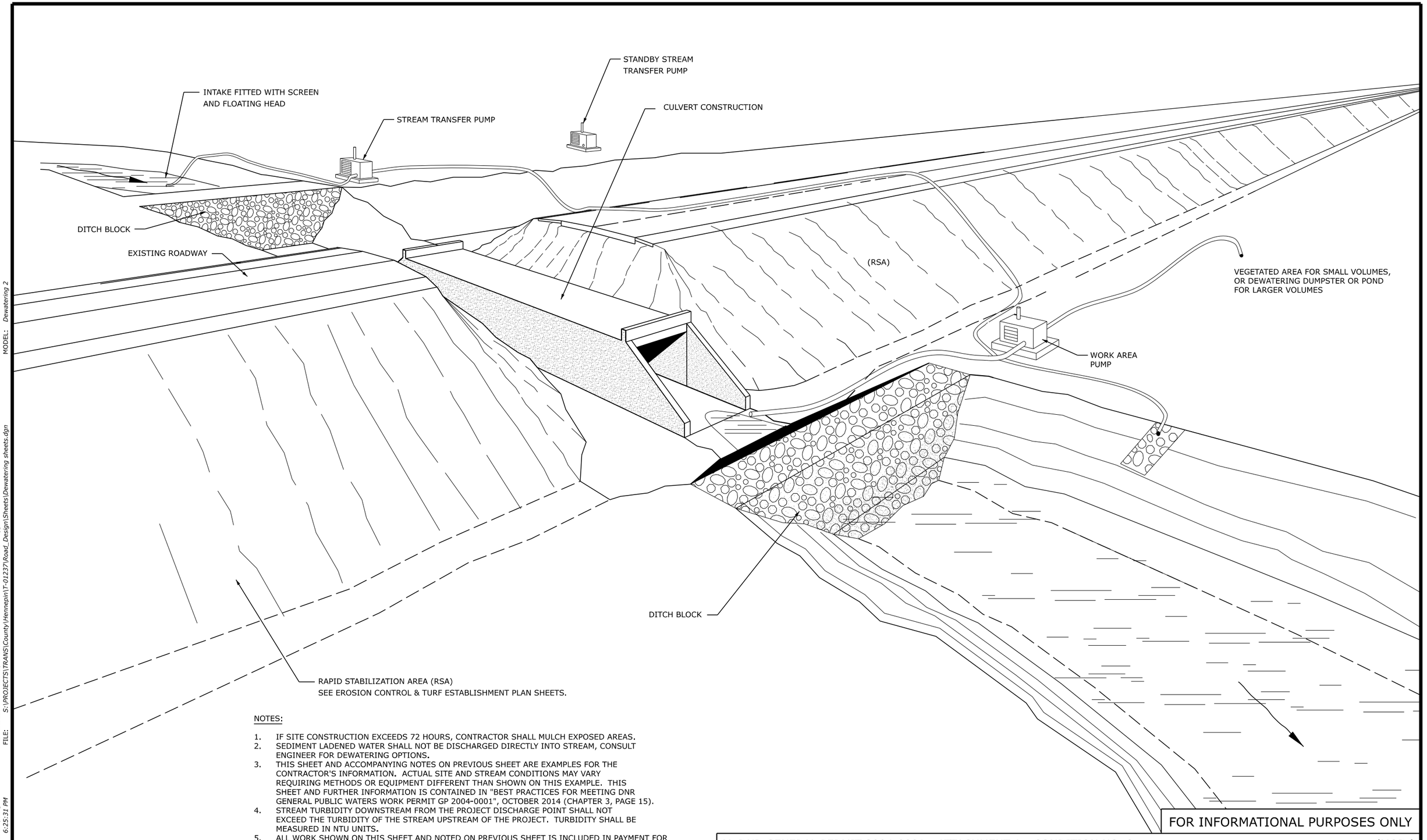
Stonebrooke

TITLE: DEWATERING DETAILS

C.P. 1010811

SHEET NO. 8 OF 23 SHEETS

PLOT DRIVER: pdf_bw_11x17.pltcfg
PLOT DATE: 1/23/2025 6:25:30 PM
PEN TABLE: T-01237_planset.tbl
FILE: S:\PROJECTS\TRANS\County\Hennepin\T-01237\Road_Design\Sheets\Dewatering sheets.dgn
USER: jgriffin
MODEL: Dewatering



NOTES:

1. IF SITE CONSTRUCTION EXCEEDS 72 HOURS, CONTRACTOR SHALL MULCH EXPOSED AREAS.
2. SEDIMENT LADENED WATER SHALL NOT BE DISCHARGED DIRECTLY INTO STREAM, CONSULT ENGINEER FOR DEWATERING OPTIONS.
3. THIS SHEET AND ACCOMPANYING NOTES ON PREVIOUS SHEET ARE EXAMPLES FOR THE CONTRACTOR'S INFORMATION. ACTUAL SITE AND STREAM CONDITIONS MAY VARY REQUIRING METHODS OR EQUIPMENT DIFFERENT THAN SHOWN ON THIS EXAMPLE. THIS SHEET AND FURTHER INFORMATION IS CONTAINED IN "BEST PRACTICES FOR MEETING DNR GENERAL PUBLIC WATERS WORK PERMIT GP 2004-0001", OCTOBER 2014 (CHAPTER 3, PAGE 15).
4. STREAM TURBIDITY DOWNSTREAM FROM THE PROJECT DISCHARGE POINT SHALL NOT EXCEED THE TURBIDITY OF THE STREAM UPSTREAM OF THE PROJECT. TURBIDITY SHALL BE MEASURED IN NTU UNITS.
5. ALL WORK SHOWN ON THIS SHEET AND NOTED ON PREVIOUS SHEET IS INCLUDED IN PAYMENT FOR OTHER ITEMS. NO DIRECT COMPENSATION SHALL BE MADE FOR MEETING ANY OF THE NOTED OR ILLUSTRATED REQUIREMENTS, OR FOR CONFORMING TO THE PROJECT PERMITS.
6. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN APPROVALS FROM THE DNR FOR THE PREFERRED INSTREAM DIVERSION METHOD PROPOSED PRIOR TO CONSTRUCTION.

FOR INFORMATIONAL PURPOSES ONLY

MnDNR GENERAL PERMIT 2004-0001 - ATTACHMENT A - CONDITION NO. 9 (MOD.)
TEMPORARY ACCESS OR CHANNEL DIVERSIONS
TEMPORARY STREAM BLOCK EXAMPLE PAGE 3-3

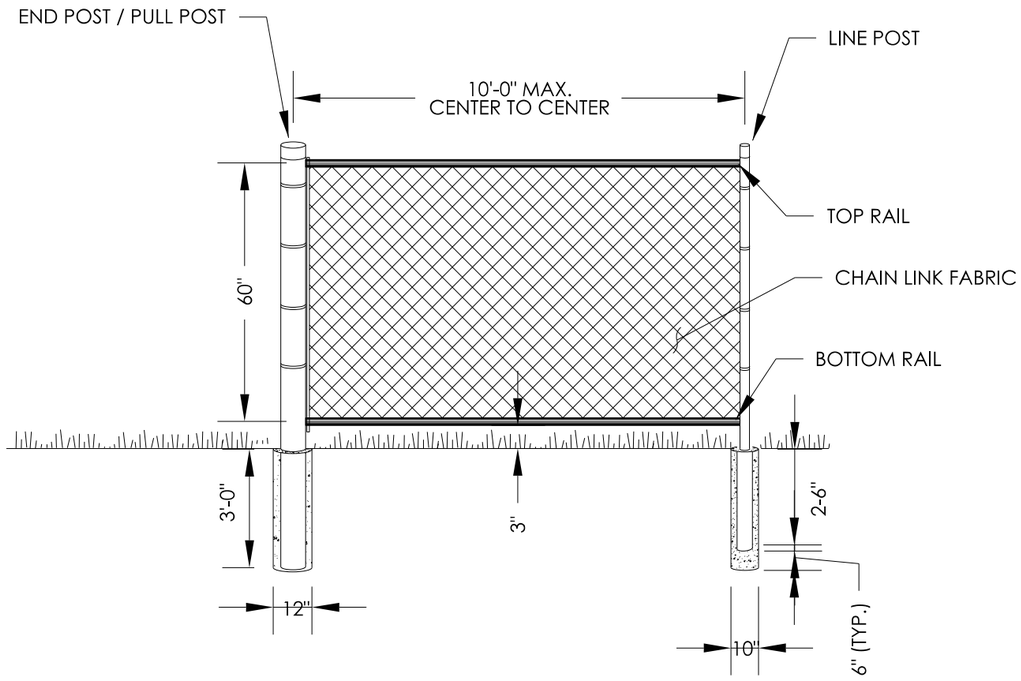
Stonebrooke

TITLE: DEWATERING DETAILS

C.P. 1010811

SHEET NO. 9 OF 23 SHEETS

PLOT DRIVER: pdf_bw_11x17.pltcfg
PLOT DATE: 1/23/2025 6:25:31 PM
PEN TABLE: T-01237_planset.tbl
FILE: S:\PROJECTS\TRANS\County\Hennepin\T-01237\Road_Design\Sheets\Dewatering sheets.dgn
USER: jgriffin
MODEL: Dewatering 2

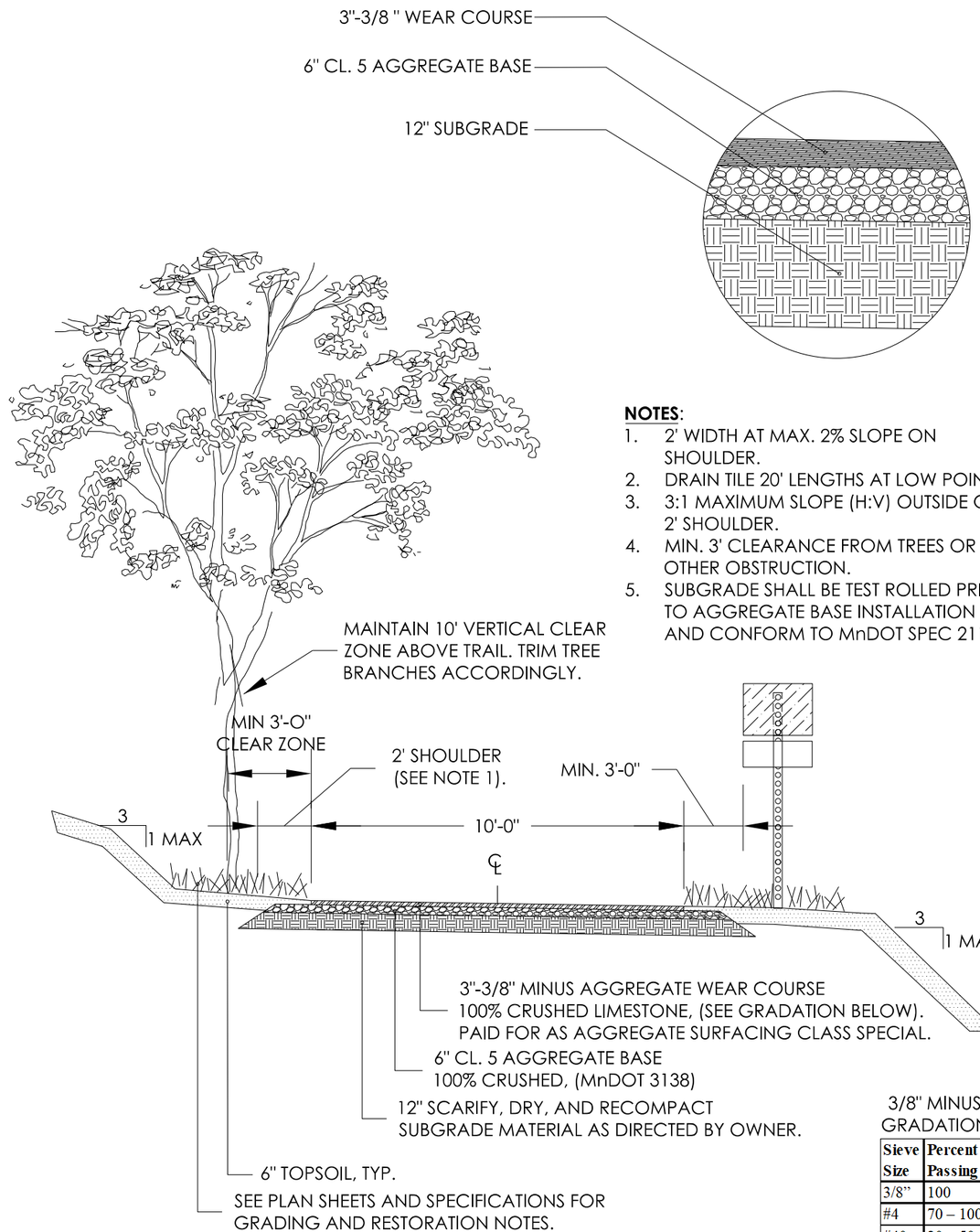


NOTES:

1. 100% BONDED VINYL COATED - "BLACK", GALVANIZED.
2. TERMINAL POST END, CORNER OR PULL POST: 3" O.D. GRADE "A" BONDED VINYL.
3. LINE POSTS SHALL BE 2-1/2" O.D. GRADE "A" BONDED VINYL.
4. TOP AND BOTTOM RAIL SHALL BE 1-5/8" O.D. GRADE "A" BONDED VINYL
5. ALL FITTINGS, TIES, LOOP CAPS AND COMPONENT PARTS SHALL BE VINYL COATED - "BLACK"
6. CHAIN LINK FABRIC SHALL BE 2" MESH WITH KNUCKLED SELVAGE TOP AND BOTTOM, AND CONFORM TO REQUIREMENTS OF AASHTO M 181 TYPE IV.
7. FABRIC SHALL BE TIED BELOW TOP RAIL AND ABOVE BOTTOM RAIL EVERY 12".
8. FENCE SHALL BE GROUNDED.
9. CONTRACTOR SHALL INSTALL ORANGE BARRIER FENCE IN LOCATION OF PROPOSED CHAIN LINK FENCE AFTER EMBANKMENT GRADING IS COMPLETE UNTIL CHAIN LINK FENCE CAN BE INSTALLED (INCIDENTAL).
10. PAID FOR AS WIRE FENCE DESIGN 60V-9322.

TR-23 SAFETY BARRIER - CHAIN LINK W/ TOP RAIL

NTS



NOTES:

1. 2' WIDTH AT MAX. 2% SLOPE ON SHOULDER.
2. DRAIN TILE 20' LENGTHS AT LOW POINTS.
3. 3:1 MAXIMUM SLOPE (H:V) OUTSIDE OF 2' SHOULDER.
4. MIN. 3' CLEARANCE FROM TREES OR OTHER OBSTRUCTION.
5. SUBGRADE SHALL BE TEST ROLLED PRIOR TO AGGREGATE BASE INSTALLATION AND CONFORM TO MnDOT SPEC 2111.

3/8" MINUS GRADATION

Sieve Size	Percent Passing
3/8"	100
#4	70 – 100
#40	20 – 50
#200	10 – 30

TR-3 TYPICAL TRAIL SECTION 10' GRAVEL

NTS

REV. NO.	DATE	BY	CHK	DESCRIPTION

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

NAME JESSICA L. GRIFFIN LIC. NO. 59503 DATE 1/23/2025

DESIGNED SRS
DRAWN SRS
CHECKED JLG

Stonebrooke

MISCELLANEOUS DETAILS
THREE RIVERS PARK DISTRICT DETAILS
C.P. 1010811

SHEET 10 OF 23

PLOT DRIVER: pdf_bw_11x17.pltctg
PLOT DATE: 1/23/2025 6:25:44 PM
USER: jgriffin
PEN TABLE: T-01237_planset.tbl
FILE: S:\PROJECTS\TRANS\County\Hennepin\T-01237\Road_Design\Sheets\T-01237_det.dgn
MODEL: Default

SIGN SPECIAL DETAIL

PLOT DRIVER: pdf_bw_11x17.pltcfg
PLOT DATE: 1/23/2025 6:25:46 PM
USER: jgriffin
PEN TABLE: T-01237_planset.tbl
FILE: S:\PROJECTS\TRANS\County\Hennepin\T-01237\Road_Design\Sheets\T-01237_det.dgn
MODEL: Wetland_Buffer_Sign

REV. NO.	DATE	BY	CHK	DESCRIPTION

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

NAME JESSICA L. GRIFFIN LIC. NO. 59503 DATE 1/23/2025

DESIGNED SRS
DRAWN SRS
CHECKED JLG

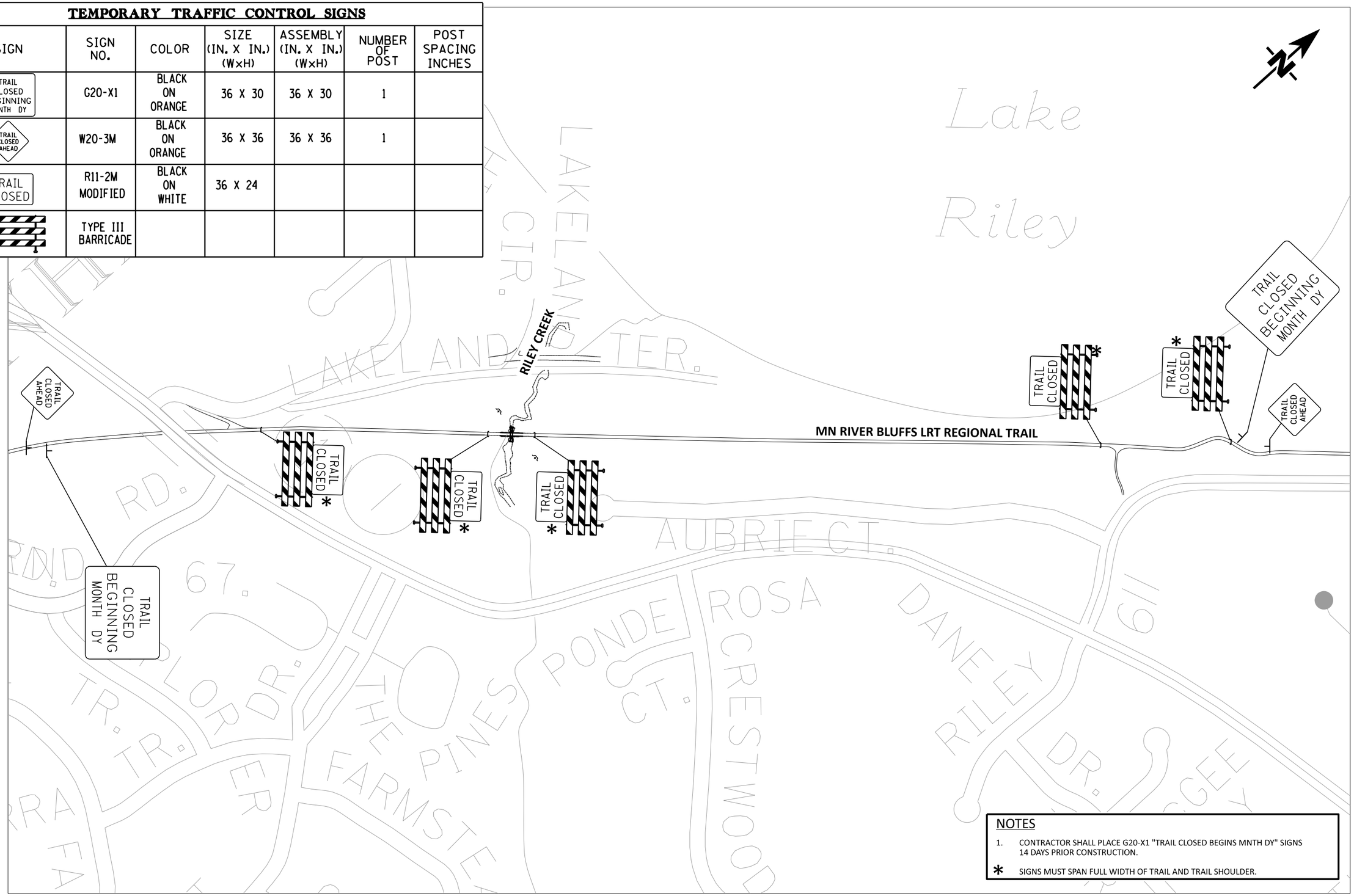
Stonebrooke

MISCELLANEOUS DETAILS
SIGN SPECIAL DETAIL
C.P. 1010811

SHEET 11 OF 23

TEMPORARY TRAFFIC CONTROL SIGNS

SIGN	SIGN NO.	COLOR	SIZE (IN. X IN.) (W×H)	ASSEMBLY (IN. X IN.) (W×H)	NUMBER OF POST	POST SPACING INCHES
TRAIL CLOSED BEGINNING MONTH DY	G20-X1	BLACK ON ORANGE	36 X 30	36 X 30	1	
TRAIL CLOSED AHEAD	W20-3M	BLACK ON ORANGE	36 X 36	36 X 36	1	
TRAIL CLOSED	R11-2M MODIFIED	BLACK ON WHITE	36 X 24			
	TYPE III BARRICADE					



NOTES

1. CONTRACTOR SHALL PLACE G20-X1 "TRAIL CLOSED BEGINS MNTH DY" SIGNS 14 DAYS PRIOR CONSTRUCTION.

* SIGNS MUST SPAN FULL WIDTH OF TRAIL AND TRAIL SHOULDER.

REV. NO.	DATE	BY	CHK	DESCRIPTION

0 150 300
SCALE FEET

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

NAME JESSICA L. GRIFFIN LIC. NO. 59503 DATE 1/23/2025

DESIGNED	BPV
DRAWN	BSM
CHECKED	JLG

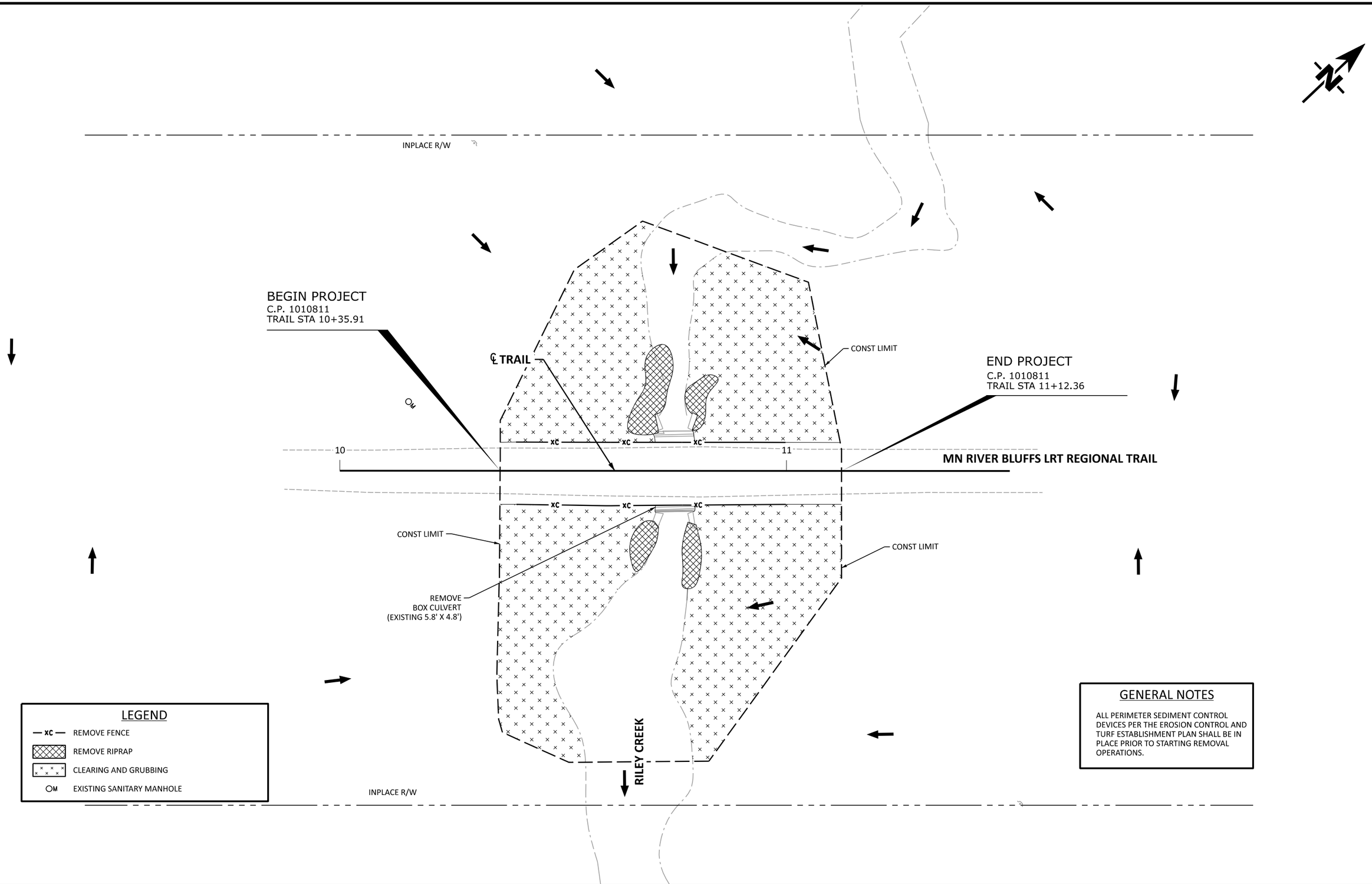
Stonebrooke

TRAFFIC CONTROL PLAN

C.P. 1010811

SHEET 12 OF 23

PLOT DRIVER: pdf_bw_11x17.pltcfg
PLOT DATE: 1/23/2025 6:25:59 PM
PEN TABLE: T-01237_planset.tbl
FILE: S:\PROJECTS\TRANS\County\Hennepin\T-01237\Road_Design\Sheets\T-01237_tcp.dgn
USER: jgriffin
MODEL: 1-TC



PLOT DRIVER: pdf_bw_11x17.pltcfg
PLOT DATE: 1/23/2025 6:26:10 PM
USER: jgriffin
PEN TABLE: T-01237_planset.tbl
FILE: S:\PROJECTS\TRANS\County\Hennepin\T-01237\Road_Design\Sheets\T-01237_apl.dgn
MODEL: 20 scale

REV. NO.	DATE	BY	CHK	DESCRIPTION

0 10 20
SCALE FEET

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

NAME JESSICA L. GRIFFIN LIC. NO. 59503 DATE 1/23/2025

DESIGNED SRS
DRAWN BSM
CHECKED JLG

Stonebrooke

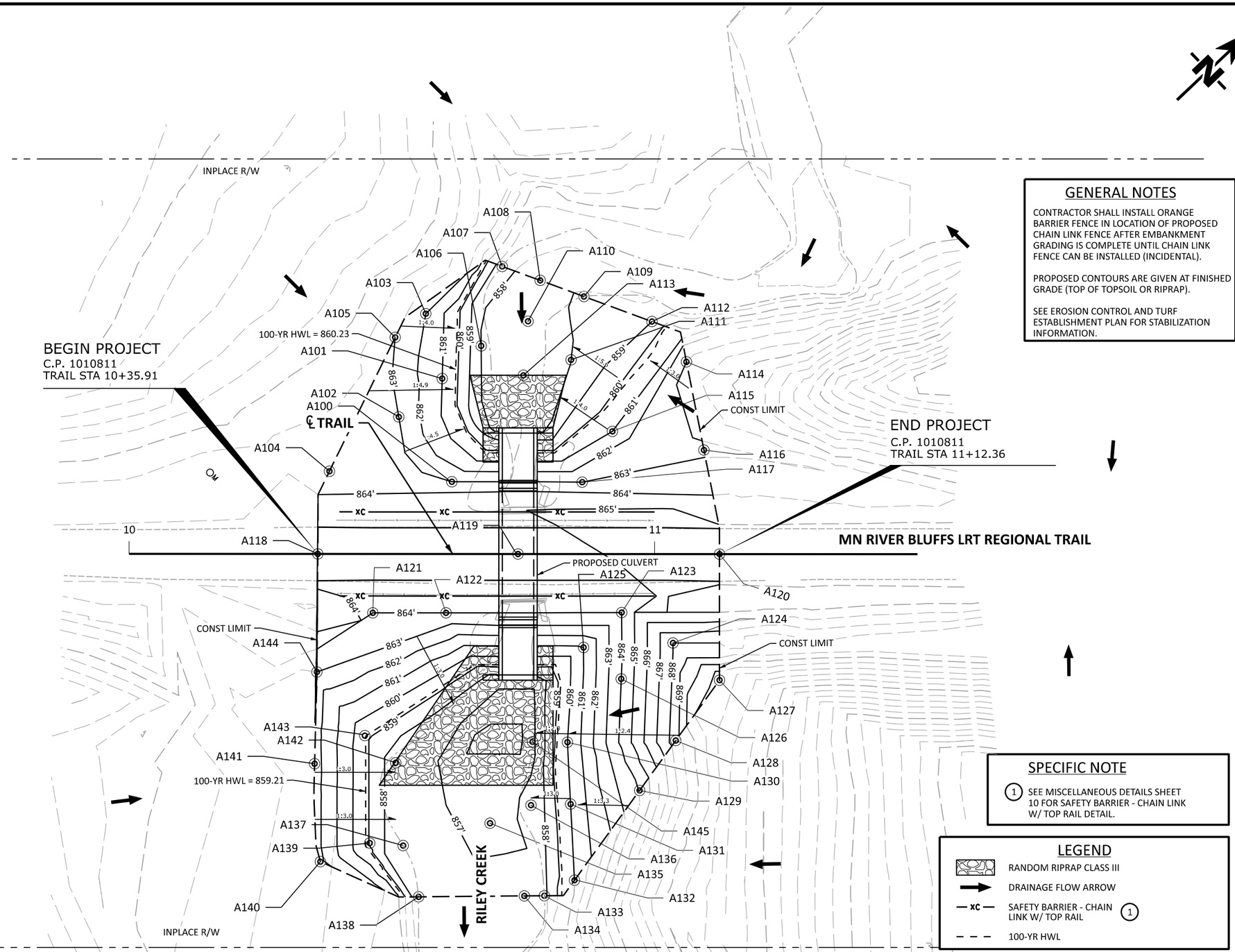
INPLACE TOPOGRAPHY, UTILITIES, & REMOVALS

C.P. 1010811

SHEET 13 OF 23

STAKING POINTS

POINT NO.	X	Y	Z
A100	465213.7543	114142.5958	863.00
A101	465198.1803	114154.6966	861.00
A102	465197.8522	114143.6704	863.00
A103	465187.0498	114160.8611	862.00
A104	465196.3585	114126.9776	863.72
A105	465186.3423	114153.5252	863.00
A106	465198.7165	114164.3569	858.00
A107	465190.4318	114177.6169	858.21
A108	465197.3184	114181.0686	857.71
A109	465205.2509	114185.0445	858.16
A110	465201.3980	114174.0544	857.63
A111	465212.3594	114175.0072	858.00
A112	465217.5740	114191.2211	859.00
A113	465208.3016	114166.3858	857.49
A114	465227.6536	114190.7656	862.85
A115	465227.6746	114171.4342	861.00
A116	465242.1777	114181.7047	862.78
A117	465230.7842	114160.6343	863.00
A118	465206.3078	114114.5985	864.59
A119	465232.3930	114142.3721	864.86
A120	465258.6440	114170.3222	865.22
A121	465221.6464	114114.5624	864.00
A122	465231.1826	114124.7252	864.00
A123	465254.0095	114149.1422	864.00
A124	465264.9118	114152.2916	868.00
A125	465253.8880	114139.3006	861.00
A126	465263.1547	114140.4391	864.00
A127	465276.1326	114153.9119	871.39
A128	465278.8078	114139.9903	868.59
A129	465281.0228	114128.4629	864.05
A130	465264.9383	114124.7295	860.00
A131	465273.9365	114117.1124	860.00
A132	465285.0042	114107.7436	860.00
A133	465283.2308	114101.5349	857.35
A134	465280.6528	114098.7394	857.30
A135	465266.0970	114103.4410	856.79
A136	465268.9287	114111.4790	857.64
A137	465257.8848	114088.4687	857.46
A138	465267.0144	114083.9504	857.07
A139	465253.1815	114084.1543	858.95
A140	465249.3381	114074.8931	862.21
A141	465235.0005	114086.8391	862.43
A142	465245.4300	114098.2207	857.30
A143	465237.6413	114097.4681	859.25
A144	465222.5706	114099.1041	863.00
A145	465260.3187	114119.9478	856.75



GENERAL NOTES

CONTRACTOR SHALL INSTALL ORANGE BARRIER FENCE IN LOCATION OF PROPOSED CHAIN LINK FENCE AFTER EMBANKMENT GRADING IS COMPLETE UNTIL CHAIN LINK FENCE CAN BE INSTALLED (INCIDENTAL).

PROPOSED CONTOURS ARE GIVEN AT FINISHED GRADE (TOP OF TOPSOIL OR RIPRAP).

SEE EROSION CONTROL AND TURF ESTABLISHMENT PLAN FOR STABILIZATION INFORMATION.

SPECIFIC NOTE

(1) SEE MISCELLANEOUS DETAILS SHEET 10 FOR SAFETY BARRIER - CHAIN LINK W/ TOP RAIL DETAIL.

LEGEND

- RANDOM RIPRAP CLASS III
- DRAINAGE FLOW ARROW
- xc — SAFETY BARRIER - CHAIN LINK W/ TOP RAIL (1)
- 100-YR HWL

PLOT DRIVER: pdf_bw_11x17.pltcfg
PLOT DATE: 1/23/2025 6:26:51 PM
USER: jgriffin
PEN TABLE: T-01237_planset.tbl
FILE: S:\PROJECTS\TRANS\County\Hennepin\T-01237\Road_Design\Sheets\T-01237_cpp.dgn
MODEL: 20 scale

REV. NO.	DATE	BY	CHK	DESCRIPTION

0 10 20
SCALE FEET

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

NAME JESSICA L. GRIFFIN LIC. NO. 59503 DATE 1/23/2025

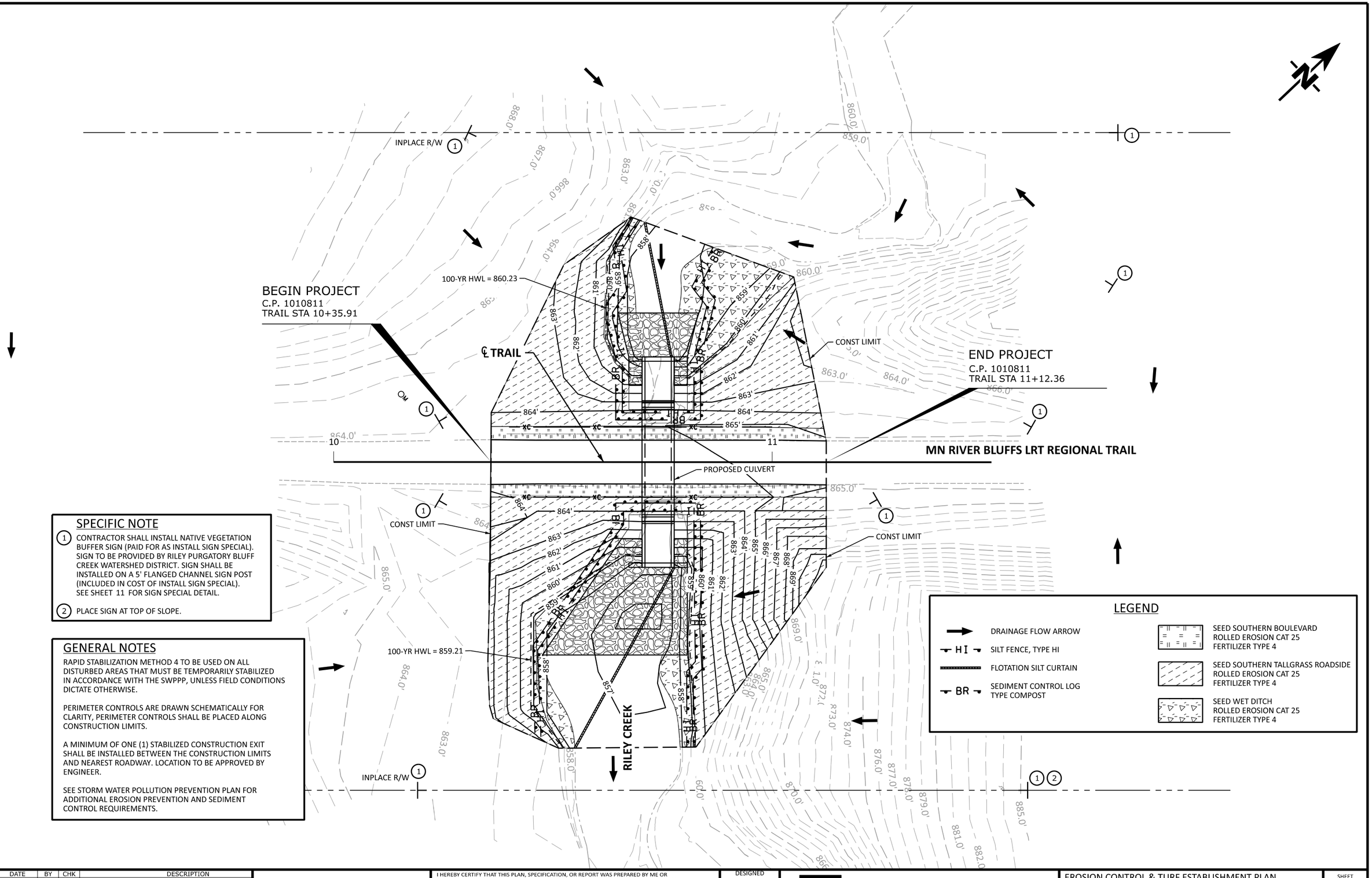
DESIGNED SRS
DRAWN BSM
CHECKED JLG

Stonebrooke

CONSTRUCTION PLAN

C.P. 1010811

SHEET 14 OF 23



SPECIFIC NOTE

1. CONTRACTOR SHALL INSTALL NATIVE VEGETATION BUFFER SIGN (PAID FOR AS INSTALL SIGN SPECIAL). SIGN TO BE PROVIDED BY RILEY PURGATORY BLUFF CREEK WATERSHED DISTRICT. SIGN SHALL BE INSTALLED ON A 5' FLANGED CHANNEL SIGN POST (INCLUDED IN COST OF INSTALL SIGN SPECIAL). SEE SHEET 11 FOR SIGN SPECIAL DETAIL.
2. PLACE SIGN AT TOP OF SLOPE.

GENERAL NOTES

RAPID STABILIZATION METHOD 4 TO BE USED ON ALL DISTURBED AREAS THAT MUST BE TEMPORARILY STABILIZED IN ACCORDANCE WITH THE SWPPP, UNLESS FIELD CONDITIONS DICTATE OTHERWISE.

PERIMETER CONTROLS ARE DRAWN SCHEMATICALLY FOR CLARITY, PERIMETER CONTROLS SHALL BE PLACED ALONG CONSTRUCTION LIMITS.

A MINIMUM OF ONE (1) STABILIZED CONSTRUCTION EXIT SHALL BE INSTALLED BETWEEN THE CONSTRUCTION LIMITS AND NEAREST ROADWAY. LOCATION TO BE APPROVED BY ENGINEER.

SEE STORM WATER POLLUTION PREVENTION PLAN FOR ADDITIONAL EROSION PREVENTION AND SEDIMENT CONTROL REQUIREMENTS.

LEGEND

- DRAINAGE FLOW ARROW
- HI — SILT FENCE, TYPE HI
- FLOTATION SILT CURTAIN
- BR — SEDIMENT CONTROL LOG TYPE COMPOST
- SEED SOUTHERN BOULEVARD ROLLED EROSION CAT 25 FERTILIZER TYPE 4
- SEED SOUTHERN TALLGRASS ROADSIDE ROLLED EROSION CAT 25 FERTILIZER TYPE 4
- SEED WET DITCH ROLLED EROSION CAT 25 FERTILIZER TYPE 4

REV. NO.	DATE	BY	CHK	DESCRIPTION

SCALE 0 10 20 FEET

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

NAME JESSICA L. GRIFFIN LIC. NO. 59503 DATE 1/23/2025

DESIGNED SRS
DRAWN BSM
CHECKED JLG

Stonebrooke

EROSION CONTROL & TURF ESTABLISHMENT PLAN

C.P. 1010811

SHEET 15 OF 23

PLOT DRIVER: pdf_bw_11x17.pltcfg
PLOT DATE: 1/23/2025 6:27:15 PM
USER: jgriffin
PEN TABLE: T-01237_planset.tbl
FILE: S:\PROJECTS\TRANS\County\Hennepin\T-01237\Road_Design\Sheets\T-01237_erc.dgn
MODEL: 20 scale

SWPPP REQUIREMENTS:

PROJECT LOCATION AND GENERAL SITE INFORMATION

THIS PROJECT CONSISTS OF CONSTRUCTING A 6X6 RCBC ON MN RIVER BLUFFS LRT REGIONAL TRAIL IN EDEN PRAIRIE, MN.

THIS PROJECT WILL REQUIRE THE DISTURBANCE OF 0.19 ACRES OF SOIL.

THIS PROJECT SWPPP WAS PREPARED BY JESSICA GRIFFIN, PE CERTIFIED IN THE DESIGN OF SWPPP BY THE UNIVERSITY OF MINNESOTA.

LONG TERM OPERATION AND MAINTENANCE

HENNEPIN COUNTY REGIONAL RAILROAD AUTHORITY WILL BE RESPONSIBLE FOR THE LONG TERM OPERATION AND MAINTENANCE OF THE PERMANENT STORMWATER MANAGEMENT SYSTEM.

RECEIVING SURFACE WATERS, DISCHARGE TO IMPAIRED WATERS & SPECIAL WATERS

THE TABLE BELOW IDENTIFIES ALL SURFACE WATERS LOCATED WITHIN 1 MILE OF THE DISTURBED SOIL PROJECT BOUNDARIES, WHICH WILL RECEIVE STORMWATER RUNOFF FROM THE CONSTRUCTION SITE, DURING OR AFTER CONSTRUCTION.

STORMWATER FROM A DISCHARGE POINT ON THE PROJECT THAT FLOWS TO A SURFACE WATER IDENTIFIED AS IMPAIRED AND/OR SPECIAL MUST INCLUDE THE FOLLOWING ADDITIONAL BMP REQUIREMENTS:

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

2. TEMPORARY SEDIMENT BASINS MUST BE USED FOR COMMON DRAINAGE LOCATIONS THAT SERVE AN AREA WITH (5) OR MORE ACRES DISTURBED AT ONE TIME. THIS PROJECT AS DESIGNED DOES NOT HAVE FIVE (5) DISTURBED ACRES DRAINING TO A COMMON LOCATION, THEREFORE A TEMPORARY SEDIMENT BASIN WILL NOT BE NEEDED.

RECEIVING SURFACE WATERS

NAME OF BODY OF WATER	SPECIAL WATER	IMPAIRED WATER	IMPAIRMENTS
HENNEPIN COUNTY			
RILEY LAKE	NO	YES	MERCURY IN FISH TISSUE, FISH BIOASSESSMENTS, NUTRIENTS
RILEY CREEK	NO	YES	BENTHIC MACROINVERTEBRATES BIOASSESSMENTS, FISH BIOASSESSMENTS, TURBIDITY, E.COLI

CONTRACTOR RESPONSIBILITIES

CONSTRUCTION SHALL BE GOVERNED BY THE MnDOT SPEC BOOK (2020 EDITION).

PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR MUST IDENTIFY A MnDOT CERTIFIED EROSION CONTROL SUPERVISOR FOR THIS SITE, THAT IS IN GOOD STANDING WHO WILL BE KNOWLEDGEABLE AND EXPERIENCED IN THE APPLICATION OF EROSION PREVENTION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES.

THE CONTRACTOR IS RESPONSIBLE FOR EROSION AND SEDIMENT CONTROL ON THIS PROJECT.

THE CONTRACTOR WILL DEVELOP A CHAIN OF COMMAND WITH ALL OPERATORS ON THE SITE TO ENSURE THAT THE EROSION AND SEDIMENT CONTROL WILL BE IMPLEMENTED AND STAY IN EFFECT UNTIL THE CONSTRUCTION PROJECT IS COMPLETE, THE ENTIRE SITE HAS UNDERGONE FINAL STABILIZATION, AND A NOTICE OF TERMINATION (N.O.T.) HAS BEEN SUBMITTED TO THE MPCA WHEN A NPDES PERMIT IS REQUIRED.

FINAL STABILIZATION TO BE COMPLETED PRIOR TO SUBMITTING THE N.O.T. INCLUDES: APPROXIMATELY 70% UNIFORM VEGETATIVE COVER OVER ALL PERVIOUS SURFACE, ALL TEMPORARY BMPS CLEANED OUT AND REMOVED, DITCHES STABILIZED, AND FINAL MAINTENANCE/CLEANOUT OF PERMANENT STORMWATER SYSTEMS.

THE CONTRACTOR SHALL MAINTAIN THE SEDIMENT AND EROSION CONTROL MEASURES IDENTIFIED ON THIS PLAN UNTIL THE SITE IS STABILIZED. ALL EROSION AND SEDIMENT CONTROL DEVICES SHALL BE INSPECTED AFTER EACH RUNOFF PRODUCING RAIN EVENT. ALL NONFUNCTIONAL DEVICES SHALL BE REPAIRED OR REPLACED WITH NO ADDITIONAL COMPENSATION MADE THEREFOR.

IF SEDIMENT ESCAPES THE CONSTRUCTION SITE, OFF-SITE ACCUMULATION OF SEDIMENT MUST BE REMOVED IN A MANNER AND AT A FREQUENCY SUFFICIENT TO MINIMIZE OFF-SITE IMPACTS. NO FILLING EXCEPT THAT SPECIFICALLY DETAILED IN THE PLAN SHALL OCCUR WITHIN THE AREA CONTAINED BETWEEN THE UPPER STREAM BANKS OR ANY WETLAND.

EROSION PREVENTION PRACTICES

STABILIZATION OF ALL EXPOSED SOIL AREAS MUST BE COMMENCED IMMEDIATELY TO LIMIT SOIL EROSION, AND COMPLETED WITHIN 7 DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED. FOR AREAS WHERE DISTURBED SOILS DRAIN TO AN IMPAIRED OR SPECIAL WATER THE EXPOSED SOIL MUST BE STABILIZED NO LATER THAN 7 DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT AREA HAS CEASED. SEE THE IMPAIRED & SPECIAL WATERS SECTION OF THIS SHEET FOR ADDITIONAL BMP REQUIREMENTS FOR DISTURBED AREAS THAT DRAIN TO A SPECIAL OR IMPAIRED WATER.

THE NORMAL WETTED PERIMETER OF ANY TEMPORARY OR PERMANENT DRAINAGE DITCH OR SWALE THAT DRAINS WATER FROM ANY PORTION OF THE CONSTRUCTION SITE, OR DIVERTS WATER AROUND THE SITE, MUST BE STABILIZED WITHIN 200 LINEAL FEET FROM THE POINT OF DISCHARGE INTO ANY SURFACE WATER. STABILIZATION OF THE LAST 200 LINEAL FEET MUST BE COMPLETED WITHIN 24 HOURS AFTER CONNECTING TO A SURFACE WATER WITH RAPID STABILIZATION METHOD 4.

PIPE CULVERT OUTLETS MUST BE PROVIDED WITH TEMPORARY OR PERMANENT ENERGY DISSIPATION WITHIN 24 HOURS AFTER CONNECTION TO A SURFACE WATER. THIS WILL INCLUDE DRAINAGE DITCHES THAT DRAIN WATER FROM ANY PORTION OF THE CONSTRUCTION SITE.

CONSTRUCTION PHASING - EROSION AND SEDIMENT CONTROL SEQUENCING

SILT FENCE, CONSTRUCTION ENTRANCES, AND/OR OTHER SUITABLE PERIMETER BMP'S AS DEPICTED IN THE TEMPORARY EROSION AND SEDIMENT CONTROL PLANS WILL BE INSTALLED PRIOR TO THE START OF ANY LAND DISTURBING ACTIVITY. CONSTRUCTION WILL BE REQUIRED TO BE PHASED SO THAT ALL DOWN GRADIENT SEDIMENT CONTROL MEASURES ARE INSTALLED PRIOR TO OR IN CONJUNCTION WITH ANY SOIL DISTURBING ACTIVITIES.

WHEN THE EXISTING TOPSOIL IS DISTURBED, THE TOPSOIL WILL BE STRIPPED AND STOCKPILED IN SOIL BERMS AT THE TOE OF THE STRIPPED SLOPES ALONG THE PROJECT LIMITS OR OTHER LOCATION DETERMINED BY THE CONTRACTOR. STOCKPILED TOPSOIL BERMS WILL NOT BE PLACED IN ANY STORMWATER CONVEYANCES.

SEDIMENT DAMAGE FROM STOCKPILES WILL BE MINIMIZED BY PLACING A ROW OF SILT FENCE 5 FEET FROM THE TOE (INCIDENTAL).

ALL STOCKPILES LEFT FOR A PERIOD OF 7 DAYS SHALL BE TEMPORARILY STABILIZED. TEMPORARY STABILIZATION SHALL CONSIST OF RAPID STABILIZATION METHOD 4 (INCIDENTAL).

AFTER STRIPPING THE TOPSOIL THE EXPOSED SOIL INSLOPES WILL BE STABILIZED WITH A RAPID STABILIZATION METHOD 4 WITHIN 7 DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED.

UPON COMPLETION OF THE APPROACH GRADING FILL WILL BE ADDED TO THE EXISTING INSLOPES AND TAPERED BACK TO MATCH EXISTING GROUND. THE STOCKPILED TOPSOIL BERMS WILL BE SPREAD ON THE NEW SLOPES AND PERMANENT VEGETATION WILL BE ESTABLISHED AS PROVIDED IN THE PLAN.

THE CONTRACTOR MAY SKIP TEMPORARY OR RAPID STABILIZATION METHODS IF AN AREA IS STABILIZED WITH PERMANENT STABILIZATION IMMEDIATELY AFTER WORK IS COMPLETE.

SITE INSPECTION AND MAINTENANCE

THE CONTRACTOR'S INSPECTOR SHALL INSPECT THE CONSTRUCTION SITE ONCE EVERY SEVEN (7) DAYS DURING ACTIVE CONSTRUCTION AND WITHIN 24 HOURS AFTER A STORM EVENT GREATER THAN 0.5 INCHES IN 24 HOURS. INSPECT ALL TEMPORARY AND PERMANENT WATER QUALITY MANAGEMENT, EROSION PREVENTION, AND SEDIMENT CONTROL BMP'S UNTIL THE SITE HAS UNDERGONE FINAL STABILIZATION.

THE CONTRACTOR SHALL KEEP A RECORD OF ALL INSPECTIONS AND MAINTENANCE CONDUCTED DURING CONSTRUCTION. RECORDS SHALL INCLUDE:

- DATE AND TIME OF INSPECTIONS
  - NAME OF PERSON(S) CONDUCTING INSPECTIONS
  - ACCURATE FINDINGS OF INSPECTIONS, INCLUDING SPECIFIC LOCATIONS WHERE CORRECTIVE ACTIONS ARE NEEDED
  - CORRECTIVE ACTIONS TAKEN (INCLUDING DATE AND TIMES)
  - DATE AND AMOUNT OF ALL RAINFALL EVENTS GREATER THAN 0.5 INCHES IN 24 HOURS
  - DOCUMENTATION OF CHANGES MADE TO THE EROSION CONTROL PLANS
  - ANY AMENDMENTS TO THE SWPPP

ALL SILT FENCE AND DITCH CHECKS SHALL BE CLEANED OF SEDIMENT WHEN THE SEDIMENT REACHES 1/2 THE HEIGHT OF THE DITCH CHECK, SILT FENCE, OR OTHER PERIMETER CONTROL.

WHEN ACTIVE LAND-DISTURBING ACTIVITIES ARE NOT UNDER WAY, THE CONTRACTOR'S INSPECTOR MUST PERFORM SITE INSPECTION AND MAINTENANCE RESPONSIBILITIES AT LEAST WEEKLY UNTIL VEGETATIVE COVER IS ESTABLISHED. THE CONTRACTOR'S INSPECTOR SHALL MAINTAIN A RECORD OF INSPECTIONS AND MAINTENANCE THAT SHALL BE MADE AVAILABLE TO THE RILEY CREEK PURGATORY BLUFF CREEK WATERSHED AS REQUESTED.

PERMANENT STORMWATER MANAGEMENT SYSTEM

ALL STORMWATER MUST BE DISCHARGED IN A MANNER THAT DOES NOT CAUSE NUISANCE CONDITIONS, EROSION IN RECEIVING WATERS OR ON DOWNSLOPE PROPERTIES, OR INUNDATION IN WETLANDS RESULTING IN A SIGNIFICANT ADVERSE IMPACT TO THE WETLAND.

THIS ROAD CONSTRUCTION PROJECT HAS THE FOLLOWING LAND FEATURE CHANGES:

TOTAL DISTURBED AREA: 0.19 ACRES

TOTAL EXISTING IMPERVIOUS AREA: 0.02 ACRES

TOTAL PROPOSED IMPERVIOUS AREA: 0.02 ACRES

TOTAL PROPOSED NET CHANGE IN IMPERVIOUS AREA: 0.00 ACRES

WATER QUALITY VOLUME REQUIRED: N/A

FINAL STABILIZATION REQUIREMENTS

SOIL SURFACES COMPACTED DURING CONSTRUCTION AND REMAINING PERVIOUS UPON COMPLETION OF CONSTRUCTION MUST BE DECOMPACTED TO ACHIEVE:

- A SOIL COMPACTION TESTING PRESSURE OF LESS THAN 1,400 KILOPASCALS OR 200 POUNDS PER SQUARE INCH IN THE UPPER 12 INCHES OF SOIL OR
- A BULK DENSITY OF LESS THAN 1.4 GRAMS PER CUBIC CENTIMETER OR 87 POUNDS PER CUBIC FOOT IN THE UPPER 12 INCHES OF SOIL.

CONTRACTOR SHALL PROTECT ALL UTILITIES, TREE ROOTS AND OTHER EXISTING VEGETATION UNTIL FINAL REVEGETATION AND STABILIZATION OF THE SITE IS COMPLETE.

ALL EXISTING DISTURBED TOPSOIL SHALL BE RE-ESTABLISHED WITH 6" MINIMUM TOPSOIL. TOPSOIL MATERIAL SHALL FOLLOW THE REQUIREMENTS OF MNDOT SPEC 3877.1.A AND SHALL CONTAIN AT LEAST 5% ORGANIC MATTER. TOPSOIL SHALL BE SPREAD AND INCORPORATED INTO UNDERLYING SOIL DURING FINAL SITE TREATMENT.

ALL TEMPORARY EROSION PREVENTION AND SEDIMENT CONTROL BMPS MUST BE REMOVED UPON FINAL SITE STABILIZATION.

SEDIMENT CONTROL PRACTICES

TEMPORARY STOCKPILED TOPSOIL BERMS MUST INCLUDE PERIMETER BMP'S AS DESCRIBED IN CONSTRUCTION PHASING SECTION OF THIS SHEET.

ALL STORM DRAIN INLETS MUST BE PROTECTED BY APPROPRIATE BMP'S DURING CONSTRUCTION UNTIL ALL SOURCES WITH POTENTIAL DISCHARGE TO THE INLET HAVE BEEN STABILIZED.

VEHICLE TRACKING OF SEDIMENT FROM THE CONSTRUCTION SITE MUST BE MINIMIZED. STREET SWEEPING MUST BE USED IF SEDIMENT IS BEING TRACKED OFF THE CONSTRUCTION SITE ON PAVED SURFACES.

POLLUTION PREVENTION MEASURES

THE CONTRACTOR WILL IMPLEMENT THE POLLUTION PREVENTION MANAGEMENT MEASURES AS DIRECTED IN THE NPDES PERMIT SECTION 12 AS PERTAINING TO SOLID WASTE, HAZARDOUS MATERIALS, EXTERNAL TRUCK WASHING, AND CONCRETE WASHOUT ONSITE.

THESE MANAGEMENT MEASURES FOR POLLUTION PREVENTION WILL BE STRICTLY ENFORCED.

ALL LIQUID AND SOLID WASTE GENERATED BY CONCRETE WASHOUT OPERATIONS MUST BE CONTAINED IN A LEAK-PROOF CONTAINMENT FACILITY OR IMPERMEABLE LINER ONSITE. NO LIQUID OR SOLID WASTE MUST CONTACT THE GROUND AND NO RUNOFF IS ALLOWED FROM THE CONCRETE WASHOUT OPERATIONS OR AREA. ALL WASTE MUST BE PROPERLY DISPOSED IN COMPLIANCE WITH MPCA REGULATIONS. A SIGN MUST BE INSTALLED NEAR EACH WASHOUT FACILITY TO INFORM CONCRETE EQUIPMENT OPERATORS TO UTILIZE THE PROPER FACILITIES.

ALL CONSTRUCTION DEBRIS AND OTHER WASTES SHALL BE DISPOSED OF BY THE CONTRACTOR IN A MANNER THAT COMPLIES WITH MPCA DISPOSAL REQUIREMENTS. ONSITE BURIAL OF WASTE IS STRICTLY PROHIBITED.

BURNING OF ANY MATERIAL IS NOT ALLOWED WITHIN PROJECT BOUNDARIES.

ALL BRIDGE DEMOLITION AND REMOVAL OPERATIONS SHALL BE PERFORMED IN A MANNER WHICH CONTAINS ALL DEBRIS FROM ENTERING THE STREAM. IF REMOVAL OPERATIONS RESULT IN DEBRIS ENTERING THE STREAM, REMOVAL OPERATIONS SHALL BE SUSPENDED AND METHODS CORRECTED PRIOR TO RESUMING. ANY DEBRIS WHICH DOES ENTER THE STREAM SHALL BE REMOVED.

PAYMENT

NO DIRECT COMPENSATION WILL BE MADE FOR COMPLIANCE TO THE REQUIREMENTS ON THIS SHEET INCLUDING TEMPORARY STABILIZATION, MAINTENANCE OR REPAIR OF TEMPORARY OR PERMANENT EROSION AND SEDIMENT CONTROL MEASURES, OR CLEAN UP OF SEDIMENT OR ERODED MATERIAL. PAYMENT FOR INSTALLATION OF INDIVIDUAL CONTROL MEASURES IS PROVIDED FOR AS TABULATED AND NOTED ON OTHER SHEETS.

LOCATION OF SWPPP REQUIREMENTS IN PROJECT PLAN

DESCRIPTION	PLAN LOCATION
QUANTITY TABULATION	2
TEMPORARY SEDIMENT CONTROL	15
PLAN VIEW	15

SOIL TYPES

SOIL TYPES TYPICALLY FOUND ON THIS PROJECT ARE B & C SOILS (NRCS SURVEY).

PROJECT CONTACTS

AGENCY	CONTACT NAME	PHONE NUMBER
WATER RESOURCES ENGINEER - STONEBROOKE ENGINEERING	JESSICA GRIFFIN	952-540-4855
HENNEPIN COUNTY REGIONAL RAILROAD AUTHORITY	AARON FRENG	612-730-2303
RILEY PURGATORY BLUFF CREEK WATERSHED	TERRY JEFFREY	952-607-6512
MINNESOTA POLLUTION CONTROL AGENCY (MPCA)	JOSH NORMAN	651-757-2389
MN DEPARTMENT OF NATURAL RESOURCES	WES SAUNDERS-PEARCE	651-259-5822
THREE RIVERS PARK DISTRICT	MARK DUSBABEK	763-694-7866

WORK IN WATER RESTRICTIONS

THE FOLLOWING TYPES OF WATERS HAVE WORK IN WATER EXCLUSIONS. NO WORK IN THE WATER IS ALLOWED DURING THE EXCLUSION DATES.

WATERBODY	EXCLUSION DATES
LAKES	APRIL 1 - JUNE 30
NON-TROUT STREAMS	MARCH 15 - JUNE 15
TROUT STREAMS	SEPTEMBER 1 - APRIL 1

PLOT DRIVER: pdf_bw_11x17.pltcfg
PLOT DATE: 1/23/2025 6:27:27 PM
MODEL: 1 - SWPPP
PEN TABLE: T-01237_planset.tbl
FILE: S:\PROJECTS\TRANS\County\Hennepin\T-01237\Road_Design\Sheets\T-01237_swn.dgn
USER: jgriffin

REV. NO.	DATE	BY	CHK	DESCRIPTION

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

NAME JESSICA L. GRIFFIN LIC. NO. 59503 DATE 1/23/2025

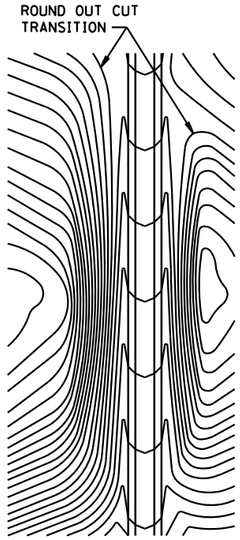
DESIGNED JLG
DRAWN SRS
CHECKED TWN

Stonebrooke

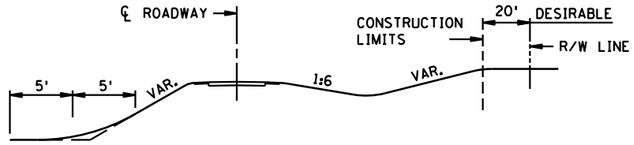
STORM WATER POLLUTION PREVENTION PLAN

C.P. 1010811

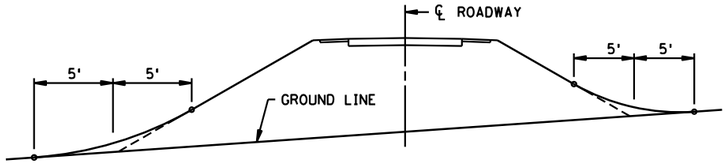
SHEET 16 OF 23



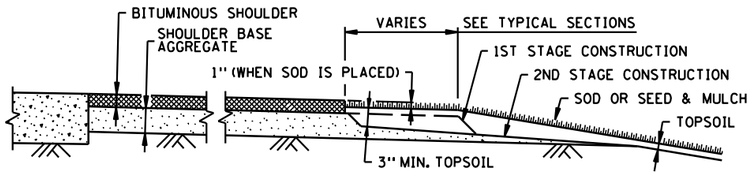
CONTOURING ROAD CUTS



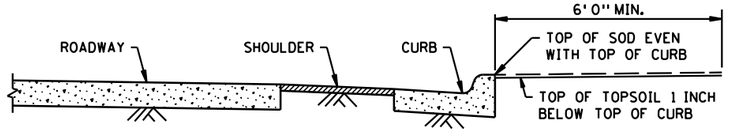
ROUNDING SHOULDERS AND BACKSLOPES



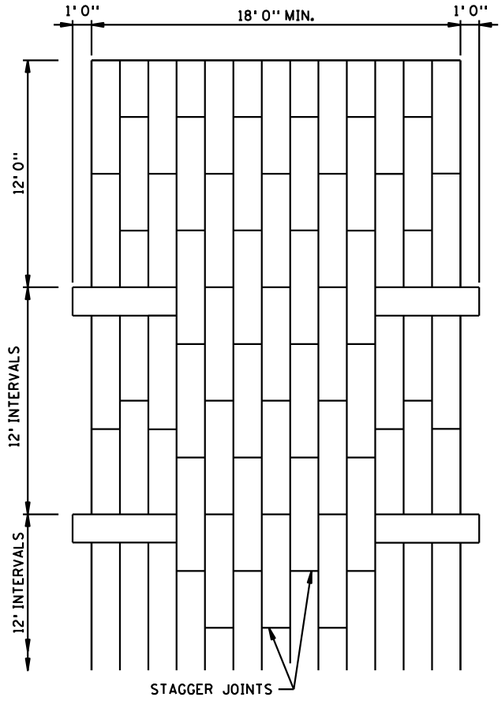
SHAPING FOR DRAINAGE ALONG THE TOE OF FILL SLOPES



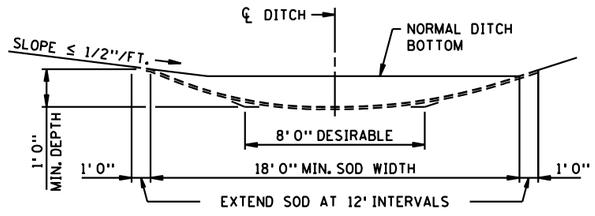
SHAPING AND TOPSOILING INSLOPES



SHAPING ADJACENT TO CURBS WHEN SOD IS PLACED

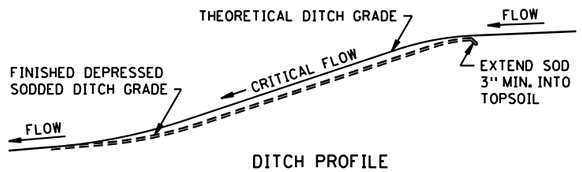


PLAN VIEW



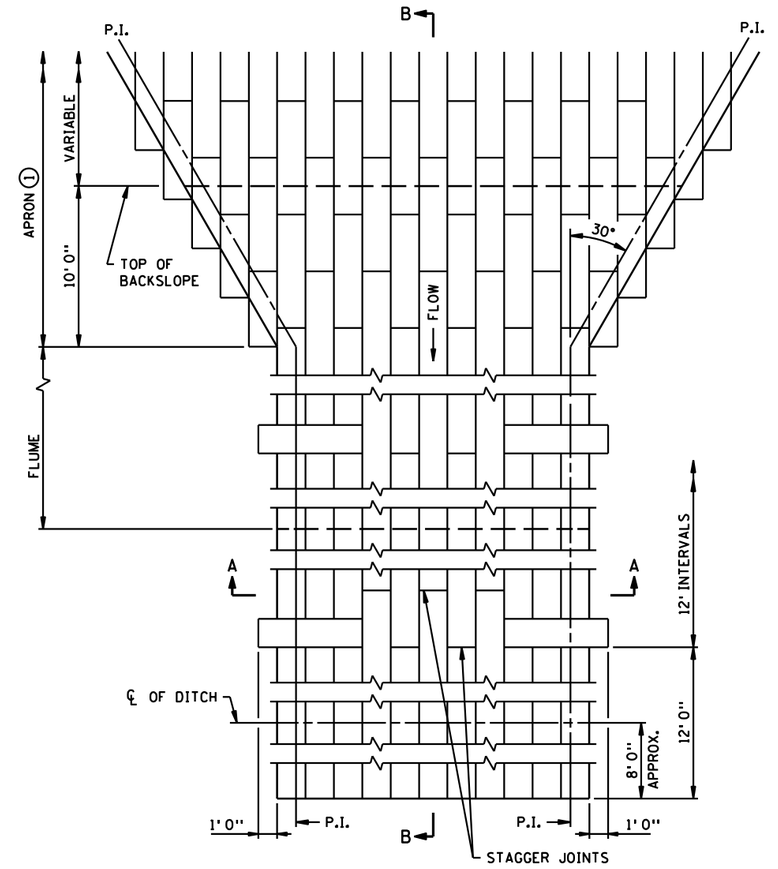
SODDED DITCH CROSS SECTION

WHERE FRONT OR BACK SLOPE IS FLAT (LESS THAN 1/2"/FT.), FIRST NOTCH DITCH AND THEN PROVIDE ROUNDING.

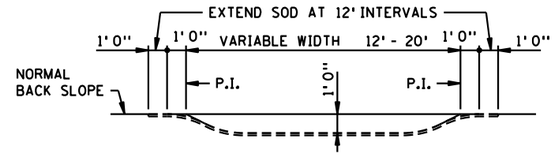


DITCH PROFILE

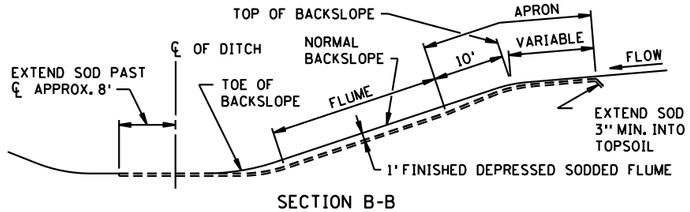
SODDED DITCH DETAILS



PLAN VIEW



SECTION A-A



SECTION B-B

SODDED FLUME DETAILS

NOTES:

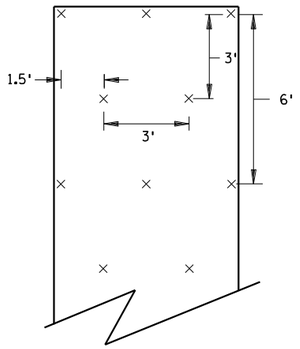
SEE SPEC. 2575.3 FOR ADDITIONAL INFORMATION.

① CONSTRUCT TAPER AS DIRECTED BY THE ENGINEER.

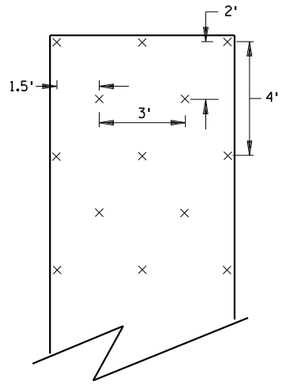
LEAD EXPERT OFFICE	LYNN CLARKOWSKI CHIEF ENVIRONMENTAL OFFICER OFFICE OF ENVIRNOMENTAL STEWARDSHIP		PERMANENT EROSION CONTROL ALONG ROADWAYS, DITCHES AND FLUMES	APPROVED: 02-28-2017 REVISED:	THOMAS STYRBICKI STATE DESIGN ENGINEER	STANDARD PLAN 5-297.404	1 OF 3

C.P. 1010811 SHEET NO. 17 OF 23 SHEETS

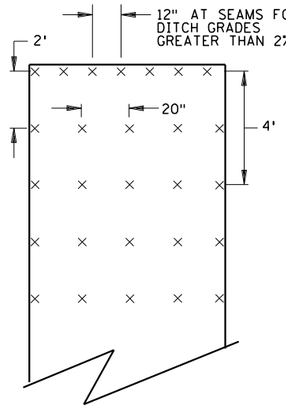
MODEL: 404_1
USER: jgriffin
PEN TABLE: T-01237_planset.tbl
FILE: S:\PROJECTS\TRANS\County\Hennepin\T-0123?\Road_Design\Sheets\T-01237_spn.dgn
PLOT DRIVER: pdf_bw_11x17.pltcfg
PLOT DATE: 1/23/2025 6:27:37 PM



SLOPES FLATTER THAN 1:2
120 STAPLES PER 100 SQ YD

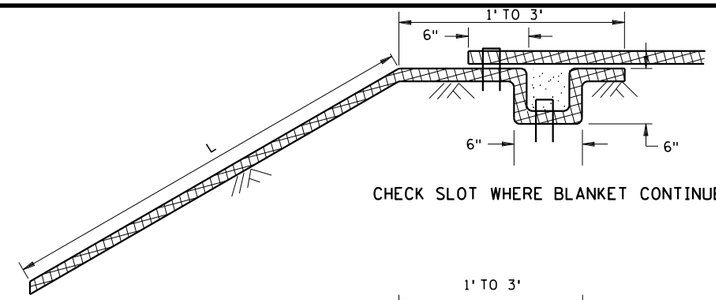


SLOPES 1:2 TO 1:1
170 STAPLES PER 100 SQ YD

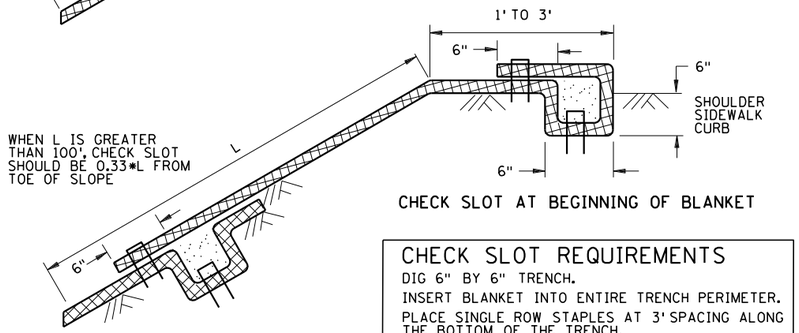


CHANNEL AND DITCH APPLICATIONS
350 STAPLES PER 100 SQ YD

BLANKET STAPLE PATTERN



CHECK SLOT WHERE BLANKET CONTINUES



CHECK SLOT AT BEGINNING OF BLANKET

CHECK SLOT REQUIREMENTS

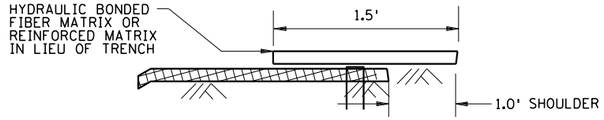
DIG 6" BY 6" TRENCH.

INSERT BLANKET INTO ENTIRE TRENCH PERIMETER.

PLACE SINGLE ROW STAPLES AT 3' SPACING ALONG THE BOTTOM OF THE TRENCH.

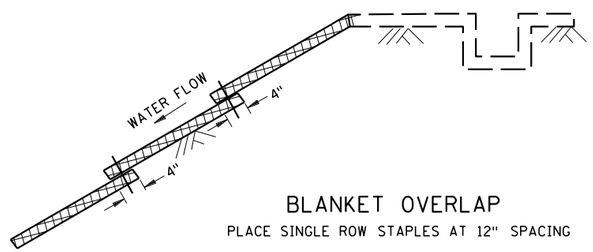
BACKFILL TRENCH WITH SOIL AND TAMP.

PLACE SINGLE ROW STAPLES AT 3' SPACING ON OVERLAP.

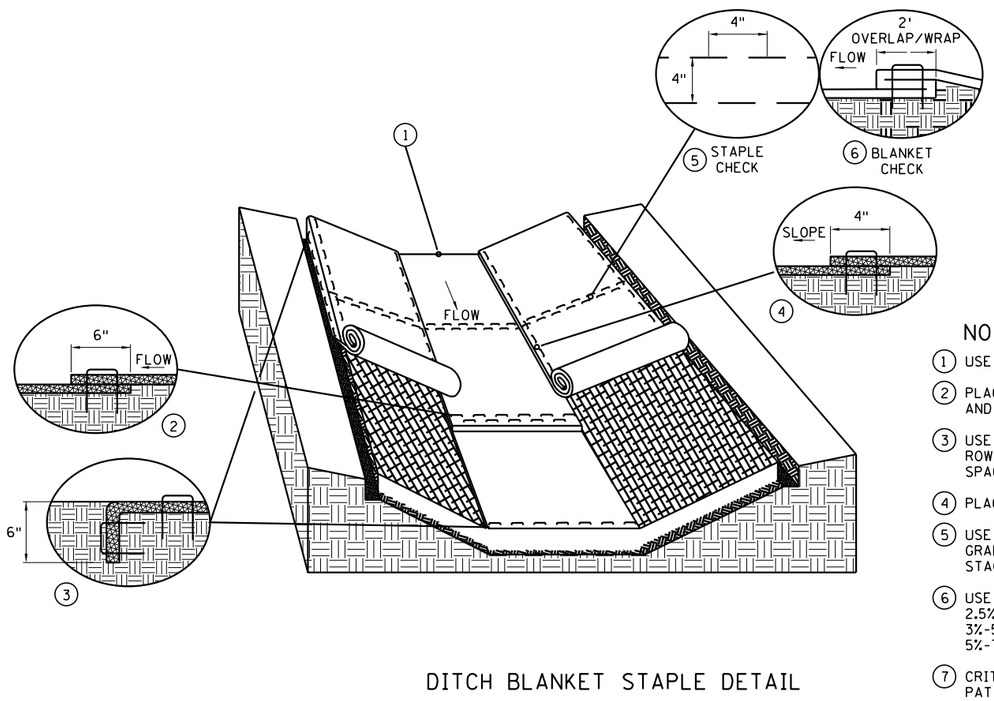


CHECK SLOT ALTERNATIVE
PLACE SINGLE ROW STAPLES AT 12" SPACING

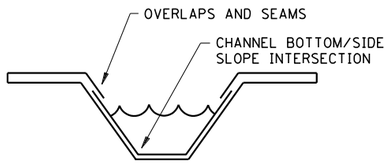
CHECK SLOT DETAILS



BLANKET OVERLAP
PLACE SINGLE ROW STAPLES AT 12" SPACING



DITCH BLANKET STAPLE DETAIL



DITCH BLANKET CRITICAL POINTS (7)

NOTES:

1. USE CHECK SLOT DETAIL (NO ALTERNATES).
2. PLACE DOUBLE ROW OF STAPLES STAGGERED 4" APART AND 4" ON CENTER.
3. USE 6" X 6" TRENCH TO PLACE BLANKET. PLACE SINGLE ROW OF STAPLES ON TOP AND TRENCH SIDES AT 12" SPACING. BACKFILL TRENCH WITH SOIL AND TAMP.
4. PLACE SINGLE ROW OF STAPLES AT 12" SPACING.
5. USE STAPLE CHECK FOR CHANNEL SLOPES LESS THAN 2.5% GRADE AT 100' INTERVALS. PLACE DOUBLE ROW OF STAPLES STAGGERED 4" APART AND AT 4" SPACING.
6. USE BLANKET CHECKS FOR THE FOLLOWING SLOPES:
   2.5%-3% 100' INTERVALS
   3%-5% 50' INTERVALS
   5%-7% 25' INTERVALS
7. CRITICAL POINTS SHALL BE SECURED WITH PROPER STAPLE PATTERNS.

GENERAL BLANKET INSTALLATION REQUIREMENTS

REPP = ROLLED EROSION PREVENTION PRODUCT.

PREPARE SOIL AS PER SPECIFICATION 2574.

LAY PARALLEL OR PERPENDICULAR TO THE DIRECTION OF WATER FLOW.

OVERLAP ADJACENT STRIP EDGES A MINIMUM OF 4".

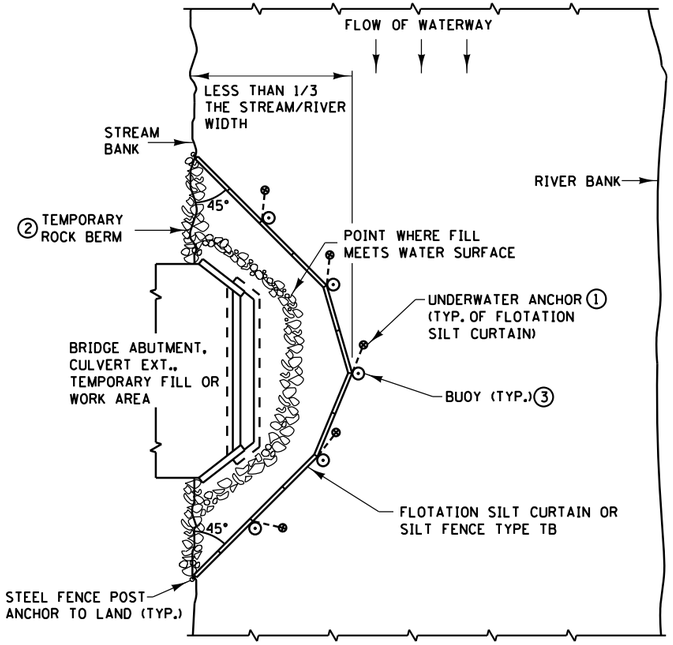
OVERLAP BLANKET 6" (MINIMUM) AT EACH END. OVERLAP BOTTOM END OF UPPER BLANKET OVER TOP END OF LOWER BLANKET. STAPLE ALONG OVERLAP EVERY 1.5'.

THE UPPERMOST BLANKET OF ALL SLOPE APPLICATIONS MUST START IN A CHECK SLOT. IF SLOPE LENGTH (L) IS 100' OR GREATER, INSERT BLANKET INTO A CHECK SLOT ⅓ FROM THE BOTTOM OF THE SLOPE.

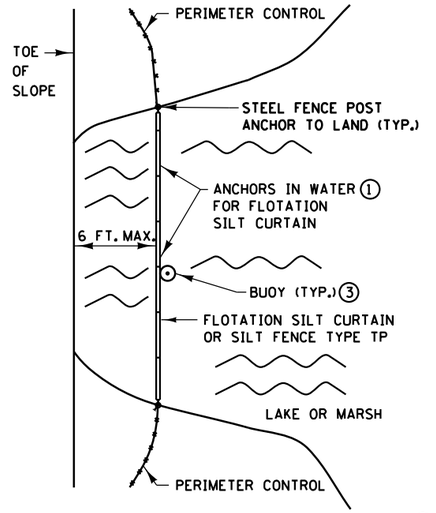
LEAD EXPERT OFFICE	MARNI KARNOWSKI CHIEF ENVIRONMENTAL OFFICER OFFICE OF ENVIRNOMENTAL STEWARDSHIP		PERMANENT EROSION CONTROL REPP (BLANKET) STAPLE PATTERN FOR SLOPES	APPROVED: 01-08-2020 REVISED:	THOMAS STYRBICKI STATE DESIGN ENGINEER	STANDARD PLAN 5-297.404	3 OF 3

C.P. 1010811 SHEET NO. 18 OF 23 SHEETS

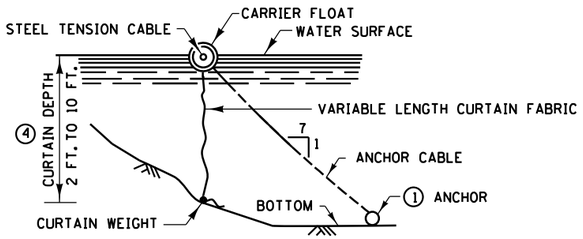
PLOT DRIVER: pdf_bw_11x17.pltcfg
PLOT DATE: 1/23/2025 6:27:38 PM
USER: jgriffin
PEN TABLE: T-01237_planset.tbl
FILE: S:\PROJECTS\TRANS\County\Hennepin\T-01237\Road_Design\Sheets\T-01237_spn.dgn
MODEL: 404_3



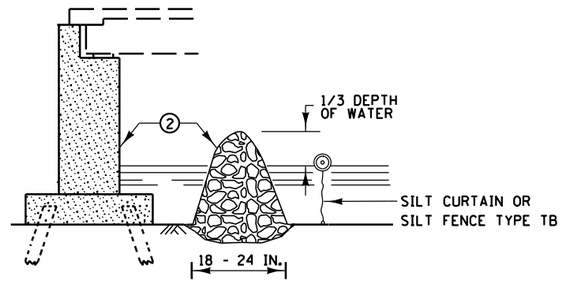
PLAN VIEW FOR STREAM ⑤



PLAN VIEW FOR LAKE OR MARSH ⑤



FLOTATION SILT CURTAIN



TEMPORARY ROCK BERM
FOR SEDIMENT CONTROL

INSTALLATION GUIDELINES
SILT FENCE TYPE TB

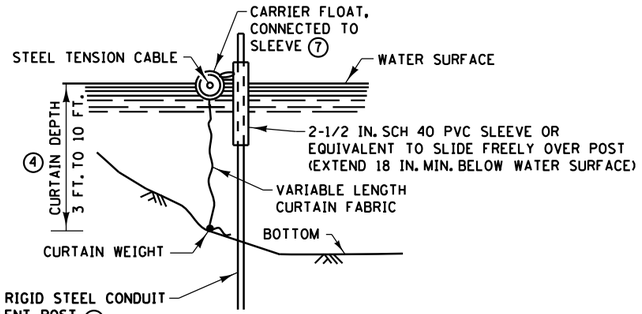
MINIMUM WATER DEPTH: 1 FT.
MAXIMUM WATER DEPTH: 3 FT.
MAXIMUM WATER VELOCITY: 5 FT./SEC.

INSTALLATION GUIDELINES ④
FLOTATION SILT CURTAIN
TYPE: STILL WATER

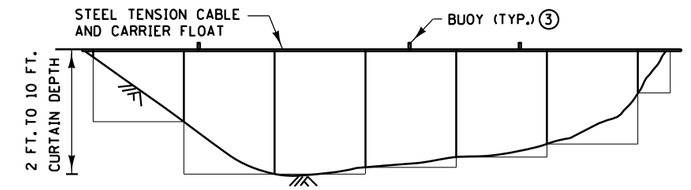
MINIMUM WATER DEPTH: 3 FT.
MAXIMUM WATER DEPTH: 10 FT.
MAXIMUM WATER VELOCITY: 2 FT./SEC.
MAXIMUM WAVE HEIGHT: 1 FT

INSTALLATION GUIDELINES ④
FLOTATION SILT CURTAIN
TYPE: MOVING WATER

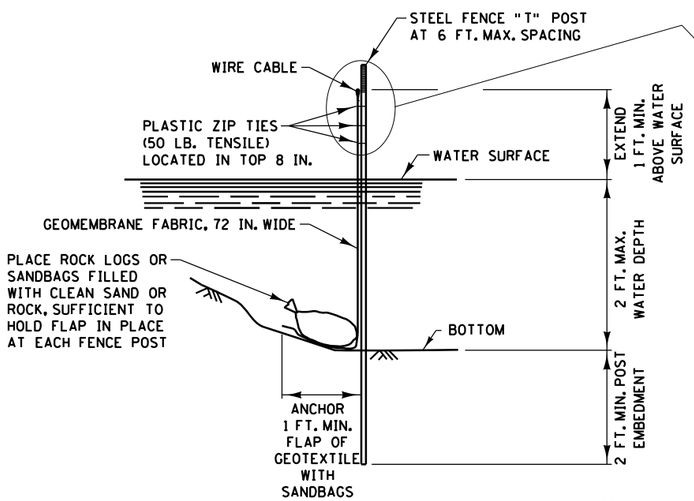
MINIMUM WATER DEPTH: 3 FT.
MAXIMUM WATER DEPTH: 10 FT.
MAXIMUM WATER VELOCITY: 5 FT./SEC.
MAXIMUM WAVE HEIGHT: 2 FT.



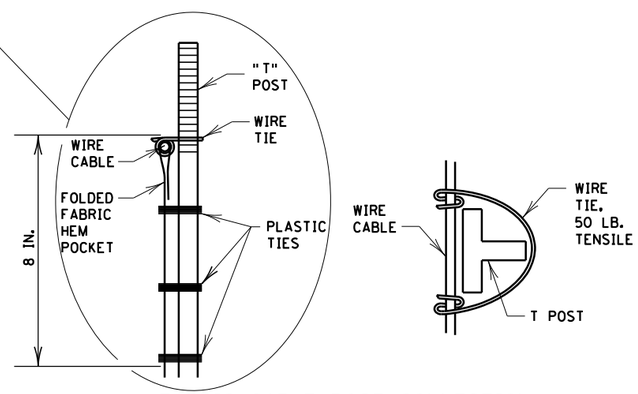
ALTERNATE FLOTATION SILT CURTAIN



FRONT VIEW FOR FLOTATION SILT CURTAIN



SILT FENCE TYPE TB ⑥



FABRIC/CABLE/POST CONNECTION

NOTES:

SEE SPECS. 2573, 3886, 3887 & 3893.

① FOR ANCHOR SPACING AND WEIGHT REQUIREMENTS, SEE SPEC. 2573.

② IN AREAS WHERE THE PLAN CALLS FOR RIPRAP AT A BRIDGE, CULVERT, OR SLOPE, A TEMPORARY ROCK BERM CONSTRUCTED FROM THE RIPRAP CAN BE USED TO PROVIDE ADDITIONAL PROTECTION. WHEN THE WORK IS COMPLETE THE RIPRAP CAN THEN BE MOVED TO THE PERMANENT LOCATION INDICATED IN THE PLANS. THE TEMPORARY ROCK BERM IS INCIDENTAL.

③ ON U.S. COAST GUARD OR OTHER MOTORIZED WATERWAYS, BUOYS ARE REQUIRED TO MARK THE ENDS AND SPECIAL AREAS FOR VISIBILITY. PLACE BUOYS AS REQUIRED FOR NAVIGATIONAL PURPOSES.

④ MINIMUM WATER DEPTH APPLIES TO THE DEEPEST POINT ALONG THE FLOTATION SILT CURTAIN OR SILT FENCE TYPE TB FOR DETERMINING APPLICABILITY OF FLOTATION SILT CURTAIN OR SILT FENCE TYPE TB.

⑤ SILT CURTAIN SHOULD BE REMOVED WHEN THE AREA CONTRIBUTING DIRECT RUNOFF HAS BEEN TEMPORARILY OR PERMANENTLY STABILIZED. SILT CURTAIN SHOULD ALSO BE REMOVED BEFORE WINTER IF ICE UP OR ICE FLOW IS ANTICIPATED.

⑥ EMBED POST INTO BOTTOM A MINIMUM OF 40% OF THE WATER DEPTH (INCLUDING WAVE HEIGHT), BUT IN NO CASE SHALL EMBEDMENT BE LESS THAN 2 FEET.

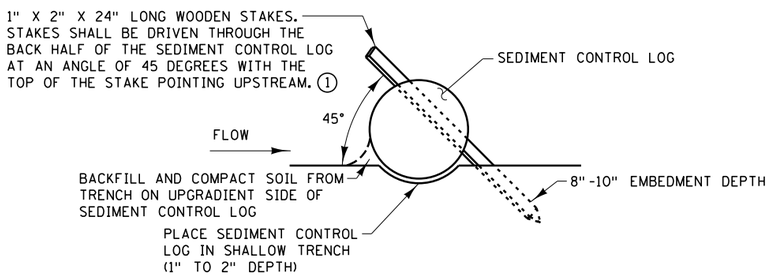
⑦ ANCHOR FLOAT MUST BE CONNECTED SECURELY TO SLEEVE WITH A MINIMUM TENSILE STRENGTH OF 100 LBS. CONNECTION METHOD MUST ALLOW FOR SLEEVE TO MOVE FREELY ON POST.

⑧ PROVIDE SUFFICIENT NUMBER OF POST ANCHORS TO MAINTAIN SILT CURTAIN POSITION.

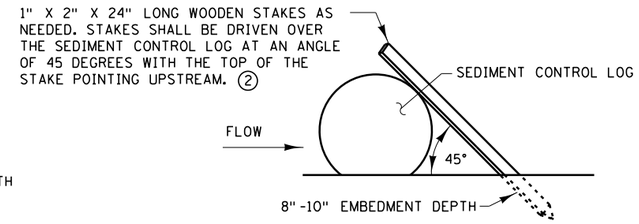
LEAD EXPERT OFFICE	LYNN CLARKOWSKI CHIEF ENVIRONMENTAL OFFICER OFFICE OF ENVIRNOMENTAL STEWARDSHIP		TEMPORARY SEDIMENT CONTROL SILT CURTAIN OR SILT FENCE TYPE TB	APPROVED: 02-28-2017 REVISED:	THOMAS STYRBICKI STATE DESIGN ENGINEER	STANDARD PLAN 5-297.405	1 OF 8

C.P. 1010811 SHEET NO. 19 OF 23 SHEETS

PLOT DRIVER: pdf_bw_11x17.pltcfg
PLOT DATE: 1/23/2025 6:27:39 PM
USER: jgriffin
PEN TABLE: T-01237_planset.tbl
FILE: S:\PROJECTS\TRANS\County\Hennepin\T-01237\Road_Design\Sheets\T-01237_spn.dgn
MODEL: 405_1

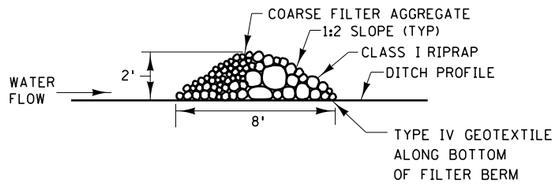


TYPES: STRAW, WOOD FIBER, OR COIR

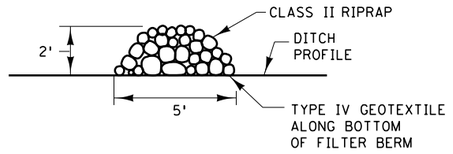


TYPES: WOOD CHIP, COMPOST, OR ROCK

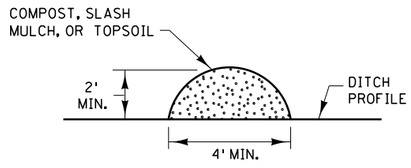
SEDIMENT CONTROL LOGS



TYPE 3 (ROCK WEEPER)

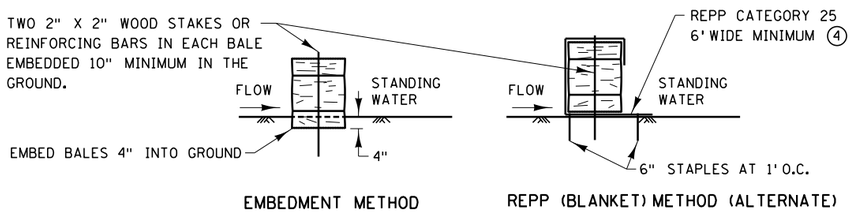


TYPE 5 (ROCK)



TYPE 1 (COMPOST), TYPE 2 (SLASH MULCH), OR TYPE 4 (TOPSOIL)

FILTER BERMS



EMBEDMENT METHOD

REPP (BLANKET) METHOD (ALTERNATE)

BALE BARRIERS (3)

NOTES:

REPP = ROLLED EROSION PREVENTION PRODUCT.

SEE SPECS. 2573, 3149, 3874, 3882, 3885, 3886, AND 3897.

(1) SPACE BETWEEN STAKES SHALL BE A MAXIMUM OF 1' FOR DITCH CHECKS OR 2' FOR OTHER APPLICATIONS.

(2) PLACE STAKES AS NEEDED TO PREVENT MOVEMENT OF SEDIMENT CONTROL LOGS PLACED ON SLOPES OR AS NEEDED DUE TO OTHER FACTORS. STAKES SHALL BE INCIDENTAL.

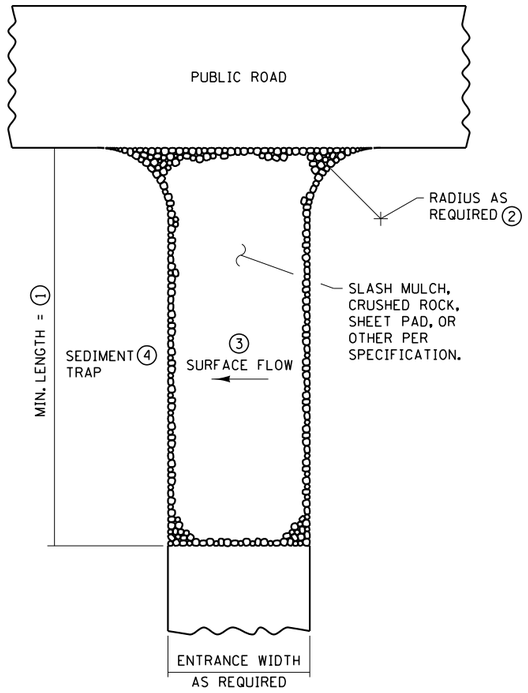
(3) TO BE USED FOR CRITICAL PERIMETER CONTROL AREAS WHERE STANDING WATER OCCURS (6" MAXIMUM DEPTH). BALES SHALL CONSIST OF TYPE 1 MULCH OF APPROXIMATELY 14" X 18" X 36" LONG. BALES SHALL BE PLACED ON EDGE AND BUTTED TIGHT TO ADJACENT BALES.

(4) INSTEAD OF TRENCHING, PLACE BALE ON THE REPP (BLANKET) AND WRAP BLANKET AROUND THE BALE. PLACE STAKE THROUGH BALE AND BLANKET.

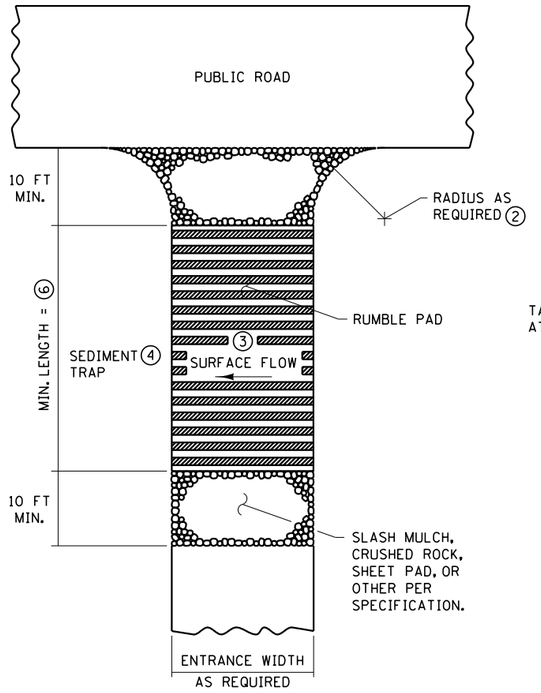
LEAD EXPERT OFFICE	MARNI KARNOWSKI CHIEF ENVIRONMENTAL OFFICER OFFICE OF ENVIRNOMENTAL STEWARDSHIP		TEMPORARY SEDIMENT CONTROL FILTER BERMS, SEDIMENT CONTROL LOGS, AND BALE BARRIERS	APPROVED: 01-08-2020 REVISED:	THOMAS STYRBICKI STATE DESIGN ENGINEER	STANDARD PLAN 5-297.405	2 OF 8

C.P. 1010811 SHEET NO. 20 OF 23 SHEETS

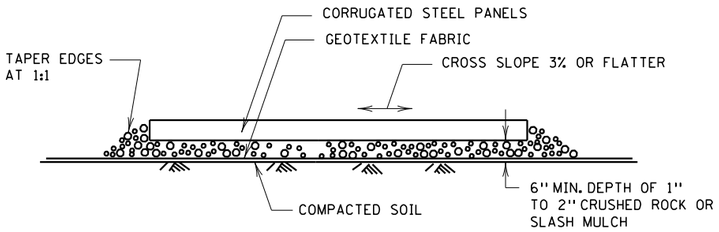
PLOT DRIVER: pdf_bw_11x17.pltcfg
PLOT DATE: 1/23/2025 6:27:40 PM
USER: jgriffin
PEN TABLE: T-01237_planset.tbl
FILE: S:\PROJECTS\TRANS\County\Hennepin\T-01237\Road_Design\Sheets\T-01237_spn.dgn
MODEL: 405_2



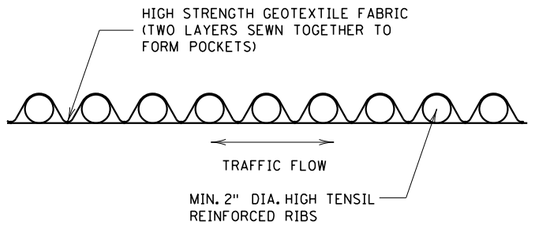
SLASH MULCH, CRUSHED ROCK, OR SHEET PAD CONSTRUCTION EXIT ⑤⑦



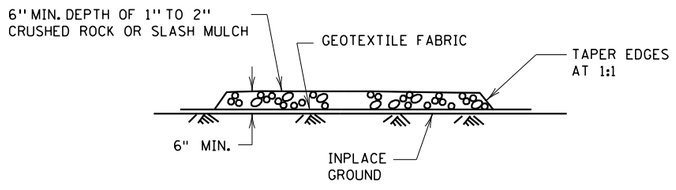
RUMBLE PAD CONSTRUCTION EXIT ⑤⑦



RUMBLE PAD



SHEET PAD



SLASH MULCH OR CRUSHED ROCK

NOTES:

SEE SPECS. 2573 & 3882.

(1) MINIMUM LENGTH SHALL BE THE GREATER OF 50 FEET OR A LENGTH SUFFICIENT TO ALLOW A MINIMUM OF 5 TIRE ROTATIONS ON THE PROVIDED PAD. MINIMUM LENGTH SHALL BE CALCULATED USING THE LARGEST TIRE WHICH WILL BE USED IN TYPICAL OPERATIONS.

(2) PROVIDE RADIUS OR WIDEN PAD SUFFICIENTLY TO PREVENT VEHICLE TIRES FROM TRACKING OFF OF PAD WHEN LEAVING SITE.

(3) IF RUNOFF FROM DISTURBED AREAS FLOWS TOWARD CONSTRUCTION EXITS, PREVENT RUNOFF FROM DRAINING DIRECTLY TO PUBLIC ROAD OVER CONSTRUCTION EXIT BY CROWNING THE EXIT OR SLOPING TO ONE SIDE. IF SURFACE GRADING IS INSUFFICIENT, PROVIDE OTHER MEANS OF INTERCEPTING RUNOFF.

(4) IF RUNOFF FROM CONSTRUCTION EXITS WILL DRAIN OFF OF PROJECT SITE, PROVIDE SEDIMENT TRAP WITH STABILIZED OVERFLOW.

(5) IF A TIRE WASH OFF IS REQUIRED THE CONSTRUCTION EXITS SHALL BE GRADED TO DRAIN THE WASH WATER TO A SEDIMENT TRAP.

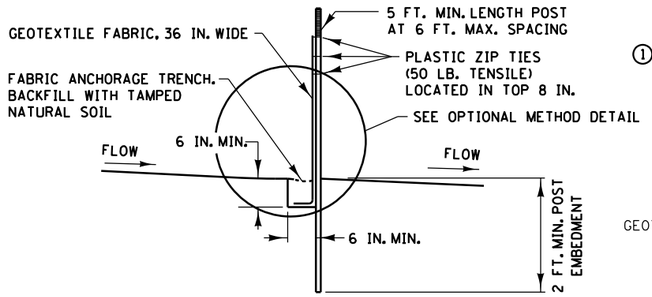
(6) MINIMUM LENGTH OF RUMBLE PAD SHALL BE 20 FEET, OR AS REQUIRED TO REMOVE SEDIMENT FROM TIRES. IF SIGNIFICANT SEDIMENT IS TRACKED FROM THE SITE, THE RUMBLE PAD SHALL BE LENGTHENED OR THE DESIGN MODIFIED TO PROVIDE ADDITIONAL VIBRATION. WASH-OFF LENGTH SHALL BE AS REQUIRED TO EFFECTIVELY REMOVE CONSTRUCTION SEDIMENT FROM VEHICLE TIRES.

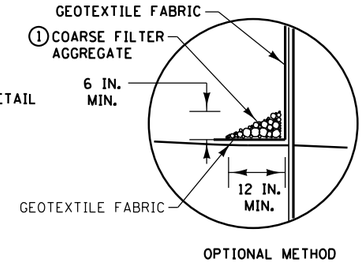
(7) MAINTENANCE OF CONSTRUCTION EXITS SHALL OCCUR WHEN THE EFFECTIVENESS OF SEDIMENT REMOVAL HAS BEEN REDUCED. MAINTENANCE SHALL CONSIST OF REMOVING SEDIMENT AND CLEANING THE MATERIALS OR PLACING ADDITIONAL MATERIAL (SLASH MULCH OR CRUSHED ROCK) OVER SEDIMENT FILLED MATERIAL TO RESTORE EFFECTIVENESS.

LEAD EXPERT OFFICE	LYNN CLARKOWSKI CHIEF ENVIRONMENTAL OFFICER OFFICE OF ENVIRNOMENTAL STEWARDSHIP		TEMPORARY SEDIMENT CONTROL STABILIZED CONSTRUCTION EXIT	APPROVED: 02-28-2017 REVISED:	THOMAS STYRBICKI STATE DESIGN ENGINEER	STANDARD PLAN 5-297.405	5 OF 8

C.P. 1010811 SHEET NO. 21 OF 23 SHEETS

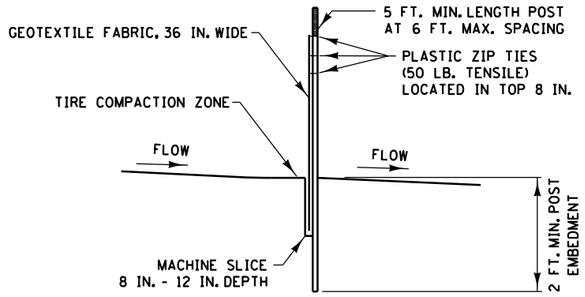
PLOT DRIVER: pdf_bw_11x17.pltcfg
PLOT DATE: 1/23/2025 6:27:40 PM
USER: jgriffin
PEN TABLE: T-01237_planset.tbl
FILE: S:\PROJECTS\TRANS\County\Hennepin\T-01237\Road_Design\Sheets\T-01237_spn.dgn
MODEL: 405_5



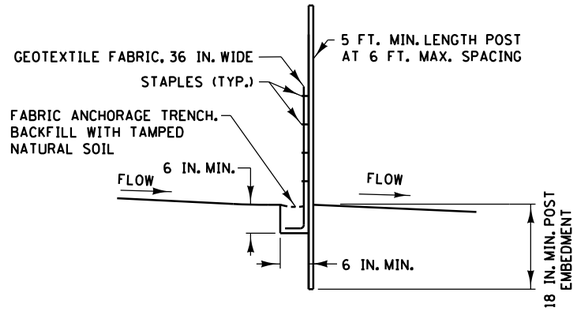


OPTIONAL METHOD

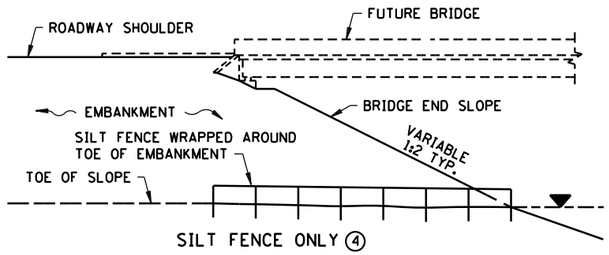
SILT FENCE TYPE HI ②
(HAND INSTALLED)



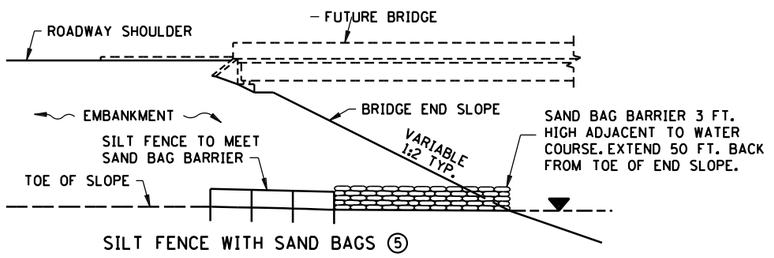
SILT FENCE TYPE MS ②
(MACHINE SLICED)



SILT FENCE TYPE PA ③
(PREASSEMBLED)

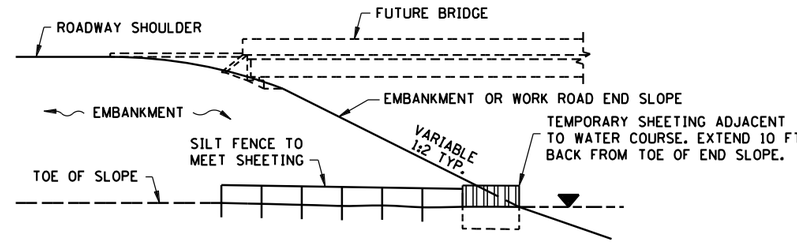


SILT FENCE ONLY ④

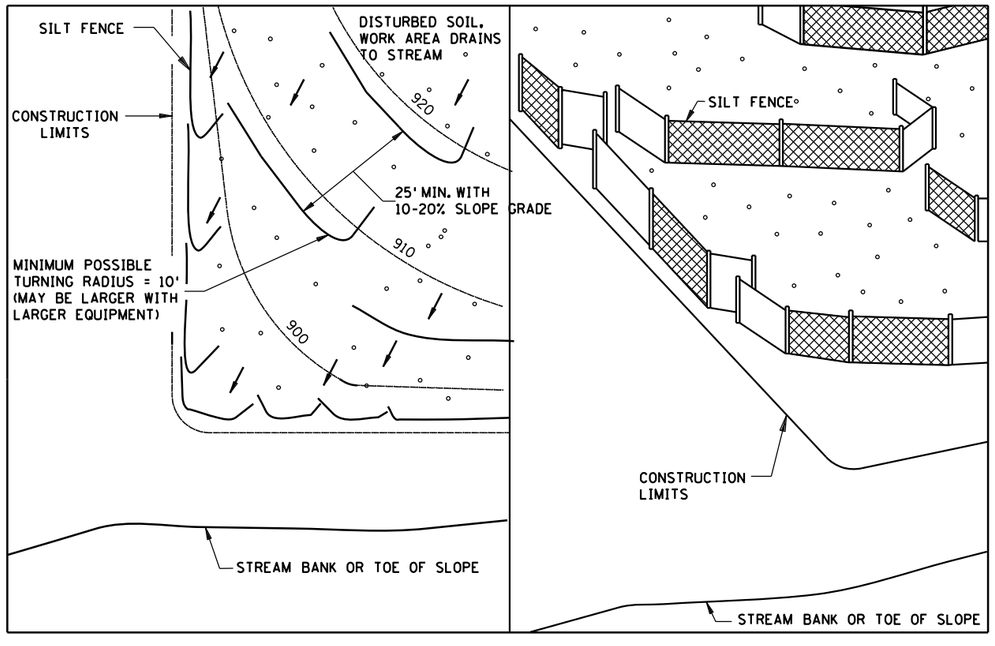


SILT FENCE WITH SAND BAGS ⑤

INSTALLATION AT BRIDGE EMBANKMENT ADJACENT TO WATER

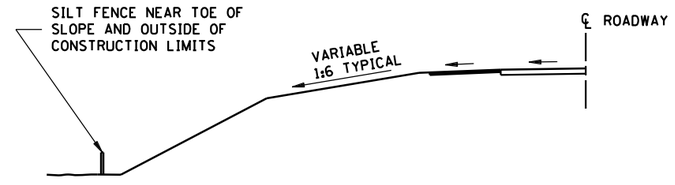


SILT FENCE WITH SHEETING ⑥



PLAN VIEW — PERSPECTIVE VIEW

J-HOOK INSTALLATION



LOCATION AT TOE OF ROADWAY EMBANKMENT

NOTES:

SEE SPECS. 2573, 3149 & 3886.

① COARSE FILTER AGGREGATE (SPEC. 3149) SHALL BE INCIDENTAL.

② TO PROTECT AREAS FROM SHEET FLOW. MAXIMUM CONTRIBUTING AREA: 1 ACRE.

③ TO PROTECT AREAS FROM SHEET FLOW. MAXIMUM CONTRIBUTING AREA: 0.25 ACRE.

④ WATER COURSE FLOW VELOCITY: STANDING.
CONTRIBUTING SLOPE AREA: 1./2 ACRE.

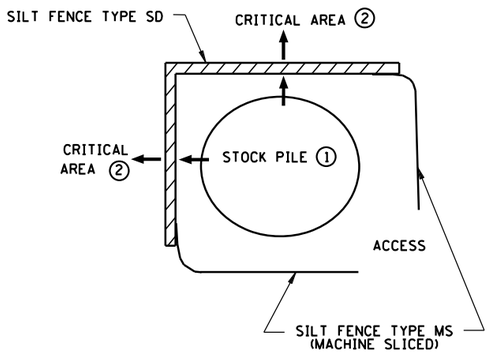
⑤ WATER COURSE FLOW VELOCITY: 1 TO 7 FT./SEC.
CONTRIBUTING SLOPE AREA: 1. ACRE.

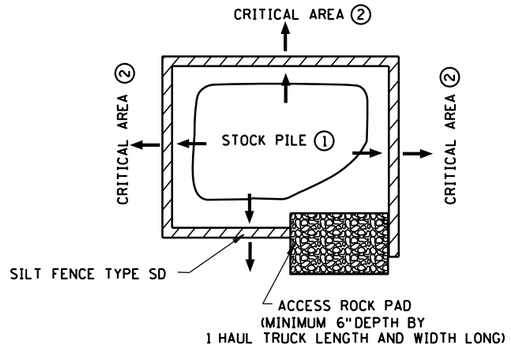
⑥ WATER COURSE FLOW VELOCITY: 8 TO 15 FT./SEC.
CONTRIBUTING SLOPE AREA: 3 ACRES.

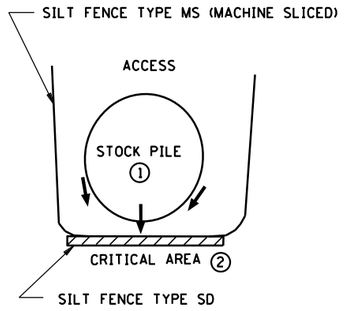
LEAD EXPERT OFFICE	LYNN CLARKOWSKI CHIEF ENVIRONMENTAL OFFICER OFFICE OF ENVIRNOMENTAL STEWARDSHIP		TEMPORARY SEDIMENT CONTROL SILT FENCE	APPROVED: 02-28-2017 REVISED:	THOMAS STYRBICKI STATE DESIGN ENGINEER	STANDARD PLAN 5-297.405	6 OF 8

C.P. 1010811 — SHEET NO. 22 OF 23 SHEETS

PLOT DRIVER: pdf_bw_11x17.pltcfg
PLOT DATE: 1/23/2025 6:27:41 PM
USER: jgriffin
PEN TABLE: T-01237_planset.tbl
FILE: S:\PROJECTS\TRANS\County\Hennepin\T-01237\Road_Design\Sheets\T-01237_spn.dgn
MODEL: 405_6

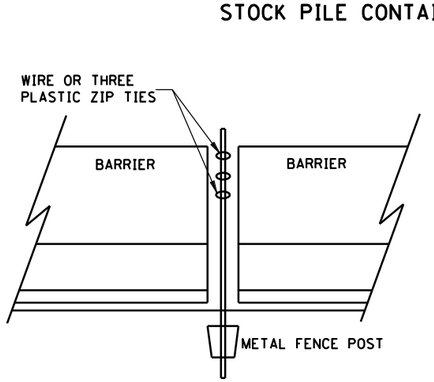




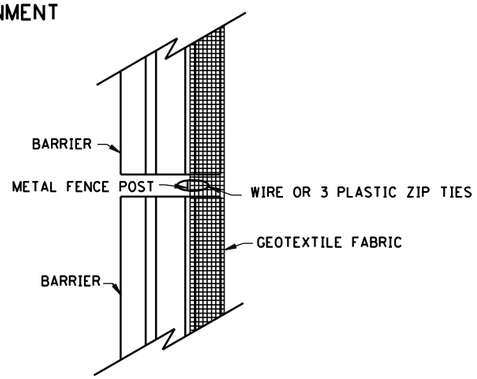


STOCK PILE CONTAINMENT

STOCKPILE SEDIMENT CONTROL

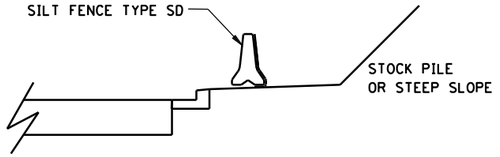


PROFILE VIEW

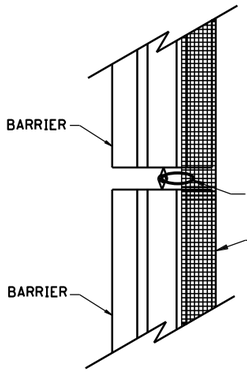


TOP VIEW

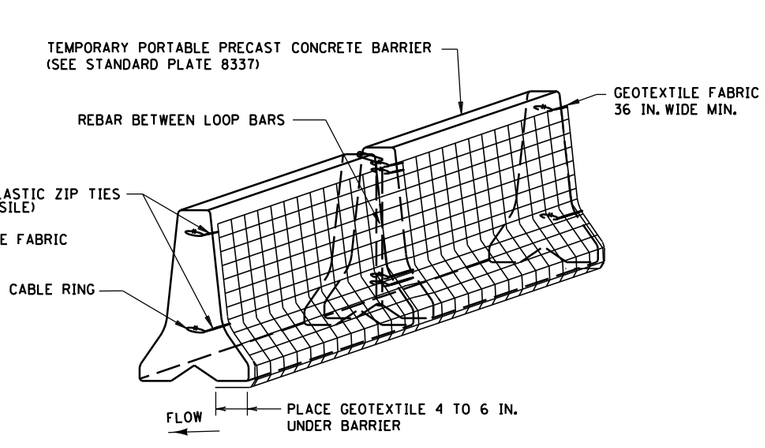
SILT FENCE TYPE SD (SUPER DUTY)
BARRIER WITHOUT LOOP BARS



CURB AND GUTTER PROTECTION SYSTEM

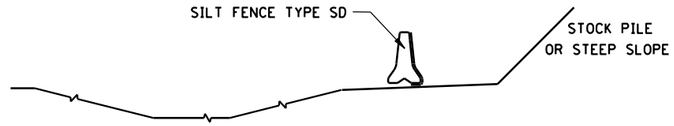


TOP VIEW



PERSPECTIVE VIEW

SILT FENCE TYPE SD (SUPER DUTY)
BARRIER WITH LOOP BARS



DITCH PROTECTION SYSTEM

NOTES:

SEE SPECS. 2533, 2573 & 3886.

SILT FENCE TYPE SD USED TO PROTECT CRITICAL AREAS FROM SHEET FLOW, AND AREAS WHERE OTHER SILT FENCES CANNOT BE PLACED. MAXIMUM CONTRIBUTING AREA: 1 ACRE.

PLACE SILT FENCE TYPE SD ALONG A CONSTANT ELEVATION.

SILT FENCE TYPE SD CAN UTILIZE EITHER A CONCRETE, OR WATER FILLED, TEMPORARY MEDIAN BARRIER.

(1) PLACING STOCK PILES NEXT TO AN ENVIRONMENTALLY SENSITIVE AREA IS NOT RECOMMENDED. WHEN THERE ARE NO FEASIBLE ALTERNATIVES, PLACE SILT FENCE SD AS SHOWN OR AS DIRECTED BY THE ENGINEER.

(2) CRITICAL AREAS INCLUDE WETLANDS, JUDICIAL DITCHES, STREAMS, WATER BODIES, AND OTHER AREAS REQUIRING PROTECTION.

LEAD EXPERT OFFICE	LYNN CLARKOWSKI CHIEF ENVIRONMENTAL OFFICER OFFICE OF ENVIRNOMENTAL STEWARDSHIP		TEMPORARY SEDIMENT CONTROL SUPER DUTY SILT FENCE	APPROVED: 02-28-2017 REVISED:	THOMAS STYRBICKI STATE DESIGN ENGINEER	STANDARD PLAN 5-297.405	7 OF 8

C.P. 1010811 SHEET NO. 23 OF 23 SHEETS

PLOT DRIVER: pdf_bw_11x17.pltcfg
PLOT DATE: 1/23/2025 6:27:42 PM
USER: jgriffin
PEN TABLE: T-01237_planset.tbl
FILE: S:\PROJECTS\TRANS\County\Hennepin\T-01237\Road_Design\Sheets\T-01237_spn.dgn
MODEL: 405_7