## ***Shoreland Alteration and/or Grading/Filling***

## ***Submittal Requirements***

**Land Disturbing Activities shall comply with the Minnesota Pollution Control Agency's Best Management Practices (BMP's).**

*The purpose of requiring this information as a part of the permit application process is to minimize both short-term and long-term erosion, contain sediment on site, manage post construction runoff to better protect our lakes.*

All shoreland alterations are considered a Construction Stormwater Permit Category 2 Land disturbing activity and the plan for such work MUST contain the following information as applicable to project and be prepared by a licensed design professional:

- ☐ A clearly legible and complete Alexandria Construction Stormwater Permit application.
- ☐ Drawings prepared to an easily legible scale, shall be clearly labels with a north arrow and a date of preparation.
- ☐ Names, addresses and phone numbers of the licensed design professional.
- ☐ Project description including property boundaries, areas to be disturbed, and the nature and purpose of that land disturbing activity and the amount of grading involved.
- ☐ Spot elevations of proposed grades in relation to existing grades on the subject property and adjacent properties.
- ☐ Existing site conditions including topography, vegetation and drainage arrows.
- ☐ Areas where finished slope will be steeper than 3:1.
- ☐ Critical erosion areas including areas on the site that have potential for erosion problems.
- ☐ Erosion and sediment control devices including methods to be used to control erosion on the site, both during and after the construction activity.
- ☐ Location and type of storm drain inlet protection for all stormwater inlets downstream of the site within one block or as directed by City Engineer, wetlands, wet sediment basins and lakes.
- ☐ Location of material stockpiles.
- ☐ Plan for temporary site stabilization.
- ☐ Permanent stabilization including how the site will be stabilized after construction is completed, including specifications.
- ☐ Temporary construction site vehicle exit location and material that it will be constructed of.

☐ Adjacent areas including neighboring streams, roads, residential areas, etc. that might be affected by the land disturbing activity.

☐ Project schedule including a projected timeframe for completion of all activities.

☐ Phasing of construction including the nature and purpose of the land disturbing activity, utilities and building construction.

☐ Provisions for the removal of temporary synthetic erosion prevention and sediment control BMP's upon establishment of permanent vegetation.

☐ FOR BLUFF AND STEEP SLOPES: Surveyed elevations (using North American Vertical Datum of 1988) at:

- Benchmark
- Existing ground defining areas of steeper than 3:1 slope.
- Construction activity disturbance area.

☐ Standard illustrations (details) of proper installation of erosion prevention and sediment control BMP's (MnDOT details provided in packet for reference.

**Review of grading/filling and/or shoreland alteration applications will be conducted by the Soil and Water Conservations District (SCWD) and others prior to permit issuance.**

**Please be advised that applications that do not have ALL applicable required information WILL be returned to applicant.**

CITY OF ALEXANDRIA

# SHORELAND ALTERATION INFORMATION SHEET*

## Permits Required

**A shoreland alteration permit is required for any activity within the building setback area including, but not limited to vegetation removal, paths, retaining walls, ice ridge alterations, sand blankets, patios, gazebos and similar work.**

**Additional permits/approvals may be required depending upon the scope of the project. The applicant is advised to consult with the Community Development Department along with appropriate state and federal agencies to determine whether additional reviews, approvals or permits are required. Any activity below the OHW of DNR Protected Water may require a permit from the DNR.**

## *Terms & Definitions*

***Bluff*** - A topographic feature such as a hill, cliff or embankment having the following characteristics:

1. Part or all of the feature is located in the shoreland area.
2. The slope rises at least 25 feet or more above the Ordinary High Water (OHW).
3. The grade of the slope from the toe of the bluff to a point 25 feet or more above the OHW averages 30 percent or greater; and
4. The slope must drain toward the waterbody.

***Bluff Impact Zone*** - A bluff and land located within 20 feet from the top of the bluff.

***OHW*** - Ordinary High-Water Mark: Commonly the point where the natural vegetation changes from predominately aquatic to terrestrial.

***SIZ*** - Shore Impact Zone: Land located between the OHW and 50% of the structure setback.

***Shoreland*** - Land located within 1,000 feet of a lake.

***Steep Slope*** - Lands having average slopes of 12%- 30% as measured over 50 or more feet.

## *Work within Bluffs*

- Structures and accessory facilities, except stairways and landings, shall not be placed within the *bluff impact zone.*
- Intensive vegetation clearing within *shore and bluff impact zones* is not allowed.
- In *shore and bluff impact zones and on steep slopes,* limited clearing of trees and shrubs and cutting, pruning, and trimming of trees is allowed to provide a view to the water from the principal dwelling site and to accommodate the placement of access paths, beach and watercraft access areas, and permitted water-oriented accessory structures, provided that the screening of structures, vehicles, or other facilities as viewed from the water, assuming summer, leaf-on conditions, is not substantially reduced.
- No grading is allowed in *bluff impact zones.*
- Fill or excavated material may not be placed in *bluff impact zones.*
- Roads, driveways, and parking areas must not be placed within *bluff impact zones,* when other reasonable and feasible placement alternatives exist.

## *Vegetation Alterations*

The removal of trees, limbs, or branches that are dead, diseased, or pose safety hazards is allowed. Additionally, removal of invasive species, such as buckthorn, as defined by the DNR is allowed provided the area is re-vegetated with a native non-invasive species.

## *Grading & Filling within the Shoreland*

The following conditions must be adhered to:

1. Grading or filling in any wetland must be conducted in accordance with the rules of the Minnesota Wetlands Conservation Act. amended.

***(Grading & Filling Continued)***

2. Alterations must be designed and conducted in a manner that ensures the smallest amount of bare ground is exposed for the shortest time possible.

3. Mulches or similar materials must be used, for temporary bare soil coverage, and a permanent vegetation cover must be established as soon as possible.

4. Methods to minimize soil erosion and to trap sediments before they reach any surface water features must be used.

5. Altered areas must be stabilized in accord with appropriate (BMP's) Best Management Practices.

6. Fill or excavated material must not be placed in a manner that creates an unstable slope.

7. Plans to place fill or excavated material on *steep slopes* must be reviewed and approved by a certified engineer for continued slope stability and must not create finished slopes of 30 percent or greater.

8. Alterations below the OHW are subject to a Protected Waters Permit from the DNR.

Review of grading/filling and/or shoreland alteration applications will be conducted by the Soil and Water Conservation District (SWCD) and others prior to permit issuance.

## ***Placement of Natural Rock Riprap***

Limited installation of natural rock riprap is permitted to control existing erosion when the following conditions are met:

- Rip Rap of entire shoreline is strongly discouraged.

- Rip rap to be done in accord with the DNR specifications. Shoreline Alterations: Riprap (state.mn.us)

## ***Retaining Walls***

Retaining walls may be allowed in the setback area provided the Community Development Department and SCWD determines that there is no other alternative to control erosion. No tier of a retaining wall shall exceed four (4) feet in height without a plan signed by a registered professional engineer and approved building permit.

## ***Sand Blanket Beaches***

New beaches shall not extend more than ten (10) feet waterward of the *OHW,* exceed 50 feet in width or ½ the width of the lot, whichever is less and may be up to six (6) inches thick.

- Beach installation to comply with DNR requirements. Shoreline Alterations: Beach Blanket (state.mn.us)

## ***Public/Private Watercraft Access Ramps, Approach Roads, and Related Parking***

Watercraft access ramps, approach roads and related parking to comply with DNR requirements. Water Access: Installing a Boat Ramp (state.mn.us)

**A City Construction Stormwater Permit must be obtained in addition to the grading/filling or shoreland alteration permit.

*Note: *This document is only a general summary of the City of Alexandria's Shoreland regulations. Always consult the City Code for specifics.*

**City of Alexandria**
**704 Broadway**
**Alexandria, MN 56308**
**(320)763-6678**
**www.alexandriamn.city**

# SHORELAND ALTERATION PERMIT APPLICATION

www.alexandriamn.city

| | | |
|---|---|---|
| **Date App. Received** ____/_____/_____<br><br>**Date App. Approved** ____/_____/_____ | **City of Alexandria**<br>**704 Broadway**<br>**Alexandria, MN 56308**<br>**320-763-6678**<br>permits@alexandriamn.city | **PERMIT NUMBER:** _____<br><br>**Permit Fee: $150.00**<br><br>**Date Fee Rec'd:** _____ |

**Site Address:** _____ **Parcel Number: 63-** _____-_____

_____

Property Owner Name (Last, First MI) Phone

_____

Property Owner Address City, State & Zip

_____

Property Owner Email Address

**Applicant/Contractor/Design Professional Information:**

**Applicant is:** ☐ **Owner** ☐ **Contractor** ☐ **Licensed Design Professional**

_____

Applicant/Contractor Name (Last, First, MI) Business Name

_____

Applicant/Contractor Address City, State & Zip

_____

Applicant/Contractor Email Address Phone

_____

Licensed Professional Name License Number:

**Proposed Start Date:** _____ **Proposed Completion Date:** _____ **Plan Submitted Yes** ☐ **No** ☐

**TYPE OF WORK (Check all that apply)**

| | | | |
|---|---|---|---|
| **Earthmoving** ☐<br><br>**Fill** ☐<br>**Cut** ☐ | Cubic Yards in SIZ | Dimension(s) of Work Area(s) | Maximum Depth of Cut<br><br>Maximum Depth of Fill |
| **Fill** ☐<br>**Cut** ☐ | Cubic Yards Outside SIZ | Dimension(s) of Work Area(s) | Maximum Depth of Cut<br><br>Maximum Depth of Fill |
| | Distance from OHW | Height above OHW | |

| | | | |
|---|---|---|---|
| **Rip-Rap** ☐ | Cubic Yards Rock | Feet of Shoreline to be Rip-Rapped | Per DNR Specifications<br>Yes ☐<br>No ☐ |
| **Sand Blanket** ☐ | Cubic Yards in SIZ | Dimension of Work Area | Per DNR Specifications<br>Yes ☐<br>No ☐ |
| **Stairs/Landings** ☐ | Maximum Depth of Cut | Stair Width<br><br>Number of Treads | Number of Landings<br><br>Size of Landings |
| **Other Project** ☐ | Please Describe | | |

**Proposed Erosion Control Methods:**

Sod ☐ Mulch Only ☐ Fiber Blanket ☐ Straw Bale Checks ☐ Geotextile Fabric ☐ Seed & Mulch ☐ Silt Fence ☐
Bio-roll ☐ Floating Silt Curtain ☐ Other ☐

**Comments:**

_____
_____
_____
_____
_____
_____
_____
_____

***Agreement:*** *I the undersigned hereby make an application for the work described and located as shown herein. I hereby certify that the information herein is true and correct and agree to conduct the work in accordance with the provisions of the Alexandria City Code and other applicable regulations. I further agree that any plans and specifications submitted shall become part of this application.*

Signature of Applicant: _____ Date: _____

***Permit:*** *Permission is hereby granted to the above-named applicant to perform the work described in this application. This permit is granted on the express condition that the person to whom it is granted, and their agents, shall conform in all respect to the provisions set forth in the Alexandria City Code. If any of the information provided by the applicant in their application is later found to be to be inaccurate, the City may revoke the permit based upon the supplying of inaccurate information.*

Signature of Permitting Authority: _____ Date: _____

**ALEXANDRIA**
**CONSTRUCTION STORMWATER PERMIT**
**(CSP)**

**City of Alexandria**
**704 Broadway**
**Alexandria, MN 56308**
**(320) 763-6678 Telephone**
**(320) 763-3511 Fax**

**CSP Permit Number:** _____

**Other Permit Number:** _____

**Date Issued:** _____

## Site Information

**Project Address:**_____ **Owners Name:** _____

**Project Name:**_____ **Project Type:**_____**Acres to be Disturbed:**_____

**Natural Resource Feature within 100 feet:** **Yes** ☐ **No** ☐ **Storm Drain within 100 feet:** **Yes** ☐ **No** ☐

**If Yes, Identify Natural Resource Feature(s):** _____

**Proposed Start Date:**_____**Proposed Completion Date:** _____

## Scope of Land Disturbance Activity:

- ☐ Category 1 Land Disturbance
- ☐ Category 2 Land Disturbance
- ☐ Category 3 Land Disturbance*

*_Separate MPCA Construction Stormwater Permit Required_

- ☐ Part of Common Development Plan
- ☐ Site within 1 mile of Lake Winona

## Party Responsible for Installing, Implementing and Maintaining Erosion and Sediment Control per Plan

**Name:**_____

☐ **Operator/General Contractor**

☐ **Owner (if Owner is Operator/General Contractor)**

**Contact Person:** _____

**Address:**_____

**City:**_____**State:**_____**Zip:**_____

**Telephone:**_____ **Cell:**_____

**Email:**_____

## Best Management Practices

Areas not being actively worked to be stabilized within 14 days.
**(Areas within 1 mile of Lake Winona 7 days)
Install/maintain perimeter controls and sediment barriers.
Keep discharge points and receiving waters free of sediment.
Protect natural resources (streams, wetlands, mature trees, etc).
Properly protect storm drain inlets.
Keep sediment from tracking onto street.
Keep trash/litter collected and contained.
Keep concrete washout areas clearly marked and maintained.
Keep fueling, cleaning, maintenance areas free of leaks and spills.
Keep potential stormwater contaminants inside or under cover.
Make sure previously disturbed areas are/remain stabilized.
Properly located and stabilize all stockpiles.
Check site for compliance after each ½-inch (+) rain event.

## GENERAL NOTES TO PERMITEE:

The costs associated with an on-site review by the City Engineer of reported stormwater management violations will be the responsibility of the property owner. Re-inspections of Non-Compliant Erosion and Sediment Control BMPs will be subject to re-inspection **fees and may result in a "stop work" order being issued to** the site. Any **permit** issued becomes invalid if the work authorized by the **permit** is suspended or abandoned for more than **180 days**. The **180 days** commences the first **day** the work was suspended or abandoned.

## CERTIFICATION STATEMENT

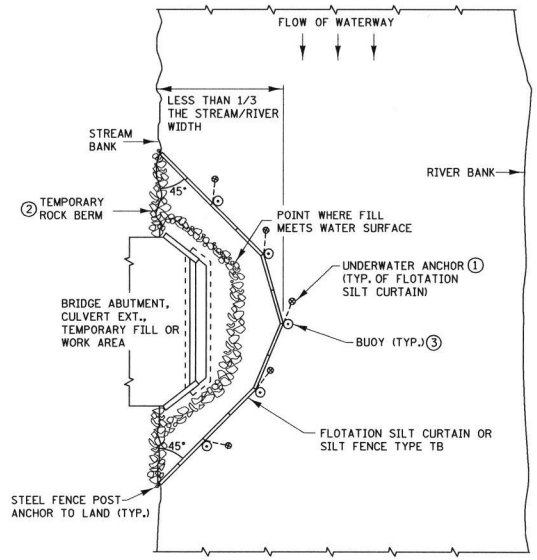
I certify under penalty of law that this document and all attachments, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

**Print Name and Title:** _____

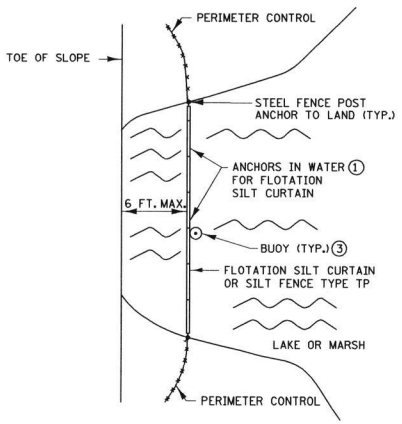
**Signature of Permit Holder:**_____**Date:**_____

**Approved By:**_____**Date:** _____

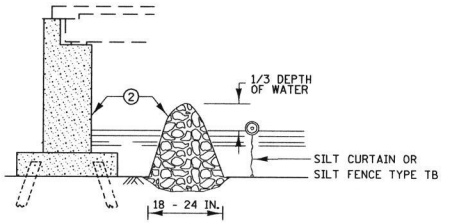
Valid 01/01/2024 thru 12/31/2024




PLAN VIEW FOR STREAM ⑤




PLAN VIEW FOR LAKE OR MARSH ⑤

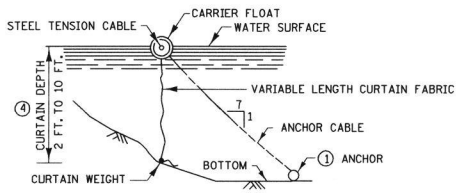



TEMPORARY ROCK BERM
FOR SEDIMENT CONTROL

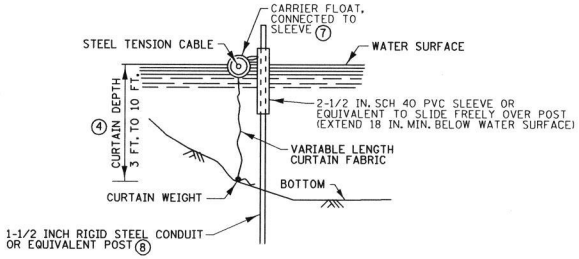
**INSTALLATION GUIDELINES**
**SILT FENCE TYPE TB**
MINIMUM WATER DEPTH: 1 FT.
MAXIMUM WATER DEPTH: 3 FT.
MAXIMUM WATER VELOCITY: 5 FT./SEC.

**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

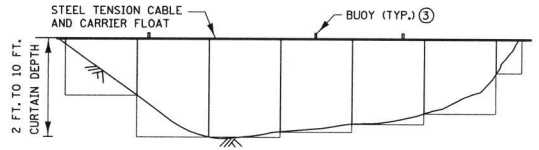
**INSTALLATION GUIDELINES ④**
**FLOTATION SILT CURTAIN**
**TYPE: MOVING WATER**
MINIMUM WATER DEPTH: 3 FT.
MAXIMUM WATER DEPTH: 10 FT.
MAXIMUM WATER VELOCITY: 5 FT./SEC.
MAXIMUM WAVE HEIGHT: 2 FT.



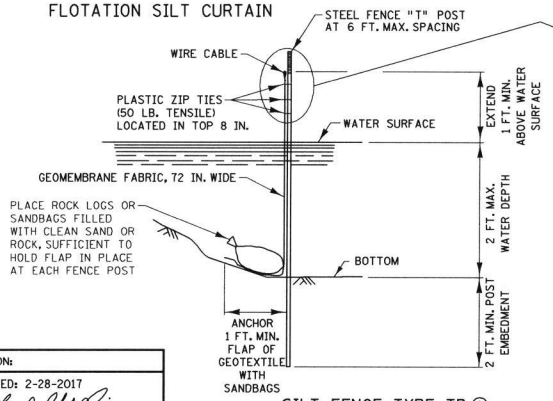

FLOTATION SILT CURTAIN



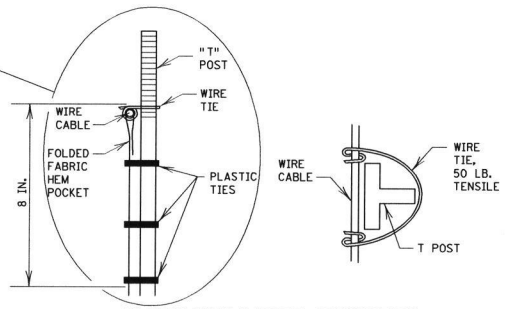

ALTERNATE FLOTATION SILT CURTAIN




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.

REVISION:

APPROVED: 2-28-2017
CHIEF ENVIRONMENTAL OFFICER

MINNESOTA DEPARTMENT OF TRANSPORTATION

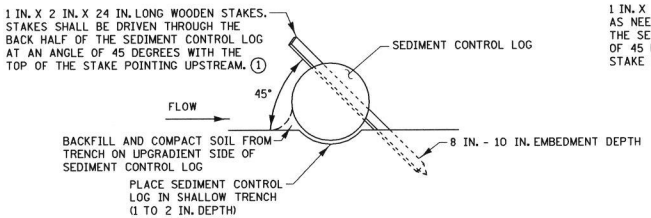
STATE DESIGN ENGINEER

REVISED:

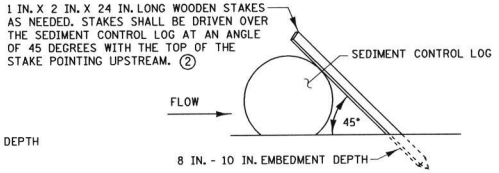
APPROVED: 2-28-2017

TEMPORARY SEDIMENT CONTROL
SILT CURTAIN OR SILT FENCE TYPE TB

STANDARD PLAN 5-297.405 | 1 OF 8

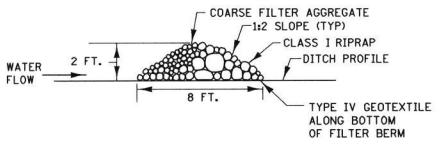



TYPES: STRAW, WOOD FIBER, OR COIR

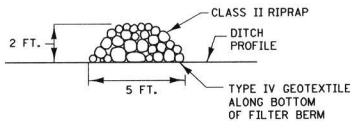



TYPES: WOOD CHIP, COMPOST, OR ROCK

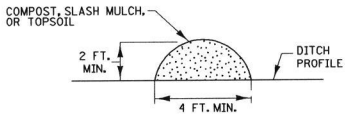
SEDIMENT CONTROL LOGS




TYPE 3 (ROCK WEEPER)

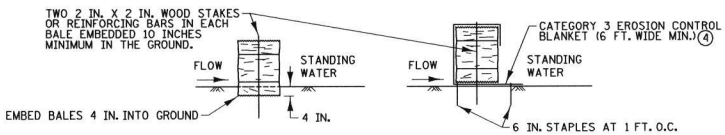



TYPE 5 (ROCK)




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

FILTER BERMS




EMBEDMENT METHOD

BLANKET METHOD (ALTERNATE)

BALE BARRIERS (3)

NOTES:

SEE SPECS. 2573, 3149, 3874, 3882, 3886, & 3897.

(1) SPACE BETWEEN STAKES SHALL BE A MAXIMUM OF 1 FOOT FOR DITCH CHECKS OR 2 FEET 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 INCH MAX. DEPTH). BALES SHALL CONSIST OF TYPE 1 MULCH OF APPROXIMATELY 14 IN. X 18 IN. X 36 IN. LONG. BALES SHALL BE PLACED ON EDGE AND BUTTED TIGHT TO ADJACENT BALES.

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

REVISION:

APPROVED: 2-28-2017

CHIEF ENVIRONMENTAL OFFICER

MINNESOTA DEPARTMENT OF TRANSPORTATION

STATE DESIGN ENGINEER

REVISED:

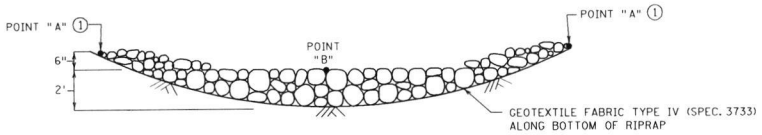
APPROVED: 2-28-2017

TEMPORARY SEDIMENT CONTROL

FILTER BERMS, SEDIMENT CONTROL LOGS, AND BALE BARRIERS

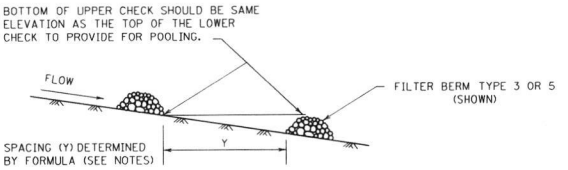
STANDARD PLAN 5-297.405 | 2 OF 8

Valid 01/01/2024 thru 12/31/2024



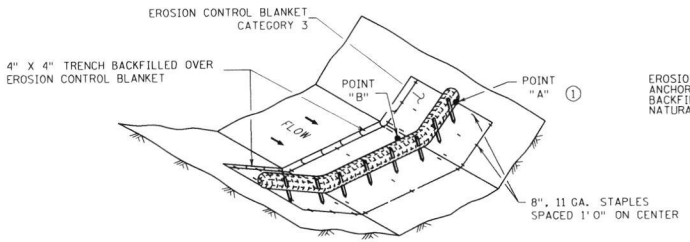

ROCK DITCH CHECKS
FILTER BERMS TYPE 3 (ROCK WEEPER) OR FILTER TYPE 5 (ROCK) ②③

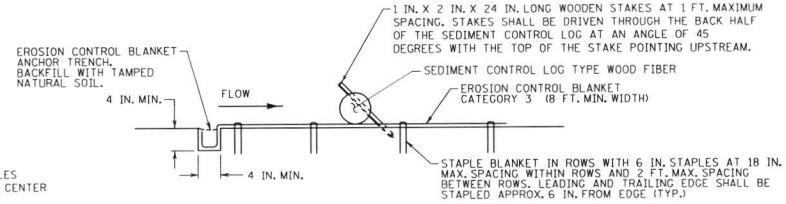
(FOR USE ON ROUGH GRADED AREAS)



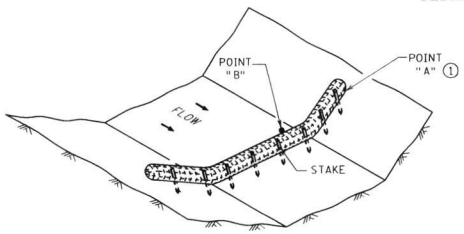

DITCH CHECK SPACING

(FOR ALL FILTER BERM TYPES)




SEDIMENT CONTROL LOG TYPE BLANKET SYSTEM ④




SEDIMENT CONTROL LOG TYPE WOOD FIBER, OR TYPE COMPOST ⑤

(FOR USE ON ROUGH GRADED AREAS)

NOTES:

SEE SPECS. 2573, 3601, 3733, 3885, 3886 & 3889.

FOR DITCH CHECKS, PLACE SEDIMENT CONTROL LOG PERPENDICULAR TO FLOW AND IN A CRESCENT SHAPE WITH THE ENDS FACING UPSTREAM.

APPROXIMATE SPACING BETWEEN EACH DITCH CHECK SHOULD BE DETERMINED FROM THE FOLLOWING SPACING FORMULA:

$$\text{APPROXIMATE SPACING OF DITCH CHECKS (FT.)} = Y = \frac{\text{DITCH CHECK HEIGHT (FT)}}{\text{\% CHANNEL SLOPE}} \times 100$$

① POINT "A" MUST BE A MINIMUM OF 6 INCHES HIGHER THAN POINT "B" TO ENSURE THAT WATER FLOWS OVER THE DIKE AND NOT AROUND THE ENDS.

② PERMANENT ROCK DITCH CHECKS PLACED WITHIN THE CLEAR ZONE ARE TO BE 18" OR LESS IN HEIGHT. A 1:6 APPROACH AND DEPARTURE SLOPE SHALL BE PROVIDED.

③ DITCH GRADE 3% - 5%, MAX. FLOW VELOCITY 12 FT./SEC..

④ DITCH GRADE 1.5% - 3%, MAX. FLOW VELOCITY 4.5 FT./SEC..

⑤ DITCH GRADE 1.5% - 3%, MAX. FLOW VELOCITY 1.5 FT./SEC..

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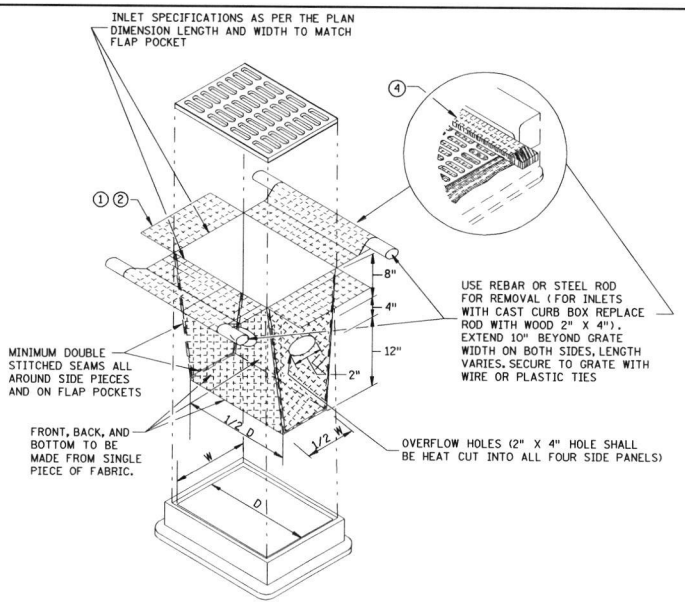
TEMPORARY SEDIMENT CONTROL
DITCH CHECK

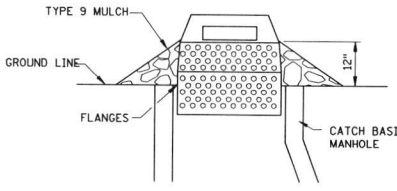
STANDARD PLAN 5-297.405 | 3 OF 8

Valid 01/01/2024 thru 12/31/2024



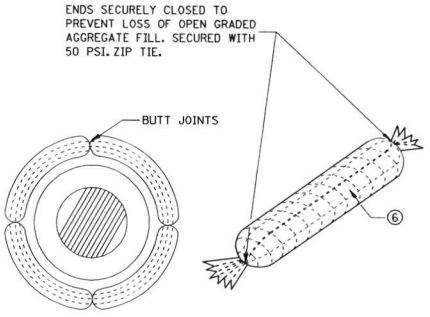

FILTER BAG INSERT ③

(CAN BE INSTALLED IN ANY INLET TYPE WITH OR WITHOUT A CURB BOX)

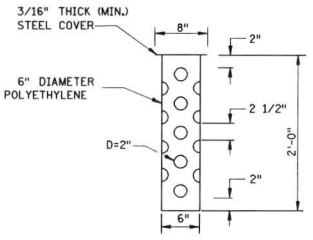



SEDIMENT CONTROL INLET HAT

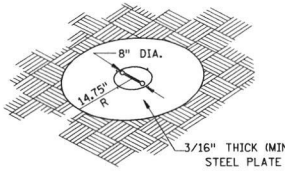
NOTE:
THE SEDIMENT CONTROL BARRIER SHALL BE A METAL OR PLASTIC/POLYETHYLENE RISER SIZED TO FIT INSIDE THE CATCH BASIN/MANHOLE; HAVE PERFORATIONS TO ALLOW FOR WATER INFILTRATION; HAVE AN OVERFLOW OPENING, FLANGES AND A LID/COVER.



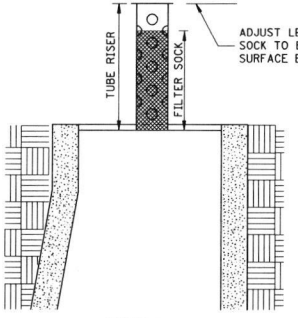

ROCK LOG/COMPOST LOG



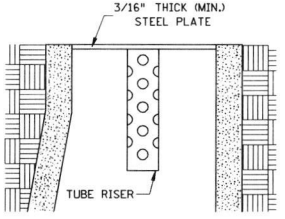

TUBE RISER




PERSPECTIVE VIEW

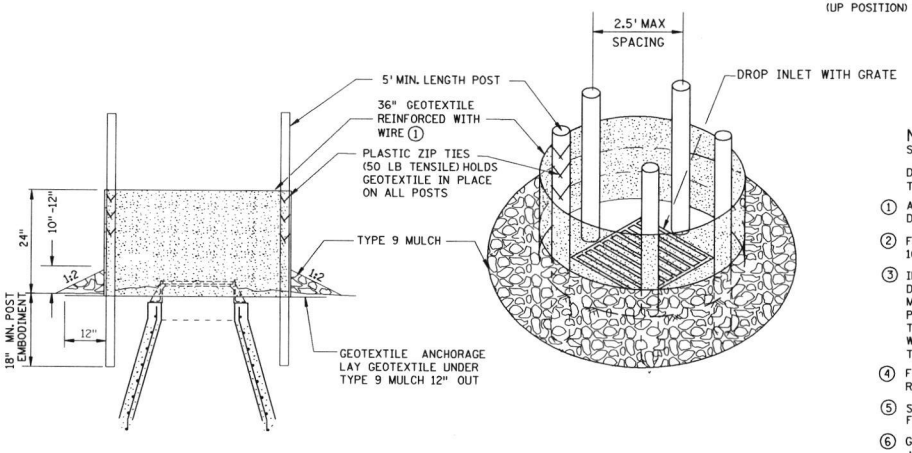



SECTION (UP POSITION)




SECTION (DOWN POSITION)

POP-UP HEAD




SILT FENCE RING AND ROCK FILTER BERM

USE WHERE INLET DRAINS IN AN AREA WITH SLOPES AT 1:3 or LESS

NOTES:
SEE SPECS. 2573, 3137, & 3886.

DEVICES MUST BE ADJUSTED ACCORDINGLY AS TO NOT CAUSE FLOODING ON ROADWAY THAT WOULD IMPEED TRAFFIC FLOW.

① ALL GEOTEXTILE USED FOR INLET PROTECTION SHALL BE MONOFILAMENT IN BOTH DIRECTIONS, MEETING SPEC. 3886.

② FINISHED SIZE, INCLUDING POCKETS WHERE REQUIRED SHALL EXTEND A MINIMUM OF 10 INCHES AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.

③ INSTALLATION NOTES:
DO NOT PLACE FILTER BAG INSERT IN INLETS SHALLOWER THAN 30 INCHES, MEASURED FROM THE BOTTOM OF THE INLET TO THE TOP OF THE GRATE. THE PLACED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE OF 3 INCHES BETWEEN THE INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES. WHERE NECESSARY THE CONTRACTOR SHALL CLINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 3 INCH SIDE CLEARANCE.

④ FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2 INCH X 4 INCH OR USE A ROCK SOCK OR SAND BAGS IN PLACE OF THE FLAP POCKETS.

⑤ SOCK HEIGHT MUST NOT BE SO HIGH AS TO SLOW DOWN WATER FILTRATION TO CAUSE FLOODING OF THE ROADWAY.

⑥ GEOTEXTILE SOCK BETWEEN 4-10 FEET LONG AND 4-6 INCH DIAMETER. SEAM TO BE JOINED BY TWO ROWS OF STITCHING WITH A PLASTIC MESH BACKING OR PROVIDE A HEAT BONDED SEAM (OR APPROVED EQUIVALENT). FILL ROCK LOG WITH OPEN GRADED AGGREGATE CONSISTING OF SOUND DURABLE PARTICLES OF COARSE AGGREGATE CONFORMING TO SPEC. 3137 TABLE 3137-1; CA-3 GRADATION.

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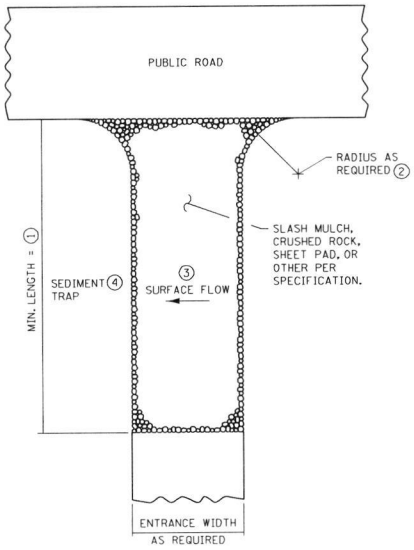
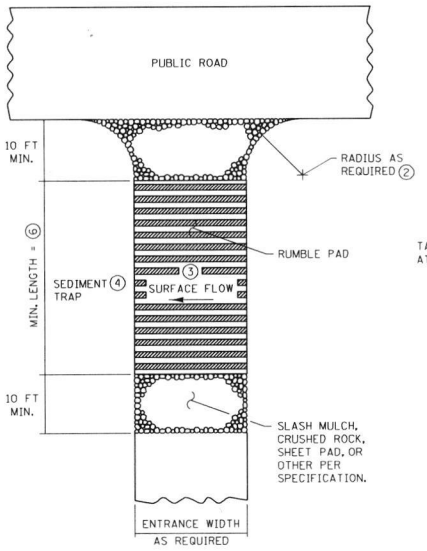
TEMPORARY SEDIMENT CONTROL
STORM DRAIN INLET PROTECTION

STANDARD PLAN 5-297.405 | 4 OF 8

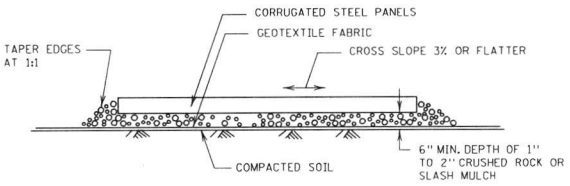
Valid 01/01/2024 thru 12/31/2024



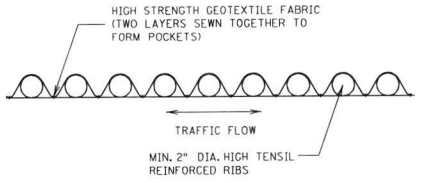

SLASH MULCH, CRUSHED ROCK, OR SHEET PAD CONSTRUCTION EXIT ⑤⑦



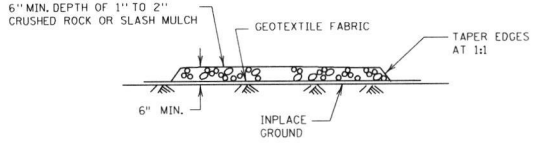

RUMBLE PAD CONSTRUCTION EXIT ⑤⑦




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.

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TEMPORARY SEDIMENT CONTROL
STABILIZED CONSTRUCTION EXIT

STANDARD PLAN 5-297.405 | 5 OF 8

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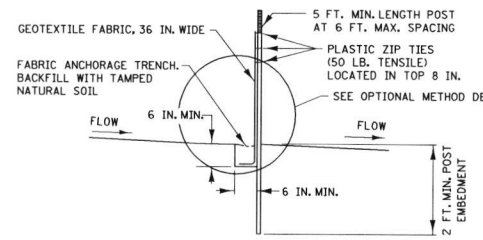
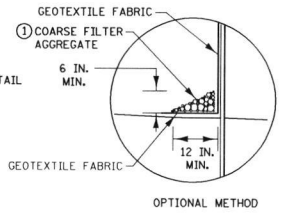
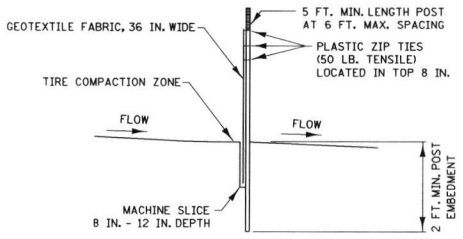
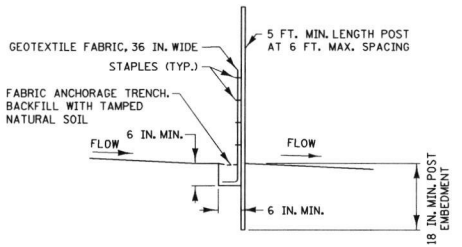


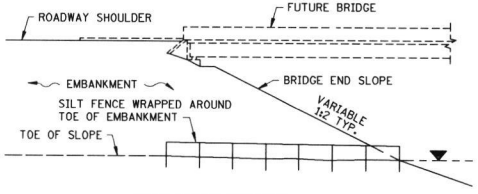

SILT FENCE TYPE HI ②
(HAND INSTALLED)



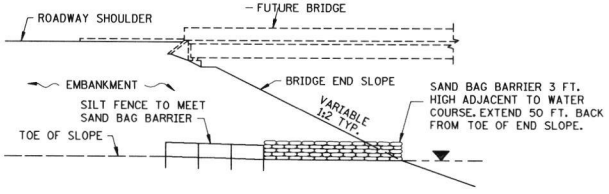

SILT FENCE TYPE MS ②
(MACHINE SLICED)



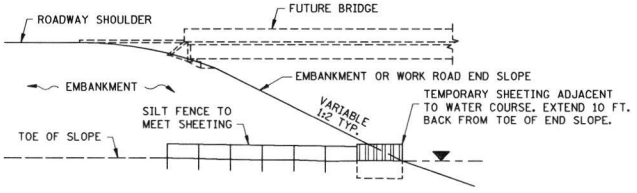

SILT FENCE TYPE PA ③
(PREASSEMBLED)




SILT FENCE ONLY ④

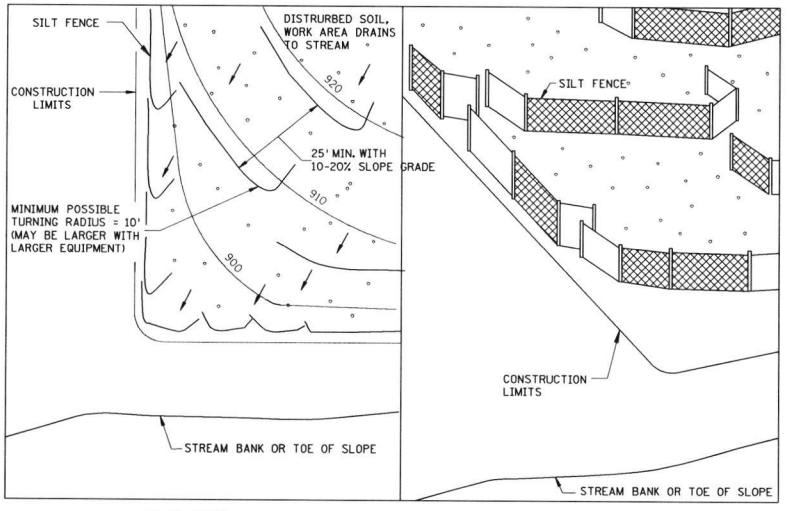



SILT FENCE WITH SAND BAGS ⑤




SILT FENCE WITH SHEETING ⑥

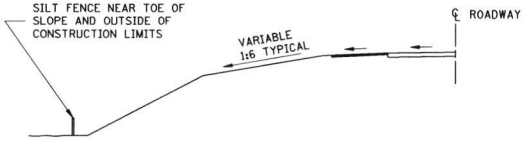
INSTALLATION AT BRIDGE EMBANKMENT ADJACENT TO WATER




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.

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STATE DESIGN ENGINEER

TEMPORARY SEDIMENT CONTROL
SILT FENCE

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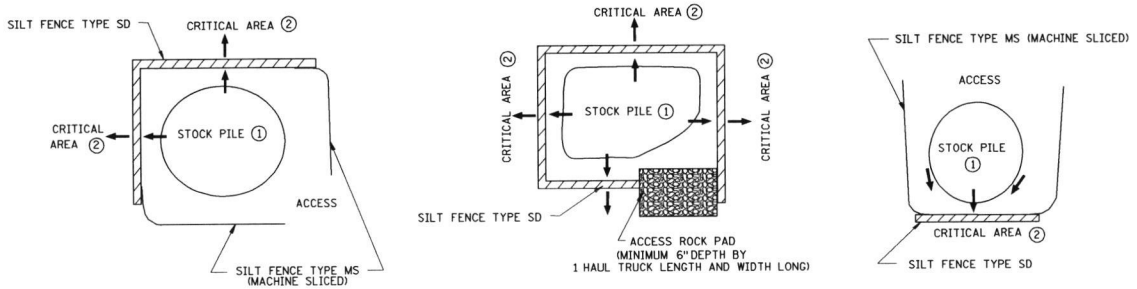
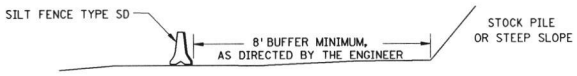
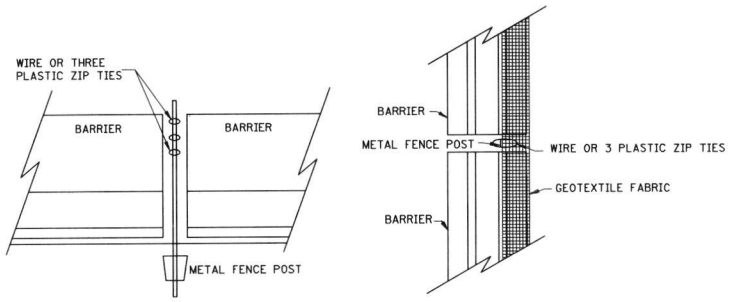
Valid 01/01/2024 thru 12/31/2024




STOCK PILE CONTAINMENT

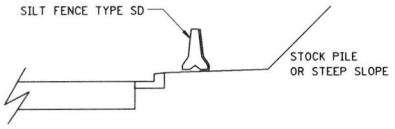



STOCKPILE SEDIMENT CONTROL

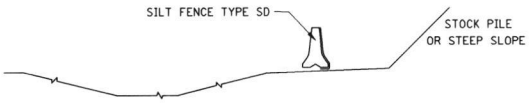



PROFILE VIEW TOP VIEW

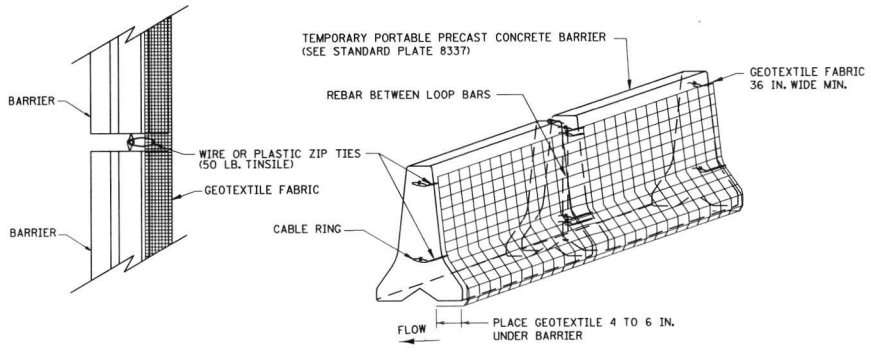
SILT FENCE TYPE SD (SUPER DUTY)
BARRIER WITHOUT LOOP BARS




CURB AND GUTTER PROTECTION SYSTEM




DITCH PROTECTION SYSTEM




TOP VIEW PERSPECTIVE VIEW

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

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.

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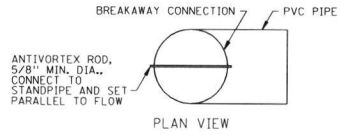
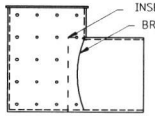
TEMPORARY SEDIMENT CONTROL
SUPER DUTY SILT FENCE

STANDARD PLAN 5-297.405 | 7 OF 8

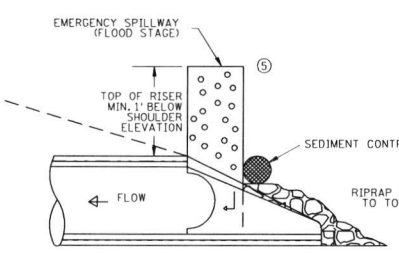
Valid 01/01/2024 thru 12/31/2024



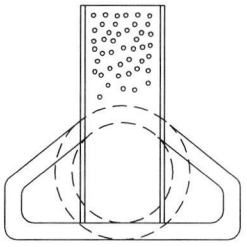
PLAN VIEW

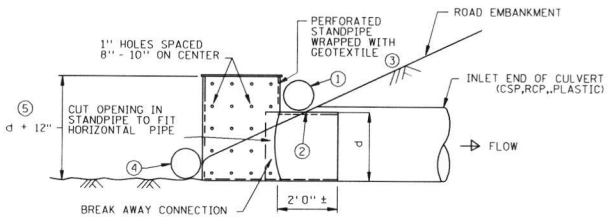


CULVERT STANDPIPE



LONGITUDINAL SECTION

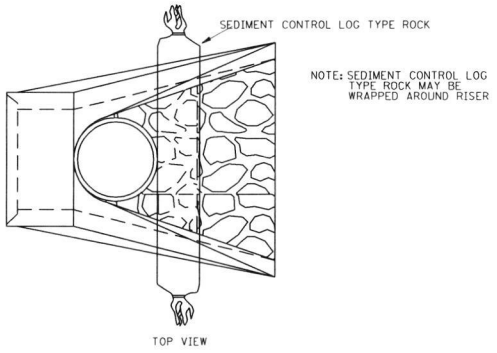

END VIEW



ELEVATION VIEW OF CULVERT INSTALLATION

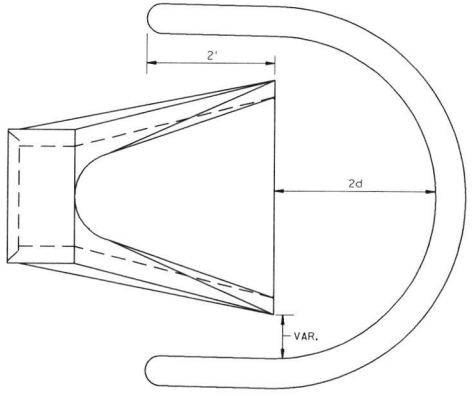
CULVERT STANDPIPE INSERT (D-RISER)

d= CULVERT SIZE: 12" - 36"



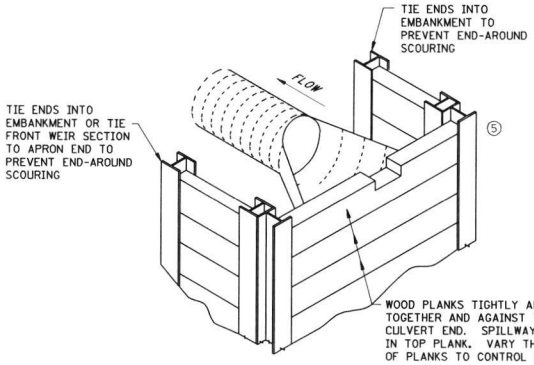
TOP VIEW

CULVERT STANDPIPE INSERT (D-RISER)



SEDIMENT CONTROL LOG WEIR
(COMPOST, WOOD CHIP, OR ROCK)

d = CULVERT SIZE: 12"-36"



WOOD PLANK WEIR

NOTES:

SEE SPECS. 2573, 3891 & 3893.

FOR USE WHEN TEMPORARY PONDING IS NEEDED IN DITCH SECTIONS FOR SEDIMENT CONTROL.

MANUFACTURED ALTERNATIVES LISTED ON MnDOT'S APPROVED PRODUCTS LIST MAY BE SUBSTITUTED AT NO ADDITIONAL COST.

① ROCK LOG OR SANDBAG TO HOLD STANDPIPE AND ACT AS A SEAL BETWEEN RISER PIPE AND CULVERT.

② PLACE CULVERT APRON AND SLIDE TEMPORARY STANDPIPE INTO CSP OR RCP CULVERT.

③ ALL GEOTEXTILE USED FOR CULVERT PROTECTION SHALL BE MONOFILAMENT IN BOTH DIRECTIONS, MEETING SPEC. 3886 FOR MACHINE SLICED.

④ ROCK LOG OR RIP RAP TO HOLD STANDPIPE AND ACT AS A FILTER BETWEEN RISER PIPE AND CULVERT.

⑤ HEIGHT OVERFLOW NOT TO CAUSE FLOODING OF ROAD OR ADJACENT PROPERTIES.

REVISION:

APPROVED: 2-28-2017

CHIEF ENVIRONMENTAL OFFICER

MINNESOTA DEPARTMENT OF TRANSPORTATION

STATE DESIGN ENGINEER

REVISED:

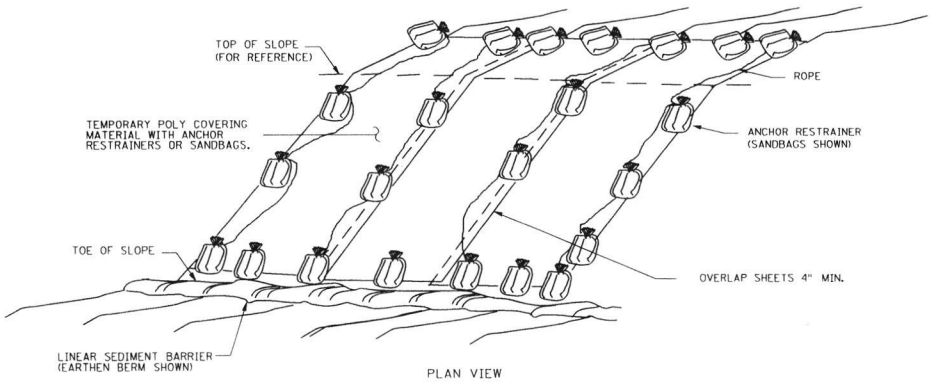
APPROVED: 2-28-2017

# TEMPORARY SEDIMENT CONTROL

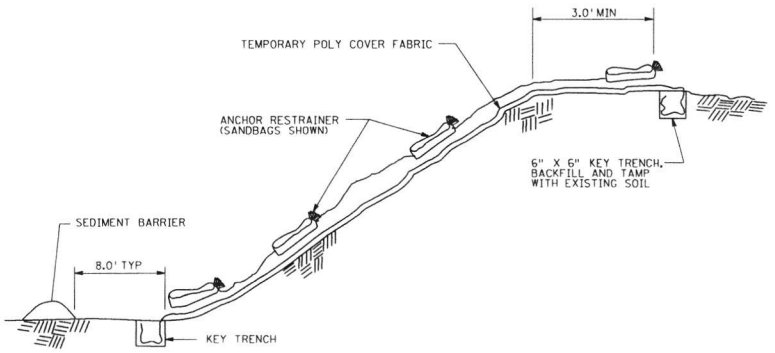
CULVERT END CONTROLS

STANDARD PLAN 5-297.405 | 8 OF 8

Valid 01/01/2024 thru 12/31/2024

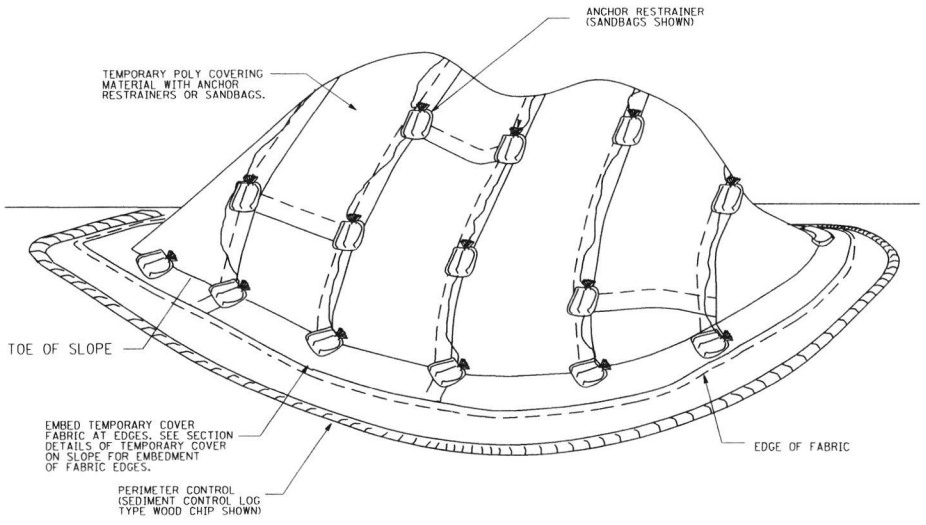



PLAN VIEW

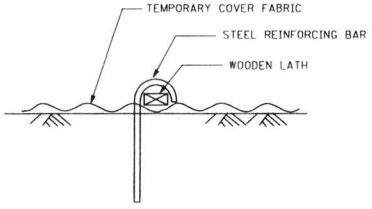



ELEVATION VIEW

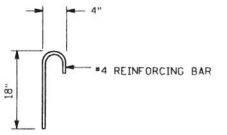
## TEMPORARY POLY COVER ON SLOPE




## TEMPORARY POLY COVER ON STOCKPILE




ANCHOR RESTRAINER
(STEEL BAR AND WOODEN LATH OPTION)




STEEL REINFORCING BAR DETAIL

NOTES

ANCHOR RESTRAINERS: TYPE, QUANTITY, AND SPACING ARE INCIDENTAL TO POLY COVER. PROVIDE ON CORNERS AND SEAMS OF POLY COVER MATERIAL TO KEEP FROM BLOWING OFF. NO MINIMUM SPACING REQUIRED.

PERIMETER CONTROL: USE SEDIMENT CONTROL LOGS TYPE WOOD CHIP OR COMPOST, INCIDENTAL.

| REVISION: |
|---|
| APPROVED: 2-28-2017<br>CHIEF ENVIRONMENTAL OFFICER |

| MINNESOTA DEPARTMENT OF TRANSPORTATION | STATE DESIGN ENGINEER | REVISED:<br>APPROVED:<br>2-28-2017 | TEMPORARY EROSION CONTROL<br>TEMPORARY POLY COVERINGS | |
|---|---|---|---|---|
| | | | STANDARD PLAN 5-297.409 | 1 OF 1 |