

EAGLE VIEW STORAGE PRELIMINARY PLANS BREEZY POINT RESORT BREEZY POINT, MINNESOTA



LOCATION MAP

NOT TO SCALE

GENERAL NOTES

1. WORK TO BE COMPLETED IN ACCORDANCE WITH MnDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION (CURRENT EDITION).
2. THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY LEVEL D. THIS UTILITY QUALITY LEVEL WAS DETERMINED ACCORDING TO GUIDELINES OF CI/ASCE 38-02, ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION & DEPICTION OF EXISTING SUBSURFACE UTILITY DATA."
3. TOPOGRAPHIC SURVEY WAS COMPLETED BY BOLTON & MENK.
4. CONTRACTOR IS RESPONSIBLE FOR GOPHER STATE ONE CALL PRIOR TO BEGINNING ANY REMOVALS, GRADING OR EXCAVATION.
5. CONTRACTOR TO CONTACT OWNER FOR PRIVATE UTILITY LOCATES IF NEEDED.
6. ALL RADII ARE 5-FEET UNLESS NOTED.

GRADING NOTES

1. ALL EROSION CONTROL DEVICES ARE TO BE INSTALLED PRIOR TO BEGINNING DEMOLITION OR GRADING OPERATIONS.
2. ALL SPOT ELEVATIONS ARE TO FINISHED GROUND (BITUMINOUS, CONCRETE, GRAVEL, EOF, ETC.) UNLESS NOTED. SPOT ELEVATIONS ON CURB LINES ARE TO FLOW LINE UNLESS NOTED.
3. EXISTING TOPSOIL SHALL BE STRIPPED WITHIN THE PROJECT GRADING LIMITS AND STOCKPILED ON SITE. GRADING OPERATIONS SHALL BE LIMITED TO THE AREAS SHOWN ON THE PLANS. STABILIZE STOCKPILES PER THE SWPPP.
4. IF UNSUITABLE SOILS ARE DISCOVERED ON SITE, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER.
5. COMPACT SUBGRADES TO RELATIVE COMPACTION IN ACCORDANCE WITH ASTM D698.
6. NOTIFY THE OWNER OF EARTHWORK DISCREPANCIES.

UTILITY NOTES

1. THE CONTRACTOR IS RESPONSIBLE FOR ANY NECESSARY PERMITS FOR DEWATERING OPERATIONS (IF NECESSARY).
2. THE WATER SYSTEM IS PERMITTED THROUGH THE MINNESOTA DEPARTMENT OF HEALTH (MDOH). THE WELL CONTRACTOR IS RESPONSIBLE FOR PERMITTING THROUGH THE MDOH.
3. PROVIDE 10-FEET OF HORIZONTAL SEPARATION AND 18-INCHES OF VERTICAL SEPARATION BETWEEN WATER AND SANITARY SEWER.
4. SANITARY SEWER MAIN TO BE INSTALLED IN ACCORDANCE WITH THE CITY ENGINEERS ASSOCIATION OF MINNESOTA (CEAM) SPECIFICATIONS CURRENT EDITION.
5. WATER AND SANITARY SEWER SERVICES SHALL BE INSTALLED IN ACCORDANCE WITH THE MINNESOTA DEPARTMENT OF LABOR AND INDUSTRY (MDLI) REQUIREMENTS.
6. CONTRACTOR SHALL COORDINATE WITH WELL CONTRACTOR ON CONNECTION FOR THE PROPOSED WATER SERVICE CONNECTIONS.
7. 1" PE WATER SERVICES LINES ARE TO BE CONNECTED TO EACH UNIT FROM THE PROPOSED PUMP HOUSE.
8. WATERMAIN TO BE DISINFECTED AND BACTERIA TESTED IN ACCORDANCE WITH MINNESOTA DEPARTMENT OF HEALTH REQUIREMENTS.
9. CONTRACTOR SHALL CONDUCT PRESSURE AND LEAKAGE TESTING OF UTILITIES AS REQUIRED BY THE CITY OF BREEZY POINT. CONTACT CITY OF BREEZY POINT PUBLIC WORKS FOR OVERSIGHT ON TESTING.
10. CONTRACTOR SHALL COORDINATE WATER AND SEWER SERVICE CONNECTIONS AT EACH STORAGE UNIT WITH THE PLUMBING CONTRACTOR.
11. INSTALL GRAVITY SEWER SERVICE LINES WITH MINIMUM 2.0% GRADE.
12. STORM SEWER CASTING SCHEDULE
 - 12.1. GREEN SPACE INLETS - NEENAH R-4342

EROSION CONTROL NOTES

1. RESTORE ALL DISTURBED AREAS USING THE FOLLOWING MNDOT PAY ITEMS:
 - A) TEMPORARY SEEDING (AS NEEDED) - 2575.608 SEED OATS WITH FERTILIZER TYPE 1 (COMMERCIAL) ANALYSIS 10-10-20 AT 200 LBS/AC
 - B) FINAL SEEDING - 2575.608 SEED NORTHERN BOULEVARD WITH FERTILIZER TYPE (SLOW RELEASE) ANALYSIS 22-5-10 AT 200 LBS/AC
2. SEE SWPPP ON SHEET C6 FOR ADDITIONAL NOTES FOR STORMWATER MANAGEMENT & EROSION CONTROL.

GOPHER STATE ONE CALL

811 | (651) 454-0002 | (800) 252-1166
qa@gopherstateonecall.org

THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING GOPHER STATE ONE CALL FOR UTILITY LOCATES.

THE CONTRACTOR SHALL CONTACT GOPHER STATE ONE CALL IN ADVANCE OF ANY GRADING OR EXCAVATION AS REQUIRED BY STATE STATUTE. THE CONTRACTOR, AT NO COST TO THE OWNER, SHALL BE RESPONSIBLE FOR ANY REQUIRED UTILITY REPAIRS RESULTING FROM THEIR WORK.

SHEET INDEX

C0	TITLE SHEET
C1	EXISTING CONDITIONS & DEMOLITION PLAN
C2	SITE PLAN
C3	UTILITY PLAN
C4	GRADING PLAN
C5	EROSION & SEDIMENT CONTROL PLAN
C6	STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

MnDOT STANDARD PLANS - TEMPORARY EROSION CONTROL

2 of 8	FILTER BERMS, SEDIMENT CONTROL LOGS & BALE BARRIERS
3 of 8	DITCH CHECKS
4 of 8	STORM DRAIN INLET PROTECTION
5 of 8	STABILIZED CONSTRUCTION EXIT
6 of 8	SILT FENCE
8 OF 8	CULVERT END CONTROLS

MnDOT STANDARD PLANS - PERMANENT EROSION CONTROL

1 of 3	ALONG DITCHES, ROADWAYS & FLUMES
2 of 3	TURF ESTABLISHMENT DETAIL AT CULVERT ENDS
3 of 3	BLANKET STAPLE PATTERN FOR SLOPES

PROJECT CONTACTS

OWNER

DAVID LANDECKER
BREEZY POINT RESORT
9252 BREEZY POINT DRIVE
BREEZY POINT, MN 56472
dlandecker@breezypointresort.com
(218) 820-4038 (M)

ENGINEER

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SONMOR CONSULTING, LLC
967 GULL MEADOWS LANE
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chris@sonmorconsulting.com
(952) 270-8394 (M)

CITY OF BREEZY POINT

JOE ZIERDEN
PUBLIC WORKS
8319 COUNTY ROAD 11
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jzierden@cityofbreezypointmn.us
(218) 820-8809 (M)

SONMOR
CONSULTING

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.
CHRISTOPHER L. SONMOR
LIC. NO. 44599
DATE 02/10/2026

REVISIONS

#	REVISION NOTE	DATE
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EAGLE VIEW STORAGE
TITLE SHEET
BREEZY POINT, MINNESOTA

SHEET

C0



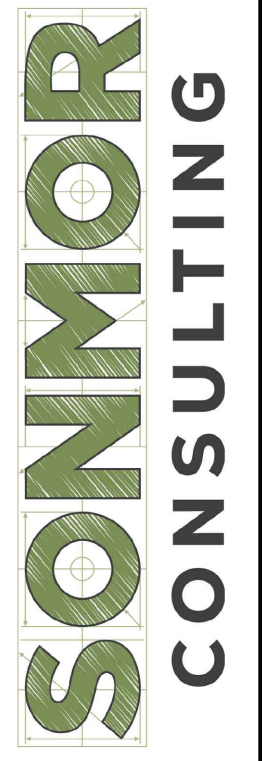
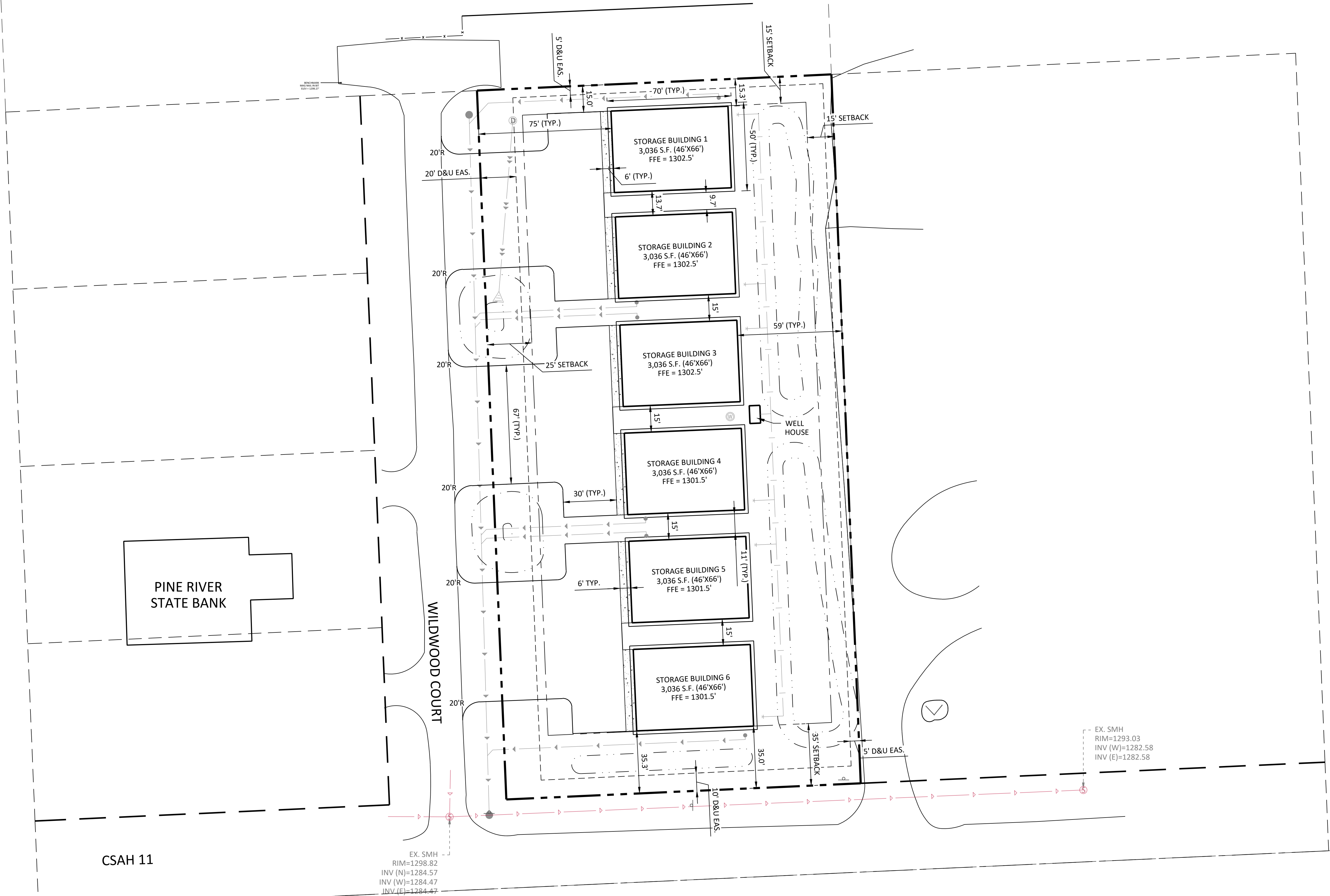
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Christopher L. Sommor
CHRISTOPHER L. SOMMOR
LIC. NO. 44599
DATE 02/10/2026

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EAGLE VIEW STORAGE
EXISTING CONDITIONS & DEMOLITION PLAN
BREEZY POINT, MINNESOTA

PROPOSED LOT IMPERVIOUS COVERAGE			
GROUND COVER	AREA (SF)	AREA (AC)	COV. (%)
IMPERVIOUS	37,255	0.855	46.6
GREEN SPACE	42,744	0.981	53.4
TOTALS	79,999	1.836	100.0



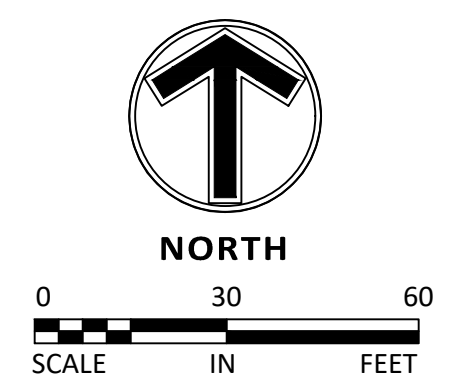
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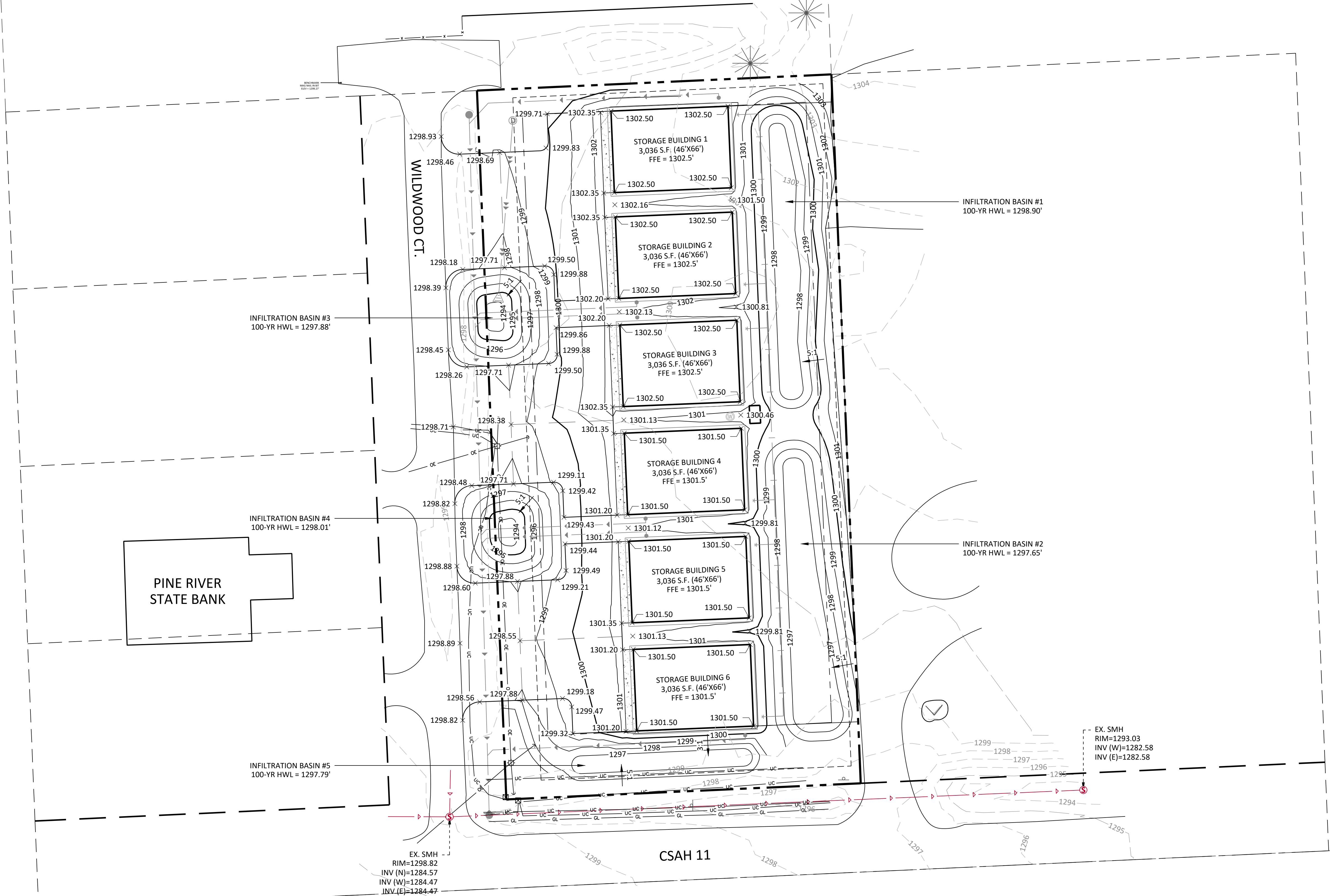
Christopher L. Sonmor
 CHRISTOPHER L. SONMOR LIC. NO. 44599 DATE 02/10/2026

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EAGLE VIEW STORAGE
 SITE PLAN
 BREEZY POINT, MINNESOTA

SHEET
 C2

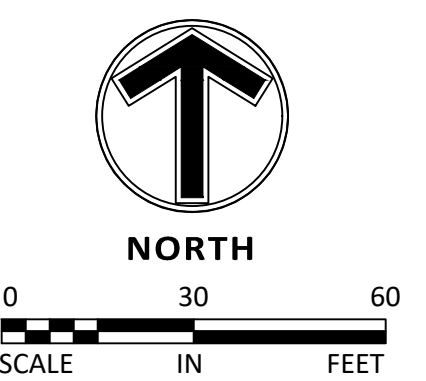




PINE RIVER
STATE BANK

EX. SMH -
RIM=1298.82
INV (N)=1284.57
INV (W)=1284.47
INV (E)=1284.47

EX. SMH
RIM=1293.03
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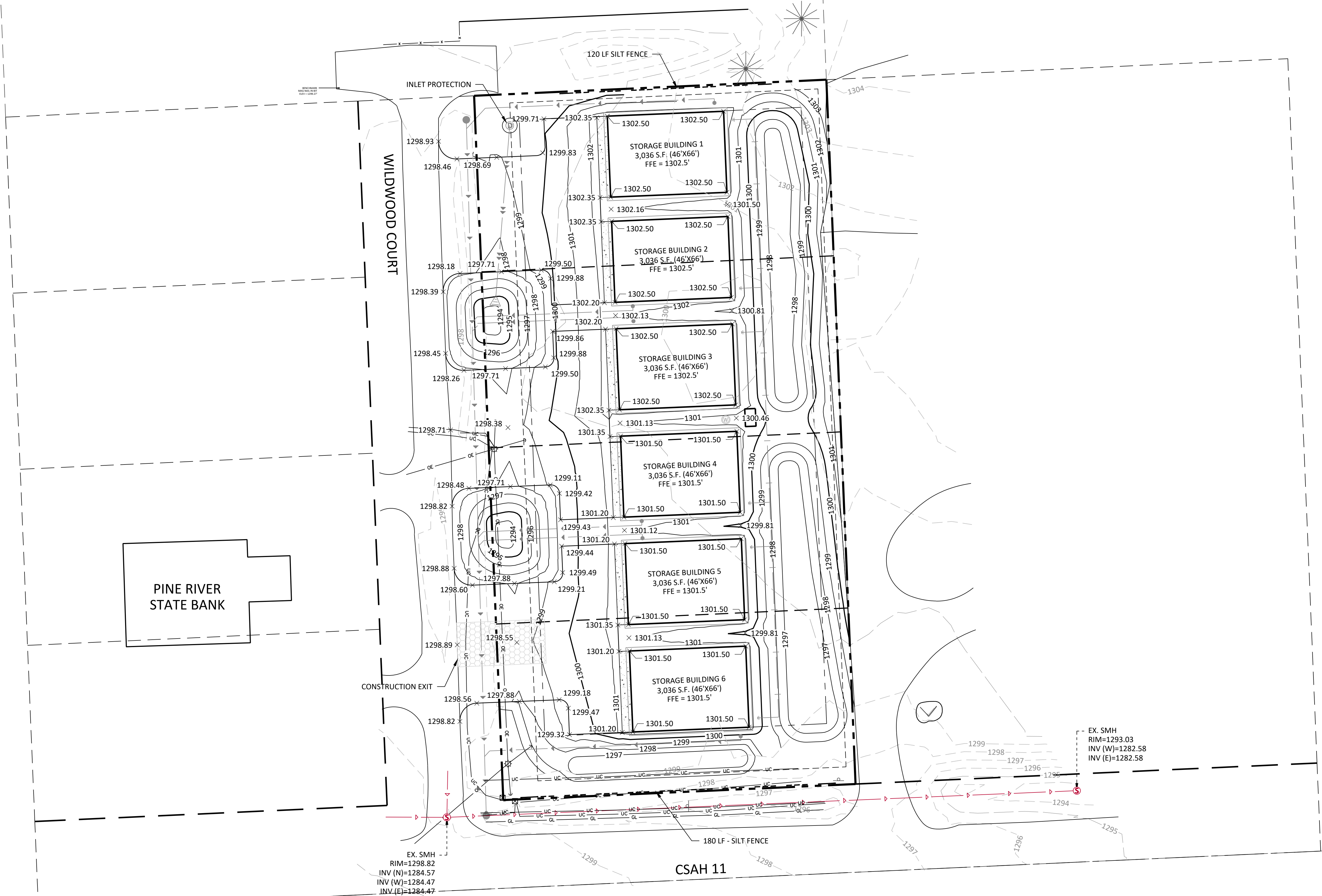


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EAGLE VIEW STORAGE
GRADING PLAN
BREEZY POINT, MINNESOTA

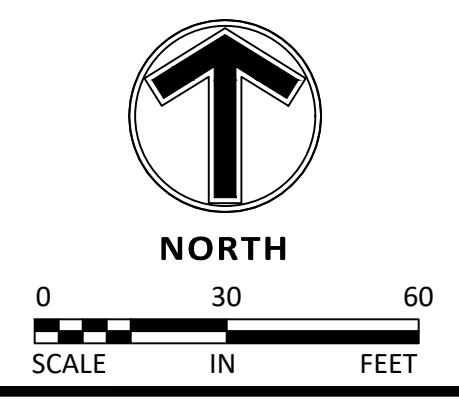


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EAGLE VIEW STORAGE
EROSION & SEDIMENT CONTROL PLAN
BREEZY POINT, MINNESOTA



1. GENERAL INFORMATION

A. PROJECT DESCRIPTION & LOCATION

- A.1. THE PROJECT IS LOCATED IN BREEZY POINT, MINNESOTA (CROW WING COUNTY PID'S 10070676, 10070677, 10070678 & 10070679). THE AREA OF THE COMBINED FOUR PARCELS IS APPROXIMATELY 1.84 ACRES.
- A.2. THE PROJECT INCLUDES CONSTRUCTION OF 6 STORAGE BUILDINGS, BITUMINOUS PAVEMENT, UTILITIES, STORMWATER INFILTRATION BASINS AND MISCELLANEOUS SITE AMENITIES.
- A.3. CONSTRUCTION WILL BEGIN IN THE SPRING/SUMMER OF 2026.
- A.4. FINAL RESTORATION IS TO BE COMPLETED BY FALL OF 2026.

B. PERMITTEE & CO-PERMITTEE

THE CONTRACTOR SHALL BE THE CO-PERMITTEE WITH THE OWNER ON THE NPDES CONSTRUCTION STORMWATER PERMIT APPLICATION.

OWNER
 BREEZY POINT RESORT
 DAVID LANDECKER
 9252 BREEZY POINT DRIVE
 BREEZY POINT, MINNESOTA 56472
 (218) 820-4038
 dlandecker@breezypointresort.com

CONTRACTOR
 TO BE DETERMINED

C. SWPPP CERTIFICATIONS

SWPPP DESIGNER
 CHRISTOPHER L. SONMOR
 SONMOR CONSULTING, LLC
 CERTIFICATION EXPIRES: 2027

SWPPP INSTALLER/SITE MANAGER
 TO BE DETERMINED

D. IMPERVIOUS AREA CALCULATIONS

TOTAL DISTURBED AREA:	2.0-ACRES
EXISTING IMPERVIOUS AREA:	0.0-ACRES
PROPOSED IMPERVIOUS AREA:	1.0-ACRES
TOTAL CHANGE IN IMPERVIOUS AREA:	1.0-ACRES

2. RECEIVING WATERS

THE PROJECT IS DESIGNED TO COLLECT AND INFILTRATE THE 100-YEAR, 24-HOUR STORM EVENT ON SITE. IN THE EVENT OF A LARGER STORM EVENT, THE SITE WILL OVERFLOW TO THE CSAH 11 RIGHT-OF-WAY.

3. PROJECT PLANS & SPECIFICATIONS

- A. THE EAGLE VIEW STORAGE PRELIMINARY PLANS & DRAINAGE REPORT TOGETHER WITH THIS DOCUMENT MAKE UP THE COMPLETE SWPPP.
- B. EROSION & SEDIMENT CONTROL PLANS & DETAILS ARE INCLUDED IN THE CONSTRUCTION PLANS.
- C. REFER TO THE DRAINAGE REPORT FOR ALL PERMANENT STORMWATER BMP MODEL RESULTS AND CALCULATIONS.

4. EROSION PREVENTION & SEDIMENT CONTROL PRACTICES

- A. PRIOR TO BEGINNING GRADING OPERATIONS, THE CONTRACTOR SHALL INSTALL ALL TEMPORARY EROSION & SEDIMENT CONTROL DEVICES AS INDICATED IN THE CONSTRUCTION PLANS.
- B. ALL DISTURBED SOILS NOT ACTIVELY WORKED FOR A PERIOD OF 7 DAYS SHALL BE STABILIZED. STABILIZATION INCLUDES, BUT IS NOT LIMITED TO TEMPORARY SEED/MULCH, HYRAULIC MULCH & EROSION CONTROL BLANKET.
- C. CONTRACTOR SHALL MINIMIZE CONSTRUCTION ACTIVITY IN AREAS PROPOSED FOR INFILTRATION.
- D. GRADING OPERATIONS SHALL BE PHASED AND SEQUENCED TO MINIMIZE DISTURBED AREA AND DURATION OF EXPOSED SOILS.
- E. WHEN POSSIBLE, ROUTE STORMWATER RUNOFF THROUGH VEGETATED AREAS.
- F. USE PERIMETER SILT FENCE AROUND TOPSOIL STOCKPILES. TEMPORARY SEED OR STABILIZE STOCKPILES.
- G. DISCHARGE OF TURBID OR SEDIMENT-LADEN WATERS (IF APPLICABLE) FROM DEWATERING OPERATIONS SHALL BE ROUTED THROUGH A SEDIMENT CONTROL DEVICE (SEDIMENT TRAP, BASIN OR FILTER BAG) OR A TEMPORARY SEDIMENTATION BASIN PRIOR TO DISCHARGE TO A SURFACE WATER. WHEN POSSIBLE, USE A WELL-VEGETATED AREA TO INFILTRATE AND TREAT WATER PRIOR TO DISCHARGE.
- H. IF NUISANCE CONDITIONS RESULT FROM THE THE DISCHARGE, THE PERMITTEE SHALL CEASE DEWATERING OPERATIONS IMMEDIATELY AND CORRECTIVE ACTION MUST OCCUR BEFORE DEWATERING IS RESUMED.
- I. ANY DEWATERING DISCHARGE THAT CONTAINS OIL OR GREASE SHALL BE ROUTED THROUGH A OIL-WATER SEPARATOR OR FILTRATION DEVICE.
- J. DISCHARGE FROM DEWATERING OPERATIONS MUST BE PERFORMED IN A MANNER THAT DOES NOT CAUSE EROSION OR SCOURING AT THE DISCHARGE POINT.
- K. ANTICIPATED EROSION & SEDIMENT CONTROL DEVICES & INSTALLATION SEQUENCING IS AS

FOLLOWS:

- K.1. CONSTRUCTION EXIT (LS) - PRIOR TO BEGINNING GRADING OPERATIONS
- K.2. SILT FENCE (LF) - PRIOR TO BEGINNING GRADING OPERATIONS
- K.3. RIPRAP/ARMOR AT OUTFALLS (CY) - AT TIME OF FES INSTALLATION
- K.4. TEMPORARY SEEDING (AC) - AS NEEDED DURING GRADING OPERATIONS
- K.5. EROSION CONTROL BLANKET (SY) - INSTALL AT TIME OF FINAL TURF ESTABLISHMENT
- K.6. BIOROLL (EA) - INSTALL IN DITCHES AT TIME OF FINAL TURF ESTABLISHMENT
- K.7. PERMANENT SEEDING (AC) - FINAL TURF ESTABLISHMENT
- L. IF CONSTRUCTION EXIT IS OBSERVED TO BE FULL OF SEDIMENT OR SEDIMENT IS BEING TRACKED ONTO PUBLIC STREETS, THE CONSTRUCTION EXIT SHALL BE IMMEDIATELY REPLACED OR REPAIRED. THE CONTRACTOR SHALL SWEEP OR REMOVE ANY SEDIMENT TRACKED ONTO PUBLIC ROADWAYS WITHIN 24 HOURS.
- M. WHEN/IF INLET PROTECTION DEVICES BECOME CLOGGED OR ARE FULL TO 1/3 OF THEIR DESIGNED CAPACITY, CLEAN OR REPLACE THE DEVICE WITHIN 24 HOURS OF OBSERVATION OF THE DEVICE BEING CLOGGED.
- N. IF SEDIMENT IS OBSERVED AT PIPE OUTFALLS, THE SEDIMENT SHALL BE REMOVED WITHIN 24 HOURS. THE SOURCE OF THE SEDIMENT SHALL BE IDENTIFIED AND CORRECTED.

5. PERMANENT STORMWATER MANAGEMENT SYSTEM

- A. STORMWATER RUNOFF IS MANAGED ON-SITE UTILIZING A SERIES OF INFILTRATION BASINS TO COLLECT AND INFILTRATE THE 100-YEAR, 24-HOUR STORM EVENT.

6. INSPECTION & MAINTENANCE ACTIVITIES

- A. THE CONTRACTOR SHALL PROVIDE A CERTIFIED EROSION CONTROL SUPERVISOR FOR THE PROJECT.
- B. THE EROSION CONTROL SUPERVISOR SHALL BE TRAINED TO OVERSEE THE IMPLEMENTATION OF THE SWPPP AND MANAGEMENT OF ALL EROSION PREVENTION & SEDIMENT CONTROL PRACTICES FOR THE DURATION OF THE PROJECT.
- C. THE EROSION CONTROL SUPERVISOR SHALL PERFORM ROUTINE INSPECTIONS EVERY 7 DAYS OR FOLLOWING A RAIN EVENT OF 1/2-INCH OR GREATER IN 24 HOURS.
- D. ALL INSPECTION LOGS SHALL BE KEPT ON SITE WITH THE NPDES PERMIT DOCUMENTATION.

7. POLLUTION PREVENTION MANAGEMENT MEASURES

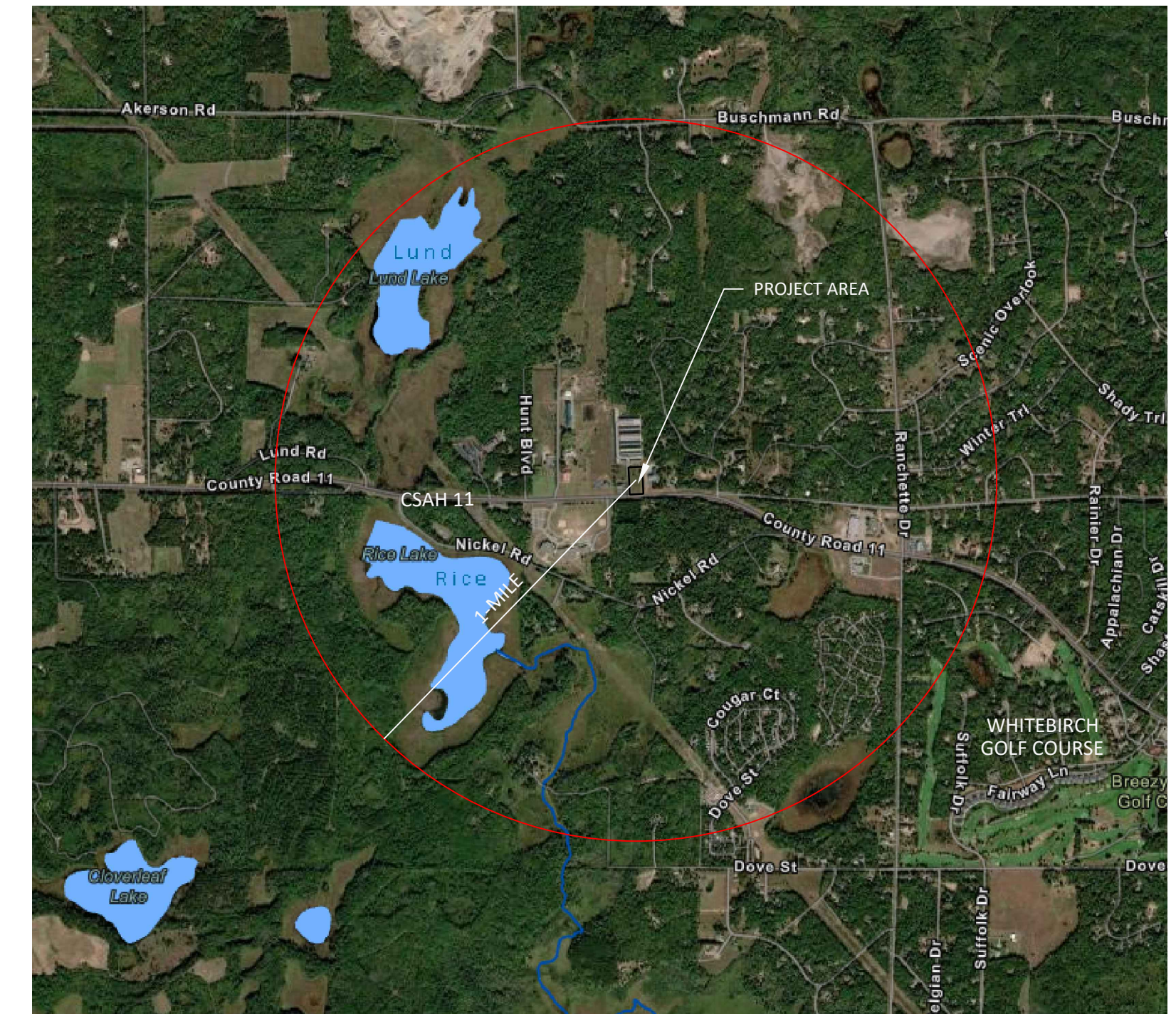
- A. THE CONTRACTOR SHALL HAVE A SPILL CONTAINMENT PLAN IN PLACE IN THE EVENT OF A SPILL.
- B. DISPOSAL BINS SHALL BE AVAILABLE ON SITE FOR COLLECTION OF SOLID WASTE. ALL SOLID WASTE SHALL BE DISPOSED OF IN ACCORDANCE WITH MPCA REQUIREMENTS.
- C. ALL HAZARDOUS MATERIALS INCLUDING BUT NOT LIMITED TO FUEL, GAS & OILS SHALL BE PROPERLY CONTAINED ON SITE TO PREVENT CONTAMINATION OR POLLUTION FROM SPILLS OR LEAKS.
- D. PORTABLE TOILETS SHALL BE PLACED ON SITE AND BE SECURE AND UNABLE TO BE TIPPED. WASTE SHALL BE DISPOSED OF IN ACCORDANCE WITH MPCA REQUIREMENTS.

8. PERMIT TERMINATION CONDITIONS

- A. FINAL STABILIZATION OF THE DISTURBED AREAS IS TO BE COMPLETED BY SEEDING WITH WITH THE SEED MIXTURES AS IDENTIFIED IN THE CONSTRUCTION PLANS.
- B. PRIOR TO THE OWNER TAKING POSSESSION OF THE NEW STORMWATER TREATMENT AND COLLECTION SYSTEMS, ALL FACILITIES SHALL BE CLEANED AND FREE OF SEDIMENT AND DEBRIS.
- C. WHEN FINAL TURF ESTABLISHMENT REACHES 70% COVERAGE, TEMPORARY EROSION & SEDIMENT CONTROL DEVICES CAN BE REMOVED. THOSE MAY INCLUDE, BUT NOT BE LIMITED TO SILT FENCE, BIOROLL, INLET/OUTLET PROTECTION, & CONSTRUCTION EXITS.

9. SPECIAL OR IMPAIRED WATER

- A. THERE ARE NO SPECIAL OR IMPAIRED WATERS WITHIN 1-MILE OF THE PROJECT SITE.



IMPAIRED & SPECIAL WATERS MAP

NOT TO SCALE

ESTIMATED QUANTITIES

SITE

1. CONSTRUCTION EXIT - 1 LUMP SUM
2. SILT FENCE (SINGLE ROW) - 300 LINEAR FEET
3. INLET PROTECTION - 1 EACH
4. PERMANENT SEEDING - 1.0 ACRES
5. TEMPORARY SEEDING - 2.0 ACRES (AS NEEDED)



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Christopher L. Sonmor
 CHRISTOPHER L. SONMOR
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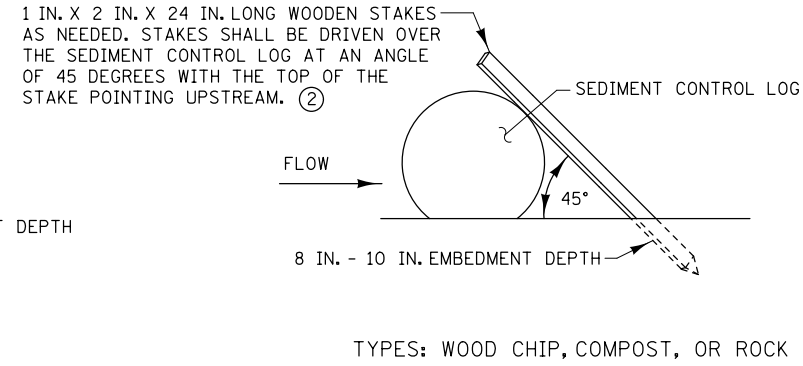
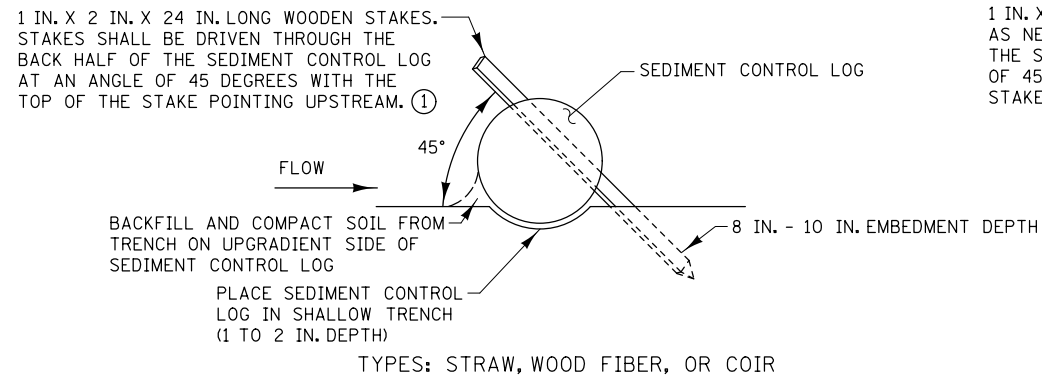
REVISIONS

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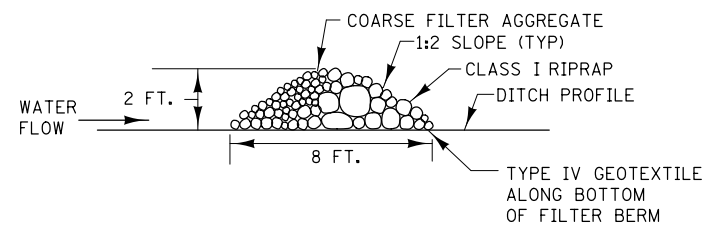
**EAGLE VIEW STORAGE
 STORMWATER POLLUTION PREVENTION PLAN (SWPPP)
 BREEZY POINT, MINNESOTA**

SHEET

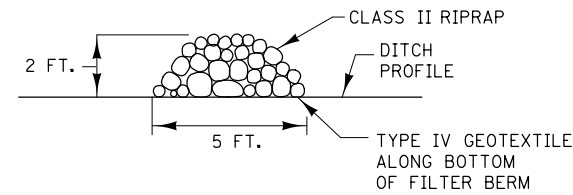
C6



SEDIMENT CONTROL LOGS

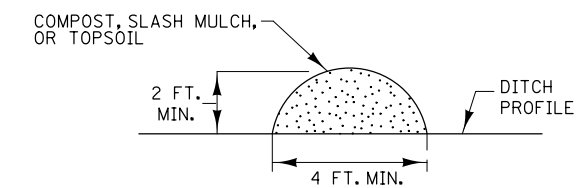


TYPE 3 (ROCK WEEPER)

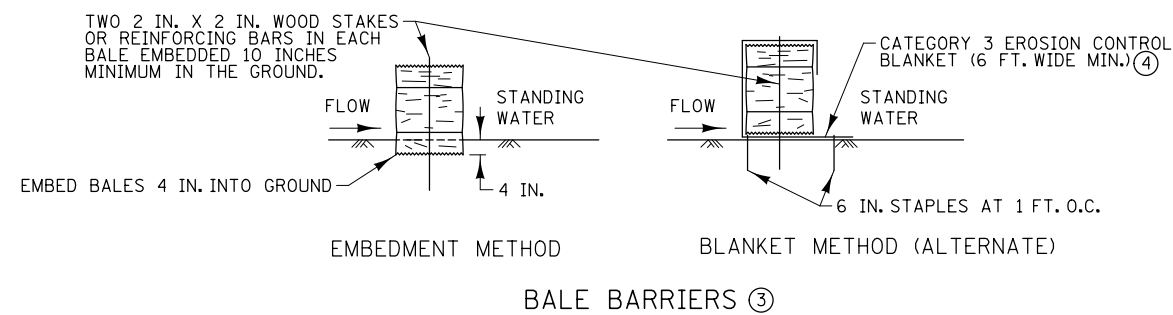


TYPE 5 (ROCK)

FILTER BERMS



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



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

[Signature]
CHIEF ENVIRONMENTAL OFFICER

m
MINNESOTA
DEPARTMENT
OF
TRANSPORTATION

REVISOR:

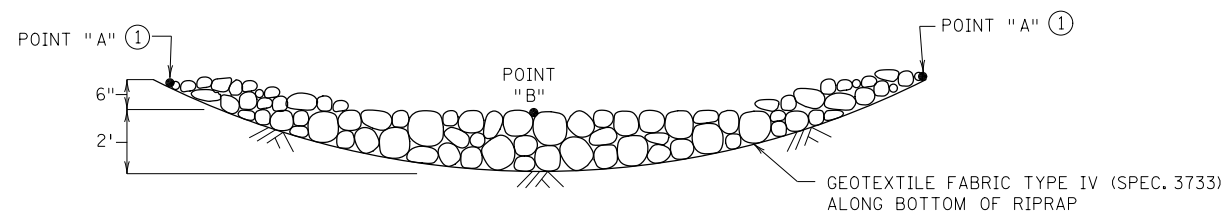
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STATE DESIGN ENGINEER

APPROVED:
2-28-2017

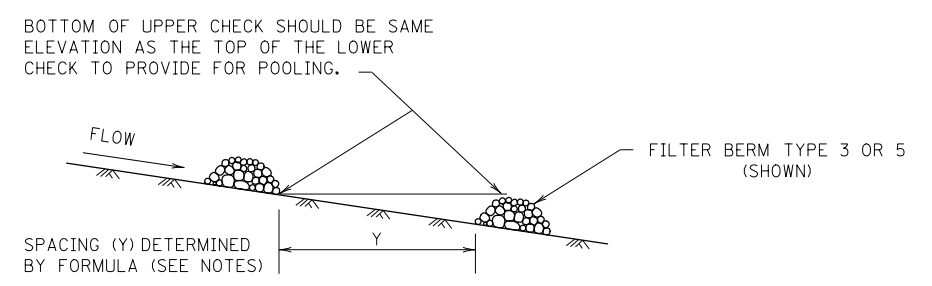
TEMPORARY SEDIMENT CONTROL
FILTER BERMS, SEDIMENT CONTROL LOGS, AND BALE BARRIERS

STANDARD PLAN 5-297.405

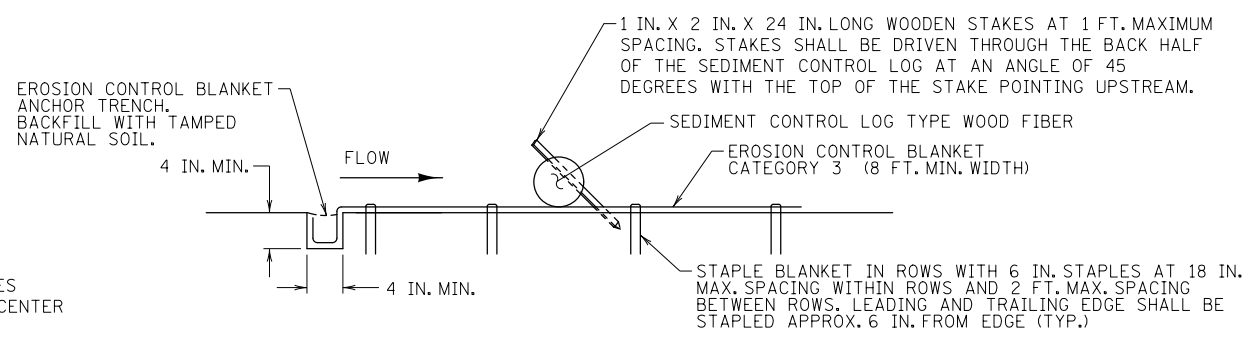
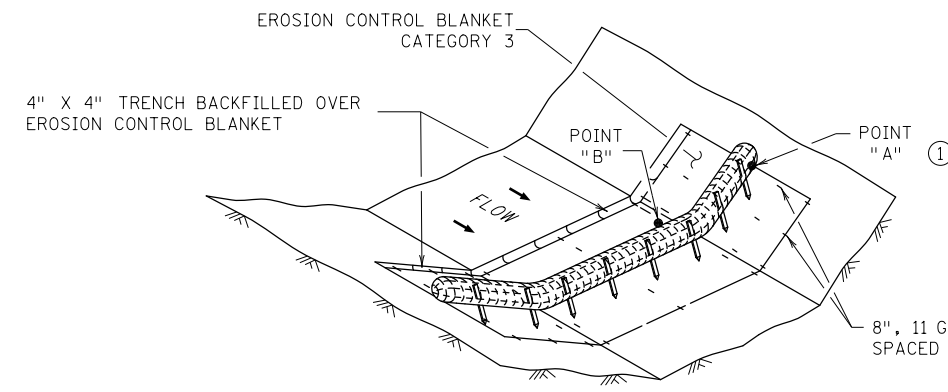
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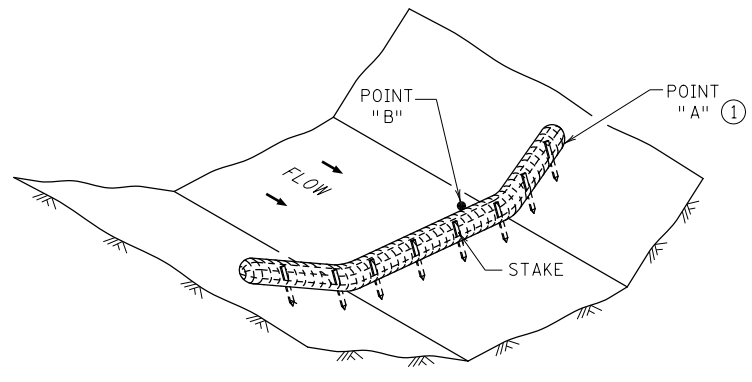
ROCK DITCH CHECKS
 FILTER BERMS TYPE 3 (ROCK WEEPER) OR FILTER TYPE 5 (ROCK) ②③
 (FOR USE ON ROUGH GRADED AREAS)



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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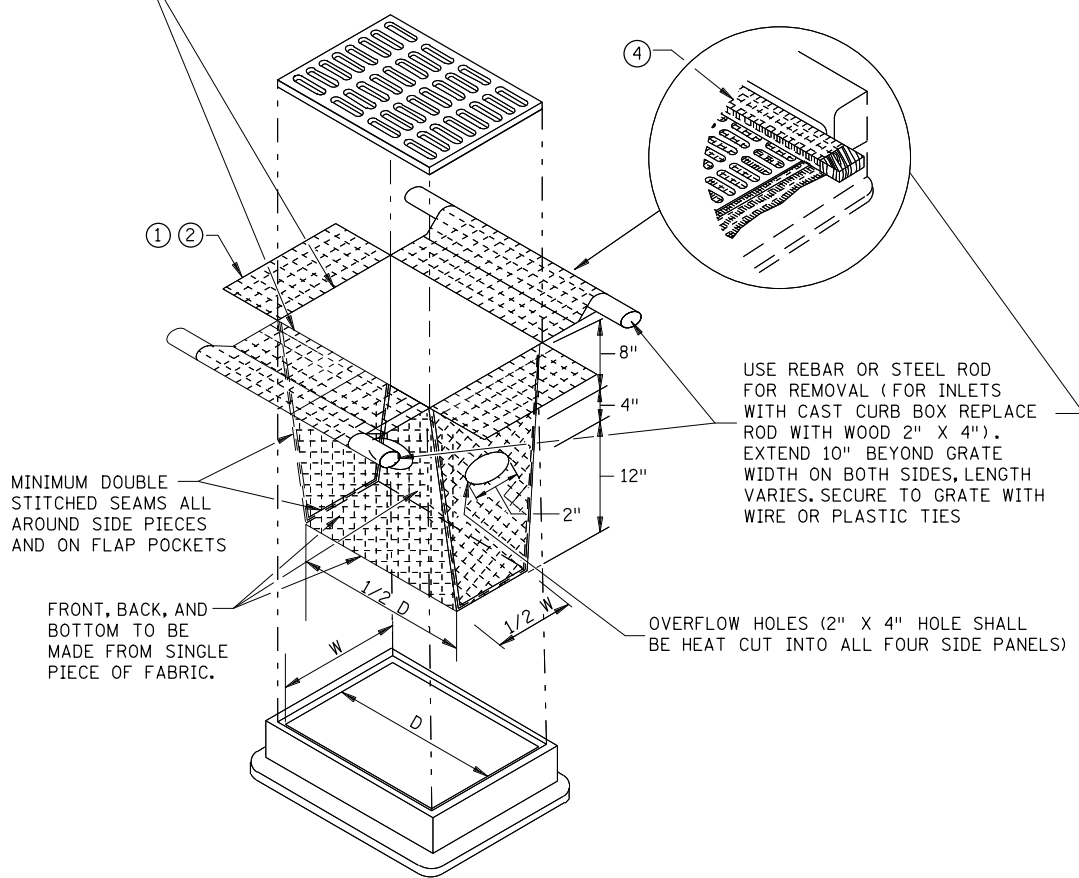
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TEMPORARY SEDIMENT CONTROL
 DITCH CHECK
 STANDARD PLAN 5-297.405 3 OF 8

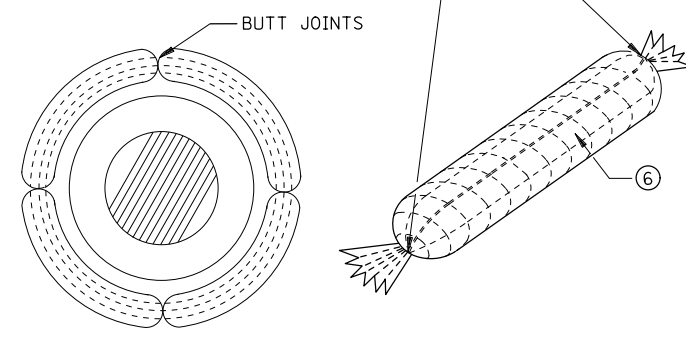
INLET SPECIFICATIONS AS PER THE PLAN
DIMENSION LENGTH AND WIDTH TO MATCH
FLAP POCKET



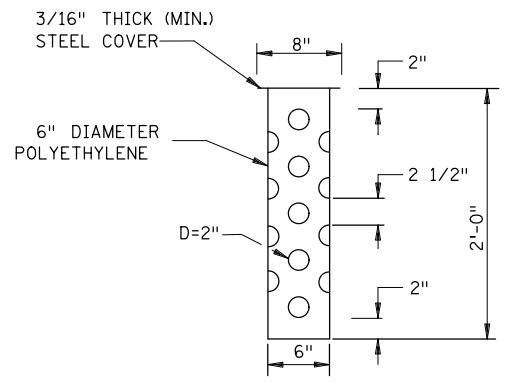
FILTER BAG INSERT ③

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

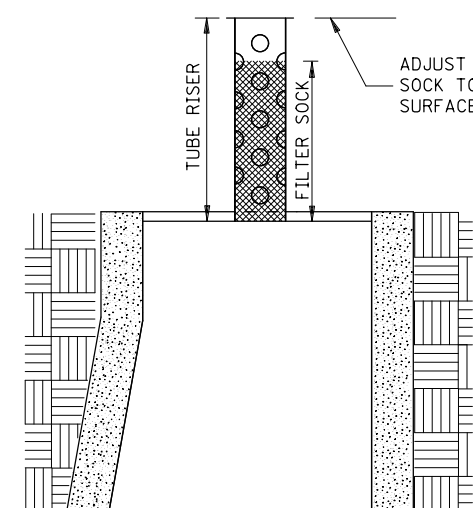
ENDS SECURELY CLOSED TO
PREVENT LOSS OF OPEN GRADED
AGGREGATE FILL. SECURED WITH
50 PSI. ZIP TIE.



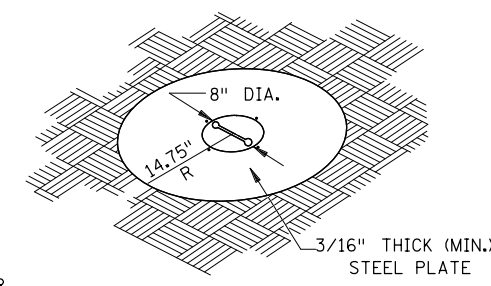
ROCK LOG/COMPOST LOG



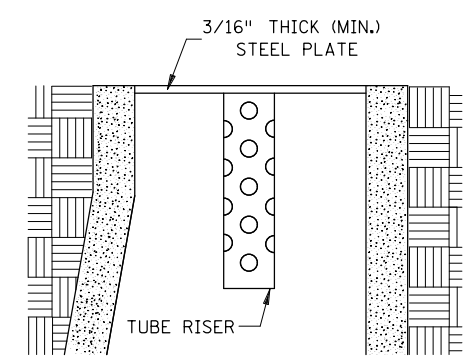
TUBE RISER



**SECTION
(UP POSITION)**

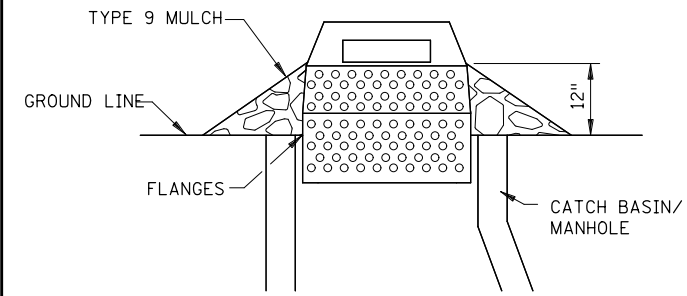


PERSPECTIVE VIEW



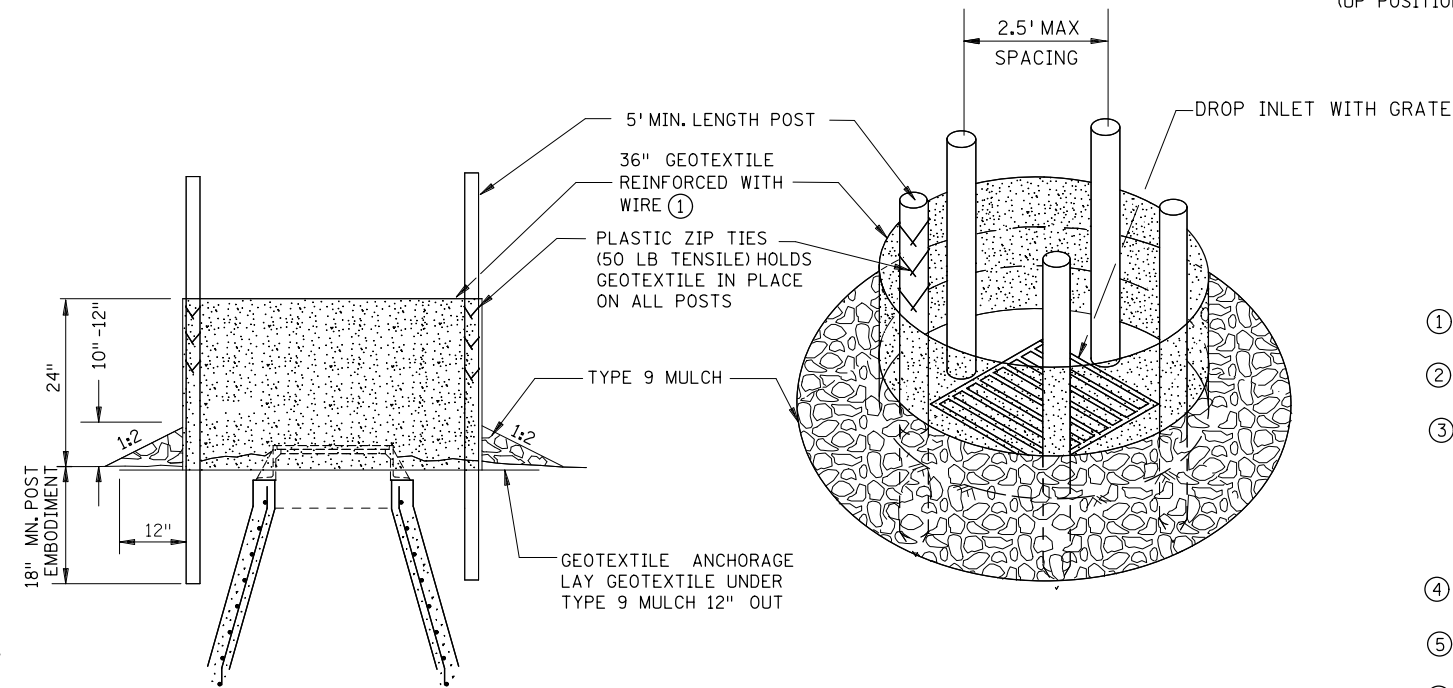
**SECTION
(DOWN POSITION)**

POP-UP HEAD



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.



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.

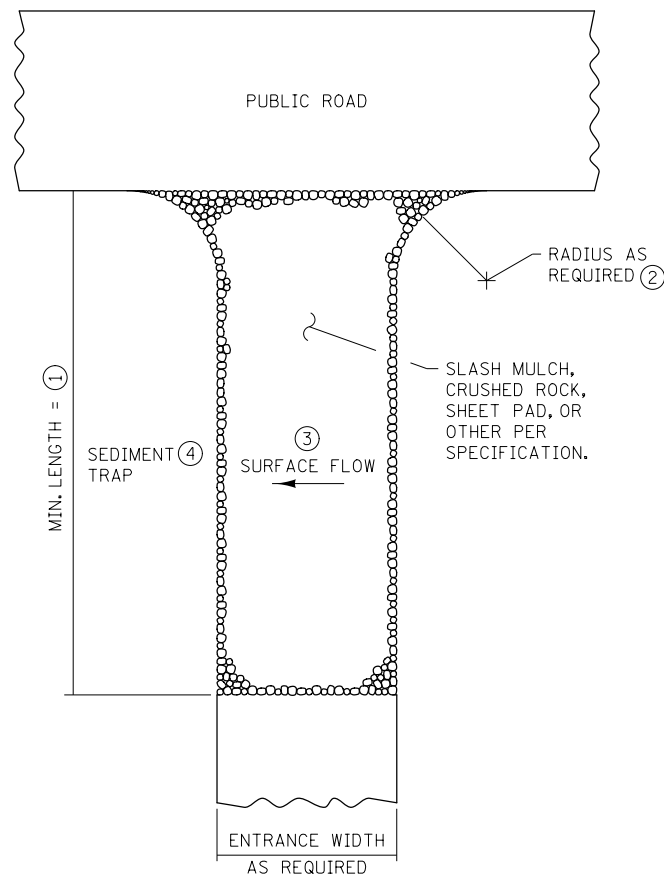
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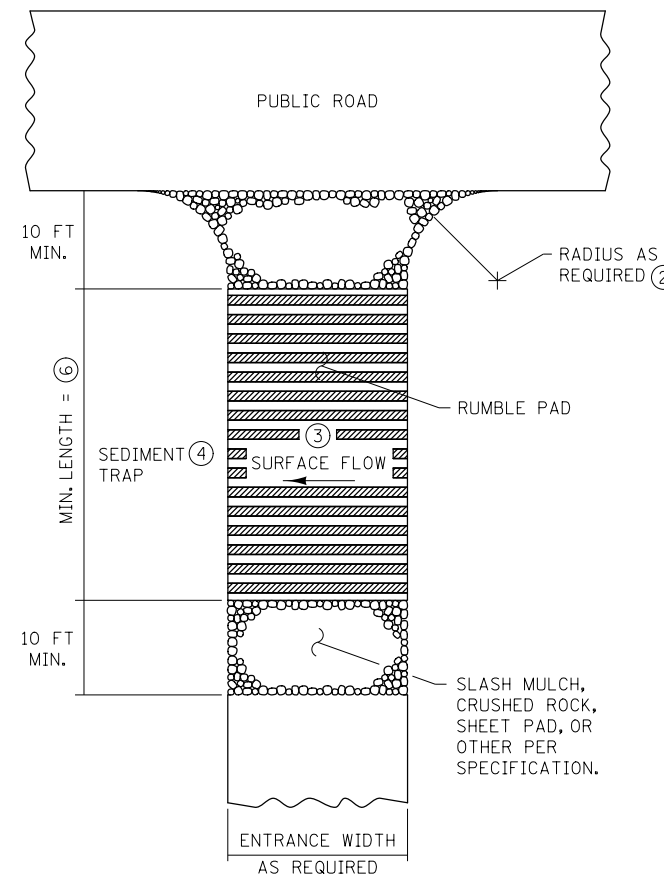
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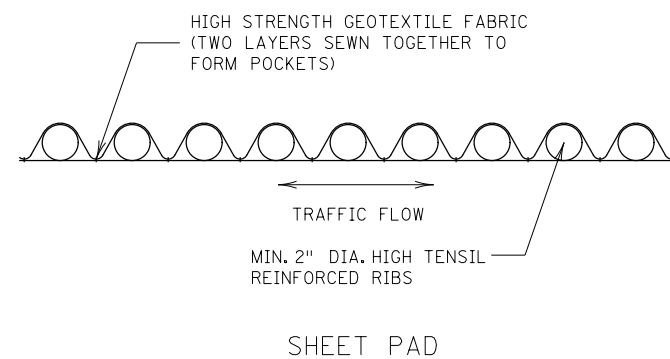
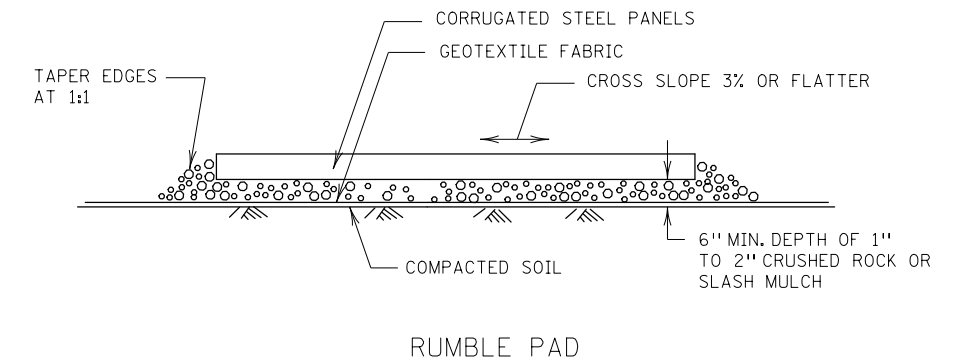
TEMPORARY SEDIMENT CONTROL
STORM DRAIN INLET PROTECTION
STANDARD PLAN 5-297.405 4 OF 8



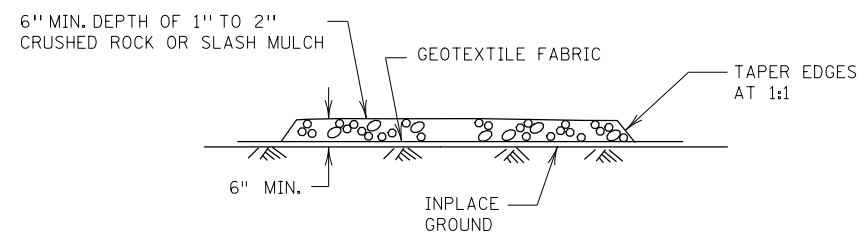
SLASH MULCH, CRUSHED ROCK, OR SHEET PAD CONSTRUCTION EXIT ⑤⑦



RUMBLE PAD CONSTRUCTION EXIT ⑤⑦



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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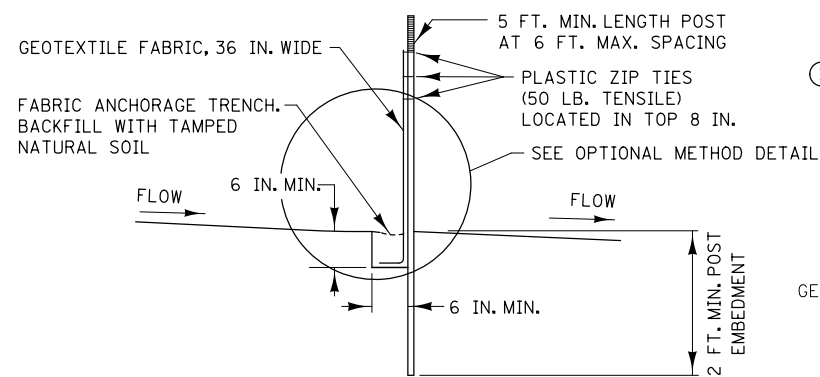
DEPARTMENT OF TRANSPORTATION

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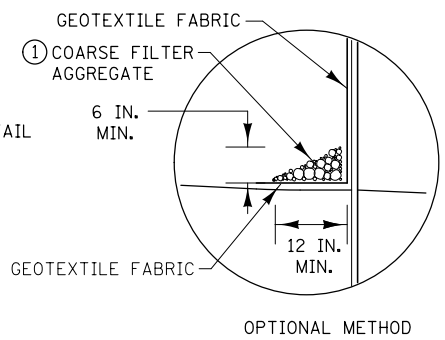
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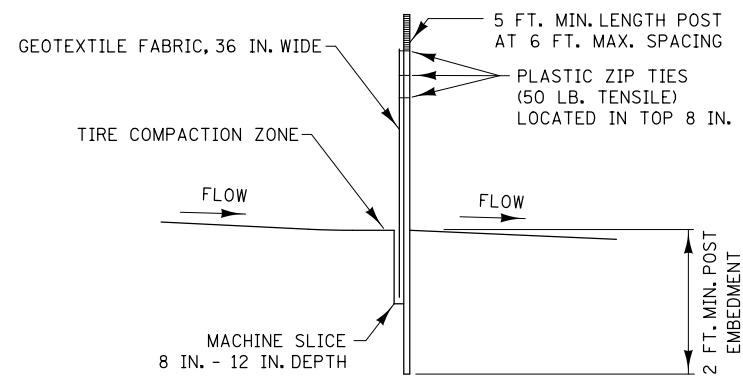
TEMPORARY SEDIMENT CONTROL
 STABILIZED CONSTRUCTION EXIT
 STANDARD PLAN 5-297.405 5 OF 8



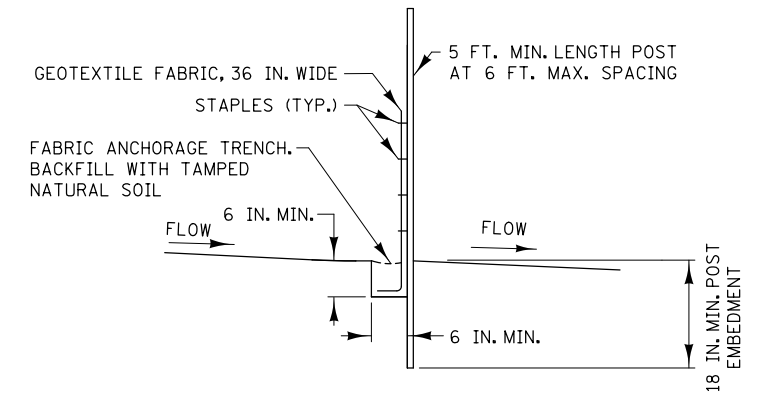
SILTS FENCE TYPE HI ②
(HAND INSTALLED)



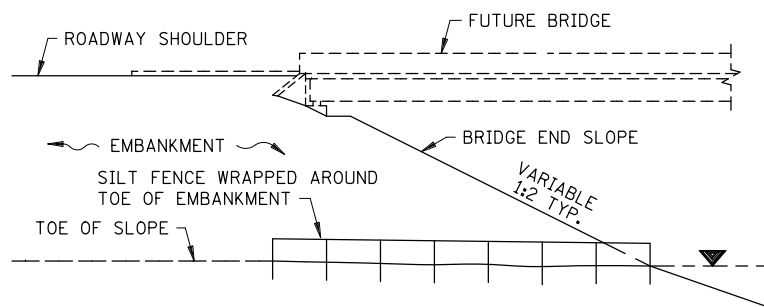
OPTIONAL METHOD



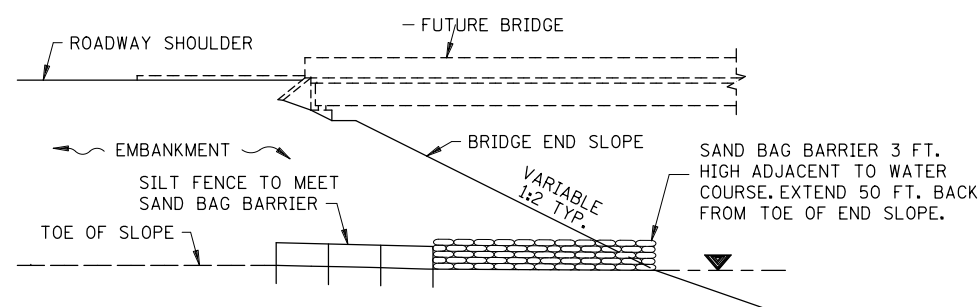
SILTS FENCE TYPE MS ②
(MACHINE SLICED)



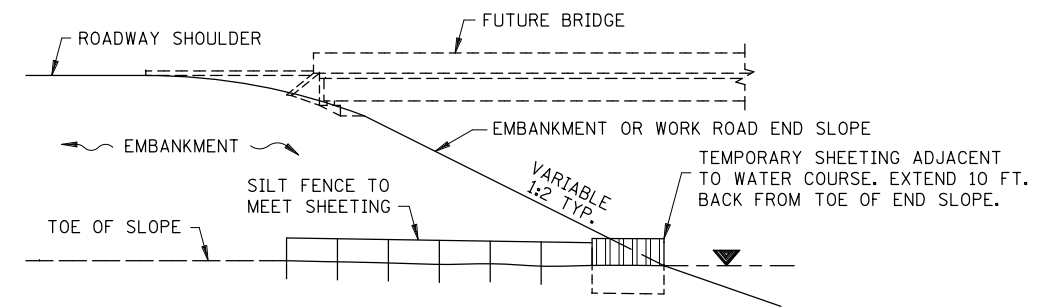
SILTS FENCE TYPE PA ③
(PREASSEMBLED)



SILTS FENCE ONLY ④

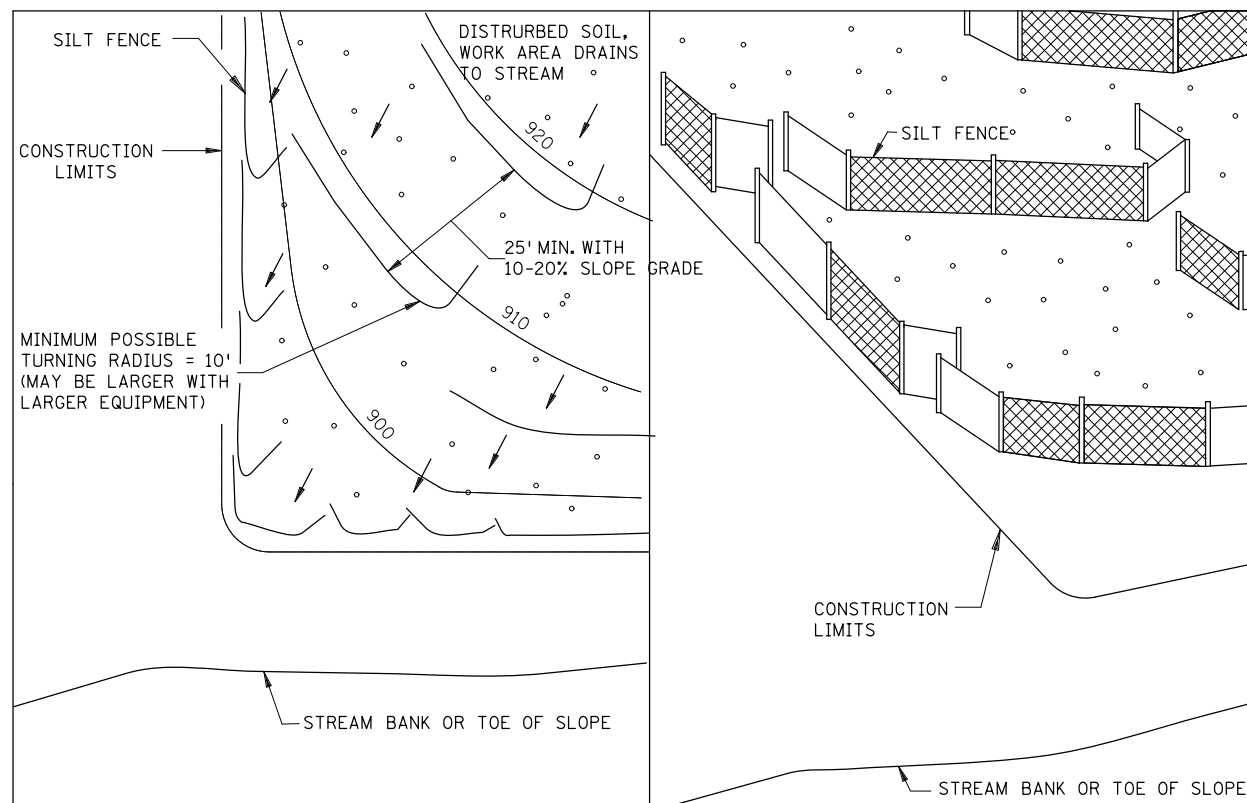


SILTS FENCE WITH SAND BAGS ⑤



SILTS FENCE WITH SHEETING ⑥

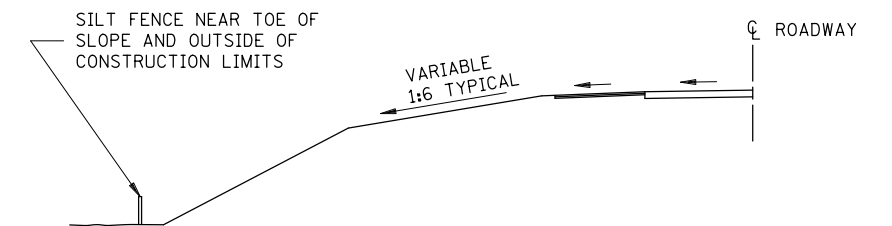
INSTALLATION AT BRIDGE EMBANKMENT ADJACENT TO WATER



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.

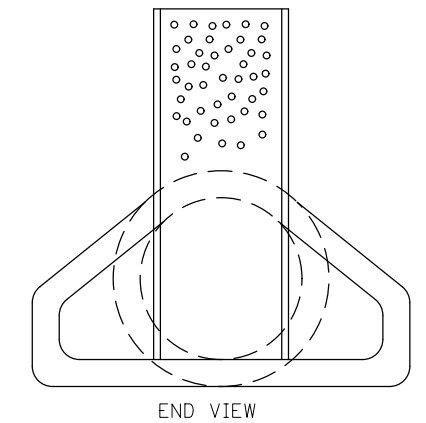
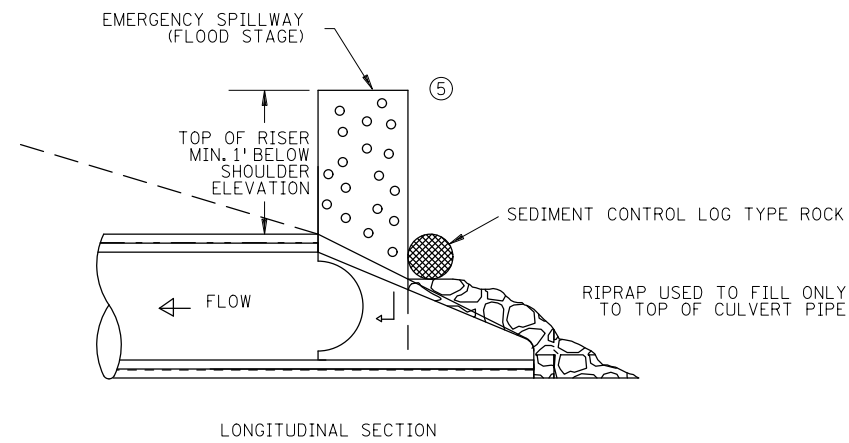
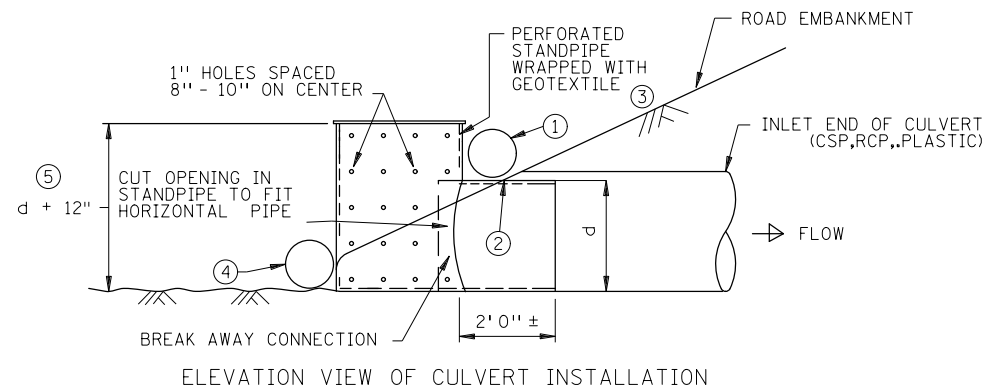
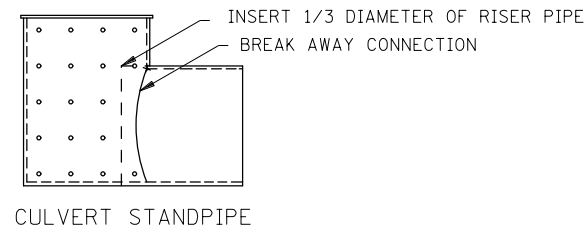
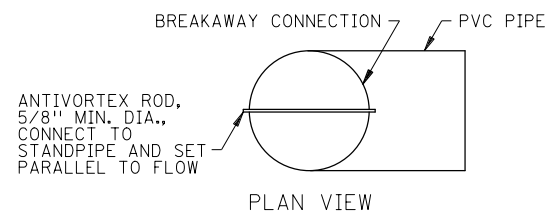
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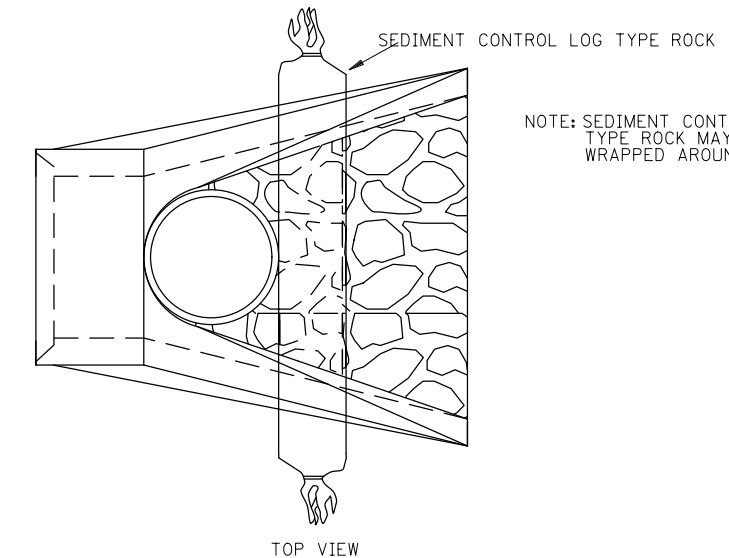
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TEMPORARY SEDIMENT CONTROL
SILTS FENCE
STANDARD PLAN 5-297.405 6 OF 8

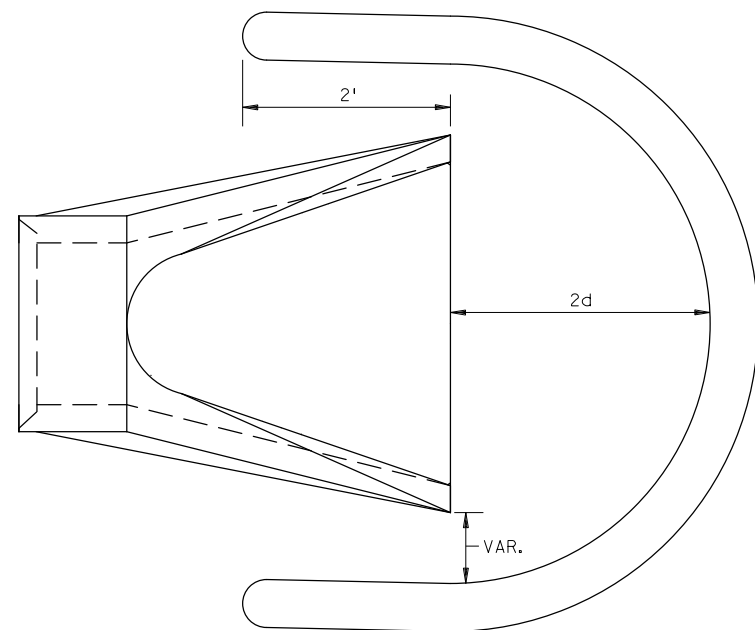


CULVERT STANDPIPE INSERT (D-RISER)

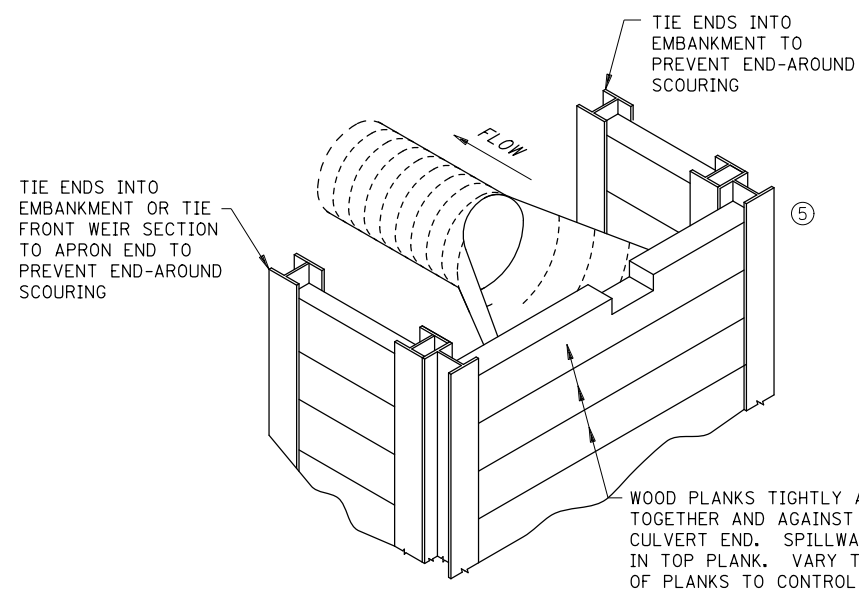
d = CULVERT SIZE: 12" - 36"



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.

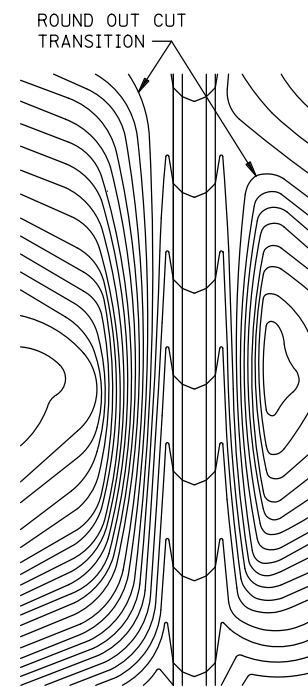
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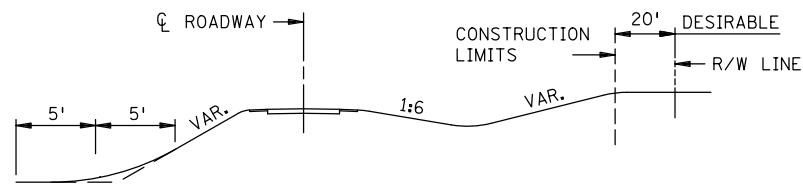
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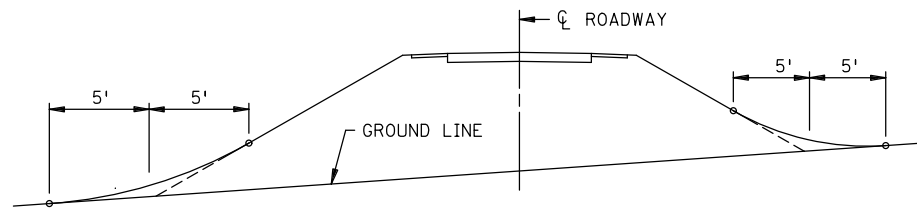
TEMPORARY SEDIMENT CONTROL
CULVERT END CONTROLS
STANDARD PLAN 5-297.405 8 OF 8



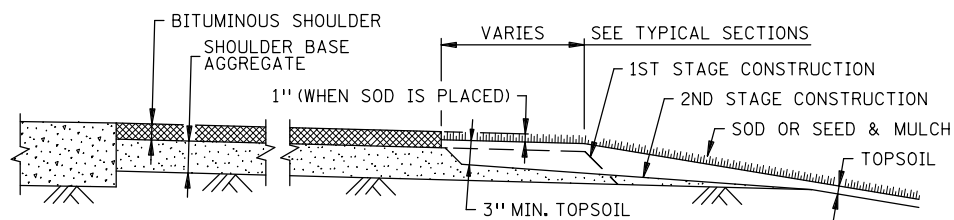
CONTOURING ROAD CUTS



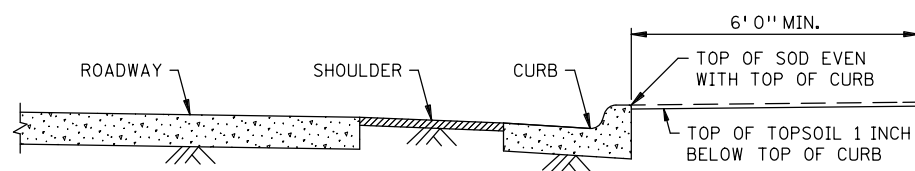
ROUNDING SHOULDERS AND BACKSLOPES



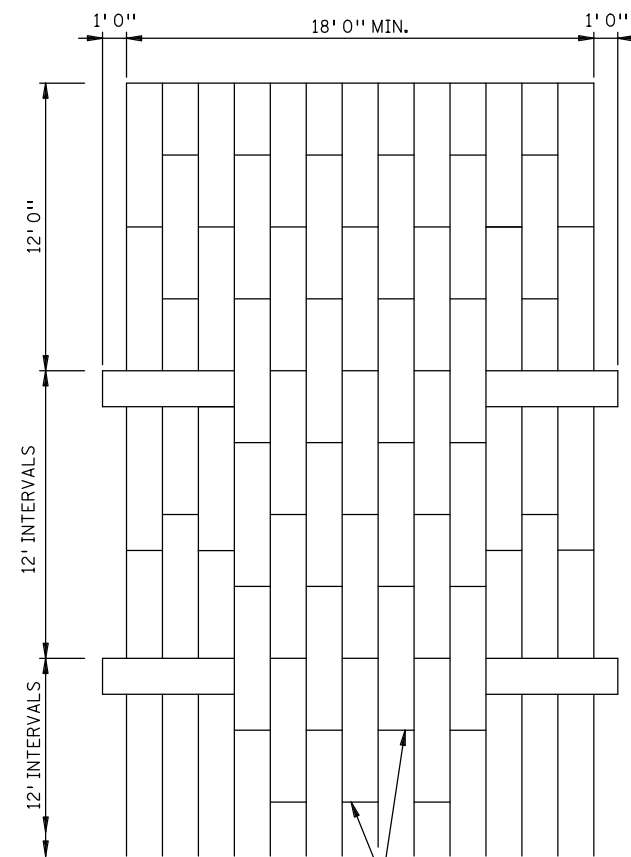
SHAPING FOR DRAINAGE ALONG THE TOE OF FILL SLOPES



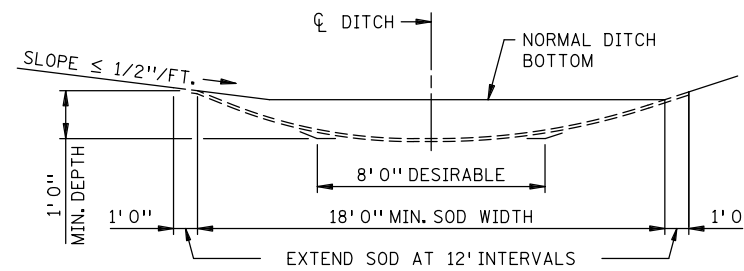
SHAPING AND TOPSOILING INSLOPES



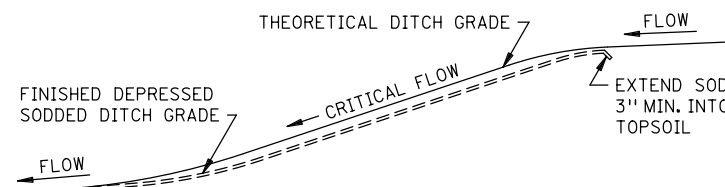
SHAPING ADJACENT TO CURBS WHEN SOD IS PLACED



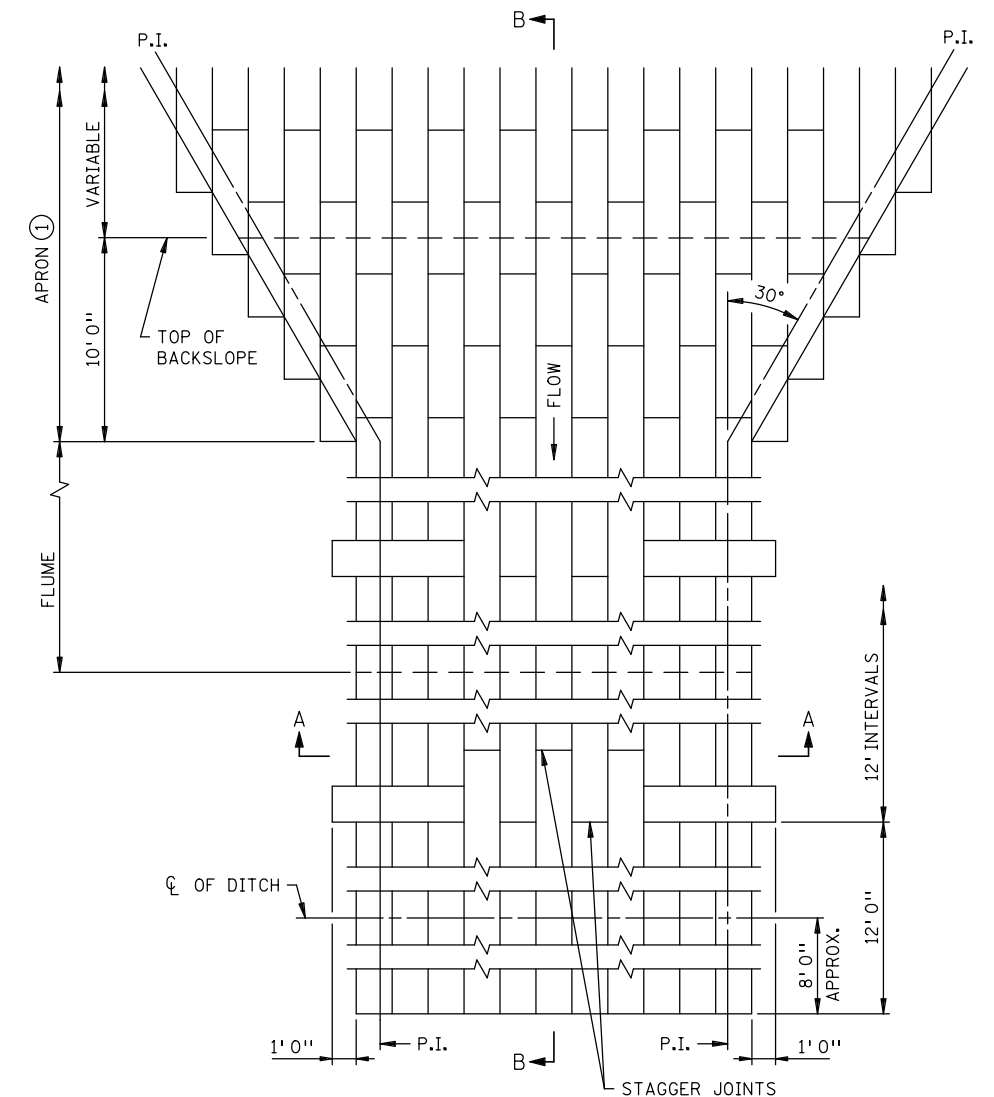
STAGGER JOINTS
PLAN VIEW



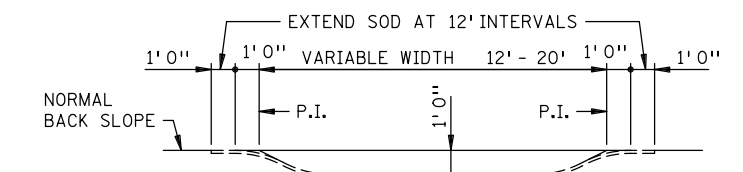
SODDED DITCH CROSS SECTION
WHERE FRONT OR BACK SLOPE IS FLAT (LESS THAN 1/2"/FT.),
FIRST NOTCH DITCH AND THEN PROVIDE ROUNDING.



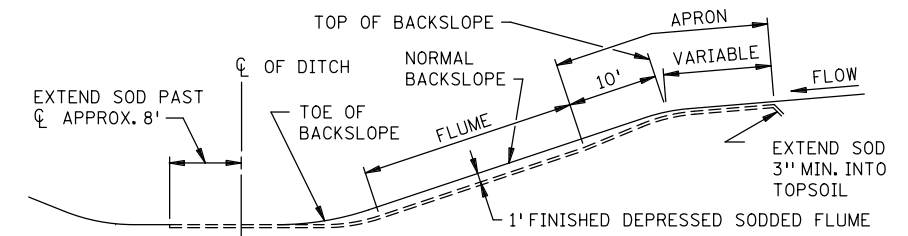
SODDED DITCH DETAILS



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.

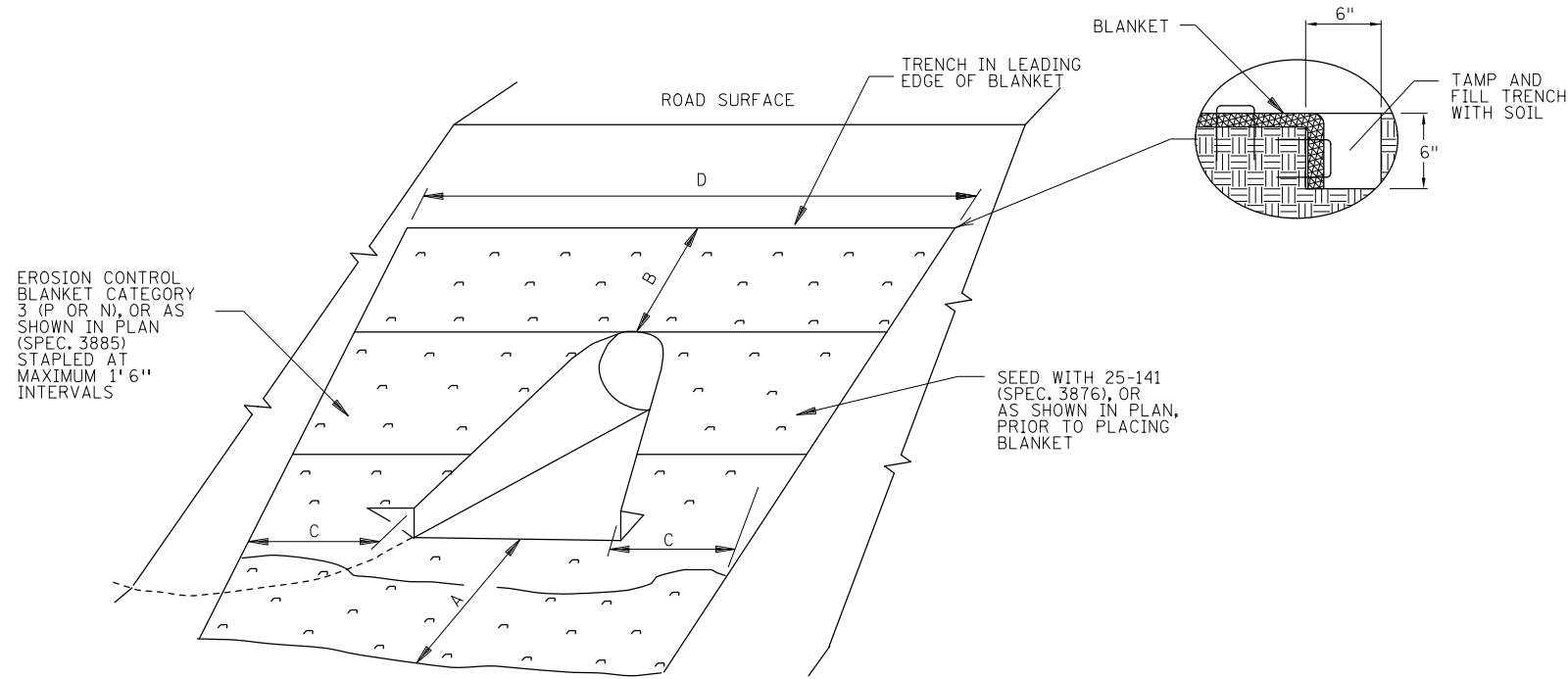
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PERMANENT EROSION CONTROL
ALONG ROADWAYS, DITCHES AND FLUMES
STANDARD PLAN 5-297.404 1 OF 3



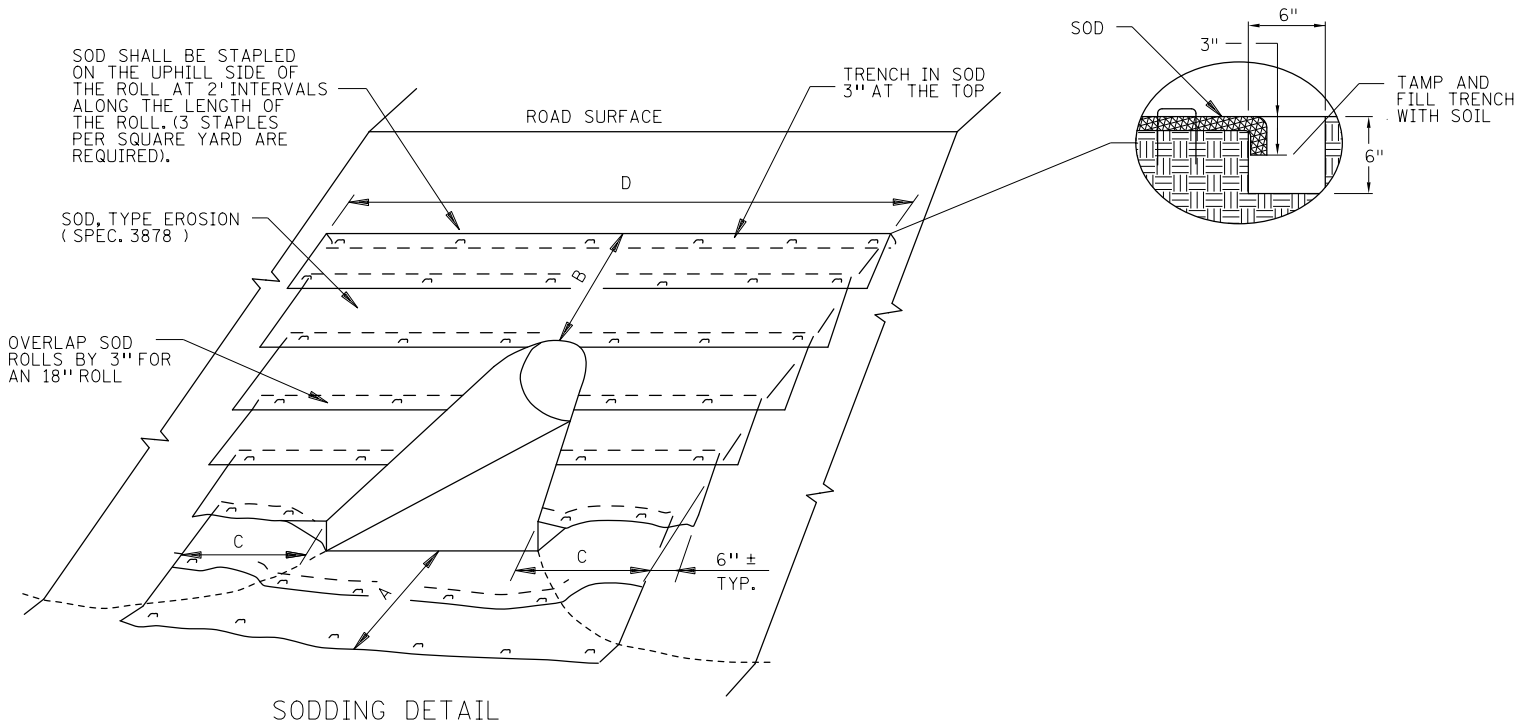
EROSION CONTROL BLANKET & SEED DETAIL

CULVERT DIAMETER ②	SOD OR EROSION CONTROL BLANKET (SQ. YDS.)						"A"	"B"	"C"	"D"
	CIRCULAR AND ARCH PIPE METAL APRON (PLATE 3123, PLATE 3122)	CIRCULAR AND ARCH PIPE CONCRETE APRON (PLATE 3100, PLATE 3110)	CIRCULAR AND ARCH PIPE METAL SAFETY APRON 1:4 SLOPE (PLATE 3148)	CIRCULAR AND ARCH PIPE METAL SAFETY APRON 1:6 SLOPE (PLATE 3148)	CIRCULAR CORRUGATED METAL PIPE SAFETY APRON 1:6 SLOPE (PLATE 3128)	CIRCULAR CORRUGATED METAL PIPE SAFETY APRON 1:4 SLOPE (PLATE 3128)				
15"	9	9	8	8	N/A	N/A	3'	1.5'	3'	13'
18"	13	12	12	14	16	N/A	3'	3'	3'	16'
21"	14	14	14	16	18	14	3'	3'	3'	17'
24"	16	15	16	19	21	17	3'	3'	3'	18'
27"	N/A	20	N/A	N/A	N/A	N/A	3'	4.5'	3'	20'
30"	23	22	25	30	32	N/A	3'	4.5'	3'	22'
36"	34	34	39	48	51	37	4.5'	4.5'	4.5'	27'
42"	43	40	51	64	N/A	N/A	4.5'	6'	4.5'	30'
48"	54	50	66	82	N/A	N/A	4.5'	7.5'	4.5'	34'
54"	65	58	81	102	N/A	N/A	4.5'	9'	4.5'	37'
60"	69	59	91	115	N/A	N/A	4.5'	9'	4.5'	39'
66"	69	63	N/A	N/A	N/A	N/A	4.5'	9'	4.5'	39'
72"	78	72	99	122	N/A	N/A	4.5'	10.5'	4.5'	41'

CULVERT DIAMETER ②	SOD OR EROSION CONTROL BLANKET (SQ. YDS.)						"A"	"B"	"C"	"D"
	CIRCULAR AND ARCH PIPE METAL APRON (PLATE 3123, PLATE 3122)	CIRCULAR AND ARCH PIPE CONCRETE APRON (PLATE 3100, PLATE 3110)	CIRCULAR AND ARCH PIPE METAL SAFETY APRON 1:4 SLOPE (PLATE 3148)	CIRCULAR AND ARCH PIPE METAL SAFETY APRON 1:6 SLOPE (PLATE 3148)	CIRCULAR CORRUGATED METAL PIPE SAFETY APRON 1:6 SLOPE (PLATE 3128)	CIRCULAR CORRUGATED METAL PIPE SAFETY APRON 1:4 SLOPE (PLATE 3128)				
15"	10	10	9	10	N/A	N/A	4.5'	1.5'	3'	13'
18"	13	13	12	14	15	N/A	6'	1.5'	3'	14'
21"	16	14	16	18	19	15	6'	1.5'	3'	15'
24"	18	18	18	21	22	18	7.5'	1.5'	3'	16'
27"	N/A	19	N/A	N/A	N/A	N/A	7.5'	1.5'	3'	17'
30"	23	23	24	28	29	N/A	9'	1.5'	3'	18'
36"	36	35	38	47	48	37	10.5'	1.5'	4.5'	23'
42"	43	40	47	58	N/A	N/A	12'	1.5'	4.5'	25'
48"	50	46	57	70	N/A	N/A	13.5'	1.5'	4.5'	27'
54"	57	50	67	84	N/A	N/A	15'	1.5'	4.5'	29'
60"	74	63	90	113	N/A	N/A	16.5'	1.5'	6'	33'
66"	75	67	N/A	N/A	N/A	N/A	16.5'	1.5'	6'	33'
72"	77	70	92	114	N/A	N/A	16.5'	1.5'	6'	34'

NOTES:

- AREA SHOWN IN SQUARE YARDS IS FOR ONE CULVERT END.
- QUANTITIES ARE CALCULATED TO INCLUDE SOD REQUIRED TO PROVIDE A 3" OVERLAP ON ALL 18" WIDE ROLLS. THIS ALLOWS FOR SHRINKAGE OF THE SOD.
- FOR PIPE ARCHES USE EQUIVALENT PIPE DIAMETER TO APPROXIMATE AREA.
- FOR CORRUGATED POLYETHYLENE PIPE METAL APRON (PLATE 3129), USE THE METAL APRON COLUMN (PLATE 3123).
- AREAS AND DIMENSIONS ARE APPROXIMATE AND ARE BASED ON APRON SIDE SLOPES OF NO STEEPER THAN 1:2, UNLESS INDICATED AS FOR SAFETY APRONS.
- CARE SHOULD BE TAKEN IN SELECTING SOD TO STABILIZE THE APRON. RIP-RAP SHOULD BE USED FOR FLOW VELOCITIES GREATER THAN 6 FPS.
- ① ADDITIONAL QUANTITIES MAY BE SHOWN IN THE PLAN OR REQUIRED BY THE ENGINEER.
- ② FOR ARCH PIPE USE CLOSEST CIRCULAR PIPE DIAMETER AND APRON SLOPE. (DIAMETERS LARGER THAN 72" REQUIRE SPECIAL DESIGNS.)



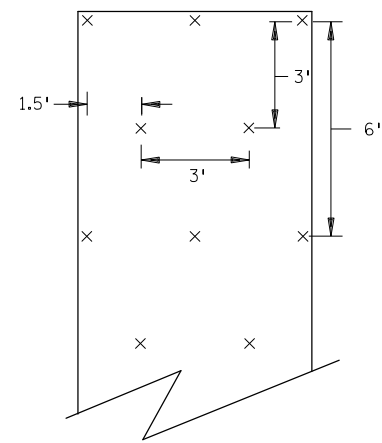
SODDING DETAIL

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APPROVED: 2-28-2017
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CHIEF ENVIRONMENTAL OFFICER

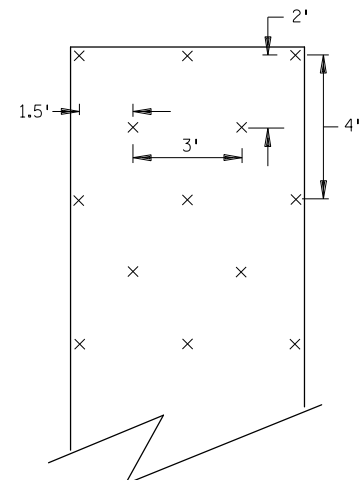
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TRANSPORTATION

REVISED:
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APPROVED:
2-28-2017
STATE DESIGN ENGINEER

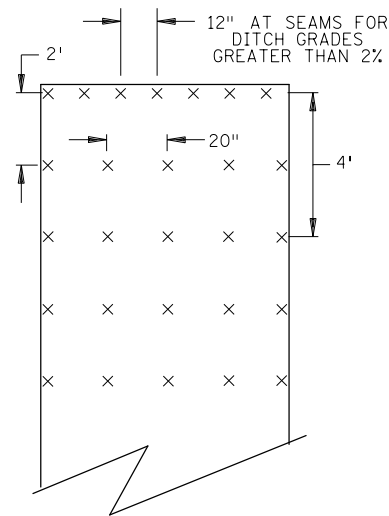
PERMANENT EROSION CONTROL
TURF ESTABLISHMENT DETAIL AT CULVERT ENDS
STANDARD PLAN 5-297.404
2 OF 3



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

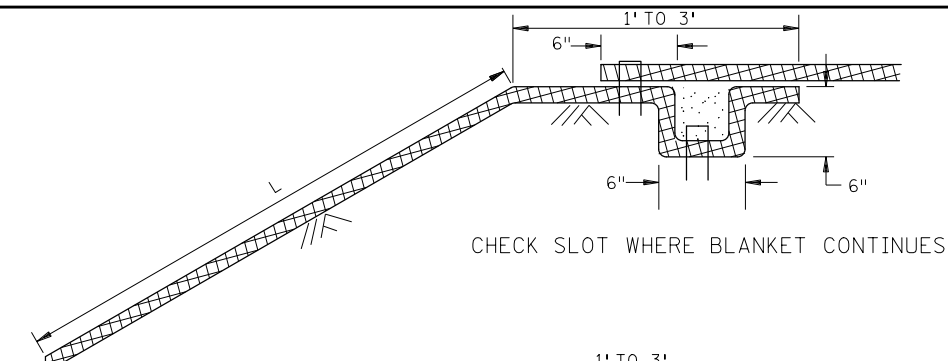


SLOPES 1:2 TO 1:1
(170 STAPLES PER 100 SQ YD)

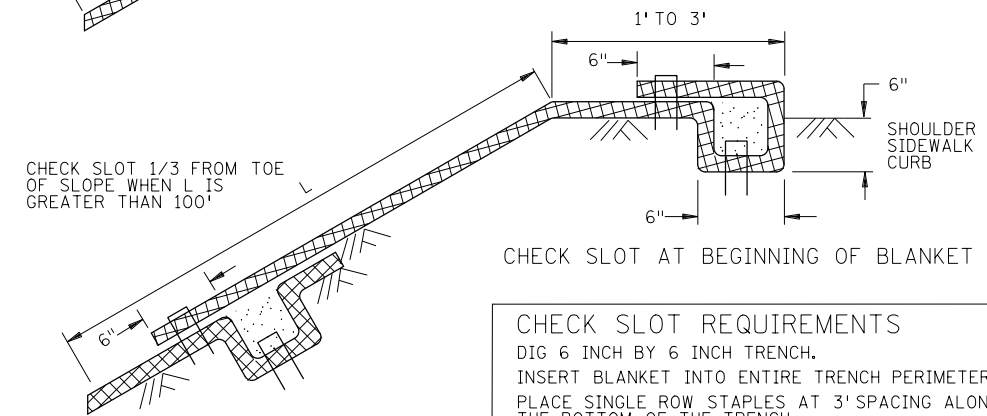


CHANNEL AND DITCH APPLICATIONS
(350 STAPLES PER 100 SQ YD)

BLANKET STAPLE PATTERN

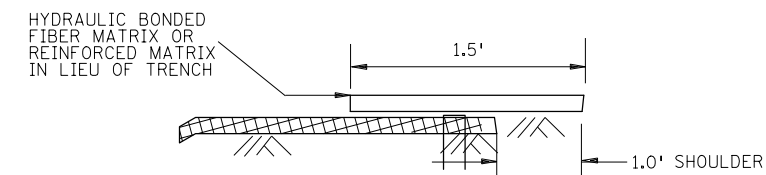


CHECK SLOT WHERE BLANKET CONTINUES

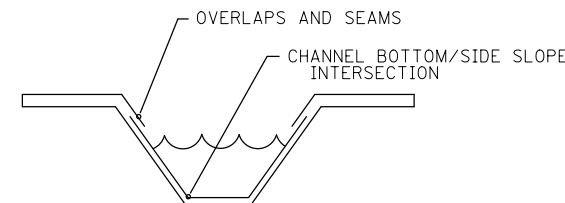


CHECK SLOT AT BEGINNING OF BLANKET

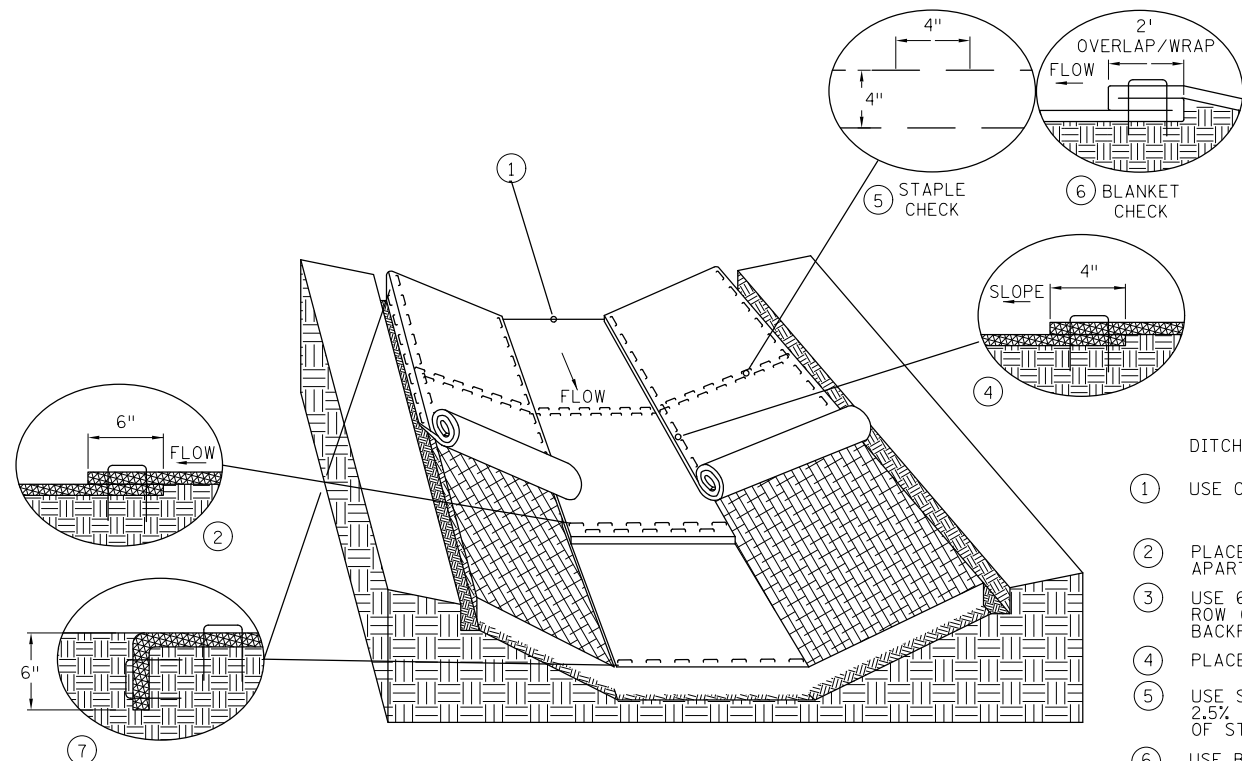
CHECK SLOT REQUIREMENTS
DIG 6 INCH BY 6 INCH TRENCH.
INSERT BLANKET INTO ENTIRE TRENCH PERIMETER.
PLACE SINGLE ROW STAPLES AT 3' SPACING ALONG THE BOTTOM OF THE TRENCH.
BACKFILL TRENCH WITH SOIL AND TAMP.
PLACE SINGLE ROW STAPLES AT 3' SPACING ON OVERLAP.



CHECK SLOT ALTERNATIVE
PLACE SINGLE ROW STAPLES AT 12" SPACING
CHECK SLOT DETAILS



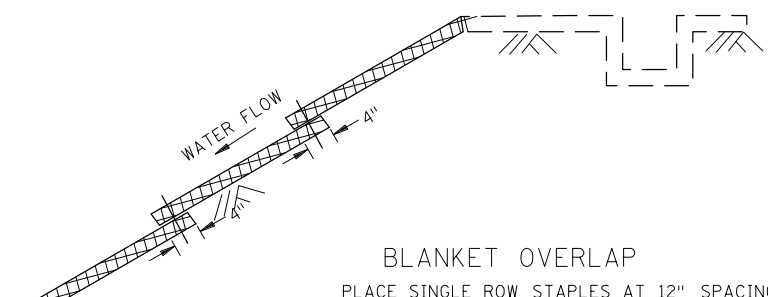
DITCH BLANKET CRITICAL POINTS ⑦



DITCH BLANKET STAPLE DETAIL

DITCH BLANKET STAPLE DETAIL 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 FOOT 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 FT INTERVALS
3%-5% 50 FT INTERVALS
5%-7% 25 FT INTERVALS
- ⑦ CRITICAL POINTS SHALL BE SECURED WITH PROPER STAPLE PATTERNS.



BLANKET OVERLAP
PLACE SINGLE ROW STAPLES AT 12" SPACING

GENERAL BLANKET INSTALLATION REQUIREMENTS
PREPARE SOIL AS PER SPECIFICATION 2574.
LAY PARALLEL OR PERPENDICULAR TO THE DIRECTION OF WATER FLOW.
OVERLAP ADJACENT STRIP EDGES A MINIMUM OF 4 INCHES.
OVERLAP BLANKET 6" (MIN.) 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 1/3 FROM THE BOTTOM OF THE SLOPE.

REVISION:
APPROVED: 2-28-2017
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STATE DESIGN ENGINEER

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APPROVED:
2-28-2017

PERMANENT EROSION CONTROL
BLANKET STAPLE PATTERN FOR SLOPES
STANDARD PLAN 5-297.404 3 OF 3