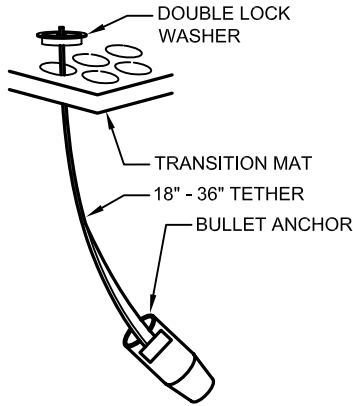
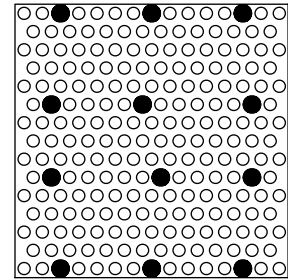


# COHESIVE SOILS SCOURSTOP TRANSITION MAT INSTALLATION DETAILS



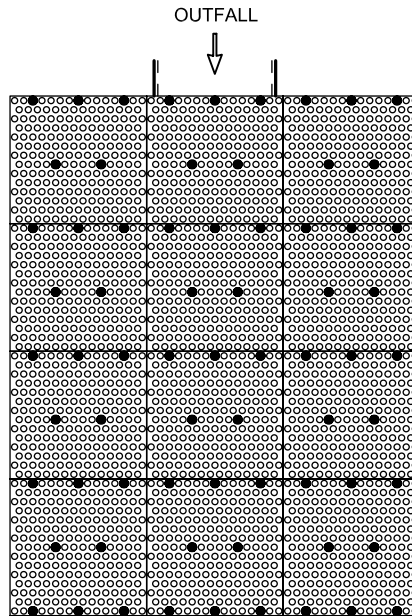
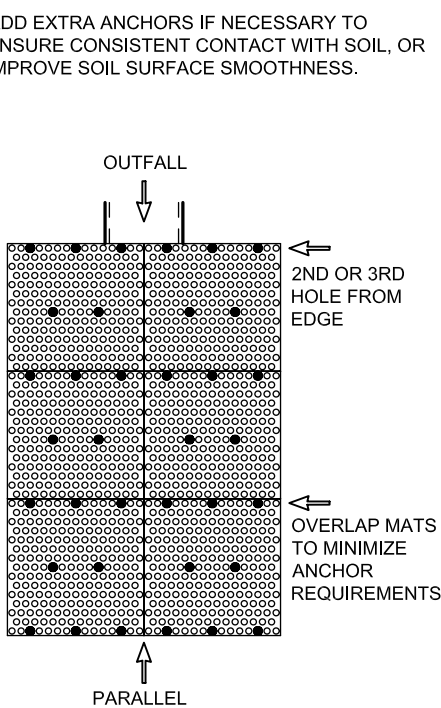
PIPE DIAMETER	DISCHARGE (CFS)	SCOURSTOP WIDTHxLENGTH
12"	8	4' x 4'
24"	30	4' x 8'
36"	75	8' x 12'
48"	100	12' x 16'
60"	150	12' x 20'
72"+		SEE DETAILS

SHORELINE PROTECTION:



ANCHOR CONFIGURATION FOR SLOPES STEEPER THAN 5:1; TRANSITION MATS OVER A MIN. 8 OZ. GEOTEXTILE

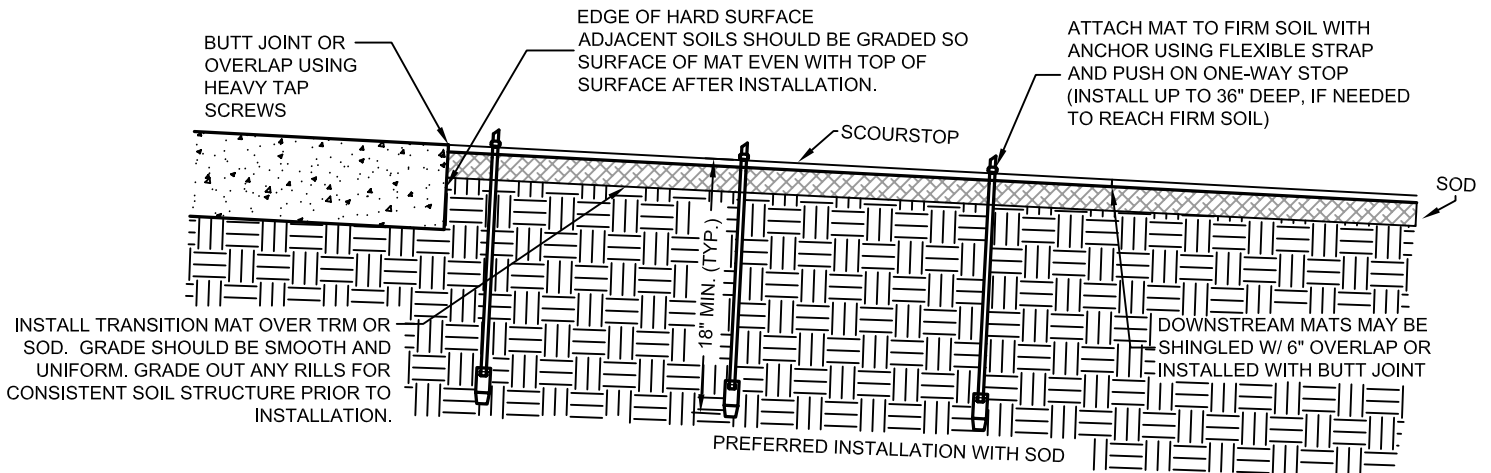
ADD EXTRA ANCHORS IF NECESSARY TO ENSURE CONSISTENT CONTACT WITH SOIL, OR IMPROVE SOIL SURFACE SMOOTHNESS.



POSITION ANCHORS TO SECURE SCOURSTOP MATS FLUSH WITH SOIL SURFACE. MINIMIZE GAPS OR BRIDGING.

ANCHOR REQUIREMENTS\*:  
FIRST ROW OF SCOURSTOP MATS - MINIMUM OF 8 ANCHORS  
SECOND ROW OF SCOURSTOP MATS - MINIMUM OF 5 ANCHORS

\*TO ACHIEVE CONSISTENT CONTACT WITH THE SOIL, EXCEED THE MINIMUM ANCHOR REQUIREMENT AT INSTALLATION.



# COHESIVE SOILS

## SCOURSTOP TRANSITION MAT APPLICATIONS

1. INTENDED AS AN BIOTECHNICAL REPLACEMENT FOR RIP-RAP. THIS IS AN ENGINEERED SYSTEM. UTILIZE PROPER DESIGN PRACTICES FOR LONG-TERM EFFECTIVE PERFORMANCE.
2. CAN BE PLACED ON DOWNSTREAM OUTLET SIDE OF CURB CUTS, OVERFLOW STRUCTURES, ENDS OF CONCRETE FLUMES OR PIPE FIXTURES; AS STREAM BANK AND SHORELINE PROTECTION.
3. SCOURSTOP STANDARD SIZE IS 4' X 4' X ½" SHEET WITH MULTIPLE VOIDS FOR VEGETATION GROWTH, PROVIDING SOIL PROTECTION FOR: 1) THE SUSCEPTIBLE, EROSION AREA DIRECTLY BELOW OUTFALLS 2) ANY HIGHLY EROSION AREA; 3) SHORELINE AND STREAMBANKS.
4. PRIMARY BENEFITS OVER RIP-RAP ARE: UTILIZATION OF VEGETATION, LOWER INSTALLATION COSTS, LOWER LONG TERM MAINTENANCE, AESTHETICALLY PLEASING, AND IMPROVED SAFETY.

## PREFERRED INSTALLATION SPECIFICATIONS

1. READ AND UNDERSTAND INSTALLATION GUIDE.
2. FOR EACH INSTALLATION, COMPLETE INSTALLER'S CHECKLIST AND PROVIDE TO GENERAL CONTRACTOR FOR PAYMENT.
3. FOR VEGETATION, INSTALL APPROPRIATE SOIL UNDER THESE INSTALLATIONS TO IMPROVE THE GROWING ENVIRONMENT.
4. MINIMUM APPLICATION IS 4 FOOT LENGTH. UTILIZE DESIGNER CHECKLIST FOR PROPER DESIGN AND INSTALLATION MODE.
5. REMOVE AND REPLACE SATURATED SOILS FOR A SOLID BASE. USE SUB-SURFACE DRAIN FOR TRICKLE FLOWS.
6. CAN BE INSTALLED AS A BUTT JOINT, OR PERMANENTLY ATTACHED TO THE HARD SURFACE.
7. AVOID EROSION IMPACT CONDITIONS AT SCOUR AREA.
8. ENSURE LOCATION HAS ADEQUATE SUNLIGHT FOR HEALTHY VEGETATION, OTHERWISE UTILIZE THE HP-TRM INSTALLATION.
9. SCOURSTOP SHALL NOT BE INSTALLED OVER BARE SOIL. OPTIONAL SOIL COVERS ARE SOD, TRM'S, AND GEOTEXTILES. SOIL COVERS MAY NEED TO EXTEND DOWNSTREAM OF SCOURSTOP INSTALLATION IN AREAS OF HIGHER VELOCITY OR SHEAR (CHECK WITH DESIGNER PRIOR TO INSTALLATION).
10. WHERE EXCESS CONCRETE FROM THE END SECTION FOOTINGS EXTENDS BEYOND THE END SECTION, INSERT A FILLER MATERIAL (LIKE A HIGH-PERFORMANCE TRM OR HEAVY GEOTEXTILE) BETWEEN THE TRANSITION MAT AND THE EXCESS CONCRETE SURFACE TO FILL THE AREA TOO SHALLOW (<4 INCHES) TO SUPPORT SOIL AND VEGETATION GROWTH.
11. CONSTRUCT DOWNSTREAM CHANNEL AT LEAST TWICE THE WIDTH OF THE OUTLET. CONSTRUCT WIDTH AS FLAT AND LEVEL AS POSSIBLE FOR PROPER DRAINAGE.
12. SOIL ANCHORS SHALL BE DRIVEN AT LEAST 18" DEEP, OR DEEPER AS NEEDED INTO FIRM SOIL. USE FLEXIBLE STRAPPING AND DOUBLE-LOCK WASHERS TO ATTACH THE TRANSITION MAT INSTALLATION INTO THE SOIL. FIRMLY PULL STRAP TO SNUG THE TRANSITION MAT DOWN AGAINST THE SOIL WITH THE WASHER AND ONE-WAY STOP. A 3-2-3 ANCHOR CONFIGURATION IS THE MINIMUM ANCHOR QUANTITY.
13. PER NPDES PHASE II, THE DOWNSTREAM CHANNEL (D.C.) MUST BE PROTECTED FOR ITS ENTIRE LENGTH. THIS D.C. IS PART OF THE TRANSITION MAT ENGINEERED SYSTEM. USE SOD TO PROTECT THE D.C. WHEN POSSIBLE. SEE DETAILS PAGE FOR PROPER INSTALLATION. TURF REINFORCEMENT MATS (TRM'S) ARE ACCEPTABLE. TRM'S HAVE LOW PERFORMANCE RATINGS WHEN UNVEGETATED - DESIGN APPROPRIATELY.
14. ON AREAS OF SLOPE TRANSITION, UTILIZE ANCHORS TO MAINTAIN SOIL CONTACT ACROSS ENTIRE MAT LENGTH. ANCHORS CAN BE USED TO PROVIDE UP TO 14" OF DEFLECTION AT CENTER OF MAT FROM ENDS.

### 15. TYPE "A" INSTALLATION INSTRUCTIONS

**(DESIGN OUTLET VELOCITY < 21 FPS AND DOWNSTREAM SCOUR AREA FLATTER THAN 10%, OR 10:1)**

SOD IS THE SOIL COVER PRACTICE UNDER THE TRANSITION MATS - WIDTH AND LENGTH OF TM'S SPECIFIED BY DESIGNER. SOD ELIMINATES GERMINATION RISK, AND IS GREAT PROTECTION FOR SOIL.

### 16. TYPE "B" INSTALLATION INSTRUCTIONS

**(DESIGN OUTLET VELOCITY < 21 FPS AND DOWNSTREAM SCOUR AREA STEEPER THAN 10%, OR 10:1)**

SOD TRIMMED AND COVERED BY AN OPEN-WEAVE TRM IS THE SOIL COVER PRACTICE UNDER THE TRANSITION MATS - WIDTH AND LENGTH OF TM'S TO BE SPECIFIED BY DESIGNER. ADDITIONAL TRANSITION MATS ARE REQUIRED AT THE TOE OF THE SLOPE. SEE DETAILS.

- TRM INSTALLED SOD TO 1-2" HEIGHT. INSTALL TRM OVER INSTALLED SOD AND STRETCH TIGHTLY BEFORE STAPLING.

IRRIGATE SOD AS NEEDED AFTER INSTALLATION TO AID IN ESTABLISHMENT OF VEGETATION.

- ANCHOR SOD/TRM COMBINATION WITH 8-INCH STAPLES A MAXIMUM OF 18 INCHES APART.

### 17. TYPE "C" INSTALLATION INSTRUCTIONS

**(DESIGN OUTLET VELOCITY < 8 FPS AND DOWNSTREAM SCOUR AREA FLATTER THAN 4%, OR 25:1)**

A TRM IS THE SOIL COVER PRACTICE UNDER THE TRANSITION MATS. THE WIDTH AND LENGTH OF THE TM'S TO BE SPECIFIED BY DESIGNER. TRM'S OVER BARE SOIL HAVE LOW-PERFORMANCE UNTIL VEGETATED.

### 18. TYPE "D" INSTALLATION INSTRUCTIONS

**(DESIGN APPLICATIONS: ALL OUTFALLS; LOW SUNLIGHT AREAS; SEMI-ARID REGIONS; WHERE VEGETATION MAY BE SLOW TO ESTABLISH.)**

A 3 OZ. GEOTEXTILE COVERED WITH A HIGH-PERFORMANCE TRM IS THE PREFERRED SOIL COVER PRACTICE. THE WIDTH AND LENGTH OF THE TM'S TO BE SPECIFIED BY DESIGNER. THE GEOTEXTILE PROTECTS THE SOIL FROM EROSION, AND THE HP-TRM PROVIDES LONG TERM STABILITY. THIS INSTALLATION CAN BE SOIL-FILLED AND SEEDED, OR LEFT TO FILL-IN WITH SEDIMENTS AND NATIVE VEGETATION. MECHANICALLY-BONDED FIBER MATRIX (MBFM) HYDROMULCH HAS ALSO SHOWN TO BE AN EFFECTIVE FILLER/SEED BASE. FOR INSTALLATIONS ON OUTFALLS > 60 INCHES WITH HIGH VELOCITY FLOWS, AN ADDITIONAL LAYER OF TM'S ADJACENT TO THE OUTFALL PROVIDES GREATER PROTECTION.

### 19. TYPE "E" INSTALLATION INSTRUCTIONS

**(DESIGN APPLICATIONS: STREAMBANK AND SHORELINE; MAX. 1.5H:1V SLOPE.)**

A 8-12 OZ. GEOTEXTILE IS THE SOIL COVER PRACTICE UNDER THE TRANSITION MATS WHICH ARE GENERALLY INSTALLED 3 FT BELOW AND MINIMUM 8 INCHES ABOVE THE NORMAL WATER LEVEL. TYPES A, B, AND D MAY BE UTILIZED ABOVE THE GEOTEXTILE/TM PROTECTED AREA. REQUIRES DIFFERENT ANCHOR CONFIGURATION AND DEPTH.

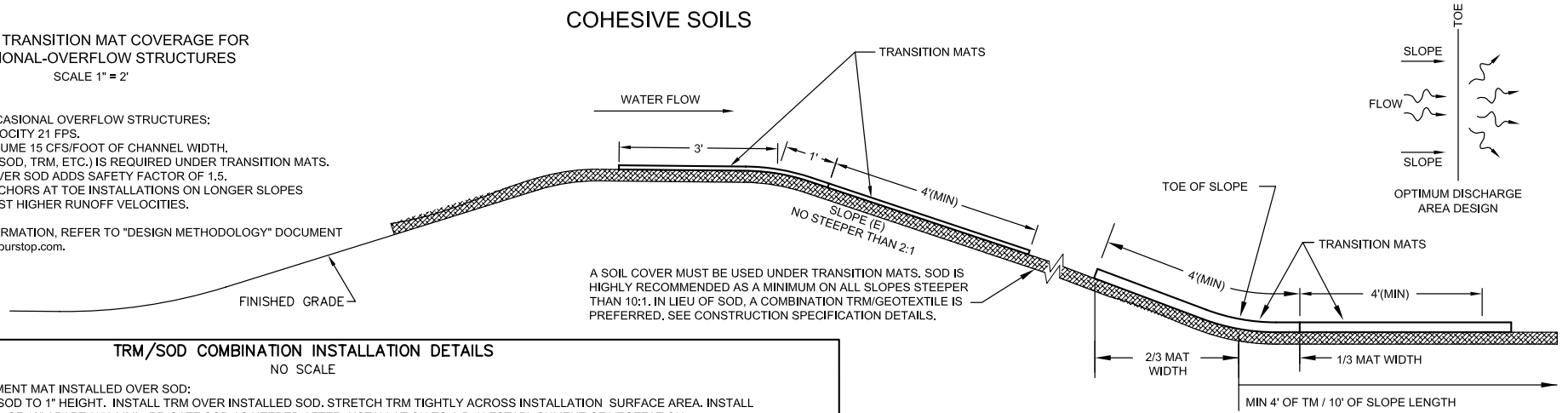
**==> FOR DESIGN INFORMATION, REFER TO "DESIGN METHODOLOGY" DOCUMENT AVAILABLE AT [www.scourstop.com](http://www.scourstop.com).**

# COHESIVE SOILS

## MINIMUM TRANSITION MAT COVERAGE FOR OCCASIONAL-OVERFLOW STRUCTURES SCALE 1" = 2'

- LIMITATIONS FOR OCCASIONAL OVERFLOW STRUCTURES:
- MAXIMUM FLOW VELOCITY 21 FPS.
  - MAXIMUM FLOW VOLUME 15 CFS/FOOT OF CHANNEL WIDTH.
  - A SOIL COVER BMP (SOD, TRM, ETC.) IS REQUIRED UNDER TRANSITION MATS.
  - ADDITION OF TRM OVER SOD ADDS SAFETY FACTOR OF 1.5.
  - ADD ADDITIONAL ANCHORS AT TOE INSTALLATIONS ON LONGER SLOPES TO PROTECT AGAINST HIGHER RUNOFF VELOCITIES.

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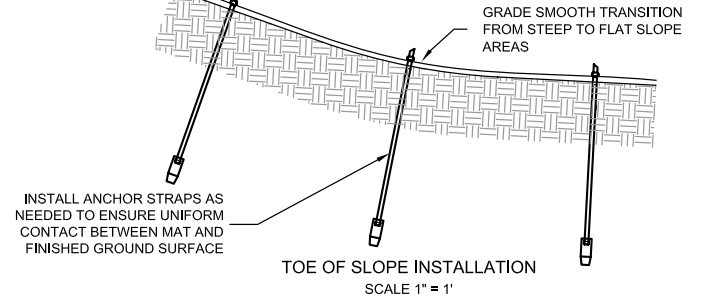
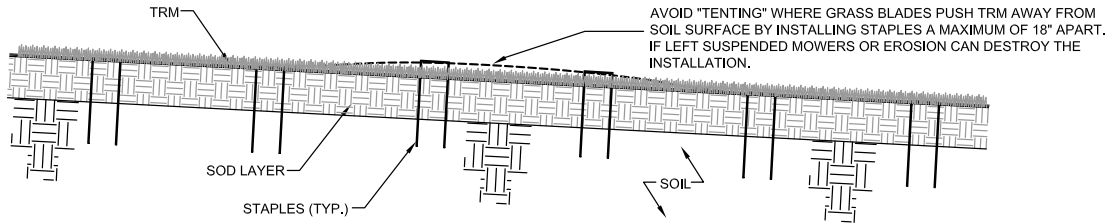


A SOIL COVER MUST BE USED UNDER TRANSITION MATS. SOD IS HIGHLY RECOMMENDED AS A MINIMUM ON ALL SLOPES STEEPER THAN 10:1. IN LIEU OF SOD, A COMBINATION TRM/GEOTEXTILE IS PREFERRED. SEE CONSTRUCTION SPECIFICATION DETAILS.

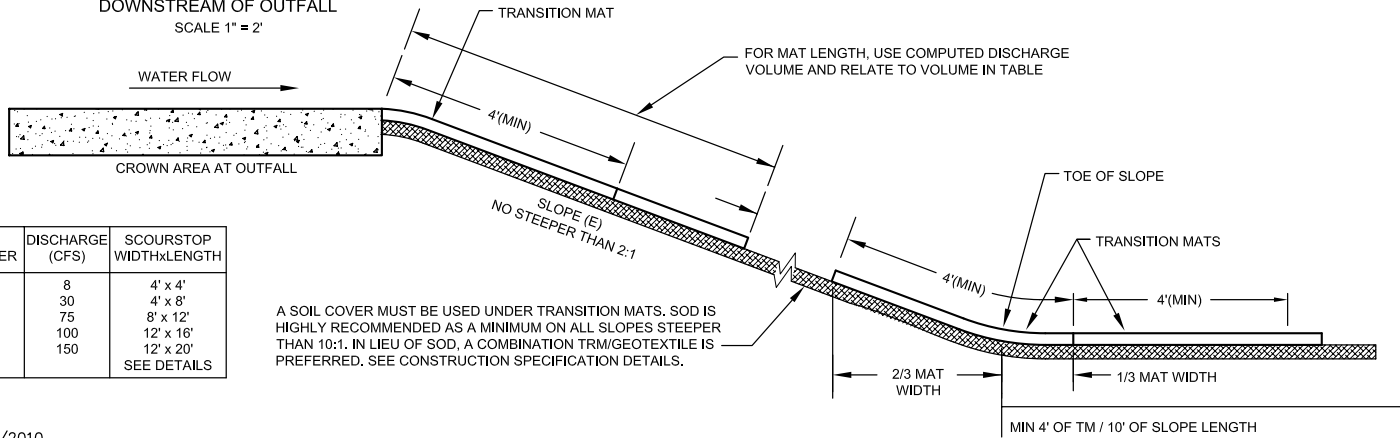
## TRM/SOD COMBINATION INSTALLATION DETAILS NO SCALE

- TURF REINFORCEMENT MAT INSTALLED OVER SOD:
- TRIM INSTALLED SOD TO 1" HEIGHT. INSTALL TRM OVER INSTALLED SOD. STRETCH TRM TIGHTLY ACROSS INSTALLATION SURFACE AREA. INSTALL STAPLES AT MAX. OF 18" APART (450 MM). IRRIGATE SOD AS NEEDED AFTER INSTALLATION TO AID IN ESTABLISHMENT OF VEGETATION.
  - SOD DOWNSTREAM OF MAT INSTALLATION AREA DOES NOT NEED TRIMMED BEFORE MAT INSTALLATION.
  - TO HOLD SOD IN PLACE DOWNSTREAM OF TM'S, INSTALL WIRE STAPLES AT 8" O.C. WITHIN 4" OF UPSTREAM EDGE OF SOD, AND AT A RATE OF ONE STAPLE PER SQUARE FOOT STAGGERED THROUGHOUT.

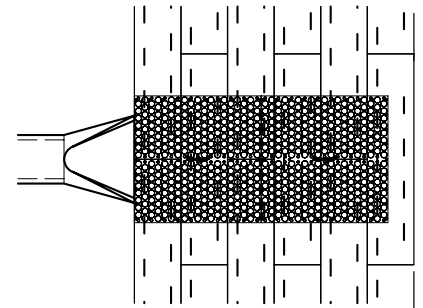
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## MINIMUM TRANSITION MAT COVERAGE FOR SLOPES DOWNSTREAM OF OUTFALL SCALE 1" = 2'



PIPE DIAMETER	DISCHARGE (CFS)	SCOURSTOP WIDTHxLENGTH
12"	8	4' x 4'
24"	30	4' x 8'
36"	75	8' x 12'
48"	100	12' x 16'
60"	150	12' x 20'
72"+		SEE DETAILS



STAPLED SOD DETAILS  
NO SCALE