



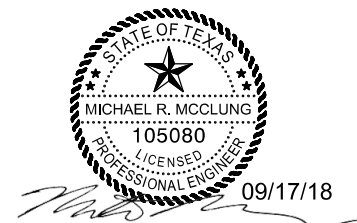
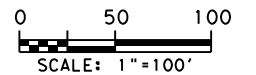


### LEGEND

- |   |                              |
|---|------------------------------|
|  | SILT CONTROL FENCE           |
|  | INLET PROTECTION BARRIER     |
|  | TYPE 3 ROCK FILTER DAM       |
|  | STABILIZED CONSTRUCTION EXIT |

NOTES

1. THE LOCATION OF CONSTRUCTION EXITS WILL BE DETERMINED BY THE FIELD ENGINEER.
2. ALL DISTURBED AREAS SHALL BE SEEDED IN ACCORDANCE WITH THE SWPPP USING CELL FIBER MULCH SEED (TEMP) (WARM OR COOL).
3. CONTRACTOR TO SUBMIT LOCATIONS OF PREFERRED CONSTRUCTION ACCESS TO ENGINEER FOR APPROVAL IF DIFFERENT FROM PLANS.



NO.	DATE	REVISION	APPROV.



1160 Dairy Ashford, Suite 500  
Houston, Texas 77079  
T 281 589 7257  
USInfrastructure@rpsgroup.com  
Formerly Klotz Associates, Inc.  
Texas PE Firm Reg. #F-929

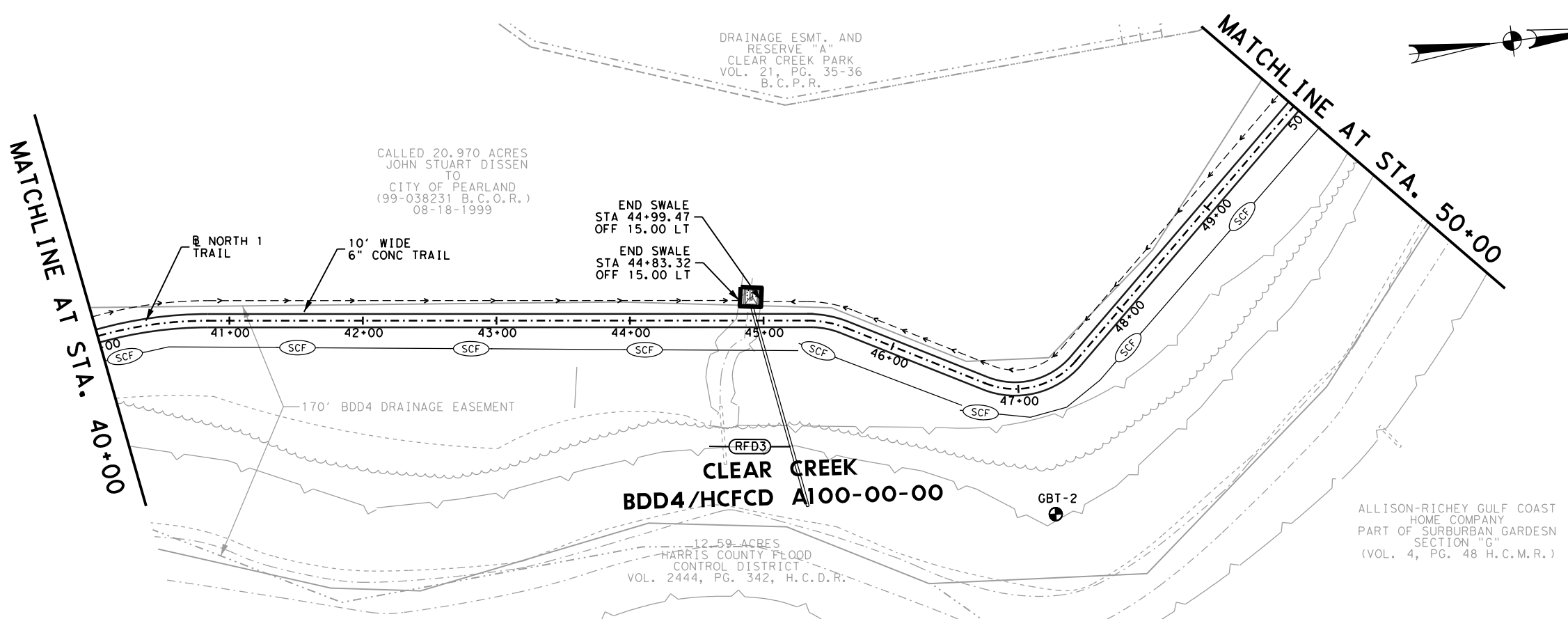
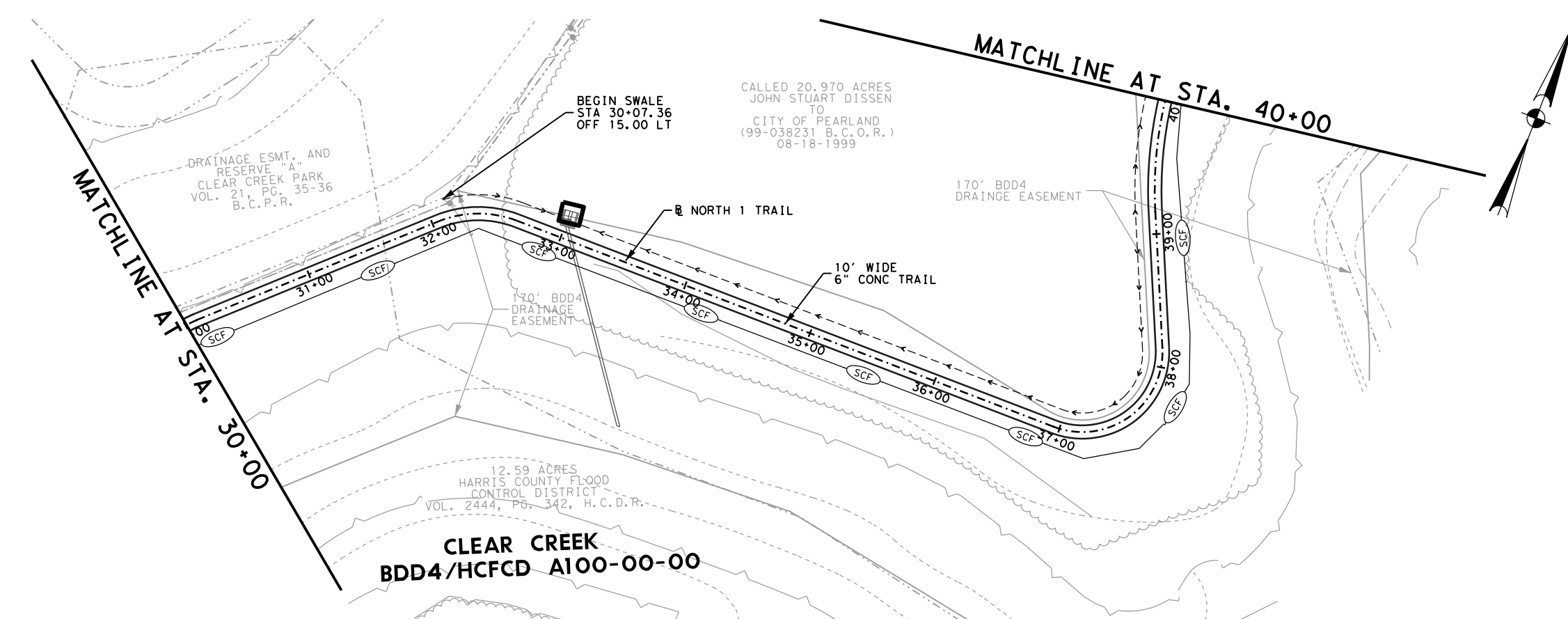


## GREEN TEE TERRACE BIKE & PEDESTRIAN TRAIL

# STORM WATER POLLUTION PREVENTION PLAN

SHEET 1 OF 5

FED. RD. DIV. NO.	PROJECT NO.		SHEET NO.
6			107
STATE	DIST.	COUNTY	
TEXAS	HOU	BRAZORIA / HARRIS	
CONT.	SECT.	JOB	HIGHWAY NO.
0912	31	291	VA



- LEGEND**
- (SCF)— SILT CONTROL FENCE
  - INLET PROTECTION BARRIER
  - (RFD3)— TYPE 3 ROCK FILTER DAM
  - ⊥(SC) STABILIZED CONSTRUCTION EXIT

- NOTES**
1. THE LOCATION OF CONSTRUCTION EXITS WILL BE DETERMINED BY THE FIELD ENGINEER.
  2. ALL DISTURBED AREAS SHALL BE SEEDED IN ACCORDANCE WITH THE SWPPP USING CELL FIBER MULCH SEED (TEMP) (WARM OR COOL).
  3. CONTRACTOR TO SUBMIT LOCATIONS OF PREFERRED CONSTRUCTION ACCESS TO ENGINEER FOR APPROVAL IF DIFFERENT FROM PLANS.
- 0 50 100  
SCALE: 1"=100'

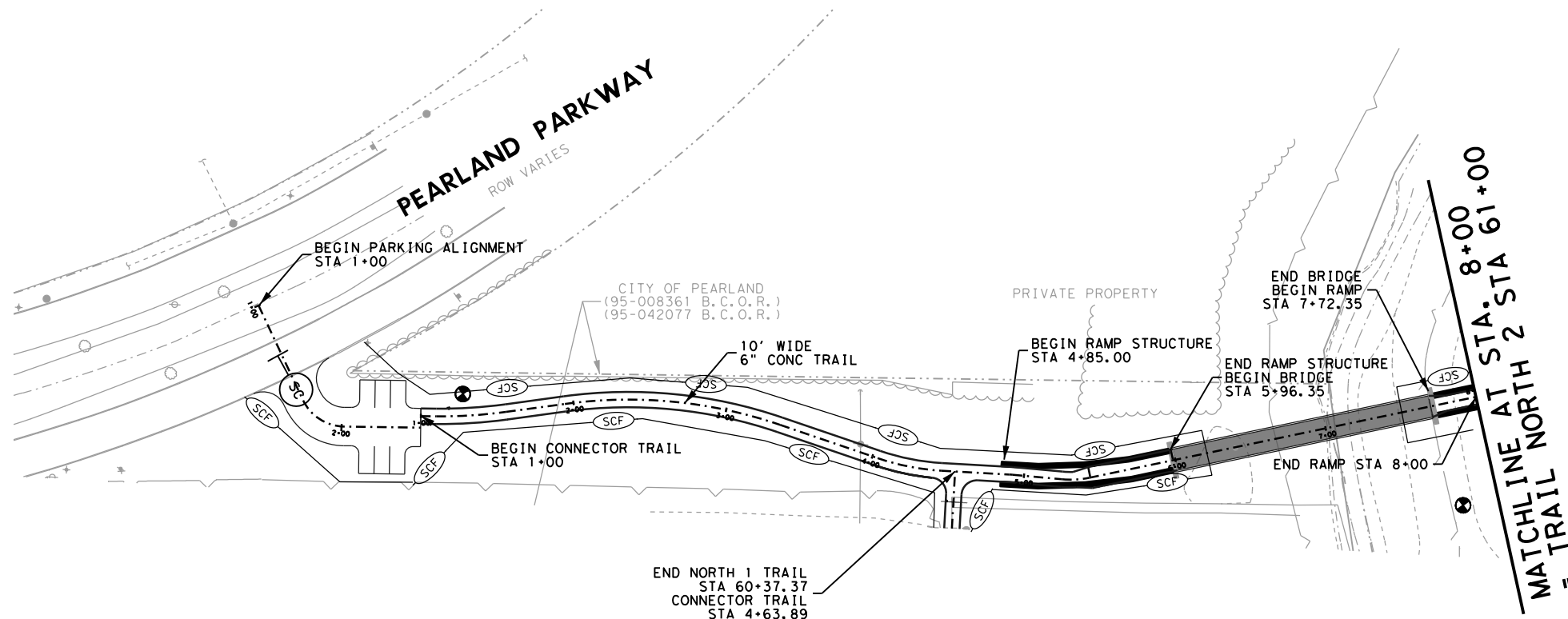
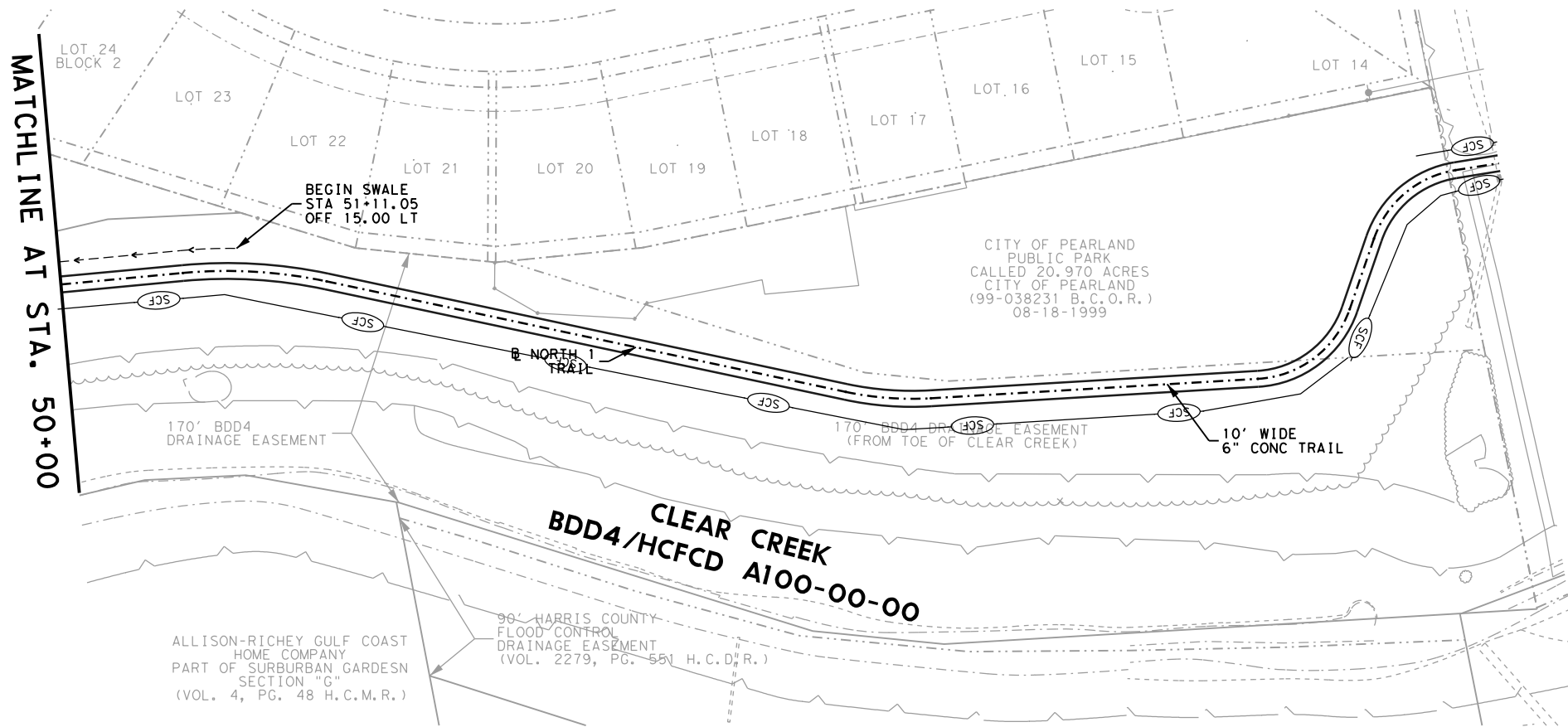


NO.	DATE	REVISION	APPROV.

**RPS** 1160 Dairy Ashford, Suite 500  
Houston, Texas 77079  
T 281 589 7257  
USInfrastructure@rpsgroup.com  
Formerly Klotz Associates, Inc.  
Texas PE Firm Reg. #F-929

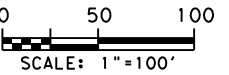
**Texas Department of Transportation**  
© 2018 TxDOT  
**GREEN TEE TERRACE  
BIKE & PEDESTRIAN TRAIL**  
STORM WATER POLLUTION  
PREVENTION PLAN

SHEET 2 OF 5		PROJECT NO.	SHEET NO.
FED. RD. DIV. NO.	6		108
STATE	DIST.	COUNTY	
TEXAS	HOU	BRAZORIA / HARRIS	
CONT.	SECT.	JOB	HIGHWAY NO.
0912	31	291	VA



- LEGEND**
- SCF SILT CONTROL FENCE
  - IPB INLET PROTECTION BARRIER
  - RFD3 TYPE 3 ROCK FILTER DAM
  - SC STABILIZED CONSTRUCTION EXIT

- NOTES**
1. THE LOCATION OF CONSTRUCTION EXITS WILL BE DETERMINED BY THE FIELD ENGINEER.
  2. ALL DISTURBED AREAS SHALL BE SEEDED IN ACCORDANCE WITH THE SWPPP USING CELL FIBER MULCH SEED (TEMP) (WARM OR COOL).
  3. CONTRACTOR TO SUBMIT LOCATIONS OF PREFERRED CONSTRUCTION ACCESS TO ENGINEER FOR APPROVAL IF DIFFERENT FROM PLANS.

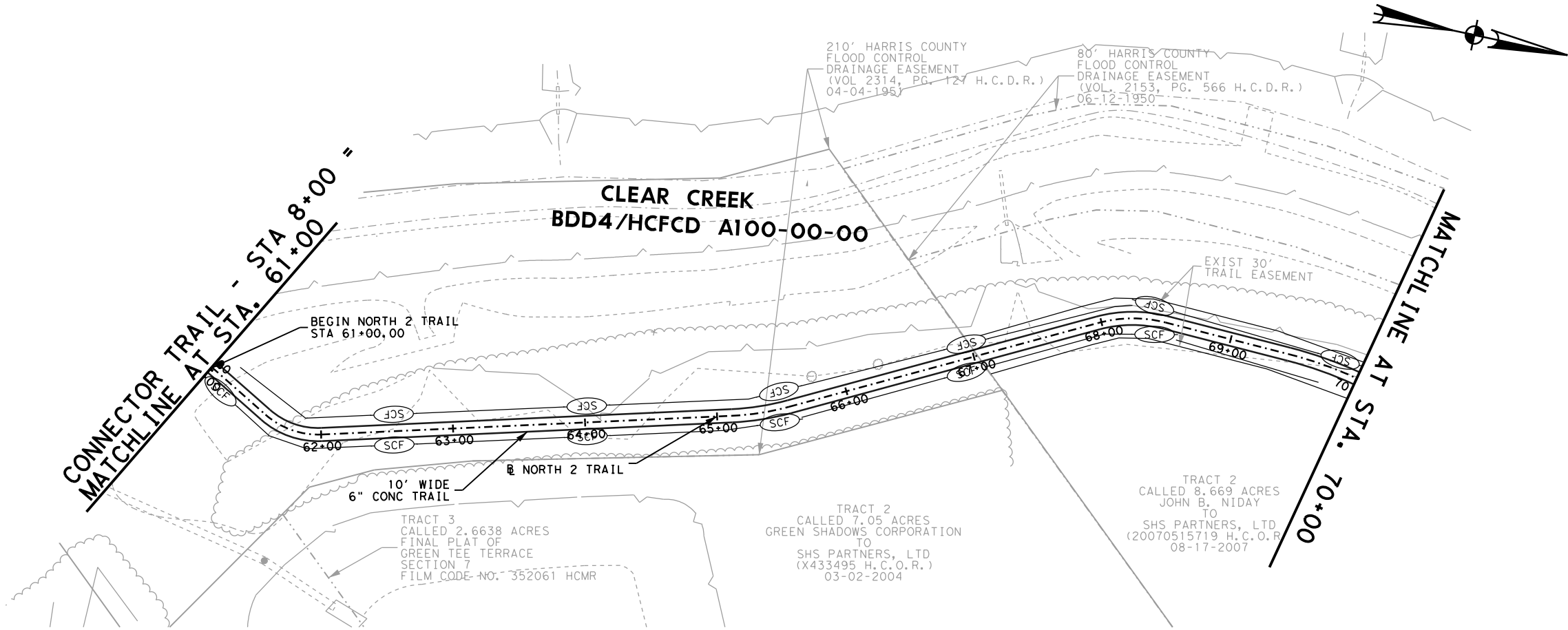


NO.	DATE	REVISION	APPROV.

**RPS** 1160 Dairy Ashford, Suite 500  
Houston, Texas 77079  
T 281 589 7257  
USInfrastructure@rpsgroup.com  
Formerly Klotz Associates, Inc.  
Texas PE Firm Reg. #F-929

**Texas Department of Transportation**  
© 2018 TxDOT  
**GREEN TEE TERRACE  
BIKE & PEDESTRIAN TRAIL**  
STORM WATER POLLUTION  
PREVENTION PLAN

SHEET 3 OF 5			
FED. RD. DIV. NO.	PROJECT NO.		SHEET NO.
6			109
STATE	DIST.	COUNTY	
TEXAS	HOU	BRAZORIA / HARRIS	
CONT.	SECT.	JOB	HIGHWAY NO.
0912	31	291	VA



- LEGEND**
- SCF SILT CONTROL FENCE
  - INLET PROTECTION BARRIER
  - RFD3 TYPE 3 ROCK FILTER DAM
  - SC STABILIZED CONSTRUCTION EXIT

- NOTES**
1. THE LOCATION OF CONSTRUCTION EXITS WILL BE DETERMINED BY THE FIELD ENGINEER.
  2. ALL DISTURBED AREAS SHALL BE SEEDED IN ACCORDANCE WITH THE SWPPP USING CELL FIBER MULCH SEED (TEMP) (WARM OR COOL).
  3. CONTRACTOR TO SUBMIT LOCATIONS OF PREFERRED CONSTRUCTION ACCESS TO ENGINEER FOR APPROVAL IF DIFFERENT FROM PLANS.



NO.	DATE	REVISION	APPROV.

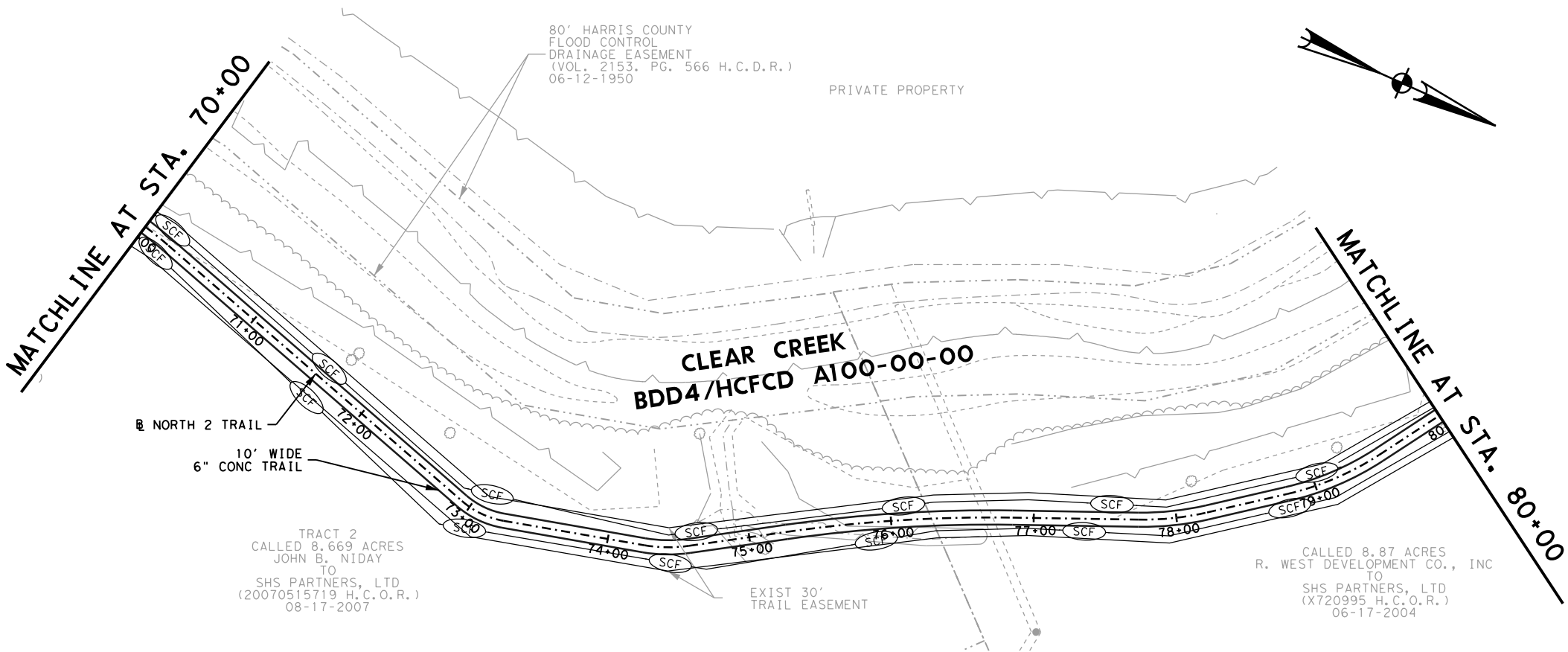
**RPS** 1160 Dairy Ashford, Suite 500  
Houston, Texas 77079  
T 281 589 7257  
USInfrastructure@rpsgroup.com  
Formerly Klotz Associates, Inc.  
Texas PE Firm Reg. #F-929

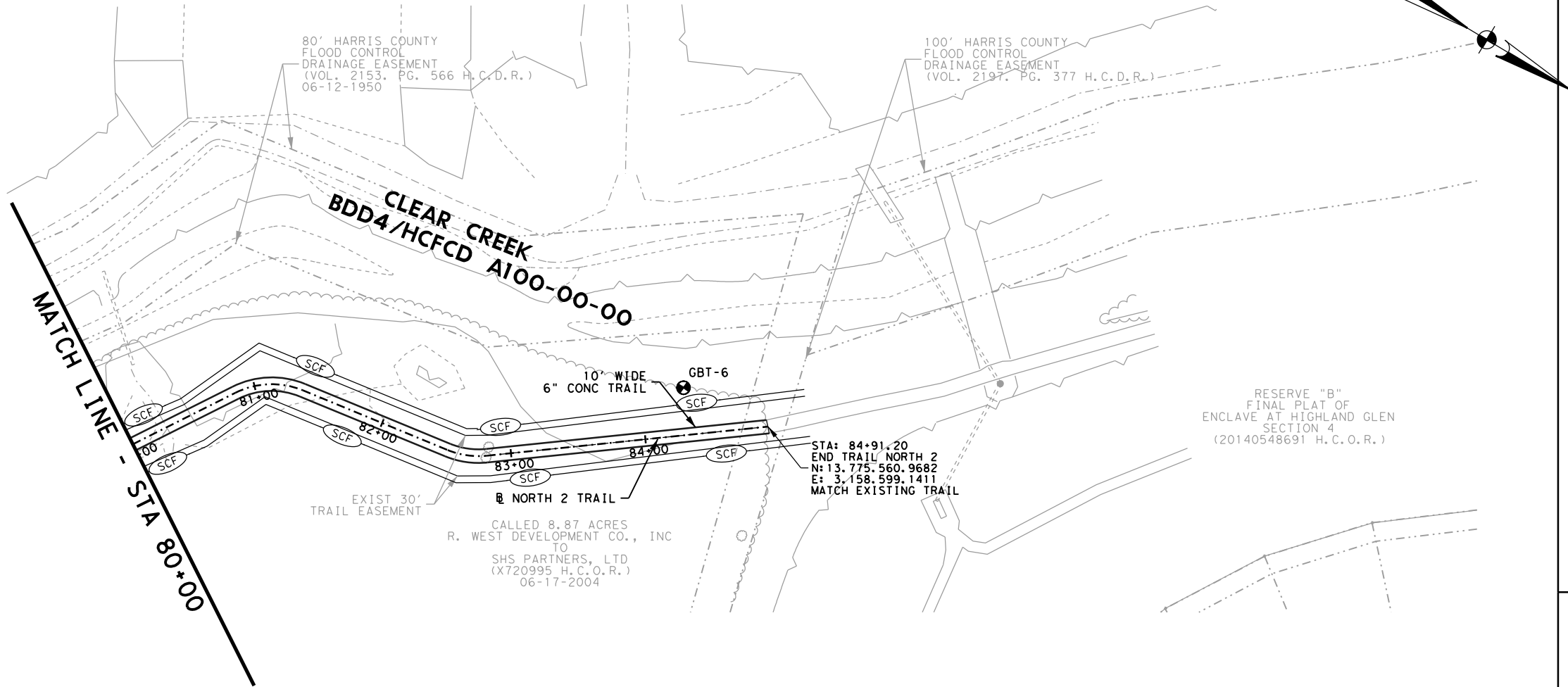
**Texas Department of Transportation**  
© 2018 TxDOT

**GREEN TEE TERRACE  
BIKE & PEDESTRIAN TRAIL**

**STORM WATER POLLUTION  
PREVENTION PLAN**

SHEET 4 OF 5		PROJECT NO.		SHEET NO.
FED. RD. DIV. NO.	6			110
STATE	DIST.	COUNTY		
TEXAS	HOU	BRAZORIA / HARRIS		
CONT.	SECT.	JOB	HIGHWAY NO.	
0912	31	291	VA	



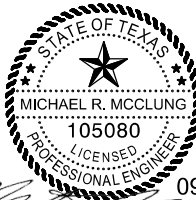
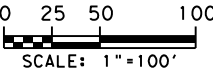


LEGEND

- SCF SILT CONTROL FENCE
- INLET PROTECTION BARRIER
- RFD3 TYPE 3 ROCK FILTER DAM
- SC STABILIZED CONSTRUCTION EXIT

NOTES

- THE LOCATION OF CONSTRUCTION EXITS WILL BE DETERMINED BY THE FIELD ENGINEER.
- ALL DISTURBED AREAS SHALL BE SEEDED IN ACCORDANCE WITH THE SWPPP USING CELL FIBER MULCH SEED (TEMP) (WARM OR COOL).
- CONTRACTOR TO SUBMIT LOCATIONS OF PREFERRED CONSTRUCTION ACCESS TO ENGINEER FOR APPROVAL IF DIFFERENT FROM PLANS.



NO.	DATE	REVISION	APPROV.

**RPS** 1160 Dairy Ashford, Suite 500  
Houston, Texas 77079  
T 281 589 7257  
USInfrastructure@rpsgroup.com  
Formerly Klotz Associates, Inc.  
Texas PE Firm Reg. #F-929



**GREEN TEE TERRACE  
BIKE & PEDESTRIAN TRAIL**

**STORM WATER POLLUTION  
PREVENTION PLAN**

SHEET 5 OF 5

FED. RD. DIV. NO.	PROJECT NO.		SHEET NO.
6			111
STATE	DIST.	COUNTY	
TEXAS	HOU	BRAZORIA / HARRIS	
CONT.	SECT.	JOB	HIGHWAY NO.
0912	31	291	VA

SITE DESCRIPTION

PROJECT LIMITS: F.M. 518 (BROADWAY) TO SOUTH OF HUGHES ROAD

PROJECT DESCRIPTION: CONSTRUCTION OF SHARED USE PATH CONSISTING OF GRADING, CONCRETE PAVEMENT, STABILIZED BASE, BRIDGE, TRAFFIC CONTROLS, STORM SEWER, SIGNING, PAVEMENT MARKINGS, SIDEWALKS, CURB RAMPS, AND BLOCK SODDING.

MAJOR SOIL DISTURBING ACTIVITIES: PARKING LOT, TRAIL, BRIDGE, SWALE, AND DRAINAGE CONSTRUCTION.

TOTAL PROJECT AREA: 10.311 ACRES

TOTAL AREA TO BE DISTURBED: 10.311 ACRES

WEIGHTED RUNOFF COEFFICIENT: 0.169

EXISTING CONDITION OF SOIL & VEGETATIVE COVER AND % OF EXISTING VEGETATIVE COVER:

NAME OF RECEIVING WATERS: CLEAR CREEK (HCFCD UNIT NO. A100-00-00)

EROSION AND SEDIMENT CONTROLS

SOIL STABILIZATION PRACTICES:

TEMPORARY SEEDING  
PERMANENT PLANTING, SODDING, OR SEEDING  
MULCHING  
SOIL RETENTION BLANKET  
BUFFER ZONES  
PRESERVATION OF NATURAL RESOURCES

OTHER:

STRUCTURAL PRACTICES:

SILT FENCES  
HAY BALES  
ROCK BERMS  
DIVERSION, INTERCEPTOR, OR PERIMETER DIKES  
DIVERSION, INTERCEPTOR, OR PERIMETER SWALES  
DIVERSION DIKE AND SWALE COMBINATIONS  
PIPE SLOPE DRAINS  
PAVED FLUMES  
ROCK BEDDING AT CONSTRUCTION EXIT  
TIMBER MATTING AT CONSTRUCTION EXIT  
CHANNEL LINERS  
SEDIMENT TRAPS  
SEDIMENT BASINS  
STORM INLET SEDIMENT TRAP  
STONE OUTLET STRUCTURES  
CURBS AND GUTTERS  
STORM SEWERS  
VELOCITY CONTROL DEVICES  
EROSION CONTROL LOGS

OTHER:

NARRATIVE - SEQUENCE OF CONSTRUCTION (STORM WATER MANAGEMENT) ACTIVITIES:

INSTALL EROSION CONTROL LOGS AT EXISTING INLETS.  
INSTALL CONSTRUCTION ENTRANCE.

STORM WATER MANAGEMENT: RUNOFF WILL BE CONVEYED TO EXISTING SWALES, INLETS AND CHANNELS UNTIL PROPOSED SWALES ARE CONSTRUCTED.  
RUNOFF BEHIND THE CURB DRAINS OVER THE CURB TO THE INLETS.

OTHER EROSION AND SEDIMENT CONTROLS:

MAINTENANCE: All erosion and sediment controls will be maintained in good working order. If a repair is necessary it will be done at the earliest date possible, but no later than 7 calendar days after the surrounding exposed ground has dried sufficiently to prevent further damage from heavy equipment. The area adjacent to creeks and drainageways shall have priority followed by devices protecting storm sewer inlets.

INSPECTION: All inspections will be performed by a TxDOT inspector per one of the options below as directed by the Area Engineer  
1. At least every 7 calendar days  
2. At least every 14 days or after 0.5 inches or more of rainfall  
An inspection and maintenance report should be made for each inspection. Based on the inspection results, the controls shall be revised according to the inspection report.

HAZARDOUS WASTE (INCLUDING SPILL REPORTING): In the event of a spill which may be considered hazardous, the Houston District Safety Office shall be contacted immediately at 713-802-5962.

SANITARY WASTE:

OFFSITE VEHICLE TRACKING:

HAUL ROADS DAMPENED FOR DUST CONTROL  
LOADED HAUL TRUCKS TO BE COVERED WITH TARPULIN  
EXCESS DIRT ON ROAD REMOVED DAILY  
STABILIZED CONSTRUCTION ENTRANCE

OTHER:

REMARKS: Disposal areas, stockpiles, and haul roads shall be constructed in a manner that will minimize and control the sediment that may enter receiving waterways. Disposal areas shall not be located in any waterway, waterbody or streambed. Construction staging areas and vehicle maintenance areas shall be constructed by the contractor in a manner which minimizes the runoff of all pollutants. All waterways shall be cleared as soon as practical of temporary embankments, temporary bridges, matting, falsework, piling, debris, and other obstructions placed during construction operations that are not part of the finished work.

STATE OF TEXAS

MICHAEL R. MCCLUNG

105080

PROFESSIONAL ENGINEER

09/17/18

Texas Department of Transportation

Houston District

TxDOT STORM WATER POLLUTION PREVENTION PLAN

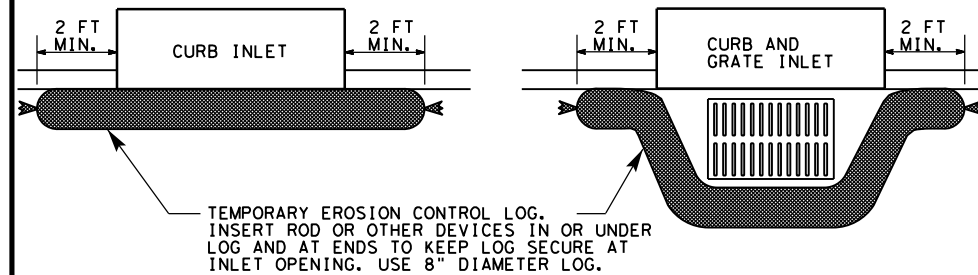
SWP3

FILE: STDG1.DGN	DN: TxDot	CK: TxDot	DW: TxDot	CK: TxDot
© TxDOT JANUARY 2007	DIST	FED REG	PROJECT NO.	SHEET
REVISIONS	HOU	6		112
9/2010 INSPECTION NOTE	COUNTY	CONTROL	SECT	JOB
9/2013 INSPECTION NOTE				HIGHWAY
11/2013 SW3P TO SWP3	BRAZORIA/HARRIS	0912	31	291
03/2015 2014 SPECS				VA

STD G-1

## CURB INLETS 8" DIAMETER LOGS

ITEM 506-6040 BIODEG EROSN CONT LOGS (INSTL) (8")



## MATERIAL REQUIREMENTS

### FILL:

Use 100% shredded mulch or other non-compost biodegradable material as fill for logs. No compost or fines.

DO NOT USE MATERIAL WHICH PROHIBITS WATER INFILTRATION.

### LOG MESH:

Use mesh with  $\frac{1}{4}$ " openings or larger. Mesh must allow water infiltration but also hold fill material in place.

## SEDIMENT BASIN & TRAP USAGE GUIDELINES

A sediment trap (erosion control log) may be used to filter sediment out of runoff draining from an unstabilized area.

Traps: The drainage area for a sediment trap should not exceed 5 acres. The trap capacity should be 1800 CF/Acre (0.5" over the drainage area).

Sediment traps should be placed in the following locations:

1. Within drainage ditches spaced as needed or min. 500' on center
2. Immediately preceding ditch inlets
3. Just before the drainage enters a water course
4. Just before the drainage leaves the right of way

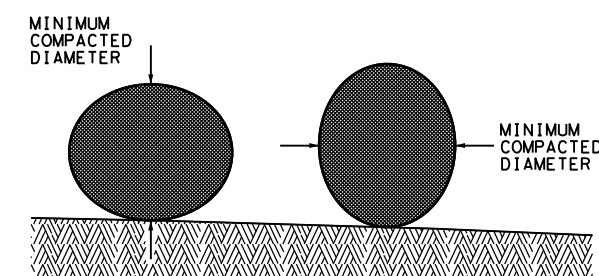
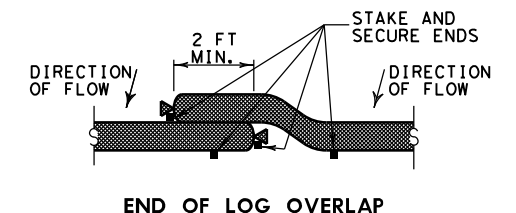
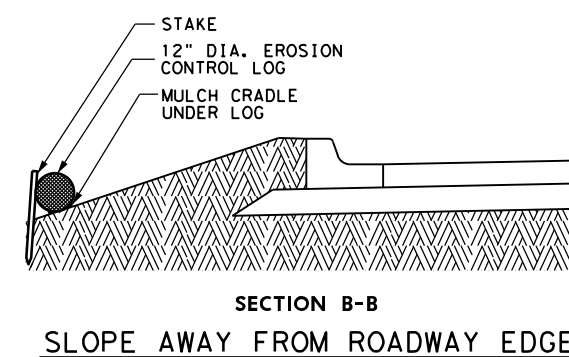
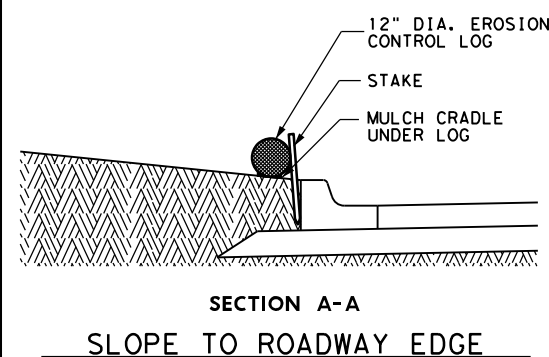
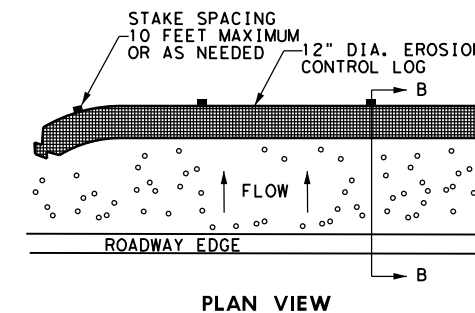
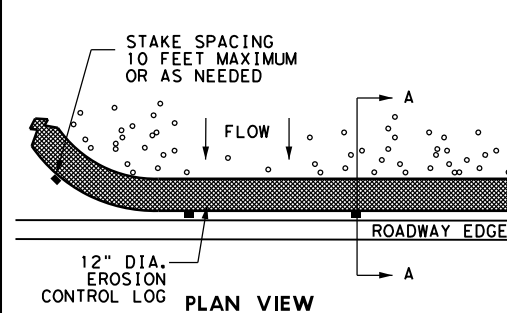
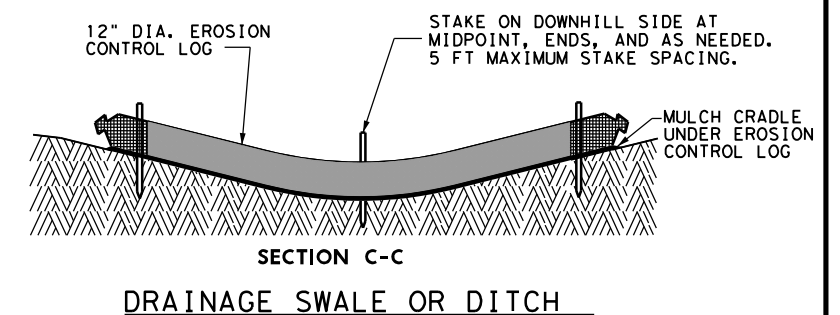
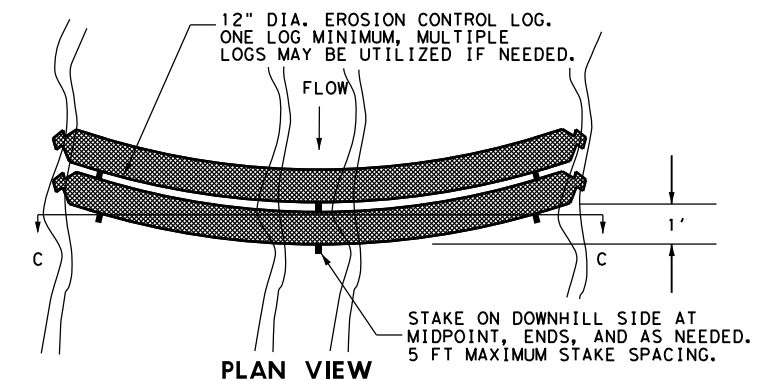
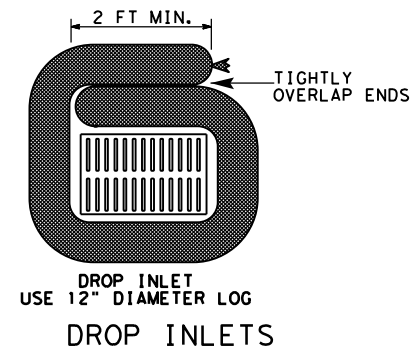
The trap should be cleaned when the capacity has been reduced by  $\frac{1}{2}$  or the sediment has accumulated to a depth of 1', whichever is less.

### REQUIRED ITEMS:

- ITEM 506-6040 BIODEG EROSN CONT LOGS (INSTL) (8") LF
- ITEM 506-6041 BIODEG EROSN CONT LOGS (INSTL) (12") LF
- ITEM 506-6043 BIODEG EROSN CONT LOGS (REMOVE) LF

## DROP INLETS AND OTHER LOCATIONS 12" DIAMETER LOGS

ITEM 506-6041 BIODEG EROSN CONT LOGS (INSTL) (12")



## DIAMETER MEASUREMENTS OF EROSION CONTROL LOGS SPECIFIED IN PLANS

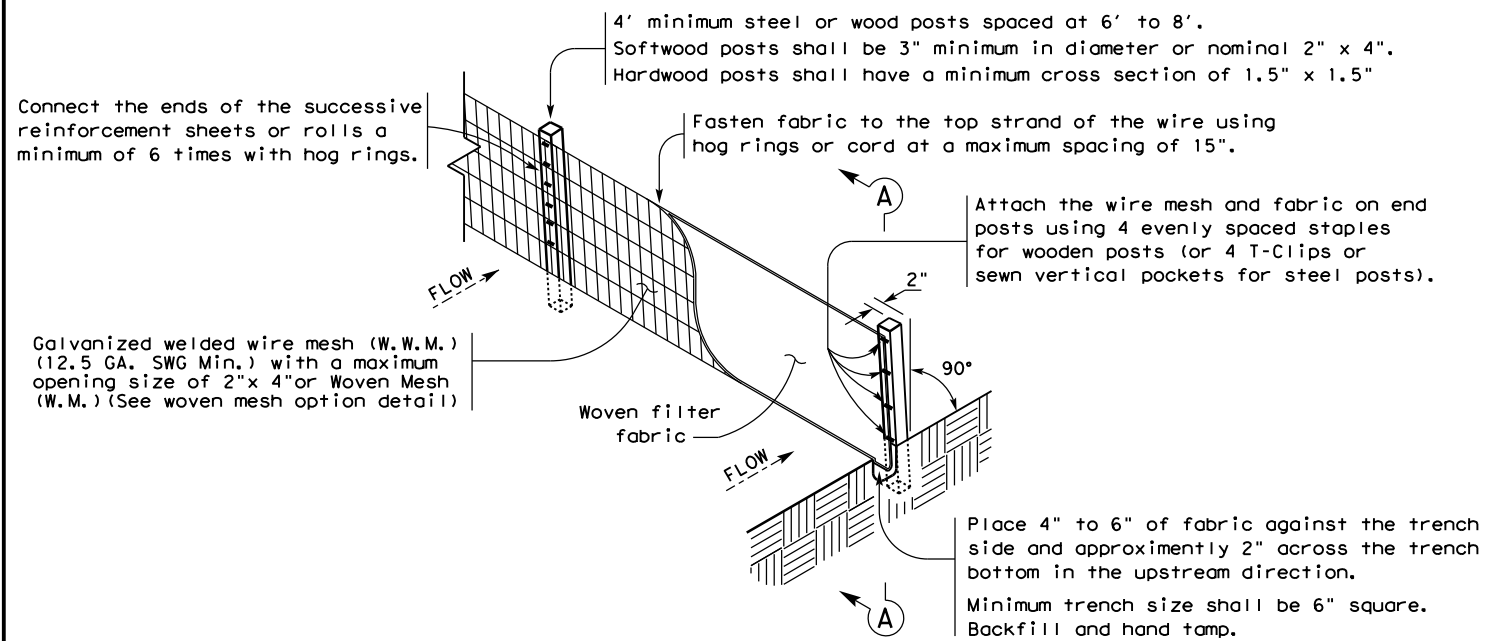


## EROSION CONTROL LOG

ECL-12

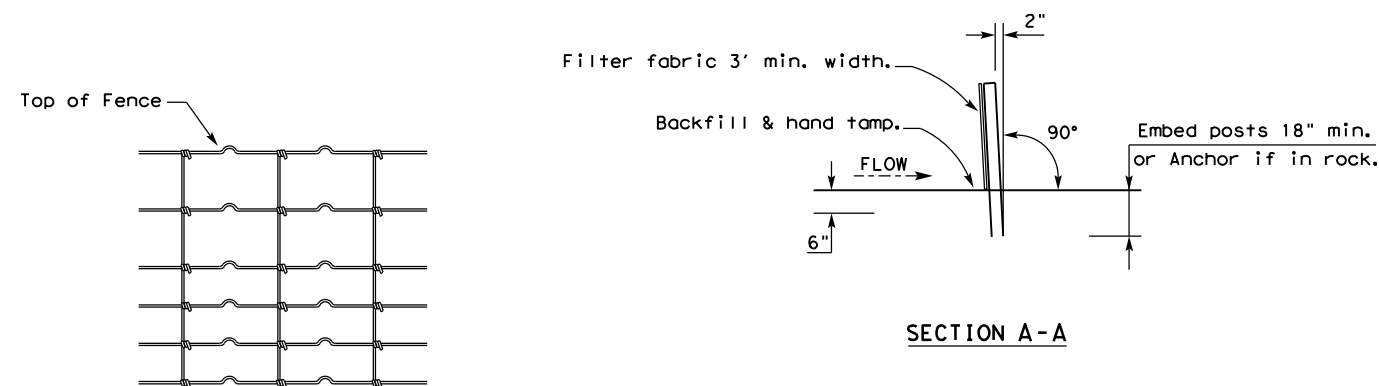
FILE: STDG4a.DGN	DN: TxDot	CK: TxDot	DN: TxDot	CK: TxDot
© TXDOT 2014	DISTRICT	FED REG	PROJECT NUMBER	SHEET
REVISIONS	HOU	6		113
3/15 MINOR CORRECTIONS	COUNTY	CONTROL	SECT	JOB
	BRAZORIA/HARRIS	0912	31	291
				VA

DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.



TEMPORARY SEDIMENT CONTROL FENCE

SCF



HINGE JOINT KNOT WOVEN MESH (OPTION) DETAIL

Galvanized hinge joint knot woven mesh (12.5 GA. SWG Min.) requires a minimum of five horizontal wires spaced at a maximum of 12 inches apart and all vertical wires spaced at a maximum of 12 inches apart.

SEDIMENT CONTROL FENCE USAGE GUIDELINES

A sediment control fence may be constructed near the downstream perimeter of a disturbed area along a contour to intercept sediment from overland runoff. A 2 year storm frequency may be used to calculate the flow rate to be filtered.

Sediment control fence should be sized to filter a maximum flow through rate of 100 GPM/FT<sup>2</sup>. Sediment control fence is not recommended to control erosion from a drainage area larger than 2 acres.

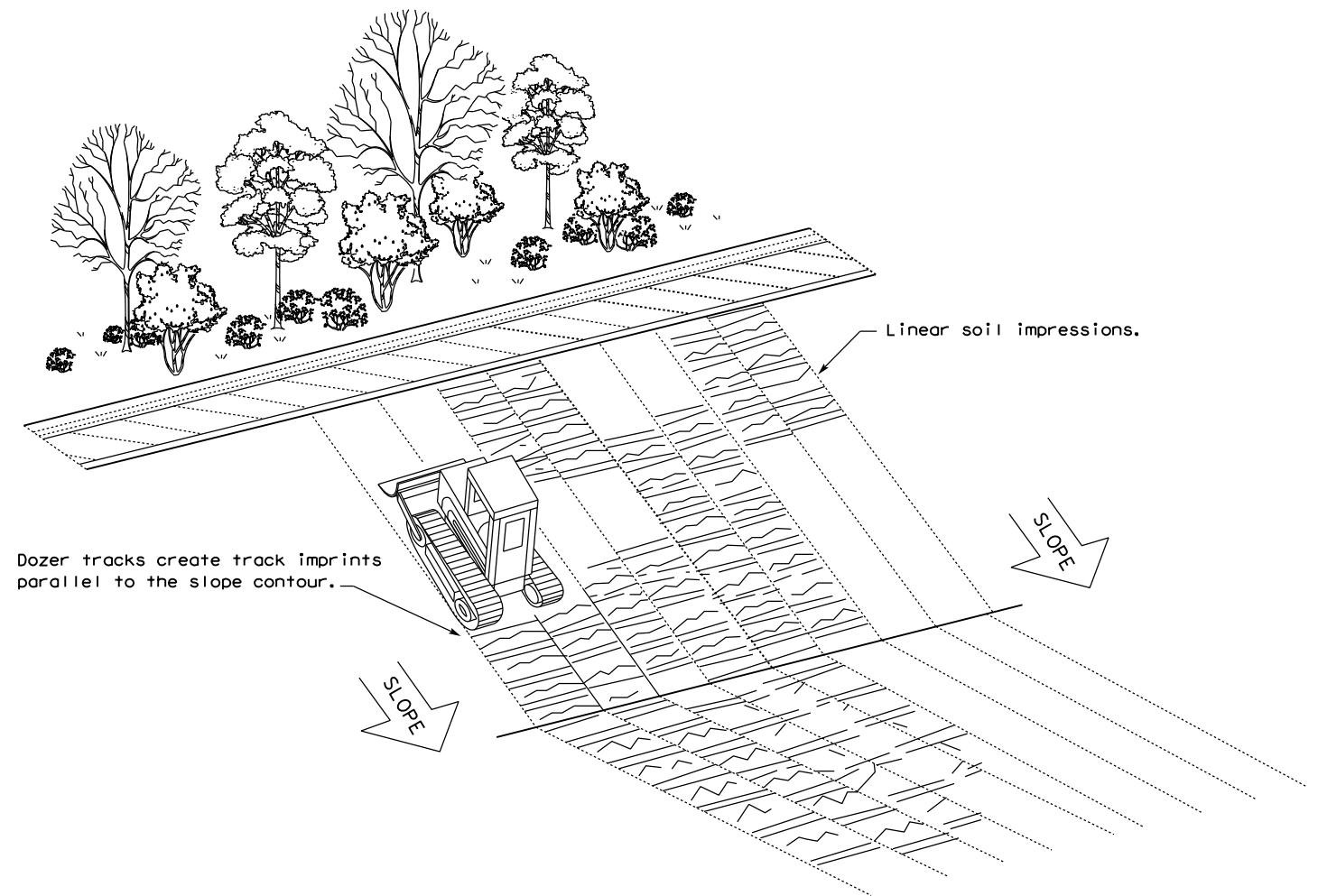
LEGEND

Sediment Control Fence


SCF

GENERAL NOTES

1. Vertical tracking is required on projects where soil distributing activities have occurred unless otherwise approved.
2. Perform vertical tracking on slopes to temporarily stabilize soil.
3. Provide equipment with a track undercarriage capable of producing linear soil impressions measuring a minimum of 12" in length by 2" to 4" in width by 1/2" to 2" in depth.
4. Do not exceed 12" between track impressions.
5. Install continuous linear track impressions where the minimum 12" length impressions are perpendicular to the slope or direction of water flow.



VERTICAL TRACKING



Texas Department of Transportation

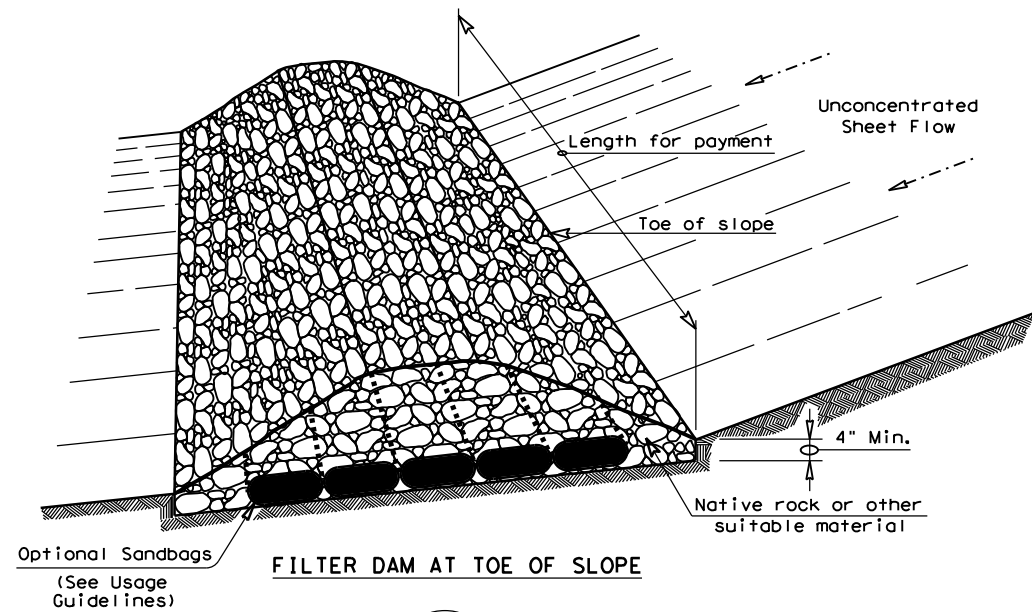
Design  
Division  
Standard

TEMPORARY EROSION,  
SEDIMENT AND WATER  
POLLUTION CONTROL MEASURES  
FENCE & VERTICAL TRACKING  
EC(1)-16

FILE: ec116	DN: TxDOT	CK: KM	DW: VP	DN/CK: LS
© TxDOT: JULY 2016	CONT	SECT	JOB	HIGHWAY
REVISIONS	0912	31	291	VA
	DIST	COUNTY		SHEET NO.
	HOU	BRAZORIA/HARRIS		114

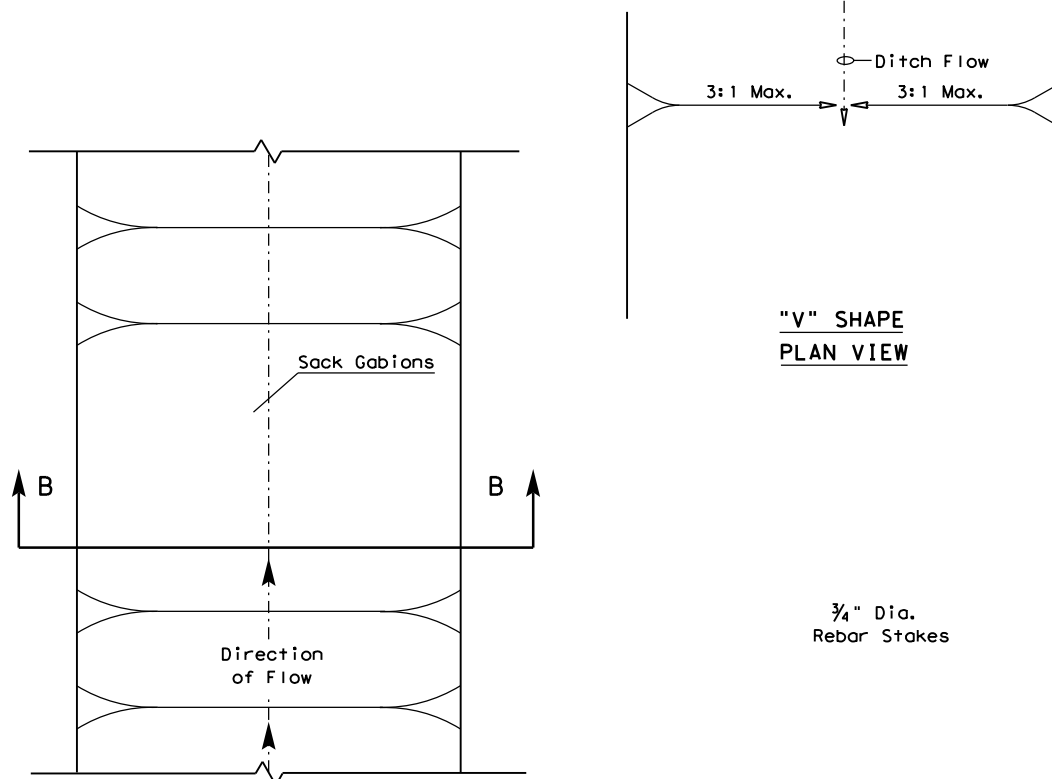


DATE: 9/18/2018 10:47:47 AM  
FILE: J:\0218.036.000\07.00 CADD\GREEN TEE TRAIL\10-IX ENVIRONMENTAL STANDARDS\RD316\RD316.dwg  
The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

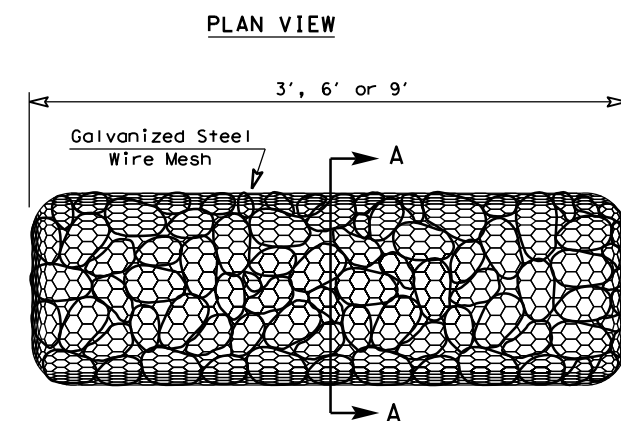


FILTER DAM AT TOE OF SLOPE

(RFD1)



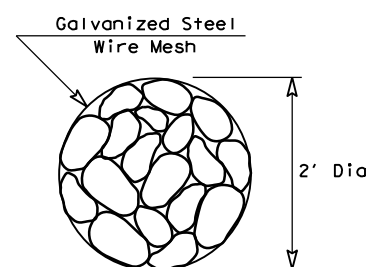
"V" SHAPE  
PLAN VIEW



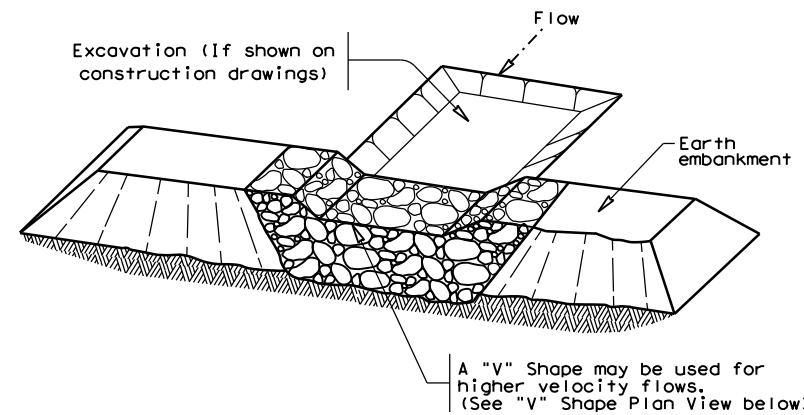
TYPE 4 (SACK GABIONS)

(RFD4)

SECTION B-B

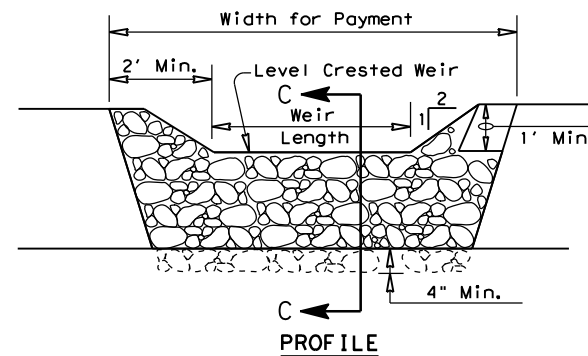


SECTION A-A

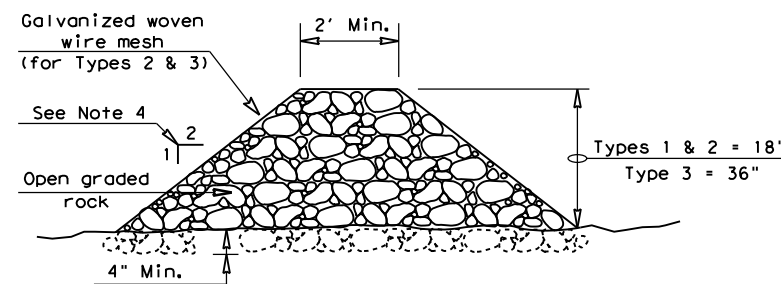


FILTER DAM AT SEDIMENT TRAP

(RFD2) OR (RFD3)



PROFILE



SECTION C-C

#### ROCK FILTER DAM USAGE GUIDELINES

Rock Filter Dams should be constructed downstream from disturbed areas to intercept sediment from overland runoff and/or concentrated flow. The dams should be sized to filter a maximum flow through rate of 60 GPM/FT<sup>2</sup> of cross sectional area. A 2 year storm frequency may be used to calculate the flow rate.

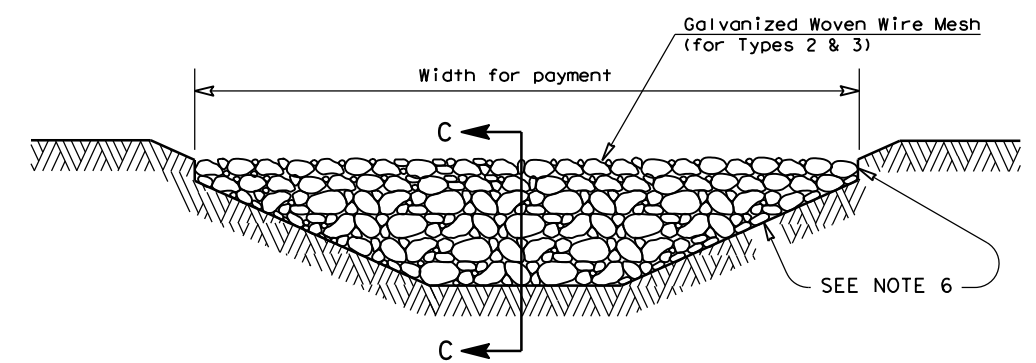
**Type 1** (18" high with no wire mesh) (3" to 6" aggregate): Type 1 may be used at the toe of slopes, around inlets, in small ditches, and at dike or swale outlets. This type of dam is recommended to control erosion from a drainage area of 5 acres or less. Type 1 may not be used in concentrated high velocity flows (approximately 8 Ft/Sec or more) in which aggregate wash out may occur. Sandbags may be used at the embedded foundation (4" deep min.) for better filtering efficiency of low flows if called for on the plans or directed by the Engineer.

**Type 2** (18" high with wire mesh) (3" to 6" aggregate): Type 2 may be used in ditches and at dike or swale outlets.

**Type 3** (36" high with wire mesh) (4" to 8" aggregate): Type 3 may be used in stream flow and should be secured to the stream bed.

**Type 4** (Sack gabions) (3" to 6" aggregate): Type 4 May be used in ditches and smaller channels to form an erosion control dam.

**Type 5:** Provide rock filter dams as shown on plans.



FILTER DAM AT CHANNEL SECTIONS


(RFD3) OR (RFD2) OR (RFD1)

#### GENERAL NOTES

1. If shown on the plans or directed by the Engineer, filter dams should be placed near the toe of slopes where erosion is anticipated, upstream and/or downstream at drainage structures, and in roadway ditches and channels to collect sediment.
2. Materials (aggregate, wire mesh, sandbags, etc.) shall be as indicated by the specification for "Rock Filter Dams for Erosion and Sedimentation Control".
3. The rock filter dam dimensions shall be as indicated on the SW3P plans.
4. Side slopes should be 2:1 or flatter. Dams within the safety zone shall have sideslopes of 6:1 or flatter.
5. Maintain a minimum of 1' between top of rock filter dam weir and top of embankment for filter dams at sediment traps.
6. Filter dams should be embedded a minimum of 4" into existing ground.
7. The sediment trap for ponding of sediment laden runoff shall be of the dimensions shown on the plans.
8. Rock filter dam types 2 & 3 shall be secured with 20 gauge galvanized woven wire mesh with 1" diameter hexagonal openings. The aggregate shall be placed on the mesh to the height & slopes specified. The mesh shall be folded at the upstream side over the aggregate and tightly secured to itself on the downstream side using wire ties or hog rings. For in stream use, the mesh should be secured or staked to the stream bed prior to aggregate placement.
9. Sack Gabions should be staked down with 3/4" dia. rebar stakes, and have a double-twisted hexagonal weave with a nominal mesh opening of 2 1/2" x 3 1/4".
10. Flow outlet should be onto a stabilized area (vegetation, rock, etc.).
11. The guidelines shown hereon are suggestions only and may be modified by the Engineer.

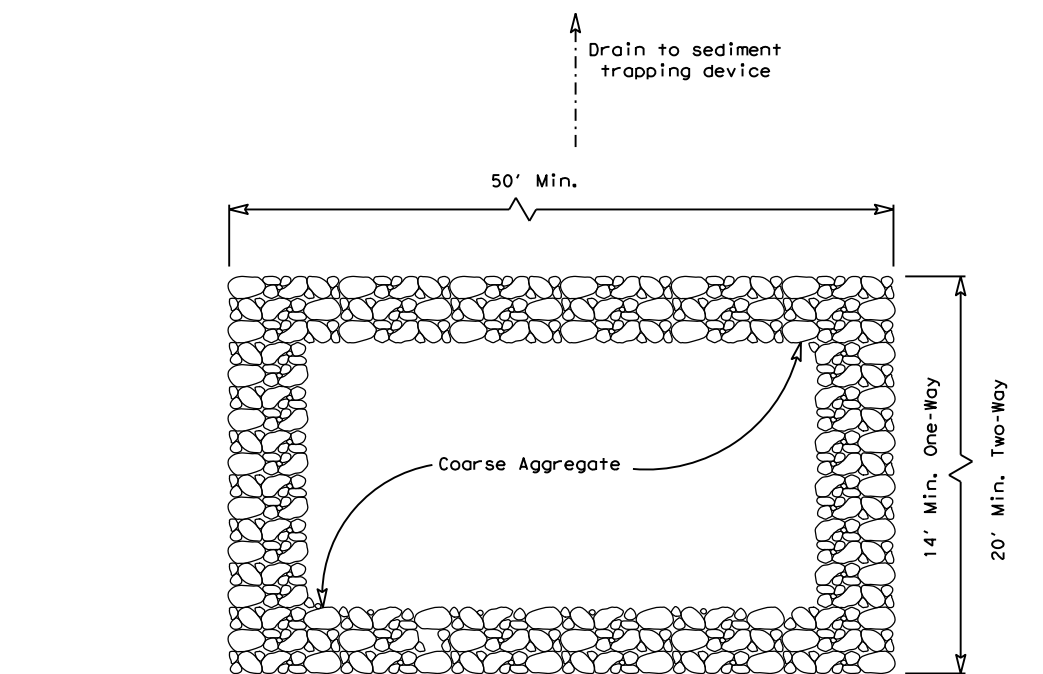
#### PLAN SHEET LEGEND

- Type 1 Rock Filter Dam (RFD1)  
Type 2 Rock Filter Dam (RFD2)  
Type 3 Rock Filter Dam (RFD3)  
Type 4 Rock Filter Dam (RFD4)

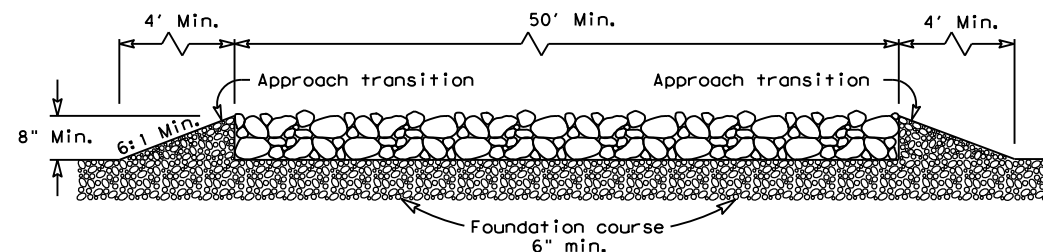
 <b>Texas Department of Transportation</b>				<b>Design Division Standard</b>	
<b>TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES  ROCK FILTER DAMS  EC (2) - 16</b>					
FILE: ec216		DN: TxDOT	CK: KM	DW: VP	DN/CK: LS
© TxDOT: JULY 2016		CONT	SECT	JOB	HIGHWAY
REVISIONS		0912	31	291	VA
		DIST		COUNTY	SHEET NO.
		HOU		BRAZORIA/HARRIS	

DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of units or for the use of this standard in any other format or for incorrect results or damages resulting from its use.

DATE: 9/18/2018 10:47:48 AM  
FILE: J:\0218.036.000\07.00 CADD\GREEN TEE TRAIL\10-1X ENVIRONMENTAL\STANDARD SHEET\036.000\07.00



PLAN VIEW

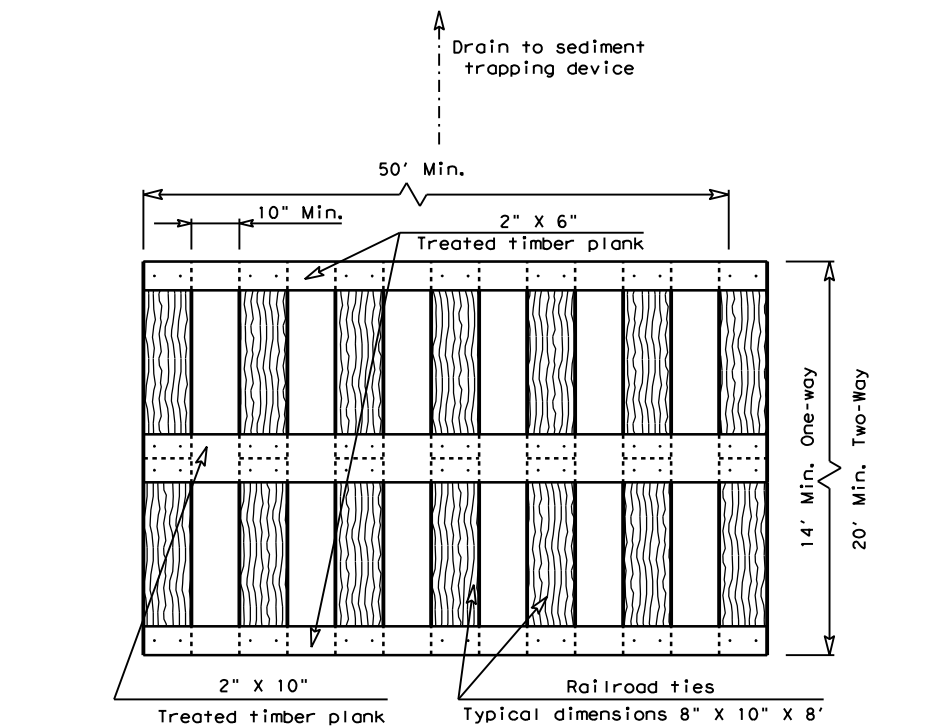


ELEVATION VIEW

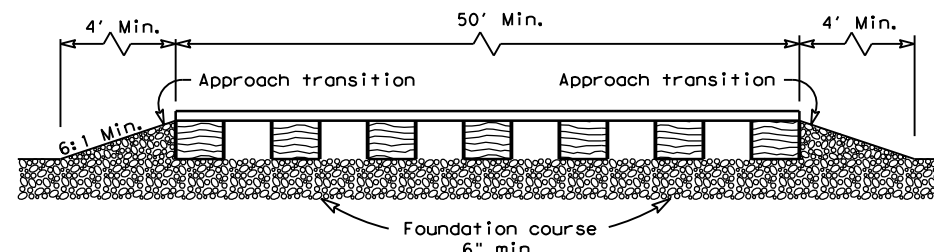
CONSTRUCTION EXIT (TYPE 1)  
ROCK CONSTRUCTION (LONG TERM)

GENERAL NOTES (TYPE 1)

1. The length of the type 1 construction exit shall be as indicated on the plans, but not less than 50'.
2. The coarse aggregate should be open graded with a size of 4" to 8".
3. The approach transitions should be no steeper than 6:1 and constructed as directed by the Engineer.
4. The construction exit foundation course shall be flexible base, bituminous concrete, portland cement concrete or other materials approved by the Engineer.
5. The construction exit shall be graded to allow drainage to a sediment trapping device.
6. The guidelines shown hereon are suggestions only and may be modified by the Engineer.
7. Construct exits with a width of at least 14 ft. for one-way and 20 ft. for two-way traffic for the full width of the exit, or as directed by the engineer.



PLAN VIEW

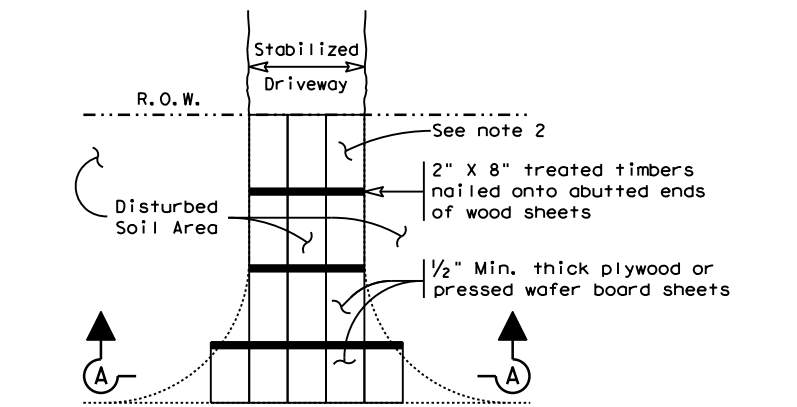


ELEVATION VIEW

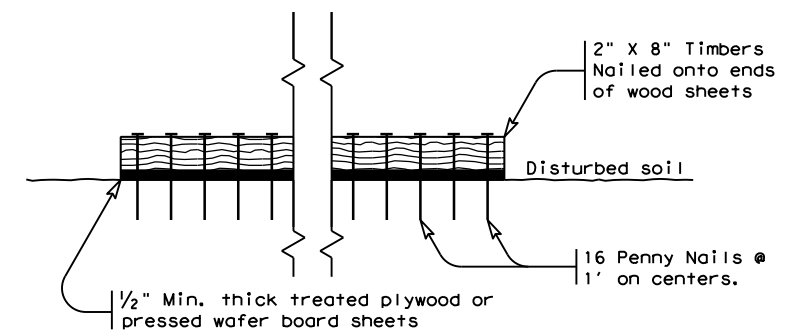
CONSTRUCTION EXIT (TYPE 2)  
TIMBER CONSTRUCTION (LONG TERM)

GENERAL NOTES (TYPE 2)

1. The length of the type 2 construction exit shall be as indicated on the plans, but not less than 50'.
2. The treated timber planks shall be attached to the railroad ties with 1/2" x 6" min. lag bolts. Other fasteners may be used as approved by the Engineer.
3. The treated timber planks shall be #2 grade min., and should be free from large and loose knots.
4. The approach transitions shall be no steeper than 6:1 and constructed as directed by the Engineer.
5. The construction exit foundation course shall be flexible base, bituminous concrete, portland cement concrete or other material as approved by the Engineer.
6. The construction exit should be graded to allow drainage to a sediment trapping device.
7. The guidelines shown hereon are suggestions only and may be modified by the Engineer.
8. Construct exits with a width of at least 14 ft. for one-way and 20 ft. for two-way traffic for the full width of the exit, or as directed by the engineer.




PLAN VIEW



SECTION A-A  
CONSTRUCTION EXIT (TYPE 3)  
SHORT TERM

GENERAL NOTES (TYPE 3)

1. The length of the type 3 construction exit shall be as shown on the plans, or as directed by the Engineer.
2. The type 3 construction exit may be constructed from open graded crushed stone with a size of two to four inches spread a min. of 4" thick to the limits shown on the plans.
3. The treated timber planks shall be #2 grade min., and should be free from large and loose knots.
4. The guidelines shown hereon are suggestions only and may be modified by the Engineer.

 <b>Texas Department of Transportation</b>				<b>Design Division Standard</b>	
<div>TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES CONSTRUCTION EXITS EC(3) - 16</div>					
FILE: ec316	DN: <u>IxDOT</u>	CK: KM	DW: VP	DN/CK: LS	
© TxDOT: JULY 2016	CONT	SECT	JOB	HIGHWAY	
REVISIONS	0912	31	291	VA	
	DIST	COUNTY			SHEET NO.
	HOU	BRAZORIA/HARRIS			116

TYPE OF WORK

ITEMS AND REQUIREMENTS FOR EACH TYPE OF WORK

SODDING	PERMANENT SEEDING	TEMPORARY SEEDING	Reference Item 161, 162, 164, 166, 168 of the Texas Standard Specifications for Construction and Maintenance of Highways, Streets and Bridges 2014 for specifications, dimensions, volumes and measurements that are not shown. Use latest Houston District, Special Provisions for those items indicated.		
	✓		161-6017 COMPOST MANUF TOPSOIL (BIP) (4") SY	APPLICATION RATE Item 161.2.1. Compost Manufactured Topsoil (CMT)	Item 161.2. Materials. Submit quality control (QC) documentation to the Engineer. Compost producer's STA certification must be dated to meet STA requirements (certification must be within 30 or 90 days per STA requirements). Lab analysis performed by an STA-certified lab must be dated within 30 days before delivery of the compost.
✓			162-6002 BLOCK SODDING SY	GRASS SPECIES Item 162.2. Materials. Common Bermuda (Cynodon Dactylon)	Item 162.2.1. Block Sod. Use block palletized or roll type sod. <b>REMOVE PLASTIC BACKING FROM ROLL TYPE SOD.</b> Place sod within 48 hours of delivery to site. No exceptions. Place sod with joints alternating on each row to prevent continuous joint lines. Peg sod as needed with wood pegs to hold sod in place. Pegging sod is subsidiary to Item 162.
	✓		164-6066 DRILL SEEDING (PERM) (WARM OR COOL) SY Item 164.1. Description Provide and install seeding as shown on District Standard	PLANTING MONTH SEED MIX March, April, Hulled - Bermudagrass (Cynodon dactylon) - 40.0 lbs PLS/acre May, June, Foxtail Millet (Setaria italica) - 34.0 lbs PLS/acre July, August, Green Sprangletop (Leptochloa dubia) - 4.0 lbs PLS/acre September, Sideoats Grama (Bouteloua curtipendula) - 3.2 lbs PLS/acre October, Little Bluestem (Schizachyrium scoparium) - 1.4 lbs PLS/acre	PLS (Pure Live Seed)  Provide documentation of PLS requirements per Item 164.2.1.  CONSTRUCTION. Cultivate the area to a depth of 4 inches before placing the seed unless otherwise directed. When performing permanent seeding after an established temporary seeding, cultivate the seedbed to a depth of 4 inches or mow the area before placement of the permanent seed. Plant the seed and place the straw or hay mulch after the area has been completed to lines and grades as shown on the plans.
	✓		164-6052 BROADCAST SEED (PERM) (SPECIAL MIX) SY Item 164.1. Description Provide and install seeding as shown on District Standard	November, Unhulled - Bermudagrass (Cynodon dactylon) - 40.0 lbs PLS/acre December, Oats (Avena sativa) - 72.0 lbs PLS/acre January, Green Sprangletop (Leptochloa dubia) - 4.0 lbs PLS/acre February, Sideoats Grama (Bouteloua curtipendula) - 3.2 lbs PLS/acre Little Bluestem (Schizachyrium scoparium) - 1.4 lbs PLS/acre	Drill Seeding. Plant seed or seed mixture uniformly over the area shown on the plans at a depth of 1/4 to 1/3 inch using a cultipacker (turfgrass) type seeder. Plant seed along the contour of the slopes.
		✓	164-6051 DRILL SEED (TEMP) (WARM OR COOL) SY Item 164.1. Description Provide and install seeding as shown on District Standard	PLANTING MONTH SEED MIX March, April, May, June, July, August, September, October, Foxtail Millet (Setaria italica) - 34.0 lbs PLS/acre	Use broadcast seeding method where site conditions prevent drill seeding method.  Broadcast Seeding. Distribute the dry seed or dry seed mixture uniformly over the areas shown on the plans using hand or mechanical distribution on top of soil.
		✓	164-6009 BROADCAST SEED (TEMP) (WARM) SY Item 164.1. Description Provide and install seeding as shown on District Standard	November, December, January, February, Oats (Avena sativa) - 72.0 lbs PLS/acre	
	✓	✓	162-6003 STRAW OR HAY MULCH SY	APPLICATION RATE Immediately after planting the seed or seed mixture, apply straw or hay mulch uniformly over the seeded area. Apply straw or hay mulch at 2 tons per acre. Use tacking agent with straw or hay mulch as described on this sheet.	Use straw or hay mulch in conformance with Article 162.2.5, "Mulch." Use biodegradable tacking agents only applied at a rate in accordance with manufacturer's recommendations. Use the following products or an approved equal (see note this sheet): Conweb/Contac Guar Gum, Profile Products Corporation, (307) 655-9565, Ramtec/Procol/Viscol Guar Gum, Ramtec Corporation, (800) 366-1180
✓	✓	✓	166-6001 FERTILIZER AC Item 166.2. Materials Use fertilizer as shown on District Standard	APPLICATION RATE Deliver and evenly distribute fertilizer at a rate of 4000 lbs/acre.	Use a <b>NON-CHEMICAL</b> fertilizer which meets all the following criteria: (1) BRAND NAME must be registered with the Texas State Chemist as a commercial fertilizer. (2) Meets USEPA guidelines for unrestricted use. (3) Derived from biological sources such as, but not limited to: sewage sludge, manures, vegetation, etc. (4) In granular form and essentially dust free. Submit proof of registration and nutrient source to Engineer. Use the following products or an approved equal (see note this sheet): Sigma, SIGMA AgriScience, 281-851-6749 Sustanite-standard grade, Automation Nation, Inc., 713-675-4999 Milorganite, MMSD, 800-287-9645 Agricultural Organic P/L, Ag Org, INC., 713-523-4396
✓	✓	✓	168-6001 VEGETATIVE WATERING MG	APPLICATION RATE Item 168.3 Construction. 6000 gallons/acre x 20 consecutive working days = 120,000 gallons total/acre	Begin watering immediately after installation of seed or sod. Replace, fertilize, and water any seed or sod in poor condition due to the failure to apply the specified amount of water within the time allowed at no expense to the Department.

SEQUENCE OF WORK

BLOCK SOD	PERMANENT SEEDING	TEMPORARY SEEDING
1. FERTILIZER 2. CULTIVATE SOIL (ITEM 162.3) 3. SOD 4. VEGETATIVE WATERING	1. FERTILIZER 2. COMPOST MANUFACTURED TOPSOIL 3. CULTIVATE SOIL (ITEMS 164.3 AND 161.3.1) 4. PERMANENT SEEDING 5. STRAW OR HAY MULCH 6. VEGETATIVE WATERING	1. FERTILIZER 2. CULTIVATE SOIL (PER ITEM 164.3) 3. TEMPORARY SEEDING 4. STRAW OR HAY MULCH 5. VEGETATIVE WATERING

FERTILIZER, SEED, SOD,  
STRAW, COMPOST, AND WATER

SHEET 1 OF 1

REVISIONS		FILE:				PROJECT NUMBER		SHEET
10/2014 UPDATED TO 2014 SPEC	3/2015 MINOR CORRECTIONS	OCT 2014	FED	STATE				117
			6	TEXAS				
		ORIGINAL:	DIST	COUNTY	CONTROL	SECT	JOB	HIGHWAY
			12	BRAZORIA/HARRIS	0912	31	291	VA

BMP:	Best Management Practice	SPCC:	Spill Prevention Control and Countermeasure
CGP:	Construction General Permit	SW3P:	Storm Water Pollution Prevention Plan
DSHS:	Texas Department of State Health Services	PCN:	Pre-Construction Notification
FHWA:	Federal Highway Administration	PSL:	Project Specific Location
MOA:	Memorandum of Agreement	TCEQ:	Texas Commission on Environmental Quality
MOU:	Memorandum of Understanding	TPDES:	Texas Pollutant Discharge Elimination System
MS4:	Municipal Separate Stormwater Sewer System	TPWD:	Texas Parks and Wildlife Department
MBTA:	Migratory Bird Treaty Act	TXDOT:	Texas Department of Transportation
NOT:	Notice of Termination	T&E:	Threatened and Endangered Species
NWP:	Nationwide Permit	USACE:	U.S. Army Corps of Engineers
NOI:	Notice of Intent	USFWS:	U.S. Fish and Wildlife Service

- 1.
- 2.
- 3.

