

General Notes

- All erosion control devices shown on the plans released for construction shall be installed in accordance with the SWP3 sequencing prior to commencing any earth disturbing activities.
- Erosion control devices shall be installed and maintained in compliance with the project plans, City stormwater ordinance and/or SWP3 and Construction General Permit.
- Contractor(s) shall comply with the SWP3 as specified, including installing, maintaining, and removing all temporary control measures.
- Contractor(s) shall conduct and document weekly SWP3 inspections of BMP's and control measures and revise the SWP3 within seven (7) calendar days following the inspection.
- Hay products, organic or other types are not accepted for use as BMP's within the City of Grand Prairie.
- Dust Control shall be utilized on a regular basis during dry conditions or as weather dictates the need.
- Curb cut-backs shall NOT be permitted for the purpose of BMP's ONLY.
- Curb cut-backs for the purpose of driveway installation will be allowed for a period not to exceed 72 hours (maximum) prior to pouring concrete. Backfilling areas shall be performed within 48 hours (maximum).
- Streets shall be kept free from mud, dirt, or any other construction type debris during the construction operation.
- Concrete wash-out areas shall be designed and maintained with proper signage/markings in compliance with the City stormwater ordinance and/or SWP3 and Construction General Permit.
- Grass sod shall be required for stabilization within the City right-of-way. Variations for stabilization in right-of-way shall be in writing and submitted to City Engineer for approval.

Stormwater Pollution Prevention Plan (SWP3) Requirements

Prior to ANY earth disturbing activities the following conditions need to be addressed and accepted through the City of Grand Prairie Stormwater Department:

- A fully executed SWP3 will be submitted for review and acceptance through the Stormwater Department. Fully executed means all signatures will be required with the submittal and authorized in accordance with the 30 Texas Administrative Code (TAC) Subchapters 305.44 & 305.128. The owner of the project and the operator (contractor) hired by the owner are the required signatures needed for a fully executed SWP3.
- Land disturbing activities that equal one (1) acre and less than five (5) acres are required by the TPDES Construction General Permit and the City of Grand Prairie (MS4) to submit a SWP3. A signed Small Construction Site Notice from the owner and the operator (contractor) of the project site will also need to be included with the SWP3 submittal. The conditions described in item 1 (above) apply to all SWP3 submittals.
- Land disturbing activities that equal five (5) acres or more, or included in a larger project or common plan of development that equals five (5) or more acres are required by the TPDES Construction General Permit and the City of Grand Prairie (MS4) to submit a SWP3, Notice of Intent (NOI) and Construction Site Notice provided by the Primary Operator (Contractor) as defined in the TPDES Construction General Permit as having Day to Day operational control over the site. And if there is a Primary Operator (Owner) having control over construction plans or specifications, they will also need to submit a NOI and Site Notice as defined in the TPDES Construction General Permit. If a Secondary Operator is part of this plan and meets the definition guidelines in accordance with the TPDES Construction General Permit, then they can or should fall under the Primary Operators NOI and sign the Secondary Operator Construction Site Notice.

Notice of Termination (NOT) Required

Each operator that has submitted a Notice of Intent (NOI) for authorization under the construction general permit must apply to terminate that authorization. The NOT must be submitted to TCEQ, and a copy of the NOT provided to the MS4 receiving the discharge (Grand Prairie), within 30 days after any of the following conditions are met:

- Final stabilization has been achieved and meets the conditions of 80% coverage with no large bare areas on all portions of the site that are the responsibility of the permittee.
- A transfer of operational control has occurred, or
- The operator has obtained alternative authorization under an individual TPDES permit or alternative TPDES general permit.
- For small construction sites and secondary operators that fall under the provisions of the construction general permit, complete the applicable portion of the site notice related to removal of the site notice, and submit a copy of the completed site notice to the operator of the MS4 (City) receiving the discharge.

Vegetation Management

Vegetation is used as a temporary or final stabilization measure for areas disturbed by construction. As a temporary control, vegetation is used to stabilize stockpiles, earthen dikes, and barren areas that are inactive for longer than two weeks. As a final control at the end of construction, grasses and other vegetation provide good protection from erosion along with some filtering for overland runoff.

Temporary Vegetation

The following table lists recommended plant species for the North Central Texas region depending on the season for planting. Areas receiving temporary seeding and vegetation shall be landscaped, re-seeded or sodded with perennial species to establish final vegetation at the end of construction.

Recommended Grass Mixture for Temporary Vegetation

Season	Common Name	Pure Live Seed Rate (Lbs/Acre)
Sept 1 – Nov 30	Tall Fescue	4.5
	Western Wheat Grass	5.6
	Wheat (Red, Winter)	34.0
May 1 – Aug 31	Foxtail Millet	34.0
Feb 15 – May 31	Annual Rye	20.0
Sept 1 – Dec 31		

Vegetation for Final Stabilization

Sodding or seeding may be used to establish vegetation for final stabilization of areas disturbed by construction activity. The vegetation must achieve a cover that is 80 percent of the native background vegetative cover to be considered final stabilization.

Grass seed for establishing final stabilization can be sown at the same time as seeding for temporary (annual) vegetation. Drought tolerant native vegetation is recommended rather than exotics as a long-term water conservation measure.

For construction activities that include landscaping in the development plans, the landscape architect should be consulted when specifying vegetation for temporary or final stabilization of disturbed areas.

Where vegetation is used in swales and channels it may be necessary to use sod, rather than seeding, to establish an erosion resistant surface that accommodates rainfall runoff flows.

Table 2.5 Recommended Grass Mixture for Final Stabilization of Upland in Rural Areas

County	Planting Date	Clay Soils		Sandy Soils	
		Species and Pure Live Seed Rate (Lbs/Acre)		Species and Pure Live Seed Rate (Lbs/Acre)	
Erath Hood Johnson Palo Pinto Parker Somervell Tarrant Wise	February 1 – May 15	Green Sprangletop	0.3	Green Sprangletop	0.3
		Sideoats Grama (El Reno)	2.7	Sand Lovegrass	0.5
		Bermudagrass	0.9	Bermudagrass	1.8
		Little Bluestem (Native)	1.0	Weeping Lovegrass (Ermelo)	0.8
		Blue Grama (Hachita)	0.9	Sand Dropseed	0.4
		Illinois Bundleflower	1.0	Partridge Pea	1.0
Collin Dallas Denton Ellis Kaufman Navarro Rockwell	February 1 – May 15	Green Sprangletop	0.3	Green Sprangletop	0.3
		Bermudagrass	1.2	Bermudagrass	1.8
		Sideoats Grama (El Reno)	2.7	Weeping Lovegrass (Ermelo)	0.6
		Little Bluestem (Native)	2.0	Sand Lovegrass	0.6
		Buffalograss (Texoka)	1.6	Sand Dropseed	0.4
		Illinois Bundleflower	1.0	Partridge Pea	1.0
Hunt	February 1 – May 15	Green Sprangletop	0.3	Green Sprangletop	0.3
		Sideoats Grama (El Reno)	3.2	Bermudagrass	1.5
		Bermudagrass	1.8	Bahia grass (Pensacola)	6.0
		Little Bluestem (Native)	1.7	Sand Lovegrass	0.6
		Illinois Bundleflower	1.0	Weeping Lovegrass (Ermelo)	0.8
				Partridge Pea	1.0

(Source: TxDOT Standard Specifications for Construction and Maintenance of Highways, Streets and Bridges, Item 164)

Table 2.6 Recommended Grass Mixture for Final Stabilization of Upland in Urban Areas

County	Planting Date	Clay Soils		Sandy Soils	
		Species and Pure Live Seed Rate (Lbs/Acre)		Species and Pure Live Seed Rate (Lbs/Acre)	
Erath Hood Johnson Palo Pinto Parker Somervell Tarrant Wise	February 1 – May 15	Green Sprangletop	0.3	Green Sprangletop	0.3
		Sideoats Grama (El Reno)	3.6	Sideoats Grama (El Reno)	3.6
		Bermudagrass	2.4	Bermudagrass	2.1
		Buffalograss (Texoka)	1.6	Sand Dropseed	0.3
Collin Dallas Denton Ellis Kaufman Navarro Rockwell	February 1 – May 15	Green Sprangletop	0.3	Green Sprangletop	0.3
		Sideoats Grama (El Reno)	3.6	Buffalograss (Texoka)	1.6
		Buffalograss (Texoka)	1.6	Bermudagrass	3.6
		Bermudagrass	2.4	Sand Dropseed	0.4
Hunt	February 1 – May 15	Green Sprangletop	0.3	Green Sprangletop	0.3
		Bermudagrass	2.4	Bermudagrass	5.4
		Sideoats Grama (Haskell)	4.5		

(Source: TxDOT Standard Specifications for Construction and Maintenance of Highways, Streets and Bridges, Item 164)

Vegetation for final stabilization of channels requires grasses that are tolerant of periodic inundation, such as Bermuda grass, Kentucky bluegrass or a grass-legume mixture.

Debris and Trash Management

Debris and trash management is used to minimize floatables and other wastes in stormwater. By controlling the trash and debris onsite, stormwater quality is improved and the need for extensive clean up upon completion of the project is reduced.

- All waste sources and storage areas shall be located a minimum of 50 feet away from inlets, swales, drainage ways, channels and other waters, if the site configuration provides sufficient space to do so. In no case shall material and waste sources be closer than 20 feet from inlets, swales, drainage ways, channels, and other waters.
- Construction waste and trash shall be stored in a manner that minimizes its exposure to precipitation and stormwater runoff.
- Do not allow trash containers to overflow. Do not allow waste materials to accumulate on the ground.
- Police site daily for litter and debris.
- Trash and debris shall be removed from the site at regular intervals that are scheduled to empty containers when they are 90 percent full or more frequently.
- No waste, trash, or debris shall be buried, burned or otherwise disposed of onsite.
- The following are lists describing the type of targeted materials.

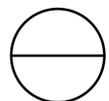
Construction (and Demolition) Debris:

- Dimensional lumber
- Miscellaneous wood (pallets, plywood, etc.)
- Copper (pipe and electrical wiring)
- Miscellaneous metal (studs, pipe, conduit, sheathing, nails, etc.)
- Insulation
- Brick and mortar
- Shingles
- Roofing materials
- Gypsum board
- Trash:**
- Paper and cardboard (packaging, containers, wrappers)
- Plastic (packaging, bottles, containers)
- Styrofoam (cups, packing, and forms)
- Food and beverage containers
- Food Waste

Dust Control

Dust Control includes those measures necessary to prevent wind transport of dust from disturbed soil surfaces. Dust control is applied in areas subject to surface and air movement to dust where on-site and off-site impacts including roadways drainage ways and surface waters.

- Limit dust generation by clearing only those areas where immediate activity will take place, leaving the remaining area(s) in the original condition if stable. Maintain original cover as long as practicable.
- Construct natural or artificial windbreaks or windscreens. Vegetate areas that will not receive vehicular traffic.
- Sprinkle the site with water until dampened sufficiently to prevent dust and repeat as necessary. Do not apply water in quantities to cause runoff.



5	△		
4	△		
3	△		
2	△		
1	△		
No.	△	Description	Date

Revisions

EROSION CONTROL							
STANDARD DETAILS							

1 OF 4



DESIGN	DRAWN	CHECK	DATE	SCALE	NOTES	FILE	NO.
G.F.	J.P.	G.F.	NOV. 2016	N.T.S.			

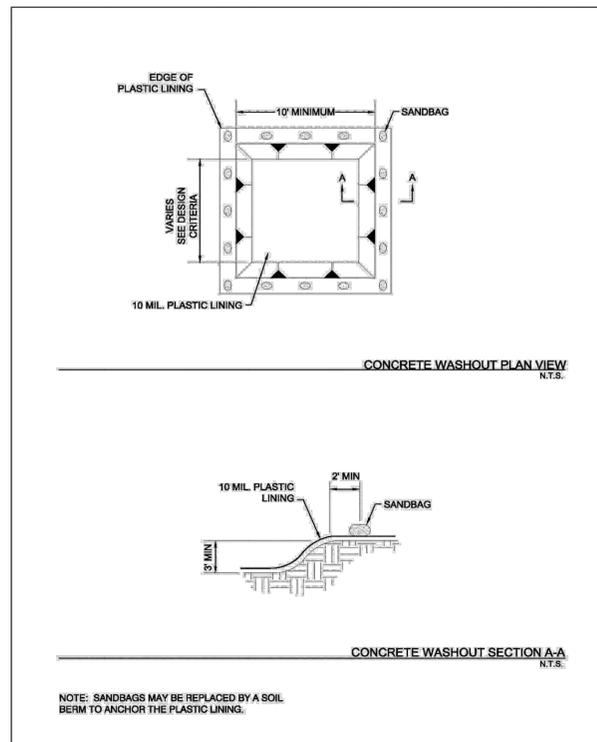


Figure 4.1 Schematics of Concrete Washout Containment

Concrete Truck Washout Requirements

1. Direct discharge of concrete truck washout water to surface water in the state, including discharge to storm sewers, is prohibited.
2. Concrete truck wash out water shall be discharged to areas at the construction site where structural controls have been established to prevent direct discharge to surface waters.
3. Structural controls may consist of temporary berms, temporary shallow pits, temporary storage tanks with slow rate release, or other reasonable measures to prevent runoff from the construction site.
4. Washout of concrete trucks during rainfall events shall be minimized. The direct discharge of concrete truck wash out water is prohibited at all times, and the operator shall insure that its BMPs are sufficient to prevent the discharge of concrete truck wash out as the result of rainfall or stormwater runoff.
5. The discharge of wash out water must not cause or contribute to groundwater contamination.
6. If a SWP3 is required to be implemented, the SWP3 shall include concrete washout areas on the associated erosion control plan.

Prohibited Concrete Disposal Practices

1. Dumping in vacant areas on the job-site.
2. Illicit dumping onto off-site lots or any other place not permitted to receive construction demolition debris or waste.
3. Dumping into ditches, drainage facilities, or natural water ways.

Stabilized Construction Entrance/Exit

Minimum Entrance/Exit Dimensions

Disturbed Area	Min. Width of Entrance/Exit	Min. Length of Entrance/Exit
< 1 Acre	15 feet	20 feet
> 1 Acre but < 5 Acres	25 feet	50 feet
> 5 Acres	30 feet	50 feet

1. Stabilized construction access shall be used on all construction sites with a disturbed area of one acre or larger and are a recommended practice for smaller construction sites.
2. Design the access point(s) to be at the upslope side of the construction site. Do not place construction access at the lowest point on the construction site.
3. The access must be sloped away from the paved surface so that stormwater from the site does not discharge through the exit onto roadways.
4. Minimum width of exit shall be 15 feet.
5. The construction access material shall be a minimum thickness of 6 inches. The stone or recycled concrete used shall be 3 to 5 inches in size with little or no fines.
6. The geotextile fabric shall be installed prior to the rock and must meet the following minimum criteria:
 - * Tensile Strength, ASTM D4632 Test Method for Grab Breaking Load and Elongation of Geotextiles, 300 lbs.
 - * Puncture Strength, ASTM D4833 Test Method for Index Puncture Resistance of Geotextiles, Geomembranes, and Related Products, 120 lbs.
 - * Mullen Burst Rating, ASTM D3786 Standard Test Method for Hydraulic Bursting Strength of Textile Fabrics-Diaphragm Bursting Strength Tester Method, 600 psi.
 - * Apparent Opening Size, ASTM D4751 Test Method for Determining Apparent Opening Size of a Geotextile, U.S. Sieve No. 40 (max).
7. Periodic re-grading and top dressing with additional stone shall be done to keep the efficiency of the exit from diminishing. The rock shall be re-graded when ruts appear. Additional rock shall be added when soil is showing through the rock surface.

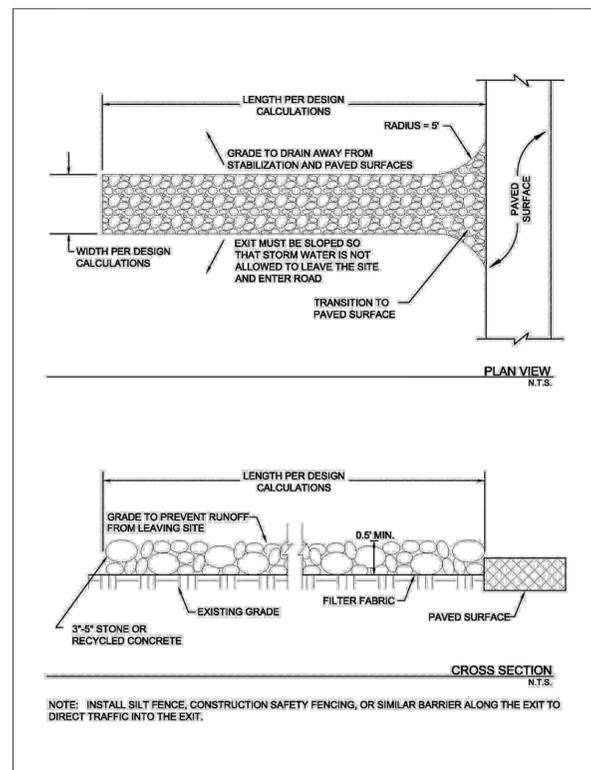


Figure 3.29 Schematics of Stabilized Construction Exit

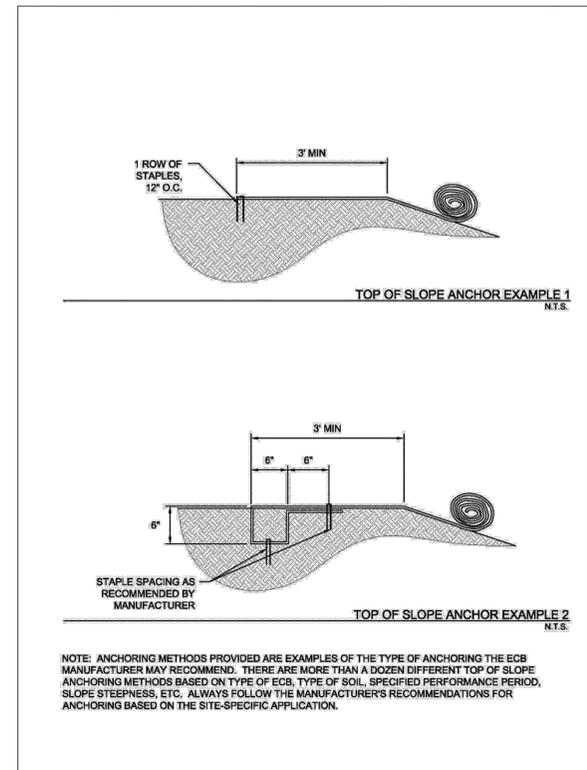


Figure 2.8 Anchor Examples for Erosion Control Blankets
(Sources: American Excelsior Company and Western Excelsior Corporation)

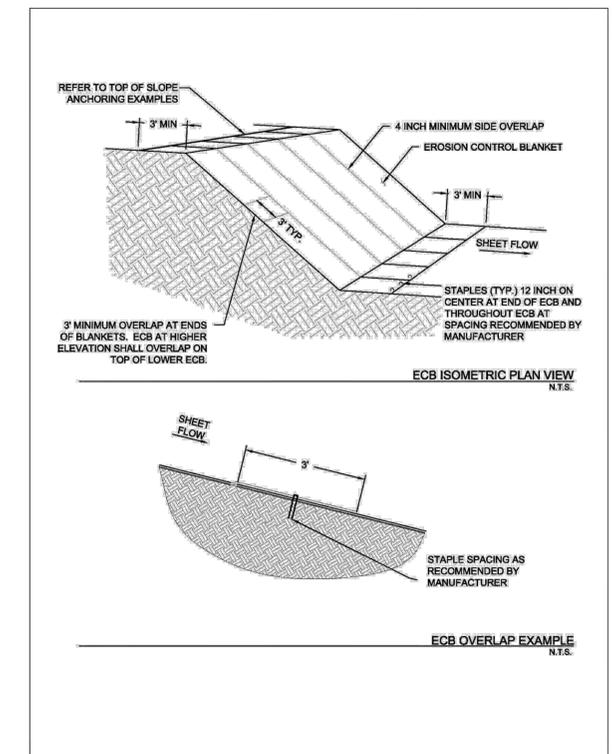
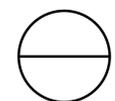


Figure 2.7 Schematics of Erosion Control Blankets

Erosion Control Blankets

Applications: Perimeter Control, Slope Protection, Sediment Barrier, Channel Protection, Temporary Stabilization, and Final Stabilization.

1. Prior to the installation of the ECB, all rocks, dirt clods, stumps, roots, trash and any other obstructions that would prevent the ECB from lying in direct contact with the soil shall be removed.
2. Installation and anchoring shall conform to the recommendations shown within the manufacturer's published literature for the erosion control blanket. Anchors (staples) shall be a minimum of 6 inches in length and 1 inch wide. They shall be made of 11-gauge wire, or equivalent.
3. ECBs may be used as a sediment barrier behind curb in place of silt fence. For Single Family residential lots the width of the ECB shall be ten (10) feet minimum. For Commercial Development applications the width shall be twenty (20) feet minimum, unless otherwise approved by the Stormwater Department.
4. Erosion control blankets should be inspected weekly (in accordance with the SWP3 requirements and the TPDES Construction General Permit) for bare spots caused by weather or other events. Missing or loosened blankets shall be replaced or re-anchored.
5. Erosion control blankets shall not be used as sediment barriers in swales and channels that have shear stresses of more than 2.0 pounds per square foot or slopes greater than 2%. Turf reinforcement mats shall be used in open channels with higher shear stresses and greater slopes.



5	▲		
4	▲		
3	▲		
2	▲		
1	▲		
No.	▲	Description	Date

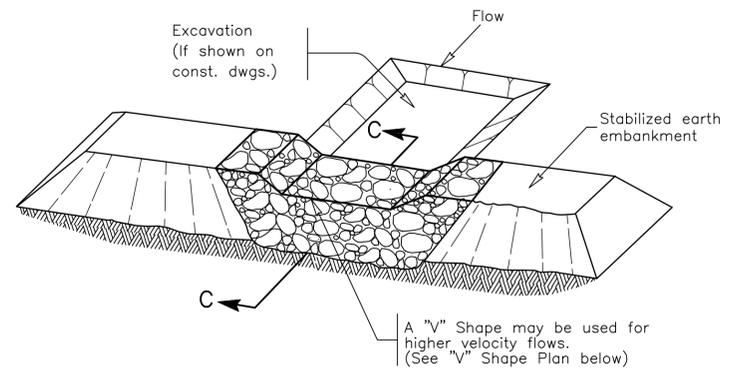
Revisions

EROSION CONTROL STANDARD DETAILS

2 OF 4

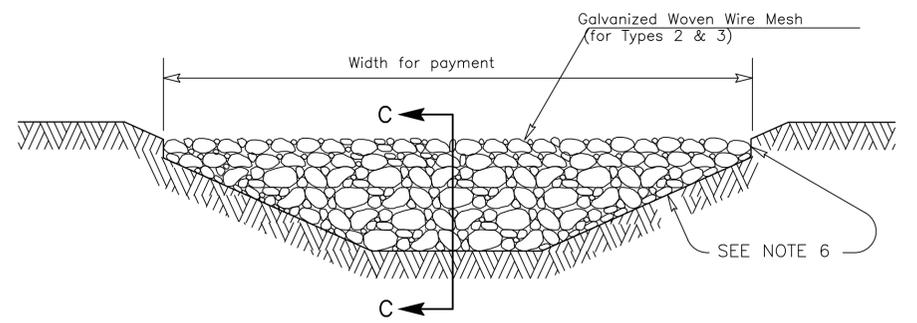
Grand Prairie
— T E X A S —
ENGINEERING

DESIGN	DRAWN	CHECK	DATE	SCALE	NOTES	FILE	NO.
G.F.	J.P.	G.F.	NOV. 2016	N.T.S.			



FILTER DAM AT SEDIMENT TRAP

— RFD1 — OR — RFD2 —
TYPE 1 OR TYPE 2

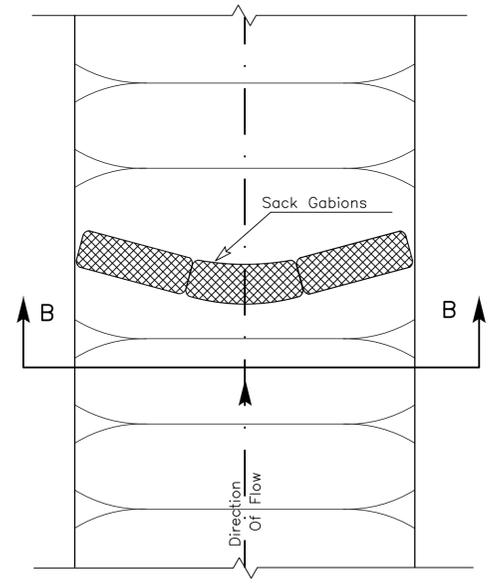


FILTER DAM AT CHANNEL SECTIONS

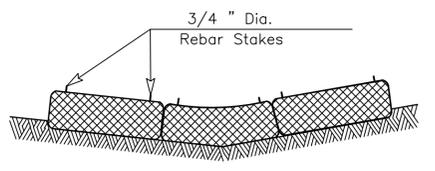
— RFD1 — OR — RFD2 — OR — RFD3 —
TYPE 1 OR TYPE 2

GENERAL NOTES

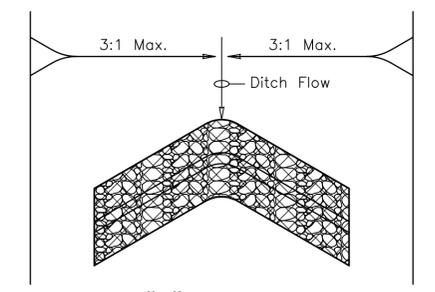
1. IF SHOWN ON THE PLANS OR DIRECTED BY THE ENGINEER, FILTER DAMS SHOULD BE PLACED NEAR THE TOE OF SLOPES WHERE EROSION IS ANTICIPATED, UPSTREAM AND/OR DOWNSTREAM AT DRAINAGE STRUCTURES, AND IN ROADWAY DITCHES AND CHANNELS TO COLLECT SEDIMENT.
2. MATERIALS (AGGREGATE, WIRE MESH, SANDBAGS, ETC.) SHALL 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 SWP3 OR EROSION CONTROL PLANS.
4. STONE SIDE SLOPES SHOULD BE 2:1 OR FLATTER. DAMS WITHIN THE SAFETY ZONE SHALL HAVE SIDE SLOPES 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. 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.
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.
12. ALL MATERIAL INCORPORATED IN THE CONSTRUCTION SHALL BE NEW.
13. MAX TEMPORARY EARTH SLOPE IS 3:1 WITH 4:1 RECOMMENDED IF PRACTICAL.



PLAN VIEW



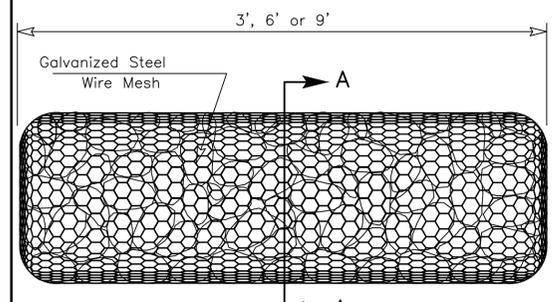
SECTION B-B



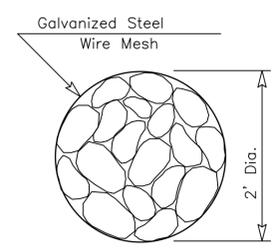
**"V" SHAPE
(Plan View)**

PLANS SHEET LEGEND

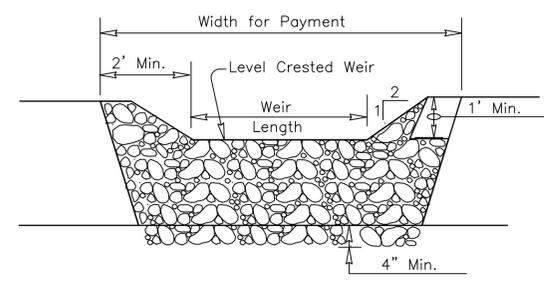
- Type 1 Rock Filter Dam — RFD1 —
- Type 2 Rock Filter Dam — RFD2 —
- Type 3 Rock Filter Dam — RFD3 —



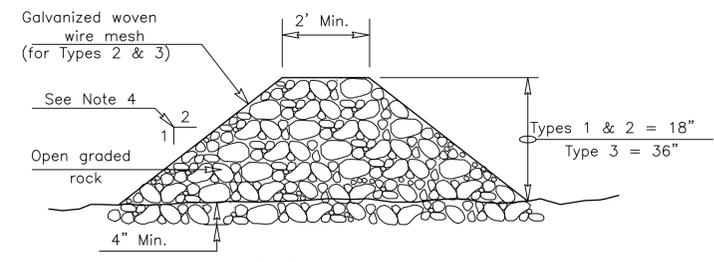
TYPE 4 (SACK GABIONS)



SECTION A-A



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 of cross sectional area. A 2 year storm frequency may be used to calculate the flow rate.

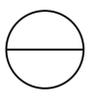
Type 1 (18" high with no wire mesh): Type 1 may be used at the toe of slopes, around inlets, in small ditches, and at dike or swale outlets. This type of dam is recommended to control erosion from a drainage area of 5 acres or less. Type 1 may not be used in concentrated high velocity flows (approx. 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): Type 2 may be used in ditches and at dike or swale outlets.

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

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

CERTIFICATION:
THIS CITY OF GRAND PRAIRIE STANDARD DETAIL SHEET IS AUTHORIZED FOR USE IN THIS PROJECT BY THE ENGINEER WHOSE SEAL APPEARS ON THIS SHEET. THIS ENGINEER IS ALSO CERTIFYING THAT THE CONTENT OF THE DETAILS AND NOTES ON THIS SHEET HAVE NOT BEEN ALTERED FROM THAT RECEIVED FROM THE CITY OF GRAND PRAIRIE.



EROSION CONTROL						
ROCK FILTER DAM						
ADOPTED FROM TXDOT STANDARD						
DETAIL EC(2)–93						
4 OF 4						
Grand Prairie — T E X A S — ENGINEERING						
DESIGN	DRAWN	CHECK	DATE	SCALE	FILE	NO.
G.F.	J.P.	R.A.K.	NOV. 2016	N.T.S.		