DRAINAGE DISTRICT

Fort Bend County, Texas

Robert E. Hebert - County Judge
Richard Morrison - Commissioner Pct. 1
Grady Prestage - Commissioner Pct. 2
W. A. "Andy" Meyers - Commissioner Pct. 3
James Patterson - Commissioner Pct. 4

August 1, 2011

Subject: Regulations of Fort Bend County, Texas for Storm Water Quality Management

Dear Commissioner's Court:

Attached is a copy of the proposed Storm Water Quality Management Regulations of Fort Bend County, Texas describing the Regulations to provide for the health, safety, and general welfare of the citizens of Fort Bend County through the regulation of non-storm water discharges to the storm drainage system as is required by federal and state law. These Regulations establish methods for controlling the introduction of pollutants into the municipal separate storm sewer system (MS4) in order to comply with requirements of the National Pollutant Discharge Elimination System (NPDES) permit process. The objectives of these Regulations are to provide land use controls necessary to comply with Fort Bend County's NPDES or TPDES storm water permit, to protect human life and health and to avoid increasing pollutant levels associated with storm water.

The TCEQ has a requirement that these regulations be adopted by August 12, 2011 to comply with TXR040000 General Permit that provides authorization for storm water and certain non storm water discharges to surface waters of the state. This document is planned to be on both the Commissioner's Court and the Drainage District meetings on August 9, 2011 for approval.

Thank you for reviewing this information, and feel free to contact Adam Wright at telephone number 281-342-0141 if you have any questions.

Sincerely,

Adam Wright
Project Coordinator, Drainage District

Ronald Drachenberg, P.E., R.P.L.S.
Assistant County Engineer

Engineering/Administration: P.O. Box 1028 • 1004 Blume Road • Rosenberg, Texas 77471 • (281) 342-2863
Construction/Maintenance: 1022 Blume Road • Rosenberg, Texas 77471 • (281) 342-0141

DRAINAGE DISTRICT
Fort Bend County, Texas

Cc: Roy L. Cordes, Jr. - County Attorney
Mark Vogler, P.E. – Drainage District Manager/Chief Engineer
D. Jesse Hegemier, P.E. - County Engineer
Troy Scalco - Health and Human Services
Robert Ed Sturdivant – County Auditor
Pam Gubbels – Budget
Gilbert Jalomo – Purchasing
Don Brady – Facilities/Planning
Ray Webb – Information and Technology
Dianne Wilson – County Clerk

FORT BEND COUNTY

REGULATIONS OF FORT BEND COUNTY, TEXAS FOR STORM WATER QUALITY MANAGEMENT

ADOPTED August 9, 2011

REGULATIONS OF FORT BEND COUNTY, TEXAS FOR STORM WATER QUALITY MANAGEMENT

PART 1
GENERAL PROVISIONS

1.1 AUTHORITY AND SCOPE OF RULES

These Regulations are adopted by Fort Bend County pursuant to Texas Local Government Code Chapter 573 which permits certain districts or authorities created under Section 59, Article XVI, Texas Constitution to take reasonable action to comply with the requirements of the stormwater permitting program under the national pollutant discharge elimination system.

1.2 AREA COVERED BY REGULATIONS

These regulations apply in all unincorporated areas of Fort Bend County, Texas.

1.3 PURPOSE

The purpose of these Regulations is to provide for the health, safety, and general welfare of the citizens of Fort Bend County through the regulation of non-storm water discharges to the storm drainage system as is required by federal and state law. These Regulations establish methods for controlling the introduction of pollutants into the municipal separate storm sewer system (MS4) in order to comply with requirements of the Texas Pollutant Discharge Elimination System permit process. The objectives of these Regulations are to provide land use controls necessary to comply with Fort Bend County's TPDES storm water permit, to protect human life and health and to avoid increasing pollutant levels associated with storm water.

1.4 EFFECTIVE DATE

These rules become effective on the 12 day of August, 2011.

1.5 SUPERSESSION

In the event of conflict, the Regulations for Stormwater Quality Management supersede any conflicting regulations of the County.

1.6 SEVERABILITY

If any part or provision of these regulations, or application thereof, to any person or circumstance is adjudged invalid by any court of competent jurisdiction, such judgment shall be confined in its operation to the part, provision, or application directly involved in the controversy in which such judgment shall have been rendered and shall not affect or impair the validity of the remainder of these regulations or the application thereof to other persons or circumstances. Commissioners Court hereby declares that it would have enacted the remainder of these regulations without any such part, provision or application.

1.7 DEFINITIONS- For the purposes of these Regulations, the following shall mean:

A. Authorized Enforcement Agency: Employees or designees of the director of the department designated to enforce these regulations.
B. Best Management Practices (BMPs): Schedules of activities, prohibitions of practices, general good house keeping practices, pollution prevention and educational practices, maintenance procedures, and other management practices to prevent or reduce the discharge of pollutants directly or indirectly to stormwater, receiving waters, or stormwater conveyance systems. BMPs also include treatment practices, operating procedures, and practices to control site runoff, spillage or leaks, sludge or water disposal, or drainage from raw materials storage.
C. Clean Water Act: The federal Water Pollution Control Act (33 U.S.C. § 1251 et seq.), and any subsequent amendments thereto.
D. Construction Activity: Activities subject to TPDES Construction Permits for construction projects resulting in land disturbance of 1 acre or more. Such activities include but are not limited to clearing and grubbing, grading, excavating, and demolition.
E. County Engineer: the appointed Fort Bend County Engineer or his designee.
F. Hazardous Materials: Any material, including any substance, waste, or combination thereof, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may cause, or significantly contribute to, a substantial present or potential hazard to human health, safety, property, or the environment when improperly treated, stored, transported, disposed of, or otherwise managed.
G. Illegal Discharge: Any direct or indirect non-storm water discharge to the storm drain system, except as exempted in these regulations.
H. Illicit Connections: An illicit connection is defined as either of the following: Any drain or conveyance, whether on the surface or subsurface, which allows an illegal discharge to enter the storm drain system including but not limited to any conveyances which allow any non-storm water discharge including sewage, process wastewater, and wash water to enter the storm drain system and any connections to the storm drain system from indoor drains and sinks, regardless of whether said drain or connection had been previously allowed, permitted, or approved by an authorized enforcement agency or, Any drain or conveyance connected from a commercial or industrial land use to the storm drain system which has not been documented in plans, maps, or equivalent records and approved by an authorized enforcement agency.
I. Industrial Activity: Activities subject to TPDES/ NPDES Industrial Permits as defined in 40 CFR, Section 122.26 (b)(14).
J. Non-Storm Water Discharge: Any discharge to the storm drain system that is not composed entirely of storm water except for those discharges authorized by a TPDES permit or a NPDES permit.
K. Person: Any individual, association, organization, partnership, firm, corporation or other entity recognized by law and acting as either the owner or as the owner's agent.
L. Pollutant: Anything which causes or contributes to pollution. Pollutants may include, but are not limited to: paints, varnishes, and solvents; oil and other automotive fluids; non-hazardous liquid and solid wastes and yard wastes; refuse,

rubbish, garbage, litter, or other discarded or abandoned objects and accumulations, so that same may cause or contribute to pollution; floatables; pesticides, herbicides, and fertilizers; hazardous substances and wastes; sewage, fecal coliform and pathogens; dissolved and particulate metals; animal wastes; wastes and residues that result from constructing a building or structure; and noxious or offensive matter of any kind.

M. Premises: Any building, lot, parcel of land, or portion of land whether improved or unimproved including adjacent sidewalks and parking strips.

N. Redevelopment: Alterations of a property that changed the "footprint" of a site or building in such a way that there is a disturbance of equal to or greater than (1) acre of land. The term does not include such activities as exterior remodeling.

O. Special Districts.: Are independent governmental agencies that exist separately from, and with substantial administrative and fiscal independence from, general purpose local government such as County, Municipal, and Township.

P. Storm Drainage System.: Publicly-owned facilities by which storm water is collected and/or conveyed, including but not limited to any roads with drainage systems, municipal streets, gutters, curbs, inlets, piped storm drains, pumping facilities, retention and detention basins, natural and human-made or altered drainage channels, reservoirs, and other drainage structures.

Q. Storm Water: Any surface flow, runoff, and drainage consisting entirely of water from any form of natural precipitation, and resulting from such precipitation.

R. Stormwater Pollution Prevention Plan: .A document which describes the Best Management Practices and activities to be implemented by a person or business to identify sources of pollution or contamination at a site and the actions to eliminate or reduce pollutant discharges to Stormwater, Stormwater Conveyance Systems, and/or Receiving Waters to the Maximum Extent Practicable.

S. Texas Pollutant Discharge Elimination System (TPDES): A permit issued by TCEQ in accordance with 33 USC § 1342(b) that authorizes the discharge of pollutants to waters of the State, whether the permit is applicable on an individual, group, or general area-wide basis.

T. Wastewater: Any water or other liquid, other than uncontaminated storm water, discharged from a facility.

PART II
ILLICIT DISCHARGES

2.1 General prohibitions. Except as set forth herein any discharge to the municipal storm drain system or watercourses that is not composed entirely of stormwater is prohibited. It is an affirmative defense to any enforcement action for a violation of subsection that the discharge is exempt from the Regulations.

2.2 The prohibition shall not apply to any non-storm water discharge permitted under a TPDES permit, waiver, or waste discharge order issued to the discharger and administered under the authority of the TPDES Permitting Authority, provided that the discharger is in full compliance with all requirements of the permit,

waiver, or order and other applicable laws and regulations, and provided that written approval has been granted for any discharge to the storm drain system.

2.3 The following discharges are exempt: dye testing, water line flushing or other potable water sources, landscape irrigation or lawn watering, diverted stream flows, rising ground water, ground water infiltration to storm drains, uncontaminated pumped ground water, foundation or footing drains (not including active groundwater dewatering systems), crawl space pumps, air conditioning condensation, springs, non-commercial washing of vehicles, natural riparian habitat or wetland flows, dechlorinated swimming pool draining, fire fighting/training activities, tidal intrusion, and any other water source not containing pollutants.

2.4 The County Engineer may exempt discharges not stated in 2.3 if the County Engineer certifies in writing that the discharge is necessary to protect public health and safety.

2.5 Illicit connections. No person may maintain, use or establish any direct or indirect connection to the separate storm sewer system that results in any discharge in violation of these Regulations. This prohibition applies to connections made in the past, regardless of whether made under a permit, or other authorization, or whether permissible under laws or practices applicable or prevailing at the time the connection was made. **There is no grandfathering for connections of these type.**

2.6 Suspension due to the Detection of Illicit Discharge- Any person discharging to the MS4 in violation of these Regulations may have their MS4 access terminated if such termination would abate or reduce an illicit discharge. The County Engineer will notify a violator prior to termination of its MS4 access.

2.7 Suspension due to Illicit Discharges in Emergency Situations

A. The County Engineer may, without prior notice, suspend MS4 discharge access to a person when such suspension is necessary to stop an actual or threatened discharge that presents or may present imminent and substantial danger to the environment, or to the health or welfare of persons, or to the MS4 or Waters of the State.

B. If the violator fails to comply with a suspension order issued in an emergency, the County Engineer may take such steps as deemed necessary to prevent or minimize damage to the MS4 or Waters of the State, or to minimize danger to the public.

PART III
CONSTRUCTION STORM WATER MANAGEMENT

3.1 A Storm Water Permit, issued by the County Engineer prior to commencement of construction activities, shall be obtained for any construction site for which construction activities at the site will disturb in total one (1) acre or more of land surface area or is part of a common plan of development that disturbs 1 or more acres of land.

3.2 A Storm Water Permit shall be posted at the construction site, and no construction activity can occur prior to the date of commencement, or after the date of termination, stated on the Storm Water Permit.

3.3 If for any reason the Storm Water Permit is suspended, revoked, terminated, or voided, construction activity at the site shall immediately cease.

3.4 The following activities are exempt from the storm water permit requirements:

A. Developments that do not disturb more than one (1) acre of land, provided they are not part of a larger common development plan; or
B. Any logging and agricultural activity; or
C. Additions or modifications to existing single family structures

3.5 Application Requirements

A. A Storm Water Permit is requested by submitting a permit application on a form provided for that purpose by the Fort Bend County Engineering Department.

B. A Storm Water Permit applicant is the person or persons making such application and is an operator at the property upon which construction is proposed or is taking place. In the event the operator of a construction site is more than one legal entity, the applicant is responsible for complying with these Regulations.

C. Unless otherwise excepted by these Regulations a permit application must be accompanied by the following in order that the permit application be considered:

1. Name and address of the construction site owner and/or operator, either property owner or lessee, and name and address of general construction contractor, if different from property owner or lessee;
2. Name, address, and business telephone number of the construction site owner and/or operator's on-site representative, to include a 24 hours on call contact;
3. Address or other description of location of the construction site;
4. Earliest date of commencement of construction activity;
5. Proposed dates of termination of construction activity, completion of final stabilization activities, and closure of the site;
6. Storm Water Quality Plan which details how the discharge of pollutants will be controlled or managed that complies with Part IV of these Regulations;
7. A maintenance agreement in accordance with Part IV of these Regulations;
8. Identified practices to be employed for site stabilization during the course of the construction;
9. Description of means by which the site is to be stabilized during suspension of construction activity for periods of fourteen (14) or more days and permanently

stabilized by the time of completion of construction activities;

10. Certification by the applicant for the Storm Water Permit that the information provided on the Storm Water Permit application is true and accurate;
11. Any other information the County Engineer may deem necessary, whether or not required of any other owner and/or operator making application for a Storm Water Permit; and
12. A non-refundable permit review fee.

3.6 Amendment to Storm Water Permit

A. Application for amendment to a Storm Water Permit can be made at any time ten (10) or more working days prior to the time identified in the Storm Water Permit for completion of construction activities, provided the person(s) making application is not in violation of these Regulations.

B. If the application for amendment to a Storm Water Permit requires a change in the Storm Water Quality Plan in order for the Storm Water Quality Plan to remain true and accurate should construction be undertaken in accordance with the amendment, an appropriately modified Storm Water Quality Plan shall also be provided at the time of application for amendment to the County Engineer.

3.7 Late Filing of Amendment to a Storm Water Permit

A. If application for amendment to a Storm Water Permit is made less than two (2) working days prior to the time for which the activities or conditions described by the amendment are to occur, exist or come about, and such activities or conditions are not authorized by the Storm Water Permit prior to application for amendment, the application shall be deemed to be a Late Filing of Storm Water Permit Amendment.

B. A Late Filing of Storm Water Permit Amendment shall meet all the same conditions and requirements as application submitted more than two (2) working days prior to the time for which the activities or conditions described by the amendment are to occur, exist or come about, and include other such information the County Engineer may require.

C. Construction to be undertaken in accord with a Late Filing of Storm Water Permit Amendment shall not be undertaken until such amendment is approved by the County Engineer.

D. Approval by the County Engineer of a Late Filing of Storm Water Permit Amendment or payment of any fees for such filing shall not relieve the applicant from any or all administrative enforcement remedies, judicial enforcement remedies, enforcement actions, or other remedies allowed by these Regulations.

3.8 A Storm Water Permit application must be completed within 1 year of the initial submission or it considered to withdrawn by the applicant and a new application will need to be submitted.

3.9 Storm Water Permit Waiver: The County Engineer in his sole discretion may grant a Storm Water Permit Waiver if:

A. The construction activity is undertaken at a single or multiple family residential property site for the sole purpose of maintenance of the residential property site; or

B. The County Engineer determines the construction is necessary on an emergency basis because of imminent harm or endangerment to the public or environment, in which case the construction may by continued only so long as such imminent harm or endangerment or threat of harm or endangerment exists.

3.10 Permit Termination and Expiration A Storm Water Permit is terminated automatically when all of the requirements listed under proper closure section of these Regulations are met. Unless terminated sooner, permit coverage will automatically terminate two (2) years after the permit issuance date. If continued permit is needed beyond the termination or expiration date, a new permit application must be submitted and approved.

3.11 Fees: the below fees will be assessed in accordance with Texas Local Government Code section 573.002 and will be used to fund plan review, inspection and program administration. Payment shall be made prior to the issuance of any Stormwater Permit.

Storm Water Permit Fees

Item	Minimum Amount, $
On-time application for Storm Water Permit	$300
Late filing of application for Storm Water Permit	$400
On-time amendment of Storm Water Permit	$50
Late amendment of Storm Water Permit	$100
Lifting of Stop Work Order	$25

PART IV
STORM WATER QUALITY PLAN

4.1 A Storm Water Quality Plan shall be prepared in accordance with the guidance document and good pollution control practices.

A. A Storm Water Permit Applicant will be provided guidance documents which identify acceptable storm water treatment practices, including the specific design criteria and operation and maintenance requirements for each storm water practice.

B. The guidance documents may be updated and expanded from time to time, at the discretion of the Fort Bend County Engineer, based on improvements in engineering, science, monitoring and local maintenance experience.

C. It is the responsibility of an applicant to ensure that the project is in compliance with the most recent guidance document generated by the County Engineer.

4.2 The main objective of the Storm Water Quality Plan is to identify potential sources of pollution, including sediment, which may reasonably be expected to affect the quality of storm water discharges associated with construction and development. The plan must describe the implementation of best management practices (BMPs), which will be used to reduce the pollutants in storm water discharges associated with construction and post-development runoff.

4.3 Storm Water Quality Plans shall be retained on site during the course of construction and shall be available for inspection by the County upon request.

4.4 Contents of Storm Water Quality Plan

A. Site Description

B. A description of the construction activity;

C. A copy of any development plans;

D. A proposed construction schedule;

E. Total area of the site, and total disturbed area, including off-site staging/storage areas;

F. A description of the existing vegetation at the site, including coverage;

G. The location of other sources of pollution, such as vehicle fueling, storage of chemicals, concrete washout areas, etc.; and

H. The name of the receiving water(s) and description of any outfalls (size, type, and location), if the discharge is to a MS4, the name of the system, the location of the storm sewer discharge, and the ultimate receiving water(s).

I. Best Management Practices (BMPs)- The plan should indicate locations for and descriptions of control measures that will be used. The plan should clearly describe the implementation of BMPs relevant to each phase of site development such as:

1. before clearing and grading activities begin;
2. during all phases of construction; and
3. post-construction/post development.

4. Control Measures
    a. Construction Phase- Construction phase control measures to be described in the Storm Water Quality Plan: Temporary Sediment Control Measures may include, but is not limited to: silt fence, sand bag berms, hay bales, check dams and interceptor swales/dikes,
    b. Temporary Stabilization Measures may include, but is not limited to: temporary seeding, erosion control blankets/matting, mulch/compost and temporary sodding
    c. Final Stabilization Measures may include, but is not limited to: permanent seeding, permanent sodding and impervious surfaces.
5. Post-Construction Phase- Post-construction phase control measures shall be incorporated into the Storm Water Quality Plan to preserve pre-development hydrologic regimes. These control measures do not apply to residential home construction.
    a. On-Site: detention basins/ponds, constructed wetlands, bio-retention and wet basins
    b. Off-Site: in-line detention and outfall pump systems
    c. Low Impact Development Standards- For construction sites located within watersheds that are considered to be impaired by the Texas Commission for Environmental Quality, or in buffer zones designated by the County, the owner and/or operator of the site, may be required, at the discretion of the County Engineer, to utilize Low Impact Development Standards that include, but are not limited to:
        - Minimization of the width or size of: roads/streets, sidewalks, cul-de-sacs and/or parking lots
        - Open-space design
        - Urban forestry
        - Roof drainage control
6. The County Engineer may determine that a new or significant redevelopment projects requires on-site control post-construction control measures such as detention ponds, constructed wetlands, bio-retention systems, or the like.
7. An affidavit (supplied by the County), signed by the developer, or the person or persons who will be responsible for the maintenance of the control measure(s), must be submitted to the County Engineer no later than two (2) calendar days after the date of termination of construction, and will serve as a legal commitment to the County.
8. Once an affidavit has been submitted to the County Engineer, the County Engineer may require for entities other than municipal utility districts or other special districts that a Performance Bond be issued to ensure the maintenance is performed according to the said legal commitment.
9. Good Housekeeping- the Storm Water Quality Plan should include inspection and maintenance procedures during the entire construction

phase to ensure that BMPs are in good and effective operation condition.

10. Maintenance Agreement-

a. The Storm Water Quality Plan shall identify the person(s) or organization(s) responsible for maintenance which may include: the owner of the property, property owners association or other nonprofit organization provided that provisions for financing necessary maintenance are included in deed restrictions or other contractual agreements.

b. Maintenance agreements shall specify responsibilities for financing maintenance and emergency repairs, including but not limited to the procedures specified in the Fort Bend County Engineering Department Guidance Document

c. The Fort Bend County Engineer will make the final decision of what maintenance option is appropriate in a given situation. Natural features, proximity of site to lakes, streams and protected wetlands, extent of impervious surfaces, size of the site and potential need for ongoing maintenance activities will be considered when making this decision.

d. If the Fort Bend County Engineer determines that a project required to have a Storm Water Quality Plan has a high potential for soil erosion the applicant may be required to post a cash escrow, letter of credit, or other acceptable form of performance security in an amount determined by the Fort Bend County Engineer.

e. Letters of credit, if used as a performance guarantee, shall extend for a minimum of one year with automatic renewal. Letters of credit will be returned to the applicant when the site is certified by the licensed professional (or successor) who designed the site plan and the site is completely stabilized to meet requirements set forth by the Fort Bend County Engineer.

4.5 Revisions to Storm Water Quality Plan

A. The Storm Water Quality Plan shall accurately reflect site conditions and the construction activities proposed to be undertaken. Revisions necessary to maintain an accurate and up-to-date Storm Water Quality Plan shall be made in a timely fashion but in no case later than two (2) working days after the occurrence of conditions or activities requiring such revisions.

B. If the conditions or activities described by a Storm Water Quality Plan revision could be reasonably expected to result in an increase in the actual or potential discharge of pollutants from the site, such revision must be approved by the County Engineer prior to implementation of the proposed revision at least two (2) working days prior to the implementation of activities described by the revision.

C. The County Engineer shall have up to ten (10) working days to approve or reject a revision to a Storm Water Quality Plan after submittal of a proposed revision.

4.6 Pollution Prevention Requirements

A. Any and all owners and/or operators of a construction site and any and all other persons undertaking construction activities as a contractor or subcontractor at a construction site shall use Best Management Practices pursuant to the Storm water Permit to control, reduce, and prevent, to the maximum extent practicable, the discharge of pollutants to the MS4 and/or waters of the State.

B. The discharge of pollutants to the MS4 and/or waters of the State from activities conducted by said operator, contractor, or subcontractor include but is not limited to: sediment, silt, earth, soil, dirt, sand and gravel; lime, liquids, solids, and semi-solids used for soil treatment, preparation, or amendment; concrete, slurries, grout, tar, and asphalt; construction vehicle cleaning and wash waters; construction vehicle maintenance fluids such as hydraulic fluids, lubricants, fuels, brake fluids, and coolants; hazardous or extremely hazardous materials; materials resulting from repair, renovation, or demolition such as concrete, reinforcing bar, steel, wire, tar paper, roofing materials, sheet rock, plaster, wood, cellar dirt and carpeting; residual and surplus construction materials; paint, paint thinner, paint equipment cleaner and wastewater from the cleaning of painting equipment and supplies; waste construction material packaging and containers; and construction trash, debris, and waste.

4.7 Inactive Construction Sites

A. A construction site for which active and ongoing on-site construction activities have halted for a period of ninety (90) continuous calendar days and for which proper closure actions as required by these Regulations have not been conducted is a violation of these Regulations unless allowed by the County Engineer.

B. The County Engineer may allow a construction site to halt constructions activities if the inaction is only a temporary suspension of activities; and site conditions prevent the discharge of pollutants to the County's MS4 or waters of the State to the maximum extent possible during the period of temporary inaction.

4.8 Closure and Final Stabilization of Construction Site

A. Closure Activities- Construction activities at a site, for the purposes of these Regulations, shall not be complete until proper closure of the site has been accomplished. Until such time proper closure has been achieved, the operator of the site is subject to all applicable requirements for conduct and completion of construction activities at the construction site. Any operator of a construction site shall complete all construction activities at a

construction site in compliance with the requirements of these Regulations for proper closure.

B. Proper Closure includes, but is not limited to: final stabilization of the site; removal of all construction surplus and residual materials, supplies, packaging, drums, cans, and containers; removal of all surplus and residual soaps, cleaners, pastes, mastics, solvents, materials for soil amendment or preparation and similar construction materials; removal of all excess, surplus, and unused construction vehicle maintenance fluids, including lubricants, fuels, brake fluids, and coolants; removal of all wastes, trash, and debris; removal of any waste bins, enclosures, drums, or similar containers which are not intended to serve as permanent waste storage containers at the site and removal of all temporary storm water pollution control devices, structures, and materials.

C. A Construction Site is not closed until the following actions have been taken:
   1. Repair or replacement of damaged storm water conveyances and appurtenances; AND
   2. Repair or replacement of damaged drainage works and facilities; AND
   3. Restoration of proper function and capacity of storm water conveyances.; AND
   4. Written notice of termination is submitted to the Fort Bend County Engineer

PART V
REPORTS AND NOTIFICATIONS

5.1 NOTIFICATION OF SPILLS- Notwithstanding other requirements of law, as soon as any person responsible for a facility or operation, or responsible for emergency response for a facility or operation has information of any known or suspected release of materials which are resulting or may result in illegal discharges or pollutants discharging into storm water, the storm drain system, or waters of the State said person shall take all necessary steps to ensure the discovery, containment, and cleanup of such release. In the event of such a release of hazardous materials, said person shall immediately notify emergency response agencies of the occurrence via emergency dispatch services. In the event of a release of non-hazardous materials, said person shall notify the County Engineer in person or by phone or facsimile no later than the next working day. Notifications in person or by phone shall be confirmed by written notice addressed and mailed to the County Engineer within three (3) working days of the phone notice. If the discharge of prohibited materials emanates from a commercial or industrial establishment, the owner or operator of such establishment shall also retain an on-site written record of the discharge and the action taken to prevent its recurrence. Such records shall be retained for at least five (5) years.

5.2 CITIZEN REPORTS OF VIOLATIONS

A. Any person may report to the County Engineer or an office designated by the County Engineer, any spill, release, illicit

connection or other instance of anyone (as may be identified by name, title, employing company, legal identity, commonplace name, or other description) discharging into the MS4 or waters of the State, and any other violation of this Regulations of which the person becomes aware.

B. Reports may be taken by phone but the caller will be required to make a sworn written report, subject to penalty of perjury, before the County Engineer will commence an investigation.

C. Informers shall have no expectation that their identity will be confidential.

D. Records shall be kept by the Fort Bend County Engineer for a period of at least eight (8) years by the County, and a copy of the County's record of the report will be furnished to the reporting person upon request at no charge. Also upon request, the County Engineer will inform the person making such report of any action undertaken by the County in response to such report.

PART VI
ENFORCEMENT ACTIONS BY THE COUNTY ENGINEER

6.1 Whenever necessary to make an inspection to enforce any of the provisions herein or whenever the County Engineer has reasonable cause to believe there exists any condition constituting a violation of any of the provisions of these Regulations or other regulation or permit issued hereunder, the County Engineer may enter any property, building or facility at any reasonable time to inspect the same or to perform any duty related to enforcement of the provisions of the Regulations or any regulations or permits issued hereunder; provided, however, that if such property, building or facility is occupied, the County Engineer shall first present proper credentials and request permission to enter, and if such property, building or facility is unoccupied, the County Engineer shall make a reasonable effort to locate the owner or other person having charge or control of the property, building or facility and shall request permission to enter. Any request for permission to enter made hereunder shall state that the owner or person in control has the right to refuse entry, and that in such event that entry is refused; the County Engineer may seek issuance of a search warrant from any court of competent jurisdiction.

6.2 Warning Notices- When the County Engineer finds that any person has violated, or continues to violate, any provision of this Regulations, or any other order issued hereunder, the County Engineer may serve upon that person a written Warning Notice specifying the particular violation determined to have occurred and requesting the violator to immediately investigate the violation and initiate preventative or corrective actions to stop the conditions causing, contributing to or resulting in the violation. Nothing in this subsection shall limit the authority of the County Engineer to take any action, including emergency action or any other enforcement action, prior to issuing a Warning Notice.

6.3 When the Fort Bend County Engineer determines there is a violation of these Regulations he shall issue a written notice of violation to the owner of the property. The notice of violation shall contain:

A. the name and address of the owner or applicant;

B. the address when available or a description of the building, structure or land upon which the violation is occurring;
C. a statement specifying the nature of the violation;
D. a description of the remedial measures necessary to bring the development activity into compliance with these Regulations and a time schedule for the completion of such remedial action;
E. a statement of the penalty or penalties that shall or may be assessed against the person to whom the notice of violation is directed; and
F. a statement that the determination of violation may be appealed to the County Judge by filing a written notice of appeal within fifteen (15) days of service of notice of violation.

6.4 Stop Work Orders

A. Persons receiving a notice of violation will be required to halt all construction activities. This "stop work order" will be in effect until the (jurisdictional storm water authority) confirms that the development activity is in compliance and the violation has been satisfactorily addressed. Failure to address a notice of violation in a timely manner can result in civil, criminal, or monetary penalties in accordance with the enforcement measures authorized in these regulations.

B. Persons receiving a notice of violation will be required to halt all construction activities. This "stop work order" will be in effect until the Fort Bend County Engineer confirms that the development activity is in compliance and the violation has been satisfactorily addressed. Failure to address a notice of violation in a timely manner can result in civil, criminal, or monetary penalties in accordance with the enforcement measures authorized in these regulations.

6.5 Remedies for violations

A. Suit may be filed in a district court to restrain a violation or threatened violation of these regulations in accordance with Texas Local Government Code §573.003

1. Civil Penalties: A person who violates a rule or order adopted by the county, district, or authority under this chapter is liable to the county, district, or authority for a civil penalty of not more than $1,000 for each violation. Each day a violation continues is considered a separate violation for purposes of assessing the civil penalty.
2. Injunctive Relief- If a person has violated or continues to violate the provisions of these Regulations, the Fort Bend County Engineer may petition for a preliminary or permanent injunction restraining the person from activities which would create further violations or compelling the person to perform abatement or remediation of the violation.

B. In addition to the enforcement processes and penalties provided, any condition caused or permitted to exist in violation of any of the provisions of these Regulations is a threat to public health, safety, and welfare, and is declared and deemed a nuisance, and may be summarily abated or restored at the violator's expense, and/or a civil action to abate, enjoin, or otherwise compel the cessation of such nuisances may be taken. Violators may also be subject to criminal penalties as allowed by law.

C. The remedies listed in these Regulations are not exclusive of any other remedies available under any applicable federal, state or local law and it is within the discretion of the Fort Bend County Engineer to seek cumulative remedies.

PART VII
APPEAL AND HEARING

7.1 Any person aggrieved by the action or inaction of the Fort Bend County Engineer regarding these Regulations may petition the County Judge to reconsider the County Engineer's decision within fourteen (14) calendar days of the affected person's notice of decision.

7.2 Failure to submit a written Petition for Reconsideration within fourteen (14) calendar days of the affected person's notice of issuance of such an order shall be deemed to be a waiver of any further right to administrative reconsideration or review of the order.

7.3 In the Petition for Reconsideration, the petitioning party must indicate the provisions of the Regulations objected to, the reasons for the objection(s), any facts that are contested, the evidence that supports the petitioner's view of the facts, and whether the petitioning party requests a hearing on its petition.

7.4 Any enforcement action issued by the Fort Bend County Engineer shall be stayed pending the County Judge's consideration of the Petition for Reconsideration, and any hearing thereon, unless the County Judge expressly makes a written determination to the contrary.

7.5 Within fourteen (14) calendar days of the submittal of a Petition for Reconsideration, the County Judge shall either: (1) grant the petition and withdraw or modify the order accordingly; (2) deny the petition, without hearing if no material issue of fact is raised; or (3) if a hearing has been requested and a material issue of fact has been raised, schedule a Show Cause Hearing on the petition.

7.6 Written notice of any hearing set by the County Judge as a result of a Petition for Reconsideration shall be served on the petitioning party personally or by registered or certified mail (return receipt requested) at least ten (10) calendar days prior to the hearing. Such notice may be served on any authorized representative of the petitioning party.

7.7 All testimony taken shall be under oath and recorded. Any party is entitled to legal representation at their own expense and may present his or her case by oral

and/or documentary evidence. Cross-examination is permitted. A transcript will be made available to any party to the hearing upon payment of the usual charges thereof.

7.8 After the County Judge has reviewed the evidence, the County Judge shall either: (1) grant the petition; (2) deny the petition; or (3) grant the petition in part and deny it in part. The County Judge may modify the order giving rise to the Petition for Reconsideration as may be appropriate based upon the evidence and arguments presented at the hearing and the County Judge's action on the petition.

PART VIII
ADOPTION OF REGULATIONS

These Regulations shall be in full force and effect 3 days after its final passage and adoption. All prior Regulations, Court Orders and parts of Court Orders in conflict with these Regulations are hereby repealed

PASSED AND APPROVED this the 9 day of August, 2011.

FORT BEND COUNTY

Honorable Robert E. Hebert
County Judge

ATTEST:

Honorable Dianne Wilson
County Clerk

Exhibit A: Construction Site and Post-Construction Runoff Controls Storm Water Permit and Storm Water Quality Plan Guidelines current as of the day these Regulations were adopted.*

** The guidance documents may be updated and expanded from time to time, at the discretion of the Fort Bend County Engineer, based on improvements in engineering, science, monitoring and local maintenance experience. It is the responsibility of an applicant to ensure that the project complies with the most recent guidance document generated by the County Engineer.*

/MTR Drainage & Eng Regs/ Stormwater 08052011 FINAL

EXHIBIT A

Construction Site and Post-Construction Runoff Controls

Storm Water Permit and Storm Water Quality Plan Guidelines

Fort Bend County

Current as of August 2011

These guidelines may be updated and expanded from time to time, at the discretion of the Fort Bend County Engineer, based on improvements in engineering, science, monitoring and local maintenance experience. It is the responsibility of an applicant to ensure that the project is in compliance with the most recent guidance document generated by the County Engineer.

Table of Contents

1.0 Introduction

The Texas Commission on Environmental Quality (TCEQ) and the Environmental Protection Agency (EPA) regulate pollution sources to local water ways. One such regulation is focused on the control of pollutants that enter our local waterways as storm water runoff. The regulators have taken a broad approach to controlling such pollutants. The TCEQ was granted authority by the EPA to issue and enforce permits to control storm water pollutants that enter "Surface Waters in the State".

The TCEQ regulates stormwater discharges from certain industrial facilities, construction activities, and municipal sources into surface waters in the state through the issuance of three Texas Pollution Discharge Elimination System (TPDES) storm water permits.

The Construction General Permit (CGP), permit number TXR150000, regulates large and small construction projects. Large construction projects include projects that result in the land disturbance of greater than 5 acres or a project that is a part of a common plan of development that will disturb greater than 5 acres. Small sites disturb less than 5 acres but more than 1 acre of land or a smaller site that is a part of a common plan of development that disturbs greater than 1 acre but less than 5 acres. The CGP requires that regulated construction site operators develop and implement a Storm Water Pollution Prevention Plan (SWPPP or SWP3) to reduce the discharge of pollutants from construction sites and if large construction project or part of a larger common plan of development that is considered a large construction project, to submit a notice of intent and the fee to the TCEQ.

The Multi-sector General Permit (MSGP), permit number TXR05000, regulates storm water runoff associated with industrial activity to surface water in the state (including direct discharges to surface water in the state and discharges to municipal separate storm water sewer systems or MS4s). The permit contains effluent limitations and requirements to 30 sectors of industrial activities that are eligible for coverage under this general permit.

The Municipal Separate Stormwater Sewer Systems (MS4s) General Permit, permit number TXR040000, provides authorization from storm water and certain non stormwater discharges from small MS4s to surface waters in the state. This general permit contains requirements applicable to all small MS4s that are eligible for coverage under this general permits (i.e. those MS4s that are fully or partially located within an urbanized area, as determined by the 2000 Decennial Census by the U.S. Bureau of Census).

The County was issued authorization under the Phase II MS4 general permit under, permit number TXR040045. The MS4 permit requires that the County regulate construction and post construction site runoff into the MS4. All parts of the County's drainage system is considered to be the MS4 including but not limited to roadways, curbs and gutters, inlets, roadside ditches, underground storm sewer, culverts, outfall pipes and other County owned storm water conveyances. The following is an excerpt from the MS4 permit that outlines the County's required activities in order to comply with the permit.

4. *Construction Site Storm Water Runoff Control*

The MS4 operator, to the extent allowable under State and local law, must develop, implement, and enforce a program to reduce pollutants in any storm water runoff to the small MS4 from construction activities that result in a land disturbance of greater than or equal to one acre or if that construction activity is part of a larger common plan of development or sale that would disturb one acre or more of land. The MS4 operator is not required to develop, implement, and/or enforce a program to reduce pollutant discharges from sites where the construction site operator has obtained a waiver from permit requirements under NPDES or TPDES construction permitting requirements based on a low potential for erosion.

(a) The program must include the development and implementation of, at a minimum, an ordinance or other regulatory mechanism to require erosion and sediment controls, as well as sanctions to ensure compliance, to the extent allowable under state and local law.

(b) Requirements for construction site contractors to, at a minimum:

(1) implement appropriate erosion and sediment control BMPs; and

(2) control waste such as discarded building materials, concrete truck washout water, chemicals, litter, and sanitary waste at the construction site that may cause adverse impacts to water quality.

(c) The MS4 operator must develop procedures for:

(1) site plan review which incorporate consideration of potential water quality impacts;

(2) receipt and consideration of information submitted by the public; and

(3) site inspection and enforcement of control measures to the extent allowable under state and local law.

5. *Post-Construction Storm Water Management in New Development and Redevelopment*

To the extent allowable under state and local law, the MS4 operator must develop, implement, and enforce a program to address storm water runoff from new development and redevelopment projects that disturb greater than or equal to one acre of land, including projects less than one acre that are part of a larger common plan of development or sale that will result in disturbance of one or more acres, that discharge into the small MS4. The program must ensure that controls are in place that would prevent or minimize water quality impacts. The permittee shall:

(a) Develop and implement strategies which include a combination of structural and/or non-structural BMPs appropriate for the community;

(b) Use an ordinance or other regulatory mechanism to address post-construction runoff from new development and redevelopment projects to the extent allowable under state and local law; and

(c) Ensure adequate long-term operation and maintenance of BMPs.

In order to comply with these requirements, the County has adopted REGULATIONS OF FORT BEND COUNTY, TEXAS FOR STORM WATER QUALITY MANAGEMENT to regulate runoff from construction activities. The Regulations require that owners of construction sites that disturb more than 1 acre of land or owners of smaller sites that are a part of a common plan of development that will disturb more than one acre of land must comply with the requirements of the TXR150000 Construction General Permit. The County storm water permit requires the development of a storm water quality plan for construction sites. The plan must include control measures in accordance to these guidelines in order to be approved. The following sections will describe these requirements, the application process and other technical information necessary for permit compliance.

1.1 County Storm Water Permit Compliance Process Overview

A. Develop a Storm Water Quality Plan (SWQP) or Storm Water Pollution Prevention Plan (SWP3)

The owner of a construction project shall consider the County and TCEQ storm water permits during the construction planning process. The TCEQ permit and County permits are independent and must be applied for separately from each agency. The permits regulate essentially the same aspects of construction and construction site runoff and therefore the SWP3 required by the TCEQ permit may be submitted in place of the Storm Water Quality Plan in order to meet the County's storm water permit requirements. Information regarding TCEQ's permit contact the local Region 10 TCEQ office that is located at 3870 Eastex Fwy. in Beaumont. TX 77703 and can be contacted at 409-898-3838.

B. Complete the County permit application forms

The next required activity is to complete the County permit application form and SWP3 checklist, included in section 6.0 of this document. The County also requires that a copy of the TCEQ construction site notice be attached to the County SWP3 checklist. For large construction sites, a copy of the TCEQ permit application or a copy of the Notice of Intent (NOI) is also required as an attachment to the SWP3 checklist. The permit application must be submitted to the building permits office in order to apply for a County building permit or storm water permit. Once submitted, the County will review the permit application and SWP3 including permanent control measures to ensure the required elements are addressed.

C. Initial Site Preparations

Once the County has issued a storm water permit and any other necessary permits, construction activities may begin once the SWP3 or Storm Water Quality Plan (SWQP) is implemented, before any grading or land clearing begins, the temporary erosion controls and off-site tracking controls must be installed and functional. Any construction activities beginning before controls are in place will be in violation of the County's REGULATIONS FOR STORM WATER QUALITY MANAGEMENT.

During grading and or site preparations, careful attention to the adequacy of the selected and installed control measures must be considered. The temporary erosion controls should control offsite transport of sediment from all disturbed areas within the construction site boundary.

D. Inspection and maintenance of controls during construction.

During construction, all of the required storm water control measures must be maintained in proper functioning order. The site must be inspected by the site operator or owner according to the TCEQ permit. The inspection must be documented and maintained with the SWP3. The County will inspect construction sites during construction to ensure the implementation of the SWP3 and compliance with the County permit. Construction site operators will be expected to understand the SWP3 and cooperate with County inspectors during inspections.

E. Final stabilization of the site and termination of permit coverage.

In order for the construction site to be considered stabilized and the permit coverage to be terminated the following conditions must be met.

- Construction at the site is complete
- All construction materials and debris shall be properly removed from the site
- All earthen surfaces must be permanently stabilized with vegetation to within at least 70% of the naturally occurring vegetative cover in the area
- Permanent control measures are in place and functional including a long term operation and maintenance plan. (Permanent Controls will be reviewed by the County during the initial storm water quality plan review)
- After the site is properly stabilized, then the temporary erosion controls must be removed from the site (Except those temporary controls that will become permanent controls i.e. Detention Pond)

It is considered a violation of the Stormwater Permit to remove temporary control measures before the site is properly stabilized. Once the temporary erosion controls are removed and all four of the criteria above are met, the permit is automatically terminated. If new construction is required at the site after the permit was terminated, a new permit will be required before new work begins. No permit is required if less than one acre once the larger common plan is no longer in effect.

1.2 Storm Water Quality Plan Requirements

The County's storm water permit application requires the submission of a Storm Water Quality Plan (SWQP) in order for the permit application to be reviewed by the County.. The County will accept SWP3s developed in accordance to the TCEQ construction general permit in place of a separate SWQP. The County does not intend to require any elements that are not already required by the TCEQ permit. The County's criteria for review of Storm Water Quality Plans are included in Section 6.0 of the document. It is recommended that construction site operators review the TCEQ permits and have a qualified person(s) develop the plan. The following sections are required by the County in order for the SWP3 to be considered for County permit approval.

Contents of the Storm Water Quality Plan

A. Site or Project Description

The site or projection description section of the SWQP or SWP3 must include the following elements.

1. The location of the site or project: The address, subdivision name and lot number or other detailed description that will allow County inspectors to locate and inspect the project. *Examples: Lot 2 of Subdivision A, 110 West Drive or at the intersection of West Drive and Ave H.*
2. A brief description of the nature of the construction activity: What will be constructed or accomplished as a result of the construction activity. *Examples: A house, subdivision streets and utilities, commercial strip center, clearing and grading of 2 acres of wooded land or others.*
3. A list of potential pollutants and their sources: The pollutants that will be potentially discharged into the storm sewer system and the sources of those pollutants. *Examples: Pollutant: Sediment Source: Clearing and grading activities, Pollutant: Construction Debris Source: Scrap Materials from Construction.*
4. The total number of acres of the entire property and the total number of acres where construction activities will occur: Example: *Total Acres: 27 Land Disturbance Acres: 7.4.*
5. A general location map and a detailed site map: The maps must conform to the specification required by the TCEQ in the TPDES Construction General Permit TXR150000. *Examples are included with the example SWP3 in section 7.0 of this guidance.*
6. Other sections as required by the TCEQ Construction General Permit TXR150000 Part III Section F.

B. Sediment and Erosion Controls

The sediment and erosion controls section of the SWQP must address the following requirements.

1. The plan must describe temporary and permanent erosion control and stabilization practices for the site. *Examples: temporary or permanent vegetation, mulching, geotextiles, sod stabilization, vegetative buffer strips, protection of existing trees and*

vegetation, slope texturing temporary velocity dissipation devices, flow diversion mechanisms, and other similar measures.

2. Procedures for the initialization of stabilization measures by the 14th day after construction activity temporarily or permanently ceased. *Examples: Temporary stabilization will be achieved by hand broadcasting grass seeds, Permanent Stabilization will be accomplished by installing sod strips and landscaping.*
3. A description of sediment control practices used to remove eroded soils from storm water runoff. *Examples: Sedimentation Basins, Sediment Traps, Rock Filter Dams, Silt Fences, Vegetative Buffer Strips or equivalent sediment controls.*

C. Permanent Controls (Post-Construction Runoff Controls Measures)

The permanent controls section of the SWQP must include a description of any measures that will be installed during the construction process to control pollutants in storm water discharges that may occur after construction operations are complete. *Examples: On-site detention pond, Vegetated Swales, Vegetated Buffer Areas, Drainage to Regional Detention Ponds, Drainage to Low Velocity Drainage Channels and other permanent controls.*

D. Tracking Controls

The tracking controls section of the SWQP must contain a description of control measures designed to minimize offsite tracking of sediment, mud and other construction related pollutants. The plan must also include controls to minimize the general of dust. *Examples: Stabilized Construction Site Entrances and Exits, Wheel Washing Stations, Daily Street Sweeping or watering of haul roads to prevent dust generation.*

E. Construction and Waste Materials Controls

The plan must include a description of how construction waste products, debris and other wastes and pollutants will be retained or stored on-site. *Examples: Temporary Roll-off dumpsters will used to store scrap construction materials and site debris, Contractor maintained portable restrooms will be provided for sanitary waste.*

F. Velocity Dissipation Controls

The plan must include a description of velocity dissipation devices at discharge locations and along the length of any outfall channel to provide a non-erosive flow velocity from the structure to a water course, so that the natural, physical and biological characteristics and functions are maintained and protected. *Examples: Level Spreaders, Concrete Aprons where outfalls enter drainage channels, Rock Stabilized Outlets, Engineered Dissipation Structures, Low Velocity Swales or Sheet Flow Discharges.*

G. Site Dewatering Controls

The plan must include control measures that minimize the offsite transport of sediment when it is necessary to pump or channel standing water from the site. *Examples include pumping into sediment*

traps, silt fence controlled areas or engineered products or channeling water through rock filters or sediment traps prior to water entering the County storm sewer system.

H. Maintenance and Inspection of Controls

The plan must describe inspection and maintenance procedures for the controls included in the storm water quality plan. The inspections must be summarized in an inspection report and maintained with the SWQP. Maintenance of controls measures must be conducted according to the manufacturer's specifications and/or the specifications included in Sections 3, 4 and 5 of this guidance document.

I. Any other information required to comply with the current TCEQ Construction General Permit.

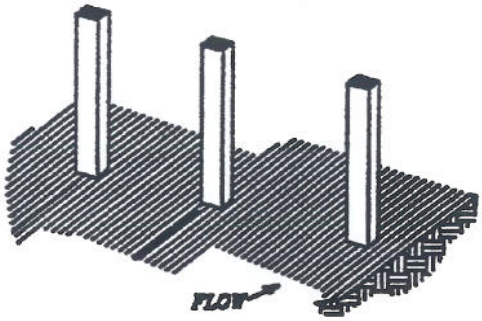
The SWQP must comply with the requirements as established by the TCEQ Construction General Permit TXR150000. It is the responsibility of the construction site operator to ensure that the requirements of the TCEQ are met during construction. Conformance to the County's construction guidance document does not relieve a construction site operator or owner from any state or federal regulations.

2.0 Sediment Controls

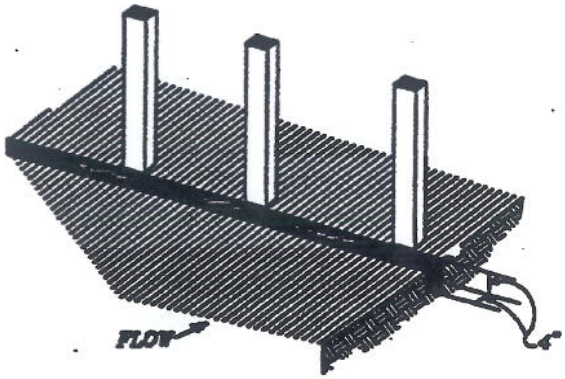
Construction activities near drainage channels, streams, rivers, and lakes have the potential to cause water pollution and stream degradation if erosion and sediment controls are not properly installed and maintained. In order to effectively reduce erosion and sedimentation impacts, Best Management Practices (BMP's) must be designed, installed, and maintained during land disturbing activities. This section is designed to provide information to planners, developers, engineers, and contractors on the proper selection, installation, and maintenance of BMP's. This guidance is intended for use during the design and construction of projects that require erosion and sediment controls to protect waters of the state.

FILTER FABRIC FENCE

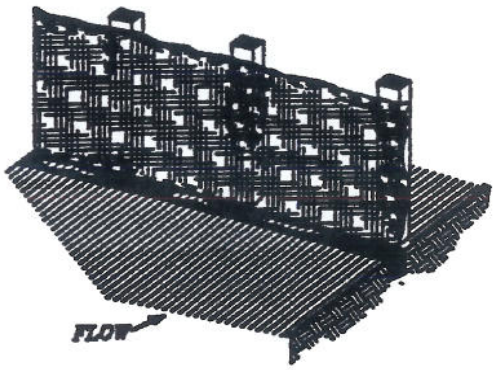
1. SET POSTS AT REQUIRED SPACING (2" x 2" wooden posts)



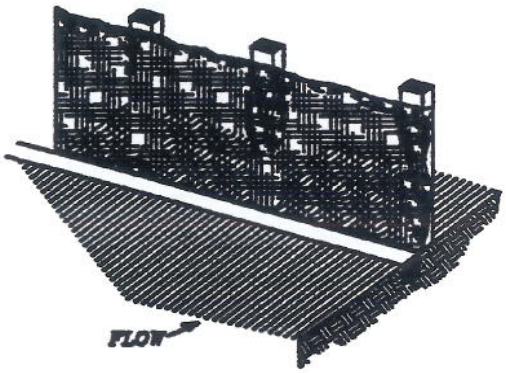
2. EXCAVATE A 4"x4" TRENCH UPSLOPE ALONG THE LINE OF STAKES.



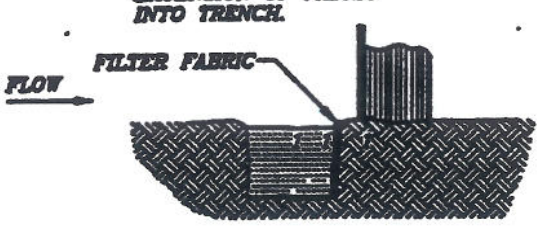
3. STAKE FILTER MATERIAL TO STAKES AND EXTEND IT INTO THE TRENCH.



4. BACKFILL AND COMPACT THE EXCAVATED SOIL.



EXTENSION OF FABRIC INTO TRENCH.



ALTERNATE V-TRENCH EXTENSION OF FABRIC INTO TRENCH.

GENERAL NOTES:

1. POSTS TO BE SET AT 8-FOOT MAXIMUM SPACING. IF FACTORY PREASSEMBLED FENCE WITH SUPPORT NETTING IS USED, SPACING OF POST MAY BE INCREASED TO 10 FEET MAXIMUM.
2. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHOULD BE OVERLAPPED 6 INCHES AT THE POSTS, AND FOLDED.

2.1.1 Filter Fabric (Silt) Fences

A. Purposes

1. To intercept and detain small amounts of sediment from disturbed areas during construction operations, preventing sediment from leaving the site.

2. To decrease the velocity of sheet flows.

B. Conditions Where Practice Applies

1. Down slope of disturbed areas where erosion is likely to occur in the form of sheet or rill erosion.

2. Around or down slope of soil piles.

3. Where the maximum size of the drainage area is 0.50 acres per 100 feet of fence length; the maximum length of slope behind the fence is 200 feet; and the maximum gradient behind the fence is 50% (2:1). The maximum slope length is as follows:

Slope, %	Maximum Slope Length
< 0.2%	200
0.2 to 0.5	175
0.5 to 1.0	140
1.0 to 2.0	100
2.0 to 5.0	75
5.0 to 10.0	50
10.0 to 20.0	25
> 20.0	15

4. Under no circumstances may filter fabric fences be used in streams, swales, ditches, or below ordinary high-water marks along streams.

C. Placement

1. Filter fabric fences shall be placed on the contour to the extent practicable. The ends of the fence should be turned up slope 1 to 2 feet in elevation to prevent flanking.

2. The full height of the filter fabric fence shall be supported by 2-inch x 2-inch wooden posts or equivalent. The posts shall be driven at least 8 inches into the ground. The filter fabric shall be stapled using at least 0.5-inch staples to the up slope side of the posts.

3. The filter fabric shall be anchored by spreading at least 8 inches of the fabric in a 4-inch x 4-inch trench or in a 4-inch deep V-trench on the up slope side of the fence. The trench shall be backfilled and compacted.

D. Fabric Specifications

1. **Grab Strength** – 100 lb. minimum in any principal direction
2. **Mullen Burst** – Minimum 200 psi
3. **Equivalent opening size** – Between 50 and 140 for soils with more than 15% by weight passing a No. 200 sieve. Between 20 and 50 for soils with less than 15% by weight passing a No. 200 sieve.

E. Maintenance

1. Under normal conditions, filter fabric fences require removal of trapped sediment. Once sediment has accumulated to 50% of the height of the filter fabric fence, the sediment should be removed. Filter fabric fences should be inspected at least once a week and daily during periods of prolonged rainfall.

2. Filter fabrics degrade due to ultraviolet light. Consult the manufacturer's specifications for usual life.

3. Filter fabric fences should be removed once final stabilization of the disturbed area is completed.

2.1.2 Hay Bales

A. Purposes

1. Used to intercept small drainage areas of disturbed soils to reduce offsite transport of sediment.

2. To decrease the velocity of sheet flows.

B. Conditions Where Practice Applies

1. Down slope of disturbed areas where erosion is likely to occur in the form of sheet or rill erosion

2. Around or down slope of soil piles.

3. Straw bales deteriorate with time. They should be utilized for short-term use where pollutant control is needed for less than 3 months.

4. Under no circumstances may straw bale fences be used in streams, swales, ditches, or below ordinary high-water marks along streams.

C. Placement

1. Stake firmly in place with two 2" x 2" wooden stakes or 1" metal stakes in the center of each bale.

2. Ramp 6 inches of compacted fill to toe in the disturbed soil side of the bales to prevent flow bypasses.

D. Maintenance

1. Straw bales shall be inspected at least once a week and daily during periods of prolonged rainfall.

2. Sediment deposits should be removed before deposits reach one-third the height of the bale.

2.1.3 Inlet Protection

A. Inlet Protection – Filter fabric material used in silt fence staked around storm water inlet structures or many other materials used in the same manner.

1. Use 2" x 2" wooden stakes at each corner of the inlet. Minimum 36" long, drove 12 to 18 inches deep. (Stakes no greater than 1 meter apart)

2. Toe filter fabric material around base of inlet 8 to 10 inches deep.

3. Wire mesh re-enforcement is recommended.

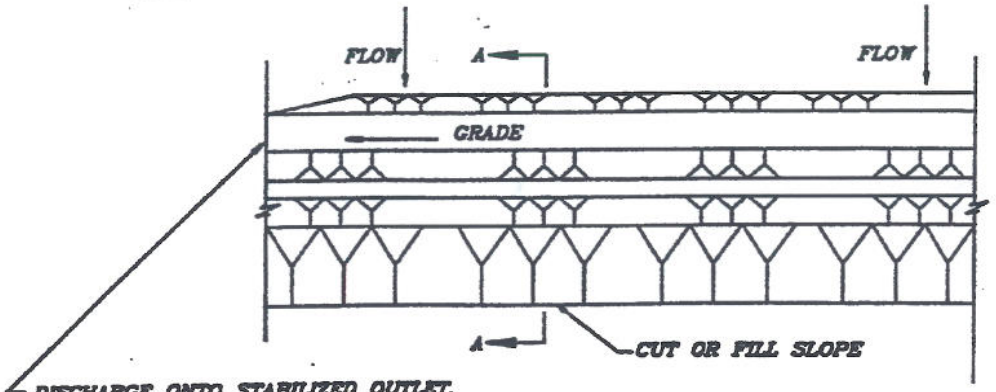
B. Inlet Socks – The sock, usually constructed of polypropylene, is place in a drop inlet to remove sediment and debris.

1. The fabric may be attached to a frame or the grate of the inlet may hold the sock.

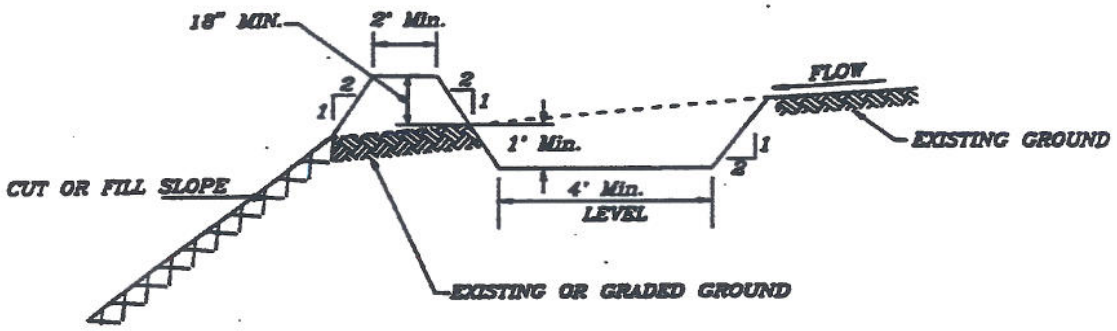
2. Inlet socks should be inspected at least once a week and after each rainfall of 0.5 inches or more.

3. Check manufacturer's specifications for inlet sock capaCounty.

DIVERSION DIKE WITH SWALE



PLAN



SECTION A–A

GENERAL NOTES:

1. DIKE MATERIAL – MACHINE COMPACTED SOIL
2. DIKE HEIGHT – 18 INCHES MINIMUM, MEASURED FROM THE EXISTING OR GRADED GROUND AT THE UPSLOPE TOE, TO THE TOP OF THE DIKE.
3. SIDE SLOPES OF THE DIKE WITH SWALE–2:1 OR FLATTER.
4. GRADE – AS SHOWN ON THE CONSTRUCTION DRAWINGS, IF NOT SHOWN, PROVIDE POSITIVE DRAINAGE TO POINT OF DISCHARGE.

2.2 Dikes and Swales

A. Purpose

Diversion dikes and swales divert runoff around disturbed areas to a stabilized outlet where the water can be discharged without adversely impacting the receiving area or channel. Diversion dikes and swales can be used along the perimeter of the site or disturbed area to carry sediment laden runoff to a sediment trapping facility. Interceptor dikes and swales are used to shorten the length of exposed slopes by intercepting runoff and diverting it to a stabilized outlet.

B. Conditions Where Practice Applies

1. Up slope of disturbed areas where erosion is likely to occur.

2. Up slope of soil piles.

3. To direct runoff from an area to a stabilized outlet sediment trap or sediment basin.

C. Placement

The slope behind the dike or swale also is an important consideration. The dike or swale must have a positive grade to assure drainage, but if the slope is too steep, precautions must be taken to prevent erosion due to high flow velocity.

D. Capacity

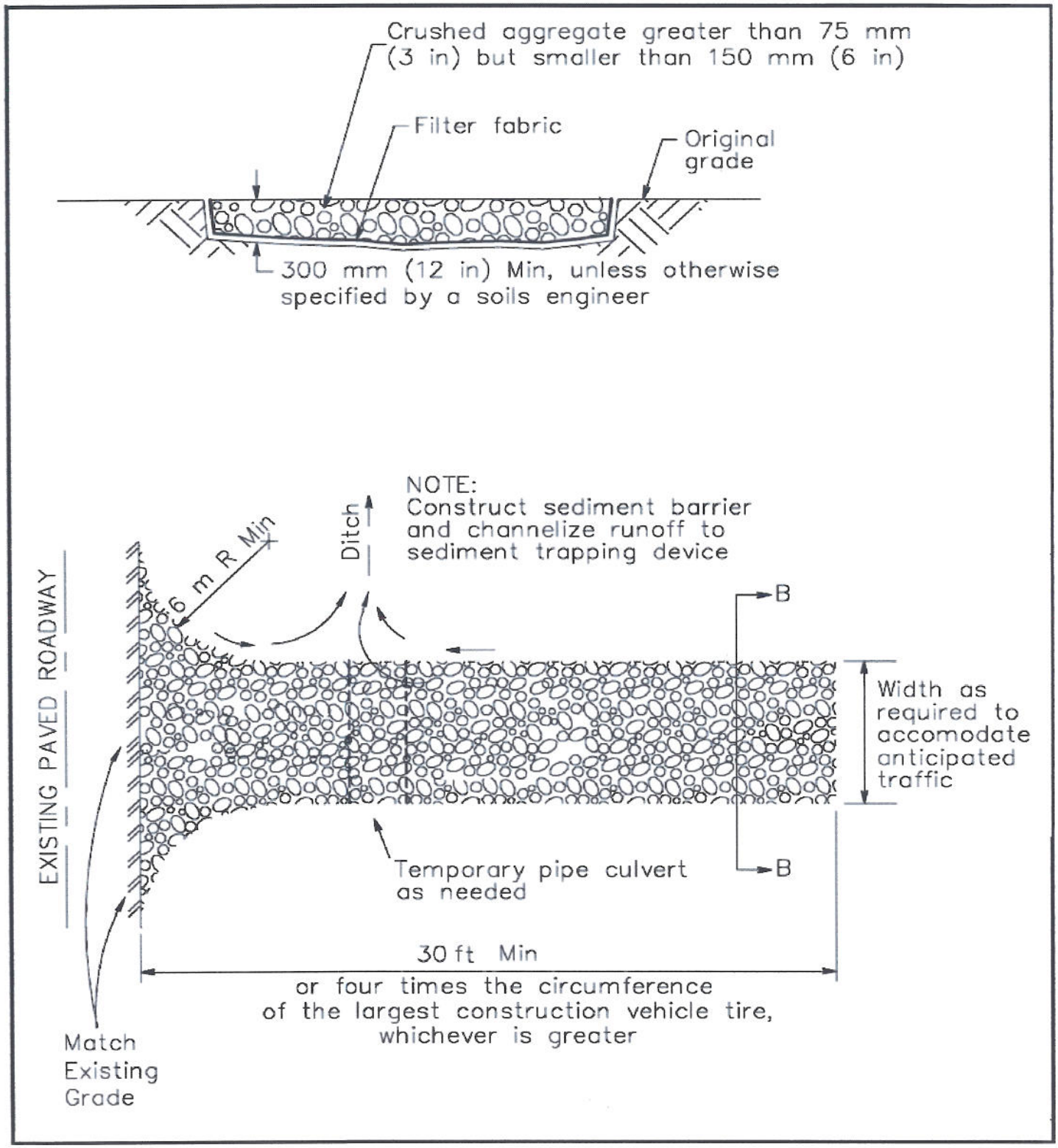
The capacity of a permanent dike or swale should be designed in accordance with existing TCEQ or EPA design criteria. The capacity of a temporary dike or swale shall be designed to carry the peak runoff from at least a 3-year 24-hour frequency storm with a freeboard not less than 0.3 feet. The drainage area of a temporary dike or swale shall not exceed 5 acres.

E. Maintenance

1. Dikes and Swales should be inspect weekly and on a daily basis during periods of prolonged rainfall until the vegetative cover is stabilized. Thereafter, dikes and swales should be inspected at least every two weeks.

2. The life expectancy of temporary diversion dikes and swales is 18 months.

Stabilized Entrance/Exit



2.3 Stabilized Entrance/Exit

A. Purpose

To reduce the tracking of mud/dirt (sediment) onto public roadways by construction vehicles. Reducing tracking of sediments and other pollutants onto paved roads helps prevent deposition of sediments into local storm drains and production of airborne dust.

B. Conditions Where Practice Applies

1. Where traffic will be entering or leaving the construction site.
2. Adjacent to water bodies.
3. When an existing permanent entrance/exit is not available.

C. Placement

1. Entrances/exits should be constructed on level ground only and used in conjunction with street sweeping.
2. Entrance/exit should be underlain with filter cloth before placing aggregate down.
3. Select 3" to 6" diameter stones and have a minimum length of 50 feet.

D. Maintenance

1. Inspect local roads adjacent to site daily. Sweep/remove any visible accumulated sediment.
2. Replace aggregate when surface voids are visible.
3. Remove aggregate and filter fabric at completion of construction.

2.4.1 Vegetative Buffer

A. Purpose

A vegetative buffer is an area of dense vegetation intended to slow runoff and trap sediment. Vegetative buffers are commonly referred to as filter or buffer strips. The purpose of this practice is to remove sediment in sheet flow by velocity reduction.

B. Conditions Where Practice Applies

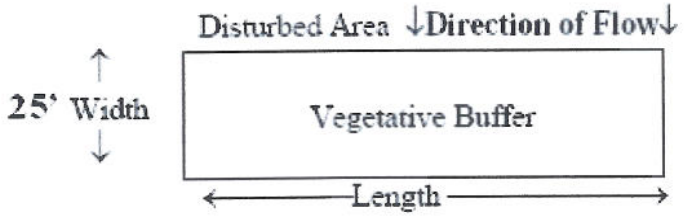
This practice applies to areas where sediment delivery is in the form of sheet and rill erosion from disturbed areas.

C. Placement

1. The vegetative buffer shall be located on the contour of the disturbed area. The buffer shall be located along the entire length of the down slope edge of the entire disturbed area for which the practice is being applied.

2. The width of the vegetative buffer shall have slopes less than 5%.

3. The vegetative buffer shall have a minimum width of 25 feet.



D. Maintenance

1. A stand of dense vegetation shall be maintained to a height of 3-12 inches. To minimize compaction and destruction of the vegetative cover, designate the vegetative buffer as an area of no disturbance. Construction equipment shall be excluded from the designated area. Vegetative buffers shall be clearly shown on plans and marked in the field.

2. If the vegetative buffer becomes silt covered, contains rills, or is otherwise rendered ineffective, other perimeter sediment control measures shall be installed.

3. Vegetative buffer shall be inspected every 14 days or after each 0.5 inch storm event or every 7 days as an alternative frequency (as outlined by TCEQ in the TXR150000 CGP) is also acceptable

2.4.2 Grassy Swales

A. Purpose

A grassy swale is a long, narrow grassy depression used to collect and convey storm water runoff, allowing pollutants to settle and filter out as the water infiltrates into the ground or flows through the facility.

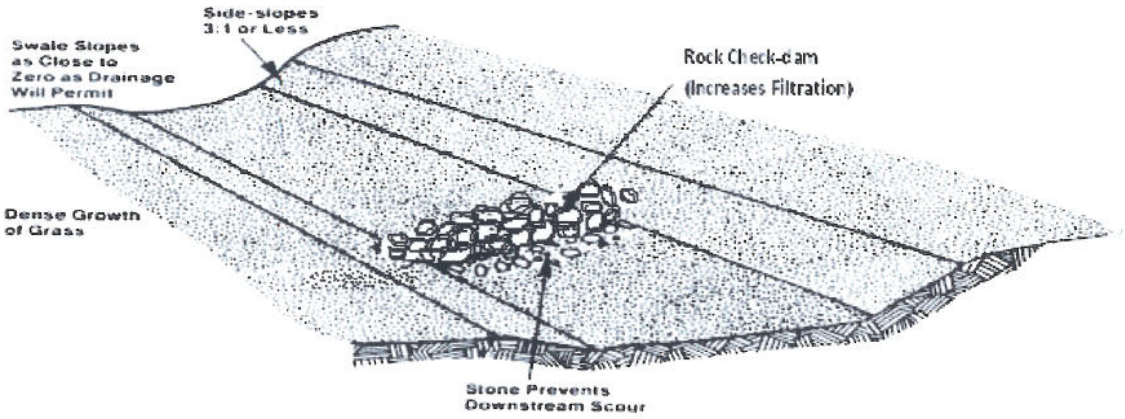
B. Conditions Where Practice Applies

Small projects (less than 15,000 square feet of impervious surface) can be managed using grassy swales. Swales are best used in combination with other treatment BMPs.

C. Placement

1. Swales should be designed to be as flat as possible and still allow efficient drainage.
2. Maximum flow rates to the swale should not exceed 1.5 feet per second to prevent erosion.
3. Swales should be designed for a maximum residence time of 24 hours.
4. Vegetation that can survive periodic inundation should be used in the swale bed.

Schematic Design of an Enhanced Grass Swale



D. Maintenance

Swales require routine maintenance, including mowing, watering, fertilizing, and removal of sediment (especially behind check dams). Swales should be inspected every 14 days or after each 0.5 inch storm event or every 7 days as an alternative frequency (as outlined by TCEQ in the TXR150000 CGP) is also acceptable.

2.5.1 Rock Filter Dam

A. Purpose

The purpose of a rock filter dam is to intercept channelized drainage from small to medium drainage areas in order to trap sediment and dissipate channel velocity.

B. Conditions Where Practice Applies

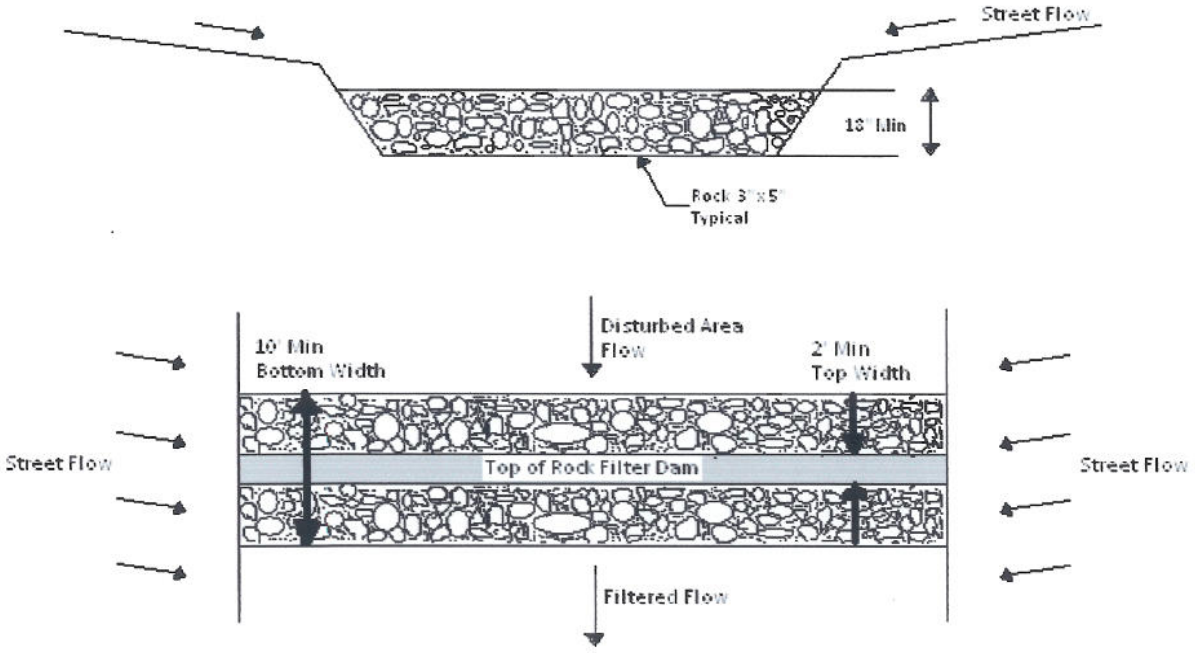
This practice can be used as an alternative to a standard sediment basin for locations with a drainage area of 5 acres or less.

C. Placement

1. Rock filter dams should be located in accessible areas for periodic sediment removal and that will not interfere with construction activity.

2. Typically constructed of 3" to 6" rock or larger (same material can be used as stabilized construction site entrance/exit).

3. Minimum 18" in height, 10 feet at the base, 2 feet at the top, and the width should be equal to the channel width.



D. Maintenance

1. Rock filter dams should be inspected every 14 days or after each 0.5 inch storm event or every 7 days as an alternative frequency (as outlined by TCEQ in the TXR150000 CGP) is also acceptable.

2. Remove sediment when sediment is 50% of the height of rock dam. (Example: If rock dam has height of 18", sediment should be removed when it reaches 9" in depth)

2.5.2 Rock Gabions

A. Purpose

A rock gabion is a woven wire basket filled with rock, to form an erosion resistant structure. The gabions provide a degree of grade stability and reduce flow velocities long enough to trap coarse sediments.

B. Conditions Where Practice Applies

Rock gabions are intended for areas with a mild gradient. They should not be used in areas with high velocity flows greater than 3ft/sec.

C. Placement

1. Proper gabion design and installation are crucial to the success of these structures. The rock gabions must be properly placed, keyed in, and anchored to stay in place during runoff events.

2. Downslope energy dissipaters are recommended in conjunction with rock gabions to reduce the risk of the gabions being undercut.

3. Rock gabions are typically constructed using 3" x 6" rock.

4. Gabions should be a minimum of 18" in height and should be equal width to the channel they are placed in.

D. Maintenance

1. Rock gabions should be inspected every 14 days or after each 0.5 inch storm event or every 7 days as an alternative frequency (as outlined by TCEQ in the TXR150000 CGP) is also acceptable.

2. Remove sediment when sediment is 50% of the height of rock gabion. (Example: If rock gabion has a height of 18", sediment should be removed when it reaches 9" in depth)

3.0 Erosion and Stabilization Practices

The BMPs discussed in this section are erosion prevention controls that should be used when temporary or permanent stabilization is needed. The proper use of these best management practices can be effective in preventing erosion and controlling sediment on construction sites. Efforts to stabilize a construction site, shall be initiated within 14 days during suspension of construction activity for periods of up to fourteen (14) or more days, when construction activity has been temporarily or permanently suspended. After the completion of construction activities, permanent stabilization must be completed, according to the requirements of the CGP, before permit coverage can be terminated.

3.1.1 Hydromulch Seeding

A. Purposes

Hydromulch seeding is temporary or permanent planting of grasses used to stabilize disturbed areas, minimize erosion, and to reduce overland flow velocities.

B. Conditions Where Practice Applies

On exposed soils.

C. Placement

1. The effectiveness of seeding in controlling erosion is increased if drainage from up slope areas is diverted around the exposed areas.

2. Seeding should be used in conjunction with other best management practices such as filter fabric fences or straw bale fences.

3. Seeding shall not be considered as acceptable vegetative cover until the grasses are established. **(See Section 3.2)**

4. Seeds shall conform to requirements of U.S. Department of Agriculture Rules and Regulations as set forth in Federal Seed Act and Texas Seed Law. These standards can be viewed at www.agr.state.tx.us. Use seed which has been treated with an approved fungicide. Container labels are to show purity and germination, and name and type of seed. Planting date, type, and rate of application as follows:

Type A	***Rate of Application in pounds per acre***	***Planting Date***
Hulled Bermuda Grass (98/88)	40	January 1 to April 15
Unhulled Bermuda Grass (98/88)	40	" "
Annual Rye Grass (Gulf)	50	" "

Type B	***Rate of Application in pounds per acre***	***Planting Date***
Hulled Bermuda Grass	40	April 16 to October 1

Type C	***Rate of Application in pounds per acre***	***Planting Date***
Hulled Bermuda Grass (98/88)	40	October 2 to January 1
Unhulled Bermuda Grass (98/88)	40	" "
Rye Grass (Gulf)	30	" "

D. Maintenance

The hydro-mulch seeding areas should be adequately watered until well established (See Section 3.2). Any areas damaged by erosion or areas that do not have an acceptable turfing should be reseeded.

3.1.2 Sodding

A. Purposes

Sodding is the application of sod rolls or mats to rapidly establish a permanent grass cover and stabilize disturbed areas by decreasing the velocity of sheet flow.

B. Conditions Where Practice Applies

1. Sodding may be used where initial flow velocity is low to moderate.

2. Sodding can be applied to unstabilized swales, ditches, or diversions where flow velocities are less than 5 feet per second. Sodding is also applicable to any disturbed area with overland flow runoff.

C. Maintenance

1. Water sod as needed to maintain adequate moisture in the root zone and to prevent dormancy of the sod. Mow only after the sod is firmly rooted, usually in about 2 to 3 weeks. Do not remove more than 1/3 of the shoot during mowing.

2. Until sod is firmly root and well established, it should be inspected every 14 days or after each 0.5 inch storm event or every 7 days as an alternative frequency (as outlined by TCEQ in the TXR150000 CGP) is also acceptable. Damaged sod should be repaired or replaced immediately.

3.2 Initialization of Stabilization

A. Erosion control and stabilization measures must be initiated as soon as practicable in portions of the site where construction activities have temporarily ceased. Stabilization measures that provide a protective cover must be initiated as soon as practicable in portions of the site where construction activities have permanently ceased. Except as provided in (1) through (4) below, these measures must be initiated no more than 14 days after the construction activity in that portion of the site has temporarily or permanently ceased:

1. Where the initiation of stabilization measures by the 14th day after construction activity temporarily or permanently ceased is precluded by snow cover or frozen ground conditions, stabilization measures must be initiated as soon as possible.

2. Where construction activity on a portion of the site has temporarily ceased, and earth disturbing activities will be resumed within 21 days, temporary erosion control and stabilization measures are not required on that portion of site.

3. In arid areas, semiarid areas, and areas experiencing droughts where the initiation of stabilization measures by the 14th day after construction activity has temporarily or permanently ceased or is precluded by arid conditions, erosion control and stabilization measures must be initiated as soon as practicable. Where vegetative controls are not feasible due to arid conditions, the operator shall install non-vegetative erosion controls. If non-vegetative controls are not feasible, the operator shall install temporary sediment controls as required in Paragraph (4) below.

4. In areas where temporary stabilization measures are infeasible, the operator may alternatively utilize temporary perimeter controls (silt fence). The operator must document in the SWP3 the reason why stabilization measures are not feasible, and must demonstrate that the perimeter controls will retain sediment on site to the extent practicable. The operator must continue to inspect the BMPs at the frequency of Section III.F.7. (a) of the TPDES General Permit TXR150000 for unstabilized sites.

B. What is Final Stabilization?

- Construction at the site is complete
- All construction materials and debris is properly removed from the site
- All earthen surfaces must be permanently stabilized with vegetation to within at least 70% of the naturally occurring vegetative cover in the area
- Permanent control measures are in place and functional including a long term operation and maintenance plan. (Permanent Controls will be reviewed by the County during the initial storm water quality plan review)
- After the site is properly stabilized, then the temporary erosion controls must be removed from the site (Except those temporary controls that will become permanent controls i.e. Detention Pond)

4.0 Structural Controls

4.1 Temporary Sediment Ponds (Drainage Areas > 10 acres)

A. Purpose

Temporary sediment ponds are intended to slow the velocity of concentrated flows of storm water before leaving the site. The reduction in velocity allows sediment to be deposited and trapped in the pond. The ponds serve to control sediment transport from larger disturbed areas (> 10 acres) draining to a common outfall or discharge point.

B. Conditions Where Practice Applies

1. Down slope of drainage areas greater than 10 acres.

2. Temporary sediment ponds may not be practicable in all situations. Some of the following factors may be considered when deciding if sediment basins are practicable for a specific site.
    - Site Soils
    - Depth to groundwater
    - Slope
    - Site geometry
    - Other Factors

3. If temporary sediment ponds are not feasible for large drainage areas exceeding 10 acres, then a combination of smaller sediment traps and/or at a minimum appropriate perimeter controls must be implemented.

C. Placement

Sediment ponds should be placed where channelized flows of storm water can be collected in the pond before being discharged off-site and down slope of large drainage areas greater than 10 acres.

D. Capacity

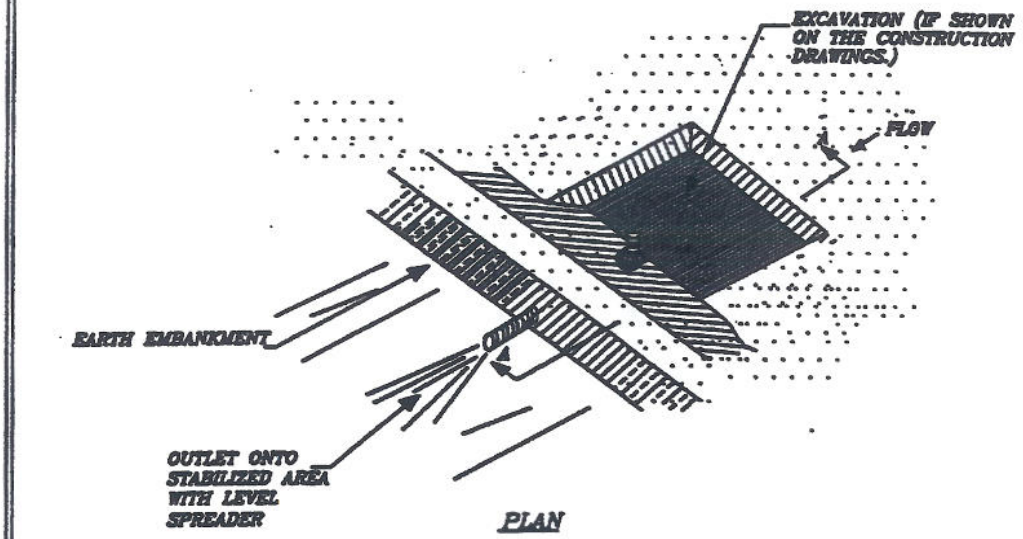
The capacity of a sediment pond must contain the runoff of the drainage area that would result from a 2 year 24-hour frequency storm. Where data required for calculating the volume of the pond based on a 2 year 24 hour storm is not available, the pond must have a capacity of at least 3600 cubic feet per acre in the drainage area served by the pond.

E. Maintenance

1. Sediment ponds should be inspected weekly and on a daily basis during periods of prolonged rainfall until the vegetative cover is stabilized. Thereafter, sediment ponds should be inspected at least every two weeks.

2. Sediment from sediment ponds must be removed when 50% of the ponds capacity is diminished due to sediment deposits.

SEDIMENT BASIN WITH PIPE OUTLET



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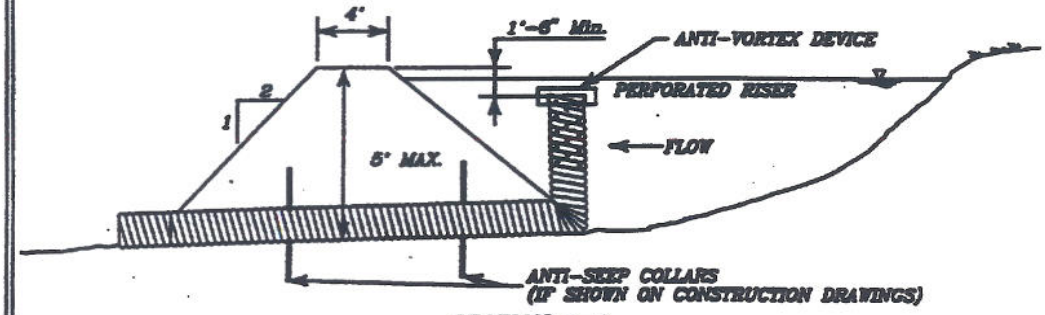


SECTION A-A

GENERAL NOTES:

1. PIPE MATERIAL - CORRUGATED METAL PIPE
2. DIMENSIONS - LIMIT OF EXCAVATION AND PIPE DIAMETER SHALL BE AS SPECIFIED ON THE CONSTRUCTION DRAWINGS.
3. EMBANKMENT HEIGHT - MINIMUM OF 1 1/2 FEET ABOVE THE CREST OF THE RISER.
4. SIDE SLOPES - 2:1 OR FLATER.
5. RISER PERFORATION - SPECIFIED ON THE CONSTRUCTION DRAWINGS.
6. ALL PIPE CONNECTIONS SHALL BE WATERTIGHT.
7. FILL MATERIAL AROUND PIPE SHALL BE COMPACTED IN 4 INCH LIFTS. A MINIMUM OF 2 FEET OF COMPACTED BACKFILL SHALL BE PLACED OVER THE PIPE BEFORE CROSSING IT WITH CONSTRUCTION EQUIPMENT.
8. PONDING OF SEDIMENT LADEN RUNOFF IN SEDIMENT BASIN ACCOMPLISHED BY EMBANKMENT OR EXCAVATION DEPENDING ON TERRAIN. REFERENCE CONSTRUCTION DRAWING FOR BASIN TYPE AND DIMENSIONS.

SB SP

SYMBOL

SEDIMENT BASIN WITH PIPE OUTLET

4.2 Temporary Sediment Traps

A. Purpose

The purpose of a sediment trap is to intercept sediment-laden runoff and trap the sediment to protect drainage ways, properties, and right-of-way below the sediment trap from sedimentation.

B. Conditions Where Practice Applies

A sediment trap usually is installed at points of discharge from disturbed areas. The drainage area should not exceed five acres.

C. Placement

Sediment traps should be placed to intercept concentrated flows of sediment-laden storm water runoff down stream of disturbed areas not exceeding 5 acres.

D. Capacity

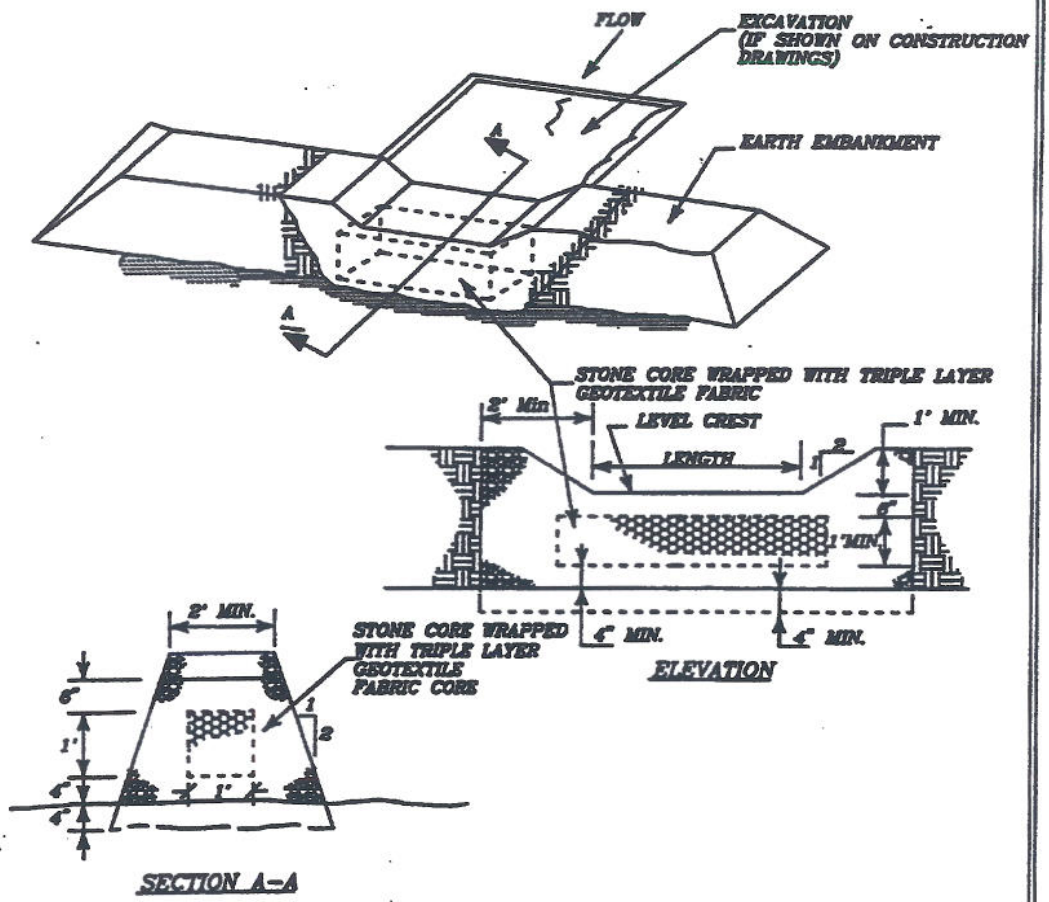
It is recommended that the volume of a sediment trap as measured at the elevation of the crest of the outlet be at least 1,800 cubic feet per acre of drainage area. The trap must be large enough to allow sediment to settle and must have a capacity to store the collected sediment until it is removed. The volume of the trap shall be calculated using standard mathematical procedures.

E. Maintenance

1. Sediment traps should be inspected weekly during routine site inspections.

2. Sediment from sediment traps must be removed when 50% of the ponds capacity is diminished due to sediment deposits.

STONE OUTLET SEDIMENT TRAP



GENERAL NOTES:

1. ROCK AND GEOTEXTILE FABRIC SHALL BE AS INDICATED BY THIS SPECIFICATION
2. DIMENSION – LIMIT OF EXCAVATION AND OUTLET LENGTH AND HEIGHT SHALL BE AS INDICATED ON THE CONSTRUCTION DRAWING.
3. SIDE SLOPE SHALL BE 2:1 OR FLATTER.
4. MAINTAIN A MINIMUM OF 6 INCHES BETWEEN TOP OF CORE MATERIAL AND TOP OF STONE OUTLET. A MINIMUM OF 4 INCHES BETWEEN BOTTOM OF CORE MATERIAL AND EXISTING GROUND AND A MINIMUM OF 1 FOOT BETWEEN TOP OF STONE OUTLET AND TOP OF EMBANKMENT.
6. ROCK SHALL BE EMBEDDED A MINIMUM OF 4 INCHES INTO EXISTING GROUND.
6. CORE SHALL BE A MINIMUM OF 1 FOOT IN HEIGHT AND IN WIDTH AND SHALL BE WRAPPED IN GEOTEXTILE FABRIC.
7. PONDING ON SEDIMENT LADEN RUNOFF IN SEDIMENT TRAP ACCOMPLISHED BY EMBANKMENT OR EXCAVATION DEPENDING ON TERRAIN. REFERENCE CONSTRUCTION DRAWINGS FOR TRAP TYPE AND DIMENSIONS.
8. OUTLET ONTO STABILIZED AREA.

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SYMBOL

STONE OUTLET SEDIMENT TRAP

5.0 Permanent Controls

Permanent control measures or post-construction control measures are features installed during construction that are left in place in order to serve as permanent storm water quality features at the site after construction is complete. Each large construction site (resulting in at least one acre of new impervious surface area) must incorporate at least one permanent control measure option. Each large construction application will be reviewed to determine if additional permanent controls are required to ensure long term storm water quality in order to maintain the pre-development peak-flow rate or to address other flood control considerations. When completing the storm water permit application, at least one of the post-construction control measures must be selected in order for the application to be considered complete. Residential home construction projects will not generally result in a full acre of new impervious surface area and therefore do not need to consider including permanent controls. It is the project engineer's responsibility to provide appropriate details and specifications for the construction of permanent control measures in plans submitted for approval. The following is a partial list of acceptable permanent control measures; other control measure options may be submitted and reviewed for approval.

- On-Site Detention Ponds (Dry or Wet)
- Vegetated Swales (Grass lined ditches or swales)
- Low Impact Development (Innovative methods of reducing impervious surface area or peak runoff flow rates) Examples: Permeable pavers, vegetated swales, rain barrels, reduction of impervious surface area, etc.
- Low velocity Drainage Channels served by Pump Stations (Drainage channels receiving the discharge from the site is low velocity and is served by a fixed rate pump station and trash rack system.)
- Regional Detention (The site drains to a watershed served by a regional detention facility)

6.0 Other Controls

6.1 Containment of Waste Products (Dumpsters, Potable Restrooms)

The storm water permit requires that discarded building materials, chemicals, trash, sanitary waste and other potential pollutants are retained at the site in proper containers or portable restrooms. Trash or other wastes that leave the site during storm water runoff events will result in a violation of the permit.

6.2 Concrete Truck Washout Controls

Concrete trucks must not wash out into the storm sewer system. Concrete truck may washout in designated locations where appropriate controls measures will retain concrete on site for proper disposal. A small area upstream of silt fence or other control measures will be accepted.

6.3 Site Dewatering Controls

If site dewatering is required at a construction site remove impoundments of water, the water must be directed through appropriate sediment traps or control devices to reduce off-site transport of sediment.

6.4 Non-storm water controls

Significant sources of non-storm water from construction sites including springs or other constant discharges must be directed through appropriate controls in order reduce the off-site transport of sediment.

7.0 Inspection of Controls

Control measures installed at construction sites must be inspected according to manufacturer's recommendations and at least once every two weeks which ever is more frequent. The construction site operator must document these inspections and maintain inspection records with the storm water quality plan. Prompt maintenance of controls is required if controls are found to require sediment removal or have been damaged.