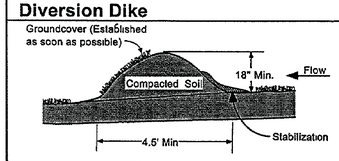
PROJECT NO.	SHEET

Diversion Dike



DESCRIPTION
A diversion dike is a compacted soil mound which redirects runoff to a desired location The dike is typically stabilized with natural grass for low velocities or with stone or erosion control mats for higher velocities.

PRIMARY USE
The diversion dike is normally used to intercept offsite flow upstream of the construction area and direct the flow around the disturbed soils. It can also be used downstream of the construction area to direct flow into a sediment reduction device such as a sediment basin or protected inlet. The diversion dike serves the same purpose and, based on the topography of the site, can be used in combination with an interceptor swale.

APPLICATIONS
By intercepting runoff before it has the chance to cause erosion, diversion dikes are very effective in reducing erosion at a reasonable cost. They are applicable to a large variety of projects including site developments and linear projects such as roadways and pipeline construction. Diversion dikes are normally used as perimeter controls for construction sites with large amounts of offsite flow from neighboring properties. Used in combination with swales, the diversion dike can be quickly installed with a minimum of equipment and cost, using the swale excavation as the dike. No sediment removal technique is required if the dike is properly stabilized and the runoff is intercepted prior to crossing disturbed areas.

Significant savings in structural controls can be realized by using diversion dikes to direct sheet flow to a central area such as a sediment basin or other sediment reduction structure if the runoff crosses disturbed areas.

DESIGN CRITERIA
- The maximum contributing drainage area should be 10 acres or
- Maximum depth of flow at the dike shall be 1 foot for 2 year design storm.
- The maximum width of the flow at the dike shall be 20 feet.
- Side slopes of the diversion dike shall be 3:1 or flatter.

Applications
- Perimeter Control
- **Slope Protection**
- Sediment Trapping
- Channel Protection
- Temporary Stabilization
- Permanent Stabilization
- Waste Management
- Housekeeping Practices

Targeted Constituents
- ● Sediment
- ○ Nutrients Toxic Materials
- ○ Oil & Grease
- ◒ Floatable Materials
- ◒ Other Construction Wastes

Implementation Requirements
- ◒ Capital Costs
- ◒ Maintenance
- ○ Training
- ● Suitability for Slopes >5%

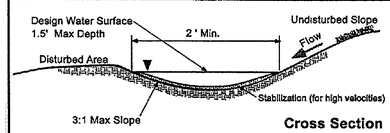
Legend
- ● Significant Impact
- ◒ Medium Impact
- ○ Low Impact
- ? Unknown or Questionable Impact

BMP 7

City of Baton Rouge Parish of East Baton Rouge

Department of Public Works

Interceptor Swale



Cross Section

DESCRIPTION
An interceptor swale is a small v-shaped or parabolic channel which collects runoff and directs it to a desired location. It can either have a natural grass lining or depending on slope and design velocity, a protective lining of erosion matting, stone or concrete.

PRIMARY USE
The interceptor swale can either be used to direct sediment laden flow from disturbed areas into a controlled outlet or to direct 'clean' runoff around disturbed areas. Since the swale is easy to install during early grading operations, it can serve as the first line of defense in reducing runoff across disturbed areas. As a method of reducing runoff across the disturbed construction area, it reduces the requirements of structural measures to capture sediment from runoff since the flow is reduced. By intercepting sediment laden flow downstream of the disturbed area, runoff can be directed into a sediment basin or other BMP for sedimentation as opposed to long runs of silt fence, straw bales or other filtration method.

Based on site topography, swales can be effectively used in combination with diversion dikes.

APPLICATIONS
Common applications for interceptor swales include roadway projects, site development projects with substantial offsite flow impacting the site and sites with a large area(s) of disturbance. It can be used in conjunction with diversion dikes to intercept flows. Temporary swales can be used throughout the project to direct flows away from staging, storage and fueling areas along with specific areas of construction. Note that runoff which crosses disturbed areas or is directed into unstabilized swales must be routed into a treatment BMP such as a sediment basin.

Grass lined swales are an effective permanent stabilization technique. The grass effectively filters both sediment and other pollutants while reducing velocity.

Applications
- Perimeter Control
- **Slope Protection**
- Sediment Trapping
- Channel Protection
- Temporary Stabilization
- Permanent Stabilization
- Waste Management
- Housekeeping Practices

Targeted Constituents
- ● Sediment
- ○ Nutrients Toxic Materials
- ○ Oil & Grease
- ● Floatable Materials
- ◒ Other Construction Wastes

Implementation Requirements
- ◒ Capital Costs
- ◒ Maintenance
- ○ Training
- ● Suitability for Slopes >5%

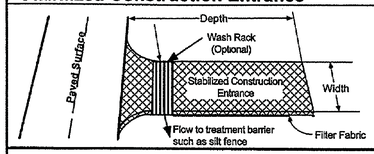
Legend
- ● Significant Impact
- ◒ Medium Impact
- ○ Low Impact
- ? Unknown or Questionable Impact

BMP 8

City of Baton Rouge Parish of East Baton Rouge

Department of Public Works

Stabilized Construction Entrance



DESCRIPTION
A stabilized construction entrance consists of a pad consisting of gravel, crushed stone, recycled concrete or other rock like material on top of geotextile filter cloth to facilitate the wash down and removal of sediment and other debris from construction equipment prior to exiting the construction site. For added effectiveness, a wash rack area can be incorporated into the design to further reduce sediment tracking. For long term projects, cattle guards or other type of permanent rack system can be used in conjunction with a wash rack. This directly addresses the problem of silt and mud deposition in roadways used for construction site access.

PRIMARY USE
Stabilized construction entrances are used primarily for sites in which significant truck traffic occurs on a daily basis. It reduces the need to remove sediment from streets. If used properly, it also directs the majority of traffic to a single location, reducing the number and quantity of disturbed areas on the site and providing protection for other structural controls through traffic control.

APPLICATIONS
Stabilized construction entrances are a required part of the erosion control plan for all site developments larger than 5 acres and a recommended practice for all construction sites. It is not suitable for long, linear projects. If possible, small entrances should be incorporated into small lot construction due to the large percentage of disturbed area on the site and the high potential for offsite tracking of silt and mud.

DESIGN CRITERIA
- Stabilized construction entrances are to be constructed such that drainage across the entrance is directed to a controlled, stabilized outlet on site with provisions for storage
- The entrance must be properly graded so that storm water is not allowed to leave the site and enter roadways.
- Minimum width of entrance shall be 15 feet, but in no case shall the width be less than that of the entry way to be used.

Applications
- Perimeter Control
- Slope Protection
- Sediment Trapping
- Channel Protection
- **Temporary Stabilization**
- Permanent Stabilization
- Waste Management
- Housekeeping Practices

Targeted Constituents
- ◒ Sediment
- ○ Nutrients Toxic Materials
- ○ Oil & Grease
- ○ Floatable Materials
- ○ Other Construction Wastes

Implementation Requirements
- ● Capital Costs
- ◒ Maintenance
- ○ Training
- ○ Suitability for Slopes >5%

Legend
- ● Significant Impact
- ◒ Medium Impact
- ○ Low Impact
- ? Unknown or Questionable Impact

BMP 9

City of Baton Rouge Parish of East Baton Rouge

Department of Public Works

Diversion Dike

- Minimum width of the embankment at the top shall be 2 feet.
- Minimum embankment height shall be 18 inches as measured from the toe of slope on the upgrade side of the berm
- For velocities less than 6 feet per second, the minimum stabilization for the dike and adjacent flow areas is grass, erosion control mats or mulch. For velocities greater than 6 feet per second, stone stabilization or high velocity erosion control mats should be used. Velocities greater than 8 feet per second must be approved by the local jurisdiction.
- The dikes shall remain in place until all disturbed areas which are protected by the dike are permanently stabilized unless other controls are put into place to protect the disturbed area.
- Flow line at dike shall have a positive grade to drain to a controlled outlet.

LIMITATIONS
Compacted earth dikes require stabilization immediately upon placement so as not to contribute to the problem they are addressing.

The diversion dikes can be a hinderance to construction equipment moving on the site, therefore their locations must be carefully planned prior to installation.

MAINTENANCE REQUIREMENTS
Dikes must be inspected on a weekly basis and after each significant (>0.5 inch) rainfall to determine if silt is building up behind the dike, or if erosion is occurring on the face of the dike. Silt shall be removed in a timely manner. If erosion is occurring on the face of the dike, the slopes of the face shall either be stabilized through mulch or seeding or the slopes of the face shall be reduced.

BMP 7

Department of Public Works

Interceptor Swale

DESIGN CRITERIA
- Maximum depth of flow in the swale shall be 1.5 feet based on a 2 year design storm peak flow. Positive overflow must be provided to accommodate larger storms.
- Side slopes of the swale shall be 3:1 or flatter.
- Minimum design channel freeboard shall be 6 inches.
- The minimum required channel stabilization for grades less than 2 percent and velocities less than 6 feet per second may be grass, erosion control mats or mulching. For grades in excess of 2 percent, or velocities exceeding 6 feet per second, stabilization in the form of high velocity erosion mats, a three inch layer of crushed stone or rip rap is required. Velocities greater than 8 feet per second will require approval by the PROGRAM MANAGER.
- Check dams can be used to reduce velocities in steep swales. See check dam BMP fact sheet for design criteria.
- Interceptor swales must be designed for flow capacity based on Manning's Equation to ensure a proper channel section. Alternate channel sections may be used when properly designed and accepted.
- Consideration must be given to the possible impact that any swale may have on upstream or downstream conditions.
- Swales must maintain positive grade to an acceptable outlet.

LIMITATIONS
Interceptor swales must be stabilized quickly upon excavation so as not to contribute to the erosion problem they are addressing.

Swales may be unsuitable to the site conditions (too flat or steep).

Limited flow capacity for temporary swales. For permanent swales, the 1.5 feet maximum depth can be increased as long

MAINTENANCE REQUIREMENTS
Inspection must be made weekly and after each significant (0.5" or greater) rain event to locate and repair any damage to the channel or to clear debris or other obstructions so as not to diminish flow capacity. Damage from storms or normal construction activities such as tire ruts or disturbance of swale stabilization shall be repaired as soon as practical.

BMP 8

Department of Public Works

Stabilized Construction Entrance

- Minimum depth of entrance shall be 6 inches for the entire length of the control.
- Minimum dimensions for the entrance shall be as follows:

Tract Area	Avg. Lot Depth	Min. Width of Entrance	Min. Depth of Entrance
< 1 Acre	100 feet	15 feet	20 feet
< 5 Acres	200 feet	20 feet	30 feet
< 10 Acres	> 200 feet	20 feet	40 feet
> 10 Acres	> 200 feet	25 feet	50 feet

LIMITATIONS
Selection of the construction entrance location is critical in that to be effective, it must be used exclusively.

Stabilized entrances are rather expensive considering that it must be installed in combination with one or more other sediment control techniques, but it may be cost effective compared to labor intensive street cleaning.

MAINTENANCE REQUIREMENTS
Inspections should be made on a regular basis and after large storm events in order to ascertain whether or not sediment and pollution are being effectively detained on site.

When sediment has substantially clogged the void area between the rocks, the aggregate mat must be washed down or replaced.

Periodic re-grading and top dressing with additional stone must be done to keep the efficiency of the entrance from diminishing.

BMP 9

Department of Public Works

DATE	DESCRIPTION REVISIONS	BY

STANDARD PLAN NO.	DATED	SHEET NO.
903–01	FEBRUARY 25, 2008	3 OF 11

STORM WATER POLLUTION PREVENTION PLAN
BEST MANAGEMENT PRACTICES

ENGINEERING DIVISION
DEPARTMENT OF PUBLIC WORKS
CITY OF BATON ROUGE & PARISH OF EAST BATON ROUGE

DESIGNED	DRAWN	CHECKED	APPROVED
G. CHENG	G. VANNICE	G. CHENG	T. STEPHENS

903–01