

SWPPP Binder Insert - Curb & Grate Inlet Protection  
ERTEC Combo Guard™

425 micron integrated particle filter – set 2 inches high to allow high-flow bypass

HDPE high-flow outer jackets - 6,000 openings per sq ft

Four layer system

Seal controls underflow

Acceptable Anchor Methods: a) install gravel bags at each side – half on and half off the edge of the Combo Guard or b) alternately concrete anchor/nails around the outside perimeter or c) alternately Black UV Stable Cable Ties (24")

Product Designation	Grate Size
CG 28x22	Fits 23" by 19" Grate
CG 36x22	Fits 36" x 18" and 36" x 20" and 40" x 17" Grates
CG 48x27	Fits 40" x 24" Grate
CG 58x30	Fits 42" x 28" Grate
Custom sizes available upon request	

**Definition – ERTEC Combo Guard**  
A temporary sediment filter made of high density polyethylene with an integrated filter. During construction, place device over the grate and curb opening of the drain inlet near disturbed soil. Anchor with 2 Gravel Bags, or alternately 2 ERTEC GR-8 Hooks™ or alternately concrete anchors/nails or alternately black UV stable cable ties (24 to 36").


**Purpose**  
Storm drain inlet protection is used to intercept sediment laden water at the curb and grate opening and prevent the sediment, associated pollutants and debris from entering the storm water underground pipe systems. The system reduces water velocity which causes heavier soil particles to be deposited above ground. While allowing flow through the module, the barrier filters certain smaller sized particles from suspension and prevents them from flowing through the device and into the pipes. Heavy flows are passed over the top of the filter. Advantages are that it is effective, durable, re-usable, easily installed and cleaned.

**Conditions Where the Practice Applies**  
It is recommended for use over curb & grate openings with small drainage areas. Generally, the drainage areas should be less than 1/3 acre and the total for inlets in series should be 1 acre or less with slopes flatter than 5 percent in the contributing drainage area.

**Design Criteria**

- **Geo-textile Filter:** Apparent Opening Size (AOS) = 425 micron integrated particle filter. Flow rate (ASTM D-4491) = 145 gpm/ft². Provide a bypass over the top.
- **Outer Jacket Material:** HDPE. For detailed characteristics contact ERTEC. Module weight = 3 to 5 lbs. Module height = 6.0". Module length/opening size protected varies as per the chart above – according to grate size. Service temperature (deg F) = -30 to 160.
- **Install system with the vertical section covering the curb inlet and the horizontal section covering the grate. Alternate anchor methods listed above. If using Gravel Bags - place small gravel bags containing clean, pea-sized graded gravel on each end of the cover and tuck the bags tightly against the curb to keep water in the gutter from flowing behind the filter (do not use sandbags). The porosity of the gravel bag should allow for design flow rate through the bag. The bag should be durable enough to last the period of intended use. If the storm inlet opening exceeds 5.0' in length, overlap one module by 6" over side of adjoining module for a continuous run until the desired length is achieved. Anchor thru the overlap as necessary.**

**Maintenance**  
Perform maintenance as required. Inspect following rainfall events and at least daily during prolonged rainfall. Maintain to provide an adequate sediment holding capacity. Debris shall be removed daily and sediment shall be removed when the sediment accumulation reaches 2 inches. Removed sediment shall be incorporated in the project at designated locations or disposed-of outside the project or in conformance with requirements. Remove the device after final stabilization has been achieved.



**ERTEC**  
**Combo Guard™**  
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[www.ertecsystems.com](http://www.ertecsystems.com)  
Toll Free: 866-521-0724

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SWPPP Binder Insert - Curb Inlet Protection  
ERTEC Curb Inlet Guard™

Inset Size

6.0"	1 Module
12.0"	2 Modules
18.0"	3 Modules
24.0"	4 Modules

Variable height pins

"L" shaped brackets

Filter height - 2"

Under-seal gasket

Install gravel bags ½ full at each end,



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H999222 Updated: 02/10

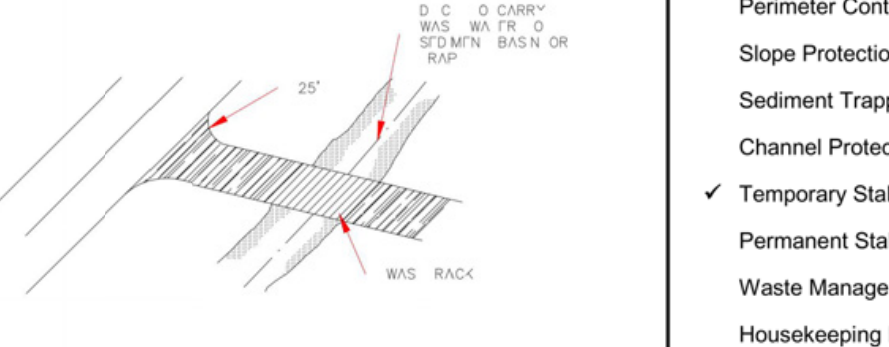
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National Pollutant Discharge Elimination System Manual  
Appendix A5 – Good Housekeeping/Materials Management

Revision 2  
August 2012

**Stabilized Construction Entrance/Exit**



**Applications**

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

**Targeted Constituents**

- ✓ Sediment
- Nutrients
- Toxic Materials
- Oil and Grease
- Floatable Materials
- Construction Wastes

**Impact**

- ✓ Significant
- Medium
- Low
- Unknown or Questionable

**DESCRIPTION**  
A stabilized construction entrance consists of a pad of crushed stone, recycled concrete, or other rock-like material on top of a geotextile filter cloth, which is used to facilitate the washdown and removal of sediment and other debris from construction equipment prior to exiting the site. During the construction phase of a project, regular street sweeping should be performed to remove debris carried from the site.

**PRIMARY USE**  
Stabilized construction entrances are used to reduce offsite sediment tracking from trucks and construction equipment, and for sites where considerable truck traffic occurs each day. They also reduce the need to clean adjacent pavement as often, and help route site traffic through a single point.

**APPLICATIONS**  
As a part to the erosion-control plan required for sites larger than five acres, and recommended for all construction sites.

**LIMITATIONS**  
Selection of the construction entrance location is critical. To be effective, it must be used exclusively.

Stabilized entrances are rather expensive, considering that they must be installed in combination with one or more other sediment control techniques. It may be more cost effective, however, than 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.

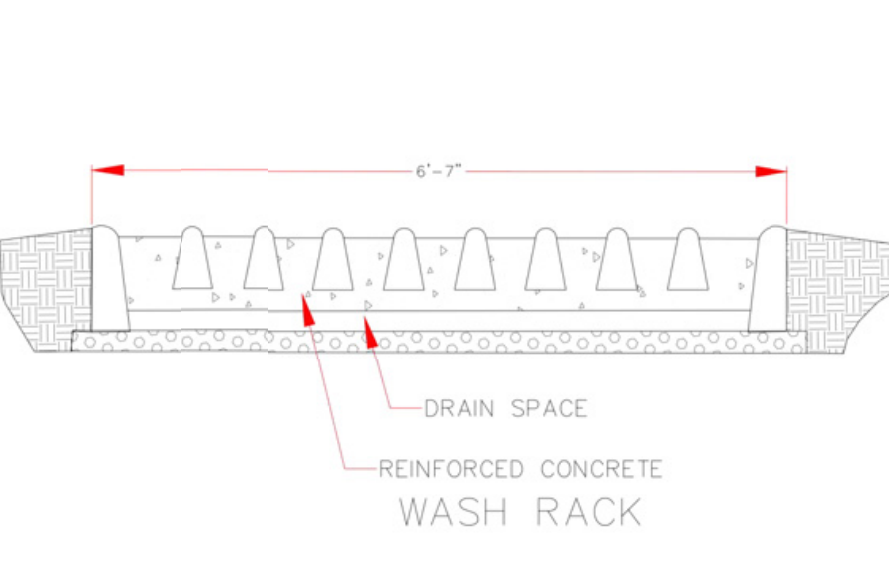
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Appendix A3 – Housekeeping Practices

Revision 0  
November 2002

**Stabilized Construction Entrance/Exit (continued)**



**ROCK / AGGREGATE VEHICLE TRACKING CONTROL**

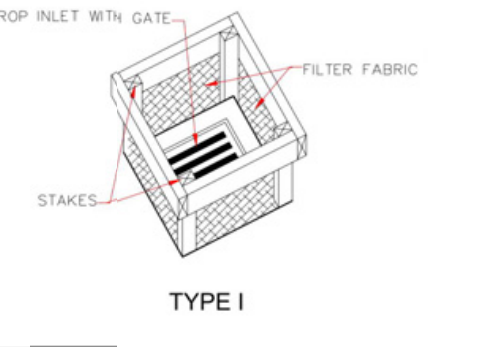
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National Pollutant Discharge Elimination System Manual  
Appendix A2 – Structural Controls

Revision 0  
November 2002

**Drop Inlet Protection**



**Applications**

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

**Targeted Constituents**

- ✓ Sediment
- Nutrients
- Toxic Materials
- Oil and Grease
- ✓ Floatable Materials
- Construction Wastes

**Impact**

- ✓ Significant
- Medium
- Low
- Unknown or Questionable

**DESCRIPTION**  
A variety of drop inlet protection methods are used to intercept sediments at inlets through the use of stone, filter fabric, or other materials.

**PRIMARY USE**  
Drop inlet protection is normally used as a second defense in site erosion control. A backup to onsite systems that have limited effectiveness.

**APPLICATIONS**

- Filter barrier when site is less than one acre and slope is less than 5%
- Block and gravel are used when flows exceed 0.5 cfs
- Wire mesh and gravel are used where traffic crosses inlet

**LIMITATIONS**  
Ponding will occur at the inlet, with possible flooding as a result. Inlet protection is only viable at low-point inlets. Inlets that are on a slope cannot be effectively protected because storm water will bypass the inlet and continue downstream, causing an overload condition at inlets beyond.

**MAINTENANCE REQUIREMENTS**  
Inspections should be made on a weekly basis, especially after large (>0.5 inches) storm events. When silt fence is used and the fabric becomes clogged, it should be cleaned or, if necessary, replaced. Also, sediment should be removed when it reaches approximately one-half the height of the fence. If a sump is used, sediment should be removed when the volume of the basin is reduced by 50%.

For systems using stone filters, when the stone filter becomes clogged with sediment, the stones must be pulled away from the inlet and cleaned or replaced. Since cleaning of gravel at a construction site may be difficult, an alternative approach would be to use the clogged stone as fill material and put new stone around the inlet.

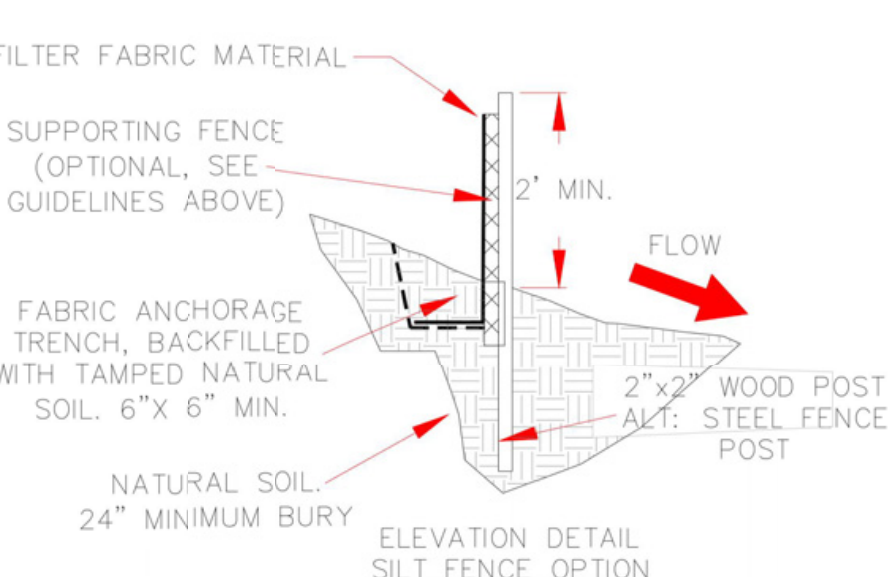
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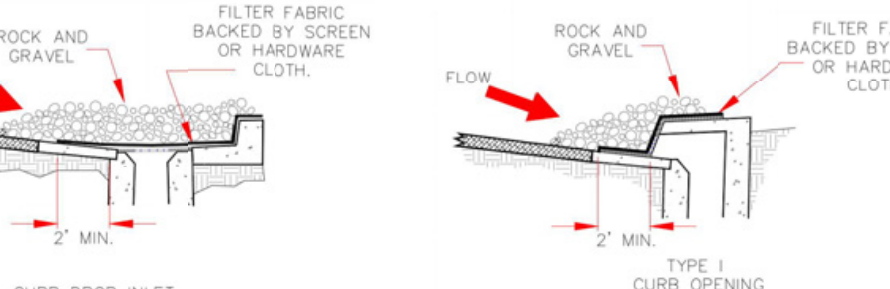
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Appendix A2 – Structural Controls

Revision 0  
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**Drop Inlet Protection (continued)**



**TYPE I**



**TYPE II**

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Temporary Sediment Control  
Gravel Bag Berm

**Definition.** A gravel bag berm consists of a series of gravel-filled bags made of a woven polypropylene geotextile fabric abutted end to end to form a berm. Gravel bag berms can be used as a perimeter control and placed along the site perimeter to contain pollutants on site, they can be placed on the toe and face of slopes to intercept runoff and reduce flow velocity, and they can also be used around temporary stockpiles.

**Purpose.** As a perimeter control, the gravel bag berm is used to intercept sediment-laden stormwater and prevent the sediment and associated pollutants from entering the street and the stormwater system.

**Conditions Where the Practice Applies.** As a perimeter control, gravel bag berms can be used anywhere along the site perimeter, even on impermeable surfaces. All new and existing roadways, curbs, and gutters must be protected from sediment-laden runoff, are considered as perimeters of the site, and will need perimeter controls installed.

**Specifications: Design and Installation Gravel Bags**

- Bags shall be woven polypropylene, polyethylene, or polyamide fabric.
- Minimum unit weight of 8 ounces per square yard.
- Burst strength exceeding 200 lbs in conformance with ASTM designation D4632.
- Ultraviolet stability exceeding 70% in conformance with ASTM designation D4355.
- Each gravel-filled bag shall have a length of 24-32 inches, width of 16-20 inches, and mass of approximately 30-50 lbs.
- Fill material shall be between 3/8 and 1 inch in diameter.
- Fill material shall be free from clay balls, organic matter, sand or silt, and other deleterious material.

**Installation Requirements.**

- Install along a level contour.
- Clear bedding area of obstructions one inch in diameter or larger.
- Place in single layer with ends abutted tightly and not overlapped.
- Use in conjunction with temporary soil stabilization.

**Maintenance & Inspection.**

- Inspect BMPs prior to forecast rain, daily during extended rain events, after rain events, and weekly throughout the life of the Project.
- Gravel bags exposed to sunlight will need to be replaced every two to three months due to degradation of the bags.
- Reshape or replace gravel bags as needed.
- Repair washouts or other damage as needed. Split or torn gravel bags must be repaired, if possible, or replaced.
- Inspect gravel bag berms for sediment accumulation. Sediment that accumulates in the BMP must be periodically removed in order to maintain BMP effectiveness. Sediment should be removed when the sediment accumulation reaches one-third of the barrier height. Sediment removed during maintenance must be disposed of in a proper place that will not allow contamination of the stormwater system.
- Properly dispose of gravel bags that have been damaged or are no longer needed and cannot be reused.



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ENGINEER



PROJECT

ONE CENTRAL

ALBUQUERQUE, NM

REVISIONS

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DRAWN BY SLK

REVIEWED BY MDT

DATE: 6-1-16

PROJECT NO.

DRAWING NAME

EROSION AND  
SEDIMENT CONTROL  
DETAILS AND NOTES

SHEET NO.

ESC 102  
OF