

Chapter amendments approved:	OMPC	Owensboro	Daviess Co.	Whitesville
2002 Revised Public Improvement Specifications (new chapter)	08-Aug-02	No action required by legislative bodies		
Revisions to Public Improvement Specifications	04-Apr-09			

11.0 PURPOSE. The purpose of this Chapter is to outline the procedure and techniques for erosion and sediment control, and to be in compliance with the Kentucky Division of Water (DOW) Kentucky Pollutant Discharge Elimination System (KPDES) Stormwater General Permit KYR10.

11.1 GENERAL. All construction activities shall have erosion and sediment control, and at the discretion of the Engineer, an erosion and sediment control plan. Any development requiring a development plan or preliminary subdivision plat to be considered by the Owensboro Metropolitan Planning Commission shall include an erosion and sediment control plan prepared by a Professional Engineer licensed in the State of Kentucky. Erosion and sediment control plans shall be reviewed and approved by the Engineer. One set of plans shall be furnished to the Engineer, and two sets shall be furnished to the Developer or Contractor.

Any construction activity that disturbs one (1) acre or more, or any construction activity on a lot that is part of a development that disturbs more than one (1) acre shall be required to prepare a Notice of Intent (NOI) and a Storm Water Pollution Prevention Plan (SWPPP) for the elimination of pollutants into the receiving stream or surrounding properties. The SWPPP shall follow the guidelines as specified in the KPDES permit, KYR10, current edition. The original NOI shall be submitted to the DOW. Two (2) copies of the NOI, along with two (2) copies of the SWPPP shall be submitted to the Engineer, and another copy of each shall be kept on the job site at all times. Once the Notice of Termination (NOT) has been filed with the DOW, a copy of the NOT must also be submitted to the Engineer. The NOI, SWPPP, and the NOT shall be prepared by an individual qualified to prepare these documents, and shall be in compliance with all parts of KYR10. A sample BMP may be obtained by the Engineer upon request.

An erosion and sediment control plan shall include procedures and techniques to prevent erosion and sediment runoff onto adjacent property or into ditches, streams or

lakes. The “Kentucky Best Management Practices (BMPs) for Controlling Erosion, Sediment, and Pollutant Runoff from Construction Sites” prepared by the Division of Conservation and Division of Water, Natural Resources and Environmental Protection Cabinet and the Department of Transportation (current issue) should be used as a guideline by reference for Erosion Prevention and Sediment Control. The symbology used in this manual shall be employed in the development of the Erosion and Sediment Control Plan.

11.2 EROSION AND SEDIMENT CONTROL PROCEDURES.

Site ground cover shall not be removed until measures are in place to prevent erosion and sediment from running onto adjacent property or into streams and ditches. Where a detention basin is designed for the Development, the basin shall be used for a sediment basin and shall be constructed first. The basin outlet structure shall have adequate sediment control measures such as timber dams, or rock dams to prevent sediment from running onto adjacent property or into streams and ditches. All upstream drainage ditches and channels should be directed into the basin as soon as possible. Where a detention basin does not control runoff, methods shall be applied to prevent erosion and sediment runoff onto adjacent property or into ditches and streams.

11.3 EROSION AND SEDIMENT CONTROL TECHNIQUES.

11.3.1 General Techniques shall include but are not limited to silt fences, rock checks, earthen dams, timber dams, diversion ditches, silt traps, silt basins, seeding and sodding. It is recommended that the “j-hook” method of silt fence installation is employed in lieu of placing the silt fence in a straight line. All techniques shall have as a goal the removal of 80% of all Total Suspended Solids. Straw Bales are not an acceptable form of erosion and sediment control. For examples of techniques and installation see Exhibits 11-1 through 11-7.

11.3.2 Sediment Runoff Onto Streets. To prevent sediment runoff onto streets and into curb inlets, the methods listed below may be applied:

- a. Silt fences installed at back of curb.
- b. Seeding or sodding.
- c. Diversion ditches directed into drainage ditches and channels.
- d. Berms or other methods may be accepted on a case by case basis.

11.3.3 Drop Inlet Sediment Control. Gravel filters, or silt fences may be used to prevent sediment from entering drop inlets.

11.3.4 Curb Inlets. Sediment checks should not be required around curb inlets where storm sewers empty into a detention basin, which also acts as a sediment basin. However, prior to final acceptance of the storm sewer system, the Developer shall clean the pipe system and ensure it is free of all sediment. Sediment is controlled at the basin outlet structure before entering into ditches and streams. Where curb inlet storm sewers empty into ditches and streams without down stream sediment control, the curb inlets shall have filter checks. Techniques that may be applied are:

- a. Gravel filter bags; see Exhibit 11-7 for correct installation.
- b. Curb inlet filter bags; concrete block filter checks shall not be used due to traffic hazard.
- c. Bolt slots at the back of inlet castings shall be covered with a strip of filter fabric placed across the back of the inlet.

11.3.5 Drainage Channels. To prevent erosion in drainage channels and to trap sediment, the following techniques may be applied:

- a. Rock check structures; for correct installation see Exhibit 11-8.
- b. Sediment trap; for correct installation see Exhibit 11-1.

11.3.6 Sediment Basins. Where waterways and drainage channels do not run into detention basins, a sediment basin

may be necessary. See Exhibit 11-1 for an example of an installation. The Engineer may approve other methods.

11.3.7 Over Lot Perimeter Sediment Control. To prevent sediment runoff onto adjacent property, the following techniques may be applied:

- a. Filter fabric silt fences; for correct installation, see Exhibit 11-5.

11.3.8 Embankments. Where runoff onto adjacent property or into streams and ditches occur from embankments, the following techniques may be applied:

- a. Silt fences; see Exhibit 11-5.
- b. Seeding and sodding; see Chapter 10 of these Specifications.

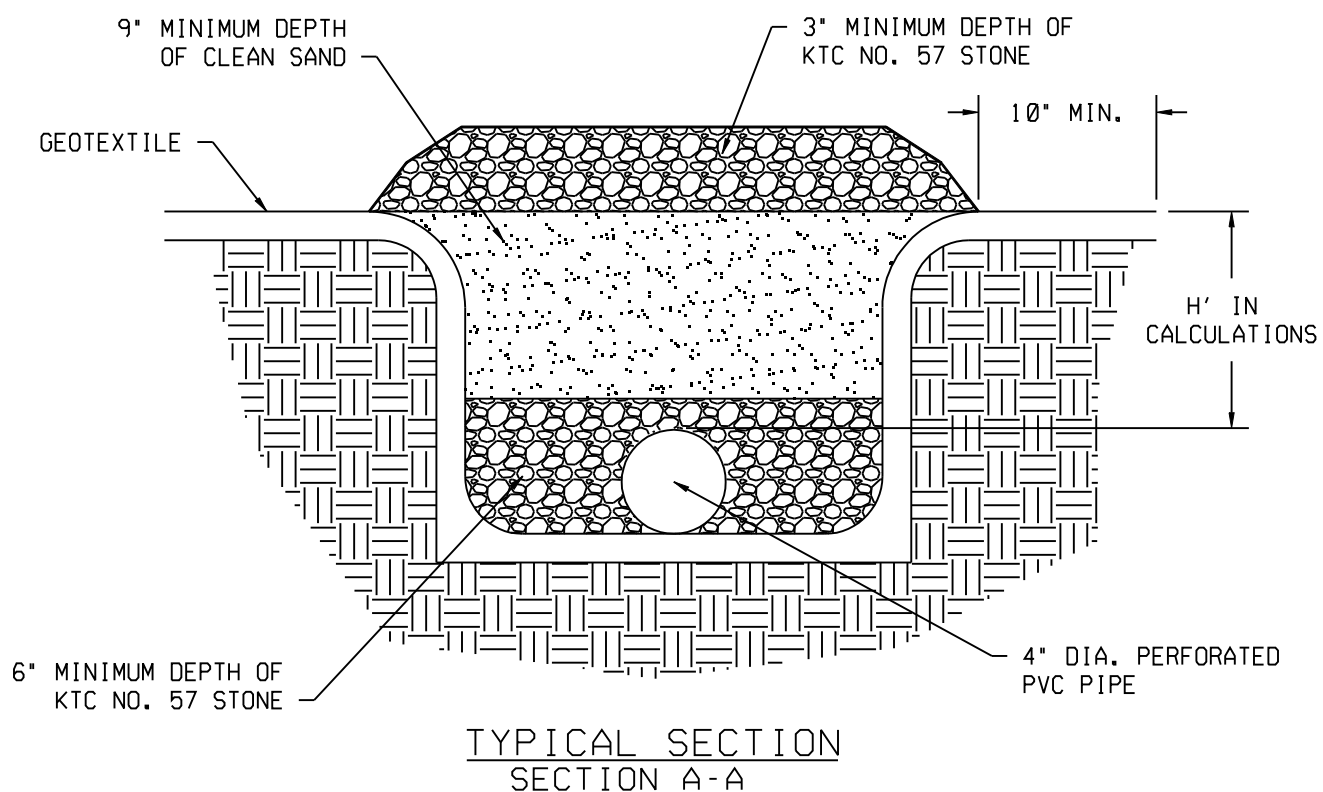
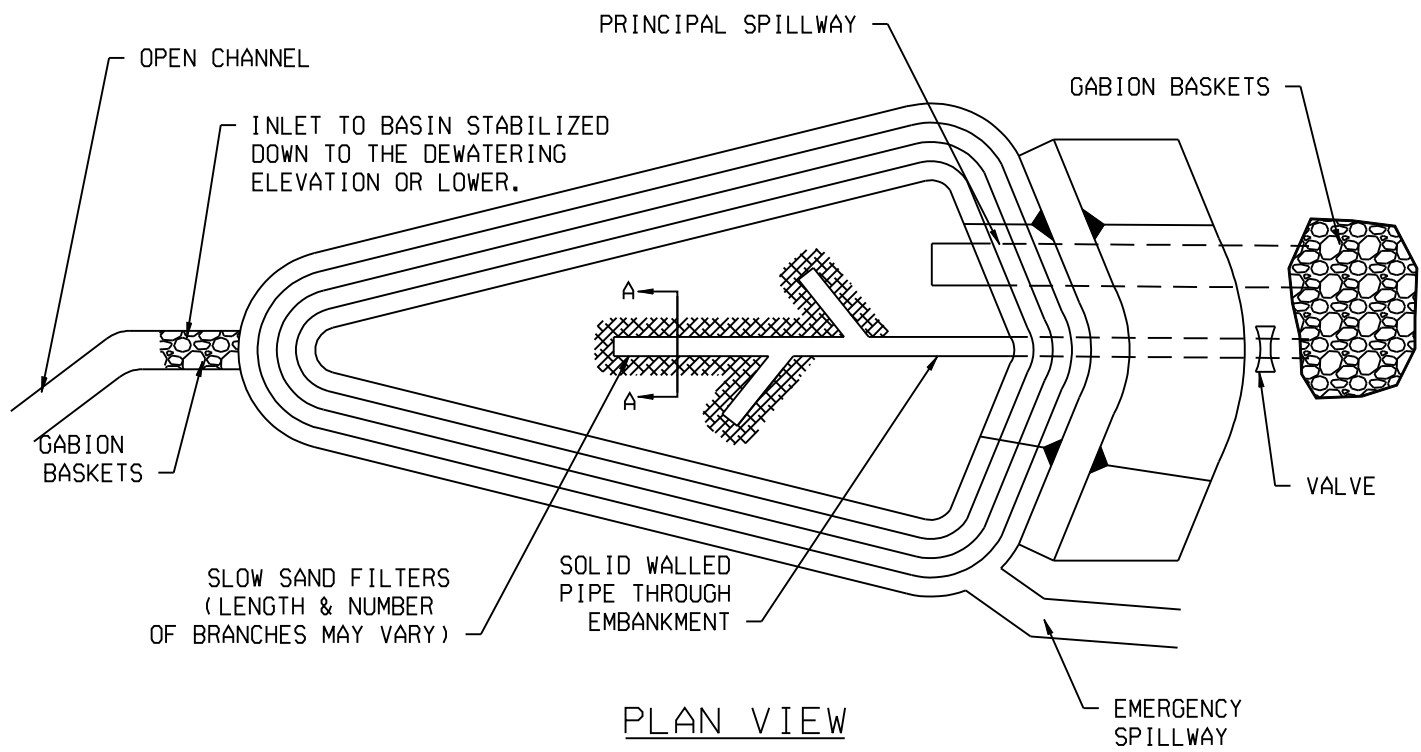
11.4 MAINTENANCE. Storm water runoff routes, sediment traps, detention basins, and any other erosion control measures shall be monitored and sediment removed whenever the depth of sediment reaches 30 to 50 percent of the designed sediment depth at the control structure. All erosion control devices shall be maintained in good working condition. The Developer or Contractor shall be responsible for removal of sediment and maintenance of traps until vegetation is restored and erosion is under control.

11.5 INSPECTIONS. All inspections shall be performed by a qualified Inspector per KPDES KYR10, Part IV, Section F. The inspection reports shall be kept on file by the holder of the NOI, and shall be made available to the Engineer upon request.

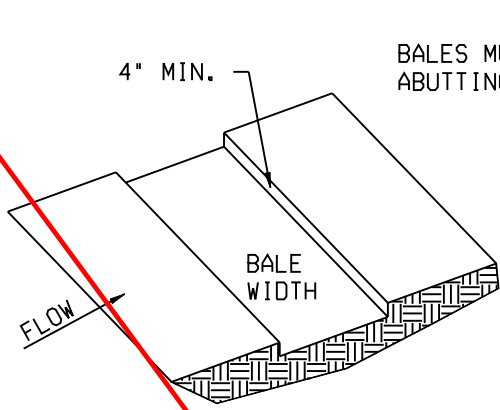
11.6 STABILIZATION DURING SHUTDOWN OF ACTIVITY. As per the KPDES KYR10, stabilization of any disturbed area shall begin within 14 days on areas of the site where construction activities have permanently ceased, or 21 days on areas where construction activities have temporarily ceased. Stabilization practices include seeding, mulching, placing sod, planting trees or shrubs, using geotextile fabrics, and other appropriate measures.

11.7 REVISIONS. All the above procedures and techniques are standard and adequate methods to control erosion and sediment under normal conditions. Where severe erosion and sediment runoff onto adjacent property and into ditches and streams occur from steep embankments and high velocity waterways, other methods may be required. Revisions to the erosion and sediment

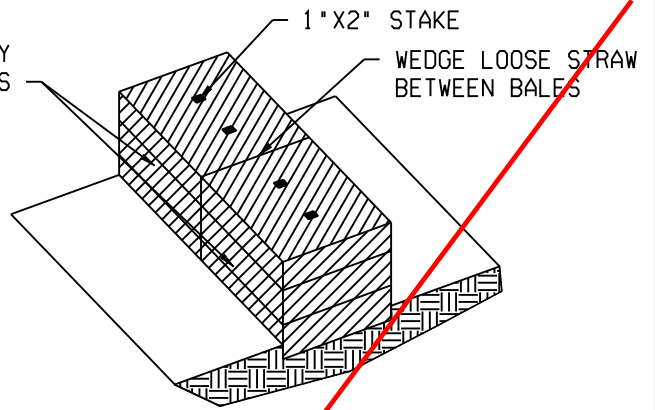
control plan may be proposed by a developer, contractor, or professional engineer, subject to approval by the Engineer.



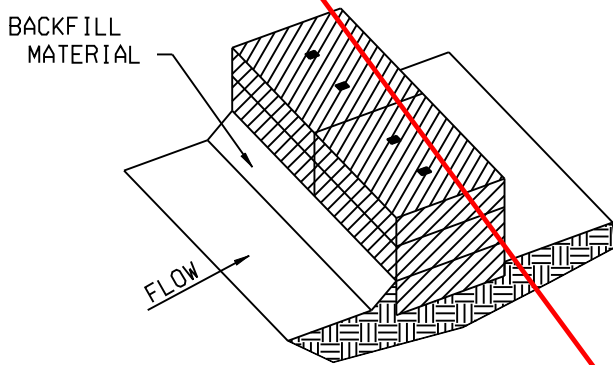
OWENSBORO METROPOLITAN PUBLIC IMPROVEMENT SPECIFICATIONS
CHAPTER 11 EROSION PREVENTION AND SEDIMENT CONTROL
SEDIMENT POND WITH SAND FILTER OUTLET
EXHIBIT NO. 11-1 NOT TO SCALE



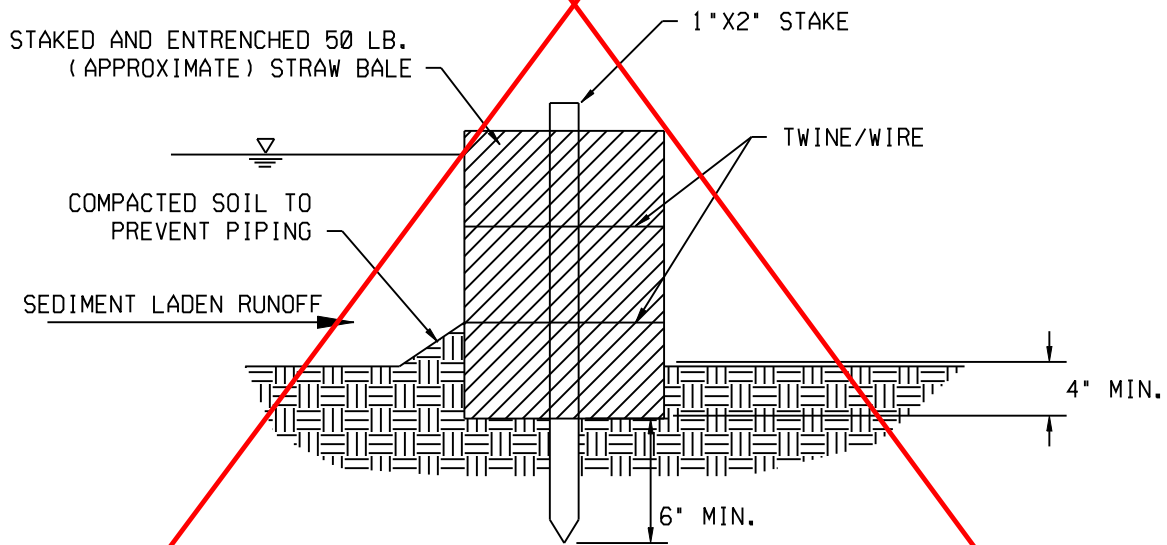
1. EXCAVATE THE TRENCH



2. PLACE AND STAKE STRAW BALES

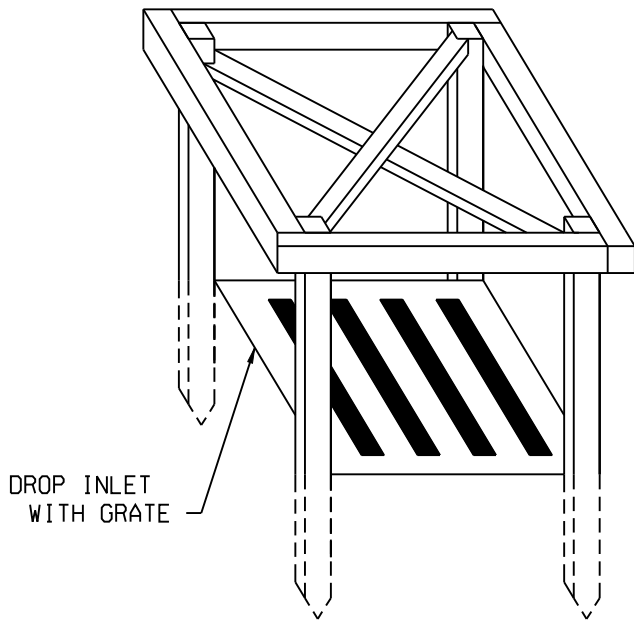


3. BACKFILL AND COMPACT EXCAVATED SOIL



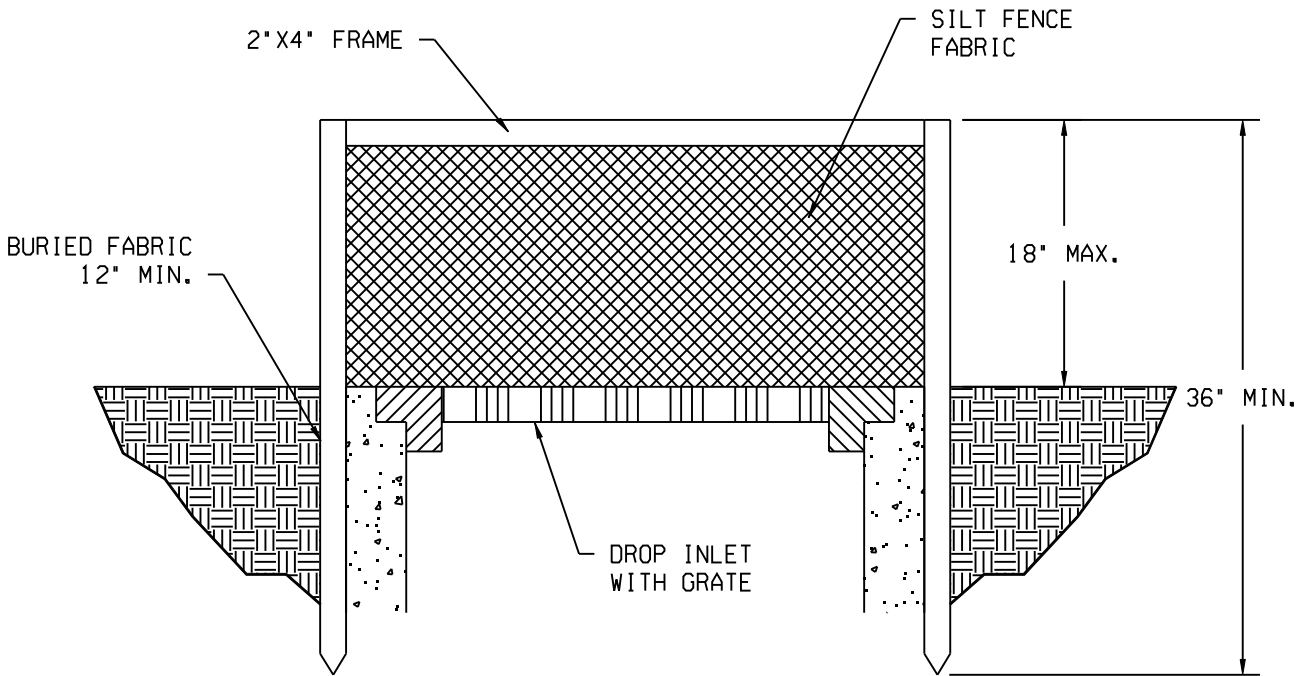
CROSS-SECTION OF A PROPERLY INSTALLED STRAW BALE

OWENSBORO METROPOLITAN PUBLIC IMPROVEMENT SPECIFICATIONS
CHAPTER 11 EROSION PREVENTION AND SEDIMENT CONTROL
INSTALLATION OF STRAW BALE DETAILS
EXHIBIT NO. 11-2 NOT TO SCALE



DROP INLET
WITH GRATE

ISOMETRIC VIEW OF
2X4 WOOD FRAME



2"X4" FRAME

SILT FENCE
FABRIC

BURIED FABRIC
12" MIN.

18" MAX.

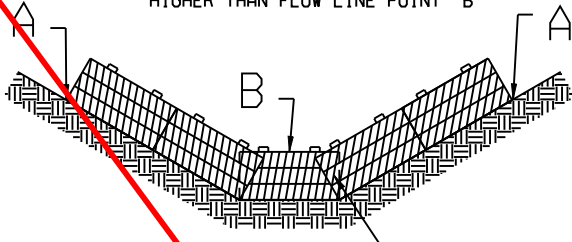
DROP INLET
WITH GRATE

36" MIN.

CROSS SECTION VIEW

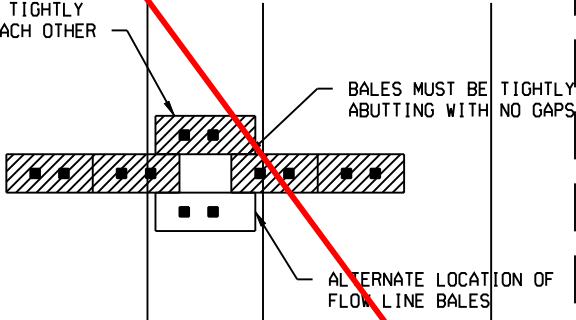
<p>OWENSBORO METROPOLITAN PUBLIC IMPROVEMENT SPECIFICATIONS</p>
<p>CHAPTER 11 EROSION PREVENTION AND SEDIMENT CONTROL</p>
<p>DROP INLET PROTECTION USING SILT FENCE</p>
<p>EXHIBIT NO. 11-3</p>
<p>NOT TO SCALE</p>

END POINTS "A" MUST BE HIGHER THAN FLOW LINE POINT "B"



OVERLAP SIDE BALES ON FLOW LINE BALES TO PREVENT GAPS

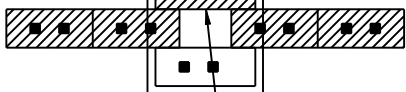
ONE OR MORE BALES IN CHANNEL BED TIGHTLY ABUTTING EACH OTHER



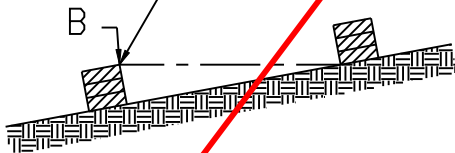
BALES MUST BE TIGHTLY ABUTTING WITH NO GAPS

ALTERNATE LOCATION OF FLOW LINE BALES

FLOW



PLACE DOWNSTREAM BALES SUCH THAT POINT "B" IS APPROXIMATELY LEVEL WITH THE LOWEST GROUND ELEVATION OF THE UPSTREAM BALE



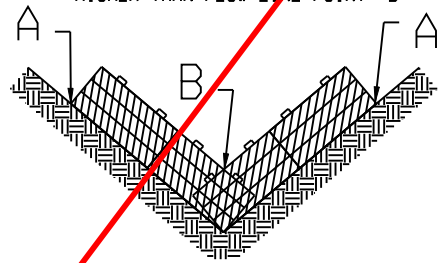
WIDE CHANNELS

18" BY 36" BALES

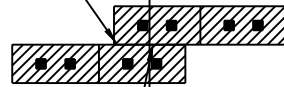
VALUE OF Z	MINIMUM NUMBER OF BALES
1.0 OR <	1**
1.0-3.5	2**
3.5-5.0	3**
5.0-7.0	4**
7.0 OR >	NOT RECOMMENDED

** ASSUMES DEPTH OF WATER ABOVE POINT "B" WILL NOT EXCEED 6".

END POINTS "A" MUST BE HIGHER THAN FLOW LINE POINT "B"

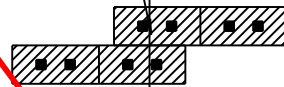


BALES MUST BE TIGHTLY ABUTTING WITH NO GAPS



PLACE DOWNSTREAM BALES SUCH THAT POINT "B" IS APPROXIMATELY LEVEL WITH THE LOWEST GROUND ELEVATION OF THE UPSTREAM BALE.

FLOW



NARROW CHANNELS

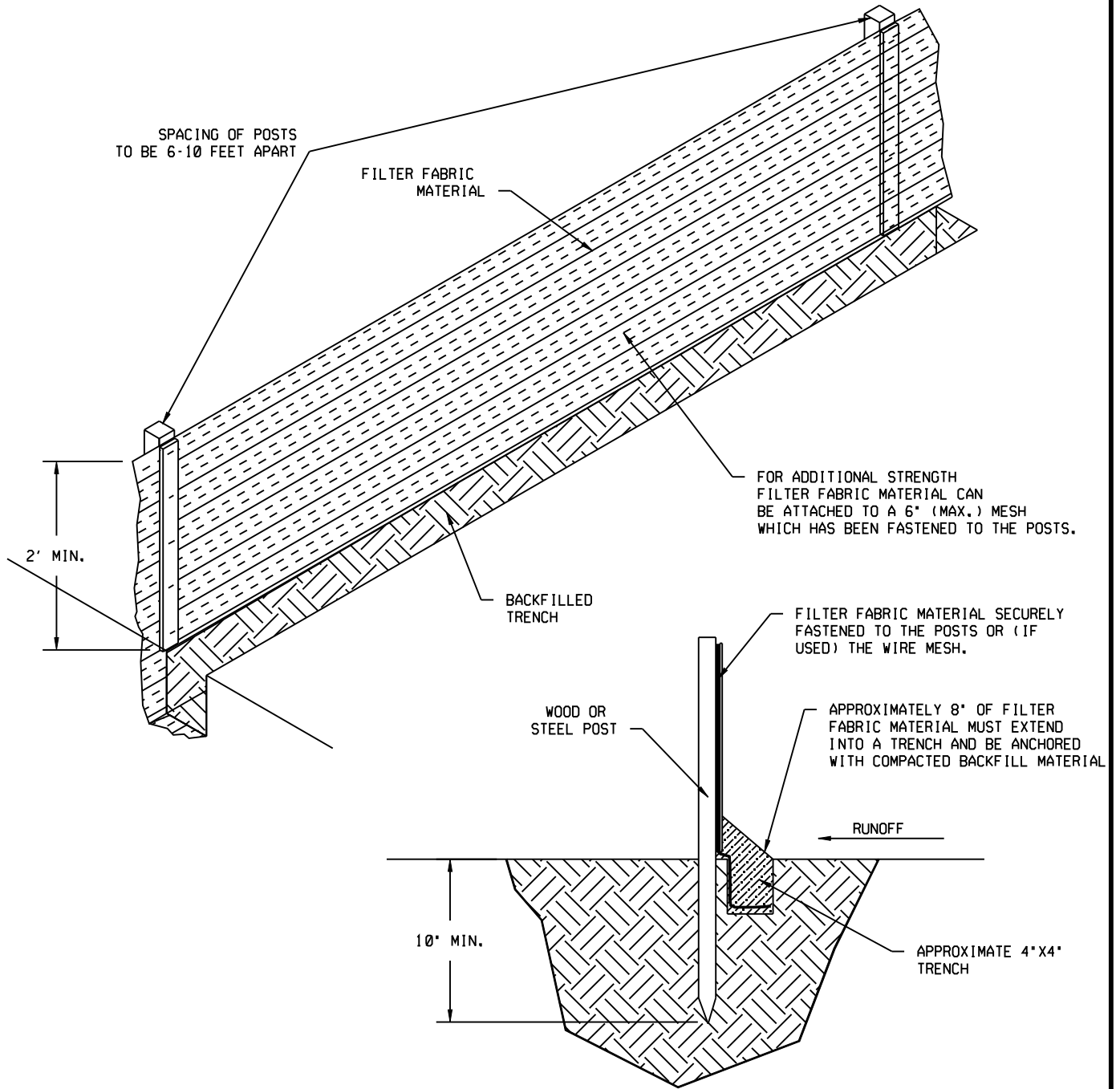
OWENSBORO METROPOLITAN PUBLIC IMPROVEMENT SPECIFICATIONS

CHAPTER 11 EROSION PREVENTION AND SEDIMENT CONTROL

STRAW BALE DROP STRUCTURES FOR DRAINAGE CHANNELS

EXHIBIT NO. 11-4

NOT TO SCALE

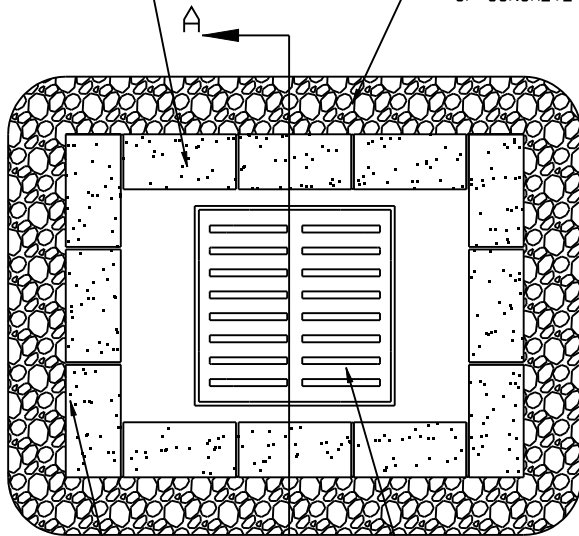


FILTER FABRIC SILT FENCE

OWENSBORO METROPOLITAN PUBLIC IMPROVEMENT SPECIFICATIONS
CHAPTER 11 EROSION PREVENTION AND SEDIMENT CONTROL
INSTALLING A FILTER FABRIC SILT FENCE
EXHIBIT NO. 11-5
NOT TO SCALE

CONCRETE BLOCKS PLACED
AROUND DROP INLET
PERIMETER

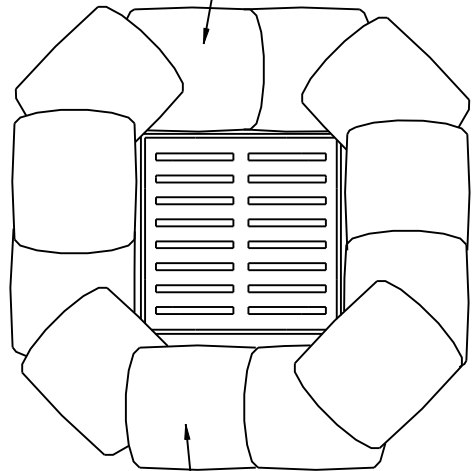
GRAVEL FILTER (APPROXIMATELY
3/4" DIAMETER) PLACED TO TOP
OF CONCRETE BLOCKS.



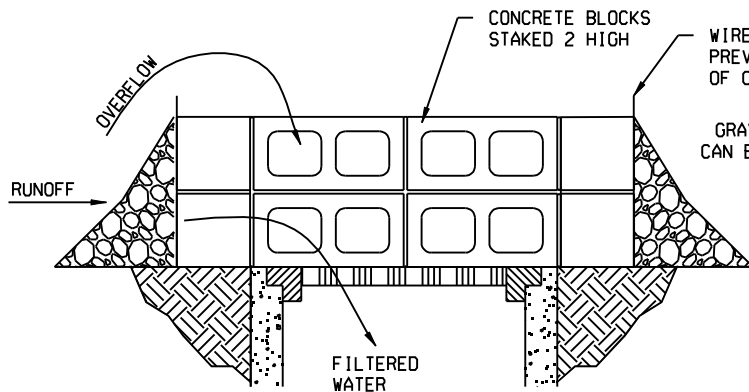
WIRE SCREEN PLACED
AROUND CONCRETE
BLOCK PERIMETER

AREA INLET
WITH GRATE

PLACE GRAVEL FILTER
BAGS SUCH THAT NO
GAPS ARE EVIDENT



3/4" GRAVEL CONTAINED IN PERVIOUS
BURLAP BAGS OR SYNTHETIC NET BAGS
(1/8" MESH) APPROXIMATELY 24' LONG,
12" WIDE AND 6" HIGH



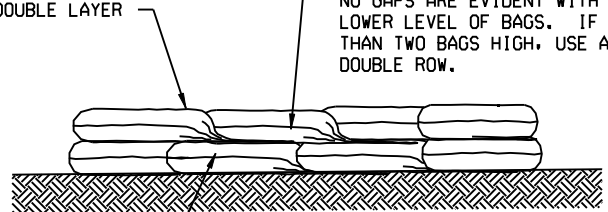
SECTION A-A

CONCRETE BLOCK FILTER

WIRE SCREEN TO
PREVENT MOVEMENT
OF GRAVEL

GRAVEL FILTER BAGS
CAN BE A SINGLE OR
DOUBLE LAYER

IF A DOUBLE LAYER OF GRAVEL
FILTER BAGS ARE USED, THE TOP
BAGS MUST BE PLACED SUCH THAT
NO GAPS ARE EVIDENT WITH THE
LOWER LEVEL OF BAGS. IF MORE
THAN TWO BAGS HIGH, USE A
DOUBLE ROW.



PLACE GRAVEL FILTER
BAGS SUCH THAT NO
GAPS ARE EVIDENT

SIDE VIEW

GRAVEL FILTER BAGS

NOTE: GRAVEL FILTERS MAY BE USED ON
PAVEMENT OR BASE GROUND

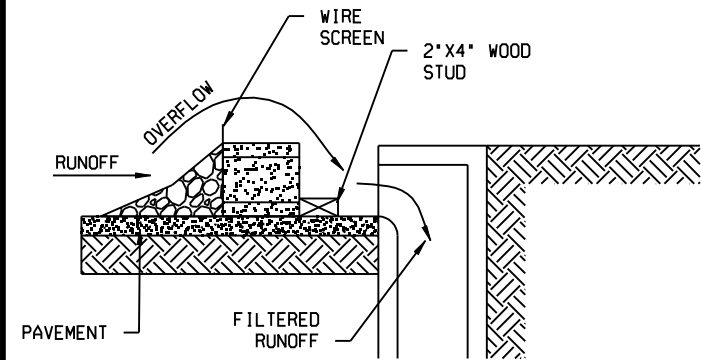
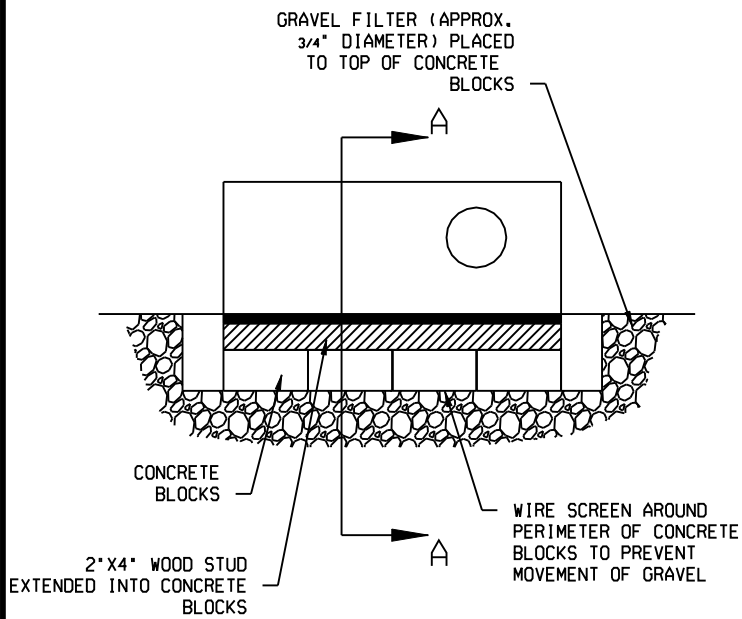
OWENSBORO METROPOLITAN
PUBLIC IMPROVEMENT SPECIFICATIONS

CHAPTER 11
EROSION PREVENTION AND
SEDIMENT CONTROL

GRAVEL FILTER
FOR AREA INLET

EXHIBIT NO. 11-6

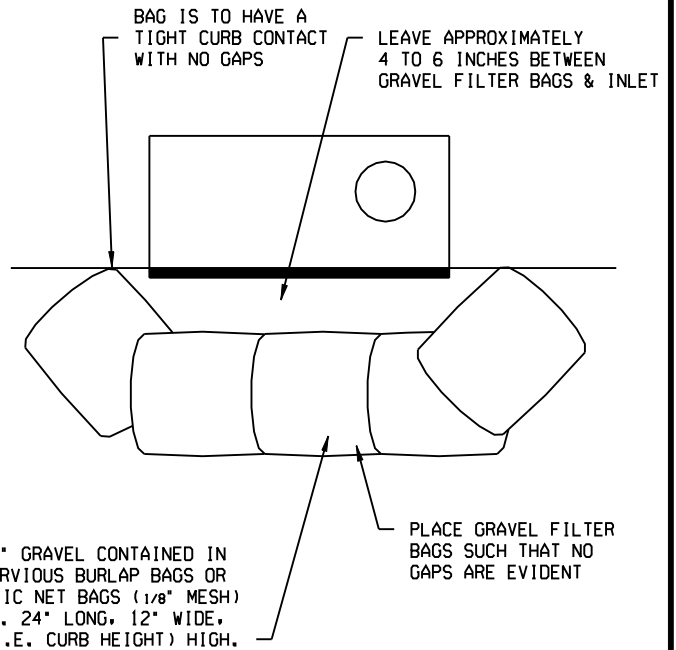
NOT TO SCALE



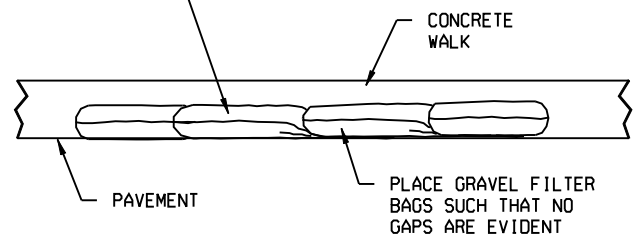
CROSS-SECTION A-A

CONCRETE BLOCK FILTER

NOTE: GRAVEL FILTERS MAY BE USED ON PAVEMENT OR BASE GROUND



HEIGHT OF GRAVEL FILTER BAGS SHOULD NOT BE ABOVE THE CONCRETE WALK



FRONT VIEW

GRAVEL FILTER BAGS

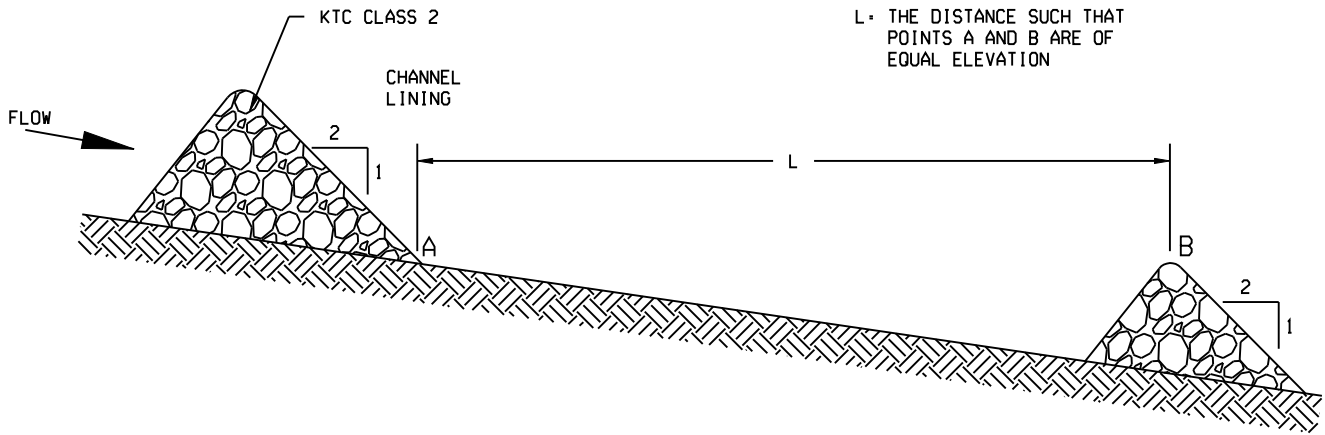
OWENSBORO METROPOLITAN
PUBLIC IMPROVEMENT SPECIFICATIONS

CHAPTER 11
EROSION PREVENTION AND
SEDIMENT CONTROL

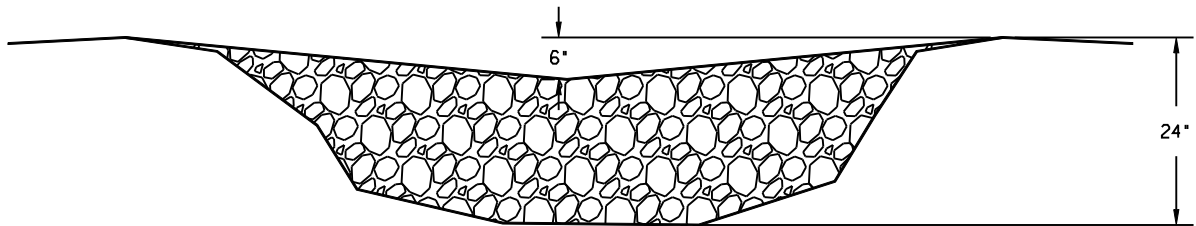
CURB INLET
GRAVEL FILTER

EXHIBIT NO. 11-7

NOT TO SCALE



LONGITUDINAL SECTION SHOWING SPACING BETWEEN CHECK DAMS



SECTION ACROSS CHANNEL

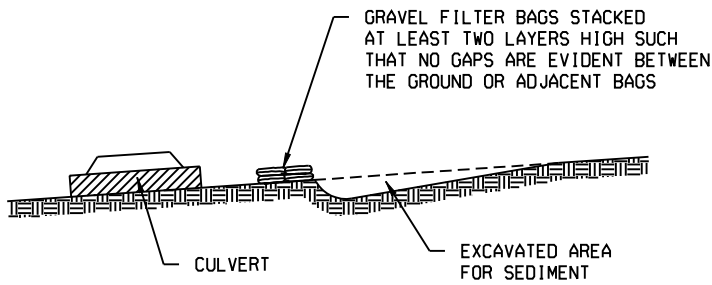
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PUBLIC IMPROVEMENT SPECIFICATIONS

CHAPTER 11
EROSION PREVENTION AND
SEDIMENT CONTROL

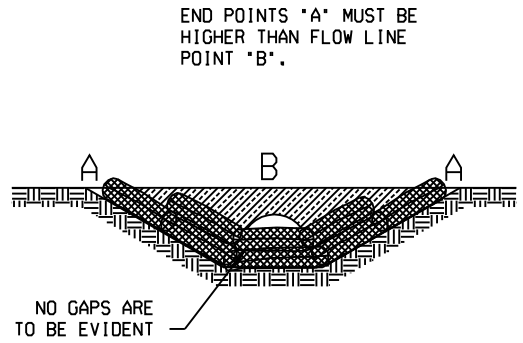
ROCK CHECK DAM
DETAILS

EXHIBIT NO. 11-8

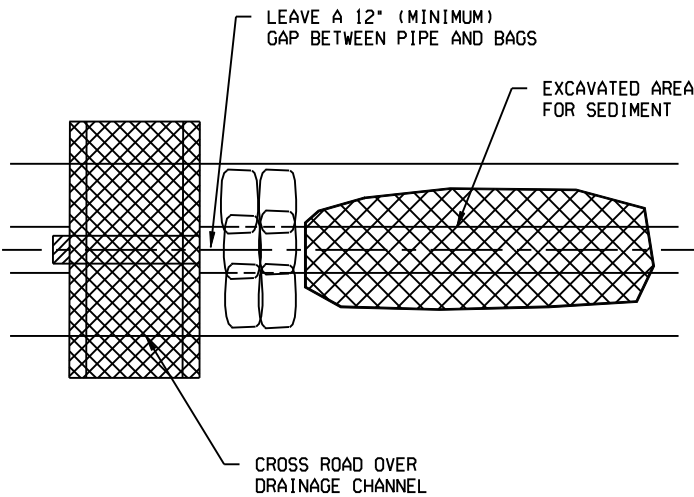
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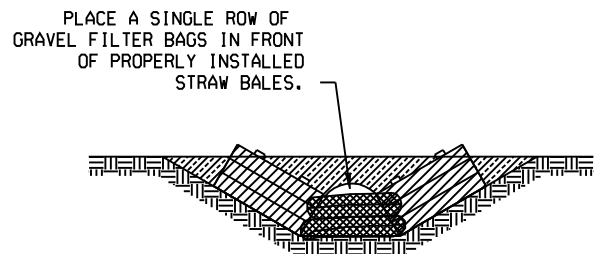
SIDE VIEW



FRONT VIEW



TOP VIEW



FRONT VIEW
(ALTERNATE)

EACH BAG IS TO CONSIST OF 3/4" DIAMETER GRAVEL CONTAINED IN PERVIOUS BURLAP BAGS OR SYNTHETIC NET BAGS (1/8" MESH) AND BE APPROXIMATELY 24" LONG, 12" WIDE, AND 6" HIGH.

OWENSBORO METROPOLITAN PUBLIC IMPROVEMENT SPECIFICATIONS
CHAPTER 11 EROSION PREVENTION AND SEDIMENT CONTROL
SMALL SEDIMENT TRAP LOCATED WITHIN DRAINAGE CHANNEL
EXHIBIT NO. 11-9 NOT TO SCALE