

ITEM 741

**INLET PROTECTION BARRIER
(FOR STAGE II INLETS, GRAVEL BAGS)**

741.1 Description: This work shall consist of furnishing, installing, and removing temporary erosion protection and sediment control gravel bag inlet protection barrier for a stage II inlet in accordance with these specifications and construction drawings, and as directed by the Engineer. Gravel bag inlet protection barriers for stage II inlets are geotextile fabric bags filled with clean gravel and placed around a stage II inlet, such as a curb inlet. This work shall be performed during construction operations and prior to final stabilization to control erosion and sedimentation.

741.2 Materials: Bags shall consist of geotextile fabric (filter fabric) made of long-chain synthetic polymers composed of at least 95 percent by weight of polyolefins in a woven fabric. The geotextile fabric shall meet the following specifications shown in Table 1:

Geotextile Fabric Properties: The geotextile fabric used shall equal or exceed the stated property values listed in Table 1 below:

Table 1

Silt fence Geotextile Fabric Properties			Requirements Unsupported Silt Fence	
	Units	Supported Silt Fence	Geotextile Elongation $\geq 50\%$	Geotextile Elongation $< 50\%$
Grab Strength				
Machine Direction	lbs	90	123	123
X-Machine Direction	lbs	90	100	100
Permittivity	sec-1	0.05	0.05	0.05
Apparent Opening Size (Maximum average roll value)	Mm/sieve	0.6/30	0.6/30	0.6/30
Ultraviolet Stability (Retained Tensile Strength)	%	70 after 500 hrs exposure	70 after 500 hrs exposure	70 after 500 hrs exposure
NOTES: 1. Table 1 adapted from AASHTO M 288 Geotextile Specification for Highway Applications Table 6. Temporary Silt Fence Property Requirements. 2. All numeric values in Table 1 except Apparent Opening Size (AOS) represent minimum average roll values (MARV). Values for AOS represent maximum average roll values.				

Geotextile fabric shall contain stabilizers and/or inhibitors to make the fabric resistant to deterioration resulting from exposure to sunlight or heat. Geotextile fabric shall be resistant to commonly encountered soil chemicals, mildew, rot, and insects. Geotextile fabric shall be free of defects or flaws that affect its physical and/or filtering properties. Geotextile fabric shall provide an expected useable life comparable to the anticipated construction period.

The bag size shall be as follows:

Length: 18 to 24 inches

Width: 12 to 18 inches

Thickness 6 to 8 inches

The bag shall be filled with open-graded gravel and weigh 50 to 75 pounds. The gravel shall be free from adherent coatings, salt, alkali, dirt, clay, or organic and injurious matter. Clean coarse sand may be substituted for the open-graded gravel only as approved by the Engineer.

Nylon rope shall be used to secure the closure of the gravel filled bag.

741.3 Construction Methods: No clearing and grubbing or rough cutting, other than as specifically directed by the Engineer to allow for soil testing, surveying and installation of erosion protection and sediment control measures, shall be permitted until sediment control and erosion protection systems are in-place.

Gravel bag inlet protection barrier for a stage II inlet shall be installed at the locations shown on the construction drawings and in accordance with the drawing attached to this specification or as directed by the Engineer. Inlet protection barrier for a stage II inlet shall be constructed in accordance with an approved schedule that clearly describes the timing during the construction process that the various erosion control measures will be implemented. Inlet protection barrier for a stage II inlet shall be installed so as surface runoff will percolate through the system and allow sediment to be retained and accumulated.

Gravel bags for the inlet protection barrier shall be placed so as the gravel bags are placed on each side of the curb inlet along the gutter line and continuously along the back of the curb inlet. Gravel bags shall not be placed so as the throat of the inlet is blocked. Gravel bags shall be placed in a row with ends tightly abutting the adjacent bag.

The Contractor shall inspect the gravel bag inlet protection barrier at least once every week or as directed by the Engineer. The Contractor shall remove irregularities which will impede normal flow. Erosion protection and sediment control systems shall be maintained by the Contractor until final stabilization. Damage caused to erosion protection and sediment control systems shall be repaired immediately.

The Contractor is responsible for removal and proper disposal of sediment and debris from the inlet protection barrier system and as directed by the Engineer. Sediment and debris shall not be allowed to flush into the storm sewer system, waterways, jurisdictional wetlands, or onto adjacent properties. Sediment deposits shall be removed before they reach one-third of the height of the gravel bags.

Uncontaminated sediment can be placed at the project spoil site or, if properly handled, spread out to supplement fill requirements. The Engineer will designate how the sediment deposits are to be handled. Uncontaminated sediment shall not be placed in waterways or jurisdictional wetlands, unless as approved by the Engineer. If sediment has been contaminated, then it shall be disposed of in accordance with the applicable federal, state, and local regulations. Offsite disposal shall be the responsibility of the Contractor.

After final stabilization and at the direction of the Engineer, the Contractor, when required, shall be responsible for removing all erosion protection and sediment control systems that are not permanent, from the project.

741.4 Quality Assurance. The Contractor is responsible for the control of the quality of materials incorporated into the construction and the quality of completed construction. The City will have the option to engage materials engineering services to provide quality assurance testing and inspection to assist the City Engineer in determining the acceptability of materials and completed construction. Quality assurance services provided by the City do not relieve the Contractor of his responsibility for quality control. The Materials Engineer shall not have control of the means, methods, techniques, sequences or procedures of construction selected by the Contractor.

741.5 Measurement and Payment. When paid for separately as a pay item, measurement and payment for the gravel bag inlet protection barrier for a stage II inlet shall be by the **linear foot**, complete and in-place, measurement being along the centerline of the inlet protection barrier, between the limits of the beginning and ending gravel bag.

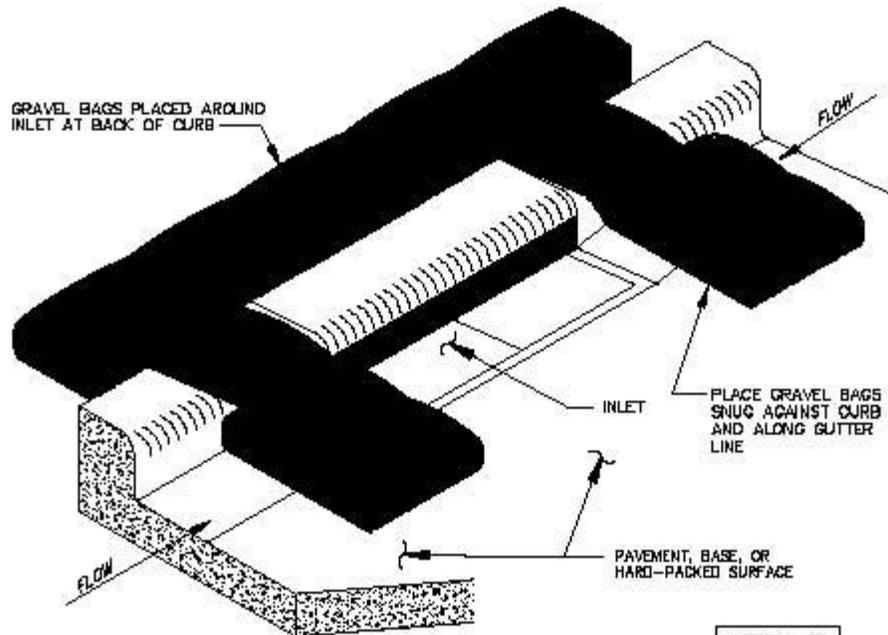
Payment for a gravel bag inlet protection barrier for a stage II inlet shall include and be full compensation for all labor, equipment, materials, supervision, and all incidental expenses for construction of this item, where 60% of the total unit cost shall be for the furnishing and placing all materials. Thus, 40% of the total unit cost shall be for the removal and disposal of erosion protection and sediment control systems: inlet protection barrier, after final stabilization, at the end of the project.

When other materials for Inlet Protection Barriers (For Stage II Inlets, Special Applications) are used in lieu of the gravel bags, all installation, maintenance, and payment shall be in accordance with those established for gravel bags in this specification.

If no separate Bid Item is provided on the Proposal for “Inlet Protection Barriers (For Stage II Inlets, Special Applications” then it is considered a subsidiary item for construction of the Project and there will be no separate measurement or payment.

Note: This specification requires a drawing.

**GRAVEL BAG INLET PROTECTION BARRIER
(FOR STAGE II INLETS)**



IPB-II

General Notes:

1. PLACE GRAVEL BAGS IN THE GUTTER ON EACH SIDE OF THE INLET OPENING. GRAVEL BAGS SHALL BE PLACED TIGHTLY AGAINST THE CURB.
2. PLACE GRAVEL BAGS AT BACK OF CURB ALONG INLET.
3. GRAVEL BAGS SHALL NOT BLOCK THROAT OF INLET, UNLESS DIRECTED BY ENGINEER.
4. IF THE LANE ADJACENT TO THE INLET IS CLOSED TO TRAFFIC THEN ADDITIONAL GRAVEL BAGS SHALL BE PLACED CONTINUOUSLY ACROSS THE FRONT OF THE INLET, BUT SHALL NOT BLOCK THE THROAT OF THE INLET.

H.C.P.I.D. ARCH. & ENG. DIV.	
DESCRIPTION	DRAWN BY
GRAVEL BAG INLET	RA
PROTECTION BARRIER	APPROVED BY
(FOR STAGE II INLETS)	RA
	DATE
	10/1/08
	DWG. NO.
	HC741-4

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END OF ITEM 741