

Item No.	Pay Item	Pay Unit
802180X	<u>(size)</u> " Perforated Corrugated Aluminum Alloy Pipe Underdrain	Linear Foot
802190X	<u>(size)</u> " Polyvinyl Chloride (PVC) Pipe Underdrain	Linear Foot
802200X	<u>(size)</u> " Corrugated Polyethylene Underdrain	Linear Foot

## SECTION 803

### PIPE SLOPE DRAINS

**803.01 Description.** This work shall consist of furnishing and installing intake spillway assemblies and pipe slope drains; constructed on the shoulders, slopes and at other designated locations and shall be of the types, sizes and dimensions shown on the plans or specified in the proposal, all in accordance with these specifications and in conformity with the lines and grades set by the Engineer.

This work shall include the furnishing and construction of joints, connections, bends and elbows as may be required to complete the construction indicated.

#### MATERIALS

**803.02 Corrugated Metal Pipe.** Corrugated metal pipe shall conform to the requirements of AASHTO M 36 for Type I Culvert Pipe.

**803.03 Bituminized-Fiber Pipe.** Bituminized-fiber pipe shall conform to the requirements set forth in Subsection **802.05**, except that it shall not be perforated.

**803.04 Class PS 46 Polyvinyl Chloride (PVC) Pipe.** PVC

pipe shall conform to the requirements of AASHTO M 278 for Class PS 46 having a cell classification of 12454-B as defined in ASTM D 1784. ASTM D 3034 SR 35 pipe is considered equal.

**803.05 Metal Intake Spillway Assembly.** Metal intake spillway assemblies shall be fabricated from either steel sheet conforming to the requirements of AASHTO M 218, or aluminum conforming to the requirements of AASHTO M 196.

**803.06 Corrugated Polyethylene (PE) Pipe.** Corrugated polyethylene pipe shall conform to the requirements of AASHTO M 294, Type S. The pipe shall be on the Department's source approval sheet for smooth interliner polyethylene pipe. The manufacturer shall furnish a certification with each shipment stating that it meets the requirements of AASHTO M 294.

## CONSTRUCTION REQUIREMENTS

**803.07 Pipe Slope Drains.** Pipe slope drains and intake assemblies shall be constructed in conformity with details indicated on the plans and at locations designated by the Engineer. The laying of the pipe and all construction shall be in accordance with all applicable provisions and requirements stipulated in Section 714. The pipe joints shall be clamped together by bands or couplings in such a manner that separation will be prevented and the connections shall be watertight.

Intake assemblies shall be installed so that they will function properly and efficiently. Water shall be prevented from percolating under or around them.

On occasions when intake assemblies are not used in conjunction with the installation of pipe slope drains, the area around and in front of the inlet shall be paved with approved

asphalt surfacing to prevent erosion and undermining of the

pipe. The pipe, forming the entrance, may be field cut when necessary to provide a satisfactory entrance.

**803.08 Methods of Measurement.** Pipe slope drains will be measured by the linear foot of pipe of the kind and size specified, installed and accepted, complete in place.

Intake spillway assemblies will be measured as complete units installed.

No measurement will be made for excavation necessary for the construction and installation of the above items.

**803.09 Basis of Payment.**

**A. Pipe Slope Drains.** The accepted quantities, measured as provided above, will be paid for at the contract unit price for Pipe Slope Drain of the types and sizes of pipe called for in the proposal, complete in place, which price and payment shall be full compensation for furnishing all materials, including bends, elbows, bands, couplings, asphalt surfacing, etc., hauling and placing all materials, excavation and backfilling, constructing connections, disposal of surplus material, and including all labor, equipment, tools, and incidentals necessary to complete the work.

**B. Intake Spillway Assembly.** Intake spillway assemblies, measured as provided above, will be paid for at the contract unit price for Metal Intake Spillway Assembly, which price and payment shall be full compensation for furnishing all materials, excavation and backfilling, constructing connections, disposal of surplus material, and including all labor, equipment, tools, and incidentals necessary to complete the work.

Payment for each item includes all direct and indirect costs and expenses required to complete the work.

Payment will be made under:

Item No.	Pay Item	Pay Unit
8031XX0	( <u>size</u> )" Corrugated Metal Pipe Slope Drain	Linear Foot
8032XX0	( <u>size</u> )" Bituminized-Fiber Pipe Slope Drain	Linear Foot
8033XX0	( <u>size</u> ) " Polyvinyl Chloride (PVC) Pipe Slope Drain	Linear Foot
8034XX0	( <u>size</u> ) " Pipe Slope Drain	Linear Foot
8035000	Metal Intake Spillway Assembly	Each

## SECTION 804

### RIP-RAP AND SLOPE PROTECTION

**804.01 Description.** This work shall consist of placing protective coatings of broken stone or concrete (which may or may not be grouted), bagged sand and cement, polyvinyl chloride coated wire enclosed rock gabions, precast concrete slabs or slope protection in accordance with these specifications and in conformity with the lines, grade and thickness shown on the plans or established by the Engineer. This work shall also consist of placing an approved fabric on a prepared slope beneath the rip-rap.

#### MATERIALS

**804.02 Stone for Rip-Rap.** Stones shall be hard quarry or field stone and shall be of such quality that they will not disintegrate on exposure to water or weathering. The stone shall be suitable in all respects for the purpose intended. Only stone obtained from an approved source shall be used.

Rip-rap shall be well graded stone with test samples falling between the following gradation limits:

Stone Size Range (Feet)	Stone Weight Range (Pounds)	Percent of Gradation
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