

ITEM 63603.16XXYY M - CORRUGATED STEEL PIPE INTERCEPTOR DRAIN, 16 GAUGE,
EMERGENCY STANDBY CONTRACT WORK

DESCRIPTION

Under this item, the Contractor shall furnish and install asphalt coated and asphalt paved invert corrugated pipe drain interceptor in accordance with these specifications and the contract documents.

MATERIALS

All provisions of Subsection 707-02 for round corrugated steel pipe shall apply, with the following additions for interceptors:

The inlet capability shall be along a longitudinal axis of the wall segment. This inlet apparatus may be continuous or intermittent. The opening in the pipe wall may be fabricated in the form of continuous bar risers and spacers, or of intermittent cut-out segments with structural members supporting a continuous grating, all as indicated on the plans.

Backfill shall be Class A Portland Cement Concrete, meeting the requirements of Sections 501, Subsection 502-3.01 and cured with 711-05, using white pigmented compound material.

Elastomeric polymer sealer shall meet the physical requirements of either Federal Specification SS-S-195B or ASTM D3406, and be accepted on manufacturer's certification.

Bar Riser, Space Type - The bar riser, space type shall be helically corrugated pipe with a continuous welded or lock seam. Pipe ends shall have two (2) rolled annular corrugations on each end for jointing.

Riser assemblies shall be fabricated from 4.75mm structural steel, welded to form a 44mm wide, continuous opening, and shall have solid web spacers on 150mm centers. The height of the riser assemblies, as determined from the contract documents, shall be 125mm minimum. The riser assemblies shall be hot dipped galvanized according to ASTM Designation A-123. The assemblies shall be welded to the corrugated pipe on each side of the riser at the location of the solid web spacers. The riser shall terminate one (1) inch from the ends of each pipe length to allow clearance for single bolt coupling bands. The ends of the riser shall be closed with a suitable welded plate, where solid web spacers do not come to the ends of the riser.

The maximum deviation from straight in both the vertical and horizontal plane of the riser assembly shall not exceed 19mm in a 6m length.

Any fittings that may be designated in the contract documents shall meet the material requirements of Subsection 707-02.

Continuous Grating Type - The continuous grating type shall be helically corrugated pipe with a continuous lock seam.

Pipe ends shall have two (2) rolled annular corrugations on each end for joining. The cut-out pipe segments shall be made with a high speed rotary friction saw, and the material removed shall provide a 50mm wide slot of maximum length between the lock seams. The slot shall be

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left intact 25mm on each side of the lock seam, and this material shall be utilized to fasten the serpentine reinforcing bar in place.

A serpentine bent epoxy coated reinforcing bar shall cross the slotted opening on 150mm centers. The reinforcing bar shall be an ASTM A615, No. 4 deformed bar, epoxy coated with 7 mils of fusion bonded epoxy powder.

Grating shall be furnished unless noted in the contract documents. Grating shall meet NAAMM Specifications and all bearing bars, cross bars and bent connecting bars shall be of welding quality, mild carbon steel conforming to ASTM A569, and hot dipped galvanized. The grating shall be 19mm deep by 44mm wide, and extend the full length of each pipe section slot.

Tie down bolts shall be 7.9mm diameter, J-type bolts plated, ASTM A307 steel supplied with self-locking nuts.

Concrete forms shall be of cellular foam plastic base, fabricated as an integral part of the pipe and reinforcing bar assembly. The form shall be capped with a 25mm thick wood or plastic cap resting on top of the foam plastic and reinforcing bar.

The maximum deviation from straight in both the vertical and horizontal plane of the completed assembly shall not exceed 19mm in a 6m length.

Any fittings that may be designated on the contract plans shall meet the material requirements of Subsection 707-02

CONSTRUCTION DETAILS

Excavation - The requirements specified in Section 206 - Trench, Culvert and Structure Excavation - that apply to culverts and storm drains, shall govern, except as modified in the contract documents, or as directed by the Engineer.

Pipe Assembly - All interceptor drain pipe and related fittings shall be handled and assembled in accordance with the manufacturer's instructions, except as modified in the contract documents, or as ordered by the Engineer.

Backfill - Class A Portland Cement Concrete shall be used for backfill to encase the interceptor drain pipe. Placement limits and details of concrete placement shall be as shown in the contract documents.

Care shall be taken in placing concrete backfill immediately adjacent to the interceptor drain pipes to avoid damage to the pipe and to prevent pipe misalignment. The concrete shall be thoroughly consolidated using internal vibrators. Sufficient hold downs shall be provided by the Contractor to prevent the interceptor drain from floating during concrete placement.

The surface of the concrete shall be sloped toward the slotted drain, as detailed in the contract documents. The Contractor shall provide a suitable cover for the wall openings to prevent the concrete backfill or any other foreign debris from entering the pipe or sealing the opening during the installation and subsequent curing periods.

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Transverse contraction joints shall be either formed or sawed in the concrete backfill at 6m intervals unless the concrete abuts concrete curbs. In this case, the transverse joints shall be formed or sawed to match the curb joint interval. The transverse joints shall be 9.5mm wide and 62.5mm deep. If sawed, they shall be done as soon as possible after placement, within 24 hours prior to the development of shrinkage cracks. Care shall be taken not to saw into the interceptor drain pipe.

One expansion joint shall be provided in the concrete backfill for every 152m of continuous interceptor drain pipe installed, or at every location where the concrete backfill abuts a drop inlet, manhole or other similar structure. This joint shall be formed for the full depth of the backfill concrete, and shall be a minimum of 19mm in width.

A longitudinal joint shall be provided if the concrete backfill is placed adjacent to a concrete pavement. This joint shall be either formed or sawed 6mm wide and 62.5mm deep.

After curing, the transverse, expansion and longitudinal joints shall be thoroughly cleaned to remove any contaminants or laitance remaining from forming or sawcutting. Before sealing, a backer rod bond breaking material, such as upholstery cord or closed cell polyurethane rod, shall be placed so that a sealer width to depth ratio of 1:1 will be achieved. The joints shall then be sealed with an elastomeric polymer sealer. The methods and materials used to construct the various joints shall be chosen by the Contractor subject to approval by the Engineer.

Movement of construction equipment, and all other vehicles and loads over and adjacent to any slotted drain pipe shall be done at the Contractor's risk. Any pipe or backfill which becomes damaged or disturbed through any cause shall be replaced or repaired, as directed by the Engineer, at the expense of the Contractor and at no cost to the State. Suitable temporary crossovers, consisting of steel plate or other materials approved by the Engineer, shall be employed for a minimum of 7 days following concrete backfill operations in all areas where vehicular traffic must be maintained, or until such time as the pipe installation will withstand loading without damage.

METHOD OF MEASUREMENT

Interceptor drain pipe shall be measured in linear meters along the top centerline, as designated on the plans or as directed by the Engineer in writing.

BASIS OF PAYMENT

The unit price bid per linear meter for this work shall include the cost of furnishing all labor, materials and equipment necessary to complete the work.

Note: All pipe diameters shall be to the nearest millimeter.

The manner in which the serialized portion of this specification is input is as follows:

Third and Fourth digits (XX) to the right of the decimal place insert: 10 - 300mm Diam.

11 - 375mm Diam.

12 - 450mm Diam.

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14 - 600mm Diam.

16 - 750mm Diam.

Fifth and Sixth digits (YY) to the right of the decimal place insert: Quantity Range serialization
(See below).

- “01” Summer Quantity Range 1 (0.0 to 6)
- “02” Summer Quantity Range 2 (6.1 to 18)
- “03” Summer Quantity Range 3 (18.1 to 60)
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- “04” Winter Quantity Range 1 (0.0 to 6)
- “05” Winter Quantity Range 2 (6.1 to 18)
- “06” Winter Quantity Range 3 (18.1 to 60)