

ITEM 01603.81 M - PRECAST CONCRETE CULVERT (FLOORLESS)

DESCRIPTION:

This work shall consist of furnishing and placing single or multi-cell precast reinforced concrete culvert sections of the type indicated in the plans in accordance with these specifications in the locations indicated and in a manner approved by the Engineer.

MATERIALS:

Precast concrete culvert shall meet the requirements of Section 706-17, Precast Concrete Box Culverts.

Grout. Grout shall meet the requirements of Section 705-21, Mortar for Concrete Masonry.

Joint Seals. Joint seals shall consist of an impervious membrane joint or equivalent of the size and type specified by the precast units manufacturer.

CONSTRUCTION DETAILS:

1. Site Preparation. All stream protection, excavation, footing and drainage work required prior to the installation of the precast units, as indicated on the contract plans, will be paid for under their respective items, in accordance with the appropriate sections of the Standard Specifications.

2. 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 plans or as directed by the Engineer.

3. Inspection, Storage and Handling. All precast units and installation materials shall be inspected upon arrival at the construction site and prior to installation to determine any damage during shipment and storage and for conformance to dimensional tolerances.

The Contractor shall handle the units with extreme care to prevent damage. Damaged units shall be repaired in a manner approved by the Engineer. Units, which as determined by the Engineer, cannot be repaired or which do not meet dimensional tolerances, shall be rejected and replaced with acceptable units furnished by the Contractor at no additional cost to the State.

4. Installation of the Structures. The Contractor shall provide the Engineer with detailed information concerning the proposed method of installation and the construction equipment he intends to use. No work shall be performed without the Engineer's approval.

5. Joints. All dowels, joint filler material, tie rods, connectors, waterproofing strips or other sealing materials indicated on the contract plans or supplied by the manufacturer, shall be furnished and installed by the Contractor in accordance with the manufacturer's directions and as approved by the Engineer. All welding required shall be performed in accordance with the provisions of the New York State Steel Construction Manual.

6. Grouting. Grouting shall be done in the manner indicated on the contract plans.

7. Backfilling. Backfilling operations shall not begin until the following checks have been made:

- a. Unit to footing key joints are grouted as shown on contract plans.
- b. Transverse connectors between unit segments are placed and secured, if required.
- c. Headwall tie-rods are placed and properly grouted (if required).

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- d. Proper bearing between precast units and cast-in-place wingwalls is achieved.
- e. Joints seals are properly placed.

Backfilling will be paid for under its respective item(s). Payment limits to be used in backfilling shall be as indicated on the plans or as established in writing by the Engineer. Backfilling procedures shall be in accordance with Section 203, Excavating and Embankment, with the following modifications:

- a. Fill shall be placed and compacted in layers not exceeding 300 mm in depth;
- b. Backfill shall be placed as symmetrically as possible around the structure with differential depths of backfill on each side of the structure not exceeding 450 mm with respect to each other;
- c. Dumping for filling operations shall not be allowed any nearer than 900 mm to a plane passing vertically through the back face of each footing.
- d. The bare structure may not be crossed over by any construction equipment heavier than that specified by the structure unit manufacturer. All damage resulting from equipment passage shall be rectified in a manner satisfactory to the Engineer and at no cost to the State.
- e. Compacting with hand compaction equipment is required for all fill within 300 mm of the structure.
- f. At least 300 mm of compacted fill shall be in place over the top of the structure before equipment heavier than that specified by the manufacturer is allowed to cross the culvert.

METHOD OF MEASUREMENT:

The work will be measured as the number of linear meters of culvert installed. Measurement will be taken along the vertical projection of the culvert centerline to the limits shown on the contract drawings.

BASIS OF PAYMENT:

The unit price bid per linear meter shall include all labor, materials and equipment necessary to furnish, install and prepare the structure for backfilling. Excavation, cast-in-place concrete elements and backfill shall be paid for under their respective items.

Payment will be made under:

<u>ITEM NO.</u>	<u>ITEM DESCRIPTION</u>	<u>PAY UNIT</u>
01603.81xxyyM	Precast Concrete Culvert (Floorless)	meter

Payment shall be made under item 01603.81xxyyM, where “xx” and “yy” as indicated in the itemized proposal shall mean the inside span and rise dimensions respectively in meters to the nearest tenth of a meter of the precast section.