

ITEM 18603.0511 M - LINING EXISTING CULVERT WITH CORRUGATED STEEL PIPE

DESCRIPTION: Work shall consist of inserting a corrugated steel pipe into an existing culvert in accordance with this specification and contract documents. The inserted pipe is placed such that grout may later be placed in the annular space between the new and existing culverts. The insert culvert has the following characteristics:

_____	Classification
_____	Diameter or size
_____	Gauge
_____	Corrugations
_____	Coating

MATERIALS: Materials shall meet the requirements of the following specifications:

Corrugated Steel Pipe	707-02
Portland Cement Concrete - General	501
Zinc Chromatic Primer	708-04

The ends of the corrugated steel pipe shall be rerolled. The exterior of aluminum coated corrugated steel pipe shall be thoroughly coated with zinc chromate primer. Repairs of damaged coatings shall be made in accordance with Specification 707-02 prior to placement. End sections, when used, shall be galvanized.

Corrugated steel pipe shall have grout holes and fittings located as specified in the contract plans. Plugs shall be inserted into a grout fitting after the grouting operation is complete at that fitting. Grout fittings shall be compatible with plugs and grout delivery equipment.

CONSTRUCTION DETAILS

Existing Culvert Preparation: The Contractor shall dewater, inspect, and clean the existing culvert. The Engineer and Contractor shall identify voids in the backfill around the existing culvert by visual inspection or by chain drag or other sounding method acceptable to the Engineer. The Contractor shall fill all voids by cutting holes in the culvert and pumping grout into the areas of lost backfill. The Contractor shall provide strutting and bracing to insure the stability of the existing culvert during this operation.

Handling and Assembly of Pipe: The pipe shall be inserted in reasonably close conformance to line and grade. To facilitate placement and proper alignment of the

ITEM 18603.0511 M - LINING EXISTING CULVERT WITH CORRUGATED STEEL PIPE

new pipe, the Contractor shall install skids in the existing culvert or construct a concrete bed in the existing invert. The Contractor may propose an alternate method to place and align the new pipe, subject to the approval of the Engineer.

If the Contractor chooses to install skids, the skids shall be 2.0 meter minimum lengths and staggered along the entire length of the existing culvert. The staggered skids shall be spaced such that grout will freely flow beneath the entire inserted pipe. The skids shall be securely attached to the existing culvert near the invert such that the invert of the new pipe does not drag along the invert of the existing culvert during placement.

If the Contractor chooses to construct a concrete bed in the invert of the existing culvert, the concrete shall be Class A and meet the requirements of NYSDOT Specifications Section 501, Portland Cement Concrete - General, and Sections 555-3.04 and 555-3.06. No water shall pass through the existing culvert during concrete placement. The concrete shall be finished such that the new pipe lays reasonably close to line and grade. The edges of the placement shall be feathered back to allow grout to pass freely between the corrugations of the new pipe and the concrete bed. The Contractor will not be required to grout voids where the concrete bedding will fill voids caused by the loss of the existing culvert invert.

Adjacent pipe sections shall be aligned such that the grout holes are placed as detailed in the contract plans regardless of the placement and alignment system used. The displacement between adjacent pipe ends shall not exceed 13 mm.

Pipe sections may be pushed or pulled into place. As pipe sections are placed, each end shall be braced against the existing culvert such that the new pipe shall remain in place during a grouting operation. Bracing material shall not significantly impede grout flow into the annular space between culverts. Bracing bolts which cannot be fully turned out shall be cut off and ground smooth to the new culvert interior seven days after the completion of the grouting operation.

Joints: Internal expanding joint bands with annular corrugations and foam gaskets shall be placed at all joints to contain grout. Before grouting, these bands shall be strutted to the satisfaction of the Engineer. The internal bands and struts shall remain in place for seven days after the completion of the grouting operation. Alternate joint methods may be submitted to the Director, Materials Bureau, for approval. Such a submission is not cause for an extension of time as provided under Subsection 108-04.

ITEM 18603.0511 M - LINING EXISTING CULVERT WITH CORRUGATED STEEL PIPE

Seals: Plywood, or an equivalent material of adequate strength, shall be placed in the annular space at each end of the culvert to retain grout. Seals may be left in place providing they do not interfere with bank protection.

Damaged Pipe and Repair: Prior to placement, pipes shall be inspected and repaired in accordance with the written procedures of the Materials Bureau. Interior coatings damaged during placement shall also be repaired in accordance with the written procedures of the Materials Bureau. Pipe sections damaged or disturbed through any cause prior to contract acceptance shall be repaired, realigned, or replaced as directed by the Engineer at the Contractor's expense. Pipe sections which are defective from any cause, and determined by the Engineer to be unrepairable, are unacceptable and shall be replaced at no cost to the State.

METHOD OF MEASUREMENT: Corrugated steel pipe placed as culvert linings shall be measured in linear meters along the invert centerline.

BASIS OF PAYMENT: The unit price bid per linear meter shall include the cost of furnishing all labor, materials, and equipment necessary to manufacture and install the corrugated steel pipe, including: dewatering, cleaning, inspecting, strutting, bracing, skids, concrete, joint bands, seals, installing grout holes, plugs, fittings, and damaged pipe repair. Grout used to fill the annular space and backfill voids shall be paid for under a separate item.