

ITEM 01602.90nnnn M - LINING EXISTING CULVERT WITH CORRUGATED STRUCTURAL PLATE

ARCH

DESCRIPTION

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

_____	Span
_____	Rise
_____	Thickness
_____	Corrugations

MATERIALS

Materials shall meet the requirements of the following specifications:

Corrugated Structural Steel Plate for Pipe, Pipe Arches and Underpasses	707-09
Corrugated Aluminum Structural Plate for Pipe and Pipe Arches	707-14
Portland Cement Concrete - General	501
Zinc Chromatic Primer	708-04

When aluminum pipe is used: The pipe exterior shall be thoroughly coated with zinc chromate primer. The Contractor shall repair damage to the aluminum coating due to drilling and welding in accordance with the manufacturer's recommendations prior to applying zinc primer.

Corrugated structural plate pipe and/or pipe arch 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

Handling and Assembly of Plate Arch: The plate arch shall be handled and assembled in accordance with the manufacturer's instructions, except as modified herein, on the plans or as directed by the Engineer in writing.

The Contractor shall submit fabrication details including assembly drawings, plate arch insertion methods, internal joint coupling, and bracing details to the Regional Construction Engineer for review. The Regional Construction Engineer will be allowed a minimum of seven (7) working days to review the Contractor's submittal.

Adjacent 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 ends shall not exceed 15 mm.

Assembled sections may be pushed or pulled into place. As sections are placed, each end shall be braced against the existing arch such that the new plate arch shall remain in place during the grouting operation. Bracing material shall not significantly impede grout flow into the annular space between arches. The bracing method shall allow a minimum 25 mm of grout between the new and existing structure. If bracing bolts are used to align and brace the plate arch those bolts which cannot be fully turned out after grouting shall be cut off and ground smooth to the new structure 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

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not cause for an extension of time as provided under Subsection 108-04.

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

Damage and Repair. Prior to placement, structural plate sections shall be inspected and repaired in accordance with the written procedures of the Materials Bureau. Structural plate 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. Structural plate pipe sections which are defective from any cause, and determined by the Engineer to be beyond repair, are unacceptable and shall be replaced at no cost to the State.

METHOD OF MEASUREMENT

The work of this item will be measured as the number of linear meters of new plate arch installed, as measured along the pipe arch 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 structural plate pipe arch, 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.

Payment will be made under:

<u>ITEM NO.</u>	<u>ITEM DESCRIPTION</u>	<u>PAY UNIT</u>
01602.90nnnn M	Lining Existing Culvert with Corrugated Structural Plate Pipe Arch	Meter

Note: "nnnn" denotes a serialized pay item, see Subsection 101-53