

ITEM 555.9900 01 - PRECAST CONCRETE FOR RAILROAD STRUCTURES

DESCRIPTION

This work shall consist of fabricating, furnishing and installing a permanent precast concrete backwall. The backwall shall be of the type and size, and at the locations shown on the plans or as directed by the Engineer.

Also included in this work shall be the concrete materials, concrete mix design, testing fabrication and installation of the backwall on the existing abutment and approaches as detailed on the plans.

MATERIALS

The backwall shall meet the requirements of 704-03 Precast Concrete - General with the following modifications and additions:

General The materials used for the structural concrete shall comply with the material requirements of American Railway Engineering and Maintenance-of-Way Association (AREMA) Manual for Railway Engineering, Chapter 8, Part 1 latest edition and shall conform to the following additional requirements:

- Concrete shall be made with a low alkali normal Portland cement (Type 1A) in accordance with ASTM C 150, latest edition, with less than 0.6% sodium equivalents.
- Maximum size of aggregate shall be 19 mm.
- Slump at point of discharge shall be a minimum of 50mm and a maximum of 100mm.
- Maximum water/cement ratio shall be in accordance with AREMA Chapter 8 section 1.12 and minimum concrete strength shall be 31.0 MPa at 28 days
- Air entraining agent shall be used in accordance with ASTM C 260 and air content shall be 5% to 8%.

Reinforcing shall meet the requirements of American Railway Engineering and Maintenance-of-Way Association (AREMA) Manual for Railway Engineering, Chapter 8, Part 1

Architectural Treatments has been modified to NONE

Curing shall meet the requirements of American Railway Engineering and Maintenance-of-Way Association (AREMA) Manual for Railway Engineering, Chapter 8, Part 1

CONSTRUCTION DETAILS

A. Precast Concrete Segments

1. Handling, storage, transportation

Employ positive means to protect panel edges from damage. Load and ship

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panels with care as indicated or as per manufacturer's recommendation.

Lift panels so as to minimize strain, distortion or impact loads.

2. Erection

Lift backwall units by the lifting hooks located in the backwall segments. The hooks for all backwalls will be embedded in concrete and need not be removed.

Backwall shall be placed as indicated in the contract documents. The Contractor shall block/shim to ensure alignment of horizontal details and to ensure plumbness of vertical backwall details. The open space between the precast panel and existing backwall shall be filled with non-shrink grout. Grout used for this purpose need not be colored.

Following erection of all panels, grout ports in each panel shall be filled with non-shrink grout colored to match the color of the panels. Recessed in flush surfaces shall be struck off flush. If the recesses are not to be exposed, this requirement will not apply.

Repair and repair procedures require approval by the Engineer.

METHOD OF MEASUREMENT

The Precast Concrete backwall will be measured by the total number of square meters of exposed backwall measured horizontally in place, end-to-end of each segment, and vertically according to the segment length as specified on the plans.

BASIS OF PAYMENT

The unit price bid per square meter of Precast Concrete For Railroad Structures shall include the cost of all labor, materials, tools and equipment necessary to perform the work, including Structural steel (including reinforcing, bolts, washers and nuts), grout, and joint materials, for the purpose of payment, are considered to be incidental to the backwall segment complete in place, and will not be paid for separately.