DESCRIPTION

This work shall consist of furnishing and installing precast concrete approach slabs in accordance with the contract documents and as directed by the Engineer.

MATERIALS

All materials shall conform to the NYSDOT Prestressed Concrete Construction Manual (PCCM).

A. Concrete

28 Day Compressive Strength 5,000 psi (Minimum)
Lifting Strength 3,000 psi (Minimum)
Water § 712-01
Aggregates § 501-2.02.B.1, § 703-02

B. Bar Reinforcement

Epoxy Coated Bar Reinforcement § 709-04

C. Stainless Steel

Stainless steel shall conform to the requirements of ASTM A167, or ASTM A240, Type 304. Stainless steel in contact with PTFE shall be polished to a No. 8, bright mirror finish. The minimum thickness of the stainless steel shall be as detailed on the plans.

Shear studs shall conform to the requirements of ASTM A276, Type 304 or 316.

CONSTRUCTION DETAILS

A. Drawings

Shop drawings, installation drawings and erection drawings shall be prepared and submitted as per the requirements of the PCCM.

The submitted drawings shall include details of lifting, handling and storage of beams in the production facility and their transportation, handling, and storage at the construction site.
The proposed handling and lifting shall be such that the maximum tensile stress in concrete due to handling and erection loads shall not exceed $0.15(f'_c)^{1/2}$, where $f'_c$ is the concrete compressive strength at the time being considered. Calculations showing actual concrete stresses based upon the proposed support locations and expected dynamic loading of the panels during handling, storage and transportation shall be submitted along with the drawings. Dynamic load shall take into account inertial effects anticipated during handling and transport. These drawings and calculations shall be stamped and signed by a Professional Engineer.

B. Fabrication of Precast Concrete Panels

Fabrication shall meet the requirements of the PCCM and the following:

1. Fabrication Tolerances:
   a. Width (transverse direction of the bridge): +1/8, -1/8 in.
   b. Length (longitudinal direction of the bridge): +1/8, -1/8 in.
   c. Depth (overall): +1/8, -0 in.
   d. Reinforcement cover: +3/16, -0 in.
   e. Bulkhead alignment (deviation from square or designated skew):
      - Vertical: ¼ in.
      - Horizontal: ¼ in.
   f. Horizontal alignment (deviation from straight line parallel to centerline of unit):
      - 1/4 in. for lengths up to 40 feet, inclusive
      - 3/8 in. for lengths from 40 feet to 60 feet, inclusive
      - 1/2 in. for lengths greater than 60 feet

2. Placing Concrete, Curing, and Finishing

All requirements stipulated in the PCCM shall apply and the following:

   a. After curing, all form release material and all other forming material adhering to the shear keyway and block out concrete shall be removed. Shear key faces shall be roughened and blast cleaned per the PCCM.
b. Surfaces shall be finished to a surface tolerance of ¼ in. in 10 ft. The surface tolerance shall be verified by the Engineer with an approved straightedge furnished by the Contractor not less than 10 ft. long. Surface irregularities in either the longitudinal or transverse directions shall be corrected in a manner acceptable to the Engineer.

c. Hand screeds or bullfloats, if used, shall be magnesium and 10 in., or more, in width. Care shall be taken not to overwork the concrete surface during any finishing operation.

d. After finishing, the surface shall be given a suitable texture with an artificial turf drag made of molded polyethylene with approximately 53,500 synthetic turf blades per square yard, each approximately ½ in. long. The artificial turf drag shall be of a type and brand appearing on the Department’s Approved list. Texturing shall be done prior to the beginning of curing operations. Only one pass of the turf drag over the finished area will be permitted.

e. Penetrating sealers shall not be applied to surfaces which are to receive a spray-applied waterproof membrane.

3. Stainless Steel Sliding Surfaces

Sliding surfaces shall be stainless steel plate with stainless steel studs, welded in accordance with AWS D1.6, current edition, and cast into the end diaphragm slide shoes.

4. Shipping and Handling of Precast Panels

Shipping and handling shall meet the requirements in the PCCM and as stated on the approved drawings. The finished surface of the slide shoes shall be protected from damage during all phases of handling.

5. Loading of Panels

Equipment weighing more than 2500 pounds shall not be permitted on the precast beams between the initial set of the longitudinal closure pour and the time that test cylinders demonstrate the closure pour concrete has reached a minimum strength of 10 ksi.

C. Pre-Installation Meeting

A pre-placement meeting shall be held 7 to 14 calendar days prior to the planned start of panel installation. The Contractor shall arrange for an onsite meeting with representatives from the UHPC and the precast system suppliers. The Contractor’s staff and the NYSDOT
Engineer and Inspectors shall attend the site meeting. The objective of the meeting will be to clearly outline the procedures for placing and leveling the precast concrete panels.

D. Installation Requirements

1. Prior to installing panels, the supporting surfaces in contact with the panels or field placed concrete shall be cleaned.

2. Adjust slab end elevations to achieve maximum differential elevation of \(\frac{1}{4}\) in. between edges of adjacent panels along the length of all longitudinal joints.

3. Install cast-in-place concrete closure pours as shown in the Contract Plans, with costs paid for under Item 557.XXXXXXRR, Field Cast Joints Between Precast Concrete Units.

**METHOD OF MEASUREMENT**

This work will be measured as the number of square feet of precast approach slab panels satisfactorily furnished and placed in accordance with the plans and specifications.

**BASIS OF PAYMENT**

The unit price bid shall include the cost of furnishing all labor, materials, and equipment necessary to satisfactorily complete the work, including fabrication, storage, protection, transporting, unloading and installation of all precast approach slab panels. The cost shall include fabrication, installation and protection of the stainless steel sliding surfaces, but the cost of bearings shall be paid for under their appropriate item. This work does not include field placement of reinforcement or casting of longitudinal closure pours.

*Payment will be made under:*

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Item</th>
<th>Pay Unit</th>
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<tbody>
<tr>
<td>557.6404NN08</td>
<td>Precast Concrete Approach Slab, Type 1</td>
<td>Square Foot</td>
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<tr>
<td>557. 6404NN08</td>
<td>Precast Concrete Approach Slab, Type 2</td>
<td>Square Foot</td>
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NN = Type Designation (1 or 2, as shown on the plans)