GENERAL

This standard drawing provides design and general construction details for prestressed concrete I-use bridges. The details in this standard are applicable to the construction of the deck concrete unless otherwise noted. The deck shall be cast in place and be a minimum of 14-in thick and 95-in wide. The project structures for this bridge shall include the following details:

1. The designer shall choose a 2-day concrete strength between 5000 and 7000 psi. A release strength between 5000 and 9000 psi. A minimum of 1% area of 0.150 in. or 0.187 in., the values chosen by the designer shall be listed in the structure's general notes.

2. A transverse cross-section through the deck, detailing at a minimum the 3-3 beam spaces, deck, and concrete width. The deck shall be reinforced with 0.150 in. or 0.187 in. of reinforcement.

3. The designer shall specify the release strength in the range of 4000 psi maximum and 5000 psi maximum and list the value in the structure's general notes. The designer shall specify only the steel area used in the design in the structure's general notes.

4. The designer shall not specify more than one steel area and the release strength for a single structure.

DECK REINFORCING. The designer shall choose the deck reinforcing over the piers to resist the negative moments induced by any superimposed dead loads and live loads.

LAP SPACES FOR REINFORCING STEEL IN I-BEAMS AND DIAPHRAGMS SHALL BE:

2'-0" IN LENGTH FOR 4" BAR
3'-0" IN LENGTH FOR 5" BAR
5'-0" IN LENGTH FOR 6" BAR

FABRICATION AND CONSTRUCTION REQUIREMENTS:

Erection procedure. The contractor shall submit plans for erection and handling procedures according to Section 050.00.

Erection and lifting devices. The designer shall provide the lifting and handling system for the I-beams as a minimum, the fabricator shall use the lifting system on all beams. The fabricator shall show the lifting system for the shop drawings and use a factor of safety in the design, refer to part 2 of the PCi Handbook.

Temporary stability for deck placement. The erection procedure shall include an additional temporary diaphragm to provide stability during placement. The concrete deck shall be cast at least 1-hour after complete placement. The placement of the deck concrete shall be completed at least 48-hours before deck placement begins.

CAST-IN-PLACE DECK, THOROUGHLY CLEAN THE TOP OF THE SURFACES. Sweep and vacuum the top of the surface to be coated. The surface shall be coated in one application. The surface shall be coated in one application. The surface shall be coated in one application.

DIAPHRAGM CONCRETE - F'c = 4000 PSI

REINFORCING STEEL - 1/4" YIELD STRENGTH = 60 KSI.

PRESTRESSING STRAND - F'p = Prestressing the material conforms to AASHTO (ASTMA388) SPANS. 1000 rel. at 1000 psi and 1000 psi, a minimum of 1% area of 0.150 in. or 0.187 in. with a total cross-sectional area of either 0.150 in. or 0.187 in.

STRUCTURAL STEEL - ASTM A572, GRADE 50 OR 50

CONTINUOUS DECK POOL PROCEDURES, WHICH PROCEED FROM END TO END OF THE DECK SHALL BE USED FOR THE DECK CONCRETE CONCURRENTLY WITH THE DECK CONCRETE. THE DECK CONCRETE SHALL BE USED FOR THE DECK CONCRETE. FIRE SHIELDING (Sheet 1) FIRE SHIELDING (Sheet 2)

Sealing of fascia beams. Seal the fascia I-beam with an epoxy-urethane sealer as shown in Sheet 3 of B. The department will award for accepted quantities separate under sealing of concrete surfaces.

DIAPHRAGMS: All end and pier diaphragms shall be cast-in-place. The intermediate diaphragms may be cast-in-place or prestressed. The diaphragms shall be placed on sheet 5 of B, only one type of intermediate diaphragm may be used per pier. Diaphragms are required to span up to, and including, 40 feet. Diaphragms are required to span up to, and including, 40 feet. The design plans shall show the location of each intermediate diaphragm. The fabricator shall show the location of each intermediate diaphragm. The fabricator shall show the location of each intermediate diaphragm.

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ALTERNATE DESIGNS: No equivalent to the project. The designer's alternate design is required. The designer's alternate design is required. The designer's alternate design is required.

J-Beam sections shall be provided. The designer shall provide the alternate design for J-Beam sections. The designer shall provide the alternate design for J-Beam sections. The designer shall provide the alternate design for J-Beam sections.

SHIPPING STRANDS: The fabricator's alternate design for shipping strands is at 10'-0" at each end. These shipping strands shall be designed for the entire length of the beam except for the last 10'-0" at each end. These shipping strands shall be cut after all handling operations are complete.

Basis of Payment: In addition to the items listed in Sheet 4 of B, the department will consider all costs associated with addition items to the cost of the I-beam: threaded rods, bearings, sleeve plates, temporary bracing, and fixed anchor devices.

The department will pay for pretensioned and post-tensioned diaphragms separately under item 5. Concrete for the diaphragms.