

SPECIAL PROVISION

SPECIFICATION 910 – BRIDGE TRANSITION UPGRADES AND TRANSITION MODULES

910-1 DESCRIPTION

910-1.01 Scope - This work shall consist of the reconstruction to existing transition modules, and construction of new transition modules (cast-in-place or precast) at bridges and/or concrete barriers in accordance with these specifications and in conformity with the lines, grades, types, details and locations shown on the plans, contract documents, Standard Drawings or established by the Engineer.

910-2 MATERIALS

910-2.01 Structural Concrete

- a. For Bridge Transition Upgrades or New Transition Modules to bridge concrete parapets, the structural concrete shall be according to the requirements of Specification 934 - Structural Concrete. All structural concrete shall be Class IV (General Use) Concrete (4,000 psi at 28 days minimum) with the same Permeability Level specified for the new structure unless otherwise specified in the construction plans.
- b. For New Transition Modules to concrete barriers, the structural concrete shall conform according to the requirements of Specification 601 - Structural Concrete. All structural concrete shall be Class "A" Concrete (3,000 psi at 28 days minimum) unless otherwise specified in the construction plans.

910-2.02 Reinforcing Steel - Shall be of the class, grade and size indicated on the plans and shall meet the requirements of Specification 602 Reinforcing Steel”.

910-2.03 Excavation - Shall conform to the requirements of Specification 206 - Excavation For Structures.

910-2.04 Structural Bonding Agent - Shall be an epoxy-cementitious bonding agent and an anti-corrosion coating for steel reinforcement. The structural bonding agent shall have minimum bond strength of 2,500 psi at 24 hours as per ASTM C-882, a minimum compressive strength of 8,000 psi at 28 days as per ASTM C-109, and a minimum pot life of 60 minutes. The Contractor shall submit, for the approval of the Engineer, the product specifications and technical data that comply with the aforementioned parameters.

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910-2.05 Epoxy Resin Adhesive for Anchors - Shall conform the requirements of AASHTO M 235 and ASTM C-881, Types IV and V, Classes C. The Contractor shall submit, for the approval of the Engineer, the product specifications and technical data that comply with the aforementioned parameters.

910-2.06 Grout Material - Shall be a fast setting non-shrinking sand/cement mortar mix or a concrete mix that will attain compressive strength of 4,000 psi at 7 days when tested as per AASHTO T 22. The Contractor shall submit, for the approval of the Engineer, the product specifications and technical data that comply with the aforementioned parameters.

910-3 CONSTRUCTION REQUIREMENTS

910-3.01 Reinforced concrete works shall be performed according with the requirements of Specification 934 - Structural Concrete and Specification 602 Reinforcing Steel, and as indicated on Standard Drawings or plans.

910-3.02 Scarifying works shall be performed with a fifteen (15) pounds maximum chipping hammer or approved equal tool. The Contractor shall take utmost care to avoid any damage to the existing transition module during reconstruction works. Any damage caused to the module shall be repaired by the Contractor at no extra cost to the Authority.

910-3.03 The maximum number of bridge transition upgrades and/or new transition modules to be performed at the same time shall be as established in the contract documents and as directed by the Engineer.

910-3.04 The Contractor shall only perform works on one side of the bridge at the same time.

910-3.05 The bridge transition upgrades and/or new transition modules shall be constructed in a coordinated manner in relation with other project activities.

910-4 METHOD OF MEASUREMENT

910-4.01 The Bridge Transition Upgrades will be measured by the unit. This includes both the existing transition module to be reconstructed and new transition module constructed, completely installed and accepted by the Engineer. The complete item includes

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but its not limited to excavation, concrete, reinforcing steel, scarification of concrete for transition module to be reconstructed, cleaning, placing, finishing, curing, furnishing and applying of structural bonding agent, epoxy resin adhesive for anchors and grout material, and any other works or appurtenances necessary to complete the item.

910-4.02 The New Transition Modules (Cast-in-Place or Precast) to bridge concrete parapets or concrete barriers will be measured by the unit. This includes the new transition module (cast-in-place or precast) constructed, completely installed and accepted by the Engineer. The complete item includes, but its not limited to excavation, concrete, reinforcing steel, placing, finishing, curing, furnishing and applying of structural bonding agent, epoxy resin adhesive for anchors and grout material, and any other works or appurtenances necessary to complete the item.

910-4.03 Measurement and payment for the maintenance of traffic (MOT) will be made as provided in the Specification 638 - Maintenance and Protection of Traffic.

910-5 BASIS OF PAYMENT

910-5.01 The accepted Bridge Transition Upgrade, measured as Article 910-4.01, will be paid for at the contract price for unit of measurement. Such price and payment shall constitute full compensation for furnishing and placing all required materials, and for all labor, equipment, materials and incidentals necessary to complete the work as required by the plans and specifications and to the satisfaction of the Engineer.

910-5.02 The accepted New Transition Module (Cast-in-Place or Precast), measured as Article 910-4.02, will be paid for at the contract price for unit of measurement. Such price and payment shall constitute full compensation for furnishing and placing all required materials, and for all labor, equipment, materials and incidentals necessary to complete the work as required by the plans and specifications and to the satisfaction of the Engineer.

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910-5.03 Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
Bridge Transition Upgrade.....	Each
New Transition Module Speed \geq 45 mph (Cast-in-Place or Precast).....	Each
New Transition Module Speed < 45 mph (Cast-in-Place or Precast).....	Each