Special Specification 4196
Prefabricated Pedestrian Steel Truss Bridge Span

1. DESCRIPTION

Design, fabricate, and install prefabricated pedestrian steel truss bridge spans including bearing devices, anchor bolts, bridge deck, and pedestrian railings. This Specification does not govern the design or construction of bridge substructure, including piers, abutments, and foundations.

1.1. **Design**. The Contractor is responsible for the structural adequacy of the prefabricated pedestrian steel truss bridge span design. Submit to the Engineer details and design calculations bearing the seal of a licensed professional engineer in the State of Texas for review and approval. Include the steel truss span superstructure, bearing devices, anchor bolts, bridge deck, and bridge railing with accessibility handrails when required. Provide at least 28 calendar days notice before the start of fabrication. Design in compliance with the current AASHTO Load and Resistance Factor Design (LRFD) Guide Specifications for the Design of Pedestrian Bridges. The Department will not grant additional time for rejection or correction of design submissions.

For the maintenance vehicle, use the current AASHTO LRFD Guide Specifications for the Design of Pedestrian Bridges, unless otherwise specified on the plans.

Design railing as 42 in. pedestrian railing in accordance with the latest AASHTO requirements for pedestrian railing unless otherwise specified on the plans. Railing may be integral with through truss members provided it satisfies LRFD Specification requirements.

Design bridge deck surfaces to meet the requirements of Texas Accessibility Standards (TAS) Section 302, "Floor and Ground Surfaces."

When bridge deck grade is equal to or greater than 5%, provide accessible handrails meeting the requirements of the Texas Accessibility Standards (TAS) Section 505, "Handrails."

2. MATERIALS

Provide materials that meet requirements of the following Items:

- Item 421, "Hydraulic Cement Concrete"
- Item 422, "Concrete Superstructures"
- Item 434, "Bridge Bearings"
- Item 440, "Reinforcement for Concrete,"
- Item 441, "Steel Structures"
- Item 442, "Metal for Structures"
- Item 445, "Galvanizing"
- Item 447, "Structural Bolting"
- Item 448, "Structural Field Welding"
- Item 449, "Anchor Bolts"
- Item 491, "Timber for Structures."

Paint, galvanize, or, when weathering steel is specified, leave the steel truss surfaces bare. When specified, galvanize in accordance with Item 445, "Galvanizing." When painting is specified, use System IV in accordance with Item 441, "Steel Structures." Provide a Society for Protective Coatings (SSPC) SP6 cleaning when bare weathering steel is specified.

2.1. **Fabrication**. Fabricate the trusses, bearing devices, and other permanent metal components for the steel truss span in accordance with Item 441, "Steel Structures."

2.2. **Certifications**. Fabrication plants that produce prefabricated pedestrian steel truss bridge spans must maintain a current American Institute of Steel Construction (AISC) certification for Intermediate Steel Bridges (IBR).

Coating applicators performing painting on prefabricated pedestrian steel truss bridge spans must maintain a current AISC Sophisticated Coatings Endorsement or SSPC QP3 certification.

2.3. **Shop Drawings.** Prepare and submit detailed shop drawings and design calculations for the steel truss span, bearing devices, bridge deck, deck joints, bridge railings, and accessibility handrails. Submit shop drawings and design calculations to the Engineer for review and approval following the Department's Guide to Electronic Shop Drawing Submittal process available on the Bridge Division website. Give the Engineer at least 28 calendar days to review and approve each shop drawing submittal. Include unique drawings that illustrate specific portions of the work to be performed. Clearly show all relevant design information such as member sizes and connections.

2.4. **Nondestructive Testing (NDT).** Perform all NDT in accordance with Item 441, "Steel Structures" and as indicated below.

- Visually inspect all welds in accordance with Visual Inspection Acceptance Criteria for tubular structures in American Welding Society (AWS) D1.1 Structural Welding Code.
- Magnetic Particle Testing (MT) 10% of all fillet and partial joint penetration groove welds located throughout the structure in accordance with Visual Inspection Acceptance Criteria for tubular structures in AWS D1.1.
- When complete joint penetration groove welds are permitted on chords or other members, perform 100% Ultrasonic Testing (UT) in accordance with UT requirements for tubular structures in AWS D1.1.

Hands-on testing of NDT technicians and periodic audits referenced in Item 441, "Steel Structures" are not required.

3. CONSTRUCTION

Verify all dimensions of the steel truss span with the manufacturer before construction of the substructure and foundation. Provide bolted connections at field splices in accordance with Item 447, "Structural Bolting." Field welding of secondary members will be allowed in accordance with Item 448, "Structural Field Welding."

Erect the bridge and construct the deck in accordance with the following Items:

- Item 422, "Concrete Superstructures"
- Item 441, "Steel Structures"
- Item 491, "Timber for Structures."

Construct bridge deck surfaces that meet the requirements of TAS Section 302, "Floor and Ground Surfaces."

4. MEASUREMENT

This Item will be measured by each pedestrian truss bridge span in the completed and accepted final position.

5. PAYMENT

The work performed and materials furnished in accordance with this Item and measured under "Measurement" will be paid for at the unit price bid for "Prefabricated Pedestrian Steel Truss Bridge Span" of the length specified. This price is full compensation for design, fabrication, transport, erection, deck construction, and final finishing; and for equipment, labor, tools, and incidentals.