

Special Specification 5102

Pedestrian Shelter and Canopy



1. DESCRIPTION

1.1. SCOPE

Furnish, construct and install pedestrian shelter and canopy. The extent of pedestrian shelter and canopy is shown on the plans, including: Reinforced concrete column stone veneer; galvanized steel canopy; metal roof system, metal benches; logo signs; electrical and lighting systems; anchor bolts, fasteners, accessories, and all miscellaneous components as required for a complete pedestrian shelter as shown on the plans.

Provide completely fabricated and erected pedestrian shelter and canopy system with all accessories as shown on plans.

1.2. **General.** Furnish materials in accordance with the following.

- Item 416, "Drilled Shaft Foundations,"
- Item 420, "Concrete Substructures,"
- Item 421, "Hydraulic Cement Concrete,"
- Item 440, "Reinforcement for Concrete,"
- Item 441, "Steel Structures,"
- Item 442, "Metal for Structures,"
- Item 445, "Galvanizing,"
- Item 449, "Anchor Bolts,"
- Item 610, "Roadside Illumination Assemblies," and
- Item 636, "Signs."

1.3. REGULATORY REQUIREMENTS, ABBREVIATIONS AND DEFINITIONS

1.3.1. Comply with the most recent edition of the following regulations:

- International Building Code (IBC).

1.4. SYSTEM DESCRIPTION

1.4.1. Construct pedestrian shelter and canopy in accordance with the details shown on the plans, approved working drawings, and to the pertinent requirements of the following Items:

- Reinforced concrete column with stone veneer, 4 logo signs and a galvanized steel canopy on all sides with a metal roof system supported on a drilled shaft with four metal benches installed around the base perimeter of the column;
- Reinforced concrete column.
- Stone veneer/fascia.
- Logo Signs.
- Galvanized steel canopy.
- Metal benches.
- Electrical and Lighting.

1.5. SUBMITTALS FOR REVIEW

- 1.5.1. **Submittals:** Provide four copies of product data and shop drawings for review by the Engineer. Provide required re-submittals if original submittals are not approved.
- Submit all required shop drawings and product data to the Engineer with reasonable promptness and in an orderly sequence so as to cause no delay in the work. No extension of time will be allowed because of failure to properly coordinate and sequence submittals. Contractor's responsibility for deviations or errors and omissions in submittals is not relieved by Engineer review. All work must ultimately comply with the contract documents unless Engineer gives specific written acceptance of specific deviations.
- 1.5.2. **Product Data:** Provide data on all manufactured products, including fasteners and anchor bolts.
- 1.5.3. **Shop Drawings:** Prepare and electronically submit shop drawings before fabrication as documented in the *Guide to Electronic Shop Drawing Submittal* available on the Bridge Division website. The Engineer may require complete hardcopy sets. Indicate assembly dimensions, locations of structural members, connections, attachments, and all associated items; general construction details, anchorages and method of anchorage, fasteners and method of fastening; indicate welded connections with AWS A2.0 welding symbols; indicate net weld length.
- 1.5.4. **Samples:** Submit three samples of stone veneer, 12 x 12 in. (305 x 305 mm) in size illustrating color and texture of finish.
- 1.5.5. **Electrical and Lighting:** Submit three copies of manufacturer's specifications for luminaires and mounting types.
- 1.6. **SUBMITTALS FOR INFORMATION**
- 1.6.1. **Erection Drawings:** Indicate members by label, assembly sequence, and temporary erection bracing.
- 1.7. **SUBMITTALS FOR CLOSEOUT**
- 1.7.1. **Project Record Documents:** Record actual locations of concealed components and utilities.
- Provide warranties as specified. Warranties must not limit length of time for remedy of damages Owner may have by legal statute. Contractor, supplier, or installer responsible for performance of warranty must sign warranties.
- 1.8. **QUALITY ASSURANCE**
- Perform work in accordance with all applicable codes, industry standards and TxDOT standard specifications and construction requirements.
- 1.8.1. **Manufacturer Qualifications:** Company specializing in manufacturing the products specified in this section with minimum five years documented experience.
- 1.8.2. **Erector Qualifications:** Company specializing in performing the work of this Section with minimum five years documented experience and approved by manufacturer.
- 1.9. **DELIVERY, STORAGE AND HANDLING**
- Deliver and store prefabricated components, sheets, panels and other manufactured items so they will not be damaged or deformed.
- Stack materials on platforms or pallets, covered with tarpaulins or other suitable weather tight ventilated covering. Cover metal sheets or panels so that water accumulations will drain freely. Do not store sheets or

panels in contact with other materials that might cause staining. Elevate one end of stored metal sheets and panels so as to positively drain water and prevent "white" rust.

1.10. **REGULATORY REQUIREMENTS**

- Conform to IBC for submission of reviewed shop and erection drawings, and
- Cooperate with regulatory agency or authority and provide data as required.

1.11. **PRE-INSTALLATION MEETING**

Convene one week before starting any work related to the pedestrian shelter and canopy.

1.12. **WARRANTY**

1.12.1. **Manufacturer's Warranty:** Preprinted written warranty published by individual manufacturer for the specified product and specifically endorsed by the manufacturer to the Department.

- Furnish 10 year manufacturer warranty for metal benches to cover pre-finished color coat against chipping, cracking or crazing, blistering, peeling, chalking or fading.
- Furnish 10 year manufacturer warranty for stone veneer to cover against chipping, cracking or debonding.

2. MATERIALS

2.1. **PRODUCTS**

2.1.1. Furnish metal benches in accordance with the following:

- MLB310-W Bench, by Maglin Site Furniture; Frame – Cast Aluminum; Color – Black; Including all hardware needed to mount bench to concrete pavement.
- Other acceptable manufacturers offering equivalent products.

2.2. **MATERIALS – REINFORCED CONCRETE COLUMN**

- Structural concrete: Class C concrete per Item 420 "Concrete Substructures,"
- Reinforcing steel: Grade 60 reinforcement per Item 440 "Reinforcement for Concrete."

2.3. **MATERIALS – COLUMN STONE VENEER**

- Hill Country Limestone – Bandera, by Coronado Stone Products.
- Adhesive Bond Coat: Per Manufacturer's Specifications.
- Polymer Modified Mortar: Per Manufacturer's Specifications.
- Other acceptable manufacturers offering equivalent products.

2.4. **MATERIALS – GALVANIZED STEEL CANOPY**

- Structural Steel Members meeting all requirements of ASTM A36/A36M or A529/A529M, galvanized.
- Galvanized Sheet Steel Decking meeting all requirements of ASTM A653 Structural Quality Grade 33 or higher, gauge as shown.
- Anchor Bolts meeting all requirements of ASTM A307, galvanized to meet all requirements of ASTM A153 Class C or D,
- Bolts, Nuts and Washers meeting all requirements of ASTM F3125 Grade A325, galvanized to meet all requirements of ASTM A153 Class C or D or ASTM B695 Class 50,
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2.5. **MATERIALS – STANDING SEAM METAL ROOF SYSTEM**

- Sheet Steel Stock meeting all requirements of ASTM A1008 Grade 80 or ASTM A1011 Grade 80 galvanized to meet all requirements of ASTM A653 G90 designation,
- Joint Seal Gaskets: Manufacturer's standard,
- Fasteners: Manufacturer's standard type, galvanized to ASTM A153 Class C, finish to match adjacent surfaces when exterior exposed,
- Bituminous Paint: Asphaltic type,
- Sealant: Non-staining, elastomeric, skinning,
- Profile Closure: Manufacturer's standard to match and seal voids of roof panels; E.P.T. or E.P.D.M. type, and
- Trim, Closure Pieces, Caps, Flashings, Rain Water Diverter, Fascias, Infills, and Accessories: Same material, thickness and finish as exterior sheets; brake formed to require profiles.

2.6. FABRICATION – CANOPY AND STANDING SEAM METAL ROOF SYSTEM

- Fabricate members in accordance with AISC and AISI Specifications for all members decking, and
- Anchor Bolts: Formed with bent or straight shank, assembled with template for casting into concrete.

2.7. FINISHES

Paint and coating materials must comply with performance requirements of the federal specifications indicated. Unless specifically indicated otherwise, compliance with compositional requirements of federal specifications indicated is not required.

Shop primer for ferrous metal will be fast-curing, lead-free, universal primer, selected by the manufacturer for resistance to normal atmospheric corrosion, compatibility with finish paint systems, and capability to provide a sound foundation for field-applied topcoats despite prolonged exposure. Comply with FS TT-P-645.

Shop primer for galvanized metal surfaces will be zinc dust-zinc oxide primer selected by the manufacturer for compatibility with substrate. Comply with FS TT-P641.

Finish Coats for Exposed Primary or Secondary Steel Framing Members: Two coats equal to PPG Silicon Alkyd Finished Coatings 97-480 plus pigmentation. Total dry mill thickness of finish coats will be 3 mils minimum. Refer to TxDOT Standard Specification, Item 446 "Field Cleaning and Painting."

2.7.1. Factory Applied Finishes and Coatings for Galvanized Steel Sheet Metals:

- Sheet metal will be G-90 hot dipped galvanized steel of the specified gauges, prepared and coated before fabrication of panels and shapes,
- Sheet steel will be given a controlled complex oxide chemical conversion treatment and then precision coat before fabrication of panels and shapes,
- Exterior Roof Panel Surface Finish: Coatings will be manufacturer's standard color system utilizing Kynar 500 Finish with 20 year warranty,
- Roof Finish and Weather Tightness: Coatings will be Kynar 500 Finish. 20 year warranty for finish and weather tightness. 100% Warranty for first 2 years and prorated thereafter,
- All finishes will be factory applied under precision conditions, and
- Engineer will make all color selections. Submit sample board.

3. CONSTRUCTION METHODS

3.1. EXAMINATION

Verify that drilled shaft footings, electrical utilities, and placed anchors are in correct position.

3.2. CONSTRUCT – REINFORCED CONCRETE COLUMN

- Construct reinforced concrete column in accordance with Item 420 "Concrete Substructures."
- Provide for construction and wind loads. Provide temporary bracing to maintain structure plumb and in alignment until completion of construction.

3.3. INSTALLATION – STONE VENEER

- Install stone veneer in accordance with manufacturer's requirements and per the drawings.
- Verify that weather conditions for installation period meet manufacturer and project specifications. Do not install veneer stone under 40° F conditions or when the initial set /adhesion period temperature will drop below 40° F within 48 hr. from installation.
- Keep all products in a clean and dry storage area with temperature conditions remaining above 40° F within 24 hr. before installation.

3.4. ERECTION – STEEL CANOPY

- Erect steel canopy in accordance with AISC and AISI Specifications.
- Provide for erection and wind loads. Provide temporary bracing to maintain structure plumb and in alignment until completion of erection.
- Do not field cut or alter structural members without approval from the Engineer, and
- After erection, repair any damaged galvanizing.

3.5. ERECTION - ROOFING SYSTEM

- Install in accordance with manufacturer's instructions.
- Exercise care when cutting pre-finished material to ensure cuttings do not remain on finish surface;
- Fasten cladding system to structural supports, aligned level and plumb.
- Locate end laps over supports. End laps minimum 6 in. (152 mm). Place side laps over bearing;
- Provide expansion joints where indicated, and
- Use concealed fasteners at roof.

3.5.1. Structural Standing Seam Metal Roof Panels: Factory formed, pre-finished metal roofing panel system.

3.5.1.1. Roof panels to be equal to and conform to the following criteria:

- Type: MBCI - Craftsman Series,
- Style: Concealed Fasteners,
- Profile: Flat Panel,
- Gauge/Galv.: Minimum 24 gauge, G90,
- Interior and Exterior Finish: Kynar 500 Coating System with 20 year warranty. Ten year water tightness warranty,
- Color: Selected by owner,
- Panel Length: Full panel from ridge to eave, and
- Panel Width: 16 in. nominal.

3.5.1.2. Ridge assembly will be designed to allow roof panels to move lengthwise for thermal expansion and contraction.

3.5.1.3. Ridge assembly will be designed to support design loads and carry a UL Class 90 Rating.

3.5.2. Roof Laps: Before securing, roof panels must be sealed with a continuous ribbon of tape sealer, unless the optional anti-capillary groove is specified.

3.5.3. Roof Fastenings:

- Roof panels must be secured to deck with expansion clips.
- At end laps of rib sheets the maximum spacing must be attached to each side of the major rib.

3.5.4. Install sealant and gaskets to prevent weather penetration.

3.6. **INSTALLATION – METAL BENCHES**

- Rigidly support and secure benches to concrete pavement.

3.7. **TOLERANCES**

- Framing Members: 1/8 in. (3 mm) from plumb; and
- Framing Roofing: 1/8 in. (3 mm) from true position.

3.8. **ELECTRICAL AND LIGHTING**

- Install all pertinent items per National Electrical Code (NEC); and
- Install all pertinent items in a neat and workmanlike manner.

4. MEASUREMENT

This Item will be measured by each pedestrian shelter and canopy installed. Drill Shafts will be measured in accordance with Item 416, "Drilled Shaft Foundations."

5. PAYMENT

The work performed and materials furnished in accordance with this item and measured as provided under "Measurement" will be paid for at the unit price bid for "Pedestrian Shelter and Canopy". This price is full compensation for furnishing and placing concrete, reinforcing steel, waterproofing material, joint material, water stop; fabricating, curing, and finishing all finishes; column and awning erection; and equipment, labor, tools, testing, appurtenances and incidentals and all materials furnished as outlined and detailed in the plan notes, specifications and associated drawings for a complete in-place Pedestrian Shelter and Canopy.

When drilled shafts are required, they will be measured and paid for as specified in Item 416, "Drilled Shaft Foundations."