

Section 10534

Car Shelters

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes: Car shelters as shown on Drawings and as specified Herein.

1.02 DESIGN REQUIREMENTS

- A. Design Criteria: Steel car shelters shall be engineered to withstand the following minimum loads:
1. Code: Latest Building Code
 2. Soil Bearing: 1500 PSF (10.35Pa)
 3. Roof Live Load: 20 psf
 4. Wind Load: 90 MPH
 5. Exposure (C)
 6. Seismic: In accordance with Local Code
- B. Application for Design Loads: Design loads shall be applied to the steel bent base plate and anchor points.
- C. Related Sections: Section 13121 – Pre-engineered Building, and Equipment Canopies.

1.03 SUBMITTALS

- A. Shop Drawings: Submit Drawings for fabrication and erection of car shelter assemblies, which are not completely shown by Manufacturer's data sheets, certified, and sealed by a Structural Engineer registered in the State of the Jobsite. Include plans and elevations, details of sections and connections showing anchorage and accessory items.
- B. Test Reports: Submit two copies of applicable testing reports.
- C. Engineering Calculations: Submit three copies of design calculations for foundations and structure certified and sealed by a Structural Engineer registered in the State of the project location.

1.04 QUALITY ASSURANCE

- A. Manufacturer's Qualifications: Manufacturer shall not have less than 10 years experience in manufacturing steel car shelter structures consisting of prefabricated, pre-engineered, full cantilevered design for Projects of equivalent size and complexity as required by the Drawings and Specifications.
- B. Installer's Qualifications: Installer shall submit evidence of not less than 10 years experience installing pre-engineered car shelters.
- C. Standards: Comply with the following;
1. Metal Building Manufacturer's Association (MBMA) "Recommended Design Practices Manual".
 2. American Institute of Steel Construction (AISC) "Specifications for the Design, Fabrication and Erection of Structural Steel for Buildings".
 3. American Iron and Steel Institute (AISI) "Specifications for the Design of Cold Formed Steel Structural Members".
- D. Regulatory Requirements: Comply with latest IBC, UBC and local building code as applicable.

1.05 DELIVERY, STORAGE AND HANDLING

- A. Packing and Shipping: Deliver materials to site in Manufacturer's original unopened packaging with labels intact. Protect finished surfaces with removable wrapping or coating which will not bond when exposed to sunlight.
- B. Storage: Adequately protect against damage while stored at the site. Store out of contact with ground and provide air circulation.

PART 2 PRODUCTS

2.01 MANUFACTURER

- A. Parking Shelters: Shall be manufactured by U.S. Prefab, Inc. or prior approved equal approved by the Architect, subject to compliance with Specification requirements;

Team Zodiac, 8877 N 107th Ave Ste 302 #175 Peoria, AZ 85345
Local – 623-240-2378 Fax – 623-546-2884
www.teamzodiac.com

- B. Specification is based on prefabricated, pre-engineered, ?No-Post? full cantilever steel car Shelter structures as manufactured by U.S. Prefab Inc., Glendale, AZ.

2.02 MATERIALS

- A. Structural Steel: ASTM A36.
- B. Structural Sheet Steel: ASTM A446 zinc-coated galvanized by hot-dip process.
- C. Sheet Steel: ASTM A525, G90
- D. Steel Tubes: ASTM A500, Grade B, hot-dip galvanized.
- E. Bolts: ASTM A307 or A449 as required by design and structural analysis. Use of A325 or A490 bolts shall conform to the requirements of AISC Specifications.
- F. Sleeves: Machined from solid steel to meet the requirements of ASTM A500, Grade B (FY=42 KSI) (290 MPa).
- G. Footings: Concrete for footings shall have a minimum 28 day compressive strength of 2000 psi. Reinforcing bars shall conform to ASTM A305 intermediate guide.
- H. Purlin Seats and Fittings: Fabricated from ASTM A36 hot rolled steel.
- I. Purlins: Shall be "50 K.S.I" minimum yield cold formed from Hi-Tensile steel and designed in accordance with the "Light Gauge Cold Formed Design Manual" as published by the American Iron & Steel Institute.
- J. Decking: Shall be factory per-finished painted galvanized deck galvanized iron coil conforming to ASTM A-93-59T including oxygen converter. Process, zinc coating 1.25 ounces per foot squared, lock forming quality. Profile shall be as recommended by manufacturer.
- K. Paint: Factory applied baked polyester for roof deck and trim per selection from manufacturers stand ard colors, and rust-inhibitive primer for structural steel.
- L. Fascia: Shall be standard purlins as provided by manufacturer.

2.03 FABRICATION

- A. Provide prefabricated carport structures of rigid frame, cantilever type with frames constructed of steel.
- B. Provide structure with dimensions and roof slope as indicated. Frame and covering may be matched and pre-punched to receive fasteners, or drilling of holes for fasteners may be performed in field.

2.04 FINISHING

- A. Clean ferrous surfaces of oil, grease, loose rust, loose mill scale, and other foreign substances and shop prime. Prime in accord with Manufacturer's standards.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verification of Conditions: Examine sub-surfaces to receive Work and report detrimental conditions in writing to Architect. Commencement of Work will be construed as acceptance of sub-surfaces.
- B. Erector shall examine supports, work areas and conditions under which the Work is to be installed prior to assembly and erection. If conditions are unsatisfactory, erection shall not proceed until satisfactory corrections have been made.

3.02 INSTALLATION

- A. Install steel car shelters and related accessories in accordance with the Manufacturers Erection Drawings and recommendations.
- B. Set Column after placement of Asphalt paving.
- C. Set anchor bolts accurately by template while concrete is in a plastic state. Provide uniform bearing under base plates and sill members using a non-shrink grout when necessary. Calk base plate to foundation with sealant. Space members accurately to assure proper fitting of covering. As erection progresses, fasten and brace Work to resist dead load and wind and erection stresses.
- D. Isolate dissimilar materials by means of gaskets or isolating compounds. Plug improper or misallocated drill holes with an oversize screw fastener or with a gasketed washer. Sheets with an excess of holes or with holes in critical locations will be rejected. Keep exposed surfaces clean and free from sealants and foreign materials.
- E. Install framing true to line, level and plumb.
- F. Take adequate care during the erection sequences to insure members are not positioned by force or erected in a manner which causes secondary stresses.
- G. Provide adequate temporary bracing and supports to insure the structures stability during erection.
- H. Retain protective wrap on prefinished metal trim and accessories through the erection process.
- I. Completed structures shall comply with approved erection tolerances and Shop Drawing requirements.
- J. Call "Blue-Stake" and coordinate with Contractor and other Trades prior to drilling column footings.

3.03 PROTECTION

- A. During erection and until inspection, protect the structure from damage.
- B. Remove bent or distorted members and replace with new, undamaged members.
- C. Upon completion and inspection, protect the car shelter from damage during the remainder of construction on the Project and until Owner Use and/or Acceptance.

3.04 INSPECTION

- A. Completed steel car shelter structure shall be inspected by trained representative of the Manufacturer and certified by the Manufacturer that the finished product has been manufactured and erected in accordance with Manufacturers approved erection Drawings and the Contract Documents.

3.05 CLEANING

- A. During the course of the Work and on completion, remove and dispose of excess materials, Equipment and debris away from premises. Leave Work in a "broom clean" condition.
- B. Touch up paints immediately after assembly. Apply air dry touch up paint to damaged finish material handling and/or erection of the car shelter.

END OF SECTION