



Iowa Department of Transportation

SPECIAL PROVISIONS FOR STEEL BENCH SEATING ASSEMBLIES

Black Hawk County

Project No.
STP-E-8155(721)--8V-07

Effective Date
October 19, 2010

THE STANDARD SPECIFICATIONS, SERIES 2009, ARE AMENDED BY THE FOLLOWING MODIFICATIONS AND ADDITIONS. THESE ARE SPECIAL PROVISIONS AND THEY SHALL PREVAIL OVER THOSE PUBLISHED IN THE STANDARD SPECIFICATIONS.

097024.01 DESCRIPTION

1.01 Summary: This work includes the construction of steel bench seating assemblies as shown on the plans, including reinforcement bar systems. The work shall include all labor, materials, equipment, and transportation required to install the steel bench seating assemblies as shown.

1.02 REFERENCES

- A. American Society for Testing and Materials (ASTM)
 - A36 - Specification for Carbon Structural Steel.
 - A513 - Specification for Electric-Resistance-Welded Carbon and Alloy Steel Mechanical Tubing.
 - A500 - Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes.
- B. American National Standards Institute (ANSI)
 - ANSI/BIFMA X5.4-1997 Lounge Seating
- C. Business and Institutional Furniture Manufacturer's Association (BIFMA)
 - ANSI/BIFMA X5.4-1997 Lounge Seating

1.03 SUBMITTALS

- A. Product Data: Submit manufacturer's product data for bench assemblies.
- B. Shop Drawings: Submit Shop Drawings for all bench assemblies shown in the plans.
- C. Samples: Submit full-size sample of 4-seat "Type 1" bench assembly for approval.

- D. Manufacturers Qualifications - Manufacturer shall provide documentation for the following:
1. Manufacturer has been in business for a minimum of 5 years.
 2. Manufacturer has been manufacturing the specified products or ones very similar in style and material for at least two years.

097024.02 MATERIALS

2.01 BENCH MATERIALS

- A. Steel Bench Seating Assemblies shall be "Plexus II" straight or 11 degree (see plan) multi-seat assemblies on tube support (backed, no arms, painted black) as supplied by:
Landscape Forms
431 Lawndale Ave.
Kalamazoo, MI 49048
Phone: 800-521-2546
- B. Seats: Seats are constructed with a steel wire grid panel and frame. Wires are 1/8 inch, spaced 1/2 inch o.c, with 5/16 inch cross wires spaced 2-1/2 inch o.c. Frame is 7/8 inch by 0.120 inch wall thickness steel tube. Optional armrests are constructed of 7/8 inch o.d. by 0.120 inch wall thickness steel tubing. Seats are mechanically fastened to tubular supports with manufacturer supplied hardware (see information on supports).
- C. Sizes and Shapes: Straight seats with backs are 22 inches wide and 24 inches deep. 11 degree angled seats with narrow backs for curved applications are 24 inches wide in front and 20 inches wide in back. 11 degree wide-backed seats are 20 inches wide in front and 24 inches wide in back. 22 degree angled seats with narrow backs for curved applications are 27 inches wide in front and 15 inches wide in back. Straight seat without backs are 22 inches by 22 inches. 11 degree angled seats without backs for curved applications are 20 inches wide in front and 24 inches wide in back. 22 degree angled seats without backs are 21 inches wide in front and 24 inches wide in back. Spacing between seats shall be 2 1/4 inches.
- D. Supports: Horizontal support is 3 inch o.d. x 0.120 inch wall thickness steel tube, with welded tabs to accept seat mounted tab. Vertical support is 2-1/2 inch o.d. x 0.120 inch wall thickness steel tube welded to horizontal support tube.
- E. Sizes and Shapes: Horizontal tube sections can be connected to form any length and many configurations including circles. Supports must be specified to be embedded, surface mounted, freestanding or wall mounted.
- F. Finishes: Finish on metal shall include a rust inhibitor and top coat finish of thermosetting polyester powdercoat that is U.V., chip and flake resistant. Color shall be black. Submit color sample to Engineer for approval prior to delivery.
- G. Technical Data:
1. Gloss - According to Garner 60 deg. ASTM D 523: 80-90
 2. Cross Hatch Adhesion - ASTM D 3359 method B: pass 100%
 3. Mandrel Bending Test - ASTM D 522: 1/8 inch/3 mm
 4. Erichsen Cupping - ISO 1520: 5/16 inch/8 mm
 5. Impression Hardness - According to Buchholz ISO 2215: 95
 6. Impact Test - ASTM D 2794-90: 1/10 inch distortion up to 160 in/lb
 7. Pencil Hardness - ASTM D 3363074: 2H (min.)
 8. Drill Mill Tests: OK
 9. Saltspray Resistance 1500 hr Test - ASTM B 117: Max. undercutting 1/16 inch/1 mm
 10. Humidity Resistance 1500 hr Test - ASTM D 2247-68: Max. blisters 1/16 inch/1 mm

- H. Warranty: Products to be free from defects in material and/or workmanship for a period of three years from the date of invoice.

097024.03 CONSTRUCTION

- 3.01 Construction Method. Coordinate and verify final bench locations and layout with Engineer prior to installation. Bench frame shall be securely anchored as detailed and as recommended by manufacturer. Bench shall be installed as per the detail shown in the plans. Bench shall not rock after installation.

097024.04 MEASUREMENT AND PAYMENT

- 4.01 Measurement: The Engineer shall count the number of steel bench seating assemblies satisfactorily installed in accordance with the plans and this Special Provision, as required by the contract documents. Each individual seat shall be regarded as one steel bench seating assembly, regardless of number of seats ganged together for installation.

- 4.02 Payment: For each steel bench seating assembly installed and counted for payment, the Contractor shall be paid the contract unit price. This payment shall be full compensation for the steel bench seating assembly.