

SECTION 13121

GRANDSTANDS AND BLEACHERS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Permanent metal grandstand, as indicated on drawings.
- B. Permanent metal seating in the concrete grandstand.

1.02 Related Sections:

- A. Section - 03300: Cast-In-Place Concrete.
- B. Section - 03400: Precast Prestressed Structural Concrete.
- C. Section - 09900: Paints and Coatings.

1.03 REFERENCES

- A. ASTM A 307 - Standard Specification for Carbon Steel Bolts and Studs, 60 000 PSI Tensile Strength; 2004.
- B. International Building Code; 2006.
- C. Structural Steel; Specification for structural steel buildings by the American Institute of Steel Construction, Inc. (AISC); March 9, 2005.
- D. Specification for structural joints using ASTM A325 or A490 bolts by Research Council on Structural Connections (RCSC); June 30, 2004.
- E. Code of Standard Practice for Steel Buildings and Bridges by the American Institute of Steel Construction, Inc. (AISC); March 18, 2005.
- F. Welding; AWS D1.1 - 2004 Structural Welding Code - Steel by American Welding Society (AWS).
- G. Aluminum Design Manual; 2005.

1.04 SYSTEM DESCRIPTION

- A. Grandstands shall be designed by, or under supervision of, a registered structural engineer licensed in the State of Georgia.
- B. Steel grandstands shall be combination of an aluminum structure which may include steel beam and column components designed to support, in addition to dead loads, the following loads:
 - 1. Uniformly distributed live load of not less than 100 pounds per square foot of gross horizontal projection.
 - 2. Parallel sway load of 24 pounds per linear foot of seats, applied to seat lengths, designed to resist a horizontal swaying force; and in a direction perpendicular to length of seats, 10 pounds per linear foot of seat plank.
 - 3. Horizontal wind load, including live load, of 30 pounds per square foot of gross vertical projection.
- C. Seat and foot board members shall be designed for live loads of not less than 120 pounds per linear foot. Under these loads, stresses in aluminum members, connections, and steel members shall not exceed those specified by the Aluminum Association for Building Type Structures, or the American Institute of Steel Construction.

- D. Aisles: Placement of aisles shall meet local code requirements and shall be located to obtain maximum number of seats in grandstands. Aisle planks shall be securely fastened to their supports.
- E. Exits: Shall be provided for installation to accommodate spectator movement at specified locations.
- F. Footing design shall be based on allowable soil pressures indicated on Drawings or in the soils report. Footings shall extend a minimum of 18 inches below finish grade unless otherwise required or indicated. Provide required steel reinforcing. Working strength for footing concrete shall be not less than 3,000 psf.

1.05 DEFERRED APPROVAL

- A. Drawings: Submit Drawings indicating locations, dimensions, assembly and anchoring details. Indicate size and location of concrete footings and steel reinforcing. Indicate locations and dimensions of aisles.
- B. Supplier shall conform to the size, layout and details of the structure as reflected on the drawings. This applies to all elements of those drawings.
- C. Calculations: Submit engineering design calculations, signed and sealed by a registered structural engineer licensed in the State of Georgia.
- D. Foundations have been shown to support the expected loads imposed by the proposed structure. The Supplier shall submit final loads for review to the Engineer of Record for the Foundations. These loads shall include all dead, live, wind, and seismic loads transferred to the foundations. These shall include gravity as well as net uplift loads.
- E. Product Data: Submit complete Product Data for all system components.
- F. Installation Instructions: Submit manufacturer's complete printed installation instructions.
- G. Installation of grandstands shall not be started until detailed plans, specifications and engineering calculations have been approved by Gardner Spencer Smith Tench & Jarbeau, P.C..

1.06 QUALITY ASSURANCE

- A. Installer Qualifications: Manufacturer's installation crew.
- B. Qualifications of Manufacturer: Grandstands shall be product of a manufacturer regularly engaged in manufacture of grandstands for at least 5 years. Provide references of 5 satisfactory installations in which grandstands have been in service for 3 or more years.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacturer's unopened packaging until ready for installation.
- B. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.08 WARRANTY

- A. Permanent Grandstand shall be under warranty for a period of one year beginning at Date of Substantial Completion for Projects installed by Manufacturer. The Grandstand is warranted to be free from defect in materials and workmanship in the course of manufacture.
- B. Manufacturer shall provide a 25 year material warranty on aluminum planks.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Basis of Design: Hannah Industries of Enterprise, AL.
- B. Additional Acceptable Manufacturers: Subject to compliance with the requirements, provide products of one of the following:
1. All Star Bleachers; www.allstarbleachers.com.
 2. Aluminum Seating, Inc; www.aluminumseating.com.
 3. Bleachers International, Inc; www.getseating.com.
 4. Dant Clayton Corporation; www.dantclayton.com.
 5. MVP, Inc; www.gotbleachers.com.
 6. Outdoor Aluminum; www.outdooraluminum.com.
 7. Seating Services Incorporated; www.seatingservices.com.
 8. Sightlines, Inc; www.sightlinesinc.com.
 9. Southern Bleacher Co; www.southernbleacher.com.
 10. Sturdisteel Co; www.sturdisteel.com.
 11. Substitutions: See Division 1 - Product Requirements.
- Seating Constructors USA Inc
2347 Circuit Way Brooksville, FL 34604
Ph: 877.589.5226 | Fax: 352.799.0308 |
Contact Information Denise Isensee
denise@seatingusa.com

2.02 GRANDSTANDS

- A. Grandstand: See drawings for dimensions.
1. Provide guardrails with chain link fence infill at sides and back.
 2. Provide guardrails on front wherever the first tread is more than 24 inches (610 mm) above ground level.
 3. Provide stair railings at each set of steps.
- B. Ramp up to first row, with wheelchair platform at both ends.
1. Slope: 1 in 12.
 2. Width: 5'-6" wide for two wheelchairs.
 3. Landings: 7'-2" Landing to have 3-line 36" chain link with rail at 42" above front walk plank.
 4. Guardrail to be 42 inches above ramp with 9 gauge galvanized chain link fence and 2 x 6 toeboard.
 5. Handrail: Ramps to have handrail extension. The handgrip portion of handrails shall not be less than 1 1/2 inches or more than 2 inches in cross-sectional dimension or the shape shall provide an equivalent gripping surface. The handgrip portion of handrails shall have a smooth surface with no sharp corners. The top of handrails and handrail extensions shall be placed not less than 34 inches or more than 38 inches above the ramp surface. Handrails shall be continuous the full length of the ramp and shall extend in the direction of the ramp not less than 12 inches beyond the end of the ramp. Ends shall be returned or shall terminate in newel posts or safety terminals.
- C. Handicap provision: Riser area adjacent to wheelchair spaces to have intermediate construction so 4 inch sphere cannot pass through opening.
- D. Support Structure: Structural steel members shall be of adequate size and location, reinforced as required to carry required design loads. Steel stringers shall be structural channels with varied welded angle shapes, which will form footboard and seat supports. Bolts shall be high tensile strength type.
- E. Seat boards shall be 2 inches x 12 inches contour anodized aluminum extrusions, clear anodized finish 204-R1. Fasteners, expansion devices, pop rivets and other items shall be provided as required. Outside corners shall be furnished with a smooth radius for comfort and shall be furnished with serrations on top for safety. Horizontal distances back-to-back seating

shall be 26 inches.

- F. Footboards shall be single 2 inch x 10 inch mill finish aluminum extrusions.
- G. Aisles:
 - 1. Aisles with seating on both sides to have 34-inch high handrail with intermediate rail at approximately 22 inches above tread.
 - 2. Anodized aluminum handrails with rounded ends are discontinuous to allow access to seating through a space 22 inches (min.) to 36 inches (max.).
 - 3. Aluminum tread nosing of contrasting color on aisle steps.
 - 4. Halfsteps shall provide equal rise and run throughout aisle. Each shall have aisle nosing with non-skid black powder coated finish or other paint system meeting AAMA 603.8-92 specifications with a hardness rating of 2H and riser closure with clear anodized finish. If colored riser is specified for seating area, the aisle nose and riser closure shall be of same finish.
- H. Aluminum seat boards and footboards shall be 6063-T6 alloy one-piece extrusions as specified. Top surface minimum wall thickness shall be 0.080 inch.
- I. Fasteners for aluminum components shall be aluminum fasteners.
- J. Exposed ends of aluminum planks shall be furnished with an extruded aluminum end cap with matching design.
- K. Guardrails shall be furnished at front, back, and ends and at exits and will be of adequate size, location and height to satisfy local codes and specified design loads. Railing material shall be aluminum with coating of clear polyurethane. Guardrail supports shall be 3-rail aluminum channels.
- L. Lighting Ground Rod: 3/4" diameter steel rod. Weld to base plate.

2.03 COMPONENTS

- A. Framing System: Prefabricated, modular frames with cross bracing.
 - 1. Material: Extruded aluminum structural angle sections, of alloy 6061-T6, with mill finish.
 - 2. Frame Spacing: Maximum of 72 inches.
 - 3. Sized for vertical rise of 8 inches and horizontal depth of 24 inches per row, with seat 17 inches above tread.
 - 4. Welding: By AWS certified welders.
 - 5. Designed to withstand the following loads:
 - a. Live Load: 100 pounds per square foot over gross horizontal projection.
 - b. Live Load on Seat and Tread Plank: 120 pounds per linear foot
 - c. Lateral Sway Stress: 24 pounds per linear foot of seat plank.
 - d. Perpendicular Sway Stress: 10 pounds per linear foot of seat plank.
 - e. Wind Load: 30 pounds per square foot over vertical projection.
- B. Tread Planks: Extruded aluminum sections, of alloy 6063-T6, with ribbed top and mill finish.
 - 1. Size: 2 inches deep by 10 inches wide.
 - 2. Provide end caps on each exposed end.
 - 3. Wherever sections are placed end to end, provide joint sleeve assembly of same material to maintain alignment.
- C. Seat Planks: Extruded aluminum sections, of alloy 6063-T6, with ribbed top and Class II AA-M10C22A31 natural anodized finish.
 - 1. Size: 2 inches deep by 12 inches wide.
 - 2. Provide end caps on each exposed end.

3. Wherever sections are placed end to end, provide joint sleeve assembly of same material to maintain alignment.
4. Provide Whenever sections are installed in the concrete gradstand
- D. Plank End Caps: Formed aluminum, of alloy 6063-T6, with Class II AA-M10C22A31 natural anodized finish.
- E. Joint Sleeve Assembly: Pair of aluminum sleeves to insert in flat plank to maintain true alignment in joining together two plank pieces. Splice cover is unacceptable between two flat plank pieces joined in a straight line.
- F. Slats of seat bottom: Extruded aluminum alloy 6063-T6 with clear anodized 204R1, AA-M10C22A31, Class II finish.
- G. Vertical Post: Aluminum alloy 6061-T6, clear anodized 204R1, AAM10C22A31, Class II.
- H. Railings: Anodized aluminum pipe railing with formed elbows at corners and caps at ends of straight runs, fastened to framing system.
 1. Pipe Size: 1.66 inch outside diameter.
 2. Height at Front: 42 inches above tread.
 3. Height at Back and Sides: 42 inches above adjacent seat.
 4. Infill at Back and Sides: 9 gage diameter aluminum wire woven chain link with twisted selvages, fastened to aluminum pipe panel frame.
 5. Designed to withstand the following loads:
 - a. Vertical Live Load: 100 pounds per linear foot applied to top rail.
 - b. Horizontal Live Load: 50 pounds per linear foot applied to top rail.
- I. Fasteners:
 1. Bolts and Nuts: ASTM A 307, steel, hot-dipped galvanized or cadmium-plated.
 2. Hold-Down Clips: Aluminum, alloy 6063-T6.
- J. Row Numbers: Provide 6" tall painted sequentially numbered row identification at both grandstands.
- K. Transport Kit: Steel tube tow bar, painted; with wheel/axle set with 2 4.80 x 12 rubber tires; tie-downs to anchor bleachers during transport.

2.04 FINISH

- A. Steel components shall be furnished with a primer coat and finish coat of high-performance paint. Standard understructure shall be weathering steel. Steel shall be of same approximate age and mechanically cleaned to achieve same weathering consistency.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. If substrate preparation is the responsibility of another installer, notify Gardner Spencer Smith Tench & Jarbeau, P.C. of unsatisfactory preparation before proceeding.
- C. Verify that concrete footings have sufficiently hydrated to permit grandstands to be installed.

3.02 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best

result for the substrate under the project conditions.

3.03 INSTALLATION

- A. Install in accordance with Shop Drawings, Drawings, Specifications, and manufacturer's written instructions.

3.04 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products after Substantial Completion.

END OF SECTION