PART 1 GENERAL

1.01 SECTION INCLUDES
A. Fixed, upholstered skybox suite chairs.
B. Fixed, non-upholstered chair-back exterior seating bowl chairs.
C. Fixed aluminum seating bowl bench seats
D. Support standards.
E. Chair accessories.

1.02 REFERENCE STANDARDS
C. AWS D1.2 / D1.2M – Structural Welding Code – Aluminum.

1.03 PREINSTALLATION MEETINGS
A. Convene pre-installation meeting no less than 30 days prior to start of installation of any seating type.
B. Required attendees shall include CM's Project Manager, CM's Superintendent, Manufacturer's Representatives, and Installer's Foreman and Project Manager.
C. Review materials, installation timing and procedures, adjustments, protections, and coordination with other trades’ work.

1.04 SUBMITTALS
A. See Section 01.30.00 - Administrative Requirements, for submittal procedures.
B. Product Data: Manufacturer's printed data sheets for products specified.
C. Shop Drawings: Fabrication and installation details, chair layouts and dimensions and seat numbering scheme.
   1. Field Measurements: Verify seating layout by field measurements and record field dimensions on shop drawings.

D. Selection Samples: Manufacturer's color charts and swatches for fabric upholstery, baked enamel finish, and molded plastic, indicating full range of materials, colors, and patterns available.

E. Verification Samples: Full-size two-seat fabricated sample of each type of chair specified, including all accessories and one end panel, illustrating all finishes and workmanship to be expected in the finished Work; approved sample may be incorporated into the Work.

F. Maintenance Materials:
   1. See Section 01.60.00 - Product Requirements, for additional provisions.
   2. Extra Seats: Quantity equal to 5 percent of total installed, but not less than one of each type and width of seat, furnished from same production run as that installed.

1.05 QUALITY ASSURANCE

A. Installer Qualifications: An experienced installer certified in writing by the seating manufacturer to be qualified for installation of specified seating.

B. Fire Retardance of Upholstered Seating: Self-extinguishing when mock-up is exposed to smoldering cigarettes in accordance with ASTM E1352 or NFPA 261.

C. Fire Retardance of Fixed Theater Seating: Maximum instantaneous net peak rate of heat release of 250 kW or less, and total energy released during first 5 minutes of 40 mJ or less, when tested in accordance with ASTM E1537.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Deliver seats to project site in unopened containers clearly labeled with manufacturer's name and identification of contents.

B. Store seating units in dry and clean location until needed for installation. During installation, handle in a manner that will prevent marring and soiling of finished surfaces.

1.07 MOCK-UP

A. See Section 01.40.00 - Quality Requirements, for additional mock-up requirements.

B. Construct mock-up with at least 2 seats in each of 2 rows at location indicated. Approved mock-up will serve as quality standard for completed installation. Approved mock-up may not remain as part of the Work.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Fixed Stadium Bench Seating:

B. Fixed Stadium Chairback Seating
   1. Irwin; Centurion, 130.45.35.45, riser-mounted, cast iron chair platform, self-rising seat, rear-mounted plastic cup holder: www.irwinseating.com.

C. Fixed Skybox Suite Seating
   1. Irwin; Citation, 90.12.20.4: www.irwinseating.com.

D. Substitutions: See Section 01.60.00 - Product Requirements.
2.02 MATERIALS
A. Cast Iron: ASTM A48/A48M, Class 25A minimum, free of air holes and casting imperfections, all edges ground smooth.
B. Sheet Steel: ASTM A879/A879M, Commercial Steel (CS) or Drawing Steel (DS) electrogalvanized sheet, 04Z (12G) coating class on both surfaces; chemically treated for baked enamel finish.
C. Steel Plates, Bars, and Tubes: ASTM A36/A36M.
D. Fiberglass: Molded plastic material with not less than 30 percent glass fiber reinforcement and integral color pigments.
E. Polypropylene Sheet: Molded high density plastic with minimum tensile strength of 3300 psi, integral color pigments, and textured, scuff-resistant surface finish.
F. Polyurethane Foam: Density not less than 1.8 lb/cu ft, fire retardant, non-hardening and non-oxidizing, with high resistance to alkalis, oils, moisture, and mildew.
G. Upholstery Fabric: ASTM D3597 heavy-duty plain woven nylon fabric, treated to resist cigarette ignition and staining; color and pattern as selected from manufacturer's standards.

2.03 UPHOLSTERED CHAIRS
A. Fixed seating system designed to permit radial installation using common middle support standards in each row and aisle standards aligned as indicated on drawings. Width of seats not less than 22 inches, except exit seat locations may be reduced to 20 inches to complete specific row dimensions.
B. Backs: Fixed type; two-panel construction with fabric covering over padding and protective back panel, with installed height not less than 32 inches above finished floor.
   1. Structural Support: One-piece die-formed steel sheet.
   2. Padding: Polyurethane foam not less than 1 in thick bonded to structural support.
   3. Covering: Fabric bonded to padding and fastened by upholstery technique that facilitates replacement.
   4. Rear Panel: One-piece injection molded high-impact plastic, with scuff-resistant textured surface.
C. Seats: Hinged type, constructed to permit reupholstering without removing seat from chair.
   1. Steel Seat Construction: One-piece sheet steel pan construction, reinforced at stress points; supporting not fewer than 16 coil springs or five non-sag serpentine springs. Separate padding from springs with burlap sheeting cemented to polyurethane foam padding formed with minimum thickness of 1-3/4 in. Upholster with fabric sewn into box construction without welts and securely fastened to supporting frame to provide smooth, wrinkle-free surface.
      a. For serpentine spring construction, provide not less than 3 in thick foam padding at front edge of seat.
D. Hinges: Self-lubricating, noiseless steel hinges with brass alloy bearings or nylon bushings, equipped with spring mechanism that causes unoccupied seat to rise automatically to uniform 3/4 fold, with 100 percent fold when additional pressure is applied.
E. Arm Rests: Locate at aisles and between chairs; mount to support standard with concealed fasteners; exposed surfaces of molded high-impact plastic.
   1. Provide arm rests with cup holder opening sized to accommodate cups up to 40 ounces.

2.04 NON-UPHOLSTERED CHAIRS
A. Fixed seating system designed to permit radial installation using common middle support standards in each row and aisle standards aligned as indicated on drawings. Width of seats not less than 21 inches, except exit seat locations may be reduced to 20 inches to complete specific row dimensions.
B. Two-Piece Chairs:
1. Construction: Contoured seat and back construction with rolled edges, fabricated from molded fiberglass or injection-molded high-impact polypropylene.
2. Seats: Equip seat with noiseless, self-lubricating hinges and spring-operated mechanism that will raise seat to vertical or near-vertical position when seat is unoccupied.
   C. Arm Rests: Locate at aisles and between chairs; mount to support standard with concealed fasteners; exposed surfaces of molded high-impact plastic.
   D. End Panels: One piece panels fastened securely to aisle standards with concealed fasteners, configured as follows:
      1. Shape: Rectangular.
   E. Cup Holders: Provide rear-mounted, plastic cup holders.

2.05 ALUMINUM STADIUM BENCH SEATING
   B. Seat Boards: Provide extruded aluminum, alloy 6063-T6. Finish shall be clear anodized aluminum 204R1, AA-M10C22A31, Class II, Live Load capacity of 120 plf.. Size: Manufacturer's standard nominal 2" x 10", 32' maximum length.
   C. Accessories: Provide aluminum end channel type end caps.
   D. Hardware: ASTM A307, galvanized steel.
   E. Seat Number Plates: Provide 1/8 inch aluminum plates, pop riveted using 1/8 inch aluminum pop rivets.

2.06 STANDARDS
   A. Support Standards @ Seating Bowl Chairback Seats: One-piece cast iron, with integral mounting points for backs, seats, and arm rests, and integral riser anchoring points.
   B. Support Standards @ Skybox Suites Seating: Tubular steel with welded mounting points for backs, seats, and arm rests, and welded riser anchor plates.
   C. ADA Seating: Provide designed with integral framework, intended for ease of removal to provide accessible seating positions, as indicated on Drawings.

2.07 ACCESSORIES
   A. Seat and Aisle Numbers: Manufacturer's standard seat numbers securely fastened to front edge of folding seats and row numbers securely fastened to aisle arm rests; anodized aluminum finish, with letters and numbers countersunk and filled with black paint.
   B. Row-End ID Plates: Manufacturer's standard row end identifying plates, of aluminum or steel construction.
   C. Row-End Graphic Panels: Manufacturer's standard row end circular graphic panel with custom school logo insert.

2.08 FINISHES
   A. Ferrous Metals: Manufacturer's standard two-coat baked enamel finish, applied over conversion coating appropriate to base metal.
      1. Color and Gloss: As selected from manufacturer's standard choices.
PART 3 EXECUTION

3.01 EXAMINATION
   A. Examine substrates for conditions detrimental to installation of fixed theater seating. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 INSTALLATION
   A. Comply with manufacturer's installation instructions and approved shop drawings.
   B. Anchor support standards securely to substrate with at least two anchoring devices recommended by manufacturer.
      1. Place standards in each row laterally so the standards at the aisle will be in alignment.
      2. Vary width of seats and backs as required to optimize sightlines, and comply with the ADA Standards for row and aisle widths.
      3. Attach components to standards with sufficient flexibility to compensate for convergence of seats toward the center.

3.03 ADJUSTING
   A. Adjust seat mechanisms to ensure that seats in each row are aligned when unoccupied.
   B. Repair minor abrasions and imperfections in painted finishes with a coating that matches factory-applied finish; replace units that cannot be repaired to unblemished appearance.
   C. Replace upholstery fabric damaged or soiled during installation.

END OF SECTION