

SECTION 12760 - TELESCOPING GYM SEATS SPECIFICATIONS

PART 1 GENERAL

1.01 SUMMARY

- A. Section Includes: Telescoping Gym Seating includes, either manually or electrically operated systems of multiple-tiered seating rows comprising of seat, deck components, understructure that permits closing without requiring dismantling, into a nested configuration for storing or for moving purposes.

ED NOTE: REVISE BELOW TO SUIT PROJECT

1. Typical applications include the following:
 - a. Wall Attached Telescoping Gym Seats.
 - b. Recessed Telescoping Gym Seats.
 - c. Floor-Attached (Freestanding) Telescoping Gym Seats.
 - d. Portable/Movable Telescoping Gym Seats.
 - e. Reverse Fold Telescoping Gym Seats.

ED NOTE: REVISE BELOW TO SUIT PROJECT

2. Special applications include the following:
 - a. Tapered Section Telescoping Gym Seats.
 - b. Truncated Units Telescoping Gym Seats.
 - c. Rear Wall Column Cutouts Telescoping Gym Seats.
 - d. Elevated front cross aisles and rear cross aisles
 - e. Poolside and other high-humidity applications

B. Related Sections:

1. Division 9 finishes sections for adequate floor & wall construction for operation of Telescoping Gym Seats. Flooring shall be level and rear wall plumb within 1/8" [3mm] in 8'-0 [2438mm]. Maximum bleacher force on the floor, of a 25'-6" [7772] section, shall be a static point load of less than 300 psi [2.068 N/mm²].
2. Division 16 Electrical sections for electrical wiring and connections for electrically operated Telescoping Gym Seats.

- C. Alternates: This section specifies alternates for Telescoping Gym Seat products. Refer to Part 2 products for alternate products, and to Division 1 Alternates sections and other bid documents, if any, for alternate requirements.

A. BIDDER QUALIFICATIONS

- 1) **Bidders are required to be an authorized dealer or manufacturer for equipment proposed which on a day-to-day basis regularly provide the equipment offered. Bidders are further advised that only standard production models or standard options will be acceptable for award. Equipment offered shall be currently manufactured on an active assembly line. The State is only interested in proven equipment; provided, installed, and serviced by Authorized Dealers capable of providing references.**

2) INSTALLER QUALIFICATIONS:

Bleacher installer shall be Factory Certified by the Manufacturer. Proof of Factory Certified Installation Certificate shall be provided along with the Invitation to Bid. Failure to provide this information shall result in rejection of bid. (No Exceptions Taken)

3.) SERVICE CAPABILITY:

The Bleacher Contractor must be able to show proof of full time service capability by factory certified technicians directly employed by the Bleacher Contractor. Sub-Contractors of the Bleacher Contractor or Factory Technicians located outside of the State do not qualify under this service response requirement. Adequate and satisfactory availability of repair parts and supplies, and ability to meet warranty and service requirements are a requirement of this Invitation to Bid. The State reserves the right to satisfy itself by inquiry or otherwise as to bidder's capabilities in this regard. A four (4) to eight (8) hour maximum on-site repair response is required during normal working hours, 8 a.m. to 5 p.m. weekdays (excluding holidays) All Full Time Service Personnel shall be Factory Authorized and Trained. Proof of Service Capability along with a listing of service parts regularly maintained in inventory shall be provided along with the Invitation for Bid. Failure to provide this information shall result in rejection of bid.

1.02 REFERENCES

- A. National Fire Protection Association (NFPA)
 - 1. NFPA 102 Standard for Assembly Seating, Tents and Membrane Structures.
- B. American Welding society (AWS):
 - 1. AWS D1.1 Structural Welding Code - Steel.
 - 2. AWS D1.3 Structural Welding Code - Sheet Steel.
- C. American Institute of Steel Construction (AISC):
 - 1. AISC - Design of Hot Rolled Steel Structural Members.
- D. American National Standards Institute (ANSI).
- E. American Iron & Steel Institute (AISI):
 - 1. AISI - Design Cold Formed Steel Structural Members.
- F. Aluminum Association (AA):
 - 1. AA - Aluminum Structures, Construction Manual Series.
- G. American Society for Testing Materials (ASTM):
 - 1. ASTM - Standard Specification for Properties of Materials.
- H. National Forest Products Association (NFoPA):
 - 1. NFoPA - National Design Specification for Wood Construction.
- I. Southern Pine Inspection Bureau (SPIB):
 - 1. SPIB - Standard Grading Rules for Southern Pine.
- J. National Bureau of Standards/Products Standard (NBS/PS):
 - 1. PS1 - Construction and Industrial Plywood.
- K. Americans with Disability Act (ADA)
 - 1. ADA - Standards for Accessible Design.

1.03 MANUFACTURER'S SYSTEM ENGINEERING DESCRIPTION

- A. Structural Performance: Engineer, fabricate and install telescopic gym seating systems to the following structural loads without exceeding allowable design working stresses of materials involved, including anchors and connections. Apply each load to produce maximum stress in each respective component of each gym seat unit.

ED NOTE: REVISE BELOW IF MORE STRINGENT REQUIREMENTS APPLY. NFPA 102 INCLUDES DESIGN LOADS FOR RAILING; VERIFY WITH JURISDICTIONAL AUTHORITY IF RAILINGS LOADS NEED TO BE INCREASED TO MEET AUTHORITY REQUIREMENTS.

1. Design Loads: Comply with NFPA 102, 1992 Edition, Chapter 5 for design loads.
- B. Manufacturer's System Design Criteria:
 1. Gymnasium seat assembly; Design to support and resist, in addition to its own weight, the following forces:
 - a. Live load of 120 lbs per linear foot [162.69 N/m] on seats and decking
 - b. Uniformly distributed live load of not less than 100 lbs per sq. ft. [135.58N/m] of gross horizontal projection.
 - c. Parallel sway load of 24 lbs. [32.53 N/m] per linear foot of row combined with (b.) above
 - d. Perpendicular sway load of 10 lbs. [13.56 N-m] per linear foot of row combined with (b.) above
 2. Hand Railings, Posts and Supports: Engineered to withstand the following forces applied separately:
 - a. Concentrated load of 200 lbs. [90.72 kg] applied at any point and in any direction.
 - b. Uniform load of 50 lbs. per foot [.344 N/mm²] applied in any direction.
 3. Guard Railings, Post and Supports: Engineered to withstand the following forces applied separately:
 - a. Concentrated load of 200 lbs. [90.72 kg] applied at any point and in any direction along top rail.
 - b. Uniform load of 50 lbs. per foot [.344 N/mm²] applied horizontally at top rail and a simultaneous uniform load of 100 lbs. per foot [.689 N/mm²] applied vertically downward.
 4. Member Sizes and Connections: Design criteria (current edition) of the following shall be the basis for calculation of member sizes and connections:
 - a. AISC: Manual of Steel Construction
 - b. AISI: Specification for Design of Cold Formed Steel Structural Members
 - c. AA: Specification for Aluminum Structures
 - d. NFOPA: National Design Guide For Wood Construction.

1.04 SUBMITTALS

- A. Section Cross-Reference: Required submittals in accordance with "Conditions of the Contract" and Division 1 General Requirements sections of this "Project Manual."
- B. Project Data: Manufacturer's product data for each system. Include the following:
 1. Project list: Ten (10) seating projects of similar size, complexity and in service for at least five (5) years.
 2. Deviations: List of deviations from these project specifications, if any.
- C. Shop Drawings: Indicate Telescoping Gym Seat assembly layout. Show seat heights, row spacing and rise, aisle widths and locations, assembly dimensions, anchorage to supporting structure, material types and finishes.
 1. Wiring Diagrams: Indicate electrical wiring and connections.
 2. Graphics Layout Drawings: Indicate pattern of contrasting or matching seat colors

- D. Samples: Seat materials and color finish as selected by Architect from manufacturers offered color finishes.
- E. Manufacturer Qualifications: Certification of insurance coverage and manufacturing experience of manufacturer, and copy of a telescopic load test to all loads described in 1.03 above, observed by a qualified independent testing laboratory, and certified by a registered professional structural engineer verifying the integrity of the manufacturer's geometry design and base structural assumptions.
- F. Installer Qualifications: Installer qualifications indicating capability, experience, and official Certification Card issued by manufacturer of telescopic seating.
- G. Engineer Qualifications: Certification by a professional engineer registered in the state of manufacturer that the equipment to be supplied meets or exceeds the design criteria of this specification.
- H. Operating/Maintenance Manuals: Provide to Owner maintenance manuals. Demonstrate operating procedures, recommended maintenance and inspection program.
- I. Warranty: Manufacturers standard warranty documents.

1.05 QUALITY ASSURANCE

ED NOTE: BELOW STANDARD MAY BE MORE STRINGENT THAN APPLICABLE BUILDING CODE REQUIREMENTS. COORDINATE WITH IBC, UBC, SBCCI, BOCA CODE REQUIREMENTS FOR TELESCOPIC SEATS.

- A. Seating Layout: Comply with current NFPA 102 Standard for Assembly seating, Tents, and Membrane Structures, and specifically with Folding and Telescopic Seating, except where additional requirements are indicated or imposed by authorities having jurisdiction.
- B. Welding Standards & Qualification: Comply with AWS D1.1 Structural Welding Code - Steel and AWS D1.3 Structural Welding Code - Sheet Steel.
- C. Insurance Qualifications: Mandatory that each bidder submit with his bid an insurance certificate from the manufacturer evidencing the following insurance coverage:
 - 1. Workers Compensation - including Employers Liability with the following limits:
 - \$500,000.00 (US) Each Accident
 - \$500,000.00 (US) Disease - Policy Limit
 - \$500,000.00 (US) Disease - Each Employee
 - 2. Commercial General Liability - including premises/ operations, independent contractors and products completed operations liability. Limits of liability shall not be less than \$5,000,000.00 (US).
- D. Manufacturer Qualifications: Manufacturer who has a minimum of 40 years of experience manufacturing telescoping gym seats and can demonstrate continual design enhancement and 25-year minimum product life-cycle support of telescopic seating.
- E. Installer Qualifications: Engage experienced Installer who has specialized in installation of telescoping gym seat types similar to types required for this project and who carries an official Certification Card issued by telescoping gym seat manufacturer.

- F. Engineer Qualifications: Engage licensed professional engineer experienced in providing engineering services of the kind indicated that have resulted in the successful installation of telescoping bleachers similar in material, design, fabrication, and extent to those types indicated for this project.

1.06 DELIVERY, STORAGE AND HANDLING

- A. Deliver telescopic gym seats in manufacturers packaging clearly labeled with manufacturer name and content.
- B. Handle seating equipment in a manner to prevent damage.
- C. Deliver the seating at a scheduled time for installation that will not interfere with other trades operating in the building.

1.07 PROJECT CONDITIONS

- A. Field Measurements: Coordinate actual dimensions of construction affecting telescoping bleachers installation by accurate field measurements before fabrication. Show recorded measurements on final shop drawings. Coordinate field measurements and fabrication schedule with construction progress to avoid delay of Work.

1.08 WARRANTY

- A. Manufacturer's Product Warranty: Submit manufacturer's standard warranty form for telescoping bleachers. This warranty is in addition to, and not a limitation of other rights Owner may have under Contract Documents.
 - 1. Warranty Period: Five years from Date of Acceptance.
 - 2. Beneficiary: Issue warranty in legal name of project Owner.
 - 3. Warranty Acceptance: Owner is sole authority who will determine acceptance of warranty documents.

1.09 MAINTENANCE AND OPERATION

- A. Instructions: Both operation and maintenance shall be transmitted to the Owner by the manufacturer of the seating or his representative.
- B. Service: Maintenance and operation of the seating system shall be the responsibility of the Owner or his duly authorized representative, and shall include the following:
 - 1. Operation of the Seating System shall be supervised by responsible personnel who will assure that the operation is in accordance with the manufacturer's instructions.
 - 2. Only attachments specifically approved by the manufacturer for the specific installation shall be attached to the seating.
 - 3. An annual inspection and required maintenance of each seating system shall be performed to assure safe conditions. At least biannually the inspection shall be performed by a professional engineer or factory qualified service personnel.

PART 2 - PRODUCTS

ED NOTE: MANUFACTURER DOES NOT RECOMMEND THE USE OF PHRASES “OR EQUAL” / “OR APPROVED EQUAL” BECAUSE OF DIFFERING INTERPRETATIONS BETWEEN CONTRACTING PARTIES. CONSIDER UTILIZING “ALTERNATE” METHOD OF SPECIFYING PRODUCTS FOR LISTING ALTERNATE MANUFACTURERS AND PRODUCTS. (SEE ARTICLE 2.02 HERE IN).

2.01 MANUFACTURERS

- A. Manufacturer: Hussey Seating Company, U.S.A.
 - 1. Address: North Berwick, Maine, 03906
 - 2. Telephone: (207) 676-2271; Fax: (207) 676-9690

ED NOTE: ADD BELOW SELECTIONS FROM MANUFACTURER’S LITERATURE AND COORDINATE SELECTIONS WITH DRAWINGS.

- 3. Product: MAXAM Telescopic Gym Seat System by Hussey Seating Company

ED NOTE: SELECT BELOW MODEL TYPE.

- a. Model: MAXAM26 Series Telescopic Gym Seats, adjustable row spacing in two inch increments from 22 inches [559] to 26 inches [660].
- b. Aisle Type: **SELECT:**, foot level aisles, front steps, intermediate aisle steps.
- c. Seat Type: **SELECT:** Classic (wood seat), 10” or 12” Courtside Collection, Custom MVP 2-Tone (plastic seat modules)
 - 1) Seat color finish: **SELECT:** manufacturers 15 standard for Courtside Collection/MVP
 - 2) Two-tone seat color combinations: **SELECT:** any two-tone combination of 15 standard for MVP seat tops and seat front panels
 - 3) Seat design logos: **SELECT:** up to 5 color combinations for seating design graphics and/ or school logos.
- d. Rail Type: **SELECT:** Self-storing end rail, removable end rails, front railings, rear rails, store-in-place aisle hand rails, folding aisle hand rails.
 - 1.) Rail color finish: **SELECT:** Standard black or optional 15 standard colors to match Courtside Collection seat.
- e. Operation: **SELECT:** electrical power or manual
 - 1) Electrical Power System: **SELECT:** Integral power with pendant control, motion monitor, limit switches, key switches, portable power-assist tractor
- f. Portable-MAXAM Dolly System: Integral Dolly, Portable Dolly.

4. Product Description/Criteria:

- a. Bank Length: _____
- b. Aisle Widths: _____
- c. Number of Tiers: _____
- d. Row Spacing(s): _____
- e. Row Rise: _____
- f. Open Dimension: _____
- g. Closed Dimension: _____
- h. Overall Unit Height: _____
- i. Net Capacity: _____ per seat
(18” [457] for MAXAM)

5. Miscellaneous Product Accessories: **SELECT:** operating handles, front panels, end panels, rear panels, ventilating grills, scorer's table, top seat filler, rear seats for reverse fold units, seat number's, row letters, end curtains, aisle closure curtains, Top-row--Basketball deflector curtains.
 6. Special Applications: **SELECT:** tapered sections, truncated units, poolside/ high humidity finish, elevated-front and rear cross aisles, portable access stairs, programming supports, extended rear deck filler, rear wall column cutouts.
 7. Handicap Seating Provisions: **SELECT:** Provide first tier modular recoverable Flex-rows, handicap first-tier fixed end-section cutouts, full-section truncations per requirements of (ADA) Americans with Disability Act located as indicated.
 8. Special Seating Graphics: Provide contrasting or matching seat top or seat base colors to create graphic pattern as indicated.
- B. Other Acceptable Manufacturers: Will be considered if in compliance with these specifications. Deviations must be submitted with bid in order that a fair and proper evaluation be made. Those bidders not submitting a list of deviations will be presumed to have bid as specified.

NOTE: COORDINATE BELOW ARTICLE WITH RELATED DIVISION 1 SECTION FOR ALTERNATES, AND BID DOCUMENTS AND BID FORMS FOR BID TYPE PROJECTS

2.02 ALTERNATES

- A. Base Bid:
 1. Base Bid Product:
 2. Base Bid Product Accessories:
- B. Alternate No. ____: In lieu of providing base bid product, provide the following:
 1. Alternate Product:
 2. Alternate Product Accessories:
- C. Alternate No. ____: In lieu of providing base bid product, provide the following:
 1. Alternate Product:
 2. Alternate Product Accessories:

ED NOTE: BELOW ARTICLE FOR GENERIC / REFERENCE SPECIFICATION.

2.03 MATERIALS

- A. Lumber: ANSI/Voluntary Product 20, B & B Southern Pine
- B. Plywood: ANSI/Voluntary Product PS1, APA A-C Exterior Grade.
- C. Structural Steel Shapes, Plates and Bars: ASTM A 36.
- D. Uncoated Steel Strip (Non-Structural Components): ASTM A569, Commercial Quality, Hot-Rolled Strip.
- E. Uncoated Steel Strip (Structural Components): ASTM A570 Grade 33, 40, 45, or 50, Structural Quality, Hot-Rolled Strip.
- F. Uncoated Steel Strip (Structural Components): ASTM A607 Grade 45 or 50, High-Strength, Low Alloy, Hot-Rolled Strip.

- G. Galvanized Steel Strip: ASTM A653 Grade 40, zinc coated by the hot-dip process, structural quality.
- H. Structural Tubing: ASTM A500 Grade B, cold-formed.
- I. Polyethylene Plastic: ASTM D 1248, Type III, Class B; molded, color-pigmented, textured, impact-resistant, structural formulation; in color indicated or, if not otherwise indicated, as selected by Architect from manufacturer's standard colors.
- J. Fasteners: Vibration-proof, of size and material standard with manufacturer.

2.04 UNDERSTRUCTURE FABRICATION

- A. Frame System:
 - 1. Wheels: Not less than 5" [127] diameter by 1 1/4" [32] with non-marring soft rubber face to protect wood and synthetic floor surfaces, with molded-in sintered iron oil-impregnated bushings to fit 3/8" [10] diameter axles secured with E-type snap rings.
 - 2. Lower Track: Continuous Positive Interglide System interlocks each adjacent CPI unit using an integral, continuous, anti-drift feature and through-bolted guide at front to prevent separation and misalignment. CPI units at end sections of powered banks and manual sections shall contain a Low Profile Posi-Lock LX to lock each row in open position and allow unlocking automatically. Provide adjustable stops to allow field adjustment of row spacings.
 - 4. Slant Columns: High tensile steel, tubular shape.
 - 5. Sway Bracing: High tensile steel members through-bolted to columns.
 - 6. Deck Stabilizer: High tensile steel member through-bolted to nose and riser at three locations per section. Interlocks with adjacent stabilizer on upper tier using low-friction nylon roller to prevent separation and misalignment. Incorporates multiple stops to allow field adjustment of row spacings.
 - 7. Deck Support: Securely captures front and rear edge of decking at rear edge of nose beam and lower edge of riser beam for entire length of section.
- B. Deck System:
 - 1. Section Lengths: Each bank shall contain sections not to exceed 25'-6" [7772] in length with a minimum of two supporting frames per row, each section.
 - 2. Nose beam and Rear Riser beam: Nose beam shall be continuously roll-formed closed tubular shape of ASTM A653 grade 40, Riser beam shall be continuously roll-formed of ASTM A653 grade 40. Nose and Riser beam shall be designed with no steel edges exposed to spectator after product assembly.
 - 3. Attachment: Through-Bolted fore/aft to deck stabilizers, and frame cantilevers.
 - 4. Decking: 5/8" [16], AC grade clear-top-coated tongue and groove Southern Yellow Pine; or BC grade polyethylene-top-coated tongue and groove Douglas Fir plywood; both of interior type with exterior glue, 5-ply, all plies with plugged crossbands, produced in accordance with National Bureau of Standards PS-1-97. Plywood shall be cut and installed with top, center and bottom ply grain-oriented from front of deck to rear of deck (nose beam to riser beam). Adjacent pieces shall be locked together with tongue and groove joint from front to rear of deck. Longest unsupported span: MAXAM 26, 21 1/2" [546];
 - 5. Deck End Overhang: Not to exceed frame support by more than 5'-7" [1702].

2.05 SEATING FABRICATION - COORDINATE BELOW PARAGRAPHS WITH SEAT SELECTION

- A. Classic Wood Seat System:

1. Seats and Front Riser: 4/4" nominal thickness kiln dried, end finger joined only and/or solid Southern Pine Grade "B & B" in conformity with the Southern Pine Inspection Bureau (SPIB) Grading Rules. Mixed lumber species, edge glued strips, or plugs are unacceptable.
2. Seats: Bench seat posture pitched to the rear for spectator comfort. Seats and front risers shall have full-radiused comfort shaped edges.
3. Seat Supports: Seat supports shall be through-bolted to seats, front risers, and noses and shall be provided in sufficient number to limit unsupported length of bench seat to 3'-0" [914].

B. Plastic Seat System – Courtside Collection XC10 (10") or XCS12 (12"):

Hussey Courtside Collection Series embodies the latest leading edge innovations in linear telescopic seating modules. Courtside seats utilize a harmonious blend of advanced ergonomic principals, architecturally appealing design, safety, value and performance.

1. Seat Modules: 18" [457] long assembled, gas assisted injection-molded, high density, 100% recyclable HDPE (high density polyethylene) modules in monochromatic colors providing, dual textured scuff resistant 10" [254] or 12" [305] wide seat surface with ½" [13] minimum interlock on seat and face. Unit structural tested to 600 lbs occupant load.

Courtside XC10 Seat Module

2. XC10 – 10" Comfort Profile
 - ✓ 10" wide continuous comfort curve style bench seat
 - ✓ Ergonomically contoured forward "waterfall" edge for enhanced spectator comfort and minimization of sensitive pressure point area, regardless of leg positioning.
 - ✓ Fore & Aft contoured seat surface for uniform support and minimize high pressure points under the buttocks.
 - ✓ Seat height ranges from deck to t/o seat range from 16-1/8" to 18-1/8"
 - ✓ 21-1/2" clear foot space area, regardless of leg positioning.
3. Integrally molded end caps at aisle end locations for clean finished appearance.
4. Optional: Custom color graphic logo design application for end cap insert.
5. Integrally molded recess pockets to accept seat number and row letters.
6. Integrally molded rear closure panel at back of seat to allow for "continuous clean sweep" of debris at deck level and minimized visibility of structural ribbing.
7. Seat Attachment: Each plastic seat module shall be securely anchored by a 12 ga steel clamp bracket that provides a steel-to-steel, through bolted attachment to the front nose beam of the bleacher. Attachment eliminates fore / aft movement of the seat module on the nose beam.

Courtside XCS12 Seat Module

8. XCS12 – 12" Comfort Profile

- ✓ Individual ergonomically contoured seat module
 - ✓ Compound contoured seats with fore/aft and horizontally contoured curves provide a “scalloped” surface area for maximum spectator comfort. Forward edge “waterfall” for enhanced spectator comfort and minimization of sensitive pressure point area, regardless of leg positioning.
 - ✓ Fore & Aft contoured seat surface for uniform support and minimize high pressure points under the buttocks.
 - ✓ Seat height ranges from deck to t/o seat range from 16-1/8” to 18-1/8”
 - ✓ 21-1/8” clear foot space area.
9. Bold contoured design lines for maximum architectural appeal and application with modern or traditional facility spaces.
 10. Integrally molded end caps at aisle end locations for clean finished appearance.
 11. Optional: Custom color graphic logo design application for end cap insert.
 12. Integrally molded recess pockets to accept seat number and row letters.
 13. Integrally molded rear closure panel at back of seat to allow for “continuous clean sweep” of debris at deck level and minimized visibility of structural ribbing.

Seat Attachment: Each plastic seat module shall be securely anchored by a 12 ga steel clamp bracket that provides a steel-to-steel, through bolted attachment to the front nose beam of the bleacher. Solid attachment of clamp to nose beam eliminates fore / aft movement of the seat module on the nose beam.

CourtSide Graphic Logo

1. Decorative graphic logo that is applied to the integrally molded end cap recess area of the CourtSide 10 XC or 12XCS seat module.
2. Logo is approximately 4.7” (h) x 3.5” (w) w/full color CMYK vector art output on FujiFlex crystal archive printing material. (FujiFlex Specs. Available)
3. Color logo is laminated with a 5-mil Hard Guard Matte laminate (Specs. Available)
4. Laminated logo is bonded to a Flex-Con L – 606 laminating adhesive layer (Specs. Available)

Logo is trimmed to a precise custom cut shape with two mounting holes

Custom Signature Logo

1. **Factory or Dealer designed logo that incorporates school letters or graphical representation of school logo across the front of the bleachers.**
2. **Logo is visible when the bleachers are in the stored position.**
3. **Select up to three colors for maximum color contrast and creativity.**

Custom 2-Tone MVP Plastic Seats

14. Seat Modules: 18" [457] long assembled, injection-molded, high density polyethylene modules two-tone colors providing scuff resistant textured 10" [254]

or 12" [305] wide seat surface with ½" [13] minimum interlock on seat and face. Unit structural tested to 360 lbs occupant load.

15. Comfort Profile: Designed with anatomically contoured seat surface using multiple internal reinforcement ribs that allow form-fit deflection for maximum spectator comfort. Cantilevered to the rear to provide not less than 3" [76] smooth toe space beneath the seat.
16. Seat Support: Each plastic seat module shall be supported by internal steel structural members secured against fore/aft movement by 3/8" grade 5 steel fasteners creating a steel-to-steel connection, tying the seat structure firmly to the steel nose beam.
17. Number Plates: Seat module shall have recessed pockets to accept seat number plates.
18. End Caps: Each end of row shall be enclosed with matching end caps. End caps shall be designed flush with end-edge of seat top and provide indent for row letters. Color to match seat top.

2.06 SHOP FINISHES

- A. Understructure: For rust resistance, steel understructure shall be finished on all surfaces with black "Dura-Coat" enamel. Understructure finish shall contain a silicone additive to improve scratch resistance of finish.
- B. Wear Surfaces: Surface subject to normal wear by spectators shall have a finish that does not wear to show different color underneath:
 1. Steel nosing and rear risers shall be pre-galvanized with a minimum spangle of G-60 zinc plating.
 2. Decking shall have use-surfaces to receive both a sealer coat and wear-resistant high gloss clear urethane finish. Optional decking to have 0.030" laminated polyethylene wear surface.

ED NOTE: SELECT BELOW FINISHES FOR EACH SEAT TYPE

3. Classic wood seats and fascia shall be triple sanded and receive a sealer coat with use surfaces to receive high gloss clear urethane finish.
 4. Injection Molded MVP seats or Sentinel Chairs to be selected from (15) fifteen standard and (7) seven select colors. Colors shall be per manufacturer's standards
- C. Railings: Steel railings shall be finished with powder-coated semi - gloss black or optional 15 standard colors to match plastic seat color.
 - D. Poolside/ High Humidity finish: Above shop finishes shall include following modifications:
 1. Understructure: All frames and other structural components shall be hot-dip galvanized per ASTM A103
 2. All top-side rails shall be e-coated prior to powder paint coating
 3. All hardware to be zinc-plated
 4. All posi-locks and other steel wear surfaces to be electroless-nickel plated
 5. Decking to be polyethylene-laminated plywood

2.07 FASTENINGS:

- A. Welds: Performed by welders certified by AWS standards for the process employed.
- B. Structural Connections: Secured by structural bolts with prevailing torque lock nuts, free-spinning nuts in combination with lock washers, or Riv-nuts in combination with lock washers.

2.08 ELECTRICAL OPERATION

ED NOTE: SELECT ONE STYLE POWER SYSTEM BELOW FOR EACH BANK

- A. Integral Power: Furnish and install Hussey PF(1/2/3/4), an integral automatic electro-mechanical powered frame propulsion system, to open and close telescopic seating. Integral Power and Control System shall be Underwriters Laboratories, Inc. (UL) approved and listed.
 - 1. Operation shall be with a removable pendant control unit which plugs into seating bank for operator management of stop, start, forward, and reverse control of the power operation.
 - 2. Each Powered Frame unit shall consist of output shaft gear reducer with 6" [152] diameter x 4" [102] wide wheels covered with non-marring 1/2" [13] thick composite rubber. Reducers shall be fitted with 3 phase induction motors which will provide an average operating speed of (46/25) f.p.m [.23/ .12 M/s].
 - 3. Operating Loads: Each Powered Frame provides (220 / 550) lbs pull force [978 / 2446 N] which equals approximately (28 / 35) psi [.192 / .241 N/mm²] lateral force on the floor..
- B. Economy Integral Power: Furnish and install Hussey PFe, an integral automatic electro-mechanical powered frame propulsion system to open and close smaller telescopic seating sections up to 8 rows. Integral Power and Control System shall be Underwriters Laboratories, Inc. (UL) approved and listed
 - 1. Operation shall be with a removable pendant control unit which plugs into seating bank for operator management of stop, start, forward, and reverse control of the power operation.
 - 2. Each Powered Frame unit shall consist of output shaft gear reducer with 6" [152] diameter x 4" [102] wide wheels covered with non-marring 1/2" [13] thick composite rubber. Reducers shall be fitted with single phase induction motors which will provide an average operating speed of 25 f.p.m [12 M/s].
 - 3. Operating Loads: Each Powered Frame provides 280 lbs pull force [1245N] which equals approximately (30) psi [.206 N/mm²] lateral force on the floor.

ED NOTE: BELOW LIMIT SWITCHES ARE OPTIONAL

- 4. Limit Switches: Furnish and install both open and closed limit switches for the integral power system. The limit switches will automatically stop integral power operation when seating has reached the fully extended or closed position.
 - A. Power operation shall utilize a combination of contactors and limit switches to insure the wiring is not energized except during operation. Straight wired electric system is not allowed.

ED NOTE: BELOW MOTION MONITOR IS OPTIONAL

- 5. Motion Monitor: Provide flashing light with self-contained warning horn rated at 85 db at 10' mounted under telescopic seating for audio and visual warning during integral power operation.

ED NOTE: CONSULT HUSSEY APPLICATION ENGINEERING FOR DETERMINING BELOW POWER SUPPLY AND WIRE SIZE FOR RUN LENGTHS REQUIRED OR IF OVER TWENTY TIERS

6. Electrical: Seating Manufacturer shall provide all wiring within seating bank including pendant control.
 - a. Each unit for PF(1/2/3/4) is power operated by a 1/2 horsepower, 1725 R.P.M., 208 Volts, 50/60 Hz., three phase 1.25 service factor motor. This motor draws a full load current of 2.2 amperes. Power supply required shall be 120/208 volts three phase 5 wire plus ground service with 20 amps. Motors, housing, and wiring shall be installed and grounded in complete accord with the National Electrical Code.
 - b. Each unit for PFe is power operated by a 1/4 horsepower, 1725 R.P.M., 117 Volts, 60 Hz., single phase 1.1 service factor motor. This motor draws a full load current of 4.2 amperes. Power supply required shall be 120 volts single phase 2 wire plus ground service with 20 amps. Motors, housing, and wiring shall be installed and grounded in complete accord with the National Electrical Code
 - c. The electrical contractor shall provide required power source with no greater than 4% voltage drop at the seatings' junction box. The electrical contractor shall perform all wiring connections in junction box that are attached to or a part of the building.

ED NOTE: PORTABLE POWER ASSIST IS NOT AVAILABLE WITH LIMIT SWITCHES OR MOTION MONITOR.

- C. Portable Power Assist: Furnish and install one portable electro-mechanical power unit to open/close telescopic seating sections equal to Hussey PF 3 complete with 100' heavy duty electric cord and tractor receptacles (to be fitted two per section). Portable power unit to operate from 120V 20 amp outlet located conveniently to bank(s) of seating. Tractor unit shall be fitted with rugged operating handle with convenient switches controlling forward/reverse separate from spring loaded on/off switch. Power drive unit shall consist of a dual output shaft gear reducer with 6" [152] diameter wheels covered with non-marring 1/2" [13] thick molded polyurethane. Reducers shall be fitted with induction motors which will provide an average operating speed of 35 f.p.m [.18 M/ second].

2.09 TRANSPORT SYSTEMS

ED NOTE: SELECT BELOW SYSTEMS ONE PER APPLICATION

- A. Integral Mechanical Dollies: Provide one pair of machine-screw-jack dollies (per section) for transport of movable telescopic sections. Each dolly shall be fitted with 6--6 inch, 360 degree swiveling "kingpinless" casters to insure ease of telescopic section movement. Wheel treads shall be molded polyurethane bonded to cast iron with roller bearing hubs. Dollies are integral to each section and shall be operated by a cordless drill through access holes in either the front or rear of the section. Dollies shall be designed to engage front and rear structural steel lift beams.
- B. Portable Hydraulic Dollies: Provide one pair of portable hydraulic dollies suitable for transport of movable telescopic sections. Each dolly shall be fitted with sufficient quantity of 360 degree swiveling ball race caster to insure ease of movement. Wheel treads shall be molded polyurethane bonded to cast steel with roller bearing hubs. Dollies shall be inserted manually beneath the front of first telescoping row with

seating completely closed. Dollies shall be designed to engage front and rear structural steel lift beams.

2.10 ACCESSORIES

ED NOTE: SELECT BELOW ACCESSORIES AS REQUIRED

- A. Access Panels (Hatchway): Provide access to unit at 4th or 5th tier.
- B. Operating Handles: Provide and install manual operating handles constructed of ¾" [19] OD steel tubing. Handles to engage pull-bar installed at the first tier.
- C. Flex-Row: Provide first row modular recoverable seating units to be utilized by persons in wheelchairs and able-bodied persons. Each Flex-Row unit shall have an unlock handle for easy deployment if wheelchair or team seating access is needed. Unlock handle shall lock the bleacher seats into position when fully opened.
 - 1. Provide a black full-surround steel skirting with no more than ¾" floor clearance for safety and improved aesthetics.
 - 2. Provide a black injection molded end cap for the nose beam for safety and improved aesthetics.
 - 3. Provide a mechanical positive lock when the Flex-Row system is in the open and used position.
 - 4. Flex-Row modular units are designed to achieve multi-use front row seating to accommodate team seating, ADA requirements and facility specific requirements. Flex-Row units are available in modular units from 2 to 7 seats wide as well as full section widths.
- D. Permanent Handicap Cut-Outs: Provide first tier permanent handicap cutouts per requirements of Americans with Disability Act (ADA) located as indicated. Provide a full width front closure panel at handicap cutout, extending from underside of second tier to within 1 1/2" [38] of finished floor.
- E. Provide a removable belt barrier with or without signage for the rear of each recoverable Flex-Row module to assist with seating identification.
- F. Front Aisle Steps: Provide at each vertical aisle location front aisle step. Front steps shall engage with front row to prevent accidental separation or movement. Steps shall be fitted with four non-skid rubber feet each 1/2" [13] in diameter. Blow molded end caps shall have full radius on all four edges. Quantity and location as indicated.
- G. Non-Slip Tread: Provide at front edge of each aisle location an adhesive-backed abrasive non-slip tread surface.
- H. Foot Level Aisles: Provide deck level full width vertical aisles located as indicated.
- I. Intermediate Aisle Steps: Intermediate aisle steps shall be of boxed fully enclosed type construction. Blow molded end caps shall have full radius on all four edges. Step shall have adhesive-backed abrasive non-slip tread surface. Quantity and location as indicated.
- J. Intermediate Aisle Handrails: Provide single pedestal mount handrails 34" [864] high with terminating mid rail. Handrails shall be attached to the socket and shall lift

and rotate 90° for easy storage in socket. Aisle handrails that are detached from the socket for storage are unacceptable.

- K. Intermediate Folding Aisle Handrails: Provide single pedestal mount handrails 34" [864] high with terminating mid rail. Handrail to be permanently mounted to a rotating socket for rail storage on the intermediate aisle step.
- L. Front Panel: Provide front closure panels for truncated sections, permanent end cutouts or elevated front aisles. Panels shall extend vertically from underside of front row to within 1 1/2" [38] or floor. Paneling to be 5/8" [16] Southern Pine Plywood or grey Polydeck attached to a steel framework.
- M. End Panel: Provide closure end panels for closed stack position at each exposed bank end. End panels shall be constructed of 5/8" [16] Southern pine plywood or grey Polydeck.
- N. Rear Panel: Provide required seating units with full width rear closure panels. Panels shall extend vertically full height or up to 8'-0" [2438] high to within 1 1/2" [38] of floor. Paneling to be 5/8" [16] Southern Pine Plywood or grey Polydeck attached to a steel framework. Rear panels cannot extend above 8'-0" [2438] on portable sections.
- O. Front Rail: Provide not less than 30" [762] high above deck, steel rails with tubular supports and intermediate members designed with 4" [102] sphere passage requirements. Rails to be located at each required seating location.
- P. Self Storing End Rails: Provide steel self-storing 42" [1066] high above seat, end rail with tubular supports and intermediate members designed with 4" [102] sphere passage requirements.
- Q. Scorer's Table: Provide one 8' [2438] x 15" [4572] scorer's table. Table top shall be tan high pressure laminate on 5/8" [16] balance veneer core with edge molding. Integral perimeter frame to include tubular folding steel legs permanently attached to top with screws.
- R. Top Seat Flush Filler: Provide at top seat level a flush filler board mounted between top seat and rear wall. Flush filler board shall be constructed of 4/4" nominal thickness Southern pine Grade "B & B" clear urethane finished.

ED NOTE: BELOW SEAT NUMBERS AND ROW LETTERS ARE TO BE USED ON PLASTIC MVP SEATS

- S. Seat Numbers: Provide each plastic seat module with a 1 3/4" x 1 1/4" [45 x 32] oval etched Lexan plate. Easy to read black numerals will be on the plate fitted in a vandal resistant recess.
- T. Row Letters: Provide at each row end of plastic seat a 1 3/4" x 1 1/4" [45 x 32] oval etched Lexan plate with black numerals. Plates to be fitted flush in vandal resistant end cap recess.

ED NOTE: BELOW FOLDING BACKRESTS ARE TO BE USED ON MODEL MAXAM Plus ONLY.

- U. Classic Wood Folding Backrests: Gym seating shall include 1" X 5" [25 x 127] (nominal size) grade "B & B" southern pine clear urethane finished wood backrests

mounted on folding steel supports. Backrests shall manual fold into footwell for storage

- V. Contoured Plastic Folding Backrests: Gym seating shall include 18" [457] (nominal size) compound contoured plastic backrests mounted on folding steel supports. Plastic backs shall be one-piece double wall blow molded pigmented polyethylene shells. Backrests shall manual fold into footwell for storage
- W. Top row ball deflector curtain: Include on gym seat units six (6) rows or more of single stack configuration, top row footwell closure curtain, secured with Velcro to prevent lodging of basketballs and foreign objects.
- X. End Closure Curtains: Provide closure curtains fabricated of vinyl-coated 14oz Polyester fabric on open ends of telescopic seating. Curtains to be permanently attached to wall or rear closure panel and secured to individual rows of seating. Curtain to open with seating unit into taught secure configuration and fold automatically as seating unit closes.
- Y. Poly Deck: Decking panel to be a 0.030" [1] thick high-density polyethylene overlay panel fabricated with a skid-resistant textured top surface permanently bonded to a Western Fir plywood substrate meeting the requirements of NBS PS-1-97. Panel thickness shall be 5/8" [16] with tongue and grooved edge joints and top polyethylene surface of textured gray color.

ED NOTE: BELOW ACCESSORIES REQUIRE SPECIAL CONSIDERATION - CONSULT HUSSEY APPLICATION ENGINEERING

- Z. Full Section Permanent Truncation: Provide Full Section Permanent Truncation as indicated. Provide rigid 38" [965] high above truncated deck front rails with tubular supports attached to the front of the permanent truncation. Provide full height front closure panel from underside of truncated row to within 1 1/2" [38] from finished floor.
- AA. **Safety Accessories: Provide the following safety features:**
 - 1. **Coin Round or Roll all edges of exposed metal on top and underneath Bleacher to eliminate sharp edges. Provide safety ease edges, coined edges, or rounded edges for the bleacher understructure components as follows. Diagonal or X braces and deck support or deck stabilizers. Systems provided with sharp edges or corners, to be rounded off in the field and field painted.**
 - 2. **Provide plastic end cap on nose metal at Bank ends to close off edges to prevent spectator injury.**
 - 3. **Provide plastic end cap on back of deck supports on 1st 7 Rows to prevent spectator injury.**
 - 4. **On 1st Row, provide front and side skirt boards any where there is an exposed end to prevent players/balls from sliding underneath the 1st Row.**
 - 5. **Provide metal cover over motor chains and wheels to protect chains from debris and provide a safety switch that if cover is taken off the power system will not work.**
 - 6. **Provide metal end deck cover on each row to cover exposed edge of plywood at the ends of the bleachers.**
 - 7. **Powered frames systems without a metal protective housing, covering drive chain and drive wheels are not permitted under this specification**

- BB. Full Section Recoverable Truncation: Provide a combination programming support and front rail as required to support full section recoverable truncation with remaining lower rows stored beneath. Support/front rail to extend 38" [965] above deck and be designed to sustain live load of first seating row being programmed.
- CC. Portable Access Stairs: Provide portable stair units with hand rails. Stair understructure shall be steel with plywood treads and steel risers. Stairs shall be fitted with not less than four (4) full swiveling industrial wheels.
- DD. Transitional Top Steps: Provide at each vertical aisle location top transition steps (last row of telescopic gym seats to level above). Steps shall be of boxed fully enclosed type with construction materials and finish coordinated with that of intermediate aisle steps.
- EE. Extended Rear Deck Filler: Provide at rear deck level an extended rear deck filler mounted between rear wall building columns. Select extended rear deck filler from (12) twelve standard sizes to meet site conditions.
- FF. Rear Wall Column Cutouts: Provide custom bleacher cutouts at rear wall building columns. Top row(s) to be cutout and scribe fitted to meet wall column conditions.
- GG. Cross Aisles: Provide continuous top cross aisle or elevated front cross aisle per plan of seating. Construction material and finish to match telescopic seating.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Verification of Conditions: Verify area to receive telescoping gym seats are free of impediments interfering with installation and condition of installation substrates are acceptable to receive telescoping gym seats in accordance with telescoping gym seats manufacturer's recommendations. Do not commence installation until conditions are satisfactory.

3.02 INSTALLATION

- A. Manufacturer's Recommendations: Comply with telescoping gym seats manufacturer's recommendations for product installation requirements.
- B. General: Manufacturer's Certified Installers to install telescoping gym seats in accordance with manufacturer's installation instructions and final shop drawings. Provide accessories, anchors, fasteners, inserts and other items for installation of telescoping gym seats and for permanent attachment to adjoining construction.

3.03 ADJUSTMENT AND CLEANING

- A. Adjustment: After installation completion, test and adjust each telescoping gym seats assembly to operate in compliance with manufacturer's operations manual.
- B. Cleaning: Clean installed telescoping gym seats on both exposed and semi-exposed surfaces. Touch-up finishes to restore damage or soiled surfaces.

3.04 PROTECTION

- A. General: Provide final protection and maintain conditions, in a manner acceptable to manufacturer and installer to ensure telescoping gym seats are without damage or deterioration at time of substantial completion.

END OF SECTION