# **PART 1 - GENERAL**

**1.01 SUMMARY**

A. Provisions of Division 01 apply to this section.

B. Section Includes:

1. Gymnasium Basketball Backstops and Components.

1. Indoor Volleyball, Badminton, and Tennis.
2. Protective Wall Padding
3. Indoor Scoreboards.
4. Shot Clocks.

6. Other athletic equipment as indicated on the Drawings.

C. Related Sections:

1. Section 03 30 00: Cast-In-Place Concrete.
2. Section 09 64 50: Resilient Wood Flooring Assemblies – Gymnasiums
3. Division 16: Electrical

**1.02 DEFINITIONS**

## Sequencing, Scheduling:

1. Coordinate with related Work of other Sections.

2. Furnish items to be embedded in concrete and/or wood floors and templates for setting as required to respective trades in ample time for proper positioning as Work progresses.

**1.03 SUBMITTALS**

A. Provide in accordance with Division 01.

B. Shop Drawings: Submit Shop Drawings for all Work.

C. Product Data:

1. Copies of manufacturer’s standard printed brochure illustrating standard components and features of each system specified.

D. Material Samples:

1. Manufacturer’s standard color range.

**1.05 QUALITY ASSURANCE**

A. Comply with the following as a minimum requirement:

1. Source Limitations: Provide secondary materials including adhesives, anchoring materials, filler/sealant material, and repair materials of type and from source recommended by manufacturer of primary playground surface system material.

B. Qualifications:

1. Installer: Minimum 5 years experience in successfully installing the same or similar playground equipment and shall be certified in writing by the playground materials manufacturer to install the playground equipment.

**1.06 WARRANTY**

A. Manufacturer shall provide their standard warranty for all components specified in this section.

**PART 2 - PRODUCTS**

**2.01 MATERIALS**

A. Basketball Backstops and Components:

1. Components:
   1. Manufacturer/Product:
      * 1. Porter Athletic Equipment Co., as a standard of quality.

2) L.A. Steelcraft.

3) Gametime.

4) PW Athletic.

b. Type: Provide model #950 overhead supported backstop incorporating a fully welded vertical front frame assembly consisting of a main center mast of 6-5/8" O.D. heavy wall structural steel tube with diagonal side sway braces of 2-1/2” rectangular steel tube. Ends of diagonal brace tubes and internal web bracing shall be precision machine cut to provide maximum weld surface contact to form a unitized, back-to-back triangular type structural design to provide superior lateral stability. Top horizontal mast hinge spreader shall be a heavy 4" structural channel. Backstop shall be supported from 3-1/2”O.D. pipe anchored to overhead framing members by means of heavy formed steel support fittings which must be capable of supporting a load exceeding 10,000 pounds with sufficient attachment points and meeting a safety factor of 60 to 1. Certified test results shall be furnished with submittals.

1) All goals shall mount directly through backboard and into a heavy structural steel weldment "Center-Strut"® which shall be clamped to the vertical 6-5/8" O.D. center support to eliminate strain on backboard should a player hang on the front mounted goal. Design mount shall comply with NCAA unit design recommendation on backboard stress minimization.

2) NFSHSA requirements. All fittings shall be attached to the 6-5/8” O.D. vertical drop tube by heavy ¼” thick precision saddle die-cut formed steel fittings secured in place by 5/8” diameter “U”-bolt type hardware. The upper backboard extension assembly shall provide the official NCAA and NFSHSA regulation 6” from the front of the Center-Strut® to the face of the backboard.

3) The main backstop frame assembly shall be suspended from overhead 3 ½” O.D. pipe by adjustable hangers (with 2" of vertical adjustment) to provide for precise plumbing of frame during installation. Each hanger shall be tested to 20,000 pounds maximum breaking point to achieve a safety factor of 50 to 1. Certified test results shall be furnished with submittals. Support hangers shall be offset 2" from centerline of main center mast to properly weight lock unit in playing position.

4) Backstop to operate with 1-7/8" O.D. front *(rear brace for series 952)* brace assemblies with folding knee joint. Knee joint shall lock backboard into playing position, by means of a torsion spring within the hinge assembly. Hoist cable shall disengage knee joint allowing front brace to fold easily.

5) Backstop 6-5/8" O.D. main stem shall be suspended diagonally from the super structure with a 15 degree angle with a 4'6" long vertical member for attachment of basketball backboard.

6) Provide hoist cable to each backstop of sufficient length and 1/4" diameter galvanized aircraft type (minimum of 7,000 lbs., ultimate). Swivel pulleys shall be furnished with a 4” diameter cast (ductile iron) pulley sheave with a maintenance free, oil-impregnated bearing for proper hoist cable routing to winch. Pulley assembly and attachment to 3-1/2” O.D. support structure shall be rated at a minimum 9,000 pound load rating. Certified test results shall be furnished with submittals.

7) Each backstop shall be provided with a heavy duty electric winch. Designed to hold units at any position when raising or lowering. Units shall be individually operated by 1/2 H.P. (9 AMP) capacitor type, 60 cycle, 115 VAC single phase electric motor with automatic thermal overload protection manufactured to NEMA specifications. Winch shall include a fully enclosed gear set. Gear set shall be set in an oil bath and sealed at factory to eliminate the need for lubrication. The cable drum shall be grooved to provide neat and consistent cable tracking. The gear shaft shall connect directly to the drum hoist without the use of a chain. Electric winch shall incorporate a special rotary up and down limit switches and a flush wall mounted dual key (separate up and down keys) switch to prevent improper operation of system. Key switches, which operate basketball backstops and gym dividers, must be furnished identical.

8) Provide for each #950 court backstop a #797 "Saf-Strap" safety lock. Lock shall be inertia sensitive to automatically lock a basketball backstop in position at any time in storage or during the raising or lowering cycle due to a sudden surge of speed created by a possible malfunction of the hoisting apparatus. Unit shall incorporate a fully automatic reset requiring no poles, ropes, levers or buttons.

* + 1. Provide each #950 court backstop with #208 rectangular backboard 1/2" thick 72" x 42" tempered plate glass cushioned in unitized steel tubing frame with glare free aluminum perimeter. Standard white borders and target area shall be fired-into glass permanently. Provide Limited Lifetime Warranty against breakage.

c. Backward-Fold Backstop: Provide Model 951 Trak-Fold Center-Strut Ceiling-Suspended Compact Backward-Fold Backstop, including but not limited to side sway braces, adjustable hangers, weight lock, adjustable suspension hanger, two-wheel carrier system rated at 600 lbs each, conformance with NCAA and NFHS rules and regulations. Provide worm gear type electric wall-mounted winch designed to hold unit at any position when raising or lowering backstop and key switch operation.

## d. Backboard Padding: Provide for each rectangular glass backboard #326 bolt-on positiv2 attachment backboard pad along bottom of backboard and up 15” on each side meeting NCAA/NFSHSA rules. Pads shall be 2” thick molded form 9 lb. density polyurethane foam with integral skin. Provide standard colors. Provide 8 year warranty.

### e. Goal Selection: Provide for each #208 backboard a goal incorporating a positive lock, pressure release mechanism to automatically release and pivot downward when a static force of 230 pounds is placed on the top of the goal ring at the point most distant from the backboard to meet the latest NBA, NCAA, NFSHSA, and FIBA specifications for movable goals. Goal shall be spring loaded to automatically and instantaneously return to the playing position. The pressure release mechanism is preset at the factory with a capability for field adjustment to comply with the NCAA recommendation to test goals for rebound elasticity. Pressure release adjustment is accomplished without removing the mechanism cover. Breakaway goals with plastic pivot bearings are not permitted. Rim shall be rigidly braced by means of a 3/16" thick steel formed and die cut steel brace welded in position on the underside of the rim for maximum support. Rim shall be provided with a unique “tube-tie” net attachment system to eliminate the conventional wire-formed type net locks. Goal shall be easily mounted to the backboard with a special slotted direct mounting system without removing the housing cover. Goal shall be finished in a durable official orange powder coat. Provide, anti-whip type net. Shall be Porter #00245-500.

##### Indoor Volleyball, Badminton & Tennis

1. Components:
   * 1. Manufacturer/Product:
        1. Porter Athletic Equipment Co., as a standard of quality.

2) L.A. Steelcraft.

3) Gametime.

4) PW Athletic.

2. Type: Provide #00872‑100 floor (or 00872-200 **specify which**) sleeve to be cast in place as shown on Drawing. Sleeve shall be 3‑3/4" O.D., extending 9" into grout footing. Chrome ***or*** brass plated cover plate shall consist of an 8" O.D. x 1/2" thick recessed collar, cork gasket and cover. A special swivel retainer pin in the collar shall prevent theft. Furnish special cover removal key.

### 3. Competition Volleyball Equipment Requiring Floor Sleeves

a. Provide Porter #1991competition volleyball system. The post shall be telescoping type that does not extend above the net and impede the official’s vision. Posts shall be constructed of 3‑1/2" diameter 6063T6 type aluminum extrusion and finished with plastic molded foot to protect against gym floor damage. Upper telescoping upright shall be extruded from the same aluminum alloy as bottom upright. Upper end of upright shall be equipped with 2-1/2" diameter pulley to reduce from cable drag and unnecessary system tension. Upper telescoping upright shall be height adjustable for heights from 6'-1" to 7'-11‑5/8". Upright shall be counter balanced to eliminate the possibility of accidentally falling while making adjustments. End post shall be equipped with a heavy-duty power winch and incorporate a heavy-duty self‑locking ratchet mechanism. Power winch shall be furnished with a 1‑3/4" wide high tensile nylon strap and durable snap hook. Power winch shall be furnished complete with removable handle to prevent unauthorized use. Provide height indicator labels to be applied after assembly for all post. Each system shall consist of one reel post and one end post.

b. Provide #00999‑000 judge's platform designed to attach to volleyball system in the cavities of the post. Platform size shall be 23-5/16” square at a height of 3’-10” above playing floor. Platform support side frames shall consist of formed 1-5/16” O.D. steel tube handrail/ladder sections. Provide casters (2) for ease of moving. Provide #00993-100 protective pads for the judges platform.

c. Provide #00839‑000 protective padding. Padding shall extend to a height of 6'‑0" and shall meet all current competition requirements as prescribed by the USAV, NFSHSA and NAGWS for player protection and safety. They shall be constructed of firm, 1‑1/4" thick closed cell protective filler and covered in durable vinyl reinforced fabric. Each pad shall be tailored with four vertical, miter-type hinge arrangements to fold around upright. When installed on uprights, pads shall provide a narrow profile of 7-1/2”x 11-1/4” to provide for maximum visibility for judges and spectators.

d.Provide #2295-420 volleyball net. Net shall be 32' x 39" with 42'-6", 1/8” diameter galvanized cable along the top. For use with the 1991 competition standards. The end hems shall be 4" inch width with a ½” diameter fiberglass dowel to provide a tailored square hanging net. Each end hems shall be furnished with (3) 1" wide polypropylene web tension straps and quick adjust tension clips. Netting shall be 4” square heavy duty #24 black nylon mesh with a 2” wide high quality vinyl coated polyester hem double stitched across the top of the net.

e. Provide Porter #2296 net antenna with clamp. Net antenna shall incorporate the antenna clamps. As one complete unit the clamps shall snap easily and securely into place. Net antenna shall be 3/8" x 6' long fiberglass dowels. Antenna shall be alternately marked red and white.

f. Provide Porter #2297 boundary markers. Boundary markers shall be of 2" wide durable white polyester reinforced vinyl material with white Velcro attachment strips sewn in place for securing to any competition volleyball net.

g. Provide #0956-100 Volleyball Storage/Transport system. Heavy-duty steel transport frame shall be designed to store and transport six sleeve-type volleyball standards, one judge’s stand with pads, three nets including antennae and three sets of upright pads. Frame to be constructed of heavy wall 2-1/2” x 1-1/2” rectangular steel tubing. Heavy formed steel hooks shall be provided on side diagonal frame members for storage of standards. Hooks shall be covered in a vinyl material to protect finish on upright posts. Large vinyl nylon net storage pouch shall be provided with tunnel loops and Velcro flaps for attaching to transport frame. Bottom of transport shall be on four 3-1/2” diameter heavy-duty swivel casters. Overall size of unit to be 4’-3/8” in length, 3’-2-1/4” in height and 2’ 6-1/4” in width to allow transporter to pass through a typical 3’ wide doorway.

### C. Protective Wall Padding

1. Manufacturer/Product:

* + 1. FR-SAFPAD, Porter Athletic Equipment Co., as a standard of quality.
    2. Safe-Wall, Nissen Corp.
    3. L.A. Steelcraft.
    4. Gametime.
    5. PW Athletic.

2. Provide #00345 certified fire-retardant wall padding wainscot panels. The entire pad, vinyl covering, foam padding and backing board, shall be certified (Athletic Equipment – Division 11 Equipment, Category #11710, Listing #15559-1 to meet the National Fire Protection Association (NFPA 101®) Life Safety Code – 2000 Edition requirement. 10.2.3.2 and 10.2.4.1.2, class A rating of 0-25 flame spread and 0-450 smoke development for use on interior wall and ceiling finishes. Wall padding shall also meet the BOCA National Building Code Section 803.0 Interior Finish and Trim, and Section 2603.0 Foam Plastic requirements. Laboratory certification test results must be furnished to verify that the wall pad assembly (vinyl cover, foam interior and wood backing) meets or exceeds the ASTM E-84 standard test method for surface burning characteristics of building materials (test also published as NFPA-255, UL-723, UBC 8-1 (42-1), and ANSI 2.5). Each panel shall have a certification label attached to backside. Wall pad panels not meeting proof of certification and test requirements are not permitted.

3. Wall pad panels shall be 2’-0” wide x 6’-0” high with a 1” nailing margin top and bottom for securing panels to the wall. Panels shall be constructed with flame retardant, 2” thick open cell neoprene foam filler with a density of 5.5 lb./ft and an Indentation Force Deflection (IFD) of 25-45 lbs. Interior foam shall be bonded to a 7/16” oriented strand wood board to minimize warping. Entire face of panel including the 1” nailing margins, shall be upholstered in a heavy (14-oz.) fire-retardant vinyl laminated, high tensile, polyester base fabric material with a leather-like embossed finish. Provide cutouts in panels as required for outlets and switches to fit related Work. The installer shall be responsible for proper inspection and installation of panels. Installation shall be in accordance with current factory suggested procedures.

D. Indoor Scoreboard:

1. Manufacturer/Product:

a. WatchFire LED

b. Nevco

c. Daktronics

2. Type: 100% solid state microprocessor-controls systems, aluminum frame, LED lighting, portable control console with interchangeable keyboard inserts, remote control cable, horn, game clock, 5-year warranty, colors and accessories as selected.

E. Shot Clock Set:

1. Manufacturer/Product:

a. Fair-Play, Model ST-1410-2 Shot Clock Set (Two Displays), unless otherwise shown, as a standard of quality.

b. Type: ETL listed, remotely operated via two-wire shielded cable from control points, displaying seconds up to 99, solid state electronic type, HS-70 Handswitch control, 5-year warranty.

**PART 3 - EXECUTION**

**3.01 INSTALLATION**

A. Equipment shall be installed by factory trained craftsmen skilled in their trade.

B. Install and assemble all equipment furnished in accordance with manufacturer’s instructions and reviewed Shop Drawings. Adjust backstops, backboards and goals for plumb and level. Set and adjust electric winch upper and lower limit controls. Before Substantial Completion, demonstrate operation of all units to designated Owner personnel. Transmit keys to the OAR before Substantial Completion.

1. Install other athletic equipment as indicated on the Drawings.

**3.02 CLEANUP**

A. Remove rubbish, debris, and waste materials and legally dispose of off the Project site.

* 1. **PROTECTION**

A. Protect the Work of this section until Substantial Completion.

### **END OF SECTION**