Section 11 6833 - REMOVABLE OUTFIELD SAFETY FENCE

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Athletic Field ***GSS OF300*** Removable Outfield Safety Fence
B. Fence framework, mesh panels and accessories.
C. Excavation for post foundations, concrete or helical pile foundations for posts.

1.2 RELATED REQUIREMENTS

A. Section 312000 - Earthwork: Excavation, filling, and compacting around post foundations.
B. Section 033000 - Cast-in-Place Concrete: Concrete foundations and anchorage for posts.

1.3 REFERENCE STANDARDS

A. ASTM A36/A36M - Standard Specification for Carbon Structural Steel
B. ASTM A53/A53M – Standard Specification for Pipe, Steel, Black and Hot Dipped, Zinc-Coated, Welded and Seamless.
C. ASTM A500/A500M – Standard Specifications for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes.
D. ASTM F2000 - Standard Safety Performance Specification for Fences for Baseball and Softball Fields
E. Federal Test Method Standard 191A - Method 5041 - Weight of Textile Materials, Small Specimen Method; Determination of Mass per Unit Area of Fabric.
F. Federal Test Method Standard 191A - Method 5134 - Strength of Cloth, Tearing; Tongue Method.
G. Federal Test Method Standard 191A - Method 5100 - Strength and Elongation, Breaking of Woven Cloth; Grab Method

1.4 ADMINISTRATIVE REQUIREMENTS

A. Large Components: Ensure the large components can be moved into final position without damage to other construction.
B. Concrete Foundations: Coordinate foundation design(per supplied loads), foundation characteristics, and locations.

1.5 SUBMITTALS

A. See Section 013000 - Administrative Requirements, for submittal procedures.

B. Product Data: Provide manufacturer's data showing configuration, sizes, materials, finishes, hardware, and accessories; include:
    1. Foundation characteristics and locations.
    2. Manufacturer's installation instructions.
C. Shop Drawings: For custom fabricated equipment indicate, in large scale detail, construction methods; method of attachment or installation; type and gage of metal, hardware, and fittings; plan front elevation; elevations and dimensions; minimum one cross section; utility requirements as to types, sizes, and locations.
D. Erection Drawings: Detailed dimensional requirements for proper location of equipment.
E. Samples: Submit samples of fence materials in manufacturer's available range of colors.
F. Operating and maintenance data, for each operating equipment item.
G. Warranty: Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.

1.6 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than three years of documented experience.
B. Installer Qualifications: Company specializing in performing work of the type specified with minimum two years of experience.

1.7 WORK BY OTHERS

A. Pole foundation design and sizing based on local soil conditions and supplied loading.
B. Foundation Installation
    i. Concrete foundation installation per foundation design characteristics and supplied layout. Foundations to include supplied sleeves and/or anchor bolts per foundation details.
    ii. Option: Helical pile foundations available. Contact manufacturer.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Deliver products to the project site in manufacturer's original packaging with factory original labels attached.
B. Store products in a sheltered location and elevated above the ground; prevent warping, twisting, or sagging.
C. Store products in accordance with manufacturer's instructions; protect from extremes of weather, temperature, moisture, and other damage.

1.7 WARRANTY

A. Removable Outfield Fence mesh panels and components shall be warranted free of defects in material and workmanship for a period of two (2) years.
B. Removable Outfield Fence steel components, cables, and winches shall be warranted for a period of five (5) years against all defects of material and workmanship.
C. Removable Outfield Fence PVC and PEX components shall be warranted for a period of two (2) years.
D. This warranty does not cover: Cost of removing or reinstalling defective parts; fading or discoloration to padding or vinyl-coated mesh parts caused by exposure to sunlight; vandalism, misuse or acts of God (such as but not limited to hurricanes, lightning strikes, tornados, hailstorms); product malfunction resulting from improper product installation/manipulation by customer, and; damage caused by metal cleats.

PART 2 - PRODUCTS

2.1 REMOVABLE OUTFIELD SAFETY FENCE

A. Supply and install removable outfield safety fence as manufactured by ***Grand Slam Safety, LLC.*** or an approved equal to be complete in all respects with mesh panels, support poles, and safety features.
B. Other suppliers or manufacturers wishing to bid products other than product specified herein shall submit to the Architect 7 days prior to the bidding a list of 3 past installations similar to the proposal, complete catalogue data along with deviations from the product specified. The manufacturer guarantees the proposed substitute product to comply with the product specified and as detailed on the drawings unless the deviations are so noted in the submittal for approval.

2.2 MATERIAL AND FABRICATION

A. Intermediate posts: ASTM A53, steel pipe, welded construction, minimum yield strength of 25 ksi. The intermediate poles provide vertical attachment points for the horizontal top and bottom cable at 10'-11" above the playing surface and are set back 31-½" from center of pole to centerline of fence, to offset from hard structure. The pole shall be a two (2) piece system for ease of installation and removal with the top portion being 2" schedule 40 pipe steel pipe and the bottom 2-1/2" sch 40, both powder coated black.
B. Concrete: Type specified in Section 03 3000.
C. Foul Pole: ASTM A53, steel pipe, welded construction, minimum yield strength of 25 ksi. The foul poles shall consist of 4" schedule 40 pipe with a flanged base to be anchored via 1" anchor bolts in a concrete footing (by other). The foul pole shall be powder coated, customer to specify color, and contain the pulley, winches and tension indicators for the horizontal fence cables.
D. Foul Pole Top: ASTM A513 or ASTM A519 steel structural tubing, minimum yield strength of 32 ksi. The foul pole top shall be 4" od tube with the flag border

formed from 1-3/8 od tube. The flag shall be filled with 9-11ga expanded metal. The entire foul pole top shall be powder coated to customers preferred color. A foul pole top installation tool shall consist of 1-3/4" od tube with pulleys and 3/8" nylon double braided rope.

E. Transporter: ASTM A500, square structural steel tubing, welded construction, minimum yield strength 33 ksi. A transport cart shall be supplied standard with all fences to contain all the soft components of the fencing system. The cart shall consist of 2" square steel tube black powder coated frame, 2-5/16 pillow block bearings, 18" od tube to roll the fence onto, a 4' diameter hand wheel, (4) 10" or 12" diameter swiveling caster wheels, and an integrated neap with 2" ball coupler. The total storage footprint is approximately 30 sqft for a 220' long by 7' high softball fence and 36 sqft for 360' long by 8' high baseball fence.
F. Cable: 304 Stainless Steel
G. Mesh Panel Material: Vinyl Coated Mesh 9x9. PVC dip-coated 9x9 6.5oz/psy 1000 denier polyester twisted, weft inserted knit scrim. Self-extinguishing in horizontal burn mode.
H. Mesh panels shall be 8’ high (compliant with ASTM F2000) or 7’ high and 20’ in length with panels adjacent to the foul poles customized to fit field dimensions. Panels shall be connected by 2" hook and loop vertical seams. Seam connections shall be reinforced with horizontal hook and loop "l-straps" at the top and bottom. The horizontal top and bottom edges shall have 7 inches turned back to form a pocket to accept tension cables and shall be closed via 2" hook and loop. As an option, the bottom pocket may be made of solid vinyl to form a trimmer barrier for added durability. Also, an optional 2" hook may be attached to the field side 7" below the top to attach the optional upper sports netting. A 6" square, ½" closed cell foam pad covered by 18 oz per square yard vinyl shall be sewn to the panel to cover the bottom attachment point between panels. The top 7" may be a different color to act as a demarcation line.
I. The mesh panels shall be supported via a top and bottom horizontal 3/16" stainless steel cable having a 3500 lb breaking strength enclosed within a ½" od hdpe uv stabilized tube. Each cable shall contain a break away mechanism to protect the fence components from excess load due to winds in excess of 60 mph.
J. The horizontal cables shall route over 2" diameter steel pulleys and terminate to the foul poles on 2000# worm gear driven winches. Proper tension shall be indicated by compression springs with optimal compressed length indicators.
K. A top vertical cable support shall be positioned at panels seams and consist of ⅛" cable having a 1800# breaking strength and a turnbuckle with snap links. The top vertical cable support shall extend upward to a vertical anchor point on the intermediate pole. The vertical cable shall be sleeved with 1-1/2" sunlight resistant pvc and a vinyl coated polyester mesh skirt secured to the intermediate pole by polyester shock cord.
L. A 1/8" horizontal cable shall connect the top horizontal cable to the intermediate pole at each panel seam.
M. Both vertical and horizontal cables shall have a breakaway link to allow the fence to collapse at winds in excess of 60 mph.

N. The bottom vertical anchor point shall be secured from forward and backward movement by a 5/16" captive pin shackle attached to the leg of the intermediate pole.
O. A 2" thick closed cell pad in a 18 oz per square yard vinyl sleeve shall protect the athlete from the foul pole and it's hardware. The foul pole pad shall connect to the adjacent fence panel via the same 2" hook and loop as the panel to panel connection. The foul pole pad shall connect to the foul pole via a mesh tab connected to the foul pole tension rod via 1" hook and loop.
P. The tension rod shall be secured to the foul pole by 1-1/2" id tube sleeves and 3/8 set screws with 3-lobed knobs. A second tension rod shall be mounted on the foul pole to be utilized for optional foul territory fencing.
Q. An optional pole cart shall be supplied and shall be designed to house all the hard components of the fencing system. The cart shall be 2" square steel tube black powder coated frame, (2) 20.5 inch diameter wheels (fences up to 400 linear feet) or (2) 26.3 diameter wheels (fences over 400 linear feet), all wheels shall be mounted on hubs and spindles with tapered roller bearings and an integrated neap with 2" ball coupler. The total storage footprint is approximately 70 sqft for a 220' long by 7' high softball fence and 118 sqft for a 360' long by 8' high baseball fence.

2.3 DESIGN CRITERIA

A. Outfield fence must be removable to allow for multiple sports to be played on the same space.
B. Fence panels must allow safe impact from athletes.

2.4 FINISHES

A. Components (Other Than Fabric): Powder coated, color as selected, polyester
B. Fabric – vinyl coated.
C. Vinyl Components: color as selected.
D. Hardware: Hot-dip galvanized or Zinc coated

2.5 MANUFACTURERS:

A. Grand Slam Safety, LLC: www.grandslamsafety.com; Tel: 315-301-4039; Fax: 315-301-4031

PART 3 - EXECUTION

3.2 EXAMINATION AND MEASUREMENT

A. When the job is sufficiently advanced to permit the installation of the removable outfield safety fence, visit the site and check the actual conditions where the fence

is to be installed, to ascertain whether the preparation work by the preceding trades is acceptable.

B. Check and record all dimensions that affect the manufacture and installation of the units. Incorporate these dimensions into the Shop Drawings.
C. Delivery to the job site shall be co-coordinated by the Contractor. Proper storage of the fence before installation and continued protection during and after installation shall be the responsibility of the Contractor.

3.3 INSTALLATION

A. Install the removable outfield safety fence in accordance to the manufacturer supplied installation manual.
B. A ***Grand Slam Safety, LLC.*** factory trained installer shall carry out this installation.
C. Contractor responsible for foundations will provide completed foundations free of debri.
D. Do not tension fabric until the concrete foundations have cured for a minimum of 2 weeks.

3.3 OPERATION

A. The removable outfield safety fence shall be capable of being impactable by athletes and shall be removable.
B. Fence tensions should be checked periodically by examining the compression length indicators located next to the winches. Tension shall be adjusted according to the provided installation instructions.