

## SECTION 02800

### SITE IMPROVEMENTS

#### PART 1 GENERAL

##### 1.01 SECTION INCLUDES

- A. Provide Labor, Materials, and Equipment for Site Improvements Shown on the Drawings or Specified Herein, Including:
1. Chain-link fence.
  2. Benches.
  3. Granite benches.
  4. Ballfield netting and posts.
  5. Exterior signs.
  6. Precast concrete unit retaining wall.
  7. Precast concrete site pads and fixtures.
  8. Precast concrete steps.

##### 1.02 RELATED SECTIONS IN OTHER DIVISIONS

- A. Cast-In-Place Concrete: Section 03300.

##### 1.03 SUBMITTALS

- A. Submit manufacturer's product literature and Shop Drawings for approval on materials in accordance with Division 1 Submittals section.
- B. For precast concrete unit retaining walls, also submit profile and section drawings. For walls taller than 5 ft., submit design drawings (including plans, profiles, sections, and details), and computations stamped by a Registered Professional Engineer.

##### 1.04 DELIVERY, STORAGE AND PROTECTION

- A. Deliver materials to the site in an undamaged condition. Carefully store materials off the ground to provide proper protection against oxidation, and other damage caused by ground contact.

#### PART 2 PRODUCTS

##### 2.01 CHAIN-LINK FENCE

- A. Construction Barrier Fence: Temporary fencing for this portion of the project serves as a construction barrier between the contractors and the school students and staff. Keep the fence in place until final summer construction season, then remove it from the site. Coordinate the proper time of removal with the Owner's schedule. This fence is temporary, and "used" fabric will be allowed.
- B. Chain-Link Fencing Fabric: Thermally fused polyvinyl chloride coated and galvanized steel, 9-gage core wire size with a zinc coating of at least 2 oz. per square foot. Mesh size shall be two inch. Selvage shall be knuckled at bottom and top. Fence height shall be as shown on the Drawings. Dark green color.
- C. Privacy Strips: High density polyethylene or fiberglass reinforced polyester, with ultraviolet inhibitor. Manufactured for inserting in chainlink fence fabric. Dark green uniform color.

- D. Posts, Top Rails and Braces: Material shall be zinc-coated, Schedule 40, round steel pipe; weight of zinc coating shall be 1.6 ounces per square foot of base metal surface. Provide galvanized post tops shaped to receive top rail. Provide fabric ties of 9 gauge aluminized wire. Provide all components with the following dimensions.

USE AND SECTION	OUTSIDE DIAMETER NOMINAL INCHES
End, corner and pull posts (tubular) fabric height 6'-0" and less	2.375
Over 6'-0"	2.875
Gate posts for nominal width of gate, single or one leaf of double gate width 6'-0" or less	2.875
Over 6'-0" to 13'-0"	4.00
Over 13'-0" to 18'-0"	6.625
Over 18'-0"	8.625
Gate frames 6'-0" or less in height - 8'-0" or less in width	1.660
Gate frames over 6'-0" in height - over 8'-0" in width	1.90
Rails and post braces	1.66
<b>INTERMEDIATE POSTS FOR FABRIC HEIGHTS</b>	
6'-0" and less	1.90
Over 6'-0"	2.375

## 2.02 SITE FURNITURE

- A. Benches: Recycled plastic 3 1/2" x 3 1/2" slats with non-fading, molded-in grey color for seat and back on metal support pedestals. Provide 3 or 4 seat slats and 2 or 3 back slats. Pre-treat metal components and provide primer and powder finish complying with ASTM D-3451, bronze color. Embed pedestals in 4 ft. deep buried concrete posts as recommended by the manufacturer. Manufactured by Dumor, Inc., Mifflintown, PA, Model #11, or approved equal.

## 2.03 GRANITE BENCHES

- A. Granite bench constructed of curved granite slab and granite pedestals as shown on drawings. Lay slab and pedestals dry. One-piece, sound durable, high-quality granite seat cut to dimensions shown on Drawings. Smooth saw-cut top and sides. Saw-cut foundation piers.

## 2.04 BALLFIELD NETTING

- A. Aluminum posts 20 ft. tall, 4" diameter, with standard mill finish. Synthetic treated 1-3/4" mesh netting

with galvanized steel top cable. Net is raised by pulleys and halyard. Provide concrete bases for each post.

- B. Multi-Sport BallStopper System(MBS) model, by AAE, West Conshohoken, PA, tel. 1-800-523-5471.

## 2.05 EXTERIOR SIGNS

- A. Standard metal traffic control signs conforming to U. S. DOT Manual on Uniform Traffic Control Devices. Code numbers as shown on Drawings.
- B. Standard U-channel steel support post of 8 ft. length, green or black enamel finish, with theft-proof sign fasteners.

## 2.06 PRECAST CONCRETE UNIT RETAINING WALL

- A. Modular block interlocking units of 3000 psi 28-day compressive strength concrete with maximum moisture absorption rate of 6 percent, conforming to ASTM C90, C140 and C145. Textured exposed straight face units shall provide a weight of 80 lbs. per sq. ft. of wall face and shall interlock with non-corrosive pins or integral cast keys. The finished wall shall be battered at approximately 3/4-inch per course. Color to be selected by Architect.
- B. Wall units shall be "Highland Stone" by Anchor Wall Systems of Minnetonka, MN.
- C. Retaining wall shall be reinforced with horizontal layers of high density polyethylene geogrid conforming to ASTM D1248 of the grade recommended by the wall manufacturer. Manufactured by Tensar Corporation, or approved equal.

## 2.07 PRECAST CONCRETE

- A. Concrete for precast items shall be 4000 psi, air-entrained, 0.40 w/c ratio, with smooth form finish. Portland cement shall conform to the requirements of ASTM C-150, type I, II, or III. Aggregates shall conform to the requirements of ASTM C-33, and shall be free of injurious amounts of deleterious substances.
- B. Transformer Pad: Conform to the standards of the Utility Company. Detail shown on Drawings is approximate only.
- C. Light Pole Base and Light Bollard Base: Conform to the details shown on the Drawings. Coordinate bolt circle with the light pole base.
- D. Electric or Communication Manholes: Coordinate the details shown on the Drawings with the Utility Companies for their approval.
- E. Precast Concrete Steps: Conform to the details shown on the Drawings. Treads shall have a slip-resistant broom finish. Provide 1 1/4" inside diameter anodized aluminum pipe handrails.

## PART 3 EXECUTION

### 3.01 POST INSTALLATION

- A. Install posts for the fence and playfield equipment on previously prepared surfaces to line and grade as indicated. Install in accordance with the manufacturer's written installation instructions except as modified herein.

- B. Excavation: Excavate for concrete-embedded items to dimensions indicated. Clear post holes of loose material. Dispose of waste material as directed.
- C. Post Setting: Direct-drive posts plumb.

### 3.02 FENCE CONSTRUCTION

- A. Bracing: Brace gate, corner, end, and pull posts to the nearest post with a horizontal brace used as a compression member and a diagonal truss rod and truss tightener used as a tension member.
- B. Rails: Install rails before installing chain-link fabric. Pass top rail through intermediate post caps. Provide expansion coupling spaced as recommended by the manufacturer.
- C. Fabric: Pull fabric taut and secure fabric to top rail close to both sides of each post and at intervals of not more than 24 inches on centers. Secure fabric to posts using stretcher bars and ties or clips or by integrally weaving to integral fastening loops of end, corner, pull, and gate posts for full length of each post. Install fabric on opposite side of posts from area being secured. Install fence fabric to provide approximately 2-inch deflection at center of span of fabric between two posts, when a force of approximately 30 pounds is applied perpendicular to fabric. Fabric should return to its original position when force is removed.

### 3.03 SITE FURNITURE

- A. Benches: Install benches where shown on the Drawings. Provide two 12" diameter concrete piers for each bench. Set anchor bolts and attach bench as recommended by the manufacturer.

### 3.04 GRANITE BENCHES

- A. Install bench seat on pedestals in neat alignment as shown on the Drawings. Set plumb in well compacted gravel base material.

### 3.05 BALLFIELD NETTING

- A. Install behind existing chain link fence, where shown on the drawings. Position overhanging top of posts in uniform alignment, facing fence and perpendicular to it. Set post sleeves in proper orientation into concrete post bases. Attach bottom of netting to top of chainlink fence.

### 3.06 PRECAST CONCRETE RETAINING WALL

- A. Install wall in proper alignment as shown on the Drawings, set on a gravel leveling course compacted to 95% maximum dry density as shown, and in accordance with the manufacturer's recommendations. Follow manufacturer's safety precautions for cutting and installation.
- B. Backfill placement shall closely follow erection of each course of wall units. Backfill shall be placed in such a manner as to avoid any damage to the wall materials or misalignment of units. Any wall components which become damaged or disturbed during backfill placement shall be removed and replaced at the contractor's expense. Any backfill material placed within the soil mass which does not meet the requirements of Section 02200 shall be corrected or removed and replaced at the Contractor's expense.
- C. Adhere both the cap stone and the top two full-size stones solidly to the underlying stone using "Versalok Concrete Adhesive," or approved equal.
- D. Grout exposed slots, grooves, or holes on end units to a solid appearance using color matched mortar.

END OF SECTION

