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These “guideline” specifications are to be used by the A/E as a base document in the development of project/site-specific Division 2 – SITE WORK specifications for Montgomery County Public Schools Construction Projects. They may or may not be complete, correct and/or appropriate for use for any given project. It is the responsibility of the A/E to review these “guideline” specifications and to edit and/or supplement them as required to ensure that they represent the full, complete, correct and code-compliant specifications required for all construction of the project to which they apply. The use of these “guideline” specifications, and/or any information herein, in no way releases the A/E from their contractual responsibility to prepare and provide the full, complete and correct code-compliant contract documents, plans and/or specifications required for construction.

Review and editing of these “guideline” specifications shall be performed by appropriately licensed Maryland professional engineer. Specifications are to be prepared in Microsoft Word, edited using the “Track Changes” feature of that software and submitted to MCPS electronically on a compact Disk for review.

SECTION 02800 – FENCING

PART 1 – GENERAL:

1.1 RELATED DOCUMENTS:

- A. Drawings and General Provisions of Contract, including the General Conditions and other Division 1 Specification Sections, apply to the work of this Section.

1.2 DESCRIPTION OF WORK:

- A. Materials and Work Required to Construct Chain Link Fence and Gates and Related Accessories.

1.3 RELATED SECTIONS:

- A. Refer to Section 02100: “Earthwork and Grading”, Section 02514: “Concrete Curbing”, Section 02520: “Asphalt Pavement”.

1.4 CODES:

- A. Existing Underground Utilities: Refer to Section 02100 “Earthwork and Grading”.

1.5 STANDARDS:

- A. Installation shall be per chain link manufacturer’s standards (CLFMI).

1.6 SUBMITTALS:

- A. Submit manufacturer's descriptive literature, specifications and installation instructions for chain link fence and gates.

1. Include location of product manufacture

- B. Submit samples of vinyl-coated fabric 12 by 24 inches.

- C. Warranty:
 - 1. Submit typewritten vinyl coated fence warranty signed by Manufacturer and Contractor.

1.7 PRODUCT DELIVERY, STORAGE AND HANDLING:

- A. Deliver chain link fencing to Project Site in original unopened containers bearing manufacturer's label.

1.8 QUALITY ASSURANCE:

- A. Provide complete fencing (of each type) produced by a single manufacturer.

1.9 PROJECT CONDITIONS:

- A. Refer to Section 02100 "Earthwork and Grading" and as noted.
- B. Limitations: Do not proceed with fencing installation until underground utility, bituminous concrete pavement and concrete curb and gutter construction is complete.

1.10 WARRANTY:

- A. Warrant vinyl coated fencing for 10 years against peeling, cracking and corrosion.

1.11 CONSTRUCTION SURVEYS:

- A. Retain the services of a registered land surveyor or professional engineer to provide horizontal alignment stakes for fencing located adjacent to site property lines. Horizontal stake interval 50 feet maximum, and at all angle points along property line.
- B. Provide horizontal alignment stakes for project site fencing. Horizontal stake interval 50 feet maximum and at all corner points.

PART 2 – PRODUCTS:

2.1 CHAIN LINK FENCING:

- A. Acceptable Manufacturers, giving preference to products manufactured within a 500-mile radius of Project Site:
 - 1. Anchor Fencing
 - 2. Sonco Fence
 - 3. Long Fence
 - 4. P&H Tube Division/Southwestern Pipe
 - 5. Allied Tube and Conduit Corp.
 - 6. Other pre-bid approved manufacturer(s) meeting the requirements of this Specification Section will be considered in accordance with Specification Section 01630: Substitutions and Product Options.
- B. General: Posts, rails, braces and bracing assemblies shall be high tensile steel pipe, cold-rolled and electric resistance welded from steel conforming to ASTM A 569, and hot-dip galvanized to ASTM A 525 G-90 zinc weight both inside and outside pipe.
- C. Finish: Outsides shall receive a conversion coating and fusion bonded polyester powder coating equivalent to "Lifecoat LCX" by P & H Tube. Coating color shall be black.
 - 1. Fencing except Tennis Courts shall have bottom tension wire.
 - 2. Fencing shall have continuous top rail.
- D. Fabric: 9-gauge (0.148-inch) core size, finished steel wires, galvanized in accordance with ASTM A 641-71a. Finish shall be thermally bonded PVC over galvanized steel, Class 2B, in accordance with ASTM F 668. Coating color shall be black. Fabric shall have 2-inch diamond mesh pattern with top and bottom selvages knuckled.

- E. Tennis Court Fencing: Mesh size shall be 1-3/4 inches. Tennis Court fencing shall have top rail and bottom rail.
- F. Posts, Rails and Braces:
 - 1. Terminal Posts (Corner Posts): Up to 6 feet: 2.375 inch O.D.; over 6 feet: 2.875 inch O.D.
 - 2. Line Posts: Up to 6 feet: 1.90 inch O.D.; over 6 feet: 2.375 inch O.D.
 - 3. Gate Posts (Hinge Posts): Leaf widths up to 6 feet: 2.875 inch O.D.; leaf widths 6 feet to 13 feet: 4.00 inch O.D.
 - 4. Top Rail and Bottom Rail: Manufacturer's longest lengths, with expansion couplings (approximately 6 inches long) for each joint. Provide means of attaching top rail securely to each corner, end, and pull post.
 - 5. Terminal and Gate Post Bracing Assemblies: Manufacturer's standard adjustable brace at end posts and at both sides of corner and pull posts, with horizontal brace located at mid-height of fabric. Use same material as top rail for braces. Brace line posts with 0.375-inch diameter rod and adjustable tightener.
 - 6. Stretcher Bars: One-piece lengths equal to full height of fabric, with minimum cross section of 3/16" x 3/4". Provide one stretcher bar at each end post and two for each corner and pull post, except where fabric is integrally woven into post.
- G. Gates:
 - 1. Gate framing shall be 2-inch square aluminum tube with fabric installed inside frame with "J" bolts.
 - 2. Hinges shall be Manufacturer's standards.
 - 3. Latches shall be butterfly type.
 - 4. Height shall match adjacent fencing fabric, leaf swings 180 degrees.
- H. Bottom Tension Wire: 7-gauge, O.D. = 0.177-inch core size, with PVC coating.
- I. Post Tops (Caps): Weathertight closure caps, dome type, at each post, with openings to permit passage of top rails.
- J. Hardware and Accessories: Galvanized per ASTM A 152 with manufacturer's standard polyvinyl chloride (PVC) plastic resin finish over galvanizing, not less than 10 mils (0.010") thick.

2.2 CHAIN LINK FENCING HEIGHTS:

- A. Heights shall be as indicated or as specified:
 - 1. Fencing around tennis courts shall be 10'-0" high.

2.3 PADLOCKS:

- A. Padlocks manufactured by Master Lock Company, Milwaukee, Wisconsin. Provide one "Steel Secret Service" lock and furnish Owner with two keys for each gate.

2.4 CONCRETE:

- A. Class "B" Portland cement concrete, Specification Section 02200: Utility Standards.

PART 3 - EXECUTION:

3.1 PROTECTION AND RESTORATION:

- A. Refer to Section 02100 "Earthwork and Grading" and as noted.
- B. Existing Utilities: Verify utility locations prior to fencing excavation operation. Adjust horizontal fencing alignment to avoid utilities at no increase to Contract Sum.

3.2 GRADING:

- A. Grade fence lines to smooth and uniform surfaces, free of depressions and high spots exceeding four inches in ten feet.

3.3 CHAIN LINK FENCING:

- A. General: Install in accordance with Manufacturer's installation instructions and as noted. Install corner posts at horizontal alignment changes exceeding 30 degrees. Install line posts at intervals not exceeding ten feet. Install gateposts on both sides of gate opening.
- B. Post Installation:
 - 1. Excavate post footings to minimum 18-inch diameters and 39 inch depths or as otherwise indicated.
 - 2. Place and consolidate concrete in footing excavations. Install posts in concrete plumb to 1/4 inch in 10 feet. Provide bracing to prevent movement. Embed line post in concrete to 18 inches, terminal and gate posts to 24 inches. Slope exposed concrete footing surface one inch with outside edge flush with ground surface. Trowel exposed concrete footing surface to smooth finish. Contractor shall allow concrete footings to cure a minimum of 14 calendar days before removing bracing, or performing subsequent fencing operations.
- C. Terminal and Gate Post Bracing Assemblies, Truss Rods and Tighteners and Tension Wire and Post Tops: Install in accordance with Manufacturer's installation instructions and as specified.
- D. Fabric: Each span shall be attached independently at pull and corner posts. Ends of fabric rolls and other section to be spliced shall be joined by weaving a single strand of fabric wire into ends of fabric to create a continuous pattern of mesh. Fabric shall be stretched taut and securely fastened to each post and rail. Fastenings at ends, gates, corners, and pull posts shall be with stretcher bars and metal bands.

3.4 MAINTENANCE:

- A. Refer to Section 02100 "Earthwork and Grading".

END OF SECTION