

DIVISION 32 – EXTERIOR IMPROVEMENTS

320190.29 TOPSOIL MANAGEMENT
321623 CONCRETE WALKS AND INCIDENTAL PAVING
323119 ORNAMENTAL ALUMINUM FENCE AND GATES

SECTION 32 01 90.29

TOPSOIL MANAGEMENT

PART 1 - GENERAL

1.1 Scope: This Section includes the location, removal, stockpiling, protection and re-use of existing topsoil, as available, to be used for this project.

1.2 Application Publications:

- A. United States Department of Agriculture Soil Conservation Service and Forest Services - Soil Survey of Rapides Parish, Louisiana, issued March 1980.
- B. Geotechnical Investigation Services – A New Multipurpose Building for Minden High School, Minden, Webster Parish, Louisiana. Refer to Section 02 00 00 – Subsurface Exploration .

1.3 Location and Determination of Topsoil: The Contractor will be responsible locating and determining characteristics of available on-site topsoil to be managed for re-use on this project.

PART 2 - PRODUCTS

2.1 Topsoil: Available on-site topsoil is defined as non plastic silty loam located in the first zero to four (0" - 4") inches of the natural surface, having a pH of 5.9 to 6.6 and an organic matter content greater than two percent (2%) by weight. Generally, the upper part of the soil that is richest in organic matter is most valuable. Topsoil shall be free of debris, noxious weeds, toxic substances, muck, and rocks one half (½") inch and larger, clay, debris and any other undesirable matter that would be detrimental to the intended use of the topsoil for this project.

2.2 Soil Amendments: Refer to Section 31 25 14 – Erosion Control and Soil Stabilization.

PART 3 - EXECUTION

3.1 Spreading Thickness: Topsoil shall be respread not less than four inches (4") thick in all grassed areas. The thickness specified herein is compacted thicknesses.

3.2 Stripping: Strip topsoil from those areas that will be disturbed by excavation and filling operations. The entire site shall NOT be stripped at once. Stripping shall progress as earthwork demands. Stripping depths varies but is anticipated to be six inches (6") thick over the site. Contractor shall be responsible for determining the depth of stripping.

3.3 Stockpiling: Topsoil for re-use shall be stockpiled in areas to be determined by the Contractor. Generally, resspreading is easier and more economical when topsoil is stock-piled

in small piles near the area(s) where it will be re-used. Stockpiles shall not exceed slopes of 2:1 and shall not be higher than five feet (5') to prevent compaction. Stockpiles shall contain similar type soils. Do not mix topsoils from different areas where they are to be returned.

3.3.1 Stockpile Maintenance: Protect topsoil stockpiles by temporarily seeding as soon as possible and in NO case any later than fifteen (15) days after the formation of the stockpile. If stockpiles are to remain unused for a period greater than three (3) months they shall be permanently stabilized with appropriate vegetation to control erosion, contamination and weeds. All stockpiles shall be protected with silt fences regardless of storage time in conformance with the Storm Water Pollution Prevention Plan.

3.4 Installation: The top six inches (6") of the subgrade or area to receive topsoil shall have a pH of 5.1-7.1 to support adequate vegetation. CONTRACTOR shall provide soil amendments in conformance with Section 31 25 14 – Erosion Control and Soil Stabilization. This is a requirement for all areas disturbed due to construction whether the site yields sufficient quantities of topsoil or not. In general, any areas requiring topsoil, seeding, sprigging and/or sodding shall be prepared accordingly. Once the area meets the aforementioned requirements and immediately prior to spreading the topsoil, loosen the subgrade a minimum of six inches (6") by disking and/or scarifying to ensure bonding of the prepared subgrade and topsoil. Spread the topsoil to the thicknesses specified in Paragraph 3.1 of this Section. Compact the topsoil enough to ensure good contact with the prepared subgrade, but avoid excessive compaction as it increases run off and inhibits germinations. Do not install topsoil in areas that are wet, muddy, frozen, compacted and/or dried hard. Lightly disk immediately prior to seeding.

3.5 Seeding Rates: Refer to Section 31 25 14 – Erosion Control and Soil Stabilization.

3.6 Watering: Refer to Section 31 25 14 – Erosion Control and Soil Stabilization.

- END OF SECTION -

SECTION 32 16 23CONCRETE WALKS AND INCIDENTAL PAVINGPART 1 - GENERAL

1.1 Scope: The CONTRACTOR shall furnish all labor, materials, tools and equipment, and perform operations necessary for the construction of Portland Cement concrete walkways, sidewalks and incidental paving in accordance with these Specifications and in conformity with the lines and grades as shown on the Drawings or established by the ENGINEER.

1.2 Reference Standard: Conform to the following sections of the State of Louisiana, Department of Transportation and Development, Standard Specifications for Roads and Bridges, 2006 Edition, except as modified herein:

- Section 706 - Concrete Walks, Drives, and Incidental Paving
- Section 1005 - Joint Materials for Pavements and Structures
- Section 1009 - Reinforcing Steel and Wire Rope
- Section 1011 - Concrete Curing Materials, Admixtures and Special Finishes

All references made therein to Measurement and Payment are deleted.

1.3 Submittals: Submit product data in accordance with provisions of Section 01 33 00 – Submittal Procedures.

PART 2 - PRODUCTS

2.1 Portland Cement Concrete: Portland Cement concrete for walkways, sidewalks, sidewalk ramps, landings, drainage flumes/swales and incidental concrete pavement shall be Minor Structural Class “M” as specified in Section 03 30 53 - Cast-in-Place Concrete.

2.2 Joint Materials:

A. Joint Material: Material shall conform to Section 1005.01 (a) of the Reference Standard.

A. Sidewalk and Pavement Isolation and Butt Joints: Closed cell polypropylene joint filler (1/2” thickness).

B. Sidewalk and Pavement Expansion Joints: Redwood (3/4” thickness) with removable strip to allow for sealant reservoir. **Note: Sealant reservoir not required for sidewalk expansion joints.**

2.3 Steel Reinforcing: Steel reinforcing shall be grade 60 ksi and shall conform to Section 1009.01 of the Reference Standard.

2.4 Fiber Reinforcement: (None Required This Project) Concrete shall be reinforced with the use of polypropylene, collated, fibrillated fibers. The fibers shall be used at a rate of one- and one-half pounds (1½ lbs.) per cubic yard and in strict accordance with the manufacturer's recommendations. The fiber manufacturer or approved distributor shall provide the services of a qualified technician at job startup.

2.5 Curing Compound: This material shall conform to AASHTO Designation: M148 and be on the LDOTD Qualified Products list and conform to Subsection 1011.01. The curing compound shall be white pigmented.

2.6 Concrete Stain: (None Required This Project) Integral concrete stain shall be provided at areas of contrasting concrete color as detailed on the Drawings. Acceptable manufacturers shall be Kemiko Concrete Stains, H&C Concrete or approved equal.

PART 3 - EXECUTION

3.1 General: Concrete walks, ramps, landings, drainage flumes/swales and incidental paving shall be constructed by the CONTRACTOR in the best workmanlike manner. The underlying subgrade as well as the finish surface shall conform to the requirements of these Specifications and of the Drawings.

3.2 Paving work shall be performed in accordance with Section 706 - "Concrete Walks, Drives and Incidental Paving" of the Reference Standard.

3.3 Walks shall be constructed on compacted subgrade as shown on the Drawings. Subgrade shall be compacted in conformance with Section 31 22 10 - Excavation, Filling and Backfilling.

3.4 Finishing concrete by either machine or hand may be used, conforming to Section 706.03(d).

3.5 Expansion, isolation and dummy joints shall be constructed as detailed on the Drawings.

3.6 Pavement surface shall be finished with a broom finish.

3.7 All pavement shall receive white pigmented spray sealant curing compound upon completion of finish work.

3.8 Concrete Cylinder Testing: The Portland Cement concrete used for walks and incidental paving shall be tested for seven (7) and 28-day compressive strength by a geotechnical engineer/laboratory. Concrete cylinders shall be molded at a frequency of three (3) cylinders per 50 cubic yards of concrete placed or portion thereof. Costs for required concrete cylinder testing shall be borne by the OWNER.

- END OF SECTION -

SECTION 32 31 19ORNAMENTAL ALUMINUM FENCE AND GATESPART 1 - GENERAL

1.1 Scope: This Section covers materials, labor and all necessary items required for the installation of industrial grade ornamental aluminum fencing and gates at locations indicated in the Drawings.

1.2 References:

- A. ASTM B 26/B 26M - Standard Specification for Aluminum-Alloy Sand Castings; 2005.
- B. ASTM B 209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate; 2004.
- C. ASTM B 210 - Standard Specification for Aluminum and Aluminum-Alloy Drawn Seamless Tubes; 2004.
- D. ASTM B 221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes; 2005.
- E. ASTM B 247 - Standard Specification for Aluminum and Aluminum-Alloy Die Forgings, Hand Forgings, and Rolled Ring Forgings; 2000.
- F. ASTM B 429 - Standard Specification for Aluminum-Alloy Extruded Structural Pipe and Tube; 2002.
- G. ASTM C 1107 - Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Non-shrink); 2002.
- H. ASTM E 488 - Standard Test Methods for Strength of Anchors in Concrete and Masonry Elements; 1996.
- I. AA 30 - "Specifications for Aluminum Structures".
- J. Americans with Disabilities Act Accessibility Guidelines (ADA).

1.3 Submittals: Provide product data for fence, gates, hardware, etc. specified in accordance with Section 01 33 00 – Submittal Procedures.

- A. Project Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Installation methods.
- B. Shop Drawings:
 - 1. Submit Manufacturer's approved shop drawings detailing the section and elevation views of each product to be installed.

2. Coordinate with locations listed on Drawings.

C. Verification Samples: For each finish product specified, two samples, minimum size 6 inches (150 mm) square representing actual product, color, and patterns.

1.5 Quality Assurance:

A. Manufacturer Qualifications: All primary products specified in this section will be supplied by a single manufacturer with a minimum of ten (10) years' experience.

1.6 Delivery, Storage and Handling:

A. Store products in manufacturer's unopened packaging until ready for installation.

B. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.7 Project Conditions:

A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

1.8 Warranty:

A. Provide Manufacturer's minimum ten-year warranty for aluminum fence components and gates and aluminum finishes.

PART 2 - PRODUCTS

2.1 Manufacturers:

A. Acceptable Manufacturer: Elite Fence Products, Inc., 50925 Richard W. Boulevard, Chesterfield Twp., Michigan 48051 (800-783-1331).

B. Acceptable Manufacturer: OnGuard Ornamental Aluminum Fence, 18 Culnen Drive, Branchbury, New Jersey, 08876 (866-321-0001).

C. Or approved equal.

2.2 Metals:

A. General: Provide metal free from pitting, seam marks, roller marks, stains, discolorations, and other imperfections where exposed to view on finished units.

B. Aluminum: Alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated, and with not less than strength and durability properties of alloy and temper designated below for each aluminum form required.

1. Extruded Bar and Tube: ASTM B 221 (ASTM B 221 M), alloy 6063-T5/T52

2. Extruded Structural Pipe and Tube: ASTM B 429, alloy 6063-T832.
3. Plate and Sheet: ASTM B 209 (ASTM B 209M), alloy 6061-T6.
4. Die and Hand Forgings: ASTM B247 (ASTM B 247 M), alloy 6061-T6
5. Castings: ASTM B 26/B 26M, alloy A356-T6.

C. Brackets, Flanges and Anchors: Cast or formed metal of same type of material and finish as supported rails, unless otherwise indicated.

1. Provide brackets with flange for concealed anchorage to hanger bolt.
2. Provide formed brackets with predrilled hole for exposed bolt anchorage.
3. Provide brackets with internal sleeve connectors.

2.3 Fasteners:

A. Anchors: (None Required this Project) Select fasteners of type, grade and class required to produce connections suitable for anchoring fencing to existing building walls.

2.4 Setting Material: Refer to Section 03 30 53 - Cast in Place Concrete – Civil Sitework.

2.5 Fences:

A. Fence Style: Industrial picket fence with two (2) upper rails and one (1) lower rail.
Pickets end flush with top and bottom rails.

1. Elite: Industrial Grade Aluminum EFF-20 Style (Modified) (Industrial Grade).
Note: Pickets shall end flush with top and bottom rails.
2. On-Guard: Starling Style (Modified) (Industrial Grade). Note: Pickets to end flush with top and bottom rail.
3. Rails: Three (3) - 1 5/8-inch wide by 1 5/8-inch-deep aluminum U-channel.
4. Height: 6'-0"
5. Unsupported Span: Not to exceed 8 feet.

B. Pickets:

1. Style: 1-inch (25mm) extruded square aluminum, 0.062-inch wall thickness.
2. Spacing: Picket spacing must disallow the passage of a 4-inch sphere through the fence at any point.

C. Support Posts:

1. Size: 3-inch (min.) square extruded aluminum posts, 0.125-inch wall thickness.

2. Post Cap: Standard Post Cap.

D. Gate Posts:

1. Size: 6-inch square extruded aluminum posts, 0.250-inch wall thickness.
2. Post Cap: Standard Post Cap.

2.6 Gates:

A. Swing gates to match fence and railing style and finish as indicated. If shop fabricated aluminum gates are to be provided by entity other than the fence manufacturer, detailed drawings specifying all member sizes, dimensions, weld locations, etc. shall be submitted for approval.

C. Gate hardware shall include heavy duty hinges and lockable latch. A padlock shall be provided for each gate, and all gate lock mechanisms shall be keyed alike, with two (2) sets of keys being provided for each gate.

D. Two (2) gate stop posts shall be installed at each double gate location as shown on the Drawings. Stop posts shall be 2.375-inch O.D. standard weight (schedule 40) galvanized-steel pipe conforming to ASTM F 1083, and to the heavy industrial requirements of ASTM F 669, Group IA, with minimum yield strength of 30,000 psi, not less than 1.2 oz. of zinc per sq. ft. Stop posts and caps shall be fusion bonded vinyl over galvanized surface with a PVC coating of 10 to 14 mils in accordance with ASTM F668 Class 2b. Color shall be standard "Black".

2.7 Fabrication:

A. Assemble fencing in shop to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Clearly mark units for reassembly and coordinated installation. Use connections that maintain structural value of joined pieces.

B. All rail and upright intersections and all picket and rail intersections shall be joined by welding.

C. Brackets, Flanges, Fittings and Anchors: Provide manufacturer's standard wall brackets, flanges, miscellaneous fittings and anchors to connect fences to existing building walls.

D. Provide inserts and other anchorage devices to connect fencing to concrete or masonry. Fabricate anchorage devices capable of withstanding loads imposed by fencing. Coordinate anchorage devices with supporting structure.

E. Shear and punch metals cleanly and accurately. Remove burrs from exposed cut edges.

F. Cut, reinforce, drill and tap components as required to receive finish hardware, screws and similar items.

G. Close exposed ends of fencing members, as necessary, with prefabricated end fittings.

2.8 Finishes:A. General:

1. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
2. Appearance of Finished Work:
 - a. Variations in appearance of abutting or adjacent units are acceptable if they are within one-half of the range of approved samples. Noticeable variations in the same unit are not acceptable.

B. Finish Coating: Prepare, pre-treat, and apply coating to exposed metal surfaces to comply with manufacturer's written instructions.

1. Material: AAMA 2604 - Polyester powder coating, 3 mil average film thickness; or,
2. Material: Kynar 500 coating
3. Color: Black

2.9 Ground Rods: 5/8" nominal diameter x 8" long Copper weld rod, Burndy type GAR.PART 3 - EXECUTION3.1 Examination:

A. Do not begin installation until all fencing, gates and components have been checked for damage and/or imperfections.

3.2 Installation:

A. Install fence in accordance with manufacturer's instructions.

B. Space posts uniformly at 8'-0" (max) center to center unless otherwise indicated.

C. Concrete Set Posts (in Earthen Areas): Drill hole in firm, undisturbed or compacted soil. Holes shall be drilled to dimensions shown on the Drawings. Place concrete around post in a continuous pour, exercising care to limit concrete residue on posts. Post footing shall terminate 4" below adjacent finished ground level to allow for 4" of topsoil placement around posts. Clean any concrete residue from post bottom immediately after concrete has been poured.

D. Concrete Set Post (in Existing Walks/Slabs): Neatly sawcut and remove existing walk/slab to the dimensions shown on the Drawings. Drill hole in undisturbed soil and pour concrete footing as specified in Paragraph 3.2.C above except top of footing shall be terminated 4" below existing walk/slab. Allow footing to cure for minimum of 72 hours. Fill remaining square hole in existing walk/slab with concrete and lightly broom finish to match existing walk/slab elevations.

E. Gate Posts and Hardware: Set keepers, stops, sleeves and other accessories into concrete.

F. Type and quantity of gate hinges shall be based on the application, weight, height and number of gate cycles.

G. Gate hardware shall be provided by the manufacturer and shall be installed per manufacturer's recommendations.

H. Check each post for vertical and top alignment and maintain in position during placement and finishing operation.

I. Align fence panels between post. Ensure panels and posts remain plumb throughout construction.

J. Clean surfaces thoroughly with soap and water after installation is completed.

3.3 Grounding Devices:

A. A grounding device shall be installed at max. 250' along fence, at overhead utility crossings and at each gate location as detailed on the Drawings.

3.4 Accessories:

A. Install post caps and other accessories to complete fence.

3.5. Cleaning:

A. The CONTRACTOR shall clean the jobsite of excess materials; post-hole excavations shall be scattered uniformly away from posts.

3.6 Protection:

A. Protect installed products until completion of project.

B. Touch-up, repair or replace damaged products before Substantial Completion.

-END OF SECTION-