

	<b>UNION ST SWITCHGEAR REPLACEMENT NON-CONDUCTIVE FENCE SYSTEM</b>	<b>SECTION 32 31 00</b> Revision 00 Date: 3/14/2013
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## PART 1 GENERAL

### 1.01 SUMMARY

- A. Section Includes
1. Fence framework, fabric, and accessories
  2. Excavation for post bases
  3. Concrete foundation for posts and center drop gates
  4. Manual gates and related hardware

### 1.02 RELATED SECTIONS

- A. Section 03 30 10 – Cast-in-Place Concrete
- B. Section 03 41 02 – Miscellaneous Precast Concrete
- C. Section 28 05 53 – Identification for Electrical Equipment Safety & Security – Substation Markers & Labels.

### 1.03 REFERENCES

- A. Manufacturer’s Certified Test Reports attesting the level of non-conductivity

### 1.04 SYSTEM DESCRIPTION

- A. Work includes layout and installation of substation security fence and gates. Also included is miscellaneous fences and fence related appurtenances. Fencing system specifically designed and tested to be non-conductive to electricity for providing a safe and secure barrier around electrical substation locations.
- B. Fence line layout, gate location and fence dimensional information is provided on the project drawings. Fence component dimension are provided in this specification and project drawings.

### 1.05 SUBMITTALS

- A. Fence Installer Qualifications: Submit name, address, references, and general qualifications of the firm responsible for the fence installation.
- B. Shop Drawings: Indicate plan layout, spacing of components, post foundation dimensions, hardware anchorage, gates, and schedule of components.
- C. Placement Drawings: Include plans, elevations and sections showing construction, installation and fasteners.
- D. Product Data: Submit data on fabric, posts, accessories, fittings, hardware and method of joining non-conductive materials.

- E. Manufacturer's Installation Instructions: Submit installation requirements.
- F. Submit As-Built details of fence, gate(s), locations & details of terminal posts (end, corner, pull and gate), and their respective foundation(s). Record and submit information as required under Section 01 00 00 - General Requirements.

#### 1.06 QUALITY ASSURANCE

- A. At time of submittal, certified test results must be presented confirming non-conductivity.
- B. Field measurements shall be taken prior to submittal of final shop drawings and fabrication.
- C. Each product type shall be the same and be made by the same manufacturer.
- D. The Non-Conductive Fence shall be capable of sustaining a horizontal load of 1500 pounds.
- E. Perform Work in accordance with State, local and Owner requirements.

#### 1.07 COORDINATION

- A. Grading-Ensure site grading is ready to accommodate fencing work before setting fence posts. Coordinate the start of the fence installation with the site work Contractor.

#### 1.08 QUALIFICATIONS

- A. Manufacturer shall be a company regularly engaged in the manufacture of fence and fence components of a non-conductive fencing system.
- B. Installer shall be a company specializing in performing work of this section with minimum three (3) years experience, or having provided similar services on Owner projects and acceptable to the Owner.

#### 1.09 DELIVERY, STORAGE AND HANDLING

- A. Materials shall be protected against damage from weather, vandalism, and theft. In the event of freight damage, note freight bill and contact manufacturer immediately.
- B. Care shall be taken when storing materials to insure and prevent damage from excessive or uneven storage and or damage to the finish.
- C. Store fence materials in secure and dry place, off of ground and protected from weather and construction traffic.
- D. Do not install damaged material.

## PART 2 PRODUCTS

### 2.01 MANUFACTURER

- A. The Electrically Non-Conductive panels shall conform to material specifications as manufactured by Alabama Metal Industries Corporation (AMICO), Birmingham, AL. Security Products Department: Telephone 800/366-2642 or approved equal.

### 2.02 MATERIALS

- A. The materials and accoutrements for this fencing system are unique. All panels, fittings and methods of securing are of a design implemented for the purpose of creating an electrically non-conductive barrier. All design, construction and components shall be approved by the owner's grounding engineer to meet the desired level of non-conductivity. Construction and design of the fence shall comply with the non-conductive fence manufacturer's recommendations and be approved by the owner's grounding engineer. Common materials not manufactured specifically for a non-conductive fence are NOT acceptable for this work.
- B. Color of materials shall be dark gray.
- C. The finish shall not rust or corrode.

### 2.03 PANELS

- A. Non-Conductive Panel Style as noted on drawing(s) (ANC 1.0-1.75).

### 2.04 NON-CONDUCTIVE FRAMEWORK

- A. 100 percent non-conductive construction shall only incorporate non-conductive materials for posts and supports members as required. Color shall be dark gray.
- B. Line posts shall be an H-Type post 6-inches x 4-inches x 2-inches with a minimum thickness of 0.375-inches.
- C. Gate posts shall be 12-inches x 12-inches x 1/2-inch H-Posts.

### 2.05 METHODS OF ATTACHMENT

- A. 100 percent non-conductive construction shall only incorporate non-conductive materials for posts, gates, supports, fittings and fasteners as supplied by the manufacturer.

### 2.06 SWING GATES

- A. Gates shall be manufactured from the same non-conductive mesh panels and materials as specified above.

- B. Gate sizes and locations shall be noted on the drawings.
- C. Gate hinges and bolts securing the gate members shall be galvanized steel.
- D. Gates shall be the same height as the fence.

#### 2.06 FABRICATION

- A. Exposed joints will butt tight and flush.
- B. Verify dimensions on site prior to shop fabrication.

#### 2.07 CONCRETE PRODUCTS

- A. Post Foundation Concrete: Provide 3000 psi minimum 28-day compressive strength concrete for post foundations in accordance with 03 30 10 – Cast-In-Place Concrete.
- B. Gate Concrete Thresholds: Contractor shall supply and install precast concrete threshold as shown on Contract Drawings & specified in 03 41 02 – Miscellaneous Precast Concrete.
  - 1. Threshold shall include a gate stop cast integral with the unit.
  - 2. Contractor shall provide rigid insulation and prepare site accordingly to accept thresholds.
- C. Non-Shrink Grout: ASTM C1107, quick set expansive hydraulic cement grout designed for exterior post setting in rock. Free of chlorides and metallic aggregates.
  - 1. 5000psi, 28-day minimum compressive strength as determined in accordance with ASTM C109.
  - 2. Polymer modified or epoxy grouts designed for application may also be used with Owner approval.

### PART 3 EXECUTION

#### 3.01 PREPARATION

- A. Coordinate post setting, and guidelines for installation of materials with other trades.
- B. Installation and lay-out of the job shall be approved by the owner or general contractor prior to installation.

#### 3.02 INSTALLATION

- A. Install in accordance with manufacturer's drawings and direction.
- B. Fit materials together to form tight joints except as necessary for expansion and change in grade.
- C. Perform cutting, drilling, and fitting required for installation.

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- D. The ANC Fence must be installed using AMICO non-conductive panels and fittings.
- E. Vertical joints must be staggered on the ANC 1.0-1.75 mesh panels.
- F. Follow the cutting, sealing and safety information as recommended by the manufacturer.
- G. Posts shall be plumb, spaced and installed as noted on drawings.

3.03 CLEANING

- A. The contractor shall be responsible to clean up the jobsite of any unused materials and trash.
- B. Post hole excavations shall be scattered uniformly away from posts.

END OF SECTION


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## ANC Non-Conductive Fence System®

**AMICO introduces the ANC Non-Conductive Fence System® that allows the security barrier to be non-conductive (does not conduct electricity or allow induced voltage) and it greatly reduces radar reflectivity (microwave transmissions). Designed for new or the retrofit of existing fencing.**

### Features:

- Mesh Pattern Allows for Generous Air Flow
- Mesh has minimum 70% open area
- Mesh sizes range from 1/2" - 2"
- Can provide medium / maximum level of security
- Only non-conductive components used
- Non-magnetic
- Corrosion Resistant
- Fire retardant
- Withstands ultraviolet rays
- Easy to install
- Light weight
- Low maintenance



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ANC 1.0-1.75, ANC .50-2.25, 09206, 09 29 00

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