SECTION 281602 - FENCE ACCESSORY STATIONS FOR PERIMETER SECURITY SYSTEMS

1. GENERAL
   * + 1. RELATED WORK SPECIFIED ELSEWHERE
          1. Perimeter Security Multiplex System: Section 281603.
          2. Microwave Detection System: Section 281604.
          3. Electronic Fence Alarm System: Section 281605.
          4. Infrared Detection System: Section 281607.
          5. Taut Wire Fence Alarm System: Section 281608.
          6. Perimeter Surveillance CCTV System: Section 282301.
       2. DEFINITIONS
          1. The terms “fence accessory station” and “fence alarm station” are synonymous.
       3. DESCRIPTION
          1. The fence accessory stations (FAS):

Serve as secure weather resistant enclosures for equipment (of various perimeter security systems) located at and on the perimeter security fences.

Serve as interconnection points between various perimeter security systems and their equipment.

Serve as a source of 120V ac single phase power for security equipment located at and on the perimeter security fences.

* + - 1. SUBMITTALS
         1. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.
         2. Manufacturer’s installation instructions shall be provided along with product data.
         3. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).
         4. Waiver of Submittals: The “Waiver of Certain Submittal Requirements” in Section 013300 does not apply to this Section.
         5. Submittals Package: Submit the shop drawings and the product data specified below at the same time as a package.
         6. Shop Drawings:

Composite wiring and/or schematic diagrams showing the wiring within each fence accessory station as proposed to be installed (standard diagrams will not be accepted).

Scale drawings showing location and mounting of components within each fence accessory station.

* + - * 1. Product Data:

Catalog sheets, specifications and installation instructions.

Bill of materials.

* + - * 1. Contract Closeout Submittals:

Photographs:

After completion of the work take color photographs of the completed Work including one fence accessory station, as follows:

One (close-up) front view with the FAS enclosure door open, showing the entire interior of the FAS and all of its components.

One overall view of the FAS with the enclosure door closed, showing the finished grade below the FAS and the fence lighting junction box above the FAS.

Use a digital camera.  Use wide angle lens for overall view.  Use electronic flash capable of supplying sufficient light to evenly illuminate the overall subject.

Minimum digital requirements:

Format shall be .jpg or .tif

The resolution shall be 12 Megapixels or greater.

Submit photographs to electronic submittal website for approval and record.

* + - 1. MAINTENANCE
         1. Spare Parts:

One transformer.

Six of each size fuse.

1. PRODUCTS
   * + 1. FENCE ACCESSORY STATIONS (FAS)
          1. Enclosures: Hoffman’s Bulletin A-4 NEMA Type 4X stainless steel enclosure, having:

Dimensions as required for installation of components (minimum dimensions shown on drawings).

Single gasketed door with continuous hinge and lock.

Lock Kit; Hoffman’s A-CLSN12.

Key all FAS locks the same.

Furnish 4 keys.

Twelve gage steel mounting plate within enclosure for mounting components and future components.

Tamper switches to indicate opening of enclosure door.

Stainless steel external hardware.

Louvers as required for ventilation and to prevent temperatures above equipment ratings.

Mounting accessories as required.

* + - * 1. Outlet and Junction Boxes (Within the Fence Accessory Station):

Outlet Boxes: Standard galvanized steel boxes and device covers as manufactured by Appleton Electric Co., Raco Inc., or Steel City.

Junction Boxes: Code gage, galvanized steel screw cover boxes as manufactured by Gray Metal Products Inc., Hoffman Engineering Co., Keystone Columbia Inc., or Queen Products Co. Inc.

* + - * 1. Channel Support System:

Channel Material: 12 gage steel.

Finish: Hot dipped galvanized.

Fittings: Same material and finish as channel.

UL Listed Systems:

B-Line Systems Inc.’s B-22 (1-5/8 x 1-5/8 inches), B-12 (1-5/8 x 2-7/16 inches), B-11 (1-5/8 x 3-1/4 inches).

Kindorf’s B-900 (1-1/2 x 1-1/2 inches), B-901 (1-1/2 x 1-7/8 inches), B-902 (1-1/2 x 3 inches).

Unistrut Corp.’s P-3000 (1-3/8 x 1-5/8 inches), P-5500 (1-5/8 x 2-7/16 inches), P-5000 (1-5/8 x 3-1/4 inches).

Versabar Corp.’s VA-1 (1-5/8 x 1-5/8 inches), VA-3 (1-5/8 x 2-1/2 inches).

* + - * 1. Combination Transformer and Disconnect: Square D Co.’s Class 9070 transformer disconnect, having:

NEMA 1 enclosure.

Integral disconnect switch on primary side of circuit.

Primary and secondary fuseholders and fuses.

Dry type transformer; single phase, 120 volt secondary, primary voltage and KVA ratings as indicated on drawings.

Ground fault receptacle, mounted in enclosure cover.

Mounting accessories.

Lightning arresters connected to primary terminals of transformers; Joslyn’s J9200-7 thru 12 series, to suit system characteristics.

* + - * 1. Receptacles:

Specification Grade Receptacles:

Single receptacle, NEMA 5-15R (15A, 125V, 2P, 3W); Bryant’s 5251, Crouse-Hinds/AH’s 5251, General Electric’s 5251-1, Hubbell’s 5251, Leviton’s 5251, Pass & Seymour’s 5251, or Slater’s 5361-AG-BR.

Duplex receptacle, NEMA 5-15R (15A, 125V, 2P, 3W); Bryant’s 5262, Crouse-Hinds/AH’s 5252-S, General Electric’s GEN5252-1, Hubbell’s 5252, Leviton’s 5252, Pass & Seymour’s 5252, or Slater’s 5252-AG-BR.

* + - * 1. Grounding:

Ground Lugs: Burndy Corp.’s Hylug YA-2L, YA-2LN, YA-2, YA-2N, or Thomas & Betts Corp.’s 54204 Series, 54850 Series.

Exothermic Type Weld: Erico Products Inc.’s Cadweld Process.

Insulated Grounding Bushings: Appleton Electric Co.’s GIB-50 Series, Efcor Inc.’s 56-50-4 Series, Midwest Electric Mfg. Corp.’s GLL Series, OZ/Gedney Co.’s IBC-50L Series, Raco Inc.’s 1212 Series, or Thomas & Betts Corp.’s 3870 Series.

Rod Electrodes: Copper clad (min. .010 jacket) ground rods minimum 5/8 inches dia. by 8’-0” long.

Grounding Electrode Conductors and Bonding Conductors: Copper conductors, bare or insulated with RHW, THW, XHHW, THWN or THHN insulation.

Hardware: Silicon-bronze bolts, nuts, flat and lock washers etc. as manufactured by Burndy Corp., Dossert Corp., or OZ/Gedney Co.

* + - * 1. Terminal Strips: Barrier type double screw terminals rated 300V minimum, meeting UL 94 requirements for materials classed 94V-O.
        2. Markers and Nameplates:

Markers: Premarked self-adhesive; W.H. Brady Co.’s B940, Thomas and Betts Co.’s E-Z code WSL self-laminating, Ideal Industries’ Mylar/Cloth wire markers, or Markwick Corp.’s permanent wire markers.

Nameplates: Precision engraved letters and numbers with uniform margins, character size minimum 3/16 inches high.

Phenolic: Two color laminated engraver’s stock, 1/16 inch minimum thickness, machine engraved to expose inner core color (white).

Aluminum: Standard aluminum alloy plate stock, minimum .032 inches thick, engraved areas enamel filled or background enameled with natural aluminum engraved characters.

* + - * 1. Expanding Silicone Foam: Chase Technology Corp.’s CTC PR-855, Dow Corning’s Silicone RTV Foam, or General Electric Co.’s PENSIL 851.
        2. ACCESSORIES: Include all accessories required to perform the functions summarized in DESCRIPTION and indicated on the drawings.

1. EXECUTION
   * + 1. INSTALLATION
          1. At each fence accessory station:

Separate the power wiring from signal wiring by installation of power wiring in raceway and junction boxes.

Ground transponders, conduits, enclosures, etc. with rod electrodes.

Install each systems surge protection on each conductor entering and leaving fence accessory stations.

Install terminal strip for each system for splicing and terminating conductors. Use markers to identify conductors at the terminal strips (designations shall correspond with each systems point to point wiring diagrams).

Install nameplate on door of FAS enclosure with designation indicated on drawings.

After installation of all conductors within the FAS enclosure, seal the interior of all conduits entering the FAS enclosure by injecting expanding silicone foam into the conduits.

END OF SECTION 281602