SECTION 281615 - MODIFICATIONS TO ELECTRONIC FENCE ALARM SYSTEM

Use this section for reference only. The products as specified in this section are obsolete. Manufacturer’s original type parts are not readily available to repair, modify, or update this type of existing system. Use the PPI version of section 281615 to modify or update this type of existing system.

1. GENERAL
   * + 1. DESCRIPTION OF EXISTING SYSTEM

Modify description to suit.

* + - * 1. The existing perimeter security system consists of a GTE/Sylvania FPS-2 electronic fence alarm system. Alarms from fence mounted processors are monitored at a security console in Bldg. No. 1.

Gate bypass units permit the sensor cables protecting gates to be disabled while the rest of the sensor cable remains active. The bypass position of the switch and tampering with the gate bypass unit is indicated at the security console as follows:

When a gate bypass unit is placed in the “access” position, the gate alarm sounds at the fence security console and an amber indicator at the gate location on the graphic display annunciator flashes. Placing a gate acknowledge switch on the console to the “access” position silences the alarm and the indicator stops flashing but remains illuminated.

Returning the gate bypass switch to the “secure” position again sounds the gate alarm at the security console and a green indicator at the gate location on the graphic display flashes. Placing the gate acknowledge switch on the console to the “secure” position silences the alarm and the indicator stops flashing but remains illuminated.

Tampering with a gate bypass unit causes the gate alarm to sound at the fence security panel and a gate tamper indicator to illuminate. Placing the gate acknowledge switch in the access position silences the alarm; however, the tamper indicator remains illuminated.

There is a separate gate acknowledge switch, tamper indicator, and graphic display indicators for each gate bypass unit.

* + - 1. MODIFICATIONS TO EXISTING SYSTEM (ZONE NO. 1)

List and explain modification to existing system. Example:

* + - * 1. Remove existing fence sensor cable from existing 8 foot high inner security fence in area of new sally port and provide new cable and equipment for operation of detection system as follows:

Secure Mode (Gate bypass switch in “secure” position and sensor cable plugs connected to bulkhead connectors on slide gate):

Cantilever gate operator motor control circuit is “disabled” preventing operation of gate from control booth.

Gate bypass switch position is indicated at security console in Building No. 1 in same manner as existing gate bypass switches.

Detection is continuous throughout entire zone including pedestrian and slide gate.

Bypass Mode (Bypass switch in “by-pass” position and sensor cable plugs connected to bulkhead connectors in enclosures on fence adjacent to gates):

Cantilever gate operator motor control circuit is “enabled” allowing operation of gate from control booth.

Gate bypass switch position is indicated at security console in Building No. 1 in same manner as existing gate bypass switches.

No alarms occur for intrusions at gate and within 20 ft of each side of gate. Detection within remainder of zone is not affected.

* + - 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, product data, and quality control submittals specified below at the same time as a package.
         6. Shop Drawings:

Wiring and/or schematic diagrams of the modifications as proposed to be installed (standard diagrams will not be accepted).

* + - * 1. Product Data:

Catalog sheets, specifications and installation instructions.

Bill of materials.

Detailed description of system modifications and operation.

* + - * 1. Quality Control Submittals:

Installers’ Qualifications Data: Include the following for each person who will be performing the Work:

Name.

Employer’s name, business address and telephone number.

Name and addresses of the required number of similar projects worked on which meet the experience criteria.

Company Field Advisor Data: Include:

Name, business address and telephone number of Company Field Advisor secured for the required services.

Certified statement from the Company listing the qualifications of the Company Field Advisor.

Services and each product for which authorization is given by the Company, listed specifically for this project.

Test Report: Existing system test report

* + - * 1. Contract Closeout Submittals:

System acceptance test report.

Certificate: Affidavit, signed by the Company Field Advisor and notarized, certifying that the system meets the contract requirements and is operating properly.

* + - 1. QUALITY ASSURANCE
         1. Installers’ Qualifications: The persons installing the Work of this Section and their supervisor shall be personally experienced in security systems and shall have been engaged in the installation of security systems for a minimum of three years.

Furnish to the Director the names and addresses of five similar projects which the foregoing people have worked on during the past three years.

Edit number of hours to suit.

* + - * 1. Company Field Advisors: Secure the services of a Company Field Advisor from the company of the existing electronic fence alarm system for a minimum of 16 hours for the following:

Render advice and witness test of existing system.

Render advice regarding modifications to existing system.

Witness final systems test and certify with an affidavit that the modifications are installed in accordance with the contract documents and are operating properly.

1. PRODUCTS
   * + 1. MATERIALS

Verify that products specified are compatible with existing system.

* + - * 1. Sensor Cables: GTE Sylvania Inc.’s FPS Electret Transducer cable with Teflon outer sheath, in lengths to suit job conditions with connectors and terminations preinstalled.
        2. Non-Sensitized Coaxial Cable: RG-59/U flooded burial coaxial cable with black polyethylene jacket; Belden Corp.’s 9590.
        3. Multi-Conductor Cable: Type MCP, multi-conductor cable with 6 individually shielded twisted pairs of insulated, 20AWG stranded copper wires enclosed in a jacket suitable for direct burial in earth; Belden Corp.’s 9886.
        4. Gate Bypass Switch: GTE Sylvania Inc.’s CU-1 with contacts to indicate that the switch has been placed in the access mode.
        5. NEMA 4 Enclosures: Hoffman Bulletin A-51 Type NF, having:

Dimensions as required for installation of components and terminating conduits.

Gasketed cover attached with vandal resistant screws.

Tamper switches to indicate opening of cover.

Component mounting panel and barrier type terminal strips as required.

Mounting accessories as required.

* + - * 1. Junction Boxes: Galvanized cast iron boxes, O.Z. Gedney Co.’s Type YL, having:

Dimensions as required for installation of components and terminating conduits.

Gasketed cover attached with vandal resistant screws.

Tamper switch to indicate opening of cover.

Component mounting panel and barrier type terminal strips as required.

Mounting accessories as required.

* + - * 1. Sensor Cable Ties: Weather resistant for outdoor use; Panduit Corp.’s, SST 1.5 IMO, Thomas and Betts Corp.’s TY-24MX.
        2. Rigid Steel Conduit and Fittings: Galvanized on the outside and inside (conduit enameled on the inside will not accepted), as manufactured by; Allied Tube & Conduit Corp., Midwest Electric Mfg. Corp., Robroy Industries Inc., Steelduct Conduit Products, Triangle PWC Inc., or Wheatland Tube Co.
        3. Tags and Nameplates:

Tags: 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: Phenolic engraved plates; minimum 3/4 inch wide and length as required by inscription as manufactured by Seton Nameplate Corp.

* + - * 1. Miscellaneous: Provide all connectors, mounting devices, and other items required for the modifications.

1. GENERAL
   * + 1. PREPARATION
          1. Test of Existing Perimeter Security System:

Prior to modifying the system, test portions of the existing system affected by the modifications to ascertain their operating condition.

Conduct fast or slow climb-over tests (method as described under system acceptance test) at various locations as directed in zones 1, 5, 6, and 7.

Test security console functions.

Prepare a written report for the Director’s Representative indicating the repairs, if any, required to make the existing system function properly.

Repairs to the existing system are not included in the Work unless requested by Order on Contract.

* + - 1. INTERRUPTIONS TO EXISTING SYSTEM
         1. Maintain the existing system in its present condition to the extent possible while performing the required modifications.
         2. Prior to making changes or removals relative to the existing system, notify the Director’s Representative and have procedures approved.
         3. Plan and perform modifications so that entire system is activated each night. Make temporary connections as required.
      2. INSTALLATION
         1. Install the Work in accordance with the Company’s printed instructions unless otherwise indicated.
         2. Install sensor cable on fence with cable ties spaced 12 inches on center.
         3. Use rigid steel conduit for all locations.
         4. Gate Bypass:

Make connection for gate bypass switch from area of new sally port to existing security console via existing spare MCP multi-conductor cable.

Provide additional “acknowledge” switch and connections as required in security console for annunciation of new gate bypass switch position.

Provide indicator lamps in graphic display and security console for new gate bypass switch.

Connect tamper switches in new NEMA 4 enclosures and junction boxes to gate bypass tamper circuit.

* + - * 1. Use non-sensitized coaxial cable for all extensions of sensor cable in conduit installed underground.
        2. Tag each cable in new junction boxes, enclosures, and console.
      1. FIELD QUALITY CONTROL
         1. Preliminary System Test:

Preparation: Have the Company Field Advisor adjust the completed system and then operate it long enough to assure that it is preforming properly.

Run a preliminary test for the purpose of:

Determining whether the system is in a suitable condition to conduct an acceptance test.

Checking and adjusting equipment.

* + - * 1. System Acceptance Test:

Preparation: Notify the Director’s Representative at least three working days prior to the tests so that arrangements can be made to have a Facility Representative witness the test.

Make the following tests for Zone No. 1 (approx. 600 feet in length):

Test each system function step by step as summarized under MODIFICATIONS TO EXISTING SYSTEM.

Perform simulated escape attempts listed below at 10 foot intervals unless otherwise directed (Director’s Representative shall select exact location and type of escape attempt or combination of attempts). Each penetration of the sensor system shall produce an alarm. If it does not, wait 30 seconds and repeat in the same location. If misses are repeated in the same location, the entire zone must be corrected and retested. The simulated escape attempts shall be performed by a person weighing 100 lbs or more. Provide safety equipment and take proper precautions when performing tests. Terminate each test climb at detection, or when the climb is complete, whichever comes first.

Fast Climb Over: Approach and make contact with the fence and rapidly scale the fabric until the top is reached. At this point, either jump down or climb down the opposite side of the fence.

Slow/Stealful Climb Over: Approach and make contact with the fence and slowly, deliberately, and stealthfully climb to the top of the fence, carefully negotiate the barb wire and climb down the opposite side of the fence.

Perform tests at selected locations for zones 5, 6, and 7 as directed, to demonstrate that operation of these zones was not adversely affected by the modifications and are functioning properly.

Supply all equipment necessary for system adjustment and testing.

Submit written report of test results signed by Company Field Advisor and the Director’s Representative. Mount a copy of the final report in a plexiglass enclosed frame assembly adjacent to the control panel.

END OF SECTION 281615