SECTION 281613 - MODIFICATIONS TO PERIMETER SECURITY MULTIPLEX SYSTEM

1. GENERAL
   * + 1. RELATED WORK SPECIFIED ELSEWHERE
          1. Fence Accessory Stations For Perimeter Security Systems: Section 281602.
          2. Microwave Detection System: Section 281604.
          3. Modifications To Perimeter Surveillance CCTV System: Section 282315.
       2. DESCRIPTION OF EXISTING SYSTEM

Do not use the description of existing system solely as written. It is only a guide. Modify to suit existing system. Refer to the original project manual and shop drawings for an accurate description of existing system.

* + - * 1. The existing Vindicator Corp. Model MP-2100 system operates as an integrated proprietary monitoring and control system. Changes in the status of monitored points are detected by the microprocessor based perimeter security central processing unit (PSCPU).

Choose paragraph above or below suit.

* + - * 1. The existing Vindicator Corp. Model SMS-2000S system operates as an integrated proprietary monitoring and control system. Changes in the status of monitored points are detected by the microprocessor based perimeter security central processing unit (PSCPU).
        2. The system operation is summarized as follows:

Upon receipt of alarm condition, the perimeter security console:

Displays zone number, time, date and alarm status (flashing) on the display screen.

Prints zone number, time, date, and zone status (alarm).

Sounds an internal audible alarm.

Locks out keyboard.

Automatically initiates switching the CCTV camera station covering that zone to a designated monitor in the perimeter security console.

The attendant at the PSCPU presses the acknowledge switch which:

Silences the internal audible alarm.

Unlocks the keyboard.

Causes print-out of acknowledge message.

Changes flashing alarm status indicator to a steady on state.

When an alarm condition is corrected, the attendant presses a secure switch which causes a secure status indicator display to illuminate, and a print-out stating “Zone Secure” with zone, date and time.

A numeric keyboard and special purpose keys on the PSCPU allows the attendant to perform the following functions:

Call-up zones for display.

Acknowledge alarm (turns off audible alarms and frees keyboard for response to alarm).

Secure zones in access and zones in alarm after alarm situation is corrected. Securing a zone enables the zone to go into alarm when the sensor is activated. When a zone is made secure, a print-out states “Zone Secure” with zone, date and time.

Access zones (permits authorized access to zones in alarm or secure zones). An accessed zone does not go into alarm when the sensor is activated. When a valid zone is in access, a print-out states “Zone Access” with zone, date and time.

Reset active tours zones (future). When an active tour is reset a print-out states “Tours Reset” with date and time.

Display zones that are not secure (recall).

Generate a printed list of all zones that are not secure (status).

Initiate a 10 second test of PSCPU audible alarms and indicator lights with a print-out stating “System Test” with date and time.

Advance printer paper.

Change program functions in conjunction with special key program lockswitch (enter).

Activate test of individual microwave fence zones. Depressing a test button on the keyboard shall interrupt power to the microwave transmitter for the selected zone. This shall cause an alarm condition for that “zone test” with zone number, date, and time. All functions associated with an alarm for that zone shall be automatically performed, i.e., illuminate alarm lamps on map display, switch CCTV camera for that zone to the designated monitor.

By inserting a special key in a program lockswitch, the attendant may use the keyboard to make program changes in the system.

Programmable functions include:

The time in months, days, hours and minutes.

Addition and deletion of zones.

Description of status of monitored points.

Perimeter zone status is continuously displayed by indicating lamps on the map display.

Tamper alarms are indicated by individual lamps in a schedule on the map display.

Multiplex control transponder units located at fence accessory stations (FAS) send alarm conditions from remote sensors to the PSCPU.

Multiplex control transponders receive commands from the PSCPU and initiate functions at remote locations.

Omit subparagraph below if the system is model sms-2000s.

Transponders are programmable and addressable thru software run on an IBM compatible personal computer (PC).

All wiring between alarm sensor points, transponder units, and control panel is completely supervised.

The loss of signal from a transponder is annunciated by a visual and audible indication. A print-out states the number of the transponder lost, and the date and time.

Loss of AC power to the PSCPU is annunciated by a visual and audible indicator.

* + - 1. MODIFICATIONS TO EXISTING SYSTEM

List and explain modifications to existing system. Example:

* + - * 1. Add alarm zones.
        2. Reprogram system to accommodate added alarm zones.
      1. DESCRIPTION OF COMPLETED SYSTEM

Describe completed system operation. Example:

* + - * 1. The completed system shall operate as outlined in DESCRIPTION OF EXISTING SYSTEM.
      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:

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

Interconnection details between the systems monitored and controlled by the perimeter security multiplex system.

Scale drawing of map display showing site drawing and exact locations of lamps.

* + - * 1. Product Data:

Catalog sheets, specifications and installation instructions.

Bill of materials.

Detailed description of completed system operation.

Name, address and telephone number of nearest fully equipped service organization.

* + - * 1. Quality Control Submittals:

Copy of license for installing Security Systems.

Also include copy of identification card issued by the Licensee for each person who will be performing the Work.

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

Name.

Employers 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:

Test Report: 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.

Operation and Maintenance Data:

Deliver 2 copies, covering the installed products, to the Director’s Representative. Include:

Operation and maintenance data for each product.

Complete point to point wiring diagrams of the system modifications as installed. Number all conductors and show all terminations and splices. (Numbers shall correspond to numbered tags installed on each conductor.)

Name, address, and telephone number of nearest fully equipped service organization.

* + - 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 3 years.

Furnish to the Director the names and addresses of 5 similar projects which the foregoing people have worked on during the past 3 years.

Adjust number of hours to suit.

* + - * 1. Company Field Advisor: Secure the services of a Company Field Advisor for the existing system for a minimum of 40 hours for the following:

Render advice and witness test of existing system.

Render advice regarding modifications to the system.

Engineering associated with interconnecting between the perimeter security multiplex system and the related systems.

Assist in reprogramming of the system.

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

* + - * 1. Service Availability: A fully equipped service organization capable of guaranteeing response within 8 hours to service calls shall be available 24 hours a day, 7 days a week to service the completed system.
      1. MAINTENANCE
         1. Spare Parts:

One transponder.

Twelve replacement lamps of each color for map display.

Six of each size fuse.

1. PRODUCTS
   * + - 1. Specify required products. Verify that products specified are compatible with existing system.
       1. MAP DISPLAY
          1. Vindicator Corp.’s MD-3300, having:

Modified size approximately 60 inches wide by height as required for mounting at approximately 30 degree tilt on top of main security console (control room ceiling is 8’-8”).

Custom enclosure as shown on drawings for mounting on top of main security console (enclosure finish shall match finish of console side and back).

Scale site drawing showing:

All existing security fences.

All Security fences installed under this project.

All existing perimeter alarm zones and their designations.

All perimeter alarm zones installed under this project, and their designations.

All existing camera stations and their designations.

All camera stations installed under this project, and their designations.

All existing fence accessory (FAS) stations, and their designations.

All fence accessory stations (FAS) installed under this project, and their designations.

All existing building outlines and their numbers.

All buildings constructed under this project, and their numbers.

Indicating lamps for each zone as follows:

Red lamp at the center of each zone, which flashes to indicate zone “alarm” (upon depressing acknowledge switch, lamp stops flashing but remains illuminated).

Yellow lamp at center of each zone to indicate zone “access”.

Green lamp at center of each zone to indicate zone “secure”.

Lamp type and brightness suitable for viewing at any angle in ambient illumination level of 70 foot candles.

Tamper alarms indicated on a schedule on the map display as follows:

One lamp and description for each “tamper” zone listed in the schedule on the drawings.

20 additional spaces complete with lamps, for future alarm indications (description space blank).

Power supply with batteries:

Upgrade existing power supply and batteries to operate map display for a minimum of 4 hours upon loss of AC power.

Power supply sized to operate the map display with all lamps (including future alarm spaces listed above), and to recharge batteries.

Sealed, lead-acid gelled electrolyte batteries.

Replace existing batteries and provide additional batteries as required to operate map display for a minimum of 4 hours upon loss of AC power.

Mount power supply and batteries in main security console.

* + - * 1. Upgrade existing central 12 Volt Nominal (13.8 volt) DC Power Supply Batteries:

Replace existing batteries with sealed, lead-acid gelled electrolyte batteries.

* + - 1. REMOTE POWER SUPPLY
         1. 12 Volt Nominal (13.8 volt) DC Power Supply and Batteries:

Power supply capacity suitable for powering all transponder units installed under this project, recharging batteries, and powering future transponders (include 50 percent spare capacity for future transponders).

Batteries sized to operate transponder units (including future units described above) for a period of 4 hours upon loss of AC power.

Sealed, lead-acid gelled electrolyte batteries.

* + - * 1. Change location to suit in subparagraph below.

Mount power supply and batteries in Electric room of Building No. 42 (Heating Plant).

* + - 1. TRANSPONDERS

Paragraph below is used with mp-2100 system.

* + - * 1. Type MCT: Vindicator Corp.’s Model UHS-6842.

Paragraph below is used with sms-2000s system.

* + - * 1. Type MCT: Vindicator Corp.’s Model MCT-44S.
      1. INTERCONNECTION CABLE
         1. Type MPX: Multiconductor cable with 6 individually shielded twisted pairs of insulated 20 AWG stranded copper wires enclosed in a jacket suitable for direct burial in earth; Belden Corp.’s 9886, Carol Cable Co. Inc.’s C6062, Quabbin Wire & Cable Co. Inc.’s 6175, or Tappan Wire & Cable Inc.’s 2050AT6DB.
      2. SURGE SUPPRESSORS
         1. Equip system with surge suppressors to protect equipment from voltage transients and lightning surges.
      3. TERMINAL STRIPS
         1. Barrier type double screw terminals rated 300V minimum, meeting UL94 requirements for materials classed 94V-0.
      4. MARKERS AND NAMEPLATES
         1. 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.
         2. Nameplates: Precision engraved letters and numbers with uniform margins, character size minimum 3/16 inch 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 inch thick, engraved areas enamel filled or background enameled with natural aluminum engraved characters.

Article below is used with mp-2100 system, but may not be required if this equipment was provided under the original project.

* + - 1. PROGRAMMING SOFTWARE AND EQUIPMENT
         1. Vindicator Corp.’s PK-1 Programming kit.
         2. PC compatible laptop computer, with:

Compatibility with International Business Machine (IBM) Personal Computer (PC), running DOS version 2.1 or later.

A minimum of 512 K bytes of memory.

Attached display, with:

High quality backlit liquid crystal display (LCD).

A 25 line (minimum) display of 80 characters (minimum) per line.

2 built in disc drives (two 3-1/2 inch or two 5-1/4 inch disc drives).

Built in Hayes compatible modem.

One RS-232 serial port and one parallel port.

Accessories as required to perform all programming functions.

* + - 1. ACCESSORIES
         1. Include accessories as required for the modifications to perform the functions summarized in DESCRIPTION OF COMPLETED SYSTEM and indicated on the drawings.

1. EXECUTION
   * + 1. VERIFICATIONS OF CONDITIONS
          1. Test of Existing System:

Prior to modifying the existing system, test the existing system to ascertain its operating condition. Specifically, test:

Each zone. (Individually activate test of each zone).

Test each audible and visual indicator.

Test each system function step by step as described in DESCRIPTION OF EXISTING SYSTEM.

All tests shall be witnessed by the Company Field Advisor and Director’s Representative.

Prepare a written report for the Director’s Representative indicating the repairs required, if any, 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 PERIMETER SECURITY MULTIPLEX SYSTEM
         1. Maintain the existing system in its present condition, to the extent possible, while installing new Work.
         2. Prior to making changes or removals relative to the existing system, notify the Director’s Representative and have procedures approved.
      2. INSTALLATION

Edit paragraph below for integrated systems.

* + - * 1. Install the Work in accordance with the Company’s printed instructions. Interconnect with microwave detection system (Section 281604), and existing perimeter surveillance CCTV system (Section 282315) for a completely integrated system.
        2. Make cable connections, terminations, and splices in fence accessory stations (FAS), microwave detection system control boxes, infrared unit junction boxes, and console. Splices will not be permitted at any other locations.

Use markers to identify conductors at terminal strips, cabinets, and pull boxes (designations shall correspond with point to point wiring diagrams).

* + - * 1. Install surge protection on each conductor entering and leaving console and fence accessory stations.
      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 performing properly.

Run a preliminary test for the purpose of:

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

Checking and adjusting equipment.

* + - * 1. System Acceptance Test:

Preparation: Notify the Director’s Representative at least 3 working days prior to the test so arrangements can be made to have a Facility Representative witness the test.

Make the following tests:

Individually test alarm initiating points (new and existing).

Individually test control points.

Test audible and visual alarm devices.

Test each system function step by step as summarized under DESCRIPTION OF COMPLETED SYSTEM.

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 console.

END OF SECTION 281613