

Chain Link Fence Intrusion Detection System Architectural and Engineering Specification

Part 1 – INTRODUCTION

- 1.01 Description: The work specified in this section consists of furnishing and installing an intrusion detection system as indicated.
- 1.02 Quality Assurance: Products for, and the execution of, the work in this section will satisfy the applicable requirements of the latest Nation Electrical Code, and the Occupational Safety and Health Act. Products will satisfy the applicable requirements of UL related to the type of equipment and services described herein.
- 1.03 Submittals:
- A. Shop drawings and manufactures literature will be submitted as follows:
 - 1.) Shop drawings showing detection devices, specifying conduit and wire way cable assignment, control Panel location(s) and power sources.
 - 2.) Manufacture's literature covering conduit, fittings, detection devices, mounting hardware, and other materials.
 - B. A work plan which describes work methods, coordination procedure and a tentative schedule for performing the work.
 - C. Test results which demonstrate that the intrusion detection system operates Correctly.
- 1.04 Service: Control panels will be operated from 120 volt, 60 Hz supply made available within the room or area housing the panel as indicated.
- 1.05 Job Conditions: Surface and structures to and on which products will be affixed, placed and installed will be inspected before the work of this section begins. Work involving usage of existing surfaces and facilities will not interfere with normal operations. Work sites will be restored to their original condition or as indicated in the Contract Drawings.
- 1.06 Fence Conditions: Fence and gate conditions will be surveyed before installation to determine what repairs may be necessary. The survey guidelines will be available from equipment manufactures. Subscriber will be responsible for maintaining fence in a good state of repair.

Part 2 – PRODUCTS

- 2.01 Shock sensors will be devices operating on the principle of an accelerometer. Method of operation and construction will be as manufactured by Terminus. Shock sensors will be provided with a weather resistant or acceptable housing. Shock sensor units will be Terminus model number SP3223-1U, SP2539 and an SP2549 or acceptable equal.

- 2.02 Control Panel will be enclosed in a locking cabinet furnished with two keys and consist of one (or more as indicated) supervised sensor loop. Each loop will be capable of monitoring up to 50 shock sensors. The panel will include an adjustable event counter, an output SPDT failsafe relay(s) per zone with selectable automatic or latching output, multi-zone units shall incorporate a master SPDT failsafe relay, adjustable sensitivity, count interval and pulse width and necessary indicating devices to facilitate set up of the panel. The panel will be supplied with a power transformer for service from a 120 VAC, 60 Hz source. A battery pack capable of sustaining the intrusion detection system in service for a period of ten hours or more will be provided. The control panel will be a Terminus model number SP3274/73 four zone control or acceptable equal.
- 2.03 Sensor cable shall be stranded copper, twisted pair with a jacket, 18 AWG rated for 300 volt service, and UL approved Belden # 9740 or equal. If the loop distance is less than 1500 feet 22 AWG will be used.

Part 3 – EXECUTION

- 3.01 Installation: Products will be installed, connected and interconnected as indicated and in accordance with the manufacture's printed installation instructions. Installation of conduits, shock sensors, conductors, boxes and wiring devices will be as indicated by the manufacture's installation manual. *
- 3.02 Wiring Methods:
- A. Twisted Pair cable will be installed between sensors as indicated or by the most direct route which minimizes exposure of cable to accidental damage or vandalism.
 - B. Electrical connections of sensor wires and twisted loop wire will be soldered and taped. These solder joints shall be made with a suitable rosin core solder and a soldering iron.
 - C. Wires terminated in the control panel will have spade lugs attached to them. These lugs will facilitate terminal connections at the control.
- 3.03 Shock Sensor Mounting Methods: Shock sensors are to be mounted where indicated according to manufactures recommendations. *
- 3.04 Grounding of Fence: Whenever possible and particularly on areas of high lightning saturation, the fence should be grounded with a ground rod and appropriate clamp.
- 3.05 Control Panel Installation:
- A. Control Panel will be mounted as indicated by the SP3268, SP3274 or SP3273 installation instruction Manual.

- B. Incoming sensor cable will be routed to the control panel by the most direct means. Cable will be attached to wall as required prior to entry of panel through a bushing or protective grommet.
- C. Power transformer will be installed to the nearest 24 hour, 120 VAC outlet. Power leads will be attached to the wall and the panel entered through a bushing or protective grommet.
- D. Master alarm panel will be of the installers choice. It will satisfy the requirements for annunciation and alarm signals required.

3.06 Testing and Final Adjustments:

- A. The contractor will provide the qualified technical personnel, all tools, test equipment and other required items to perform the testing and complete final adjustments. The end user will have qualified witnesses present to observe the test and certify the recorded results.
- B. Sensor, cable splices and cable installation will be inspected for physical appearance and workmanship.
- C. Sensor wiring will be checked for continuity, grounds and lack of shorts.
- D. Sensor circuits will have their resistance measured. Each circuit shall measure 4700 ± 200 ohms to be acceptable.
- E. Sensitivity will be set to a level to ignore a light tap with a screwdriver blade approximately 5 feet from sensors. It should be adjusted to detect a moderate to heavy blow from a screwdriver blade at the same distance. Pulse width should be set near mid-range (3). Count interval should be set for approximately 40 seconds. Count select should be set for no more than 5 events. (Note: These are suggested settings for starting points.) Actual fine adjustments shall be made to satisfy the end user.

* Fence Intrusion Detection System Installation Manual, Supplied by Terminus.