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| **Revision History** |
| **Revision Date** | **Section / Nature of Revision** |
| **03/01/17** | Document Issued |
| **09/21/21** | 1.07 B Added the words exterior and interior to paragraph 2.03 E Revised Control Panel part number 2.04 D Revised Motion Detector part number 2.05 Clarified verbiage  |
| **10/23/23** | 3.02 E Added section to define the process if more than one intrusion system is needed |

PART 1 - GENERAL CONDITIONS

1. The requirements of the Contract Documents, including the General and Supplementary Conditions, shall apply to the work of this section.
2. It is the intent of this scope of work that the District shall select firms to provide and install intrusion detection systems for one (1) year period with two (2) one-year renewal options.
3. The Pinellas County Schools’ approved selected contractor shall provide services as requested to district facilities, inside and outside, based upon unit costs, hourly rates and percentage markup or discounted rates for equipment, parts and materials as entered on the bid proposal form. Under certain circumstances, parts and materials may be supplied to the contractor by the district. All vehicles and/or equipment required by the contractor to complete a job shall be the responsibility of the Contractor. The district will not pay for rental or purchase of equipment needed by the contractor, nor will it pay for mobilization fees of any kind. In the event that the district supplies parts and materials for a specific project, the Contractor will be responsible for obtaining the parts and materials form the Maintenance Department at the Walter Pownall Service Center (11111 S. Belcher Rd., Largo, FL 33773-5204) or another designated place.
4. At the time of bid, all exceptions taken to the Specifications, all variances from the Specifications and all substitutions of operating capabilities or equipment called for in this Specification shall be listed in writing and forwarded to the project leader. Any such exception, variances or substitutions which were not listed at the time of bid and are identified in the submittal, shall be grounds for immediate disapproval without comment.

1.01 RELATED DOCUMENTS

Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

A. Provide a complete and operational TCP/IP Intrusion Detection System with distributed panels. The work covered by this Section of the Specification shall include all necessary tools, equipment, material, labor and services and other trades (electrical, piping, cabling etc.) required to install a complete intrusion detection system with all necessary hardware, software and memory specifically tailored for this installation. It is the responsibility of the Contractor to verify ALL aspects of the installation. The scope of work for the security intrusion system shall consist of, but not limited to the installation of the following:

1. Central Station communication
2. Modular, microprocessor-based controls
3. Intrusion sensors and detection devices
4. Communication links to perform monitoring, alarm, and control functions
5. Reporting

B. All units on the intrusion system shall be listed by Underwriters' Laboratories, Inc. for security use and the control panel shall bear the UL label.

C. The system shall be activated and deactivated by using a keypad located in buildings and interconnected to a master panel in the Administration Building. Keypad in Administration Building and one other location located in either HPO office or work area or Kitchen shall be capable of disarming the entire intrusion system with a master code.

D. System's Connection: The control panel shall be capable and wired so that anyone or multiples of security devices, upon activation, shall sound alarm at the individual zone unless the alarm is activated from the master panel.

E. Door contacts, motion detectors and other detection devices shall provide a silent alarm condition, which shall be transmitted over the LAN/WAN to the District’s Central Monitoring Station. A keypad with a tamper switch shall be located in buildings to activate and deactivate the buildings in which it is located. All keypads shall be wired back to the controller panel for the security system logic and the display on an LCD readout that shall describe in English the area of intrusion. Status lights shall be located next to each keypad to tell the operator that the system is on, off and system ready. A minimum of one entry per building with a keypad shall be provided with a two-pole door contact (i.e., position and status) to be set up as “delay entry door.” This door location shall be determined by the Owner.

1.03 RELATED SECTIONS

1. Section 08 71 00 Door Hardware
2. Section 26 05 10 Basic Electrical Requirements
3. Section 26 05 05 Electrical Demolition for Remodeling
4. Section 26 05 33.13 Conduits and Raceways
5. Section 26 05 33.23 Surface Raceways
6. Section 26 05 19 Building Wire and Cable
7. Section 26 05 33.16 Boxes
8. Section 26 05 26 Grounding and Bonding
9. Section 26 05 53 Electrical Identification
10. Section 26 43 00 Surge Protective Devices (SPD’s)
11. Section 26 43 13 Surge Protectors for Data and Electronic Equipment
12. Section 27 10 00 Structured Cabling
13. Section 28 10 00 Access Control System

1.04 REFERENCES (LATEST EDITIONS):

1. NFPA 70 - National Electrical Code
2. NFPA 101 - Life Safety Code
3. NEC Article 760 – Fire Protective Signaling Systems
4. Applicable Florida Building Code, FCC, NEC, IEEE, NEMA and WZA codes
5. Americans with Disabilities Act – Latest Edition
6. ANSI A117.1 – Latest Edition – American National Standard for Building Facilities Providing Accessibility and Usability for Physically Handicapped People.
7. Florida Fire Protection Code
8. State Requirements for Educational Facilities (S.R.E.F)
9. UL 365, 609, 864, 985, 1023, 1610 and 1635 as required for the type of application
10. Manufacturer Installation Instructions

1.05 REGULATORY REQUIREMENTS:

1. System: UL Listed, Factory Mutual Approved
2. Conform of Requirement of NFPA 101
3. Underwriters Laboratories, Inc. (UL) – USA

1.06 DEFINITIONS:

1. Central Station: A PC with software designated as the main controlling PC of the security system. Where this term is presented with initial capital letters, this definition applies.
2. LCD: Liquid-crystal display
3. LED: Light-emitting diode
4. PIR: Passive infrared
5. RFI: Radio-frequency interference
6. UPS: Uninterruptible power supply
7. Protected or Protection Zone: A space or area for which an intrusion must be detected and uniquely identified, the sensor or group of sensors assigned to perform the detection, and any interface equipment between sensors and communication link to central-station control unit.

1.07 SYSTEM DESCRIPTION

1. Intent is for the Intrusion System to be TCP/IP based.
	1. Multi-user multi-tasking to allow for independent activities and for monitoring to occur simultaneously at different workstations.
	2. Graphical user interface to show pull-down menus and a menu tree format.
	3. Password-protected operator login and access.
2. It is the intent of this specification that all first floor, exterior windows and doors shall be intrusion protected areas with an exterior door shall have a door switch and motion detector. Areas with windows and an interior door shall have a glass break detector and motion detector unless otherwise noted. The plans are intended to show the extent of coverage. It is incumbent on the Contractor to provide all devices, whether explicitly shown or not on the plans for a working system.
3. Security partitions [each with its own security keypad (SKP) shall be provided. The SKPs shall be linked via twisted pair conductors to a controller panel located in the closet. Each of the security partitions shall be activated or deactivated from its respective SKP. All zones, or any select zone, may be activated or deactivated from the SKP.
4. The system shall communicate with the headend monitoring station via the Owner’s LAN/WAN in the event of an alarm. The panel shall produce a voice code or a digital code to the receiving party that would uniquely identify the site of the security alarm.
5. The control panel shall have a battery backup and charger capable of 24 hours of continuous operation in the event of a power failure. Electrical power shall be coordinated with the Division 26 Contractor to provide a source derived upstream of the main panel switch. Surge protection shall be provided for the main control panel per the manufacturer’s recommendations.
6. Network, connecting the system, shall be via a dedicated VLAN on Owner’s network to Central Monitoring Station.
7. It is the intent of this specification that the Contractor shall deliver a complete and a working system, fully tested, that meets the requirements of this specification. All systems shall be completed and ready for immediate use.
8. This specification is specifically applicable to Division 27 and 28 Sections, in addition to Division 01 – General Requirements, General Conditions, and Supplementary General Conditions.
9. Cabling plant consists of a Main Distribution Frame (MDF) and multiple Intermediate Distribution Frames (IDFs). All conduit and cable interconnecting the MDF to the IDFs to be provided by this Contractor.

1.08 QUALIFICATIONS

1. Manufacturer: Manufacturer's authorized representative, trained and approved for installation of units required for this Project at time of Bid, with at least five years documented experience. Installing and servicing office to be located within a 75-mile radius of Pinellas County and be an approved installer with Pinellas County Schools.
2. Installer: An employer of workers with at least one of whom is a full-time technician certified in the state of Florida as a Fire Alarm System Agent (FASA), Burglar Alarm System Agent (BASA). Trained and certified with DSC/Tyco Company shall specialize in intrusion detection systems with at least five (5) years’ experience. Also, be certified by Florida State Licensing Board as an intrusion detection system installing contractor (ES, ET, EF or EC). The Contractor shall maintain a permanent office with installation, service, and technical staff within 75 miles of the School Board Administration Building at 301 4th Street SW, Largo, Florida 33770. Contractor’s personnel shall have manufacturer certification/training for installation and service. The Contractor shall provide evidence of qualifications as described herein.
3. Performance History: The Contractor shall have successfully performed at least three (3) projects of similar scope and size, during the last two (2) years of the date of this bid. One (1) of the three (3) being a DSC NEO install. Proof of performance shall be in the form of reference sheets which shall include a brief description of the project, the beginning and ending contract price, the project foreman or superintendent's name and the name, address, and telephone number of a project contact. The Superintendent proposed for the project shall have been responsible for at least two (2) of these projects under the employment of this Contractor.
4. The Contractor shall show evidence, upon request, that they maintain a fully equipped service organization capable of furnishing adequate inspection and service to the system, including a stock of replacement parts. Replacement parts shall include at least one of every device used on the system and access to local distributor parts (to include control panels).
5. The Contractor shall be prepared to offer a service contract for the maintenance of the system after the warranty period.

1.09 SUBMITTALS (SUBMIT THREE COPIES OF THE REQUESTED DATA)

1. Submit shop drawings and product data under provisions of Division 01.
2. Provide riser diagram, terminal-to-terminal wiring diagrams, data sheets, equipment ratings, layout, dimensions, finishes, and battery calculations. Identify the location of all devices, panels, and keypads in scaled plan form. Drawings to be in 24" x 36" drawing format. Provide disk copy in “.dwg” AutoCAD 2014 format (or newer) and pdf file and one 24" x 36" print. At the end of construction, this document shall be revised for the set of as-builts with new disks submitted to Owner for approval. Data sheets (i.e., catalog cut sheets) shall include, but not be limited to: control panels, batteries, auxiliary power supply, door switches, enclosures, keypads, wire/cable, building wiring plan.
3. Submit manufacturer's installation instructions under provisions of Division 01.
4. Submit manufacturer's certificate, under provisions of Division 01, that system meets or exceeds specified requirements.

1.10 DELIVERY, STORAGE AND HANDLING

1. Deliver products to site under the provisions of Division 01.
2. Store and protect products under the provisions of Division 01.

1.11 EXTRA MATERIALS

Provide spare parts under the provisions of Division 01.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

1. Manufactures approved to bid this project are:
	1. DSC/Tyco
	2. Pre-Approved Equal
2. All requirements specified shall be met by the Contractor, whether listed or not. Any exceptions, modifications (or other manufacturers desiring approval to bid) shall submit requests to the Engineer prior to bid. Requests shall be submitted with timely and sufficient information for the Engineer to assess requested exceptions. No exceptions to the specifications shall be given unless authorized in writing via addenda format.

2.02 FIBER OPTIC CABLING

A. Per Section 27 10 00 “Structured Cabling”

2.03 TCP/IP INTRUSION CONTROL PANEL SOFTWARE

1. The Control Panel shall process signal information and communicate with the District’s central monitoring station via the Owner’s LAN/WAN.
2. The Control Panel shall be capable of supervising all zones up to the maximum allowed per control panel and be expandable, as well as assign zones and their controlling keypads in accordance with installer programming.
3. The system shall communicate between panels with the site fiber optic cable installed under Division 27. This Contractor shall verify availability and continuity. This Contractor shall be responsible for cross-connecting to the Owner’s LAN/WAN after coordination with Owner. Provide separate VLAN for intrusion system.
4. The control panel shall provide the following:
	1. LED testing
	2. Enabling and disabling of each SKP separately
	3. Changing operator access levels
	4. Running diagnostic functions
	5. Displaying software revision level
5. Acceptable Manufacturer: DSC Neo Control Panel HS2128NK and DSC Pro Controller HS3248 with cabinet plus necessary modules or Pre-Approved Equal, in quantities required. Provide zone expanders and cabinets as necessary (i.e., HSM2108, PC5002 and PC5003C).
6. This Contractor shall coordinate with Owner to include testing of communication between devices/panels and panels/Central Monitoring Station and Owner site training (as described in Part 3).
7. Control Panel with GSM option shall not activate the GSM option.

2.04 DEVICES AND ACCESSORIES

1. Systems that require factory reprogramming to add or delete devices are unacceptable.
2. Should a device fail, it shall not hinder the operation of other system devices.
3. A supervised wiring system shall be provided. A supervised system shall detect troubles in panel or wiring; removal or tampering of point devices; monitor either open or closed circuits; and verify system integrity.
4. Security Keypad (DSC/Tyco NEO HS2LCDENG or Pro HS2LEDPRO): Provide keypads with a large, 32-character, backlit, LCD display of zone identification, system status, trouble conditions, system instructions and event buffer in plain English. Units shall provide a menu for programming and user functions. LED indicators shall provide trouble and armed status. A piezo buzzer shall provide audible feedback of key entries capable of 1,500 user codes, four or six digits.

Door Contact Switches: Furnish and install at each door location, as indicated in the drawings. Hardwired door contact switches shall be dual reed, concealed type, recessed in the jamb, opposite hinge location - separate from the access system’s contact. Install per manufacturer's written recommendations. Maintain minimum gap per manufacturer. Door contacts shall be compatible with steel doors and jambs. Contacts shall work with a minimum ½" gap and shall be recessed into steel doors/jambs (coordinate with other trades). Door mounted contacts shall not be permitted. Door contacts hard-wired. Used on second door in double door situations and or as noted on the prints will be wired to a DSC/Tyco PG9309 only unless noted on prints to be hardwired to another device/location.

Indoor Space Protection (Motion Detectors): Motion detectors shall provide uniform detection capability throughout the pattern with optimum field of view. Motion detectors shall be of dual technology (i.e., motion and IR). Motion detectors shall be designed to minimize/eliminate spurious, false alarms. Detectors shall have a built-in tamper switch and an LED to indicate when in an alarm condition. Acceptable Manufacturer: DSC/Tyco PG9984P or PG9872 wireless devices only unless otherwise noted on prints and DSC/Tyco LC 103 PIMSK W or pre-approved equal for hardwired applications.

Indoor Space Protection (glass break detectors): Glass break detectors shall have a built-in tamper switch and detect all types of breaking glass (plate, laminated, safety and tempered). Shall be tested using the glass break simulator (AFT-100). Acceptable Manufacturer: DSC/Tyco PG9922 only.

2.05 BATTERY BACK-UP

The system shall be designed to provide twenty-four (24) hours of capacity and equipped with a gel cell type battery.

2.06 ZONE MAPS

Provide a security alarm zone map for each building clearly showing the zone boundaries. Zone maps shall be provided to Owner’s Representative at Substantial Completion.

2.07 SURGE/LIGHTING PROTECTION

1. Furnish and install an isolated circuit protector device on all security (initiating device circuit), (signaling line circuit), (audio riser), (telephone riser or circuit) wiring, (including shields), which extends beyond the main methods (walkways, bridges, or other above ground connectors). Provide Isolated Loop Circuit Protectors: Ditek Model DTK-4LVPSCP on initiation zones. Provide lightning protection as close as practical to the point at which the circuits leave or enter a building.
2. The Control Panel grounding conductor shall be a No. 6 AWG wire having a maximum length of 28 feet to be run in as straight a line as practical and connected to a building ground electrode system (unified ground).
3. The Control Panel furnished shall have a line-to-line response time of less than one nanosecond capable of accepting greater than 2,000 amps (35 joules each line) to earth. Shield to earth current shall be 5,000 amps maximum.
4. The Control Panel shall be protected by a high dielectric insulating material and of a small enough size to mount in a standard 4" square 2-1/8" deep electrical box.
5. Spark gap devices or devices incorporated in or installed within the security control panel, in lieu of the specified Control Panel are not acceptable.

2.08 WIRING

1. In all rooms containing windows and in classrooms or learning spaces containing an exterior door, or in locations designated by District personnel; provide detection devices (i.e., motion and glass break or door contact). "Additional spaces" that may require detection devices may be AV Storage, Cafeteria, Kitchen, Computer Classrooms, etc., as designated by the District’s Representative. Cabling shall be per manufacturer’s recommendations. Cable shall be provided to the center of the room with service loop - able to reach the furthest corner of the room - to the allocated panel space located in the MDF/IDF. Provide ten (10) foot service loop at MDF/IDF panel location for all hard-wired devices.
2. Provide 15 feet of service slack cable at MDF and IDFs for detector devices, motion devices, sounder devices and door contacts (this Contractor shall pull cable down through door jamb). Provide 20 feet of slack cable at device location indicated on drawings and 36 inches at door contact locations only for hard wired devices back to security panel. Devices being tied into DSC/Tyco PG9945 shall have 36 inches at the door contact location and at the PG9945 location.
3. This Contractor shall provide all cabling per manufacturer’s recommendations for a complete working system. For cross connect to switches, this Contractor shall be manufacturer certified (plus BICSI RCDD) and provide all necessary media convertors and Category 6 cross connects. All network cabling shall be the same as specified (or pre-approved) in Section 27 10 00, Structured Cabling.

2.09 SOFTWARE

1. This Contractor shall cooperate in connection to central station.

Existing Software Manufacturer: Micro Key Solutions (i.e., MKS)

1. Provide quote for annual technical support beyond warranty period.
2. Provide TL280RE per SYSTEM (internet alarm communicator) and integrate with existing Sur- Guard System 5 Receivers (SG-System 5). Mount per manufacturer’s recommendations.
3. Contractor shall be responsible for interfacing the hardware and software for a working system.

PART 3 - EXECUTION

3.01 EXAMINATION

1. Examine pathway elements intended for cables. Check raceways, cable trays and other elements for compliance with space allocations, installation tolerances, hazards to cable installation and other conditions affecting installation.
2. Examine roughing-in for LAN and control cable conduit systems to Controllers and other cable connected devices to verify actual locations of conduit and back boxes before device installation.
3. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 INSTALLATION OF INTRUSION DETECTION SYSTEM

1. Install intrusion detection system as indicated, in accordance with equipment manufacturer's written instructions.
2. Contractor shall provide all equipment required for the installation of the security intrusion system.
3. Contractor shall install all equipment, conduit, wire, terminal strips and related Control Panel shall have an electrical system grounding connection LAN/WAN connection.
4. Provide concealed conduit from door jambs to above finished ceilings. Wiring to terminal cabinets and other device locations shall be run, without conduit, in ceiling spaces. All wiring shall be in accordance with N.E.C.
5. In situations that require more than one system to be installed at a location or campus, a minimum of one (1) keypad for each system shall be installed at the following locations: Administration area and Plant Operations area, as determined by Access/Intrusion Project Coordinator.

3.03 FIRE STOPPING

1. All penetrations of rated walls, floors, or ceilings shall be through a metallic conduit sleeve fire stopped with a UL listed fire stopping product. See project drawings for penetration details.
2. Penetrations of non-rated masonry walls shall have a conduit sleeve.

3.04 PREPARATION

1. Comply with recommendations in SIA CP-01.
2. Comply with EIA/TIA-606, "Administration Standard for the Telecommunications Infrastructure of Commercial Buildings."
3. Obtain detailed Project planning forms from manufacturer of intrusion system; develop custom forms to suit Project. Fill in all data available from Project plans and specifications and publish as Project planning documents for review and approval.
	1. For each Location, record setup of controller features and access requirements.
	2. Propose start and stop times for time zones and holidays and match up access levels for doors.
	3. Set up groups, facility codes, linking and list inputs and outputs for each controller.
	4. Assign action message names and compose messages.
	5. Set up alarm notification and verify transmission at Central Station.
	6. Complete system diagnostics and operation verification.
	7. Prepare a specific plan for system testing, startup and demonstration.
	8. Develop acceptance test concept and, on approval, develop specifics of the test.

3.05 COMPLETION AND TESTING

1. Furnish to the Owner, a written report which certify that all initiating devices have been tested and which indicate the result of the inspection. Additionally, furnish to the Owner, three sets of Operation and Maintenance manuals with parts list and other information necessary for the proper operation and maintenance on the system, as installed. Include three copies of complete troubleshooting and repair manuals. Provide Owner with a CD-ROM copy (AutoCAD 2013 or newer and pdf formats) and one printed copy of as-built drawings indicating location of conduit, junction boxes and zoning of each individual device. Provide control diagram on 8½" x 11" document, frame/mounted, and installed next to main control panel.
2. Upon completion of installation, the system shall be completely checked-out and tested by a factory authorized representative, to determine that the system was tested and installed in accordance with the manufacturer's instructions and all applicable codes. Results of the check out and testing shall be reported in writing to the Project Leader or designee. The written report shall precede or accompany the Contractor's request for acceptance inspection for work under this Section. This representative shall prepare an inspection report for the Owner and instruct the Owner's personnel in the operation of the system.
3. Provide eight (8) effort-hours of on-site training at the school for two people on the operation of the system and (8) effort-hours of on-site training at Pinellas County Schools Monitoring Station (Schools Police) for two people on the operation, maintenance, troubleshooting and repair of the system at the Contractor's expense. Training shall be certified by the manufacturer and be at different times for each person. Transportation, room and board, where needed, shall be the responsibility of the Contractor’s trainer. Furnish project leader or designee with a list of attendees.
4. All initial software programming for passwords, telephone numbers, zones, and partitions shall be provided to the Owner’s Representative. Provide a printout of all zone assignments.
5. The Contractor, at no cost to the Owner, shall immediately replace all equipment, devices and/or work found to be defective.
6. Program system with partition and master codes to be provided by the Owner at acceptance and turnover to the Owner.
7. Contractor shall turn over a turnkey security system programmed with Owner access codes, passwords, partitions, etc.
8. Before testing the intrusion detection system transmission from the project site to the central control station, coordinate with the Owner’s Project Representative. Personnel shall be available to verify a successful and trouble-free transmission signal.
9. Site Test:
	1. Check and test installation for shorts, ground and circuit continuity.
	2. Cables: Test free from opens, grounds, or crosses (shorts) between conductors.
	3. Walk-test doors and motion detectors for proper function and operation. Ensure proper zoning of devices.
	4. Test all functions on intrusion control panels for proper functions and operations.
	5. Verify signals are properly received by the District.
	6. Check for proper standby battery backup in intrusion panels and remote power supplies.
	7. Verify remote power supplies are UL 603 listed for burglary systems.
	8. Inspect and test cabinet tampers on intrusion cabinets.
	9. Verify raceway.
	10. Glass Break detectors shall be tested with manufacturer recommended testing device.

3.06 CABLING

1. Comply with Section 26 05 19 “Building Wire and Cable” and with NECA 1, "Good Workmanship in Electrical Contracting" and manufacturer’s recommendations.
2. Wiring Method: Install wiring in raceway and cable tray. Use NRTL-listed plenum cable in environmental air spaces, including plenum ceilings. Conceal raceway and wiring except in unfinished spaces.
3. Install cables without damaging conductors, shield, or jacket.
4. Boxes and enclosures containing security system components or cabling and which are easily accessible to employees or to the public, shall be provided with a lock. Boxes above ceiling level in occupied areas of the building shall not be accessible. Junction boxes and small device enclosures below ceiling level and easily accessible to employees or the public shall be covered with a suitable cover plate and secured with tamperproof screws.
5. Install end-of-line resistors at the field device location and not at the Controller or panel location.

3.07 CABLE APPLICATION

1. Comply with EIA/TIA-569, "Commercial Building Standard for Telecommunications Pathways and Spaces."
2. Do not exceed cabling recommended lengths.
3. Cable application requirements are minimum requirements and shall be exceeded if recommended or required by manufacturer of system hardware.

3.08 GROUNDING

1. Comply with Section 26 05 26 "Grounding and Bonding for Electrical Systems."
2. Comply with IEEE 1100, "Power and Grounding Sensitive Electronic Equipment."
3. Ground cable shields, drain conductors, and equipment to eliminate shock hazard and to minimize ground loops, common-mode returns, noise pickup, cross talk and other impairments.
4. Signal Ground:
	1. Terminal: Locate in each equipment room and wiring closet; isolate from power system and equipment grounding.
	2. Bus: Mount on wall of main equipment room with standoff insulators.
	3. Backbone Cable: Extend from signal ground bus to signal ground terminal in each equipment room and wiring closet.

3.09 IDENTIFICATION

1. In addition to requirements in this Article, comply with applicable requirements in Division 26 Section "Identification for Electrical Systems" and with TIA/EIA-606.
2. Using cable and asset management software specified in Part 2, develop Cable Administration Drawings for system identification, testing, and management. Use unique, alphanumeric designation for each cable, and label cable and jacks, connectors, and terminals to which it connects with same designation. Use logical and systematic designations for facility's architectural arrangement.
3. Label each terminal strip and screw terminal in each cabinet, rack, or panel.
	1. All wiring conductors connected to terminal strips shall be individually numbered, and each cable or wiring group being extended from a panel or cabinet to a building-mounted device shall be identified with the name and number of the particular device as shown.
	2. Each wire connected to building-mounted devices is not required to be numbered at the device if the color of the wire is consistent with the associated wire connected and numbered within the panel or cabinet.
4. At completion, cable and asset management software shall reflect as-built conditions.

3.10 FIELD QUALITY CONTROL

1. Manufacturer's Field Service: Engage a factory-authorized service representative to inspect, test and adjust field-assembled components and equipment installation, including connections, and to assist in field testing. Provide report results in writing.
2. Remove and replace malfunctioning devices and circuits and retest as specified above.

3.11 PROTECTION

Maintain strict security during the installation of equipment and software.

3.12 TRAINING

1. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate and maintain security access system.
2. Develop separate training modules for the following:
	1. Computer system administration personnel to manage and repair the LAN and databases and to update and maintain software.
	2. Operators who prepare and input credentials to the control station and workstations and enroll personnel.
	3. Security personnel.
	4. Hardware maintenance personnel.
	5. Corporate management.
3. Contractor shall provide on-site training and system training for District personnel.
4. At Substantial Completion, provide up to eight (8) hours for up to three (3) maintenance personnel (concurrently or in series at the District’s discretion) at the site and up to 16 hours for eight (8) District personnel at the central station site.
5. Six months after Substantial Completion, provide up to sixteen 16 hours for up to eight (8) District personnel at the site or at the central station site (District’s discretion).

3.13 PROJECT RECORD DRAWINGS

1. Submit documents under the provisions of Division 01.
2. Include location of end-of-line devices.

3.14 WARRANTY

1. Submit data under provisions of Division 01.
2. Include letter from authorized manufacturer representative's (addressed to the District) stating that the system is operational and in compliance with warranty requirements. Include five copies of full manufacturer’s published warranty for parts and components to be provided.
3. Provide warranty response information inside alarm system control panel.
4. The warranty shall allow the District to repair vandalized areas without voiding the total system warranty.
5. The system shall be warranted, as follows, from the date of acceptance by the Owner:
	1. Three (3) years full maintenance (i.e., parts and labor), provided by Contractor or Manufacturer’s Authorized Representative, for electric components.
	2. Two (2) years full maintenance (i.e., parts and labor), provided by Contractor, for defective materials, workmanship, and improper adjustment for the remaining elements including wiring and zone controls.
	3. Any defective materials shall be replaced at no expense (parts or labor) to the Owner providing they do not show abuse. The representative must be able to respond to warranty calls within twelve (12) hours of notice, whether oral or written.
6. This Contractor shall provide and install software updates on the Owner’s system throughout the warranty period (software and labor to install are to be included within this bid). Any licenses are to be assigned to the District at the end of warranty period.

**END OF SECTION**