

SECTION 28 05 13
SECURITY SYSTEM CABLING
Construction Specification

PART 1 GENERAL

1.1 SUMMARY

- A. General: Furnish engineering, labor, materials, apparatus, tools, equipment, transportation, temporary construction and special or occasional services as required to make a complete working security system installation, as described in these specifications.
- B. Section Includes:
1. Wiring and cable
- C. Related Sections:
1. Consult other Divisions; determine the extent and character of related work and properly coordinate work specified herein with that specified elsewhere to produce a complete and operable system.
 2. Section 28 00 00: Basic Security System Requirements
 3. Section 28 13 00: Access Control and Alarm Monitoring System
 4. Section 28 23 00: Video Surveillance System
 5. Section 28 05 53: Security System Labeling
 6. Section 28 08 00: Security System Commissioning
 7. Section 27 15 13: Telecommunications Horizontal Cabling
 8. Section 271314: Telecommunication OSP Fiber
 9. Section 27 08 00: Telecommunications Testing
 10. Section 07 84 00: Firestopping
 11. Section 26 05 48: Supporting Devices
 12. Section 26 05 34: Boxes
- D. Products Supplied But Not Installed Under This Section:
None
- E. Products Installed But Not Supplied Under This Section:
None
- F. Products Specified But Not Installed Under This Section:
None
- G. Products Furnished and Installed Under Another Section:
Network cabling

1.2 SUBMITTALS

- A. Submit in accordance with the requirements of Section 28 00 00: Basic Security System Requirements, the following items:
1. Product Data: including

- a. Cable Description and Use
- b. Jacket Rating
- c. Outside Diameter (of the overall wire or cable)
- d. Manufacturer
- e. Part Number

PART 2 PRODUCTS

2.1 WIRE AND CABLE

A. General

1. Provide all necessary cable supports and J-Hangers dedicated for security cable
2. Do not share conduits with fire alarm or telecommunications systems
3. Provide required wire and cable sized to allow for voltage drop on long runs and effectively shielded as required to allow the routing of 12 & 24V power and video signal cable in the same conduit without interference or signal noise
4. Cable installed outdoors or in underground conduit must contain a PVC or Polyethylene jacket, flooded to prevent water intrusion.
5. Cables installed outdoors or in underground conduit that transition into the building and run in plenum space to contain a plenum rated (type CMP) jacket and contain water block material to prevent water intrusion.
6. Cables installed indoors to contain a plenum rated jacket (type CMP).

B. Manufacturers:

1. Westpenn
2. Belden
3. Commscope
4. Or Equal

C. Access Control System

1. Provide plenum rated cable by Westpenn, Belden, Commscope, or equal.
 - a. #22-4 conductor unshielded: door contacts, glass break detectors, Rex Detectors
 - b. #16-2 AWG unshielded: low current lock power
 - c. #16-2 AWG unshielded: Lock power from PS-873 to Exit Device (panic hardware)
 - d. #18-2 AWG unshielded: Low current relays and card reader power
 - e. #20-4 conductor unshielded: Door Management and Exit Alarms
2. Provide self-adhesive flat tapewire on all existing wood doors for lock power transfer from hinge to lock.
 - a. Install tape wire in routed channel along edge of door
 - b. Fill channel with silicone after lock has been tested
 - c. Manufacturer: Taperwire 222-CL.

- d. Refer to architectural details and section 08 14 00 Flush Wood Doors for additional information
 - e. Power locks to ensure continuity of circuit
 - D. Video Surveillance
 - Refer to Telecommunications Specification Section 271513 for IP camera horizontal structured cabling requirements. Horizontal structured cable provided by telecommunications contractor.
- 2.2 PATCH CORDS WIRE
 - Modular Patch Cords provided by SMCCCD IT group.
- 2.3 LAN AND POWER OVER ETHERNET EXTENDER
 - A. General
 - 1. Forwards LAN and PoE to remote network devices beyond 295 feet
 - 2. Utilizes PoE eliminating the need for additional power cable
 - 3. Supports 100Base-TX, full duplex
 - 4. Wall or enclosure mountable
 - 5. Manufacturer:
 - a. Veracity OUTREACH #VOR-OR

PART 3 EXECUTION

- 3.1 INSTALLATION
 - A. Label cables in accordance with Section 28 05 53 – Security System Labeling.
 - B. General
 - 1. Do not run signal wire and cable in parallel to power (120VAC).
 - 2. Identify all wire and cable clearly with permanent labels wrapped about the full circumference within one (1) inch of each connection. Indicate the number designated on the associated field or shop drawings or run sheet, as applies. Assign wire or cable designations consistently throughout a given system; i.e., each wire or cable shall carry the same labeled designation over its entire run, regardless of intermediate terminations. Additionally, provide labels where wire and cable first enter and exit from conduit, junction or distribution boxes; labels shall be located within six (6) inches of the point of exit. Labels shall be by Brady, Thomas and Betts, or equal.
 - 3. Secure all wire and cable run vertically in conduit for continuous distances greater than thirty (30) feet at the vertical run terminations. Non-coaxial cables shall be secured by screw-flange nylon cable ties or similar approved devices, Thomas and Betts or equal. Symmetrical clamping devices with split, circular or other wire conforming, nonmetallic bushings shall be provided for all other cables.
 - 4. Wire and cable shall be continuous and splice-free for the entire length of run between designated connections or terminations.
 - 5. Make connections to screw-type barrier strips on panels and with insulated crimp-type spade lugs when appropriate. Size lugs properly to assure high electrical integrity, i.e., low resistance connections.

6. Lace, tie or harness wire or cable as required herein, and in accordance with accepted professional practice. Dress, lace or harness all wire and cable to prevent mechanical stress on electrical connections; no wire or cable shall be supported by a connection point.
7. Wiring for shielding certain conductors from others or routing in separate raceways, shall be as recommended by the manufacturer's current requirements.
8. Wiring shall be installed in a continuous steel conduit system when not located above accessible ceiling and shall be of the size recommended by the equipment supplier.
9. Terminate modular patch cord terminated at one end via 8 position modular plug to IP camera. Telecommunications contractor will provide cable and terminate to patch panels.
10. Provide necessary tie wires.
11. Label cables at both ends of a run and within pull and junction boxes using machine generated wrap-around labels.
12. Follow manufacturers recommended guidelines for installation.
13. Utilize the horizontal and vertical management components to properly route the cables and patch cord.

END OF SECTION