

13740 INTERCOM AND CLOCK RACEWAY SYSTEM

SPECIFIER:

CSI MasterFormat 2004 number: 27 05 28

An optional keynote to the Drawings follows major product titles, for A/Es using National CAD Standard.

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes: Complete raceway system to serve the intercom and clock / call button / speaker cables system. Installation shall include, but not be limited to, all necessary accessories, plywood backboards, terminal-cabinets, conduits, pull boxes, clock/speaker enclosures, outlet boxes, pull strings, etc.
- B. Related Sections:
 - 1. 07840 - Firestopping and Smoke Sealing.
 - 2. 13742 - Telephone and Data Raceway System.
 - 3. 13745 - Intercom and Clock System.
 - 4. 16100 - Basic Materials and Methods.
 - 5. 16112 - Raceways and Conduits.
 - 6. 16120 - Wire and Cable.
 - 7. 16131 - Outlet, Pull, and Junction Boxes.
 - 8. 16132 - Floor Boxes.
 - 9. 16160 - Terminal Cabinets.
 - 10. 16450 - Grounding.
 - 11. 16511 - Lighting, Fixtures, and Lamps.

1.2 SUBMITTALS

- A. Submit for review, properly identified product data giving materials, finishes, accessories, and installation directions where required.
- B. Furnish a set of "Record Drawings" to A/E indicating accurate plan layout, conduit runs, and the like as installed.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Intercom and Clock Raceway System:

NOTE TO SPECIFIER: To select and communicate with rooms, intercom systems use either a telephone type handset or mechanical switches in a console. A/E shall provide 2 riser diagrams showing the 2 different systems.

1. System shall be complete from head-end unit with branch conduit to final intercom and clock outlet locations.
2. Provide a punch-down metal enclosure located directly behind the main intercom control console. Enclosure shall be 4 feet wide x 6 feet high x 10 inches deep and shall have hinged doors with locking mechanism. Interior of cabinet shall have surge protection devices for the intercom system and punch-down blocks at least 3 inches apart and at least 3 inches from the sides of the cabinet. This enclosure shall be provided a minimum of 3 feet clearance to adjacent equipment for maintenance purposes. From this enclosure provide for each building, a minimum of two (2) 2" dedicated conduits, and/or cable trays (sized to meet NEC requirements plus 25% for future expansion). These conduits shall terminate at a 2 feet x 2 feet x 10" deep metal cabinet located within a satellite wiring closet in each building. From each of these wiring cabinets provide selected raceways terminating at each intercom audio device within each building.
3. Refer to the intercom and clock riser diagrams shown on the Drawings.
4. Provide one (1) 2" conduit from the intercom punch-down enclosure located behind the head-end unit, to the main telecom room.
5. Branch conduits to final intercom and clock outlet locations from main or satellite locations shall be 3/4" minimum and not exceed a length of 250 feet.
6. Where a cellular metal deck is provided (i.e., Walker duct) it shall be used as part of the raceway system.
7. Furnish and install necessary interior conduit, sleeves, strip cabinets, pull boxes, outlet boxes, and other materials for a complete conduit system for intercom and clocks as shown on the Drawings.
8. Install the conduit in the same manner as specified for lighting work.
9. Provide pull strings in empty conduits.
10. Where junction boxes are used to distribute the 3/4" conduit runs, the conduits feeding the junction box shall be sized as specified.
11. Size conduits as follows:

<u>Conduit Size</u>	<u>Number of Cables If Pulled Together</u>
3/4" (minimum)	4
1"	7
1-1/4"	12
1-1/2"	16
2"	22
2-1/2"	36
3"	50

12. Raceways shall not contain more than two (2) 90 degree bends or equivalent. Provide additional junction or pull boxes to meet this requirement.

B. Floor Sleeves:

1. Extend 6 inches above and below the slab construction at main telephone/communications room and satellite wiring closets.
2. Provide 4 inch diameter sleeves in all above grade telephone closets, except as noted.
3. Provide iron pull eyes at ceiling slabs of telephone rooms for cable pulling.

C. Terminal Cabinets:

1. At Head-end:
 - a. Locate the main terminal cabinet behind the main intercom rack or console. Cabinet shall be 4 feet wide, 6 feet high and 10 inches deep.
 - b. Pre-drilled back panels shall be part of the cabinet to allow for mounting of 66 type blocks in the cabinet. Knockouts shall be furnished on top, bottom, and sides for cable entry and exit.
 - c. Provide ground bar connected to the main electrical grounding electrode by the head-end rack.
2. At satellite wiring closets:
 - a. Provide a metal terminal cabinet a minimum of 2 feet wide, 2 feet high and 10 inches deep. Top of cabinet shall be located at 6'-0" AFF.

D. Wall Intercom Outlet Boxes: Four inch boxes.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Install materials according to Codes and the Contract Documents.
- B. System equipment and wiring installation shall be by the properly licensed company, either the original equipment manufacturer or the factory distributor for the brand of equipment used. Furnish wiring diagrams and wire runs for the raceway system installed by the licensed electrical contractor, under Divisions 13 and 16.
- C. Conduit from branch intercom and clock outlets shall terminate at the top and bottom of the terminal cabinet, except as noted. Provide empty conduits with suitable pull strings. Provide a minimum of 10 inches of slack at each end of pull string.
 1. Provide pull boxes in intercom and clock/bell raceway system spaced not greater than 100 feet apart, and on runs with more than two right angle bends.
 2. Place intercom and clock/bell label on pull and junction boxes.
 3. Minimum conduit size to each device shall be 3/4 inch.
 4. Minimum size outlet box shall be 4 inches square by 1-1/2 inches deep.
- D. Bury underground conduit a minimum of 24 inches below finish grade.
- E. Provide an insulated No.6 AWG grounding wire from the main terminal cabinet at the head end to the main grounding point connection in the main electrical room as indicated on Drawings. Terminate grounding on a grounding bar inside the cabinet.

- F. Provide an insulated No.6 AWG grounding wire terminated on a grounding bar in the main telephone and each satellite telephone room as indicated on Drawings.
- G. Ensure the empty raceway system installed for intercom and clock is clearly marked and is not used for any other purpose.
- H. Two-way Call Buttons, Speakers and Clock/Speakers shall be located according to Contract Documents.
- I. Conduit Installation:
 - 1. Install 3/4" conduit from the final outlet box to an accessible junction/pull box or cable tray to the intercom and clock terminal cabinet within a 250-foot wire run distance of the outlet.
 - 2. Conduits from junction boxes to main and satellite closets shall be sized according to the chart in PART 2. PRODUCTS of this section.
 - 3. Wiring from outlet-box to outlet-box (daisy-chaining) is not acceptable.
 - 4. Conduit bushings for low voltage system wiring may be plastic.
- J. Coordination:
 - 1. The contractor, subcontractor, M-DCPS Maintenance, and M-DCPS Information Technology Services - Network Expansion Services (ITS) shall cooperate with each other to resolve any conflicts and to coordinate the use of wall space, cable entrances, and conduit terminations in wiring closets to be shared by the intercom system and telephone and data systems.
 - 2. Coordination and approval by M-DCPS Maintenance are required before conduits and space in wiring closets are used by other trades.

END OF SECTION