

SECTION 27 13 00

COMMUNICATIONS BACKBONE CABLING

PART 1: GENERAL

1.1 MAIN COMMUNICATIONS ROOM (MDF)

The low voltage contractor is responsible for proper wire management. All cable shall be installed in the MDF per the accompanying drawing set. Ladder racks shall be installed where required to facilitate wire management for cables that must cross to walls other than those the conduit stubouts are on. Ladder racks shall be aluminum 12-18 inches wide with a ladder bottom supported from both sides and sized to support the cabling load.

It is the responsibility of the low voltage contractor to verify that all duplex outlets designated are in place and are the correct surge-protected outlets. It is also the low voltage contractor's responsibility to report any deficiencies to the GC, Owner or Owner's Representative, and InfiniSys, Inc. at the earliest possible time.

A. Facilities

The General Contractor shall construct the MDF with the minimum dimensions shown on the InfiniSys drawing set with minimum dimensions of 8' x 10'. The MDF walls shall be covered with $\frac{3}{4}$ " plywood over any building materials required by code. The plywood shall be 8 ft high, start at 6" AFF, and must meet all national, state and local codes for fire rating.

Once the MDF is constructed, the Low voltage contractor shall roughly designate the various provider areas per the InfiniSys drawings, using a can of spray-paint to outline and label the areas.

No piping, ductwork, mechanical equipment, or power cabling should pass through the equipment room.

B. Secure Access/Lock Boxes

General Contractor shall provide single or double 36" x 80" lockable doors. The doors must be able to be securely locked, using a high security deadbolt style lock, and be common keyed across the site. Access shall be restricted to authorized personnel.

The low voltage Contractor shall provide and install lock-boxes (knox boxes) on a wall close to the MDF for each provider. The General Contractor shall ensure that the lock-boxes are accessible 24x7x365. The general contractor shall also provide (2) sets of keys for the MDF and IDF(s) for in each box.

C. HVAC

General Contractor will provide sufficient HVAC to maintain a temperature of 40-85 degrees Fahrenheit with humidity 30-60%, non-condensing, positive pressure.

D. Lighting

General Contractor shall provide 4-bulb 4' or 4-bulb 8' LED lighting fixtures, typically, 8.5 -9.0 feet above floor, and providing 50-foot candles at 3 feet above floor.

E. Electrical

All duplex outlets are to be Pass & Seymour Surge Protective Receptacles with Isolated Ground unless otherwise specified. This ground shall be tied to the electrical service ground. Use Pass & Seymour part #IG5262-WSP for 15-amp circuits and Pass & Seymour part #IG5362-WSP for 20-amp circuits.

Required duplex outlets and circuits are as follows:

- Power requirements for NexGen are TBD
- One (1) 20A 120VAC surge protected duplex outlet on one (1) separate circuit for Comcast.
- (1) 20A 120VAC surge protected quad outlet on one (1) separate circuit for NVR and camera PoE switches.
- (1) 20A 120VAC surge protected quad outlet on one (1) separate circuit for AV and leasing/amenities data.
- One (1) 20A 120VAC surge protected duplex outlet on one (1) separate circuit for access control
- Minimum of two (2) convenience outlets on the lighting circuit.

All circuits must be clearly labeled at their circuit breaker panel.

F. Grounding

General Contractor shall provide solid copper grounding busbar to be installed with insulated standoffs, (1/4" thick x 4" high). This busbar is drilled with rows of holes according to NEMA standards for attachment of bolted compression fittings. Telecommunications equipment, frames, cabinets and voltage protectors shall be grounded to this busbar. General Contractor shall connect busbars in the MDF and IDFs with a backbone of insulated, solid copper cable between all closets and rooms.

This backbone shall be connected to the Main Grounding Busbar in the MDF, to an earth ground in the electrical entrance facility, and to structural steel on each floor, if applicable.

Bonding conductor cabling shall be colored green or labeled appropriately.

All grounding shall be in accordance with Article 250 of NEC 2020.

Telecommunications Bonding Backbone Conductor Sizing

TBB length linear m (ft)	TBB Size (AWG)
less than 4 (13)	6
4 – 6 (14 – 20)	4
6 – 8 (21 – 26)	3
8 – 10 (27 – 33)	2
10 – 13 (34 – 41)	1
13 – 16 (42 – 52)	1/0

16 – 20 (53 – 66)	2/0
greater than 20 (66)	3/0

Grounding conductors between other equipment in the Telecommunications Room and the Grounding Busbar shall be a #6AWG conductor, minimum.

(from ANSI/TIA-607-C)

1.2 COMCAST FACILITIES AND DISTRIBUTION PLANT WIRING

The MDF will house the incoming connections for Comcast video/data service. The facilities and distribution plant cabling from Comcast's off premises network to the MDF and to each IDF, as well as any distribution equipment, will be supplied and installed by the Comcast.

1.3 NEXGEN FACILITIES AND DISTRIBUTION PLANT WIRING

THE MDF is the point of entry and will house the incoming connections for NexGen video and data service. The facilities from NexGen's off premises network to the MDF and to each IDF, as well as any distribution equipment, will be supplied and installed by the NexGen.

PART 2: PRODUCTS

Not used.

PART 3: EXECUTION

Not used.

END OF SECTION