SECTION 27 00 00

COMMUNICATIONS

PART 1: GENERAL

1.1 INTRODUCTION

Zimmer Development's Inspiration at South Point is a market-rate garden style project consisting of 3 buildings and 296 units.

InfiniSys has been contracted to coordinate the overall design and cabling for low-voltage communications for the project on behalf of Zimmer Development.

1.2 COPYRIGHT

This design uses CAD drawings provided by Planworx Architecture, P.A. for this project and are used with their permission.

1.3 INFORMATION FOR BIDDERS

The low voltage contractor is responsible for procuring specified materials, installing wiring, and testing all components as described in this document, the accompanying drawing set, and the bill of materials. The low voltage contractor shall also schedule all work to meet the overall project schedule. Items that fall under the responsibility of the General Contractor and not included as part of the low voltage contractor's scope of work are described in this specification.

All materials necessary for proper installation, such as special tools, fasteners, fire caulking and other materials not specifically mentioned are the responsibility of the low voltage contractor. The Low voltage contractor is responsible for secure storage of materials on site.

The low voltage contractor is responsible for completing all work a minimum of 30 days prior to the first C.O. in order to provide time for rework, repairs, and installation of low voltage contractor equipment. This 30-day requirement may be waived by the Owner or Owner's Representative.

1.4 DEFINITIONS

Main Communications Room (MDF) is the main communications room for the site, houses the incoming low voltage services, and may be the demarcation point for these services. The MDF distributes low voltage services to the other communications rooms.

Building Communications Room (IDF) is the intermediate communications room located at each building in a garden-style or in separate locations throughout the building in a high-density. This communications room distributes low voltage services to each of the units.

Unit Distribution Panel (UDP) is the distribution panel located in each of the units. This panel distributes low voltage services from the corresponding IDF to each of the faceplates in a unit.

1.5 CODES, REGULATIONS, AND STANDARDS

All work will meet or exceed the requirements of all applicable statutes, ordinances, rules, codes, regulations, decisions, and orders of all local, state, and federal authorities having jurisdiction over the construction of telecommunications cable systems, including, but not limited to, applicable building codes, fire codes, and regulations of the Occupational Safety and Health Administration and Federal Communications Commission.

All work will meet or exceed the requirements of the 2020 National Electrical Code, other NFPA codes, and any then-current amendments or addenda thereto, including, but not limited to:

NFPA 70 National Electrical Code 2020 Edition, Article 800

”Communications Systems”

NFPA 70 National Electrical Code 2020 Edition, Article 200

”Wiring and Protection”

Except as otherwise specified in the Scope of Work, all work will meet or exceed the requirements of the ANSI/TIA telecommunications cabling standards and any then-current amendments or addenda thereto, including, but not limited to:

ANSI/TIA-570-D

“Residential Telecommunications Infrastructure Standard”

ANSI/TIA-568.0-D and addenda

” Generic Telecommunications Cabling For Customer Premises”

ANSI/TIA-568.1-D and addenda

” Commercial Building Telecommunications Cabling Standard”

ANSI/TIA-568.2-D and addenda

” Balanced Twisted-Pair Telecommunications Cabling and Components Standards”

ANSI/TIA-568.3-D and addenda

“Optical Fiber Cabling Components Standard”

ANSI/TIA-568.4-D and addenda

“Broadband Coaxial Cabling and Components Standard”

ANSI/TIA-569-E and addenda

” Telecommunications Pathways and Spaces”

ANSI/TIA-606-C and addenda

” Administration Standard for Commercial Telecommunications Infrastructure”

ANSI/TIA-607-C and addenda

” Generic Telecommunications Bonding and Grounding (Earthing) For Customer Premises”

All work will meet or exceed the safety requirements and certifications of Underwriters Laboratories Inc. (UL).

Except as otherwise specified in the Scope of Work, all video cabling will be installed and terminated in accordance with Society of Cable Telecommunications Engineers standards.

PART 2: PRODUCTS

2.1 CABLE AND COMPONENTS

All cables and duct/microduct shall be at a minimum riser rated. All cables and duct/microduct shall be plenum rated in such spaces that require it by local, state, or national code. The plenum rating must conform to the most current version of NFPA 262.

All inside and home-run data wiring will utilize 4-Pair TIA Cat-6 twisted pair copper cable terminating on TIA RJ-45 jacks utilizing the TIA 568a standard configuration.

All inside and home-run video cable will utilize Quad-Shield 60% minimum braid RG-6 (Series 6) coaxial cable terminating on self-terminating F-81 barrel connectors. All coaxial cable must be manufacturer rated to a minimum of 3.0 GHz.

All “F” connectors shall be of the radial 360-degree crimp type (F-Conn Model RG-6NR or equivalent for Quad-shield) or compression connectors. Hex crimp connectors are not acceptable.

If the outlets with video ports are installed with a wall cavity depth of less than 3”, 90° f-connector adapters (Channel Vision #2125 or equivalent) must be used inside the wall.

A single-gang low-voltage mounting ring shall be installed during rough-in for each outlet. We do not recommend the use of electrical boxes where video outlets are located, unless the outlet is in a fire-rated wall, as they do not provide sufficient clearance to meet the minimum bend radius requirement for the coaxial cables.

Items that are not specifically shown on the drawings or called for by the scope of work, but are required by local, state, and federal authorities or normally used and required for the system design to perform to specifications and system design intent, will be considered part of the scope of work.

PART 3: EXECUTION

3.1 CABLING PRACTICES

The installing contractor may use bundled, webbed, or jacketed hybrid cable assemblies as long as the component cables and any outer jackets or sheaths of the assembly meet the above requirements. All low-voltage wiring shall be run at least one stud bay apart (12" minimum) from any parallel high-voltage wiring, and cross at right angles whenever necessary. Where there is insufficient clearance to meet that requirement, the cabling must be arranged in accordance with the "Cabling Practices" drawing in the InfiniSys drawing set to provide the maximum possible separation. Under no circumstances shall the lateral distance be less than 4" without supplemental shielding. The only exception is where cables cross at right angles, where a 2" minimum separation must be maintained.

Protecting cabling from damage is the responsibility of the low voltage installing contractor. All cabling must be run where it is unlikely to be damaged. The low voltage contractor shall install nail plates where cabling passes through wall studs. Where steel framing is used, plastic bushings must be installed wherever cables pass through metal structural members. The cables must not touch any edges of metal framing.

All cabling must be secured and supported at maximum 48" intervals using approved fastening methods as referenced on the InfiniSys drawing set and in a way that will not compress or deform the cables. ENT "Smurf tube" must be supported a minimum of every 36". Microducts must have supports installed approximately every 16-24 inches. Where microduct runs exceed 200 feet or has more than eight 90-degree bends, a junction box must be installed.

All cable bends must maintain a minimum 3" bend radius with the exception of RG-11, Hardline Coax and outside plant cable bends that must maintain a minimum bend radius equivalent to 10 times the OD of the cable under a no-load condition and 20 times the cable OD under a tensile load condition.

Cable pulling shall not at any time exceed the manufacturer's maximum pulling tension recommendations for the type of cable being installed.

Splicing or repair of cabling is not permitted. Damaged cable must be replaced in its entirety. Any defective or damaged cabling, or any cable or cable installation that does not meet these specifications, must be replaced. This will be at the low voltage contractor's expense, unless it is the result of gross negligence by another trade, or unavoidable because of subsequent changes, structural modifications, etc.

During rough-in, sufficient extra cable shall always be left for termination. All rough-in cable ends in either the MDF or IDF(s) shall be placed in a plastic bag after labeling, and the bag taped around the cable bundle, so the cable ends will not be painted, textured, or damaged. In the unit, the cable shall be coiled inside the UDP and the panel opening covered with the included cardboard paint shield until the permanent locking cover is installed during trim-out.

The low voltage contractor is responsible for measuring the distance of all cable runs. Any distances indicated by the accompanying drawing set or the scope of work are estimates.

The low voltage contractor is responsible for any required fire-stopping or smoke seals. No flammable materials may be used to line a chase or hole. All fire-stopping materials will meet applicable guidelines, standards, codes, rules and regulations.

3.2 LABELING

The low voltage contractor shall label all low voltage cables at both ends in a clear and legible manner. For example, the cabling between the UDP and the IDF(s) shall be labeled at both ends with the function

and Unit Number. At the IDF end, a typical label would read, “DATA1 - UNIT 102”. At the UDP end, the label would read “DATA1 – IN”.

The label shall be located within 1 foot of the likely termination point after trim, so the label will not be cut off.

Both sides of a dual cable and unterminated wires shall be labeled.

END OF SECTION