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Architect Notes

1.0 Main Communications Room (MCR)
 1.1 Facilities
 The General Contractor shall construct the MCR to the minimum dimensions shown on the InfiniSys drawing set. The MCR walls shall be covered with 3/4" plywood over any building materials required by code. The plywood shall be 8' high, start at 6" AFF, and must meet all national, state, and local codes for fire rating. If noted, the MCR walls shall be shielded by installing a grounded metal lath behind the plywood. Once the MCR is constructed, the Low Voltage Contractor shall roughly designate the various provider areas per the InfiniSys drawings, using spray-paint to outline and label the areas. No piping, ductwork, mechanical equipment or power cabling should pass through the MCR.

1.2 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 three lock-boxes (knock boxes) on a wall close to the MCR for each provider - Telephone, Video, and Data. The General Contractor shall ensure that the lock-boxes are accessible 24x7x365. The General Contractor shall also provide two sets of keys for the MCR and BCR(s) in each box.

2.0 Communications Rooms (BCR)
 2.1 Facilities
 The General Contractor shall construct the BCR(s) to the minimum dimensions shown on the InfiniSys drawing set. The BCR walls shall be covered with 3/4" plywood over any building materials required by code. The plywood shall be 8' high, start at 6" AFF, and must meet all national, state, and local codes for fire rating. If noted, the BCR walls shall be shielded by installing a grounded metal lath behind the plywood. Once the BCR is constructed, the Low Voltage Contractor shall roughly designate the various provider areas per the InfiniSys drawings, using spray-paint to outline and label the areas. No piping, ductwork, mechanical equipment or power cabling should pass through the BCR.
 2.2 Secure Access
 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.
 Each BCR must allow secure 24/7 access for each of the service providers who have equipment or facilities within it.

3.0 Pathways
 3.1 Coring
 All coring through concrete, block, stone, or other impervious materials is the responsibility of the General Contractor.
 3.2 Interior Pathways
 All interior building pathways are the responsibility of the general contractor.
 3.3 Fire stopping
 All fire stopping designs shall be the responsibility of the site architect. All fire stopping as required by code and installation of the fire stopping designs of the site architect shall be the responsibility of the installing contractor.

MEP Notes
 1.0 General
 All electrical work shall conform to all of the National Electric Code for state, county, city electrical codes, and authorities having jurisdiction.
 All switch boxes in units, leasing, amenities area, etc. must contain a neutral to the load they are controlling.
 Install unswitched quad outlet by each Home Theater Outlet and duplex by each Multimedia Outlet
 2.0 Main Communications Room
 2.1 HVAC
 The MCR requires sufficient HVAC to maintain 40° - 85° Fahrenheit with humidity at 30-60%, non-condensing, positive pressure.
 2.2 Lighting
 4-bulb 4" or 4-bulb 8" fluorescent lighting fixtures with tube protectors installed are required for proper lighting, typically 8.5-9.0 feet above the floor, providing 85 foot-candles at 3 feet above the floor.
 2.3 Electrical
 All duplex outlets are to be Pass & Seymour Industrial Grade Surge Protective Receptacles with Isolated Ground unless otherwise specified. This ground shall be tied to the electrical service ground. Use Pass & Seymour part number IGS262-WSP for 15 amp circuits and Pass & Seymour part number IGS362-WSP for 20 amp circuits. Required duplex outlets and circuits are as follows:

4-bulb 4" or 4-bulb 8" fluorescent lighting fixtures with tube protectors installed are required for proper lighting, typically 8.5-9.0 feet above the floor, providing 85 foot-candles at 3 feet above the floor.
 2.3 Electrical
 All duplex outlets are to be Pass & Seymour Industrial Grade Surge Protective Receptacles with Isolated Ground unless otherwise specified. This ground shall be tied to the electrical service ground. Use Pass & Seymour part number IGS262-WSP for 15 amp circuits and Pass & Seymour part number IGS362-WSP for 20 amp circuits. Required duplex outlets and circuits are as follows:

All circuits must be clearly labeled at their circuit breaker panel.
 2.4 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 MCR and BCRs 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 MCR, 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 2017.
 3.0 Building Communications Room(s)
 3.1 Ventilation/HVAC
 The general Contractor shall provide sufficient HVAC or ventilation to maintain a temperature of 40° to 100° Fahrenheit. For ventilation, the General Contractor shall provide for a minimum of 110-200 CFM of air circulation. This shall be thermostatically controlled to start if the temperature exceeds 85° Fahrenheit in the BCR. Use Fantech RVF-6 or equivalent exhaust fan in conjunction with a Columbus Electric DPST 50° to 90° thermostat or equivalent. If a ventilation fan cannot maintain a maximum room temperature of 100° Fahrenheit with a full load of all electronic equipment, supplemental cooling may be required.
 3.2 Lighting
 4-bulb 4" or 4-bulb 8" fluorescent lighting fixtures with tube protectors installed are required to provide illumination for installation and maintenance, providing 85 foot-candles at 3 feet above the floor.
 3.3 Electrical
 All duplex outlets are to be Pass & Seymour Industrial Grade Surge Protective Receptacles with Isolated Ground unless otherwise specified. This ground shall be tied to the electrical service ground. Use Pass & Seymour part number IGS262-WSP for 15 amp circuits and Pass & Seymour part number IGS362-WSP for 20 amp circuits. Required outlets and circuits are as follows:

4-bulb 4" or 4-bulb 8" fluorescent lighting fixtures with tube protectors installed are required to provide illumination for installation and maintenance, providing 85 foot-candles at 3 feet above the floor.
 3.3 Electrical
 All duplex outlets are to be Pass & Seymour Industrial Grade Surge Protective Receptacles with Isolated Ground unless otherwise specified. This ground shall be tied to the electrical service ground. Use Pass & Seymour part number IGS262-WSP for 15 amp circuits and Pass & Seymour part number IGS362-WSP for 20 amp circuits. Required outlets and circuits are as follows:

All grounding shall be in accordance with Article 250 of NEC 2017.
 4.0 Network/Apartment Unit Distribution Panel
 4.1 Electrical
 The Electrical Contractor must install a box with a 15A 120VAC Pass & Seymour 5262-WSP surge protected duplex outlet in the bottom of each UDP. This outlet does not require a dedicated circuit and may be powered from a lighting circuit.
 5.0 Site Requirements
 5.1 The MEP shall be responsible for the integration of the Access Control System with the Fire Alarm System.
 5.3 The Electrical Contractor shall provide power to all gate camera locations.
 5.4 The Electrical Contractor shall provide power to all access control panel and gate locations.

General Notes

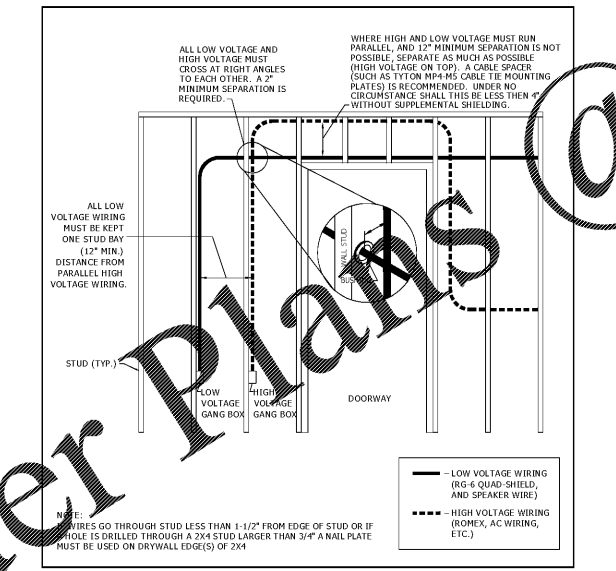
1. Leave 2 foot tail at multimedia outlet plaster ring locations.
2. Leave 3 foot tail at ncd(Unit Distribution Panel) and speaker locations.
3. Leave 10 foot tail at unit distribution panel locations.
4. 3 inch min. bend radius on all cable runs do not use metal staples or kink cables.
Use plastic staples such as the peter mangone rd clip gun system.
5. All low voltage wiring must be kept one stud bay (12" min.) distance from parallel high voltage wiring and cross at right angles.
6. Mount home theater outlet in caddy/erico model mp2s low voltage mounting bracket or two-gang plastic box with back removed, unless it is in a fire-rated wall (if applicable.)
7. It is preferred to mount single outlets in a single gang plastic box with back removed. Optionally, a single gang mud ring may be used, unless it is in a fire-rated wall.
8. All blank covers are the responsibility of the installing sub-contractor.
9. Install all multimedia, and binding post outlets at duplex outlet height in all rooms, except wall outlet in kitchen or unless otherwise noted.
10. Low voltage boxes must be level and unobstructed.
11. Install pull strings in all empty conduits and innerducts.
12. Wall phone outlets must be at least 6" above any counter splash or ledge
13. All f-connectors must be stripped and crimped using approved tools. tighten all "f" connectors to 25 in-lbs torque using approved tool-all f-connectors shall be of the radial 360-degree crimp type (f-conn model RG-6NR or equivalent for RG-6 quad-shield). Compression crimp also acceptable.
14. No splices are permitted inside walls.
15. Install wall plates and speakers after finish painting.
16. All exposed connections, hardware shall be protected from plaster, paint and other such materials.
17. All final installation must be done in accordance with the attached drawings, specifications and infinisys supplied scope of work.
18. Fire stopping must be accomplished in accordance to local, state, and national codes and in accordance with the fire stopping designs of the site architect.
19. All grounding shall conform to NEC 2017 article 250.
20. The low voltage contractor shall label all low voltage cables at both ends in a clear and legible manner. The label shall be located within 1 foot of the likely termination point after trim so that the label will not be cut off.

Cable Specifications

1. All cables and microduct pathways with included pull string/tape shall be at a minimum riser rated. All cables and microduct pathways with included pull string/tape 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.
2. Video Cable: All inside and home-run video cable will utilize Quad-Shield 60% minimum braid Series 6 coaxial cable terminating on OnQ Legrand or equivalent self-terminating F-81 barrel connectors. All coaxial cable must be manufacturer rated to a minimum of 3.0 GHz.
3. All "F" connectors shall be of the radial 360-degree crimp type (F-Conn Model RG-6NR or equivalent for Quad-shield). These connectors require a CablePro RTC-360 or equivalent tool for installation. Hex crimp tools are not acceptable.
4. 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.
5. Data Cable: All inside and home-run data wiring will utilize 4-Pair TIA Cat-5e or Cat-6 twisted pair copper cable terminating on TIA RJ_45 jacks utilizing the TIA 568a standard configuration. All Cat-6 cable shall meet or exceed ANSI/EIA/TIA-568 requirements. **It is required that all data cabling be bid utilizing Cat-6.**

GENERAL WIRING NOTES

1. All low-voltage wiring should 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 to provide the maximum possible separation, over as much distance as possible (under no circumstance 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. This may require coordination with the Electrical Contractor before the high-voltage wiring commences.
2. 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 after installation. Nail plates should be installed where cabling passes through wall studs. Where steel framing is used, plastic bushings must be installed wherever cables pass through metal structural members. Cables must not touch any edges of metal framing.
3. All cabling must be properly supported and secured in a way that will not compress or deform the cables. All cable bends must maintain a minimum 3' bend radius.
4. Splicing or repair of cabling is not permitted. Damaged cable must be replaced in its entirety.
5. 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 installation contractor's expense, unless it is the result of gross negligence by another trade, or unavoidable because of subsequent changes, structural modifications, etc.
6. The General Contractor shall be responsible for notifying the low-voltage installation contractor of any such cable damage.

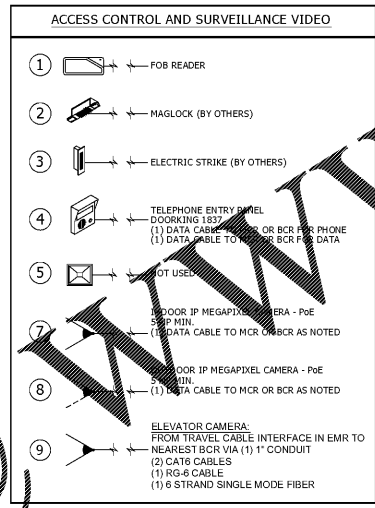
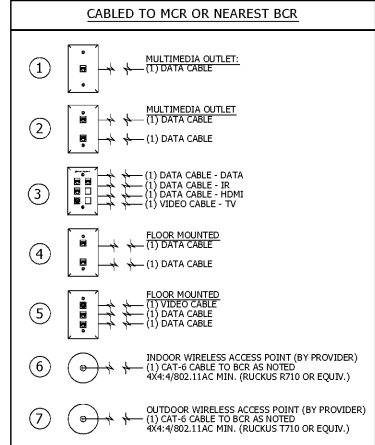
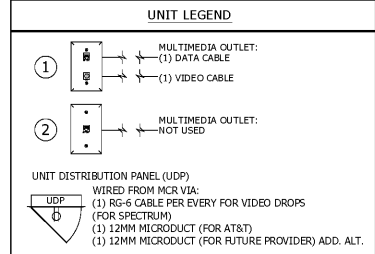


MCR and BCR notes:

1. All installation work shall meet applicable local, State and Federal codes.
2. All fire stopping designs will be the responsibility of the site architect.
3. All fire stopping as required by code and installation of the fire stopping designs of the site architect will be the responsibility of the installing contractor.
4. All necessary low voltage permits and inspections shall be the responsibility of the installing contractor.
5. All grounding shall conform to article 250 of NEC 2017 (if adopted by the authority having jurisdiction prior to permitting and/or the commencement of construction).
6. All primary and secondary surge and isolation protection shall be the responsibility of the service provider.
7. Conduit shall be at least 2-4" below finish grade, 36" recommended.

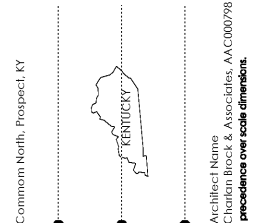
NOTES:

1. All conduit shall be schedule 40 PVC or HDPE 2", 4", or 6" according to plan.
2. All conduits are to include a pull string.
3. All underground conduits to be buried a minimum of 36" below finish grade to the top of the conduit.
4. All underground conduit road crossing ends shall be marked with electronic markers.
5. All conduits shall use sweeps in lieu of bends. Sweeps must be 36" radius minimum.
6. Conduit runs should have no more than 270 degrees of bends between any two pull points, runs that exceed this should have appropriate pull boxes installed.
7. Conduit runs exceeding 200 feet in length should have appropriate pull boxes installed.
All conduits shall employ a tracer wire, such as Neptco Trace Safe RT1800W or equivalent.
8. If soil conditions require it (backfill/compaction material is not granular, or the trench bed is not uniform), the trench shall be lined with a 3" layer of sand on the bottom and a 6" layer of sand on top of the conduits before backfill and compaction.



UNIT MIX TOTALS

| | | |
|-------------|-----|-----|
| UNIT A1 | 24 | Yes |
| UNIT A2 | 16 | Yes |
| UNIT A2.1 | 8 | Yes |
| UNIT A2.2 | 8 | Yes |
| UNIT A3 | 25 | Yes |
| UNIT A3.1 | 9 | Yes |
| UNIT A4 | 39 | Yes |
| UNIT A5 | 8 | Yes |
| UNIT B1 | 19 | Yes |
| UNIT B1.1 | 14 | Yes |
| UNIT B2 | 24 | Yes |
| UNIT B3 | 17 | Yes |
| UNIT B4 | 17 | Yes |
| UNIT B5 | 6 | Yes |
| UNIT B6 | 4 | Yes |
| UNIT C1 | 12 | Yes |
| UNIT C2 | 12 | Yes |
| UNIT C3 | 3 | Yes |
| UNIT S1 | 4 | Yes |
| UNIT S2 | 4 | Yes |
| UNIT TOTAL: | 273 | |



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LOW VOLTAGE NOTES & LEGENDS

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 reviewed by: T.STENDER
 issue history:
 Δ Date

T-000

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