SECTION 27 11 16 – EQUIPMENT AND TELECOMMUNICATION ROOM

PART 1 - GENERAL

1.1 DESCRIPTION

A. The IT Room will house the electronics for the network equipment, phone equipment, security and observation systems. Coordinate cable routing and power requirements with other trades utilizing the space.

B. All equipment, sleeves, bushing, fire-stop and accessories needed to make this a safe and useable area whether specified or not are to be a part of the contractor's submittals and implemented in the space during construction.

1.2 QUALITY ASSURANCE

A. All equipment shall be UL listed.

B. All equipment shall be installed in a neat and professional manner.

C. Communication grounding and bonding shall be in accordance with applicable codes and regulations. It is recommended that the requirements of IEC, NEC, and ANSI/EIA/TIA-607 shall be observed throughout the entire space.

D. Refer Section 27 01 00 for additional requirements.

1.3 SUBMITTALS AND PRODUCT DATA

A. Include shop drawings depicting wiring and connection diagrams in addition to the requirements in other parts of this Specification.

B. The drawings submitted need to show the amount of space, mounting design, and power requirements needed for the systems.

PART 2 - PRODUCT

2.1 MATERIAL

A. Plywood
   1. ¾"x 4'x8'
   2. AC grade
   3. Fire-rated or painted all sides fire rated or latex paint depending on utility requirements and local codes.

B. Equipment Rack
   1. Floor Standing
   2. Compatible with EIA 1 ¼"-1/2" hole pattern, both sides
   3. UL Listed
   4. Finish as listed on plans
   5. Size as listed on plan

C. Ladder Rack/Cable Tray

1. UL listed
2. Include all connecting hardware recommended by manufacturer. Including but not limited to rack-to-runway mounting plate, wall angle support bracket, junction spice kit, and grounding/bonding.

D. Patch Panels for Horizontal Cabling
1. Mounting pattern per industry standard
2. 48 port Universal Pin-out
3. 19" rack mountable

E. Fiber Optic Shelf
1. 19" rack mountable
2. Include cover and tough
3. Capacity as dictate by strand count or indicated on plans.

F. Horizontal Cable Managers
1. Single or Double sided as shown on plans
2. Number of rack spaces as shown on plans

G. Vertical Cable Managers
1. Finish to match Racks
2. Single or Double sided as shown on plans
3. Pass through ports
4. Bolts to standard industry rack bolt pattern
5. Required to have some means of securing cable within the manager whether covers or latch.

H. Ground bus bar with #6 AWG to main building ground.

I. D-Rings

J. Fire-Stop
1. Appropriate rating for wall penetrated.
2. Re-enterable

K. Hilti HDI drop in anchors

L. Velcro cable ties

PART 3 - EXECUTION

3.1 INSTALLATION

A. Plywood
1. Plywood is to be mounted to the wall finished side into the room.
2. Anchors are to be flush or recessed.
3. Sand smooth and paint all sides white with Latex paint.
4. Plywood will be mounted 8' high and 4' across trimmed as space dictates with plywood as close to ceiling as possible. If the ceiling is over 8 feet in height then the plywood will be mounted as close to floor as possible not covering baseboard if present and will utilize the full 8 feet of the plywood.

B. Equipment Rack

1. Anchored to the floor with Hilti anchors.
2. The hardware is to be Grade 5 bolts with washers minimum.
3. The rack shall be plumb and level.
4. A vertical wire manager shall be on both sides of each rack.
5. Each rack having ladder rack attached to it will utilize a rack-to-runway kit.
6. Each rack will have a grounding bar.
7. Each rack will be grounded per industry standards.
8. Rack layout will be per industry standard, also verified with on site representative.

C. Ladder Rack
1. Ladder rack is to be installed per manufacturer recommendation for support.
2. Securely anchored to wall with wall termination bracket recommended by manufacturer.
3. Attached to racks with rack to runway kit as recommended by manufacturer.
4. Ladder rack to Ladder rack junctions will done with hardware whether it be “butt-splice” or “junction splice”.
5. Ladder rack that does not terminate at a will or into ladder rack i.e. floating end, will utilize an “end closing kit”.

D. Patch Panel
1. Need to allow for 10% expansion at the close of the project.

E. Horizontal Cable Managers
1. Provide cable mangers as shown in Rack Elevation Detail on the plans.
2. If no detail present on plans provide one horizontal manager above and below each patch panel.

F. Grounding
1. Each rack is to be grounded
2. Per TIA/EIA-607
3. Any part that has a painted surface will have a spot scraped in order to provide metal-to-metal contact for grounding. The spot scraped clean shall be visible with ground lug attached.

G. D-Rings
1. Every 2’
2. Placed at every turn in cable path to ensure a clean a professional install.
3. Rings shall used minimally to transition cable from wall mounted equipment to closest cable tray.

3.2 CABLES

A. All Cables within the Equipment room shall be routed to avoid any electrical interference.

B. D-rings if used for cable routing shall be sized to allow for future use.

C. Cables will be supported and secured in a professional manner.

D. Any Tie Cable passing through, within, or terminating in the space will be labeled with a To-From indication and pair count/strand count of cable. See section 27 13 00 Cable Plant Overview for additional requirements.

END OF SECTION