

RESPONSIBILITY MATRIX				
SCOPE ITEM	RESPONSIBILITY			NOTES
	OFOI	CFCI	OFCI	
COMMUNICATIONS - DIVISION 27				
CATEGORY 6 STRUCTURED CABLING SYSTEM		X		
VIDEO DISTRIBUTION SYSTEM - SPECIAL SPACE		X		
AUDIO DISTRIBUTION SYSTEM - SPECIAL SPACE		X		
VIDEO DISTRIBUTION SYSTEM - INSTRUCTIONAL SPACE		X		
AUDIO DISTRIBUTION SYSTEM - INSTRUCTIONAL SPACE		X		
FLAT PANEL DISPLAYS		X		
FLAT PANEL DISPLAY MOUNTS		X		
INTERACTIVE DISPLAYS		X		
INTERACTIVE DISPLAY MOUNTS		X		
DIGITAL SIGNAGE		X		
BUILDING INTERCOMPA, BELL, AND CLOCK SYSTEM		X		
NETWORK EQUIPMENT				
→ MDF/IDF NETWORK EQUIPMENT		X		
→ VOIP TELEPHONES		X		
→ WIRELESS ACCESS POINTS		X		
→ UNINTERRUPTIBLE POWER SUPPLIES (UPS)		X		
RACEWAY: CONDUIT, BACK BOXES, SLEEVES, ETC.		X		SEE NOTE 1.
ELECTRICAL POWER		X		SEE NOTE 1.
LIFE SAFETY AND SECURITY - DIVISION 28	OFOI	CFCI	OFCI	
ACCESS CONTROL SYSTEM(ACS)		X		
INTRUSION DETECTION SYSTEM		X		
VIDEO SURVEILLANCE SYSTEM (VSS)				
→ VSS SERVERS		X		
→ VSS CAMERAS		X		
→ VSS PROGRAMMING		X		
→ VSS CABLING		X		SEE NOTE 2.
FIRE ALARM SMOKE DETECTION WITH VOICE EVACUATION		X		SEE NOTE 1.
RACEWAY: CONDUIT, BACK BOXES, SLEEVES, ETC.		X		SEE NOTE 1.
ELECTRICAL POWER		X		SEE NOTE 1.
RESPONSIBILITY MATRIX NOTES:				
1. BY DIVISION 26.				
2. BY DIVISION 27.				

SUBSCRIPTS AND ABBREVIATIONS	
'WM'	INDICATES THAT THE DESIGNATED DEVICE IS TO BE WALL MOUNTED AT SPECIFIED HEIGHT OR IN COMPLIANCE WITH CODE REQUIREMENTS. ALL WALL MOUNTED HEIGHTS ARE TO BE CONFIRMED WITH THE PROJECT'S ARCHITECT PRIOR TO ROUGH-IN.
'WP'	INDICATES THAT THE DESIGNATED DEVICE SHALL BE WEATHER PROOF AND RATED FOR EXTERIOR CONDITIONS INSTALLATION.
'AC'	INDICATES THAT THE DESIGNATED DEVICE IS TO BE INSTALLED ABOVE THE COUNTERTOP. A NUMERIC VALUE SHALL REPLACE THE '#' SYMBOL AND SHALL DESIGNATE THE SPECIFIC HEIGHT ABOVE COUNTER. ALL HEIGHTS ARE TO BE CONFIRMED WITH THE PROJECT'S ARCHITECT PRIOR TO ROUGH-IN.
'AFF'	INDICATES THAT THE DESIGNATED DEVICE IS TO BE INSTALLED ABOVE THE FINISHED FLOOR. A NUMERIC VALUE SHALL REPLACE THE '#' SYMBOL AND SHALL DESIGNATE THE SPECIFIC HEIGHT ABOVE FINISHED FLOOR. ALL HEIGHTS ARE TO BE CONFIRMED WITH THE PROJECT'S ARCHITECT PRIOR TO ROUGH-IN.
'UC'	INDICATES THAT THE DESIGNATED DEVICE IS TO BE MOUNTED ON THE UNDERSIDE OF THE ELEVATED CANOPY.
'CM'	INDICATES THAT THE DESIGNATED DEVICE IS TO BE CORNER MOUNTED AT SPECIFIED HEIGHT. ALL WALL MOUNTED HEIGHTS ARE TO BE CONFIRMED WITH THE PROJECT'S ARCHITECT PRIOR TO ROUGH-IN.
	FIELD COORDINATE ELEVATION.

FIRE ALARM LEGEND	
	FIRE ALARM CONTROL
	FIRE ALARM ANNIUNCIATOR PANEL
	NOTIFICATION APPLIANCE CIRCUIT
NOTES:	
1. FIRE ALARM SYSTEM IS A PERFORMANCE BASED PER SPECIFICATIONS 28 46 00. CONTRACTOR TO REFERENCE SPECIFICATIONS FOR ADDITIONAL INFORMATION.	
2. A LICENSED FIRE ALARM PLANNING SUPERINTENDENT CERTIFIED TO A MINIMUM LEVEL 3, IN THE SUBFIELD OF FIRE ALARM SYSTEMS THROUGH THE NATIONAL INSTITUTE FOR CERTIFICATION IN ENGINEERING TECHNOLOGIES (NICTE), SHALL PROVIDE PLANS AND CALCULATIONS FOR A MANUAL AND AUTOMATIC FIRE DETECTION AND ALARM SYSTEM TO COMPLY WITH THE BUILDING SPACE LAYOUT, BUILDING OCCUPANCY, CURRENT NFPA 72, LOCAL AND STATE CODE REQUIREMENTS, AND THE FIRE ALARM AND DETECTION SYSTEM SPECIFICATIONS.	
3. PROJECT SCOPE INCLUDES EXPANDING THE EXISTING FIRE ALARM SYSTEM. FIRE ALARM SYSTEM SHALL BE FULLY OPERATIONAL THROUGHOUT ALL PHASES OF CONSTRUCTION.	

NOTES TO CONTRACTOR	
1.	EVERY SYMBOL SHOWN ON LEGEND MAY NOT APPEAR ON DRAWINGS. REFER TO GENERAL ELECTRICAL NOTES FOR WALL-MOUNTED DEVICE MOUNTING HEIGHTS.
2.	REFERENCE SPECIFICATIONS FOR MATERIALS AND METHODS.
3.	COMPLETE INSTALLATION OF ALL PRODUCTS SHALL BE IN COMPLIANCE WITH ALL CODES, INDUSTRY STANDARDS, COMMON PRACTICES AND MANUFACTURERS' INSTRUCTIONS.
4.	ALL EXTERIOR AND WALL MOUNTED CAMERA LOCATIONS AND MOUNTING HEIGHTS MUST BE COORDINATED WITH THE OWNER PRIOR TO ROUGH-IN. COORDINATION MEETINGS SHALL BE SCHEDULED THROUGH THE ARCHITECT'S PROJECT MANAGER.

INTERCOM GENERAL NOTES	
1.	THE SYSTEM INSTALLER SHALL PROPERLY SUPPORT ALL INSTALLED SYSTEM CABLING FROM AN APPROVED CABLE SUPPORT SYSTEM AS DETAILED IN SPECIFICATIONS. NO CABLING SHALL BE ROUTED AND TIED DIRECTLY TO BUILDING STEEL, CEILING GRID SUPPORT, CONDUIT, PIPING, OR DUCTWORK. THE CABLE SUPPORT SYSTEM SHALL BE DIRECTLY CONNECTED TO THE BUILDING'S STEEL JOIST. AT LOCATIONS WHERE THE BOTTOM OF THE JOIST IS MORE THAN 5' ABOVE THE CEILING, THE SYSTEM INSTALLER SHALL PROVIDE AND INSTALL THREADED ROD AND ALL REQUIRED MATERIALS TO CONNECT THE THREADED ROD TO THE BUILDING STEEL AND THE CABLE SUPPORT SYSTEM TO THE THREADED ROD. CABLE PATHWAY SHALL NOT BE HIGHER THAN 5' ABOVE THE CEILING AT ANY LOCATIONS.
2.	ALL EXTERIOR AND WALL MOUNTED SPEAKERS SHALL BE MOUNTED AT 10'-0" UNLESS OTHERWISE NOTED.
3.	EXTERIOR SPEAKERS SHALL BE INDEPENDENTLY ZONED FROM INTERIOR SPEAKERS.
4.	ALL WALL MOUNTED CALL INITIATING DEVICES SHALL BE INSTALLED AT ADA HEIGHT, MATCHING THE HEIGHT OF THE INSTALLED LIGHT SWITCHES.
5.	PROVIDE AND INSTALL WALL MOUNTED VOLUME CONTROLS IN ALL OFFICES, CONFERENCE ROOMS, AND CLINICS.
6.	ALL VOLUME CONTROLS SHALL BE CONFIGURED WITH EMERGENCY CALL OVERRIDE, ALLOWING EMERGENCY ANNOUNCEMENTS TO BE HEARD DESPITE THE POSITION OF THE VOLUME CONTROL.
7.	ALL 25/70V SPEAKERS SHALL BE CONNECTED TO A STANDARD PUNCH DOWN BLOCK LOCATED NEAR HEAD END EQUIPMENT AND THEN CONNECTED TO HEAD END EQUIPMENT.
8.	CONTRACTOR TO TAP ALL EXTERIOR SPEAKERS AT 7 WATTS.
9.	ALL EXTERIOR AND WALL MOUNTED SPEAKERS SHALL BE MOUNTED AT 10'-0" UNLESS OTHERWISE NOTED.

GENERAL NOTES	
1.	ALL 120V POWER REQUIRED FOR THE FUNCTIONALITY OF EACH SYSTEM SHALL BE A DEDICATED CIRCUIT AND ON EMERGENCY POWER WHEN AVAILABLE. PROJECTS ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL POWER TO MAIN CONTROL PANELS, REMOTE POWER SUPPLIES AND ALL HEAD END EQUIPMENT. SYSTEM INSTALLERS SHALL COORDINATE LOCATIONS AND CONNECTIONS WITH THE PROJECT'S ELECTRICAL CONTRACTOR.
2.	THE PROJECTS ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONDUITS, FLOOR BOX, BACK BOXES, JUNCTION BOXES, RACEWAYS, AND SLEEVES REQUIRED TO ESTABLISH CLEAR PATHWAYS FOR ALL SYSTEMS. ALL CONDUITS, SLEEVES, BOXES, AND RACEWAYS SHALL BE PROPERLY SIZED TO MAINTAIN A 40% MAXIMUM FILL RATIO. THE INSTALLER FOR EACH SYSTEM SHALL PROVIDE THE ELECTRICAL CONTRACTOR WITH SHOP DRAWINGS INDICATING LOCATIONS AND SIZES OF CONDUITS BEYOND THOSE SHOWN ON THE CONTRACT DOCUMENTS.
3.	ALL EXPOSED SYSTEMS WIRING OR WIRING ROUTING ACROSS NON-ACCESSIBLE CEILINGS SHALL BE ROUTED IN CONDUIT, PROVIDED AND INSTALLED BY THE PROJECT'S ELECTRICAL CONTRACTOR. SIZE CONDUIT AS REQUIRED TO ROUTE SYSTEMS WITH 40% CABLE FILL RATIO. MINIMUM CONDUIT SIZE SHALL BE 3/4".
4.	EACH SYSTEM INSTALLER SHALL BE RESPONSIBLE FOR ENSURING ALL EXTERIOR WALL PENETRATIONS ARE PROPERLY SEALED TO PREVENT ANY MOISTURE FROM ENTERING BUILDING.
5.	NO CONDUITS SHALL BE INSTALLED ON THE EXTERIOR OF THE BUILDING. IF EXTERIOR CONDUITS ARE REQUIRED FOR A COMPLETE INSTALLATION, EACH SYSTEM CONTRACTOR SHALL COORDINATE WITH THE PROJECTS CONSULTANT PRIOR TO ANY ROUGH-IN.
6.	EACH SYSTEM INSTALLER SHALL PROVIDE AND INSTALL PROTECTIVE BUSHINGS ON ALL CONDUIT STUB OUTS AND SLEEVES TO PREVENT CABLE DAMAGE. BUSHING TO BE INSTALLED PRIOR TO CABLE INSTALLATION. CUTTING BUSHING AND INSTALLING AFTER CABLE IS INSTALLED WILL NOT BE EXCEPTED.
7.	ALL CABLE SHALL BE ROUTED DOWN CORRIDORS, PARALLEL AND PERPENDICULAR TO THE BUILDING WALLS AND STRUCTURE. CABLE TO EACH DEVICE SHALL BRANCH OFF OF A MAIN CORRIDOR TRUNK. ROUTING CABLES THROUGH CLASSROOMS, OFFICES, STORAGE ROOMS, RESTROOMS OR ANY TYPE OF ROOM OTHER THAN A CORRIDOR WILL NOT BE ACCEPTED. ENTER ALL ROOMS ABOVE THE ASSOCIATED ROOM DOORWAY.

TECHNOLOGY GENERAL NOTES	
1.	CONTRACTOR SHALL COORDINATE WITH THE SYSTEM ENGINEER PRIOR TO THE INSTALLATION OF RACKS AND RACK EQUIPMENT. NO RACKS SHALL BE PERMANENTLY INSTALLED WITHOUT WRITTEN APPROVAL OF THE PROPOSED LOCATIONS.
2.	THE SELECTED, INSTALLING CONTRACTOR MUST BE A CERTIFIED INTEGRATOR/INSTALLER AUTHORIZED BY THE SPECIFIED SYSTEM MANUFACTURER TO INSTALL THE CABLE PLANT AND CONNECTIVITY PRODUCTS. REFER TO SPECIFICATIONS FOR PRODUCT TYPE AND DESCRIPTION.
3.	SYSTEM WIRING AND EQUIPMENT INSTALLATION SHALL BE IN ACCORDANCE WITH GOOD ENGINEERING PRACTICES AS ESTABLISHED BY ANSIE/NETA, BICSI, AND THE NEC.
4.	ALL WIRING SHALL MEET ALL STATE AND LOCAL ELECTRICAL CODES.
5.	ALL TELECOMMUNICATIONS SYSTEMS EQUIPMENT AND MOUNTING LOCATIONS SHALL BE IN COMPLIANCE WITH ADA ACCESSIBILITY STANDARDS.
6.	ALL INDUSTRY STANDARD CATEGORY 6 CABLING PRACTICES MUST BE FOLLOWED FOR ALL DATA CABLING.
7.	ALL CABLES/WIRING ARE TO BE INSTALLED WITH A MINIMUM OF 12" INCHES OF SEPARATION FROM AC POWER CABLES, INTERCOM, FIRE ALARM, SECURITY CABLES IN ANY PARALLEL OPEN WIRE RUN.
8.	ALWAYS CROSS OTHER SYSTEM CABLES AT A 90 DEGREE ANGLE.
9.	ALL CABLES AND TERMINATION COMPONENTS SHALL BE MACHINE LABELED AT BOTH ENDS. LABEL ALL CABLES PER TS DRAWINGS AND/OR SPECIFICATIONS. FINAL CABLE/OUTLET IDENTIFICATION LABELS SHALL BE COORDINATED WITH THE OWNER AND ENGINEER.
10.	CONTRACTOR TO PROVIDE LIGHTNING PROTECTION ON ALL COMMUNICATION CABLE BETWEEN BUILDINGS.
11.	ALL EXPOSED CABLING ROUTED IN PLENUM SHALL BE PLENUM-RATED. ALL NON PLENUM-RATED CABLING INSTALLED IN PLENUM SPACES SHALL BE INSTALLED IN CONDUIT.
12.	NO TERMINATION OR SPLICES SHALL BE INSTALLED IN OR ABOVE CEILINGS UNLESS NOTED NOTED OTHERWISE.
13.	CONTRACTOR SHALL MAINTAIN WALL RATING WITH PROPER FIRE BLOCKING METHODS.
14.	ALL CABLE INSTALLED SHALL ROUTE TO THE CENTER OF THE ROOM IN WHICH IT SERVES AND THEN TO THE OUTLET LOCATION IT IS INTENDED FOR. EACH CABLE SHALL HAVE A 10' SERVICE LOOP AT THE CENTER OF EACH ROOM AND A 3' SERVICE LOOP ABOVE EACH OUTLET LOCATION.
16.	PROVIDE AND INSTALL ONE (1) CATEGORY 6 CABLE TO EACH VIDEO SURVEILLANCE CAMERA ON THE ENTIRE PROJECT. REFERENCE VIDEO SURVEILLANCE LEGEND, NOTES, FLOOR PLANS, DETAILS, AND SCHEDULE.
17.	PROVIDE AND INSTALL ONE (1) CATEGORY 6 CABLE TO THE BUILDING'S ACCESS CONTROL HEAD END PANEL. TERMINATION OF THIS CABLE SHALL BE COORDINATED WITH THE SYSTEM INSTALLER.
18.	PROVIDE AND INSTALL ONE (1) CATEGORY 6 CABLE TO THE BUILDING'S INTRUSION DETECTION PANEL. TERMINATION OF THIS CABLE SHALL BE COORDINATED WITH THE SYSTEM INSTALLER.
19.	PROVIDE AND INSTALL ONE (1) CATEGORY 6 CABLE TO EACH LIGHTING CONTROL HUB ON THE ENTIRE PROJECT. COORDINATE EXACT QUANTITY AND LOCATIONS WITH THE LIGHTING CONTROL SYSTEM INSTALLER. CONTRACTOR TO ASSUME A MINIMUM OF TEN (10) PER PROJECT.
20.	PROVIDE AND INSTALL TWO (2) CATEGORY 6 DATA CIRCUITS TO EACH FSD (ALL VARIATIONS OF), CMP, WMP, AND DS ON THE ENTIRE PROJECT. COORDINATE ANY DISCREPANCIES WITH ENGINEER.
21.	PROVIDE AND INSTALL ONE (1) CATEGORY 6 DATA CIRCUIT TO THE LOCAL AIR UNIT CONTROLLER IN EACH MDF AND IDF.
22.	PROVIDE AND INSTALL ONE (1) CATEGORY 6 DATA CIRCUIT TO EACH ACCESS CONTROL VIDEO DOOR STATION AND MASTER STATION ON THE ENTIRE PROJECT. COORDINATE EXACT LOCATION AND TERMINATION REQUIREMENTS WITH THE DOOR STATION INSTALLER, PRIOR TO INSTALLATION.
23.	ALL CEILING MOUNTED DEVICES SHALL BE INSTALLED ON STAIN RESISTANT CEILING TILES.

AUDIO/VIDEO LEGEND	
'AV-#'	INDICATES THAT THE DESIGNATED TECHNOLOGY OUTLET IS INTENDED FOR AN AUDIO/VIDEO (AV) INPUT. CONTRACTOR TO PROVIDE AND INSTALL A FLOOR MOUNTED OR WALL MOUNTED BOX AS INDICATED. (1) 1.25" CONDUIT AND (1) 1" CONDUITS FROM THE BOX TO THE NEAREST, PLENUM ACCESSIBLE CEILING WITHIN THE SAME ROOM. ALL FLOOR AND WALL MOUNTED BOXES SHALL BE A MINIMUM OF 2-6 INCHES. #- WHEN REPLACED WITH A '1' (AV-1) ONLY, THE OUTLET SHALL BE A STANDALONE. LOCAL INPUT TIED TO A LOCAL VIDEO DISPLAY (FSD, CMP, WMP, AV-2, ETC.). THIS OUTLET WILL NOT BE ASSOCIATED WITH ANY SYSTEM FOR ROUTING TO DISPLAYS LOCATED IN ANY OTHER PORTION OF THE PROJECT. IF NOT REPLACED WITH A '1' SEE THE NOTES AT THE BOTTOM OF THE LEGEND FOR ADDITIONAL INSTRUCTIONS.
'V#'	INDICATES THE LOCATION OF A FLAT PANEL VIDEO DISPLAY. CONTRACTOR TO PROVIDE AND INSTALL TWO (2) CATEGORY 6 UTP NETWORK CABLE TO ALL LOCATIONS SHOWN ON THE ENTIRE PROJECT. #- WHEN REPLACED WITH A '1' (FSD-1) ONLY, THE OUTLET SHALL BE A STANDALONE AND ONLY HAVE THE CATEGORY 6 CABLE ROUTED TO IT, FROM THE MDF/IDF SERVING THE DEVICES AREA ROOM. #- WHEN REPLACED WITH A '2' (FSD-2) ONLY, THE OUTLET SHALL HAVE THE CATEGORY 6 CABLE ROUTED TO IT, FROM THE MDF/IDF SERVING THE DEVICES AREA, AND THE CABLING FROM THE ASSOCIATED AV-1. #- WHEN NOT REPLACED WITH A '1' OR '2', SEE THE 'NOTES' SECTION AT THE END OF THIS LEGEND. EACH FSD OUTLET SHALL BE A 2-GANG BOX AND TWO (2) 1.25" CONDUITS STUBBING INTO THE ROOMS ACCESSIBLE CEILING. PROVIDE ONE DOUBLE-GANG FACEPLATE WITH TWO (2) DECORA PORTS. PROVIDE A DECORA STYLE INSERT THAT ACCEPTS THE STYLE OF DATA JACK BEING USED FOR STRUCTURED CABLING. WHEN THERE IS A LOCAL AV INPUT ASSOCIATED WITH THE DISPLAY, PROVIDE A DECORA INSERT THAT CONFORMS WITH THE SYSTEMS SPECIFIED. OTHERWISE PROVIDE A BLANK INSERT IN THE SECOND PORT.
'FSD-#'	INDICATES THE LOCATION OF A WALL MOUNTED, INTERACTIVE VIDEO DISPLAY. PROVIDE AND INSTALL AV CABLE FROM THE ASSOCIATED AV-1 AS PER SYSTEM SPECIFICATIONS. RACEWAY SHALL CONSIST OF A 2-GANG BOX AND TWO (2) 1.25" CONDUITS STUBBING INTO THE ROOMS ACCESSIBLE CEILING. PROVIDE ONE DOUBLE-GANG FACEPLATE WITH TWO (2) DECORA PORTS. PROVIDE A DECORA STYLE INSERT THAT ACCEPTS THE STYLE OF DATA JACK BEING USED FOR STRUCTURED CABLING. WHEN THERE IS A LOCAL AV INPUT ASSOCIATED WITH THE DISPLAY, PROVIDE A DECORA INSERT THAT CONFORMS WITH THE SYSTEMS SPECIFIED, OTHERWISE PROVIDE A BLANK INSERT IN THE SECOND PORT.
'TV#'	INDICATES THE LOCATION OF AN AUDIO/VIDEO CONTROL PLATE. RACEWAY SHALL CONSIST OF ONE (1) A BACK BOX WITH A 1" CONDUIT ROUTING INTO THE ACCESSIBLE CEILING SPACE WITHIN THE SAME ROOM. AV SYSTEM INSTALLER TO COORDINATE THE CONTROL BACK BOX SIZE REQUIREMENT WITH THE PROJECT'S ELECTRICAL CONTRACTOR.
'S'	LOCAL INSTRUCTIONAL SPACE PRESENTATION SPEAKER. REFERENCE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
'C#'	INDICATES THE LOCATION OF A STREAMING CAMERA. CONTRACTOR TO PROVIDE AND INSTALL TWO (2) CATEGORY 6 UTP NETWORK CABLE TO ALL LOCATIONS SHOWN ON THE ENTIRE PROJECT. REFERENCE SPECIFICATION FOR ADDITIONAL INFORMATION.
NOTES:	
A. IN THE EVENT THAT "F" IS NOT DEFINED IN THE OUTLET DESCRIPTION, THE DEVICE SHALL BE CONSIDERED A STANDALONE DEVICE, SERVING THE SYSTEM WITHIN THE SAME SPACE OR THE FOLLOWING SHALL APPLY: #- UNLESS SPECIFICALLY NOTED OTHERWISE, THE FOLLOWING SHALL APPLY TO EACH DEVICE SHOWN ON THE ENTIRE PROJECT: #- SHALL BE REPLACED WITH ALPHABETICAL CHARACTERS THAT SHALL INDICATE THE SPECIFIC VENUE THAT THE DEVICE IS ASSOCIATED WITH. #- SHALL BE REPLACED WITH A NUMERIC VALUE THAT SHALL IDENTIFY THE SPECIFIC DEVICE WITHIN THE SPECIFIC VENUE.	
B. THE AUDIO/VIDEO SYSTEM INTEGRATOR SHALL COORDINATE ALL BOX AND CONDUIT SIZE REQUIREMENTS PRIOR TO ROUGH-IN WITH THE PROJECTS ELECTRICAL CONTRACTOR.	
C. REFERENCE SCOPE MATRIX AND PROJECT SPECIFICATIONS FOR INSTRUCTIONS REGARDING THE PROVIDING AND INSTALLATION OF VIDEO DISPLAYS, PROJECTORS, SCREENS, MOUNTS, AND LIFTS.	

INTERCOM/CLOCK LEGEND	
	PROVIDE AND INSTALL A 2" TILE REPLACEMENT, CEILING MOUNTED, 25/70V INTERCOM SPEAKER. SPEAKER TO BE INSTALLED FLUSH WITH CEILING UNLESS NOTED OTHERWISE.
	PROVIDE AND INSTALL A 12" CEILING MOUNTED, 25/70V INTERCOM SPEAKER THAT IS TO BE FLUSH MOUNTED IN A SOLID CEILING ENVIRONMENT. SYSTEM INSTALLER TO PROVIDE BACK CANS TO PROJECTS ELECTRICAL CONTRACTOR FOR INSTALLATION. ON OBJECTS WITHOUT AN ELECTRICAL CONTRACTOR THE INSTALLER SHALL BE RESPONSIBLE FOR THE COMPLETE INSTALLATION INCLUDING BACK CANS AND ASSOCIATED RACEWAY.
	INTERIOR WALL MOUNTED, 25/70V INTERCOM SPEAKER INTERCOM SPEAKER. SPEAKER TO BE INSTALLED FLUSH WITH WALL UNLESS NOTED OTHERWISE. SYSTEM INSTALLER TO PROVIDE BACK CANS TO PROJECTS ELECTRICAL CONTRACTOR FOR INSTALLATION. ON PROJECTS WITHOUT AN ELECTRICAL CONTRACTOR THE INSTALLER SHALL BE RESPONSIBLE FOR THE COMPLETE INSTALLATION INCLUDING BACK CANS AND ASSOCIATED RACEWAY.
	EXTERIOR WALL MOUNTED INTERCOM PAGING HORN. PAGING HORN SHALL BE TAPPED AT 7 WATTS UNLESS NOTE OTHERWISE. SYSTEM INSTALLER TO PROVIDE BACK CANS TO PROJECTS ELECTRICAL CONTRACTOR FOR INSTALLATION. ON PROJECTS WITHOUT AN ELECTRICAL CONTRACTOR THE INSTALLER SHALL BE RESPONSIBLE FOR THE COMPLETE INSTALLATION INCLUDING BACK CANS AND ASSOCIATED RACEWAY. REFERENCE SHEET SPECIFICATIONS FOR MORE INFORMATION.
	PROVIDE AND INSTALL A WALL MOUNTED VOLUME CONTROL WITH EMERGENCY ANNOUNCEMENT PRIORITY OVERRIDE. VOLUME CONTROL SHALL BE INSTALLED WITH LEVEL ZERO ATTENUATING AT NO LESS THAN 10DB. DEVICE TO BE MOUNTED AT 48" AFF.
	PROVIDE AND INSTALL A WALL MOUNTED, INTERCOM CALL BUTTON. DEVICE TO BE MOUNTED AT 48" AFF.
	PROVIDE AND INSTALL AN IP ADMINISTRATIVE CALL STATION. DEVICE OUTLET TO BE INSTALLED IN THE WORKSTATION KNEE SPACE AND THE DEVICE SHALL RESIDE ON THE WORKSTATION SURFACE.
	INDICATES THE LOCATION OF A SINGLE FACE SECONDARY TIME CLOCK. REFERENCE SPECIFICATIONS FOR ADDITIONAL INFORMATION. PROVIDE CABLING AS REQUIRED FOR THE TYPE OF CLOCK BEING INSTALLED: - IP BASED CLOCKS - PROVIDE ONE (1) CATEGORY 6 CABLE PER FACE - 12V/24V CLOCK TO BE POWERED VIA A CLOCK POWER SUPPLY AND CONNECTED TO THE SPECIFIED MASTER CLOCK. - 120V CLOCK SHALL BE POWERED VIA 120V ELECTRICAL OUTLET AT THE DEVICE LOCATION AND CONNECTED TO THE SPECIFIED MASTER CLOCK.
	INDICATES THE LOCATION OF A DUAL FACE SECONDARY TIME CLOCK. REFERENCE SPECIFICATIONS FOR ADDITIONAL INFORMATION. PROVIDE CABLING AS REQUIRED FOR THE TYPE OF CLOCK BEING INSTALLED: - IP BASED CLOCKS - PROVIDE ONE (1) CATEGORY 6 CABLE PER FACE - 12V/24V CLOCK TO BE POWERED VIA A CLOCK POWER SUPPLY AND CONNECTED TO THE SPECIFIED MASTER CLOCK. - 120V CLOCK SHALL BE POWERED VIA 120V ELECTRICAL OUTLET AT THE DEVICE LOCATION AND CONNECTED TO THE SPECIFIED MASTER CLOCK.

ACCESS CONTROL LEGEND	
	WALL OR MULLION MOUNTED ACCESS CONTROL PROXIMITY CARD READER.
	DOOR MOUNTED ACCESS CONTROL PROXIMITY CARD READER THAT IS INTEGRATED INTO THE DOOR HARDWARE.
	DOOR RELEASE BUTTON
	DESIGNATES THE LOCATION OF THE ACCESS CONTROL SYSTEM, CONTROL PANEL. ELECTRICAL CONTRACTOR TO PROVIDE 120V POWER TO PANEL. PROVIDE NETWORK CABLE TO PANEL, AND COORDINATE WITH THE OWNERS TECHNOLOGY DEPARTMENT ON ACQUIRING AN IP ADDRESS.
	WALL OR MULLION MOUNTED, 2-WAY AUDIO/VIDEO INTERCOM DOOR STATION.
	DOOR MOUNTED, 2-WAY AUDIO/VIDEO INTERCOM DOOR STATION.
	2-WAY AUDIO/VIDEO INTERCOM MASTER STATION.
	ADA AUTO DOOR OPEN BUTTON. SHOWN FOR REFERENCE ONLY. BUTTON AND AUTO DOOR OPERATOR PROVIDED AND INSTALLED BY THE DOOR SYSTEM INSTALLER.
	DPDT MAGNETIC DOOR CONTACT/DOOR POSITION SENSOR. FLUSH MOUNTED IN DOOR FRAME, UNLESS NOTED OTHERWISE.
	LOCKDOWN BUTTON
NOTES:	
1. REFERENCE ACCESS CONTROL, SCHEDULE, DETAILS, AND DIVISION 28 SPECIFICATIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS	

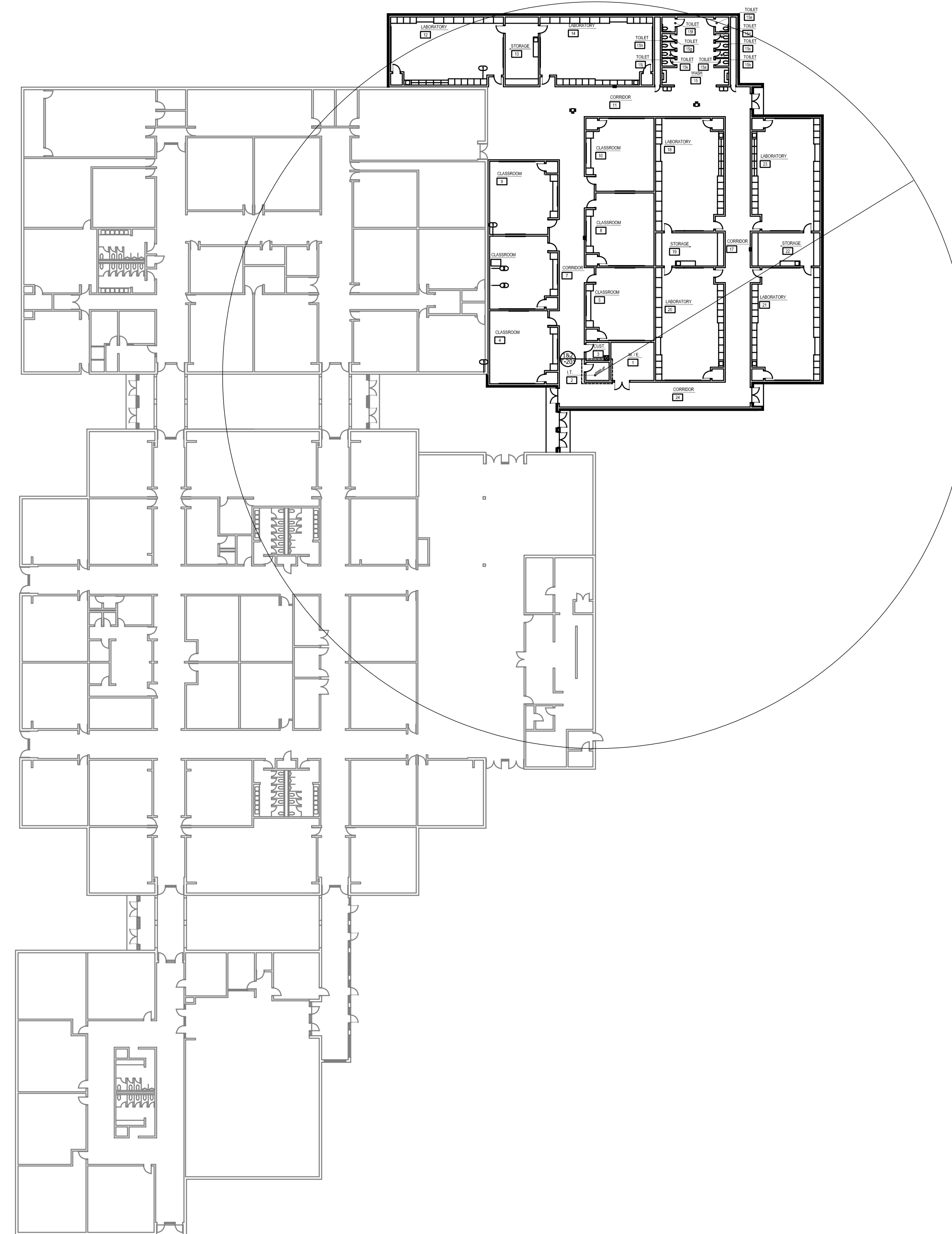
VIDEO SURVEILLANCE LEGEND	
	4-SENSOR CAMERA WITH 3-SENSOR PROVIDING A 270 DEGREE AREA OF VIEW AND 1-SENSOR PROVIDING COVERAGE DIRECTLY UNDERNEATH THE CAMERA LOCATION. # TO BE REPLACED WITH AN ALPHABETICAL TEXT DEPICTING THE CAMERA TYPE AS ASSOCIATED WITH THE VIDEO SURVEILLANCE CAMERA SCHEDULE.
	4-SENSOR CAMERA, 4-SENSORS TO PROVIDE A 360 DEGREE AREA OF VIEW # TO BE REPLACED WITH AN ALPHABETICAL TEXT DEPICTING THE CAMERA TYPE AS ASSOCIATED WITH THE VIDEO SURVEILLANCE CAMERA SCHEDULE.
	2-SENSOR CAMERA. EACH SENSOR SHALL BE POSITIONED TO PROVIDE COVERAGE IN THE DIRECTION SHOWN. # TO BE REPLACED WITH AN ALPHABETICAL TEXT DEPICTING THE CAMERA TYPE AS ASSOCIATED WITH THE VIDEO SURVEILLANCE CAMERA SCHEDULE.
	1-SENSOR CAMERA. SENSOR SHALL BE POSITIONED TO PROVIDE COVERAGE IN THE DIRECTION SHOWN. # TO BE REPLACED WITH AN ALPHABETICAL TEXT DEPICTING THE CAMERA TYPE AS ASSOCIATED WITH THE VIDEO SURVEILLANCE CAMERA SCHEDULE.
NOTES:	
1. REFERENCE VIDEO SURVEILLANCE SCHEDULE AND DIVISION 28 SPECIFICATIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS	

SECURITY GENERAL NOTES	
1.	THE SECURITY SYSTEM INSTALLERS SHALL BE RESPONSIBLE FOR CONNECTING ALL APPLICABLE SYSTEM EQUIPMENT TO THE OWNER'S NETWORK.
2.	THE SYSTEM INSTALLER SHALL PROPERLY SUPPORT ALL INSTALLED SYSTEM CABLING FROM AN APPROVED CABLE SUPPORT SYSTEM AS DETAILED IN SPECIFICATIONS. NO CABLING SHALL BE ROUTED AND TIED DIRECTLY TO BUILDING STEEL, CEILING GRID SUPPORT, CONDUIT, PIPING, OR DUCTWORK. THE CABLE SUPPORT SYSTEM SHALL BE DIRECTLY CONNECTED TO THE BUILDING'S STEEL JOIST. AT LOCATIONS WHERE THE BOTTOM OF THE JOIST IS MORE THAN 5' ABOVE THE CEILING, THE SYSTEM INSTALLER SHALL PROVIDE AND INSTALL THREADED ROD AND ALL REQUIRED MATERIALS TO CONNECT TO THE THREADED ROD TO THE BUILDING STEEL AND THE CABLE SUPPORT SYSTEM TO THE THREADED ROD. CABLE PATHWAY SHALL NOT BE HIGHER THAN 5' ABOVE THE CEILING AT ANY LOCATIONS.
3.	SECURITY CAMERA SYSTEM INSTALLER SHALL PROVIDE A CEILING MOUNTED INSTALLATION KIT RECOMMENDED BY THE MANUFACTURER OF THE CAMERA. EACH CEILING MOUNTED CAMERA KIT SHALL HAVE A SUPPORT WIRE ATTACHED TO THE BUILDING'S STRUCTURE TO PREVENT THE CAMERA FROM DROPPING TO THE FLOOR AT ANY TIME. AT NO POINT SHALL THE WEIGHT OF THE CEILING MOUNTED SECURITY CAMERA BE SUPPORTED BY THE CEILING GRID SYSTEM OR CEILING TILES. ALL CEILING MOUNTED CAMERAS SHALL BE FLUSH MOUNTED.
4.	ALL EXTERIOR AND WALL MOUNTED CAMERA LOCATIONS AND MOUNTING HEIGHTS MUST BE COORDINATED WITH THE OWNER PRIOR TO ROUGH-IN. COORDINATION MEETINGS SHALL BE SCHEDULED THROUGH THE ARCHITECT'S PROJECT MANAGER.
5.	PROVIDE AND INSTALL MAGNETIC DOOR CONTACT AT ALL ROOF HATCHES ON THE ENTIRE PROJECT. CONTACTS TO BE CONNECTED TO THE BUILDING'S INTRUSION DETECTION SYSTEM.
COORDINATE MONITORING REQUIREMENTS WITH THE INSTALLER FOR EACH SYSTEM AND THE OWNER. PROGRAM SYSTEM TO ALERT THE OWNER DESIGNATED PERSONNEL UPON A MONITORED ALARM EVENT	

LOCAL SOUND SYSTEM LEGEND	
	VENUE SPECIFIC LOCAL SOUND SYSTEM SPEAKER. # TO BE REPLACED WITH NUMERIC VALUE INDICATING THE POSITION NUMBER OF THE VENUE SPECIFIC DEVICE.
	VENUE SPECIFIC LOCAL SOUND SYSTEM CONTROL PLATE. # TO BE REPLACED WITH NUMERIC VALUE INDICATING THE POSITION NUMBER OF THE VENUE SPECIFIC DEVICE.
	VENUE SPECIFIC LOCAL SOUND SYSTEM MICROPHONE INPUT. # TO BE REPLACED WITH NUMERIC VALUE INDICATING THE POSITION NUMBER OF THE VENUE SPECIFIC DEVICE.
	VENUE SPECIFIC LOCAL SOUND SYSTEM 3.5MM AUXILIARY INPUT AND BLUETOOTH MIXER. # TO BE REPLACED WITH ALPHA/NUMERIC TEXT INDICATING THE ASSOCIATED VENUE AND MIXER NUMBER. CONTRACTOR TO PROVIDE AND INSTALL A RECESSED ENCLOSURE WITH FLUSH MOUNTED, LOCKABLE DOOR. DEVICE TO BE MOUNTED AT + 42" AFF.
	INDICATED THE LOCATION OF THE VENUE SPECIFIC LOCAL SOUND SYSTEM HEAD END RACK, AMPLIFIERS, DSPS, AND ALL OTHER HEAD END EQUIPMENT SHALL BE INSTALLED IN THIS RACK/CABINET.
	WIRELESS MICROPHONE ANTENNA. REFERENCE SPECIFICATIONS FOR MORE INFORMATION.
	ASSISTED LISTENING ANTENNA. REFERENCE SPECIFICATIONS FOR MORE INFORMATION.
NOTES:	
1. REFERENCE SPECIFICATIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS	

TECHNOLOGY LEGEND	
'#F'	DESIGNATES THAT THE ASSOCIATED TECHNOLOGY OUTLET IS INTENDED FOR THE USE OF A NETWORK CONNECTION. THE '#' SHALL BE REPLACED WITH NUMERIC TEXT THAT IDENTIFIES THE TOTAL NUMBER OF CATEGORY 6 NETWORK CABLES THAT ARE TO BE INSTALLED AT THE TECHNOLOGY OUTLET LOCATION. CONTRACTOR TO PROVIDE AND INSTALL CATEGORY 6 NETWORK CABLES, CATEGORY 6 CONNECTORS, STAINLESS STEEL FACEPLATES WITH IDENTIFICATION WINDOWS, LABELS, BLANK INSERTS, AND ANY OTHER MATERIALS REQUIRED TO FURNISH A COMPLETE FUNCTIONAL AND TESTED OUTLET LOCATION. ALL FACEPLATES PROVIDED SHALL CONTAIN A MINIMUM 4-PORTS AND SHALL BE APPROPRIATELY SIZED TO ACCOMMODATE THE NUMBER OF CIRCUITS BEING INSTALLED AT THIS TECHNOLOGY OUTLET LOCATION. MAXIMUM OF SIX(6) DATA CABLES PER OUTLET.
'W'	DESIGNATES THAT THE ASSOCIATED TECHNOLOGY OUTLET IS INTENDED FOR THE USE OF A WALL MOUNTED TELEPHONE CONNECTION. CONTRACTOR TO PROVIDE AND INSTALL (1) CATEGORY 6 NETWORK CABLE, (1) CATEGORY 6 CONNECTOR, STAINLESS STEEL WALL TELEPHONE FACEPLATE, LABELS, AND ANY OTHER MATERIALS REQUIRED TO FURNISH A COMPLETE FUNCTIONAL AND TESTED CIRCUIT AT EACH LOCATION SHOWN. CONTRACTOR SHALL MOUNT THIS OUTLET AT ADA HEIGHT (MATCH LIGHT SWITCH HEIGHT) AND COORDINATE ALL FINAL LOCATIONS WITH OTHER TRADES ON THE PROJECT TO VERIFY THAT THE LOCATION OF THE OUTLET MAINTAINS 8" OF CLEARANCE ON ALL FOUR SIDES OF THE BACK BOX. OUTLETS SHALL REMAIN CLEAR OF ROOM DOORS, CABINET DOORS, APPLIANCE DOORS, AND SLIDING DRAWERS.
'AP'	DESIGNATES THAT THE ASSOCIATED TECHNOLOGY OUTLET IS INTENDED FOR THE USE OF A WIRELESS ACCESS POINT CONNECTION. CONTRACTOR TO PROVIDE AND INSTALL (2)CATEGORY 6 NETWORK CABLE, (2) CATEGORY 6 CONNECTOR, (2) CAT 6 BISCUIT JACK FACEPLATE WITH IDENTIFICATION WINDOWS, LABELS, AND ANY OTHER MATERIALS REQUIRED TO FURNISH A COMPLETE FUNCTIONAL AND TESTED CIRCUIT AT EACH LOCATION SHOWN. REFERENCE SPECIFICATIONS FOR PATCH CABLE REQUIREMENTS.
'FF'	INDICATES THAT THE ASSOCIATED TECHNOLOGY OUTLET IS INTENDED FOR FURNITURE FEED. ALLOWING CABLING TO ROUTE INTO A MODULAR FURNITURE SYSTEM. CONDUIT SHALL BE SIZE TO ACCOMMODATE THE NUMBER CABLE ROUTING INTO TO THE FURNITURE SYSTEM.
'#V'	VOICE OUTLET WITH CABLE AND TERMINATION AS INDICATED.
NOTES:	
REFERENCE TECHNOLOGY GENERAL NOTES, PLAN KEYED NOTES, AND ALL OTHER SYSTEM LEGENDS/NOTES. THE STRUCTURED CABLING SYSTEM CONTRACTOR SHALL PROVIDE AND INSTALL CATEGORY 6/6A CABLE TO ALL SYSTEMS' EQUIPMENT REQUIRING NETWORK CONNECTIVITY.	

RACEWAY LEGEND	
	INDICATES THE LOCATION OF A FLOOR MOUNTED BOX AND RACEWAY FOR LOW VOLTAGE. CONTRACTOR TO PROVIDE AND INSTALL A FLOOR BOX. EACH FLOOR BOX SHALL HAVE ONE (1) SINGLE GANG PORT WITH ONE (1) 1" CONDUIT/PER EVERY SIX(6) CATEGORY 6 OR FOUR(4) CATEGORY 6A CABLES) AND ONE (1) DOUBLE GANG PORT WITH ONE (1) 1/2" CONDUIT UNLESS NOTED OTHERWISE. ALL CONDUITS SHALL ROUTE FROM THE FLOOR BOX, DIRECTLY TO THE WALL INDICATED AND STUB-UP INTO THE NEAREST ACCESSIBLE PLENUM CEILING.
	INDICATES THE LOCATION OF A CEILING MOUNTED OUTLET. CONTRACTOR SHALL MOUNT THIS OUTLET AT +12" ABOVE THE CEILING AND COORDINATE ALL FINAL LOCATIONS WITH OTHER TRADES ON THE PROJECT TO VERIFY THAT THE LOCATION OF THE OUTLET MAINTAINS 12" OF CLEARANCE FROM THE FRONT OF THE FACEPLATE FOR OWNER ACCESS.



GENERAL NOTES

1. FIRE ALARM: CONNECT NEW FIRE ALARM DEVICES TO EXISTING SILENT KNIGHT FIRE ALARM SYSTEM. SUPPLY ALL NAC PANELS, POWER SUPPLIES ETC NEEDED TO MAKE A COMPLETE AND CODE COMPLIANT SYSTEM.
2. SECURITY ALARM: CONNECT NEW SECURITY DEVICES TO EXISTING ZONE EXPANDER AND OWNER SUPPLY LOCATED IN STORAGE CLOSET NEXT TO ROOM 101.
3. INTERCOM: CONNECT NEW INTERCOM DEVICES TO EXISTING TELECOR SYSTEM. INTERCOM WIRE SHALL BE SHIELDED.
4. CLOCK: CONNECT NEW CLOCK DEVICES TO EXISTING TELECOR SYSTEM. PROVIDE TELECOR CLOCK DRIVER IF NEEDED.
5. DATA: CONNECT NEW DATA DROPS TO NEW IDF. CONNECT NEW IDF TO EXISTING MDF LOCATED IN THE COUNSELING CENTER CLOSET VIA FIBER AND CAT 6. SEE NETWORK SPECIFICATIONS FOR FIBER AND CAT 6 INFO.
6. CAMERA: CONNECT NEW CAMERA DROPS TO NEW IDF. EXISTING SYSTEM IS ANIGLON MATCH PER SPECIFICATIONS.
7. ACCESS CONTROL: CONNECT NEW ACCESS CONTROL DEVICES TO NEW KEYSKAN CONTROLLER. PROVIDE CONTROLLER, READERS, STRIKES, ETC TO MAKE A COMPLETE AND OPERABLE SYSTEM.

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GENERAL NOTES	
A.	COORDINATE ALL FINAL MOUNTING HEIGHTS, FOR WALL MOUNTED DEVICES, PRIOR TO ROUGH-IN. COORDINATE WITH ARCHITECT, OWNER AND ENGINEER.
B.	COORDINATE ALL CEILING DEVICE LOCATIONS WITH ARCHITECTURAL DRAWINGS AND INTERIOR DESIGN CONSULTANT (IF APPLICABLE) PRIOR TO ROUGH-IN.
C.	REFERENCE TECHNOLOGY PLANS, OVERALL PLANS, NOTES & LEGENDS, ELECTRICAL PLAN AND THEATRICAL PLANS FOR ADDITIONAL INFORMATION AND DEVICE/OUTLET LOCATIONS.
D.	CONTRACTOR TO COORDINATE ALL DROP LOCATIONS WITH FURNITURE. COORDINATE WITH ARCHITECT AND OWNER FOR MORE INFORMATION.

KEYED NOTES	
1.	REMOVE EXISTING CAMERA AND RETURN TO MPS TECHNOLOGY.
2.	REMOVE EXISTING BELL.
3.	REMOVE EXISTING INTERCOM PAGING HORN AND RETURN TO OWNER.

FIRE ALARM	
A.	FIRE ALARM SYSTEM IS A PERFORMANCE BASED. CONTRACTOR TO REFERENCE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
B.	A LICENSED FIRE ALARM PLANNING SUPERINTENDENT CERTIFIED TO A MINIMUM LEVEL 3, IN THE SUBFIELD OF FIRE ALARM SYSTEMS THROUGH THE NATIONAL INSTITUTE FOR CERTIFICATION IN ENGINEERING TECHNOLOGIES (NICET), SHALL PROVIDE PLANS AND CALCULATIONS FOR A MANUAL AND AUTOMATIC FIRE DETECTION AND ALARM SYSTEM TO COMPLY WITH THE BUILDING SPACE LAYOUT, BUILDING OCCUPANCY, CURRENT NFPA 72, LOCAL AND STATE CODE REQUIREMENTS, AND THE FIRE ALARM AND DETECTION SYSTEM SPECIFICATIONS.

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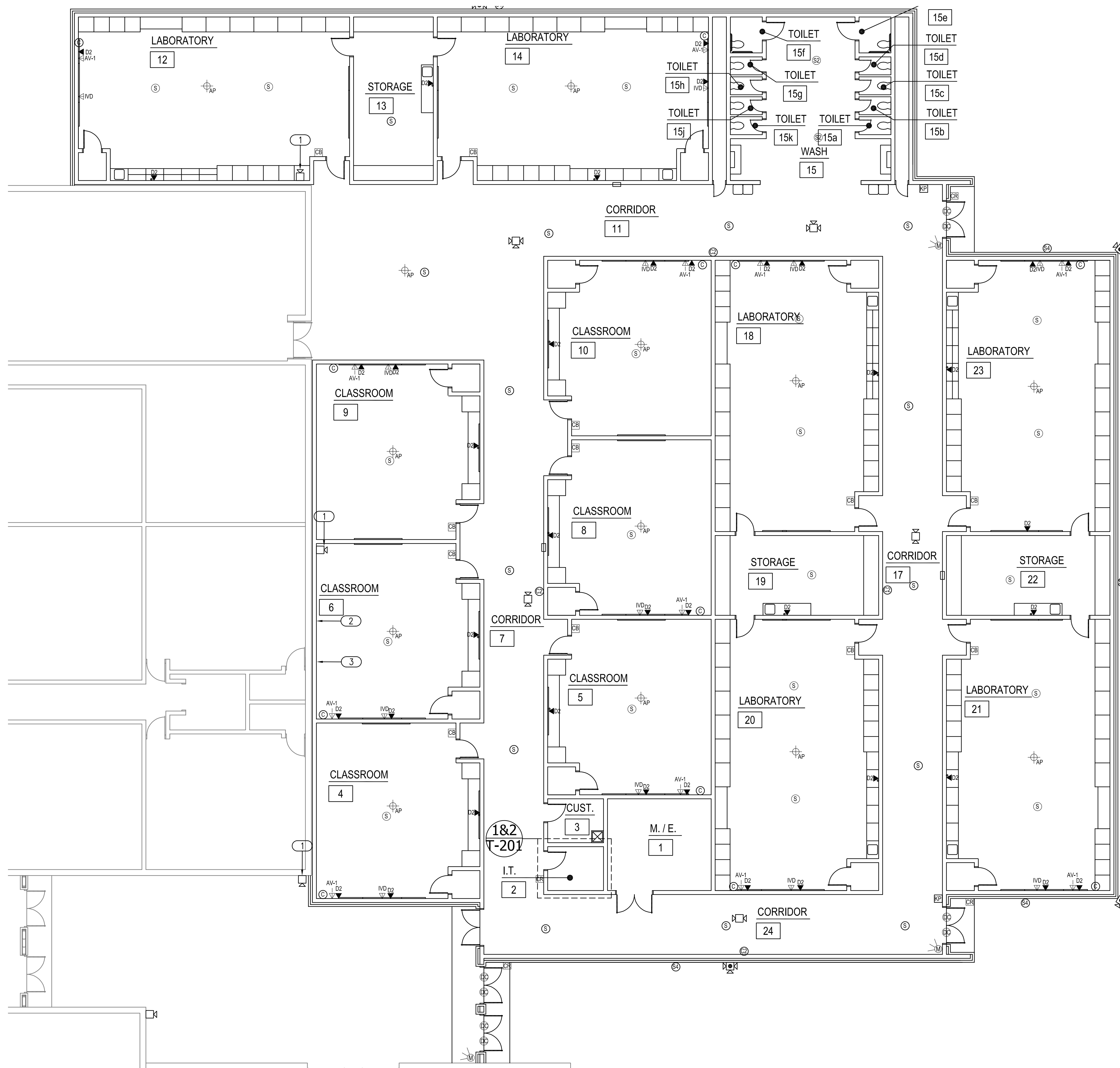
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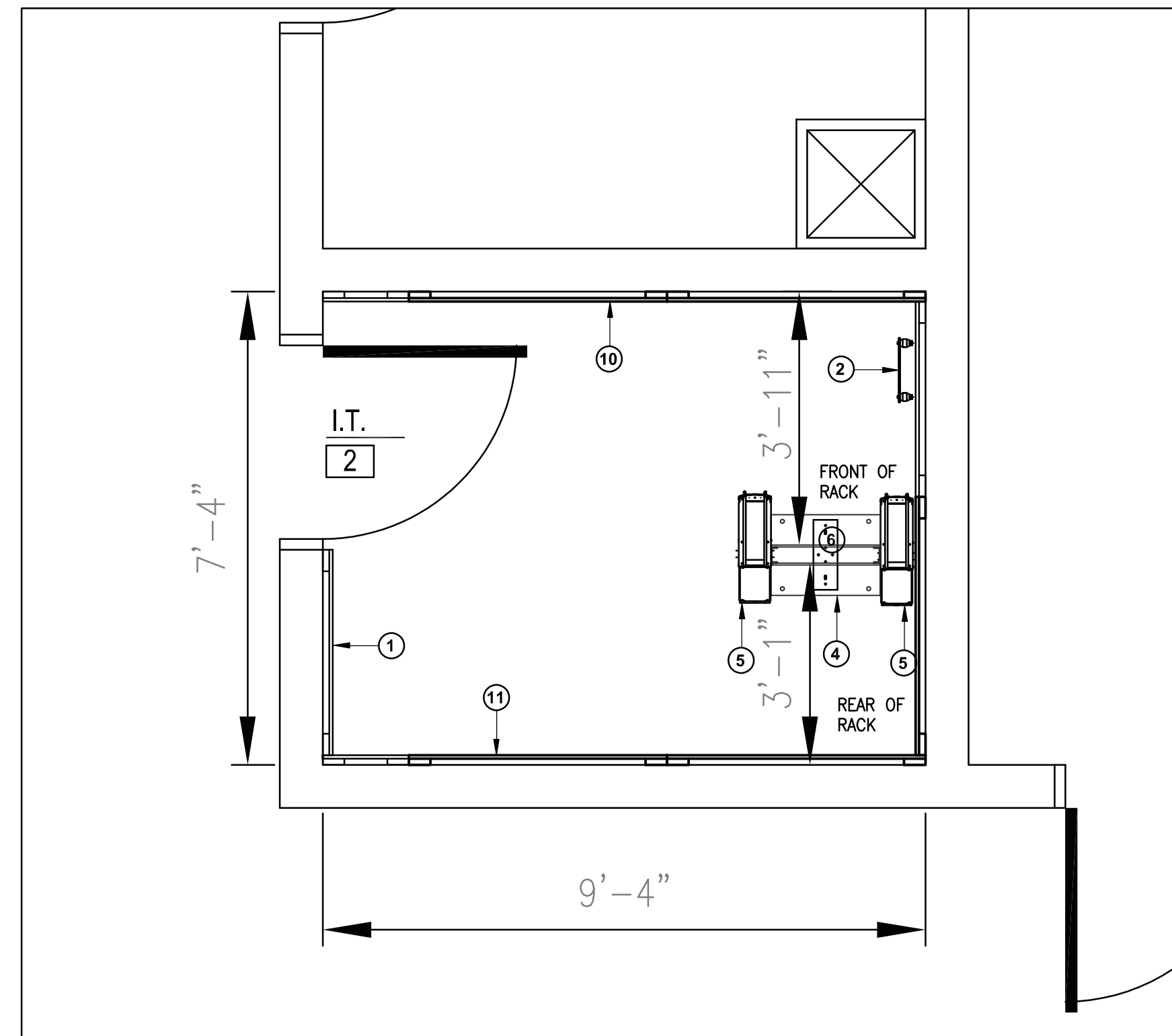
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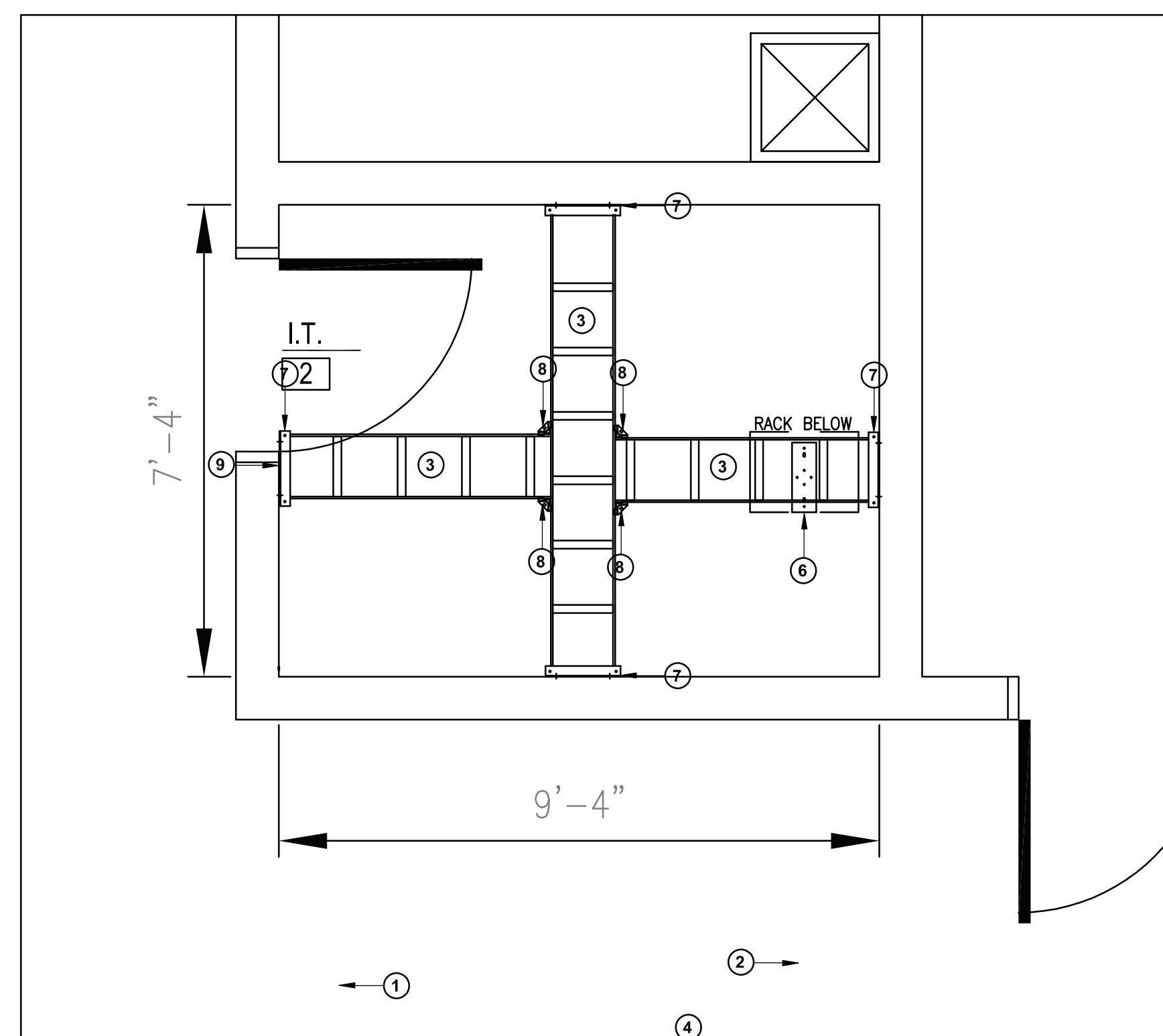


1 TECHNOLOGY PLAN
1/8" = 1'-0"





1 TECHNOLOGY ENLARGED PLAN
1/2" = 1'-0"



2 TECHNOLOGY ENLARGED CEILING PLAN
1/2" = 1'-0"



TECH ENLARGED PLAN GEN NOTES

- A. ALL RACK LOCATIONS SHALL BE COORDINATED WITH THE PROJECTS TECHNOLOGY CONSULTANT AND OWNER PRIOR TO INSTALLATION. NO RACKS AND/OR ASSOCIATED CABLE TRAY SYSTEM SHALL BE PERMANENTLY INSTALLED PRIOR TO DOCUMENTED ACCEPTANCE.
- B. PATCH PANEL QUANTITY SHALL BE DETERMINED BY STATION CABLE DROP COUNTS SHOWN ON TECHNOLOGY PLANS AND THE ASSOCIATED PROJECT MATRIX. ENSURE PATCH PANEL QUANTITY IS SUFFICIENT TO SUPPORT THE NUMBER OF PORTS REQUIRED BY TECHNOLOGY PLANS PLUS AN ADDITIONAL 25% FOR FUTURE GROWTH.
- C. CONTRACTOR SHALL NOT MOUNT EXCEED MORE THAN A 50% RACK FILL RATIO ON ANY RACK.
- D. REFERENCE SPECIFICATIONS FOR MATERIALS AND METHODS
- E. ALL RACKS, LADDER TRAYS, LIGHTNING PROTECTION ENCLOSURES AND ANY OTHER DEVICES, PART OF THE STRUCTURED CABLING SYSTEM, SHALL BE GROUNDED TO A GROUND BUS BAR LOCATED IN THE TELECOMMUNICATIONS ROOM WITH A #6AWG GROUND CABLE. DAISY CHAINING WILL NOT BE ACCEPTED. ALL ITEMS SHALL HAVE A DEDICATED GROUND CABLE TO BUS BAR. GROUND CABLE SHALL BE GREEN IN COLOR.

TECHNOLOGY ENLARGED PLAN KEYED NOTES

1. INDICATES THE LOCATION OF A 8" TALL, 3/4" FIRE RATED PLYWOOD CONTRACTOR TO PROVIDE AND INSTALL PLYWOOD AND ALL REQUIRED MOUNTING HARDWARE. PLYWOOD SHALL BE PAINTED WHITE WITH FIRE RATED PAINT. TYPICAL FOR ALL SHOWN ON DRAWING.
2. INDICATES THE LOCATION OF A NEW WALL MOUNTED TELECOMMUNICATION GROUND BUS BAR (TGGB). CABLING CONTRACTOR TO PROVIDE BUS BAR AND ALL REQUIRED MATERIAL TO MOUNT AT THE LOCATION SHOWN. TGGB TO BE MOUNTED AT +93" A.F.F.
3. PROVIDE AND INSTALL A 12" WIDE, UNIVERSAL LADDER TRAY AND ALL REQUIRED MOUNTING HARDWARE. LADDER TRAY SHALL BE BLACK IN COLOR. TYPICAL FOR ALL SHOWN ON ENTIRE PROJECT.
4. PROVIDE AND INSTALL ONE (1) 2-POST, FLOOR MOUNTED, 7" RELAY RACK (BLACK IN COLOR). PROVIDE BONDING WASHERS, BOLTS, AND NUTS AT ALL MECHANICALLY CONNECTED LOCATIONS OF THE RACK TO ENSURE THAT ALL PIECES OF THE RACK ARE COMPLETELY BONDED. SCRAPING PAINT FROM RACKS TO MAKE A BOND WILL NOT BE ACCEPTED. ALL RACK MOUNTED COMPONENTS SHALL BE MOUNTED WITH BONDING SCREWS AND THE CONTRACTOR SHALL PROVIDE THE OWNER WITH (50) ADDITIONAL BONDING SCREWS FOR THE INSTALLATION OF OWNER EQUIPMENT. NO DAISY CHAINING GROUNDS FROM RACK TO CABLE TRAY OR TO OTHER RACKS WILL BE ACCEPTED. ALL GROUNDS SHALL BE HOME RUN TO THE TELECOMMUNICATIONS GROUND BUS BAR (TGGB). TYPICAL FOR ALL SHOWN ON THE ENTIRE PROJECT.
5. PROVIDE AND INSTALL ONE (1) 7"x6", FRONT AND REAR MANAGED, VERTICAL CABLE MANAGER (BLACK IN COLOR). CABLE MANAGERS SHALL BE INSTALLED ON EACH END OF THE RACK SYSTEMS AND BETWEEN EACH RACK. CABLE MANAGERS SHALL HAVE A SINGLE, SOLID, FULL HEIGHT HINGED DOOR IN THE FRONT AND WIDE SPACED CABLE RINGS WITH SPIN-OPEN LATCHES IN THE REAR. TYPICAL FOR ALL SHOWN IN THE ENTIRE PROJECT.
6. PROVIDE AND INSTALL RACK-TO-RUNWAY MOUNTING PLATE FOR ALL LOCATIONS WHEN ASSOCIATED WITH A 2-POST OR 4-POST BACK RACK. MOUNTING PLATE SHALL BE BLACK IN COLOR. PROVIDE (1) 6" LADDER TRAY ELEVATION KIT (BLACK IN COLOR) AT EACH RACK-TO-RUNWAY MOUNTING PLATE LOCATION. TYPICAL FOR ALL SHOWN ON THE ENTIRE PROJECT.
7. INDICATES THE LOCATION OF A 12" LADDER TRAY WALL ANGLE SUPPORT BRACKET, BLACK IN COLOR. CONTRACTOR TO PROVIDE AND INSTALL WALL ANGLE SUPPORT BRACKET AND ALL REQUIRED MOUNTING HARDWARE AT EACH LOCATION WHERE LADDER TRAY TERMINATES INTO A VERTICAL WALL SECTION. TYPICAL FOR ALL SHOWN.
8. PROVIDE AND INSTALL A LADDER JUNCTION SPLICE KIT, BLACK IN COLOR. PROVIDE ONE (1) KIT AT EACH LADDER TRAY JUNCTION SPLICE LOCATION ON THE ENTIRE PROJECT.
9. PROVIDE AND INSTALL A MINIMUM OF THREE (3) STI EZPATH SERIES 44+ THRU-WALL PENETRATION SLEEVES WITH MULTI-GANG WALLPLATE BRACKET SYSTEM AT INDICATED LOCATION. PROVIDE ADDITIONAL AS REQUIRED TO MAINTAIN A MAXIMUM OF 40% FILL RATIO, PLUS ONE (1) ADDITIONAL FOR SPARE.
10. INDICATED APPROXIMATE LOCATION OF FIRE ALARM POWER SUPPLIES
11. APPROXIMATE LOCATION FOR ACCESS CONTROL PANEL.

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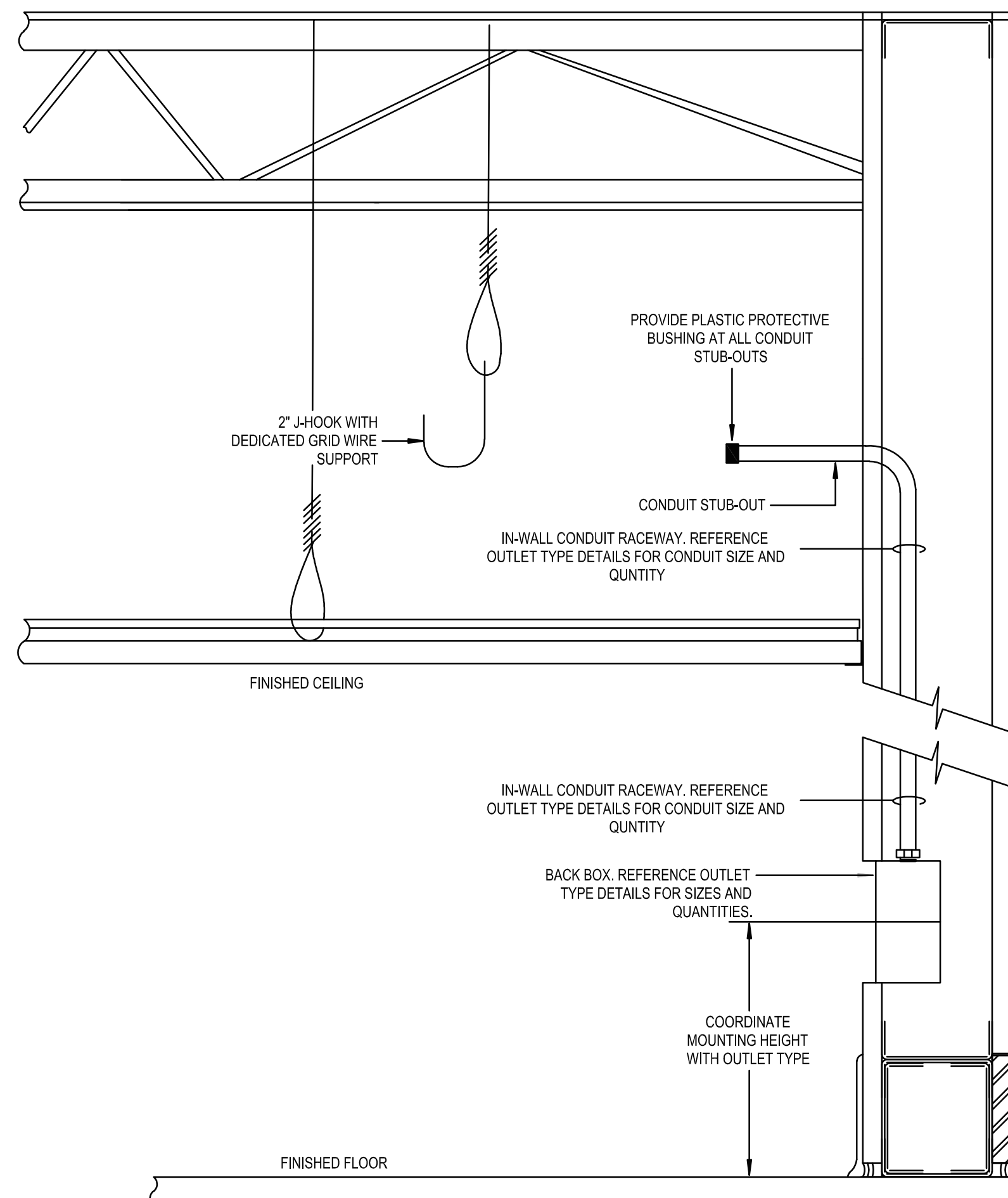
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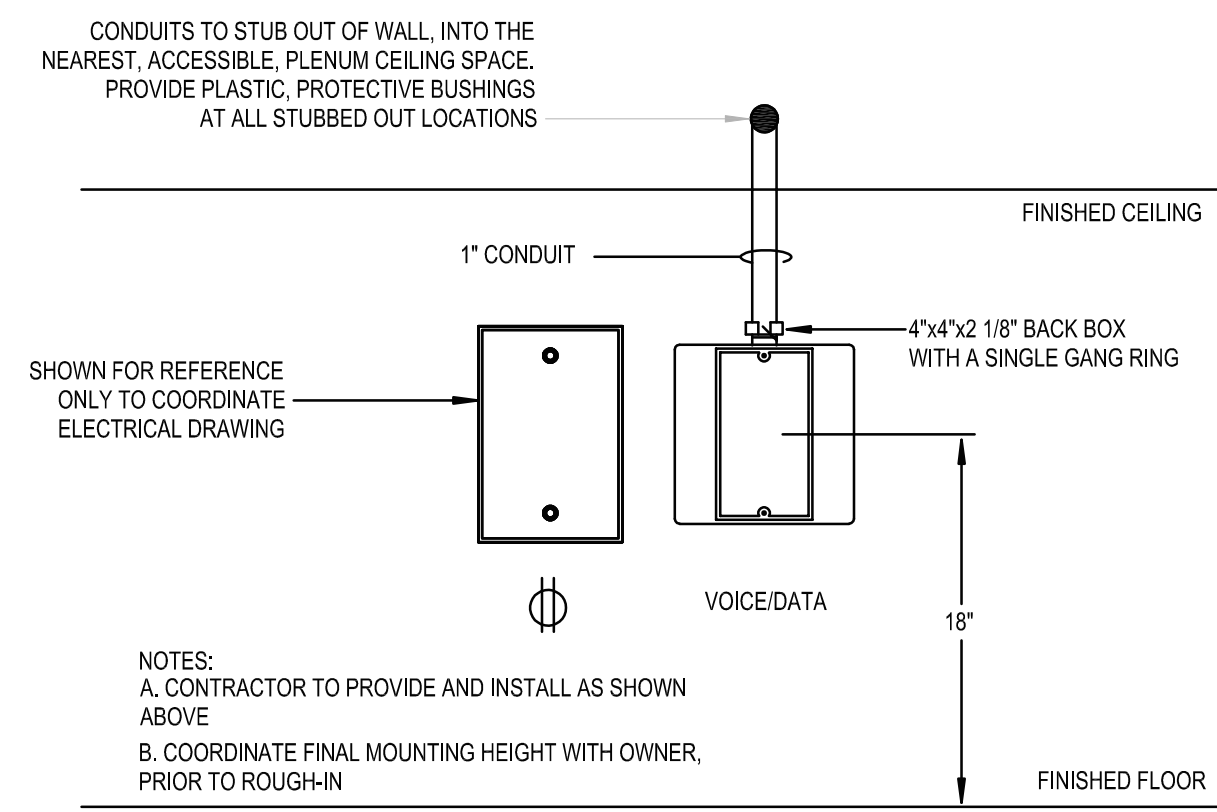
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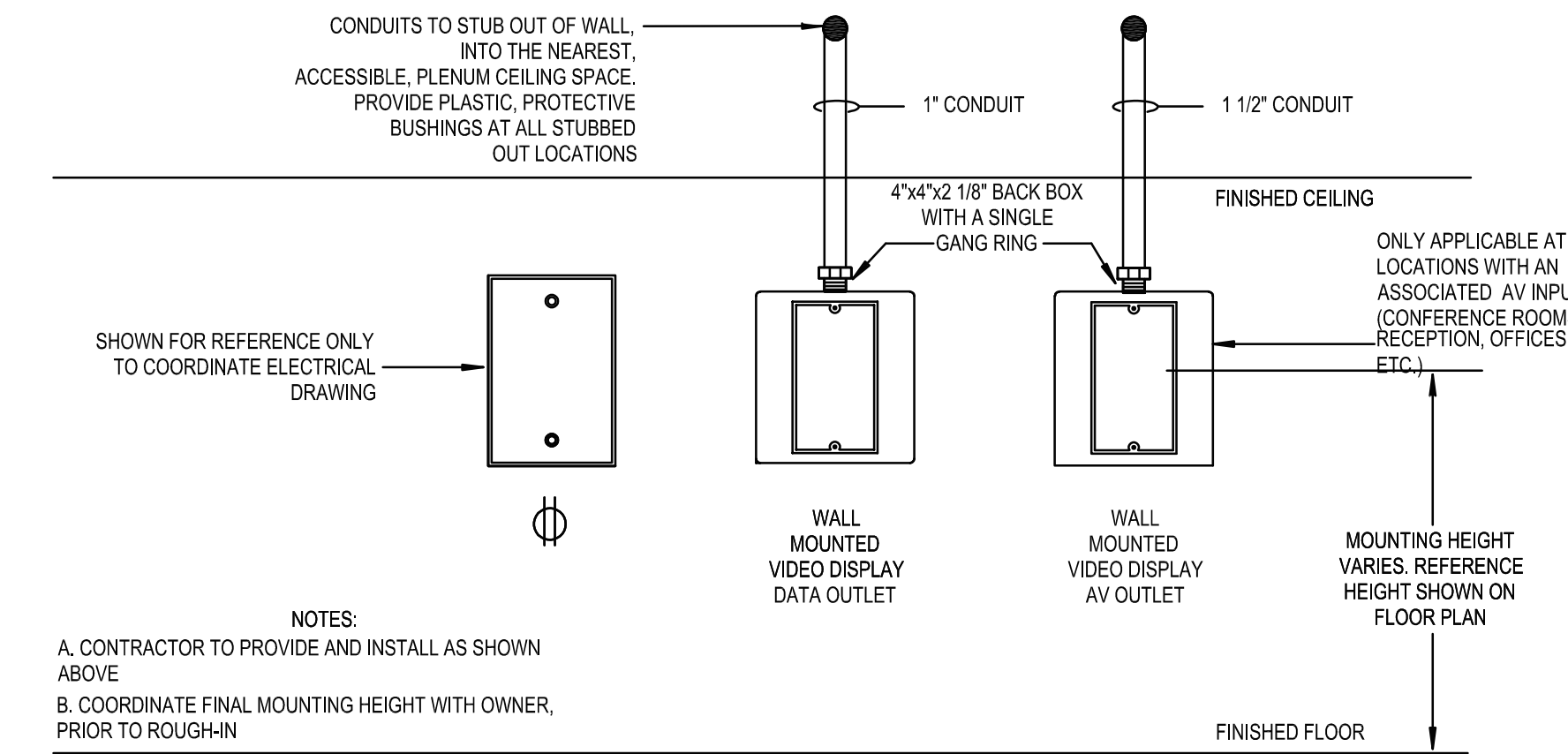
01 LOW VOLTAGE ELEVATION - IN-WALL RACEWAY

NOT TO SCALE



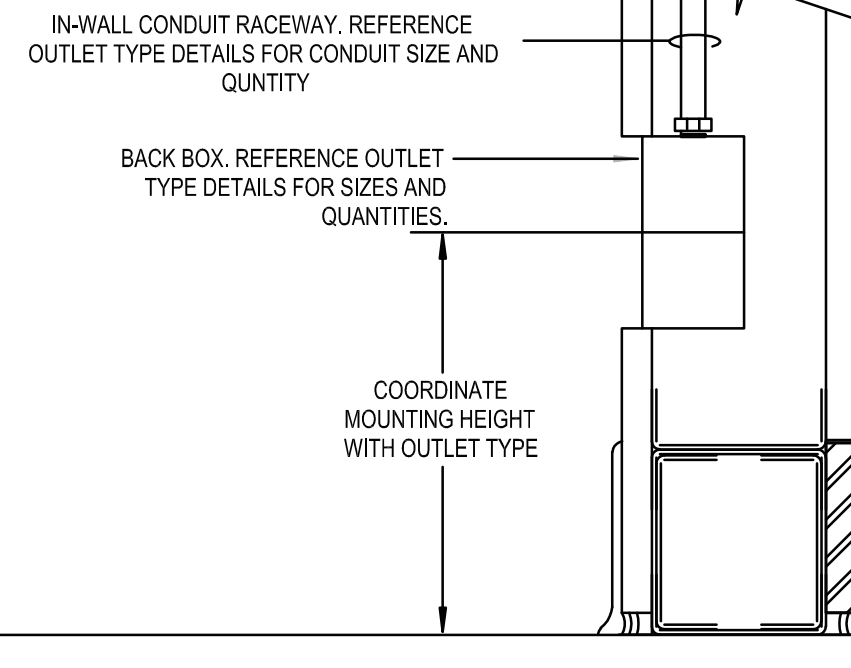
02 RACEWAY DETAIL - TYPICAL VOICE/DATA OUTLET

NOT TO SCALE



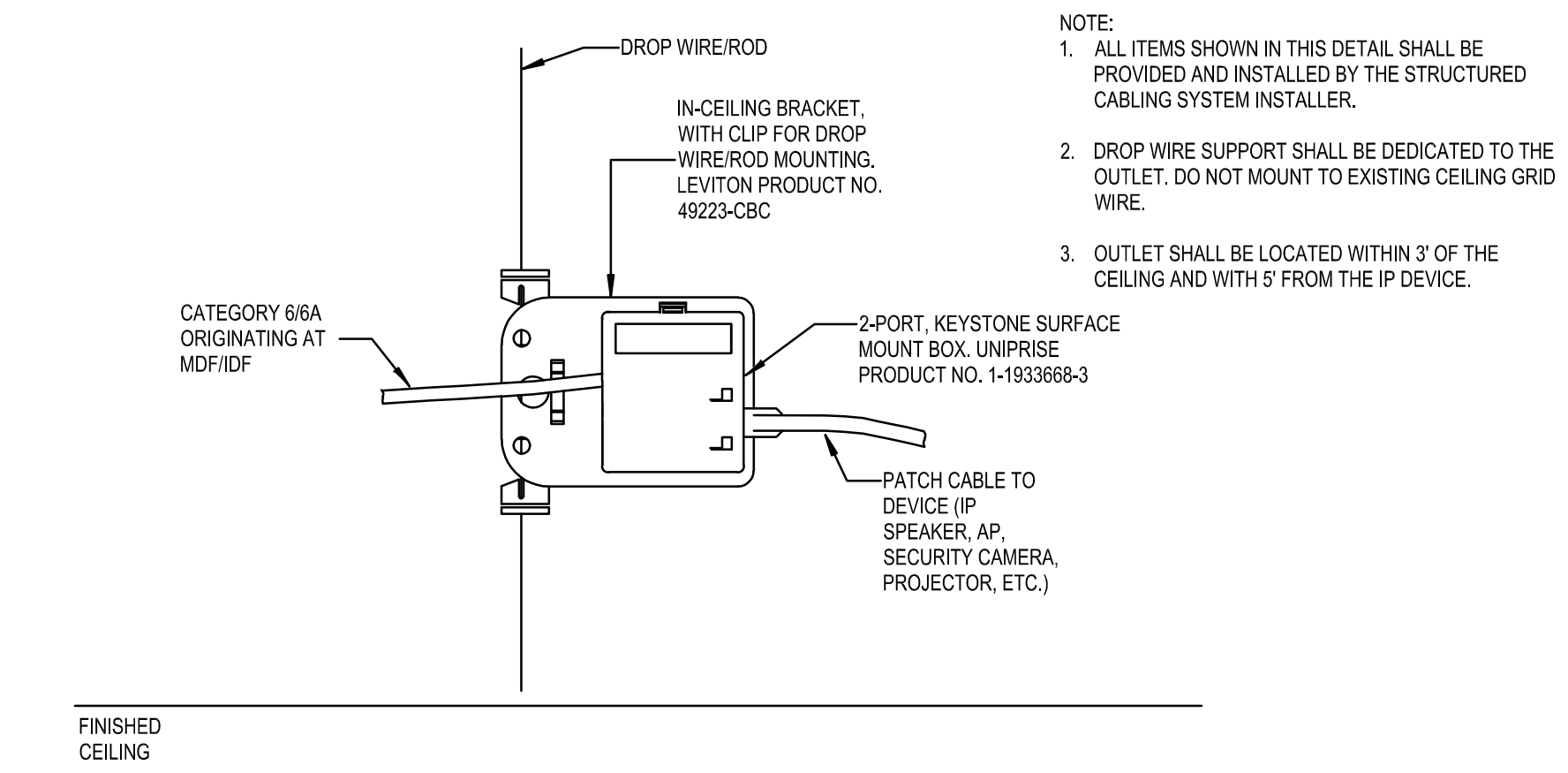
03 RACEWAY DETAIL - WALL MOUNTED DISPLAY

NOT TO SCALE



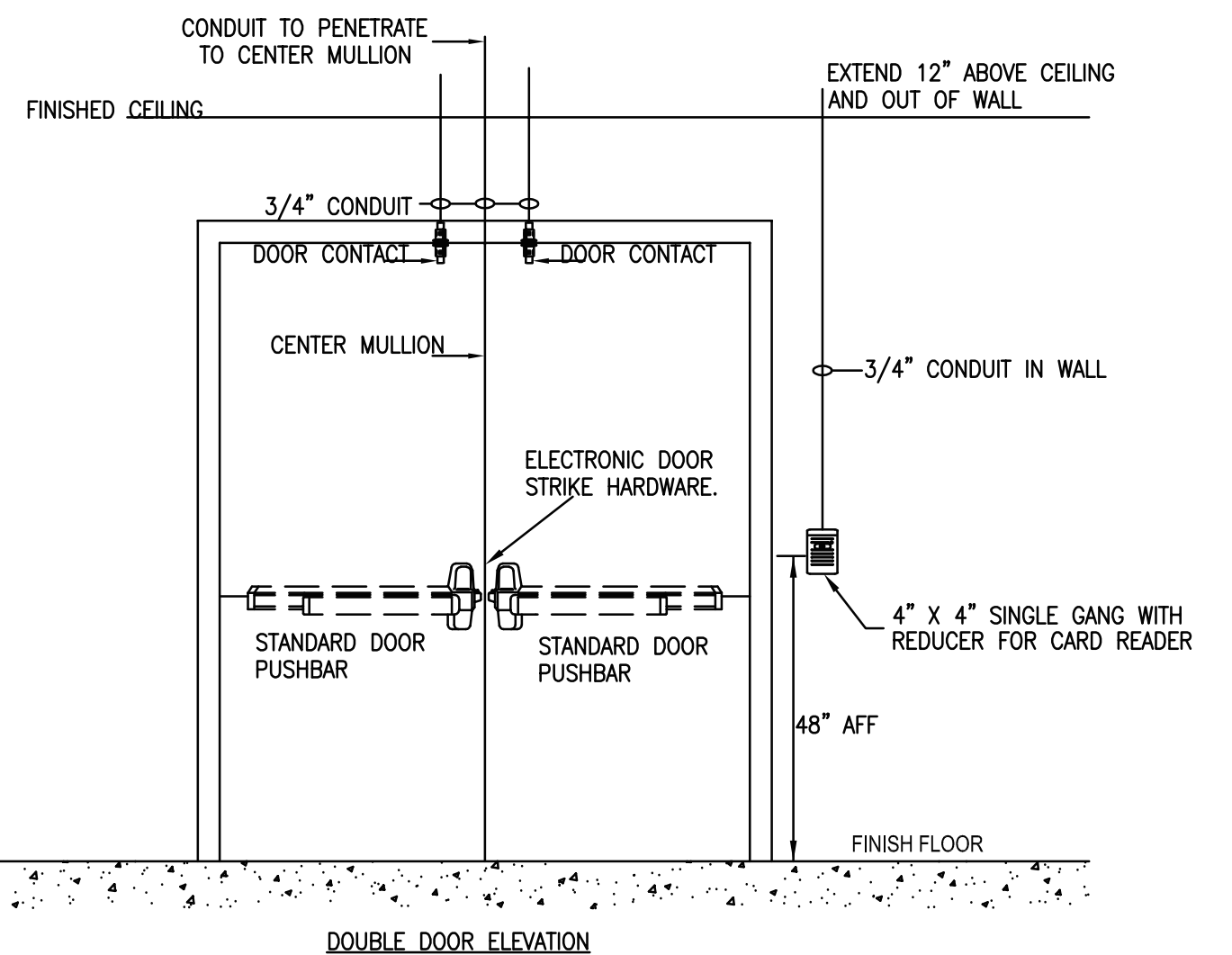
04 SECURITY CONDUIT DOOR JAMB HEADER

NOT TO SCALE

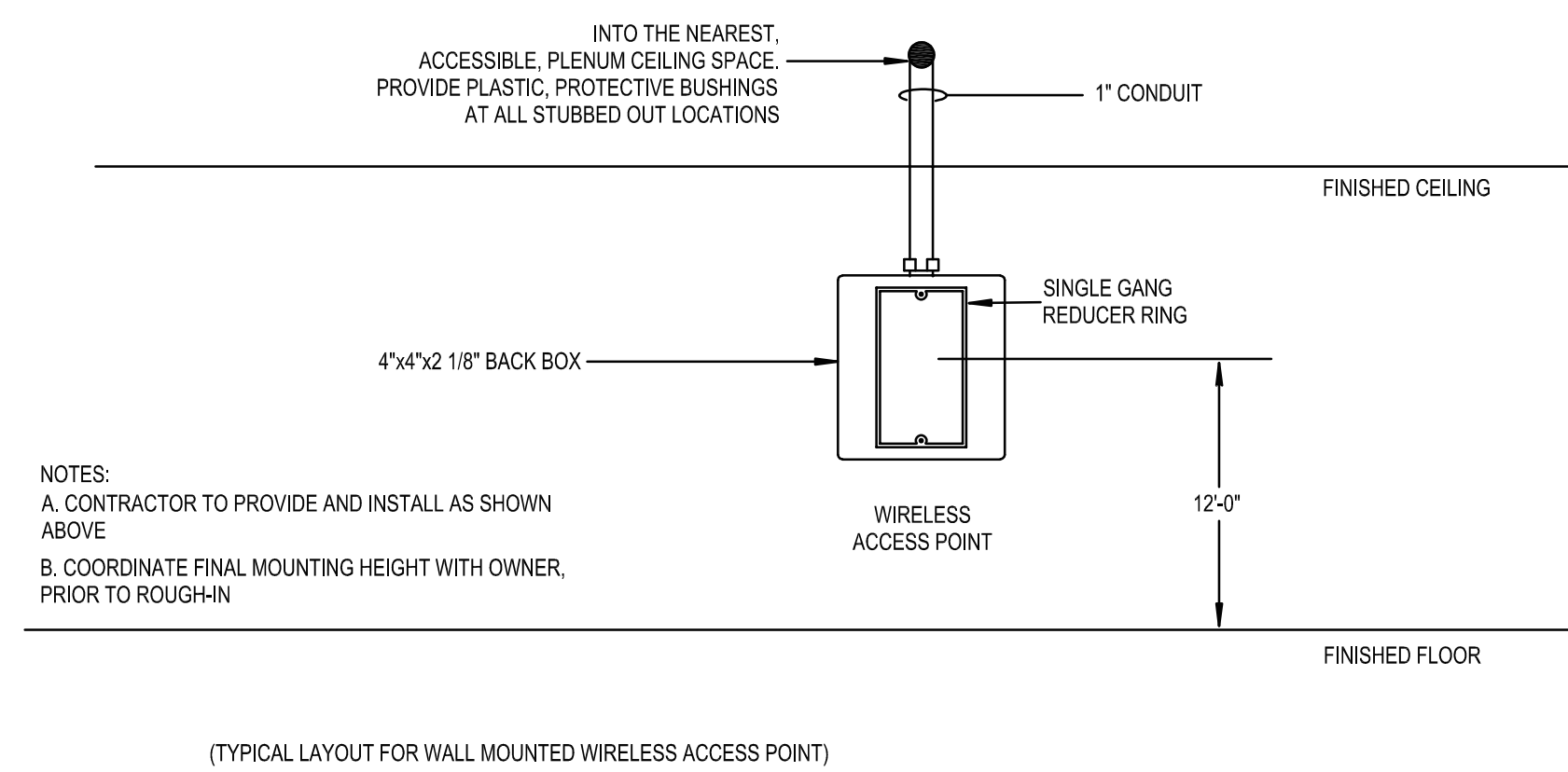


05 ABOVE CEILING STAND ALONE OUTLET

NOT TO SCALE



06 DOUBLE DOOR SECURITY & ACCESS CONTROL

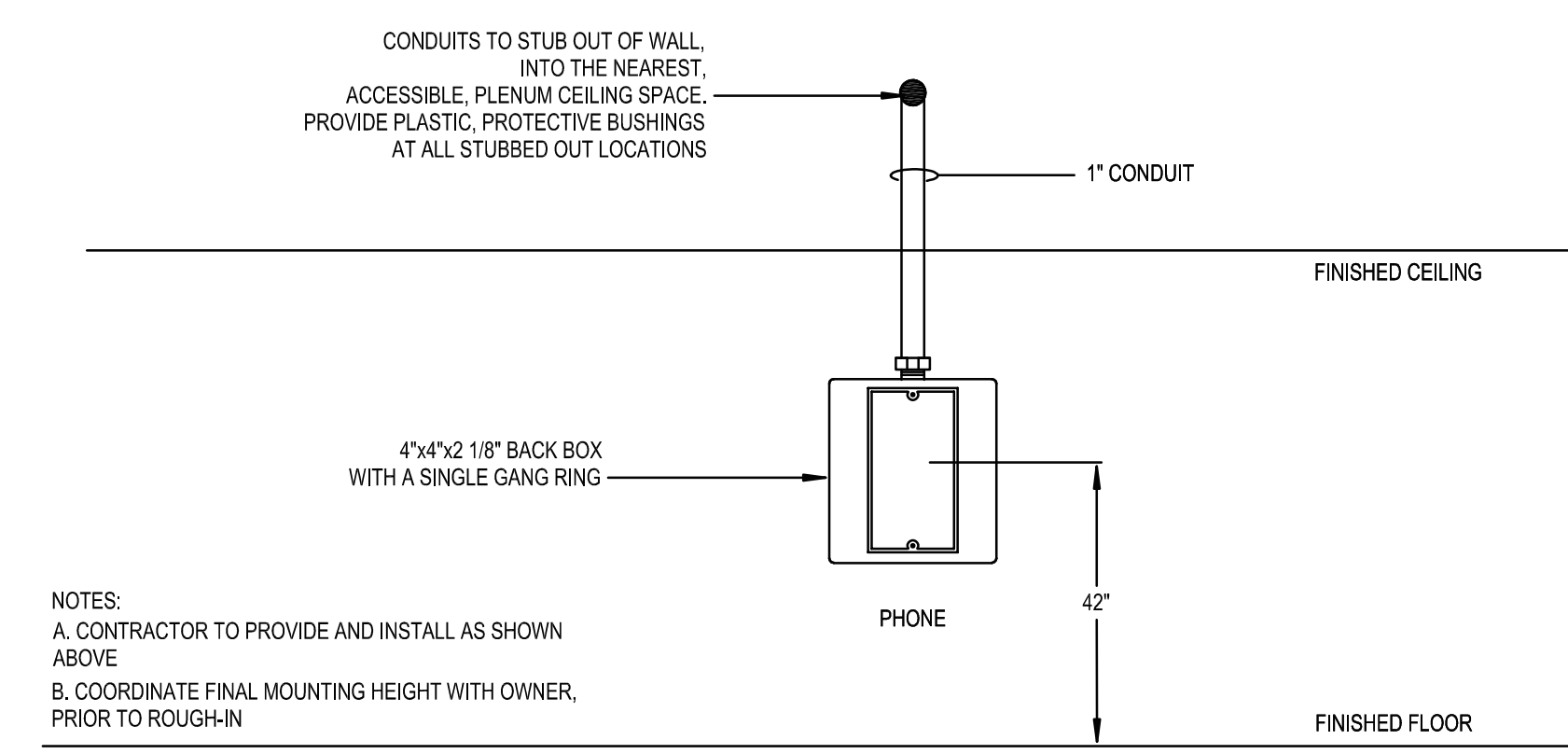


07 RACEWAY DETAIL - WALL MOUNTED WIRELESS AP

NOT TO SCALE

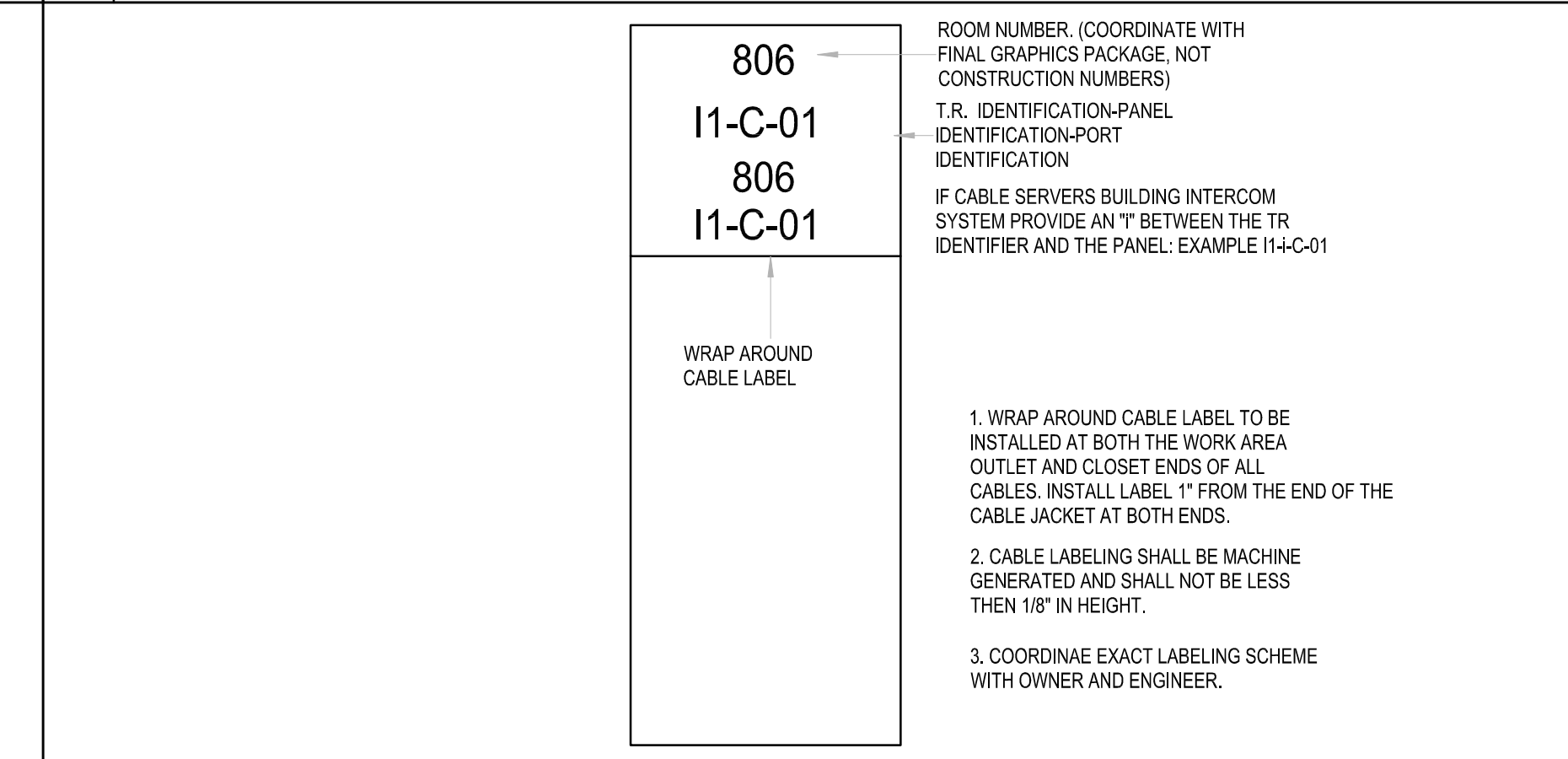
08 FACEPLATE LABEL DETAIL

NOT TO SCALE



09 RACEWAY DETAIL - WALL MOUNTED TELEPHONE

NOT TO SCALE



10 CABLE LABEL DETAIL

NOT TO SCALE

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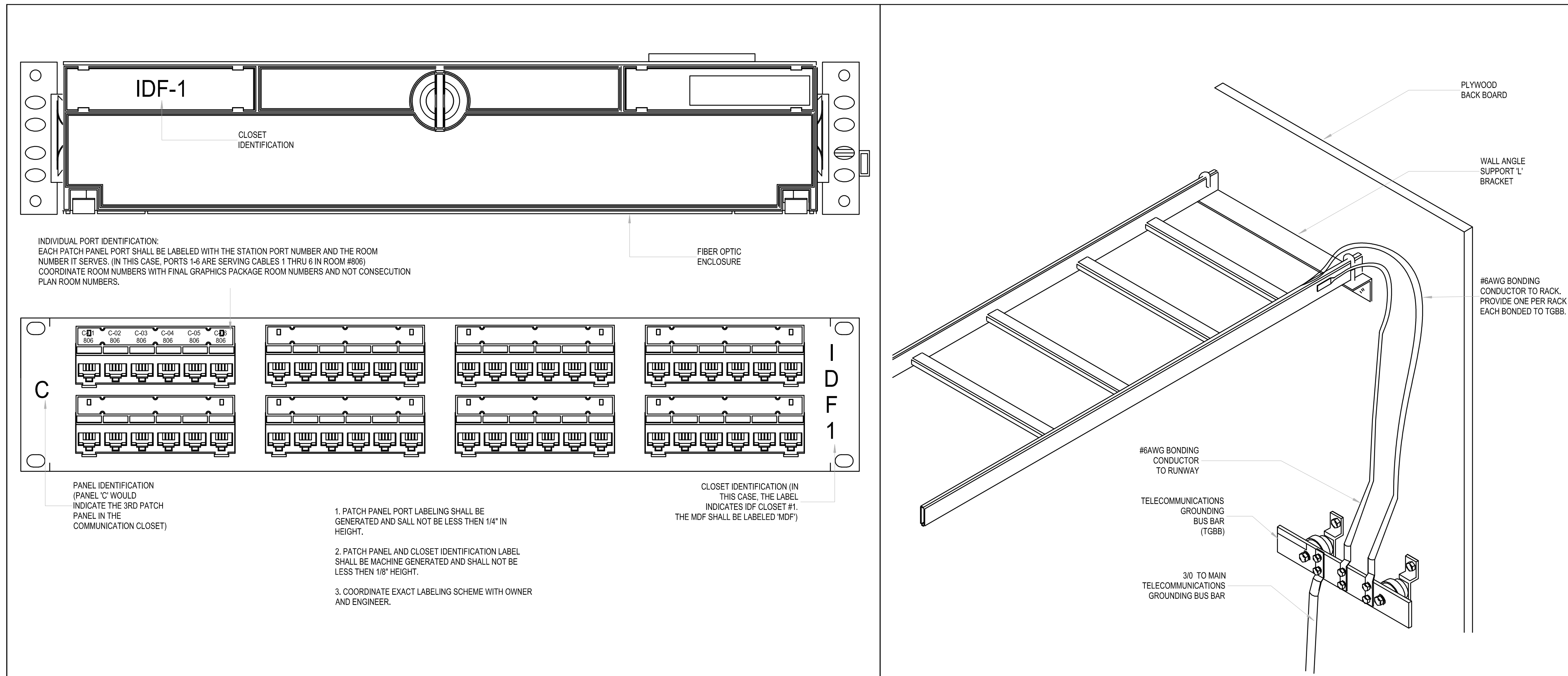
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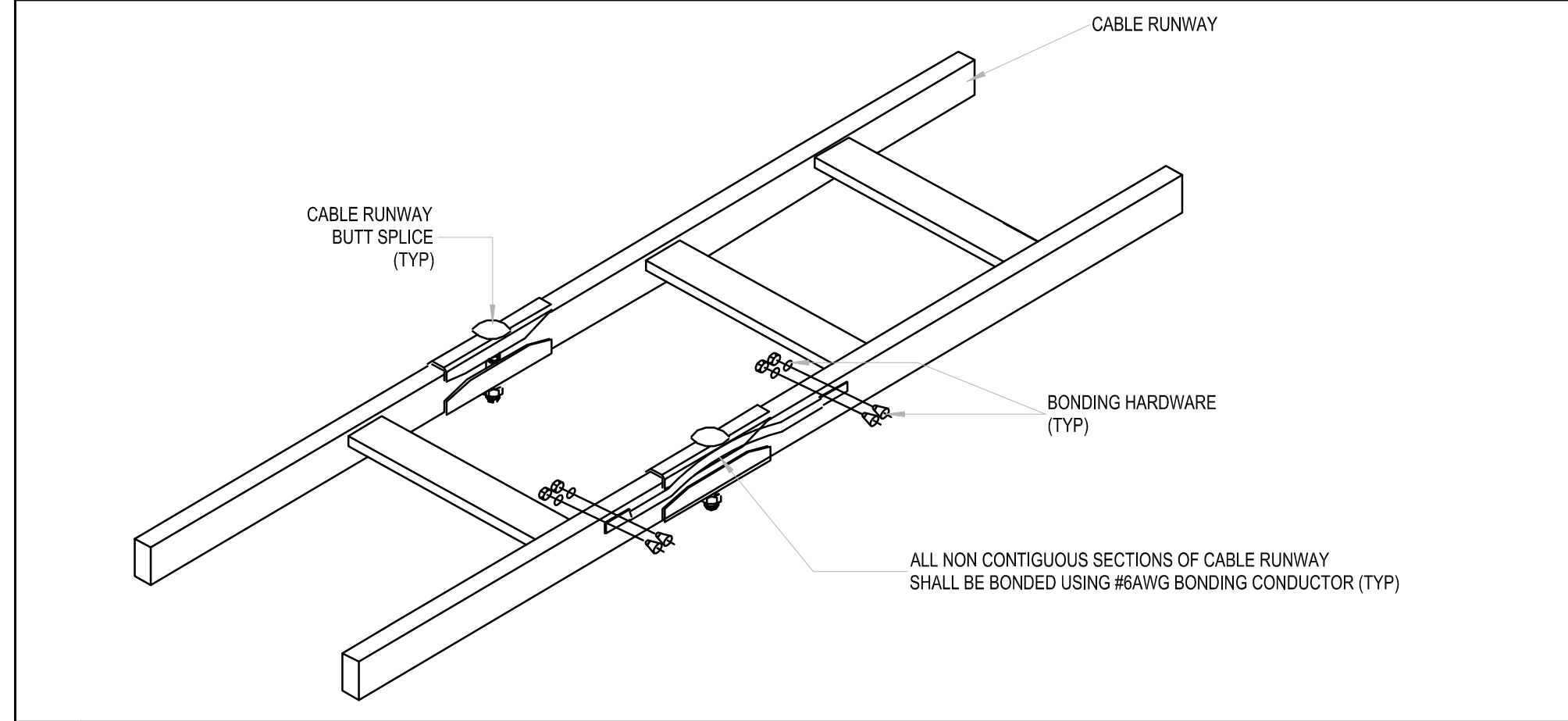
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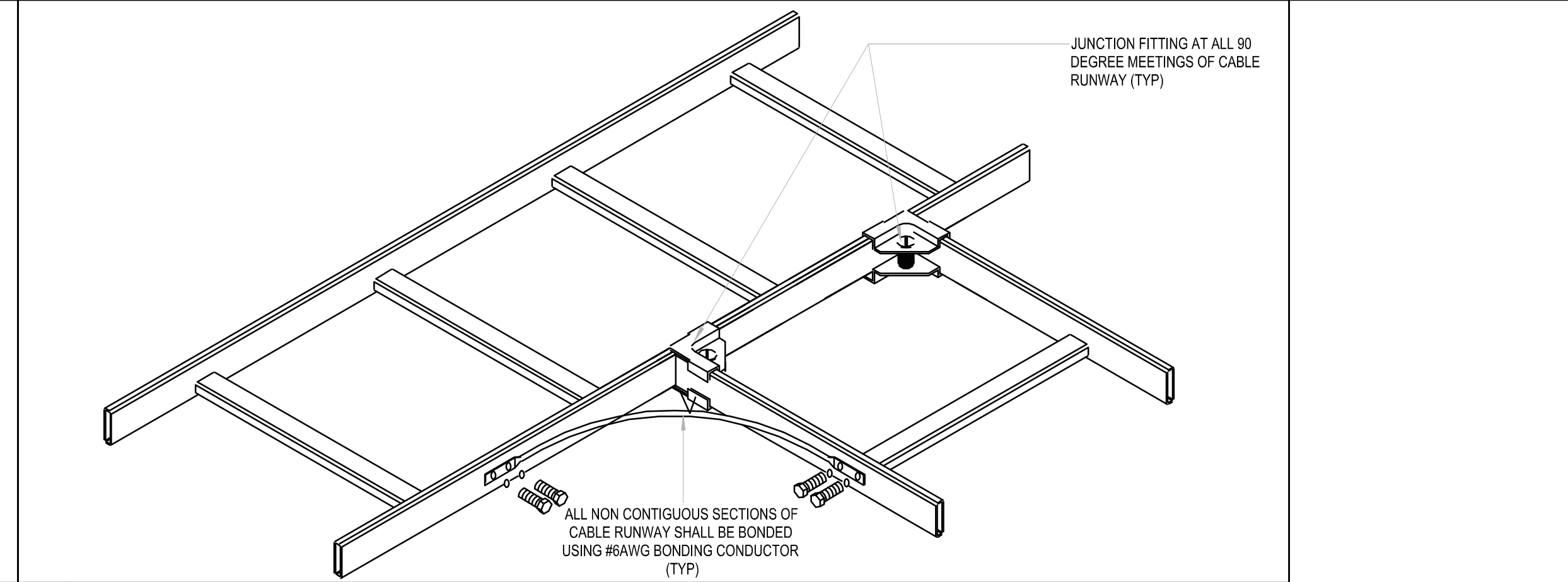


01 FIBER ENCLOSURE/ COPPER PATCH PANEL LABELING DETAIL NOT TO SCALE

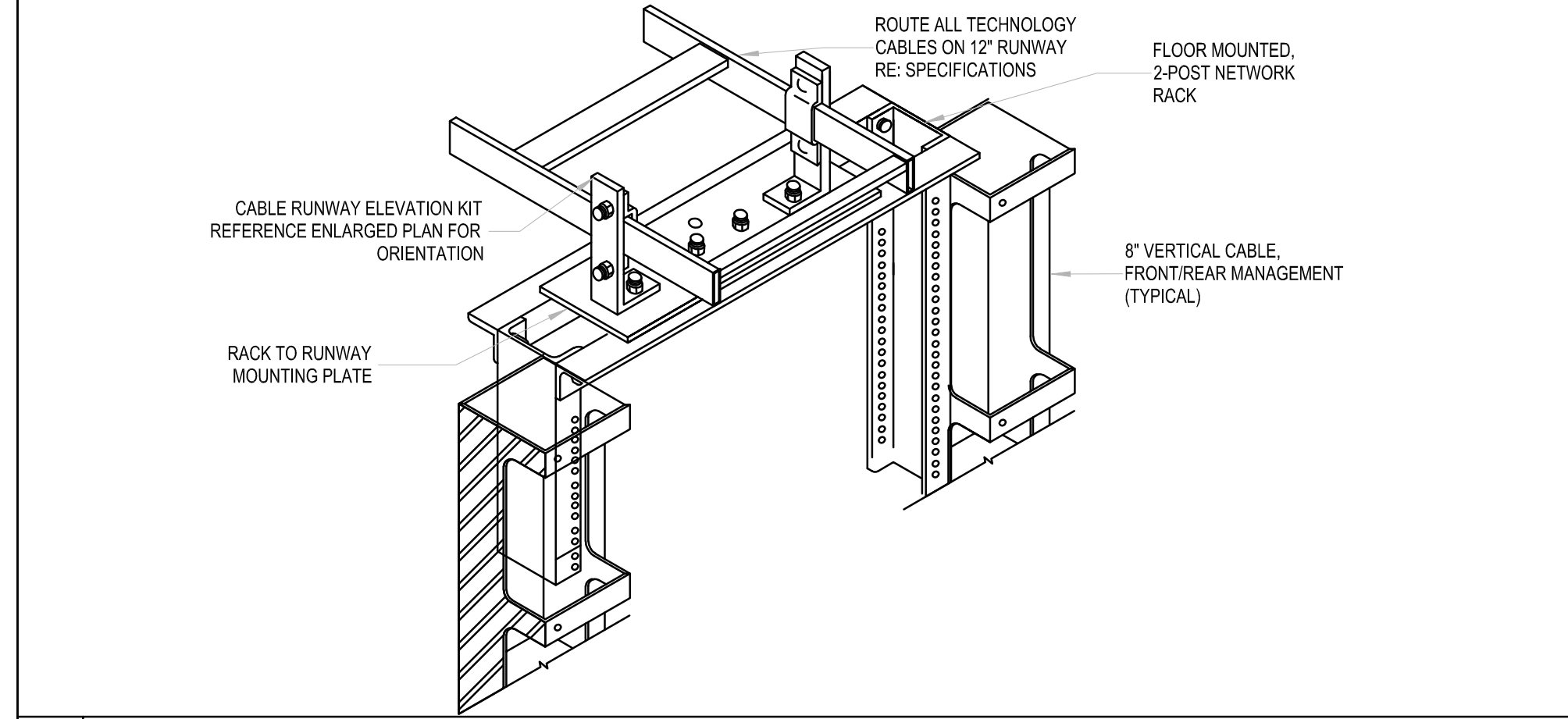
02 CABLE RUNWAY - GROUNDING AND BONDING NOT TO SCALE



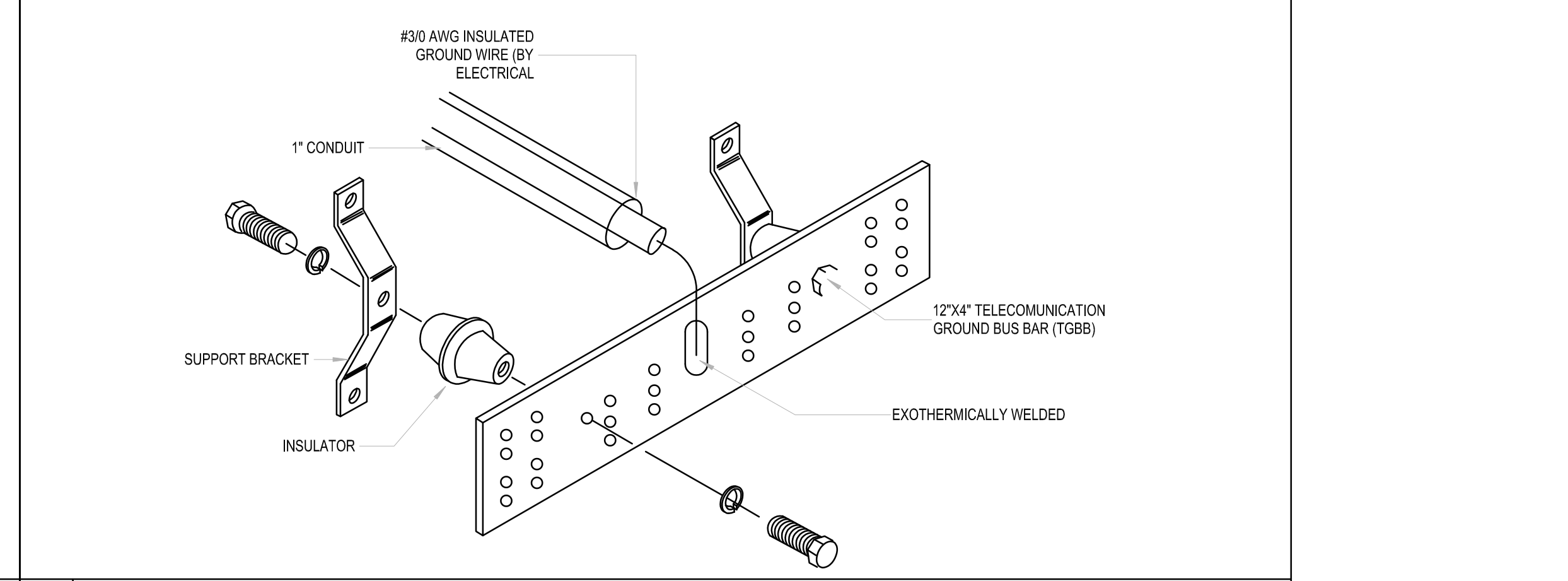
03 CABLE RUNWAY - BONDING AND BUTT SPLICE NOT TO SCALE



04 CABLE RUNWAY - JUNCTION AND BONDING NOT TO SCALE



05 RACK TO RUNWAY DETAIL NOT TO SCALE



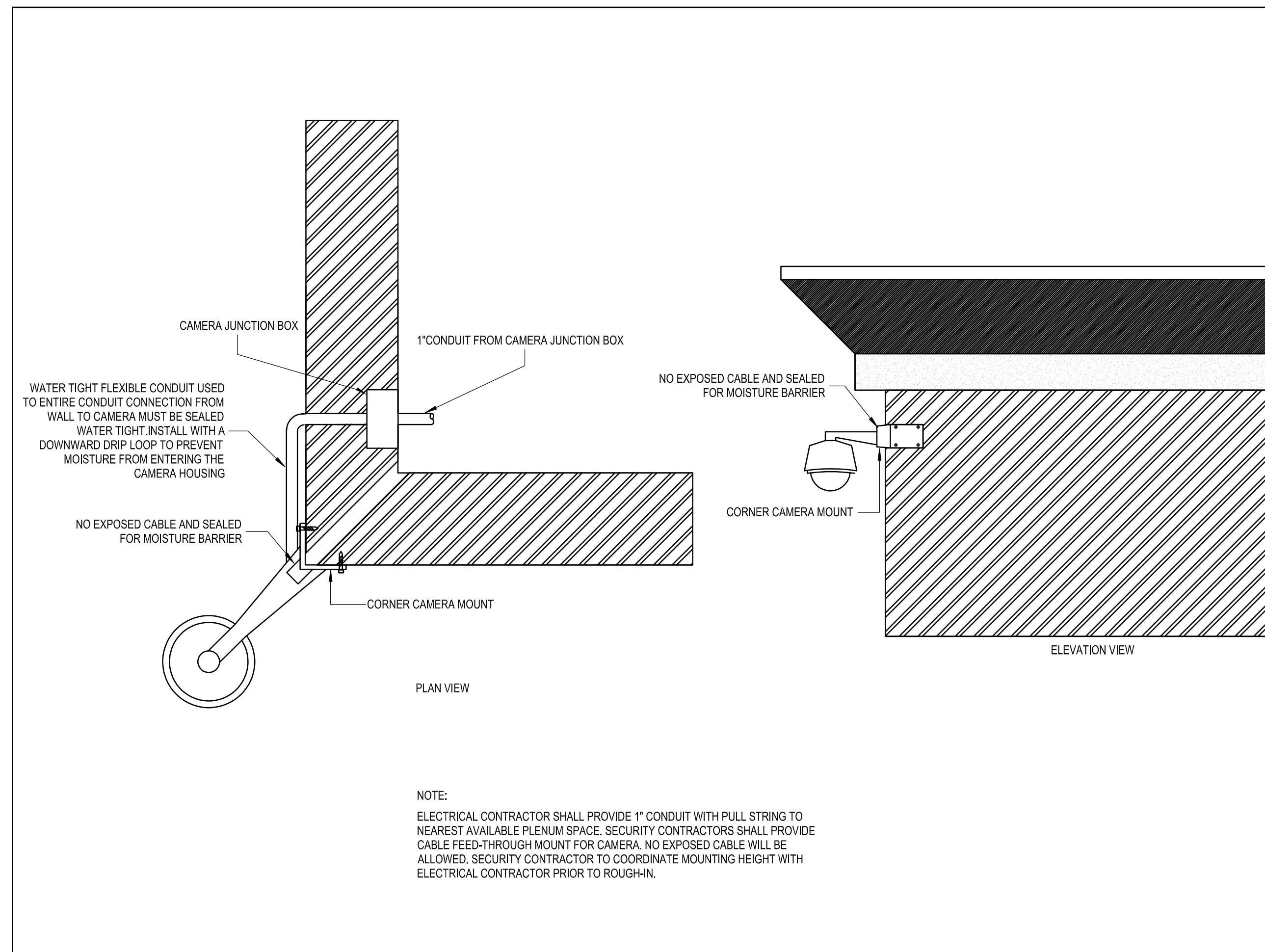
06 TELECOMMUNICATION GROUNDING BUS DETAIL NOT TO SCALE

KFC ENGINEERING

STRUCTURAL

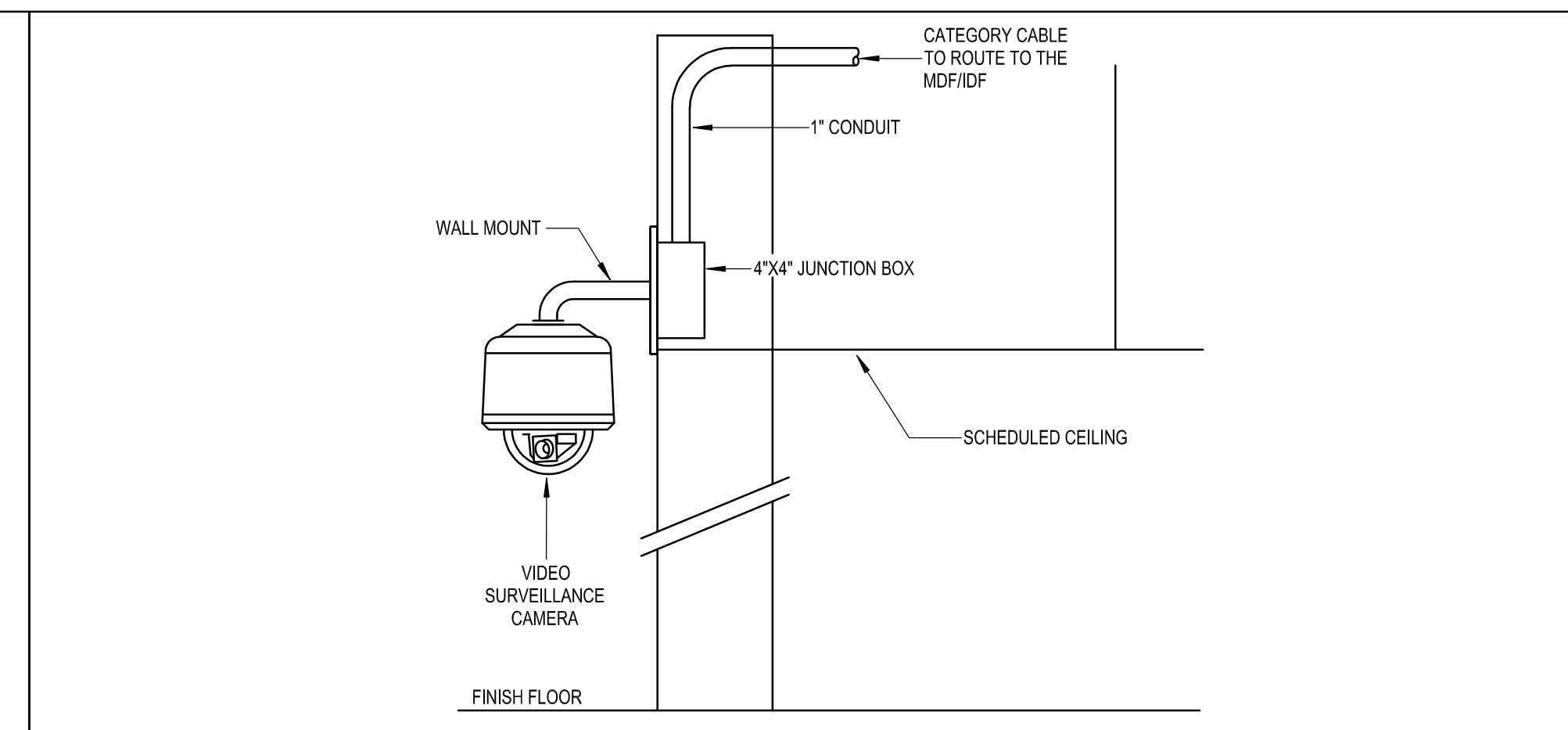
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MECHANICAL / ELECTRICAL



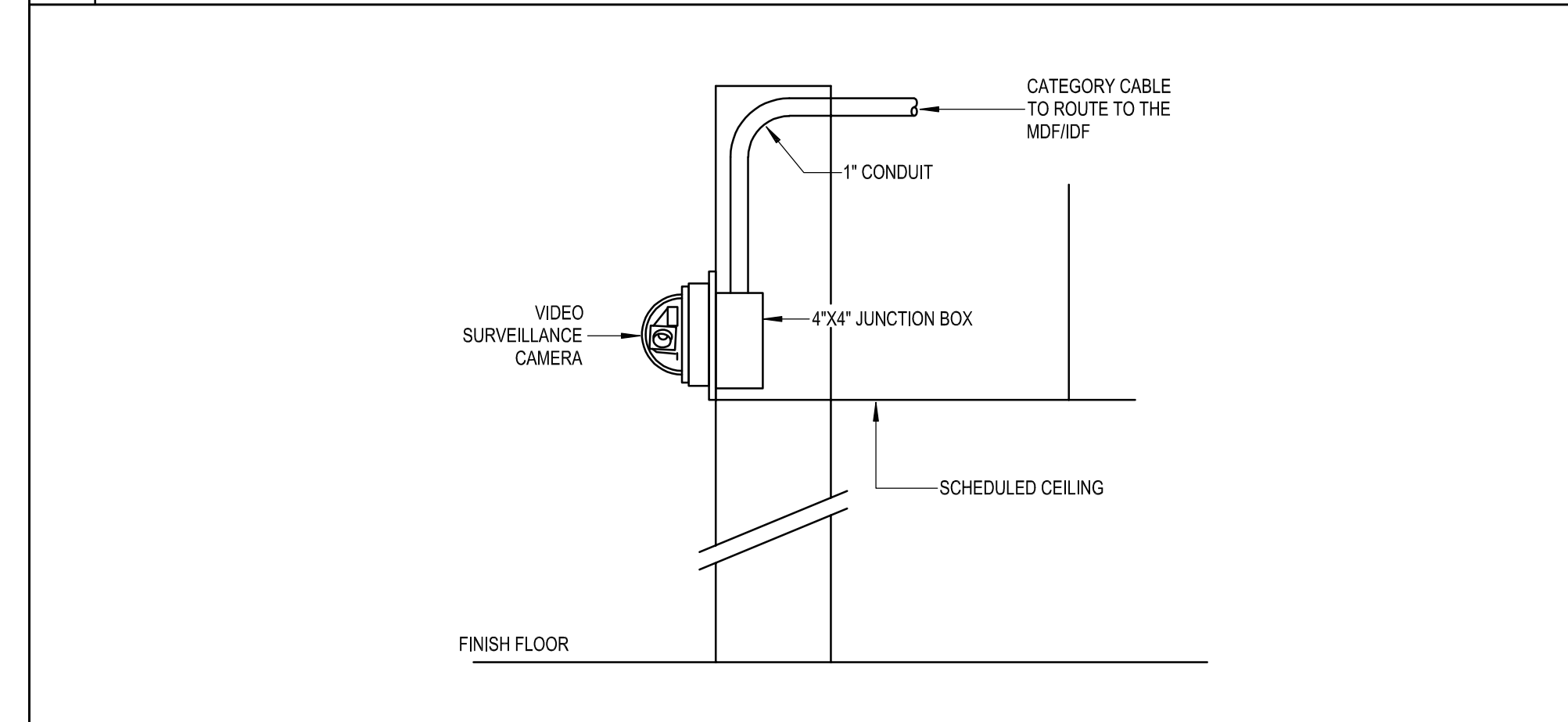
01 CORNER MOUNTING DETAIL

NOT TO SCALE



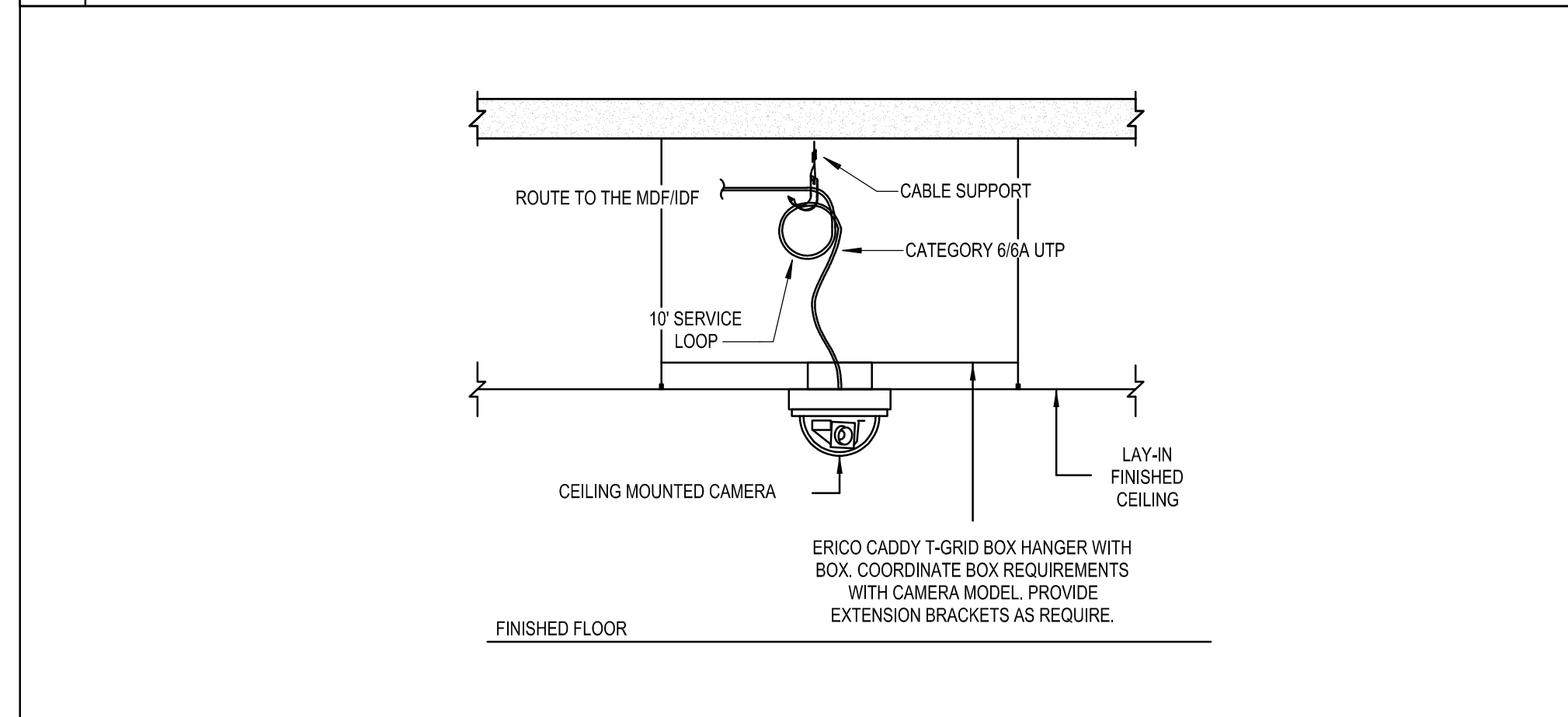
02 INTERIOR WALL MOUNT CAMERA-VERTICAL

NOT TO SCALE



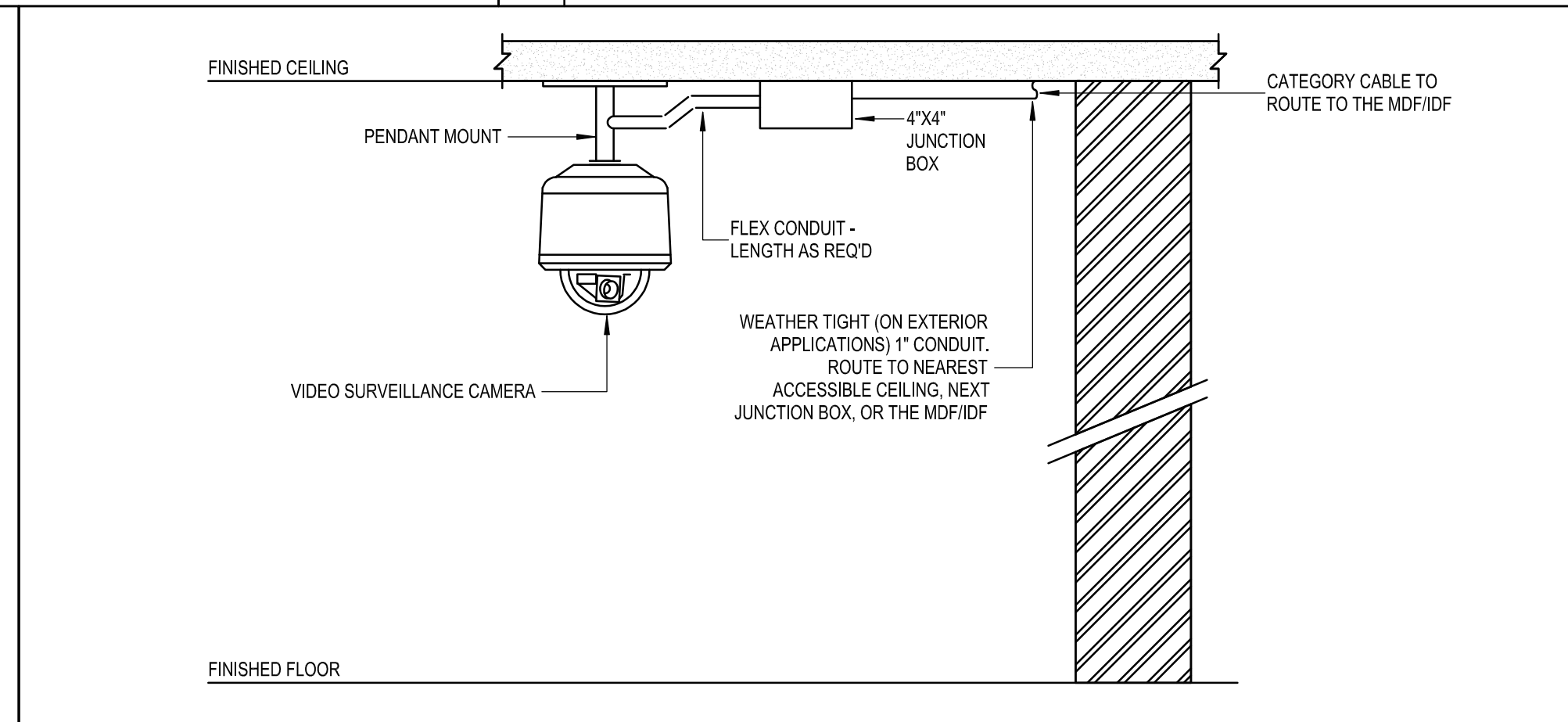
03 INTERIOR WALL MOUNTED DOME CAMERA

NOT TO SCALE



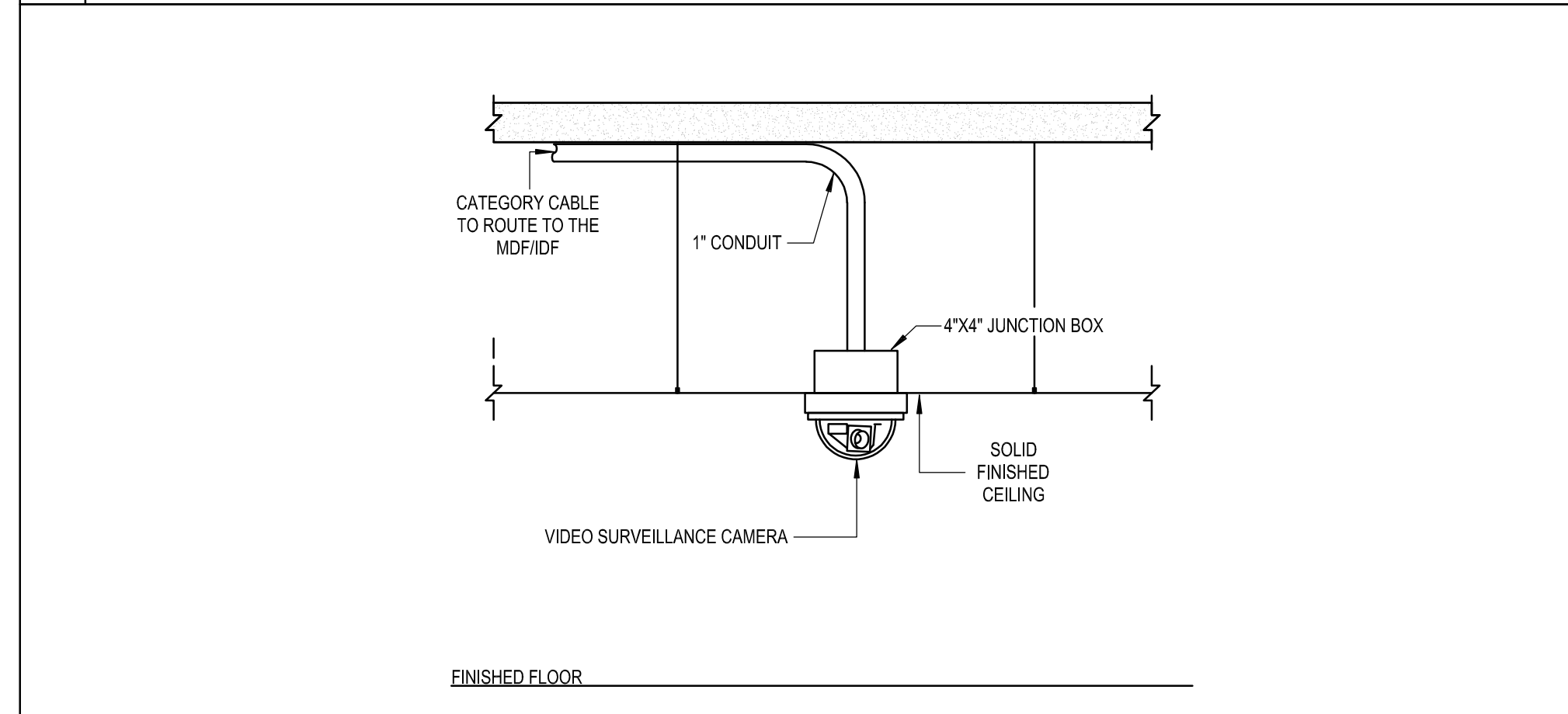
04 INTERIOR LAY-IN CEILING MOUNTED CAMERA

NOT TO SCALE



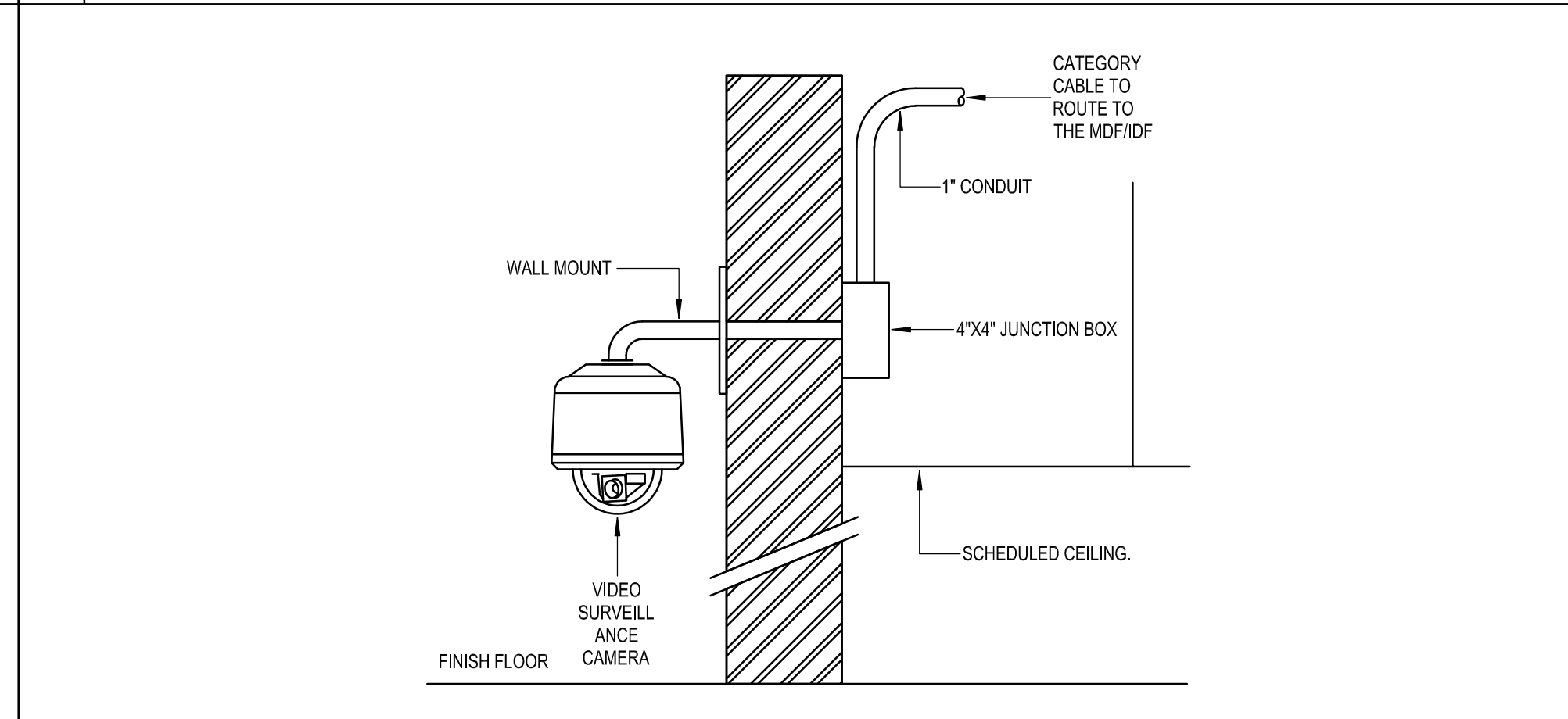
05 EXT./INT. PENDANT MOUNTED DOME CAMERA

NOT TO SCALE



06 EXTERIOR/INTERIOR SOLID CEILING MOUNT CAMERA

NOT TO SCALE



07 EXTERIOR WALL MOUNTED DOME CAMERA

NOT TO SCALE

08 NOTES

GENERAL NOTES:
A. ELECTRICAL CONTRACTOR SHALL PROVIDE CONDUITS AND BACK BOXES. CONDUITS SHALL ROUTE TO THE NEAREST, ACCESSIBLE PLENUM SPACE.
B. ALL WALL, CORNER, PENDANT, AND UNDER CANOPY MOUNTING HEIGHTS SHALL BE COORDINATED WITH THE OWNER AND SECURITY CONSULTANT PRIOR TO ROUGH-IN.
C. SECURITY CONTRACTOR SHALL PROVIDE CAMERAS, MOUNTING HARDWARE, AND ANY OTHER COMPONENTS AND/OR HARDWARE REQUIRED FOR A COMPLETE INSTALLATION.
D. REFERENCE VIDEO SURVEILLANCE CAMERA SCHEDULES, FLOOR PLANS, AND SPECIFICATIONS FOR ADDITIONAL INSTRUCTIONS.
E. CABLE FEED-THROUGH MOUNT FOR CAMERA. NO EXPOSED CABLE WILL BE ALLOWED. SECURITY CONTRACTOR TO COORDINATE MOUNTING HEIGHT WITH ELECTRICAL CONTRACTOR PRIOR TO ROUGH-IN.

08 NOTES

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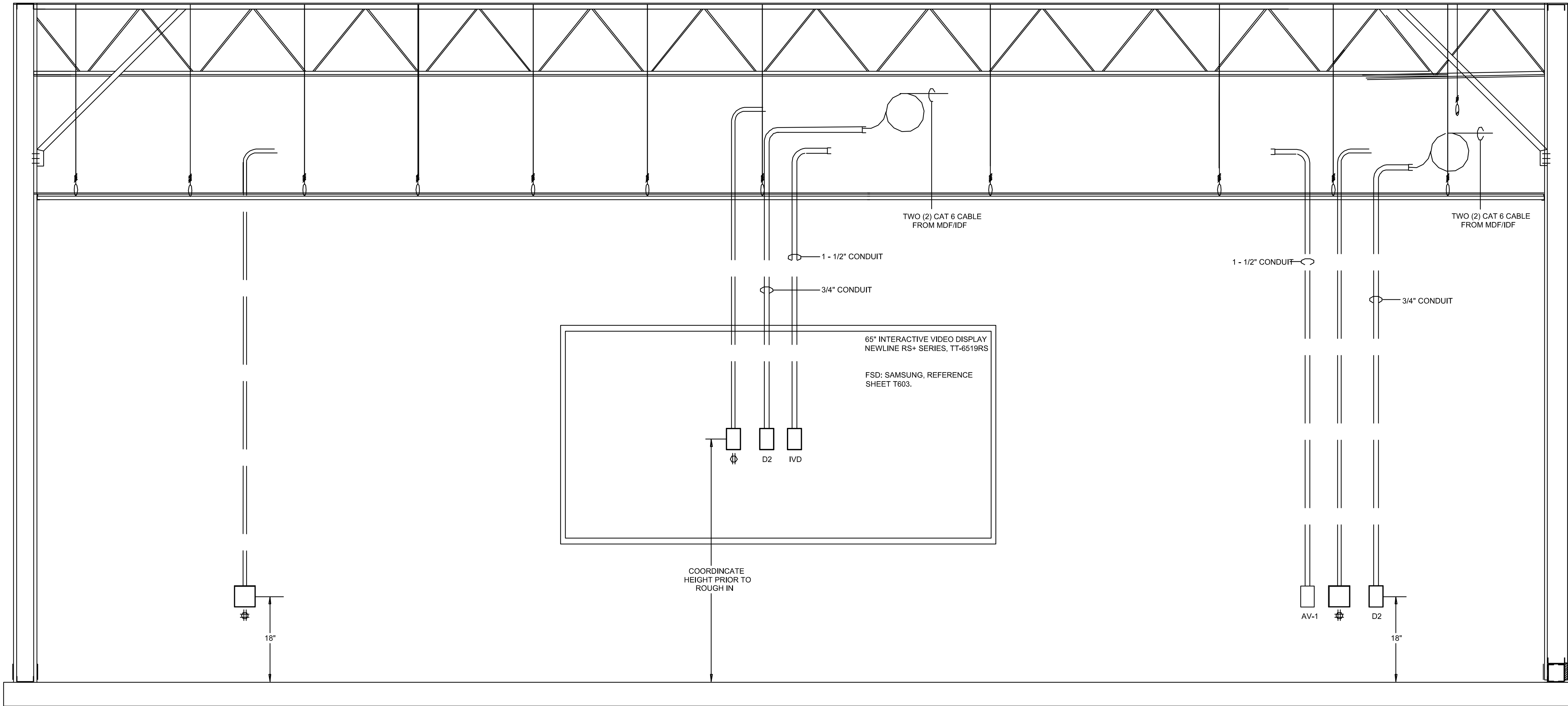
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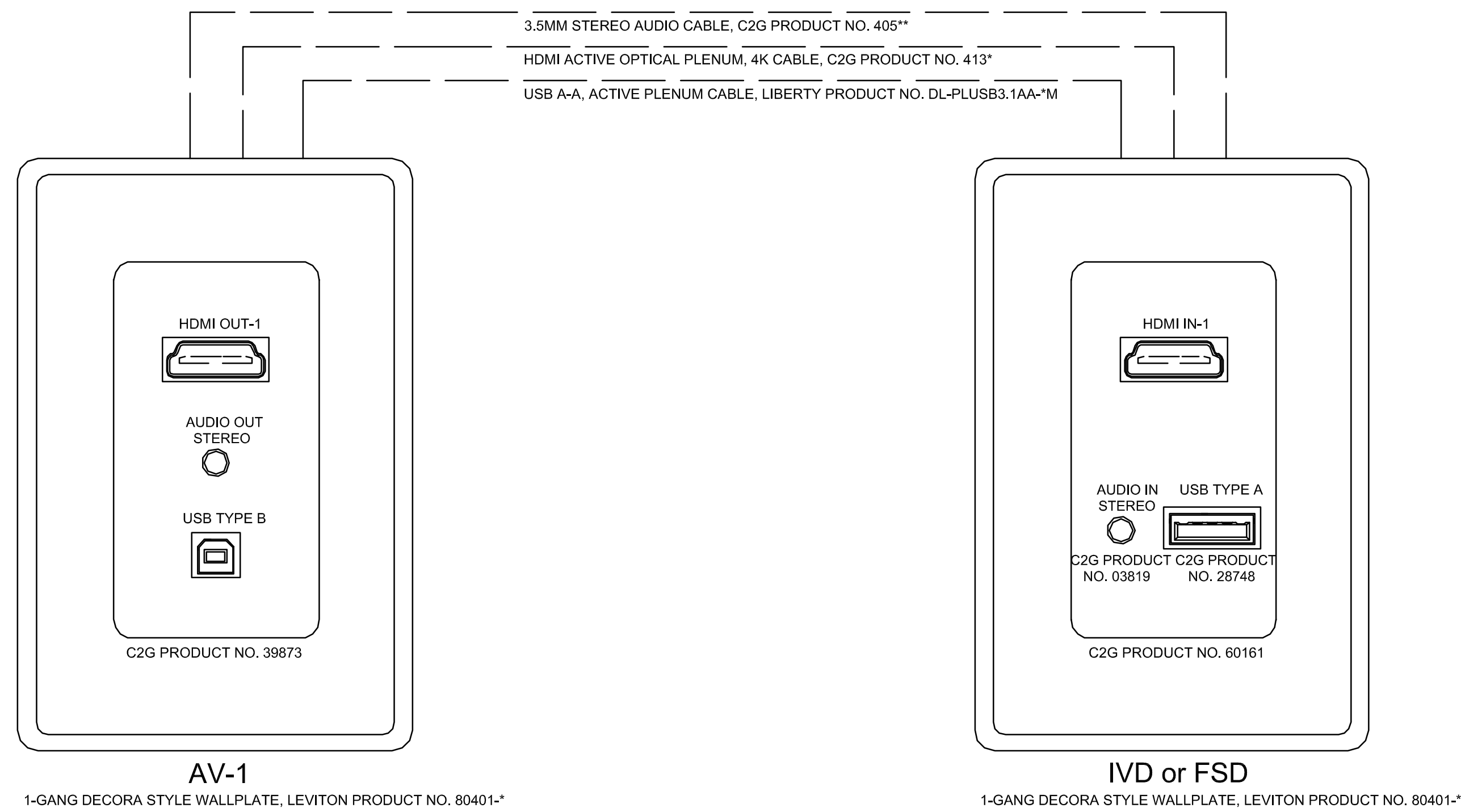
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01 TYPICAL TECHNOLOGY WALL PRESENTATION

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02 TYPICAL 'IVD' 'AV-1' OUTLET DETAIL

NOT TO SCALE

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T504

SYSTEMS SPECIFICATIONS

<p>STRUCTURED CABLING</p> <p style="text-align: center;">Horizontal Cabling</p> <p>Requirements</p> <ul style="list-style-type: none"> Copper cable shall be Category 6 plenum rated cable (blue in Color) for all work station drops. Copper cable shall be Category 6 plenum rated cable (White in Color) for all Security camera drops. Copper cable shall be Category 6 plenum rated cable (Yellow in Color) for all Wifi drops. Approved Category 6 cables are as follows. <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <tr> <td style="width: 50%;">Superior Essex Cat6 Plenum Part #s</td> <td style="width: 50%;">77-240-2B blue 77-240-4B white 77-240-6B yellow 77-240-5B green</td> </tr> <tr> <td>Mohawk Cat6 Plenum Part #s</td> <td>M58261B Blue M58280B white M58283B yellow M58286B green</td> </tr> <tr> <td>Berk-Tech Cat6 Plenum Part #s</td> <td>10136226 blue 10136230 white 10136749 yellow 10136748 green</td> </tr> <tr> <td>General Cat6 Plenum Part #s</td> <td>7131800 blue 7131841 white 7131802 yellow 7131806 green</td> </tr> </table> <ul style="list-style-type: none"> Connector shall be Leviton part # 61110-RO6 eXtreme 6 connector for all workstation drops. Connector shall be Leviton part # 61110-RV6 eXtreme 6 connector for all Security camera drops. Connector shall be Leviton part # 61110-RV6 eXtreme 6 connector for all Wifi drops. Contractor shall provide Moore Public Schools, Technology Department, one 5' category 6 patch cord, (blue in color) for each category 6 work station cable installed. To be installed by contractor at the network cabinet. Contractor shall provide Moore Public Schools, Technology Department, one 10' category 6 patch cord, (blue in color) for each category 6 work station cable installed. Leave in box at network cabinet. To be installed by MPS Technology Dept. Contractor shall provide Moore Public Schools, Technology Department, one 5' category 6 patch cord, (White in color) for each category 6 Security Camera cable installed. To be installed by contractor at the network cabinet. Contractor shall provide Moore Public Schools, Technology Department, one 10' category 6 patch cord, (White in color) for each category 6 Security Camera cable installed. Leave in box at network cabinet. To be installed by MPS Technology Dept. Contractor shall provide Moore Public Schools, Technology Department, one 5' category 6 patch cord, (Yellow in color) for each category 6 Wifi cable installed. To be installed by contractor at the network cabinet. Contractor shall provide Moore Public Schools, Technology Department, one 10' category 6 patch cord, (Yellow in color) for each category 6 Wifi cable installed. Leave in box at network cabinet. To be installed by MPS Technology Dept. Each cable shall be terminated on the patch panel in data closets. All Category 6 connectors shall be placed into QuickPort faceplates at the workstation end. Faceplate shall be Leviton part # 41080-6wp No substitutions. <p style="text-align: center;">Communications Backbone Cabling</p> <p>Requirements - Optical fiber</p> <ul style="list-style-type: none"> 1 Optical fiber cable shall be run from the MDF to each IDF. Fiber shall be terminated with LC connectors. Optical fiber cable shall be plenum rated Laser Optimized 50 micron Multi Mode distribution fiber. Optical fiber cable shall be an OM3 rated cable guaranteed to support 10 Gigabit Ethernet for 300 meters using 850 nm wavelength. Optical fiber cable shall have 24 strands using industry standard color coding. Optical fiber cable shall have a flame retardant and low smoke FEP jacket. Optical fiber cable shall support 10GBase-SX applications for the life of the system. Optical fiber cable shall be armor jacketed or protected inside plenum rated plastic inner duct orange or aqua in color. <p>MIC Tight-buffered 024T88-33180-A3</p> <ul style="list-style-type: none"> No substitutions. <p>Requirements - Copper backbone</p> <ul style="list-style-type: none"> 6 Cat 6 cables shall be run from the MDF to each IDF. 3 Cat 6 cables shall be run from the phone Dmark to the MDF. Copper cable shall be Category 6 cable, Green in color Connector shall be Leviton part # 61110-RV6 eXtreme 6 connector. Each cable shall be terminated on the patch panel in data closets. Each cable end shall be terminated using the T568B pin/pair assignment. No substitutions. <p>Cable Installation</p> <ul style="list-style-type: none"> Properly support horizontal cables in ceiling every 4'-5' using J-hooks or cable tray only. (no slings, pouches, or D rings.) Place horizontal cables in pathways and spaces dedicated for communications cables. No pathways shall be in or above the red iron. Data cable will be run in separate pathways from all other cables. Provide 30' of slack at station end in ceiling and not inside wall. Slack shall be rolled neatly in a 2' loop and hanging from a j-hook in ceiling above drop location. Cat 6 data cables are to be terminated using the T568B standard. Leviton face plates that support 6 snap in jacks will be used with Leviton snap in blanks in unused slots. Ensure terminations are at 180 degrees to the jack with no more than 1/4" un-twisting and no more than 1/2" un-jack-ketting and are in accordance with manufacturer's recommendations. Ensure terminations have no un-twisting and that tower separators are utilized to separate pairs. 	Superior Essex Cat6 Plenum Part #s	77-240-2B blue 77-240-4B white 77-240-6B yellow 77-240-5B green	Mohawk Cat6 Plenum Part #s	M58261B Blue M58280B white M58283B yellow M58286B green	Berk-Tech Cat6 Plenum Part #s	10136226 blue 10136230 white 10136749 yellow 10136748 green	General Cat6 Plenum Part #s	7131800 blue 7131841 white 7131802 yellow 7131806 green	<ul style="list-style-type: none"> Ensure pulling tensions of cables are not exceeded. Maintain proper cable bend radius of 4 times the cable's outer diameter during placement. No splices are permitted. No link shall exceed 90 meters. Contractor is responsible for verifying proper footages. Pull one additional "Mule Tape" or 1/2" Nylon rope when pulling cables through any conduit utilizing existing pull string. Mule Tape or Nylon rope is to be pulled into conduit separately and after all other cables have been installed. Install sleeves when puncturing walls. Cable shall not be installed between cinder block walls and roof decking. Cable shall not be installed between red iron and roof decking. Firestop all sleeves and conduit openings after cable installation. Terminate all pairs and conductors at all ends according to manufacturer's instructions following color code sequence. No splices are permitted in any fiber optic cable except when terminating connectors Terminate all Fiber pairs. All optical fiber cable shall be installed in the fiber panels in accordance with the manufacturer's instructions. Optical fiber Back bone cable length shall not exceed 300 meters. Copper backbone cable length shall not exceed 90 meters. All back bone cables (Fiber and Copper) shall have 20' of slack at both ends. Coming rack mount fiber patch panels are to be used where applicable. Outdoor rated fiber will be used for all outdoor fiber runs. Stress relief cable and the appropriate building fastener will be used on all aerial runs. All aerial cables will be fastened to the stress relief cables. 3" conduit is to be used for all buried runs, accessible at each end, with a pull string inside. A trace wire and warning tape will be buried with all buried runs All bends in conduit will be made with sweeps. Back bone cabling shall utilize a star topology with no more than 2 levels of backbone. Utilize Velcro ONLY in all closets. Install all components in a neat and workmanlike manner. Install all horizontal cables and termination frames in accordance with manufacturer's recommendations. <p>Labeling</p> <ul style="list-style-type: none"> Label shall be a rap type with number printed multiple times enabling print to be legible from any angle. Machine label all termination panels and face plates with cabinet and cable number. Termination panels shall be labeled in numerical order. A single drop will be labeled a total of four times. The labels will be located on the patch panel in the rack, on both ends of the cable, and on the face plate at the work station end. The labels are to read exactly the same in all four locations. All 5' patch cables will be labeled at both ends. 5' cables will be installed at the cabinet. Numbering scheme will be 00-000 where the first two digits are the cabinet number and the last three are the drop number. Example, drop number 75 in cabinet 2 will read, 02-075. Camera drop labels numerically start at 500 in each cabinet. If camera drops already exist in said cabinet the next available consecutive number will be used. Wifi drop labels numerically start at 800 in each cabinet. If Wifi drops already exist in said cabinet the next available consecutive number will be used. <p>Example for cabinet 1: Data (blue cable orange jacks) 01-001 to 01-499 Camera (white cable white jacks) 01-500 to 01-799 Wifi (yellow cable yellow jacks) 01-800 to 01-999</p> <ul style="list-style-type: none"> Label all fiber optic cables at both ends on the cable and in the break out box <p>Test</p> <ul style="list-style-type: none"> Test results for all Category 6 copper and fiber optic cables shall be provided to Moore Public Schools, Technology department. <p style="text-align: center;">End of Section</p> <p style="text-align: center;">Communications Equipment Room Fittings</p> <p>Equipment rack</p> <ul style="list-style-type: none"> Free standing equipment rack shall be Chatsworth #55053-703. Free standing racks shall be sized to accept 19" spaced equipment and handle a total weight load of 1, 000 pounds. Free standing racks shall have 3" side rails tapped on both sides with universal hole patterns for threaded 12-24 screws. No substitutions. <p>Copper Patch panels</p> <ul style="list-style-type: none"> Patch panel shall be a Leviton #49255-H24 Quick Port 110 panel with cable management bar. Patch panel shall have 24 ports taking up 1 rack mount unit. No substitutions. <p>Horizontal cable management</p> <ul style="list-style-type: none"> Horizontal cable manager shall be a 2 RU Chatsworth part #30130-719. No substitutions. <p>Vertical cable management</p> <ul style="list-style-type: none"> Vertical cable manager shall be Chatsworth part #30095-703. No substitutions. <p>Optical fiber patch panel / enclosure</p> <ul style="list-style-type: none"> Optical fiber enclosure shall be Corning LC loaded rack mount panel. <p>CCH-04U CCH-01U CCH-CP24-E4 SOC-LC-900-OM4</p>
Superior Essex Cat6 Plenum Part #s	77-240-2B blue 77-240-4B white 77-240-6B yellow 77-240-5B green								
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<p>Ladder racking</p> <ul style="list-style-type: none"> No substitutions. Ladder racking shall be Chatsworth #10250-718. The appropriate Chatsworth mounting hardware shall be used. No substitutions. <p>Power protection power strips</p> <ul style="list-style-type: none"> PDU's are to be placed in all data racks. PDU shall have overload protection and easy to reset circuit breaker. PDU shall be rack mountable. PDU shall be constructed from 18 AWG steel. PDU shall have light emitting diodes to indicate "Power On" and "Ground/Polarity Ok" feature. PDU shall be rated for 20 Amps and have a 12 L5-20P plug and ten 5-20R receptacles. No substitutions. <p style="text-align: center;">Installation</p> <p>Free standing racks</p> <ul style="list-style-type: none"> Assemble free standing racks according to manufacturer's instructions. Verify that equipment mounting rails are sized properly for rack-mount equipment before attaching the rack to the floor. All racks must be attached to the floor in four places using appropriate floor mounting anchors. When placed over a raised floor, threaded rods should pass through the raised floor tile and be secured in the structural floor below. All rack must be secured to the adjacent wall using ladder rack to stabilize the top of the rack and provide a cable pathway from the ceiling to the rack. Racks shall be grounded to the telecommunications bus bar using #6 AWG green insulated solid copper wire and any necessary attachment hardware provided by the Communications Contractor. Mount rack mount power strips on rack where active equipment will be placed. <p>Ladder rack</p> <ul style="list-style-type: none"> Ladder rack shall be attached to the top of the rack to deliver cables to the rack. The rack should not be drilled to attach ladder rack. Use appropriate hardware from the ladder rack manufacturer. Ladder racking shall be supported every 5' with 3/8" threaded rod anchored and secured to permanent ceiling structure. Loading of cable rack shall not exceed 6" depth and should have retainers every 12" to prevent cables from spilling over the sides. Where ladder racking butts up against wall the appropriately sized wall mount bracket shall be utilized. Ladder rack shall extend vertically up wall and through drop ceiling to gain access to cavity above drop ceiling. Ladder racking shall utilize all appropriate radius drop stringers, corner bends and other devices to maintain cable bend radius when entering and exiting racks, cabinets and drop ceilings Mating pieces of ladder racking together shall utilize appropriate butt splice and junction splice kits. All cut and exposed sharp ends shall utilize a plastic end cap to prevent injury. <p>Cable management</p> <ul style="list-style-type: none"> Vertical cable manager shall be installed on every rack vertical rail. Where two rack rails will be butted together there shall be two vertical wire managers between the racks. Horizontal wire managers shall be utilized above and below every copper and fiber patch panel. All cables shall sweep in and out of any cable management product without a deformation of cable jacket. Ensure cables are properly supported when using cable management to ensure cables do not sag. Utilize Velcro ONLY for securing of cables on cable management. <p>Copper and Fiber patching panels</p> <ul style="list-style-type: none"> Route all cables to backside of termination panels in an asymmetrical orientation to ensure cable bundles are split evenly. Utilize rear wire management bars for supporting cables into point of termination. Secure all cables on all panels using Velcro ONLY to prevent cables from pulling away. <p style="text-align: center;">End of Section</p> <p>Quality Assurance</p> <ul style="list-style-type: none"> Install all components as directed by Manufacturer's installation guidelines. All products shall bear the mark of UL or ETL for performance level. System installation shall meet all applicable Local/State codes and safety requirements where project is located. All products shall be new and un-used in original packaging. Follow and adhere to installation practices specified by the applicable Telecommunications Industry Association standards. Follow and adhere to installation practices specified by BICSI Information Transport System Installation. Follow and adhere to installation practices specified by BICSI Telecommunications Distribution Methods. Follow and adhere to installation practices specified by NFPA-70 National Electric Code. Follow and adhere to installation practices specified by the Manufacturers. Contractor shall make available all ceiling and termination work for inspection by Manufacturer's representative or owner's representative. Contractor shall replace all defective components. <p>Bidder/Installer Qualifications</p> <ul style="list-style-type: none"> Bidding Contractor shall be a licensed to install telecommunications systems in the state where work will be performed. Bidding Contractor shall be Leviton certified for at least one year Bidding Contractor shall have a minimum of 5 years experience installing structured cabling for telecommunications. Bidding Contractor shall have the capability to bond project in its entirety. Bidding Contractor shall be able to provide insurance at the request of the owner. Installer shall have an onsite supervisor and one technician who are certified by the Manufacturer to install the Manufacturer's telecommunications products. Communications Contractor shall have an RCDD on staff for at least one year, to certify that the Communications System can support the required applications on the various cabling media. 	<p>Delivery, Storage, and Protection</p> <ul style="list-style-type: none"> Communications Contractor shall ensure that materials delivery to work area shall be coordinated with construction site manager responsible for materials distribution to all trades. Communications Contractor is responsible for all materials, tools and vehicles left on the job site. Communications Contractor shall coordinate a disposal bin for the removal of all trash produced by the Communications Contractor personnel during the project. Communications Contractor shall ensure materials are stored in an environmental area where: <ul style="list-style-type: none"> Temperature does not exceed 120 degrees Fahrenheit nor below 32 degrees Fahrenheit. Humidity does not exceed 80 %. No direct exposure to sunlight. Follow Manufacturer's recommendations for handling of materials. <p>Warranty</p> <ul style="list-style-type: none"> Communications Contractor shall provide a 1 year parts and labor warranty against defective workmanship and/or system component failure. Communications Contractor shall execute a Lifetime Applications Assurance Warranty for parts and labor to support stated applications from the connectivity Manufacturer. <p style="text-align: center;">End of Section</p> <p style="text-align: center;">INTERCOM SYSTEM SPECIFICATIONS</p> <p>Part 1 - Equipment</p> <p>1.01 System Manufacture</p> <ul style="list-style-type: none"> Intercom System Manufacturer shall be Telecor or Rauland Telecenter U IP. (Match existing system) Cable Manufacturer shall be Belden or Equivalent <p>Locations where Telecor equipment is required. It may be purchased from the following authorized Telecor dealers: Advanced Cabling, Inc - 405-418-4322 High-Tech Tronics, Inc - 405-495-0215</p> <p>Locations where TelecenterU equipment is required. It may be purchased from the following authorized TelecenterU dealer Endex of Oklahoma Inc - 405-602-0001</p> <p>1.02 Intercom Systems Equipment</p> <p>1.02.a Telecor Intercom Equipment</p> <ul style="list-style-type: none"> Intercom call in button shall be momentary close and compatible with existing Intercom system Intercom ceiling speakers shall be Manufacture Clarity Model # S-522. (Or equivalent approved by MPS must have volume control accessible from the floor) Intercom outside paging horn shall be Manufacture Rauland Borg 3601. (Or equivalent approved by MPS) Locations where Telecor equipment is required. It may be purchased from the following authorized Telecor dealers Advanced Cabling, Inc - 405-418-4322 High-Tech Tronics, Inc - 405-495-0215 <p>1.02.b Rauland Telecenter U IP Intercom Systems Equipment</p> <ul style="list-style-type: none"> Classroom Intercom Equipment <ul style="list-style-type: none"> Call button shall be Part # 603302 Dual Level call switch. Ceiling speakers shall be Part # BAFKIT2X2L6RJ - 8 Ohm ceiling tile replacement speaker with RJ45 connector. IP Classroom Module shall be TCC2011 IP Module (*Module required for each classroom, *Requires POE network drop) Hallway/Commons/Outside Intercom Equipment <ul style="list-style-type: none"> TCC2022-IP Zone page module (*Requires POE network drop) Appropriate size amp for quantity of speakers. BAFKIT2X2L - 25 volt ceiling tile replacement paging speaker (For all classroom & hallway locations) Rauland Borg 3601 - Loud paging horn (For all outside & large area locations such as gymnasiums, etc.) <p>Locations where TelecenterU equipment is required. It may be purchased from the following authorized TelecenterU dealer Endex of Oklahoma Inc - 405-602-0001</p> <p style="text-align: center;">End of Section</p> <p>Part 2 - Installation</p> <p>2.01 Systems Installation</p> <ul style="list-style-type: none"> All non-IP cabling shall be shielded and have a minimum of 5 conductors. All network IP cabling shall be Cat6 (See Structured Cabling System Specifications for cabling information) All circuits and cabling shall be labeled at all terminating ends. All devices shall be mounted according to the manufacturer's specifications. All devices shall be properly adjusted and tested prior to job completion. All non-IP room circuits shall run from the intercom system to the call button then to the room speaker. All extra speaker wire taps shall be insulated. All rooms shall be individually wired and terminated at the intercom system on individual points. (No Doubling) All rooms shall be tested to verify proper room number programming and operation. All call buttons shall be labeled with their corresponding system point number. Protective grommets shall be installed on all conduits to protect wire. All wire shall be run in J hooks above ceiling with a minimum space of 4" from ceiling deck. All wire shall be in separate pathways 6" from other system wiring. No wire ties allowed. No wire shall be run between the red iron and roof deck. All wire ran between building shall be in conduit and shall be direct burial cable. It shall be a minimum of 5 conductor 18 AWG copper. Installer shall supply the electrical and/or masonry contractors with specialty back boxes and coordinate with them to ensure that all necessary conduits, back boxes, etc. are installed in the proper locations. Follow and adhere to installation practices specified by NFPA-70 National Electric Code, Edition 2008. Follow and adhere to installation practices specified by the Manufacturers.
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<p>2.02 Quality Assurance</p> <ul style="list-style-type: none"> Install all components as directed by Manufacturer's installation guidelines. All products shall bear the mark of UL or ETL for performance level. System installation shall meet all applicable Local/State codes and safety requirements where project is located. All products shall be new and un-used in original packaging. Bidding contractor shall be able to provide insurance at the request of the owner. Bidding contractor shall have a minimum of 5 years experience installing school intercom systems. <p>2.03 Bidder/Installer Qualifications</p> <ul style="list-style-type: none"> Bidding contractor shall have a minimum of 5 years experience installing school intercom systems. <p>2.04 Delivery, Storage, and Protection</p> <ul style="list-style-type: none"> Contractor shall ensure that materials delivery to work area shall be coordinated with construction site manager responsible for materials distribution to all trades. Contractor shall ensure materials are stored in an environmental area where: <ul style="list-style-type: none"> Temperature does not exceed 120 degrees Fahrenheit nor below 32 degrees Fahrenheit. Humidity does not exceed 80 %. No direct exposure to sunlight. Follow Manufacturer's recommendations for handling of materials. <p>Warranty</p> <ul style="list-style-type: none"> Contractor shall provide a 1 year parts and labor warranty against defective workmanship and/or system component failure. Contractor shall execute a Lifetime Applications Assurance Warranty for parts and labor to support stated applications from the connectivity Manufacturer. <p style="text-align: center;">End of Section</p> <p>Part 3 - Execution</p> <p>3.01 Field Quality Control</p> <ul style="list-style-type: none"> Contractor shall make available all ceiling and termination work for inspection by Manufacturer's representative or owner's representative. Contractor shall replace all defective components. <p>3.02 Adjusting</p> <ul style="list-style-type: none"> No additional work outside of the contract scope of work shall be completed without the approval of the Owner or Owner's representative. <p>3.03 Protection</p> <ul style="list-style-type: none"> It is the responsibility of the Contractor to ensure equipment is protected from dust and water during the project with appropriate materials. Remove all protective covers and protective materials from equipment prior to turnover to Owner. <p>3.04 Schedules</p> <ul style="list-style-type: none"> Coordinate work with Owner's project manager and follow scheduling sequence as established by Owner's project manager. It is recommended that the Contractor schedule closely with any other systems contractor to ensure turnover date is met. Contractor bidding will supply the electrical and/or masonry contractors with any specialty back boxes such as clock recessed back boxes etc. and coordinate with them to ensure that all necessary conduits, back boxes, etc. are installed in the proper locations. <p>3.05 Submittals</p> <p>1.03.01 Prior to installation</p> <ul style="list-style-type: none"> Show compete map of system design for approval by Owner. <p>3.06 System Requirements</p> <p>Intercom system shall be capable of communicating to all rooms and shall have adequate number of room points as to not double up on any given point.</p> <p style="text-align: center;">End of Section</p> <p style="text-align: center;">Intercom System Installation Completion Check List</p> <p>Part 4 - Check List</p> <p>4.01 Section Includes</p> <ul style="list-style-type: none"> Intercom System Completion Check List <p>4.02 Completion Check List</p> <ul style="list-style-type: none"> Main control panel has a map of the entire system inside and a copy has been given to Jack Phillips with MPS. All intercom programming such as bell times, tornado drill alert, etc has been checked and is correct. Intercom has been tested for proper operation. All rooms have been tested to verify proper description at console. All speakers have been tested to verify proper operation and volume. All extra speaker wires have been tapped or insulated All call buttons are labeled and have been tested for proper operation. <p style="text-align: center;">End of Section</p> <p style="text-align: center;">Clock System Specifications</p> <p>Part 1 - General</p> <p>1.01 System Manufacture</p> <ul style="list-style-type: none"> Clock Equipment shall match existing system. (Must be compatible with schools existing system.) <p>Locations where Telecor equipment is required. It may be purchased from the following authorized Telecor dealers Advanced Cabling, Inc - 405-418-4322 High-Tech Tronics, Inc - 405-495-0215</p> <p>1.02 Intercom Clock Systems Equipment Description</p> <ul style="list-style-type: none"> Intercom Digital Clocks shall be hard wired and may not use battery power for its primary power source. Clocks shall be 4 inch and be compatible with existing system. Clocks must be compatible with existing clock system. 	<p style="text-align: center;">End of Section</p> <p style="text-align: center;">INTERCOM SYSTEM SPECIFICATIONS</p> <p>Part 1 - Equipment</p> <p>1.01 System Manufacture</p> <ul style="list-style-type: none"> Intercom System Manufacturer shall be Telecor or Rauland Telecenter U IP. (Match existing system) Cable Manufacturer shall be Belden or Equivalent <p>Locations where Telecor equipment is required. It may be purchased from the following authorized Telecor dealers: Advanced Cabling, Inc - 405-418-4322 High-Tech Tronics, Inc - 405-495-0215</p> <p>Locations where TelecenterU equipment is required. It may be purchased from the following authorized TelecenterU dealer Endex of Oklahoma Inc - 405-602-0001</p> <p>1.02 Intercom Systems Equipment</p> <p>1.02.a Telecor Intercom Equipment</p> <ul style="list-style-type: none"> Intercom call in button shall be momentary close and compatible with existing Intercom system Intercom ceiling speakers shall be Manufacture Clarity Model # S-522. (Or equivalent approved by MPS must have volume control accessible from the floor) Intercom outside paging horn shall be Manufacture Rauland Borg 3601. (Or equivalent approved by MPS) Locations where Telecor equipment is required. It may be purchased from the following authorized Telecor dealers Advanced Cabling, Inc - 405-418-4322 High-Tech Tronics, Inc - 405-495-0215 <p>1.02.b Rauland Telecenter U IP Intercom Systems Equipment</p> <ul style="list-style-type: none"> Classroom Intercom Equipment <ul style="list-style-type: none"> Call button shall be Part # 603302 Dual Level call switch. Ceiling speakers shall be Part # BAFKIT2X2L6RJ - 8 Ohm ceiling tile replacement speaker with RJ45 connector. IP Classroom Module shall be TCC2011 IP Module (*Module required for each classroom, *Requires POE network drop) Hallway/Commons/Outside Intercom Equipment <ul style="list-style-type: none"> TCC2022-IP Zone page module (*Requires POE network drop) Appropriate size amp for quantity of speakers. BAFKIT2X2L - 25 volt ceiling tile replacement paging speaker (For all classroom & hallway locations) Rauland Borg 3601 - Loud paging horn (For all outside & large area locations such as gymnasiums, etc.) <p>Locations where TelecenterU equipment is required. It may be purchased from the following authorized TelecenterU dealer Endex of Oklahoma Inc - 405-602-0001</p> <p style="text-align: center;">End of Section</p> <p>Part 2 - Installation</p> <p>2.01 Systems Installation</p> <ul style="list-style-type: none"> All non-IP cabling shall be shielded and have a minimum of 5 conductors. All network IP cabling shall be Cat6 (See Structured Cabling System Specifications for cabling information) All circuits and cabling shall be labeled at all terminating ends. All devices shall be mounted according to the manufacturer's specifications. All devices shall be properly adjusted and tested prior to job completion. All non-IP room circuits shall run from the intercom system to the call button then to the room speaker. All extra speaker wire taps shall be insulated. All rooms shall be individually wired and terminated at the intercom system on individual points. (No Doubling) All rooms shall be tested to verify proper room number programming and operation. All call buttons shall be labeled with their corresponding system point number. Protective grommets shall be installed on all conduits to protect wire. All wire shall be run in J hooks above ceiling with a minimum space of 4" from ceiling deck. All wire shall be in separate pathways 6" from other system wiring. No wire ties allowed. No wire shall be run between the red iron and roof deck. All wire ran between building shall be in conduit and shall be direct burial cable. It shall be a minimum of 5 conductor 18 AWG copper. Installer shall supply the electrical and/or masonry contractors with specialty back boxes and coordinate with them to ensure that all necessary conduits, back boxes, etc. are installed in the proper locations. Follow and adhere to installation practices specified by NFPA-70 National Electric Code, Edition 2008. Follow and adhere to installation practices specified by the Manufacturers.
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<p>Requirements</p> <ul style="list-style-type: none"> Connector shall be Leviton part # 61110-RO6 eXtreme 6 connector for all workstation drops. Connector shall be Leviton part # 61110-RV6 eXtreme 6 connector for all Security camera drops. Connector shall be Leviton part # 61110-RV6 eXtreme 6 connector for all Wifi drops. Contractor shall provide Moore Public Schools, Technology Department, one 5' category 6 patch cord, (blue in color) for each category 6 work station cable installed. To be installed by contractor at the network cabinet. Contractor shall provide Moore Public Schools, Technology Department, one 10' category 6 patch cord, (blue in color) for each category 6 work station cable installed. Leave in box at network cabinet. To be installed by MPS Technology Dept. Contractor shall provide Moore Public Schools, Technology Department, one 5' category 6 patch cord, (White in color) for each category 6 Security Camera cable installed. To be installed by contractor at the network cabinet. Contractor shall provide Moore Public Schools, Technology Department, one 10' category 6 patch cord, (White in color) for each category 6 Security Camera cable installed. Leave in box at network cabinet. To be installed by MPS Technology Dept. Contractor shall provide Moore Public Schools, Technology Department, one 5' category 6 patch cord, (Yellow in color) for each category 6 Wifi cable installed. To be installed by contractor at the network cabinet. Contractor shall provide Moore Public Schools, Technology Department, one 10' category 6 patch cord, (Yellow in color) for each category 6 Wifi cable installed. Leave in box at network cabinet. To be installed by MPS Technology Dept. Each cable shall be terminated on the patch panel in data closets. All Category 6 connectors shall be placed into QuickPort faceplates at the workstation end. Faceplate shall be Leviton part # 41080-6wp No substitutions. <p style="text-align: center;">Communications Backbone Cabling</p> <p>Requirements - Optical fiber</p> <ul style="list-style-type: none"> 1 Optical fiber cable shall be run from the MDF to each IDF. Fiber shall be terminated with LC connectors. Optical fiber cable shall be plenum rated Laser Optimized 50 micron Multi Mode distribution fiber. Optical fiber cable shall be an OM3 rated cable guaranteed to support 10 Gigabit Ethernet for 300 meters using 850 nm wavelength. Optical fiber cable shall have 24 strands using industry standard color coding. Optical fiber cable shall have a flame retardant and low smoke FEP jacket. Optical fiber cable shall support 10GBase-SX applications for the life of the system. Optical fiber cable shall be armor jacketed or protected inside plenum rated plastic inner duct orange or aqua in color. <p>MIC Tight-buffered 024T88-33180-A3</p> <ul style="list-style-type: none"> No substitutions. <p>Requirements - Copper backbone</p> <ul style="list-style-type: none"> 6 Cat 6 cables shall be run from the MDF to each IDF. 3 Cat 6 cables shall be run from the phone Dmark to the MDF. Copper cable shall be Category 6 cable, Green in color Connector shall be Leviton part # 61110-RV6 eXtreme 6 connector. Each cable shall be terminated on the patch panel in data closets. Each cable end shall be terminated using the T568B pin/pair assignment. No substitutions. <p>Cable Installation</p> <ul style="list-style-type: none"> Properly support horizontal cables in ceiling every 4'-5' using J-hooks or cable tray only. (no slings, pouches, or D rings.) Place horizontal cables in pathways and spaces dedicated for communications cables. No pathways shall be in or above the red iron. Data cable will be run in separate pathways from all other cables. Provide 30' of slack at station end in ceiling and not inside wall. Slack shall be rolled neatly in a 2' loop and hanging from a j-hook in ceiling above drop location. Cat 6 data cables are to be terminated using the T568B standard. Leviton face plates that support 6 snap in jacks will be used with Leviton snap in blanks in unused slots. Ensure terminations are at 180 degrees to the jack with no more than 1/4" un-twisting and no more than 1/2" un-jack-ketting and are in accordance with manufacturer's recommendations. Ensure terminations have no un-twisting and that tower separators are utilized to separate pairs. 	<p>2.02 Quality Assurance</p> <ul style="list-style-type: none"> Install all components as directed by Manufacturer's installation guidelines. All products shall bear the mark of UL or ETL for performance level. System installation shall meet all applicable Local/State codes and safety requirements where project is located. All products shall be new and un-used in original packaging. Bidding contractor shall be able to provide insurance at the request of the owner. Bidding contractor shall have a minimum of 5 years experience installing school intercom systems. <p>2.03 Bidder/Installer Qualifications</p> <ul style="list-style-type: none"> Bidding contractor shall have a minimum of 5 years experience installing school intercom systems. <p>2.04 Delivery, Storage, and Protection</p> <ul style="list-style-type: none"> Contractor shall ensure that materials delivery to work area shall be coordinated with construction site manager responsible for materials distribution to all trades. Contractor shall ensure materials are stored in an environmental area where: <ul style="list-style-type: none"> Temperature does not exceed 120 degrees Fahrenheit nor below 32 degrees Fahrenheit. Humidity does not exceed 80 %. No direct exposure to sunlight. Follow Manufacturer's recommendations for handling of materials. <p>Warranty</p> <ul style="list-style-type: none"> Contractor shall provide a 1 year parts and labor warranty against defective workmanship and/or system component failure. Contractor shall execute a Lifetime Applications Assurance Warranty for parts and labor to support stated applications from the connectivity Manufacturer. <p style="text-align: center;">End of Section</p> <p>Part 3 - Execution</p> <p>3.01 Field Quality Control</p> <ul style="list-style-type: none"> Contractor shall make available all ceiling and termination work for inspection by Manufacturer's representative or owner's representative. Contractor shall replace all defective components. <p>3.02 Adjusting</p> <ul style="list-style-type: none"> No additional work outside of the contract scope of work shall be completed without the approval of the Owner or Owner's representative. <p>3.03 Protection</p> <ul style="list-style-type: none"> It is the responsibility of the Contractor to ensure equipment is protected from dust and water during the project with appropriate materials. Remove all protective covers and protective materials from equipment prior to turnover to Owner. <p>3.04 Schedules</p> <ul style="list-style-type: none"> Coordinate work with Owner's project manager and follow scheduling sequence as established by Owner's project manager. It is recommended that the Contractor schedule closely with any other systems contractor to ensure turnover date is met. Contractor bidding will supply the electrical and/or masonry contractors with any specialty back boxes such as clock recessed back boxes etc. and coordinate with them to ensure that all necessary conduits, back boxes, etc. are installed in the proper locations. <p>3.05 Submittals</p> <p>1.03.01 Prior to installation</p> <ul style="list-style-type: none"> Show compete map of system design for approval by Owner. <p>3.06 System Requirements</p> <p>Intercom system shall be capable of communicating to all rooms and shall have adequate number of room points as to not double up on any given point.</p> <p style="text-align: center;">End of Section</p> <p style="text-align: center;">Intercom System Installation Completion Check List</p> <p>Part 4 - Check List</p> <p>4.01 Section Includes</p> <ul style="list-style-type: none"> Intercom System Completion Check List <p>4.02 Completion Check List</p> <ul style="list-style-type: none"> Main control panel has a map of the entire system inside and a copy has been given to Jack Phillips with MPS. All intercom programming such as bell times, tornado drill alert, etc has been checked and is correct. Intercom has been tested for proper operation. All rooms have been tested to verify proper description at console. All speakers have been tested to verify proper operation and volume. All extra speaker wires have been tapped or insulated All call buttons are labeled and have been tested for proper operation. <p style="text-align: center;">End of Section</p> <p style="text-align: center;">Clock System Specifications</p> <p>Part 1 - General</p> <p>1.01 System Manufacture</p> <ul style="list-style-type: none"> Clock Equipment shall match existing system. (Must be compatible with schools existing system.) <p>Locations where Telecor equipment is required. It may be purchased from the following authorized Telecor dealers Advanced Cabling, Inc - 405-418-4322 High-Tech Tronics, Inc - 405-495-0215</p> <p>1.02 Intercom Clock Systems Equipment Description</p> <ul style="list-style-type: none"> Intercom Digital Clocks shall be hard wired and may not use battery power for its primary power source. Clocks shall be 4 inch and be compatible with existing system. Clocks must be compatible with existing clock system.
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<p style="text-align: center;">End of Section</p> <p style="text-align: center;">INTERCOM SYSTEM SPECIFICATIONS</p> <p>Part 1 - Equipment</p> <p>1.01 System Manufacture</p> <ul style="list-style-type: none"> Intercom System Manufacturer shall be Telecor or Rauland Telecenter U IP. (Match existing system) Cable Manufacturer shall be Belden or Equivalent <p>Locations where Telecor equipment is required. It may be purchased from the following authorized Telecor dealers: Advanced Cabling, Inc - 405-418-4322 High-Tech Tronics, Inc - 405-495-0215</p> <p>Locations where TelecenterU equipment is required. It may be purchased from the following authorized TelecenterU dealer Endex of Oklahoma Inc - 405-602-0001</p> <p>1.02 Intercom Systems Equipment</p> <p>1.02.a Telecor Intercom Equipment</p> <ul style="list-style-type: none"> Intercom call in button shall be momentary close and compatible with existing Intercom system Intercom ceiling speakers shall be Manufacture Clarity Model # S-522. (Or equivalent approved by MPS must have volume control accessible from the floor) Intercom outside paging horn shall be Manufacture Rauland Borg 3601. (Or equivalent approved by MPS) Locations where Telecor equipment is required. It may be purchased from the following authorized Telecor dealers Advanced Cabling, Inc - 405-418-4322 High-Tech Tronics, Inc - 405-495-0215 <p>1.02.b Rauland Telecenter U IP Intercom Systems Equipment</p> <ul style="list-style-type: none"> Classroom Intercom Equipment <ul style="list-style-type: none"> Call button shall be Part # 603302 Dual Level call switch. Ceiling speakers shall be Part # BAFKIT2X2L6RJ - 8 Ohm ceiling tile replacement speaker with RJ45 connector. IP Classroom Module shall be TCC2011 IP Module (*Module required for each classroom, *Requires POE network drop) Hallway/Commons/Outside Intercom Equipment <ul style="list-style-type: none"> TCC2022-IP Zone page module (*Requires POE network drop) Appropriate size amp for quantity of speakers. BAFKIT2X2L - 25 volt ceiling tile replacement paging speaker (For all classroom & hallway locations) Rauland Borg 3601 - Loud paging horn (For all outside & large area locations such as gymnasiums, etc.) <p>Locations where TelecenterU equipment is required. It may be purchased from the following authorized TelecenterU dealer Endex of Oklahoma Inc - 405-602-0001</p> <p style="text-align: center;"><</p>

SYSTEMS SPECIFICATIONS

Intercom 12" Analog Clock shall be hard wired and may not use battery power for its primary power source. Clock must be compatible with existing clock system.
If site does not have an existing working clock system, stand-alone battery powered clocks shall be used. Stand-alone wall clock shall be American Time E56BAGD304BP
Stand-alone dual face hallway clock shall be American Time E53BAQD204BP
An 110v electric clock receptacle shall be installed at each clock location for future devices.
1.03 Systems Installation
All devices shall be mounted according to the manufactures specifications.
All devices shall be properly adjusted and tested prior to job completion.
All extra wire taps shall be insulated.
Protective grommets shall be installed on all conduits to protect wire.
All wire shall be run in J hooks above ceiling with a minimum space of 4" from ceiling deck. All wire shall be in separate pathways 6" from other system wiring. No wire ties allowed.
All wire ran between building shall be in conduit and shall be direct burial cable. It shall be a minimum of 5 conductor 18 AWG copper.
Installer shall supply the electrical and or masonry contractors with specialty back boxes such as clock recessed back boxes etc. and coordinate with them to ensure that all necessary conduits, back boxes, etc. are installed in the proper locations.
Follow and adhere to installation practices specified by NFPA-70 National Electric Code, Edition 2008.
Follow and adhere to installation practices specified by the Manufacturers.
1.04 Quality Assurance
1.04.01 Qualifications
Install all components as directed by Manufacturer's installation guidelines.
All products shall bear the mark of UL or ETL for performance level.
System installation shall meet all applicable Local/State codes and safety requirements where project is located.
All products shall be new and un-used in original packaging.
1.04.02 Bidder/Installer Qualifications
Bidding contractor shall have a minimum of 5 years experience installing school intercom systems.
Bidding contractor shall be able to provide insurance at the request of the owner.
1.05 Delivery, Storage, and Protection
Contractor shall ensure that materials delivery to work area shall be coordinated with construction site manager responsible for materials distribution to all trades.
Contractor is responsible for all materials, tools and vehicles left on the job site.
Follow Manufacturer's recommendations for handling of materials.
1.06 Scheduling
Contractor shall provide a detailed construction schedule with hard dates for completion of roughing in cables, terminations and testing once scheduling sequence has been determined to the Owner's Project Manager.
1.07 Warranty
Contractor shall provide a 1 year parts and labor warranty against defective workmanship and/or system component failure.
Part 3 - Execution
3.01 Field Quality Control
Contractor shall make available all ceiling and termination work for inspection by Manufacturer's representative or owner's representative.
Contractor shall replace all defective components.
3.02 Adjusting
No additional work outside of the contract scope of work shall be completed without the approval of the Owner or Owner's representative.
3.03 Protection
It is the responsibility of the Contractor to ensure equipment is protected from dust and water during the project with appropriate materials.
Remove all protective covers and protective materials from equipment prior to turnover to Owner.
3.04 Schedules
Coordinate work with Owner's project manager and follow scheduling sequence as established by Owner's project manager.
It is recommended that the Contractor schedule closely with any other systems contractor to ensure turnover date is met.
Contractor bidding will supply the electrical and or masonry contractors with any specialty back boxes such as clock recessed back boxes etc. and coordinate with them to ensure that all necessary conduits, back boxes, etc. are installed in the proper locations.

End of Section
1.04 Submittals
1.04.01 Prior to Installation
Show complete map of system design for approval by Owner.
End of Section

Clock System Installation Completion Check List
Part 1 - General
1.01 Section Includes
Clock System Completion Check List
1.02 Completion Check List
All Clocks have been tested for proper operation and synchronization.
End of Section

Security System Specifications
Part 1 - General
2.01 Manufacturers
Security System Manufacturer shall be DSC. (No Substitutions)
Peripheral device Manufacturers shall be according to equipment list. (No Substitutions)
Cable Manufacturer shall be Genesis. (Or Equivalent)
Security Systems Equipment
Security alarm control shall be DSC Model # PC4020. (No Substitutions)
Security alarm keypad shall be DSC Model # LCD4501. (No Substitutions)
Security alarm 8 zone hardwire expander shall be DSC Model # PC4108 (No Substitutions)
Security alarm 16 zone hardwire expander shall be DSC Model # PC4116 (No Substitutions)
Security alarm power supply shall be DSC Model # PC4204. (No Substitutions)
Security alarm power supply cabinet shall be DSC Model # PC4051C (No Substitutions)
Security alarm cabinet locks shall be DSC Model # L1. (No Substitutions)
Security alarm 35X35" motion detector shall be Honeywell Model # DT-8035. (No Substitutions)
Security alarm 50X60" motion detector shall be Honeywell Model # DT-8050. (No Substitutions)
Security alarm window glass break sensor shall be Honeywell Model # FG-730. (No Substitutions)
Security alarm recessed 3/4" wide gap door contact shall be GE Model # 1076CW4M. (No Substitutions)
Security alarm recessed 1" wide gap door contact shall be GE Model # 1076D-M. Double Pole Double Throw for doors with access control (No Substitutions)
Security alarm C channel door magnets shall be GRI Model # MC180
Security alarm surface window contact shall be Aleph Model # PS-1541. (Or equivalent approved by MPS)
Security alarm overhead door contact shall be Amseco Model # ODC-59A or for rail mount applications Interlogix GE2315AL. (No Substitutions)
Security alarm indoor siren shall be Ademco Model # Wave2EX. (No Substitutions)
Security alarm outdoor siren shall be ATW Model # DS301SET. (No Substitutions)
Security alarm outdoor strobe shall be Amseco Model # SL401C. (No Substitutions)
1.01 Systems Installation
All alarm junctions and or splices shall be soldered and insulated.
All circuits and wiring shall be labeled at all terminating ends.
All devices shall be mounted according to the manufactures specifications.
All devices shall be properly adjusted and tested prior to job completion.
All DSC PC4108 & PC4116 zone expanders shall be installed with power supply DSC PC4204 and cabinet DSC PC4051C
All cabinets shall be labeled outside with their corresponding module and zone numbers and installed with lock.
All cabinets shall be labeled inside with module number by the corresponding module and zone list definitions.
Main control panel shall have a CAT 6 cable ran between the main control and the phone company DMARC for monitoring purposes.
Each expansion cabinets shall have two non-shielded 16 gauge 4 conductor cables ran from the main control to the expansion cabinet.
All devices such as motion detectors, glass break detectors, door contacts, Keypads etc. shall be labeled with their corresponding module and zone number. Label shall be visible from the floor.
All motion detectors shall be sealed to prevent air and insects from entering.
All steel doors shall have wide gap contacts installed.
All door contacts shall be recessed and door magnets shall be glued in place.
All devices such as door contact (double doors wire as one), motion detectors, glass break detectors, etc. shall be wired individually on separate zones with end of line resistors at the devices.
All air conditioning condensers accessible from the outside and roof shall have pressure switches installed on the high pressure side and be connected to the security alarm.
Protective grommets shall be installed on all conduits to protect wire.
All devices shall be wired with NON shielded cable.
All panels, power supplies and modules shall be grounded.
All wire shall be run in J hooks above ceiling with a minimum space of 4" from ceiling deck. All wire shall be in separate pathways 6" from other system wiring. No wire ties allowed. No wire shall be run between the red iron and roof deck.
All wire visible from the finished floor shall be covered in decorative wire molding.
All wire ran between building shall be in conduit and shall be non shielded direct burial cable. It shall be a minimum of 4 conductor 16 AWG copper.
Installer shall have a commercial burglar technician on the job site at all times during installation.
Installer will work closely with the electrical and or masonry contractors to ensure conduit, back boxes, door frame access conduit, etc. are in the proper locations and accessible.
Follow and adhere to installation practices specified by NFPA-70 National Electric Code, Edition 2008.
Follow and adhere to installation practices specified by the Manufacturers.

1.02 Products Installed but not Supplied Under This Section
All conduit and EMT required for Fire cabling pathway in/out of closets and in/out of wall cavities at the work area. EMT or Conduit for pathways shall have no more than two 90 degree sweeps and no continuous section over 100'.
All core holes and poke through devices in the floor for the installation of Fire cabling.
All core holes and EMT sleeves between buildings shall be checked and is correct.
Back boxes for the mounting of Fire Devices.
Drag line or pull string at the back boxes fished through EMT or conduit to the other end for installing Fire Cabling.

1.02 Submittals
1.03.01 Prior to installation
Show complete map of system design for approval by Owner.
Security System Installation Completion Check List
Part 1 - General
1.01 Section Includes
Security System Completion Check List
1.02 Completion Check List
A map of the entire system showing device numbers and wire routes has been left inside the main control panel and a copy has been given to Jack Phillips with MPS.
All panel programming has been checked and is correct.
Panel(s) has been tested for proper operation.
All zones have been tested to verify proper description at keypad.
End of Section

1.03 Quality Assurance
1.03.01 Qualifications
Install all components as directed by Manufacturer's installation guidelines.
All products shall bear the mark of UL or ETL for performance level.
System installation shall meet all applicable Local/State codes and safety requirements where project is located.
All products shall be new and un-used in original packaging.
1.03.02 Bidder/Installer Qualifications
Bidding contractor shall be a local licensed Commercial Burglar Alarm Company with licensed Commercial Burglar Alarm technician(s) on staff.
Bidding contractor shall have at least one year experience installing DSC equipment.
Bidding contractor shall have a minimum of 5 years experience installing commercial burglar alarms.
Bidding contractor shall be able to provide insurance at the request of the owner.
Bidding contractor shall have a commercial burglar technician on the job site at all times during installation.
1.04 Delivery, Storage, and Protection
Contractor shall ensure that materials delivery to work area shall be coordinated with construction site manager responsible for materials distribution to all trades.
Contractor is responsible for all materials, tools and vehicles left on the job site.
Follow Manufacturer's recommendations for handling of materials.
1.05 Project Conditions
1.05.01 Environmental Requirements
Contractor shall ensure that any pollutants produced during the Work are disposed of according to local, state or national regulations. Follow the most stringent guidelines.
It is preferred that the Contractor recycle any used or un-used components during the course of the construction project.
1.06 Sequencing
Contractor shall coordinate with Owner's project manager on sequencing of various trades and construction teams for the lifecycle of the project.
1.07 Scheduling
Contractor shall provide a detailed construction schedule with hard dates for completion of roughing in cables, terminations and testing once scheduling sequence has been determined to the Owner's Project Manager.
1.08 Warranty
Contractor shall provide a 1 year parts and labor warranty against defective workmanship and/or system component failure. (1 year warranty shall begin at job completion)
Part 2 - Products
2.02 Source Quality Control
Materials shall be purchased from Distributors authorized by system Manufacturers to sell new and unused components.
Part 3 -
3.01 Field Quality Control
Contractor shall make available all ceiling and termination work for inspection by Manufacturer's representative or owner's representative.
Contractor shall replace all defective components.
3.02 Adjusting
No additional work outside of the contract scope of work shall be completed without the approval of the Owner or Owner's representative.
3.03 Cleaning
Contractor shall sweep and mop the floors of all equipment rooms or connection point closets prior to turnover to the Owner.
3.04 Protection
It is the responsibility of the Contractor to ensure equipment is protected from dust and water during the project with appropriate materials.
Remove all protective covers and protective materials from equipment prior to turnover to Owner.
3.05 Schedules
Coordinate work with Owner's project manager and follow scheduling sequence as established by Owner's project manager.
It is recommended that the Contractor schedule closely with any other systems contractor to ensure turnover date is met.
Contractor bidding will work closely with the electrical and or masonry contractors to ensure conduit, back boxes, door frame access conduit, etc. are in the proper locations and accessible.
End of Section

End of Section
1.09 References
NFPA-70 National Electrical Code 2008 edition
NFPA-72 National Fire Alarm Code
UL 1666 - Standard for Safety of Flame Propagation Height
NFPA 262 - Flame Travel and Smoke of Wires and Cables
Local Authority Having Jurisdiction
Access Control System Specifications
Access Control Equipment
Part 1 - Manufacture
Access Control Manufacturer shall be Keyscan. (No Substitutions)
Peripheral device Manufacturers shall be according to equipment list. (No Substitutions)
Cable Manufacturer shall be Genesis. (Or Equivalent)
1.01 Access Control Equipment Description
Access Control System Manufacture shall be Keyscan (No Substitutions)
Access Control Management Software = Aurora (This software is already installed and in use. It is listed for information purposes only)
Reader Control Panels shall be (No Substitutions)
Keyscan CA 250 = 2 Door
Keyscan CA 400 = 4 Door
Keyscan CA 8500 = 8 Door
Each Reader Control Panel shall be equipped with (2) 18VAC 40VA Transformer
Each Reader Control Panel shall be equipped with (1) 12V 7AH Battery
One 2, 4 or 8 Door Reader Control Panel per site shall be equipped with (1) Keyscan Netcom2p module. If the site has an existing 2, 4 or 8 Door Control Panel with a Netcom2P already installed, then a Netcom 2P is not needed and CIM or CIM-Link modules shall be used to connect the new Control Panel to the existing Control Panel.
All Reader Control Panels shall be linked together with either CIM or CIM-Link modules.
Each new Reader Control Panel shall be capable of 2 doors minimum
Elementary School Card Readers shall be (No Substitutions)
HID 13.56 Mhz SINGLE GANG BACK BOX MOUNT READ ONLY CONTACTLESS SMART CARD READER -KEYSCAN HIGH SECURITY FORMAT C/W 36 BIT WIEGAND OUTPUT- Part # KR40SE (For use in all locations except where mullion mount reader size is required to fit)
HID 13.56 Mhz MULLION MOUNT READ ONLY CONTACTLESS SMART CARD READER -KEYSCAN HIGH SECURITY FORMAT C/W 36 BIT WIEGAND OUTPUT- Part # KR10SE (For use on mullion mount locations where single gang reader KR40SE is too large)
HID 13.56 Mhz SINGLE GANG BACK BOX MOUNT READ ONLY C/W KEYPAD CONTACTLESS SMART CARD READER HIGH SECURITY FORMAT C/W 36 BIT WIEGAND OUTPUT- Part # KRK40SE (Do not use unless noted)
Jr High & High School Card Readers shall be (No Substitutions)
HID 13.56 Mhz SINGLE GANG BACK BOX MOUNT READ ONLY CONTACTLESS SMART CARD READER -HID ICLASS SE R40 Part # 920NTNEK00000 (For use in all locations except where mullion mount reader size is required to fit)
HID 13.56 Mhz MULLION MOUNT READ ONLY CONTACTLESS SMART CARD READER -FULL MULLION HID ICLASS SE R15 Part # 910NTNEK00000 or MINI-MULLION HID ICLASS SE R10 Part # 900NTNEK00000 (For use on mullion mount locations where single gang reader R40 is too large)
All Readers require Z216 STR OAS Wire
Elementary, Jr High & High School Access Control Cards shall be (No Substitutions)
HID SEOS Part # 5006PGGMN 48-bit HID Global Corporate 1000 format. (Cards must be ordered from ADI or Anixter. MPS shall provide the Format & Facility Code to winning bidder.)
Provide Moore Public Schools with 100 Cards
Access Control Strikes and locks shall be (No Substitutions unless approved by Moore Public Schools)
RCI 0162X32D 3/4 inch Rim
RCI 0162X32D 1/2 inch Rim
RCI F0162X32D 3/4 inch Rim Fire Rated
RCI F2164X32D
Where storm doors are installed, install compatible power motor and power supply to activate door hardware unless installed by door contractor.
Egress Motions shall be (No Substitutions)
End of Section

End of Section
1.02 Submittals
1.03.01 Prior to installation
Show complete map of system design for approval by Owner.
Security System Installation Completion Check List
Part 1 - General
1.01 Section Includes
Security System Completion Check List
1.02 Completion Check List
A map of the entire system showing device numbers and wire routes has been left inside the main control panel and a copy has been given to Jack Phillips with MPS.
All panel programming has been checked and is correct.
Panel(s) has been tested for proper operation.
All zones have been tested to verify proper description at keypad.
End of Section

End of Section
1.02 Submittals
1.03.01 Prior to installation
Show complete map of system design for approval by Owner.
Security System Installation Completion Check List
Part 1 - General
1.01 Section Includes
Security System Completion Check List
1.02 Completion Check List
A map of the entire system showing device numbers and wire routes has been left inside the main control panel and a copy has been given to Jack Phillips with MPS.
All panel programming has been checked and is correct.
Panel(s) has been tested for proper operation.
All zones have been tested to verify proper description at keypad.
End of Section

All zones have been tested to verify proper reporting to the monitoring station.
All zones have been tested to verify they are in their proper partition(s).
All sirens and strobes have been tested for proper operation.
All motion detectors have been adjusted for proper sensitivity and have been walk tested.
All motion detectors have been sealed to prevent air and insects from entering.
All glass break detectors have been adjusted for proper sensitivity and tested.
All cabinets are labeled on the outside with module numbers and zone numbers.
All cabinets are labeled on the inside with module numbers by the corresponding module and zone descriptions.
All user codes have been programmed and tested for proper partition access.
The monitoring station has the correct account information such as call list, zone descriptions etc.
End of Section

End of Section
1.09 References
NFPA-70 National Electrical Code 2008 edition
NFPA-72 National Fire Alarm Code
UL 1666 - Standard for Safety of Flame Propagation Height
NFPA 262 - Flame Travel and Smoke of Wires and Cables
Local Authority Having Jurisdiction
Access Control System Specifications
Access Control Equipment
Part 1 - Manufacture
Access Control Manufacturer shall be Keyscan. (No Substitutions)
Peripheral device Manufacturers shall be according to equipment list. (No Substitutions)
Cable Manufacturer shall be Genesis. (Or Equivalent)
1.01 Access Control Equipment Description
Access Control System Manufacture shall be Keyscan (No Substitutions)
Access Control Management Software = Aurora (This software is already installed and in use. It is listed for information purposes only)
Reader Control Panels shall be (No Substitutions)
Keyscan CA 250 = 2 Door
Keyscan CA 400 = 4 Door
Keyscan CA 8500 = 8 Door
Each Reader Control Panel shall be equipped with (2) 18VAC 40VA Transformer
Each Reader Control Panel shall be equipped with (1) 12V 7AH Battery
One 2, 4 or 8 Door Reader Control Panel per site shall be equipped with (1) Keyscan Netcom2p module. If the site has an existing 2, 4 or 8 Door Control Panel with a Netcom2P already installed, then a Netcom 2P is not needed and CIM or CIM-Link modules shall be used to connect the new Control Panel to the existing Control Panel.
All Reader Control Panels shall be linked together with either CIM or CIM-Link modules.
Each new Reader Control Panel shall be capable of 2 doors minimum
Elementary School Card Readers shall be (No Substitutions)
HID 13.56 Mhz SINGLE GANG BACK BOX MOUNT READ ONLY CONTACTLESS SMART CARD READER -KEYSCAN HIGH SECURITY FORMAT C/W 36 BIT WIEGAND OUTPUT- Part # KR40SE (For use in all locations except where mullion mount reader size is required to fit)
HID 13.56 Mhz MULLION MOUNT READ ONLY CONTACTLESS SMART CARD READER -KEYSCAN HIGH SECURITY FORMAT C/W 36 BIT WIEGAND OUTPUT- Part # KR10SE (For use on mullion mount locations where single gang reader KR40SE is too large)
HID 13.56 Mhz SINGLE GANG BACK BOX MOUNT READ ONLY C/W KEYPAD CONTACTLESS SMART CARD READER HIGH SECURITY FORMAT C/W 36 BIT WIEGAND OUTPUT- Part # KRK40SE (Do not use unless noted)
Jr High & High School Card Readers shall be (No Substitutions)
HID 13.56 Mhz SINGLE GANG BACK BOX MOUNT READ ONLY CONTACTLESS SMART CARD READER -HID ICLASS SE R40 Part # 920NTNEK00000 (For use in all locations except where mullion mount reader size is required to fit)
HID 13.56 Mhz MULLION MOUNT READ ONLY CONTACTLESS SMART CARD READER -FULL MULLION HID ICLASS SE R15 Part # 910NTNEK00000 or MINI-MULLION HID ICLASS SE R10 Part # 900NTNEK00000 (For use on mullion mount locations where single gang reader R40 is too large)
All Readers require Z216 STR OAS Wire
Elementary, Jr High & High School Access Control Cards shall be (No Substitutions)
HID SEOS Part # 5006PGGMN 48-bit HID Global Corporate 1000 format. (Cards must be ordered from ADI or Anixter. MPS shall provide the Format & Facility Code to winning bidder.)
Provide Moore Public Schools with 100 Cards
Access Control Strikes and locks shall be (No Substitutions unless approved by Moore Public Schools)
RCI 0162X32D 3/4 inch Rim
RCI 0162X32D 1/2 inch Rim
RCI F0162X32D 3/4 inch Rim Fire Rated
RCI F2164X32D
Where storm doors are installed, install compatible power motor and power supply to activate door hardware unless installed by door contractor.
Egress Motions shall be (No Substitutions)
End of Section

End of Section
1.02 Submittals
1.03.01 Prior to installation
Show complete map of system design for approval by Owner.
Security System Installation Completion Check List
Part 1 - General
1.01 Section Includes
Security System Completion Check List
1.02 Completion Check List
A map of the entire system showing device numbers and wire routes has been left inside the main control panel and a copy has been given to Jack Phillips with MPS.
All panel programming has been checked and is correct.
Panel(s) has been tested for proper operation.
All zones have been tested to verify proper description at keypad.
End of Section

End of Section
1.02 Submittals
1.03.01 Prior to installation
Show complete map of system design for approval by Owner.
Security System Installation Completion Check List
Part 1 - General
1.01 Section Includes
Security System Completion Check List
1.02 Completion Check List
A map of the entire system showing device numbers and wire routes has been left inside the main control panel and a copy has been given to Jack Phillips with MPS.
All panel programming has been checked and is correct.
Panel(s) has been tested for proper operation.
All zones have been tested to verify proper description at keypad.
End of Section

Bosch DS160 or Honeywell IS310
Door Contacts shall be GE Model # 1076D-M Double Pole Double Throw (To be utilized for Access Control and Security Alarm) (See security alarm specs)
Power Supply for locking hardware
**Power supply in Keyscan Controller is for the Control and Readers only.
Power Supplies shall be sized to meet requirements of Strikes and locks with a maximum of 80% amp load.
Power Supply shall have form "C" contacts for supervision that is connected to Keyscan Control Aux Input.
24 VDC Securiton- AccuPower- AQM20-8G/16C, AGDS-8C or equal.
2.01 Systems Installation
All junctions and or splices shall be soldered and insulated.
All circuits and wiring shall be labeled at all terminating ends.
All devices shall be mounted in accordance to the manufactures specifications.
All devices shall be properly adjusted and tested prior to job completion.
All controllers shall be labeled outside with their corresponding modules and installed with lock.
All controllers shall have a Cat 6 network cable Blue in color ran from the nearest network cabinet and labeled with drop number.
All card readers shall be labeled with their corresponding reader number.
All doors with access control shall have contacts installed for door status indication. Steel doors shall have wide gap door contacts installed.
All doors with access control shall have egress motions installed to allow system to detect proper egress. (including doors with panic exit hardware.)
Protective grommets shall be installed on all conduits to protect wire.
All panels, power supplies and modules shall be grounded.
All wire shall be run in J hooks above ceiling with a minimum space of 6" from ceiling deck. All wire shall be in separate pathways 6" from other system wiring. No wire ties allowed. No wire shall be run between the red iron and roof deck.
All wire visible from the finished floor shall be covered in decorative wire molding.
All wire ran between building shall be in conduit and shall be direct burial cable.
Installer shall have a licensed Access Control technician on the job site at all times during installation.
Installer will work closely with the electrical and or masonry contractors to ensure conduit, back boxes, door frame access conduit, etc. are in the proper locations and accessible.
Follow and adhere to installation practices specified by NFPA-70 National Electric Code, Edition 2008.
Follow and adhere to installation practices specified by the Manufacturers.
3.01 Bidder/Installer Qualifications
Bidding contractor shall be a local licensed Access Control Company with licensed Access Control technician(s) on staff.
Bidding contractor shall have at least one year experience installing Keyscan Access Control Systems.
Bidding contractor shall have a minimum of 5 years experience installing commercial Access Control Systems.
Bidding contractor shall be able to provide insurance at the request of the owner.
Bidding contractor shall have a commercial Access Control technician on the job site at all times during installation.
3.01.1 Submittals
3.01.2 Prior to installation
Show complete map of system design for approval by Owner.
3.01.3 Prior to final acceptance
Provide a soft CAD copy As-Built showing layout of Controller Panel, Card Readers, Power Supplies and all mounted equipment upon Substantial Completion.
Ensure all warranties specify that the Owner is entitled to all rights guaranteed by the warranty for various components.
3.02 Quality Assurance
3.02.1 Qualifications
Install all components as directed by Manufacturer's installation guidelines.
All products shall bear the mark of UL or ETL for performance level.
System installation shall meet all applicable Local/State codes and safety requirements where project is located.
All products shall be new and un-used in original packaging.
Access Control Installation Completion Check List
Part 4 - General
4.01 Section Includes
Access Control System Completion Check List
4.02 Completion Check List
A map of the entire system showing device numbers and wire routes has been left inside the main controller panel and a copy has been given to Rodney Cobb with MPS.
All system programming has been checked and is correct.
Panel(s) has been tested for proper operation.
All card readers are labeled with reader number and have been tested to verify proper operation.
All user card and key fobs have been programmed into system and tested to verify proper operation.
All egress motion detectors have been adjusted for proper sensitivity and have been walk tested.
All controllers are labeled on the outside with module numbers.
All controllers are labeled on the inside with module numbers by the corresponding module.
End of Section

End of Section
1.02 Submittals
1.03.01 Prior to installation
Show complete map of system design for approval by Owner.
Security System Installation Completion Check List
Part 1 - General
1.01 Section Includes
Security System Completion Check List
1.02 Completion Check List
A map of the entire system showing device numbers and wire routes has been left inside the main control panel and a copy has been given to Jack Phillips with MPS.
All panel programming has been checked and is correct.
Panel(s) has been tested for proper operation.
All zones have been tested to verify proper description at keypad.
End of Section

End of Section
1.02 Submittals
1.03.01 Prior to installation
Show complete map of system design for approval by Owner.
Security System Installation Completion Check List
Part 1 - General
1.01 Section Includes
Security System Completion Check List
1.02 Completion Check List
A map of the entire system showing device numbers and wire routes has been left inside the main control panel and a copy has been given to Jack Phillips with MPS.
All panel programming has been checked and is correct.
Panel(s) has been tested for proper operation.
All zones have been tested to verify proper description at keypad.
End of Section



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KFC ENGINEERING

STRUCTURAL

SALAS O'BRIEN

MECHANICAL / ELECTRICAL

NY

drawn by

NY

checked by

MARCH 2022

date

revisions

MOORE PUBLIC SCHOOLS BOARD OF EDUCATION MOORE, OKLAHOMA



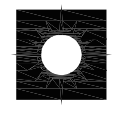
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Salas O'Brien Project No.: 2021-02932-00

SYSTEMS SPECIFICATIONS

4.03 Products Installed but not Supplied Under This Section

- All conduit and EMT required for Fire cabling pathway in/out of closets and in/out of wall cavities at the work or Conduit for pathways shall have no more than two 90 degree sweeps and no continuous section over 100'.
- All core holes and poke through devices in the floor for the installation of cabling.
- All core holes and EMT sleeves between floors for the routing of cabling.
- Back boxes for the mounting of Devices.
- Drag line or pull string at the back boxes fished through EMT or conduit to the other end for installing Cabling.

4.04 References

- NFPA-70 National Electrical Code 2008 edition
- NFPA-72 National Fire Alarm Code
- UL 1666 - Standard for Safety of Flame Propagation Height
- NFPA 262 - Flame Travel and Smoke of Wires and Cables
- Local Authority Having Jurisdiction

4.05 Definitions

AWG - American Wire Gauge
 BICSI - Building Industry Consulting Service International
 EIA - Electronics Industry Alliance
 FCC - Federal Communications Commission
 NECA - National Electrical Contractors Association
 NFPA - National Fire Protection Agency
 UL - Underwriters Laboratory

4.06 Delivery, Storage, and Protection

- Contractor shall ensure that materials delivery to work area shall be coordinated with construction site manager responsible for materials distribution to all trades.
- Contractor is responsible for all materials, tools and vehicles left on the job site.
- Follow Manufacturer's recommendations for handling of materials.

4.07 Project Conditions

4.07.1 Environmental Requirements

- Contractor shall ensure that any pollutants produced during the Work are disposed off according to local, state or national regulations. Follow the most stringent guidelines.
- It is preferred that the Contractor recycle any used or un-used components during the course of the construction project.

4.07.2 Field Measurements

- Contractor shall coordinate with electrical engineer on project that the main electrical service ground has a resistance to earth of less than 5 ohms.
- Contractor shall ensure that all field testers have been calibrated from the Manufacturer within 1 year.
- All field test results will be documented and submitted to Moore Public Schools, Technology Department.

4.08 Sequencing

- Contractor shall coordinate with Owner's project manager on sequencing of various trades and construction teams for the lifecycle of the project.

4.09 Scheduling

- Contractor shall provide a detailed construction schedule with hard dates for completion of roughing in cables, terminations and testing once scheduling sequence has been determined to the Owner's Project Manager.

4.10 Warranty

- Contractor shall provide a 1 year parts and labor warranty against defective workmanship and/or system component failure. (1 year warranty shall begin at job completion)

4.11 Source Quality Control

- Materials shall be purchased from Distributors authorized by system Manufacturers to sell new and unused components.

Part 5 -

5.01 Field Quality Control

- Contractor shall make available all ceiling and termination work for inspection by Manufacturer's representative or owner's representative.
- Contractor shall replace all defective components.

5.02 Adjusting

- No additional work outside of the contract scope of work shall be completed without the approval of the Owner or Owner's representative.

5.03 Cleaning

- Contractor shall sweep and mop the floors of all equipment rooms or connection point closets prior to turnover to the Owner.

5.04 Protection

- It is the responsibility of the Contractor to ensure equipment is protected from dust and water during the project with appropriate materials.
- Remove all protective covers and protective materials from equipment prior to turnover to Owner.

5.05 Schedules

- Coordinate work with Owner's project manager and follow scheduling sequence as established by Owner's project manager.
- It is recommended that the Contractor schedule closely with any other systems contractor to ensure turnover date is met.
- Contractor bidding will work closely with the electrical and or masonry contractors to ensure conduit, back boxes, door frame access conduit, etc. are in the proper locations and accessible.

End of Section

Fire System Specifications

Part 1 - General

2.01 Manufacturers

- Fire System Manufacturer shall be Silent Knight. (No Substitutions)
- Notification appliance Manufacturer shall be System Sensor. (No Substitutions)
- Device Manufacturer shall be as specified in equipment description. (No Substitutions)
- Cable Manufacturer shall be Genesis. (Or Equivalent)

1.03 Fire Systems Equipment Description

- Fire alarm control shall be Silent Knight Model # 6820. (No Substitutions)
- Fire alarm distributed power module NAC Expansion shall be Silent Knight Model #'s 5495 or 5499. (No Substitutions)
- Fire alarm intelligent power supply shall be Silent Knight Model # 5895XL. (No Substitutions)
- Fire alarm remote Annunciator shall be Silent Knight Model # 5860 (Grey) and surface mount trim ring 5860TG (Grey) shall be used if surface mounted. (No Substitutions)
- Fire Alarm signaling line circuit expander shall be Silent Knight Model # 5815XL. (No Substitutions)
- Fire alarm addressable manual pull station shall be Silent Knight Model # SD500-PSDA. (No Substitutions)
- CO Detector shall be System Sensor Model # CO1224T. (No Substitutions) An SD500-AIM shall be installed on each CO1224T and be accessible from the finished floor.
- Fire alarm addressable photoelectric smoke detector shall be Silent Knight Model # SD505-PHOTO. (No Substitutions)
- Fire alarm addressable heat detector shall be Silent Knight Model # SD505-HEAT. (No Substitutions)
- Fire alarm base for Silent Knight Model #'s SD505-PHOTO and SD505-HEAT shall be Silent Knight Model # SD505-6AB. (No Substitutions)
- Fire alarm addressable input module shall be Silent Knight Model # SD500-AIM. (No Substitutions)
- Fire alarm addressable relay module shall be a Silent Knight Model # SD500-ARM. (No Substitutions)
- Fire alarm SLC line isolator shall be Silent Knight Model # SD500-LIM. (No Substitutions)
- Fire alarm Horn / Strobe signaling device shall be System Sensor Model # P2WL. (Model PC2WL can be substituted if mounted on non-stainable ceiling tile. No other Substitutions)
- Fire alarm Strobe signaling device shall be System Sensor Model # SWL. (Model SCWL can be substituted if mounted on non-stainable ceiling tile. No other Substitutions)
- Fire alarm strobe synch module shall be System Sensor Model # MDL3. (Not needed on version 9 panels or newer (No Substitutions)
- Fire alarm Outdoor strobe signaling device shall be System Sensor Model # P2RK. (No Substitutions)
- Fire alarm Speaker / Strobe signaling device shall be System Sensor Model # SPSWL. (Model SPSCWL can be substituted if mounted on non-stainable ceiling tile. No other Substitutions)
- Fire alarm Speaker signaling device shall be System Sensor Model # SPWL. (No Substitutions)
- Fire alarm 50 watt Voice Evac system shall be as needed Silent Knight SKE-450 (Single Zone), SKE-450-ZN4 (4 Zone) or SKE-450-ZN6 (6 Zone). (No Substitutions)
- Fire alarm Duct detectors and Duct Detector Remote Test Stations shall be Silent Knight Model #'s SD505-DUCTR and SD505-DTS-K. (No Substitutions)

1.01 Systems Installation

- All fire alarm junctions and or splices shall be soldered and insulated.
- All Ceiling mounted devices shall be mounted on non-stainable ceiling tiles.
- All circuits and wiring shall be labeled at all terminating ends.
- All fire system wiring shall be RED in color and non-shielded.
- All devices shall be mounted according to the manufactures specifications.
- All devices shall be properly adjusted and tested prior to job completion.
- All fire pulls shall be dual action.
- All Initiating Devices shall be labeled with their corresponding module and point number. Smoke detector label shall be on smoke detector and smoke detector base and be clearly visible from the finished floor.
- All Each Initiating Device Circuits (IDC) shall have Line Isolator Modules installed at the SLC Head End.
- All Initiating Device Circuits (IDC) shall be wired Class B (NFPA Style B).
- All Initiating Device Circuits (IDC) shall be wired with minimum 18 AWG gauge red NON Shielded cable.
- All duct detectors shall be connected to fire system and shall have remote test stations installed accessible and visible from the finished floor. They shall be labeled with their corresponding module and point number.
- All duct detector ARM / AIM shall be installed adjacent to the remote test stations and accessible and visible from the finished floor. They shall be labeled with their corresponding module and point number. (ARM/AIM should not be needed when using SD505-DUCTR duct det.)
- Each CO 1224T detectors shall have an SD500 AIM installed (No doubling). All CO1224T & SD500 AIM shall be labeled with their corresponding module and point number.
- All modules shall have their corresponding module number.
- All notification devices shall be wall mounted where possible. Where wire is exposed decorative wire molding shall be installed from the ceiling to the device. If ceiling mount devices are used they shall be mounted on a non-stainable ceiling tile
- All notification devices shall be labeled with their corresponding module, circuit number and device number. Label shall be on the base and be clearly visible from the finished floor. EOL Device shall be labeled as such.
- All horn / strobes and strobes shall be synchronized.
- All Notification Appliance Circuits (NAC) shall be wired Class B (NFPA Style Y).
- All Notification Appliance Circuits (NAC) shall be wired with minimum 16 AWG gauge red NON Shielded cable.
- Protective grommets shall be installed on all conduits to protect wire.
- All SBUS and SLC circuits shall be wired with red NON shielded cable.
- All wire shall be run in J hooks above ceiling with a minimum space of 4" from ceiling deck. All wire shall be in separate pathways 6" from other system wiring. No wire ties allowed. No wire shall be run between the red iron and roof deck.
- Main control panel shall have a CAT 6 cable ran between the main control and the phone company DMARC for monitoring purposes.
- All wire ran between building shall be in conduit and shall be non shielded direct burial cable. It shall be a minimum of 4 conductor 16 AWG copper.
- Installer shall have a commercial fire technician on the job site at all times during the installation.
- Installer shall supply the electrical and or masonry contractors with specially back boxes such as remote annunciator recessed back boxes etc. and coordinate with them to ensure that all necessary conduits, back boxes, etc. are installed in the proper locations.

- Follow and adhere to installation practices specified by the applicable NFPA 72 standards.
- Follow and adhere to installation practices specified by NFPA-70 National Electric Code, Edition 2008.
- Follow and adhere to installation practices specified by the Manufacturers.

1.02 Products Installed but not Supplied Under This Section

- All conduit and EMT required for Fire cabling pathway in/out of closets and in/out of wall cavities at the work area. EMT or Conduit for pathways shall have no more than two 90 degree sweeps and no continuous section over 100'.
- All core holes and poke through devices in the floor for the installation of Fire cabling.
- All core holes and EMT sleeves between floors for the routing of Fire cabling.
- Back boxes for the mounting of Fire Devices.
- Drag line or pull string at the back boxes fished through EMT or conduit to the other end for installing Fire Cabling.

1.03 Quality Assurance

1.03.01 Qualifications

- Install all components as directed by Manufacturer's installation guidelines.
- All products shall bear the mark of UL or ETL for performance level.
- System installation shall meet all applicable Local/State codes and safety requirements where project is located.
- All products shall be new and un-used in original packaging.

1.03.02 Bidder/Installer Qualifications

- Bidding contractor shall be a local licensed Commercial Fire Alarm Company with licensed Commercial Fire Alarm technician(s) on staff.
- Bidding contractor shall have a minimum of one year experience installing Silent Knight Addressable fire panels.
- Bidding contractor shall have a minimum of 5 years experience installing commercial fire alarms.
- Bidding contractor shall be able to provide insurance at the request of the owner.
- Bidding contractor shall have a commercial fire technician on the job site at all times during the installation.

1.04 Sequencing

- Contractor shall coordinate with Owner's project manager on sequencing of various trades and construction teams for the lifecycle of the project.

1.05 Scheduling

- Contractor shall provide a detailed construction schedule with hard dates for completion of roughing in cables, terminations and testing once scheduling sequence has been determined to the Owner's Project Manager.

1.06 Warranty

- Contractor shall provide a 1 year parts and labor warranty against defective workmanship and/or system component failure. (1 year warranty shall begin at job completion)

Part 2 - Products

2.02 Source Quality Control

- Materials shall be purchased from Distributors authorized by system Manufacturers to sell new and unused components.

Part 3 -

3.01 Field Quality Control

- Contractor shall make available all ceiling and termination work for inspection by Manufacturer's representative or owner's representative.
- Contractor shall replace all defective components.

3.02 Adjusting

- No additional work outside of the contract scope of work shall be completed without the approval of the Owner or Owner's representative.

3.03 Protection

- It is the responsibility of the Contractor to ensure equipment is protected from dust and water during the project with appropriate materials.
- Remove all protective covers and protective materials from equipment prior to turnover to Owner.

End of Section

End of Section

1.04 Submittals

1.04.01 Prior to installation

- Show complete map of system design for approval by Owner.

1.04.02 Prior to final acceptance

- Provide a soft CAD copy As-Built showing layout of panel, Initiating devices, notification devices and all mounted equipment upon Substantial Completion.
- Ensure all warranties specify that the Owner is entitled to all rights guaranteed by the warranty for various components.

Fire System Installation Completion Check List

Part 1 - General

1.01 Section Includes

- Fire System Completion Check List

1.02 Completion Check List

- A map of the entire system showing device numbers and wire routes has been left inside the main control panel and a copy has been given to Rodney Cobb with MPS.
- All panel programming has been checked and is correct.
- Panel(s) has been tested for proper operation.
- All zones have been tested to verify proper description at keypad.
- All zones have been tested to verify proper reporting to the monitoring station.
- All points have been tested to verify proper description at the keypad.
- All horn/strobes and strobes have been tested for proper operation.

- All smoke detectors have been tested and dust covers removed.
- All devices have been tested for proper operation.
- All cabinets are labeled on the outside with module numbers and point numbers.
- All cabinets are labeled on the inside with module numbers by the corresponding module and point descriptions.
- The monitoring station has the correct account information such as call list, zone descriptions, etc.

End of Section

IP camera Specifications

IP CAMERA MANUFACTURER

- Avigilon (No Substitutions).

EQUIPMENT

AVIGILON

INDOOR / OUTDOOR
 2.0C-H5A-D01-IR 05/06/2021
 4.0C-H5A-D01-IR
 6.0C-H5A-D01-IR
 8.0C-H5A-D01-IR

OUTDOOR CORNER MOUNT MULTI-HEAD REQUIREMENTS (Cameras)

9C-H4A-3MH-180 (3x3MP)
 15C-H4A-3MH-180 (3x5MP)
 24C-H4A-3MH-180 (3x8MP)

(Parts to hang cameras)
 H4AMH-AD-PEND1
 IRPTZ-MNT-WALL1
 H4AMH-DC-COVR1
 H4AMH-AD-RILL1
 H4-MT-CRNR1
 POE-INJZ-60W-NA

INDOOR MULTI-HEAD REQUIREMENTS (Cameras)

9C-H4A-3MH-180 (3x3MP)
 15C-H4A-3MH-180 (3x5MP)
 12C-H4A-3MH-180 (4x3MP)
 20C-H4A-3MH-180 (4x5MP)

(Parts to hang cameras)
 H4AMH-AD-CEIL1
 H4AMH-DC-COVR1

NEW DUAL SENSOR CAMERAS
 6.0C-H5DH-D1-IR
 10.0C-H5DH-D1-IR

INSTALLATION

- Install cameras on adjacent walls where possible. If it must be mounted on tile, should be on a water-resistant tile. MPS to have final determination of camera location and field of view. (Call Jack Phillips for final location and view phone 473-5225)
- New installed cameras need camera license for all new cameras.
- All network drops shall be connected with patch cords to a switch at each rack location.
- No Substitutions.

Horizontal Cabling Requirements

- See MPS Structured Cabling Specifications for camera network cabling installation, labelling and testing requirements.

Warranty

- Communications Contractor shall provide a 1 year parts and labor warranty against defective workmanship and/or system component failure.
- Communications Contractor shall execute a Lifetime Applications Assurance Warranty for parts and labor to support stated applications from the connectivity Manufacturer.

End of Section

Audio Visual Systems for Instructional Spaces Specifications

Part 1 - General

1.01 Instructional Spaces

- Reference technology drawings and detail sheet T504 for classroom configuration and part numbers.

1.02 Special Spaces

- Reference technology drawings and one line diagrams.

1.03 Flat Panel Displays

- All non interactive Flat Panel displays shall be Samsung BE Series. Contractor to coordinate sizes with owner and architect prior to purchase.

End of Section



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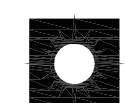
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