

KEYED NOTES	
①	LOCATION OF SECURITY ALARM ZONE EXPANDER.
②	LOCATION OF IDF ROOM.
③	APPROXIMATE LOCATION OF EXISTING INTERCOM TELECOR HEADEND UNIT.
④	APPROXIMATE LOCATION OF EXISTING FIRE ALARM CONTROL PANEL.

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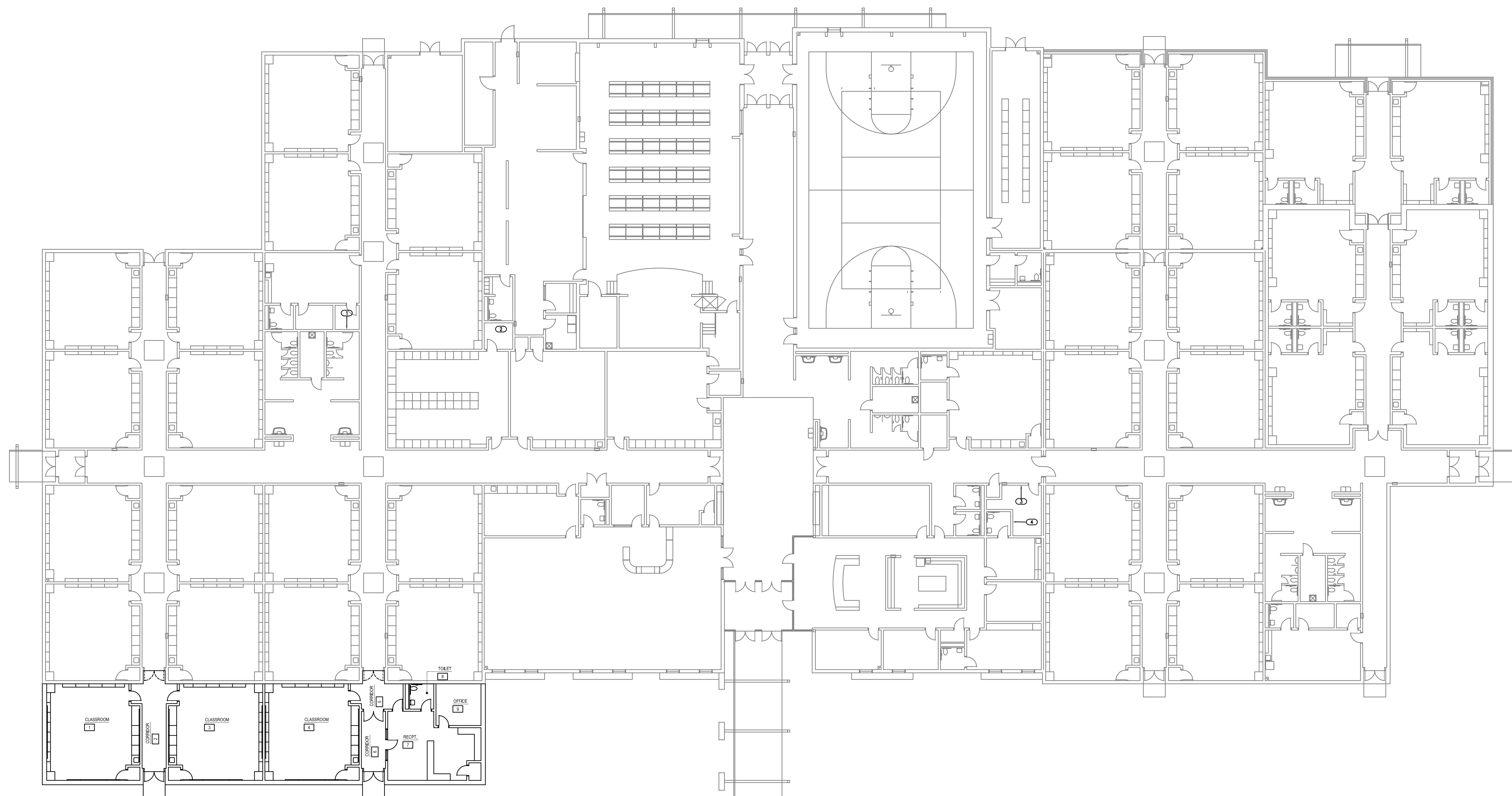
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KFC ENGINEERING

STRUCTURAL

SALAS O'BRIEN

MECHANICAL / ELECTRICAL



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APRIL 2022
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MOORE PUBLIC SCHOOLS
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MOORE, OKLAHOMA



NEW CLASSROOM
ADDITION -
SOUTH LAKE
ELEMENTARY SCHOOL

sheet no:

T100

1 TECHNOLOGY SITE PLAN
1/16" = 1'-0"



NORTH

SALASOBRIEN
expect a difference

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P: 405.364.9926 | CA#:7058 Expiration Date: 6/30/2023

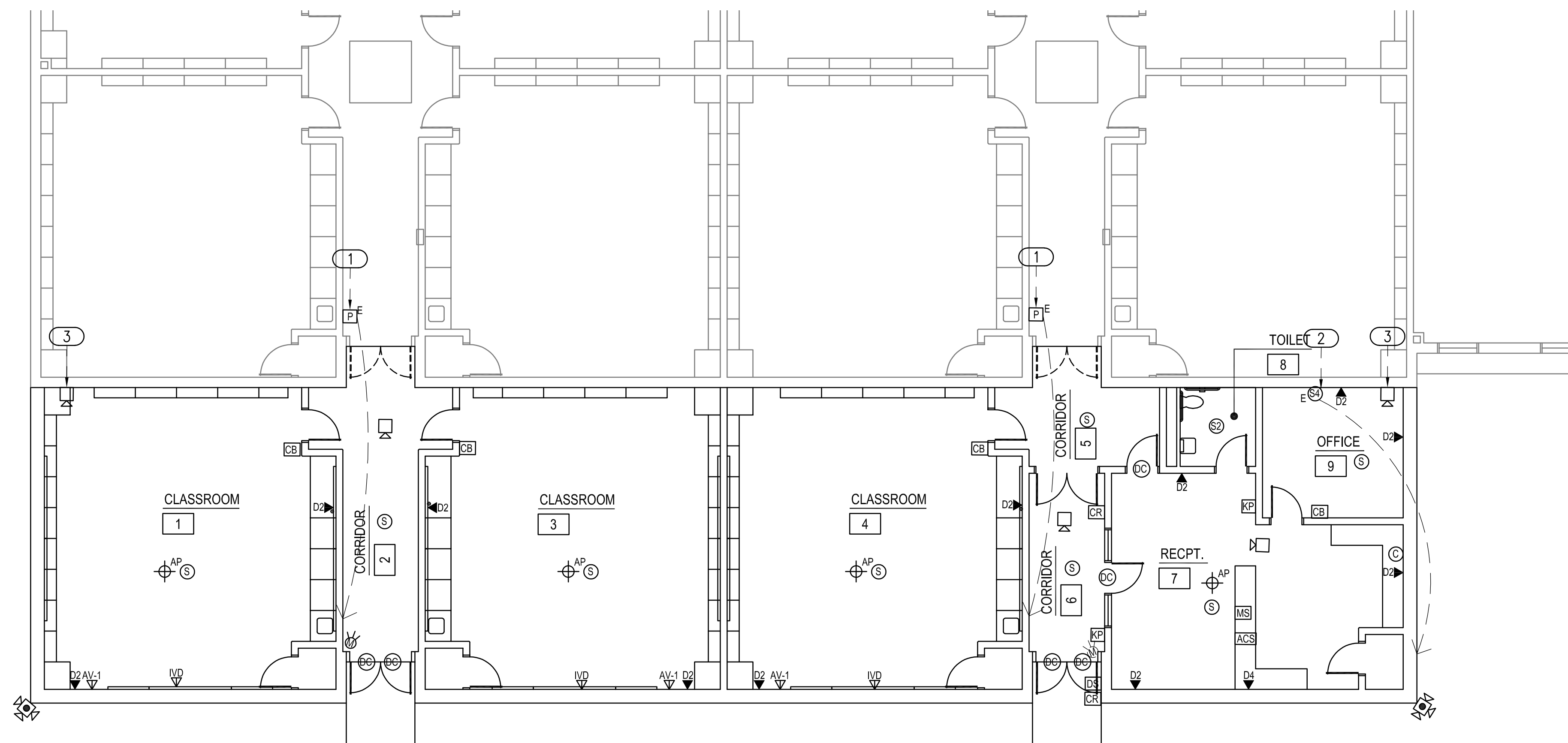
Salas O'Brien Project No.: 2022-01376-00

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GENERAL NOTES	
1.	FIRE ALARM: RELOCATE EXISTING FIREPULLS TO NEW EXTERIOR DOORS. 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 SYSTEM: CONNECT NEW SECURITY DEVICES TO EXISTING ZONE EXPANDER AND POWER SUPPLY.
3.	INTERCOM: CONNECT NEW INTERCOM DEVICES TO EXISTING TELECOR INTERCOM SYSTEM. INTERCOM WIRE SHALL BE SHIELDED.
4.	CLOCK: CONNECT NEW CLOCK DEVICES TO EXISTING TELECOR CLOCK SYSTEM.
5.	DATA: CONNECT NEW DATA DROPS TO EXISTING IDF.
6.	CAMERA: CONNECT NEW CAMERA DROPS TO EXISTING IDF. EXISTING CAMERA SYSTEM IS AVIGILON. 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.
8.	AIPHONE: PROVIDE AND INSTALL AN IX SERIES AIPHONE SYSTEM. DOOR STATION: IX-EA. MASTER STATION: IX-MV7-HB.

KEYED NOTES	
①	RELOCATE EXISTING FIRE PULL.
②	RELOCATING EXISTING PAGING HORN
③	REMOVE EXISTING CAMERA AND RETURN TO MPS TECHNOLOGY. JACK PHILLIP, 405-473-5225



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NEW CLASSROOM
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sheet no:

T201



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NEW CLASSROOM
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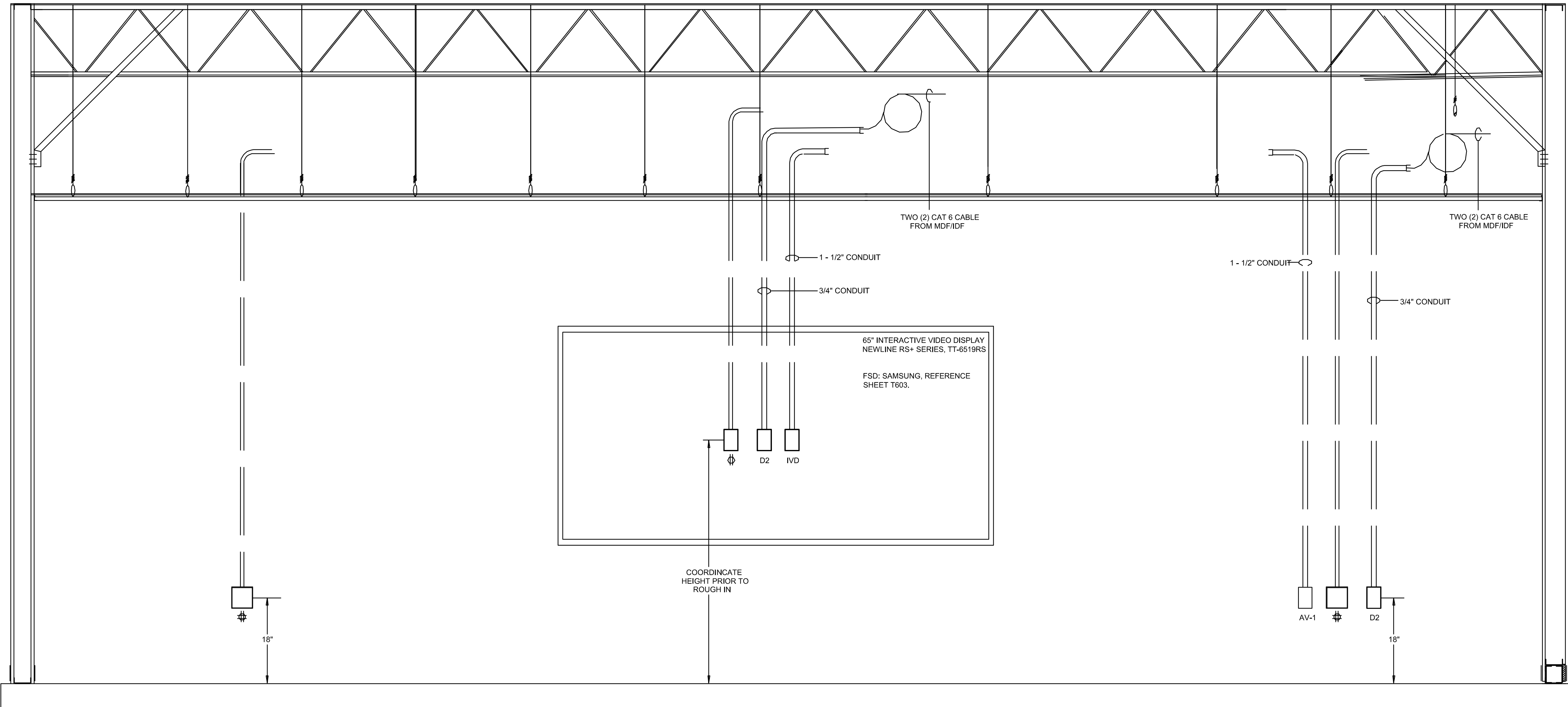
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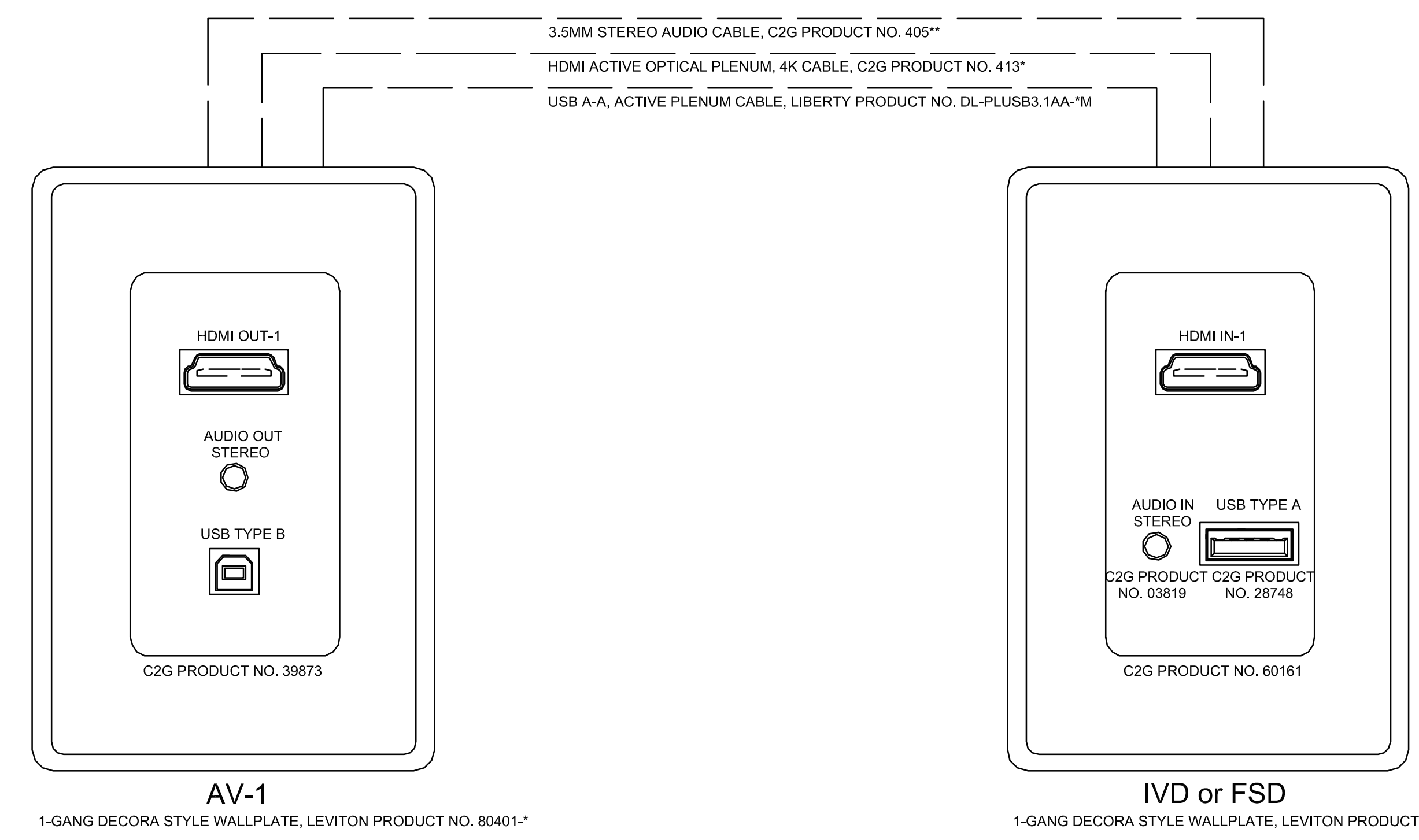
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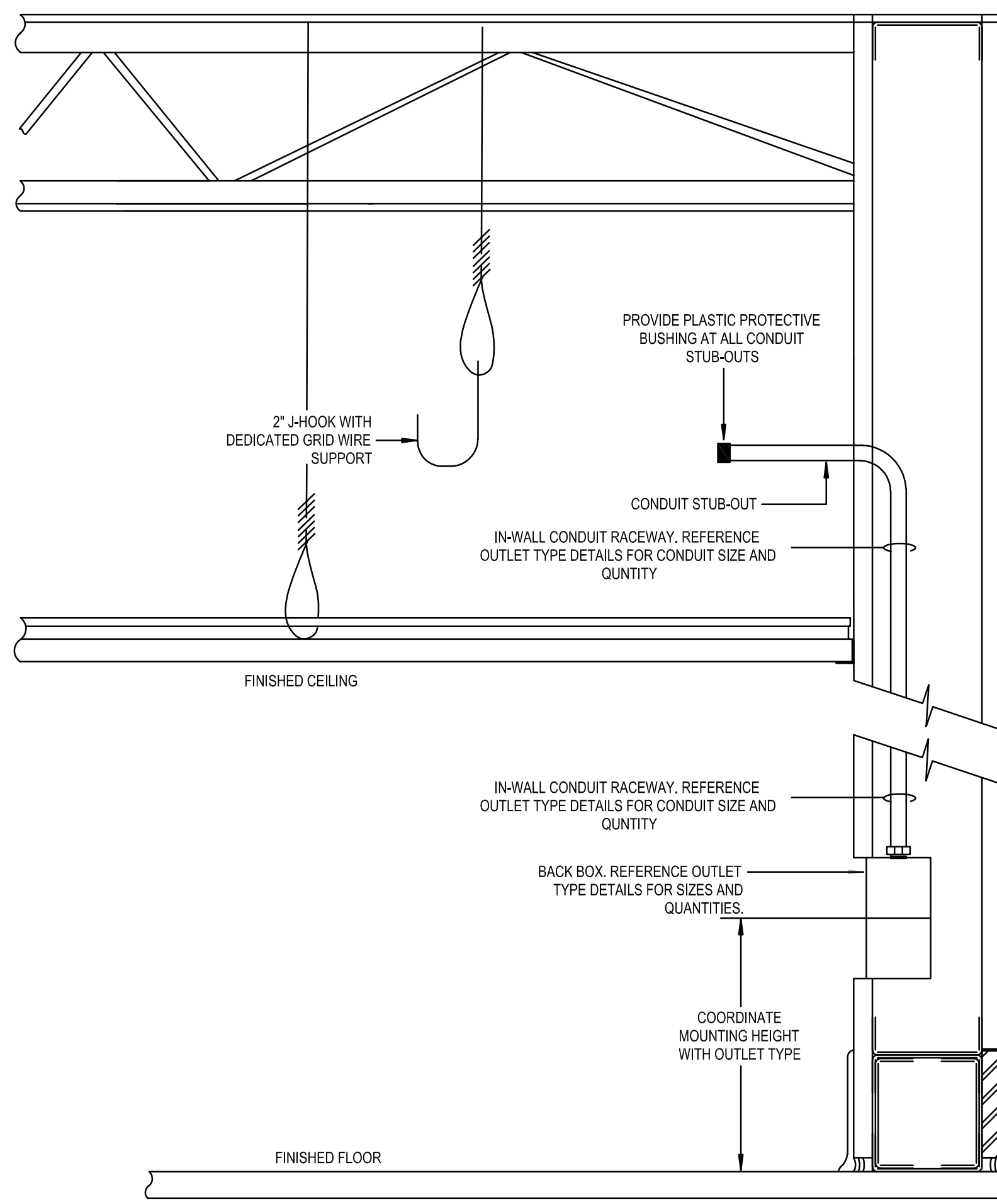
01 TYPICAL TECHNOLOGY WALL PRESENTATION

NOT TO SCALE

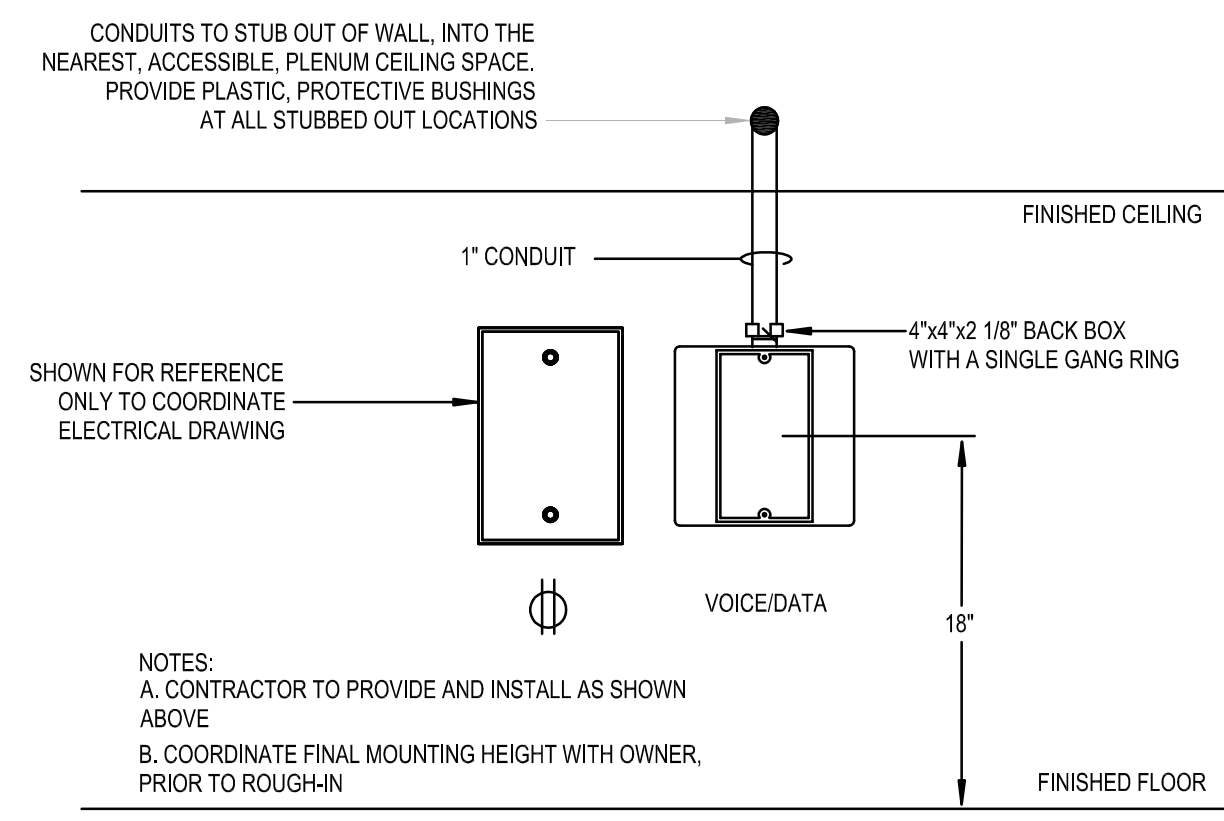


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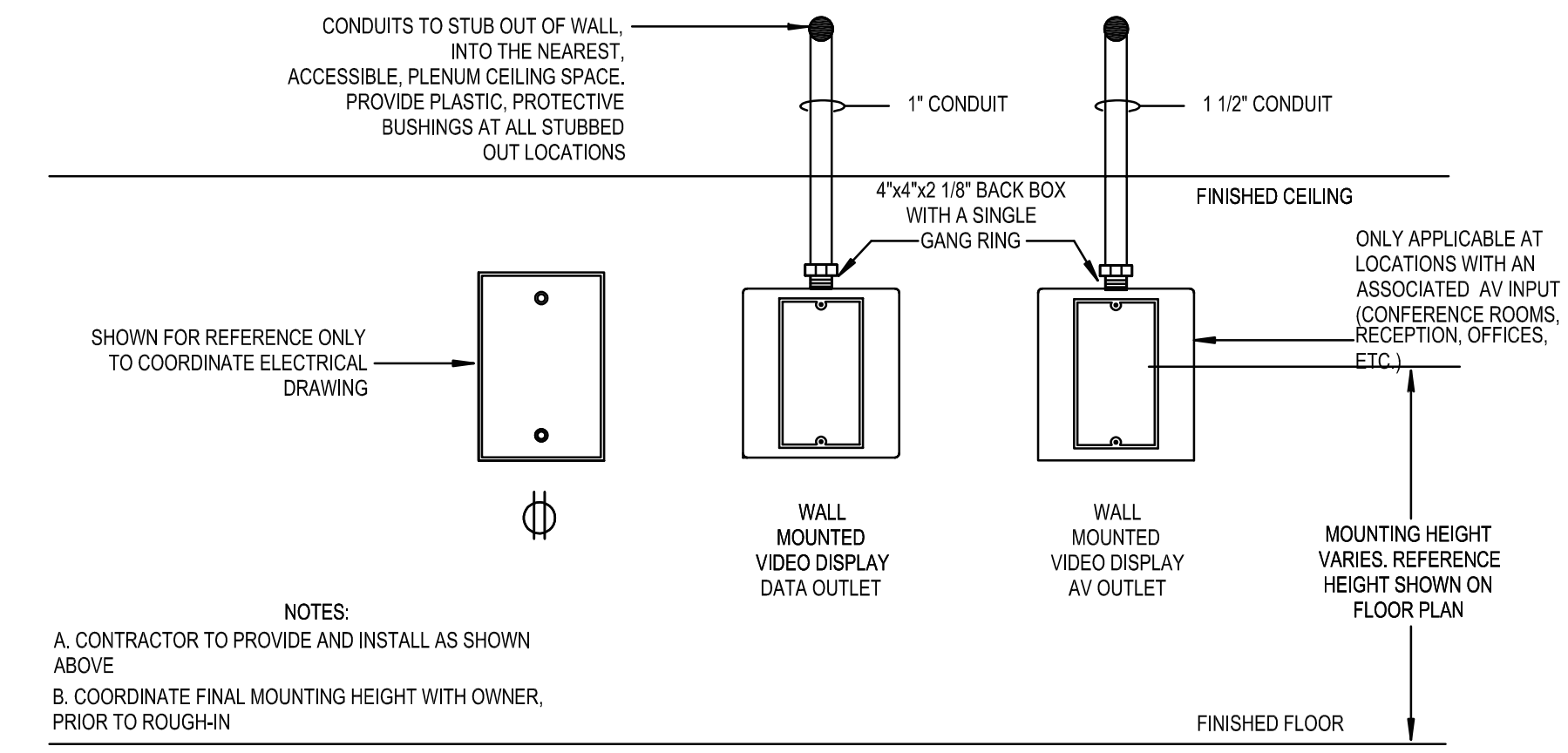
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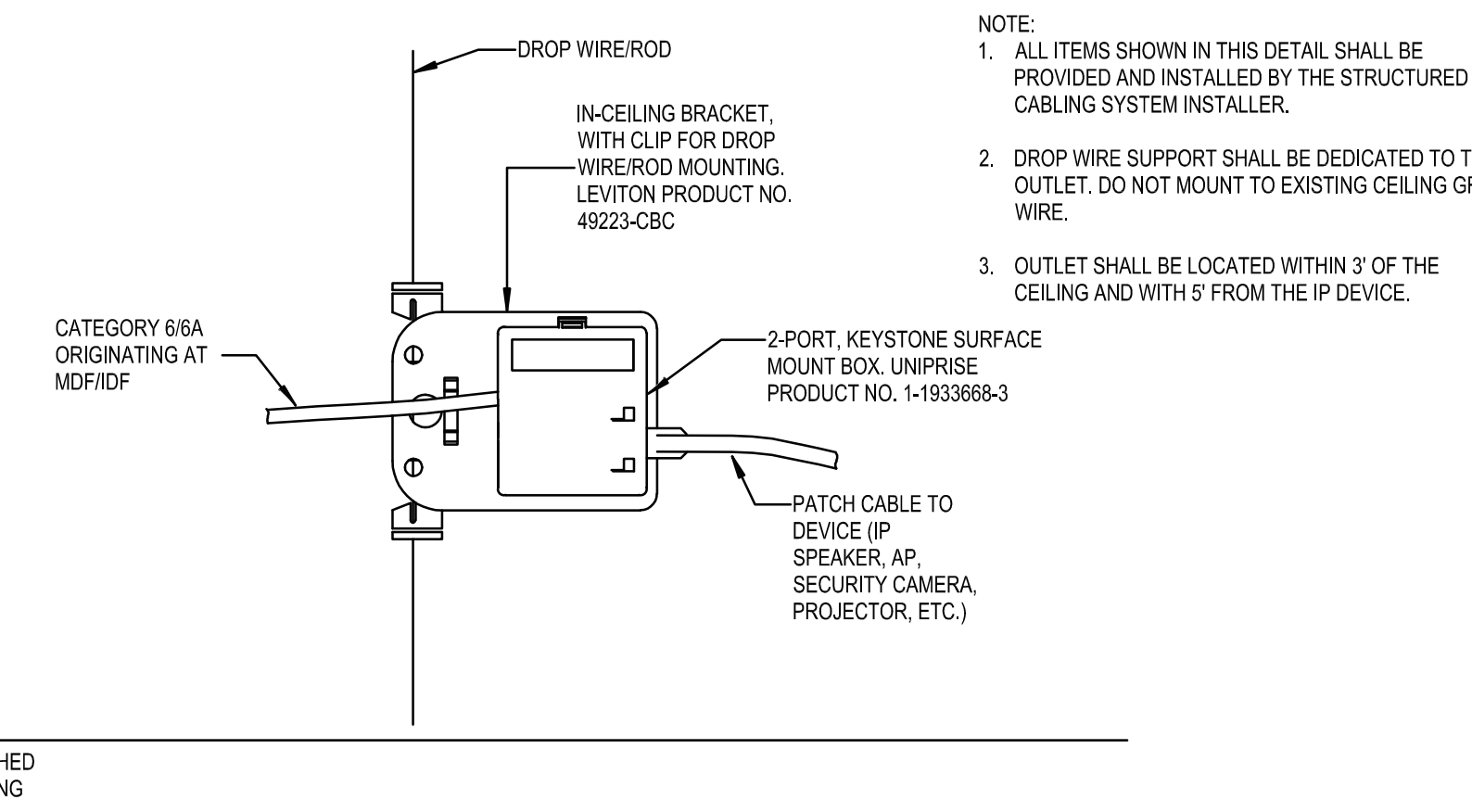
01 LOW VOLTAGE ELEVATION - IN-WALL RACEWAY NOT TO SCALE



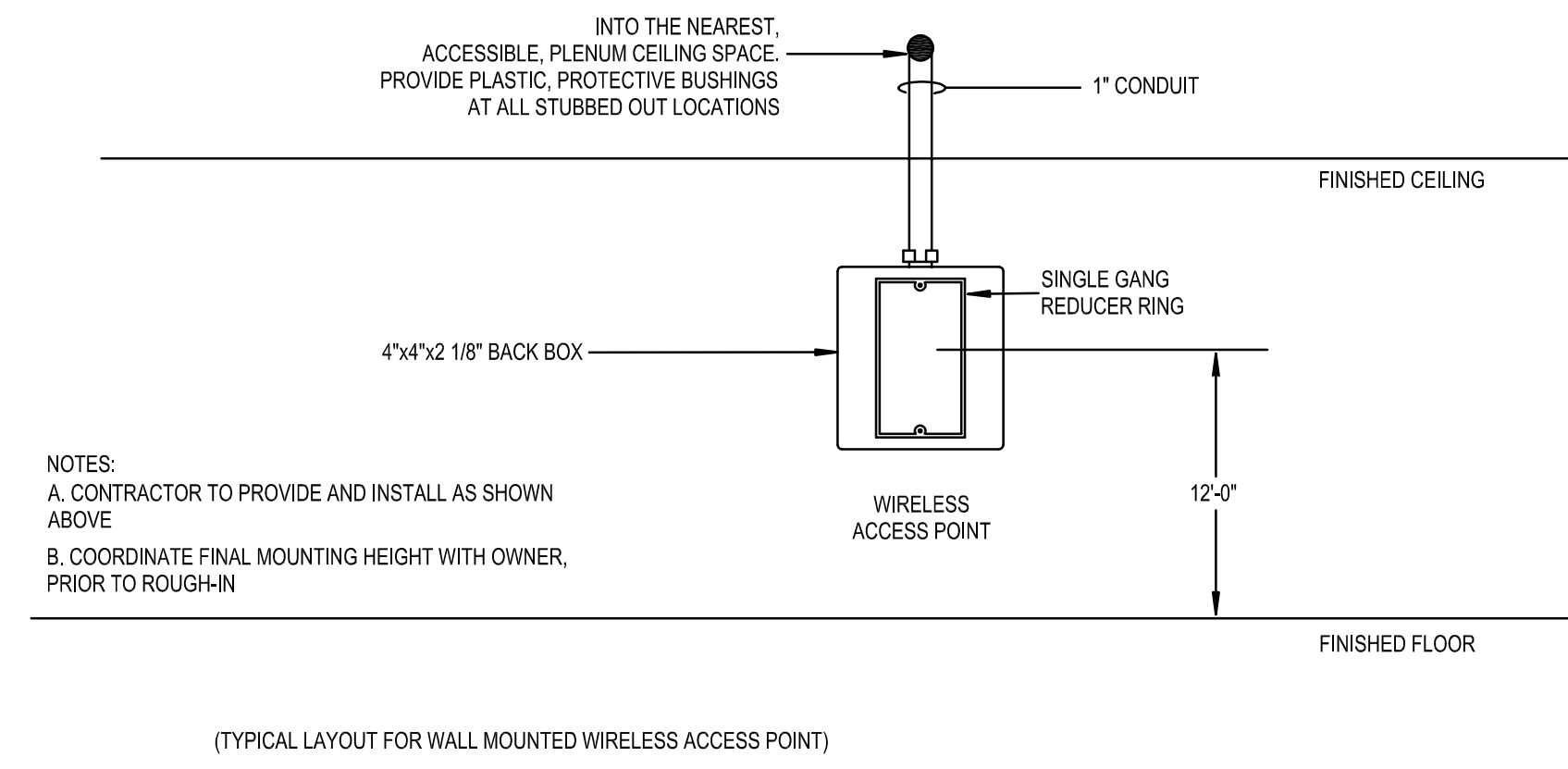
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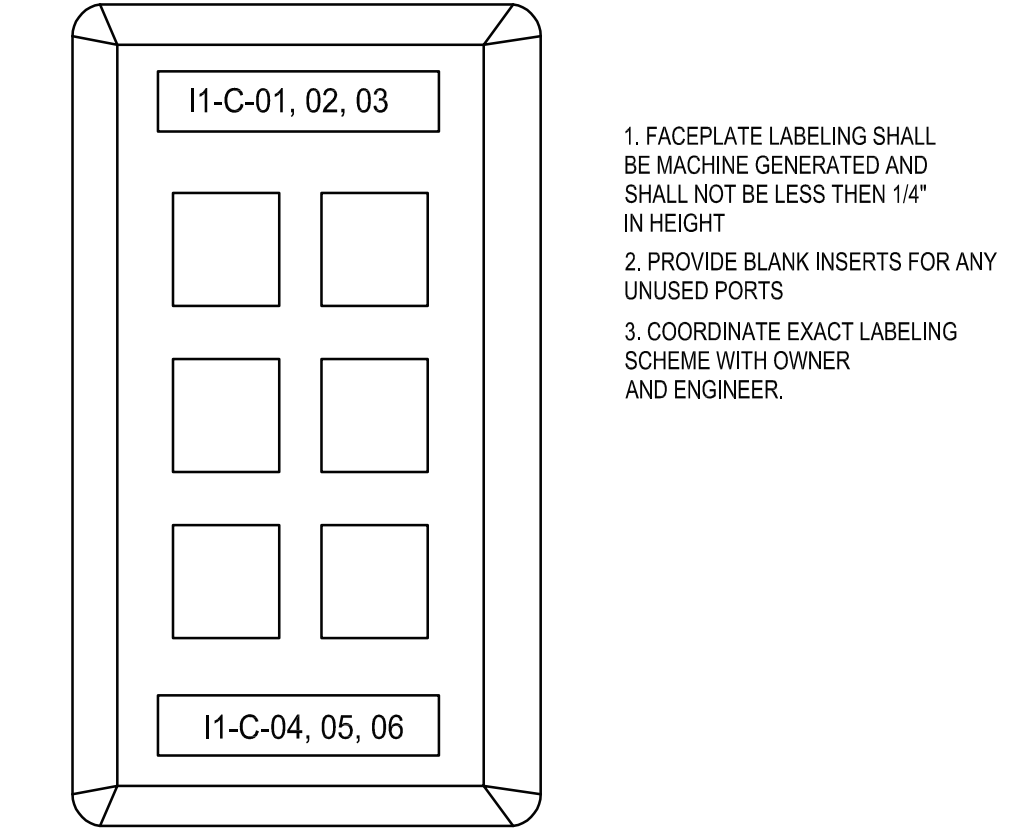
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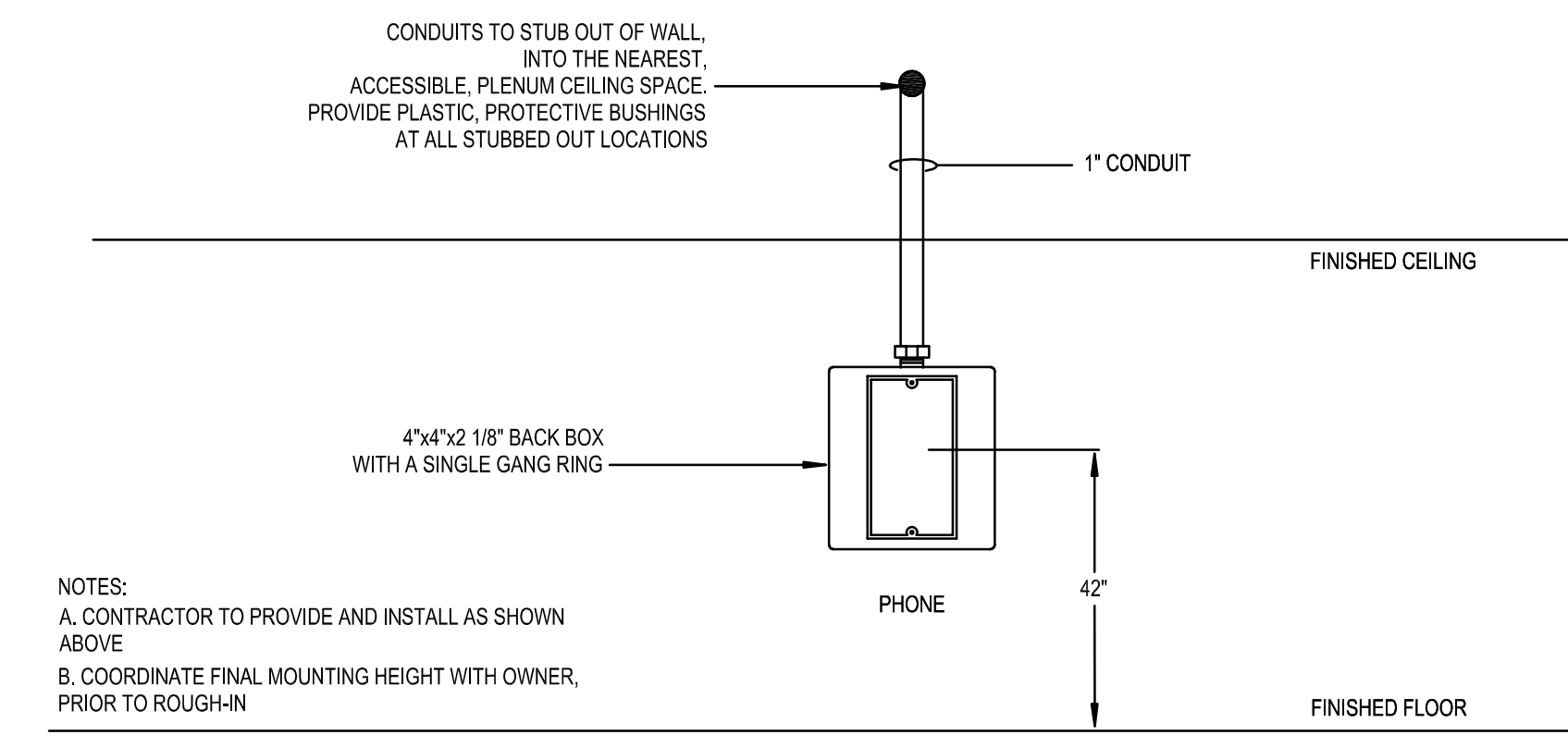
05 ABOVE CEILING STAND ALONE OUTLET NOT TO SCALE



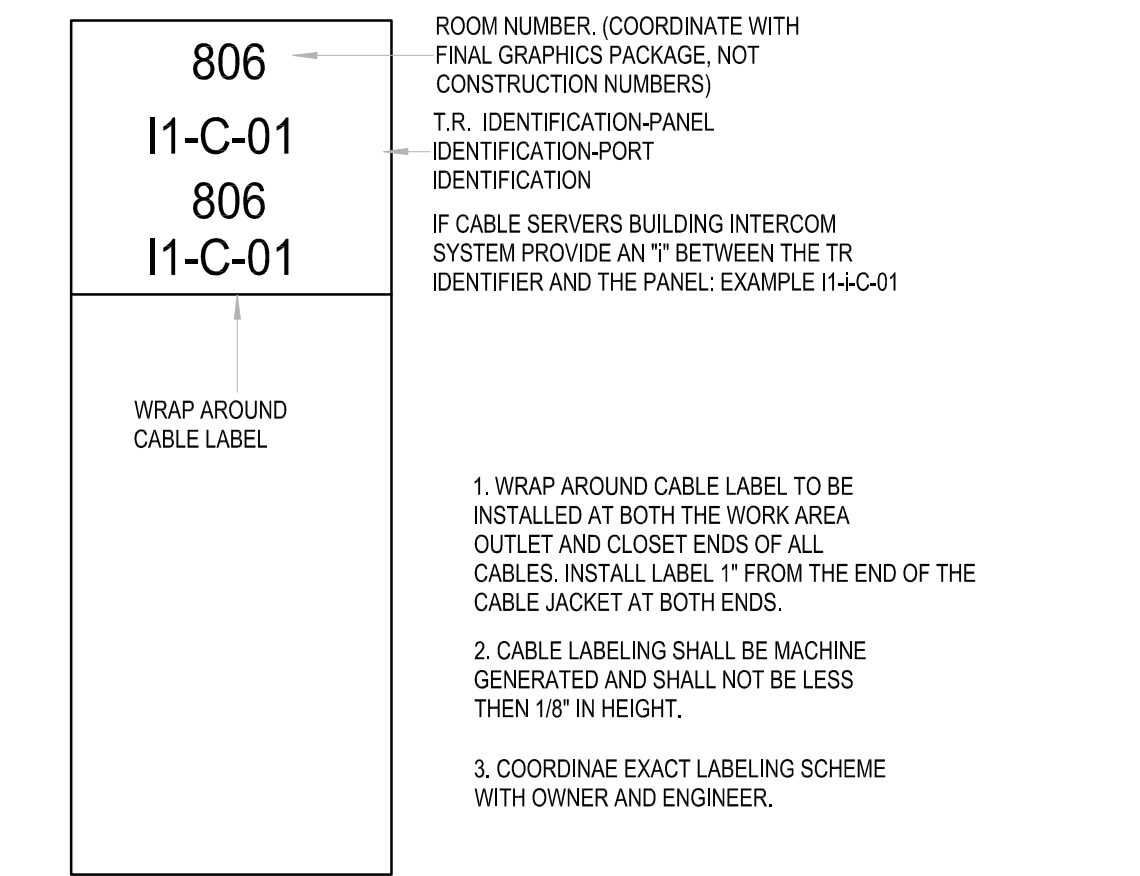
07 RACEWAY DETAIL - WALL MOUNTED WIRELESS AP NOT TO SCALE



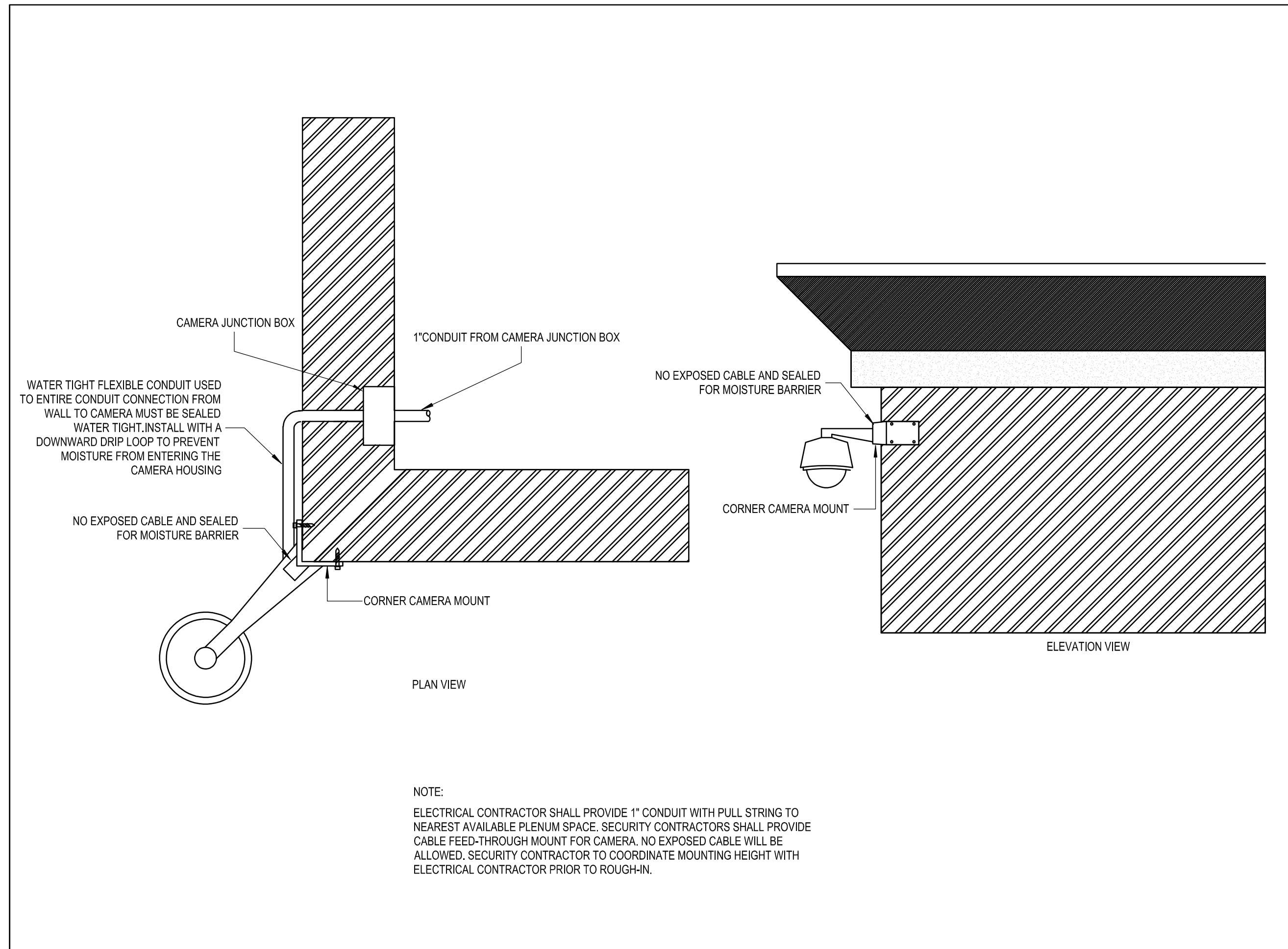
08 FACEPLATE LABEL DETAIL NOT TO SCALE



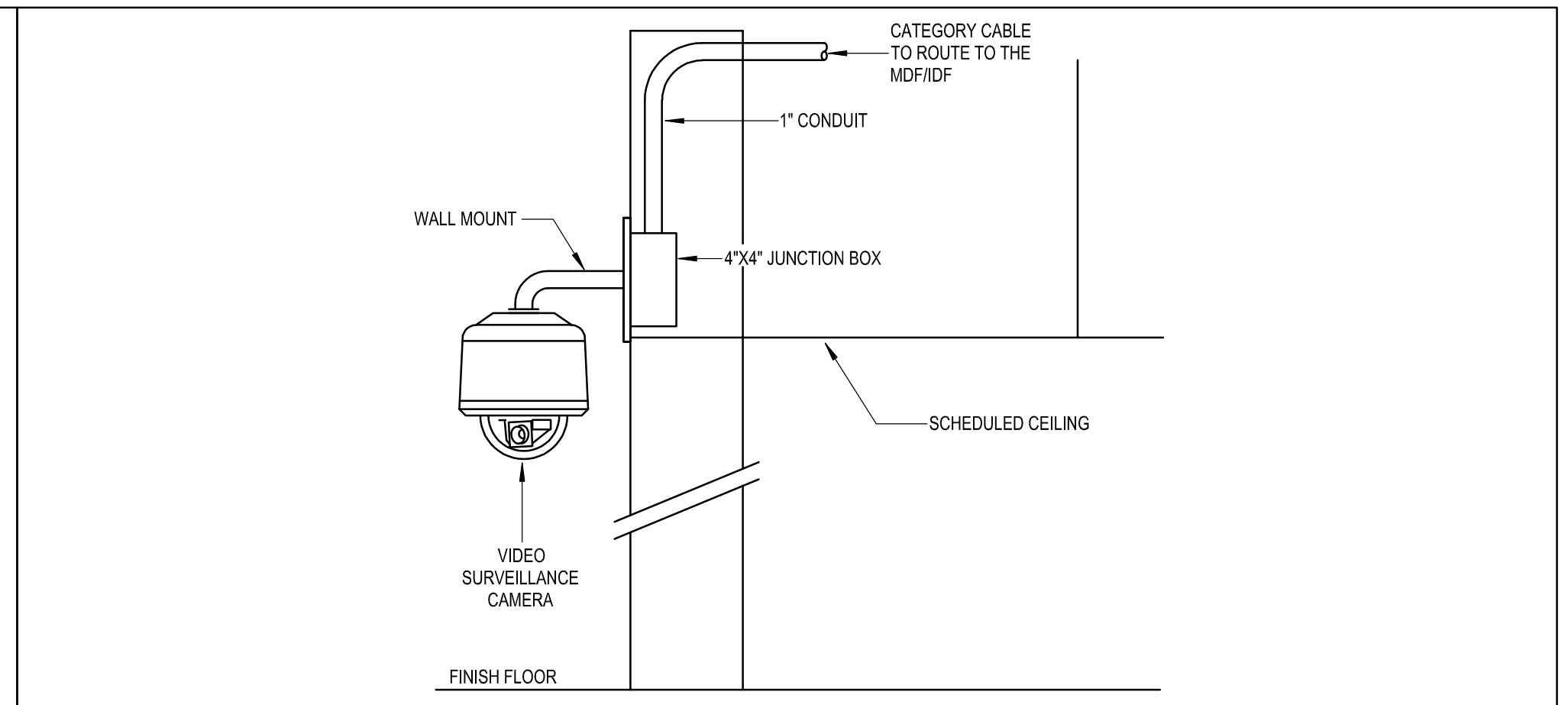
09 RACEWAY DETAIL - WALL MOUNTED TELEPHONE NOT TO SCALE



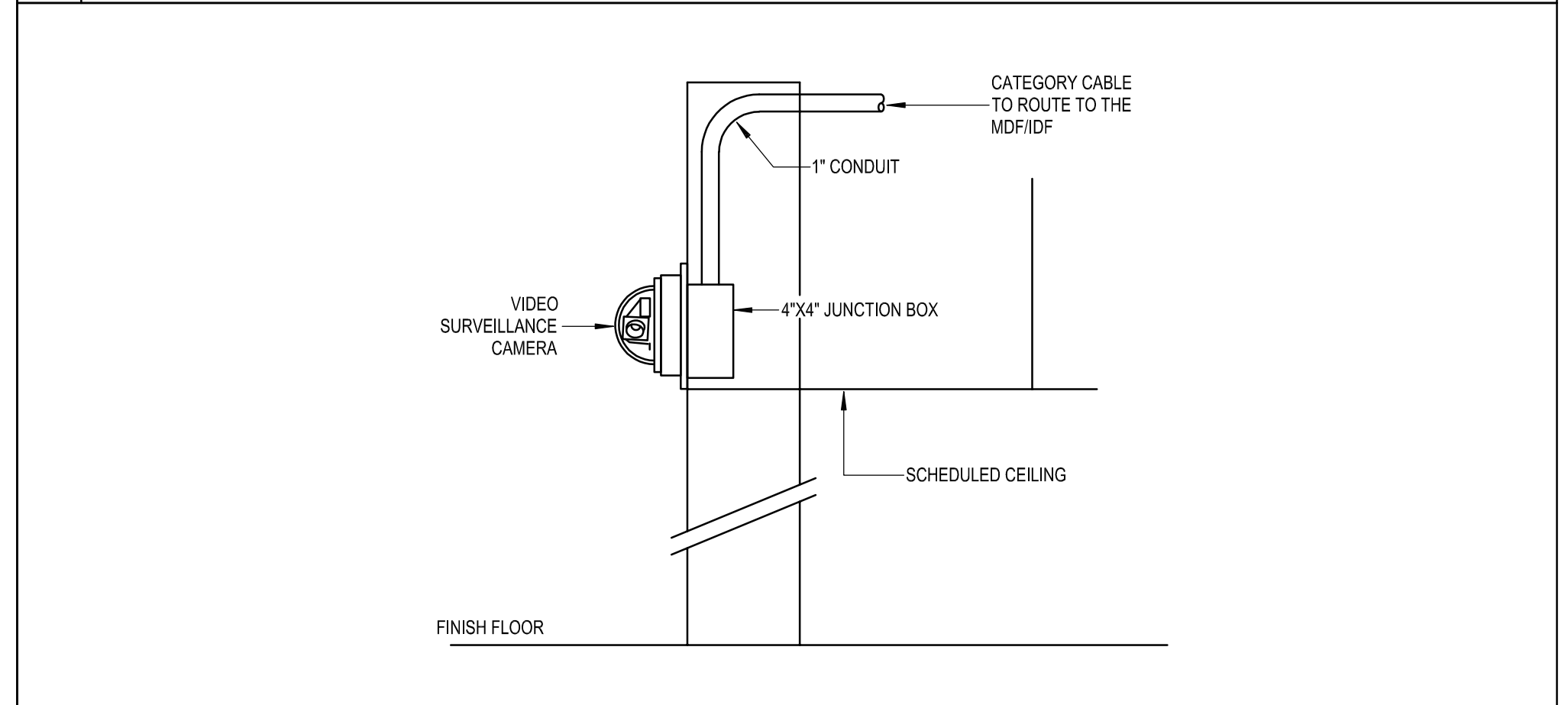
10 CABLE LABEL DETAIL NOT TO SCALE



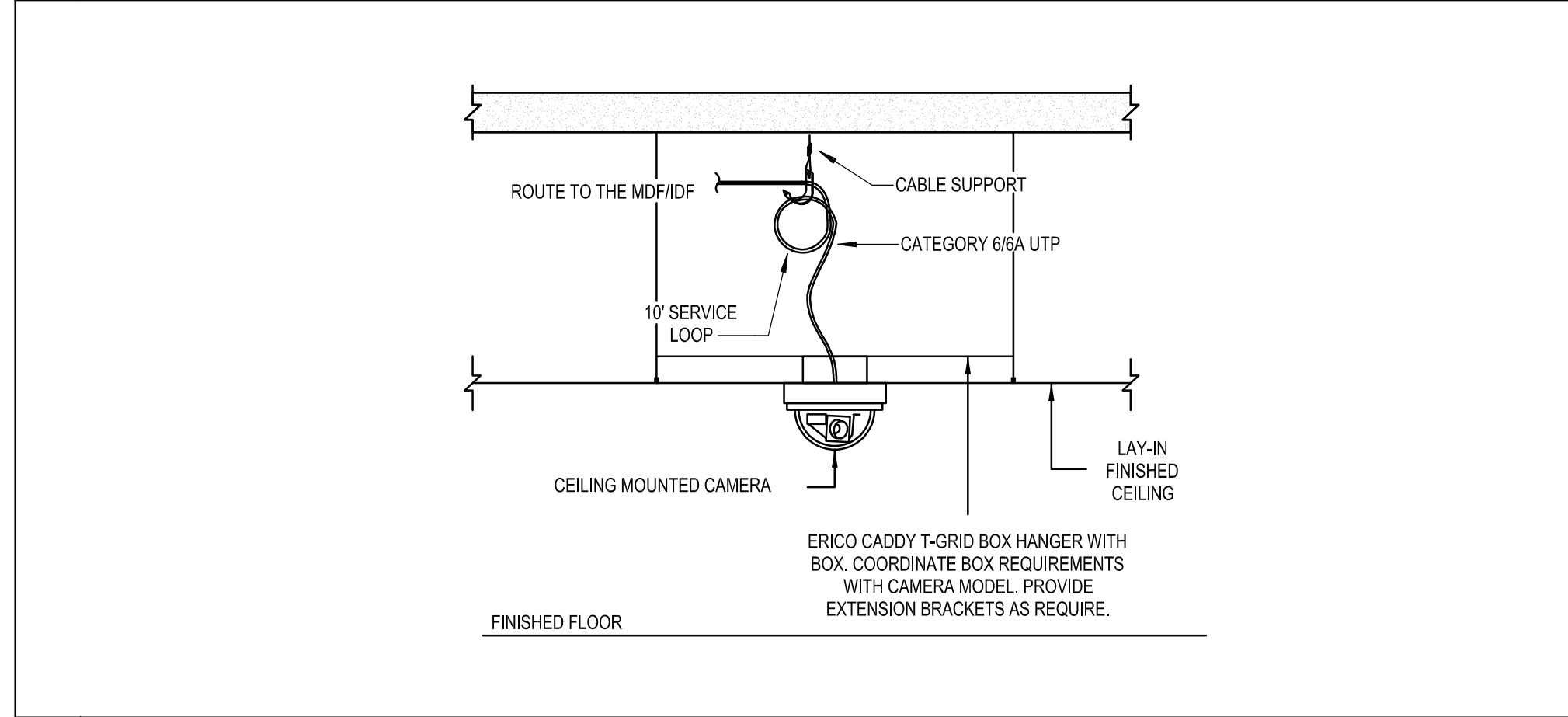
01 CORNER MOUNTING DETAIL NOT TO SCALE



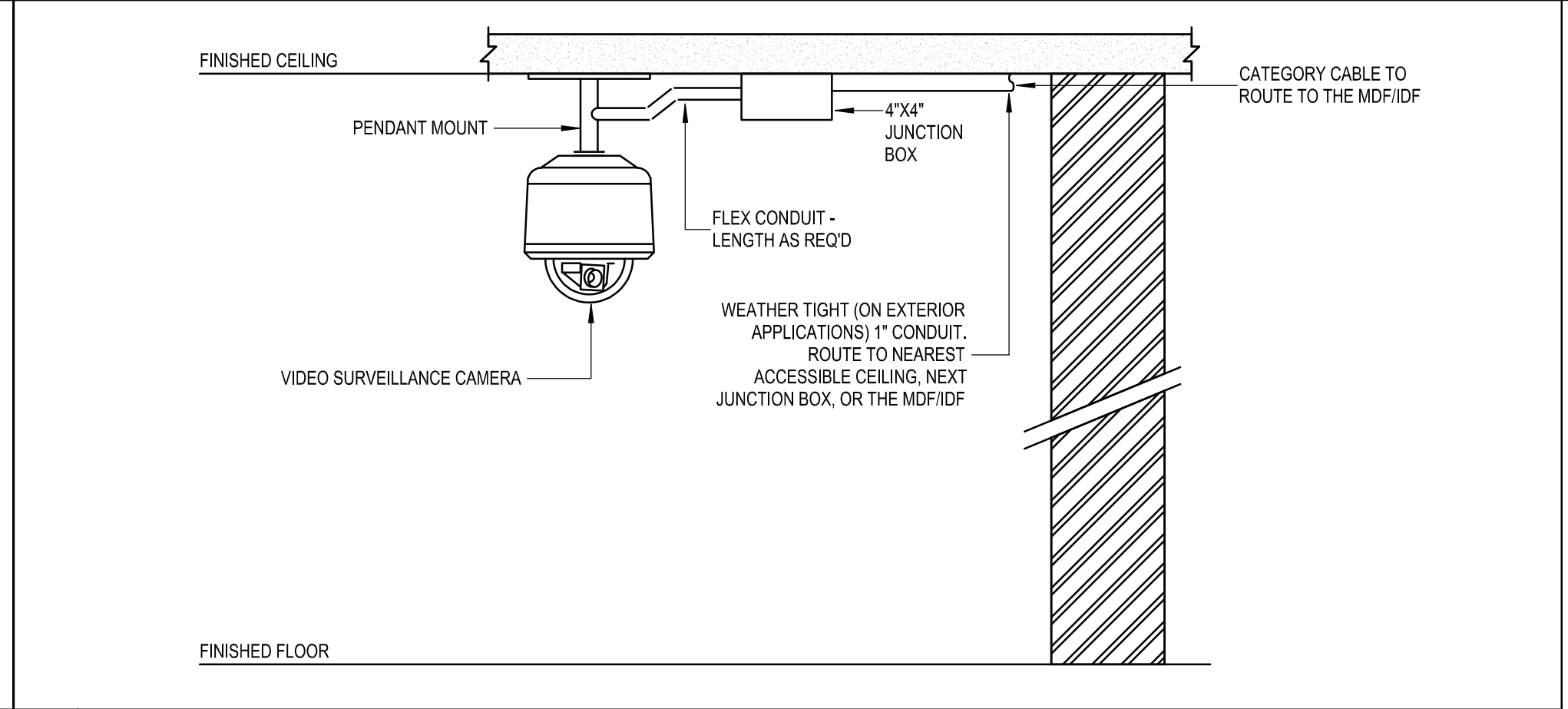
03 INTERIOR WALL MOUNTED DOME CAMERA NOT TO SCALE



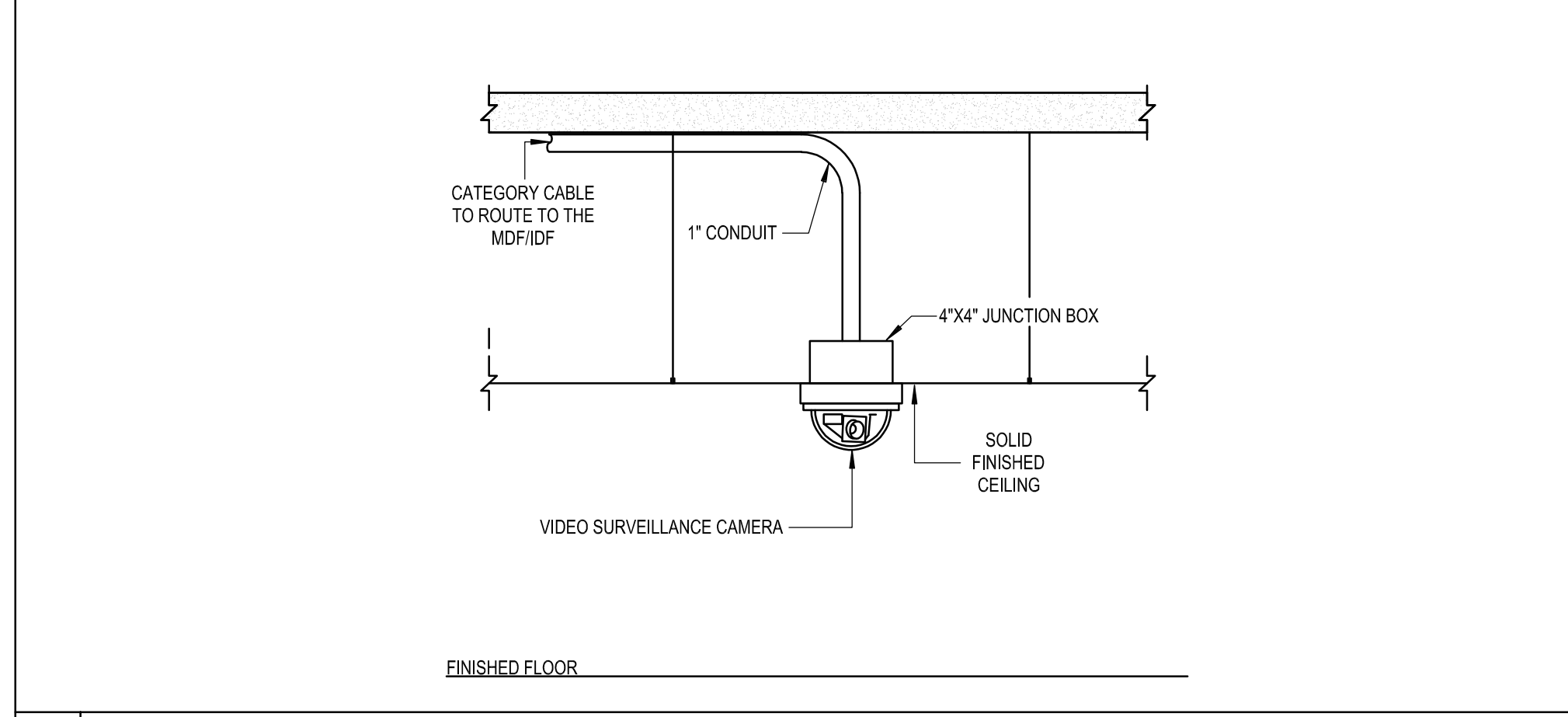
02 INTERIOR WALL MOUNT CAMERA-VERTICAL NOT TO SCALE



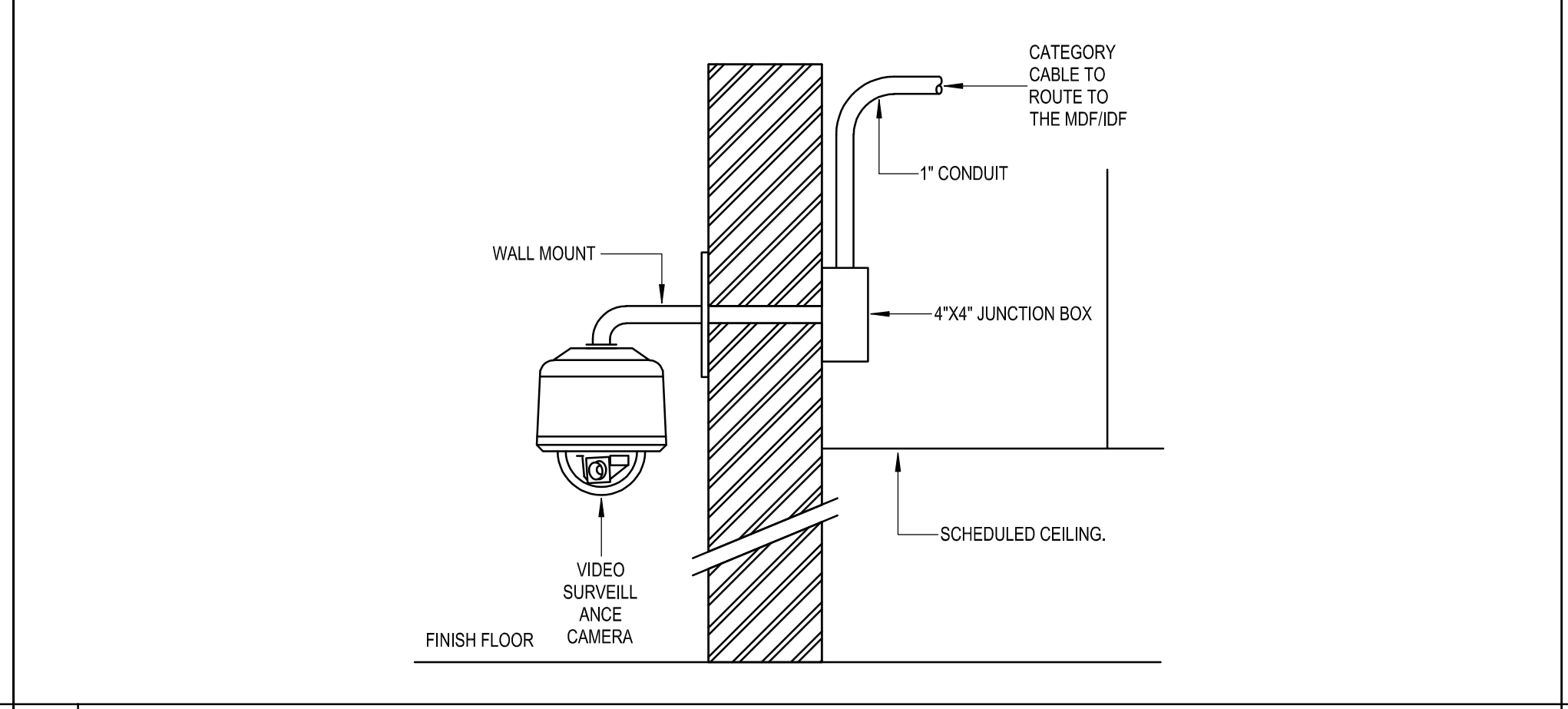
04 INTERIOR LAY-IN CEILING MOUNTED CAMERA NOT TO SCALE



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

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 NOT TO SCALE

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MOORE PUBLIC SCHOOLS
BOARD OF EDUCATION
MOORE, OKLAHOMA



NEW CLASSROOM
ADDITION -
SOUTH LAKE
ELEMENTARY SCHOOL

sheet no:

T502

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="0" style="width: 100%;"> <tr> <td style="width: 20%;">Superior Essex Cat6 Plenum Part #s</td> <td>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>M582818 Blue M582808 white M582838 yellow M582868 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> <p>Connector shall be Leviton part # 61110-RO6 eXtreme 6 connector for all workstation drops.</p> <p>Connector shall be Leviton part # 61110-RW6 eXtreme 6 connector for all Security camera drops.</p> <p>Connector shall be Leviton part # 61110-RV6 eXtreme 6 connector for all Wifi drops.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>Each cable shall be terminated on the patch panel in data closets.</p> <p>All Category 6 connectors shall be placed into QuickPort faceplates at the workstation end.</p> <p>Faceplate shall be Leviton part # 41080-6wp</p> <p>No substitutions.</p> <p style="text-align: center;">Communications Backbone Cabling</p> <p>Requirements - Optical fiber</p> <ul style="list-style-type: none"> 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 OMS 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> <p>No substitutions.</p> <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 Z' 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 1/2' un-twisting and no more than 1/2' un-jacketing 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	M582818 Blue M582808 white M582838 yellow M582868 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. 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 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" slide 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. <table border="0" style="width: 100%;"> <tr> <td>CCH-04U</td> <td></td> </tr> <tr> <td>CCH-01U</td> <td></td> </tr> <tr> <td>CCH-CP24-E4</td> <td></td> </tr> <tr> <td>SOC-LC-900-OM4</td> <td></td> </tr> </table>	CCH-04U		CCH-01U		CCH-CP24-E4		SOC-LC-900-OM4		<ul style="list-style-type: none"> No substitutions. <p>Ladder racking</p> <ul style="list-style-type: none"> 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 spill 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. 	<ul style="list-style-type: none"> Installer shall have obtained Leviton certification from the Manufacturer within 1 year prior to performing the Work. <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: 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 Telecenter-U equipment is required. It may be purchased from the following authorized Telecenter-U 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 # BAFKIT2X2LBRJ - 8 Ohm ceiling tile replacement speaker with RL45 connector. IP Classroom Module shall be TC20211 IP Module (Module required for each classroom, "Requires POE network drop) Hallway/Commons/Outside Intercom Equipment <ul style="list-style-type: none"> TC2022-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 Telecenter-U equipment is required. It may be purchased from the following authorized Telecenter-U 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. 	<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. 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>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. Bidding contractor shall be able to provide insurance at the request of the owner. <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 is responsible for all materials, tools and vehicles left on the job site. Contractor shall ensure materials are stored in an environmental area where: 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>2.05 Scheduling</p> <ul style="list-style-type: none"> 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. <p>2.06 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. <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 complete 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;">sheet no:</p>
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	M582818 Blue M582808 white M582838 yellow M582868 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																			
CCH-04U																				
CCH-01U																				
CCH-CP24-E4																				
SOC-LC-900-OM4																				

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APRIL 2022

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MOORE, OKLAHOMA



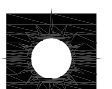
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ADDITION -
SOUTH LAKE
ELEMENTARY SCHOOL

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T601

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Salas O'Brien Project No.: 2022-01376-00

SYSTEMS SPECIFICATIONS

<ul style="list-style-type: none"> 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 E56BAQD304BP Stand-alone dual face hallway clock shall be American Time E93BAQD204BP An 110v electric clock receptacle shall be installed at each clock location for future devices. <p>1.03 Systems Installation</p> <ul style="list-style-type: none"> 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 16 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. <p>1.04 Quality Assurance</p> <p>1.04.01 Qualifications</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. <p>1.04.02 Bidder/Installer Qualifications</p> <ul style="list-style-type: none"> 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. <p>1.05 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 is responsible for all materials, tools and vehicles left on the job site. Follow Manufacturer's recommendations for handling of materials. <p>1.06 Scheduling</p> <ul style="list-style-type: none"> 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. <p>1.07 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. <p align="right">End of Section</p>	<p>Security System Specifications</p>
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<p align="right">End of Section</p> <p>1.04 Submittals</p> <p>1.04.01 Prior to Installation</p> <ul style="list-style-type: none"> Show compete map of system design for approval by Owner. <p align="right">End of Section</p>
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<p>Clock System Installation Completion Check List</p>
<p>Part 1 - General</p> <p>1.01 Section Includes</p> <ul style="list-style-type: none"> Clock System Completion Check List <p>1.02 Completion Check List</p> <ul style="list-style-type: none"> All Clocks have been tested for proper operation and synchronization. <p align="right">End of Section</p>

<p>Part 1 - General</p> <p>2.01 Manufacturers</p> <ul style="list-style-type: none"> 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) <p>Security Systems Equipment</p> <ul style="list-style-type: none"> Security alarm control shall be DSC Model # PC4202. (No Substitutions) Security alarm keypad shall be DSC Model # LCD4501. (No Substitutions) Security alarm 8 zone hardware expander shall be DSC Model # PC4108 (No Substitutions) Security alarm 16 zone hardware 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 35"x35" motion detector shall be Honeywell Model # DT-8035. (No Substitutions) Security alarm 50"x60" 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 1/2" wide gap door contact shall be GE Model # 1078CW-M. (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 Alph Model # PS-1541. (Or equivalent approved by MPS) Security alarm overhead door contact shall be Amseco Model # ODC-59A or for roll mount applications Interlogix GE2315AL. (No Substitutions) Security alarm indoor siren shall be Ademco Model # WaveZEX. (No Substitutions) Security alarm outdoor siren shall be ATW Model # DS301SET. (No Substitutions) Security alarm outdoor strobe shall be Amseco Model # SL401C. (No Substitutions) 	<p>Security System Installation Completion Check List</p>
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<p>1.01 Systems Installation</p> <ul style="list-style-type: none"> 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. 	<p align="right">End of Section</p>
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<p>1.02 Products Installed but not Supplied Under This Section</p> <ul style="list-style-type: none"> 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.

<p>1.03 Quality Assurance</p> <p>1.03.01 Qualifications</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. <p>1.03.02 Bidder/Installer Qualifications</p> <ul style="list-style-type: none"> 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. <p>1.04 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 is responsible for all materials, tools and vehicles left on the job site. Follow Manufacturer's recommendations for handling of materials. <p>1.05 Project Conditions</p> <p>1.05.01 Environmental Requirements</p> <ul style="list-style-type: none"> 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. <p>1.06 Sequencing</p> <ul style="list-style-type: none"> Contractor shall coordinate with Owner's project manager on sequencing of various trades and construction teams for the lifecycle of the project. <p>1.07 Scheduling</p> <ul style="list-style-type: none"> 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. <p>1.08 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. (1 year warranty shall begin at job completion) <p>Part 2 - Products</p> <p>2.02 Source Quality Control</p> <ul style="list-style-type: none"> Materials shall be purchased from Distributors authorized by system Manufacturers to sell new and unused components. <p>Part 3 -</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 Cleaning</p> <ul style="list-style-type: none"> Contractor shall sweep and mop the floors of all equipment rooms or connection point closets prior to turnover to the Owner. <p>3.04 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>3.05 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 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. <p align="right">End of Section</p>	<p>Access Control System Specifications</p>
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<p>1.02 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 align="right">End of Section</p>	<p>Security System Installation Completion Check List</p>
<p>Part 1 - General</p> <p>1.01 Section Includes</p> <ul style="list-style-type: none"> Security System Completion Check List <p>1.02 Completion Check List</p> <ul style="list-style-type: none"> 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. 	

<ul style="list-style-type: none"> 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. <p align="right">End of Section</p>
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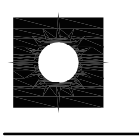
<p>1.09 References</p> <ul style="list-style-type: none"> NFPA-70 National Electrical Code 2008 edition NFPA-72 National Fire Alarm Code UL 1666 - Standard for Safety of Flame Propagation Height NFPA 262 - Flame Travel and Smoke of Wires and Cables Local Authority Having Jurisdiction <p>1.10 Definitions</p> <p>AWG - American Wire Gauge</p> <p>BICSI - Building Industry Consulting Service International</p> <p>EIA - Electronics Industry Alliance</p> <p>FCC - Federal Communications Commission</p> <p>NECA - National Electrical Contractors Association</p> <p>NFPA - National Fire Protection Agency</p> <p>UL - Underwriters Laboratory</p>
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<p>Access Control System Specifications</p>
<p>Access Control Equipment</p> <p>Part 1 - Manufacture</p> <ul style="list-style-type: none"> 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) <p>1.01 Access Control Equipment Description</p> <ul style="list-style-type: none"> 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 4500 = 4 Door Keyscan CA 8500 = 8 Door Each Reader Control Panel shall be equipped with (2) 16VAC 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 <p align="center">Elementary School Card Readers shall be (No Substitutions)</p> <ul style="list-style-type: none"> HID 13.56 MHz SINGLE GANG BACK BOX MOUNT READ ONLY CONTACTLESS SMART CARD READER KEYSKAN 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 - KEYSKAN 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) <p align="center">Jr High & High School Card Readers shall be (No Substitutions)</p> <ul style="list-style-type: none"> HID 13.56 MHz SINGLE GANG BACK BOX MOUNT READ ONLY CONTACTLESS SMART CARD READER - HID ICLASS SE R40 Part # 920NTNNEK00000 (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 # 910NTNNEK00000 or MINI-MULLION HID ICLASS SE R10 Part # 900NTNNEK00000 (For use on mullion mount locations where single gang reader R40 is too large) <ul style="list-style-type: none"> All Readers require 22/6 STR OAS Wire <p align="center">Elementary, Jr High & High School Access Control Cards shall be (No Substitutions)</p> <ul style="list-style-type: none"> HID SEOS Part # 500SPGMM 48-bit HID Global Corporate 1000 format. (Cards must be ordered from ADI or Antler. MPS shall provide the Format & Facility Code to winning bidder.) Provide Moore Public Schools with 100 Cards <p>Access Control Strikes and locks shall be (No Substitutions unless approved by Moore Public Schools)</p> <ul style="list-style-type: none"> RCI 016X32D 1/2 inch Rim RCI 016X232D 3/4 inch Rim RCI F016X32D 3/4 Inch Rim Fire Rated RCI F216X32D <ul style="list-style-type: none"> 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)

<p>Bosch DS160 or Honeywell IS310</p> <ul style="list-style-type: none"> 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 Securtron- AccuPower- AOM20-8C16C, AGDS-8C or equal. <p>2.01 Systems Installation</p> <ul style="list-style-type: none"> 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. 	<p>Access Control Installation Completion Check List</p>
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<p>3.01 Bidder/Installer Qualifications</p> <ul style="list-style-type: none"> 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. <p>3.01.1 Submittals</p> <ul style="list-style-type: none"> Show compete map of system design for approval by Owner. <p>3.01.2 Prior to Installation</p> <ul style="list-style-type: none"> Show compete map of system design for approval by Owner. <p>3.01.3 Prior to final acceptance</p> <ul style="list-style-type: none"> 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. <p>3.02 Quality Assurance</p> <p>3.02.1 Qualifications</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. 	<p>Access Control Installation Completion Check List</p>
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<p>Part 4 - General</p> <p>4.01 Section Includes</p> <ul style="list-style-type: none"> Access Control System Completion Check List <p>4.02 Completion Check List</p> <ul style="list-style-type: none"> 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. <p align="right">End of Section</p>


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**MOORE PUBLIC SCHOOLS
 BOARD OF EDUCATION
 MOORE, OKLAHOMA**



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SYSTEMS SPECIFICATIONS

<p>4.03 Products Installed but not Supplied Under This Section</p> <ul style="list-style-type: none"> • All conduit and EMT required for Fire calling pathway (rout of closets and linout of wall cavities at the work. EMT or Conduit for pathways shall have no more than 90 degree sweeps and no continuous section over 100'. • All core holes and pole 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. • Dwg line or pull string at the back boxes (shut through EMT or conduit to the other end) for installing Cabling. <p>4.04 References</p> <ul style="list-style-type: none"> • 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 <p>4.05 Definitions</p> <p>AWG - American Wire Gauge</p> <p>BCSI - Building Industry Consulting Service International</p> <p>EIA - Electronics Industry Alliance</p> <p>FCC - Federal Communications Commission</p> <p>NECA - National Electrical Contractors Association</p> <p>NFPA - National Fire Protection Agency</p> <p>UL - Underwriters Laboratory</p>	<p>Part 1 - General</p> <p>2.01 Manufacturers</p> <ul style="list-style-type: none"> • Fire System Manufacturer shall be Sient 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 Generac. (Or Equivalent) <p>1.03 Fire Systems Equipment Description</p> <ul style="list-style-type: none"> • Fire alarm control shall be Sient Knight Model # 6820. (No Substitutions) • Fire alarm dedicated power module N/C Expansion shall be Sient Knight Model #S 5495 or 5499. (No Substitutions) • Fire alarm intelligent power supply shall be Sient Knight Model # 6865L. (No Substitutions) • Fire alarm removable manual pull station shall be Sient Knight Model # SD500-PSL. (No Substitutions) • CO Detector shall be System Sensor Model # CO1Z24T. (No Substitutions) An SD500-AHM shall be installed on each CO 1Z24T and be accessible from the finished floor. • Fire alarm addressable photoelectric smoke detector shall be Sient Knight Model # SD95C-PHO-T0. (No Substitutions) • Fire alarm addressable heat detector shall be Sient Knight Model # SD95C-HEAT1. (No Substitutions) • Fire alarm base for Sient Knight Model #S SD95C-PHO-T0 and SD95C-HEAT1 shall be Sient Knight Model # SD95C-6A1B. (No Substitutions) • Fire alarm addressable audible module shall be Sient Knight Model # SD500-AAM. (No Substitutions) • Fire alarm addressable relay module shall be a Sient Knight Model # SD95C-REL. (No Substitutions) • Fire alarm SLC line isolator shall be Sient Knight Model # SD900-LIM. (No Substitutions) • Fire alarm Horn / Strobes signaling device shall be System Sensor Model # F2WL. (Model F2ZWL can be substituted if mounted on non-sustainable ceiling tile. No other Substitutions) • Fire alarm Strobes signaling device shall be System Sensor Model # SWL. (Model SCWL can be substituted if mounted on non-sustainable ceiling tile. No other Substitutions) • Fire alarm strobe strobe module shall be System Sensor Model # NDR3. (NDR3 not needed on version 9 panels or newer. (No Substitutions) • Fire alarm Outdoor strobes signaling device shall be System Sensor Model # P2RK. (No Substitutions) • Fire alarm Speaker / Strobes signaling device shall be System Sensor Model # SP2WL. (Model SP2WL can be substituted if mounted on non-sustainable ceiling tile. No other Substitutions) • Fire alarm Speaker signaling device shall be System Sensor Model # SP2WL. (No Substitutions) • Fire alarm 30 watt Voice Eloc system shall be as needed Sient Knight SIC-450 (Single Zone), SIC-450/2M (4 Zone) or SIC-450/2N6 (6 Zone). (No Substitutions) • Fire alarm Dual detectors and Dual Detector Remote Test Stations shall be Sient Knight Model #S SD95C-DUO-CIR and SD95C-DT-SK. (No Substitutions) <p>1.01 Systems Installation</p> <ul style="list-style-type: none"> • All fire alarm trunctions and/or splices shall be soldered and insulated. • All Cabling mounted devices shall be mounted on non-sustainable ceiling tiles. • All circuits and wiring shall be labeled at all terminating ends. • All fire alarm wiring shall be RED in color and non-shielded. • All Devices shall be mounted according to the manufacturers specifications. • All devices shall be properly retained 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 speaker detector and strobe detector base and be clearly visible from the finished floor. • All EMT Initiating Device Circuits (DC) shall have Line Isolator Modules installed at the SLC Head End. • All Initiating Device Circuits (DC) shall be wired with minimum 18 AWG gauge not NON Shielded cable. • All Initiating Device Circuits (DC) shall be wired with minimum 16 AWG gauge and NON Shielded cable. • All dual 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 dual detector AHM/ AHM shall be installed adjacent to the remote test stations and accessible and shall be labeled with their corresponding module and point number. • Each CO 1Z24T detectors shall have an SD500-AHM installed (No doubling). All CO 1Z24T & SD950-AHM 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-sustainable 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 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 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-sustainable ceiling tile • All modules shall have their corresponding module number. • 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 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 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-sustainable ceiling tile • All modules shall have their corresponding module number. 	<ul style="list-style-type: none"> • 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. <p>1.02 Products Installed but not Supplied Under This Section</p> <ul style="list-style-type: none"> • All conduit and EMT required for Fire calling pathway (rout of closets and linout of wall cavities at the work area. EMT or Conduit for pathways shall have no more than 90 degree sweeps and no continuous section over 100'. • All core holes and pole 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. • Dwg line or pull string at the back boxes (shut through EMT or conduit to the other end) for installing Fire Cabling. <p>1.03 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 unused in original packaging. <p>1.03.01 Bidder/Installer Qualifications</p> <ul style="list-style-type: none"> • Bidding contractor shall be a local licensed Commercial Fire Alarm Company with licensed Commercial Fire Alarm Technicians (s) on staff. • Bidding contractor shall have a minimum of one year experience installing Sient 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. <p>1.04 Sequencing</p> <ul style="list-style-type: none"> • Contractor shall coordinate with Owner's project manager on sequencing of various trades and construction items for the lifecycle of the project. <p>1.05 Scheduling</p> <ul style="list-style-type: none"> • 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. <p>1.06 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. (1 year warranty shall begin at job completion) <p>Part 2 - Products</p> <p>2.02 Source Quality Control</p> <ul style="list-style-type: none"> • Materials shall be purchased from Distributors authorized by system Manufacturers to sell new and unused components. <p>Part 3.</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. 	<ul style="list-style-type: none"> • 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. <p style="text-align: right;">End of Section</p> <p style="text-align: center;">IP camera Specifications</p> <p>IP CAMERA MANUFACTURER</p> <ul style="list-style-type: none"> • All cameras are labeled on the outside with module numbers and point numbers. • All cameras are labeled on the inside with module numbers by the corresponding module and point descriptions. <p style="text-align: right;">End of Section</p> <p style="text-align: center;">IP camera Specifications</p>
<p>4.07 Project Conditions</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 is responsible for all materials, tools and vehicles left on the job site. • Follow Manufacturer's recommendations for handling of materials. <p>4.08 Environmental Requirements</p> <ul style="list-style-type: none"> • 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 unused components during the course of the construction project. <p>4.07.2 Field Measurements</p> <ul style="list-style-type: none"> • Contractor shall coordinate with electrical engineer or project that the main electrical service ground has a resistance to earth of less than 5 Ohms. • Contractor shall ensure that all field tests have been calibrated from the Manufacturer within 1 year. • All field test results will be documented and submitted to Moore Public Schools Technology Department. <p>4.08 Sequencing</p> <ul style="list-style-type: none"> • Contractor shall coordinate with Owner's project manager on sequencing of various trades and construction items for the lifecycle of the project. <p>4.09 Scheduling</p> <ul style="list-style-type: none"> • 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. <p>4.10 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. (1 year warranty shall begin at job completion) <p>4.11 Source Quality Control</p> <ul style="list-style-type: none"> • Materials shall be purchased from Distributors authorized by system Manufacturers to sell new and unused components. <p>Part 5.</p> <p>5.01 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>5.02 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>5.03 Cleaning</p> <ul style="list-style-type: none"> • Contractor shall sweep and mop the floors of all equipment rooms or connector point closets prior to turnover to the Owner. <p>5.04 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>5.05 Schedules</p> <ul style="list-style-type: none"> • Coordinate work with Owner's project manager and deliver 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 message contractor to ensure control, back boxes, door frame access control, etc. are in the proper locations and accessible. <p style="text-align: right;">End of Section</p>	<p>1.01 Section Includes</p> <ul style="list-style-type: none"> • Fire System Installation • Fire System Completion Check List <p>1.02 Completion Check List</p> <ul style="list-style-type: none"> • 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 Facility Code with IPIS. • 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. <p>1.03 Fire Panel Displays</p> <ul style="list-style-type: none"> • All panels have been tested to verify proper description at the keypad. • All icons/status and zones have been tested for proper operation. <p style="text-align: right;">End of Section</p> <p>Audio Visual Systems for Instructional Spaces</p> <p>1.01 Instructional Spaces</p> <ul style="list-style-type: none"> • Reference technology drawings and detail sheet 1594 for classroom configuration and part numbers. <p>1.02 Special Spaces</p> <ul style="list-style-type: none"> • Reference technology drawings and one line diagrams. <p>1.03 Fire Panel Displays</p> <ul style="list-style-type: none"> • All non interactive Fire Panel displays shall be Sensung BE Series. Contractor to coordinate sizes with owner and architect prior to purchase. <p style="text-align: right;">End of Section</p>	<p>INSTALLATION</p> <ul style="list-style-type: none"> • Cameras or digital walls were possible. If it must be mounted on the abutment a single cabinet the IPIS to the other side of the main entrance of camera location and field of view. (Call Jack Phillips for final location and view phone 473-5229) • New installed cameras need camera license for all new cameras. • All network drops shall be connected with patch cords to switch at each rack location. • No Substitutions. <p>Horizontal Cabling Requirements</p> <ul style="list-style-type: none"> • See IPIS Structural Cabling Specifications for camera network cabling installation, labeling and testing requirements. • 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: right;">End of Section</p>	



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SOUTH LAKE
ELEMENTARY SCHOOL

sheet no.

T603

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