

Addendum No. 4

Date: 03/30/2026

Project: Pam Bay Gymnasium

DAG Project #: 22019

1A-1 General

1. The following changes and/or additions to the plans and specifications are hereby made part of same and are incorporated in full as part of the Contract documents.

1A-2 Specifications

1. No changes

1A-3 Drawings / Cut Sheets

1. Sheet T101, COMMUNICATIONS SITE PLAN, revision 4, Addendum 4, dated 3/30/26.
2. Sheet T201, COMMUNICATIONS FLOOR PLAN, revision 4, Addendum 4, dated 3/30/26.
3. Sheet T301, COMMUNICATIONS TYPICAL DETAILS, revision 4, Addendum 4, dated 3/30/26.
4. Sheet T302, COMMUNICATIONS TYPICAL DETAILS, revision 4, Addendum 4, dated 3/30/26.
5. Sheet T303, COMMUNICATIONS TYPICAL FLOOR BOX DETAILS, revision 4, Addendum 4, dated 3/30/26.
6. Sheet T304, COMMUNICATIONS TYPICAL FACEPLATE & LABELING DETAILS, revision 4, Addendum 4, dated 3/30/26.
7. Sheet T305, INTERCOM/PA SYSTEM NOTES & LABELING DETAILS, revision 4, Addendum 4, dated 3/30/26.
8. Sheet T401, DATA SYSTEM SINGLE LINE DIAGRAM, revision 4, Addendum 4, dated 3/30/26.
9. Sheet T402, INTERCOM/PA SYSTEM SINGLE LINE DIAGRAM, revision 4, Addendum 4, dated 3/30/26.
10. Sheet T501, COMMUNICATIONS CLOSET ENLARGED FLOOR PLAN, revision 4, Addendum 4, dated 3/30/26.
11. Sheet T502, COMMUNICATIONS RACK ELEVATIONS, revision 4, Addendum 4, dated 3/30/26.
12. Sheet ACS101, ACCESS CONTROL SYSTEM FLOOR PLAN, revision 4, Addendum 4, dated 3/30/26.
13. Sheet ACS201, ACCESS CONTROL SYSTEM DETAILS, revision 4, Addendum 4, dated 3/30/26.
14. Sheet ACS301, ACCESS CONTROL SYSTEM DETAILS, revision 4, Addendum 4, dated 3/30/26.
15. Sheet SEC101, IP SECURITY CAMERA SYSTEM FLOOR PLAN, revision 4, Addendum 4, dated 3/30/26.
16. Sheet SEC201, IP SECURITY CAMERA SYSTEM DETAILS, revision 4, Addendum 4, dated 3/30/26.

1A-4 Answers & Clarifications to Bidder Questions & Comments



GENERAL ABOVEGROUND CONDUIT NOTES

- 1. SEE PLANS, NOTES AND DETAILS FOR SPECIAL REQUIREMENTS TO RUN HORIZONTAL CABLING, SECURITY CAMERA CABLING, AND ACCESS CONTROL SYSTEM CABLING IN CONDUIT UNDERGROUND - ALL SUCH CABLING SHALL BE BURIAL GRADE GEL FILLED.
- 2. CONDUIT INSTALLER PROVIDE PULL STRINGS IN ALL HORIZONTAL CABLE CONDUITS AND PULL TAPE IN ALL BACKBONE CONDUITS FOR USE BY CABLING INSTALLER.
- 3. LOCATION AND ROUTING OF ABOVEGROUND CONDUITS IS APPROXIMATE AND DEPICTS DESIGN INTENT ONLY. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DETERMINING FINAL CONDUIT ROUTING IN THE FIELD. THE CONTRACTOR SHALL COORDINATE THE FINAL ROUTING OF CONDUITS TO AVOID CONFLICTS WITH OTHER TRADES, WHILE MINIMIZING CHANGES IN DIRECTION AND OVERALL CONDUIT LENGTH. OBTAIN APPROVAL OF ENGINEER PRIOR TO ANY CHANGES IN ROUTING. CONDUIT INSTALLER - PROVIDE PULL TAPE IN ALL BACKBONE CABLING CONDUITS CONTINUOUS FROM END TO END.
- 4. FREE-ROUTE CATEGORY 6 AND CATEGORY 6A HORIZONTAL CABLES NOT OTHERWISE INDICATED TO BE HOMERUN IN CONDUIT. SEE "HORIZONTAL CABLE ROUTING NOTE" AND "HORIZONTAL CABLING CONDUIT SLEEVES NOTE". LIMITED TO CABLES ABOVE CEILING - NO EXPOSED CABLES ALLOWED.
- 5. PROVIDE A HOMERUN CONDUIT RUN CONTINUOUSLY CONCEALED IN WALLS AND OVERHEAD FROM EACH IP SECURITY CAMERA TO SERVING CC. EACH HOMERUN CONDUIT SHALL BE 3/4" TRADE SIZE. SEE "IP SECURITY CAMERA CONDUIT NOTES" THIS SHEET. CONDUIT INSTALLER SHALL PROVIDE PULL STRINGS IN ALL HORIZONTAL CONDUITS CONTINUOUS FROM END TO END.
- 6. PROVIDE A HOMERUN CONDUIT RUN CONTINUOUSLY CONCEALED IN WALLS AND OVERHEAD FROM EACH SPECIAL SERVICE OUTLET TO SERVING CC. EACH HOMERUN CONDUIT SHALL BE 3/4" TRADE SIZE. CONDUIT INSTALLER SHALL PROVIDE PULL STRINGS IN ALL HORIZONTAL CONDUITS CONTINUOUS FROM END TO END.
- 7. CONDUITS RUN INDOORS SHALL BE RUN CONCEALED OVERHEAD ABOVE CEILING UNLESS LOCATED IN SPACES WITHOUT CEILING. IN AN UNFINISHED SPACE SUCH AS EQUIPMENT ROOMS, INDOOR CONDUIT SHALL BE EMT WITH STEEL FITTINGS EXCEPT WHERE RIGID THREADED CONDUIT IS INDICATED. DIE CAST EMT FITTINGS ARE NOT ALLOWABLE. FITTINGS IN EXPOSED INDOOR LOCATIONS SHALL BE STEEL COMPRESSION TYPE. FITTINGS IN CONCEALED LOCATIONS SHALL BE STEEL SET SCREW TYPE. SUPPORT EXPOSED CONDUIT AT A MINIMUM OF 4'-0" ON CENTER WITH 2-HOLE HEAVY DUTY GALVANIZED STEEL HARDWARE. DO NOT RUN CONDUITS BELOW SLAB EXCEPT AS SPECIFICALLY INDICATED.
- 8. WHERE RIGID CONDUIT (RMC) IS INDICATED, PROVIDE ALL THREADED WATERTIGHT RIGID GALVANIZED THREADED FITTINGS. IN ALL LOCATIONS WHERE INDICATED OUTDOORS PROVIDE RIGID CONDUIT ONLY (RMC). WHERE INDICATED INDOORS CONTRACTOR MAY PROVIDE IMC CONDUIT, BUT ALL FITTINGS SHALL BE THREADED RMC. MAINTAIN ELECTRICAL CONTINUITY FROM END-TO-END AND TERMINATE/GROUND WITH UL LISTED BONDING BUSHING.
- 9. SUPPORT CONDUIT DIRECTLY FROM BUILDING STRUCTURE USING APPROVED HARDWARE. DO NOT SUPPORT CONDUIT FROM OTHER SYSTEMS COMPONENTS OR SUPPORTS. ROUTE ALL CONDUITS AS HIGH AS POSSIBLE. WHERE CONDUIT IS EXPOSED RUN HARD AGAINST WALL OR UNDERSIDE OF ROOF/FLOOR DECK. RUN ALL CONDUITS PARALLEL/PERPENDICULAR AND PLUMB WITH BUILDING LINES.
- 10. CONDUIT BODIES SUCH AS "LB" FITTINGS ARE NOT ALLOWABLE.
- 11. PROVIDE PULLBOXES OF THE SAME TYPE AND SIZE AS THOSE INDICATED ON DRAWINGS FOR EACH RUN OF CONDUIT AT EVERY 100 FEET ON CENTER AND AT EACH END OF CONDUIT RUNS CONTAINING A TOTAL OF TWO 90 DEG BENDS OR A COMBINATION OF LESSER BENDS TOTALING 180 DEG (MINIMUM REQUIREMENTS - PROVIDE WHETHER SPECIFICALLY INDICATED OR NOT). CONDUIT RUNS CONTAINING MORE THAN TWO 90 DEG BENDS WITHOUT A PULLBOX ARE NOT ALLOWABLE. FACTORY CONDUIT ELBOWS AND ALL OTHER BENDS SHALL HAVE A MINIMUM RADIUS OF SIX TIMES THE INTERNAL CONDUIT DIAMETER. CONDUIT OFFSETS AND PULLBOXES REQUIRED TO SUIT FIELD CONDITIONS AND TO CONFORM TO THESE REQUIREMENTS SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.
- 12. PULLBOXES FOR BACKBONE CONDUITS SHALL BE AS INDICATED. PULL BOXES FOR HOMERUN CONDUITS SHALL BE 4" WIDE x 4" LONG x 2-1/8" DEEP NEMA 1 GALVANIZED STEEL WITH SCREW COVER. WHERE HOMERUN CONDUITS ARE TIGHTLY PACKED WITH UNIFORM SPACING, WIDER PULL BOXES MAY BE PROVIDED TO SERVE MULTIPLE CONDUITS. TERMINATE CONDUITS AT OPPOSITE ENDS OF PULLBOXES. DO NOT TERMINATE CONDUITS IN PULLBOXES AT RIGHT ANGLES TO EACH OTHER. HOMERUN CONDUITS SHALL NOT BE COMBINED INTO LARGER CONDUITS SERVING MULTIPLE OUTLETS. PROVIDE INDIVIDUAL HOMERUN CONDUITS FROM EACH SECURITY CAMERA.
- 13. WHERE CONDUIT AND PULLBOXES ARE LOCATED ABOVE NON-ACCESSIBLE CEILING OR SOFFITS (EXAMPLE PLASTER, METAL, OR GYPSUM BOARD), INSTALL AN 24" x 24" ALL ALUMINUM CEILING ACCESS DOOR IN CEILING DIRECTLY BELOW EACH SUCH PULLBOX. ACCESS DOORS SHALL BE LARSEN'S L-10P, ALL ALUMINUM CONSTRUCTION AND FASTENERS. PROVIDE ACCESS DOORS FACTORY PRIMED FOR PAINTING. FINISH PAINT WITH TWO COATS ENAMEL AFTER INSTALLATION TO MATCH EXISTING CEILING, SOFFIT, OR WALL.
- 14. TERMINATE ALL CONDUIT ENDS WITH THREADED PLASTIC INSULATING BUSHINGS (PUSH-ON NOT ALLOWABLE). BUSHINGS MUST FIT TIGHTLY ON CONDUIT CONNECTOR THREADS. INSTALL ALL BUSHINGS PRIOR TO PULLING CABLE. CONDUIT INSTALLER PROVIDE PULL STRINGS IN ALL HORIZONTAL CABLE CONDUITS AND PULL TAPE IN ALL BACKBONE CONDUITS FOR USE BY CABLING INSTALLER. LEAVE 10'-0" OF PULL TAPE SLACK AT EACH END OF BACKBONE CONDUIT AND TAPE EXCESS INTO ROLL.
- 15. IDENTIFICATION: IDENTIFY ALL COMMUNICATIONS CONDUITS AND PULLBOXES ABOVE LAY-IN CEILING, ACCESS DOORS AND IN ROOF SPACE WITH BLUE PAINT AT EVERY PULLBOX AND ON CONDUIT AT EACH COUPLER (PAINT ENTIRE COUPLER). DO NOT PAINT CONDUIT COUPLERS AND ENCLOSURES IN CC. IDENTIFY ALL BACKBONE CONDUIT PULLBOXES. PAINT WITH 1" TALL LETTER STENCIL (COLOR BLUE) THE WORDS "TELCOM" ON EACH PULLBOX COVER. LETTERING SHALL BE LEVEL AND SQUARE AND AT CENTER OF PULLBOX COVER.
- 16. IDENTIFICATION: IDENTIFY ALL CCTV IP SECURITY CAMERA CONDUITS AND PULLBOXES ABOVE LAY-IN CEILING, ACCESS DOORS AND IN ROOF SPACE WITH RED PAINT AT EVERY PULLBOX AND ON CONDUIT AT EACH COUPLER (PAINT ENTIRE COUPLER). DO NOT PAINT CONDUIT COUPLERS AND ENCLOSURES IN CC. IDENTIFY ALL CCTV CONDUIT PULLBOXES. PAINTING WITH 1" TALL LETTER STENCIL (COLOR GREEN) THE WORDS "CCTV" ON EACH PULLBOX COVER. LETTERING SHALL BE LEVEL AND SQUARE AND AT CENTER OF PULLBOX COVER.
- 17. IDENTIFICATION: IDENTIFY ALL INTERCOM/PA CONDUIT SLEEVES AND PULLBOXES ABOVE LAY-IN CEILING, ACCESS DOORS AND IN ROOF SPACE WITH YELLOW PAINT AT EVERY PULLBOX AND ON CONDUIT AT EACH COUPLER (PAINT ENTIRE COUPLER). DO NOT PAINT CONDUIT COUPLERS AND ENCLOSURES IN CC. PAINT WITH 1" TALL LETTER STENCIL (COLOR YELLOW) THE WORDS "INTERCOM/PA" ON EACH PULLBOX COVER. LETTERING SHALL BE LEVEL AND SQUARE AND AT CENTER OF PULLBOX COVER.
- 18. PAINTING: PAINT ALL OUTDOOR CONDUITS WHERE ENTERING EXISTING BUILDING. SEE SITE PLAN. COLORS SHALL MATCH EXISTING ADJACENT SURFACES (INCLUDING MATCHING COLOR AND LUSTER FOR BRICK WALLS). PREP ALL GALVANIZED SURFACES BY THOROUGHLY WASHING WITH VINEGAR, THEN PRIME WITH GLODEX "GRIPPER" GL-3250 GREY PRIMER. PREP FACTORY PAINTED BOXES BY ROUGHENING WITH SANDPAPER, PRIMING, AND PAINTING. FINISH ALL SURFACES WITH TWO COATS PREMIUM GRADE ACRYLIC LATEX EXTERIOR PAINT, COLOR TO MATCH ADJACENT SURFACE. PROVIDE SEMI-GLOSS PAINT AT FASCIAS AND OTHER PRE-FINISHED METAL SURFACES AND SURFACES FINISHED WITH SEMI-GLOSS PAINT. PROVIDE FLAT PAINT AT BRICK WALLS AND OTHER FLAT FINISHED SURFACES.

FREE-ROUTED HORIZONTAL CABLING CONDUIT SLEEVES NOTE

CONDUIT SLEEVES FOR FREE-ROUTED HORIZONTAL CAT 6 AND CAT 6A CABLING - FINAL ROUTING PATHS FOR HORIZONTAL CABLING SHALL BE DETERMINED BY THE CONTRACTOR IN THE FIELD. FOR THIS REASON CONDUIT SLEEVES ARE NOT INDICATED ON THE DRAWINGS. THE CONTRACTOR SHALL PROVIDE EMT CONDUIT SLEEVES IN THE QUANTITIES AND LOCATIONS REQUIRED TO SUIT THE CONTRACTOR SELECTED HORIZONTAL CABLE ROUTING AND AS REQUIRED FOR A COMPLETE INSTALLATION, REGARDLESS OF WHETHER THOSE SLEEVES ARE INDICATED ON THE DRAWINGS OR NOT, AND AT NO ADDITIONAL COST TO THE OWNER. AT ALL LOCATIONS WHERE HORIZONTAL CABLING RUNS THRU MECHANICAL OR ELECTRICAL EQUIPMENT ROOMS, STORAGE ROOMS, OR ANY OTHER TYPE OF ROOM WITH EXPOSED STRUCTURE CEILING, ALL SUCH CABLING SHALL BE RUN IN CONTINUOUS CONDUIT SLEEVES EXTENDING TO THE NEAREST ACCESSIBLE LAY-IN CEILING AT BOTH ENDS. IN ADDITION, THE CONTRACTOR SHALL PROVIDE CONDUIT SLEEVES TRAVERSING INACCESSIBLE (HARD) CEILING OR SOFFIT AREAS AND EXTENDING TO THE NEAREST ACCESSIBLE LAY-IN CEILING AT BOTH ENDS FOR CABLE PASS-THRU - PROVIDE ACCESS PANELS IN INACCESSIBLE CEILING AS REQUIRED TO INSTALL SLEEVES. SLEEVES SHALL BE SIZED FOR MAXIMUM 30 PERCENT CABLE FILL AND SHALL BE CONSTRUCTED AND PROVIDED WITH PULL BOXES AND ACCESS DOORS PER THE GENERAL ABOVEGROUND CONDUIT NOTES. GENERAL CONTRACTOR PAINT EXPOSED CONDUIT SLEEVES IN ALL FINISHED/OCCUPIED SPACES WITH NO CEILING TO MATCH ADJACENT SURFACES.

FREE-ROUTED HORIZONTAL CABLE ROUTING NOTE

ALL COMMUNICATIONS CABLE NOT SHOWN TO BE INSTALLED IN CONDUIT SHALL BE RUN ABOVE CEILING AND SHALL BE ROUTED UP HIGH DIRECTLY UNDER THE BUILDING ROOF STRUCTURE AND PROPERLY SUPPORTED WITH APPROVED HANGERS AT 4'-0" ON CENTER TO THE NEAREST WIRE BASKET CABLE TRAY (SEE "WIRE BASKET CABLE TRAY NOTES" THIS SHEET). DO NOT RUN CABLES CLOSER THAN 6" BELOW ROOF DECK (TO AVOID DAMAGE FROM LONG SCREWS USED IN FUTURE ROOF REPLACEMENTS). RUN ALL CABLING ABOVE DUCTWORK, PIPING, CONDUITS AND ALL OTHER WORK BY OTHER TRADES AND PLACE FOR MAXIMUM PHYSICAL PROTECTION. BUNDLE CABLES TOGETHER AND ROUTE PARALLEL AND PERPENDICULAR TO BUILDING LINES. HANGERS SHALL BE ERICO CADDY "CABLECAT" CATEGORY-5 WITH WIDE BASE LOOP. SEE "CATEGORY 6 & CATEGORY 6A CABLE J-HOOK SCHEDULE" FOR MINIMUM J-HOOK SIZES AND MAXIMUM CABLE BUNDLE CABLE REQUIREMENTS. BUNDLE CABLES AT 4'-0" O.C. WITH VELCRO, COLOR BLUE FOR CATEGORY 6 CABLES AND COLOR RED FOR CATEGORY 6A WAP CABLES. ATTACH HANGERS TO THE BUILDING STRUCTURE. DO NOT ATTACH HANGERS TO CEILING GRID OR SUPPORT WIRES, CONDUITS, DUCTWORK, PIPING, OR ANY OTHER SYSTEM COMPONENT OR WORK OF OTHER TRADES. INSTALL CABLES TO AVOID ELECTROMAGNETIC INTERFERENCE FROM MOTORS, TRANSFORMERS, GENERATORS, ELEVATORS, POWER CABLES/CONDUITS, LIGHTING FIXTURES, ETC. - DO NOT ROUTE CABLE THRU FIRE DAMPERS, HVAC DUCTS, VENTILATING SHAFTS, OR GRATES. DO NOT BLOCK ACCESS TO PULL/JUNCTION BOXES, HATCHES, DOORS, UTILITY ACCESS PANELS, MECHANICAL SERVICE AREAS, ELECTRICAL SERVICE AREAS, OR ANY OTHER SPACE ASSOCIATED WITH SERVICE OR ACCESS OF ANY TYPE. DO NOT RUN HORIZONTAL CABLING ABOVE CEILING OF CHEMICAL STORAGE ROOMS.

DUST CONTROL NOTE!

THE GENERAL CONTRACTOR AND THE STRUCTURED CABLING SYSTEM CONTRACTOR SHALL SHARE FULL RESPONSIBILITY FOR PROTECTING ALL COMMUNICATIONS OUTLETS AND THE SER/CC FROM DUST AND DEBRIS DURING CONSTRUCTION AND UNTIL FINAL COMPLETION OF THE PROJECT. THE SCS SHALL NOT INSTALL WIRE MANAGERS, PATCH PANELS, OR DRESS OUT AND TERMINATE CABLES UNTIL THE CC ARE COMPLETELY ISOLATED FROM DUST INFILTRATION WITH PLASTIC SHEETING AND DUCT TAPE. ALL CO'S JACKS SHALL BE PROTECTED BY BAGGING AND SEALING DUST TIGHT AT ALL TIMES AFTER CONNECTIVITY DEVICES ARE INSTALLED. ALL SYSTEM COMPONENTS THAT, IN THE SOLE JUDGMENT OF THE ENGINEER, ARE EXPOSED TO EXCESSIVE ACCUMULATION OF CONSTRUCTION DUST/DEBRIS AT ANY STAGE OF THE PROJECT SHALL BE REMOVED AND REPLACED WITH NEW COMPONENTS AT NO ADDITIONAL COST TO THE OWNER.

USE OF SCS FACILITIES BY OTHER TRADES

CC: THE CC WITH ALL RELATED SPACE, BACKBOARDS, CABLE RUNWAY, ETC. ARE DEDICATED TO STRUCTURED CABLING SYSTEM COMPONENTS ONLY AND SHALL NOT BE USED IN ANY WAY BY ANY OTHER TRADE WITH THE EXCEPTION OF ELECTRICAL POWER AND HVAC WORK SPECIFICALLY ASSOCIATED WITH THAT SPACE.

J-HOOKS: CATEGORY 5 J-HOOKS INDICATED ON 'TEL' DRAWINGS ARE DEDICATED TO SCS CABLING (HORIZONTAL CATEGORY 6 AND CATEGORY 6A CABLES) AND SHALL NOT BE USED FOR ANY OTHER TYPE OF CABLING.

CONDUITS: CONDUITS INDICATED ON 'TEL' DRAWINGS ARE DEDICATED TO SCS CABLING AND SHALL NOT BE USED FOR ANY OTHER TYPE OF CABLING.

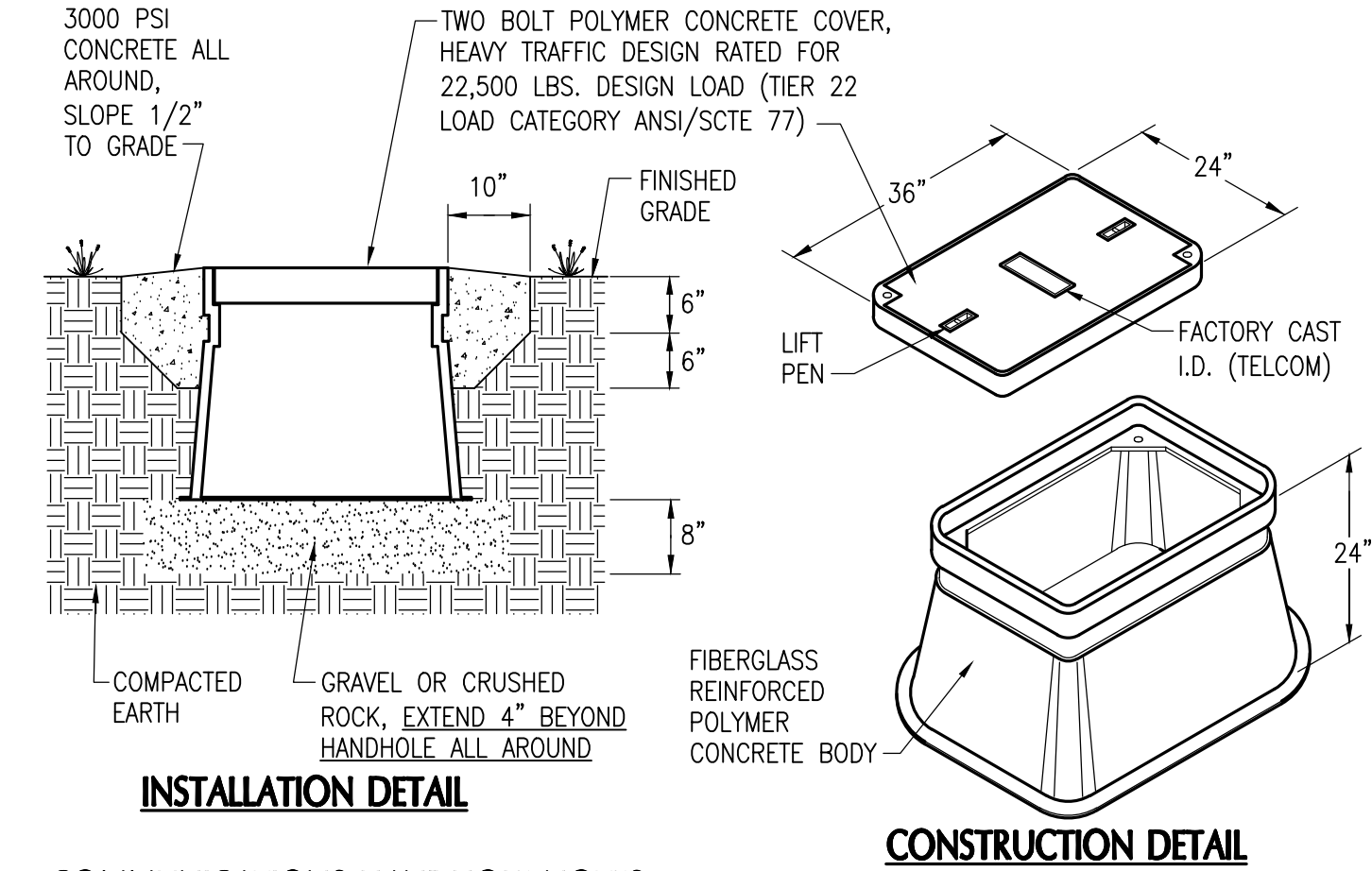
GYM 100 NO EXPOSED CONDUIT OR CABLE NOTE

EXPOSED CONDUIT OR CABLE IS NOT ALLOWED IN GYM 100 AND ADJACENT EXPOSED ROOF STRUCTURE AREAS AS FOLLOWS (EXCEPT THAT LIMITED EXPOSED CONDUIT IS ALLOWED IN THE GYM FOR STRUCTURE MOUNTED INTERCOM/PA HORN SPEAKERS).

ALL CONDUIT AND CABLE FOR COMMUNICATIONS OUTLETS, WAPS, EXTERIOR INTERCOM/PA SPEAKERS, SECURITY CAMERAS, SECURE DOORS AND OTHER DEVICES SHOWN MOUNTED IN THE NORTH AND EAST WALLS OF GYM 100, STAGE 102 AND TABLE/CHAIR STORAGE 103 AND IN MECH/ELEC MEZZANINES 201 AND 203 SHALL BE RUN CONCEALED IN WALLS DOWN TO TURN AND RUN UNDERGROUND BELOW SLAB TO SERVING CC. CONDUITS SHALL BE 1" SCHEDULE 80 PVC WITHIN WALLS AND BELOW SLAB. 3/4" CONDUIT SIZES INDICATED IN DETAILS SHOWING CONDUIT AND CABLE RUN ABOVE THE FLOOR SLAB DO NOT APPLY - PROVIDE ALL 1" CONDUITS FOR BURIAL APPLICATIONS. IN SERVING CC TURN CONDUITS UP IN TIGHT RECTANGULAR UNIFORM GROUPING SEPARATED BY SERVICE (DO NOT MIX SYSTEMS) THRU FLOOR SLAB IN LOCATION SHOWN ON ENLARGED CC FLOOR PLAN AND TERMINATE AT 4" A.F.F. WITH END BELL. RUN UNDERGROUND CONDUIT STRAIGHT "AS THE CROW FLIES" FROM POINT OF TURNING DOWN THRU FLOOR SLAB TO RUN UNDERGROUND OVER TO POINT OF TURNING UP IN SERVING CC. THE ONLY BENDS OR CHANGES IN DIRECTION IN EACH UNDERGROUND CONDUIT SHALL BE THOSE TWO 90 DEGREE ELBOWS. AND THOSE ELBOWS SHALL BE SCHEDULE 80 LONG RADIUS, CLEAN, GLUE AND MAKE ALL UNDERGROUND CONDUIT JOINTS WATERTIGHT. ELECTRICAL CONTRACTOR VALIDATE CONTINUITY OF CONDUITS, BLOW OR VACUUM ALL WATER OUT OF CONDUITS, AND INSTALL HEAVY DUTY PULL STRING CONTINUOUS FROM END TO END OF EACH CONDUIT PRIOR TO FLOOR SLAB POUR - ELECTRICAL CONTRACTOR PROVIDE 10' OF HEAVY DUTY PULL STRING SLACK AT EACH END, TEMPORARILY CAP CONDUIT ENDS TO PREVENT ENTRY OF WATER AND DIRT. SUBCONTRACTOR FOR EACH SYSTEM AGAIN BLOW WATER OUT OF CONDUITS PRIOR TO INSTALLING CABLES. SCS PROVIDE ALL BURIAL GRADE CATEGORY 6 CABLE EXCEPT CATEGORY 6A BURIAL GRADE CABLE FOR WAPS. INTERCOM/PA CONTRACTOR PROVIDE BURIAL GRADE SPEAKER CABLE. ACCESS CONTROL SYSTEM CONTRACTOR PROVIDE BURIAL GRADE ACS CABLE. SEE CC ENLARGED FLOOR PLAN AND 'GENERAL ABOVEGROUND CONDUIT NOTES'.

GENERAL UNDERGROUND CONDUIT NOTES

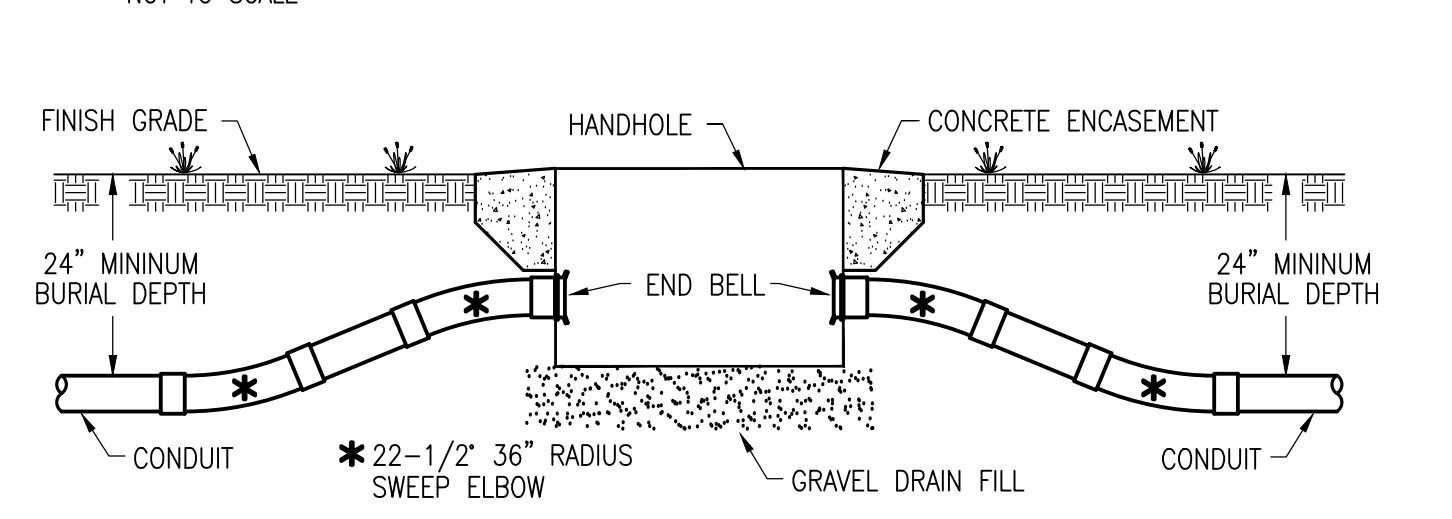
- 1. LOCATION AND ROUTING OF NEW UNDERGROUND CONDUIT IS APPROXIMATE. THE CONTRACTOR SHALL COORDINATE THE FINAL LOCATION AND ROUTING OF CONDUIT TO AVOID CONFLICTS WITH BURIED UTILITIES AND OTHER OBSTRUCTIONS. SIGNIFICANT CHANGES TO CONDUIT ROUTING SHALL REQUIRE THE APPROVAL OF THE ENGINEER.
- 2. ALL BURIED CONDUIT SHALL BE SCHEDULE 80 ELECTRICAL GRADE PVC CONDUIT. ALL PVC CONDUIT JOINTS SHALL BE CLEANED AND GLUED FOR A WATERTIGHT CONNECTION. TERMINATE ENDS OF PVC CONDUIT AT CLOSETS AND HANDHOLES WITH END BELLS.
- 3. SEAL ALL UNDERGROUND CONDUITS WATERTIGHT AT ALL HANDHOLE ENDS AND AT ALL BUILDING ENTRY POINTS FOLLOWING CABLE INSTALLATION TO PREVENT THE ENTRY OF WATER INTO BUILDINGS, AND TO PREVENT THE ENTRY OF WATER OR DEBRIS INTO THE CONDUITS FROM THE BUILDING OR HANDHOLES.
- 4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATION OF ALL EXISTING BURIED UTILITIES PRIOR TO COMMENCING ANY EXCAVATION REQUIRED FOR WORK UNDER THE PROJECT. THE CONTRACTOR SHALL REPAIR ANY DAMAGE TO EXISTING UTILITIES THAT OCCURS AS A RESULT OF OPERATIONS PERFORMED UNDER THIS CONTRACT AT NO ADDITIONAL COST TO THE OWNER. REPAIRS SHALL BE MADE USING MATERIALS & METHODS TO MATCH EXISTING CONSTRUCTION AND SHALL BE APPROVED BY THE ENGINEER PRIOR TO RE-COVERING.
- 5. LOCATION OF HANDHOLES SHOWN IS INTENDED TO PLACE HANDHOLES IN ACCESSIBLE SODDED, PLANTED OR PAVED AREAS. COORDINATE LOCATIONS WITH DRAINAGE STRUCTURES, SIDEWALKS, OTHER OUTSIDE STRUCTURES, AND LANDSCAPING TO AVOID CONFLICTS.
- 6. PROVIDE HANDHOLES IN UNDERGROUND CONDUIT AS INDICATED AND ADDITIONAL HANDHOLES AS REQUIRED DUE TO CHANGES IN CONDUIT DIRECTION. INSTALL A HANDHOLE IN EACH CONDUIT RUN OF LONGER THAN 500 FEET OR CONTAINING THE EQUIVALENT OF MORE THAN TWO 90° BENDS. INSTALL HANDHOLES AFTER BENDS AS INDICATED. DO NOT USE HANDHOLES TO MAKE A CHANGE IN DIRECTION.
- 7. RESTORE TO THEIR ORIGINAL ELEVATION AND CONDITION UNPAVED SURFACES DISTURBED DURING INSTALLATION OF UNDERGROUND CONDUIT. PRESERVE AND REPLACE SOO OR TOPSOIL AFTER INSTALLATION IS COMPLETED. REPLACE SOO THAT IS DAMAGED WITH SOO OF TYPE AND QUALITY EQUAL TO THAT REMOVED.
- 8. WHERE TRENCHES OR OTHER EXCAVATIONS ARE MADE IN AREAS OF EXISTING WALKWAYS WHERE SURFACE TREATMENT OF ANY KIND EXISTS, RESTORE SUCH SURFACE TREATMENT TO THE SAME THICKNESS AND IN THE SAME KIND AS PREVIOUSLY EXISTED (EXCEPT AS OTHERWISE INDICATED) AND TO MATCH AND TIE INTO THE ADJACENT AND SURROUNDING SURFACES.
- 9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXTENT OF EXISTING SURFACE TREATMENT SUCH AS CONCRETE OR ASPHALTIC PAVING. THE DRAWINGS SHALL NOT BE CONSTRUED AS PROVIDING ACCURATE REPRESENTATION OF THE TYPE, LOCATION OR EXTENT OF SURFACE TREATMENT OF ANY KIND.
- 10. THE MINIMUM BEND RADIUS FOR ALL UNDERGROUND CONDUITS SHALL BE 10 TIMES THE INTERNAL CONDUIT DIAMETER.
- 11. BURIED WARNING AND IDENTIFICATION TAPE: PROVIDE METALLIC DETECTION TAPE MANUFACTURED SPECIFICALLY FOR WARNING AND IDENTIFICATION OF BURIED UTILITIES. INSTALL TAPE DIRECTLY ABOVE EACH BURIED CONDUIT AT DEPTH OF 10 TO 12 INCHES BELOW GRADE FOR ENTIRE LENGTH OF CONDUIT. TAPE SHALL BE DETECTABLE BY ANY STANDARD NON-FERRIC METAL DETECTOR. PROVIDE TAPE IN ROLLS, 2 INCHES MINIMUM WIDTH, COLOR ORANGE, WITH WARNING AND IDENTIFICATION IMPRINTED IN BOLD BLACK LETTERS CONTINUOUSLY AND REPEATABLE OVER ENTIRE TAPE LENGTH. WARNING AND IDENTIFICATION SHALL READ "CAUTION BURIED COMMUNICATIONS LINE BELOW". USE PERMANENT CODE AND LETTER COLORING UNFFECTED BY MOISTURE AND OTHER SUBSTANCES CONTAINED IN BACKFILL MATERIAL.
- 12. UNDERGROUND CONDUIT VALIDATION - FOLLOWING INSTALLATION OF UNDERGROUND CONDUITS, PERFORM THE FOLLOWING OPERATION FOR EACH CONDUIT: CLEAN, LUBRICATE AND VALIDATE EACH INSTALLED CONDUIT FOR SERVICEABILITY BY RUNNING A FULL SIZE RUBBER DUCT SWAB THROUGH THE CONDUIT FROM END TO END. CONDUITS THAT ARE OBSTRUCTED MAY BE CLEANED USING A WIRE BRUSH MANDREL, THEN REVALIDATED WITH THE FULL SIZE RUBBER DUCT SWAB. CONDUITS THAT DO NOT ALLOW PASSAGE OF THE FULL SIZE RUBBER DUCT SWAB SHALL BE REPLACED.
- 13. PULL TAPES: AS BACKBONE CABLING RUNS ARE INSTALLED CONDUIT INSTALLER SHALL PROVIDE A CONTINUOUS MARKED PULL TAPE (MULE TAPE W/2500P 2500 LB. TENSILE STRENGTH) FOR THE FULL LENGTH OF THE END-TO-END CABLE RUN WITH 10 FEET OF SLACK AT EACH END PULLED IN ALONGSIDE CABLING. BUNDLE SLACK NEATLY AT EACH END AND THE OFF TO CONDUIT SUPPORT STRUT AT EACH END. PROVIDE CONTINUOUS FACTORY UNCUIT LENGTHS OF PULL TAPE FROM END-TO-END - UNDER NO CIRCUMSTANCES SHALL PULL PARTIAL LENGTH SECTION OF PULL TAPE BE TIED TOGETHER.
- 14. SPARE CONDUITS: FOR CONDUITS THAT ARE INDICATED AS SPARE, INSTALL A CONTINUOUS MARKED PULL TAPE (CARLON TL382 1800 LB. TENSILE STRENGTH) FOR THE FULL LENGTH OF THE END-TO-END CONDUIT RUN WITH 10 FEET OF SLACK AT EACH END, THE EACH END OF THE TAPE TO A BLANK DUCT PLOG WITH ROPE THE TAB, PUSH SLACK TAPE BACK INTO CONDUIT, AND INSTALL A DUCT PLOG IN EACH CONDUIT END FOR A WATERTIGHT SEAL.



COMMUNICATIONS HANDHOLE NOTES

- 1) HANDHOLE SHALL BE 36"x24"x24" DEEP, OLDCASTLE H SERIES. COVER AND BODY SHALL BOTH BE HEAVY TRAFFIC RATED, 22,500 POUND DESIGN LOAD, ANSI/SCTE 77 TIER 22 LOAD CATEGORY. COVER LOGO SHALL BE "TELCOM" OR "COMMUNICATIONS". INSTALL IN ACCORDANCE WITH THE MANUFACTURER'S PRINTED INSTRUCTIONS AND THE REQUIREMENTS OF THIS PROJECT.
- 2) TERMINATE CONDUITS ENTERING HANDHOLE WITH END BELL (CARLON E997). CONSTRUCT CONDUIT RISE TO ENTER BOX FROM SIDE WITH 22-1/2" SWEEP ELBOWS. SEE "TYPICAL HANDHOLE CONDUIT ENTRY DETAIL". DO NOT ENTER HANDHOLE FROM BOTTOM.

LARGE COMMUNICATIONS HANDHOLE TYPICAL DETAILS

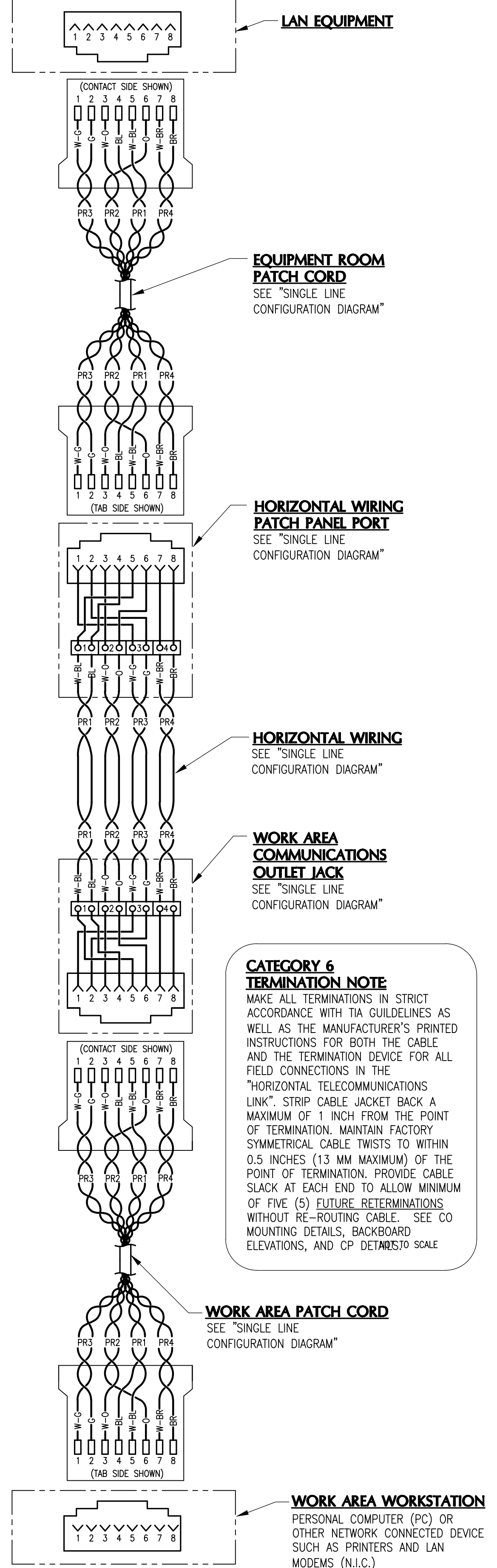


TYPICAL HANDHOLE CONDUIT ENTRY DETAIL



IP SECURITY CAMERA SPECIAL CONDUIT NOTES

- 1. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DETERMINING FINAL CONDUIT ROUTING IN THE FIELD. THE CONTRACTOR SHALL COORDINATE THE FINAL ROUTING OF CONDUITS TO CONCEAL CONDUITS AND TO AVOID CONFLICTS WITH THE BUILDING STRUCTURE, OTHER UTILITIES AND OBSTACLES, WHILE MINIMIZING CHANGES IN DIRECTION AND OVERALL CONDUIT LENGTH. ALL CONDUIT SHALL BE RUN OVERHEAD AND CONCEALED EXCEPT AS SPECIFICALLY INDICATED. BEST ROUTING WITHIN BUILDINGS SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR WITH THE LIMITATIONS SPECIFIED IN THESE NOTES AND THE CONTRACT DOCUMENTS IN GENERAL.
- 2. A HOMERUN CONDUIT SHALL BE RUN TO EACH CAMERA. CONDUITS RUN INDOORS SHALL BE RUN CONCEALED OVERHEAD ABOVE CEILING UNLESS LOCATED IN SPACES WITHOUT CEILING, IN SPACES WITH EXPOSED ROOF STRUCTURE, OR AS OTHERWISE SPECIFICALLY INDICATED. INDOOR CONDUIT SHALL BE EMT WITH STEEL COMPRESSION FITTINGS. DIE CAST EMT FITTINGS ARE NOT ALLOWABLE. SUPPORT EXPOSED CONDUIT AT A MINIMUM OF 4'-0" ON CENTER WITH 2-HOLE HEAVY DUTY GALVANIZED STEEL HARDWARE.
- 3. HOMERUN CONDUITS FROM CC SHALL BE A MAXIMUM OF 260 FEET LONG. PROVIDE PULLBOXES AT EVERY 100 FEET ON CENTER AND AT EACH END OF CONDUIT RUNS CONTAINING A TOTAL OF TWO 90 DEG BENDS OR A COMBINATION OF LESSER BENDS TOTALING 180 DEG (MINIMUM REQUIREMENTS - PROVIDE WHETHER SPECIFICALLY INDICATED OR NOT). CONDUIT RUNS CONTAINING MORE THAN TWO 90 DEG BEND WITHOUT A PULLBOX ARE NOT ALLOWABLE. FACTORY CONDUIT ELBOWS AND ALL OTHER BENDS SHALL HAVE A MINIMUM RADIUS OF SIX TIMES THE INTERNAL CONDUIT DIAMETER. CONDUIT OFFSETS AND PULLBOXES REQUIRED TO SUIT FIELD CONDITIONS AND TO CONFORM TO THESE REQUIREMENTS SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER. PULL BOXES FOR 3/4" HOMERUN CONDUITS SHALL BE 4"x4"x2-1/8" WITH BLANK COVER.
- 4. IDENTIFICATION: IDENTIFY ALL INDOOR IP CAMERA CONDUITS, PULLBOXES ABOVE LAY-IN CEILING AND ACCESS DOORS WITH GREEN PAINT AT EVERY PULLBOX AND ON CONDUIT AT EACH COUPLER (PAINT ENTIRE COUPLER). IDENTIFY ALL CCTV CONDUIT PULLBOXES BY PAINTING WITH 1" TALL LETTER STENCIL (COLOR GREEN) THE WORDS "CCTV" ON EACH PULLBOX COVER. LETTERING SHALL BE LEVEL AND SQUARE AND AT CENTER OF PULLBOX COVER. DO NOT PAINT CONDUIT COUPLERS AND ENCLOSURES IN CC.
- 5. SEE ADDITIONAL NOTES FOR SECURITY CAMERAS ON SEC SHEETS.



TYPICAL POINT-TO-POINT WIRING DIAGRAM WORK AREA WORKSTATION TO LAN EQUIPMENT CATEGORY 6 "HORIZONTAL TELECOMMUNICATIONS CHANNEL"

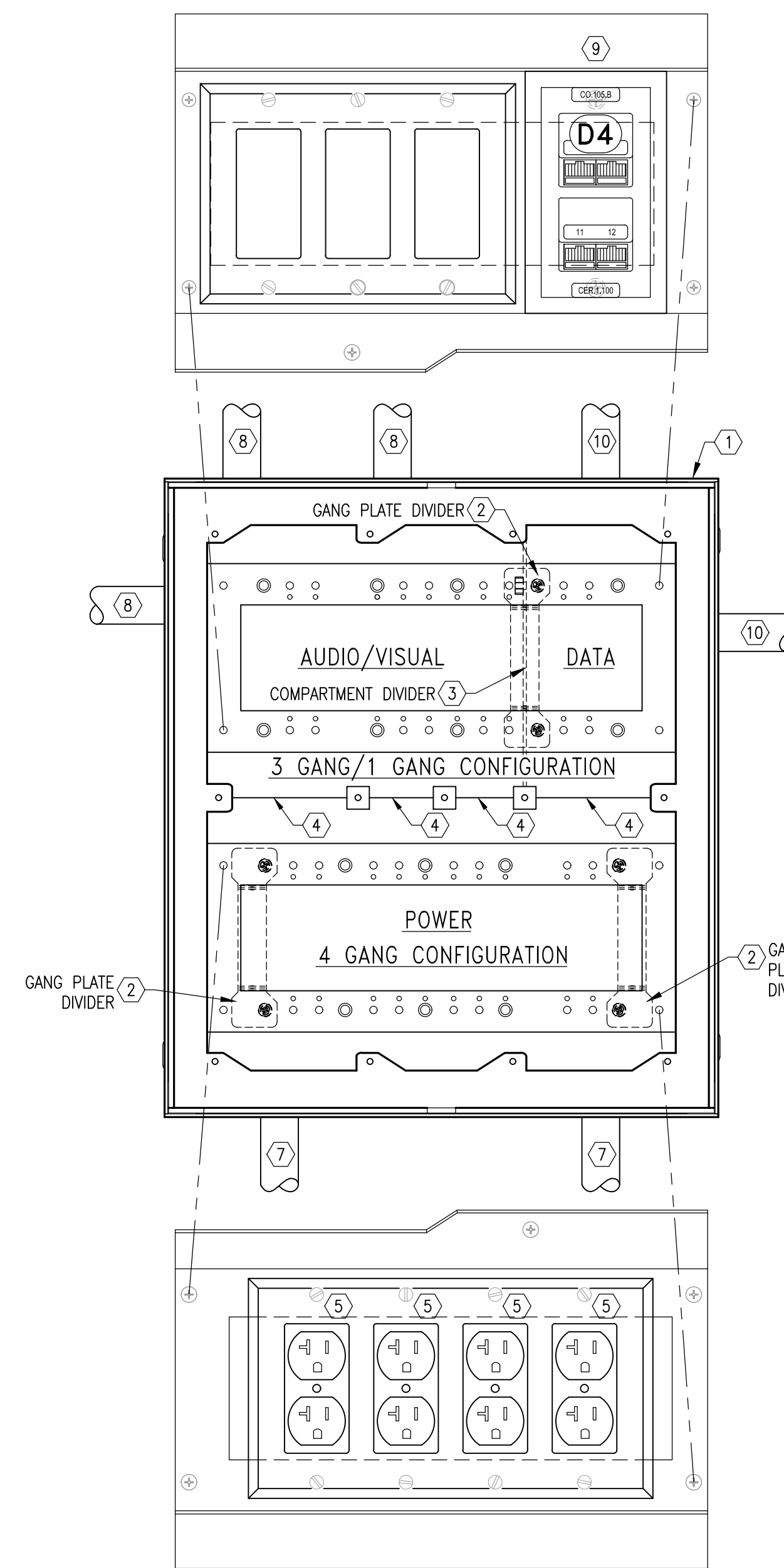
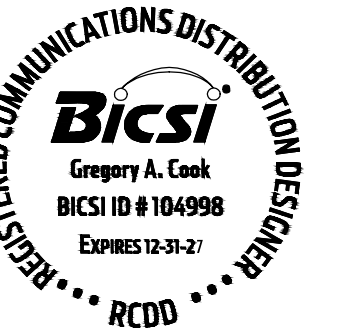
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COMMUNICATIONS TYPICAL DETAILS

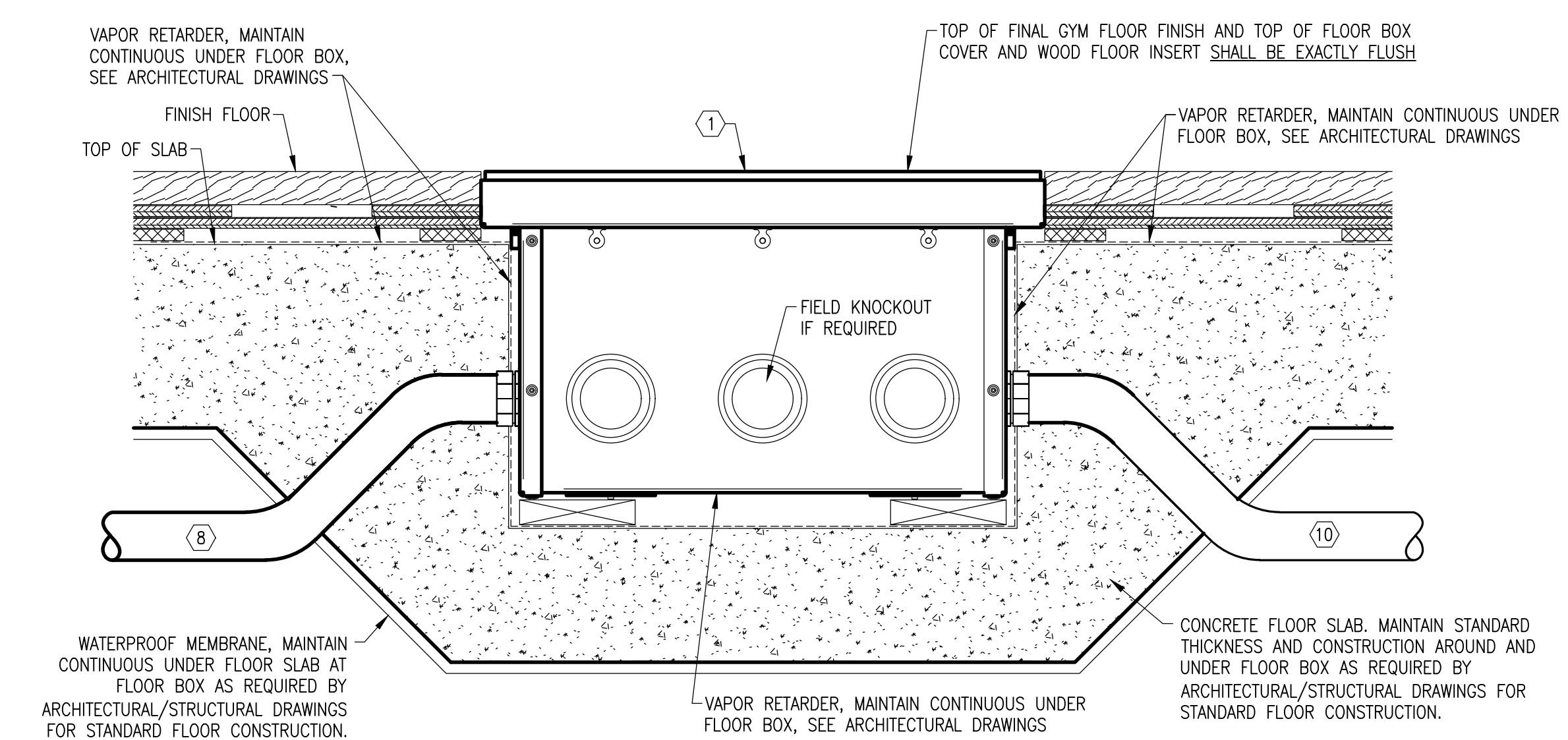
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GYM FLOOR BOX FINISH NOTE
GENERAL CONTRACTOR COORDINATE WORK OF FLOOR FINISH PROVIDER TO INSTALL FLOOR FINISH MATCHING ADJACENT SURFACES INSET INTO FLOOR BOX COVER CAVITY FOR TILE/STONE/WOOD AND CARPETED FLOORS. THE FLOOR BOX MANUFACTURERS HAVE DIFFERENT TYPES OF COVERS FOR EACH TYPE OF FLOOR FINISH - THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE REQUIRED FLOOR BOX COVER FOR EACH AREA BASED ON FLOOR FINISH. FINAL HEIGHT OF HIGH LOAD FLOOR BOXES AND LARGE FLOOR BOXES IN TILE/STONE/WOOD FLOOR AREAS AT TOP OF COVER AND INSET FINISH SHALL BE ABSOLUTELY FLUSH WITH TOP OF SURROUNDING FLOOR FINISH. COVER FLANGE OF LARGE FLOOR BOXES IN CARPETED AREAS SHALL SIT ON TOP OF SURROUNDING CARPET AND CARPET SHALL BE FLUSH WITH TOP OF COVER FLANGE.

HIGH LOAD CAPACITY GYM FLOOR BOX KEY NOTES

- 1 BY ELECTRICAL CONTRACTOR: HIGH LOAD CAPACITY RECTANGULAR 8-GANG FLOOR BOX, 75R FLX20 WITH RECESSED COVER FOR WOOD FLOOR INSERT. GENERAL CONTRACTOR COORDINATE WITH BOX MANUFACTURER AND ELECTRICAL CONTRACTOR TO SELECT COVER WITH RECESS DEPTH AND PERIMETER WALL THICKNESS DIMENSION TO SUIT WOOD FLOOR INSERT - BOTH DIMENSIONS ARE FACTORY OPTIONS. GENERAL CONTRACTOR PROVIDE WOOD FLOOR INSERT IN COVER RECESS TO MATCH GYM FLOOR.
- 2 BY ELECTRICAL CONTRACTOR: FACTORY GANG PLATE DIVIDER.
- 3 BY ELECTRICAL CONTRACTOR: FACTORY COMPARTMENT DIVIDER.
- 4 BY ELECTRICAL CONTRACTOR: FACTORY CENTER DIVIDER.
- 5 ELECTRICAL POWER RECEPTACLES, SEE ELECTRICAL DRAWINGS.
- 7 BY ELECTRICAL CONTRACTOR: PROVIDE QUANTITY AND SIZE OF POWER CONDUITS WITH WATERTIGHT FITTINGS INDICATED ON ELECTRICAL DRAWINGS AND SPECIFICATIONS.
- 8 BY ELECTRICAL CONTRACTOR: PROVIDE QUANTITY AND SIZE OF A/V CONDUITS WITH WATERTIGHT FITTINGS INDICATED ON A/V DRAWINGS. TERMINATE IN A/V SECTION OF FLOOR BOX.
- 9 BY STRUCTURED CABLING SYSTEM CONTRACTOR: STANDARD 'D4' COMMUNICATION OUTLET. SEE FACEPLATE DETAILS.
- 10 BY ELECTRICAL CONTRACTOR: PROVIDE ONE 1" COMMUNICATIONS HOMERUN CONDUIT FOR EACH 'D4' OUTLET INDICATED ON PLAN PLUS ONE 1" EMPTY CONDUIT W/PULLSTRING. RUN MINIMUM OF TWO 1" SCHEDULE 80 PVC CONDUITS - RUN CONDUITS UNDERGROUND TO SERVING CC AND TERMINATE AT 4" A.F.F. WITH END BELL. SEE "GENERAL ABOVEGROUND CONDUIT NOTES."

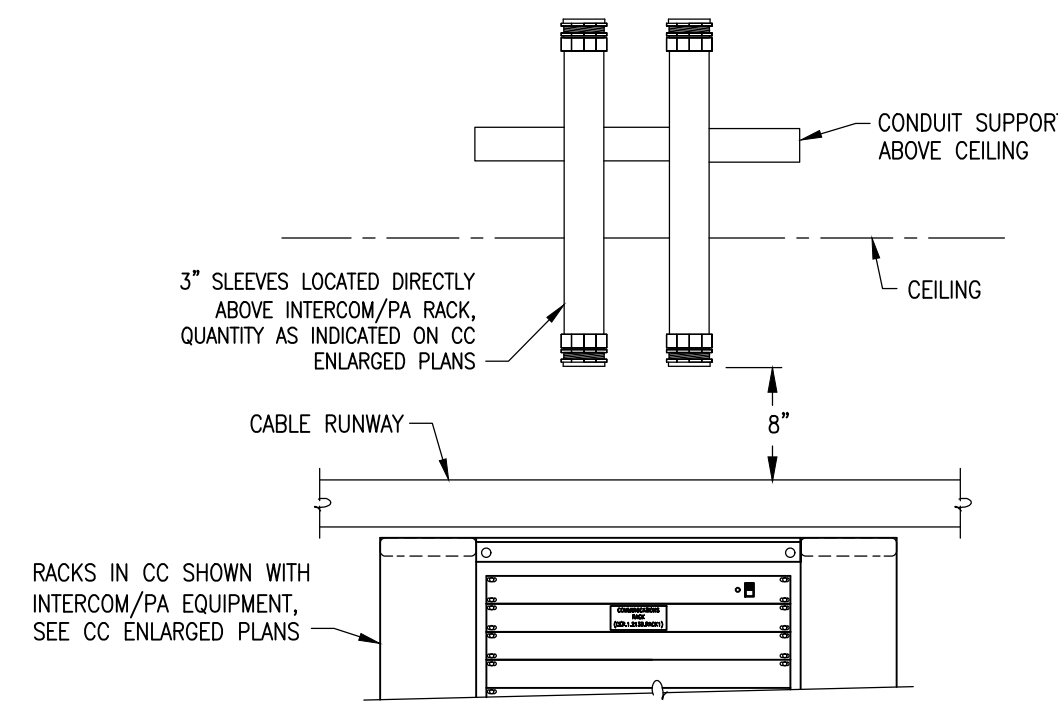


HIGH LOAD CAPACITY GYMNASIUM FLOOR BOX DETAIL
NOT TO SCALE (AT SCORER'S TABLE) GFB AV D4 = 4 CAT 6 JACKS IN ONE 'D4' CO + AV + POWER

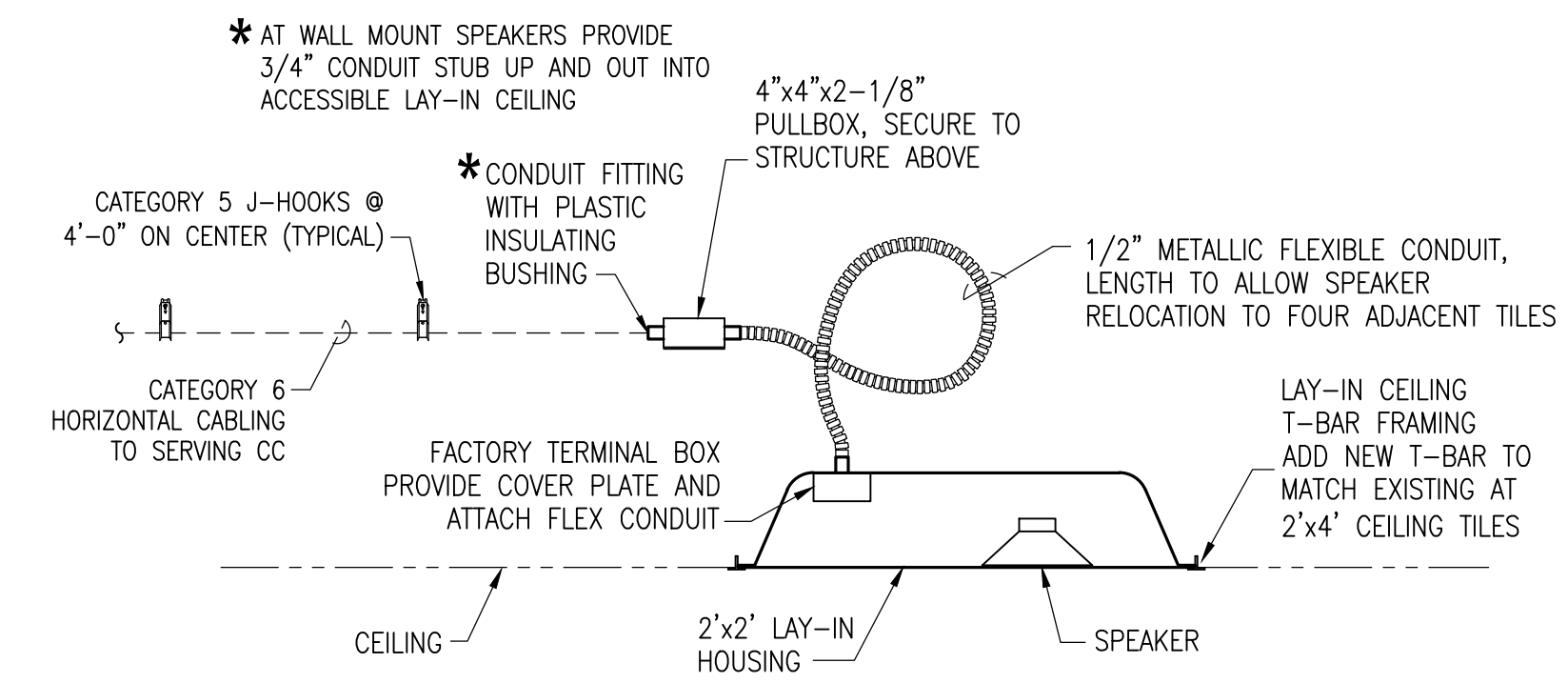
UNDERGROUND CONDUITS - WATERTIGHT REQUIREMENTS
ALL UNDERGROUND CONDUITS FOR COMMUNICATIONS AND AUDIO-VISUAL CABLING SERVED BY FLOOR BOXES SHALL BE SCHEDULE 80 PVC, SHALL HAVE CONDUIT ENTRY INTO FLOOR BOXES SEALED WITH LEVEL GASKET/ADHESIVE, AND SHALL OTHERWISE BE MADE FULLY WATERTIGHT TO PROTECT THE CABLES FROM WATER INTRUSION.
NO CABLES SHALL BE INSTALLED IN THE UNDERGROUND CONDUITS UNTIL THE ENTIRE BUILDING IS UNDER ROOF, FULLY ENCLOSED AND AIR CONDITIONED, AT WHICH TIME THE CONDUIT SHALL BE VACUUMED BY THE ELECTRICAL CONTRACTOR TO REMOVE ALL WATER AND THE CONDUITS LEFT TO DRY COMPLETELY.
AT THAT POINT THE STRUCTURED CABLING SYSTEM CONTRACTOR SHALL VACUUM THE CONDUITS A SECOND TIME TO VERIFY THAT ALL WATER HAS BEEN REMOVED BEFORE INSTALLING ANY CABLES. CABLES PULLED INTO CONDUITS CONTAINING WATER OR CABLES INSTALLED IN CONDUITS FOUND TO CONTAIN WATER FOLLOWING THE CABLE INSTALLATION SHALL BE REMOVED AND REPLACED WITH NEW AT NO COST TO THE OWNER.

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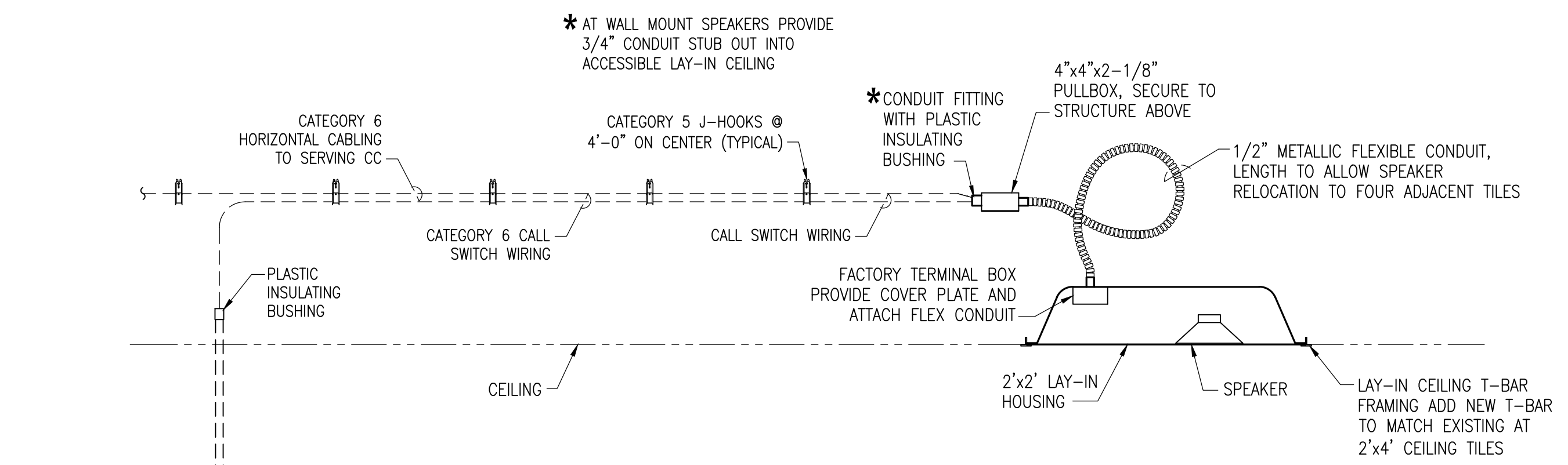
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TYPICAL HOMERUN SPEAKER CONDUITS AT CC DETAIL
NOT TO SCALE



TYPICAL ONE-WAY SPEAKER MOUNTING DETAIL
NOT TO SCALE



CALL SWITCH LOCATION NOTE
COORDINATE FINAL MOUNTING LOCATION OF EACH CALL SWITCH WITH OWNER'S PROJECT MANAGER PRIOR TO DEVICE BOX ROUGH-IN. IN CLASSROOMS LOCATE AT TEACHER STATION FOR EASY ACCESS BY TEACHER AND PROTECTED FROM STUDENTS. DO NOT PROCEED WITHOUT OWNER LOCATE.

TYPICAL TALKBACK SPEAKER/CALL SWITCH STATION MOUNTING DETAIL
NOT TO SCALE

SPEAKER ATTACHMENT NOTES

- ALL ATTACHMENTS SHALL BE MADE WITH HIGH STRENGTH/HIGH LOAD COMMERCIAL GRADE FASTENERS. ALL FASTENERS AND MISCELLANEOUS RELATED HARDWARE SHALL BE STAINLESS STEEL. TAP-CONS OR RAM-SET TYPE FASTENERS ARE NOT ALLOWABLE. ATTACHMENTS AT VARIOUS BUILDING WALL CONSTRUCTIONS SHALL BE AS FOLLOWS AS A MINIMUM REQUIREMENT. COMPLY WITH MORE STRINGENT FASTENER SPECIFICATIONS WHEN REQUIRED BY THE LOADING APPLICATION OR RECOMMENDED BY THE MANUFACTURER OF EACH SYSTEM COMPONENT:
- AT FRAMED WALLS WITH GYP BOARD FINISH OR AT OPEN BLOCK CELLS OF CMU WALLS PROVIDE TOGGLER "SNAP-TOGGLE" TOGGLE BOLTS. AT FRAMED WALLS FASTENERS SHALL BE PLACED AT STUDS.
 - AT BRICK WALLS, BLOCK WEBS AND FILLED CELLS OF CMU WALLS, AND AT CONCRETE WALLS, PROVIDE COMMERCIAL GRADE HIGH LOAD EXPANSION ANCHORS SUCH AS TOGGLER "ALLIGATOR" SOLID-WALL ANCHORS WITH STAINLESS STEEL FASTENERS.
 - AT METAL SOFFIT OR FASCIA CONSTRUCTION PROVIDE STAINLESS STEEL THRU BOLTS ALL THE WAY THRU SOFFIT OR FASCIA FRAMING, PROVIDE SUPPLEMENTARY FRAMING ON INTERIOR AS REQUIRED FOR SECURE MOUNTING.
 - FASTENERS SHALL BE FULL SIZE OF FASTENER HOLES/OPENING IN EQUIPMENT TO BE SECURED (ALLOWING FOR STANDARD CLEARANCES - FASTENERS SIZE 1/16" LESS THAN HOLE SIZE).

INTERCOM/PA GENERAL NOTES

- RUN CABLING CONTINUOUSLY IN CONDUIT IN ALL AREAS WITH NO CEILING AND EXPOSED ROOF STRUCTURE TO ACCESSIBLE LAY-IN CEILING SPACE. WORK WITH GC TO ROUTE CONDUITS THRU AREA FOR LOWEST POSSIBLE VISIBILITY. RUN WITH OTHER TRADES WHEREVER POSSIBLE. PREP, PRIME AND PAINT ALL EXPOSED CONDUIT TO MATCH ADJACENT SURFACES.
- PROVIDE CONDUIT FOR EXTERIOR SPEAKERS EXTENDING INTO THE BUILDING TO ACCESSIBLE LAY-IN CEILING SPACE.
- PROVIDE CONDUIT SLEEVES WITH INSULATING BUSHING EACH END TURNING DOWN INTO SERVING Ccs FOR ENTRY OF FREE ROUTED CABLES INTO Ccs. SIZE SLEEVES FOR 30% FILL.
- IDENTIFY ALL INDOOR INTERCOM/PA, SLEEVES, CONDUIT AND PULLBOXES ABOVE LAY-IN CEILINGS, AT ACCESS DOORS, IN ROOF SPACE, AND IN ALL EXPOSED LOCATIONS (EXCEPT WITHIN CER/Ccs) WITH YELLOW PAINT AT EVERY PULLBOX AND ON CONDUIT AT EACH COUPLER (PAINT ENTIRE COUPLER).
- ALL HORIZONTAL INTERCOM/PA (NETWORK) CABLES TO TALKBACK SPEAKERS SHALL BE FOUR PAIR 24 AWG UTP CATEGORY 6 RISER (CMR) RATED JACKET WITH YELLOW JACKET SHALL BE FREE ROUTED FROM THE SERVING CC TO EACH TALKBACK SPEAKER AS INDICATED ON THE SINGLE LINE DIAGRAM. IN NO CASE SHALL CABLES BE DAISY-CHAINED BETWEEN MULTIPLE TALKBACK SPEAKERS OR ANY OTHER INTERCOM/PA DEVICE EXCEPT AS INDICATED FROM CALL SWITCH TO ASSOCIATED TALKBACK SPEAKER IN SAME ROOM. PUNCH CABLES DOWN ON PATCH PANELS IN CC AND DIRECT CONNECTORIZE AT SPEAKERS USING CATEGORY 6 PLUG PER SINGLE LINE DIAGRAM.
- ALL HORIZONTAL INTERCOM/PA (SPEAKER SIGNAL AND POWER) CABLES TO ONE-WAY SPEAKERS SHALL BE FOUR PAIR 24 AWG UTP CATEGORY 6 RISER (CMR) RATED JACKET WITH YELLOW JACKET AND SHALL BE FREE ROUTED FROM THE CC TO THE NEAREST ONE-WAY SPEAKER ON THAT ZONE, THEN DAISY-CHAINED TO OTHER ONE-WAY SPEAKERS ON THE SAME ZONE AND IN CLOSE PROXIMITY TO THE FIRST ONE-WAY SPEAKER. PUNCH CABLES DOWN ON 110 WIRING BLOCKS IN CC AND DIRECT TERMINATE ON WIRING TERMINALS AT ONE-WAY SPEAKERS. SEE INTERCOM SINGLE LINE WIRING DIAGRAMS FOR MAXIMUM SPEAKER QUANTITIES PER DAISY-CHAIN.
- MAKE ALL NON-NETWORK WIRING CONNECTIONS ON FACTORY WIRING TERMINALS OF SPEAKERS AND CALL SWITCHES. WHERE FACTORY WIRE LEADS ONLY ARE PROVIDED AT SPEAKERS MAKE CONNECTIONS USING SCOTCHLOK "UR2" SEALANT FILLED CONNECTORS USING ONLY 3M FACTORY TERMINATION TOOLS. WHERE WIRE-TO-WIRE CONNECTIONS ARE REQUIRED MAKE CONNECTIONS USING SCOTCHLOK "UR2" CONNECTORS.
- CEILING MOUNT SPEAKER LOCATIONS SHOWN ARE APPROXIMATE. COORDINATE EXACT SPEAKER LOCATIONS WITHIN CEILING GRID WITH LIGHT FIXTURES, HVAC AIR DISTRIBUTION DEVICES, FIRE ALARM DEVICES, AND ANY OTHER CEILING MOUNTED DEVICES TO AVOID CONFLICTS. PLACE AS NEAR TO LOCATION INDICATED AS POSSIBLE IN SYMMETRICAL PATTERN. MOUNT TALKBACK SPEAKERS IN CLASSROOMS FOR EASE OF USE BY TEACHER (TALKBACK/CALLOUT) WHILE MAINTAINING ADEQUATE SOUND DISTRIBUTION THROUGHOUT CLASSROOM SPACE.

DIRECT CONNECT NOTE

DIRECT TERMINATE CATEGORY 6 CABLES FOR INTERCOM/PA TALKBACK SPEAKERS WITH PLATINUM TOOLS EZEX-RJ45 TERMINATION SYSTEM WITH EZEX44 OR EZEX48 CONNECTOR AS REQUIRED TO SUIT CABLE CONDUCTOR AND OVERALL JACKET DIAMETERS. INSTALL IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS USING FACTORY EXO CRIMP FRAME WITH EXO-EX DIE (10061C). CABLE JACKET MUST BE EXTENDED INTO THE CONNECTOR FOR STRAIN RELIEF.

INTERCOM/PA SYSTEM HORIZONTAL CABLE ROUTING NOTE

CONDUIT SLEEVES FOR INTERCOM/PA SYSTEM HORIZONTAL CABLE ROUTING: FINAL ROUTING PATHS FOR HORIZONTAL CABLEING SHALL BE DETERMINED BY THE ELECTRICAL CONTRACTOR IN THE FIELD. FOR THIS REASON CONDUIT SLEEVES ARE NOT INDICATED ON THE DRAWINGS. THE CONTRACTOR SHALL PROVIDE EMT CONDUIT SLEEVES IN THE QUANTITIES AND LOCATIONS REQUIRED TO SUIT THE CONTRACTOR SELECTED HORIZONTAL CABLE ROUTING AND AS REQUIRED FOR A COMPLETE INSTALLATION, REGARDLESS OF WHETHER THOSE SLEEVES ARE INDICATED ON THE DRAWINGS OR NOT, AND AT NO ADDITIONAL COST TO THE OWNER. AT ALL LOCATIONS WHERE HORIZONTAL CABLEING RUNS THRU MECHANICAL OR ELECTRICAL EQUIPMENT ROOMS, STORAGE ROOMS, OR ANY OTHER TYPE OF ROOM WITH EXPOSED STRUCTURE CEILING, ALL SUCH CABLEING SHALL BE RUN IN CONTINUOUS CONDUIT SLEEVES EXTENDING TO THE NEAREST ACCESSIBLE LAY-IN CEILING AT BOTH ENDS. IN ADDITION, THE CONTRACTOR SHALL PROVIDE CONDUIT SLEEVES TRAVERSING INACCESSIBLE (HARD) CEILING OR SOFFIT AREAS AND EXTENDING TO THE NEAREST ACCESSIBLE LAY-IN CEILING AT BOTH ENDS FOR CABLE PASS-THRU. SLEEVES SHALL BE SIZED FOR MAXIMUM 30 PERCENT CABLE FILL AND SHALL BE CONSTRUCTED PER THE GENERAL ABOVEGROUND CONDUIT NOTES. GENERAL CONTRACTOR PAINT EXPOSED CONDUIT SLEEVES IN ALL FINISHED/OCCUPIED SPACES WITH EXPOSED STRUCTURE TO MATCH ADJACENT SURFACES. ALL SLEEVES SHALL BE NEW AND SHALL BE USED FOR INTERCOM/PA SYSTEM CABLEING ONLY. STRUCTURED CABLEING SYSTEM SLEEVES SHALL NOT BE USED UNDER ANY CIRCUMSTANCES.

INTERCOM/PA SYSTEM HORIZONTAL CABLE ROUTING NOTE

ALL INTERCOM/PA SYSTEM CABLEING NOT SHOWN TO BE INSTALLED IN CONDUIT SHALL BE RUN ABOVE CEILINGS AND SHALL BE ROUTED UP HIGH DIRECTLY UNDER THE BUILDING ROOF STRUCTURE AND PROPERLY SUPPORTED WITH APPROVED HANGERS AT 4'-0" ON CENTER, BUT DO NOT RUN CABLES CLOSER THAN 6" BELOW ROOF DECK (TO AVOID DAMAGE FROM LONG SCREWS USED IN FUTURE ROOF REPLACEMENTS). RUN ALL CABLEING ABOVE DUCTWORK, PIPING, CONDUITS AND ALL OTHER WORK BY OTHER TRADES AND PLACE FOR MAXIMUM PHYSICAL PROTECTION. BUNDLE INTERCOM/PA CABLES TOGETHER AND ROUTE PARALLEL AND PERPENDICULAR TO BUILDING LINES. HANGERS SHALL BE ERICO CADDY "CABLECAT" CATEGORY-5 WITH WIDE BASE LOOP. BUNDLE CABLES AT 4'-0" O.C. WITH PLENUM RATED VELCRO, COLOR YELLOW. ATTACH HANGERS TO THE BUILDING STRUCTURE. DO NOT ATTACH HANGERS TO CEILING GRID OR SUPPORT WIRES, CONDUITS, DUCTWORK, PIPING, OR ANY OTHER SYSTEM COMPONENT OR WORK OF OTHER TRADES. INSTALL CABLES TO AVOID ELECTROMAGNETIC INTERFERENCE FROM MOTORS, TRANSFORMERS, GENERATORS, ELEVATORS, POWER CABLES/CONDUITS, LIGHTING FIXTURES, ETC. DO NOT ROUTE CABLE THRU FIRE DAMPERS, HVAC DUCTS, VENTILATING SHAFTS, OR GRATES. DO NOT BLOCK ACCESS TO PULL/JUNCTION BOXES, HATCHES, DOORS, UTILITY ACCESS PANELS, MECHANICAL SERVICE AREAS, ELECTRICAL SERVICE AREAS, OR ANY OTHER SPACE ASSOCIATED WITH SERVICE OR ACCESS OF ANY TYPE. ALL HANGERS, SUPPORTS AND VELCRO WRAPS SHALL BE NEW AND SHALL BE USED FOR INTERCOM/PA SYSTEM CABLEING ONLY. STRUCTURED CABLEING SYSTEM CABLE HANGERS SHALL NOT BE USED UNDER ANY CIRCUMSTANCES.

DAG

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100% CONSTRUCTION DOCUMENTS



A New Gymatorium for:
PALM BAY CHARTER SCHOOLS

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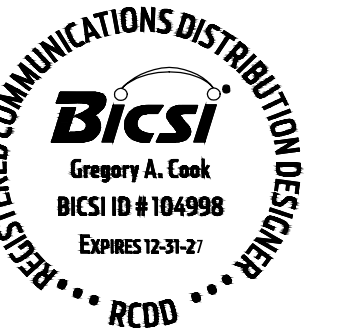
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INTERCOM/PA SYSTEM NOTES & LABELING DETAILS

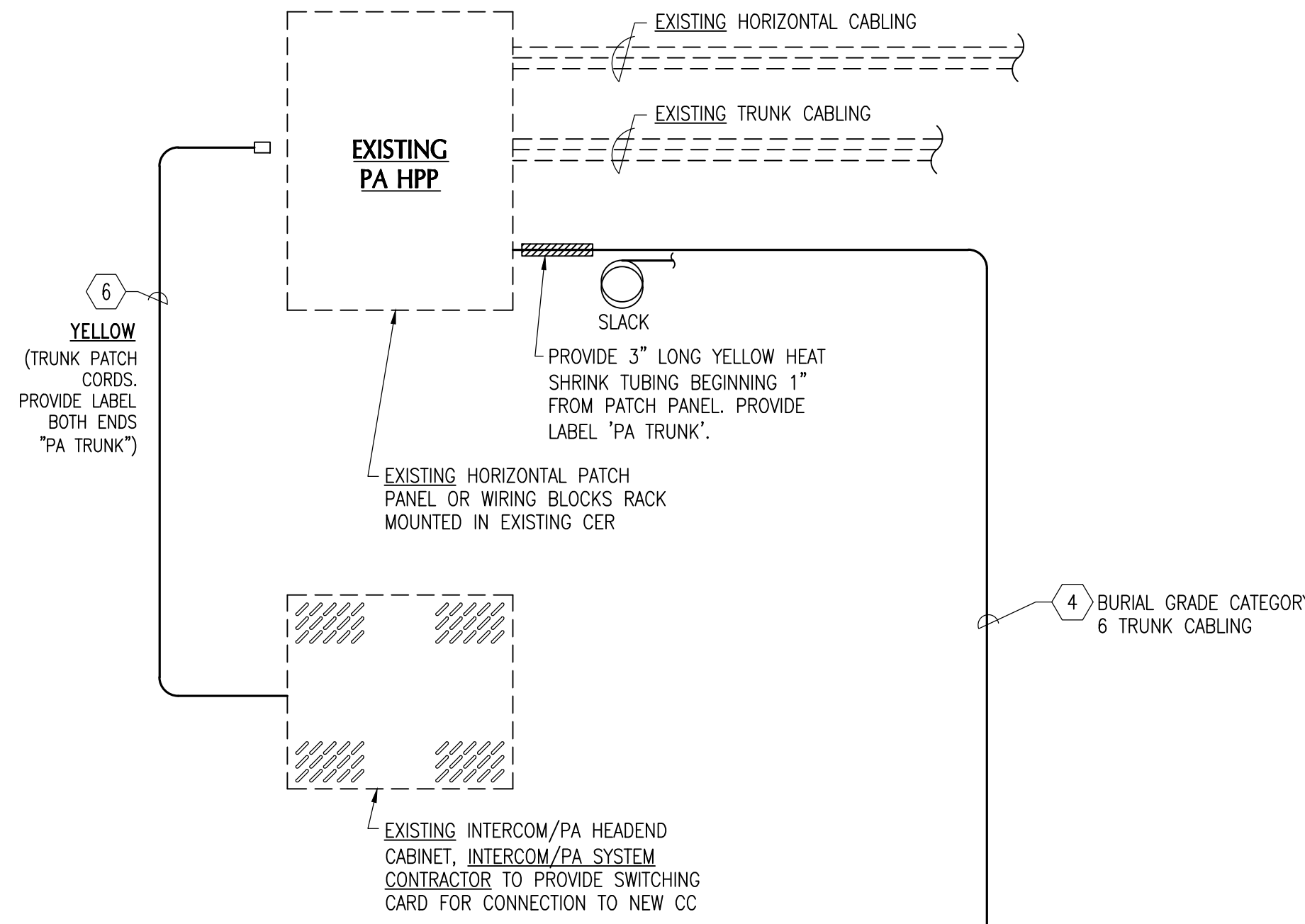
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Premier Project #22024

T305



EXISTING CER.1131



INTERCOM/PA SYSTEM SINGLE LINE KEY NOTES:

- BY INTERCOM/PA SYSTEM CONTRACTOR: 32 PORT SWITCHING MODULE, CAREHAWK SS32. PROVIDES ANNUNCIATION CALL-IN AND BIDIRECTIONAL COMMUNICATIONS WITH DISPLAY ADMIN CONSOLES. RACK MOUNT USING CAREHAWK PART #84103 RACK MOUNT KIT. QUANTITY AS REQUIRED. BOND DIRECTLY TO CC GROUNDING BUSBAR WITH #10 AWG INSULATED GROUNDING CONDUCTOR (GREEN) AND HEAVY DUTY COMPRESSION RING CONNECTORS. MATCH RING SIZE TO FASTENER SIZE. ATTACH TO SS32 AT FACTORY DESIGNATED AND MASKED OFF POINT AT CASING MOUNTING FLANGE FOR CLEAN METAL-TO-METAL CONTACT. ROUTE GROUNDING CONDUCTOR ALONG AND SECURE TO BACK OF RACK USING SSSC PROVIDED NYLON CABLE STANDOFF BRACKETS, UP TO CABLE RUNWAY AND IN A DIRECT PATH PARALLEL TO RUNWAY LINES OVER TO BACKBOARD AND DOWN TO BUSBAR. ROUTE WITH AND SECURE SAME AS OTHER GROUNDING CONDUCTORS BY SSSC.
- BY INTERCOM/PA SYSTEM CONTRACTOR: SIX OSP BURIAL GRADE CATEGORY 6 CABLES, BELDEN 'OSP6U' (NO EQUAL), PULL IN ALONG WITH FIBER OPTIC BACKBONE CABLING TO CC. TWO CABLES ARE SPARE. TERMINATE, TEST, LABEL AND COIL 20 FEET SLACK EACH END ON BACK OF VERTICAL CABLE RUNWAY AT UNDERGROUND CONDUIT ENTRY. PROVIDE INDUSTRIAL GRADE SURGE PROTECTION AT EACH END, DITEK OR ENGINEER APPROVED EQUAL - INSTALL AND BOND TO GROUND IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS.
- BY INTERCOM/PA SYSTEM CONTRACTOR: EQUIPMENT ROOM INTERCOM/PA PATCH CORDS, FACTORY TERMINATED AND TESTED CATEGORY 6 MODULAR PATCH CORD (UTP) 4-PAIR UNSHIELDED CABLE WITH 23 GAGE SOLID COPPER CONDUCTORS, COLOR YELLOW. PROVIDE WITH 8-PIN MODULAR PLUG ON BOTH ENDS AND TIA 568A PIN/PAIR ASSIGNMENTS, BELDEN C6011xxxx (NO EQUAL). FIELD BUILT OR ASSEMBLED PATCH CORDS WILL NOT BE ACCEPTED. PROVIDE PATCH CORD QUANTITIES AND LENGTHS AS REQUIRED PLUS 25% SPARE. PROVIDE DOCUMENTATION OF FACTORY TESTING AT SUBMITTAL.
- BY INTERCOM/PA SYSTEM CONTRACTOR: HORIZONTAL UN-LOADED PATCH PANEL, 48 PORT, TIA 568A PINOUT, BELDEN RVMPPF2U48BK-P. PROVIDE WITH FACTORY PLASTIC LABELING WINDOWS AND BELDEN AX107527 ACCESSORY NON-ADHESIVE LABEL SHEETS, FACTORY CABLE MANAGEMENT BAR, AND MOUNTING HARDWARE. PROVIDE WITH TIA CATEGORY 6+ 8-PIN MODULAR JACKS IN ALL PORTS. BELDEN RECONNECT FROM/KU/ML. COLOR YELLOW TO MATCH THE USER/SERVICE COLOR SCHEDULE. SEE SCHEDULE ON SHEET T401. SEE CATEGORY 6 CABLE NOTE BELOW FOR PINOUT.
- BY INTERCOM/PA SYSTEM CONTRACTOR: TIA CATEGORY 6 INTERCOM/PA HORIZONTAL CABLING, 4 PAIR UTP, 23 GAGE SOLID COPPER CONDUCTORS. MAXIMUM INSTALLED LENGTH 90 METERS (295'). PROVIDE DOCUMENTATION OF CURRENT UL CERTIFICATION WITH SUBMITTALS. PROVIDE WITH CMR (RISER) JACKET, COLOR YELLOW. SEE SCHEDULE ON SHEET T401 FOR APPROVED CABLES. PINOUT FOR THE CAREHAWK SYSTEM IS NOT TIA 568A OR 568B BUT IS CUSTOM FOR THE CAREHAWK SYSTEM, PUNCH DOWN ACCORDINGLY.

ALLOWANCE FOR INTERCOM/PA SYSTEM

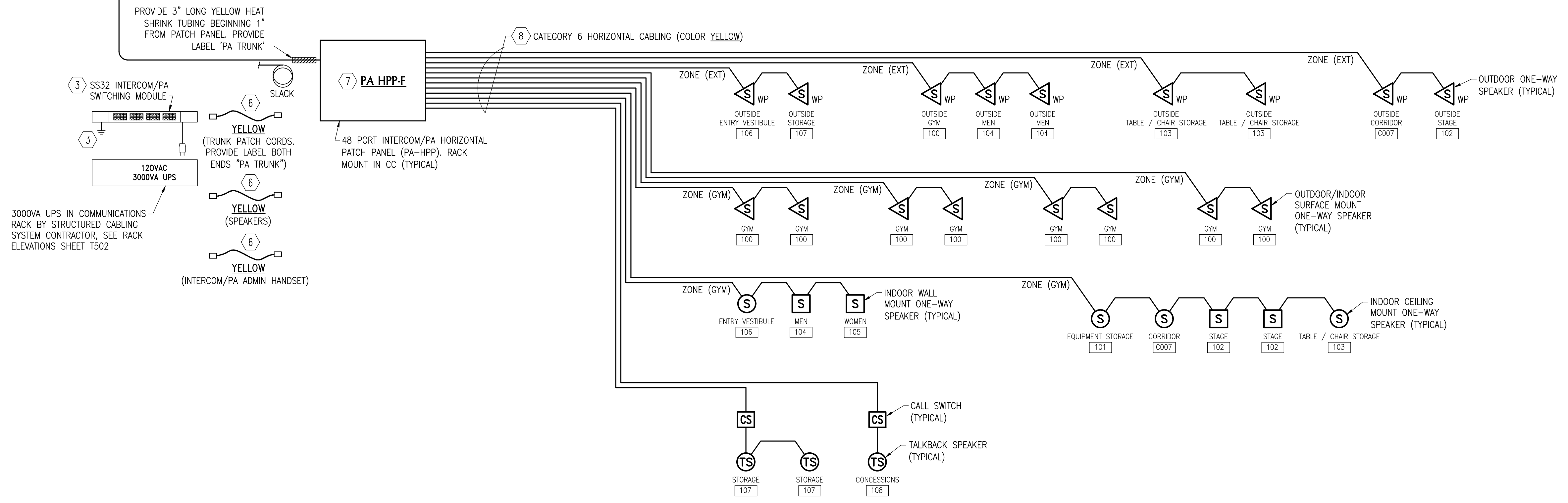
THE GENERAL CONTRACTOR SHALL INCLUDE AN ALLOWANCE FOR THE PROVISION OF A COMPLETE INTERCOM/PA SYSTEM FOR THIS PROJECT IN THE BASE BID. ALL REFERENCES TO MATERIALS AND LABOR ASSOCIATED WITH THE INTERCOM/PA SYSTEM WITHIN THE CONTRACT DOCUMENTS SHALL BE INCLUDED IN THIS ALLOWANCE UNLESS SPECIFICALLY INDICATED OTHERWISE. THE AMOUNT OF THE ALLOWANCE SHALL BE ISSUED AS AN ADDENDUM PRIOR TO THE BID DATE. THE SCOPE OF WORK FOR THE ALLOWANCE SHALL INCLUDE:

- THE INTERCOM/PA SYSTEM COMPLETE WITH ALL DEVICES AND EQUIPMENT DESCRIBED IN THE DRAWINGS AND SPECIFICATIONS, TO INCLUDE A FULL INTERFACE TO THE EXISTING SCHOOL CAREHAWK INTERCOM/PA SYSTEM AND THREE NEW ADMIN CONSOLES.
- ALL DEVICES AND EQUIPMENT IN THE INTERCOM/PA SYSTEM PROVIDER'S COST PROPOSAL AND ASSOCIATED STATEMENT OF WORK.
- ALL OTHER DEVICES AND EQUIPMENT REQUIRED FOR A COMPLETE SYSTEM.
- ALL ASSOCIATED CABLING.
- ALL WIRING AND CABLING, ALL CABINETS AND ENCLOSURES AND ALL PROGRAMMING AND SETUP REQUIRED TO MAKE THE SYSTEM FULLY OPERATIONAL AND FUNCTIONAL TO THE SATISFACTION OF THE OWNER.
- AN INTERFACE TO THE TELEPHONE SYSTEM TO ALLOW INTERCOM/PA CALLS TO BE MADE THRU ANY VOIP TELEPHONE SET ANYWHERE ON CAMPUS.

RELATED WORK TO BE PROVIDED BY OTHERS UNDER THE BASE BID BUT NOT INCLUDED IN THE SCOPE OF THE ALLOWANCE SHALL INCLUDE A "D2" SPECIAL SERVICES COMMUNICATIONS OUTLET AT THE INTERCOM/PA SYSTEM FOR CONNECTION TO THE VOIP TELEPHONE SYSTEM (BY THE STRUCTURED CABLING SYSTEM CONTRACTOR), CONDUIT FOR ALL INTERCOM/PA SYSTEM WIRING AND CABLING (BY THE ELECTRICAL CONTRACTOR), AND ALL POWER AND GROUNDING REQUIRED FOR THE SYSTEM (BY THE ELECTRICAL CONTRACTOR). EACH ELECTRICAL CONTRACTOR PROVIDING A BID FOR THIS PROJECT SHALL BE RESPONSIBLE FOR COORDINATING THE ASSOCIATED CONDUIT, POWER AND GROUNDING WORK WITH THE SYSTEM PROVIDER PRIOR TO BIDS - BUT THE SCOPE OF CONDUIT AND POWER WORK SHALL NOT BE LESS THAN THAT DESCRIBED ON THE DRAWINGS.

THE INTERCOM/PA SYSTEM CONTRACTOR SHALL BE JACKSONVILLE SOUND & COMMUNICATIONS, TALLAHASSEE FL. CONTACT JAMIE BAKER AT SCOTT.POWELL@JSCSYSTEMS.NET OR (850) 656-1705.

COMMUNICATIONS CLOSET - CCX.109



INTERCOM/PA SYSTEM SINGLE LINE CONFIGURATION DIAGRAM

NOT TO SCALE

NOTE
SEE FLOOR PLAN FOR SPEAKER AND CALL BUTTON QUANTITIES IF GREATER THAN THE QUANTITY SHOWN ON THE SINGLE LINE.

NOTE RUN ALL CABLES CONTINUOUS BETWEEN TERMINATION POINTS INDICATED WITH NO INTERMEDIATE SLICES OR TERMINATIONS.

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INTERCOM/PA SYSTEM SINGLE LINE DIAGRAM

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DATED	01/31/2025



CC ENLARGED FLOOR PLAN KEY NOTES:

- 1 PLYWOOD BACKBOARD, 8'-0" HIGH X FULL WIDTH OF WALL AS INDICATED, MOUNT WITH BOTTOM AT 6" ABOVE FINISH FLOOR. ROUTE ALL ELECTRICAL OUTLETS INTO WALL BEHIND BACKBOARD AND BACKBOARD FOR FLUSH MOUNT INSTALLATION OF FACEPLATES. COORDINATE WORK WITH ELECTRICAL CONTRACTOR TO ENSURE THAT POWER RECEPTACLES ARE PROPERLY LOCATED. POWER CONDUITS ARE RECESSED INTO WALL AND BACKBOARD AND FACEPLATES ARE FLUSH ON FACE OF BACKBOARD. FILL AND SAND SMOOTH ALL SEAMS, COUNTERSINK SCREW HOLES AND VOIDS. PRIME WITH TWO COATS PRIMER, SANDING SMOOTH AFTER EACH COAT. PRETREAT BARE PLYWOOD WITH FLAMECHECK M-111 AND ALLOW TO DRY BEFORE PAINTING. APPLY FIRST COAT WITH FIRE RETARDANT PAINT - ADD 8 OUNCES OF FLAMECHECK M-111FA TO ONE GALLON OF ACRYLIC PAINT, THOROUGHLY MIX AND APPLY TWO FULL COATS FOR 2 MIL THICKNESS PER MANUFACTURER'S PRINTED RECOMMENDATIONS. FINISH WITH THICK COAT OF SEMI-GLOSS ACRYLIC PAINT, COLOR BATTLESHIP GREY. FINAL SURFACE SHALL BE UNIFORMLY SMOOTH AND EVEN. TOUCH UP AT END OF PROJECT.
- 2 CC GROUNDING BUSBAR, HARGER GBI-144200 WITH TWO ROWS OF 7/16" HOLES AT 1" SPACING EACH WAY. MAKE ALL CONNECTIONS WITH TWO HOLE LONG BARREL COMPRESSION LUGS (HARGER GECLB4-2C FOR #4 AWG, GECLB6-2C FOR #6 AWG) AND BOND TO BUSBAR WITH TWO 3/8" SS HEX HEAD CAP SCREWS WITH SS LOCKING NUTS. SEE "CC GROUNDING NOTES" AND "VOICE SYSTEM SINGLE LINE CONFIGURATION DIAGRAM".
- 3 BY ELECTRICAL CONTRACTOR: 120 VAC 20 AMP DOUBLE DUPLEX POWER RECEPTACLE, ROUGH-IN WALL BOX FLUSH WITH FACE OF BACKBOARD. EXTEND EMT CONDUIT FROM BOX CONCEALED BEHIND BACKBOARD. SEE ELECTRICAL DRAWINGS.
- 3A BY ELECTRICAL CONTRACTOR: 120 VAC 20 AMP DOUBLE DUPLEX POWER RECEPTACLE, MOUNT DIRECTLY UNDER CCTV ENCLOSURE CHASE NIPPLE FOR POWER CORD PASS-THRU. ROUGH-IN WALL BOX FLUSH WITH FACE OF BACKBOARD. EXTEND EMT CONDUIT FROM BOX CONCEALED BEHIND BACKBOARD. SEE ELECTRICAL DRAWINGS.
- 3B BY ELECTRICAL CONTRACTOR: 120 VAC 20 AMP SIMPLEX POWER RECEPTACLE WITH DEDICATED 120 VAC 20 AMP CIRCUIT. MOUNT ON BACKSIDE OF CABLE RUNWAY IN NON-METALLIC SINGLE GANG BOX TO SERVE RACK MOUNTED POWER SURGE SUPPRESSOR. PROVIDE 1/2" PVC ELECTRICAL CONDUIT FROM BACKBOARD ALONG UNDERSIDE OF CABLE RUNWAY, SAME AS REQUIRED FOR 30 AMP POWER OUTLET. PAINT FLAT BLACK. SEE ELECTRICAL DRAWINGS.
- 3C BY ELECTRICAL CONTRACTOR: 120 VAC L5-30 30 AMP POWER RECEPTACLE WITH DEDICATED 120 VAC 30 AMP CIRCUIT. MOUNT ON HEAVY DUTY (3/16" THICK) BLANK FILLER PLATE ON REAR OF RACK AS INDICATED TO SERVE 3000 VA UPS. RUN POWER CONDUIT FROM BACKBOARD IN PVC ELECTRICAL CONDUIT UNDER CABLE RUNWAY AND IN FLEXIBLE NON-METALLIC CONDUIT INSIDE OF RACK CHANNEL CONCEALED - MAINTAIN MINIMUM SEPARATION FROM DATA CABLING. PAINT ALL FLAT BLACK. SEE "TYPICAL POWER CONDUIT TO UPS 30 AMP POWER OUTLET DETAIL", "TYPICAL 3000 VA UPS 30 AMP POWER OUTLET MOUNTING DETAIL" AND "TYPICAL RACK POWER DISTRIBUTION DIAGRAM" DETAILS, SHEET 16.2. SEE ELECTRICAL DRAWINGS.
- 4 UNDERGROUND BACKBONE CONDUIT. SEE "COMMUNICATIONS SITE PLAN" FOR CONDUIT REQUIREMENTS AND ROUTING. SEE SINGLE LINE CONFIGURATION DIAGRAMS SHEETS FOR CABLE REQUIREMENTS. TURN UP WITH CONDUIT CENTERLINE AT 6" FROM BACKBOARD AND TERMINATE AT 4" A.F.F. WITH PVC END BELL PRIOR TO INSTALLING CABLING.
- 4B 3/4" HOMERUN CONDUITS FOR DIRECT CONNECTIONS TO SPECIAL SERVICES. SEE "SPECIAL SERVICES NOTE" SHEET 1201. STUB CONDUITS THRU CEILING TILE (TRIM TILE CLOSE AROUND CONDUIT) AND TERMINATE AT 8" ABOVE CABLE RUNWAY.
- 4C EMT CONDUIT SLEEVES (CAT 6 & CAT 6A) UP INTO CEILING SPACE, SIZE AS INDICATED. STUB CONDUIT SLEEVE THRU CEILING TILE (TRIM TILE CLOSE AROUND CONDUIT) AND TERMINATE AT 8" ABOVE CABLE RUNWAY. SECURE EACH SLEEVE ABOVE AND BELOW CEILING - PROVIDE SUPPORTS AS REQUIRED. CONNECTORIZE EACH END OF CONDUIT AND INSTALL PLASTIC INSULATING BUSHINGS ON CONNECTORS BEFORE PULLING CABLING. LOCATE SLACK CABLE ABOVE CEILING (NOT IN CC CABLE RUNWAY), COIL SLACK CABLE IN NEAT "U BENDS" BUNDLED WITH VELCRO AND SECURED TO ROOF STRUCTURE. BOND STRUT TO GROUNDING BUSBAR.
- 4D EMT CONDUIT SLEEVES (INTERCOM/PA) UP THRU CEILING AND INTO PULL BOX ABOVE, SIZE AS INDICATED, QUANTITY AS INDICATED OR PROVIDE ADDITIONAL SLEEVES IF SO DIRECTED BY INTERCOM/PA SYSTEM PROVIDER. STUB CONDUIT SLEEVE THRU CEILING TILE (TRIM TILE CLOSE AROUND CONDUIT) AND TERMINATE AT 8" ABOVE CABLE RUNWAY. SECURE EACH SLEEVE ABOVE AND BELOW CEILING - PROVIDE SUPPORTS AS REQUIRED. CONNECTORIZE EACH END OF CONDUIT AND INSTALL PLASTIC INSULATING BUSHINGS ON CONNECTORS BEFORE PULLING CABLING. LOCATE SLACK CABLE IN PULL BOX ABOVE CEILING, COIL SLACK CABLE IN NEAT "U BENDS" BUNDLED WITH VELCRO. BOND STRUT TO GROUNDING BUSBAR.
- 4E BY ELECTRICAL CONTRACTOR: 3/4" EMT CONDUIT TO BUILDING MAIN ELECTRICAL PANEL FOR GROUNDING CONDUCTOR. PROVIDE WITH INSULATED GROUNDING BUSHING - MALLEABLE IRON, STEEL CITY #80-80Z.
- 5 FLOOR MOUNT EQUIPMENT RACK. REFER TO RACK ELEVATION DETAILS.
- 7 18" WIDE CABLE RUNWAY, CHATSWORTH 10250-718, COLOR BLACK. PROVIDE BUTT-SPLICE KIT, CHATSWORTH 11301-001 TO BUTT-SPLICE SECTIONS OF CABLE RUNWAY (PAINT BEFORE INSTALLING AND TOUCH UP AFTER INSTALLATION). INSTALL ALL CABLE RUNWAY, FITTINGS, AND ACCESSORIES IN ACCORDANCE WITH MANUFACTURER'S PRINTED INSTRUCTIONS.
- 7F CABLE RUNWAY WALL ANGLE SUPPORT KIT, CHATSWORTH 11421-718.
- 7G 18" WIDE CABLE RUNWAY, MOUNTED VERTICALLY FROM CONDUIT ENTRANCE IN FLOOR TO 7'-6". SEE "TYPICAL VERTICAL CABLE RUNWAY DETAIL".
- 8 1" UNDERGROUND HOMERUN CONDUIT FROM COs, WAPS, INTERCOM/PA SPEAKERS, SECURITY CAMERAS, SECURE DOORS AND MONITORED DOORS SHOWN TO HAVE CABLES RUN BELOW GRADE. SEE COMMUNICATIONS FLOOR PLANS, IP SECURITY CAMERA PLANS AND ACCESS CONTROL PLANS FOR CONDUIT REQUIREMENTS. SEE SINGLE LINE DIAGRAMS SHEETS FOR CABLE REQUIREMENTS. TURN UP WITH CONDUITS GROUPED TIGHT TOGETHER BY APPLICATION AND TERMINATE AT 4" A.F.F. WITH PVC END BELL PRIOR TO INSTALLING CABLING.

CC GENERAL NOTES:

CABLE ROUTING: ROUTE CABLING IN CABLE RUNWAY. BUNDLE FIBER OPTIC, VOICE BACKBONE AND HORIZONTAL CABLING SEPARATELY. SECURE BUNDLES WITH BLACK VELCRO AT MINIMUM OF 12" ON CENTER IN CABLE RUNWAY AND AT MINIMUM OF 6" ON CENTER IN RACK VERTICAL CABLING SECTIONS. THE FINISHED INSTALLATION SHALL MEET THE APPROVAL OF THE ENGINEER FOR OVERALL QUALITY, ORGANIZATION, AND NEATNESS OF APPEARANCE. SEE SINGLE LINE CONFIGURATION DIAGRAMS FOR CABLE TYPES AND QUANTITIES.

BACKBOARD LAYOUT: BACKBOARD AND RACK ARRANGEMENT AND EQUIPMENT LOCATIONS INDICATED ARE DRAWN TO SCALE. DO NOT MODIFY LAYOUT WITHOUT PRIOR APPROVAL OF ENGINEER. USE ALL BLACK HARDWARE ON FACE OF RACKS.

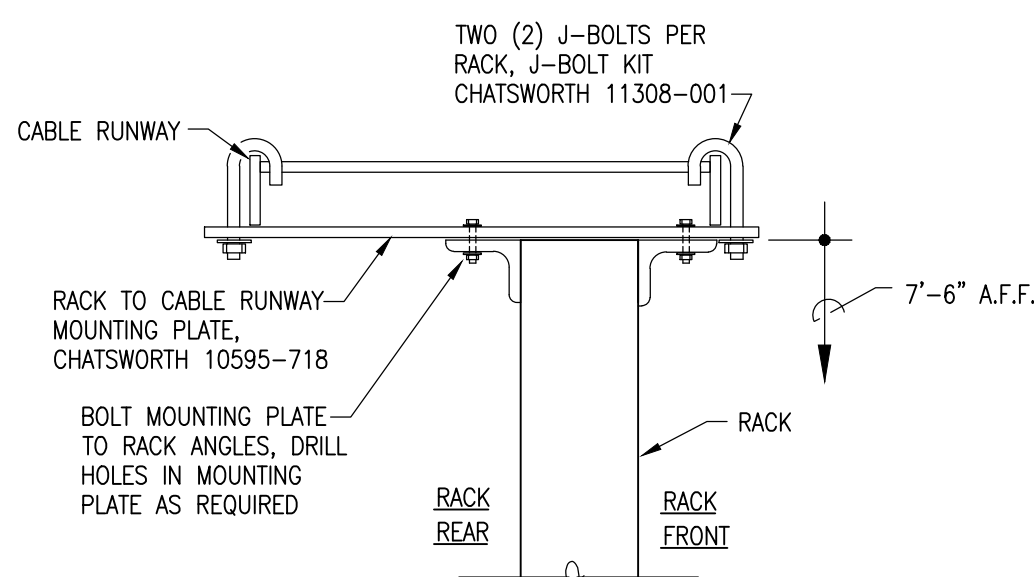
CC FASTENERS: ALL ATTACHMENTS MADE TO CABLE TRAY OR RACKS SHALL HAVE SCREWS, BOLTS OR ANY OTHER MOUNTING HARDWARE INSTALLED IN DIRECTION AWAY FROM ANY COMMUNICATIONS CABLING. SELF TAPPING SCREWS ARE NOT ACCEPTABLE. ALL MOUNTING SCREWS SHALL BE BLACK.

CC PAINTING: TOUCH-UP PAINT ALL NICKS AND SCRATCHES ON ALL RACKS, CABLE RUNWAY, BACKBOARDS, ETC. AFTER INSTALLATION IS COMPLETE. TOUCH-UP SHALL BE DONE USING MANUFACTURER PROVIDED PAINT TO MATCH. ALL SCREWS, NUTS, AND BOLTS SHALL BE PAINTED TO MATCH HARDWARE.

CATEGORY 6 TERMINATIONS: MAKE ALL TERMINATIONS IN STRICT ACCORDANCE WITH TIA GUIDELINES AS WELL AS THE MANUFACTURER'S PRINTED INSTRUCTIONS FOR BOTH THE CABLE AND THE TERMINATION DEVICE FOR ALL FIELD CONNECTIONS IN THE "HORIZONTAL TELECOMMUNICATIONS LINK". STRIP CABLE JACKET BACK A MAXIMUM OF 1 INCH FROM THE POINT OF TERMINATION. MAINTAIN FACTORY SYMMETRICAL CABLE TWISTS TO WITHIN 0.5 INCHES (13 MM MAXIMUM) OF THE POINT OF TERMINATION. PROVIDE CABLE SLACK AT EACH END TO ALLOW MINIMUM OF FIVE (5) FUTURE DETERMINATIONS WITHOUT RE-ROUTING CABLE. SEE CO MOUNTING DETAILS, BACKBOARD ELEVATIONS, AND CC DETAILS.

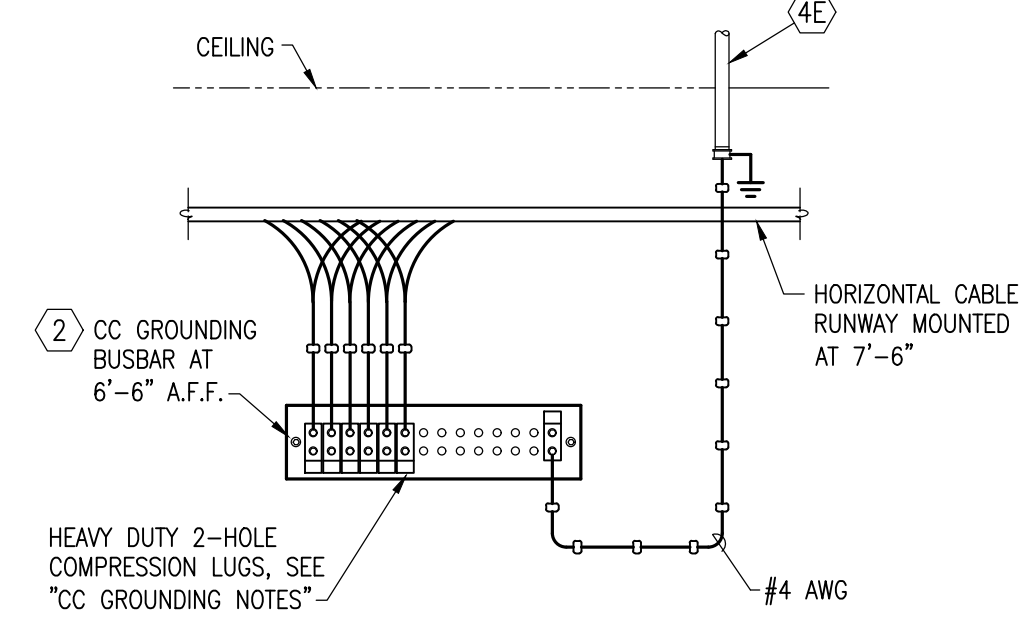
CABLE RUNWAY MOUNTING HEIGHT NOTE

BOTTOM OF CABLE RUNWAY MUST BE MOUNTED AT EXACTLY 7'-6" ABOVE THE FINISHED FLOOR TO ALLOW INSTALLATION OF 7'-6" HIGH RACKS. RACKS ARE 7'-6" HIGH TO ALLOW CABLE RUNWAY TO CLEAR DOOR FRAMES.



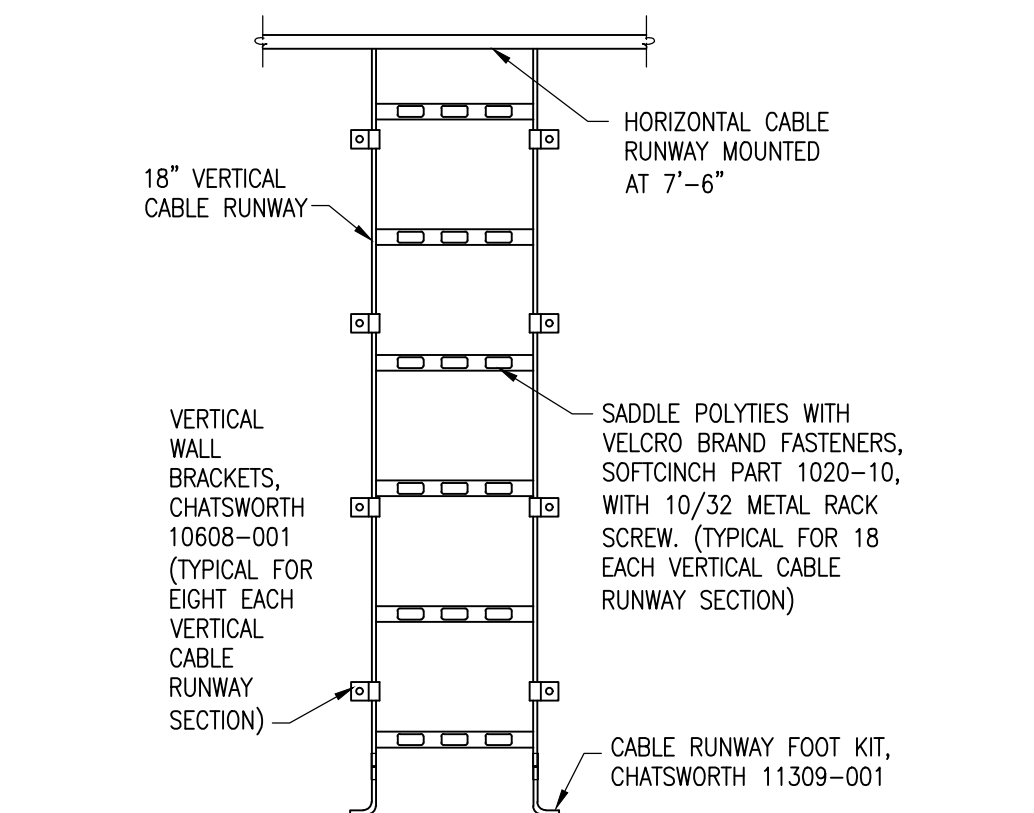
TYPICAL CABLE RUNWAY RACK SUPPORT DETAIL

NOT TO SCALE



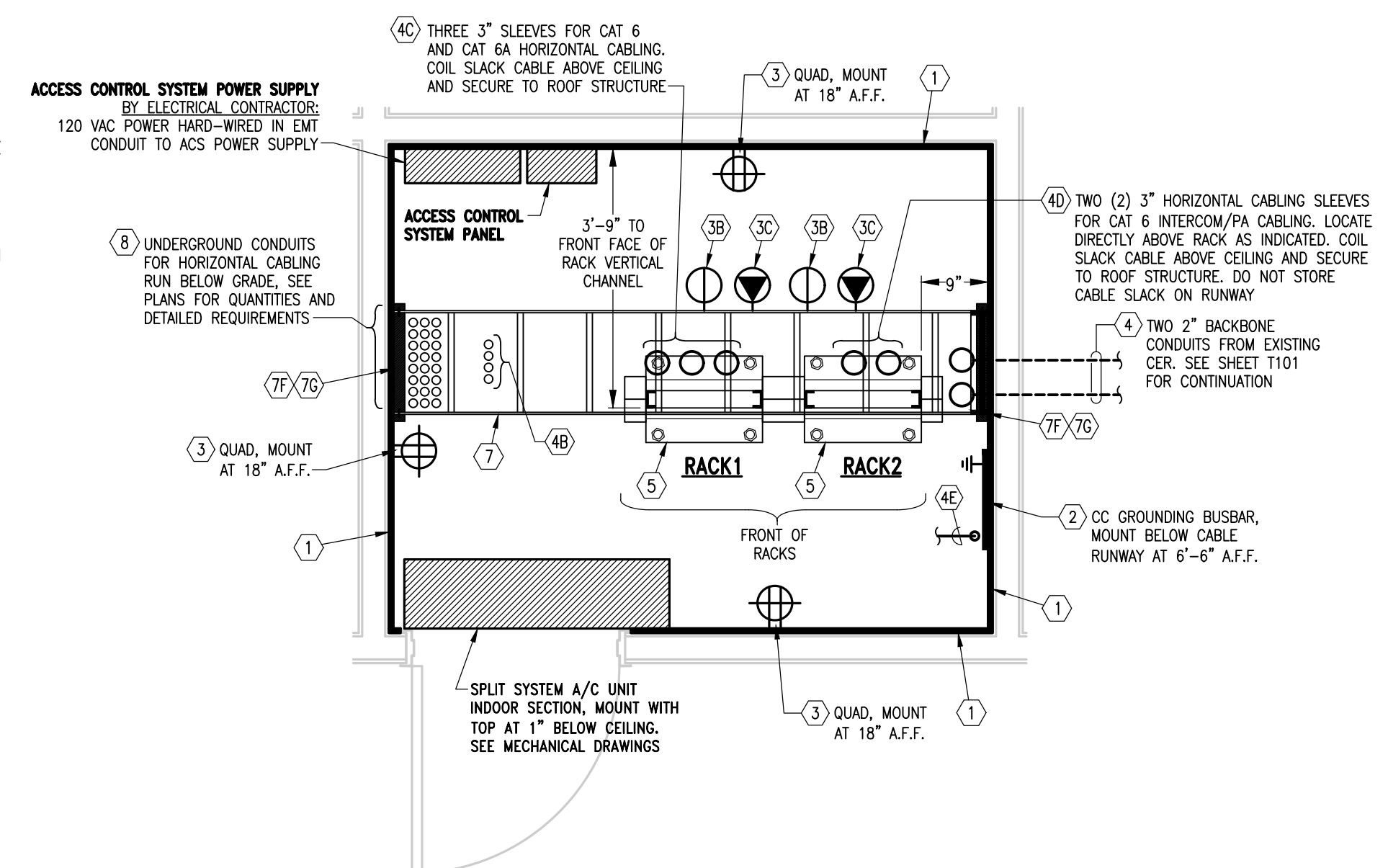
TYPICAL CC GROUNDING BUSBAR DETAIL

NOT TO SCALE



TYPICAL VERTICAL CABLE RUNWAY DETAIL

NOT TO SCALE



CCX-109 - ENLARGED FLOOR PLAN

SCALE: 1/2" = 1'-0"

ELECTRICAL CONTRACTOR NOTE

IN CC, RECESS ALL POWER CONDUITS AND DEVICE BOXES INTO WALLS BEHIND BACKBOARD TO ALLOW FLUSH MOUNTING OF POWER OUTLET FACE PLATES. DO NOT SURFACE MOUNT CONDUITS ON BACKBOARDS.

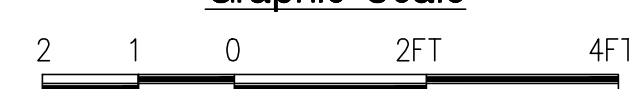
CC LIGHT FIXTURE NOTE

LOCATE LIGHT FIXTURES TO CLEAR CABLE RUNWAY FOR LAMP CHANGE/FIXTURE MAINTENANCE, REGARDLESS OF FIXTURE LAYOUT INDICATED ON ELECTRICAL DRAWINGS. PROVIDE UNIFORM 50 FOOTCANDLE LIGHT LEVEL AT 48" A.F.F.

CC GROUNDING NOTES

1. ALL GROUND CONNECTIONS SHALL BE MADE WITH HEAVY DUTY 2 HOLE COMPRESSION LUGS (HARGER GECLB4-2C FOR #4AWG, GECLB6-2C FOR #6AWG) AND 3/8" SS HEX HEAD CAP SCREWS WITH SS LOCKING NUTS (TWO SCREWS AND NUTS PER 2 HOLE LUG).
2. PROVIDE GROUNDING BUSBAR IN "CC" AS INDICATED. ELECTRICAL CONTRACTOR GROUND MAIN BUSBAR TO BUILDING MAIN ELECTRICAL SERVICE GROUND (BUILDING IN WHICH CC IS LOCATED) WITH #4 AWG INSULATED (GREEN) SOLID COPPER GROUNDING CONDUCTOR. RUN CONDUCTOR FROM BUSBAR LOCATION TO BUILDING MAIN ELECTRICAL SERVICE GROUND IN EMT CONDUIT. PROVIDE UL LISTED RIGID CONDUIT THREADED MALLEABLE IRON INSULATED GROUNDING BUSHING WITH BRONZE LUG (0-2/GEENEY TYPE IBC-L-BC) AT BOTH CONDUIT ENDS AND GROUND EACH END PER NEC. GROUNDING TO BUILDING STRUCTURE, CONDUITS, UTILITY PIPING, OR ELECTRICAL SUBPANELS IN LIEU OF BONDING TO BUILDING MAIN ELECTRICAL SERVICE GROUND IS NOT ACCEPTABLE.
3. GROUND ALL COMMUNICATION RACKS WITH #6 AWG INSULATED (GREEN) SOLID COPPER GROUNDING CONDUCTOR TO MAIN GROUNDING BUSBAR. GROUND RACKS INDIVIDUALLY TO BUSBAR (DO NOT LOOP GROUNDS). ROUTE CONDUCTOR ALONG RACK REAR AND IN CABLE RUNWAY TO GROUNDING BUSBAR.
4. GROUND EACH CONDUIT AND CONDUIT SUPPORT STRUT WITH #6 AWG INSULATED (GREEN) SOLID COPPER GROUNDING CONDUCTOR TO GROUNDING BUSBAR. ROUTE CONDUCTOR IN CABLE RUNWAY TO GROUNDING BUSBAR.
5. GROUND CABLE RUNWAY WITH #6 AWG INSULATED (GREEN) SOLID COPPER GROUNDING CONDUCTOR TO GROUNDING BUSBAR. ROUTE CONDUCTOR IN CABLE RUNWAY TO GROUNDING BUSBAR.
6. PROVIDE UL LISTED RIGID CONDUIT THREADED MALLEABLE IRON INSULATED GROUNDING BUSHING WITH BRONZE LUG (0-2/GEENEY TYPE IBC-L-BC) ON END OF BACKBONE CONDUITS AND GROUND TO BUSBAR WITH #6 AWG INSULATED (GREEN) COPPER GROUNDING CONDUCTOR. PLASTIC INSULATING BUSHING IS ALSO REQUIRED.

Graphic Scale



SCALE: 1/2" = 1'-0"



GENERAL CONDUIT NOTES - ACCESS CONTROL SYSTEM

- RUN ALL ACCESS CONTROL SYSTEM CABLING CONTINUOUSLY IN CONDUIT. ALL INTERIOR CONDUIT SHALL BE EMT WITH STEEL COMPRESSION FITTINGS (SCREW FITTINGS AND DIE CAST FITTINGS ARE NOT ALLOWABLE). CONDUIT SIZE SHALL BE 1" MINIMUM OR LARGER AS INDICATED, EXCEPT WHERE 1/2" CONDUIT IS SPECIFICALLY ALLOWED AT LOCAL DOOR DEVICES. WHERE CONDUIT SIZE IS NOT SPECIFICALLY INDICATED PROVIDE SIZE AS REQUIRED FOR EACH CONDUIT RUN WITH MAXIMUM 30% CONDUIT FILL RATE.
- ELECTRICAL CONTRACTOR PROVIDE ALL CONDUIT AS INDICATED AND ALL ADDITIONAL CONDUIT AS REQUIRED FOR A COMPLETE SYSTEM. THE ACS IS TO BE PROVIDED UNDER AN ALLOWANCE AND THE SYSTEM PROVIDER IS IDENTIFIED (SEE "ALLOWANCE FOR ACCESS CONTROL SYSTEM" THIS SHEET). PRIOR TO BIDS EACH BIDDER FOR ELECTRICAL WORK SHALL CONTACT THE ACS PROVIDER, SHALL OBTAIN A SCOPE OF WORK FOR ASSOCIATED CONDUIT WORK TO INCLUDE ANY CONDUIT REQUIRED BY THE PROVIDER IN ADDITION TO THAT INDICATED ON THE DRAWINGS ALONG WITH ALL CONDUIT INDICATED ON THE DRAWINGS, AND SHALL INCLUDE AS PART OF THE BASE BID ALL SUCH CONDUIT WORK.
- WHERE DOORS ARE MOUNTED IN A STOREFRONT SYSTEM AND THE OWNER DIRECTS THE ACS TO MOUNT THE ASSOCIATED CARD READERS IN THE STOREFRONT SYSTEM RUN ALL WIRING IN CONDUIT PROVIDED BY THE ELECTRICAL CONTRACTOR CONCEALED IN STOREFRONT SYSTEM FRAMING. AT CONTRACTOR'S OPTION WIRING WITHIN THE STOREFRONT MAY BE RUN CONTINUOUSLY IN STAINLESS STEEL ARMORED FLEXIBLE CONDUIT, SIZE AS REQUIRED, CONNECTING TO THE EMT WITH A FITTING MADE FOR THAT PURPOSE CONCEALED IN A JUNCTION BOX ABOVE THE CEILING, BUT UNDER NO CIRCUMSTANCES SHALL ANY WIRING BE RUN WITHIN STOREFRONT FRAMING WITHOUT CONDUIT. CLOSELY COORDINATE REQUIREMENTS WITH GENERAL CONTRACTOR AND STOREFRONT SUPPLIER PRIOR TO MANUFACTURER OF STOREFRONT SYSTEM. DO NOT MOUNT CARD READERS IN STOREFRONT FRAMING UNLESS SPECIFICALLY DIRECTED TO DO SO BY THE OWNER.
- RUN 1" HOMERUN CONDUIT FROM ACCESS CONTROL SYSTEM PANEL TO EACH SECURE DOOR JUNCTION BOX "JB"; RUN 1/2" CONDUIT FROM "JB" CONTINUOUS TO EACH POWER TRANSFER BACKBOX, EACH DOOR POSITION SWITCH JUNCTION BOX AND EACH CARD READER JUNCTION BOX. PROVIDE OTHER CONDUITS AS INDICATED IN DOOR DETAILS AND ELSEWHERE ON THE DRAWINGS AND AS REQUIRED BY THE ACS.
- RUN CONDUIT AND MOUNT MAIN JUNCTION BOXES FOR EACH SECURE DOOR ON THE SECURE SIDE OF THE DOOR SERVED IN AN ACCESSIBLE/SERVICABLE LOCATION ABOVE A LAY-IN CEILING AS CLOSE TO THE DOOR AS POSSIBLE OR IN A NEARBY ELECTRICAL EQUIPMENT ROOM. MOUNT ACS PANELS AND ASSOCIATED POWER SUPPLIES IN COMM ROOMS ONLY. MOUNT POWER SUPPLIES NEXT TO OR INSIDE OF ACS PANELS.
- FIRE WALLS: FIRESTOP ALL FLOOR PENETRATIONS AND ALL PENETRATIONS OF FIRE RATED WALLS. FIRESTOP USING ASSEMBLY UL LISTED FOR THE SPECIFIC APPLICATION AND FLOOR OR WALL RATING. INSTALL IN STRICT ACCORDANCE WITH THE MANUFACTURER'S PRINTED INSTRUCTIONS AND THE CONDITIONS OF THE UL LISTING.
- SMOKE WALL PENETRATIONS AND PENETRATIONS OF WALLS EXTENDING UP TO THE STRUCTURE ABOVE: ALL CONDUIT PENETRATIONS OF ALL WALLS INDICATED ON THE ARCHITECTURAL DRAWINGS AS SMOKE WALLS/BARRIERS/PARTITIONS AND ALL WALLS INDICATED ON THE ARCHITECTURAL DRAWINGS AS EXTENDING UP TO THE STRUCTURE ABOVE SHALL BE SEALED SMOKE/TIGHT WITH STI SMOKE 'N' SOUND SEALANT WITH UL LISTED 'L' SMOKE RATING AND 'ST' ACOUSTICAL RATING OF 62. SEALANT SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS FOR 'N' SEALANT CAULK ON BOTH SIDES OF THE WALL. SEALANT INSTALLATION ON ONLY ONE SIDE OF THE WALL IS NOT ACCEPTABLE. AT THE CONTRACTOR'S OPTION PROVIDE AN ALTERNATE ACOUSTICAL SEALANT WITH EQUAL 'ST' RATING AT THRU PENETRATIONS OF NON-SMOKE WALLS THAT EXTEND UP TO THE STRUCTURE ABOVE FOR SOUND ISOLATION. INSTALL SAME AS INDICATED FOR STI SMOKE 'N' SOUND ABOVE.
- RUN ALL CONDUIT CONCEALED ABOVE CEILINGS AND IN WALLS. EXPOSED WIRING, SURFACE RACEWAY AND ARMORED DOOR LOOPS AND CABLES ARE NOT ALLOWED.
- EC PROVIDE HEAVY DUTY PULL STRINGS IN ALL CONDUITS SERVING SECURE DOORS AND DEVICES AND PROVIDE PULL TAPE IN ALL BACKBONE CONDUITS BETWEEN ACS PANELS FOR USE BY CABLING INSTALLER - RUN CONTINUOUS FROM PULL POINT TO PULL POINT WITH NOT LESS THAN 10 FEET SLACK COILED AT EACH END.
- LOCATION AND ROUTING OF ABOVEGROUND CONDUITS IS APPROXIMATE AND DEPICTS GENERAL DESIGN INTENT ONLY. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DETERMINING FINAL CONDUIT ROUTING IN THE FIELD. THE CONTRACTOR SHALL COORDINATE THE FINAL ROUTING OF CONDUITS TO AVOID CONFLICTS WITH OTHER TRADES, WHILE MINIMIZING CHANGES IN DIRECTION AND OVERALL CONDUIT LENGTH.
- CONDUITS SHALL BE RUN CONCEALED OVERHEAD ABOVE CEILINGS UNLESS LOCATED IN SPACES WITHOUT CEILINGS OR IN AN UNFINISHED SPACE SUCH AS EQUIPMENT ROOMS. SUPPORT EXPOSED CONDUIT AT A MINIMUM OF 4'-0" ON CENTER WITH 2-HOLE HEAVY DUTY GALVANIZED STEEL HARDWARE.
- SUPPORT CONDUIT DIRECTLY FROM BUILDING STRUCTURE USING APPROVED HARDWARE. DO NOT SUPPORT CONDUIT FROM OTHER SYSTEMS COMPONENTS OR SUPPORTS. ROUTE ALL CONDUITS AS HIGH AS POSSIBLE. WHERE CONDUIT IS EXPOSED RUN HARD AGAINST WALL OR UNDERSIDE OF ROOF/FLOOR DECK. RUN ALL CONDUITS PARALLEL/PERPENDICULAR AND PLUMB WITH BUILDING LINES.
- CONDUIT BODIES SUCH AS "LB" FITTINGS ARE NOT ALLOWABLE.
- PROVIDE PULLBOXES OF THE SAME TYPE AND SIZE AS THOSE INDICATED ON DRAWINGS FOR EACH RUN OF CONDUIT AT EVERY 100 FEET ON CENTER AND AT EACH END OF CONDUIT RUNS CONTAINING A TOTAL OF TWO 90 DEG BENDS OR A COMBINATION OF LESSER BENDS TOTALING 180 DEG (MINIMUM REQUIREMENTS - PROVIDE WHETHER SPECIFICALLY INDICATED OR NOT). CONDUIT RUNS CONTAINING MORE THAN TWO 90 DEG BENDS WITHOUT A PULLBOX ARE NOT ALLOWABLE. FACTORY CONDUIT ELBOWS AND ALL OTHER BENDS SHALL HAVE A MINIMUM RADIUS OF SIX TIMES THE INTERNAL CONDUIT DIAMETER. CONDUIT OFFSETS AND PULLBOXES REQUIRED TO SUIT FIELD CONDITIONS AND TO CONFORM TO THESE REQUIREMENTS SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.
- PULL BOXES SHALL BE 4" WIDE x 4" LONG x 2-1/8" DEEP NEMA 1 GALVANIZED STEEL WITH SCREW COVER. WHERE CONDUITS ARE TIGHTLY RACKED WITH UNIFORM SPACING, WIDER PULL BOXES MAY BE PROVIDED TO SERVE MULTIPLE CONDUITS. TERMINATE CONDUITS AT OPPOSITE ENDS OF PULLBOXES. DO NOT TERMINATE CONDUITS IN PULLBOXES AT RIGHT ANGLES TO EACH OTHER. HOMERUN CONDUITS SHALL NOT BE COMBINED INTO LARGER CONDUITS SERVING MULTIPLE DOORS OR DEVICES.
- TERMINATE ALL CONDUIT ENDS WITH THREADED PLASTIC INSULATING BUSHINGS (PUSH-ON NOT ALLOWABLE). BUSHINGS MUST FIT TIGHTLY ON CONDUIT CONNECTOR THREADS. INSTALL ALL BUSHINGS PRIOR TO PULLING CABLE.
- IDENTIFICATION: IDENTIFY ALL INDOOR ACS CONDUITS AND PULLBOXES ABOVE LAY-IN CEILINGS AT EVERY PULLBOX AND ON CONDUIT AT EACH COUPLER (PAINT ENTIRE COUPLER) WITH GREEN PAINT. DO NOT PAINT CONDUIT COUPLERS AND ENCLOSURES IN EQUIPMENT ROOMS. CONDUIT IN FINISHED SPACES WITH EXPOSED STRUCTURE CEILING SHALL BE PAINTED BY THE GENERAL CONTRACTOR TO MATCH ADJACENT FINISHES AND OTHER EXPOSED UTILITIES.

ACCESS CONTROL SYSTEM CABLING REQUIREMENTS

- PROVIDE JACKETED WIRE FOR ALL APPLICATIONS.
- PROVIDE SHIELDED CABLE WHERE RECOMMENDED BY THE CONNECTED EQUIPMENT MANUFACTURER. TERMINATE SHIELD PER MANUFACTURER'S INSTALLATION INSTRUCTIONS.
- HOMERUN CARD READER CABLE FROM READER TO SERVING ACCESS CONTROL SYSTEM PANEL. PROVIDE SLACK IN CABLE AT MAIN PULL BOX AT EACH SECURE DOOR. MAKE ALL WIRING CONNECTIONS TO CABLE IN MAIN PULL BOX AT EACH SECURE DOOR.
- FOR PURPOSES OF BIDS THE ACS CONTRACTOR SHALL PROVIDE THE FOLLOWING WIRING FOR THE ACS AND OTHER SECURITY SYSTEMS. FOLLOWING BIDS THE ACS SHALL PROVIDE WIRING AS REQUIRED FOR EACH APPLICATION AT NO ADDITIONAL COST TO THE OWNER.
- PROVIDE THE FOLLOWING WIRING TO EACH CARD READER:
4-CONDUCTOR/18 AWG, 3-PAIR/22 AWG, 2-CONDUCTOR/22 AWG, 4-CONDUCTOR/22 AWG
- PROVIDE WIRING AS REQUIRED TO ALL OTHER ACCESS CONTROL AND INTRUSION ALARM SYSTEM DEVICES AND POWER SUPPLIES.
- CONDUCTOR QUANTITIES AND GAUGES ARE MINIMUM, PROVIDE HIGHER CONDUCTOR COUNT AND LARGER GAUGES AS REQUIRED FOR EACH WIRED DEVICE PER MANUFACTURER'S INSTRUCTIONS.

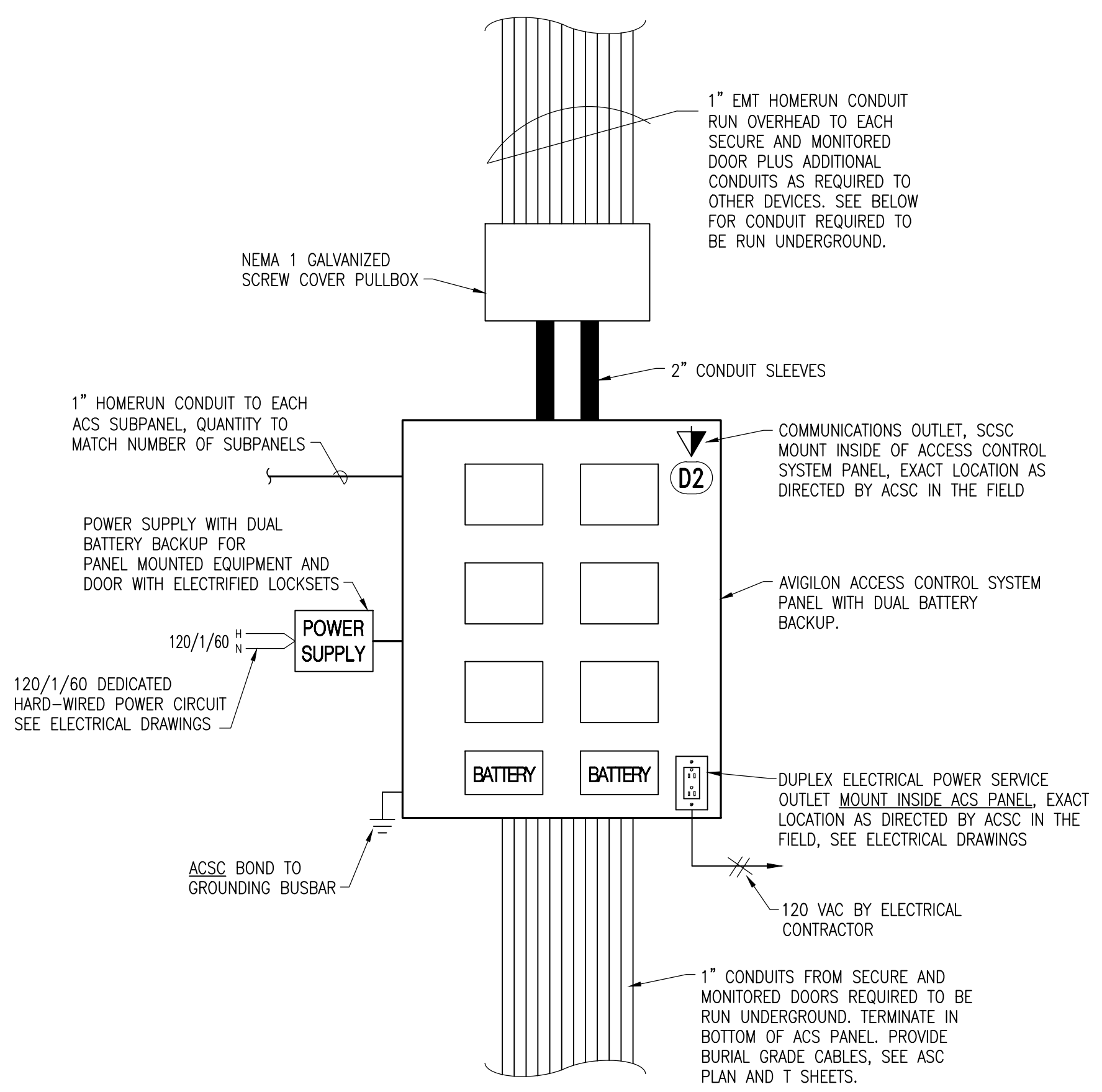
ALLOWANCE FOR ACCESS CONTROL SYSTEM

THE GENERAL CONTRACTOR SHALL INCLUDE AN ALLOWANCE FOR THE PROVISION OF A COMPLETE ACCESS CONTROL SYSTEM WITH INTEGRATED INTRUSION ALARM FOR THIS PROJECT IN THE BASE BID. ALL REFERENCES TO MATERIALS AND LABOR ASSOCIATED WITH THE ACCESS CONTROL SYSTEM WITHIN THE CONTRACT DOCUMENTS SHALL BE INCLUDED IN THIS ALLOWANCE UNLESS SPECIFICALLY INDICATED OTHERWISE. THE AMOUNT OF THE ALLOWANCE SHALL BE ISSUED AS AN ADDENDUM PRIOR TO THE BID DATE.

THE SCOPE OF WORK SHALL INCLUDE THE ACCESS CONTROL SYSTEM COMPLETE WITH ALL WORK INDICATED ON THE DRAWINGS AND DESCRIBED IN THE SPECIFICATIONS. ALL DEVICES, EQUIPMENT AND WORK DESCRIBED IN THE INTEGRATOR'S COST PROPOSAL AND ASSOCIATED STATEMENT OF WORK, ALL OTHER DEVICES, EQUIPMENT AND WORK REQUIRED FOR A COMPLETE SYSTEM, ALL WIRING AND CABLING (EXCEPT AS INDICATED BELOW FOR CATEGORY 6 CABLING BY THE SCSC), AND ALL PROGRAMMING AND SETUP REQUIRED TO MAKE THE SYSTEM FULLY OPERATIONAL AND FUNCTIONAL TO THE SATISFACTION OF THE OWNER.

RELATED WORK TO BE PROVIDED BY OTHERS UNDER THE BASE BID BUT NOT INCLUDED IN THE SCOPE OF THE ALLOWANCE SHALL INCLUDE CONDUIT FOR ALL ACCESS CONTROL SYSTEM WIRING AND CABLING AND ALL POWER AND GROUNDING REQUIRED FOR THE ACCESS CONTROL SYSTEM. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE ASSOCIATED CONDUIT, POWER AND GROUNDING WORK WITH THE ACCESS CONTROL SYSTEM CONTRACTOR - BUT THE SCOPE OF CONDUIT, POWER AND GROUNDING WORK SHALL NOT BE LESS THAN THAT DESCRIBED ON THE DRAWINGS. THE SCSC SHALL PROVIDE CATEGORY 6 CABLING TO EACH ACCESS CONTROL SYSTEM PANEL AS INDICATED ON THE DRAWINGS.

THE ACCESS CONTROL SYSTEM PROVIDER SHALL BE UNDER MULTI-YEAR CONTRACT WITH THE OWNER, SHALL BE AVIGILON CERTIFIED AND SHALL BE MCA (CONTACT TONY COOPER - EMAIL TONYCOOPER@CALLMC.COM).



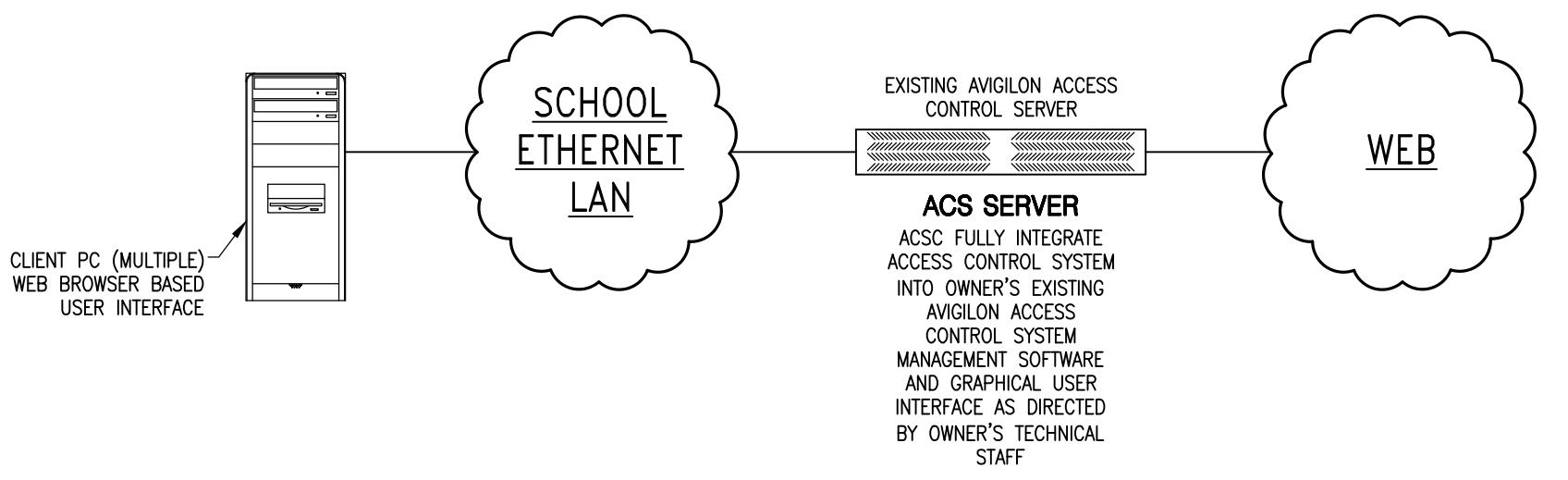
TYPICAL ACCESS CONTROL SYSTEM PANEL DETAIL
NOT TO SCALE

ACSC, EC, SCSC AND GC/CM COORDINATION NOTES

- THE ACSC SHALL PROVIDE THE ACCESS CONTROL SYSTEM NOTIFICATION OF ALARMS TO OWNER IDENTIFIED CENTRAL RECEIVING STATIONS, OTHER WORK SHOWN TO BE BY THE ACSC IN THE DRAWINGS AND SPECIFICATIONS, AND ALL OTHER WORK REQUIRED FOR COMPLETE AND FULLY FUNCTIONAL SYSTEMS.
- THE ACSC WILL FULLY INTEGRATE THE ACCESS CONTROL SYSTEM INTO THE OWNER'S EXISTING DSX ACCESS CONTROL SYSTEM SOFTWARE FOR MANAGEMENT OF THE ACCESS CONTROL SYSTEM TO INCLUDE INTRUSION, LOCKDOWN AND PANIC.
- THE ACSC SHALL PROVIDE ALL LOW VOLTAGE WIRING ASSOCIATED WITH THE SYSTEM LISTED ABOVE.
- THE ACSC SHALL PROVIDE A DETAILED STATEMENT OF WORK WITH INCLUSIONS AND EXCLUSIONS TO THE GC/CM AND EC FOR FINAL COORDINATION. ALONG WITH WIRING DIAGRAMS, INSTALLATION, OPERATION AND MAINTENANCE MANUALS, AND OTHER INFORMATION REQUIRED FOR THE GC AND EC TO COMPLETE THEIR ASSOCIATED WORK IN A TIMELY MANNER IN ACCORDANCE WITH THE OVERALL PROJECT SCHEDULE.
- THE GC/CM SHALL PROVIDE OVERALL COORDINATION AND SCHEDULING FOR THE SYSTEM LISTED ABOVE TO INCLUDE DIRECT COORDINATION BETWEEN THE ACSC AND EC FOR ROUGH-IN AND OTHER WORK ITEMS THAT ARE TIME CRITICAL. THE GC/CM SHALL ALSO PROVIDE OVERALL COORDINATION OF EQUIPMENT LOCATIONS WITH THE ARCHITECT, OWNER, EC AND ACSC.
- THE EC AND ACSC SHALL COORDINATE PROJECT REQUIREMENTS AS SOON AS THE ACSC IS IDENTIFIED BY THE OWNER AND CONTINUALLY DURING THE COURSE OF THE PROJECT.
- THE EC SHALL PROVIDE ALL CONDUIT, BOXES, ENCLOSURES, PULL STRINGS AND TAPES, SLEEVES, FIRESTOPPING, SMOKESTOPPING, POWER, GROUNDING, AND ALL OTHER WORK REQUIRED BY CODE OR FOR COMPLETE AND FULLY FUNCTIONAL SYSTEMS BUT NOT PROVIDED BY THE ACSC OR SPECIFICALLY IDENTIFIED AS PROVIDED BY OTHERS, WHETHER SPECIFICALLY SHOWN OR NOT.
- THE EC SHALL WIRE AND MAKE ALL CONNECTIONS TO ALL ELECTRIFIED DOOR HARDWARE AND DOOR HARDWARE THAT REQUIRES ANY TYPE OF 120 VAC WIRING CONNECTION. SEE DOOR HARDWARE SPECIFICATION SECTION 087100 AND ARCHITECTURAL AND ELECTRICAL DRAWINGS.
- ACCESS CONTROL SYSTEM PANELS - CATEGORY 6 OUTLET: CATEGORY 6 CABLING AND MODULAR OUTLETS FOR NETWORK CONNECTIONS TO ACS PANELS SHALL BE PROVIDED BY THE STRUCTURED CABLING SYSTEM CONTRACTOR (SCSC) COMPLETE TO INCLUDE PATCH PANELS, TERMINATION, LABELING, TESTING, AND PATCHING TO ASSIGNED NETWORK CONNECTIONS. THE CATEGORY 6 CABLES SHALL BE TERMINATED ON A BISCUIT JACK BY THE SCSC INSIDE THE ACS PANELS. SCSC AND ACSC COORDINATE FINAL OUTLET LOCATIONS WITHIN THE ACS PANELS. THE SCSC SHALL ALSO PROVIDE CATEGORY 6 CABLES AND FACEPLATES FOR EACH SECURITY VIDEO INTERCOM SYSTEM OUTDOOR STATION AND INDOOR STATION.

ACCESS CONTROL SYSTEM GENERAL NOTES:

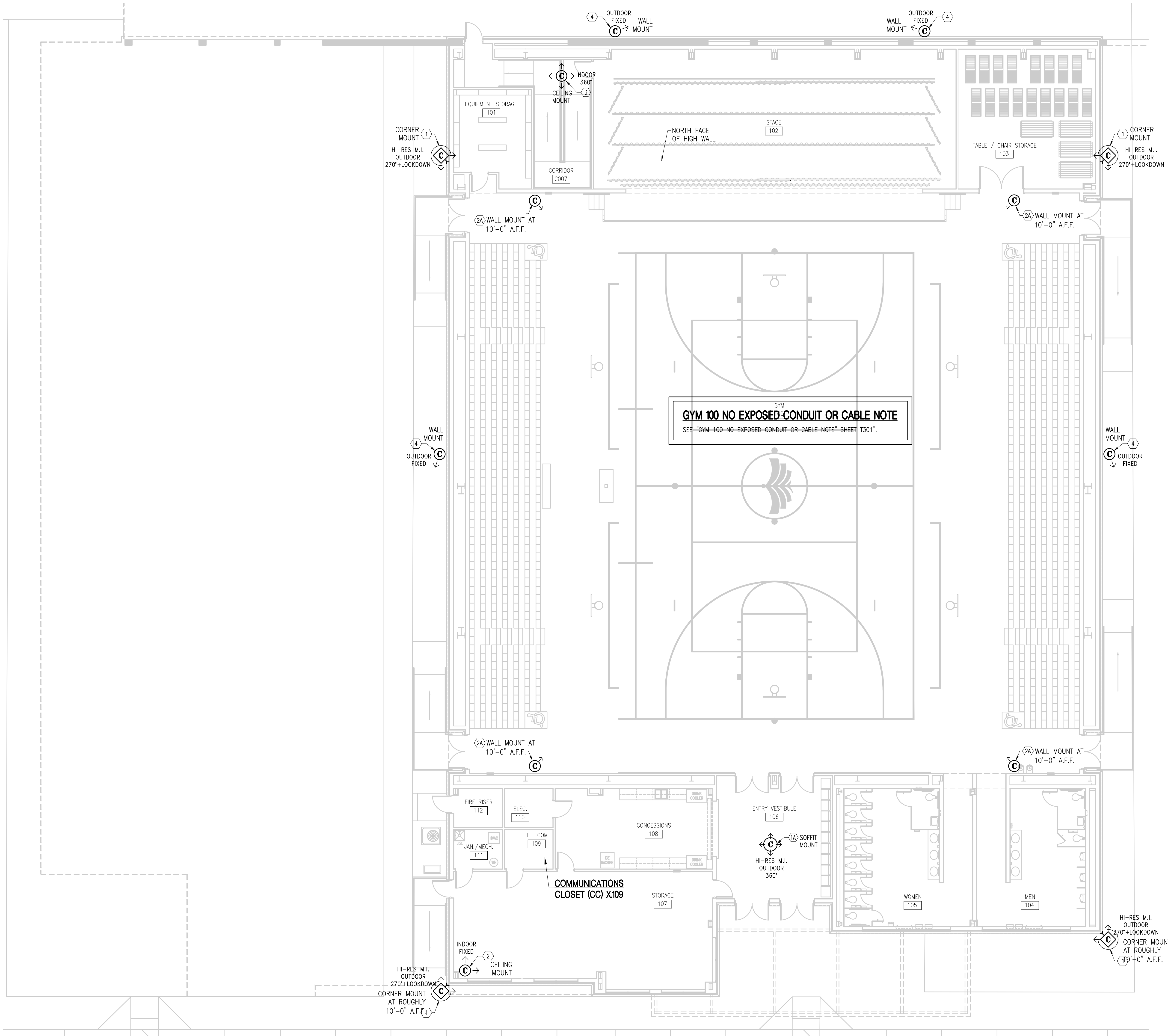
- REFER TO SPECIFICATION SECTION 087100 - DOOR HARDWARE TO CROSS REFERENCE DOOR HARDWARE SET NUMBERS TO INDIVIDUAL DOOR NUMBERS ALONG WITH OTHER INFORMATION FOR SECURE DOORS TO INCLUDE OPERATION. DOOR HARDWARE INDICATED ON ACS DRAWINGS IS FOR INFORMATION ONLY. SEE DOOR HARDWARE SPECIFICATION FOR FINAL DOOR HARDWARE REQUIREMENTS. ALL DOOR HARDWARE COMPONENTS LISTED IN SPECIFICATION SECTION 087100 - DOOR HARDWARE SHALL BE PROVIDED BY THE DOOR HARDWARE PROVIDER UNLESS SPECIFICALLY INDICATED TO BE PROVIDED BY OTHERS. CARD READERS AND DOOR POSITION SWITCHES SHALL BE PROVIDED BY THE ACCESS CONTROL SYSTEM CONTRACTOR. POWER SUPPLIES AT ALL SECURE DOORS WITH EXIT DEVICES SHALL BE PROVIDED AS PART OF THE DOOR HARDWARE PACKAGE AND SHALL BE THE SAME MANUFACTURER AS THE EXIT DEVICE. POWER SUPPLIES SERVING ACCESS CONTROL SYSTEM PANELS AND DOORS WITH ELECTRIFIED LOCKSETS SHALL BE PROVIDED BY THE ACSC AND SHALL BE LOCATED IN OR DIRECTLY ADJACENT TO ACCESS CONTROL SYSTEM PANELS IN COMM ROOMS. ALL POWER SUPPLIES SHALL HAVE DUAL BATTERY BACKUP AND SHALL BE TURNED OVER TO THE ELECTRICAL CONTRACTOR FOR INSTALLATION. LOW VOLTAGE WIRING SHALL BE PROVIDED BY THE ACCESS CONTROL SYSTEM CONTRACTOR. ALL CONDUIT FOR LOW VOLTAGE WIRING SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR. 120VAC POWER AND ALL CONDUIT FOR POWER SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR.
- ALL DOORS SHALL FAIL SECURE UPON LOSS OF POWER TO LOCKING DEVICE FOR ANY REASON.
- ALL DOORS SHALL HAVE MECHANICAL FREE EGRESS FROM SECURE SIDE TO UNSECURE SIDE UNLESS SPECIAL CIRCUMSTANCES DICTATE OTHERWISE AS SPECIFICALLY DESCRIBED IN THE DOOR HARDWARE SPECIFICATIONS.
- ALL DOORS SHALL HAVE REQUEST TO EXIT SWITCH INTEGRAL TO THE ELECTRIFIED DOOR LOCKING DEVICES AS PART OF THE DOOR HARDWARE PACKAGE. REQUEST TO EXIT SWITCH SHALL INDICATE AUTHORIZED EGRESS FROM SECURE SIDE TO UNSECURE SIDE AND PREVENT ACTIVATION OF THE INTRUSION ALARM.
- ALL SECURE DOOR MAIN JUNCTION BOXES SHALL BE 12"x12"x6" NEMA 1 SCREW COVER AND SHALL BE INSTALLED IN ACCESSIBLE LOCATION ABOVE LAY-IN CEILING AS CLOSE TO DOOR OR GATE SERVED AS POSSIBLE.
- MOUNT ALL CARD READERS FLUSH IN WALL. WHERE STOREFRONT MOUNTING IS REQUIRED BY THE OWNER SEE "GENERAL CONDUIT NOTES" NOTE 3 THIS SHEET AND ACSC PROVIDE NARROW STYLE CARD READER.
- PROVIDE WEATHERPROOF CARD READERS, ROUGH-IN AND MOUNTING AT ALL LOCATIONS.
- CARD READER LOCATIONS SHOWN ON PLANS ARE APPROXIMATE AND INTENDED ONLY TO SHOW DOOR SERVED AND UNSECURE SIDE MOUNTING. THE OWNER'S PROJECT MANAGER AND ARCHITECT PROVIDE DIRECTION ON EXACT LOCATION OF ALL CARD READERS IN THE FIELD - WHICH MAY BE ANYWHERE IN THE VICINITY OF THE DOOR SERVED AT NO ADDITIONAL COST TO THE OWNER. THE GC SHALL REQUEST LOCATIONS WELL PRIOR TO COMMENCEMENT OF ROUGH-IN.
- THE GC/CM SHALL PROVIDE OVERALL COORDINATION AND SCHEDULING FOR THE ACCESS CONTROL SYSTEM INCLUDING DIRECT COORDINATION BETWEEN THE ACSC AND EC FOR ROUGH-IN AND OTHER WORK ITEMS THAT ARE TIME CRITICAL. THE GC SHALL ALSO PROVIDE OVERALL COORDINATION OF EQUIPMENT LOCATIONS (CARD READERS AND KEYPADS) WITH THE ARCHITECT, OWNER, EC AND ACSC.
- PROVIDE WALL/MORTAR/JUNCTION BOXES AT ALL POWER TRANSFERS, AND DOOR POSITION SWITCHES REGARDLESS OF WALL TYPE AND WHETHER DOOR FRAMES ARE MORTAR FILLED OR NOT. CONNECT CONDUIT TO BOXES WITH MORTAR TIGHT COMPRESSION FITTINGS. PROVIDE GRONMETS WHERE WIRING PASSES THRU OPENINGS IN METAL COMPONENTS. COMPLY WITH CODE FOR PROTECTION OF CONDUITS IN CONTACT WITH MORTAR OR CONCRETE.
- FINAL DOOR NUMBERS SHALL BE BASIS FOR SYSTEM LABELING AND PROGRAMMING SHALL BE BASED ON FINAL ROOM NUMBERS USED FOR ROOM SIGNAGE. FINAL NUMBERING/LABELING SCHEME FOR DOORS OTHER SECURITY DEVICES SHALL BE WORKED OUT IN CLOSE COORDINATION WITH THE OWNER'S PROJECT MANAGER AND ARCHITECT.



REVISIONS:		
No.	Description	Date
4	ADDENDUM NO. 4	3/30/26

ACCESS CONTROL SYSTEM DETAILS

PROJECT NUMBER 22019
DATED 01/31/2025



IP SECURITY CAMERA SYSTEM FLOOR PLAN KEY NOTES

- ① IPRO W-58574L 33 MEGAPIXEL HI-RES 4 X 4K MULTI-IMAGER OUTDOOR FIXED IK10 VANDAL CAMERA WITH BUILT-IN IRLED (COLOR WHITE) - CORNER MOUNT, INSTALL AND SETUP FOR 270 DEGREE VIEW PLUS DOWNLOOK. VERIFY EXACT LOCATION WITH OWNER AND CAMERA INTEGRATOR PRIOR TO INSTALLATION. CORNER MOUNT USING IPRO W-026353F1-W SHROUD, IPRO W-0W1505M1-W OUTDOOR WALL MOUNT AND IPRO W-0C0500-W CORNER MOUNT ADAPTER (ALL COLOR WHITE). LOCATE CORNER MOUNT AND DRILL HOLE THROUGH CORNER OF WALL IN EXACT LOCATION REQUIRED FOR CONDUIT TO EXTEND THRU FACTORY OPENING IN CORNER MOUNT AND TERMINATE IN FACTORY CONDUIT CONNECTOR IN WALL MOUNT. UNDER NO CIRCUMSTANCES WILL EXPOSED CONDUIT OR WIRING BE ALLOWED AT CAMERA MOUNTING. SET CORNER MOUNT IN FULL BED OF LEVEL CLEAR SEALANT/ADHESIVE AND SECURE TO STRUCTURE WITH EIGHT 3/8" DIAMETER STAINLESS STEEL BOLTS AND WASHERS. SECURE WALL MOUNT TO CORNER MOUNT WITH FOUR 3/8" DIAMETER STAINLESS STEEL BOLTS AND WASHERS. MAKE ALL PENETRATIONS OF WALL WATER TIGHT WITH LEVEL SEALANT. EXTEND 3/4" CONDUIT TO 4"x4"x2-1/8" NEMA 1 PULL BOX MOUNTED IN NEAREST ACCESSIBLE LOCATION ABOVE LAY-IN CEILING. THEN RUN 3/4" CONDUIT FROM PULL BOX CONCEALED CONTINUOUS TO SERVING CC. SCSC PROVIDE CATEGORY 6 CABLE FOR NETWORK AND POE SERVICES CONTINUOUS FROM CAMERA TO SERVING CC.
- ② IPRO W-522500-V3L SMP INDOOR FIXED IK10 VANDAL CAMERA WITH BUILT-IN IRLED (COLOR WHITE) - CEILING MOUNT. VERIFY EXACT LOCATION WITH OWNER AND CAMERA INTEGRATOR PRIOR TO INSTALLATION. FLUSH MOUNT IN LAY-IN CEILING USING PANASONIC W-0EM100-W EMBEDDED CEILING MOUNT BRACKET. SUPPORT MOUNTING BRACKET FROM ROOF STRUCTURE ABOVE. EXTEND CONDUIT TO 4"x4"x2-1/8" NEMA 1 PULL BOX MOUNTED IN NEAREST ACCESSIBLE LOCATION ABOVE LAY-IN CEILING NEAR CAMERA. THEN RUN 3/4" CONDUIT FROM PULL BOX CONCEALED CONTINUOUS TO SERVING CC. SCSC PROVIDE CATEGORY 6 CABLE FOR NETWORK AND POE SERVICES CONTINUOUS FROM CAMERA TO SERVING CC.
- ③ IPRO W-54176A 12 MEGAPIXEL INDOOR 360 DEGREE IK10 VANDAL CAMERA WITH BUILT-IN IRLED (COLOR WHITE) - CEILING MOUNT FOR 360 DEGREE VIEW. VERIFY EXACT LOCATION WITH OWNER AND CAMERA INTEGRATOR PRIOR TO INSTALLATION. MOUNT ON CEILING USING DOUBLE GANG ELECTRICAL BOX WITH DOUBLE GANG PLASTER RING (OR AS RECOMMENDED BY CAMERA INTEGRATOR) SUPPORTED CEILING SUPPORT STRUCTURE AND IPRO FACTORY PROVIDED CAMERA ATTACHMENT PLATE. EXTEND CONDUIT TO 4"x4"x2-1/8" NEMA 1 PULL BOX MOUNTED IN NEAREST ACCESSIBLE LOCATION ABOVE LAY-IN CEILING NEAR CAMERA. THEN RUN 3/4" CONDUIT FROM PULL BOX CONCEALED CONTINUOUS TO SERVING CC. SCSC PROVIDE CATEGORY 6 CABLE FOR NETWORK AND POE SERVICES CONTINUOUS FROM CAMERA TO SERVING CC.
- ④ IPRO W-525700-V2LN 4K OUTDOOR FIXED IK10 VANDAL CAMERA WITH BUILT-IN IRLED (COLOR WHITE) - WALL MOUNT. VERIFY EXACT LOCATION WITH OWNER AND CAMERA INTEGRATOR PRIOR TO INSTALLATION. WALL MOUNT USING IPRO W-026353F1-W SHROUD AND IPRO W-0W1505M1-W OUTDOOR WALL MOUNT (ALL COLOR WHITE). LOCATE WALL MOUNT AND DRILL HOLE THROUGH WALL IN EXACT LOCATION REQUIRED FOR CONDUIT TO TERMINATE IN FACTORY CONDUIT CONNECTOR IN WALL MOUNT. UNDER NO CIRCUMSTANCES WILL EXPOSED CONDUIT OR WIRING BE ALLOWED AT CAMERA MOUNTING. SET WALL MOUNT IN FULL BED OF LEVEL CLEAR SEALANT/ADHESIVE AND SECURE TO STRUCTURE WITH FOUR 3/8" DIAMETER STAINLESS STEEL BOLTS. MAKE ALL PENETRATIONS OF WALL WATER TIGHT WITH LEVEL CLEAR SEALANT. SECURE WALL MOUNT TO CORNER MOUNT WITH FOUR 3/8" DIAMETER STAINLESS STEEL BOLTS AND WASHERS. MAKE ALL PENETRATIONS OF WALL WATER TIGHT WITH LEVEL SEALANT. EXTEND CONDUIT TO 4"x4"x2-1/8" NEMA 1 PULL BOX MOUNTED IN NEAREST ACCESSIBLE LOCATION ABOVE LAY-IN CEILING NEAR CAMERA. THEN RUN 3/4" CONDUIT FROM PULL BOX CONCEALED CONTINUOUS TO SERVING CC. SCSC PROVIDE CATEGORY 6 CABLE FOR NETWORK AND POE SERVICES CONTINUOUS FROM CAMERA TO SERVING CC.
- ⑤ HALO 2C SMART DETECTOR OR EQUAL BY TITON ULTRA, INSTALL IN CEILING IN ACCORDANCE WITH MANUFACTURER'S PRINTED INSTRUCTIONS. CAMERA INTEGRATOR SETUP IN VIDEO INSIGHT AS DIRECTED BY OWNER. EXTEND 3/4" CONDUIT TO 4"x4"x2-1/8" NEMA 1 PULL BOX MOUNTED IN NEAREST ACCESSIBLE LOCATION ABOVE LAY-IN CEILING NEAR CAMERA. THEN RUN 3/4" CONDUIT FROM PULL BOX CONCEALED CONTINUOUS TO SERVING CC. SCSC PROVIDE CATEGORY 6 CABLE FOR NETWORK AND POE SERVICES CONTINUOUS FROM CAMERA TO SERVING CC.

GYM 100 NO EXPOSED CONDUIT OR CABLE NOTE
SEE "GYM 100 NO EXPOSED CONDUIT OR CABLE NOTE" SHEET T301".

NO EXPOSED CONDUIT OR CABLE NOTE
EXPOSED CONDUIT AND EXPOSED CABLE IS PROHIBITED AT ALL SECURITY CAMERAS. SEE 1 SHEET FLOOR PLANS FOR NOTES PROHIBITING EXPOSED CONDUIT OR CABLE AT AREAS WITH EXPOSED ROOF STRUCTURE IN AND AROUND THE GYM. PROVIDE BURIAL GRADE CABLES IN ALL UNDERGROUND CONDUITS.

BURIAL GRADE CABLE NOTE
RUN ALL ACS AND SECURITY CAMERA CONDUIT AND CABLE UNDERGROUND LOCATED ON THE NON CER SIDE OF THE BUILDING TO SERVING COMMUNICATIONS EQUIPMENT ROOM CER-107. IN ALL SUCH CASES THE ACS CONTRACTOR SHALL PROVIDE BURIAL GRADE CABLE. CABLE SHALL BE CONTINUOUS FROM EACH SECURE OR MONITORED DOOR TO THE ACCESS CONTROL SYSTEM PANEL PULL BOX AND FROM EACH SECURITY CAMERA TO THE BACK MOUNTED CATEGORY 6 PATCH PANEL, WITH NO TERMINATIONS OR SPLICES. THE CONTRACTOR SHALL INCLUDE A SUBMITAL FOR EACH TYPE OF BURIAL GRADE CABLE FOR ENGINEER APPROVAL IN THE SUBMITAL PACKAGE.

SECURITY DEVICE IDENTIFICATION NOTE:
ALL CAMERAS AND OTHER SECURITY DEVICES SHALL BE IDENTIFIED BASED ON FINAL FISH ROOM NUMBERS OR AS OTHERWISE DIRECTED BY THE OWNER DURING CONSTRUCTION. OBTAIN FINAL ROOM NUMBERS FROM THE ARCHITECT PRIOR TO IDENTIFYING AND LABELING DEVICES.

PROJECT NOTE (ALL SHEETS):
ALL MATERIALS AND EQUIPMENT INDICATED AND REQUIRED FOR A COMPLETE AND FINISHED INSTALLATION SHALL BE NEW AND SHALL BE PROVIDED BY THE CONTRACTOR UNDER THIS PROJECT UNLESS SPECIFICALLY INDICATED TO BE PROVIDED BY OTHERS.

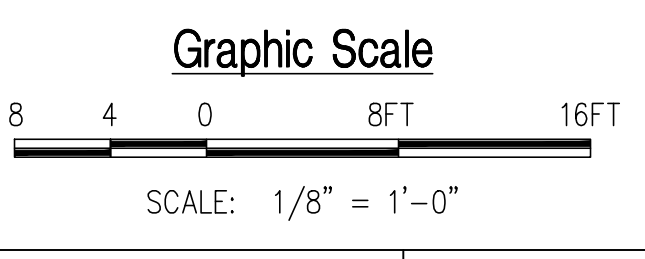
IP SECURITY CAMERA SYSTEM FLOOR PLAN
SCALE: 1/8" = 1'-0"

DIRECT CONNECT NOTE
DIRECT TERMINATE CATEGORY 6 CABLE FOR SECURITY CAMERAS WITH MALE MODULAR PLUG. ALL CATEGORY 6 DIRECT CONNECT PLUGS SHALL BE AS INDICATED ON THE DATA SINGLE LINE.

CAMERA FASTENER SIZE NOTE:
FASTENER SIZES INDICATED FOR CAMERA MOUNTS ARE APPROXIMATE AND MUST BE VERIFIED WITH THE ACTUAL HARDWARE RECEIVED. FASTENERS FOR THREADED CONNECTIONS SHALL BE SAME SIZE AS THREADED HOLE. FASTENERS FOR SMOOTH HOLES SHALL BE 1/16" SMALLER THAN HOLE DIAMETER. ALL FASTENERS SHALL BE STAINLESS STEEL.

- SECURITY LEGEND**
- CLASSROOM ARCHITECT'S ROOM NUMBER, SEE 127 "SECURITY DEVICE IDENTIFICATION NOTE."
 - ④ OUTDOOR WALL MOUNT FIXED SECURITY CAMERA
 - ② INDOOR CEILING MOUNT FIXED SECURITY CAMERA
 - ③ INDOOR CEILING MOUNT 360 DEGREE FIXED SECURITY CAMERA
 - ① OUTDOOR CORNER MOUNT HI-RES MULTI-IMAGER (M.I.) 270 DEGREE FIXED SECURITY CAMERA

- ABBREVIATIONS**
- CER COMMUNICATIONS EQUIPMENT ROOM
 - CC COMMUNICATIONS CLOSET
 - SCSC STRUCTURED CABLEING SYSTEM CONTRACTOR
 - EC ELECTRICAL CONTRACTOR
 - CM/CC CONSTRUCTION MANAGER



REVISIONS:

No.	Description	Date
4	ADDENDUM NO. 4	3/30/26

IP SECURITY CAMERA SYSTEM FLOOR PLAN

PROJECT NUMBER: 22019
DATED: 01/31/2025

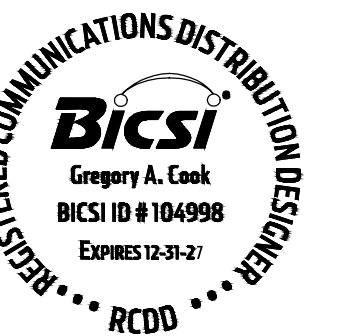
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ALLOWANCE FOR IP SECURITY CAMERA SYSTEM INTEGRATOR

THE GENERAL CONTRACTOR SHALL INCLUDE AN ALLOWANCE FOR ALL WORK BY THE IP SECURITY CAMERA SYSTEM INTEGRATOR IN THE BASE BID.

THE IP SECURITY CAMERA SYSTEM INTEGRATOR SHALL ALSO BE THE ACCESS CONTROL SYSTEM CONTRACTOR AND THE INTRUSION ALARM SYSTEM CONTRACTOR FOR THIS PROJECT. SEE "ALLOWANCE FOR ACCESS CONTROL SYSTEM" NOTE SHEET ACS301.

THE IP SECURITY CAMERA SYSTEM INTEGRATOR SHALL PROVIDE WORK AS SPECIFICALLY INDICATED ON THE DRAWINGS, IN THE SPECIFICATIONS AND AS DESCRIBED IN THE IP SECURITY CAMERA SYSTEM INTEGRATOR ALLOWANCE COST PROPOSAL AND ASSOCIATED SCOPE OF WORK STATEMENT. THE ALLOWANCE COST AND SCOPE OF WORK STATEMENT WILL BE ISSUED IN AN ADDENDUM PRIOR TO BIDS.

THE IP SECURITY CAMERA SYSTEM INTEGRATOR SHALL PROVIDE ALL CAMERAS, LOCATE CAMERAS PRIOR TO ROUGH-IN, TEST THE OPERATION OF EACH INSTALLED CAMERA, SET FINAL CAMERA VIEWING ANGLES, FIELDS OF VIEW, LENS SETTINGS, COMPRESSION SETTINGS AND OTHER CAMERA SETTINGS FOR OPTIMUM PERFORMANCE, SHALL PROVIDE A NEW NVR WITH STORAGE CAPACITY AS REQUIRED OR SHALL EXPAND THE EXISTING NVR, SHALL PROVIDE SOFTWARE UPGRADES AND REGISTER CAMERA LICENSES, SHALL PROVIDE FINAL SETUP, PROGRAMMING, TESTING AND OWNER TRAINING FOR THE SYSTEM, AND SHALL MAKE THE SYSTEM FULLY OPERATIONAL AND FUNCTIONAL TO THE SATISFACTION OF THE OWNER.

RELATED WORK TO BE PROVIDED BY OTHERS UNDER THE BASE BID BUT NOT INCLUDED IN THE SCOPE OF THE ALLOWANCE SHALL INCLUDE WORK BY THE SCSC AS INDICATED ON THE DRAWINGS, THE SCSC SHALL PROVIDE ALL CATEGORY 6 CABLING, PATCH PANELS, TERMINATION AND TESTING, AND CLOSE COORDINATION WITH THE GC/CM, ELECTRICAL CONTRACTOR AND THE IP SECURITY CAMERA SYSTEM INTEGRATOR.

ADDITIONAL RELATED WORK TO BE PROVIDED BY OTHERS UNDER THE BASE BID BUT NOT INCLUDED IN THE SCOPE OF THE ALLOWANCE SHALL INCLUDE CONDUIT REQUIRED FOR WIRING AND CABLING, AND ALL POWER AND GROUNDING REQUIRED FOR THE IP SECURITY CAMERA SYSTEM. EACH ELECTRICAL CONTRACTOR PROVIDING A BID FOR THIS PROJECT SHALL BE RESPONSIBLE FOR COORDINATING THE ASSOCIATED CONDUIT, POWER AND GROUNDING WORK WITH THE SCSC - BUT THE SCOPE OF CONDUIT, POWER AND GROUNDING WORK SHALL NOT BE LESS THAN THAT DESCRIBED ON THE DRAWINGS.

THE IP SECURITY CAMERA SYSTEM INTEGRATOR SHALL BE UNDER CONTRACT WITH THE OWNER, SHALL BE AVIGILON CERTIFIED AND SHALL BE MCA (CONTACT TONY COOPER - EMAIL TONYCOOPER@CALLMC.COM).

IP SECURITY CAMERA LOCATION NOTES

MOUNTING LOCATIONS INDICATED FOR CAMERAS ARE APPROXIMATE AND SHALL BE COORDINATED IN DETAIL BEFORE ANY ROUGH-IN BEGINS. THE CM SHALL TAKE THE LEAD IN COORDINATING FINAL CAMERA LOCATIONS WITH THE ARCHITECT, DISTRICT SECURITY STAFF AND CAMERA INTEGRATOR. SEE SPECIFICATIONS. THE CM AND CAMERA INTEGRATOR SHALL COORDINATE ROUGH-IN REQUIREMENTS WITH THE ELECTRICAL CONTRACTOR BASED ON THE CAMERA LOCATIONS DETERMINED BY THIS EFFORT.

THE CONTRACTOR SHALL COORDINATE THE EXACT LOCATION OF ALL INDOOR CEILING MOUNTED CAMERAS WITH LIGHTING FIXTURES AND OTHER CEILING MOUNTED DEVICES THAT EXTEND BELOW THE CEILING ALONG WITH CEILING FEATURES INVOLVING CHANGES IN CEILING HEIGHT THAT WILL IMPEDE FULL CAMERA VIEWS.

THE CONTRACTOR SHALL COORDINATE THE EXACT LOCATION OF ALL INDOOR WALL MOUNTED CAMERAS WITH ALL NEARBY WALL MOUNTED OR CEILING MOUNTED LIGHTING FIXTURES AND OTHER DEVICES THAT WILL IMPEDE FULL CAMERA VIEWS.

THE CONTRACTOR SHALL COORDINATE THE EXACT LOCATION OF ALL OUTDOOR CAMERAS WITH LIGHT FIXTURES, CANOPIES, SOFFITS, GUTTER DOWNSPOUTS, POLES AND ANY OTHER OBSTRUCTION THAT WILL IMPEDE FULL CAMERA VIEWS.

WHERE GUTTER DOWNSPOUTS OR OTHER OBSTRUCTIONS INTERFERE WITH A CAMERAS FULL FIELD OF VIEW TIGHT TO THE BUILDING EXTERIOR, PROVIDE STANDOFF PADDING USING KING STARBOARD, 1-1/2" THICK, COLOR TO MATCH COLOR OF CAMERA MOUNT AS CLOSELY AS POSSIBLE. MAKE CUTS STRAIGHT AND SQUARE AND FILE EDGES SMOOTH. PROVIDE MULTIPLE STANDOFF PADS AS REQUIRED TO COMPLETELY CLEAR DOWNSPOUT OR OBSTRUCTION AND PROVIDE FULL CAMERA VIEW AS INDICATED.

ALL FINAL CAMERA LOCATIONS SHALL PROVIDE AN UNOBSTRUCTED VIEW OF THE AREA SERVED BY EACH CAMERA.

CAMERA COORDINATION NOTES

THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL CONDUIT, BOXES, ENCLOSURES, PULL STRINGS, FIRESTOPPING, SMOKESTOPPING, POWER, GROUNDING, AND ALL OTHER WORK REQUIRED BY CODE OR FOR A COMPLETE AND FULLY FUNCTIONAL SYSTEM BUT NOT SPECIFICALLY IDENTIFIED AS PROVIDED BY OTHERS.

THE SCSC SHALL PROVIDE ALL CATEGORY 6 CABLING FOR NETWORK CONNECTIONS TO IP SECURITY CAMERAS COMPLETE TO INCLUDE PATCH PANELS, TERMINATION, LABELING, TESTING, AND PREPPING SLACK AT CAMERA LOCATIONS FOR FINAL CONNECTIONS TO CAMERAS.

THE IP CAMERA SYSTEM INTEGRATOR SHALL PROVIDE CAMERAS, MOUNTS, DIRECTION TO EC AND GC FOR EXACT LOCATION OF CAMERAS, NETWORK VIDEO RECORDER EXPANSION, SETTING OF CAMERA VIEWS, CAMERA SETUP, NETWORK VIDEO RECORDER SETUP, INTEGRATION OF SYSTEM INTO OWNER'S EXISTING VMS, AND ALL OTHER WORK REQUIRED FOR A COMPLETE AND FULLY OPERATIONAL SYSTEM.

RECORDING OF CAMERA IMAGES TO THE NETWORK VIDEO RECORDER SHALL BE MADE AT HIGHEST CAMERA RESOLUTION SETTINGS IN COLOR WHEN AMBIENT LIGHT LEVELS ALLOW AND IN BLACK AND WHITE DURING LOW LIGHT CONDITIONS. FRAMES PER SECOND SHALL BE AS DIRECTED BY COUNTY STAFF (15 FPS MINIMUM). ALL OTHER SETTINGS TO INCLUDE COMPRESSION SHALL BE MADE TO OPTIMIZE IMAGE QUALITY WHILE MINIMIZING STORAGE REQUIREMENTS.

IP SECURITY CAMERAS GENERAL ABOVEGROUND CONDUIT NOTES

1. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DETERMINING FINAL CONDUIT ROUTING IN THE FIELD. THE CONTRACTOR SHALL COORDINATE THE FINAL ROUTING OF CONDUITS TO CONCEAL CONDUITS AND TO AVOID CONFLICTS WITH THE BUILDING STRUCTURE, OTHER UTILITIES AND OBSTACLES, WHILE MINIMIZING CHANGES IN DIRECTION AND OVERALL CONDUIT LENGTH. ALL CONDUIT SHALL BE RUN OVERHEAD AND CONCEALED EXCEPT AS SPECIFICALLY INDICATED. BEST ROUTING WITHIN BUILDINGS SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR WITH THE LIMITATIONS SPECIFIED IN THESE NOTES AND THE CONTRACT DOCUMENTS IN GENERAL.
2. CONDUITS RUN INDOORS SHALL BE RUN CONCEALED OVERHEAD ABOVE CEILINGS UNLESS LOCATED IN SPACES WITHOUT CEILINGS, IN SPACES WITH EXPOSED ROOF STRUCTURE, OR AS OTHERWISE SPECIFICALLY INDICATED. INDOOR CONDUIT SHALL BE EMT WITH STEEL COMPRESSION FITTINGS. DIE CAST EMT FITTINGS ARE NOT ALLOWABLE. SUPPORT EXPOSED CONDUIT AT A MINIMUM OF 4'-0" ON CENTER WITH 2-HOLE HEAVY DUTY GALVANIZED STEEL HARDWARE.
3. SUPPORT CONDUIT DIRECTLY FROM BUILDING STRUCTURE USING APPROVED HARDWARE. DO NOT SUPPORT CONDUIT FROM OTHER SYSTEMS COMPONENTS OR SUPPORTS UNLESS SPECIFICALLY APPROVED BY THE ENGINEER. ROUTE ALL CONDUITS AS HIGH AS POSSIBLE, BUT DO NOT RUN CONDUITS CLOSER THAN 6" BELOW ROOF DECK (TO AVOID DAMAGE FROM LONG SCREWS USED IN FUTURE ROOF REPLACEMENTS). RUN ALL CONDUITS PARALLEL/PERPENDICULAR AND PLUMB WITH BUILDING LINES.
4. CONDUIT BODIES SUCH AS 'LB' FITTINGS ARE NOT ALLOWABLE.
5. HOMERUN CONDUITS FROM CCs SHALL BE A MAXIMUM OF 260 FEET LONG. PROVIDE PULLBOXES AT EVERY 100 FEET ON CENTER AND AT EACH END OF CONDUIT RUNS CONTAINING A TOTAL OF TWO 90 DEG BENDS OR A COMBINATION OF LESSER BENDS TOTALING 180 DEG (MINIMUM REQUIREMENTS - PROVIDE WHETHER SPECIFICALLY INDICATED OR NOT). CONDUIT RUNS CONTAINING MORE THAN TWO 90 DEG BEND WITHOUT A PULLBOX ARE NOT ALLOWABLE. FACTORY CONDUIT ELBOWS AND ALL OTHER BENDS SHALL HAVE A MINIMUM RADIUS OF SIX TIMES THE INTERNAL CONDUIT DIAMETER. CONDUIT OFFSETS AND PULLBOXES REQUIRED TO SUIT FIELD CONDITIONS AND TO CONFORM TO THESE REQUIREMENTS SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER. PULL BOXES FOR 3/4" HOMERUN CONDUITS SHALL BE 4"x4"x2-1/8" WITH BLANK COVER.
6. TERMINATE CONDUITS AT OPPOSITE ENDS OF PULLBOXES. DO NOT TERMINATE CONDUITS AT RIGHT ANGLES TO EACH OTHER EXCEPT AS SPECIFICALLY INDICATED.
7. IDENTIFY ALL CONDUIT ENDS WITH THREADED PLASTIC INSULATING BUSHINGS (PUSH-ON NOT ALLOWABLE). BUSHINGS MUST FIT TIGHTLY ON CONDUIT CONNECTOR THREADS. INSTALL ALL BUSHINGS PRIOR TO PULLING CABLE.
8. IDENTIFICATION: IDENTIFY ALL INDOOR IP CAMERA CONDUITS, PULLBOXES ABOVE LAY-IN CEILINGS, ACCESS DOORS, IN ROOF SPACE, AND IN ALL EXPOSED LOCATIONS WITH RED PAINT AT EVERY PULLBOX AND ON CONDUIT AT EACH COUPLER (PAINT ENTIRE COUPLER). IDENTIFY ALL CCTV CONDUIT PULLBOXES BY PAINTING WITH 1" TALL LETTER STENCIL (COLOR RED) THE WORDS "CCTV" ON EACH PULLBOX COVER. LETTERING SHALL BE LEVEL AND SQUARE AND AT CENTER OF PULLBOX COVER.

FIRESTOPPING NOTE:

THE CONTRACTOR SHALL FIRESTOP ALL PENETRATIONS OF ALL FLOORS AND ALL WALLS WHICH EXTEND TO THE UNDERSIDE OF THE FLOOR OR ROOF DECK ABOVE. FIRESTOPPING SHALL BE ACCOMPLISHED USING UL CLASSIFIED SYSTEMS WITH FIRE RATING EQUAL TO OR GREATER THAN THE FIRE RATING OF THE FLOOR OR WALL ASSEMBLY PENETRATED. FIRESTOP SYSTEMS SHALL BE 3M, NELSON OR ENGINEER APPROVED EQUAL. INSTALL IN ACCORDANCE WITH THE MANUFACTURER'S PRINTED INSTRUCTIONS. THE CONTRACTOR SHALL SUBMIT A MANUFACTURER'S STANDARD DETAIL FOR EACH TYPE OF FLOOR AND WALL PENETRATION REQUIRED FOR THIS PROJECT. ALL OTHER PENETRATIONS OR OPENINGS IN NON-FIRE RATED WALLS SHALL BE REPAIRED AND SEALED WITH MATERIALS TO MATCH THE CONSTRUCTION OF THE WALL.

THE CONTRACTOR SHALL PROVIDE DETAILS FOR EACH DIFFERENT TYPE OF FIRESTOP ASSEMBLY REQUIRED TO THE BUILDING OFFICIAL FOR APPROVAL PRIOR TO INSTALLATION. EACH DETAIL SHALL INCLUDE THE TEST ASSEMBLY NUMBER AND A DESCRIPTION OF THE MATERIALS TO BE USED. HAVE APPROVED FIRESTOPPING DETAILS AVAILABLE AT PROJECT SITE AT TIME OF INSPECTION.

CAMERA ATTACHMENT NOTES:

ALL CAMERA ATTACHMENTS SHALL BE MADE VANDAL-RESISTANT WITH NON-REMOVEABLE FASTENERS. FASTENER SIZES SHALL BE FULL SIZE ACCOMMODATED BY EQUIPMENT HOLE SIZE.

FASTENER SIZES INDICATED FOR CAMERA MOUNTS ARE APPROXIMATE AND MUST BE VERIFIED WITH THE ACTUAL HARDWARE RECEIVED. FASTENERS FOR THREADED CONNECTIONS SHALL BE SAME SIZE AS THREADED HOLE. FASTENERS FOR SMOOTH HOLES SHALL BE 1/16" SMALLER THAN HOLE DIAMETER. ALL FASTENERS AND MISCELLANEOUS RELATED HARDWARE SHALL BE STAINLESS STEEL.

ATTACHMENTS AT VARIOUS WALL CONSTRUCTIONS SHALL BE AS FOLLOWS:

1. AT FRAMED WALLS AND AT OPEN CELLS OF CMU WALLS, PROVIDE STAINLESS STEEL "SNAP-TOGGLER" TOGGLE BOLTS. ATTACH TO FRAMING OF FRAMED WALLS.
2. AT METAL SOFFIT OR FASCIA CONSTRUCTION PROVIDE STAINLESS STEEL THRU BOLTS ALL THE WAY THRU SOFFIT OR FASCIA FRAMING. PROVIDE SUPPLEMENTARY FRAMING ON INTERIOR AS REQUIRED FOR SECURE MOUNTING.
3. AT BRICK WALLS, BLOCK WEBS AND FILLED CELLS OF CMU WALLS, AND AT CONCRETE WALLS, PROVIDE COMMERCIAL GRADE HIGH LOAD EXPANSION ANCHORS SUCH AS TOGGLER "ALLIGATOR" SOLID-WALL ANCHORS WITH STAINLESS STEEL FASTENERS.

ABBREVIATIONS

CER	COMMUNICATIONS EQUIPMENT ROOM
CC	COMMUNICATIONS CLOSET
SCSC	STRUCTURED CABLING SYSTEM CONTRACTOR
EC	ELECTRICAL CONTRACTOR
CM/GC	CONSTRUCTION MANAGER / GENERAL CONTRACTOR

REVISIONS:

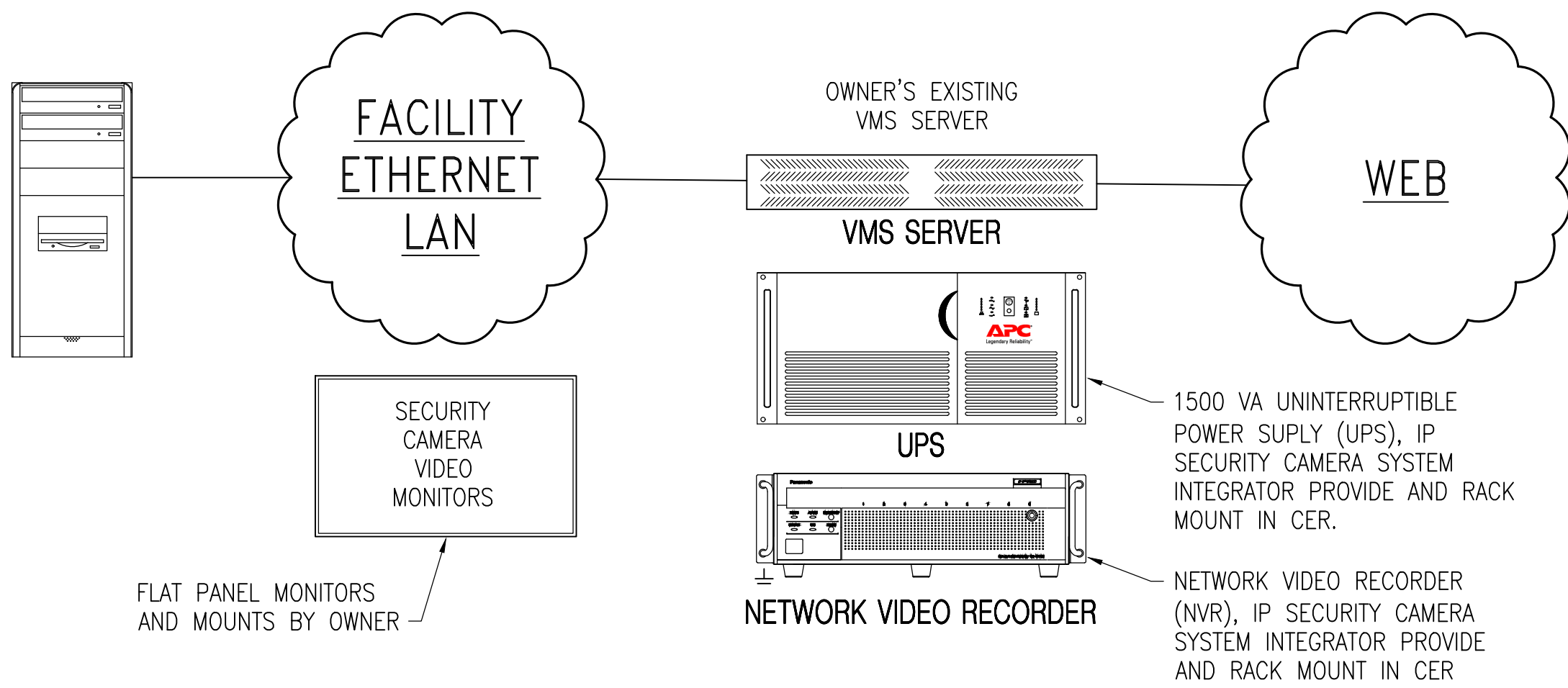
No.	Description	Date
4	ADDENDUM NO. 4	3/30/26

IP SECURITY CAMERA SYSTEM DETAILS

PROJECT NUMBER 22019
DATED 01/31/2025

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SEC201



AVIGILON SOFTWARE

AVIGILON SOFTWARE VIDEO MANAGEMENT SOFTWARE (VMS) IS EXISTING FOR PALM BAY CHARTER SCHOOL. UNDER THIS PROJECT THE IP SECURITY CAMERA SYSTEM INTEGRATOR SHALL FULLY INTEGRATE THE SECURITY CAMERAS AND HALO DETECTORS PROVIDED UNDER THIS PROJECT INTO THE EXISTING SOFTWARE. PROVIDE EXPANSION, PROGRAMMING, SETUP, LICENSING, AND ALL OTHER WORK REQUIRED TO INTEGRATE THE CAMERAS INTO THE AVIGILON SYSTEM FOR THE FULL RANGE OF FUNCTIONS AVAILABLE FROM THE MANUFACTURER FOR EACH CAMERA AND DESIRABLE FOR THE VARIOUS CAMERA VIEWING AND RECORDING APPLICATIONS ENCOMPASSED BY THIS PROJECT.

NETWORK VIDEO RECORDER

THE IP SECURITY CAMERA SYSTEM INTEGRATOR SHALL PROVIDE A NETWORK VIDEO RECORDER (NVR) RACK MOUNTED IN THE CER WITH RAID 5 OR 6 STORAGE. HARD DRIVES SHALL BE VIDEO SURVEILLANCE GRADE (PURPLE). THE NVR SHALL HAVE SUFFICIENT UNUSED HARD DRIVE SLOTS TO ALLOW AT LEAST 50% EXPANSION OF STORAGE IN THE FUTURE. AFTER THE HARD DRIVES FOR THIS PROJECT ARE INSTALLED, SUFFICIENT STORAGE SHALL BE PROVIDED UNDER THIS PROJECT TO ARCHIVE 30 DAYS OF VIDEO WITH ALL CAMERAS RECORDING AT FULL RESOLUTION IN COLOR AND AT A MINIMUM OF 15 FRAMES PER SECOND. THE INTEGRATOR SHALL UTILIZE H.265 SMARTCODEC WHERE FACTORY INTEGRATED IN THE SPECIFIED CAMERAS (PREFERRED) OR H.264 SMARTCODEC WHERE H.265 IS NOT FACTORY INTEGRATED. SETUP TO OPTIMIZE STORAGE WITHOUT SACRIFICING STORED VIDEO QUALITY. IF SO DIRECTED BY THE OWNER THE CAMERA INTEGRATOR SHALL EXPAND THE STORAGE CAPACITY OF THE EXISTING NVR AS REQUIRED TO MEET THESE REQUIREMENTS.