

GENERAL NOTES

- 1. THE CONTRACTOR IS RESPONSIBLE FOR ALL WORK, MATERIAL, AND LABOR TO SATISFY A COMPLETE AND WORKING SYSTEM WHETHER SPECIFIED OR IMPLIED.
2. THE CONTRACTOR SHALL SECURE ALL PERMITS OR APPLICATIONS AND PAY ANY AND ALL FEES AS REQUIRED.
3. ALL WORK ON THE DRAWINGS SHALL BE CONSIDERED AS NEW UNLESS IF EXPLICITLY CALLED OUT AS EXISTING...
4. ELECTRICAL DRAWINGS ARE DIAGRAMMATIC, SIZES AND LOCATION OF EQUIPMENT AND WIRING ARE SHOWN TO SCALE WHERE POSSIBLE...
5. FIELD MOUNTED DEVICES SUCH AS SWITCHES, MOTOR STARTERS, RECEPTACLES, ETC., ARE SHOWN IN THEIR APPROXIMATE LOCATION...
6. ALL RECEPTACLES SHALL BE GROUNDING TYPE.
7. ALL RECEPTACLES INSTALLED IN BATHROOMS AND KITCHENS SHALL HAVE GROUND-FAULT CIRCUIT INTERRUPTER PROTECTION AS REQUIRED BY THE NATIONAL ELECTRIC CODE...
8. ALL ELECTRIC MATERIALS AND EQUIPMENT FOR THE PROJECT SHALL BE NEW AND U.L. OR EQUALLY APPROVED.
9. CONTRACTOR TO CONFIRM EXACT LOCATION OF METERS WITH ELECTRIC UTILITY.
10. SUBMIT TO THE OWNER CERTIFICATES OF INSPECTIONS IN DUPLICATE FROM AN APPROVED INSPECTION AGENCY UPON COMPLETION.
11. BIDDERS, BEFORE SUBMITTING A PROPOSAL, SHALL VISIT AND CAREFULLY EXAMINE THE AREAS AFFECTED BY THIS WORK TO BECOME FAMILIAR WITH CONDITIONS AND WITH THE DIFFICULTIES THAT WILL ATTEND THE EXECUTION OF THIS WORK...
12. FURNISH AND INSTALL WIRING FOR EQUIPMENT FURNISHED BY OTHERS, AS SHOWN ON ARCHITECTURAL, HVAC, PLUMBING AND/OR ELECTRICAL DRAWINGS...
13. VERIFY LOCATIONS AND QUANTITY OF ALL ELECTRICAL EQUIPMENT WITH ARCHITECTURAL DRAWINGS OR INTERIOR DETAILS...
14. VERIFY THAT NO CONFLICTS EXIST WHICH WOULD PROHIBIT THE INSTALLATION OF AND ALL MECHANICAL, TELEPHONE, ELECTRICAL, LIGHTING, PLUMBING AND SPRINKLER EQUIPMENT...
15. ALL WORK SHALL BE PERFORMED SUCH AS TO LEAST INTERFERE OR INCONVENIENCE NORMAL OPERATIONS OF ADJACENT SPACES.
16. ALL WORKS SHOWN ON THE DRAWINGS SHALL BE FURNISHED AND INSTALLED BY THIS CONTRACTOR, UNLESS OTHERWISE INDICATED.
17. SEE MECHANICAL CONTRACT DOCUMENTS FOR EXACT QUANTITY, LOCATION AND ELECTRICAL CHARACTERISTICS OF MECHANICAL EQUIPMENT.
18. SEE PLUMBING/FIRE PROTECTION CONTRACT DOCUMENTS FOR EXACT QUANTITY, LOCATION AND ELECTRICAL CHARACTERISTICS OF PLUMBING/FIRE PROTECTION EQUIPMENT.
19. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR ALL FINAL CONNECTIONS.
20. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR ALL CONNECTION TO EQUIPMENT TERMINALS, IF NOT AN INTRINSIC PART OF THE EQUIPMENT, AND SPLICES SHALL BE BY MEANS OF APPROVED COMPRESSION TYPE COPPER CONNECTORS.
21. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF ALL DIMENSIONS AND LOCATION OF LIGHT FIXTURES ON PLAN...
22. SEE ARCHITECTURAL FOR EXACT QUANTITY & LOCATIONS OF LIGHTING FIXTURES AND TYPE OF CEILING CONSTRUCTION...
23. SEE ARCHITECTURAL ELEVATIONS AND DETAILS FOR EXACT QUANTITY & LOCATIONS AND MOUNTING HEIGHTS OF RECEPTACLES AND OUTLETS FOR ELECTRICAL DEVICES...
24. COORDINATE LOCATION OF ALL DEVICES (I.E. DETECTORS, FIXTURES, AND ALL OTHER CEILING MOUNTED DEVICES) WITH OTHER TRADES...
25. LIGHTING AND APPLIANCE CIRCUIT NUMBERS NOTED ON PLANS ARE INTENDED AS A GUIDE...
26. WHEREVER A CIRCUIT OR HOMERUN IS NOTED (I.E. AT EACH LOCATION WHERE A JUNCTION/PULL BOX WITH A HOMERUN NOTATION IS INDICATED...
27. QUANTITY AND SIZE OF WIRE (CABLE) AND SIZE OF CONDUIT SHALL BE AS REQUIRED BY CODE IF NOT SPECIFICALLY INDICATED...
28. THE TYPE OF CONDUIT SHALL BE AS FOLLOWS FOR ALL FEEDERS AND DISTRIBUTION CIRCUITS, UNLESS OTHERWISE SPECIFIED.

Table with 2 columns: APPLICATION, TYPE OF CONDUIT. Rows include BURIED IN CONCRETE OR MASONRY, OR OUTDOORS (GALV. RIGID STEEL) and SERVICE ENTRANCE (PVC).

- SUPPLY TO DISTRIBUTION PANELS AND HVAC EQUIPMENT EMT OR MC (OR NM FOR TYPES III, IV AND V CONSTRUCTION)
BRANCH CIRCUITS EMT OR MC (OR NM FOR TYPES III, IV AND V CONSTRUCTION)
29. PROVIDE ALL NECESSARY CONNECTIONS.
30. PROVIDE ALL REQUIRED GROUNDINGS. ALL GROUND WIRE SHALL BE ENCLOSED IN CONDUIT.
31. PROVIDE ALL AUXILIARY STEEL MEMBERS AS REQUIRED FOR THE SUPPORT OF ELECTRICAL WORK TO BUILDING STRUCTURE...
32. RACEWAY AND CONDUIT ROUTING SHOWN IS DIAGRAMMATIC AND INDICATES GENERAL INTENT...
33. UNLESS OTHERWISE INDICATED ALL RACEWAYS SHALL BE INSTALLED CONCEALED IN FINISHED AREAS.
34. RUN EXPOSED RACEWAYS PARALLEL TO OR AT RIGHT ANGLES TO WALLS.
35. POWER WIRING SHALL BE COPPER CONDUCTOR WITH THHN OR THWN INSULATION RATED 600 VOLTS MINIMUM...
36. FURNISH FISH WIRE IN EACH RACEWAY RUN IN WHICH WIRING IS NOT INSTALLED.
37. WIRING TO AND FROM AN ITEM SHALL BE SIZED THE SAME UNLESS OTHERWISE REQUIRED...
38. PIPE SLEEVES SHALL BE GROUDED IN WALLS...
39. BOLT ON TYPE LUGS SHALL BE FASTENED WITH TWO BOLTS MINIMUM.
40. INTERCONNECT DEVICES/FIXTURES WITH SAME CIRCUIT NUMBER WITH REQUIRED WIRE AND CONDUIT...
41. PROVIDE ALL REQUIRED PULL, JUNCTION, OUTLET BOXES AND TROUGHS.
42. COVERS OF JUNCTION AND PULL BOXES SHALL BE ACCESSIBLE.
43. PROVIDE BACKBOXES FOR ALL DEVICES, EQUIPMENT, ETC.
44. PROVIDE BLANK COVER PLATES OVER ALL UNUSED OPENINGS IN PANELBOARDS, PULL AND JUNCTION BOXES AND TROUGHS.
45. INSTALL AND CONNECT EVERY STARTER AND VARIABLE FREQUENCY DRIVE FURNISHED BY OTHER TRADES/VENDORS ON THIS PROJECT.
46. RATING OF DISCONNECT SWITCHES TO MATCH OVERCURRENT PROTECTIVE DEVICE U.O.N.
47. EXIT LIGHTS, EMERGENCY BATTERY PACKS & NIGHT LIGHTS SHALL NOT BE SWITCHED...
48. CIRCUITS FOR COMPUTER RECEPTACLES AND LIGHTING SHALL BE PROVIDED WITH A SEPARATE GROUND WIRE.
49. EACH BRANCH CIRCUIT SERVING SHALL BE PROVIDED WITH GROUND WIRE AS REQUIRED.
50. PROVIDE ALL NECESSARY TEMPORARY AND INTERIM ELECTRICAL POWER WORK...
51. WHENEVER EXCAVATION OR CUTTING OF SLABS ARE PERFORMED...
52. LOCATE JUNCTION AND PULL BOXES TO BE CONCEALED IN FINISH SPACES...
53. UPON COMPLETION OF ALL ELECTRICAL WORK...
54. AFTER COMPLETION OF WORK, CLEAN UP ALL RESULTANT DEBRIS...
55. ALL PENETRATIONS THROUGH FIRE RATED WALLS OR FLOORS SHALL BE SEALED...
56. PROVIDE GFI TYPE PROTECTION FOR ANY DEVICE WITHIN 6' OF SINK, WATER OR LIQUIDS...
57. THE CONTRACTOR SHALL TAG EACH AND EVERY PANELBOARD...
58. THE ELECTRICAL CONTRACTOR SHALL COMPLY WITH THE FOLLOWING CODES AND STANDARDS:
A. THE NATIONAL ELECTRIC CODE, STATE LAWS, AND ALL OTHER REGULATIONS GOVERNING WORK OF THIS NATURE.
B. UNDERWRITERS LABORATORIES, INC. (UL)
C. OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA)
D. AMERICAN DISABILITIES ACT (ADA), 2010
E. ALL LOCAL JURISDICTION DIRECTIVES AND REQUIREMENTS.
F. APPLICABLE NFPA SECTIONS.
59. WHERE DISCREPANCIES IN EQUIPMENT, DEVICE, AND FIXTURE LOCATIONS OCCUR BETWEEN ARCHITECTURAL AND ENGINEERING DRAWINGS...
60. ALL ABOVE COUNTER RECEPTACLE OUTLETS IN THE KITCHEN(S) SHALL BE GFI TYPE.
61. "BACK-TO-BACK" ELECTRICAL OUTLETS IN ADJACENT ROOMS SHALL BE INSTALLED AS FOLLOWS:
A. BOXES LOCATED ON OPPOSITE SIDES OF WALLS OR PARTITIONS SHALL BE SEPARATED BY A MINIMUM HORIZONTAL DISTANCE OF 24 IN...
B. OPENING PROTECTIVE MATERIALS (CLIV) ARE INSTALLED ACCORDING TO THE

- REQUIREMENTS OF THE CLASSIFICATION.
62. UNLESS INDICATED OTHERWISE, ALL CURRENT CARRYING CONDUCTORS SHALL BE COPPER.
63. PROVIDE CABLE SUPPORT BOXES IN ALL VERTICAL CONDUIT RUNS AS PER CODE REQUIRED SPACING.
64. GROUNDING
A. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL GROUNDING SYSTEMS (AS REQUIRED) IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE.
B. GROUND SHALL CONSIST OF CONNECTING THE NEUTRAL CONDUCTOR OF THE EQUIPMENT TO A GROUND SOURCE.
65. GROUND CONTINUITY SHALL BE MAINTAINED THROUGHOUT.
66. DISTRIBUTION EQUIPMENT SHALL BE BRACED TO WITHSTAND THE AVAILABLE SHORT CIRCUIT CURRENT.
67. NOTIFY ENGINEER OF CONFLICTS BETWEEN DRAWINGS AND SPECIFICATIONS BEFORE SUBMITTAL OF BID PROPOSAL...
68. FURNISH ALL PERMITS AND FILINGS AS REQUIRED AS A PART OF THIS CONTRACT.
69. COLOR OF ALL WIRING DEVICES (SWITCHES, RECEPTACLES, PLATES, ETC.) SHALL BE APPROVED BY THE ARCHITECT PRIOR TO PURCHASE.
70. ELECTRICAL CONTRACTOR SHALL COORDINATE FINAL LOCATION OF REMOTE CONTROL OVERRIDE RELAY SWITCHES...
71. FURNISH ALL PERMITS AND FILINGS AS REQUIRED AS PART OF THIS CONTRACT...
72. UNLESS OTHERWISE DIRECTED BY ARCHITECT, PROVIDE STAINLESS STEEL COVER PLATES FOR UNUSED JUNCTION BOXES...
73. DISTRIBUTION SYSTEM SHALL BE FULLY RATED...
74. USE RIGID GALVANIZED STEEL FOR ALL BENDS AND STUB-UPS IN UNDERGROUND CONDUITS.
75. SERVICE ENTRANCE
A. COMPLY WITH ALL OF THE CONTRACT DOCUMENTS...
B. THE WORK COVERED BY THIS SECTION...
C. THIS CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF THE UTILITY COMPANY...
D. THIS CONTRACTOR SHALL MAKE APPLICATION FOR THE REQUIRED PERMITS AND APPROVALS...
E. THE WORK OF THE ELECTRICAL CONTRACTOR SHALL GENERALLY BE AS FOLLOWS:
1) BOND AND GROUND ALL CABLES, CONDUITS, AND ELECTRICAL EQUIPMENT...
2) INSTALL ALL SERVICE AND METERING EQUIPMENT...
3) INSTALL ALL MATERIALS PER UTILITY COMPANY SPECIFICATIONS.
F. THE CONTRACTOR SHALL, BEFORE SUBMITTING HIS BID...
G. ALL PRODUCTS SHALL BE AS RECOMMENDED AND APPROVED BY UTILITY COMPANY...
H. PROVIDE 6" DIAMETER SLEEVES (GRS) THRU FOUNDATION WALL...
I. PROVIDE WATERPROOF LINK SEAL AROUND RIGID STEEL CONDUIT...
J. PROVIDE 4'AWG COPPER GROUND CONDUCTOR CONNECTED TO RE-BAR...
76. PROVIDE CONDUIT EXPANSION/DEFLECTION COUPLING BETWEEN BUILDINGS...
77. PROVIDE CONDUIT EXPANSION FITTINGS AT EVERY CONCRETE AND STRUCTURAL EXPANSION OR CONTROL JOINT.
78. ALL NORMAL POWER EXTERIOR ELECTRICAL INSTALLATIONS SHALL BE WEATHERPROOF...
79. PROVIDE GROUND FAULT PROTECTION AS REQUIRED BY THE ELECTRICAL CODE.
80. ALL RECEPTACLES SERVED FROM THE EMERGENCY SYSTEM SHALL HAVE THE PANELBOARD AND CIRCUIT NUMBER SERVING THEM MARKED ON A FACEPLATE.

- 81. SHORT CIRCUIT, COORDINATION AND ARC FLASH STUDY SHALL BE PREPARED BY THE ENGINEER LICENSED IN THE STATE AND SUBMITTED TO THE ENGINEER OF RECORD...
82. ELECTRICAL CONTRACTOR IS RESPONSIBLE TO FURNISH AND INSTALL ELECTRICAL WIRING TO ALL ELECTRICAL HEATING EQUIPMENT...
83. PROVIDE CONDUIT EXPANSION/DEFLECTION FITTINGS BETWEEN BUILDINGS...
84. CONTRACTOR TO ARRANGE WIRING FOR INTERFACING 3 PHASE TO SINGLE PHASE WIRING...
85. PROVIDE PANIC HARDWARE FOR ALL DOORS IN MAIN ELECTRICAL ROOMS...
86. ALL EQUIPMENT AND DEVICES LOCATED IN FIRE ALARM CONTROL ROOM...
87. ALL ELECTRICAL EQUIPMENT SHALL BE INSTALLED ABOVE BASE FLOOD ELEVATION.
88. SHOP DRAWINGS SHALL IDENTIFY ALL OPTIONS PROVIDED AND LIST ALL DEVIATIONS...
89. UNLESS INDICATED OTHERWISE ALL DISCONNECTS, STARTERS AND VARIABLE FREQUENCY DRIVES (VFD'S) SHALL BE LOCATED 10 FEET FROM ASSOCIATED EQUIPMENT...
90. FOR EQUIPMENT REQUIRING EMERGENCY SHUT OFF...
91. PROVIDE CONTROL WIRING FOR ALL REMOTE EQUIPMENT...
92. ELECTRICAL DEVICES AND INSTALLATIONS SHALL COMPLY WITH APPLICABLE ENERGY CONSERVATION CODE SECTIONS.
93. FOR EACH ELECTRICAL PANELBOARD PROVIDE INSTALLED CLOSED CELL NEOPRENE FOAM TAPE PANEL AND DRYWALL AROUND ACCESS DOOR.
94. ALL CONDUIT PENETRATIONS SHALL BE SEALED...
95. ALL SPACES, EXCEPT THOSE INTENDED FOR 24 HOUR OPERATION...
96. NOT USED.
97. NOT USED.
98. PROVIDE 4" HIGH HOUSEKEEPING PAD FOR EACH FLOOR...
99. ALL EMERGENCY AND STANDBY POWER FEEDERS SHALL BE A LISTED ELECTRICAL CIRCUIT PROTECTIVE SYSTEM...
100. ALL JUNCTION BOXES ON DEMISING WALL SHALL BE PUT TO PACKED SEALED.
101. SPECIAL PURPOSE RECEPTACLE OUTLET NEMA CONFIGURATION SHALL MATCH ASSOCIATED EQUIPMENT PLUG RATING.
102. THE SPACE EQUAL TO THE WIDTH AND DEPTH OF THE EQUIPMENT...
103. VOLTAGE DROP SHALL NOT EXCEED 5% FROM POINT OF SERVICE...
104. ALL COMMUNICATION WIRING SHALL BE INSTALLED AS PER NEC 2017, SECTION 800.
105. PERFORMANCE AND WITNESSING OF TESTS
A. THE CONTRACTOR SHALL FURNISH ALL INSTRUMENTS AND QUALIFIED PERSONNEL...
B. ALL NEW AND RECONNECTED ELECTRICAL CIRCUIT SHALL BE TESTED...
C. ANY CONTRACTOR FURNISHED AND/OR INSTALLED SPLICE...
D. NO EQUIPMENT SHALL BE ENERGIZED UNTIL ALL TESTS AND ADJUSTMENTS...
E. THREE COPIES OF ALL TEST RESULTS SHALL BE DELIVERED TO THE OWNER.



IS NOW COLLIER'S ENGINEERING & DESIGN
ARCHITECT OF RECORD:
Justin A. Mihalik, AIA
373 US Route 46 West
Building D, Suite 240
Fairfield, New Jersey 07004
ph: (973) 291-3730 fax: (973) 291-3740
www.colliersengineering.com
Bergmann Architectural Associates, Inc.



NOT VALID FOR CONSTRUCTION WITHOUT SEAL

Project:
LIGHTBRIDGE ACADEMY
655 Reedy Creek Rd
Cary, NC 27513

Developer:
STNL Advisors LLC
260 Madison Ave, 5th Flr
New York, NY 10016

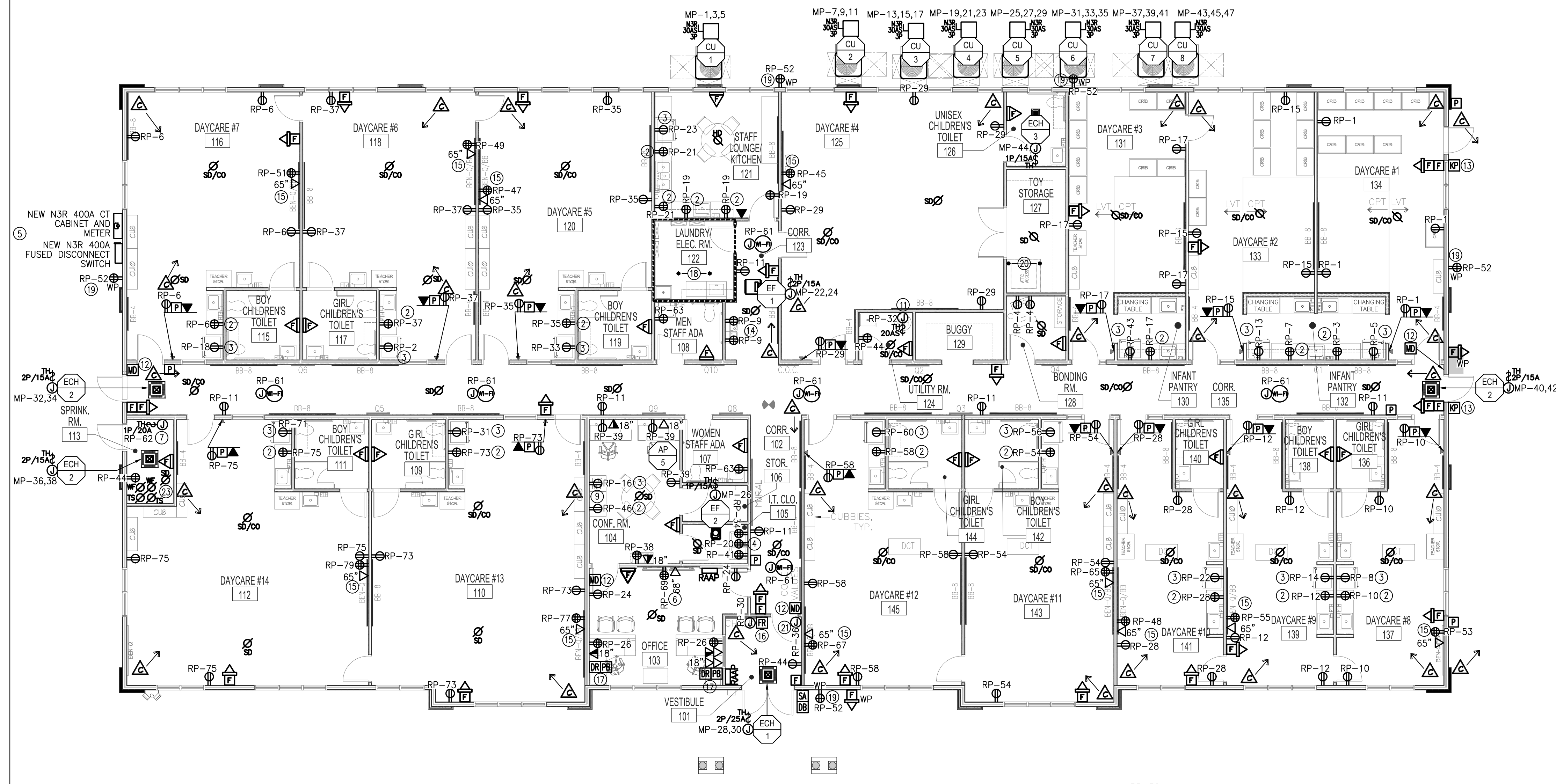
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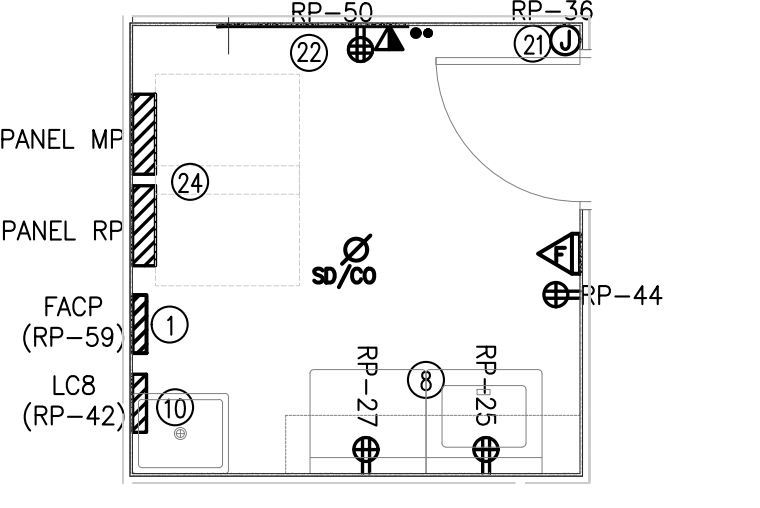
ELECTRICAL GENERAL NOTES

Table with 3 columns: Rev. #, Date, Remarks. Includes entries for 03/28/2024 and 2022-01-09.

SHEET NO.
E-002



1 ELECTRICAL FIRST FLOOR POWER PLAN
SCALE: 1/8"=1'-0"
0 4 8 16 FEET



1 ELECTRICAL ROOM PART PLAN
SCALE: 1/4"=1'-0"

- ### ELECTRICAL GENERAL NOTES
- THESE DRAWINGS SHOW THE INTENT OF THE NEW CIRCUITING DESIGN.
 - ALL WIRING/CABLING AND OTHER TEL/DATA DEVICES SHALL BE PROVIDED BY GC'S CONTRACTOR. GENERAL CONTRACTOR SHALL VERIFY LOCATIONS OF DEVICES AND PROVIDE NECESSARY ROUGH-INS.
 - MOUNTING HEIGHTS FOR WALL OUTLETS AS PER "TYPICAL DEVICE MOUNTING HEIGHTS" TABLE ON ELECTRICAL COVER SHEET AND "TYPICAL MOUNTING HEIGHT DETAIL" ON ELECTRICAL DETAILS SHEET. ANY CHANGES TO OUTLET MOUNTING HEIGHTS SHALL BE COORDINATED WITH OWNER.
 - CONTRACTOR SHALL COORDINATE WITH OTHER TRADES FOR EXACT LOCATION OF MECHANICAL AND PLUMBING EQUIPMENT.
 - ALL RECEPTACLES SHALL BE TAMPER RESISTANT.
 - PROVIDE GFCI RECEPTACLES WHERE SHOWN AND AS REQUIRED BY CODE. ALL RECEPTACLES SHALL BE TAMPER RESISTANT. PROVIDE GFCI RECEPTACLES IF DISTANCE FROM THE SINK IS WITHIN 6' AS PER NEC REQUIREMENTS.
 - LANDLORD/CONTRACTOR SHALL PROVIDE AND INSTALL COMPUTER ROUGH-INS IN OFFICE AND CONFERENCE ROOM AS PER THE APPROVED PLANS.
 - CONTRACTOR SHALL COORDINATE DEVICE LOCATIONS & INSTALLATION OF SECURITY SYSTEM WITH LIGHTBRIDGE.
 - CONTRACTOR TO REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATION OF WHITEBOARDS.

- ### ELECTRICAL KEY NOTES
- APPROXIMATE LOCATION OF FIRE ALARM CONTROL PANEL. COORDINATE EXACT LOCATION WITH FIRE MARSHAL.
 - COUNTER-TOP RECEPTACLE TO BE MOUNTED 42" AFF. COORDINATE FOR FINAL LOCATION.
 - RECEPTACLE FOR REFRIGERATOR TO BE MOUNTED AT 18" AFF. COORDINATE FOR FINAL LOCATION.
 - COORDINATE COMPUTER SERVER CLOSET REQUIREMENTS WITH IT VENDOR. (3) QUAD RECEPTACLES MOUNTED AT 48" AFF. EQUIPMENT SHALL BE MOUNTED ON FULL WALL FIRE RATED BACK BOARD. SEE DETAIL ON DRAWING E-404.
 - EC TO VERIFY EXACT LOCATION OF INCOMING SERVICE AND COORDINATE EXACT LOCATION OF CT CABINET/METER AND SERVICE DISCONNECTS PRIOR TO BID AND INSTALLATION.
 - REFER TO WATCHMEGROWN TV SETUP DETAIL ON E-404 FOR INSTALLATION REQUIREMENTS.
 - PROVIDE 120V CIRCUIT FOR DRY VALVE ASSEMBLY AIR COMPRESSOR AND PRESSURE SWITCH. COORDINATE FINAL LOCATION OF EQUIPMENT WITH SPRINKLER CONTRACTOR.
 - COORDINATE EXACT ELECTRICAL REQUIREMENTS AND RECEPTACLE TYPE FOR WASHER/DRYER WITH MANUFACTURER PRIOR TO BID AND INSTALLATION.
 - REFER TO DETAIL 10 ON ARCHITECTURAL DRAWING 4402 FOR PLACEMENT OF CONVENIENCE UNDER COUNTER FRIDGE RECEPTACLES.
 - EC SHALL FURNISH AND INSTALL LIGHTING RELAY PANEL (WATTSTOPPER LCB OR APPROVED EQUAL). REFER TO ELECTRICAL DETAILS SHEET FOR FURTHER REQUIREMENTS.
 - POWER FOR WATER HEATER AND RECIRC. PUMP. COORDINATE EXACT CONTROL REQUIREMENTS WITH MANUFACTURER PRIOR TO BID AND INSTALLATION.
 - CONTRACTOR SHALL FIELD VERIFY FINAL LOCATION FOR ALL MOTION DETECTOR SYSTEMS PRIOR TO INSTALLATION.
 - CONTRACTOR SHALL FIELD VERIFY FINAL MOUNTING HEIGHT AND LOCATION OF KEYPAD TO BE INSTALLED AT PLAYGROUND DOORS PRIOR TO BID AND INSTALLATION.
 - EC TO COORDINATE EXACT REQUIREMENTS FOR WATER COOLER WITH MANUFACTURER PRIOR TO BID AND INSTALLATION.
 - REFER TO INTERACTIVE WHITEBOARD DETAIL ON SHEET E-404 AND DRAWING G103 FOR INSTALLATION REQUIREMENTS.
 - POWER FOR FACIAL RECOGNITION SYSTEM. REFER TO DRAWING A-100 FOR PLACEMENT DETAIL, AND E-404 FOR FURTHER DETAILS. COORDINATE EXACT REQUIREMENTS WITH LOW VOLTAGE SYSTEM CONSULTANT.
 - CONTRACTOR SHALL FIELD VERIFY FINAL MOUNTING LOCATION OF DOOR RELEASE/PANIC BUTTON. MOUNTING HEIGHT SHALL BE 48" AFF.
 - REFER TO ENLARGED ELECTRICAL ROOM PART PLAN ON THIS SHEET FOR FURTHER REQUIREMENTS. ALL EQUIPMENT SHALL BE MOUNTED ON FIRE RATED PLYWOOD BACKBOARD IN THIS ROOM.
 - EC TO VERIFY FINAL LOCATION OF OUTDOOR RECEPTACLES PRIOR TO BID AND INSTALLATION.
 - NO PIPES, DUCT, WIRES TO BE INSTALLED ABOVE CEILING IN THIS AREA.
 - PROVIDE 120V CIRCUIT FOR ACCESS CONTROL PANEL FOR ELECTRIC DOOR STRIKE SYSTEM. REFER TO PANEL SCHEDULE FOR CIRCUITING. DOOR STRIKE LOCATIONS AS SHOWN ON PLAN.
 - FULL WALL FIRE RATED PLYWOOD BACKBOARD. MOUNT BLACKBOX UNIT AND ACCESSORIES ON BACKBOARD. (2) 4" CONDUITS FOR TELEPHONE SERVICE AT TENANTS TEL/DATA BACKBOARD. COORDINATE REQUIREMENTS WITH LOCAL TELEPHONE DISTRIBUTION BOARD. MAINTAIN REQUIRED CLEARANCES.
 - EC TO COORDINATE EXACT LOCATIONS AND QUANTITIES OF WATER FLOW AND TAMPER SWITCH WITH SPRINKLER CONTRACTOR
 - FULL WALL FIRE RATED PLYWOOD BACKBOARD. MOUNT ELECTRICAL PANELS ON BACKBOARD.

ELECTRICAL GENERAL REQUIREMENTS:

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| <p>TELEPHONE</p> <ol style="list-style-type: none"> CONTRACTOR SHALL PROVIDE AND INSTALL TELEPHONE CABLES AT LOCATIONS SHOWN ON PLANS. CONTRACTOR SHALL TERMINATE ALL CABLING TO I.T. CLOSET. <p>RECEPTACLES</p> <ol style="list-style-type: none"> ALL RECEPTACLES SHALL BE TAMPER RESISTANT AS MANUFACTURED BY "PASS & SEYMOUR". CHILD PROOF GFCI RECEPTACLE. <p>PANEL BOARDS:</p> <ol style="list-style-type: none"> CIRCUIT BREAKERS SHALL HAVE A COMMON TRIP ON ALL MULTI-POLE BREAKERS AND CONTRACTOR TO PROVIDE LABELING. BUS AND HARDWARE SHALL BE BRACED FOR INTERRUPTING CAPACITY AS SHOWN ON PANEL BOARD SCHEDULE. BREAKERS SHALL MATCH AIC RATINGS OF PANEL AT PANEL VOLTAGE. ALL BUSSING SHALL BE COPPER. PROVIDE EACH PANEL BOARD WITH GREEN CODED GROUND BAR. FOR GREEN EQUIPMENT GROUND WIRES. EACH BAR TO HAVE A MINIMUM CAPACITY FOR THE NUMBER OF POLES IN PANEL WITH SOLDERLESS. BOX LUGS FOR WIRE SIZE NO. 4. MAXIMUM ONE WIRE PER LUG. LOCATE BAR ADJACENT TO NEUTRAL BAR BOLT OR WELD TO BACK BOX. MAIN CIRCUIT BREAKERS & SWITCH BOARDS WHERE REQUIRED, MUST BE APPROVED BY LOCAL UTILITY. <p>RECEPTACLES CONTINUED:</p> <ol style="list-style-type: none"> PROVIDE 208Y/120V PANEL-BOARDS WITH AN ISOLATED NEUTRAL BAR. THERE SHALL BE AS MANY TERMINALS AS THERE ARE CIRCUIT POLES. THE TERMINAL FOR THE FEEDER NEUTRAL SHALL MATCH THE SIZE OF THE FEEDER PHASE TERMINATIONS. LANDLORD/CONTRACTOR SHALL LABEL ALL CIRCUIT BREAKERS. | <ol style="list-style-type: none"> LANDLORD/CONTRACTOR SHALL INSTALL ALL DISTRIBUTION DEVICES, INCLUDING J-BOXES, SWITCHES AND RECEPTACLES PER LOCAL BUILDING CODES AND THE APPROVED PLANS. EACH CLASSROOM LIGHTING SYSTEM SHALL BE SEPARATELY SWITCHED AND THE LOCATION OF LIGHT SWITCHES SHALL BE CONVENIENT TO THE ENTRANCE OF EACH CLASSROOM. SHARED TOILET BETWEEN CLASSROOMS SHALL BE SWITCHED FOR THREE WAY OPERATIONS. <p>OUTLET BOXES</p> <ol style="list-style-type: none"> GALVANIZED STAMPED STEEL FOR ALL INTERIOR LOCATIONS. MOUNT ALL BOXES SO THAT COVERS AND PLATES WILL MOUNT FLUSH WITH THE WALL AND CEILING FINISH SURFACE. PROVIDED PLASTER RINGS AS NECESSARY. GOOF RINGS ARE ACCEPTABLE. THE ENGINEER RESERVES THE RIGHT TO MAKE MINOR CHANGES. SUITABLE GALVANIZED BARS, ROD GANGLERS OR CADDY CLIPS SHALL BE USED THROUGHOUT THE WORK. WOODEN SUPPORTS, STRIPES, TIE WIRES, OR MAKESHIFT DEVICES SHALL NOT BE USED. BOXES SHALL NOT BE LESS THAN 1" DEEP. IN GENERAL, OUTLET BOXES SHALL BE OF SUFFICIENT DEPTH SO THAT CONDUIT ENTERING WITHIN TILE WALLS NEED NOT BE OFFSET SO THAT TILES HAVE TO BE CHIPPED OR ALTERED. ALL BOXES SHALL BE SET LEVEL AND PLUMB. PROVIDE RAIN TIGHT CAST METAL BOXES WITH THREADED CONDUIT HOLES AND CAST METAL FACE PLATES. COVERS SHALL MAINTAIN RATING WHILE IN USE. REFER TO "TYPICAL DEVICE MOUNTING HEIGHTS" TABLE ON ELECTRICAL COVER SHEET AND "TYPICAL MOUNTING HEIGHT DETAIL" ON ELECTRICAL DETAILS SHEET FOR MOUNTING HEIGHTS. ANY CHANGES TO OUTLET MOUNTING HEIGHTS SHALL BE COORDINATED WITH OWNER. WHEN INSTALLED (IN MASONRY WALLS), LOCATE BOTTOM OF BOX AT NEAREST MASONRY JOINT TO DIMENSION INDICATED, WHERE OUTLETS OCCUR ABOVE COUNTERS, OR CABINETS, CORRELATE HEIGHT OF OUTLET WITH EQUIPMENT SO DEVICE WILL CLEAR ALL TRIM. | <ol style="list-style-type: none"> ALL RECEPTACLE AND SWITCH PLATES SHALL BE WHITE. <p>SAFETY SWITCHES:</p> <ol style="list-style-type: none"> SAFETY SWITCHES, FUSIBLE HEAVY DUTY. <p>METER CENTER:</p> <ol style="list-style-type: none"> WHERE REQUIRED, METER MUST BE APPROVED BY LOCAL UTILITY. <p>WIRING DEVICES:</p> <ol style="list-style-type: none"> PROVIDE SPECIFICATION GRADE WIRING DEVICES OF 20 AMP RATING MINIMUM, AS REQUIRED ON THE PLANS. SWITCHES SHALL BE QUIET TYPE. SWITCHES, WHERE REQUIRED SHALL BE MOUNTED ON THE STRIKE SIDE OF DOORS AS FINALLY HUNG. DEVICES SHALL HAVE SMOOTH NYLON PLATE-FIT & TYPE AS REQUIRED BY DEVICE. OUTLETS WITHOUT DEVICES, EXCEPT TELEPHONE, TO HAVE BLANK PLATES. FASTEN PLATES IN PLACE BY OVAL HEAD, SCREWS MATCHING PLATE. <p>PUBLIC ANNOUNCEMENT SYSTEM:</p> <ol style="list-style-type: none"> PUBLIC ANNOUNCEMENT SYSTEM SHALL BE WIRED FOR THE FOLLOWING ZONES: <ul style="list-style-type: none"> A. ZONE 1 - CLASSROOMS B. ZONE 2 - CORRIDOR C. ZONE 3 - PLAYGROUND D. ZONE 4 - MULTI-PURPOSE ROOM <p>VOICEDATA, TELEPHONE, CCTV, SECURITY:</p> <ol style="list-style-type: none"> SEE PROJECT MANUAL FOR SPECIFICATIONS CONTRACTOR SHALL TERMINATE ALL CABLING TO I.T. CLOSET. |
|---|--|---|



ARCHITECT OF RECORD:
Justin A. Mihalik, AIA
373 US Route 46 West
Building D, Suite 240
Fairfield, New Jersey 07004
ph: (973) 291-3730 fax: (973) 291-3740
www.colliersengineering.com
Bergmann Architectural Associates, Inc.



NOT VALID FOR CONSTRUCTION WITHOUT SEAL

Project:
LIGHTBRIDGE ACADEMY
655 Reedy Creek Rd
Cary, NC 27513

Developer:
STNL Advisors LLC
260 Madison Ave, 5th Flr
New York, NY 10016

Lot: -
Zone: -

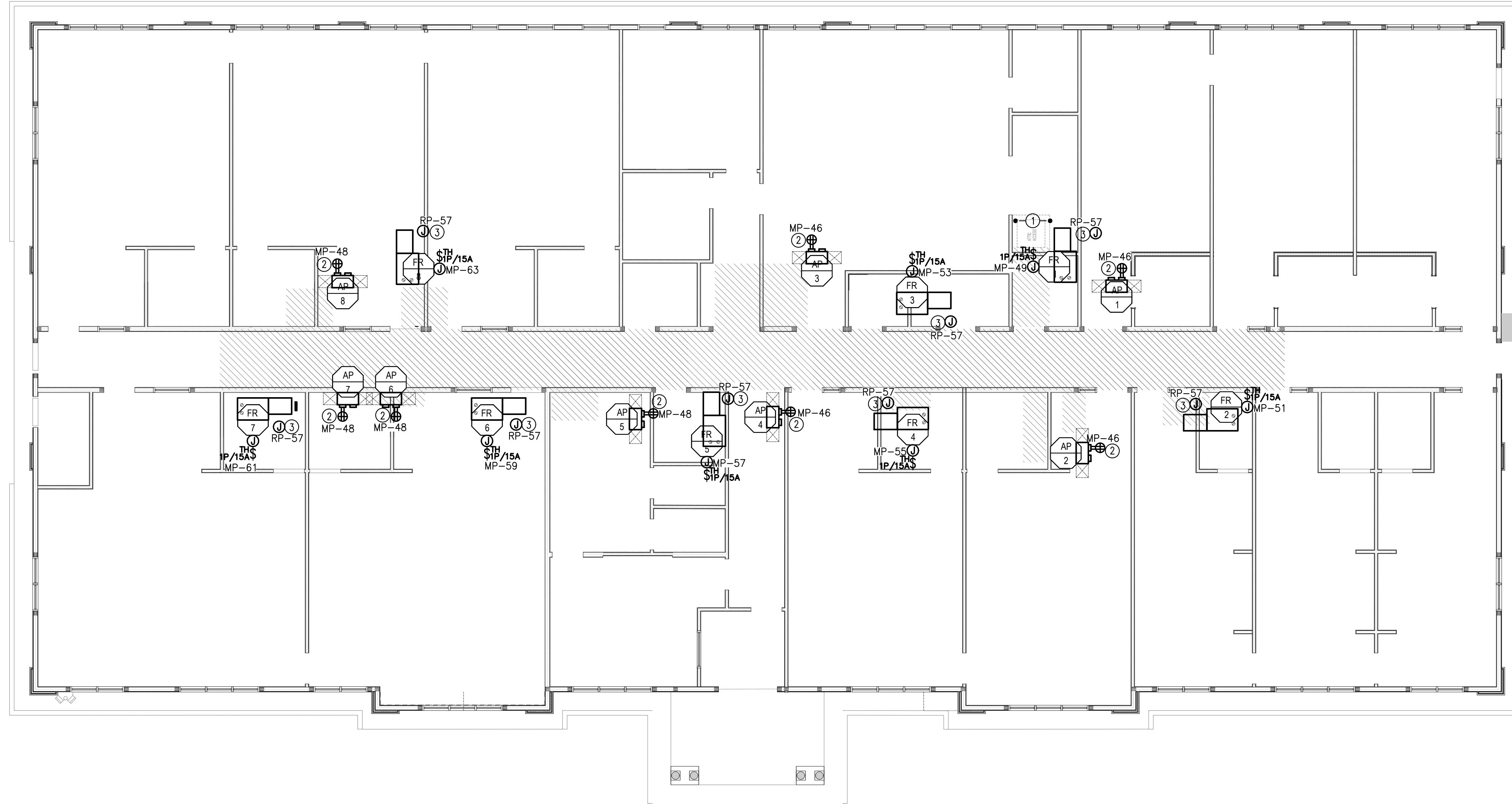
SHEET TITLE:

ELECTRICAL FIRST FLOOR POWER PLAN

Rev. #	Date	ISSUED FOR PERMIT	Remarks
	03/29/2024		

JOB NUMBER: 2022-01-09
DATE: 10/07/2022
DRAWN BY: GS/MB/WC
CHECKED BY: JAM
SHEET NO.
E-101

THESE PLANS ARE COPYRIGHTED AND ARE SUBJECT TO COPYRIGHT PROTECTIONS AS AN "ARCHITECTURAL WORK" UNDER SEC.102 OF THE COPYRIGHT ACT, 17 U.S.C. AS AMENDED DECEMBER 1990 AND KNOWN AS THE ARCHITECTURAL WORKS COPYRIGHT ACT OF 1990.



1 ELECTRICAL ATTIC POWER PLAN
 SCALE: 1/8"=1'-0"
 0 4 8 16 FEET

ELECTRICAL GENERAL NOTES	
1.	THESE DRAWINGS SHOW THE INTENT OF THE NEW CIRCUITING DESIGN.
2.	ALL WIRING/CABLING AND OTHER TELECOM/DATA DEVICES SHALL BE PROVIDED BY GC'S CONTRACTOR. GENERAL CONTRACTOR SHALL VERIFY LOCATIONS OF DEVICES AND PROVIDE NECESSARY ROUGH-INS.
3.	MOUNTING HEIGHTS FOR WALL OUTLETS AS PER "TYPICAL DEVICE MOUNTING HEIGHTS" TABLE ON ELECTRICAL COVER SHEET AND "TYPICAL MOUNTING HEIGHT DETAIL" ON ELECTRICAL DETAILS SHEET. ANY CHANGES TO OUTLET MOUNTING HEIGHTS SHALL BE COORDINATED WITH OWNER.
4.	CONTRACTOR SHALL COORDINATE WITH OTHER TRADES FOR EXACT LOCATION OF MECHANICAL AND PLUMBING EQUIPMENT.
5.	ALL RECEPTACLES SHALL BE TAMPER RESISTANT.
6.	PROVIDE GFCI RECEPTACLES WHERE SHOWN AND AS REQUIRED BY CODE. ALL RECEPTACLES SHALL BE TAMPER RESISTANT. PROVIDE GFCI RECEPTACLES IF DISTANCE FROM THE SINK IS WITHIN 6' AS PER NEC REQUIREMENTS.
7.	LANDLORD/CONTRACTOR SHALL PROVIDE AND INSTALL COMPUTER ROUGH-INS IN OFFICE AND CONFERENCE ROOM AS PER THE APPROVED PLANS.
8.	CONTRACTOR SHALL COORDINATE DEVICE LOCATIONS & INSTALLATION OF SECURITY SYSTEM WITH LIGHTBRIDGE.
9.	CONTRACTOR TO REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATION OF WHITEBOARDS.

ELECTRICAL KEY NOTES	
①	NO PIPES, DUCT, WIRES TO BE INSTALLED BELOW FLOOR IN THIS AREA.
②	RECEPTACLE FOR MICROROOM UNITS TO BE LOCATED ABOVE CEILING, AND WITHIN 6' FROM RTU ENTRANCE TO BUILDING. EC SHALL NOT RUN FLEXIBLE CORD WIRING FOR UNIT UNLESS SPECIFICALLY REQUIRED BY MANUFACTURER. PROVIDE J-BOX AND DISCONNECT SWITCH FOR HARDWIRED UNITS, DISCONNECT ONLY REQUIRED IF NOT INTEGRAL OR IF POWERED VIA RECEPTACLE.
③	PROVIDE GFCI PROTECTED CIRCUIT TO ALL BIPOLAR IONIZATION FILTER DEVICES LOCATED AT THE RETURN OPENING OF EACH FURNACE. COORDINATE WITH MECHANICAL CONTRACTOR FOR FINAL LOCATION AND MANUFACTURER'S SPECIFICATIONS FOR CONNECTION.

IS NOW COLLIER'S ENGINEERING & DESIGN

ARCHITECT OF RECORD:
Justin A. Mihalik, AIA
 373 US Route 46 West
 Building D, Suite 240
 Fairfield, New Jersey 07004
 ph: (973) 291-3730 fax: (973) 291-3740
 www.colliersengineering.com
 Bergmann Architectural Associates, Inc.

KEAO ENGINEERS
 Engineering Excellence since 1984
 186 WOOD AVE. SOUTH, 1ST FLOOR
 ISELIN, NJ 08830
 TEL: (732) 635-0844 FAX: (732) 635-1777
 SEAL 042952
 ARMIEN KHACHATURIAN, P.E., N.J. 042952
 N.C. CERTIFICATE OF REGISTRATION: C-5015

Lightbridge Academy
 Innovators in Educational Child Care

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Project:
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 655 Reedy Creek Rd
 Cary, NC 27513

Developer:
 STNL Advisors LLC
 260 Madison Ave, 5th Flr
 New York, NY 10016

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ELECTRICAL ATTIC POWER PLAN

Rev. #	Date	Remarks
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 DRAWN BY: GS/MB/WC
 CHECKED BY: JAM

SHEET NO.
E-102

ELECTRICAL GENERAL REQUIREMENTS:

<p>TELEPHONE</p> <p>1. CONTRACTOR SHALL PROVIDE AND INSTALL TELEPHONE CABLES AT LOCATIONS SHOWN ON PLANS.</p> <p>2. CONTRACTOR SHALL TERMINATE ALL CABLING TO LT. CLOSET.</p>	<p>7. LANDLORD/CONTRACTOR SHALL INSTALL ALL DISTRIBUTION DEVICES, INCLUDING J-BOXES, SWITCHES AND RECEPTACLES PER LOCAL BUILDING CODES AND THE APPROVED PLANS. EACH CLASSROOM LIGHTING SYSTEM SHALL BE SEPARATELY SWITCHED AND THE LOCATION OF LIGHT SWITCHES SHALL BE CONVENIENT TO THE ENTRANCE OF EACH CLASSROOM. SHARED TOILET BETWEEN CLASSROOMS SHALL BE SWITCHED FOR THREE WAY OPERATIONS.</p>	<p>8. ALL RECEPTACLE AND SWITCH PLATES SHALL BE WHITE.</p>
<p>RECEPTACLES</p> <p>1. ALL RECEPTACLES SHALL BE TAMPER RESISTANT AS MANUFACTURED BY "PASS & SEYMOUR", CHILD PROOF GFCI RECEPTACLE.</p>	<p>OUTLET BOXES</p> <p>1. GALVANIZED STAMPED STEEL FOR ALL INTERIOR LOCATIONS. MOUNT ALL BOXES SO THAT COVERS AND PLATES WILL MOUNT FLUSH WITH THE WALL AND CEILING FINISH SURFACE. PROVIDED PLASTER RINGS AS NECESSARY. GOOF RINGS ARE ACCEPTABLE.</p> <p>2. THE ENGINEER RESERVES THE RIGHT TO MAKE MINOR CHANGES.</p> <p>3. SUITABLE GALVANIZED BARS, ROD GANGLERS OR CADDY CLIPS SHALL BE USED THROUGHOUT THE WORK. WOODEN SUPPORTS, STRIPES, TIE WIRES, OR MAKESHIFT DEVICES SHALL NOT BE USED.</p> <p>4. BOXES SHALL NOT BE LESS THAN 1 1/2" DEEP. IN GENERAL OUTLET BOXES SHALL BE OF SUFFICIENT DEPTH SO THAT CONDUIT ENTERING WITHIN TILE WALLS NEED NOT BE OFFSET SO THAT TILES HAVE TO BE CHIPPED OR ALTERED. ALL BOXES SHALL BE SET LEVEL AND PLUMB.</p> <p>5. PROVIDE RAIN TIGHT CAST METAL BOXES WITH THREADED CONDUIT HOLES AND CAST METAL FACE PLATES. COVERS SHALL MAINTAIN RATING WHILE IN USE.</p> <p>6. REFER TO "TYPICAL DEVICE MOUNTING HEIGHTS" TABLE ON ELECTRICAL COVER SHEET AND "TYPICAL MOUNTING HEIGHT DETAIL" ON ELECTRICAL DETAILS SHEET FOR MOUNTING HEIGHTS. ANY CHANGES TO OUTLET MOUNTING HEIGHTS SHALL BE COORDINATED WITH OWNER.</p> <p>7. WHEN INSTALLED (IN MASONRY WALLS), LOCATE BOTTOM OF BOX AT NEAREST MASONRY JOINT TO DIMENSION INDICATED. WHERE OUTLETS OCCUR ABOVE COUNTERS, OR CABINETS, CORRELATE HEIGHT OF OUTLET WITH EQUIPMENT SO DEVICE WILL CLEAR ALL TRIM.</p>	<p>SAFETY SWITCHES:</p> <p>1. SAFETY SWITCHES, FUSIBLE HEAVY DUTY.</p> <p>METER CENTER:</p> <p>1. WHERE REQUIRED, METER MUST BE APPROVED BY LOCAL UTILITY.</p> <p>WIRING DEVICES:</p> <p>1. PROVIDE SPECIFICATION GRADE WIRING DEVICES OF 20 AMP RATING MINIMUM. AS REQUIRED ON THE PLANS. SWITCHES SHALL BE QUIET TYPE.</p> <p>2. SWITCHES, WHERE REQUIRED SHALL BE MOUNTED ON THE STRIKE SIDE OF DOORS AS FINALLY HUNG.</p> <p>3. DEVICES SHALL HAVE SMOOTH NYLON PLATE-FIT & TYPE AS REQUIRED BY DEVICE. OUTLETS WITHOUT DEVICES, EXCEPT TELEPHONE, TO HAVE BLANK PLATES. FASTEN PLATES IN PLACE BY OVAL HEAD, SCREWS MATCHING PLATE.</p> <p>PUBLIC ANNOUNCEMENT SYSTEM:</p> <p>1. PUBLIC ANNOUNCEMENT SYSTEM SHALL BE WIRED FOR THE FOLLOWING ZONES: A. ZONE 1- CLASSROOMS B. ZONE 2- CORRIDOR C. ZONE 3- PLAYGROUND D. ZONE 4 - MULTI-PURPOSE ROOM</p> <p>VOICE/DATA, TELEPHONE, CCTV, SECURITY:</p> <p>1. SEE PROJECT MANUAL FOR SPECIFICATIONS. 2. CONTRACTOR SHALL TERMINATE ALL CABLING TO LT. CLOSET.</p>
<p>PANEL BOARDS:</p> <p>1. CIRCUIT BREAKERS SHALL HAVE A COMMON TRIP ON ALL MULTI-POLE BREAKERS AND CONTRACTOR TO PROVIDE LABELING.</p> <p>2. BUS AND HARDWARE SHALL BE BRACED FOR INTERRUPTING CAPACITY AS SHOWN ON PANEL BOARD SCHEDULE. BREAKERS SHALL MATCH AIC RATING OF PANEL AT PANEL VOLTAGE. ALL BUSSING SHALL BE COPPER.</p> <p>3. PROVIDE EACH PANEL BOARD WITH GREEN CODED GROUND BAR. FOR GREEN EQUIPMENT GROUND WIRES. EACH BAR TO HAVE A MINIMUM CAPACITY FOR THE NUMBER OF POLES IN PANEL WITH SOLDERLESS. BOX LUGS FOR WIRE SIZE NO. 12 MINIMUM TO NO. 4 MAXIMUM. ONE WIRE PER LUG. LOCATE BAR ADJACENT TO NEUTRAL BAR BOLT OR WELDED TO BACK BOX.</p> <p>4. MAIN CIRCUIT BREAKERS & SWITCH BOARDS WHERE REQUIRED, MUST BE APPROVED BY LOCAL UTILITY.</p> <p>RECEPTACLES CONTINUED:</p> <p>5. PROVIDE 208Y/120V PANEL-BOARDS WITH AN ISOLATED NEUTRAL BAR. THERE SHALL BE AS MANY TERMINALS AS THERE ARE CIRCUIT POLES. THE TERMINAL FOR THE FEEDER NEUTRAL SHALL MATCH THE SIZE OF THE FEEDER PHASE TERMINATIONS.</p> <p>6. LANDLORD/CONTRACTOR SHALL LABEL ALL CIRCUIT BREAKERS.</p>		

ARCHITECT OF RECORD:
Justin A. Mihalik, AIA
373 US Route 46 West
Building D, Suite 240
Fairfield, New Jersey 07004
ph: (973) 291-3730 fax: (973) 291-3740
www.colliersengineering.com
Bergmann Architectural Associates, Inc.



186 WOOD AVE. SOUTH, 1ST FLOOR
ISELIN, NJ 08830
TEL (732) 635-0044 FAX (732) 635-1777



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LIGHTBRIDGE ACADEMY
655 Reedy Creek Rd
Cary, NC 27513

Developer:
STNL Advisors LLC
260 Madison Ave, 5th Flr
New York, NY 10016

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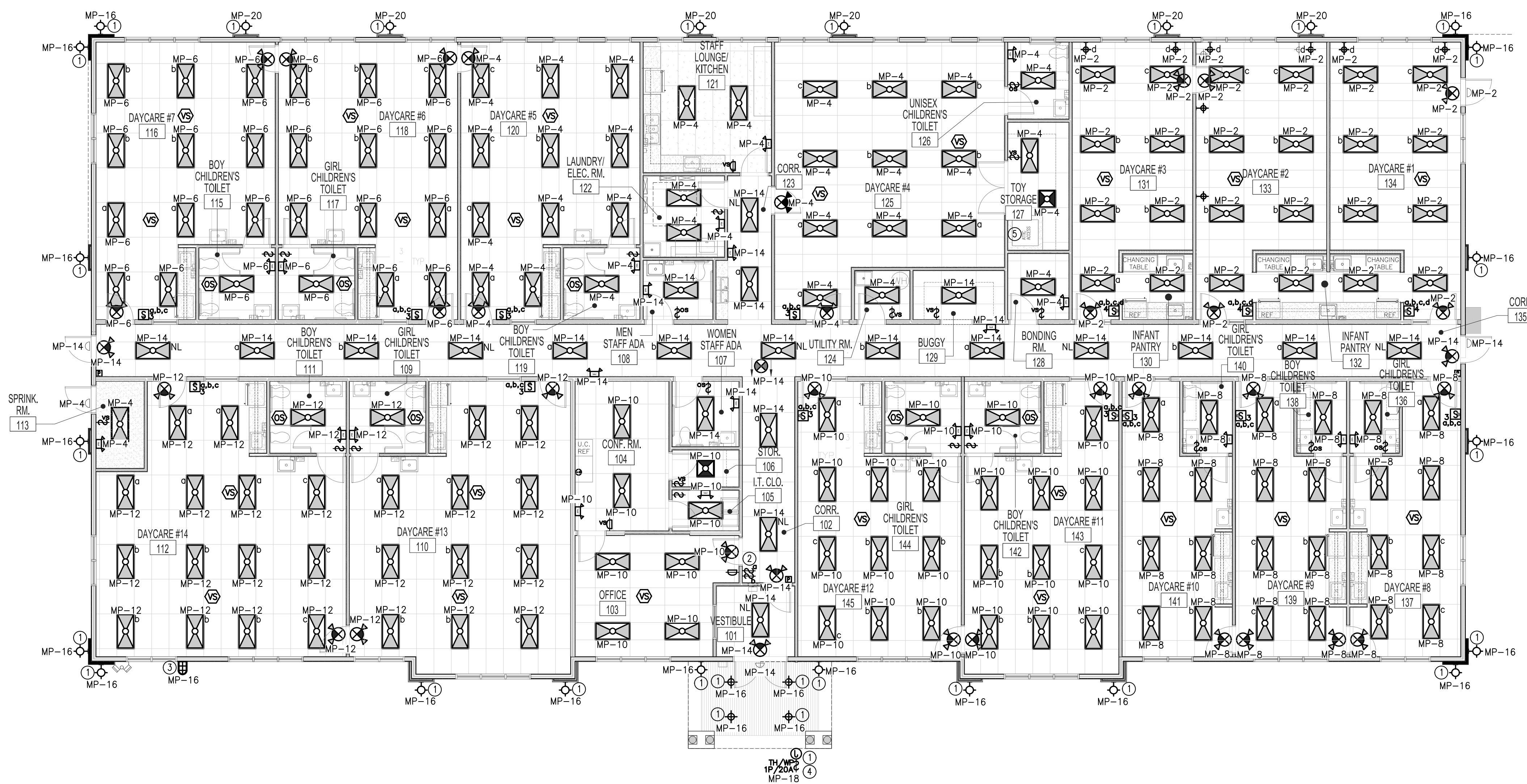
SHEET TITLE:

ELECTRICAL FIRST FLOOR LIGHTING PLAN

Rev. #	Date	Remarks
03/29/2024		ISSUED FOR PERMIT

JOB NUMBER: 2022-01-09
DATE: 10/07/2022
DRAWN BY: GS/MB/WC
CHECKED BY: JAM

SHEET NO.
E-201



1 ELECTRICAL FIRST FLOOR LIGHTING PLAN
SCALE: 1/8"=1'-0"
0 4 8 16 FEET

LIGHTING GENERAL NOTES

- THESE DRAWINGS SHOW THE INTENT OF THE NEW CIRCUITING DESIGN.
- PROVIDE AN UN-SWITCHED HOT LEG TO ALL NIGHT LIGHT, EMERGENCY AND EXIT FIXTURES.
- EACH SPACE THAT IS ENCLOSED BY CEILING-HEIGHT PARTITIONS MUST HAVE AT LEAST ONE CONTROL DEVICE THAT INDEPENDENTLY CONTROLS THE GENERAL LIGHTING IN THE SPACE. EACH CLASSROOM LIGHTING SYSTEM SHALL BE SEPARATELY SWITCHED AND THE LOCATIONS OF LIGHT SWITCHES SHALL BE CONVENIENT TO THE ENTRANCE OF EACH CLASSROOM. SHARED TOILET BETWEEN CLASSROOMS SHALL BE SWITCHED FOR THREE WAY OPERATION.
- ALL EMERGENCY LIGHTING FIXTURES AND EXIT SIGNS SHALL BE WIRED LIGHTS AND SHOULD BE WIRED AS 'NL' (NIGHT LIGHT).
- ALL OUTDOOR AND INDOOR LIGHTING FIXTURES SHALL BE CONNECTED TO PANELS AS PER CIRCUIT NUMBERS ON DRAWINGS.
- G.C. SHALL PROVIDE AND INSTALL A DOOR BELL IN THE VESTIBULE AREA. LOCATED AND WIRED TO BE HEARD IN THE LOBBY AREA AND OFFICE.
- CONTRACTOR SHALL LOCATE VACANCY SENSOR WITH OVERRIDE WALL SWITCH AT HEIGHT AND LOCATION BEST SUITED FOR OPTIMUM PERFORMANCE. COORDINATE WITH ARCHITECT PRIOR TO ROUGH-IN.
- ANY ACCESS/MAINTENANCE DOORS IN CEILING SHALL NOT BE BLOCKED BY ANY DUCT, PIPES, ELECTRICAL CONDUITS/WIRES, OR OTHER HARD TO REMOVE OBJECTS. AT LEAST ONE SWITCH SHALL BE LOCATED AT THE USUAL POINT OF ENTRY AND EXIT OR AS REQUIRED BY CODE.
- EMERGENCY WALL PACK FIXTURES SHALL BE CONNECTED TO CIRCUIT SERVING FIXTURES LOCAL TO AREA.

ADDITIONAL LIGHTING COORDINATION NOTE:

THE NUMBER OF LIGHTING ZONES IN EACH CLASSROOM CORRESPONDS THE NUMBER OF B2-150 POWERPACKS REQUIRED PER CLASSROOM. POWERPACKS TO BE PLACED ABOVE CEILING IN CLASSROOMS. REFER TO LIGHTING CONTROL DIAGRAM ON DRAWING E-402 FOR FURTHER COORDINATION AND DEVICES REQUIRED.

LIGHTING KEY NOTES

- EXTERIOR LIGHTING AND/OR SIGNAGE SHALL BE CONTROLLED VIA PHOTOCELL AND ALSO TIME SCHEDULE. SIGNAGE LIGHTING MUST BE SHUT OFF FROM THE HOURS OF MIDNIGHT TO 6AM. COORDINATE EXACT LOCATION OF EXTERIOR SIGNAGE PRIOR TO BID AND INSTALLATION. EC TO FURNISH AND INSTALL MOMENTARY SWITCHES (WATTSTOPPER DCC2 W/BZ-150 POWERPACK OR APPROVED EQUAL) FOR CORRIDOR LIGHTING.
- JELLY JAR FIXTURE TO BE FITTED WITH RED GLOBE AND MOUNTED LOCAL TO FDC.
- COORDINATE EXACT LOCATION OF SIGNAGE WITH ARCHITECT/OWNER PRIOR TO INSTALLATION.
- NO PIPES, DUCT, WIRES TO BE INSTALLED ABOVE CEILING IN THIS AREA.

LIGHTING CONTROL NARRATIVE:

OPEN AREAS/CORRIDORS (TIME CONTROLLED):
1. CONTROLLED VIA TIME SCHEDULE LIGHTING CONTROL PANEL/CONTACTOR.
2. PROVIDE LOCAL MANUAL ON/OFF SWITCH DOWNSTREAM OF AUTOMATIC RELAYS.

CLASSROOMS/CLOSETS/STORAGE/OFFICE (VACANCY SENSOR CONTROLLED):
1. CONTROLLED VIA OCCUPANCY SENSORS IN VACANCY MODE.
2. MANUAL ON/AUTOMATIC OFF, 20-MINUTE OFF SETTING
3. PROVIDE LOCAL OVERRIDE SWITCH.

RESTROOMS (OCCUPANCY SENSOR CONTROLLED):
1. CONTROLLED VIA OCCUPANCY SENSORS.
2. AUTOMATIC ON/AUTOMATIC OFF, 15-MINUTE OFF SETTING
PROVIDE LOCAL OVERRIDE

UTILITY ROOMS (MANUALLY ON/OFF):
1. CONTROLLED VIA LOCAL MANUAL ON/OFF SWITCH.

LIGHTING FIXTURE SCHEDULE									
SYMBOL	DESCRIPTION	MANF.	MODEL	LAMPS		VOLTS	WATTS	MOUNTING	REMARKS
				NO.	TYPE				
	2X4 LED RECESSED TROFFER LIGHT FIXTURE	LITHONIA LIGHTING	2BLT4-30L-ADP-120-MP850	1	LED	120V	30W	RECESSED	FIXTURES TAGGED WITH "NL" SHALL BE WIRED AS A NIGHT LIGHT.
	2X2 LED RECESSED TROFFER LIGHT FIXTURE	LITHONIA LIGHTING	2BLT2-33L-ADP-120-MP850	1	LED	120V	30W	RECESSED	FIXTURES TAGGED WITH "NL" SHALL BE WIRED AS A NIGHT LIGHT.
	EXTERIOR SURFACE MOUNTED UP/DOWN WALL FIXTURE	PROGRESS LIGHTING	P5675-2030K	2	LED	120V	34W	WALL	COORDINATE MTG. HT. WITH ARCHITECT. PROVIDE COVER LENS.
	COMBINATION EXIT AND EMERGENCY LED LIGHTING FIXTURE	LITHONIA LIGHTING	ECR-LED-M6	2	LED	120-277V	4.3	SURFACE	PROVIDE 90 MINUTE BATTERY BACK UP
	LED EXIT SIGN	LITHONIA LIGHTING	EXR-LED-M6	N/A	LED	120-277V	3.3	SURFACE	ARROWS DENOTE DIRECTIONAL FIXTURE AS NEEDED PROVIDE 90 MINUTE BATTERY BACK UP
	EXTERIOR EMERGENCY FIXTURE	LITHONIA LIGHTING	AF-0ELJVL4-TFR-CT-CW	1	LED	120-277V	15W	SURFACE	PROVIDE 90 MINUTE BATTERY BACK UP WITH COLD WEATHER OPTION.
	INTERIOR SURFACE MOUNTED WALL FIXTURE	KICHLER SHAILENE	45572OZ	1	LED	120V	10W	WALL	USE 60W MAX LED EQUIVALENT BULB 2700K. TO BE MOUNTED AT 72" AFF. OLDE BRONZE FINISH.
	6" RECESSED DOWNLIGHT	PRESCOLITE	LF6LEDG4-6LFLLED6G439KWT	1	LED	120-277V	19.1	RECESSED	FIXTURES SPECIFIED WITH "EM" SHALL BE FURNISHED WITH EMERGENCY BATTERY PACK OPTION.
	EMERGENCY LED LIGHTING FIXTURE	LITHONIA LIGHTING	ELMLTLED	2	LED	120-277V	10.6	SURFACE	PROVIDE 90 MINUTE BATTERY BACK UP
	JELLY JAR FIXTURE (WEATHERPROOF)	LITHONIA LIGHTING	OLV7W	1	LED	120-277V	15W	WALL	PROVIDE RED GLOBE FIXTURE
	4' GENERAL PURPOSE STRIP LIGHT	COLUMBIA	MPS4-40ML-CW-EDU	-	LED	120-277V	40.1	SURFACE	-

LIGHTING FIXTURE SCHEDULE NOTES:

- FIXTURES RATED FOR A HIGHER MAXIMUM WATTAGE SHALL BE FURNISHED WITH A CUSTOM MAXIMUM WATTAGE LABEL FROM THE MANUFACTURER. THE LABEL SHALL LIST THE MAXIMUM WATTAGE SHOWN IN THIS FIXTURE SCHEDULE.
- REFER TO ARCHITECTURAL DRAWINGS FOR FINAL LIGHTING FIXTURE SCHEDULES AND EXACT FIXTURE LOCATIONS.
- ALL COLORS, TRIMS, AND FINISHES SHALL BE APPROVED BY ARCHITECT.

ARCHITECT OF RECORD:
Justin A. Mihalik, AIA
373 US Route 46 West
Building D, Suite 240
Fairfield, New Jersey 07004
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ARMEN KHACHATURIAN, P.E. PE 042952
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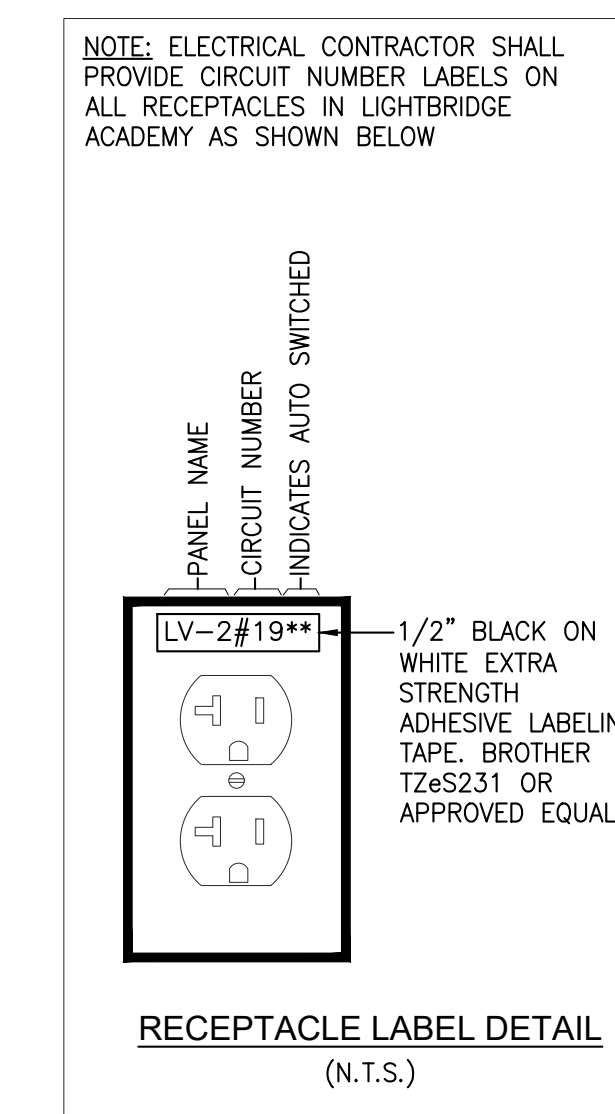
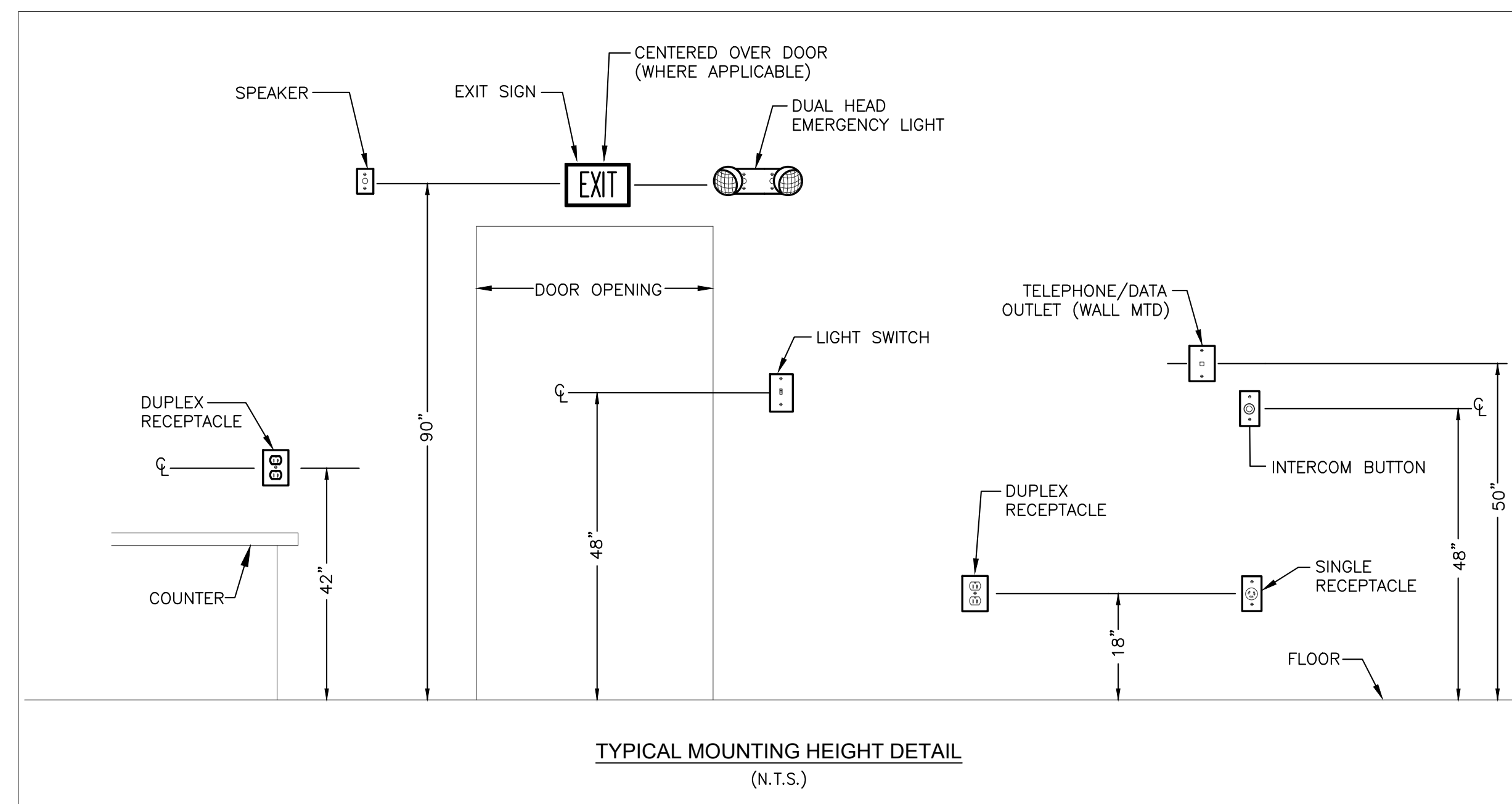
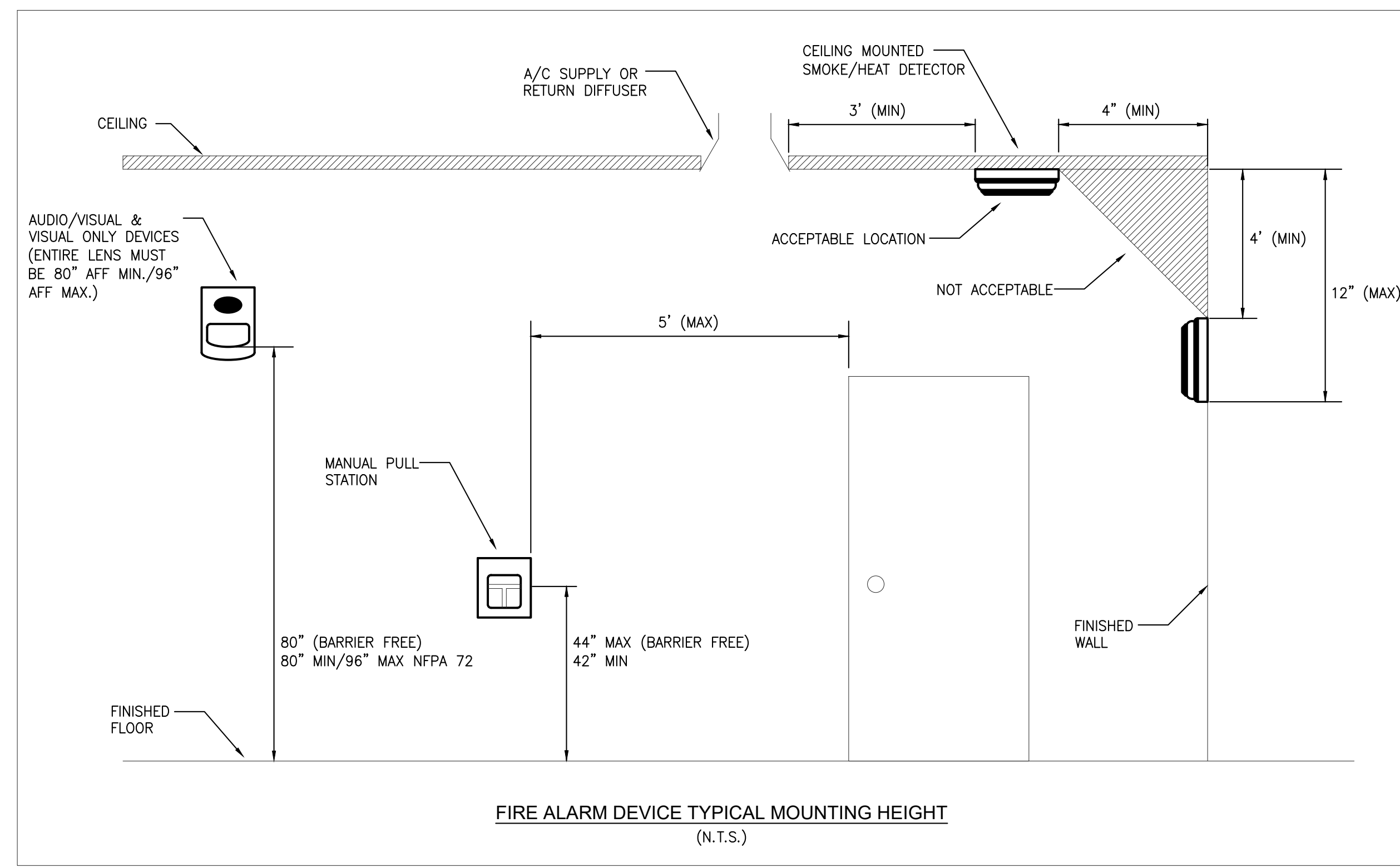
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E-202



1 ELECTRICAL ATTIC LIGHTING PLAN
SCALE: 1/8"=1'-0"
0 4 8 16 FEET

LIGHTING GENERAL NOTES	
1.	THESE DRAWINGS SHOW THE INTENT OF THE NEW CIRCUITING DESIGN.
2.	PROVIDE AN UN-SWITCHED HOT LEG TO ALL NIGHT LIGHT, EMERGENCY AND EXIT FIXTURES.
3.	EACH SPACE THAT IS ENCLOSED BY CEILING-HEIGHT PARTITIONS MUST HAVE AT LEAST ONE CONTROL DEVICE THAT INDEPENDENTLY CONTROLS THE GENERAL LIGHTING IN THE SPACE. EACH CLASSROOM LIGHTING SYSTEM SHALL BE SEPARATELY SWITCHED AND THE LOCATIONS OF LIGHT SWITCHES SHALL BE CONVENIENT TO THE ENTRANCE OF EACH CLASSROOM. SHARED TOILET BETWEEN CLASSROOMS SHALL BE SWITCHED FOR THREE WAY OPERATION.
4.	ALL EMERGENCY LIGHTING FIXTURES AND EXIT SIGNS SHALL BE WIRED LIGHTS AND SHOULD BE WIRED AS 'NL' (NIGHT LIGHT).
5.	ALL OUTDOOR AND INDOOR LIGHTING FIXTURES SHALL BE CONNECTED TO PANELS AS PER CIRCUIT NUMBERS ON DRAWINGS.
6.	G.C. SHALL PROVIDE AND INSTALL A DOOR BELL IN THE VESTIBULE AREA. LOCATED AND WIRED TO BE HEARD IN THE LOBBY AREA AND OFFICE.
7.	CONTRACTOR SHALL LOCATE VACANCY SENSOR WITH OVERRIDE WALL SWITCH AT HEIGHT AND LOCATION BEST SUITED FOR OPTIMUM PERFORMANCE. COORDINATE WITH ARCHITECT PRIOR TO ROUGH-IN.
8.	ANY ACCESS/MAINTENANCE DOORS IN CEILING SHALL NOT BE BLOCKED BY ANY DUCT, PIPES, ELECTRICAL CONDUITS/WIRES, OR OTHER HARD TO REMOVE OBJECTS. AT LEAST ONE SWITCH SHALL BE LOCATED AT THE USUAL POINT OF ENTRY AND EXIT OR AS REQUIRED BY CODE.
9.	EMERGENCY WALL PACK FIXTURES SHALL BE CONNECTED TO CIRCUIT SERVING FIXTURES LOCAL TO AREA.

LIGHTING KEY NOTES	
①	SWITCH FOR ATTIC LIGHTING SHALL BE LOCATED NEXT TO ATTIC ACCESS HATCH. SWITCH MAY BE LOCATED IN TOY STORAGE ROOM FOR CONVENIENCE IF APPROVED BY ARCH/OWNER. REMOTE SWITCHES SHALL BE FURNISHED WITH PILOT LIGHT. FINAL LOCATION OF SWITCH SHALL BE COORDINATED IN FIELD.
②	ATTIC ACCESS. NO PIPES, DUCT, WIRES TO BE INSTALLED BELOW FLOOR IN THIS AREA.



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COPPER BRANCH CIRCUIT WIRE SIZING TABLES - 208V - 3% VOLTAGE DROP

	C/B TRIP	208V, 3P, 3W			208V, 2P, 2W			120V, 1P, 2W						
		120V/208V, 3P, 4W	120V/208V, 3P, 4W	120V/208V, 3P, 4W	120V/208V, 2P, 3W	120V/208V, 2P, 3W	120V/208V, 2P, 3W	120V, 1P, 2W	120V, 1P, 2W	120V, 1P, 2W				
DISTANCE IN FEET	15	177	273	429	153	236	371	578	88	136	214	333	500	625
MINIMUM WIRE SIZE		12	10	8	12	10	8	6	12	10	8	6	4	3
DISTANCE IN FEET	20	132	205	322	115	177	279	433	66	102	161	250	375	469
MINIMUM WIRE SIZE		12	10	8	12	10	8	6	12	10	8	6	4	3
DISTANCE IN FEET	30	136	214	334	118	186	289	433	68	107	167	250	313	375
MINIMUM WIRE SIZE		10	8	6	10	8	6	4	10	8	6	4	3	2
DISTANCE IN FEET	40	161	250	375	139	217	325	406	80	125	188	234	281	352
MINIMUM WIRE SIZE		8	6	4	8	6	4	3	8	6	4	3	2	1
DISTANCE IN FEET	50	129	200	300	111	173	260	325	64	100	150	188	225	281
MINIMUM WIRE SIZE		8	6	4	8	6	4	3	8	6	4	3	2	1
DISTANCE IN FEET	60	167	250	313	144	217	271	325	83	125	156	188	234	
MINIMUM WIRE SIZE		6	4	3	6	4	3	2	6	4	3	2	1	
DISTANCE IN FEET	70	214	268	322	168	232	279	348		107	134	161	201	
MINIMUM WIRE SIZE		4	3	2	4	3	2	1		4	3	2	1	
DISTANCE IN FEET	80	188	235	281	163	203	244	305		94	117	141	176	
MINIMUM WIRE SIZE		4	3	2	4	3	2	1		4	3	2	1	
DISTANCE IN FEET	90	208	250	313	181	217	271			104	125	156		
MINIMUM WIRE SIZE		3	2	1	3	2	1			3	2	1		
DISTANCE IN FEET	100	188	225	281	163	195	244			94	113	141		
MINIMUM WIRE SIZE		3	2	1	3	2	1			3	2	1		

NOTES:
 1. READ ACROSS TO THE RIGHT FROM C/B TRIP TO DESIRED VOLTAGE CHARACTERISTICS AND NEXT GREATER DISTANCE THAN CIRCUIT IN QUESTION.
 2. READ DOWN TO MINIMUM WIRE SIZE.
 3. DISTANCES ARE TO THE CENTER OF CONCENTRATED LOAD SUCH AS CLASSROOM LIGHTING OR THE MIDPOINT OF DISTRIBUTED LOAD SUCH AS CORRIDOR LIGHTING.
 4. EQUIPMENT GROUNDING CONDUCTORS SHALL BE INCREASED IN SIZE PROPORTIONATELY PER NEC.

RACEWAY SIZING
 ALL RACEWAYS SHALL BE SIZED IN ACCORDANCE WITH THE CURRENT NATIONAL ELECTRICAL CODE IN EFFECT AS A MINIMUM SIZE. THE MORE COMMON SIZES ARE INCLUDED HERE FOR THE CONTRACTOR'S CONVENIENCE.

WIRE SIZE	NO. OF CONDUCTORS	MINIMUM CONDUIT SIZE
12	3	3/4"
12	4	3/4"
12	5	3/4"
12	6	3/4"
12	7	3/4"
12	8	3/4"

WIRE SIZE	NO. OF CONDUCTORS	MINIMUM CONDUIT SIZE
8	3	3/4"
8	4	3/4"
8	5	3/4"
8	6	1"
8	7	1"
8	8	1"

NOTES TO PANELBOARD SCHEDULES AND BRANCH CIRCUIT WIRE SIZING TABLES.

WIRE SIZING
 UNLESS OTHERWISE INDICATED, MINIMUM WIRE AMPACITY SHALL BE GREATER THAN OR EQUAL TO THE BRANCH CIRCUIT TRIP BASED ON COPPER CONDUCTOR WITH 90-DEGREE C THIN INSULATION APPLIED AT ITS 75-DEGREE C AMPACITY.

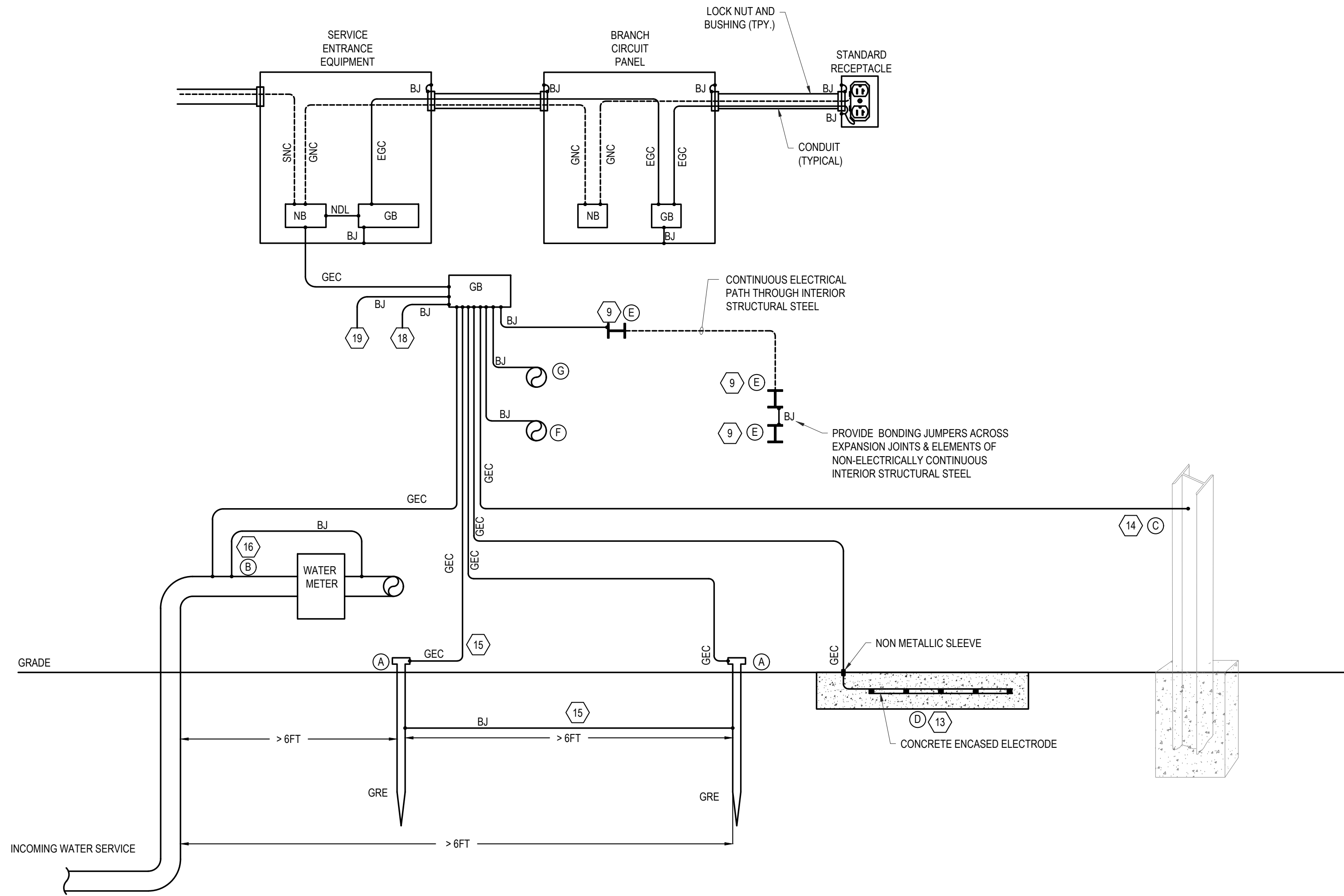
REFER TO THE BRANCH CIRCUIT WIRE SIZING TABLES FOR DISTANCE LIMITATIONS FOR THE MINIMUM WIRE SIZE AND FOR SELECTING THE PROPER WIRE SIZE FOR THE DISTANCE AND VOLTAGE DROP INVOLVED.

NUMBER OF CONDUCTORS
 QUANTITIES OF WIRES SHALL BE BASED ON AN INDIVIDUAL HOMERUN FOR EACH CIRCUIT AS FOLLOWS.

	PHASE CONDUCTOR	FULL CIRCUIT SIZE NEUTRAL CONDUCTOR	FULL CIRCUIT SIZE EQUIPMENT GROUNDING CONDUCTOR	FULL CIRCUIT SIZE ISOLATED GROUND CONDUCTOR
1 POLE CIRCUIT	1	1	1	0
1 POLE DATA / COMPUTER CIRCUIT	1	1	1	1
2 POLE CIRCUIT	2	1	1	0
3 POLE CIRCUIT	3	1	1	0
3 POLE MOTOR CIRCUIT	3	0	1	0

	PHASE CONDUCTOR	FULL CIRCUIT SIZE NEUTRAL CONDUCTOR	FULL CIRCUIT SIZE EQUIPMENT GROUNDING CONDUCTOR	FULL CIRCUIT SIZE ISOLATED GROUND CONDUCTOR
TWO 1 POLE HOMERUNS	2	2	1	0
TWO 1 POLE DATA/COMP. CIRCUIT HOMERUNS	2	2	1	1
THREE 1 POLE HOMERUNS	3	3	1	0
THREE 1 POLE DATA/COMP. CIRCUIT HOMERUNS	3	3	1	1

CONSECUTIVE INDIVIDUAL 20 AMP LINE TO NEUTRAL BRANCH CIRCUITS MAY NOT BE COMBINED INTO MULTI-WIRE BRANCH CIRCUITS HAVING HOMERUNS WITH A COMMON NEUTRAL CONDUCTOR.
 SINGLE PHASE, TWO POLE, TWO WIRE, LINE TO LINE, BRANCH CIRCUITS AND SINGLE PHASE, TWO POLE, THREE WIRE, LINE TO LINE PLUS NEUTRAL, BRANCH CIRCUITS SHALL HAVE INDIVIDUAL UNCOMBINED HOMERUNS.
 COMBINED TWO AND THREE CIRCUIT HOMERUNS SHALL HAVE SEPARATE NEUTRALS FOR EACH BUT A COMMON EQUIPMENT GROUNDING CONDUCTOR AND A COMMON ISOLATED GROUNDING CONDUCTOR MAY BE USED.



ELECTRICAL GROUNDING AND BONDING DETAILS

SCALE: NONE 1 2 8 10 11 12 17

DETAIL NOTES:

- DETAIL IS TYPICAL AND IS INTENDED TO ILLUSTRATE METHODS OF GROUNDING AND BONDING OF ELECTRICAL DISTRIBUTION SYSTEM COMPONENTS AND BUILDING ELEMENTS. CONTRACTOR SHALL ADAPT DETAILS TO SUIT THE PARTICULAR APPLICATION AND MAY SUBMIT ALTERNATIVE METHODS TO THE ENGINEER FOR CONSIDERATION.
- DETAIL IS TYPICAL FOR METALLIC AND NONMETALLIC RACEWAY AND BOX SYSTEMS. FOR METALLIC RACEWAY SYSTEMS WITH U.L. LISTED AND APPROVED BONDING LOCKNUTS OR BUSHINGS AND NONMETALLIC RACEWAYS AND/OR BOXES, ELIMINATE THE BONDING JUMPERS BETWEEN THE RACEWAY AND THE BOX.
- GROUNDING ELECTRODE ROD SHALL NOT BE LESS THAN 3/4" DIAMETER AND 10 FEET IN LENGTH AND SHALL CONSIST OF THE FOLLOWING:
 - COPPER CLAD.
 - TOP OF GROUNDING ROD SHALL BE MINIMUM 12" ABOVE FINISHED GRADE.
 - INSTALLATION AND CONNECTION OF DRIVEN GROUND RODS MUST BE WITNESSED BY THE AUTHORITY HAVING JURISDICTION AND THE LOCATION(S) DOCUMENTED BY RECORDING THE DEPTH OF COVER AND MEASURED DISTANCES FROM TWO FIXED PERMANENT OBJECTS OR BUILDING APPURTENANCES.
- GROUNDING NEUTRAL CONDUCTORS (GNC) AND EQUIPMENT GROUNDING CONDUCTORS (EGC) SHALL ALL BE INSULATED. GNC SHALL BE WHITE (OR GRAY), EGC SHALL BE GREEN.
- GROUNDING ELECTRODE CONDUCTORS (GEC) SHALL BE INSULATED AND SHALL BE GREEN.
- BONDING JUMPERS (BJ) MAY BE BARE WHERE COMPLETELY CONTAINED WITHIN AN ENCLOSURE OR INSTALLED EXPOSED IN LENGTHS OF SIX FEET OR LESS. WHERE INSTALLED IN RACEWAY OR EXPOSED IN LENGTHS GREATER THAN SIX FEET THEY SHALL BE INSULATED AND SHALL BE GREEN.
- METHODS OF ESTABLISHING THE GROUNDING ELECTRODE SYSTEM SHALL BE AS PER NEC 250.53, INCLUDING COMBINATIONS OF GROUNDING ELECTRODE CONDUCTORS AND SUPPLEMENTAL ELECTRODES.
- REFER TO NATIONAL ELECTRICAL CODE "GROUNDING ELECTRODE CONDUCTORS" TABLE (NEC 250.66) AND "EQUIPMENT GROUNDING CONDUCTORS" TABLE (NEC 250.122) FOR SIZING OF GROUNDING AND BONDING CONDUCTORS THAT ARE NOT INDICATED IN THE SCHEDULES OR DIAGRAMS.
- NONE OF THE BUILDING STEEL IS INTENTIONALLY GROUND TO THE EXTENT THAT IT MAY BE USED AS THE GROUNDING ELECTRODE. CONTRACTOR SHALL GROUND THE BUILDING STEEL OR BOND IT TO THE SERVICE ENTRANCE EQUIPMENT.
- REFER TO PROJECT STRUCTURAL STEEL DRAWINGS TO DETERMINE THE QUANTITY AND LOCATION OF BONDING JUMPERS ACROSS EXPANSION JOINTS IN THE INTERIOR STRUCTURAL STEEL FRAMING SYSTEM. WHERE PORTIONS OF THE BUILDING HAVING INTERIOR STRUCTURAL STEEL FRAMING ARE PHYSICALLY CONNECTED BUT SEPARATED BY CONNECTING CORRIDORS, BREEZEWAYS, ETC. THAT DO NOT CONTAIN INTERIOR STRUCTURAL STEEL, THE CONTRACTOR SHALL PROVIDE BONDING JUMPERS(S) BETWEEN ELEMENTS OF THE INTERIOR STEEL FRAMING. NOTE: METAL ROOF DECKS AND METAL ROOF AND FLOOR JOISTS IN MASONRY BUILDINGS DO NOT CONSTITUTE INTERIOR STRUCTURAL STEEL.
- ELECTRICALLY CONTINUOUS METAL BAR JOISTS IN MASONRY CONSTRUCTION SHALL BE BONDED TO THE SERVICE ENTRANCE EQUIPMENT ENCLOSURE OR TO INTERIOR GROUNDING, STRUCTURAL STEEL IN OTHER PORTIONS OF THE BUILDING.
- THE EQUIPMENT GROUNDING CONDUCTOR OF CONDUITS SERVING GAS APPLIANCES MAY SERVE AS THE REQUIRED BONDING CONNECTION.
- THE CONCRETE SURROUNDING A CONCRETE ENCASED ELECTRODE SHALL BE IN DIRECT CONTACT WITH THE EARTH. VAPOR BARRIERS AND THE LIKE NEGATE ITS USE AS A GROUNDING ELECTRODE. ELECTRODE SHALL BE LOCATED WITHIN AND NEAR THE BOTTOM OF A FOOTING. ELECTRODE SHALL CONSIST OF 20 FT. OF #3 AWG BARE COPPER CONDUCTOR BONDED TO THE REINFORCING STEEL AT FOUR POINTS. COORDINATE INSPECTION OF PIGTAIL, SLEEVE AND CONNECTION TO ELECTRODE WITH AUTHORITY HAVING JURISDICTION.
 - ENCASED IN A MINIMUM OF 2" CONCRETE.
 - CLAMPS SHALL BE U.L. LISTED.
- STRUCTURAL STEEL MAY BE USED AS GROUNDING AS FOLLOWS:
 - MINIMUM OF 10 FEET OF SINGLE STRUCTURAL METAL MEMBER IS IN DIRECT CONTACT WITH THE EARTH OR INCASED IN CONCRETE THAT IS IN DIRECT CONTACT WITH EARTH.
 - STRUCTURAL METAL FRAME IS BONDED TO ONE OR MORE GROUNDING ELECTRODES AS DEFINED BY APPLICABLE NEC SECTION.
- #6 MINIMUM BARE SOFT DRAWN COPPER CONDUCTOR.
- WATER METER WITH JUMPER. TAP BEFORE THE METER SHALL BE WITHIN 5 FEET FROM THE POINT OF WATER PIPE ENTRANCE TO THE BUILDING.
- SEPARATELY DERIVED GROUNDING SYSTEM SHALL BE GROUND AS PER NEC 250.30 AND GROUNDING ELECTRODE CONDUCTION SHALL BE AS PER NEC 250.66.
- TO GROUND LOOP CONDUCTOR INTERCONNECTING LIGHTNING PROTECTION SYSTEM GROUNDING ELECTRODES (WHERE PROVIDED).
- TO TELECOMMUNICATION SYSTEM MAIN GROUND BUSBAR (WHERE PROVIDED).

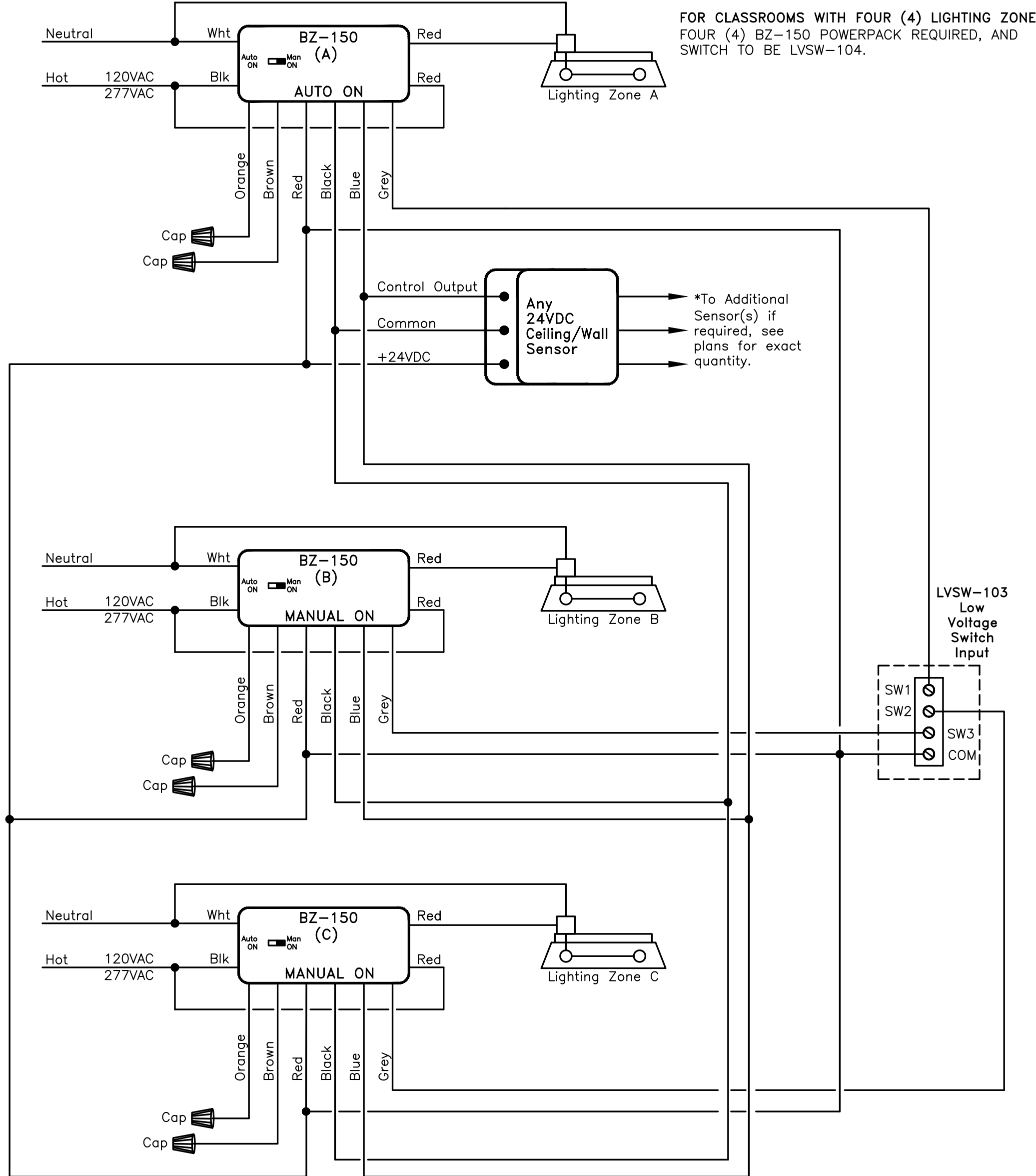
KEY LEGEND GROUNDING ELECTRODES	
(A)	GROUND ROD ELECTRODE NEC 250.52(A)(5)
(B)	METAL UNDERGROUND WATER SERVICE PIPE NEC 250.52(A)(1)
(C)	GROUNDING INTERIOR STRUCTURAL STEEL NEC 250.52(A)(2)
(D)	CONCRETE ENCASED ELECTRODE NEC 250.52(A)(3)

NOTES:
 1. GROUNDING ELECTRODE CONDUCTORS SHALL BE SIZED AS PER NEC 250.66.
 2. OTHER GROUNDING ELECTRODES MAY BE USED AS PER NEC 250.52 WHEN APPROVED BY THE ENGINEER AND LOCAL AUTHORITIES HAVING JURISDICTION.

KEY LEGEND BONDING OF PIPING AND EXPOSED STRUCTURAL METAL	
(E)	EXPOSED STRUCTURAL STEEL NEC 250.104(C) AND NEC 250.104(D)(2)
(F)	LOCAL INTERIOR HOT & COLD WATER PIPING NEC 250.104(A)(1) AND NEC 250.104(D)(1)
(G)	METAL GAS SERVICE PIPING, AFTER THE METER NEC 250.104(B)

NOTES:
 1. BONDING CONDUCTORS SHALL BE AS PER NEC 250.102.
 2. BONDING METHOD SHALL BE AS PER NEC 250.104.

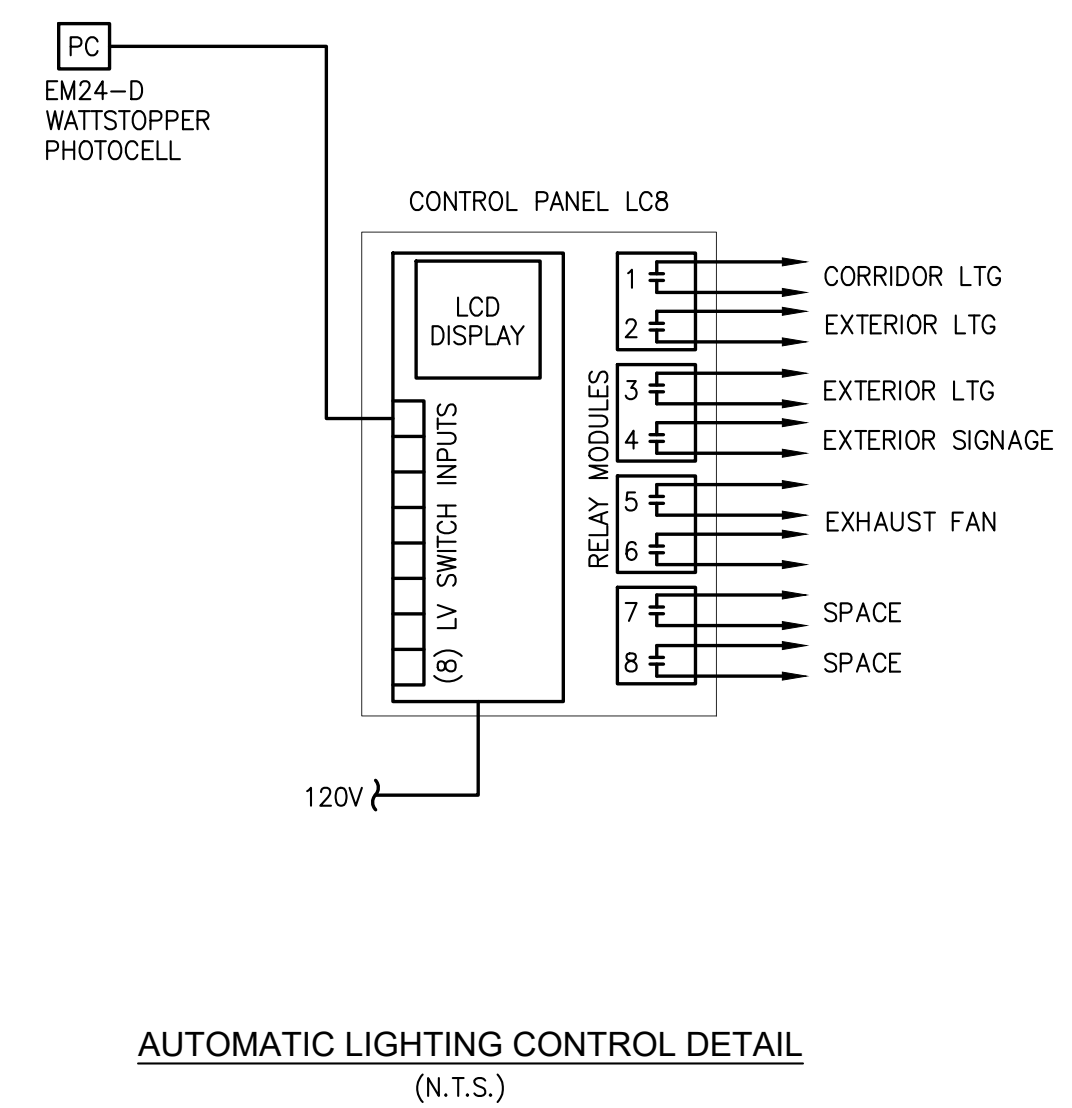
ABBREVIATIONS		
BJ	BONDING JUMPER	(6)
GNC	GROUNDING NEUTRAL CONDUCTOR	(4)
GEC	GROUNDING ELECTRODE CONDUCTOR	(5)
EGC	EQUIPMENT GROUNDING CONDUCTOR	(4)
GB	GROUND BLOCK	
NB	NEUTRAL BLOCK	
GRE	GROUND ROD ELECTRODE	(3)
SNC	SERVICE NEUTRAL CONDUCTOR	
NDL	NEUTRAL DISCONNECT LINK	



LIGHTING CONTROL WIRING DIAGRAM FOR CLASSROOMS WITH (3) ZONES (N.T.S.)

RELAY CONTROL SCHEDULE				
CONTROL PANEL / CONTACTOR	RELAY DESIGN.	CIRCUIT CONTROLLED	CONTROL DESIGNATION	OVERRIDE DESIGNATION
LC8	1	MP-14	CORRIDOR LTG	PANEL
	2	MP-16	EXTERIOR LTG	PC
	3	MP-20	EXTERIOR LTG	PC
	4	MP-18	EXTERIOR SIGNAGE	PC
	5	MP-22,24	EXHAUST FAN	PANEL
	6			
	7	SPARE		
	8	SPARE		

- NOTES:
 1. EC SHALL FURNISH AND INSTALL ALL EQUIPMENT SHOWN.
 2. PROVIDE WATTSTOPPER LC-8 LIGHTING CONTROL PANEL.
 3. PROVIDE 3 WIRE LOW VOLTAGE MOMENTARY OVERRIDE SWITCH.
 4. TIME SCHEDULE TO BE COORDINATED WITH TENANT.
 5. PROVIDE (3) DUAL SINGLE-POLE RELAYS MODULES AND (1) DOUBLE-POLE RELAY MODULE.
 6. LV SWITCH SHALL SERVE AS MANUAL OVERRIDE SWITCH FOR GENERAL LIGHTING.
 7. ALL 120V LOCAL SWITCHES SHALL BE WIRED DOWNSTREAM OF RELAYS.
 8. COORDINATE EXACT LOCATION OF PHOTOCELL IN FIELD. PHOTOCELL SHALL FACE NORTHERN SKY.



AUTOMATIC LIGHTING CONTROL DETAIL (N.T.S.)

JAM ARCH
 IS NOW COLLIER ENGINEERING & DESIGN

ARCHITECT OF RECORD:
Justin A. Mihalik, AIA
 373 US Route 46 West
 Building D, Suite 240
 Fairfield, New Jersey 07004
 ph: (973) 291-3730 fax: (973) 291-3740
 www.colliersengineering.com
 Bergmann Architectural Associates, Inc.

KEAO ENGINEERS
 Engineering Excellence since 1984
 186 WOOD AVE. SOUTH, 1ST FLOOR
 ISELIN, NJ 08830
 TEL (732) 635-0044 FAX (732) 635-1777

Professional Engineer Seal for Armen Khachatourian, No. 042952, State of New Jersey.

Lightbridge Academy
 Innovators in Educational Child Care

NOT VALID FOR CONSTRUCTION WITHOUT SEAL

Project:
 LIGHTBRIDGE ACADEMY
 655 Reedy Creek Rd
 Cary, NC 27513

Developer:
 STNL Advisors LLC
 260 Madison Ave, 5th Flr
 New York, NY 10016

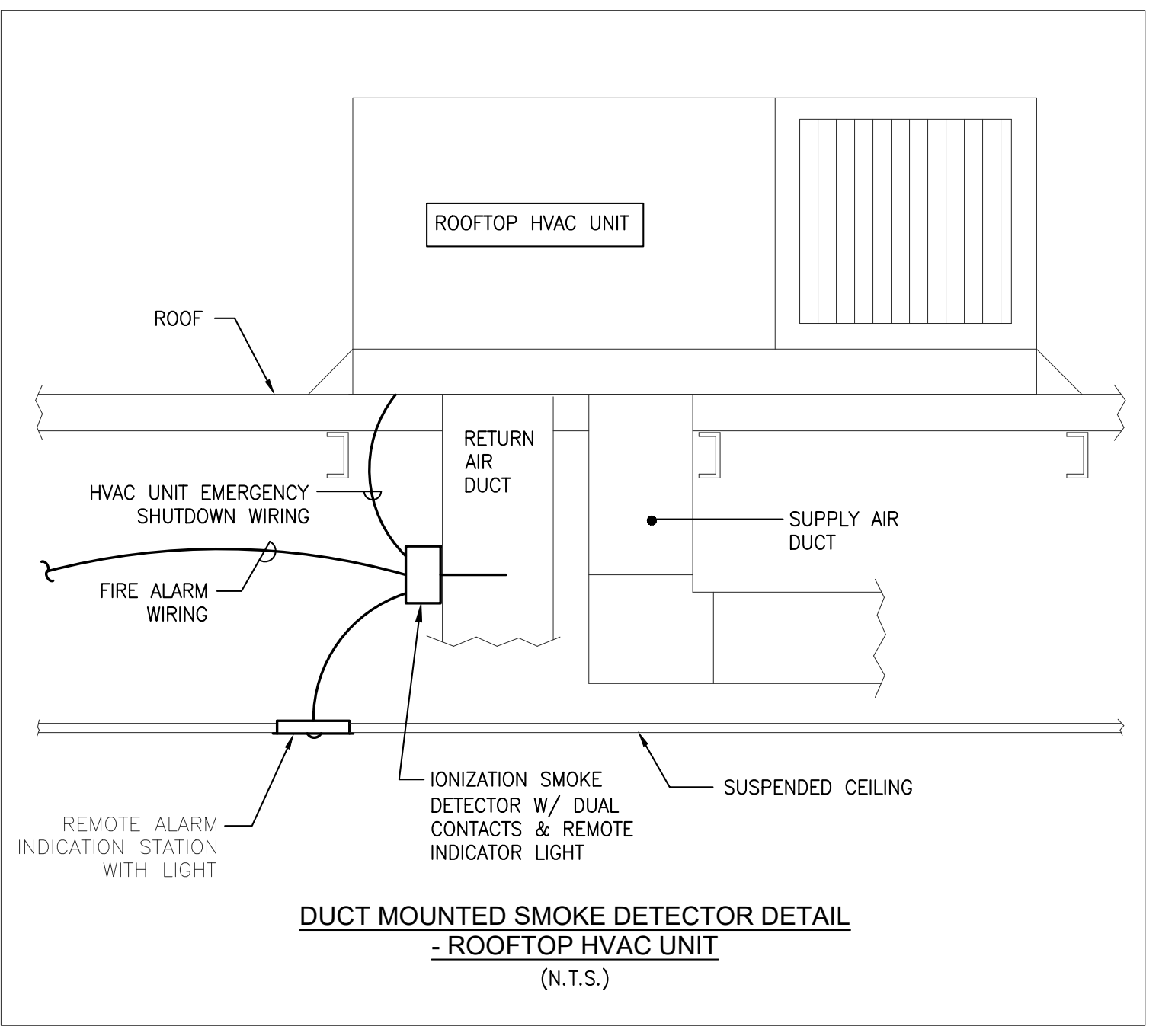
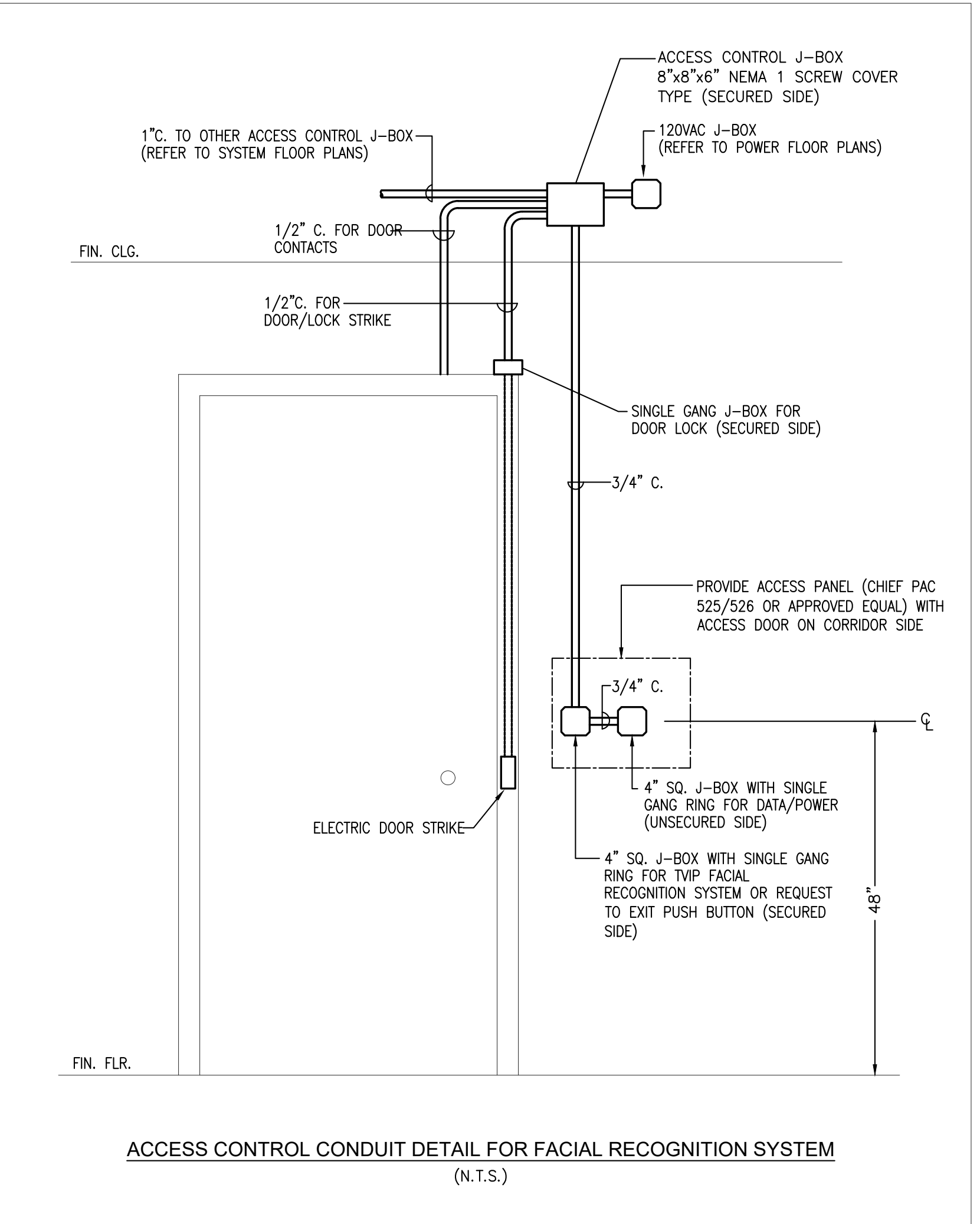
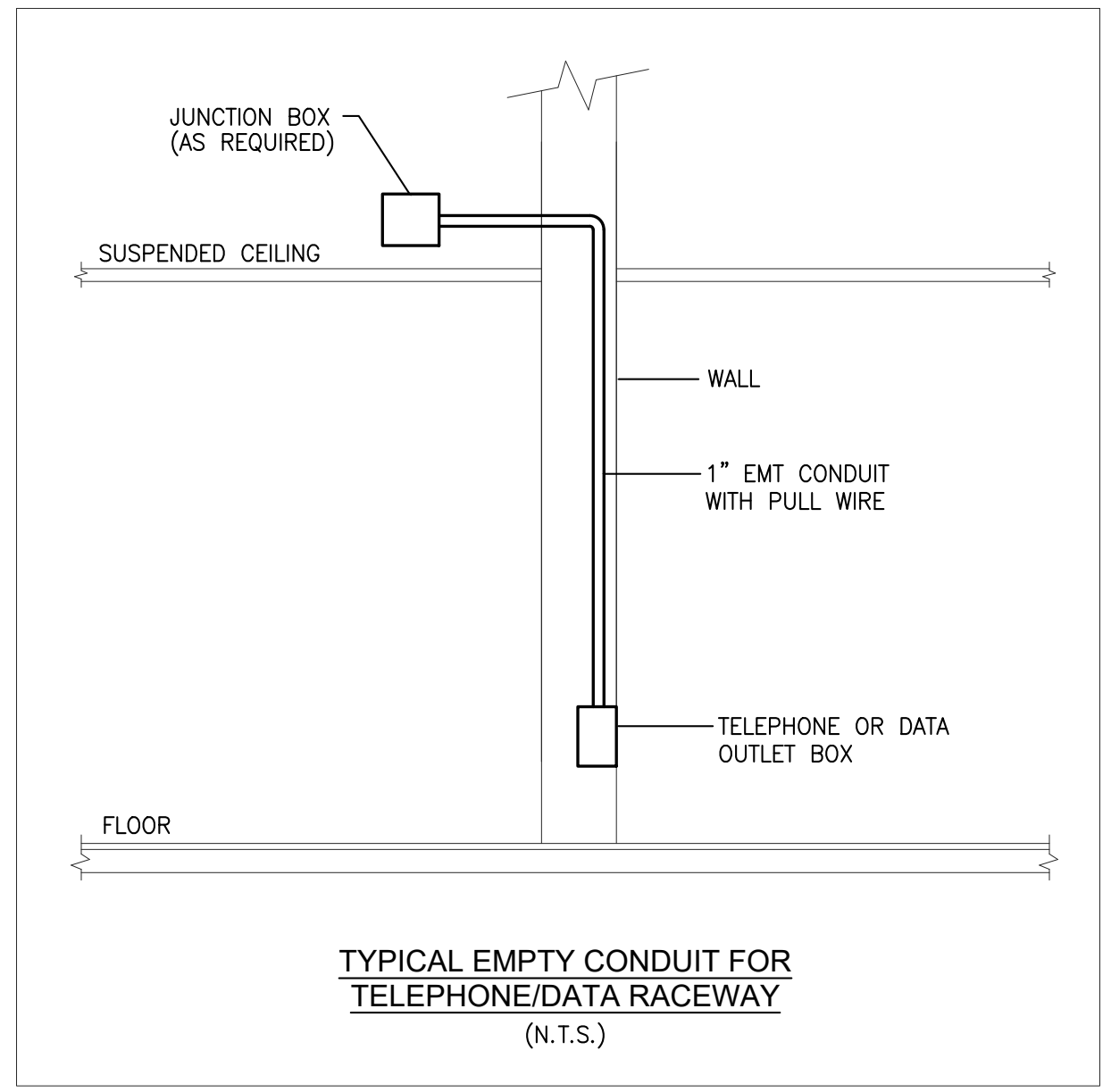
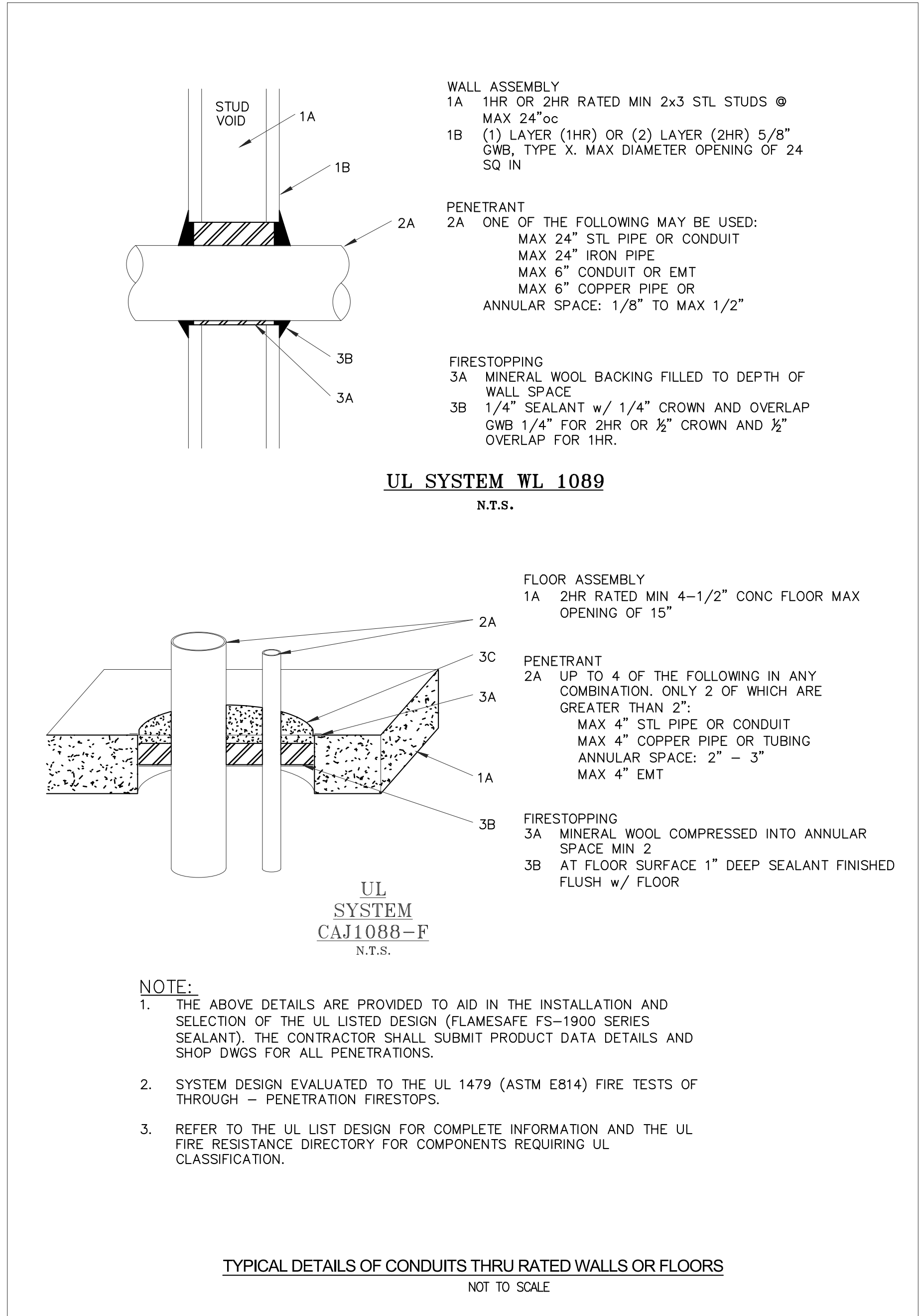
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SHEET TITLE:

ELECTRICAL DETAILS

Rev. #	Date	Remarks
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JOB NUMBER:	2022-01-09	
DATE:	10/07/2022	
DRAWN BY:	GS/MB/WC	
CHECKED BY:	JAM	

SHEET NO.
E-402



ARCHITECT OF RECORD:
Justin A. Mihalik, AIA
 373 US Route 46 West
 Building D, Suite 240
 Fairfield, New Jersey 07004
 ph: (973) 291-3730 fax: (973) 291-3740
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 TEL (732) 635-0044 FAX (732) 635-1777

Professional Engineer Seal
 ARMEN KHACHATURIAN, P.E. No. 042952
 NC CERTIFICATE OF REGISTRATION: C-5015

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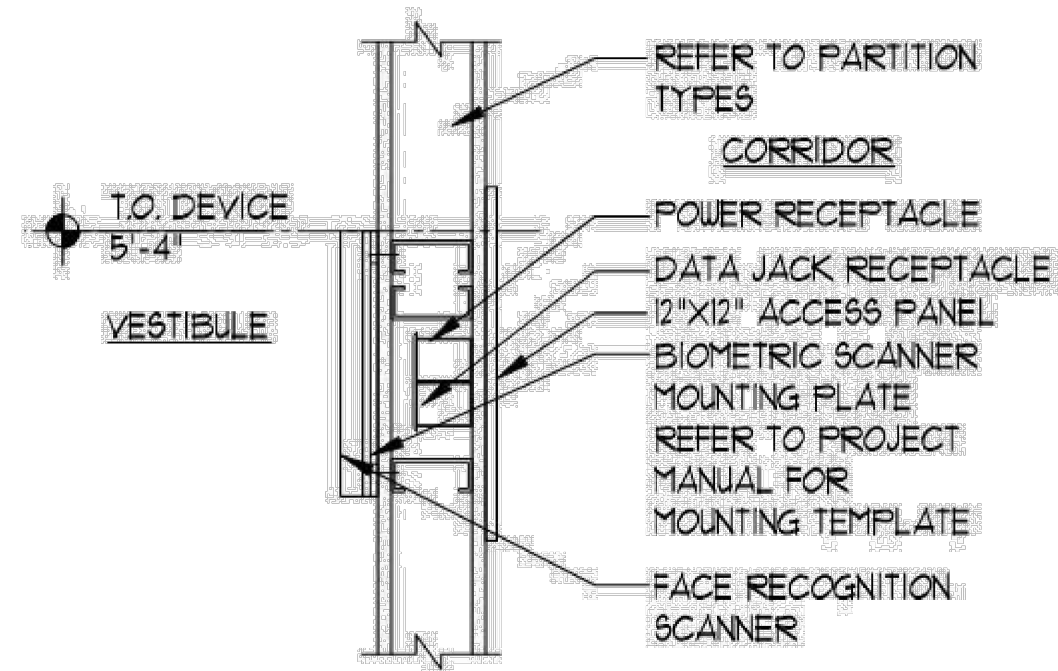
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ELECTRICAL DETAILS

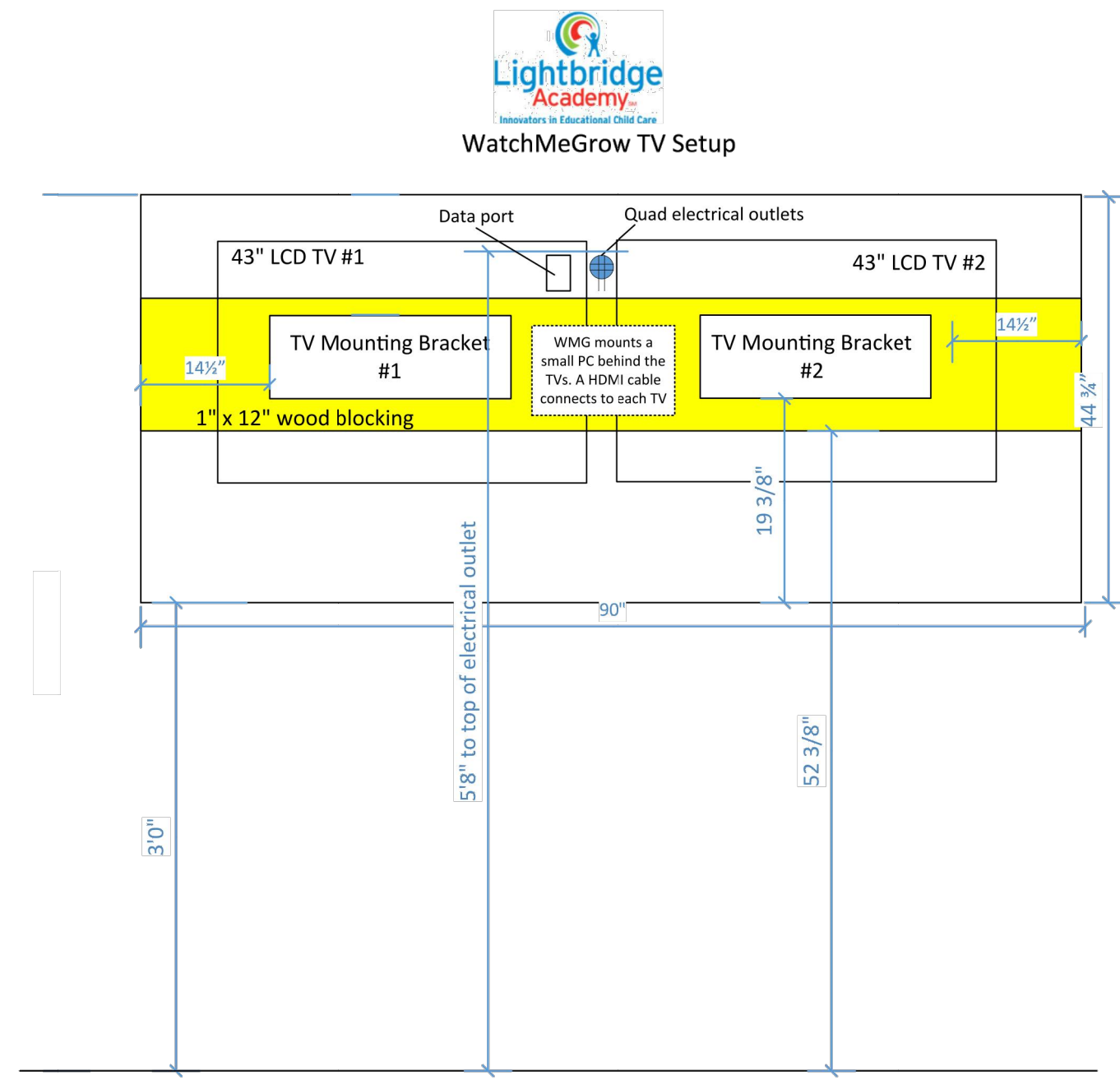
Rev. #	Date	Remarks

JOB NUMBER: 2022-01-09
 DATE: 10/07/2022
 DRAWN BY: GS/MB/WC
 CHECKED BY: JAM

SHEET NO.
E-403



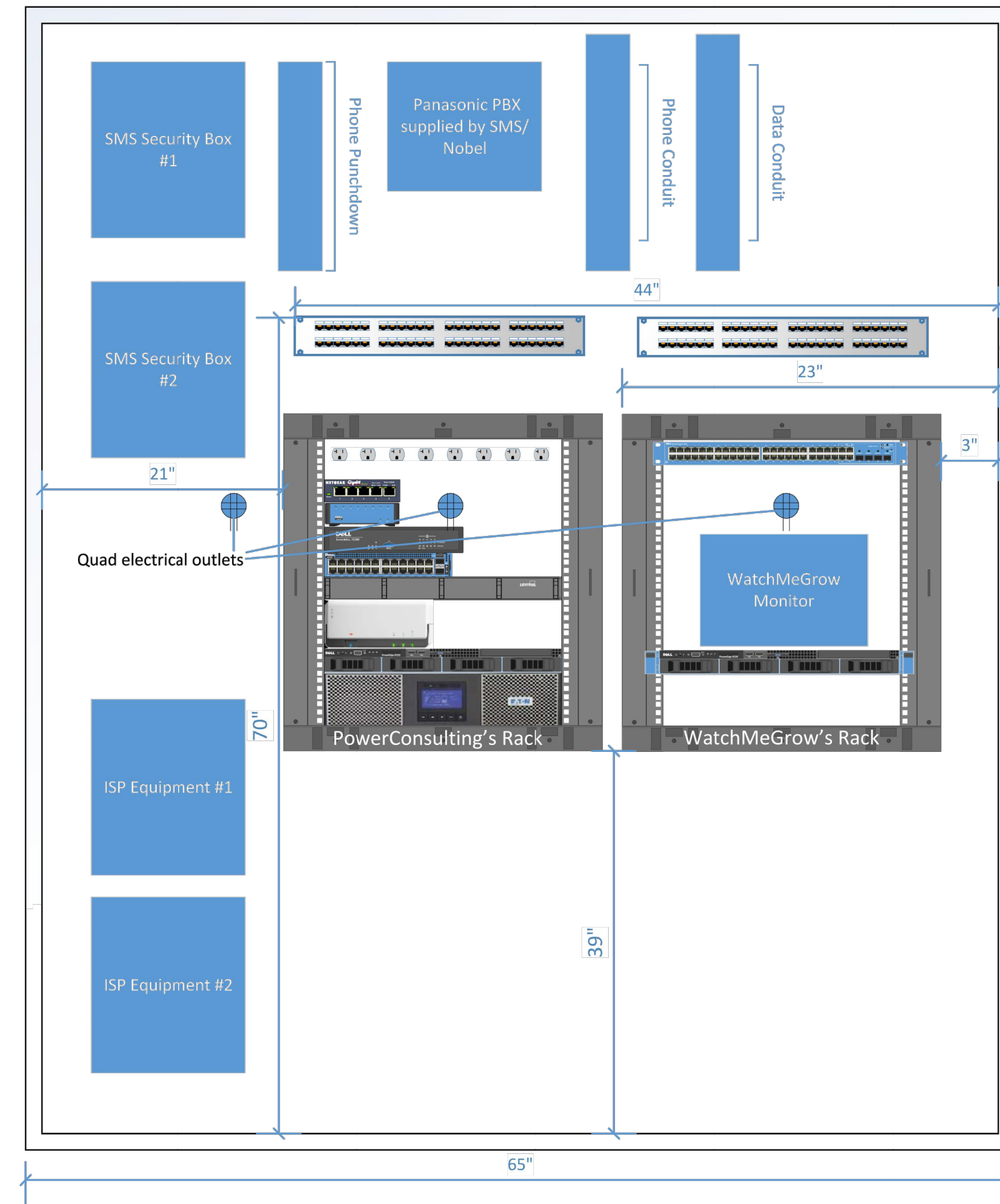
FACIAL RECOGNITION SCANNER DETAIL
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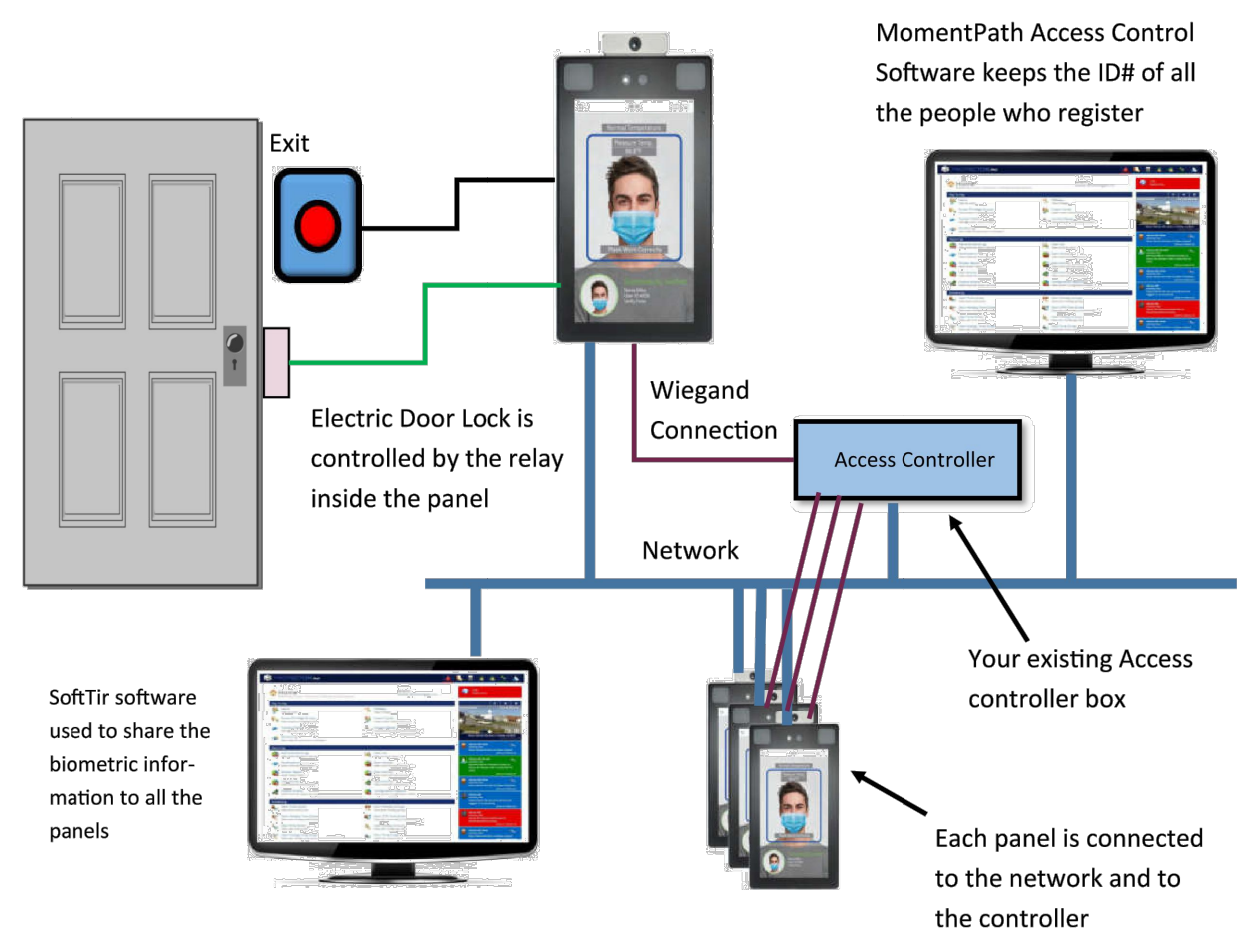
*Samsung TVs & mounts provided by PCG
*WatchMeGrow TV system provided by WMG

WATCHMEGROW TV SETUP
(N.T.S.)

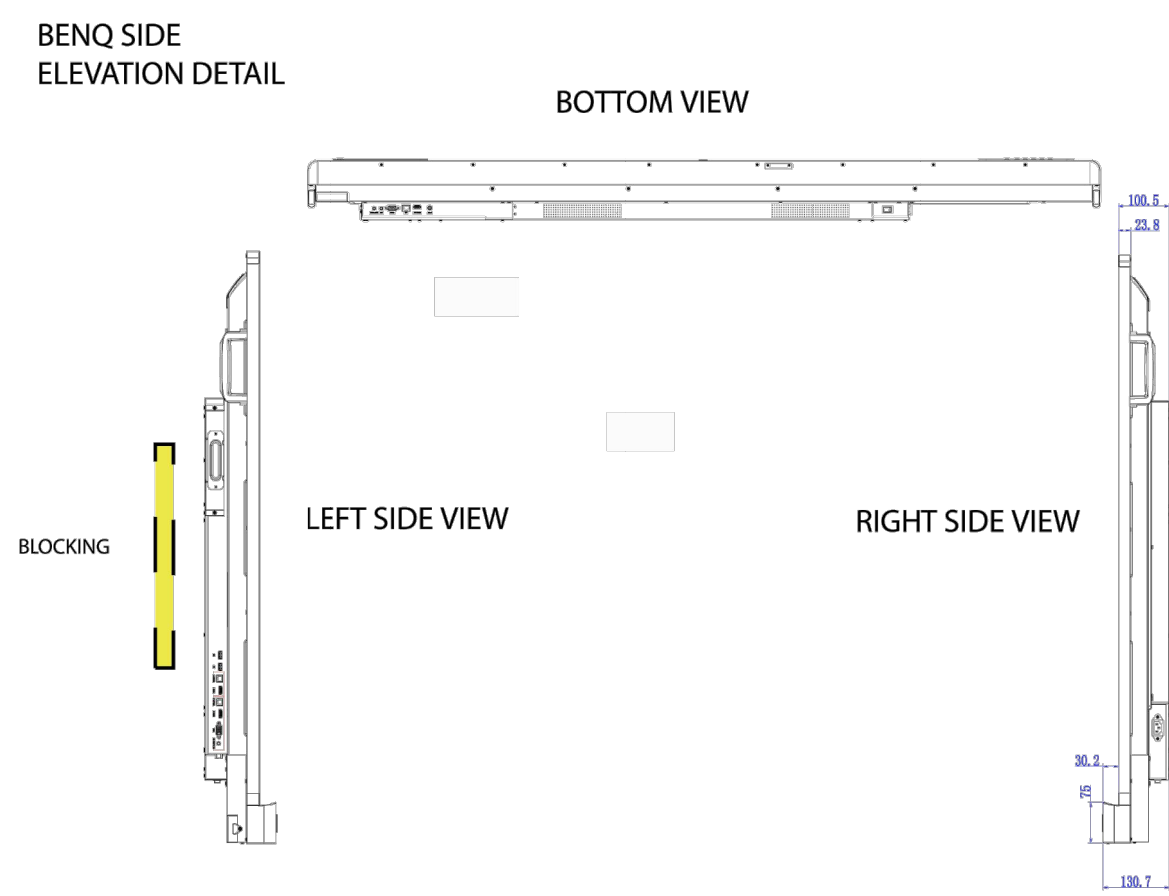
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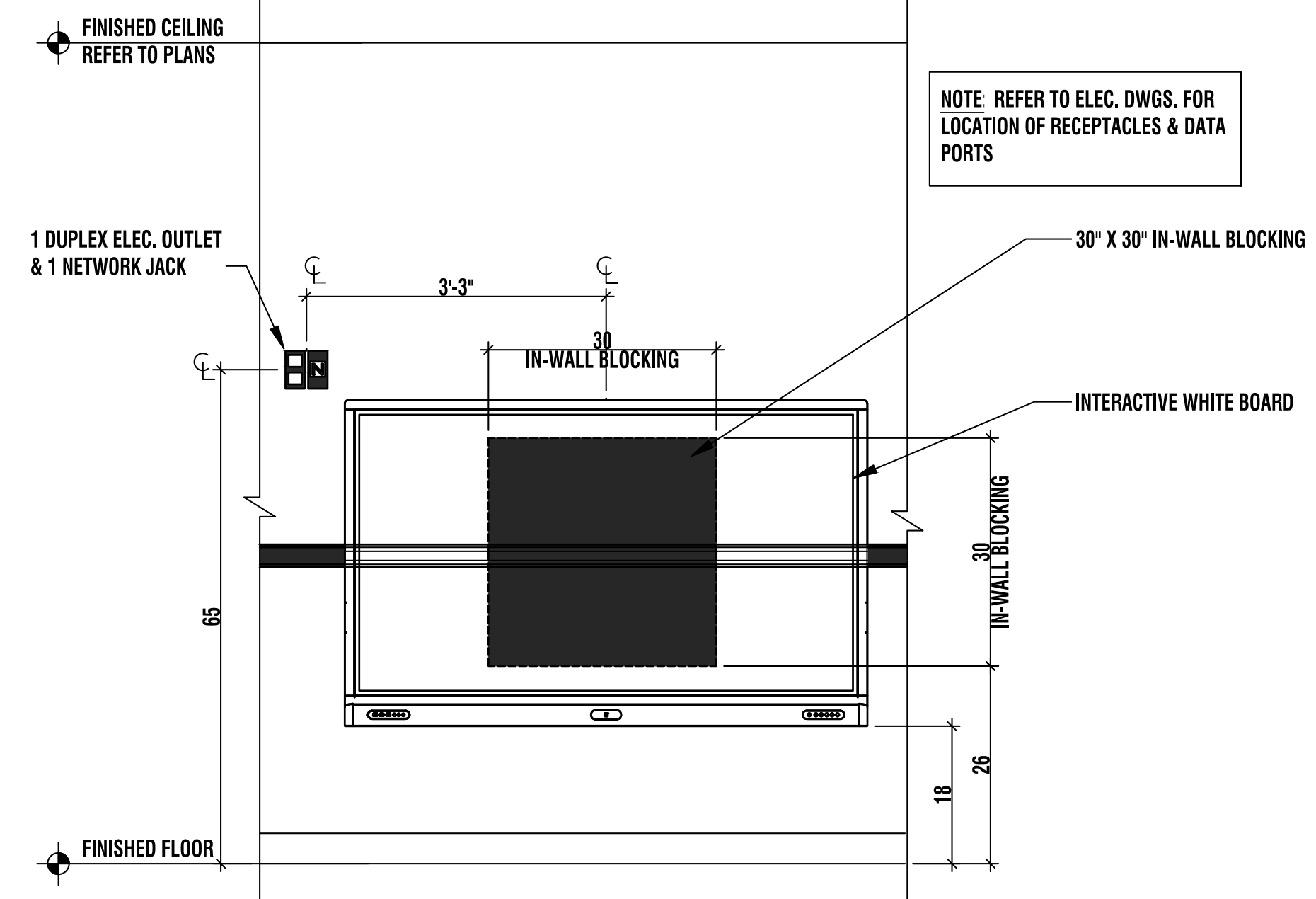
LIGHTBRIDGE ACADEMY SERVER CLOSET DETAIL
(N.T.S.)



LIGHTBRIDGE PROJECTOR MOUNT ELEVATION
(N.T.S.)



LIGHTBRIDGE PROJECTOR MOUNT ELEVATION
(N.T.S.)



LIGHTBRIDGE INTERACTIVE WHITEBOARD ELEVATION
(N.T.S.)

ARCHITECT OF RECORD:
Justin A. Mihalik, AIA
373 US Route 46 West
Building D, Suite 240
Fairfield, New Jersey 07004
ph: (973) 291-3730 fax: (973) 291-3740
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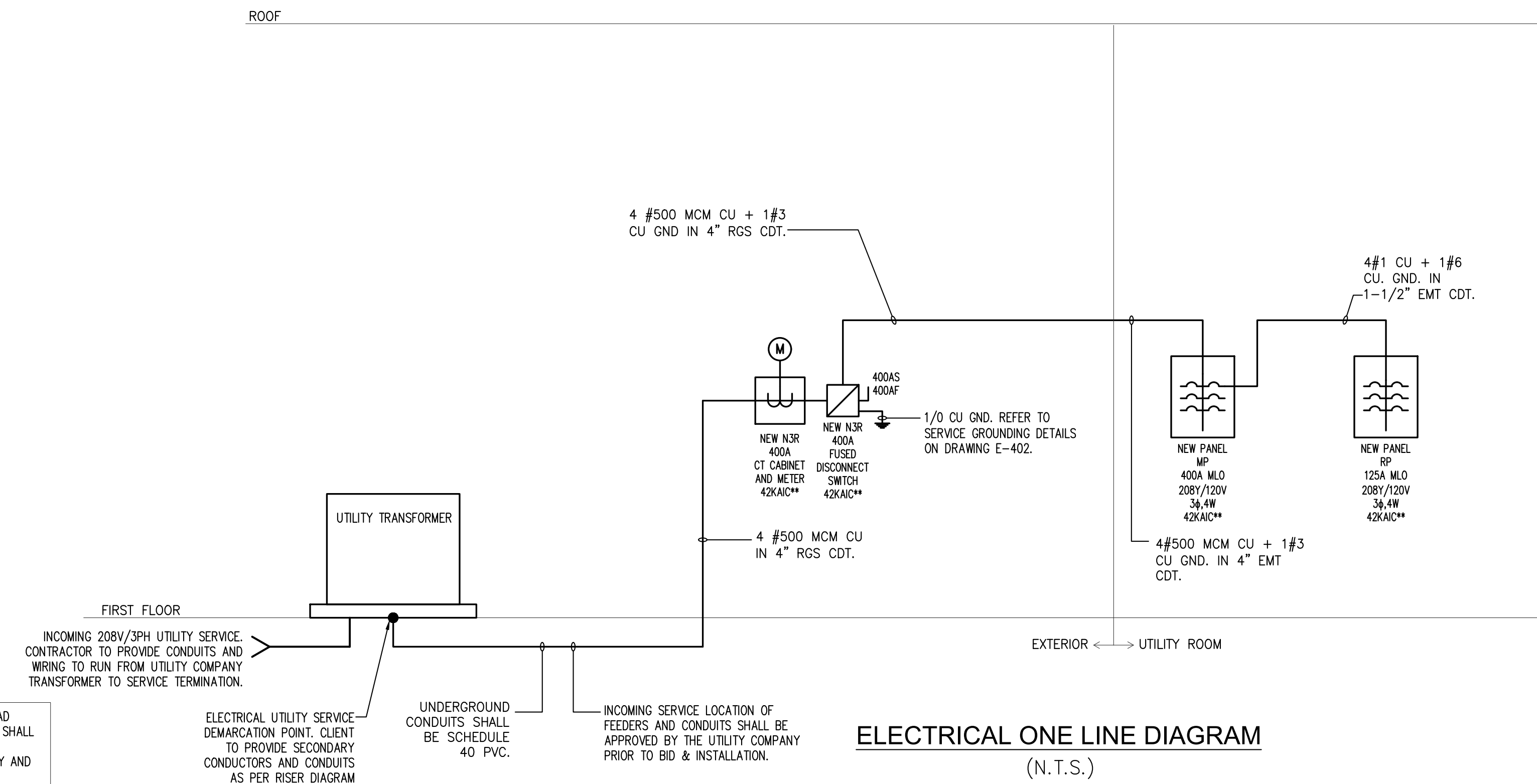
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**LIGHTBRIDGE ACADEMY
ELECTRICAL EQUIPMENT
DETAILS**

Rev. #	Date	Remarks
03/29/2024	ISSUED FOR PERMIT	
JOB NUMBER:	2022-01-09	
DATE:	10/07/2022	
DRAWN BY:	GS/MB/WC	
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LEGEND	
SYMBOL	DESCRIPTION
-----	EXISTING TO REMAIN
————	NEW

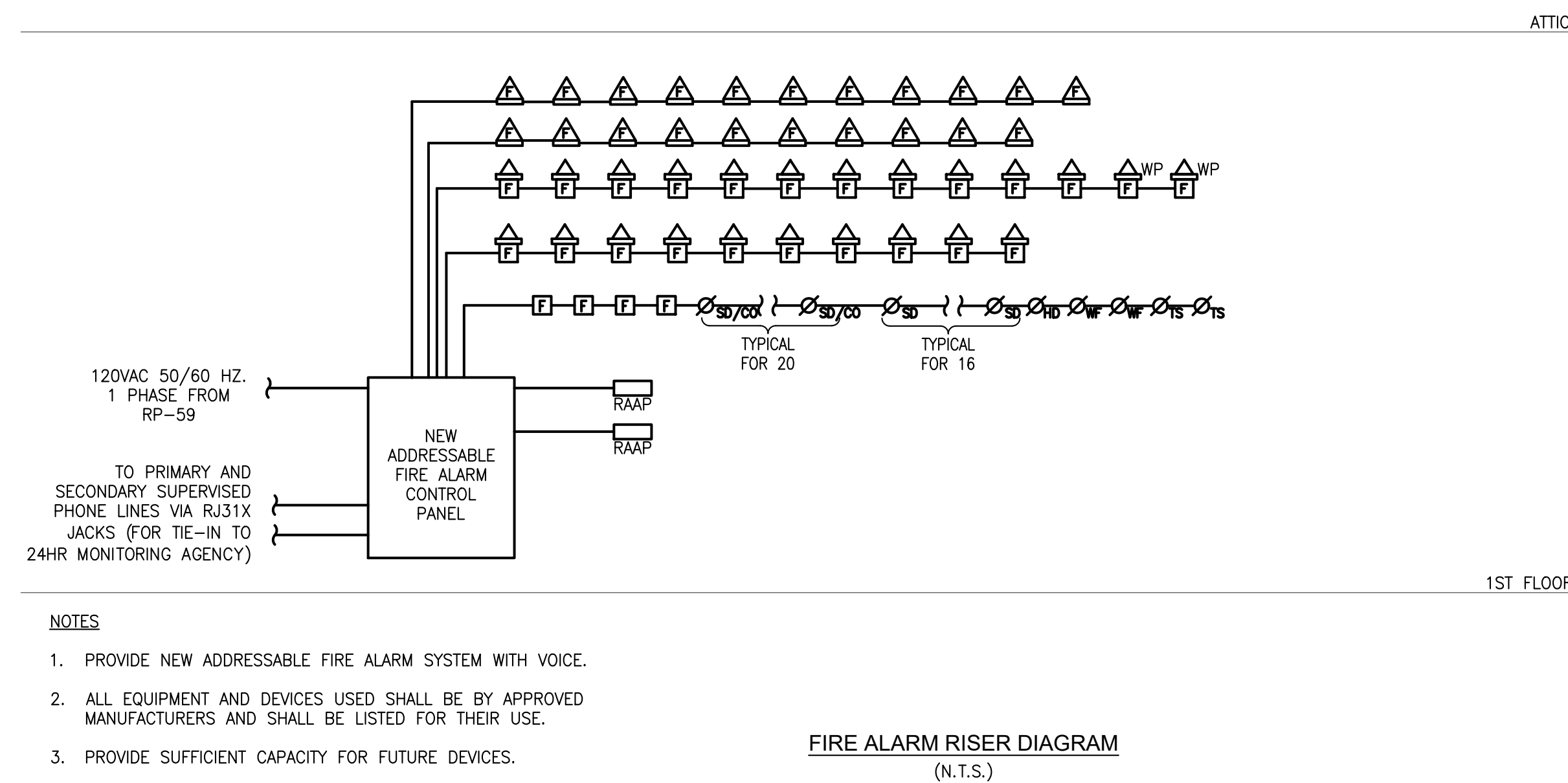
LOCATION OF ELECTRICAL EQUIPMENT SHALL BE COORDINATED WITH AUTHORITIES HAVING JURISDICTION AND UTILITY COMPANY. ELECTRICAL CONTRACTOR TO VERIFY CONDUIT WIRE SIZE REQUIRED. REFER TO NATIONAL ELECTRIC CODE 2017 (WITH NORTH CAROLINA AMENDMENTS).



** AVAILABLE FAULT CURRENT BASED ON A 150KVA PAD MOUNT TRANSFORMER PROVIDED BY DUKE ENERGY. EC SHALL OBTAIN ACTUAL AVAILABLE FAULT CURRENT AT THE TRANSFORMER ONCE AVAILABLE FROM UTILITY COMPANY AND SUBMIT TO ENGINEER OF RECORD FOR REVIEW.

RISER DIAGRAM GENERAL NOTES

- ELECTRICAL EQUIPMENT, AND MATERIAL SHALL BE LISTED, LABELED, AND INSTALLED PER RECOGNIZED ELECTRICAL TESTING LABORATORY.
- PANELS AND SUB PANELS REQUIRE A LETTER ON LETTERHEAD FROM THE INSTALLER THAT THE TORQUE REQUIREMENTS HAVE BEEN MET TO THE MANUFACTURER'S INSTRUCTIONS.
- TWO OR MORE CONDUCTORS THAT LAND ON A SINGLE LUG SHALL BE LISTED FOR THAT USE.
- THE DESIGN TEMPERATURE OF THE CONDUCTORS AND THEIR TERMINATIONS SHALL BE 75°C.
- PARALLEL FEEDER CONDUCTORS SHALL BE CUT TO EXACTLY THE SAME LENGTHS AND SHALL BE FROM THE SAME FACTORY RUN. ALL CONNECTIONS FOR SAME SHALL BE TORQUED TO IDENTICAL VALUES.
- CONDUCTORS BELOW GRADE OR SUBJECT TO MOISTURE SHALL BE "XHHW-2".
- PROVIDE FACTORY SERIES COORDINATION FOR ALL CIRCUIT BREAKERS (INCLUDING ALL BRANCH BREAKERS), RELATIVE TO "UPSTREAM" BREAKERS, SO THAT ONLY THE BREAKER CLOSEST IN THE CIRCUIT TO THE LOAD TRIPS UPON AN OVERLOAD OR FAULT CONDITION.
- POWER DISTRIBUTION EQUIPMENT SUPPLIER SHALL PROVIDE EQUIPMENT APPROPRIATELY RATED AND BRACED TO ACCOMMODATE THE AVAILABLE FAULT CURRENT AT THE UTILITY COMPANY TRANSFORMER SECONDARIES. THIS SUPPLIER SHALL ACCORDINGLY PROVIDE ANY RELATED CALCULATIONS SO THAT THEIR EQUIPMENT IS PROPERLY COORDINATED FOR THE AVAILABLE FAULT CURRENT. THE ELECTRICAL CONTRACTOR SHALL PROVIDE THIS SUPPLIER WITH COPIES OF THE ELECTRICAL DOCUMENTS AS REQUIRED SO THAT PROPERLY RATED/BRACED EQUIPMENT IS PROVIDED UNDER BASE BID.
- WORKING CLEARANCES SHALL BE PROVIDED FOR ALL ELECTRICAL EQUIPMENT (SWITCHBOARDS, PANEL-BOARDS, TRANSFORMERS, STARTERS, DISCONNECTS, ETC. AS APPLICABLE) IN STRICT COMPLIANCE WITH N.E.C. CHAPTER 1, PART B, SECTION 110-26(A). LOCATIONS SHOWN ON FLOOR PLANS ARE SCHEMATIC AND DIAGRAMMATIC IN NATURE. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING COMPLIANCE WITH THE ABOVE N.E.C. REFERENCE. THIS REQUIREMENT APPLIES TO EQUIPMENT ON FLOOR PLANS AS WELL AS TO EQUIPMENT SHOWN ON RISER.
- LOCATE ANY RELATED PULL-BOXES SO THAT THEY WILL BE FULLY ACCESSIBLE AFTER ALL CONSTRUCTION WORK IS COMPLETE. AS WITH ALL WORK, COORDINATE IN ADVANCE WITH ALL OTHER TRADES.
- ALL INDOOR PANELS SHALL BE IN NEMA-1 ENCLOSURES AND ALL OUTDOOR PANELS SHALL BE NEMA-3R (U.O.N.).



- NOTES**
- PROVIDE NEW ADDRESSABLE FIRE ALARM SYSTEM WITH VOICE.
 - ALL EQUIPMENT AND DEVICES USED SHALL BE BY APPROVED MANUFACTURERS AND SHALL BE LISTED FOR THEIR USE.
 - PROVIDE SUFFICIENT CAPACITY FOR FUTURE DEVICES.

- FIRE ALARM SEQUENCE OF OPERATION**
- THE SYSTEM SHALL IDENTIFY ANY OFF NORMAL CONDITION AND LOG EACH CONDITION INTO THE SYSTEM DATABASE AS AN EVENT.
 - THE SYSTEM SHALL AUTOMATICALLY DISPLAY ON THE CONTROL PANEL LIQUID CRYSTAL DISPLAY THE FIRST EVENT OF THE HIGHEST PRIORITY BY TYPE. THE PRIORITIES AND TYPES SHALL BE ALARM, SUPERVISORY, TROUBLE, AND MONITOR.
 - THE SYSTEM SHALL HAVE A QUEUE OPERATION, AND SHALL NOT REQUIRE EVENT ACKNOWLEDGMENT BY THE SYSTEM OPERATOR. THE SYSTEM SHALL HAVE A LABELED COLOR CODED INDICATOR FOR EACH TYPE OF EVENT; ALARM - RED, SUPERVISORY - YELLOW, TROUBLE - YELLOW, MONITOR - YELLOW. WHEN AN UNSEEN EVENT EXISTS FOR A GIVEN TYPE, THE INDICATOR SHALL BE LIT. FOR EACH EVENT, THE DISPLAY SHALL INCLUDE THE CURRENT TIME, THE TOTAL NUMBER OF EVENTS, THE TYPE OF EVENT, THE TIME THE EVENT OCCURRED AND UP TO A 42 CHARACTER CUSTOM USER DESCRIPTION.
 - THE USER SHALL BE ABLE TO REVIEW EACH EVENT BY SIMPLY SELECTING SCROLLING KEYS (UP-DOWN) FOR EACH EVENT TYPE.
 - ALARM, SUPERVISORY, OR TROUBLE EVENTS SHALL SOUND A SILENCING AUDIBLE SIGNAL AT THE CONTROL PANEL.
 - OPERATION OF ANY ALARM INITIATING DEVICE SHALL AUTOMATICALLY:
 - UPDATE THE CONTROL/DISPLAY AS DESCRIBED ABOVE (A.1.)
 - SOUND ALL AUDIBLE APPLIANCES IN A TEMPORAL-3 ON THE ALARMING FLOOR OR AS REQUIRED OTHERWISE BY LOCAL AUTHORITIES HAVING JURISDICTION IN ACCORDANCE WITH THE BUILDING'S FIRE SAFETY AND EVACUATION PLANS. ALL AUDIBLE APPLIANCES SHALL BE SYNCHRONIZED WITH EACH OTHER WHEN TWO OR MORE AUDIBLE DEVICES CAN BE HEARD. AUDIBLE DEVICES SHALL HAVE THE ABILITY TO BE SILENCED.
 - ACTIVATE ALL STROBE APPLIANCES. ALL STROBE APPLIANCES SHALL BE SYNCHRONIZED WITH EACH OTHER IN ANY LOCATION WITH TWO OR MORE DEVICES IN A COMMON FIELD OF VIEW. VISUAL DEVICES SHALL BE NON-SILENCED UNLESS THE SYSTEM IS SUCCESSFULLY RESET.
 - OPERATE CONTROL RELAY CONTACTS TO SHUTDOWN ALL HVAC UNITS SERVING THE FLOOR OF ALARM INITIATION.
 - OPERATE CONTROL RELAY CONTACTS TO RELEASE ALL MAGNETICALLY HELD SMOKE DOORS THROUGHOUT THE BUILDING.
 - ACTIVATION OF A SPRINKLER SUPERVISORY INITIATING DEVICE (TAMPER SWITCH) SHALL:
 - UPDATE THE CONTROL/DISPLAY AS DESCRIBED ABOVE (A.1.)
 - TRANSMIT A SUPERVISORY CONDITION, VIA THE INTEGRAL CENTRAL STATION COMMUNICATOR, TO CENTRAL STATION/LOCAL FIRE DEPARTMENT (AS REQUIRED BY THE AHJ).
 - VISUALLY AND AUDIBLY ANNUNCIATE A GENERAL TROUBLE CONDITION, ON THE REMOTE ANNUNCIATOR PANELS. THE VISUAL INDICATION SHALL REMAIN ON UNTIL THE TROUBLE CONDITION IS REPAIRED.
 - ACTIVATION OF CARBON MONOXIDE DETECTOR SHALL:
 - ACTUATE LOCAL VISIBLE COMMON SUPERVISORY SIGNAL INDICATOR AND DISPLAY ON LCD
 - ACTUATE LOCAL AUDIBLE SUPERVISORY SIGNAL
 - DISPLAY/PRINT CHANGE OF STATUS
 - TRANSMIT CO ALARM SIGNAL TO SUPERVISING STATION
 - SHUTDOWN ASSOCIATED CARBON MONOXIDE PRODUCING EQUIPMENT

- FIRE ALARM SPECIFICATIONS**
- NEW FIRE ALARM SYSTEM WORK
 - MANUAL FIRE ALARM SYSTEM THAT ACTIVATES NON VOICE OCCUPANT NOTIFICATION SYSTEM IN ACCORDANCE WITH 2018 INTERNATIONAL BUILDING CODE NORTH CAROLINA EDITION, SECTION 907.2.3. THE SYSTEM SHALL ALSO INCLUDE FAN SHUTDOWN FUNCTIONS PER THE SEQUENCE OF OPERATIONS. THE CONTROL PANEL SHALL BE FULLY ADDRESSABLE AND UTILIZE INTELLIGENT DEVICES AND MODULES AS SHOWN ON THE DRAWINGS.
 - DUCT MOUNTED SMOKE DETECTORS: PROVIDE NEW DUCT MOUNTED SMOKE DETECTORS WHERE INDICATED ON THE DRAWINGS. PROVIDE SAMPLING TUBES, INTEGRATED TEST SWITCH AND REMOTE ALARM LED. DETECTORS SHALL BE FURNISHED AND WIRED BY THE ELECTRICAL CONTRACTOR AND WILL BE INSTALLED BY THE HVAC CONTRACTOR. DUCT SMOKE DETECTORS SHALL BE WIRED INDIVIDUALLY BACK TO THE SPRINKLER AND SMOKE DETECTION ALARM SYSTEM. ACTIVATION OF THE DETECTOR SHALL INDICATE AN ALARM CONDITION ON THE SPRINKLER AND SMOKE DETECTION ALARM SYSTEM AND SUBSEQUENTLY SHUT DOWN THE ASSOCIATED AIR HANDLING UNIT.
 - FAN SHUT DOWN: PROVIDE REQUIRED RELAYS FOR FAN SHUTDOWN IN ACCORDANCE WITH ALL APPLICABLE LOCAL LAWS AND AS INDICATED IN CONTRACT DOCUMENTS. FANS THAT WERE SHUTDOWN DURING SMOKE/FIRE CONDITION MUST NOT AUTOMATICALLY RE-START OR BE RE-ENERGIZED UPON RESET OF SPRINKLER AND SMOKE DETECTION ALARM CONTROL PANEL. A MANUAL MEANS OF RESTARTING THE FANS OR FAN SYSTEM SHALL FUNCTION INDEPENDENTLY.
 - ALL NEW EQUIPMENT SHALL BE IN COMPLIANCE WITH ALL APPLICABLE LOCAL CODES AND REGULATIONS.
 - FIRE ALARM SYSTEM DIVISION OF WORK IS AS FOLLOWS:
 - FIRE ALARM VENDOR WILL PROVIDE THE FOLLOWING INSTALLATION PACKAGE UNDER THIS CONTRACT:
 - FURNISH ALL DRAWINGS, MATERIAL AND PROGRAM CHANGES.
 - FILE DRAWINGS WITH LOCAL AUTHORITIES HAVING JURISDICTION.
 - COORDINATE INSPECTIONS WITH LOCAL AUTHORITIES HAVING JURISDICTION.
 - PROVIDE BUILDING OWNER WITH A LETTER ATTESTING THAT SAID SYSTEM(S) ARE FULLY OPERATIONAL PRIOR TO TENANT MOVE IN.
 - ELECTRICAL CONTRACTOR SHALL:
 - PURCHASE EQUIPMENT, DRAWINGS AND FILING FROM SYSTEM VENDOR.
 - INSTALL EQUIPMENT AND WIRE RUNS TO DESIGNATED POINTS PER VENDOR DRAWINGS.
 - FILE THE REQUIRED FORMS FOR HIS WORK WITH THE THE LOCAL AUTHORITIES HAVING JURISDICTION.
 - CONTRACTOR SHALL BE AVAILABLE ON THE DATE OF ANY INSPECTION OR TEST OF SUCH SYSTEMS REQUIRED BY LOCAL AUTHORITIES HAVING JURISDICTION.
 - TENANTS WILL NOT BE PERMITTED TO MOVE IN OR OCCUPY ANY AREAS UNTIL FIRE ALARM SYSTEM IS COMPLETE AND SYSTEM VENDOR CONFIRMS, IN WRITING, THAT THE SYSTEM(S) ARE OPERATIONAL.



IS NOW COLLIERS ENGINEERING & DESIGN

ARCHITECT OF RECORD:
Justin A. Mihalik, AIA
 373 US Route 46 West
 Building D, Suite 240
 Fairfield, New Jersey 07004
 ph: (973) 291-3730 fax: (973) 291-3740
 www.colliersengineering.com

Bergmann Architectural Associates, Inc.



NOT VALID FOR CONSTRUCTION WITHOUT SEAL

Project:
 LIGHTBRIDGE ACADEMY
 655 Reedy Creek Rd
 Cary, NC 27513

Developer:
 STNL Advisors LLC
 260 Madison Ave, 5th Flr
 New York, NY 10016

Lot: -
 Zone: -

SHEET TITLE:

ELECTRICAL RISER DIAGRAM

Rev. #	Date	Remarks
03/28/2024	ISSUED FOR PERMIT	

JOB NUMBER: 2022-01-09
 DATE: 10/07/2022
 DRAWN BY: GS/MB/WC
 CHECKED BY: JAM

SHEET NO.
E-501

