Electrical General Notes

1. THE CONTRACTOR SHALL REVIEW THE ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR WORK REQUIREMENTS, THE AMOUNT OF SPACE AVAILABLE FOR ELECTRICAL EQUIPMENT, AND LAYOUT HIS WORK IN A COMPATIBLE AND COMPLEMENTARY MANNER.
2. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR THOROUGHLY FAMILIARIZING HIMSELF WITH ANY CONTRACTUAL REQUIREMENTS AS MAY BE SET FORTH IN THE OTHER DIVISIONS OF THE PROJECT SPECIFICATIONS.
3. UNLESS SPECIFICALLY NOTED OTHERWISE, SYSTEMS PROVIDED OR INSTALLED BY THE ELECTRICAL CONTRACTOR SHALL BE COMPLETE AND FULLY-FUNCTIONING AFTER INSTALLATION. INCIDENTAL COMPONENTS MAY NOT BE SHOWN, AND ALL WORK WHICH MAY BE REASONABLY IMPLIED AS BEING INCIDENTAL TO THIS WORK, BUT REQUIRED FOR THE PROPER OPERATION OF THE EQUIPMENT OR SYSTEM, SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER. ADDITIONAL CIRCUITS SHALL BE INSTALLED WHEREVER NEEDED TO CONFORM TO THE SPECIFIC REQUIREMENTS OF EQUIPMENT.
4. BIDDERS SHALL HAVE A WORKING KNOWLEDGE OF LOCAL CODES AND ORDINANCES AND SHALL INCLUDE IN THEIR BIDS THE COSTS FOR ALL WORK INSTALLED IN STRICT ACCORDANCE WITH GOVERNING CODES, THE CONSTRUCTION DOCUMENTS NOTWITHSTANDING.
5. TEMPORARY POWER CONNECTIONS AS REQUIRED SHALL BE PROVIDED BY THE CONTRACTOR AT NO ADDITIONAL EXPENSE TO THE OWNER. ALL TEMPORARY EQUIPMENT WIRING SHALL BE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE. THE CONTRACTOR SHALL PROVIDE DETAILS, METHODS, MATERIALS, ETC. TO THE ARCHITECT/ENGINEER PRIOR TO MAKING TEMPORARY CONNECTIONS. FURNISH AND INSTALL ALL EQUIPMENT AND MATERIALS INCLUDING CONTROL EQUIPMENT, MOTOR STARTERS, BRANCH AND FEEDER CIRCUIT BREAKERS, PANELBOARDS, TRANSFORMERS, ETC. FOR TEMPORARY POWER. COORDINATE WITH THE OWNER AS REQUIRED.
6. THE WORK SHALL INCLUDE COMPLETE TESTING OF ALL EQUIPMENT AND WIRING AT THE COMPLETION OF WORK AND ANY MINOR CORRECTIONS, CHANGES OR ADJUSTMENTS NECESSARY FOR THE PROPER FUNCTIONING OF THE SYSTEM AND EQUIPMENT.
7. ALL EQUIPMENT SHOWN DOTTED OR DASHED IS BY OTHERS OR IS EXISTING, AS NOTED.
8. ALL ELECTRICAL EQUIPMENT SHALL, AT ALL TIMES DURING CONSTRUCTION, BE ADEQUATELY PROTECTED AGAINST MECHANICAL INJURY, OR DAMAGE BY WATER AND/OR THE ELEMENTS. ELECTRICAL EQUIPMENT SHALL BE STORED IN DRY PERMANENT SHELTERS. PROVIDE HEATING FOR EQUIPMENT SUBJECT TO MOISTURE DAMAGE OR DAMAGE FROM CONDENSATION. IF AN APPARATUS HAS BEEN DAMAGED, OR HAS BEEN SUBJECT TO POSSIBLE INJURY BY WATER OR THE ELEMENTS, SUCH DAMAGE SHALL BE REPLACED AT NO ADDITIONAL COST TO THE OWNER.
9. DO NOT SCALE ELECTRICAL DRAWINGS. FIELD VERIFY ALL DIMENSIONS AND/OR REFER TO THE ARCHITECTURAL DRAWINGS FOR DIMENSIONS.
10. CIRCUIT LAYOUTS ARE NOT INTENDED TO SHOW THE NUMBER OF FITTINGS, OR OTHER INSTALLATION DETAILS. UNLESS NOTED OTHERWISE, THE EXACT ROUTING OF FEEDER AND BRANCH CIRCUIT RACEWAYS AND CABLES IS THE RESPONSIBILITY OF THE CONTRACTOR. RISER AND GENERAL CIRCUIT ARRANGEMENTS ARE SHOWN SCHEMATICALLY/DIAGRAMMATICALLY ONLY. THE CONTRACTOR SHALL ROUTE CONDUITS AND CABLES AS REQUIRED BY THE CONDITIONS OF THE INSTALLATION.
11. UNLESS DIMENSIONED, DEVICE LOCATIONS SHOWN ON THE DRAWINGS ARE APPROXIMATE. ADJUST EXACT LOCATIONS AS REQUIRED TO SERVE THE INTENDED PURPOSE AND TO AVOID CONFLICTS AND INTERFERENCES WITH OTHER TRADES. EXACT DEVICE LOCATIONS SHALL BE AS INDICATED ON THE ARCHITECTURAL DRAWINGS OR AS DIMENSIONED. IF NOT SHOWN ON THE ARCHITECTURAL DRAWINGS OR DIMENSIONED ON THE ELECTRICAL DRAWINGS, VERIFY EXACT LOCATION WITH THE ARCHITECT/ENGINEER PRIOR TO ROUGH-IN.
12. CONDUIT TERMINATING IN PRESSED STEEL BOXES SHALL HAVE DOUBLE LOCKNUTS AND INSULATED BUSHINGS. CONDUITS TERMINATING IN GASKETED ENCLOSURES SHALL BE TERMINATED WITH GROUNDING TYPE CONDUIT HUBS.
13. DEVICE BOXES SHOWN BACK-TO-BACK SHALL BE OFFSET A MINIMUM OF TWELVE (12) INCHES TO REDUCE SOUND TRANSMISSION BETWEEN ROOMS.
14. THE DRAWINGS INDICATE THE NUMBER OF BRANCH CIRCUIT HOMERUN PHASE CONDUCTORS VIA ARROWHEADS. PROVIDE NEUTRAL AND EQUIPMENT GROUND CONDUCTORS AS REQUIRED. ADDITIONAL CONDUCTORS REQUIRED FOR CONTROL SHALL BE INCLUDED EVEN IF NOT EXPLICITLY SHOWN.
15. SEAL ALL CONDUIT OPENINGS THROUGH EXTERIOR BUILDING WALLS WATERTIGHT.
16. ALL EXTERIOR WIRING DEVICES, BOXES, ETC. SHALL BE WEATHERPROOF. LIGHTING FIXTURES SHALL BE APPROPRIATELY RATED AND LISTED FOR THE ENVIRONMENT.
17. MAINTAIN CEILING FIRE RATINGS WITH ALL NECESSARY LIGHTING FIXTURE TRIM, ACCESSORIES, OPTIONS AND/OR FIELD FABRICATED SHROUDS COMPLYING WITH ALL APPLICABLE CODES.
18. RACEWAYS AND CABLES PENETRATING FLOORS, CEILINGS OR WALLS SHALL BE PROPERLY SEALED SMOKETIGHT.
19. RACEWAYS AND CABLES PENETRATING RATED CEILING OR WALL ASSEMBLIES SHALL BE PROPERLY SEALED IN ACCORDANCE WITH THE CORRESPONDING UNDERWRITERS LABORATORIES (OR OTHER APPROVED THIRD PARTY TESTING AGENCY) APPROVED AND LISTED FIRESTOPPING MATERIALS AND MANUFACTURER APPROVED INSTALLATION TECHNIQUES COMPLYING WITH ALL APPLICABLE CODES. SEE ARCHITECTURAL DRAWINGS FOR IDENTIFICATION OF RATED WALLS AND CEILINGS.
20. LIGHTING FIXTURES MOUNTED IN FIRE-RATED CEILINGS SHALL BE PROVIDED WITH ACCESSORIES NECESSARY TO MAINTAIN THE CEILING FIRE RATING.
21. ALL RACEWAYS AND CABLES SHALL BE CONCEALED EXCEPT THOSE SHOWN ON DRAWINGS TO BE EXPOSED. IF APPLICABLE, MATCH EXISTING RACEWAY INSTALLATION METHODS AND ROUTINGS AT OR NEAR EXISTING FACILITIES.
22. INSTALL EXPOSED RACEWAYS PARALLEL TO OR AT RIGHT ANGLES TO NEARBY SURFACES OR STRUCTURAL MEMBERS, AND FOLLOW THE SURFACE CONTOURS AS MUCH AS POSSIBLE. NO DIAGONAL RUNS WILL BE ALLOWED. ALL CONDUITS SHALL BE RUN STRAIGHT AND TRUE. RUN PARALLEL OR BANKED RACEWAYS TOGETHER ON COMMON SUPPORTS WHERE PRACTICAL. MAKE BENDS IN PARALLEL OR BANKED RUNS FROM SAME CENTERLINE TO MAKE BENDS PARALLEL.
23. PROVIDE AND PLACE ALL SLEEVES FOR CONDUITS PENETRATING WALLS, FLOORS, PARTITIONS, ETC. LOCATE ALL NECESSARY SLOTS FOR ELECTRICAL WORK AND FORM BEFORE CONCRETE IS POURED.
24. PATCHING OF WATERPROOFED SURFACES SHALL RENDER THE AREA OF THE PATCHING COMPLETELY WATERPROOF.
25. ALL MOTORS, DRY TYPE TRANSFORMERS AND OTHER VIBRATING EQUIPMENT SHALL BE CONNECTED TO THE CONDUIT SYSTEM BY MEANS OF A SHORT SECTION (18 INCH MINIMUM) OF FLEXIBLE CONDUIT UNLESS OTHERWISE INDICATED. AN EQUIPMENT GROUNDING CONDUCTOR SHALL BE INSTALLED INSIDE THE FLEXIBLE CONDUIT AND TERMINATE AT THE LOAD END WITH AN APPROVED GROUNDING CLAMP OR LUG.
26. SURFACE MOUNTED PANELBOARDS, JUNCTION, OUTLET AND PULL BOXES, RACEWAYS, ETC., INSTALLED ON EXTERIOR SURFACES OR INSIDE ON EXTERIOR WALLS SHALL BE SUPPORTED BY SPACERS TO PROVIDE A 1/4" MINIMUM CLEARANCE BETWEEN THE WALL AND EQUIPMENT.
27. CEILING MOUNTED DEVICES INSTALLED IN ACOUSTICAL TILE CEILING AREAS SHALL BE SUPPORTED FROM THE STRUCTURE ABOVE WITH RODS OF SUFFICIENT SIZE TO PREVENT VERTICAL MOVEMENT OF THE OUTLET BOX. BRIDGES ALONE ARE NOT ADEQUATE UNLESS SPECIFICALLY APPROVED. CEILING MOUNTED EXIT LIGHT FIXTURES SHALL BE INSTALLED LEVEL. DO NOT SUPPORT DEVICES FROM ACOUSTICAL CEILING TILE.
28. PRIOR TO TRENCHING IN ANY AREA, THE CONTRACTOR SHALL CONTACT ELECTRICAL POWER, COMMUNICATIONS/DATA/FIBER, CABLE TELEVISION, GAS AND WATER UTILITY PROVIDERS AND HAVE ALL UTILITIES IN THE AREA IDENTIFIED. DAMAGE TO ANY UNDERGROUND UTILITIES OR STRUCTURES SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE PROJECT.
29. ALL UNDERGROUND RACEWAYS SHALL BE IDENTIFIED BY UNDERGROUND LINE MARKING TAPE LOCATED DIRECTLY ABOVE THE RACEWAY AT 6 TO 8 INCHES BELOW FINISHED GRADE. SEE SPECIFICATIONS SECTION 260553.
30. WHERE UNDERGROUND SERVICE, FEEDER AND BRANCH CIRCUIT RACEWAYS ARE REQUIRED TO TURN UP INTO CABINETS, EQUIPMENT, ETC., AND ON TO POLES, THE ELBOW REQUIRED AND THE STUB-UP OUT OF THE SLAB OR EARTH SHALL BE OF PLASTIC-COATED RIGID STEEL. ALTERNATELY, FIELD APPLIED CORROSION PROTECTION WRAPS MAY BE USED, IN EQUIVALENT THICKNESS TO FACTORY APPLIED MATERIALS, WITH THE SPECIFIC APPROVAL OF THE ARCHITECT/ENGINEER.
31. PROVIDE 200% RATED NEUTRAL FEEDERS AND NEUTRAL BARS FOR PANELBOARDS FED BY K-RATED TRANSFORMERS, EVEN IF NOT SHOWN ON THE POWER RISER DIAGRAM AND/OR PANELBOARD SCHEDULES.
32. PROVIDE MACHINE PRINTED, LAMINATED, CLEAR WITH BLACK LETTERING, ADHESIVE BACKED RECEPTACLE DEVICE PLATE LABELS IDENTIFYING THE CIRCUIT FEEDING THE DEVICE. LABELS SHALL INDICATE PANEL AND CIRCUIT NUMBER. INSTALL CENTERED ON UPPER PORTION OF THE DEVICE PLATE. SEE SPECIFICATIONS SECTION 260553 FOR REQUIREMENTS.
33. FINAL TYPED PANELBOARD DIRECTORIES INSTALLED IN THE PANELBOARD DOOR POCKET SHALL INCLUDE FINAL ACTUAL ROOM NAMES AND NUMBERS IN ADDITION TO THE GENERAL DESCRIPTION SHOWN ON THE PANEL SCHEDULES ON THE DRAWINGS.
34. UNLESS NOTED OTHERWISE, CONDUCTOR SIZING IS BASED ON 75 DEGREE C. COPPER NEC RATINGS, UNLESS NOTED OTHERWISE. THE CONTRACTOR SHALL VERIFY, PRIOR TO INSTALLATION OF CONDUCTORS OR CONDUIT FEEDING ANY EQUIPMENT, THE ELECTRICAL EQUIPMENT IS RATED FOR USE WITH 75 DEGREE C. WIRING. IF ANY EQUIPMENT IS RATED FOR USE WITH LESS THAN 75 DEGREE C. CONDUCTORS, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER IMMEDIATELY FOR EVALUATION/CORRECTION.
35. DO NOT PULL CONDUCTORS UNTIL THE CONDUIT SYSTEM IS COMPLETE IN EVERY DETAIL. IN THE CASE OF CONCEALED WORK, "COMPLETE" MEANS UNTIL ALL ROUGH PLASTERING OR MASONRY HAS BEEN COMPLETED.
36. WHERE SIZE IS NOT SHOWN ON THE DRAWINGS, BRANCH CIRCUITS SHALL CONSIST OF #12 OR #10 AWG MINIMUM PHASE, NEUTRAL AND EQUIPMENT GROUND CONDUCTORS IN 1/2" MINIMUM RACEWAY. REFER TO "MINIMUM CONDUCTORS SIZE CHART" ON THE DRAWINGS AND INCREASE CONDUCTORS SIZES AS REQUIRED TO MAINTAIN A MAXIMUM OF 3% VOLTAGE DROP.
37. ALTERNATE MULTIWIRE RECEPTACLE CIRCUITS SUCH THAT ADJACENT RECEPTACLES ARE ON DIFFERENT CIRCUITS.
38. COMMON NEUTRAL BRANCH CIRCUITS ARE NOT PERMITTED. PROVIDE SEPARATE, INDIVIDUAL NEUTRAL CONDUCTORS FOR ALL LIGHTING AND RECEPTACLE BRANCH CIRCUITS.
39. MC CABLE SHALL BE SUPPORTED IN STRAIGHT LINES USING APPROVED SUPPORTING MEANS AND IN COMPLIANCE WITH THE NEC. DEDICATED SUPPORT WIRES MAY BE USED ABOVE FINISHED CEILINGS AND SHALL BE PAINTED RED PRIOR TO INSTALLATION. DO NOT SUPPORT CABLE WITH CEILING GRID SUPPORTS WIRES. DO NOT DRAPE CABLE OVER CEILINGS, LIGTING FIXTURES, CONDUIT, DUCTWORK, PIPING OR EQUIPMENT.
40. KEEP CONDUCTOR SPLICES TO A MINIMUM. INSTALL SPLICES AND TAPES THAT POSSESS EQUIVALENT OR BETTER MECHANICAL STRENGTH AND INSULATION RATINGS THAN CONDUCTORS BEING SPLICED. USE SPLICE AND TAP CONNECTORS COMPATIBLE WITH CONDUCTOR MATERIAL. INSTALL CONDUCTORS AT EACH OUTLET WITH AT LEAST 6 INCHES OF SLACK. CONNECT OUTLETS AND COMPONENTS TO WIRING AND TO GROUND AS INDICATED AND INSTRUCTED BY THE MANUFACTURER.
41. DO NOT SPLICE BRANCH CIRCUIT HOMERUNS WITHOUT THE PERMISSION OF THE ARCHITECT/ENGINEER. HOMERUNS SHALL BE CONTINUOUS FROM THE LAST OUTLET BOX TO THE SERVING PANELBOARD.
42. DO NOT COMBINE BRANCH CIRCUIT HOMERUNS UNLESS SPECIFICALLY INDICATED ON THE DRAWINGS.
43. DO NOT CHANGE CIRCUITING SHOWN WITHOUT PERMISSION OF THE ARCHITECT/ENGINEER.
44. TROUGH TAPS SHALL BE AT SWITCH/CIRCUIT BREAKER AMPACITY, UNLESS NOTED OTHERWISE.
45. INSTALL WIRING DEVICES AT HEIGHTS AS SHOWN ON THE DRAWINGS. ALSO COORDINATE MOUNTING HEIGHTS WITH THE ARCHITECTURAL DRAWINGS AND CASEWORK DETAILS. IF CONFLICTING, ARCHITECTURAL DRAWINGS AND DETAILS SHALL GOVERN.
46. PROVIDE GROUND FAULT CIRCUIT-INTERRUPTER (GFCI) PROTECTION FOR PERSONNEL IN ACCORDANCE WITH NEC ART. 210.8 (B) INCLUDING ALL ELECTRIC WATER COOLERS, KITCHEN EQUIPMENT, EXTERIOR RECEPTACLES AND RECEPTACLES IN AREAS SUBJECT TO POSSIBLE WET CONDITIONS. ALL RECEPTACLES INSTALLED WITHIN 6 FEET OF A SINK SHALL BE GFI PROTECTED. ALL RECEPTACLES IN NON-RESIDENTIAL KITCHENS SHALL BE GFI PROTECTED.
47. GFCI RECEPTACLES SHALL BE READILY ACCESSIBLE AFTER INSTALLATION. IF CONDITIONS OF THE INSTALLATION TO NOT ALLOW FOR READY ACCESS, PROVIDE A STANDARD RECEPTACLE AND PROVIDE A GFCI CIRCUIT BREAKER TO FEED THE CIRCUIT.
48. IN AREAS IN WHICH DUAL LEVEL SWITCHING IS INDICATED (TYPICALLY BY 2 OR MORE ADJACENT, GANGED SWITCHES), PROVIDE THE APPROPRIATE NUMBER OF CONDUCTORS TO FACILITATE THIS FUNCTION (AS TYPICALLY SHOWN).
49. IF NOT CIRCUITED, CONNECT BATTERY PACK TYPE EMERGENCY LIGHTING FIXTURES TO THE UNSWITCHED LIGHTING CIRCUIT SERVING THE SPACE LIGHTED BY THE EMERGENCY FIXTURES. THESE CONNECTIONS ARE INTENTIONALLY NOT SHOWN TO MAINTAIN DRAWING CLARITY.
50. COORDINATE LIGHTING FIXTURE LOCATIONS WITH THE ARCHITECTURAL REFLECTED CEILING PLAN. IF CONFLICTS ARE NOTED, REQUEST CLARIFICATION FROM THE ARCHITECT/ENGINEER BEFORE PROCEEDING.
51. ADJACENT SWITCHES SHALL BE GANGED. INSTALL BARRIERS BETWEEN 277 VOLT AND UNLIKE VOLTAGE SECTIONS.
52. ADJACENT RECEPTACLES AND DATA/TELEPHONE OUTLETS SHALL BE INSTALLED 6 INCHES CENTER TO CENTER AND SHALL BE AT THE SAME ELEVATION.
53. SEPARATE NEUTRALS ARE REQUIRED FOR ALL LINE VOLTAGE DIMMED LIGHTING CIRCUITS.
54. WHERE THE DRAWINGS INDICATE A LIGHTING FIXTURE IS TO BE PROVIDED WITH SPECIAL FEATURES/SWITCHING (DIMMING, MULTI-LEVEL, ETC.), THE CONTRACTOR SHALL PROVIDE THESE FIXTURES WITH THE APPROPRIATE DRIVERS TO ACCOMMODATE THE SPECIAL FEATURE. THE CONTRACTOR SHALL PROVIDE THE FIXTURES AS INDICATED IN THE LIGHTING FIXTURE SCHEDULE WITH MODIFICATIONS AS REQUIRED BY DRAWING NOTES.
55. COORDINATE LOCATIONS OF PLUMBING, MECHANICAL, DATA, LOW VOLTAGE SYSTEMS AND AUDIO/VISUAL EQUIPMENT AND OF OWNER-PROVIDED EQUIPMENT WITH THE RESPECTIVE CONTRACTORS AND VENDORS AND THE OWNER BEFORE ROUGH-IN. ADJUST LIGHTING FIXTURES, RECEPTACLES AND ELECTRICAL EQUIPMENT TO ACCOMMODATE THIS EQUIPMENT. ADVISE THE ARCHITECT/ENGINEER OF CONFLICTS BEFORE ROUGH-IN. SEE SPECIFICATIONS SECTION 260580 FOR ADDITIONAL DETAIL INVOLVING WORK WITH OTHER TRADES.
56. THE LOCATIONS OF ELECTRICAL EQUIPMENT SERVING MECHANICAL, PLUMBING AND FOOD SERVICE EQUIPMENT MAY NOT BE SHOWN PRECISELY ON THE ELECTRICAL DRAWINGS DUE TO THE VARIABILITY OF INSTALLATIONS, SPACE AND EQUIPMENT ROOM ARRANGEMENTS AND THE EQUIPMENT PROVIDED. LOCATIONS OF ELECTRICAL EQUIPMENT, PANELBOARDS, WIRING TROUGHS, LOCAL DISCONNECTING MEANS, ETC. SHALL BE COORDINATED WITH THE RESPECTIVE CONTRACTORS PRIOR TO ROUGH-IN. LOCATE AND/OR ADJUST EQUIPMENT LOCATIONS SHOWN IN CONSULTATION WITH OTHER TRADES TO MAINTAIN VISIBILITY OF THE EQUIPMENT FROM DISCONNECTING MEANS AND PROVIDE ACCESS AND WORKING SPACE IN COMPLIANCE WITH CODES.
57. BEFORE COMMENCING WORK OR ORDERING MATERIALS, THE CONTRACTOR SHALL COORDINATE WITH OTHER TRADES AND VERIFY THE NAMEPLATE RATINGS OF ALL EQUIPMENT (MOTORS, HEATERS, COMPRESSORS, ETC.) AND ADJUST THE RATINGS OF THE ELECTRICAL EQUIPMENT (SWITCHES, FUSES, CIRCUIT BREAKERS, CONDUCTORS, RACEWAYS, ETC.) AS APPROPRIATE TO SERVE THIS EQUIPMENT.
58. COORDINATE ALL EQUIPMENT TERMINATIONS, PLUGS AND CORDSETS WITH VENDOR EQUIPMENT AND VERIFY ALL DEVICE LOCATIONS FOR SPECIALTY EQUIPMENT WITH CASEWORK PRIOR TO ROUGH-IN.
59. THE LAYOUT AND PLACEMENT OF ELECTRICAL DISTRIBUTION EQUIPMENT IN ELECTRICAL AND MECHANICAL EQUIPMENT ROOMS IS BASED ON PUBLISHED EQUIPMENT SIZES AND SHALL BE FOLLOWED AS CLOSELY AS POSSIBLE. DEVIATIONS FROM CONFIGURATIONS SHOWN IS THE RESPONSIBILITY OF THE CONTRACTOR. PROVIDE NATIONAL ELECTRIC CODE REQUIRED CLEARANCES FOR ALL ELECTRICAL EQUIPMENT, PANELBOARDS, TRANSFORMERS, SAFETY SWITCHES, ETC. COORDINATE RESOLUTION OF CONFLICTS WITH OTHER TRADES. ADVISE THE ARCHITECT/ENGINEER OF CONFLICTS BEFORE ROUGH-IN.
60. THE EXACT SPACING OF SMOKE AND HEAT DETECTORS AND A/V DEVICES SHALL BE FOLLOWED AS CLOSELY AS POSSIBLE WITH POSITIONS SHOWN ON THE DRAWINGS. DETECTOR SPACING IS BASED UPON NFPA 72 INCLUDING APPENDIX A. SLIGHT ADJUSTMENTS MAY BE MADE IN SPACING IF REQUIRED BY FIELD CONDITIONS, BUT SPACING SHALL NOT EXCEED ADA, NFPA AND EQUIPMENT MANUFACTURER'S SPACING CRITERIA. DO NOT INSTALL SMOKE DETECTORS WITHIN 3 FEET OF SUPPLY AIR DIFFUSERS OR RETURN GRILLES. PROVIDE FLEX CONDUIT CONNECTION TO SMOKE AND HEAT DETECTORS OF ADEQUATE LENGTH TO ALLOW HORIZONTAL ADJUSTMENT OF FOUR FEET FROM POSITION INDICATED ON DRAWINGS.
61. INSTALLATION INFORMATION PACKED WITH LIGHTING FIXTURES, DEVICES AND EQUIPMENT SHALL BE RETAINED FOR INCLUSION IN THE OPERATIONS AND MAINTENANCE MANUALS.
62. PROTECT ALL EXISTING POWER, COMMUNICATIONS, DATA, TELEPHONE, LIFE SAFETY, FIRE ALARM, ACCESS CONTROL, SECURITY, PUBLIC ADDRESS, NURSE CALL, PAGING, CLOSED CIRCUIT TV SYSTEMS, ETC. AND MAINTAIN THEM IN OPERATION THROUGHOUT THE PROGRESS OF THE WORK. NOTIFY THE OWNER AND ARCHITECT/ENGINEER IF SHUTDOWNS ARE REQUIRED PRIOR TO ANY OUTAGE OF SERVICE. WHERE THE DURATION OF A PROPOSED OUTAGE CANNOT BE TOLERATED BY THE OWNER PROVIDE TEMPORARY CONNECTIONS AS REQUIRED TO MAINTAIN SERVICE.
63. THE CONTRACTOR SHALL PERFORM ALL CUTTING AND PATCHING NECESSARY TO INSTALL ALL EQUIPMENT AS REQUIRED AND SHALL REESTABLISH ALL FINISHES TO THEIR ORIGINAL CONDITION WHERE CUTTING AND PATCHING OCCUR. ALL CUTTING AND PATCHING SHALL BE DONE IN A THOROUGHLY WORKMANSHIP MANNER. SAW CUT CONCRETE AND MASONRY PRIOR TO BREAKING OUT SECTIONS. ALL PATCHING MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH DIVISION 9 OF THESE SPECIFICATIONS AND PERFORMED BY TRADESMEN EXPERIENCED IN THAT WORK. ALL WORK SHALL BE SUBJECT TO THE APPROVAL OF THE ARCHITECT/ENGINEER.
64. CORE DRILL HOLES IN EXISTING CONCRETE WALLS AS REQUIRED.
65. INSTALL WORK AT SUCH TIME AS TO REQUIRE THE MINIMUM AMOUNT TO CUTTING AND PATCHING.
66. CUT OPENINGS ONLY LARGE ENOUGH TO ALLOW EASY INSTALLATION OF THE CONDUIT.
67. EXISTING CIRCUITING WHERE SHOWN IS FOR CONVENIENCE PURPOSES ONLY. VERIFICATION OF EXISTING WIRING DESTINATION, TERMINATION AND ADDITIONS OF NEW LOADS IS THE RESPONSIBILITY OF THE CONTRACTOR.
68. MAINTAIN CONTINUITY OF ALL EXISTING CIRCUITS TO REMAIN OR PORTIONS THEREOF AFFECTED BY THIS WORK.
69. DESIGN AND ADDITION OF NEW CIRCUITING IS BASED ON THE ENGINEER'S BEST INFORMATION REGARDING EXISTING CONDITIONS AND CURRENT RECORD DRAWINGS. AVAILABILITY OF ADEQUATE CIRCUIT BREAKER SPACE FOR NEW WORK IN EXISTING PANELBOARDS SHALL BE VERIFIED BY THE CONTRACTOR. IF ADEQUATE SPACE IS NOT AVAILABLE FOR NEW CIRCUIT BREAKERS THE CONTRACTOR SHALL NOTIFY THE ENGINEER FOR RESOLUTION BEFORE PROCEEDING.
70. TRACE OUT EXISTING WIRING THAT IS TO BE RELOCATED, OR REMOVED AND PERFORM THE RELOCATION OR REMOVAL WORK AS REQUIRED FOR A COMPLETE OPERATING AND SAFE SYSTEM.
71. THE EXISTING ELECTRICAL SYSTEMS DEPICTED ON THESE DRAWINGS HAVE BEEN COMPILED BY THE ENGINEER FROM THE OWNER'S RECORD DRAWINGS AND LIMITED FIELD VERIFICATION OF THE EXISTING CONDITIONS FOR THE PURPOSE OF INDICATING THE WORK REQUIRED AND ARE BELIEVED TO BE CORRECT. NOTWITHSTANDING, THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, POINTS OF ACCESS AND FIELD CONDITIONS AFFECTING HIS WORK.
72. THE CONTRACTOR SHALL VISIT THE SITE AND BECOME FAMILIAR WITH THE EXISTING ELECTRICAL SYSTEMS AND THE EXISTING BUILDING. THE SUBMISSION OF THE PROPOSAL BY THE CONTRACTOR SHALL BE CONSIDERED EVIDENCE THAT HE OR HIS REPRESENTATIVE HAS VISITED THE SITE AND BUILDING AND NOTED THE LOCATION AND CONDITIONS UNDER WHICH THE WORK WILL BE PERFORMED AND THAT HE TAKES FULL RESPONSIBILITY OF ALL FACTORS GOVERNING HIS WORK. NO EXTRAS WILL BE CONSIDERED BECAUSE OF ADDITIONAL WORK NECESSITATED BY EXISTING JOB CONDITIONS THAT ARE NOT INDICATED ON THE DRAWINGS.
73. SOME EXISTING RECEPTACLE, LIGHTING OR OTHER LOADS MAY BE SERVED BY CIRCUITS INDICATED TO BE REMOVED. IF SUCH CONDITIONS ARE DISCOVERED, REQUEST THE ARCHITECT/ENGINEER PROVIDE NEW CIRCUIT NUMBER FOR THE LOAD. DO NOT INDISCRIMINATELY CONNECT TO THE NEAREST CIRCUIT.
74. ALL UNUSED OUTLET BOXES SHALL BE REMOVED OR, WITH SPECIFIC APPROVAL OF THE ARCHITECT/ENGINEER, SHALL BE BLANKED WITH STAINLESS STEEL PLATES. ALL OPENINGS IN EXISTING WALLS AND CEILINGS MADE BY THIS CONTRACTOR SHALL BE REPAIRED TO AN EQUAL FINISH AS ADJACENT SURFACES.
75. PROVIDE ALL ELECTRICAL RELOCATION WORK ASSOCIATED WITH THE RELOCATING OF EQUIPMENT FOR THE EXISTING FACILITIES, INCLUDING DISCONNECTING ALL EXISTING WIRING AND CONDUITS AND PROVIDING NEW WIRING AND CONDUITS TO THE RELOCATED EQUIPMENT.

SELECTIVE DEMOLITION NOTES

76. THE ELECTRICAL CONTRACTOR SHALL REVIEW THE ARCHITECTURAL, MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS AND SPECIFICATIONS FOR DEMOLITION REQUIREMENTS AND CARRY OUT THE WORK IN A COMPATIBLE AND COMPLEMENTARY MANNER. SECURE AND REMOVE ALL WIRING DEVICES, BOXES, FIXTURES, EXPOSED ABANDONED RACEWAYS, HANGARS, ETC., MADE OBSOLETE BY THESE ALTERATIONS AND AS SHOWN ON THE DRAWINGS. REMOVE UNUSED EXPOSED CONDUIT AND WIRING BACK TO POINT OF CONCEALMENT INCLUDING ABANDONED CONDUIT ABOVE ACCESSIBLE CEILINGS. REMOVE UNUSED WIRING IN CONCEALED CONDUITS BACK TO SOURCE OR NEAREST POINT OF USAGE. BLANK ABANDONED KNOCKOUTS IN REMAINING BOXES. INSTALL BLANK PLATES FOR ALL UNUSED OUTLETS THAT WILL REMAIN AS A RESULT OF THIS CONSTRUCTION. ALL SUCH WORK SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES AND ORDINANCES. ALL ITEMS TO BE REMOVED OR MODIFIED MAY NOT BE SHOWN, HOWEVER, THIS CONTRACTOR SHALL REMOVE ANY ELECTRICAL WORK AS REQUIRED BY THE CONSTRUCTION OR AS DIRECTED BY THE OWNER OR ARCHITECT/ENGINEER. SURVEY THE AFFECTED AREAS BEFORE SUBMITTING A BID AS ALL EXISTING CONDITIONS CANNOT BE COMPLETELY DEPICTED ON THE DRAWINGS AND SOME UNUSUAL CONDITIONS MAY EXIST.
77. THE ACCESSIBLE PORTIONS OF ABANDONED FREE RUN CABLES (VOICE, DATA, VIDEO, ALARM, ETC.) SHALL BE REMOVED. VERIFY THAT ABANDONED WIRING AND EQUIPMENT SERVE ONLY ABANDONED FACILITIES.
78. REMOVE, RELOCATE, AND EXTEND EXISTING INSTALLATIONS TO ACCOMMODATE THE WORK.
79. PROVIDE TEMPORARY AND/OR PERMANENT WIRING AND CONNECTIONS AS SHOWN AND/OR AS REQUIRED BY CONDITIONS TO MAINTAIN EXISTING SYSTEMS IN SERVICE DURING CONSTRUCTION. WHEN WORK MUST BE PERFORMED ON ENERGIZED EQUIPMENT OR CIRCUITS, AND WHEN SUCH WORK IS SPECIFICALLY APPROVED BY THE OWNER AND PERMITTED BY REGULATORY AUTHORITIES, USE PERSONNEL EXPERIENCED IN SUCH OPERATIONS.
80. EXISTING ELECTRICAL SERVICE: COORDINATE POWER OUTAGES WITH THE OWNER AND UTILITY COMPANY. MAINTAIN EXISTING SYSTEMS IN SERVICE. DISABLE SYSTEMS ONLY TO MAKE SWITCHOVERS AND CONNECTIONS. OBTAIN WRITTEN PERMISSION FROM THE OWNER AT LEAST 24 HOURS BEFORE PARTIALLY OR COMPLETELY DISABLING SYSTEM. MINIMIZE OUTAGE DURATION. MAKE TEMPORARY CONNECTIONS TO MAINTAIN SERVICE IN AREAS ADJACENT TO WORK AREA.
81. EXISTING FIRE ALARM SYSTEM: COORDINATE FIRE ALARM SYSTEM WORK AND MAINTAIN THE EXISTING SYSTEM IN SERVICE UNTIL THE NEW AREA IS ACCEPTED. DISABLE SYSTEM ONLY TO MAKE SWITCHOVERS AND CONNECTIONS. NOTIFY THE OWNER AND LOCAL FIRE SERVICE AT LEAST 24 HOURS BEFORE PARTIALLY OR COMPLETELY DISABLING SYSTEM. LIMIT OUTAGES TO NORMAL BUSINESS HOURS ONLY AND MINIMIZE OUTAGE DURATION. MAKE TEMPORARY CONNECTIONS TO MAINTAIN SERVICE IN AREAS ADJACENT TO WORK AREA.
82. MAINTAIN ACCESS TO EXISTING ELECTRICAL INSTALLATIONS WHICH REMAIN ACTIVE. MODIFY INSTALLATION OR PROVIDE ACCESS PANEL AS APPROPRIATE.
83. PROTECT EXISTING EQUIPMENT AND CIRCUITS TO REMAIN AND EXTEND AS REQUIRED UTILIZING MATCHING CONDUCTORS AND CONDUIT SIZE AND TYPE.
84. RECONNECT EXISTING CIRCUITS SEPARATED AS A RESULT OF THIS CONSTRUCTION.
85. THE EXISTING ADJACENT FACILITIES WILL REMAIN OCCUPIED BY THE OWNER THROUGHOUT THE PROJECT. AS SUCH, WORK WILL REQUIRE SPECIAL EFFORT BY THIS CONTRACTOR TO ALLOW THE WORK TO PROCEED IN A TIMELY MANNER. ALL ELECTRICAL WORK SHALL BE COORDINATED WITH THE OWNER AND GENERAL CONTRACTOR SO AS TO MINIMIZE DISRUPTION OF THE OWNER'S USE OF THE FACILITIES AND MAINTAIN THE CONSTRUCTION SEQUENCE OF THE GENERAL CONTRACTOR. SEE ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL INSTRUCTIONS CONCERNING PHASING AND SEQUENCE OF WORK. ALSO SEE SPECIFICATIONS SECTION TITLED "EXISTING BUILDINGS AND CONSTRUCTION" FOR ADDITIONAL REQUIREMENTS.
86. SAFETY
    A. COMPLY WITH OSHA AND NEC ARC FLASH PROTECTION REQUIREMENTS.
    B. FOR EQUIPMENT BEING REMOVED AND REPLACED, THE CONTRACT

Dry Type Transformer Schedule

MARK	LOCATION	SOURCE	LOAD	RATING (kVA)	PRI. VOLTS	SEC. VOLTS	GRND'G. ELECTR. CONDX.	TEMP. RISE (DEG. C.)	K RATING	REMARKS
T-2HVAC	MECHANICAL 0007	PANEL "4MDP"	PANEL "2HVAC"	112.5	480	120/208	1/0	115		175A PRIMARY CB, NOTE 3
T-2NE1	MECHANICAL 0007	PANEL "4MDP"	PANEL "2NE1"	75	480	120/208	2	115	13	125A PRIMARY CB, NOTE 3
T-2NE3	MECHANICAL 0007	PANEL "4MDP"	PANEL "2NE2"	75	480	120/208	2	115	13	125A PRIMARY CB, NOTE 3

NOTES:
1. ALL TRANSFORMERS ARE THREE PHASE, DELTA:WYE CONNECTED, FLOOR MOUNTED, K RATED 1, UNO.
2. GROUNDING ELECTRODE CONDUCTOR (GRND'G. ELECTR. CONDX.) IS SHOWN IN AWG.
3. PROVIDE TRANSFORMER WITH AN INTEGRAL PRIMARY MOLDED CASE CIRCUIT BREAKER SIZE AS INDICATED. SEE SPECS SECTION 262200 PARA. 2.3.
4. SEE SPECIFICATIONS SECTION 262200 FOR TRANSFORMER MATERIALS AND INSTALLATION DETAILS.

SURGE PROTECTION DEVICES (SPD) SCHEDULE

SPD TYPE	LOCATION	FEEDER CIRCUIT BREAKER
SERVICE ENTRANCE	EXISTING MAIN SWITCHBOARD DISTRIBUTION SECTION	EXISTING CB #3, SQUARE D LX36300G, 3/200 SPARE, REPLACE TRIP UNIT WITH 30A
PANELBOARD	EXISTING PANELBOARD CB	REMOVE EXISTING 3/100 CB AT POLES 32,34,36 AND REPLACE WITH NEW SQUARE D FA36030, 3/30 CB
PANELBOARD	EXISTING PANELBOARD 4MDP	REMOVE EXISTING CB #9, SQUARE D HGA36040, 3/60 SPARE AND PROVIDE AN HGA36030 3/30 CB. DELIVER THE SPARE CB TO THE OWNER.
PANELBOARD	EXISTING PANELBOARD 4LS	REMOVE EXISTING 1/20 CBs AT POLES 14,16,18 AND INSTALL NEW SQUARE D EDB34030, 3/30 CB
PANELBOARD	EXISTING PANELBOARD 4N	PROVIDE AND INSTALL A NEW GED TED134030, 3/30 CB IN AVAILABLE SPACE. IF SPACE IS NOT AVAILABLE REMOVE THE EXISTING CB #4, GED TED134060, 3/60 SPARE AND INSTALL THE NEW 3/30 IN THAT SPACE. DELIVER THE SPARE CB TO THE OWNER.

NOTES
1. UPDATE ALL SWITCHBOARD AND PANELBOARD SCHEDULES TO REFLECT ABOVE REVISIONS.
2. KEEP SPD CONDUCTORS AS SHORT AND STRAIGHT AS POSSIBLE.
3. THE SPD BASIS OF DESIGN SPDs REQUIRE 30A CBs. PROVIDE MANUFACTURER RECOMMENDED CBs IF THEY DIFFER FROM 30A.
4. REFER TO SPECS SECTION 264313 FOR SPD REQUIREMENTS.

EXISTING PANEL 4MDP BRANCH CIRCUIT BREAKER MODIFICATIONS

LOAD	PANEL 4MDP FEEDER CIRCUIT BREAKER
PANEL 4NE	EXISTING CB #11, 3/60 SPARE
PANEL 4HVAC	REMOVE EXISTING CB #12, SQUARE D HGA36060, 3/60 SPARE AND PROVIDE AN JGA36225 3/225 CB. DELIVER THE SPARE CB TO THE OWNER.
TRANSFORMER T-2HVAC	PROVIDE A SQUARE D JGA36175 3/175 CB AND INSTALL IN EXISTING SPACE 17.
TRANSFORMER T-2NE1	PROVIDE A SQUARE D JGA36125 3/125 CB AND INSTALL IN EXISTING SPACE 18.
TRANSFORMER T-2NE2	PROVIDE A SQUARE D JGA36125 3/125 CB AND INSTALL IN EXISTING SPACE 19.

NOTES:
1. PROVIDE ALL NECESSARY MOUNTING HARDWARE AND ACCESSORIES AS REQUIRED TO INSTALL NEW CIRCUIT BREAKERS.
2. UPDATE ALL SWITCHBOARD AND PANELBOARD SCHEDULES TO REFLECT ABOVE REVISIONS.

HOUSEHOLD "D" | HOUSEHOLD "C" | HOUSEHOLD "B" | HOUSEHOLD "A" | COMMUNITY CENTER "E" | HOUSEHOLD "F" | HOUSEHOLD "G" | HOUSEHOLD "H" | STAND ALONE HOUSEHOLD "J" | STAND ALONE HOUSEHOLD "K"

NIC

NIC

1 - Electrical Single Line Diagram
not to scale

McFadyen Engineers, PLLC
4411 Peachtree Avenue Wilmington, NC 28403 Phone : 910.399.1125
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BOWMAN MURRAY HEMINGWAY ARCHITECTS
514 Market Street
Wilmington, NC 28406
Tel - (910) 762-2621
Fax - (910) 762-8506

NORTH CAROLINA PROFESSIONAL SEAL 8433 ENGINEER JOSHUA M. MCFADYEN
12-10-20

THE DAVIS COMMUNITY
New Community Center
1011 Porter's Neck Road
Wilmington, North Carolina 28411

REV.	DATE	DESCRIPTION
1	12-10-2020	REVISED PER NHC INSPECTIONS COMMENTS

NO.	DATE	ISSUE NOTE

Project Manager: RDM	Drawn By: WPJ
Date: December 10, 2020	Reviewed By: RDM
Project ID	

Sheet Title: **Electrical Single Line Diagram**

Sheet No.: E102

PANEL "2NE1"

TYPE: 208 / 120 VOLTS, 3 PHASE, 4 WIRE — PROVIDE xx EQUIPMENT GROUND BUS
BOLT-ON — MOUNT: SURFACE — PROVIDE IF xx 200 % NEUTRAL BUS
HINGED TRM — FEED: TOP — CHECKED ULSE LABEL
NEMA – 1 ENCLOSURE — ISOLATED GROUND BAR

LOAD SERVED	LOAD VA	CKT BKR POLES/TRIP	CKT #	LOAD VA A	LOAD VA B	LOAD VA C	CKT #	CKT BKR POLES/TRIP	LOAD VA	LOAD SERVED
PROJECTOR 133	500	1/20	1	2,300			2	1/20	1,800	FOUNTAIN 178
RECEPTACLES 133	720	1/20	3		1,220		4	1/20	500	EWC 139
RECEPTACLE 133	1,000	1/20	5			1,500	6	1/20	500	EWC 139
RECEPTACLE 133	1,000	1/20	7	1,900			8	1/20	900	RECEPTACLES 134,135,139,PV-03,PV-04
RECEPTACLE 133	1,000	1/20	9		2,080		10	1/20	1,080	RECEPTACLES 120,138
RECEPTACLE 129	1,000	1/20	11			1,720	12	1/20	720	RECEPTACLES 137
RECEPTACLE 129	1,000	1/20	13	1,500			14	1/20	500	AUTOMATIC DOOR 136
REFRIGERATOR 129	1,200	1/20	15		2,460		16	1/20	1,260	RECEPTACLES 120,123,124,132
RECEPTACLES 129	540	1/20	17			1,280	18	1/20	720	RECEPTACLES 132
DISPOSAL 129	1,176	1/20	19	1,896			20	1/20	720	RECEPTACLES 132
RECEPTACLES 127,129,130,PV-01,PV-02	900	1/20	21		1,400		22	1/20	500	PROJECTOR 132
RECEPTACLES 118,119,131	1,620	1/20	23			2,700	24	1/20	1,080	RECEPTACLES 178
RECEPTACLES 106,107,110,111,114,115	1,080	1/20	25	2,340			26	1/20	1,260	RECEPTACLES 181
RECEPTACLES 106,107,110,111,114,115	1,080	1/20	27		1,580		28	1/20	500	PROJECTOR 181
RECEPTACLES 106,107,110,111,114,115	1,080	1/20	29			2,880	30	1/20	1,800	RECEPTACLES 181
RECEPTACLE 113	1,000	1/20	31	2,800			32	1/20	1,800	RECEPTACLES 181
RECEPTACLE 113	1,000	1/20	33		2,800		34	1/20	1,800	RECEPTACLES 181
RECEPTACLES 113	720	1/20	35			1,440	36	1/20	720	RECEPTACLES 172,173,PV-10,PV-11
PROJECTOR 113	500	1/20	37	1,500			38	1/20	1,000	RECEPTACLE 171
RECEPTACLES 105,109	1,080	1/20	39		2,080		40	1/20	1,000	RECEPTACLE 171
RECEPTACLES 104,117	900	1/20	41			2,160	42	1/20	1,260	RECEPTACLES 170,174,175,176,178,PV-09
RECEPTACLES 100,101,102,103	1,080	1/20	43	2,580			44	1/20	1,500	COPIER 126
RECEPTACLES 100,101,102,103	1,080	1/20	45		1,800		46	1/20	720	DIGITAL DISPLAY 138
EXTERIOR RECEPTACLES	720	1/20	47			1,980	48	1/20	1,260	RECEPTACLES 118,119,123,127,131
REFRIGERATOR 122	1,500	1/20	49	2,044			50	1/20	544	LIGHTING 133,172,173,175,178,PV05,10,11,178 FANS
REFRIGERATOR 122	1,500	1/20	51		2,064		52	1/20	564	LIGHTING 120,134,135, PV03,04
COOLER 122	1,500	1/20	53			2,165	54	1/20	665	LIGHTING 104,113,117,118,127,128,PV01,02
RECEPTACLES 122	720	1/20	55	1,104			56	1/20	384	LIGHTING 136, 137,138
VENDING 129	1,000	1/20	57		1,000		58	1/20		SPARE
VENDING 129	1,000	1/20	59			1,000	60	1/20		SPARE
RECEPTACLE 180	1,000	1/20	61	1,000			62	1/20		SPARE
RECEPTACLE 180	1,000	1/20	63		1,000		64	1/20		SPARE
SPARE		1/20	65				66	1/20		SPARE
SPARE		1/20	67				68	1/20		SPARE
SPARE		1/20	69				70	1/20		SPARE
SPARE		1/20	71				72	1/20		SPARE
SPARE		1/20	73				74	1/20		SPARE
SPARE		1/20	75				76	1/20		SPARE
SPARE		1/20	77				78	1/20		SPARE
SPARE		1/20	79				80	1/20		SPARE
SPARE		2/20	81				82	2/20		COPIER
			83				84			
SPARE				20,064	19,484	18,805	TOTAL VA			225 A. BUS (COPPER, UNO)
1. COORDINATE CIRCUIT BREAKER TRIP WITH EQUIPMENT.				175	162	157	TOTAL AMPERES			225 A. MAIN CIRCUIT BREAKER
2. PROVIDE CIRCUIT BREAKER LOCKING DEVICE FOR FACU AND UNIT TYPE SMOKE DETECTOR CIRCUITS.				35%	33%	32%	PHASE BALANCE			14 KAIC MINIMUM RATING

DEMAND SUMMARY:	CONNL (VA)	DEMAND FACTOR	DEMAND (VA)	NOTES
R: TOTAL RECEPTACLES (VA) = 43,140				
RECEPTACLES FIRST 10 KVA	10,000	1.00	10,000	
RECEPTACLES > 10 KVA	33,140	0.50	16,570	
L: LIGHTING	2,157	1.25	2,696	
M: MISCELLANEOUS EQUIPMENT	13,956	1.00	13,956	
O: OTHER EQUIPMENT (CONTINUOUS)		1.25		
B: LARGEST MOTOR		1.25		
H: HVAC EQUIPMENT (FLA = MCA X 0.8)		1.00		
K: KITCHEN EQUIPMENT		1.00		DEMAND FACTOR PER NEC TABLE 220.56
TOTAL CONNECTED (VA)	59,253			
TOTAL DEMAND (VA)			43,222	
TOTAL DEMAND (AMPERES)			120.0	
PANEL DEMAND LOADING VS RATING		53.3%		

PANEL "2NE2"

TYPE: 208 / 120 VOLTS, 3 PHASE, 4 WIRE — PROVIDE xx EQUIPMENT GROUND BUS
BOLT-ON — MOUNT: FLUSH — PROVIDE IF xx 200 % NEUTRAL BUS
HINGED TRM — FEED: TOP — CHECKED ULSE LABEL
NEMA – 1 ENCLOSURE — ISOLATED GROUND BAR

LOAD SERVED	LOAD VA	CKT BKR POLES/TRIP	CKT #	LOAD VA A	LOAD VA B	LOAD VA C	CKT #	CKT BKR POLES/TRIP	LOAD VA	LOAD SERVED
RECEPTACLE 161	1,500	1/20	1	2,760			2	1/20	1,260	RECEPTACLES 159,160,166,167,168,PV-07,PV-08
RECEPTACLE 162	1,500	1/20	3		2,040		4	1/20	540	RECEPTACLES 169,179
RECEPTACLE 163	1,500	1/20	5			2,760	6	1/20	1,260	RECEPTACLES 183, 184
RECEPTACLE 164	1,500	1/20	7	2,500			8	1/20	1,000	RECEPTACLE 183
REFRIGERATOR 159	1,000	1/20	9		2,000		10	1/20	1,000	RECEPTACLE 183
REFRIGERATOR 159	1,000	1/20	11			2,000	12	1/20	1,000	RECEPTACLE 183
RECEPTACLE 159	1,000	1/20	13	1,500			14	1/20	500	PROJECTOR 183
RECEPTACLE 159	1,000	1/20	15		2,080		16	1/20	1,080	RECEPTACLES 186
EWC 159	1,000	1/20	17			1,540	18	1/20	540	FLOOR BOXES 186
VENDING 159	1,000	1/20	19	1,500			20	1/20	500	AUTOMATIC DOOR 187
VENDING 159	1,000	1/20	21		2,080		22	1/20	1,080	RECEPTACLES AND FLOOR BOXES 185
RECEPTACLES 157,158	1,080	1/20	23			2,520	24	1/20	1,440	RECEPTACLES 182
RECEPTACLES 155,156	540	1/20	25	1,260			26	1/20	720	RECEPTACLES 179
RECEPTACLES 140,146,PV-05	540	1/20	27		1,620		28	1/20	1,080	EXTERIOR RECEPTACLES
RECEPTACLES 141,142,143,144	1,080	1/20	29			1,440	30	1/20	360	EXTERIOR RECEPTACLES
RECEPTACLES 141,142,143,144	1,080	1/20	31	2,880			32	1/20	1,800	FOUNTAIN EQUIPMENT 168
RECEPTACLES 140	720	1/20	33		1,280		34	1/20	540	RECEPTACLES 135
RECEPTACLES 140	720	1/20	35			1,813	36	1/20	1,093	LIGHTING 181,182,183,185,186, CEILING FANS
DISPOSAL 159	1,176	1/20	37	1,528			38	1/20	352	CEILING FANS FRONT PORCH
DISHWASHER 159	1,500	1/20	39		2,208		40	1/20	708	LIGHTING 161,162,163,164,167,168, PV07,08
SPARE		1/20	41			636	42	1/20	636	LIGHTING 179
SPARE		1/20	43	112			44	1/20	112	EXTERIOR LIGHTING THRU TS
SPARE		1/20	45		63		46	1/20	63	TRACK LIGHTING 181
SPARE		1/20	47			72	48	1/20	72	TRACK LIGHTING 181
SPARE		1/20	49	63			50	1/20	63	TRACK LIGHTING 183
SPARE		1/20	51		72		52	1/20	72	TRACK LIGHTING 183
SPARE		1/20	53				54	1/20		SPARE
SPARE		1/20	55				56	1/20		SPARE
SPARE		1/20	57				58	1/20		SPARE
SPARE		1/20	59				60	1/20		SPARE
SPARE		1/20	61				62	1/20		SPARE
SPARE		1/20	63				64	1/20		SPARE
SPARE		1/20	65				66	1/20		SPARE
SPARE		1/20	67				68	1/20		SPARE
SPARE		1/20	69				70	1/20		SPARE
SPARE		1/20	71				72	1/20		SPARE
SPARE		1/20	73				74	1/20		SPARE
SPARE		1/20	75				76	1/20		SPARE
SPARE		1/20	77				78	1/20		SPARE
SPARE		1/20	79				80	1/20		SPARE
SPARE		2/30	81				82	2/30		SPARE
			83				84			
SPARE				14,103	13,423	12,781	TOTAL VA			225 A. BUS (COPPER, UNO)
1. COORDINATE CIRCUIT BREAKER TRIP WITH EQUIPMENT.				118	112	107	TOTAL AMPERES			225 A. MAIN CIRCUIT BREAKER
2. PROVIDE CIRCUIT BREAKER LOCKING DEVICE FOR FACU AND UNIT TYPE SMOKE DETECTOR CIRCUITS.				35%	33%	32%	PHASE BALANCE			14 KAIC MINIMUM RATING

DEMAND SUMMARY:	CONNL (VA)	DEMAND FACTOR	DEMAND (VA)	NOTES
R: TOTAL RECEPTACLES (VA) = 27,660				
RECEPTACLES FIRST 10 KVA	10,000	1.00	10,000	
RECEPTACLES > 10 KVA	17,660	0.50	8,830	
L: LIGHTING	2,819	1.25	3,524	
M: MISCELLANEOUS EQUIPMENT	9,828	1.00	9,828	
O: OTHER EQUIPMENT (CONTINUOUS)		1.25		
B: LARGEST MOTOR		1.25		
H: HVAC EQUIPMENT (FLA = MCA X 0.8)		1.00		
K: KITCHEN EQUIPMENT		1.00		DEMAND FACTOR PER NEC TABLE 220.56
TOTAL CONNECTED (VA)	40,307			
TOTAL DEMAND (VA)			32,182	
TOTAL DEMAND (AMPERES)			89.3	
PANEL DEMAND LOADING VS RATING		39.7%		

KITCHEN EQUIPMENT ELECTRICAL SCHEDULE

ITEM NO	QTY	CATEGORY	V	PH	A	HZ	HP	VA	CONNECTION TYPE	PLUG NEMA CONFIG	CONN HEIGHT	REMARKS
3	2	Convection Oven, Gas	120	1	7.7	60		924	CORD & PLUG	FV	FV	Existing/Relocated
6	1	Pizza Preparation Refrigerator	115	1	5.4	60	1/3	690	CORD & PLUG	5-15P	FV	
7	1	Hot Food Serving Counter / Table	208	1	13.3	60		2766.4	CORD & PLUG	6-20P	FV	
11	1	Dishwasher, Door Type, Ventless	208	3	46.3	60		36493	HARDWIRE			Leased by Owner
15	1	Coffee Brewer	120	1		60		1600	CORD & PLUG	FV	FV	By Vender
16	1	Iced Tea Brewer	120	1	14.4	60		1728	CORD & PLUG	5-15P	FV	By Vendor
17	1	Ice Dispenser	115	1	4	60		460	CORD & PLUG	5-15P	FV	
21	1	Reach-In Refrigerator	115	1	5	60	1/4	575	CORD & PLUG	5-15P	FV	
26	1	Ice Maker, Cube-Style	208	1	9.8	60		2038.4	HARDWIRE			Existing/Relocated
29	1	Refrigerated Work Top	115	1	2.7	60	1/5	310.5	CORD & PLUG	5-15P	FV	
30	1	Food Processor, Benchtop / Countertop	120	1	7.0	60	1	840	CORD & PLUG	5-15P	FV	
31	1	Commercial Food Blender	120	1	15.0	60	3-3/4	1800	CORD & PLUG	FV	FV	
47	1	Food Slicer, Electric	115	1	4.8	60	1/3	552	CORD & PLUG	5-15P	FV	
56	1	Exhaust Hood System	See Mechanical Drawings Equipment Schedule						HARDWIRE			
57	2	Walk In Cooler, Modular, Remote Cond.	208	3		60		4323	HARDWIRE			
58	1	Walk In Freezer Modular, Remote Cond.	208	3		60		5763	HARDWIRE			
66	1	Reach-In Undercounter Freezer	115	1	2.3	60	1/5	265	CORD & PLUG	5-15P	FV	
67	1	French Fry Warmer	120	1	4.2	60		504	CORD & PLUG	5-15P	FV	
68	2	Mobile Heated Cabinet	120	1	13.8	60		1656	CORD & PLUG	5-15P	FV	
71	1	Combi Oven, Gas	120	1	7.0	60		840	HARDWIRE			

NOTES:
1. "FV" INDICATES NO CONFIGURATION GIVEN, FIELD VERIFY.

PANEL "4HVAC"

TYPE: 480 / 277 VOLTS, 3 PHASE, 4 WIRE — PROVIDE xx EQUIPMENT GROUND BUS
BOLT-ON — MOUNT: SURFACE — PROVIDE IF xx 100 % NEUTRAL BUS
HINGED TRM — FEED: BOTTOM — CHECKED ULSE LABEL
NEMA – 1 ENCLOSURE — ISOLATED GROUND BAR

LOAD SERVED	LOAD VA	CKT BKR POLES/TRIP	CKT #	LOAD VA A	LOAD VA B	LOAD VA C	CKT #	CKT BKR POLES/TRIP	LOAD VA	LOAD SERVED
	2,550		1	4,462			2	1/20	1,912	
RTU-01	2,550	3/15	3		4,462		4	3/15	1,912	RTU-07
	2,550		5			4,462	6		1,912	
	2,550		7	4,462			8		1,912	
RTU-02	2,550	3/15	9		4,462		10	3/15	1,912	RTU-08
	2,550		11			4,462	12		1,912	
	3,399		13	5,949			14		2,550	
RTU-03	3,399	3/20	15		5,949		16	3/15	2,550	RTU-09
	3,399		17			5,949	18		2,550	
	3,399		19	5,312			20		1,912	
RTU-04	3,399	3/20	21		5,312		22	3/15	1,912	RTU-10
	3,399		23			5,312	24		1,912	
	3,399		25	5,312			26		1,912	
RTU-05	3,399	3/20	27		5,312		28	3/15	1,912	RTU-13
	3,399		29			5,312	30		1,912	
	3,399		31	15,914			32		12,514	
RTU-06	3,399	3/20	33		15,914		34	3/60	12,514	DOAS-01
	3,399		35			15,914	36		12,514	
			37				38			
		3/70	39				40	3/70		SPARE
			41				42			
				41,409	41,409	41,409	TOTAL VA			225 A. BUS (COPPER, UNO)
1. COORDINATE CIRCUIT BREAKER TRIP WITH EQUIPMENT.				149	149	149	TOTAL AMPERES			225 A. MAIN LUGS
				33%	33%	33%	PHASE BALANCE			30 KAIC MINIMUM RATING

DEMAND SUMMARY:	CONNL (VA)	DEMAND FACTOR	DEMAND (VA)	NOTES
R: TOTAL RECEPTACLES (VA) =				
RECEPTACLES FIRST 10 KVA		1.00		
RECEPTACLES > 10 KVA		0.50		
L: LIGHTING		1.25		
M: MISCELLANEOUS EQUIPMENT		1.00		
O: OTHER EQUIPMENT (CONTINUOUS)		1.25		
B: LARGEST MOTOR	37,542	1.25	46,928	
H: HVAC EQUIPMENT (FLA = MCA X 0.8)	86,685	1.00	86,685	
K: KITCHEN EQUIPMENT		1.00		DEMAND FACTOR PER NEC TABLE 220.56
TOTAL CONNECTED (VA)	124,228			
TOTAL DEMAND (VA)			133,613	
TOTAL DEMAND (AMPERES)			160.7	
PANEL DEMAND LOADING VS RATING		71.4%		

PANEL "2HVAC"

TYPE: 208 / 120 VOLTS, 3 PHASE, 4 WIRE — PROVIDE xx EQUIPMENT GROUND BUS
BOLT-ON — MOUNT: SURFACE — PROVIDE IF xx 100 % NEUTRAL BUS
HINGED TRM — FEED: BOTTOM — CHECKED ULSE LABEL
NEMA – 1 ENCLOSURE — ISOLATED GROUND BAR

LOAD SERVED	LOAD VA	CKT BKR POLES/TRIP	CKT #	LOAD VA A	LOAD VA B	LOAD VA C	CKT #	CKT BKR POLES/TRIP	LOAD VA	LOAD SERVED
ROOF RECEPTACLES	1,080	1/20	1	2,160			2	1/20	1,080	ROOF RECEPTACLES
SPARE		1/20	3		1,584		4	1/20	1,584	DEHUMIDIFIER D-01
SPARE		1/20	5			1,584	6	1/20	1,584	DEHUMIDIFIER D-03
SPARE		1/20	7	1,584			8	1/20	1,584	DEHUMIDIFIER D-03
SPARE		1/20	9		1,584		10	1/20	1,584	DEHUMIDIFIER D-04
SPARE		1/20	11			25	12	1/20	25	VENTILATOR PV-06
SPARE		1/20	13				14	1/20		SPARE
SPARE		1/20	15				16	1/20		SPARE
SPARE		1/20	17				18	1/20		SPARE
SPARE		1/20	19				20	1/20		SPARE
DHP-01	1,839	2/25	21		1,839		22	2/25		SPARE
	1,839		23			1,839	24			
RTU-11	1,664	2/30	25	1,664			26	2/25		SPARE
	1,664		27		1,664		28			
RTU-12	1,664	2/30	29			1,664	30	2/30		SPARE
	1,664		31	1,664			32			
RTU-14	1,664	2/30	33		1,664		34	2/30		SPARE
	1,664		35			1,664	36			
			37	26,515			38		26,515	
SPARE		3/30	39		25,063		40	3/250	25,063	PANEL "K"
			41			26,697	42		26,697	
				33,587	33,398	33,473	TOTAL VA			400 A. BUS (COPPER, UNO)
1. COORDINATE CIRCUIT BREAKER TRIP WITH EQUIPMENT.				280	278	279	TOTAL AMPERES			400 A. MAIN CIRCUIT BREAKER
				33%	33%	33%	PHASE BALANCE			18 KAIC MINIMUM RATING

DEMAND SUMMARY:	CONNL (VA)	DEMAND FACTOR	DEMAND (VA)	NOTES
R: TOTAL RECEPTACLES (VA) = 3,600				
RECEPTACLES FIRST 10 KVA	3,600	1.00	3,600	
RECEPTACLES > 10 KVA		0.50		
L: LIGHTING		1.25		
M: MISCELLANEOUS EQUIPMENT	325	1.00	325	
O: OTHER EQUIPMENT (CONTINUOUS)		1.25		
B: LARGEST MOTOR	3,328	1.25	4,160	
H: HVAC EQUIPMENT (FLA = MCA X 0.8)	18,351	1.00	18,351	
K: KITCHEN EQUIPMENT	74,854	0.65	48,655	DEMAND FACTOR PER NEC TABLE 220.56
TOTAL CONNECTED (VA)	100,458			
TOTAL DEMAND (VA)			75,091	
TOTAL DEMAND (AMPERES)			208.4	
PANEL DEMAND LOADING VS RATING		52.1%		

PANEL "K"

TYPE: 208 / 120 VOLTS, 3 PHASE, 4 WIRE — PROVIDE xx EQUIPMENT GROUND BUS
BOLT-ON — MOUNT: FLUSH — PROVIDE IF xx 100 % NEUTRAL BUS
HINGED TRM — FEED: TOP — CHECKED ULSE LABEL
NEMA – 1 ENCLOSURE — ISOLATED GROUND BAR

LOAD SERVED	LOAD VA	CKT BKR POLES/TRIP	CKT #	LOAD VA A	LOAD VA B	LOAD VA C	CKT #	CKT BKR POLES/TRIP	LOAD VA	LOAD SERVED
FOOD PROCESSOR (30)	840	1/20	1	1,740			2	1/20	900	RECEPTACLES 150
FOOD SLICER (47)	552	1/20	3		1,092		4	1/20	540	RECEPTACLES 153
REFRIGERATED WORK TOP (29)	324	1/20	5			828	6	1/20	504	UNDERCOUNTER FREEZER (67)
FOOD BLENDER (31)	1,800	1/20	7	2,065			8	1/20	265	FRY DUMP STATION (66)
SPARE		1/20	9		575		10	1/20	575	REACH-IN REFRIGERATOR (20)
PIZZA PREP REFRIG (6)	690	1/20	11			2,290	12	1/20	1,600	COFFEE BREWER (15)
CONVECTION OVEN (2)	924	1/20	13	2,604			14	1/20	1,680	ICED TEA BREWER (16)
CONVECTION OVEN (3)	924	1/20	15		1,384		16	1/20	460	ICE DISPENSER (17)
FREEZER DOOR HEATER (58)	200	1/20	17			1,856	18	1/20	1,656	HOT FOOD CABINET (68)
KITCHEN HOOD LIGHTS (58)	400	1/20	19	2,056			20	1/20	1,656	HOT FOOD CABINET (68)
KITCHEN HOOD CONTROLS (56)	200	1/20	21		1,028		22	1/20	828	FAN KEF-1
FRIDGE 1 EVAPORATOR (57)	216	1/20	23			1,044	24	1/20	828	FAN KEF-2
FRIDGE 2 EVAPORATOR (57)	216	1/20	25	416			26	1/20	200	CMH1, CMH2
FREEZER EVAPORATOR (58)	1,020	1/20	27		1,145		28	1/20	125	CP1
COMB GAS OVEN (71)	840	1/20	29			840	30	1/20		SPARE
SPARE		1/20	31				32	1/20		SPARE
SPARE		1/20	33				34	1/20		SPARE
SPARE		1/20	35				36	1/20		SPARE
SPARE		1/20	37				38	1/20		SPARE
HOT FOOD SERVING COUNTER (7)	1,383	2/20	39		1,383		40	1/20		SPARE
	1,383		41			1,383	42	1/20		SPARE
	1,441		43	1,441			44	1/20		SPARE
FRIDGE 1 CONDENSER (67)	1,441	3/15	45		2,263		46	2/15	822	ICE MAKER (26)
	1,441		47			2,263	48		822	
	1,441		49	3,362			50		1,921	
FRIDGE 2 CONDENSER (67)	1,441	3/15	51		3,362		52	3/30	1,921	FREEZER CONDENSER
	1,441		53			3,362	54		1,921	
			55	12,631			56		12,631	
SPARE		3/30	57		12,631		58	3/60	12,631	DISHWASHER (11)
			59			12,631	60		12,631	
				28,515	25,063	26,899	TOTAL VA			250 A. BUS (COPPER, UNO)
1. COORDINATE CIRCUIT BREAKER TRIP WITH EQUIPMENT.				221	209	222	TOTAL AMPERES			250 A. MAIN LUGS
2. ALL SINGLE AND TWO POLE CIRCUIT BREAKERS TO BE GFCI TYPE.				34%	32%	34%	PHASE BALANCE			14 KAIC MINIMUM RATING
3. NUMBERS IN PARENTHESIS ARE EQUIPMENT NUMBERS FROM FOOD SERVICE DRAWINGS.										
4. PROVIDE STAINLESS STEEL TRIM.										

DEMAND SUMMARY:	CONNL (VA)	DEMAND FACTOR	DEMAND (VA)	NOTES
R: TOTAL RECEPTACLES (VA) = 1,440				
RECEPTACLES FIRST 10 KVA	1,440	1.00	1,440	
RECEPTACLES > 10 KVA		0.50		
L: LIGHTING		1.25		
M: MISCELLANEOUS EQUIPMENT	325	1.00	325	
O: OTHER EQUIPMENT (CONTINUOUS)		1.25		
B: LARGEST MOTOR		1.25		
H: HVAC EQUIPMENT (FLA = MCA X 0.8)	1,656	1.00	1,656	
K: KITCHEN EQUIPMENT	74,854	0.65	48,655	DEMAND FACTOR PER NEC TABLE 220.56
TOTAL CONNECTED (VA)	78,275			
TOTAL DEMAND (VA)			52,076	
TOTAL DEMAND (AMPERES)			144.5	
PANEL DEMAND LOADING VS RATING		57.8%		

Important Note

NOTE: ARRANGE PANELBOARD BRANCH CIRCUIT BREAKERS AS SHOWN ON THE ABOVE SCHEDULES. AGREEMENT OF CIRCUIT BREAKER (POLE) NUMBERS WITH THE PANEL SCHEDULES AND ELECTRICAL FLOOR PLANS IS REQUIRED IN ORDER TO AVOID CONFUSION DURING CONSTRUCTION. REDRAWING THE CIRCUITRY FOR RECORD DRAWING PURPOSES AND ACCURATE DOCUMENTATION OF THE AS-BUILT CONDITIONS.

McFadyen Engineers, PLLC
4411 Peachtree Avenue Wilmington, NC 28403 Phone : 910.399.1125

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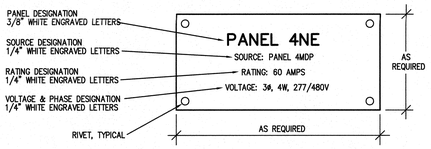
NCB P-1010

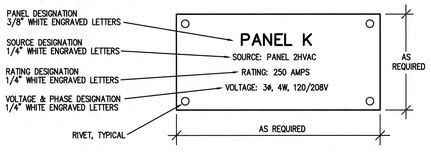
DAVIS COMMUNITY SKILLED NURSING FACILITY
EXISTING ELECTRICAL UTILITY SERVICE EQUIPMENT CAPACITY CALCULATION

	KW	AMPERES	REMARKS
DUKE ENERGY MAXIMUM RECORDED DEMAND FOR THE PERIOD 6/2019 – 7/2020	638.0	767.4	NOTE 1
TIMES 1.25 PER NEC 220.87	797.5	959.2	
EXISTING UTILITY SERVICE EQUIPMENT RATING/CAPACITY		1600.0	
AVAILABLE SURPLUS UTILITY SERVICE EQUIPMENT CAPACITY		640.8	
RENOVATED COMMUNITY CENTER ADDITIONAL LOAD	–100.0	–120.3	NOTES 2 & 3

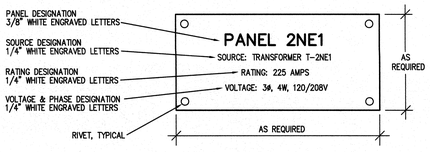
NOTES:
1. MAXIMUM RECORDED DUKE ENERGY DEMAND FOR THE PERIOD 1/20/20 – 2/19/20
2. THE RENOVATED COMMUNITY CENTER IS APPROXIMATELY 2,650 SF (8.9%) LARGER THAN THE ORIGINAL FOOTPRINT, BUT THE LAUNDRY HAS BEEN RELOCATED TO THE CENTRAL SERVICES BUILDING, MECHANICAL EQUIPMENT WILL BE REPLACED WITH HIGH EFFICIENCY EQUIPMENT AND LED LIGHTING REPLACES FLUORESCENT LIGHTING THROUGHOUT. ADDITIONALLY, THE EXISTING AREA IS HEATED BY HEAT PUMPS WITH SUPPLEMENTAL ELECTRIC RESISTANCE HEAT. THE RENOVATED AREA WILL BE HEATED BY NATURAL GAS. AS THE MAXIMUM RECORDED UTILITY DEM



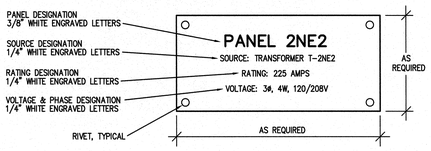
1 - Panelboard "4NE" Nameplate Detail
Not to Scale



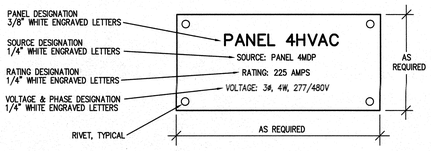
2 - Panelboard "K" Nameplate Detail
Not to Scale



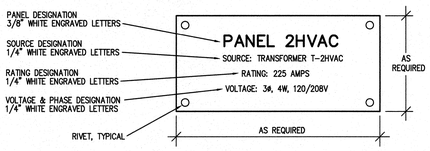
3 - Panelboard "2NE1" Nameplate Detail
Not to Scale



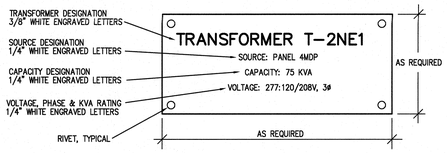
4 - Panelboard "2NE2" Nameplate Detail
Not to Scale



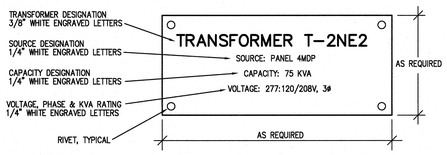
5 - Panelboard "HVAC4" Nameplate Detail
Not to Scale



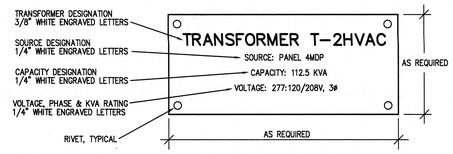
6 - Panelboard "HVAC2" Nameplate Detail
Not to Scale



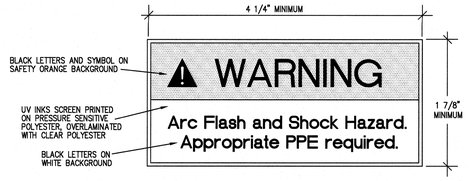
7 - Transformer "T-2NE1" Nameplate Detail
Not to Scale



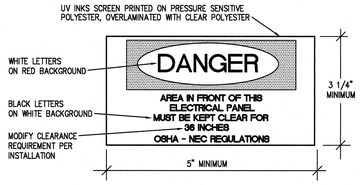
8 - Transformer "T-2NE2" Nameplate Detail
Not to Scale



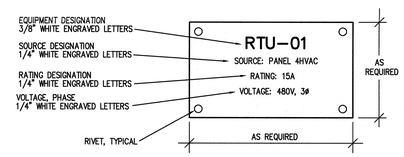
9 - Transformer "T-2HVAC" Nameplate Detail
Not to Scale



10 - Electrical Equipment Warning Label Detail
Not to Scale

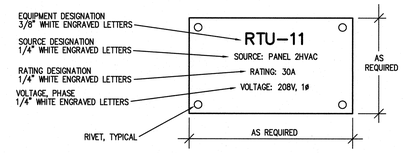


11 - NEC Working Space Label Detail
Not to Scale



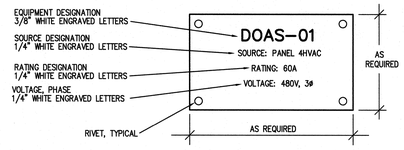
SIMILAR FOR RTU-01 THRU RTU-10 AND RTU-13

12 - Typical Equipment Nameplate Detail
Not to Scale

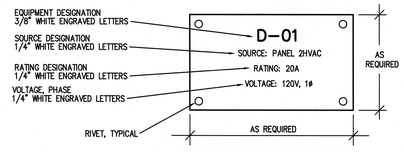


SIMILAR FOR RTU-11, RTU-12 AND RTU-14

13 - Typical Equipment Nameplate Detail
Not to Scale

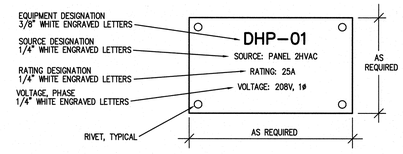


14 - Typical Equipment Nameplate Detail
Not to Scale

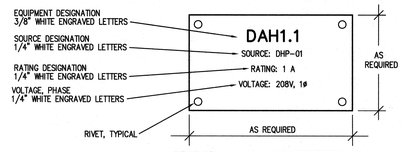


SIMILAR FOR D-01, D-02, D-03 AND D-04

15 - Typical Equipment Nameplate Detail
Not to Scale



16 - Typical Equipment Nameplate Detail
Not to Scale



SIMILAR FOR DAH1.1, DAH1.2 AND DAH1.3

17 - Typical Equipment Nameplate Detail
Not to Scale

McFadyen Engineers, PLLC
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BOWMAN MURRAY HEMINGWAY ARCHITECTS
514 Market Street
Wilmington, NC 28406
Tel - (910) 762-2621
Fax - (910) 762-8506

NORTH CAROLINA PROFESSIONAL SEAL 8433 ENGINEER DUNCAN MCFADYEN
12-10-20

THE DAVIS COMMUNITY
New Community Center
1011 Porter's Neck Road
Wilmington, North Carolina 28411

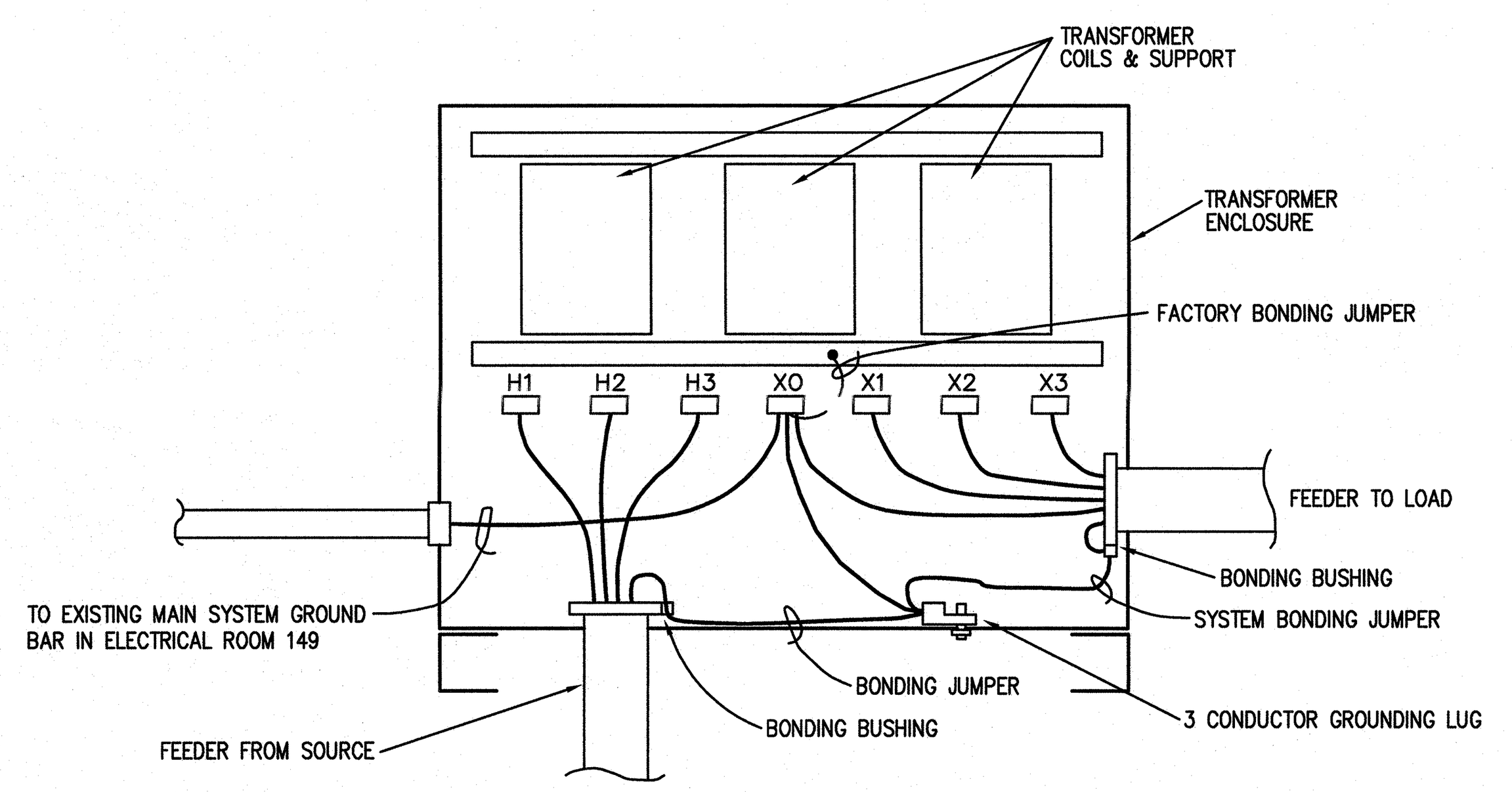
REV.	DATE	DESCRIPTION
1	12-10-2020	REVISED PER NHC INSPECTIONS COMMENTS

NO.	DATE	ISSUE NOTE

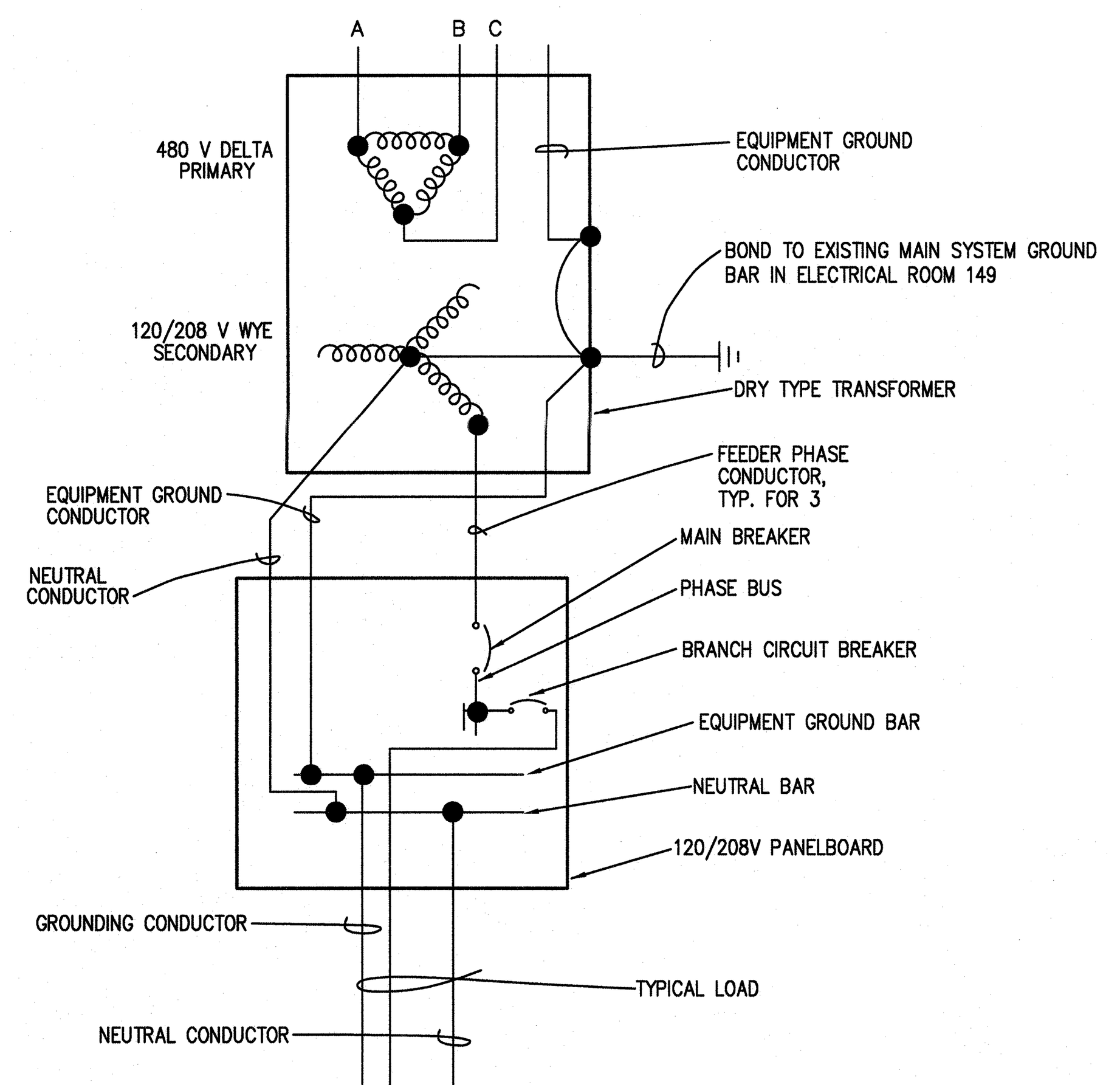
Project Manager: RDM	Drawn By: WPJ
Date: December 10, 2020	Reviewed By: RDM
Project ID	

Sheet Title
Electrical Details

Sheet No.
E104

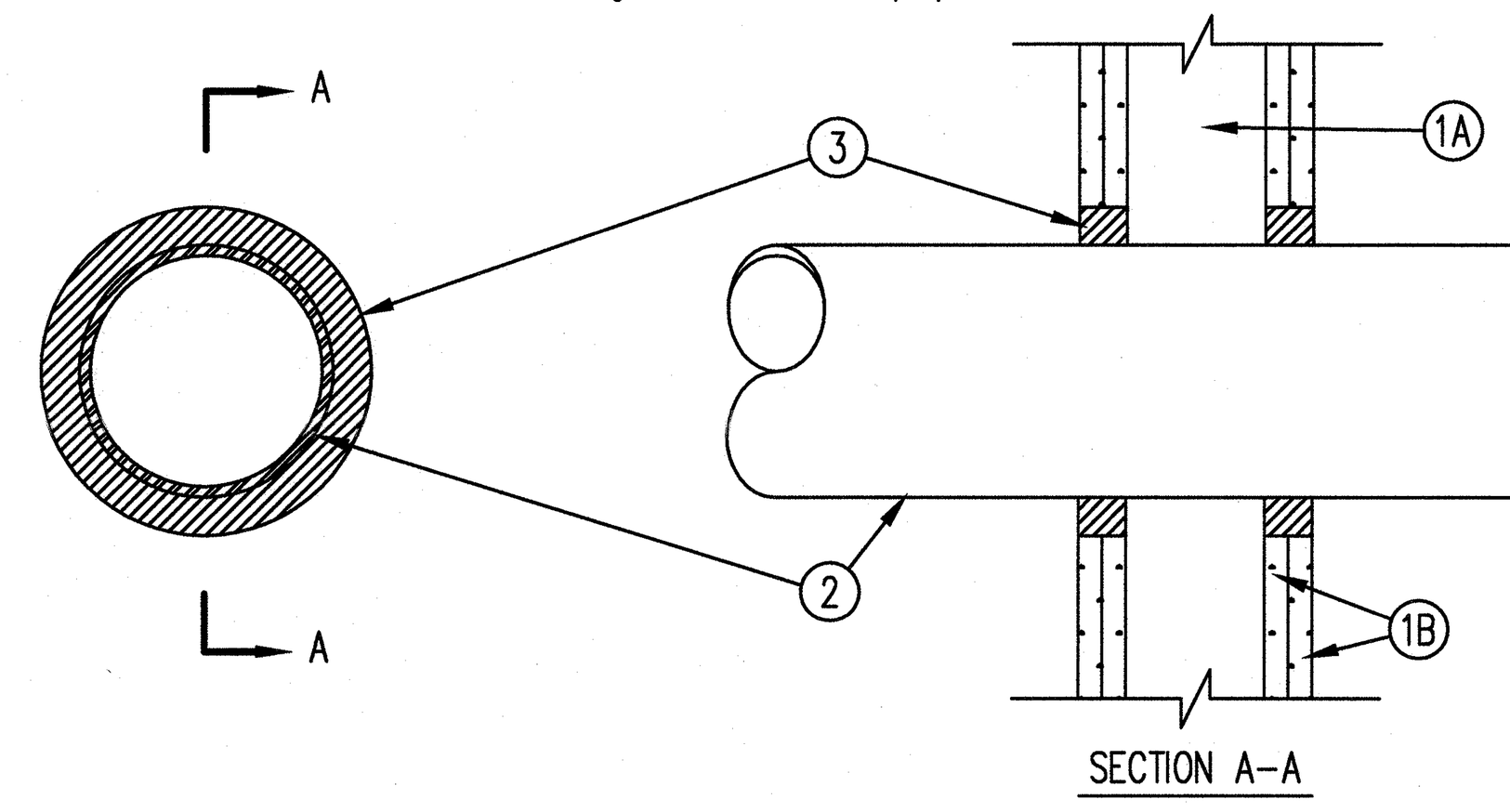


3 - Dry Type Transformer Bonding Detail
Not to Scale



4 - Transformer Grounding System Detail
Not to Scale

System No. W-L-1054
December 04, 2002
F Ratings – 1 and 2 Hr (See Items 1 and 3)
T Rating – 0 Hr
L Rating At Ambient – Less Than 1 CFM/Sq Ft
L Rating At 400 F – 4 CFM/Sq Ft



1. Wall Assembly – The 1 or 2 hr fire-rated gypsum wallboard/stud wall assembly shall be constructed of the materials and in the manner specified in the individual U300 or U400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:
   A. Studs – Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. lumber spaced 16 in. OC. Steel studs to be min 2-1/4 in. wide and spaced max 24 in. OC. When steel studs are used and the diam of opening exceeds the width of stud cavity, the opening shall be framed on all sides using lengths of steel stud installed between the vertical studs and screw-attached to the steel studs at each end. The framed opening in the wall shall be 4 to 6 in. wider and 4 to 6 in. higher than the diam of the penetrating item such that, when the penetrating item is installed in the opening, a 2 to 3 in. clearance is present between the penetrating item and the framing on all four sides.
   B. Gypsum Board* – 3/8 in. thick, 4 ft wide with square or tapered edges. The gypsum board type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual U300 or U400 Series Design in the UL Fire Resistance Directory. Max diam of opening is 32-1/4 in. for steel stud walls. Max diam of opening is 14-1/4 in. for wood stud walls.
   The F Rating of the firestop system is equal to the fire rating of the wall assembly.
2. Through-Penetrants – One metallic pipe, conduit or tubing to be installed either concentrically or eccentrically within the firestop system. The annular space shall be min 0 in. to max 2-1/4 in. Pipe may be installed with continuous point contact. Pipe, conduit or tubing may be installed at an angle not greater than 45 degrees from perpendicular. Pipe, conduit or tubing to be rigidly supported on both sides of wall assembly. The following types and sizes of metallic pipes, conduits or tubing may be used:
   A. Steel Pipe – Nom 30 in diam (or smaller) Schedule 10 (or heavier) steel pipe.
   B. Iron Pipe – Nom 30 in. diam (or smaller) cast or ductile iron pipe.
   C. Conduit – Nom 4 in diam (or smaller) steel electrical metallic tubing or 6 in. diam steel conduit.
   D. Copper Tubing – Nom 6 in. diam (or smaller) Type L (or heavier) copper tubing.
   E. Copper Pipe – Nom 6 in. diam (or smaller) regular (or heavier) copper pipe.
3. Fill, Void or Cavity Material* – Sealant – Min 3/8 in. thickness of fill material applied within the annulus, flush with both surfaces of wall. At the point or continuous contact locations between pipe and wall, a min 1/4 in. diam bead of fill material shall be applied at the pipe wall interface on both surfaces of wall .
HILTI CONSTRUCTION CHEMICALS, DIV OF
HILTI INC – FS-One Sealant

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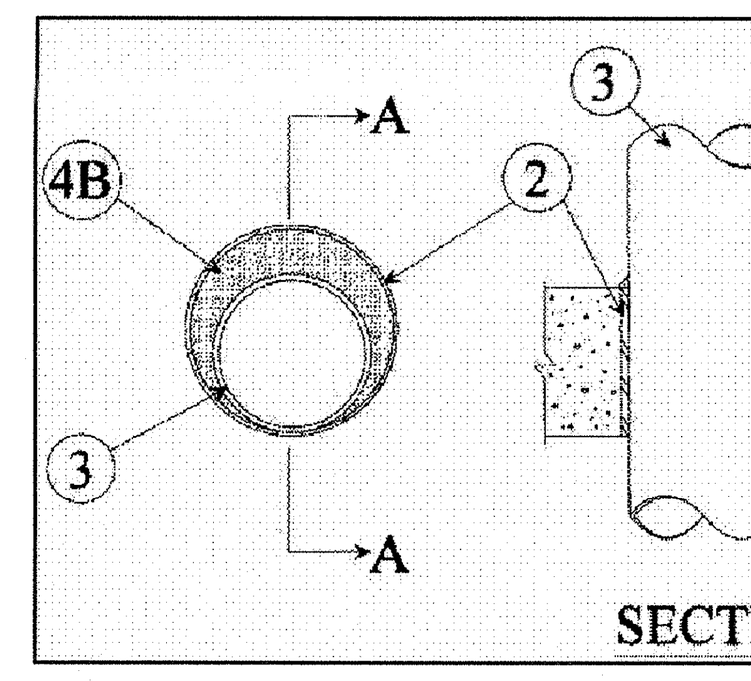
5 - 1 and 2 Hour Firewall Penetration Detail
NOT TO SCALE

System No. C-AJ-1226
October 30, 2003
F Rating – 3 Hr
T Rating – 0 Hr
L Rating At Ambient – Less Than 1 CFM/Sq Ft
L Rating At 400 F – 4 CFM/Sq Ft



1. Floor or Wall Assembly – Min 4-1/4 in. thick reinforced lightweight or normal weight (100-150 pcf) concrete. Wall may also be constructed of any UL Classified Concrete Blocks*. Max diam of opening is 32 in.
2. Metallic Sleeve – (Optional) Nom 32 in. diam (or smaller) Schedule 40 (or heavier) steel sleeve cast or grouted into floor or wall assembly, flush with floor or wall surfaces or extending a max of 3 in. above floor or beyond both surfaces of wall.
3. Through-Penetrant – One metallic pipe, tube or conduit to be installed either concentrically or eccentrically within the firestop system. The annular space between penetrant and periphery of opening shall be min 0 in. (point contact) to max 1-7/8 in. Penetrant may be installed with continuous point contact. Penetrant to be rigidly supported on both sides of floor or wall assembly. The following types and sizes of metallic penetrants may be used:
   A. Steel Pipe – Nom 30 in. diam (or smaller) Schedule 10 (or heavier) steel pipe.
   B. Iron Pipe – Nom 30 in. diam (or smaller) cast or ductile iron pipe.
   C. Copper Pipe – Nom 6 in. diam (or smaller) Regular (or heavier) copper pipe.
   D. Copper Tubing – Nom 6 in. diam (or smaller) Type L (or heavier) copper tubing.
   E. Conduit – Nom 6 in. diam (or smaller) steel conduit.
   F. Conduit – Nom 4 in. diam (or smaller) steel electrical metallic tubing (EMT).
4. Firestop System – The firestop system shall consist of the following:
   A. Packing Material – Min 4 in. thickness of min 4 pcf mineral wool batt insulation firmly packed into opening as a permanent form. Packing material to be recessed from top surface of floor or sleeve or from both surfaces of wall or sleeve as required to accommodate the required thickness of fill material.
   B. Fill, Void or Cavity Material* – Sealant – Min 1/4 in. thickness of fill material applied within the annulus, flush with top surface of floor or sleeve or with both surfaces of wall or sleeve. At the point or continuous contact locations between penetrant and concrete or sleeve, a min 1/4 in. diam bead of fill material shall be applied at the concrete or sleeve/ pipe penetrant interface on the top surface of floor and on both surfaces of wall.
   HILTI CONSTRUCTION CHEMICALS, DIV OF
   HILTI INC – FS-One Sealant
*Bearing the UL Classification Mark

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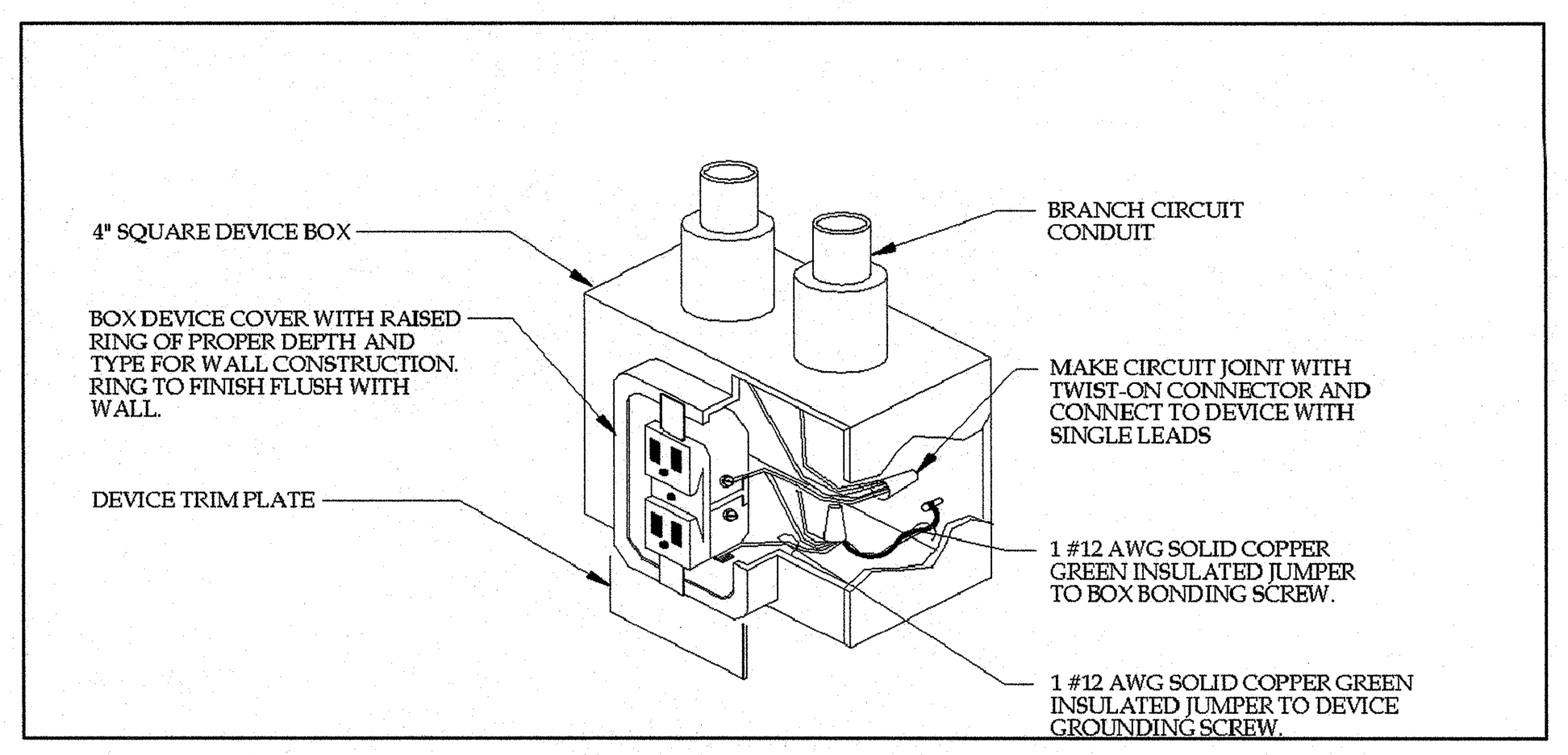
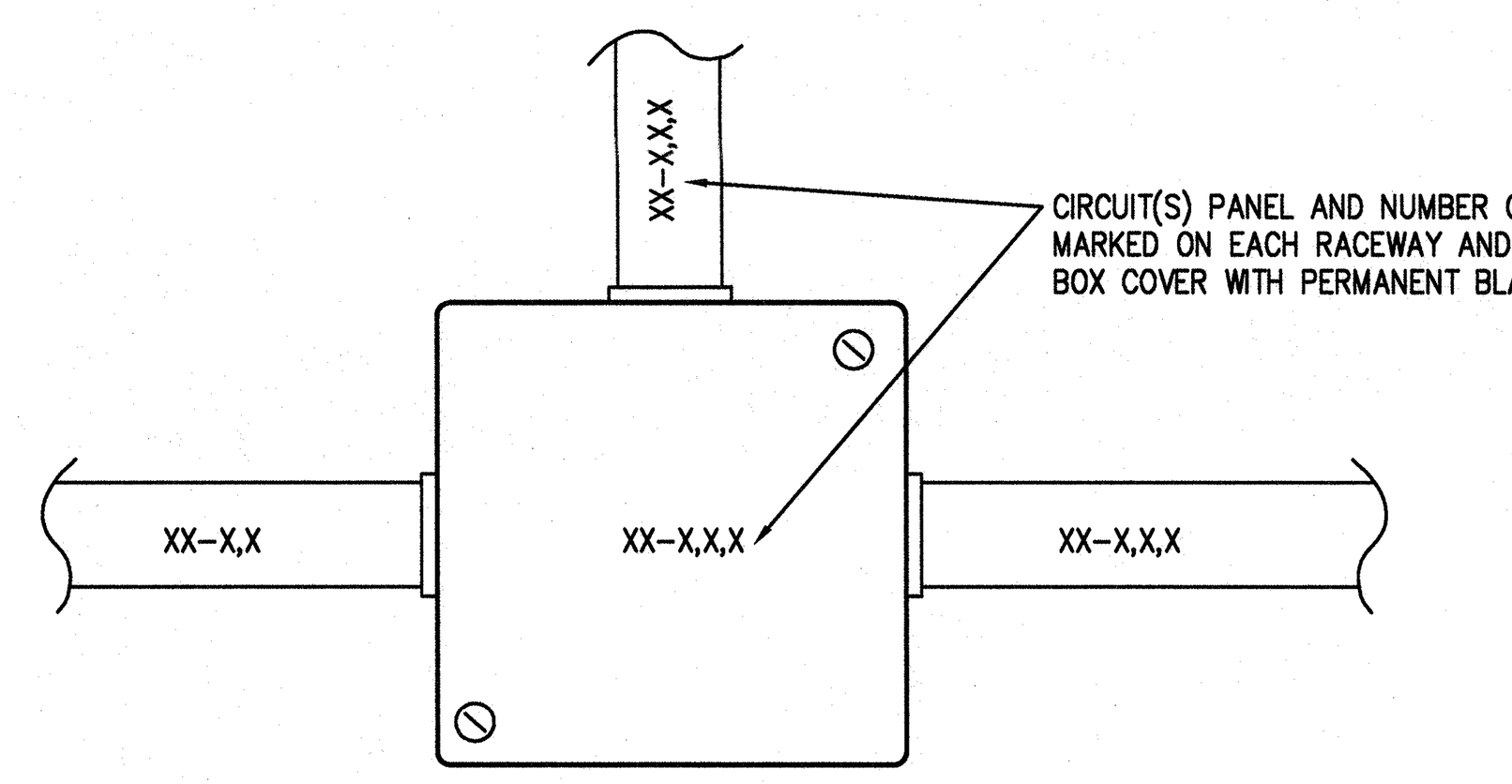
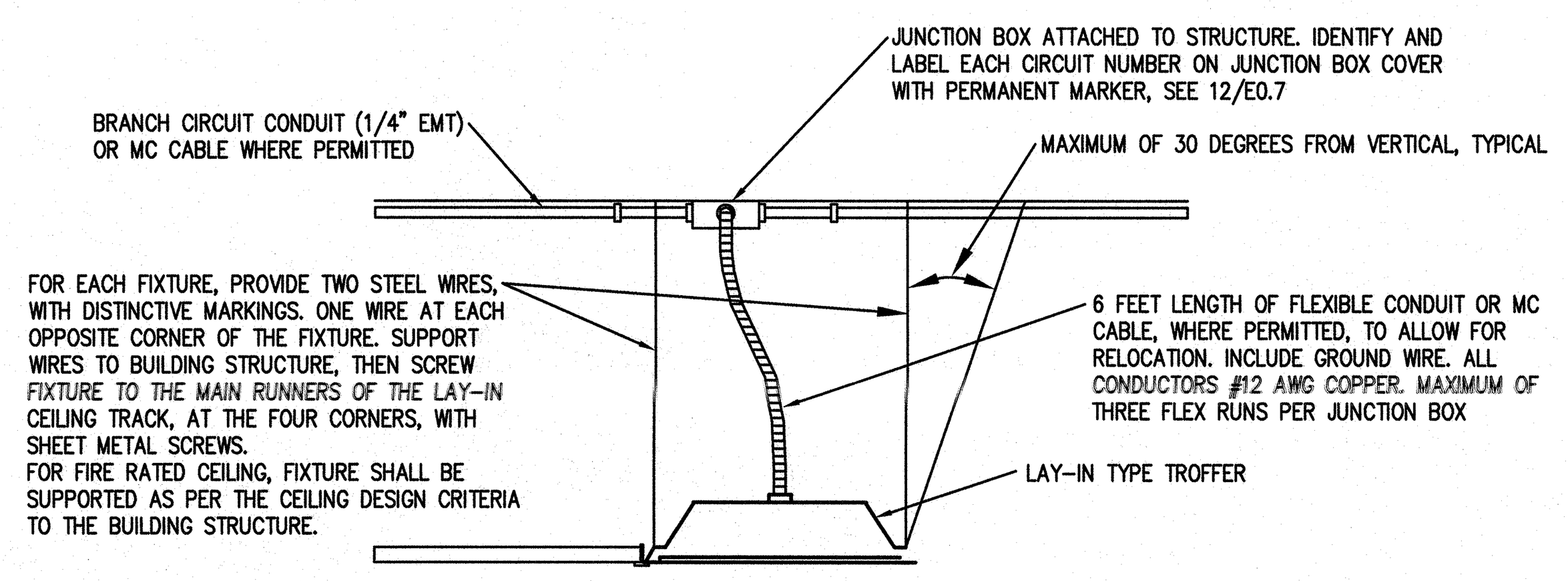
6 - 3 Hour Firewall Penetration Detail
NOT TO SCALE



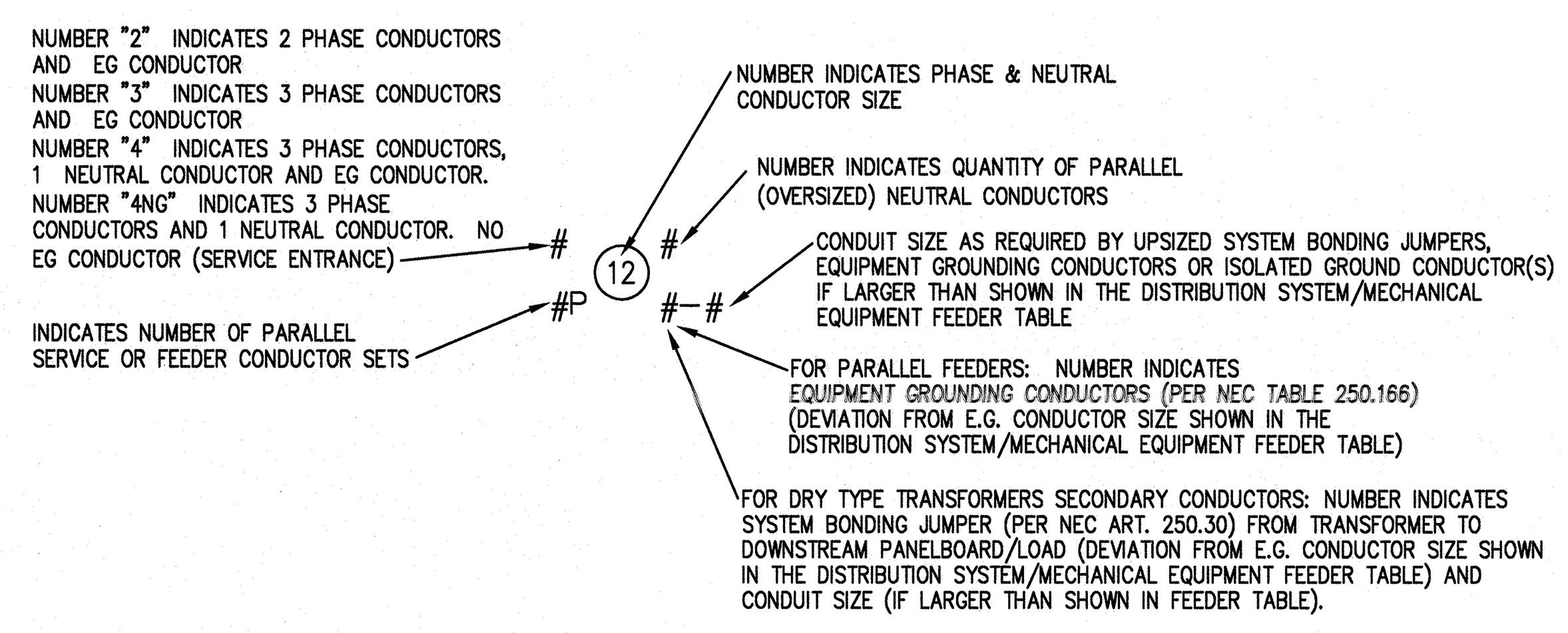
7 - Receptacle Grounding Detail
NOT TO SCALE



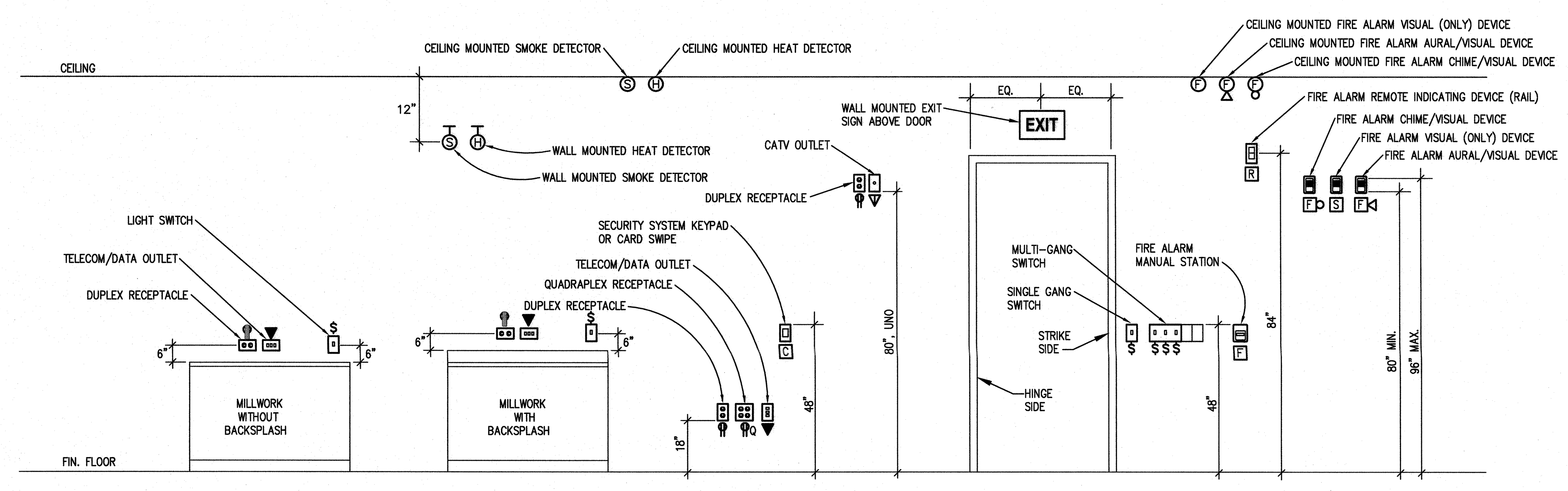
9 - Circuit Identification Detail
NOT TO SCALE



8 - Lighting Fixture Mounting and Installation Detail
Not to Scale



2 - Feeder Identification Detail
Not to Scale



NOTE: TELECOM/DATA OUTLETS ARE TO BE INSTALLED AT THE SAME HEIGHT AS ADJACENT RECEPTACLE, UNO

1 - Standard Device Mounting Height Detail
Not to Scale

MINIMUM CONDUCTORS SIZE CHART
PROVIDE THE FOLLOWING MINIMUM SIZES FOR BRANCH CIRCUIT CONDUCTORS:

SINGLE PHASE CIRCUITS

CONDUCTOR SIZE (AWG)	BRANCH CIRCUIT BREAKER TRIP (AMPERES)	CIRCUIT VOLTAGE MAXIMUM ALLOWABLE CIRCUIT LENGTH (FEET)			
		120	208	240	277
#12	15	81	141	163	188
#10	15	135	234	270	312
#8	15	204	355	409	473
#12	20	61	106	122	141
#10	20	101	175	202	233
#8	20	153	266	307	354
#10	30	67	117	135	155
#8	30	102	177	204	236

THREE PHASE CIRCUITS

CONDUCTOR SIZE (AWG)	BRANCH CIRCUIT BREAKER TRIP (AMPERES)	CIRCUIT VOLTAGE MAXIMUM ALLOWABLE CIRCUIT LENGTH (FEET)		
		208	240	480
#12	15	163	188	377
#10	15	270	312	624
#12	20	122	141	283
#10	20	202	234	468
#10	30	135	156	312
#8	30	205	236	473
#8	40	153	177	354
#6	40	239	276	553
#8	50	123	142	283
#6	50	191	221	442
#6	60	159	184	368
#4	60	245	283	567

NOTES:
1. CONDUCTOR LENGTHS ARE BASED ON SINGLE & THREE PHASE, 90% POWER FACTOR LOADS USING 75°C COPPER CONDUCTORS IN EMT RACEWAYS TO ACHIEVE NO MORE THAN 3 PERCENT VOLTAGE DROP.
2. CALCULATIONS ASSUME LOADS OF 80% OF CIRCUIT BREAKER TRIP (12A, 16A & 24A, 32A, 40A & 48A, RESPECTIVELY) ARE CONCENTRATED AT THE END OF THE CIRCUITS.
3. IF LOAD CHARACTERISTICS DIFFER FROM ABOVE, CALCULATE USING KNOWN CHARACTERISTICS AND SUBMIT CALCULATIONS TO THE ARCHITECT/ENGINEER DOCUMENTING 3% OR LESS VOLTAGE DROP UNDER THE ACTUAL LOAD CONDITIONS.
4. WHEN A DEDICATED SINGLE LOAD LESS THAN NOTED ABOVE IS KNOWN, THE CONTRACTOR MAY UTILIZE SMALLER CONDUCTORS UPON SUBMISSION OF VOLTAGE DROP CALCULATIONS DOCUMENTING 3% OR LESS VOLTAGE DROP. THE MINIMUM LOAD SHALL BE ASSUMED TO BE 60% OF THE CB TRIP RATING REGARDLESS OF ACTUAL DEDICATED LOAD.
5. USE THE LARGER OF THE CONDUCTORS INDICATED ON THE DRAWINGS OR THIS TABLE.

Power Distribution System/Utilization Equipment Conductor Identification Table

ID#	MAX OCP	CONDUCTORS	CONDUIT SIZE
2 (12)	20	2#12 & 1#12 EG	1/4"
3 (12)	20	3#12 & 1#12 EG	1/4"
4 (12)	20	4#12 & 1#12 EG	1/4"
2 (10)	30	2#10 & 1#10 EG	1/4"
3 (10)	30	3#10 & 1#10 EG	1/4"
4 (10)	30	4#10 & 1#10 EG	1/4"
2 (8)	50	2#8 & 1#10 EG	1/4"
3 (8)	50	3#8 & 1#10 EG	3/4"
4 (8)	50	4#8 & 1#10 EG	1"
2 (6)	70	2#6 & 1#8 EG	1"
3 (6)	70	3#6 & 1#8 EG	1"
4 (6)	70	4#6 & 1#8 EG	1"
2 (4)	90	2#4 & 1#8 EG	1"
3 (4)	90	3#4 & 1#8 EG	1"
4 (4)	90	4#4 & 1#8 EG	1 1/4"
2 (3)	100	2#3 & 1#8 EG	1 1/4"
3 (3)	100	3#3 & 1#8 EG	1 1/4"
4 (3)	100	4#3 & 1#8 EG	1 1/4"
2 (2)	115	2#2 & 1#6 EG	1 1/4"
3 (2)	115	3#2 & 1#6 EG	1 1/4"
4 (2)	115	4#2 & 1#6 EG	1 1/4"
2 (1)	125	2#1 & 1#6 EG	1 1/4"
3 (1)	125	3#1 & 1#6 EG	1 1/4"
4 (1)	125	4#1 & 1#6 EG	1 1/4"
3 (1/0)	150	3#1/0 & 1#6 EG	1 1/4"
4 (1/0)	150	4#1/0 & 1#6 EG	2"
3 (2/0)	175	3#2/0 & 1#6 EG	2"
4 (2/0)	175	4#2/0 & 1#6 EG	2"
3 (3/0)	200	3#3/0 & 1#6 EG	2"
4 (3/0)	200	4#3/0 & 1#6 EG	2"
3 (4/0)	225	3#4/0 & 1#4 EG	2"
4 (4/0)	225	4#4/0 & 1#4 EG	2 1/4"
3 (250)	250	3#250 KCMIL & 1#4 EG	2 1/4"
4 (250)	250	4#250 KCMIL & 1#4 EG	2 1/4"
3 (300)	300	3#300 KCMIL & 1#4 EG	2 1/4"
4 (300)	300	4#300 KCMIL & 1#4 EG	3"
3 (350)	300	3#350 KCMIL & 1#3 EG	2 1/4"
4 (350)	300	4#350 KCMIL & 1#3 EG	3"
3 (400)	350	3#400 & 1#3 EG	2 1/4"
4 (400)	350	4#400 & 1#3 EG	3"
3 (500)	400	3#500 KCMIL & 1#3 EG	3"
4 (500)	400	4#500 KCMIL & 1#3 EG	3 1/4"

1. TABLE IS FOR THHN/THWN INSULATED COPPER CONDUCTORS USING 75°C RATING IN EMT ONLY. OTHER INSULATION AND RACEWAY TYPES MAY REQUIRE LARGER RACEWAYS AND ARE THE RESPONSIBILITY OF THE CONTRACTOR TO ASSURE CODE COMPLIANCE.
2. SOME DRY TYPE TRANSFORMER SECONDARY CONDUCTORS AND PARALLEL CONDUCTORS REQUIRE UPSIZED BONDING JUMPERS, UPSIZED EQUIPMENT GROUND CONDUCTORS AND LARGER RACEWAYS THAN SHOWN IN THIS TABLE.
3. OVERSIZED AND PARALLELED NEUTRAL CONDUCTORS MAY ALSO REQUIRE LARGER RACEWAYS THAN INDICATED.
4. CONDUIT SIZING IS CODE MINIMUM. LARGER SIZES MAY BE REQUIRED.
5. REFER TO THE CONDUCTORS IDENTIFICATION DETAIL FOR ADDITIONAL INFORMATION.
6. MAX OCP = MAXIMUM OCP DEVICE DESIGN AMPACITY

McFadyen Engineers, PLLC
4411 Peachtree Avenue Wilmington, NC 28403 Phone : 910.399.1125
NC# P-1010
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BOWMAN MURRAY HEMINGWAY ARCHITECTS
514 Market Street
Wilmington, NC 28406
Tel - (910) 762-2621
Fax - (910) 762-8506

NORTH CAROLINA PROFESSIONAL SEAL 8433 ENGINEER R. DUNCAN McFADYEN 12.6.20

THE DAVIS COMMUNITY
New Community Center
1011 Porter's Neck Road
Wilmington, North Carolina 28411

REV.	DATE	DESCRIPTION
1	12-10-2020	REVISED PER NHC INSPECTIONS COMMENTS

NO.	DATE	ISSUE NOTE

Project Manager RDM	Drawn By WPJ
Date December 10, 2020	Reviewed By RDM

Project ID

Sheet Title
Electrical Details

Sheet No.
E105

LIGHTING FIXTURE SCHEDULE

MARK	DESCRIPTION.	SIZE/APERTURE	VOLTS	LAMPS	WATTS	LENS	TRIM/DOOR	TRIM COLOR	MOUNTING HEIGHT	REMARKS	MANUFACTURER
L1	LAY-IN GRID LED	2'x4'	UNIV.	6000 LUMEN 4000K LED	48	ADP DIFFUSER	FLUSH STEEL	WHITE	RECESSED GRID MOUNTED	10%, 0-10V GZ10 DIMMING DRIVER	LITHONIA "2BLT" SERIES
L1A	LAY-IN GRID LED	2'x4'	UNIV.	4800 LUMEN 4000K LED	38	ADP DIFFUSER	FLUSH STEEL	WHITE	RECESSED GRID MOUNTED	10%, 0-10V GZ10 DIMMING DRIVER	LITHONIA "2BLT" SERIES
L2	LAY-IN GRID LED	2'x4'	UNIV.	7200 LUMEN 4000K LED	54	0.125" ACRYLIC PRISMATIC	FLUSH STEEL	WHITE	RECESSED GRID MOUNTED	10%, 0-10V GZ10 DIMMING DRIVER	LITHONIA "2GTL" SERIES
L3	LAY-IN GRID LED	2'x4'	UNIV.	6000 LUMEN 4000K LED	49	0.125" ACRYLIC PRISMATIC	FLUSH STEEL	WHITE	RECESSED GRID MOUNTED	10%, 0-10V GZ10 DIMMING DRIVER	LITHONIA "2GTL" SERIES
L4	LAY-IN GRID LED	2'x4'	UNIV.	4800 LUMEN 4000K LED	36	0.125" ACRYLIC PRISMATIC	FLUSH STEEL	WHITE	RECESSED GRID MOUNTED	10%, 0-10V GZ10 DIMMING DRIVER	LITHONIA "2GTL" SERIES
L4A	LAY-IN GRID LED	2'x4'	UNIV.	4800 LUMEN 2700K LED	36	0.125" ACRYLIC PRISMATIC	FLUSH STEEL	WHITE	RECESSED GRID MOUNTED	10%, 0-10V GZ10 DIMMING DRIVER	LITHONIA "2GTL" SERIES
L5	SURFACE MOUNTED LED	4'	UNIV.	4146 LUMEN 4000K LED	38	DIFFUSE POLYCARBONATE	FLUSH STEEL	WHITE	SURFACE CEILING	80 CRI	LITHONIA "CDS" SERIES
L6	LED LIGHT TAPE	LENGTH AS INDICATED	277/24	172 LUMENS / LF 4000K LED	1.5 W/LF	_____	_____	_____	SURFACE UNDER CABINET	24V REMOTE DRIVER, RATING AS REQUIRED, BW/CLS CONNECTOR/WIRE – IN/OUT,WH,CL2, SLIM ST-SST-CL-S1 EXTRUSION. PROVIDE MANUFACTURER PRODUCED BILL OF MATERIALS AND LAYOUT PLAN FOR EACH INSTALLATION. FIELD VERIFY EXACT LOCATION PRIOR TO ROUGH-IN	Q-TRAN "SW24/1.5" SERIES
L6A	LED LIGHT TAPE	LENGTH AS INDICATED	277/24	172 LUMENS / LF 4000K LED	1.5 W/LF	_____	_____	_____	SURFACE UNDER CABINET	24V REMOTE DRIVER, RATING AS REQUIRED, BW/CLS CONNECTOR/WIRE – IN/OUT, SLIM ST-SST-CL-P1 EXTRUSION. PROVIDE MANUFACTURER PRODUCED BILL OF MATERIALS AND LAYOUT PLAN FOR EACH INSTALLATION. FIELD VERIFY EXACT LOCATION PRIOR TO ROUGH-IN	Q-TRAN "SW24/1.5" SERIES
L6B	LED LIGHT TAPE	LENGTH AS INDICATED	277/24	172 LUMENS / LF 2700K LED	1.5 W/LF	_____	_____	_____	SURFACE IN LIGHT COVE	24V REMOTE 0-10 VOLT DIMMING DRIVER, QUANTITY AND RATING AS REQUIRED, BW/CLS CONNECTOR/WIRE IN-OUT, WH,CL2, ARKA ST-SST-CL-P1-LENGTH AS REQUIRED EXTRUSION. PROVIDE MANUFACTURER PRODUCED BILL OF MATERIALS AND LAYOUT PLAN FOR EACH INSTALLATION. FIELD VERIFY EXACT LOCATION PRIOR TO ROUGH-IN	Q-TRAN "SW24/1.5" SERIES
L6C	LED LIGHT TAPE	LENGTH AS INDICATED	277/24	349 LUMENS / LF 2700K LED	4.0 W/LF	_____	_____	_____	SURFACE IN LIGHT COVE	24V REMOTE 0-10 VOLT DIMMING DRIVER, QUANTITY AND RATING AS REQUIRED, BW/CLS CONNECTOR/WIRE IN-OUT, WH,CL2, ARKA ST-SST-CL-S1-LENGTH AS REQUIRED EXTRUSION. PROVIDE MANUFACTURER PRODUCED BILL OF MATERIALS AND LAYOUT PLAN FOR EACH INSTALLATION. FIELD VERIFY EXACT LOCATION PRIOR TO ROUGH-IN	Q-TRAN "SW24/4.0" SERIES
L6D	LED LIGHT TAPE	LENGTH AS INDICATED	277/24	172 LUMENS / LF 2700K LED	1.5 W/LF	_____	_____	_____	SURFACE UNDER CABINET	24V REMOTE DRIVER, RATING AS REQUIRED, BW/CLS CONNECTOR/WIRE – IN/OUT,WH,CL2, SLIM ST-SST-CL-S1 EXTRUSION. PROVIDE MANUFACTURER PRODUCED BILL OF MATERIALS AND LAYOUT PLAN FOR EACH INSTALLATION. FIELD VERIFY EXACT LOCATION PRIOR TO ROUGH-IN	Q-TRAN "SW24/1.5" SERIES
L7	RECESSED LED DOWNLIGHT	6"	UNIV.	3000 LUMEN 2700K LED	38	_____	ALUMINUM	WHITE	RECESSED CEILING	0-10V 10% DIMMING LED DRIVER, DOWNLIGHT APERTURE, SEMI-SPECULAR DIFFUSER	LITHONIA "LDN6" SERIES
L8	RECESSED LED DOWNLIGHT	6"	UNIV.	2000 LUMEN 2700K LED	25	_____	ALUMINUM	WHITE	RECESSED CEILING	0-10V, 10% DIMMING LED DRIVER, DOWNLIGHT APERTURE, SEMI-SPECULAR DIFFUSER	LITHONIA "LDN6" SERIES
L9	RECESSED LED DOWNLIGHT	4"	UNIV.	2500 LUMEN 4000K LED	32	_____	ALUMINUM	WHITE	RECESSED CEILING	0-10V, 10% DIMMING LED DRIVER, DOWNLIGHT APERTURE, SEMI-SPECULAR DIFFUSER	LITHONIA "LDN4" SERIES
L9A	RECESSED LED DOWNLIGHT	4"	UNIV.	2500 LUMEN 4000K LED	32	_____	ALUMINUM	WHITE	RECESSED CEILING	0-10V, 10% DIMMING LED DRIVER, DOWNLIGHT APERTURE, SEMI-SPECULAR DIFFUSER	LITHONIA "LDN4" SERIES
L12	WALL MOUNTED LED AREA LIGHT	17" x 10"	UNIV.	P3 6000 LUMEN 4000K LED	50	_____	DIE CAST ALUMINUM	DARK BRONZE	WALL AT 9'-6"	VW DISTRIBUTION, IP65 RATING, WET LOCATION LABEL	LITHONIA "WST LED" SERIES
L12A	WALL MOUNTED LED AREA LIGHT	17" x 10"	UNIV.	P2, 3000 LUMEN 4000K LED	25	_____	DIE CAST ALUMINUM	DARK BRONZE	WALL AT 9'-6"	VF DISTRIBUTION, IP65 RATING, WET LOCATION LABEL	LITHONIA "WST LED" SERIES
L13	WALL MOUNTED LED AREA LIGHT	16" x 15"	UNIV.	20C, 8427 LUMEN 4000K LED	72	GLASS	DIE CAST ALUMINUM	DARK BRONZE	WALL AT 9'-6"	1000 mA DRIVER, TYPE III MEDIUM DISTRIBUTION, WET LOCATION LABEL	LITHONIA "TWH LED" SERIES
L14	WALL MOUNTED LED AREA LIGHT	16" x 15"	UNIV.	20C, 8427 LUMEN 4000K LED	72	GLASS	DIE CAST ALUMINUM	DARK BRONZE	WALL, FIELD VERIFY MOUNTING HEIGHT	1000 mA DRIVER, TYPE III MEDIUM DISTRIBUTION, WET LOCATION LABEL	LITHONIA "TWH LED" SERIES
L15	SURFACE MOUNTED LED	4'	UNIV.	4146 LUMEN 4000K LED	38	DIFFUSE POLYCARBONATE	FLUSH STEEL	WHITE	WALL AT 7'-0"	80 CRI	LITHONIA "CDS" SERIES
L16	RECESSED TRACK LIGHTING	LENGTH AS INDICIATED	120	700 LUMEN, GU5.3 BASE, 12V, 2700K LED, FLOOD DISTRIBUTION FROSTED	9 PER HEAD	_____	EXTRUDED ALUMINUM	WHITE	FLANGED RECESSED CEILING	120 VOLT, 2 CIRCUIT RECESSED FLANGE TRACK, RECESSED FLANGED END FEED, EN D CAP, STRAIGHT JOINER AND HANGER SUPPORT CLIPS AS REQUIRED FOR INSTALLATION. SSL260-WX8-DE-120-W HEADS WITH INTEGRAL RECESSED TRACK FITTING WITH 120V / 11.6V ELECTRONIC TRANSFORMER, INTEGRAL ON/OFF SAFETY SWITCH, INSTALL TRACK HEADS IN ALTERNATING CIRCUIT CONFIGURATION, QUANTITY AS INDICATED	LITHONIA "923" SERIES
L17	SURFACE MOUNTED LED	17"	UNIV.	3116 LUMEN 4000K LED	30	PEARLESCENT POLYCARBONATE	MARINE GRADE DIE-CAST ALUM.	MATTE WHITE	SURFACE CEILING	CLOSED CELL NEOPRENE GASKET, STAINLESS STEEL HARDWARE, WET LOCATION LISTING	KENALL "MR17FL" SERIES
X1	EXIT LIGHT	_____	UNIV	RED LED	5	_____	POLYCARBONATE	WHITE	FLUSH CEILING	RED LED, 6" LETTERS, SINGLE OR DOUBLE FACE UNITS AND CHEVRONS AS INDICATED, SELF DIAGNOSTICS	LITHONIA "LQM" SERIES
X2	EXIT LIGHT	_____	UNIV	RED LED	5	_____	POLYCARBONATE	WHITE	WALL OVER DOOR	RED LED, 6" LETTERS, SINGLE OR DOUBLE FACE UNITS AND CHEVRONS AS INDICATED, SELF DIAGNOSTICS	LITHONIA "LQM" SERIES
E	EMERGENCY LIGHT	_____	UNIV	2 – 1.5W LED	3	_____	POLYCARBONATE	WHITE	WALL / 7'-6"	INTERNAL 90 MINUTE BATTERY BACKUP, SELF DIAGNOSTICS	LITHONIA "ELM2 LED" SERIES

NOTES:
1. ACRYLIC PRISMATIC LENSES SHALL BE 0.125" NOMINAL MINIMUM THICKNESS.
2. ALL EXIT AND EMERGENCY FIXTURES SHALL COMPLY WITH NCSBC STANDARDS AND HAVE AUTOMATIC TESTING DEVICES.
3. LED EMERGENCY BATTERY SHALL PROVIDE 1400 MINIMUM LUMENS OUTPUT FOR 90 MINUTES MINIMUM.
4. SEE SPECIFICATIONS SECTIONS 265100 AND 265200 FOR ADDITIONAL REQUIREMENTS.
5. THE FIRST FIXTURE NAMED IN THE MANUFACTURER COLUMN IS THE BASIS OF DESIGN. OTHER FIXTURES ARE SIMILAR IN THE OPINION OF THE ARCHITECT AND ENGINEER. IF THE CONTRACTOR ELECTS TO SUBMIT A FIXTURE OTHER THAN THE BASIS OF DESIGN FIXTURE, INCLUDING ONE OF THE TWO SIMILAR FIXTURES, REQUIREMENTS OF NOTES 6 AND 7 APPLY.

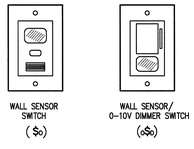
6. LIGHTING FIXTURES HAVE BEEN SELECTED AND SPECIFIED TO ACHIEVE REQUIRED/DESIRED ILLUMINATION LEVELS AND OTHER CHARACTERISTICS IN THEIR RESPECTIVE AREAS. SPECIFIED FIXTURES HAVE SPECIFIC CHARACTERISTICS WHICH MAY CREATE UNIQUE ILLUMINATION RESULTS ESSENTIAL TO THE PROJECT. LIGHTING FIXTURES PROVIDED SHALL MEET THE AESTHETICS, DETAILS, AND SPECIFICATIONS STATED ABOVE AND IN THE DIVISION 26 SPECIFICATIONS, AND MOUNTING HEIGHTS AND SPACINGS SHOWN ON THE DRAWINGS. ANY DEVIATIONS FROM THE SPECIFIED FIXTURES SHALL DEEM ALL PARTIES IN THE SUPPLY CHAIN AND CONTRACTOR RESPONSIBLE FOR PROVIDING DETAILED COMPARISONS OF THE SPECIFIED FIXTURE AND THE PROPOSED FIXTURE FOR ARCHITECT AND ENGINEER REVIEW IN DETERMINING EQUALITY. PROVIDE COMPLETE POINT BY POINT ILLUMINATION STUDIES FOR ALL SUBSTITUTIONS.

7. SUBSTITUTIONS MAY BE APPROVED BY THE ARCHITECT AND ENGINEER IF THEY ARE JUDGED TO BE EQUAL TO THE SPECIFIED FIXTURES. 'EQUAL'MAY INCLUDE, AT THE SOLE DISCRETION OF THE ARCHITECT AND ENGINEER, LENS MATERIAL AND CHARACTERISTICS, COLORS, REFLECTORS, HOUSING MATERIAL AND CONFIGURATION, FINISHES, PHOTOMETRICS, EFFICIENCY, OPTIONS, FUNCTIONALITY, ETC..

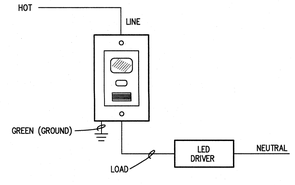
CEILING FAN SCHEDULE

MARK	DESCRIPTION.	SIZE/APERTURE	VOLTS	LAMPS	WATTS	LENS	TRIM/DOOR	TRIM COLOR	MOUNTING HEIGHT	REMARKS	MANUFACTURER
HH	PENDANT MOUNTED INTERIOR CEILING FAN	52"	120	_____	88	_____	_____	FLAT WHITE	PENDANT CEILING MOUNTED	3 ABS BLADES, DOWNROD AS REQUIRED FOR 24" TOTAL FAN SUSPENSION, WC116 WALL CONTROL	MINKAAIRE "ROUDOLPH F272-WHF" SERIES
JJ	SURFACE MOUNTED EXTERIOR CEILING FAN	54"	120	_____	45	_____	_____	COAL	PENDANT CEILING MOUNTED	3 PC BLADES, 3.5" DOWNROD, RCS213 REMOTE CONTROL	MINKAAIRE "JAVA F753-CL" SERIES
KK	PENDANT MOUNTED INTERIOR CEILING FAN	60"	120	_____	28	_____	_____	SOFT BRASS WITH COAL BLADES	PENDANT CEILING MOUNTED	3 ABS BLADES, DOWNROD FOR 72" TOTAL FAN SUSPENSION, WC500 WALL CONTROL	MINKAAIRE "AVIATION F853-SBR/CL" SERIES

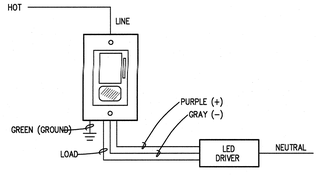
NOTE:
OCCUPANCY SENSOR WIRING SCHEMATICS ARE PROVIDED TO INDICATE SWITCHING FUNCTION(S) REQUIRED. COMPONENTS AND CONNECTIONS BETWEEN COMPONENTS ARE REPRESENTATIVE ONLY AND MAY NOT BE APPLICABLE FOR ALL MANUFACTURER'S DEVICES. CONSULT ACTUAL APPROVED DEVICE MANUFACTURER APPLICATION INFORMATION AND INSTALLATION INSTRUCTIONS FOR COMPONENTS AND WIRING REQUIRED BEFORE ROUGHING IN AND INSTALLING SYSTEMS.



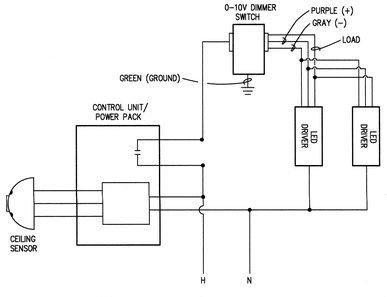
1 - Occupancy Sensor Wall Switch Plate Detail
NOT TO SCALE



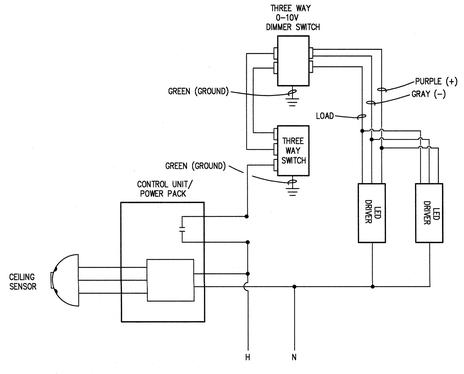
2 - Wall Box Occupancy Sensor Switch Wiring Diagram ($o)
NOT TO SCALE



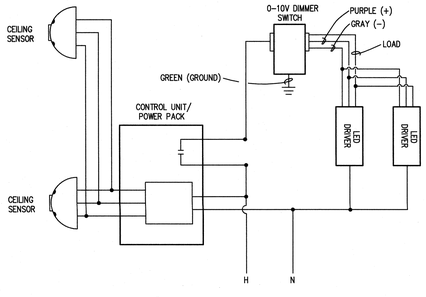
3 - Wall Box Combination Occupancy Sensor/0-10 Volt Dimmer Switch, Single Circuit Wiring Diagram (o$o)
NOT TO SCALE



4 - Ceiling Mounted Occupancy Sensor, Wall Mounted 0-10 Volt Dimmer Switch, Single Circuit Wiring Diagram(os)
NOT TO SCALE



5 - Ceiling Mounted Occupancy Sensor, Wall Mounted Three Way, 0-10 Volt Dimmer Switch, Single Circuit Wiring Diagram (os)
NOT TO SCALE



6 - Multiple Ceiling Mounted Occupancy Sensor, Wall Mounted 0-10 Volt Dimmer Switch, Single Circuit Wiring Diagram (os)
NOT TO SCALE

McFadyen Engineers, PLLC
4411 Peachtree Avenue Wilmington, NC 28403 Phone: 910.399.1125
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BOWMAN MURRAY HEMINGWAY ARCHITECTS
514 Market Street
Wilmington, NC 28406
Tel - (910) 762-2621
Fax - (910) 762-8506

NORTH CAROLINA PROFESSIONAL SEAL 8433 ENGINEER DUNCAN McFADYEN
12-16-20

THE DAVIS COMMUNITY
New Community Center
1011 Porter's Neck Road
Wilmington, North Carolina 28411

REV.	DATE	DESCRIPTION
2	12-16-2020	ADD NEW LIGHTING FIXTURE AT EXISTING COVERED WALKWAYS
1	12-10-2020	REVISED PER NHC INSPECTIONS COMMENTS

NO.	DATE	ISSUE NOTE

Project Manager: RDM	Drawn By: WPJ
Date: December 10, 2020	Reviewed By: RDM
Project ID	

Sheet Title
Lighting Fixture and Ceiling Fan Schedules and Electrical Details

Sheet No.
E106

INTERIOR DESIGNER LIGHTING FIXTURE SCHEDULE

MARK	DESCRIPTION	SIZE/APERTURE	VOLTS	LAMPS	WATTS	LENS	TRIM/DOOR	TRIM COLOR	MOUNTING HEIGHT	REMARKS	MANUFACTURER
A	PENDANT MOUNTED LED	BY INTERIOR DESIGNER	120	6 – 4.5W (60W EQUIVALENT) E12, DIMMABLE, 450 LUMEN, 80 CRI 2700K LED CANDELABRA	27	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	FIXTURE PROVIDED BY INTERIOR DESIGNER, INSTALLED BY ELECTRICAL CONTRACTOR. ALL QUESTIONS SHOULD BE DIRECTED TO JENNIFER KRANER, BIG SKY DESIGNS, 910–793–3992. LAMPS PROVIDED BY OWNER, INSTALLED BY ELECTRICAL CONTRACTOR	BY INTERIOR DESIGNER
B	PENDANT MOUNTED LED	BY INTERIOR DESIGNER	120	12 – 4W (40W EQUIVALENT) E12, 300 LUMEN, 80 CRI,CANDELABRA 2700K LED CANDELABRA	48	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	FIXTURE PROVIDED BY INTERIOR DESIGNER, INSTALLED BY ELECTRICAL CONTRACTOR. ALL QUESTIONS SHOULD BE DIRECTED TO JENNIFER KRANER, BIG SKY DESIGNS, 910–793–3992. LAMPS PROVIDED BY OWNER, INSTALLED BY ELECTRICAL CONTRACTOR	BY INTERIOR DESIGNER
C	PENDANT MOUNTED LED	BY INTERIOR DESIGNER	120	4 – 7W (60W EQUIVALENT) E12, 500 LUMEN, 80 CRI, 2700K LED, FLAME TIP CANDELABRA	28	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	FIXTURE PROVIDED BY INTERIOR DESIGNER, INSTALLED BY ELECTRICAL CONTRACTOR. ALL QUESTIONS SHOULD BE DIRECTED TO JENNIFER KRANER, BIG SKY DESIGNS, 910–793–3992. LAMPS PROVIDED BY OWNER, INSTALLED BY ELECTRICAL CONTRACTOR	BY INTERIOR DESIGNER
D	PENDANT MOUNTED LED	BY INTERIOR DESIGNER	120	10 – 7W (60W EQUIVALENT) E12, 500 LUMEN, 80 CRI, 2700K LED, FLAME TIP CANDELABRA	70	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	FIXTURE PROVIDED BY INTERIOR DESIGNER, INSTALLED BY ELECTRICAL CONTRACTOR. ALL QUESTIONS SHOULD BE DIRECTED TO JENNIFER KRANER, BIG SKY DESIGNS, 910–793–3992. LAMPS PROVIDED BY OWNER, INSTALLED BY ELECTRICAL CONTRACTOR	BY INTERIOR DESIGNER
E	PENDANT MOUNTED LED	BY INTERIOR DESIGNER	120	10 – 4.5W (60W EQUIVALENT) E12, DIMMABLE, 450 LUMEN, 80 CRI, 2700K LED, CANDELABRA	45	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	FIXTURE PROVIDED BY INTERIOR DESIGNER, INSTALLED BY ELECTRICAL CONTRACTOR. ALL QUESTIONS SHOULD BE DIRECTED TO JENNIFER KRANER, BIG SKY DESIGNS, 910–793–3992. LAMPS PROVIDED BY OWNER, INSTALLED BY ELECTRICAL CONTRACTOR	BY INTERIOR DESIGNER
F	PENDANT MOUNTED LED	BY INTERIOR DESIGNER	120	3 – 7W (60W EQUIVALENT) E26, DIMMABLE, 800 LUMEN, 2700K LED	21	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	FIXTURE PROVIDED BY INTERIOR DESIGNER, INSTALLED BY ELECTRICAL CONTRACTOR. ALL QUESTIONS SHOULD BE DIRECTED TO JENNIFER KRANER, BIG SKY DESIGNS, 910–793–3992. LAMPS PROVIDED BY OWNER, INSTALLED BY ELECTRICAL CONTRACTOR	BY INTERIOR DESIGNER
G	PENDANT MOUNTED LED	BY INTERIOR DESIGNER	120	1 – 10W (100W EQUIVALENT) E26, DIMMABLE, 1050 LUMEN, 2700K LED	10	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	FIXTURE PROVIDED BY INTERIOR DESIGNER, INSTALLED BY ELECTRICAL CONTRACTOR. ALL QUESTIONS SHOULD BE DIRECTED TO JENNIFER KRANER, BIG SKY DESIGNS, 910–793–3992. LAMPS PROVIDED BY OWNER, INSTALLED BY ELECTRICAL CONTRACTOR	BY INTERIOR DESIGNER
H	PENDANT MOUNTED LED	BY INTERIOR DESIGNER	120	1 – 8.5W (75W EQUIVALENT) E26, DIMMABLE, 800 LUMEN, 2700K LED	8.5	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	FIXTURE PROVIDED BY INTERIOR DESIGNER, INSTALLED BY ELECTRICAL CONTRACTOR. ALL QUESTIONS SHOULD BE DIRECTED TO JENNIFER KRANER, BIG SKY DESIGNS, 910–793–3992. LAMPS PROVIDED BY OWNER, INSTALLED BY ELECTRICAL CONTRACTOR	BY INTERIOR DESIGNER
J	PENDANT MOUNTED LED	BY INTERIOR DESIGNER	120	3 – 4.5W (60W EQUIVALENT) E12, DIMMABLE, 450 LUMEN, 80 CRI 2700K LED CANDELABRA	13.5	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	FIXTURE PROVIDED BY INTERIOR DESIGNER, INSTALLED BY ELECTRICAL CONTRACTOR. ALL QUESTIONS SHOULD BE DIRECTED TO JENNIFER KRANER, BIG SKY DESIGNS, 910–793–3992. LAMPS PROVIDED BY OWNER, INSTALLED BY ELECTRICAL CONTRACTOR	BY INTERIOR DESIGNER
K	PENDANT MOUNTED LED	BY INTERIOR DESIGNER	120	3 – 4.5W (60W EQUIVALENT) E12, DIMMABLE, 450 LUMEN, 80 CRI 2700K LED CANDELABRA	13.5	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	FIXTURE PROVIDED BY INTERIOR DESIGNER, INSTALLED BY ELECTRICAL CONTRACTOR. ALL QUESTIONS SHOULD BE DIRECTED TO JENNIFER KRANER, BIG SKY DESIGNS, 910–793–3992. LAMPS PROVIDED BY OWNER, INSTALLED BY ELECTRICAL CONTRACTOR	BY INTERIOR DESIGNER
L	PENDANT MOUNTED LED	BY INTERIOR DESIGNER	120	10 – 4W (40W EQUIVALENT) T4, G9, DIMMABLE, 2700K LED	40	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	FIXTURE PROVIDED BY INTERIOR DESIGNER, INSTALLED BY ELECTRICAL CONTRACTOR. ALL QUESTIONS SHOULD BE DIRECTED TO JENNIFER KRANER, BIG SKY DESIGNS, 910–793–3992. LAMPS PROVIDED BY OWNER, INSTALLED BY ELECTRICAL CONTRACTOR	BY INTERIOR DESIGNER
M	WALL MOUNTED LED SCONCE	BY INTERIOR DESIGNER	120	1 – 13W LED	13	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	FIXTURE PROVIDED BY INTERIOR DESIGNER, INSTALLED BY ELECTRICAL CONTRACTOR. ALL QUESTIONS SHOULD BE DIRECTED TO JENNIFER KRANER, BIG SKY DESIGNS, 910–793–3992.	BY INTERIOR DESIGNER
N	WALL MOUNTED LED SCONCE	BY INTERIOR DESIGNER	120	1 – 9.5W (13W EQUIVALENT) A19, GU24, 800 LUMENT, 2700K LED	9.5	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	FIXTURE PROVIDED BY INTERIOR DESIGNER, INSTALLED BY ELECTRICAL CONTRACTOR. ALL QUESTIONS SHOULD BE DIRECTED TO JENNIFER KRANER, BIG SKY DESIGNS, 910–793–3992. LAMPS PROVIDED BY OWNER, INSTALLED BY ELECTRICAL CONTRACTOR	BY INTERIOR DESIGNER
P	PENDANT MOUNTED LED	BY INTERIOR DESIGNER	120	3 – 4.5W (60W EQUIVALENT) E12, DIMMABLE, 450 LUMEN, 80 CRI 2700K LED CANDELABRA	13.5	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	FIXTURE PROVIDED BY INTERIOR DESIGNER, INSTALLED BY ELECTRICAL CONTRACTOR. ALL QUESTIONS SHOULD BE DIRECTED TO JENNIFER KRANER, BIG SKY DESIGNS, 910–793–3992. LAMPS PROVIDED BY OWNER, INSTALLED BY ELECTRICAL CONTRACTOR	BY INTERIOR DESIGNER
Q	WALL MOUNTED LED SCONCE	BY INTERIOR DESIGNER	120	2 – 4W (40W EQUIVALENT) E12, 300 LUMEN, 80 CRI,CANDELABRA 2700K LED CANDELABRA	8	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	FIXTURE PROVIDED BY INTERIOR DESIGNER, INSTALLED BY ELECTRICAL CONTRACTOR. ALL QUESTIONS SHOULD BE DIRECTED TO JENNIFER KRANER, BIG SKY DESIGNS, 910–793–3992. LAMPS PROVIDED BY OWNER, INSTALLED BY ELECTRICAL CONTRACTOR	BY INTERIOR DESIGNER
R	WALL MOUNTED ART LIGHT	BY INTERIOR DESIGNER	120	2 – 25W T	50	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	FIXTURE PROVIDED BY INTERIOR DESIGNER, INSTALLED BY ELECTRICAL CONTRACTOR. ALL QUESTIONS SHOULD BE DIRECTED TO JENNIFER KRANER, BIG SKY DESIGNS, 910–793–3992.	BY INTERIOR DESIGNER
S	WALL MOUNTED LED SCONCE	BY INTERIOR DESIGNER	120	2 – 4W (40W EQUIVALENT) E12, 300 LUMEN, 80 CRI,CANDELABRA 2700K LED CANDELABRA	8	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	FIXTURE PROVIDED BY INTERIOR DESIGNER, INSTALLED BY ELECTRICAL CONTRACTOR. ALL QUESTIONS SHOULD BE DIRECTED TO JENNIFER KRANER, BIG SKY DESIGNS, 910–793–3992. LAMPS PROVIDED BY OWNER, INSTALLED BY ELECTRICAL CONTRACTOR	BY INTERIOR DESIGNER
T	WALL MOUNTED LED SCONCE	BY INTERIOR DESIGNER	120	2 – 4W (40W EQUIVALENT) E12, 300 LUMEN, 80 CRI,CANDELABRA 2700K LED CANDELABRA	8	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	FIXTURE PROVIDED BY INTERIOR DESIGNER, INSTALLED BY ELECTRICAL CONTRACTOR. ALL QUESTIONS SHOULD BE DIRECTED TO JENNIFER KRANER, BIG SKY DESIGNS, 910–793–3992. LAMPS PROVIDED BY OWNER, INSTALLED BY ELECTRICAL CONTRACTOR	BY INTERIOR DESIGNER
U	WALL MOUNTED LED SCONCE	BY INTERIOR DESIGNER	120	1 – 6.5W LED B	6.5	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	FIXTURE PROVIDED BY INTERIOR DESIGNER, INSTALLED BY ELECTRICAL CONTRACTOR. ALL QUESTIONS SHOULD BE DIRECTED TO JENNIFER KRANER, BIG SKY DESIGNS, 910–793–3992.	BY INTERIOR DESIGNER
V	PENDANT MOUNTED LED	BY INTERIOR DESIGNER	120	6 – 4.5W (60W EQUIVALENT) E12, DIMMABLE, 450 LUMEN, 80 CRI 2700K LED CANDELABRA	27	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	FIXTURE PROVIDED BY INTERIOR DESIGNER, INSTALLED BY ELECTRICAL CONTRACTOR. ALL QUESTIONS SHOULD BE DIRECTED TO JENNIFER KRANER, BIG SKY DESIGNS, 910–793–3992. LAMPS PROVIDED BY OWNER, INSTALLED BY ELECTRICAL CONTRACTOR	BY INTERIOR DESIGNER
W	PENDANT MOUNTED LED	BY INTERIOR DESIGNER	120	10 – 7W (60W EQUIVALENT) E12, 500 LUMEN, 80 CRI, 2700K LED, FLAME TIP CANDELABRA	70	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	FIXTURE PROVIDED BY INTERIOR DESIGNER, INSTALLED BY ELECTRICAL CONTRACTOR. ALL QUESTIONS SHOULD BE DIRECTED TO JENNIFER KRANER, BIG SKY DESIGNS, 910–793–3992. LAMPS PROVIDED BY OWNER, INSTALLED BY ELECTRICAL CONTRACTOR	BY INTERIOR DESIGNER
X	PENDANT MOUNTED LED	BY INTERIOR DESIGNER	120	3 – 2.5W (25W EQUIVALENT) E12, 200 LUMEN, 80 CRI, 2700K LED, FLAME TIP CANDELABRA	7.5	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	FIXTURE PROVIDED BY INTERIOR DESIGNER, INSTALLED BY ELECTRICAL CONTRACTOR. ALL QUESTIONS SHOULD BE DIRECTED TO JENNIFER KRANER, BIG SKY DESIGNS, 910–793–3992. LAMPS PROVIDED BY OWNER, INSTALLED BY ELECTRICAL CONTRACTOR	BY INTERIOR DESIGNER
Y	WALL MOUNTED LED SCONCE	BY INTERIOR DESIGNER	120	2 – 7W (60W EQUIVALENT) E12, 500 LUMEN, 80 CRI, 2700K LED, FLAME TIP CANDELABRA	14	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	FIXTURE PROVIDED BY INTERIOR DESIGNER, INSTALLED BY ELECTRICAL CONTRACTOR. ALL QUESTIONS SHOULD BE DIRECTED TO JENNIFER KRANER, BIG SKY DESIGNS, 910–793–3992. LAMPS PROVIDED BY OWNER, INSTALLED BY ELECTRICAL CONTRACTOR	BY INTERIOR DESIGNER
Z	PENDANT MOUNTED LED	BY INTERIOR DESIGNER	120	1 – 9 W (60W EQUIVALENT) A19, 750 LUMEN, 2700K LED	9	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	FIXTURE PROVIDED BY INTERIOR DESIGNER, INSTALLED BY ELECTRICAL CONTRACTOR. ALL QUESTIONS SHOULD BE DIRECTED TO JENNIFER KRANER, BIG SKY DESIGNS, 910–793–3992. LAMPS PROVIDED BY OWNER, INSTALLED BY ELECTRICAL CONTRACTOR	BY INTERIOR DESIGNER
AA	WALL MOUNTED LED SCONCE	BY INTERIOR DESIGNER	120	1–18W LED	18	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	FIXTURE PROVIDED BY INTERIOR DESIGNER, INSTALLED BY ELECTRICAL CONTRACTOR. ALL QUESTIONS SHOULD BE DIRECTED TO JENNIFER KRANER, BIG SKY DESIGNS, 910–793–3992.	BY INTERIOR DESIGNER
BB	WALL MOUNTED LED SCONCE	BY INTERIOR DESIGNER	120	1–14.5 LED	14.5	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	FIXTURE PROVIDED BY INTERIOR DESIGNER, INSTALLED BY ELECTRICAL CONTRACTOR. ALL QUESTIONS SHOULD BE DIRECTED TO JENNIFER KRANER, BIG SKY DESIGNS, 910–793–3992.	BY INTERIOR DESIGNER
CC	PENDANT MOUNTED LED	BY INTERIOR DESIGNER	120	1 – 3W (25W EQUIVALENT) A19, DIMMABLE, 270 LUMEN, 2700K LED	3	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	FIXTURE PROVIDED BY INTERIOR DESIGNER, INSTALLED BY ELECTRICAL CONTRACTOR. ALL QUESTIONS SHOULD BE DIRECTED TO JENNIFER KRANER, BIG SKY DESIGNS, 910–793–3992. LAMPS PROVIDED BY OWNER, INSTALLED BY ELECTRICAL CONTRACTOR	BY INTERIOR DESIGNER
DD	WALL MOUNTED LED SCONCE	BY INTERIOR DESIGNER	120	1 – 7W (60W EQUIVALENT) E12, 500 LUMEN, 80 CRI, 2700K LED, FLAME TIP CANDELABRA	7	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	FIXTURE PROVIDED BY INTERIOR DESIGNER, INSTALLED BY ELECTRICAL CONTRACTOR. ALL QUESTIONS SHOULD BE DIRECTED TO JENNIFER KRANER, BIG SKY DESIGNS, 910–793–3992. LAMPS PROVIDED BY OWNER, INSTALLED BY ELECTRICAL CONTRACTOR	BY INTERIOR DESIGNER
EE	WALL MOUNTED LED SCONCE	BY INTERIOR DESIGNER	120	3 – 7W (60W EQUIVALENT) E26, DIMMABLE, 800 LUMEN, 2700K LED	21	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	FIXTURE PROVIDED BY INTERIOR DESIGNER, INSTALLED BY ELECTRICAL CONTRACTOR. ALL QUESTIONS SHOULD BE DIRECTED TO JENNIFER KRANER, BIG SKY DESIGNS, 910–793–3992. LAMPS PROVIDED BY OWNER, INSTALLED BY ELECTRICAL CONTRACTOR	BY INTERIOR DESIGNER
FF	WALL MOUNTED LED SCONCE	BY INTERIOR DESIGNER	120	3 – 13.5W (100W EQUIVALENT) A19, 1600 LUMEN, 2700K LED,	40.5	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	FIXTURE PROVIDED BY INTERIOR DESIGNER, INSTALLED BY ELECTRICAL CONTRACTOR. ALL QUESTIONS SHOULD BE DIRECTED TO JENNIFER KRANER, BIG SKY DESIGNS, 910–793–3992. LAMPS PROVIDED BY OWNER, INSTALLED BY ELECTRICAL CONTRACTOR	BY INTERIOR DESIGNER
GG	WALL MOUNTED LED SCONCE	BY INTERIOR DESIGNER	120	2 – 4.5W (60W EQUIVALENT) E12, DIMMABLE, 450 LUMEN, 80 CRI 2700K LED CANDELABRA	9	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	BY INTERIOR DESIGNER	FIXTURE PROVIDED BY INTERIOR DESIGNER, INSTALLED BY ELECTRICAL CONTRACTOR. ALL QUESTIONS SHOULD BE DIRECTED TO JENNIFER KRANER, BIG SKY DESIGNS, 910–793–3992. LAMPS PROVIDED BY OWNER, INSTALLED BY ELECTRICAL CONTRACTOR	BY INTERIOR DESIGNER

McFadyen Engineers, PLLC
4411 Peachtree Avenue Wilmington, NC 28403 Phone : 910.399.1125
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NC# P-1010

BOWMAN MURRAY HEMINGWAY
ARCHITECTS
514 Market Street
Wilmington, NC 28406
Tel - (910) 762-2621
Fax - (910) 762-8506

NORTH CAROLINA PROFESSIONAL SEAL 8433 ENGINEER JOHN MCFADYEN
12-10-20

THE DAVIS COMMUNITY
New Community Center
1011 Porter's Neck Road
Wilmington, North Carolina 28411

REV.	DATE	DESCRIPTION
1	12-10-2020	REVISED PER NHC INSPECTIONS COMMENTS

NO.	DATE	ISSUE NOTE

Project Manager: RDM	Drawn By: WPJ
Date: December 10, 2020	Reviewed By: RDM
Project ID	

Sheet Title: **Lighting Fixture Schedule**

Sheet No.: E106.1

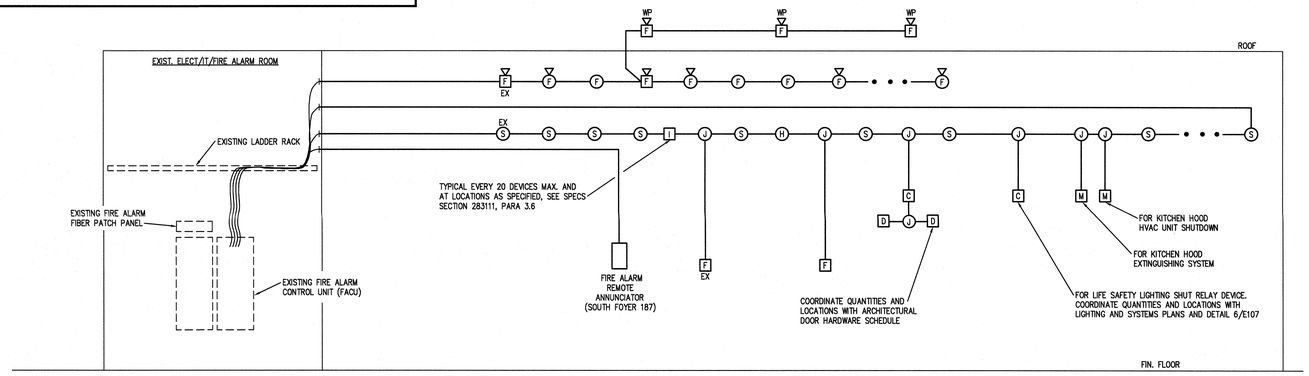
Fire Alarm System Control Matrix

SYSTEM INPUTS	NOTE	SYSTEM OUTPUTS: ACTUATE COMMON ALARM SIGNAL INDICATOR	ACTUATE NOTIFICATION APPLIANCES	ACTUATE NOTIFICATION APPLIANCES	ACTUATE CO NOTIFICATION APPLIANCES	ACTUATE COMMON TROUBLE SIGNAL INDICATOR	ACTUATE COMMON SUPERVISORY SIGNAL INDICATOR	ACTUATE ALARM SIGNAL TO MONITORING SERVICE	SUPERVISORY SIGNAL TO MONITORING SERVICE	TROUBLE SIGNAL TO MONITORING SERVICE	DISPLAY/PRINT CHANGE OF STATUS	RELEASE MAGNETICALLY HELD DOORS	SIGNAL HVAC CONTROL SYSTEM	ACTUATE FIREPLACE GAS VALVE SHUTOFF SOLENOID	ACTIVATE EMERGENCY LIGHTING SHUNT RELAYS	SHUTDOWN KITCHEN HOOD AS REQUIRED BY CODES	ACTUATE SMOKE DAMPERS
SMOKE DETECTORS		X	X				X				X	X	X		X		X
HEAT DETECTORS		X	X				X				X	X	X		X		X
CARBON MONOXIDE DETECTOR AT FIREPLACE IN LIVING ROOM 186				X			X				X			X			X
MANUAL PULL STATIONS		X	X				X				X	X	X		X		X
SYSTEM TROUBLE CONDITION					X					X							
LOSS OF FACU AC POWER	1				X					X							
GROUND FAULT					X					X							
SHORT CIRCUIT					X					X							
OPEN CIRCUIT					X					X							
KITCHEN HOOD ANSUL SYSTEM	3	X	X					X			X	X	X		X	X	X
AHU SHUTDOWN AND SMOKE DAMPER OVERRIDE SWITCH							X			X							
SPRINKLER SYSTEM FLOW SWITCH	2	X	X					X			X	X	X		X		X
FIRE PROTECTION PIPING HEAT TRACE FAILURE	2,4						X			X							
SPRINKLER SYSTEM TAMPER SWITCH	2						X			X							
SPRINKLER PRESSURE SWITCH	2						X			X							
RPZ TAMPER SWITCH	2,4						X			X							
RPZ HOT BOX LOW TEMPERATURE	2,4						X			X							

NOTES:
1. ONLY AFTER LOSS OF POWER FOR > 8 HOURS.
2. REFER TO FIRE PROTECTION DRAWINGS FOR SPRINKLER DEVICE LOCATIONS.
3. SEE MECHANICAL DRAWINGS FOR DETAILS AND REQUIRMENTS.
4. IF PRESENT.
5. EMERGENCY LIGHTING SHUNT RELAYS IN COMMUNITY CHAPEL 181 AND COMMUNITY PLAYHOUSE 183
6. THIS IS A ABBREVIATED CONTROL MATRIX. REFER TO SPECS SECTION 283111 AND THE MECHANICAL DRAWINGS AND SPECS FOR ADDITIONAL REQUIREMENTS.

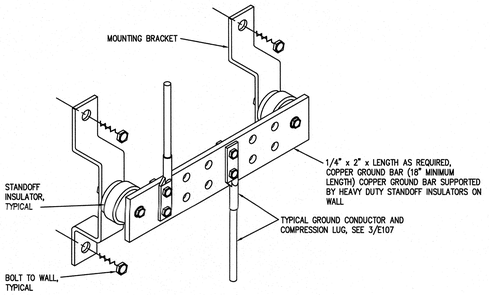
Fire Alarm Legend

F	FIRE ALARM MANUAL STATION, 48" AFF
EX F	EXISTING FIRE ALARM MANUAL STATION, 48" AFF
WP F	WEATHERPROOF FIRE ALARM MANUAL STATION, 48" AFF
75 F	FIRE ALARM CHIME/VISUAL DEVICE, 80" AFF, "75" INDICATES CANDELLA RATING
EX F	EXISTING FIRE ALARM AURAL/VISUAL DEVICE, 80" AFF, "75" INDICATES CANDELLA RATING
75 F	FIRE ALARM CHIME/VISUAL DEVICE, CEILING MOUNTED, "75" INDICATES CANDELLA RATING
WP 75 F	WEATHERPROOF FIRE ALARM CHIME/VISUAL DEVICE, 80" AFF, "75" INDICATES CANDELLA RATING
15 S	FIRE ALARM VISUAL (ONLY) DEVICE, 80" AFF, "15" INDICATES CANDELLA RATING
15 P	FIRE ALARM VISUAL (ONLY) DEVICE, CEILING MOUNTED, "15" INDICATES CANDELLA RATING
75 CO	CARBON MONOXIDE DISTINCTIVE CHIME/VISUAL DEVICE (AMBER), CEILING MOUNTED
S	SMOKE DETECTOR, CEILING MOUNTED
EX S	EXISTING SMOKE DETECTOR, CEILING MOUNTED
H	HEAT DETECTOR, CEILING MOUNTED
C	CARBON MONOXIDE DETECTOR, CEILING MOUNTED
I	FIRE ALARM ISOLATION MODULE
C	FIRE ALARM SYSTEM CONTROL MODULE
M	FIRE ALARM SYSTEM MONITOR MODULE
TB	FIRE ALARM SYSTEM TERMINAL BOX
D	DOOR HOLD OPEN DEVCE

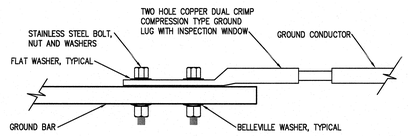


5 - Functional Fire Alarm Riser Diagram
Not to Scale

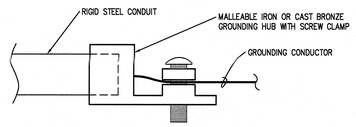
NOTES: 1. RISER DIAGRAM IS DEPICTIVE (FUNCTIONAL) ONLY. ALL DEVICES ARE NOT SHOWN
2. SEE SPECIFICATIONS SECTION 283111 FOR DETAILS.



2 - Typical Ground Bar Mounting Detail
Not to Scale

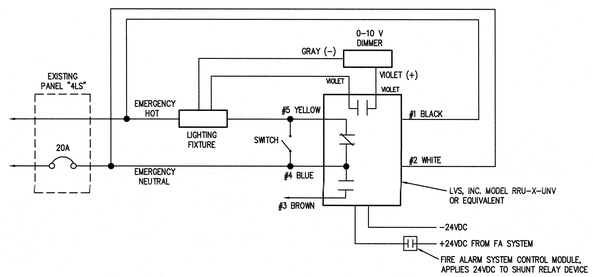


3 - Typical Ground Bar Connection Detail
Not to Scale

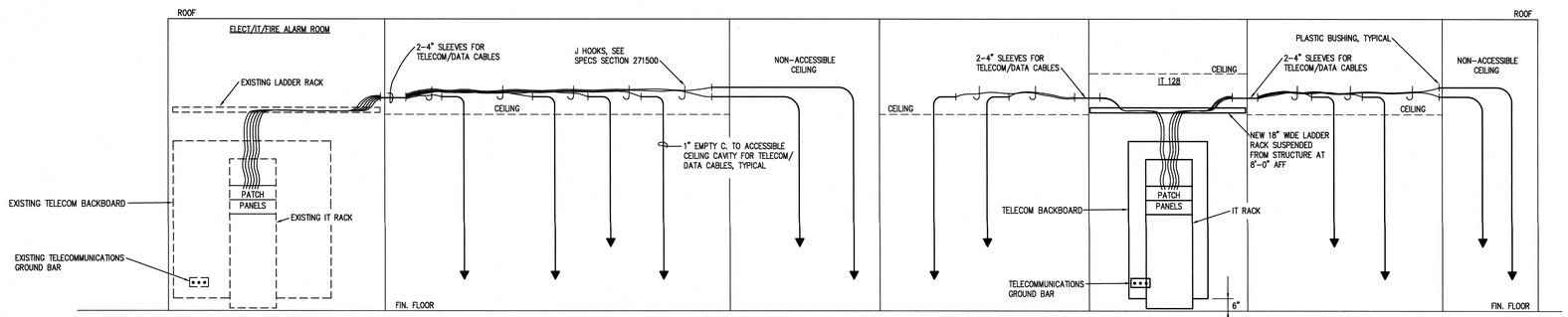


NOTE: INSTALL AT EACH END OF RACEWAY

4 - Conduit and Grounding Conductor Grounding Detail
Not to Scale



6 - Life Safety Lighting Shunt Relay Detail (Typical)
Not to Scale
NOTE: EXTEND 3 WAY SWITCHING AS REQUIRED TO ALLOW FUNCTIONALITY SHOWN



NOTE: 1. RISER DIAGRAM IS DEPICTIVE (FUNCTIONAL) ONLY. ALL DEVICES ARE NOT INDICATED.
2. SEE SPECS SECTIONS 271500 AND 271510 FOR DETAILS

1 - Functional Telecommunications Riser Diagram
Not to Scale

McFadyen Engineers, PLLC
4411 Peachtree Avenue Wilmington, NC 28403 Phone : 910.399.1125

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BOWMAN MURRAY HEMINGWAY ARCHITECTS
514 Market Street
Wilmington, NC 28406
Tel - (910) 762-2621
Fax - (910) 762-8506

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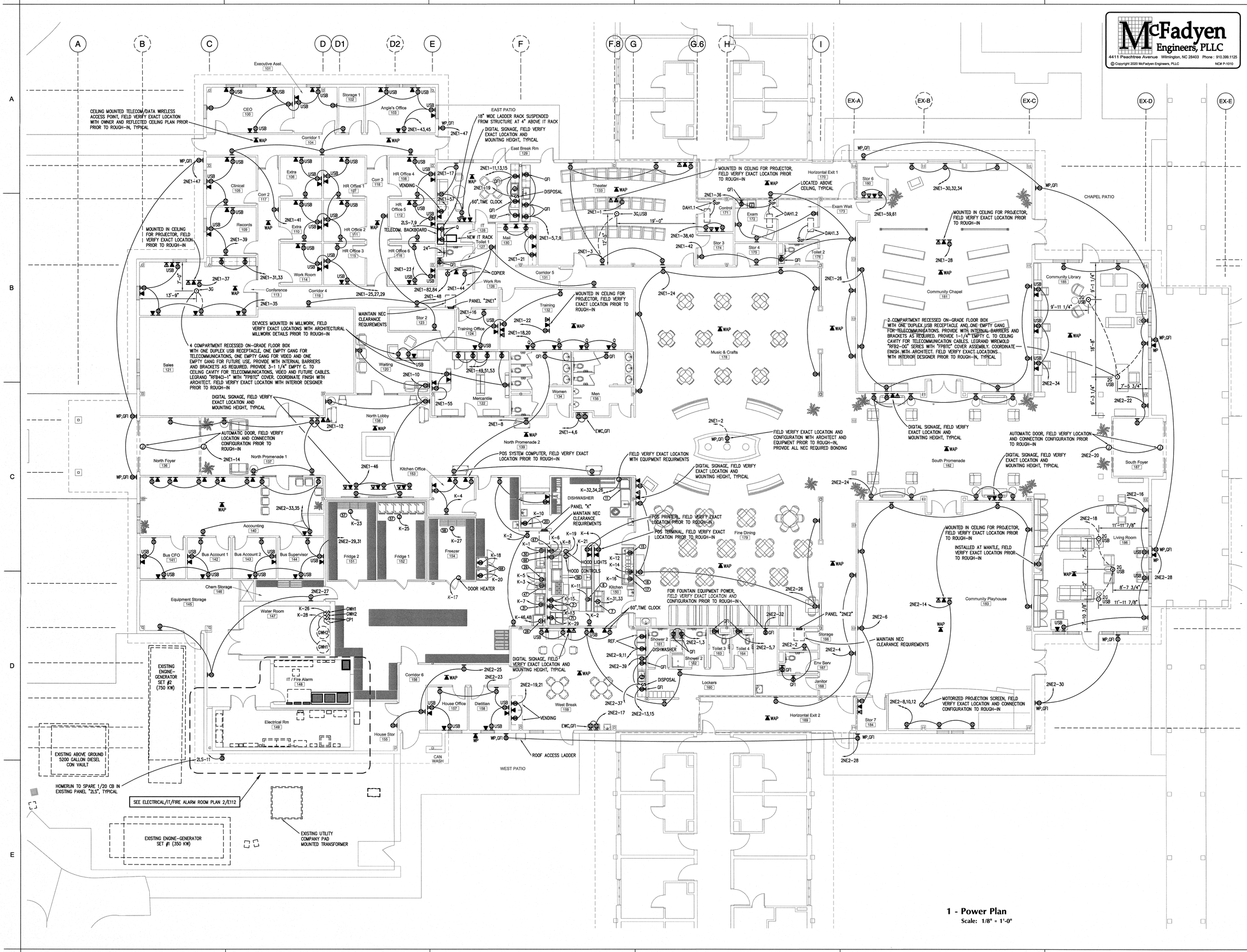
Project Manager: RDM	Drawn By: WPJ
Date: December 10, 2020	Reviewed By: RDM
Project ID	

Sheet Title
Telecommunications and Fire Alarm Riser Diagrams

Sheet No.
E107



1 - Power Plan
Scale: 1/8" = 1'-0"

McFadyen Engineers, PLLC
4411 Peachtree Avenue Wilmington, NC 28403 Phone : 910.399.1125

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bmh BOWMAN MURRAY HEMINGWAY ARCHITECTS
514 Market Street
Wilmington, NC 28406
Tel - (910) 762-2621
Fax - (910) 762-8506

NORTH CAROLINA PROFESSIONAL SEAL 8433 ENGINEER R. DUNCAN McFADYEN
12.10.20

THE DAVIS COMMUNITY
New Community Center

1011 Porter's Neck Road
Wilmington, North Carolina 28411

REV.	DATE	DESCRIPTION
1	12-10-2020	REVISED PER NHC INSPECTIONS COMMENTS

NO.	DATE	ISSUE NOTE

Project Manager: RDM	Drawn By: WPJ
Date: December 10, 2020	Reviewed By: RDM
Project ID	

Sheet Title
Power Plan

Sheet No.
E108

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BOWMAN MURRAY HEMINGWAY ARCHITECTS
514 Market Street
Wilmington, NC 28406
Tel - (910) 762-2621
Fax - (910) 762-8506

NORTH CAROLINA PROFESSIONAL SEAL 8433 ENGINEER RYAN J. MCFADYEN
12-10-20

THE DAVIS COMMUNITY
New Community Center

1011 Porter's Neck Road
Wilmington, North Carolina 28411

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Project Manager: RDM	Drawn By: WPJ
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Project ID	

Sheet Title: **Lighting Plan**

Sheet No.: E109

1 - Lighting Plan
Scale: 1/8" = 1'-0"

NOTE: ALL EXIT FIXTURES SHALL BE CONNECTED UNSWITCHED TO THE 277 VOLT LIFE SAFETY (4LS) LIGHTING CIRCUIT SERVING THE SPACE INSTALLED OR SHALL BE CONNECTED TO THE NEAREST 277 VOLT LIFE SAFETY (4LS) LIGHTING CIRCUIT, TYPICAL

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514 Market Street
Wilmington, NC 28406
Tel - (910) 762-2621
Fax - (910) 762-8506

NORTH CAROLINA PROFESSIONAL SEAL 8433 ENGINEER DUNCAN McFADYEN 12-10-20

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1011 Porter's Neck Road
Wilmington, North Carolina 28411

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Project Manager: RDM	Drawn By: WPJ
Date: December 10, 2020	Reviewed By: RDM
Project ID	

Sheet Title: **Systems Plan**

Sheet No.: E110

RECESSED FIRE ALARM REMOTE ANNUNCIATOR

FOR COMMUNITY CHAPEL LIFE SAFETY LIGHTING SHUT RELAY DEVICE

FOR COMMUNITY PLAYHOUSE LIFE SAFETY LIGHTING SHUT RELAY DEVICE

FOR FIREPLACE GAS VALVE SHUTOFF

FOR KITCHEN HOOD HVAC UNIT SHUTDOWN
FOR KITCHEN HOOD EXTINGUISHING SYSTEM

EXISTING FIRE ALARM CONTROL UNIT (FACU)
EXISTING LADDER RACK
EXISTING IT RACK
EXISTING FIRE ALARM DEVICES, TYPICAL

EXISTING ENGINE-GENERATOR SET #2 (750 KW)
EXISTING ABOVE GROUND 5200 GALLON DIESEL CON VAULT
EXISTING ENGINE-GENERATOR SET #1 (350 KW)
EMPLOYEE PATIO

Fire Alarm Legend

F	FIRE ALARM MANUAL STATION, 48" AFF
WP F	WEATHERPROOF FIRE ALARM MANUAL STATION, 48" AFF
75 F	FIRE ALARM CHIME/VISUAL DEVICE, 80" AFF, "75" INDICATES CANDELLA RATING
75 F	FIRE ALARM CHIME/VISUAL DEVICE, CEILING MOUNTED, "75" INDICATES CANDELLA RATING
WP 75 F	WEATHERPROOF FIRE ALARM CHIME/VISUAL DEVICE, 80" AFF, "75" INDICATES CANDELLA RATING
15 S	FIRE ALARM VISUAL (ONLY) DEVICE, 80" AFF, "15" INDICATES CANDELLA RATING
15 F	FIRE ALARM VISUAL (ONLY) DEVICE, CEILING MOUNTED, "15" INDICATES CANDELLA RATING
75 C	CARBON MONOXIDE DISTINCTIVE CHIME/VISUAL DEVICE (AMBER), CEILING MOUNTED
S	SMOKE DETECTOR, CEILING MOUNTED
H	HEAT DETECTOR, CEILING MOUNTED
C	CARBON MONOXIDE DETECTOR, CEILING MOUNTED
I	FIRE ALARM ISOLATION MODULE
C	FIRE ALARM SYSTEM CONTROL MODULE
M	FIRE ALARM SYSTEM MONITOR MODULE
TB	FIRE ALARM SYSTEM TERMINAL BOX
D	DOOR HOLD OPEN DEVICE

1 - Systems Plan
Scale: 1/8" = 1'-0"

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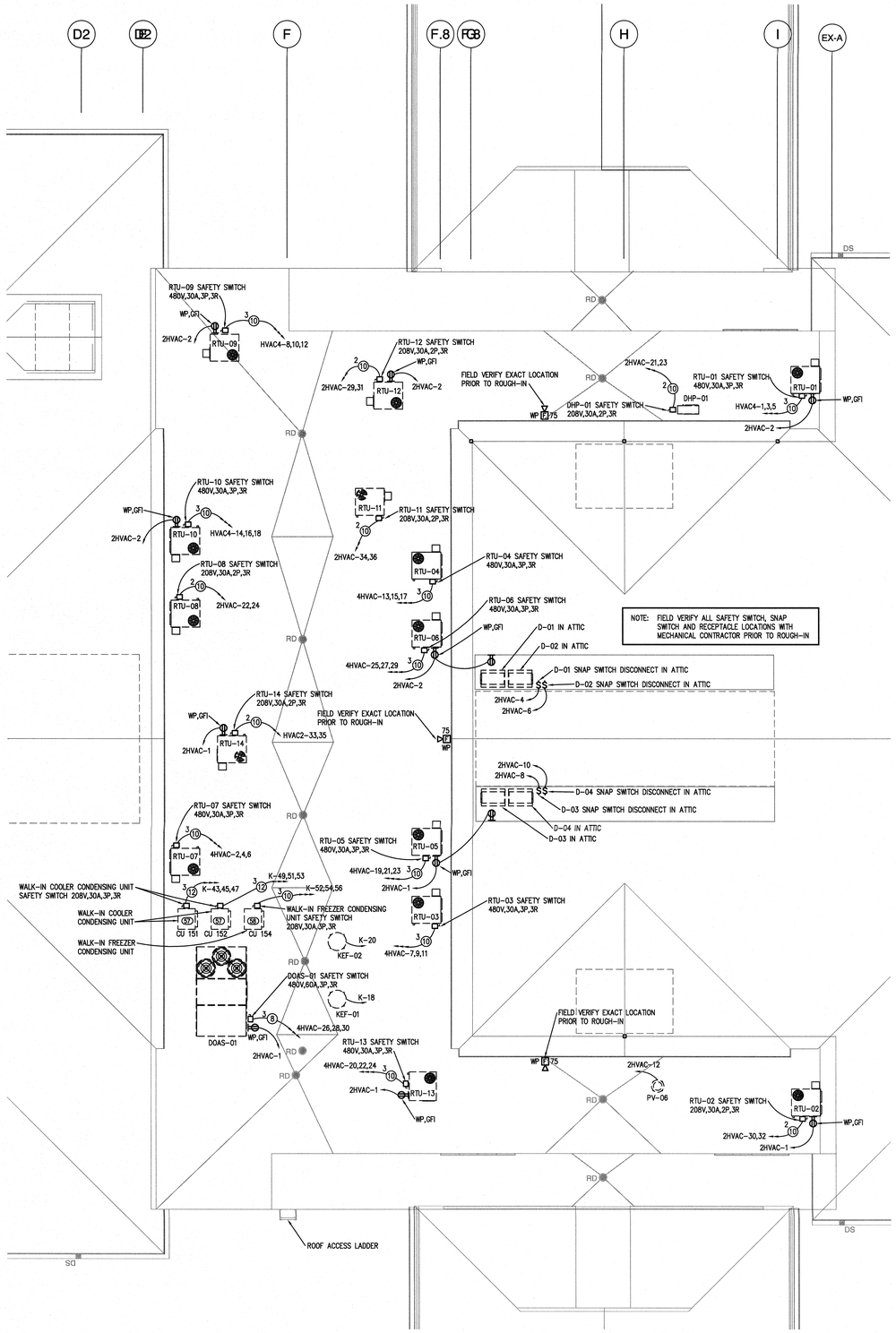
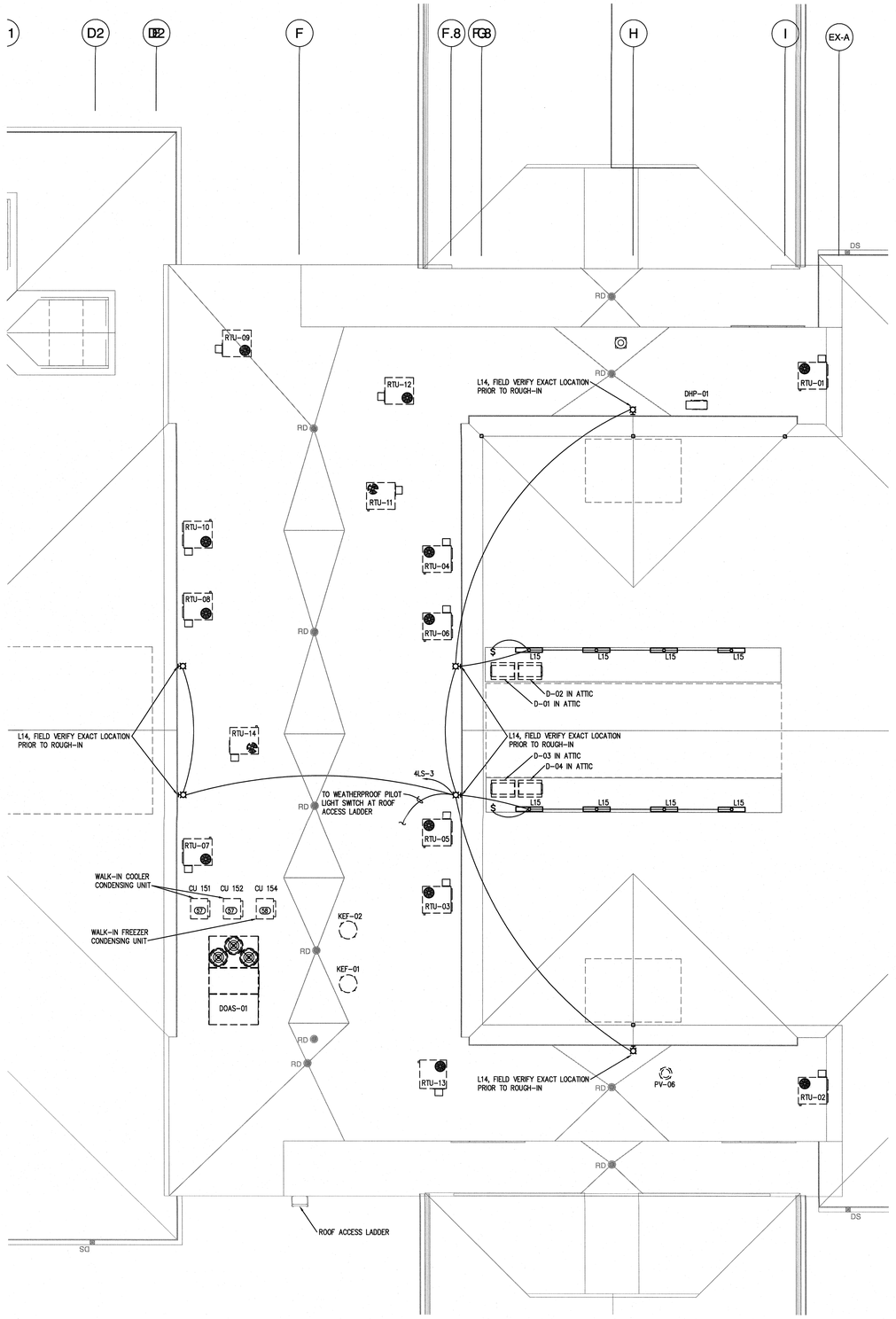


1 - Roof Power and Systems Plan
Scale: 1/8" = 1'-0"



1 - Roof Lighting Plan
Scale: 1/8" = 1'-0"

BOWMAN MURRAY HEMINGWAY ARCHITECTS
514 Market Street
Wilmington, NC 28406
Tel - (910) 762-2621
Fax - (910) 762-8506

NORTH CAROLINA PROFESSIONAL SEAL 8433 ENGINEER ROBERT DUNCAN MCFADYEN
12.10.20

THE DAVIS COMMUNITY
New Community Center
1011 Porter's Neck Road
Wilmington, North Carolina 28411

REV.	DATE	DESCRIPTION
1	12-10-2020	REVISED PER NHC INSPECTIONS COMMENTS

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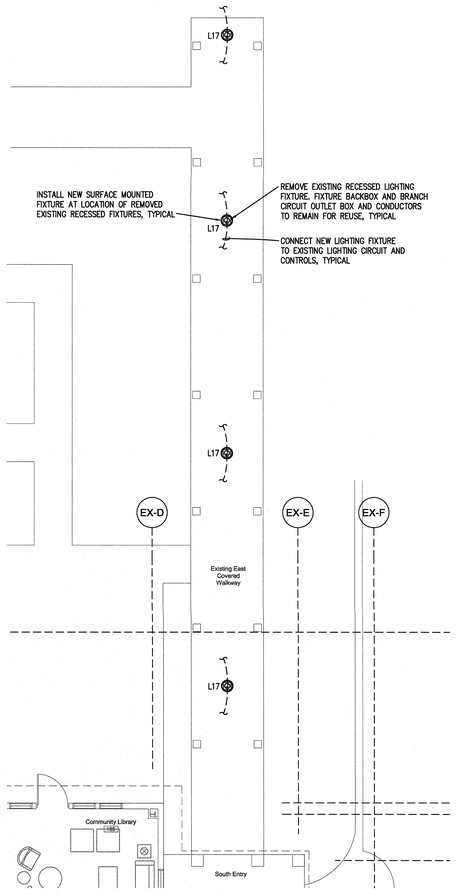
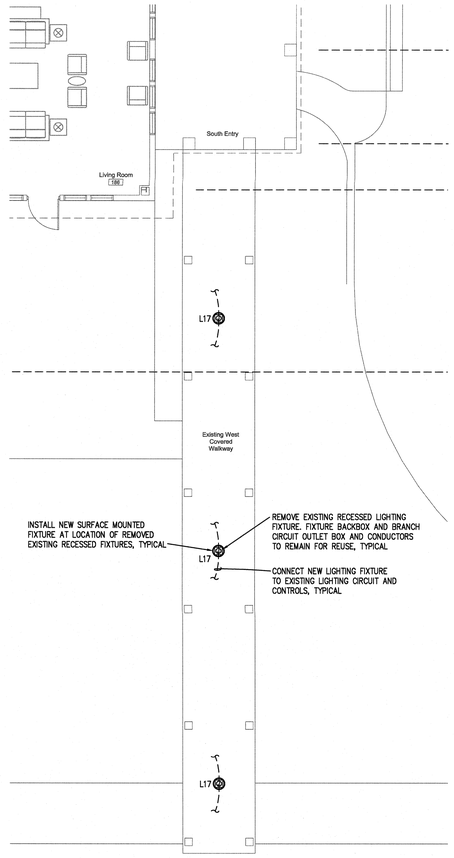
Project Manager: RDM	Drawn By: WPJ
Date: December 10, 2020	Reviewed By: RDM
Project ID	

Sheet Title
Roof Power, Systems and Lighting Plan

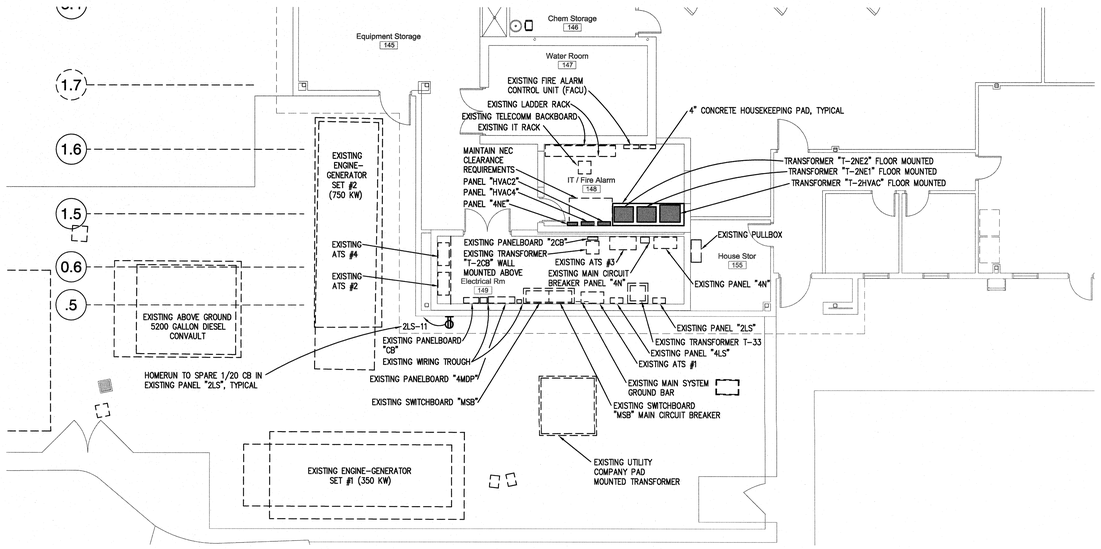
Sheet No.
E111



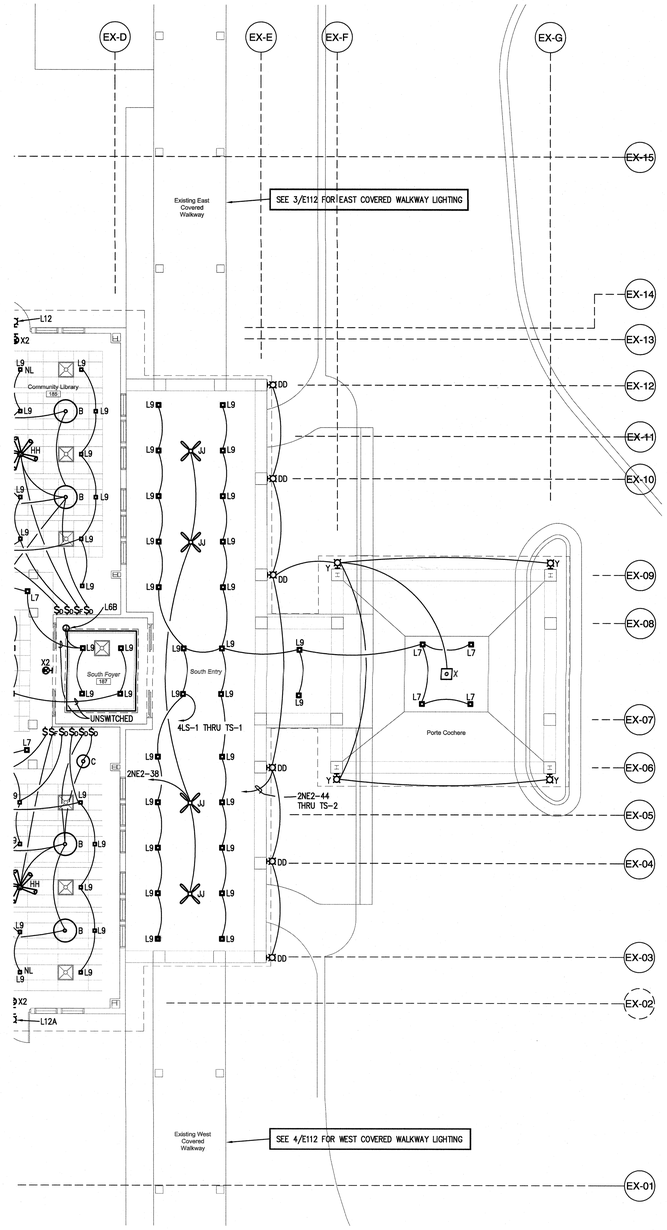
3 - East Covered Walkway Lighting Plan
Scale: 1/8" = 1'-0"



4 - West Covered Walkway Lighting Plan
Scale: 1/8" = 1'-0"



2 - Electrical Room 149 and IT / Fire Alarm Room 148 Plan
Scale: 1/8" = 1'-0"



1 - Partial Lighting Plan
Scale: 1/8" = 1'-0"

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BOWMAN MURRAY HEMINGWAY ARCHITECTS
514 Market Street
Wilmington, NC 28406
Tel - (910) 762-2621
Fax - (910) 762-8506

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 8433 JOHN C. MCFADYEN
12-18-20

THE DAVIS COMMUNITY
New Community Center
1011 Porter's Neck Road
Wilmington, North Carolina 28411

REV.	DATE	DESCRIPTION
2	12-16-2020	ADD NEW LIGHTING FIXTURE AT EXISTING COVERED WALKWAYS
1	12-10-2020	REVISED PER NHC INSPECTIONS COMMENTS

NO.	DATE	ISSUE NOTE

Project Manager: RDM	Drawn By: WPJ
Date: December 10, 2020	Reviewed By: RDM
Project ID	

Sheet Title
Partial Lighting and Electrical Room Plans

Sheet No.
E112

Abbreviations

A	AMPERES
AC	ALTERNATING CURRENT
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
ALUM	ALUMINUM
AMP	AMPERE
ATS	AUTOMATIC TRANSFER SWITCH
AUTO	AUTOMATIC
AUX	AUXILIARY
AWG	AMERICAN WIRE GAUGE
BLDG	BUILDING
C	CONDUIT
CB	CIRCUIT BREAKER
CFM	CUBIC FEET PER MINUTE
CKT	CIRCUIT
CLF	CURRENT LIMITING FUSE
CLG	CEILING
CPT	CONTROL POWER TRANSFORMER
CR	CONTROL RELAY
CS	CONTROL SWITCH
CT	CURRENT TRANSFORMER
CU	COPPER
DC	DIRECT CURRENT
DI	DOOR INTERLOCK
DN	DOWN
E	EXISTING
EC	ELECTRICAL CONTRACTOR
EG	EQUIPMENT GROUND
ELECT	ELECTRICAL
ELEV	ELEVATION
EM	EMERGENCY
ENCL	ENCLOSURE
EQUIP	EQUIPMENT
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WATER HEATER
FLEX	FLEXIBLE
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
GEN	GENERATOR
GFI	GROUND FAULT INTERRUPTING
G, GRD	GROUND
GRS	GALVANIZED RIGID STEEL
HDSS	HEAVY DUTY SAFETY SWITCH
HID	HIGH INTENSITY DISCHARGE
HP	HORSEPOWER
HPS	HIGH PRESSURE SODIUM
HT	HEIGHT
HZ	HERTZ
IDU	INDOOR UNIT
INST	INSTANTANEOUS
INSTR	INSTRUMENT
KEC	KITCHEN EQUIPMENT CONTRACTOR
LA	LIGHTNING ARRESTOR
MC	MECHANICAL CONTRACTOR
MCC	MOTOR CONTROL CENTER
MECH	MECHANICAL
MFR	MANUFACTURER
MH	METAL HALIDE
MTD	MOUNTED
MTG	MOUNTING
NC	NORMALLY CLOSED
NO	NUMBER
NTS	NOT TO SCALE
OC	ON CENTER
ODU	OUTDOOR UNIT
OL	OVERLOAD
P	POLE
PC	PLUMBING CONTRACTOR OR PHOTOCELL
#	PHASE
PL	PILOT LIGHT
PR	PAIR
PT	POTENTIAL TRANSFORMER
PVC	POLYVINYL CHLORIDE
QTY	QUANTITY
R	EXISTING TO REMAIN
RECEPT	RECEPTACLE
RGC	RIGID GALVANIZED CONDUIT
RL	RELOCATE OR RELOCATED
RM	ROOM
RPZ	REDUCED PRESSURE ZONE BACKFLOW PREVENTOR
SEC	SECONDS OR SECONDARY
SPECS	SPECIFICATIONS
SN	SOLID NEUTRAL
SS	STAINLESS STEEL
SW	SWITCH
SWGR	SWITCHGEAR
TC	TIME DELAY ON CLOSING
TEL	TELEPHONE
TO	TIME DELAY ON OPENING
TS	TIME SWITCH
TW	TWISTED
TYP	TYPICAL
UG	UNDERGROUND
UNO	UNLESS NOTED OTHERWISE
V	VOLTS
W	WATTS
WP	WEATHERPROOF
XFMR	TRANSFORMER

Legend

	RACEWAY CONCEALED ABOVE CEILING OR IN WALLS
	RACEWAY EXPOSED ON WALLS OR CEILING
	RACEWAY CONCEALED BELOW OR IN SLAB/FLOOR
PPA-1,3	HOMERUN TO PANEL, ARROWS INDICATE NO. OF CIRCUITS
	FLEXIBLE METAL CONDUIT OR LIQUIDTIGHT FLEX AS APPLICABLE
3/4" C.	CONDUIT: SIZE AND FILL AS NOTED
3 #12 & 1 #12 EG	THREE NO. 12 AWG CONDUCTORS AND ONE NO. 12 AWG EQUIPMENT GROUND
	GROUND AS PRESCRIBED BY CODES, OR AS SHOWN
$	SINGLE POLE SWITCH, 48" AFF, UNO
$3	THREE WAY SWITCH, 48" AFF, UNO
$D	DIMMER SWITCH, 48" AFF, UNO
$O	WALL BOX OCCUPANCY SENSOR, 48" AFF UNO, SEE SPECS SECTION 262726
OS	FLUSH CEILING MOUNTED OCCUPANCY SENSOR WITH FAN AND POWER PACK, SEE SPECS SECTION 262726.
J	JUNCTION BOX, SIZE AS SPECIFIED OR REQUIRED
	DUPLEX RECEPTACLE, 18" AFF, UNO
	DUPLEX RECEPTACLE, 42" AFF, UNO
GFI	GROUND FAULT RECEPTACLE, 18" AFF
GFI	GROUND FAULT RECEPTACLE, 42" AFF
Q	QUADRAPLEX RECEPTACLE, 18" AFF, UNO
Q	QUADRAPLEX RECEPTACLE, 42" AFF, UNO
WP	WEATHERPROOF DUPLEX RECEPTACLE, 18" AFF, UNO
WP	WEATHERPROOF DUPLEX RECEPTACLE, 42" AFF, UNO
	ELECTRICAL DISTRIBUTION PANELBOARD, SEE PANEL SCHEDULE
30 SAF. SW. PLAN / 30 SAF. SW. ELEVATION	ENCLOSED CIRCUIT BREAKER OR FUSIBLE HEAVY DUTY SAFETY SWITCH, 250 OR 600 VOLT AS APPLICABLE, NEMA-1 ENCLOSURE, 3P, 4W, UNO
CIRC. BKR. PLAN / CB 30 CIRC. BKR. ELEVATION	"30" INDICATES RATING IN AMPERES "CB" INDICATES ENCLOSED CIRCUIT BREAKER "2P" INDICATES 2 POLE, 3 WIRE "3P" INDICATES 3 POLE, 3 WIRE "NF" INDICATES NON-FUSIBLE SAFETY SWITCH "SE" INDICATES U.L. SERVICE ENTRANCE LABEL "3R" INDICATES NEMA-3R ENCLOSURE
LX	RECESS MOUNTED LED LIGHTING FIXTURE, LETTER INDICATES FIXTURE TYPE, SEE LIGHTING FIXTURE SCHEDULE
LX	SURFACE/PENDANT MOUNTED LED LIGHTING FIXTURE. LETTER INDICATES FIXTURE TYPE, SEE LIGHTING FIXTURE SCHEDULE
LX	WALL OUTLET AND LED TYPE LIGHTING FIXTURE. LETTER INDICATED FIXTURE TYPE, SEE LIGHTING FIXTURE SCHEDULE
X1	CEILING OUTLET AND SINGLE FACE EXIT SIGN WITHOUT CHEVRONS, SEE LIGHTING FIXTURE SCHEDULE
X1	CEILING OUTLET AND SINGLE FACE EXIT SIGN WITH CHEVRONS AS INDICATES, SEE LIGHTING FIXTURE SCHEDULE
X1	CEILING OUTLET AND DOUBLE FACE EXIT SIGN WITH CHEVRONS AS INDICATES, SEE LIGHTING FIXTURE SCHEDULE
X2	WALL OUTLET AND SINGLE FACE EXIT SIGN WITHOUT CHEVRONS, SEE LIGHTING FIXTURE SCHEDULE
X2	WALL OUTLET AND SINGLE FACE EXIT SIGN WITH CHEVRONS AS INDICATES, SEE LIGHTING FIXTURE SCHEDULE
X2	WALL OUTLET AND DOUBLE FACE EXIT SIGN WITH CHEVRONS AS INDICATES, SEE LIGHTING FIXTURE SCHEDULE
E1	WALL OUTLET AND EMERGENCY LIGHTING FIXTURE, SEE LIGHTING FIXTURE SCHEDULE

Electrical General Notes

1. ALL EQUIPMENT SHOWN DOTTED OR DASHED IS BY OTHERS OR IS EXISTING, AS NOTED.
2. THE DRAWINGS INDICATE THE NUMBER OF BRANCH CIRCUIT HOMERUN PHASE CONDUCTORS VIA ARROWHEADS. PROVIDE NEUTRAL AND EQUIPMENT GROUND CONDUCTORS AS REQUIRED. ADDITIONAL CONDUCTORS REQUIRED FOR CONTROL SHALL BE INCLUDED EVEN IF NOT EXPLICITLY SHOWN.
3. ALL MOTORS, DRY TYPE TRANSFORMERS AND OTHER VIBRATING EQUIPMENT SHALL BE CONNECTED TO THE CONDUIT SYSTEM BY MEANS OF A SHORT SECTION (18 INCH MINIMUM) OF FLEXIBLE CONDUIT UNLESS OTHERWISE INDICATED. AN EQUIPMENT GROUNDING CONDUCTOR SHALL BE INSTALLED INSIDE THE FLEXIBLE CONDUIT AND TERMINATE AT THE LOAD END WITH AN APPROVED GROUNDING CLAMP OR LUG.
4. SURFACE MOUNTED PANELBOARDS, JUNCTION, OUTLET AND PULL BOXES, RACEWAYS, ETC., INSTALLED ON EXTERIOR SURFACES OR INSIDE ON EXTERIOR WALLS SHALL BE SUPPORTED BY SPACERS TO PROVIDE A 1/4" MINIMUM CLEARANCE BETWEEN THE WALL AND EQUIPMENT.
5. CEILING MOUNTED DEVICES INSTALLED IN ACOUSTICAL TILE CEILING AREAS SHALL BE SUPPORTED FROM THE STRUCTURE ABOVE WITH RODS OF SUFFICIENT SIZE TO PREVENT VERTICAL MOVEMENT OF THE OUTLET BOX. BRIDGES ALONE ARE NOT ADEQUATE UNLESS SPECIFICALLY APPROVED. CEILING MOUNTED EXIT LIGHT FIXTURES SHALL BE INSTALLED LEVEL. DO NOT SUPPORT DEVICES FROM ACOUSTICAL CEILING TILE.
6. INSTALL WIRING DEVICES AT HEIGHTS AS SHOWN ON THE DRAWINGS. ALSO COORDINATE MOUNTING HEIGHTS WITH THE ARCHITECTURAL DRAWINGS AND CASEWORK DETAILS. IF CONFLICTING, ARCHITECTURAL DRAWINGS AND DETAILS SHALL GOVERN.
7. PROVIDE GROUND FAULT CIRCUIT-INTERRUPTER (GFCI) PROTECTION FOR PERSONNEL IN ACCORDANCE WITH THE NEC INCLUDING ALL ELECTRIC WATER COOLERS, EXTERIOR RECEPTACLES AND RECEPTACLES IN AREAS SUBJECT TO POSSIBLE WET CONDITIONS. ALL RECEPTACLES INSTALLED WITHIN 6 FEET OF A SINK SHALL BE GFI PROTECTED. ALL RECEPTACLES IN NON-RESIDENTIAL KITCHENS SHALL BE GFI PROTECTED.
8. GFCI RECEPTACLES SHALL BE READILY ACCESSIBLE AFTER INSTALLATION. IF CONDITIONS OF THE INSTALLATION TO NOT ALLOW FOR READY ACCESS, PROVIDE A STANDARD RECEPTACLE AND PROVIDE A GFCI CIRCUIT BREAKER TO FEED THE CIRCUIT.
9. IN AREAS IN WHICH DUAL LEVEL SWITCHING IS INDICATED (TYPICALLY BY 2 OR MORE ADJACENT, GANGED SWITCHES), PROVIDE THE APPROPRIATE NUMBER OF CONDUCTORS TO FACILITATE THIS FUNCTION (AS TYPICALLY SHOWN).
10. CONNECT BATTERY PACK TYPE EMERGENCY AND EXIT LIGHTING FIXTURES AND EMERGENCY BATTERY (BODINE TYPE) DRIVERS TO THE UNSWITCHED LIGHTING CIRCUIT SERVING THE SPACE LIGHTED BY THE EMERGENCY AND EXIT FIXTURES. THESE CONNECTIONS ARE INTENTIONALLY NOT SHOWN TO MAINTAIN DRAWING CLARITY.
11. COORDINATE LIGHTING FIXTURE LOCATIONS WITH THE ARCHITECTURAL REFLECTED CEILING PLAN. IF CONFLICTS ARE NOTED, REQUEST CLARIFICATION FROM THE ARCHITECT/ENGINEER BEFORE PROCEEDING.
12. ADJACENT SWITCHES SHALL BE GANGED. INSTALL BARRIERS BETWEEN UNLIKE VOLTAGE SECTIONS.
13. ADJACENT RECEPTACLES AND DATA/TELEPHONE OUTLETS SHALL BE INSTALLED 6 INCHES CENTER TO CENTER AND SHALL BE AT THE SAME ELEVATION.
14. SEPARATE NEUTRALS ARE REQUIRED FOR ALL DIMMED LIGHTING CIRCUITS.
15. WHERE THE DRAWINGS INDICATE A LIGHTING FIXTURE IS TO BE PROVIDED WITH SPECIAL FEATURES/SWITCHING (DIMMING, EMERGENCY BATTERY DRIVER, MULTI-LEVEL, ETC), THE CONTRACTOR SHALL PROVIDE THESE FIXTURES WITH THE APPROPRIATE BALLASTING TO ACCOMMODATE THE SPECIAL FEATURE. THE CONTRACTOR SHALL PROVIDE THE FIXTURES AS INDICATED IN THE LIGHTING FIXTURE SCHEDULE WITH MODIFICATIONS AS REQUIRED BY DRAWING NOTES.
16. LIGHTING FIXTURES ARE, IN SOME INSTANCES, SHOWN TO BE INSTALLED ON THE BOTTOM OF THE EXPOSED STRUCTURE. THE CONTRACTOR SHALL NOT INSTALL FIXTURES ABOVE DUCTWORK WHICH BLOCKS LIGHTING FROM REACHING THE FLOOR. FIELD ADJUST FIXTURE LOCATIONS TO AVOID DUCTWORK AND OTHER EQUIPMENT WHICH INTERFERES WITH INTENDED LIGHTING OF THE SPACE. INSTALL FIXTURES ON WALLS IN SPACES WHERE FIXTURE OUTPUT WOULD OTHERWISE BE BLOCKED. COORDINATE RELOCATIONS WITH THE ARCHITECT/ENGINEER.
17. THE LOCATIONS OF ELECTRICAL EQUIPMENT SERVING MECHANICAL, PLUMBING, GENERAL- AND OWNER-PROVIDED EQUIPMENT MAY NOT BE SHOWN PRECISELY ON THE ELECTRICAL DRAWINGS DUE TO THE VARIABILITY OF SPACE AND EQUIPMENT ARRANGEMENTS AND THE EQUIPMENT PROVIDED. LOCATIONS OF ELECTRICAL EQUIPMENT, PANELBOARDS, WIRING TROUGHS, LOCAL DISCONNECTING MEANS, ETC. SHALL BE COORDINATED WITH THE RESPECTIVE CONTRACTORS PRIOR TO ROUGH-IN. LOCATE AND/OR ADJUST EQUIPMENT LOCATIONS SHOWN IN CONSULTATION WITH OTHER TRADES TO MAINTAIN VISABILITY OF THE EQUIPMENT FROM DISCONNECTING MEANS AND PROVIDE ACCESS AND WORKING SPACE IN COMPLIANCE WITH CODES.
18. THE LAYOUT AND PLACEMENT OF ELECTRICAL DISTRIBUTION EQUIPMENT IS BASED ON PUBLISHED EQUIPMENT SIZES AND SHALL BE FOLLOWED AS CLOSELY AS POSSIBLE. DEVIATIONS FROM CONFIGURATIONS SHOWN IS THE RESPONSIBILITY OF THE CONTRACTOR. PROVIDE NATIONAL ELECTRIC CODE REQUIRED CLEARANCES FOR ALL ELECTRICAL EQUIPMENT, PANELBOARDS, TRANSFORMERS, SAFETY SWITCHES, ETC. COORDINATE RESOLUTION OF CONFLICTS WITH OTHER TRADES. ADVISE THE ARCHITECT/ENGINEER OF CONFLICTS BEFORE ROUGH-IN.
19. INSTALLATION INFORMATION PACKED WITH LIGHTING FIXTURES, DEVICES AND EQUIPMENT SHALL BE RETAINED FOR INCLUSION IN THE OPERATIONS AND MAINTENANCE MANUALS.

Electrical System and Equipment Method of Compliance

Prescriptive X Performance ____ Energy Cost Budget ____

Provide a standard riser diagram which indicates designated points for check metering.
Provide a standard panel schedule description which identifies different enduse loads.

Lighting Schedule:
- lamp type required in fixture: see fixture schedule
- number of lamps in fixture: see fixture schedule
- ballast type used in the fixture: see fixture schedule
- number of ballasts in fixture: see fixture schedule
- total wattage per fixture: see fixture schedule

Total interior wattage:

Allowed =	737 Watts
Specified =	287 Watts

Exterior Allowance:
(Tradeable Surfaces)

Allowed =	N/A Watts
Specified =	N/A Watts

(Non-tradeable Surfaces:)

Allowed =	N/A Watts
Specified =	N/A Watts

Equipment schedules with motors (not used for mechanical systems):
- motor horse power: N/A
- number of phases: N/A
- minimum efficiency: N/A
- motor type: N/A
- # of poles: N/A

McFadyen Engineers, PLLC
4411 Peachtree Avenue Wilmington, NC 28403 Phone : 910.399.1125
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BOWMAN MURRAY HEMINGWAY ARCHITECTS
514 Market Street
Wilmington, NC 28406
Tel - (910) 762-2621
Fax - (910) 762-8506

NORTH CAROLINA PROFESSIONAL SEAL 8433 ENGINEER R. DOUGLAS MCFADYEN
8.26.20

THE DAVIS COMMUNITY
Community Center - DEMOLITION &
MAKE SAFE
1011 Porter's Neck Road
Wilmington, North Carolina 28411

REV.	DATE	DESCRIPTION

NO.	DATE	ISSUE NOTE
A	8/26/20	Permit Set

Project Manager: RDM	Drawn By: WPJ
Date: August 26, 2020	Reviewed By: RDM
Project ID:	

Sheet Title: **Abbreviations, Legend, Electrical General Notes and Energy Summary**

Sheet No.: E100

Electrical Specifications

260500 GENERAL ELECTRICAL

A. ALL WORK SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF THE FOLLOWING CODES AND STANDARDS INSOFAR AS THEY APPLY.
1. THE NATIONAL ELECTRICAL CODE, 2017 EDITION
2. THE NATIONAL ELECTRICAL SAFETY CODE
3. UNDERWRITER'S LABORATORIES, INC., STANDARDS AND APPROVED LISTINGS
4. ELECTRICAL TESTING LABORATORIES STANDARDS
5. NORTH CAROLINA STATE BUILDING CODE, LATEST EDITION AND REVISIONS
6. ALL LOCAL CODES AND ORDINANCES
7. NFPA 72
8. ADA

B. SAFETY:
1. COMPLY WITH OSHA AND NEC ARC FLASH HAZARD PROTECTION REQUIREMENTS.
2. FOR EQUIPMENT BEING REMOVED AND REPLACED, THE CONTRACTOR SHALL DE-ENERGIZE THE EQUIPMENT AND MAKE IT SAFE PRIOR TO REMOVAL AND COMPLY WITH OSHA REQUIREMENTS FOR LOCKING-OUT AND TAGGING EQUIPMENT TO PREVENT INADVERTENT RE-ENERGIZING.
3. WHERE EQUIPMENT IS BEING REMOVED, BUT NOT REPLACED, REMOVE THE CONDUCTORS FEEDING THE EQUIPMENT BACK TO THE POINT WHERE THEY RECEIVE POWER. REMOVE ACCESSIBLE CONDUITS. ABANDON IN PLACE INACCESSIBLE CONDUITS. AFTER REMOVAL OF EQUIPMENT, REPAIR ANY OPENING LEFT TO MATCH SURROUNDING WALLS, CEILINGS, OR FLOORS TO THE ARCHITECT/ENGINEER'S SATISFACTION.
4. COORDINATE WITH THE OTHER TRADES, PRIOR TO BID, AND INCLUDE IN THE BASE BID THE ELECTRICAL DISCONNECTION OF ANY EQUIPMENT BEING DEMOLISHED, EVEN IF NOT EXPLICITLY SHOWN. UNLESS NOTED OTHERWISE, REMOVE ALL DEMOLISHED EQUIPMENT FROM THE PROPERTY.

C. THE CONTRACTOR SHALL REVIEW THE ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR WORK REQUIREMENTS, THE AMOUNT OF SPACE AVAILABLE FOR ELECTRICAL EQUIPMENT, AND LAYOUT HIS WORK IN A COMPATIBLE AND COMPLEMENTARY MANNER.

D. SEE ELECTRICAL GENERAL NOTES FOR ADDITIONAL REQUIREMENTS, CONDITIONS AND RESTRICTIONS.

E. UNLESS SPECIFICALLY NOTED OTHERWISE, SYSTEMS PROVIDED OR INSTALLED BY THE CONTRACTOR SHALL BE COMPLETE AND FULLY-FUNCTIONING AFTER INSTALLATION. INCIDENTAL COMPONENTS MAY NOT BE SHOWN, AND ALL WORK WHICH MAY BE REASONABLY IMPLIED AS BEING INCIDENTAL TO THIS WORK, BUT REQUIRED FOR THE PROPER OPERATION OF THE EQUIPMENT OR SYSTEM, SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER. ADDITIONAL CIRCUITS SHALL BE PROVIDED AND INSTALLED WHEREVER NEEDED TO CONFORM TO THE SPECIFIC REQUIREMENTS OF EQUIPMENT.

F. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR THOROUGHLY FAMILIARIZING HIMSELF WITH ANY CONTRACTUAL REQUIREMENTS AS MAY BE SET FORTH IN THE OTHER DIVISIONS OF THE PROJECT SPECIFICATIONS.

G. THE CONTRACTOR SHALL OBTAIN ALL PERMITS, LICENSES, INSPECTIONS, ETC., REQUIRED FOR THE WORK AND SHALL PAY FOR SAME, IF ANY. WORK SHALL NOT BE COVERED UP OR ENCLOSED UNTIL IT HAS BEEN INSPECTED, TESTED AND APPROVED BY THE ARCHITECT/ENGINEER AND AUTHORITIES HAVING JURISDICTION OVER THIS WORK. SHOULD ANY OF THE WORK BE ENCLOSED OR COVERED UP BEFORE SUCH INSPECTION AND TEST, THE CONTRACTOR SHALL UNCOVER THE WORK AT THE CONTRACTOR'S EXPENSE. AFTER IT HAS BEEN INSPECTED, TESTED AND APPROVED, THE CONTRACTOR SHALL RESTORE THE WORK TO ITS ORIGINAL CONDITION.

H. BIDDERS SHALL HAVE A WORKING KNOWLEDGE OF LOCAL CODES AND ORDINANCES AND SHALL INCLUDE IN THEIR BIDS THE COSTS FOR ALL WORK INSTALLED IN STRICT ACCORDANCE WITH GOVERNING CODES, THE CONSTRUCTION DOCUMENTS NOTWITHSTANDING.

I. THE CONTRACTOR SHALL VISIT THE SITE AND BECOME FAMILIAR WITH THE EXISTING CONDITIONS. THE SUBMISSION OF THE PROPOSAL BY THE CONTRACTOR SHALL BE CONSIDERED EVIDENCE THAT HE OR HIS REPRESENTATIVE HAS VISITED THE SITE AND NOTED THE LOCATION AND CONDITIONS UNDER WHICH THE WORK WILL BE PERFORMED AND THAT HE TAKES FULL RESPONSIBILITY OF ALL FACTORS GOVERNING HIS WORK. NO EXTRA WILL BE GIVEN BECAUSE OF ADDITIONAL WORK NECESSITATED BY EXISTING JOB CONDITIONS THAT ARE NOT INDICATED ON THE DRAWINGS.

J. ALL WORK SHALL BE DONE BY SKILLED MECHANICS AND SHALL PRESENT A NEAT, TRIM AND WORKMANLIKE FINISH WHEN COMPLETED.

K. DO NOT SCALE ELECTRICAL DRAWINGS. FIELD VERIFY ALL DIMENSIONS.

L. UNLESS DIMENSIONED, WIRING DEVICE, TELECOM AND OTHER OUTLET LOCATIONS SHOWN ON THE DRAWINGS ARE APPROXIMATE. EXACT DEVICE AND OUTLET LOCATIONS SHALL BE AS INDICATED ON THE ARCHITECTURAL DRAWINGS OR AS DIRECTED. IF NOT SHOWN ON THE ARCHITECTURAL DRAWINGS OR DIMENSIONED ON THE ELECTRICAL DRAWINGS, VERIFY EXACT LOCATION WITH THE ARCHITECT/ENGINEER AND/OR THE OWNER PRIOR TO ROUGH-IN.

M. THE CONTRACTOR SHALL REFER TO THE ARCHITECTURAL DRAWINGS FOR EXACT MEASUREMENTS IN THE PLACEMENT OF EQUIPMENT, FIXTURES, ETC.

N. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING COMPLETE ELECTRICAL CONNECTIONS AS THE DRAWINGS DO NOT PROVIDE EXACT DETAILS AS TO ELEVATIONS AND LOCATIONS OF VARIOUS FITTINGS, CONDUIT, ETC., AND DO NOT SHOW ALL OFFSETS AND OTHER INSTALLATION DETAILS, ALL WHICH MAY BE REQUIRED. ADJUST LOCATIONS AS REQUIRED TO SERVE THE INTENDED PURPOSE AND TO AVOID CONFLICTS AND INTERFERENCES WITH OTHER TRADES.

O. UNLESS NOTED OTHERWISE, THE EXACT ROUTING OF FEEDER AND BRANCH CIRCUIT RACEWAYS AND CABLES IS THE RESPONSIBILITY OF THE CONTRACTOR. RISER AND GENERAL CIRCUIT ARRANGEMENTS ARE SHOWN SCHEMATICALLY/DIAGRAMMATICALLY ONLY. THE CONTRACTOR SHALL ROUTE CONDUITS AND CABLES AS REQUIRED BY THE CONDITIONS OF THE INSTALLATION.

P. WORK WITH OTHER CONTRACTORS: THE ELECTRICAL CONTRACTOR SHALL MAKE FINAL ELECTRICAL CONNECTIONS FOR ALL PLUMBING AND HVAC EQUIPMENT, GENERAL CONTRACTOR– AND OWNER–PROVIDED EQUIPMENT.

Q. COORDINATION
1. COORDINATE LOCATIONS OF PLUMBING, MECHANICAL, DATA, AUDIO/VISUAL EQUIPMENT AND OF OWNER–PROVIDED EQUIPMENT WITH THE RESPECTIVE CONTRACTORS AND VENDORS AND THE OWNER BEFORE ROUGH–IN. ADJUST LIGHTING FIXTURES, RECEPTACLES, OUTLETS AND ELECTRICAL EQUIPMENT TO ACCOMMODATE THIS EQUIPMENT. ADVISE THE ARCHITECT/ENGINEER OF CONFLICTS BEFORE ROUGH–IN.
2. ENERGIZE EQUIPMENT ONLY AFTER OBTAINING PERMISSION FROM THE CONTRACTOR OR ENTITY PROVIDING THE EQUIPMENT.
3. BEFORE COMMENCING WORK OR ORDERING MATERIALS, THE CONTRACTOR SHALL COORDINATE WITH OTHER TRADES AND VERIFY THE NAMEPLATE RATINGS OF ALL EQUIPMENT (MOTORS, HEATERS, COMPRESSORS, ETC.) AND ADJUST THE RATINGS OF THE ELECTRICAL EQUIPMENT (SWITCHES, FUSES, CIRCUIT BREAKERS, CONDUCTORS, RACEWAYS, ETC.) AS APPROPRIATE TO SERVE THIS EQUIPMENT.
4. UNLESS SPECIFICALLY NOTED OTHERWISE, THE ELECTRICAL CONTRACTOR SHALL MAKE FINAL CONNECTIONS TO ALL UTILIZATION EQUIPMENT SHOWN ON THE DRAWINGS. VERIFY THE TYPE OF FINAL CONNECTION AND PROVIDE APPROPRIATE WIRING METHOD. THE ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE MECHANICAL, PLUMBING AND GENERAL CONTRACTORS, PRIOR TO ORDERING OR INSTALLATION OF ANY EQUIPMENT, TO VERIFY MECHANICAL AND PLUMBING EQUIPMENT REQUIREMENTS ARE PROVIDED IN THE ELECTRICAL DESIGN. THE CONTRACTOR WILL NOT BE COMPENSATED FOR COSTS ASSOCIATED WITH CHANGING THE ELECTRICAL SYSTEMS TO MATCH UTILIZATION EQUIPMENT, EVEN IF THE ELECTRICAL WORK IS INSTALLED PER THE ELECTRICAL DRAWINGS.
5. THE MECHANICAL AND PLUMBING CONTRACTORS SHALL FURNISH ALL STARTERS AND CONTROLS FOR THEIR EQUIPMENT. THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL SAFETY SWITCHES AND PROVIDE LOAD SIDE WIRING AND CONNECTIONS TO MECHANICAL AND PLUMBING EQUIPMENT. THE MECHANICAL AND PLUMBING CONTRACTORS SHALL PROVIDE ALL CONTROL WIRING AND CONNECTIONS AND DEVICES FOR THEIR EQUIPMENT.
6. THE ELECTRICAL CONTRACTOR SHALL COORDINATE ALL EQUIPMENT TERMINATIONS, PLUGS AND CORDSETS WITH VENDOR EQUIPMENT AND VERIFY ALL DEVICE AND OUTLET CONFIGURATIONS FOR SPECIALTY EQUIPMENT WITH CASEWORK PRIOR TO ROUGH–IN.
7. HVAC CONTROLS POWER AND POWER FOR UNSCHEDULED HVAC EQUIPMENT: THE ELECTRICAL CONTRACTOR SHALL PROVIDE BRANCH CIRCUIT POWER SOURCES (DESIGNATED "SPARE" 20A CIRCUIT BREAKERS IN SELECTED BRANCH CIRCUIT PANELBOARDS) AS INDICATED IN THE PANEL SCHEDULES ON THE DRAWINGS. THE HVAC CONTRACTOR SHALL EXTEND POWER FROM THESE SOURCES AS REQUIRED FOR CONTROL POWER, DAMPER POWER, AND POWER FOR UNSCHEDULED HVAC EQUIPMENT.

R. MATERIALS: ALL MATERIALS SHALL BE NEW AND SHALL BEAR THE MANUFACTURER'S NAME AND TRADE NAME. MATERIALS SHALL BE THE STANDARD PRODUCTS OF MANUFACTURERS REGULARLY ENGAGED IN THE MANUFACTURE OF THE REQUIRED TYPE OF EQUIPMENT AND THE MANUFACTURER'S LATEST APPROVED DESIGN. OTHER MATERIALS AND EQUIPMENT TO BE AS SHOWN ON THE DRAWINGS. WHERE NO SPECIFIC MANUFACTURER IS MENTIONED, MATERIALS SHALL BE OF A MANUFACTURER, AS JUDGED BY THE ARCHITECT/ENGINEER, MAY BE USED PROVIDED IT CONFORMS TO THE REQUIREMENTS OF THESE SPECIFICATIONS.

S. ALL ELECTRICAL EQUIPMENT AND MATERIAL SHALL BE LISTED BY A QUALIFIED THIRD PARTY TESTING AGENCY ACCEPTABLE TO THE AUTHORITY HAVING JURISDICTION, FOR THE CONDITIONS OF INSTALLATION. ACCEPTABLE QUALIFIED THIRD PARTY TESTING LABORATORIES/AGENCIES SHALL BE AMONGST THOSE ACCREDITED BY THE NORTH CAROLINA BUILDING CODE COUNCIL (NCBCC) TO LABEL ELECTRICAL AND MECHANICAL EQUIPMENT. EQUIPMENT AND MATERIALS SHALL BEAR THE APPROPRIATE TESTING AGENCY'S LISTING MARK OR LABEL/SYMBOL MARKING. EQUIPMENT, MATERIALS, ETC. UTILIZED NOT BEARING A THIRD PARTY TESTING AGENCY CERTIFICATION SHALL BE FIELD OR FACTORY THIRD PARTY TESTING AGENCY CERTIFIED PRIOR TO EQUIPMENT ACCEPTANCE AND USE. FIELD CERTIFICATIONS SHALL BE AT THE CONTRACTOR'S EXPENSE.

T. EQUIPMENT SHALL BE SUITABLE FOR ITS APPLICATION (E.G., WHEN INSTALLED IN THE EXTERIOR, IT SHALL BE WEATHERPROOF, ETC.) ALL EXTERIOR WIRING DEVICES, OUTLETS, BOXES, ETC. SHALL BE WEATHERPROOF. LIGHTING FIXTURES SHALL BE APPROPRIATELY RATED AND LISTED FOR THE ENVIRONMENT.

U. ALL ELECTRICAL EQUIPMENT SHALL, AT ALL TIMES DURING CONSTRUCTION, BE ADEQUATELY PROTECTED AGAINST MECHANICAL INJURY, OR DAMAGE BY WATER AND/OR THE ELEMENTS. ELECTRICAL EQUIPMENT SHALL BE STORED IN DRY PERMANENT SHELTERS. PROVIDE HEATING FOR EQUIPMENT SUBJECT TO MOISTURE DAMAGE OR DAMAGE FROM CONDENSATION. IF MATERIALS OR EQUIPMENT HAVE BEEN JUDGED BY THE ARCHITECT/ENGINEER TO BE DAMAGED, OR HAS BEEN SUBJECT TO POSSIBLE INJURY BY WATER OR THE ELEMENTS, SUCH EQUIPMENT SHALL BE REPLACED AT NO ADDITIONAL COST TO THE OWNER.

V. WIRING METHODS: ALL WORK SHALL BE IN METALLIC CONDUIT, EXCEPT TYPE MC CABLE MAY BE USED AS DETAILED BELOW.

W. TESTING
1. THE WORK SHALL INCLUDE COMPLETE TESTING OF ALL EQUIPMENT AND WIRING DURING CONSTRUCTION AND/OR AT THE COMPLETION OF WORK AND ANY MINOR CORRECTIONS, CHANGES OR ADJUSTMENTS NECESSARY FOR THE PROPER FUNCTIONING OF THE SYSTEM AND EQUIPMENT.
2. MAKE THE FOLLOWING MINIMUM TESTS AND CHECKS PRIOR TO ENERGIZING ELECTRICAL EQUIPMENT:
   a. MECHANICAL INSPECTION, TESTING AND SETTINGS OF ALL CIRCUIT BREAKERS, DISCONNECTING MEANS/SAFETY SWITCHES, MOTOR STARTERS, CONTROL EQUIPMENT, ETC., FOR PROPER OPERATION. ALL OVERCURRENT PROTECTIVE DEVICES SHALL BE SET AS RECOMMENDED BY THE ELECTRICAL EQUIPMENT MANUFACTURER, UNLESS OTHERWISE DIRECTED, IF APPLICABLE.
   b. CHECK ALL WIRE AND CABLE TERMINATIONS. VERIFY TO THE ARCHITECT/ENGINEER THAT CONNECTIONS MEET THE EQUIPMENT TORQUE REQUIREMENTS.
   c. CHECK ROTATION OF MOTORS, OBTAIN PERMISSION FROM OTHER CONTRACTORS TO START MOTORS, AND PROCEED TO CHECK FOR PROPER ROTATION. TAKE ALL NECESSARY PRECAUTIONS NOT TO DAMAGE ANY EQUIPMENT.
   d. PROVIDE ALL INSTRUMENTS AND TOOLS FOR TESTS SPECIFIED HEREIN.
3. ALL CURRENT CARRYING PHASE CONDUCTORS AND NEUTRALS SHALL BE TESTED AS INSTALLED, AND SHELLER CONNECTIONS ARE MADE, FOR INSULATION RESISTANCE AND ADEQUATE CONTINUITY. THIS SHALL BE DONE IN A 500 VOLT PULSE INDUCTION TESTER.
   a. MINIMUM READINGS SHALL BE ONE MILLION (1,000,000) OR MORE OHMS FOR #6 WIRE AND SMALLER, 250,000 OHMS OR MORE FOR #4 WIRE OR LARGER BETWEEN CONDUCTORS AND BETWEEN CONDUCTOR AND THE GROUNDED METAL RACEWAY.
   b. AFTER ALL FIXTURES AND EQUIPMENT ARE INSTALLED AND ALL CONNECTIONS COMPLETED TO EACH PANEL, THE CONTRACTOR SHALL DISCONNECT THE NEUTRAL FEEDER CONDUCTOR FROM THE NEUTRAL BAR AND TAKE A CABLE INSULATION TESTER READING BETWEEN THE NEUTRAL BAR AND GROUNDED ENCLOSURE. IF THIS READING IS LESS THAN 250,000 OHMS, THE CONTRACTOR SHALL DISCONNECT THE BRANCH CIRCUIT NEUTRAL WIRES FROM THIS NEUTRAL BAR. HE SHALL THEN TEST EACH ONE SEPARATELY TO THE PANEL AND UNTIL THE LOW READING ONES ARE FOUND. THE CONTRACTOR SHALL CORRECT TROUBLES, RECONNECT AND RETEST UNTIL AT LEAST 250,000 OHMS FROM THE NEUTRAL BAR TO THE GROUNDED PANEL CAN BE ACHIEVED WITH ONLY THE NEUTRAL FEEDER DISCONNECTED.
   c. THE CONTRACTOR SHALL CERTIFY IN WRITING THE ABOVE HAS BEEN DONE AND TABULATE THE MEGGER READINGS FOR EACH PANEL.
   d. AT INSPECTION, THE CONTRACTOR SHALL FURNISH A CABLE INSULATION TESTER AND SHOW ARCHITECT/ENGINEER'S REPRESENTATIVE THAT THE PANELS COMPLY WITH THE ABOVE REQUIREMENTS. THE CONTRACTOR SHALL ALSO FURNISH A CLAMP TYPE AMMETER AND A VOLTMETER AND TAKE CURRENT AND VOLTAGE READINGS AS DIRECTED BY THE REPRESENTATIVES.
   e. AT INSPECTION, THE CONTRACTOR SHALL FURNISH LADDERS, REQUIRED TOOLS, AND MECHANICS TO OPEN FIXTURES, BOXES, PANELS, FOR ANY OTHER EQUIPMENT TO ENABLE THE ARCHITECT/ENGINEER'S REPRESENTATIVES TO SEE INTO ANY PARTS OF THE INSTALLATION THAT MAY BE REQUIRED.
4. ALL TESTS SHALL BE COMPLETELY DOCUMENTED WITH THE TIME OF DAY, DATE, TEMPERATURE, TEST INSTRUMENTS MAKE AND MODEL USED, AND ALL OTHER PERTINENT TEST INFORMATION. ALL REQUIRED DOCUMENTATION OF READINGS INDICATED SHALL BE SUBMITTED TO THE ARCHITECT/ENGINEER PRIOR TO, AND AS ONE OF THE PREREQUISITES FOR, FINAL ACCEPTANCE OF THE PROJECT.

X. SEISMIC REQUIREMENTS
1. ALL EQUIPMENT FURNISHED UNDER THE ELECTRICAL CONTRACT SHALL BE INSTALLED IN A MANNER TO BE FULLY COMPLIANT WITH THE SEISMIC RESTRAINT REQUIREMENTS OF THE NORTH CAROLINA STATE BUILDING CODE (NCSBC). THE CONTRACTOR SHALL PROVIDE ANY AND ALL SEISMIC RESTRAINT DETAILS AND CALCULATIONS THAT MAY BE REQUIRED BY THE NCSBC AND/OR THE AUTHORITY HAVING JURISDICTION.
2. REQUIREMENTS FOR RESTRAINTS ARE DETAILED IN THE NCSBC. ALL TABLES AND REFERENCES SHALL CONFORM TO BUILDING'S LOCATION. RESTRAINTS SHALL BE PER CATEGORY AND PERFORMANCE CATEGORY STATED ON ARCHITECTURAL DRAWINGS.
3. THE CONTRACTOR SHALL RETAIN THE SERVICES OF A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF NORTH CAROLINA TO DESIGN SEISMIC RESTRAINT DETAILS AS REQUIRED FOR THIS PROJECT. ENGINEER'S CALCULATIONS, BEARING HIS PROFESSIONAL SEAL, SHALL ACCOMPANY SHOP DRAWINGS AND SHALL DEMONSTRATE CODE COMPLIANCE INCLUDING CERTIFICATION THAT THE SEISMIC SYSTEM COMPONENTS COMPLY WITH THE TESTING REQUIREMENTS OF NCSBC SECTION 1708.5. CALCULATIONS AND SHOP DRAWINGS SHALL BE SUBMITTED FOR REVIEW PRIOR TO THE PURCHASING OF MATERIALS, EQUIPMENT, SYSTEMS AND ASSEMBLIES. INTERNAL SEISMIC RESTRAINT ELEMENTS OF MANUFACTURED EQUIPMENT SHALL BE CERTIFIED BY A PROFESSIONAL ENGINEER RETAINED BY THE MANUFACTURER. SUCH CERTIFICATION APPLIES ONLY TO INTERNAL ELEMENTS OF THE EQUIPMENT. ALL EQUIPMENT ANCHORAGE REQUIREMENTS SHALL BE COORDINATED WITH THE BUILDING'S STRUCTURE AND SHALL BE COMPATIBLE THERETO. ALL SUCH ANCHORAGES SHALL BE SUBJECT TO THE REVIEW AND APPROVAL OF THE PROJECT'S STRUCTURAL ENGINEER.
4. THE PROFESSIONAL ENGINEER RETAINED FOR SEISMIC RESTRAINT CALCULATIONS SHALL VISIT THE JOB SITE UPON COMPLETION OF THE SEISMIC RESTRAINT INSTALLATION TO COMPLY WITH THE SPECIAL INSPECTIONS REQUIREMENT OF THE CODE. THIS ENGINEER SHALL PROVIDE WRITTEN VERIFICATION OF COMPLIANCE OF THE INSTALLATION WITH THE APPROVED SEISMIC SUBMITTAL. THIS VERIFICATION SHALL BE SUBMITTED AS A SPECIAL INSPECTIONS REPORT AND SHALL BEAR THE ENGINEER'S PROFESSIONAL SEAL. JOB SITE INSPECTIONS BY OTHER THAN THIS ENGINEER ARE NOT ACCEPTABLE.
5. REVIEW OF THE SEISMIC DESIGN COMPUTATIONS AND SHOP DRAWINGS BY THE ARCHITECT/ENGINEER OR HIS AGENT SHALL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY TO COMPLY WITH THE SEISMIC OR ANY OTHER REQUIREMENTS OF THE NORTH CAROLINA STATE BUILDING CODE.
6. PROJECT CONDITIONS
   a. ASSIGNED SEISMIC DESIGN CATEGORY AS DEFINED IN THE IBC: *.
   b. S_s MAPPED MAXIMUM CONSIDERED EARTHQUAKE SPECTRAL RESPONSE AT SHORT PERIODS: *
   c. S1, MAPPED MAXIMUM CONSIDERED EARTHQUAKE SPECTRAL RESPONSE AT 1–SECOND PERIOD: *
   d. ASSIGNED SEISMIC USE GROUP OR BUILDING CATEGORY AS DEFINED IN THE IBC: I.

(* CONTRACTOR SHALL CONSULT THE STRUCTURAL DRAWINGS FOR THIS INFORMATION.)

Y. SUBMITTALS: SUBMITTALS SHALL INCLUDE PRODUCT DATA FOR EACH PANELBOARD, TRANSFORMER, SAFETY SWITCH, ENCLOSED CIRCUIT BREAKER, LIGHTING FIXTURE, LAMPS, OVERCURRENT PROTECTIVE DEVICE, TELECOMMUNICATIONS CABLING SYSTEM, WIREWAY, RACEWAY FITTINGS, WIRING DEVICES AND ACCESSORIES. INCLUDE DIMENSIONS AND MANUFACTURERS TECHNICAL DATA ON FEATURES, PERFORMANCE, ELECTRICAL CHARACTERISTICS, RATINGS AND FINISHES. IN LIEU OF SUBMITTALS, THE CONTRACTOR MAY PROVIDE A CERTIFICATION OF PRODUCT COMPLIANCE FOR COMMODITY MATERIALS SUCH AS CONDUIT, CONDUCTORS, BOXES, FITTINGS, HANGARS, HARDWARE, ETC. ATTESTING NAMED PRODUCTS COMPLY WITH THE DRAWINGS AND SPECIFICATIONS. COMPLIANCE FORM SHALL BE ACCEPTABLE TO THE ARCHITECT/ENGINEER. ALL SHOP DRAWINGS AND SUBMITTALS SHALL BE SUBMITTED AT THE SAME TIME. PARTIAL SHOP DRAWING AND SUBMITTALS WILL BE REJECTED AND NOT PROCESSED. MATERIALS AND EQUIPMENT WITH LONG LEAD TIMES OR OTHER MATERIALS AND EQUIPMENT REQUIRING SPECIAL HANDLING, IF IDENTIFIED AND REQUESTED BY THE CONTRACTOR, WILL BE PROCESSED SEPARATELY.

Z. GUARANTEE: THE CONTRACTOR SHALL GUARANTEE THE MATERIALS AND WORKMANSHIP COVERED BY THESE DRAWINGS AND SPECIFICATIONS FOR A PERIOD OF ONE YEAR FROM THE DATE OF ACCEPTANCE BY THE OWNER. THE CONTRACTOR SHALL REPAIR AND/OR REPLACE ANY PARTS OF ANY SYSTEM THAT MAY PROVE TO BE DEFECTIVE AT NO ADDITIONAL COST TO THE OWNER WITHIN THE GUARANTEE PERIOD.

260519 CONDUCTORS

A. CONDUCTORS SHALL BE COPPER WITH 600V INSULATION, MINIMUM SIZE #12 AWG. SIZES #10 AWG AND #12 AWG SHALL BE SOLID, #8 AWG AND LARGER, STRANDED.

B. METAL CLAD CABLE.
1. MC CABLE MAY BE USED FOR INTERIOR CONCEALED BRANCH CIRCUITS FOR RECEPTACLE AND LIGHTING CIRCUITS. MC CABLE SHALL BE OF STEEL OR ALUMINUM INTERLOCKED ARMOR CONSTRUCTION WITH COPPER CONDUCTORS AND AN INTERNAL GREEN INSULATED EQUIPMENT GROUNDING CONDUCTOR. USE CABLE WITH INDIVIDUAL NEUTRAL CONDUCTORS. CABLE WITH INDIVIDUAL NEUTRAL PER PHASE DESIGN NEUTRAL CONDUCTORS SHALL BE PROVIDED WITH FACTORY COLOR CODED NEUTRAL MARKINGS OR STRIPES IDENTIFIED FOR THEIR ASSOCIATED PHASE CONDUCTOR (WHITE–BLACK, WHITE–RED, WHITE–BLUE, GRAY–BROWN, GRAY–ORANGE, GRAY–YELLOW). CONDUCTOR CHARACTERISTICS, COLOR CODING, ETC. SHALL BE AS HEREIN SPECIFIED FOR BUILDING WIRE. CONNECTORS SHALL BE ZINC PLATED MALLEABLE IRON OR STEEL BODY WITH INSULATED THROAT. PROVIDE CABLE CLAMPS AT CABINET SADDLE DESIGN WITH SET SCREWS AND INSULATED THROAT. PRESSURE CAST (POT METAL) CONNECTORS ARE NOT PERMITTED.
2. MC CABLE MAY BE USED EXPOSED IN ELECTRICAL EQUIPMENT ROOMS WHERE BRANCH CIRCUITS ORIGINATE AT PANELBOARDS, BUT CABLE SHALL BE SUPPORTED AND NEATLY ARRANGED ON CABLE TRAYS/BOARDS ON STEEL LADDER RACK, WIDTH AS REQUIRED. CABLE SHALL BE STRAPPED TO LADDER RACK USING APPROVED, UV RESISTANT PLASTIC CABLE TIES. ALTERNATELY, MC CABLE SHALL BE TRANSITIONED TO BUILDING WIRE AND METALLIC RACEWAY OUTSIDE OF THE ELECTRICAL EQUIPMENT ROOMS IN A JUNCTION BOX OR WIRING TROUGH CONCEALED ABOVE AN ACCESSIBLE CEILING. IF THIS METHOD IS UTILIZED TO CONVERT MC CABLE TO BUILDING WIRE AND METALLIC RACEWAY, PROVIDE SCREW CONNECTION, FEED–THROUGH, MODULAR TYPE DIN RAIL TERMINAL BLOCKS FOR TERMINATION AND EXTENSION OF CIRCUIT CONDUCTORS. TERMINAL BLOCKS SHALL BE RATED 300V, 30A, 600V MINIMUM, AND HIGHER AS REQUIRED BY CIRCUIT AMPACITY AND VOLTAGE, QUANTITY AS REQUIRED FOR PHASE, NEUTRAL AND EQUIPMENT GROUND CONDUCTORS. WIRENUT AND SIMILAR TERMINATIONS ARE NOT PERMITTED IN SPLICE BOXES OR PANELBOARD INTERIORS. ALL SPLICES SHALL BE CLEARLY LABELED AND NEATLY TRAINED AS JUDGED ACCEPTABLE BY THE ENGINEER.

C. CONDUCTOR SIZING IS BASED ON 75 DEGREE C. COPPER NEC RATINGS, UNLESS NOTED OTHERWISE. THE CONTRACTOR SHALL VERIFY, PRIOR TO INSTALLATION OF CONDUCTORS, THAT ALL TERMINATIONS, INCLUDING LUGS, BUSSING AND EQUIPMENT IS SUITABLE FOR 75 DEGREE C. WIRING. IF ANY EQUIPMENT IS RATED FOR USE WITH LESS THAN 75 DEGREE C. CONDUCTORS, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER IMMEDIATELY FOR EVALUATION AND CORRECTION.

D. CONDUCTORS SHALL BE COLOR CODED THROUGHOUT, SIZES #10 AWG AND #12 AWG SHALL BE FACTORY CODED, SIZES #8 AWG AND LARGER MAY BE COLOR TAPED ON THE JOB. COLOR CODING SHALL BE: PHASE A – BLACK, PHASE B – RED, PHASE C – BLUE, NEUTRAL – WHITE, GROUND – GREEN FOR 277/480 VOLT SYSTEMS. 208/120 VOLT SHALL BE: PHASE A – BROWN, PHASE B – ORANGE, PHASE C – YELLOW, NEUTRAL – GREY, GROUND – GREEN FOR 277/480 VOLT SYSTEMS.

E. CONDUCTORS SHALL MEET THE LATEST REQUIREMENTS OF NEMA AND ICEA AND SHALL BE THIRD PARTY TESTING AGENCY APPROVED.

F. FEEDER CONDUCTORS SHALL BE CONTINUOUS WITHOUT SLICE FROM SOURCE TO LOAD, UNLESS SPLICING IS SPECIFICALLY APPROVED BY THE ARCHITECT/ENGINEER. KEEP BRANCH CIRCUIT CONDUCTOR SPLICES TO A MINIMUM. ALL BRANCH CIRCUIT CONDUCTORS SHALL BE CONTINUOUS WITHOUT SPLICE FROM THE PANELBOARD TO OUTLET, DEVICE OR LOAD, EVEN IF UNLESS NOTED OTHERWISE, CONDUCTORS SHALL BE CONTINUOUS FROM THE LAST OUTLET BOX TO THE SERVING PANELBOARD. NO SPLICES WILL BE PERMITTED IN PANELBOARD CABINETS, SAFETY SWITCHES, ETC. WHERE REQUIRED AND PERMITTED, INSTALL SPLICES AND TAPES THAT POSSESS EQUIVALENT OR BETTER MECHANICAL STRENGTH AND INSULATION RATING AS THE CONDUCTOR BEING SPLICED. USE SPLICE AND TAP CONNECTORS COMPATIBLE WITH CONDUCTOR MATERIAL.

G. INSTALL CONDUCTORS IN EACH OUTLET WITH AT LEAST 6 INCHES OF SLACK. CONNECT OUTLETS AND COMPONENTS TO WIRING AND TO GROUND AS INDICATED AND INSTRUCTED BY THE MANUFACTURER.

H. DO NOT PULL CONDUCTORS UNTIL THE CONDUIT SYSTEM IS COMPLETE IN EVERY DETAIL. IN THE CASE OF CONCEALED WORK, "COMPLETE" MEANS UNTIL ALL ROUGH PLASTERING OR MASONRY HAS BEEN COMPLETED.

I. WHERE SIZE IS NOT SHOWN ON THE DRAWINGS, BRANCH CIRCUITS SHALL CONSIST OF #12 AWG OR #10 AWG MINIMUM PHASE, NEUTRAL AND EQUIPMENT GROUND CONDUCTORS IN 1/2" MINIMUM RACEWAY. REFER TO THE "MINIMUM CONDUCTORS SIZE CHART" ON THE DRAWINGS AND INCREASE SIZES AS REQUIRED TO MAINTAIN A MAXIMUM 3% VOLTAGE DROP.

J. COMMON NEUTRAL BRANCH CIRCUITS ARE NOT PERMITTED. PROVIDE SEPARATE, INDIVIDUAL NEUTRAL CONDUCTORS FOR ALL BRANCH CIRCUITS.

K. MC CABLE SHALL BE SUPPORTED IN STRAIGHT LINES USING APPROVED SUPPORTING MEANS AND IN COMPLIANCE WITH THE NEC. DEDICATED SUPPORT WIRES MAY BE USED ABOVE FINISHED CEILINGS AND SHALL BE PAINTED RED PRIOR TO INSTALLATION. DO NOT SUPPORT CABLE WIRE CEILING GRID SUPPORTS WIRES. DO NOT DRAPE CABLE OVER CEILINGS, LIGHTING FIXTURES, CONDUIT, DUCTWORK, PIPING OR EQUIPMENT.

L. DO NOT COMBINE BRANCH CIRCUIT HOMERUNS UNLESS SPECIFICALLY INDICATED ON THE DRAWINGS.

M. DO NOT CHANGE CIRCUITING SHOWN WITHOUT PERMISSION OF THE ARCHITECT/ENGINEER.

N. TROUGH TAPS SHALL BE AT SWITCH/CIRCUIT BREAKER AMPACITY, UNLESS NOTED OTHERWISE.

O. TRENCHING: DIRECT BURIED RACEWAYS SHALL BE 24" DEEP TO THE TOP OF THE RACEWAY.

P. TRENCH IN COMPLIANCE WITH LOCAL CODES AND REGULATIONS. BACKFILL TO 95% COMPACTION AND RESOD GRASSED AREAS TO MATCH EXISTING.

Q. MARKER TAPE: ALL UNDERGROUND CONDUCTORS SHALL BE IDENTIFIED BY UNDERGROUND LINE MARKING TAPE LOCATED DIRECTLY ABOVE THE CONDUCTORS AT 6 TO 8 INCHES BELOW FINISHED GRADE. TAPE SHALL BE PERMANENT BRIGHT–COLORED, CONTINUOUS FOR BURIED SUITABLE FOR USE WITH METAL DETECTION DEVICES, FOR DIRECT BURIAL NOT LESS THAN 8 INCHES AND 4 MILS THICK. PRINTED LEGEND SHALL BE INDICATIVE OF TYPE OF UNDERGROUND LINE BELOW.

Q. WHERE UNDERGROUND RACEWAYS ARE REQUIRED TO TURN UP, THE ELBOW REQUIRED AND THE STUB–UP OUT OF THE EARTH SHALL BE OF PLASTIC–COATED RIGID STEEL. ALTERNATELY, FIELD APPLIED CORROSION PROTECTION WRAPS MAY BE USED FOR UNDERGROUND LOCATIONS, IN EQUIVALENT THICKNESS TO FACTORY APPLIED MATERIALS, WITH THE SPECIFIC APPROVAL OF THE ARCHITECT/ENGINEER. EXPOSED RACEWAYS SHALL BE FACTORY PLASTIC COAT

McFadyen Engineers, PLLC
4411 Peachtree Avenue Wilmington, NC 28403 Phone : 910.399.1125
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BOWMAN MURRAY HEMINGWAY ARCHITECTS
514 Market Street
Wilmington, NC 28406
Tel - (910) 762-2621
Fax - (910) 762-8506

NORTH CAROLINA PROFESSIONAL SEAL 8433 ENGINEER DUNCAN MCFADYEN
8.26.20

THE DAVIS COMMUNITY
Community Center - DEMOLITION & MAKE SAFE
1011 Porter's Neck Road
Wilmington, North Carolina 28411

REV.	DATE	DESCRIPTION
A	8/26/20	Permit Set

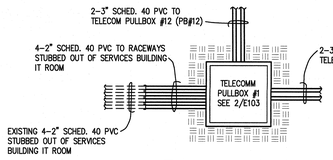
NO.	DATE	ISSUE NOTE

Project Manager	Drawn By
RDM	WPJ
Date	Reviewed By
August 26, 2020	RDM
Project ID	

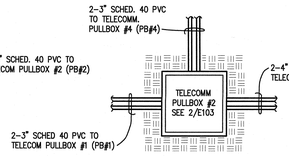
Sheet Title
IT and Fire Alarm Infrastructure Site Plan

Sheet No.
E102

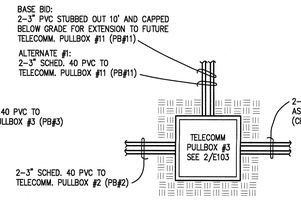
1 - IT and Fire Alarm Infrastructure Site Plan
Scale: 1" = 60'-0"



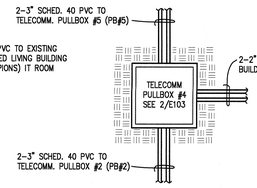
3 - Telecommunications Pullbox #1 Detail
Not to Scale



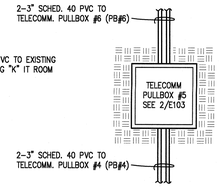
4 - Telecommunications Pullbox #2 Detail
Not to Scale



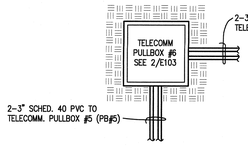
5 - Telecommunications Pullbox #3 Detail
Not to Scale



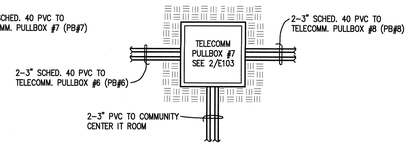
6 - Telecommunications Pullbox #4 Detail
Not to Scale



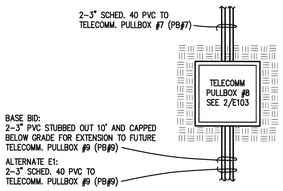
7 - Telecommunications Pullbox #5 Detail
Not to Scale



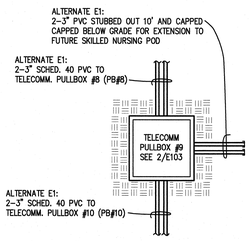
8 - Telecommunications Pullbox #6 Detail
Not to Scale



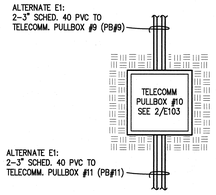
9 - Telecommunications Pullbox #7 Detail
Not to Scale



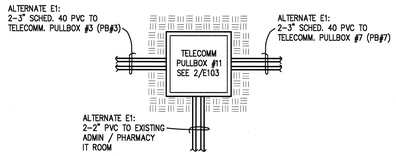
10 - Telecommunications Pullbox #8 Detail
Not to Scale



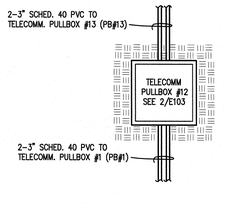
11 - Alternate Bid E1 Telecommunications Pullbox #9 Detail
Not to Scale



12 - Alternate Bid E1: Telecommunications Pullbox #10 Detail
Not to Scale



13 - Alternate Bid E1: Telecommunications Pullbox #11 Detail
Not to Scale



14 - Telecommunications Pullbox #12 Detail
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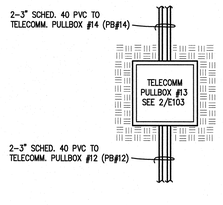

15 - Telecommunications Pullbox #13 Detail
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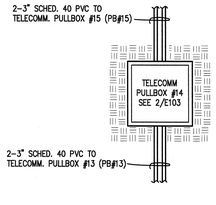
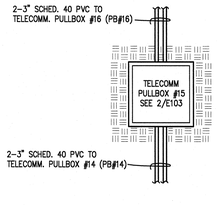


16 - Telecommunications Pullbox #14 Detail
Not to Scale



17 - Telecommunications Pullbox #15 Detail
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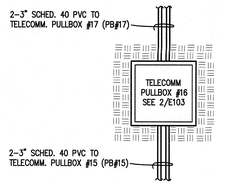
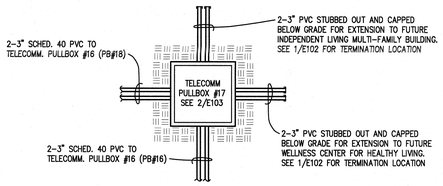
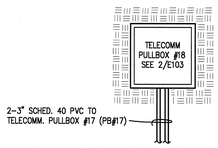


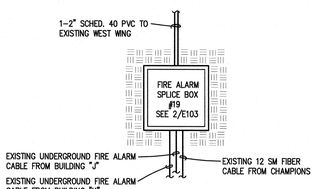
18 - Telecommunications Pullbox #16 Detail
Not to Scale



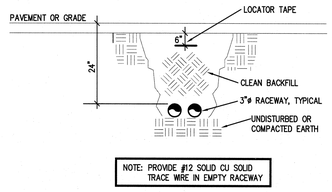
19 - Telecommunications Pullbox #17 Detail
Not to Scale



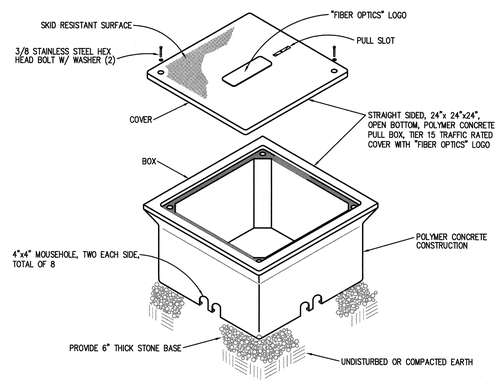
20 - Telecommunications Pullbox #18 Detail
Not to Scale



21 - Building "J" and "K" Fire Alarm and Champions Fiber Splice Box #19 Detail
Not to Scale



1 - Telecommunications Direct Buried Raceways Detail Plan
Not to Scale



2 - Telecommunications Pullbox Detail
Not to Scale

McFadyen Engineers, PLLC
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NC# P-1010

BOWMAN MURRAY HEMINGWAY ARCHITECTS
514 Market Street
Wilmington, NC 28406
Tel - (910) 762-2621
Fax - (910) 762-8506

NORTH CAROLINA PROFESSIONAL SEAL 8433 ENGINEER ADAM MCFADYEN REGISTERED 8-26-20

THE DAVIS COMMUNITY
Community Center - DEMOLITION & MAKE SAFE
1011 Porter's Neck Road
Wilmington, North Carolina 28411

REV.	DATE	DESCRIPTION
A	8/26/20	Permit Set

NO.	DATE	ISSUE NOTE

Project Manager: RDM	Drawn By: WPJ
Date: August 26, 2020	Reviewed By: RDM
Project ID	

Sheet Title
IT and Fire Alarm Infrastructure Details

Sheet No.
E103

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BOWMAN MURRAY HEMINGWAY ARCHITECTS
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Fax - (910) 762-8506



KITCHEN

BOILER ROOM & LAUNDRY, WORKSHOP

ADMINISTRATION

WEST CORRIDOR

EAST CORRIDOR

EXISTING PANEL 2LSW 3ø, 4W, 120/208V

EXISTING XFMR 2LSW 15 KVA

EXISTING PANEL 4LSW 3ø, 4W, 277/480V

EXISTING PANEL 2LSE 3ø, 4W, 120/208V

EXISTING XFMR 2LSE 15 KVA

EXISTING PANEL 4LSE 3ø, 4W, 277/480V

REMOVE EXISTING PANEL 2NAK 3ø, 4W, 120/208V

REMOVE EXISTING T2 45 KVA

REMOVE EXISTING PANEL 2NBK 3ø, 4W, 120/208V

REMOVE EXISTING T26 45 KVA

REMOVE EXISTING PANEL 2NDK 3ø, 4W, 120/208V

REMOVE EXISTING PANEL 2NCK 3ø, 4W, 120/208V

REMOVE EXISTING T1 75 KVA

REMOVE EXISTING PANEL 4NK 3ø, 4W, 277/480V

EXISTING PANEL 2CABR 3ø, 4W, 120/208V

EXISTING T30 45 kVA

EXISTING PANEL 2CBBR 3ø, 4W, 120/208V

EXISTING T31 45 kVA

REMOVE EXISTING PANEL 2CCWS 3ø, 4W, 120/208V

REMOVE EXISTING T32 45 KVA

REMOVE EXISTING RACEWAY AND CONDUCTORS, TYPICAL

EXISTING PANEL 4NBR 3ø, 4W, 277/480V

EXISTING PANEL 4CBR 3ø, 4W, 277/480V

NEW TEMPORARY 277/480 VOLT SERVICE PROVIDED BY CONTRACTOR

REMOVE EXISTING PANEL 2NAWC 3ø, 4W, 120/208V

REMOVE EXISTING PANEL 2C1A 3ø, 4W, 120/208V

REMOVE EXISTING T27 45 KVA

REMOVE EXISTING T4 30 KVA

REMOVE EXISTING PANEL 2N3A 3ø, 4W, 120/208V

REMOVE EXISTING PANEL 2N2A 3ø, 4W, 120/208V

REMOVE EXISTING T23 75 KVA

REMOVE EXISTING T28 45 KVA

REMOVE EXISTING PANEL 4NAWC 3ø, 4W, 277/480V

REMOVE EXISTING PANEL 2LSB3A 3ø, 4W, 120/208V

REMOVE EXISTING PANEL 4C3A 3ø, 4W, 277/480V

REMOVE EXISTING PANEL 2LSB3A 3ø, 4W, 120/208V

REMOVE EXISTING PANEL 2NBEC 3ø, 4W, 120/208V

REMOVE EXISTING T5 75 KVA

REMOVE EXISTING PANEL 4N3A 3ø, 4W, 277/480V

REMOVE EXISTING PANEL 4CWC 3ø, 4W, 277/480V

REMOVE EXISTING T24 15 KVA

REMOVE EXISTING PANEL 4S3A 3ø, 4W, 277/480V

REMOVE EXISTING PANEL 4NBEC 3ø, 4W, 277/480V

SEE 8/E105

SEE 10/E105

SEE 11/E105

SEE 9/E105

SEE 10/E105

NEW PANEL 2CB 3ø, 4W, 120/208V

NEW T-2CB 30 KVA

4#3 & 1#8 EG - 1 1/4" C.

3#8 & 1#10 EG - 3/4" C.

SEE NOTE 1

REMOVE EXISTING T25 45 KVA

REMOVE EXISTING PANEL 2CWS 3ø, 4W, 120/208V

45A

600A

EXISTING CRITICAL BRANCH DISTRIBUTION PANEL CB 3ø, 4W, 277/480V

EXISTING ATS 2

600A

1200A

EXISTING E-G ST 750 KW

EXISTING ATS 4

1200A

EXISTING SWITCHBOARD MSN 3ø, 4W, 277/480V

1600A

EXISTING UG UTILITY SERVICE

NEW MAIN SYSTEM GROUND BAR, SEE 4/E003 & 10/E005

1200A

EXISTING NORMAL BRANCH DISTRIBUTION PANEL 4MDP 3ø, 4W, 277/480V

EXISTING NEW E-G SET 350 KW

EXISTING ATS 1

100A

100A

400A

EXISTING ATS 3

400A

400A

CB

400A

EXISTING PANEL 4N 3ø, 4W, 277/480V

EXISTING 133 15 kVA

EXISTING PANEL 2LS

EXISTING LIFE SAFETY BRANCH EXISTING PANEL 4LS

EXISTING PANEL 2CD 3ø, 4W, 120/208V

EXISTING XFMR 2CD 30 KVA

EXISTING PANEL 2CC 3ø, 4W, 120/208V

EXISTING XFMR 2CC 30 KVA

EXISTING PANEL 2CB 3ø, 4W, 120/208V

EXISTING XFMR 2CB 30 KVA

EXISTING PANEL 2CA 3ø, 4W, 120/208V

EXISTING XFMR 2CA 30 KVA

EXISTING PANEL 2F 3ø, 4W, 120/208V

EXISTING XFMR 2F 30 KVA

EXISTING PANEL 2G 3ø, 4W, 120/208V

EXISTING XFMR 2G 30 KVA

EXISTING PANEL NEW 3ø, 4W, 120/208V

EXISTING XFMR NEW 30 KVA

EXISTING PANEL 2DK 3ø, 4W, 120/208V

EXISTING PANEL 2CK 3ø, 4W, 120/208V

EXISTING PANEL 2BK 3ø, 4W, 120/208V

EXISTING PANEL 4CWW 3ø, 4W, 277/480V

EXISTING PANEL 2AK 3ø, 4W, 120/208V

EXISTING PANEL 2FK 3ø, 4W, 120/208V

EXISTING PANEL 2GK 3ø, 4W, 120/208V

EXISTING PANEL 4CNE 3ø, 4W, 277/480V

EXISTING PANEL 2HK 3ø, 4W, 120/208V

EXISTING PANEL 2NJ2 3ø, 4W, 120/208V

EXISTING PANEL 2NK2 3ø, 4W, 120/208V

EXISTING PANEL 2NDA 3ø, 4W, 120/208V

EXISTING PANEL 2ND 3ø, 4W, 120/208V

225 CB

150 CB

EXISTING XFMR 2ND 112.5 kVA

200 NF

EXISTING PANEL 4ND 3ø, 4W, 277/480V

EXISTING PANEL 2NC 3ø, 4W, 120/208V

225 CB

150 CB

EXISTING XFMR 2NC 75 KVA

200 NF

EXISTING PANEL 4NC 3ø, 4W, 277/480V

EXISTING PANEL 2NB 3ø, 4W, 120/208V

150 CB

150 CB

EXISTING XFMR 2NB 75 KVA

200 NF

NON-FUSIBLE SAFETY SWITCH, TYPICAL

EXISTING PANEL 4NB 3ø, 4W, 277/480V

EXISTING PANEL 4NNW 3ø, 4W, 277/480V

EXISTING PANEL 2NA 3ø, 4W, 120/208V

150 CB

150 CB

EXISTING XFMR 2NA 75 KVA

200 NF

EXISTING PANEL 4NA 3ø, 4W, 277/480V

EXISTING PANEL 2NF 3ø, 4W, 120/208V

EXISTING PANEL 2NFA 3ø, 4W, 120/208V

150 CB

225 CB

150 CB

EXISTING XFMR 2NF 112.5 KVA

200 NF

EXISTING PANEL 4NF 3ø, 4W, 277/480V

EXISTING PANEL 2NGA 3ø, 4W, 120/208V

150 CB

60 NF

EXISTING XFMR 2NGA 45 KVA

EXISTING PANEL 4NG 3ø, 4W, 277/480V

EXISTING PANEL 2NGB 3ø, 4W, 120/208V

150 CB

150 CB

200 NF

EXISTING XFMR 2NGB 75 KVA

EXISTING PANEL 4NNE 3ø, 4W, 277/480V

EXISTING PANEL 2NH 3ø, 4W, 120/208V

150 CB

150 CB

EXISTING XFMR 2NH 75 KVA

200 NF

EXISTING PANEL 4NH 3ø, 4W, 277/480V

EXISTING PANEL 2NJ 3ø, 4W, 120/208V

150 CB

150 CB

EXISTING XFMR 2NJ 75 KVA

200 NF

EXISTING PANEL 4NJ 3ø, 4W, 277/480V

EXISTING PANEL 2CJ 3ø, 4W, 120/208V

100 CB

60 CB

EXISTING XFMR 2CJ 30 KVA

60 NF

EXISTING PANEL 4CJ 3ø, 4W, 277/480V

EXISTING PANEL 2LSJ 3ø, 4W, 120/208V

60 CB

30 CB

EXISTING XFMR 2LSJ 15 KVA

30 NF

EXISTING PANEL 4LSJ 3ø, 4W, 277/480V

EXISTING PANEL 2NK 3ø, 4W, 120/208V

150 CB

150 CB

EXISTING XFMR 2NK 75 KVA

200 NF

EXISTING PANEL 4NK 3ø, 4W, 277/480V

EXISTING PANEL 2CK 3ø, 4W, 120/208V

100 CB

60 CB

EXISTING XFMR 2CK 30 KVA

60 NF

EXISTING PANEL 4CK 3ø, 4W, 277/480V

EXISTING PANEL 2LSK 3ø, 4W, 120/208V

60 CB

30 CB

EXISTING XFMR 2LSK 15 KVA

30 NF

EXISTING PANEL 4LSK 3ø, 4W, 277/480V

HOUSEHOLD "D"

HOUSEHOLD "C"

HOUSEHOLD "B"

HOUSEHOLD "A"

ADMIN/SUPPORT "E"

HOUSEHOLD "F"

HOUSEHOLD "G"

HOUSEHOLD "H"

STAND ALONE HOUSEHOLD "J"

STAND ALONE HOUSEHOLD "K"

NOTE 1 – REMOVE EXISTING 3/100 CIRCUIT BREAKER AT POLES 32,34,36 AND DELIVER TO OWNER. PROVIDE AND INSTALL NEW 3/45 CB IN SPACE TO FEED NEW TRANSFORMER T-2CS. PROVIDE ALL NECESSARY MOUNTING HARDWARE AND ACCESSORIES AS REQUIRED TO INSTALL NEW CIRCUIT BREAKER. NEW CIRCUIT BREAKER SHALL MATCH EXISTING TYPES INSTALLED AND BE RATED CONSISTENT WITH THE EXISTING EQUIPMENT TO MAINTAIN THE EQUIPMENT RATINGS

1 - Electrical Single Line Diagram
not to scale

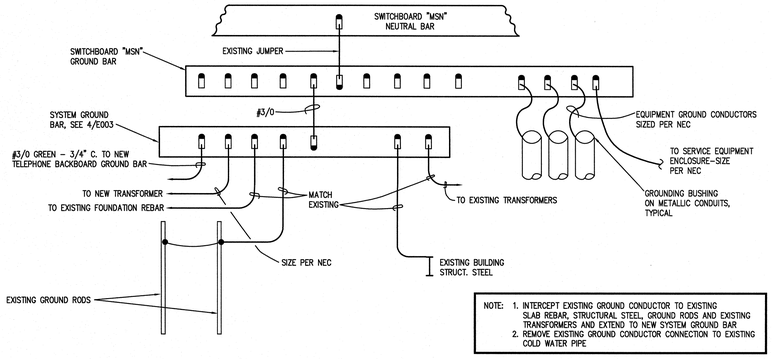
THE DAVIS COMMUNITY
Community Center - DEMOLITION & MAKE SAFE
1011 Porter's Neck Road
Wilmington, North Carolina 28411

REV.	DATE	DESCRIPTION
A	8/26/20	Permit Set
NO.	DATE	ISSUE NOTE

Project Manager	Drawn By
RDM	WPJ
Date	Reviewed By
August 26, 2020	RDM
Project ID	

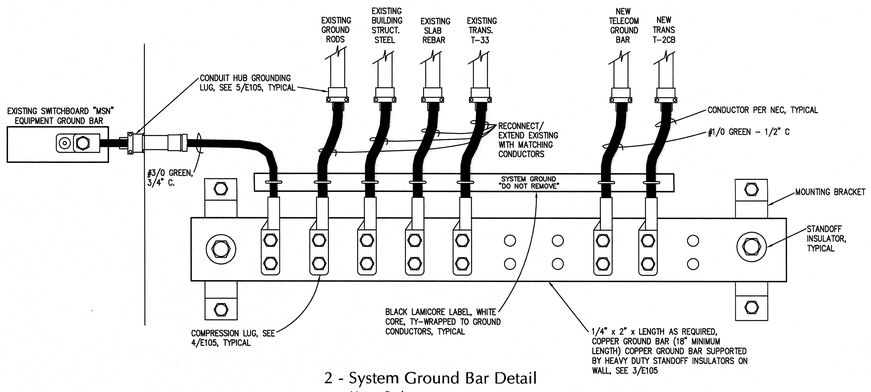
Sheet Title
Electrical Single Line Diagram

Sheet No.
E104

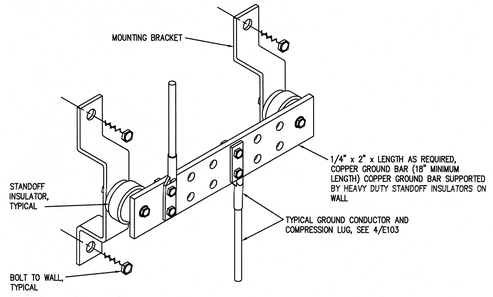


NOTE: 1. INTERCEPT EXISTING GROUND CONDUCTOR TO EXISTING SLAB REBAR, STRUCTURAL STEEL, GROUND RODS AND EXISTING TRANSFORMERS AND EXTEND TO NEW SYSTEM GROUND BAR
2. REMOVE EXISTING GROUND CONDUCTOR CONNECTION TO EXISTING COLD WATER PIPE

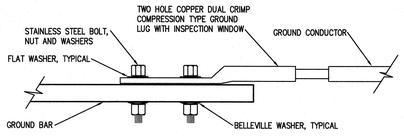
1 - Service Grounding System Detail
Not to Scale



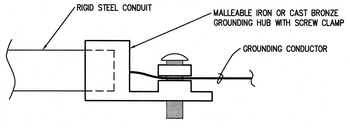
2 - System Ground Bar Detail
Not to Scale



3 - Typical Ground Bar Mounting Detail
Not to Scale

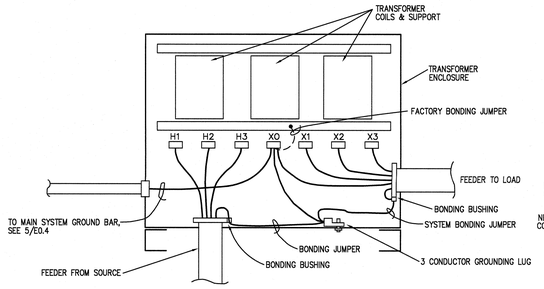


4 - Typical Ground Bar Connection Detail
Not to Scale

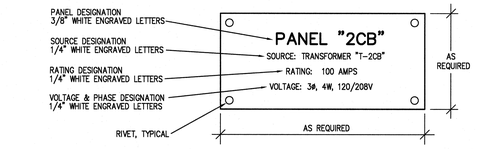


NOTE: INSTALL AT EACH END OF RACEWAY

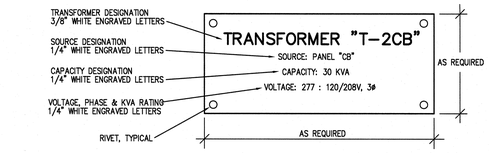
5 - Conduit and Grounding Conductor Grounding Detail
Not to Scale



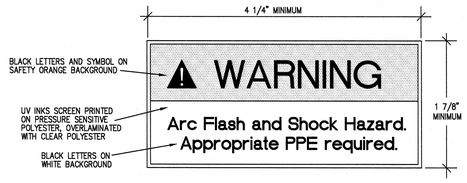
6 - Dry Type Transformer Bonding Detail
Not to Scale



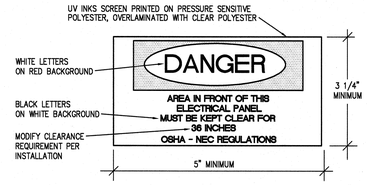
8 - Panelboard "2CB" Nameplate Detail
Not to Scale



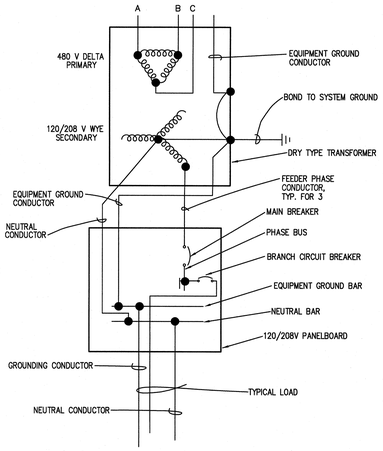
9 - Transformer "T-2CB" Nameplate Detail
Not to Scale



10 - Electrical Equipment Warning Label Detail
Not to Scale



11 - NEC Working Space Label Detail
Not to Scale



7 - Transformer Grounding System Detail
Not to Scale

MINIMUM CONDUCTORS SIZE CHART

PROVIDE THE FOLLOWING MINIMUM SIZES FOR BRANCH CIRCUIT CONDUCTORS:

SINGLE PHASE CIRCUITS					
CONDUCTOR SIZE (AWG)	BRANCH CIRCUIT BREAKER TRIP (AMPERES)	CIRCUIT VOLTAGE MAXIMUM ALLOWABLE CIRCUIT LENGTH (FEET)			
		120	208	240	277
#12	15	81	141	163	188
#10	15	135	234	270	312
#8	15	204	355	409	473
#12	20	61	106	122	141
#10	20	101	175	202	233
#8	20	153	266	307	354
#10	30	67	117	135	155
#8	30	102	177	204	236

THREE PHASE CIRCUITS					
CONDUCTOR SIZE (AWG)	BRANCH CIRCUIT BREAKER TRIP (AMPERES)	CIRCUIT VOLTAGE MAXIMUM ALLOWABLE CIRCUIT LENGTH (FEET)			
		208	240	480	
#12	15	163	188	377	
#10	15	270	312	624	
#12	20	122	141	283	
#10	20	202	234	468	
#10	30	135	156	312	
#8	30	205	236	473	
#8	40	153	177	354	
#6	40	239	276	553	
#8	50	123	142	283	
#6	50	191	221	442	
#6	60	159	184	368	
#4	60	245	283	567	

NOTES:
1. CONDUCTOR LENGTHS ARE BASED ON SINGLE & THREE PHASE, 90% POWER FACTOR LOADS USING 75°C COPPER CONDUCTORS IN EMT RACEWAYS TO ACHIEVE NO MORE THAN 3 PERCENT VOLTAGE DROP.
2. CALCULATIONS ASSUME LOADS OF 80% OF CIRCUIT BREAKER TRIP (12A, 16A & 24A, 32A, 40A & 48A, RESPECTIVELY) ARE CONCENTRATED AT THE END OF THE CIRCUITS.
3. IF LOAD CHARACTERISTICS DIFFER FROM ABOVE, CALCULATE USING KNOWN CHARACTERISTICS AND SUBMIT CALCULATIONS TO THE ARCHITECT/ENGINEER DOCUMENTING 3% OR LESS VOLTAGE DROP UNDER THE ACTUAL LOAD CONDITIONS.
4. WHEN A DEDICATED SINGLE LOAD LESS THAN NOTED ABOVE IS KNOWN, THE CONTRACTOR MAY UTILIZE SMALLER CONDUCTORS UPON SUBMISSION OF VOLTAGE DROP CALCULATIONS DOCUMENTING 3% OR LESS VOLTAGE DROP. THE MINIMUM LOAD SHALL BE ASSUMED TO BE 60% OF THE CB TRIP RATING REGARDLESS OF ACTUAL DEDICATED LOAD.
5. USE THE LARGER OF THE CONDUCTORS INDICATED ON THE DRAWINGS OR THIS TABLE.

PANEL "2CB"

TYPE:	208	120	VOLTS,	3	PHASE,	4	WIRE		PROVIDE IF CHECKED	XX	EQUIPMENT GROUND BUS
BOLT–ON	MOUNT:	SURFACE								XX	100 % NEUTRAL BUS
HINGED TRIM	FEED:	TOP									ULSE LABEL
	NEMA –	1	ENCLOSURE								ISOLATED GROUND BAR

LOAD SERVED	LOAD VA	CKT BKR POLES/TRIP	CKT #	LOAD VA A	LOAD VA B	LOAD VA C	CKT #	CKT BKR POLES/TRIP	LOAD VA	LOAD SERVED
SPARE		1/20	1	180			2	1/20	180	EXTERIOR RECEPTACLE
SPARE		1/20	3		200		4	1/20	200	WATER SOFTENER EQUIPMENT
SPARE		1/20	5			200	6	1/20	200	WATER SOFTENER EQUIPMENT
SPARE		1/20	7				8	1/20		SPARE
SPARE		1/20	9				10	1/20		SPARE
SPARE		1/20	11				12	1/20		SPARE
SPARE		1/20	13				14	1/20		SPARE
SPARE		1/20	15				16	1/20		SPARE
SPARE		1/20	17				18	1/20		SPARE
SPARE		1/20	19				20	1/20		SPARE
SPARE		1/20	21				22	1/20		SPARE
SPARE		1/20	23				24	1/20		SPARE
SPARE		1/20	25				26	1/20		SPARE
SPARE		1/20	27		1,839		28	2/25	1,839	DHP1,DAH1,1,DAH1.2,DAH1.3
SPARE		1/20	29			1,839	30		1,839	
NOTES:				180	2,039	2,039	TOTAL VA			100 A. BUS (COPPER, UNO)
1. COORDINATE CIRCUIT BREAKER TRIP WITH EQUIPMENT.				2	17	17	TOTAL AMPERES			100 A. MAIN CIRCUIT BREAKER
				4%	48%	48%	PHASE BALANCE			14 KAIC MINIMUM RATING

DEMAND SUMMARY:	CONN. (VA)	DEMAND FACTOR	DEMAND (VA)	NOTES
R: TOTAL RECEPTACLES (VA) = 580				
RECEPTACLES FIRST 10 KVA	580	1.00	580	
RECEPTACLES > 10 KVA		0.50		
L: LIGHTING		1.25		
M: MISCELLANEOUS EQUIPMENT		1.00		
O: OTHER EQUIPMENT		1.00		
B: LARGEST MOTOR		1.25		
H: HVAC EQUIPMENT (FLA = MCA X 0.8)	3,678	1.00	3,678	
K: KITCHEN EQUIPMENT		1.00		DEMAND FACTOR PER NEC TABLE 220.56
TOTAL CONNECTED (VA)	4,258			
TOTAL DEMAND (VA)			4,258	
TOTAL DEMAND (AMPERES)			11.8	
PANEL DEMAND LOADING VS RATING		11.8%		

McFadyen Engineers, PLLC
4411 Peachtree Avenue Wilmington, NC 28403 Phone : 910.399.1125
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NCE P-1010

BOWMAN MURRAY HEMINGWAY ARCHITECTS
514 Market Street
Wilmington, NC 28406
Tel - (910) 762-2621
Fax - (910) 762-8506

NORTH CAROLINA PROFESSIONAL SEAL 8423 ENGINEER RANDALL MCFADYEN
8-26-20

THE DAVIS COMMUNITY
Community Center - DEMOLITION &
MAKE SAFE
1011 Porter's Neck Road
Wilmington, North Carolina 28411

REV.	DATE	DESCRIPTION
A	8/26/20	Permit Set

NO.	DATE	ISSUE NOTE

Project Manager	Drawn By
RDM	WPJ
Date: August 26, 2020	Reviewed By: RDM
Project ID	

Sheet Title
Electrical Details and Panel Schedules

Sheet No.
E105

McFadyen Engineers, PLLC
4411 Peachtree Avenue Wilmington, NC 28403 Phone : 910.399.1125
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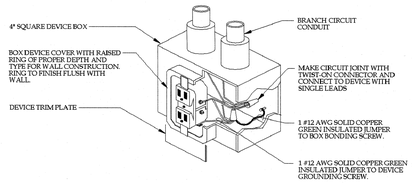
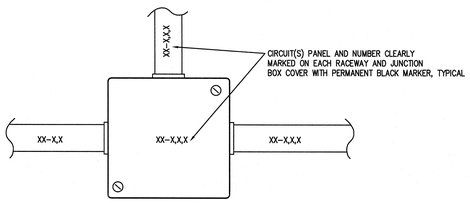
BOWMAN MURRAY HEMINGWAY
ARCHITECTS
514 Market Street
Wilmington, NC 28406
Tel - (910) 762-2621
Fax - (910) 762-8506

NORTH CAROLINA PROFESSIONAL SEAL 8433 ENGINEER JOHN MCFADYEN
8.26.20

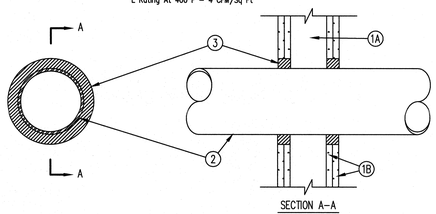


4 - Receptacle Grounding Detail
NOT TO SCALE



5 - Circuit Identification Detail
NOT TO SCALE

System No. W-L-1054
December 04, 2002
F Ratings – 1 and 2 Hr (See Items 1 and 3)
T Rating – 0 Hr
L Rating At Ambient – Less Than 1 CFM/Sq Ft
L Rating At 400 F – 4 CFM/Sq Ft



1. Wall Assembly – The 1 or 2 hr fire–rated gypsum wallboard/stud wall assembly shall be constructed of the materials and in the manner specified in the individual U300 or U400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:
   A. Studs – Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. lumber spaced 16 in. OC. Steel studs to be min 2–1/4 in. wide and spaced max 24 in. OC. When steel studs are used and the diam of opening exceeds the width of stud cavity, the opening shall be framed on all sides using lengths of steel stud installed between the vertical studs and screw–attached to the steel studs at each end. The framed opening in the wall shall be 4 to 6 in. wider and 4 to 6 in. higher than the diam of the penetrating item such that, when the penetrating item is installed in the opening, a 2 to 3 in. clearance is present between the penetrating item and the framing on all four sides.
   B. Gypsum Board* – 3/8 in. thick, 4 ft wide with square or tapered edges. The gypsum board type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual U300 or U400 Series Design in the UL Fire Resistance Directory. Max diam of opening is 32–1/4 in. for steel stud walls. Max diam of opening is 14–1/4 in. for wood stud walls.

   The F Rating of the firestop system is equal to the fire rating of the wall assembly.
2. Through–Penetrants – One metallic pipe, conduit or tubing to be installed either concentrically or eccentrically within the firestop system. The annular space shall be min 0 in. to max 2–1/4 in. Pipe may be installed with continuous point contact. Pipe, conduit or tubing may be installed at an angle not greater than 45 degrees from perpendicular. Pipe, conduit or tubing to be rigidly supported on both sides of wall assembly. The following types and sizes of metallic pipes, conduits or tubing may be used:
   A. Steel Pipe – Nom 30 in diam (or smaller) Schedule 10 (or heavier) steel pipe.
   B. Iron Pipe – Nom 30 in. diam (or smaller) cast or ductile iron pipe.
   C. Conduit – Nom 4 in diam (or smaller) steel electrical metallic tubing or 6 in. diam steel conduit.
   D. Copper Tubing – Nom 6 in. diam (or smaller) Type L (or heavier) copper tubing.
   E. Copper Pipe – Nom 6 in. diam (or smaller) regular (or heavier) copper pipe.
3. Fill, Void or Cavity Material* – Sealant – Min 3/8 in. thickness of fill material applied within the annulus, flush with both surfaces of wall. At the point or continuous contact locations between pipe and wall, a min 1/4 in. diam bead of fill material shall be applied at the pipe wall interface on both surfaces of wall .
   HILTI CONSTRUCTION CHEMICALS, DIV OF
   HILTI INC – FS–One Sealant

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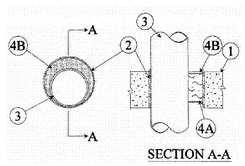
2 - 1 and 2 Hour Firewall Penetration Detail
NOT TO SCALE

System No. C-AJ-1226
October 30, 2003
F Rating – 3 Hr
T Rating – 0 Hr
L Rating At Ambient – Less Than 1 CFM/Sq Ft
L Rating At 400 F – 4 CFM/Sq Ft



1. Floor or Wall Assembly – Min 4–1/4 in. thick reinforced lightweight or normal weight (100–150 pcf) concrete. Wall may also be constructed of any UL Classified Concrete Blocks*. Max diam of opening is 32 in.
2. Metallic Sleeve – (Optional) Nom 32 in. diam (or smaller) Schedule 40 (or heavier) steel sleeve cast or grouted into floor or wall assembly, flush with floor or wall surfaces or extending a max of 3 in. above floor or beyond both surfaces of wall.
3. Through–Penetrant – One metallic pipe, tube or conduit to be installed either concentrically or eccentrically within the firestop system. The annular space between penetrant and periphery of opening shall be min 0 in. (point contact) to max 1–7/8 in. Penetrant may be installed with continuous point contact. Penetrant to be rigidly supported on both sides of floor or wall assembly. The following types and sizes of metallic penetrants may be used:
   A. Steel Pipe – Nom 30 in. diam (or smaller) Schedule 10 (or heavier) steel pipe.
   B. Iron Pipe – Nom 30 in. diam (or smaller) cast or ductile iron pipe.
   C. Copper Pipe – Nom 6 in. diam (or smaller) Regular (or heavier) copper pipe.
   D. Copper Tubing – Nom 6 in. diam (or smaller) Type L (or heavier) copper tubing.
   E. Conduit – Nom 6 in. diam (or smaller) steel conduit.
   F. Conduit – Nom 4 in. diam (or smaller) steel electrical metallic tubing (EMT).
4. Firestop System – The firestop system shall consist of the following:
   A. Packing Material – Min 4 in. thickness of min 4 pcf mineral wool batt insulation firmly packed into opening as a permanent form. Packing material to be recessed from top surface of floor or sleeve or from both surfaces of wall or sleeve as required to accommodate the required thickness of fill material.
   B. Fill, Void or Cavity Material* – Sealant – Min 1/4 in. thickness of fill material applied within the annulus, flush with top surface of floor or sleeve or with both surfaces of wall or sleeve. At the point or continuous contact locations between penetrant and concrete or sleeve, a min 1/4 in. diam bead of fill material shall be applied at the concrete or sleeve/ pipe penetrant interface on the top surface of floor and on both surfaces of wall.
   HILTI CONSTRUCTION CHEMICALS, DIV OF
   HILTI INC – FS–One Sealant
*Bearing the UL Classification Mark

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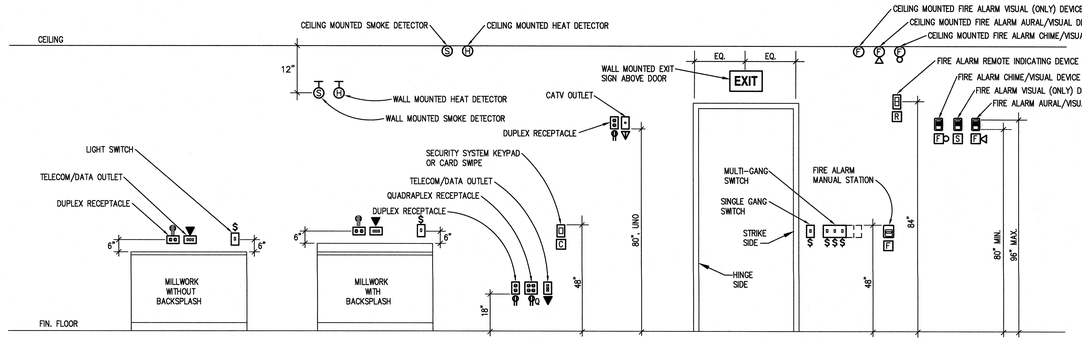
3 - 3 Hour Firewall Penetration Detail
NOT TO SCALE



NOTE: TELECOM/DATA OUTLETS ARE TO BE INSTALLED AT THE SAME HEIGHT AS ADJACENT RECEPTACLE, UNO

1 - Standard Device Mounting Height Detail
Not to Scale

THE DAVIS COMMUNITY
Community Center - DEMOLITION & MAKE SAFE

1011 Porter's Neck Road
Wilmington, North Carolina 28411

REV.	DATE	DESCRIPTION
A	8/26/20	Permit Set

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Project Manager	Drawn By
RDM	WPJ
Date	Reviewed By
August 26, 2020	RDM
Project ID	

Sheet Title
Electrical Details

Sheet No.
E106

McFadyen Engineers, PLLC
4411 Peachtree Avenue Wilmington, NC 28403 Phone : 910.399.1125
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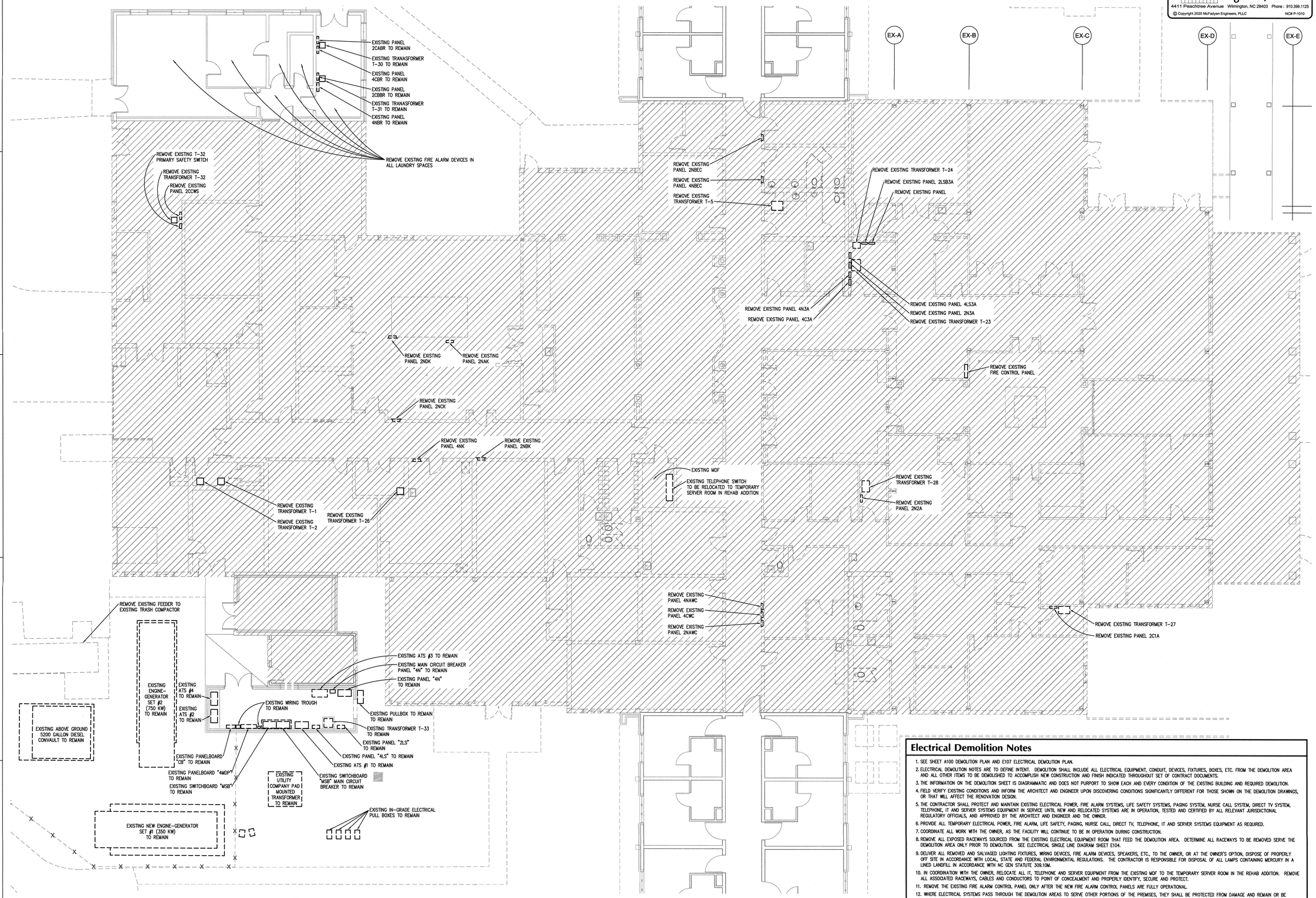
BOWMAN MURRAY HEMINGWAY
ARCHITECTS
514 Market Street
Wilmington, NC 28406
Tel - (910) 762-2621
Fax - (910) 762-8506



1 - Electrical Demolition Plan
Scale: 1/8" = 1'-0"

Electrical Demolition Notes

1. SEE SHEET A100 DEMOLITION PLAN AND E107 ELECTRICAL DEMOLITION PLAN.
2. ELECTRICAL DEMOLITION NOTES ARE TO DEFINE INTENT. DEMOLITION SHALL INCLUDE ALL ELECTRICAL EQUIPMENT, CONDUIT, DEVICES, FIXTURES, BOXES, ETC. FROM THE DEMOLITION AREA AND ALL OTHER ITEMS TO BE DEMOLISHED TO ACCOMPLISH NEW CONSTRUCTION AND FINISH INDICATED THROUGHOUT SET OF CONTRACT DOCUMENTS.
3. THE INFORMATION ON THE DEMOLITION SHEET IS DIAGRAMMATIC AND DOES NOT PURPORT TO SHOW EACH AND EVERY CONDITION OF THE EXISTING BUILDING AND REQUIRED DEMOLITION.
4. FIELD VERIFY EXISTING CONDITIONS AND INFORM THE ARCHITECT AND ENGINEER UPON DISCOVERING CONDITIONS SIGNIFICANTLY DIFFERENT FOR THOSE SHOWN ON THE DEMOLITION DRAWINGS, OR THAT WILL AFFECT THE RENOVATION DESIGN.
5. THE CONTRACTOR SHALL PROTECT AND MAINTAIN EXISTING ELECTRICAL POWER, FIRE ALARM SYSTEMS, LIFE SAFETY SYSTEMS, PAGING SYSTEM, NURSE CALL SYSTEM, DIRECT TV SYSTEM, TELEPHONE, IT AND SERVER SYSTEMS EQUIPMENT IN SERVICE UNTIL NEW AND RELOCATED SYSTEMS ARE IN OPERATION, TESTED AND CERTIFIED BY ALL RELEVANT JURISDICTIONAL REGULATORY OFFICIALS, AND APPROVED BY THE ARCHITECT AND ENGINEER AND THE OWNER.
6. PROVIDE ALL TEMPORARY ELECTRICAL POWER, FIRE ALARM, LIFE SAFETY, PAGING, NURSE CALL, DIRECT TV, TELEPHONE, IT AND SERVER SYSTEMS EQUIPMENT AS REQUIRED.
7. COORDINATE ALL WORK WITH THE OWNER, AS THE FACILITY WILL CONTINUE TO BE IN OPERATION DURING CONSTRUCTION.
8. REMOVE ALL EXPOSED RACEWAYS SOURCED FROM THE EXISTING ELECTRICAL EQUIPMENT ROOM THAT FEED THE DEMOLITION AREA. DETERMINE ALL RACEWAYS TO BE REMOVED SERVE THE DEMOLITION AREA ONLY PRIOR TO DEMOLITION. SEE ELECTRICAL SINGLE LINE DIAGRAM SHEET E104.
9. DELIVER ALL REMOVED AND SALVAGED LIGHTING FIXTURES, WIRING DEVICES, FIRE ALARM DEVICES, SPEAKERS, ETC., TO THE OWNER, OR AT THE OWNER'S OPTION, DISPOSE OF PROPERLY OFF SITE IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL ENVIRONMENTAL REGULATIONS. THE CONTRACTOR IS RESPONSIBLE FOR DISPOSAL OF ALL LAMPS CONTAINING MERCURY IN A LINED LANDFILL IN ACCORDANCE WITH NC GEN STATUTE 309.10M.
10. IN COORDINATION WITH THE OWNER, RELOCATE ALL IT, TELEPHONE AND SERVER EQUIPMENT FROM THE EXISTING MDF TO THE TEMPORARY SERVER ROOM IN THE REHAB ADDITION. REMOVE ALL ASSOCIATED RACEWAYS, CABLES AND CONDUCTORS TO POINT OF CONCEALMENT AND PROPERLY IDENTIFY, SECURE AND PROTECT.
11. REMOVE THE EXISTING FIRE ALARM CONTROL PANEL ONLY AFTER THE NEW FIRE ALARM CONTROL PANELS ARE FULLY OPERATIONAL.
12. WHERE ELECTRICAL SYSTEMS PASS THROUGH THE DEMOLITION AREAS TO SERVE OTHER PORTIONS OF THE PREMISES, THEY SHALL BE PROTECTED FROM DAMAGE AND REMAIN OR BE SUITABLY RELOCATED UTILIZING MATCHING SIZE AND TYPE MATERIALS AND THE SYSTEM RESTORED TO NORMAL OPERATION. ADVISE THE ARCHITECT/ENGINEER IMMEDIATELY IF SUCH CONDITIONS ARE UNCOVERED BEFORE PROCEEDING WITH ADDITIONAL WORK.
13. SECURE ALL CIRCUITS, RACEWAYS, CABLE AND CONDUCTORS THAT, AS A RESULT FROM THIS CONSTRUCTION, ARE ABANDONED OR UNUSED. REMOVE UNUSED EXPOSED CONDUIT AND WIRING BACK TO POINT OF CONCEALMENT INCLUDING ABANDONED CONDUIT ABOVE ACCESSIBLE CEILINGS. REMOVE UNUSED WIRING IN CONCEALED CONDUITS BACK TO SOURCE OR NEAREST POINT OF USAGE. BLANK ABANDONED KNOCKOUTS IN REMAINING BOXES. INSTALL BLANK PLATES FOR ALL UNUSED OUTLETS THAT WILL REMAIN AS A RESULT OF THIS CONSTRUCTION. ALL SUCH WORK SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES AND ORDINANCES.
14. SEE SHEETS E102, E108 AND E109 FOR ADDITIONAL INFORMATION.
15. LAUNDRY AREA POWER DISTRIBUTION PANELBOARD FEEDERS WILL BE REMOVED DURING THE DEMOLITION AND LAUNDRY DEMOLITION SHALL BE DEFERRED AT THE DISCRETION OF THE CONTRACTOR. MAINTAIN EXISTING ELECTRICAL POWER UNTIL TIME OF LAUNDRY DEMOLITION BY MEANS OF A TEMPORARY ELECTRICAL UTILITY SERVICE.

NORTH CAROLINA PROFESSIONAL SEAL 8433 ENGINEER JOHN MICHAEL MCFADYEN
9.16.20

THE DAVIS COMMUNITY
Community Center - DEMOLITION & MAKE SAFE
1011 Porter's Neck Road
Wilmington, North Carolina 28411

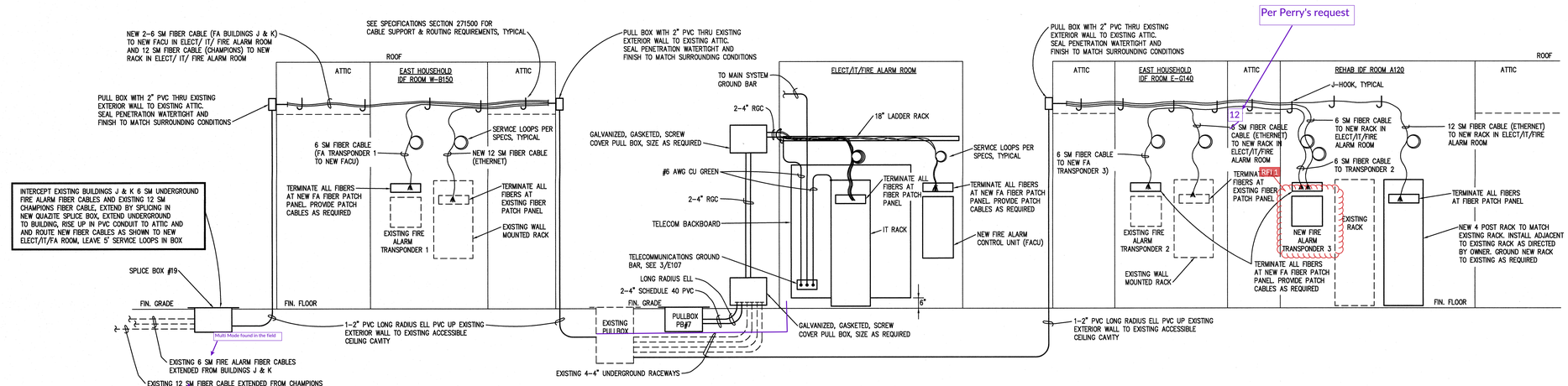
REV.	DATE	DESCRIPTION
A	8/26/20	Permit Set

NO.	DATE	ISSUE NOTE

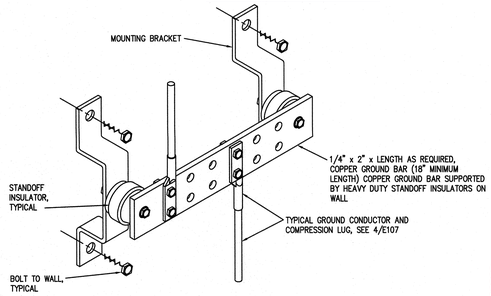
Project Manager: RDM	Drawn By: WPJ
Date: August 26, 2020	Reviewed By: RDM
Project ID	

Sheet Title
Electrical Demolition Plan and Demolition Notes

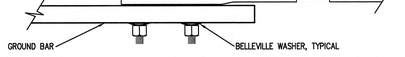
Sheet No.
E107



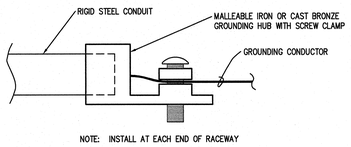
2 - Functional Telecommunications and Fire Alarm Riser Diagram
Not to Scale



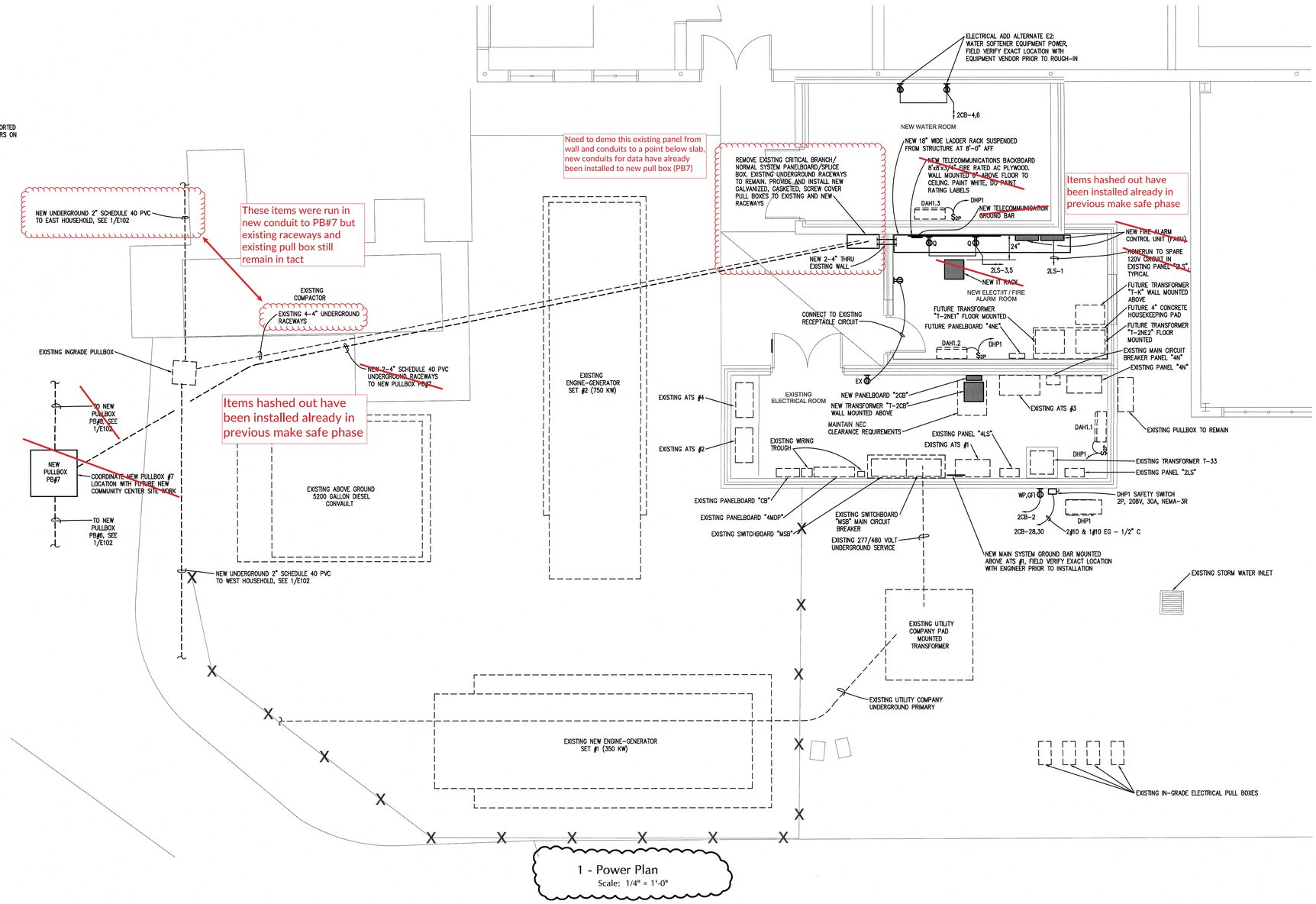
3 - Typical Ground Bar Mounting Detail
Not to Scale



4 - Typical Ground Bar Connection Detail
Not to Scale



5 - Conduit and Grounding Conductor Grounding Detail
Not to Scale



1 - Power Plan
Scale: 1/4" = 1'-0"

McFadyen Engineers, PLLC
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BOWMAN MURRAY HEMINGWAY
ARCHITECTS
514 Market Street
Wilmington, NC 28406
Tel - (910) 762-2621
Fax - (910) 762-8506

NORTH CAROLINA PROFESSIONAL SEAL 8433 ENGINEER RICHARD D. MCFADYEN
9/29/20

THE DAVIS COMMUNITY
Community Center - DEMOLITION & MAKE SAFE
1011 Porter's Neck Road
Wilmington, North Carolina 28411

REV.	DATE	DESCRIPTION
1	9/29/20	Electrical Room Revisions

NO.	DATE	ISSUE NOTE
A	8/26/20	Permit Set

Project Manager: RDM	Drawn By: WPJ
Date: August 26, 2020	Reviewed By: RDM
Project ID	

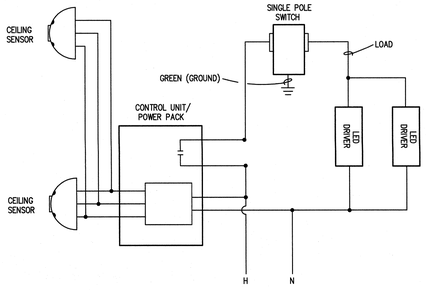
Sheet Title: **Power Plan, Functional Telecommunications and Fire Alarm Riser Diagram and Details**

Sheet No.: **E108**

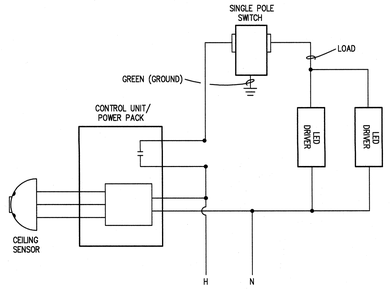
Lighting Fixture Schedule

MARK	DESCRIPTION	SIZE/APERTURE	VOLTS	LAMPS	WATTS	LENS	TRIM/DOOR	TRIM COLOR	MOUNTING HEIGHT	REMARKS	MANUFACTURER
L1	SURFACE MOUNTED LED	4'	UNIV.	5000 LUMEN, 4000K LED	41	FST DROP LENS	————	WHITE	SURFACE CEILING	0-10V 10% DIMMING DRIVER, 80 CRI,	LITHONIA "HZL10" SERIES
X1	EXIT LIGHT	————	UNIV.	RED LED	5	————	POLYCARBONATE	WHITE	WALL OVER DOOR	RED LED, 6" LETTERS, SINGLE OR DOUBLE FACE UNITS AND CHEVRONS AS INDICATED, INTERNAL 90 MINUTE BATTERY BACKUP, SELF-DIAGNOSTICS	LITHONIA "LQM" SERIES
E1	EMERGENCY LIGHT	————	120	2-1.5W	3	POLYCARBONATE	THERMOPLASTIC	WHITE	WALL 8'-0"	INTERNAL 90 MINUTE BATTERY BACKUP, SELF DIAGNOSTICS	LITHONIA "ELM2 LED" SERIES

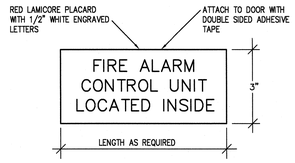
NOTES:
1. VERIFY ALL WALL MOUNTED LIGHTING FIXTURE LOCATIONS AND MOUITNG HEIGHTS WITH ARCHITECT PRIOR TO ROUGH-IN.
2. ALL EMERGENCY FIXTURES SHALL COMPLY WITH NCSBC STANDARDS AND HAVE AUTOMATIC TESTING DEVICES.
3. SEE SPECIFICATIONS SECTIONS 265100 AND 265200 FOR ADDITIONAL REQUIREMENTS.
5. LIGHTING FIXTURES HAVE BEEN SELECTED AND SPECIFIED TO ACHIEVE REQUIRED/DESIRED ILLUMINATION LEVELS AND OTHER CHARACTERISTICS IN THEIR RESPECTIVE AREAS. SPECIFIED FIXTURES HAVE SPECIFIC CHARACTERISTICS WHICH MAY CREATE UNIQUE ILLUMINATION RESULTS ESSENTIAL TO THE PROJECT. LIGHTING FIXTURES PROVIDED SHALL MEET THE AESTHETICS, DETAILS, AND SPECIFICATIONS STATED ABOVE AND IN THE DIVISION 26 SPECIFICATIONS, AND MOUNTING HEIGHTS AND SPACINGS SHOWN ON THE DRAWINGS. ANY DEVIATIONS FROM THE SPECIFIED FIXTURES SHALL DEEM ALL PARTIES IN THE SUPPLY CHAIN AND CONTRACTOR RESPONSIBLE FOR PROVIDING DETAILED COMPARISONS OF THE SPECIFIED FIXTURE AND THE PROPOSED FIXTURE FOR ARCHITECT AND ENGINEER REVIEW IN DETERMINING EQUALITY. PROVIDE COMPLETE POINT BY POINT ILLUMINATION STUDIES FOR ALL SUBSTITUTIONS.
6. SUBSTITUTIONS MAY BE APPROVED BY THE ARCHITECT AND ENGINEER IF THEY ARE JUDGED TO BE EQUAL TO THE SPECIFIED FIXTURES. 'EQUAL'MAY INCLUDE, AT THE SOLE DISCRETION OF THE ARCHITECT AND ENGINEER, LENS MATERIAL AND CHARACTERISTICS, COLORS, REFLECTORS, HOUSING MATERIAL AND CONFIGURATION, FINISHES, PHOTOMETRICS, EFFICIENCY, OPTIONS, FUNCTIONALITY, ETC..



6 - Multiple Ceiling Mounted Occupancy Sensor, Single Pole Switch, Single Circuit Wiring Diagram (OS)
NOT TO SCALE



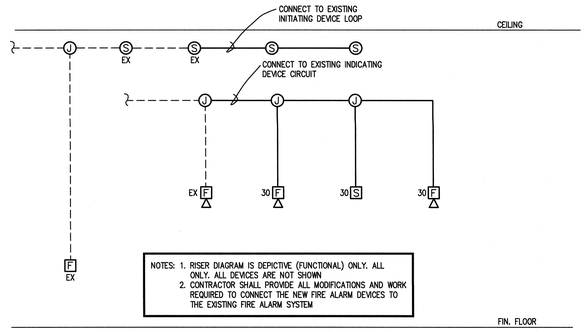
5 - Ceiling Mounted Occupancy Sensor, Wall Mounted Single Pole Switch, Circuit Wiring Diagram (OS)
NOT TO SCALE



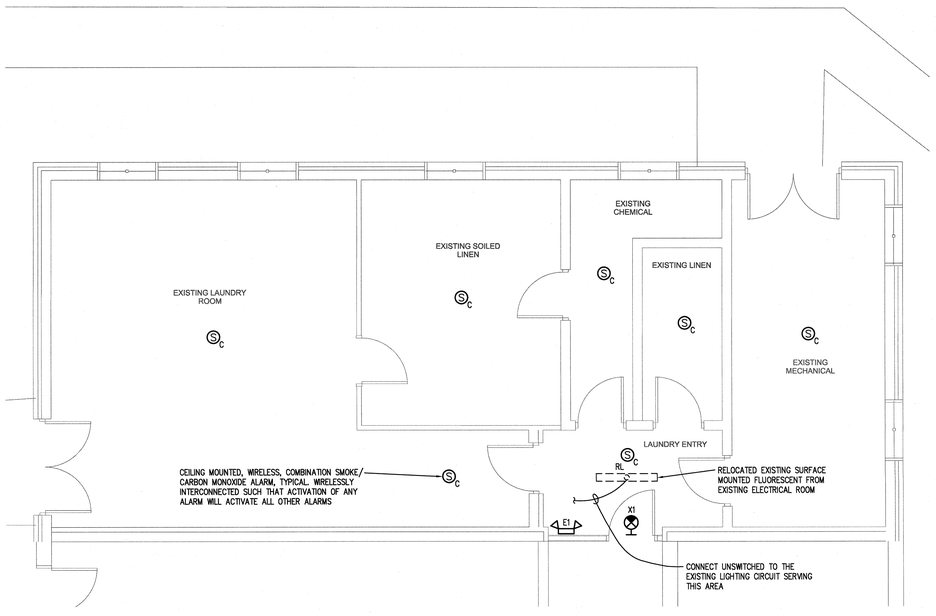
4 - FACU Placard Detail
Not to Scale

Fire Alarm Legend

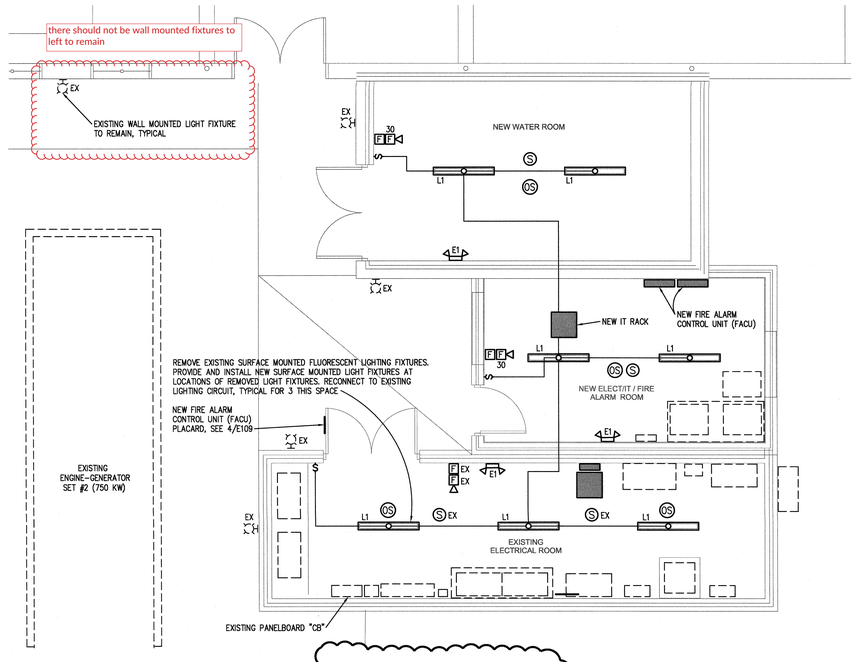
EX F	EXISTING FIRE ALARM AURAL/VISUAL DEVICE, 80" AFF
30 F	NEW FIRE ALARM AURAL/VISUAL DEVICE, 80" AFF, "30" INDICATES CANDELLA RATING
30 S	NEW FIRE ALARM VISUAL (ONLY) DEVICE, 80" AFF, "30" INDICATES CANDELLA RATING
EX S	EXISTING SMOKE DETECTOR, CEILING MOUNTED
S	NEW SMOKE DETECTOR, CEILING MOUNTED



3 - Functional Fire Alarm Riser Diagram (Devices Only)
Not to Scale



2 - Laundry Lighting and Systems Plan
Scale: 1/4" = 1'-0"



1 - Lighting and Systems Plan
Scale: 1/4" = 1'-0"

McFadyen Engineers, PLLC
4411 Peachtree Avenue Wilmington, NC 28403 Phone: 910.399.1125
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BOWMAN MURRAY HEMINGWAY ARCHITECTS
514 Market Street
Wilmington, NC 28406
Tel - (910) 762-2621
Fax - (910) 762-8506

NORTH CAROLINA PROFESSIONAL SEAL 8433 ENGINEER JOHN MCFADYEN
9/29/20

THE DAVIS COMMUNITY
Community Center - DEMOLITION & MAKE SAFE
1011 Porter's Neck Road
Wilmington, North Carolina 28411

REV.	DATE	DESCRIPTION
1	9/29/20	Electrical Room Revisions

NO.	DATE	ISSUE NOTE
A	8/26/20	Permit Set

Project Manager: RDM	Drawn By: WPJ
Date: August 26, 2020	Reviewed By: RDM
Project ID	

Sheet Title
Lighting and Systems Plan, Lighting Fixture Schedule and Details

Sheet No.
E109