DIVISION 26 ELECTRICAL SPECIFICATIONS

01 GENERAL
THE CONTRACTOR SHALL VISIT THE JOBSITE, PRIOR TO ANY SUBMISSION OF BID AND REVIEW ALL CONTRACT DOCUMENTS TO FAMILIARIZE HIMSELF WITH EXTENT OF WORK REQUIRED AND THE CONDITIONS (BOTH EXISTING AND NEW) UNDER WHICH THE WORK SHALL BE PERFORMED. THE CONTRACTOR SHALL NOTIFY ENGINEER OF ANY DISCREPANCY BETWEEN THE ELECTRICAL PLANS AND EXISTING CONDITIONS PRIOR TO ISSUING A BID.

THE CONTRACTOR SHALL REVIEW ALL CONSTRUCTION DRAWINGS, SPECIFICATIONS, EQUIPMENT INSTALLATION INSTRUCTIONS AND SHOP DRAWINGS OF ALL TRADES TO FAMILIARIZE HIMSELF WITH THE EXTENT OF THE WORK REQUIRED.

THE CONTRACTOR SHALL NOT SCALE THESE DRAWINGS. CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS AND ELEVATIONS FOR EXACT LOCATIONS OF ALL EQUIPMENT, UNLESS NOTED OTHERWISE. IT SHALL NOT BE THE INTENT OF THESE DOCUMENTS TO SHOW EVERY MINOR DETAIL OF CONSTRUCTION. THE ELECTRICAL CONTRACTOR SHALL BE EXPECTED TO FURNISH AND INSTALL ALL ITEMS REQUIRED FOR A COMPLETE AND OPERABLE SYSTEM. ALL CONDUIT RUNS ARE SHOWN DIAGRAMMATICALLY, EXACT ROUTING SHALL BE DETERMINED IN THE FIELD. UON.

ALL CUTTING AND PATCHING, FIRE SEALING, TRENCHING AND BACKFILL, ELECTRICAL COORDINATION, ETC. REQUIRED FOR THE INSTALLATION OF THIS WORK IS THE RESPONSIBILITY OF THIS CONTRACTOR.

IT SHALL BE UNDERSTOOD THAT ALL WORK SHALL COMPLY WITH THE LATEST EDITIONS OF NATIONAL ELECTRICAL CODE, APPLICABLE NATIONAL AND LOCAL CODES, LOCAL ORDINANCES, MANUFACTURERS' INSTALLATION INSTRUCTIONS, UL STANDARDS, NFPA, THAT SPECIFIED IN THESE DOCUMENTS, AND OTHER AUTHORITIES HAVING JURISDICTION OVER THE ELECTRICAL CONSTRUCTION WORK ON THIS PROJECT. ALL WORK SHALL BE PERFORMED BY A LICENSED ELECTRICAL CONTRACTOR.

THE REQUIREMENTS OF THE ARCHITECT'S DIVISION 1, GENERAL AND SPECIAL CONDITIONS, AND THE CONTRACT SHALL APPLY TO THIS WORK.

ALL MATERIAL SHALL BE NEW AND LISTED FOR ITS INTENDED USE. WHERE UNDERWRITER'S LABORATORIES LABELING IS AVAILABLE FOR THE CLASS OF MATERIAL INVOLVED, MATERIALS SHALL BE FURNISHED WITH UL LABEL OR LISTING, OR THE CONTRACTOR SHALL PROVE IT IS NOT REQUIRED. ALL EQUIPMENT SHALL HAVE UL LABELS AND BE LISTED FOR ITS INTENDED USE.

ELECTRICAL CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS FOR PERMITS, LICENSES, FEES, INSPECTIONS, INSURANCE FOR PROTECTION AGAINST PUBLIC LIABILITY AND PROPERTY DAMAGE FOR THE DURATION OF THE WORK UNDER THIS CONTRACT AT HIS EXPENSE.

CONTRACTOR SHALL COMPLY WITH ALL RULES AND REGULATIONS OF OSHA AS APPLIED TO CONSTRUCTION PROJECTS.

IN THE EVENT A CONFLICT OCCURS BETWEEN THE CONTRACT, SPECIFICATIONS, DRAWINGS, REFERRED TO MANUFACTURERS' LITERATURE, CODES HAVING JURISDICTION OR OTHER DOCUMENTS REFERRED TO HEREIN, THIS CONTRACTOR SHALL CONTACT THE ARCHITECT AND ENGINEER FOR A RULING AND CLARIFICATION PRIOR TO SUBMITTING ANY BID DOCUMENTS. WHERE CONFLICTS ARE QUESTIONED AFTER BID SUBMITTALS, THE DOCUMENT OR DOCUMENTS WITH THE MOST STRINGENT, EXPENSIVE AND DETAILED REQUIREMENTS WILL BE ENFORCED BY THE ARCHITECT AND ENGINEER. THE CONTRACTOR SHALL BE REQUIRED TO FURNISH AND INSTALL THE MORE STRINGENT REQUIREMENTS AND AGREES THAT NO SEPARATE OR EXTRA PAYMENTS WILL BE MADE FOR ANY ITEM OF WORK OR MATERIALS REQUIRED TO FOLLOW THE MORE STRINGENT REQUIREMENTS.

ALL EQUIPMENT AND MATERIAL SHALL BE INSTALLED IN A FIRST CLASS WORKMAN-LIKE MANNER AND ALIGNED, LEVELED AND ADJUSTED FOR SATISFACTORY OPERATION. INSTALL EQUIPMENT SO THAT ALL PARTS ARE EASILY ACCESSIBLE FOR INSPECTION, OPERATION, MAINTENANCE AND REPAIR.

THE WORD "PROVIDE" MEANS THAT THIS CONTRACTOR SHALL FABRICATE, ERECT, CONNECT AND COMPLETELY INSTALL COMPLETE SYSTEMS PLACED IN PROPER OPERATING CONDITION. THIS SHALL INCLUDE ALL LABOR, PRODUCT OPTIONS, ACCESSORIES AND INCIDENTAL MATERIALS REQUIRED TO COMPLETE THE INSTALLATION.

THE WORD "CONNECT" MEANS THAT THIS CONTRACTOR SHALL PROVIDE (SEE DEFINITION ABOVE) ALL DISCONNECTING MEANS, OVERCURRENT PROTECTION AND WIRING REQUIRED TO PLACE THE EQUIPMENT AND SYSTEMS IN PROPER OPERATING CONDITION AND TO COMPLY WITH CODE REQUIREMENTS.

ALL ELECTRICAL APPARATUS SHALL BE INSTALLED AT THE SAME MOUNTING HEIGHTS (UNLESS ALTERED BY AMERICANS WITH DISABILITIES ACT – ADA), USING THE SAME MATERIALS AND METHODS USED IN THE EXISTING CONSTRUCTION. THE QUALITY, PERFORMANCE AND APPEARANCE OF THE NEW CONSTRUCTION SHALL MATCH THAT OF ANY EXISTING CONSTRUCTION.

02 SCOPE
ELECTRICAL CONTRACTOR SHALL FURNISH ALL, BUT NOT LIMITED TO, EQUIPMENT, TOOLS, SKILLED SUPERVISION NECESSARY FOR THE CONSTRUCTION, ERECTION, INSTALLATION, CONNECTION, TESTING AND ADJUSTMENT OF ALL CIRCUITS AND ELECTRICAL EQUIPMENT SHOWN OR NOTED ON PLANS.

IT SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO PROVIDE AND INSTALL ALL WORK IN ACCORDANCE WITH THE SPECIFICATIONS ASSOCIATED WITH THESE DRAWINGS. THE INSTALLATION OF ALL WORK PREFORMED AND ALL MATERIALS PROVIDED SHALL BE AS DIRECTED BY THE SPECIFICATIONS KEEPING IN MIND THAT THE NATIONAL ELECTRICAL CODE SHALL BE CONSIDERED AS A MINIMUM STANDARD AND THESE SPECIFICATIONS SHALL GOVERN ALL WORK. ALL EQUIPMENT SHALL BE AS SPECIFIED ON PLANS.

ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL A COMPLETE AND FULLY OPERATIONAL ELECTRICAL SYSTEM, INSTALLED IN A GOOD WORKMANSHIP MANNER.

ELECTRICAL CONTRACTOR SHALL INCLUDE ALL LABOR, EQUIPMENT, TOOLS AND MATERIALS FOR ELECTRIC DISTRIBUTION, AS SHOWN ON DRAWINGS.

ELECTRICAL CONTRACTOR SHALL COORDINATE WITH POWER AND TELEPHONE COMPANIES AND ADHERE TO REQUIRED CRITERIA.

ELECTRICAL CONTRACTOR SHALL COORDINATE WITH ALL OTHER TRADES PRIOR TO ROUGHING.

ELECTRICAL CONTRACTOR SHALL FURNISH ALL NEW SWITCHBOARDS, PANELBOARDS, TRANSFORMERS, DISCONNECT SWITCHES, ETC. THAT ARE MANUFACTURED BY THE SAME MANUFACTURER. NEW PANELBOARDS ADDED TO AN EXISTING FACILITY SHALL BE OF THE SAME MANUFACTURER AS THE EXISTING PANELBOARDS.

UNLESS NOTED AS EXISTING, ALL EQUIPMENT, WIRING, DEVICES, LUMINAIRES, LAMPS, ETC., SHALL BE NEW AND AS SPECIFIED.

IT SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR FOR THE ADVANCE ORDERING OF LONG LEAD ITEMS SO AS NOT TO INTERFERE WITH THE PRODUCTION OF OTHER TRADES RESULTING IN ANY DOWN OR LAG TIME.

03 QUALITY ASSURANCE
THIS CONTRACTOR SHALL VERIFY THE LOCATIONS AND MEASUREMENTS OF EQUIPMENT AND DEVICES BEFORE INSTALLATION TO AVOID CONFLICT WITH THE WORK OF OTHER TRADES. ANY UNCERTAINTIES AND CONFLICTS SHALL BE SUBMITTED TO THE ENGINEER FOR FINAL DECISION.

THE INTEGRITY OF ALL STRUCTURAL, FIRE AND SMOKE RATED PARTITIONS AND CEILINGS, ROOFING, AND WATER PROOFING SHALL BE MAINTAINED.

CHECK NAMEPLATE DATA AND INSTALLATION DOCUMENTS OF ALL OWNER FURNISHED EQUIPMENT AND EQUIPMENT FURNISHED BY OTHER TRADES. VERIFY CIRCUIT SIZE, CONTROL REQUIREMENTS, AND MISCELLANEOUS REQUIREMENTS AGAINST THAT SHOWN IN THESE DOCUMENTS. ANY CONFLICT AND UNCERTAINTIES SHALL BE SUBMITTED TO THE ENGINEER FOR FINAL DECISION.

04 TESTS
UPON COMPLETION OF WORK, THE CONTRACTOR SHALL DEMONSTRATE THE INSTALLATION AND MAKE SUCH TESTS AS MAY BE REQUIRED TO SATISFY THE ENGINEER AND OWNER THAT THE WORK IS INSTALLED IN ACCORDANCE WITH DRAWINGS, SPECIFICATIONS AND EQUIPMENT MANUFACTURER'S INSTRUCTIONS.

TEST ALL LIGHTS, EQUIPMENT, APPLIANCES, AND OTHER SYSTEMS. ALL DEFECTS SHALL BE PROMPTLY REMEDIED AT NO ADDITIONAL COST TO THE OWNER.

THE CONTRACTOR SHALL TEST ALL WIRING AND CONNECTIONS FOR CONTINUITY AND GROUNDS AND CORRECT ALL FAULTS AT NO ADDITIONAL COST TO THE OWNER.

CHECK SERVICE GROUND. RESISTANCE TO GROUND SHALL NOT EXCEED 25 OHMS.

CHECK ALL EMPTY RACEWAYS TO ASSURE AN UNOBSTRUCTED AND USEABLE PATH FOR USE BY OTHER TRADES OR THE OWNERS VENDOR.

05 WARRANTY
THE CONTRACTOR SHALL GUARANTEE THE SYSTEM INSTALLATION FOR A PERIOD OF ONE YEAR FROM DATE OF FINAL ACCEPTANCE AGAINST ANY DEFECT IN WORKMANSHIP OR MATERIAL. EXCEPTION: INCANDESCENT LAMPS SHALL BE GUARANTEED FOR 90 DAYS.

THE CONTRACTOR SHALL BE RESPONSIBLE TO REPAIR TO ORIGINAL CONDITION ANY AND ALL DAMAGES TO BUILDING SURFACES,EQUIPMENT AND FURNISHINGS CAUSED DURING PERFORMANCE OF WORK.

CORRECTION OF ANY DEFECTS SHALL BE COMPLETED WITHOUT ADDITIONAL CHARGE AND SHALL INCLUDE REPLACEMENT OR REPAIR OF ANY OTHER PHASE OF THE INSTALLATION WHICH MAY HAVE BEEN DAMAGED THEREBY.

ALL TEST EQUIPMENT SHALL BE FURNISHED BY THE CONTRACTOR AT HIS EXPENSE.

06 RECORD DRAWINGS
DURING THE CONSTRUCTION OF THIS PROJECT, THE CONTRACTOR SHALL MAINTAIN ONE COMPLETE SET OF ELECTRICAL CONTRACT DRAWINGS ON WHICH SHALL BE RECORDED ALL, BUT NOT LIMITED TO, SIGNIFICANT CHANGES IN EQUIPMENT LOCATIONS, CIRCUIT ASSIGNMENT DEVIATIONS, EQUIPMENT SIZE CHANGES, ADDITIONS AND DELETIONS TO THE PROJECT, LOCATIONS OF ALL CONDUITS AND WIRING BELOW GRADE, LOCATIONS OF ALL INSTALLED PULL AND JUNCTION BOXES, FEEDER CIRCUIT LOCATIONS, ETC. THIS SET OF DRAWINGS SHALL BE USED TO PREPARE RECORD DRAWINGS TO BE SUBMITTED TO THE OWNER UPON COMPLETION OF THE PROJECT.

UPON COMPLETION OF THE PROJECT, THE CONTRACTOR SHALL PREPARE AN OPERATION AND MAINTENANCE MANUAL WHICH SHALL INCLUDE CATALOG DATA, EQUIPMENT INFORMATION, WIRING DIAGRAMS, WARRANTY INFORMATION, RECOMMENDED MAINTENANCE PROCEDURES, REPLACEMENT PARTS LISTS, ETC. FOR THE ELECTRICAL INSTALLATION. THE QUANTITIES OF MANUALS SHALL BE AS REQUIRED BY THE ARCHITECTURAL SECTIONS OF THESE SPECIFICATIONS. THESE MANUALS SHALL BE DELIVERED TO THE ARCHITECT FOR APPROVAL AND PRESENTATION TO THE OWNER.

07 SUBMITTALS
SHOP DRAWINGS OF MATERIALS, EQUIPMENT, LIGHTING FIXTURES AND WIRING DEVICES SHALL BE SUBMITTED FOR APPROVAL. ALL EQUIPMENT SHALL BE AS SPECIFIED HERE IN OR AS CALLED FOR ON THE DRAWINGS AND ANY ITEM NOT SUBMITTED SHALL BE PROVIDED AS SPECIFIED. THE RESPONSIBILITY TO ACCEPT OR REJECT ANY PROPOSED SUBSTITUTION REMAINS WITH THE PROJECT ENGINEER.

ALL OPERATING AND MAINTENANCE MANUALS SHALL BE DELIVERED TO THE OWNER.

SUBMIT CERTIFICATES OF INSPECTION AND ACCEPTANCE TO THE ENGINEER.

ANY ADDITIONAL COSTS INCURRED FOR SUBSTITUTE EQUIPMENT, MATERIALS AND METHODS SHALL BE PAID BY THE CONTRACTOR UNLESS APPROVED BY THE ENGINEER. CREDITS SHALL BE GIVEN TO THE OWNER WHERE SUCH SUBSTITUTE EQUIPMENT AND METHODS RESULT IN LESS EXPENSE TO THE CONTRACTOR.

ANY AND ALL DELAYS CAUSED BY THE REJECTION AND RE-SUBMITTAL OF SHOP DRAWINGS THAT ARE OR WERE IN CONFLICT WITH THE CONTRACT DRAWINGS SHALL BE THE DIRECT RESPONSIBILITY OF THIS CONTRACTOR.

CONTRACTOR AND EQUIPMENT SUPPLIERS SHALL PERFORM AND PROVIDE ALL COORDINATION STUDIES AND ARC FLASH STUDIES REQUIRED BY NATIONAL ELECTRICAL CODE FOR ALL REQUIRED SYSTEMS. REPORTS SHALL BE PROVIDED TO ENGINEER, INSPECTIONS DEPARTMENT AND OWNER.

08 CLEANING
THE ELECTRICAL CONTRACTOR SHALL KEEP ALL AREAS IN WHICH WORK IS BEING PERFORMED, FREE FROM DEBRIS AT ALL TIMES AND SAID AREAS SHALL BE LEFT BROOM CLEAN AT THE END OF EACH WORKING DAY.

ALL ELECTRICAL WORK SHALL BE CLEANED AND MADE READY FOR FINAL INSPECTION AND USE BY THE OWNER.

09 CONTRACT DOCUMENTS
THE CONTRACT DOCUMENTS ARE DIAGRAMMATIC AND ARE NOT INTENDED TO INDICATE EVERY DETAIL OF CONSTRUCTION OR EVERY ITEM OF MATERIAL OR EQUIPMENT REQUIRED. THE CONTRACT DOCUMENTS ARE INTENDED TO ILLUSTRATE AND SPECIFY THE GENERAL EXTENT, TYPE OF SYSTEM AND PERFORMANCE WITH ANY SPECIAL CONDITION AND FUNCTIONS REQUIRED. THE ELECTRICAL CONTRACTOR SHALL BE EXPECTED TO FURNISH AND INSTALL ALL ITEMS FOR A COMPLETE AND OPERATABLE ELECTRICAL SYSTEM AND PROVIDE ALL REQUIREMENTS NECESSARY FOR EQUIPMENT TO BE PLACED IN PROPER WORKING ORDER.

CONTRACTOR SHALL MAINTAIN ON THE JOB SITE ONE COMPLETE SET OF CONTRACT DOCUMENTS OF ALL TRADES AND SHALL COORDINATE WITH OTHER TRADES SO AS TO AVOID CONFLICTS AND PROVIDE EQUIPMENT CONNECTIONS AS REQUIRED BY EQUIPMENT SHOP DRAWINGS AND EQUIPMENT NAMEPLATES.

INDICATED LOCATIONS OF OUTLETS, EQUIPMENT CONNECTIONS, ETC. ARE APPROXIMATE AND SHALL BE VERIFIED BY REFERENCE TO RELATED DOCUMENTS (I.E. ARCHITECTURAL DRAWINGS, EQUIPMENT SHOP DRAWINGS, MANUFACTURER'S INSTRUCTIONS, MECHANICAL AND PLUMBING DRAWINGS, STRUCTURAL DRAWINGS, ETC.).

ANY SLASH MARKS SHOWN FOR CONDUCTOR QUANTITIES ARE INTENDED TO ILLUSTRATE THE WIRING INTENT ONLY. NOTE THAT IT IS NOT THE INTENT OF THE CONTRACT DRAWINGS TO INDICATE ALL CONDUCTORS REQUIRED TO PROVIDE COMPLETE AND FULLY OPERABLE WIRING SYSTEMS.

RISER DIAGRAMS ARE DIAGRAMMATIC AND NOT INTENDED TO SHOW ALL REQUIRED MATERIALS, DEVICES AND QUANTITIES OF STATIONS OR DEVICES. THE FLOOR PLANS, SPECIFICATIONS, CODES, REGULATIONS, LAWS, AND MANUFACTURER REQUIREMENTS ALSO SUPPLEMENT AND GOVERN THE REQUIREMENTS AND QUANTITIES OF DEVICES FOR THE SYSTEMS.

THE CONTRACT DOCUMENTS ARE INTENDED TO ILLUSTRATE TO COMPETENT AND EXPERIENCED CONTRACTORS AND WORKMEN THE SYSTEMS REQUIRED AND TO PERMIT SUCH PEOPLE TO TAKE-OFF THE REQUIRED MATERIALS AND EQUIPMENT, LAY OUT THE WORK SPECIFIED, AND EXECUTE ALL NECESSARY MEANS REQUIRED TO PROVIDE THE COMPLETE AND OPERABLE SYSTEMS SPECIFIED AND ILLUSTRATED.

10 GROUNDING AND BONDING
THE SERVICE CONDUITS, EQUIPMENT, AND NEUTRAL CONDUCTORS SHALL BE GROUNDED. THE GROUND CONNECTIONS FOR SYSTEM NEUTRAL AND CONDUIT SYSTEMS SHALL BE MADE AT THE SERVICE ENTRANCE. RUN A BARE COPPER GROUNDING CONDUCTOR IN CONDUIT FROM POINT OF ENTRANCE EQUIPMENT TO THE METAL COLD WATER LINE WHERE IT ENTERS THE BUILDING PLUS THE BUILDING STEEL IF AVAILABLE. PROVIDE A SUPPLEMENTAL MADE ELECTRODE (BUILDING GROUND ROD(S), OTHER METAL UNDERGROUND SYSTEMS OR STRUCTURES, OR PLATE ELECTRODE IN ACCORDANCE WITH NEC 250-66 IF BUILDING STEEL IS NOT AVAILABLE. THE GROUNDING CONDUCTOR SHALL BE SIZED IN ACCORDANCE WITH THE NEC 250-122. ALL GROUNDING CONDUCTORS SHALL BE INSTALLED AS TO PERMIT SHORTEST PATH FROM EQUIPMENT TO GROUND. ALL CONNECTIONS TO GROUNDING CONDUCTORS SHALL BE ACCESSIBLE FOR INSPECTION AND MADE WITH APPROVED SOLDERLESS CONNECTORS, EXOTHERMIC WELD, OR BOLTED TO THE EQUIPMENT OR STRUCTURE TO BE GROUNDED. ALL CONTACT SURFACES SHALL BE THOROUGHLY CLEANED BEFORE CONNECTIONS ARE MADE TO INSURE GOOD METAL TO METAL CONTACT. ALL CONNECTIONS TO GROUND RODS AND OR BUILDING FOOTER STEEL SHALL BE MADE BY EXOTHERMIC WELDS. IN NO CASE SHALL THE RESISTANCE OF THE "GROUND" EXCEEDED 25 OHMS.

ALL ELECTRICAL WORK SHALL BE GROUNDED IN ACCORDANCE WITH NEC ARTICLE 250.

ALL "CSST" GAS PIPING SHALL HAVE A BONDING GROUND IN ACCORDANCE WITH NEC ARTICLE 250 AND SIZED PER NEC TABLE 250.66.

WIRING IN PVC CONDUIT SHALL HAVE AN EQUIPMENT GROUNDING CONDUCTOR.

PROVIDE EQUIPMENT GROUNDING MEANS FOR TELEPHONE EQUIPMENT AND FIRE ALARM SYSTEM SPACES.

GROUND FAULT CIRCUITS SHALL HAVE AN EQUIPMENT GROUNDING CONDUCTOR.

PROVIDE AN INSULATED EQUIPMENT GROUNDING CONDUCTOR IN EACH RACEWAY UNLESS OTHERWISE NOTED.

EACH GROUNDED RECEPTACLE SHALL HAVE A GROUNDING JUMPER ATTACHED TO THE BOX WITH A SCREW. REMOVAL OF ANY DEVICE SHALL NOT DISRUPT THE GROUND CONTINUITY OF DOWNSTREAM DEVICES.

11 WIRING
BRANCH CIRCUIT CONDUCTORS SHALL BE MINIMUM NO. 12 AWG, UNLESS OTHERWISE INDICATED ON THE DRAWINGS. CONDUCTORS FOR SIGNAL AND PILOT CONTROL CIRCUITS MAY BE NO. 16 AWG.

ALL CONDUCTORS SHALL BE STRANDED OR SOLID COPPER CONDUCTORS FOR #12 AND #10 AWG AND STRANDED FOR #8 AND LARGER WITH 600 VOLT THHN/THWN INSULATION UNLESS OTHERWISE SHOWN ON THE DRAWINGS. INSULATION TO LIGHT FIXTURES OR SPECIAL EQUIPMENT SHALL BE AS REQUIRED BY NAMEPLATES OR TO SUITE THE CONDITION. CONDUCTORS FOR CIRCUITS & EQUIPMENT RATED 100 AMP OR LESS SHALL BE SIZED FOR 60°C. CONDUCTORS FOR CIRCUITS & EQUIPMENT RATED ABOVE 100 AMP SHALL BE SIZED FOR 75°C.

TO COMPENSATE FOR VOLTAGE DROP ACROSS A BRANCH CIRCUIT, WIRE SHALL BE UPSIZED IN RELATION TO LENGTH. SEE CONDUCTOR SIZING TABLE AND APPLY ACCORDINGLY.

COLOR CODE CONDUCTORS FOR VOLTAGE SYSTEMS SHALL BE AS FOLLOWS:

208 VOLTS		480 VOLTS	
A PHASE:	BLACK	A PHASE:	BROWN
B PHASE:	RED	B PHASE:	ORANGE
C PHASE:	BLUE	C PHASE:	YELLOW
NEUTRAL:	WHITE	NEUTRAL:	GRAY
	GROUNDING CONDUCTORS:		GREEN

CONDUCTORS SHALL BEAR READABLE MARKINGS ALONG THE ENTIRE LENGTH.

CONDUCTORS #6 AWG OR SMALLER SHALL BEAR FACTORY COLOR INSULATION COMPLYING WITH SYSTEM PHASING ALONG THE ENTIRE LENGTH.

TYPE "MC" CABLE SHALL HAVE FACTORY COLOR INSULATION ON CONDUCTORS COMPLYING WITH SYSTEM PHASING ALONG THE ENTIRE LENGTH OF THE CONDUCTORS. FIELD PHASE TAPING WILL NOT BE ALLOWED. THE USE OF TYPE "ACT" OR "NM" CABLE SHALL BE PROHIBITED.

JOINTS FOR #10 AWG OR SMALLER SHALL BE MADE WITH APPROVED TWIST-ON TYPE CONNECTORS AND INSULATED WITH SCOTCH #33 ELECTRICAL TAPE. JOINTS FOR #8 OR LARGER SHALL BE WITH MECHANICAL PRESSURE TYPE CONNECTORS OR LUGS AND PROPERLY TAPED WITH SCOTCHFILL AND SCOTCH #33 ELECTRICAL TAPE TO 150% OF THE INSULATING VALUE OF THE CONDUCTOR.

WIRING WITHIN PANELBOARDS, JUNCTION BOXES AND OUTLET BOXES SHALL BE NEATLY SQUARED AND BUNCHED TOGETHER. DO NOT USE PLASTIC TIE WRAP SYSTEMS.

PROVIDE CIRCUIT NUMBER ON EACH CONDUCTOR WITHIN PANELBOARDS, JUNCTION BOXES AND OUTLET BOXES.

PROVIDE PANEL NAME AND CIRCUIT NUMBERS ON ALL JUNCTION BOX COVERS INDICATING CIRCUIT CONTAINED WITHIN BOX WITH PERMANENT MARKER.

ALL WIRING LUGS AND TERMINALS THROUGHOUT THE PROJECT, INCLUDING BUT NOT LIMITED TO LUGS FOR SWITCHBOARDS, PANELBOARDS, CIRCUIT BREAKERS, MOTOR STARTERS, TRANSFORMERS, WIRING DEVICES, AND/OR EQUIPMENT SHALL BE 75° TEMPERATURE RATING. LUG AND TERMINAL SIZES SHALL MATCH THE CONDUCTOR SIZE.

PARALLEL CONDUCTORS SHALL BE EXACTLY THE SAME LENGTH.

TRAVELERS FOR SWITCHING SHALL BE THE SAME COLOR AS THE PHASE CONDUCTORS.

NO MORE THAN THREE CIRCUITS SHALL BE ALLOWED IN ANY ONE CONDUIT. NO CONDUIT SHALL CONTAIN ANY SHARED NEUTRAL CONDUCTORS OR MORE THAN ONE CONDUCTOR OF THE SAME PHASE.

12 CONDUIT SYSTEMS
ALL WIRING SHALL BE IN CONDUIT OR TYPE "MC" CABLE WHICH IS ALLOWABLE IN CONCEALED LOCATIONS ONLY FOR SIZES #12 & #10 CONDUCTORS WITH INSULATED GROUND AND INSULATED THROAT CONNECTORS. MINIMUM SIZE CONDUIT IS 1/2". THE CONDUIT SHALL BE INTERMEDIATE (IMC), RIGID GALVANIZED (RGS) OR ELECTRICAL METALLIC TUBING (EMT) WITH STEEL COMPRESSION TYPE FITTINGS.

ALL WIRING FOR POWER, FIRE ALARM, SECURITY AND/OR COMMUNICATIONS IN EXPOSED AREAS SHALL BE IN CONDUIT.

ALL CONDUITS IN FINISHED AREAS SHALL BE CONCEALED UNLESS OTHERWISE INDICATED ON THE DRAWINGS.

ALL CONDUITS IN UNFINISHED AREAS MAY BE RUN EXPOSED AND SHALL BE PARALLEL WITH AND PERPENDICULAR TO THE STRUCTURE.

PVC SCHEDULE 40 WILL BE ALLOWED UNDERGROUND, BELOW FLOOR SLABS, OUTSIDE OF THE BUILDING FOUNDATION BELOW GRADE, FOR SERVICES TO BUILDING NOT SUBJECT TO PHYSICAL DAMAGE, OR WHERE INDICATED ON THE DRAWINGS; HOWEVER, ALL RISERS AND ELBOWS SHALL BE GALVANIZED RIGID STEEL. RGS CONDUITS SHALL EXTEND A MINIMUM OF 18" BELOW GRADE. APPLY BITUMASTIC COATING TO ALL METALLIC CONDUITS IN SLABS OR UNDERGROUND. THE USE PVC SHALL BE AVOIDED WHERE CONDUIT IS SUSCEPTIBLE TO PHYSICAL DAMAGE SHALL BE ACCEPTABLE PROVIDING IT IS NOT EXPOSED TO VIEW.

ALL MOTORS, EQUIPMENT, AND OTHER ITEMS SUBJECT TO VIBRATION SHALL BE CONNECTED WITH FLEXIBLE METAL CONDUIT (FMC) OR LIQUIDTIGHT FLEXIBLE METAL CONDUIT (LFMC) WITH LISTED FITTINGS.

FLEXIBLE METAL CONDUIT SHALL BE STEEL. FLEXIBLE CONDUIT OUTDOORS OR IN DAMP OR WET LOCATIONS SHALL BE LIQUID-TIGHT WITH BITE-TIGHT STEEL CONNECTORS. ALL CABLES SHALL BE SECURED WITHIN 12" OF TERMINATIONS AND EVERY SIX (6) FEET.

CONDUIT PENETRATIONS THROUGH RATED WALLS OR ASSEMBLIES SHALL BE SEALED WITH A UL LISTED FIRE SEALANT.

CONDUIT RUN THROUGH BUILDING EXPANSION JOINTS SHALL HAVE APPROPRIATE CONDUIT EXPANSION FITTINGS.

CONDUITS IN HAZARDOUS AREAS SHALL BE THREADED GALVANIZED RIGID STEEL (GRS), THREADED INTERMEDIATE METAL CONDUIT (IMC) OR LIQUIDTIGHT FLEXIBLE METAL CONDUIT (LFMC) WITH LISTED FITTINGS.

CONDUITS PASSING THROUGH BUILDING FOUNDATION WALLS OR OTHER MOISTURE PRONE SURFACE SHALL BE PROPERLY WATER PROOFED.

WHERE CORE DRILLING OF FLOOR/WALLS ARE REQUIRED, CONTRACTOR SHALL SEAL OPENINGS WATERTIGHT AFTER UTILITIES HAVE BEEN INSTALLED. LOCATION OF CORED HOLES SHALL BE COORDINATED WITH LOCATION OF EQUIPMENT IN A MANNER TO BE CLEAN AND FUNCTIONAL. THE CONTRACTOR SHALL INSTALL ONLY ONE CONDUIT PER HOLE AND SEAL THE OPENING AROUND THE CONDUIT AS SPECIFIED.

CONDUITS RUN IN FLOOR SLABS SHALL BE SPACED APART AND REMAIN CLEAR OF STRUCTURAL COLUMNS AS REQUIRED BY THE STRUCTURAL ENGINEER.

CONDUITS PENETRATING THE ROOF STRUCTURE FOR THE PURPOSE OF SERVING EQUIPMENT SHALL UTILIZE THE OPENINGS THROUGH ROOF CURBS WHERE POSSIBLE. PENETRATIONS THROUGH THE ROOF SHALL BE HELD TO A MINIMUM.

SERVICE ENTRANCE CONDUITS SHALL BE SPACED APART AS REQUIRED BY NEC AND LOCAL CODES.

CONDUITS PENETRATING THE ROOF SHALL BE PROVIDED WITH A SUITABLE PREFABRICATED ROOF CURB OR PITCH POCKET.

FLEXIBLE CONDUIT WHIPS TO LIGHTING FIXTURES MAY BE 3/8" WITH A MAXIMUM LENGTH OF 6'-0" AND SUPPORTED WITHIN 12" OF TERMINATIONS.

ALL WIRING SHALL BE INSTALLED IN CONDUIT IN ACCORDANCE WITH THE N.E.C. AND SO THAT THE REQUIRED CONDUCTORS MAY BE PULLED WITHOUT INJURY OR STRAIN AND PROPERLY SUPPORTED.

PROVIDE ALL PULL BOXES AND FITTINGS WHEREVER NECESSARY OR SHOWN. ALL STRAIGHT CONDUIT RUNS SHALL NOT EXCEED 100 FEET WITHOUT PULL BOX, NOT OVER 75 FEET FOR RUN WITH ONE (1) RIGHT ANGLE BEND AND NOT OVER 50 FEET FOR RUN WITH TWO (2) RIGHT ANGLES.

ALL CONDUIT SHALL BE PROPERLY SUPPORTED IN ACCORDANCE WITH THE N.E.C. AND SECURED WITHIN THREE (3) FEET OF TERMINATION AND ALL CONDUITS SHALL BE INDEPENDENTLY SUPPORTED EVERY TEN (10) FEET FROM STRUCTURE AND NOT FROM DUCTWORK, CEILING HANGERS OR CEILING SUPPORT WIRES. ALL EMPTY CONDUITS SHALL BE PROVIDED WITH PULL WIRES AND NYLON BUSHINGS AT BOTH ENDS.

13 LIGHTING FIXTURES
FURNISH AND INSTALL LIGHTING FIXTURES AS SHOWN AND SCHEDULED ON THE DRAWINGS.

THE CATALOG NUMBERS GIVEN IDENTIFY THE SERIES OF LIGHT FIXTURE ONLY AND MAY NOT SPECIFY ALL MOUNTING HARDWARE AND ACCESSORIES REQUIRED. THE CATALOG NUMBERS ALSO MAY NOT IDENTIFY ALL ITEMS AND FINISHES REQUIRED BY THE LIGHT FIXTURE DESCRIPTION. INCLUDE ALL REQUIRED HARDWARE AND ACCESSORIES.

COORDINATE FIXTURE TYPE AND TRIM WITH CEILING CONSTRUCTION. RECESSED INCANDESCENT, FLUORESCENT, LED AND HID LIGHTING FIXTURES SHALL HAVE THERMAL PROTECTION. FIXTURES RECESSED IN INSULATED CEILINGS SHALL BE LISTED FOR DIRECT CONTACT WITH INSULATION MATERIAL OR MAINTAIN REQUIRED CLEARANCES FROM INSULATION.

RECESSED LIGHTING FIXTURES IN NON-ACCESSIBLE CEILINGS SHALL HAVE BOTTOM ACCESS.

ALL LINEAR FIXTURES IN LAY-IN CEILINGS SHALL BE SUPPORTED FROM THE STRUCTURE INDEPENDENT OF THE CEILING SYSTEM AT ALL FOUR (4) CORNERS AND ATTACHED WITH LISTED GRID CLIPS. ALL OTHER RECESSED FIXTURES (ie. RECESSED CANS) IN LAY-IN CEILINGS SHALL BE SUPPORTED FROM THE STRUCTURE INDEPENDENT OF THE CEILING SYSTEM AT TWO LOCATIONS (OPPOSITE SIDES) AND ATTACHED WITH LISTED GRID CLIPS.

RECESSED LIGHT FIXTURES IN FIRE RATED CEILINGS SHALL HAVE A FIRE RATED "TENT" BUILT OVER THE FIXTURE TO MAINTAIN THE STATED INTEGRITY OF THE CEILING. SUCH FIXTURES SHALL BE RATED FOR INSTALLATION IN AN INSULATED CEILING AND DESIGNED TO WITHSTAND THE INCREASED TEMPERATURE BUILD-UP AROUND THE FIXTURE.

LIGHTING FIXTURES INDICATED TO BE INSTALLED IN WET OR DAMP LOCATIONS SHALL HAVE THE APPROPRIATE UL "WET" OR "DAMP" LABELS.

THE MANUFACTURER OF EACH LIGHTING FIXTURE SHALL REVIEW THE APPLICATION OF HIS EQUIPMENT AND CERTIFY AT THE TIME OF SHOP DRAWING SUBMITTAL THAT HIS FIXTURE HAS BEEN PROPERLY APPLIED AND CAN BE INSTALLED, MAINTAINED AND SERVICED WHERE SHOWN ON THE DRAWINGS.

14 BALLASTS
BALLASTS SHALL BE ELECTRONIC TYPE <10% THD MINIMUM OR AS SPECIFIED IN THE LIGHTING FIXTURE SCHEDULE.

LIGHTING FIXTURES IN COLD ATMOSPHERE SHALL HAVE BALLASTS SUITABLE FOR THE TEMPERATURE TO BE ENCOUNTERED.

BALLASTS SHALL BE MANUFACTURED BY OSRAM/SYLVANIA, UNIVERSAL, OR ADVANCE.

15 LED DRIVERS
LED ELECTRONIC DRIVERS SHALL BE UL CLASS 2 AND HAVE A SOUND RATING OF CLASS "A" WITH A LIFE EXPECTANCY OF 50,000 HOUR

SYMBOL SCHEDULE

GENERAL SYMBOLS

- HOMERUN TO PANELBOARD. SEE "CIRCUIT HOMERUN AND CONDUCTOR LOGIC".
- CONDUIT RUN CONCEALED OVERHEAD ABOVE CEILING AND IN WALLS OR MC CABLE WHERE PERMITTED. USE SURFACE RACEWAY SYSTEM EXPOSED ON INACCESSIBLE EXISTING CONSTRUCTION.
- CONDUIT RUN EXPOSED.
- CONDUIT RUN CONCEALED BELOW FLOOR.
- FLEXIBLE CONDUIT WITH CONNECTION TO EQUIPMENT SERVED.
- GROUND SIZED PER NEC 250.
- 120/208 VOLT PANELBOARD. SEE PANEL SCHEDULE.
- 277/480 VOLT PANELBOARD. SEE PANEL SCHEDULE.
- MONITORING PANEL, SEE PLANS FOR DESCRIPTION.

SWITCHES

- $ — SWITCH RATED 120/277 VOLTS AND 20 AMPERES. SUBSCRIPTS FOR BASIC SYMBOL.
  - BLANK– SINGLE POLE
  - 2– DOUBLE POLE
  - 3– THREE WAY
  - 4– FOUR WAY
  - D– DIMMER WITH SILICON CONTROLED RECTIFIER (DEVICE SHALL BE COMPATIBLE WITH THE LOAD IT SERVES, VERIFY)
  - P– PILOT LIGHT
  - 3,D– THREE WAY SWITCH WITH DIMMING OPTION
- $$ — TWO SWITCHES IN COMMON OUTLET BOX AT 48" AFF.
- ^{OC} $_{OC}$ — SWITCH RATED 120/277 VOLTS AND 20 AMPERES WITH OCCUPANT SENSOR FOR MANUAL ON AND AUTO OFF AFTER PRESET TIME.
- ^{OC,D} $_{OC,D}$ — COMBO SWITCH RATED 120/277 VOLTS AND 20 AMPERES WITH DIMMER AND OCCUPANT SENSOR FOR MANUAL ON AND AUTO OFF AFTER PRESET TIME.
- TC — TIME CLOCK – ELECTRONIC 24 HOUR–7 DAY
- LC — LIGHTING CONTROL LIGHTING CONTACTOR.
- OS — LINE VOLTAGE TYPE DUAL TECHNOLOGY CEILING MOUNTED OCCUPANT SENSOR

WIRING DEVICES

- 120V, 20A DUPLEX RECEPTACLE WALL MOUNTED AT 18" AFF UNLESS OTHERWISE NOTED
  - EWC– GFCI TYPE RECEPTACLE SERVING ELECTRIC WATER COOLER. COORDINATE EXACT LOCATION AND MOUNTING HEIGHT WITH PLUMBING CONTRACTOR AND INSTALL RECEPTACLE SO THAT IT IS CONCEALED FROM VIEW.
  - R– RECEPTACLE SERVING REFRIGERATOR. COORDINATE EXACT LOCATION AND MOUNTING HEIGHT WITH EQUIPMENT CONTRACTOR AND INSTALL RECEPTACLE SO THAT IT IS CONCEALED FROM VIEW AND DOES NOT IMPEDE THE INSTALLATION OF THE REFRIGERATOR.
  - GFCI– DUPLEX RECEPTACLE WITH BUILT–IN GROUND FAULT CIRCUIT INTERRUPTING MECHANISM.
  - WP– WEATHERPROOF COVER.
- 120V, 20A DUPLEX RECEPTACLE WITH BOTTOM OF BOX 2" ABOVE COUNTER BACKSLASH OR AT COUNTER HEIGHT
- TWO 120V, 20A DUPLEX RECEPTACLES UNDER COMMON COVER
- TWO 120V, 20A DUPLEX RECEPTACLE UNDER COMMON COVER MOUNTED AT COUNTER HEIGHT
- 120V, 20A DUPLEX RECEPTACLE WITH ISOLATED GROUND TERMINAL–COLORED ORANGE
- 120V, 20A DUPLEX RECEPTACLE FLUSH MOUNTED IN CEILING
- SPECIAL EQUIPMENT RECEPTACLE. (SEE NOTES)

LIGHTING (SEE LIGHTING FIXTURE SCHEDULE)

EQUIPMENT CONNECTIONS

- * — CONNECTION TO 120 VOLT MOTOR.
- * — CONNECTION TO 3–PHASE MOTOR.
- HEAVY DUTY SAFETY SWITCH. (NON–FUSED) SEE "EQUIPMENT DISCONNECT SCHEDULE".
- HEAVY DUTY SAFETY SWITCH. (FUSED) SEE "EQUIPMENT DISCONNECT SCHEDULE".
- *J — JUNCTION BOX WITH CONNECTION TO EQUIPMENT SERVED.
- * — CONNECTION TO HVAC, PLUMBING OR OTHER EQUIPMENT AS NOTED.
- *WH — CONNECTION TO WATER HEATER.
- CONNECTION TO OVERHEAD DOOR. PROVIDE SAFETY SWITCH AT CONNECTION POINT. RUN POWER WIRING THROUGH DOOR CONTROLLER. CONNECT ALL DOOR CONTROLS (UP/DOWN CONTROL STATION, LIMIT SWITCHES, OBSTRUCTION SAFETY SWITCHES, ETC.)
- MOTOR CONTROLLER

* NOTE: PROVIDE A DISCONNECT ON ALL FANS, UNIT HEATERS, FAN COILS, PUMPS, AIR HANDLERS, UNIT VENTILATORS, ETC.

COMMUNICATIONS SYMBOLS

- COMBINATION DATA/TELEPHONE CABLING OUTLET. COORDINATE MOUNTING HEIGHT WITH CLOSEST POWER RECEPTACLE.
- TV OUTLET BOX.
- 2ANN — 2–COMPARTMENT RECESSED FLOOR BOX, WITH ONE DUPLEX RECEPTACLE AND ONE SECTION FOR OWNERS COMMUNICATIONS REQUIREMENTS.
- 3ANN&SD — 3–COMPARTMENT RECESSED FLOOR BOX, WITH ONE QUAD RECEPTACLE AND TWO SECTIONS FOR OWNERS COMMUNICATIONS REQUIREMENTS.
- FIRE RATED FLUSH STYLE POKE THRU DEVICE

FIRE ALARM SYMBOLS

- FACP — CONTROL PANEL.
- ANN — REMOTE ANNUNCIATOR 66" AFF TO MIDDLE OF DEVICE.
- F — MANUAL PULL STATION 48" AFF.
- F — AUDIBLE & VISUAL SIGNAL STROBE LIGHT MOUNTED @ 80" AFF. OR 6" BELOW CEILING WHICHEVER IS LOWER.
- F — VISUAL SIGNAL STROBE LIGHT MOUNTED @ 80"AFF OR 6" BELOW CEILING WHICHEVER IS LOWER.
- F — AUDIBLE & VISUAL SIGNAL STROBE LIGHT CEILING MOUNTED
- SD — PHOTO–ELECTRIC TYPE SMOKE DETECTOR.
- TD — THERMAL TYPE DETECTOR.
- SD — DUCT MOUNT SMOKE DETECTOR WITH RELAY BASE IN AIR DUCT.
- R — ADDRESSABLE CONTROL MODULE
- RT — REMOTE TEST SWITCH WITH INDICATOR LAMP FOR DUCT MOUNTED SMOKE DETECTOR
- TS — TAMPER SWITCH CONNECTED TO SPRINKLER VALVE.
- WF — WATER FLOW SWITCH CONNECTED TO SPRINKLER PIPING.

ABBREVIATIONS

ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
A	AMPERE	LC	LIGHTING CONTACTOR
A/C	AIR CONDITIONING	LED	LIGHT EMITTING DIODE
ADA	AMERICANS WITH DISABILITIES ACT	LT	LIGHT
		LTG	LIGHTING
AFF	ABOVE FINISHED FLOOR	MIN	MINIMUM
AFG	ABOVE FINISHED GRADE	MAX	MAXIMUM
AHU	AIR HANDLING UNIT	MCA	MINIMUM CIRCUIT AMPERES
AL	ALUMINUM	MCB	MAIN CIRCUIT BREAKER
AMP	AMPERE	MFS	MAXIMUM FUSE SIZE
ATS	AUTOMATIC TRANSFER SWITCH	MLO	MAIN LUGS ONLY
AWG	AMERICAN WIRE GAUGE	MOCP	MAXIMUM OVER–CURRENT PROTECTION
BB	BACKBOARD		
C	CONDUIT	MMS	MANUAL MOTOR STARTER
CB	CIRCUIT BREAKER	NEC	NATIONAL ELECTRICAL CODE
CU	CONDENSING UNIT	NEMA	NATIONAL ELECTRICAL MFRS ASSOC.
DPDT	DOUBLE POLE DOUBLE THROW		
EC	EMPTY CONDUIT	NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
EF	EXHAUST FAN		
EGC	EQUIPMENT GROUNDING CONDUCTOR	NIC	NOT IN CONTRACT
		P	POLE
EM	EMERGENCY	PB	PULL BOX
EMT	ELECTRICAL METALLIC TUBING	PE	PHOTO–ELECTRIC SWITCH
E OR EX	EXISTING	PVC	POLYVINYL CHLORIDE CONDUIT
ER	EXISTING TO BE REMOVED	PNL	PANEL
ETR	EXISTING TO REMAIN	RMC	RIGID METAL CONDUIT
F	FUSE	RTU	ROOF TOP UNIT
FACP	FIRE ALARM CONTROL PANEL	SF	SUPPLY FAN
FLA	FULL LOAD AMPERES	SPD	SURGE PROTECTIVE DEVICE
FPN	FUSE PER NAMEPLATE	SPDT	SINGLE POLE DOUBLE THROW
FT	FEET	SPST	SINGLE POLE SINGLE THROW
GC	GENERAL CONTRACTOR	SQ	SQUARE
GND	GROUND	SW	SWITCH
GF	GAS FURNACE	SWBD	SWITCHBOARD
GFCI	GROUND FAULT CIRCUIT INTERRUPTER	TTB	TELEPHONE TERMINAL BACKBOARD
GND	GROUND		
GRC	GALVANIZED RIGID STEEL CONDUIT	UH	UNIT HEATER
		UL	UNDERWRITER'S LABORATORIES
GWB	GYPSUM WALLBOARD	UNO	UNLESS NOTED OTHERWISE
HP	HORSEPOWER	UON	UNLESS OTHERWISE NOTED
HVAC	HEATING–VENTILATING–AIR CONDITIONING	UPS	UNINTERRUPTIBLE POWER SUPPLY
		V	VOLT
IG	ISOLATED GROUND	W	WATT
IMC	INTERMEDIATE METAL CONDUIT	VA	VOLT–AMPERE
KW	KILOWATT	WP	WEATHER PROOF
KVA	KILOVOLT–AMPERE	XFMR	TRANSFORMER
JB	JUNCTION BOX	XP	EXPLOSION PROOF

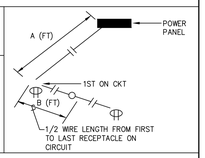
NOTES:

1. PROVIDE A BLANK COVERPLATE ON TELEPHONE OUTLETS.
2. SEE DETAILS FOR ELEVATION REPRESENTATION OF ALL DEVICE MOUNTING HEIGHTS. ALL QUESTIONS ABOUT MOUNTING HEIGHTS SHALL BE DIRECTED TO THE ARCHITECT AND ENGINEER PRIOR TO ROUGH–IN.
3. THESE ARE STANDARD SYMBOLS AND ALL MAY NOT APPEAR ON PROJECT DRAWINGS. WHEREVER THE SYMBOL ON THE PROJECT OCCURS, THE ITEM SHALL BE PROVIDED AND INSTALLED.

CONDUCTOR SIZING TABLE

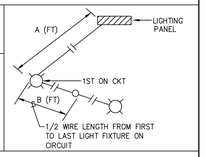
FOR 120V–20A BRANCH CIRCUITS ONLY, UNLESS OTHERWISE NOTED

IF DISTANCE A + B IN FEET IS: (SEE DIAGRAM AT RIGHT)	USE COPPER WIRE IN METALLIC CONDUIT, AWG SIZE AS FOLLOWS ON ENTIRE CIRCUIT AND SIZE CONDUIT ACCORDINGLY:
0' TO 100'	#12 (MIN.)
100' TO 175'	#10
175' TO 300'	#8
300' TO 450'	#6 (MAX.)



FOR 277V–20A BRANCH CIRCUITS ONLY, UNLESS OTHERWISE NOTED

IF DISTANCE A + B IN FEET IS: (SEE DIAGRAM AT RIGHT)	USE COPPER WIRE IN METALLIC CONDUIT, AWG SIZE AS FOLLOWS ON ENTIRE CIRCUIT AND SIZE CONDUIT ACCORDINGLY:
0' TO 250'	#12 (MIN.)
250' TO 400'	#10
400' TO 700'	#8
700' TO 1000'	#6 (MAX.)



THESE TABLES ARE BASED ON AN EVENLY DISTRIBUTED LOAD ALLOWING A 3% VOLTAGE DROP AT LAST OUTLET: APPLY ACCORDINGLY.

NEW YORK ENERGY CODE

(2020 ENERGY CONSERVATION CONSTRUCTION CODE OF NEW YORK STATE – SECTION 407)

METHOD OF COMPLIANCE:

2020 ENERGY CONSERVATION CODE OF NEW YOUR STATE:	☒ PRESCRIPTIVE	☐ PERFORMANCE
2007 ASHRAE 90.1:	☐ PRESCRIPTIVE	☐ PERFORMANCE

LIGHTING SCHEDULE:

LAMP TYPE REQUIRED IN FIXTURE	SEE "LIGHTING FIXTURE SCHEDULE"
NUMBER OF LAMPS IN FIXTURE	SEE "LIGHTING FIXTURE SCHEDULE"
BALLAST TYPE USED IN THE FIXTURE	SEE "LIGHTING FIXTURE SCHEDULE"
NUMBER OF BALLASTS IN FIXTURE	SEE "LIGHTING FIXTURE SCHEDULE"
TOTAL WATTAGE PER FIXTURE	SEE "LIGHTING FIXTURE SCHEDULE"
TOTAL INTERIOR WATTAGE SPECIFIED VS. ALLOWED (WHOLE BUILDING OR SPACE BY SPACE)	SEE "LIGHTING FIXTURE SCHEDULE"
TOTAL EXTERIOR WATTAGE SPECIFIED VS. ALLOWED	SEE "LIGHTING FIXTURE SCHEDULE"

TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE DESIGN OF THIS BUILDING COMPLIES WITH THE ELECTRICAL SYSTEM AND EQUIPMENT REQUIREMENTS OF THE NEW YORK ENERGY CONSERVATION CODE.

SIGNED: William Lee Teeter

NAME: WILLIAM LEE TEETER

TITLE: PROFESSIONAL ENGINEER

EQUIPMENT DISCONNECT SCHEDULE

- $M — MANUAL MOTOR STARTING SWITCH WITH OVERLOAD PROTECTION EQUAL TO SQUARE–D CLASS 2510 TYPE KG–1 SERIES.
- 3P/30A/208V — HEAVY DUTY SAFETY SWITCH; 3 POLE, 30 AMP, 208 VOLT. FIRST NUMERAL INDICATES QUANTITY OF POLES SECOND NUMERAL INDICATES AMPERE RATING. THIRD NUMERAL INDICATES VOLTAGE. IE: 3P/30A/208V INDICATES 3 POLE, 30 AMP, 208 VOLT, ETC.
- 3P/30A/208V — FUSED HEAVY DUTY SAFETY SWITCH SAME AS ABOVE EXCEPT WITH FUSES. ACTUAL SIZE AND TYPE SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. FUSES SHALL BE "RK–5" FUSETRONS.
- 3P/30A/208V/3R — NEMA 3R CONSTRUCTION HEAVY DUTY SAFETY SWITCHES. NO–FUSE AND FUSED SWITCHES
- 3P/30A/208V/3R — RESPECTIVELY AS SPECIFIED ABOVE. /3R INDICATES NEMA 3R CONSTRUCTION. NOTE: PROVIDE NEUTRAL BARS, GROUNDING BARS, REJECTION CLIPS, SERVICE ENTRANCE LABELS, FUSES AND ALL OTHER ACCESSORIES REQUIRED FOR THE APPLICATION.

CIRCUIT HOMERUN SYMBOL SCHEDULE

- A–1 — ONE CIRCUIT HOMERUN TO PANEL "A", CIRCUIT #1.
- A–1,3 — TWO CIRCUIT HOMERUN TO PANEL "A", CIRCUITS #1 & 3. (REQUIRES MULTI–POLE CIRCUIT BREAKER.)
- A–1,3,5 — THREE CIRCUIT HOMERUN TO PANEL "A", CIRCUITS #1, 3, & 5. (REQUIRES MULTI–POLE CIRCUIT BREAKER.)
- A–(1,3) — ONE CIRCUIT HOMERUN TO PANEL "A", 208 VOLT OR 480 VOLT–1 PHASE CIRCUIT TO POLES #1 & 3.
- A–(1,3,5) — ONE CIRCUIT HOMERUN TO PANEL "A", 208 VOLT OR 480 VOLT–3 PHASE CIRCUIT TO POLES #1, 3, & 5.
- SLASH MARKS INDICATE QUANTITY OF CONDUCTORS OTHER THAN TWO; ——— INDICATES NEUTRAL, ——— INDICATES HOT, NOTE: TWO WIRE CIRCUITS DO NOT SHOW SLASH MARKS.
- SLASH MARK INDICATES EQUIPMENT GROUNDING CONDUCTOR SIZED IN ACCORDANCE WITH NATIONAL ELECTRICAL CODE 250–122.

LIGHTING NOTES

1. LED DRIVERS SHALL BE ELECTRONIC TYPE.
2. LED'S SHALL BE SOLID STATE WITH 3500 DEGREE COLOR TEMP.
3. LIGHTING FIXTURE CATALOG NUMBERS IDENTIFY THE SERIES OF LIGHTING FIXTURE ONLY. PROVIDE ALL FIELD FABRICATION, MOUNTING HARDWARE, ACCESSORIES AND OPTIONS REQUIRED TO ADAPT TO THE CONDITIONS AND MEET THE INTENT OF THE FIXTURE DESCRIPTION.
4. COORDINATE FIXTURE OPERATING VOLTAGES WITH THAT PROVIDED BY THE CIRCUITRY.
5. COORDINATE FIXTURE TRIMS WITH THE CEILING TYPE.
6. DRIVERS AND LED'S SHALL BE DESIGNED TO START AND MAINTAIN PROPER OPERATION IN THE ENVIRONMENTAL AND TEMPERATURE CONDITIONS IN WHICH THE FIXTURES ARE APPLIED.
7. RECESSED LIGHTING FIXTURES SHALL HAVE THERMAL PROTECTION.
8. DOWNLIGHTS IN NONACCESSIBLE CEILINGS SHALL HAVE BOTTOM ACCESS.
9. LAY–IN TYPE FIXTURES SHALL BE SUPPORTED FROM THE STRUCTURE INDEPENDENT FROM THE CEILING SYSTEM.
10. DOWNLIGHT FIXTURES AND EXIT SIGNS IN SUSPENDED CEILINGS SHALL NOT BE SUPPORTED BY THE GRID SYSTEM AND SHALL BE SUPPORTED FROM THE STRUCTURE AND NOT RELY ON THE CEILING SYSTEM ALONE FOR SUPPORT.
11. LIGHTING FIXTURES IN WET LOCATIONS SHALL BE "WET LOCATION" LISTED. LIGHTING FIXTURES IN DAMP LOCATIONS SHALL BE "DAMP LOCATION" LISTED.
12. SUBMIT SHOP DRAWINGS FOR APPROVAL.

LIGHTING FIXTURE SCHEDULE

SYMBOL & TYPE	MANUFACTURER & CATALOG NUMBER	DESCRIPTION	LAMP TYPE & QUANTITY	VOLTS/ DRIVER	MOUNTING	INPUT WATTS
A	EQUAL TO: LITHONIA #CPX–2X4–4000LM–80CRI–40K–SWL–MINTO–ZT–MVOLT	2'x4' LED TROFFER, ALUMINUM FRAME WITH SATIN WHITE DIFFUSER.	LED 4000 LUMENS 4000K	120–277V ELECTRONIC	RECESSED CEILING	40.0
A/E	–	SAME AS "A" WITH INTEGRATED EMERGENCY BATTERY PACK. A/NL – NIGHT LIGHT FIXTURE, 24/7.	–	–	–	–
A1	EQUAL TO: LITHONIA #CPX–2X4–6000LM–80CRI–40K–SWL–MINTO–ZT–MVOLT	2'x4' LED TROFFER, ALUMINUM FRAME WITH SATIN WHITE DIFFUSER.	LED 6000 LUMENS 4000K	120–277V ELECTRONIC	RECESSED CEILING	44.0
A1/E	–	SAME AS "A1" WITH INTEGRATED EMERGENCY BATTERY PACK. A1/NL – NIGHT LIGHT FIXTURE, 24/7.	–	–	–	–
A2	EQUAL TO: LITHONIA #CPX–2X2–3200LM–80CRI–40K–SWL–MINTO–ZT–MVOLT	2'x2' LED TROFFER, ALUMINUM FRAME WITH SATIN WHITE DIFFUSER.	LED 3200 LUMENS 4000K	120–277V ELECTRONIC	RECESSED CEILING	31.0
A2/E	–	SAME AS "A2" WITH INTEGRATED EMERGENCY BATTERY PACK. A2/NL – NIGHT LIGHT FIXTURE, 24/7.	–	–	–	–
B	EQUAL TO: LITHONIA #SBL4–LP840 (CI–254RKU)	1'x4' LED WRAPAROUND FIXTURE.	LED 2994 LUMENS 4000K	120–277V ELECTRONIC	SURFACE CEILING	32.0
B/E	–	SAME AS "B" WITH INTEGRATED EMERGENCY BATTERY PACK. B/NL – NIGHT LIGHT FIXTURE, 24/7.	–	–	–	–
C	EQUAL TO: GOTHAM EVO #EVO6–35–10–WR–WD–LSS–MVOLT	6" ROUND LED DOWNLIGHT, WHITE REFLECTOR, WHITE FLANGE.	LED 1000 LUMENS 3500K	120V	RECESSED CEILING	10.0
C/E	–	SAME AS "C" WITH INTEGRATED EMERGENCY BATTERY PACK. C/NL – NIGHT LIGHT FIXTURE, 24/7.	–	–	–	–
D	EQUAL TO: TECH LIGHTING #700–TD–S–S–S	SMALL PENDANT LIGHTING FIXTURE, SMOKE COLOR, SATIN NICKEL FINISH. CONTRACTOR TO PROVIDE ONE (1) E11 BASE 60W T6 MINI–CANDELABRA BULB.	INCANDESCENT	120V	PENDANT CEILING	60.0
V	EQUAL TO: LITHONIA #MVCSLS–48IN–MVOLT–35K–90CRI–BN–M4	1'x4' LED WALL MOUNTED CONTEMPORARY SWITCHABLE SQUARE VANITY FIXTURE.	LED 2960 LUMENS 3500K	120–277V ELECTRONIC	SURFACE WALL	36.0
F	EQUAL TO: LITHONIA #CPX–2X4–4000LM–80CRI–40K–SWL–MINTO–ZT–MVOLT MULTISURFACE KIT #2X4SMKSH	2'x4' LED TROFFER, ALUMINUM FRAME WITH SATIN WHITE DIFFUSER. SHALLOW DEPTH MULTI–SURFACE MOUNTING KIT INCLUDED.	LED 4000 LUMENS 4000K	120–277V ELECTRONIC	SURFACE CEILING	40.0
G	PROVIDED BY OWNER, INSTALLED BY ELECTRICAL CONTRACTOR	PROCEDURE (EXAM) LED LIGHT MEDICAL ILLUMINATION M–550, PROVIDED BY OWNER, INSTALLED BY E.C.	LED	120V	SURFACE CEILING	16.0
G2	PROVIDED BY OWNER, INSTALLED BY ELECTRICAL CONTRACTOR	SURGERY LED LIGHT MEDICAL ILLUMINATION M–1000, PROVIDED BY OWNER, INSTALLED BY E.C.	LED	120V	SURFACE CEILING	54.0
N NE	EQUAL TO: LITHONIA #ML4–30L–SLD–LP840–DIM10 "NE" – WITH E10WLCP	5'x51" LED WRAPAROUND FIXTURE WITH INTEGRATED OCCUPANCY SENSOR. FIXTURE DIMS TO 10% WHEN UNOCCUPIED. "NE" WITH 90 MIN EMERGENCY BATTERY PACK.	LED 3000 LUMENS 4000K	120–277V ELECTRONIC	SURFACE WALL	28.0
P	EQUAL TO: PHOENIX LIGHTING #VA–W–17LED–WW–FGC	INDUSTRIAL TYPE ENCLOSED/GASKETED VAPORTIGHT SURFACE MOUNTED LIGHTING FIXTURE, FROSTED GLASS LENS.	LED 1336 LUMENS 3000K	120V–277V	SURFACE CEILING	17.0
S	EQUAL TO: LITHONIA #OLLWU–LED–P1–40K–MVOLT–WH	EXTERIOR LED DECORATIVE WALL SCONCE UP & DOWN FIXTURE, WHITE FINISH. SEE EXTERIOR ELEVATIONS SHEETS A201 & A202 FOR EXACT MOUNTING HEIGHTS AND LOCATIONS.	LED 947 LUMENS 4000K	120V–277V	SURFACE WALL @ 7' AGL	14
U	EQUAL TO: STONCO BY SIGNIFY #LPW16–50–NW–G3–3–120–BK. (VERIFY WITH CIVIL DRAWINGS C900 & C910 PRIOR ORDERING)	EXTERIOR LED WALL MOUNT MEDIUM SCONCE FIXTURE, BLACK FINISH. SEE EXTERIOR ELEVATIONS SHEETS A201 & A202 FOR EXACT MOUNTING HEIGHTS AND LOCATIONS.	LED 5334 LUMENS 4000K	120V	SURFACE WALL @ 15' AFG	50
EO	EQUAL TO: LITHONIA #ERE–GY–T–WP–RD	WALL MOUNTED LED SQUARE TWN REMOTE HEAD FIXTURE. GRAY COLOR.	LED	120V	WALL	<5
EX	EQUAL TO: LITHONIA #EXRG–EL–M6	SURFACE MOUNTED LED EXIT SIGN. 90 MINUTE MINIMUM BATTERY BACKUP. WHITE FINISH, RED/GREEN LETTERS.	LED	120V	UNIVERSAL	<5
EX1	EQUAL TO: LITHONIA #ECRG–HO–RD–M6	COMBINATION EMERGENCY LIGHTING UNIT/EXIT SIGN. WHITE THERMOPLASTIC HOUSING, RED/GREEN LETTERS. 90 MINUTE MINIMUM BATTERY BACKUP.	LED EXIT, TWO(2) LED LAMPHEADS	120V	UNIVERSAL	<5
EM	EQUAL TO: LITHONIA #ELM2L–M12	SURFACE MOUNTED EMERGENCY LIGHTING UNIT. WHITE THERMOPLASTIC HOUSING, 90 MINUTE MINIMUM BATTERY BACKUP. WHITE FINISH.	TWO(2) LED LAMPHEADS	120V	UNIVERSAL	<5

QUANTITY NOTE

THE LIGHTING FIXTURE QUANTITIES LISTED IN THIS SCHEDULE ARE FOR ENERGY CODE COMPLIANCE ONLY. THE FLOOR PLANS GOVERN THE ACTUAL QUANTITIES. THE CONTRACTOR SHALL MAKE HIS OWN QUANTITY TAKEOFF.

TOTAL WATTS PER PROJECT (INTERIOR)	
TOTAL SQUARE FEET (INTERIOR)	
TOTAL WATTS / SQUARE FOOT	
ALLOWED WATTS / SQUARE FOOT (–10%)	

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BDA

STATE OF NEW YORK — WILLIAM LEE TEETER — 071959 — LICENSED PROFESSIONAL ENGINEER

07/08/24

ROCKLAND GREEN CENTER FOR ANIMAL RESCUE AND EDUCATIONAL SERVICES, INC.
R.G. C.A.R.E.S. ANIMAL SHELTER
427 BEACH RD. LOCATED IN THE TOWN OF HARVERSTRAW, NY 10993

ELECTRICAL SYMBOLS AND LIGHTING FIXTURE SCHEDULE

REV.#	DATE	COMMENTS
REVISION: -	-	-
REVISION: -	-	-
REVISION: -	-	-
REVISION: -	-	-

REVIEWS

INITIALS	
	BDA DSGN. REV.
	BDA TECH REV.

RGAS

PROJECT NO.: 23077
DRAWN: SCG
DATE: 07/08/2024

E002

2 OF 17

VARIABLE REFRIGERANT VOLUME - AIR-COOLED CONDENSING UNIT SCHEDULE

TAG: ROOM	BASIS OF DESIGN (DAIKIN)	NOMINAL TONNAGE	DESCRIPTION	COOLING CAPACITY		HEATING CAPACITY		REFRIGERANT CHARGE		CONNECTION RATIO (%)	ELECTRICAL												DIMENSIONS		EFFICIENCY (NonDucted/Ducted or Specific Combo)							NOTES	Options and Accessories
											VOLTAGE-PHASE	MIN CIRCUIT AMPS (MCA)				MAX OVERCURRENT PROTECTION (MOP)				RUNNING CURRENT(RLA)													
				BTU/h	AMBIENT DESIGN (°F DB)	BTU/h	AMBIENT DESIGN (°F DB / WB)	Factory Charge (lbs)	Add'l Refrigerant (lbs)			mod #1	mod #2	mod #3	total	mod #1	mod #2	mod #3	total	mod #1	mod #2	mod #3	total	(WxHxD) (inch)	WEIGHT (lbs)	EER	IEER	COP47	COP17	SCHE	SEER	HSPF		
CU-1 (DOAS-1-2-3)	REYQ312XATJB	26	Air cooled heat recovery (2)	312,666	92.2	246,834	13.0 / 10.0	51.6	NA	92.3	208V - 230V 3ph	61.9	58.3		120.2	70.0	70.0		125.0	49.0	42.6		91.6	48.9 x 66.7 x 30.2 / 48.9 x 66.7 x 30.2	793.0 / 727.0	10.1 / 9.9	20.4 / 18	3.56 / 3.2	2.09 / 2.05	24.3 / 20.7	NA	NA		BHFP26P100UA (1), EKEQDCBAV3-US (4)
CU-2 (DOAS-8-9-10)	REYQ192XATJB	16	Air cooled heat recovery (2)	192,407	92.2	177,510	13.0 / 10.0	51.6	NA	93.8	208V - 230V 3ph	38.1	38.1		76.2	45.0	45.0		80.0	23.3	23.3		46.6	48.9 x 66.7 x 30.2 / 48.9 x 66.7 x 30.2	727.0 / 727.0	13 / 13	22.6 / 21.4	3.85 / 3.67	2.5 / 2.37	26.6 / 22.8	NA	NA		BHFP26P100UA (1), EKEQDCBAV3-US (3)
CU-3 (DOAS-11-13)	REYQ264XATJB	22	Air cooled heat recovery (2)	264,555	92.2	211,340	13.0 / 10.0	51.6	NA	90.9	208V - 230V 3ph	58.3	43.0		101.3	70.0	50.0		110.0	42.6	28.2		70.8	48.9 x 66.7 x 30.2 / 48.9 x 66.7 x 30.2	727.0 / 727.0	11.2 / 10.4	21.6 / 18	3.62 / 3.2	2.22 / 2.07	26.1 / 18.2	NA	NA		BHFP26P100UA (1), EKEQDCBAV3-US (3)
CU-4 (DOAS-14-15)	REYQ144XATJB	12	Air cooled heat recovery (1)	144,297	92.2	115,105	13.0 / 10.0	25.8	NA	91.7	208V - 230V 3ph	58.3			58.3	70.0			70.0	42.6			42.6	48.9 x 66.7 x 30.2	727.0	11.9 / 11.6	23.5 / 21.6	3.75 / 3.42	2.16 / 2.12	25.5 / 22	NA	NA		EKEQDCBAV3-US (2)

Schedule Notes:
1. ALL UNITS SHALL BE AGA CERTIFIED AND U.L. LABELED.
2. ALL UNITS SHALL BE SUPPLIED BY ONE MANUFACTURER UNLESS NOTED OTHERWISE.
3. REFRIGERANT SHALL BE R410A
4. PROVIDE ALL SUPPORTS, RAILS, CURBS, ETC. AS REQUIRED TO AND INSTALL UNITS ON ROOF.
5. VARIABLE REFRIGERANT SYSTEM SHALL BE INSTALLED, PIPED, AND CONTROLLED PER MANUFACTURERS RECOMMENDATIONS.
6. PROVIDE ANY ADDITIONAL PIPING, REFRIGERANT, ETC TO ACCOMMODATE ACTUAL PIPING LENGTHS, FIELD VERIFIED.
7. EQUIPMENT MANUFACTURER SHALL PROVIDE ALL REQUIRED TRAINING, ONSITE ASSISTANCE, PROJECT SPECIFIC SHOP DRAWINGS, ETC. AS REQUIRED FOR A COMPLETE AND OPERATING SYSTEM. EQUIPMENT MANUFACTURERS SERVICE REPRESENTATIVE SHALL PROVIDE A FINAL REPORT AFTER START-UP CERTIFYING PROPER INSTALLATION AND CONFIRMING WARRANTIES.
8. COORDINATE WITH BRANCH CONTROLLER LAYOUT, SIZE, QUANTITY, ETC WITH MANUFACTURER.
9. PROVIDE PANEL HEATER KIT TO PREVENT ICE BUILDUP ON OUTDOOR DRAIN PAN.
10. PROVIDE WITH WIND BAFFLE KIT.
11. PROVIDE SNOW/HAIL KIT TO PREVENT DAMAGE OR SNOW BUILD-UP IN SEVERE WINTER CLIMATES.
12. PROVIDE WITH MASTER "CENTRAL BRANCH CIRCUIT CONTROLLER", 120V/10, 0.3A.
13. PROVIDE WITH EXPANSION CONTROLLER, 120V/10, 0.3A.
14. FIELD INSTALLED LOW-AMBIENT KIT.
15. NOMINAL COOLING CAPACITIES ARE BASED ON INDOOR COIL EAT OF 80/67°F (DB/WB), OUTDOOR OF 95°F (DB).
16. NOMINAL HEATING CAPACITIES ARE BASED ON INDOOR COIL EAT OF 70°F (DB), OUTDOOR OF 43°F (WB).
17. EFFICIENCY VALUES FOR EER, IEER, COP ARE BASED ON AHRI 1230 TEST METHOD FOR MIXTURE OF DUCTED & NON-DUCTED INDOOR UNITS.
18. FOR SYSTEMS WITH MULTIPLE MODULES, REFRIGERANT PIPE DIMENSIONS INDICATE TOTAL SYSTEM COMBINED PIPING DOWNSTREAM OF MODULE TWINNING.
19. ADDED FIELD CHARGE LISTED IS IN ADDITION TO FACTORY CHARGE, THIS MUST BE UPDATED BASED UPON FINAL AS-BUILT PIPING LAYOUT.
20. EACH CONDENSING UNIT SHALL BE PROVIDED WITH A HOFFMAN & HOFFMAN SINGLE POINT POWER PANEL (SPPP).

VARIABLE REFRIGERANT VOLUME - INDOOR UNIT SCHEDULE

TAG	LEVEL	BASIS OF DESIGN (DAIKIN)	NOMINAL TONNAGE	TYPE	CONNECTED TO:		SUPPLY FAN	COOLING CAPACITY				HEATING CAPACITY		ELECTRICAL			DIMENSIONS	WEIGHT	NOTES	Options and Accessories
					CONDENSING UNIT	ZONE CHANGEOVER DEVICE	AIR FLOW RATE cfm	TOTAL BTU/h	SENSIBLE BTU/h	ENTERING AIR °F DB	ENTERING AIR °F WB	TOTAL BTU/h	ENTERING AIR °Fdb	POWER SUPPLY Voltage - Phase	Min Circuit Amps MCA	Max Overcurrent Protection MOP	WxHxD inch	Net lbs		
AHU 1 DX box 1	MAIN	EKEXV200-US	6.0	EEV4DOAS VALVE KIT	CU-1 for DOAS-1-2-3	Yes	1840	83,939	N/A	N/A	N/A	94,516	N/A	120V/1ph	8.8	15	8.5 x 15.8 x 3.1	6.4		
AHU 1 RH box 1	MAIN	EKEXV80-US	2.5	EEV4DOAS VALVE KIT	CU-1 for DOAS-1-2-3	Yes	1840	33,780	N/A	N/A	N/A	37,875	N/A	120V/1ph	0.8	15	8.5 x 15.8 x 3.1	6.4		
AHU 2 DX box 1	MAIN	EKEXV200-US	6.0	EEV4DOAS VALVE KIT	CU-1 for DOAS-1-2-3	Yes	1805	83,939	N/A	N/A	N/A	94,516	N/A	120V/1ph	8.8	15	8.5 x 15.8 x 3.1	6.4		
AHU 2 RH box 1	MAIN	EKEXV80-US	2.5	EEV4DOAS VALVE KIT	CU-1 for DOAS-1-2-3	Yes	1805	33,780	N/A	N/A	N/A	37,875	N/A	120V/1ph	0.8	15	8.5 x 15.8 x 3.1	6.4		
AHU 3 DX box 1	MAIN	EKEXV200-US	6.0	EEV4DOAS VALVE KIT	CU-1 for DOAS-1-2-3	Yes	2600	83,939	N/A	N/A	N/A	94,516	N/A	120V/1ph	8.8	15	8.5 x 15.8 x 3.1	6.4		
AHU 3 DX box 2	MAIN	EKEXV200-US	6.0	EEV4DOAS VALVE KIT	CU-1 for DOAS-1-2-3	Yes	2600	83,939	N/A	N/A	N/A	94,516	N/A	120V/1ph	8.8	15	8.5 x 15.8 x 3.1	6.4		
AHU 3 RH box 1	MAIN	EKEXV50-US	1.5	EEV4DOAS VALVE KIT	CU-1 for DOAS-1-2-3	Yes	2800	21,155	N/A	N/A	N/A	23,885	N/A	120V/1ph	0.8	15	8.5 x 15.8 x 3.1	6.4		
AHU 3 RH box 2	MAIN	EKEXV50-US	1.5	EEV4DOAS VALVE KIT	CU-1 for DOAS-1-2-3	Yes	2800	21,155	N/A	N/A	N/A	23,885	N/A	120V/1ph	0.8	15	8.5 x 15.8 x 3.1	6.4		
AHU 8 DX box 1	MAIN	EKEXV125-US	4.0	EEV4DOAS VALVE KIT	CU-2 for DOAS-8-9-10	Yes	1045	52,547	N/A	N/A	N/A	59,030	N/A	120V/1ph	0.8	15	8.5 x 15.8 x 3.1	6.4		
AHU 8 RH box 1	MAIN	EKEXV50-US	1.5	EEV4DOAS VALVE KIT	CU-2 for DOAS-8-9-10	Yes	1045	21,155	N/A	N/A	N/A	23,885	N/A	120V/1ph	0.8	15	8.5 x 15.8 x 3.1	6.4		
AHU 9 DX box 1	MAIN	EKEXV140-US	5.0	EEV4DOAS VALVE KIT	CU-2 for DOAS-8-9-10	Yes	1255	60,054	N/A	N/A	N/A	67,560	N/A	120V/1ph	8.8	15	8.5 x 15.8 x 3.1	6.4		
AHU 9 RH box 1	MAIN	EKEXV50-US	1.5	EEV4DOAS VALVE KIT	CU-2 for DOAS-8-9-10	Yes	1255	21,155	N/A	N/A	N/A	23,885	N/A	120V/1ph	0.8	1	8.5 x 15.8 x 3.1	6.4		
AHU 10 DX box 1	MAIN	EKEXV200-US	6.0	EEV4DOAS VALVE KIT	CU-2 for DOAS-8-9-10	Yes	1425	83,939	N/A	N/A	N/A	94,516	N/A	120V/1ph	8.8	15	8.5 x 15.8 x 3.1	6.4		
AHU 10 RH box 1	MAIN	EKEXV63-US	2.0	EEV4DOAS VALVE KIT	CU-2 for DOAS-8-9-10	Yes	1425	26,615	N/A	N/A	N/A	30,027	N/A	120V/1ph	0.8	15	8.5 x 15.8 x 3.1	6.4		
AHU 11 DX box 1	UPPER	EKEXV250-US	8.0	EEV4DOAS VALVE KIT	CU-3 for DOAS-11-13	Yes	2065	105,094	N/A	N/A	N/A	118,401	N/A	120V/1ph	8.8	15	8.5 x 15.8 x 3.1	6.4		
AHU 11 RH box 1	UPPER	EKEXV80-US	2.5	EEV4DOAS VALVE KIT	CU-3 for DOAS-11-13	Yes	2065	33,780	N/A	N/A	N/A	37,875	N/A	120V/1ph	0.8	15	8.5 x 15.8 x 3.1	6.4		
AHU 13 DX box 1	UPPER	EKEXV200-US	6.0	EEV4DOAS VALVE KIT	CU-3 for DOAS-11-13	Yes	3250	83,939	N/A	N/A	N/A	94,516	N/A	120V/1ph	8.8	15	8.5 x 15.8 x 3.1	6.4		
AHU 13 DX box 2	UPPER	EKEXV200-US	6.0	EEV4DOAS VALVE KIT	CU-3 for DOAS-11-13	Yes	3250	83,939	N/A	N/A	N/A	94,516	N/A	120V/1ph	8.8	15	8.5 x 15.8 x 3.1	6.4		
AHU 13 RH box 1	UPPER	EKEXV63-US	2.0	EEV4DOAS VALVE KIT	CU-3 for DOAS-11-13	Yes	3250	26,615	N/A	N/A	N/A	30,027	N/A	120V/1ph	0.8	15	8.5 x 15.8 x 3.1	6.4		
AHU 13 RH box 2	UPPER	EKEXV63-US	2.0	EEV4DOAS VALVE KIT	CU-3 for DOAS-11-13	Yes	3250	26,615	N/A	N/A	N/A	30,027	N/A	120V/1ph	0.8	15	8.5 x 15.8 x 3.1	6.4		
AHU 14 DX box 1	UPPER	EKEXV200-US	6.0	EEV4DOAS VALVE KIT	CU-4 for DOAS-14-15	Yes	1650	83,939	N/A	N/A	N/A	94,516	N/A	120V/1ph	8.8	15	8.5 x 15.8 x 3.1	6.4		
AHU 14 RH box 1	UPPER	EKEXV63-US	2.0	EEV4DOAS VALVE KIT	CU-4 for DOAS-14-15	Yes	1650	26,615	N/A	N/A	N/A	30,027	N/A	120V/1ph	0.8	15	8.5 x 15.8 x 3.1	6.4		
AHU 15 DX box 1	UPPER	EKEXV140-US	5.0	EEV4DOAS VALVE KIT	CU-4 for DOAS-14-15	Yes	1245	60,054	N/A	N/A	N/A	67,560	N/A	120V/1ph	8.8	15	8.5 x 15.8 x 3.1	6.4		
AHU 15 RH box 1	UPPER	EKEXV50-US	1.5	EEV4DOAS VALVE KIT	CU-4 for DOAS-14-15	Yes	1245	21,155	N/A	N/A	N/A	23,885	N/A	120V/1ph	0.8	15	8.5 x 15.8 x 3.1	6.4		

Schedule Notes:
1. ALL UNITS SHALL BE AGA CERTIFIED AND U.L. LABELED.
2. ALL UNITS SHALL BE SUPPLIED BY ONE MANUFACTURER UNLESS NOTED OTHERWISE.
3. REFRIGERANT SHALL BE R410A.
4. PROVIDE WITH INTEGRAL CONDENSATE PUMP. ROUTE CONDENSATE LINE AS INDICATED ON PLANS.
5. PROVIDE ALL SUPPORTS, HANGERS, ETC. AS REQUIRED TO MOUNT/HANG AND INSTALL UNITS.
6. VARIABLE REFRIGERANT SYSTEM SHALL BE INSTALLED, PIPED, AND CONTROLLED PER MANUFACTURERS RECOMMENDATIONS.
7. EQUIPMENT MANUFACTURER SHALL PROVIDE ALL REQUIRED TRAINING, ONSITE ASSISTANCE, PROJECT SPECIFIC SHOP DRAWINGS, ETC. AS REQUIRED FOR A COMPLETE AND OPERATING SYSTEM. EQUIPMENT MANUFACTURERS SERVICE REPRESENTATIVE SHALL PROVIDE A FINAL REPORT AFTER START-UP CERTIFYING PROPER INSTALLATION AND CONFIRMING WARRANTIES.
8. PROVIDE WITH INDIVIDUAL ZONE CONTROLS AS INDICATED ON PLANS. OCCUPANCY SENSORS ARE PART OF THE MANUFACTURER SUPPLIED SPACE THERMOSTATS. WHERE REMOTE TEMPERATURE SENSORS ARE USED, INDIVIDUAL AREA OCCUPANCY SENSORS SHALL BE PROVIDED.
9. NOMINAL COOLING CAPACITIES ARE BASED ON INDOOR COIL EAT OF 80/67°F (DB/WB), OUTDOOR OF 95°F (DB).
10. NOMINAL HEATING CAPACITIES ARE BASED ON INDOOR COIL EAT OF 70°F (DB), OUTDOOR OF 43°F (WB).
11. SEE OUTDOOR UNIT SCHEDULE FOR OUTDOOR AMBIENT CONDITIONS, CONNECTED CAPACITY, AND OTHER FACTORS ASSOCIATED WITH CORRECTED CAPACITIES.
12. SEE SCHEMATIC PIPING/CONTROL DIAGRAM FOR INDICATION OF REQUIRED INDOOR UNIT REMOTE CONTROLLERS, SYSTEM CONTROLLERS, AND INTEGRATION DEVICES.
13. FULL DEMAND CORRECTED CAPACITY INCLUDES DE-RATE ASSOCIATED WITH INDOOR VS. OUTDOOR CONNECTED CAPACITY INDICATED ON OUTDOOR UNIT SCHEDULE FOR ASSOCIATED SYSTEM PARTIAL CORRECTED CAPACITY ASSUMES SUFFICIENT DIVERSITY EXISTS SUCH THAT THE CONNECTED CAPACITY DE-RATE DOES NOT APPLY.
14. IT IS RECOMMENDED TO ALWAYS BASE HEATING CORRECTED CAPACITY ON FULL DEMAND.

VARIABLE REFRIGERANT VOLUME - BRANCH SELECTOR & ZONE HEAT RECOVERY DEVICE SCHEDULE

TAG: ROOM	BRANCH SELECTOR BASIS OF DESIGN (DAIKIN)	CONDENSING UNIT SERVED	VOLTAGE-PHASE	MIN CIRCUIT AMPS (MCA)	MAX OVERCURRENT PROTECTION (MOP)	MAX CAPACITY (per Port)	DIMENSIONS (WxHxD inch)	WEIGHT (lbs)	ZONE SERVED	REHEAT BOX BASIS OF DESIGN
BS-1	BSF4Q54TVJ	CU-1 for DOAS-1-2-3	208-230V 1ph	0.4	15.0	54,000	13.7 x 9.5 x 23.7	48.5	N/A	KHFP26A100CA (1), KHRP26A250TA (1)
BS-2	BSF4Q54TVJ	CU-1 for DOAS-1-2-3	208-230V 1ph	0.4	15.0	54,000	13.7 x 9.5 x 23.7	48.5	N/A	KHFP26A100CA (1), KHRP26A250TA (1)
BS-3	BSF6Q54TVJ	CU-1 for DOAS-1-2-3	208-230V 1ph	0.6	15.0	54,000	23.3 x 9.5 x 23.7	72.8	N/A	KHRP26A250TA (2)
BS-8	BSF4Q54TVJ	CU-2 for DOAS-8-9-10	208-230V 1ph	0.4	15.0	54,000	13.7 x 9.5 x 23.7	48.5	N/A	KHFP26A100CA (2)
BS-9	BSF4Q54TVJ	CU-2 for DOAS-8-9-10	208-230V 1ph	0.4	15.0	54,000	13.7 x 9.5 x 23.7	48.5	N/A	KHFP26A100CA (1), KHRP26A250TA (1)
BS-10	BSF4Q54TVJ	CU-2 for DOAS-8-9-10	208-230V 1ph	0.4	15.0	54,000	13.7 x 9.5 x 23.7	48.5	N/A	KHFP26A100CA (1), KHRP26A250TA (1)
BS-11	BSF4Q54TVJ	CU-3 for DOAS-11-13	208-230V 1ph	0.4	15.0	54,000	13.7 x 9.5 x 23.7	48.5	N/A	KHFP26A100CA (1), KHRP26A250TA (1)
BS-13	BSF6Q54TVJ	CU-3 for DOAS-11-13	208-230V 1ph	0.6	15.0	54,000	23.3 x 9.5 x 23.7	72.8	N/A	KHRP26A250TA (2)
BS-14	BSF4Q54TVJ	CU-4 for DOAS-14-15	208-230V 1ph	0.4	15.0	54,000	13.7 x 9.5 x 23.7	48.5	N/A	KHFP26A100CA (1), KHRP26A250TA (1)
BS-15	BSF4Q54TVJ	CU-4 for DOAS-14-15	208-230V 1ph	0.4	15.0	54,000	13.7 x 9.5 x 23.7	48.5	N/A	KHFP26A100CA (1), KHRP26A250TA (1)

Schedule Notes:
1. INCLUDE DIAMONDBACK BALL VALVES BV-SERIES, 700PSIG WORKING PRESSURE, FULL PORT, 410A RATED.
2. FOR SUB BC CONTROLLER, THE TOTAL CONNECTABLE INDOOR UNIT CAPACITY CAN BE 126,000 BTUS OR LESS. IF TWO SUB BC CONTROLLERS ARE USED, THE TOTAL INDOOR UNIT CAPACITY CONNECTED TO BOTH SUB BC CONTROLLERS ALSO CANNOT EXCEED 126,000 BTUS. FOR SUB BC CONTROLLER CMB-P1016NU-HB1 THE TOTAL CONNECTABLE INDOOR UNIT CAPACITY CAN BE 126,000 BTUS OR LESS. HOWEVER, IF TWO SUB CONTROLLERS ARE USED, AND ONE OF THEM IS CMB-1016NU-HB1, THE TOTAL INDOOR UNIT CAPACITY CONNECTED TO BOTH SUB CONTROLLERS MUST NOT EXCEED 168,000 BTUS.

STANDARD AIR HANDLING UNIT SCHEDULE

TAG	ELECTRICAL DATA			DISCONNECT	WIRE & RACEWAY	PANEL & CIRCUIT
	MCA	MOCP	VOLTAGE			
AHU-4	27	30	208V-1ø	30A/F30/3P/3R	¾"C, 2#10, 1#10 GND	SEE PLANS
AHU-5	43	45	208V-1ø	60A/F45/3P/3R	1¼"C, 2#6, 1#10 GND	SEE PLANS
AHU-6	50	50	208V-1ø	60A/F50/3P/3R	1¼"C, 2#6, 1#10 GND	SEE PLANS
AHU-7	71.5	80	208V-1ø	100A/F80/3P/3R	1¼"C, 2#3, 1#8 GND	SEE PLANS
AHU-12	95.4	110	208V-1ø	125A/F110/3P/3R	2"C, 2#1, 1#6 GND	SEE PLANS

NOTES:
1. SEE MECHANICAL DRAWINGS FOR MORE INFORMATION

STANDARD HEAT PUMP SCHEDULE

TAG	ELECTRICAL DATA			DISCONNECT	WIRE & RACEWAY	PANEL & CIRCUIT
	MCA	MOCP	VOLTAGE			
HP-4	14.6	15	208V-1ø	30A/F15/3P/3R	¾"C, 2#12, 1#12 GND	SEE PLANS
HP-5	34.4	35	208V-1ø	60A/F35/3P/3R	1¼"C, 2#8, 1#10 GND	SEE PLANS
HP-6	34.4	35	208V-1ø	60A/F35/3P/3R	1¼"C, 2#8, 1#10 GND	SEE PLANS
HP-7	23.9	25	208V-1ø	30A/F25/3P/3R	¾"C, 2#10, 1#10 GND	SEE PLANS
HP-12	40.6	60	208V-3ø	60/F60/3P/3R	1¼"C, 2#4, 1#10 GND	SEE PLANS

NOTES:
1. SEE MECHANICAL DRAWINGS FOR MORE INFORMATION

ELECTRIC HEATER SCHEDULE

TAG	SYSTEM SERVED	HEATER TYPE	ELECTRICAL DATA			DISCONNECT	WIRE & RACEWAY	PANEL & CIRCUIT
			KW	AMPS	VOLTAGE			
EWH-1	FIRE RISER ROOM	WALL	5	24.1	208V-1ø	30A/F30/2P	¾"C, 2#10, 1#10 GND	SEE PLANS
EWH-2,3	STAIRWELL	WALL	3	14.4	208V-1ø	30A/F20/2P	¾"C, 2#10, 1#10 GND	SEE PLANS

NOTES:
1. SEE MECHANICAL DRAWINGS FOR MORE INFORMATION

FAN SCHEDULE

TAG	SYSTEM SERVED	FAN TYPE	ELECTRICAL DATA			DISCONNECT	WIRE & RACEWAY	PANEL & CIRCUIT
			H.P.	WATTS	VOLTAGE			
EF-1	141 MENS RR	CEILING EXHAUST	–	17.6	115V-1ø	SINGLE POLE SWITCH	¾"C, 2#12, 1#12 GND	SEE PLANS
EF-2	142 WOMENS RR	CEILING EXHAUST	–	17.6	115V-1ø	SINGLE POLE SWITCH	¾"C, 2#12, 1#12 GND	SEE PLANS
EF-3	162 PUBLIC RR	CEILING EXHAUST	–	17.6	115V-1ø	SINGLE POLE SWITCH	¾"C, 2#12, 1#12 GND	SEE PLANS
EF-4	243 MENS RR	CEILING EXHAUST	–	17.6	115V-1ø	SINGLE POLE SWITCH	¾"C, 2#12, 1#12 GND	SEE PLANS
EF-5	249 MENS SHOWER	CEILING EXHAUST	–	17.6	115V-1ø	SINGLE POLE SWITCH	¾"C, 2#12, 1#12 GND	SEE PLANS
EF-6	223 JANITOR	CEILING EXHAUST	–	16.4	115V-1ø	SINGLE POLE SWITCH	¾"C, 2#12, 1#12 GND	SEE PLANS
EF-7	226 WOMENS SHOWER	CEILING EXHAUST	–	17.6	115V-1ø	SINGLE POLE SWITCH	¾"C, 2#12, 1#12 GND	SEE PLANS
EF-8	242 WOMENS RR	CEILING EXHAUST	–	17.6	115V-1ø	SINGLE POLE SWITCH	¾"C, 2#12, 1#12 GND	SEE PLANS
EF-9	155 02 CLOSET	CEILING EXHAUST	–	17	115V-1ø	SINGLE POLE SWITCH	¾"C, 2#12, 1#12 GND	SEE PLANS
EF-10	173 JANITOR CLOSET	CEILING EXHAUST	–	17.6	115V-1ø	SINGLE POLE SWITCH	¾"C, 2#12, 1#12 GND	SEE PLANS
EF-11	232 FELINE HOLD 2	INLINE EXHAUST	1/30	–	115V-1ø	SINGLE POLE SWITCH	¾"C, 2#12, 1#12 GND	SEE PLANS
EF-12	116 FELINE CONDOS 1	INLINE EXHAUST	1/50	–	115V-1ø	SINGLE POLE SWITCH	¾"C, 2#12, 1#12 GND	SEE PLANS
EF-13	112 FELINE CONDOS 2	INLINE EXHAUST	1/40	–	115V-1ø	SINGLE POLE SWITCH	¾"C, 2#12, 1#12 GND	SEE PLANS
EF-14	143 JANITOR	CEILING EXHAUST	–	17.6	115V-1ø	SINGLE POLE SWITCH	¾"C, 2#12, 1#12 GND	SEE PLANS
EF-15	171 FELINE HOLD CONDOS	INLINE EXHAUST	1/30	–	115V-1ø	SINGLE POLE SWITCH	¾"C, 2#12, 1#12 GND	SEE PLANS
EF-16	156/158 ISO AREAS	INLINE EXHAUST	1/30	–	115V-1ø	SINGLE POLE SWITCH	¾"C, 2#12, 1#12 GND	SEE PLANS
RF-1	ECONOMIZER RELIEF FAN	IN-LINE EXHAUST	2	–	208V-1ø	30A/F15/2P/3R	¾"C, 2#12, 1#12 GND	SEE PLANS

NOTES:
1. SEE MECHANICAL DRAWINGS FOR MORE INFORMATION

MINI SPLIT SYSTEM/HEAT PUMP SCHEDULE

TAG	AREA SERVED	EVAPORATOR SECTION ELECTRICAL DATA		CONDENSING SECTION ELECTRICAL DATA			DISCONNECT	WIRE & RACEWAY	PANEL & CIRCUIT
		MCA	VOLTAGE	MCA	MOCP	VOLTAGE			
DAH-1/DHP-1	154 DOUBLE SURGERY	1	208V-1ø	10	15	208V-1ø	30A/F15/2P	¾"C, 2#12, 1#12 GND	SEE PLANS

NOTES:
1. SEE MECHANICAL DRAWINGS FOR MORE INFORMATION

WATER HEATER SCHEDULE

TAG	ELECTRICAL DATA		DISCONNECT	WIRE & RACEWAY	PANEL & CIRCUIT
	KW	VOLTAGE			
WH-1A	18 KW	208V-3PH	60A/FPN/3P/3R	1¼"C, 4#4, 1#10 GND	SEE PLANS
WH-1B	18 KW	208V-3PH	60A/FPN/3P/3R	1¼"C, 4#4, 1#10 GND	SEE PLANS

NOTES:
1. REFER TO PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION

PUMP SCHEDULE

TAG	ELECTRICAL DATA		DISCONNECT	WIRE & RACEWAY	PANEL & CIRCUIT
	HP	VOLTAGE			
RCP-1	1/6	120V-1ø	SINGLE POLE SWITCH	¾"C, 2#12, 1#12 GND	SEE PLANS
SP-1	0.5	120V-1ø	SINGLE POLE SWITCH	¾"C, 2#12, 1#12 GND	SEE PLANS

NOTES:
1. REFER TO PLUMBING DRAWINGS FOR ADDITIONAL INFORMATION

FAN FILTER UNIT SCHEDULE

TAG	AREA SERVED	ELECTRICAL INFORMATION			DISCONNECT	WIRE & RACEWAY	PANEL & CIRCUIT
		WATTS AT MAXIMUM CFM	FLA	VOLTAGE			
FFU-1	154 DBL. SURG.	300	1.5	208V-1PH	30A/F15/2P	¾"C, 2#12, 1#12 GND	SEE PLANS

NOTES:
1. SEE MECHANICAL DRAWINGS FOR MORE INFORMATION

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BDA

STATE OF NEW YORK
WILLIAM LEE TEETER
071959
LICENSED PROFESSIONAL ENGINEER

07/08/24

ROCKLAND GREEN CENTER FOR ANIMAL RESCUE AND EDUCATIONAL SERVICES, INC.
R.G. C.A.R.E.S. ANIMAL SHELTER
427 BEACH RD. LOCATED IN THE TOWN OF HARVERSTRAW, NY 10993

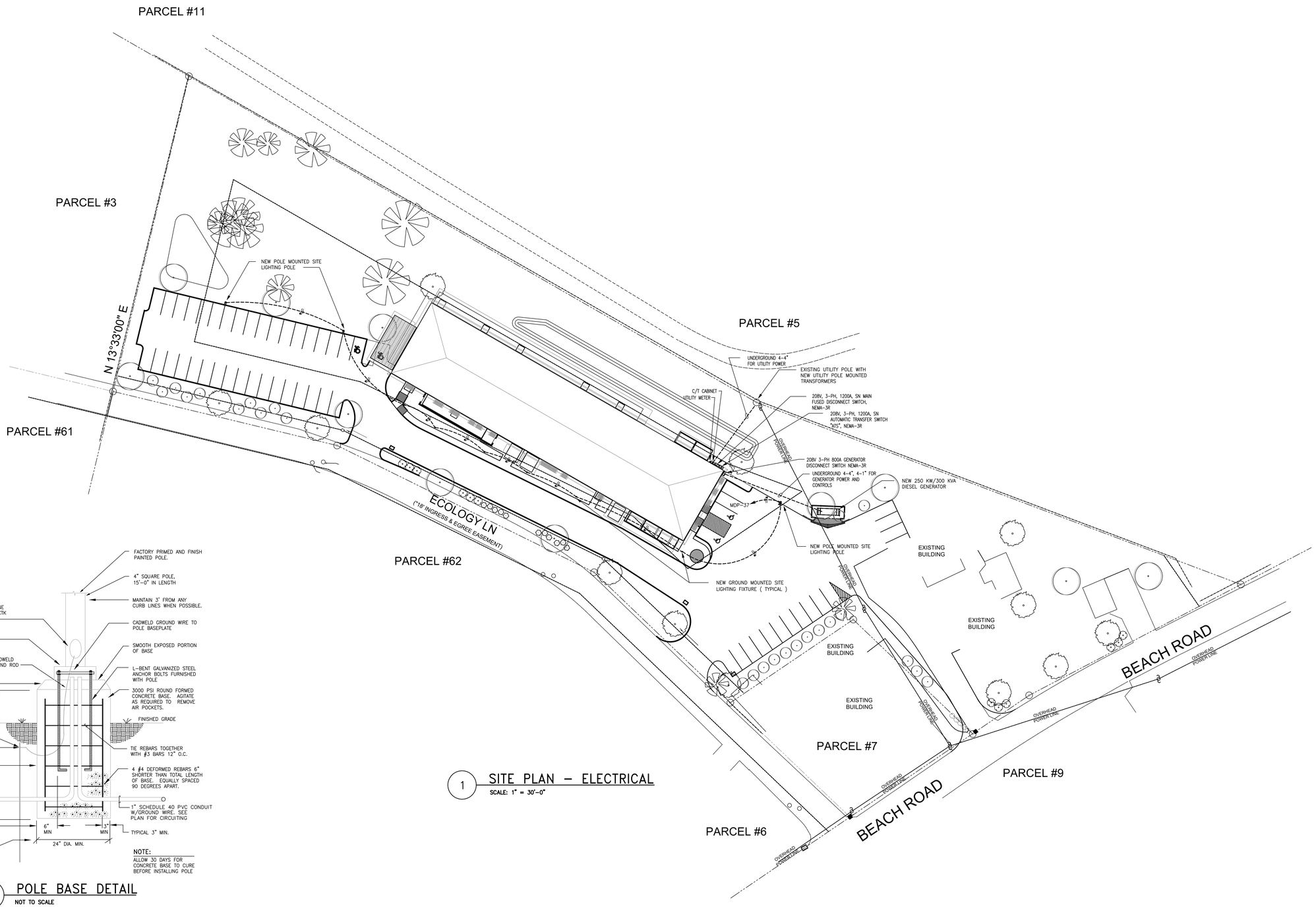
ELECTRICAL SCHEDULES - HVAC & PLUMBING EQUIPMENT

REV.#	DATE	COMMENTS
REVISION:		
REVISION:		
REVISION:		
REVISION:		

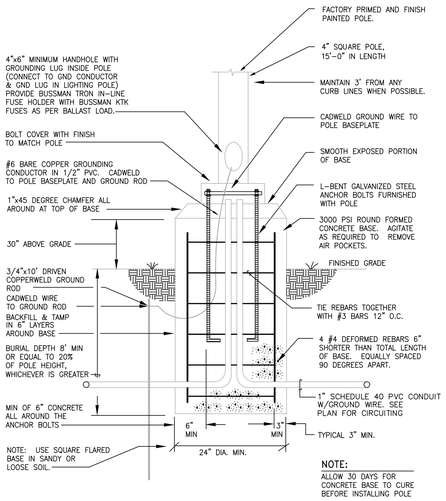
REVIEWS	
INITIALS	
	BDA DSGN. REV.
	BDA TECH REV.

RGAS
PROJECT NO.: 23077
DRAWN: SCG
DATE: 07/08/2024

E003



1 SITE PLAN – ELECTRICAL
SCALE: 1" = 30'-0"



2 POLE BASE DETAIL
NOT TO SCALE

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WILLIAM LEE TEETER
071959
LICENSED PROFESSIONAL ENGINEER
07/08/24

ROCKLAND GREEN CENTER FOR ANIMAL RESCUE AND EDUCATIONAL SERVICES, INC.
R.G. C.A.R.E.S. ANIMAL SHELTER
427 BEACH RD. LOCATED IN THE TOWN OF HARVERSTRAW, NY 10993

SITE PLAN - ELECTRICAL

REV#	DATE	COMMENTS
REVISION:	-	-
REVISION:	-	-
REVISION:	-	-
REVISION:	-	-

REVIEWS	
INITIALS	
	BDA DSGN. REV.
	BDA TECH REV.

RGAS
PROJECT NO.: 23077
DRAWN: SCG
DATE: 07/08/2024

E100
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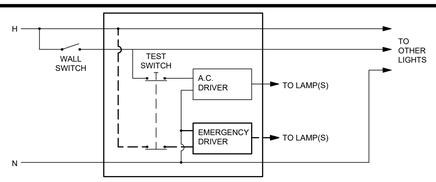


2 SWITCHED EMERGENCY LIGHTING DETAIL

NO SCALE

KEY NOTES

1. SEE DRAWING E102 FOR CONTINUATION.
2. CONNECT FIXTURES SUCH THAT ACTIVATION OF ANY OCCUPANCY SENSOR SHALL ENERGIZE ALL FIXTURES IN THIS SPACE.
3. NIGHT LIGHTS, EXIT SIGNS AND EMERGENCY LIGHTING FIXTURES (DRIVERS) SHALL BE CONNECTED TO LOCAL AREA LIGHTING CIRCUIT UNSWITCHED, AHEAD OF AREA LIGHTING CONTROLS.
4. SEE UPPER LEVEL PLAN FOR LIGHTING IN THIS AREA.
5. OWNER SUPPLIED EXAM/SURGERY LIGHT. SEE SHEET E201 FOR POWER CONNECTION.
6. NIGHT LIGHT FIXTURE "ON" 24/7.
7. WIRE EXTERIOR LIGHTING FIXTURE VIA PHOTOCELL/LIGHTING CONTACTOR. VERIFY LOCATIONS AND MOUNTING HEIGHTS WITH ARCHITECTURAL DRAWINGS PRIOR TO ROUGH-IN. SEE LIGHTING CONTROL DETAIL #X ON SHEET E402 FOR ADDITIONAL INFORMATION.
8. SEE SWITCHED EMERGENCY LIGHTING DETAIL #2 THIS SHEET.

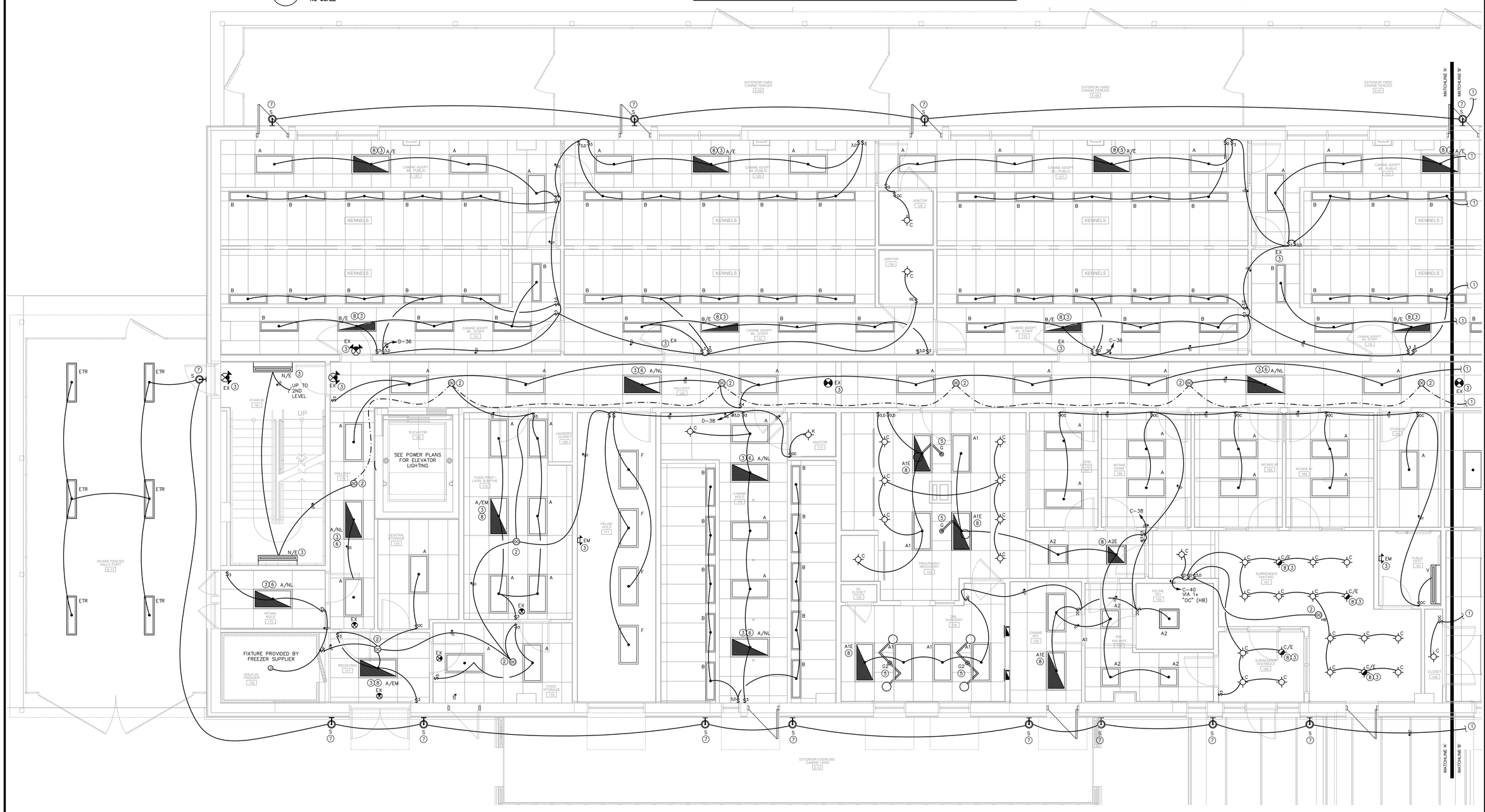
GENERAL NOTES

A. REFER TO DRAWING E001 & E002 FOR ELECTRICAL SPECIFICATIONS, SYMBOL LEGENDS, AND NOTES.

B. PROVIDE A FLANGE KIT FOR FIXTURES MOUNTED IN HARD CEILING (TYPICAL).

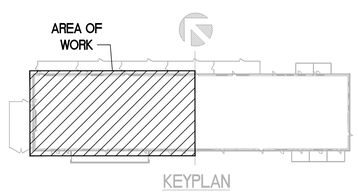
DAYLITE RESPONSIVE CONTROLS AREA ANALYSIS

ALL SIDELIT ZONES IN THIS BUILDING CONSIST OF LESS THAN 150W OF GENERAL LIGHTING THEREFORE DAYLIGHT-RESPONSIVE CONTROLS ARE NOT REQUIRED PER 2018 IECC C405.2.3.



1 MAIN LEVEL FLOOR PLAN – LIGHTING – WEST

SCALE: 1/4" = 1'-0"



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ROCKLAND GREEN CENTER FOR ANIMAL RESCUE AND EDUCATIONAL SERVICES, INC.
R.G. C.A.R.E.S. ANIMAL SHELTER
427 BEACH RD. LOCATED IN THE TOWN OF HARVERSTRAW, NY 10993

MAIN LEVEL
FLOOR PLAN - LIGHTING - WEST

REV #	DATE	COMMENTS
REVISION:	-	-
REVISION:	-	-
REVISION:	-	-
REVISION:	-	-

REVIEWS	
INITIALS	
	BDA DSGN. REV.
	BDA TECH REV.

RGAS

PROJECT NO.: 23077
DRAWN: SCG
DATE: 07/08/2024

E101

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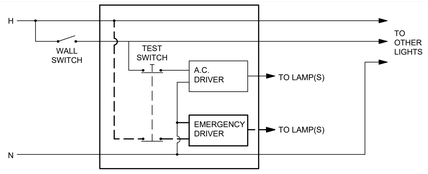


2 SWITCHED EMERGENCY LIGHTING DETAIL

NO SCALE

DAYLITE RESPONSIVE CONTROLS AREA ANALYSIS

ALL SIDELIT ZONES IN THIS BUILDING CONSIST OF LESS THAN 150W OF GENERAL LIGHTING THEREFORE DAYLIGHT-RESPONSIVE CONTROLS ARE NOT REQUIRED PER 2018 IECC C405.2.3.

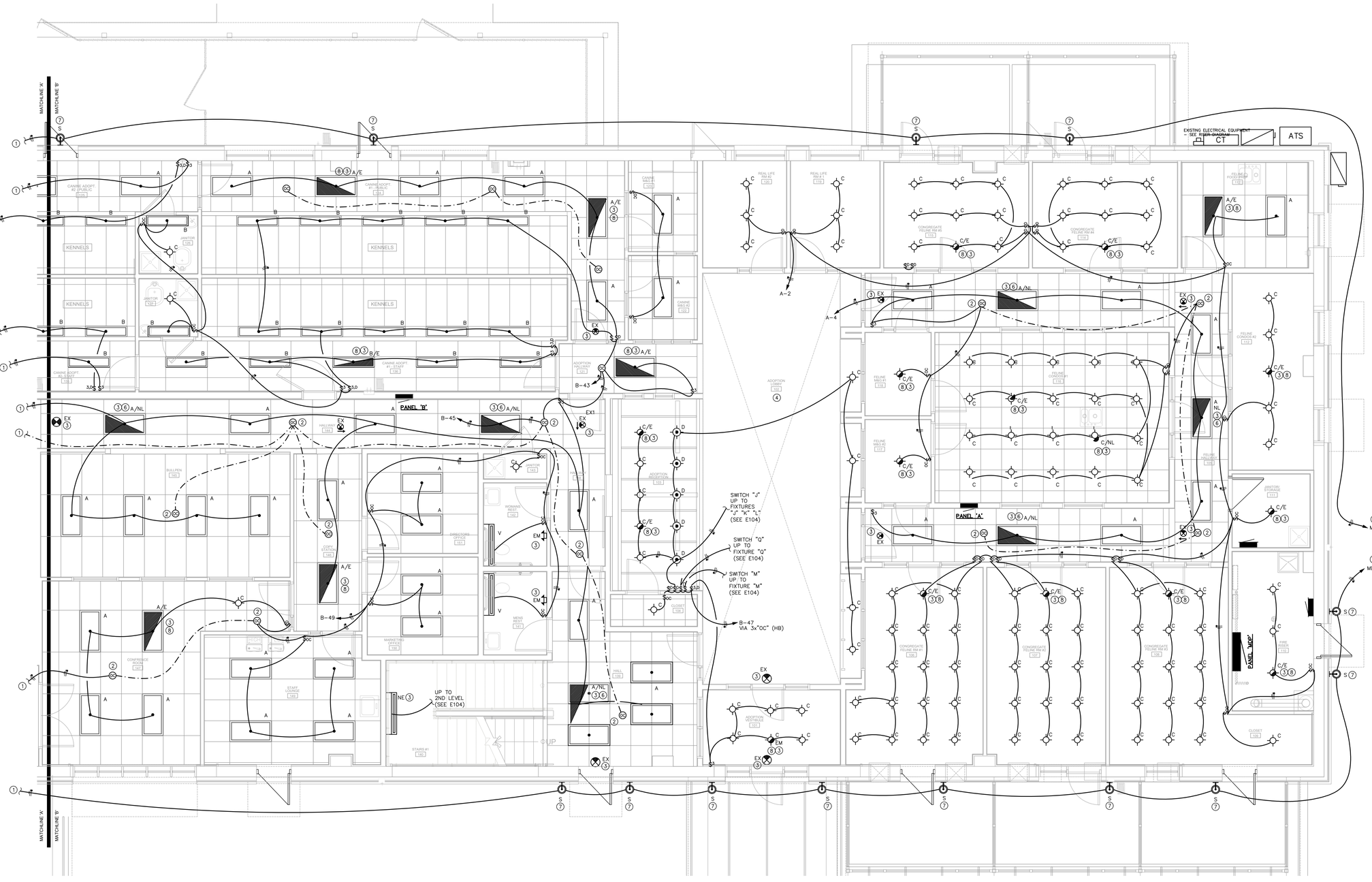
KEY NOTES

1. SEE DRAWING E101 FOR CONTINUATION.
2. CONNECT FIXTURES SUCH THAT ACTIVATION OF ANY OCCUPANCY SENSOR SHALL ENERGIZE ALL FIXTURES IN THIS SPACE.
3. NIGHT LIGHTS, EXIT SIGNS AND EMERGENCY LIGHTING FIXTURES (DRIVERS) SHALL BE CONNECTED TO LOCAL AREA LIGHTING CIRCUIT UNSWITCHED, AHEAD OF AREA LIGHTING CONTROLS.
4. SEE UPPER LEVEL PLAN FOR LIGHTING IN THIS AREA.
5. OWNER SUPPLIED EXAM/SURGERY LIGHT. SEE SHEET E201 FOR POWER CONNECTION.
6. NIGHT LIGHT FIXTURE "ON" 24/7.
7. WIRE EXTERIOR LIGHTING FIXTURE VIA PHOTOCELL/LIGHTING CONTACTOR. VERIFY LOCATIONS AND MOUNTING HEIGHTS WITH ARCHITECTURAL DRAWINGS PRIOR TO ROUGH-IN. SEE LIGHTING CONTROL DETAIL #X ON SHEET EXXX FOR ADDITIONAL INFORMATION.
8. SEE SWITCHED EMERGENCY LIGHTING DETAIL #2 THIS SHEET.

GENERAL NOTES

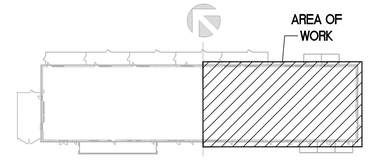
A. REFER TO DRAWING E001 & E002 FOR ELECTRICAL SPECIFICATIONS, SYMBOL LEGENDS, AND NOTES.

B. PROVIDE A FLANGE KIT FOR FIXTURES MOUNTED IN HARD CEILING (TYPICAL).



1 MAIN LEVEL
FLOOR PLAN – LIGHTING – EAST

SCALE: 1/4" = 1'-0"



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ROCKLAND GREEN CENTER FOR ANIMAL RESCUE AND EDUCATIONAL SERVICES, INC.
R.G. C.A.R.E.S. ANIMAL SHELTER
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MAIN LEVEL
FLOOR PLAN - LIGHTING - EAST

REV.#	DATE	COMMENTS
REVISION: -	-	-
REVISION: -	-	-
REVISION: -	-	-
REVISION: -	-	-

REVIEWS	
INITIALS	
	BDA DSGN. REV.
	BDA TECH REV.

RGAS
PROJECT NO.: 23077
DRAWN: SCG
DATE: 07/08/2024

E102

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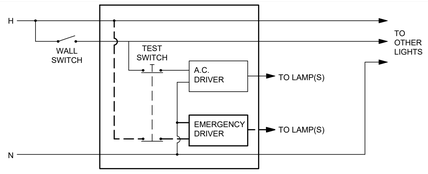


2 SWITCHED EMERGENCY LIGHTING DETAIL

NO SCALE

DAYLITE RESPONSIVE CONTROLS AREA ANALYSIS

ALL SIDELIT ZONES IN THIS BUILDING CONSIST OF LESS THAN 150W OF GENERAL LIGHTING THEREFORE DAYLIGHT-RESPONSIVE CONTROLS ARE NOT REQUIRED PER 2018 IECC C405.2.3.

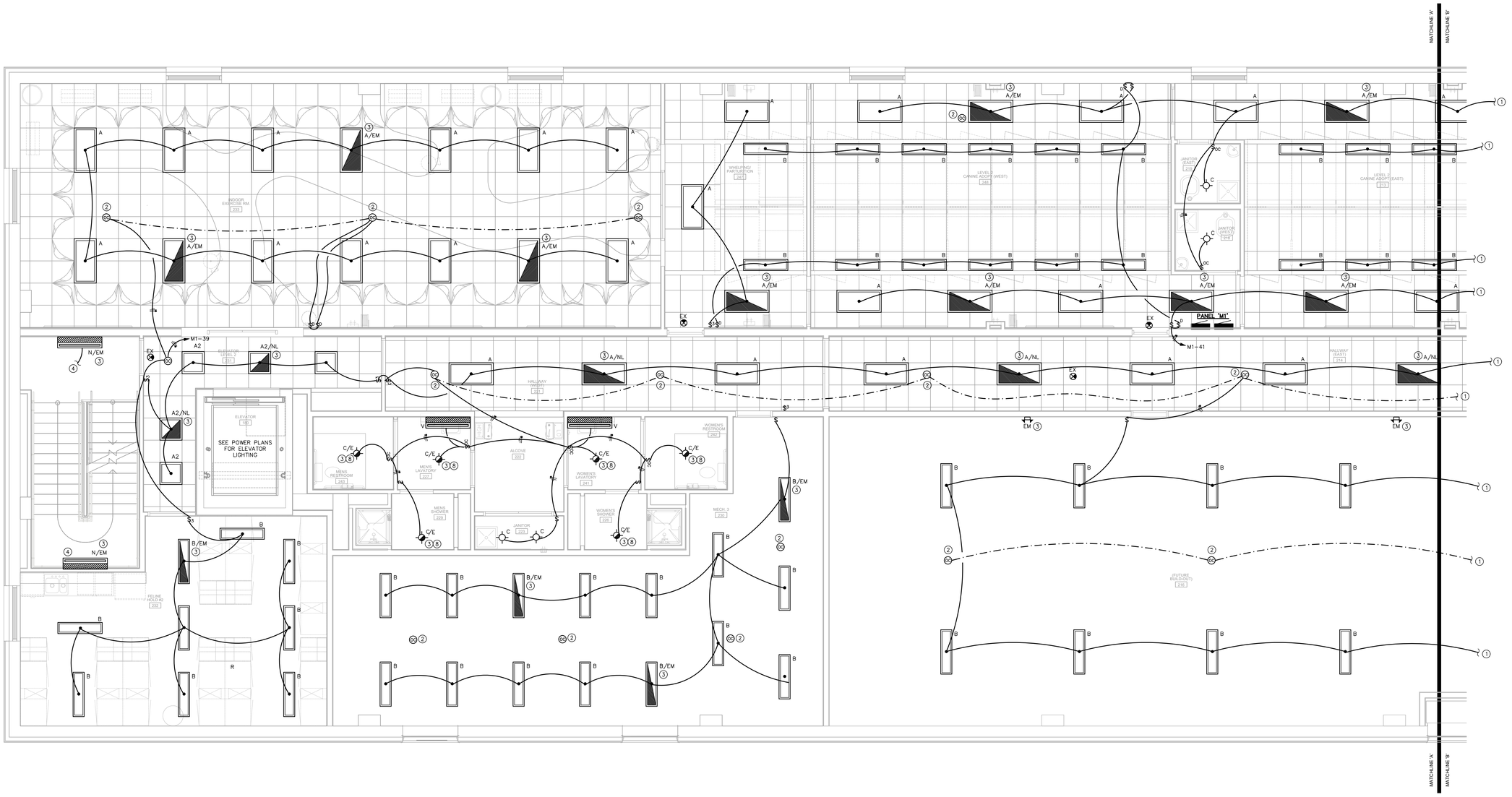
KEY NOTES

1. SEE DRAWING E104 FOR CONTINUATION.
2. CONNECT FIXTURES SUCH THAT ACTIVATION OF ANY OCCUPANCY SENSOR SHALL ENERGIZE ALL FIXTURES IN THIS SPACE.
3. NIGHT LIGHTS, EXIT SIGNS AND EMERGENCY LIGHTING FIXTURES (DRIVERS) SHALL BE CONNECTED TO LOCAL AREA LIGHTING CIRCUIT UNSWITCHED, AHEAD OF AREA LIGHTING CONTROLS.
4. SEE DRAWING E101.
5. NOT USED.
6. NIGHT LIGHT FIXTURE "ON" 24/7.
7. NOT USED
8. SEE SWITCHED EMERGENCY LIGHTING DETAIL #2 THIS SHEET.

GENERAL NOTES

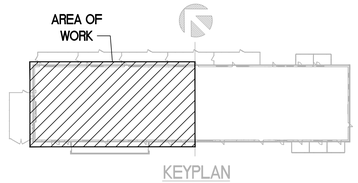
A. REFER TO DRAWING E001 & E002 FOR ELECTRICAL SPECIFICATIONS, SYMBOL LEGENDS, AND NOTES.

B. PROVIDE A FLANGE KIT FOR FIXTURES MOUNTED IN HARD CEILING (TYPICAL).



1 UPPER LEVEL FLOOR PLAN – LIGHTING – WEST

SCALE: 1/4" = 1'-0"



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427 BEACH RD. LOCATED IN THE TOWN OF HARVERSTRAW, NY 10993

UPPER LEVEL FLOOR PLAN - LIGHTING - WEST

REV.#	DATE	COMMENTS
REVISION:	-	-
REVISION:	-	-
REVISION:	-	-
REVISION:	-	-

REVIEWS	
INITIALS	
	BDA DSGN. REV.
	BDA TECH REV.

RGAS

PROJECT NO.: 23077
DRAWN: SCG
DATE: 07/08/2024

E103

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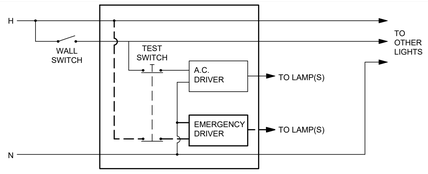


2 SWITCHED EMERGENCY LIGHTING DETAIL

NO SCALE

DAYLITE RESPONSIVE CONTROLS AREA ANALYSIS

ALL SIDELIT ZONES IN THIS BUILDING CONSIST OF LESS THAN 150W OF GENERAL LIGHTING THEREFORE DAYLIGHT-RESPONSIVE CONTROLS ARE NOT REQUIRED PER 2018 IECC C405.2.3.

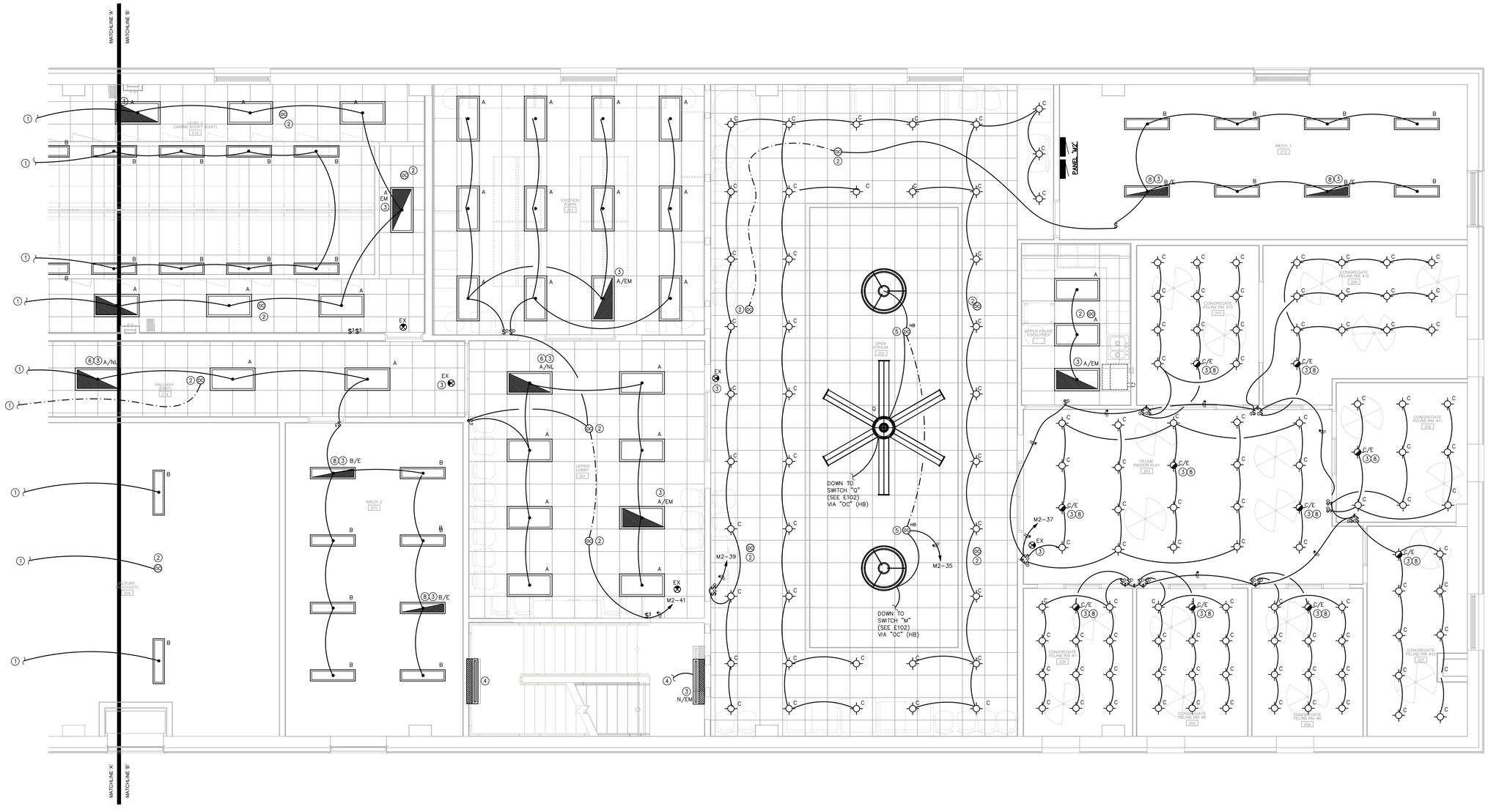
KEY NOTES

1. SEE DRAWING E103 FOR CONTINUATION.
2. CONNECT FIXTURES SUCH THAT ACTIVATION OF ANY OCCUPANCY SENSOR SHALL ENERGIZE ALL FIXTURES IN THIS SPACE.
3. NIGHT LIGHTS, EXIT SIGNS AND EMERGENCY LIGHTING FIXTURES (DRIVERS) SHALL BE CONNECTED TO LOCAL AREA LIGHTING CIRCUIT UNSWITCHED, AHEAD OF AREA LIGHTING CONTROLS.
4. SEE DRAWING E102.
5. NOT USED.
6. NIGHT LIGHT FIXTURE "ON" 24/7.
7. NOT USED
8. SEE SWITCHED EMERGENCY LIGHTING DETAIL #2 THIS SHEET.

GENERAL NOTES

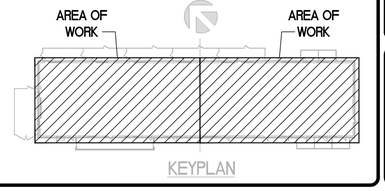
A. REFER TO DRAWING E001 & E002 FOR ELECTRICAL SPECIFICATIONS, SYMBOL LEGENDS, AND NOTES.

B. PROVIDE A FLANGE KIT FOR FIXTURES MOUNTED IN HARD CEILING (TYPICAL).



1 UPPER LEVEL
FLOOR PLAN – LIGHTING – EAST

SCALE: 1/4" = 1'-0"



KEYPLAN

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WILLIAM LEE TEETER
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R.G. C.A.R.E.S. ANIMAL SHELTER
427 BEACH RD. LOCATED IN THE TOWN OF HARVERSTRAW, NY 10993

UPPER LEVEL
FLOOR PLAN - LIGHTING - EAST

REV.#	DATE	COMMENTS
REVISION: -	-	-
REVISION: -	-	-
REVISION: -	-	-
REVISION: -	-	-

REVIEWS

INITIALS	
	BDA DSGN. REV.
	BDA TECH REV.

RGAS

PROJECT NO.: 23077
DRAWN: SCG
DATE: 07/08/2024

E104

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ELEVATOR NOTES

1. LOCATE ELEVATOR LIGHT SWITCH ADJACENT TO LADDER 60" ABOVE LANDING. SWITCH SHALL BE EASILY ACCESIBLE FROM ENTRANCE TO ELEVATOR PIT.
2. ELEVATOR PIT LIGHT. 120V VAPOR PROOF LIGHT FIXTURE WALL MOUNTED 18" AFF. ELEVATOR LIGHTS SHALL SHARE CIRCUIT WITH ELEVATOR PIT RECEPTACLES. PER **NEC 620-23(A)** LIGHTS SHALL BE UPSTREAM OF GFCI DEVICES SUCH THAT **GFCI RECEPTACLE DEVICES SHALL NOT INTERRUPT POWER TO LIGHT FIXTURES.**

   MODEL #: CREE #C-VT-A-SMWL OR APPROVED EQUAL
3. ELEVATOR SUMP PUMP. SEE DRAWING E003 FOR DETAILS.
4. SEE ELEVATOR DETAILS ON E401 FOR ADDITIONAL INFORMATION AND SPECIFICATIONS.
5. LOCATION OF ELEVATOR CONTROL BOX, ELEVATOR INDICATOR, AND FIREFIGHTER OVERRIDE.

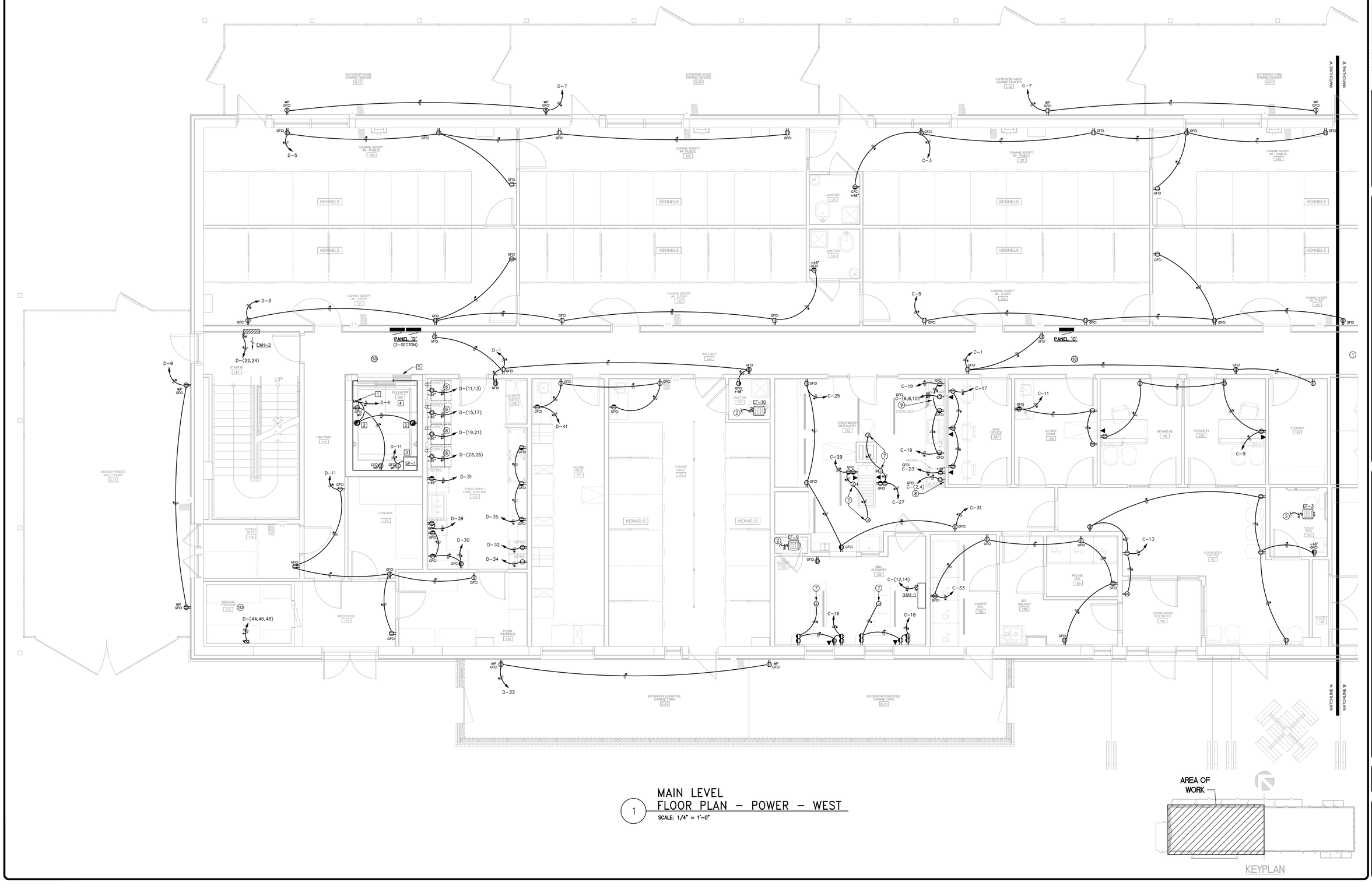
KEY NOTES

1. SEE DRAWING E202 FOR CONTINUATION.
2. POWER EXHAUST FAN VIA UN-SWITCHED LEG OF LOCAL 120V LIGHTING CIRCUIT. COORDINATE CONTROLS WITH MECHANICAL CONTRACTOR.
3. CONNECTION FOR STACKABLE WASHER 120V, 1-P, 12 AMPS. VERIFY ELECTRICAL CONNECTION TYPE WITH DELIVERED EQUIPMENT PRIOR TO ROUGH-IN. PROVIDE RESPECTIVE POWER CORD WITH PLUG AND CONNECT WASHER.
4. CONNECTION FOR STACKABLE ELECTRIC DRYER 208V, 1-P, 0.42 KW MOTOR WITH 5.4 KW HEATING ELEMENT, 26 AMPS. VERIFY ELECTRICAL CONNECTION TYPE WITH DELIVERED EQUIPMENT PRIOR TO ROUGH-IN. PROVIDE RESPECTIVE POWER CORD WITH PLUG AND CONNECT DRYER.
5. RECEPTACLE AND DATA PORT AT 72" HEIGHT FOR WALL MOUNTED MONITOR. VERIFY REQUIREMENTS AND MOUNTING HEIGHT WITH OWNER PRIOR TO ROUGH-IN.
6. CONNECTION FOR DRYER, 208V, 1-PH, 0.42 KW MOTOR WITH 5.4 KW HEATING ELEMENT, 26 AMPS. VERIFY ELECTRICAL CONNECTION TYPE REQUIRED WITH EQUIPMENT DELIVERED PRIOR TO ROUGH-IN.
7. POWER J-BOX IN CEILING FOR EXAM/SURGERY LIGHT, 115V, 1PH, 16W/54W. ELECTRICAL CONTRACTOR TO INSTALL OWNER SUPPLIED LIGHT.
8. CONNECTION FOR AUTOCLAVE 208V, 1-PH. VERIFY ELECTRICAL CONNECTION TYPE WITH DELIVERED EQUIPMENT PRIOR TO ROUGH-IN.
9. HARDWIRED CONNECTION FOR STERILIZER, 208V, 3 PH. VERIFY REQUIRED ELECTRICAL CONNECTION TYPE WITH DELIVERED EQUIPMENT PRIOR TO ROUGH-IN.
10. VERIFY WALK-IN COOLER AND FREEZER ELECTRICAL REQUIREMENT IN THE FIELD. ADJUST ELECTRICAL CONNECTIONS PER MANUFACTURER'S DOCUMENTATION AS REQUIRED.

GENERAL NOTES

A. REFER TO DRAWING E001 & E002 FOR ELECTRICAL SPECIFICATIONS, SYMBOL LEGENDS, AND NOTES.

B. REFER TO DRAWING E003 FOR MECHANICAL AND PLUMBING EQUIPMENT SCHEDULES.



1 MAIN LEVEL
FLOOR PLAN – POWER – WEST
SCALE: 1/4" = 1'-0"

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07/08/24

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R.G. C.A.R.E.S. ANIMAL SHELTER
427 BEACH RD. LOCATED IN THE TOWN OF HARVERSTRAW, NY 10993

MAIN LEVEL
FLOOR PLAN - POWER - WEST

REV #	DATE	COMMENTS
REVISION: -	-	-
REVISION: -	-	-
REVISION: -	-	-
REVISION: -	-	-

REVIEWS	
INITIALS	
	BDA DSGN. REV.
	BDA TECH REV.

RGAS

PROJECT NO.: 23077
DRAWN: SCG
DATE: 07/08/2024

E201

9 OF 17

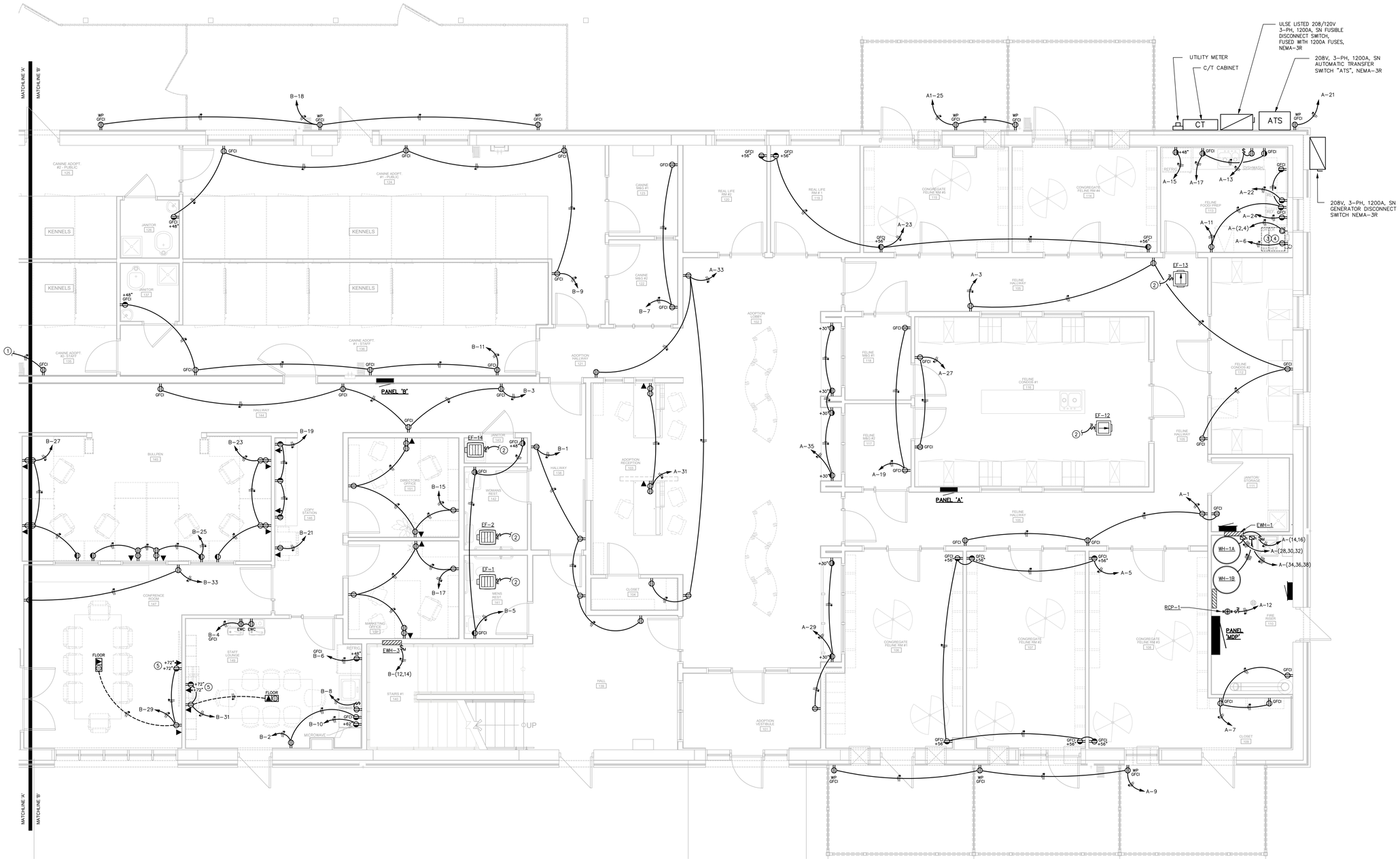
KEY NOTES

1. SEE DRAWING E201 FOR CONTINUATION.
2. POWER EXHAUST FAN VIA UN-SWITCHED LEG OF LOCAL 120V LIGHTING CIRCUIT. COORDINATE CONTROLS WITH MECHANICAL CONTRACTOR.
3. CONNECTION FOR STACKABLE WASHER 120V, 1-P, 12 AMPS. VERIFY ELECTRICAL CONNECTION TYPE WITH DELIVERED EQUIPMENT PRIOR TO ROUGH-IN. PROVIDE RESPECTIVE POWER CORD WITH PLUG AND CONNECT WASHER.
4. CONNECTION FOR STACKABLE ELECTRIC DRYER 208V, 1-P, 0.42 KW MOTOR WITH 5.4 KW HEATING ELEMENT, 26 AMPS. VERIFY ELECTRICAL CONNECTION TYPE WITH DELIVERED EQUIPMENT PRIOR TO ROUGH-IN. PROVIDE RESPECTIVE POWER CORD WITH PLUG AND CONNECT DRYER.
5. RECEPTACLE AND DATA PORT AT 72" HEIGHT FOR WALL MOUNTED MONITOR. VERIFY REQUIREMENTS AND MOUNTING HEIGHT WITH OWNER PRIOR TO ROUGH-IN.

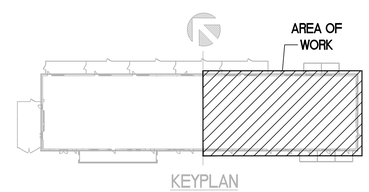
GENERAL NOTES

A. REFER TO DRAWING E001 & E002 FOR ELECTRICAL SPECIFICATIONS, SYMBOL LEGENDS, AND NOTES.

B. REFER TO DRAWING E003 FOR MECHANICAL AND PLUMBING EQUIPMENT SCHEDULES.



1 MAIN LEVEL
FLOOR PLAN – POWER – EAST
SCALE: 1/4" = 1'-0"



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R.G.C.A.R.E.S. ANIMAL SHELTER
427 BEACH RD. LOCATED IN THE TOWN OF HARVERSTRAW, NY 10993

MAIN LEVEL
FLOOR PLAN - POWER - EAST

REV.#	DATE	COMMENTS
REVISION: -	-	-
REVISION: -	-	-
REVISION: -	-	-
REVISION: -	-	-

REVIEWS	
INITIALS	
	BDA DSGN. REV.
	BDA TECH REV.

RGAS
PROJECT NO.: 23077
DRAWN: SCG
DATE: 07/08/2024

E202
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ELEVATOR NOTES

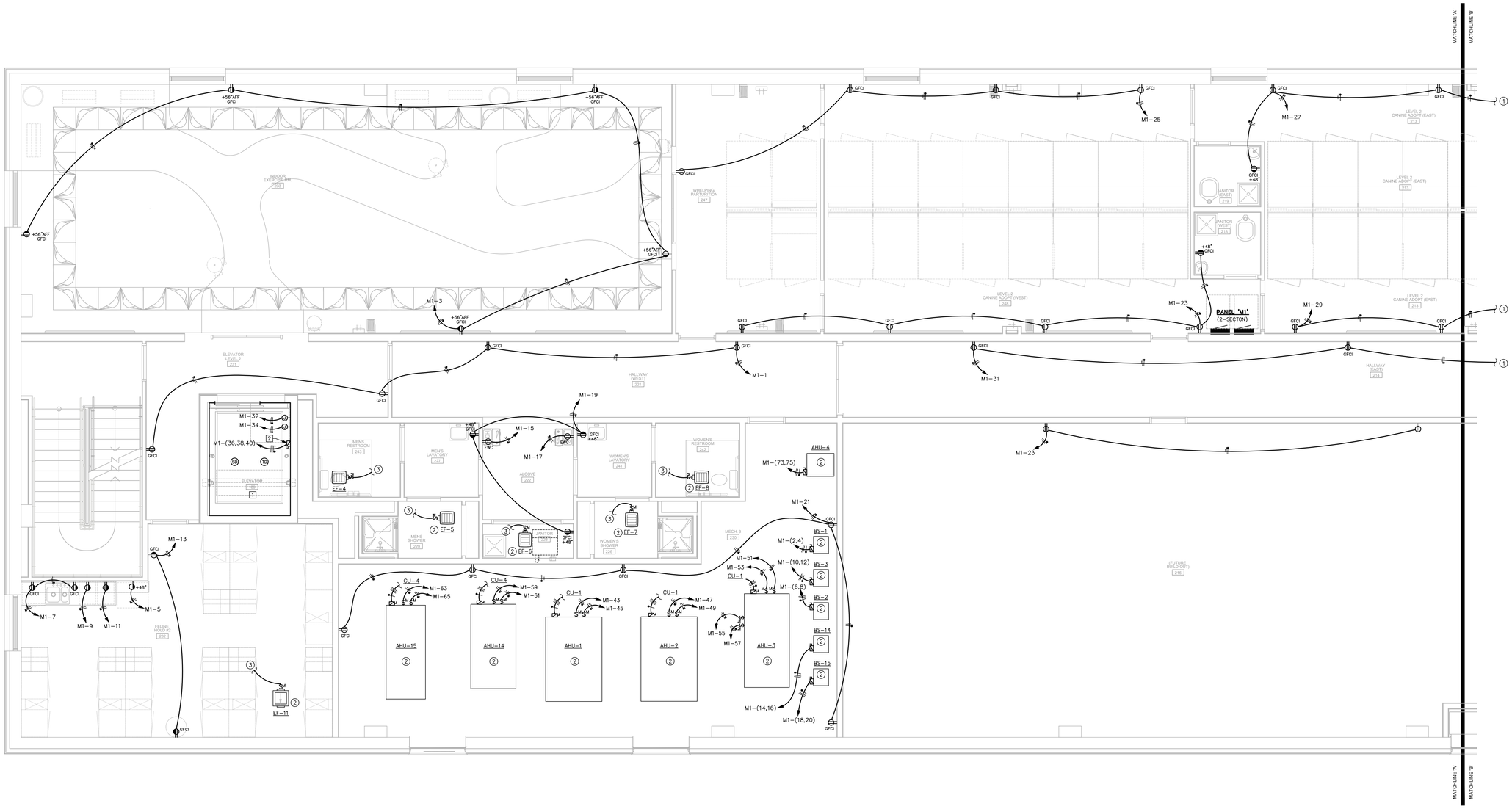
1. SEE ELEVATOR DETAILS ON E503 FOR ADDITIONAL INFORMATION AND SPECIFICATIONS.
2. ELEVATOR DISCONNECT BY ELEVATOR MANUFACTURER.

KEY NOTES

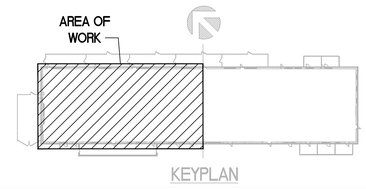
1. SEE DRAWING E204 FOR CONTINUATION.
2. REFER TO DRAWING E003 FOR MECHANICAL AND PLUMBING EQUIPMENT SCHEDULES.
3. POWER EXHAUST FAN VIA UN-SWITCHED LEG OF LOCAL 120V LIGHTING CIRCUIT. COORDINATE WITH MECHANICAL CONTRACTOR.

GENERAL NOTES

A. REFER TO DRAWING E001 & E002 FOR ELECTRICAL SPECIFICATIONS, SYMBOL LEGENDS, AND NOTES.



1 UPPER LEVEL
FLOOR PLAN – POWER – WEST
SCALE: 1/4" = 1'-0"



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ROCKLAND GREEN CENTER FOR ANIMAL RESCUE AND EDUCATIONAL SERVICES, INC.

R.G. C.A.R.E.S. ANIMAL SHELTER
427 BEACH RD. LOCATED IN THE TOWN OF HARVERSTRAW, NY 10993

UPPER LEVEL
FLOOR PLAN - POWER - WEST

REVISION:	REV.#	DATE	COMMENTS
REVISION:	-	-	-
REVISION:	-	-	-
REVISION:	-	-	-
REVISION:	-	-	-

REVIEWS	
INITIALS	
	BDA DSGN. REV.
	BDA TECH REV.

RGAS
PROJECT NO.: 23077
DRAWN: SCG
DATE: 07/08/2024

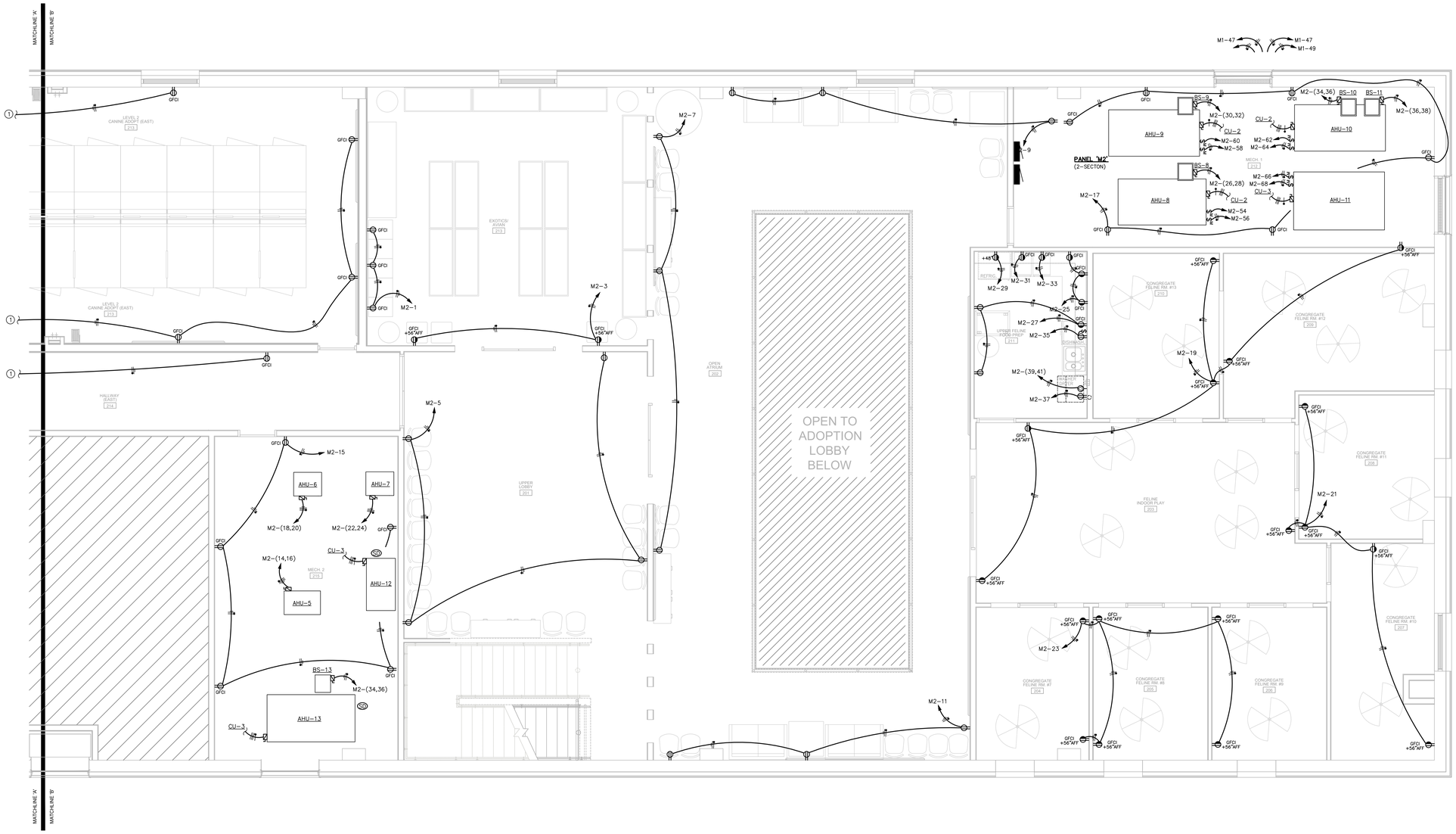
E203
11 OF 17

KEY NOTES

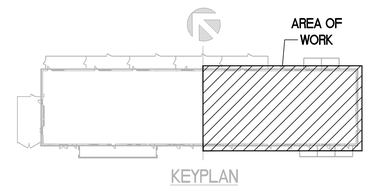
1. SEE DRAWING E203 FOR CONTINUATION.
2. REFER TO DRAWING E003 FOR MECHANICAL AND PLUMBING EQUIPMENT SCHEDULES.
3. POWER EXHAUST FAN VIA UN-SWITCHED LEG OF LOCAL 120V LIGHTING CIRCUIT. COORDINATE WITH MECHANICAL CONTRACTOR.

GENERAL NOTES

A. REFER TO DRAWING E001 & E002 FOR ELECTRICAL SPECIFICATIONS, SYMBOL LEGENDS, AND NOTES.



1 UPPER LEVEL
FLOOR PLAN - POWER - EAST
SCALE: 1/4" = 1'-0"



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BDA

STATE OF NEW YORK
WILLIAM LEE TEETER
071959
LICENSED PROFESSIONAL ENGINEER

07/08/24

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R.G. C.A.R.E.S. ANIMAL SHELTER
427 BEACH RD. LOCATED IN THE TOWN OF HARVERSTRAW, NY 10993

UPPER LEVEL FLOOR PLAN - POWER - EAST

REV.#	DATE	COMMENTS
REVISION:	-	-
REVISION:	-	-
REVISION:	-	-
REVISION:	-	-

REVIEWS	
INITIALS	
	BDA DSGN. REV.
	BDA TECH REV.

RGAS
PROJECT NO.: 23077
DRAWN: SCG
DATE: 07/08/2024

E204
12 OF 17

KEY NOTES

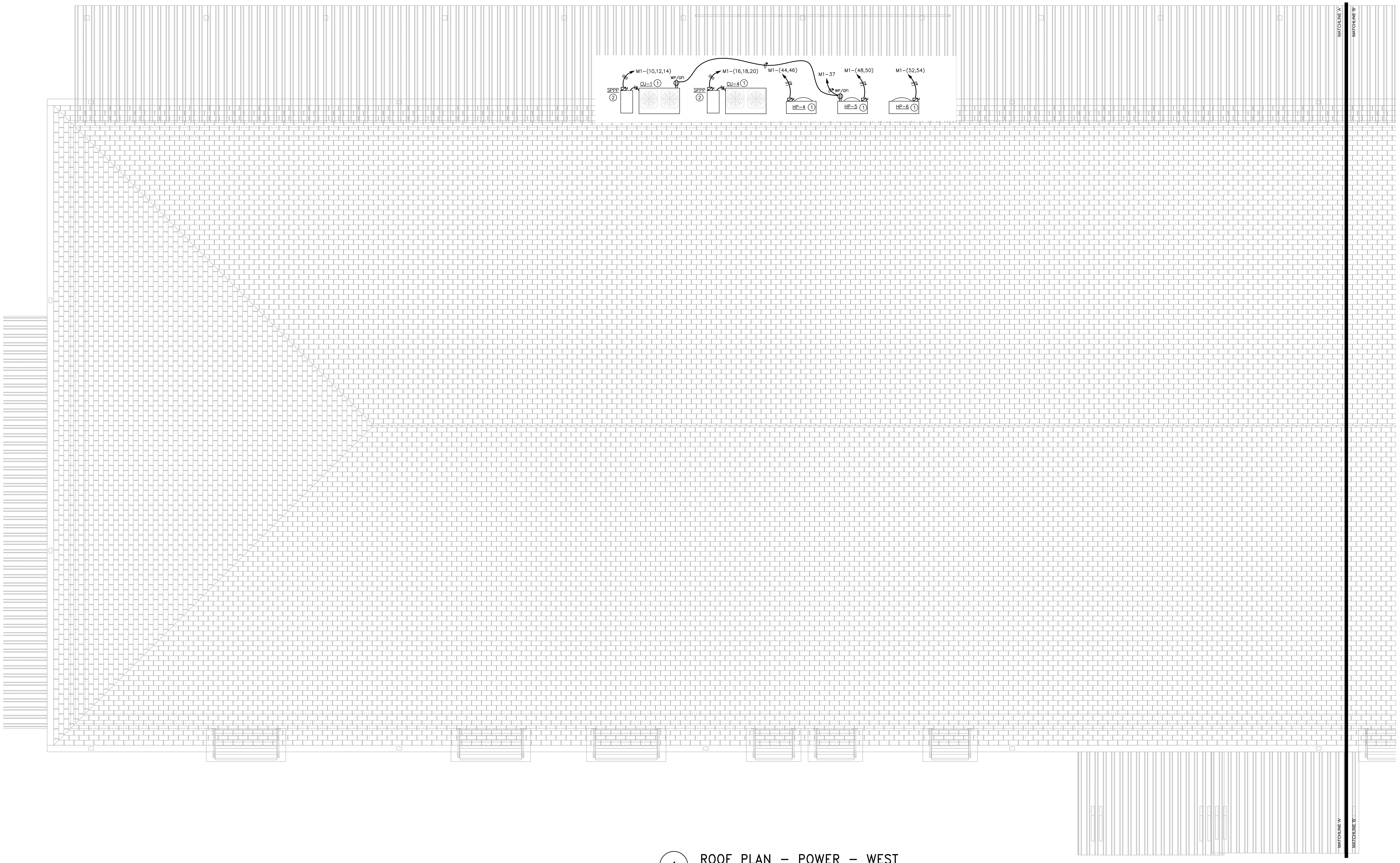
① CONDENSING/HEAT-PUMP OUTDOOR UNIT INSTALLED ATOP OF THE ROOF OVER THE CANINE EXERCISE YARDS BY MECHANICAL.

② SINGLE POINT POWER PANEL EQUAL "SPPP" PROVIDED BY MECHANICAL CONTRACTOR. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH MECHANICAL CONTRACTOR TO HAVE ALL ELECTRICAL CONNECTIONS LANDED AT PANEL AND THEN DISTRIBUTED TO ASSOCIATED INDOOR UNIT(S) AS REQUIRED.

GENERAL NOTES

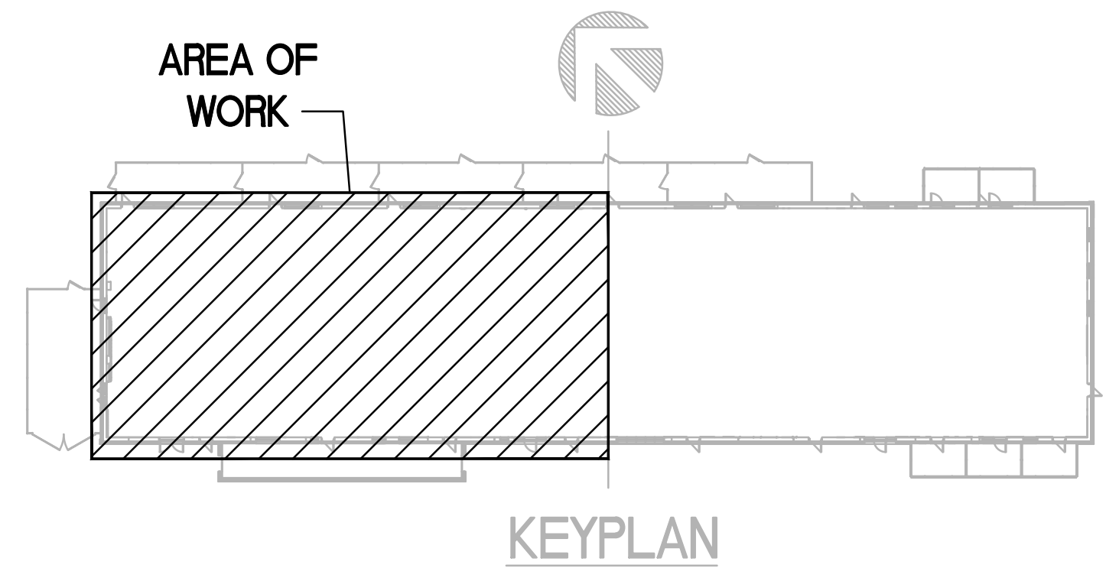
A. REFER TO DRAWING E001 & E002 FOR ELECTRICAL SPECIFICATIONS, SYMBOL LEGENDS, AND NOTES.

B. REFER TO DRAWING E003 FOR MECHANICAL AND PLUMBING EQUIPMENT SCHEDULES.



1 ROOF PLAN – POWER – WEST

SCALE: 1/4" = 1'-0"



KEYPLAN

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427 BEACH RD. LOCATED IN THE TOWN OF
HARVERSTRAW, NY 10993

ROOF PLAN - POWER - WEST

	REV.#	DATE	COMMENTS
REVISION:	-	-	-
REVISION:	-	-	-
REVISION:	-	-	-
REVISION:	-	-	-

INITIALS	REVIEWS
	BDA DSGN. REV.
	BDA TECH REV.

RGAS
PROJECT NO.: 23077
DRAWN: SCG
DATE: 07/08/2024

E205

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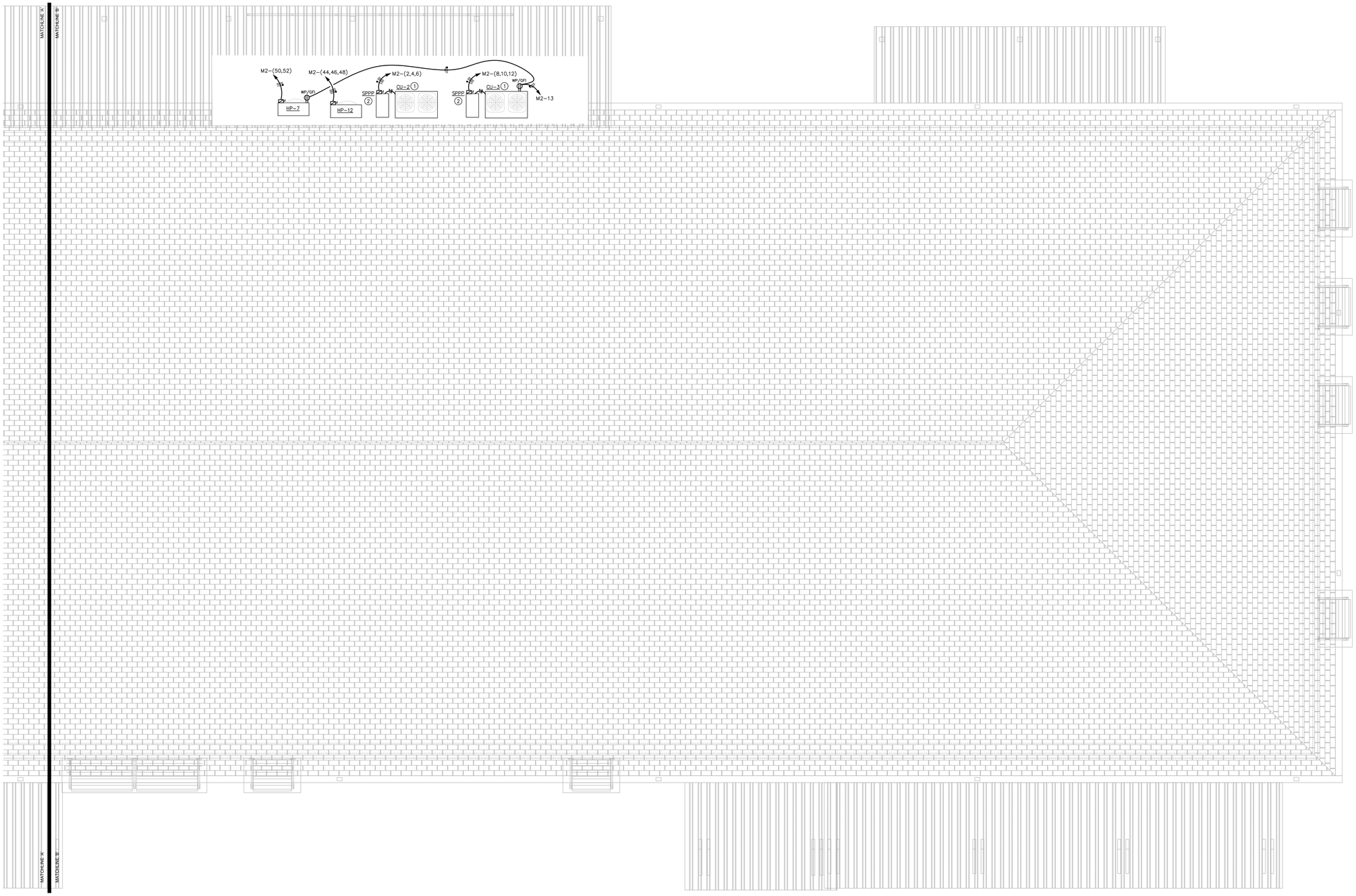
KEY NOTES

1. CONDENSING/HEAT-PUMP OUTDOOR UNIT INSTALLED ATOP OF THE ROOF OVER THE CANINE EXERCISE YARDS BY MECHANICAL.
2. SINGLE POINT POWER PANEL EQUAL "SPPP" PROVIDED BY MECHANICAL CONTRACTOR. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH MECHANICAL CONTRACTOR TO HAVE ALL ELECTRICAL CONNECTIONS LANDED AT PANEL AND THEN DISTRIBUTED TO ASSOCIATED INDOOR UNIT(S) AS REQUIRED.

GENERAL NOTES

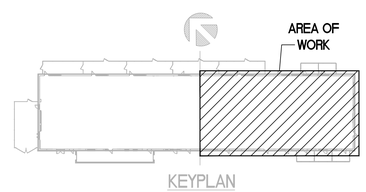
A. REFER TO DRAWING E001 & E002 FOR ELECTRICAL SPECIFICATIONS, SYMBOL LEGENDS, AND NOTES.

B. REFER TO DRAWING E003 FOR MECHANICAL AND PLUMBING EQUIPMENT SCHEDULES.



1 ROOF PLAN – POWER – EAST

SCALE: 1/4" = 1'-0"



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07/08/24

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R.G. C.A.R.E.S. ANIMAL SHELTER
427 BEACH RD. LOCATED IN THE TOWN OF HARVERSTRAW, NY 10993

ROOF PLAN - POWER - EAST

REV.#	DATE	COMMENTS
REVISION:	-	-
REVISION:	-	-
REVISION:	-	-
REVISION:	-	-

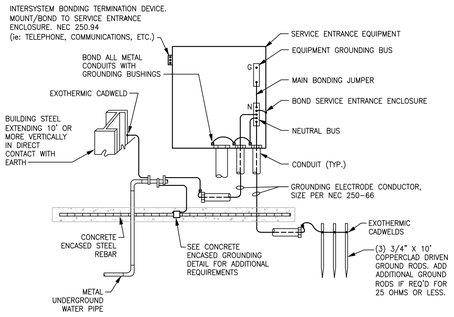
REVIEWS	
INITIALS	
	BDA DSGN. REV.
	BDA TECH REV.

RGAS

PROJECT NO.: 23077
DRAWN: SCG
DATE: 07/08/2024

E206

14 OF 17

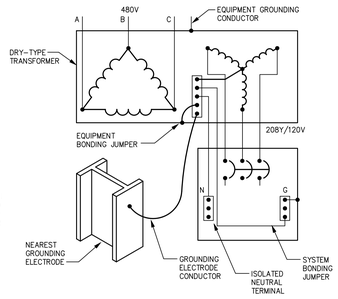


5 SERVICE GROUND DETAIL

NOT TO SCALE

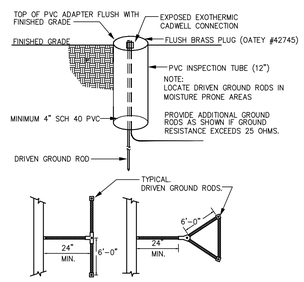
NOTES:

1. GROUNDING ELECTRODE CONDUCTOR SHALL BE ENCLOSED FULL LENGTH BY CONDUIT (RMC OR EMT).
2. GROUNDING ELECTRODE CONDUCTOR SHALL BE CONTINUOUS (UNBROKEN) FROM THE NEUTRAL BUS TO THE GROUNDING ELECTRODE. SPLICES AND/OR JOINTS ARE PROHIBITED. EXCEPTIONS AS ALLOWED PER NEC 250.64(C) IRREVERSIBLE COMPRESSION TYPE CONNECTORS OR BY EXOTHERMIC WELDING WILL BE ACCEPTABLE FOR REMODEL WORK ONLY.
3. GROUNDING ELECTRODE CONDUCTORS SHALL BE COPPER.
4. CONNECTION TO THE METAL COLD WATER PIPE SHALL BE MADE WITHIN 5' OF THE POINT OF ENTRANCE INTO THE BUILDING.
5. GROUNDING ELECTRODE CONDUCTORS AND BONDING JUMPER CONNECTIONS TO BUILDING STEEL, CONCRETE ENCASED STEEL REBAR, AND DRIVEN GROUND RODS SHALL BE CONNECTED BY EXOTHERMIC CADWELDS.
6. ALL GROUNDING BUSHINGS, CLAMPS, JUMPERS, FASTENERS, ETC. SHALL BE APPROVED AND LISTED FOR THE PURPOSE.



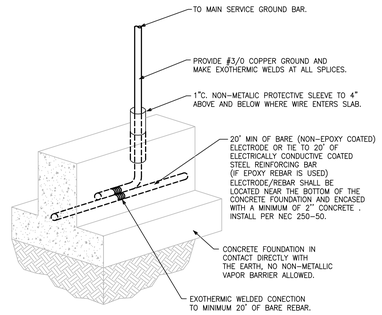
4 TRANSFORMER GROUND SYSTEM

NOT TO SCALE



3 DRIVEN GROUND DETAIL

NOT TO SCALE



2 CONCRETE ENCASED GROUNDING DETAIL

NOT TO SCALE

NEW PANEL MDP

SUPPLY: 208/120V, 3-PH, 4W
MAINS: 1200A MLO
INTERRUPT RATING: 22K AIC
MOUNTING: SURFACE

TYPE: BRANCH CIRCUIT PANELBOARD
BUS MATERIAL: CU OR AL
MANUFACTURER: SQ-D, GE, SIEMENS

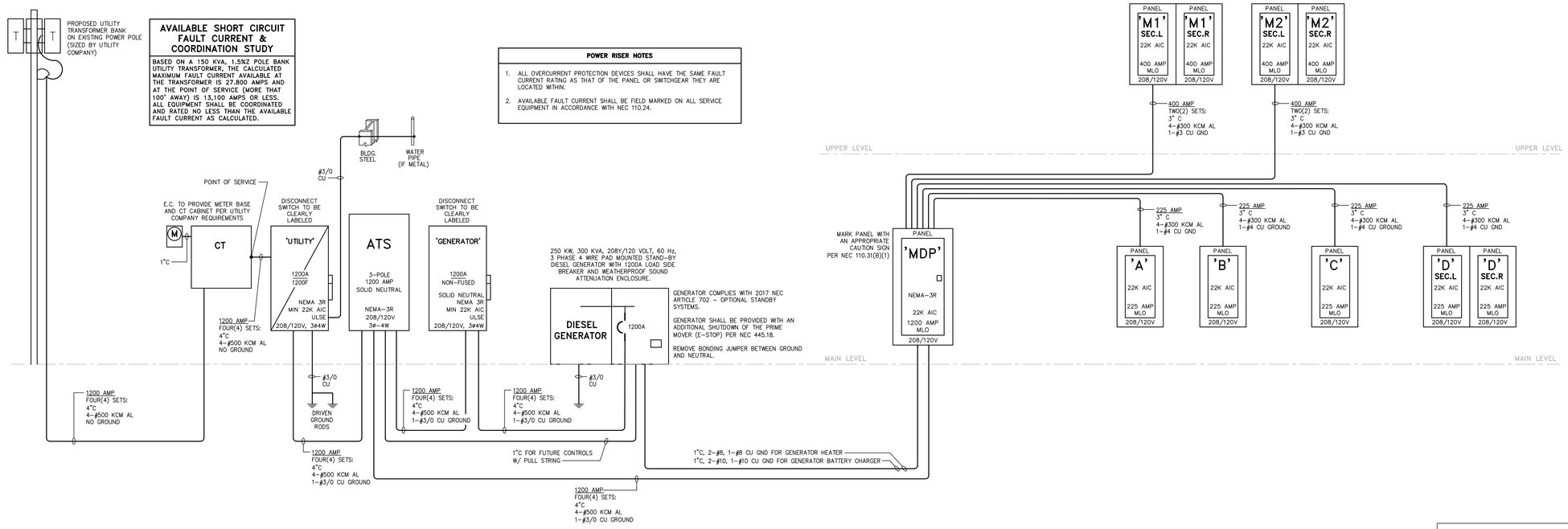
NOTE	DESCRIPTION	TRIP	POLE	WIRE	CCT	PHASE LOAD SUMMARY A		PHASE LOAD SUMMARY B		PHASE LOAD SUMMARY C		CCT	WIRE	POLE	TRIP	DESCRIPTION	NOTE
					1	20.8	7.0					2					
.	PANEL 'A'	225	3	SR	3			21.7	7.2			4	SR	3	225	PANEL 'B'	
					5					20.1	7.7	6					
					7	16.1	12.8					8					
.	PANEL 'C'	225	3	SR	9			15.9	12.1			10	SR	3	225	PANEL 'D'	
					11					14.2	12.7	12					
					13	38.3	43.2					14					
.	PANEL 'M1'	400	3	SR	15			40.0	44.6			16	SR	3	400	PANEL 'M2'	
					17					41.8	45.3	18					
	SPARE		1	20	19	0.0	0.0					20					
.	SPARE		1	20	21			0.0	0.0			22		3	100	SPARE	
.	SPARE		1	20	23					0.0	0.0	24					
.	SPARE		1	20	25	0.0	0.0					26				BLANK	
.	SPARE		1	20	27			0.0	0.0			28				BLANK	
.	SPARE		1	20	29					0.0	0.0	30				BLANK	
.	SPARE		1	20	31	0.0	0.0					32				BLANK	
.	SPARE		1	20	33			0.0	0.0			34				BLANK	
.	SPARE		1	20	35					0.0	0.0	36				BLANK	
.	LIGHTING - EXTERIOR	20	1	20	37	1.4	0.0					38				BLANK	
.	LIGHTING - EXTERIOR	20	1	20	39			1.3	0.0			40				BLANK	
.	LIGHTING - EXTERIOR	20	1	20	41					1.4	0.0	42				BLANK	
TOTAL KVA PER PHASE						139.6		142.7		143.1							
DIVERSIFIED KVA PER PHASE						132.4		135.7		135.5							
DIVERSIFIED TOTAL KVA								403.5 KVA									
MAXIMUM AMPS HEAVIEST PHASE (DIVERSIFIED)								1129.8 AMPS									

PANEL NOTES

1. WITH EQUIPMENT GROUND BUS
2. PROVIDE A TYPEWRITTEN DIRECTORY.
3. "SR" = SEE POWER RISER DIAGRAM

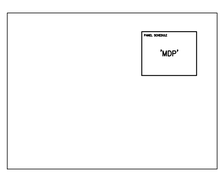
PANEL KEY NOTES

NEC 220 LOAD JUSTIFICATION		
LIGHTING	125%	16.2
HEATING	100%	0.0
AIR HANDLERS	100%	0.2
AIR CONDITIONING	100%	0.0
RECEPTACLES	1st 10kVA = 100% +50% OF REMAINING	35.1
WATER HEATER	100%	0.0
SERVICE EQUIPMENT	MINUS NEC DEMAND 100%	0.0
PROCESS	100%	0.0
MISCELLANEOUS	100%	352.0



1 POWER RISER DIAGRAM

DIAGRAMMATIC



PANEL SCHEDULE KEY

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07/08/24

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POWER RISER DIAGRAM & PPANEL SCHEDULES

REV.#	DATE	COMMENTS
REVISION:	.	.
REVISION:	.	.
REVISION:	.	.
REVISION:	.	.

REVIEWS	
INITIALS	
	BDA DSGN. REV.
	BDA TECH REV.

RGAS
PROJECT NO.: 23077
DRAWN: SCG
DATE: 07/08/2024

E301

15 OF 17

NEW PANEL A

SUPPLY: 208/120V, 3-PH, 4W
MAINS: 225A MLO
INTERRUPT RATING: 22K AIC
MOUNTING: RECESSED

TYPE: BRANCH CIRCUIT PANELBOARD
BUS MATERIAL: CU OR AL
MANUFACTURER: SQ-D, GE, SIEMENS

PHASE LOAD SUMMARY

NOTE	DESCRIPTION	TRIP	POLE	WIRE	CCT	PHASE A	PHASE B	PHASE C	CCT	WIRE	POLE	TRIP	DESCRIPTION	NOTE
	REC – FELINE HALLWAY	20	1	12	1	0.7	2.0		2	10	2	30	DRYER	
	REC – FELINE HALLWAY	20	1	12	3			0.7	2.0		4	10		
	REC – FELINE ROOMS	20	1	12	5				6	12	1	20	WASHING MACHINE	A
	REC – FIRE RISER/CLOSET	20	1	12	7	0.7	0.0		8				BLANK	
	REC – FELINE EXT.	20	1	12	9			0.5	0.0		10		BLANK	
	REC – FELINE FOOD PREP	20	1	12	11				12	12	1	20	RECIRC PUMP RCP-1	
A	DISHWASHER – FELINE	20	1	12	13	1.2	2.5		14	10	2	20	EWH-1	
A	REFRIGERATOR – FELINE	20	1	12	15			1.2	2.5		16	10		
	REC – FELINE FOOD PREP	20	1	12	17				18				BLANK	
	REC – FELINE M&G	20	1	12	19	0.4	0.0		20				BLANK	
	REC – EXTERIOR	20	1	12	21			0.2	1.0		22	12	1	20	REFRIG. – FELINE PREP	A
	REC – FELINE CONGR.	20	1	12	23				0.7	1.0	24	12	1	20	REFRIG. – FELINE PREP	A
	REC – FELINE CONGR. EXT.	20	1	12	25	0.4	0.0		26				BLANK	
	REC – FELINE CONDOS	20	1	12	27			0.4	6.0		28	4			
	REC – ADOPTION LOBBY	20	1	12	29				0.4	6.0	30	4	3	60	WH-1A	
	REC – ADOPT. RECEPTION	20	1	12	31	0.9	6.0		32	4						
	REC – ADOPTION LOBBY	20	1	12	33			0.7	6.0		34	4				
	REC – ADOPTION LOBBY	20	1	12	35				0.7	6.0	36	4	3	60	WH-1B	
	SPARE	20	1		37	0.0	6.0				38	4				
	SPARE	20	1		39			0.0	0.5		40	12	2	20	LINT INTERCEPTOR	
	SPARE	20	1		41				0.0	0.5	42	12			CONTROL PANEL	
TOTAL KVA PER PHASE						20.8	21.7	20.1						
DIVERSIFIED KVA PER PHASE						20.4	21.4	19.8						
DIVERSIFIED TOTAL KVA							61.6 KVA							
MAXIMUM AMPS HEAVIEST PHASE (DIVERSIFIED)							178.2 AMPS							

PANEL NOTES + REQUIREMENTS
1. WITH EQUIPMENT GROUND BUS
2. PROVIDE A TYPEWRITTEN DIRECTORY.
3. "SR" = SEE POWER RISER DIAGRAM.

PANEL KEY NOTES:
A. PROVIDE A GFCI BREAKER.
B. PROVIDE LOCK-ON DEVICE ON BREAKER.

NEC 220 LOAD JUSTIFICATION

LIGHTING	125%	0.0
HEATING	100%	0.0
AIR HANDLERS	100%	0.0
AIR CONDITIONING	100%	0.0
RECEPTACLES	1st 10kVA = 100%	11.1
	+50% OF REMAINING	
WATER HEATER	100%	0.0
SERVICE EQUIPMENT	MINUS NEC DEMAND	0.0
	100%	
PROCESS	100%	0.0
MISCELLANEOUS	100%	50.5

NEW PANEL B

SUPPLY: 208/120V, 3-PH, 4W
MAINS: 225A MLO
INTERRUPT RATING: 22K AIC
MOUNTING: RECESSED

TYPE: BRANCH CIRCUIT PANELBOARD
BUS MATERIAL: CU OR AL
MANUFACTURER: SQ-D, GE, SIEMENS

PHASE LOAD SUMMARY

NOTE	DESCRIPTION	TRIP	POLE	WIRE	CCT	PHASE A	PHASE B	PHASE C	CCT	WIRE	POLE	TRIP	DESCRIPTION	NOTE
	=LEFT1F2	20	1	12	1	0.7	0.5		2	12	1	20	REC – STAFF LOUNGE	
	REC – HALLWAY	20	1	12	3			0.7	1.2		4	12	1	20	ELEC. WATER COOLER	A
	REC – RESTROOMS/JAN	20	1	12	5					0.5	1.2	6	12	1	20	REFRIGERATOR	A
	REC – CANINE M/G	20	1	12	7	0.4	1.2					8	12	1	20	DISHWASHER	A
	REC – KENNELS/ADOPT	20	1	12	9			0.9	1.2			10	12	1	20	MICROWAVE	
	REC – KENNELS/ADOPT	20	1	12	11					0.7	1.5	12	12	2	20	EWH-3	
	SPARE	20	1		13	0.0	1.5					14	12				
	REC – OFFICE	20	1	12	15			0.9	0.0			16		1	20	SPARE	
	REC – OFFICE	20	1	12	17					0.9	0.5	18	12	1	20	REC – CANINE YARDS	
	REC – COPY STATION	20	1	12	19	0.5	0.0					20		1	20	SPARE	
	COPY MACHINE	20	1	12	21			1.0	0.0			22		1	20	SPARE	
	REC – CUBICALS	20	1	12	23					0.9	0.0	24		1	20	SPARE	
	REC – CUBICALS	20	1	12	25	0.9	0.0					26		1	20	SPARE	
	REC – CUBICALS	20	1	12	27			0.9	0.0			28		1	20	SPARE	
	TV – CONF RM	20	1	12	29					1.4	0.0	30		1	20	SPARE	
	TV – LOUNGE	20	1	12	31	1.2	0.0					32		1	20	SPARE	
	REC – CONF RM	20	1	12	33			0.4	0.0			34				SPACE WITH BUSSING	
	SPARE	20	1		35					0.0	0.0	36				SPACE WITH BUSSING	
	SPARE	20	1		37	0.0	0.0					38				SPACE WITH BUSSING	
	SPARE	20	1		39			0.0	0.0			40				SPACE WITH BUSSING	
	SPARE	20	1		41				0.0	0.0		42				SPACE WITH BUSSING	
TOTAL KVA PER PHASE						7.0	7.2	7.7									
DIVERSIFIED KVA PER PHASE						6.6	6.6	7.2									
DIVERSIFIED TOTAL KVA							20.4 KVA										
MAXIMUM AMPS HEAVIEST PHASE (DIVERSIFIED)							59.8 AMPS										

REQUIREMENTS
1. WITH EQUIPMENT GROUND BUS
2. PROVIDE A TYPEWRITTEN DIRECTORY.
3. "SR" = SEE POWER RISER DIAGRAM.

PANEL KEY NOTES:
A. PROVIDE A GFCI BREAKER.
B. PROVIDE LOCK-ON DEVICE ON A BREAKER.

NEC 220 LOAD JUSTIFICATION

LIGHTING	125%	0.0
HEATING	100%	0.0
AIR HANDLERS	100%	0.0
AIR CONDITIONING	100%	0.0
RECEPTACLES	1st 10kVA = 100%	11.4
	+50% OF REMAINING	
WATER HEATER	100%	0.0
SERVICE EQUIPMENT	MINUS NEC DEMAND	0.0
	100%	
PROCESS	100%	0.0
MISCELLANEOUS	100%	9.0

NEW PANEL C

SUPPLY: 208/120V, 3-PH, 4W
MAINS: 225A MLO
INTERRUPT RATING: 22K AIC
MOUNTING: RECESSED

TYPE: BRANCH CIRCUIT PANELBOARD
BUS MATERIAL: CU OR AL
MANUFACTURER: SQ-D, GE, SIEMENS

PHASE LOAD SUMMARY

NOTE	DESCRIPTION	TRIP	POLE	WIRE	CCT	PHASE A	PHASE B	PHASE C	CCT	WIRE	POLE	TRIP	DESCRIPTION	NOTE
	REC – HALLWAY	20	1	12	1	0.5	1.5		2	10	2	20	AUTOCLAVE	
	REC – KENNELS/ADOPT	20	1	12	3			1.1	1.5		4	10		
	REC – KENNELS/ADOPT	20	1	12	5					0.9	8.0	6	4			
	REC – CANINE YARD	20	1	12	7	0.4	8.0					8	4	3	70	STERILIZER
	REC – CANINE SURRENDER	20	1	12	9			0.7	8.0			10	4			
	REC – EXAM	20	1	12	11					0.5	1.1	12	12	2	15	DAH-1
	RCPT – WAITING RM	20	1	12	13	1.1	1.1					14	12			
	SPARE	20	1		15			0.0	1.3			16	12	1	20	REC – DOUBLE SURGERY
	COMPUTERS – DVM OFFICE	20	1	12	17					1.2	1.3	18	12	1	20	REC – DOUBLE SURGERY
	REC – TREATMENT	20	1	12	19	0.5	0.0					20		1	20	SPARE
	SPARE	20	1		21			0.0	0.0			22		1	20	SPARE
	SPARE	20	1		23					0.0	0.0	24		1	20	SPARE
	REC – TREATMENT	20	1	12	25	1.1	0.0					26		1	20	SPARE
	TREATMENT	20	1	12	27			1.2	0.0			28		1	20	SPARE
	TREATMENT	20	1	12	29					1.2	0.0	30		1	20	SPARE
	REC – TREATMENT	20	1	12	31	0.7	0.0					32		1	20	SPARE
	REC – ISOLATION	20	1	12	33			0.9	0.0			34		1	20	SPARE
	SPARE	20	1		35					0.0	0.0	36		1	20	SPARE
	DBL SURGERY	20	1	12	37	1.2	0.0					38		1	20	SPARE
	DBL SURGERY	20	1	12	39			1.2	0.0			40				SPACE WITH BUSSING
	SPARE	20	1		41				0.0	0.0		42				SPACE WITH BUSSING
TOTAL KVA PER PHASE						16.1	15.9	14.2									
DIVERSIFIED KVA PER PHASE						15.8	15.5	13.9									
DIVERSIFIED TOTAL KVA							45.2 KVA										
MAXIMUM AMPS HEAVIEST PHASE (DIVERSIFIED)							131.2 AMPS										

PANEL NOTES + REQUIREMENTS
1. WITH EQUIPMENT GROUND BUS
2. PROVIDE A TYPEWRITTEN DIRECTORY.
3. "SR" = SEE POWER RISER DIAGRAM.

PANEL KEY NOTES:
A. PROVIDE A GFCI BREAKER.
B. PROVIDE LOCK-ON DEVICE ON A BREAKER.

NEC 220 LOAD JUSTIFICATION

LIGHTING	125%	0.1
HEATING	100%	0.0
AIR HANDLERS	100%	0.0
AIR CONDITIONING	100%	0.0
RECEPTACLES	1st 10kVA = 100%	11.0
	+50% OF REMAINING	
WATER HEATER	100%	0.0
SERVICE EQUIPMENT	MINUS NEC DEMAND	0.0
	100%	
PROCESS	100%	0.0
MISCELLANEOUS	100%	34.0

NEW PANEL D (LEFT SECTION)

SUPPLY: 208/120V, 3-PH, 4W
MAINS: 225A MLO
INTERRUPT RATING: 22K AIC
MOUNTING: RECESSED

TYPE: BRANCH CIRCUIT PANELBOARD WITH 42 POLES
BUS MATERIAL: CU OR AL PER SECTION. PROVIDE SUB-FEED LUGS AND
MANUFACTURER: SQ-D, GE, SIEMENS CONNECTION TO SECOND SECTION.

PHASE LOAD SUMMARY

NOTE	DESCRIPTION	TRIP	POLE	WIRE	CCT	PHASE A	PHASE B	PHASE C	CCT	WIRE	POLE	TRIP	DESCRIPTION	NOTE
.	REC – HALL/JANITOR	20	1	12	1	0.7	0.5		2	12	1	20	ELEV – SP-1 (SUMP PUMP)	.
.	REC – KENNELS/ADOPT	20	1	12	3			1.1	0.1		4	12	1	20	ELEV – PIT LIGHTING	.
.	REC – KENNELS/ADOPT	20	1	12	5					0.9	4.0	6					.
.	REC – CANINE EXT.	20	1	12	7	0.4	4.0					8		3	60	WALK-IN FREEZER	.
.	REC – FENCED EXTERIOR	20	1	12	9			0.4	4.0			10					.
A	DRYER	30	2	10	11					1.5	0.0	12		1	20	SPARE	.
				10	13	1.5	0.0					14		1	20	SPARE	.
A	DRYER	30	2	10	15			1.5	0.0			16		1	20	SPARE	.
				10	17					1.5	0.0	18		1	20	SPARE	.
A	DRYER	30	2	10	19	1.5	0.0					20		1	20	SPARE	.
				10	21			1.5	1.5			22	12	2	20	EWH-2	
A	DRYER	30	2	10	23					1.5	1.5	24	12				
				10	25	1.5	0.5					26	12	2	20	LINT INTERCEPTOR	
	SPARE	20	1		27			0.0	0.5			28	12			CONTROL PANEL	
	SPARE	20	1		29					0.0	0.5	30	12	1	20	REC – FOOD PREP	
A	REFRIG. – FOOD PREP	20	1	12	31	1.0	1.2					32	12	1	20	REFRIG. – FOOD PREP	A
	REC – EXTERIOR	20	1	12	33			0.4	1.2			34	12	1	20	REFRIG. – FOOD PREP	A
	REC – FOOD PREP	20	1	12	35					0.5	0.0	36				SPACE WITH BUSSING	.
	SPARE	20	1		37	0.0	0.0					38				SPACE WITH BUSSING	.
	SPARE	20	1		39			0.0	0.0			40				SPACE WITH BUSSING	.
	REC – FELINE/CANINE HOLD	20	1	12	41					0.7	0.0	42				SPACE WITH BUSSING	.
TOTAL KVA PER PHASE						12.8	12.1	12.7									

NEC 220 LOAD JUSTIFICATION
SEE RIGHT SECTION FOR LOAD JUSTIFICATION.

REQUIREMENTS
1. WITH EQUIPMENT GROUND BUS
2. PROVIDE A TYPEWRITTEN DIRECTORY.
3. "SR" = SEE POWER RISER DIAGRAM.

PANEL KEY NOTES:
A. PROVIDE A GFCI BREAKER.
B. PROVIDE LOCK-ON DEVICE ON A BREAKER.

NEW PANEL M1 (LEFT SECTION)

SUPPLY: 208/120V, 3-PH, 4W
MAINS: 400A MLO
INTERRUPT RATING: 22K AIC
MOUNTING: RECESSED

TYPE: BRANCH CIRCUIT PANELBOARD WITH 42 POLES
BUS MATERIAL: CU OR AL PER SECTION. PROVIDE SUB-FEED LUGS AND
MANUFACTURER: SQ-D, GE, SIEMENS CONNECTION TO SECOND SECTION.

PHASE LOAD SUMMARY

NOTE	DESCRIPTION	TRIP	POLE	WIRE	CCT	PHASE A	PHASE B	PHASE C	CCT	WIRE	POLE	TRIP	DESCRIPTION	NOTE
	REC – HALLWAY	20	1	12	1	0.7	0.6		2	12	2	15	BS-1,2,3	.
	REC – EXERCISE RM	20	1	12	3			0.9	0.6		4	12				.
A	REFRIGERATOR – FELINE	20	1	12	5					1.2	0.4	6	12	2	15	BS-14,15	.
	REC – FELINE SINK	20	1	12	7	0.4	0.4					8	12				.
A	COUNTER REFRIG. FELINE	20	1	12	9			1.2	13.5			10	1				.
A	COUNTER REFRIG. FELINE	20	1	12	11					1.2	13.5	12	1	3	125	CU-1	.
	REC – FELINE	20	1	12	13	0.4	13.5					14	1				.
A	EWC – ALCOVE	20	1	12	15			1.0	7.0			16	4				.
A	EWC – ALCOVE	20	1	12	17					1.0	7.0	18	4	3	70	CU-4	.
	REC – JAN./RESTROOMS	20	1	12	19	0.5	7.0					20	4				.
	REC – MECH RM	20	1	12	21			0.9	0.0			22		1	20	SPARE	.
	REC – CANINE ADOPT WEST	20	1	12	23					0.9	0.0	24		1	20	SPARE	.
	REC – CANINE ADOPT WEST	20	1	12	25	0.7	0.0					26		1	20	SPARE	.
	REC – CANINE ADOPT EAST	20	1	12	27			0.7	0.0			28		1	20	SPARE	.
	REC – CANINE ADOPT EAST	20	1	12	29					0.9	0.0	30		1	20	SPARE	.
	REC – HALLWAY	20	1	12	31	0.5	1.0					32	12	1	20	ELEV CONTROLS	.
	SPARE	20	1		33			0.0	0.3			34	12	1	20	ELEV FAN & LIGHTS	.
	SPARE	20	1		35					0.0	5.1	36	4				.
	REC – ROOF MECH	20	1	12	37	0.4	5.1					38	4	3	70	ELEVATOR	B
	LIGHTS	20	1	12	39			1.7	5.1			40	4				.
	LIGHTS	20	1	12	41					1.4	0.0	42	.	.	.	SHUNT TRIP SPACE	.
TOTAL KVA PER PHASE						31.2	32.9	32.6									

NEC 220 LOAD JUSTIFICATION
SEE RIGHT SECTION FOR LOAD JUSTIFICATION.

REQUIREMENTS
1. WITH EQUIPMENT GROUND BUS
2. PROVIDE A TYPEWRITTEN DIRECTORY.

PANEL KEY NOTES:
A. PROVIDE A GFCI BREAKER.
B. PROVIDE LOCK-ON DEVICE ON A BREAKER.

NEW PANEL M2 (LEFT SECTION)

SUPPLY: 208/120V, 3-PH, 4W
MAINS: 400A MLO
INTERRUPT RATING: 22K AIC
MOUNTING: RECESSED

TYPE: BRANCH CIRCUIT PANELBOARD WITH 42 POLES
BUS MATERIAL: CU OR AL PER SECTION. PROVIDE SUB-FEED LUGS AND
MANUFACTURER: SQ-D, GE, SIEMENS CONNECTION TO SECOND SECTION.

PHASE LOAD SUMMARY

NOTE	DESCRIPTION	TRIP	POLE	WIRE	CCT	PHASE A	PHASE B	PHASE C	CCT	WIRE	POLE	TRIP	DESCRIPTION	NOTE
	REC – EXOTICS	20	1	12	1	0.5	8.8		2	3				
	REC – EXOTICS	20	1	12	3			0.4	8.8		4	3	3	80	CU-2	
	REC – LOBBY/ATRIUM	20	1	12	5					0.7	8.8	6	3				
	REC – LOBBY/ATRIUM	20	1	12	7	0.5	10.1					8	1				
	REC – LOBBY/ATRIUM	20	1	12	9			0.5	10.1			10	1	3	110	CU-3	
	REC – LOBBY/ATRIUM	20	1	12	11					0.5	10.1	12	1				
	REC – ROOF MECH	20	1	12	13	0.4	4.1					14	.	2	45	AHU-6	
	REC – MECH RM	20	1	12	15			0.9	4.1			16	.				
	REC – MECH RM	20	1	12	17					1.1	5.0	18	.	2	50	AHU-6	
	REC – FELINE	20	1	12	19	1.1	5.0					20	.				
	REC – FELINE	20	1	12	21			0.9	6.9			22	.	2	80	AHU-7	
	REC – FELINE	20	1	12	23					1.1	6.9	24	.				
	REC – FELINE FOOD SINK	20	1	12	25	0.5	0.4					26	.	2	15	BS-8,9	
	REC – FELINE FOOD	20	1	12	27			0.5	0.4			28	.				
A	REFRIGERATOR – FELINE	20	1	12	29					1.0	0.4	30	.	2	15	BS-10,11	
A	COUNTER REFRIG – FELINE	20	1	12	31	1.0	0.4					32	.				
A	COUNTER REFRIG – FELINE	20	1	12	33			1.0	0.2			34	.	2	15	BS-13	
A	DISHWASHER – FELINE	20	1	12	35					1.0	0.2	36	.				
A	WASHER – FELINE	20	1	12	37	1.0	0.0					38		1	20	SPARE	
A	DRYER – FELINE	20	2	10	39			1.0	0.0			40		1	20	SPARE	
				10	41					1.0	0.0	42		1	20	SPARE	
TOTAL KVA PER PHASE						33.9	35.7	37.8									

NEC 220 LOAD JUSTIFICATION
SEE RIGHT SECTION FOR LOAD JUSTIFICATION.

PANEL NOTES + REQUIREMENTS
1. WITH EQUIPMENT GROUND BUS
2. PROVIDE A TYPEWRITTEN DIRECTORY.
3. "SR" = SEE POWER RISER DIAGRAM.

PANEL KEY NOTES:
A. PROVIDE A GFCI BREAKER.
B. PROVIDE LOCK-ON DEVICE ON A BREAKER.

NEW PANEL D (RIGHT SECTION)

SUPPLY: 208/120V, 3-PH, 4W
MAINS: 225A MLO
INTERRUPT RATING: 22K AIC
MOUNTING: RECESSED

TYPE: BRANCH CIRCUIT PANELBOARD WITH 42 POLES
BUS MATERIAL: CU OR AL PER SECTION. PROVIDE SUB-FEED LUGS AND
MANUFACTURER: SQ-D, GE, SIEMENS CONNECTION TO SECOND SECTION.

PHASE LOAD SUMMARY

NOTE	DESCRIPTION	TRIP	POLE	WIRE	CCT	PHASE A	PHASE B	PHASE C	CCT	WIRE	POLE	TRIP	DESCRIPTION	NOTE
	0	0	0	0	43	0.0	0.0		44	0	0	0	0	.
	SPARE	20	1		45			0.0	0.0	46	0	0	0	0	.
	SPARE	20	1		47					0.0	0.0	48	0	0	0	0	.
	SPARE	20	1		49	0.0	0.0					50		1	20	SPARE	.
	SPARE	20	1		51			0.0	0.0			52		1	20	SPARE	.
	SPARE	20	1		53					0.0	0.0	54		1	20	SPARE	.
	SPARE	20	1		55	0.0	0.0					56		1	20	SPARE	.
	SPARE	20	1		57			0.0	0.0			58		1	20	SPARE	.
	SPARE	20	1		59					0.0	0.0	60		1	20	SPARE	.
	SPARE	20	1		61	0.0	0.0					62		1	20	SPARE	.
	SPARE	20	1		63			0.0	0.0			64		1	20	SPARE	.
	SPARE	20	1		65					0.0	0.0	66		1	20	SPARE	.
	SPARE	20	1		67	0.0	0.0					68		1	20	SPARE	.
	SPARE	20	1		69			0.0	0.0			70		1	20	SPARE	.
	SPARE	20	1		71					0.0	0.0	72				SPACE WITH BUSSING	.
	SPACE WITH BUSSING				73	0.0	0.0					74				SPACE WITH BUSSING	.
	SPACE WITH BUSSING				75			0.0	0.0			76				SPACE WITH BUSSING	.
	SPACE WITH BUSSING				77					0.0	0.0	78				SPACE WITH BUSSING	.
	SPACE WITH BUSSING				79	0.0	0.0					80				SPACE WITH BUSSING	.
	SPACE WITH BUSSING				81			0.0	0.0			82				SPACE WITH BUSSING	.
	SPACE WITH BUSSING				83					0.0	0.0	84				SPACE WITH BUSSING	.
TOTAL KVA PER PHASE						12.8	12.1	12.7									
DIVERSIFIED KVA PER PHASE						12.8	12.1	12.7									
DIVERSIFIED TOTAL KVA							37.6 KVA										
MAXIMUM AMPS HEAVIEST PHASE (DIVERSIFIED)							106.4 AMPS										

NEC 220 LOAD JUSTIFICATION

LIGHTING	125%	0.1
HEATING	100%	0.0
AIR HANDLERS	100%	0.0
AIR CONDITIONING	100%	0.0
RECEPTACLES	1st 10kVA = 100%	5.6
	+50% OF REMAINING	
WATER HEATER	100%	0.0
SERVICE EQUIPMENT	MINUS NEC DEMAND	0.0
	100%	
PROCESS	100%	0.0
MISCELLANEOUS	100%	31.9

REQUIREMENTS
1. WITH EQUIPMENT GROUND BUS
2. PROVIDE A TYPEWRITTEN DIRECTORY.
3. "SR" = SEE POWER RISER DIAGRAM.

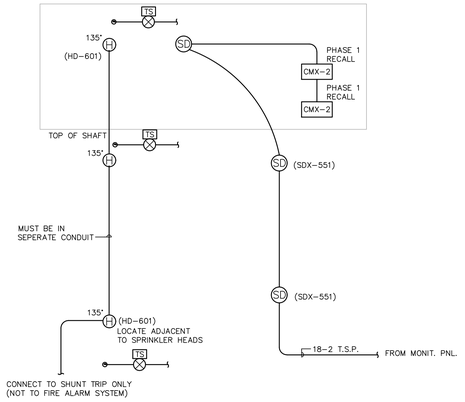
NEW PANEL M1 (RIGHT SECTION)

SUPPLY: 208/120V, 3-PH, 4W
MAINS: 400A MLO
INTERRUPT RATING: 22K AIC
MOUNTING: RECESSED

TYPE: BRANCH CIRCUIT PANELBOARD WITH 42 POLES
BUS MATERIAL: CU OR AL PER SECTION. PROVIDE SUB-FEED LUGS AND
MANUFACTURER: SQ-D, GE, SIEMENS CONNECTION TO SECOND SECTION.

PHASE LOAD SUMMARY

NOTE	DESCRIPTION	TRIP	POLE	WIRE	CCT	PHASE A	PHASE B	PHASE C	CCT	WIRE	POLE	TRIP	DESCRIPTION	NOTE
	AHU-1 (DX BOX)	15	1	12	43	0.9	1.5		44	.	2	15	HP-4	
	AHU-1 (DX BOX)	15	1	12	45			0.1	1.5	46	.				
	AHU-2 (DX BOX)	15	1	12	47					0.9	3.6	48	.	2	35	HP-5	
	AHU-2 (DX BOX)	15	1	12	49	0.1	3.6					50	.				
	AHU-3 (DX BOX)	15	1	12	51			0.9	3.6			52	.	2	35	HP-6	
	AHU-3 (DX BOX)	15	1	12	53					0.1	3.6	54	.				
	AHU-3 (DX BOX)	15	1	12	55	0.9	0.0					56		1	20	SPARE	.
	AHU-3 (DX BOX)	15	1	12	57			0.1	0.0			58		1	20	SPARE	
	AHU-14 (DX BOX)	15	1	12	59					0.9	0.0	60		1	20	SPARE	.
	AHU-14 (DX BOX)	15	1	12	61	0.1	0.0					62		1	20	SPARE	
	AHU-15 (DX BOX)	15	1	12	63			0.9	0.0			64		1	20	SPARE	.
	AHU-15 (DX BOX)	15	1	12	65					0.1	0.0	66		1	20	SPARE	
	SPARE	20	1		67	0.0	0.0					68		1	20	SPARE	
	SPARE	20	1		69			0.0	0.0			70		1	20	SPARE	
	SPACE WITH BUSSING				71					0.0	0.0	72				SPACE WITH BUSSING	
	SPACE WITH BUSSING				73	0.0



NOTES:

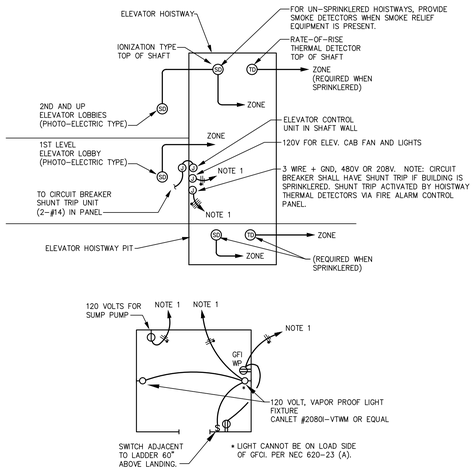
1. WIRE COMPONENTS PER NORTH CAROLINA STATE FIRE MARSHALL "UNIFORM FIRE SAFETY STANDARDS FOR ELEVATORS".
2. CONNECT WARNING LIGHTS THRU FIRE ALARM PANEL.
3. SHUT-OFF VALVE: RUN TAMPER SWITCH TO F.A.P.(TYP.)
4. SIGN: ENGRAVED BAKELIGHT, RED WITH 1/8" HIGH WHITE LETTERS STATING. "DO NOT USE ELEVATOR WHEN FLASHING".
5. WARNING LIGHT: PROVIDED POWERED AND WIRED TO FIRE ALARM PANEL BY ELECTRICAL CONTRACTOR.
6. SEE POWER PLANS FOR EXACT DEVICE LOCATIONS.
7. SMOKE DETECTOR WITH AUXILLARY CONTACT (TYP.).
8. HEAT DETECTOR (135ø F) LOCATE HEAT DETECTOR NEXT TO THE SPRINKLER HEAD. CONNECT DETECTORS IN PARALLEL TO SHUNT-TRIP MECHANISM THRU AUXILLARY CONTACTS.
9. MONITORING PANEL. (SEE SPRINKLER AND HVAC MONIT. RISER DIAGRAM).

ELEVATOR RECALL CONTROL SYSTEM SPECIFICATIONS

1. FURNISH AND INSTALL A SUPERVISED, LOW VOLTAGE, ADDRESSABLE CONTROL UNIT. THE SYSTEM SHALL INCLUDE, BUT NOT BE LIMITED TO, CONTROL PANEL WITH ALL REQUIRED COMPONENTS, POWER SUPPLIES, STANDBY BATTERY SYSTEM, INTEGRAL ALARM, CONDUIT, OUTLETS AND WIRE, END-OF-LINE DEVICES, POWER CIRCUIT, 120 VOLT POWER CIRCUIT, ETC.
2. ALL COMPONENTS SHALL BE U.L. LISTED AND COMPLY WITH NFPA 72. WIRING SHALL COMPLY WITH NEC ARTICLE 760.
3. CATALOG NUMBERS GIVEN ARE THOSE OF EDWARDS AND DENOTE THE MINIMUM QUALITY AND PERFORMANCE REQUIRED. EQUAL EQUIPMENT BY FCI, SIMPLEX, ADT, AUTOCALL, GAMEWELL, PYROTRONICS OR OTHER APPROVED MANUFACTURER WILL BE ACCEPTABLE.
4. WIRING SHALL BE CLASS-B, COPPER SINGLE STRANDED CONDUCTORS, #16AWG, COLOR CODED AS REQUIRED BY EQUIPMENT SUPPLIER. COORDINATE WIRE AND CONDUIT SHOWN IN RISER DIAGRAM WITH EQUIPMENT SUPPLIER PRIOR TO CONDUIT INSTALLATION. ALL WIRE SHALL BE RUN IN EMT CONDUIT, ½" MINIMUM SIZE. AT THE CONTRACTORS OPTION, FIRE RETARDANT AND LOW SMOKE PRODUCING FIRE ALARM CABLE UL LISTED FOR THE PURPOSE MAY BE USED WITHOUT CONDUIT.
5. THE CONTROL PANEL SHALL BE EQUAL TO THE EDWARDS FIRE SHIELD SERIES SEMI-FLUSH MOUNTED. THE PANEL SHALL BE COMPLETE WITH, BUT NOT LIMITED TO, POWER MODULES, MASTER PANEL CONTROLS, SIGNAL CIRCUIT MODULES FOR AUDIBLE/VISUAL DEVICES, SMOKE DETECTOR ALARM RECEIVING/POWER MODULES, REMOTE STATION MONITOR MODULE CAPABLE, 24 HOUR STANDBY BATTERY WITH INTERFACE MODULE AND CHARGER MODULE, AUXILIARY MODULES, TROUBLE MODULES, ALL REQUIRED TERMINAL STRIPS AND BLOCKS AND ACCESSORY RELAYS, AND ALL OTHER NECESSARY FEATURES FOR A COMPLETE SYSTEM. PROVIDE TRANSIENT SUPPRESSION ON THE POWER SUPPLY.
6. THE SYSTEM SHALL BE TESTED AND CERTIFIED.
7. PROVIDE 12 MONTH GUARANTEE ON ALL WORKMANSHIP AND MATERIALS EFFECTIVE THE DATE OF BENEFICIAL USE.
8. THE SYSTEM SHALL OPERATE ON 120 VOLT POWER. FAILURE TO THE NORMAL POWER SOURCE SHALL AUTOMATICALLY TRANSFER TO THE STANDBY BATTERY.
9. SYSTEM OPERATION:
   ACTUATION OF EACH ELEVATOR LOBBY, ELEVATOR HOISTWAY, AND ELEVATOR MACHINE ROOM SMOKE DETECTOR SHALL INITIATE ALARM CONDITION AND ELEVATOR RECALL. VISBLE AND AUDIBLE SUPERVISORY SIGNAL SHALL BE ACTIVATED AT CONTROL UNIT THE ALARM INITIATION CIRCUIT FROM WHICH THE ALARM ORIGINATED.
10. THE SYSTEM SHALL BE FULLY SUPERVISED SUCH THAT ANY CIRCUIT OPENS OR GROUNDS, POWER FAILURES, OR DISARRANGEMENT OF SYSTEM COMPONENTS OR WIRING SHALL BE INDICATED AT THE CONTROL PANEL.

2 ELEVATOR RECALL DIAGRAM

DIAGRAMMATIC



NOTE:
1. SEE PANEL SCHEDULES FOR RESPECTIVE CIRCUIT DESIGNATION(S).

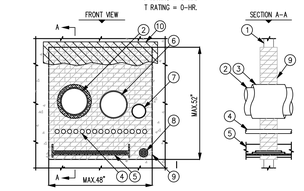
1 TYPICAL ELEVATOR HOIST AND PIT

DIAGRAMMATIC

MACHINE ROOMLESS DESIGN ELEVATOR PROVISIONS

1. THE ELECTRICAL WORK ASSOCIATED WITH THE ELEVATOR SHALL BE IN ACCORDANCE WITH ALL APPLICABLE NATIONAL, STATE AND LOCAL CODES AND STANDARDS.
2. THIS CONTRACTOR SHALL COORDINATE THE ELEVATOR REQUIREMENTS WITH THE ELEVATOR INSTALLER. LOCATE EQUIPMENT ROOM AND HOISTWAY SWITCHES, LIGHTS, DETECTORS, RECEPTACLES, TELEPHONE, ETC AS DIRECTED BY THE ELEVATOR INSTALLER.
3. THE HOISTWAY SHALL INCLUDE THE FOLLOWING: TWO (2) VAPOR-TIGHT WALL MOUNTED LIGHT FIXTURES AT 18" ABOVE THE PIT FLOOR AND TWO (2) VAPOR-TIGHT WALL MOUNTED LIGHT FIXTURE NEAR TOP OF HOISTWAY; COORDINATE BEST LOCATION IN THE FIELD TO ILLUMINATE ELEVATOR EQUIPMENT AT TOP OF HOISTWAY. TWO LIGHT CONTROL SWITCHES ADJACENT TO THE HOISTWAY LADDER AT 60" ABOVE THE LOWEST AND UPPER LANDING ENTRANCE SILL. A 20 AMPERE, GROUND FAULT CIRCUIT INTERRUPTER (GFCI) RECEPTACLE AT 18" ABOVE THE PIT FLOOR. A SECOND 20 AMPERE, RECEPTACLE AT 18" ABOVE THE PIT FLOOR FOR SUMP PUMP IF A PUMP IS SPECIFIED. AN IONIZATION TYPE SMOKE DETECTOR AT THE TOP OF THE HOISTWAY. A THERMAL DETECTOR AT THE TOP OF THE HOISTWAY (WHEN HOISTWAY IS SPRINKLERED).
4. THIS ELEVATOR IS MACHINE ROOMLESS TYPE, PROVIDE A DIRECT CONNECTION FOR THE ELEVATOR UNIT AS REQUIRED BY THE ELEVATOR SUPPLIER. COORDINATE EXACT REQUIREMENTS WITH ELEVATOR INSTALLER PRIOR TO ROUGHING. PROVIDE CONDUIT AND TELEPHONE STATION CABLE FOR TELEPHONE SERVICE TO THE CONTROL UNIT AS REQUIRED. CABLE SHALL BE 4-PAIR, #24GA IN ¾" EMT CONDUIT. PROVIDE A CONDUIT TO CONTROL UNIT FOR THE FIRE ALARM CONTROL AND CAB EMERGENCY MODE OPERATION.
5. ACTIVATION OF ANY THERMAL DETECTOR IN THE HOISTWAY SHALL AUTOMATICALLY SIGNAL THE ELEVATOR CONTROLLER AND ACTIVATE A SHUNT TRIP UNIT ON THE ELEVATOR SERVICE CIRCUIT BREAKER, PRIOR TO THE APPLICATION OF WATER.
6. ACTIVATION OF ANY SMOKE DETECTOR IN THE HOISTWAY OR ELEVATOR LOBBIES SHALL AUTOMATICALLY SIGNAL THE ELEVATOR CONTROLLER. THESE SIGNALS WILL BE USED TO PLACE THE ELEVATOR IN AN EMERGENCY MODE OF OPERATION.
7. ALL WIRING IN THE HOISTWAY SHALL BE RUN IN EMT CONDUIT (NO FLEX OR CABLE). ONLY WIRING ASSOCIATED WITH THE ELEVATOR EQUIPMENT IS ALLOWED TO RUN THROUGH THE HOISTWAY AND EQUIPMENT ROOMS. ALL POWER WIRING CIRCUITS SHALL HAVE A CODE SIZED EQUIPMENT GROUNDING CONDUCTOR.
8. ALL WIRING BETWEEN THE ELEVATOR POWER AND CONTROLS/LIGHT FUSED SWITCHES AND THE ELEVATOR EQUIPMENT SHALL BE BY THIS CONTRACTOR.
9. ONLY ITEMS THAT PERTAIN TO THE OPERATION OF THE ELEVATOR ARE ALLOWED IN THE ELEVATOR HOISTWAY.

U.L. SYSTEM NO. WJB007
MULTIPLE PENETRATING ITEMS THROUGH CONCRETE FLOOR OR WALL
F RATING = 4-HR.
T RATING = 0-HR.



1. CONCRETE FLOOR OR WALL ASSEMBLY (MINIMUM 4-1/2" THICK).
2. MAXIMUM 12" DIAMETER STEEL PIPE OR MAXIMUM 6" DIAMETER COPPER PIPE.
3. MAXIMUM 1-1/2" THICK GLASS-FIBER PIPE INSULATION.
4. 1-1/2" DIAMETER STEEL CONDUIT (MAXIMUM QUANTITY = 15).
5. STEEL OR ALUMINUM CABLE TRAY (MAXIMUM SIZE : 36" x 6") WITH ANY OF THE FOLLOWING TYPES OF CABLE MAY BE USED WITH MAXIMUM 30% FILL OF CABLE TRAY :
   A. MAXIMUM 500 KCMIL SINGLE CONDUCTOR POWER CABLE.
   B. MAXIMUM 7/C NO. 12 AWG COPPER CONDUCTOR CABLE.
   C. MAXIMUM 300 PAIR NO. 24 AWG TELEPHONE CABLES.
6. MAXIMUM 30" DIAMETER STEEL PIPE (12" DIAMETER PIPE SHOWN).
7. 6" DIAMETER STEEL PIPE.
8. MAXIMUM 4" DIAMETER CABLE BUNDLE TO INCLUDE ANY OF THE FOLLOWING :
   A. FIBER-OPTIC CABLE (MAX. 1/2" DIA).
   B. ROMEX (2/C NO. 10 +GROUND).
   C. 25 PAIR NO. 24 AWG TELEPHONE CABLES.
   D. 7/C NO. 12 AWG CABLES.
   E. RG 62A COAXIAL CABLES.
   F. METAL CLAD CABLE (MAX. 3/4" DIA.)
9. HILTI FS 657 INTUMESCENT FIRESTOP BLOCK (2" TALL x 5" WIDE x 8" DEEP, REF: FRONT VIEW).
10. SEE NOTE NO. 4 BELOW.

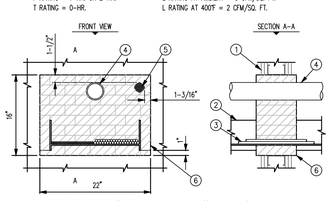
NOTES: 1. ANNULAR SPACING FOR CABLE TRAY = MINIMUM 1-1/2".
2. ANNULAR SPACING FOR PIPE AND CABLE PENETRATIONS = MINIMUM 1".
3. INSTALL HILTI FS-ONE HIGH PERFORMANCE INTUMESCENT FIRESTOP SEALANT IN ANY VOID THAT MAY EXIST (AROUND CABLE TRAY, CABLES, OR PIPE PENETRATIONS).
4. IF THE ANNULAR SPACE IS GREATER THAN 5", PROVIDE A STEEL WIRE MESH (NOMINAL 2" SQUARES, NO. 16 SWG) INSTALL ON EACH SIDE OF WALL ASSEMBLY.
5. MAXIMUM AREA OF OPENING = 2496 SQUARE INCHES.

SEE HILTI FIRESTOP INSTALLATION MANUAL FOR ADDITIONAL INSTRUCTIONS
HILTI, INC. TULSA, OK 1-800-879-8000

3 MULTIPLE PENETRATING ITEMS THROUGH CONCRETE FLOOR OR WALL

NOT TO SCALE

U.L. SYSTEM NO. WL8013
MULTIPLE PENETRATIONS THROUGH 1-HR. OR 2-HR. GYPSUM WALL
F RATING = 1-HR. OR 2-HR. L RATING AT AMBIENT = 5 CFM/SQ. FT.
T RATING = 0-HR. L RATING AT 400°F = 2 CFM/SQ. FT.



1. GYPSUM WALL ASSEMBLY (1-HR. OR 2-HR. FIRE-RATING)(2-HR. SHOWN).
2. STEEL OR ALUMINUM CABLE TRAY (MAXIMUM SIZE : 18" x 6").
3. ANY OF THE FOLLOWING TYPES OF CABLE MAY BE USED WITH MAX. 30% FILL ON CABLE TRAY :
   A. 500 KCMIL SINGLE CONDUCTOR POWER CABLE.
   B. 7/C NO. 12 AWG COPPER CONDUCTOR CABLE.
   C. 300 PAIR NO. 24 AWG TELEPHONE CABLE.
4. MAXIMUM 3" DIAMETER PVC PLASTIC PIPE (SCHEDULE 40)(CLOSED OR VENTED PIPING SYSTEM).
5. CABLE BUNDLE (MAX. 2" DIA.) TO CONSIST OF ANY OF THE FOLLOWING:
   A. FIBER-OPTIC CABLE.
   B. RG 59 COAXIAL CABLE.
   C. 25 PAIR NO. 24 AWG TELEPHONE CABLE.
   D. 7/C NO. 12 AWG COPPER CONDUCTOR.
6. HILTI FS 657 FIRESTOP BLOCKS (2" x 5" x 8" DEEP, REF: FRONT VIEW).

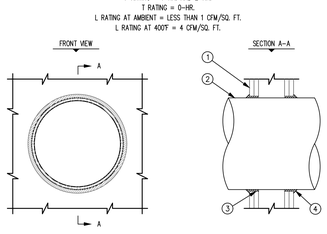
NOTES : 1. NOT SHOWN: PENETRATING ITEMS MAY ALSO INCLUDE A MAX. 4" DIA. STEEL OR COPPER PIPE, EMT, OR STEEL CONDUIT WITH A MAX. 1-1/2" GLASS-FIBER PIPE INSULATION OR NON-INSULATED MAX. 4" STEEL PIPE, EMT, OR CONDUIT.
2. ANNULAR SPACE = MINIMUM 1".
3. INSTALL HILTI FS-ONE HIGH PERFORMANCE INTUMESCENT FIRESTOP SEALANT IN ANY VOID THAT MAY EXIST (AROUND PENETRATING ITEMS, OR BETWEEN BLOCKS).

SEE HILTI FIRESTOP INSTALLATION MANUAL FOR ADDITIONAL INSTRUCTIONS
HILTI, INC. TULSA, OK 1-800-879-8000

4 MULTIPLE PENETRATIONS THROUGH 1-HR. OR 2-HR. GYPSUM WALL

NOT TO SCALE

U.L. SYSTEM NO. WL8085
EMT THROUGH 1-HR. OR 2-HR. GYPSUM WALL ASSEMBLY
F RATING = 1-HR. AND 2-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. GYPSUM WALL ASSEMBLY (1-HR. OR 2-HR. FIRE-RATING)(2-HR. SHOWN).
2. PENETRATING ITEM TO BE ONE OF THE FOLLOWING :
   A. MAXIMUM 12" DIAMETER STEEL PIPE (SCHEDULE 20 OR HEAVIER).
   B. MAXIMUM 12" DIAMETER CAST IRON PIPE.
   C. MAXIMUM 6" DIAMETER COPPER PIPE.
   D. MAXIMUM 6" DIAMETER EMT.
   E. MAXIMUM 6" DIAMETER STEEL CONDUIT.
3. HILTI FS-ONE HIGH PERFORMANCE INTUMESCENT FIRESTOP SEALANT FORCED INTO ANNULAR SPACE TO MAXIMUM EXTENT.
4. MINIMUM 1/2" BEAD HILTI FS-ONE HIGH PERFORMANCE INTUMESCENT FIRESTOP SEALANT AT PIPE/GYPSUM WALLBOARD INTERFACE.

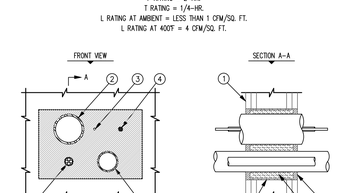
NOTE : ANNULAR SPACE = MINIMUM 0", MAXIMUM 1/4".

SEE HILTI FIRESTOP INSTALLATION MANUAL FOR ADDITIONAL INSTRUCTIONS
HILTI, INC. TULSA, OK 1-800-879-8000

5 EMT THROUGH 1-HR. OR 2-HR. GYPSUM WALL ASSEMBLY

NOT TO SCALE

U.L. SYSTEM NO. WL8004
MULTIPLE METAL PIPE AND CABLE THROUGH 2-HR. GYPSUM WALL
F RATING = 2-HR.
T RATING = 1/4-HR.
L RATING AT AMBIENT = LESS THAN 1 CFM/SQ. FT.
L RATING AT 400°F = 4 CFM/SQ. FT.



1. GYPSUM WALL ASSEMBLY (2-HR. FIRE-RATING).
2. MAXIMUM 3" DIAMETER ELECTRICAL METALLIC TUBING (EMT).
3. MAXIMUM 25 PAIR NO. 24 AWG (OR SMALLER) TELEPHONE CABLES.
4. MAXIMUM 3/C NO. 10 AWG NM (WITH GROUND) POWER CABLE WITH PVC INSULATION.
5. MAXIMUM 300 KCMIL (OR SMALLER) POWER CABLE WITH PVC INSULATION & NYLON JACKET.
6. MAXIMUM 2" DIAMETER STEEL PIPE, COPPER PIPE, EMT, OR STEEL CONDUIT.
7. NO. 8 STEEL WIRE MESH, 4-3/4" LONG (OR STANDARD METAL DRYWALL TRACK SCREWED SECURELY IN PLACE) CENTERED IN OPENING.
8. MINIMUM 4" THICKNESS MINERAL WOOL (MIN. 4 PCF DENSITY) TIGHTLY PACKED.
9. MIN. 1/2" DEPTH HILTI FS-ONE HIGH PERFORMANCE INTUMESCENT FIRESTOP SEALANT.

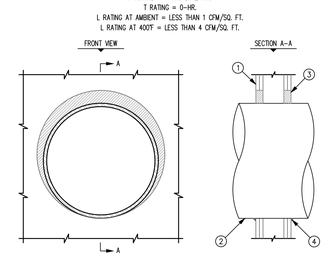
NOTES : 1. MAXIMUM AREA OF OPENING = 96 SQUARE INCHES WITH A MAX. DIM. OF 12".
2. DISTANCE BETWEEN ITEMS = MINIMUM 1-3/4", MAXIMUM 7".
3. DISTANCE FROM EDGE OF OPENING = MINIMUM 1/2", MAXIMUM 7". (EXCEPTION: 300 KCMIL POWER CABLE MUST BE MINIMUM 1-1/2" FROM EDGE OF OPENING.

SEE HILTI FIRESTOP INSTALLATION MANUAL FOR ADDITIONAL INSTRUCTIONS
HILTI, INC. TULSA, OK 1-800-879-8000

6 MULTIPLE METAL PIPE & CABLE THROUGH 2-HR. GYPSUM WALL

NOT TO SCALE

U.L. SYSTEM NO. WL1054
METAL PIPE THROUGH GYPSUM WALL ASSEMBLY
F RATING = 1-HR. OR 2-HR.
T RATING = 0-HR.
L RATING AT AMBIENT = LESS THAN 1 CFM/SQ. FT.
L RATING AT 400°F = LESS THAN 4 CFM/SQ. FT.



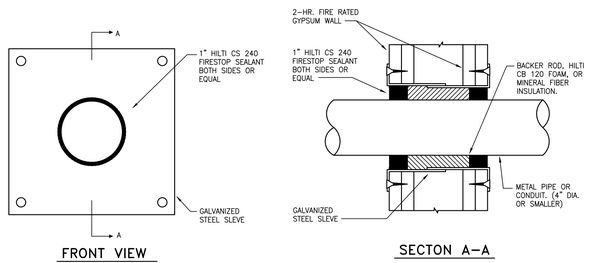
1. GYPSUM WALL ASSEMBLY (1-HR. OR 2-HR. FIRE-RATING)(2-HR. SHOWN).
2. PENETRATING ITEM TO BE ONE OF THE FOLLOWING :
   A. MAXIMUM 30" DIAMETER STEEL PIPE (SCHEDULE 10 OR HEAVIER).
   B. MAXIMUM 6" DIAMETER COPPER PIPE.
   C. MAXIMUM 6" DIAMETER STEEL CONDUIT.
   D. MAXIMUM 4" DIAMETER STEEL EMT.
3. HILTI FS-ONE HIGH PERFORMANCE INTUMESCENT FIRESTOP SEALANT :
   A. MINIMUM 5/8" DEPTH OF SEALANT FOR A 1-HR. FIRE-RATING.
   B. MINIMUM 1-1/4" DEPTH OF SEALANT FOR A 2-HR. FIRE-RATING.
4. MINIMUM 1/2" BEAD HILTI FS-ONE HIGH PERFORMANCE INTUMESCENT FIRESTOP SEALANT AT POINT OF CONTACT.

NOTES : 1. MAXIMUM DIAMETER OF OPENING = 32-1/4".
2. ANNULAR SPACE = MINIMUM 0", MAXIMUM 2-1/4".

SEE HILTI FIRESTOP INSTALLATION MANUAL FOR ADDITIONAL INSTRUCTIONS
HILTI, INC. TULSA, OK 1-800-879-8000

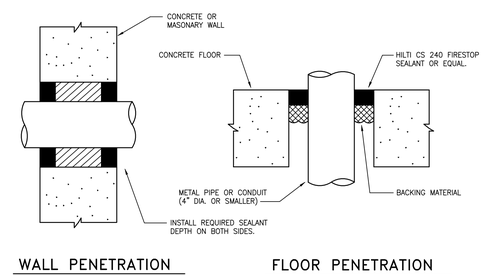
7 CABLE BUNDLE THROUGH 1-HR. OR 2-HR. GYPSUM WALL

NOT TO SCALE



8 FIRESTOP DETAIL THRU GYPSUM WALL

NOT TO SCALE



9 FIRESTOP DETAIL THRU CONCRETE/MASONRY

NOT TO SCALE

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BDA

STATE OF NEW YORK
WILLIAM LEE TEETER
071959
REGISTERED PROFESSIONAL ENGINEER

07/08/24

ROCKLAND GREEN CENTER FOR ANIMAL RESCUE AND EDUCATIONAL SERVICES, INC.
R.G. C.A.R.E.S. ANIMAL SHELTER
427 BEACH RD. LOCATED IN THE TOWN OF HARVERSTRAW, NY 10993

ELECTRICAL DETAILS

REV #	DATE	COMMENTS
REVISION:	.	.
REVISION:	.	.
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REVISION:	.	.

REVIEWS	
INITIALS	
	BDA DSGN. REV.
	BDA TECH REV.

RGAS
PROJECT NO.: 23077
DRAWN: SCG
DATE: 07/08/2024

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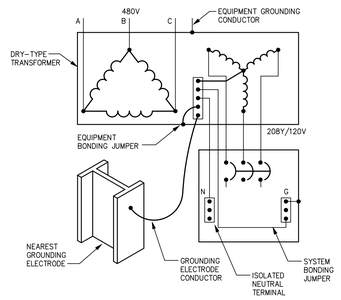
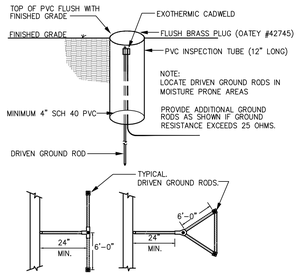


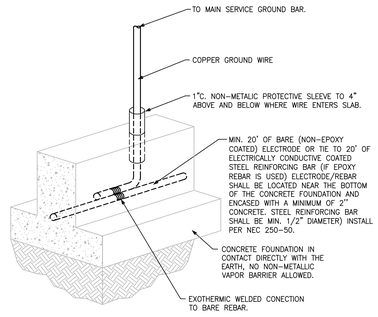
4 TRANSFORMER GROUND SYSTEM

NOT TO SCALE



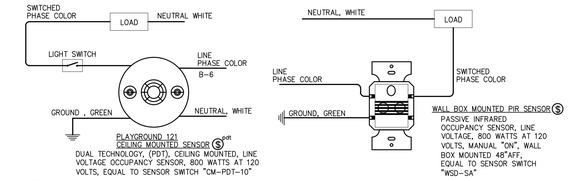
3 DRIVEN GROUND DETAIL

NOT TO SCALE



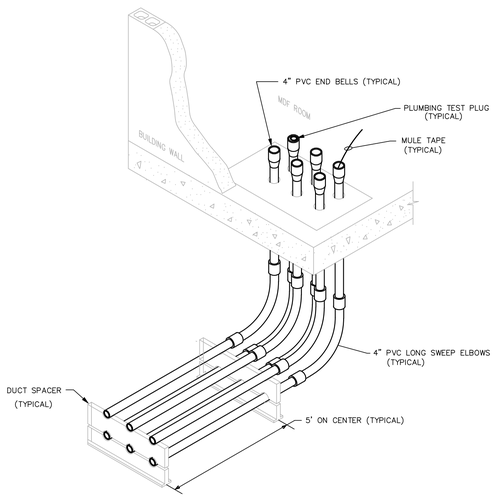
2 CONCRETE ENCASED GROUNDING DETAIL

NOT TO SCALE



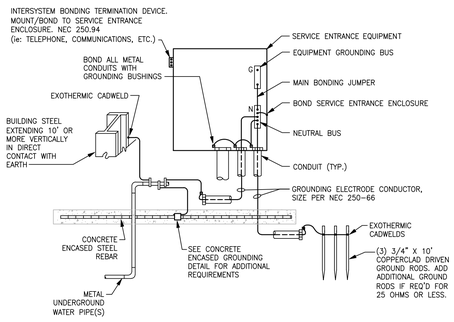
1 OCCUPANCY SENSOR LIGHTING CONTROLS

DIAGRAMMATIC



5 CONDUIT ENTRANCE DETAIL

NTS

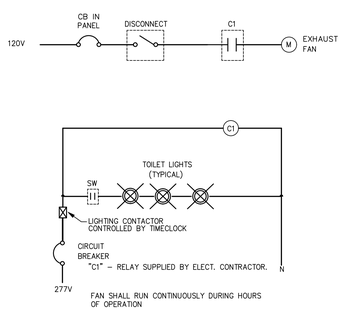


NOTES:

1. GROUNDING ELECTRODE CONDUCTOR SHALL BE ENCLOSED FULL LENGTH BY CONDUIT (RMC OR EMT).
2. GROUNDING ELECTRODE CONDUCTOR SHALL BE CONTINUOUS (UNBROKEN) FROM THE NEUTRAL BUS TO THE GROUNDING ELECTRODE. SPLICES AND/OR JOINTS ARE PROHIBITED. EXCEPTIONS AS ALLOWED PER NEC 250.64(C) IRREVERSIBLE COMPRESSION TYPE CONNECTORS OR BY EXOTHERMIC WELDING WILL BE ACCEPTABLE FOR REMODEL WORK ONLY.
3. GROUNDING ELECTRODE CONDUCTORS SHALL BE COPPER.
4. CONNECTION TO THE METAL COLD WATER PIPE SHALL BE MADE WITHIN 5' OF THE POINT OF ENTRANCE INTO THE BUILDING.
5. GROUNDING ELECTRODE CONDUCTORS AND BONDING JUMPER CONNECTIONS TO BUILDING STEEL, CONCRETE ENCASED STEEL REBAR, AND DRIVEN GROUND RODS SHALL BE CONNECTED BY EXOTHERMIC CADWELDS.
6. ALL GROUNDING BUSHINGS, CLAMPS, JUMPERS, FASTENERS, ETC. SHALL BE APPROVED AND LISTED FOR THE PURPOSE.

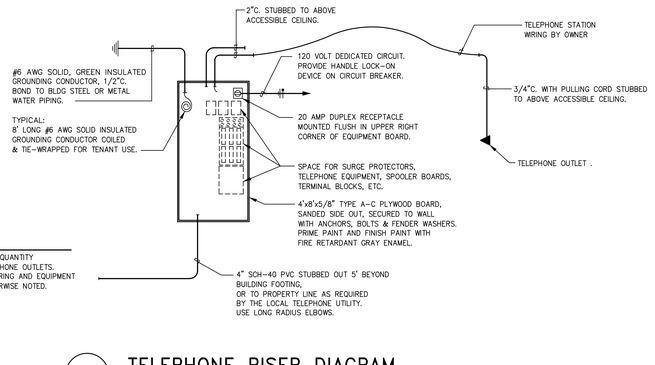
6 SERVICE GROUND DETAIL

NOT TO SCALE



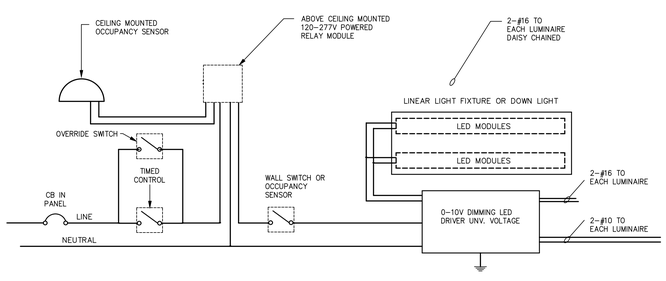
7 TYPICAL LIGHT & 120V EXHAUST FAN INTERLOCK WIRING DETAIL

NOT TO SCALE



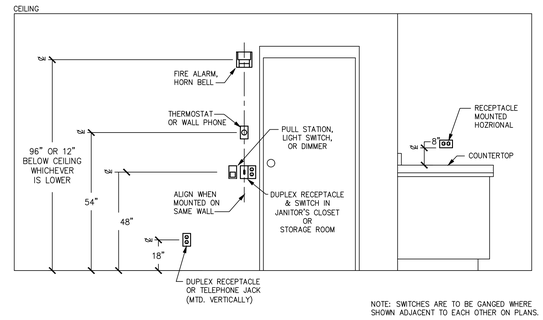
8 TELEPHONE RISER DIAGRAM

DIAGRAMMATIC



10 LED DRIVER WIRING DETAIL

NOT TO SCALE



NOTE: SWITCHES ARE TO BE GANGED WHERE SHOWN ADJACENT TO EACH OTHER ON PLANS.

9 TYPICAL MOUNTING HEIGHTS

NOT TO SCALE

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BDA ARCHITECTURE

07/08/24

ROCKLAND GREEN CENTER FOR ANIMAL RESCUE AND EDUCATIONAL SERVICES, INC.

R.G. C.A.R.E.S. ANIMAL SHELTER
427 BEACH RD. LOCATED IN THE TOWN OF HARVERSTRAW, NY 10993

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INITIALS	
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	BDA TECH REV.

RGAS

PROJECT NO.: 23077
DRAWN: SCG
DATE: 07/08/2024

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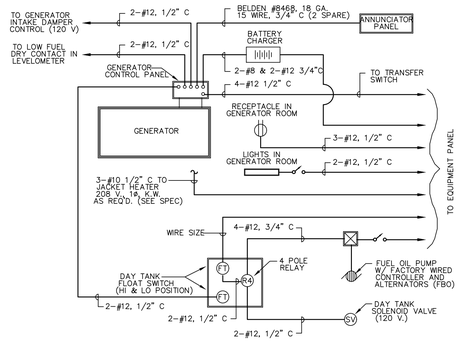


2 EMERGENCY DIESEL GENERATOR SYSTEM INTERLOCKING DIAGRAM

NOT TO SCALE

EMERGENCY POWER SYSTEM

CONTRACTOR SHALL FURNISH AND INSTALL, AS INDICATED ON THE PLANS AND AS HEREIN SPECIFIED, A COMPLETE SYSTEM FOR THE GENERATION, CONTROL AND DISTRIBUTION OF ELECTRICAL POWER UPON FAILURE OF NORMAL SOURCE.

SYSTEM SHALL INCLUDE ENGINE–GENERATOR UNIT(S), AUTOMATIC TRANSFER SWITCH(ES), NO. 2 DIESEL FUEL SUPPLY SYSTEM, AND ALL OTHER WIRING, RACEWAYS, EQUIPMENT, HARDWARE, ETC., NECESSARY FOR A COMPLETE AND PROPERLY FUNCTIONING SYSTEM, WHETHER OR NOT EVERY SUCH ITEM IS SPECIFICALLY SHOWN OR MENTIONED.

SYSTEM SHALL COMPLY WITH THE REQUIREMENTS OF NFPA 110 AND 37, NEC ARTICLE 700, UL 2200, STATE BUILDING CODE, AND ALL LOCAL CODES AND REQUIREMENTS.

UPON FAILURE TO NORMAL POWER SOURCE TO THE AUTOMATIC TRANSFER SWITCH, SYSTEM SHALL FUNCTION AUTOMATICALLY TO RESTORE POWER TO DESIGNATED LOADS FROM THE ENGINE–GENERATOR SET WITHIN 10 SECONDS.

POWER RATING OF THE DIESEL ENGINE–GENERATOR SET SHALL BE BASED ON OPERATION AT 1800 RPM WHEN EQUIPPED WITH ALL NECESSARY OPERATION ACCESSORIES SUCH AS AIR CLEANERS, LUBRICATING OIL PUMP, JACKET WATER PUMP, GOVERNOR, ALTERNATING CURRENT GENERATOR, AND EXCITER REGULATOR. RADIATOR FAN SHALL BE INCLUDED AS NECESSARY OPERATING ACCESSORY. RATING SHALL APPLY AT SITE CONDITIONS.

THE ENGINE SHALL BE WATER–COOLED, IN–LINE TYPE, WITH FOUR STROKE ENGINE.

THE ENGINE SHALL BE COMPRESSION IGNITION DIESEL WHICH MEETS SPECIFICATIONS FOR OPERATING ON NO. 2 FUEL OIL.

THE ENGINE SHALL BE EQUIPPED WITH FUEL, LUBE OIL, INTAKE AIR FILTERS, LUBE OIL COOLER, FUEL TRANSFER PUMP, FUEL PRIMING PUMP, RUNNING TIME METER, CHARGING ALTERNATOR, GEAR–DRIVEN WATER PUMP, AND INSTRUMENTS, INCLUDING A FUEL PRESSURE GAUGE, WATER TEMPERATURE GAUGE, LUBRICATING OIL PRESSURE GAUGE AS HEREIN SPECIFIED.

AN AUTOMATIC VOLTS PER HERTZ TYPE, SOLID STATE EXCITER/REGULATOR, MANUFACTURED BY THE GENERATOR MANUFACTURER, SHALL BE INCLUDED AND SHOCK MOUNTED INSIDE THE GENERATOR. VOLTAGE REGULATION SHALL BE +1% FROM NO LOAD TO FULL RATED LOAD. READILY ACCESSIBLE VOLTAGE DROOP, VOLTAGE LEVEL, AND VOLTAGE GAIN CONTROLS SHALL BE INCLUDED IN THE MODULE. VOLTAGE LEVEL ADJUSTMENTS SHALL BE MINIMUM OF +10% THE MODULE SHALL INCLUDE THE FOLLOWING PROTECTIVE FEATURES:

VOLTAGE REGULATOR SHALL BE THREE PHASE SENSING. SINGLE SENSING SHALL NOT BE ACCEPTABLE.

AN ENGINE MOUNTED RADIATOR WITH BLOWER–TYPE FAN SHALL BE PROVIDED TO MAINTAIN SAFE OPERATION AT 100 DEGREE F• (43 DEGREES C) AMBIENT TEMPERATURE. TOTAL AIR FLOW RESTRICTION TO AND FROM THE RADIATOR SHALL NOT EXCEED 0.5 IN. H2O (0. 12 KPA).

THE ENGINE COOLING SYSTEM SHALL BE PRETREATED BY THE ENGINE SUPPLIER FOR THE INHIBITION OF INTERNAL CORROSION. IN ADDITION, A SOLUTION OF 50% ETHYLENE GLYCOL SHALL BE ADDED, TO PREVENT FREEZING OF SYSTEM DUE TO EXTREME TEMPERATURES.

A CRITICAL EXHAUST SILENCER, AND ALL REQUIRED ACCESSORIES AND FITTINGS, SHALL BE PROVIDED. MOUNTING SHALL BE ON THE WEATHERPROOF ENCLOSURE. THE SILENCER SHALL BE MOUNTED SO THAT ITS WEIGHT IS NOT SUPPORTED BY THE ENGINE NOR WILL EXHAUST SYSTEM GROWTH, DUE TO THERMAL EXPANSION, BE IMPOSED ON THE ENGINE. EXHAUST PIPE SIZE SHALL BE SUFFICIENT TO ENSURE THAT EXHAUST BACKPRESSURE DOES NOT EXCEED THE MAXIMUM LIMITATIONS SPECIFIED BY THE ENGINE MANUFACTURER.

THE EXHAUST SILENCER SHALL BE MOUNTED DIRECTLY ON THE EXHAUST ELBOW OF THE ENGINE AND SHALL PROTRUDE THROUGH THE ENCLOSURE. A RAINCAP SHALL ALSO BE PROVIDED.

FULLY AUTOMATIC GENERATOR SET START–STOP CONTROLS IN THE GENERATOR CONTROL PANEL SHALL BE PROVIDED. CONTROLS SHALL PROVIDE SHUTDOWN FOR LOW OIL PRESSURE, HIGH WATER TEMPERATURE, OVERSPEED, OVERCRANK, AND ONE AUXILIARY CONTACT FOR ACTIVATING ACCESSORY ITEMS. CONTROLS SHALL INCLUDE ONE 30–SECOND CRANKING CYCLE WITH LOCKOUT AND MANUAL RESET FEATURE.

AN ENGINE–MOUNTED THERMAL CIRCULATION TANK–TYPE IMMERSION WATER HEATER INCORPORATING AN ADJUSTABLE THERMOSTATIC SWITCH SHALL BE FURNISHED TO MAINTAIN ENGINE JACKET WATER TO 90 DEGREES F (32.2 DEGREES C) IN A STILL AIR, AMBIENT TEMPERATURE OF 30 DEGREES F (–1.1 DEGREES C). THE HEATER SHALL BE 120 VOLT, SINGLE PHASE, 1.5KW, 60HZ.

THE ENGINE SHALL BE EQUIPPED WITH A 24 VOLT ELECTRIC STARTING SYSTEM WITH POSITIVE ENGAGEMENT DRIVE AND OF SUFFICIENT CAPACITY TO CRANK THE ENGINE AT A SPEED WHICH WILL START THE ENGINE UNDER OPERATING CONDITIONS. THE STARTING PINION WILL DISENGAGE AUTOMATICALLY WHEN THE ENGINE STARTS. THE STARTING SYSTEM SHALL INCORPORATE AN AUTOMATICALLY RESET CIRCUIT BREAKER FOR ANTIBUTT ENGAGEMENT.

A LEAD–ACID STORAGE BATTERY SET OF THE HEAVY–DUTY DIESEL STARTING TYPE SHALL BE PROVIDED. BATTERY VOLTAGE SHALL BE COMPATIBLE WITH THE STARTING SYSTEM. THE BATTERY SET SHALL BE RATED NO LESS THAN 220 AMPERE HOURS. A BATTERY RACK CONSTRUCTED IN CONFORMANCE WITH NEC REQUIREMENTS AND NECESSARY CABLES AND CLAMPS SHALL BE PROVIDED. BATTERIES SHALL BE CAPABLE OF CRANKING ENGINE AT RATED AMBIENT FOR MINIMUM OF FIVE MINUTES.

BATTERIES SHALL FIT INSIDE ENCLOSURE AND ALONG SIDE THE ENGINE. (BATTERIES UNDER THE GENERATOR ARE NOT ACCEPTABLE).

A CURRENT LIMITING, FLOAT–EQUALIZE CHARGER SHALL BE FURNISHED TO AUTOMATICALLY RECHARGE BATTERIES. THE CHARGER SHALL FLOAT AT 2.17 VOLTS PER CELL AND EQUALIZE AT 2.33 VOLTS PER CELL. IT SHOULD INCLUDE OVERLOAD PROTECTION, SILICON DIODE FULL WAVE RECTIFIERS, VOLTAGE SURGE SUPPRESSERS, DC AMMETER, AND FUSED C OUTPUT. AC INPUT VOLTAGE SHALL BE 120 VOLTS, SINGLE PHASE. AMPERAGE OUTPUT SHALL BE NO LESS THAN 5 AMPERES. CHARGER SHALL BE WALL MOUNTING TYPE IN NEMA 3R ENCLOSURE OR IN GENERATOR ENCLOSURE.

MAIN LINE MOLDED CASE, THREE–POLE, SINGLE THROW CIRCUIT BREAKER(S) RATED AS INDICATED ON THE DRAWINGS, AT 104 DEGREES F (40 DEGREES C) AMBIENT TEMPERATURE SHALL BE INSTALLED FOR THREE PHASE OVERLOADS AND/OR SHORT CIRCUIT PROTECTION. THESE RATINGS SHALL INCLUDE AT LEAST 10% ADDITIONAL CAPACITY FOR OVERLOAD AND OPERATING TEMPERATURE RISE OVER 104 DEGREES F(40 DEGREES C). IT SHALL OPERATE BOTH MANUALLY FOR NORMAL SWITCHING FUNCTIONS AND AUTOMATICALLY DURING OVERLOAD AND SHORT CIRCUIT CONDITIONS.

WEATHERPROOF, SOUND ATTENUATED (LEVEL II) ENCLOSURE FOR GENERATOR AND ALL OTHER ITEMS TO BE DESIGNED AND BUILT BY ENGINE MANUFACTURER AS AN INTEGRAL PART OF THE GENERATOR SET AN BE DESIGNED TO PERFORM WITHOUT OVERHEATING IN THE AMBIENT TEMPERATURE SPECIFIED.

CONSTRUCTED OF 16 GAUGE CORROSION RESISTANT SHEET METAL, SUITABLY REINFORCED TO BE VIBRATION FREE IN THE OPERATING MODE. ROOF TO BE PEAKED TO ALLOW DRAINAGE OF RAIN WATER.

BAKED ENAMEL FINISH WITH PRIMER AND FINISH COAT TO BE PAINTED BEFORE ASSEMBLY. ALL FASTENERS SHALL BE RUST RESISTANT.

UNIT SHALL HAVE SUFFICIENT GUARDS TO PREVENT ENTRANCE BY SMALL ANIMALS.

UNIT SHALL HAVE COOLANT AND OIL DRAINS OUTSIDE THE UNIT TO ACCUMULATE MAINTENANCE. EACH DRAIN LINE IS TO HAVE A HIGH QUALITY VALVE LOCATED NEAR THE FLUID SOURCE.

FUEL TANK CAPACITY SHALL BE AS NOTED ON THE POWER RISER DIAGRAM.

PROVIDE U.L. LISTED BASE MOUNTED TANK WITH RUPTURE BASIN AND LEAK ALARM CONNECTED TO REMOTE STATUS MONITOR AND CONTROL PANEL. VERIFY STATUS AND CONTROL PANEL LOCATION.

PROVIDE LOW–FUEL ALARM INDICATOR, ANALOG TYPE, VERIFY LOCATION.

TANK SHALL BE CONSTRUCTED IN ACCORDANCE WITH NEMA, UL AND ASTM STANDARDS.

THE GENERATOR ASSEMBLY SHALL BE MOUNTED SECURELY TO THE CONCRETE HOUSEKEEPING PAD. THE CONCRETE PAD SHALL BE 6" THICK, 3000 PSI WITH #4 REBAR TIED TOGETHER ON 6" CENTERS (BOTH WAYS). PROVIDE 1½" THICK VIBRATION ISOLATION RUBBER MAT BETWEEN THE CONCRETE PAD AND CONCRETE DECK. THE GENERATOR SET FRAME SHALL HAVE SPRING VIBRATION ISOLATORS. ALL ELECTRICAL CONNECTIONS TO THE GENERATOR SET SHALL CONSIST OF WEATHER–PROOF FLEXIBLE CONDUIT.

PROVIDE AND INSTALL AUTOMATIC TRANSFER SWITCH TO OPERATE ON A 3 PHASE, 4 WIRE, 60 HZ SYSTEM. VOLTAGE AND AMPERAGE AS NOTED ON DRAWINGS. TRANSFER SWITCH SHALL BE 3 POLE WITH SOLID NEUTRAL UNLESS INDICATED AS 4–POLE ON THE POWER RISER DIAGRAM. THE ENTIRE ASSEMBLY SHALL BE UL LISTED UNDER UL–1008 AND COMPLY WITH NATIONAL ELECTRICAL CODE REQUIREMENTS. THE TRANSFER SWITCH SHALL BE DOUBLE THROW, ACTUATED BY A SINGLE ELECTRICAL OPERATOR, MOMENTARILY ENERGIZED; AND CONNECTED TO THE TRANSFER MECHANISM BY A SINGLE OVER–CENTER TYPE LINKAGE WITH A TOTAL TRANSFER TIME NOT TO EXCEED ONE–HALF SECOND.

THE TRANSFER SWITCH SHALL BE CAPABLE OF TRANSFERRING SUCCESSFULLY IN EITHER DIRECTION WITH 70% OF RATED VOLTAGE APPLIED TO THE SWITCH TERMINALS.

PROVIDE WITH EXERCISER CLOCK WHICH SHALL VIRTUALLY EXERCISE THE GENERATOR SET WITHOUT TRANSFERRING THE LOAD.

THE NORMAL AND EMERGENCY CONTACTS SHALL BE POSITIVELY INTERLOCKED MECHANICALLY AND ELECTRICALLY TO PREVENT SIMULTANEOUS CLOSING. MAIN CONTACTS SHALL BE MECHANICALLY LOCKED IN POSITION IN BOTH THE NORMAL AND EMERGENCY POSITIONS WITHOUT THE USE OF HOOKS, LATCHES, MAGNETS OR SPRINGS AND SHALL BE SILVER ALLOY. SEPARATE ARCING CONTACTS, WITH MAGNETIC BLOWOUTS, SHALL BE PROVIDED ON ALL TRANSFER SWITCHES. INTERLOCKED MOLDED CASE CIRCUIT BREAKERS OR CONTACTORS ARE NOT ACCEPTABLE. THE TRANSFER SHALL BE EQUIPPED WITH A PERMANENTLY ATTACHED SAFE MANUAL OPERATOR DESIGNED TO PREVENT INJURY TO OPERATING PERSONNEL.

THE MANUAL OPERATOR SHALL PROVIDE A SAME CONTACT–TO CONTACT TRANSFER SPEED AS THE ELECTRICAL OPERATOR TO PREVENT A FLASHOVER FROM SWITCHING THE MAIN CONTACTS SLOW.Y.

CAREFULLY "CHM" OUT CONTROL WIRING BETWEEN ATS AND GENERATOR SET PRIOR TO CONNECTING. CHECK FOR OPENS, SHORTS, OR GROUNDS.

TEST ATS FUNCTIONS PRIOR TO CONNECTING LOAD CHECK NORMAL AND EMERGENCY INPUT FEEDERS, PRIOR TO CONNECTION, FOR INSULATION BREAKAGE, OPENS, SHORTS, OR GROUNDS.

THE GENERATOR SET SHALL BE TESTED AT THE EQUIPMENT MANUFACTURER'S FACILITY PRIOR TO SHIPMENT. ALL TESTS SHALL BE RECORDED AND SUBMITTED TO THE ARCHITECT/ENGINEER. MINIMUM TESTING TO INCLUDE, BUT NOT LIMITED TO, THE FOLLOWING:

1. TRANSIENT RESPONSE.
2. VOLTAGE DIP AT 50, 75, AND 100% LOAD.
3. FREQUENCY DIP.
4. RECOVERY TIME.

ON COMPLETION OF THE INSTALLATION, START–UP SHALL BE PERFORMED BY THE GENERATOR SET MANUFACTURER, A TRAINED DEALER SERVICE REPRESENTATIVE. PARTS BOOKS COVERING THE ENGINE, GENERATOR, AND MAJOR AUXILIARY EQUIPMENT SHALL BE PROVIDED TO THE OWNER AT THIS TIME. PROCEDURES ON OPERATING AND MAINTENANCE OF THE STANDBY POWER SYSTEM SHALL BE EXPLAINED TO OPERATING PERSONNEL.

EQUIPMENT FURNISHED UNDER THESE SPECIFICATIONS SHALL BE GUARANTEED AGAINST DEFECTIVE PARTS AND WORKMANSHIP UNDER TERMS OF THE MANUFACTURER'S AND DEALER'S STANDARD WARRANTY. BUT, IN NO EVENT, SHALL IT BE FOR A PERIOD OF LESS THAN TWO YEARS FROM DATE OF INITIAL START–UP OF THE SYSTEM AND SHALL INCLUDE LABOR AND TRAVEL TIME FOR NECESSARY REPAIRS AT THE JOB SITE. RUNNING HOURS SHALL NOT BE A LIMITING FACTOR FOR THE SYSTEM WARRANTY.

BASE–TANK STORAGE REQUIREMENTS

CONTROL OF SPILLAGE FROM ABOVEGROUND TANKS.

FACILITIES SHALL BE PROVIDED SO THAT ANY ACCIDENTAL DISCHARGE OF ANY CLASS I, II, OR IIIA LIQUIDS WILL BE PREVENTED FROM ENDANGERING IMPORTANT FACILITIES, AND ADJOINING PROPERTY, OR REACHING WATERWAYS.

EXCEPTION NO. 1: TANKS STORING CLASS IIIB LIQUIDS DO NOT REQUIRE SPECIAL DRAINAGE OR DIKING PROVISIONS FOR FIRE PROTECTION PURPOSES.

EXCEPTION NO. 2: ABOVEGROUND SECONDARY CONTAINMENT–TYPE TANKS NEED NOT MEET THE REQUIREMENTS OF 2–3.4 IF ALL OF THE FOLLOWING CONDITIONS ARE MET:
(A) THE CAPACITY OF THE TANK SHALL NOT EXCEED 12,000 GAL (45,420 L).

(B) ALL PIPING CONNECTIONS TO THE TANK SHALL BE MADE ABOVE THE NORMAL MAXIMUM LIQUID LEVEL.

(C) MEANS SHALL BE PROVIDED TO PREVENT THE RELEASE OF LIQUID FROM THE TANK BY SIPHON FLOW.

(D) MEANS SHALL BE PROVIDED FOR DETERMINING THE LEVEL OF LIQUID IN THE TANK. THIS MEANS SHALL BE ACCESSIBLE TO THE DELIVERY OPERATOR.

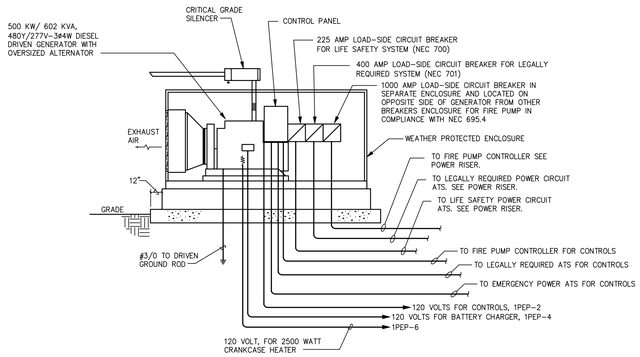
(E) MEANS SHALL BE PROVIDED TO PREVENT OVERFILLING BY SOUNDING AN ALARM WHEN THE LIQUID LEVEL IN THE TANK REACHES 90 PERCENT OF CAPACITY AND BY AUTOMATICALLY STOPPING DELIVERY OF LIQUID TO THE TANK WHEN THE LIQUID LEVEL IN THE TANK REACHES 95 PERCENT OF CAPACITY. IN NO CASE SHALL THESE PROVISIONS RESTRICT OR INTERFERE WITH THE PROPER FUNCTIONING OF THE NORMAL VENT OR THE EMERGENCY VENT.

(F) SPACING BETWEEN ADJACENT TANKS SHALL BE NOT LESS THAN 3FT (0.9 M).

(G) THE TANK SHALL BE CAPABLE OF RESISTING THE DAMAGE FROM THE IMPACT OF A MOTOR VEHICLE OR SUITABLE COLLISION BARRIERS SHALL BE PROVIDED.

(H) WHERE THE INTERSTITIAL SPACE IS ENCLOSED, IT SHALL BE PROVIDED WITH EMERGENCY VENTING IN ACCORDANCE WITH 2–3.6.

(I) MEANS SHALL BE PROVIDED TO ESTABLISH THE INTEGRITY OF THE SECONDARY CONTAINMENT. FOR TESTING OF SECONDARY CONTAINMENT–TYPE TANKS.



1 GENERATOR DEATIL

NOT TO SCALE

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BDA

07/08/24

ROCKLAND GREEN CENTER FOR ANIMAL RESCUE AND EDUCATIONAL SERVICES, INC.
R.G. C.A.R.E.S. ANIMAL SHELTER
427 BEACH RD. LOCATED IN THE TOWN OF HARVERSTRAW, NY 10993

ELECTRICAL DETAILS

REV.#	DATE	COMMENTS
REVISION:	-	-
REVISION:	-	-
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REVIEWS	
INITIALS	
	BDA DSGN. REV.
	BDA TECH REV.

RGAS

PROJECT NO.: 23077
DRAWN: SCG
DATE: 07/08/2024

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