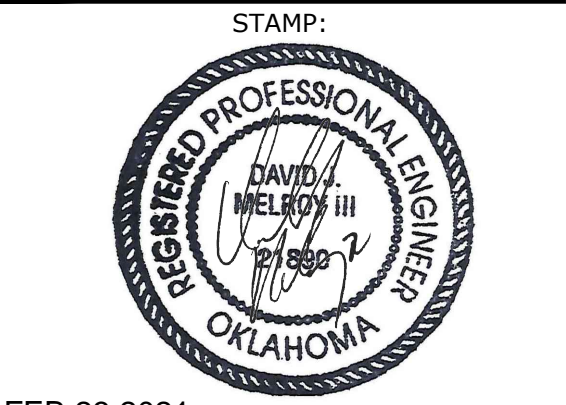


DRAWING INDEX					
SHEET NUMBER	SHEET TITLE	PERMIT SET DATE: 02-23-2021	1"	1/2"	3/4"
E0.0	SYMBOL LIST AND ABBREVIATIONS	●	▲	▲	▲
E0.1	ELECTRICAL SPECIFICATIONS	●			
E0.2	SINGLE LINE DIAGRAM AND PANEL SCHEDULE	●			
ED5.1	ELECTRICAL DEMOLITION ROOF PLAN	●			
E2.2	ELECTRICAL PLAN - LEVEL 3	●			
E5.1	ELECTRICAL ROOF PLAN	●			
	TOTAL	6			

ELECTRICAL SYMBOL LIST	
NOTE: THIS IS A MASTER SCHEDULE. NOT ALL SYMBOLS AND/OR ABBREVIATIONS CONTAINED HEREIN MAY APPEAR ON THE DRAWINGS. SHEETS AND/OR DESCRIPTIONS IN THESE PLANS AND DIAGRAMS SHALL SUPERSEDE THIS SYMBOL LIST (SYMBOL DEFINITION, FUNCTION, MOUNTING HEIGHTS, ETC. MOUNTING HEIGHTS SHALL BE TO CENTER OF THE BOX U.O.N.)	
ABBREVIATIONS A, AMPS AMPERES AL ALUMINUM AFF ABOVE FINISHED FLOOR AFG ABOVE FINISHED GRADE AFCI ARC FAULT INTERRUPTER DEVICE AIC AMPERE INTERRUPTION CAPACITY ATS AUTOMATIC TRANSFER SWITCH BKBD BACKBOARD C, C. CONDUIT (W/ PULL CORD IF OTHERWISE EMPTY) CU COPPER DIA. DIAMETER DIST DISTRIBUTION DLH DAYLIGHT HARVESTING DMR DIMMER EVSE ELECTRIC VEHICLE SUPPLY EQUIPMENT (E) EXISTING TO REMAIN F FUSE (DUAL-ELEMENT, TIME DELAY UON) (F) FUTURE FBO FURNISHED BY OTHERS FBE FIXTURES, FURNISHINGS & EQUIPMENT FPE FUSE PER EQUIPMENT NAMEPLATE GFCI GROUND FAULT CIRCUIT INTERRUPTER DEVICE G, GND GROUND HOA HAND-OFF-AUTOMATIC HP HORSEPOWER ID INSIDE DIMENSION IG ISOLATED GROUND K KCMIL (EXAMPLES 300 KCMIL = 300K) LCP LIGHTING CONTROL PANEL (N) NEW NF NON-FUSED NIC NOT IN CONTRACT NL NIGHT LIGHT NTS NOT TO SCALE OD OUTSIDE DIMENSION P POLES P, PNL PANEL PH PHASE (R) EXISTING - RELOCATE RCP ROOM CONTROL PANEL REQD REQUIRED RGS RIGID GALVANIZED STEEL SPD SURGE PROTECTIVE DEVICE (AKA TVSS) SVC SERVICE SWBD SWITCHBOARD TVSS TRANSIENT VOLTAGE SURGE SUPPRESSION (AKA SPD) UNSW UNSWITCHED UPS UNINTERRUPTIBLE POWER SUPPLY UON UNLESS OTHERWISE NOTED W WIRES WP WEATHERPROOF (NEMA 3R) (X) EXISTING - REMOVE T-, XFMR TRANSFORMER 30/3 AMPS/POLES REPRESENTATION (EXAMPLE: 30/3=30A,3P)	LIGHT FIXTURES TAGS AND MODIFIERS    1 - NUMBER INDICATES CIRCUIT NUMBER # - LOWER-CASE LETTER INDICATES SWITCH LEG 21 - LOWER-CASE "Z" W/ NUMBER INDICATES CONTROL ZONE. SWITCHES @ +46" UON (DECORA STYLE UON) S SWITCH - SINGLE POLE S2 SWITCH - TWO POLE S3 SWITCH - THREE-WAY S4 SWITCH - FOUR-WAY SX SWITCH - EMERGENCY (W/VOLTAGE BARRIER FROM NORMAL POWER DEVICES) SP SWITCH - PILOT LIGHT (CONFIRM LIT POSITION) SK SWITCH - KEY OPERATED SC SWITCH - MOMENTARY CONTACT; SPDT CENTER OFF UON SH MANUAL MOTOR STARTER; POLES AS INDICATED, HEATERS AS REQD. ST COUNTDOWN TIMER SWITCH; DURATION AS INDICATED D DIMMER SWITCH - SLIDER TYPE; 600W UON - MATCH FIXTURE CONTROL REQUIREMENTS (0-10V OR ELV UON) NOTE: 0-10V REQUIRES 2/C #18 STRANDED SHIELDED CONTROL WIRE. RUN SEPARATE FROM POWER WIRING. PE PHOTOCELL SWITCH: 1500W, WP W/ ADJUSTABLE LIGHT GATE UON OCCUPANCY / VACANCY SWITCHES @ +46" UON NOTE: (ALL DUAL-TECHNOLOGY WITH INTEGRAL OR ADJACENT POWER PACK) M SWITCH - SPST M SWITCH - SPST CEILING MOUNTED M2 SWITCH - DPTD 2-CHANNEL HI-LOW CONTROL MD SWITCH - SPST DIMMER 0-10V OR W/ 10V-ELV POWER PACK ADAPTER MP SWITCH - SPST W/ AMBIENT LIGHT SENSOR (DAYLIGHT HARVESTING) M2P SWITCH - DPTD W/ AMBIENT LIGHT SENSOR MDP SWITCH - SPST DIMMER W/ AMBIENT LIGHT SENSOR 0-10V OR W/ 10V-ELV POWER PACK ADAPTER PE LOCAL-ONLY PHOTOCELL W/ INTEGRAL DIMMER (0-10V OR ELV W/ POWER PACK ADAPTER AS REQD) LIGHTING CONTROL SYSTEM - DEVICES @ +46" UON MS MASTER LIGHTING CONTROL STATION OV SYSTEM OCCUPANCY/VACANCY SENSOR RCP# ROOM CONTROLLER PANEL L SYSTEM LIGHTING CONTROL STATION PS SYSTEM PHOTOCELL SENSOR - CEILING UON EQUIPMENT, CONTROLS & CONNECTIONS     VFD VARIABLE FREQUENCY DRIVE B ENCLOSED CIRCUIT BREAKER DISCONNECT SWITCH: 30/3 UON. F=FUSED (FPE), N=NONFUSED RELAY CONTACTOR W/ INTEGRAL HOA SELECTOR MOTOR STARTER W/ INTEGRAL CONTROL TRANSFORMER, PILOT LIGHT & HOA SELECTOR COMBINATION STARTER & FUSIBLE DISCONNECT, 30/3, SIZE 1 UON SINGLE-PHASE MOTOR CONTROL ASSEMBLY: HP-RATED SWITCH AND POWER RELAY - 20/1 UON JUNCTION BOX - SIZE PER NEC REQUIREMENTS PULLBOX - SIZE AND LOCATION AS SCHEDULED (OTHERWISE AS REQUIRED BY CODE) CONTROL STATION - FUNCTION AS INDICATED, +46" UON SHUNT TRIP STATION - +72" AFF UON MOTOR SIGN OUTLET EQUIPMENT PACKAGE - TYPE AS INDICATED CEILING FAN OUTLET (PROVIDE 5X STRUCTURAL BACKING) SPECIALTY EQUIPMENT DOUBLE SINGLE ELECTRIC VEHICLE EVSE CHARGING STATION, LEVEL 2 UON, PEDESTAL MOUNT UON SAME AS ABOVE EXCEPT WALL MOUNT - ADA-COMPLIANT MOUNTING. COMBINATION INTERCONNECTABLE SMOKE/CO DETECTOR W/INTEGRAL HORN, STROBE & BACK-UP BATTERY.
ABBREVIATIONS A, AMPS AMPERES AL ALUMINUM AFF ABOVE FINISHED FLOOR AFG ABOVE FINISHED GRADE AFCI ARC FAULT INTERRUPTER DEVICE AIC AMPERE INTERRUPTION CAPACITY ATS AUTOMATIC TRANSFER SWITCH BKBD BACKBOARD C, C. CONDUIT (W/ PULL CORD IF OTHERWISE EMPTY) CU COPPER DIA. DIAMETER DIST DISTRIBUTION DLH DAYLIGHT HARVESTING DMR DIMMER EVSE ELECTRIC VEHICLE SUPPLY EQUIPMENT (E) EXISTING TO REMAIN F FUSE (DUAL-ELEMENT, TIME DELAY UON) (F) FUTURE FBO FURNISHED BY OTHERS FBE FIXTURES, FURNISHINGS & EQUIPMENT FPE FUSE PER EQUIPMENT NAMEPLATE GFCI GROUND FAULT CIRCUIT INTERRUPTER DEVICE G, GND GROUND HOA HAND-OFF-AUTOMATIC HP HORSEPOWER ID INSIDE DIMENSION IG ISOLATED GROUND K KCMIL (EXAMPLES 300 KCMIL = 300K) LCP LIGHTING CONTROL PANEL (N) NEW NF NON-FUSED NIC NOT IN CONTRACT NL NIGHT LIGHT NTS NOT TO SCALE OD OUTSIDE DIMENSION P POLES P, PNL PANEL PH PHASE (R) EXISTING - RELOCATE RCP ROOM CONTROL PANEL REQD REQUIRED RGS RIGID GALVANIZED STEEL SPD SURGE PROTECTIVE DEVICE (AKA TVSS) SVC SERVICE SWBD SWITCHBOARD TVSS TRANSIENT VOLTAGE SURGE SUPPRESSION (AKA SPD) UNSW UNSWITCHED UPS UNINTERRUPTIBLE POWER SUPPLY UON UNLESS OTHERWISE NOTED W WIRES WP WEATHERPROOF (NEMA 3R) (X) EXISTING - REMOVE T-, XFMR TRANSFORMER 30/3 AMPS/POLES REPRESENTATION (EXAMPLE: 30/3=30A,3P)	FEEDERS AND CIRCUITING        POWER RECEPTACLES @ +18" UON (DECORA STYLE UON)                 RECEPTACLES & OUTLETS - MOUNTING AND ASSEMBLIES   FLOOR BOXES NOTE: BASIC BOXES ARE SHOWN: ROUND PLASTIC BOX, IN CONCRETE SLAB, DECORA-STYLE DEVICES, FLUSH FLIP-LID OUTLET COVERS, FLANGED UNIVERSAL COVER PLATE (COLOR AS DIRECTED BY ARCHITECT)     LOW VOLTAGE SYSTEMS OUTLETS @ +18" UON NOTE: THESE SYMBOLS ARE FOR OUTLETS OF GENERIC INSTALLATIONS. W/O FORMAL LOW VOLTAGE SYSTEMS DESIGN. IF COMMUNICATIONS/ITS SYSTEM DESIGN IS ISSUED FOR THIS PROJECT, THOSE SYMBOLS AND REQUIREMENTS SHALL GOVERN.        ACCESS CONTROL OUTLETS NOTE: THESE SYMBOLS ARE FOR OUTLETS OF GENERIC INSTALLATIONS. W/O FORMAL ACCESS CONTROL DESIGN. IF ACCESS CONTROL DESIGN IS ISSUED FOR THIS PROJECT, THOSE SYMBOLS AND REQUIREMENTS SHALL GOVERN.  

ISSUE DATE:		MM-DD-YEAR
REVISIONS:		
#	DESCRIPTION	DATE

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FEB 23 2021
SHEET TITLE:

SYMBOL LIST AND ABBREVIATIONS

ELECTRICAL SPECIFICATIONS

PART ONE - GENERAL

- 1.1. **THE WORK:** ALL WORK SHALL BE NEW UNLESS OTHERWISE NOTED. THE CONTRACTOR SHALL PROVIDE THE WORK SHOWN ON THE DRAWINGS AND SPECIFIED FOR ITS INDIVIDUAL SECTIONS OF WORK. THE WORD "WORK" IS DEFINED AS ALL LABOR, TRANSPORTATION, MATERIAL, EQUIPMENT, TOOLS, INSTALLATION, SUPERVISION AND ANY OTHER INCIDENTAL ITEMS OR SERVICES NECESSARY FOR THE PROPER INSTALLATION AND OPERATION OF THE COMPLETE SYSTEMS, WHICH SHALL BE PROVIDED BY THIS CONTRACTOR WHETHER OR NOT SPECIFICALLY INDICATED OR NOTED.
- 1.2. **RESPONSIBILITY:** THIS CONTRACTOR IS SOLELY RESPONSIBLE FOR THE ACTIONS OF ITS PERSONNEL, SUPPLIERS, AND SUB-CONTRACTORS. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR THE PERFORMANCE OF ALL WORK AS MAY BE REQUIRED TO ACCOMMODATE OR SUPPORT THE ELECTRICAL WORK. EXAMPLES: PAINTING, STRUCTURAL SUPPORTS, CUTTING AND PATCHING, EXCAVATION AND BACKFILL, CONCRETE PADS, ROOF JACKS, ETC. REQUIRING THIS CONTRACTOR'S ENGAGEMENT OF APPROPRIATE TRADES TO PERFORM SUCH WORK FOR THE PROPER INSTALLATION AND OPERATION OF COMPLETE ELECTRICAL SYSTEMS.
- 1.3. **MINIMUM REQUIREMENTS:** THESE SPECIFICATIONS ESTABLISH THE MINIMUM REQUIREMENTS FOR THE WORK AND MATERIALS, EQUIPMENT AND METHODS TO BE PROVIDED. THE DRAWINGS MAY INDICATE REQUIREMENTS WHICH EXCEED THESE MINIMUMS.
- 1.4. **GENERAL CONDITIONS:** ALL GENERAL CONDITIONS, SPECIAL REQUIREMENTS OR GENERAL REQUIREMENTS OF THE CONSTRUCTION SPECIFICATIONS ARE MADE PART OF THIS SPECIFICATION AND HAVE THE SAME FORCE AND EFFECT AS IF COMPLETELY REPRODUCED.
- 1.5. **DEFINITIONS:**
AHJ: AUTHORITY HAVING JURISDICTION.
ASSEMBLY: AN INSTALLATION OR SYSTEM OF MULTIPLE COMPONENTS REQUIRING MULTIPLE CONNECTIONS. (EXAMPLES: TRASH COMPACTOR, MOTORIZED DOOR, HVAC SPLIT SYSTEM, ETC.).
EQUAL: ACCEPTED BY THE ENGINEER AS EQUAL.
FF&E: FURNISHINGS, FIXTURES AND EQUIPMENT - PROVIDED BY OTHERS AT JOBSITE. RECEIVE, PROTECT, STORE, ASSEMBLE, INSTALL AND CONNECT. PROVIDE MINIMUM 5x STRUCTURAL BACKING. (EXAMPLES: CHANDELIERS, PROJECTORS, ETC.).
PROVIDE: FURNISH, INSTALL, ACTIVATE, AND COMMISSION.
- 1.6. **CODES:** ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE LATEST ADOPTED EDITIONS OF THE NATIONAL ELECTRICAL CODE (NEC) AND ALL OTHER APPLICABLE FEDERAL, STATE, AND LOCAL REGULATIONS.
- 1.7. **PERMITS:** PAY ALL FEES AND OBTAIN ALL PERMITS AND INSPECTIONS REQUIRED FOR THE WORK.
- 1.8. **DRAWINGS:** DRAWINGS ARE DIAGRAMMATIC AND SCHEMATIC IN NATURE, AND INDICATE THE TYPE, SIZE, ARRANGEMENT AND LOCATIONS OF MATERIALS AND EQUIPMENT. WORK INCLUDES CERTAIN COMPONENTS, APPURTENANCES, AND RELATED SPECIALTIES THAT MAY NOT BE SHOWN. PROVIDE ALL NECESSARY ITEMS TO COMPLETE THE WORK ACCORDING TO INDUSTRY STANDARDS. IT IS THE INTENT OF THE DRAWINGS AND SPECIFICATIONS TO REQUIRE FINISHED WORK, TESTED AND READY FOR OPERATION. DO NOT SCALE DRAWINGS. ARRANGEMENT OF EQUIPMENT AND ROUTING OF FEEDERS AND BRANCH CIRCUITING SHALL BE PLUMB AND AT RIGHT ANGLES TO BUILDING CONSTRUCTION, AND MAY REQUIRE MODIFICATION DUE TO UNFORESEEN CONDITIONS REQUIRING ONSITE REVISIONS DURING CONSTRUCTION. (SEE ALSO "BIDDING").
- 1.9. **COORDINATION:** THIS PROJECT REQUIRES A HIGH LEVEL OF COORDINATION AND COOPERATION WITH OWNER, ARCHITECT, OTHER TRADES, VENDORS, AND SPECIALTY CONTRACTORS. CAREFULLY EXAMINE ALL CONTRACT DOCUMENTS INCLUDING, BUT NOT LIMITED TO, SHOP DRAWINGS, ETC. FOR ALL GENERAL CONSTRUCTION, STRUCTURAL, MECHANICAL, PLUMBING, ELECTRICAL, AND SPECIALTY CONTRACTOR WORK. PRIOR TO ROUGH-IN, COORDINATE THE WORK WITH ALL OTHER TRADES, TAKING RESPONSIBILITY FOR THE PROPER FITTING OF MATERIAL INTO THE BUILDING AS PLANNED WITHOUT INTERFERENCE WITH OTHER WORK. ESTABLISH AND VERIFY LOCATIONS, HEIGHTS, CONNECTION METHODS, ETC. WITH EQUIPMENT INSTALLER (AND OWNER, ARCHITECT, AND/OR INTERIOR DESIGNER FOR FF&E ITEMS), AND MAKE REASONABLE MODIFICATIONS IN THE LAYOUTS NEEDED TO PREVENT CONFLICTS WITH OTHER TRADES IN ORDER TO PROVIDE ACCESS FOR THE PROPER EXECUTION OF THE WORK.
- 1.10. **IDENTICAL:** ALL WORK REQUIRED FOR IDENTICAL ITEMS AND ASSEMBLIES OF THE PROJECT SHALL BE PROVIDED, ALTHOUGH EACH SPECIFIC IDENTICAL ITEM MAY NOT BE SHOWN IN DETAIL.
- 1.11. **VERIFICATION:** CHECK AND VERIFY ALL SIZES, DIMENSIONS, AND CONDITIONS BEFORE STARTING ANY WORK. ANY DEVIATION(S) OR PROBLEM(S) SHALL BE TRANSMITTED TO THE ENGINEER FOR REVIEW.
- 1.12. **CONNECTIONS:** CONNECT ALL EQUIPMENT, SYSTEMS, AND ASSEMBLIES PROVIDED BY OTHERS INCLUDING CONTROLS, SAFETY DEVICES AND INTERCONNECTIONS. EXCEPTION: DO NOT INTERCONNECT THE CONTROL SYSTEMS OF THOSE MECHANICAL AND PLUMBING SYSTEMS WHICH ARE SPECIFICALLY NOTED TO BE THE RESPONSIBILITY OF THOSE TRADES. PROVIDE FUSIBLE DISCONNECT SWITCHES AND MOTOR STARTERS FOR ALL EQUIPMENT EXCEPT THOSE ITEMS WHICH ARE SPECIFICALLY LISTED WITH INTEGRAL STARTERS/DISCONNECT SWITCHES. WHERE STARTERS AND/OR DISCONNECT SWITCHES ARE FURNISHED TOGETHER WITH EQUIPMENT, RECEIVE, INSTALL, AND CONNECT THOSE ITEMS.
- 1.13. **SUBMITTAL:** SUBMIT TO THE ENGINEER COMPLETE ELECTRONIC SETS OF SHOP DRAWINGS AND TECHNICAL DATA SHEETS FOR ALL EQUIPMENT AND MATERIALS SPECIFIED HEREIN. THE ENGINEER SHALL REVIEW SHOP DRAWINGS AND TECHNICAL DATA SHEETS FOR CONFORMANCE WITH THE CONTRACT DOCUMENTS AND ISSUE A WRITTEN ASSESSMENT TO THE OWNER PRIOR TO COMMENCEMENT OF WORK. THE ENGINEER'S FAILURE TO CORRECT ERRORS IN THE SUBMITTAL SHALL NOT RELIEVE THE CONTRACTOR OF THE OBLIGATION TO PERFORM THE WORK AS SHOWN AND/OR SPECIFIED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ENGINEERING FEES NECESSARY TO CHANGE PROJECT DOCUMENTS BASED ON ALTERNATE SUBMITTAL PACKAGES/EQUIPMENT SUBSTITUTIONS.
- 1.14. **OR-EQUAL SUBSTITUTIONS:** ALL PROPOSED "OR EQUAL" SUBSTITUTIONS SHALL BE SUBMITTED TO THE ENGINEER FOR CONSIDERATION PRIOR TO BIDDING AND AFTER ALL REQUIREMENTS ASSOCIATED WITH SUBSTITUTED EQUIPMENT AND/OR MATERIALS HAVE BEEN COORDINATED WITH OTHER BUILDING TRADES, INCLUDING ALL MECHANICAL, STRUCTURAL, AND/OR ARCHITECTURAL ELEMENTS. THE OWNER'S REPRESENTATIVE SHALL PRE-APPROVE ANY PROPOSED SUBSTITUTION IN WRITING. IDENTIFY AND ANNOTATE ALL REVISED REQUIREMENTS PER BUILDING TRADE ON THE SHOP DRAWINGS. ALSO IDENTIFY ALL COST DEBITS OR CREDITS IN WRITING FOR THE PROPOSED CHANGES PER BUILDING TRADE AND SUMMARIZE THESE AS A TOTAL NET-TO-OWNER CHARGE OR CREDIT FOR CONSIDERATION.

- 1.15. **AS-BUILT:** UPON COMPLETION OF CONSTRUCTION, SUPPLY THE ENGINEER WITH AS-BUILT DOCUMENTS ACCURATELY SHOWING THE MATERIALS AND EQUIPMENT AS INSTALLED. PROVIDE OPERATION AND MAINTENANCE MANUAL(S) CONTAINING APPROVED SHOP DRAWINGS, OPERATING AND MAINTENANCE INSTRUCTION FOR SWITCHGEAR, LIGHTING FIXTURES, CONTROLS, AND SPECIALTY EQUIPMENT.
- 1.16. **GUARANTEE:** ALL MATERIALS AND WORKMANSHIP SHALL BE GUARANTEED FOR A MINIMUM OF ONE (1) YEAR FROM DATE OF ACCEPTANCE BY OWNER (LONGER IF REQUIRED BY GENERAL AND/OR SPECIAL CONDITIONS). IN ADDITION, THE INSTALLATION SHALL BE GUARANTEED TO PERFORM AS SPECIFIED AND FULFILL EACH AND EVERY REQUIREMENT OF THE DRAWINGS AND SPECIFICATIONS WHEN OPERATED IN ACCORDANCE WITH THE CONTRACTOR'S INSTRUCTIONS. SHOULD THE INSTALLATION IN ANY WAY FAIL TO DO SO, THE CONTRACTOR WILL, WITHOUT DELAY AND WITHOUT COST TO THE OWNER, PROVIDE WHATEVER ADDITIONAL EQUIPMENT, MATERIAL, AND LABOR REQUIRED TO CORRECT THE DEFICIENCY AND COMPLY WITH THE REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS. WHERE SPECIFIED EQUIPMENT HAS A LONGER GUARANTEE PERIOD, THE TERMS OF THAT GUARANTEE SHALL GOVERN (EXAMPLE: LED SYSTEM WITH 5 YEAR GUARANTEE). INCANDESCENT LAMPS ARE EXEMPT BUT SHALL BE NEW AND UNUSED AT THE TIME OF FINAL ACCEPTANCE.
- BIDDING**
- 1.17. **SITE VISIT:** CONTRACT DOCUMENTS INDICATE NEW WORK TO BE PERFORMED AND DO NOT PURPORT TO SHOW ALL EXISTING CONDITIONS. VISIT THE SITE PRIOR TO SUBMITTING A BID TO BECOME FAMILIAR WITH EXISTING CONDITIONS. COMPARE THE WORK SPECIFIED IN THE CONTRACT DOCUMENTS AGAINST EXISTING CONDITIONS, AND IDENTIFY AND ANNOTATE ALL WORK OR CONDITIONS THAT ARE DIFFERENT FROM THE CONTRACT DOCUMENTS OR THEIR INTENT. UPON DISCOVERY, IMMEDIATELY NOTIFY AND REPORT IN WRITING ANY DISCREPANCIES TO THE ENGINEER. NO EXTRAS OR CHANGE ORDERS WILL BE ALLOWED FOR FAILURE TO PERFORM THE PRE-BID SITE VISIT.
- 1.18. **BASIS OF PROPOSAL:** PROPOSAL SHALL BE BASED ON MANUFACTURERS AND MODELS AS LISTED UNLESS "OR EQUAL" IS INDICATED. PROVIDE SUBSTITUTION REQUESTS A MINIMUM OF FIVE (5) BUSINESS DAYS PRIOR TO BID DATE CLOSING TO ALLOW TIME FOR DUE CONSIDERATION OF PROPOSED ALTERNATE AND SUBSEQUENT NOTIFICATION TO ALL OTHER BIDDERS IN THE EVENT SUBSTITUTION IS DEEMED ACCEPTABLE. DETERMINATION OF SUBSTITUTION EQUALITY RESTS SOLELY WITH THE ENGINEER.
- 1.19. **VALUE ENGINEERING (V.E.) INITIATIVES:** IN ADDITION TO THE "AS SPECIFIED/OR EQUAL" BASE BID, A COST REDUCTION INITIATIVE(S) MAY BE PROPOSED BASED ON SUBSTITUTIONS OF EQUIPMENT, MATERIALS, AND/OR METHODS. EACH SUCH PROPOSAL SHALL INCLUDE A DATA SHEET(S) ON THE SPECIFIED ITEM(S), THE PROPOSED SUBSTITUTE(S), AND THE NET CREDIT TO THE OWNER, INCLUDING ALL CREDITS AND CHARGES FROM ALL MEMBERS OF THE CONSTRUCTION TEAM. THE ENGINEER WILL REVIEW AND RENDER AN OPINION TO THE OWNER. IF THE V.E. INITIATIVE IS DECLINED, PROVIDE THE SPECIFIED EQUIPMENT/MATERIAL/METHOD. IF THE V.E. INITIATIVE IS ACCEPTED, AND IF SUCH ACCEPTANCE RESULTS IN A REQUIREMENT TO REVISE ANY DESIGN DOCUMENTS, THE CHARGES FOR THESE REVISIONS SHALL BE BILLED TO THE CONTRACTOR AND THE INVOICING SHALL BE SETTLED BEFORE THE PROJECT IS SIGNED OFF FOR FINAL ACCEPTANCE.
- 1.20. **BIDDING:** THE CIVIL, ARCHITECTURAL, MECHANICAL, KITCHEN, AND/OR INTERIOR DRAWINGS CONTAIN DETAILED DESCRIPTIONS, CIRCUITING, AND CONNECTION REQUIREMENTS WHICH ARE PART OF THIS CONTRACTOR'S RESPONSIBILITIES. DO NOT SUBMIT BIDS ON THIS PROJECT PRIOR TO REVIEWING ALL PROJECT DRAWINGS, SPECIFICATIONS, AND ADDENDA.

PART TWO - PRODUCTS

- 2.1. **MATCH EXISTING:** EXISTING EQUIPMENT AND SYSTEMS SHALL BE CONSIDERED A MINIMUM STANDARD TO BE MET, IF NOT OTHERWISE EXCEEDED BY THESE PLANS AND SPECIFICATIONS. NEW MATERIALS AND EQUIPMENT SHALL MATCH EXISTING IN APPEARANCE AND FUNCTION.
- 2.2. **EXISTING SWITCHGEAR:** CHANGES TO EXISTING PANELBOARDS AND DISTRIBUTION EQUIPMENT SHALL BE MADE WITH MATCHING COMPONENTS. NEW CIRCUIT PROTECTIVE DEVICES SHALL BE MANUFACTURER-CERTIFIED AS COMPATIBLE WITH EXISTING EQUIPMENT, AND SHALL EQUAL OR EXCEED EQUIPMENT RATED CURRENT (AIC) RATINGS.
- 2.3. **EQUIPMENT STANDARDS:** ALL MATERIALS AND EQUIPMENT SHALL BE NEW AND OF THE HIGHEST QUALITY AVAILABLE ("SPECIFICATION GRADE"). EQUIPMENT SHALL BE CONSTRUCTED TO NEMA STANDARDS AND SHALL BE LABELED FOR THEIR INTENDED PURPOSE BY A RECOGNIZED TESTING AGENCY ACCEPTABLE TO THE AHJ (UL, CSA, ETC., ETC.).
- 2.4. **ACCEPTABLE MANUFACTURERS AND SUPPLIERS:** WHERE EQUIPMENT AND MATERIALS ARE NOT SPECIFIED BY NAME THEY ARE DEEMED TO GENERIC, SUBJECT TO THE REQUIREMENTS LISTED HEREIN. THESE MANUFACTURERS ARE CONSIDERED CAPABLE OF OFFERING EQUIVALENT PRODUCTS. MINIMUM STANDARD IN ALL INSTANCES IS COMMERCIAL GRADE.
SWITCHGEAR: EATON, GENERAL ELECTRIC, SIEMENS, SQUARE D
LIGHT FIXTURES: ACUTTY, COOPER, HUBBELL, THOMAS
WIRING DEVICES: HUBBELL, LEVITON, LEGRAND, WIREMOLD
- 2.5. **CIRCUITING:** ALL WIRING SHALL BE IN CONDUIT, CONCEALED EXCEPT WHERE NOTED. EMT WITH STEEL INSULATED THROAT SET SCREW FITTINGS MAY BE USED IN DRY, PROTECTED INTERIOR LOCATIONS. PVC SCHEDULE 40 SHALL BE USED BELOW GRADE AT MINIMUM -24". WRAPPED RIGID ELBOWS AND RISERS SHALL BE USED FOR ALL THROUGH-GRADE TRANSITIONS AND STUB-UPS. RGS OR IMC CONDUIT WITH THREADED FITTINGS SHALL BE USED IN ALL LOCATIONS WHERE EXPOSED TO THE ELEMENTS OR SUBJECT TO PHYSICAL DAMAGE. IMC OR RIGID CONDUIT BELOW GRADE SHALL BE HALF-LAP WRAPPED WITH 20 MIL PVC TAPE. TYPE ENT RACEWAY IS NOT ALLOWED. CONNECT RECESSED AND SUSPENDED LIGHTING FIXTURES, MOTORIZED AND/OR VIBRATING EQUIPMENT WITH STEEL FLEX OR SEALTITE CONDUIT. ALL CONDUIT SHALL HAVE PULL CORD IF OTHERWISE EMPTY.
- 2.6. **MC CABLE:** MC CABLE MAY BE USED IN LOCAL 1- AND 2-CIRCUIT APPLICATIONS ACCEPTABLE TO THE AHJ. HOMERUNS AND FEEDERS SHALL BE CONDUIT AND WIRE.
- 2.7. **WIRING:** ALL WIRE SHALL BE COPPER, STRANDED IN SIZES #8 AWG AND LARGER. INSULATION SHALL BE TYPE THHN OR THHN. SINGLE PHASE BRANCH CIRCUITS SHALL INCLUDE A SEPARATE NEUTRAL WIRE WITH EACH PHASE WIRE. NEUTRAL SHALL BE WHITE WITH COLOR STRIPE MATCHING COLOR OF PHASE WIRE.
- 2.7. **FUSES AND CIRCUIT BREAKERS:** FUSES AND CIRCUIT BREAKERS SHALL BE SIZED PER ACTUAL RESPECTIVE APPLICATION (i.e., MOTOR CIRCUIT PROTECTOR, GROUND FAULT CIRCUIT INTERRUPTER,

- ARC FAULT CIRCUIT INTERRUPTER, ETC.). FUSES SHALL BE DUAL ELEMENT, CURRENT-LIMITING, AND SHALL BE INTERCHANGEABLE BETWEEN FRAME SIZES WITH STANDARD FACTORY FUSE REDUCERS. PROVIDE LOCKABLE SPARE FUSE CABINET WITH (3) SPARE FUSES OF EACH SIZE USED.
- 2.8. **DISTRIBUTION SWITCHGEAR:** SWITCHGEAR SHALL HAVE COPPER BUS AND HEAVY GAUGE HOUSINGS. SWITCHGEAR IN LOCATIONS OTHER THAN LOCKED ELECTRICAL ROOMS SHALL HAVE LOCKABLE COVERS. SWITCHGEAR SHALL HAVE NO LESS THAN 20% SPARE BUSSED AND USABLE SPACE, MEASURED AS A PERCENTAGE OF THE SPACE OCCUPIED BY SPECIFIED CIRCUIT BREAKERS, SWITCHES, ETC.
- 2.9. **SERVICE SWITCHGEAR:** IN ADDITION TO THE ABOVE, SERVICE SWITCHGEAR SHALL MEET THE REQUIREMENTS OF THE SERVING UTILITY.
- 2.10. **PANELBOARDS:** PANELS SHALL HAVE COPPER BUS AND HARDWARE, BOLT-ON CIRCUIT BREAKERS, FLUSH MONO-FLAT TRIM, PLANO HINGED DOORS AND COVER (DOOR-IN-DOOR) WITH LOCKABLE MASTER-KEYED FLUSH LATCHES. FLUSH-MOUNTED PANELS SHALL HAVE EMPTY CONDUITS STUBBED TO ACCESSIBLE ATTIC SPACE: (1) 3/4" CONDUIT FOR EACH THREE (3) SPARE/SPACE CIRCUITS.
- 2.11. **SAFETY SWITCHES:** SWITCHES SHALL BE GENERAL DUTY UP TO 250 VOLTS, HEAVY DUTY ABOVE 250 VOLTS. FUSIBLE SWITCHES SHALL BE FUSED PER THE NAMEPLATE REQUIREMENTS OF THE EQUIPMENT BEING CONNECTED.
- 2.12. **MOTOR STARTERS:** STARTERS SHALL BE MINIMUM NEMA SIZE 1 WITH INTEGRAL CONTROL TRANSFORMER, RED NEON "RUN" PILOT LIGHT AND "ON-OFF-AUTO" SELECTOR SWITCH ON COVER. OVERLOAD DEVICES SHALL BE SIZED PER THE NAMEPLATE AMPERAGE OF THE EQUIPMENT BEING CONTROLLED.
- 2.13. **CONTRACTORS:** CONTRACTORS SHALL BE ELECTRICALLY HELD WITH "ON-OFF-AUTO" SELECTOR SWITCH ON COVER.
- 2.14. **RATINGS:** ALL ELECTRICAL EQUIPMENT SHALL BE FULLY RATED FOR BRACING IN EXCESS OF THE MAXIMUM AVAILABLE FAULT CURRENT CALCULATED AND SHOWN AT THE EQUIPMENT CONNECTION POINT WITHIN THE DISTRIBUTION SYSTEM. MINIMUM RATING SHALL BE 10K AIC.
- 2.15. **WIRING DEVICES:** WIRING DEVICES (SWITCHES, RECEPTACLES, ETC.) SHALL BE SPECIFICATION GRADE "DECORA" STYLE, MINIMUM 20-AMP RATED. COVER PLATES SHALL BE NYLON. DEVICE AND PLATE COLOR(S) SHALL BE AS SPECIFIED BY ARCHITECT OR INTERIOR DESIGNER. VERIFY PRIOR TO COMMENCEMENT OF WORK. WIRING DEVICES EXPOSED TO THE ELEMENTS SHALL HAVE WEATHERPROOF-IN-USE LOCKABLE COVERS. RAISED STEEL BOX COVERS MAY BE USED IN UTILITY AREAS.
- 2.16. **TRANSFORMERS:** TRANSFORMERS SHALL BE TYPE TP-1 MINIMUM, WITH ALUMINUM WINDINGS, RATED FOR 150°C RISE (UNLESS OTHERWISE NOTED), MOUNTED ON RUBBER-IN-SHEAR VIBRATION ISOLATORS, CONNECTED WITH FLEXIBLE CONDUIT. PUBLISHED AND MEASURED NOISE RATING SHALL NOT EXCEED NEMA TP-20 MAXIMUM.
- 2.17. **LIGHTING FIXTURES:** LIGHT FIXTURES SHALL BE PROVIDED WITH ALL ASSOCIATED HARDWARE (HANGER BARS, PENDANTS, STEMS, RESTRAINTS, CHAINS, CORDS, LAMPS, ETC.). LENSES SHALL BE ACRYLIC, REFLECTORS SHALL BE ANODIZED. FLUORESCENT BALLASTS SHALL BE ELECTRONIC, PROGRAM RAPID START, THD LESS THAN 10%. FLUORESCENT LAMPS SHALL HAVE MINIMUM CRI OF 80%. INCANDESCENT LAMPS SHALL BE 120 VOLT, INSIDE FROST, MINIMUM 2000 HOUR LIFE. LOW VOLTAGE INCANDESCENT LAMPS SHALL BE HIR HALOGEN, MINIMUM 3000 HOUR LIFE. EXTERIOR LIGHTING FIXTURES SHALL BE INSTALLED TO PREVENT WATER, DUST AND INSECT INTRUSION, WITH GASKETING FOR DOOR/BACKPLATE AND SEALANT AT THE WIRING ENTRY POINT. REFER TO LIGHTING FIXTURE SCHEDULE WITHIN PLAN SET FOR ADDITIONAL REQUIREMENTS (LED CRITERIA, ETC.).
- 2.18. **TAMPERPROOF:** ALL EQUIPMENT AND CIRCUITING ACCESSIBLE BY THE PUBLIC SHALL BE DEMONSTRATED TO BE TAMPERPROOF AND VANDAL RESISTANT. OPENABLE DEVICES AND EQUIPMENT SHALL BE PAD LOCKABLE.

PART THREE - EXECUTION

- 3.1. **GROUNDING:** GROUND ALL EQUIPMENT AND SYSTEM NEUTRAL IN ACCORDANCE WITH THE REQUIREMENTS OF NEC ARTICLE 250. PROVIDE CODE-SIZED EQUIPMENT GROUNDING CONDUCTOR IN ALL FEEDERS AND BRANCH CIRCUIT RACEWAYS. WHERE ISOLATED GROUNDS ARE INDICATED, PROVIDE INSULATED CONDUCTOR (GREEN WITH YELLOW STRIPE).
- 3.2. **DEMOLITION:** PROVIDE COMPLETE ELECTRICAL DEMOLITION - REMOVE EXISTING OUTLETS AND EQUIPMENT IN CONFLICT WITH NEW CONDITIONS. EXISTING CONDUITS REMOVED FROM SERVICE MAY BE ABANDONED IN PLACE IF IN A CONCEALED LOCATION. REMOVE ALL WIRE FROM ABANDONED RACEWAYS. CONTRACTOR SHALL ENSURE CONTINUITY OF EXISTING CIRCUITING PASSING THROUGH DEMOLITION AREAS - EXTEND AND/OR RELOCATE AS NECESSARY. SHIFT OR RELOCATE EXISTING EQUIPMENT AND CIRCUITING AS REQUIRED TO ACCOMMODATE NEW WORK.
- 3.3. **SALVAGE:** ALL EXISTING EQUIPMENT REMOVED DURING THE COURSE OF THIS PROJECT SHALL BE OFFERED TO OWNER FOR SALVAGE. ANY EQUIPMENT SELECTED BY OWNER SHALL BE DELIVERED TO OWNER ON SITE. ALL REMAINING EQUIPMENT BECOMES THE PROPERTY OF THIS CONTRACTOR AND SHALL BE REMOVED FROM THE SITE.
- 3.4. **EXISTING SWITCHGEAR:** REUSE EXISTING SWITCHGEAR AND PANELBOARDS IN PLACE WHERE SO INDICATED - MODIFY AS REQUIRED TO ACCOMMODATE NEW REQUIREMENTS. PROVIDE NEW CIRCUIT BREAKERS AND/OR FUSES AS REQUIRED WITH AIC RATING TO MEET OR EXCEED THAT OF EXISTING DEVICES. REARRANGE EXISTING CIRCUITS WITHIN PANELS TO AGREE WITH NEW PANEL SCHEDULES. TRACE AND IDENTIFY ALL EXISTING CIRCUITS ON NEW TYPED AS-BUILT PANEL SCHEDULES.
- 3.5. **EXISTING OUTLETS:** EXISTING OUTLETS AND CIRCUITING NOT IN CONFLICT WITH NEW CONDITIONS SHALL REMAIN. EXTEND OUTLETS TO NEW SURFACES, CAULK AND PROVIDE JUMBO PLATES AS REQUIRED TO PRESENT A SERVICEABLE AND FINISHED APPEARANCE.
- 3.6. **TEMPORARY CONSTRUCTION POWER:** PROVIDE TEMPORARY ELECTRICAL POWER DISTRIBUTION AND LIGHTING AS REQUIRED FOR ALL TRADES THAT REQUIRE SERVICE DURING THE COURSE OF THIS PROJECT IN COMPLIANCE WITH ALL NEC AND OSHA REQUIREMENTS. OWNER SHALL NOT BE RESPONSIBLE FOR TEMPORARY POWER CHARGES.
- 3.7. **LOCATIONS:** INDICATED LOCATIONS OF ALL OUTLETS AND EQUIPMENT ARE SUBJECT TO CHANGE. SHIFT/RELOCATE/RECONFIGURE ANY OUTLET, EQUIPMENT OR CONNECTION POINT UP TO 10' AS DIRECTED BY ENGINEER AT NO ADDED COST.
- 3.8. **WORKMANSHIP:** THE WORK SHALL BE INSTALLED PARALLEL, AND AT RIGHT ANGLES TO THE BUILDING LINES, LEVEL AND PLUMB. THE WORK SHALL BE WELL SUPPORTED AND SOLIDLY MOUNTED. DRESS AND TIE WIRING IN PANELBOARDS AND SWITCHGEAR. THE WORK SHALL BE LEFT CLEAN WITH NO

DIRT, DENTS, ABRASIONS, PAINT SPATTERS, OR OTHER IRREGULARITIES.

- 3.9. **FIRE STOPPING:** ALL PENETRATED FIRE RATED SURFACES SHALL BE FIRE SEALED WITH APPROVED U.L. LISTED SEALANTS AS LISTED WITHIN ARCHITECTURAL SPECIFICATIONS. DO NOT EXCEED MAXIMUM ALLOWABLE SURFACE PENETRATIONS DEPENDENT ON RATING OF SURFACES. REFER TO ARCHITECTURAL DRAWINGS FOR DETERMINATION OF PENETRATION LOCATIONS THROUGH FIRE RATED ASSEMBLIES.
- 3.10. **SUPPORTS AND HANGERS:** PROVIDE 3" HIGH HOUSEKEEPING CONCRETE PAD BENEATH FLOOR MOUNTED EQUIPMENT, EXTENDING 3" BEYOND EQUIPMENT FOOTPRINT. SUPPORT AND ALIGN ALL RACEWAYS, CABINETS, BOXES, BACK BOXES, FIXTURES, AND EQUIPMENT FROM STRUCTURE. SECURE ALL SUPPORTING METHODS BY MEANS OF TOGGLE BOLTS IN HOLLOW MASONRY, EXPANSION BOLTS IN SOLID MASONRY, CONCRETE PRESET INSERTS OR EXPANSION BOLTS IN CONCRETE. ALL MACHINE SCREWS OR BOLTS IN METAL, AND WOOD SCREWS IN WOOD CONSTRUCTION. ALL SUPPORTING SYSTEMS AND COMPONENTS SHALL BE RATED FOR A MINIMUM OF FIVE (5) TIMES THE ACTUAL LOAD.
- 3.11. **SLEEVES AND PENETRATIONS:** PENETRATIONS OF ALL SURFACES SHALL BE PROVIDED WITH SLEEVES THAT SHALL BE SEALED WITH LIKE MATERIALS AND SHALL BE FINISHED WITH ESCUTCHEON PLATES. PENETRATIONS BELOW GRADE LEVEL SHALL BE WATERTIGHT. PENETRATIONS AT EXTERIOR WALLS SHALL BE WEATHERPROOF. ROOF PENETRATIONS SHALL BE FLASHED AND COUNTER FLASHED.
- 3.12. **EXPANSION AND CONTRACTION:** RACEWAYS PASSING THROUGH BUILDING EXPANSION JOINTS, ON ROOF, AND IN AREAS OF TEMPERATURE VARIATIONS GREATER THAN 30°F SHALL BE INSTALLED WITH EXPANSION FITTINGS.
- 3.13. **IDENTIFICATION:** IDENTIFY ALL EQUIPMENT, SWITCHBOARD, CIRCUITS AND ELECTRICALLY-CONNECTED EQUIPMENT WITH ENGRAVED NAMEPLATES. BOXES SHALL BE MARKED WITH PANEL AND CIRCUIT NUMBERS (PERMANENT PEN ACCEPTABLE ABOVE CEILING). NAMEPLATES SHALL BE FASTENED WITH A MINIMUM OF TWO (2) SCREWS. PANEL DIRECTORIES SHALL BE TYPED. CONDUCTORS SHALL BE TAGGED WITH CIRCUIT NUMBER AT SOURCE, JUNCTION BOXES, AND ALL OUTLET BOXES WITH PERMANENT ADHESIVE MARKER STRIP. IDENTIFY WIRING DEVICES WITH SELF ADHESIVE CLEAR SATIN FINISH LABELS WITH SOURCE AND CIRCUIT NUMBER.
- 3.14. **ELECTRIC ROOM CODE COMPLIANCE:** DUE TO THE DIAGRAMMATIC NATURE OF THE DESIGN DOCUMENTS (ELECTRICAL, MECHANICAL, PLUMBING, FIRE SPRINKLER, ETC.), COORDINATE WITH ALL OTHER SUBCONTRACTORS AT THE START OF THIS PROJECT TO INFORM AND VERIFY THAT NO FOREIGN SYSTEMS OR EQUIPMENT ARE MOUNTED ABOVE ELECTRICAL EQUIPMENT OR PASS THROUGH THE DESIGNATED ELECTRIC ROOMS, AND THAT A MINIMUM OF 7'-0" IS PROVIDED AS CLEAR HEADROOM ALONG ACCESS PATHS TO ELECTRIC ROOMS. ANY REROUTING OR RELOCATION OF SYSTEMS THAT A SUBCONTRACTOR FEELS WILL COMPROMISE THE DESIGN INTENT SHALL BE DESCRIBED IN WRITING AND FORWARDED TO THE DESIGN ENGINEER FOR FURTHER REVIEW. ALL PIPING IN SOLID MASONRY THAT CONDUCTS ROOMS SHALL BE LOCATED ABOVE ENTRY DOOR. THE SPRINKLER PIPING TO PROVIDE PROTECTION FOR THE ELECTRIC ROOM IS PREFERRED TO ENTER THE ROOM ABOVE THE ENTRY DOOR AND RUN DOWN THE AISLE SPACES OF THE ROOM. ALL INSTALLATIONS SHALL BE FULLY COORDINATED AMONGST ALL TRADES.
- 3.15. **ELECTRICALLY-OPERATED EQUIPMENT, VERIFICATION, AND SUBSTITUTION:** FEEDERS AND OVER-CURRENT DEVICES (INCLUDING STARTERS, DISCONNECTS, ETC.) HAVE BEEN DESIGNED BASED ON INFORMATION PROVIDED BY THE RESPONSIBLE CONSULTANT AND/OR DESIGNATED SUPPLIER. PRIOR TO ROUGH-IN, COORDINATE WITH THE APPROPRIATE TRADE AND/OR INSTALLER TO DETERMINE THAT THE ACTUAL NAMEPLATE ELECTRICAL REQUIREMENTS MATCH THIS DESIGN. ALL ADDITIONAL ELECTRICAL COSTS RELATED TO THE CONNECTION OF EQUIPMENT WHICH VARIES FROM THE ORIGINAL SPECIFICATIONS SHALL BE RESOLVED WITHIN THE CONSTRUCTION TEAM AT NO ADDITIONAL COST TO THE OWNER.
- 3.16. **ADDITIONAL SYSTEMS AND EQUIPMENT CONNECTIONS:** IN ADDITION TO EQUIPMENT POWER FEEDERS AND CONNECTIONS INDICATED ON THE ELECTRICAL DRAWINGS, PROVIDE 120V CONTROL POWER CONNECTIONS TO SMOKE/FIRE DAMPERS, VAV BOXES, TEMPERATURE CONTROL, FIRE ALARM PANELS, DOOR HOLDING/LATCHING DEVICES, ETC. AS INDICATED IN THE PROJECT DRAWINGS AND SPECIFICATIONS AS WELL AS ALL DESIGN-BUILD SYSTEM DRAWING.
- | ITEM | POWER SOURCE | MAX NO. PER 20A CIRCUIT | PROVIDE SMOKE DETECTORS |
|-------------------------------|--------------------|-------------------------|-------------------------|
| FIRE/SMOKE DAMPER | EMERGENCY | 10 | YES |
| VAV TERMINAL (NO FAN) | NORMAL (VERIFY) | 10 | NO |
| TEMPERATURE CONTROL PANEL | EMERGENCY (VERIFY) | 1 | NO |
| FIRE ALARM PANEL | EMERGENCY | 1 | NO |
| DOOR HOLDING/LATCHING DEVICES | EMERGENCY | 10 | NO |
- 3.17. **HOURS OF OPERATION:** CONDUCT WORK TO MINIMIZE DISRUPTION OF OWNER'S ONGOING BUSINESS OPERATIONS. PROVIDE BARRICADES, NOISE ABATEMENT, AND DUST CONTAINMENT MEASURES TO ENSURE THE SAFETY AND COMFORT OF PATRONS, STAFF, AND WORKERS. INTERRUPTIONS OF EXISTING POWER, COMMUNICATIONS, AND/OR FIRE ALARM SYSTEMS SHALL BE PERFORMED ONLY AT SUCH TIMES AS DIRECTED BY OWNER OR RESIDENT ENGINEER. OUTAGES SHALL BE MOMENTARY IN NATURE, EACH SUCH OUTAGE (OR OPERATION WHICH MAY POSE RISK OF AN ACCIDENTAL OUTAGE) SHALL BE SCHEDULED A MINIMUM OF FORTY- EIGHT (48) HOURS IN ADVANCE.

ISSUE DATE: MM-DD-YYYY
REVISIONS:
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FEB 23 2021

SHEET TITLE:

ELECTRICAL
SPECIFICATIONS

SHEET

E0.1

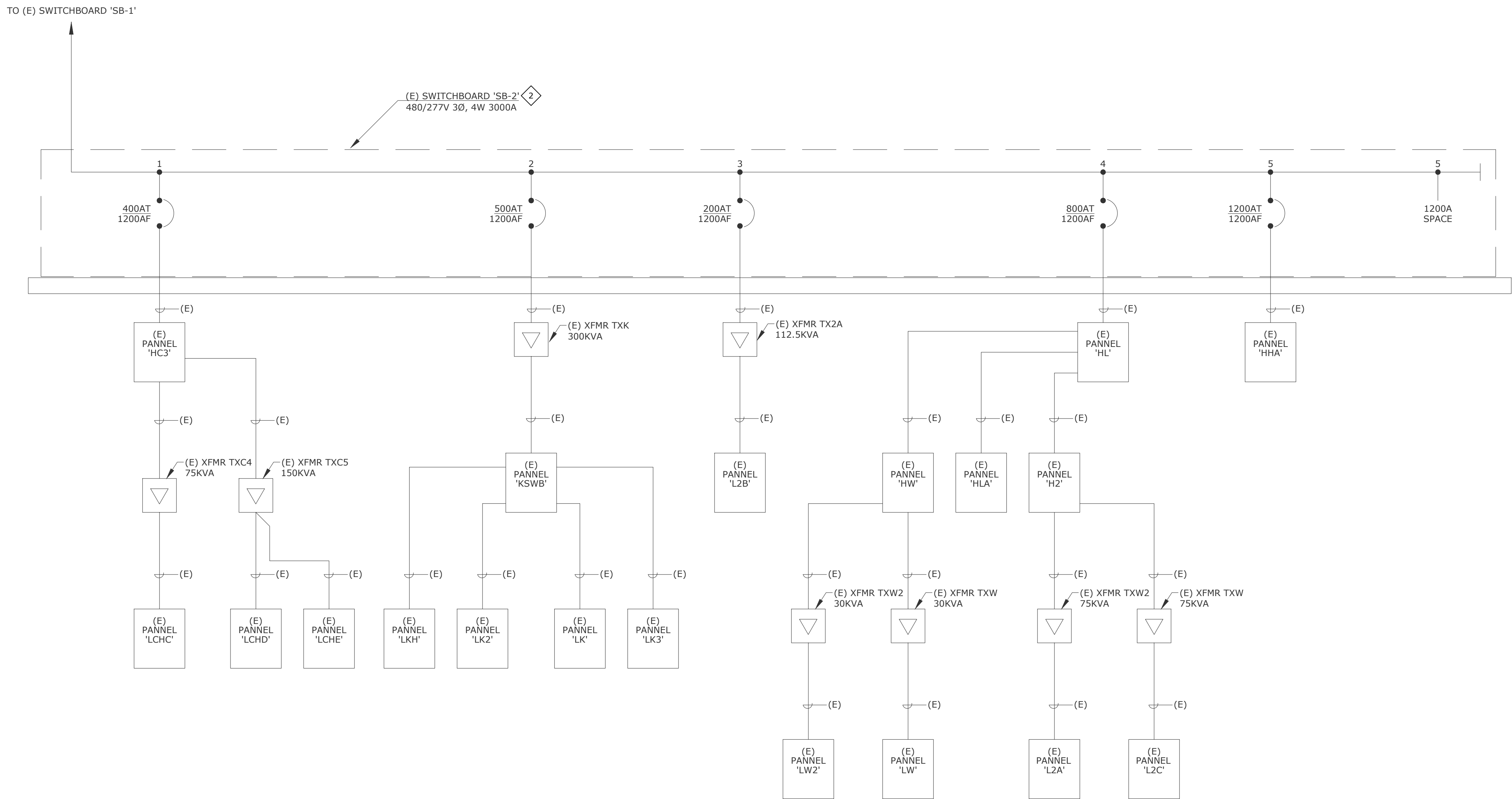
GENERAL NOTES:

1. THE OVERALL LOAD FOR DISTRIBUTION PANEL 'HHA' HAS DECREASED AS A RESULT OF THE SCOPE OF WORK INDICATED ON THESE DRAWINGS.

SHEET NOTES:

1. CONTRACTOR TO PROVIDE NEW CIRCUIT BREAKER. MATCH EXISTING MANUFACTURE AND AIC RATING.
2. THE OVERALL LOAD OF (E) SWITCHBOARD 'SB-2' HAS DECREASED AS A RESULT OF THE SCOPE INDICATED ON THESE DRAWINGS.

EXISTING PANEL 'HHA' SCHEDULE												
NOTE	TYPE	DESCRIPTION	LOAD	BREAKER	CUT	CUT	BREAKER	LOAD	DESCRIPTION	TYPE	NOTE	
		(E) SPARE		300	1	2						
				3	3	4						
				5	5	6						
				7	7	8	60	12631	RTU-4			
				9	9	10		12631				
		(E) SPARE		11	11	12	3	12631	(E) SPACE			
		(E) SPARE		20/1	13	14			(E) SPACE			
		(E) NEON W. SIDE		20/1	15	16			(E) SPACE			
				20/1	17	18			(E) SPACE			
		RTU-11	6205	30	19	20	20	3989	RTU-12			
			6205	21	21	22		3989				
			6205	3	23	24	3	3989				
		(E) RTU-8		100	25	26	20	3989				
				27	27	28		3989	RTU-13			
				3	29	30	3	3989				
			10858	60	31	32	100					
		RTU-7	10858	33	33	34			(E) RTU-1			
			10858	3	35	36	3					
		(E) ELEV 7		50	37	38	100					
				3	39	40			(E) TRANSFORMER 'XLTP'			
				3	41	42	3					
VOLTS: <input checked="" type="radio"/> 480 /277V, 3Ø, 4W. <input type="radio"/> 255A <input type="radio"/> 400A <input checked="" type="radio"/> 1200A												
AMPS: <input type="radio"/> 100A <input type="radio"/> MCB <input type="radio"/> MLO <input checked="" type="radio"/> FEED-THRU												
LUGS: <input type="radio"/> DBL LUGS <input type="radio"/> FLUSH <input type="radio"/> ALUMINUM <input checked="" type="radio"/> STANDARD												
MTD: <input checked="" type="radio"/> SURFACE <input type="radio"/> FLUSH												
BUSS: <input checked="" type="radio"/> COPPER <input type="radio"/> ALUMINUM												
DOOR: <input type="radio"/> DOOR IN DOOR <input checked="" type="radio"/> STANDARD												
NEMA RATING: <input checked="" type="radio"/> 1 <input type="radio"/> 100% <input type="radio"/> 200%												
NEUTRAL BUS: <input checked="" type="radio"/> STANDARD <input type="radio"/> ISOLATED												
GROUND BUS: <input type="radio"/> 10K <input type="radio"/> 14K <input type="radio"/> 22K <input type="radio"/> .												
AIC RATING: <input type="radio"/> 10K <input type="radio"/> 14K <input type="radio"/> 22K <input type="radio"/> .												
SERIES RATING: <input type="radio"/> ./. .												
LOADS BY PHASE: <input type="radio"/> AD: 38 KVA (336 A) <input type="radio"/> REMOVED LOAD: 326 KVA (392 A)												
<input type="radio"/> BD: 38 KVA (336 A) <input type="radio"/> ADDED LOAD: 113 KVA (136 A)												
<input type="radio"/> CD: 38 KVA (336 A) <input type="radio"/> LOAD SUBTOTAL: 527 KVA (634 A)												
LOAD-TYPE SUBTOTALS: <input type="radio"/> NEC FACTORED LOADS:												
LIGHTING: 0 KVA <input type="radio"/> LOAD FACTOR AT 1.25: 0 KVA (0 A)												
FOOD SERVICE: 0 KVA <input type="radio"/> LOAD FACTOR AT 0.65: 0 KVA (0 A)												
LARGEST MOTOR: 38 KVA <input type="radio"/> LOAD FACTOR AT 1.25: 48 KVA (57 A)												
CALCULATED LOAD: 537 KVA (645 A)												



HARD ROCK AHU REPLACEMENT
308 N 193rd E AVE,
CATOOSA, OK 74015

ISSUE DATE: MM-DD-YEAR

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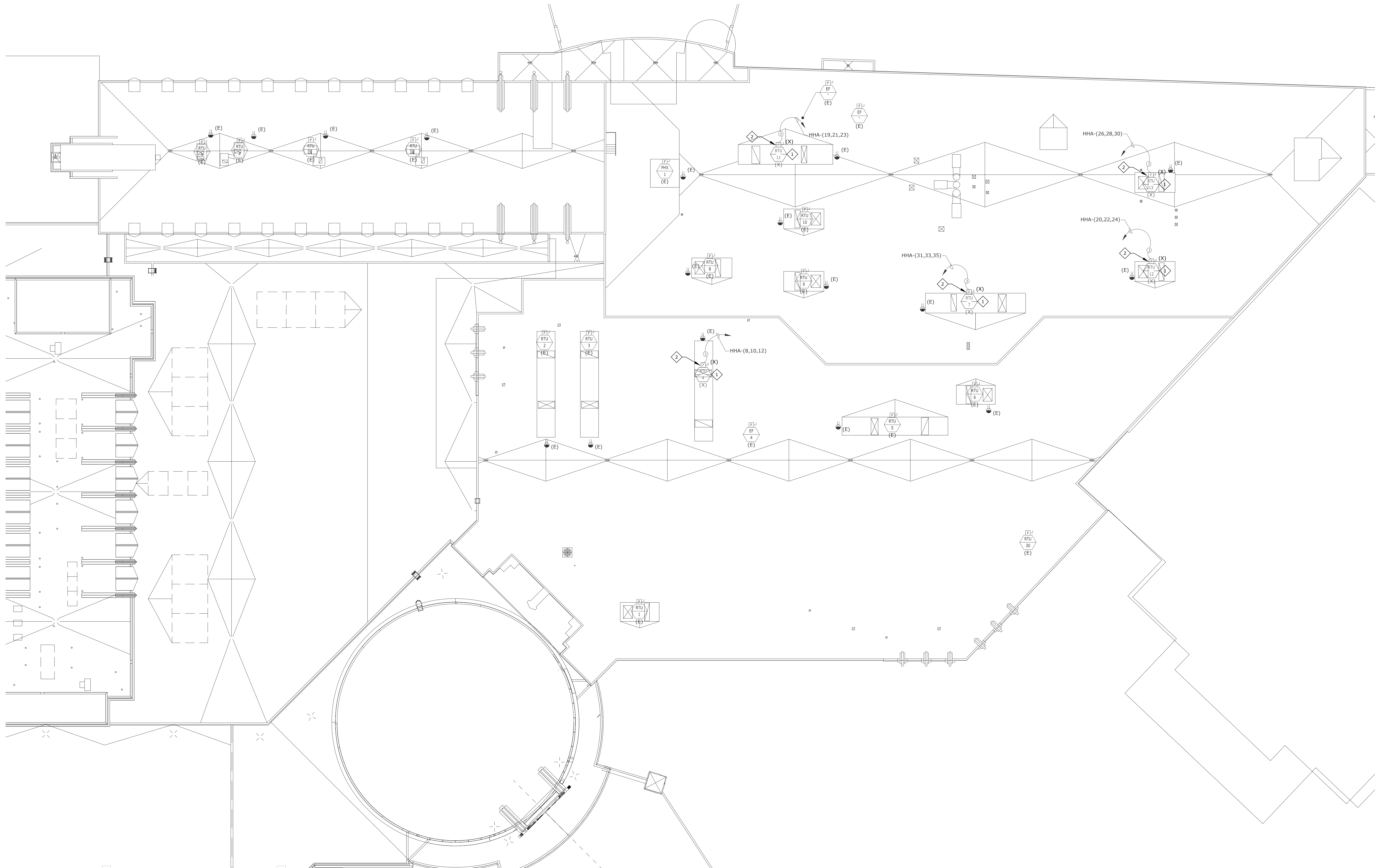
FEB 23 2021

SHEET TITLE:

SINGLE LINE DIAGRAM
AND PANEL SCHEDULE

SHEET

E0.2



GENERAL NOTES:

1. THE CONTRACTOR SHALL REMOVE OUTLETS/EQUIPMENT AS INDICATED AND PROVIDE SALVAGE AS DIRECTED BY OWNER'S REPRESENTATIVE. DEMOLITION WILL INCLUDE REMOVAL OF ALL BRANCH CIRCUIT/FEEDER CONDUIT AND WIRING FROM OUTLETS/EQUIPMENT TO SOURCE.
2. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING CONTINUITY OF ALL EXISTING POWER AND LOW VOLTAGE CIRCUITING SCHEDULED TO REMAIN, WHICH MAY PASS THROUGH DEMOLITION AREA.
3. REFER TO ARCHITECTURAL DRAWINGS FOR LIMITS OF DEMOLITION AND ADDITIONAL INFORMATION.

SHEET NOTES:

1. DISCONNECT ELECTRICAL FROM EQUIPMENT TO ALLOW FOR REMOVAL OF EQUIPMENT BY MECHANICAL CONTRACTOR.
2. CONTRACTOR TO DEMOLISH EQUIPMENT DISCONNECT. INSTALL NEW DISCONNECT AS SHOWN ON NEW WORK.

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SHEET TITLE:

**ELECTRICAL
DEMOLITION ROOF
PLAN**

SHEET

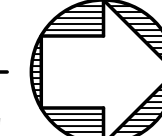
ED5.1

A
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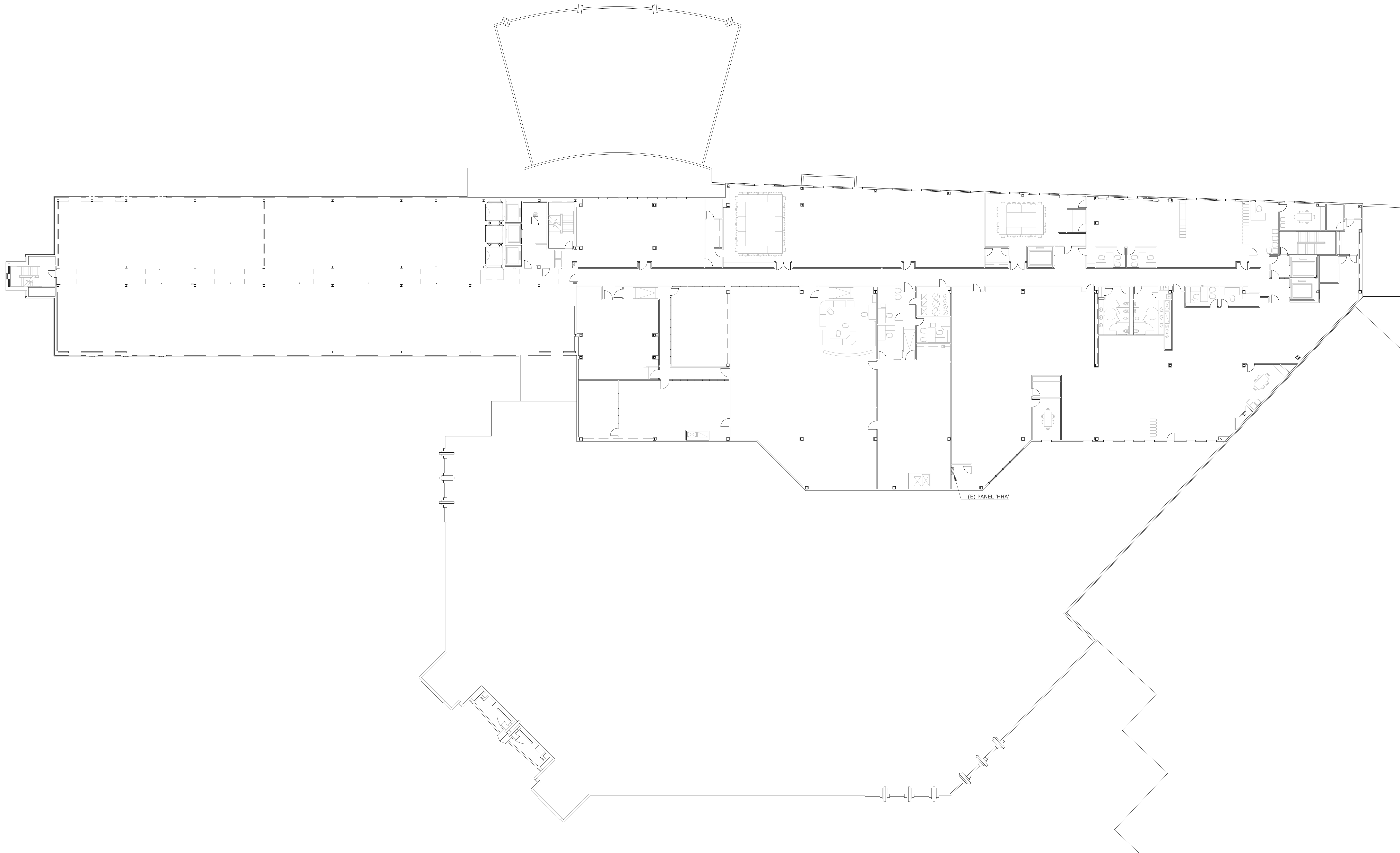
ELECTRICAL DEMOLITION ROOF PLAN

1/16" = 1'-0"

0' 4' 8' 16' 32'



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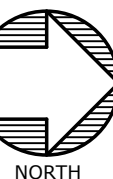


A
E2.2

ELECTRICAL PLAN - LEVEL 3

1/16" = 1'-0"

0' 4' 8' 16' 32'



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SHEET TITLE:

ELECTRICAL PLAN -
LEVEL 3

SHEET

E2.2

1. ALL CIRCUITS SHALL CARRY A GREEN GROUND CONDUCTOR.
2. MULTI-WIRE BRANCH CIRCUITS SHALL BE INSTALLED TO COMPLY WITH NEC 210.4(B) AND REFERENCED SECTIONS FOR DISCONNECTING MEANS.
3. PROVIDE CODE - APPROVED OUTLET BOX WRAP FOR BACK-TO-BACK INSTALLATIONS, OR PROVIDE ADDITIONAL STUD TO SEPARATE OUTLET BOXES.
4. COORDINATE ROUGH-IN LOCATION FOR ELECTRICAL SYSTEMS WITH ARCHITECT, MANUFACTURES CUT SHEETS, AND OWNERS CONSTRUCTION MANAGER.
5. PROVIDE PULLSTRINGS IN EMPTY RACEWAYS.
6. PROVIDE ACCESS PANELS AT ALL LOCATION ABOVE HARD LID CEILINGS. COORDINATE LOCATIONS AND ABOVE CEILING ROUGH-IN WITH ARCHITECT PRIOR TO START OF WORK.

1 CONTRACTOR TO USE EXISTING HOMERUN CONDUIT AND CONDUCTORS TO PROVIDE POWER TO NEW MECHANICAL UNITS. TERMINATE EXISTING CONDUITS AND CONDUCTORS AT NEW DISCONNECTS AS REQUIRED.



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E5.1

