

DIVISION 16 ELECTRICAL SPECIFICATIONS

01 GENERAL THE CONTRACTOR SHALL VISIT THE JOB SITE, 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.

LOCATIONS OF ALL CONDUITS AND WRING BELOW GRADE, LOCATIONS OF ALL INSTALLED PULL AND JUNCTION BOXES, FEEDER CIRCUIT LOCATIONS AND ECT. 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, 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 APPROVED AS SPECIFIED. THE RESPONSIBILITY TO ACCEPT OR REJECT ANY PROPOSED SUBSTITUTION REMAINS WITH THE PROJECT ENGINEER.

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.

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. RISERS SHALL EXTEND TO A MINIMUM OF 18" BELOW GRADE. APPLY BITUMASTIC COATING TO ALL METALLIC CONDUITS IN SLABS OR UNDERGROUND. THE USE OF PVC SCHEDULE 80 WHERE CONDUIT IS SUSCEPTIBLE TO PHYSICAL DAMAGE SHALL BE ACCEPTABLE PROVIDED IT IS NOT EXPOSED TO VIEW.

ALL MOTORS, EQUIPMENT, AND OTHER ITEMS SUBJECT TO VIBRATION SHALL BE CONNECTED WITH FLEXIBLE METAL CONDUIT (FMC) OR LIQUID-TIGHT CONDUIT (LTC). FLEXIBLE METAL CONDUIT SHALL BE STEEL (FMC). FLEXIBLE CONDUIT OUTDOORS OR IN DAMP OR WET LOCATIONS SHALL BE LIQUID-TIGHT (LTC) WITH BITE-TIGHT STEEL CONNECTORS. ALL CABLES SHALL BE SECURED WITHIN 12" OF TERMINATIONS AND EVERY SIX (6) FEET.

CONDUITS PENETRATING THROUGH RAISED FLOORS 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 WATER TIGHT AFTER UTILITIES HAVE BEEN INSTALLED. LOCATION OF CORED HOLES SHALL BE COORDINATED WITH LOCATION OF EQUIPMENT IN A MANNER TO BE CLEAR 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 3/4" WITH A MAXIMUM LENGTH OF 6'-0" AND SUPPORTED WITHIN 12" OF TERMINATIONS.

ALL WIRING SHALL BE INSTALLED IN CONDUIT IN ACCORDANCE WITH THE SPECIFICATIONS AND THAT THE REQUIRED CONDUITS MAY BE PULLED WITHIN THE CONDUIT PROPERLY SUPPORTED.

PROVIDE ALL PULL BOXES AND FITTINGS WHEREVER NECESSARY. ALL STRAIGHT CONDUIT RUNS SHALL NOT EXCEED 100 FEET WITHOUT FOUR (4) NOT OVER 75 FEET FOR RUN WITH ONE (1) RIGHT ANGLE BEND AND NOT OVER SEVENTY FIVE (75) FEET FOR RUN WITH TWO (2) RIGHT ANGLES.

ALL CONDUIT SHALL BE PROPERLY TERMINATED IN ACCORDANCE WITH THE N.E.C. AND SECURED WITHIN THREE (3) FEET OF THE TERMINATION AND ALL CONDUITS SHALL BE INDENTIFIED BY TAGS IN ACCORDANCE WITH THE N.E.C. EXCEPT FOR STRUCTURE AND NOT FROM DUCTWORK. LABELING HANGERS OR SPLITTING SUPPORT WIRES. ALL EMPTY CONDUITS SHALL BE FEMOVED WITH PULL WIPS 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 NOT SPECIALLY ALL LIGHTING HARDWARE REQUIRED. THE CATALOG NUMBERS ALSO MAY INCLUDE ACCESSORIES ITEMS AND FINISHES REQUIRED BY THE LIGHT FIXTURE DESCRIPTION. INCLUDE ALL REQUIRED HARDWARE AND ACCESSORIES.

COORDINATE FIXTURE TYPE AND TRIM WITH CEILING CONSTRUCTION. RECESSED IN ACCESSIBLE, FLUORESCENT, LED AND HID LIGHTING FIXTURES SHALL HAVE THERMAL PROTECTIVE TREATMENTS TO INSULATE CEILING AND EQUIPMENT, LAY OUT 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 GRID CLIPS. ALL OTHER RECESSED FIXTURES (w/ 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 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.

ELECTRICAL DRAWING INDEX

Table with columns: DRAWING SHEET, DESCRIPTION. Includes rows for E-001 (DIVISION 16 ELECTRICAL SPECIFICATIONS), E-002 (ELECTRICAL SYMBOLS AND SCHEDULES), E-003 (LIGHTING SCHEDULE AND DETAILS), E-100 (SITE LIGHTING), E-201 (FLOOR PLAN - LIGHTING), E-202 (FLOOR PLANS - HVAC & PLUMBING CONNECTIONS), E-301 (SCHEDULES AND RISERS), E-302 (PANEL SCHEDULES).

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ISSUANCE NO. DATE DESCRIPTION

FILE NUMBER 18030 PROJECT MANAGER PROFESSIONAL DRAWN BY CHECKED BY

ELECTRICAL SPECIFICATIONS E-001

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