

DIVISION 26 - ELECTRICAL
SECTION 26 00 00 - BASIC ELECTRICAL REQUIREMENTS

A. NOTES

1. THE ABBREVIATION ESDC WHEREVER IT APPEARS IN THESE ELECTRICAL DRAWINGS AND/OR SPECIFICATIONS SHALL REFER TO THE PROJECT'S DESIGNATED EDITION OF THE NATIONAL ELECTRICAL CODE, STATE AND LOCAL CODES, THE LANDLORD'S TENANT CRITERIA, AS NOTED IN THE SPECIFICATIONS, AND AS INDICATED ON THE DRAWINGS.
2. DRAWINGS AND GENERAL PROVISIONS OF CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND ALL OTHER SPECIFICATION SECTIONS, APPLY TO THIS AND THE OTHER SECTIONS OF DIVISION 26.
3. THE CONTRACTOR FOR THIS DIVISION OF WORK IS REQUIRED TO READ THE SPECIFICATIONS AND REVIEW DRAWINGS FOR ALL DIVISIONS OF WORK AND IS RESPONSIBLE FOR THE COORDINATION OF THIS WORK AND THE WORK OF HIS OR HER SUBCONTRACTORS WITH ALL DIVISIONS OF WORK. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE HIS OR HER SUBCONTRACTORS WITH A COMPLETE SET OF BID DOCUMENTS.
4. THIS ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR SCHEDULING THE COMPLETION AND INSPECTION OF THIS WORK TO COMPLY WITH THE ESDC SCHEDULE AND THE PROJECT COMPLETION DATE.
5. THIS CONTRACTOR SHALL VISIT THE SITE PRIOR TO SUBMITTAL OF BID TO DETERMINE CONDITIONS AFFECTING THE WORK. ANY BID ITEMS WHICH ARE NOT COVERED IN THE BID DOCUMENTS OR ANY PROPOSED SUBSTITUTIONS SHALL BE LISTED SEPARATELY AND QUALIFIED IN THE CONTRACTORS BID. SUBMITTAL OF BID SHALL SERVE AS EVIDENCE OF KNOWLEDGE OF EXISTING CONDITIONS AND ANY MODIFICATIONS WHICH ARE REQUIRED TO MEET THE INTENT OF THE DRAWINGS AND SPECIFICATIONS. FAILURE TO VISIT THE SITE DOES NOT RELIEVE THE CONTRACTOR OF RESPONSIBILITY IN PERFORMANCE OF HIS OR HER WORK.
6. REFER TO RESPONSIBILITY SCHEDULE ON SHEET E01.2 OF THIS SET FOR INFORMATION IN REGARD TO RESPONSIBILITY OF WORK OR ITEMS WHICH MAY AFFECT BID.

B. GENERAL REQUIREMENTS

1. THIS CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, EQUIPMENT, SERVICES, TOOLS, TRANSPORTATION, INCIDENTALS NECESSARY TO PROVIDE A COMPLETE ELECTRICAL SYSTEM AS SHOWN ON THE DRAWINGS, CALLED FOR IN THE SPECIFICATIONS, AND AS REQUIRED BY JOB CONDITIONS. ALL WORK NOT SPECIFICALLY NOTED AS BEING BY THE LANDLORD OR ESDC SHALL BE PROVIDED BY THIS CONTRACTOR. CLOSELY COORDINATE THE ENTIRE INSTALLATION WITH THE LANDLORD AND THE ESDC PROJECT MANAGER, AS REQUIRED.
2. THE DRAWINGS AND SPECIFICATIONS ARE INTENDED TO SUPPLEMENT EACH OTHER AND ANY MATERIAL OR LABOR CALLED FOR IN ONE SHALL BE FURNISHED AND INSTALLED EVEN THOUGH NOT SPECIFICALLY MENTIONED IN ANY OTHER. THIS CONTRACTOR SHALL VERIFY WITH THE LANDLORD AND THE ESDC PROJECT MANAGER, AS REQUIRED, THAT THE DRAWINGS AND SPECIFICATIONS ARE CORRECT AND THAT THE WORK IS BEING DONE IN ACCORDANCE WITH THE SPECIFICATIONS, BUT WHICH IS OBVIOUSLY NECESSARY TO COMPLETE THE WORK, AND WHICH IS USUALLY INCLUDED IN THE DRAWINGS AND SPECIFICATIONS. FAILURE TO VISIT THE SITE DOES NOT RELIEVE THE CONTRACTOR OF RESPONSIBILITY IN PERFORMANCE OF HIS OR HER WORK.
3. WHERE THE DRAWINGS OR SPECIFICATIONS CALL FOR ITEMS WHICH EXCEED CODES OR THE LANDLORD'S TENANT CRITERIA, THE CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING AND INSTALLING THE SYSTEM WITH THE MORE STRINGENT REQUIREMENTS AS DESIGNED AND DESCRIBED ON THESE DRAWINGS, UNLESS SPECIFICALLY NOTED OTHERWISE.
4. ALL WORK IN THIS SECTION SHALL BE INSTALLED SO AS TO BE READILY ACCESSIBLE FOR OPERATING, SERVING, MAINTAINING, AND REPAIRING. THIS CONTRACTOR IS RESPONSIBLE FOR PROVIDING SUFFICIENT SERVICE ACCESS TO ALL EQUIPMENT.
5. ALL WORK SHALL BE PERFORMED IN A NEAT PROFESSIONAL MANNER USING GOOD CONSTRUCTION PRACTICES.
6. UNLESS SPECIFICALLY NOTED OTHERWISE, MATERIALS, PRODUCTS, AND EQUIPMENT, INCLUDING ALL COMPONENTS THEREOF, SHALL BE NEW, UNDERWRITERS LABORATORIES LISTED AND LABELED AND SIZED IN CONFORMITY WITH REQUIREMENTS OF NATIONAL, STATE AND LOCAL CODES, WHICHEVER IS MORE STRINGENT.
7. THIS CONTRACTOR SHALL DO ALL CUTTING, CHASING AND CHANNELING REQUIRED FOR ANY WORK UNDER THIS DIVISION. CUTTING SHALL HAVE PRIOR APPROVAL BY ESDC PROJECT MANAGER AND THE LANDLORD. ALL PATCHING SHALL BE BY G.C. AND SHALL MATCH THE SURROUNDING SURFACES.
8. THE ELECTRICAL CONTRACTOR SHALL MAKE ALL FINAL ELECTRICAL CONNECTIONS AS REQUIRED FOR A COMPLETE AND OPERATING SYSTEM.

C. TEMPORARY LIGHT AND POWER

1. THIS CONTRACTOR SHALL FURNISH AND INSTALL ALL TEMPORARY WIRING AND RELATED GENERAL FAULT INTERRUPTION PROTECTION FOR LIGHT AND POWER FOR ALL CONTRACTORS AND IS RESPONSIBLE FOR ITS REMOVAL.
2. THE GENERAL CONTRACTOR SETS UP ALL ELECTRICAL UTILITIES IN THE NAME OF EXPRESS BRANDS. EXPRESS BRANDS PAYS FOR ALL UTILITIES THROUGHOUT CONSTRUCTION.

D. CODES

1. ALL WORK SHALL CONFORM TO THE LANDLORDS' CRITERIA, THE STATE'S, COUNTY'S, CITY'S AND LOCAL CODES AND ORDINANCES, SAFETY AND HEALTH CODES, NFPA CODES, ENERGY CODES AND ALL OTHER APPLICABLE CODES AND REQUIREMENTS. THIS CONTRACTOR SHALL INQUIRE INTO AND COMPLY WITH ALL APPLICABLE CODES, ORDINANCES, AND REGULATIONS. THIS CONTRACTOR SHALL INCLUDE ANY CHANGES REQUIRED BY CODES IN THE BID AND IF THESE CHANGES ARE NOT INCLUDED IN THE BID, THEY SHALL BE QUALIFIED AS A SEPARATE LINE ITEM IN THE BID. ANY CHANGES TO THE GENERAL CONTRACTOR SHALL BE QUALIFIED AS A SEPARATE LINE ITEM IN THE BID. ANY CHANGES TO THE GENERAL CONTRACTOR SHALL BE QUALIFIED AS A SEPARATE LINE ITEM IN THE BID. ANY CHANGES TO THE GENERAL CONTRACTOR SHALL BE QUALIFIED AS A SEPARATE LINE ITEM IN THE BID. ANY CHANGES TO THE GENERAL CONTRACTOR SHALL BE QUALIFIED AS A SEPARATE LINE ITEM IN THE BID.

E. LICENSES, PERMITS, INSPECTIONS & FEES

1. THIS CONTRACTOR SHALL OBTAIN AND PAY FOR ALL LICENSES, PERMITS, INSPECTIONS, AND FEES REQUIRED OR RELATED TO HIS OR HER WORK.
2. FURNISH TO THE ESDC'S PROJECT MANAGER ALL CERTIFICATES OF INSPECTION AND FINAL INSPECTION APPROVAL AT COMPLETION OF PROJECT.

F. TRADE NAMES, MANUFACTURERS & SHOP DRAWINGS

1. WHERE TRADE NAMES AND MANUFACTURERS ARE USED ON THE DRAWINGS OR IN THE SPECIFICATIONS, THE EXACT EQUIPMENT SHALL BE USED AS A MINIMUM FOR THE BASE BID. MANUFACTURERS CONSIDERED AS AN EQUAL OR BETTER IN ALL RESPECTS TO THAT SPECIFIED WILL BE SUBJECT TO APPROVAL IN WRITING BY ESDC'S PROJECT MANAGER. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING APPROVAL PRIOR TO INSTALLATIONS. THE USE OF ANY UNAUTHORIZED EQUIPMENT SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
2. GENERAL CONTRACTOR SHALL SUBMIT ONLY SUBSTITUTION REQUESTS TO ESDC PROJECT MANAGER FOR APPROVAL. SUBSTITUTIONS SHALL BE MADE EARLY ENOUGH IN PROJECT TO ALLOW FOUR (4) WORKING DAYS FOR ESDC PROJECT MANAGER'S REVIEW WITHOUT CAUSING DELAYS OR CONFLICTS TO THE JOB'S PROGRESS. SUBSTITUTIONS SHALL BEAR THE STAMP OF THE GENERAL CONTRACTOR'S PROJECT MANAGER. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING APPROVAL PRIOR TO INSTALLATIONS. THE USE OF ANY UNAUTHORIZED EQUIPMENT SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.

G. GUARANTEE

1. THIS CONTRACTOR SHALL GUARANTEE ALL MATERIALS AND WORK PROVIDED UNDER HIS OR HER CONTRACT AND SHALL MAKE GOOD ANY EXPENSE, ANY DEFECTIVE WORK, MATERIAL, OR EQUIPMENT WHICH MAY BE DISCOVERED WITHIN A PERIOD OF 12 MONTHS FROM THE DATE OF ACCEPTANCE OR THE INSTALLATION BY ESDC'S PROJECT MANAGER (IN WRITING). EXTENDED WARRANTIES ARE AS SPECIFIED WITH INDIVIDUAL EQUIPMENT.
2. THE EQUIPMENT MANUFACTURER SHALL GUARANTEE AND PROVIDE A 12 MONTH GUARANTEE TO ESDC FROM THE DATE OF ACCEPTANCE. THE CONTRACTOR SHALL WARRANT THE INSTALLATION OF THIS EQUIPMENT AND WILL BE RESPONSIBLE FOR ANY DAMAGE AND/OR MALFUNCTION CAUSED BY THE INSTALLATION. THIS CONTRACTOR SHALL NOT BEAR ADDITIONAL WARRANTIES BEYOND A COMPLETE WORKING SYSTEM.

H. RECORD DRAWINGS

1. THIS CONTRACTOR SHALL MAINTAIN ONE SET OF DRAWINGS ON THE JOB SITE UPDATED WEEKLY TO RECORD ALL DEVIATIONS FROM CONTRACT DRAWINGS, SUCH AS:
a. LOCATION OF CONCEALED PULLBOXES
b. REVISIONS, ADDENDUMS, AND CHANGE ORDERS
c. SIGNIFICANT DEVIATIONS MADE NECESSARY BY FIELD CONDITIONS, APPROVED EQUIPMENT SUBSTITUTIONS, AND CONTRACTOR COORDINATION WITH OTHER TRADES
2. AT COMPLETION OF THE PROJECT AND BEFORE FINAL APPROVAL, THIS CONTRACTOR SHALL MAKE ANY FINAL CORRECTIONS TO DRAWINGS AND CERTIFY THE ACCURACY OF EACH PRINT BY SIGNATURE THEREON. FAILURE TO KEEP THESE RECORDS WILL ALLOW ESDC TO DIRECT THE GENERAL CONTRACTOR TO PROVIDE THESE RECORDS AT HIS OR HER EXPENSE PRIOR TO FINAL PAYMENT.

I. DISCREPANCIES IN DOCUMENTS

1. DRAWINGS (PLANS, SPECIFICATIONS, AND DETAILS) ARE DIAGRAMMATIC AND INDICATE THE GENERAL LOCATION AND INTENT OF THE ELECTRICAL SYSTEMS. WHERE DRAWINGS, EXISTING SITE CONDITIONS, SPECIFICATIONS OR OTHER TRADES CONFLICT OR ARE UNCLEAR, ADVISE THE GENERAL CONTRACTOR IN WRITING, PRIOR TO SUBMITTAL OF BID. THE GENERAL CONTRACTOR IS RESPONSIBLE TO ADVISE ESDC'S PROJECT MANAGER, IN WRITING, OF VARIATIONS TO CONTRACT DOCUMENTS PRIOR TO SUBMISSION OF BID. OTHERWISE, ESDC PROJECT MANAGER'S INTERPRETATION OF CONTRACT DOCUMENTS OR CONDITIONS SHALL BE FINAL WITH NO ADDITIONAL COMPENSATION PERMITTED.

J. PHASE REQUIREMENTS

1. THIS CONTRACTOR IS TO INCLUDE IN HIS OR HER BID ALL NECESSARY SERVICE REQUIRED TO KEEP THE OPERATING PHASE OF THE STORES HVAC, ELECTRICAL, PLUMBING AND SPRINKLER SERVICE IN OPERATION. CONTRACTOR SHALL SCHEDULE IN WRITING WITH ESDC'S PROJECT MANAGER AND THE LANDLORD ONE WEEK PRIOR TO ANY SHUT DOWN OF THE HVAC, PLUMBING OR FIRE PROTECTION SYSTEMS.

K. DEMOLITION

1. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION OF THE DEMOLITION OF EXISTING WORK AND THE DEMOLITION PROVIDED BY THE GENERAL CONTRACTOR. COORDINATE WITH THE GENERAL CONTRACTOR ANY EXISTING EQUIPMENT REQUIRED TO BE LEFT INTACT.
2. THIS CONTRACTOR SHALL INCLUDE, AND WILL BE HELD RESPONSIBLE FOR, THE REMOVAL OF ALL EXISTING CONDUIT, FIRE ALARM SYSTEM, SWITCH GEAR, PITCH POCKETS AND EQUIPMENT ETC., UNLESS SPECIFICALLY NOTED OTHERWISE. CONTRACTOR SHALL VERIFY WITH THE LANDLORD ALL PRESERVED AND ABANDONED EQUIPMENT, CONDUIT AND SWITCH GEAR PRIOR TO REMOVAL. PITCH POCKETS SHALL BE REMOVED AND THE ROOF PATCHED, AS REQUIRED BY THE LANDLORD. ALL EXTRANEOUS ITEMS IN THE SPACE OR ON THE ROOF NOT APPLICABLE TO THE NEW WORK SHALL BE PATCHED/REPAIRED TO LIKE NEW CONDITION. EXISTING ABANDONED CONDUIT OR EQUIPMENT IN THE FLOOR, EMBEDDED IN CONCRETE, OR OTHERWISE INACCESSIBLE, AND/OR WITHIN BELOW OR WITHIN FLOOR OR WALL LEVEL WHEN THEY ARE NOT TO BE REUSED IN THIS PROJECT, IF REQUIRED BY LANDLORD OR CODES, ABANDONED CONDUIT SHALL BE REMOVED TO POINT OF ORIGINATION, CONFIRM EXTENT OF DEMOLITION PRIOR TO BID AND INCLUDE IN PROPOSAL.
3. ALL UNUSED COMMUNICATION, DATA, AND LOW VOLTAGE CABLING IS TO BE REMOVED IN ACCORDANCE WITH N.E.C. 726 (3)B AND 760.3(A).

L. SLEEVES

1. THIS CONTRACTOR SHALL PROVIDE SLEEVES TO PROTECT EQUIPMENT OR FACILITIES IN THE INSTALLATION. EACH SLEEVE SHALL EXTEND THROUGH ITS RESPECTIVE FLOOR, WALL OR PARTITION AND SHALL BE CUT FLUSH WITH EACH SURFACE EXCEPT SLEEVES THAT PENETRATE THE FLOOR, WHICH SHALL EXTEND 2" ABOVE THE FLOOR. CONTRACTOR SHALL COORDINATE THROUGH THE LANDLORD ANY CORE DRILLING OR CUTTING OF OPENINGS IN MASONRY FLOORS OR WALLS.
2. ALL SLEEVES AND OPENINGS THROUGH FIRE RATED WALLS AND/OR FLOORS SHALL BE FIRE SEALED WITH CALCIUM SILICATE, SILICONE "RTV" FOAM, "SM" FIRE RATED SEALANTS OR EQUAL, SO AS TO RETAIN THEIR FIRE RATING.
3. SLEEVES IN BEARING AND MASONRY WALLS, FLOORS, AND PARTITIONS SHALL BE STANDARD HEAVY STEEL PIPE FINISHED WITH SMOOTH EDGES. FOR OTHER THAN MASONRY PARTITIONS, THROUGH SUSPENDED CEILINGS, OR FOR CONCEALED VERTICAL PIPING, SLEEVES SHALL BE NO. 22 U.S.G. GALVANIZED STEEL MINIMUM.

M. HANGERS

1. HANGERS SHALL INCLUDE ALL MISCELLANEOUS STEEL SUCH AS ANGLE IRON, BANDS, C-CLAMPS WITH RETAINING CLIPS, CHANNELS, HANGER RODS, ETC., NECESSARY FOR THE INSTALLATION OF WORK.
2. HANGERS SHALL BE FASTENED TO BUILDING STEEL, CONCRETE, OR MASONRY, BUT NOT TO PIPING. HANGING FROM STRUCTURAL STEEL SHALL BE ATTACHED TO UPPER CHORD OF BEAM JOIST, WHERE INTERFERENCES OCCUR, AND IN ORDER TO SUPPORT DUCTWORK OR PIPING, THE CONTRACTOR SHALL INSTALL TRAPEZOID TYPE HANGERS OR SUPPORTS WHICH SHALL BE LOCATED WHERE THEY DO NOT INTERFERE WITH ACCESS TO FIRE DAMPERS, VALVES, AND OTHER EQUIPMENT. HANGER TYPES AND INSTALLATION METHODS ARE ALSO SUBJECT TO LANDLORD CRITERIA.
3. HANGERS FOR ALL INSULATED PIPING SHALL BE SIZED AND INSTALLED FOR THE OUTER DIAMETER OF INSULATION. INSTALL 6" LONG SPLIT CIRCLE GALVANIZED SADDLE BETWEEN THE HANGER AND THE PIPE INSULATION.
4. HANGERS AND PIPING OF DISSIMILAR METALS SHALL BE DI-ELECTRICALLY SEPARATED.

N. FINAL ELECTRICAL INSPECTIONS

1. ASIDE FROM NORMAL INTERIM INSPECTIONS OF WORK IN PLACE, ESDC MAY HAVE AN INDEPENDENT ELECTRICAL CONTRACTOR INSPECT THE FINISHED ELECTRICAL INSTALLATION UPON COMPLETION FOR COMPLIANCE WITH THE PLANS, SPECIFICATIONS AND CODES. THE INSTALLING CONTRACTOR WILL BE RESPONSIBLE TO BRING ALL ITEMS REPORTED BY THE INDEPENDENT ELECTRICAL CONTRACTOR UP TO PLANS AND SPECIFICATION REQUIREMENTS.

O. SCOPE OF WORK

1. THIS CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS, EQUIPMENT, SERVICES, TOOLS, TRANSPORTATION, AND FACILITIES NECESSARY FOR, REASONABLY IMPLIED AND INCIDENTAL TO, THE FURNISHING, INSTALLATION, COMPLETION AND TESTING OF ALL THE WORK FOR THE ELECTRICAL SYSTEMS AS SHOWN ON THE DRAWINGS, CALLED FOR IN THE SPECIFICATIONS, AND AS REQUIRED BY JOB CONDITIONS, TO INCLUDE, BUT NOT BE LIMITED TO THE FOLLOWING:
a. A COMPLETE ELECTRICAL DISTRIBUTION SYSTEM INCLUDING THE INSTALLATION OF ESDC FURNISHED POWER DISTRIBUTION SYSTEM UNIT, SAFETY SWITCHES, DISCONNECT SWITCHES AND MOTOR STARTERS (SOMETIMES FURNISHED AND INSTALLED BY CONTRACTOR), AND LIGHTING. IT IS THE ELECTRICAL CONTRACTOR'S RESPONSIBILITY TO INCLUDE IN HIS OR HER BID FOR PROVIDING SERVICE EQUIPMENT NECESSARY FOR THE FOLLOWING:
i. TO LANDLORD'S DISTRIBUTION EQUIPMENT OR TO OBTAIN SERVICE FROM LOCAL UTILITY COMPANY. REFER TO ELECTRICAL RESPONSIBILITY SCHEDULE AND ELECTRICAL POWER RISER DIAGRAM FOR ADDITIONAL INFORMATION.
ii. TO LANDLORD'S DISTRIBUTION EQUIPMENT OR TO OBTAIN SERVICE FROM LOCAL UTILITY COMPANY. REFER TO ELECTRICAL RESPONSIBILITY SCHEDULE AND ELECTRICAL POWER RISER DIAGRAM FOR ADDITIONAL INFORMATION.
b. EQUIPMENT AND MATERIALS REQUIRED TO COMPLETE THE SYSTEM INCLUDING, BUT NOT LIMITED TO, FEEDERS, BRANCH CIRCUITS, JUNCTION BOXES, OUTLET BOXES, WIRING DEVICES, COVERPLATES, CONDUITS, MOTOR STARTERS, DISCONNECTS, ETC.
c. METERING AND CURRENT TRANSFORMERS AS REQUIRED BY DRAWINGS, ESDC, UTILITY COMPANY, AND/OR LANDLORD.
d. THE WIRING OF MECHANICAL EQUIPMENT AS OUTLINED ON THE BID SET DRAWINGS AND IN THE SPECIFICATIONS. WORK SHALL INCLUDE WIRING OF ALL STARTERS, DISCONNECTS, AND POWER WIRING OF MECHANICAL EQUIPMENT EXCEPT AS SPECIFICALLY NOTED OTHERWISE. ALL LOW VOLTAGE (24 VOLT) EHS TEMPERATURE CONTROL WIRING SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR UNLESS NOTED SPECIFICALLY ON DRAWING.
e. INSTALLATION OF LIGHT FIXTURES AND LAMPS AS SHOWN ON THE DRAWINGS INCLUDING ALL DEVICES, EQUIPMENT, ETC. REQUIRED FOR MOUNTING.
f. A COMPLETE CONDUIT SYSTEM FOR TELEPHONE/DATA INCLUDING BRANCH CONDUITS, OUTLET BOXES, PULL BOXES, GROUND CONDUCTORS, COVER PLATES, ETC. OR AS SPECIFICALLY NOTED OTHERWISE ON THE DRAWINGS.
g. A COMPLETE EMERGENCY AND EXIT LIGHTING SYSTEM AS SHOWN ON THE DRAWINGS.
h. TEMPORARY SERVICE AS INDICATED IN THE SPECIFICATIONS, INCLUDING ITS REMOVAL.
i. FINAL CONNECTIONS TO NATIONAL, STATE AND LOCAL CODES, WHICHEVER IS MORE STRINGENT.
j. IF INDICATED ON DRAWINGS, INSTALLATION AND WIRING OF SPEAKERS, AMPLIFIERS, CONDUIT AND FINAL CONNECTIONS FOR SOUND SYSTEM AS SHOWN.
k. SMOKE/FIRE ALARM WIRING, DEVICES AND CONDUIT, AS SHOWN OR DESCRIBED ON DRAWINGS OR AS NECESSARY TO MEET LANDLORD, STATE, LOCAL, INSURANCE AND FIRE DEPARTMENT REQUIREMENTS.
l. INSTALLATION OF CONDUITS STUBBED TO ABOVE CEILING FOR HVAC, ALSO, ANY ADDITIONAL CONDUIT FOR HVAC CONTROL EQUIPMENT WHERE PLenum RATED CABLES ARE NOT PERMITTED.
m. BALANCING LOADS.
n. AS-BUILTS, PANEL SCHEDULES, AND CIRCUIT BREAKER SPECIFIC LABELING.
2. WORK NOT INCLUDED
THE FOLLOWING ITEMS OF ELECTRICAL CONSTRUCTION ARE NOT INCLUDED IN THIS CONTRACT:
a. TELEPHONE, DATA, AND WIRING UNLESS NOTED OTHERWISE.
b. DATA CABLE WIRING UNLESS NOTED OTHERWISE.
3. BEFORE STARTING WORK, THIS CONTRACTOR SHALL EXAMINE THE ARCHITECTURAL, STRUCTURAL, FIRE PROTECTION, MECHANICAL AND PLUMBING PLANS, SHOP DRAWINGS AND SPECIFICATIONS TO DETERMINE COORDINATION AND INTEGRATE THE VARIOUS ELEMENTS OF THE ELECTRICAL SYSTEM. MATERIALS AND EQUIPMENT WITH OTHER CONTRACTORS TO AVOID INTERFERENCES AND CONFRONTATIONS.

P. CLEANING

1. AT THE END OF THE PROJECT, THIS CONTRACTOR SHALL CLEAN ALL EQUIPMENT, INCLUDING LIGHT FIXTURES, TO THE SATISFACTION OF ESDC. ALL DUST, DIRT, DEBRIS, AND FOREIGN MATTER SHALL BE REMOVED FROM ALL EQUIPMENT.

END OF SECTION 26 00 00

SECTION 26 01 26 - MAINTENANCE TESTING OF ELECTRICAL SYSTEMS

1. ALL CONNECTIONS AT PANELS, LIGHTING CONTRACTORS AND SWITCHES ARE TO BE MADE, ALL SPLICES COMPLETE, ALL FUSES IN PLACE, AND ALL CIRCUITS CONTINUOUS FROM POINT OF SERVICE CONNECTION TO ITS FINAL DESTINATION, AND ALL COVERS AND PLATES INSTALLED PRIOR TO THE TIME OF FINAL INSPECTION BY ESDC'S PROJECT MANAGER.
2. UPON COMPLETION OF THE WORK, ALL PARTS OF THE ELECTRICAL INSTALLATION SHALL BE TESTED AND PROVED FREE OF UNWANTED GROUNDS AND OTHER DEFECTS.
3. ALL OVERLOAD DEVICES, INCLUDING EQUIPMENT FURNISHED UNDER OTHER CONTRACTS, SHALL BE SET AND ADJUSTED TO SUIT THE LOAD CONDITIONS.
4. TEST AND MAKE CORRECTIONS/ADJUSTMENTS FOR PHASE BALANCING.

END OF SECTION 26 01 26

SECTION 26 05 19 - ELECTRICAL POWER CONDUCTORS AND CABLES

1. CONDUCTORS FOR FEEDERS AND BRANCH CIRCUITS SHALL BE COPPER AND THE AWG SIZE AND TYPE AS SHOWN ON DRAWINGS. MINIMUM WIRE SIZE SHALL BE #12 AND THE CONDUCTORS SHALL BE 600 VOLT INSULATION TYPE THHN, THWN OR THWN.
2. MINIMUM WIRE SIZE - 20 AMP BRANCH CIRCUIT SHALL BE AWG LISTED SIZE PER DISTANCE SHOWN BELOW. DISTANCE SHALL BE MEASURED FROM THE PANELBOARD CIRCUIT BREAKER TO THE FARTHEST OUTLET.
a. #12 LESS THAN 100 FEET
b. #10 BETWEEN 100 - 150 FEET
c. #8 BETWEEN 150 - 250 FEET
d. #6 OVER 250 FEET
3. ON ALL 20 AMP BRANCH CIRCUITS, CONDUCTORS LARGER THAN #10 AWG SHALL BE REDUCED TO #10 AWG WITHIN 10 FEET OF PANELBOARD AND DEVICE IN JUNCTION BOXES ON RATED TERMINAL STRIPS.
4. CONDUCTORS MAY BE STRANDED FOR SIZES #10 AWG AND LARGER. CONDUCTORS SIZE #12 SHALL BE SOLID.
5. ALUMINUM CONDUCTORS ARE NOT PERMITTED.
6. ALL WIRING SHALL BE IN CONDUIT, UNLESS SPECIFICALLY NOTED OTHERWISE (IE. LOW VOLTAGE PLenum RATED WIRE).
7. THE USE OF ROMEX OR BX CABLE IS NOT PERMITTED.
8. WIRE CONNECTORS SHALL BE EQUAL TO "SCOTCH LOCK" FOR #8 AWG WIRE AND SMALLER AND EQUAL TO T & B "LOCKTIGHT" FOR #6 AWG AND LARGER.
9. EACH CIRCUIT TO HAVE A SEPARATE NEUTRAL CONDUCTOR. NO SHARED NEUTRALS ARE PERMITTED.

END OF SECTION 26 05 19

SECTION 26 05 23 - CONTROL VOLTAGE ELECTRICAL POWER CABLES

1. FURNISH AND INSTALL A SYSTEM OF CONDUIT RACEWAYS, OUTLET BOXES AND PULL BOXES AS SHOWN ON THE DRAWINGS UNLESS OTHERWISE NOTED ON PLANS. TELEPHONE SCHEDULING APPARATUS, CONDUCTORS, INSTRUMENTS, MISCELLANEOUS EQUIPMENT AND APPURTENANCES ARE NOT PART OF THIS CONTRACT AND WILL BE PROVIDED AND INSTALLED BY ESDC.
2. OUTLET BOXES TO BE 4" SQUARE MINIMUM WITH SINGLE DEVICE COVER AND TELEPHONE PLATE.
3. CONDUIT RUNS FROM IT CABINET OR MANAGER'S OFFICE FOR TELEPHONE AND DATA LINES TO CASHIERS ARE TO BE CONTINUOUS WITH NO JUNCTION BOXES EXCEPT AS NOTED OTHERWISE ON DRAWINGS.
4. ALL PULL WIRES ARE TO BE LABELED FOR PURPOSE DESIGNATED.
5. ELECTRICAL CONTRACTOR SHALL REFER TO MECHANICAL DRAWINGS FOR ADDITIONAL ELECTRICAL WORK TO BE INCLUDED IN HIS OR HER BID.
6. ELECTRICAL CONTRACTOR SHALL DO ALL POWER WIRING, LINE VOLTAGE WIRING, AND LINE VOLTAGE CONTROL WIRING INDICATED UNDER THE HEATING, VENTILATION AND AIR CONDITIONING, PLUMBING AND FIRE PROTECTION SPECIFICATIONS AND DRAWINGS. THIS CONTRACTOR SHALL ALSO DO ALL INTERCONNECTING LINE VOLTAGE WIRING BETWEEN RELAYS AND SWITCHES AS REQUIRED.
7. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR FURNISHING AND INSTALLING CONDUIT FOR HVAC CONTROL WIRING WHERE REQUIRED BY CODE OR SHOWN ON PRINTS TO BE IN CONDUIT. REFER TO PLANS FOR REQUIREMENTS AND SIZE.
8. FIRE AND/OR SMOKE DAMPERS SHALL BE WIRED BY ELECTRICAL CONTRACTOR. COORDINATE WITH HVAC CONTRACTOR FOR POWER REQUIREMENTS.
9. REFER TO MECHANICAL DRAWINGS FOR AVAILABLE SCHEMATIC WIRING DIAGRAMS OF EQUIPMENT.

END OF SECTION 26 05 23

SECTION 26 05 26 - GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

1. FURNISH AND INSTALL COMPLETE WIRED GROUNDING CONDUCTOR SYSTEM, #12 AWG MINIMUM, SIZED AND INSTALLED IN ACCORDANCE WITH THE LATEST ADOPTED EDITION OF THE NATIONAL ELECTRICAL CODE, STATE AND LOCAL CODES, THE LANDLORD'S TENANT CRITERIA, AS NOTED IN THE SPECIFICATIONS, AND AS INDICATED ON THE DRAWINGS.
2. ALL CONDUITS, INCLUDING FLEXIBLE METAL CONDUIT, SHALL BE GROUNDED WITH A GREEN GROUNDING CONDUCTOR.
3. GROUNDING CONNECTIONS MADE TO THE WATER PIPING SYSTEM SHALL BE COORDINATED WITH THE PLUMBING CONTRACTOR AND A BONDING JUMPER INSTALLED AROUND WATER METER PER CODES AND AS INDICATED ON DRAWINGS.
4. ALL DEVICES SHALL BE BONDED TO THE CONDUIT SYSTEM. USE A BONDING JUMPER BETWEEN THE OUTLET BOX AND THE DEVICE GROUNDING TERMINAL. METAL-TO-METAL CONTACT BETWEEN THE DEVICE YOKE AND THE OUTLET BOX IS NOT ACCEPTABLE AS A BOND FOR EITHER SURFACE MOUNTED BOXES OR FLUSH TYPE BOXES. ALL JUNCTION BOXES, OUTLET BOXES, AND PULL BOXES SHALL BE BONDED TO THE CONDUIT SYSTEM.
5. ALL ENCLOSURES AND NON-CURRENT CARRYING METAL PARTS ARE TO BE GROUNDED. CONDUIT SYSTEM IS TO BE ELECTRICALLY CONTINUOUS. ALL LOCKNUTS SHALL CUT THROUGH ENAMELED OR PAINTED SURFACES ON ENCLOSURES WHERE ENCLOSURES AND NON-CURRENT CARRYING METAL PARTS ARE ISOLATED FROM THE CONDUIT SYSTEM. USE BONDING JUMPERS WITH APPROVED CLAMPS. ALL GROUND CLAMPS SHALL BE "PEN-UNION" OR EQUAL, SIMILAR TO "GFL" TYPE.

END OF SECTION 26 05 26

SECTION 26 05 33 - RACEWAY AND BOXES FOR ELECTRICAL SYSTEMS

1. THIS CONTRACTOR SHALL FURNISH AND INSTALL ALL CONDUITS SERVING ALL EQUIPMENT, INCLUDING BUT NOT LIMITED TO, LIGHTING, RECEPTACLES, HEATING, AIR CONDITIONING, PLUMBING EQUIPMENT, TELEPHONE, DATA, BREAKERS, SECURITY, PAGER, TRAFFIC COUNTING SYSTEM AND ELECTRICAL EQUIPMENT.
2. ALL CONDUITS SHALL BE GALVANIZED IMC OR EMT UNLESS OTHERWISE SPECIFIED IN SPECIFICATIONS OR ON DRAWINGS. ALL CONDUIT IS TO BE UL LABELED. EMT CONNECTORS SHALL BE STEEL COMPRESSION OR SET SCREW TYPE. CONDUIT UNDER SLAB ON GRADE SHALL BE RIGID STEEL, OR SCHEDULE 40 PVC WITH RIGID STEEL ELBS WHERE PERMITTED BY LANDLORD AND CODE.
3. MINIMUM SIZE OF CONDUIT SHALL BE:
a. 1/2" FEEDER CONDUIT TO 2' OR LARGER FOR ALL APPLICATIONS.
b. 1/2" MINIMUM FOR ALL LOCATIONS (IF ACCEPTABLE BY THE LANDLORD AND LOCAL CODE OFFICIALS), UNLESS NOTED OTHERWISE IN PLANS, SPECIFICATIONS, OR DRAWINGS.
c. IF HVAC CONTROL WIRING IS REQUIRED TO BE RUN IN CONDUIT, IT SHALL BE A MINIMUM OF 3/4", UNLESS NOTED OTHERWISE ON DRAWINGS.
d. ALL INDOOR FLOOR CONDUIT SHALL BE OF MINIMUM 3/4" SIZE.
e. ALL FIRE ALARM CONDUIT SHALL BE OF MINIMUM 3/4" SIZE.
4. SUPPORT ALL CONDUIT, INCLUDING SEISMIC AND SHAY BRACING, IN ACCORDANCE WITH THE NEC AND LOCAL CODES.
5. GENERALLY, ALL CONDUIT SHALL BE CONCEALED EXCEPT FOR UNFINISHED AREAS, SUCH AS EQUIPMENT ROOMS. EXPOSED CONDUIT SHALL BE ALLOWED ONLY AS NOTED ON PLAN AND AS APPROVED BY ESDC'S PROJECT MANAGER. PAINTING OF CONDUITS, NOTED ON DRAWINGS OR SPECIFICATIONS WILL BE BY GENERAL CONTRACTOR.
6. FLEXIBLE METAL CONDUIT OR MC TYPE CABLE
a. FLEXIBLE METAL CONDUIT OR MC TYPE CABLE SHALL BE USED FOR THE FOLLOWING APPLICATIONS ONLY:
i. FINAL CONNECTIONS TO MOTORS.
ii. FINAL CONNECTIONS INTO AND OUT OF THE TRANSFORMER.
iii. FINAL CONNECTIONS TO VIBRATING EQUIPMENT.
iv. INTER-CONNECTING LIGHT FIXTURES AND JUNCTION BOXES.
v. FINAL CONNECTIONS WHERE RIGID CONDUIT IS NOT PRACTICAL.
vi. IN WALLS (FOR LIGHT SWITCHES AND 120 VOLT POWER RECEPTACLES AND HVAC CONTROL EQUIPMENT).
b. FLEXIBLE METAL CONDUIT SHALL BE THE SAME SIZE AS THE IMC OR EMT CONDUIT TO WHICH IT IS CONNECTED. BOTH THE CONDUIT AND ITS FITTINGS SHALL BE LISTED FOR USE IN GROUNDING. A GREEN GROUNDING CONDUIT SHALL BE INSTALLED. ALL CONNECTORS ARE TO BE OF A NEMA APPROVED TYPE.
6. LENGTH OF FLEXIBLE METAL CONDUIT IS NOT TO EXCEED 6'-0".
7. THE USE OF ROMEX OR BX CABLE IS NOT PERMITTED.
8. CONNECTION TO ANY OUTDOOR EQUIPMENT SHALL BE MADE WITH LIQUIDTIGHT FLEXIBLE METAL CONDUIT.
9. PROVIDE PULL-WIRE IN ALL EMPTY CONDUITS EXCEPT AS NOTED OTHERWISE ON DRAWINGS.
10. HOYE RUNS AND MAIN CONDUIT RUNS ARE TO BE HELD TIGHT TO STRUCTURE ABOVE OR AS REQUIRED TO ALLOW PROPER SERVICE ACCESS AND OTHER TRADES WORK. CONDUIT SHALL BE TRAFFICED TO ALLOW 3 FEET MINIMUM CLEARANCE ABOVE CEILING.
11. ALL CONDUITS SHALL BE SIZED PER NEC AND LOCAL CODES.
12. ALL SENSORIATIC WIRING SHALL BE PLACED IN EMT, IMC, OR RMC CONDUIT. PVC IS NOT ALLOWED.
13. ALL OUTLET BOXES SHALL BE GALVANIZED PRESSED STEEL OF THE STANDARD KNOCKOUT TYPE, NO ROUND OUTLET BOXES SHALL BE PERMITTED UNLESS INDICATED AND FOR LIGHTING THAT REQUIRE SUCH CONFIGURATION. CONCEALED BOXES SHALL NOT BE LESS THAN 4" SQUARE AND 1-1/2" DEEP, WITH PLASTER RINGS.
14. EXTERIOR BOXES SHALL BE CAST RUST-RESISTING METAL WITH GASKETED COVERS.
15. INSTALL BOXES RIGIDLY FROM BUILDING STRUCTURE AND SUPPORT INDEPENDENTLY OF THE CONDUIT SYSTEM. ALSO PROVIDE SUITABLE BOX EXTENSIONS TO EXTEND BOXES TO FINISHED FACES OF FLOORS, CEILINGS, WALLS, ETC. ALL OUTLET BOXES TO BE PROVIDED WITH CADY QUICK-PLUG BOX SUPPORT TO MINIMIZE THE DEFLECTION THAT OCCURS WHEN PLUGGING/UNPLUGGING INTO THESE DEVICES.
16. UNLESS OTHERWISE NOTED ON DRAWINGS OR OTHERWISE REQUIRED BY THE NATIONAL ELECTRICAL CODE, HANDICAP CODES OR LOCAL CODES, OUTLET HEIGHTS SHALL BE AS FOLLOWS:
a. SWITCH HEIGHT 48" FROM FINISHED FLOOR TO CENTERLINE OF OUTLET.
b. CONVENIENCE OUTLETS:
i. SALES AREAS: MOUNTED ON THE WALL 20" AFF UNLESS NOTED OTHERWISE, AS SHOWN ON DRAWINGS, AS REQUIRED BY LOCAL CODES. SEE DRAWINGS.
ii. NON-SALES AREAS: 1' FROM FINISHED FLOOR TO CENTERLINE OF OUTLET.
c. TELEPHONE OUTLETS SHALL BE LOCATED AS NOTED ON DRAWINGS.
17. THE PLANS INDICATE ONLY SCHEMATIC ROUTINGS FOR CONDUIT RUNS. THIS CONTRACTOR SHALL FURNISH AND INSTALL ADDITIONAL BOXES WHERE REQUIRED BY FIELD CONDITIONS OR BY CODE.
18. BOXES AND COVERS SHALL BE GALVANIZED STEEL OF CODE GAUGE SIZE.
19. ARRANGE CIRCUITS TO AVOID THE USE OF JUNCTION BOXES IN INACCESSIBLE LOCATIONS. THE USE OF JUNCTION BOXES ABOVE DRYWALL CEILINGS SHOULD BE LIMITED TO LOCATIONS NEAR ACCESS FRAMES USED FOR DIFFUSERS AND RETURN AIR GRILLES OR ACCESS PANELS AS LOCATED ON PLANS.

END OF SECTION 26 05 33

SECTION 26 05 53 - IDENTIFICATION FOR ELECTRICAL SYSTEMS

1. ALL WIRING SHALL BE COLOR-CODED AS FOLLOWS:
a. 120/208 VOLT SYSTEM
NEUTRAL - WHITE
PHASE A OR L1 - BLACK
PHASE B OR L2 - RED
PHASE C OR L3 - BLUE
GROUND - GREEN
ISOLATED GROUND - GREEN WITH YELLOW TRACER
2. JUNCTION AND PULL BOXES SHALL BE LABELED WITH CIRCUIT NUMBER IDENTIFICATION AND SYSTEM TYPE ON COVER.
3. CONDUIT SHALL BE IDENTIFIED BY COLOR-CODED AS FOLLOWS:
a. CONDUIT
b. CONDUIT
c. CONDUIT
d. CONDUIT
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