DIVISION 26 - ELECTRICAL

SECTION 26 00 00 - BASIC ELECTRICAL REQUIREMENTS

A. NOTES

1. THE ABBREVIATION ESD&C WHEREVER IT APPEARS IN THESE ELECTRICAL DRAWINGS AND/OR SPECIFICATIONS SHALL REFER TO "EXPRESS STORE DESIGN AND CONSTRUCTION". ANY REFERENCE TO TENANT'S PROJECT MANAGER OR FURNISHED BY ANY OF THE ABOVE REFERS TO ESD&C.
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 OTHER DIVISIONS OF WORK. IT IS THIS CONTRACTORS 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 ESD&C 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 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 AND INSTALLATIONS TO COMPLETE ELECTRICAL SYSTEM AS SHOWN ON THE DRAWINGS, CALLED FOR IN THE SPECIFICATIONS, AND AS REQUIRED BY JCB CONDITIONS. ALL WORK NOT SPECIFICALLY NOTED AS BEING BY THE LANDLORD OR ESD&C SHALL BE PROVIDED BY THIS CONTRACTOR. CLOSELY COORDINATE THE ENTIRE INSTALLATION WITH THE LANDLORD AND THE ESD&C 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 BOTH. ANY MATERIAL OR LABOR WHICH IS NEITHER SHOWN ON THE DRAWINGS NOR CALLED FOR IN THE SPECIFICATIONS, BUT WHICH IS OBVIOUSLY NECESSARY TO COMPLETE THE WORK, AND WHICH IS USUALLY INCLUDED IN WORK OF SIMILAR CHARACTER, SHALL BE FURNISHED AND INSTALLED AS PART OF CONTRACT.
3. WHERE THE DRAWINGS OR SPECIFICATIONS CALL FOR ITEMS WHICH EXCEED CODES OR THE LANDLORD'S TENANT CRITERIA, THE CONTRACTOR IS 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, SERVICING, MAINTAINING, OR 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 NFPA, 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 ESD&C 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 GROUND FAULT INTERRUPTION PROTECTION FOR LIGHT AND POWER FOR ALL CONTRACTORS AND IS RESPONSIBLE FOR IT'S 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. AFTER CONTRACT IS AWARDED, CHANGE ORDERS FOR INCREASED COSTS DUE TO CODE ISSUES WILL NOT BE ACCEPTED BY ESD&C, UNLESS ALLOWANCES HAVE PREVIOUSLY BEEN AGREED UPON.

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 ESD&C'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 ASPECTS TO THAT SPECIFIED WILL BE SUBJECT TO APPROVAL IN WRITING BY ESD&C'S PROJECT MANAGER THROUGH SHOP DRAWING SUBMITTAL PROCESS FOR ACCEPTANCE 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 ESD&C PROJECT MANAGER FOR APPROVAL. SUBMISSIONS SHALL BE MADE EARLY ENOUGH IN PROJECT TO ALLOW FOUR (4) WORKING DAYS FOR ESD&C PROJECT MANAGER'S REVIEW WITHOUT CAUSING DELAYS OR CONFLICTS TO THE JOB'S PROGRESS. SUBMITTALS SHALL BEAR THE STAMP OF THE GENERAL CONTRACTOR AND THE SUBCONTRACTOR SHOWING THAT HE HAS REVIEWED AND CONFIRMED THAT THE SUBMITTALS ARE IN CONFORMANCE WITH THE CONTRACT DRAWINGS AND SPECIFICATIONS OR INDICATE WHERE EXCEPTIONS HAVE BEEN TAKEN.

G. GUARANTEE

1. THIS CONTRACTOR SHALL GUARANTEE ALL MATERIALS AND WORK PROVIDED UNDER HIS OR HER CONTRACT AND SHALL MAKE GOOD, REPAIR OR REPLACE AT HIS OR HER OWN EXPENSE, ANY DEFECTIVE WORK, MATERIAL, OR EQUIPMENT WHICH MAY BE DISCOVERED WITHIN A PERIOD OF 12 MONTHS FROM THE DATE OF ACCEPTANCE OF THE INSTALLATION BY ESD&C'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 ESD&C 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'S 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 ESD&C 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 ESD&C'S PROJECT MANAGER, IN WRITING, OF VARIATIONS TO CONTRACT DOCUMENTS PRIOR TO SUBMISSION OF BID. OTHERWISE, ESD&C PROJECT MANAGER'S INTERPRETATION OF CONTRACT DOCUMENTS OR CONDITIONS SHALL BE FINAL WITH NO ADDITIONAL COMPENSATION PERMITTED.

J. PHASING REQUIREMENTS

1. THIS CONTRACTOR IS TO INCLUDE IN HIS OR HER BID ALL NECESSARY SERVICE REQUIRED TO KEEP THE OPERATING PHASE OF THE STORE'S HVAC, ELECTRICAL, PLUMBING AND SPRINKLER SERVICE IN OPERATION. CONTRACTOR SHALL SCHEDULE IN WRITING WITH ESD&C'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 PRESUMED 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 REMOVED AND ROOF/WALL/FLOOR PATCHED/REPAIRED TO LIKE NEW CONDITION. EXISTING ABANDONED CONDUIT OR EQUIPMENT IN THE FLOOR, EMBEDDED IN CONCRETE, OR OTHERWISE INACCESSIBLE, ARE TO BE CUT OFF AND SEALED 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. 725.(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, "3M" 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 WEIGHT 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 METAL DECK IS NOT PERMITTED. HANGERS SHALL BE ATTACHED TO UPPER CHORD OF BAR JOIST WHERE INTERFERENCES OCCUR, AND IN ORDER TO SUPPORT DUCTWORK OR PIPING. THE CONTRACTOR SHALL INSTALL TRAPEZE 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, ESD&C 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 JCB CONDITIONS, TO INCLUDE, BUT NOT BE LIMITED TO THE FOLLOWING:
   a. A COMPLETE ELECTRICAL DISTRIBUTION SYSTEM INCLUDING THE INSTALLATION OF ESD&C FURNISHED POWER DISTRIBUTION SYSTEM UNIT, SAFETY SWITCHES, DISCONNECT SWITCHES AND MOTOR STARTERS (SOMETIMES FURNISHED AND INSTALLED BY THE CONTRACTOR), AND LIGHTING. IT IS THE ELECTRICAL CONTRACTOR'S RESPONSIBILITY TO INCLUDE IN HIS OR HER BID FOR PROVIDING SERVICE EQUIPMENT RECOMMENDED FOR THIS PROJECT BY THE DISTRIBUTION EQUIPMENT TO OBTAIN SERVICE FROM THE LOCAL UTILITY COMPANY. REFER TO ELECTRICAL RESPONSIBILITY SCHEDULE AND ELECTRICAL POWER RISER DIAGRAM FOR ADDITIONAL INFORMATION.
   b. CONTRACTOR SHALL INCLUDE IN BID ALL NECESSARY MATERIALS REQUIRED TO COMPLETE THE SYSTEM INCLUDING, BUT NOT LIMITED TO, FEEDERS, BRANCH CIRCUITS, JUNCTION BOXES, OUTLET BOXES, WIRING DEVICES, COVERPLATES, CONDUITS, SWITCHES, STARTERS, DISCONNECTS, ETC.
   c. METERING AND CURRENT TRANSFORMERS AS REQUIRED BY DRAWINGS, ESD&C, UTILITY COMPANY, AND/OR LANDLORD.
   d. THE HOOK-UP 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 24 VOLTAGE (24 VOLT.) EMS TEMPERATURE CONTROL WIRING SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR UNLESS NOTED SPECIFICALLY ON DRAWING.
   e. INSTALLATION OF LAMPS 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 WIRES, 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 IT'S REMOVAL.
   i. FINAL CONNECTIONS TO ALL SIGNS, CORNICE LIGHTING, CASE LIGHTING, ETC. AS SHOWN ON DRAWINGS.
   j. IF INDICATED ON DRAWINGS, INSTALLATION AND WIRING OF SPEAKERS, AMPLIFIERS, CONDUIT AND FINAL CONNECTIONS FOR SOUND SYSTEM AS SHOWN.
   k. SMOKE/FIRE ALARM 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 DESCRIPTION AND CIRCUIT BREAKER SPECIFIC LABELING.
2. WORK NOT INCLUDED

   THE FOLLOWING ITEMS OF ELECTRICAL CONSTRUCTION ARE NOT INCLUDED IN THIS CONTRACT:
   a. DATA/BELL 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 SEQUENCE, COORDINATE, 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 ESD&C. 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 CONTACTORS 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 ESD&C'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 THH, THWN OR THHN.
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 WIRES AS SHOWN ON THE DRAWINGS UNLESS OTHERWISE NOTED ON PLANS. TELEPHONE SWITCHING APPARATUS, CONDUCTORS, INSTRUMENTS, MISCELLANEOUS EQUIPMENT AND APPURTENANCES ARE NOT PART OF THIS CONTRACT AND WILL BE PROVIDED AND INSTALLED BY ESD&C.
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 CASHWRAPS 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 "PENN-UNION" OR EQUAL, SIMILAR TO "GPL" 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, SPEAKERS, 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 ELLS WHERE PERMITTED BY LANDLORD AND CODE.
3. MINIMUM SIZE OF CONDUIT SHALL BE:
   a. MAIN FEEDER CONDUIT TO 2" OR LARGER FOR ALL APPLICATIONS.
   b. 1/2" TRADE SIZE MAY BE USED IF ACCEPTABLE BY LANDLORD AND LOCAL CODE OFFICIALS), UNLESS NOTED OTHERWISE IN PLANS, SPECIFICATIONS, OR DRAWINGS.
   c. IF FLEXIBLE CONDUIT WIRING IS REQUIRED TO BE RUN IN CONDUIT, IT SHALL BE A MINIMUM OF 3/4", UNLESS NOTED OTHERWISE ON DRAWINGS.
   d. ALL IN-UNDER 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 SWAY 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 ESD&C'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-CONNECTIONS BETWEEN 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. USE ONLY APPROVED METAL CONDUIT AND ITS FITTINGS ARE TO BE LISTED FOR GROUNDING. A GREEN GROUNDING CONDUCTOR SHALL BE INSTALLED. ALL CONNECTORS ARE