26 05 00 COMMON WORK RESULTS FOR ELECTRICAL

A. THE FOLLOWING TERMS APPLY TO WORK PERFORMED UNDER THIS CONTRACT:

1. ANY REFERENCE TO TENANT OR TENANT'S CONSTRUCTION MANAGER OR FURNISHED BY ANY OF THE ABOVE REFERS TO UNTUCKIT.
2. DRAWINGS AND GENERAL PROVISIONS OF CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND OTHER SPECIFICATIONS SECTIONS, APPLY TO THIS AND THE OTHER SECTIONS OF DIVISION 26 THROUGH 28.
3. THE CONTRACTOR FOR THIS 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 THE SUBCONTRACTORS WITH ALL DIVISIONS OF WORK. IT IS THIS CONTRACTOR'S RESPONSIBILITY TO PROVIDE THE SUBCONTRACTORS WITH A COMPLETE SET OF BID DOCUMENTS.
4. THIS CONTRACTOR IS RESPONSIBLE FOR SCHEDULING THE COMPLETION AND INSPECTION OF THIS WORK AND THE WORK OF THE SUBCONTRACTORS TO COMPLY WITH THE TENANT'S SCHEDULE AND THE PROJECT COMPLETION DATE.
5. THIS CONTRACTOR SHALL VISIT THE SITE PRIOR TO BID SUBMISSION 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 CONTRACTOR'S BID. BID SUBMISSION 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 WORK.
6. REFER TO RESPONSIBILITY SCHEDULE ON THE ARCHITECTURAL DRAWINGS FOR INFORMATION IN REGARD TO RESPONSIBILITY OF WORK OR ITEMS WHICH MAY AFFECT BID.

B. PROVIDE MATERIALS AND EQUIPMENT AND PERFORM LABOR REQUIRED TO INSTALL NEW COMPLETE ELECTRICAL SYSTEM AS INDICATED ON DRAWINGS, AS REQUIRED BY CODE AND AS SPECIFIED HEREIN, IN DIVISIONS 26, 27, AND 28. WORK SHALL INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING:

1. TEMPORARY SERVICE AS REQUIRED.
2. EMERGENCY AND EXIT LIGHTING SYSTEMS.
3. CONDUIT AND CABLES FOR TELEPHONE AND DATA SYSTEMS AS SHOWN ON THE DRAWINGS.
4. ELECTRICAL PANEL AND BRANCH CIRCUIT WIRING.
5. WIRING DEVICES AND PLATES.
6. LIGHTING FIXTURES AND LAMPS, INSTALLATION AND WIRING.
7. LIGHTING CONTROLS.
8. ELECTRICAL CONNECTIONS TO EQUIPMENT FURNISHED BY OTHERS, SIGNS, CORNICE LIGHTING, CASE LIGHTING, ETC., AS SHOWN ON DRAWINGS.
9. INSTALLATION OF CONDUIT AND CABLES FOR SOUND SYSTEM AS SHOWN ON DRAWINGS.
10. 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.
11. INSTALLATION OF CONDUITS STUBBED TO ABOVE CEILING FOR HVAC. ALSO, ANY ADDITIONAL CONDUIT FOR HVAC CONTROL EQUIPMENT WHERE PLENUM RATED CABLES ARE NOT PERMITTED.
12. THE GENERAL CONTRACTOR SHALL PAY FOR ALL ELECTRICITY PRIOR TO STORE MERCHANDISING, AND INCLUDE COST IN BID.

C. WORK WHICH SHALL BE PERFORMED BY OTHERS, UNLESS NOTED OTHERWISE, INCLUDES THE FOLLOWING:

1. TEMPERATURE CONTROL WIRING THAT IS FURNISHED BY OTHERS PRE-WIRED IN UNITS.
2. TELEPHONES AND FINAL CONNECTION OF WIRING THERETO.
3. INTERNAL WIRING OF EQUIPMENT FURNISHED AND PRE-WIRED BY OTHERS.
4. SECURITY SYSTEM FURNISHED AND INSTALLED BY SECURITY CONTRACTOR.

D. ELECTRICAL EQUIPMENT FURNISHED BY OTHER TRADES OR BY TENANT AND SPECIFIED IN OR SHOWN ON CONTRACT DOCUMENTS SHALL BE INSTALLED AND CONNECTED BY GENERAL CONTRACTOR, EXCEPT AS OTHERWISE NOTED. PROVIDE BRANCH CIRCUIT CONNECTIONS TO ELECTRICALLY-OPERATED EQUIPMENT FURNISHED BY OTHERS AS SPECIFIED IN OR SHOWN ON THE CONTRACT DOCUMENTS. TEMPORARY WIRING FOR OTHER CONTRACTORS SHALL BE INSTALLED BY THE GENERAL CONTRACTOR WHO SHALL BE ENTIRELY RESPONSIBLE TO THE TENANT FOR THE SAFE AND SATISFACTORY OPERATION OF SAID TEMPORARY WIRING. CONTRACTOR REQUIRING SUCH TEMPORARY WIRING SHALL PAY FOR DAMAGES TO PROPERTY RESULTING FROM ITS USE. COMPLY WITH LATEST REQUIREMENTS OF OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA). PROVIDE PERSONNEL GROUND-FAULT PROTECTION ON TEMPORARY POWER AND LIGHTING CIRCUITS 30 AMPERES OR LESS. GROUND-FAULT CIRCUIT INTERRUPTERS (GFCI) ON CONSTRUCTION CIRCUITS ARE NOT REQUIRED WHERE CIRCUIT IS A PERMANENT CIRCUIT TO BE A PART OF THE COMPLETED BUILDING. HOWEVER, CONTRACTOR SHALL PROVIDE APPROVED CORD SETS INCORPORATING GFCI PROTECTION FOR PERSONNEL. SEE THE LOCALLY-ADOPTED EDITION OF THE N.E.C. FINISH PAINTING IS TO BE PERFORMED BY GENERAL CONTRACTOR EXCEPT THAT THIS CONTRACTOR SHALL RESTORE TO ORIGINAL CONDITION ANY PAINTING DEFACED BY THIS CONTRACTOR AFTER ORIGINAL PAINTING.

E. GENERAL CONTRACTOR SHALL PERFORM CUTTING, CHASING, OR CHANNELING AND PATCHING REQUIRED FOR WORK UNDER THIS DIVISION. CUTTING SHALL HAVE PRIOR APPROVAL BY TENANT'S CONSTRUCTION MANAGER AND THE LANDLORD. PATCHING IS TO BE "AS NEW" CONDITION.

F. INSTALL ELECTRICAL WORK AS TO BE READILY ACCESSIBLE FOR OPERATING, SERVICING, MAINTAINING AND REPAIRING. THIS CONTRACTOR IS RESPONSIBLE FOR PROVIDING SUFFICIENT SERVICE ACCESS TO ALL EQUIPMENT.

G. ANY ACCESS PANELS REQUIRED, BUT NOT SPECIFIED OR SHOWN ON DRAWINGS, SHALL BE FURNISHED BY GENERAL CONTRACTOR WITH DESIGN TO BE APPROVED BY ARCHITECT BEFORE STARTING INSTALLATION.

H. THE DRAWINGS AND SPECIFICATIONS ARE INTENDED TO SUPPLEMENT EACH OTHER AND ANY MATERIAL OR LABOR CALLED FOR IN ONE SHALL BE PROVIDED 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 NECESSARY TO COMPLETE THE WORK OR WHICH IS USUALLY INCLUDED IN WORK OF SIMILAR CHARACTER, SHALL BE PROVIDED AS PART OF CONTRACT.

I. PERFORM WORK IN ACCORDANCE WITH:

1. THE NATIONAL ELECTRICAL CODE (N.E.C.).
2. STATE, CITY, AND COUNTY BUILDING CODES AND ORDINANCES.
3. NATIONAL BOARD OF FIRE UNDERWRITERS.
4. CERTAIN CODES AND STANDARDS AS SET UP BY VARIOUS TECHNICAL SOCIETIES SUCH AS UL, NEMA, NECA, IEEE, ASTM, IES, IPCEA, AND ANSI.
5. THIS WORK SHALL BE GOVERNED ALSO BY LOCAL INSPECTOR'S REQUIREMENTS.
6. FEDERAL OCCUPATIONAL SAFETY AND HEALTH ACT STANDARDS.
7. AMERICANS WITH DISABILITIES ACT.

J. GENERAL CONTRACTOR SHALL INQUIRE INTO AND COMPLY WITH APPLICABLE CODES, ORDINANCES, AND REGULATIONS. THIS CONTRACTOR SHALL INCLUDE CHANGES REQUIRED BY CODES IN THE BID AND IF THESE CHANGES ARE NOT INCLUDED IN THE BID, THEY MUST BE QUALIFIED AS A SEPARATE LINE ITEM IN THE BID. AFTER CONTRACT IS ISSUED, NO ADDITIONAL COST DUE TO CODE ISSUES SHALL BE REIMBURSED BY TENANT TO THE CONTRACTOR.

K. WHERE THE DRAWINGS OR SPECIFICATIONS CALL FOR ITEMS WHICH EXCEED CODE OR THE LANDLORD OR TENANT CRITERIA, THE CONTRACTOR IS RESPONSIBLE FOR FURNISHING AND INSTALLING THE SYSTEM WITH THE MOST STRINGENT REQUIREMENTS AS DESIGNED AND DESCRIBED ON THESE DRAWINGS, UNLESS NOTED OTHERWISE.

L. UNLESS SPECIFICALLY NOTED OTHERWISE, MATERIALS, PRODUCTS, AND EQUIPMENT, INCLUDING COMPONENTS THEREOF, SHALL BE NEW, UNDERWRITERS LABORATORIES LISTED AND LABELED AND SIZED IN CONFORMITY WITH REQUIREMENTS OF THE N.E.C., STATE, AND LOCAL CODES, WHICHEVER IS MORE STRINGENT.

M. PERMITS REQUIRED BY LAWS, ORDINANCES AND BUILDING CODES HAVING JURISDICTION SHALL BE OBTAINED AT PROPER TIME BY AND AT THE EXPENSE OF THE GENERAL CONTRACTOR.

N. ELECTRICAL WORK SHALL BE INSPECTED BY THE GOVERNMENTAL AGENCY HAVING JURISDICTION, INCLUDING LOCAL INSPECTION AUTHORITIES.

O. 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, THROUGH SHOP DRAWING SUBMITTAL PROCESS, BY TENANT'S CONSTRUCTION MANAGER PRIOR TO ACCEPTANCE. THE USE OF UNAUTHORIZED EQUIPMENT SHALL BE SUBJECT TO REMOVAL AND REPLACEMENT AT THE CONTRACTOR'S EXPENSE.

P. GENERAL CONTRACTOR SHALL SUBMIT ONLY SUBSTITUTION REQUESTS TO TENANT'S CONSTRUCTION MANAGER FOR APPROVAL. SUBMISSIONS SHALL BE MADE EARLY ENOUGH IN PROJECT TO ALLOW SEVEN (7) WORKING DAYS FOR TENANT'S CONSTRUCTION MANAGER'S REVIEW WITHOUT CAUSING DELAYS OR CONFLICTS TO THE JOB'S PROGRESS. SUBMITTALS SHALL BEAR THE STAMP OF THE GENERAL CONTRACTOR AND/OR SUB-CONTRACTOR SHOWING THAT THEY HAVE REVIEWED AND CONFIRMED THAT THE SUBMITTALS ARE IN CONFORMANCE WITH THE CONTRACT DRAWINGS AND SPECIFICATIONS OR INDICATE WHERE EXCEPTIONS HAVE BEEN TAKEN.

Q. FOR PHASED STORE CONSTRUCTION, THIS CONTRACTOR IS TO INCLUDE IN THIS BID NECESSARY ELECTRICAL SERVICE CHANGES REQUIRED TO KEEP THE OPERATING PHASE OF THE STORE'S ELECTRIC SERVICE IN OPERATION. CONTRACTOR MUST SCHEDULE WITH TENANT'S CONSTRUCTION MANAGER AND LANDLORD (IN WRITING) ONE WEEK PRIOR TO SHUT DOWN OF THE P.O.S./ CASH REGISTERS, ELECTRICAL, TELEPHONE OR FIRE ALARM SYSTEMS. ADVISE GENERAL CONTRACTOR AND TENANT AT TIME OF BID IF CONFLICTS EXIST.

R. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION OF THE DEMOLITION OF EXISTING WORK. COORDINATE EXISTING EQUIPMENT TO BE LEFT INTACT AND ADVISE TENANT'S CONSTRUCTION MANAGER AT TIME OF BID.

S. THIS CONTRACTOR SHALL INCLUDE, AND WILL BE HELD RESPONSIBLE FOR, THE REMOVAL OF EXISTING CONDUIT, FIRE ALARM SYSTEM, SWITCH GEAR, PITCH POCKETS AND EQUIPMENT, ETC. UNLESS SPECIFICALLY NOTED OTHERWISE. CONTRACTOR MUST VERIFY WITH THE LANDLORD ALL PRESUMED ABANDONED EQUIPMENT, CONDUIT AND SWITCHGEAR PRIOR TO REMOVAL. PITCH POCKETS SHALL BE REMOVED AND THE ROOF PATCHED AS REQUIRED BY THE LANDLORD. EXTRANEOUS ITEMS IN THE SPACE ON THE FLOOR 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 MUST BE REMOVED TO POINT OF ORIGIN. CONFIRM EXTENT OF DEMOLITION PRIOR TO BID AND INCLUDE IN PROPOSAL.

T. PROVIDE SLEEVES TO PROTECT EQUIPMENT OR FACILITIES IN THE INSTALLATION. EACH SLEEVE SHALL EXTEND THROUGH IT'S RESPECTIVE FLOOR, WALL OR PARTITION AND SHALL BE CUT FLUSH WITH EACH SURFACE EXCEPT SLEEVES WHICH PENETRATE THE FLOOR, WHICH SHALL EXTEND 2" ABOVE THE FLOOR.

U. FIRE SEAL SLEEVES AND OPENINGS THROUGH FIRE-RATED WALLS AND FLOORS WITH CALCIUM SILICATE, SILICONE "RTV" FOAM, "3M" FIRE RATED SEALANTS OR EQUAL, SO AS TO RETAIN THEIR FIRE RATING.

V. 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 CONDUIT, SLEEVES SHALL BE NO. 22 U.S.G. GALVANIZED STEEL MINIMUM.

W. HANGERS SHALL INCLUDE MISCELLANEOUS STEEL SUCH AS ANGLE IRON, WIRE, UNISTRUT, C-CLAMPS WITH RETAINING CLIPS, CHANNELS, HANGER RODS, ETC., NECESSARY FOR THE INSTALLATION OF WORK.

X. FASTEN HANGERS TO BUILDING STEEL, CONCRETE, OR MASONRY, BUT NOT TO OTHER CONDUIT OR PIPING. HANGERS UPPER ATTACHMENT MUST BE SUPPORTED FROM THE TOP OF THE BAR JOIST. HANGING FROM METAL DECK IS NOT PERMITTED. WHERE INTERFERENCES OCCUR, IN ORDER TO SUPPORT CONDUIT, THE CONTRACTOR MUST INSTALL TRAPEZE-TYPE HANGERS OR SUPPORTS WHICH SHALL BE LOCATED WHERE THEY DO NOT INTERFERE WITH ACCESS TO FIRE DAMPERS, VALVES, JUNCTION BOXES, ACCESS DOORS, OTHER EQUIPMENT SERVICE REQUIREMENTS AND/OR OTHER TRADES. HANGER TYPES AND INSTALLATION METHODS ARE SUBJECT TO LANDLORD CRITERIA.

Y. UPON COMPLETION OF THE WORK, GENERAL CONTRACTOR SHALL FURNISH TO THE ARCHITECT A CERTIFICATE OF INSPECTION AND APPROVAL FROM THE ABOVE DEPARTMENT BEFORE FINAL PAYMENT ON CONTRACT WILL BE ALLOWED.

Z. TEST WIRING AND CONNECTIONS FOR CONTINUITY AND GROUNDS BEFORE EQUIPMENT IS CONNECTED. WHEN DIRECTED BY ARCHITECT, DEMONSTRATE BY PROPER VOLTAGE MEGGER TEST OF INSULATION RESISTANCE OF CONDUCTORS AND REPLACE CONDUCTORS WHICH FAIL SAID TESTS UNTIL CONDUCTORS ARE FREE FROM INSULATION FAULTS.

AA. ELECTRICAL LAYOUTS ARE SCHEMATIC. EXACT LOCATIONS ARE DETERMINED BY EXACT LOCATION OF EQUIPMENT, ETC., AND MAY BE REVISED TO SUIT THE CONSTRUCTION CONDITIONS AND AID IN COORDINATION WITH WORK OF OTHER CONTRACTORS. 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 TENANT'S CONSTRUCTION MANAGER IN WRITING OF ANY VARIATIONS TO CONTRACT DOCUMENTS PRIOR TO SUBMISSION OF THE BID. OTHERWISE, TENANT'S CONSTRUCTION MANAGER'S INTERPRETATION OF CONTRACT DOCUMENTS OR CONDITIONS SHALL BE FINAL WITH NO ADDITIONAL COMPENSATION PERMITTED.

AB. ELECTRICAL DRAWINGS ARE INTENDED TO INDICATE APPROXIMATE LOCATIONS OF SWITCHES, RECEPTACLES, LIGHTING FIXTURES AND OTHER ITEMS OF VARIOUS ELECTRICAL SYSTEMS OF PROJECT. EXACT LOCATIONS AND ROUGH-IN DIMENSIONS FOR WORK AND EQUIPMENT SHALL BE OBTAINED FROM ARCHITECT OR ARCHITECT'S REPRESENTATIVE AS WORK PROGRESSES. SHOULD THE GENERAL CONTRACTOR FAIL TO PROPERLY OBTAIN SUCH LOCATIONS OR DIMENSIONS, THE GENERAL CONTRACTOR SHALL CHANGE THIS WORK AT THE GENERAL CONTRACTOR'S EXPENSE WHEN REQUESTED BY ARCHITECT. ARCHITECT RESERVES THE RIGHT TO MAKE MINOR CHANGES IN LOCATION OF ELECTRICAL WORK OR EQUIPMENT PRIOR TO ROUGHING IN WITH NO ADDITIONAL COST TO TENANT. TENANT'S CONSTRUCTION MANAGER RESERVES THE RIGHT TO RELOCATE OUTLETS OR FIXTURES BEFORE THEY ARE INSTALLED WITHOUT ADDITIONAL COST.

AC. THE ARCHITECT RESERVES THE RIGHT TO DIRECT REMOVAL AND REPLACEMENT OF ITEMS WHICH, IN THE ARCHITECT'S OPINION, DO NOT PRESENT AN ORDERLY OR REASONABLY NEAT OR WORKMANLIKE APPEARANCE, PROVIDED THAT SUCH ITEM(S) CAN BE PROPERLY INSTALLED IN SUCH ORDERLY WAY BY METHODS USUAL IN SUCH WORK, OR WHICH DOES NOT COMPLY WITH CONTRACT DRAWINGS OR SPECIFICATIONS. SUCH REMOVALS OR REPLACEMENTS SHALL BE DONE BY CONTRACTOR AT CONTRACTOR'S EXPENSE WHEN SO DIRECTED IN WRITING BY ARCHITECT.

AD. MAINTAIN ONE COPY OF DRAWINGS ON THE JOB SITE TO RECORD DEVIATIONS FROM CONTRACT DRAWINGS, SUCH AS:
1. LOCATION OF JUNCTION BOXES AND RECEPTACLES.
2. REVISIONS, ADDENDUMS, AND CHANGE ORDERS.
3. SIGNIFICANT DEVIATIONS MADE NECESSARY BY FIELD CONDITIONS, APPROVED EQUIPMENT SUBSTITUTIONS, AND CONTRACTOR'S COORDINATION WITH OTHER TRADES.

AE. AT COMPLETION OF PROJECT AND BEFORE FINAL APPROVAL, MAKE FINAL CORRECTIONS TO DRAWINGS AND CERTIFY THE ACCURACY OF EACH PRINT BY SIGNATURE THEREON. PLACE ONE COPY OF DRAWINGS STAMPED "DO NOT REMOVE" IN DRAWING TUBE LOCATED NEXT TO THE ELECTRICAL PANELS (SEE ARCHITECTURAL DRAWINGS FOR LOCATION). A SECOND AS-BUILT SET SHALL BE SENT TO TENANT'S OFFICES.

AF. MATERIALS AND EQUIPMENT INSTALLED AS A PART OF THE WORK SHALL MEET THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.

AG. SUBMIT SHOP DRAWINGS PER THE DOCUMENTS PROVIDED BY THE TENANT.

AH. MANUFACTURER'S CATALOG CUTS MAY BE SUBMITTED FOR STANDARD CATALOG LIGHTING FIXTURES AND OTHER EQUIPMENT. CATALOG CUTS MAY BE MARKED UP TO MEET THE PROJECT SPECIFICATIONS. CUTS SHALL BE MARKED TO INDICATE MODEL NUMBER, SIZE, TYPE, COLOR, RATING, ETC., OF THE ITEM TO BE FURNISHED.

AI. PROVIDE INSTRUCTION TO TENANT'S OPERATING PERSONNEL AS NECESSARY, SHOWING LOCATIONS AND PROPER OPERATION OF MAJOR ITEMS OF EQUIPMENT AND SYSTEM COMPONENTS AND REFERRING TO THE OPERATING INSTRUCTION MANUAL DESCRIBED BELOW AS A GUIDE.

AJ. GENERAL CONTRACTOR SHALL GUARANTEE WORKMANSHIP AND MATERIALS, EXCEPT FOR TENANT-SUPPLIED MATERIALS, FOR A PERIOD OF ONE YEAR FROM THE DATE OF ACCEPTANCE (IN WRITING) OF THE INSTALLATION BY TENANT'S CONSTRUCTION MANAGER/ENGINEERING MANAGER AND LEAVE THIS WORK IN PERFECT ORDER AT COMPLETION.

AK. SHOULD DEFECTS DEVELOP WITHIN GUARANTEE PERIOD, GENERAL CONTRACTOR SHALL, UPON NOTICE OF SAME, REMEDY SUCH DEFECTS AND HAVE DAMAGES TO OTHER WORK OR FURNISHINGS CAUSED BY DEFECTS OR WORK OR CORRECTIONS TO SAME REPAIRED AND/OR REPLACED AT THIS EXPENSE TO CONDITION BEFORE SUCH DEFECTS OR DAMAGE.

AL. COMPILE TWO (2) WRITTEN MANUALS OF OPERATING INSTRUCTIONS INCLUDING COPIES OF SHOP DRAWINGS AND A LISTING OF EQUIPMENT SUPPLIERS. ASSEMBLE IN 8-1/2" X 11" HARD BACKED INDEXED BINDER. MATERIAL SHALL BE AS FOLLOWS:

1. TITLE PAGE: TITLE OF JOB, LANDLORD, TENANT'S ADDRESS, DATE OF SUBMISSION, CONTRACTOR, AND ENGINEER.
2. INDEX
3. LIST OF MAJOR EQUIPMENT USED IN PROJECT ACCOMPANIED BY CONTRACTOR PURCHASE ORDER NUMBERS AND SUPPLIERS' NAMES AND ADDRESSES.
4. ONE COPY OF EACH SHOP DRAWING GROUPED BY TYPES OF EQUIPMENT, I.E., LIGHTING FIXTURES, PANELBOARDS, ETC.
5. SECTION FOR EACH SYSTEM, INCLUDING:
   a. BRIEF DESCRIPTION OF SYSTEM OPERATION WITH LOCATION OF MAJOR COMPONENTS.
   b. LIST OF ITEMS IN SYSTEM REQUIRING PERIODIC SERVICE. REQUIRES SEPARATE SECTION FOR EACH OF: ELECTRICAL DISTRIBUTION SYSTEM FROM THE SERVICE ENTRANCE TO EACH LIGHTING AND POWER PANEL AND OTHER SYSTEMS (I.E. CONTROL SYSTEMS AND ANY OTHER GENERAL CONTRACTOR SYSTEM LISTED IN THESE SPECIFICATIONS.)

AM. TENANT SHALL PROVIDE A COMPLETE 12-MONTH WARRANTY FOR PARTS ON EQUIPMENT PROVIDED BY TENANT AND TENANT'S VENDORS. THIS CONTRACTOR SHALL NOT BEAR ADDITIONAL WARRANTIES BEYOND A COMPLETE WORKING SYSTEM, AND AS SUCH, NO ADDITIONAL MONIES SHOULD BE INCLUDED IN THE BID.

AN. AT THE END OF THE PROJECT, CLEAN EQUIPMENT, INCLUDING LIGHT FIXTURES, TO THE SATISFACTION OF TENANT'S CONSTRUCTION MANAGER. REMOVE DUST, DIRT, DEBRIS, PAINT AND FOREIGN MATTER FROM EQUIPMENT.

26 05 19 LOW VOLTAGE ELECTRICAL POWER CONDUCTORS

A. CONDUCTORS SHALL BE COPPER - ALUMINUM CONDUCTORS ARE NOT PERMITTED UNLESS NOTED OTHERWISE ON THE DRAWINGS.

B. MINIMUM COPPER WIRE SIZES FOR WET AND DRY AREAS AS DEFINED BY THE N.E.C. SHALL BE AS FOLLOWS:

20 AMP CKT BKR OR FUSE = #12 AWG, THHN/THWN
30 AMP CKT BKR OR FUSE = #10 AWG, THHN/THWN
40 AMP CKT BKR OR FUSE = #8 AWG, THHN/THWN
50 AMP CKT BKR OR FUSE = #8 AWG, THHN/THWN
100 AMP CKT BKR OR FUSE = #3 AWG, THHN/THWN
125 AMP CKT BKR OR FUSE = #1 AWG, THHN/THWN
200 AMP CKT BKR OR FUSE = #3/0 AWG, THHN/THWN

ADJUST MINIMUM WIRE SIZES FOR 20A BRANCH CIRCUITS FOR DISTANCE, MEASURED FROM THE PANELBOARD CIRCUIT BREAKER TO THE FURTHEST OUTLET, AS FOLLOWS:

LESS THAN 71 FEET - #12
BETWEEN 71 AND 110 FEET - #10
BETWEEN 111 AND 175 FEET - #8
OVER 175 FEET - #6

CONDUCTORS USED FOR EMERGENCY LIGHTING CIRCUITS SHALL BE #10 AWG, MINIMUM, AND SHALL BE RUN IN SEPARATE CONDUIT USED FOR NO OTHER PURPOSE.

CONDUCTORS MAY BE STRANDED FOR SIZES #10 AWG AND LARGER. CONDUCTORS SIZE #12 AND SMALLER SHALL BE SOLID (NOT STRANDED).

20 AMP BRANCH CIRCUIT CONDUCTORS LARGER THAN #10 AWG SHALL BE REDUCED TO #10 AWG WITHIN 10 FEET OF PANELBOARD AND DEVICES IN JUNCTION BOXES ON RATED TERMINAL STRIPS.

C. THE FOLLOWING COLOR CODE SHALL BE USED:

	208/120 VOLT	480/277 VOLT
PHASE A	BLACK	BROWN
PHASE B	RED	ORANGE
PHASE C	BLUE	YELLOW
NEUTRAL	WHITE	GRAY
GROUND	GREEN	GREEN

D. CIRCUIT BREAKER/FUSE AND WIRE SIZE COMBINATIONS NOT SHOWN ABOVE SHALL BE APPROVED BY THE ENGINEER PRIOR TO INSTALLATION.

26 05 26 GROUNDING AND BONDING

A. FURNISH AND INSTALL A COMPLETE GROUNDING SYSTEM IN COMPLIANCE WITH ALL REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE.

B. PROVIDE A SEPARATE EQUIPMENT GROUNDING CONDUCTOR, MINIMUM SIZE PER NEC TABLE 250.122, IN EACH CONDUIT ALONG WITH FEEDERS, BRANCH CIRCUITS AND CONTROL CIRCUITS. CONDUCTOR INSULATION SHALL BE GREEN.

C. CONDUIT SYSTEM SHALL BE ELECTRICALLY CONTINUOUS. GROUND ENCLOSURES AND NON-CURRENT CARRYING METALS. LOCK NUTS SHALL CUT THROUGH ENAMELED OR PAINTED SURFACES ON ENCLOSURES. WHERE ENCLOSURES AND NON-CURRENT CARRYING METALS ARE ISOLATED FROM THE CONDUIT SYSTEM, USE BONDING JUMPERS WITH APPROVED CLAMPS.

D. BOND RECEPTACLES TO GROUND CONDUCTORS USING #12 AWG MINIMUM BONDING JUMPERS BETWEEN RECEPTACLE TERMINALS AND GROUND CONDUCTORS. METAL-TO-METAL CONTACT BETWEEN THE DEVICE YOKE AND THE OUTLET BOX IS NOT ACCEPTABLE FOR EITHER SURFACE-MOUNTED BOXES OR FLUSH-TYPE BOXES.

E. PROVIDE GROUNDING ELECTRODE CONDUCTORS FOR SEPARATELY-DERIVED SYSTEMS, SUCH AS DRY-TYPE TRANSFORMERS, N NON-METALLIC (PVC) CONDUIT TO MINIMIZE GROUND IMPEDANCE.

F. GROUND LIGHTING FIXTURES BY THE USE OF A PIGTAIL FASTENED ON BARE METAL THAT IS FREE OF PAINT.

G. BOND STRUCTURAL STEEL TO EARTH, GROUND RODS OR PLATES, OR WATER SYSTEM.

H. BOND ROOF-MOUNTED EQUIPMENT TO ACCEPTABLE GROUNDS PER THE N.E.C.

26 05 29 DISTRIBUTION

A. FURNISH LABOR, MATERIALS AND EQUIPMENT NECESSARY TO INSTALL THE ELECTRICAL SERVICE FROM THE LANDLORD'S ELECTRICAL SERVICE ROOM INCLUDING (AS INDICATED ON SHEET E4.0) BUT NOT LIMITED TO THE SECONDARY CABLES, CONDUIT, PULL WIRE AND GROUND ROD AND SLEEVE AS REQUIRED. COORDINATE REQUIREMENTS WITH LANDLORD PRIOR TO BID. THE GENERAL CONTRACTOR SHALL COORDINATE INSTALLATION OF THE DISCONNECT SWITCHES AND PANELBOARD WITH THIS WORK.

B. COORDINATE WORK PROVIDED BY LANDLORD PRIOR TO BID AND INCLUDE THE COST OF SUCH WORK AS DIRECTED BY LANDLORD. WIRING OF METERING EQUIPMENT SHALL BE BY GENERAL CONTRACTOR AS DIRECTED BY THE ELECTRIC COMPANY.

C. METERING EQUIPMENT IS EXISTING TO REMAIN.

D. DISCONNECT SWITCHES SHALL BE HEAVY-DUTY TYPE, UL LISTED.

E. DISCONNECT SWITCHES SHALL BE BY SQUARE D, SIEMENS, CUTLER HAMMER, OR GENERAL ELECTRIC.

F. SWITCHES SHALL HAVE SWITCH BLADES WHICH ARE FULLY VISIBLE IN THE "OFF" POSITION WHEN THE SWITCH DOOR IS OPEN. SWITCHES SHALL HAVE REMOVABLE ARC SUPPRESSORS WHERE NECESSARY TO PERMIT EASY ACCESS TO LINE SIDE LUGS. LUGS SHALL BE FRONT REMOVABLE AND UL LISTED FOR 75 DEGREES C., ALUMINUM OR COPPER WIRES.

G. SWITCHES SHALL BE QUICK-MAKE, QUICK-BREAK. THE OPERATING HANDLE SHALL BE AN INTEGRAL PART OF THE BOX, NOT THE COVER. PROVISIONS FOR PADLOCKING THE SWITCH IN THE "OFF" POSITION WITH AT LEAST THREE LOCKS SHALL BE PROVIDED. SWITCHES SHALL HAVE A DUAL COVER INTERLOCK TO PREVENT UNAUTHORIZED OPENING OF THE SWITCH DOOR WHEN THE HANDLE IS IN THE "ON" POSITION, AND TO PREVENT CLOSING OF THE SWITCH MECHANISM WITH THE DOOR OPEN. THE HANDLE POSITION SHALL INDICATE WHETHER THE SWITCH IS "ON" OR "OFF".

H. SWITCHES SHALL BE FURNISHED IN NEMA 1 GENERAL PURPOSE ENCLOSURE EXCEPT SWITCHES LOCATED OUTDOORS SHALL BE NEMA 3R WEATHERPROOF (WP). NEMA 3R ENCLOSURE SHALL BE MANUFACTURED FROM GALVANIZED STEEL. ENCLOSURES SHALL HAVE A GRAY BAKED ENAMEL FINISH, ELECTRODEPOSITED, ON CLEANED, PHOSPHATIZED STEEL.

I. SWITCHES SHALL BE RATED FOR AC. FUSIBLE SWITCHES MUST ACCEPT CLASS R FUSES AND HAVE PROVISIONS TO REJECT FUSES EXCEPT CLASS R. THE UL LISTED SHORT CIRCUIT RATING OF THE SWITCHES SHALL BE 200,000 RMS SYMMETRICAL AMPERES WHEN CLASS R FUSES ARE USED.

J. NAMEPLATES SHALL INDICATE FUNCTION OF EACH DEVICE. NAMEPLATES SHALL BE LAMINATED PHENOLIC WITH A WHITE SURFACE AND BLACK CORE. USE 1/16" THICK MATERIAL FOR NAMEPLATES UP TO 2"x4" AND USE 1/8" THICK MATERIAL FOR LARGER SIZES. ALL NAMEPLATES SHALL BE FURNISHED AND INSTALLED BY GENERAL CONTRACTOR. GENERAL CONTRACTOR TO COORDINATE WITH THE LOCAL BUILDING AUTHORITY OR BUILDING INSPECTOR ON WHICH ITEMS SHOULD HAVE A NAMEPLATE.

K. FUSES SHALL BE BUSSMANN, SIZES AS NOTED ON DRAWINGS.

L. FUSES SHALL BE UL LISTED, CURRENT-LIMITING TYPE, MINIMUM 200,000 AMPS INTERRUPTING CAPACITY.

M. FUSES 1 AMP AND ABOVE SHALL BE BUSSMANN "LOW PEAK" RK-1. 250 VOLT FUSES SHALL BE USED ON 208/120 VOLT SYSTEMS.

N. CONTROL FUSES FOR MOTOR STARTERS, CONTACTORS, AND CONTROL PANEL TRANSFORMERS SHALL BE BUSSMANN FNQ-R SIZED AT 500% RATED CURRENT.

O. FURNISH SPARE FUSES TO THE TENANT IN THE FOLLOWING QUANTITIES: 10% OF TOTAL PROJECT QUANTITY (BUT NOT LESS THAN THREE (3) FOR EACH TYPE AND RATING OF FUSES).

P. PROVIDE A TYPED LIST OF SPARES FUSES.

Q. CIRCUIT BREAKERS SHALL BE QUICK-MAKE, QUICK-BREAK, THERMAL-MAGNETIC-TRIP (ENCLOSURE COMPENSATED), MOLDED CASE TYPE, UL LISTED. 15 AND 20 AMP SINGLE-POLE BREAKERS SHALL CARRY THE UL "SWD" MARKING. LINE SIDE TERMINALS SHALL BE BOLTED TO MAIN BUSBARS. BREAKER RATINGS SHALL BE PER DRAWINGS.

R. FURNISH AND INSTALL CIRCUIT BREAKER TYPE POWER, HEATING AND LIGHTING PANELBOARDS AS SHOWN ON THE DRAWINGS.

S. PANELBOARDS SHALL BE EXISTING TO REMAIN.

T. PANELBOARDS FOR USE ON 480Y/277V SYSTEMS SHALL HAVE A MINIMUM INTEGRATED EQUIPMENT SHORT CIRCUIT CURRENT RATING OF 18,000 AMPS RMS SYMMETRICAL. PANELBOARDS FOR USE ON 208Y/120V VOLT SYSTEMS SHALL HAVE A MINIMUM INTEGRATED EQUIPMENT SHORT CIRCUIT CURRENT RATING OF 10,000 AMPS RMS SYMMETRICAL. EXACT RATING SHALL BE DETERMINED BY AVAILABLE FAULT CURRENT FROM UTILITY. GENERAL CONTRACTOR SHALL FURNISH PANELS BASED ON UTILITY COMPANY INFORMATION.

U. PANELBOARD FRONT ASSEMBLY SHALL INCLUDE A HINGED DOOR WITH A FLUSH MOUNTED CYLINDER LOCK, TYPE SPRING LOADED LATCH. LOCKS SHALL BE KEYED ALIKE. DOOR SHALL INCLUDE A TYPED CIRCUIT DIRECTORY CARD MOUNTED IN A FRAME WITH A CLEAR PLASTIC PROTECTIVE COVER.

V. EACH PANELBOARD SHALL HAVE A FULL CAPACITY SOLID COPPER NEUTRAL SUBASSEMBLY.

W. EACH PANELBOARD SHALL INCLUDE A SOLID COPPER GROUND BUS SUBASSEMBLY, SIMILAR IN CONSTRUCTION TO THE NEUTRAL SUBASSEMBLY, FACTORY-MOUNTED AND BONDED TO THE BOX.

X. EACH PANELBOARD SHALL INCLUDE (WHERE SPECIFIED) A SOLID COPPER ISOLATED GROUND BUS SUBASSEMBLY, SIMILAR IN CONSTRUCTION TO THE NEUTRAL SUBASSEMBLY, FACTORY-SUPPLIED FIELD-INSTALLED.

Y. INTERIOR LABELING SHALL INCLUDE A CONNECTION DIAGRAM AND LABELS INDICATING PROPER TORQUE AND WIRE TYPES FOR MAIN INPUT CONNECTIONS AND BOTH LINE AND LOAD SIDE CIRCUIT BREAKER CONNECTIONS.

Z. TERMINALS FOR CONNECTION OF THE FEEDER TO THE PANELBOARD MAINS OR MAIN BREAKER SHALL BE UL RECOGNIZED AS SUITABLE FOR THE TYPE OF CONDUCTORS SPECIFIED.

AA. MANUFACTURER: GENERAL ELECTRIC TYPE AQ FOR 208Y/120V APPLICATIONS. GENERAL ELECTRIC TYPE AE FOR 480Y/277V APPLICATIONS. EQUAL EQUIPMENT BY SQUARE D, SIEMENS, OR CUTLER HAMMER WILL BE ACCEPTED.

AB. INSTALL EACH PANELBOARD WITH TOP CIRCUIT BREAKER AT 6'-0" ABOVE FLOOR, FLUSH- OR SURFACE-MOUNTED AS INDICATED ON THE DRAWINGS.

AC. NAMEPLATES AS SCHEDULED ON DRAWINGS SHALL INDICATE FUNCTION OF EACH DEVICE. NAMEPLATES SHALL BE LAMINATED PHENOLIC WITH A WHITE SURFACE AND BLACK CORE. USE 1/16" THICK MATERIAL FOR PLATES UP TO 2" X 4". FOR LARGER SIZES, USE 1/8" THICK MATERIAL.

AD. CONNECTIONS AT PANELS AND SWITCHES ARE TO BE MADE, SPLICES COMPLETE, FUSES IN PLACE, CIRCUITS CONTINUOUS FROM POINT OF SERVICE CONNECTION TO FINAL DESTINATIONS, COVERS AND PLATES INSTALLED, AND FINAL ELECTRICAL INSPECTION COMPLETED PRIOR TO THE TIME OF FINAL INSPECTION BY TENANT'S CONSTRUCTION MANAGER.

AE. TEST AND MAKE CORRECTIONS/ADJUSTMENTS FOR PHASE BALANCING.

26 05 33 RACEWAY AND BOXES FOR ELECTRICAL SYSTEMS

A. FURNISH AND INSTALL OUTLET BOXES FOR DEVICES AS REQUIRED, (RECEPTACLES, LIGHTING FIXTURES, MOTORS, SYSTEMS EQUIPMENT CONNECTIONS, SPECIAL OUTLETS AND AS OTHERWISE REQUIRED).

B. OUTLET BOXES SHALL BE GALVANIZED PRESSED STEEL OF THE STANDARD KNOCKOUT TYPE. NO ROUND OUTLET BOXES SHALL BE PERMITTED, EXCEPT AS SPECIFICALLY NOTED ON DRAWINGS. CONCEALED BOXES SHALL NOT BE LESS THAN 4" SQUARE AND 1-1/2" DEEP, WITH PLASTER RINGS.

C. OUTLET BOXES UPON WHICH LIGHTING FIXTURES ARE TO BE INSTALLED SHALL BE EQUIPPED WITH 3/8" FIXTURE STUDS.

D. RECESSED OUTLET BOXES SHALL BE STAMPED STEEL SUITABLE FOR THE DEVICE INSTALLED. SURFACE MOUNTED OUTLET BOXES SHALL BE CAST IRON SUITABLE FOR THE DEVICE INSTALLED.

E. EXTERIOR BOXES SHALL BE CAST RUST-RESISTING METAL WITH GASKETED COVERS.

F. 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. PROVIDE OUTLET BOXES WITH CADDY "QUICK-MOUNT BOX SUPPORT" TO MINIMIZE THE DEFLECTION THAT OCCURS WHEN PLUGGING/UNPLUGGING INTO THESE DEVICES.

G. ENCLOSE ELECTRICAL CONDUCTORS IN CONTINUOUS GROUNDED RACEWAY SYSTEM EXCEPT AS OTHERWISE NOTED (I.E. LOW-VOLTAGE PLENUM-RATED WIRE).

H. NO OTHER CIRCUITS ARE TO BE RUN IN SAME CONDUIT FEEDING ISOLATED GROUND RECEPTACLES.

I. RACEWAY AND ENCLOSURE SIZES SHALL BE AS SHOWN ON DRAWINGS OR, IF NOT SHOWN, SHALL BE SIZED TO COMPLY WITH N.E.C. FILL REQUIREMENTS FOR CONDUCTORS ENCLOSED.

J. PROVIDE PULL OR JUNCTION BOXES IN RACEWAY SYSTEMS AT MAXIMUM OF 100 FOOT INTERVALS AND WHERE REQUIRED TO AVOID EXCESSIVE NUMBER OF BENDS, TO FACILITATE WIRE PULLING OR TO PROVIDE ACCESS TO RACEWAY SYSTEM. BOXES AND COVERS SHALL BE GALVANIZED STEEL OF CODE GAUGE SIZE. TO THE EXTENT POSSIBLE, AVOID THE USE OF JUNCTION BOXES IN INACCESSIBLE LOCATIONS. THE USE OF JUNCTION BOXES ABOVE DRYWALL CEILINGS SHALL BE LIMITED TO LOCATIONS NEAR ACCESS FRAMES USED FOR DIFFUSERS AND RETURN AIR GRILLES OR ACCESS PANELS AS LOCATED ON PLANS. JUNCTION AND PULL BOXES MUST BE LABELED WITH CIRCUIT NUMBER IDENTIFICATION AND SYSTEM TYPE ON COVER.

K. RACEWAYS AND ENCLOSURES SHALL BE ADEQUATELY SUPPORTED FROM BUILDING STRUCTURE WITH APPROVED SUPPORT RODS AND/OR CLAMPS.

L. CONDUIT SHALL BE RIGID HEAVYWALL GALVANIZED STEEL OR THIN WALL EMT WHERE PERMITTED BY CODE OR AS HEREINAFTER SPECIFIED. PVC SCHEDULE 80 CONDUIT MAY BE USED UNDER FLOOR SLAB. ROMEX, BX OR AC, ETC., ARE NOT PERMITTED.

M. MINIMUM SIZE OF CONDUIT SHALL BE 1/2" FOR INDIVIDUAL LIGHTING FIXTURE CONNECTIONS OR TO INDIVIDUAL LIGHT SWITCHES (IF ACCEPTABLE BY THE LANDLORD AND LOCAL CODE OFFICIALS) AND 3/4" FOR OTHER LOCATIONS. IF HVAC CONTROL WIRING IS REQUIRED TO BE RUN IN CONDUIT, IT SHALL BE A MINIMUM OF 1/2", UNLESS NOTED OTHERWISE ON DRAWINGS. IN/UNDER FLOOR CONDUIT SHALL BE OF MINIMUM 1" SIZE.

N. EMT THIN WALL CONDUIT MAY BE USED INSIDE HOLLOW PARTITIONS, AND ABOVE SUSPENDED CEILINGS AND EXPOSED ABOVE 8'-0" ABOVE FINISHED FLOOR OR ABOVE PANELBOARDS. EMT CONDUIT MAY NOT BE USED BURIED IN EARTH OR FILL, IN OR UNDER CONCRETE FLOOR OR IN POURED CONCRETE CONSTRUCTION.

O. PVC CONDUIT USED UNDER FLOOR SLABS SHALL HAVE RIGID GALVANIZED STEEL ELLS AND METALLIC CONDUIT ABOVE FLOOR SLAB.

P. FLEXIBLE METAL CONDUIT (FMC) SHALL BE USED ONLY FOR ABOVE CEILING APPLICATIONS, CONNECTIONS INSIDE CASEWORK, AS THE FINAL CONNECTION TO RECESSED FIXTURES, MOTORS, AND ELECTRICAL EQUIPMENT THAT MAY GENERATE VIBRATION THROUGH THE CONDUIT SYSTEM. EMT SHALL BE USED FOR ALL CONNECTIONS TO PANELBOARDS AND RUN TO WIREWAY ABOVE CEILING WHERE FMC MAY BE USED. FMC SHALL BE UL APPROVED, AND BOTH THE CONDUIT AND FITTINGS SHALL BE LISTED FOR GROUNDING. FMC SHALL BE MINIMUM ONE-HALF INCH (1/2") ELECTRICAL TRADE SIZE. WHEN CONNECTED TO HARD CONDUIT, THE FMC MUST BE THE SAME SIZE AS THE HARD CONDUIT IT IS CONNECTED TO. AN EQUIPMENT GROUNDING CONDUCTOR MUST BE INSTALLED IN ALL RUNS OF FMC.

Q. LIQUID-TIGHT FLEXIBLE METAL CONDUIT (LFMC) AND LIQUID-TIGHT FITTINGS SHALL BE USED IN AREAS EXPOSED TO THE WEATHER OR EXCESSIVE MOISTURE AS THE FINAL CONNECTION TO MOTORS, AND ELECTRICAL EQUIPMENT THAT MAY GENERATE VIBRATION THROUGH THE CONDUIT SYSTEM. LFMC SHALL BE UL APPROVED, AND BOTH THE CONDUIT AND FITTINGS SHALL BE LISTED FOR GROUNDING. LFMC SHALL BE KEPT TO SIX FEET (6'-0") MAXIMUM LENGTH AND SHALL BE MINIMUM ONE-HALF INCH (1/2") ELECTRICAL TRADE SIZE. WHEN CONNECTED TO HARD CONDUIT, THE LFMC MUST BE THE SAME SIZE AS THE HARD CONDUIT IT IS CONNECTED TO. PROVIDE AN EQUIPMENT GROUNDING CONDUCTOR IN RUNS OF LFMC.

R. CONDUIT SHALL GENERALLY BE CONCEALED WHERE POSSIBLE. NO CONDUIT SHALL BE RUN IN SLAB, EXCEPT AS REQUIRED FOR FLOOR-MOUNTED DEVICES. PROVIDE PROPERLY LABELED PULL STRING IN EMPTY CONDUITS.

S. EXPOSED CONDUIT PERMITTED IN ELECTRIC ROOMS, AND SIMILAR UNFINISHED SPACES, OVERHEAD IN AREAS WITHOUT CEILINGS AND ELSEWHERE AT THE DISCRETION OF THE ARCHITECT.

T. CONDUIT FITTINGS SHALL BE GALVANIZED MALLEABLE IRON OR STEEL. CONNECTORS AND COUPLINGS SHALL BE THREADED OR CUPPED SET SCREW TYPE, CONCRETE TIGHT. CONDUIT BODIES SHALL BE MALLEABLE IRON, THREADED FOR HEAVYWALL CONDUIT AND CUPPED SET SCREW TYPE FOR EMT, WITH CADMIUM FINISH AND CADMIUM PLATED SHEET STEEL COVERS. SYNTHETIC RUBBER GASKETS SHALL BE USED UNDER BODY COVERS EXPOSED TO WEATHER. EMT CONNECTORS SHALL BE INSULATED THROAT TYPE.

U. INSTALL EXPANSION FITTINGS AT LOCATIONS WHERE CONDUITS CROSS BUILDING EXPANSION JOINTS OR TRAVERSE FROM ONE INDEPENDENT STRUCTURE TO ANOTHER. INSTALL WHEREVER CONDUITS TRAVERSE STRUCTURES HAVING SEPARATE FOUNDATIONS OR WHERE EXISTING BUILDINGS ARE JOINED TO A NEW STRUCTURE.

V. DURING ROUGHING-IN, CAP CONDUITS WHICH MAY BECOME FOULED WITH FOREIGN MATERIAL.

W. NO MORE THAN THREE (3) 90 DEGREE BENDS WILL BE ALLOWED IN ANY ONE CONDUIT RUN. WHERE MORE BENDS ARE NECESSARY IN ANY SINGLE RUN, A PULL BOX SHALL BE INSTALLED. ALL CONDUIT EXCEPT IN CONCRETE SLAB OR EARTH SHALL BE ROUTED PARALLEL OR PERPENDICULAR TO THE LINES OF THE BUILDING, AND NO OUT-OF-PLUMB OR DIAGONAL LINES WILL BE ACCEPTED.

26 09 23 LIGHTING CONTROLS

A. WHERE LIGHTING CONTACTORS ARE INDICATED ON THE DRAWINGS, THEY WILL BE FURNISHED AND INSTALLED BY THE GENERAL CONTRACTOR COMPLETE WITH CONDUIT. THE GENERAL CONTRACTOR WILL BE RESPONSIBLE TO INSTALL THE CONTACTORS AND PULL WIRES AS DETAILED ON THESE DRAWINGS AND CIRCUITED EXACTLY AS DIAGRAMMED ON THE ELECTRICAL DETAIL DRAWINGS. NO VARIATIONS TO THE CIRCUITING ARE ALLOWED.

26 22 00 LOW VOLTAGE TRANSFORMERS

A. TRANSFORMERS ARE EXISTING-TO-REMAIN UNLESS NOTED OTHERWISE - PROVIDE MODIFICATIONS AS INDICATED ON THE DRAWINGS.

B. ADJUST TAPS IN EACH TRANSFORMER TO PROVIDE A SECONDARY VOLTAGE OF 120 MINIMUM TO 125 VOLTS MAXIMUM ONCE THE FINAL CONNECTIONS HAVE BEEN MADE TO THE LOW VOLTAGE PANELBOARD(S). PROVIDE FINAL VOLTAGE REPORT TO TENANT'S CONSTRUCTION MANAGER AT TIME OF PUNCH-OUT.

(ELECTRICAL SPECIFICATIONS CONTINUED ON SHEET E5.1)

ELECTRICAL SPECIFICATIONS | A

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DESIGN TYPE: -

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