

GENERAL PROVISIONS

- 1. REQUIREMENTS SPECIFIED ON COVER SHEET, ALONG WITH ELECTRICAL SPECIFICATIONS AND ALL ITS SECTIONS, COMPRISE THE CONTRACTOR'S OBLIGATIONS FOR THE ELECTRICAL CONTRACT. DRAWINGS AND ALL THEIR REVISIONS UP TO THE BID SUBMITTAL DATE BECOME A BINDING PART OF THE CONTRACT. ALONG WITH THESE SPECIFICATIONS AS THOUGH THEY WERE ONE, AND ANYTHING IMPLIED BY THE SPECIFICATIONS SHALL BE INTERPRETED AS ALSO IMPLIED BY THE DRAWINGS AND VICE VERSA. PROVIDE NECESSARY ITEMS FOR A COMPLETE INSTALLATION OF ALL ELECTRICALLY OPERATED EQUIPMENT LISTED IN THE SPECIFICATIONS OR SHOWN ON THE CONTRACT DRAWINGS.
2. THE ARCHITECTURAL, STRUCTURAL, MECHANICAL, PLUMBING AND EQUIPMENT DRAWINGS AND SPECIFICATIONS ARE INCORPORATED INTO THIS CONTRACT. THIS CONTRACTOR SHALL VERIFY VOLTAGE, PHASE AND HORSEPOWER AND SHALL DRAWINGS AND SPECIFICATIONS AND BECOME THOROUGHLY FAMILIAR WITH THE PROVISIONS CONTAINED THEREIN. THE SUBMISSION OF HIS BID SHALL INDICATE SUCH KNOWLEDGE.
3. ELECTRICAL DRAWINGS ARE DIAGRAMMATIC. THEY ARE INTENDED TO SHOW THE APPROXIMATE LOCATIONS OF EQUIPMENT AND CONDUIT. DIMENSIONS GIVEN ON THE PLANS, IN FIGURES, SHALL TAKE PRECEDENCE OVER SCALED DIMENSIONS AND SHALL BE VIEWED IN THE FIELD. THE ELECTRICAL CONTRACTOR SHALL LAYOUT ALL EQUIPMENT ROOMS TO MAKE SURE THE EQUIPMENT AS PURCHASED, FITS IN THE ROOM OR SPACE SHOWN. EXACT LOCATION OF ALL EQUIPMENT SHALL BE VERIFIED IN THE FIELD AND ROUTING OF CONDUITS SHALL SUIT FIELD CONDITIONS.
4. UNTIL THE TIME OF INSTALLATION, THE ARCHITECT RESERVES THE RIGHT TO MAKE MINOR CHANGES IN THE LOCATION OF CONDUIT AND EQUIPMENT WITHOUT ADDITIONAL COST TO THE CONTRACTOR.
5. THE ELECTRICAL DRAWINGS AND SPECIFICATIONS ARE INTENDED TO SUPPLEMENT EACH OTHER. MATERIAL AND LABOR NECESSARY TO THE PROJECT SHALL BE FURNISHED AND INSTALLED EVEN THOUGH NOT SPECIFICALLY MENTIONED IN BOTH. LABOR AND/OR MATERIALS NEITHER SHOWN NOR SPECIFIED, BUT OBVIOUSLY NECESSARY FOR THE COMPLETION AND PROPER FUNCTIONING OF THE SYSTEM, SHALL BE FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR AT NO ADDITIONAL COST.
6. ARRANGE ALL EQUIPMENT SUBSTANTIALLY AS SHOWN ON THE DRAWINGS. MAKE DEVIATIONS ONLY WHERE NECESSARY TO AVOID INTERFERENCE. CHECK ALL EQUIPMENT SIZES AGAINST AVAILABLE SPACE PRIOR TO SHIPMENT TO AVOID INTERFERENCE.
7. EXAMINE THE WORK OF OTHER TRADES INsofar AS THEIR WORK COMES IN CONTACT WITH OR IS COVERED BY THIS WORK. IN NO CASE ATTACH TO, OR FINISH AGAINST ANY DEFECTIVE WORK OR INSTALL WORK IN A MANNER WHICH WILL PREVENT PROPER INSTALLATION OF THE WORK OF OTHER TRADES.
8. ELECTRICAL CONTRACTOR SHALL VERIFY WITH OTHER TRADES ALL ELECTRICAL CHARACTERISTICS OF EQUIPMENT INCLUDING ELECTRICAL CONNECTIONS. CONTRACTOR SHALL VERIFY VOLTAGE, PHASE AND HORSEPOWER AND SHALL NOTIFY ENGINEER OF ANY DISCREPANCIES PRIOR TO START OF WORK. ELECTRICAL CONTRACTOR SHALL PROVIDE DISCONNECTING MEANS AND OVERLOAD PROTECTION FOR ALL EQUIPMENT, UNLESS FURNISHED INTEGRAL WITH EQUIPMENT PACKAGE.
9. IT IS THE INTENT OF THESE DRAWINGS THAT THIS BE A COMPLETE ELECTRICAL JOB. ANY ERRORS OR OMISSIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO BIDDING THE JOB.
B. VISIT TO THE SITE
1. THIS CONTRACTOR SHALL VISIT THE SITE OF THE WORK AND FAMILIARIZE HIMSELF WITH ALL CONDITIONS AFFECTING HIS WORK. THE SUBMISSION OF HIS PROPOSAL SHALL INDICATE SUCH KNOWLEDGE. NO ADDITIONAL PAYMENT SHALL BE MADE ON CLAIMS THAT ARISE FROM A LACK OF KNOWLEDGE OF THE EXISTING CONDITIONS.
C. CODE AND PERMITS
1. INSTALLATION SHALL BE IN FULL ACCORDANCE WITH ALL CODES, RULES AND REGULATIONS OF MUNICIPAL, CITY, COUNTY, STATE AND PUBLIC UTILITIES AND ALL OTHER AUTHORITIES HAVING JURISDICTION OVER THE PREMISES.
2. COMPLY WITH ANY SPECIFICATION REQUIREMENTS THAT ARE IN EXCESS BUT NOT IN CONFLICT WITH CODE REQUIREMENTS.
3. THE CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS, PLAN REVIEWS AND CERTIFICATES OF INSPECTION IN CONNECTION WITH HIS WORK. REPAIRS TO BE MADE BY THE CONTRACTOR SHALL BE MADE THROUGH THE ARCHITECT. THE CONTRACT IS ALLOWED TO BE COMPLETED BY THE ARCHITECT IN DUPLICATE.
4. ELECTRICAL MATERIAL AND EQUIPMENT SHALL BEAR THE UL LABEL EXCEPT WHERE UL DOES NOT LABEL SUCH TYPES OF MATERIAL AND EQUIPMENT.
D. SHOP DRAWINGS SUBMITTALS
1. THE ELECTRICAL CONTRACTOR SHALL SUBMIT FIVE (5) SETS OF SHOP DRAWINGS. THE SHOP DRAWINGS OF THE FOLLOWING EQUIPMENT UNDER THE TRADES NUMBERING SYSTEM AND TITLES, SHALL BE SUBMITTED TO THE ARCHITECT BY THE OWNER AND THEN RESUBMITTED FOR FINAL APPROVAL, IF NECESSARY. SHOP DRAWINGS SHALL BE SUBMITTED FOR THE FOLLOWING ITEMS:
a. WIRING DEVICES
b. PANELBOARDS AND SAFETY SWITCHES INCLUDING FAULT CURRENT STUDY BASED ON EQUIPMENT BEING SUPPLIED.
c. CONTRACTORS, TIME SWITCHES AND PHOTOCCELL
d. LIGHTING FIXTURES
e. SUPERVISORY ALARM SYSTEM
2. ALL SUBMITTED SHOP DRAWINGS (MANUFACTURERS "EQUIPMENT DESCRIPTIVE SHEETS OR VENDORS" PREPARED DRAWINGS) SHALL HAVE THE GENERAL CONTRACTOR'S OR SUBCONTRACTOR'S "STAMP OF APPROVAL" INDICATING THAT THE ITEM SUBMITTED IS AS CALLED FOR ON THE PLANS AND SPECIFICATIONS, IS APPROVED BY THE GENERAL CONTRACTOR OR SUBCONTRACTOR, THE DATE OF APPROVAL AND INITIALED BY THE PERSON APPROVING THE SUBMITTAL AND THE NAME OF THE COMPANY SUBMITTING SAID EQUIPMENT FOR APPROVAL.
3. SUBMIT BOUND BROCHURES COMPLETE WITH A TABLE OF CONTENTS. LOOSE OR STAPLED TOGETHER SHEETS ARE NOT ACCEPTABLE. ANY SUBMITTALS NOT IN BROCHURE FORM OR NOT AS SPECIFIED SHALL BE RETURNED AT THE CONTRACTOR'S EXPENSE FOR RESUBMITTAL.
4. ALL DESCRIPTIVE LITERATURE SHALL BE SUBMITTED IN A THREE (3) HOLE BROCHURE WITH A COVER IDENTIFYING THE FOLLOWING:
a. NAME OF THE JOB
b. LOCATION OF THE JOB, ADDRESS, CITY AND STATE.
c. NAME AND ADDRESS OF THE COMPANY SUBMITTING THE BROCHURES.
d. DATE OF THE SUBMITTAL.
5. EVERY EFFORT SHALL BE MADE, IN CHECKING THE SHOP DRAWINGS, TO DETECT AND CORRECT ALL ERRORS, OMISSIONS AND INACCURACIES. FAILURE TO DO THIS WILL NOT RELIEVE THE ELECTRICAL CONTRACTOR OF THE RESPONSIBILITY FOR THE PROPER AND COMPLETE INSTALLATION IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
E. RECORD DRAWINGS
1. SUBMIT TO THE ARCHITECT ONE SET OF REPRODUCIBLE (MYLARS) ELECTRICAL DRAWINGS SHOWING THE RECORD CONDITIONS.
F. STANDARDS AND SUBSTITUTIONS
1. WHEREVER THE WORDS "APPROVED BY," "APPROVED EQUAL," "AS DIRECTED" OR SIMILAR PHRASES ARE USED IN THE FOLLOWING SPECIFICATIONS, THEY SHALL BE UNDERSTOOD TO REFER TO THE APPROVING AGENCY. THE NAME OR NAME OF ANY EQUIPMENT OR MATERIALS NAMED IN THIS SPECIFICATION (WHETHER OR NOT THE WORDS "OR APPROVED EQUAL" ARE USED) SHALL BE KNOWN AS THE "STANDARD."
2. THESE SPECIFICATIONS ESTABLISH QUALITY STANDARD OF MATERIALS AND EQUIPMENT TO BE PROVIDED. SPECIFIC ITEMS ARE IDENTIFIED BY MANUFACTURER, TRADE NAME OR CATALOG DESIGNATION. THIS CONTRACTOR SHALL SUBMIT HIS BASE BID PRICE BASED UPON STANDARD SPECIFIED EQUIPMENT DESCRIBED HEREIN AND AS DETAILED ON DRAWINGS AND ASSOCIATED CONTRACT DOCUMENTS. THESE SPECIFICATIONS ARE NOT TO BE CONSIDERED PROPRIETARY BY THE CONTRACTOR AND MANUFACTURERS AND MANUFACTURERS (OTHER THAN THOSE LISTED) FOR REVIEW BY THE ARCHITECT AND ENGINEER. NO MORE THAN TEN (10) DAYS BEFORE BIDS ARE SUBMITTED, IN ADDITION, SAMPLES OF PROPOSED EQUIPMENT MAY BE REQUIRED TO BE SUBMITTED TO THE ENGINEER FOR REVIEW NO LATER THAN TEN (10) DAYS BEFORE BIDS ARE SUBMITTED. MANUFACTURERS OF PRODUCTS ACCEPTED BY THE ARCHITECT AND ENGINEER WILL BE LISTED IN AN ADDENDUM TO THE SPECIFICATIONS AS AN ACCEPTABLE SUBSTITUTION EQUIPMENT ACCEPTED AS DETAILED BELOW AND SHALL BE SHOWN AS A SEPARATE ADD OR DEDUCT PRICE TO BE FACTORED INTO THE BASE BID PRICE BY THE ARCHITECT AND OWNER IF ACCEPTED.
3. SHOULD THE CONTRACTOR PROPOSE TO FURNISH MATERIALS AND EQUIPMENT OTHER THAN THOSE SPECIFIED OR APPROVED BY ADDENDUM, SUBMIT A WRITTEN REQUEST FOR SUBSTITUTIONS TO THE ARCHITECT AT THE BID OPENING. THE REQUEST SHALL BE AN ALTERNATE TO THE ORIGINAL BID; BE ACCOMPANIED WITH COMPLETE DESCRIPTIVE (MANUFACTURER, BRAND NAME, CATALOG NUMBER, ETC.) AND TECHNICAL DATA FOR ALL ITEMS. FAILURE BY THIS CONTRACTOR TO SUBMIT THE REQUISITE DOCUMENTATION DETAILED ABOVE SHALL BE UNDERSTOOD BY THE ARCHITECT AND ENGINEER TO INDICATE THAT SUBSTITUTE EQUIPMENT WILL NOT BE PRESENTED BY THE CONTRACTOR FOR CONSIDERATION. SUCH SUBSTITUTIONS WILL NOT BE CONSIDERED AFTER THE BID OPENING DATE AND DELAY OF PROJECT WILL NOT BE PERMITTED FOR FURTHER INSPECTION EVALUATION AFTER THIS DATE.
4. WHERE SUCH SUBSTITUTIONS ALTER THE DESIGN OR SPACE REQUIREMENTS INDICATED ON THE DRAWINGS, INCLUDE ALL ITEMS OF COST FOR THE REVISED DESIGN AND CONSTRUCTION INCLUDING COST OF ALL AFFECTED TRADES INVOLVED.
5. ACCEPTANCE OR REJECTION OF THE PROPOSED SUBSTITUTIONS SHALL BE SUBJECT TO THE APPROVAL OF THE ARCHITECT AND ENGINEER. IF REQUESTED, THE CONTRACTOR SHALL SUBMIT (AT HIS COST) INSPECTION SAMPLES OF BOTH THE SPECIFIED AND PROPOSED SUBSTITUTE ITEMS.
6. IN ALL CASES WHERE SUBSTITUTIONS ARE PERMITTED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY EXTRA COST OF EVALUATING THE QUALITY OF THE MATERIAL AND EQUIPMENT TO BE PROVIDED, INCLUDING ALL ARCH/ENGINEER FEES ASSOCIATED WITH CHANGE.
G. TESTING AND PLACING IN SERVICE
1. ANY MATERIAL OR EQUIPMENT FAILING A TEST SHALL BE REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE.
2. TESTS SHALL INCLUDE THE FOLLOWING:
a. MEASURE THE LOAD ON EACH PHASE OF THE MAIN SERVICE AND THE LOAD OF EVERY FEEDER UNDER FULL LOAD CONDITIONS.
b. MEASURE THE NO-LOAD AND FULL-LOAD VOLTAGES (PHASE TO PHASE, PHASE TO NEUTRAL AND PHASE TO GROUND) AT EACH SERVICE AND EACH SERVO-CONTROLLED SYSTEM, AND AT EACH PANELBOARD, EACH FEEDER AND EACH BRANCH CIRCUIT.
c. MEASURE THE SHORT-CIRCUIT RESISTANCE OF THE MAIN SERVICE GROUNDING ELECTRODE AND THE GROUND RESISTANCE OF EACH SEPARATE SERVED SYSTEM'S GROUNDING ELECTRODE.
d. MAKE INSULATION RESISTANCE TESTS ON ALL DRY TYPE TRANSFORMERS AND MOTORS.
H. INTERFERENCES
1. BEFORE THE INSTALLATION OF ANY OTHER TRADES, THE ELECTRICAL CONTRACTOR SHALL CAREFULLY ASCERTAIN THAT HIS WORK WILL NOT INTERFERE WITH THE ERECTION OF FINISH BEAMS, COLUMNS, PLASTERED WALLS OR OTHER STRUCTURAL OR ARCHITECTURAL MEMBERS AS SHOWN ON THE ARCHITECTURAL DRAWINGS. IF ANY WORK IS INSTALLED AND THE ARCHITECTURAL DESIGN CANNOT BE FOLLOWED, THIS CONTRACTOR SHALL, AT HIS OWN EXPENSE, MAKE ANY CHANGES IN HIS WORK AS DIRECTED BY THE ARCHITECT TO PERMIT THE COMPLETION OF THE ARCHITECTURAL WORK IN ACCORDANCE WITH DRAWINGS AND SPECIFICATIONS.
2. IT SHALL BE THE DUTY OF THE CONTRACTOR TO REPORT ANY INTERFERENCES BETWEEN HIS WORK AND THAT OF ANY OF THE OTHER CONTRACTORS AS SOON AS THEY ARE DISCOVERED. THE ARCHITECT SHALL DETERMINE WHICH EQUIPMENT WILL BE RELOCATED, REGARDLESS OF WHICH WAS INSTALLED FIRST. HIS DECISION WILL BE FINAL.

- I. QUALITY ASSURANCE
ALL PRODUCTS SHALL BE NEW AND OF THE TYPE AND QUALITY SPECIFIED. WHERE MATERIALS, EQUIPMENT, APPARATUS OR OTHER PRODUCTS ARE SPECIFIED BY MANUFACTURER, BRAND NAME, TYPE OF CATALOG NUMBER, SUCH DESIGNATION SHALL ESTABLISH THE STANDARDS OF THE DESIRED QUALITY AND STYLE. IT IS THE INTENT OF THESE SPECIFICATIONS TO ESTABLISH A STANDARD OF QUALITY OF MATERIALS AND EQUIPMENT INSTALLED.
BASIC ELECTRICAL MATERIALS AND METHODS
A. NAMEPLATES
1. GENERAL: FURNISH AND MOUNT ON EACH PANELBOARD, SWITCHBOARD (INCLUDING BRANCH SWITCHES), LARGE JUNCTION BOX, SAFETY SWITCH, STARTER, REMOTE CONTROL, PUSH BUTTON STATION, AND ALL SIMILAR CONTROLS, A NAMEPLATE DESCRIPTIVE OF THE EQUIPMENT OR EQUIPMENT CONTROLLED.
2. PROVIDE BLACK AND WHITE NAMEPLATES CONSTRUCTED FROM LAMINATED PHENOLIC WITH A WHITE CENTER CORE. LETTERS SHALL BE ENGRAVED IN THE PHENOLIC TO FORM WHITE LETTERS 3/8" HIGH. FASTEN THE NAMEPLATES WITH SCREWS AND AN ADHESIVE TYPE FASTENER.
B. MOUNTING ACCESSORIES
1. THIS CONTRACTOR SHALL FURNISH AND INSTALL ALL ANGLE IRON, CHANNEL IRON, ROOS, SUPPORTS, HANGERS, CONCRETE OR PLYWOOD REQUIRED TO INSTALL, MOUNT AND SUPPORT ANY ELECTRICAL EQUIPMENT OR DEVICE CALLED FOR ON THE PLANS.
2. SUPPORTING MATERIAL SHALL BE COMPLETE WITH HANGERS, CONNECTORS, BOLTS, CLAMPS AND NECESSARY ACCESSORIES TO MAKE A COMPLETE INSTALLATION. SUPPORTING MATERIAL SHALL BE GALVANIZED, PAINTED OR OTHERWISE SUITABLY FINISHED. PRODUCTS BY BRINKLEY, STEEL CITY OR RACO WILL BE ACCEPTABLE.
3. ALL SURFACE-MOUNTED EQUIPMENT ON BLOCK WALLS SHALL BE MOUNTED ON 3/4" PLYWOOD BACKBOARD, ALL FLOOR-MOUNTED EQUIPMENT SHALL BE INSTALLED ON A 4" HIGH CONCRETE HOUSEKEEPING PAD.
C. EXECUTION
1. THE ELECTRICAL WORK FOR CONSTRUCTION PROPOSED SHALL CONFORM TO ALL FEDERAL (OSHA), STATE, ALL SPECIFIC SAFETY REQUIREMENTS AND THE REQUIREMENTS OF THE CURRENT EDITION OF THE NEC.
2. CHECK THE HVAC AND PLUMBING SPECIFICATIONS FOR ELECTRICAL REQUIREMENTS AND INCLUDE THE SAME IN THE CONTRACT COST.
3. EQUIPMENT CONNECTIONS, STARTERS, DISCONNECT SWITCHES, CONTROL TRANSFORMERS AND PUSHBUTTON STATIONS FOR THE EQUIPMENT FURNISHED BY THE OWNER OR UNDER A SEPARATE CONTRACT SHALL BE INSTALLED AND CONNECTED UNDER THIS DIVISION, AS INDICATED ON THE CONTRACT DRAWINGS.
4. ALL CUTTING, PATCHING, EXCAVATING, BACKFILLING AND CONCRETE WORK RELATED TO THIS CONTRACT WILL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR. THIS CONTRACTOR SHALL ASSUME THE RESPONSIBILITY OF PROVIDING THE SLEEVES, CHASES AND OPENINGS NECESSARY FOR THE ELECTRICAL INSTALLATION AND FOR THEIR REPAIR IN AN ACCEPTABLE MANNER, AS DETERMINED BY THE ARCHITECT. ALL HOLES SHALL BE CORE-DRILLED. PROVIDE FIRE STOP IN ALL OPENINGS CREATED THROUGH FIRE-RATED WALLS, FLOORS OR CEILINGS.
5. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL REQUIRED ACCESS PANELS NECESSARY FOR HIS WORK, COORDINATE WITH ARCHITECT PRIOR TO INSTALLATION.
D. MATERIALS AND WORKMANSHIP
1. ALL WORK SHALL BE INSTALLED IN A PRACTICAL AND WORKMANLIKE MANNER, BY MECHANICS SKILLED IN THE SEVERAL TRADES NECESSARY.
2. ALL MATERIALS SHALL BE NEW AND FREE FROM DEFECTS AND SHALL BE THE BEST OF THEIR SEVERAL KINDS UNLESS SPECIFIED OR INDICATED ON THE DRAWINGS TO THE CONTRARY.
3. DURING EACH PHASE AND AT THE COMPLETION OF THE CONSTRUCTION, THIS CONTRACTOR SHALL REMOVE ALL DEBRIS AND EXCESS MATERIALS CAUSED BY HIS WORK. HE SHALL LEAVE THE AREA OF OPERATION BROOM CLEAN.
4. ALL ELECTRICAL EQUIPMENT SHALL BEAR THE UNDERWRITERS LABORATORIES LABEL OR ETL LABEL.
5. THIS CONTRACTOR SHALL GUARANTEE HIS WORKMANSHIP AND MATERIAL (LAMPS EXCEPTED) FOR A PERIOD OF ONE YEAR FROM THE DATE OF BUILDING OPENING AND LEAVE HIS WORK IN PERFECT ORDER AT THE COMPLETION. SHOULD DEFECTS DEVELOP WITHIN THE GUARANTEE PERIOD, THE CONTRACTOR SHALL, UPON NOTICE OF THE SAME, REMEDY THE DEFECTS AND HAVE ALL DAMAGES TO OTHER WORK OR FURNISHINGS CAUSED BY THE REPAIRS CORRECTED AT HIS EXPENSE TO THE CONDITION BEFORE SUCH DAMAGE.
E. SCOPE OF WORK
1. THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIAL, STORAGE, UNPACKING AND PLACEMENT; TO INCLUDE BUT NOT LIMITED TO, THE FOLLOWING ITEMS:
a. EMERGENCY LIGHTING AND POWER.
b. COMPLETE POWER AND LIGHTING DISTRIBUTION SYSTEM INCLUDING ALL PANELS AND FEEDERS.
c. COMPLETE BRANCH CIRCUIT WIRING SYSTEM.
d. COMPLETE POWER WIRING FOR ALL AIR CONDITIONING EQUIPMENT, PLUMBING SYSTEM, HEATING EQUIPMENT, VENTILATING AND EXHAUST EQUIPMENT.
e. COMPLETE LIGHTING FIXTURE INSTALLATION, INCLUDING ALL INCANDESCENT, FLUORESCENT AND HID LAMPS.
f. COMPLETE TELEPHONE AND COMMUNICATION CONDUIT SYSTEM INCLUDING BOXES, PLATES, JACKS, ETC., AS SPECIFIED, SHOWN ON THE DRAWINGS AND REQUIRED BY THE LOCAL TELEPHONE COMPANY AND/OR OWNER.
g. TEMPORARY ELECTRICAL POWER AND LIGHTING AS REQUIRED FOR CONSTRUCTION.
h. TESTING OF ALL CABLES AND CIRCUIT WIRING AFTER INSTALLATION.
i. EXIT LIGHT SYSTEM.
j. WIRING DEVICES AND FLOOR BOXES.
k. SIGHTING CONTROLS.
l. GROUNDING OF THE ELECTRICAL SYSTEM.
m. SUPERVISORY ALARM SYSTEM.
n. TELEPHONE AND ELECTRIC SERVICES.
o. UNDERGROUND WARNING TAPE: PERMANENT, BRIGHT-COLORED, CONTINUOUS-PRINTED, TAPE NOT LESS THAN 8 INCHES WIDE BY 4 MILS THICK WITH EMBEDDED CONTINUOUS METALLIC WIRE OR CORE AND PRINTED LEGEND THAT INDICATES TYPE OF UNDERGROUND LINE.
p. IDENTIFY RACEWAYS AND CABLES WITH COLOR BANDING AS FOLLOWS:
2. COLORS:
a. FIRE ALARM SYSTEM: RED
b. SECURITY SYSTEM: BLUE AND YELLOW.
c. TELECOMMUNICATION SYSTEM: GREEN AND YELLOW.
F. TEMPORARY SERVICE
1. THE ELECTRICAL CONTRACTOR SHALL FURNISH, INSTALL AND REMOVE AS REQUIRED ALL TEMPORARY POWER AND TEMPORARY LIGHTING IN ALL AREAS AND INDIVIDUAL ROOMS WHEN NEEDED TO PERFORM INDIVIDUAL TRADES IN THE PERFORMANCE OF HIS WORK. THIS CONTRACTOR SHALL PROVIDE A MINIMUM OF TWENTY (20) FOOT CIRCLES OF ILLUMINATION FOR TEMPORARY LIGHTING. ANY ADDITIONAL LIGHTING REQUIRED BY INDIVIDUAL TRADES SHALL BE PROVIDED BY THE INDIVIDUAL TRADES INCLUDING POWER FOR THE LIGHTING. ELECTRICAL WORK FOR CONSTRUCTION PURPOSES SHALL CONFORM TO ALL FEDERAL (OSHA), STATE AND LOCAL REQUIREMENTS, AS WELL AS THE REQUIREMENTS OF THE NATIONAL ELECTRICAL SAFETY CODE. THE ELECTRICAL CONTRACTOR SHALL OBTAIN AND COMPLY FOR ALL REQUIRED APPLICATIONS, PERMITS AND INSPECTIONS PERTAINING TO THIS WORK. THIS SHALL BE INCLUDED IN THE CONTRACTOR'S PRICE.
2. NEW LIGHT FIXTURES SHALL NOT BE USED FOR TEMPORARY LIGHTING.
GROUNDING AND BONDING
A. GROUNDING EQUIPMENT PER N.E.C.
B. ALL CONDUITS SHALL CONTAIN A CODE-SIZED GROUND WIRE SIZED PER N.E.C. IN ADDITION TO THE CONDUCTORS SHOWN ON THE PLANS. WHERE CIRCUIT CONDUCTORS ARE INCREASED IN SIZE FOR VOLTAGE DROP, THE GROUND WIRE SIZE SHALL BE INCREASED PROPORTIONATELY.
C. WHERE AN ISOLATED, INSULATED GROUND IS REQUIRED A SEPARATE ISOLATED GREEN GROUND IN ADDITION TO THE EQUIPMENT GROUND WIRE SHALL BE RUN FROM THE PANEL ISOLATED GROUND BUS TO THE ISOLATED GROUND CONNECTION OF THE DEVICE SERVED. IN NO CASE SHALL THE SYSTEM GROUND (GREEN WIRE AND ASSOCIATED OUTLET BOXES, CONDUIT AND BUILDING STEEL) BE ALLOWED TO CONTACT THE ISOLATED GROUND (GREEN WIRE WITH WHITE STRIPE).
D. AFTER INSTALLING GROUNDING SYSTEM BUT BEFORE PERMANENT ELECTRICAL CIRCUITRY HAS BEEN ENERGIZED, TEST FOR COMPLIANCE WITH REQUIREMENTS.

- WIRING DEVICES
A. WIRING DEVICE COLOR SHALL BE WHITE, UNLESS OTHERWISE INDICATED.
B. PROVIDE TOTALLY ENCLOSED, 20 AMPERE, 120/277 VOLT, QUIET A/C GENERAL USE SNAP SWITCHES.
C. SWITCHES SHALL BE SPECIFICATION GRADE AS MANUFACTURED BY HUBBELL, P&S, OR LEVITON.
D. PROVIDE NEMA CONFIGURATION 5-20R DUPLEX 125 VOLT GROUNDING TYPE RECEPTACLES RATED FOR 20 AMPERES UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
E. RECEPTACLES SHALL BE SPECIFICATION GRADE AS MANUFACTURED BY HUBBELL, P&S OR LEVITON.
F. RECEPTACLES REQUIRING AMPERAGES, VOLTAGES OR CONFIGURATIONS DIFFERENT FROM THE DUPLEX CONVENIENCE RECEPTACLES ABOVE SHALL BE AS INDICATED ON THE DRAWINGS.
G. PROVIDE OTHER RECEPTACLES OF A QUALITY, MATERIAL AND WORKMANSHIP EQUAL TO THAT SPECIFIED FOR DUPLEX CONVENIENCE RECEPTACLES.
H. PROVIDE COVER OR DEVICE PLATES FOR OUTLET BOXES AS FOLLOWS UNLESS OTHERWISE NOTED:
1. FINISHED AREAS: THERMOPLASTIC - COLOR TO MATCH DEVICE.
2. UNFINISHED AREAS: ZINC COATED SHEET METAL, ALUMINUM, OR CAST METAL, AS APPROPRIATE FOR THE TYPE OF BOX.
3. EXTERIOR AREAS: COPPER FREE ALUMINUM WITH GRAY, POWDER EPOXY FINISH GASKET, WEATHERPROOF, CROUSE-HINDS "WURO" FOR DUPLEX RECEPTACLES AND WURS FOR SINGLE RECEPTACLES OR EQUAL.
4. TELEPHONE, COMMUNICATION, AND SIGNAL OUTLET PLATES, SHALL MATCH THOSE USED FOR RECEPTACLES AND SWITCHES. ALL OUTLET AND/OR JUNCTION BOXES SHALL BE COMPLETE WITH A COVER PLATE IN THIS CONTRACTOR.
5. WHERE DEVICES ARE GANGED, THEY SHALL BE INSTALLED UNDER A COMMON COVERPLATE.
I. LOCATE THE SWITCHES APPROXIMATELY 4"-6" ABOVE THE FINISHED FLOOR ELEVATION OR NEAREST BLOCK COURSE (WITHIN A.D.A. REQUIREMENTS), UNLESS OTHERWISE INDICATED. THE LONG DIMENSION OF THE SWITCHES SHALL BE VERTICAL.
J. LOCATE RECEPTACLES APPROXIMATELY 1"-6" ABOVE THE FINISHED FLOOR ELEVATION OR NEAREST BLOCK COURSE (WITHIN A.D.A. REQUIREMENTS), UNLESS NOTED OTHERWISE. THE LONG DIMENSION OF RECEPTACLES SHALL BE VERTICAL.
SAFETY SWITCHES
A. SAFETY SWITCHES SHALL BE THE ENCLOSED LEADY-DUTY TYPE (TYPE HD) WHICH QUICK-MAKE, QUICK-BREAK MECHANISM AND EXTERNAL PAD FOR SINGLE OPERATOR HANDLE.
B. SAFETY SWITCHES SHALL BE RATED FOR 600 VOLTS AND 100 AMPERES.
C. SAFETY SWITCHES SHALL BE FUSIBLE OR NON-FUSIBLE, 2, 3, OR 4 POLE AS INDICATED ON THE DRAWINGS.
D. SAFETY SWITCHES SHALL BE SINGLE THROW UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
E. SAFETY SWITCHES SHALL BE NEMA 1 INDOORS AND NEMA 3B INDOORS UNLESS OTHERWISE INDICATED ON DRAWINGS.
F. MANUFACTURER SHALL BE SQUARE D, SIEMENS, OR CUTLER-HAMMER. ALL SAFETY SWITCHES SHALL BE BY THE MANUFACTURER.
G. MOUNT THE SAFETY SWITCHES SECURELY BETWEEN 3' & 6' LEVELS ABOVE THE FLOOR UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
H. SWITCHES ON BLOCK WALLS SHALL BE MOUNTED ON A 3/4" PLYWOOD BACKBOARD, WHERE LOCATED INDOORS.
DISTRIBUTION AND PANELBOARDS
A. PANELBOARDS
1. MAIN DISTRIBUTION PANEL (A) IS EXISTING TO REMAIN.
2. NEW PANELBOARDS SHALL BE LABELED WITH PHENOLIC NAMEPLATES INSCRIBED AS INDICATED ON THE DRAWINGS. PROVIDE LABELS AFFIXED TO PANELBOARDS AS REQUIRED BY NFPA 70E.
3. NEW PANELBOARDS SHALL BE ENCLOSED DEAD FRONT SAFETY TYPE WITH FEATURES AND RATINGS AS SCHEDULED ON THE DRAWINGS.
4. PANELS KNOWN AS "LOAD CENTERS" ARE UNACCEPTABLE.
5. MOLDED CASE CIRCUIT BREAKERS SHALL BE AS SCHEDULED ON THE DRAWINGS AND SPECIFIED IN THIS DIVISION.
6. ALL BUS BARS SHALL BE RECTANGULAR TIN PLATED ALUMINUM.
7. SPACE, WHERE SHOWN IN PANEL SCHEDULES, DESIGNATES SPACE FOR FUTURE PROTECTIVE DEVICES AND SHALL INCLUDE BUS AND SUPPORT.
8. INSTALL NEW CABINETS SO THAT CENTER OF THE TOP BREAKER DOES NOT EXCEED 6'-6" ABOVE THE FINISHED FLOOR.
9. ENTRIES ON DIRECTORY CARDS SHALL BE TYPED, COMPLETE AND ACCURATE.
10. ALL BOLTED CONNECTIONS SHALL BE TORQUED IN ACCORDANCE WITH MANUFACTURER'S STANDARDS.
11. ELECTRICAL CONTRACTOR SHALL ARRANGE CIRCUITS AS NEAR AS POSSIBLE TO CIRCUIT NUMBERS ON THE DRAWINGS. AT COMPLETION OF JOB, ELECTRICAL CONTRACTOR SHALL TAKE CURRENT READING CHECKS OF RESPECTIVE PHASES. A MINIMUM OF CIRCUIT CONNECTIONS SHALL BE REARRANGED TO BALANCE, AS CLOSELY AS POSSIBLE, THE LOAD IN THE PANEL.
12. ALL BREAKERS SHALL BE BOLT-ON TYPE.
13. PROVIDE (3) SPARE 1" CONDUITS INTO ACCESSIBLE CEILING SPACE WHERE PANELS ARE FLUSH-MOUNTED. PROVIDE REMOVABLE CAP OR PLUG AT CONDUIT AND ABOVE CEILING.
14. MANUFACTURER SHALL BE GE AS THE PREFERRED SWITCHGEAR. NESCO SHALL BE THE APPROVED VENDOR FOR GE SWITCHGEAR.
B. JUNCTION BOXES
1. USE SHEET STEEL BOXES, ZINC COATED OR CADMIUM PLATED, FOR CONCEALED INTERIOR WORK.
2. USE CAST BOXES, ZINC-CADMIUM FINISH MALLEABLE IRON, FOR EXPOSED INTERIOR WORK, AND FOR EXPOSED OR CONCEALED WORK IN WET, DAMP OR EXTERIOR LOCATIONS. CAST BOXES SHALL BE SERIES FD BY CROUSE HINDS OR APPLETON.
3. WALL BOX SIZES (MINIMUM) SHALL BE 4" SQUARE x 2-1/2" DEEP WHERE WALL CONSTRUCTION PERMITS. WHERE WALL CONSTRUCTION DICTATES, THE WIDTH MAY BE REDUCED TO 2-1/8" OR 1-1/2" UNDER SPECIAL CONDITIONS.
4. FIXTURE OUTLETS IN CEILINGS (MINIMUM) SHALL BE 4" OCTAGONAL x 1-1/2" DEEP (4-11/16" OCTAGONAL x 2-1/2" DEEP WHERE REQUIRED TO ACCOMMODATE LARGER CONDUIT OR LARGER NUMBER OF WIRES).
5. GANG BOXES SHALL BE ONE PIECE (MINIMUM) 2-1/8" DEEP.
6. PROVIDE CAST IRON, CONCRETE-TIGHT FLOOR BOXES WITH ADJUSTABLE COVERS SET FLUSH AND LEVEL WITH THE FINISHED FLOOR, WITH OUTLETS AS INDICATED ON THE DRAWINGS. PROVIDE HUBBELL #B-2400, 4200, OR 4300 SERIES BOXES WITH LEVELING SCREWS. FLUSH TYPE COVERS AND OPENINGS TO SERVE OUTLETS USED. FURNISH FLUSH CAPS FOR CLOSING OFF BOX WHEN NOT IN USE.
7. FLUSH MOUNT BOXES IN ALL FINISHED WALLS. INSTALL THE PLASTER RINGS IN DRYWALLED PLASTERED WALLS AND RASSED COVERS AS REQUIRED IN OTHER FINISHES SO THAT THE COVER PLATES FIT TIGHTLY AGAINST BOXES OR RINGS, 3/16" MAXIMUM GAPS ARE ALLOWED FOR NONCOMBUSTIBLE WALLS.
8. ADJUST LOCATION OF OUTLETS IN MASONRY OR TILE CONSTRUCTION TO OCCUR IN THE NEAREST JOINT TO THE HEIGHT SPECIFIED. HEIGHTS SHALL MEET A.D.A. REQUIREMENTS.
9. SUPPORT ALL BOXES TO MAINTAIN PROPER ALIGNMENT AND RIGIDITY.
10. LEG BOXES OF ALL FOREIGN MAKE PRIOR TO THE INSTALLATION OR WIRING OF DEVICES.
11. MOUNTING HEIGHTS ON THE DRAWINGS ARE TO THE CENTERLINE OF THE BOX UNLESS OTHERWISE NOTED.

- TELEPHONE SYSTEM
ELECTRICAL CONTRACTOR TO PROVIDE TELEPHONE SERVICE CONDUIT OR DUCT TO TELEPHONE BOARD AS SHOWN ON PLANS. SERVICE CONDUIT SIZE AND QUANTITY SHALL BE AS DETERMINED BY LOCAL TELEPHONE COMPANY.
THIS CONTRACTOR SHALL PROVIDE AND INSTALL ALL CONDUITS WITH PULL WIRES, OUTLET BOXES, METAL CABINETS AND PULL BOXES. PROVIDE A COMPLETE CONDUIT SYSTEM WITH PULL WIRE AS INDICATED ON DRAWINGS.
PULL WIRES SHALL BE STANDARD TELEPHONE TYPE WITH JACK. PROVIDE PLATES OF SAME MATERIAL AND FINISH AS SPECIFIED FOR RECEPTACLES. WALL PHONE PLATES SHALL HAVE MOUNTING STUDS.
PROVIDE PLYWOOD TERMINAL BOARD AS SHOWN ON DRAWINGS.
A CONDUIT RUN SHALL HAVE NOT MORE THAN THREE (3) BENDS IN A RUN BETWEEN OUTLET BOXES OR BETWEEN OUTLET BOX AND A METAL CABINET OR PULL BOX. WHEN A RUN REQUIRES MORE THAN THREE (3) BENDS, A PULL BOX OF SUITABLE SIZE SHALL BE PLACED IN SUITABLE LOCATION TO MEET THE ABOVE CONDITIONS.
ELECTRONIC DETECTION SYSTEM
CVS/PHARMACY HAS ENTERED INTO A NATIONAL ACCOUNT AGREEMENT WITH CHECKPOINT FOR FURNISHING THE ELECTRONIC DETECTION SYSTEM SPECIFIED IN THIS SECTION. COMPLETE INSTALLATION SHALL BE BY MANUFACTURER. GENERAL CONTRACTOR IS RESPONSIBLE TO REQUEST PRICING QUOTATIONS, PLACING ORDERS, AND FURTHER INFORMATION, PLEASE CALL CHECKPOINT AT (401) 770-3920.
BURGLAR ALARM SYSTEM
CVS/PHARMACY HAS ENTERED INTO A NATIONAL ACCOUNT AGREEMENT WITH THE MANUFACTURERS LISTED ON THE CVS SUPPLIER TAKEOFF LIST FOR THE BURGLAR ALARM SYSTEM SPECIFIED IN THIS SECTION. COMPLETE INSTALLATION SHALL BE BY THE CONTRACTOR. THE GENERAL CONTRACTOR IS RESPONSIBLE TO REQUEST PRICING QUOTATIONS, PLACING ORDERS, AND FURTHER INFORMATION, PLEASE CALL THE APPROPRIATE MANUFACTURER FOR THE AREA THE STORE IS LOCATED IN, AVAILABLE VIA RESOURCE.
MUSIC AND PAGING SYSTEM
CVS/PHARMACY HAS ENTERED INTO A NATIONAL ACCOUNT AGREEMENT WITH MUZZAK FOR FURNISHING THE PUBLIC ADDRESS AND MUSIC SYSTEM SPECIFIED IN THIS SECTION. GENERAL CONTRACTOR IS RESPONSIBLE TO REQUEST PRICING QUOTATIONS, PLACING ORDERS, AND FURTHER INFORMATION, CALL GARY STUTLER OF MUZZAK AT (803) 524-8148. CONTRACTOR SHALL ENTER INTO A CONTRACT WITH MUZZAK MUSIC FOR COMPLETE INSTALLATION OF THE PUBLIC ADDRESS AND MUSIC SYSTEM.
FIRE ALARM
IF FIRE ALARM SYSTEM IS REQUIRED FOR THIS STORE'S LOCATION DUE TO COMPLIANCE WITH LOCAL REQUIREMENTS; COMPLY WITH ALL APPLICABLE BUILDING CODES, ACCESSIBILITY STANDARDS, LOCAL ORDINANCES AND REGULATIONS, AND REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION. REFER TO NATIONAL ACCOUNT VENDOR LISTED FOR SYSTEM.
CVS/PHARMACY HAS ENTERED INTO A NATIONAL ACCOUNT AGREEMENT WITH THE MANUFACTURERS LISTED ON THE CVS SUPPLIER TAKEOFF LIST TO FURNISH AND INSTALL THE FIRE ALARM SYSTEM SPECIFIED IN THIS SECTION. COMPLETE INSTALLATION SHALL BE BY THE NATIONAL ACCOUNT SUPPLIER. THE GENERAL CONTRACTOR IS RESPONSIBLE TO REQUEST PRICING QUOTATIONS, PLACING ORDERS, AND FURTHER INFORMATION, PLEASE CALL THE APPROPRIATE MANUFACTURER FOR THE AREA THE STORE IS LOCATED IN, AVAILABLE VIA RESOURCE.
REVISIONS:
CVS PROJECT MANAGER: TS
DRAWING BY: JAC
DATE: 10-23-2017
JOB NUMBER: 121-7815-08
TITLE: ELECTRICAL SPECIFICATIONS
SHEET NUMBER: E1
COMMENTS:

CVS pharmacy logo
STORE NUMBER: 5553
101 BEN SAWYER BOULEVARD
MT. PLEASANT, SC 29464
PROJECT TYPE ADA and THH
DEAL TYPE
CS PROJECT NUMBER: 106857
ARCHITECT OF RECORD: LITTLE
CONSULTANT: SHULTZ ENGINEERING GROUP, PC
DEVELOPER: CVS pharmacy
SEAL: SOUTH CAROLINA PROFESSIONAL ENGINEER No. 24000
REVISIONS:
CVS PROJECT MANAGER: TS
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