

ELECTRICAL ABBREVIATIONS

A	AMPERES
AC	ALTERNATING CURRENT
ACC	AIR CONDITIONING
AFCI	ARC FAULT CIRCUIT INTERRUPTER
AJH	AUTHORITY HAVING JURISDICTION
AHU	AIR HANDLING UNIT
AIC	AMPERE INTERRUPTING CAPACITY
AL	ALUMINUM
ATS	AUTOMATIC TRANSFER SWITCH
ATC	AUTOMATIC TEMPERATURE CONTROL
AWG	AMERICAN WIRE GAUGE
BTU	BRITISH THERMAL UNITS
C	CONDUIT
CB	CRITICAL BRANCH
CB	CIRCUIT BREAKER
CBM	CERTIFIED BALLAST MANUFACTURER
CCTV	CLOSED CIRCUIT TELEVISION
CD	CANDELA
CKT	CIRCUIT
CLF	CURRENT LIMITING FUSE
CPT	CONTROL POWER TRANSFORMER
CT	CURRENT TRANSFORMER
CU	COPPER
DC	DECIBEL
DC	DIRECT CURRENT
DIA	DIAMETER
EB	EQUIPMENT BRANCH
EC	ELECTRICAL CONTRACTOR
EF	EXHAUST FAN
ELEV	ELEVATOR
EM	EMERGENCY
EMT	ELECTRICAL METALLIC TUBING
EP	EMERGENCY POWER
EPO	EMERGENCY POWER OFF
ERMS	ENERGY REDUCING MAINTENANCE SWITCHING
EWC	ELECTRIC WATER COOLER
EXIST	EXISTING
F	FUSE
FA	FIRE ALARM
FAA	FIRE ALARM ANNUNCIATOR
FAAP	FIRE ALARM ANNUNCIATOR PANEL
FACP	FIRE ALARM CONTROL PANEL
FARP	FIRE ALARM REMOTE PANEL
FLA	FULL LOAD AMPERES
FMC	FLEXIBLE METAL CONDUIT
GFI, GFI	GROUND FAULT CIRCUIT INTERRUPTER
GFP	GROUND FAULT PROTECTION
GND	GROUND
GRMC	GALVANIZED RIGID METAL CONDUIT
HOA	HAND-OFF-AUTOMATIC SWITCH
HVAC	HEATING, VENTILATION, AIR CONDITIONING
HZ	HERTZ
IG	ISOLATED GROUND
IMC	INTERMEDIATE METAL CONDUIT
INT	INTERLOCK
KMIL	THOUSAND CIRCULAR MILS
KVA	KILOVOLT-AMPERES
KVAR	KILOVOLT-AMPERES REACTIVE
LFMC	LIQUID TIGHT FLEXIBLE METAL CONDUIT
LTG	LIGHTING
LRA	LOCK ROTOR AMPS
MC	METAL CLAD CABLE
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MCP	MOTOR CIRCUIT PROTECTION
MI	MINERAL INSULATED
MLO	MAIN LUGS ONLY
MOCP	MAXIMUM OVER CURRENT PROTECTION
MW	MEGAWATT
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NL	NIGHT LIGHT
NO	NORMALLY OPEN OR NUMBER
P	POLE
PB	PUSH BUTTON OR PANIC BUTTON OR PULL BOX
PNL	PANEL
PWR	POWER
PT	POTENTIAL TRANSFORMER
QTY	QUANTITY
REQD	REQUIRED
RMC	RIGID METAL CONDUIT
RMS	ROOT MEAN SQUARED
RNC	RIGID NONMETALLIC CONDUIT
RTS	REMOTE TEST STATION
RTU	ROOF TOP UNIT
SP	SPARE
ST	SHUNT TRIP
SW	SWITCH
SYM	SYMMETRICAL
TEL	TELEPHONE
TGB	TELECOMMUNICATIONS GROUNDING BUS BAR
TMCB	THERMAL MAGNETIC CIRCUIT BREAKER
UG	UNDER GROUND
UL	UNDERWRITERS LABORATORY
V	VOLT
VA	VOLT-AMPERE
VT	VOLTAGE TRANSFORMER
W	WATT OR WIRE
WH	WATER HEATER
WP	WEATHER PROOF
XF	TRANSFORMER

GENERAL ELECTRICAL NOTES

GENERAL REQUIREMENTS

- ALL WORK ON THIS PROJECT SHALL CONFORM TO THE LATEST ADOPTED EDITION OF THE NATIONAL ELECTRICAL CODE (NEC) AND ALL APPLICABLE LOCAL CODES AND ORDINANCES. IF A CONFLICT IS FOUND TO EXIST BETWEEN APPLICABLE CODES THE MORE STRINGENT SHALL APPLY. THE CONTRACTOR SHALL BE COMPLETELY FAMILIAR WITH ALL APPLICABLE MUNICIPAL CODES AND ORDINANCES.
- THE SPECIFICATIONS ARE AS BINDING ON THE CONTRACTOR AS THE DRAWINGS. THE CONTRACTOR SHALL READ THE SPECIFICATIONS AND SHALL INCLUDE ALL ITEMS REQUIRED BY THE SPECIFICATIONS BEFORE SUBMITTING A BID.
- THE SUBMISSION OF A PROPOSAL WILL BE CONSIDERED EVIDENCE THAT THE CONTRACTOR IS FAMILIAR WITH THE DRAWINGS, SPECIFICATIONS, BUILDING SITE, AND OTHER INFORMATION PRESENTED FOR THE CONSTRUCTION OF THIS PROJECT. CLAIMS MADE SUBSEQUENT TO THE PROPOSAL FOR MATERIALS AND LABOR BECAUSE OF DIFFICULTIES ENCOUNTERED WILL NOT BE RECOGNIZED, IF THEY COULD HAVE BEEN FORESEEN HAD A COMPLETE AND THOROUGH EXAMINATION HAD BEEN MADE.
- THE CONTRACTOR SHALL GUARANTEE ALL WORK FOR WHICH MATERIALS ARE FURNISHED, FABRICATED OR FIELD ERECTED, ALL FACTORY ASSEMBLED EQUIPMENT FOR WHICH NO SPECIFIC MANUFACTURER GUARANTEE IS FURNISHED, AND ALL WORK IN CONNECTION WITH THE INSTALLATION OF MANUFACTURER GUARANTEED EQUIPMENT. THIS CONTRACTOR'S GUARANTEE SHALL EXIST FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF FINAL OWNER ACCEPTANCE OF THE WORK AND SHALL APPLY TO ALL DEFECTS IN MATERIALS AND/OR WORKMANSHIP OF ANY KIND.
- WHERE JOB CONDITIONS REQUIRE CHANGES FROM THE CONTRACT DOCUMENTS THAT DO NOT CHANGE THE SCOPE OR NATURE OF THE WORK REQUIRED, THE CONTRACTOR SHALL MAKE SUCH CHANGES WITHOUT ADDITIONAL COST TO THE OWNER. NO OTHER CHANGES WILL BE MADE WITH THE EXPRESSED WRITTEN CONSENT OF THE OWNER.
- ALL PERMITS AND FEES REQUIRED FOR THE WORK SHALL BE PAID FOR AND SECURED BY THE CONTRACTOR AND SHALL BE INCLUDED IN THE BID PRICE.
- ALL EQUIPMENT AND MATERIAL SHALL BE NEW AND UNUSED AND SHALL BE INSTALLED IN STRICT CONFORMANCE WITH THE MANUFACTURER RECOMMENDATIONS AND INSTRUCTIONS. PROVIDE ITEMS COMPLETE WITH ALL FITTINGS, OFFSETS, AND OTHER ITEMS AS REQUIRED FOR A COMPLETE AND FUNCTIONAL SYSTEM.
- DO NOT SCALE DIRECTLY FROM THESE DRAWINGS. REFER TO THE ARCHITECTURAL DRAWINGS FOR DIMENSIONAL INFORMATION.
- THE CONTRACTOR SHALL SUPPLY TO THE ENGINEER DIGITAL COPIES OF MANUFACTURER SHOP DRAWING INFORMATION FOR APPROVAL, SO THE QUALITY OF INTENDED MATERIALS OR EQUIPMENT CAN BE REVIEWED PRIOR TO INSTALLATION.

COORDINATION

- THE EQUIPMENT ROUGH-IN ITEMS AND THEIR DIMENSIONED LOCATIONS FOR ALL CONNECTIONS ARE ACCURATE TO THE BEST OF OUR KNOWLEDGE. IN SOME INSTANCES, THE OWNER OR SUPPLIER MAY MAKE SUBSTITUTIONS, OR THE EQUIPMENT ITEMS MAY VARY FROM WHAT IS SHOWN ON THE DRAWINGS. THEREFORE, THESE ITEMS AND DIMENSIONS SHALL BE VERIFIED WITH THE EQUIPMENT SUPPLIER, OWNER, AND EQUIPMENT ROUGH-IN DRAWINGS. THE ENGINEER SHALL BE IMMEDIATELY NOTIFIED PRIOR TO CONSTRUCTION OF ANY DEVIATIONS OF THAT SHOWN OR IMPLIED ON THESE DRAWINGS. FAILURE OF THE APPROPRIATE CONTRACTOR TO VERIFY ROUGH-INS OR LOCATIONS SHALL PLACE THE RESPONSIBILITY FOR ANY SUBSEQUENT RELOCATION AND/OR ADDITIONAL ROUGH-INS DIRECTLY UPON THE CONTRACTOR.
- CONTRACTOR SHALL BE RESPONSIBLE FOR ALL OPENINGS REQUIRED IN WALLS. ALL OPENINGS SHALL BE REPAIRED TO MATCH EXISTING BY A QUALIFIED CONTRACTOR AT THE EXPENSE OF THE CONTRACTOR. ALL CONDUITS THROUGH WALLS SHALL BE GROUTED OR SEALED INTO OPENINGS. ALL MATERIALS USED TO SEAL PENETRATIONS OF ANY FIRE RATED WALLS AND/OR FLOORS SHALL BE TESTED AND CERTIFIED AS A SYSTEM PER ASTM E814 STANDARD TEST METHOD FOR FIRE TESTS OF PENETRATION FIRESTOP SYSTEMS.
- THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE POWER AND CONTROL REQUIREMENTS FOR ALL EQUIPMENT SPECIFIED ON THIS PROJECT, IRRESPECTIVE OF TRADE. VERIFY LOCATION OF ALL HVAC EQUIPMENT, PLUMBING FIXTURES, APPLIANCES, AND THEIR ACCESSORIES PRIOR TO BEGINNING ANY WORK.
- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY PRIOR TO THE INSTALLATION OF ANY WORK TO VERIFY WITH ALL OTHER TRADES CONCERNED THAT THE CIRCUITS FOR DEVICES AND EQUIPMENT AS INDICATED IS ADEQUATE IN SIZE AND MAKEUP FOR THE EQUIPMENT TO BE INSTALLED. IF ANY CONFLICT IN VOLTAGE, PHASE, OR LOAD IS ENCOUNTERED WHICH WOULD ALTER THE CIRCUIT SIZE, THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY. FAILURE TO DO SO SHALL PLACE THE RESPONSIBILITY FOR ANY SUBSEQUENT CHANGE UPON THE CONTRACTOR.
- IN MOST CASES, THE SPACE ABOVE THE CEILING, IN CHASES, AND IN OTHER CONCEALED SPACES IS EXTREMELY LIMITED. THE CONTRACTOR SHALL FULLY COORDINATE THEIR WORK WITH ALL TRADES.
- THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL POWER WIRING AND CONDUIT AND SHALL MAKE ALL FINAL ELECTRICAL CONNECTIONS TO ALL EQUIPMENT, INCLUDING EQUIPMENT SUPPLIED BY THE OWNER.
- ALL LOW VOLTAGE INTERLOCKING OF HVAC EQUIPMENT SHALL BE BY THE ELECTRICAL CONTRACTOR AND SHALL BE IN CONDUIT.
- PROVIDE 4 INCH THICK CONCRETE HOUSEKEEPING PADS FOR ALL FLOOR MOUNTED SWITCHGEAR, SWITCHBOARDS, PANELBOARDS, AND TRANSFORMERS. HOUSEKEEPING PADS SHALL EXTEND A MINIMUM OF 6" BEYOND THE FOOTPRINT OF THE EQUIPMENT ON ALL FOUR SIDES. EXACT DIMENSIONAL REQUIREMENTS OF ALL PADS MUST BE VERIFIED WITH THE ACTUAL EQUIPMENT TO BE INSTALLED.

ELECTRICAL SERVICE

- COORDINATE EXACT LOCATION AND ARRANGEMENT OF ELECTRICAL SERVICE WITH THE LOCAL UTILITY COMPANY PRIOR TO CONSTRUCTION. VERIFY ALL CONDUIT REQUIREMENTS, CONDUCTOR REQUIREMENTS, METER LOCATIONS, AND SERVICE ENTRANCE LOCATIONS.
- THE ENTIRE BUILDING ELECTRICAL SYSTEM SHALL BE GROUNDED IN ACCORDANCE WITH NEC ARTICLE 250.
- THE ELECTRICAL POWER AND DISTRIBUTION SYSTEM, INCLUDING THE GROUNDING SYSTEM, SHALL BE COMPLETELY TESTED PRIOR TO THE COMPLETION OF THIS PROJECT.

CONDUCTORS

- EACH CIRCUIT SHALL HAVE AN EQUIPMENT GROUNDING CONDUCTOR. MINIMUM SIZE #12 AWG UNLESS NOTED OTHERWISE. CONDUITS SHALL NOT BE USED A GROUNDING CONDUCTOR.
- ALL CONDUCTORS SHALL BE COPPER UNLESS NOTED OTHERWISE. MINIMUM CONDUCTOR SIZE SHALL BE #12 AWG. ALL CONDUCTORS # 10 AWG AND SMALLER SHALL BE SOLID COPPER EXCEPT WHERE FLEXIBILITY IS REQUIRED. CONDUCTORS #6 AWG AND LARGER SHALL BE STRANDED.
- CONDUIT AND CONDUCTOR SIZING SHOWN ON THE PLANS, PANEL SCHEDULES, OR THE RISER DIAGRAMS IS THE MINIMUM SIZE ALLOWED. IF CONDUIT PATHS REQUIRE THAT CONDUCTORS ARE IN EXCESS OF 75 FEET TOTAL LENGTH, WIRE SIZES SHALL BE INCREASED TO LIMIT THE VOLTAGE DROP TO 2 PERCENT.

- BRANCH CIRCUITS IN PATIENT CARE AREAS SHALL COMPLY WITH NEC 517.13(A) AND (B).

CONDUITS AND BOXES

- CONDUITS SHALL BE CONCEALED UNLESS NOTED OTHERWISE. ROUTE ALL CONDUIT SERVING BUILDING MOUNTED LIGHT FIXTURES AND EQUIPMENT WITHIN THE BUILDING.
- MINIMUM SIZE OF ABOVE GRADE CONDUITS SHALL BE 3/4" UNLESS NOTED OTHERWISE. MINIMUM SIZE OF BELOW SLAB OR GRADE SHALL BE 1" WITH LONG RADIUS FITTINGS UNLESS NOTED OTHERWISE.
- PROVIDE A PULL STRING IN EACH EMPTY CONDUIT.
- COMPRESSION FITTINGS SHALL BE USED ON ALL EMT CONDUIT. SET SCREW FITTINGS ARE NOT ACCEPTABLE.
- ALL CONDUIT PENETRATIONS THROUGH FIRE RATED PARTITIONS SHALL BE FIRESTOPPED AS REQUIRED BY CODE. ALL OUTLET BOXES MOUNTED WITHIN FIRE RATED PARTITIONS SHALL MEET THE FIRE RATING OF THE PARTITION AS REQUIRED BY CODE.
- VERIFY EXACT LOCATION OF ALL FLOOR BOXES WITH ARCHITECT PRIOR TO ROUGH-IN AND FLOOR SLAB POUR. COORDINATE WITH OTHER UNDER SLAB SYSTEMS.
- ALL EXPOSED ELECTRICAL DEVICES, CONDUIT, BOXES, SUPPORTS, ETC. INSTALLED IN EXPOSED CEILING AREAS SHALL BE PAINTED AS DIRECTED BY THE ARCHITECT.
- BOXES LOCATED ON OPPOSITE SIDES OF NON-RATED WALLS SHALL BE OFFSET A MINIMUM OF 6" HORIZONTALLY. BOXES ON OPPOSITE SIDES OF FIRE RATED WALLS SHALL BE OFFSET A MINIMUM OF 24" HORIZONTALLY. THROUGH WALL BOXES ARE NOT PERMITTED WITHOUT PRIOR WRITTEN APPROVAL OF THE ENGINEER.
- PROVIDE POWER FOR MECHANICAL ACTUATORS INCLUDING, BUT NOT LIMITED TO: FIRE DAMPERS, FIRE/SMOKE DAMPER, LOUVERS, ETC. AS NECESSARY. COORDINATE WITH MECHANICAL CONTRACTOR. RE- HVAC PLANS.

ELECTRICAL EQUIPMENT

- PANELBOARDS AND SWITCHGEAR SHALL BE AS MANUFACTURED BY EATON, SQUARE D, SIEMENS, GENERAL ELECTRIC, OR ENGINEER APPROVED EQUAL. LOAD CENTERS ARE NOT PERMITTED. PROVIDE LOCKING COVERS ON ALL EQUIPMENT WHERE ACCESSIBLE TO NON-MAINTENANCE PERSONNEL.
- ALL PANELBOARDS, SWITCHBOARDS, SWITCHES, AND CIRCUIT BREAKERS SHALL BE SIZED TO HANDLE THE FAULT CURRENT AVAILABLE. PRIOR TO ORDERING ANY EQUIPMENT THE CONTRACTOR SHALL SECURE FAULT INFORMATION FROM THE LOCAL ELECTRICAL UTILITY COMPANY.
- PROVIDE ENGRAVED NAMEPLATES ON ALL OF THE FOLLOWING EQUIPMENT: PANELBOARDS, DISCONNECT SWITCHES, ENCLOSED CIRCUIT BREAKERS, MANUAL & AUTOMATIC STARTERS, COMBINATION STARTER/DISCONNECTS, AND TRANSFORMERS. AT A MINIMUM, THE NAMEPLATE SHALL INCLUDE THE EQUIPMENT DESIGNATION, VOLTAGE, PHASE, RATING, AND THE LOCATION THE EQUIPMENT IS FED FROM. LABEL SHALL BE PHENOLIC PLASTIC WITH WHITE LETTERING AND BLACK BACKGROUND AND SHALL BE PERMANENTLY FIXED TO THE EQUIPMENT.
- THE ELECTRICAL CONTRACTOR SHALL BALANCE LOADS BETWEEN PHASES. WRITTEN PROOF IS REQUIRED UPON THE COMPLETION OF THE PROJECT.
- PROVIDE A TYPED CIRCUIT DIRECTORY IN EACH PANELBOARD.
- ALL EQUIPMENT DISCONNECT SWITCHES SHALL BE RATED FOR GENERAL DUTY UNLESS NOTED OTHERWISE.
- EXTERIOR EQUIPMENT ENCLOSURES SHALL HAVE A NEMA 3R RATING UNLESS NOTED OTHERWISE. INTERIOR EQUIPMENT SHALL HAVE A NEMA 1 RATING UNLESS NOTED OTHERWISE.
- STARTERS AND RELATED WIRING SHALL BE INSTALLED BY ELECTRICAL CONTRACTOR. OVERLOAD UNITS SHALL BE INSTALLED PER NAME PLATE DATA ON THE EQUIPMENT. THE CONTRACTOR SHALL SUPPLY ALL SUCH ITEMS EXCEPT FOR ITEMS THAT ARE NORMALLY SUPPLIED WITH STARTERS INSTALLED AT THEIR POINT OF MANUFACTURE. THE CONDUIT SHALL BE PROVIDED AND INSTALLED IN CONFORMANCE WITH EQUIPMENT MANUFACTURER'S INSTRUCTIONS.
- THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER SIZING OF ALL MOTOR OVERLOAD DEVICES (HEATERS) IN STARTERS BASED ON ACTUAL NAMEPLATE RATINGS ON THE MOTORS BEING INSTALLED PER NEC.
- ALL FUSES SHALL BE BUSSMAN LOW PEAK, NO EXCEPTIONS.

WIRING DEVICES

- TYPICAL MOUNTING OF 120 VOLT CONVENIENCE RECEPTACLES SHALL BE 18 INCHES ABOVE FINISHED FLOOR TO THE CENTER LINE OF THE BOX, UNLESS NOTED OTHERWISE.
- WHERE RECEPTACLES AND/OR OUTLETS ARE MOUNTED ABOVE A COUNTERTOP, INSTALL 6" ABOVE COUNTER HEIGHT AND CLEAR OF ANY BACKSPASH.
- THE ELECTRICAL CONTRACTOR SHALL VERIFY LOCATIONS OF RECEPTACLES IN MILLWORK OR SERVING SPECIFIC EQUIPMENT. COORDINATE WITH EQUIPMENT ROUGH IN DIAGRAMS AND MILLWORK DRAWINGS.
- PROVIDE 120 VOLT CONVENIENCE RECEPTACLE WITHIN 75 FEET OF ALL HVAC EQUIPMENT EVEN THOUGH THE RECEPTACLE MAY NOT BE SHOWN ON THE DRAWINGS.
- ALL EXTERIOR RECEPTACLES, SWITCHES AND CONDUIT SYSTEMS SHALL BE WATERPROOF.
- ALL INTERIOR SWITCHES SHALL BE INSTALLED 44 INCHES ABOVE FINISHED FLOOR TO BOTTOM OF BOX UNLESS NOTED OTHERWISE. INSTALL BOX SO THAT COVER IS CLEAR OF ANY TRIM, BACKSPASH, ETC.
- RECEPTACLES WITHIN SIX FEET OF ANY WATER SOURCE SHALL BE PROTECTED WITH A 5 MILLIAMP GROUND FAULT INTERRUPTER (GFI). PROVIDE INDIVIDUAL GFCI DEVICES OR GFCI CIRCUIT BREAKERS. CONDUCTORS FED FROM A GFCI BREAKER SHALL BE TYPE XHHW (COMPATIBLE WITH GFCI DEVICE). GFCI CIRCUITS SHALL HAVE DEDICATED NEUTRALS.

LIGHTING

- THE CONTRACTOR SHALL FURNISH ALL LIGHT FIXTURES, LAMPS, ACCESSORIES, ETC. UNLESS NOTED OTHERWISE.
- ALL LIGHT FIXTURES SHALL BE MOUNTED AS INDICATED ON THE LIGHT FIXTURE SCHEDULE. VERIFY ALL MOUNTING CONFIGURATIONS WITH ARCHITECTURAL REFLECTED CEILING PLAN PRIOR TO ORDERING FIXTURES.
- LIGHTS LOCATED IN RATED CEILING ASSEMBLIES SHALL HAVE ENCLOSURES OF 5/8" TYPE X GYPSUM BOARD TO MAINTAIN THE RATING OF THE CEILING ASSEMBLY.
- THE CONTRACTOR SHALL VERIFY LOCATION OF PARKING LOT LIGHTING AND SIGNS ON THE SITE PLAN.

SPECIAL SYSTEMS

- CONTRACTOR SHALL INSTALL RACEWAY SYSTEMS AS REQUIRED FOR COMPUTER, TELEPHONE, CABLE TELEVISION, SECURITY, SOUND, AND ALARM SYSTEMS. ELECTRICAL CONTRACTOR SHALL CONSULT WITH OTHER SUBCONTRACTORS FOR REQUIREMENTS. PROVIDE PULL STRING IN EMPTY CONDUITS.

COMMUNICATIONS

- DATA OUTLETS SHALL BE LABELED INDICATING THE TERMINAL PORT NUMBER.

FIRE ALARM

- THE FIRE ALARM INSTALLATION, LOCATION, AND SPACING OF DEVICES SHALL BE IN ACCORDANCE WITH THE LATEST ADOPTED EDITION OF NFPA 72.
- ALL AREAS OF THE BUILDING MUST BE EQUIPPED WITH A FIRE ALARM SYSTEM THAT IS ZONED BY FLOORS.
- INITIATING LOOPS AND CONTROL/MONITORING CIRCUITS SHALL BE STRANDED, COPPER, SHIELDED, TWISTED PAIR CABLE SIZED IN ACCORDANCE WITH MANUFACTURER'S WRITTEN SPECIFICATIONS, BUT SHALL NOT BE SMALLER THAN 22 AWG. SIGNAL CIRCUITS AND 24VDC POWER CIRCUITS SHALL BE STRANDED COPPER, TWISTED PAIR CABLE AND SIZED IN ACCORDANCE WITH MANUFACTURER'S WRITTEN SPECIFICATIONS, BUT NOT SMALLER THAN 18 AWG.
- FIRE ALARM CONTRACTOR SHALL PROVIDE COMPLETE DESIGN FOR FIRE ALARM SYSTEMS AND SMOKE DETECTION SYSTEMS. WRITTEN APPROVAL OF THE PLANS FOR THE FIRE SAFETY SYSTEMS REQUIRED MUST BE OBTAINED FROM THE GOVERNMENTAL AUTHORITY HAVING JURISDICTION PRIOR TO THE INSTALLATION OF THE SYSTEM. WRITTEN CERTIFICATION IS REQUIRED VERIFYING THAT THE SYSTEMS HAVE BEEN INSTALLED ACCORDING TO THE APPROVED PLANS BY A LICENSED CONTRACTOR AND ARE FULLY OPERATIONAL, TESTED AND APPROVED IS TO BE FURNISHED BY THE INSTALLATION CONTRACTOR.

ELECTRICAL SYMBOLS

GENERAL ELECTRICAL SYMBOLS

	BRANCH CIRCUIT IN CONDUIT: (2) HOT, (1) NEUTRAL, (1) GROUND
	BRANCH CIRCUIT HOME RUN. NUMBER OF ARROWS INDICATE NUMBER OF CIRCUITS. CIRCUIT NUMBERS INDICATED
	CONDUIT DROP (ELBOW DOWN)
	CONDUIT RISE (ELBOW UP)
	JUNCTION BOX. FLUSH MOUNTED. VERIFY SIZE AND LOCATION WITH EQUIPMENT PROVIDED
	CONTACTOR. VOLTAGE AND AMPACITY AS REQUIRED FOR LOAD SERVED.

RECEPTACLES AND OUTLETS

	DUPLEX RECEPTACLE. NEMA 5-20R
	TAMPER RESISTANT DUPLEX RECEPTACLE. NEMA 5-20R
	QUADRUPLX (DOUBLE DUPLEX) RECEPTACLE. NEMA 5-20R
	GROUND FAULT (GFI) RECEPTACLE. DUPLEX, TAMPER RESISTANT, QUADRUPLX SHOWN
	ARC FAULT (AFI) RECEPTACLE. DUPLEX, TAMPER RESISTANT, QUADRUPLX SHOWN
	ISOLATED GROUND RECEPTACLE. DUPLEX, TAMPER RESISTANT, QUADRUPLX SHOWN
	RECEPTACLE ON EMERGENCY POWER. DUPLEX, TAMPER RESISTANT, QUADRUPLX SHOWN
	GFI RECEPTACLE IN WEATHER PROOF ENCLOSURE
	DUPLEX RECEPTACLE WITH (2) USB OUTLETS
	SIMPLEX RECEPTACLE. NEMA TYPE AND AMPACITY AS REQUIRED FOR EQUIPMENT SERVED
	SPECIAL PURPOSE RECEPTACLE. NEMA TYPE AND AMPACITY AS REQUIRED FOR EQUIPMENT SERVED
	2-POLE RECEPTACLE (208V OR 240V)
	RECEPTACLE IN FLOOR OR CEILING AS INDICATED. DUPLEX, QUADRUPLX SHOWN
	RECEPTACLE ON CORD REEL. NEMA TYPE AND AMPACITY AS INDICATED. SEE DETAILS.
	RECEPTACLE ON CORD DROP. NEMA TYPE AND AMPACITY AS INDICATED. SEE DETAILS.
	FLUSH-MOUNTED IN-FLOOR POKE-THRU BOX WITH WIRING DEVICES FOR POWER AND COMMUNICATION. "X" DENOTES TYPE: A. PROVIDE WITH (1) DUPLEX RECEPTACLE AND (2) DATA OUTLETS PER COMPUTER SERVED.
	FLOOR BOX. LEGRAND RFB46 OR APPROVED EQUAL. PROVIDE RFB86 RING WHERE INSTALLED AT BARE OR POLISHED CONCRETE LOCATIONS. "X" DENOTES TYPE: A. PROVIDE WITH (2) DUPLEX RECEPTACLES, (2) COMMUNICATIONS BRACKETS, AND (2) DATA CABLES PER COMPUTER SERVED. (1) 1" CONDUIT FOR POWER AND (1) 1" CONDUIT FOR DATA. TYPE BCT FLUSH COVER.

DISTRIBUTION AND POWER EQUIPMENT

	NON-FUSED DISCONNECT SWITCH RATING PER EQUIPMENT PROVIDED
	FUSED DISCONNECT SWITCH. RATING AND FUSE SIZE PER EQUIPMENT PROVIDED
	MOTOR RATED SWITCH USED AS MEANS OF EQUIPMENT DISCONNECT. PROVIDE WITH THERMAL OVERLOAD SIZED FOR MOTOR LOAD
	MAGNETIC MOTOR STARTER. SIZE PER EQUIPMENT PROVIDED
	COMBINATION MAGNETIC MOTOR STARTER AND FUSIBLE DISCONNECT SWITCH. FURNISH WITH PILOT LIGHTS AND HON SWITCH. SIZE AND FUSE PER EQUIPMENT PROVIDED
	COMBINATION MAGNETIC MOTOR STARTER AND FUSIBLE DISCONNECT SWITCH WITH HAND/AUTO/OFF SWITCH. SIZE AND FUSE PER EQUIPMENT PROVIDED

MISCELLANEOUS EQUIPMENT

	PUSH BUTTON OPERATORS
	MOTOR. NUMBER INDICATES HORSEPOWER RATING. VERIFY WITH EQUIPMENT TO BE INSTALLED
	ELECTRICAL CONNECTION TO EQUIPMENT. VERIFY REQUIREMENTS WITH EQUIPMENT TO BE INSTALLED. PROVIDE DISCONNECTS, STARTERS, ETC. AS NECESSARY
	FAN CONTROLLER, RE - MECHANICAL PLANS.

COMMUNICATION DEVICES

	DATA OUTLET. 4" SQUARE BOX WITH PLASTER RING AND 1" CONDUIT STUBBED ABOVE ACCESSIBLE CEILING. MINIMUM (2) OUTLETS PER BOX UNLESS NOTED OTHERWISE.
	TELEPHONE OUTLET. 4" SQUARE BOX WITH PLASTER RING AND 1" CONDUIT STUBBED ABOVE ACCESSIBLE CEILING. MINIMUM (2) OUTLETS PER BOX UNLESS NOTED OTHERWISE.
	AUDIO VISUAL OUTLET BOX. VERIFY EXACT LOCATION AND MOUNTING HEIGHT WITH OWNER
	TELEVISION OUTLET BOX. VERIFY EXACT LOCATION AND MOUNTING HEIGHT WITH OWNER. 3-GANG BACK BOX EQUAL TO ARLINGTON TVB507. REQUIRE (1) DUPLEX RECEPTACLE, (1) R66 CABLE, AND (2) CAT 5E CABLES IN SEPARATE 1" CONDUIT TO DATA ROOM
	CEILING MOUNTED OUTLET. DATA, TELEPHONE, DUAL SHOWN
	WIRELESS ACCESS POINT. PROVIDE (2) CAT 5E CABLES PER LOCATION
	SPEAKER. WALL, CEILING SHOWN

LIGHTING DEVICES

ALL SWITCHES SHALL BE HOSPITAL GRADE UNLESS NOTED OTHERWISE.

	SWITCH. "X" INDICATES TYPE: Blank. SINGLE POLE a,b,c. INDICATES ZONE OF CONTROL 3. 3-WAY 4. 4-WAY D. DIMMER K. KEYS T. TIMER WP. WEATHER PROOF
	COMBINATION SWITCH TYPE. OCCUPANCY SWITCH AND DIMMER SHOWN
	WALL MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR. INSTALL PER MANUFACTURER SPECIFICATIONS
	LIGHTING CONTROL KEY PAD. SEE LIGHTING CONTROL DIAGRAMS FOR TYPE
	LOW VOLTAGE SWITCH. LEVITON RLVSW OR APPROVED EQUAL. VERIFY REQUIREMENTS WITH OWNER PRIOR TO ROUGH-IN
	CEILING MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR. PROVIDE POWER PACK WHERE REQUIRED. COORDINATE SWITCHING WITH LOCATION, AND QUANTITY WITH MANUFACTURER SPECIFICATIONS
	POWER PACK
	PHOTOCELL
	LIGHTING CONTROLLER

FIRE ALARM DEVICES

	FIRE ALARM CONTROL PANEL
	FIRE ALARM ANNUNCIATOR PANEL
	MANUAL PULL STATION
	VISUAL APPLIANCE (STROBE) NUMBER INDICATES LUMINANCE. WALL, CEILING SHOWN
	AUDIO-VISUAL APPLIANCE (HORN STROBE) NUMBER INDICATES LUMINANCE. WALL, CEILING SHOWN
	SMOKE DETECTOR. WALL, CEILING, DUCT SHOWN
	HEAT DETECTOR. WALL, CEILING, DUCT SHOWN
	CARBON MONOXIDE DETECTOR. WALL, CEILING SHOWN
	TAMPER SWITCH
	FLOW SWITCH

NURSE CALL DEVICES

	NURSE CALL CONTROL PANEL
	NURSE CALL MASTER SYSTEM
	NURSE CALL POWER SUPPLY CABINET
	EMERGENCY COMMUNICATION PANEL
	PATIENT STATION. "X" DENOTES TYPE: B. BED STATION B2. DOUBLE BED STATION T. TOILET STATION S. SHOWER STATION
	STAFF (DUTY) STATION
	EMERGENCY STATION
	INDICATOR LIGHT (WALL, CEILING) "X" DENOTES TYPE: A. AUXILIARY LIGHT I. NURSE CALL Z. ZONE

SECURITY DEVICES

	CARD READER
	KEY PAD
	MAGNETIC DOOR LOCK
	DOOR OPENER
	MUSHROOM PUSH BUTTON
	EMERGENCY EGRESS BUTTON - PRESSING RELEASES MAGNETIC DOOR LOCK
	SECURITY CAMERA
	WALL MOUNTED SECURITY CAMERA



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FOR PERMIT & CONSTRUCTION

Revision Schedule		Description
Rev. #	Date	
NEW Arcare MEDICAL OFFICE BUILDING 2709 Massard Rd FT. SMITH, AR 72903		
ARcare 117 S. 2ND ST. AUGUSTA, AR 72006		

DATE 06-15-2026	DRAWN BY CH
PROJECT # 2517	CHECKED BY JT
SHEET E000	
NOTES AND SYMBOLS	

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