

ELECTRICAL SYMBOLS LIST

LIGHTING

2'x4'/2'x2" RECESSED CEILING MOUNTED FIXTURE
'NL' = FIXTURE TYPE
'o' = CONTROLLED BY SWITCH 'o'
NS = NOT SWITCHED
NL = NIGHT LIGHT
WALL MOUNTED LIGHT FIXTURE
STRIP FIXTURE-TYPE AS NOTED
UNDERCABINET LIGHT FIXTURE
CEILING MOUNTED FIXTURE
SIMILAR TO ABOVE WITH EMERGENCY BACKUP
WALL MOUNTED LIGHT FIXTURE
SIMILAR TO ABOVE WITH EMERGENCY BACKUP
ACCENT LIGHT OR WALL WASHER
SIMILAR TO ABOVE WITH EMERGENCY BACKUP
CEILING MOUNTED EXIT LIGHT; TYPE 'X' - DIRECTIONAL ARROWS WHERE INDICATED - SHADED AREAS INDICATE ILLUMINATED FACE/FACES
WALL MOUNTED EXIT LIGHT; TYPE 'X' - DIRECTIONAL ARROWS WHERE INDICATED - SHADED AREAS INDICATE ILLUMINATED FACE/FACES
EMERGENCY BATTERY LIGHT UNIT
REMOTE LIGHT HEADS FOR EMERGENCY BATTERY LIGHT UNIT TYPE AS NOTED

HEALTHCARE SYMBOLS

NURSE CALL MASTER STATION
NURSE CALL EMERGENCY STATION
NURSE CALL LAVATORY STATION
NURSE CALL DUTY STATION
NURSE CALL STAFF STATION
NURSE CALL CODE BLUE STATION
NURSE CALL EQUIPMENT CABINET-SURFACE MOUNTED
NURSE CALL CORRIDOR LAMP, WALL MOUNTED
NURSE CALL ZONE LAMP, WALL MOUNTED, NUMBER OF LAMP SECTIONS EQUAL TO NUMBER OF COLORS IN ASSOCIATED CORRIDOR LAMPS.
INTERCOM CENTRAL EQUIPMENT SURFACE MOUNTED
INTERCOM STATION
PHYSIOLOGICAL MONITORING - COMBINATION POWER/SIGNAL 2 GANG PARTITIONED WALLBOX WITH A DUPLEX RECEPTACLE AND 3/4" (1.5" AT NURSE'S STATION) TERMINATED IN A 90° BEND 6" INTO ACCESSIBLE CEILING
FM = FETAL MONITOR

POWER

SINGLE POLE SWITCH
DISCONNECT SWITCH - TOGGLE TYPE WITH THERMAL OVERLOAD - 277V HP RATED
DISCONNECT SWITCH - TOGGLE TYPE MOTOR RATED, 20A, 1P, U.O.N.
WALL DIMMER - TYPE 'A' NUMBER INDICATES WATTAGE RATING
OCCUPANCY SENSOR, CEILING MOUNTED
OCCUPANCY SENSOR, WALL MOUNTED
PHOTO CONTROL SWITCH
TRANSFORMER
20A, 125V DUPLEX RECEPTACLE - FLUSH WALL MOUNTED 'CONTROLLED FROM WALL SWITCH 'o'
20A, 125V QUADRUPLEX RECEPTACLE - FLUSH WALL MOUNTED
20A, 125V ISOLATED GROUND, DUPLEX RECEPTACLE, FLUSH FLOOR MOUNTED
20A, 125V DUPLEX RECEPTACLE - FLUSH WALL MOUNTED, GFI TYPE
20A, 125V EMERGENCY DUPLEX RECEPTACLE - FLUSH WALL MOUNTED
20A, 125V DUPLEX RECEPTACLE - FLUSH WALL MOUNTED, WITH TWO (2) INTEGRALLY POWERED USB PORTS
20A, 125V EMERGENCY QUADRUPLEX RECEPTACLE - FLUSH WALL MOUNTED
SINGLE RECEPTACLE - FLUSH WALL MOUNTED
20A, 125V DUPLEX RECEPTACLE - SURFACE MOUNTED
20A, 125V SURGE SUPPRESSION DUPLEX RECEPTACLE - FLUSH WALL MOUNTED
20A, 125V DUPLEX RECEPTACLE - FLUSH FLOOR MOUNTED
20A, 125V QUADRUPLEX RECEPTACLE - FLUSH FLOOR MOUNTED
SPECIAL PURPOSE RECEPTACLE - FLUSH WALL MOUNTED 'A' = TYPE
PLUG-IN SURFACE METAL RACEWAY - LETTER INDICATES TYPE - WITH SPECIAL PURPOSE RECEPTACLES WHERE INDICATED
HOMERUN-NUMERAL WHERE USED INDICATES CIRCUIT NUMBER FOR REFERENCE ONLY.
MOTOR CONTROLLER
COMBINATION MOTOR CONTROLLER AND DISCONNECT SWITCH SWITCH AMPS/# OF POLES, VOLTAGE RATING AS REQUIRED
UNFUSED DISCONNECT SWITCH SWITCH AMPS/# OF POLES, VOLTAGE RATING AS REQUIRED
FUSED DISCONNECT SWITCH; SWITCH AMPS/FUSE AMPS/# OF POLES, VOLTAGE RATING AS REQUIRED
ENCLOSED CIRCUIT BREAKER TRIP AMPS/# OF POLES, VOLTAGE RATING AS REQUIRED 'NA' = NON-AUTOMATIC
SURFACE MOUNTED LIGHTING PANELBOARD
FLUSH MOUNTED LIGHTING PANELBOARD

CEILING MOUNTED JUNCTION BOX
FLUSH WALL MOUNTED JUNCTION
FLUSH FLOOR MOUNTED JUNCTION BOX
PULLBOX
POWER POLE
EXISTING CONDUIT TO BE REMOVED
EXISTING CONDUIT/EQUIPMENT TO REMAIN
NEW CONCEALED CONDUIT
NEW EXPOSED CONDUIT
NEW UNDERGROUND/IN SLAB CONDUIT
NEW EMERGENCY CONDUIT
CONDUIT TURNING UP
CONDUIT TURNING DOWN
CONDUIT STUB-UP WITH FLEXIBLE EQUIPMENT CONNECTION
FLEXIBLE EQUIPMENT CONNECTION
CAPPED CONDUIT
PUSH BUTTON
SECTION A-A

SINGLE LINE DIAGRAM

POWER TRANSFORMER
AUTOMATIC TRANSFER SWITCH
MOTOR
GENERATOR
GROUND CONNECTION
FUZZED SWITCH
UNFUZZED SWITCH
CIRCUIT BREAKER - MOLDED CASE TYPE
DIGITAL MULTIMETER
CURRENT TRANSFORMER
COMBINATION MOTOR CONTROLLER AND FUSED DISCONNECT SWITCH
COMBINATION MOTOR CONTROLLER AND CIRCUIT BREAKER

ABBREVIATIONS

Table with 4 columns: Abbreviation, Description, Abbreviation, Description. Includes terms like SPECIAL MOUNTING HEIGHT, SINGLE POLE, TWO POLE, THREE POLE, AMPERE, ABOVE FINISHED FLOOR, AMPERE INTERRUPTING CAPACITY, AMERICAN WIRE GAUGE, BUILDING, CONDUIT, CIRCUIT BREAKER, CIRCUIT, CEILING, CONTROL, CONNECTED, CONTINUATION, COPPER, DEGREE, DIAMETER, DISCONNECT, DIVISION, DOWN, DRAWING, EXISTING TO REMAIN, EACH, ELECTRICAL CONTRACTOR, ELECTRICAL, EMERGENCY, EQUIPMENT, EXISTING TO BE REMOVED, EXISTING TO BE REMOVED & RELOCATED, EXISTING, FEEDER, FIXTURE, FLOOR, FULL LOAD AMPERES, FLEXIBLE, GROUND, GROUND FAULT INTERRUPTER, HORSE POWER, ISOLATED GROUND, INCANDESCENT, JUNCTION BOX, THOUSAND CIRCULAR MILS, KILOVOLT, KILOVOLT AMPERE, KILOWATT, KILOWATT HOUR, LIGHTING, MAIN CIRCUIT BREAKER, MOTOR CONTROL CENTER, MAIN DISTRIBUTION PANEL, MANHOLE, MAIN LUG ONLY, MOUNTED, NEUTRAL, NORMALLY CLOSED, NIC, NOT IN CONTRACT, NORMALLY OPEN, NOT TO SCALE, POLE, PULL BOX, PHASE, PANEL, POWER, RELOCATED EXISTING, RECEPTACLE, RECEPTACLE TO BE REMOVED AND RETURN TO OWNER, SCHEDULE, SCHEDULE SPECIFICATION, SPEAKER, SWITCH, SYSTEMS, TRANSFORMER, UNLESS OTHERWISE NOTED, VOLT OR VOLTAGE.

ELECTRICAL DEMOLITION NOTES

- 1. THE CONTRACTOR SHALL INCLUDE IN HIS BID ALL COSTS ASSOCIATED WITH REMOVALS AND RELOCATIONS OF ELECTRICAL WORK AS DESCRIBED IN THE SPECIFICATIONS WITH ALLOWANCES FOR EXPECTED OR UNFORESEEN DIFFICULTIES WHEN CONCEALED WORK HAS BEEN OPENED. NO CLAIMS FOR ADDITIONAL WORK ASSOCIATED WITH DEMOLITION WILL BE ACCEPTED, EXCEPT IN CERTAIN CASES CONSIDERED JUSTIFIABLE BY THE ARCHITECT.
2. THE CONTRACTOR SHALL REMOVE AND/OR RELOCATE ALL EXISTING ELECTRICAL WORK WHICH INTERFERES WITH THE NEW ARCHITECTURAL AND ELECTRICAL LAYOUTS IN FULL COORDINATION WITH THE ARCHITECT'S DEMOLITION PLANS. ALL SYSTEMS WHICH ARE NO LONGER REQUIRED TO FUNCTION SHALL BE DE-ENERGIZED AND DISCONNECTED AT THE SOURCE OF POWER SUPPLY.
3. THE CONTRACTOR SHALL PERFORM DEMOLITION AND REMOVAL WORK WITH MINIMUM INTERFERENCE WITH FUNCTIONING ELECTRICAL SYSTEMS. ALL AFFECTED SYSTEMS SHALL BE RECONNECTED AND RESTORED.
4. DEMOLITION AND REMOVAL WORK SHALL BE PERFORMED IN A NEAT AND WORKMANLIKE MANNER. THE CONTRACTOR SHALL PATCH, REPAIR OR OTHERWISE RESTORE ANY DAMAGED INTERIOR OR EXTERIOR BUILDING SURFACE TO ITS ORIGINAL CONDITION.
5. THE CONTRACTOR SHALL REMOVE ALL ELECTRICAL OUTLETS, SWITCHES AND OTHER DEVICES, COMPLETE WITH ASSOCIATED WIRING, CONDUITS, ETC., FROM PARTITIONS THAT ARE TO BE REMOVED. WHERE THE REMOVAL OF THESE ITEMS DISRUPTS EXISTING WIRING THAT IS TO REMAIN, THE CONTRACTOR SHALL INSTALL JUNCTION BOXES AND OTHER DEVICES AND PROVIDE BYPASS CONNECTIONS NECESSARY TO MAKE CIRCUITS AFFECTED CONTINUOUS AND READY FOR OPERATION. OTHERWISE, WIRING SHALL BE REMOVED BACK TO THE NEAREST ELECTRICAL JUNCTION BOX THAT IS TO REMAIN OR TO PANELBOARD.
6. ALL RACEWAYS WHICH BECOME EXPOSED DURING THE ALTERATION WORK SHALL BE REMOVED AND REROUTED CONCEALED BEHIND FINISHED SURFACES.
7. ALL UNUSED OUTLET BOXES OR CAPPED FLOOR OUTLETS SHALL BE PROVIDED WITH MATCHING BLANK COVERS.
8. EXISTING PANEL DIRECTORIES AFFECTED BY THE ALTERATION WORK SHALL BE MODIFIED TO REFLECT THE BRANCH CIRCUIT WIRING CHANGES.
9. PORTIONS OF FEEDER RUNS TO BE REMOVED OR ABANDONED AS A RESULT OF DEMOLITION WORK, BUT WHICH ARE REQUIRED TO REMAIN ENERGIZED, SHALL BE CUT AT CONVENIENT LOCATIONS, REROUTED AND FIREPROOFED. NEW FEEDER EXTENSIONS SHALL MATCH EXISTING ONES IN ALL RESPECTS, CABLE TYPE, CONDUCTOR AMPACITY, CONDUIT SIZES, ETC.
10. THE CONTRACTOR SHALL NOTIFY THE OWNER AT THE APPROPRIATE TIME OF THE PROJECTED DEMOLITION AND PHASING SCHEDULE SO THAT REMOVAL OR RELOCATION OF AFFECTED UTILITIES MAY BE CARRIED OUT IN COORDINATION WITH THE PROJECT REQUIREMENTS. THE CONTRACTOR SHALL FOLLOW CLOSELY THE ARCHITECT'S DEMOLITION AND PHASING SCHEDULE AND PROCEED IN THE SPECIFIED SEQUENCE.
11. ALL EXISTING MATERIAL AND EQUIPMENT IN USABLE CONDITION, WHICH IS TO BE REMOVED UNDER THIS CONTRACT, SHALL REMAIN THE PROPERTY OF THE OWNER OR SHALL BE DISPOSED OF BY THE ELECTRICAL CONTRACTOR, AS DIRECTED BY THE OWNER.
12. ARRANGE TO WORK CONTINUOUSLY, INCLUDING OVER TIME, IF REQUIRED, TO ASSURE THAT SYSTEMS WILL BE SHUT DOWN ONLY DURING THE TIME ACTUALLY REQUIRED TO MAKE THE NECESSARY CONNECTIONS TO THE EXISTING SYSTEMS.
13. THE SHUTDOWN OF EXISTING BUILDING ELECTRICAL SERVICES SHALL BE COORDINATED WITH THE OWNER. MAKE ARRANGEMENTS AT LEAST 5 BUSINESS DAYS PRIOR TO A SHUTDOWN.

ELECTRICAL GENERAL NOTES

- 1. GENERAL NOTES, SYMBOL LIST AND DETAILS ARE APPLICABLE TO ALL ELECTRICAL DRAWINGS.
2. ALL WORK IS NEW UNLESS OTHERWISE NOTED.
3. DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF SYSTEMS AND WORK. FOLLOW DRAWINGS IN LAYING OUT WORK AND CHECK DRAWINGS OF OTHER TRADES TO VERIFY SPACE CONDITIONS. MAINTAIN HEADROOM AND SPACE CONDITIONS.
4. SECURE ALL SUPPORTS TO BUILDING STRUCTURE UTILIZING TOGGLE BOLTS (HOLLOW MASONRY), EXPANSION SHIELDS OR INSERTS (CONCRETE AND BRICK), MACHINE SCREWS (METAL), BEAM CLAMPS (FRAMEWORK), WOOD SCREWS (WOOD) OR PAN THRU STRAPS (METAL DECK). NAILS, RAWL PLUGS AND WOOD PLUGS ARE NOT PERMITTED. WHERE REQUIRED BY STRUCTURE, PROVIDE THRU BOLTS AND FISH PLATES. SUPPORT HORIZONTAL RUNS OF METALLIC RACEWAYS NOT MORE THAN 10 FT APART. SUPPORT RACEWAY RISERS AT EACH FLOOR LEVEL. RUN EXPOSED RACEWAYS PARALLEL WITH OR AT RIGHT ANGLES TO WALLS.
5. PASS RACEWAYS OVER WATER, STEAM OR OTHER PIPING WHEN PULL BOXES ARE NOT REQUIRED. NO RACEWAY WITHIN 3 INCHES OF STEAM OR HOT WATER PIPES OR APPLIANCES (EXCEPT PIPE CROSSINGS WHERE RACEWAY SHALL BE AT LEAST 1 INCH FROM PIPE COVERS).
6. CUT CONDUIT ENDS SQUARE. REAM SMOOTH. PAINT MALE THREAD OF FIELD THREADED RACEWAYS WITH GRAPHITE BASE PIPE COMPOUND. DRAW UP TIGHT WITH RACEWAY COUPLING.
7. HORIZONTAL OR CROSS RUNS IN PARTITIONS AND WALLS ARE NOT PERMITTED. DO NOT RUN CONDUIT IN PRECAST ROOF SLABS, IN 2 INCH SLABS OR IN TERRAZZO FLOOR FINISH.
8. LEAVE WIRES WITH SUFFICIENT SLACK TO PERMIT MAKING FINAL CONNECTIONS. RACEWAYS OVER 10 FT LONG IN WHICH WIRING IS NOT INSTALLED: FURNISH FISH WIRE.
9. SET BOXES SQUARE AND TRUE WITH BUILDING FINISH. ERECT WALL AND SWITCH OUTLETS IN ADVANCE OF FURRING AND FIREPROOFING. SECURE TO BUILDING STRUCTURE BY ADJUSTABLE STRAP IRONS.
10. VERIFY LOCATIONS OF OUTLETS AND SWITCHES IN FINISHED ROOMS WITH ARCHITECTURAL DRAWINGS OF INTERIOR DETAILS AND FINISH. IN CENTERING OUTLETS AND LOCATING BOXES AND OUTLETS, ALLOW FOR OVERHEAD PIPES, DUCTS AND MECHANICAL EQUIPMENT, VARIATIONS IN FIREPROOFING AND PLASTERING, WINDOW AND DOOR TRIM, PANELING, HUNG CEILINGS AND THE LIKE. CORRECT ANY INACCURACY RESULTING FROM FAILURE TO DO SO WITHOUT EXPENSE TO OWNER.
11. LOCATIONS INDICATED FOR LOCAL WALL SWITCHES ARE SUBJECT TO MODIFICATIONS AT OR NEAR DOORS. COORDINATE WITH ARCHITECT AND INSTALL SWITCH ON SIDE OPPOSITE HINGE. VERIFY FINAL HINGE LOCATIONS IN FIELD PRIOR TO SWITCH OUTLET INSTALLATION.
12. COVERS OF JUNCTION AND PULLBOXES SHALL BE READILY ACCESSIBLE.
13. PROVIDE PULLBOXES WHERE INDICATED, WHERE REQUIRED BY CODE AND WHEREVER NECESSARY TO FACILITATE PULLING OF WIRE. COORDINATE PULLBOX LOCATIONS WITH OTHER TRADES.
14. EMPTY RACEWAY RUNS: PROVIDE PULLBOXES EVERY 100 FT AND AS INDICATED. COORDINATE LOCATIONS WITH OTHER TRADES.
15. JUNCTION AND PULLBOXES: LOCATE GENERALLY NOT EXPOSED IN FINISHED SPACES. WHERE NECESSARY, REROUTE RACEWAYS OR MAKE OTHER ARRANGEMENTS FOR CONCEALMENT.
16. SUPPORT PANEL, JUNCTION AND PULLBOXES INDEPENDENTLY TO BUILDING STRUCTURE WITH NO WEIGHT BEARING ON RACEWAYS.
17. ALL ACCESS DOOR LOCATIONS SHALL BE REVIEWED BY ARCHITECT PRIOR TO INSTALLATION.
18. CONNECT CONDUIT TO MOTOR CONDUIT TERMINAL BOXES WITH FLEXIBLE CONDUIT (MINIMUM 18 IN. LENGTH AND 50% SLACK). DO NOT TERMINATE IN OR FASTEN RACEWAYS TO MOTOR FOUNDATION.
19. PROVIDE 2#14 INDICATING PILOT LIGHT WIRES FROM PILOT LIGHT IN CONTROLLER TO LOAD SIDE OF DISCONNECT SWITCH. RUN WIRES IN BRANCH CIRCUIT CONDUIT AND INCREASE CONDUIT SIZE AS REQUIRED.
20. PULL NO THERMOPLASTIC WIRES AT TEMPERATURES LOWER THAN 32°F (0C). PROVIDE CABLE SUPPORTS FOR WIRE IN RISER CONDUITS AS REQUIRED BY CODE.
21. PROVIDE SEPARATE RACEWAYS FOR CONDUCTORS OF NORMAL AND EMERGENCY CIRCUITS. COMMON BOXES: PROVIDE BARRIERS BETWEEN EMERGENCY AND NORMAL WIRING.
22. HEIGHTS OF OUTLETS FROM FINISHED FLOOR TO CENTERLINE OF OUTLET:
RECEPTACLES AND TELEPHONES:
GENERALLY 1'-6"
OVER WORK BENCHES 3'-6"
WALL SWITCHES 4'-0"
WALL FIXTURES 7'-0"
MOTOR CONTROLLERS 5'-0"
GONGS AND HORNS 7'-6"
FIRE ALARM STATIONS 4'-0"
CLOCKS 7'-6"
STROBE LIGHTS 6'-8" TO BOTTOM
EXCEPTIONS: AT JUNCTION OF DIFFERENT WALL FINISH MATERIALS, ON MOLDING OR BREAK IN WALL SURFACE, IN VIOLATION OF CODE REQUIREMENTS, AS NOTED OR DIRECTED.
CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING AND CONFIRMING ALL MOUNTING HEIGHTS WITH ARCHITECT AND ARCHITECTURAL DRAWINGS.
23. WIRE COLOR CODING: AS PER CODE. WHERE COLOR-CODED CABLE IS NOT AVAILABLE, CERTIFY IN WRITING AND REQUEST PERMISSION FOR OVERLAP COLOR TAPING OF CONDUCTORS (MINIMUM LENGTH 6") IN ACCESSIBLE LOCATIONS. COLOR CODING, ONCE SELECTED, MUST BE USED CONSISTENTLY FOR THE ENTIRE PROJECT.
24. INSTALL NEW WORK AND CONNECT TO EXISTING WORK WITH MINIMUM INTERFERENCE TO EXISTING FACILITIES. TEMPORARY SHUTDOWNS: ONLY WITH WRITTEN CONSENT OF OWNER. MAINTAIN CONTINUOUS OPERATION OF EXISTING FACILITIES. ALARM AND EMERGENCY SYSTEMS ARE NOT TO BE INTERRUPTED.
25. FIRESTOPPING SHALL BE INSTALLED WHENEVER WIRING OR RACEWAYS CROSS FIRE RATED CONSTRUCTION.
26. LIGHTING FIXTURE SCHEDULE STANDARD NOTE: LIGHTING FIXTURE SCHEDULE SHOWN ON ENGINEER'S DRAWINGS ARE FOR INFORMATION PURPOSES ONLY. LIGHTING FIXTURES SHOWN ARE THOSE SELECTED BY ARCHITECT. ENGINEER SHALL NOT BE RESPONSIBLE FOR INFORMATION SHOWN RELATED TO FIXTURE SELECTION AND OVERALL LIGHTING DESIGN. REFER TO ARCHITECTURAL DRAWINGS FOR FURTHER INFORMATION.

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MAINE MEDICAL CENTER IR READING ROOM AND U/S RENOVATION PORTLAND, MAINE
CURRENT ISSUE STATUS: PERMITTING
DATE: 03-31-17
ISSUED FOR PERMITTING
DESCRIPTION
GRAPHIC SCALE: 0" 1"
SCALE: NTS
PROJECT MANAGER:
JC/DRAWN BY:
A/E OF RECORD:
CAD FILE:
PROJECT NO.: B160305-000
DATE: 03-31-17
SHEET TITLE: ELECTRICAL COVER SHEET
SHEET No. E-000