

GENERAL NOTES

1. ALL RACEWAY SHALL BE CONCEALED UNLESS OTHERWISE NOTED.
2. THE SIZES OF ELECTRICAL RACEWAY SHALL BE AS INDICATED ON THE CONTRACT DRAWINGS AND SHALL MEET THE REQUIREMENTS OF THE LOCAL ELECTRIC CODE, ¾" MINIMUM, OR AS SHOWN ELSEWHERE.
3. CONDUIT FOR WIRING CONCEALED IN FLOOR SLABS, OR BELOW GRADE SHALL BE 1" MINIMUM.
4. ALL WORK INCLUDING DEVICES, OUTLETS, FIXTURES, WIRING, CONDUIT, RACEWAY, EQUIPMENT, ETC SHOWN ON THE ELECTRICAL PLANS IS NEW WORK AND SHALL BE FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR OR THEIR SUB-CONTRACTORS, UNLESS NOTED OTHERWISE.
5. ALL NEW OUTLETS, DEVICES, FIXTURES, WIRING, CONDUIT, RACEWAY, EQUIPMENT, ETC SHOWN ON THE ELECTRICAL PLANS SHALL BE PROVIDED WITH ALL PARTS AND ACCESSORIES FOR A COMPLETE INSTALLATION.
6. ALL WIRE AND CABLE FOR POWER, LIGHTING, CONTROL INDICATION, ALARM, SIGNAL AND COMMUNICATION SYSTEMS, UNLESS OTHERWISE NOTED, SHALL HAVE TYPE THHN INSULATION AND SHALL BE RATED FOR 600V MINIMUM.
7. MINIMUM WIRE SHALL BE #12. ALL WIRING SHALL BE NEW, UNLESS NOTED OTHERWISE. WIRING IN EXCESS OF 70 FEET FOR 120/208V AND 165 FEET FOR 277/480V MUST BE SIZED FOR VOLTAGE DROP. UPGRADE FEEDER SIZES IN ACCORDANCE WITH THE NEC. LIMIT VOLTAGE DROP TO LESS THAN 3%. FEEDERS SHALL FOLLOW SIMILAR GUIDELINES AND BE LIMITED TO 2% DROP.
8. ALL WIRING INSTALLATION SHALL BE COLOR CODED AS PER THE ELECTRICAL CODE. ALL CONDUCTORS SHALL BE STRANDED TYPE.
9. CIRCUIT RUNS ARE SHOWN DIAGRAMMATICALLY ONLY AND SHALL BE INSTALLED IN A MANNER TO PREVENT CONFLICTS WITH EQUIPMENT AND STRUCTURAL CONDITIONS. CONDUITS AND CABLES SHALL BE INSTALLED PARALLEL TO BEAMS AND WALLS.
10. CONDUITS SHALL BE TERMINATED SO AS TO PERMIT NEAT CONNECTIONS TO MOTORS AND OTHER EQUIPMENT.
11. CONDUIT AND WIRING (NOT SHOWN) FOR THE HVAC CONTROL EQUIPMENT AND MISCELLANEOUS DEVICES, OUTLET, SWITCHES, JUNCTION, PULL AND TERMINAL BOXES SHALL BE PROVIDED WITH NEMA ENCLOSURE SUITABLE TO THE ENVIRONMENT.
12. WIRING (NOT SHOWN) FOR THE FIRE ALARM AND LOW VOLTAGE SYSTEMS, SHALL BE FURNISHED AND INSTALLED AS PER MANUFACTURER'S RECOMMENDATIONS. SEE ELECTRICAL SPECIFICATIONS FOR ADDITIONAL SCOPE OF WORK. EXPOSED WIRING SHALL BE INSTALLED IN CONDUIT.
13. ALL CONDUIT RUNS CROSSING EXPANSION JOINTS SHALL HAVE EXPANSION OR EXPANSION AND DEFLECTION TYPE FITTINGS.
14. ALL CONDUITS FOR DATA/VOICE CABLING SHALL BE PROVIDED WITH BOX AND CONDUIT STUBBED UP ABOVE THE CEILING (UNLESS OTHERWISE NOTED) AND WITH PULL STRING AND NYLON BUSHINGS AT CONDUIT STUBS, TO PREVENT DAMAGE TO CABLES WHEN PULLED. SIZE CONDUIT AS REQUIRED.
15. ALL WIRING DEVICES, PANEL BOARDS, DISTRIBUTION BOARDS, MOTORS, ETC., SHALL BE GROUNDED AS PER ELECTRIC CODE.
16. ARCHITECTURAL DRAWINGS, INDICATE REQUIRED LOCATION OF WIRING DEVICES, COORDINATE ALL COVER PLATE COLORS WITH ARCHITECT.
17. ALL WORK SHALL BE INSTALLED IN FULL ACCORDANCE WITH LOCAL, STATE & FEDERAL CODES, STATE AND LOCAL AUTHORITIES. FILE ALL PLANS, OBTAIN ALL PERMITS, PAY ALL FEES, SCHEDULE ALL INSPECTIONS, MAKE ALL TESTS AND OBTAIN ALL APPROVALS REQUIRED. THE ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST ADOPTED EDITION OF NATIONAL ELECTRIC CODE AND LOCAL AUTHORITIES HAVING JURISDICTION. ALL COMPONENTS SHALL BE UL LISTED.
18. WHERE CONFLICTS ARE FOUND BETWEEN DRAWINGS, SPECIFICATIONS, LAWS & ORDINANCES, THE MOST STRINGENT SHALL APPLY.
19. SUBMIT FOR APPROVAL, COMPLETE SHOP DRAWINGS, LIST OF MATERIALS AND DETAILED DATA OF EQUIPMENT GIVING THE MANUFACTURERS NAME, CATALOG NUMBER, SIZE, CAPACITY AND DIMENSIONS. SUBMIT SHOP DRAWINGS FOR APPROVAL ONLY AFTER VERIFYING ALL DIMENSIONS. CONFIRM THAT THE EQUIPMENT, DEVICES, FIXTURES, ETC. CAN BE INSTALLED WITHOUT MODIFICATIONS. NO EQUIPMENT SHALL BE INSTALLED OR FABRICATED WITHOUT OBTAINING APPROVAL. ANY MODIFICATIONS REQUIRED, SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.
20. SUBMIT FOR APPROVAL PRODUCTS THAT ARE APPROVED EQUAL ONLY. IT SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO VERIFY THAT THE SUBSTITUTED SYSTEMS ARE APPROVED EQUAL. IN THE EVENT THAT UNAPPROVED SYSTEMS ARE SUBMITTED FOR APPROVAL, THE ELECTRICAL CONTRACTOR SHALL RETURN THESE SYSTEMS TO THE VENDOR AND PROVIDE APPROVED SYSTEMS AT NO ADDITIONAL COST TO THE OWNER.
21. ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL MOTOR STARTERS FOR ALL MOTORS, UNLESS CLEARLY INDICATED OTHERWISE ON THE CONTRACT DOCUMENTS. THREE PHASE MOTORS SHALL BE PROVIDED WITH A COMBINATION MAGNETIC MOTOR STARTER WITH AMBIENT COMPENSATED OVERLOAD HEATERS IN EACH UNGROUNDED LEG. SHORT CIRCUIT AND GROUND FAULT PROTECTION SHALL BE BY FUSED DISCONNECT SWITCH AS SHOWN OR SPECIFIED.
22. MANUALLY CONTROLLED SINGLE PHASE MOTORS SHALL HAVE FULLY RATED MANUAL MOTOR STARTER SWITCHES WITH O.L. HEATERS IN EACH UNGROUNDED LEG.
23. THE WIRING DIAGRAMS, QUANTITY AND SIZE OF WIRES AND CONDUIT REPRESENT A SUGGESTED ARRANGEMENT BASED UPON SELECTED STANDARD COMPONENTS OF ELECTRICAL EQUIPMENT. MODIFICATIONS ACCEPTABLE TO THE ENGINEER MAY BE MADE BY THE CONTRACTOR TO ACCOMMODATE EQUIPMENT ACTUALLY PURCHASED.
24. SWITCHES SHALL BE MOUNTED 4'-0" MAX ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED. RECEPTACLES SHALL BE MOUNTED 1'-6" ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED.
25. ALL PANELBOARDS SHALL BE MOUNTED SO THAT THE DISTANCE FROM THE TOP CIRCUIT BREAKER OPERATING HANDLE TO THE FLOOR SHALL NOT EXCEED 6'-6". PROVIDE A MINIMUM OF 3'-0" CLEARANCE FOR ALL 208V ELECTRICAL PANELS AND 3'-6" CLEARANCE FOR ALL 480V ELECTRICAL PANELS.
26. ALL 15A AND 20A, 125V AND 250V NON-LOCKING RECEPTACLES IN DAMP AND WET LOCATIONS SHALL BE LISTED AS WEATHER RESISTANT TYPE PER NEC.

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27. ALL 15A AND 20A, 125V AND 250V NON-LOCKING RECEPTACLES IN DAMP AND WET LOCATIONS SHALL BE LISTED AS WEATHER RESISTANT TYPE PER NEC.
28. ELECTRICAL CONTRACTOR TO VERIFY ACTUAL CEILING CONSTRUCTION TYPE AND FURNISH ALL LIGHTING FIXTURES WITH THE CORRECT MOUNTING DEVICE. WHETHER OR NOT SUCH VARIATIONS ARE INDICATED BY THE FIXTURE CATALOG NUMBER, THE CONTRACTOR SHALL VERIFY DEPTH OF ALL RECESSED LIGHTING FIXTURES PRIOR TO ORDERING FIXTURES. ANY DISCREPANCIES THAT WOULD CAUSE RECESSED FIXTURES NOT TO FIT INTO CEILING SHALL BE REPORTED TO THE ARCHITECT PRIOR TO ORDERING FIXTURES.
29. REFER TO ARCHITECTS INTERIOR ROOM ELEVATIONS FOR EXACT LOCATIONS LIGHT FIXTURES, RECEPTACLES AND LIGHT SWITCHES AND OTHER WALL MOUNTED ELECTRICAL EQUIPMENT PRIOR TO ROUGH-IN. CONSULT ARCHITECT PRIOR TO ROUGH-IN SHOULD THE ELECTRICAL DRAWINGS DIFFER WITH THE ARCHITECT'S INTERIOR ELEVATIONS.
30. VERIFY EXACT LOCATION OF CASEWORK AND FURNITURE WITH ARCHITECT AND GENERAL CONTRACTOR PRIOR TO ROUGH-IN.
31. COORDINATE EXACT LOCATION AND MOUNTING HEIGHTS OF DEVICES IN AREA'S BEING PROVIDED WITH FIN TUBE RADIATION WITH ARCHITECT PRIOR TO ROUGH-IN.
32. REFER TO HVAC, PLUMBING, FIRE PROTECTION, AND SECURITY CONSULTANT DRAWINGS AND ASSOCIATED PROJECT SPECIFICATIONS FOR ADDITIONAL SCOPE OF RELATED ELECTRICAL WORK.
33. FOR EXACT LOCATION OF HVAC, PLUMBING, AND FIRE PROTECTION EQUIPMENT, REQUIRING ELECTRICAL CONNECTION, REFER TO HVAC, PLUMBING, FIRE PROTECTION, AND SECURITY CONSULTANTS DRAWINGS.
34. CONFIRM EXACT POWER REQUIREMENTS AND CONNECTION LOCATIONS FOR ALL EQUIPMENT PRIOR TO INSTALLATION WITH PLUMBING, FIRE PROTECTION, HVAC, AND GENERAL CONTRACTOR.
35. THE ELECTRICAL CONTRACTOR SHALL COORDINATE THE EXACT LOCATION OF OUTLETS FOR THE PROJECTORS AND SCREENS WITH THE OWNER AND ARCHITECT PRIOR TO INSTALLATION.
36. SWITCHGEAR & PANEL DESIGNATIONS ARE INTENDED TO BE INTERPRETED AS INDICATED BELOW:  
BLANK: NOT INTENDED FOR USE, PLATE ONLY.  
SPACE: CONTAINS NECESSARY BUS AND HARDWARE FOR FUTURE ADDITION OF BREAKERS OR STARTERS WITHIN SIZE RANGE SHOWN.  
SPARE: CONTAINS A COMPLETE BREAKER OR STARTER INSTALLED, SIZE AS INDICATED AVAILABLE FOR FUTURE USE.
37. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFICATION OF EXISTING ELECTRICAL SERVICES AND CONNECTION REQUIREMENTS. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY CONFLICTS OR DISCREPANCIES FOUND PRIOR TO BID.

BRANCH CIRCUIT WIRING

1. WIRING SHOWN ON DRAWINGS IS FOR SPECIFIC ROUTES OR SPECIAL CONDITIONS.
2. NEW WIRING AND CONDUIT SHALL BE REQUIRED BETWEEN ALL OUTLETS INDICATED WITH CIRCUIT NUMBERS AND PANEL DESIGNATIONS.
3. ALL SWITCH CONTROLS SHALL BE PROVIDED WITH NEW WIRING AND CONDUIT AS REQUIRED.
4. ALTHOUGH ALL BRANCH CIRCUIT WIRE AND CONDUIT IS NOT SHOWN, IT IS THE INTENT OF THESE DRAWINGS THAT A COMPLETE BRANCH CIRCUIT WIRING SYSTEM BE INSTALLED.
5. ALL 120V SINGLE PHASE CIRCUITS SHALL HAVE DEDICATED NEUTRALS. NO SHARED NEUTRALS WILL BE ALLOWED.

MEP COORDINATION

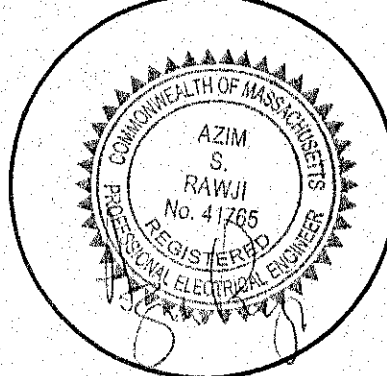
1. ALL ELECTRICALLY POWERED HVAC, PLUMBING AND FIRE PROTECTION EQUIPMENT TO BE PROVIDED WITH LOCAL DISCONNECT SWITCHES. THE SWITCHES SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR UNLESS NOTED OTHERWISE.
2. VARIABLE FREQUENCY DRIVES (VFD/VSDS) SHALL BE SUPPLIED BY THE MECHANICAL CONTRACTOR AND INSTALLED BY THE ELECTRICAL CONTRACTOR. COORDINATE EXACT LOCATION OF VARIABLE FREQUENCY DRIVES WITH MECHANICAL PLANS. THE ELECTRICAL CONTRACTOR SHALL PROVIDE AUX CONTACTS / MICRO-SWITCHES IN THE DISCONNECT WIRED TO THE VFD. ALL CONTROL WIRING SHALL BE BY THE MECHANICAL CONTRACTOR.
3. LINE VOLTAGE THERMOSTATS SHALL BE SUPPLIED BY THE MECHANICAL CONTRACTOR, INSTALLED AND WIRED BY THE ELECTRICAL CONTRACTOR.
4. DUCT MOUNTED SMOKE DETECTORS ARE TO BE SUPPLIED BY THE ELECTRICAL CONTRACTOR (FIRE ALARM EQUIPMENT SUPPLIER), INSTALLED IN THE DUCTWORK BY THE HVAC CONTRACTOR. WIRED BY THE ELECTRICAL CONTRACTOR.
5. THE ELECTRICAL CONTRACTOR SHALL COORDINATE THE EXACT LOCATIONS OF THE PLUMBING, HVAC AND SPRINKLER SYSTEM DEVICES IN THE FIELD PRIOR TO ROUGH-IN.
6. ALL EXTERIOR MOUNTED DISCONNECT SWITCHES, SAFETY SNAP SWITCHES, AND ASSOCIATED DEVICES SHALL BE WEATHERPROOF AND RATED NEMA 3R.
7. PROVIDE WEATHERPROOF RECEPTACLES WITH WHILE-IN-USE COVERS FOR ALL EXTERIOR OUTLETS.
8. ALL EQUIPMENT, DEVICES AND INSTALLATION MATERIALS LOCATED IN THE SHOWER ROOM, COLD ROOM, ICE RINK, GARAGES, BUILDING EXTERIOR AND SIMILAR AREAS SHALL BE OF WEATHER PROOF TYPE.
9. FURNISH AND INSTALL FIRE RATED ¾" PLYWOOD ON ALL THE WALLS IN THE COMMUNICATIONS ROOMS, DATA ROOMS, TELECOM ROOMS, AND SERVER ROOMS/CLOSETS AND IN ALL ROOMS AND CLOSETS WHERE COMMUNICATIONS AND SECURITY EQUIPMENT IS TO BE INSTALLED. THE PLYWOOD SHALL BE PAINTED WITH TWO COATS OF PAINT INCLUDING THE BACK SIDE, AND SHALL BE INSTALLED FROM 2'-0" AFF TO 8'-0" AFF.

FIRE ALARM NOTES

1. ALL WORK SHALL BE INSTALLED IN FULL ACCORDANCE WITH LOCAL, STATE & FEDERAL CODES, STATE AND LOCAL AUTHORITIES. IRRESPECTIVE OF THE FIRE ALARM DEVICES SHOWN ON THE DRAWINGS, FILE ALL PLANS, OBTAIN ALL PERMITS, PAY ALL FEES, SCHEDULE ALL INSPECTIONS, MAKE ALL TESTS AND OBTAIN ALL APPROVALS REQUIRED. THE FIRE ALARM WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE ADOPTED EDITIONS OF NFPA-72, NATIONAL ELECTRIC CODE AND LOCAL AUTHORITIES HAVING JURISDICTION. ALL COMPONENTS SHALL BE UL LISTED.
2. THE FIRE ALARM RISER IS FOR REFERENCES ONLY. THE ELECTRICAL CONTRACTOR SHALL USE THE FIRE ALARM RISER PROVIDED BY THE MANUFACTURER.
3. THE ELECTRICAL CONTRACTOR SHALL DETERMINE DEVICE COUNTS FROM THE FIRE ALARM DRAWINGS.
4. ALL VISUAL DEVICES SHALL BE SYNCHRONIZED AS PER NFPA 72.
5. SMOKE DETECTORS SHALL NOT BE LOCATED WITHIN 3'-0" OF A SUPPLY DIFFUSER.
6. ALL EQUIPMENT AND DEVICES LOCATED IN THE SHOWER ROOM, COLD ROOM, ICE RINK, GARAGES, BUILDING EXTERIOR AND SIMILAR AREAS SHALL BE OF WEATHER PROOF TYPE.
7. CIRCUIT BREAKER FOR FIRE ALARM CONTROL UNIT SHALL HAVE RED MARKING WITH A CIRCUIT BREAKER LOCK LISTED FOR USE WITH THE CIRCUIT BREAKER.
8. THE LOCATION OF THE CIRCUIT DISCONNECTING MEANS SHALL BE PERMANENTLY IDENTIFIED AT THE FIRE ALARM CONTROL UNIT.
9. PROVIDE CONDUIT, WIRING AND FIRE ALARM SYSTEM CONNECTION TO HVAC DUCT MOUNTED SMOKE DETECTORS. DUCT SMOKE DETECTORS SHALL BE PROVIDED WITH A REMOTE TEST SWITCH IN A LOCATION ACCEPTABLE TO THE FIRE DEPARTMENT. COORDINATE EXACT LOCATION OF REMOTE TEST SWITCH WITH THE FIRE DEPARTMENT PRIOR TO INSTALLATION.
10. PROVIDE DUCT SMOKE ALARM INDICATOR IN THE CEILING OR WALL BELOW THE DETECTOR.

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ELECTRICAL  
NOTES

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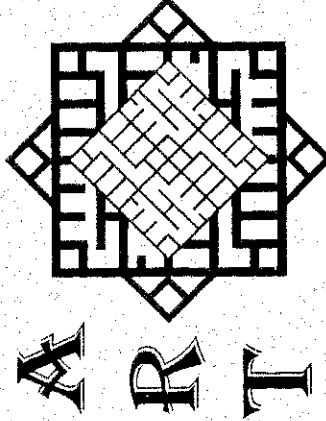
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