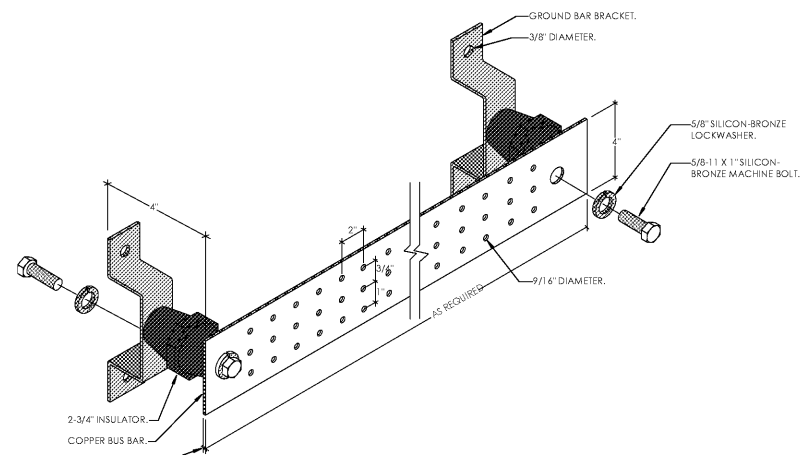


**1 SERVICE ENTRANCE GROUNDING INSTALLATION**

- NOT TO SCALE**
- NOTES:**
- GROUNDING ELECTRODE SYSTEM SHALL BE IN ACCORDANCE WITH THE NEC ARTICLE 250.
  - GROUNDING ELECTRODE CONDUCTORS SHALL BE CONTINUOUS AND NOT SPLICED.
  - GROUNDING ELECTRODE CONDUCTORS SHALL BE ENCLOSED IN FULL LENGTH GALVANIZED RIGID CONDUIT AS INDICATED.
  - GROUNDING ELECTRODE CONDUCTORS SHALL BE BARE COPPER.
  - ALL BUSHINGS INSTALLED IN DIRECT CONTACT WITH EARTH SHALL BE APPROVED FOR THE PURPOSE.
  - GROUND CONNECTIONS BELOW GRADE SHALL BE EXOTHERMICALLY WELDED TYPE.
  - PROVIDE GROUNDING JUMPERS FROM COLD WATER PIPING TO HOT WATER PIPING AT EACH WATER HEATER PROVIDE GROUNDING JUMPERS AT EACH INSULATED JOINT OR ANY PLACE WHERE GROUND IS BROKEN TO MAINTAIN THE INTEGRITY OF THE GROUNDING SYSTEM.

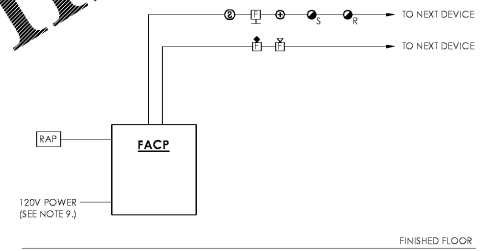


**2 TYPICAL GROUND BUS DETAIL**

- NOT TO SCALE**
- NOTES:**
- ALL GROUNDING AND BONDING SHALL BE IN ACCORDANCE WITH THE NEC AND UL STANDARDS.
  - ALL DIMENSIONS INDICATED IN THESE DOCUMENTS ARE FOR REFERENCE AND COORDINATION PURPOSES ONLY. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL DIMENSIONS IN THE FIELD.
  - ALL GROUND ELECTRODES OR BONDING CONDUCTORS INSTALLED ALONE WITH A RACEWAY SHALL UTILIZE GRC WITH GROUNDING BUSHINGS AT EACH END. THIS GROUND CONDUCTOR SHALL LOOP THRU THE BUSHING LUG PRIOR TO TERMINATION.
  - LENGTH OF BUS SHALL BE AS REQUIRED BY THE NUMBER OF CONDUCTOR CONNECTIONS PLUS 25% SPARE CAPACITY SPACE OR AS SPECIFIED OTHERWISE.
  - BUS BARS OVER 20" IN LENGTH REQUIRE AT LEAST ONE ADDITIONAL 3/4" INSULATOR SUPPORT OR AS REQUIRED. BUS BARS OVER 6" WIDE REQUIRE INSULATORS AT 4 CORNERS OR AS REQUIRED.

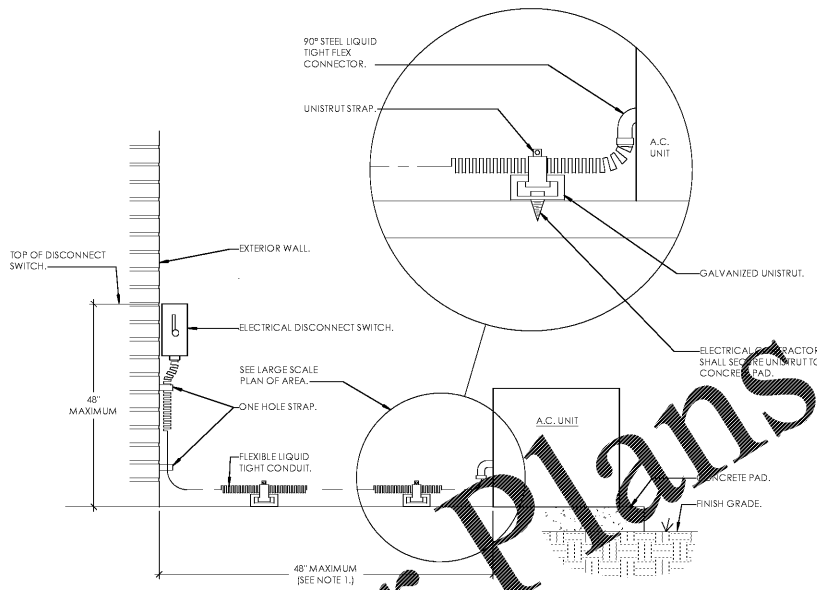
**FIRE ALARM SYSTEM GENERAL NOTES:**

- THE FIRE ALARM SYSTEM SHALL BE A COMPLETE SUPERVISED DETECTION AND ALARM SYSTEM. PROVIDE PRIMARY POWER CIRCUITS AND ALARM NOTIFICATION AND INITIATING CIRCUITS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND SPECIFICATIONS.
- INSTALLATION SHALL COMPLY WITH ADA, NEC, NFPA, AND UL.
- ALL SYSTEM COMPONENTS, ENCLOSURES, FRAMES, SURGE ARRESTORS, ETC., SHALL BE GROUNDED.
- THE FIRE ALARM WIRING SYSTEM SHALL BE FURNISHED AND INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S REQUIREMENTS FOR CLASS "B" SYSTEM AND AS FOLLOWS:  
PRIMARY POWER - 120V AC  
NOTIFICATION APPLIANCE CIRCUITS (NAC) - 24V DC  
SIGNALING LINE CIRCUIT (SLC) - 24V DC
- ALL CLASS "B" CIRCUITS SHALL BE INSTALLED SUCH THAT THE OUTGOING AND RETURN CONDUCTORS, EXITING FROM AND RETURNING TO THE CONTROL UNIT RESPECTIVELY, ARE ROUTED SEPARATELY AND NOT RUN IN THE SAME CABLE OR RACEWAY.
- ALL EQUIPMENT AND DEVICES SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS, APPLICABLE STANDARDS AND ACCESSIBLE FOR MAINTENANCE AND INSPECTION. WIRING DIAGRAMS SHALL BE SECURED FROM THE MANUFACTURER AND INSTALLED ACCORDINGLY TO MEET THE SPECIFIED SYSTEM MANUFACTURER AND INSTALLATION REQUIREMENTS.
- A "CERTIFICATE OF COMPLETION" IN ACCORDANCE WITH NFPA 72 SHALL BE FURNISHED PRIOR TO FINAL ACCEPTANCE.
- CONTRACTOR IS RESPONSIBLE FOR VERIFYING AND PROVIDING ALL FIRE ALARM DEVICES QUANTITIES FROM AUXILIARY DRAWINGS. DO NOT OBTAIN THE QUANTITIES FROM THE DEVICE CO.
- PROVIDE ADDITIONAL NOTIFICATION APPLIANCE CIRCUIT PANELS, AMP PANELS, POWER SUPPLIES, ETC. FOR FUTURE CAPACITY. PROVIDE FROM WORK SPECIFIED AS ONE SYSTEM.
- PROVIDE EMERGENCY BATTERIES CAPABLE OF RUNNING THE COMPLETE FIRE ALARM SYSTEM IN ALARM MODE.
- ALL WIRING TO BE IN CONDUIT SIZE IN ACCORDANCE WITH NEC WITH A MINIMUM SIZE OF 3/4". ALL FIRE ALARM CONDUIT SHALL BE RED.
- PROVIDE ALL FIRE ALARM JUNCTION BOXES WITH RED COVER. STENCIL THE LETTERS "FA" IN RED HIGH RELIEF ON EACH COVER.
- THE FIRE ALARM SYSTEM PROVIDER IS RESPONSIBLE FOR PROVIDING SIGNAL LINE BOOSTERS AS REQUIRED FOR THE SYSTEM TO FUNCTION PROPERLY.



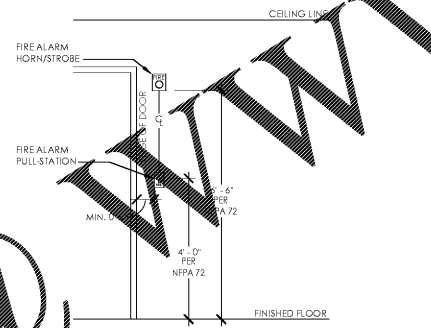
**3 FIRE ALARM SYSTEM RISER DIAGRAM**

- NOT TO SCALE**
- NOTES:**
- PROVIDE WIRING IN RED CONDUIT PER MANUFACTURER'S REQUIREMENTS.
  - SEE FLOOR PLAN FOR LOCATION AND QUANTITY OF DEVICES.
  - COORDINATE LOCATIONS AND CONNECTIONS OF HVAC SHUTDOWN RELAYS WITH HVAC/CONTROLS CONTRACTOR.
  - FIRE ALARM SYSTEM SHALL BE ADDRESSABLE.
  - IF NOT SHOWN ON FLOOR PLANS, PROVIDE 120 VOLT CIRCUIT FOR FIRE ALARM CONTROL PANEL POWER.
  - DEVICES SHALL BE RED WITH "ALARM" ENGRAVING TO COMPLY WITH FIRE ALARM USE.
  - FIRE ALARM SYSTEM SHALL BE MONITORED BY AN APPROVED SUPERVISING STATION PER IBC 907.6.5.
  - ALL ACCESS CONTROLLED DOORS THAT ARE LOCKED AND A REQUIRED MEANS OF EGRESS SHALL BE CONNECTED TO THE FIRE ALARM SYSTEM PER NFPA 72-21.9.
  - CIRCUIT BREAKER TO HAVE RED HANDLE AND IS TO BE LOCKABLE.



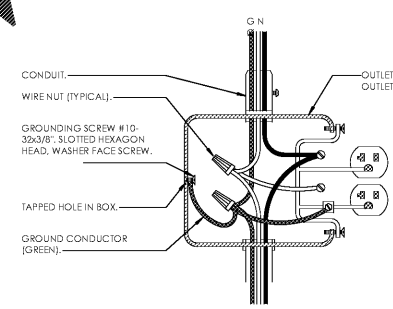
**4 TYPICAL MECHANICAL UNIT CONNECTION DETAIL**

- NOT TO SCALE**
- NOTES:**
- FOR DISTANCES GREATER THAN 48" CONDUIT TO BE RUN BELOW GRADE TO WITHIN 4" OF MECHANICAL UNIT. RUN UP WITH RIGID ELBOW TO CONCRETE PAD. PROVIDE FLEXIBLE CONNECTION FROM CONDUIT TO MECHANICAL UNIT. WITH CONNECTION MADE AT UNIT AS SHOWN ABOVE.



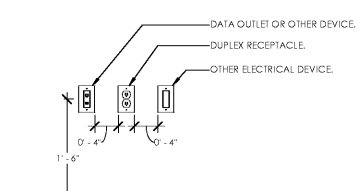
**5 TYPICAL FIRE ALARM DEVICE INSTALLATION DETAIL**

- NOT TO SCALE**
- NOTES:**
- FIRE ALARM DEVICES SHALL BE MOUNTED PER NFPA 72. THE PULL STATION HANDLE SHALL BE LOCATED BETWEEN 42" AND 48" ABOVE THE FINISHED FLOOR. THE STROBE SHALL BE MOUNTED BETWEEN 80" AND 96" ABOVE THE FINISHED FLOOR.
  - IF FIRE ALARM DEVICES ARE SHOWN IN THE MIDDLE OF A WALL ON THE FLOOR PLANS, THEN THE DOOR EDGE REQUIREMENTS DO NOT APPLY.
  - ALL CONFLICTS SHALL BE PRESENTED TO THE ARCHITECT FOR A RESOLUTION.



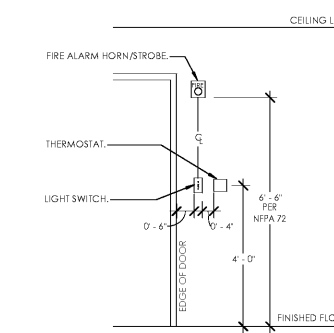
**6 TYPICAL RECEPTACLE DETAIL**

- NOT TO SCALE**
- NOTES:**
- NEUTRAL AND GROUND CONDUCTOR SHALL BE CONTINUOUS SO THAT REMOVAL OF DEVICES WILL NOT INTERFERE WITH CONDUCTOR CONTINUITY.



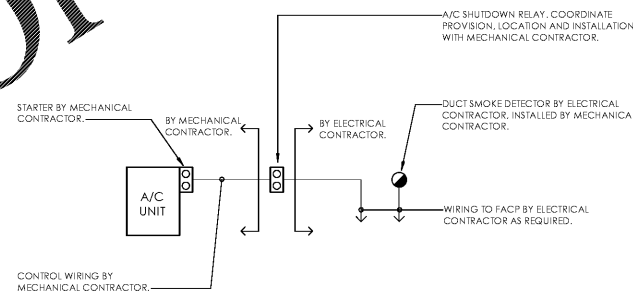
**11 TYPICAL ELECTRICAL DEVICE DETAIL**

- NOT TO SCALE**
- NOTES:**
- THIS DETAIL APPLIES WHERE EVER MULTIPLE DEVICES ARE SHOWN NEXT TO EACH OTHER ON THE SAME WALL.
  - SEE ARCHITECTURAL INTERIOR ELEVATIONS FOR EXACT LOCATION OF DEVICES.
  - ALL CONFLICTS SHALL BE PRESENTED TO THE ARCHITECT FOR A RESOLUTION.



**9 TYPICAL THERMOSTAT/SWITCH/FIRE ALARM INSTALLTION DETAIL**

- NOT TO SCALE**
- NOTES:**
- MOUNT DEVICES ON SAME VERTICAL CENTERLINE.
  - THERMOSTATS SHALL BE MOUNTED PER ADA.
  - THE LIGHT SWITCH MAY NOT APPLY IN ALL CASES.
  - IF THE THERMOSTAT IS SHOWN IN THE MIDDLE OF A WALL ON THE FLOOR PLANS, THEN THE DOOR EDGE REQUIREMENTS DO NOT APPLY.
  - ALL CONFLICTS SHALL BE PRESENTED TO THE ARCHITECT FOR A RESOLUTION.



**7 DUCT SMOKE DETECTOR CONNECTION DETAIL**

- NOT TO SCALE**

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ELECTRICAL DETAILS

**E0.4**

