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REVISIONS

| DATE | CHK | DESCRIPTION |
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SEAL

PROJECT

NUMBER: 0200375
DATE: 08/27/2020
LONGMEADOW
WOLFSWAMP
ELEMENTARY SCHOOL
BOILER REPLACEMENT

DRAWING

DRAWN BY: KEG
CHECKED BY: KEG
SCALE: NONE
ELECTRICAL
LEGEND, NOTES AND
DETAILS

ABBREVIATIONS

| AV/AMP | AMPERE | KWH | KILOWATT HOURS |
|--------|---|--------|------------------------------------|
| AC | ALTERNATING CURRENT | LTG | LIGHTING |
| ADA | AMERICAN WITH DISABILITIES ACT | MCB | MAIN CIRCUIT BREAKER |
| AF | AMPERE FRAME | MEC | MASSACHUSETTS ELECTRICAL CODE |
| AFF | ABOVE FINISHED FLOOR | M/G | MOTOR/GENERATOR SET |
| AFG | ABOVE FINISHED GRADE | MH | MANHOLE |
| AIC | AMPERE INTERRUPTING CAPACITY | MLO | MAIN LUGS ONLY |
| AL | ALUMINUM | MTD | MOUNTED |
| AT | AMPERE TRIP | MTG | MOUNTING |
| ATS | AUTOMATIC TRANSFER SWITCH | NC | NORMALLY CLOSED CONTACT |
| AWG | AMERICAN WIRE GAUGE | NEC | NATIONAL ELECTRICAL CODE |
| B | BURIED | NO | NORMALLY OPEN CONTACT |
| C | CONDUIT | NTS | NOT TO SCALE |
| CA | CABLE | # | NUMBER |
| CATV | CABLE TELEVISION | OPD | OVER CURRENT PROTECTION DEVICE |
| CCTV | CLOSED CIRCUIT TELEVISION SYSTEM | POS | PROVIDED UNDER OTHER SECTIONS |
| CB | CIRCUIT BREAKER | PVC | POLYVINYL CHLORIDE |
| CKT | CIRCUITS | PWR | POWER |
| CPU | CENTRAL PROCESSING UNIT | RGS | RIGID GALVANIZED STEEL |
| CL | CENTERLINE | RMS | ROOT MEAN SQUARE VALUE |
| dB | DECIBEL | RPM | REVOLUTIONS PER MINUTE |
| DC | DIRECT CURRENT | SN | SOLID NEUTRAL |
| DWG | DRAWING | SWBD | SWITCHBOARD |
| EC | ELECTRICAL CONTRACTOR | TB | TERMINAL BLOCK |
| EMT | ELECTRIC METALLIC TUBING | TEL | TELEPHONE |
| FDR | FEEDER | TERMIN | TERMINAL |
| FLMT | FLEXIBLE LIQUID TIGHT METALLIC TUBING | TSP | TWISTED SHIELDED-PAIR |
| FREQ | FREQUENCY | TVSS | TRANSIENT VOLTAGE SURGE SUPPRESSOR |
| GEC | GROUNDING ELECTRODE CONDUCTOR | TYP | TYPICAL |
| GFI | GROUND FAULT INTERRUPTING | UG | UNDERGROUND |
| GND | GROUND | UNO | UNLESS NOTED OTHERWISE |
| HH | HANDHOLE | UPS | UNINTERRUPTIBLE POWER SUPPLY |
| HP | HORSEPOWER | UTP | UNSHIELDED TWISTED-PAIR |
| HVAC | HEATING, VENTILATING AND AIR CONDITIONING | V | VOLTS |
| HZ | HERTZ | VA | VOLT-AMPERE |
| IG | ISOLATED GROUND | VSD | VARIABLE SPEED DRIVE |
| JB | JUNCTION BOX | W | WATTS |
| KVA | KILOVOLT-AMPERE | WP | WEATHERPROOF |
| KW | KILOWATT | | |

EXISTING EQUIPMENT LEGEND

| | |
|------|--|
| XM | EXISTING EQUIPMENT TO REMAIN |
| X | EXISTING EQUIPMENT TO BE REMOVED |
| XMRW | EXISTING EQUIPMENT TO REMAIN AND REWORKED/REWIRED |
| XR | EXISTING EQUIPMENT TO BE RELOCATED |
| XN | NEW LOCATION OF EXISTING RELOCATED EQUIPMENT |
| NR | EXISTING EQUIPMENT TO BE REMOVED AND NEW EQUIPMENT TO BE INSTALLED ON EXISTING BRANCH/FEEDER |
| | EXISTING EQUIPMENT FOR INFORMATION ONLY - INDICATED BY SYMBOL WITH LIGHT AND OUT OF FUNCTION LINE TYPE |
| | EXISTING EQUIPMENT TO BE REWORKED - INDICATED BY SYMBOL WITH DASHED AND IN FUNCTION LINE TYPE |

ELECTRICAL DRAWING LIST

| | |
|-------|---------------------------------------|
| E0.00 | ELECTRICAL LEGEND, NOTES AND DETAILS |
| E2.00 | ELECTRICAL MECHANICAL ROOM PART PLANS |

WIRING DEVICE LEGEND

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| | DUPLEX RECEPTACLE, GROUNDING TYPE, RATED 20A, 125V "5" - INDICATES CIRCUIT NUMBER "GFI" - INDICATES INTEGRAL GROUND FAULT CIRCUIT INTERRUPTER "WP" - INDICATES WEATHERPROOF "C" - INDICATES COUNTER HEIGHT |
| | DOUBLE DUPLEX RECEPTACLE, GROUNDING TYPE, RATED 20A, 125V |
| | JUNCTION BOX |
| | PULLBOX |

BRANCH CIRCUIT & FEEDER LEGEND

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| | BRANCH CIRCUIT OR FEEDER CONCEALED IN FINISHED AREAS |
| | BRANCH CIRCUIT OR FEEDER, CONCEALED IN OR UNDER FLOOR SLAB |
| | BRANCH CIRCUIT OR FEEDER TURNING UP TOWARDS OBSERVER |
| | BRANCH CIRCUIT OR FEEDER TURNING DOWN AWAY FROM OBSERVER |
| | CONDUIT STUBBED ABOVE CEILING |
| | BRANCH CIRCUIT HOME RUN TICKS INDICATE QUANTITY OF CONDUCTORS. GROUND CONDUCTORS ARE NOT INDICATED. NO TICKS INDICATES 2#12 & 1#12G IN 3/4" MINIMUM. R22A-1,3,5 INDICATES PANEL AND CIRCUIT DESIGNATION FROM WHICH HOMERUN SHALL ORIGINATE. EACH CIRCUIT SHALL BE 20A-1P (20AMP SINGLE POLE) UNLESS NOTED OTHERWISE. |
| | FLEXIBLE CONNECTION TO EQUIPMENT. RACEWAY AND CONDUCTOR RATING TO MATCH ASSOCIATED BRANCH CIRCUIT OR FEEDER |

POWER DISTRIBUTION

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| | 208Y/120 VOLT PANELBOARD, SURFACE MOUNTED |
| | UTILITY METER AND SOCKET |

MOTOR & CONTROLS LEGEND

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| | MANUAL MOTOR STARTING SWITCH WITH THERMAL OVERLOAD PROTECTION |
| | MAGNETIC MOTOR STARTER, REFER TO MAGNETIC MOTOR STARTER & VFD SCHEDULE FOR TYPE, SIZE AND ENCLOSURE |
| | COMBINATION FUSED DISCONNECT MAGNETIC MOTOR STARTER. REFER TO MAGNETIC MOTOR STARTER AND VFD SCHEDULE FOR TYPE, SIZE AND ENCLOSURE |
| | CONTACTOR IN NEMA 1 ENCLOSURE UNLESS OTHERWISE NOTED |
| | CONTROL RELAY |
| | EQUIPMENT CONTROL PANEL |
| | MOTOR, NUMERAL INDICATES HORSEPOWER "2" - INDICATES HORSEPOWER RATING |
| | DISCONNECT SWITCH RATED 30AMP, 3-POLE, IN NEMA TYPE 1 ENCLOSURE, UNLESS OTHERWISE NOTED "3R" - INDICATES NEMA TYPE 3R ENCLOSURE "2P" - INDICATES 2 POLE SINGLE PHASE DISCONNECT "60AS" - INDICATES 60A SWITCH |
| | FUSED DISCONNECT SWITCH, 3-POLE, IN NEMA TYPE 1 ENCLOSURE, UNLESS OTHERWISE NOTED. "3R" - INDICATES NEMA TYPE 3R ENCLOSURE "60AS" - INDICATES 60AMP SWITCH "50AF" - INDICATES 50AMP FUSES |
| | ENCLOSED CIRCUIT BREAKER IN NEMA TYPE 1 ENCLOSURE, UNLESS OTHERWISE NOTED "100AF" - INDICATES 100AMP, 3-POLE FRAME CIRCUIT BREAKER "90AT" - INDICATES 90AMP TRIP |
| | EQUIPMENT TAG, TOP ALPHANUMERIC CORRESPONDS TO EQUIPMENT ID LOWER INDICATES LOAD (KW, HP, ETC.) |

FIRE ALARM LEGEND

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| | FIRE ALARM CONTROL PANEL |
| | FIRE ALARM MANUAL PULL STATION "SC" INDICATES STOPPER COVER |
| | SINGLE POLE EMERGENCY BOILER SHUTOFF SWITCH |
| | ZONE MONITORING MODULE |
| | BOILER FIRESTAT |
| | FIRE ALARM AUDIBLE AND VISUAL DEVICE, NUMERAL INDICATES CANDELA VALUE |
| | FIRE ALARM HEAT DETECTOR, 135° FIXED TEMPERATURE UNLESS NOTED OTHERWISE |
| | END OF LINE RESISTOR |
| | CARBON MONOXIDE DETECTOR |

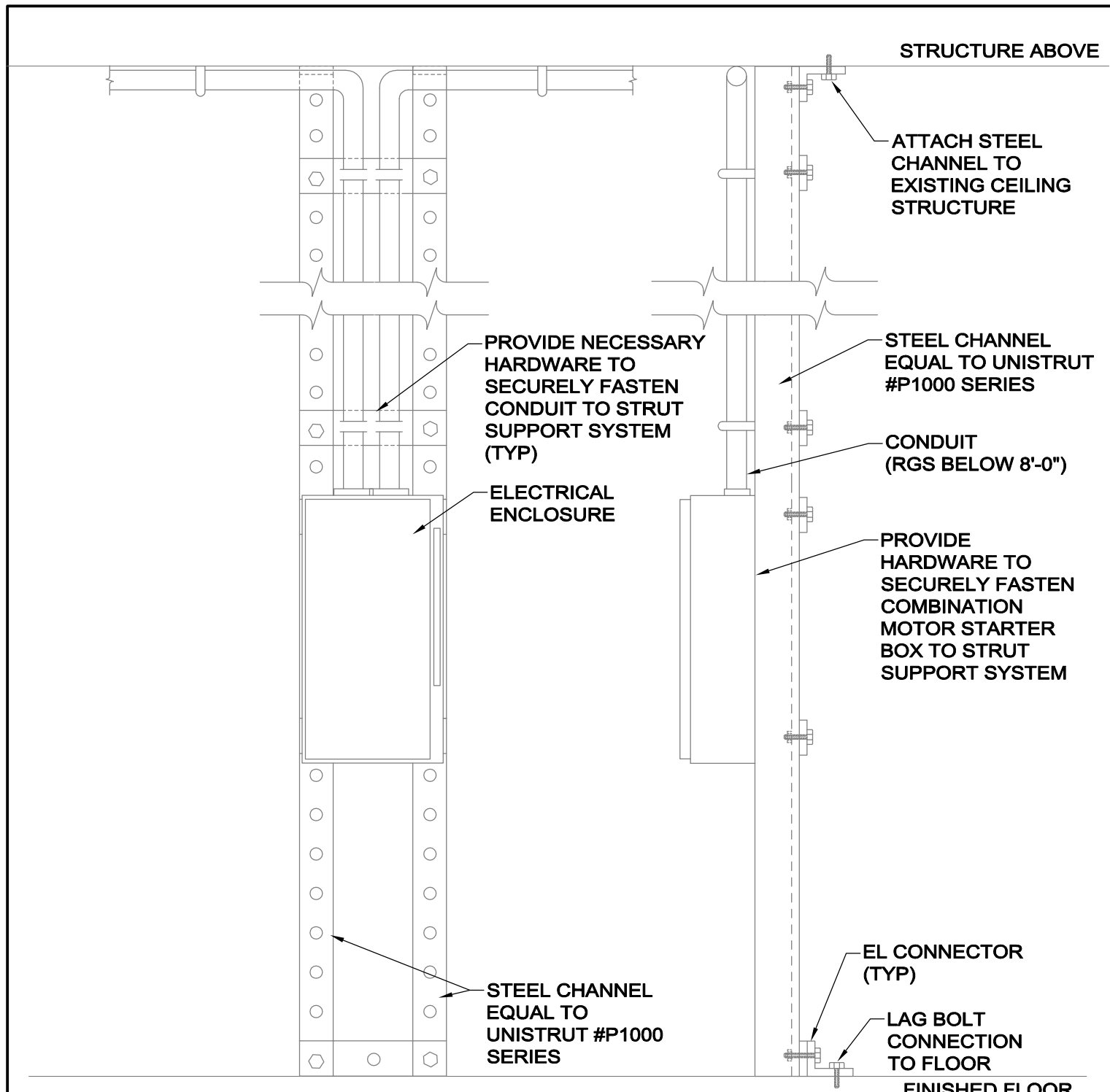
ELECTRICAL DEMOLITION NOTES

- VISIT THE SITE PRIOR TO SUBMISSION OF THE BIDS TO BECOME FAMILIAR WITH THE ACTUAL CONDITIONS AND EXTENT OF THE WORK.
- TRACE AND LABEL ALL EXISTING SYSTEMS WITHIN THE DEMOLITION AREA AND BEYOND PRIOR TO DISCONNECTION AND REMOVAL TO ENSURE THAT NO AREA OUTSIDE THE DEMOLITION AREA IS AFFECTED. REVIEW IN DETAIL WITH THE GENERAL CONTRACTOR AND OWNER WHAT IS TO BE REMOVED AND REMAIN PRIOR TO WORK COMMENCING THE DEMOLITION. THERE SHALL BE NO INTERRUPTION OF SERVICES OUTSIDE THE DEMOLITION AREA WITHOUT APPROVAL FROM THE OWNER'S REPRESENTATIVE.
- NOTIFY THE OWNER'S REPRESENTATIVE IMMEDIATELY OF ANY UNANTICIPATED HIDDEN CONDITIONS ENCOUNTERED DURING THE DEMOLITION.
- ALL ITEMS REMOVED SHALL BE OFFERED TO THE OWNER FOR SALVAGE. IF THE OWNER DOES NOT TAKE POSSESSION, DISPOSE OF THE ITEMS IN A SAFE AND LEGAL MANNER. ALL ITEMS CLASSIFIED AS HAZARDOUS SHALL BE DISPOSED AS HAZARDOUS WASTES AND A UNIFORM HAZARDOUS WASTE MANIFEST SHALL BE PROVIDED TO THE OWNER.
- ENSURE THE SAFE PASSAGE OF PERSONS IN AND AROUND THE BUILDING DURING DEMOLITION. PREVENT INJURY TO PERSONS AND DAMAGE TO PROPERTY. PROVIDE ADEQUATE SHORING AND BRACING TO PREVENT COLLAPSE. IMMEDIATELY REPAIR DAMAGED PROPERTY TO THE CONDITION BEFORE BEING DAMAGED. TAKE EFFECTIVE MEASURES TO PREVENT WINDBLOWN DUST.
- DO NOT USE CUTTING TORCHES UNTIL WORK AREA IS CLEARED OF FLAMMABLE MATERIALS. AT CONCEALED SPACES, SUCH AS PIPE INTERIORS, VERIFY CONDITION AND CONTENTS OF HIDDEN SPACE BEFORE STARTING FLAME-CUTTING OPERATIONS. MAINTAIN FIRE WATCH AND PORTABLE FIRE-SUPPRESSION DEVICES DURING FLAME-CUTTING OPERATIONS. MAINTAIN ADEQUATE VENTILATION WHEN USING CUTTING TORCHES.
- ALL DEMOLITION SCOPE ASSOCIATED WITH LOW VOLTAGE SYSTEMS INCLUDING BUT NOT LIMITED TO TELEPHONE, DATA, SECURITY, PAGING, CCTV, ETC. SHALL BE INCLUDED IN THIS CONTRACT.
- CIRCUIT TRACE AND LABEL ALL EXISTING BRANCH CIRCUITS AND FEEDERS WITHIN THE AREA OF DEMOLITION SCOPE PRIOR TO DE-ENERGIZING AND DISCONNECTION. ALL CIRCUITS WITHIN PANELBOARDS IDENTIFIED FOR REMOVAL SHALL BE TRACED AND LABELED TO ENSURE THAT NO AREA OUTSIDE THE DEMOLITION SCOPE LIMIT IS AFFECTED.
- DE-ENERGIZE AND REMOVE ALL CONDUCTORS AND RACEWAYS TO THEIR POINTS OF ORIGIN WITHIN THE AREA OF DEMOLITION SCOPE. ITEMS IDENTIFIED FOR DEMOLITION SHALL NOT BE ABANDONED IN PLACE. RACEWAYS THAT ENTER MASONRY WALLS AND FLOORS SHALL BE CUT FLUSH AT THE SURFACE FOR PATCHING BY OTHERS. ALL CIRCUIT BREAKERS ASSOCIATED WITH THE DEMOLITION SCOPE SHALL BE DE-ENERGIZED AND LABELED SPARE.
- THE EXISTING FIRE ALARM SYSTEM SHALL REMAIN FULLY FUNCTIONAL DURING THE ENTIRE DEMOLITION AND CONSTRUCTION PERIOD. REUSE OF EXISTING FIRE ALARM SYSTEM RACEWAYS SHALL NOT BE ALLOWED. ALL REQUIRED SYSTEM SHUTDOWNS SHALL BE COORDINATED WITH AND APPROVED BY THE OWNER'S REPRESENTATIVE AND THE AUTHORITY HAVING JURISDICTION. DEMOLITION OF THE EXISTING SYSTEM SHALL NOT COMMENCE UNTIL THE NEW SYSTEM HAS BEEN COMPLETELY INSTALLED, TESTED AND APPROVED BY THE AUTHORITY HAVING JURISDICTION.
- CREATE AND SUBMIT IMPAIRMENT PLANS TO THE AHJ IF ANY PORTION OF THE EXISTING FIRE ALARM SYSTEM IS TAKEN OUT OF SERVICE DURING THE EXECUTION OF THE PROJECT.

ELECTRICAL POWER NOTES

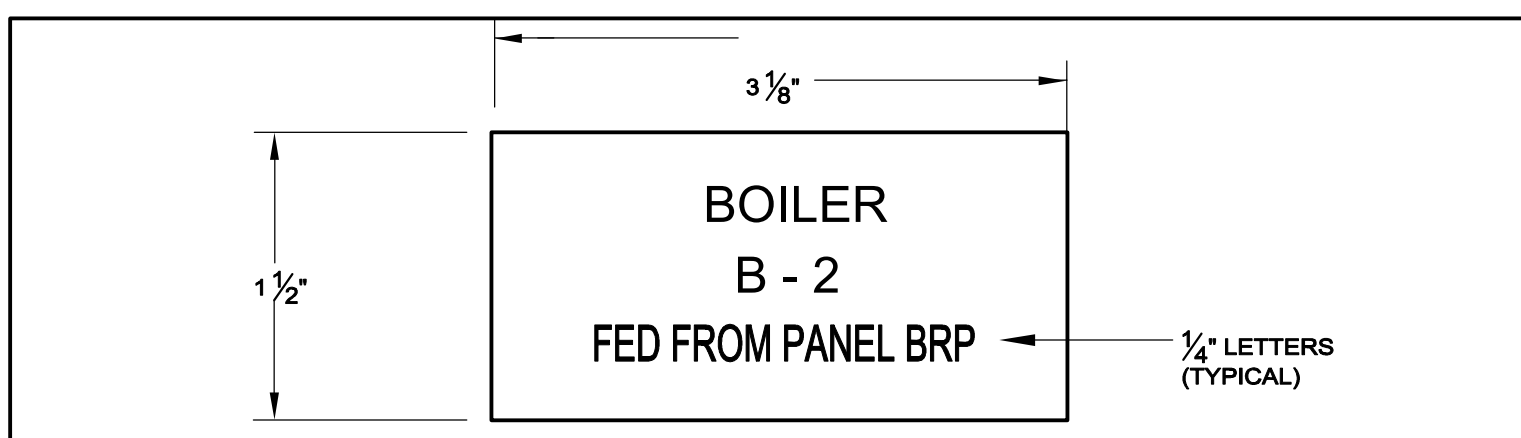
- CIRCUIT NUMBERS ARE DIAGRAMMATIC. EXACT NUMBERS SHALL BE DETERMINED IN THE FIELD AND REFLECTED ON AS-BUILT DOCUMENTATION BY THE ELECTRICAL CONTRACTOR. THE ASSOCIATED CIRCUIT NUMBERS THAT ARE APPLIED TO EACH DEVICE AND PIECE OF EQUIPMENT INFERS INTERCONNECTING BRANCH CIRCUITRY. INTERCONNECTING BRANCH WIRING SHALL BE SIZED EQUAL TO THE HOMERUN UNLESS NOTED OTHERWISE.
- VOLTAGE DROP HAS BEEN CONSIDERED IN THE DESIGN OF ALL BRANCH CIRCUITRY AND FEEDER SIZES BASED UPON THE ILLUSTRATED EQUIPMENT LAYOUTS AND SHORTEST CONDUCTOR/RACEWAY ROUTING. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR DEVIATIONS TAKEN THAT WILL INCREASE CONDUCTOR/RACEWAY ROUTING LENGTHS. BRANCH CIRCUITS LONGER THAN 75' FOR 120V FROM PANEL TO LAST OUTLET SHALL BE INCREASED A MINIMUM OF ONE SIZE ABOVE THAT SPECIFIED TO LIMIT VOLTAGE DROP TO LESS THAN 3%. FEEDERS SHALL FOLLOW SIMILAR GUIDELINES AND BE LIMITED TO 2% DROP.
- POWER BRANCH CIRCUITRY SHALL BE INSTALLED IN CONDUIT WHERE EXPOSED. POWER BRANCH CIRCUITRY MAY BE TYPE MC CABLE WHERE CONCEALED ABOVE SUSPENDED CEILINGS AND IN METAL STUD WALLS.
- MAINTAIN CONTINUITY OF BRANCH CIRCUITRY ASSOCIATED WITH ALL EXISTING POWER DEVICES TO REMAIN.

GENERAL NOTES:
CONTRACTOR TO COORDINATE WORK SCHEDULE WITH OWNER; ACCEPTABLE HOURS OF WORK ARE AS FOLLOWS:
- NOISY WORK I.E. CUTTING, DRILLING, HAMMERING, ETC. TO BE PERFORMED MONDAY THROUGH FRIDAY AFTER 3PM OR ON WEEKENDS.
- ALL OTHER WORK CAN BE PERFORMED MONDAY THROUGH FRIDAY 7AM-3PM.
- COORDINATE ALL SYSTEM SHUTDOWNS WITH OWNER. EXISTING HEATING AND CHILLED WATER SYSTEM ARE TO REMAIN IN OPERATION DURING CONSTRUCTION WHILE BUILDING IS OCCUPIED.
CONTRACTOR TO COORDINATE RIGGING PATH WITH OWNER TO PREVENT DAMAGE TO EXISTING FLOORING, FINISHES, AND STRUCTURE. CONTRACTOR IS RESPONSIBLE FOR ALL DAMAGE TO BUILDING.



NOTES:
1. THIS DRAWING IS INTENDED TO ILLUSTRATE DESIGN INTENT ONLY. FABRICATE A STEEL CHANNEL SUPPORT SYSTEM TO ACCOMMODATE MOUNTING OF A NEW STARTER, DISCONNECT SWITCH, RECEPTACLE, ETC. REFER TO FLOOR PLANS AND COORDINATE WITH MECHANICAL CONTRACTOR FOR THE EXACT LOCATION AND MOUNTING HEIGHT OF ELECTRICAL EQUIPMENT. PROVIDE ALL NECESSARY EQUIPMENT, SUPPORTS, HARDWARE, ETC. TO FACILITATE A COMPLETE AND SECURE CONDUIT AND ELECTRICAL EQUIPMENT INSTALLATION.

NV5 TYPICAL ELECTRICAL EQUIPMENT SUPPORT DETAIL E208



NOTES:
1. REFER TO SPECIFICATIONS FOR ADDITIONAL NAMEPLATE REQUIREMENTS.
2. NAMEPLATE TO BE 1/16" THICK PLASTIC WITH WHITE CENTER LAMINATION. FACE SHALL BE BLACK, ENGRAVED LETTERS SHALL BE WHITE.
3. SECURE NAMEPLATE TO SURFACES WITH HIGH STRENGTH ADHESIVE CEMENT. UTILIZE MECHANICAL FASTENERS FOR ALL EXTERIOR LOCATIONS.
4. TYPICAL FOR MOUNTING ON "VFD" AND "DISCONNECTS".

NV5 TYPICAL ENGRAVED PLASTIC NAMEPLATE DETAIL E303