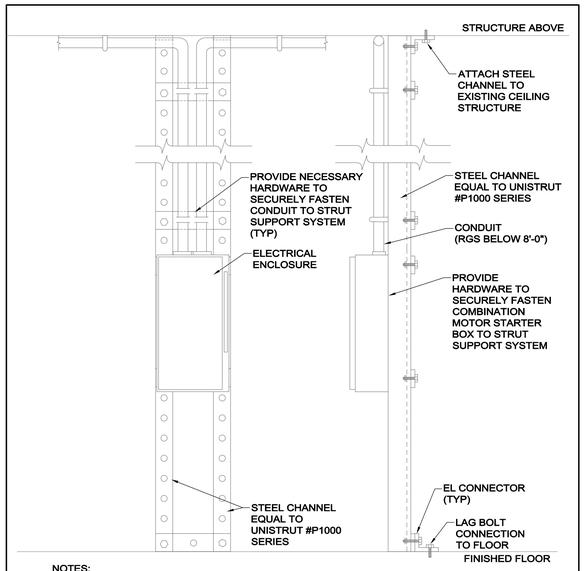
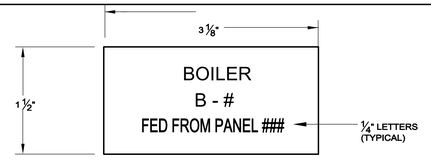


NOTES:
1. THIS DRAWING IS INTENDED TO ILLUSTRATE DESIGN INTENT ONLY. FABRICATE A STEEL CHANNEL SUPPORT SYSTEM TO ACCOMMODATE MOUNTING OF A NEW STARTER, DISCONNECT SWITCH, RECEPTACLE, ETC. REFER TO FLOOR PLANS AND COORDINATE WITH MECHANICAL CONTRACTOR FOR THE EXACT LOCATION AND MOUNTING HEIGHT OF ELECTRICAL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

RDK | 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".

RDK | TYPICAL ENGRAVED PLASTIC NAMEPLATE DETAIL | E303

ELECTRICAL DEMOLITION NOTES

1. VISIT THE SITE PRIOR TO SUBMISSION OF THE BIDS TO BECOME FAMILIAR WITH THE ACTUAL CONDITIONS AND EXTENT OF THE WORK.
2. 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.
3. NOTIFY THE OWNER'S REPRESENTATIVE IMMEDIATELY OF ANY UNANTICIPATED HIDDEN CONDITIONS ENCOUNTERED DURING THE DEMOLITION.
4. 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.
5. 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.
6. 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.
7. 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.
8. 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.
9. 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.
10. 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.
11. 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

1. 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.
2. 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.
3. 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.
4. MAINTAIN CONTINUITY OF BRANCH CIRCUITRY ASSOCIATED WITH ALL EXISTING POWER DEVICES TO REMAIN.
5. SWITCHBOARDS, AND PANELBOARDS SHALL BE FIELD MARKED TO WARN QUALIFIED PERSONS OF POTENTIAL ELECTRIC ARC FLASH HAZARDS. THE MARKING SHALL BE LOCATED SO AS TO BE CLEARLY VISIBLE TO QUALIFIED PERSONS BEFORE EXAMINATION, ADJUSTMENT, SERVICING, OR MAINTENANCE OF THE EQUIPMENT.

WIRING DEVICE LEGEND

5 GFI	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
J	JUNCTION BOX
PB	PULLBOX

BRANCH CIRCUIT & FEEDER LEGEND

	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
R22A-1,3,5	BRANCH CIRCUIT HOME RUN TICKS INDICATE QUANTITY OF CONDUCTORS, GROUND CONDUCTORS ARE NOT INDICATED. NO TICKS INDICATES 2#12 & 1#12G IN 3/4"C 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

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

MOTOR & CONTROLS LEGEND

S_M	MANUAL MOTOR STARTING SWITCH WITH THERMAL OVERLOAD PROTECTION
	MAGNETIC MOTOR STARTER, REFER TO MAGNETIC MOTOR STARTER & VFD SCHEDULE FOR TYPE, SIZE AND ENCLOSURE
60AS / 50AF	COMBINATION FUSED DISCONNECT MAGNETIC MOTOR STARTER. REFER TO MAGNETIC MOTOR STARTER AND VFD SCHEDULE FOR TYPE, SIZE AND ENCLOSURE
C	CONTACTOR IN NEMA 1 ENCLOSURE UNLESS OTHERWISE NOTED
CP	EQUIPMENT CONTROL PANEL
ATS	AUTOMATIC TRANSFER SWITCH
S^{M3}	TOGGLE TYPE 3-PHASE MOTOR DISCONNECT SWITCH
G	GENERATOR
2	MOTOR, NUMERAL INDICATES HORSEPOWER "2" - INDICATES HORSEPOWER RATING
30AS	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
60AS / 30AF	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
100AF / 90AT / CB	ENCLOSED CIRCUIT BREAKER IN NEMA TYPE 1 ENCLOSURE, UNLESS OTHERWISE NOTED "100AF" - INDICATES 100AMP, 3-POLE FRAME CIRCUIT BREAKER "90AT" - INDICATES 90AMP TRIP
FB-4 / 7.5KW	EQUIPMENT TAG, TOP ALPHANUMERIC CORRESPONDS TO EQUIPMENT ID LOWER INDICATES LOAD (KW, HP, ETC.)

ELECTRICAL DRAWING LIST

E0.00	ELECTRICAL LEGEND, NOTES AND ABBREVIATIONS
E2.0	ELECTRICAL MECHANICAL ROOM PART PLANS BLUEBERRY HILL ELEMENTARY SCHOOL

FIRE ALARM LEGEND

FACP	FIRE ALARM CONTROL PANEL
F SC	FIRE ALARM MANUAL PULL STATION "SC" INDICATES STOPPER COVER
S ESO	SINGLE POLE EMERGENCY BOILER SHUTOFF SWITCH
ZMM	ZONE MONITORING MODULE
FST	BOILER FIRESTAT
F 110cd	FIRE ALARM AUDIBLE AND VISUAL DEVICE, NUMERAL INDICATES CANDELA VALUE
G	COMBUSTIBLE GAS DETECTOR
H	FIRE ALARM HEAT DETECTOR, 135° FIXED TEMPERATURE UNLESS NOTED OTHERWISE
CO (R)	CARBON MONOXIDE DETECTION SYSTEM (REFER TO DETAIL FOR FURTHER INFORMATION AND REQUIREMENTS). "(R)" INDICATES REMOTE CARBON MONOXIDE DETECTOR.

ABBREVIATIONS

A/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
℄	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	TERMN	TERMINAL
FLMT	FLEXIBLE LIQUID TIGHT METALLIC TUBING	TSP	TWISTED SHIELDED-PAIR
FREQ	FREQUENCY	TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSER
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

ADDENDUM #1
07-25-2019

NV5
380 Russell Street
Hadley, MA 01035
T.413-387-4640
F.413-387-0197
W. www.nv5.com

REVISIONS

	DATE	CHK	DESCRIPTION
1	07/25/19	JP	ADDENDUM #1

SEAL

PROJECT
NUMBER 0190327
DATE 07/18/2019
BLUEBERRY HILL SCHOOL BOILER REPLACEMENT

DRAWING
DRAWN BY JP
CHECKED BY KEG
SCALE 1/8" = 1'-0"
ELECTRICAL LEGEND NOTES AND ABBREVIATIONS

E0.00