ELECTRICAL ABBREVIATIONS:

NOTE: NOT ALL ABBREVIATIONS ARE USED ON DRAWINGS

AMP./A	AMPERE
AC	ALTERNATING CURRENT
A/C.	AIR CONDITION
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AIC	AMPERES INTERRUPTING CAPACITY
AL.	ALUMINUM
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
ARCH.	ARCHITECTURAL
ATC	AUTOMATIC TEMPERATURE CONTROL
ATS	AUTOMATIC TRANSFER SWITCH
AWG	AMERICAN WIRE GUAGE
&	AND
BLDG.	BUILDING
BKR.	BREAKER
BPT	BUS POTENTIAL TRANSFORMER
.C.	CENTIGRADE DEGREES
CLG.	CEILING
CKT.	CIRCUIT
CB	CIRCUIT BREAKER
COL.	COLUMN
C.	CONDUIT
CU. FT	CUBIC FEET
CNTR.	CONTRACTOR
CU	COPPER
COORD	COORDINATE
CONT.	CONTINUATION
CPT	CONTROL POTENTIAL TRANSFORMER
CT	CURRENT TRANSFORMER
1/C	ONE CONDUCTOR
DISC.	DISCONNECT SWITCH
DN.	DOWN
EA.	EACH
EF	EXHAUST FAN
EM	EMERGENCY
EMT	ELECTRICAL METALLIC TUBING
EQ.	EQUAL
EQUIP.	EQUIPMENT
FA	FIRE ALARM
.F.	FAHRENHEIT DEGREES
FC	FOOTCANDLE
FT.	FEET
F.E.	FIRE EXTINGUISHER
FIN.	FINISH/FINISHED
FLEX.	FLEXIBLE
FL.	FLOOR
FLA	FULL LOAD AMPERES
GEN.	GENERATOR
G / GND.	GROUND
GFI	GROUND FAULT INTERRUPTER
H / HT.	HEIGHT
HP	HORSEPOWER
HTR	HEATER
HVAC	HEATING, VENTILATION, AIR CONDITIONING
HZ	HERTZ
JB	JUNCTION BOX
KCMIL	1000 CIRCULAR MILS
KV	KILOVOLT
KVA	KILOVOLT- AMPERE
L	LENGTH / LONG
KVAR	KILOVOLT-AMPERE REACTIVE
LA	LIGHTNING ARRESTOR
LAN	LOCAL AREA NETWORK
LOC	LIMIT OF CONTRACT
LPT	LINE POTENTIAL TRANSFORMER
LT	LIGHT
LTG	LIGHTING
M/C	MULTI- CONDUCTOR
MDP	MAIN DISTRIBUTION PANEL
MAX.	MAXIMUM
MB	MAIN BREAKER
MCT	MULTI-TAP CURRENT TRANSFORMER
MCT(P)	MULTI-TAP CURRENT TRANSFORMER-PROTECTION CLASS
MCT(M)	MULTI-TAP CURRENT TRANSFORMER-METERING CLASS
MECH.	MECHANICAL
MTD.	MOUNTED
MIN.	MINIMUM
MLO	MAIN LUGS ONLY
MVA	MEGAVOLT AMPERES
N.	NEUTRAL
NC	NORMAL CLOSED
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
N.I.C.	NOT IN CONTRACT
NO	NORMALLY OPEN
NTS	NOT TO SCALE
NO./#	NUMBER
%	PERCENT
ø/PH	PHASE
PVC	POLYVINYL CHLORIDE
PT	POTENTIAL TRANSFORMER
R.	RADIUS
RD	ROAD
RECEPT	RECEPTACLE
RECIRC	RECIRCULATE
REQ'D	REQUIRED
REV.	REVISE/REVISION
RGS	RIGID GALVANIZED STEEL CONDUIT
1/C	SINGLE CONDUCTOR
SPECS.	SPECIFICATIONS
SQ.	SQUARE
S.F.	SQUARE FEET
SW.	SWITCH
S.S.	STAINLESS STEEL
SWBD	SWITCHBOARD
SHT.	SHEET
THRU	THROUGH
TEL.	TELEPHONE
TRANSF./TRNS/TRF/XFMR	TRANSFORMER
TYP.	TYPICAL
UON	UNLESS OTHERWISE NOTED
UG	UNDERGROUND
VAC	VOLTS, ALTERNATING CURRENT
VERT.	VERTICAL
VD	VOLTAGE DROP
VM	VOLT METER
V	VOLTAGE/VOLTS
W	WIRE
WP	WEATHERPROOF
W/WD.	WIDE
W/	WITH
W/O	WITHOUT

GENERAL ELECTRICAL NOTES:

(APPLY TO ALL DRAWINGS)

1. PERFORM ALL WORK IN ACCORDANCE WITH THE ADOPTED EDITION OF THE NATIONAL ELECTRICAL CODE AND THE NATIONAL FIRE PROTECTION ASSOCIATION CODE AS WELL AS ALL OTHER APPLICABLE FEDERAL, STATE, AND LOCAL CODES. ALL CODES MENTIONED REFER TO THE LATEST ADOPTED EDITION.
2. TEST ALL SYSTEMS IN ACCORDANCE WITH THE LATEST NATIONAL ELECTRICAL TESTING AGENCY (NETA) STANDARDS. SUBMIT ALL TEST REPORTS TO THE ENGINEER PRIOR TO FINAL COMPLETION.
3. THE .4 CONTRACTOR SHALL SUBMIT ALL LOCAL PERMIT APPLICATIONS THAT MAY BE REQUIRED/ASSOCIATED WITH THE WORK SHOWN ON THE PLANS AND SPECIFICATIONS.
4. SUBMIT SHOP DRAWINGS FOR ENGINEERING REVIEW PRIOR TO PURCHASING EQUIPMENT.
5. SEE ALL SPECIFICATION SECTIONS FOR ADDITIONAL ELECTRICAL WORK REQUIRED, NOT COMPLETELY SHOWN ON DRAWINGS.
6. SUPPORT WALL MOUNTED ELECTRICAL EQUIPMENT (I.E. PANELBOARDS, TRANSFORMERS, ETC.) BY UNISTRUT CHANNELS SECURED TO FLOOR AND CEILING, UNLESS WALL IS OF MASONRY TYPE WHICH IS SUITABLE CONSTRUCTION TO SUPPORT WEIGHT OF EQUIPMENT, OR EXCEPT AS OTHERWISE NOTED OR SPECIFIED.
7. PROVIDE FIRE SEALING AFTER POWER AND CONTROL SYSTEM CONDUITS PENETRATE FIRE RATED WALLS. ALL FLOORS AND WALLS ARE TO BE CONSIDERED 2HR RATED UNLESS OTHERWISE NOTED.
8. ALL WIRING SHALL BE COPPER.
9. ALL CONDUCTORS SHALL BE ROUTED IN CONDUIT. EMT FOR INTERIOR LOCATION. RGS FOR EXTERIOR LOCATIONS. ALL CONDUIT SHALL BE SIZED PER THE CURRENT N.E.C. FOR THE QUANTITY AND SIZE CONDUCTORS INDICATED ON DRAWINGS. ALL CONDUIT SHALL BE ROUTED PERPENDICULAR AND PARALLEL TO THE STRUCTURE IN A NEAT WORKMANLIKE MANNER.
10. THE .4 CONTRACTOR SHALL FOLLOW ALL OSHA AND CLIENT AGENCIES SAFETY GUIDELINES DURING THE PERFORMANCE OF ANY WORK.
11. PROVIDE FEEDER IDENTIFICATION TAGS ON ALL ELECTRICAL EQUIPMENT. PROVIDE LABELS ON ALL EQUIPMENT DOORS STATING "DANGER 5,000 VOLTS" FOR ALL EQUIPMENT RATED AT 4160V.
12. GROUNDING OF ALL EQUIPMENT SHALL BE PROVIDED BY THE .4 CONTRACTOR IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AND THE NATIONAL ELECTRICAL SAFETY CODE. WHERE GROUND PROVISIONS ARE NOT PRESENT, THE .4 CONTRACTOR SHALL INSTALL GROUND RODS FOR GROUND CONNECTIONS.
13. THE .4 CONTRACTOR SHALL SUBMIT A PHASING PLAN FOR APPROVAL DESCRIBING THE SEQUENCE OF WORK TO BE PERFORMED FOR THE PROJECT. THE PHASING PLAN WILL BE DEVELOPED WITH INPUT FROM THE CLIENT AGENCY AND THE ENGINEER. WORK SHALL NOT START UNTIL THE PHASING PLAN IS APPROVED. THIS INCLUDES THE PROVISION OF TEMPORARY BACK-UP POWER TO LIMIT SHUT DOWN DURATIONS.
14. NO EQUIPMENT SHALL BE ORDERED OR INSTALLED WITHOUT PRIOR APPROVED SUBMITTALS FROM THE ENGINEER.

MISCELLANEOUS:

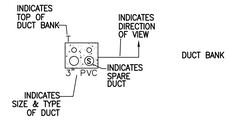
(APPLY TO ALL DRAWINGS)

- XX/X — MECHANICAL EQUIPMENT TAG, SEE MECHANICAL DRAWINGS FOR DESCRIPTION
- PLAN / DRAWING — SECTION CUT TAG. DRAWING INDICATES DRAWING WHERE SECTION IS SHOWN. PLAN INDICATED THE PLAN NUMBER ON DRAWING
- 1 — REVISION TAG.
- X — CONSTRUCTION KEYNOTE TAG.
- X — DEMOLITION KEYNOTE TAG.
- POINT/EXTENT OF DEMOLITION/REMOVAL
- POINT OF NEW CONNECTION

GENERAL

(APPLY TO ALL DRAWINGS)

- HATCHING INDICATES .4 CONTRACTOR REMOVALS
- HATCHING INDICATES REMOVALS BY OTHERS.
- ----UGE---- UNDERGROUND FEEDER & CONDUIT
- FEEDER & CONDUIT ABOVE FLOOR
- ---c--- CONTROL WIRING & CONDUIT
- CONDUIT TURNING DOWN
- CONDUIT TURNING UP
- CONDUIT CAP



POWER

RECESSED / SURFACE

- BRANCH CIRCUIT PANELBOARD. REFER TO PLANS AND SCHEDULES FOR VOLTAGE & AMPERAGE.
- WALL OUTLET BOX AND 20 AMP DUPLEX RECEPTACLE.
- GFI — WALL OUTLET BOX AND 20 AMP GFI DUPLEX RECEPTACLE, MOUNTED ABOVE COUNTER BACKSPLASH.
- GFI — WALL OUTLET BOX AND 20 AMP GFI DUPLEX RECEPTACLE.
- WP — WALL OUTLET BOX AND 20 AMP GFI DUPLEX RECEPTACLE WITH WEATHERPROOF COVER.
- TWO GANG WALL OUTLET BOX AND TWO 20 AMP DUPLEX RECEPTACLES.
- TWO GANG WALL OUTLET BOX AND TWO 20 AMP DUPLEX RECEPTACLES, MOUNTED ABOVE COUNTER BACKSPLASH.
- WP — WALL OUTLET BOX AND 20 AMP GFI 240V RECEPTACLE WITH WEATHERPROOF COVER.
- J# — FLUSH WALL JUNCTION BOX OR JUNCTION BOX ABOVE CEILING. QUANTITY AS NOTED.
- S M — MANUAL MOTOR STARTER SWITCH WITH THERMAL OVERLOADS (UNLESS OTHERWISE NOTED).
- DISCONNECT SWITCH, SIZE AS NOTED. MOUNTED 42" A.F.F. (U.O.N.)
- MOTOR CONNECTION, NUMBER INDICATES HORSEPOWER.
- T — TRANSFORMER.
- M — MOTORIZED DAMPER LOCATION (FURNISHED UNDER DIVISION 15/23).
- D EPO — EMERGENCY POWER OFF SWITCH.

SWITCHING

- $ WALL OUTLET BOX AND SINGLE POLE SWITCH (20 AMP).
- $3 WALL OUTLET BOX AND THREE-WAY SWITCH (20 AMP).
- $4 WALL OUTLET BOX AND FOUR-WAY SWITCH (20 AMP).
- $OS WALL OUTLET BOX WITH DUAL TECHNOLOGY OCCUPANCY SENSORS.

ONE-LINE

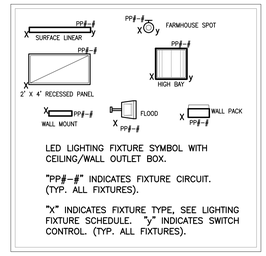
(APPLY TO ALL DRAWINGS)

- CIRCUIT BREAKER
- SWITCH
- TRANSFORMER
- GROUND
- n e — AUTO-TRANSFER SWITCH. e' INDICATES EM POWER SOURCE n' INDICATES NORMAL POWER SOURCE
- 600V SPLICE
- LIGHTNING ARRESTER
- SLIDE IN FUSE
- CURRENT TRANSFORMER.
- M — POWER QUALITY METER.
- POTENTIAL TRANSFORMER

FIRE ALARM

- S — CEILING MOUNTED SMOKE DETECTOR.
- CO — CEILING MOUNTED CARBON MONOXIDE DETECTOR.
- O2 — CEILING MOUNTED OXYGEN DETECTOR.
- H — CEILING MOUNTED HEAT DETECTOR.
- S D — DUCT MOUNTED SMOKE DETECTOR, PHOTOELECTRIC TYPE WITH REMOTE INDICATOR LIGHT WHERE INACCESSIBLE BY .4 CONTRACTOR. .4 CONTRACTOR TO PROVIDE 120V POWER & MAKE FINAL CONNECTION. .2 CONTRACTOR TO INSTALL IN DUCTWORK.
- F — WALL MOUNTED ADA COMPLIANT FLUSH MANUAL PULL STATION (MOUNT TOP @ 42" AFF).
- AV — WALL MOUNTED ADA COMPLIANT AUDIO/VISUAL UNIT (MOUNT TOP 80" AFF).
- V — WALL MOUNTED ADA COMPLIANT VISUAL ONLY UNIT (MOUNT TOP 80" AFF).
- FACP — FIRE ALARM SYSTEM CONTROL PANEL.
- FAAP — FIRE ALARM SYSTEM GRAPHIC ANNUNCIATOR PANEL.

LIGHTING FIXTURES



LED LIGHTING FIXTURE SYMBOL WITH CEILING/WALL OUTLET BOX.

"PP#-#" INDICATES FIXTURE CIRCUIT. (TYP. ALL FIXTURES).

"X" INDICATES FIXTURE TYPE, SEE LIGHTING FIXTURE SCHEDULE. "y" INDICATES SWITCH CONTROL. (TYP. ALL FIXTURES).

- WALL/CEILING OUTLET BOX AND ILLUMINATED EXIT SIGN (SHADED QUADRANT INDICATES FACE) WITH BATTERY OPERATED EMERGENCY LIGHTS AND REMOTE CAPABILITY. DIRECTIONAL ARROWS AS INDICATED ON FLOOR PLANS.
- DUAL REMOTE HEAD FOR BATTERY OPERATED EMERGENCY EXIT SIGN.
- BATTERY OPERATED EMERGENCY LIGHTING UNIT, NUMBER OF HEADS AS INDICATED ON FLOOR PLANS.

EQUIP. TAG	EQUIPMENT TYPE: TRANSFORMER — LOCATION	KVA	VOLTS PRIMARY	VOLTS SECONDARY	PHASE	NEMA	REMARKS
T-1	ELECTRICAL AREA	30	240	208/120	3	1	
T-2	ELECTRICAL AREA	75	240	480/277	3	1	

EQUIP. TAG	EQUIPMENT TYPE: POWER PANEL — LOCATION	MOUNTING	AMPS	VOLTS	PHASE	NEMA	REMARKS
MDP	ELECTRICAL AREA	SURFACE	600	240V	3	1	
PP1	ELECTRICAL AREA	SURFACE	100	208/120	3	1	
PP2	ELECTRICAL AREA	SURFACE	150	480/277	3	1	

SALVAGE EQUIPMENT SCHEDULE

EQUIPMENT LISTED IS TO BE TURNED OVER TO THE CLIENT AGENCY UPON PROFESSIONAL REMOVAL AN IN OPERABLE CONDITION. COORDINATE ALL SALVAGE ITEMS WITH CLIENT AGENCY.

EXISTING EQUIPMENT	EXISTING LOCATION	REFERENCE
120/208VY-100A POWER PANEL	OPERATING FLOOR BASEMENT STAIR	SHEET E-3 / KEYED DEMOLITION NOTE #5
NEMA 3R DISCONNECT SWITCH	EXTERIOR NORTH WALL	SHEET E-3 / KEYED DEMOLITION NOTE #5
240V-3PH MANUAL TRANSFER SWITCH	OPERATING FLOOR EAST WALL	SHEET E-9 / KEYED DEMOLITION NOTE #3
NEMA 3R 480V-3PH DISCONNECT SWITCH (TRAILER BOILER)	EXTERIOR EAST WALL	SHEET E-5 / KEYED NOTE #4
NEMA 3R 240Δ-480V 75KVA PADMOUNT TRANSFORMER	EXTERIOR EAST	SHEET E-5 / KEYED NOTE #4
NEMA 3R 240Δ-200A DISCONNECT SWITCH	EXTERIOR EAST	SHEET E-5 / KEYED NOTE #4
NEMA 3R 240Δ-125A DISCONNECT SWITCH	EXTERIOR EAST	SHEET E-5 / KEYED NOTE #4
ALL 480V/240V/120V DISCONNECT SWITCHES AND LOAD CENTERS LOCATED IN TRAILER BOILER AND TEMPORARY BOILER ENCLOSURES	EXTERIOR EAST	UN-REFERENCED ON PLANS

LIGHTING FIXTURE SCHEDULE

SYMBOL	DESCRIPTION	LAMPING NO.	WATTS	TYPE	VOLTAGE	LUMENS	COLOR	MANUFACTURER	MODEL NUMBER	MOUNTING	REMARKS
A	4' GASKETED LED FIXTURE	–	32	LED	120V	4511	4000K	LSI	EG3-4-LED-4L-DA-S-UNV-DIM-40-80	SURFACE/CABLE	PROVIDE MANUFACTURER CABLE & BRACKETS, LENGTH AS REQUIRED WHERE APPLICABLE.
B	2' x 4' LED PANEL	–	35	LED	120V	4296	3500K	LSI	SFP24-LED-FS-UNV-DIM	RECESSED	PROVIDE MANUFACTURER T-GRID KIT AS REQUIRED. FIELD SET TO 3500K.
C	2' WALL MOUNT VANITY	–	12	LED	120V	1612	3500K	COLUMBIA	W3B2--35-VW-SFA-ED-U	WALL/SURFACE	
D	HIGH BAY LED FIXTURE	–	121	LED	120V	18,597	4000K	LSI	MHB-1-LED-18L-CPW-UNV-40	STEM/PENDANT	PROVIDE MANUFACTURER PENDANT KIT, LENGTH AS REQUIRED.
F	LED GOOSENECK	–	12.8	LED	UNV	1574	3500K	LSI	AD-150-17L-UNV-CGG6-GBK-LDS96WL W/ GOOSENECK & BRACKET PART# GB-A-3-GBK	WALL	MOUNT ABOVE EXISTING TIMECLOCK (OPERATING FLOOR LEVEL).
G	MEDIUM LED FLOOD LIGHT		61	LED	UNV	6983	4000K	LSI	TMFL-LED-7L-W-UNV-DIM-40-BZA-PCI120	EXTERIOR WALL	
H	LARGE LED WALL PACK		60	LED	UNV	7229	4000K	LSI	TLWP-7L-UNV-40-CWBB-BZA-PCI120	EXTERIOR WALL	
X1	HARSH ENVIRONMENT LED EXIT SIGN W/ DUAL EM. HEADS & REMOTE CAPACITY		6	LED	UNV	–	–	DUAL LITE	DYNC-S-R-W-6	WALL	PROVIDES 90 MINUTE BATTERY BACK UP.
X2	HARSH ENVIRONMENT EMERGENCY BATTERY PACK		6	LED	UNV	515 PER HEAD	5000K	DUAL LITE	DYN12-4X-06L	WALL	PROVIDES 90 MINUTE BATTERY BACK UP.
X3	REMOTE DUAL HEAD LED EMERGENCY LIGHT		6	LED	UNV			DUAL LITE	DYNRD-4X	EXTERIOR WALL	PROVIDES 90 MINUTE BATTERY BACK UP.

NOTES: PROVIDE LIGHTING FIXTURES AS SPECIFIED OR EQUAL. CONTRACTOR TO PROVIDE AND VERIFY CABLE/STEM/PENDANT LENGTH IN FIELD.

REBID SUBMISSION
FEBRUARY 26, 2024

RECORD REVISIONS

RICHARD SZATKOWSKI — ENGINEER — No. 044441-E — COMMONWEALTH OF PENNSYLVANIA

02-26-2024
SIGNATURE DATE

ARRIS ENGINEERING GROUP, LTD.
667 SOUTH RIVER STREET
PLAINS, PENNSYLVANIA

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF GENERAL SERVICES
HARRISBURG, PENNSYLVANIA

D.G.S. PROJECT No.
C-0304-0015 PHASE 2

ELIZABETHTOWN TRAINING ACADEMY – RENOVATE BOILER PLANT AND DOMESTIC / FIRE PROTECTION PIPING
DEPARTMENT of CORRECTIONS
ELIZABETHTOWN, LANCASTER COUNTY, PA

GENERAL SYMBOLS, NOTES AND ABBREVIATIONS

VERIFY SCALE

BAR IS ONE (1) INCH LONG ON ORIGINAL DRAWING: 0 — 1

IF BAR IS NOT ONE (1) INCH LONG, ADJUST SCALE ACCORDINGLY

CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS. VARIANCE FROM CONTRACT DOCUMENTS NOT PERMITTED WITHOUT PROFESSIONAL & BUREAU OF CONSTRUCTION APPROVAL.

DRAWN BY	DATE	DRAWING No.
S. LOVE	FEB 2023	E-1
CHECKED BY	SCALE	
R. SZATKOWSKI	AS NOTED	

FILE PATH: P:\1400.01 0304-0015 P2 Elizabethtown Boiler\Drawings\As Bose Bid Drawings\4.Electrical CD\E-1_General Symbols, Notes, and Abbreviations.dwg
LAST SAVED: 2024.02.26 11:55 AM