

Drawing: P:\Projects\HDL\Kake Bulk Fuel Upgrades\Drawings\Elec\E1.01 Legend, Abbreviations And Schedules.dwg DATE/TIME: 7/14/2016 2:46:02 PM Sheet Layout: E1.01 E1.01 LEGEND ABBREVIATIONS SCHEDULES

ELECTRICAL LEGEND

SYMBOL	DESCRIPTION
	EXPOSED CONDUIT
	UNDERGROUND CONDUIT
	3/4" X 10' COPPER CLAD STEEL GROUND ROD
	CONDUIT RUN – CHANGE IN ELEVATION
	LIQUID–TIGHT FLEXIBLE METALLIC CONDUIT
	JUNCTION BOX OR FITTING
	MOLDED CASE CIRCUIT BREAKER, X = AMPERE RATING, Y = NO. OF POLES
	UNDERGROUND ELECTRIC
	OVERHEAD ELECTRIC
	KILOWATT–HOUR METER
	THERMOSTAT
	SINGLE POLE SWITCH (SPST), 120V, 20A
	PANELBOARD
	GROUND FAULT INTERRUPTING RECEPTACLE
	120V DUPLEX RECEPTACLE NEMA 5–20R
	SINGLE POLE SWITCH
	THREE–WAY SWITCH
	FOUR–WAY SWITCH
	KEYED SWITCH
	MOTOR, 3–PHASE
	MOTOR, SINGLE PHASE
	COMBINATION MOTOR STARTER
	FUSED DISCONNECT SWITCH
	UNFUSED DISCONNECT SWITCH
	MOTORIZED VALVE
OTHER SYMBOLS ARE AS DEFINED BY NOTE.	

ABBREVIATIONS

3PDT	TRIPLE POLE, DOUBLE THROW
A	ANALOG SIGNAL, AMPERE
AFF	ABOVE FINISH FLOOR
AL	ALUMINUM
BCU	BARE COPPER
C	CONDUIT OR CONDUCTOR
CP	CONTROL PANEL
CU	COPPER
D	DIGITAL SIGNAL
DPDT	DOUBLE POLE, DOUBLE THROW
E	EMERGENCY
(E)	EXISTING
EXP	EXPLOSION PROOF (HAZARDOUS AREA)
FLA	FULL LOAD AMPERES
FS	FLOW SWITCH
G	GROUND CONDUCTOR
GFI	GROUND FAULT INTERRUPTING
GRC	GALVANIZED RIGID (STEEL) CONDUIT
HOA	HAND–OFF–AUTO
HL	HIGH LEVEL
HP	HORSEPOWER
IPEC	INSIDE PASSAGE ELECTRIC COOPERATIVE
KVA	KILO–VOLT–AMPERES
LTF	LIQUID TIGHT FLEXIBLE CONDUIT (METALLIC)
MCC	MOTOR CONTROL CENTER
(N)	NEW
N.I.C.	NOT IN CONTRACT
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
PH	PHASE
SIG	SIGNAL
SP	SPACE
SPST	SINGLE POLE, SINGLE THROW
STL	STEEL
TWSH	TWISTED WIRE SHIELDED
TYP	TYPICAL
UON	UNLESS OTHERWISE NOTED
V	VOLTS
VFD	VARIABLE FREQUENCY DRIVE
W	WATTS
WP	WEATHERPROOF
XFMR	TRANSFORMER
ZS	LIMIT SWITCH

GENERAL NOTES

- ALL ELECTRICAL WORK SHALL BE INSTALLED IN ACCORDANCE WITH ALL REQUIREMENTS OF THE LATEST EDITION OF THE NATIONAL ELECTRIC CODE, STATE, MUNICIPAL, AND FEDERAL LAWS, AMENDMENTS AND/OR ORDINANCES GOVERNING THE PROJECT. IF DIRECT CONFLICT ARISES BETWEEN DESIGN DOCUMENTS AND GOVERNING CODES, LAWS, AND/OR ORDINANCES, THE CODES, LAWS, AND/OR ORDINANCES SHALL HAVE JURISDICTION AND THE WORK IN QUESTION SHALL BE INSTALLED ACCORDING TO THE CODES, LAWS, AND/OR ORDINANCES. ALL WORK SHALL BE PERFORMED UNDER THE SUPERVISION OF A CERTIFIED ELECTRICIAN.
- MATERIALS AND EQUIPMENT SHALL BE COMMERCIAL GRADE AND ACCEPTABLE TO THE AUTHORITY HAVING JURISDICTION AS SUITABLE FOR THE USE INTENDED. ALL ELECTRICAL EQUIPMENT SHALL INCLUDE THE SEAL OF A NATIONALLY RECOGNIZED TESTING LABORATORY FOR THE PURPOSE FOR WHICH IT IS INSTALLED. WHENEVER POSSIBLE, SIMILAR ITEMS SHALL BE SUPPLIED BY THE SAME MANUFACTURER THROUGHOUT THE PROJECT.
- COORDINATE AND PROVIDE THE EQUIPMENT WITH THE SHORT CIRCUIT CURRENT RATING (SCCR) FOR THE AVAILABLE FAULT CURRENT AT THE POINT OF THE SYSTEM WHERE INSTALLED. PROVIDE ARC FAULT WARNING LABELS ON ALL PANELBOARDS AND SIMILAR EQUIPMENT PER NEC REQUIREMENTS.
- DIMENSIONS OF EQUIPMENT ARE APPROXIMATE. INSTALLATION SHALL BE VERIFIED BASED ON ACTUAL MANUFACTURER'S DATA AND SHOP DRAWINGS.
- ALL SITE WORK AND UTILITIES ARE SHOWN IN APPROXIMATE LOCATIONS. VERIFY ALL INSTALLATIONS PRIOR TO COMMENCEMENT OF WORK. COORDINATE ALL WORK WITH UTILITIES AS REQUIRED.
- ALL SINGLE PHASE BRANCH CIRCUITS SHALL BE 1/2"C, 3#12, AND ALL THREE PHASE BRANCH CIRCUITS SHALL BE 1/2"C, 4#12, UNLESS OTHERWISE NOTED. ALL CIRCUITS SHALL HAVE GROUND CONDUCTOR.
- CONTRACTOR SHALL SUBMIT REQUEST FOR SUBSTITUTION IN WRITING TO THE ENGINEER.
- PROVIDE SEISMIC SUPPORT AND DESIGN PER IBC REQUIREMENTS.
- WHERE EXISTING UNDERGROUND UTILITIES ARE SHOWN ON THE PLANS, MULTIPLE PARALLEL LINES MAY BE ENCOUNTERED IN THE SAME TRENCH OR GENERAL AREA. SINGLE LINES WERE SHOWN FOR CLARITY.

CONTROL PANEL COMPONENT SCHEDULE

ITEM	PROVIDE MATERIALS SPECIFIED (SUBSTITUTIONS NOT ALLOWED)
①	PILOT LIGHT, 120V, LED, NEMA 4X, ALLEN BRADLEY CAT #800HC–QRH10*, WHERE * = LENS TINT AS SHOWN.
②	120V RELAY, 3PDT, 11–PIN OCTAL SOCKET MOUNT WITH MECHANICAL ON/OFF INDICATOR, ALLEN BRADLEY CAT #700–HA33A1 AND #700–HN126 SOCKET BASE.
③	PILOT LIGHT, PUSH TO TEST, 120V, LED, NEMA 4X, ALLEN BRADLEY CAT #800HC–QRTH10*, WHERE * = LENS TINT AS SHOWN.
④	ALARM HORN, 120V, WEATHERPROOF, FEDERAL #350WB 120.
⑤	2–POLE, 600V, 23A, IEC, OPEN TYPE CONTACTOR WITH 120V COIL ALLEN BRADLEY CAT #100–C12D10 AND SOLID STATE, SINGLE PHASE, OVERLOAD RELAY ALLEN BRADLEY CAT #193–ES1BB. PROVIDE WITH ADDITIONAL AUXILIARY AND OVERLOAD CONTACTS, AND REMOTE OVERLOAD RESET ALLEN BRADLEY CAT #193–ER1D AS REQUIRED.
⑥	NORMALLY OPEN PUSHBUTTON, 120V, 10A, NEMA 4X, ALLEN BRADLEY CAT #800HC–AR2D1. PROVIDE ADDITIONAL CONTACT BLOCKS AS REQUIRED.
⑦	ALARM LIGHT, 120V, FEDERAL ELECTRA FLASH #141ST–120R W/ RED LEXAN DOME.
⑧	120V, 10A, N.C., NEMA 4X, MUSHROOM HEAD PUSHBUTTON W/ MAINTAINED PUSH–PULL OPERATION, ALLEN BRADLEY CAT#800HC–FRXT6. PROVIDE W/ RED 'EMERGENCY SHUTDOWN' LEGEND PLATE AND CONTACTS AS REQUIRED.
⑨	120V, PANEL HEATER W/ INTEGRAL THERMOSTAT WATTAGE AS REQUIRED, HOFFMAN SERIES #DAH.
⑩	SAFETY CONTROL RELAY, 6 N.O., 2 N.C., 120V, ALLEN BRADLEY CAT #700S–CF620DC
⑪	NORMALLY CLOSED PUSHBUTTON, 120V, 10A, NEMA 4X, ALLEN BRADLEY CAT #800HC–AR6D2. PROVIDE ADDITIONAL CONTACT BLOCKS AS REQUIRED.
⑫	DOOR MOUNTED DISCONNECT SWITCH, 240V, 60A, 3–POLE W/ PADLOCK PROVISION, ALLEN BRADLEY CAT#194RF–NN060R24E
⑬	2–POSITION SELECTOR SWITCH, 120V, NEMA 4X, ALLEN BRADLEY CAT #800HC–HR2A. PROVIDE CONTACTS BLOCKS AS REQUIRED.
⑭	NEMA 4X, NON–METALLIC ENCLOSURE WITH REMOVABLE STEEL BACK PANEL, INNER DEAD–FRONT HINGED DOOR AND OUTER DOOR. SIZE AS REQUIRED. PROVIDE SWING OUT PANEL KIT. HOFFMAN OR EQUAL.
⑮	MINIATURE CIRCUIT BREAKER, 240V, AMPERE RATING AND NUMBER OF POLES AS SHOWN, DIN RAIL MOUNTED W/BOX LUGS, SQUARE D MULTI 9 C60N CLASS 860 SERIES
⑯	ADJUSTABLE TIME DELAY RELAY, 1.0–100 MINUTE ON DELAY, 120V, DPDT, ALLEN BRADLEY CAT#700–HT12DU120. SET FOR 10 MINUTE TIME DELAY.
⑰	POWER DISTRIBUTION BLOCK, 600V, 335A, 3–POLE. ALLEN BRADLEY CAT#1492–PD3163.

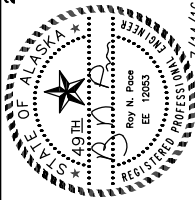
CIRCUIT AND DEVICE LEGEND

PP–1,a	GROUP OR EQUIPMENT IDENTIFICATION. "PP" DENOTES PANEL NAME "1" DENOTES CIRCUIT NUMBER "a" DENOTES SWITCH LEG AS INDICATED.
\$3,a	SWITCH IDENTIFICATION. "3" DENOTES SWITCH CONFIGURATION "a" DENOTES SWITCH LEG AS INDICATED.

FIXTURE SCHEDULE

TYPE	FIXTURE SYMBOL	LAMP SIZE	MOUNTING	DESCRIPTION
S1		134W LED	POLE MOUNT ⊙ 25'–0"	LED FLOOD LIGHT WITH PHOTOCELL. PROVIDE ON 25' METAL POLE. CREE #FLDEDG–N6–AA–06–E–UL–700–40K LUMINAIRE WITH LITHONIA #RSA–25–6G POLE.
L1		15W LED	SURFACE CEILING MOUNT	ENCLOSED AND GASKETED, WET LOCATION, LED. LITHONIA #OLVTCM.
L2		107W LED	SURFACE CEILING MOUNT	CANOPY LUMINAIRE, WET LOCATION RATED, LED. LITHONIA #DSXSC LED–30C–1000–40K–T5M–120.

REVISIONS		DESCRIPTION
MARK	DATE	REVISE COMPONENT SCHED
1	7/14/2016	
2		
3		
4		
5		



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KAKE BULK FUEL UPGRADES

ALASKA ENERGY AUTHORITY

KAKE, ALASKA

SHEET TITLE
LEGEND,
ABBREVIATIONS, AND
SCHEDULES

SHEET
E1.01

DRAWN BY: VI/OM	CHECKED BY: RP
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