

- NOTES:**
1. SEE DRAWING G-02 FOR EXISTING CONDITIONS LEGEND.
  2. HORIZONTAL DATUM: WASHINGTON STATE PLANE SOUTH ZONE, NAD83, U.S. FEET.
  3. VERTICAL DATUM: NAVD88.
  4. CONTOUR INTERVALS SHOWN ARE 1' AND 5'
  5. USE SCHEDULE 80 PVC CONDUIT UNLESS SPECIFIED OTHERWISE

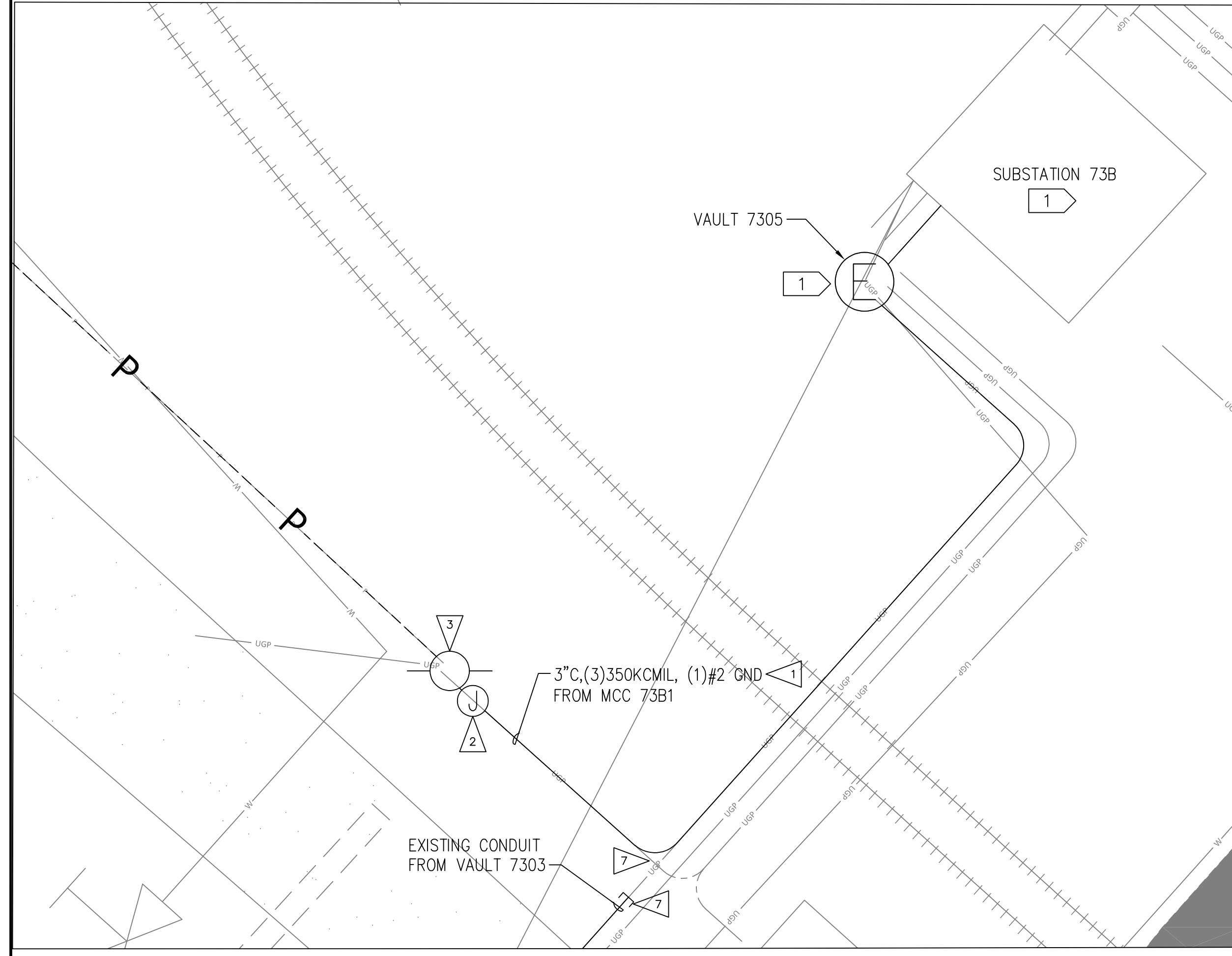
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- 1 ED0125

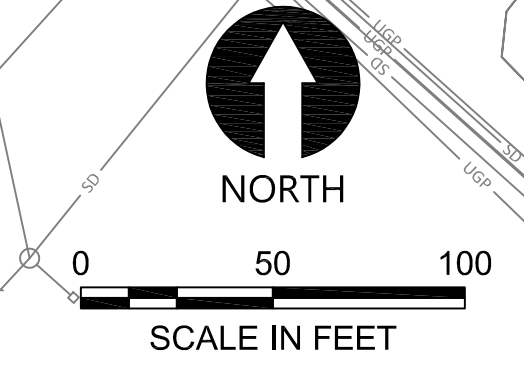
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**CONSTRUCTION NOTES:**

- 1 PROVIDE AND INSTALL CONDUCTOR IN EXISTING SPARE CONDUIT FROM SUBSTATION TO EXISTING POLE. USE MINIMUM 3" DIAMETER CONDUIT.
- 2 PROVIDE AND INSTALL ALL NECESSARY HARDWARE FOR SPLICING UNDERGROUND COPPER CONDUCTOR TO OVERHEAD ALUMINUM CONDUCTOR. USE ILSCO MULTI-TAP CONNECTOR (OR APPROVED EQUAL) IN NEMA 4X ENCLOSURE
- 3 PROVIDE AND INSTALL CONDUCTOR AND ALL ANCILLARY MOUNTING AND SUPPORT HARDWARE ON EXISTING POWER POLES. REFRAME AND PROVIDE OR RECONFIGURE ALL HARDWARE TO ACCOMMODATE NEW CONDUCTOR ON ALL EXISTING POLES.
- 4 PROVIDE AND INSTALL POWER POLE.
- 5 PROVIDE AND INSTALL UNDERGROUND CONDUIT, CONDUCTOR, BOXES, SUPPORTS, FITTINGS, AND ALL ANCILLARY HARDWARE. ROUTING SHOWN IS DIAGRAMMATIC. COORDINATE WITH OTHER DISCIPLINES.
- 6 PROVIDE AND INSTALL MANHOLE AND TRAFFIC RATED COVER.
- 7 INTERCEPT EXISTING SPARE 3" CONDUIT AND REROUTE TO EXISTING POLE. CAP AND ABANDON UNUSED PORTION OF CONDUIT FROM VAULT 7303
- 8 PROVIDE AND INSTALL GUY WIRE AS SHOWN.



1 WLF PUMP STATION ELECTRICAL PLAN DETAIL  
E-03 NO SCALE



**ISSUED FOR CONSTRUCTION**

PLAN INTENDED TO BE VIEWED IN COLOR. ADJACENT BLOCK IS "BLUE"  
ONE INCH AT FULL SIZE IF NOT ONE INCH SCALE ACCORDINGLY

Jan 31, 2023 5:11pm Hamms.Gil E-03.dwg E-03

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**Northwest Alloys, Inc.**

**CURTIS E. CLUTE**  
STATE OF WASHINGTON  
REGISTERED PROFESSIONAL ENGINEER  
35276  
02/01/23

REVISIONS				
REV	DATE	BY	APP'D	DESCRIPTION
1	02/01/23	JO	CC	ISSUED FOR CONSTRUCTION

DESIGNED BY: J. OHARA  
DRAWN BY: R. FARLEY  
CHECKED BY: O. DYE  
APPROVED BY: C. CLUTE  
SCALE: AS NOTED  
DATE: FEBRUARY 2023

**FORMER REYNOLDS METALS REDUCTION PLANT - LONGVIEW**  
**WLF PUMP STATION POWER FEED PLAN**

**E-03**  
SHEET # 89 OF 114

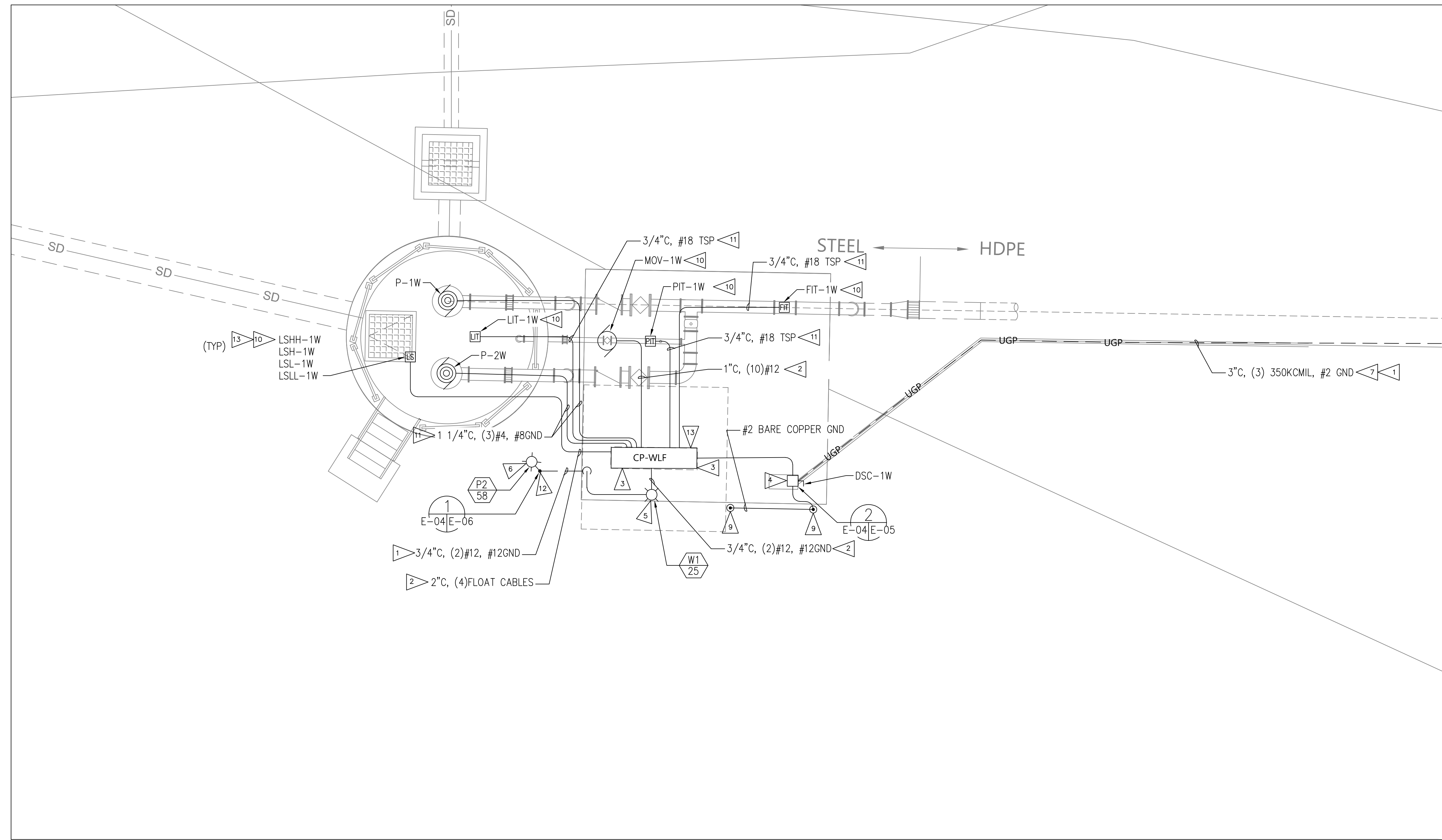
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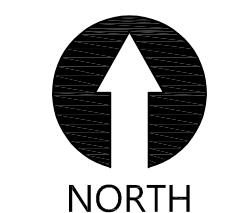
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3. VERTICAL DATUM: NAVD88.
4. CONTOUR INTERVALS SHOWN ARE 1' AND 5'.
5. USE SCHEDULE 80 PVC FOR ALL CONDUIT, WITH LIQUID TIGHT FLEXIBLE NONMETALLIC CONDUIT FOR CONNECTION TO PUMPS AND INSTRUMENTS

**CONSTRUCTION NOTES:**

- 1 PROVIDE AND INSTALL UNDERGROUND CONDUIT, CONDUCTORS, BOXES, SUPPORTS, FITTINGS, AND ALL ANCILLARY HARDWARE.
- 2 PROVIDE AND INSTALL CONDUIT, CONDUCTOR, VENDOR SUPPLIED CABLE, BOXES, FITTINGS, AND ALL ANCILLARY HARDWARE.
- 3 INSTALL CONTROL PANEL. CONNECT CONDUIT AND PULL CONDUCTORS INTO PANEL.
- 4 INSTALL DISCONNECT AND SPLICE BOX PROVIDED BY EP SUPPLIER. PROVIDE AND INSTALL SUPPORT STRUCTURE.
- 5 PROVIDE AND INSTALL LIGHT FIXTURE. MOUNT ON SHELTER ABOVE CONTROL PANEL.
- 6 PROVIDE AND INSTALL LIGHT FIXTURE. MOUNT ON 15' POLE. COORDINATE LOCATION WITH CIVIL PLANS.
- 7 CONDUIT TO SHARE TRENCH WITH STORMWATER PIPING.
8. UNDERGROUND CONDUIT ROUTING SHOWN IS DIAGRAMMATIC. COORDINATE ROUTING WITH OTHER DISCIPLINES.
- 9 PROVIDE AND INSTALL (2) 10' GROUND RODS, MINIMUM 6' APART, AND BARE COPPER CONDUCTOR.
- 10 INSTALL AND WIRE DEVICE/INSTRUMENT IN COORDINATION WITH OTHER DISCIPLINES. REFER TO I-02.
- 11 PROVIDE AND INSTALL CONDUIT, CONDUCTOR AND ALL ANCILLARY HARDWARE NECESSARY FOR CONNECTION TO FIELD INSTRUMENT/EQUIPMENT.
- 12 MOUNT POLE ON CONCRETE FOUNDATION. SEE SHEET E-06 FOR TYPICAL FOUNDATION INSTALLATION DETAIL.
- 13 CONTROL PANELS AND RELATED EQUIPMENT PROVIDED BY EP SUPPLIER. SELLER TO INSTALL EP SUPPLIER PANEL AND EQUIPMENT. SELLER TO PROVIDE FIELD WIRING, CONNECTIONS AND TERMINATIONS. COORDINATE WITH COMPANY TO SUPPORT STARTUP AND COMMISSIONING. REFER TO SPECIFICATION SECTIONS 01 64 00 AND 26 00 00.



1 WLF PUMP STATION ELECTRICAL SITE AND EQUIPMENT PLAN  
E-04|E-06



0 5 10  
SCALE IN FEET

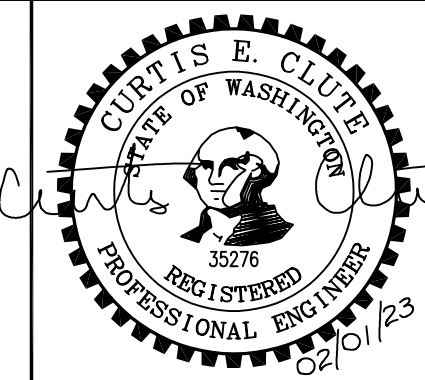
**ISSUED FOR CONSTRUCTION**

PLAN INTENDED TO BE VIEWED IN COLOR. ADJACENT BLOCK IS "BLUE" INCH SCALE ACCORDINGLY

Jan 31, 2023 5:12pm Harris, Gil E-04.dwg E-04

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**Northwest Alloys, Inc.**



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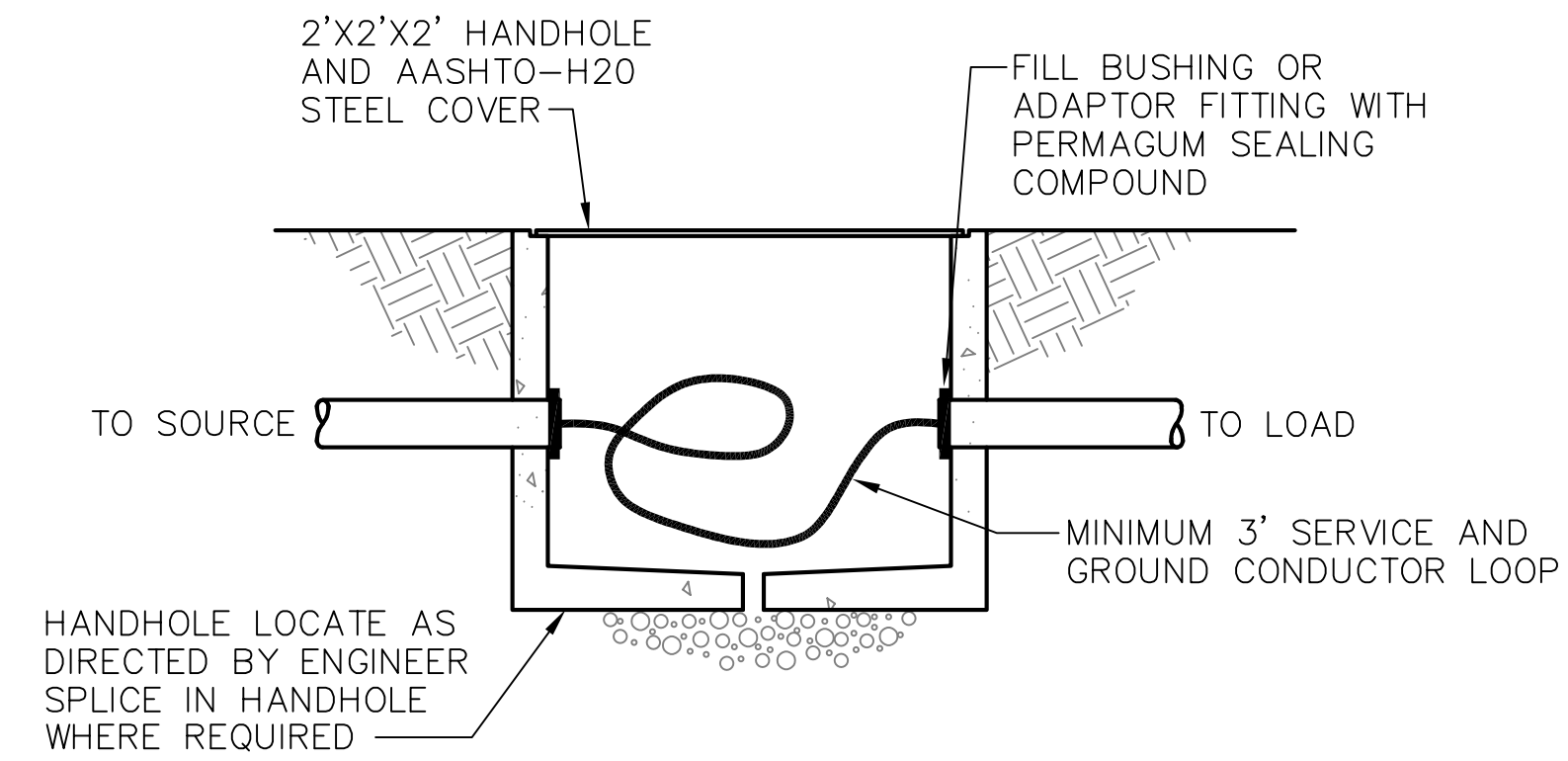
DESIGNED BY: J. OHARA  
DRAWN BY: R. FARLEY  
CHECKED BY: O. DYE  
APPROVED BY: C. CLUTE  
SCALE: AS NOTED  
DATE: FEBRUARY 2023

**FORMER REYNOLDS METALS REDUCTION PLANT - LONGVIEW**  
**WLF PUMP STATION ELECTRICAL SITE AND EQUIPMENT PLANS**

**E-04**  
SHEET # 90 OF 114

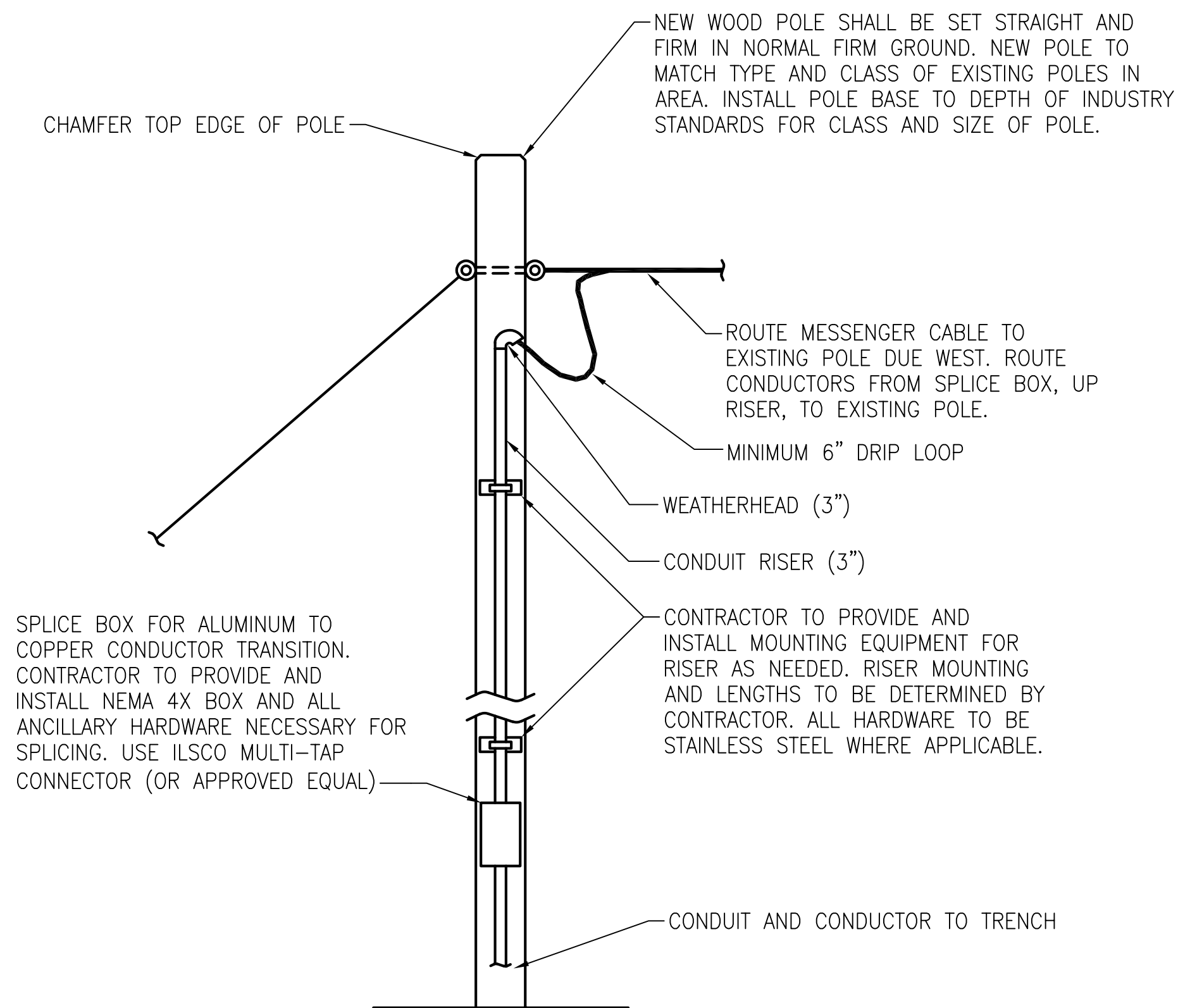
## LIGHT FIXTURE SCHEDULE

SYM	DESCRIPTION	MANUFACTURER	LAMP TYPE	VOLTS	VA/WATTS	REMARKS
P1 39	POLE MOUNTED LIGHT FIXTURE TYPE 2 DISTRIBUTION	ATLAS LIGHTING SLPM-6L-T2-4K-4	LED 6000 LUMEN	480V	39	LIGHT POLE: VALMONT #+270840705T4 POLE ADAPTER: 500-SLPMRPA
P2 58	POLE MOUNTED LIGHT FIXTURE FORWARD THROW DISTRIBUTION	ATLAS LIGHTING SLPM-9L-FT-4K	LED 9000 LUMEN	UNIV 120-277V	58	LIGHT POLE: VALMONT #150830504T4 POLE ADAPTER: 500-SLPMRPA
W1 25	SURFACE MOUNT FIXTURE MOUNTED ON SHELTER ABOVE CONTROL PANEL	ATLAS LIGHTING CPM25LED4K	LED 3363 LUMEN	UNIV 120-277V	25	MOUNTED UNDER CANOPY, CENTERED ABOVE CONTROL PANEL

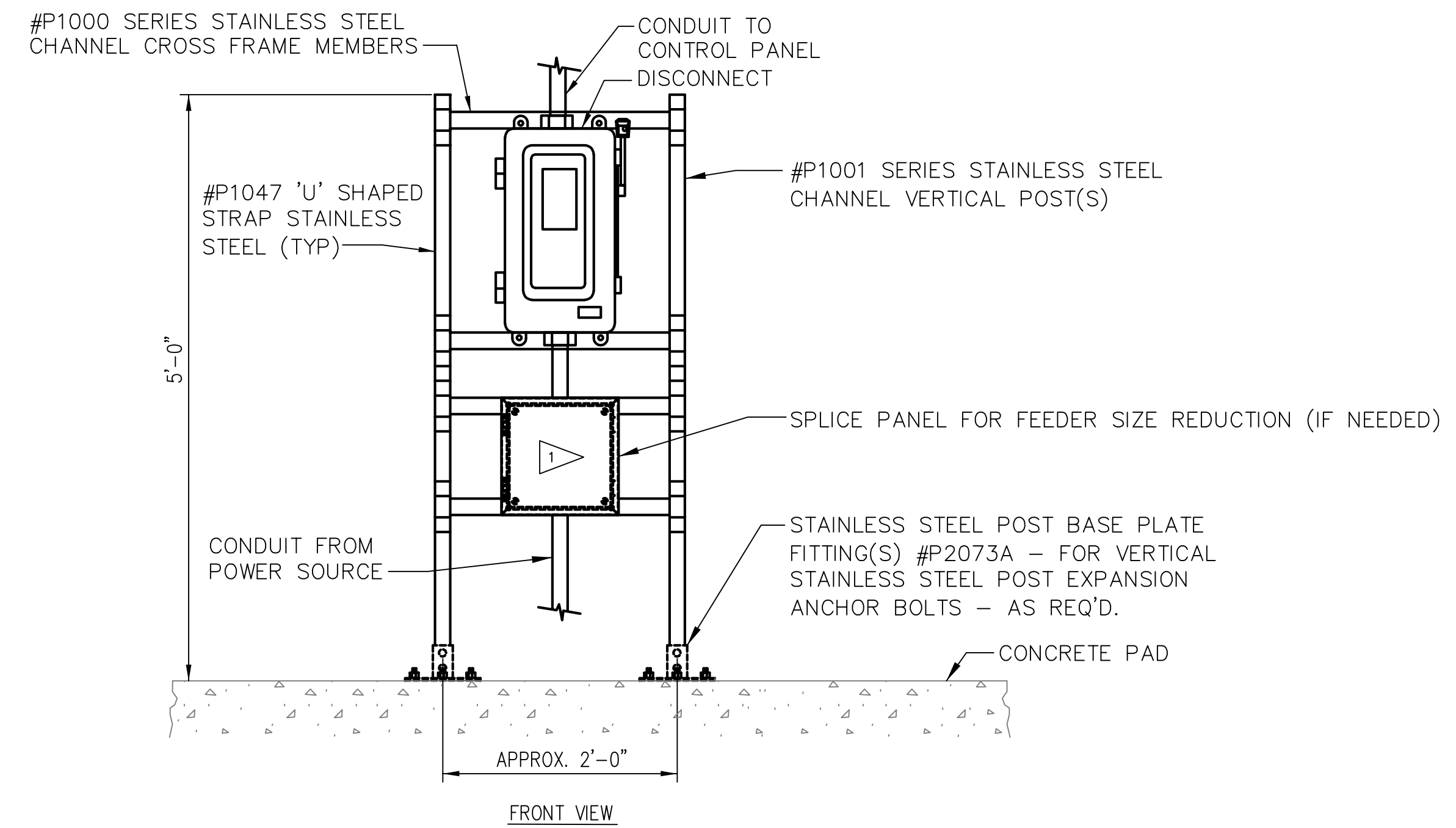


1  
E-03 HANDHOLE DETAIL  
SCALE: NONE

**CONSTRUCTION NOTES:**  
 1 NOT USED AT EAST PUMP STATION CONTROL PANEL.



3  
E-04 POLE INSTALLATION DETAIL  
SCALE: NONE



2  
E-02, E-04 DISCONNECT MOUNTING DETAIL  
SCALE: NONE

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Jan 31, 2023 5:13pm Harris.Gil E-05.dwg E-05

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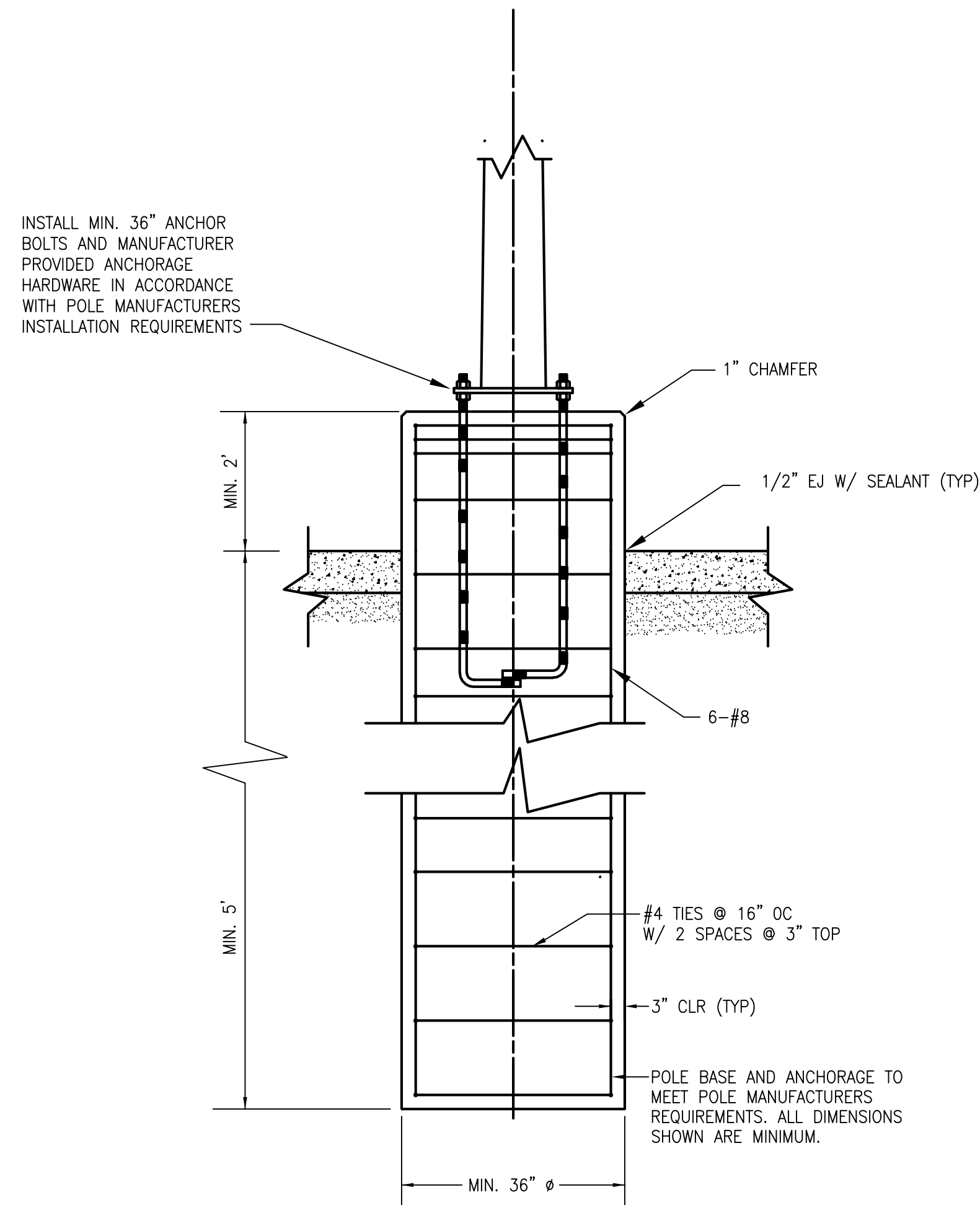
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**FORMER REYNOLDS METALS REDUCTION PLANT - LONGVIEW**

**LIGHTING FIXTURE SCHEDULE AND ELECTRICAL DETAILS**

**E-05**

SHEET # 91 OF 114



1 POLE BASE AND ANCHORAGE DETAIL  
E-02, E-04 SCALE: NONE

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Jan 31, 2023 5:13pm Harris, Gil E-06.dwg E-06

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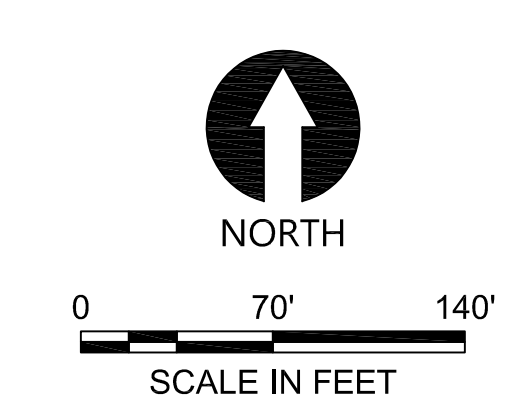
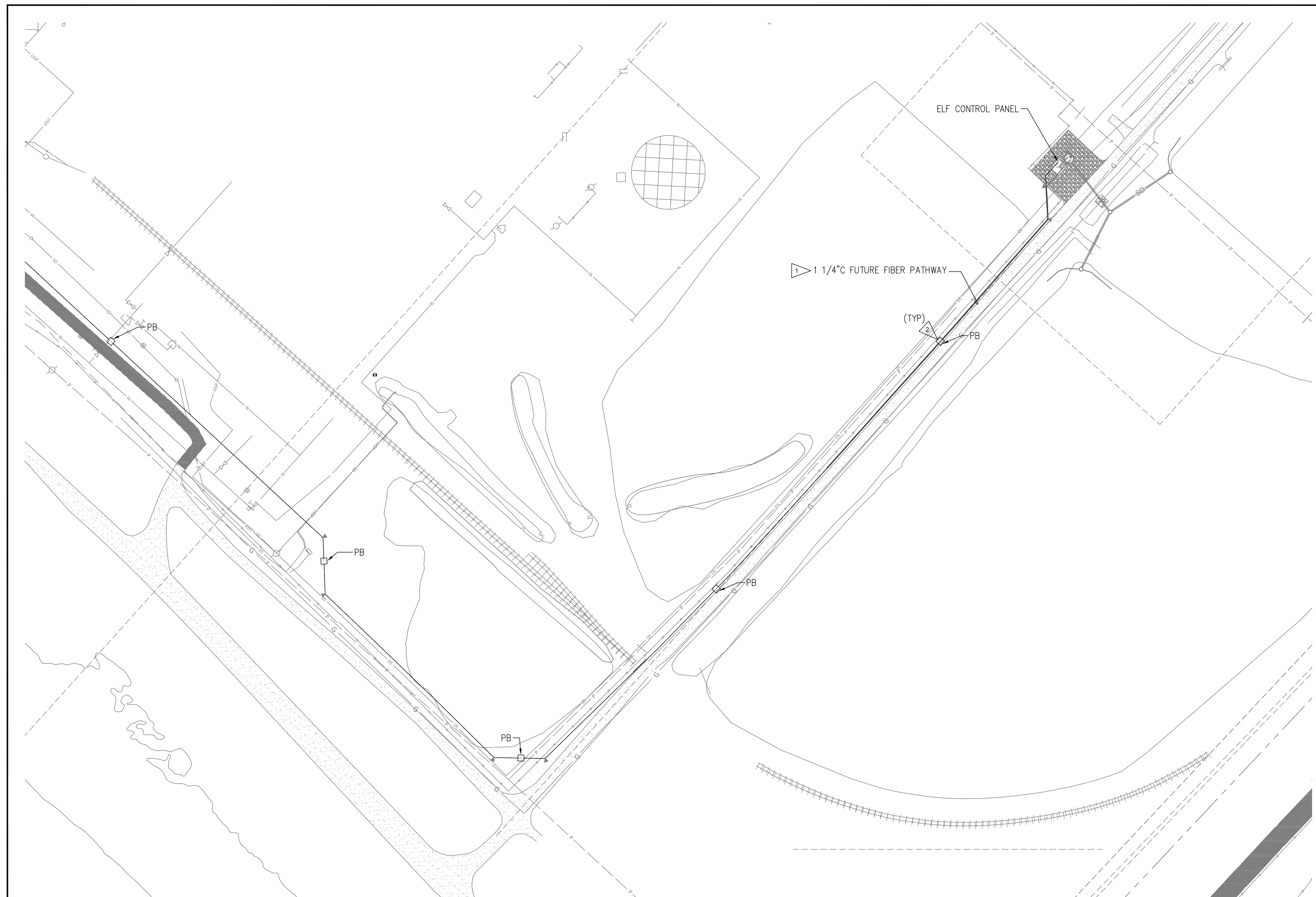
**FORMER REYNOLDS METALS REDUCTION PLANT - LONGVIEW**  
**ELECTRICAL DETAILS CONTINUED**

**E-06**  
SHEET # 92 OF 114

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  - PROVIDE AND INSTALL OLDCASTLE 444-LA WITH TRAFFIC RATED COVER OR APPROVED EQUAL. LOCATIONS OF BOXES ARE APPROXIMATE, COORDINATE WITH OWNER FOR FINAL PLACEMENT.



**WLF PUMP STATION ELECTRICAL SITE AND EQUIPMENT PLAN**  
E-04/E-06 SCALE: 1"=70'-0"

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**ISSUED FOR CONSTRUCTION**

Jan 31, 2023 5:14pm Hanns.Gil E-10.dwg E-10

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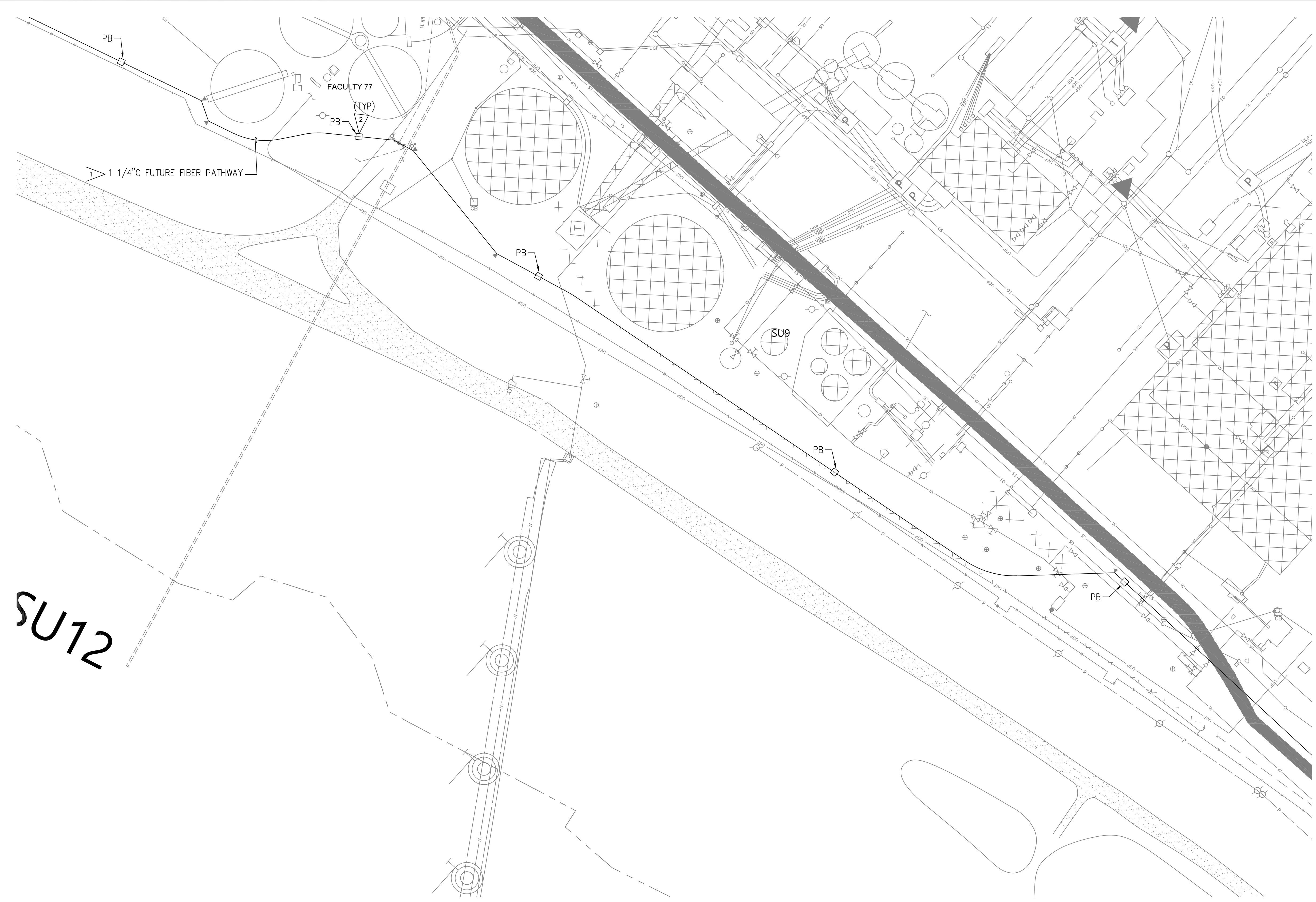
**FORMER REYNOLDS METALS REDUCTION PLANT - LONGVIEW**  
**COMMUNICATIONS SITE PLAN - SHEET 1 OF 3**

**E-10**  
SHEET # 93 OF 114

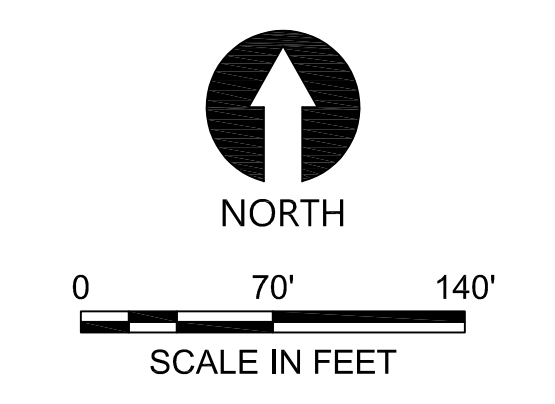
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SU12



1 WLF PUMP STATION ELECTRICAL SITE AND EQUIPMENT PLAN  
E-04 E-06 SCALE: 1"=70'-0"

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Jan 31, 2023 5:15pm Hanns.Gil E-11.dwg E-11

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SCALE: AS NOTED  
DATE: FEBRUARY 2023

**FORMER REYNOLDS METALS REDUCTION PLANT - LONGVIEW**  
**COMMUNICATIONS SITE PLAN - SHEET 2 OF 3**

**E-11**  
SHEET # 94 OF 114

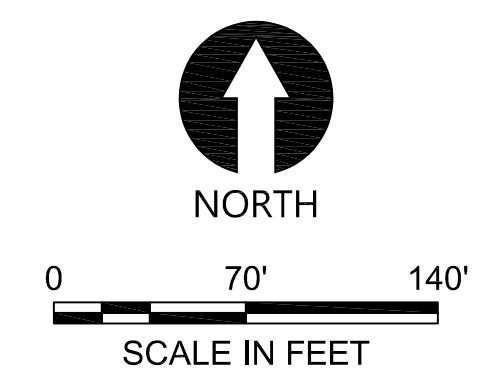
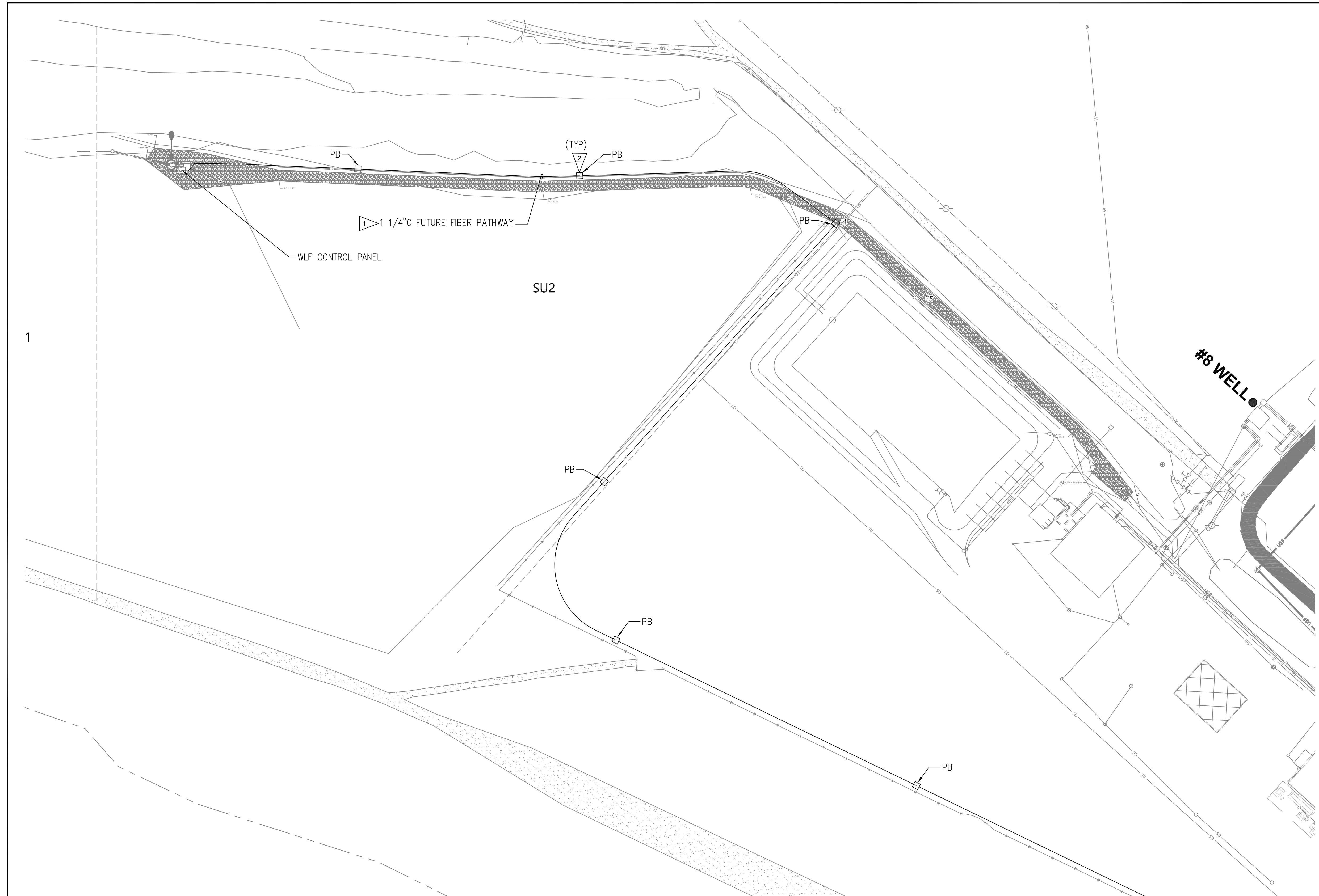
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E-04 E-06 SCALE: 1"=70'-0"

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Jan 31, 2023 5:17pm Harris.Gil E-12.dwg E-12

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**FORMER REYNOLDS METALS REDUCTION PLANT - LONGVIEW**  
**COMMUNICATIONS SITE PLAN - SHEET 3 OF 3**

**E-12**  
SHEET # 95 OF 114

ISA INSTRUMENT IDENTIFICATION				
FIRST LETTER		SUCCEEDING LETTERS		
MEASURED OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS		ALARM	
B	BURNER, COMBUSTION	USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
C	USER'S CHOICE		CONTROL	
D	DENSITY (MASS) OR SP GR	DIFFERENTIAL		
E	VOLTAGE (EMF)		PRIMARY ELEMENT	
F	FLOW RATE	RATIO (FRACTION)		
G	USER'S CHOICE		GLASS OR VIEWING DEVICE	
H	HAND (MANUALLY) INITIATED			HIGH
I	CURRENT (ELECTRICAL)		INDICATE	
J	POWER	SCAN		
K	TIME OR TIME-SCHEDULE	TIME RATE OF CHANGE	CONTROL STATION	
L	LEVEL		LIGHT (PILOT)	LOW
M	USER'S CHOICE	MOMENTARY		MIDDLE OR INTERMEDIATE
N	USER'S CHOICE		USER'S CHOICE	USER'S CHOICE
O	USER'S CHOICE		ORIFICE	
P	PRESSURE OR VACUUM		POINT (TEST CONNECTION)	
Q	QUANTITY OR EVENT	INTEGRATE/TOTALIZE		
R	RADIATION OR RESTRICTION		RECORDER OR PRINTER	
S	SPEED OR FREQUENCY	SAFETY		SWITCH
T	TEMPERATURE			TRANSMIT
U	MULTIVARIABLE		MULTIFUNCTION	MULTIFUNCTION
V	VIBRATION, MECH. ANALYSIS			VALVE, DAMPER, OR LOUVER
W	WEIGHT OR FORCE		WELL	
X	UNCLASSIFIED	X-AXIS	UNCLASSIFIED	UNCLASSIFIED
Y	EVENT, STATE OR PRESENCE	Y-AXIS	RELAY, COMPUTE OR CONVERT	
Z	POSITION, DIMENSION	Z-AXIS	DRIVE, ACTUATOR OR UNCLASSIFIED	
			FINAL CONTROL ELEMENT	

DEVICE/INSTRUMENT IDENTIFICATION (ISA)			
ABS	FLAME/COMBUSTION ANALYZER	MV	MOTOR OPERATED VALVE
AE	ANALYSIS ELEMENT	PAL	PRESSURE ALARM LOW
AGS	COMBUSTIBLE GAS ANALYZER (LEL)	PAH	PRESSURE ALARM HIGH
AO	OPTICAL INTERFACE DETECTOR (OID)	PAHH	PRESSURE ALARM HIGH-HIGH
AXS	HYDROCARBON DETECTOR	PCV	PRESSURE CONTROL VALVE
BS	SMOKE/FIRE BUILDING	PD	POSITIVE DISPLACEMENT
CTA	COMMON TROUBLE ALARM	PI	PRESSURE INDICATOR
CV	CONTROL VALVE	PLD	PULSATION DAMPENER
DE	DENSITY ELEMENT	PSE	PRESSURE SAFETY VALVE (RUPTURE DISK/PIN)
DI	DENSITY INDICATOR	PSH	PRESSURE SWITCH HIGH
DPI	DIFFERENTIAL PRESSURE INDICATOR	PSL	PRESSURE SWITCH LOW
DPS	DIFFERENTIAL PRESSURE SWITCH	PSV	PRESSURE SAFETY VALVE
DPT	DIFFERENTIAL PRESSURE TRANSMITTER	PT	PRESSURE TRANSMITTER
DT	DENSITY TRANSMITTER	PVV	PRESSURE/VACUUM RELIEF VALVE
FE	FLOW ELEMENT	SDA	SHUTDOWN ALARM
FI	FLOW INDICATOR	SV	SOLENOID OPERATED VALVE
FS	FLOW SWITCH	TE	TEMPERATURE ELEMENT
FST	ULTRASONIC FLOW TRANSMITTER/METER	TI	TEMPERATURE INDICATOR
FT	FLOW TRANSMITTER	TT	TEMPERATURE TRANSMITTER
HOA	HAND OFF AUTO	TRV	THERMAL RELIEF VALVE
HS	HAND SWITCH	TW	THERMOWELL
HV	HAND OPERATED VALVE	VT	VIBRATION TRANSMITTER
LAH	LEVEL ALARM HIGH	XA	STATUS ALARM
LAL	LEVEL ALARM LOW	YI	SPHERE/TOOL INDICATOR
LAHH	LEVEL ALARM HIGH-HIGH	YS	SPHERE/TOOL DETECTOR SWITCH
LSH	LEVEL SWITCH HIGH	XS	STATUS SWITCH
LSHH	LEVEL SWITCH HIGH-HIGH	RO	RESTRICTION ORIFICE
LSL	LEVEL SWITCH LOW	ZI	POSITION INDICATOR
LT	LEVEL TRANSMITTER	ZS	POSITION DETECTOR SWITCH

INSTRUMENT SYMBOLS	
	FIELD MOUNTED
	PRIMARY LOCATION - NORMALLY ACCESSIBLE TO OPERATOR (CONTROL PANEL MOUNTED, OMNI, API 2000, MULTILIN, ETC)
	PRIMARY LOCATION NORMALLY INACCESSIBLE TO OPERATOR (MOUNTED BEHIND CONTROL PANEL)
	INSTRUMENT WITH TWO FUNCTIONS
	INTERLOCK
	PLC SHARED DISPLAY/CONTROL HMI AND SCADA (MV, PT, ETC)
	PROGRAMMABLE LOGIC CONTROL (PLC) (SEQUENCE CONTROL AND AUTOMATION FUNCTIONS)
	EMERGENCY SHUTDOWN
	R=RED LIGHT G=GREEN LIGHT A=AMBER LIGHT

FLOW ELEMENTS	
	FE - ORIFICE PLATE
	FO - RESTRICTION ORIFICE
	TURBINE METER
	POSITIVE DISPLACEMENT/ROTARY METER
	ULTRASONIC METER
	RO - ROTOMETER (INLINE FLOW INDICATOR)
	FLOW STRAIGHTENING VANES
	VENTURI TUBE
	EDUCTOR
	MAGNETIC FLOW METER
	FLOW NOZZLE
	CORIOLIS

MISC SYMBOLS	
	FLOAT SWITCH
	ELECTRICAL SUPPLY
	ULTRASONIC LEVEL TRANSMITTER

VALVE SYMBOLS	
	GATE VALVE
	BALL VALVE
	PLUG VALVE
	THREE WAY
	GLOBE VALVE
	CHECK VALVE
	DOUBLE BLOCK & BLEED
	CHECK / PLUG VALVE (PLUGAROO)
	NEEDLE VALVE
	BUTTERFLY VALVE
	FOUR WAY VALVE
	PRESSURE SAFETY VALVE - THERMAL
	PRESSURE SAFETY VALVE - RUPTURE DISK/PIN (PSE)

CONTROL VALVES/ACTUATORS	
	CONTROL VALVE WITH DIAPHRAGM ACTUATOR
	CONTROL VALVE W/ DIAPHRAGM ACTUATOR AND HAND ACTUATOR
	PRESSURE REGULATOR SELF CONTAINED
	ELECTRIC MOTOR ACTUATED VALVE
	SOLENOID VALVE
	PRESSURE REGULATOR W/EXTERNAL TAP
	CONTROL VALVE W/ ELECTRO/HYDRAULIC ACTUATOR
	PNEUMATIC PISTON ACTUATOR (SINGLE ACTING)
	PNEUMATIC PISTON ACTUATOR (DOUBLE ACTING)
	PILOT OPERATED VALVE
	HAND WHEEL ACTUATOR

PIPING SYMBOLS			
	FLANGES		FLAME ARRESTOR
	LINE SIZE CHANGE		RAIN SHIELDED VENT TO ATMOSPHERE
	SPECTACLE BLIND (OPEN)		OPEN DRAIN HUB (COVERED)
	SPECTACLE BLIND (CLOSED)		OPEN DRAIN HUB
	UNION		TEMPORARY STRAINER
	BLIND FLANGE		BARRED "T"
	THREAD-O-LET (TOL)/WELD-O-LET (WOL)		VENT TAIL PIPE
	TOR		NITROGEN BOTTLE
	MUELLER		SENSITIVITY STRAINER (BLOCK)
	CAPPED END		
	PLUGGED END		
	Y-STRAINER		
	PULSATION DAMPENER		
	IN LINE FILTER/STRAINER		
	FLEX HOSE		
	HOSE CONNECTION		
	QUICK DISCONNECT		
	PIPE INSULATION THICKNESS & TYPE		
	INSULATION KIT (FLANGE)		
	INSULATING UNION		
	READ POINT (CATHODIC PROTECTION)		
	MAG. ANODE (CATHODIC PROTECTION)		
	SPECIALTY ITEM (EXAMPLE) (ELECTRIC TRACED)		
	TIE POINT No.		TIE-IN POINT
	JOB NUMBER		
	CHANGE IN PIPE SPEC. OR OWNERSHIP		
	TO OR FROM OTHER DRAWING		

Jan 31, 2023 5:17pm Hanns.Gil

**CASNE Engineering**  
3545 FACTORIA BOULEVARD SE., SUITE 200  
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(425) 522-1000 WWW.CASNE.COM JOB NO. 201-127

**Northwest Alloys, Inc.**

CURTIS E. CLUTE  
STATE OF WASHINGTON  
REGISTERED PROFESSIONAL ENGINEER  
3826  
02/01/23

REVISIONS				
REV	DATE	BY	APP'D	DESCRIPTION
1	02/01/23	JO	CC	ISSUED FOR CONSTRUCTION

DESIGNED BY: J. OHARA  
DRAWN BY: R. FARLEY  
CHECKED BY: O. DYE  
APPROVED BY: C. CLUTE  
SCALE: AS NOTED  
DATE: FEBRUARY 2023

**FORMER REYNOLDS METALS REDUCTION PLANT - LONGVIEW**

**INSTRUMENTATION LEGEND**

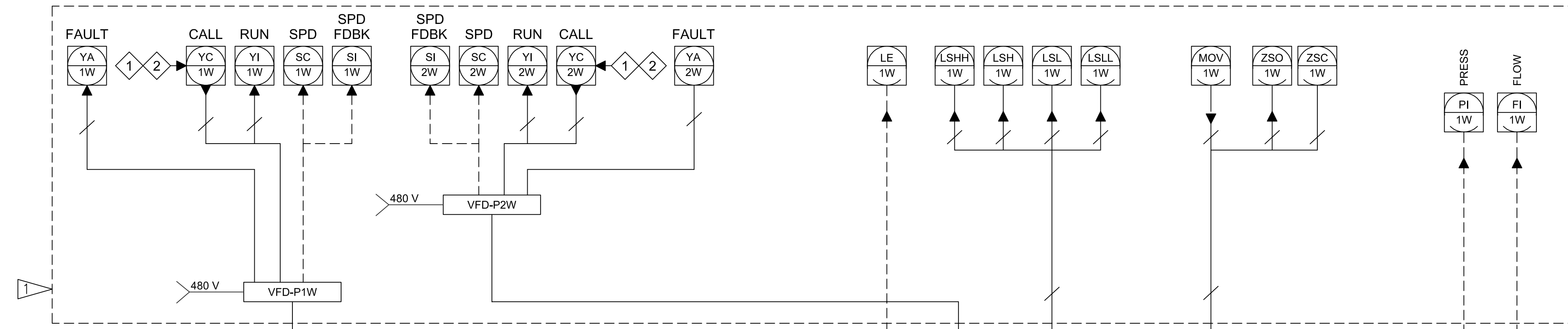
**I-01**

SHEET # 96 OF 114

**ISSUED FOR CONSTRUCTION**

PLAN INTENDED TO BE VIEWED IN COLOR. ADJACENT BLOCK IS "BLUE" INCH SCALE ACCORDINGLY

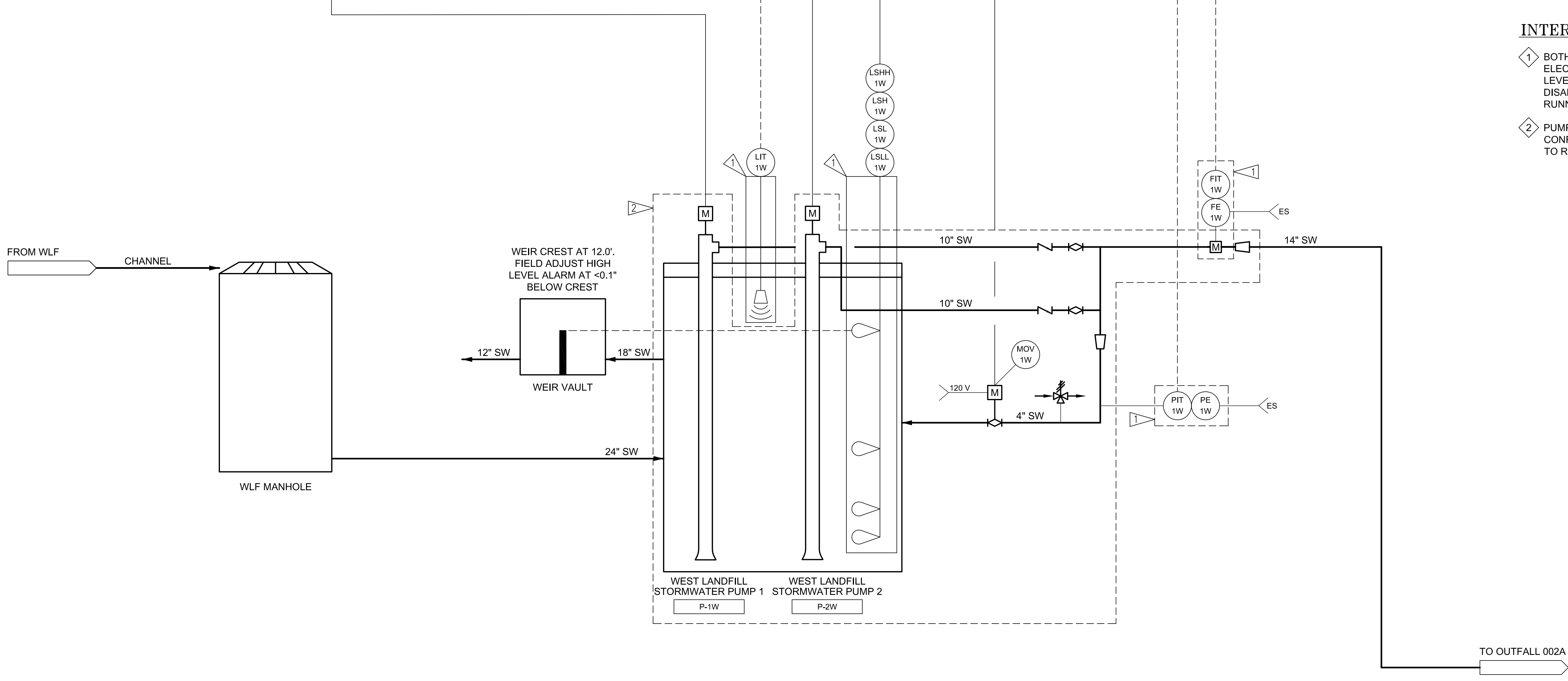




- LEGEND:**
- ANALOG CONNECTION
  - NETWORK CONNECTION
  - DISCRETE CONNECTION

- CONSTRUCTION NOTES:**
- 1 BY ELECTRICAL PACKAGE SUPPLIER.
  - 2 BY PUMP STATION PACKAGE SUPPLIER.

- INTERLOCKS:**
- 1 BOTH WEST PUMP STATION PUMPS ARE ELECTRICALLY INTERLOCKED WITH LOW LEVEL FLOAT SWITCH LSL-1W. PUMPS ARE DISABLED AT LOW LEVEL TO PREVENT RUNNING DRY.
  - 2 PUMPS ARE WIRED IN DUTY-STANDBY CONFIGURATION. PUMPS ARE NOT ABLE TO RUN SIMULTANEOUSLY.



**ISSUED FOR CONSTRUCTION**

Jan 31, 2023 5:28pm Harris.Gil I-02.dwg I-02

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**Northwest Alloys, Inc.**

**CURTIS E. CLUTE**  
 STATE OF WASHINGTON  
 35276  
 REGISTERED PROFESSIONAL ENGINEER  
 02/01/23

REVISIONS				
REV	DATE	BY	APP'D	DESCRIPTION
1	02/01/23	JO	CC	ISSUED FOR CONSTRUCTION

DESIGNED BY: J. OHARA  
 DRAWN BY: R. FARLEY  
 CHECKED BY: O. DYE  
 APPROVED BY: C. CLUTE  
 SCALE: AS NOTED  
 DATE: FEBRUARY 2023

**FORMER REYNOLDS METALS REDUCTION PLANT - LONGVIEW**  
**WEST PUMP STATION - PROCESS AND INSTRUMENTATION DIAGRAM**

**I-02**  
 SHEET # 97 OF 114

PLAN INTENDED TO BE VIEWED IN COLOR. ADJACENT BLOCK IS "BLUE" INCH SCALE ACCORDINGLY

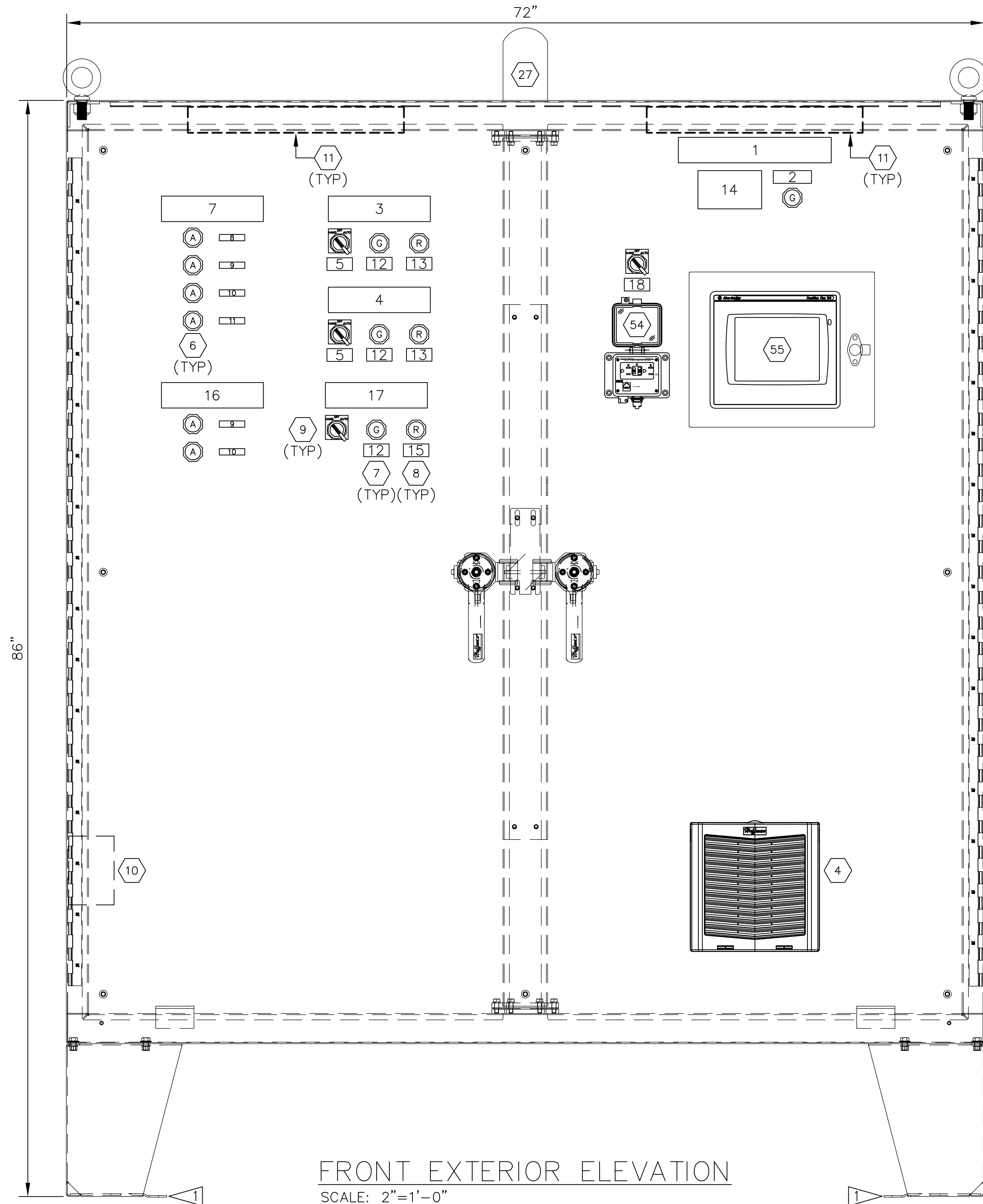


**GENERAL NOTES:**

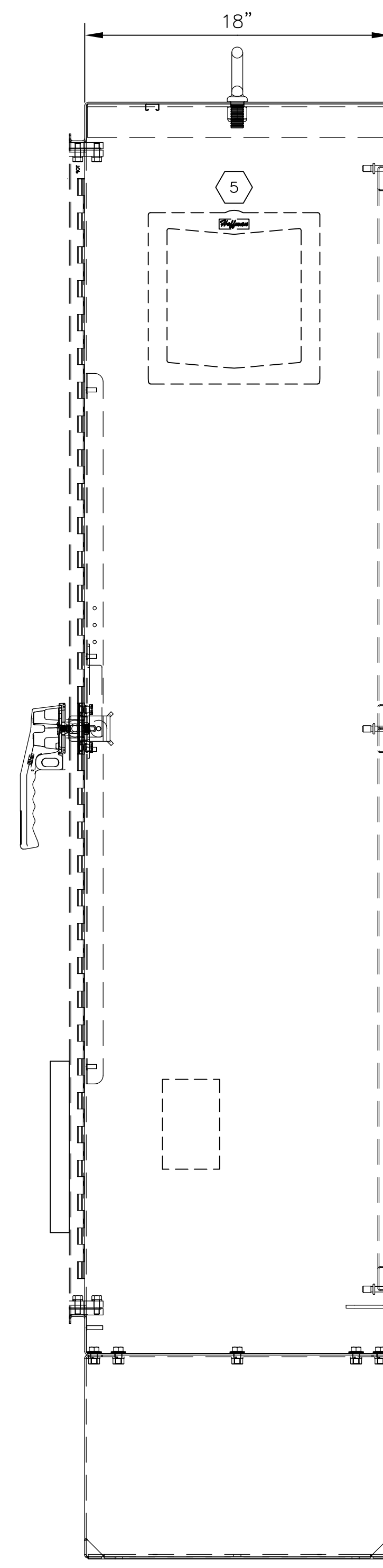
- PLC PANEL SHALL CONFORM TO NFPA 70 AND 79 AND SHALL BE U.L. 508 LABELED.
- PROVIDE "HEAT SHRINK" WIRE NUMBERS ON ALL WIRES.
- PROVIDE TERMINAL STRIP MARKINGS ON BOTH SIDES OF STRIP, LEAVING CENTER OPEN FOR JUMPERING, IF REQUIRED.
- QUANTITIES SHOWN ARE A MINIMUM. SELLER TO SUPPLY ALL MATERIALS AS REQUIRED TO PROVIDE A COMPLETE AND OPERABLE SYSTEM. SELLER TO SUPPLY ALL MISCELLANEOUS MOUNTING HARDWARE, ETC. FOR INSTALLATION OF ALL COMPONENTS.
- UNUS/SPARE ITEMS BECOME THE PROPERTY OF THE COMPANY.
- DIN RAIL SHALL BE INSTALLED THE FULL LENGTH OF WIREWAY OPENINGS AS SHOWN ON DRAWINGS.
- ALL MISCELLANEOUS SPARE COMPONENTS (FUSES, RELAYS, TAPS, TERMINATORS, ETC.) SHALL BE SHIPPED WITH THE PANEL.
- PROVIDE ENGRAVED LABELS FOR ALL DEVICES IN PANEL. DOOR MOUNTED DEVICES SHALL HAVE LABELS ON BOTH SIDES OF DOOR.
- ROUTE ALL INSTRUMENT GROUNDS TO GREEN ISOLATED INSTRUMENT GROUND BUS. INSTRUMENT GROUND BUS SHALL BE SINGLE-POINT GROUNDED TO AC GROUND.
- CONTROL PANEL AND INSTRUMENTS PROVIDED BY EP SUPPLIER. INSTALL CONTROL PANEL, INSTRUMENTS, AND EQUIPMENT. PROVIDE ALL FIELD WIRING, CONNECTIONS AND TERMINATIONS. COORDINATE AND SUPPORT STARTUP AND COMMISSIONING. REFER TO SPECIFICATION SECTIONS 01 64 00 AND 26 00 00

**CONSTRUCTION NOTES:**

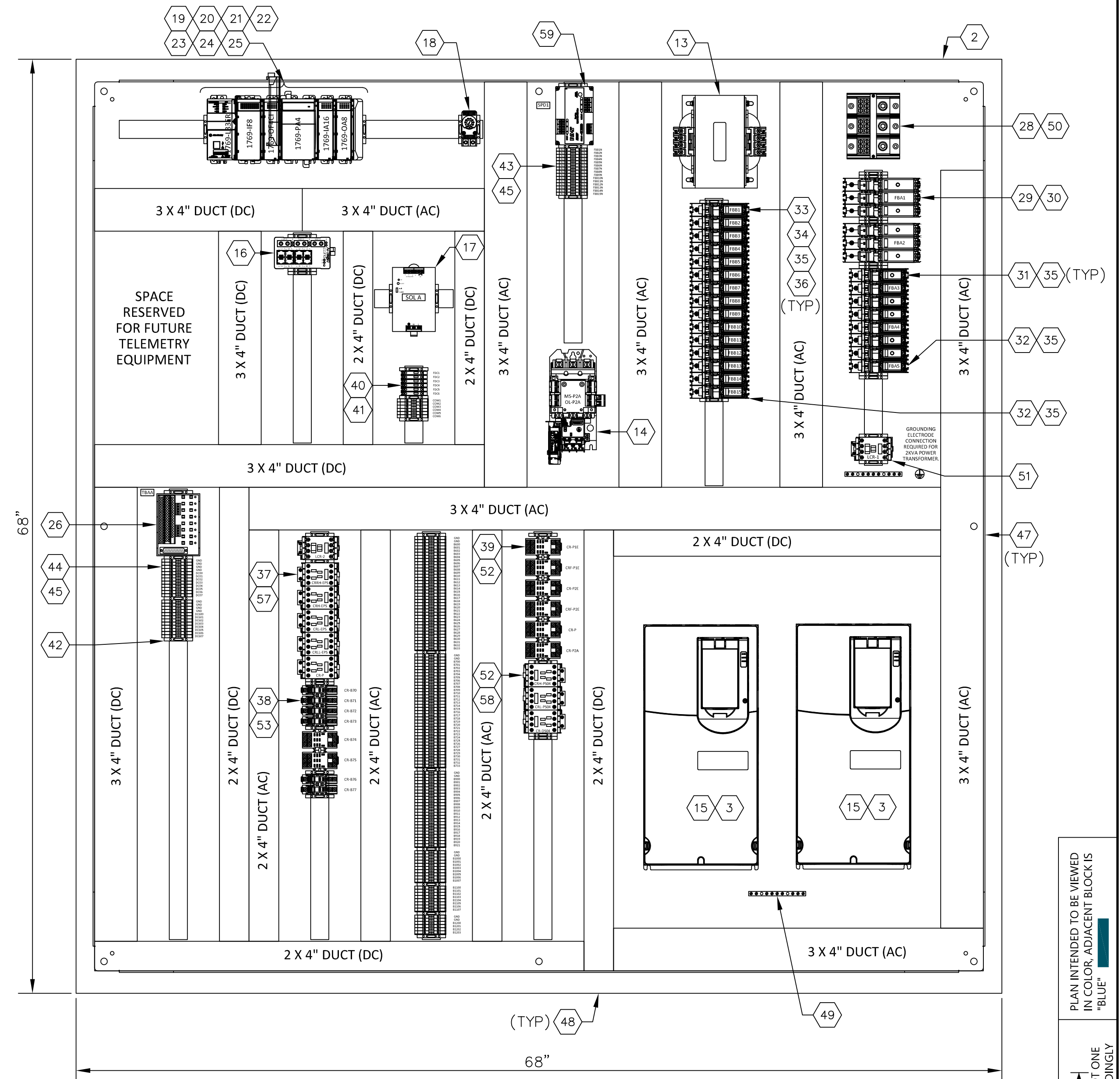
- USE STAINLESS STEEL ANCHOR BOLTS WHEN INSTALLING CONTROL PANEL.



FRONT EXTERIOR ELEVATION  
SCALE: 2"=1'-0"



SIDE EXTERIOR ELEVATION  
SCALE: 2"=1'-0"



INTERIOR LAYOUT  
SCALE:

Feb 01, 2023 11:43am Hamas.Gil IC-01.dwg IC-01

REVISIONS				
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1	02/01/23	JO	CC	ISSUED FOR CONSTRUCTION

DESIGNED BY: J. OHARA  
DRAWN BY: R. FARLEY  
CHECKED BY: O. DYE  
APPROVED BY: C. CLUTE  
SCALE: AS NOTED  
DATE: FEBRUARY 2023

**FORMER REYNOLDS METALS REDUCTION PLANT - LONGVIEW**

**ELF PUMP STATION CONTROL PANEL ELEVATION**

**IC-01**

SHEET # 99 OF 114

**ISSUED FOR CONSTRUCTION**

PLAN INTENDED TO BE VIEWED IN COLOR. ADJACENT BLOCK IS "BLUE" INCH SCALE ACCORDINGLY

BILL OF MATERIALS					
PART #	QTY.	TYPE	DESCRIPTION	MANUFACTURER	MODEL #
1	1	ENCLOSURE	TWO-DOOR WITH FLOOR STANDS, TYPE 4X ENCLOSURE 74"X72"X18"	HOFFMAN	A72H7218SS6LP3PT
2	1	BACK PANEL	BACK PANEL FOR ENCLOSURE 72"X72"	HOFFMAN	A72P72
3	2	HIM	POWERFLEX HUMAN INTERFACE MODULE	ALLEN BRADLEY	20-HIM-A6
4	1	FAN	SIDE MOUNT FILTER FAN, 115V, 159 CFM	HOFFMAN	HF1016413
5	1	VENT	FILTER FAN EXHAUST GRILLE, 10"	HOFFMAN	HG1000503
6	6	PILOT LIGHT	PUSH-TO-TEST PILOT LIGHT - AMBER	ALLEN BRADLEY	800T-QTH2A
7	4	PILOT LIGHT	PUSH-TO-TEST PILOT LIGHT - GREEN	ALLEN BRADLEY	800T-QTH2G
8	3	PILOT LIGHT	PUSH-TO-TEST PILOT LIGHT - RED	ALLEN BRADLEY	800T-QTH2R
9	4	SELECTOR SWITCH	3 POSITION MAINTAINED SELECTOR SWITCH	ALLEN BRADLEY	800T-J2B
10	1	HEATER	400W HEATER W/INTEGRATED THERMOSTAT	HOFFMAN	DAH4001B
11	2	PANEL LIGHT	LED PANEL LIGHT KIT, 400 LUMEN	HOFFMAN	LEDA1M35
12	1	PHOTOCELL	120VAC PHOTOCELL	INTERMATIC	K4421M
13	1	TRANSFORMER	SINGLE PHASE TRANSFORMER - 2000VA, 480/120VAC	SQUARE D	9070T2000D1
14	1	STARTER	FVNR MOTOR STARTER - SIZE 1, OPEN TYPE	ALLEN BRADLEY	509-B0Z-AF-901
15	2	VFD	VARIABLE FREQUENCY DRIVE - 480VAC, 40HP, 3PH, FRAME 4	ALLEN BRADLEY	20F11ND065JA0NNNN N
16	1	NETWORK SWITCH	N-TRON SERIES - 8 COPPER, 3 FIBER, ST CONNECTORS	RED LION	111FX3-ST
17	1	POWER SUPPLY	24VDC POWER SUPPLY - 10A	SOLA	SDN10-24-100P
18	1	THERMOSTAT	THERMOSTAT CONTROLLER - 115V, 40 TO 140°F	HOFFMAN	THERM16F
19	1	PLC PROCESSOR	COMPACTLOGIX 5370 ETHERNET PROCESSOR MODULE	ALLEN BRADLEY	1769-L33ER
20	1	PLC POWER SUPPLY	COMPACTLOGIX 5370 POWER SUPPLY	ALLEN BRADLEY	1769-PA4
21	1	PLC DIGITAL INPUT	COMPACTLOGIX DIGITAL INPUT MODULE - 16 POINT	ALLEN BRADLEY	1769-IA16
22	1	PLC DIGITAL OUTPUT	COMPACTLOGIX DIGITAL OUTPUT MODULE - 8 POINT	ALLEN BRADLEY	1769-OA8
23	1	PLC ANALOG INPUT	COMPACTLOGIX ANALOG INPUT MODULE - 8 POINT	ALLEN BRADLEY	1769-IF8
24	1	PLC ANALOG OUTPUT	COMPACTLOGIX ISOLATED ANALOG OUTPUT MODULE - 4 POINT	ALLEN BRADLEY	1769-OF4CI
25	1	PLC END CAP	COMPACTLOGIX END CAP	ALLEN BRADLEY	1769-ECR
26	1	IFM MODULE	PLC ANALOG WIRING SYSTEM - 8 CHANNEL, 5 TERMINAL/CHANNEL	ALLEN BRADLEY	1492-AIFM8-F-5
27	1	ALARM BEACON	ROUND BEACON - STROBE, 120MM, 120VAC, 1/2" NPT, RED	ALLEN BRADLEY	855BM-N10BR4
28	1	DISTRIBUTION BLOCK	POWER DISTRIBUTION BLOCK - 335A, 3 POLE	ALLEN BRADLEY	1492-PD3163
29	2	CIRCUIT PROTECTOR	COMPACT CIRCUIT PROTECTOR - 3 POLE, 100A, CLASS CF FUSE	COOPER BUSSMAN	CCP-3-100CF
30	6	CUBE FUSE	CLASS CF LOW-PEAK CUBE FUSE - 70A, INDICATING	COOPER BUSSMAN	TCF-70
31	4	CIRCUIT PROTECTOR	COMPACT CIRCUIT PROTECTOR - 3 POLE, 30A, CLASS CC FUSE	COOPER BUSSMAN	CCP-3-30CC
32	1	CIRCUIT PROTECTOR	COMPACT CIRCUIT PROTECTOR - 2 POLE, 30A, CLASS CC FUSE	COOPER BUSSMAN	CCP-2-30CC
33	14	CIRCUIT PROTECTOR	COMPACT CIRCUIT PROTECTOR - 1 POLE, 30A, CLASS CC FUSE	COOPER BUSSMAN	CCP-1-30CC
34	AS REQ'D	FUSE	CLASS CC LOW-PEAK TIME-DELAY FUSE - 2A	COOPER BUSSMAN	LP-CC-A
35	AS REQ'D	FUSE	CLASS CC LOW-PEAK TIME-DELAY FUSE - 5A	COOPER BUSSMAN	LP-CC-5
36	AS REQ'D	FUSE	CLASS CC LOW-PEAK TIME-DELAY FUSE - 10A	COOPER BUSSMAN	LP-CC-10
37	4	RELAY	CONTROL RELAY - 3 N.O., 1 N.C. CONTACTS, 120VAC COIL	ALLEN BRADLEY	700-CF310D
38	6	RELAY	SPDT CONTROL RELAY, 120VAC, W/CHECK BUTTON AND INDICATOR	IDEC	RH1B-ULC-AC120V
39	8	RELAY	3PDT CONTROL RELAY, 120VAC, W/CHECK BUTTON AND INDICATOR	IDEC	RH3B-ULC-AC120V
40	5	FUSED TERMINAL BLOCK	FUSED TERMINAL BLOCK	ALLEN BRADLEY	1492-WFB4
41	AS REQ'D	FUSE	5 X 20 MM TIME-DELAY FUSE - XA	COOPER BUSSMAN	GDC-XA
42	AS REQ'D	ANCHOR	TERMINAL BLOCK END ANCHOR	ALLEN BRADLEY	1492-EAJ35
43	AS REQ'D	TERMINALS	FEED THROUGH TERMINAL BLOCK - 600V, 25A, GREY	ALLEN BRADLEY	1492-J4
44	AS REQ'D	TERMINALS	FEED THROUGH TERMINAL BLOCK - 600V, 25A, BLUE	ALLEN BRADLEY	1492-J4B
45	AS REQ'D	TERMINALS	FEED THROUGH TERMINAL BLOCK - 600V, 25A, GREEN	ALLEN BRADLEY	1492-J4G
46	AS REQ'D	DIN RAIL	35MM DIN RAIL	ALLEN BRADLEY	199-DR1
47	AS REQ'D	WIREWAY	2" X 4" WIREWAY	PANDUIT	F2X4LG6
48	AS REQ'D	WIREWAY	3" X 4" WIREWAY	PANDUIT	F3X4LG6
49	1	GROUND BAR	GROUNDING BAR SYSTEM	HOFFMAN	PGS4K
50	1	COVER	POWER DISTRIBUTION BLOCK COVER	ALLEN BRADLEY	1492-PBC2
51	2	CONTACTOR	ELECTRICALLY HELD LIGHTING CONTACTOR	ALLEN BRADLEY	100L-C20ND4
52	6	AUXILIARY CONTACTS	AUXILIARY CONTACTS FOR 700CF RELAYS	ALLEN BRADLEY	100-FA02
53	8	RELAY SOCKET	DIN RAIL MOUNT SOCKET FOR CONTROL RELAY	IDEC	SH1B-05
54	1	RECEPTACLE	EXTERNAL PROGRAMMING PORT/RECEPTACLE	GRACE	P-R62-M5RF
55	1	HMI	PANELVIEW PLUS 7 PERFORMANCE, 9 IN., 24VDC	ALLEN BRADLEY	2711P-T9W22D9P
56	1	WINDOW	STAINLESS STEEL DEEP HINGED WINDOW KIT	HOFFMAN	AWDH1418N4SS
57	6	RELAY SOCKET	DIN RAIL MOUNT SOCKET FOR 3PDT CONTROL RELAY	IDEC	SH3B-05
58	3	RELAY	CONTROL RELAY - 24VDC COIL, 1 N.O., 1 N.C. CONTACTS	ALLEN BRADLEY	700-CFM310EJ
59	1	SURGE PROTECTOR	SURGE PROTECTOR W/HYBRID FILTER, 120VAC, 20A	EATON	AG-PH-120-20

NAMEPLATE SCHEDULE							
ITEM	LINE 1	LINE 2	LINE 3	LABEL SIZE	LETTER SIZE	LETTER COLOR	LABEL COLOR
1	EAST PUMP STATION	CONTROL PANEL		12" X 2"	1/2"	BLACK	WHITE
2	CONTROL	POWER		3" X 1"	1/4"	BLACK	WHITE
3	EAST STORMWATER	PUMP P-1E CONTROL		5" X 1"	1/4"	BLACK	WHITE
4	EAST STORMWATER	PUMP P-2E CONTROL		5" X 1"	1/4"	BLACK	WHITE
5	STORMWATER PUMPS	CANNOT RUN	SIMULTANEOUSLY	2" X 1"	1/8"	BLACK	WHITE
6	STORMWATER PUMPS	CANNOT RUN	SIMULTANEOUSLY	2" X 1"	1/8"	BLACK	WHITE
7	EAST PUMP STATION	LEVEL FLOATS		5" X 1"	1/4"	BLACK	WHITE
8	HIGH-HIGH			2" X 1/2"	1/8"	BLACK	WHITE
9	HIGH			2" X 1/2"	1/8"	BLACK	WHITE
10	LOW			2" X 1/2"	1/8"	BLACK	WHITE
11	LOW-LOW			2" X 1/2"	1/8"	BLACK	WHITE
12	RUNNING			1" X 1/2"	1/8"	BLACK	WHITE
13	FAULT			1" X 1/2"	1/8"	BLACK	WHITE
14	THIS PANEL	FED FROM	XXXXXXX	5" X 3"	3/8"	WHITE	RED
15	OVERLOAD			1" X 1/2"	1/8"	BLACK	WHITE
16	OUTFALL PUMP STATION	004 LEVEL FLOATS		5" X 1"	1/4"	BLACK	WHITE
17	OUTFALL PUMP STATION	PUMP P-2A CONTROL		5" X 1"	1/4"	BLACK	WHITE
18	LIGHTING	CONTROL SWITCH		2" X 1"	1/8"	BLACK	WHITE

**GENERAL NOTES:**

- CONTROL PANEL AND INSTRUMENTS PROVIDED BY EP SUPPLIER. INSTALL CONTROL PANEL, INSTRUMENTS, AND EQUIPMENT. PROVIDE ALL FIELD WIRING, CONNECTIONS AND TERMINATIONS. COORDINATE AND SUPPORT STARTUP AND COMMISSIONING. REFER TO SPECIFICATION SECTIONS 01 64 00 AND 26 00 00.

**CONSTRUCTION NOTES:**

- INSTALL PHOTOCELL ON CONTROL PANEL SHELTER EXTERIOR IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS. PROVIDE AND INSTALL CONDUIT AND CONDUCTOR TO CONTROL PANEL. REFER TO EC-05.

ONE INCH  
↑  
PLAN INTENDED TO BE VIEWED  
IN COLOR. ADJACENT BLOCK IS  
"BLUE"  
↓  
AT FULL SIZE. IF NOT ONE  
INCH SCALE ACCORDINGLY

**ISSUED FOR CONSTRUCTION**

Jan 31, 2023 5:31pm Hamms.Gil IC-02.dwg IC-02

**Anchor QEA Engineering**  
3545 FACTORIA BOULEVARD SE., SUITE 200  
BELLEVUE, WA 98006  
(425) 522-1000 WWW.CASNE.COM JOB NO. 201-127

**Northwest Alloys, Inc.**

REVISIONS					
REV	DATE	BY	APP'D	DESCRIPTION	
1	02/01/23	JO	CC	ISSUED FOR CONSTRUCTION	

DESIGNED BY: J. OHARA  
DRAWN BY: R. FARLEY  
CHECKED BY: O. DYE  
APPROVED BY: C. CLUTE  
SCALE: AS NOTED  
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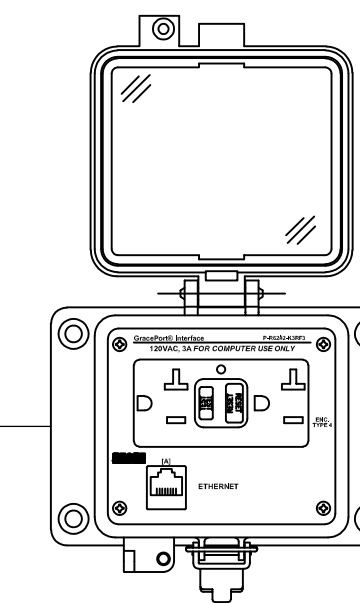
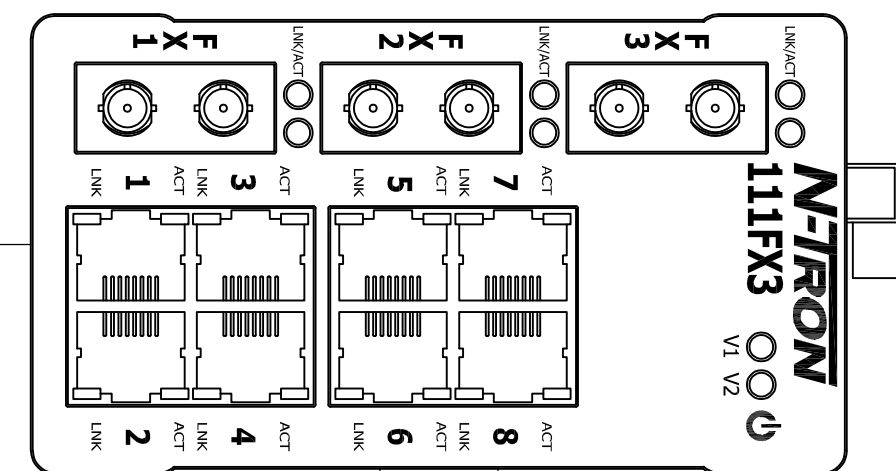
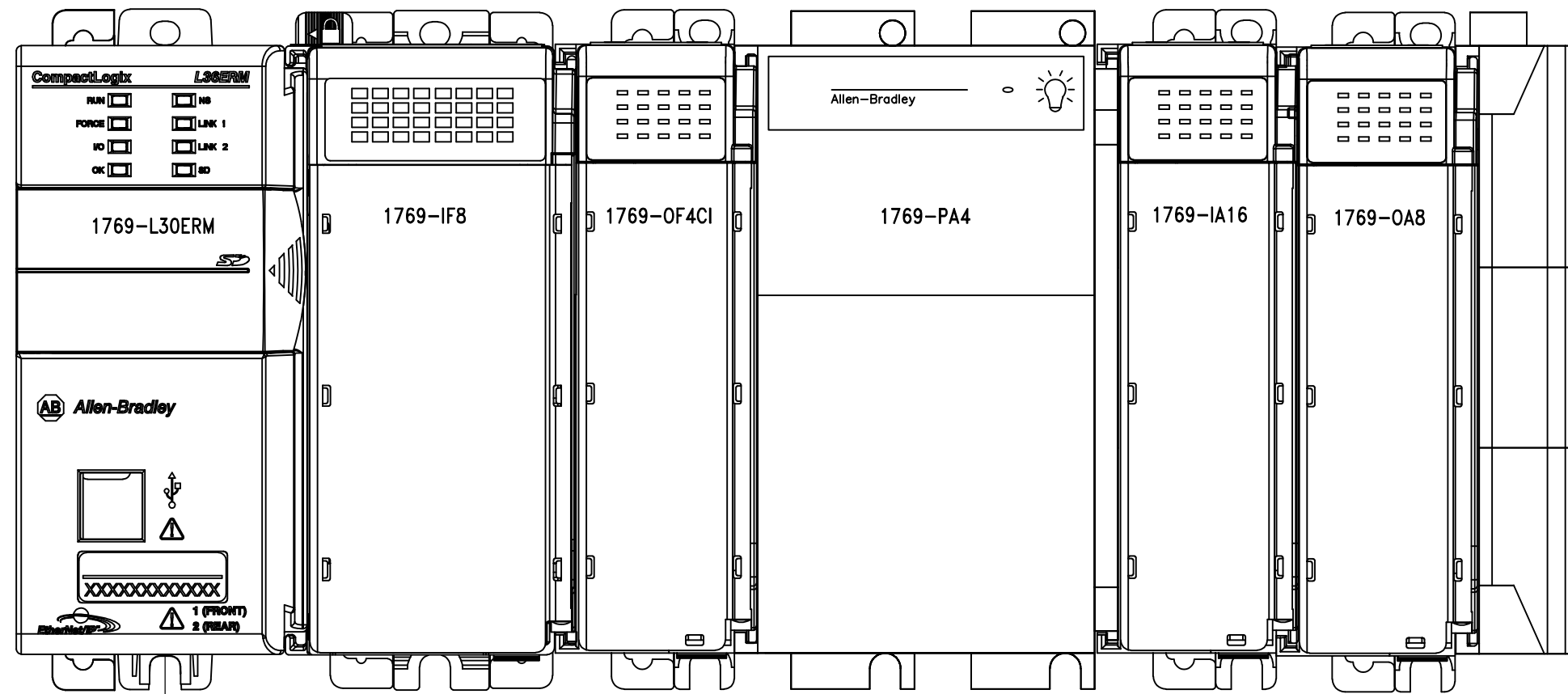
**FORMER REYNOLDS METALS REDUCTION PLANT - LONGVIEW**

**ELF PUMP STATION BILL OF MATERIALS**

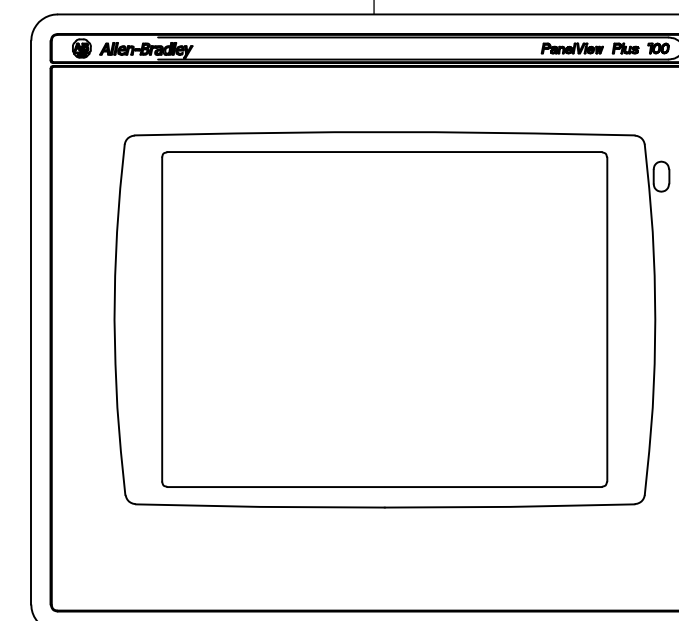
**IC-02**

SHEET # **100** OF **114**

EAST STORMWATER PUMP STATION PLC  
IP: XXX.XXX.XXX.XXX



EXTERNAL PROGRAMMING PORT



PANELVIEW  
IP: XXX.XXX.XXX.XXX

**LEGEND:**

— CAT6 ETHERNET

**GENERAL NOTES:**

- CONTROL PANEL AND INSTRUMENTS PROVIDED BY EP SUPPLIER. INSTALL CONTROL PANEL, INSTRUMENTS, AND EQUIPMENT. PROVIDE ALL FIELD WIRING, CONNECTIONS AND TERMINATIONS. COORDINATE AND SUPPORT STARTUP AND COMMISSIONING. REFER TO SPECIFICATION SECTIONS 01 64 00 AND 26 00 00.

Jan 31, 2023 5:31pm Harris.Gil IC-03.dwg IC-03

PLAN INTENDED TO BE VIEWED IN COLOR. ADJACENT BLOCK IS "BLUE" ONE INCH AT FULL SIZE. IF NOT ONE INCH SCALE ACCORDINGLY

**ISSUED FOR CONSTRUCTION**

**ANCHOR QEA**  
**CASNE Engineering**  
3545 FACTORIA BOULEVARD SE., SUITE 200  
BELLEVUE, WA 98006  
(425) 522-1000 WWW.CASNE.COM JOB NO. 201-127

**Northwest Alloys, Inc.**

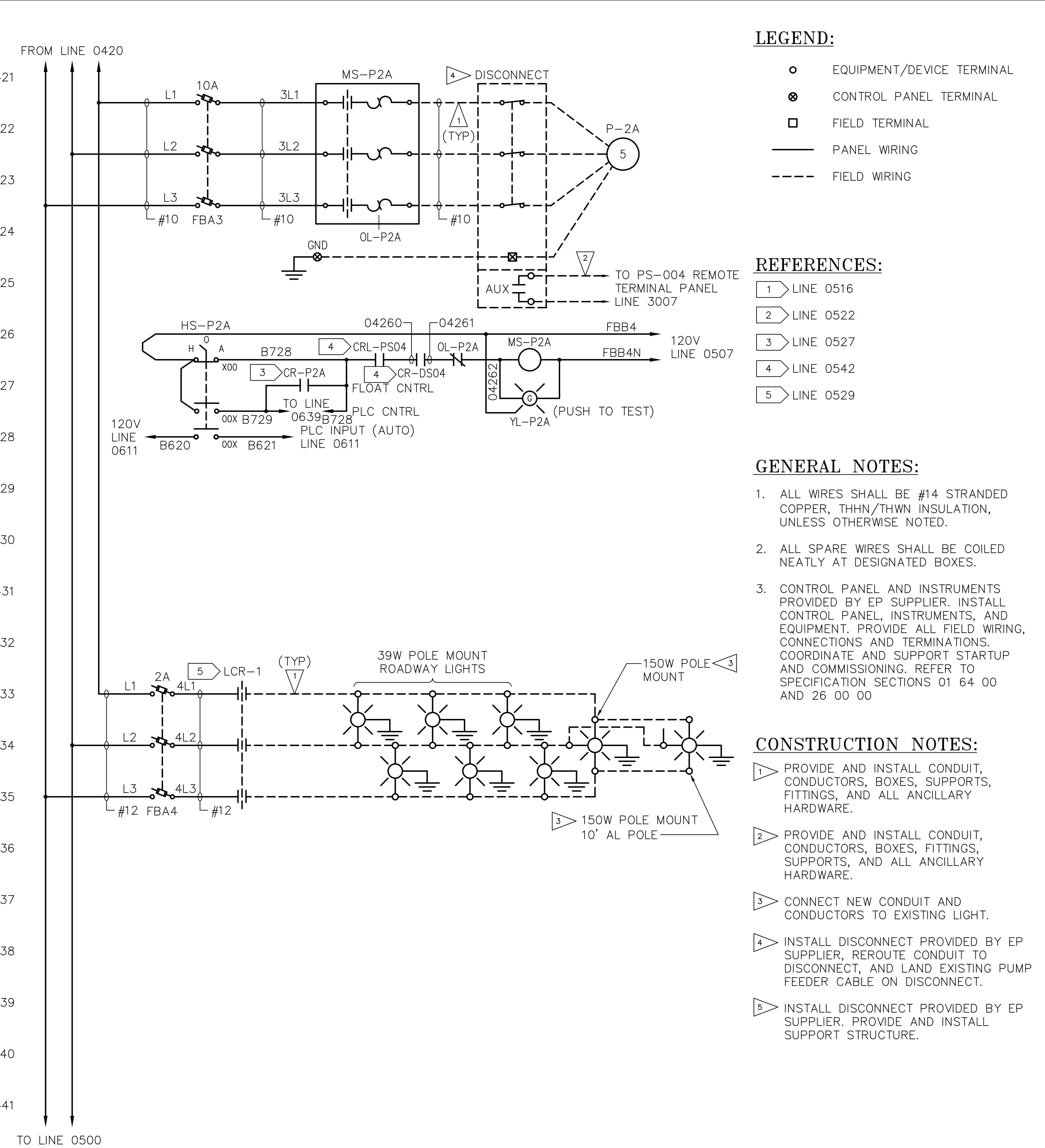
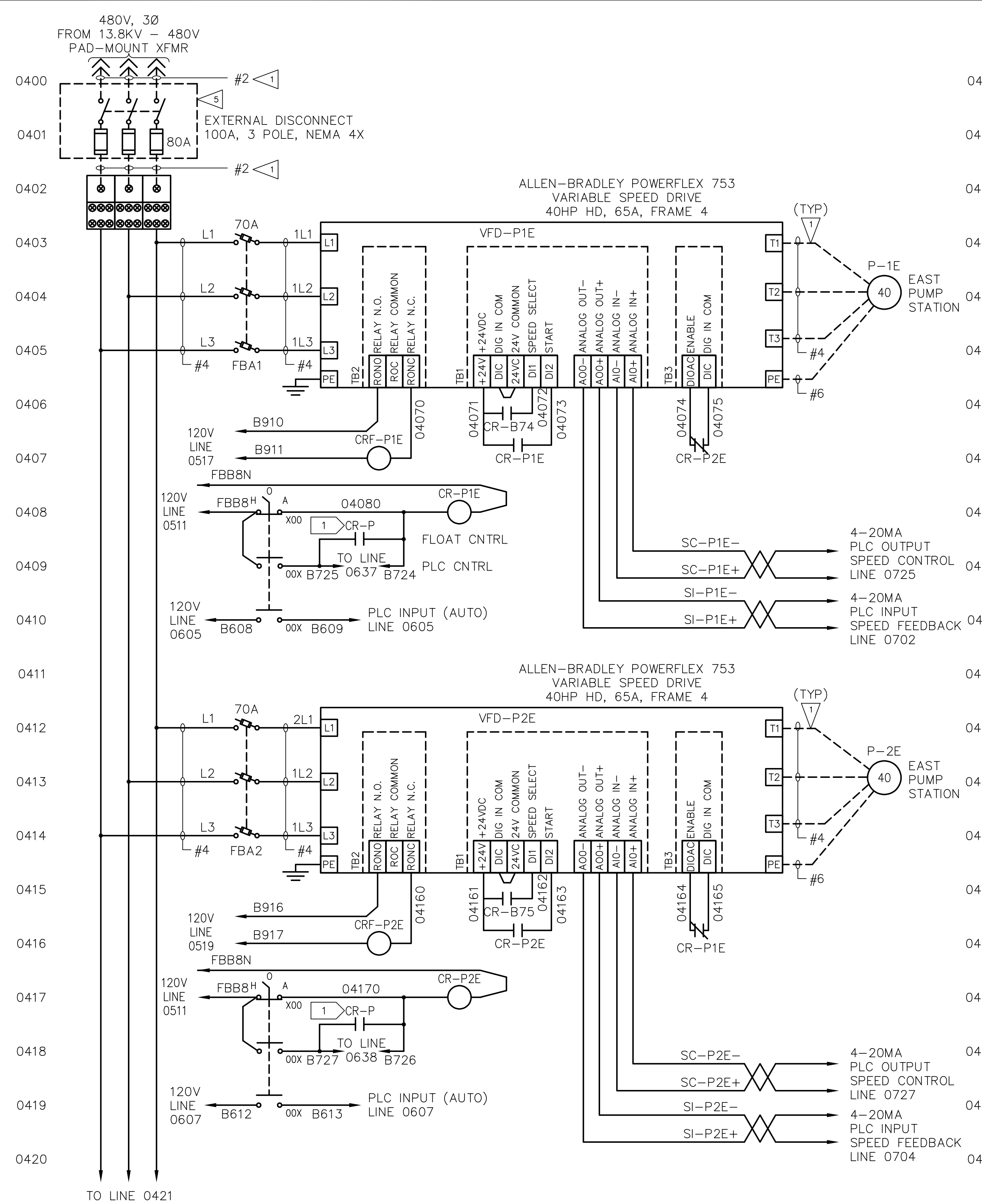
**CURTIS E. CLUTE**  
STATE OF WASHINGTON  
REGISTERED PROFESSIONAL ENGINEER  
35276  
02/01/23

REVISIONS				
REV	DATE	BY	APP'D	DESCRIPTION
1	02/01/23	JO	CC	ISSUED FOR CONSTRUCTION

DESIGNED BY: J. OHARA  
DRAWN BY: R. FARLEY  
CHECKED BY: O. DYE  
APPROVED BY: C. CLUTE  
SCALE: AS NOTED  
DATE: FEBRUARY 2023

**FORMER REYNOLDS METALS REDUCTION PLANT - LONGVIEW**  
**EAST PUMP STATION CONTROL PANEL NETWORK DIAGRAM**

**IC-03**  
SHEET # 101 OF 114



- LEGEND:**
- EQUIPMENT/DEVICE TERMINAL
  - ⊗ CONTROL PANEL TERMINAL
  - FIELD TERMINAL
  - PANEL WIRING
  - - - FIELD WIRING

- REFERENCES:**
- 1 LINE 0516
  - 2 LINE 0522
  - 3 LINE 0527
  - 4 LINE 0542
  - 5 LINE 0529

- GENERAL NOTES:**
1. ALL WIRES SHALL BE #14 STRANDED COPPER, THHN/THWN INSULATION, UNLESS OTHERWISE NOTED.
  2. ALL SPARE WIRES SHALL BE COILED NEATLY AT DESIGNATED BOXES.
  3. CONTROL PANEL AND INSTRUMENTS PROVIDED BY EP SUPPLIER. INSTALL CONTROL PANEL, INSTRUMENTS, AND EQUIPMENT. PROVIDE ALL FIELD WIRING, CONNECTIONS AND TERMINATIONS. COORDINATE AND SUPPORT STARTUP AND COMMISSIONING. REFER TO SPECIFICATION SECTIONS 01 64 00 AND 26 00 00

- CONSTRUCTION NOTES:**
- 1 PROVIDE AND INSTALL CONDUIT, CONDUCTORS, BOXES, SUPPORTS, FITTINGS, AND ALL ANCILLARY HARDWARE.
  - 2 PROVIDE AND INSTALL CONDUIT, CONDUCTORS, BOXES, FITTINGS, SUPPORTS, AND ALL ANCILLARY HARDWARE.
  - 3 CONNECT NEW CONDUIT AND CONDUCTORS TO EXISTING LIGHT.
  - 4 INSTALL DISCONNECT PROVIDED BY EP SUPPLIER, REROUTE CONDUIT TO DISCONNECT, AND LAND EXISTING PUMP FEEDER CABLE ON DISCONNECT.
  - 5 INSTALL DISCONNECT PROVIDED BY EP SUPPLIER. PROVIDE AND INSTALL SUPPORT STRUCTURE.

**ISSUED FOR CONSTRUCTION**

IC-04.dwg (C-04)

**ANCHOR QEA**  
**CASNE Engineering**  
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**Northwest Alloys, Inc.**

**CURTIS R. CLUTE**  
 STATE OF WASHINGTON  
 REGISTERED PROFESSIONAL ENGINEER  
 3876  
 02/01/23

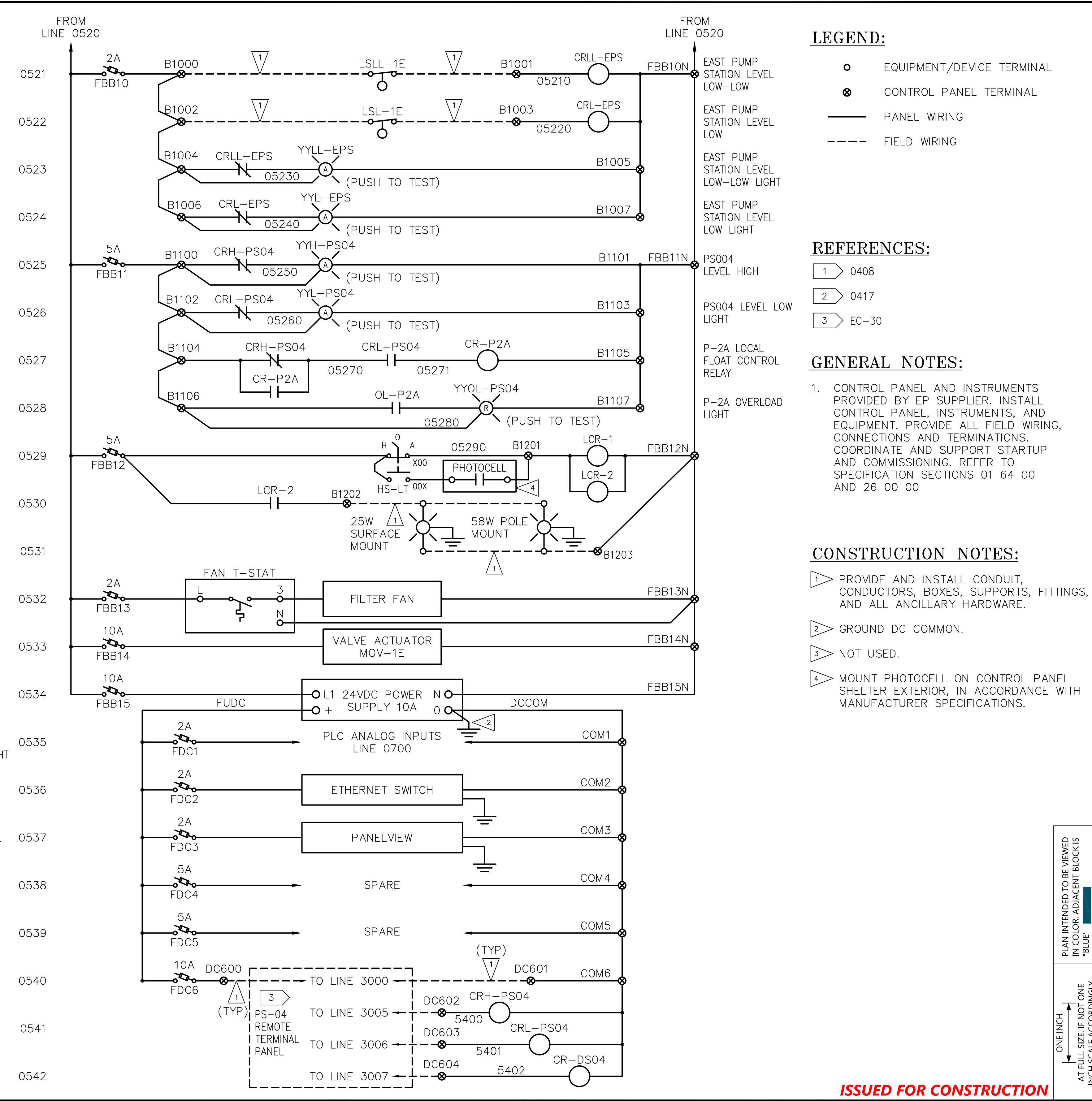
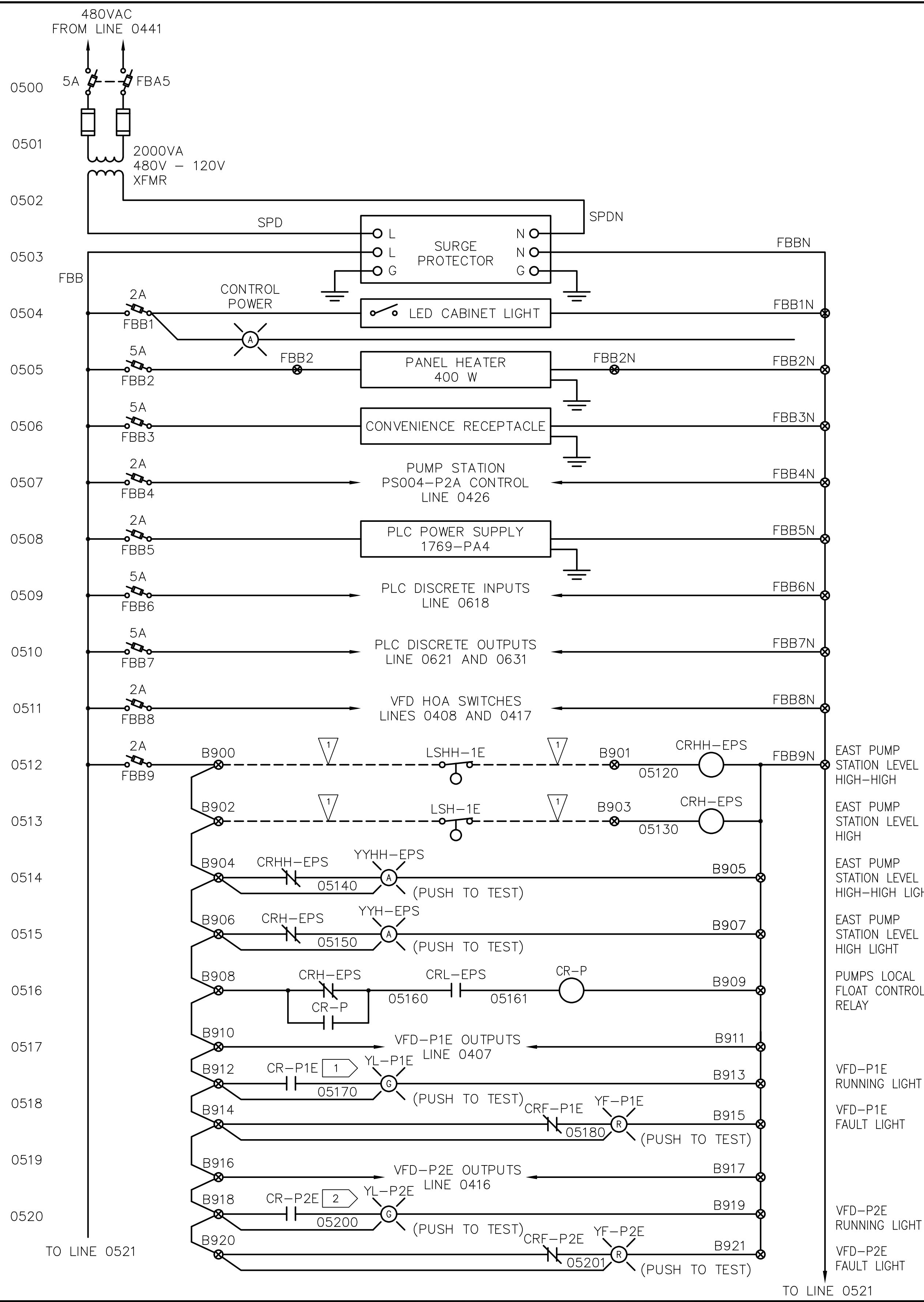
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1	02/01/23	JO	CC	ISSUED FOR CONSTRUCTION

DESIGNED BY: J. OHARA  
 DRAWN BY: R. FARLEY  
 CHECKED BY: O. DYE  
 APPROVED BY: C. CLUTE  
 SCALE: AS NOTED  
 DATE: FEBRUARY 2023

**FORMER REYNOLDS METALS REDUCTION PLANT - LONGVIEW**  
**ELF PUMP STATION WIRING DIAGRAMS**

**IC-04**  
 SHEET # 102 OF 114

PLAN INTENDED TO BE VIEWED IN COLOR. ADJACENT BLOCK IS "BLUE" INCH SCALE ACCORDINGLY



**LEGEND:**

- EQUIPMENT/DEVICE TERMINAL
- ⊗ CONTROL PANEL TERMINAL
- PANEL WIRING
- - - FIELD WIRING

**REFERENCES:**

- 1 0408
- 2 0417
- 3 EC-30

**GENERAL NOTES:**

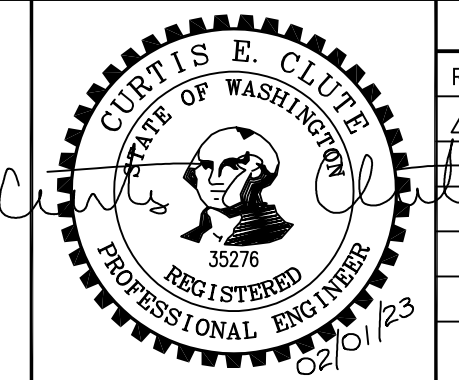
1. CONTROL PANEL AND INSTRUMENTS PROVIDED BY EP SUPPLIER. INSTALL CONTROL PANEL, INSTRUMENTS, AND EQUIPMENT. PROVIDE ALL FIELD WIRING, CONNECTIONS AND TERMINATIONS. COORDINATE AND SUPPORT STARTUP AND COMMISSIONING. REFER TO SPECIFICATION SECTIONS 01 64 00 AND 26 00 00

**CONSTRUCTION NOTES:**

- 1 PROVIDE AND INSTALL CONDUIT, CONDUCTORS, BOXES, SUPPORTS, FITTINGS, AND ALL ANCILLARY HARDWARE.
- 2 GROUND DC COMMON.
- 3 NOT USED.
- 4 MOUNT PHOTOCELL ON CONTROL PANEL SHELTER EXTERIOR, IN ACCORDANCE WITH MANUFACTURER SPECIFICATIONS.

**ISSUED FOR CONSTRUCTION**

IC-05.dwg (C-05)



REVISIONS				
REV	DATE	BY	APP'D	DESCRIPTION
1	02/01/23	JO	CC	ISSUED FOR CONSTRUCTION

DESIGNED BY: J. OHARA  
 DRAWN BY: R. FARLEY  
 CHECKED BY: O. DYE  
 APPROVED BY: C. CLUTE  
 SCALE: AS NOTED  
 DATE: FEBRUARY 2023

**FORMER REYNOLDS METALS REDUCTION PLANT - LONGVIEW**

**ELF PUMP STATION WIRING DIAGRAMS**

**IC-05**

SHEET # 103 OF 114

PLAN INTENDED TO BE VIEWED IN COLOR. ADJACENT BLOCK IS "BLUE" INCH SCALE ACCORDINGLY

**LEGEND:**

- EQUIPMENT/DEVICE TERMINAL
- ⊗ CONTROL PANEL TERMINAL
- PANEL WIRING
- - - FIELD WIRING

**REFERENCES:**

- 1 LINE 0512
- 2 LINE 0513
- 3 LINE 0521
- 4 LINE 0522
- 5 LINE 0408
- 6 LINE 0417
- 7 LINE 0422
- 8 LINE 0541
- 9 LINE 0542
- 10 LINE 0407
- 11 LINE 0416

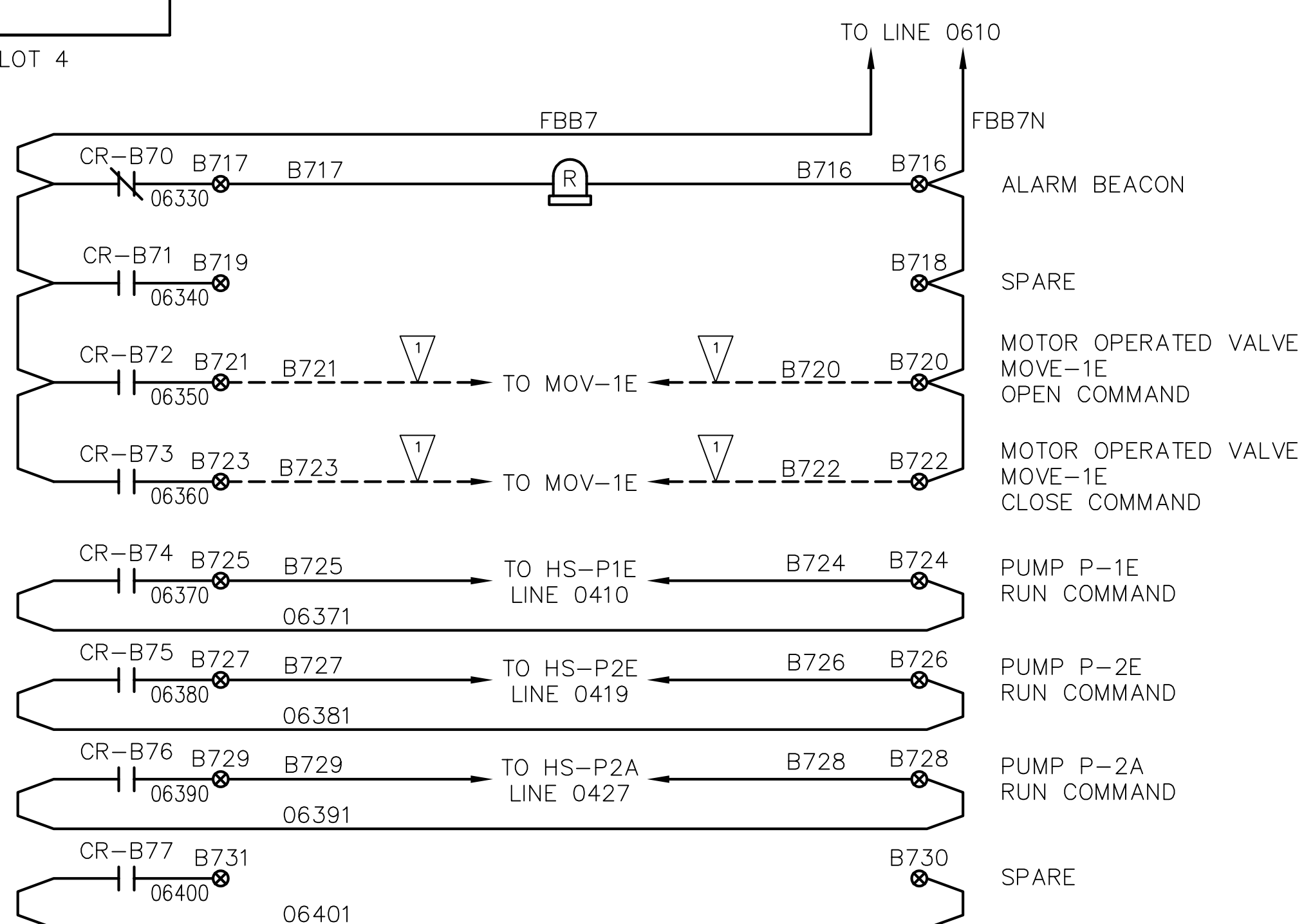
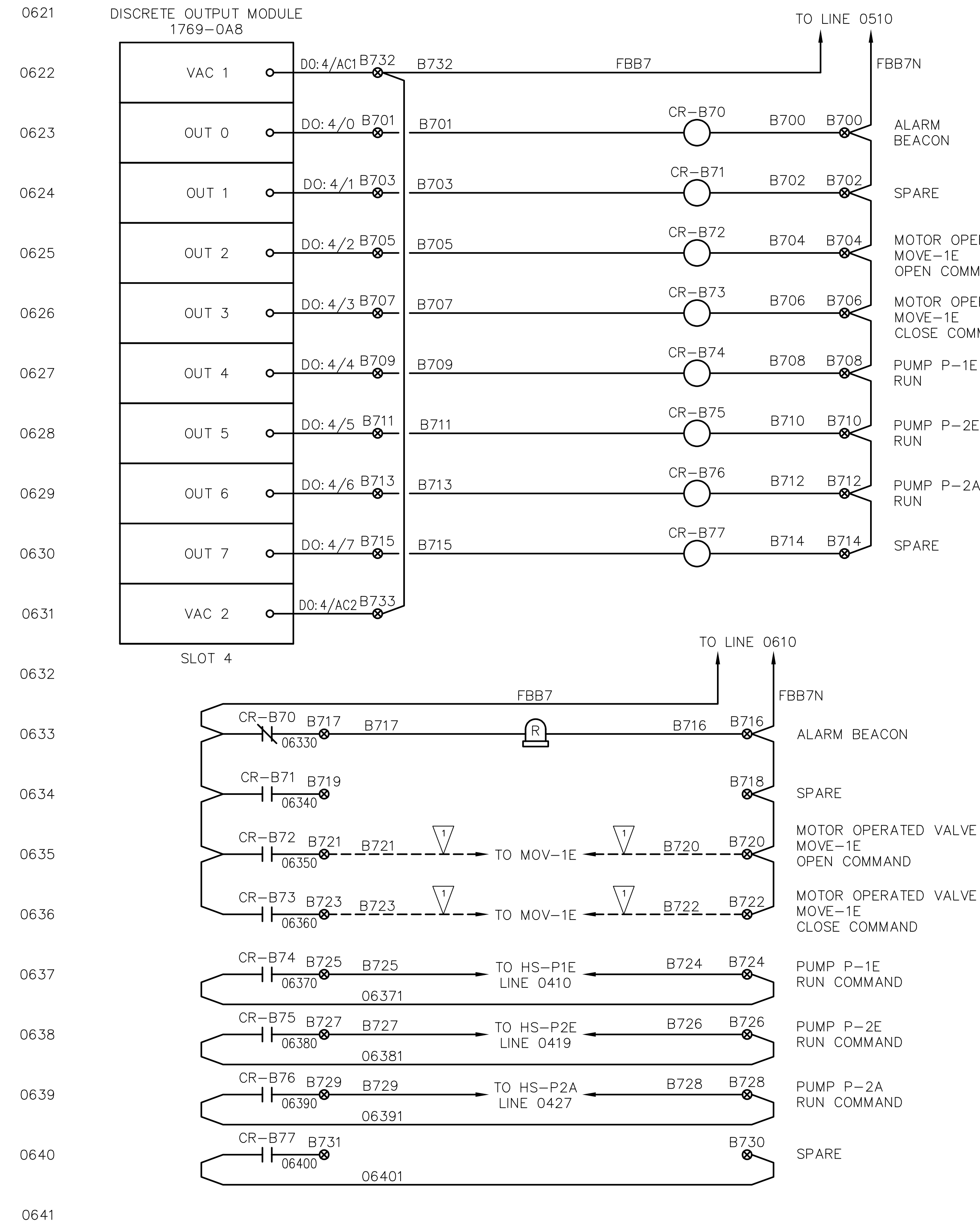
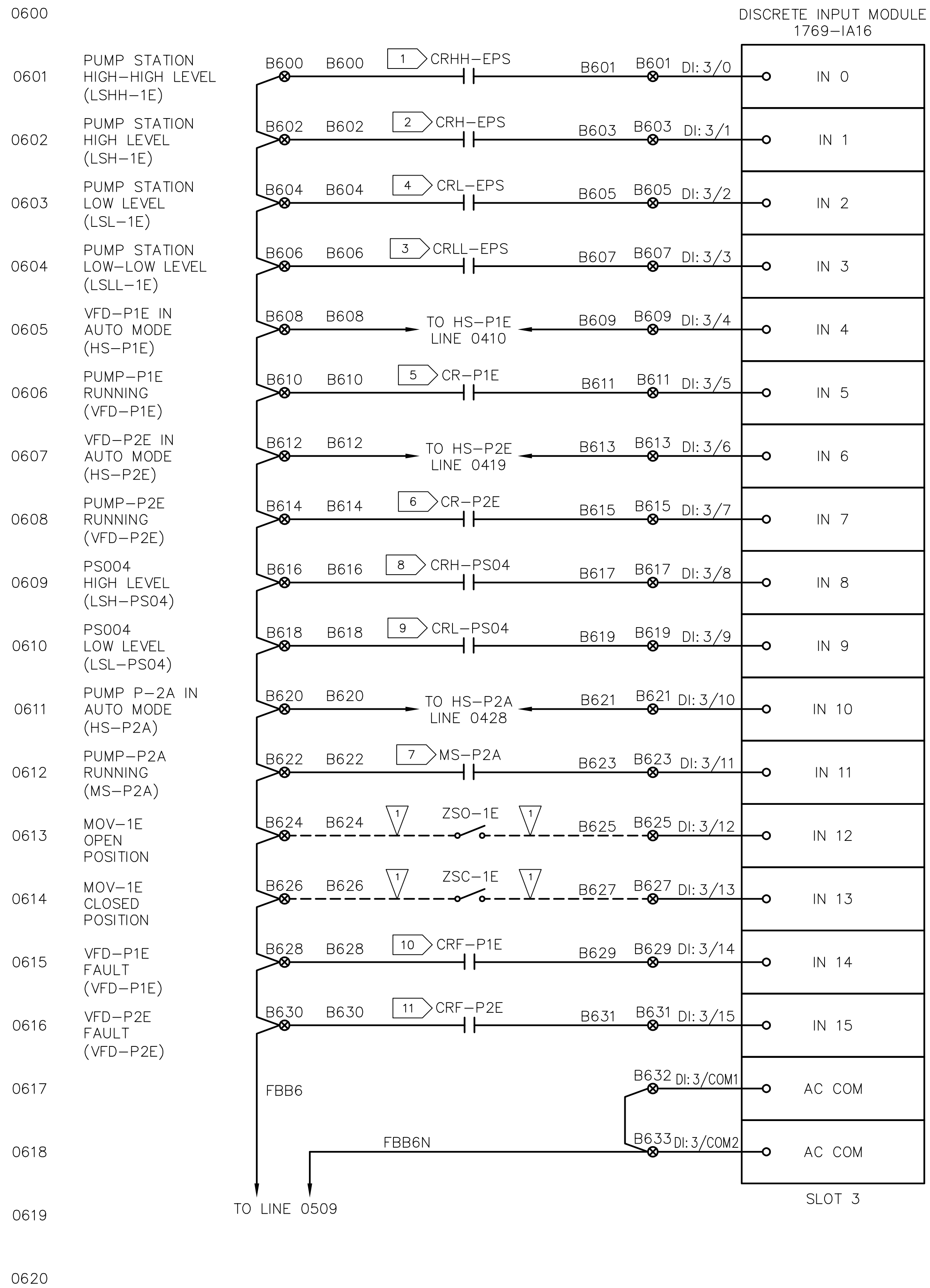
**GENERAL NOTES:**

1. CONTROL PANEL AND INSTRUMENTS PROVIDED BY EP SUPPLIER. INSTALL CONTROL PANEL, INSTRUMENTS, AND EQUIPMENT. PROVIDE ALL FIELD WIRING, CONNECTIONS AND TERMINATIONS. COORDINATE AND SUPPORT STARTUP AND COMMISSIONING. REFER TO SPECIFICATION SECTIONS 01 64 00 AND 26 00 00

**CONSTRUCTION NOTES:**

- 1 PROVIDE AND INSTALL CONDUIT, CONDUCTORS, BOXES, SUPPORTS, FITTINGS, AND ALL ANCILLARY HARDWARE.

**ISSUED FOR CONSTRUCTION**



Jan 31, 2023 5:36pm Hanns.Gil IC-06.dwg IC-06

**ANCHOR QEA**  
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 3545 FACTORIA BOULEVARD SE., SUITE 200  
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**Northwest Alloys, Inc.**

**CURTIS E. CLUTE**  
 3276  
 REGISTERED PROFESSIONAL ENGINEER  
 02/01/23

REVISIONS				
REV	DATE	BY	APP'D	DESCRIPTION
1	02/01/23	JO	CC	ISSUED FOR CONSTRUCTION

DESIGNED BY: J. OHARA  
 DRAWN BY: R. FARLEY  
 CHECKED BY: O. DYE  
 APPROVED BY: C. CLUTE  
 SCALE: AS NOTED  
 DATE: FEBRUARY 2023

**FORMER REYNOLDS METALS REDUCTION PLANT - LONGVIEW**  
**ELF PUMP STATION PLC I/O SLOT 1 & 2**

**IC-06**  
 SHEET # 104 OF 114

PLAN INTENDED TO BE VIEWED IN COLOR. ADJACENT BLOCK IS "BLUE" INCH SCALE ACCORDINGLY



**LEGEND:**

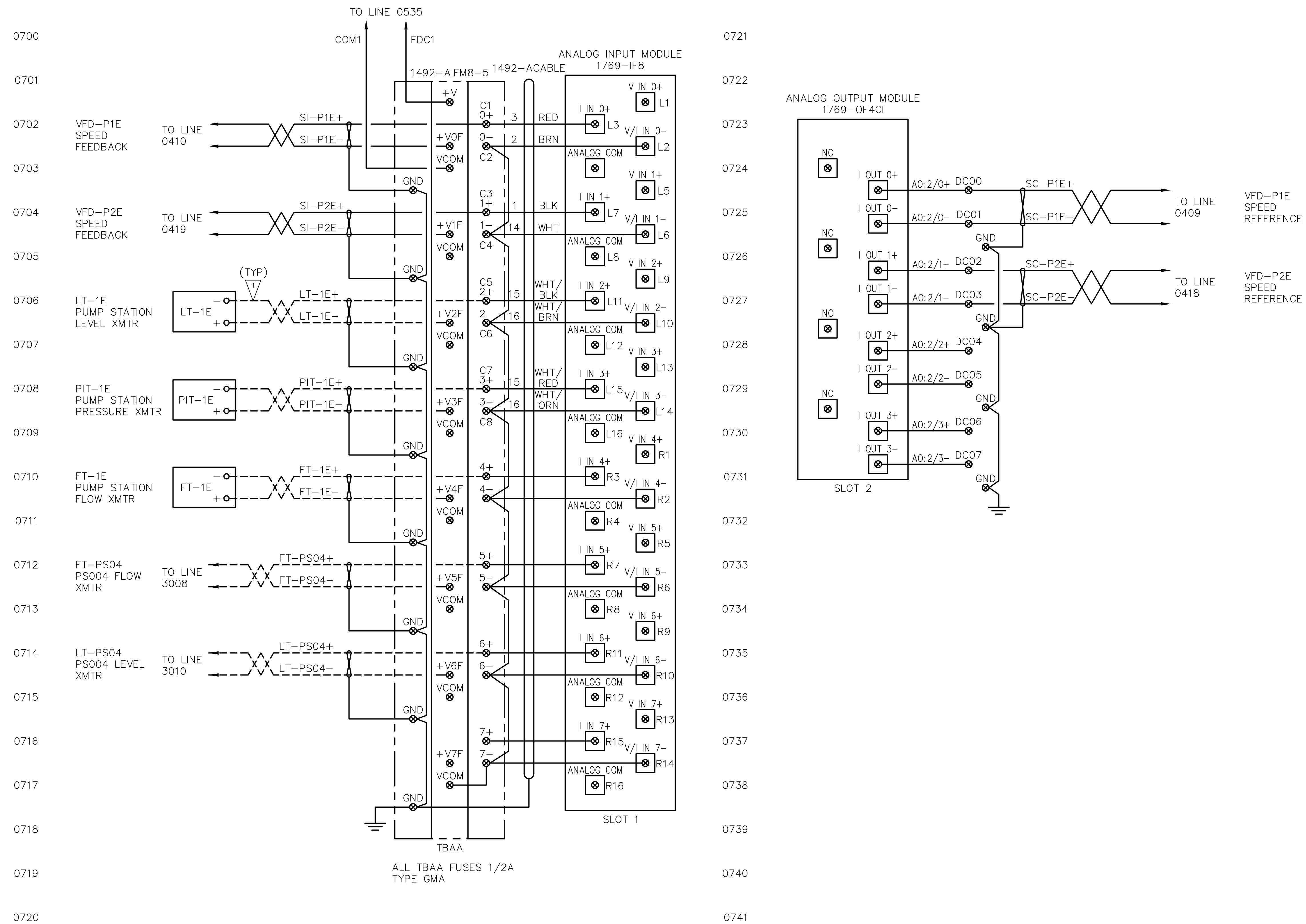
- EQUIPMENT/DEVICE TERMINAL
- ⊗ CONTROL PANEL TERMINAL
- PANEL WIRING
- - - FIELD WIRING

**GENERAL NOTES:**

- CONTROL PANEL AND INSTRUMENTS PROVIDED BY EP SUPPLIER. INSTALL CONTROL PANEL, INSTRUMENTS, AND EQUIPMENT. PROVIDE ALL FIELD WIRING, CONNECTIONS AND TERMINATIONS. COORDINATE AND SUPPORT STARTUP AND COMMISSIONING. REFER TO SPECIFICATION SECTIONS 01 64 00 AND 26 00 00

**CONSTRUCTION NOTES:**

- PROVIDE AND INSTALL CONDUIT, CONDUCTORS, BOXES, SUPPORTS, FITTINGS, AND ALL ANCILLARY HARDWARE.



VFD-P1E  
SPEED  
REFERENCE

VFD-P2E  
SPEED  
REFERENCE

REV	DATE	BY	APP'D	DESCRIPTION
1	02/01/23	JO	CC	ISSUED FOR CONSTRUCTION

DESIGNED BY: J. OHARA  
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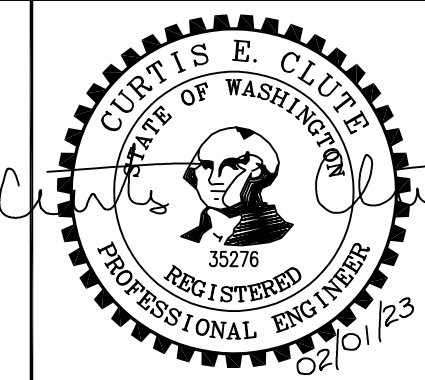
**FORMER REYNOLDS METALS REDUCTION PLANT -  
LONGVIEW**

**ELF PUMP STATION PLC I/O SLOT  
3 & 4**

**IC-07**

SHEET # 105 OF 114

Jan 31, 2023 5:39pm Hanns.Gil IC-07.dwg IC-07



**ISSUED FOR CONSTRUCTION**

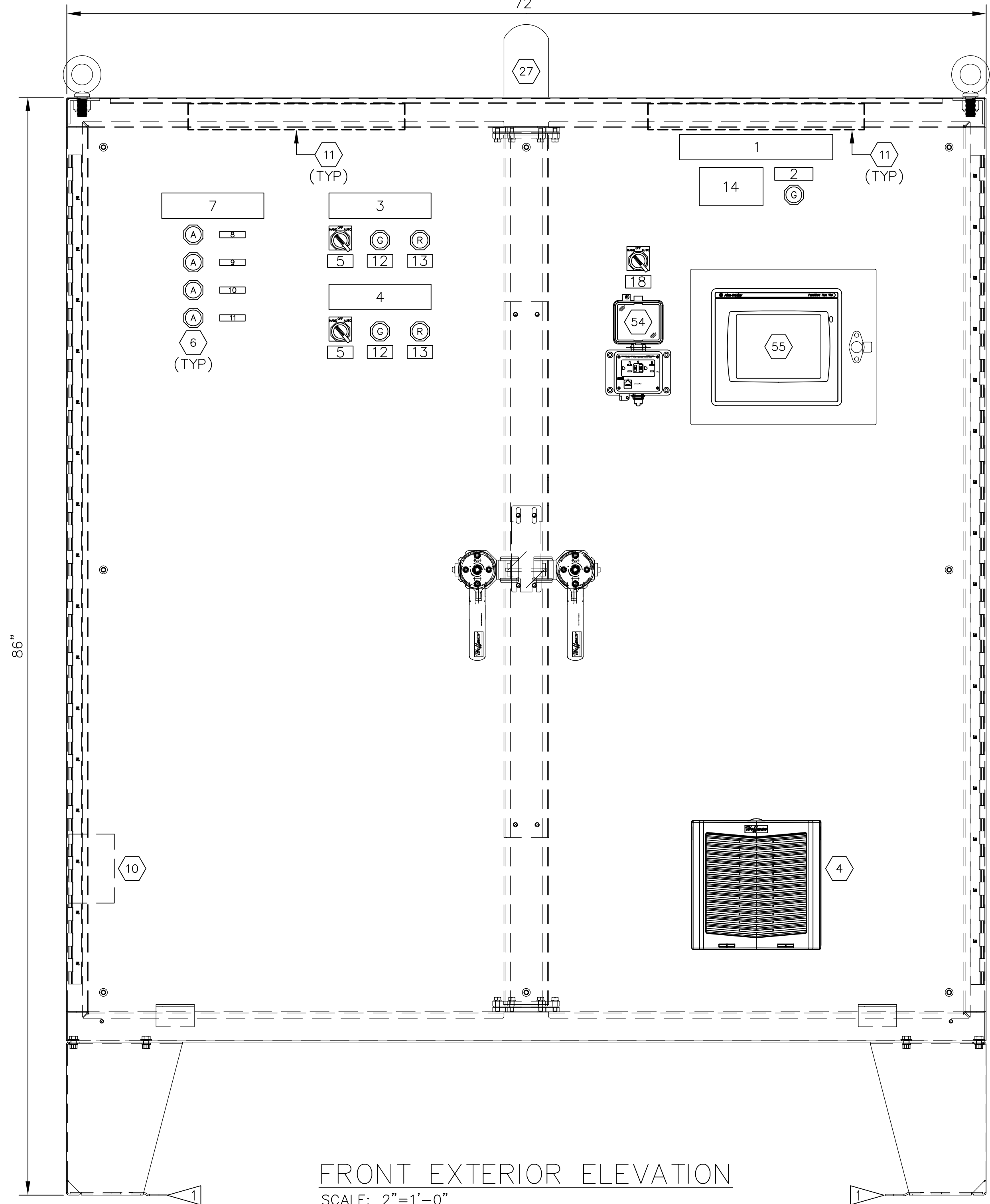
PLAN INTENDED TO BE VIEWED IN COLOR. ADJACENT BLOCK IS "BLUE" ONE INCH AT FULL SIZE. IF NOT ONE INCH SCALE ACCORDINGLY

**GENERAL NOTES:**

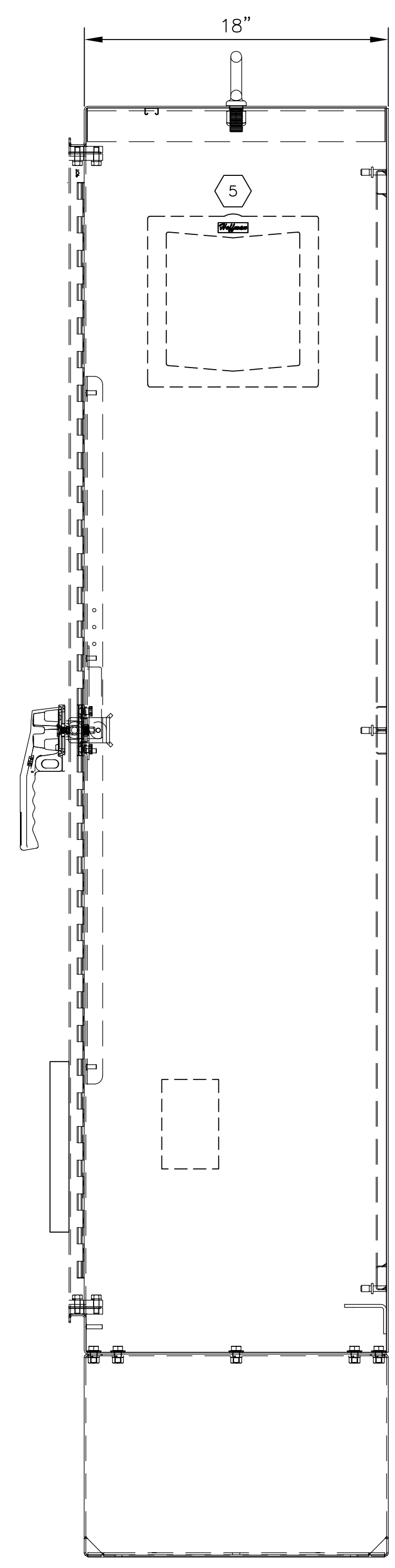
1. PLC PANEL SHALL CONFORM TO NFPA 70 AND 79 AND SHALL BE U.L. 508 LABELED.
2. PROVIDE "HEAT SHRINK" WIRE NUMBERS ON ALL WIRES.
3. PROVIDE TERMINAL STRIP MARKINGS ON BOTH SIDES OF STRIP, LEAVING CENTER OPEN FOR JUMPERING, IF REQUIRED.
4. QUANTITIES SHOWN ARE A MINIMUM. SELLER TO SUPPLY ALL MATERIALS AS REQUIRED TO PROVIDE A COMPLETE AND OPERABLE SYSTEM. SELLER TO SUPPLY ALL MISCELLANEOUS MOUNTING HARDWARE, ETC. FOR INSTALLATION OF ALL COMPONENTS.
5. UNUS/SPARE ITEMS BECOME THE PROPERTY OF THE COMPANY.
6. DIN RAIL SHALL BE INSTALLED THE FULL LENGTH 72"
7. ALL MISCELLANEOUS SPARE COMPONENTS (FUSES, RELAYS, TAPS, TERMINATORS, ETC.) SHALL BE SHIPPED WITH THE PANEL.
8. PROVIDE ENGRAVED LABELS FOR ALL DEVICES IN PANEL. DOOR MOUNTED DEVICES SHALL HAVE LABELS ON BOTH SIDES OF DOOR.
9. ROUTE ALL INSTRUMENT GROUNDS TO GREEN ISOLATED INSTRUMENT GROUND BUS. INSTRUMENT GROUND BUS SHALL BE SINGLE-POINT GROUNDED TO AC GROUND.
10. CONTROL PANEL AND INSTRUMENTS PROVIDED BY EP SUPPLIER. INSTALL CONTROL PANEL, INSTRUMENTS, AND EQUIPMENT. PROVIDE ALL FIELD WIRING, CONNECTIONS AND TERMINATIONS. COORDINATE AND SUPPORT STARTUP AND COMMISSIONING. REFER TO SPECIFICATION SECTIONS 01 64 00 AND 26 00 00

**CONSTRUCTION NOTES:**

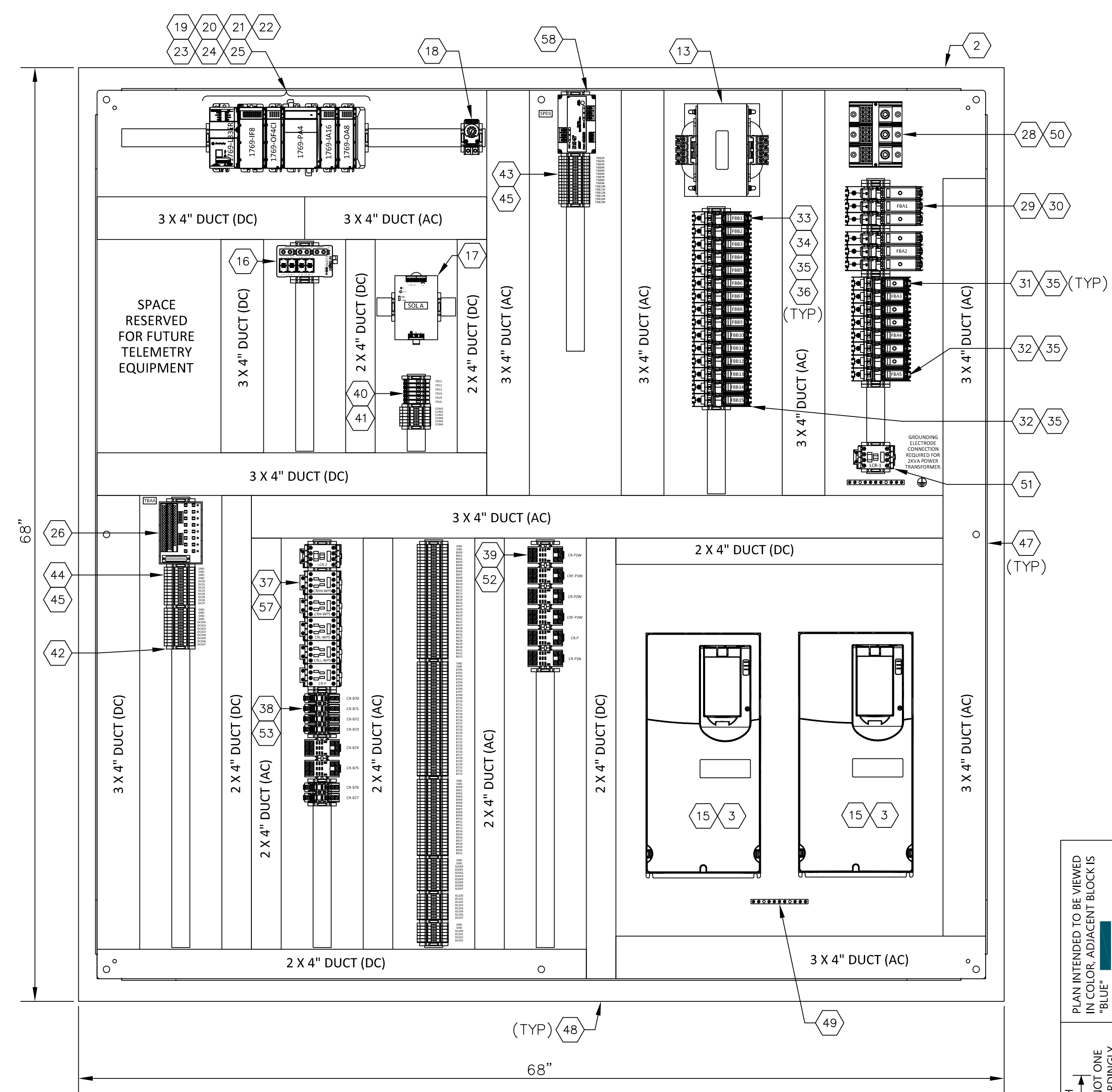
- USE STAINLESS STEEL ANCHOR BOLTS WHEN INSTALLING CONTROL PANEL.



FRONT EXTERIOR ELEVATION  
SCALE: 2"=1'-0"



SIDE EXTERIOR ELEVATION  
SCALE: 2"=1'-0"



INTERIOR LAYOUT  
SCALE:

PLAN INTENDED TO BE VIEWED IN COLOR. ADJACENT BLOCK IS "BLUE" INCH SCALE ACCORDINGLY

**ISSUED FOR CONSTRUCTION**

Feb 01, 2023 11:47am Hamas.Gil IC-11.dwg IC-11

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**Northwest Alloys, Inc.**

**CURTIS E. CLUTE**  
STATE OF WASHINGTON  
REGISTERED PROFESSIONAL ENGINEER  
3587  
02/01/23

REVISIONS				
REV	DATE	BY	APP'D	DESCRIPTION
1	02/01/23	JO	CC	ISSUED FOR CONSTRUCTION

DESIGNED BY: J. OHARA  
DRAWN BY: R. FARLEY  
CHECKED BY: O. DYE  
APPROVED BY: C. CLUTE  
SCALE: AS NOTED  
DATE: FEBRUARY 2023

**FORMER REYNOLDS METALS REDUCTION PLANT - LONGVIEW**  
**WLF PUMP STATION CONTROL PANEL ELEVATION**

**IC-11**  
SHEET # 106 OF 114

BILL OF MATERIALS					
PART #	QTY.	TYPE	DESCRIPTION	MANUFACTURER	MODEL #
1	1	ENCLOSURE	TWO-DOOR WITH FLOOR STANDS, TYPE 4X ENCLOSURE 74"X72"X18"	HOFFMAN	A72H7218S56LP3PT
2	1	BACK PANEL	BACK PANEL FOR ENCLOSURE 72"X72"	HOFFMAN	A72P72
3					
4	1	FAN	SIDE MOUNT FILTER FAN, 115V, 159 CFM	HOFFMAN	HF1016413
5	1	VENT	FILTER FAN EXHAUST GRILLE, 10"	HOFFMAN	HG1000503
6	4	PILOT LIGHT	PUSH-TO-TEST PILOT LIGHT - AMBER	ALLEN BRADLEY	800T-QTH2A
7	3	PILOT LIGHT	PUSH-TO-TEST PILOT LIGHT - GREEN	ALLEN BRADLEY	800T-QTH2G
8	2	PILOT LIGHT	PUSH-TO-TEST PILOT LIGHT - RED	ALLEN BRADLEY	800T-QTH2R
9	3	SELECTOR SWITCH	3 POSITION MAINTAINED SELECTOR SWITCH	ALLEN BRADLEY	800T-J2B
10	1	HEATER	400W HEATER W/INTEGRATED THERMOSTAT	HOFFMAN	DAH4001B
11	2	PANEL LIGHT	LED PANEL LIGHT KIT, 400 LUMEN	HOFFMAN	LEDA1M35
12	1	PHOTOCELL	120 PHOTOCELL	INTERMATIC	K4421M
13	1	TRANSFORMER	SINGLE PHASE TRANSFORMER - 2000VA, 480/120VAC	SQUARE D	9070T2000D1
14					
15	2	VFD	VARIABLE FREQUENCY DRIVE - 480VAC, 40HP, 3PH, FRAME 4	ALLEN BRADLEY	20F11ND065JA0NNNN
16	1	NETWORK SWITCH	N-TRON SERIES - 8 COPPER, 3 FIBER, ST CONNECTORS	RED LION	308TX
17	1	POWER SUPPLY	24VDC POWER SUPPLY - 10A	SOLA	SDN10-24-100P
18	1	THERMOSTAT	THERMOSTAT CONTROLLER - 115V, 40 TO 140°F	HOFFMAN	THERM16F
19	1	PLC PROCESSOR	COMPACTLOGIX 5370 ETHERNET PROCESSOR MODULE	ALLEN BRADLEY	1769-L33ER
20	1	PLC POWER SUPPLY	COMPACTLOGIX 5370 POWER SUPPLY	ALLEN BRADLEY	1769-PA4
21	1	PLC DIGITAL INPUT	COMPACTLOGIX DIGITAL INPUT MODULE - 16 POINT	ALLEN BRADLEY	1769-IA16
22	1	PLC DIGITAL OUTPUT	COMPACTLOGIX DIGITAL OUTPUT MODULE - 8 POINT	ALLEN BRADLEY	1769-OA8
23	1	PLC ANALOG INPUT	COMPACTLOGIX ANALOG INPUT MODULE - 8 POINT	ALLEN BRADLEY	1769-IF8
24	1	PLC ANALOG OUTPUT	COMPACTLOGIX ISOLATED ANALOG OUTPUT MODULE - 4 POINT	ALLEN BRADLEY	1769-OF4CI
25	1	PLC END CAP	COMPACTLOGIX END CAP	ALLEN BRADLEY	1769-ECR
26	1	IFM MODULE	PLC ANALOG WIRING SYSTEM - 8 CHANNEL, 5 TERMINAL/CHANNEL	ALLEN BRADLEY	1492-AIFM8-5
27	1	ALARM BEACON	ROUND BEACON - STROBE, 120MM, 120VAC, 1/2" NPT, RED	ALLEN BRADLEY	855BM-N10BR4
28	1	DISTRIBUTION BLOCK	POWER DISTRIBUTION BLOCK -335A, 3 POLE	ALLEN BRADLEY	1492-PD3163
29	2	CIRCUIT PROTECTOR	COMPACT CIRCUIT PROTECTOR - 3 POLE, 100A, CLASS CF FUSE	COOPER BUSSMAN	CCP-3-100CF
30	6	CUBE FUSE	CLASS CF LOW-PEAK CUBE FUSE - 70A, INDICATING	COOPER BUSSMAN	TCF-70
31	4	CIRCUIT PROTECTOR	COMPACT CIRCUIT PROTECTOR - 3 POLE, 30A, CLASS CC FUSE	COOPER BUSSMAN	CCP-3-30CC
32	1	CIRCUIT PROTECTOR	COMPACT CIRCUIT PROTECTOR - 2 POLE, 30A, CLASS CC FUSE	COOPER BUSSMAN	CCP-2-30CC
33	14	CIRCUIT PROTECTOR	COMPACT CIRCUIT PROTECTOR - 1 POLE, 30A, CLASS CC FUSE	COOPER BUSSMAN	CCP-1-30CC
34	AS REQ'D	FUSE	CLASS CC LOW-PEAK TIME-DELAY FUSE - 2A	COOPER BUSSMAN	LP-CC-A
35	AS REQ'D	FUSE	CLASS CC LOW-PEAK TIME-DELAY FUSE - 5A	COOPER BUSSMAN	LP-CC-5
36	AS REQ'D	FUSE	CLASS CC LOW-PEAK TIME-DELAY FUSE - 10A	COOPER BUSSMAN	LP-CC-10
37	4	RELAY	CONTROL RELAY - 3 N.O., 1 N.C. CONTACTS	ALLEN BRADLEY	700-CF310D
38	6	RELAY	SPDT CONTROL RELAY, 120VAC, W/CHECK BUTTON AND INDICATOR	IDEC	RH1B-ULC-AC120V
39	7	RELAY	3PDT CONTROL RELAY, 120VAC, W/CHECK BUTTON AND INDICATOR	IDEC	RH3B-ULC-AC120V
40	4	FUSED TERMINAL	FUSED TERMINAL BLOCK	ALLEN BRADLEY	1492-WFB4
41	4	FUSE	5 X 20 MM TIME-DELAY FUSE - 2A	COOPER BUSSMAN	GDC-2A
42	AS REQ'D	ANCHOR	TERMINAL BLOCK END ANCHOR	ALLEN BRADLEY	1492-EAJ35
43	AS REQ'D	TERMINALS	FEED THROUGH TERMINAL BLOCK - 600V, 25A, GREY	ALLEN BRADLEY	1492-J4
44	AS REQ'D	TERMINALS	FEED THROUGH TERMINAL BLOCK - 600V, 25A, BLUE	ALLEN BRADLEY	1492-J4B
45	AS REQ'D	TERMINALS	FEED THROUGH TERMINAL BLOCK - 600V, 25A, GREEN	ALLEN BRADLEY	1492-J4G
46	AS REQ'D	DIN RAIL	35MM DIN RAIL	ALLEN BRADLEY	199-DR1
47	AS REQ'D	WIREWAY	2" X 4" WIREWAY	PANDUIT	F2X4LG6
48	AS REQ'D	WIREWAY	3" X 4" WIREWAY	PANDUIT	F3X4LG6
49	1	GROUND BAR	GROUNDING BAR SYSTEM	HOFFMAN	PGS4K
50	1	COVER	POWER DISTRIBUTION BLOCK COVER	ALLEN BRADLEY	1492-PBC2
51	2	CONTACTOR	ELECTRICALLY HELD LIGHTING CONTACTOR	ALLEN BRADLEY	100L-C20ND4
52	4	AUXILIARY CONTACTS	AUXILIARY CONTACTS FOR 700CF RELAYS	ALLEN BRADLEY	100-FA02
53	10	RELAY SOCKET	DIN RAIL MOUNT SOCKET FOR SPDT CONTROL RELAY	IDEC	SH1B-05
54	1	RECEPTACLE	EXTERNAL PROGRAMMING PORT/RECEPTACLE	GRACE	P-R62-MSRF
55	1	HMI	PANELVIEW PLUS 7 PERFORMANCE, 9 IN., 24VDC	ALLEN BRADLEY	2711P-T9W22D9P
56	1	WINDOW	STAINLESS STEEL DEEP HINGED WINDOW KIT	HOFFMAN	AWDH1418N4SS
57	4	RELAY SOCKET	DIN RAIL MOUNT SOCKET FOR 3PDT CONTROL RELAY	IDEC	SH3B-05
58	1	SURGE PROTECTOR	SURGE PROTECTOR W/HYBRID FILTER, 120VAC, 20A	EATON	AG-PH-120-20

NAMEPLATE SCHEDULE							
ITEM	LINE 1	LINE 2	LINE 3	LABEL SIZE	LETTER SIZE	LETTER COLOR	LABEL COLOR
1	WEST PUMP STATION	CONTROL PANEL		12" X 2"	1/2"	BLACK	WHITE
2	CONTROL	POWER		3" X 1"	1/4"	BLACK	WHITE
3	WEST STORMWATER	PUMP P-1W CONTROL		5" X 1"	1/4"	BLACK	WHITE
4	WEST STORMWATER	PUMP P-2W CONTROL		5" X 1"	1/4"	BLACK	WHITE
5	STORMWATER PUMPS	CANNOT RUN	SIMULTANEOUSLY	2" X 1"	1/8"	BLACK	WHITE
6	STORMWATER PUMPS	CANNOT RUN	SIMULTANEOUSLY	2" X 1"	1/8"	BLACK	WHITE
7	WEST PUMP STATION	LEVEL FLOATS		5" X 1"	1/4"	BLACK	WHITE
8	HIGH-HIGH			2" X 1/2"	1/8"	BLACK	WHITE
9	HIGH			2" X 1/2"	1/8"	BLACK	WHITE
10	LOW			2" X 1/2"	1/8"	BLACK	WHITE
11	LOW-LOW			2" X 1/2"	1/8"	BLACK	WHITE
12	RUNNING			1" X 1/2"	1/8"	BLACK	WHITE
13	FAULT			1" X 1/2"	1/8"	BLACK	WHITE
14	THIS PANEL	FED FROM	MCC 73B1	5" X 3"	3/8"	WHITE	RED
15	LIGHTING	CONTROL SWITCH		2" X 1"	1/8"	BLACK	WHITE

**GENERAL NOTES:**

- CONTROL PANEL AND INSTRUMENTS PROVIDED BY EP SUPPLIER. INSTALL CONTROL PANEL, INSTRUMENTS, AND EQUIPMENT. PROVIDE ALL FIELD WIRING, CONNECTIONS AND TERMINATIONS. COORDINATE AND SUPPORT STARTUP AND COMMISSIONING. REFER TO SPECIFICATION SECTIONS 01 64 00 AND 26 00 00.

**CONSTRUCTION NOTES:**

- INSTALL PHOTOCCELL ON CONTROL PANEL SHELTER EXTERIOR IN ACCORDANCE WITH MANUFACTURERS SPECIFICATIONS. PROVIDE AND INSTALL CONDUIT AND CONDUCTOR TO CONTROL PANEL. REFER TO EC-05.

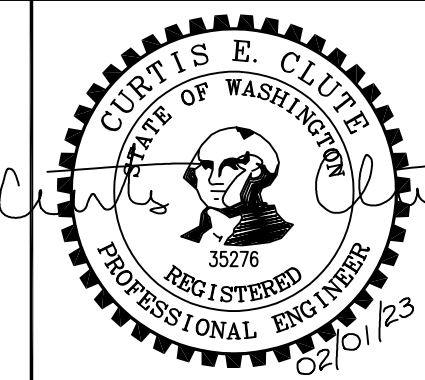
Jan 31, 2023 5:41pm Harris.Gil IC-12.dwg IC-12



**Anchor QEA Engineering**  
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 (425) 522-1000 WWW.CASNE.COM JOB NO. 201-127



**Northwest Alloys, Inc.**



CURTIS E. CLUTE  
 STATE OF WASHINGTON  
 REGISTERED PROFESSIONAL ENGINEER  
 35276  
 02/01/23

REVISIONS				
REV	DATE	BY	APP'D	DESCRIPTION
1	02/01/23	JO	CC	ISSUED FOR CONSTRUCTION

DESIGNED BY: J. OHARA  
 DRAWN BY: R. FARLEY  
 CHECKED BY: O. DYE  
 APPROVED BY: C. CLUTE  
 SCALE: AS NOTED  
 DATE: FEBRUARY 2023

**FORMER REYNOLDS METALS REDUCTION PLANT - LONGVIEW**

**WLF PUMP STATION BILL OF MATERIALS**

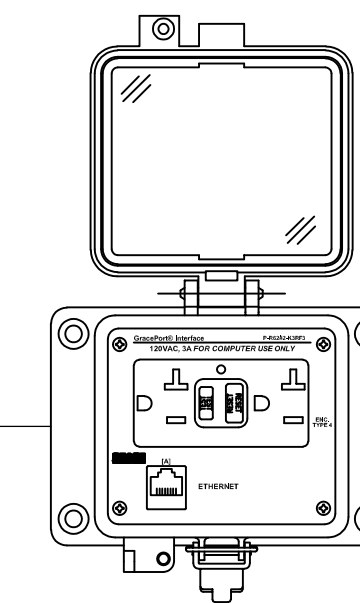
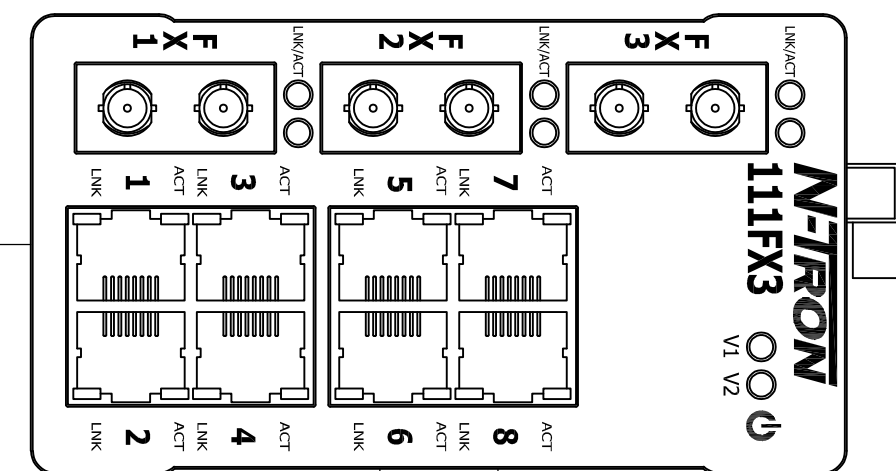
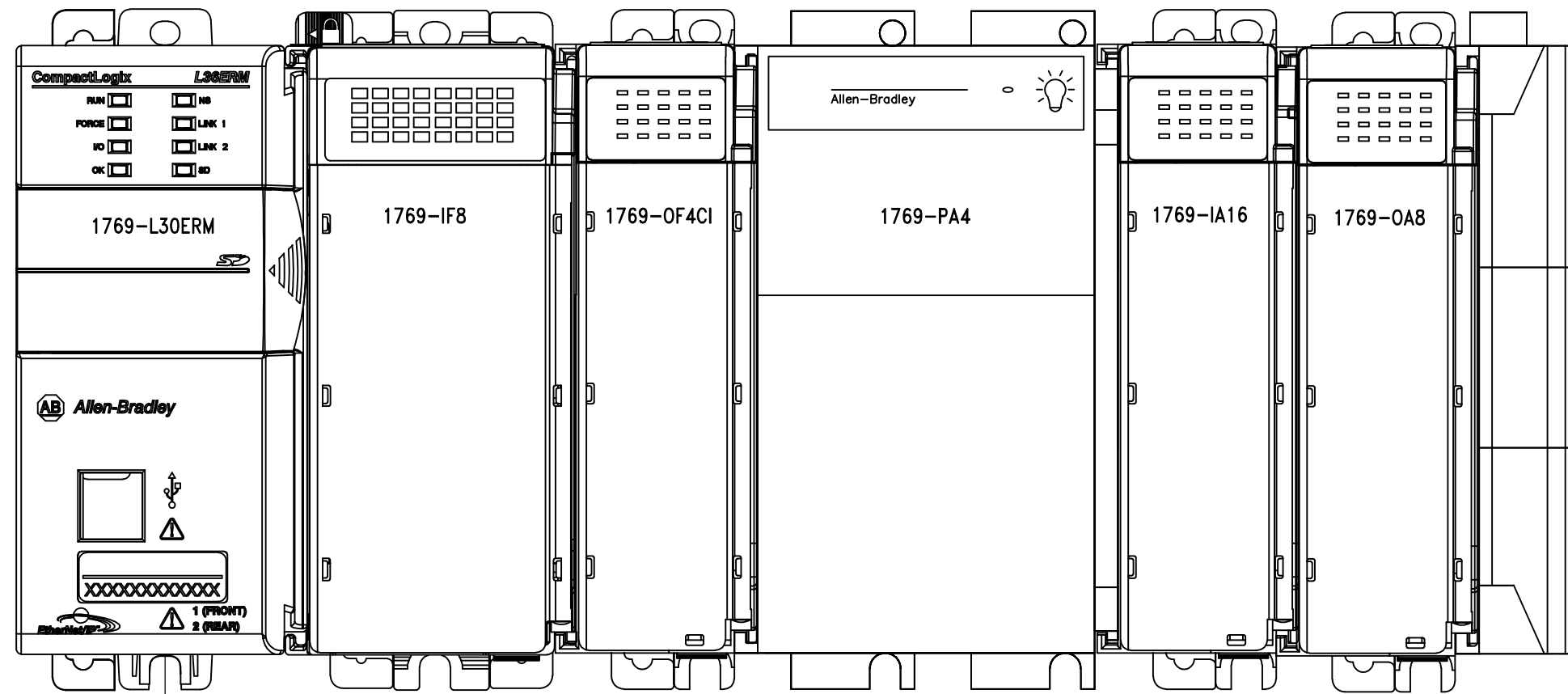
**IC-12**

SHEET # 107 OF 114

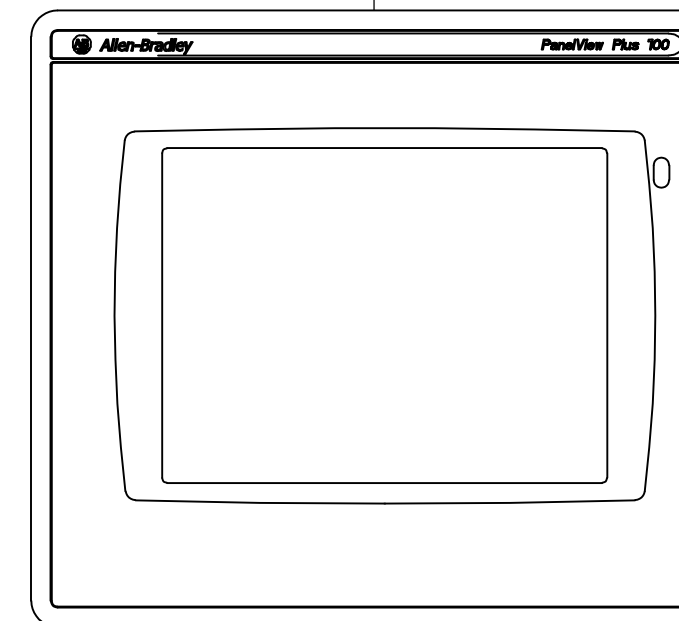
**ISSUED FOR CONSTRUCTION**

PLAN INTENDED TO BE VIEWED IN COLOR. ADJACENT BLOCK IS "BLUE" ONE INCH AT FULL SIZE. IF NOT ONE INCH SCALE ACCORDINGLY

WEST STORMWATER PUMP STATION PLC  
IP: XXX.XXX.XXX.XXX



EXTERNAL PROGRAMMING PORT



PANELVIEW  
IP: XXX.XXX.XXX.XXX

**LEGEND:**

— CAT6 ETHERNET

**GENERAL NOTES:**

- CONTROL PANEL AND INSTRUMENTS PROVIDED BY EP SUPPLIER. INSTALL CONTROL PANEL, INSTRUMENTS, AND EQUIPMENT. PROVIDE ALL FIELD WIRING, CONNECTIONS AND TERMINATIONS. COORDINATE AND SUPPORT STARTUP AND COMMISSIONING. REFER TO SPECIFICATION SECTIONS 01 64 00 AND 26 00 00.

Jan 31, 2023 5:42pm Hamms,Gil IC-13.dwg IC-13

PLAN INTENDED TO BE VIEWED IN COLOR. ADJACENT BLOCK IS "BLUE" ONE INCH AT FULL SIZE. IF NOT ONE INCH SCALE ACCORDINGLY

**ISSUED FOR CONSTRUCTION**

**ANCHOR QEA**  
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**Northwest Alloys, Inc.**

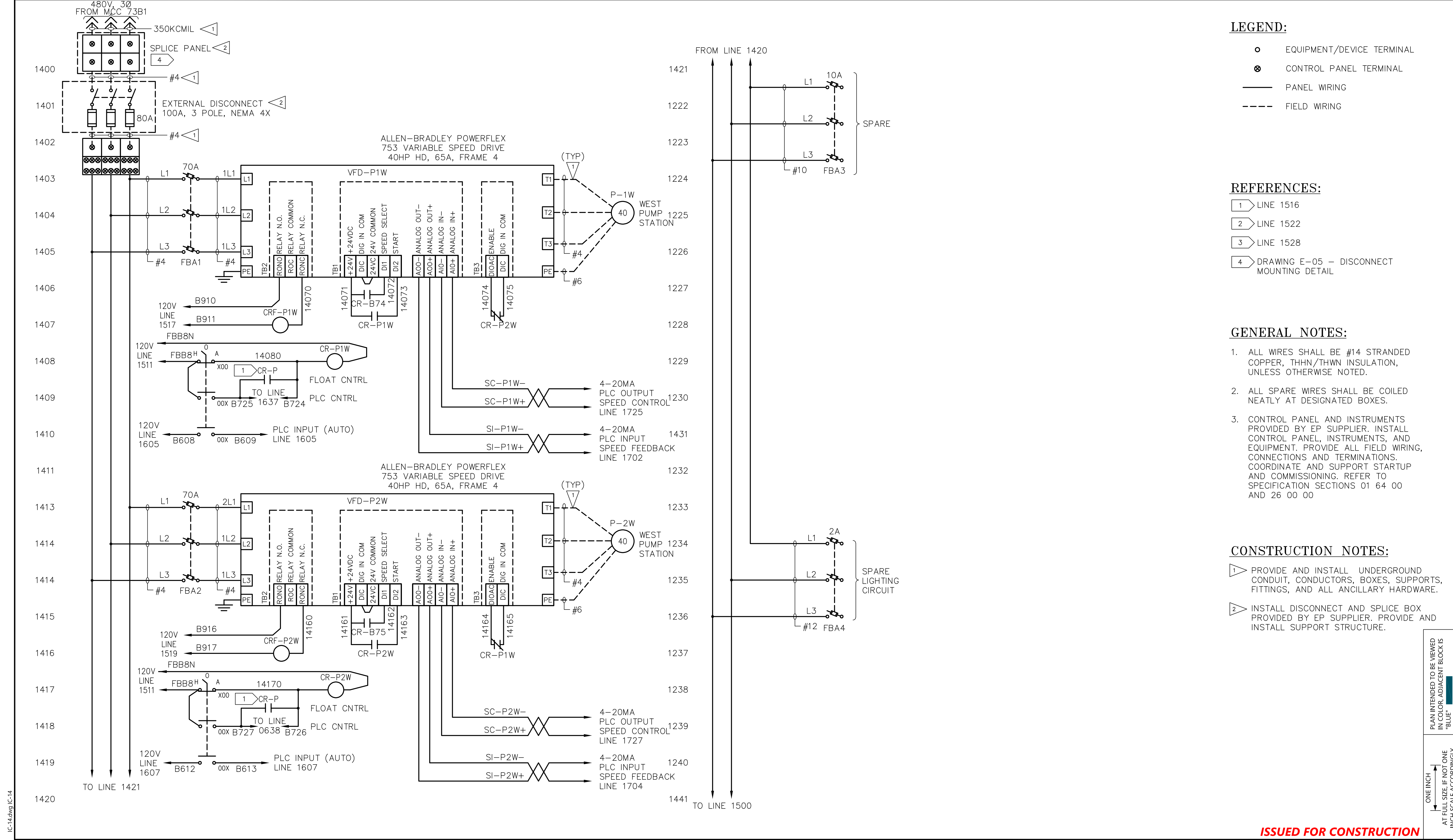
**CURTIS E. CLUTE**  
STATE OF WASHINGTON  
REGISTERED PROFESSIONAL ENGINEER  
53276  
02/01/23

REVISIONS				
REV	DATE	BY	APP'D	DESCRIPTION
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DESIGNED BY: J. OHARA  
DRAWN BY: R. FARLEY  
CHECKED BY: O. DYE  
APPROVED BY: C. CLUTE  
SCALE: AS NOTED  
DATE: FEBRUARY 2023

**FORMER REYNOLDS METALS REDUCTION PLANT - LONGVIEW**  
**WEST PUMP STATION CONTROL PANEL NETWORK DIAGRAM**

**IC-13**  
SHEET # 108 OF 114



- LEGEND:**
- EQUIPMENT/DEVICE TERMINAL
  - ⊗ CONTROL PANEL TERMINAL
  - PANEL WIRING
  - - - FIELD WIRING

- REFERENCES:**
- 1 LINE 1516
  - 2 LINE 1522
  - 3 LINE 1528
  - 4 DRAWING E-05 - DISCONNECT MOUNTING DETAIL

- GENERAL NOTES:**
1. ALL WIRES SHALL BE #14 STRANDED COPPER, THHN/THWN INSULATION, UNLESS OTHERWISE NOTED.
  2. ALL SPARE WIRES SHALL BE COILED NEATLY AT DESIGNATED BOXES.
  3. CONTROL PANEL AND INSTRUMENTS PROVIDED BY EP SUPPLIER. INSTALL CONTROL PANEL, INSTRUMENTS, AND EQUIPMENT. PROVIDE ALL FIELD WIRING, CONNECTIONS AND TERMINATIONS. COORDINATE AND SUPPORT STARTUP AND COMMISSIONING. REFER TO SPECIFICATION SECTIONS 01 64 00 AND 26 00 00

- CONSTRUCTION NOTES:**
- 1 PROVIDE AND INSTALL UNDERGROUND CONDUIT, CONDUCTORS, BOXES, SUPPORTS, FITTINGS, AND ALL ANCILLARY HARDWARE.
  - 2 INSTALL DISCONNECT AND SPLICE BOX PROVIDED BY EP SUPPLIER. PROVIDE AND INSTALL SUPPORT STRUCTURE.

PLAN INTENDED TO BE VIEWED IN COLOR. ADJACENT BLOCK IS "BLUE"  
 ONE INCH AT FULL SIZE IF NOT ONE INCH SCALE ACCORDINGLY

**ISSUED FOR CONSTRUCTION**

**ANCHOR QEA**  
**CASNE Engineering**  
 3545 FACTORIA BOULEVARD SE., SUITE 200  
 BELLEVUE, WA 98006  
 (425) 522-1000 WWW.CASNE.COM JOB NO. 201-127

**Northwest Alloys, Inc.**

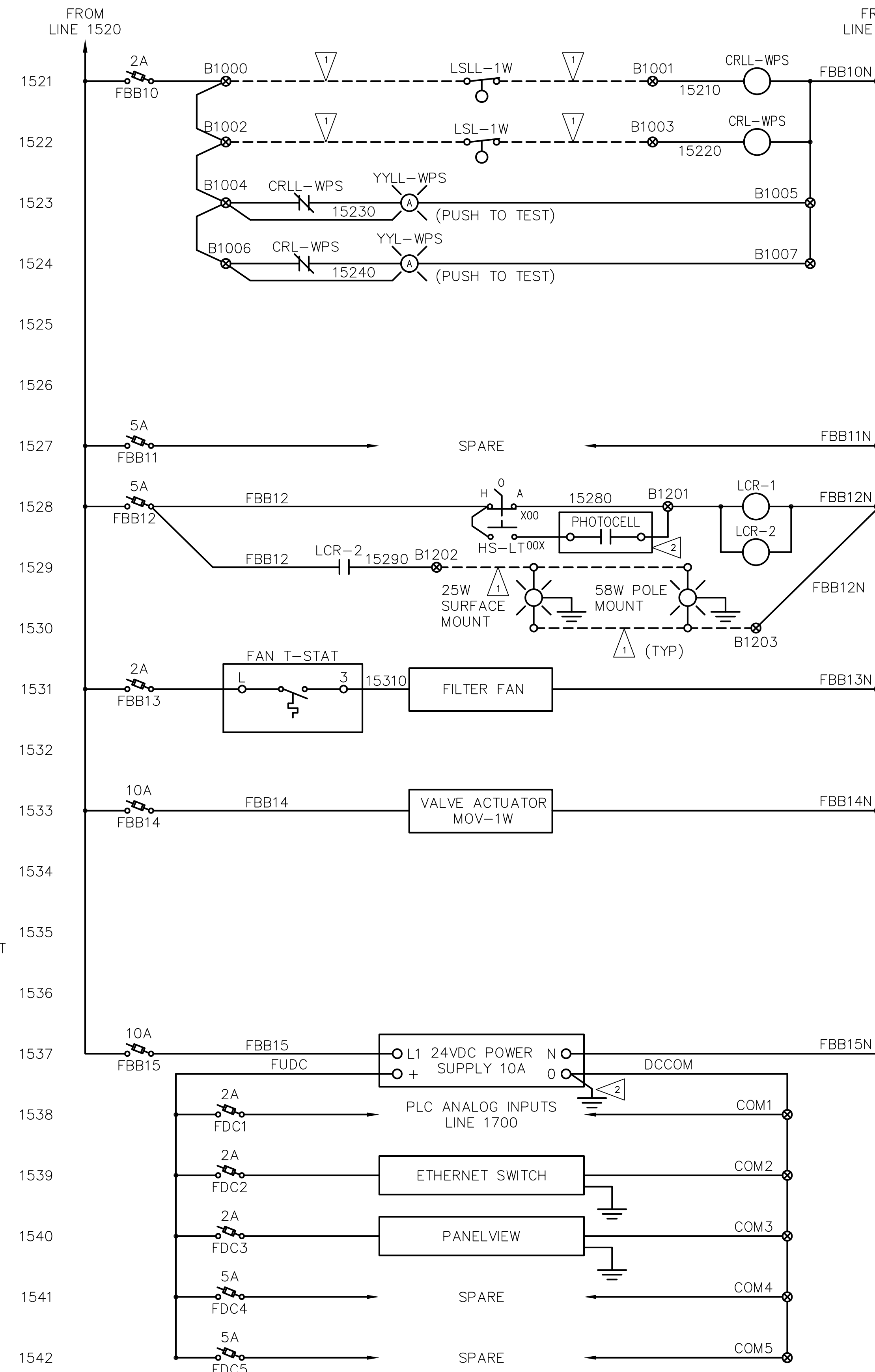
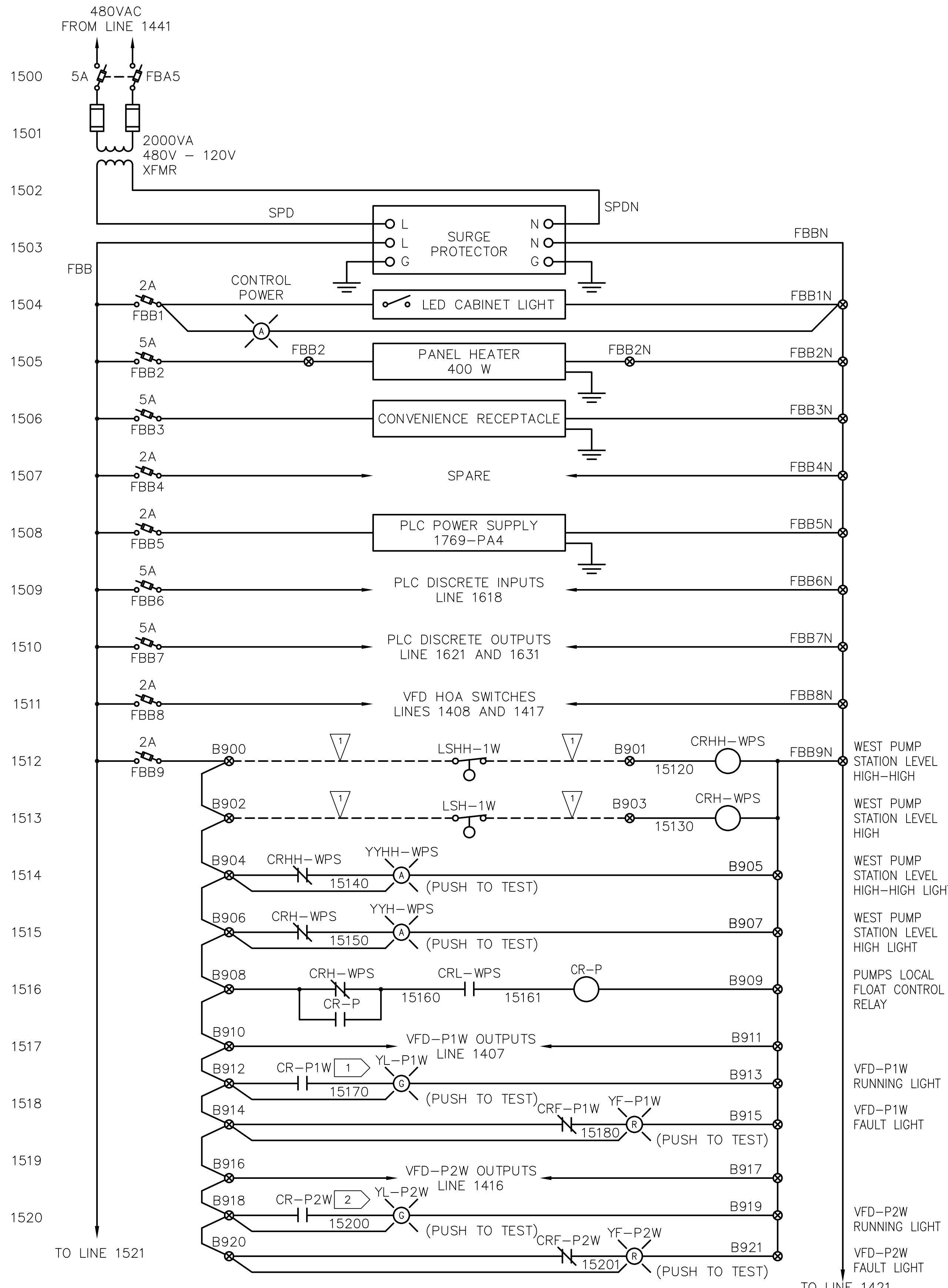
**CURTIS E. CLUTE**  
 STATE OF WASHINGTON  
 REGISTERED PROFESSIONAL ENGINEER  
 3826  
 02/01/23

REVISIONS				
REV	DATE	BY	APP'D	DESCRIPTION
1	02/01/23	JO	CC	ISSUED FOR CONSTRUCTION

DESIGNED BY: J. OHARA  
 DRAWN BY: R. FARLEY  
 CHECKED BY: O. DYE  
 APPROVED BY: C. CLUTE  
 SCALE: AS NOTED  
 DATE: FEBRUARY 2023

**FORMER REYNOLDS METALS REDUCTION PLANT - LONGVIEW**  
**WLF PUMP STATION WIRING DIAGRAMS**

**IC-14**  
 SHEET # 109 OF 114



- LEGEND:**
- EQUIPMENT/DEVICE TERMINAL
  - ⊗ CONTROL PANEL TERMINAL
  - PANEL WIRING
  - - - FIELD WIRING

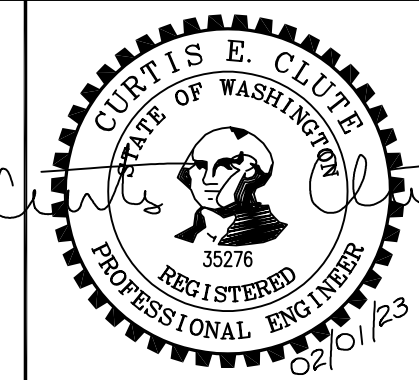
- REFERENCES:**
- 1 1408
  - 2 1417

- GENERAL NOTES:**
- CONTROL PANEL AND INSTRUMENTS PROVIDED BY EP SUPPLIER. INSTALL CONTROL PANEL, INSTRUMENTS, AND EQUIPMENT. PROVIDE ALL FIELD WIRING, CONNECTIONS AND TERMINATIONS. COORDINATE AND SUPPORT STARTUP AND COMMISSIONING. REFER TO SPECIFICATION SECTIONS 01 64 00 AND 26 00 00

- CONSTRUCTION NOTES:**
- PROVIDE AND INSTALL CONDUIT, CONDUCTORS, BOXES, SUPPORTS, FITTINGS, AND ALL ANCILLARY HARDWARE.
  - MOUNT PHOTOCELL ON CONTROL PANEL SHELTER EXTERIOR, IN ACCORDANCE WITH MANUFACTURER SPECIFICATIONS.

**ISSUED FOR CONSTRUCTION**

Jan. 31, 2023 5:45pm Hannis.Gil IC-15.dwg



REVISIONS				
REV	DATE	BY	APP'D	DESCRIPTION
1	02/01/23	JO	CC	ISSUED FOR CONSTRUCTION

DESIGNED BY: J. OHARA  
 DRAWN BY: R. FARLEY  
 CHECKED BY: O. DYE  
 APPROVED BY: C. CLUTE  
 SCALE: AS NOTED  
 DATE: FEBRUARY 2023

**FORMER REYNOLDS METALS REDUCTION PLANT - LONGVIEW**  
**WLF PUMP STATION WIRING DIAGRAMS**

**IC-15**  
 SHEET # 110 OF 114

PLAN INTENDED TO BE VIEWED IN COLOR. ADJACENT BLOCK IS "BLUE" ONE INCH AT FULL SIZE IF NOT ONE INCH SCALE ACCORDINGLY

**LEGEND:**

- EQUIPMENT/DEVICE TERMINAL
- ⊗ CONTROL PANEL TERMINAL
- PANEL WIRING
- - - FIELD WIRING

**REFERENCES:**

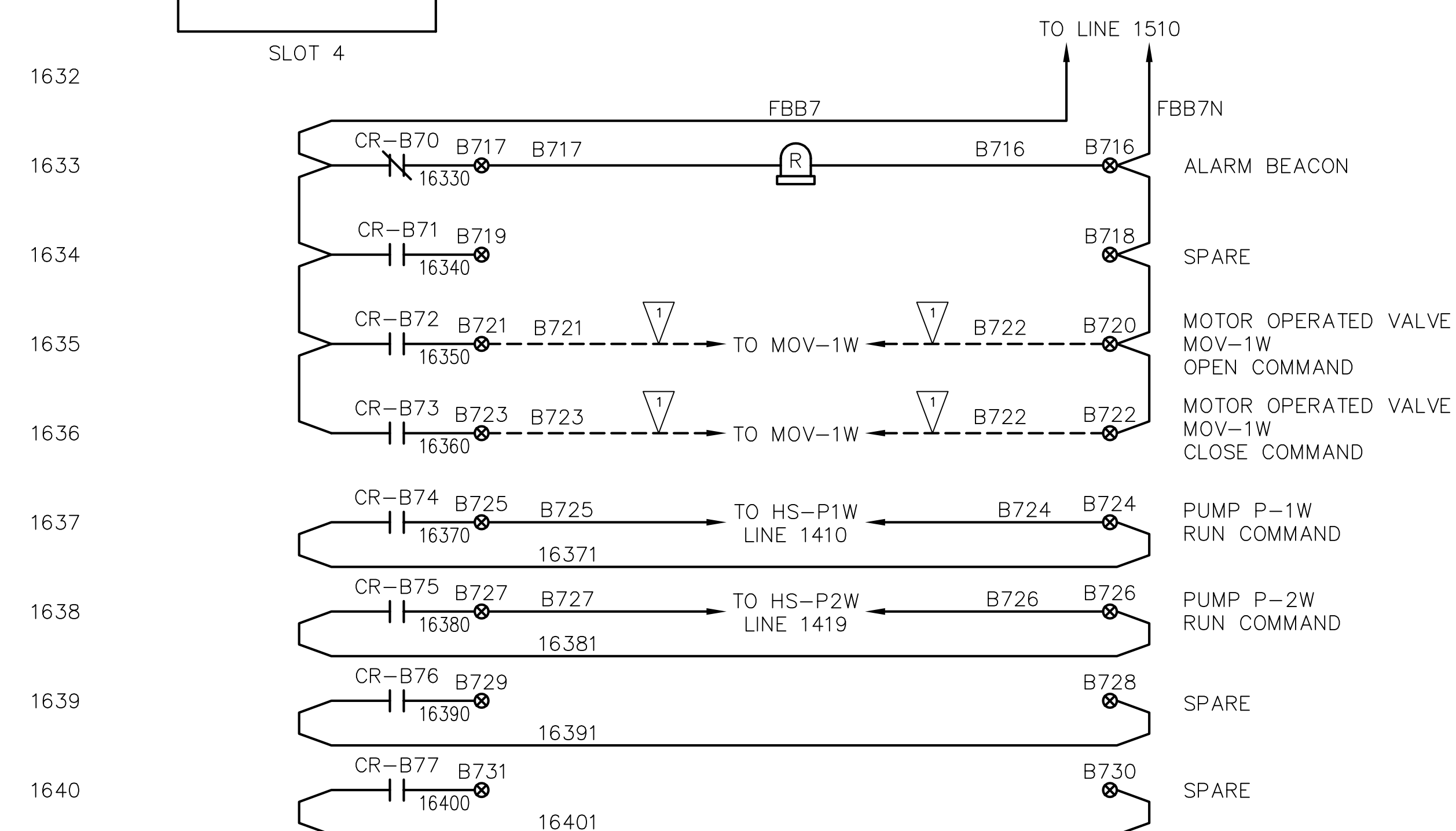
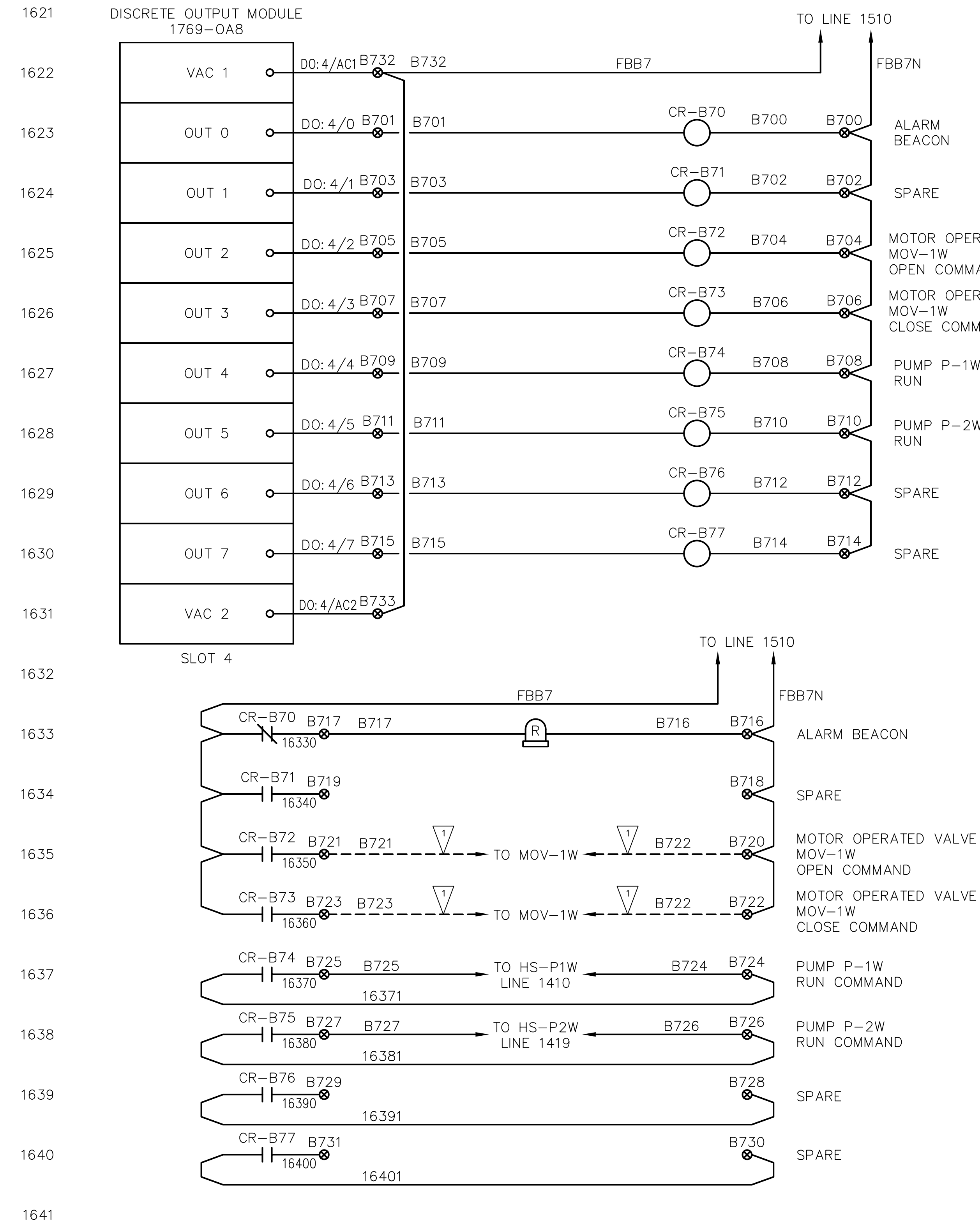
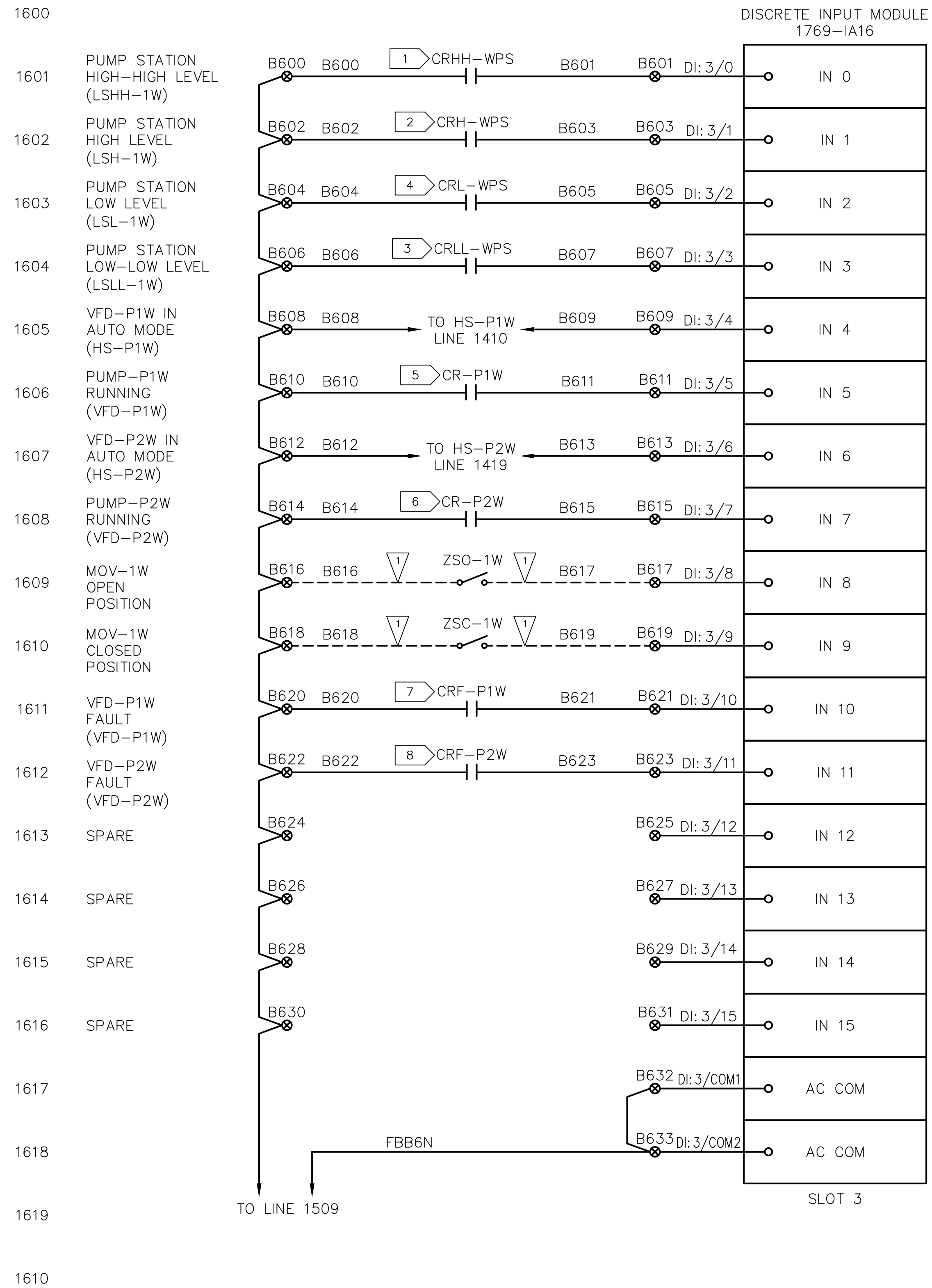
- 1 LINE 1512
- 2 LINE 1513
- 3 LINE 1521
- 4 LINE 1522
- 5 LINE 1408
- 6 LINE 1417
- 7 LINE 1407
- 8 LINE 1416

**GENERAL NOTES:**

- CONTROL PANEL AND INSTRUMENTS PROVIDED BY EP SUPPLIER. INSTALL CONTROL PANEL, INSTRUMENTS, AND EQUIPMENT. PROVIDE ALL FIELD WIRING, CONNECTIONS AND TERMINATIONS. COORDINATE AND SUPPORT STARTUP AND COMMISSIONING. REFER TO SPECIFICATION SECTIONS 01 64 00 AND 26 00 00

**CONSTRUCTION NOTES:**

- PROVIDE AND INSTALL UNDERGROUND CONDUIT, CONDUCTORS, BOXES, SUPPORTS, FITTINGS, AND ALL ANCILLARY HARDWARE.



**ISSUED FOR CONSTRUCTION**

Jan 31, 2023 5:45pm Hanns.Gil IC-16.dwg IC-16

**ANCHOR QEA**  
**CASNE Engineering**  
3545 FACTORIA BOULEVARD SE., SUITE 200  
BELLEVUE, WA 98006  
(425) 522-1000 WWW.CASNE.COM JOB NO. 201-127

**Northwest Alloys, Inc.**

**CURTIS R. CLUTE**  
STATE OF WASHINGTON  
REGISTERED PROFESSIONAL ENGINEER  
3327  
02/01/23

REVISIONS				
REV	DATE	BY	APP'D	DESCRIPTION
1	02/01/23	JO	CC	ISSUED FOR CONSTRUCTION

DESIGNED BY: J. OHARA  
DRAWN BY: R. FARLEY  
CHECKED BY: O. DYE  
APPROVED BY: C. CLUTE  
SCALE: AS NOTED  
DATE: OCTOBER 28, 2022

**FORMER REYNOLDS METALS REDUCTION PLANT - LONGVIEW**  
**WLF PUMP STATION PLC I/O SLOT 1 & 2**

**IC-16**  
SHEET # 111 OF 114

ONE INCH AT FULL SIZE IF NOT ONE INCH SCALE ACCORDINGLY  
PLAN INTENDED TO BE VIEWED IN COLOR. ADJACENT BLOCK IS "BLUE"

**LEGEND:**

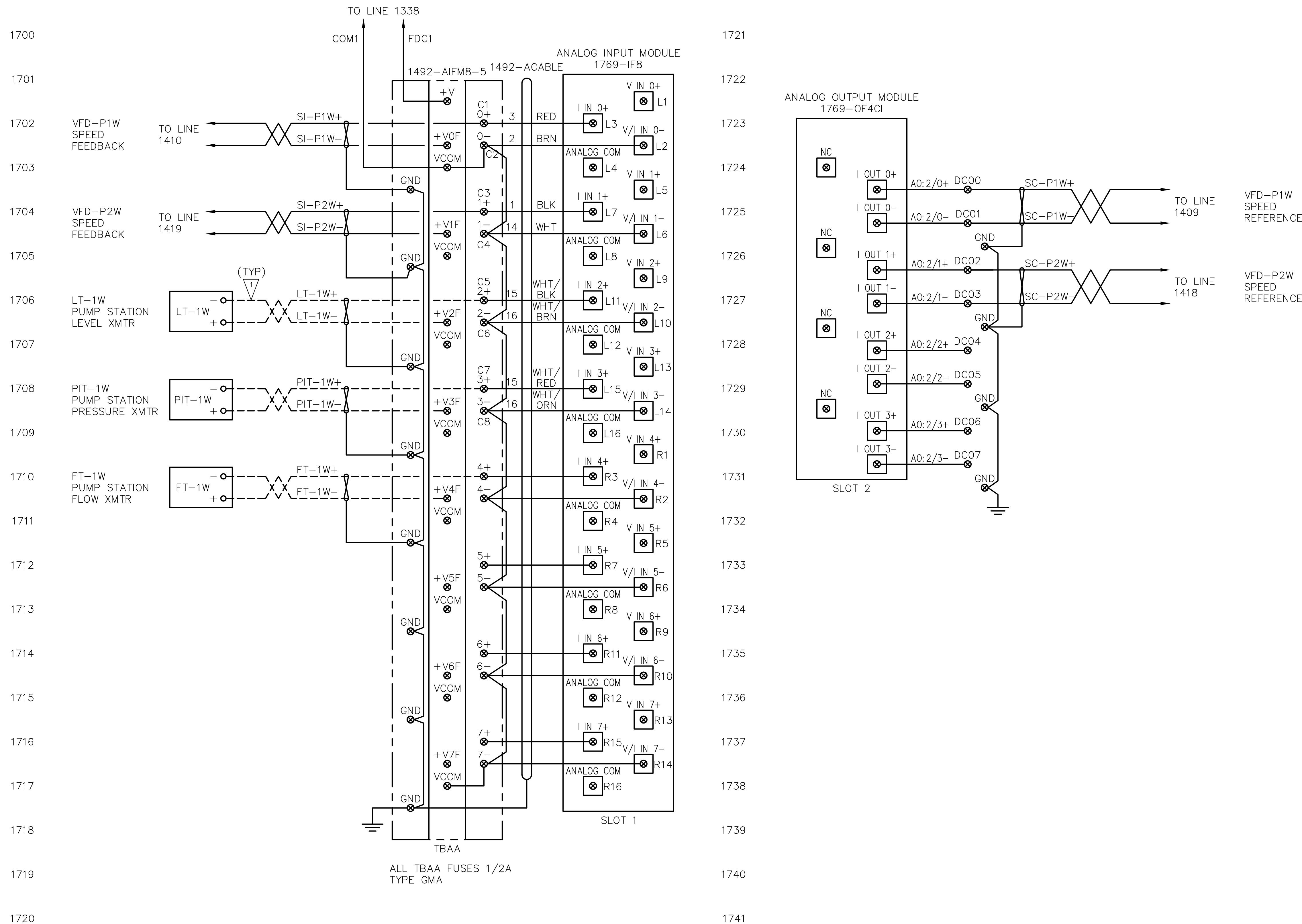
- EQUIPMENT/DEVICE TERMINAL
- ⊗ CONTROL PANEL TERMINAL
- PANEL WIRING
- - - FIELD WIRING

**GENERAL NOTES:**

- CONTROL PANEL AND INSTRUMENTS PROVIDED BY EP SUPPLIER. INSTALL CONTROL PANEL, INSTRUMENTS, AND EQUIPMENT. PROVIDE ALL FIELD WIRING, CONNECTIONS AND TERMINATIONS. COORDINATE AND SUPPORT STARTUP AND COMMISSIONING. REFER TO SPECIFICATION SECTIONS 01 64 00 AND 26 00 00

**CONSTRUCTION NOTES:**

- PROVIDE AND INSTALL CONDUIT, CONDUCTORS, BOXES, SUPPORTS, FITTINGS, AND ALL ANCILLARY HARDWARE.

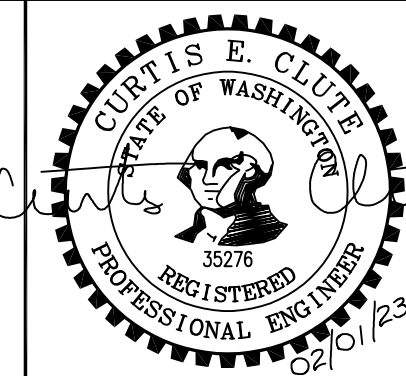


**ISSUED FOR CONSTRUCTION**

Jan 31, 2023 5:46pm Harris, Gil IC-17.dwg IC-17

**ANCHOR QEA**  
**CASNE Engineering**  
 3545 FACTORIA BOULEVARD SE., SUITE 200  
 BELLEVUE, WA 98006  
 (425) 522-1000 WWW.CASNE.COM JOB NO. 201-127

**Northwest Alloys, Inc.**



REVISIONS				
REV	DATE	BY	APP'D	DESCRIPTION
1	02/01/23	JO	CC	ISSUED FOR CONSTRUCTION

DESIGNED BY: J. OHARA  
 DRAWN BY: R. FARLEY  
 CHECKED BY: O. DYE  
 APPROVED BY: C. CLUTE  
 SCALE: AS NOTED  
 DATE: FEBRUARY 2023

**FORMER REYNOLDS METALS REDUCTION PLANT - LONGVIEW**  
**WLF PUMP STATION PLC I/O SLOT 3 & 4**

**IC-17**  
 SHEET # 112 OF 114

PLAN INTENDED TO BE VIEWED IN COLOR. ADJACENT BLOCK IS "BLUE" INCH SCALE ACCORDINGLY



EQUIPMENT SCHEDULE					
LOCATION	EQUIPMENT NAME	DESCRIPTION	MANUFACTURER	MODEL #	
EAST PUMP STATION	LSHH-1E	HIGH-HIGH LEVEL FLOAT SWITCH, 20M CABLE	ENDRESS HAUSER	71035520	
	LSH-1E	HIGH LEVEL FLOAT SWITCH, 20M CABLE	ENDRESS HAUSER	71035520	
	LSL-1E	LOW LEVEL FLOAT SWITCH, 20M CABLE	ENDRESS HAUSER	71035520	
	LSLL-1E	LOW-LOW LEVEL FLOAT SWITCH, 20M CABLE	ENDRESS HAUSER	71035520	
	LIT-1E	ULTRASONIC LEVEL TRANSMITTER	ENDRESS HAUSER	FMR50	
	PIT-1E	PRESSURE TRANSMITTER	ENDRESS HAUSER	PMP71B-1KE68/0	
	FIT-1E	ELECTROMAGNETIC FLOW METER	ENDRESS HAUSER	5W4C2F-C6ELHN2DHA1KGA+AA	
	MOV-1E	MOTORIZED VALVE ACTUATOR			
WEST PUMP STATION	DSC-1E	100A FUSIBLE DISCONNECT (3) DISCONNECT FUSES	SQUARE-D BUSSMAN	H3635S LPJ-80SP	
	LSHH-1W	HIGH-HIGH LEVEL FLOAT SWITCH, 20M CABLE	ENDRESS HAUSER	71035520	
	LSH-1W	HIGH LEVEL FLOAT SWITCH, 20M CABLE	ENDRESS HAUSER	71035520	
	LSL-1W	LOW LEVEL FLOAT SWITCH, 20M CABLE	ENDRESS HAUSER	71035520	
	LSLL-1W	LOW-LOW LEVEL FLOAT SWITCH, 20M CABLE	ENDRESS HAUSER	71035520	
	LIT-1W	ULTRASONIC LEVEL TRANSMITTER	ENDRESS HAUSER	FMR50	
	PIT-1W	PRESSURE TRANSMITTER	ENDRESS HAUSER	PMP71B-1KE68/0	
	FIT-1W	ELECTROMAGNETIC FLOW METER	ENDRESS HAUSER	5W4C2F-C6ELHN2DHA1KGA+AA	
	MOV-1W	MOTORIZED VALVE ACTUATOR			
	DSC-1W	100A FUSIBLE DISCONNECT (3) DISCONNECT FUSES	EATON BUSSMAN	DH363WKFV-SP1F LPJ-80SP	
		SP-1W	SPLICE PANEL - ENCLOSURE	HOFFMAN	CSD121265S6
			SPLICE PANEL - BACK PANEL	HOFFMAN	CP1212
	SPLICE PANEL - DISTRIBUTION BLOCK		BUSSMAN	16330-3	
PS-04	FT-PS04	FLOW METER - 24VDC, 4", 4-20mA OUTPUT	ENDRESS HAUSER	W400-	
	LT-PS04	LEVEL TRANSMITTER	ENDRESS HAUSER	FMR50-AALLCDBNX0G	
	FT-PS04	HIGH LEVEL FLOAT SWITCH	LIQUIFLOAT	FTS20	
	FT-PS04	LOW LEVEL FLOAT SWITCH	LIQUIFLOAT	FTS20	
	DS-PS04	30A NON-FUSIBLE DISCONNECT DISCONNECT AUXILIARY SWITCH	SQUARE D SQUARE D	CHU361DS HA161234	

**GENERAL NOTES:**

- CONTROL PANEL AND INSTRUMENTS PROVIDED BY EP SUPPLIER. INSTALL CONTROL PANEL, INSTRUMENTS, AND EQUIPMENT. PROVIDE ALL FIELD WIRING, CONNECTIONS AND TERMINATIONS. COORDINATE AND SUPPORT STARTUP AND COMMISSIONING. REFER TO SPECIFICATION SECTIONS 01 64 00 AND 26 00 00.

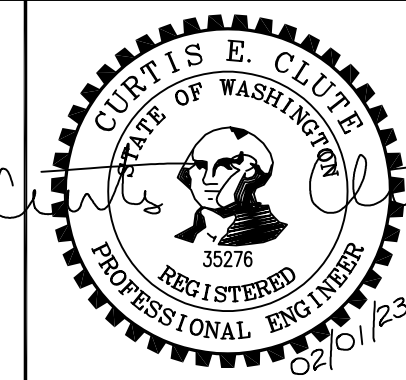
**CONSTRUCTION NOTES:**

- PUMP STATION PACKAGE SUPPLIER SHALL SIZE AND PURCHASE 120VAC ACTUATOR, WITH OPEN AND CLOSE POSITION SWITCHES.

Jan 31, 2023 5:20pm Harris.Gil IC-20.dwg IC-20

PLAN INTENDED TO BE VIEWED IN COLOR. ADJACENT BLOCK IS "BLUE"  
ONE INCH  
AT FULL SIZE. IF NOT ONE INCH SCALE ACCORDINGLY

**ISSUED FOR CONSTRUCTION**



REVISIONS				
REV	DATE	BY	APP'D	DESCRIPTION
1	02/01/23	JO	CC	ISSUED FOR CONSTRUCTION

DESIGNED BY: J. OHARA  
DRAWN BY: R. FARLEY  
CHECKED BY: O. DYE  
APPROVED BY: C. CLUTE  
SCALE: AS NOTED  
DATE: FEBRUARY 2023

**FORMER REYNOLDS METALS REDUCTION PLANT - LONGVIEW**

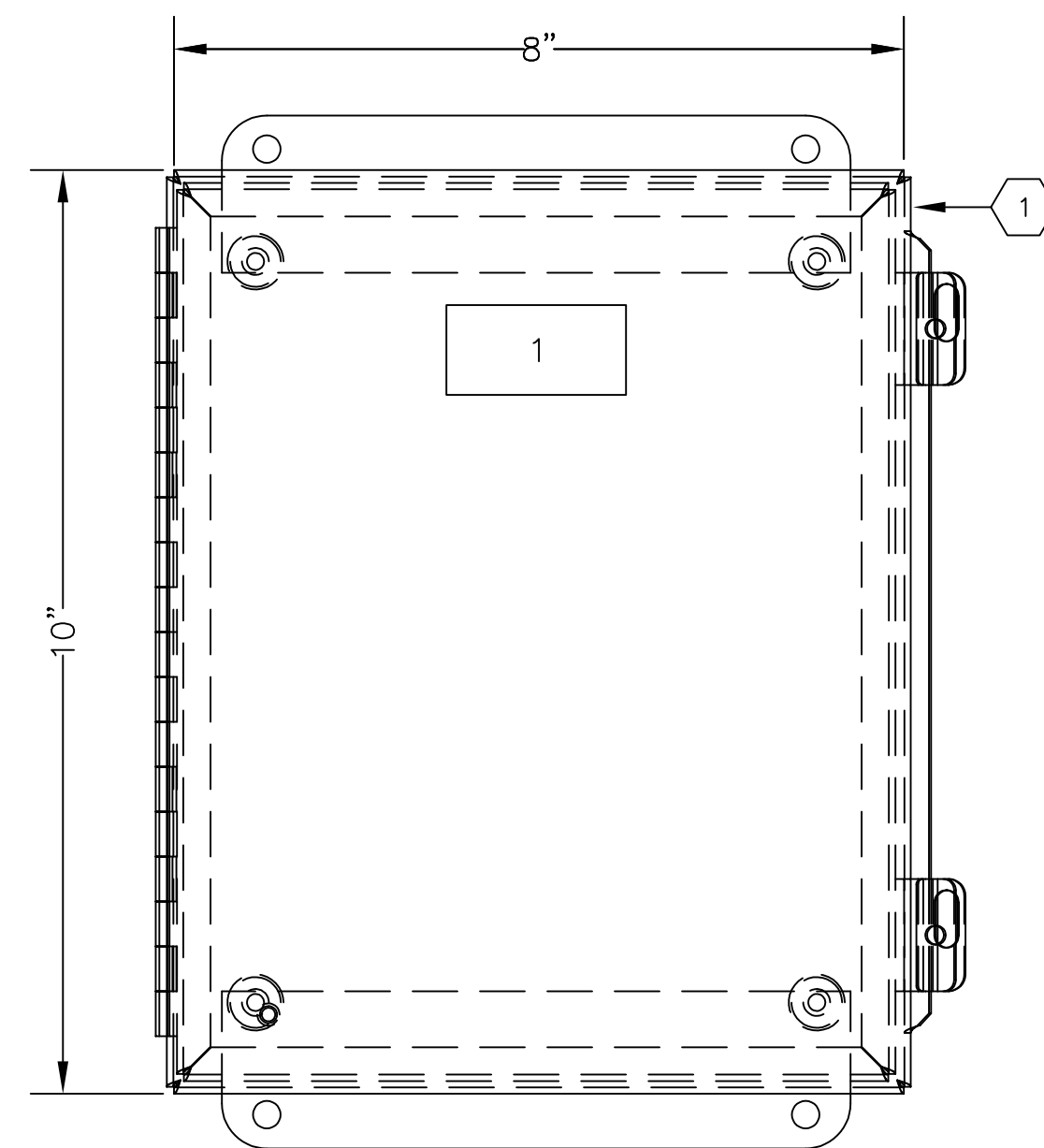
**INSTRUMENTATION SCHEDULE AND DETAILS**

**IC-20**

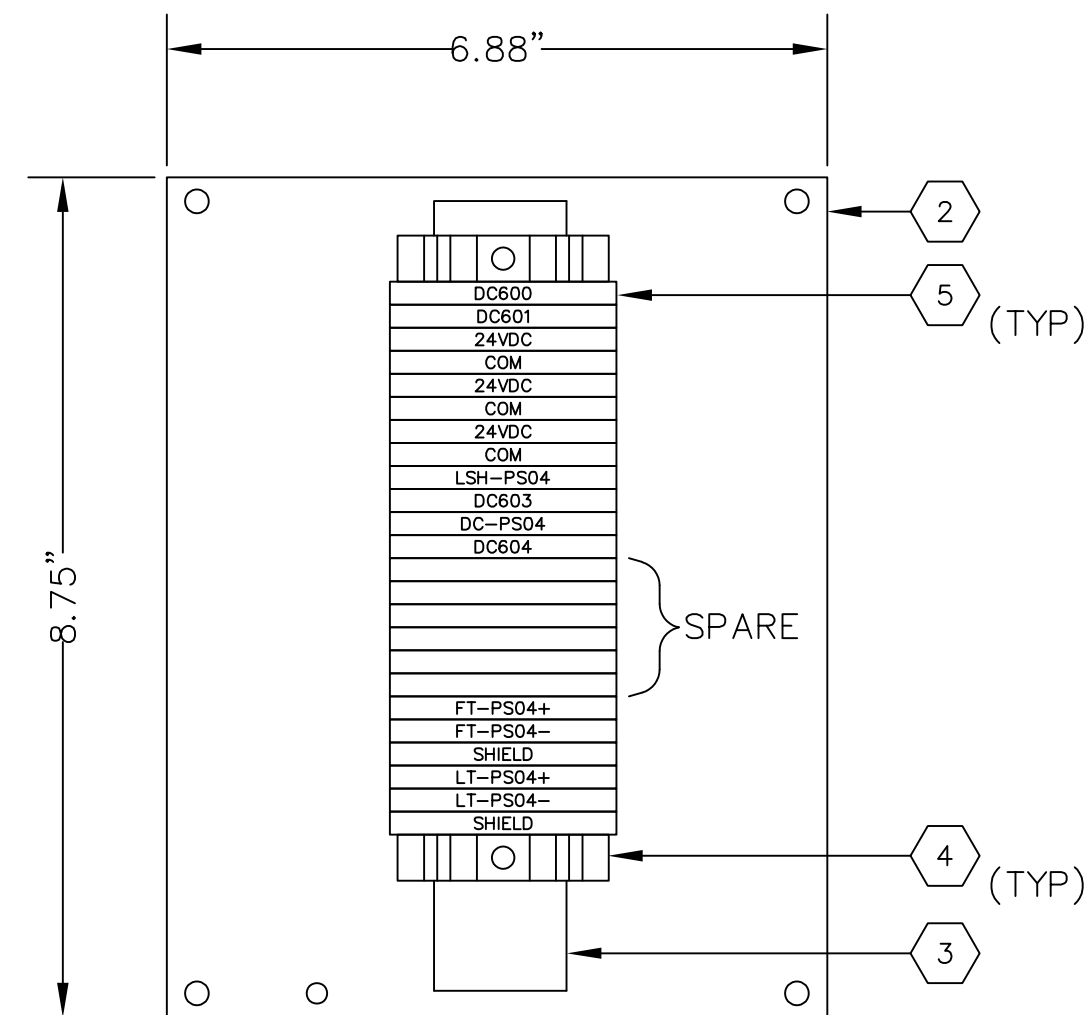
SHEET # 113 OF 114

BILL OF MATERIALS					
PART #	QTY.	TYPE	DESCRIPTION	MANUFACTURER	MODEL #
1	1	ENCLOSURE	JUNCTION BOX - 10"x8"x4", NEMA 4X	HOFFMAN	A1008CHNFSS6
2	1	BACK PANEL	BACK PANEL FOR ENCLOSURE 10"x8"	HOFFMAN	A10P8
3	AS REQ'D	DIN RAIL	35MM DIN RAIL	ALLEN BRADLEY	199-DR1
4	2	ANCHOR	TERMINAL BLOCK END ANCHOR	ALLEN BRADLEY	1492-EAJ35
5	20	TERMINALS	FEED THROUGH TERMINAL BLOCK - 600V, 25A, BLUE	ALLEN BRADLEY	1492-J4B

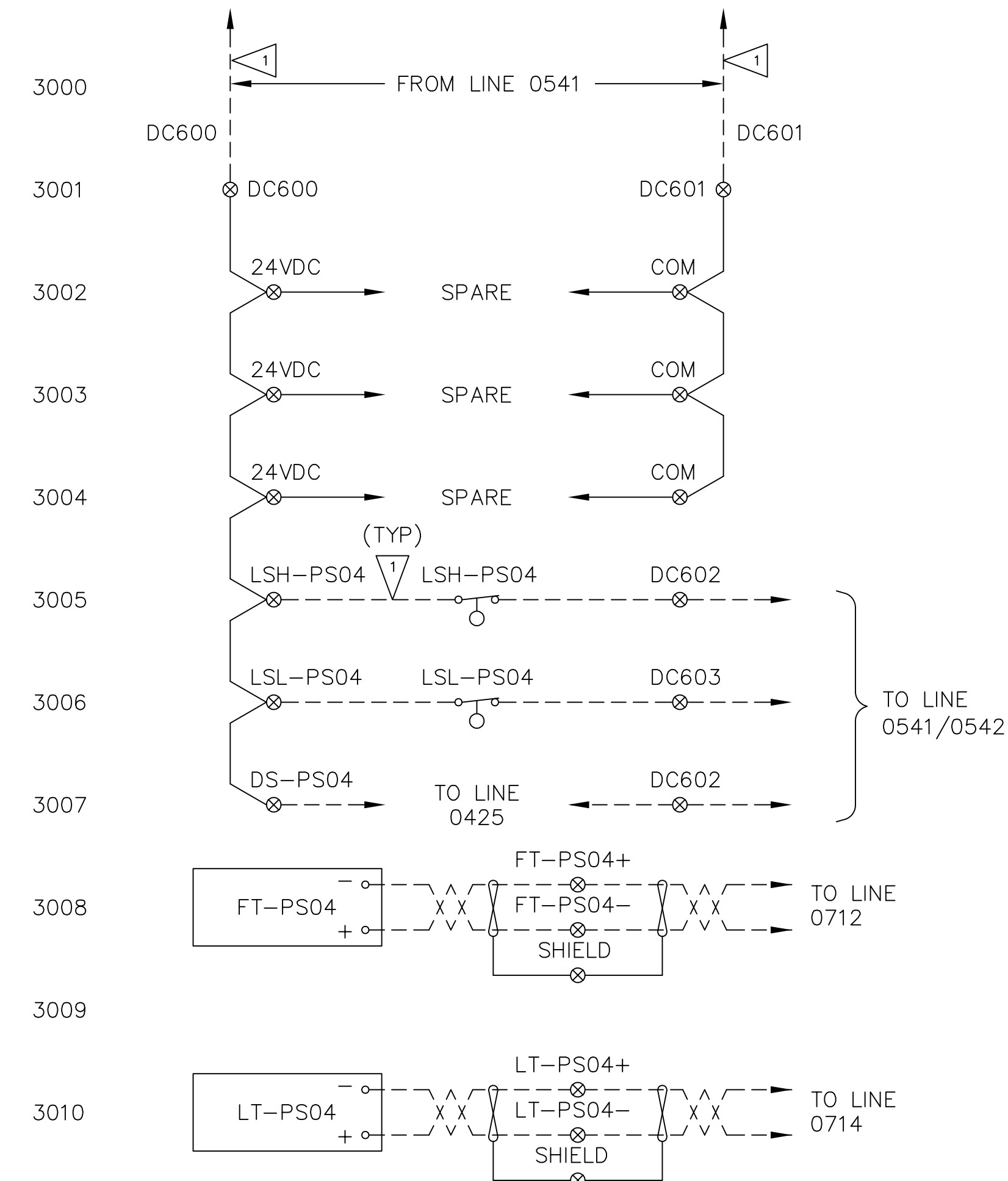
NAMEPLATE SCHEDULE						
ITEM	LINE 1	LINE 2	LABEL SIZE	LETTER SIZE	LETTER COLOR	LABEL COLOR
1	PS-004 REMOTE	TERMINAL PANEL	2" X 1"	1/8"	BLACK	WHITE



FRONT EXTERIOR ELEVATION  
SCALE: 6"=1'-0"



INTERIOR LAYOUT  
SCALE: 6"=1'-0"



WIRING DIAGRAM

**LEGEND:**

- EQUIPMENT/DEVICE TERMINAL
- ⊗ CONTROL PANEL TERMINAL
- PANEL WIRING
- FIELD WIRING

**GENERAL NOTES:**

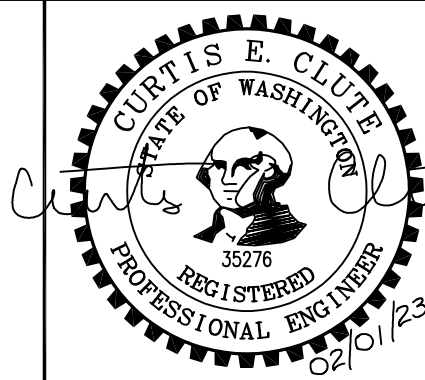
- PROVIDE "HEAT SHRINK" WIRE NUMBERS ON ALL WIRES.
- PROVIDE TERMINAL STRIP MARKINGS ON BOTH SIDES OF STRIP, LEAVING CENTER OPEN FOR JUMPERING, IF REQUIRED.
- QUANTITIES SHOWN ARE A MINIMUM. CONTRACTOR TO SUPPLY ALL MATERIALS AS REQUIRED TO PROVIDE A COMPLETE AND OPERABLE SYSTEM. CONTRACTOR TO SUPPLY ALL MISCELLANEOUS MOUNTING HARDWARE, ETC. FOR INSTALLATION OF ALL COMPONENTS.
- UNUSED/SPARE ITEMS BECOME THE PROPERTY OF THE OWNER.
- PANEL AND INSTRUMENTS PROVIDED BY EP SUPPLIER. INSTALL PANEL, INSTRUMENTS, AND EQUIPMENT. PROVIDE ALL FIELD WIRING, CONNECTIONS AND TERMINATIONS. COORDINATE AND SUPPORT STARTUP AND COMMISSIONING. REFER TO SPECIFICATION SECTIONS 01 64 00 AND 26 00 00

**CONSTRUCTION NOTES:**

- PROVIDE AND INSTALL CONDUIT, CONDUCTORS, BOXES, FITTINGS, SUPPORTS, AND ALL ANCILLARY HARDWARE TO CONNECT TO FIELD EQUIPMENT.

**ISSUED FOR CONSTRUCTION**

Jan 31, 2023 5:21pm Hamms.Gil IC-30.dwg IC-30



REVISIONS				
REV	DATE	BY	APP'D	DESCRIPTION
1	02/01/23	JO	CC	ISSUED FOR CONSTRUCTION

DESIGNED BY: J. OHARA  
 DRAWN BY: R. FARLEY  
 CHECKED BY: O. DYE  
 APPROVED BY: C. CLUTE  
 SCALE: AS NOTED  
 DATE: FEBRUARY 2023

**FORMER REYNOLDS METALS REDUCTION PLANT - LONGVIEW**

**PS-004 - REMOTE TERMINAL PANEL ELEVATION, BILL OF MATERIALS, AND WIRING DIAGRAM**

**IC-30**

SHEET # 114 OF 114

PLAN INTENDED TO BE VIEWED IN COLOR. ADJACENT BLOCK IS "BLUE" INCH SCALE ACCORDINGLY