ABBREVIATIONS

2TSP	MULTI-TWISTED TWO PAIR, OVERALL SHIELDED
A, AMP	AMP AMPERE
AAAC	ALL ALUMINUM ALLOY CONDUCTOR
AF	AMPERE FRAME SIZE
AFF	ABOVE FINISHED FLOOR
AH	AMPERE HOURS
AHJ	AUTHORITY HAVING JURISDICTION
AHU	AIR HANDLING UNIT
AL	ALUMINUM
A/R	AS REQUIRED
AT	AMPERE TRIP, AUTO, AUTOMATIC
ATS	AUTOMATIC TRANSFER SWITCH
AUX	AUXILIARY
AVR	AUTOMATIC VOLTAGE REGULATOR
AWG	AMERICAN WIRE GAUGE
BLDG	BUILDING
C	CONDUIT
CB	CIRCUIT BREAKER
CKT	CIRCUIT
CLF	CURRENT LIMITING FUSE
CTRL	CONTROL
CO	CONDUIT ONLY
CONTD	CONTINUED
CP	CONTROL PANEL
CR	CONTROL RELAY
CS	CONTROL SWITCH
CT	CURRENT TRANSFORMER
CU	COPPER
DB	DUCT BANK
DET	DETAIL
DIAG	DIAGRAM
DISC	DISCONNECT
DP	DISTRIBUTION PANEL
DSL	MANUAL DISCONNECT SWITCH, 3-POLE, GANG OPERATED
DWG(S)	DRAWING(S)
EL	ELEVATION
EMER	EMERGENCY
EPT	EXCITATION POWER TRANSFORMER
EV	ELECTRICAL VAULT
EQUIP	EQUIPMENT
FDR	FEEDER
GEN	GENERATOR
GFCI	GROUND-FAULT CIRCUIT INTERRUPTER
GFI	GROUND-FAULT INTERRUPTION
GFP	GROUND-FAULT PROTECTION
GND	GROUND
GRS	GALVANIZED RIGID STEEL
GSU	GENERATOR STEP-UP TRANSFORMER
HH	HAND HOLE
HMI	HUMAN-MACHINE INTERFACE
HOA	HAND-OFF-AUTO
HPU	HYDRAULIC POWER UNIT
HTR	HEATER
HZ	HERTZ (CYCLES PER SECOND)
I/O	INPUT/OUTPUT
INST	INSTANTANEOUS
INTLK	INTERLOCK
IP	INTERNET PROTOCOL
IPB	ILLUMINATED PUSH BUTTON
JB	JUNCTION BOX
JCRN	JIB CRANE
KCMIL	THOUSAND CIRCULAR MILLS
kV	KILOVOLTS
kVA	KILOVOLT AMPERES (APPARENT POWER)
kVAR	KILOVARS (REACTIVE POWER)
kW	KILOWATTS (REAL POWER)
kWH	KILOWATT HOUR
LP	LIGHTING PANEL
LTG	LIGHTING
LV	LOW VOLTAGE
mA	MILLIAMPERES
M	MOTOR MAN MANUAL
MAN	MANUAL
MCC	MOTOR CONTROL CENTER
MDP	MAIN DISTRIBUTION PANEL
MFM	MULTIFUNCTIONAL METER
MH	MAN HOLE
MTS	MANUAL TRANSFER SWITCH
mV	MILLIVOLTS
NC	NORMALLY CLOSED
NGR	NEUTRAL GROUNDING RESISTOR
NO	NORMALLY OPEN, NUMBER
NP	NAMEPLATE
NTS	NOT TO SCALE
OL	OVERLOAD
PB	PULLBOX, PUSH BUTTON
PC	PHOTOELECTRIC CONTROL UNIT
PCC	POINT OF COMMON CONNECTION
PH Ø	PHASE
PNL	PANEL
PLC	PROGRAMMABLE LOGIC CONTROLLER
POI	POINT OF INTER-CONNECTION
PTT	PUSH-TO-TEST
PVC	POLYVINYL CHLORIDE
RCP	RECEPTACLE
REF	REFERENCE
RGS	RIGID GALVANIZED STEEL CONDUIT
RIO	REMOTE I/O
RTD	RESISTANCE TEMPERATURE DETECTOR
S	SYNC SCOPE
SA	SURGE ARRESTER
SC	SURGE CAPACITOR
SDP	STANDBY DISTRIBUTION PANEL
SEC	SECOND
SEL	SELECTOR, SCHWEITZER ENGINEERING LABORATORIES
SPD	SURGE PROTECTIVE DEVICE
SPEC	SPECIFICATION
SS	STAINLESS STEEL
S/S	STATION SERVICE
STA	STATION
SW	SWITCH
SWGR	SWITCHGEAR
TB	TERMINAL BLOCK, TERMINAL BOX
TS	THERMOSTAT
TSP	TWISTED SHIELDED PAIR
TST	TWISTED SHIELDED TRIAD
TX	TRANSMITTER
TYP	TYPICAL
UP	UTILITY POWER
UPS	UNINTERRUPTIBLE POWER SUPPLY
V	VOLTS
VAC	VOLTS ALTERNATING CURRENT
VC	VIDEO CAMERA
VDC	VOLTS DIRECT CURRENT
VFD	VARIABLE FREQUENCY DRIVE
W	WIRE
W/	WITH
W/O	WITHOUT
WP	WEATHER PROOF (NEMA 4)
XFMR	TRANSFORMER
XLP	CROSS LINKED POLYETHYLENE
XP	EXPLOSION PROOF
YL	YARD LIGHT

CONTROL RELAY AND DEVICES INDEX

3	CHECKING OR INTERLOCKING RELAY
4	MASTER CONTACTOR
5	STOPPING DEVICE
12	OVER-SPEED DEVICE
13	SYNCHRONOUS-SPEED DEVICE
14	UNDER-SPEED DEVICE
15	SPEED/FREQUENCY MATCHING DEVICE
20	ELECTRIC OPERATED VALVE
21	DISTANCE RELAY
23T	THERMOSTAT
24	VOLT/HERTZ RELAY
25	SYNCHRONOUS CHECK DEVICE
25A	AUTOMATIC SYNCHRONIZATION DEVICE
26	APPARATUS THERMAL DEVICE
27	UNDERVOLTAGE RELAY
30	ANNUNCIATOR RELAY
32	REVERSE POWER RELAY
33	POSITION SWITCH
34	MASTER SEQUENCE DEVICE
37	UNDERCURRENT/UNDERPOWER RELAY
38	BEARING PROTECTION DEVICE
39	VIBRATION DETECTOR
40	FIELD RELAY
41	FIELD CURRENT BREAKER
43	MANUAL TRANSFER/SELECTOR DEVICE
46	REVERSE PHASE/PHASE BALANCE RELAY
48	INCOMPLETE SEQUENCE RELAY
49	MACHINE/TRANSFORMER THERMAL RELAY
50	INSTANTANEOUS OVERCURRENT RELAY
51	AC TIME OVERCURRENT RELAY
51C	VOLTAGE-CONTROLLED TIME OVERCURRENT RELAY
50/51	TIME AND INSTANTANEOUS OVERCURRENT RELAY
52	AC CIRCUIT BREAKER
52G	GENERATOR CIRCUIT BREAKER
52L	LINE CIRCUIT BREAKER
53	EXCITER/DC GENERATOR RELAY
54	HIGH SPEED DC CIRCUIT BREAKER
55	POWERFACTOR RELAY
57	GROUND SWITCH
59	OVERVOLTAGE RELAY
59N	NEUTRAL OVERVOLTAGE RELAY
60	VOLTAGE BALANCE RELAY
61	CURRENT BALANCE RELAY
62	TIME DELAY RELAY
63	LIQUID OR GAS PRESSURE LEVEL/FLOW RELAY
64	GROUND PROTECTIVE RELAY
65	GOVERNOR
67	AC DIRECTIONAL OVERCURRENT RELAY
70	ELECTRIC OPERATED RHEOSTAT
71	TRANSFORMER OIL LEVEL TRIP/ALARM DEVICE
72	DC CIRCUIT BREAKER
74	ALARM RELAY
76	DC OVERCURRENT RELAY
79	AUTOMATIC RECLOSING RELAY
81	FREQUENCY RELAY
81O/U	OVER/UNDER FREQUENCY RELAY
83	AUTOMATIC SELECTIVE CONTROL/TRANSFER RELAY
85	CARRIER/PILOT WIRE RECEIVER RELAY
86	LOCKOUT RELAY
87	DIFFERENTIAL PROTECTIVE RELAY
87G	GENERATOR DIFFERENTIAL RELAY
87T	TRANSFORMER DIFFERENTIAL RELAY
89	LINE ISOLATING SWITCH
90	REGULATING DEVICE
94	TRIPPING RELAY
95	SUPERVISION ALARM

METERING SYSTEMS AND DEVICES INDEX

A	AMMETER
AHr	AMPERE HOUR METER
AS	AMMETER SELECTOR SWITCH
C	COUNTER
CMC	CONTACT MAKING CLOCK
D	DEMAND METER
DPM	DIGITAL POWER METER
ET	ELAPSE TIME METER
F	FREQUENCY METER
G	GALVANOMETER
GFD	GROUND FAULT DETECTOR
Hz	FREQUENCY METER
KV	KILO-VOLTMETER
KW	KILO-WATTMETER
KWH	KILO-WATT HOUR METER
mA	MILLI-AMMETER (TRANSDUCER)
OHM	OHMMETER
OSC	OSCILLOGRAPH
PH	PHASE METER
PI	POSITION INDICATOR
PF	POWER FACTOR METER
REC	RECORDER
RF	REACTIVE FACTOR METER
SYN	SYNCHROSCOPE
T	TEMPERATURE METER
TLM	TELEMETER
V	VOLTMETER
VAR	VARMETER
VRHr	VAR HOUR METER
VS	VOLTMETER SELECTOR SWITCH
W	WATTMETER
WHr	WATT HOUR METER

PILOT - INDICATOR LIGHT INDEX

A	AMBER
B	BLUE
C	CLEAR
G	GREEN
NE	NEON
O	ORANGE
OP	OPALESCENT
P	PURPLE
R	RED
W	WHITE
Y	YELLOW

GENERAL NOTES:

1. THESE ABBREVIATIONS APPLY TO THE ELECTRICAL DISCIPLINE OF CONTRACT DRAWINGS ONLY.
2. LISTING OF ABBREVIATIONS DOES NOT IMPLY ALL ABBREVIATIONS ARE USED IN THE CONTRACT DRAWINGS.
3. ABBREVIATIONS SHOWN ON THIS SHEET INCLUDE VARIATIONS OF THE WORD. FOR EXAMPLE, "AT" MAY MEAN AMPERE TRIP OR AUTO; "NO" MAY MEAN NORMALLY OPEN OR NUMBER; "PB" MAY MEAN EITHER PULLBOX OR PUSH BUTTON.
4. SCREENING OR SHADING OF WORK IS USED TO INDICATE EXISTING COMPONENTS OR TO DE-EMPHASIZE PROPOSED IMPROVEMENTS TO HIGHLIGHT SELECTED TRADE WORK. REFER TO CONTEXT OF EACH SHEET FOR USAGE.

REV	DATE	BY	DESCRIPTION
0	10/28/20	MDM	ISSUED FOR CONSTRUCTION

REGISTERED PROFESSIONAL ENGINEER
JOHN ARNE BAKKEN
No. E-16301
ELECTRICAL
STATE OF CALIFORNIA
October 28, 2020

WARNING
0 1/2 1
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McMILLEN JACOBS ASSOCIATES

KLAMATH RIVER RENEWAL CORPORATION

KLAMATH RIVER RENEWAL CORPORATION
FALL CREEK FISH HATCHERY

STANDARD ELECTRICAL
ABBREVIATIONS AND DEVICE INDEXES

DESIGNED M. SKELTON
DRAWN B. ROONEY
CHECKED J. BAKKEN
PROJECT DATE 10/28/20

DRAWING
GE001

JOB NO: 000000

Path: C:\Vault20\Klamath River Renewal Corp\Fall Creek Facility\GE001.dwg Plot date: Oct 27, 2020 10:51am, CAD User: Guerrero

FIRE ALARM/DETECTION SYSTEM

- FA — FIRE ALARM PANEL
- RA — REMOTE ANNUNC PANEL
- M — MANUAL PULL STATION
- H — GAS MAN RELEASE STN
- A — GAS MAN ABORT STN
- B — F.A. BELL
- S — F.A. SIREN
- DD — DUCT SMOKE DETECTOR
- TD — THERMAL DETECTOR
- ID — IONIZATION DETECTOR
- FV — FIRE WATER VALVE LIMIT
- SD — SMOKE DETECTOR
- FS — FLOW SWITCH
- PS — PRESSURE SWITCH
- TS — THERMAL/SMOKE DETECTOR
- ELD — END OF LINE DEVICE

PRIVATE TELEPHONE SYSTEM

- SB — SWITCHBOARD
- TC — TERMINAL CABINET
- D — DESK PHONE
- W — WALL PHONE

PRIVATE ETHERNET NETWORK SYSTEM

- DATA JACK
- VOICE/DATA JACK

PAGE/SOUND SYSTEM

- A — AMPLIFIER
- WS — SPEAKER, WALL MTD
- CS — SPEAKER, CEIL MTD
- WH — HORN, WALL MTD
- CH — HORN, CEIL MTD
- MIC — MICROPHONE
- P — HANDSET

TELEVISION SYSTEM

- TV — TV JACK
- TV — TV JACK
- TV — TV JACK

INTRUSION ALARM/ACCESS SYSTEM

- IA — CENTRAL ALARM PANEL
- RA — REMOTE ANNUNC PANEL
- M — MANDOOR ALARM CONTACT
- V — VEHICLE DOOR ALARM CONTACT
- W — WINDOW ALARM CONTACT
- E — ELECTRIC DOOR ACCESS CONTROL
- C — CARD DOOR ACCESS CONTROL
- K — KEY ACTIVATED STATION
- B — I.A. BELL
- S — I.A. SIREN
- PB — PUSHBUTTON DOOR ACCESS
- PE — PHOTO ELECTRIC DOOR ACCESS
- MOTION DETECTOR

CLOCK SYSTEM

- M — MASTER CLOCK
- C — SECONDARY CLOCK

WATCHMANS SYSTEM

- C — CONTROL/CENTRAL STATION
- K — KEY STATION

CCTV SYSTEM

- CCTV — CAMERA FIXED POSITION
- CCTV — CAMERA ROTATING
- CCTV — CCTV MONITOR
- CCTV — CCTV MONITOR

LOW VOLTAGE ELECTRICAL DEVICES

- CB — -CIRCUIT BREAKER SWITCH
- UF — -UNFUSED DISCONNECT SWITCH
- F — -FUSED DISCONNECT SWITCH
- -MOTOR STARTER MANUAL
- -MOTOR STARTER MAGNETIC
- CB — -MOTOR STARTER MAG. COMBINATION C.B. SW.
- F — -MOTOR STARTER MAG. COMBINATION FUSED D.S.
- -PUSHBUTTON SW. EMERG. STOP
- -PUSHBUTTON SW. STOP/START
- -PUSHBUTTON STATION
- -SELECTOR SWITCH
- FS — -FLOAT SWITCH
- LI — -LEVEL SWITCH
- BI — -BIN LEVEL SWITCH
- LS — -LIMIT SWITCH
- PS — -PRESSURE SWITCH
- PE — -ELECTRICAL/PNEUMATIC SWITCH
- PT — --PRESSURE TRANSMITTER
- SV — -SOLENOID VALVE
- T — -THERMOSTAT
- TS — -TEMPERATURE SWITCH
- B-HTR — BASEBOARD HEATER
- C-HTR — CEILING HEATER
- F — WALL HEATER WITH FAN
- BUH — BLOWER UNIT HEATER
- F W — FAN WALL MOUNT
- F C — FAN CEILING MOUNT
- ELECTRIC MOTOR VERTICAL MTD
- ELECTRIC MOTOR HORIZONTAL MTD
- -UTILITY METER
- J — JUNCTION BOX

CONTROL ELECTRICAL DEVICES

- $ — SPST SWITCH
- $3 — -3 WAY SWITCH; LETTER INDICATES LIGHTING CIRCUIT
- $WP — SPST WEATHERPROOF SWITCH
- $M — -MOTOR SWITCH, NONFUSED
- OS — WALL MOUNTED OCCUPANCY SENSOR
- OS — CEILING MOUNTED OCCUPANCY SENSOR
- DUPLEX RECEPTACLE
- SINGLE RECEPTACLE
- WP — DUPLEX WEATHERPROOF RECEPTACLE
- GFI — DUPLEX GROUND FAULT INTERRUPTER RECEPT
- C — CLOCK RECEPTACLE
- FLOOR RECEPTACLE
- SPECIAL PURPOSE RECEPTACLE

ELECTRICAL LIGHTING FIXTURES

- SURFACE/PENDANT LINEAR
- SURFACE/PENDANT LINEAR, NIGHT LIGHT / EMERGENCY
- RECESSED LINEAR
- RECESSED LINEAR, NIGHT LIGHT / EMERGENCY
- LIGHT FIXTURE SURFACE/PENDANT CEILING MOUNT
- LIGHT FIXTURE SURFACE WALL MOUNT
- R — LIGHT FIXTURE RECESSED CEILING MOUNT
- R — LIGHT FIXTURE RECESSED WALL MOUNT
- H — HAZARD LIGHT FIXTURE CEILING MOUNT
- EXIT LIGHT FIXTURE SURFACE/PENDANT CEILING MOUNT
- EXIT LIGHT FIXTURE SURFACE WALL MOUNT
- R — EXIT LIGHT FIXTURE RECESSED WALL MOUNT
- EMERGENCY LIGHT FIXTURE SURFACE/PENDANT CEILING MOUNT
- EMERGENCY LIGHT FIXTURE SURFACE WALL MOUNT
- R — EMERGENCY LIGHT FIXTURE RECESSED CEILING MOUNT
- R — EMERGENCY LIGHT FIXTURE RECESSED WALL MOUNT
- EMERGENCY LIGHTING UNIT, 1 HEAD
- EMERGENCY LIGHTING UNIT, 2 HEAD
- EMERGENCY LIGHTING UNIT, 3 HEAD
- SURFACE MTD. DISTR. PANELBOARD
- FLUSH MTD. DISTR. PANELBOARD

POWER DISTRIBUTION/GROUNDING/ROADWAY LIGHTING

- POLE CONCRETE
- POLE WOOD
- POLE MOUNTED TRANSFORMER
- DOWN GUY
- SIDEWALK GUY
- M — MANHOLE
- H — HANDHOLE
- V — VAULT
- S — PAD MOUNTED SWITCH
- T — TRANSFORMER VAULT
- PAD MOUNTED TRANSFORMER
- GROUND ROD
- GROUND ROD WITH ACCESS BOX
- GROUND CONNECTION EXOTHERMIC
- GROUND CONNECTION MECHANICAL BOLTED
- GROUND CONNECTION TO PIPE RACK
- GROUND COIL (PIGTAIL) 5'0" (1.5M)
- GROUND GRADIENT MAT (SAFETY MAT) 4'X 4'
- GROUND GRADIENT MAT (SAFETY MAT) 4'X 6'
- LF-1 — STREET LIGHT & BRACKET, 1 FIXTURE
- LF-1 LF-1 — STREET LIGHT & BRACKET, 2 FIXTURE
- LF-1 LF-1 LF-1 — STREET LIGHT & BRACKET, 3 FIXTURE
- LF-1 LF-1 LF-1 LF-1 — STREET LIGHT & BRACKET, 4 FIXTURE

REV	DATE	BY	DESCRIPTION
0	10/28/20	MDM	ISSUED FOR CONSTRUCTION

REGISTERED PROFESSIONAL ENGINEER — JOHN ARNE BAKKEN — No. E-16301 — ELECTRICAL — STATE OF CALIFORNIA
October 28, 2020

WARNING
0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE.

McMILLEN JACOBS ASSOCIATES

KLAMATH RIVER RENEWAL CORPORATION

KLAMATH RIVER RENEWAL CORPORATION
FALL CREEK FISH HATCHERY
ELECTRICAL
STANDARD SYMBOLS 1

DESIGNED M. SKELTON
DRAWN B. ROONEY
CHECKED J. BAKKEN
PROJECT DATE 10/28/20

DRAWING
GE002

JOB NO: 000000

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CB-1	CB-2	CB-3	CB-4	CB-5
CIR BKR HIGH VOLT DRAWOUT ELEC OPER	CIR BKR DRAWOUT ELEC OPER	CIR BKR THERM O/L DRAWOUT ELEC OPER	CIR BKR MAG O/L DRAWOUT ELEC OPER	CIR BKR THERM/MAG O/L DRAWOUT ELEC OPER

CIRCUIT BREAKER SYMBOLS

DS-1	DS-2	DS-3	DS-4	DS-5	DS-6
ISOLATING SWITCH MOTOR OPERATED	INTERRUPTER SWITCH FUSED	CENTER-BREAK SWITCH MOTOR OPERATED	DUAL-BREAK SWITCH MOTOR OPERATED	LOAD-BREAK SWITCH MOTOR OPERATED	HORN GAP SWITCH

H.V. ISOLATING SWITCHES

XF-1	XF-2	XF-3	XF-4	XF-5
TRANSFORMER POWER	TRANSFORMER MAG CORE	TRANSFORMER LOAD TAP CHANGING	TRANSFORMER SPLIT SECONDARY	AUTO-TRANSFORMER

POWER TRANSFORMER SYMBOLS

DELTA-1	DELTA-2	DELTA-3	DELTA-4	WYE-1	WYE-2	ZZ-1	ZZ-2
DELTA 3P3W	DELTA GRD'D 3P4W	DELTA GRD'D 3P3W	BROKEN DELTA	WYE 3POLE	WYE GRD'D 3P4W	ZIG-ZAG 3POLE	ZIG-ZAG GRD'D 3POLE

TRANSFORMER WINDING CONNECTIONS

PT-1	PT-2	CT-1	CT-2	CT-3
POTENTIAL TRANSFORMER	POTENTIAL TRANSFORMER DUAL SECONDARY	CURRENT TRANSFORMER	CURRENT TRANSFORMER CORE BALANCE	CURRENT TRANSFORMER BUSHING

POTENTIAL/CURRENT TRANSFORMER SYMBOLS

HIGH VOLTAGE POWER
LOW VOLTAGE POWER
CONTROL
ENCLOSURE
OH POWER SCHEMATIC
EXIST POWER SCHEMATIC

CONDUCTOR, CROSSING OF PATHS OR CONDUCTORS NOT CONNECTED

CONDUCTOR, JUNCTION OF CONNECTED PATHS, CONDUCTORS OR WIRES

LINETYPE AND CONNECTION SYMBOLS

WT-1	WT-2	LA-1	GRD-SW	IPB-FLEX	IPB-LINK	HTR 100W 480VAC	
WAVE TRAP SMALL	WAVE TRAP LARGE	LIGHTNING ARRESTER	GROUND SW MOTOR OPER	ISOL PH BUS FLEX CONN	ISOL PH BUS REMOVEABLE LINK	HEATER	ELECTRICAL POINT OF CONNECTION
WELDING OUTLET	NEUT NEUTRAL CONNECTION	LINE IN/OUT LINE	CABLE-1 CABLE TERMINATION STRESS CONE	CABLE-2 CABLE POTHEAD OIL-FILLED	TEST SWITCH	TEST SWITCH, CURRENT SHORTING	
RELAY-1 RELAY SINGLE TEXT	RELAY-2 RELAY DOUBLE TEXT	DEVICE-1 CONTROL DEVICE	TRANSD TRANSDUCER	INSTR-1 INSTRUMENT SEL SW	METER-1 ANALOG METER	METER-2 ANALOG METER	METER-3 DIGITAL METER
PL-TEST PUSH-TO-TEST LIGHT	PL-1 PILOT/INDIC LIGHT	CONT-NO CONTACT NORM OPEN	CONT-NC CONTACT NORM CLOSED	FLOW-NO FLOW OPER NORM OPEN	FLOW-NC FLOW OPER NORM CLOSED	LVL-NO LEVEL OPER NORM OPEN	LVL-NC LEVEL OPER NORM CLOSED
SW-NO SWITCH NORM OPEN	SW-NC SWITCH NORM CLOSED	TEMP-NO TEMP ACT SW N.O.	TEMP-NC TEMP ACT SW N.C.	FOOT-NO FOOT OPER NORM OPEN	FOOT-NC FOOT OPER NORM CLOSED	PRES-NO PRESS OPER NORM OPEN	PRES-NC PRESS OPER NORM CLOSED
PBSW-NO PB SWITCH NORM OPEN	PBSW-NC PB SWITCH NORM CLOSED	SSW-1 OFF MAN AUTO SELECTOR SWITCH	LIM-NO LIMIT SW NORM OPEN	LIM-NC LIMIT SW NORM CLOSED	LIM-NOHC LIMIT SW NORM OPEN HELD CLOSED	LIM-NCHO LIMIT SW NORM CLOSED HELD OPEN	SOL SOLENOID
FUSE-1 FUSE	FUSE-2 FUSE DUMMY	DS-FUSE DISC SW FUSED	FUSE-LNK FUSIBLE LINK	CAP CAPACITOR	RES-1 RESISTOR	RES-2 RESISTOR ADJUSTABLE	HTR-E HEATER ELEMENT
BATT BATTERY	RECT-1 RECTIFIER SOLID STATE	RECT-2 AC POS NEG AC RECTIFIER FULLWAVE	BRAKE DC BRAKE	GRD-1 GROUND	GRD-2 CHASIS GROUND	SHUNT CURRENT SHUNT	DD-1 DISCONNECTING DEVICE
CIR-BKR1 CIRC BKR	CIR-BKR2 CIRC BKR W. OL'S	OLS-1 OVERLOAD POWER	OLS-2 OVERLOAD CONTROL	R-COIL RELAY COIL	MOTOR-DC MOTOR-DC	MOTOR-AC MOTOR-AC	GEN-1 GENERATOR

DISCONNECT	CIRCUIT INTERRUPTER	CIRCUIT BREAKER W/ THERMAL OL	CIRCUIT BREAKER W/ MAGNETIC OL	CIRCUIT BREAKER W/ THERMAL OL AND MAGNETIC OL

SELECTOR

TWO-POSITION — X-CONTACT CLOSED

	J	K
A1	X	
A2		X

THREE-POSITION — X-CONTACT CLOSED

	J	K	L
A1	X		
A2			X

TWO-POSITION SELECTOR PUSHBUTTON — X-CONTACT CLOSED

CONTACTS	SELECTOR POSITION A		SELECTOR POSITION B	
	BUTTON		BUTTON	
	FREE	CONTACTS	FREE	CONTACTS
1-2	X			
3-4		X	X	X

PUSHBUTTONS

MOMENTARY CONTACTS: SINGLE CIRCUIT (NO, NC) | DOUBLE CIRCUIT (NO & NC) | MUSHROOM HEAD | WOBBLE STICK | TWO SINGLE CIRCUIT | ONE DOUBLE CIRCUIT | ILLUMINATED (R)

CONTACTS

INSTANT OPERATING				TIMED CONTACTS - CONTACT ACTION RETARDED AFTER COIL IS:			
WITH BLOWOUT		WITHOUT BLOWOUT		ENERGIZED		DE-ENERGIZED	
NO	NC	NO	NC	NOTC	NCTO	NOTO	NCTC

OVERLOAD RELAYS

THERMAL | MAGNETIC

SUPPLEMENTARY CONTACTS SYMBOLS

SPST NO		SPST NC		SPDT		TERMS
SINGLE BREAK	DOUBLE BREAK	SINGLE BREAK	DOUBLE BREAK	SINGLE BREAK	DOUBLE BREAK	

SPST — SINGLE-POLE, SINGLE-THROW
SPDT — SINGLE-POLE, DOUBLE-THROW
DPST — DOUBLE-POLE, SINGLE-THROW
DPDT — DOUBLE-POLE, DOUBLE-THROW
NO — NORMALLY OPEN
NC — NORMALLY CLOSED

DPST, 2NO		DPST, 2NC		DPDT	
SINGLE BREAK	DOUBLE BREAK	SINGLE BREAK	DOUBLE BREAK	SINGLE BREAK	DOUBLE BREAK

METER (INSTRUMENT)

INDICATE TYPE BY LETTER: V, AM

TO INDICATE FUNCTION OF METER OR INSTRUMENT, PLACE SPECIFIED LETTER OR LETTERS WITHIN SYMBOL

AM or A	AMMETER	VA	VOLTMETER
AH	AMPERE HOUR	VAR	VARMETER
AM or A	MICROAMMETER	VARH	VARHOUR METER
mA	MILLAMMETER	W	WATTMETER
PF	POWER FACTOR	WH	WATTHOUR METER
V	VOLT METER		

PILOT LIGHTS

INDICATE COLOR BY LETTER

NON PUSH-TO-TEST (R) | PUSH-TO-TEST (R)

A-AMBER, B-BLUE, C-CLEAR, G-GREEN, NE-NEON, R-RED, W-WHITE, Y-YELLOW

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REGISTERED PROFESSIONAL ENGINEER — JOHN ARNE BAKKEN — No. E-16301 — ELECTRICAL — STATE OF CALIFORNIA
October 28, 2020

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McMILLEN JACOBS ASSOCIATES

KLAMATH RIVER RENEWAL CORPORATION

KLAMATH RIVER RENEWAL CORPORATION
FALL CREEK FISH HATCHERY
ELECTRICAL
STANDARD SYMBOLS 2

DESIGNED M. SKELTON
DRAWN B. ROONEY
CHECKED J. BAKKEN
PROJECT DATE 10/28/20

DRAWING
GE003

JOB NO: 000000

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PANELBOARD SCHEDULE

PANEL: PB-300 | PROJECT: FALL CREEK HATCHERY
VOLTAGE (L-L): 480 | PHASE: 3 | WIRE: 3 | AMPERE RATING: 125A
ENTRY: BOTTOM | MOUNTING: SURFACE | MCB: 125AT/125AF
LOADS: PHASE A: 22722, PHASE B: 22722, PHASE C: 22722, TOTAL: 68166
LOAD TYPES: 1 = LIGHTING, 2 = RECEPTACLES, 3 = MISC, 4 = MOTOR
MIN. CALCULATED O.C.P. SIZE: 101.3
REMARKS: "*" INDICATES GFCI CIRCUIT BREAKER.

LOAD (VA)		LOAD TYPE	AMPS/ POLES		CKT NO	PHASE	CKT NO	AMPS/ POLES		LOAD TYPE	LOAD SERVED	LOAD (VA)
1330	BOOSTER PUMP SKID P-380	4	15	3	1	A	2	50	3	3	DISTRIBUTION XFMR XFR-300	10000
1330	-	4	-	-	3	B	4	-	-	3	-	10000
1330	-	4	-	-	5	C	6	-	-	3	-	10000
1667	ELECTRIC UNIT HEATER UH-301	3	15	3	7	A	8	20	3	4	INTAKE TRAVELING SCREEN CONTROL PANEL	3056
1667	-	3	-	-	9	B	10	-	-	4	VCP-200	3056
1667	-	3	-	-	11	C	12	-	-	4	-	3056
1667	ELECTRIC UNIT HEATER UH-302	3	15	3	13	A	14				SPACE	
1667	-	3	-	-	15	B	16				SPACE	
1667	-	3	-	-	17	C	18				SPACE	
1667	ELECTRIC UNIT HEATER UH-303	3	15	3	19	A	20				SPACE	
1667	-	3	-	-	21	B	22				SPACE	
1667	-	3	-	-	23	C	24				SPACE	
1667	ELECTRIC UNIT HEATER UH-304	3	15	3	25	A	26				SPACE	
1667	-	3	-	-	27	B	28				SPACE	
1667	-	3	-	-	29	C	30				SPACE	
1667	ELECTRIC UNIT HEATER UH-305	3	15	3	31	A	32				SPACE	
1667	-	3	-	-	33	B	34				SPACE	
1667	-	3	-	-	35	C	36				SPACE	
1	SURGE PROTECTIVE DEVICE - TYPE 2	3	30	3	37	A	38				SPACE	
1	-	3	-	-	39	B	40				SPACE	
1	-	3	-	-	41	C	42				SPACE	

	LIGHTING	RECPT	MISC.	MOTOR	TOTAL LOAD
CONNECTED VA	0	0	55,008	13,158	68,166
DEMAND FACTOR	1.00	SEE NOTE 1	1.00	SEE NOTE 2	
DEMAND VA	0	0	55,008	15,450	70,458
LOADING FOR O.C.P.	0	0	68,760	15,450	84,210

NOTES
1. DEMAND FACTOR: 1ST 10kVA AT 100%; OVER 10KVA AT 50%.
2. LARGEST MOTOR LOAD AT 125%; ALL OTHERS AT 100%.

PANELBOARD SCHEDULE

PANEL: PB-301 | PROJECT: FALL CREEK HATCHERY
VOLTAGE (L-L): 208 | PHASE: 3 | WIRE: 4 | AMPERE RATING: 100A
ENTRY: BOTTOM | MOUNTING: SURFACE | MCB: 100AT
LOADS: PHASE A: 7417, PHASE B: 8159, PHASE C: 7205, TOTAL: 22781
LOAD TYPES: 1 = LIGHTING, 2 = RECEPTACLES, 3 = MISC, 4 = MOTOR
MIN. CALCULATED O.C.P. SIZE: 72.7
REMARKS: "*" INDICATES GFCI CIRCUIT BREAKER.

LOAD (VA)		LOAD TYPE	AMPS/ POLES		CKT NO	PHASE	CKT NO	AMPS/ POLES		LOAD TYPE	LOAD SERVED	LOAD (VA)
1690	COHO BUILDING LIGHTING	1	20	1	1	A	2	15	3	3	RADIANT HEATER RH-301	1000
94	INTAKE LIGHTING	1	20	1	3	B	4	-	-	3	-	1000
100	SKYLIGHT DIMMER CIRCUIT	3	15	1	5	C	6	-	-	3	-	1000
	SPARE		20	1	7	A	8	15	3	3	RADIANT HEATER RH-302	1000
1080	COHO BUILDING RECEPTACLES - 1	2	20	1	9	B	10	-	-	3	-	1000
1080	COHO BUILDING RECEPTACLES - 2	2	20	1	11	C	12	-	-	3	-	1000
1880	SUMP PUMP RECEPTACLE P-200	4	20	1	13	A	14	20	1	4	EXHAUST FAN EF-301	1656
1664	INDOOR WASTE DRAIN PUMP RECEPTACLE L6-20R	4	20	1	15	B	16	20	1	4	EXHAUST FAN EF-302	1656
1664	SEE NOTE 3	4	-	-	17	C	18	15	1	4	EXHAUST FAN EF-303	696
100	CONTROL PANEL POWER VCP-280	3	15	1	19	A	20	15	1	4	METER VAULT EXHAUST FAN EF-200	170
1664	OUTDOOR WASTE DRAIN PUMP RECEPTACLE L6-20R	4	20	1	21	B	22	20	1		SPARE	
1664	SEE NOTE 3	4	-	-	23	C	24	20	1		SPARE	
	SPARE		20	1	25	A	26	20	1		SPARE	
	SPARE		20	1	27	B	28	20	1		SPARE	
	SPARE		20	1	29	C	30	20	1		SPARE	
	SPARE		20	1	31	A	32	20	1		SPARE	
	SPARE		20	1	33	B	34	20	1		SPARE	
	SPARE		20	1	35	C	36	20	1		SPARE	
1	SURGE PROTECTIVE DEVICE - TYPE 2	3	30	3	37	A	38	20	1		SPARE	
1	-	3	-	-	39	B	40	20	1		SPARE	
1	-	3	-	-	41	C	42	20	1		SPARE	

	LIGHTING	RECPT	MISC.	MOTOR	TOTAL LOAD
CONNECTED VA	1,784	2,160	6,103	12,734	22,781
DEMAND FACTOR	1.00	SEE NOTE 1	1.00	SEE NOTE 2	
DEMAND VA	1784	2160	6,103	13,634	23,681
LOADING FOR O.C.P.	2230	2700	7,629	13,634	26,193

NOTES
1. DEMAND FACTOR: 1ST 10kVA AT 100%; OVER 10KVA AT 50%.
2. LARGEST MOTOR LOAD AT 125%; ALL OTHERS AT 100%.
3. ASSUMING NO MORE THAN TWO WASTE DRAIN PUMPS ACTIVE AT A TIME.

PANELBOARD SCHEDULE

PANEL: PB-500 | PROJECT: FALL CREEK HATCHERY
VOLTAGE (L-L): 480 | PHASE: 3 | WIRE: 3 | AMPERE RATING: 400A
ENTRY: TOP/BOTTOM | MOUNTING: SURFACE | MCB: MAIN LUG ONLY
LOADS: PHASE A: 79906, PHASE B: 79906, PHASE C: 63106, TOTAL: 222918
LOAD TYPES: 1 = LIGHTING, 2 = RECEPTACLES, 3 = MISC, 4 = MOTOR
MIN. CALCULATED O.C.P. SIZE: 330.8
REMARKS: "*" INDICATES GFCI CIRCUIT BREAKER.

LOAD (VA)		LOAD TYPE	AMPS/ POLES		CKT NO	PHASE	CKT NO	AMPS/ POLES		LOAD TYPE	LOAD SERVED	LOAD (VA)
1330	BOOSTER PUMP SKID P-580	4	15	3	1	A	2	50	3	3	DISTRIBUTION XFMR XFR-501	10000
1330	-	4	-	-	3	B	4	-	-	3	-	10000
1330	-	4	-	-	5	C	6	-	-	3	-	10000
1667	ELECTRIC UNIT HEATER UH-501	3	15	3	7	A	8	125	2	3	TAGGING TRAILER XMFR XFR-502	15361
1667	-	3	-	-	9	B	10	-	-	3	-	15361
1667	-	3	-	-	11	C	12				SPACE	
1667	ELECTRIC UNIT HEATER UH-502	3	15	3	13	A	14	125	3	3	COHO BLDG PANELBOARD PB-300	22722
1667	-	3	-	-	15	B	16	-	-	3	-	22722
1667	-	3	-	-	17	C	18	-	-	3	-	22722
1667	ELECTRIC UNIT HEATER UH-503	3	15	3	19	A	20	100	3	3	SPAWNING BLDG PANELBOARD PB-600	20718
1667	-	3	-	-	21	B	22	-	-	3	-	20718
1667	-	3	-	-	23	C	24	-	-	3	-	20718
1667	ELECTRIC UNIT HEATER UH-504	3	15	3	25	A	26				SPACE	
1667	-	3	-	-	27	B	28				SPACE	
1667	-	3	-	-	29	C	30				SPACE	
1667	ELECTRIC UNIT HEATER UH-505	3	15	3	31	A	32				SPACE	
1667	-	3	-	-	33	B	34				SPACE	
1667	-	3	-	-	35	C	36				SPACE	
1	SURGE PROTECTIVE DEVICE - TYPE 2	3	30	3	37	A	38				SPACE	
1	-	3	-	-	39	B	40				SPACE	
1	-	3	-	-	41	C	42				SPACE	

	LIGHTING	RECPT	MISC.	MOTOR	TOTAL LOAD
CONNECTED VA	0	0	216,050	3,990	220,040
DEMAND FACTOR	1.00	SEE NOTE 1	1.00	SEE NOTE 2	
DEMAND VA	0	0	216,050	4,988	221,038
LOADING FOR O.C.P.	0	0	270,063	4,988	275,050

NOTES
1. DEMAND FACTOR: 1ST 10kVA AT 100%; OVER 10KVA AT 50%.
2. LARGEST MOTOR LOAD AT 125%; ALL OTHERS AT 100%.

PANELBOARD SCHEDULE

PANEL: PB-501 | PROJECT: FALL CREEK HATCHERY
VOLTAGE (L-L): 208 | PHASE: 3 | WIRE: 4 | AMPERE RATING: 100A
ENTRY: TOP/BOTTOM | MOUNTING: SURFACE | MCB: 100AT
LOADS: PHASE A: 9125, PHASE B: 7553, PHASE C: 7995, TOTAL: 24673
LOAD TYPES: 1 = LIGHTING, 2 = RECEPTACLES, 3 = MISC, 4 = MOTOR
MIN. CALCULATED O.C.P. SIZE: 81.3
REMARKS: "*" INDICATES GFCI CIRCUIT BREAKER.

LOAD (VA)		LOAD TYPE	AMPS/ POLES		CKT NO	PHASE	CKT NO	AMPS/ POLES		LOAD TYPE	LOAD SERVED	LOAD (VA)
100	SKYLIGHT DIMMER CIRCUIT	3	15	1	1	A	2	15	3	3	RADIANT HEATER RH-501	1000
192	ELECTRICAL ROOM LIGHTING	1	20	1	3	B	4	-	-	3	-	1000
1646	CHINOOK BLDG LIGHTING	1	20	1	5	C	6	-	-	3	-	1000
1080	CHINOOK INCUBATION BUILDING RECEPTACLES - 1	2	20	1	7	A	8	15	3	3	RADIANT HEATER RH-502	1000
1080	CHINOOK INCUBATION BUILDING RECEPTACLES - 2	2	20	1	9	B	10	-	-	3	-	1000
1080	ELECTRICAL ROOM RECEPTACLES	2	20	1	11	C	12				-	1000
1440	CHINOOK RACEWAY RECEPTACLES	2	20	1	13	A	14	15	1	4	EXHAUST FAN EF-501	1176
400	SCADA CABINET LCP-090	3	15	1	15	B	16	15	1	4	EXHAUST FAN EF-502	1176
36	AUTODIALER TEL-090	3	15	1	17	C	18	15	1	4	EXHAUST FAN EF-503	528
1646	CHINOOK RCWY 1 & 2 WASTE DRAIN PUMP L6-20R	4	20	2	19	A	20	20	1		SPARE	
1646	SEE NOTE 3	4	-	-	21	B	22	15	2	3	SPLIT UNIT CU-500 & FCU-500	1040
1646	CHINOOK RCWY 3 & 4 WASTE DRAIN PUMP L6-20R	4	20	2	23	C	24	-	-	3	-	1040
1646	SEE NOTE 3	4	-	-	25	A	26	20	1		SPARE	
0	CHINOOK RCWY 5 & 6 WASTE DRAIN PUMP L6-20R	4	20	2	27	B	28	20	1		SPARE	
0	SEE NOTE 3	4	-	-	29	C	30	20	1		SPARE	
0	CHINOOK RCWY 7 & 8 WASTE DRAIN PUMP L6-20R	4	20	2	31	A	32	20	1		SPARE	
0	SEE NOTE 3	4	-	-	33	B	34	20	1		SPARE	
	SPARE	4	20	1	35	C	36	20	1		SPARE	
1	SURGE PROTECTIVE DEVICE - TYPE 3	3	30	3	37	A	38	20	1		SPARE	
1	-	3	-	-	39	B	40	20	1		SPARE	
1	-	3	-	-	41	C	42	20	1		SPARE	

	LIGHTING	RECPT	MISC.	MOTOR	TOTAL LOAD
CONNECTED VA	1,838	4,680	8,619	9,536	24,673
DEMAND FACTOR	1.00	SEE NOTE 1	1.00	SEE NOTE 2	
DEMAND VA	1838	4680	8,619	10,368	25,505
LOADING FOR O.C.P.	2298	5850	10,774	10,368	29,289

NOTES
1. DEMAND FACTOR: 1ST 10kVA AT 100%; OVER 10KVA AT 50%.
2. LARGEST MOTOR LOAD AT 125%; ALL OTHERS AT 100%.
3. ASSUMING NO MORE THAN TWO WASTE DRAIN PUMPS ACTIVE AT A TIME.

LUMINAIRE SCHEDULE

TYPE	DESCRIPTION	MAKE	MODEL	MOUNTING	VOLTAGE	WATTS	LUMENS	COLOR TEMP	DISTRIBUTION	FIXTURE/POLE NOTES
A	LED LINEAR	LITHONIA	MSL 8000LM L/LV 120 GZ10 40K 80CRI E10WLCP WH	CHAIN	120	75	8,733	4000K	LINEAR	CEC TITLE 20 COMPLIANT NI-CAD BATTERY; DIFFUSE ACRYLIC LENS, DIMMABLE FROM 100% TO 5%
E	LED EMERGENCY LIGHTING UNIT	LITHONIA	ELM2LF UVOLT SDRT	SURFACE	120	2	220	4000K	LINEAR	CEC TITLE 20 COMPLIANT NI-CAD BATTERY; FIXED OPTICS; SELF DIAGNOSITICS
H1	LED HIGH BAY ROUND	LITHONIA	JCBL 18000LM ACCR ACRFGL MVOLT GZ10 40K 80CRI E10WCP DWHXD	CHAIN	120	125	17,018	4000K	ROUND	CEC TITLE 20 COMPLIANT NI-CAD BATTERY; CLEAR ACRYLIC REFLECTOR; FLAT PRISMATIC LENS; DIMMABLE FROM 100% TO 10%
H2	LED HIGH BAY ROUND	LITHONIA	JCBL 24000LM ACCR ACRFGL MVOLT GZ10 40K 80CRI E10WCP DWHXD	CHAIN	120	160	22,090	4000K	ROUND	CEC TITLE 20 COMPLIANT NI-CAD BATTERY; CLEAR ACRYLIC REFLECTOR; FLAT PRISMATIC LENS; DIMMABLE FROM 100% TO 10%
S	LED RAIL-MOUNT FIXTURE	LUMARK	"NFFLD-C25 E UNV 66 S CB; TS2/NFFLD-CB"	POLE	120	85	10,530	4000K	WIDE	SLIPFITTER MOUNT; TOP AND SIDE VISORS
SP	8' HINGED STEEL POLE	SWIVELPOLE	"S3-2400-P-HG; LMK8401-40-HG"	SEE POLE NOTES	-	-	-	-	-	PLAIN, UNTHREADED TOP, WITH DN40 TO DN50 ADAPTER
W	LED BUILDING EXTERIOR WALL SCONCE	LITHONIA	WSQ LED P1 40K SR3 BBW MVOLT E10WH DDBXD	SURFACE	120	20	2,244	4000K	T3	CEC TITLE 20 COMPLIANT NI-CAD BATTERY; SURFACE-MOUNTED BACK BOX
X	LED EXIT SIGN	LITHONIA	LQM SW3R 120/277 EL N SD	SURFACE	120	1	-	-	-	CEC TITLE 20 COMPLIANT NI-CAD BATTERY; SELF DIAGNOSTICS

SCHEDULE NOTES:
1. THE FIXTURES AND POLES SHOWN IN THIS SCHEDULE ARE CONSIDERED "OR APPROVED EQUAL". ANY PROPOSED SUBSTITUTIONS SHALL BE SUBMITTED ALONGSIDE LIGHTING LEVEL CALCS FOR THE AREAS THE LUMINAIRES ARE USED IN FOR REVIEW.
2. NOT ALL FIXTURES HAVE BATTERY BACKUP. FIXTURE SYMBOLS TYPE SHOWN ON PLANS INDICATE WHETHER BATTERY BACKUP IS REQUIRED.

REV	DATE	BY	DESCRIPTION
0	10/28/20	MDM	ISSUED FOR CONSTRUCTION

REGISTERED PROFESSIONAL ENGINEER
JOHN ARNE BAKKEN
No. E-16301
ELECTRICAL
STATE OF CALIFORNIA
October 28, 2020

WARNING
0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE.

McMILLEN JACOBS ASSOCIATES

KLAMATH RIVER RENEWAL CORPORATION

KLAMATH RIVER RENEWAL CORPORATION
FALL CREEK FISH HATCHERY
ELECTRICAL
LUMINAIRE SCHEDULE
AND PANEL SCHEDULES

DESIGNED M. SKELTON
DRAWN D. JOHNSTON
CHECKED J. BAKKEN
PROJECT DATE 10/28/20

DRAWING
GE004

JOB NO: 1000000

Path: C:\Vault20\Klamath River Renewal Corp\Fall Creek Facility\GE004.dwg Plot date: Oct 27, 2020 10:51am, CAD User: Guerrero

PANELBOARD SCHEDULE

PANEL:	PB-502	PROJECT:	FALL CREEK HATCHERY				
VOLTAGE:	240	PHASE:	1	WIRE:	3	AMPERE RATING:	200A
ENTRY:	TOP/BOTTOM	MOUNTING:	SURFACE	MCB:	175AT/200AF		

LOADS: LINE 1: 15361; LINE 2: 15361; TOTAL: 30722

LOAD TYPES: 1 = LIGHTING; 2 = RECEPTACLES; 3 = MISC; 4 = MOTOR

MIN. CALCULATED O.C.P. SIZE: 160.0

REMARKS: "*" INDICATES GFCI CIRCUIT BREAKER.

LOAD (VA)		LOAD TYPE	AMPS/ POLES		CKT NO	LINE	CKT NO	AMPS/ POLES		LOAD TYPE	LOAD SERVED	LOAD (VA)
9600	TAGGING TRAILER RECEPTACLE - 100A	3	100	2	1	1	2	100	2	3	TAGGING TRAILER RECEPTACLE - 100A	0
9600	SEE NOTE 3	3	-	-	3	2	4	-	-	3	SEE NOTE 3	0
5760	TAGGING TRAILER FISH PUMP RECEPTACLE - 60A	3	60	2	5	1	6	60	2	3	TAGGING TRAILER FISH PUMP RECEPTACLE - 60A	0
5760	SEE NOTE 3	3	-	-	7	2	8	-	-	3	SEE NOTE 3	0
	SPACE		20	1	9	1	10				SPACE	
1	SURGE PROTECTIVE DEVICE - TYPE 3	3	30	2	11	2	12				SPACE	
1	-	3	-	-	13	1	14				SPACE	

	LIGHTING	RECPT	MISC.	MOTOR	TOTAL LOAD
CONNECTED VA	0	0	30,722	0	30,722
DEMAND FACTOR	1.00	SEE NOTE 1	1.00	SEE NOTE 2	
DEMAND VA	0	0	30,722	0	30,722
LOADING FOR O.C.P.	0	0	38,403	0	38,403

NOTES
1. DEMAND FACTOR: 1ST 10kVA AT 100%; OVER 10KVA AT 50%.
2. LARGEST MOTOR LOAD AT 125%; ALL OTHERS AT 100%.
3. ASSUMING NO MORE THAN ONE TAGGING TRAILER AND ONE FISH PUMP ACTIVE AT A TIME.

PANELBOARD SCHEDULE

PANEL:	PB-600	PROJECT:	FALL CREEK HATCHERY				
VOLTAGE (L-L):	480	PHASE:	3	WIRE:	3	AMPERE RATING:	100A
ENTRY:	BOTTOM	MOUNTING:	SURFACE	MCB:	100AT		

LOADS: PHASE A: 20718; PHASE B: 20718; PHASE C: 20718; TOTAL: 62154

LOAD TYPES: 1 = LIGHTING; 2 = RECEPTACLES; 3 = MISC; 4 = MOTOR

MIN. CALCULATED O.C.P. SIZE: 89.9

REMARKS:

LOAD (VA)		LOAD TYPE	AMPS/ POLES		CKT NO	PHASE	CKT NO	AMPS/ POLES		LOAD TYPE	LOAD SERVED	LOAD (VA)
1330	BOOSTER PUMP SKID P-680	4	15	3	1	A	2	50	3	3	DISTRIBUTION XMFR XFR-600	10000
1330	-	4	-	-	3	B	4	-	-	3	-	10000
1330	-	4	-	-	5	C	6	-	-	3	-	10000
3333	ELECTRIC UNIT HEATER UH-601	3	15	3	7	A	8	15	3	3	RADIANT HEATER RH-603	1500
3333	-	3	-	-	9	B	10	-	-	3	-	1500
3333	-	3	-	-	11	C	12	-	-	3	-	1500
942	ELECTRO-ANESTHESIA TANK FILL PUMP P-650	4	15	3	13	A	14	15	3	3	WET WELL PUMP CONTROL PANEL LCP-660	1950
942	-	4	-	-	15	B	16	-	-	3	-	1950
942	-	4	-	-	17	C	18	-	-	3	-	1950
831	CROWDER DRIVE MOTOR DRV-651	4	15	3	19	A	20				SPACE	
831	-	4	-	-	21	B	22				SPACE	
831	-	4	-	-	23	C	24				SPACE	
831	CROWDER LIFT MOTOR HOI-651	4	15	3	25	A	26				SPACE	
831	-	4	-	-	27	B	28				SPACE	
831	-	4	-	-	29	C	30				SPACE	
	SPACE				31	A	32				SPACE	
	SPACE				33	B	34				SPACE	
	SPACE				35	C	36				SPACE	
1	SURGE PROTECTIVE DEVICE - TYPE 2	3	30	3	37	A	38				SPACE	
1	-	3	-	-	39	B	40				SPACE	
1	-	3	-	-	41	C	42				SPACE	

	LIGHTING	RECPT	MISC.	MOTOR	TOTAL LOAD
CONNECTED VA	0	0	44,502	17,652	62,154
DEMAND FACTOR	1.00	SEE NOTE 1	1.00	SEE NOTE 2	
DEMAND VA	0	0	44,502	19,115	63,617
LOADING FOR O.C.P.	0	0	55,628	19,115	74,742

NOTES
1. DEMAND FACTOR: 1ST 10kVA AT 100%; OVER 10KVA AT 50%.
2. LARGEST MOTOR LOAD AT 125%; ALL OTHERS AT 100%.

PANELBOARD SCHEDULE

PANEL:	PB-601	PROJECT:	FALL CREEK HATCHERY				
VOLTAGE (L-L):	208	PHASE:	3	WIRE:	4	AMPERE RATING:	100A
ENTRY:	BOTTOM	MOUNTING:	SURFACE	MCB:	100AT		

LOADS: PHASE A: 9276; PHASE B: 8602; PHASE C: 5849; TOTAL: 23727

LOAD TYPES: 1 = LIGHTING; 2 = RECEPTACLES; 3 = MISC; 4 = MOTOR

MIN. CALCULATED O.C.P. SIZE: 84.8

REMARKS: "*" INDICATES GFCI CIRCUIT BREAKER.

LOAD (VA)		LOAD TYPE	AMPS/ POLES		CKT NO	PHASE	CKT NO	AMPS/ POLES		LOAD TYPE	LOAD SERVED	LOAD (VA)
100	SKYLIGHT DIMMER CIRCUIT	3	15	1	1	A	2	15	3	3	RADIANT HEATER RH-601	1000
647	SPAWNING BUILDING LIGHTING	1	20	1	3	B	4	-	-	3	-	1000
	SPARE		20	1	5	C	6	-	-	3	-	1000
900	SPAWNING BUILDING RECEPTACLE - 1	2	20	1	7	A	8	15	3	3	RADIANT HEATER RH-602	1000
720	SPAWNING BUILDING RECEPTACLE - 2	2	20	1	9	B	10	-	-	3	-	1000
540	HOLDING POND RECEPTACLES	2	20	1	11	C	12	-	-	3	-	1000
75	UV LAMP BALLAST RECEPTACLE	3	20	1	13	A	14	15	1	4	EXHAUST FAN EF-601	150
1144	CONVEYOR BELT CB-600	4	15	2	15	B	16	15	1	4	EXHAUST FAN EF-602	1176
1144	-	4	-	-	17	C	18	15	1	3	STANDBY GENERATOR GEN-100 BATTERY CHARGER	100
1920	ELECTRO-ANESTHESIA CONTROL PANEL VCP-650	3	20	1	19	A	20	15	2	3	STANDBY GENERATOR GEN-100 BLOCK HEATER	1250
1664	HOLDING PONDS WASTE DRAIN PUMP L6-20R	4	20	1	21	B	22	-	-	3	-	1250
1664	SEE NOTE 3	4	-	-	23	C	24	15	1	3	STANDBY GENERATOR GEN-100 BATTERY HEATER	400
2880	ELECTRO-ANESTHESIA TANK HOIST HOI-650	4	30	1	25	A	26	20	1		SPARE	
	SPARE		20	1	27	B	28	20	1		SPARE	
	SPARE		20	1	29	C	30	20	1		SPARE	
	SPARE		20	1	31	A	32	20	1		SPARE	
	SPARE		20	1	33	B	34	20	1		SPARE	
	SPARE		20	1	35	C	36	20	1		SPARE	
1	SURGE PROTECTIVE DEVICE - TYPE 3	3	30	3	37	A	38	20	1		SPARE	
1	-	3	-	-	39	B	40	20	1		SPARE	
1	-	3	-	-	41	C	42	20	1		SPARE	

	LIGHTING	RECPT	MISC.	MOTOR	TOTAL LOAD
CONNECTED VA	647	2,160	11,098	11,742	25,647
DEMAND FACTOR	1.00	SEE NOTE 1	1.00	SEE NOTE 2	
DEMAND VA	647	2160	11,098	13,182	27,087
LOADING FOR O.C.P.	809	2700	13,873	13,182	30,563

NOTES
1. DEMAND FACTOR: 1ST 10kVA AT 100%; OVER 10KVA AT 50%.
2. LARGEST MOTOR LOAD AT 125%; ALL OTHERS AT 100%.
3. ASSUMING NO MORE THAN TWO WASTE DRAIN PUMPS ACTIVE AT A TIME.

REV	DATE	BY	DESCRIPTION
0	10/28/20	MDM	ISSUED FOR CONSTRUCTION

REGISTERED PROFESSIONAL ENGINEER — JOHN ARNE BAKKEN — No. E-16301 — ELECTRICAL — STATE OF CALIFORNIA — October 28, 2020

WARNING
0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE.

McMILLEN JACOBS ASSOCIATES

KLAMATH RIVER RENEWAL CORPORATION

KLAMATH RIVER RENEWAL CORPORATION
FALL CREEK FISH HATCHERY
ELECTRICAL
PANEL SCHEDULES

DESIGNED M. SKELTON
DRAWN D. JOHNSTON
CHECKED J. BAKKEN
PROJECT DATE 10/28/20

DRAWING
GE005

JOB NO: 000000

Path: C:\Vault20\Klamath River Renewal Corp\Fall Creek Facility\GE005.dwg Plot date: Oct 27, 2020 10:52am, CAD User: Guerrero

DUCT BANK SCHEDULE				
DUCT BANK ID	FROM	TO	CONDUITS	TYPE
DB-100a	P-HH-100	FLOWMETER VAULT	K75, K108, K119	120V POWER, CONTROL
DB-100b	P-HH-100	INTAKE STRUCTURE	K18, K72, K109	480V POWER, 120V POWER, CONTROL
DB-100b	S-HH-100	INTAKE STRUCTURE	K137, K142	SIGNAL
DB-100c	FLOWMETER VAULT	INTAKE STRUCTURE	K138, K139, K140, K141	SIGNAL
DB-101	COHO BUILDING	P-HH-100	K18, K72, K75	480V POWER, 120V POWER
DB-102	P-HH-101	P-HH-100	K108, K109, K119	CONTROL
DB-102	S-HH-101	S-HH-100	K137, K142	SIGNAL
DB-103	P-HH-101	COHO BUILDING	K9, K58, K59, K60, K61, K110, K120, K121, K122, K123, K145	480V POWER, 240V POWER, CONTROL
DB-104a	P-HH-103	HH-102	K54, K177, K178, K179, K180	208V POWER, 120V POWER
DB-104b	P-HH-103	P-HH-101	K9, K58, K59, K60, K61, K108, K109, K110, K119, K120, K121, K122, K123, K145	480V POWER, 240V POWER, CONTROL
DB-104b	S-HH-103	S-HH-101	K137, K142	SIGNAL
DB-105	ELECTRICAL ROOM	P-HH-103	K9, K54, K58, K59, K60, K61, K108, K109, K110, K119, K120, K121, K122, K123,K145, K177, K178, K179, K180	480V POWER, 240V POWER, 208V POWER, 120V POWER, CONTROL
DB-105	ELECTRICAL ROOM	S-HH-103	K137, K142	SIGNAL
DB-106	ELECTRICAL ROOM	P-HH-104	K4, K10, K90, K91, K92, K116, K117, K129, K130, K131, K132, K160	480V POWER, 208V POWER, 120V POWER, CONTROL
DB-106	ELECTRICAL ROOM	C-HH-104	K143	COMM
DB-107	P-HH-104	GEN-100	K4, K90, K91, K92, K160	480V POWER, 208V POWER, 120V POWER, CONTROL
DB-107	C-HH-104	GEN-100	K143	COMM
DB-108	P-HH-104	SPAWNING BUILDING	K10	480V POWER
DB-109	P-HH-104	SPAWNING BUILDING/ HOLDING PONDS	K116, K117, K129, K130, K131, K132	CONTROL
DB-110	XFR-100	ELECTRICAL ROOM	K1	480V POWER
DB-111	GEN-100	REMOTE E-STOP	K1	CONTROL

REV	DATE	BY	DESCRIPTION
0	10/28/20	MDM	ISSUED FOR CONSTRUCTION

REGISTERED PROFESSIONAL ENGINEER
JOHN ARNE BAKKEN
No. E-16301
ELECTRICAL
STATE OF CALIFORNIA
October 28, 2020

WARNING
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McMILLEN JACOBS ASSOCIATES

KLAMATH RIVER RENEWAL CORPORATION

KLAMATH RIVER RENEWAL CORPORATION
FALL CREEK FISH HATCHERY
ELECTRICAL
DUCT BANK SCHEDULE

DESIGNED M. SKELTON
DRAWN D. JOHNSTON
CHECKED J. BAKKEN
PROJECT DATE 10/28/20

DRAWING
GE006

JOB NO: 000000
Path: C:\Vault20\Klamath River Renewal Corp\Fall Creek Facility\GE006.dwg Plot date: Oct 28, 2020 02:01pm, CAD User: Guerrero

CONDUIT SCHEDULE

CONDUIT ID	SIZE	FROM	TO	CABLE(S)	DUCT BANK(S)	DESCRIPTION
K1	4"	XFR-100	UTL-500	C1	DB-110	SERVICE TO CT CABINET
K2	(2) 2"	UTL-500	DSC-500	C2	-	SERVICE CONDUCTORS TO SERVICE EQUIPMENT
K3	(2) 2"	DSC-500	MTS-500	C3	-	NORMAL FEEDER TO TRANSFER SWITCH
K4	2"	GEN-100	MTS-500	C4	DB-106, DB-107	STANDBY FEEDER TO TRANSFER SWITCH
K5	1"	UTL-500	UTL-501	C5	-	SPARE BETWEEN CT CABINET AND UTILITY METER
K6	(2) 2"	MTS-500	PB-500	C6	-	MAIN FEEDER TO MAIN FACILITY 480V PANEL IN CHINOOK BLDG
K7	1"	PB-500	XFR-501	C7	-	DISTRIBUTION TRANSFORMER FEEDER - CHINOOK BLDG
K8	1-1/2"	PB-500	XFR-502	C8	-	TAGGING TRAILER TRANSFORMER FEEDER
K9	1-1/2"	PB-500	PB-300	C9	DB-103, DB-104b, DB-105	COHO BLDG PANEL FEEDER
K10	1-1/4"	PB-500	PB-600	C10	DB-106, DB-108	SPAWNING BLDG PANEL FEEDER
K11	3/4"	PB-500	P-580	C11	-	CHINOOK BOOSTER PUMP SKID FEEDER
K12	3/4"	PB-500	UH-501	C12	-	UNIT HEATER BRANCH
K13	3/4"	PB-500	UH-502	C13	-	UNIT HEATER BRANCH
K14	3/4"	PB-500	UH-503	C14	-	UNIT HEATER BRANCH
K15	3/4"	PB-500	UH-504	C15	-	UNIT HEATER BRANCH
K16	3/4"	PB-500	UH-505	C16	-	UNIT HEATER BRANCH
K17	1"	PB-300	XFR-300	C17	-	DISTRIBUTION TRANSFORMER FEEDER - COHO BLDG
K18	3/4"	PB-300	VCP-200	C18	DB-100b, DB-101	INTAKE TRAVELING SCREEN CONTROL PANEL FEEDER
K19	3/4"	VCP-200	TRS-200	C19	-	INTAKE TRAVELING SCREEN 1 BRANCH
K20	3/4"	VCP-200	TRS-201	C20	-	INTAKE TRAVELING SCREEN 2 BRANCH
K21	3/4"	VCP-200	P-200	C21	-	INTAKE SCREEN SPRAY PUMP 1 BRANCH
K22	3/4"	VCP-200	P-201	C22	-	INTAKE SCREEN SPRAY PUMP 2 BRANCH
K23	3/4"	PB-300	P-380	C23	-	COHO BOOSTER PUMP SKID FEEDER
K24	3/4"	PB-300	UH-301	C24	-	UNIT HEATER BRANCH
K25	3/4"	PB-300	UH-302	C25	-	UNIT HEATER BRANCH
K26	3/4"	PB-300	UH-303	C26	-	UNIT HEATER BRANCH
K27	3/4"	PB-300	UH-304	C27	-	UNIT HEATER BRANCH
K28	3/4"	PB-300	UH-305	C28	-	UNIT HEATER BRANCH
K29	1"	PB-600	XFR-600	C29	-	DISTRIBUTION TRANSFORMER FEEDER - SPAWNING BLDG
K30	3/4"	PB-600	P-680	C30	-	SPAWNING BLDG BOOSTER PUMP SKID FEEDER
K31	3/4"	PB-600	UH-601	C31	-	UNIT HEATER BRANCH
K32	3/4"	PB-600	RH-603	C32	-	RADIANT HEATER BRANCH
K33	3/4"	PB-600	MS-652	C33	-	ELECTRO-ANESTHESIA TANK FILL PUMP STARTER FEEDER
K34	3/4"	MS-652	P-650	C34	-	ELECTRO-ANESTHESIA TANK FILL PUMP BRANCH
K35	3/4"	PB-600	LCP-660	C35	-	WET WELL PUMP CONTROL PANEL FEEDER
K36	1"	LCP-660	P-660	C36	-	WET WELL SUMP PUMP 1 POWER, OVERTEMP, AND LEAK
K37	1"	LCP-660	P-661	C37	-	WET WELL SUMP PUMP 2 POWER, OVERTEMP, AND LEAK
K38	1-1/4"	XFR-501	PB-501	C38	-	CHINOOK BLDG LV PANEL FEEDER
K39	3/4"	PB-501	RH-501	C39	-	RADIANT HEATER BRANCH
K40	3/4"	PB-501	RH-502	C40	-	RADIANT HEATER BRANCH
K41	3/4"	PB-501	HC-501	C41	-	ELECTRICAL ROOM SPLIT UNIT CONDENSER FEEDER
K42	3/4"	HC-501	AC-501	C42	-	ELECTRICAL ROOM SPLIT UNIT FAN COIL FEEDER
K43	3/4"	PB-501	MS-501	C43	-	EXHAUST FAN 1 MOTOR STARTER FEEDER
K44	3/4"	MS-501	EF-501	C44	-	EXHAUST FAN 1 BRANCH
K45	3/4"	PB-501	MS-502	C45	-	EXHAUST FAN 2 MOTOR STARTER FEEDER
K46	3/4"	MS-502	EF-502	C46	-	EXHAUST FAN 2 BRANCH
K47	3/4"	PB-501	MS-503	C47	-	INLINE DUCT EXHAUST FAN STARTER
K48	3/4"	MS-503	MD-503	C48	-	DUCT MOTORIZED DAMPER BRANCH
K49	3/4"	PB-501	LTS	C49	-	CHINOOK BLDG LIGHTING CKT
K50	3/4"	PB-501	LTS	C50	-	CHINOOK BLDG ELECTRICAL ROOM LIGHTING CKT
K51	3/4"	PB-501	RCP	C51	-	CHINOOK BLDG RECEPTACLE CKT 1
K52	3/4"	PB-501	RCP	C52	-	CHINOOK BLDG RECEPTACLE CKT 2
K53	3/4"	PB-501	RCP	C53	-	CHINOOK BLDG ELECTRICAL ROOM RECEPTACLE CKT
K54	3/4"	PB-501	RCP	C54	DB-104a, DB-105	CHINOOK RACEWAY RECEPTACLE CKT
K55	3/4"	PB-501	LCP-090	C55	-	SCADA CABINET FEEDER
K56	3/4"	PB-501	TEL-090	C56	-	AUTODIALER BRANCH
K57	(2) 1-1/2"	XFR-502	PB-502	C57	-	TAGGING TRAILER 240V PANEL FEEDER
K58	1-1/2"	PB-502	RCP	C58	DB-103, DB-104b, DB-105	TAGGING TRAILER 240V, 100A RECEPTACLE - COHO
K59	1-1/4"	PB-502	RCP	C59	DB-103, DB-104b, DB-105	TAGGING TRAILER 240V, 60A FISH PUMP RECEPTACLE - COHO
K60	1-1/2"	PB-502	RCP	C60	DB-103, DB-104b, DB-105	TAGGING TRAILER 240V, 100A RECEPTACLE - CHINOOK
K61	1-1/4"	PB-502	RCP	C61	DB-103, DB-104b, DB-105	TAGGING TRAILER 240V, 60A FISH PUMP RECEPTACLE - CHINOOK
K62	1-1/2"	XFR-300	PB-301	C62	-	COHO BLDG LV PANEL FEEDER
K63	3/4"	PB-301	RH-301	C63	-	RADIANT HEATER BRANCH
K64	3/4"	PB-301	RH-302	C64	-	RADIANT HEATER BRANCH
K65	3/4"	PB-301	MS-301	C65	-	EXHAUST FAN 1 MOTOR STARTER FEEDER
K66	3/4"	MS-301	EF-301	C66	-	EXHAUST FAN 1 BRANCH
K67	3/4"	PB-301	MS-302	C67	-	EXHAUST FAN 2 MOTOR STARTER FEEDER
K68	3/4"	MS-302	EF-302	C68	-	EXHAUST FAN 2 BRANCH
K69	3/4"	PB-301	MS-303	C69	-	INLINE DUCT EXHAUST FAN STARTER
K70	3/4"	MS-303	MD-303	C70	-	DUCT MOTORIZED DAMPER BRANCH
K71	3/4"	PB-301	LTS	C71	-	COHO BLDG LIGHTING CKT
K72	3/4"	PB-301	LTS	C72	DB-100b, DB-101	INTAKE LIGHTING CKT
K73	3/4"	PB-301	RCP	C73	-	COHO BLDG RECEPTACLE CKT 1
K74	3/4"	PB-301	RCP	C74	-	COHO BLDG RECEPTACLE CKT 2
K75	3/4"	PB-301	VCP-280	C75	DB-100a, DB-101	METER VAULT SUMP PUMP AND CONTROL POWER
K76	1-1/2"	XFR-600	PB-601	C76	-	SPAWNING BLDG LV PANEL FEEDER
K77	3/4"	PB-601	RH-601	C77	-	RADIANT HEATER BRANCH
K78	3/4"	PB-601	RH-602	C78	-	RADIANT HEATER BRANCH
K79	3/4"	PB-601	EF-601	C79	-	INLINE DUCT EXHAUST FAN BRANCH
K80	3/4"	EF-601	MD-601	C80	-	DUCT MOTORIZED DAMPER BRANCH
K81	3/4"	PB-601	MS-602	C81	-	EXHAUST FAN MOTOR STARTER FEEDER
K82	3/4"	MS-602	EF-602	C82	-	EXHAUST FAN BRANCH
K83	3/4"	PB-601	MS-600	C83	-	CONVEYOR BELT STARTER FEEDER
K84	3/4"	MS-600	CB-600	C84	-	CONVEYOR BELT BRANCH
K85	3/4"	PB-601	VCP-650	C85	-	ELECTRO-ANESTHESIA TANK CONTROL PANEL FEEDER
K86	1"	VCP-650	TNK-650	C86	-	ELECTRO-ANESTHESIA TANK ELECTRODE CKT
K87	1"	MS-653	HOI-650	C87	-	ELECTRO-ANESTHESIA HYDRAULIC HOIST PUMP BRANCH
K88	1-1/4"	PB-601	VCP-650	C88	-	CROWDER AND FISH LIFT CONTROL PANEL FEEDER
K89	1-1/4"	VCP-650	HOI-650	C89	-	CROWDER AND FISH LIFT CABLE REEL CKT
K90	3/4"	PB-601	GEN-100	C90	DB-106, DB-107	STANDBY GENERATOR BATTERY CHARGER BRANCH
K91	3/4"	PB-601	GEN-100	C91	DB-106, DB-107	STANDBY GENERATOR BLOCK HEATER BRANCH
K92	3/4"	PB-601	GEN-100	C92	DB-106, DB-107	STANDBY GENERATOR BATTERY HEATER BRANCH

CONDUIT SCHEDULE

CONDUIT ID	SIZE	FROM	TO	CABLE(S)	DUCT BANK(S)	DESCRIPTION
K93	3/4"	PB-601	LTS	C93	-	SPAWNING BLDG LIGHTING CKT
K94	3/4"	PB-601	RCP	C94	-	SPAWNING BLDG RECEPTACLE CKT 1
K95	3/4"	PB-601	RCP	C95	-	SPAWNING BLDG RECEPTACLE CKT 2
K96	3/4"	PB-601	RCP	C96	-	UV LAMP BALLAST RECEPTACLE
K97	3/4"	PB-601	RCP	C97	-	ADULT HOLDING PONDS RECEPTACLE CKT
K98	3/4"	MS-301	MD-301	C98	-	COHO BLDG FAN 1 STARTER DAMPER CONTROL
K99	3/4"	UH-301	TSTAT1	C99	-	COHO BLDG UNIT HEATER TSTAT 1 CONTROL
K100	3/4"	MS-302	MD-302	C100	-	COHO BLDG FAN 2 STARTER DAMPER CONTROL
K101	3/4"	UH COHO	TSTAT2	C101	-	COHO BLDG UNIT HEATER TSTAT 2 CONTROL LOOP
K102	3/4"	MS-501	MD-501	C102	-	CHINOOK BLDG FAN 1 STARTER DAMPER CONTROL
K103	3/4"	UH-501	TSTAT1	C103	-	CHINOOK BLDG UNIT HEATER TSTAT 1 CONTROL
K104	3/4"	MS-502	MD-502	C104	-	CHINOOK BLDG FAN 2 STARTER DAMPER CONTROL
K105	3/4"	UH CHIN	TSTAT2	C105	-	CHINOOK BLDG UNIT HEATER TSTAT 2 CONTROL LOOP
K106	3/4"	MS-602	MD-602	C106	-	SPAWNING BLDG FAN STARTER DAMPER CONTROL
K107	3/4"	UH-601	TSTAT	C107	-	SPAWNING BLDG UNIT HEATER TSTAT CONTROL
K108	3/4"	LCP-090	LSH-201	C108	DB-100a, DB-102, DB-104b, DB-105	METER VAULT FLOOD LEVEL ALARM SWITCH
K109	3/4"	LCP-090	VCP-200	C109	DB-100b, DB-102, DB-104b, DB-105	TRAVELING SCREEN CONTROL PANEL FAULT
K110	3/4"	LCP-090	LSL-300	C110	DB-103, DB-104b, DB-105	COHO INCUBATOR HEAD TANK LOW LEVEL SWITCH
K111	3/4"	LCP-090	LSL-500	C111	-	CHINOOK INCUBATOR HEAD TANK A LOW LEVEL SWITCH
K112	3/4"	LCP-090	LSL-501	C112	-	CHINOOK INCUBATOR HEAD TANK B LOW LEVEL SWITCH
K113	3/4"	LCP-090	LSL-502	C113	-	CHINOOK INCUBATOR HEAD TANK C LOW LEVEL SWITCH
K114	3/4"	LCP-090	LSL-503	C114	-	CHINOOK INCUBATOR HEAD TANK D LOW LEVEL SWITCH
K115	3/4"	LCP-660	LSL-660, LSH-660, LSH-661	C115, C116, C117	-	WET WELL PUMP CONTROL LEVEL SWITCHES
K116	3/4"	LCP-090	LSH-662	C118	DB-106, DB-109	WET WELL ALARM HIGH LEVEL SWITCH
K117	3/4"	LCP-090	LCP-660	C119, C120	DB-106, DB-109	WET WELL PUMP FAULTS
K118	3/4"	VCP-650	HSS-651	C121	-	ELECTRO-ANESTHESIA FOOT PEDAL SAFETY SWITCH
K119	3/4"	LCP-090	ZS-200	C122	DB-100a, DB-102, DB-104b, DB-105	METER VAULT INTRUSION SWITCH
K120	3/4"	LCP-090	ZS-300	C123	DB-103, DB-104b, DB-105	COHO BLDG ENTRY DOOR INTRUSION SWITCH
K121	3/4"	LCP-090	ZS-301	C124	DB-103, DB-104b, DB-105	COHO BLDG SOUTH OVERHEAD DOOR INTRUSION SWITCH
K122	3/4"	LCP-090	ZS-302	C125	DB-103, DB-104b, DB-105	COHO BLDG NORTHWEST OVERHEAD DOOR INTRUSION SWITCH
K123	3/4"	LCP-090	ZS-303	C126	DB-103, DB-104b, DB-105	COHO BLDG NORTHEAST OVERHEAD DOOR INTRUSION SWITCH
K124	3/4"	LCP-090	ZS-500	C127	-	ELECTRICAL ROOM DOOR INTRUSION SWITCH
K125	3/4"	LCP-090	ZS-501	C128	-	CHINOOK BLDG ENTRY DOORS INTRUSION SWITCH
K126	3/4"	LCP-090	ZS-502	C129	-	CHINOOK BLDG SOUTHWEST OVERHEAD DOOR INTRUSION SWITCH
K127	3/4"	LCP-090	ZS-503	C130	-	CHINOOK BLDG NORTHEAST OVERHEAD DOOR INTRUSION SWITCH
K128	3/4"	LCP-090	ZS-504	C131	-	CHINOOK BLDG SOUTHEAST OVERHEAD DOOR INTRUSION SWITCH
K129	3/4"	LCP-090	ZS-600	C132	DB-106, DB-109	SPAWNING BLDG EAST ENTRY DOOR INTRUSION SWITCH
K130	3/4"	LCP-090	ZS-601	C133	DB-106, DB-109	SPAWNING BLDG WEST ENTRY DOOR INTRUSION SWITCH
K131	3/4"	LCP-090	ZS-602	C134	DB-106, DB-109	SPAWNING BLDG NORTH OVERHEAD DOOR INTRUSION SWITCH
K132	3/4"	LCP-090	ZS-603	C135	DB-106, DB-109	SPAWNING BLDG SOUTH OVERHEAD DOOR INTRUSION SWITCH
K133	1-1/4"	LCP-090	TEL-090	C136	-	DIALER ALARM CKTS
K134	3/4"	LCP-090	LCS-090	C142	-	ALARM SIREN CONTROL STATION SILENCE/ANNUNCIATE CONTROL
K135	3/4"	VCP-200	LE-200 J-BOX	C143	-	FALL CREEK HEAD LEVEL PRESSURE TRANSDUCER
K136	3/4"	VCP-200	LE-201 J-BOX	C144	-	INTAKE LEVEL BEHIND TRAVELING SCREEN PRESSURE TRANSDUCER
K137	1"	LCP-090	VCP-200	C145, C146	DB-100b, DB-102, DB-104b, DB-105	FALL CREEK LEVEL SIGNALS
K138	1"	FIT-200	FE-200	C147	DB-100c	COHO BLDG RW SUPPLY FLOWMETER
K139	1"	FIT-201	FE-201	C148	DB-100c	ADULT HOLDING PONDS RW SUPPLY FLOWMETER
K140	1"	FIT-202	FE-202	C149	DB-100c	CHINOOK RACEWAYS RW SUPPLY FLOWMETER
K141	1"	FIT-203	FE-203	C150	DB-100c	CHINOOK BLDG RW SUPPLY FLOWMETER
K142	1-1/4"	LCP-090	FLOW TRANSMITTER RACK	C151, C152, C153, C154	DB-100b, DB-102, DB-104b, DB-105	RW SUPPLY TO HATCHERY FLOW SIGNALS
K143	1"	LCP-090	GEN-100	C155	DB-106, DB-107	GENSET COMM CKT
K144	1"	LCP-090	MTS-500	C156	-	TRANSFER SWITCH COMM CKT
K145	3/4"	LCP-090	ZS-303	C157	DB-103, DB-104b, DB-105	COHO BLDG WEST OVERHEAD DOOR INTRUSION SWITCH
K146	(2) 1-1/4"	LCP-090	CONTROLS J-BOX	-	-	SPARE CONDUITS FOR FUTURE CONNECTION TO SCADA BY CDFW
K147	1-1/4"	TEL-090	ANTENNA	C158	-	AUTODIALER ANTENNA
K148	3/4"	MS-303	EF-303	C159	-	COHO INLINE DUCT EXHAUST FAN BRANCH
K149	3/4"	MS-303	OS-303	C160	-	COHO DUCT FAN OCCUPANCY SENSOR CIRCUIT
K150	3/4"	MS-503	EF-503	C161	-	CHINOOK INLINE DUCT EXHAUST FAN BRANCH
K151	3/4"	MS-503	OS-503	C162	-	CHINOOK DUCT FAN OCCUPANCY SENSOR CIRCUIT
K152	3/4"	MS-601	EF-601	C163	-	SPAWNING BLDG INLINE DUCT EXHAUST FAN BRANCH
K153	3/4"	MS-601	OS-601	C164	-	SPAWNING BLDG DUCT FAN OCCUPANCY SENSOR CIRCUIT
K154	3/4"	PB-301	EF-200	C165	-	METER VAULT EXHAUST FAN POWER
K155	3/4"	VCP-280	P-280	C166	-	METER VAULT SUMP PUMP BRANCH CIRCUIT AND PROTECTION
K156	1-1/4"	VCP-280	METER VAULT	C167, C168, C169	-	METER VAULT SUMP LEVEL SWITCHES
K157	3/4"	PB-301	CO-DIM	C170	-	COHO BLDG SKY LIGHT DIMMER CIRCUIT
K158	3/4"	PB-501	CH-DIM	C171	-	CHINOOK BLDG SKY LIGHT DIMMER CIRCUIT
K159	3/4"	PB-601	SP-DIM	C172	-	SPAWNING BLDG SKY LIGHT DIMMER CIRCUIT
K160	3/4"	MTS-500	GEN-100	C173	DB-106, DB-107	GENSET ENGINE START CIRCUIT
K161	3/4"	GEN-100	E-STOP	C174	DB-111	GENSET REMOTE E-STOP CIRCUIT
K162	3/4"	MS-650	TB-651	C176	-	CROWDER LIFT BRANCH
K163	3/4"	MS-651	TB-651	C177	-	CROWDER DRIVE BRANCH
K164	3/4"	PB-600	MS-650	C178	-	CROWDER LIFT FEEDER
K165	3/4"	PB-600	MS-651	C179	-	CROWDER DRIVE FEEDER
K166	3/4"	MS-650	CS-650	C180	-	CROWDER LIFT CONTROL INTERCONNECTION
K167	3/4"	MS-651	CS-650	C181	-	CROWDER DRIVE CONTROL INTERCONNECTION
K168	3/4"	MS-650	TB-651	C182	-	CROWDER LOWER LIMIT SWITCH
K169	3/4"	MS-650	TB-651	C183	-	CROWDER UPPER LIMIT SWITCH
K170	3/4"	MS-651	ZS-652	C184	-	CROWDER DOWNSTREAM LIMIT SWITCH
K171	3/4"	MS-651	ZS-653	C185	-	CROWDER UPSTREAM LIMIT SWITCH
K172	3/4"	MS-652	CS-650	C186	-	FILL PUMP CONTROL INTERCONNECTION
K173	1"	PB-601	MS-653	C187	-	ELECTRO-ANESTHESIA TANK HOIST STARTER FEEDER
K174	3/4"	MS-653	CS-650	C188	-	ELECTRO-ANESTHESIA TANK HOIST CONTROL INTERCONNECTION
K175	3/4"	PB-301	CO RCP 1	C189	-	COHO WASTE DRAIN PUMP L6-20R RECEPTACLE - INDOOR
K176	3/4"	PB-301	CO RCP 2	C190	-	COHO WASTE DRAIN PUMP L6-20R RECEPTACLE - OUTDOOR
K177	3/4"	PB-501	CH RCP 1	C191	DB-104a, DB-105	CHINOOK WASTE DRAIN PUMP L6-20R RECEPTACLE - RACEWAYS 1 & 2
K178	3/4"	PB-501	CH RCP 2	C192	DB-104a, DB-105	CHINOOK WASTE DRAIN PUMP L6-20R RECEPTACLE - RACEWAYS 3 & 4
K179	3/4"	PB-501	CH RCP 3	C193	DB-104a, DB-105	CHINOOK WASTE DRAIN PUMP L6-20R RECEPTACLE - RACEWAYS 5 & 6
K180	3/4"	PB-501	CH RCP 4	C194	DB-104a, DB-105	CHINOOK WASTE DRAIN PUMP L6-20R RECEPTACLE - RACEWAYS 7 & 8
K181	3/4"	PB-601	SP RCP 1	C195	-	HOLDING PONDS WASTE DRAIN PUMP L6-20R RECEPTACLE

REV	DATE	BY	DESCRIPTION
0	10/28/20	MDM	ISSUED FOR CONSTRUCTION

REGISTERED PROFESSIONAL ENGINEER
JOHN ARNE BAKKEN
No. E-16301
ELECTRICAL
STATE OF CALIFORNIA
October 28, 2020

WARNING
0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE.

McMILLEN JACOBS ASSOCIATES

KLAMATH RIVER RENEWAL CORPORATION

KLAMATH RIVER RENEWAL CORPORATION
FALL CREEK FISH HATCHERY
ELECTRICAL
CONDUIT SCHEDULE

DESIGNED M. SKELTON
DRAWN D. JOHNSTON
CHECKED J. BAKKEN
PROJECT DATE 10/28/20

DRAWING
GE007

JOB NO: 000000

Path: C:\Vault20\Klamath River Renewal Corp\Fall Creek Facility\GE007.dwg Plot date: Oct 27, 2020 10:52am, CAD User: Guerrero

CABLE SCHEDULE

CABLE INDEX ID	CABLE FIELD ID	SIZE/TYPE	VOLTAGE	FROM	TO	CONDUIT	DESCRIPTION
C1	P-UT_XFR	1,000-LB PULL LINE	480V	XFR-100	UTL-500	K1	SERVICE TO CT CABINET
C2	P-SVC	(2) 4#2/0 XHHW	480V	UTL-500	DSC-500	K2	SERVICE CONDUCTORS TO SERVICE EQUIPMENT
C3	P-TS_NORM	(2) 3#2/0, 1#3G XHHW	480V	DSC-500	MTS-500	K3	NORMAL FEEDER TO TRANSFER SWITCH
C4	P-TS_STAN	3#2/0, 1#6G XHHW	480V	GEN-100	MTS-500	K4	STANDBY FEEDER TO TRANSFER SWITCH
C5	P-UT_MTR	PULL CORD	480V	UTL-500	UTL-501	K5	SPARE BETWEEN CT CABINET AND UTILITY METER
C6	P-MAIN	(2) 3#2/0, 1#3G XHHW	480V	MTS-500	PB-500	K6	MAIN FEEDER TO MAIN FACILITY 480V PANEL IN CHINOOK BLDG
C7	P-XFR501	3#8, 1#10G THWN	480V	PB-500	XFR-501	K7	DISTRIBUTION TRANSFORMER FEEDER - CHINOOK BLDG
C8	P-XFR502	3#1 XHHW, 1#6G XHHW	480V	PB-500	XFR-502	K8	TAGGING TRAILER TRANSFORMER FEEDER
C9	P-PB300	3#1 XHHW, 1#6G XHHW	480V	PB-500	PB-300	K9	COHO BLDG PANEL FEEDER
C10	P-PB600	3#3 XHHW, 1#8G THWN	480V	PB-500	PB-600	K10	SPAWNING BLDG PANEL FEEDER
C11	P-P580	3#12, 1#12G THWN	480V	PB-500	P-580	K11	CHINOOK BOOSTER PUMP SKID FEEDER
C12	P-UH501	3#12, 1#12G THWN	480V	PB-500	UH-501	K12	UNIT HEATER BRANCH
C13	P-UH502	3#12, 1#12G THWN	480V	PB-500	UH-502	K13	UNIT HEATER BRANCH
C14	P-UH503	3#12, 1#12G THWN	480V	PB-500	UH-503	K14	UNIT HEATER BRANCH
C15	P-UH504	3#12, 1#12G THWN	480V	PB-500	UH-504	K15	UNIT HEATER BRANCH
C16	P-UH505	3#12, 1#12G THWN	480V	PB-500	UH-505	K16	UNIT HEATER BRANCH
C17	P-XFR300	3#8, 1#10G THWN	480V	PB-300	XFR-300	K17	DISTRIBUTION TRANSFORMER FEEDER - COHO BLDG
C18	P-VCP200	3#12, 1#12G THWN	480V	PB-300	VCP-200	K18	INTAKE TRAVELING SCREEN CONTROL PANEL FEEDER
C19	P-TRS200	3#12, 1#12G THWN	480V	VCP-200	TRS-200	K19	INTAKE TRAVELING SCREEN 1 BRANCH
C20	P-TRS201	3#12, 1#12G THWN	480V	VCP-200	TRS-201	K20	INTAKE TRAVELING SCREEN 2 BRANCH
C21	P-P200	3#12, 1#12G THWN	480V	VCP-200	P-200	K21	INTAKE SCREEN SPRAY PUMP 1 BRANCH
C22	P-P201	3#12, 1#12G THWN	480V	VCP-200	P-201	K22	INTAKE SCREEN SPRAY PUMP 2 BRANCH
C23	P-P380	3#12, 1#12G THWN	480V	PB-300	P-380	K23	COHO BOOSTER PUMP SKID FEEDER
C24	P-UH301	3#12, 1#12G THWN	480V	PB-300	UH-301	K24	UNIT HEATER BRANCH
C25	P-UH302	3#12, 1#12G THWN	480V	PB-300	UH-302	K25	UNIT HEATER BRANCH
C26	P-UH303	3#12, 1#12G THWN	480V	PB-300	UH-303	K26	UNIT HEATER BRANCH
C27	P-UH304	3#12, 1#12G THWN	480V	PB-300	UH-304	K27	UNIT HEATER BRANCH
C28	P-UH305	3#12, 1#12G THWN	480V	PB-300	UH-305	K28	UNIT HEATER BRANCH
C29	P-XFR600	3#8, 1#10G THWN	480V	PB-600	XFR-600	K29	DISTRIBUTION TRANSFORMER FEEDER - SPAWNING BLDG
C30	P-P680	3#12, 1#12G THWN	480V	PB-600	P-680	K30	SPAWNING BLDG BOOSTER PUMP SKID FEEDER
C31	P-UH601	3#12, 1#12G THWN	480V	PB-600	UH-601	K31	UNIT HEATER BRANCH
C32	P-RH603	4#12, 1#12G THWN	480V+N	PB-600	RH-603	K32	RADIANT HEATER BRANCH
C33	P-MS652	3#12, 1#12G THWN	480V	PB-600	MS-652	K33	ELECTRO-ANESTHESIA TANK FILL PUMP STARTER FEEDER
C34	P-P650	3#12, 1#12G THWN	480V	MS-652	P-650	K34	ELECTRO-ANESTHESIA TANK FILL PUMP BRANCH
C35	P-LCP660	3#12, 1#12G THWN	480V	PB-600	LCP-660	K35	WET WELL PUMP CONTROL PANEL FEEDER
C36	P-P660	1 MSC (8#12)	480V	LCP-660	P-660	K36	WET WELL SUMP PUMP 1 POWER, OVERTEMP, AND LEAK
C37	P-P661	1 MSC (8#12)	480V	LCP-660	P-661	K37	WET WELL SUMP PUMP 2 POWER, OVERTEMP, AND LEAK
C38	P-PB501	4#2, 1#6G XHHW	208V	XFR-501	PB-501	K38	CHINOOK BLDG LV PANEL FEEDER
C39	P-RH501	4#12, 1#12G THWN	208V+N	PB-501	RH-501	K39	RADIANT HEATER BRANCH
C40	P-RH502	4#12, 1#12G THWN	208V+N	PB-501	RH-502	K40	RADIANT HEATER BRANCH
C41	P-CU500	2#12, 1#12G THWN	208V	PB-501	HC-501	K41	ELECTRICAL ROOM SPLIT UNIT CONDENSER FEEDER
C42	P-FCU500	2#12, 1#12G THWN	208V	HC-501	AC-501	K42	ELECTRICAL ROOM SPLIT UNIT FAN COIL FEEDER
C43	P-MS501	2#12, 1#12G THWN	120V	PB-501	MS-501	K43	EXHAUST FAN 1 MOTOR STARTER FEEDER
C44	P-EF501	2#12, 1#12G THWN	120V	MS-501	EF-501	K44	EXHAUST FAN 1 BRANCH
C45	P-MS502	2#12, 1#12G THWN	120V	PB-501	MS-502	K45	EXHAUST FAN 2 MOTOR STARTER FEEDER
C46	P-EF502	2#12, 1#12G THWN	120V	MS-502	EF-502	K46	EXHAUST FAN 2 BRANCH
C47	P-MS503	2#12, 1#12G THWN	120V	PB-501	MS-503	K47	INLINE DUCT EXHAUST FAN STARTER
C48	P-MD503	2#12, 1#12G THWN	120V	MS-503	MD-503	K48	DUCT MOTORIZED DAMPER BRANCH
C49	P-CH_LTS	2#12, 1#12G THWN	120V	PB-501	LTS	K49	CHINOOK BLDG LIGHTING CKT
C50	P-EL_LTS	2#12, 1#12G THWN	120V	PB-501	LTS	K50	CHINOOK BLDG ELECTRICAL ROOM LIGHTING CKT
C51	P-CH_RCP1	2#12, 1#12G THWN	120V	PB-501	RCP	K51	CHINOOK BLDG RECEPTACLE CKT 1
C52	P-CH_RCP2	2#12, 1#12G THWN	120V	PB-501	RCP	K52	CHINOOK BLDG RECEPTACLE CKT 2
C53	P-EL_RCP	2#12, 1#12G THWN	120V	PB-501	RCP	K53	CHINOOK BLDG ELECTRICAL ROOM RECEPTACLE CKT
C54	P-CR_RCP	2#12, 1#12G THWN	120V	PB-501	RCP	K54	CHINOOK RACEWAY RECEPTACLE CKT
C55	P-SCADA	2#12, 1#12G THWN	120V	PB-501	LCP-090	K55	SCADA CABINET FEEDER
C56	P-DIAL	2#12, 1#12G THWN	120V	PB-501	TEL-090	K56	AUTODIALER BRANCH
C57	P-PB502	(2) 3#1, 1#6G XHHW	240V	XFR-502	PB-502	K57	TAGGING TRAILER 240V PANEL FEEDER
C58	P-TAG1	4#3 XHHW	240V	PB-502	RCP	K58	TAGGING TRAILER 240V, 100A RECEPTACLE - COHO
C59	P-FISHP1	4#6 XHHW	240V	PB-502	RCP	K59	TAGGING TRAILER 240V, 60A FISH PUMP RECEPTACLE - COHO
C60	P-TAG2	4#3 XHHW	240V	PB-502	RCP	K60	TAGGING TRAILER 240V, 100A RECEPTACLE - CHINOOK
C61	P-FISHP2	4#6 XHHW	240V	PB-502	RCP	K61	TAGGING TRAILER 240V, 60A FISH PUMP RECEPTACLE - CHINOOK
C62	P-PB301	4#2, 1#6G XHHW	208V	XFR-300	PB-301	K62	COHO BLDG LV PANEL FEEDER
C63	P-RH301	4#12, 1#12G THWN	208V+N	PB-301	RH-301	K63	RADIANT HEATER BRANCH
C64	P-RH302	4#12, 1#12G THWN	208V+N	PB-301	RH-302	K64	RADIANT HEATER BRANCH
C65	P-MS301	2#12, 1#12G THWN	120V	PB-301	MS-301	K65	EXHAUST FAN 1 MOTOR STARTER FEEDER
C66	P-EF301	2#12, 1#12G THWN	120V	MS-301	EF-301	K66	EXHAUST FAN 1 BRANCH
C67	P-MS302	2#12, 1#12G THWN	120V	PB-301	MS-302	K67	EXHAUST FAN 2 MOTOR STARTER FEEDER
C68	P-EF302	2#12, 1#12G THWN	120V	MS-302	EF-302	K68	EXHAUST FAN 2 BRANCH
C69	P-MS303	2#12, 1#12G THWN	120V	PB-301	MS-303	K69	INLINE DUCT EXHAUST FAN STARTER
C70	P-MD303	2#12, 1#12G THWN	120V	MS-303	MD-303	K70	DUCT MOTORIZED DAMPER BRANCH
C71	P-CO_LTS	2#12, 1#12G THWN	120V	PB-301	LTS	K71	COHO BLDG LIGHTING CKT
C72	P-INT_LT	2#12, 1#12G THWN	120V	PB-301	LTS	K72	INTAKE LIGHTING CKT
C73	P-CO_RCP1	2#12, 1#12G THWN	120V	PB-301	RCP	K73	COHO BLDG RECEPTACLE CKT 1
C74	P-CO_RCP2	2#12, 1#12G THWN	120V	PB-301	RCP	K74	COHO BLDG RECEPTACLE CKT 2
C75	P-VCP280	4#12, 1#12G THWN	120V	PB-301	VCP-280	K75	METER VAULT SUMP PUMP AND CONTROL POWER
C76	P-PB601	4#2, 1#6G XHHW	208V	XFR-600	PB-601	K76	SPAWNING BLDG LV PANEL FEEDER
C77	P-RH601	4#12, 1#12G THWN	208V+N	PB-601	RH-601	K77	RADIANT HEATER BRANCH
C78	P-RH602	4#12, 1#12G THWN	208V+N	PB-601	RH-602	K78	RADIANT HEATER BRANCH
C79	P-MS601	2#12, 1#12G THWN	120V	PB-601	MS-601	K79	INLINE DUCT EXHAUST FAN STARTER
C80	P-MD601	2#12, 1#12G THWN	120V	MS-601	MD-601	K80	DUCT MOTORIZED DAMPER BRANCH
C81	P-MS602	2#12, 1#12G THWN	120V	PB-601	MS-602	K81	EXHAUST FAN MOTOR STARTER FEEDER
C82	P-EF602	2#12, 1#12G THWN	120V	MS-602	EF-602	K82	EXHAUST FAN BRANCH
C83	P-MS600	2#12, 1#12G THWN	208V	PB-601	MS-600	K83	CONVEYOR BELT STARTER FEEDER
C84	P-CB600	2#12, 1#12G THWN	208V	MS-600	CB-600	K84	CONVEYOR BELT BRANCH
C85	P-VCP650	2#12, 1#12G THWN	120V	PB-601	VCP-650	K85	ELECTRO-ANESTHESIA TANK CONTROL PANEL FEEDER
C86	P-TNK650	1 MSC	120V	VCP-650	TNK-650	K86	ELECTRO-ANESTHESIA TANK ELECTRODE CKT
C87	P-HOI650	3#8, 1#10G THWN	120V	MS-653	HOI-650	K87	ELECTRO-ANESTHESIA HYDRAULIC HOIST PUMP BRANCH
C90	P-BATTCH	2#12, 1#12G THWN	120V	PB-601	GEN-100	K90	STANDBY GENERATOR BATTERY CHARGER BRANCH
C91	P-BLKHTR	2#12, 1#12G THWN	208V	PB-601	GEN-100	K91	STANDBY GENERATOR BLOCK HEATER BRANCH
C92	P-BATTHT	2#12, 1#12G THWN	120V	PB-601	GEN-100	K92	STANDBY GENERATOR BATTERY HEATER BRANCH
C93	P-SP_LTS	2#12, 1#12G THWN	120V	PB-601	LTS	K93	SPAWNING BLDG LIGHTING CKT
C94	P-SP_RCP1	2#12, 1#12G THWN	120V	PB-601	RCP	K94	SPAWNING BLDG RECEPTACLE CKT 1
C95	P-SP_RCP2	2#12, 1#12G THWN	120V	PB-601	RCP	K95	SPAWNING BLDG RECEPTACLE CKT 2
C96	P-UVLMP	2#12, 1#12G THWN	120V	PB-601	RCP	K96	UV LAMP BALLAST RECEPTACLE
C97	P-HP_RCP	2#12, 1#12G THWN	120V	PB-601	RCP	K97	ADULT HOLDING PONDS RECEPTACLE CKT

CABLE SCHEDULE

CABLE INDEX ID	CABLE FIELD ID	SIZE/TYPE	VOLTAGE	FROM	TO	CONDUIT	DESCRIPTION
C98	P-MD301	2#14, 1#14G THWN	120V	MS-301	MD-301	K98	COHO BLDG FAN 1 STARTER DAMPER CONTROL
C99	C-CO_TS1	2#14, 1#14G THWN	120V	UH-301	TSTAT1	K99	COHO BLDG UNIT HEATER TSTAT 1 CONTROL
C100	P-MD302	2#14, 1#14G THWN	120V	MS-302	MD-302	K100	COHO BLDG FAN 2 STARTER DAMPER CONTROL
C101	C-CO_TS2	2#14, 1#14G THWN	120V	UH COHO	TSTAT2	K101	COHO BLDG UNIT HEATER TSTAT 2 CONTROL LOOP
C102	P-MD501	2#14, 1#14G THWN	120V	MS-501	MD-501	K102	CHINOOK BLDG FAN 1 STARTER DAMPER CONTROL
C103	C-CH_TS1	2#14, 1#14G THWN	120V	UH-501	TSTAT1	K103	CHINOOK BLDG UNIT HEATER TSTAT 1 CONTROL
C104	P-MD502	2#14, 1#14G THWN	120V	MS-502	MD-502	K104	CHINOOK BLDG FAN 2 STARTER DAMPER CONTROL
C105	C-CH_TS1	2#14, 1#14G THWN	120V	UH CHIN	TSTAT2	K105	CHINOOK BLDG UNIT HEATER TSTAT 2 CONTROL LOOP
C106	P-MD602	2#14, 1#14G THWN	120V	MS-602	MD-602	K106	SPAWNING BLDG FAN STARTER DAMPER CONTROL
C107	C-SP_TS1	2#14, 1#14G THWN	120V	UH-601	TSTAT	K107	SPAWNING BLDG UNIT HEATER TSTAT CONTROL
C108	C-LSH201	2#14, 1#14G THWN	24 VDC	LCP-090	LSH-201	K108	METER VAULT FLOOD LEVEL ALARM SWITCH
C109	C-VCP200	2#14, 1#14G THWN	24 VDC	LCP-090	VCP-200	K109	TRAVELING SCREEN CONTROL PANEL FAULT
C110	C-LSL300	2#14, 1#14G THWN	24 VDC	LCP-090	LSL-300	K110	COHO INCUBATOR HEAD TANK LOW LEVEL SWITCH
C111	C-LSL500	2#14, 1#14G THWN	24 VDC	LCP-090	LSL-500	K111	CHINOOK INCUBATOR HEAD TANK A LOW LEVEL SWITCH
C112	C-LSL501	2#14, 1#14G THWN	24 VDC	LCP-090	LSL-501	K112	CHINOOK INCUBATOR HEAD TANK B LOW LEVEL SWITCH
C113	C-LSL502	2#14, 1#14G THWN	24 VDC	LCP-090	LSL-502	K113	CHINOOK INCUBATOR HEAD TANK C LOW LEVEL SWITCH
C114	C-LSL503	2#14, 1#14G THWN	24 VDC	LCP-090	LSL-503	K114	CHINOOK INCUBATOR HEAD TANK D LOW LEVEL SWITCH
C115	C-LSL660	2#14, 1#14G THWN	120V	LCP-660	LSL-660	K115	WET WELL PUMPS OFF LEVEL SWITCH
C116	C-LSH660	2#14, 1#14G THWN	120V	LCP-660	LSH-660	K115	WET WELL LEAD PUMP LEVEL SWITCH
C117	C-LSH661	2#14, 1#14G THWN	120V	LCP-660	LSH-661	K115	WET WELL LAG PUMP LEVEL SWITCH
C118	C-LSH662	2#14, 1#14G THWN	120V	LCP-090	LSH-662	K116	WET WELL ALARM HIGH LEVEL SWITCH
C119	C-P660FL	2#14, 1#14G THWN	24 VDC	LCP-090	LCP-660	K117	WET WELL PUMP 1 FAULT
C120	C-P661FL	2#14 THWN	24 VDC	LCP-090	LCP-660	K117	WET WELL PUMP 2 FAULT
C121	C-HSS651	1 MSC	24 VDC	VCP-650	HSS-651	K118	ELECTRO-ANESTHESIA FOOT PEDAL SAFETY SWITCH
C122	C-ZS200	2#14, 1#14G THWN	24 VDC	LCP-090	ZS-200	K119	METER VAULT INTRUSION SWITCH
C123	C-ZS300	2#14, 1#14G THWN	24 VDC	LCP-090	ZS-300	K120	COHO BLDG ENTRY DOOR INTRUSION SWITCH
C124	C-ZS301	2#14, 1#14G THWN	24 VDC	LCP-090	ZS-301	K121	COHO BLDG SOUTH OVERHEAD DOOR INTRUSION SWITCH
C125	C-ZS302	2#14, 1#14G THWN	24 VDC	LCP-090	ZS-302	K122	COHO BLDG NORTHWEST OVERHEAD DOOR INTRUSION SWITCH
C126	C-ZS303	2#14, 1#14G THWN	24 VDC	LCP-090	ZS-303	K123	COHO BLDG NORTHEAST OVERHEAD DOOR INTRUSION SWITCH
C127	C-ZS500	2#14, 1#14G THWN	24 VDC	LCP-090	ZS-500	K124	ELECTRICAL ROOM DOOR INTRUSION SWITCH
C128	C-ZS501	2#14, 1#14G THWN	24 VDC	LCP-090	ZS-501	K125	CHINOOK BLDG ENTRY DOORS INTRUSION SWITCH
C129	C-ZS502	2#14, 1#14G THWN	24 VDC	LCP-090	ZS-502	K126	CHINOOK BLDG SOUTHWEST OVERHEAD DOOR INTRUSION SWITCH
C130	C-ZS503	2#14, 1#14G THWN	24 VDC	LCP-090	ZS-503	K127	CHINOOK BLDG NORTHEAST OVERHEAD DOOR INTRUSION SWITCH
C131	C-ZS504	2#14, 1#14G THWN	24 VDC	LCP-090	ZS-504	K128	CHINOOK BLDG SOUTHEAST OVERHEAD DOOR INTRUSION SWITCH
C132	C-ZS600	2#14, 1#14G THWN	24 VDC	LCP-090	ZS-600	K129	SPAWNING BLDG EAST ENTRY DOOR INTRUSION SWITCH
C133	C-ZS601	2#14, 1#14G THWN	24 VDC	LCP-090	ZS-601	K130	SPAWNING BLDG WEST ENTRY DOOR INTRUSION SWITCH
C134	C-ZS602	2#14, 1#14G THWN	24 VDC	LCP-090	ZS-602	K131	SPAWNING BLDG NORTH OVERHEAD DOOR INTRUSION SWITCH
C135	C-ZS603	2#14, 1#14G THWN	24 VDC	LCP-090	ZS-603	K132	SPAWNING BLDG SOUTH OVERHEAD DOOR INTRUSION SWITCH
C136	C-DIAL	1-13#14 CONTROL CABLE	24 VDC	LCP-090	TEL-090	K133	AUTODIALER ALARM CKTS
C142	C-SIREN	4#14, 1#14G THWN	24 VDC	LCP-090	LCS-090	K134	ALARM SIREN CONTROL STATION SILENCE/ANNUNCIATE CONTROL
C143	S-LE200	1-TSP#16	4-20 mA DC	VCP-200	LE-200	K135	FALL CREEK HEAD LEVEL PRESSURE TRANSDUCER
C144	S-LE201	1-TSP#16	4-20 mA DC	VCP-200	LE-201	K136	INTAKE LEVEL BEHIND TRAVELING SCREEN PRESSURE TRANSDUCER
C145	S-CRKLVL	1-TSP#16	4-20 mA DC	LCP-090	VCP-200	K137	FALL CREEK HEAD LEVEL
C146	S-SCRLVL	1-TSP#16	4-20 mA DC	LCP-090	VCP-200	K137	INTAKE LEVEL BEHIND TRAVELING SCREEN
C147	S-FE200	1 MSC	4-20 mA DC	FIT-200	FE-200	K138	COHO BLDG RW SUPPLY FLOWMETER
C148	S-FE201	1 MSC	4-20 mA DC	FIT-201	FE-201	K139	ADULT HOLDING PONDS RW SUPPLY FLOWMETER
C149	S-FE202	1 MSC	4-20 mA DC	FIT-202	FE-202	K140	CHINOOK RACEWAYS RW SUPPLY FLOWMETER
C150	S-FE203	1 MSC	4-20 mA DC	FIT-203	FE-203	K141	CHINOOK BLDG RW SUPPLY FLOWMETER
C151	S-FIT200	1-TSP#16	4-20 mA DC	LCP-090	FIT-200	K142	COHO BLDG RW SUPPLY FLOW
C152	S-FIT201	1-TSP#16	4-20 mA DC	LCP-090	FIT-201	K142	ADULT HOLDING PONDS RW SUPPLY FLOW
C153	S-FIT202	1-TSP#16	4-20 mA DC	LCP-090	FIT-202	K142	CHINOOK RACEWAYS RW SUPPLY FLOW
C154	S-FIT203	1-TSP#16	4-20 mA DC	LCP-090	FIT-203	K142	CHINOOK BLDG RW SUPPLY FLOW
C155	ETH-GEN	1-CAT6 ETHERNET	COMM	LCP-090	GEN-100	K143	GENSET COMM CKT
C156	ETH-MTS	1-CAT6 ETHERNET	COMM	LCP-090	MTS-500	K144	TRANSFER SWITCH COMM CKT
C157	C-ZS304	2#14, 1#14G THWN	24 VDC	LCP-090	ZS-304	K145	COHO BLDG WEST OVERHEAD DOOR INTRUSION SWITCH
C158	COAX-ANT	1 MSC (COAX)	COMM	TEL-090	ANTENNA	K147	AUTODIALER COAX ANTENNA CIRCUIT
C159	P-EF303	2#12, 1#12G THWN	120V	MS-303	EF-303	K148	COHO INLINE DUCT EXHAUST FAN BRANCH
C160	C-OS303	2#12, 1#12G THWN	120V	MS-303	OS-303	K149	COHO DUCT FAN OCCUPANCY SENSOR CIRCUIT
C161	P-EF503	2#12, 1#12G THWN	120V	MS-503	EF-503	K150	CHINOOK INLINE DUCT EXHAUST FAN BRANCH
C162	C-OS503	2#12, 1#12G THWN	120V	MS-503	OS-503	K151	CHINOOK DUCT FAN OCCUPANCY SENSOR CIRCUIT
C163	P-EF601	2#12, 1#12G THWN	120V	MS-601	EF-601	K152	SPAWNING BLDG INLINE DUCT EXHAUST FAN BRANCH
C164	C-OS601	2#12, 1#12G THWN	120V	MS-601	OS-601	K153	SPAWNING BLDG DUCT FAN OCCUPANCY SENSOR CIRCUIT
C165	P-EF200	2#12, 1#12G THWN	120V	PB-301	EF-200	K154	METER VAULT EXHAUST FAN POWER
C166	P-P280	1 MSC	120V	VCP-280	P-280	K155	METER VAULT SUMP PUMP BRANCH CIRCUIT AND PROTECTION
C167	C-LSL280	1 MSC	120V	VCP-280	LSL-280	K156	METER VAULT SUMP LOW LEVEL SWITCH
C168	C-LSH280	1 MSC	120V	VCP-280	LSH-280	K156	METER VAULT SUMP HIGH LEVEL SWITCH
C169	C-LSH281	1 MSC	120V	VCP-280	LSH-281	K156	METER VAULT FLOOD LEVEL SWITCH
C170	C-CODIM	2#14, 1#14 THWN	120V	PB-301	CO-DIM	K157	COHO BLDG SKY LIGHT DIMMER CIRCUIT
C171	C-CHDIM	2#14, 1#14 THWN	120V	PB-501	CH-DIM	K158	CHINOOK BLDG SKY LIGHT DIMMER CIRCUIT
C172	C-SPDIM	2#14, 1#14 THWN	120V	PB-601	SP-DIM	K159	SPAWNING BLDG SKY LIGHT DIMMER CIRCUIT
C173	C-GEN	2#14, 1#14 THWN	24 VDC	MTS-500	GEN-100	K160	GENSET ENGINE START CIRCUIT
C174	C-ESTOP	2#14, 1#14 THWN	24 VDC	GEN-100	E-STOP	K161	GENSET REMOTE E-STOP CIRCUIT
C175	P-CRW651	1 MSC (12#16)	480V	TB-651	CRW-651	-	CROWDER CABLE REEL TO TERMINAL BOX
C176	P-HOI651	3#12, 1#12G THWN	480V	MS-650	TB-651	K162	CROWDER LIFT BRANCH
C177	P-DRV651	3#12, 1#12G THWN	480V	MS-651	TB-651	K163	CROWDER DRIVE BRANCH
C178	P-MS650	3#12, 1#12G THWN	480V	PB-600	MS-650	K164	CROWDER LIFT FEEDER
C179	P-MS651	3#12, 1#12G THWN	480V	PB-600	MS-651	K165	CROWDER DRIVE FEEDER
C180	C-HOI651	1-7#14 CONTROL CABLE	120V	MS-650	CS-650	K166	CROWDER LIFT CONTROL INTERCONNECTION
C181	C-DRV651	1-7#14 CONTROL CABLE	120V	MS-651	CS-650	K167	CROWDER DRIVE CONTROL INTERCONNECTION
C182	C-ZS650	2#14, 1#14 THWN	120V	MS-650	TB-651	K168	CROWDER LOWER LIMIT SWITCH
C183	C-ZS651	2#14, 1#14 THWN	120V	MS-650	TB-651	K169	CROWDER UPPER LIMIT SWITCH
C184	C-ZS652	2#14, 1#14 THWN	120V	MS-651	ZS-652	K170	CROWDER DOWNSTREAM LIMIT SWITCH
C185	C-ZS653	2#14, 1#14 THWN	120V	MS-651	ZS-653	K171	CROWDER UPSTREAM LIMIT SWITCH
C186	C-MS652	4#14, 1#14 THWN	120V	MS-652	CS-650	K172	FILL PUMP CONTROL INTERCONNECTION
C187	P-MS653	3#8, 1#10G THWN	120V	PB-601	MS-653	K173	ELECTRO-ANESTHESIA TANK HOIST STARTER FEEDER
C188	C-MS653	4#14, 1#14 THWN	120V	MS-653	CS-650	K174	ELECTRO-ANESTHESIA TANK HOIST CONTROL INTERCONNECTION
C189	P-L620C1	2#12, 1#12G THWN	208V	PB-301	CO RCP 1	K175	COHO WASTE DRAIN PUMP L6-20R RECEPTACLE - INDOOR
C190	P-L620C2	2#12, 1#12G THWN	208V	PB-301	CO RCP 2	K176	COHO WASTE DRAIN PUMP L6-20R RECEPTACLE - OUTDOOR
C191	P-L620H1	2#10, 1#10G THWN	208V	PB-501	CH RCP 1	K177	CHINOOK WASTE DRAIN PUMP L6-20R RECEPTACLE - RACEWAYS 1 & 2
C192	P-L620H2	2#10, 1#10G THWN	208V	PB-501	CH RCP 2	K178	CHINOOK WASTE DRAIN PUMP L6-20R RECEPTACLE - RACEWAYS 3 & 4
C193	P-L620H3	2#10, 1#10G THWN	208V	PB-501	CH RCP 3	K179	CHINOOK WASTE DRAIN PUMP L6-20R RECEPTACLE - RACEWAYS 5 & 6
C194	P-L620H4	2#10, 1#10G THWN	208V	PB-501	CH RCP 4	K180	CHINOOK WASTE DRAIN PUMP L6-20R RECEPTACLE - RACEWAYS 7 & 8
C195	P-L620S1	2#12, 1#12G THWN	208V	PB-601	SP RCP 1	K181	HOLDING PONDS WASTE DRAIN PUMP L6-20R RECEPTACLE

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REGISTERED PROFESSIONAL ENGINEER
JOHN ARNE BAKKEN
No. E-16301
ELECTRICAL
STATE OF CALIFORNIA
October 28, 2020

WARNING
0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE.

McMILLEN JACOBS ASSOCIATES

KLAMATH RIVER RENEWAL CORPORATION

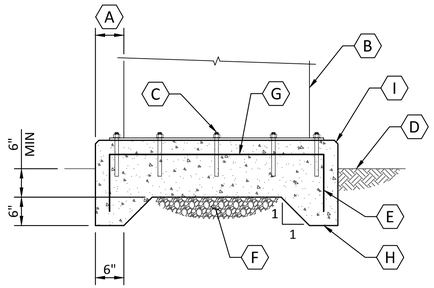
KLAMATH RIVER RENEWAL CORPORATION
FALL CREEK FISH HATCHERY
ELECTRICAL
CABLE SCHEDULE

DESIGNED M. SKELTON
DRAWN D. JOHNSTON
CHECKED J. BAKKEN
PROJECT DATE 10/28/20

DRAWING
GE008

JOB NO: 000000

Path: C:\Vault20\Klamath River Renewal Corp\Fall Creek Facility\GE008.dwg Plot date: Oct 27, 2020 10:52am, CAD User: Guerrero



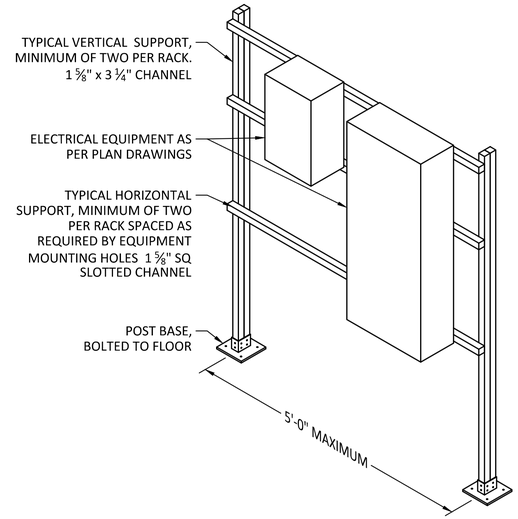
NOTES:
1. COORDINATE SIZE AND LOCATION OF CONCRETE EQUIPMENT PAD WITH EQUIPMENT LAYOUT PRIOR TO FABRICATION AND PLACEMENT.
2. CONCRETE EQUIPMENT PADS SHALL BE INSTALLED FLAT AND LEVEL.

KEY NOTES:
- A 6" MIN, TYP UNO.
- B EQUIPMENT.
- C CONCRETE ANCHOR, TYP.
- D FINISH GRADE OR PAVEMENT.
- E #5 CONT AROUND PERIMETER.
- F PROVIDE MIN 12" COMPACTED GRANULAR FILL, EXTEND MIN 12" BEYOND PAD, TYP ALL AROUND.
- G #5@12" EW AT MID-DEPTH OF SLAB.
- H THICKENED EDGE ALL AROUND.
- I ¾" CHAMFER, TYP

EXTERIOR CONCRETE EQUIPMENT PAD

E003

SCALE: NTS

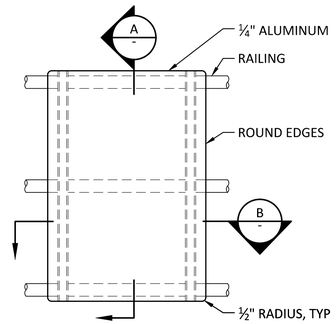


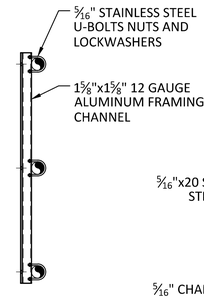
NOTES:
A. ALL CHANNEL CONNECTIONS SHALL BE SECURED USING CHANNEL NUTS AND HARDWARE BY CHANNEL MANUFACTURER.

FREE STANDING EQUIPMENT RACK CONSTRUCTION

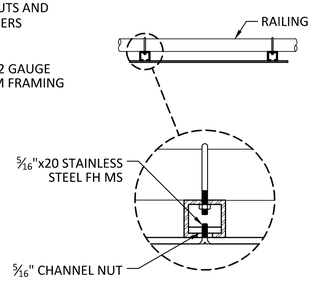
E006

SCALE: NTS





SECTION - A



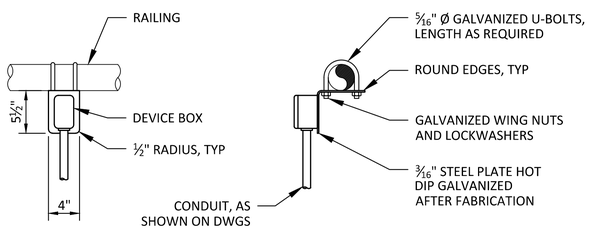
SECTION - B

NOTES:
1. ALL HARDWARE SHALL BE STAINLESS STEEL. USE WASHERS AND SPLIT-LOCK WASHERS ON ALL NUTS AND BOLTS.
2. DIMENSIONS SHALL BE AS REQUIRED FOR EQUIPMENT TO BE MOUNTED. EDGE OF MOUNTING PLATE SHALL EXTEND A MINIMUM OF 2 INCHES EACH SIDE OF THE MOUNTED EQUIPMENT.
3. THIS DETAIL SHALL BE USED FOR MOUNTING EQUIPMENT AND JUNCTION BOXES WEIGHING LESS THAN 50 LBS ON RAILING WHETHER DETAIL IS CALLED OUT OR NOT. EQUIPMENT MOUNTING SHALL NOT REDUCE THE WIDTH OF A WALKWAY TO LESS THAN 3 FT.

DEVICE MOUNTING, RAILING MOUNTED EQUIP SUPPORT

E016

SCALE: NTS

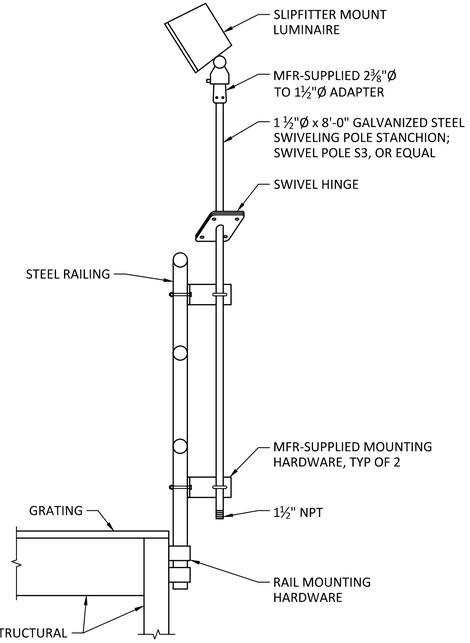


FRONT SIDE

DEVICE MOUNTING, AT RAILING; UNDERHUNG-FORWARD

E019

SCALE: NTS



STANCHION MOUNTED LUMINAIRE; AFFIXED TO RAILING

E147

SCALE: NTS

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REGISTERED PROFESSIONAL ENGINEER — JOHN ARNE BAKKEN — No. E-16301 — ELECTRICAL — STATE OF CALIFORNIA
October 28, 2020

WARNING
0 1/2 1
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McMILLEN JACOBS ASSOCIATES

KLAMATH RIVER RENEWAL CORPORATION

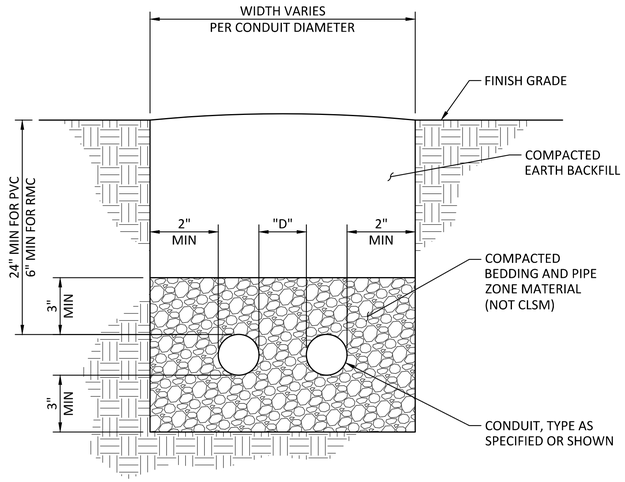
KLAMATH RIVER RENEWAL CORPORATION
FALL CREEK FISH HATCHERY
ELECTRICAL
STANDARD DETAILS 1

DESIGNED M. SKELTON
DRAWN D. JOHNSTON
CHECKED J. BAKKEN
PROJECT DATE 10/28/20

DRAWING
GE009

JOB NO: 000000

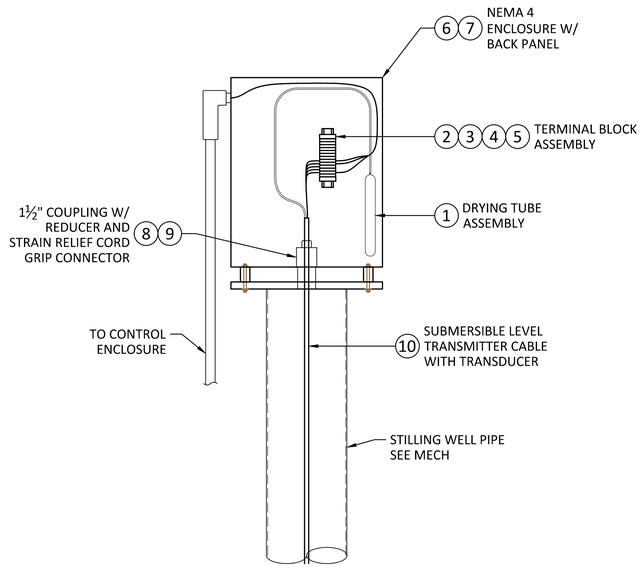
Path: C:\Vault20\Klamath River Renewal Corp\Fall Creek Facility\GE009.dwg Plot date: Oct 27, 2020 10:52am, CAD User: Guerrero



D = 3" MIN FOR 2" AND LARGER CONDUIT
D = 2" MIN FOR 1½" AND SMALLER CONDUIT

TRENCH AND CONDUIT PLACEMENT; DIRECT-BURY (E118)

SCALE: NTS



NOTES:

1. SEE MECHANICAL FOR STILLING WELL PIPE INSTALLATION AND DETAILS.
2. SUPPORT LEVEL SENSOR CABLES WITH MANUFACTURER PROVIDED STRAIN RELIEF/PRESSURE CONNECTORS.
3. COIL EXTRA CABLE FOR SENSOR IN ENCLOSURE.
4. ENSURE STILLING WELL, ENCLOSURE, AND CONDUITS ARE BONDED TO GROUND ACCORDING TO NEC. USE GROUNDING BUSHINGS ON CONDUIT ENTRY TO ENCLOSURE.
5. ATTACH DRYING TUBE ASSEMBLY TO LEVEL SENSOR CABLE VENT TUBE.
6. PROVIDE MATERIALS FROM LIST BELOW, OR APPROVED EQUAL.

MATERIAL LIST				
ITEM	QTY	DESCRIPTION	MANUFACTURER	PART NO.
1	1	DRYING TUBE ASSEMBLY	KELLER AMERICA	N.A.
2	8	UNIVERSAL TERMINAL BLOCKS, UKFN, 30A	PHOENIX	3004362
3	2	END COVER FOR UK4	PHOENIX	3003020
4	2	END BRACKETS, TYPE E/UK	PHOENIX	1201442
5	1	DIN RAIL STYLE MOUNTING TRACK	PHOENIX	1201730
6	1	NEMA 4 ENCLOSURE 10"H x 6"W x 8" D	HOFFMAN	
7	1	BACK PANEL FOR 10"H x 6"W	HOFFMAN	
8	1	1/2" NPT PIPE CONDUIT FITTING/PRESSURE RELIEF CORD GRIP CONNECTOR	KELLER AMERICA	N.A.
9	1	1-1/2" COUPLING WITH 1-1/2" TO 1/2" REDUCER		
10	1	SUBMERSIBLE LEVEL TRANSMITTER CABLE WITH TRANSDUCER	KELLER AMERICA	0507.02007.050110.54

SUBMERSIBLE LEVEL SENSOR TERMINAL BOX - DETAIL (E900)

SCALE: NTS

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JOHN ARNE BAKKEN
No. E-16301
ELECTRICAL
STATE OF CALIFORNIA
October 28, 2020

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McMILLEN JACOBS ASSOCIATES

KLAMATH RIVER RENEWAL CORPORATION

KLAMATH RIVER RENEWAL CORPORATION
FALL CREEK FISH HATCHERY

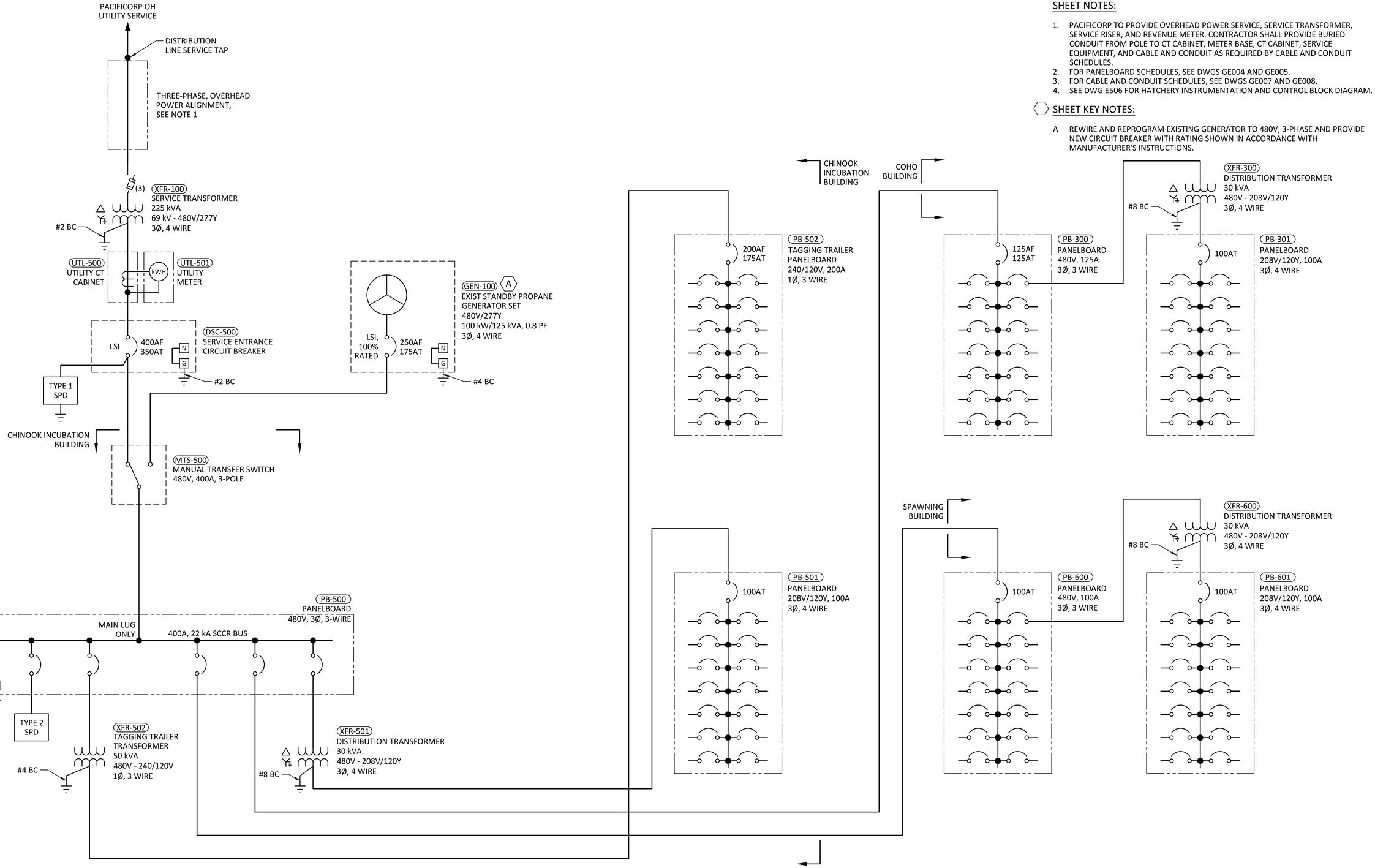
ELECTRICAL
STANDARD DETAILS 2

DESIGNED M. SKELTON
DRAWN D. JOHNSTON
CHECKED J. BAKKEN
PROJECT DATE 10/28/20

DRAWING
GE010

JOB NO: 000000

Path: C:\Vault20\Klamath River Renewal Corp\Fall Creek Facility\GE010.dwg Plot date: Oct 27, 2020 10:52am, CAD User: Guerrero



SHEET NOTES:

1. PACIFICORP TO PROVIDE OVERHEAD POWER SERVICE, SERVICE TRANSFORMER, SERVICE RISER, AND REVENUE METER. CONTRACTOR SHALL PROVIDE BURIED CONDUIT FROM POLE TO CT CABINET, METER BASE, CT CABINET, SERVICE EQUIPMENT, AND CABLE AND CONDUIT AS REQUIRED BY CABLE AND CONDUIT SCHEDULES.
2. FOR PANELBOARD SCHEDULES, SEE DWGS GE004 AND GE005.
3. FOR CABLE AND CONDUIT SCHEDULES, SEE DWGS GE007 AND GE008.
4. SEE DWG E506 FOR HATCHERY INSTRUMENTATION AND CONTROL BLOCK DIAGRAM.

SHEET KEY NOTES:

A REWIRE AND REPROGRAM EXISTING GENERATOR TO 480V, 3-PHASE AND PROVIDE NEW CIRCUIT BREAKER WITH RATING SHOWN IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

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JOHN ARNE BAKKEN
No. E-16301
ELECTRICAL
STATE OF CALIFORNIA
October 28, 2020

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McMILLEN JACOBS ASSOCIATES

KLAMATH RIVER RENEWAL CORPORATION

KLAMATH RIVER RENEWAL CORPORATION
FALL CREEK FISH HATCHERY

ELECTRICAL
OVERALL ONE-LINE DIAGRAM

DESIGNED M. SKELTON
DRAWN D. JOHNSTON
CHECKED J. BAKKEN
PROJECT DATE 10/28/20

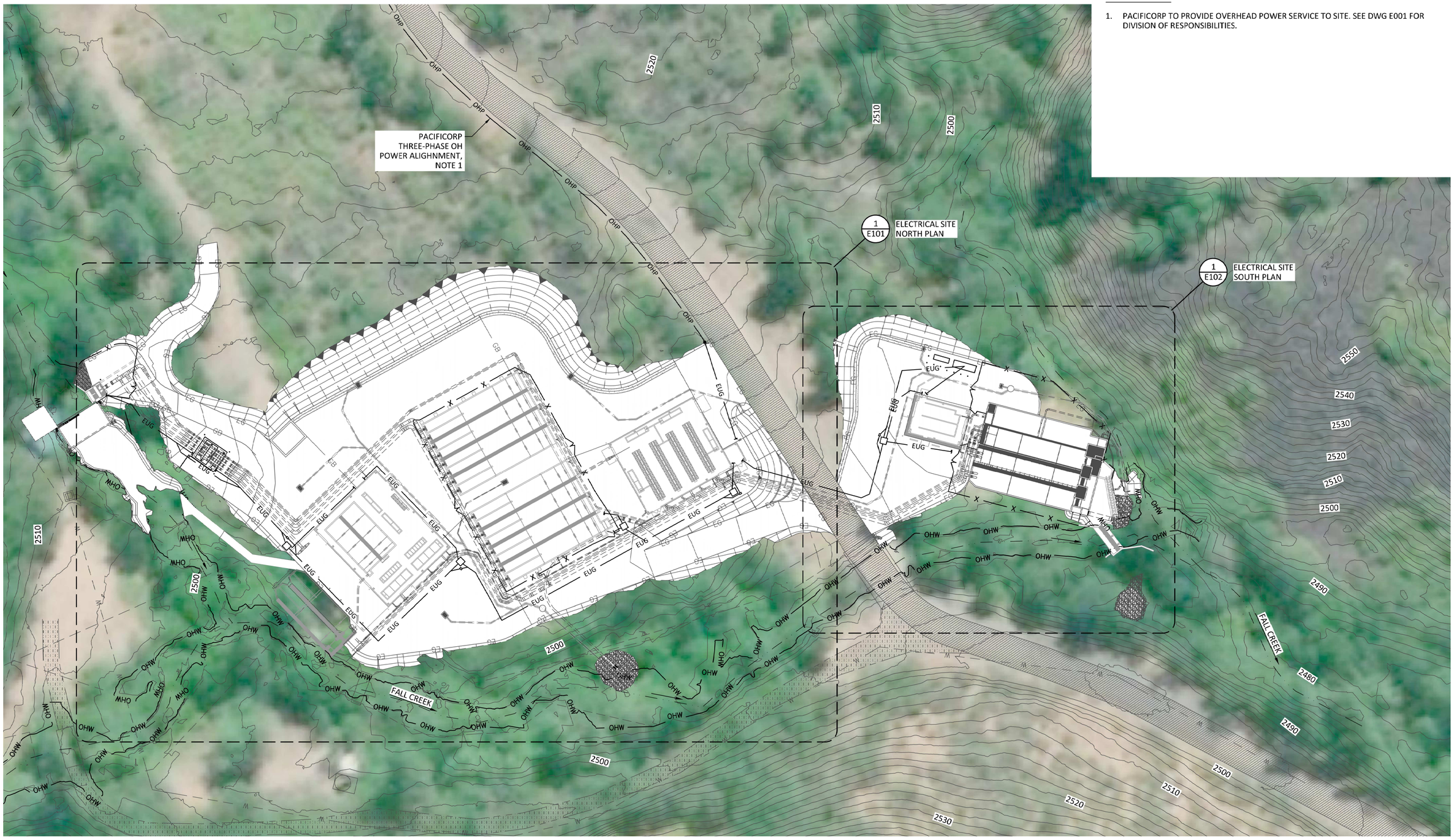
DRAWING
E001

JOB NO: 000000

Path: C:\Vault20\Klamath River Renewal Corp\Fall Creek Facility\E001.dwg Plot date: Oct 27, 2020 10:52am, CAD User: Guerrero

SHEET NOTES:

1. PACIFICORP TO PROVIDE OVERHEAD POWER SERVICE TO SITE. SEE DWG E001 FOR DIVISION OF RESPONSIBILITIES.



OVERALL ELECTRICAL SITE KEY PLAN

SCALE: 1"= 30'

0" 30' 60'

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JOHN ARNE BAKKEN
No. E-16301
ELECTRICAL
STATE OF CALIFORNIA
October 28, 2020

WARNING

0 1/2 1

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McMILLEN JACOBS ASSOCIATES

KLAMATH RIVER RENEWAL CORPORATION

KLAMATH RIVER RENEWAL CORPORATION

FALL CREEK FISH HATCHERY

OVERALL ELECTRICAL SITE KEY PLAN

DESIGNED M. SKELTON

DRAWN D. JOHNSTON

CHECKED J. BAKKEN

PROJECT DATE 10/28/20

DRAWING

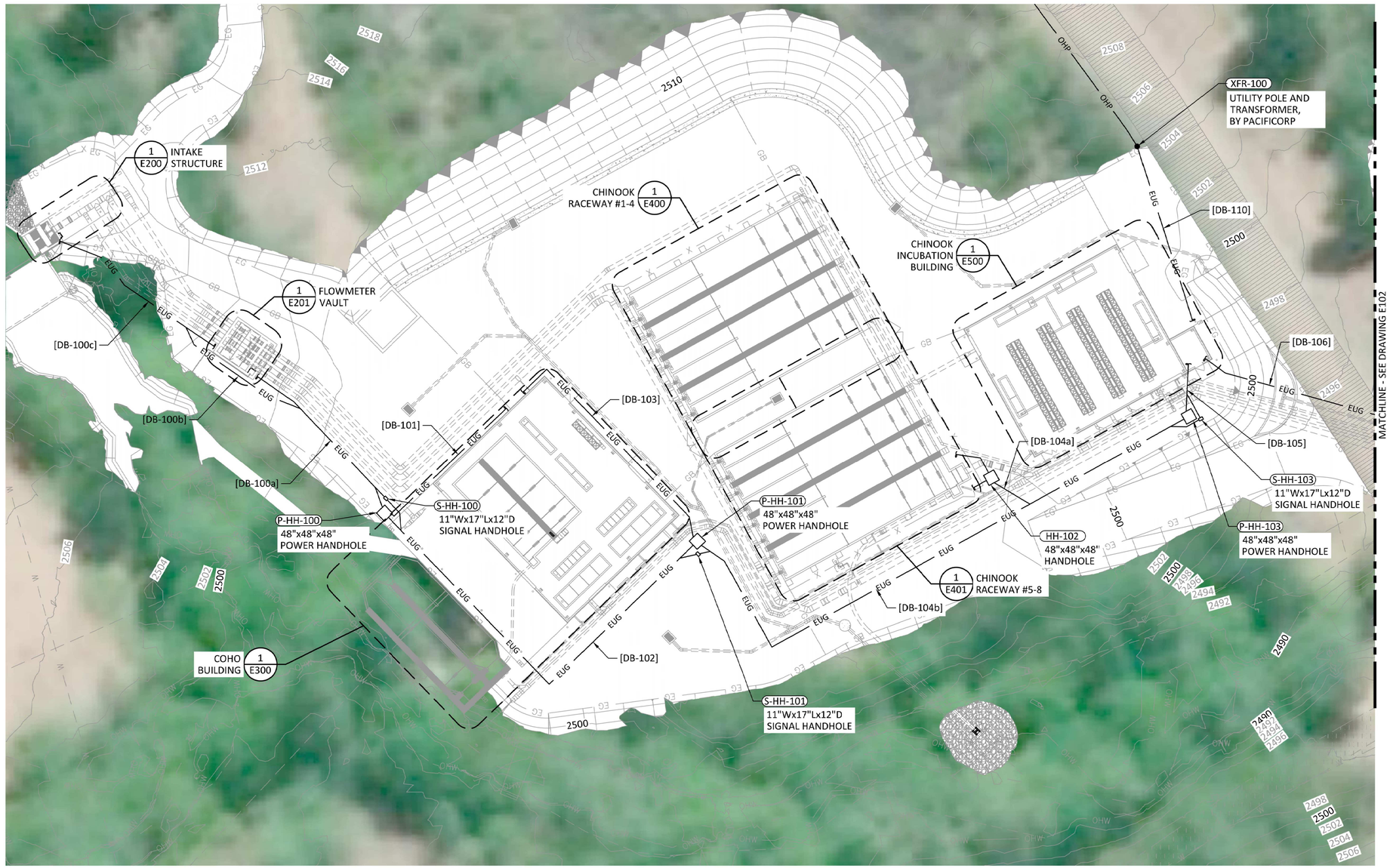
E100

JOB NO: 000000

Path: C:\Vault20\Klamath River Renewal Corp\Fall Creek Facility\E100.dwg Plot date: Oct 27, 2020 10:53am, CAD User: Guerrero

SHEET NOTES:

1. SEE DWG GE006 FOR DUCT BANK SCHEDULE.



ELECTRICAL SITE NORTH PLAN
SCALE: 1"= 20'

0" 20' 40'

1 E100

REV	DATE	BY	DESCRIPTION
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JOHN ARNE BAKKEN
No. E-16301
ELECTRICAL
STATE OF CALIFORNIA
October 28, 2020

WARNING
0 1/2 1
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McMILLEN JACOBS ASSOCIATES

KLAMATH RIVER RENEWAL CORPORATION

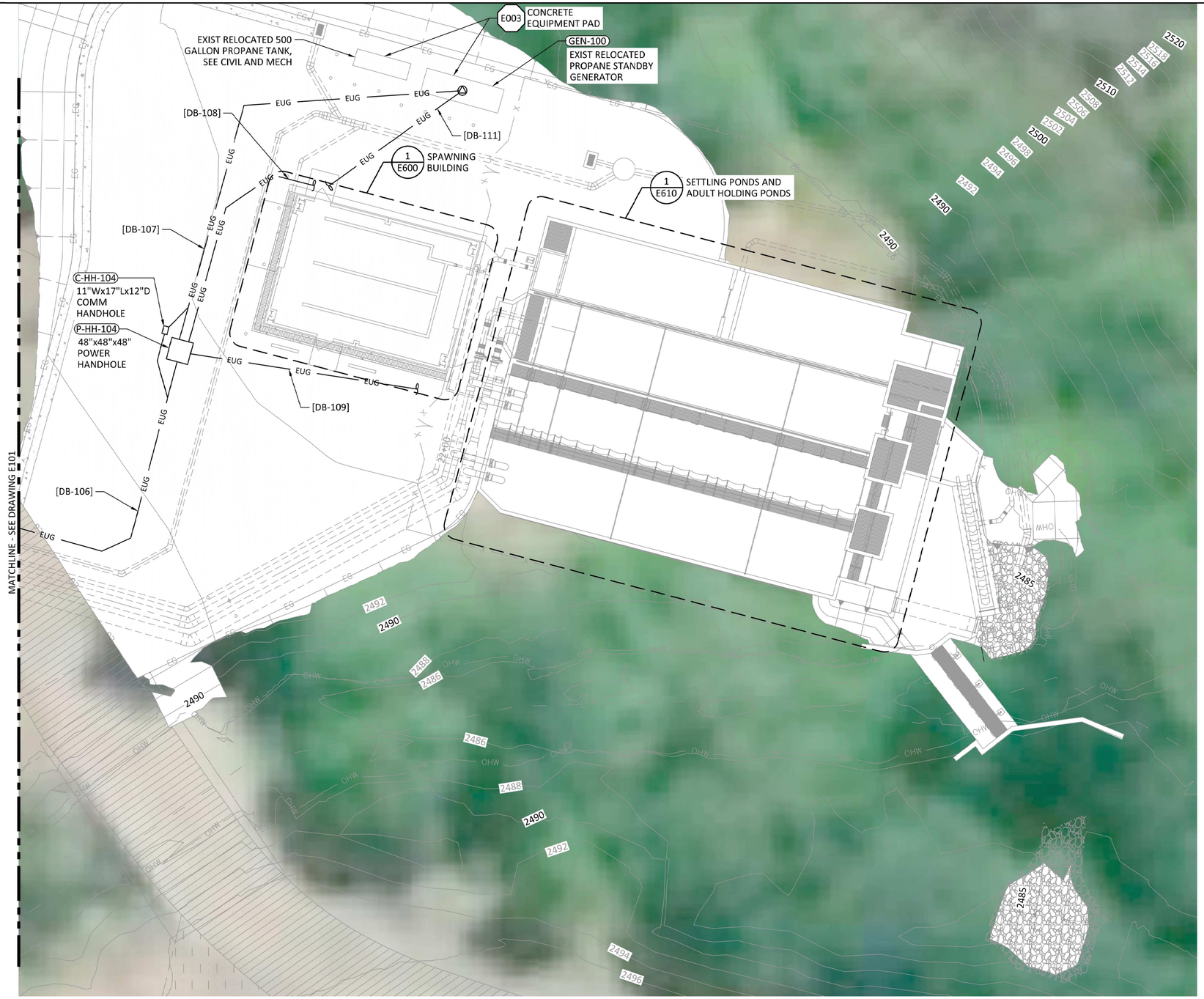
KLAMATH RIVER RENEWAL CORPORATION
FALL CREEK FISH HATCHERY
ELECTRICAL SITE NORTH PLAN

DESIGNED M. SKELTON
DRAWN D. JOHNSTON
CHECKED J. BAKKEN
PROJECT DATE 10/28/20

DRAWING
E101

JOB NO: 000000

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ELECTRICAL SITE SOUTH PLAN

SCALE: 1"= 10'

0" 10' 20'

1 E100

SHEET NOTES:

1. SEE DWG GE006 FOR DUCT BANK SCHEDULE.

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REGISTERED PROFESSIONAL ENGINEER
JOHN ARNE BAKKEN
No. E-16301
ELECTRICAL
STATE OF CALIFORNIA
October 28, 2020

WARNING
0 1/2 1
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McMILLEN JACOBS ASSOCIATES

KLAMATH RIVER RENEWAL CORPORATION

KLAMATH RIVER RENEWAL CORPORATION
FALL CREEK FISH HATCHERY
ELECTRICAL SITE SOUTH PLAN

DESIGNED M. SKELTON
DRAWN D. JOHNSTON
CHECKED J. BAKKEN
PROJECT DATE 10/28/20

DRAWING
E102

JOB NO: 000000

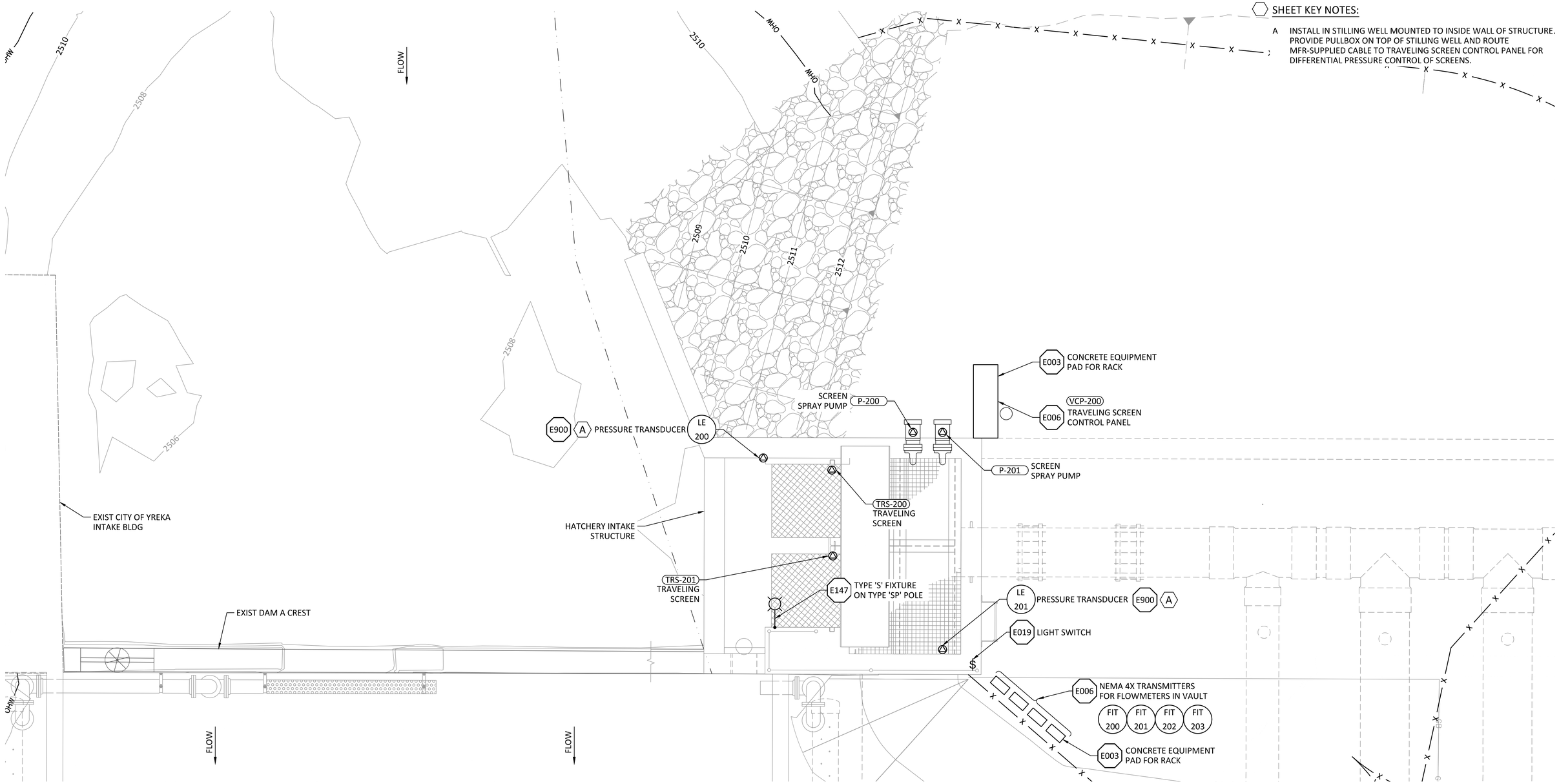
Path: C:\Vault20\Klamath River Renewal Corp\Fall Creek Facility\E102.dwg Plot date: Oct 27, 2020 10:54am, CAD User: Guerrero

SHEET NOTES:

1. SEE DWG GE004 FOR PANEL SCHEDULES AND LUMINAIRE SCHEDULE.
2. SEE DWGS GE007 AND GE008 FOR CONDUIT AND CABLE SCHEDULES.
3. SEE DWGS E503 THROUGH E505 FOR SCADA CONTROL DIAGRAMS.

SHEET KEY NOTES:

A INSTALL IN STILLING WELL MOUNTED TO INSIDE WALL OF STRUCTURE. PROVIDE PULLBOX ON TOP OF STILLING WELL AND ROUTE MFR-SUPPLIED CABLE TO TRAVELING SCREEN CONTROL PANEL FOR DIFFERENTIAL PRESSURE CONTROL OF SCREENS.



INTAKE STRUCTURE POWER AND LIGHTING PLAN (1 / E101)

SCALE: 1"= 2'

0' 2' 4'

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October 28, 2020

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KLAMATH RIVER RENEWAL CORPORATION

KLAMATH RIVER RENEWAL CORPORATION
FALL CREEK FISH HATCHERY
INTAKE STRUCTURE
POWER AND LIGHTING PLAN

DESIGNED M. SKELTON
DRAWN D. JOHNSTON
CHECKED J. BAKKEN
PROJECT DATE 10/28/20

DRAWING
E200

JOB NO: 000000

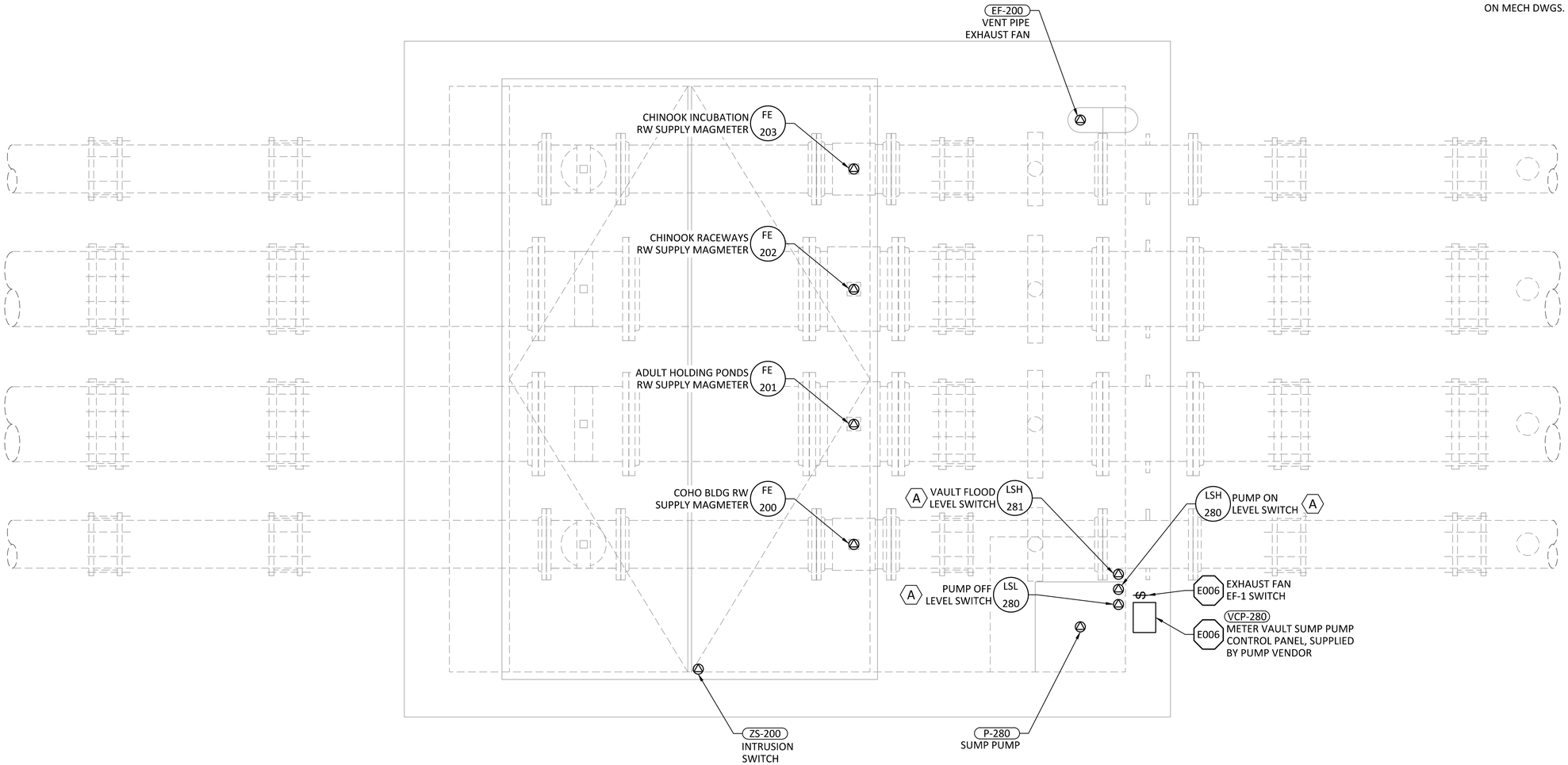
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SHEET NOTES:

1. SEE DWG E200 FOR INSTRUMENT TRANSMITTERS LOCATION.
2. SEE DWGS GE007 AND GE008 FOR CONDUIT AND CABLE SCHEDULES.
3. SEE DWGS E503 THROUGH E505 FOR SCADA CONTROL DIAGRAMS.

SHEET KEY NOTES:

A AFFIX TO PUMP DISCHARGE PIPE USING MFR-SUPPLIED HARDWARE. FIELD-ADJUST SUCH THAT SWITCHES ACTUATE AT ELEVATIONS SHOWN ON MECH DWGS.



METER VAULT POWER PLAN

SCALE: 3/4"= 1'-0"

0' 1' 2'

1 / E101

REV	DATE	BY	DESCRIPTION
0	10/28/20	MDM	ISSUED FOR CONSTRUCTION

REGISTERED PROFESSIONAL ENGINEER
JOHN ARNE BAKKEN
No. E-16301
ELECTRICAL
STATE OF CALIFORNIA
October 28, 2020

WARNING

0 1/2 1

IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE.

McMILLEN JACOBS ASSOCIATES

KLAMATH RIVER RENEWAL CORPORATION

KLAMATH RIVER RENEWAL CORPORATION

FALL CREEK FISH HATCHERY

METER VAULT POWER PLAN

DESIGNED M. SKELTON

DRAWN D. JOHNSTON

CHECKED J. BAKKEN

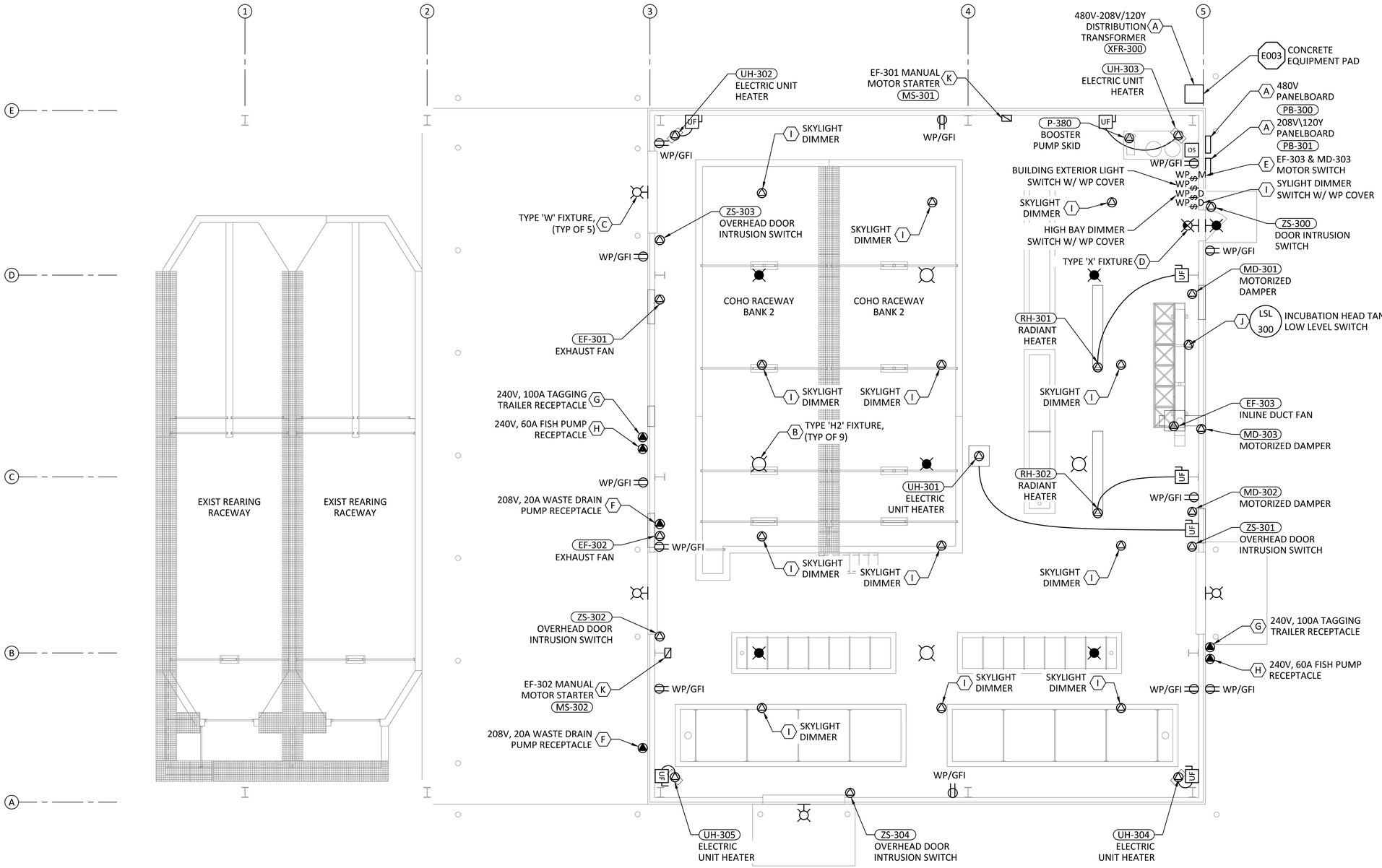
PROJECT DATE 10/28/20

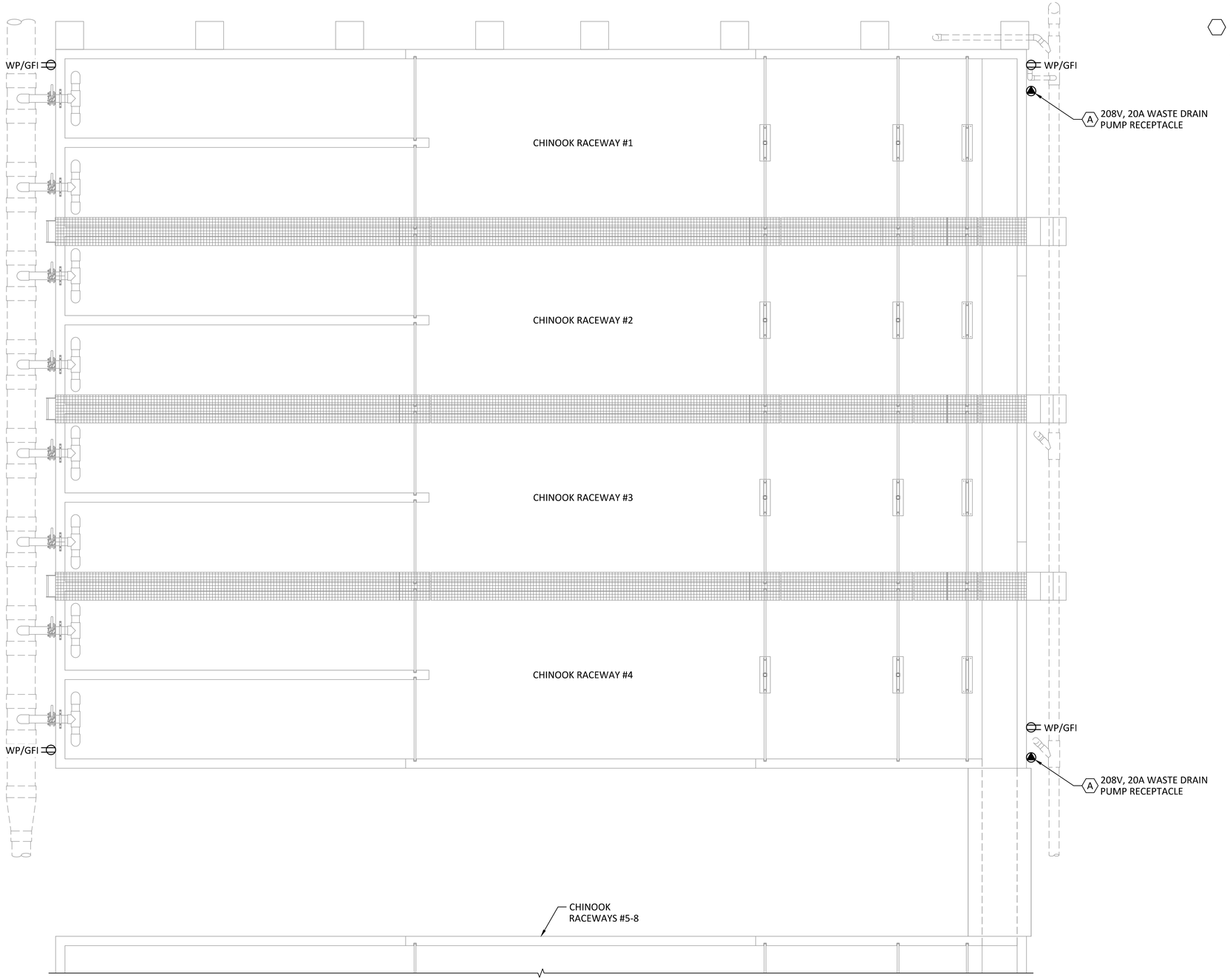
DRAWING

E201

JOB NO: 000000

Path: C:\Vault20\Klamath River Renewal Corp\Fall Creek Facility\E201.dwg Plot date: Oct 27, 2020 10:55am, CAD User: Guerrero


1
2
3
4
5
E
D
C
B
A
EXIST REARING RACEWAY
EXIST REARING RACEWAY
UH-302 ELECTRIC UNIT HEATER
UF
WP/GFI
I SKYLIGHT DIMMER
TYPE 'W' FIXTURE, (TYP OF 5) C
ZS-303 OVERHEAD DOOR INTRUSION SWITCH
WP/GFI
SKYLIGHT DIMMER I
COHO RACEWAY BANK 2
COHO RACEWAY BANK 2
EF-301 EXHAUST FAN
240V, 100A TAGGING TRAILER RECEPTACLE G
240V, 60A FISH PUMP RECEPTACLE H
SKYLIGHT DIMMER I
SKYLIGHT DIMMER I
B TYPE 'H2' FIXTURE, (TYP OF 9)
WP/GFI
208V, 20A WASTE DRAIN PUMP RECEPTACLE F
EF-302 EXHAUST FAN
WP/GFI
UH-301 ELECTRIC UNIT HEATER
SKYLIGHT DIMMER I
SKYLIGHT DIMMER I
ZS-302 OVERHEAD DOOR INTRUSION SWITCH
EF-302 MANUAL MOTOR STARTER K
MS-302
WP/GFI
208V, 20A WASTE DRAIN PUMP RECEPTACLE F
SKYLIGHT DIMMER I
LS
UH-305 ELECTRIC UNIT HEATER
ZS-304 OVERHEAD DOOR INTRUSION SWITCH
EF-301 MANUAL MOTOR STARTER K
MS-301
WP/GFI
480V-208V/120Y DISTRIBUTION TRANSFORMER A
XFR-300
UH-303 ELECTRIC UNIT HEATER
P-380 BOOSTER PUMP SKID
UF
OS
WP/GFI
BUILDING EXTERIOR LIGHT SWITCH W/ WP COVER
SKYLIGHT DIMMER I
HIGH BAY DIMMER SWITCH W/ WP COVER
TYPE 'X' FIXTURE D
RH-301 RADIANT HEATER
SKYLIGHT DIMMER I
RH-302 RADIANT HEATER
SKYLIGHT DIMMER I
WP/GFI
WP/GFI
WP/GFI



SHEET KEY NOTES:

A PROVIDE TWIST-LOCK, WATERTIGHT NEMA L6-20R OUTLET FOR PORTABLE WASTE DRAIN PUMP. RECEPTACLE SHALL BE HUBBELL OR EQUAL.

CHINOOK RACEWAYS #1-4 POWER PLAN

1 / E101

SCALE: 1/4"= 1'-0"

0' 4' 8'

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JOHN ARNE BAKKEN
No. E-16301
ELECTRICAL
STATE OF CALIFORNIA
October 28, 2020

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McMILLEN JACOBS ASSOCIATES

KLAMATH RIVER RENEWAL CORPORATION

KLAMATH RIVER RENEWAL CORPORATION

FALL CREEK FISH HATCHERY

CHINOOK RACEWAYS #1-4
POWER PLAN

DESIGNED M. SKELTON

DRAWN D. JOHNSTON

CHECKED J. BAKKEN

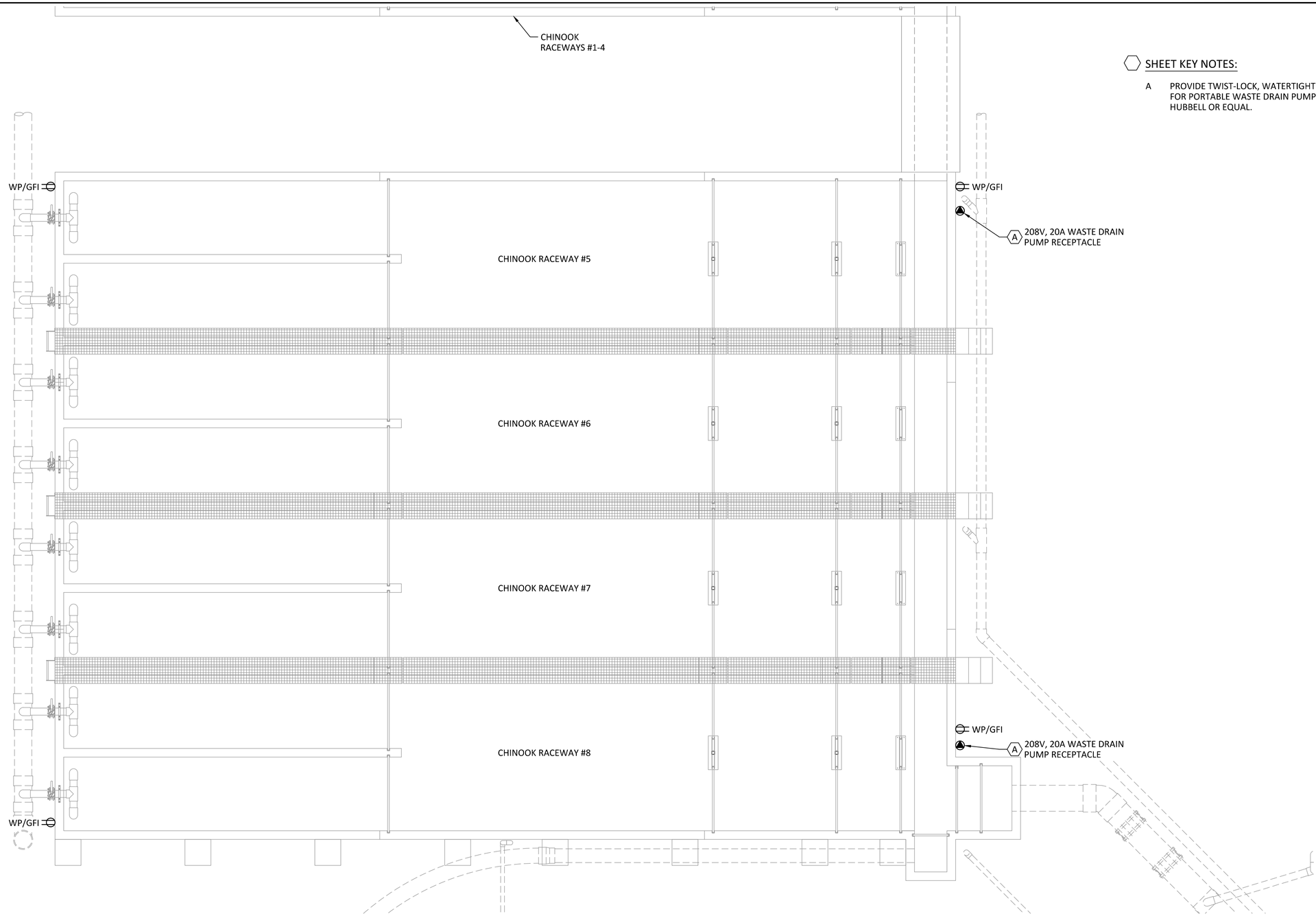
PROJECT DATE 10/28/20

DRAWING

E400

JOB NO: 000000

Path: C:\Vault20\Klamath River Renewal Corp\Fall Creek Facility\E400.dwg Plot date: Oct 27, 2020 10:55am, CAD User: Guerrero



SHEET KEY NOTES:

A PROVIDE TWIST-LOCK, WATERTIGHT NEMA L6-20R OUTLET FOR PORTABLE WASTE DRAIN PUMP. RECEPTACLE SHALL BE HUBBELL OR EQUAL.

CHINOOK RACEWAYS #5-8 POWER PLAN

1 / E101

SCALE: 1/4"= 1'-0"

0' 4' 8'

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JOHN ARNE BAKKEN
No. E-16301
ELECTRICAL
STATE OF CALIFORNIA
October 28, 2020

WARNING

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McMILLEN JACOBS ASSOCIATES

KLAMATH RIVER RENEWAL CORPORATION

KLAMATH RIVER RENEWAL CORPORATION

FALL CREEK FISH HATCHERY

CHINOOK RACEWAYS #5-8
POWER PLAN

DESIGNED M. SKELTON

DRAWN D. JOHNSTON

CHECKED J. BAKKEN

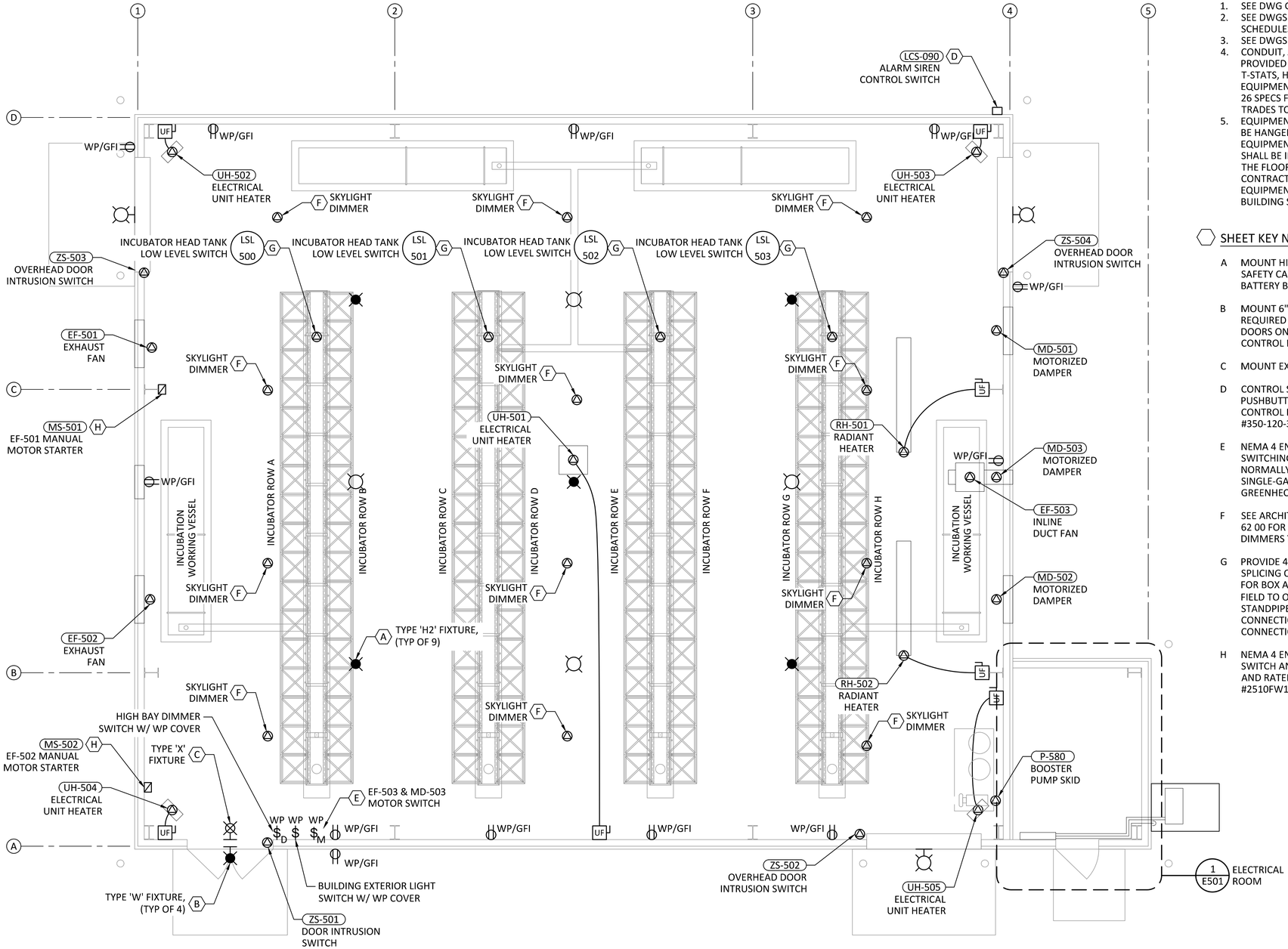
PROJECT DATE 10/28/20

DRAWING

E401

JOB NO: 000000

Path: C:\Vault20\Klamath River Renewal Corp\Fall Creek Facility\E401.dwg Plot date: Oct 27, 2020 10:55am, CAD User: Guerrero



CHINOOK INCUBATION BUILDING POWER AND LIGHTING PLAN

SCALE: 1/4"= 1'-0"

0' 4' 8'

1 E101

SHEET NOTES:

1. SEE DWG GE004 FOR LUMINAIRE SCHEDULE.
2. SEE DWGS GE007 AND GE008 FOR CONDUIT AND CABLE SCHEDULES.
3. SEE DWGS E503 THROUGH E505 FOR SCADA CONTROL DIAGRAMS.
4. CONDUIT, JUNCTION BOXES, AND 120V WIRING SHALL BE PROVIDED BY DIV 26. HVAC CONTRACTOR SHALL PROVIDE T-STATS, HVAC-RELATED OCCUPANCY SENSORS, HVAC EQUIPMENT, AND LOW VOLTAGE WIRING. REFER TO DIV 23 AND 26 SPECS FOR SPECIFIC REQUIREMENTS. COORDINATE BETWEEN TRADES TO PROVIDE A COMPLETE HVAC SYSTEM.
5. EQUIPMENT WEIGHING 100 LBS AND LESS SHALL BE ALLOWED TO BE HANGED FROM WALL USING STANDARD METHODS. EQUIPMENT OVER 100 LBS INTENDED FOR WALL MOUNTING SHALL BE INSTALLED ON FRAMING CHANNEL SUPPORTED FROM THE FLOOR IN ACCORDANCE WITH STANDARD DETAIL E006. CONTRACTOR SHALL COORDINATE INSTALLATIONS OF EQUIPMENT TO BE INSTALLED IN SUCH A MANNER WITH BUILDING SUPPLIER AND OWNER'S REPRESENTATIVE.

SHEET KEY NOTES:

A MOUNT HIGH BAY FIXTURES AT 12' AFF USING CHAIN. PROVIDE SAFETY CABLE AND CORD LENGTH AS REQUIRED. PROVIDE BATTERY BACKUP IN FIXTURES AS SHOWN.

B MOUNT 6" ABOVE DOOR FRAME, CENTERED. PROVIDE CODE REQUIRED BATTERY BACKUP IN FIXTURES ABOVE PERSONNEL DOORS ONLY. ALL EXTERIOR LIGHTS SHALL BE WIRED FOR CONTROL FROM A SINGLE, MANUAL SWITCH.

C MOUNT EXIT SIGN 6" ABOVE DOOR, CENTERED.

D CONTROL STATION CONTAINING ALARM SIREN AND SILENCE PUSHBUTTON. SEE DWGS E503 THROUGH E505 FOR RELATED CONTROL DIAGRAMS. SIREN SHALL BE FEDERAL SIGNAL #350-120-30 OR EQUAL.

E NEMA 4 ENCLOSED MOTOR STARTER WITH HAND-OFF-AUTO SWITCHING, ELECTRONIC OVERLOAD, REMOTE RUN INPUT, AND NORMALLY OPEN AUX CONTROL CONTACT. INSTALL IN SINGLE-GANG JUNCTION BOX. MOTOR STARTER SHALL BE GREENHECK #MS-1P OR EQUAL.

F SEE ARCHITECTURAL DRAWINGS AND SPECIFICATION SECTION 08 62 00 FOR SKYLIGHT REQUIREMENTS. CONNECT SKYLIGHT DIMMERS THROUGH 0-10V DIMMER SWITCH.

G PROVIDE 4"X4"X3"H NONMETALLIC WATERTIGHT BOX FOR SPLICING OF CONDUCTORS. SEE MECH FOR MOUNTING DETAILS FOR BOX AND SWITCH. SWITCH HEIGHT SHALL BE ADJUSTED IN FIELD TO OPEN CONTACT APPROX 1-1/2" BELOW TOP OF STANDPIPE. PROVIDE LIQUIDTIGHT FLEXIBLE CONDUIT FOR CONNECTION TO BOX ON HEAD TANK AND WATERTIGHT CONNECTIONS.

H NEMA 4 ENCLOSED MANUAL MOTOR STARTER WITH TOGGLE SWITCH AND RED PILOT LIGHT. STARTER SHALL BE SINGLE-POLE AND RATED FOR 1 HP AT 120V. STARTER SHALL BE SQUARE D #2510FW1P OR APPROVED EQUAL.

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JOHN ARNE BAKKEN
No. E-16301
ELECTRICAL
STATE OF CALIFORNIA
October 28, 2020

WARNING
0 1/2 1
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McMILLEN JACOBS ASSOCIATES

KLAMATH RIVER RENEWAL CORPORATION

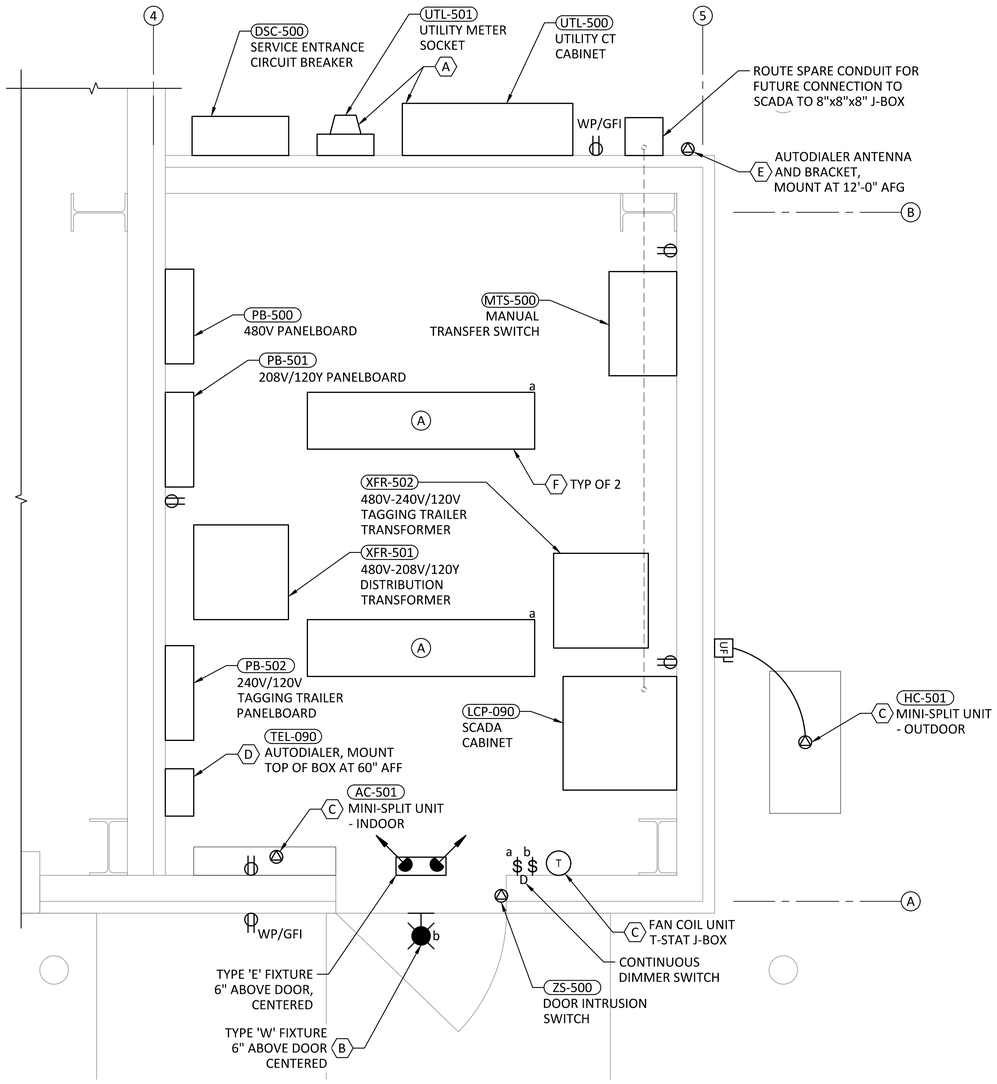
KLAMATH RIVER RENEWAL CORPORATION
FALL CREEK FISH HATCHERY
CHINOOK INCUBATION BUILDING POWER AND LIGHTING PLAN

DESIGNED M. SKELTON
DRAWN D. JOHNSTON
CHECKED J. BAKKEN
PROJECT DATE 10/28/20

DRAWING
E500

JOB NO: 000000

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CHINOOK INCUBATION BUILDING ELEC ROOM POWER AND LIGHTING PLAN

SCALE: 3/4"= 1'-0"

0' 1' 2'

1 / E500

SHEET NOTES:

1. SEE DWG E001 FOR OVERALL ONE-LINE DIAGRAM.
2. SEE DWGS GE004 AND GE005 FOR LUMINAIRE AND PANELBOARD SCHEDULES.
3. SEE DWGS GE007 AND GE008 FOR CONDUIT AND CABLE SCHEDULES.
4. SEE DWGS E503 THROUGH E505 FOR SCADA CONTROL DIAGRAMS.
5. SEE DWG E506 FOR HATCHERY INSTRUMENTATION AND CONTROL BLOCK DIAGRAM.
6. EQUIPMENT WEIGHING 100 LBS AND LESS SHALL BE ALLOWED TO BE HANGED FROM WALL USING STANDARD METHODS. EQUIPMENT OVER 100 LBS INTENDED FOR WALL MOUNTING SHALL BE INSTALLED ON FRAMING CHANNEL SUPPORTED FROM THE FLOOR IN ACCORDANCE WITH STANDARD DETAIL E006. CONTRACTOR SHALL COORDINATE INSTALLATIONS OF EQUIPMENT TO BE INSTALLED IN SUCH A MANNER WITH BUILDING SUPPLIER AND OWNER'S REPRESENTATIVE.

SHEET KEY NOTES:

A CONTRACTOR TO PROVIDE METER SOCKET, CT CABINET WITH CT MOUNTING BASE, CONDUIT, AND LOAD-SIDE CONNECTORS PER PACIFICORP REQUIREMENTS. PACIFICORP TO PROVIDE CURRENT TRANSFORMERS, METER, METER TEST SWITCH, AND SECONDARY METERING WIRING. COORDINATE WITH PACIFICORP.

B LIGHT SHALL ONLY TURN ON BY MANUAL SWITCH OR UPON LOSS OF NORMAL POWER.

C CONDUIT, JUNCTION BOXES, AND 120V WIRING SHALL BE PROVIDED BY DIV 26. HVAC CONTRACTOR SHALL PROVIDE T-STAT, HVAC EQUIPMENT, AND LOW VOLTAGE WIRING. REFER TO DIV 23 AND 26 SPECS FOR SPECIFIC REQUIREMENTS. COORDINATE BETWEEN TRADES TO PROVIDE A COMPLETE HVAC SYSTEM.

D PROVIDE CELLULAR-BASED AUTODIALER WITH 8 INPUT CHANNELS MINIMUM AT 24 VDC IN ENCLOSURE WITH CLEAR LID. AUTODIALER SHALL BE OMNISITE #XR50-ENCV-120 OR APPROVED EQUAL. COORDINATE WIRELESS SERVICE WITH MANUFACTURER AND OWNER AND PROVIDE SERVICE AND PROGRAMMING TO IMPLEMENT ALARM CALLOUT AS REQUIRED BY OWNER.

E PROVIDE OUTDOOR ANTENNA WITH BRACKET AND MANUFACTURER-SUPPLIED COAXIAL CABLE. ANTENNA AND BRACKET SHALL BE OMNISITE OUTDOOR PHANTOM KIT OR APPROVED EQUAL. PROVIDE 50 FEET OF COAXIAL CABLE MINIMUM.

F MOUNT FIXTURES AT 12' AFF USING CHAIN. PROVIDE SAFETY CABLE AND CORD LENGTH AS REQUIRED.

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JOHN ARNE BAKKEN
No. E-16301
ELECTRICAL
STATE OF CALIFORNIA
October 28, 2020

WARNING
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McMILLEN JACOBS ASSOCIATES

KLAMATH RIVER RENEWAL CORPORATION

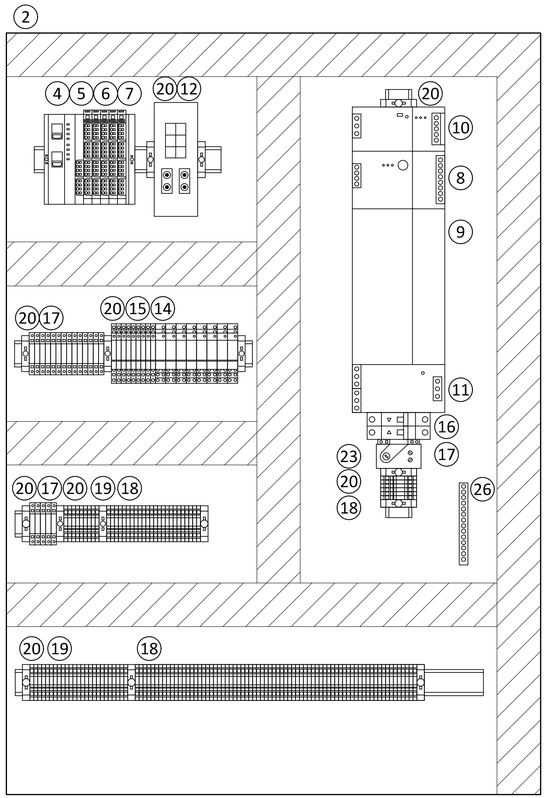
KLAMATH RIVER RENEWAL CORPORATION
FALL CREEK FISH HATCHERY
CHINOOK INCUBATION BUILDING ELEC ROOM POWER AND LIGHTING PLAN

DESIGNED M. SKELTON
DRAWN D. JOHNSTON
CHECKED J. BAKKEN
PROJECT DATE 10/28/20

DRAWING
E501

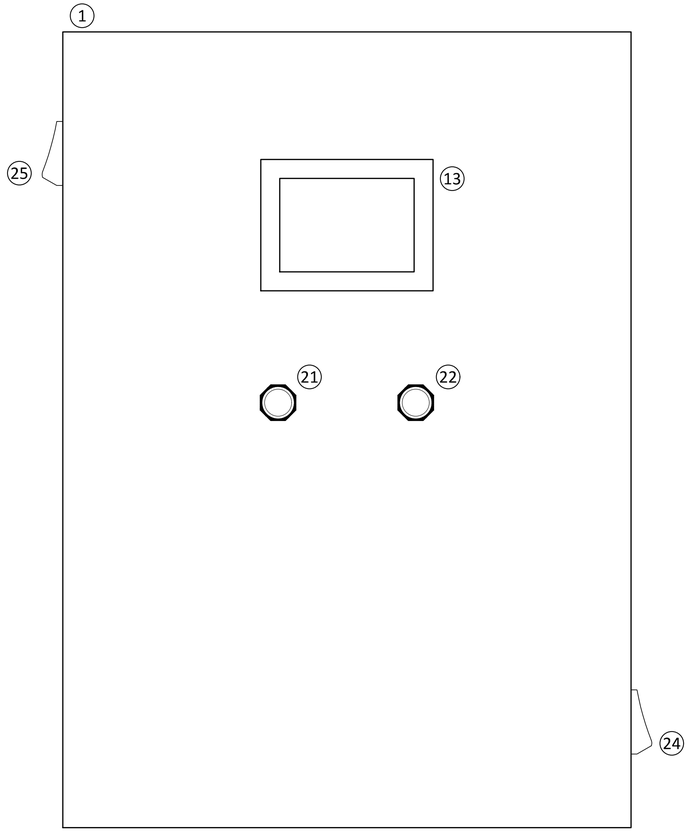
JOB NO: 000000

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SCADA CABINET BACKPANEL LAYOUT

SCALE: 3"= 1'-0" 0" 4" 8"



SCADA CABINET DOOR LAYOUT

SCALE: 3"= 1'-0" 0" 4" 8"

BILL OF MATERIALS					
ITEM	QTY	DESCRIPTION	TAG	MFR	PART NO.
1	1	ENCLOSURE, 42"H x 30"W x 10"D, NEMA 12, PAINTED MILD STEEL	LCP-090	HOFFMAN	CSD423010
2	1	BACKPANEL, 40.2" X 28.2", WHITE, 12 GA.	-	HOFFMAN	CP4230
3	1	DOOR STOP KIT	-	HOFFMAN	ADSTOPK
4	1	PROGRAMMABLE LOGIC CONTROLLER, DIN RAIL MOUNT, ETHERNET/IP, 2-RJ45	PLC-090	EMERSON	EPXEIP001
5	2	DISCRETE INPUT MODULE, 16 CH, POSITIVE LOGIC, 1-WIRE	-	EMERSON	EP-125F
6	1	DISCRETE OUTPUT MODULE, 8 CH, POSITIVE LOGIC, 2-WIRE	-	EMERSON	EP-2218
7	2	ANALOG INPUT MODULE, 4 CH, 4-20 mA, 2- OR 3-WIRE, DIAGNOSTICS	-	EMERSON	EP-3264
8	1	UNINTERRUPTIBLE POWER SUPPLY, 10A, 24 VDC	UPS-090	SOLA HD	SDU 10-24
9	1	BATTERY FOR UPS	-	SOLA HD	SDU 24-BAT
10	1	POWER SUPPLY, 240W 24 VDC/10A OUT, 120 VAC IN	PS-090	SOLA HD	SDN 10-24-100C
11	1	SURGE PROTECTION DEVICE, DIN RAIL MOUNT, 120 VAC	SPD-090	SOLA HD	STV 25K-10S
12	1	ETHERNET SWITCH, MANAGED, 6-RJ45, 2-FIBER SC 15km	MES-090	RED LION	708FXE2-SC-15
13	1	HUMAN MACHINE INTERFACE, 8.4" COLOR TFT, 1-RJ45	HMI-090	IDEC	HG3G-V8XT22MF-B
14	8	CONTROL RELAY, DPDT, 24 VDC COIL	-	PHOENIX CONTACT	2967060.0000
15	9	CONTROL RELAY, SPDT, 24 VDC COIL	-	PHOENIX CONTACT	2966171.0000
16	2	CIRCUIT BREAKER, 1 POLE	-	EATON	FAZ SERIES
17	20	FUSE MODULAR TERMINAL BLOCK	-	PHOENIX CONTACT	321 SERIES
18	100	TERMINAL BLOCK, FEED-THROUGH, SPRING CONNECTION	-	PHOENIX CONTACT	303 SERIES
19	35	GROUND TERMINAL BLOCK, FEED-THROUGH, SPRING CONNECTION	-	PHOENIX CONTACT	303 SERIES
20	15	END STOP	-	PHOENIX CONTACT	0800886
21	1	PUSH-TO-TEST LIGHT, 30 MM, LED, 24 VDC, AMBER	-	ALLEN BRADLEY	800T-QTH2A
22	1	PUSH-TO-TEST LIGHT, 30 MM, LED, 24 VDC, BLUE	-	ALLEN BRADLEY	800T-QTH2B
23	1	THERMOSTAT, 1 NO CONTACT, ADJUSTABLE 32 - 140 DEGREES F	-	STEGO	011419-00
24	1	FAN, 120 VAC, NEMA 12	-	HOFFMAN	60715141.0000
25	1	EXHAUST, NEMA 12	-	HOFFMAN	60715156.0000
26	1	GROUND BAR, 10 TERMINALS, #14 - #10	-	EATON	GBK10

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ELECTRICAL
STATE OF CALIFORNIA
October 28, 2020

WARNING
0 1/2 1
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McMILLEN JACOBS ASSOCIATES

KLAMATH RIVER RENEWAL CORPORATION

KLAMATH RIVER RENEWAL CORPORATION
FALL CREEK FISH HATCHERY

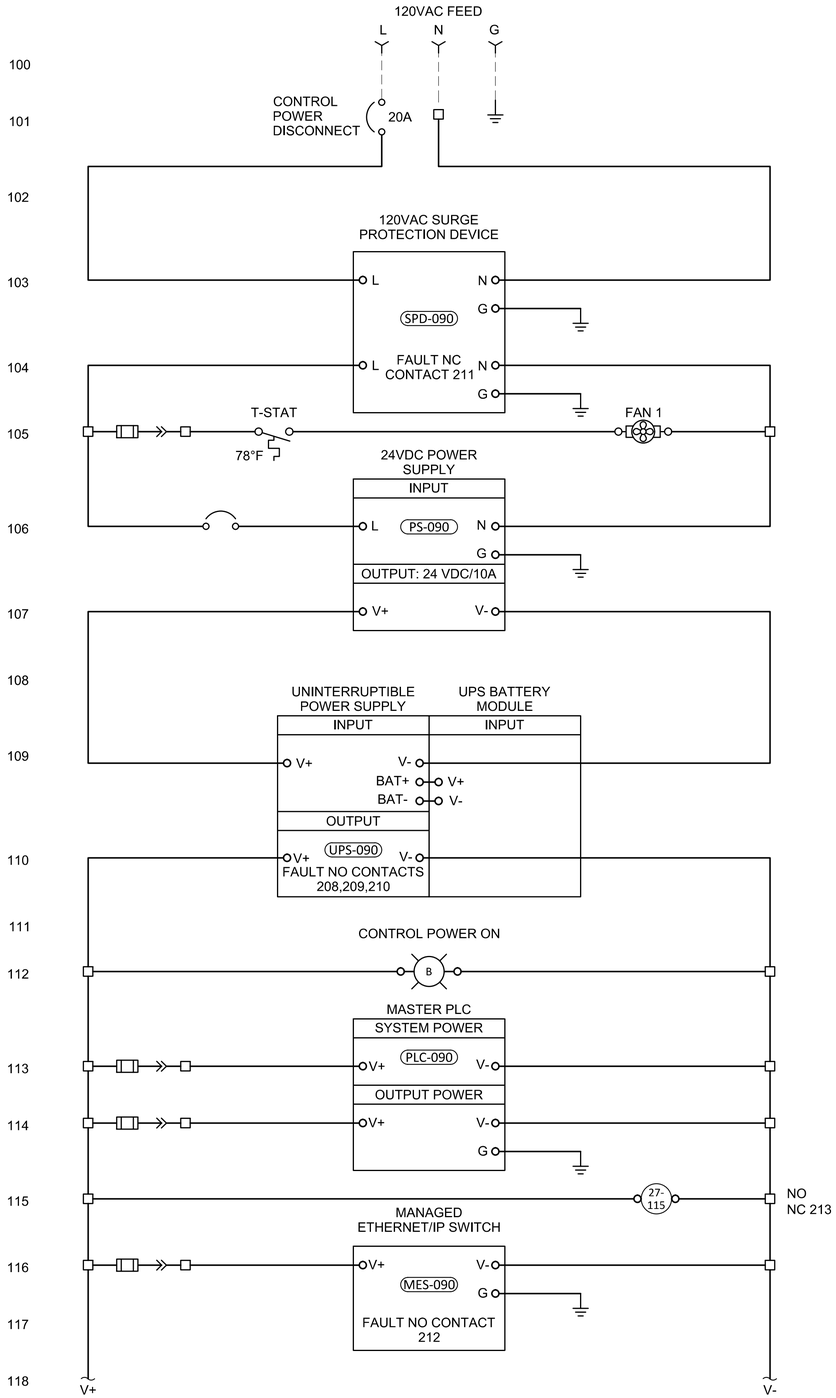
SCADA CABINET LAYOUT
AND BILL OF MATERIALS

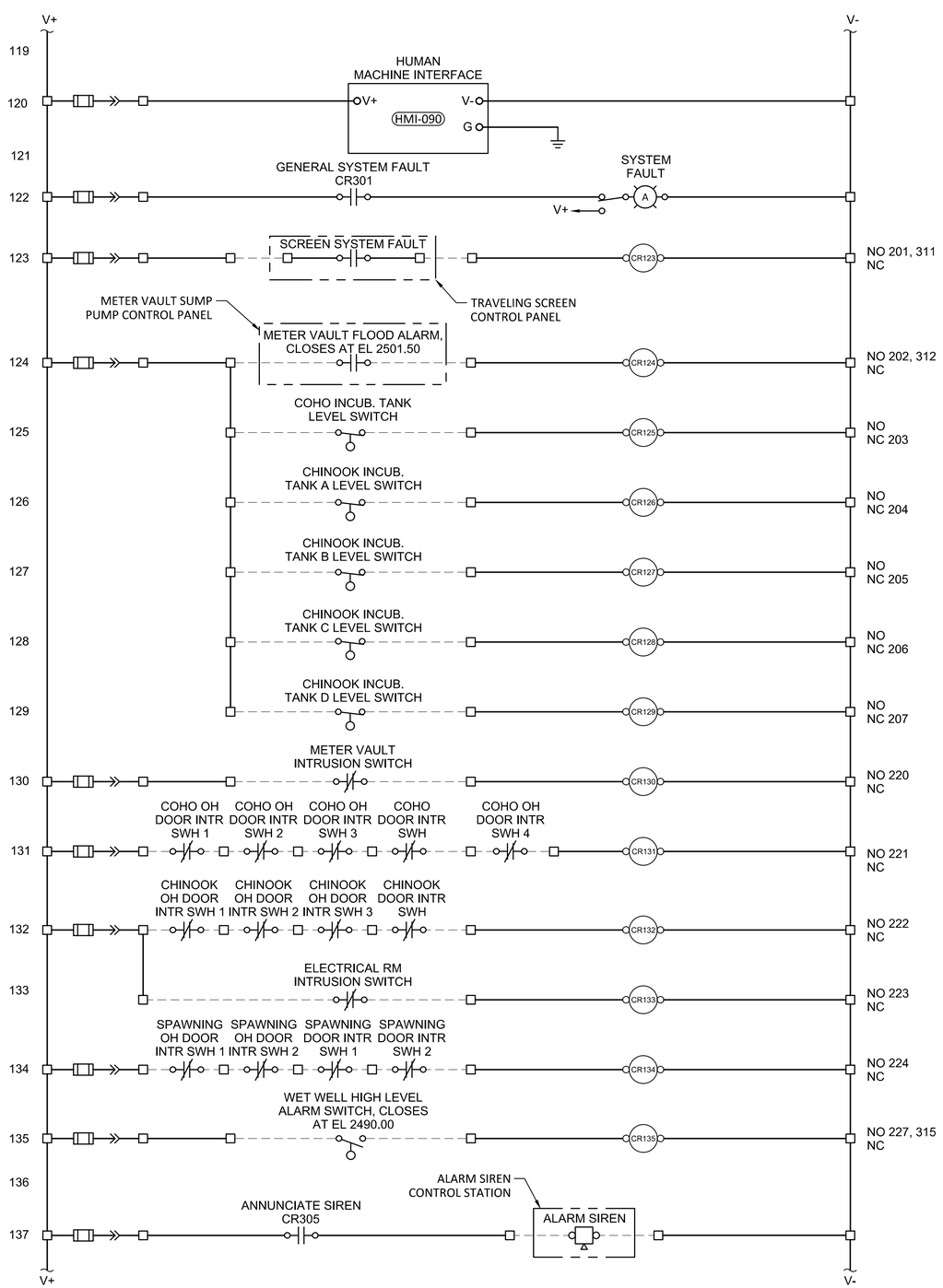
DESIGNED M. SKELTON
DRAWN B. ROONEY
CHECKED J. BAKKEN
PROJECT DATE 10/28/20

DRAWING
E502

JOB NO: 000000

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KLAMATH RIVER RENEWAL CORPORATION

KLAMATH RIVER RENEWAL CORPORATION
FALL CREEK FISH HATCHERY

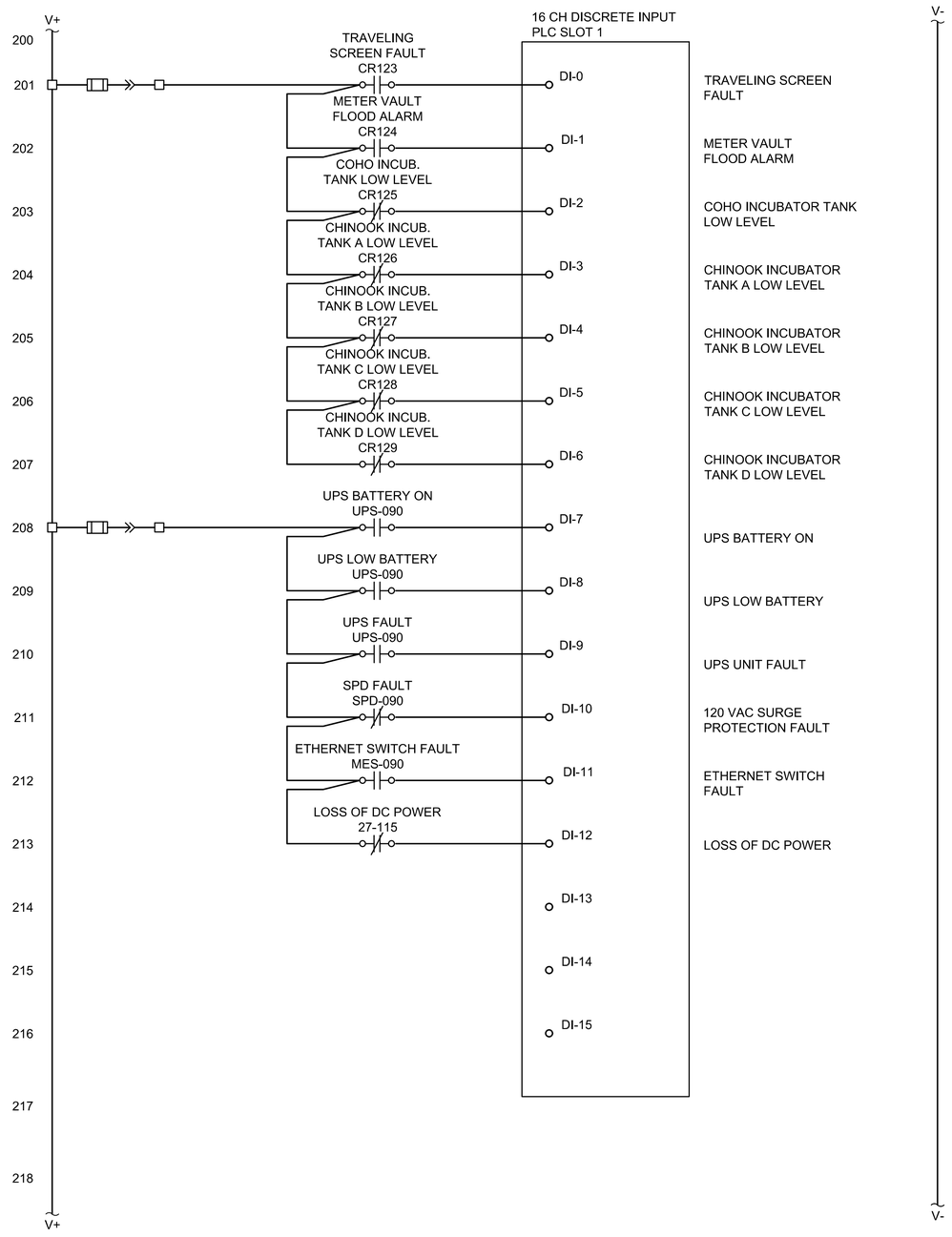
SCADA CABINET
CONTROL DIAGRAM 1

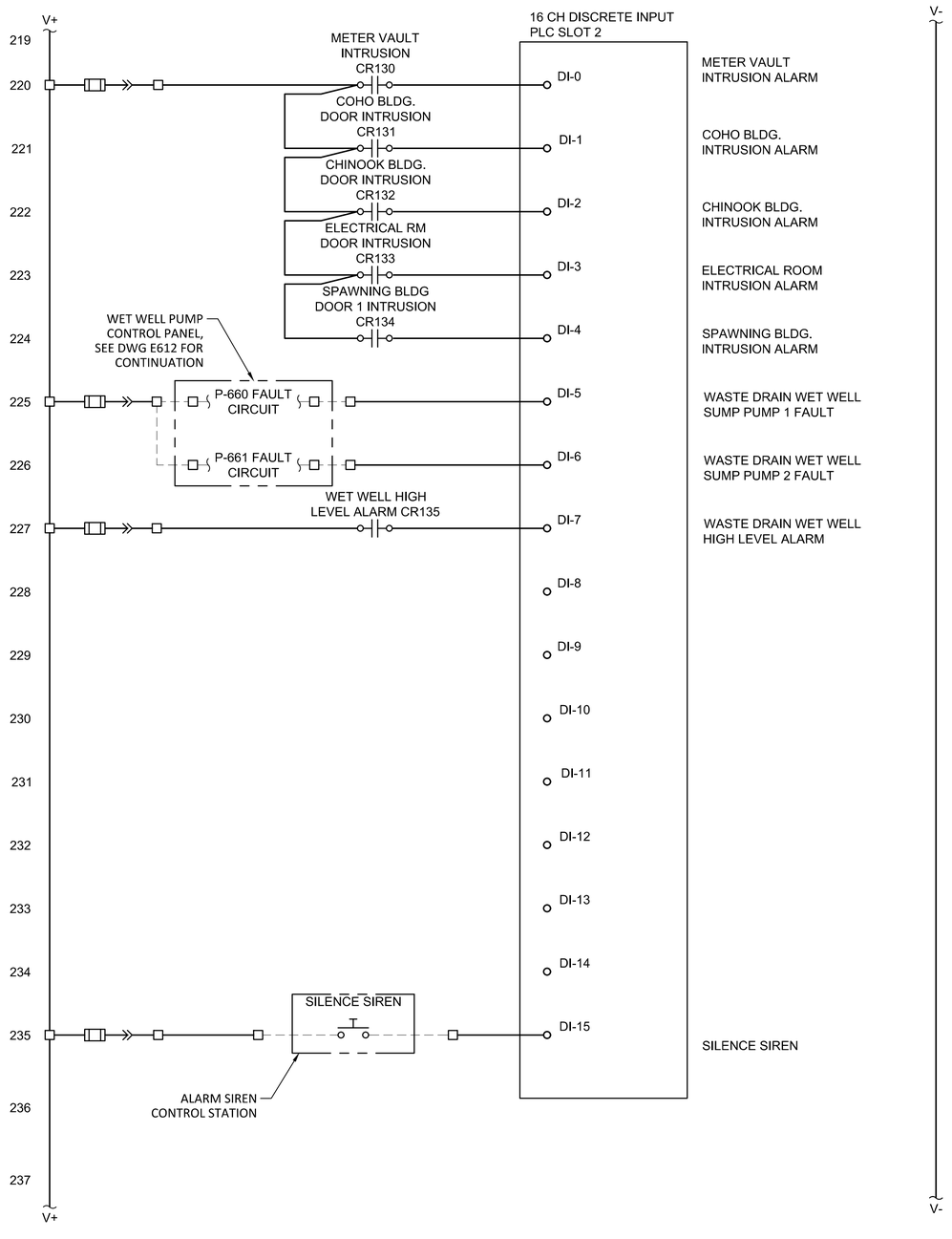
DESIGNED M. SKELTON
DRAWN B. ROONEY
CHECKED J. BAKKEN
PROJECT DATE 10/28/20

DRAWING
E503

JOB NO: 000000

Path: C:\Vault20\Klamath River Renewal Corp\Fall Creek Facility\E503.dwg Plot date: Oct 27, 2020 10:56am, CAD User: Guerrero





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KLAMATH RIVER RENEWAL CORPORATION

FALL CREEK FISH HATCHERY

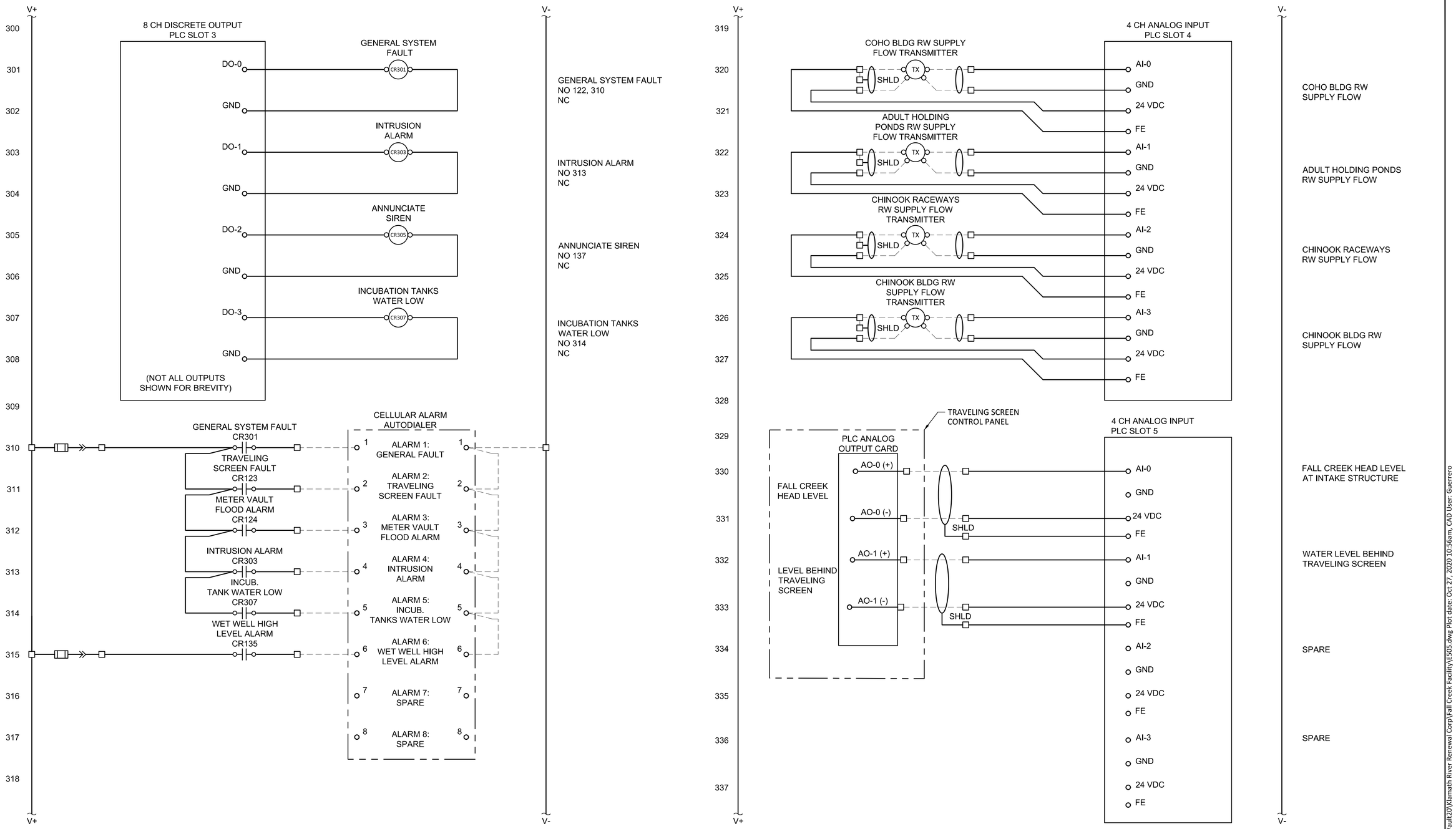
SCADA CABINET
CONTROL DIAGRAM 2

DESIGNED M. SKELTON
DRAWN B. ROONEY
CHECKED J. BAKKEN
PROJECT DATE 10/28/20

DRAWING
E504

JOB NO: 000000

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KLAMATH RIVER RENEWAL CORPORATION

KLAMATH RIVER RENEWAL CORPORATION
FALL CREEK FISH HATCHERY

SCADA CABINET
CONTROL DIAGRAM 3

DESIGNED M. SKELTON
DRAWN B. ROONEY
CHECKED J. BAKKEN
PROJECT DATE 10/28/20

DRAWING
E505

JOB NO: 000000

Path: C:\Vault20\Klamath River Renewal Corp\Fall Creek Facility\E505.dwg Plot date: Oct 27, 2020 10:56am, CAD User: Guerrero

120VAC POWER FROM LOCAL PANELBOARD

SURGE PROTECTION DEVICE (SPD-090)
120VAC IN
120VAC OUT
FAULT

POWER

24VDC POWER SUPPLY (PS-090)
120VAC IN
24VDC OUT

POWER

UNINTERRUPTIBLE POWER SUPPLY (UPS-090)
24VDC IN
BATTERY ON
LOW BATTERY
FAULT
24VDC

UPS BATTERY MODULE

RELAY 27-115
24VDC
DC POWER LOSS

MANAGED ETHERNET/IP SWITCH (MES-090)
24VDC
SC FO
RJ45
RJ45
RJ45
RJ45 RJ45 RJ45 FAULT

CAT-6 DIGITAL

HUMAN MACHINE INTERFACE (HMI-090)
RJ45
24VDC

CAT-6 DIGITAL

SCADA CABINET (LCP-090)

CAT-6 DIGITAL

EXIST STANDBY GENERATOR (GEN-100)
RJ45
E-STOP
ENGINE START

DISCRETE

REMOTE E-STOP
NC E-STOP CKT

MANUAL TRANSFER SWITCH (MTS-500)
RJ45
ENGINE START

DISCRETE

24VDC POWER BUS

INTERPOSING RELAYS

DISCRETE

MASTER PLC (PLC-090)
24VDC 24VDC RJ45

DI MODULE
DI MODULE
DO MODULE
AI MODULE
AI MODULE

DISCRETE

ANALOG

DIALER (TEL-090)
GEN FAULT
120VAC
SCREEN FAULT
METER VAULT FLOOD ALARM
INTRUSION ALARM
INCUB TANKS WATER LOW
WET WELL HIGH LEVEL ALARM

120VAC POWER FROM LOCAL PANELBOARD

DISCRETE

INTERPOSING RELAYS

VAULT HIGH LEVEL ALARM

METER VAULT SUMP PUMP CONTROL PANEL (VCP-280)
PMP OFF
HIGH LVL
PMP ON

PUMP OFF LEVEL
LEVEL SWITCH LSL 280
METER VAULT

PUMP ON LEVEL
LEVEL SWITCH LSH 280
METER VAULT

PUMP 1 FAULT
PUMP 2 FAULT

WET WELL PUMP CONTROL PANEL (LCP-660)
PUMPS OFF
LEAD PMP ON
LAG PMP ON
MOTOR 1 OT/LK
MOTOR 2 OT/LK

SILENCE
ANNUNCIATE

ALARM SIREN CONTROL STATION (LCS-090)

FAULT
4-20mA LEVEL OUTPUT 1
4-20mA LEVEL OUTPUT 2

TRAVELING SCREEN CONTROL PANEL (VCP-200)
4-20mA LEVEL INPUT 1
4-20mA LEVEL INPUT 2

4-20mA FLOW OUTPUT
FIT 200
IN

4-20mA FLOW OUTPUT
FIT 201
IN

4-20mA FLOW OUTPUT
FIT 202
IN

4-20mA FLOW OUTPUT
FIT 203
IN

FLOW TRANSMITTER (TYP OF 4)

VAULT HIGH LEVEL
LEVEL SWITCH LSH 281
METER VAULT

TANK HIGH LEVEL
LEVEL SWITCH LSL 300
COHO TANK

TANK HIGH LEVEL
LEVEL SWITCH LSL 500
CHINOOK TANK A

TANK HIGH LEVEL
LEVEL SWITCH LSL 501
CHINOOK TANK B

TANK HIGH LEVEL
LEVEL SWITCH LSL 502
CHINOOK TANK C

TANK HIGH LEVEL
LEVEL SWITCH LSL 503
CHINOOK TANK D

WELL HIGH LEVEL ALARM
LEVEL SWITCH LSH 662

PUMPS OFF LEVEL
LEVEL SWITCH LSL 660

LEAD PUMP ON LEVEL
LEVEL SWITCH LSH 660

LAG PUMP ON LEVEL
LEVEL SWITCH LSH 661

MOTOR OVERTEMP/ LEAK
SUMP PUMP 1 (P-660)

MOTOR OVERTEMP/ LEAK
SUMP PUMP 2 (P-661)

WASTE DRAIN WET WELL

15 EA

INTRUSION ALARMS

FACILITY INTRUSION SWITCHES
ZS-200 ZS-300
ZS-301 ZS-302
ZS-303 ZS-304
ZS-500 ZS-501
ZS-502 ZS-503
ZS-504 ZS-600
ZS-601 ZS-602
ZS-603

ANALOG

MSC

MSC

MSC

MSC

MAGNETIC FLOWMETER (TYP OF 4)

4-20mA FLOW OUTPUT
LEVEL ELEMENT LE 200
PRESSURE TRANSDUCER (TYP OF 2)
FALL CREEK HEAD LEVEL

4-20mA FLOW OUTPUT
FLOW ELEMENT FE 201
LEVEL BEHIND TRAVELING SCREEN

4-20mA FLOW OUTPUT
FLOW ELEMENT FE 200
COHO BLDG RW SUPPLY

4-20mA FLOW OUTPUT
FLOW ELEMENT FE 201
ADULT HOLDING PONDS RW SUPPLY

4-20mA FLOW OUTPUT
FLOW ELEMENT FE 202
CHINOOK RACEWAYS RW SUPPLY

4-20mA FLOW OUTPUT
FLOW ELEMENT FE 203
CHINOOK BLDG RW SUPPLY

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REGISTERED PROFESSIONAL ENGINEER
JOHN ARNE BAKKEN
No. E-16301
ELECTRICAL
STATE OF CALIFORNIA
October 28, 2020

WARNING
0 1/2 1
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McMILLEN JACOBS ASSOCIATES

KLAMATH RIVER RENEWAL CORPORATION

KLAMATH RIVER RENEWAL CORPORATION
FALL CREEK FISH HATCHERY

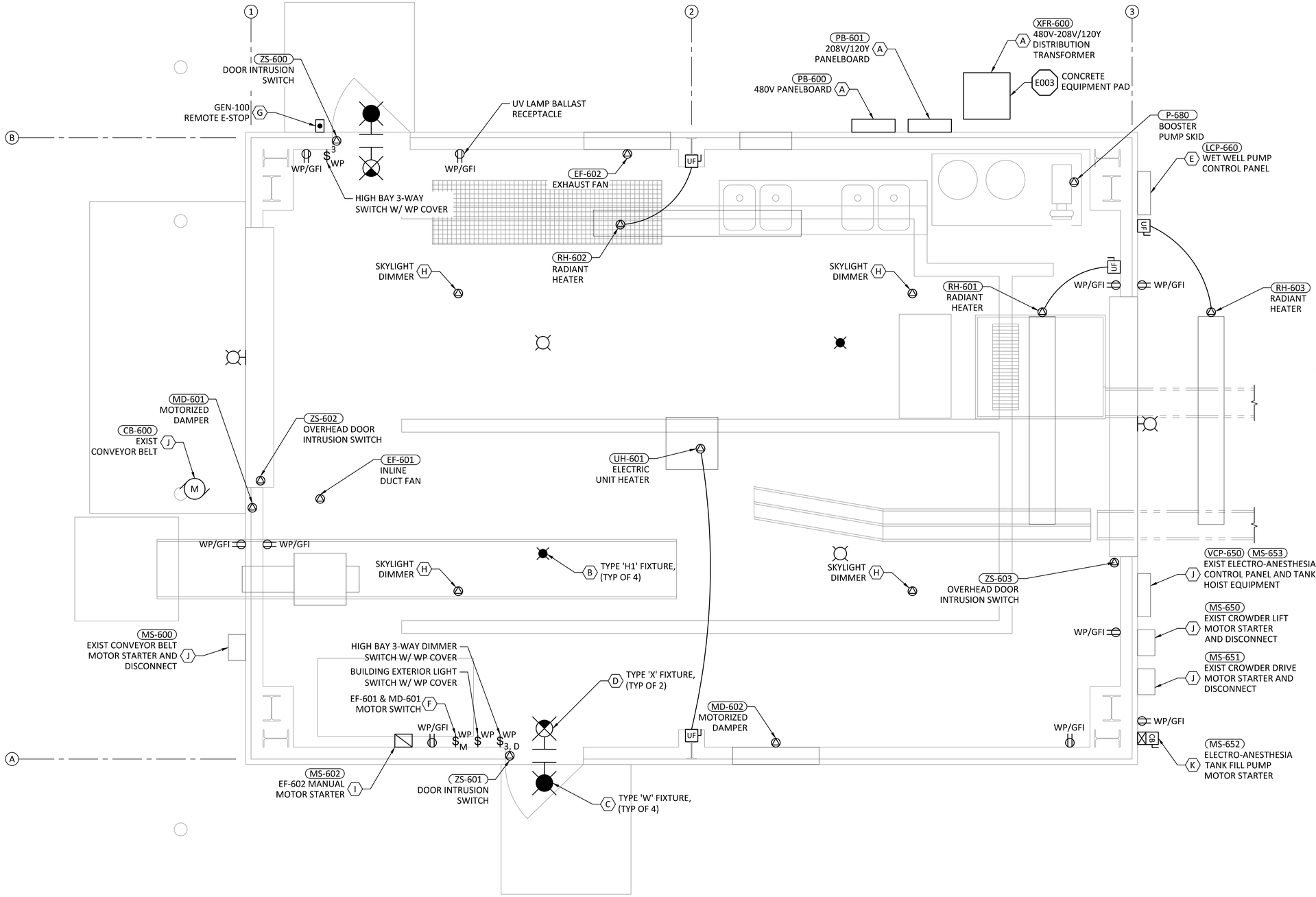
HATCHERY INSTRUMENTATION AND CONTROL BLOCK DIAGRAM

DESIGNED M. SKELTON
DRAWN D. JOHNSTON
CHECKED J. BAKKEN
PROJECT DATE 10/28/20

DRAWING
E506

JOB NO: 000000

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SPAWNING BUILDING POWER AND LIGHTING PLAN

SCALE: 1/2"= 1'-0"

1 / E102

SHEET NOTES:

1. SEE DWGS GE004 AND GE005 FOR LUMINAIRE AND PANELBOARD SCHEDULES.
2. SEE DWGS GE007 AND GE008 FOR CONDUIT AND CABLE SCHEDULES.
3. SEE DWGS E503 THROUGH E505 FOR SCADA CONTROL DIAGRAMS.
4. PRIOR TO RELOCATION OF EXISTING SYSTEMS FOR THE SPAWNING BUILDING AND HOLDING PONDS, CONTRACTOR SHALL FIELD VERIFY EXISTING CONTROL AND WIRING SYSTEMS AND CREATE POINT-TO-POINT WIRING DIAGRAMS AND PHOTO DOCUMENTATION OF EACH COMPONENT FOR SUBMITTAL TO OWNER AND OWNER'S REPRESENTATIVE. CONTRACTOR MAY PROCEED WITH RELOCATION OF THESE SYSTEMS ONLY AFTER ACCEPTANCE OF THESE SUBMITTALS.
5. CONDUIT, JUNCTION BOXES, AND 120V WIRING SHALL BE PROVIDED BY DIV 26. HVAC CONTRACTOR SHALL PROVIDE T-STATS, HVAC-RELATED OCCUPANCY SENSORS, HVAC EQUIPMENT, AND LOW VOLTAGE WIRING. REFER TO DIV 23 AND 26 SPECS FOR SPECIFIC REQUIREMENTS. COORDINATE BETWEEN TRADES TO PROVIDE A COMPLETE HVAC SYSTEM.
6. EQUIPMENT WEIGHING 100 LBS AND LESS SHALL BE ALLOWED TO BE HANGED FROM WALL USING STANDARD METHODS. EQUIPMENT OVER 100 LBS INTENDED FOR WALL MOUNTING SHALL BE INSTALLED ON FRAMING CHANNEL SUPPORTED FROM THE FLOOR IN ACCORDANCE WITH STANDARD DETAIL E006. CONTRACTOR SHALL COORDINATE INSTALLATIONS OF EQUIPMENT TO BE INSTALLED IN SUCH A MANNER WITH BUILDING SUPPLIER AND OWNER'S REPRESENTATIVE.

SHEET KEY NOTES:

A PROVIDE PANELBOARDS AND TRANSFORMER IN NEMA 3R WEATHERPROOF ENCLOSURES.

B MOUNT HIGH BAY FIXTURES AT 14' AFF USING CHAIN. PROVIDE SAFETY CABLE AND CORD LENGTH AS REQUIRED. PROVIDE BATTERY BACKUP IN FIXTURES AS SHOWN.

C MOUNT 6" ABOVE DOOR FRAME, CENTERED. PROVIDE CODE REQUIRED BATTERY BACKUP IN FIXTURES ABOVE PERSONNEL DOORS ONLY. ALL EXTERIOR LIGHTS SHALL BE WIRED FOR CONTROL FROM A SINGLE, MANUAL SWITCH.

D MOUNT EXIT SIGN 6" ABOVE DOOR, CENTERED.

E CONTAINS MOTOR STARTING, PROTECTION, AND CONTROL EQUIPMENT FOR WET WELL PUMPS. PUMPS SHALL OPERATE IN ALTERNATING LEAD-LAG CONTROL SCHEME. SEE DWG E611 FOR LAYOUT AND BILL OF MATERIAL. SEE DWG E612 FOR CONTROL DIAGRAM.

F NEMA 4 ENCLOSED MOTOR STARTER WITH HAND-OFF-AUTO SWITCHING, ELECTRONIC OVERLOAD, REMOTE RUN INPUT, AND NORMALLY OPEN AUX CONTROL CONTACT. INSTALL IN SINGLE-GANG JUNCTION BOX. MOTOR STARTER SHALL BE GREENHECK #MS-1P OR EQUAL.

G PROVIDE WEATHERPROOF E-STOP CONTROL STATION FOR SHUTTING DOWN THE PRIME MOVER OF THE STANDBY GENERATOR. E-STOP SHALL BE MOMENTARY PUSH-PULL TYPE AND HAVE 1 NC AND 1 NO CONTACT. CONTROL STATION SHALL BE SURFACE MOUNT WITH CLEAR COVER. E-STOP SHALL BE CLEARLY LABELED WITH "EMERGENCY STOP" AND "STANDBY GENERATOR". E-STOP CONTROL STATION SHALL BE STI #SS2274ES-EN OR APPROVED EQUAL.

H SEE ARCHITECTURAL DRAWINGS AND SPECIFICATION SECTION 08 62 00 FOR SKYLIGHT REQUIREMENTS. CONNECT SKYLIGHT DIMMERS THROUGH 0-10V DIMMER SWITCH.

I NEMA 4 ENCLOSED MANUAL MOTOR STARTER WITH TOGGLE SWITCH AND RED PILOT LIGHT. STARTER SHALL BE SINGLE-POLE AND RATED FOR 1 HP AT 120V. STARTER SHALL BE SQUARE D #2510FW1P OR APPROVED EQUAL.

J RELOCATE FROM IRON GATE FISH HATCHERY.

K PROVIDE NEMA 4 ENCLOSED COMBINATION FVNR MOTOR STARTER WITH MOTOR CIRCUIT PROTECTOR, HAND-OFF-AUTO CONTROL SWITCH, AND RED PILOT LIGHT. STARTER SHALL BE 480V, 3-POLE AND RATED FOR 2 HP AT 480V. STARTER SHALL ACCEPT REMOTE RUN INPUT FROM SPAWNING AREA CONTROL STATION. STARTER SHALL BE SQUARE D OR APPROVED EQUAL.

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REGISTERED PROFESSIONAL ENGINEER — JOHN ARNE BAKKEN — No. E-16301 — ELECTRICAL — STATE OF CALIFORNIA

October 28, 2020

WARNING

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McMILLEN JACOBS ASSOCIATES

KLAMATH RIVER RENEWAL CORPORATION

KLAMATH RIVER RENEWAL CORPORATION

FALL CREEK FISH HATCHERY

SPAWNING BUILDING POWER AND LIGHTING PLAN

DESIGNED M. SKELTON

DRAWN D. JOHNSTON

CHECKED J. BAKKEN

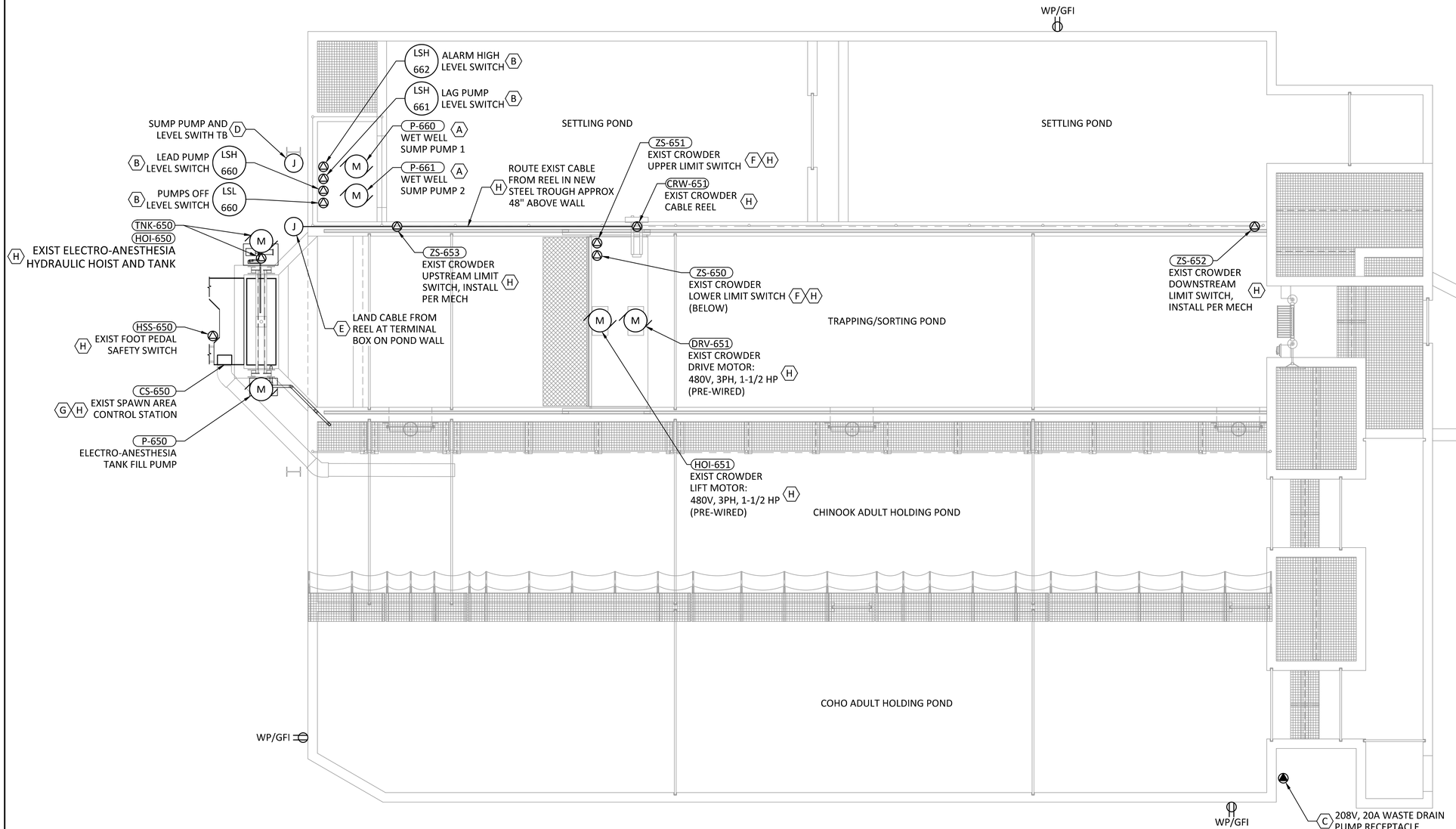
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E600

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SHEET NOTES:

1. SEE DWGS GE007 AND GE008 FOR CONDUIT AND CABLE SCHEDULES.
2. RECEPTACLE CIRCUITS SHALL BE #12 AWG MINIMUM.
3. SEE DWGS E503 THROUGH E505 FOR SCADA CONTROL DIAGRAMS.
4. PRIOR TO RELOCATION OF EXISTING SYSTEMS FOR THE SPAWNING BUILDING AND HOLDING PONDS, CONTRACTOR SHALL FIELD VERIFY EXISTING CONTROL AND WIRING SYSTEMS AND CREATE POINT-TO-POINT WIRING DIAGRAMS AND PHOTO DOCUMENTATION OF EACH COMPONENT FOR SUBMITTAL TO OWNER AND OWNER'S REPRESENTATIVE. CONTRACTOR MAY PROCEED WITH RELOCATION OF THESE SYSTEMS ONLY AFTER ACCEPTANCE OF THESE SUBMITTALS.

SHEET KEY NOTES:

A MOTOR STARTING, PROTECTION, AND CONTROL EQUIPMENT FOR WET WELL PUMPS IS LOCATED IN LCP-660. PUMPS SHALL OPERATE IN ALTERNATING LEAD-LAG CONTROL SCHEME, BASED ON LEVEL SWITCHES IN SUMP. SEE DWG E612 FOR WET WELL PUMP CONTROL DIAGRAM.

B LEVEL SWITCHES SHALL BE PROVIDED PER MECH REQUIREMENTS. SPLICE SWITCH CABLES AT INTERMEDIATE TERMINAL BOX ABOVE WET WELL, THEN CONTINUE AS REQUIRED BY CONDUIT AND CABLE SCHEDULES.

C PROVIDE TWIST-LOCK, WATERTIGHT NEMA L6-20R OUTLET FOR PORTABLE WASTE DRAIN PUMP. RECEPTACLE SHALL BE HUBBELL OR EQUAL.

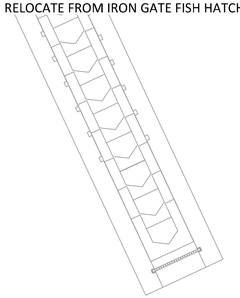
D PROVIDE NEMA 3R TERMINAL BOX FOR LANDING SUMP PUMP AND LEVEL SWITCH CABLES AT TERMINAL BLOCKS. MOUNT BOX ON NEARBY STRUCTURAL MEMBER USING STAINLESS STEEL HARDWARE.

E PROVIDE NEMA 3R TERMINAL BOX FOR LANDING CROWDER REEL CABLE AT TERMINAL BLOCKS. MOUNT USING FRAMING CHANNEL AND STAINLESS STEEL HARDWARE. EXISTING CABLE CONTAINS 12 #16 AWG 600V CONDUCTORS FOR TWO MOTORS AND TWO LIMIT SWITCHES. PROVIDE CABLE STRAIN RELIEF AT EDGE OF POND AND CABLE GLAND ENTRY TO SIDE OF BOX TO PREVENT CABLE DAMAGE DURING NORMAL OPERATION.

F RELOCATE LIMIT SWITCHES PER MECH REQUIREMENTS. REWIRE TO CABLE REEL FROM NEW LOCATIONS. PROVIDE HEAT SHRINK BUTT SPLICES WHERE SPLICING IS REQUIRED.

G INCLUDES EXIST CONTROLS FOR CROWDER DRIVE, CROWDER LIFT, ELECTRO-ANESTHESIA TANK HOIST, AND FILL PUMP.

H RELOCATE FROM IRON GATE FISH HATCHERY.



SETTLING PONDS AND ADULT HOLDING PONDS POWER PLAN

SCALE: 1/4"= 1'-0"

1 E102

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ELECTRICAL
STATE OF CALIFORNIA
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McMILLEN JACOBS ASSOCIATES

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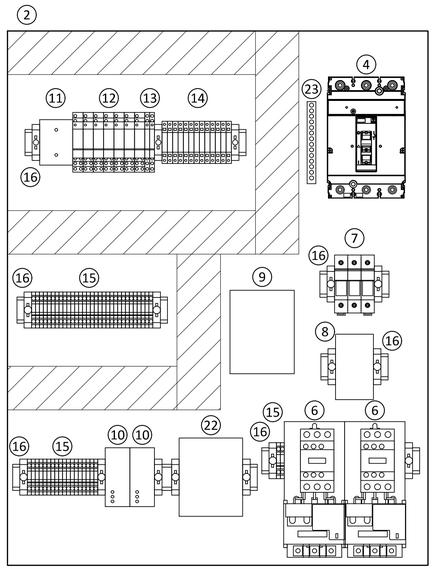
KLAMATH RIVER RENEWAL CORPORATION
FALL CREEK FISH HATCHERY
SETTLING PONDS AND ADULT HOLDING PONDS POWER PLAN

DESIGNED M. SKELTON
DRAWN D. JOHNSTON
CHECKED J. BAKKEN
PROJECT DATE 10/28/20

DRAWING
E610

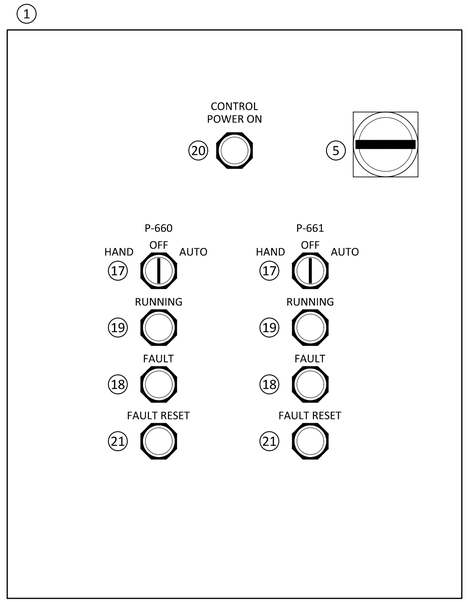
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PUMP CONTROL PANEL BACKPANEL LAYOUT

SCALE: 3"= 1'-0"



PUMP CONTROL PANEL DOOR LAYOUT

SCALE: 3"= 1'-0"

BILL OF MATERIALS					
ITEM	QTY	DESCRIPTION	TAG	MFR	PART NO.
1	1	ENCLOSURE, 30"H x 24"W x 10"D, NEMA 12, PAINTED MILD STEEL	LCP-660	HOFFMAN	CSD302410
2	1	BACKPANEL, 28.2" X 22.2", WHITE, 12 GA.	-	HOFFMAN	CP3024
3	1	DOOR STOP KIT	-	HOFFMAN	ADSTOPK
4	1	CIRCUIT BREAKER, 480V, 3 POLE, 15A	-	SQUARE D	HGL36030M38X
5	1	ROTARY DISCONNECT MECHANISM, SHAFT, & HANDLE	-	SQUARE D	S29340
6	2	"FVNR STARTER, 480V, 3-POLE, NEMA 00, 120V COIL, 1 NO; OVERLOAD RELAY, SOLID STATE, 4-20A, 1 NO, 1NC"	-	SQUARE D	T36AN13G7
7	1	FUSE HOLDER, 3P, INDICATING	-	LITTELFUSE	LPSM003ID
8	1	PHASE & VOLTAGE MONITORING RELAY, 480V, 2 NO	-	EATON	D65VMLS480C
9	1	CONTROL POWER TRANSFORMER, 480V-120V, PRIMARY AND SECONDARY FUSING W/ COVERS	-	SOLA HD	SBE SERIES
10	2	MOTOR PROTECTION RELAY, SEAL/LEAK, 120V	-	PUMP SUPPLIER	AS REQUIRED
11	1	DUPLEX ALTERNATING RELAY, DPDT, LEAD-LAG, 120V	-	MACROMATIC	ARP120A3
12	7	CONTROL RELAY, DPDT, 24 VDC COIL	-	PHOENIX CONTACT	2967060.0000
13	2	CONTROL RELAY, SPDT, 24 VDC COIL	-	PHOENIX CONTACT	2966171.0000
14	13	FUSE MODULAR TERMINAL BLOCK	-	PHOENIX CONTACT	321 SERIES
15	51	TERMINAL BLOCK, FEED-THROUGH, SPRING CONNECTION	-	PHOENIX CONTACT	303 SERIES
16	15	END STOP	-	PHOENIX CONTACT	0800886
17	2	CONTROL SWITCH, 30 MM, 3-POS, 120V, 1 NO, 1 NC	-	ALLEN BRADLEY	800T-J2A
18	2	PUSH-TO-TEST LIGHT, 30 MM, LED, 120V, AMBER	-	ALLEN BRADLEY	800T-QTH2A
19	2	PUSH-TO-TEST LIGHT, 30 MM, LED, 120V, RED	-	ALLEN BRADLEY	800T-QTH2R
20	1	PUSH-TO-TEST LIGHT, 30 MM, LED, 120V, BLUE	-	ALLEN BRADLEY	800T-QTH2B
21	2	PUSHBUTTON, 30 MM, 1 NC, MOMENTARY, BLACK FLUSH	-	ALLEN BRADLEY	800T-A2D2
22	1	HEATER, 250W, FIXED SETPOINT AT 41 F, 120V	-	STEGO	CSF 02821.9-06
23	1	GROUND BAR, 10 TERMINALS, #14 - #10	-	EATON	GBK10

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McMILLEN JACOBS ASSOCIATES

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FALL CREEK FISH HATCHERY

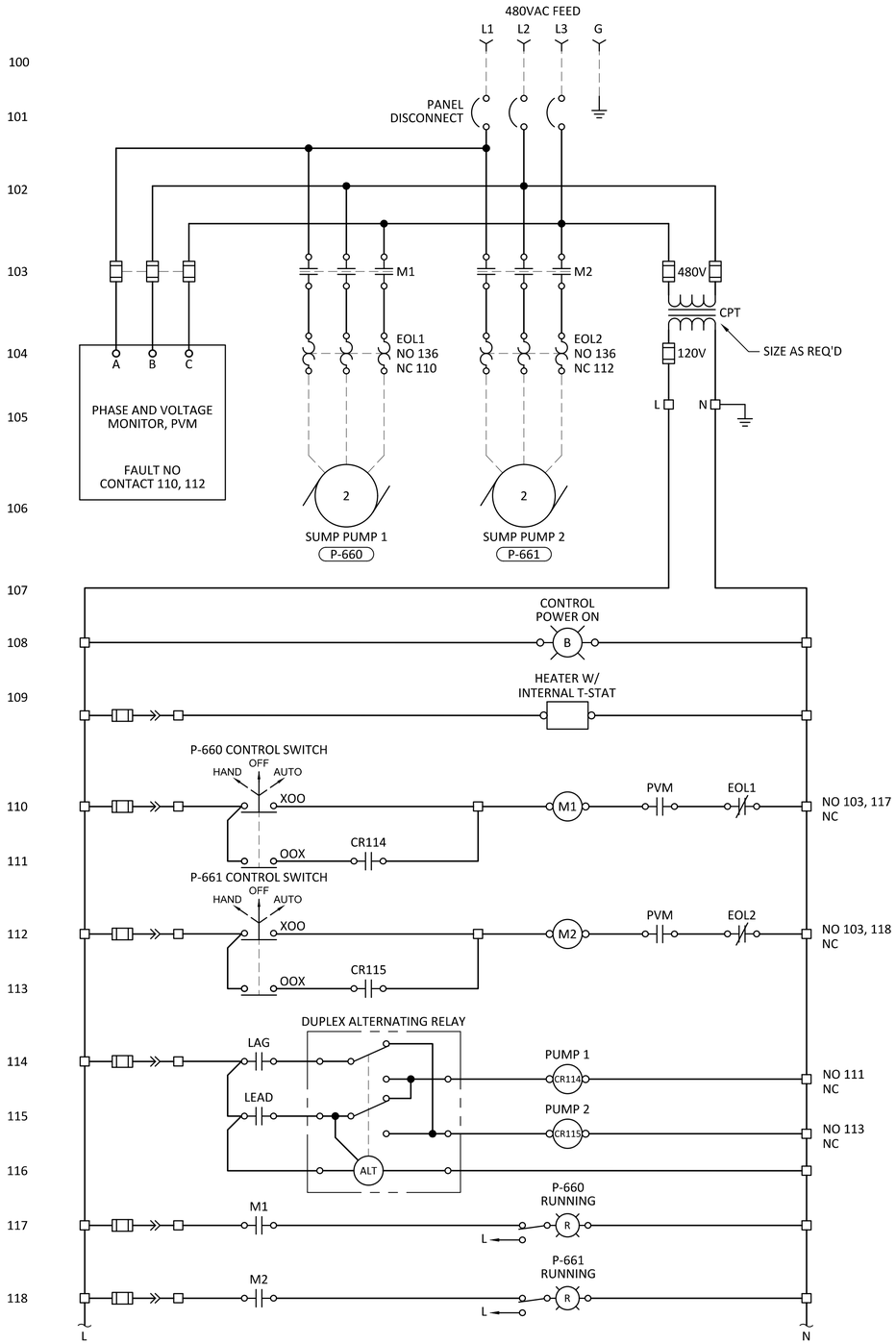
WET WELL PUMP CONTROL PANEL LAYOUT AND BILL OF MATERIALS

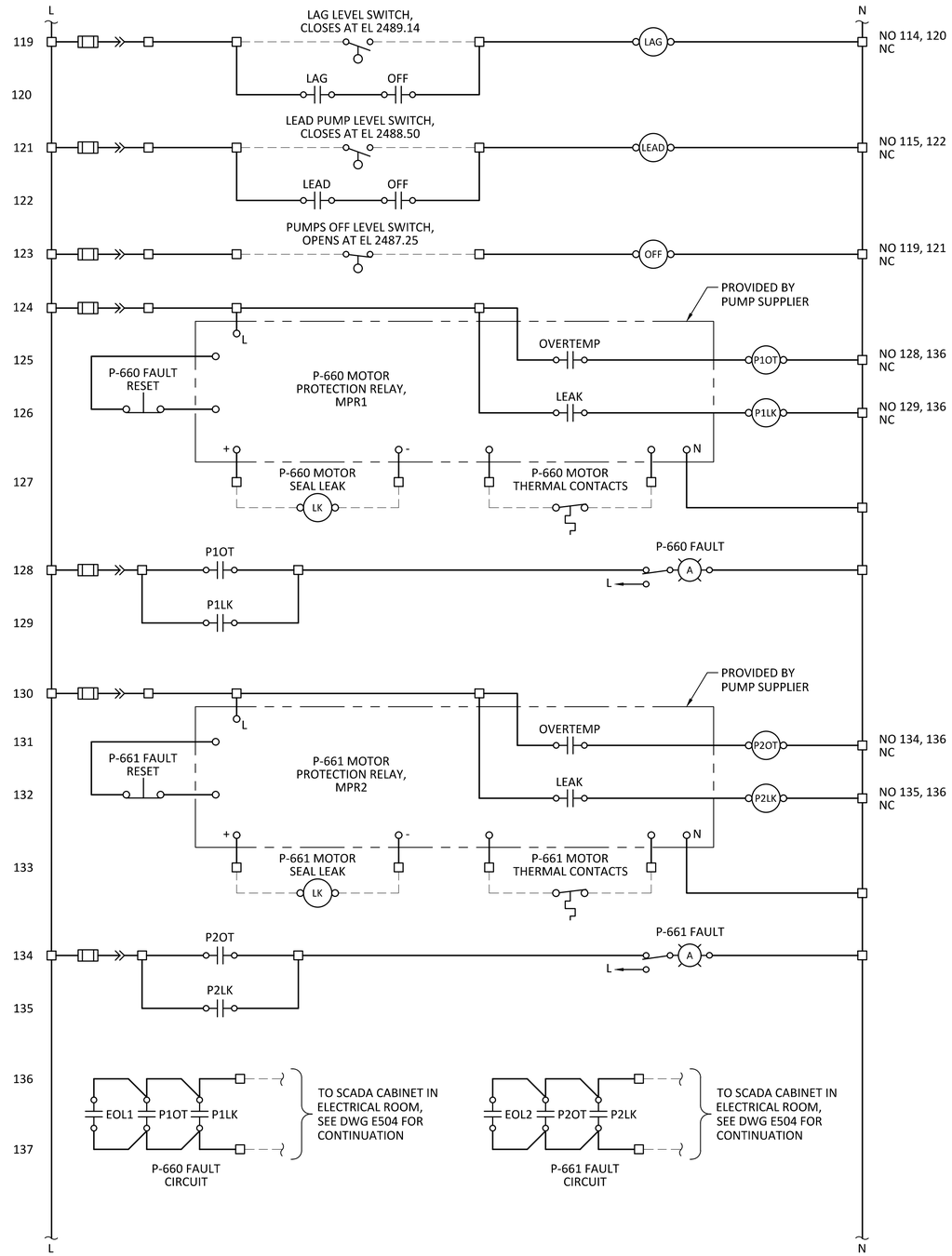
DESIGNED M. SKELTON
DRAWN D. JOHNSTON
CHECKED J. BAKKEN
PROJECT DATE 10/28/20

DRAWING
E611

JOB NO: 000000

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McMILLEN JACOBS ASSOCIATES

KLAMATH RIVER RENEWAL CORPORATION

KLAMATH RIVER RENEWAL CORPORATION
FALL CREEK FISH HATCHERY

WET WELL PUMP CONTROL PANEL CONTROL DIAGRAM

DESIGNED M. SKELTON
DRAWN D. JOHNSTON
CHECKED J. BAKKEN
PROJECT DATE 10/28/20

DRAWING
E612

JOB NO: 0000000

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