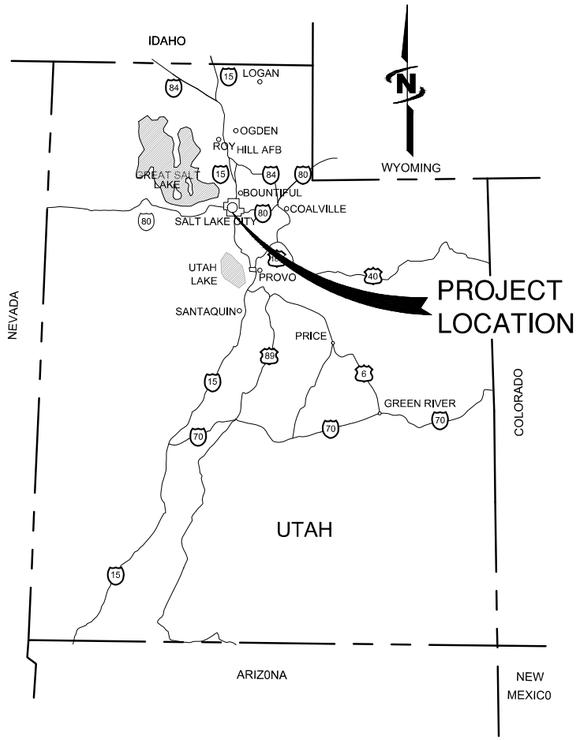
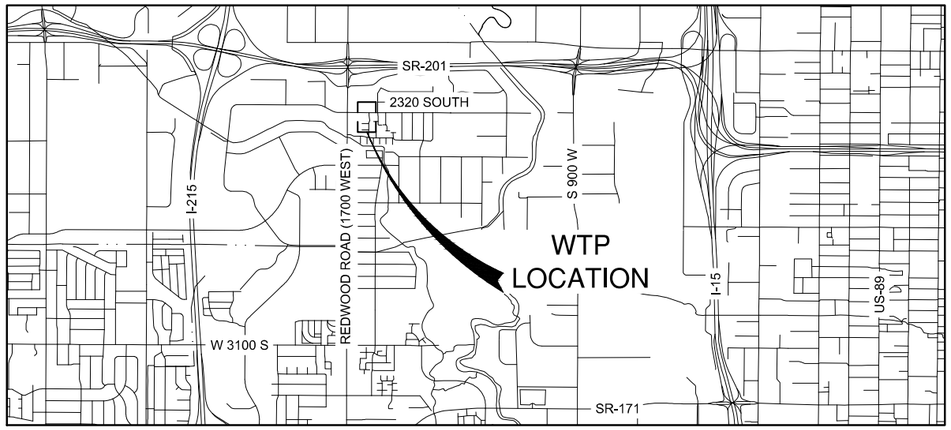
ANDERSON WATER TREATMENT PLANT

GRANGER-HUNTER IMPROVEMENT DISTRICT

SALT LAKE COUNTY, UTAH
1629 WEST 2320 SOUTH
BID SET
NOVEMBER 2024

PROJECT NO. 93-23-004





VICINITY MAP
NOT TO SCALE

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1) UTAH DIVISION OF DRINKING WATER STATE REVOLVING FUND LOAN.
2) BUREAU OF RECLAMATION, WATER SMART PROGRAM.

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BOARD OF TRUSTEES
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LAST UPDATED: 9/9/2024

SHEET NUMBER:
G-001

Plot Date:9/19/2024 \\UBICENTRAL\CLIENTS\UT\GRANGERHUNTER\PROJECTS\93-23-004_ANDERSONWTP\08-DESIGN\CAD\SHEET\GENERAL\93-23-004_G-001_COVER.DWG

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SET

NO.	DESCRIPTION	BY	APPR.	DATE
	REVISION			

ANDERSON WATER TREATMENT PLANT
GRANGER-HUNTER IMPROVEMENT DISTRICT

GENERAL (G)
SHEET INDEX
1629 WEST 2320 SOUTH

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ONE INCH
AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY

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CONTROLS & INSTRUMENTS

SYMBOL	DESCRIPTION
AE	ANALYZER ELEMENT
AIT	ANALYZING INDICATING TRANSMITTER
CGD	COMBUSTIBLE GAS DETECTOR
CIT	CONDUCTIVITY INDICATING TRANSMITTER
FE	FLOW ELEMENT
FIT	FLOW INDICATING TRANSMITTER
FS	FLOW SWITCH
LE	LEVEL ELEMENT
LIT	LEVEL INDICATING TRANSMITTER
LS	LEVEL SWITCH
LT	LEVEL TRANSMITTER
ME	MOISTURE ELEMENT
MV	MOTOR OPERATED VALVE OR GATE
OS	OVER TORQUE SWITCH
PIT	PRESSURE INDICATING TRANSMITTER
PS	PRESSURE SWITCH
SV	SOLENOID OPERATED VALVE
TE	TEMPERATURE ELEMENT
TS	TEMPERATURE SWITCH
TT	TEMPERATURE TRANSMITTER
ZS	LIMIT OR POSITION SWITCH
DS	DOOR SWITCH

ELECTRICAL LINETYPES

SYMBOL	DESCRIPTION
———	EXPOSED CONDUIT
– – – –	UNDERGROUND CONDUIT
—·—·—	BARE COPPER GROUND CONDUCTOR
———	EXISTING EXPOSED CONDUIT
– – – –	EXISTING UNDERGROUND CONDUIT
– – –E	CAPPED UNDERGROUND CONDUIT OR STUBBUP
———	NEW ELECTRICAL EQUIPMENT
– – – —	DETAIL VIEW OR MATCHING
-------	FUTURE
———o	CONDUIT DROP
———o	CONDUIT RISE

SCHEMATICS & DIAGRAMS

SYMBOL	DESCRIPTION
	LTC CONNECTION
	MC CONNECTION
X	MOTOR, X = HORSEPOWER
	DEVICE LOCATED AT REMOTE LOCATION.
	FUSE
	NODE OR CONNECTION
	TERMINAL LUG OR STRIP
	TRANSFORMER
	GROUND CONNECTION
	BOND TO METALLIC WATER PIPE
	BOND TO METALLIC WATER PIPE
	BOND TO BUILDING STEEL
	GENERATOR

LIGHTING

SYMBOL	DESCRIPTION
	FLUORESCENT LIGHT FIXTURE, SEE FIXTURE SCHEDULE.
	EMERGENCY LIGHTING, SEE FIXTURE SCHEDULE.
F#	LIGHTING FIXTURE TYPE - SEE FIXTURE SCHEDULE.
$	SINGLE POLE SWITCH
$3	3 WAY SWITCH
$m	WALL MOUNTED MOTION SWITCH - DUAL TECHNOLOGY
$T	MOTOR RATED TOGGLE SWITCH
$D	DIGITAL OVERRIDE SWITCH
$P	SINGLE POLE SWITCH WITH PILOT LIGHT
SP	RECESSED CEILING MOUNTED SPEAKER BY OTHERS
	WALL MOUNTED MOTION SENSOR
	CEILING MOUNTED MOTION SENSOR
	CEILING-MOUNTED EXIT LIGHT, SEE FIXTURE SCHEDULE
	WALL-MOUNTED EXIT LIGHT, SEE FIXTURE SCHEDULE
	RECESSED CAN LIGHT, SEE FIXTURE SCHEDULE

SECURITY / DATA

SYMBOL	DESCRIPTION
D 12	POLE MOUNTED DOME STYLE OUTDOOR HOUSING PTZ CAMERA
D 14	WALL MOUNTED DOME STYLE OUTDOOR HOUSING PTZ CAMERA
DS	SURFACE MOUNTED STAINLESS STEEL DOOR SWITCH.
CR	WALL MOUNTED CARD READER.
	DATA JACK
WAP	CEILING MOUNTED WIRELESS ACCESS POINT. PROVIDE (1) CAT6A PLENUM RATED CABLE WITHIN A 3/4" CONDUIT TO DATA RACK. MAX DISTANCE 300'-0".
CR	24 VDC ELECTRIC DOOR STRIKE.

SCHEMATICS & DIAGRAMS

SYMBOL	DESCRIPTION
	EMERGENCY STOP PUSH BUTTON (MAINTAINED)
	NORMALLY CLOSED PUSH BUTTON
	LOCKOUT STOP PUSH BUTTON
	NORMALLY OPEN PUSH BUTTON
T.C.	CONTACT - TIME DELAY T.C. = NORMALLY OPEN W/TIME DELAY CLOSING. I.C. - T.O. = NORMALLY OPEN WITH INSTANT CLOSING AND TIME DELAY OPENING. T.C.-T.O. = NORMALLY OPEN W/TIME DELAY CLOSING AND TIME DELAY OPENING AFTER DEENERGIZATION.
T.O.	CONTACT - TIME DELAY T.C. = NORMALLY CLOSED WITH TIME DELAY OPENING. T.O.-T.C. = NORMALLY CLOSED WITH TIME DELAY OPENING AND TIME DELAY CLOSING AFTER DEENERGIZATION. I.O.-T.C. = NORMALLY CLOSED WITH INSTANT OPENING AND TIME DELAY CLOSING.
	NORMALLY OPEN CONTACT
	NORMALLY CLOSED CONTACT
	LIMIT SWITCH
	PRESSURE SWITCH LOW
	PRESSURE SWITCH HIGH
	FLOW SWITCH
	LEVEL FLOAT SWITCH
	TEMPERATURE SWITCH
AMPS / POLES	DISCONNECT SWITCH SHOWN WITH RATING AND NUMBER OF POLES.
	FUSEHOLDER OR FUSEBLOCK
AMPS POLES	CIRCUIT BREAKER OR MOTOR CIRCUIT PROTECTOR, SHOWN WITH TRIP RATING AND NUMBER OF POLES.
H O A 00X	3 POSITION SELECTOR SWITCH HAND - OFF - AUTO, POSITION LEGEND: X=CLOSED 0=OPEN
ON OFF X0	2 POSITION SELECTOR SWITCH, POSITION LEGEND: X=CLOSED 0=OPEN
ICTO	TIMER RELAY CONTACT INSTANTANEOUS CLOSE TIME DELAY OPEN.
NOTC	TIMER RELAY CONTACT NORMALLY OPEN TIME DELAY CLOSE.
5	FULL VOLTAGE NONREVERSING (FVNR) MOTOR STARTER OR CONTACTER NUMBER DESIGNATES NEMA SIZE.
	RTU, PLC, OR RIO CONTACT
UM	UTILITY METER
X	BEACON ALARM LIGHT. LETTER INDICATES COLOR: R=RED, A=AMBER, B=BLUE, G=GREEN
X	PILOT LIGHT. LETTER INDICATES COLOR: R=RED, A=AMBER, B=BLUE, G=GREEN
R	RELAY
TD	TIME DELAY RELAY
AR	ALARM RELAY
ETM ETM	ELAPSED TIME METER
M	MOTOR STARTER OR CONTACTOR COIL
EOL	ELECTRONIC OVERLOAD RELAY
SSRV	SOLID STATE REDUCED VOLTAGE STARTER
VFD	VARIABLE FREQUENCY DRIVE
HF	HARMONIC FILTER
CT'S	CURRENT TRANSFORMER
	THERMAL OVERLOAD RELAY

POWER

SYMBOL	DESCRIPTION
	DUPLEX RECEPTACLE
	DUPLEX RECEPTACLE, RECESSED FLOOR MOUNTED
	DUPLEX RECEPTACLE, RECESSED CEILING MOUNTED
	QUADRAPLEX RECEPTACLE
	QUADRAPLEX RECEPTACLE, RECESSED FLOOR MOUNTED
	QUADRAPLEX RECEPTACLE, RECESSED CEILING MOUNTED
	ISOLATED GROUND TYPE DUPLEX RECEPTACLE
	SPECIAL PURPOSE OR WELDING OUTLET.
GFCI	GROUND FAULT CIRCUIT INTERRUPTER RECEPTACLE.
WP	WEATHERPROOF CONVENIENCE OUTLET
	FLUSH FLOOR DEVICE BOX
	HOME RUN TO PANEL - INDICATING 2 #12, #12 GND, 3/4" CONDUIT OR AS SHOWN.
	HOME RUN TO PANEL - INDICATING NUMBER OF CONDUCTORS - #12 OR AS SHOWN.
X-1,3,5	HOME RUN TO PANEL SHOWING BRANCH CIRCUIT NUMBERS.
	HATCH MARKS IN CONDUIT RUN DENOTES NUMBER OF CONDUCTORS IN CONDUIT. LONG HATCH MARK DENOTES GROUND CONDUCTOR. SIZE OF CONDUCTORS TO BE #12 AWG CONDUCTORS IN CONDUIT UNLESS NOTED OTHERWISE. UNMARKED CONDUITS SHALL BE 3/4" WITH 3 #12.
(E)	DENOTES EXISTING EQUIPMENT OR DEVICES
	THERMOSTAT
X M	MOTOR, X = HORSE POWER
F	CEILING EXHAUST FAN
J	JUNCTION BOX
	ELECTRICAL PANEL, POWER OR LIGHTING
	METER BASE
	COMBINATION MOTOR STARTER, SEE SPECS
	DISCONNECT SWITCH. (VOLTAGE RATING, NEMA ENCLOSURE, FUSE (NF-NO FUSE), POLES, SIZE (AMPS))
+0'-0"	THIS NOTATION ADJACENT TO WALL OUTLET SYMBOL DENOTES MOUNTING HEIGHT ABOVE FINISHED FLOOR TO CENTER OF OUTLET DEVICE. IF NOT NOTED, THE MOUNTING HEIGHT TO CENTER SHALL BE AS DETAILED OR SPECIFIED.
$M	MANUAL MOTOR STARTER
$T	MANUAL MOTOR STARTER WITH OVERLOADS
DM	DAMPER MOTOR
F#	LIGHTING FIXTURE TYPE - SEE FIXTURE SCHEDULE.
$	SINGLE POLE SWITCH
$3	3 WAY SWITCH
$4	4 WAY SWITCH
	COMMUNICATION/DATA JACK. CONDUIT TO ABOVE CEILING. OWNER TO RUN WIRING.
	DATA OR CATHODE RAY TUBE (CRT) TERMINAL OUTLET. +1'-6". (SINGLE, DOUBLE)
	TELEPHONE JACK OUTLET. 1'-6". (SINGLE, DOUBLE, QUAD)

FEEDER DESIGNATION LOGIC

6	1	P: 2 N: 3 G: 4	5

1. NUMBER OF CONDUITS
2. P: NUMBER - SIZE OF PHASE CONDUCTORS PER CONDUIT
3. N: NUMBER - SIZE OF NEUTRAL CONDUCTOR(S) PER CONDUIT
4. G: NUMBER- SIZE OF GROUND CONDUCTOR(S) PER CONDUIT
5. SIZE OF EACH CONDUIT IN INCHES
6. CONDUIT NUMBER

KEY TO CONDUCTOR SIZE & TYPE

14 = #14 AWG COPPER	6 = #6 AWG COPPER	1/0 = 1/0 AWG COPPER	250 = 250 KCMIL COPPER
12 = #12 AWG COPPER	4 = #4 AWG COPPER	2/0 = 2/0 AWG COPPER	350 = 350 KCMIL COPPER
10 = #10 AWG COPPER	2 = #2 AWG COPPER	3/0 = 3/0 AWG COPPER	500 = 500 KCMIL COPPER
8 = #8 AWG COPPER	1 = #1 AWG COPPER	4/0 = 4/0 AWG COPPER	750 = 750 KCMIL COPPER

ABBREVIATIONS

A	AMPERE	N	NEUTRAL
AFF	ABOVE FINISHED FLOOR	NEC	NATIONAL ELECTRICAL CODE
AI	ANALOG INPUT	NECA	NATIONAL ELECTRICAL CONTRACTOR ASSOCIATION
AIC	AMPS INTERRUPTING CAPACITY		
AFD	ADJUSTABLE FREQUENCY DRIVES	NOTC	NORMALLY OPEN TIMED CLOSED
AO	ANALOG OUTPUT	NPW	NON-POTABLE WATER
AS	AIR SUPPLY	NS	NITROGEN SUPPLY
ATS	AUTOMATIC TRANSFER SWITCH	NTS	NOT TO SCALE
BC	BYPASS CONTACTOR	NTU	TURBIDITY
C	CONDUIT	O.C.	ON CENTER
CB	CIRCUIT BREAKER	OF	OVERFLOW
CL2	CHLORINE	OIT	OPERATOR INTERFACE TERMINAL
CON	CONTACTOR	OL	OVERLOAD
CPM	CUSTOMER POWER MONITORING	OO	ON/OFF (MAINTAINED)
CPT	CONTROL POWER TRANSFORMER	OR	OFF-REMOTE
CU	COPPER, BARE	P	PHASE OR POLE
CV	CONTROL VALVE	PB	PULL BOX
DCS	DISTRIBUTED CONTROL SYSTEM	PCP	PROCESS CONTROL PANEL
DI	DISCRETE INPUT	PFR	PHAS/POWER FAILURE RELAY
DO	DISCRETE OUTPUT	PI	PULSE INPUT
DVDT	DIFFERENTIAL VOLTAGE/TIME	PLC	PROGRAMMABLE LOGIC CONTROLLER
DWG	DRAWING	PLI	PLANT INFLUENT
ELR	END OF LINE RESISTER	PKG	PACKAGE
ETM	ELAPSED TIME METER	PMP	PUMP
EOL	ELECTRONIC OVERLOAD	PNL	PANEL
ES	EMERGENCY STOP	PO	PULSE OUTPUT
EXIST	EXISTING	PPG	POUNDS PER GALLON
		PPH	POUNDS PER HOUR
FA	FOUL AIR	PPM	PARTS PER MILLION
FC	FAIL CLOSED	PR	PAIR
FE	FLOW ELEMENT	PRES	PRESSURE
FLA	FULL LOAD AMPS	PS	PRESSURE SWITCH
FS	FLOW SWITCH	PSH	PRESSURE SWITCH, HIGH
FVNR	FULL VOLTAGE NON-REVERSING	PSI	POUNDS PER SQUARE INCH
FW	FINISHED WATER	PV	PROCESS VARIABLE
G	GROUND	RAS	RETURN ACTIVATED SLUDGE
GES	GROUNDING ELECTRODE SYSTEM	RW	RAW WATER
GFCI	GROUND FAULT CIRCUIT INTERRUPTER	RCL	REMOTE I/O
		RF	RADIO FREQUENCY
GFP	GROUND FAULT PROTECTION	RIO	REMOTE INPUT/OUTPUT
GND	GROUND	RS	RAW SEWAGE
GPD	GALLONS PER DAY	RSP	RAW SEWAGE PUMP
GPH	GALLONS PER HOUR	RST	RESET
GPM	GALLONS PER MINUTE	RTD	RESISTANCE TEMPERATURE DETECTOR
GRS	GALVANIZED RIGID STEEL	RTU	REMOTE TELEMETRY UNIT
H, HI	HIGH	RWT	REFLECTED WAVE TRAP
H2S	HYDROGEN SULFIDE		
HMI	HUMAN MACHINE INTERFACE	SEQ	SERVICE ENTRANCE EQUIPMENT
HOA	HAND-OFF-AUTO	SES	SERVICE ENTRANCE SECTION
HOR	HAND-OFF-REMOTE	SLC	SINGLE LOOP CONTROLLER
		SLOS	START-LOCK-OFF-STOP
I	CURRENT	SMC	SUBMERSIBLE MANUFACTURER CABLE
IC	INSTRUMENTATION CABLE	SO2	SULFUR DIOXIDE
ICR	INTERMITTENT CYCLE REACTOR	SP	SET POINT
IO	INPUT/OUTPUT	SPC	SPARE CONDUIT
ISC	SHORT CIRCUIT CURRENT	SPR	SPARE
ISR	INTRINSICALLY SAFE RELAY	SS	START/STOP
JB	JUNCTION BOX	SSS	SOLID STATE STARTER (SOFT START)
L, LO	LOW	ST	SHUNT TRIP
LAN	LOCAL AREA NETWORK		
LC	LOOP CONTROLLER	TC	TELEPHONE CABLE
LCL	LEVEL CONTROL, LOW	TDOE	TIME DELAY ON ENERGIZE
LCP	LOCAL CONTROL PANEL	TS	TEMPERATURE SWITCH
LOS	LOCK-OUT-STOP	TSP	TWISTED SHIELDED PAIR
LR	LOCAL/REMOTE	TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSION
LS	LEVEL SWITCH		
LTC	LIQUID TIGHT FLEXIBLE CONDUIT	TYP	TYPICAL
M	MOTOR	UG	UNDERGROUND
MA	MANUAL/AUTO, MILLIAMP		
MAX	MAXIMUM	V	VOLT
MC	MANUFACTURER'S CABLE	VFD	VARIABLE FREQUENCY DRIVE
MCB	MAIN CIRCUIT BREAKER		
MCC	MOTOR CONTROL CENTER	W	WATT, WIRE
MCP	MOTOR CIRCUIT PROTECTOR	WAS	WASTE ACTIVATED SLUDGE
MFR(S)	MANUFACTURER(S)	WP	WEATHERPROOF
MGD	MILLION GALLONS PER DAY		
MGL	MILLIGRAMS PER LITER	XFMR	TRANSFORMER
MH	MANHOLE	XMTR	TRANSMITTER
MIN	MINIMUM		
ML	MIXED LIQUOR	ZS	POSITION SWITCH
MOV	MOTOR OPERATED VALVE		
MTU	MASTER TELEMETRY UNIT		

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PROFESSIONAL ENGINEER # 11573267-2202 ROBERT J. HILLYER 10/18/24 STATE OF UTAH

SET

NO.	DESCRIPTION	DATE	BY APP.
	REVISION		

ANDERSON WATER TREATMENT PLANT
GRANGER-HUNTER IMPROVEMENT DISTRICT

ELECTRICAL (E)
ELECTRICAL SYMBOL LEGEND
1629 WEST 2320 SOUTH

FILE:
JUB PROJ. #:93-23-004
DRAWN BY:Author
DESIGN BY:Designer
CHECKED BY:Checker
ONE INCH
AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY
LAST UPDATED: 9/4/2024

DRAWING:
E-001

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CONTROL CONDUIT SCHEDULE

C100	4 - #14, 1 - #14 GND, 3/4"C
C101	2 - #16 TSP, 1-#16 GND, 1"C
C102	FLOW ELEMENT CABLE TO FLOW TRANSMITTER, 1"C
C103	LEVEL ELEMENT CABLE TO LEVEL TRANSMITTER, 1"C
C104	PULL LINE, 1"C
C105	CAT 6 CABLE, 1"C
C106	12 - #14, 1 - #14 GND, 1"C
C107	3 - #16 TSP, 1-#16 GND, 1"C
C108	FLOAT SWITCH CABLE, 1"C
C109	6 - #14, 1 - #14 GND, 1"C
C110	8 - #14, 1 - #14 GND, 1"C
C111	4 - FIBER OPTIC, 4" HDPE WITH (4) 1" INNER DUCTS
C112	52 - #14, 1 - #14 GND, 1-1/2"C
C113	24 - #14, 1 - #14 GND, 1"C
C114	4 - #16 TSP, 1 - #16 GND, 1-1/2"C
C115	10 - #16 TSP, 1-#16 GND, 2"C
C116	2 - #16 TSP, 4-#14,1-#14 GND, 1"C

POWER CONDUIT SCHEDULE

P108	1	P: 1 - #10 N: 1 - #10 G: 1 - #10	3/4"
P109	1	P: 3 - #3 N: NONE G: 1 - #8	1-1/4"
P110	1	P: 3 - #8 N: NONE G: 1 - #10	3/4"
P111	3	P: 3 - 350 N: 1 - 350 G: NONE	3"
P112	2	P: 3 - 500 N: 1 - 500 G: 1 - 1/0	4"
P113	2	P: 3 - 4/0 N: NONE G: 1 - #2	2"
P114	1	P: 3 - 3/0 N: 1 - 3/0 G: 1 - #6	2-1/2"
P115	1	P: 3 - #6 N: NONE G: 1 - #10	1"
P116	1	P: 2- #10 N: NONE G: 1 - #10	3/4"
P117	1	P: 1- #12 N: 1 - #12 G: 1 - #12	3/4"
P001	1	WIRE BY UTILITY	4"
P002	3	WIRE BY UTILITY	4"
P003	1	WIRE BY UTILITY	1"
P100	1	P: 3 - 500 N: 1 - 500 G: 1 - 1/0	4"
P101	1	P: 3 - 3/0 N: 1 - 3/0 G: 1 - #6	2"
P102	1	P: 3 - #12 N: NONE G: 1 - #12	3/4"
P103	1	P: 3 - #4 N: NONE G: 1 - #4	1-1/4"
P104	1	P: 3 - 2/0 N: 1 - 2/0 G: 1 - #6	2"
P105	1	P: 3 - #6 N: NONE G: 1 - #10	1"
P106	1	P: 3 - #4 N: NONE G: 1 - #10	1"
P107	1	P: 2 - #12 N: NONE G: 1 - #12	3/4"

PANEL H

MLO

BUS AMPS: 225

VOLTAGE: 480/277 V 3Ø 4W | CIRCUIT BREAKER TYPE: BOLT-ON | MOUNTING: SURFACE

ENCLOSURE: NEMA 1 | INTERRUPTING CAPACITY: 22 KAIC | COVER TYPE: DOOR-IN-DOOR

LOCATION: AS INDICATED

BRANCH CIRCUIT BREAKER				CONNECTION	DESCRIPTION	PHASE			DESCRIPTION	CONNECTION	BRANCH CIRCUIT BREAKER			
NOTES	#	AMP	P.	LOAD (VA)		A	B	C		LOAD (VA)	P.	AMP	#	NOTES
	H-1	20	1	1310	INTERIOR LIGHTS	12286			TRANSFORMER TL	10976	3	70	H-2	
	H-3	20	1	245	EXTERIOR LIGHTS		7607		—	7362	--	–	H-4	
	H-5	20	1		SPARE			9626	—	9626	--	–	H-6	
	H-7	60	3	7479	BLOWER	8061			HOIST	582	3	20	H-8	
	H-9	–	–	7479	—		8061		—	582	--	–	H-10	
	H-11	–	–	7479	—			8061	—	582	--	–	H-12	
	H-13	50	3	11080	HYPOCHLORITE RECTIFIER	14413			HEATER	3333	3	20	H-14	
	H-15	–	–	11080	—		14413		—	3333	--	–	H-16	
	H-17	–	–	11080	—			14413	—	3333	--	–	H-18	
	H-19	20	3	500	VALVE SV301	3833			HEATER	3333	3	20	H-20	
	H-21	–	–	500	—		3833		—	3333	--	–	H-22	
	H-23	–	–	500	—			3833	—	3333	--	–	H-24	
	H-25	20	3	500	VALVE SV302	3833			HEATER	3333	3	20	H-26	
	H-27	–	–	500	—		3833		—	3333	--	–	H-28	
	H-29	–	–	500	—			3833	—	3333	--	–	H-30	
	H-31	20	3	500	VALVE SV303	500			SPARE		1	20	H-32	
	H-33	–	–	500	—		500		SPARE		1	20	H-34	
	H-35	–	–	500	—			500	SPARE		1	20	H-36	
	H-37	60	3		SOLAR DISCONNECT	0			SPARE		1	20	H-38	
	H-39	–	–		—		0		SPARE		1	20	H-40	
	H-41	–	–		—			0	SPARE		1	20	H-42	
					PHASE SUBTOTALS (VA)	42926	38247	40266						
					PHASE TOTALS (KVA)	42.9	38.2	40.3						
					PHASE TOTALS @ 277V (AMPS)	155.0	138.1	145.4						

NOTES:
1
2
3
4

PANEL L

MAIN BREAKER AMPS 175

BUS AMPS: 225

VOLTAGE: 208/120 V 3Ø 4W | CIRCUIT BREAKER TYPE: BOLT-ON | MOUNTING: SURFACE

ENCLOSURE: NEMA 1 | INTERRUPTING CAPACITY: 10 KAIC | COVER TYPE: DOOR-IN-DOOR

LOCATION: AS INDICATED

BRANCH CIRCUIT BREAKER				CONNECTION	DESCRIPTION	PHASE			DESCRIPTION	CONNECTION	BRANCH CIRCUIT BREAKER			
NOTES	#	AMP	P.	LOAD (VA)		A	B	C		LOAD (VA)	P.	AMP	#	NOTES
	L-1	20	1	1200	PLC	1900			GATE OPERATOR	700	1	20	L-2	
	L-3	20	1	720	FILTER CTRL PANEL		1272		ROLL-UP-DOOR	552	1	20	L-4	
	L-5	20	1	1440	NORTH RECEPTACLES INT/EXT			1440	SPARE		1	20	L-6	
	L-7	20	1	1440	SOUTH RECEPTACLES INT/EXT	2230			VENT FAN	790	2	20	L-8	
	L-9	20	1	240	DOSING PUMP		1030		—	790	--	–	L-10	
	L-11	20	1	240	DOSING PUMP			2490	HOT WATER HEATER	2250	2	30	L-12	
	L-13	20	1	150	FLOW METER	2400			—	2250	--	–	L-14	
	L-15	20	1	150	FLOW METER		234		WATER HEATER RECIRC PUMP	84	1	20	L-16	
	L-17	20	1	150	FLOW METER			2646	HYPOCHLORITE PANEL	2496	2	30	L-18	
	L-19	20	1	150	FLOW METER	2646			—	2496	--	–	L-20	
	L-21	20	2	1500	AC1		1500		SPARE		1	20	L-22	
	L-23	–	–	1500	—			1800	LEVEL TRANSMITTERS	300	1	20	L-24	
	L-25	20	2	1500	AC2	1650			LEVEL TRANSMITTER	150	1	20	L-26	
	L-27	–	–	1500	—		2676		SUMP PUMP	1176	1	20	L-28	
	L-29	20	1	1000	ELECTRIC WALL HEATER EWH-1			1250	BLOWER CONTROLLER	250	1	20	L-30	
	L-31	20	1	150	WATER ANALYZERS	150			DILUTION BLOWER		1	20	L-32	
	L-33	20	1	500	SECURITY NETWORK EQUIPMENT		650		FLOW METER	150	1	20	L-34	
	L-35	20	1		DRINKING FOUNTAIN			0	SPARE		1	20	L-36	
	L-37	20	1		SPARE	0			SPARE		1	20	L-38	
	L-39	20	1		SPARE		0		SPARE		1	20	L-40	
	L-41	20	1		SPARE			0	SPARE		1	20	L-42	
					PHASE SUBTOTALS (VA)	10976	7362	9626						
					PHASE TOTALS (KVA)	11.0	7.4	9.6						
					PHASE TOTALS @ 120V (AMPS)	91.5	61.4	80.2						

NOTES:
1
2
3
4

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PROFESSIONAL ENGINEER
11573207-2202
ROBERT J. HILLYER
10/18/24
STATE OF UTAH

SET

NO.	REVISION	BY	APP.	DATE

DESCRIPTION

ANDERSON WATER TREATMENT PLANT
GRANGER-HUNTER IMPROVEMENT DISTRICT

ELECTRICAL (E)
ELECTRICAL SCHEDULES
1629 WEST 2320 SOUTH

FILE:
JUB PROJ. #:93-23-004
DRAWN BY:Author
DESIGN BY:Designer
CHECKED BY:Checker

ONE INCH
AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY

LAST UPDATED: 9/4/2024

DRAWING:
E-002

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SEQUENCE OF WORK

1	INSTALL TRANSFORMER VAULT. INSTALL NEW CONDUITS BETWEEN UTILITY POWER POLE, NEW UTILITY TRANSFORMER, NEW CT CABINET, AND NEW METER.
2	INSTALL NEW CONDUITS AS PRACTICABLE BETWEEN LOCATION OF RELOCATED ATS, LOCATION OF EXISITING SERVICE FEEDERS, LOCATION OF RELOCATED SERVICE DISCONNECT, AND LOCATION OF RELOCATED GENERATOR. INSTALL NEW GENERATOR CONTROL FEEDERS BETWEEN LOCATION OF RELOCATED GENERATOR AND LOCATION OF RELOCATED ATS.
3	CONFIRM INSTALLATION OF NEW TRANSFORMER BY RMP. CONFIRM INSTALLATION OF FEEDERS BY RMP BETWEEN UTILITY POWER POLE, NEW TRANSFORMER, NEW CT CABINET, AND NEW METER.
4	DURING A PRE-ARRANGED OUTAGE - OUTAGE A - PERFORM THE FOLLOWING:
	A — SHUTDOWN EXISTING GENERATOR. SHUT OFF ALL EXISTING BUILDING LOADS VIA SERVICE DISCONNECT. CONNECT EXISTING BUILDING SERVICE FEEDERS TO NEW JUNCTION BOX.
	B — RELOCATE ATS, SERVICE DISCONNECT, AND GENERATOR. CONNECT NEW FEEDERS BETWEEN NEW CT CABINET, RELOCATED SERVICE DISCONNECT, RELOCATED ATS, RELOCATED GENERATOR. INTERCEPT AND REPLACE EXISTING FEEDERS TO EXISTING BUILDING WITH NEW FEEDERS TO RELOCATED ATS. STUB OUT FROM ATS TO NEW BUILDING.
	C — VERIFY PHASE ROTATION AT RELOCATED SERVICE DISCONNECT MATCHES ROTATION OF EXISTING EQUIPMENT.
	D — CONNECT GENERATOR CONTROLS BETWEEN THE ATS AND THE GENERATOR. PROGRAM AND TEST.
	E — ENERGIZE TRANSFORMER AND TEST VOLTAGE AND ROTATION AT SERVICE DISCONNECT. RE-ENERGIZE SERVICE DISCONNECT.
	F — ENERGIZE RELOCATED GENERATOR. TEST VOLTAGE AND ROTATION TO RELOCATED ATS.
	G — START-UP AND TEST GENERATOR ON NEW POWER DELIVERY. PERFORM (1) PULL THE PLUG TEST, ON THE UTILITY POWER SIDE OF THE ATS. VERIFY THAT THE ATS PERFORMS PROPERLY AND GENERATOR STARTS, RUNS, COOLS DOWN, AND SHUTS-DOWN PROPERLY. CHECK VOLTAGE DROP-OUT LEVELS ON THE GENERATOR VS. THE ATS.
	H — RE-ENERGIZE LOADS FED FROM ATS. VERIFY THAT EQUIPMENT CAME BACK UP PROPERLY.
5	COMPLETE DEMOLITION OF ALL REMAINING EXISTING EQUIPMENT, CONDUCTORS, AND CONDUIT.
NOTE	THE ABOVE STEPS OUTLINED ARE INTENDED TO PROVIDE GUIDANCE AND FACILITATE THE CONSTRUCTION PROCESS. THESE STEPS REPRESENT A PARTIAL OVERVIEW AND DO NOT ENCOMPASS THE FULL SCOPE OR COMPLETE SEQUENCE OF WORK REQUIRED.

LIGHTING FIXTURE SCHEDULE

TYPE	ELECTRICAL	MANUFACTURER	CATALOG NUMBER	DESCRIPTION	SOURCE	NOTES
F1	104W 120-277V	LITHONIA	FEM L96 18000LM IMACD MD MVOLT 40K 80CRI WLF STSL	HIGH PRESSURE HOSE DOWN LED LUMINAIRE NARROW DISTRIBUTION WET LOCATION FITTING	4000K CCT 18,000 LM 80CRI	1,2
F2	25W 120-277V	LITHONIA	CLX L24 3500LM HEF WDL MVOLT GZ10 40K 80CRI	CLX LED LINEAR 24" 3,500 LUMENS, PREMIUM EFFICIENCY, LESS LOUVER, WIDE DIFFUSE LENS, GENERAL DISTRIBUTION, MVOLT, 0-10V DIMMING, 5000 CCT, 80 CRI, LED	4000K CCT 3500 LM 80 CRI	1,2
F3	12W 120-277	LITHONIA	WST LED P1 40K VW MVOLT PE DMG	LED WALL PACK, DIE CAST ALUMINUM HOUSING, MEDIUM THROW. GLASS LENS, DARK BRONZE FINISH. PHOTOELECTRIC CELL BUTTON TYPE. 0-10V DIMMING, ADJUST PER NEIGHBORS.	4000K CCT 1200LM	1,3
F4	70W 120-277	LITHONIA	DSX1 LED P2 40K TFTM MVOLT WBA PIRH DDBXD	WALL MOUNTED LED LIGHT FIXTURE FORWARD THROW TYPE OPTIC. BUILT IN MOTION RESPONSE AND PHOTOCELL. LIGHT FIXTURE TO TURN ON/OFF WITH PHOTOCELL. LIGHT LEVEL TO DROP TO 10% LIGHT OUTPUT WHEN THERE IS NO MOTION.	4000K CCT 8900LM	1,3
F5	50W 120-277V	LITHONIA	FEM L48 8000LM IMACD MD MVOLT 40K 80CRI WLF STSL	HIGH PRESSURE HOSE DOWN LED LUMINAIRE NARROW DISTRIBUTION WET LOCATION FITTING.	4000K CCT 8000 LM 80CRI	1,2
F6	34W 120-277V	LITHONIA	DSX0 LED P1 40K 80CRI BLC4 MVOLT SPA PIR DDBXD	POLE MOUNTED LED LIGHT FIXTURE, BACKLIGHT CONTROL DISTRIBUTION. BUILT IN MOTION RESPONSE AND PHOTOCELL. LIGHT FIXTURE TO TURN ON/OFF WITH PHOTOCELL. LIGHT LEVEL TO DROP TO 10% LIGHT OUTPUT WHEN THERE IS NO MOTION.	4000K CCT 3600 LM 80CRI	1,4
F7	12W 120-277V	LITHONIA	WST LED P1 40K VW MVOLT PE DMG	LED WALL PACK, DIE CAST ALUMINUM HOUSING, MEDIUM THROW. GLASS LENS, DARK BRONZE FINISH. PHOTOELECTRIC CELL BUTTON TYPE. 0-10V DIMMING, ADJUST PER NEIGHBORS.	4000K CCT 1200LM	1,3

NOTES:

1- EQUAL FIXTURE SUBSTITUTIONS ALLOWED UPON PRIOR APPROVAL FROM ENGINEER.

2- MOUNT ON CEILING

3- MOUNT AS PER ARCHITECTURAL DRAWINGS. COORDINATE WITH ARCHITECT

4- MOUNT AT 12'-0" A.F.F. UNLESS OTHERWISE NOTED; SEE ARCHITECTURAL DRAWINGS.

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ANDERSON WATER TREATMENT PLANT
GRANGER-HUNTER IMPROVEMENT DISTRICT

ELECTRICAL (E)
LIGHTING FIXTURE SCHEDULE
1629 WEST 2320 SOUTH

FILE:
JUB PROJ. #:93-23-004
DRAWN BY:Author
DESIGN BY:Designer
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ONE INCH
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LAST UPDATED: 9/4/2024

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E-003

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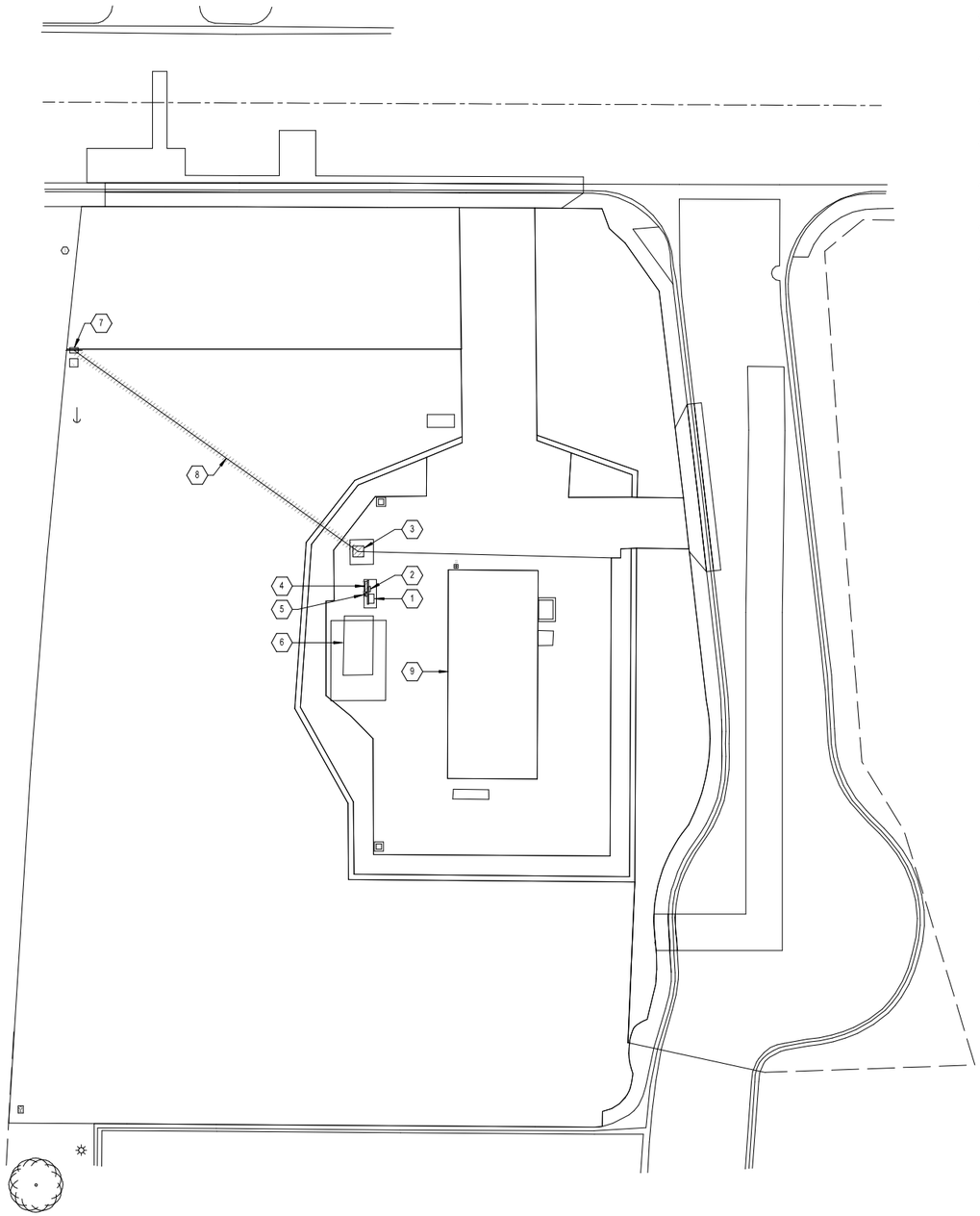

1 SITE POWER DEMOLITION PLAN
SCALE: 1" = 20'-0"

SHEET KEYED NOTES

1. EXISTING AUTOMATIC TRANSFER SWITCH. RELOCATE AS INDICATED ON SITE POWER REMODEL PLAN.
2. EXISTING SERVICE DISCONNECT. RELOCATE AS INDICATED ON SITE POWER REMODEL PLAN.
3. EXISTING UTILITY TRANSFORMER. COORDINATE DEMOLITION WITH UTILITY.
4. EXISTING CT ENCLOSURE. COORDINATE DEMOLITION WITH UTILITY.
5. EXISTING UTILITY METER. COORDINATE DEMOLITION WITH UTILITY.
6. EXISTING STANDBY GENERATOR. RELOCATE AS INDICATED ON SITE POWER REMODEL PLAN.
7. EXISTING POWER POLE
8. EXISTING TRANSFORMER CONDUCTORS AND CONDUIT FROM UTILITY. COORDINATE DEMOLITION WITH UTILITY.
9. REPLACE EXISTING EXTERIOR FIXTURES ON EXISTING BUILDING WITH NEW FIXTURES. SEE SITE PHOTOMETRIC PLAN FOR FIXTURE TYPE TO BE USED ON EXISTING BUILDING.

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ANDERSON WATER TREATMENT PLANT
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ELECTRICAL (E)
SITE POWER DEMOLITION PLAN
1629 WEST 2320 SOUTH

FILE:
JUB PROJ. #:93-23-004
DRAWN BY:Author
DESIGN BY:Designer
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DRAWING:
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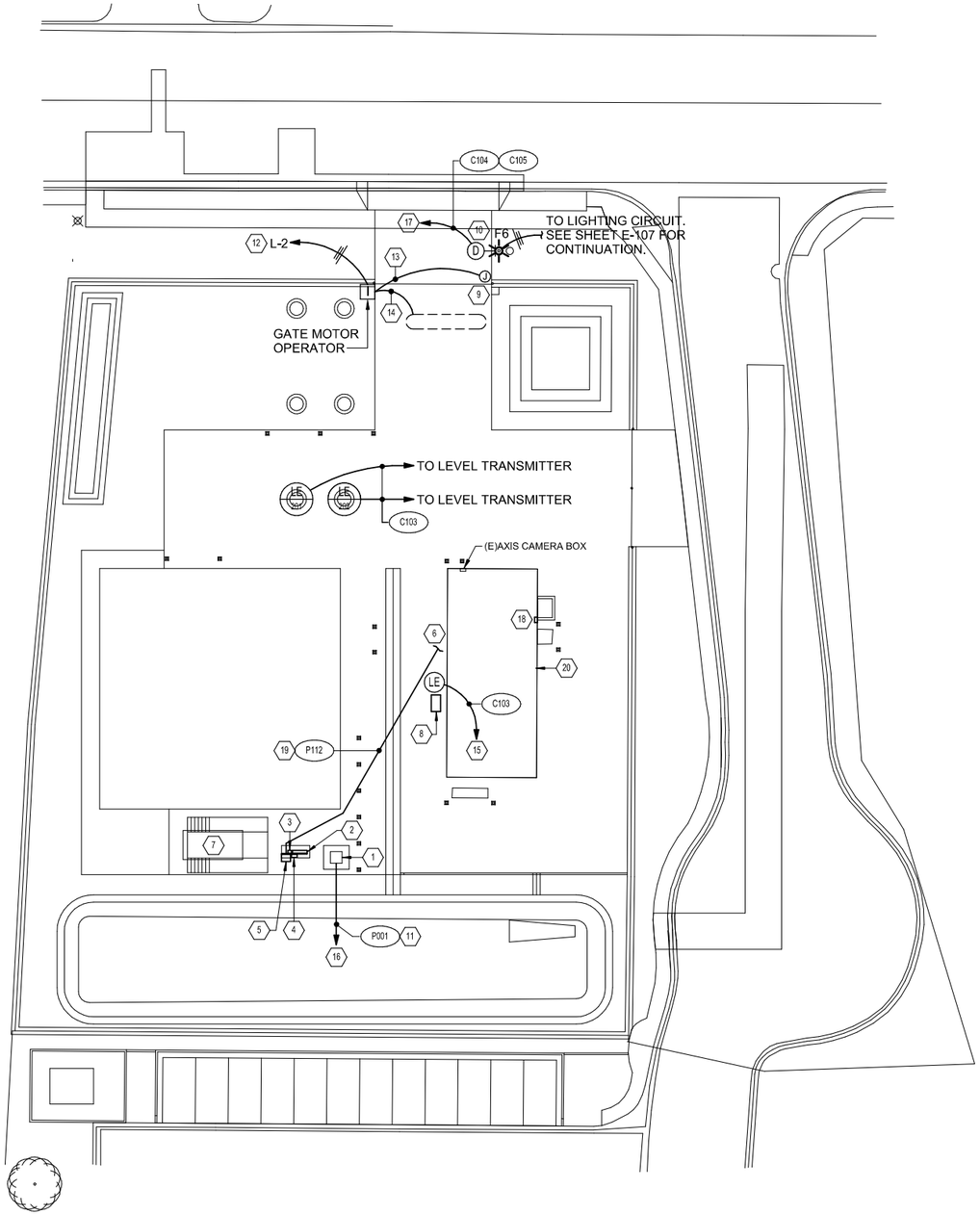

1 SITE POWER REMODEL PLAN
SCALE: 1" = 20'-0"

SHEET KEYED NOTES

1. NEW UTILITY TRANSFORMER BY UTILITY. NEW PAD VAULT BY CONTRACTOR. MAINTAIN 3'-0" CLEARANCE ON EACH SIDE AND BACK OF TRANSFORMER, 10'-0" CLEARANCE IN FRONT OF TRANSFORMER, AND DRIVING ACCESS TO TRANSFORMER.
2. NEW CT ENCLOSURE, 480V, 800A.
3. NEW NET METERING UTILITY METER BY UTILITY.
4. EXISTING SERVICE DISCONNECT, 480V, 800A. (RELOCATED)
5. EXISTING AUTOMATIC TRANSFER SWITCH, 480V, 800A, DELAYED TRANSITION. (RELOCATED)
6. INTERCEPT AND REPLACE EXISTING SERVICE FEEDERS TO EXISTNG BUILDING WITH NEW FEEDERS.
7. EXISTING STANDBY GENERATOR, 750 KVA. (RELOCATED)
8. NEW FLUORIDE CONTAINMENT BOX.
9. NEW GATE OPERATOR PEDESTAL. INCLUDE REMOTE OPERATOR CAPACITY COMPATIBLE WITH EXISTING OWNER REMOTE OPERATORS.
10. NEW SECURITY CAMERA TO MATCH MODEL OF EXISTING AXIS SECURITY CAMERA ON EXISTING BUILDING. MOUNT TO NEW FIXTURE F6 LIGHTING POLE.
11. THE UNDERGROUND FEEDER PATH MUST REMAIN CLEAR OF ANY MATERIALS OR STRUCTURES PLACED ABOVE IT.
12. RUN THE CONDUIT 24" UNDERGROUND. COORDINATE WITH GENERAL CONTRACTOR FOR EXACT LOCATION OF THE OPERATOR.
13. RUN (2) 1" CONDUITS FROM CARD READER PEDESTAL TO GATE MOTOR OPERATOR. COORDINATE WITH GENERAL CONTRACTOR FOR EXACT LOCATION. SECURITY CONTRACTOR WILL INSTALL AND PULL CABLE FOR CARD READER.
14. RUN A 1" CONDUIT FROM UNDERGROUND GATE SENSOR TO GATE OPERATOR. COORDINATE WITH GATE INSTALLER FOR EXACT LOCATION.
15. TO NEW LEVEL TRANSMITTER IN EXISTING BUILDING.
16. TO EXISTING UTILITY POWER POLE. SEE SHEET C-103 FOR ROUTING. COORDINATE WITH UTILITY.
17. TO EXISTING AXIS BOX IN EXISTING BUILDING.
18. NEW LEVEL TRANSMITTER. COORDINATE LOCATION OF INSTALLATION. PROVIDE DEDICATED 20A / 1P, 120V CIRCUIT FROM EXISTING PANEL IN EXISTING BUILDING.
19. THE UNDERGROUND FEEDER PATH MUST REMAIN CLEAR OF ANY MATERIALS OR STRUCTURES PLACE ABOVE IT.
20. REPLACE EXISTING EXTERIOR FIXTURES ON EXISTING BUILDING WITH NEW FIXTURES. SEE SITE PHOTOMETRIC PLAN FOR FIXTURE TYPE TO BE USED ON EXISTING BUILDING.

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GRANGER-HUNTER IMPROVEMENT DISTRICT

ELECTRICAL (E)
SITE POWER REMODEL PLAN
1629 WEST 2320 SOUTH

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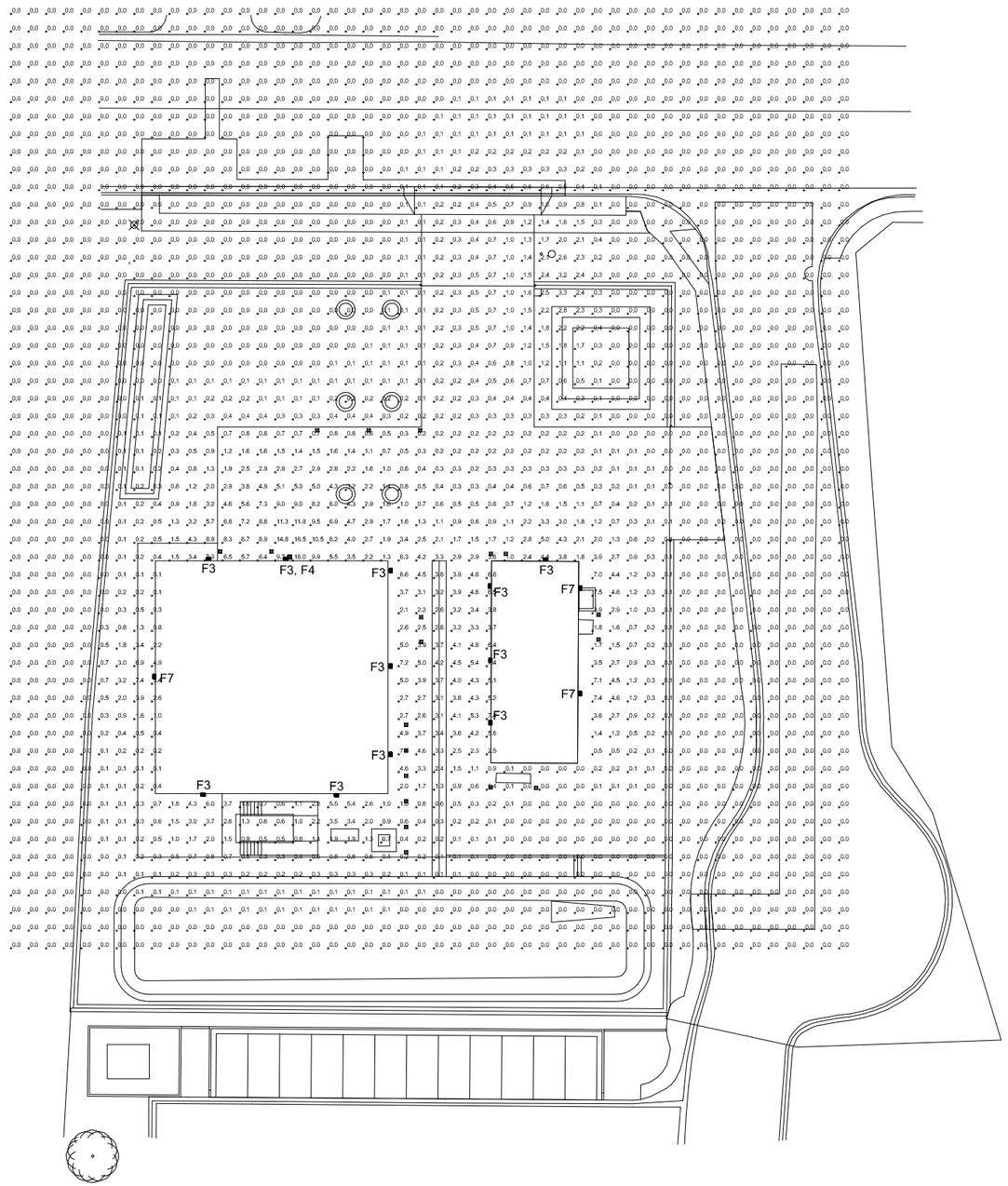
LAST UPDATED:9/4/2024

DRAWING:
E-102

Autodesk Docs://GHID Anderson WTP/93-23-004_E.rvt



1 SITE PHOTOMETRIC PLAN
SCALE: 1" = 20'-0"

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STATE OF UTAH

SET

NO.	DESCRIPTION	BY APP.	DATE
	REVISION		

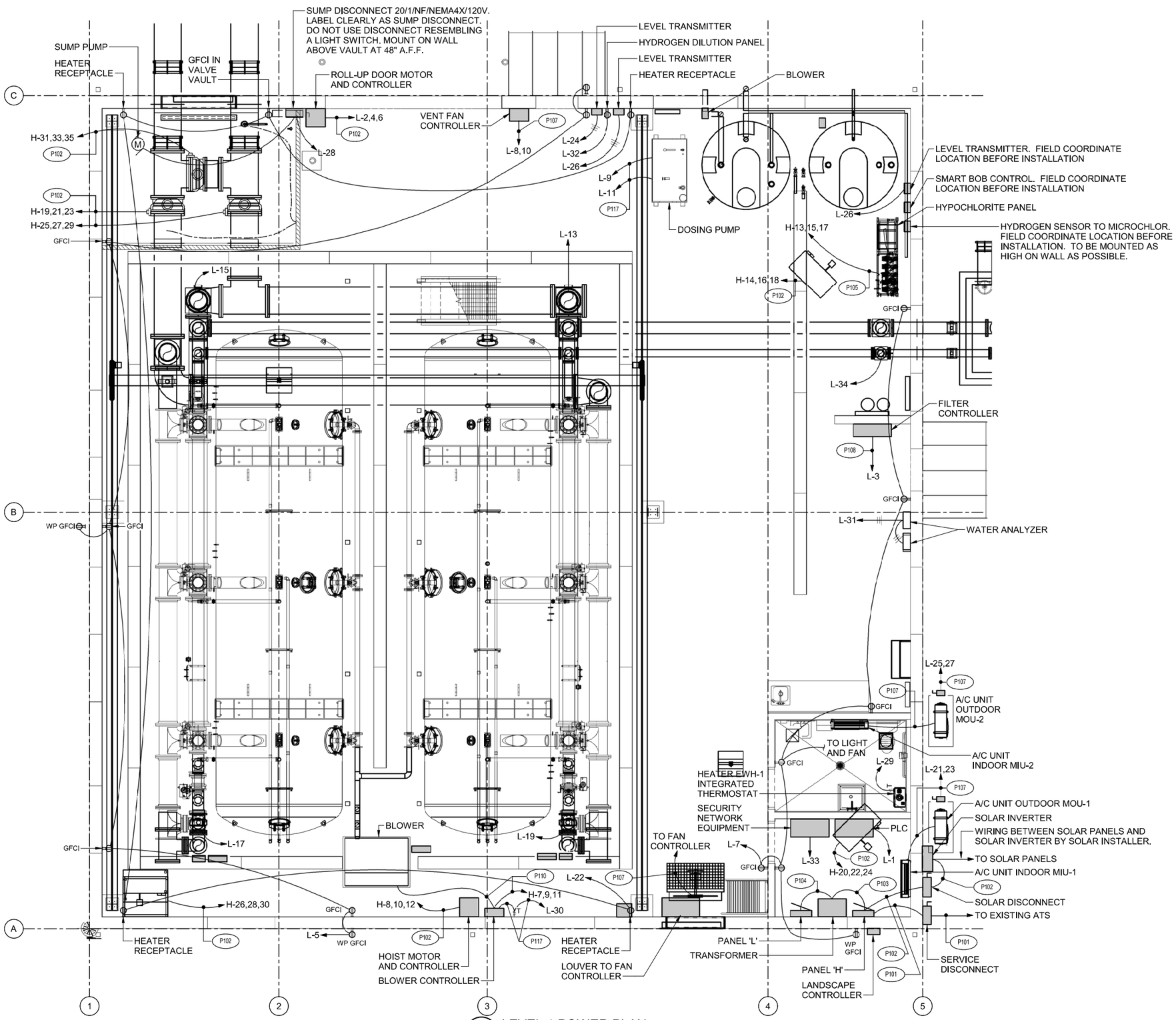
ANDERSON WATER TREATMENT PLANT
GRANGER-HUNTER IMPROVEMENT DISTRICT

ELECTRICAL (E)
SITE PHOTOMETRIC PLAN
1629 WEST 2320 SOUTH

FILE:
JUB PROJ. #:93-23-004
DRAWN BY:Author
DESIGN BY:Designer
CHECKED BY:Checker
ONE INCH
AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY
LAST UPDATED: 9/4/2024

DRAWING:
E-103

Autodesk Docs://GHID Anderson WTP\93-23-004_E.rvt



1 LEVEL 1 POWER PLAN
SCALE: 1/4" = 1'-0"

J-U-B ENGINEERS, INC.
392 E. Winchester St.
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Phone: 801.886.9052
www.jub.com

Subconsultant:
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377 West 800 North
Salt Lake City, Utah 84103
801.322.0487
www.heathengineering.com

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PROFESSIONAL ENGINEER
11573207-2202
ROBERT J. HILLYER
10/18/24
STATE OF UTAH

SET

NO.	DESCRIPTION	DATE
	REVISION	BY APP.

ANDERSON WATER TREATMENT PLANT
GRANGER-HUNTER IMPROVEMENT DISTRICT

ELECTRICAL (E)
LEVEL 1 POWER PLAN
1629 WEST 2320 SOUTH

FILE:
JUB PROJ. #:93-23-004
DRAWN BY:Author
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ONE INCH
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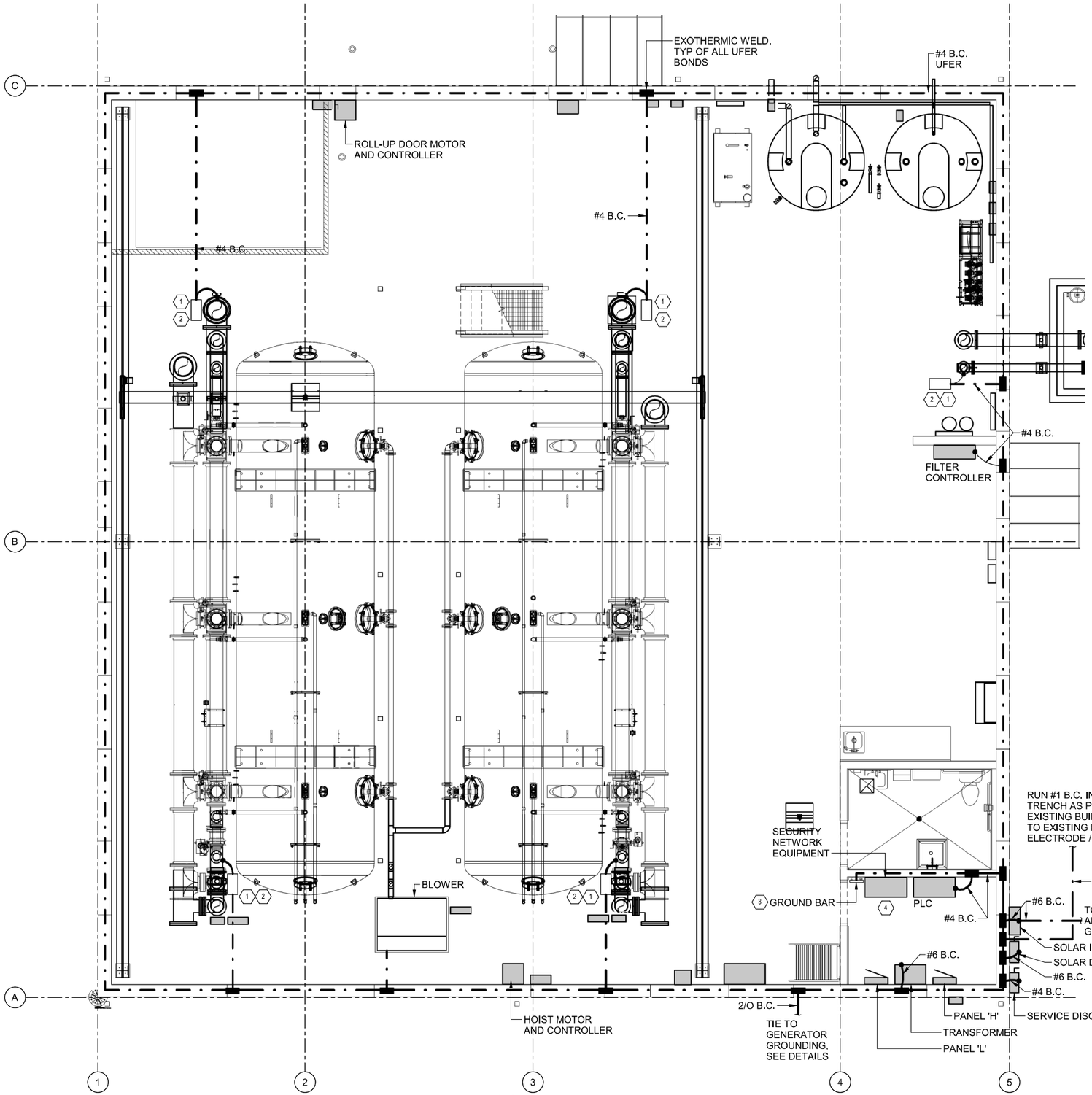
LAST UPDATED:9/4/2024

DRAWING:
E-104



1 LEVEL 1 GROUNDING PLAN
SCALE: 1/4" = 1'-0"

SHEET KEYED NOTES

1. SEE DETAIL 11/E-503.
2. SEE DETAIL 8/E-503.
3. GROUND BAR. SEE DETAIL 4/E501.
4. SECURITY NETWORK EQUIPMENT.

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	REVISION	APR	

ANDERSON WATER TREATMENT PLANT
GRANGER-HUNTER IMPROVEMENT DISTRICT

ELECTRICAL (E)
LEVEL 1 GROUNDING PLAN
1629 WEST 2320 SOUTH

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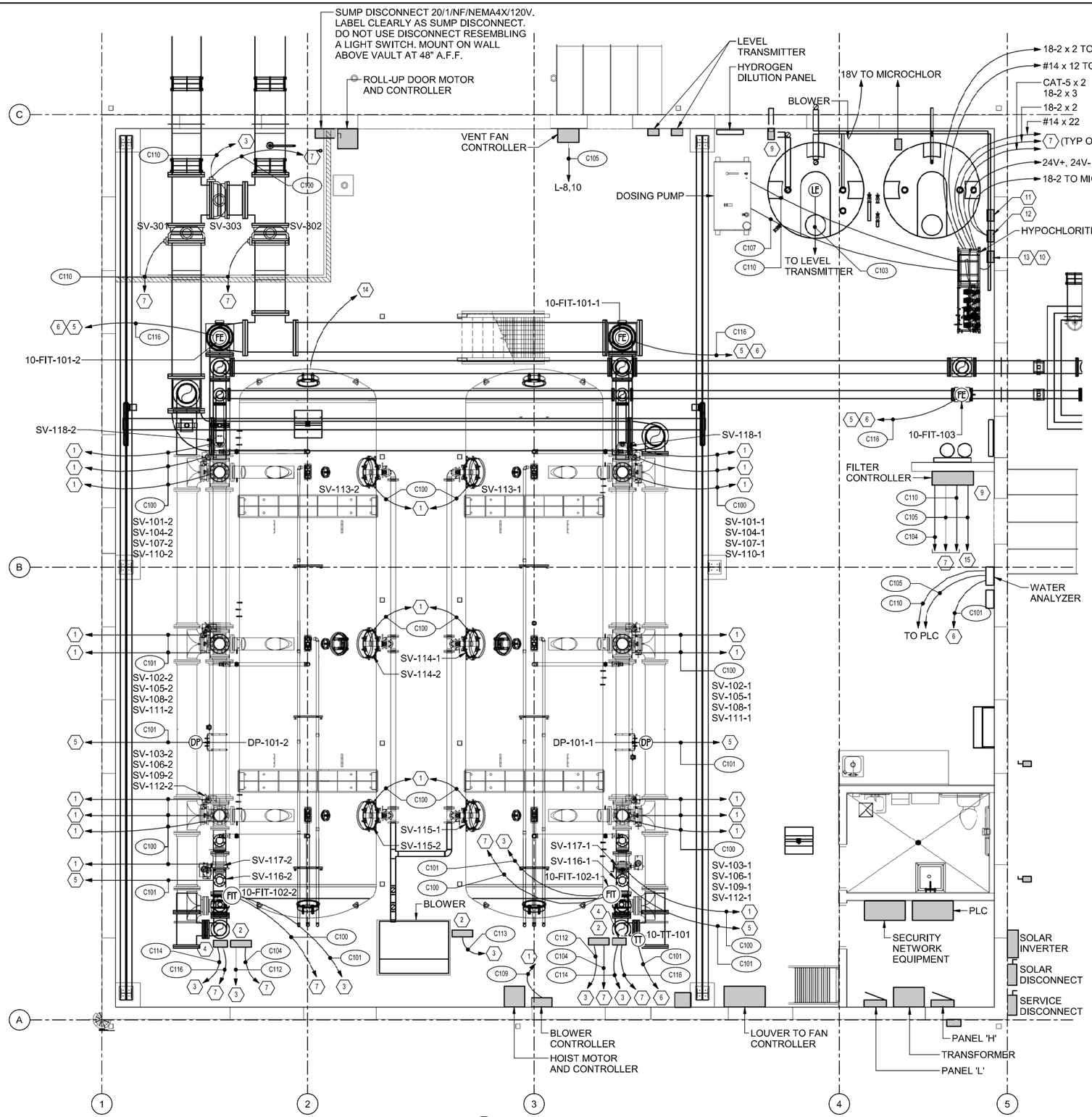
LAST UPDATED:9/4/2024

DRAWING:
E-105



1 LEVEL 1 CONTROLS PLAN
SCALE: 1/4" = 1'-0"

SHEET KEYED NOTES

1. TO FILTER CONTROL PANEL VIA DIGITAL PULL BOX.
2. DIGITAL PULL BOX 16"x16"x6" NEMA 3R GASKETED. COORDINATE EXACT LOCATION WITH INSTALLED EQUIPMENT TO AVOID CONFLICTS.
3. ROUTE CONDUIT UNDERNEATH FLOOR TO FILTER CONTROL PANEL.
4. ANALOG CONTROL PULL BOX 12"x12"x6" NEMA 3R GASKETED. COORDINATE EXACT LOCATION WITH INSTALLED EQUIPMENT TO AVOID CONFLICTS.
5. TO FILTER CONTROL PANEL VIA ANALOG PULL BOX.
6. TO PLC VIA ANALOG PULL BOX.
7. ROUTE CONDUIT UNDERNEATH FLOOR TO PLC.
8. REFER TO P&ID DRAWINGS I-006, I-007, MECHANICAL DRAWINGS D10-501, CD516, AND MANUFACTURERS INSTRUCTIONS FOR INSTRUMENTATION LOCATION AND WIRING REQUIREMENTS OF CHLORINATION EQUIPMENT.
9. PROVIDE FILTER CONTROLLER WITH AUXILIARY OPERATOR INTERFACE SCREEN FROM PLC, PREFERABLY IN THE FRONT PANEL OF THE FILTER CONTROLLER OR ALTERNATELY IN ITS OWN CABINET BESIDE THE FILTER CONTROLLER.
10. INSTALL PER MANUFACTURERS INSTRUCTIONS AND RECOMMENDED LOCATION.
11. LEVEL TRANSMITTER. FIELD COORDINATE LOCATION BEFORE INSTALLATION.
12. SMART BOB CONTROL. FIELD COORDINATE LOCATION BEFORE INSTALLATION.
13. HYDROGEN SENSOR TO MICROCHLOR. FIELD COORDINATE LOCATION BEFORE INSTALLATION. TO BE MOUNTED AS HIGH ON WALL AS POSSIBLE.
14. ADDITIONAL WIRING OF INSTRUMENTS IS OUTLINED IN VOLUME 4 DOCUMENTS PROVIDED BY WESTECH.
15. TO NETWORK EQUIPMENT.

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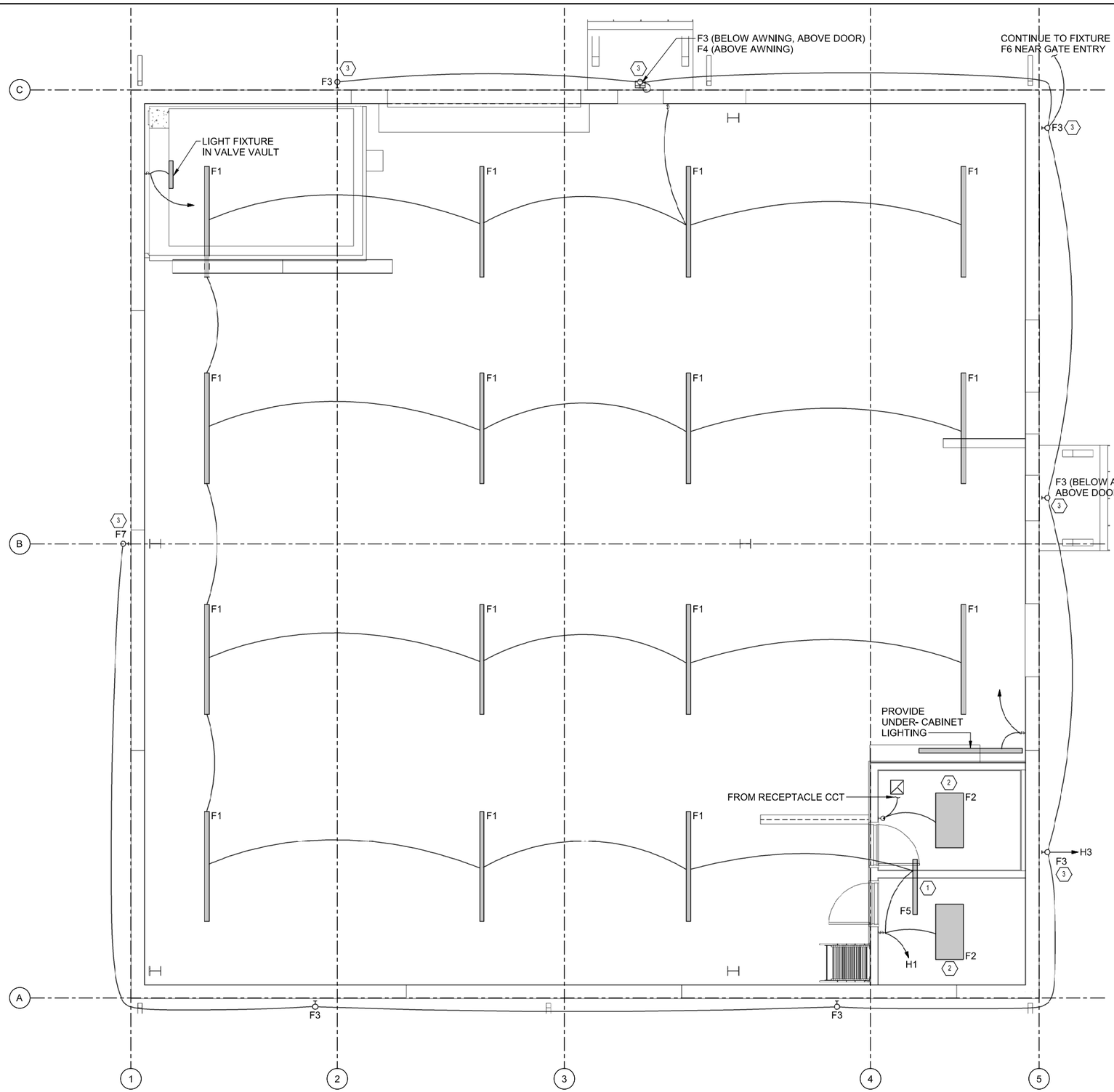
	REVISION			

ANDERSON WATER TREATMENT PLANT
GRANGER-HUNTER IMPROVEMENT DISTRICT

ELECTRICAL (E)
LEVEL 1 CONTROLS PLAN
1629 WEST 2320 SOUTH

FILE:
JUB PROJ. #:93-23-004
DRAWN BY:Author
DESIGN BY:Designer
CHECKED BY:Checker
ONE INCH
AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY
LAST UPDATED:9/4/2024

DRAWING:
E-106



SHEET KEYED NOTES

1. F5 FIXTURE ABOVE MEZZANINE. USE 0-10V AND ADJUST LUMEN OUTPUT IN MEZZANINE TO REDUCE LIGHT OUTPUT TO MATCH FILTER ROOM AREA.
2. F2 FIXTURES IN ROOMS BELOW MEZZANINE.
3. ADJUST DIMMING PER FIXTURE. REDUCE AS NEEDED TO PREVENT GLARE OR LIGHTING ON NEIGHBOR PROPERTY.

GENERAL NOTES

A. REPLACE EXISTING EXTERIOR FIXTURES ON EXISTING BUILDING WITH NEW FIXTURES. SEE SITE PHOTOMETRIC PLAN FOR FIXTURE TYPE TO BE USED ON EXISTING BUILDING.

1 LEVEL 1 LIGHTING PLAN
SCALE: 1/4" = 1'-0"

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ANDERSON WATER TREATMENT PLANT
GRANGER-HUNTER IMPROVEMENT DISTRICT

ELECTRICAL (E)
LEVEL 1 LIGHTING PLAN
1629 WEST 2320 SOUTH

FILE:
JUB PROJ. #:93-23-004
DRAWN BY:Author
DESIGN BY:Designer
CHECKED BY:Checker
ONE INCH
AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY
LAST UPDATED:9/4/2024
DRAWING:
E-107

1 LEVEL 1 LIGHTING PHOTOMETRIC PLAN
SCALE: 1/4" = 1'-0"

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ANDERSON WATER TREATMENT PLANT
GRANGER-HUNTER IMPROVEMENT DISTRICT

ELECTRICAL (E)
LEVEL 1 LIGHTING PHOTOMETRIC PLAN
1629 WEST 2320 SOUTH

FILE:
JUB PROJ. #:93-23-004
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ONE INCH
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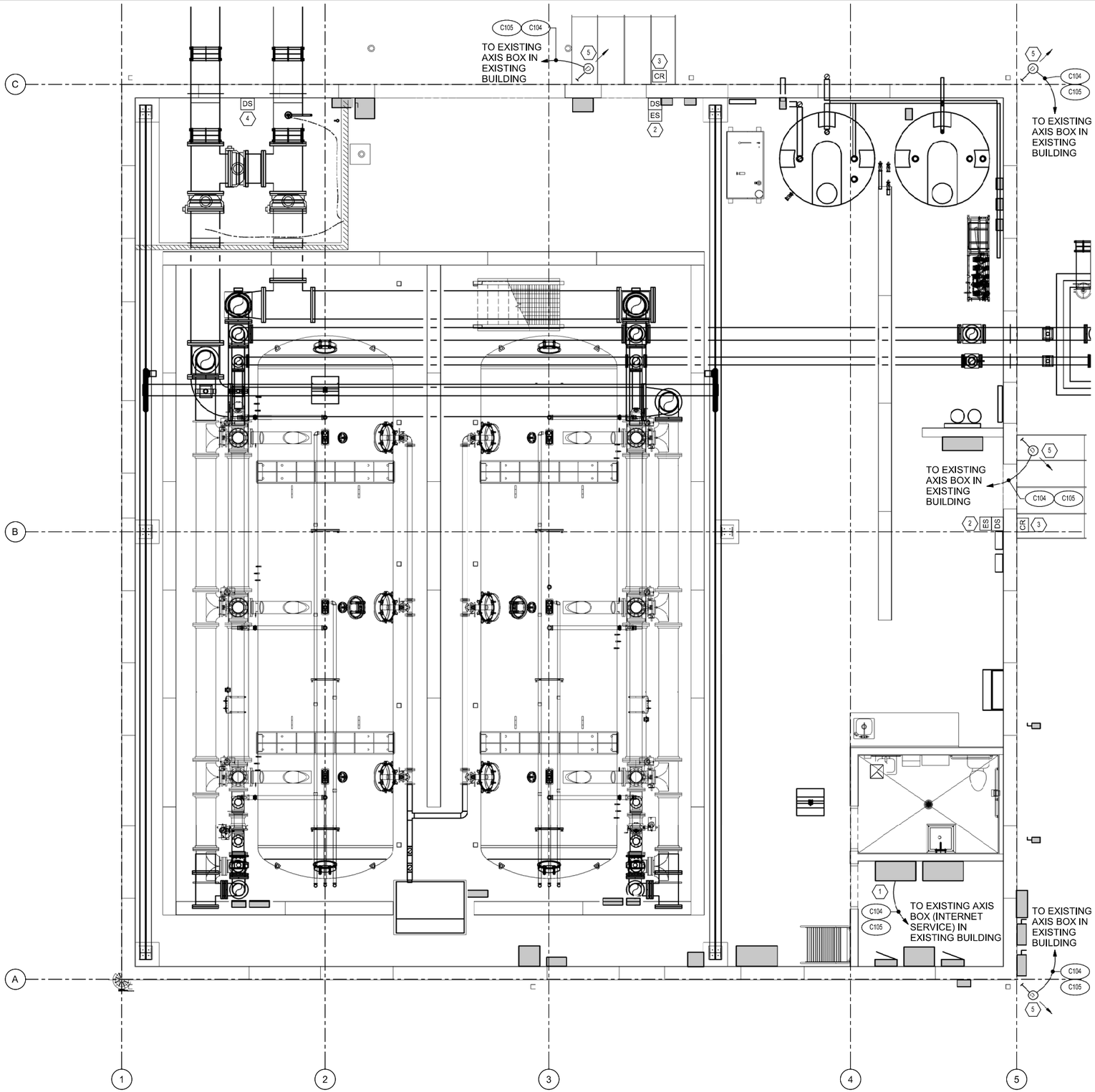
LAST UPDATED:9/4/2024

DRAWING:
E-108



SHEET KEYED NOTES

1. SECURITY CABINET CONTAINS HARDWARE FOR DOOR CARD READERS. CONNECT TO SITE INTERNET.
2. USE AXIS A1001 DOOR CONTROLLERS FOR ALL DOOR CONTROL.
3. ALL PROJECT CARD READERS SHALL BE HID COMPLIANT. COORDINATE CARD READER WITH OWNER TO ENSURE PART NUMBER COMPATIBILITY WITH EXISTING CARDS AND ACCESS DEVICES.
4. DOOR SWITCHES ARE MONITORED BY THE PLC (TYP).
5. NEW SECURITY CAMERA TO MATCH MODEL OF EXISTING AXIS SECURITY CAMERA ON EXISTING BUILDING.

1 LEVEL 1 SECURITY PLAN
SCALE: 1/4" = 1'-0"

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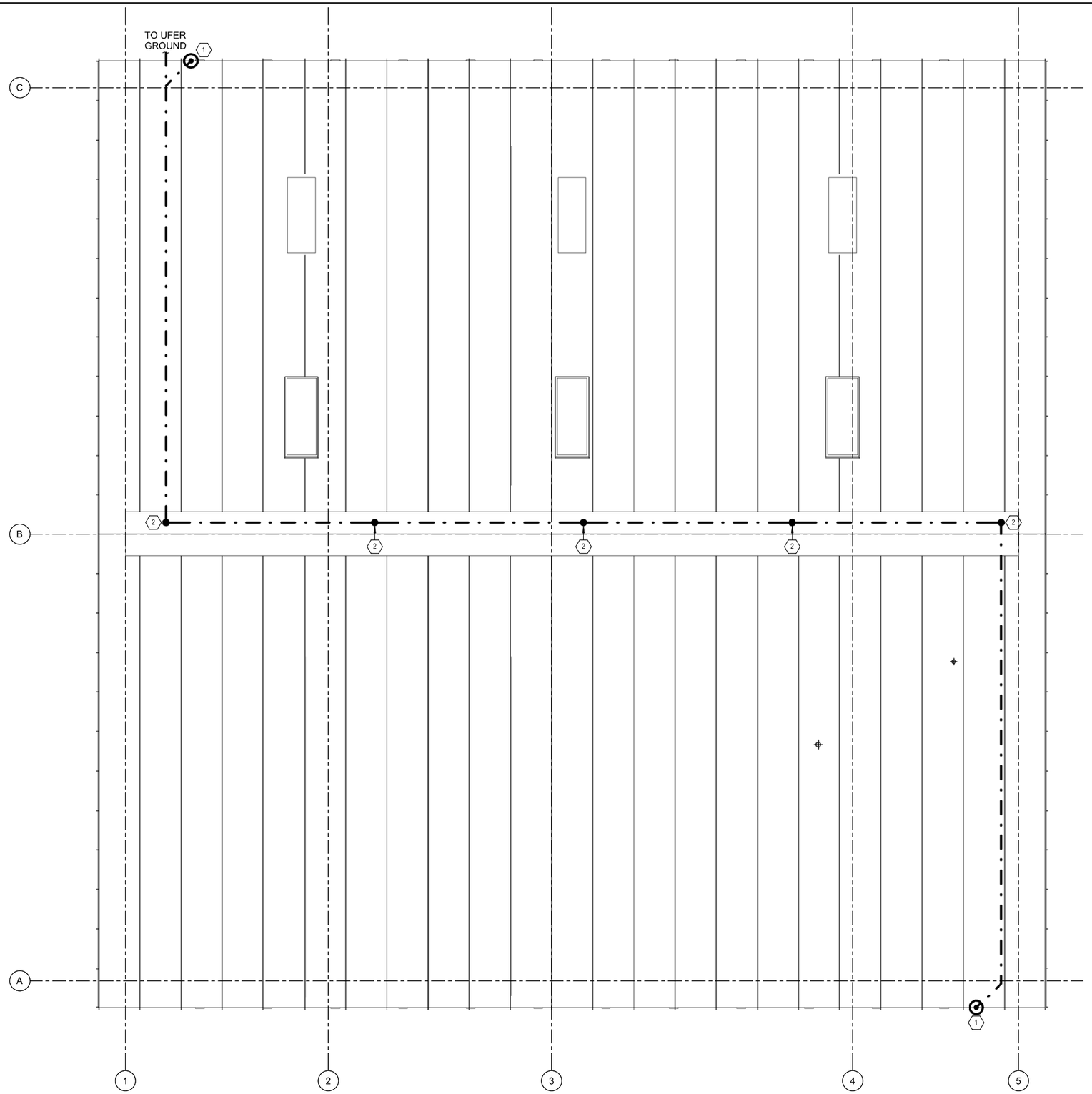
ANDERSON WATER TREATMENT PLANT
GRANGER-HUNTER IMPROVEMENT DISTRICT

ELECTRICAL (E)
LEVEL 1 SECURITY PLAN
1629 WEST 2320 SOUTH

FILE:
JUB PROJ. #:93-23-004
DRAWN BY:Author
DESIGN BY:Designer
CHECKED BY:Checker
ONE INCH
AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY
LAST UPDATED:9/4/2024

DRAWING:
E-109



1 ROOF LIGHTNING PROTECTION PLAN
SCALE: 1/4" = 1'-0"

SHEET KEYED NOTES

1. SEE DETAIL 8/E-505.
2. SEE DETAIL 4/E-505.

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ANDERSON WATER TREATMENT PLANT
GRANGER-HUNTER IMPROVEMENT DISTRICT

ELECTRICAL (E)
ROOF LIGHTNING PROTECTION PLAN
1629 WEST 2320 SOUTH

FILE:
JUB PROJ. #:93-23-004
DRAWN BY:Author
DESIGN BY:Designer
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ONE INCH
AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY
LAST UPDATED:9/4/2024

DRAWING:
E-110

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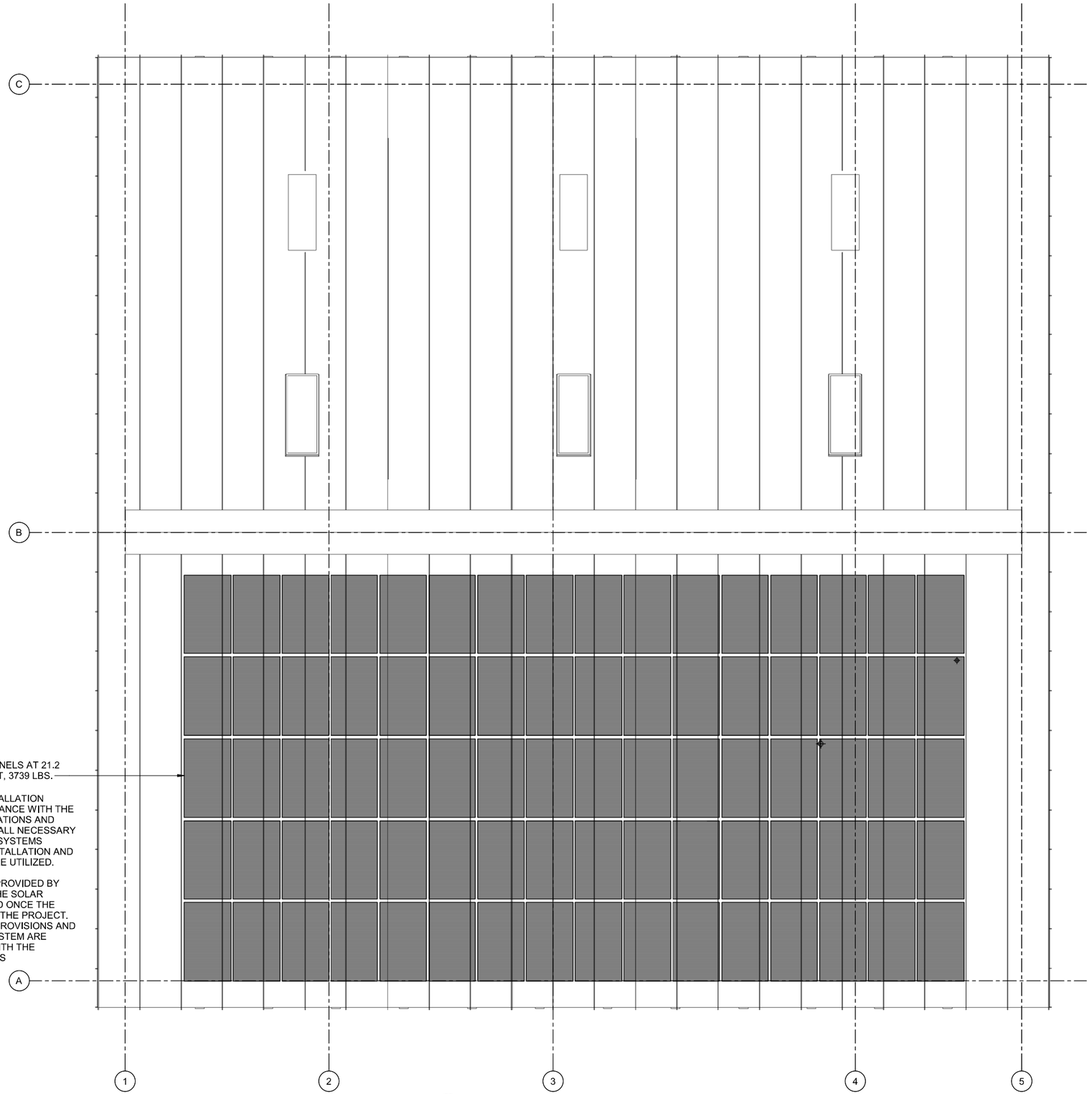

5x16 SOLAR PANEL ARRAY, 80 PANELS AT 21.2 KG EACH. 1696 KG TOTAL WEIGHT, 3739 LBS.

THE STANDING SEAM ROOF INSTALLATION SHALL BE EXECUTED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND SPECIFICATIONS. ENSURE THAT ALL NECESSARY ATTACHMENTS AND FASTENING SYSTEMS REQUIRED FOR THE PROPER INSTALLATION AND PERFORMANCE OF THE ROOF ARE UTILIZED.

SOLAR WIRING AND CONTROLS PROVIDED BY OTHERS COORDINATION WITH THE SOLAR CONTRACTOR WILL BE REQUIRED ONCE THE CONTRACTOR IS SELECTED FOR THE PROJECT. ENSURE THAT ALL NECESSARY PROVISIONS AND INTERFACES FOR THE SOLAR SYSTEM ARE ADDRESSED IN CONJUNCTION WITH THE SELECTED SOLAR CONTRACTOR'S REQUIREMENTS.

1 ROOF SOLAR PANEL LAYOUT PLAN
SCALE: 1/4" = 1'-0"

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ANDERSON WATER TREATMENT PLANT
GRANGER-HUNTER IMPROVEMENT DISTRICT

ELECTRICAL (E)
ROOF SOLAR PANEL LAYOUT PLAN
1629 WEST 2320 SOUTH

FILE:
JUB PROJ. #:93-23-004
DRAWN BY:Author
DESIGN BY:Designer
CHECKED BY:Checker
ONE INCH
AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY
LAST UPDATED: 9/4/2024

DRAWING:
E-111

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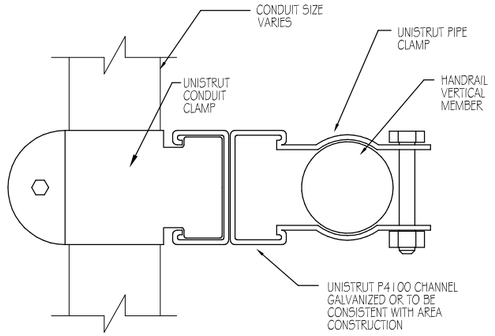
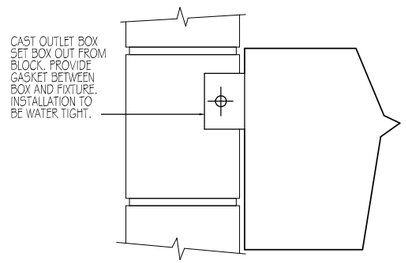
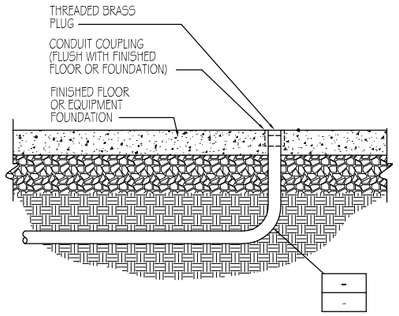


TOP VIEW

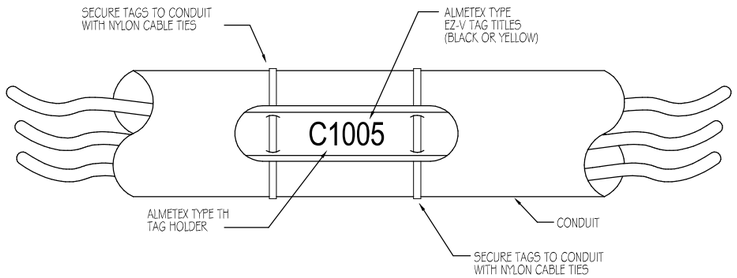
6 CONDUIT ATTACHMENT TO HANDRAIL
SCALE: NTS



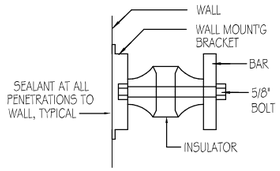
7 WALL HUNG FIXTURE MOUNTING DETAIL
SCALE: NTS



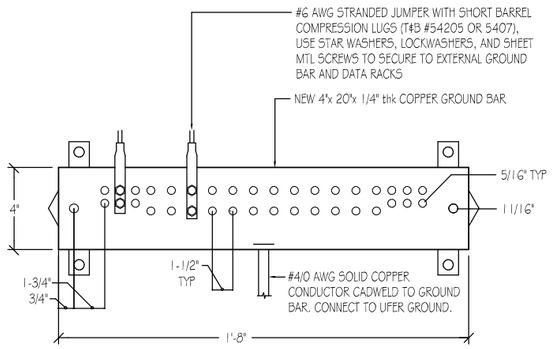
8 FLUSH CONDUIT TERMINATION
SCALE: NTS



9 CONDUIT MARKING SYSTEM
SCALE: NTS

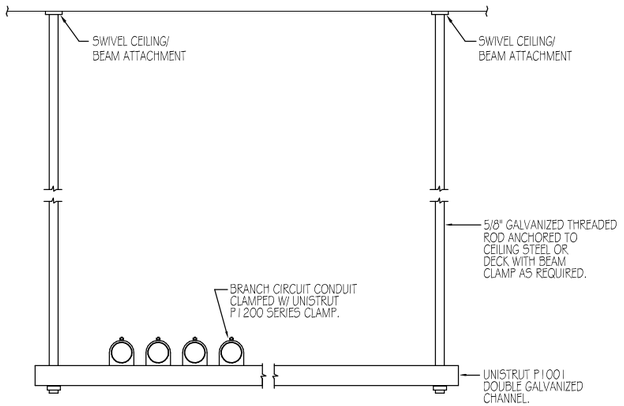


MOUNTING DETAIL

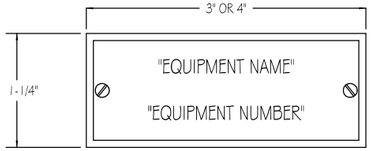


NOTES:
1. ALL HARDWARE STAINLESS STEEL INCLUDING BELLVILLES COAT ALL SURFACE WITH KOPR-SHIELD BEFORE MATING.
2. FOR GROUND BOND TO STEEL ONLY: INSERT A TOOTH WASHER BETWEEN LUG AND STEEL, COAT ALL SURFACES WITH KOPR-SHIELD.
3. ALL HOLES ARE COUNTERSUNK 1/16".

4 GROUND BAR
SCALE: NTS

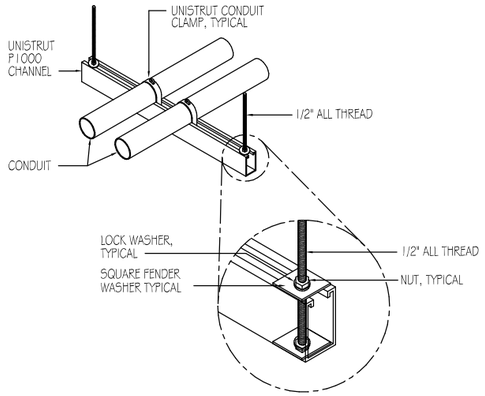


5 CONDUIT SUPPORT DETAIL
SCALE: NTS

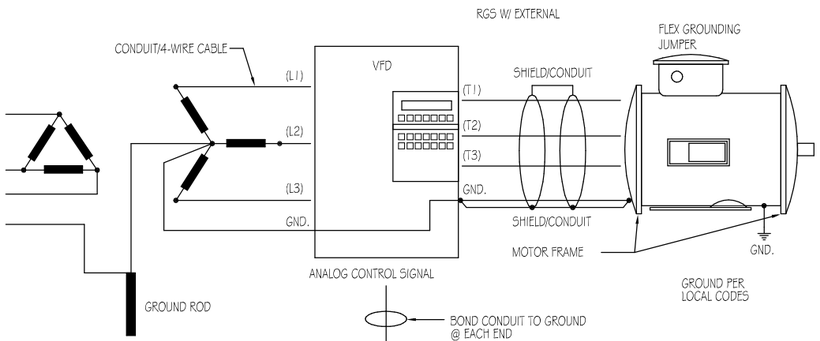


NOTES:
1. ALL LETTERS TO BE 1/4" UNLESS NOTED OTHERWISE.
2. ALL NAMEPLATES TO BE MOUNTED ON THE VERTICAL CENTERLINE OF THE CUBICAL OR DEVICE.
3. ATTACH ALL NAMEPLATES WITH STAINLESS STEEL SCREWS.
4. PROVIDE BLANK NAMEPLATES FOR ALL SPARE AND FUTURE DEVICES.

1 NAMEPLATE DETAIL
SCALE: NTS



2 CONDUIT SUPPORT DETAIL
SCALE: NTS



3 VFD GROUNDING DIAGRAM
SCALE: NTS

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ELECTRICAL (E)
ELECTRICAL DETAILS
1629 WEST 2320 SOUTH

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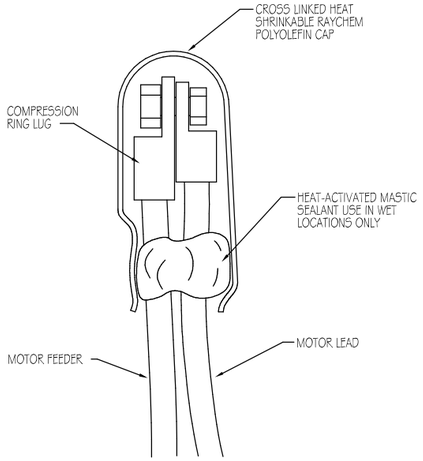
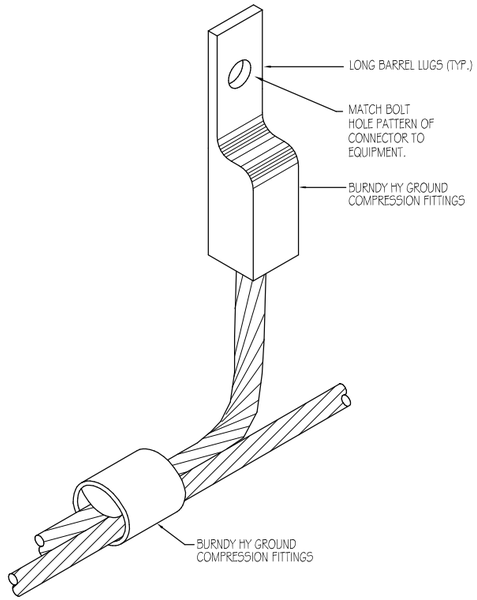
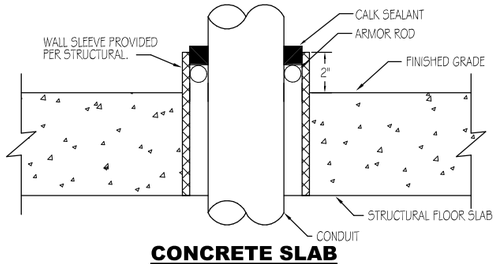
E-501



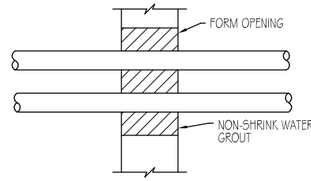
5 TYPICAL MOTOR LEAD TERMINATION
SCALE: NTS



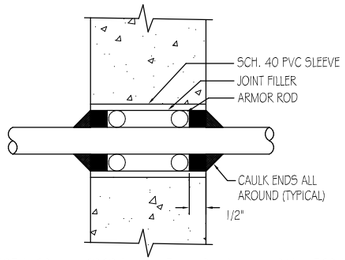
3 EQUIPMENT GROUNDING CONNECTION
SCALE: NTS



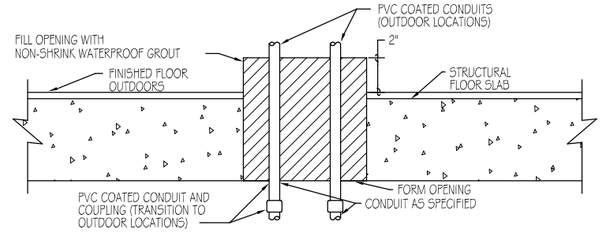
CONCRETE SLAB



CONCRETE WALL LOCATIONS

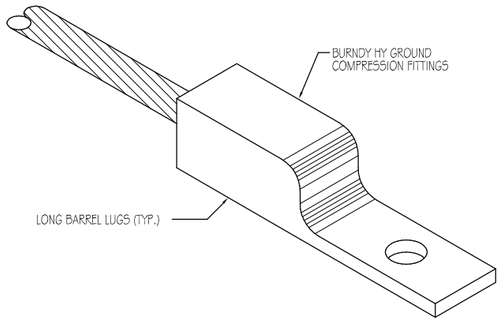


SINGLE CONDUIT PENETRATION FOR ABOVE GRADE PENETRATIONS ONLY

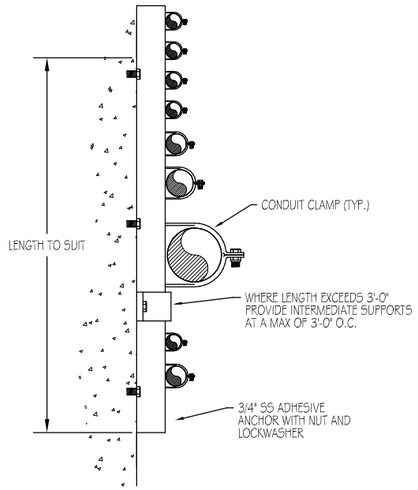


CONCRETE SLAB WET LOCATIONS

1 TYPICAL ABOVE GROUND CONDUIT PENETRATIONS FOR NEW WALLS AND FLOORS
SCALE: NTS



6 BONDING LUG
SCALE: NTS



4 CONDUIT SUPPORT DETAIL
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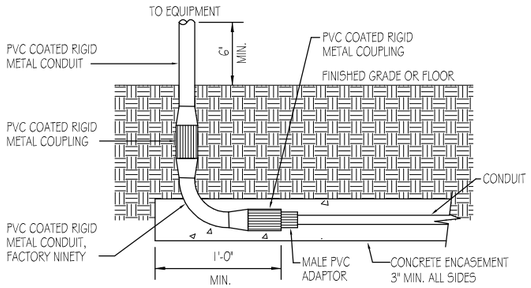
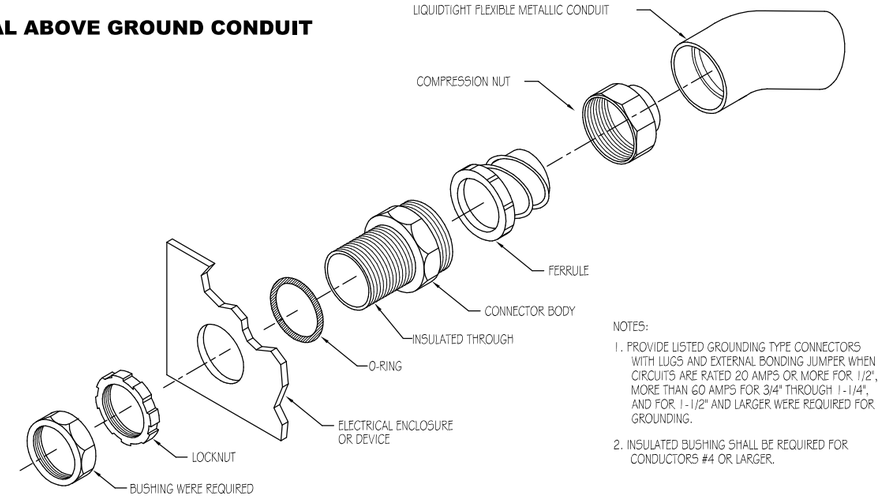


7 CONDUIT RISER
SCALE: NTS

TYPICAL ABOVE GROUND CONDUIT



NOTES:
1. PROVIDE LISTED GROUNDING TYPE CONNECTORS WITH LUGS AND EXTERNAL BONDING JUMPER WHEN CIRCUITS ARE RATED 20 AMPS OR MORE FOR 1/2", MORE THAN 60 AMPS FOR 3/4" THROUGH 1-1/4", AND FOR 1-1/2" AND LARGER WERE REQUIRED FOR GROUNDING.
2. INSULATED BUSHING SHALL BE REQUIRED FOR CONDUCTORS #4 OR LARGER.

2 TYPICAL FLEXIBLE CONDUIT CONNECTION DETAIL
SCALE: NTS

J-U-B ENGINEERS, INC.
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Phone: 801.886.9052
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Subconsultant:
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377 West 800 North
Salt Lake City, Utah 84103
801.322.0487
www.heatheng.com

BID

PROFESSIONAL ENGINEER
11573207-2202
ROBERT J. HILLYER
10/18/24
STATE OF UTAH

SET

NO.	REVISION	BY	APP.	DATE
	DESCRIPTION			

ANDERSON WATER TREATMENT PLANT
GRANGER-HUNTER IMPROVEMENT DISTRICT

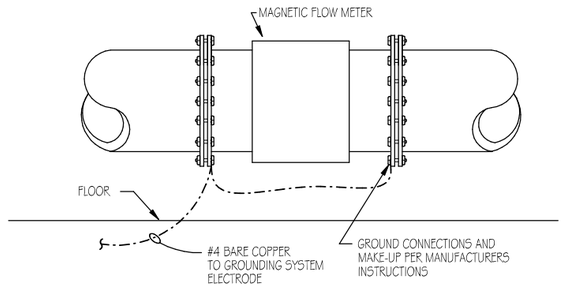
ELECTRICAL (E)
ELECTRICAL DETAILS
1629 WEST 2320 SOUTH

FILE:
JUB PROJ. #:93-23-004
DRAWN BY:Author
DESIGN BY:Designer
CHECKED BY:Checker

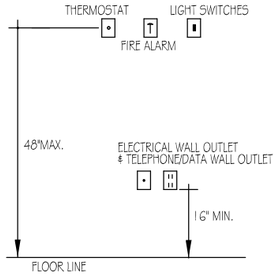
ONE INCH
AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY

LAST UPDATED:9/4/2024

DRAWING:
E-502



8 FLOW METER GROUND RING CONNECTION DETAIL
SCALE: NTS



5 MOUNTING HEIGHTS FOR ELECTRICAL DEVICES
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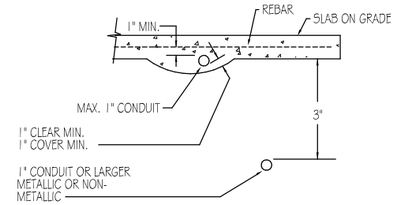
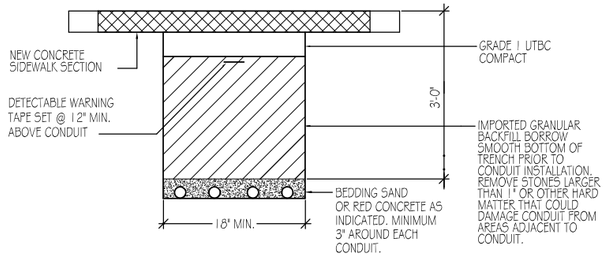
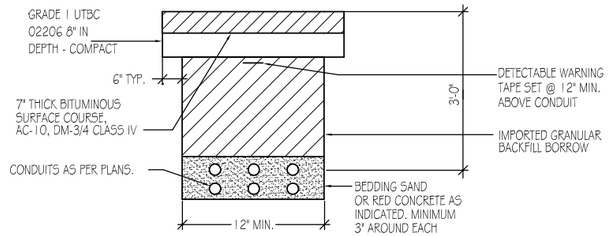


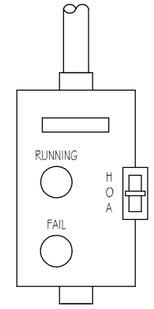
1 CONDUIT PLACEMENT
SCALE: NTS



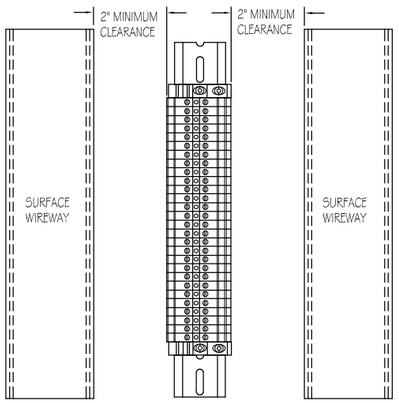
2 TRENCH DETAIL SIDEWALK
SCALE: NTS



3 TRENCH DETAIL ROADWAY
SCALE: NTS



6 EQUIPMENT HAND OFF AUTO SWITCH
SCALE: NTS



7 TERMINAL BLOCK CLEARANCE DETAIL
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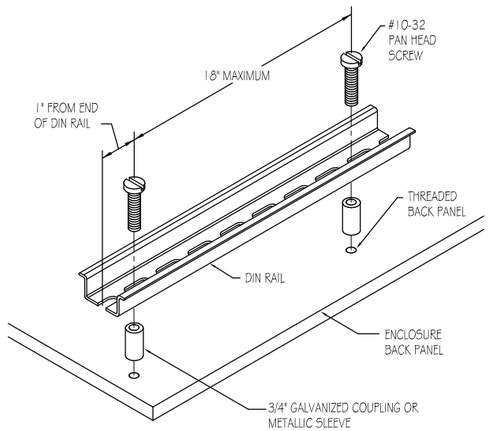
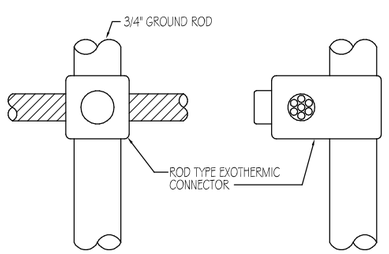
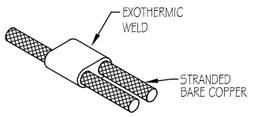


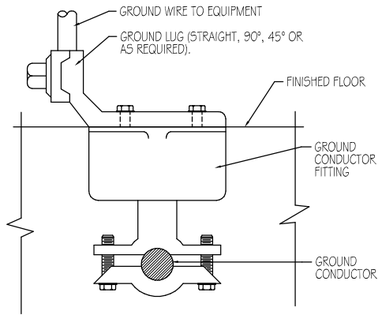
4 DIN RAIL MOUNTING DETAIL
SCALE: NTS



9 CABLE TO ROD CONNECTION DETAIL
SCALE: NTS



10 GROUNDING GRID TIE IN
SCALE: NTS



NOTE:
BOLTS SHALL BE INSERTED IN BOLT HOLES BEFORE CONNECTOR IS EMBEDDED.

11 GROUND INSERT DETAIL
SCALE: NTS

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STATE OF UTAH

SET

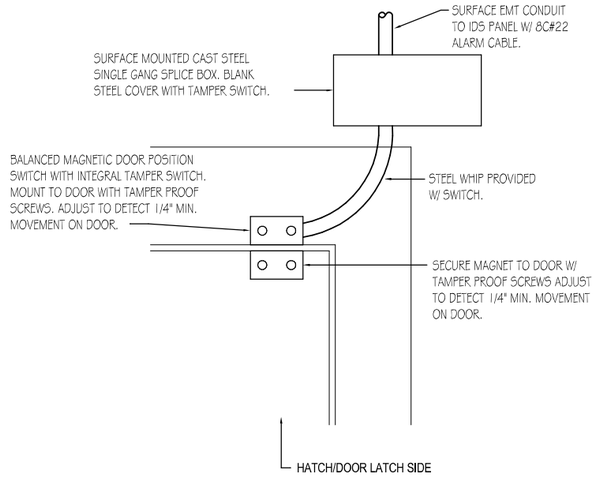
NO.	DESCRIPTION	BY	APP.	DATE
	REVISION			

ANDERSON WATER TREATMENT PLANT
GRANGER-HUNTER IMPROVEMENT DISTRICT

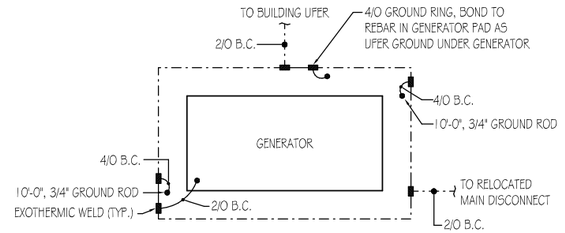
ELECTRICAL (E)
ELECTRICAL DETAILS
1629 WEST 2320 SOUTH

FILE:
JUB PROJ. #:93-23-004
DRAWN BY:Author
DESIGN BY:Designer
CHECKED BY:Checker
ONE INCH
AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY
LAST UPDATED:9/4/2024
DRAWING:
E-503

Autodesk Docs://GHID Anderson WTP\93-23-004_E.rvt



1 HATCH-DOOR SWITCH MOUNTING DETAIL
SCALE: NTS



2 GENERATOR GROUNDING DETAIL
SCALE: NTS

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392 E. Winchester St.
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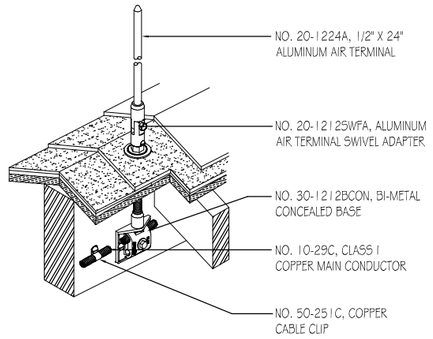
	DESCRIPTION			

ANDERSON WATER TREATMENT PLANT
GRANGER-HUNTER IMPROVEMENT DISTRICT

ELECTRICAL (E)
ELECTRICAL DETAILS
1629 WEST 2320 SOUTH

FILE:
JUB PROJ. #:93-23-004
DRAWN BY:Author
DESIGN BY:Designer
CHECKED BY:Checker
ONE INCH
AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY
LAST UPDATED:9/4/2024

DRAWING:
E-504



5 / E-505 **RIDGE AIR TERMINAL**
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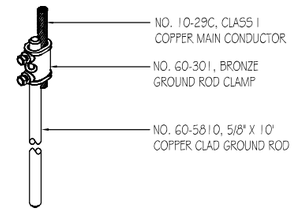

6 / E-505 **GROUND ROD DETAIL**
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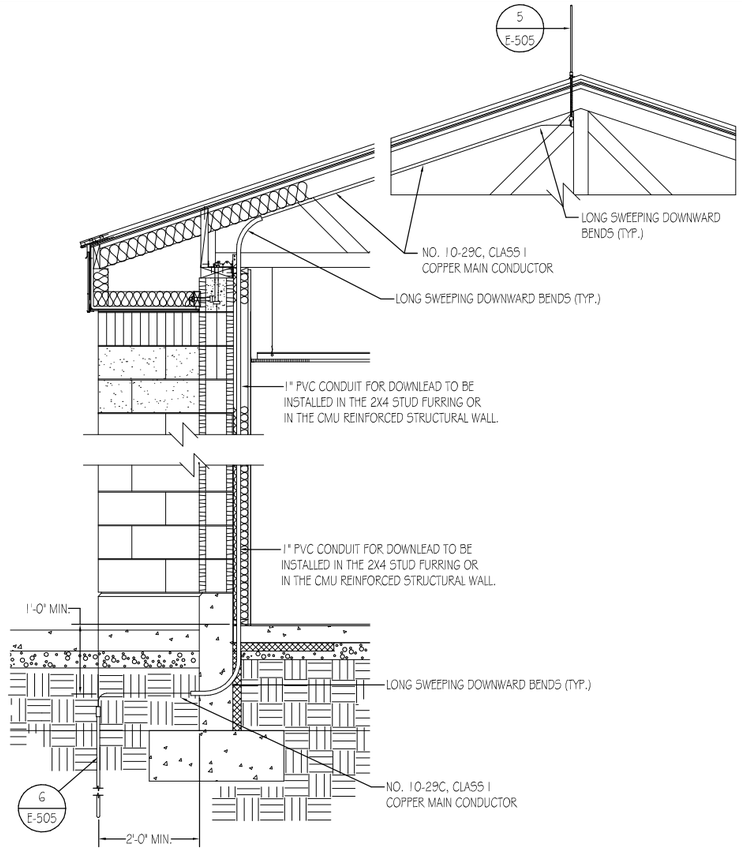
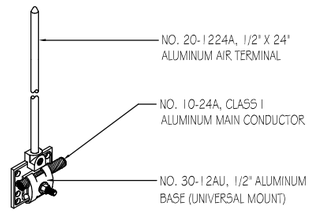
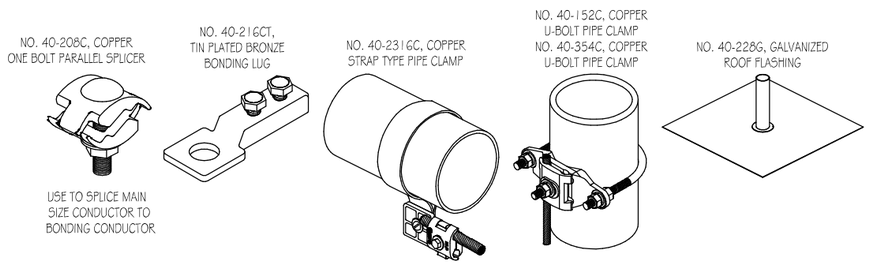


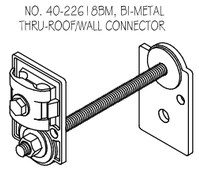
1 / E-505 **TYPICAL DOWNLEAD DETAIL**
SCALE: NONE



7 / E-505 **STACK AIR TERMINAL**
SCALE: NONE



2 / E-505 **MISCELLANEOUS DETAILS**
SCALE: NONE



8 / E-505 **THRU-ROOF / WALL CONNECTOR**
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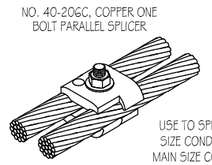


4 / E-505 **CABLE CONNECTOR**
SCALE: NONE

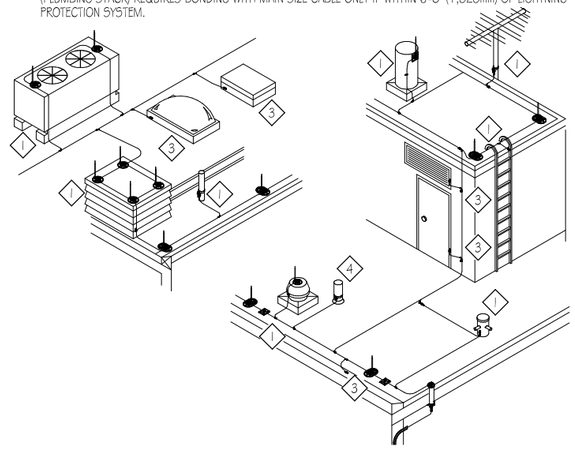
3 / E-505 **STEEL CONNECTION**
SCALE: NONE

GENERAL CONSTRUCTION NOTES

1. THIS DRAWING IS NOT INTENDED FOR USE AS A CONSTRUCTION DOCUMENT. FIELD VERIFY ACTUAL CONDITIONS PRIOR TO CONSTRUCTION. CONTACT ENGINEER TO CLARIFY ANY DISCREPANCIES.

GENERAL BONDING NOTES

1. TYPICAL BODIES OF CONDUCTANCE AS NOTED BELOW. USE FULL SIZE CONDUCTOR AND APPROPRIATE FITTING SHOWN FOR CONNECTION.
2. BONDING CONNECTIONS AND FITTINGS SHOWN ARE TYPICAL EXAMPLES. MAKE ALL CONNECTIONS REQUIRED TO MEET CODES AS NOTED BELOW. ADJUST FITTING TYPE AS REQUIRED TO SUIT FIELD CONDITIONS.
3. TYPICAL BODIES OF INDUCTANCE AS NOTED BELOW. USE SECONDARY SIZE (SMALLER) CONDUCTOR AND APPROPRIATE FITTING SHOWN FOR CONNECTION.
4. (PLUMBING STACK) REQUIRES BONDING WITH MAIN SIZE CABLE ONLY IF WITHIN 6'-0" (1,828mm) OF LIGHTNING PROTECTION SYSTEM.



GENERAL INSTALLATION NOTES

1. LOCATE AIR TERMINALS AS SHOWN. TAKE CARE TO INSURE THAT ALL POINTS ARE WITHIN 2'-0" (609mm) OF OUTSIDE BUILDING EDGE, OUTSIDE CORNERS, RIDGE ENDS, AND THAT MAX SPACING DOES NOT EXCEED 20'-0" (6,096mm), AND THAT MIN PROJECTION ABOVE OBJECT PROTECTED IS 10" (254mm); POINTS PROJECTING 24" (609mm) MAY BE SPACED @ 25'-0" (7,520mm) MAX.
2. MAINTAIN HORIZONTAL OR DOWNWARD COURSING OF MAIN CONDUCTOR. INSURE THAT ALL BENDS HAVE AT LEAST AN 8" (203mm) RADIUS AND DO NOT EXCEED 90 DEGREES.
3. ATTACH ALL EXPOSED ROOF, DOWN LEAD AND BONDING CABLES AT 3'-0" (914mm) ON CENTER MAX. VERIFY COMPATIBILITY OF ADHESIVE ON MEMBRANE ROOF APPLICATIONS PRIOR TO INSTALLATION.
4. GROUND ELECTRODES SHALL BE INSTALLED AS SHOWN, BUT IN NO INSTANCE SHALL THEY BE LESS THAN 1'-0" (304mm) BELOW GRADE AND 2'-0" (609mm) FROM FOUNDATION WALL. DRIVEN RODS SHALL PENETRATE THE EARTH AT LEAST 10'-0" (3,048mm).
5.
6. BOND TO WATER SERVICE AND OTHER PIPING SYSTEMS AS SHOWN AND AS REQUIRED BY CODE.
7. INTERCONNECT LIGHTNING PROTECTION GROUND TO ELECTRIC, TELEPHONE, AND OTHER BUILDING GROUND SYSTEMS AS SHOWN OR AS REQUIRED BY CODE.
8. SYSTEM SHALL BE INSTALLED AS REQUIRED TO INSURE PROPER CODE COMPLIANCE AND SYSTEM
9. CERTIFICATION. ANY MAJOR INSTALLATION VARIANCE SHALL BE RESUBMITTED FOR APPROVAL.
10. RECORD DOCUMENTS SHALL BE SUBMITTED IN ACCORDANCE WITH CERTIFICATION PROCEDURES.
11. ALL MATERIALS TO BE UNDERWRITER'S LABORATORIES APPROVED WITH "A" LABELS ON CONDUCTORS @ 10'-0" (3,048mm) INTERVALS AND "B" LABELS ON ALL AIR TERMINALS.
12. COMPLETED INSTALLATION SHALL BEAR U.L. MASTER LABEL "C" TO BE SECURED BY SYSTEM INSTALLER PER UL96A.

INSTALLATION SHALL BE MADE UNDER THE SUPERVISION OF AN L.P.I. CERTIFIED MASTER INSTALLER.

LEGEND

- AIR TERMINAL AND BASE ASSEMBLY
- MECHANICAL CONNECTION
- THRU-ROOF CONNECTION
- THRU-WALL CONNECTION
- COPPER LIGHTNING PROTECTION CONDUCTOR
- ALUMINUM LIGHTNING PROTECTION CONDUCTOR
- GROUND ROD
- MISCELLANEOUS BOND

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ANDERSON WATER TREATMENT PLANT
GRANGER-HUNTER IMPROVEMENT DISTRICT

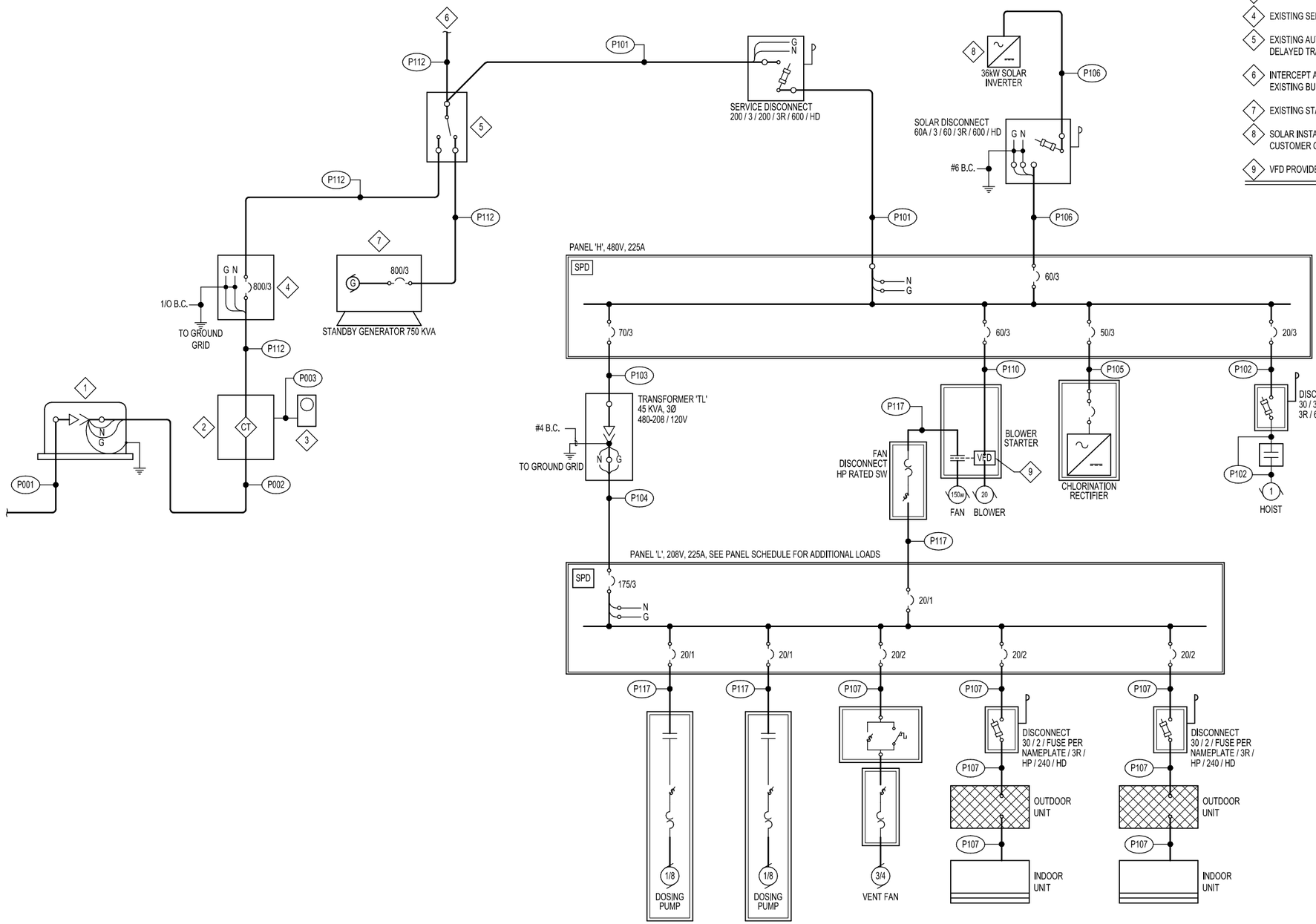
ELECTRICAL (E)
ELECTRICAL DETAILS
1629 WEST 2320 SOUTH

FILE:
JUB PROJ. #:93-23-004
DRAWN BY:Author
DESIGN BY:Designer
CHECKED BY:Checker
ONE INCH
AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY
LAST UPDATED: 9/4/2024

DRAWING:
E-505

DRAWING NOTES

1. NEW UTILITY TRANSFORMER BY UTILITY. NEW PAD VAULT BY CONTRACTOR.
2. NEW CT ENCLOSURE, 480V, 800A.
3. NEW NET METERING UTILITY METER BY UTILITY.
4. EXISTING SERVICE DISCONNECT, 480V, 800A. (RELOCATED)
5. EXISTING AUTOMATIC TRANSFER SWITCH, 480V, 800A, DELAYED TRANSITION. (RELOCATED)
6. INTERCEPT AND REPLACE EXISTING SERVICE FEEDERS TO EXISTING BUILDING WITH NEW FEEDERS.
7. EXISTING STANDBY GENERATOR, 750 KVA. (RELOCATED)
8. SOLAR INSTALLER TO COMPLETE AND SUBMIT RMP CUSTOMER GENERATION APPLICATION.
9. VFD PROVIDED BY WESTECH.



1 FILTER BUILDING ELECTRICAL ONE-LINE DIAGRAM
SCALE: NTS

J-U-B ENGINEERS, INC.
392 E. Winchester St.
Suite 300
Salt Lake City, UT 84107
Phone: 801.886.9052
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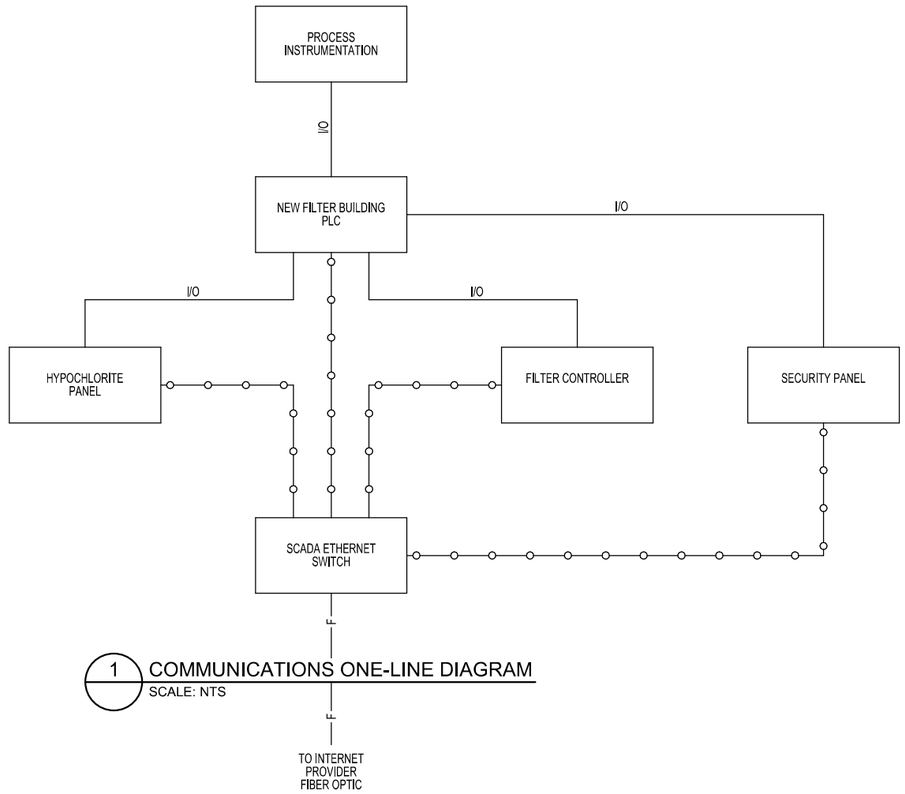
ANDERSON WATER TREATMENT PLANT
GRANGER-HUNTER IMPROVEMENT DISTRICT

ELECTRICAL (E)
FILTER BUILDING ELECTRICAL ONE-LINE DIAGRAM
1629 WEST 2320 SOUTH

FILE:
JUB PROJ. #:93-23-004
DRAWN BY:Author
DESIGN BY:Designer
CHECKED BY:Checker
ONE INCH
AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY
LAST UPDATED:9/4/2024

DRAWING:
E-601



1 COMMUNICATIONS ONE-LINE DIAGRAM
SCALE: NTS

J-U-B ENGINEERS, INC.
392 E. Winchester St.
Suite 300
Salt Lake City, UT 84107
Phone: 801.886.9052
www.jub.com

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ELECTRICAL (E)
COMMUNICATIONS ONE-LINE DIAGRAM
1629 WEST 2320 SOUTH

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LAST UPDATED:9/4/2024

DRAWING:
E-602

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