ISA INSTRUMENT IDENTIFICATION TABLE

MEASURED OR INITIATING VARIABLE	FIRST LETTER MEAS. VARI.	SUCCEEDING LETTERS: SWITCH (HI, LO, OPEN, CLOSE)	PRIM. ELEM. (SENSOR)	INDICATOR	INDICATING CONTROLLER	CONTROL OR CONTR. (BLND)	RECORDER	INTEGRATOR (TOTALIZER)	TRANSMITTER (INDICATING)	TRANSMITTER	VALVE OR ACTUATOR	RELAY	SOURCE
ANALYSIS	A	ASL	AE	AI			AR		AIT	AT		AY	
BURNER, COMBUSTION	B		BE			BC						BY	
CONDUCTIVITY	C	CSH	CE	CI	CIC	CC	CR		CIT	CT		CY	
DENSITY	D	DSH	DE	DI	DIC	DC	DR		DIT	DT		DY	DX
VOLTAGE	E		EE	EI					EIT	ET		EY	
FLOW RATE	F	FSHL	FE	FI	FIC	FC	FR	FQ	FIT	FT	FV	FY	
USER'S CHOICE	G												
HAND	H	HS											
CURRENT (ELECTRICAL)	I	IS	IE	II	IIC	IC				IT		IY	
POWER	J	JSH	JE	JI	JIC	JC	JR	JQ				JY	
TIME, TIME SCHEDULE	K			KI	KIC	KC		KQ				KY	KS
LEVEL	L	LSH	LE	LI	LIC	LC	LR		LIT	LT	LV	LY	
HUMIDITY	M		ME	MI	MIC	MC	MR		MIT	MT		MY	
USER'S CHOICE	N												
USER'S CHOICE	O												
PRESSURE, VACUUM	P	PSH	PE	PI	PIC	PC	PR		PIT	PT	PV	PY	
QUANTITY	Q						QR						
RADIATION	R												
SPEED, FREQUENCY	S	SSL	SE	SI		SC			SIT	ST		SY	
TEMPERATURE	T	TSH	TE	TI	TIC	TC	TR		TIT	TT	TV	TY	
MULTIVARIABLE	U			UI			UR					UY	
MECHANICAL ANALYSIS	V												
WEIGHT, FORCE	W	WS	WE	WI	WIC		WR		WIT	WT			
VIBRATION	X		XE	XI								XY	
EVENT	Y	YS		YI			YR		YIT	YT		YY	
POSITION, DIMENSION	Z	ZSO	ZE	ZI			ZR		ZIT	ZT		ZY	

INSTRUMENTATION NOTES

1. ALL INSTRUMENTS SHALL BE MOUNTED, PIPED, AND CONNECTED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
2. WALL PENETRATIONS TO BE FRAMED AND SEALED PER PRE ENGINEERED METAL BUILDING MANUFACTURER'S STANDARD DETAILS AND SPECIFICATIONS.
3. GENERAL CONTRACTOR SHALL COORDINATE ALL DEMOLITION WITH THE ELECTRICAL CONTRACTOR. REFER TO E-DRAWINGS.
4. ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL NECESSARY POWER AND SIGNAL WIRING WITH CONDUITS SHOWN ON ELECTRICAL SHEETS, MECHANICAL SHEETS, AND INSTRUMENTATION SHEETS BETWEEN POWER PANELS, PLC'S, CONTROL PANELS, AND FIELD INSTRUMENTS AS REQUIRED.
5. LOCATION OF PROCESS EQUIPMENT, MOTORS, VALVE, INSTRUMENTS, AND SIMILAR SHOWN ON THE DRAWINGS ARE APPROXIMATE. FINAL LOCATIONS TO BE DETERMINED IN FIELD.
6. REFER TO POWER PLANS FOR INSTRUMENTATION POWER REQUIREMENTS.
7. DURING ROUGH IN AND FINISHED STAGES OF CONSTRUCTION, THE GENERAL AND ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE TO PROTECT AND KEEP CLEAN ALL ELECTRICAL EQUIPMENT, PANELS, FIXTURES, AND DEVICES AS WELL AS ALL EXISTING EQUIPMENT AND RELATED WORK AREAS.
8. THE CONTRACTOR SHALL PROVIDE ALL INFORMATION ABOUT EQUIPMENT WHICH HE/SHE IS FURNISHING TO THE ENGINEER/OWNER FOR REVIEW PURPOSES. THE CONTRACTOR SHALL PROVIDE ALL INSTRUMENTATION DETAILS AND SUPPORT COMPONENTS SO THAT THESE MAY BE BUILT INTO THE CONSTRUCTION IN A TIMELY MANNER.
9. ELECTRICAL CONTRACTOR AND/OR SUBCONTRACTOR TO OBTAIN ALL PERMITS AND INSPECTIONS.
10. REFER TO ELECTRICAL SHEETS FOR ADDITIONAL DETAILS FOR CONDUIT, DEVICE LOCATIONS, AND POWER CIRCUITS.
11. DRAWINGS SHOW A LAYOUT OF SCADA/INSTRUMENTATION SYSTEMS AND EQUIPMENT DIAGRAMMATICALLY. EXACT LOCATION OF EQUIPMENT AND ROUTING OF RACEWAYS SHALL BE DETERMINED BY FIELD CONDITIONS AND DIRECTION BY ENGINEER AND OWNER. BY SUBMITTING A BID, CONTRACTOR WARRANTS THAT HE/SHE HAS VISITED THE SITE WHERE WORK IS TO BE PERFORMED, AND HAS EXAMINED THE EXISTING CONDITIONS AND EXTENT OF LABOR AND MATERIALS TO BE PROVIDED. COORDINATION WITH ALL TRADES, UTILITIES, ETC. SHALL BE PROVIDED.
12. CONTRACTOR SHALL REVIEW THE INSTRUMENTATION P&IDS, SPECIFICATION SECTION 13465 - SEQUENCE OF OPERATIONS, I&C INPUTS/OUTPUTS, AND INSTRUMENTATION SCHEDULES IN A COMBINED MANNER FOR A COMPLETE PROCESS REVIEW.

PROCESS AND INSTRUMENTATION ABBREVIATIONS

A/L/L	AUTO/LEAD/LAG	F/O/R	FORWARD/OFF/REVERSE	MCP	MAIN CONTROL PANEL	VFD	VARIABLE FREQUENCY DRIVE
ATS	AUTOMATIC TRANSFER SWITCH	F/R	FORWARD/REVERSE	N/A	NORMAL/ALARM	YL	EVENT ALARM LOW
AV	ACTUATED VALVE	FIT	FLOW INDICATING TRANSMITTER	NAOCL	SODIUM HYPOCHLORITE	YLL	EVENT ALARM LOW LOW
BCFP	BULK CHEMICAL FILL PANEL	FS	FLOW SWITCH	OIT	OPERATOR INTERFACE TERMINAL	YH	EVENT ALARM HIGH
BWW/DR/FTW	BACKWASH WASTE/ DRAINDOWN/ FILTER TO WASTE	GEN	GENERATOR	O/C	OPEN/CLOSE OR OPEN/CLOSED	YHH	EVENT ALARM HIGH HIGH
BWWEP	BACKWASH WASTE EMERGENCY PANEL	GPCP	GENERATOR POWER CONTROL PANEL	O/C/R	OPEN/CLOSE/REMOTE	YNF	EVENT NO FLOW
CACP	CHEMICAL ALARM CONTROL PANEL	H/A	HAND/AUTOMATIC	O/O	ON/OFF	YM	EVENT IN MANUAL
DH	DEHUMIDIFIER	H/O/A	HAND/OFF/AUTOMATIC	O/O/R	ON/OFF/RESET	YS	EVENT STATUS
DPIT	DIFFERENTIAL PRESSURE INDICATOR TRANSMITTER	ISB	INTRINSICALLY SAFE BARRIER	O/S/C	OPEN/STOP/CLOSE		
EFF	EFFLUENT	INF	INFLUENT	O/S/C/A	OPEN/STOP/CLOSE/AUTOMATIC		
ESTP	EMERGENCY STOP	KOH	POTASSIUM HYDROXIDE	P	PUMP		
F	FAULT	L/R	LOCAL/REMOTE	PAC	POLYALUMINUM CHLORIDE		
FACP	FIRE ALARM CONTROL PANEL	L/O/R	LOCAL/OFF/REMOTE	PIC	PANEL INTERFACE CONNECTOR		
		M	MOTOR	PLC	PROGRAMMABLE LOGIC CONTROLLER		
				POS	POSITION		
				PS	PRESSURE SWITCH		
				PV	PILOT VALVE		
				REC	RECYCLE		
				RS	RUN STATUS		
				RSL	REMOTE/STOP/LOCAL		
				SA	SPEED ADJUST		
				SFB	SPEED FEEDBACK		
				SP	SET POSITION		
				SSP	SPEED SET POINT		
				SV	SOLENOID VALVE		
				S/S	START/STOP		
				TP	TELEMETRY PANEL		
				TS	THERMISTOR		

INTERLOCK SCHEDULE

INTERLOCK #	EVENT	ACTION
1	WELL 3 HI-HI DISCHARGE PRESSURE (PIT-112)	TURN OFF WELL 3 (P-101)
2	WELL 3 LO-LO LEVEL (LE-111)	TURN OFF WELL 3 (P-101)
3	WELL 5 HI-HI DISCHARGE PRESSURE (PIT-214)	TURN OFF WELL 5 (P-201)
4	WELL 5 LO-LO LEVEL (LE-213)	TURN OFF WELL 5 (P-201)
5	WELL 7 HI-HI DISCHARGE PRESSURE (PIT-312)	TURN OFF WELL 7 (P-301)
6	WELL 7 LO-LO LEVEL (LE-311)	TURN OFF WELL 7 (P-301)
7	HI-HI OXIDIZED WATER pH (AIT-972)	TURN OFF WELLS 3 (P-101), 5 (P-201), AND 7 (P-301)
8	LO-LO OXIDIZED WATER pH (AIT-972)	TURN OFF WELLS 3 (P-101), 5 (P-201), AND 7 (P-301)
9	HI-HI OXIDIZED WATER Cl (AIT-972)	TURN OFF WELLS 3 (P-101), 5 (P-201), AND 7 (P-301)
10	LO-LO OXIDIZED WATER Cl (AIT-972)	TURN OFF WELLS 3 (P-101), 5 (P-201), AND 7 (P-301)
11	LO-LO FINISHED WATER PUMP WET WELL LEVEL (LSL-513)	TURN OFF FINISHED WATER PUMPS (FWP-501A, FWP-501B)
12	HI-HI FINISHED WATER DISCHARGE PRESSURE (PIT-517)	TURN OFF FINISHED WATER PUMPS (FWP-501A, FWP-501B)
13	HI-HI FINISHED WATER pH (AIT-974)	TURN OFF WELLS 3 (P-101), 5 (P-201), AND 7 (P-301). TURN OFF FINISHED WATER PUMPS (FWP-501A, FWP-501B)
14	LO-LO FINISHED WATER pH (AIT-974)	TURN OFF WELLS 3 (P-101), 5 (P-201), AND 7 (P-301). TURN OFF FINISHED WATER PUMPS (FWP-501A, FWP-501B)
15	HI-HI FINISHED WATER Cl (AIT-974)	TURN OFF WELLS 3 (P-101), 5 (P-201), AND 7 (P-301). TURN OFF FINISHED WATER PUMPS (FWP-501A, FWP-501B)
16	LO-LO FINISHED WATER Cl (AIT-974)	TURN OFF WELLS 3 (P-101), 5 (P-201), AND 7 (P-301). TURN OFF FINISHED WATER PUMPS (FWP-501A, FWP-501B)
17	PRE-FILTRATION KOH PUMP #1 EMERGENCY STOP (PB-602B)	TURN OFF PRE-FILTRATION KOH FEED PUMP #1 (MP-602)
18	PRE-FILTRATION KOH PUMP #2 EMERGENCY STOP (PB-603B)	TURN OFF PRE-FILTRATION KOH FEED PUMP #2 (MP-603)
19	PRE-FILTRATION KOH PUMP #3 EMERGENCY STOP (PB-604B)	TURN OFF PRE-FILTRATION KOH FEED PUMP #3 (MP-604)
20	PRE-FILTRATION NaOCl PUMP #1 EMERGENCY STOP (PB-702B)	TURN OFF PRE-FILTRATION NaOCl FEED PUMP #1 (MP-702)
21	PRE-FILTRATION NaOCl PUMP #2 EMERGENCY STOP (PB-703B)	TURN OFF PRE-FILTRATION NaOCl FEED PUMP #2 (MP-703)
22	POST-FILTRATION KOH PUMP #1 EMERGENCY STOP (PB-606B)	TURN OFF POST-FILTRATION KOH FEED PUMP #1 (MP-606)
23	POST-FILTRATION KOH PUMP #2 EMERGENCY STOP (PB-607B)	TURN OFF POST-FILTRATION KOH FEED PUMP #2 (MP-607)
24	POST-FILTRATION NaOCl PUMP #1 EMERGENCY STOP (PB-706A)	TURN OFF POST-FILTRATION NaOCl FEED PUMP #1 (MP-706)
25	POST-FILTRATION NaOCl PUMP #2 EMERGENCY STOP (PB-707B)	TURN OFF POST-FILTRATION NaOCl FEED PUMP #2 (MP-707)
26	PRE-FILTRATION PACl PUMP #1 EMERGENCY STOP (PB-802B)	TURN OFF PRE-FILTRATION PACl FEED PUMP #1 (MP-802)
27	PRE-FILTRATION PACl PUMP #2 EMERGENCY STOP (PB-803B)	TURN OFF PRE-FILTRATION PACl FEED PUMP #2 (MP-803)
28	ALL WELL PUMP RUN STATUSES = OFF (P-101, P-201, P-301)	TURN OFF KOH FEED PUMPS (MP-602, MP-603, MP-604, MP-606, MP-607). TURN OFF NaOCl FEED PUMPS (MP-702, MP-703, MP-706, MP-707). TURN OFF PACl FEED PUMPS (MP-802, MP-803).
29	HIGH PRE-FILTRATION KOH DAY TANK LEVEL (LSH-613)	TURN OFF PRE-FILTRATION KOH TRANSFER PUMP #1 (TP-601)
30	HIGH POST-FILTRATION KOH DAY TANK LEVEL (LSH-614)	TURN OFF POST-FILTRATION KOH TRANSFER PUMP #2 (TP-605)
31	HIGH PRE-FILTRATION NaOCl DAY TANK LEVEL (LSH-713)	TURN OFF PRE-FILTRATION NaOCl TRANSFER PUMP #1 (TP-701)
32	HIGH POST-FILTRATION NaOCl DAY TANK LEVEL (LSH-714)	TURN OFF POST-FILTRATION NaOCl TRANSFER PUMP #2 (TP-705)
33	HIGH PRE-FILTRATION PACl DAY TANK LEVEL (LSH-813)	TURN OFF PRE-FILTRATION PACl TRANSFER PUMP (TP-801)
34	FILTER AREA PLANT EMERGENCY STOP (PB-998)	TURN OFF WELL PUMPS (P-101, P-201, P-301). TURN OFF FINISHED WATER PUMPS (FWP-501A, FWP-501B). TURN OFF AIR SCOUR BLOWER (ASB-405). TURN OFF KOH FEED PUMPS (MP-602, MP-603, MP-604, MP-606, MP-607). TURN OFF NaOCl FEED PUMPS (MP-702, MP-703, MP-706, MP-707). TURN OFF PACl FEED PUMPS (MP-802, MP-803).
35	WATER TREATMENT PLANT MAIN CONTROL PANEL EMERGENCY STOP (PB-999)	TURN OFF WELL PUMPS (P-101, P-201, P-301). TURN OFF FINISHED WATER PUMPS (FWP-501A, FWP-501B). TURN OFF AIR SCOUR BLOWER (ASB-405). TURN OFF KOH FEED PUMPS (MP-602, MP-603, MP-604, MP-606, MP-607). TURN OFF NaOCl FEED PUMPS (MP-702, MP-703, MP-706, MP-707). TURN OFF PACl FEED PUMPS (MP-802, MP-803).
36	WELL STATION 3 MAIN CONTROL PANEL EMERGENCY STOP (PB-991C)	TURN OFF WELL 3 (P-101)
37	WELL STATION 5 MAIN CONTROL PANEL EMERGENCY STOP (PB-992C)	TURN OFF WELL 5 (P-201)
38	WELL STATION 7 MAIN CONTROL PANEL EMERGENCY STOP (PB-993C)	TURN OFF WELL 7 (P-301)
39	NO FLOW - RAW WATER FLOW METER (FIT-416) (FLOW = 0)	TURN OFF KOH FEED PUMPS (MP-602, MP-603, MP-604, MP-606, MP-607). TURN OFF NaOCl FEED PUMPS (MP-702, MP-703, MP-706, MP-707). TURN OFF PACl FEED PUMPS (MP-802, MP-803).
40	NO FLOW - FILTERED WATER FLOW METER (FIT-418) (FLOW = 0)	TURN OFF KOH FEED PUMPS (MP-606, MP-607). TURN OFF NaOCl FEED PUMPS (MP-706, MP-707).
41	NO FLOW - FINISHED WATER FLOW METER (FIT-518) (FLOW = 0)	TURN OFF KOH FEED PUMPS (MP-606, MP-607). TURN OFF NaOCl FEED PUMPS (MP-706, MP-707).
42	NO FLOW - WELL STATION 3 FLOW METER (FIT-113) (FLOW = 0)	TURN OFF WELL 3 (P-101)
43	NO FLOW - WELL STATION 5 FLOW METER (FIT-215) (FLOW = 0)	TURN OFF WELL 5 (P-201)
44	NO FLOW - WELL STATION 7 FLOW METER (FIT-313) (FLOW = 0)	TURN OFF WELL 7 (P-301)

TOWN OF EASTON MASS INCORPORATED 1725

ENVIRONMENTAL PARTNERS

RYAN J. TRAHAN, GMIL, No. 47941, REGISTERED PROFESSIONAL ENGINEER, COMMONWEALTH OF MASSACHUSETTS

MARK	DATE	DESCRIPTION

Scale	NTS
Date	AUGUST 2021
Job No.	307-2002
Designed by	SFP
Drawn by	GAR
Checked by	DNRP
Approved by	RJT

THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

RED MILL ROAD WATER TREATMENT PLANT
TOWN OF EASTON, MA

PROCESS AND INSTRUMENTATION CONTROL ABBREVIATIONS

FOR CONSTRUCTION

Sheet No. I-1

Drawing file: C:\Users\grahapodata\local\temp\AcPublish_37\148\2.1 I&C Abbr_Legend_SCADA Schem_Equip Sc.dwg Plot Date: Aug 19,2021-10:05am

VALVES

- BALL VALVE
- VENTED BALL VALVE
- BALL CHECK VALVE
- GATE VALVE
- GLOBE VALVE
- BUTTERFLY VALVE
- CHECK VALVE
- NEEDLE VALVE
- DIAPHRAGM VALVE
- PLUG VALVE
- PINCH VALVE
- 3 WAY VALVE
- 4 WAY VALVE
- PRESSURE REDUCING VALVE
- BACK PRESSURE VALVE
- FIVE FUNCTION VALVE
- VACUUM BREAKER
- RELIEF VALVE
- WELL SERVICE VALVE
- SAMPLE

ACTUATORS

- SOLENOID
- PNEUMATIC
- CYLINDER
- MOTOR
- ELECTROPNUEMATIC
- ELECTRO HYDRAULIC

PIPING

- PRESSURE INDICATOR
- PRESSURE SWITCH
- AIR FILTER
- AIR REGULATOR
- AIR LUBRICATOR
- FILTER REGULATOR
- CHEMICAL SEAL
- RUPTURED DISC
- DRESSER COUPLING
- REDUCER
- ECCENTRIC REDUCER
- STRAINER
- UNION
- EXPANSION JOINT/FLEX CONNECTOR
- FLEXIBLE HOSE
- FLANGE
- HOSE CONNECTION
- QUICK DISCONNECT
- MAGNETIC FLOWMETER
- ULTRASONIC FLOWMETER
- TURBINE FLOWMETER
- ORIFICE FLOWMETER
- SITE FLOW INDICATOR
- FLUME
- VENTURI
- WEIR
- THERMAL DISPERSION FLOW METER
- INSULATION
- ELECTRIC TRACE INSULATION
- STREAM TRACE INSULATION
- CENTRIFUGAL
- DIAPHRAGM
- GEAR
- METERING
- PROGRESSIVE CAVITY
- VERTICAL TURBINE PUMP
- ROTARY BLOWER
- CENTRIFUGAL BLOWER
- MOTOR
- DOUBLE SUCTION
- SUBMERSIBLE
- CENTRIFUGAL SUCTION LIFT
- POSITIVE DISPLACEMENT BLOWER
- SILENCER
- PARTICULATE FILTER
- ROTAMETER
- SLIDE GATE

PUMPS, BLOWERS, TANKS AND EQUIPMENT

- SPLITTER BOX
- BAG FEEDER
- 55 GALLON DRUM
- FILTER PRESS
- AERATOR WITH SPARGER
- AIR COMPRESSOR?
- AIR DRYER
- AIR SEPARATOR
- DUPLEX STRAINER
- INSECT SCREEN
- LEVEL ELEMENT
- LEVEL ELEMENT (ULTRASONIC)
- ANALYTICAL ELEMENT
- RADIO COMMUNICATION
- DEMISTER
- EXPANSION TANK
- LEVEL SWITCH
- FLOOD SWITCH
- PULSATION DAMPENER
- HORN
- HEAT EXCHANGER
- SAFETY SHOWER
- SINGLE STRAINER
- DUST COLLECTOR
- CALIBRATION STANDPIPE
- STATIC MIXER
- VERTICAL MIXER W/ AFD
- SUBMERSIBLE MIXER
- INJECTOR
- PIPELINE FLASH REACTOR
- TRIM HEATER
- AMBIENT VAPORIZER
- SECURITY CAMERA
- VERTICAL TANK
- HORIZONTAL TANK
- DOME TANK
- CONE BOTTOM TANK
- WATER LEVEL
- PROP. AGITATOR
- TURBINE AGITATOR
- VENT
- VACUUM SWITCH
- EJECTOR
- DRAIN
- FLOW SWITCH
- HIGH PRESSURE CUTOUT SWITCH

FLOWS AND LINES

- PRIMARY FLOW
- SECONDARY FLOW
- TERTIARY FLOW
- ELECTRICAL SIGNAL
- PLC
- CONTROL PANEL
- LOCATIONAL DIVIDE
- DATA COMMUNICATION

ANNOTATION

- FLOW ARROW LEFT
- FLOW ARROW RIGHT
- SLOPE RIGHT
- SLOPE LEFT
- DEMOLITION
- SALVAGE

INSTRUMENTATION AND ELECTRICAL

- FIELD MOUNTED INSTRUMENT TAG
- PANEL MOUNTED INSTRUMENT TAG (PROCESS CONTROL PANEL)
- PANEL MOUNTED INSTRUMENT TAG (FIELD CONTROL PANEL)
- SCADA SYSTEM SIGNAL TAG - A=ANALOG, D=DISCRETE
  I=INPUT, O=OUTPUT
- INDICATING LIGHT: R - RED, Y - YELLOW
  G - GREEN, A - AMBER
- SCADA ALARM: L = LOW, H = HIGH
  NF = NO FLOW
- VARIABLE FREQUENCY DRIVE
- INTERLOCK
- ETHERNET SWITCH
- CONTROL PANEL OPERATOR INTERFACE TERMINAL
- HAND SWITCH
- MAN DOWN PUSH BUTTON

TOWN OF EASTON MASS INCORPORATED 1725

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RED MILL ROAD WATER TREATMENT PLANT
TOWN OF EASTON, MA

PROCESS AND INSTRUMENTATION CONTROL LEGEND

FOR CONSTRUCTION

Sheet No. I-2

Drawing file: C:\Users\garlappata\local\temp\AcPublish_37\14812.1 I&C Abbr_Legend_SCADA Schem_Equip Sc.dwg Plot Date: Aug 19,2021 - 10:05am

RED MILL ROAD WATER TREATMENT PLANT

ELECTRICAL ROOM - ROOM 107

MAIN CONTROL PANEL

YAGI ANTENNA TOWER 450 MHZ

RF RADIO (WATER OFFICE) — CAT-6E — PLANT PLC — CAT-6E

OIT TOUCHSCREEN — CAT-6E

UPS

MANAGED ETHERNET SWITCH (4) — CAT-6E — FIREWALL (4) — CAT-6E — POE ETHERNET SWITCH (2)

FIBER-OPTIC (WELL STATIONS 3, 5, & 7)

ATS

CAT-6E

FIBER-OPTIC (TOWN)

VFD CONTROLS
- H/O/A
- STATUS
- SPEED

FIRE ALARM CONTROL PANEL (FACP) (2)

CHEMICAL ALARM SYSTEM CONTROL PANEL (CACP) (2)

FIBER-PATCH PANEL (3)

FIELD EQUIPMENT
- FINISHED WATER PUMPS

INSTRUMENTATION
- FLOW METERS
- PRESSURE TRANSMITTERS
- CLEARWELL TANK LEVEL TRANSMITTER
- CLEARWELL FLOAT SWITCHES
- CHEMICAL TANK LEVEL TRANSMITTERS
- CHEMICAL TANK FLOAT SWITCHES
- FLOOD SWITCHES
- FLOW SWITCH (1)
- MAN DOWN SWITCHES
- ANALYZERS
- TEMPERATURE TRANSMITTERS
- INTRUSION ALARM SWITCHES (2)
- MOTION SENSORS

FILTER EQUIPMENT AND CONTROLS
- VALVE ACTUATORS
- FLOW METERS
- DIFFERENTIAL PRESSURE TRANSMITTERS

FIELD EQUIPMENT
- AIR SCOUR BLOWER
- PRESSURE SUSTAINING VALVE
- VALVE ACTUATORS
- CHEMICAL FEED PUMPS
- CHEMICAL TRANSFER PUMPS

DEHUMIDIFIER CONTROL PANEL (1)

CONTROL ROOM/LABORATORY - ROOM 110

HMI SCADA PC WORKSTATION (4) — USB — PRINTER (4)

IP TELEPHONE — UPS (4)

FIELD EQUIPMENT
- SECURITY CAMERAS (2)

FIELD EQUIPMENT
- SECURITY CAMERAS (2)

CAT-6E

FIBER-OPTIC (3)

WELL STATION 3

TOWN FIBER NETWORK

WELL STATIONS 5 & 7

GENERATOR (2)

LEGEND

- ROOM LINE
- CONTROL PANEL
- LOCATIONAL DIVIDE / BUILDING LINE
- FIELD/SIGNAL WIRING
- DATA / COMMUNICATION
- ELECTRICAL WIRING

SCADA SYSTEM ARCHITECTURE NOTES:

1. COMMUNICATIONS: FIBER OPTIC AND RADIO (BACK-UP)
2. PLC SYSTEM: ALLEN BRADLEY
3. SCADA SOFTWARE: GE PROFICY iFIX
4. FIREWALL UPGRADES AT THE TOWN WATER DEPARTMENT WILL BE COMPLETED BY OTHERS.

KEYNOTES:

(1) FURNISHED AND INSTALLED UNDER DIVISION 15

(2) FURNISHED AND INSTALLED UNDER DIVISION 16

(3) FURNISHED AND INSTALLED BY PHOENIX COMMUNICATIONS

(4) FURNISHED BY APPLICATION ENGINEER AND INSTALLED UNDER DIVISION 13

WELL STATION 3

CONTROL PANEL

YAGI ANTENNA

RF RADIO — CAT-6E — UPS — CAT-6E — PLC — CAT-6E — OIT — CAT-6E — MANAGED ETHERNET SWITCH (4) — MANAGED ETHERNET SWITCH (4)

FIBER OPTIC

TO WTP FIBER PATCH PANEL (3)

FIBER PATCH PANEL (3) — FIBER OPTIC

FIELD EQUIPMENT
- SECURITY CAMERAS (2)

CAT-6E

WELL PUMP VFD CONTROLS
- H/O/A
- STATUS
- SPEED

INSTRUMENTATION
- FLOW METER
- FLOOD SWITCH
- TEMPERATURE TRANSMITTER
- PRESSURE TRANSMITTER
- WELL LEVEL TRANDUCER
- INTRUSION ALARM SWITCHES
- MAN DOWN SWITCHES
- MOTION SENSOR

WELL STATION 5

CONTROL PANEL

YAGI ANTENNA

RF RADIO — CAT-6E — UPS — CAT-6E — PLC — CAT-6E — OIT — CAT-6E — MANAGED ETHERNET SWITCH (4) — MANAGED ETHERNET SWITCH (4)

FIBER OPTIC

TO WTP FIBER PATCH PANEL (3)

FIBER PATCH PANEL (3) — FIBER OPTIC

FROM WELL STATION 7 FIBER PATCH PANEL (3)

CAT-6E

FIELD EQUIPMENT
- SECURITY CAMERAS (2)

ATS

WELL PUMP VFD CONTROLS
- H/O/A
- STATUS
- SPEED

INSTRUMENTATION
- FLOW METER
- INTRUSION SWITCHES
- FLOOD SWITCH
- TEMPERATURE TRANSMITTER
- PRESSURE TRANSMITTER
- WELL LEVEL TRANSDUCER
- MAN DOWN SWITCHES
- MOTION SENSOR
- PROPANE TANK LEVEL TRANSMITTERS

GENERATOR (2)

TO WELL STATION 5 FIBER PATCH PANEL (3)

FIELD EQUIPMENT
- SECURITY CAMERAS (2)

WELL STATION 7

CONTROL PANEL

YAGI ANTENNA

RF RADIO — CAT-6E — UPS — CAT-6E — PLC — CAT-6E — OIT — CAT-6E — MANAGED ETHERNET SWITCH (4) — MANAGED ETHERNET SWITCH (4)

FIBER OPTIC

FIBER PATCH PANEL (3) — FIBER OPTIC

CAT-6E

GENERATOR

ATS

WELL PUMP VFD CONTROLS
- H/O/A
- STATUS
- SPEED

INSTRUMENTATION
- FLOW METER
- INTRUSION SWITCHES
- MAN DOWN SWITCHES
- FLOOD SWITCH
- MOTION SENSOR
- TEMPERATURE TRANSMITTER
- PRESSURE TRANSMITTER
- WELL LEVEL TRANSDUCER

ENVIRONMENTAL PARTNERS

RYAN J. TRAHAN, GMIE, No. 47841, REGISTERED PROFESSIONAL ENGINEER, COMMONWEALTH OF MASSACHUSETTS

MARK	DATE	DESCRIPTION

Scale	NTS
Date	AUGUST 2021
Job No.	307-2002
Designed by	DNRP
Drawn by	GAR
Checked by	DNRP
Approved by	RJT

THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

RED MILL ROAD WATER TREATMENT PLANT
TOWN OF EASTON, MA

PROCESS AND INSTRUMENTATION CONTROL SCADA SCHEMATIC

FOR CONSTRUCTION

Sheet No. I-3

Drawing file: C:\Users\garia\appdata\local\temp\AcPublish_37\48\2.1\&C Abbr_Legend_SCADA Schem_Equip Sc.dwg Plot Date: Aug 19,2021 - 10:05am

ANALYZER SCHEDULE

P&ID TAG NUMBER	DESCRIPTION	LOCATION	TYPE	VOLTAGE			REMARKS
				VAC	Hz	pH	
AIT-971	RAW WATER pH & TEMPERATURE	FILTER AREA 101	pH & TEMPERATURE ANALYZER	120	60	1	AE-971A (pH & TEMPERATURE)
AIT-972	OXIDIZED WATER pH, TEMPERATURE, & CHLORINE	FILTER AREA 101	pH, TEMPERATURE, & CHLORINE ANALYZER	120	60	1	AE-972A (pH & TEMPERATURE); AE-972B (CHLORINE)
AIT-973	FILTERED WATER pH, TEMPERATURE, & CHLORINE	FILTER AREA 101	pH, TEMPERATURE, & CHLORINE ANALYZER	120	60	1	AE-973A (pH & TEMPERATURE); AE-973B (CHLORINE)
AIT-974	FINISHED WATER pH, TEMPERATURE, & CHLORINE	FILTER AREA 101	pH, TEMPERATURE, & CHLORINE ANALYZER	120	60	1	AE-974A (pH & TEMPERATURE); AE-974B (CHLORINE)

ULTRASONIC LEVEL SCHEDULE

P&ID TAG NUMBER	DESCRIPTION	LOCATION	TYPE	VOLTAGE			REMARKS
				VAC	Hz	pH	
LIT-511	CLEARWELL ULTRASONIC LEVEL TRANSMITTER	FINISHED WATER WET WELL	LEVEL INSTRUMENT	LOOP POWERED			
LIT-611	KOH BULK TANK BT-608 ULTRASONIC LEVEL TRANSMITTER	POTASSIUM HYDROXIDE AREA 104	LEVEL INSTRUMENT	LOOP POWERED			PROVIDED WITH CHEMICAL ISOLATERS
LIT-711	NaOCl BULK TANK BT-708 ULTRASONIC LEVEL TRANSMITTER	SODIUM HYPOCHLORITE AREA 105	LEVEL INSTRUMENT	LOOP POWERED			PROVIDED WITH CHEMICAL ISOLATERS
LIT-811	PACL BULK TANK BT-808 ULTRASONIC LEVEL TRANSMITTER	POLYALUMINUM CHLORIDE AREA 106	LEVEL INSTRUMENT	LOOP POWERED			PROVIDED WITH CHEMICAL ISOLATERS
LIT-211	PROPANE LEVEL TRANSMITTER	WELL 5 PROPANE TANK	LEVEL INSTRUMENT	0-10 VDC			
LIT-212	PROPANE LEVEL TRANSMITTER	WELL 5 PROPANE TANK	LEVEL INSTRUMENT	0-10 VDC			

FLOOD/FLOAT SWITCH LEVEL SCHEDULE

P&ID TAG NUMBER	DESCRIPTION	LOCATION	TYPE	VOLTAGE			REMARKS
				VAC	Hz	pH	
LSH-411	FILTER AREA FLOOD SWITCH	FILTER AREA 101	LEVEL INSTRUMENT	LOOP POWERED			MERCURY FREE
LSH-512	CLEARWELL HI-HI LEVEL SWITCH	FINISHED WATER WET WELL	LEVEL INSTRUMENT	LOOP POWERED			MERCURY FREE
LSL-513	CLEARWELL LO-LO LEVEL SWITCH	FINISHED WATER WET WELL	LEVEL INSTRUMENT	LOOP POWERED			MERCURY FREE
LSH-514	CLEARWELL DISTRIBUTION BOX HIGH LEVEL SWITCH	CLEARWELL DISTRIBUTION BOX	LEVEL INSTRUMENT	LOOP POWERED			MERCURY FREE
LSH-515A	CLEARWELL CHANNEL HIGH LEVEL SWITCH	CLEARWELL CHANNEL #1	LEVEL INSTRUMENT	LOOP POWERED			MERCURY FREE
LSH-515B	CLEARWELL CHANNEL HIGH LEVEL SWITCH	CLEARWELL CHANNEL #2	LEVEL INSTRUMENT	LOOP POWERED			MERCURY FREE
LSH-612	KOH BULK TANK BT-608 HI-HI LEVEL SWITCH	POTASSIUM HYDROXIDE AREA 104	LEVEL INSTRUMENT	LOOP POWERED			MERCURY FREE, CHEMICAL RESISTANT
LSH-613	PRE-FILTRATION KOH DAY TANK DT-609 HIGH LEVEL SWITCH	POTASSIUM HYDROXIDE AREA 104	LEVEL INSTRUMENT	LOOP POWERED			MERCURY FREE, CHEMICAL RESISTANT
LSH-614	POST-FILTRATION KOH DAY TANK DT-610 HIGH LEVEL SWITCH	POTASSIUM HYDROXIDE AREA 104	LEVEL INSTRUMENT	LOOP POWERED			MERCURY FREE, CHEMICAL RESISTANT
LSH-615	KOH CONTAINMENT AREA FLOOD SWITCH	POTASSIUM HYDROXIDE AREA 104	LEVEL INSTRUMENT	LOOP POWERED			MERCURY FREE, CHEMICAL RESISTANT
LSH-712	NaOCl BULK TANK BT-708 HI-HI LEVEL SWITCH	SODIUM HYPOCHLORITE AREA 105	LEVEL INSTRUMENT	LOOP POWERED			MERCURY FREE, CHEMICAL RESISTANT
LSH-713	PRE-FILTRATION NaOCl DAY TANK DT-709 HIGH LEVEL SWITCH	SODIUM HYPOCHLORITE AREA 105	LEVEL INSTRUMENT	LOOP POWERED			MERCURY FREE, CHEMICAL RESISTANT
LSH-714	POST-FILTRATION NaOCl DAY TANK DT-710 HIGH LEVEL SWITCH	SODIUM HYPOCHLORITE AREA 105	LEVEL INSTRUMENT	LOOP POWERED			MERCURY FREE, CHEMICAL RESISTANT
LSH-715	NaOCl CONTAINMENT AREA FLOOD SWITCH	SODIUM HYPOCHLORITE AREA 105	LEVEL INSTRUMENT	LOOP POWERED			MERCURY FREE, CHEMICAL RESISTANT
LSH-812	PACL BULK TANK BT-808 HI-HI LEVEL SWITCH	POLYALUMINUM CHLORIDE AREA 106	LEVEL INSTRUMENT	LOOP POWERED			MERCURY FREE, CHEMICAL RESISTANT
LSH-813	PACL DAY TANK DT-809 HIGH LEVEL SWITCH	POLYALUMINUM CHLORIDE AREA 106	LEVEL INSTRUMENT	LOOP POWERED			MERCURY FREE, CHEMICAL RESISTANT
LSH-814	PACL CONTAINMENT AREA FLOOD SWITCH	POLYALUMINUM CHLORIDE AREA 106	LEVEL INSTRUMENT	LOOP POWERED			MERCURY FREE, CHEMICAL RESISTANT
LSH-981	SEPTIC TANK HIGH LEVEL SWITCH	SEPTIC TANK	LEVEL INSTRUMENT	LOOP POWERED			MERCURY FREE

WELL LEVEL TRANSDUCER SCHEDULE

P&ID TAG NUMBER	DESCRIPTION	LOCATION	TYPE	VOLTAGE			REMARKS
				VAC	Hz	pH	
LE-111	WELL LEVEL	WELL 3	LEVEL INSTRUMENT	LOOP POWERED			FURNISH WITH 200-FT CABLE
LE-213	WELL LEVEL	WELL 5	LEVEL INSTRUMENT	LOOP POWERED			FURNISH WITH 200-FT CABLE
LE-311	WELL LEVEL	WELL 7	LEVEL INSTRUMENT	LOOP POWERED			FURNISH WITH 200-FT CABLE

FLOW SWITCH SCHEDULE

P&ID TAG NUMBER	DESCRIPTION	LOCATION	TYPE	VOLTAGE			REMARKS
				VAC	Hz	pH	
FS-415 (1)	SAFETY SHOWER - VANE TYPE	FILTER AREA NEAR CHEMICAL CONTAINMENT AREAS	FLOW INSTRUMENT	120	60	1	

NOTE:

1. EXISTING INSTRUMENTATION TO REMAIN NOT INCLUDED IN EQUIPMENT SCHEDULES.

PRESSURE TRANSMITTER SCHEDULE

P&ID TAG NUMBER	DESCRIPTION	LOCATION	TYPE	VOLTAGE			REMARKS
				VAC	Hz	pH	
PIT-112	WELL 3 PRESSURE INDICATING TRANSMITTER	WELL 3 DISCHARGE PRESSURE	PRESSURE INSTRUMENT	LOOP POWERED			PRESSURE RANGE 0 - 200 PSI
PIT-214	WELL 5 PRESSURE INDICATING TRANSMITTER	WELL 5 DISCHARGE PRESSURE	PRESSURE INSTRUMENT	LOOP POWERED			PRESSURE RANGE 0 - 200 PSI
PIT-312	WELL 7 PRESSURE INDICATING TRANSMITTER	WELL 7 DISCHARGE PRESSURE	PRESSURE INSTRUMENT	LOOP POWERED			PRESSURE RANGE 0 - 200 PSI
PIT-412	WTP INFLUENT PRESSURE INDICATING TRANSMITTER	RAW WATER	PRESSURE INSTRUMENT	LOOP POWERED			PRESSURE RANGE 0 - 200 PSI
DPIT-413A	FILTER #1 DIFFERENTIAL PRESSURE INDICATING TRANSMITTER	FILTER #1	PRESSURE INSTRUMENT	LOOP POWERED			DIFFERENTIAL PRESSURE RANGE 0 - 30 PSI; PROVIDED BY FILTER MANUFACTURER
DPIT-413B	FILTER #2 DIFFERENTIAL PRESSURE INDICATING TRANSMITTER	FILTER #2	PRESSURE INSTRUMENT	LOOP POWERED			DIFFERENTIAL PRESSURE RANGE 0 - 30 PSI; PROVIDED BY FILTER MANUFACTURER
DPIT-413C	FILTER #3 DIFFERENTIAL PRESSURE INDICATING TRANSMITTER	FILTER #3	PRESSURE INSTRUMENT	LOOP POWERED			DIFFERENTIAL PRESSURE RANGE 0 - 30 PSI; PROVIDED BY FILTER MANUFACTURER
DPIT-413D	FILTER #4 DIFFERENTIAL PRESSURE INDICATING TRANSMITTER	FILTER #4	PRESSURE INSTRUMENT	LOOP POWERED			DIFFERENTIAL PRESSURE RANGE 0 - 30 PSI; PROVIDED BY FILTER MANUFACTURER
PIT-414	FILTERED WATER PRESSURE INDICATING TRANSMITTER	FILTERED WATER	PRESSURE INSTRUMENT	LOOP POWERED			PRESSURE RANGE 0 - 200 PSI
PIT-517	FINISHED WATER PRESSURE INDICATING TRANSMITTER	FINISHED WATER	PRESSURE INSTRUMENT	LOOP POWERED			PRESSURE RANGE 0 - 200 PSI

TEMPERATURE TRANSMITTER SCHEDULE

P&ID TAG NUMBER	DESCRIPTION	LOCATION	TYPE	VOLTAGE			REMARKS
				VAC	Hz	pH	
TT-931	ROOM TEMPERATURE TRANSMITTER	FILTER AREA ROOM 101	TEMPERATURE INSTRUMENT	LOOP POWERED			MOUNT OFF FLOOR PER MANUFACTURERS RECOMMENDATION
TT-932	ROOM TEMPERATURE TRANSMITTER	FUTURE PFAS AREA ROOM 102	TEMPERATURE INSTRUMENT	LOOP POWERED			MOUNT OFF FLOOR PER MANUFACTURERS RECOMMENDATION
TT-933	ROOM TEMPERATURE TRANSMITTER	CONTROL ROOM ROOM 110	TEMPERATURE INSTRUMENT	LOOP POWERED			MOUNT OFF FLOOR PER MANUFACTURERS RECOMMENDATION
TT-934	ROOM TEMPERATURE TRANSMITTER	ELECTRICAL ROOM ROOM 107	TEMPERATURE INSTRUMENT	LOOP POWERED			MOUNT OFF FLOOR PER MANUFACTURERS RECOMMENDATION
TT-935	ROOM TEMPERATURE TRANSMITTER	MECHANICAL ROOM ROOM 108	TEMPERATURE INSTRUMENT	LOOP POWERED			MOUNT OFF FLOOR PER MANUFACTURERS RECOMMENDATION

TRANSFER PUMP SWITCH SCHEDULE

P&ID TAG NUMBER	DESCRIPTION	LOCATION	TYPE	VOLTAGE			REMARKS
				VAC	Hz	pH	
HS-616	PRE-FILTRATION KOH TRANSFER PUMP TP-601 SWITCH	POTASSIUM HYDROXIDE AREA 104	PUSH BUTTON	LOOP POWERED			SPRING LOADED SWITCH
HS-617	PRE-FILTRATION KOH GRAVITY TRANSFER PUMP SWITCH	POTASSIUM HYDROXIDE AREA 104	PUSH BUTTON	LOOP POWERED			SPRING LOADED SWITCH
HS-618	POST-FILTRATION KOH TRANSFER PUMP TP-605 SWITCH	POTASSIUM HYDROXIDE AREA 104	PUSH BUTTON	LOOP POWERED			SPRING LOADED SWITCH
HS-619	POST-FILTRATION KOH GRAVITY TRANSFER PUMP SWITCH	POTASSIUM HYDROXIDE AREA 104	PUSH BUTTON	LOOP POWERED			SPRING LOADED SWITCH
HS-716	PRE-FILTRATION NaOCl TRANSFER PUMP TP-701 SWITCH	SODIUM HYPOCHLORITE AREA 105	PUSH BUTTON	LOOP POWERED			SPRING LOADED SWITCH
HS-717	PRE-FILTRATION NaOCl GRAVITY TRANSFER PUMP SWITCH	SODIUM HYPOCHLORITE AREA 105	PUSH BUTTON	LOOP POWERED			SPRING LOADED SWITCH
HS-718	POST-FILTRATION NaOCl TRANSFER PUMP TP-705 SWITCH	SODIUM HYPOCHLORITE AREA 105	PUSH BUTTON	LOOP POWERED			SPRING LOADED SWITCH
HS-719	POST-FILTRATION NaOCl GRAVITY TRANSFER PUMP SWITCH	SODIUM HYPOCHLORITE AREA 105	PUSH BUTTON	LOOP POWERED			SPRING LOADED SWITCH
HS-815	PRE-FILTRATION PACl TRANSFER PUMP TP-801 SWITCH	POLYALUMINUM CHLORIDE AREA 106	PUSH BUTTON	LOOP POWERED			SPRING LOADED SWITCH
HS-816	PRE-FILTRATION PACl GRAVITY TRANSFER PUMP SWITCH	POLYALUMINUM CHLORIDE AREA 106	PUSH BUTTON	LOOP POWERED			SPRING LOADED SWITCH

KEYNOTES:

1. FURNISHED AND INSTALLED UNDER DIVISION 15
2. FURNISHED AND INSTALLED UNDER DIVISION 16
3. FURNISHED AND INSTALLED BY PHOENIX COMMUNICATIONS
4. FURNISHED BY APPLICATION ENGINEER AND INSTALLED UNDER DIVISION 13

TOWN OF EASTON MASS INCORPORATED 1725

ENVIRONMENTAL PARTNERS

COMMONWEALTH OF MASSACHUSETTS RYAN J. TRAHAN GM/L No. 47843 REGISTERED PROFESSIONAL ENGINEER

MARK	DATE	DESCRIPTION

Scale	NTS
Date	AUGUST 2021
Job No.	307-2002
Designed by	SFP
Drawn by	GAR
Checked by	DNRP
Approved by	RJT

THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

RED MILL ROAD WATER TREATMENT PLANT
TOWN OF EASTON, MA

PROCESS AND INSTRUMENTATION CONTROL EQUIPMENT SCHEDULE I

FOR CONSTRUCTION

Sheet No. I-4

Drawing file: C:\Users\grahan\appdata\local\temp\AcPublish_37\148\2.1 I&C Abbr_Legend_SCADA Schem_Equip Sc.dwg Plot Date: Aug 19,2021-10:05am

FLOW METER SCHEDULE

P&ID TAG NUMBER	DESCRIPTION	LOCATION	TYPE	VOLTAGE			NOMINAL METER SIZE	FLOW RANGE (GPM)	FLOW DIRECTION	REMARKS
				VAC	Hz	pH				
FIT-113	WELL 3 ELECTROMAGNETIC FLOW METER	WELL STATION 3	FLOW INSTRUMENT	120	60	1	4"	0 - 500	FORWARD	SALVAGE EXISTING AND RE-INSTALL
FIT-416	RAW WATER FLOW METER	SODIUM HYPOCHLORITE AREA 105	FLOW INSTRUMENT	120	60	1	8"	0 - 1,500	FORWARD	
FIT-417A	FILTER #1 INFLUENT ELECTROMAGNETIC FLOW METER	FILTER #1 INFLUENT	FLOW INSTRUMENT	120	60	1	6"	0 - 1100	BI-DIRECTIONAL	PROVIDED BY FILTER MANUFACTURER
FIT-417B	FILTER #2 INFLUENT ELECTROMAGNETIC FLOW METER	FILTER #2 INFLUENT	FLOW INSTRUMENT	120	60	1	6"	0 - 1100	BI-DIRECTIONAL	PROVIDED BY FILTER MANUFACTURER
FIT-417C	FILTER #3 INFLUENT ELECTROMAGNETIC FLOW METER	FILTER #3 INFLUENT	FLOW INSTRUMENT	120	60	1	6"	0 - 1100	BI-DIRECTIONAL	PROVIDED BY FILTER MANUFACTURER
FIT-417D	FILTER #4 INFLUENT ELECTROMAGNETIC FLOW METER	FILTER #4 INFLUENT	FLOW INSTRUMENT	120	60	1	6"	0 - 1100	BI-DIRECTIONAL	PROVIDED BY FILTER MANUFACTURER
FIT-418	FILTERED WATER FLOW METER	NaHSO3 AREA 103	FLOW INSTRUMENT	120	60	1	8"	0 - 1,500	FORWARD	
FIT-518	FINISHED WATER FLOW METER	FINISHED WATER	FLOW INSTRUMENT	120	60	1	8"	0 - 1,500	FORWARD	

INTRUSION SWITCH SCHEDULE

P&ID TAG NUMBER	DESCRIPTION	LOCATION	TYPE	VOLTAGE			REMARKS
				VAC	Hz	pH	
YS-911 (2)	WEST WALL SINGLE DOOR INTRUSION ALARM	WTP DOOR 01	MAGNETIC CONTACT SWITCH	LOOP POWERED			
YS-912 (2)	EAST WALL SINGLE DOOR INTRUSION ALARM	WTP DOOR 02	MAGNETIC CONTACT SWITCH	LOOP POWERED			
YS-180	WELL STATION 3 SINGLE DOOR INTRUSION ALARM	WELL STATION 3 DOOR 1	MAGNETIC CONTACT SWITCH	LOOP POWERED			
YS-181	WELL STATION 3 SINGLE DOOR INTRUSION ALARM	WELL STATION 3 DOOR 2	MAGNETIC CONTACT SWITCH	LOOP POWERED			
YS-184	WELL STATION 3 MOTION SENSOR	WELL STATION 3 ROOF HATCH	MAGNETIC CONTACT SWITCH	LOOP POWERED			

MAN DOWN SWITCH SCHEDULE

P&ID TAG NUMBER	DESCRIPTION	LOCATION	TYPE	VOLTAGE			REMARKS
				VAC	Hz	pH	
PB-991A	WELL STATION 3 MAN DOWN SWITCH	WELL STATION 3 PUMP ROOM	PUSH BUTTON	LOOP POWERED			NEMA 4 RATED
PB-991B	WELL STATION 3 MAN DOWN SWITCH	WELL STATION 3 LIME ROOM	PUSH BUTTON	LOOP POWERED			NEMA 4 RATED
PB-991C	WELL STATION 3 CONTROL PANEL EMERGENCY STOP SWITCH	WELL STATION 3 PUMP ROOM	PUSH BUTTOM	LOOP POWERED			NEMA 4 RATED
PB-992A	WELL STATION 5 MAN DOWN SWITCH	WELL STATION 5 PUMP ROOM	PUSH BUTTON	LOOP POWERED			NEMA 4 RATED
PB-992B	WELL STATION 5 MAN DOWN SWITCH	WELL STATION 5 LIME ROOM	PUSH BUTTON	LOOP POWERED			NEMA 4 RATED
PB-992C	WELL STATION 5 CONTROL PANEL EMERGENCY STOP SWITCH	WELL STATION 5 PUMP ROOM	PUSH BUTTOM	LOOP POWERED			NEMA 4 RATED
PB-993C	WELL STATION 7 CONTROL PANEL EMERGENCY STOP SWITCH	WELL STATION 7 PUMP ROOM	PUSH BUTTOM	LOOP POWERED			NEMA 4 RATED
PB-994A	WTP MAN DOWN SWITCH	SODIUM HYPOCHLORITE AREA 105	PUSH BUTTON	LOOP POWERED			NEMA 4 RATED
PB-994B	WTP MAN DOWN SWITCH	POTASSIUM HYDROXIDE AREA 104	PUSH BUTTON	LOOP POWERED			NEMA 4 RATED
PB-995	WTP MAN DOWN SWITCH	POLYALUMINUM CHLORIDE AREA 106	PUSH BUTTON	LOOP POWERED			NEMA 4 RATED
PB-996	WTP MAN DOWN SWITCH	CONTROL ROOM 110	PUSH BUTTON	LOOP POWERED			NEMA 4 RATED
PB-997	WTP MAN DOWN SWITCH	FILTER AREA 101	PUSH BUTTON	LOOP POWERED			NEMA 4 RATED
PB-998	WTP EMERGENCY ESTOP SWITCH	FILTER AREA 101	PUSH BUTTON	LOOP POWERED			NEMA 4 RATED
PB-999	MAIN CONTROL PANEL EMERGENCY ESTOP SWITCH	WATER TREATMENT PLANT MAIN CONTROL PANEL	PUSH BUTTON	LOOP POWERED			NEMA 4 RATED

MOTION SENSOR SCHEDULE

P&ID TAG NUMBER	DESCRIPTION	LOCATION	TYPE	VOLTAGE			REMARKS
				VAC	Hz	pH	
YS-913	FILTER AREA MOTION SENSOR	FILTER AREA 101	PASSIVE INFRARED, WALL MOUNTED	12 VDC			
YS-914	CORRIDOR MOTION SENSOR	CORRIDOR 109	PASSIVE INFRARED, WALL MOUNTED	12 VDC			
YS-915	CONTROL ROOM MOTION SENSOR	CONTROL ROOM 110	PASSIVE INFRARED, WALL MOUNTED	12 VDC			
YS-182	WELL STATION 3 MOTION SENSOR	WELL STATION 3 PUMP ROOM	PASSIVE INFRARED, WALL MOUNTED	12 VDC			
YS-183	WELL STATION 3 MOTION SENSOR	WELL STATION 3 LIME ROOM	PASSIVE INFRARED, WALL MOUNTED	12 VDC			
YS-283	WELL STATION 5 MOTION SENSOR	WELL STATION 5 PUMP ROOM	PASSIVE INFRARED, WALL MOUNTED	12 VDC			
YS-284	WELL STATION 5 MOTION SENSOR	WELL STATION 5 LIME ROOM	PASSIVE INFRARED, WALL MOUNTED	12 VDC			

NOTE:

1. EXISTING INSTRUMENTATION TO REMAIN NOT INCLUDED IN EQUIPMENT SCHEDULES.

KEYNOTES:

(1) FURNISHED AND INSTALLED UNDER DIVISION 15

(2) FURNISHED AND INSTALLED UNDER DIVISION 16

(3) FURNISHED AND INSTALLED BY PHOENIX COMMUNICATIONS

(4) FURNISHED BY APPLICATION ENGINEER AND INSTALLED UNDER DIVISION 13

TOWN OF EASTON MASS. INCORPORATED 1725

ENVIRONMENTAL PARTNERS

COMMONWEALTH OF MASSACHUSETTS RYAN J. TRAHAN CIVIL No. 47241 REGISTERED PROFESSIONAL ENGINEER

MARK	DATE	DESCRIPTION

Scale	NTS
Date	AUGUST 2021
Job No.	307-2002
Designed by	SFP
Drawn by	GAR
Checked by	DNRP
Approved by	RJT

THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

RED MILL ROAD WATER TREATMENT PLANT
TOWN OF EASTON, MA

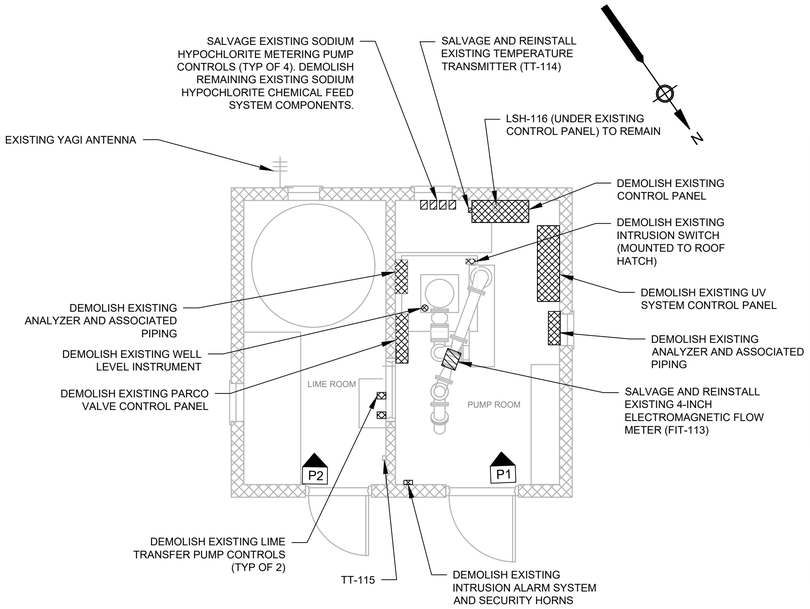
PROCESS AND INSTRUMENTATION CONTROL
EQUIPMENT SCHEDULE II

FOR CONSTRUCTION

Sheet No.

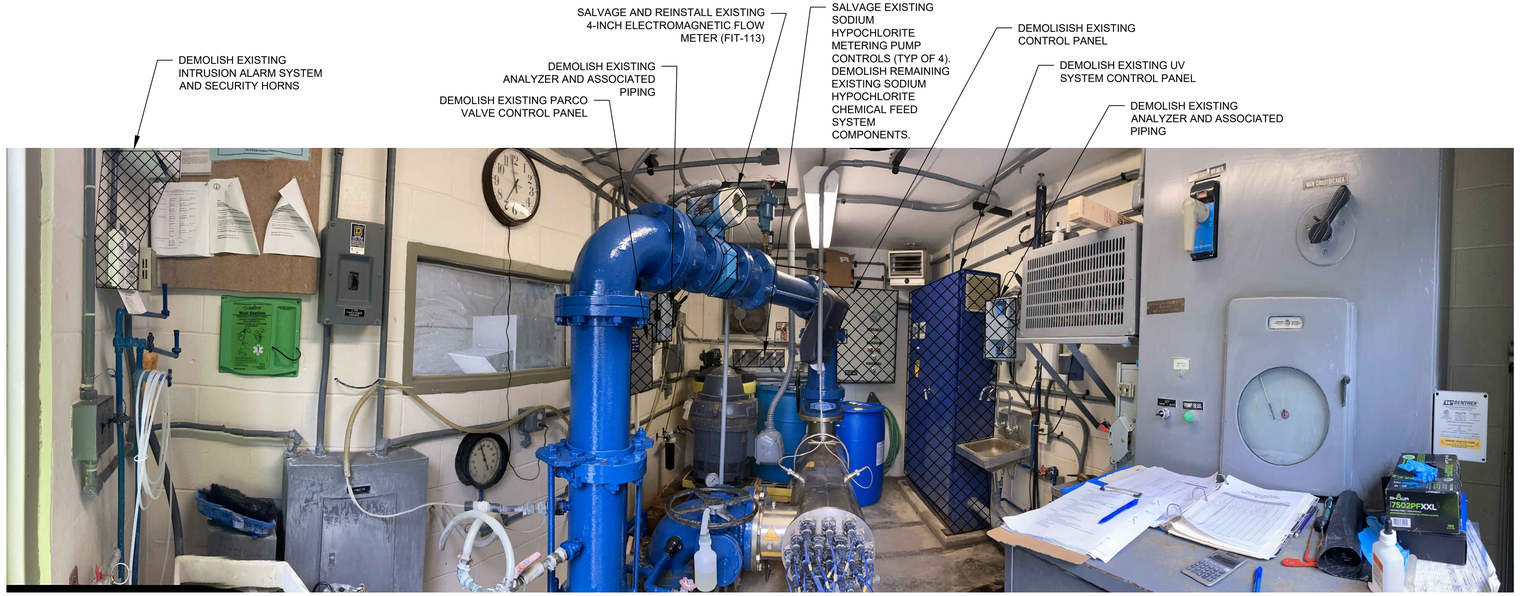
I-5

Drawing file: C:\Users\gar\appdata\local\temp\AcPublish_3\7148\12.1 I&C Abbr_Legend_SCADA Schem_Equip Sc.dwg Plot Date: Aug 19,2021-10:05am



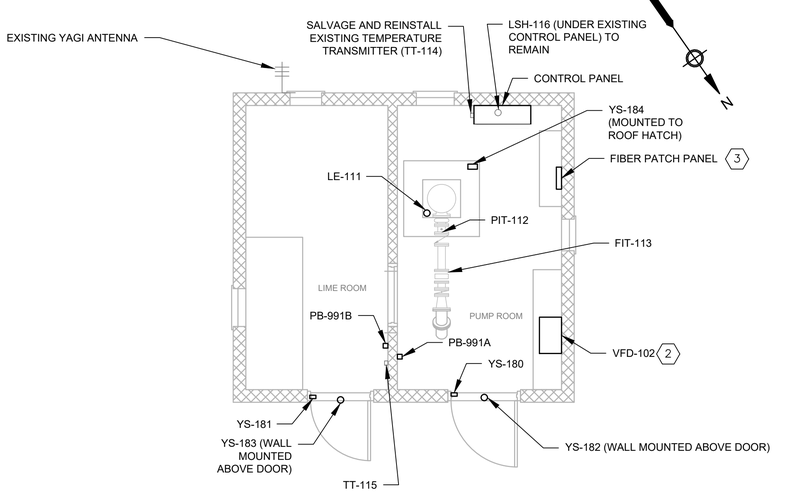
WELL STATION 3 DEMOLITION PLAN

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



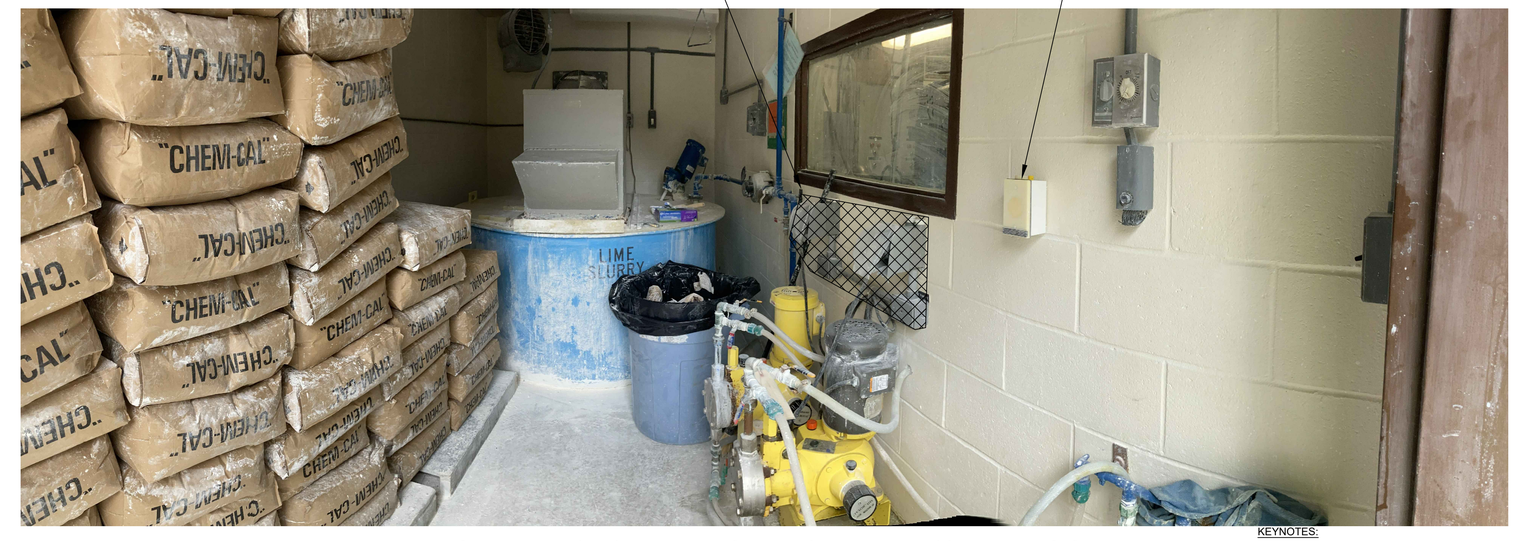
PICTURE 1 (P1) - WELL STATION 3 PUMP ROOM

SCALE: N.T.S.



WELL STATION 3 MODIFICATION PLAN

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



PICTURE 2 (P2) - WELL STATION 3 LIME/CHEM ROOM

SCALE: N.T.S.

KEYNOTES:

1. FURNISHED AND INSTALLED UNDER DIVISION 15
2. FURNISHED AND INSTALLED UNDER DIVISION 16
3. FURNISHED AND INSTALLED BY PHOENIX COMMUNICATIONS
4. FURNISHED BY APPLICATION ENGINEER AND INSTALLED UNDER DIVISION 13

TOWN OF EASTON MASS INCORPORATED 1725

ENVIRONMENTAL PARTNERS

COMMONWEALTH OF MASSACHUSETTS — RYAN J. TRAHAN — CIVIL — No. 47841 — REGISTERED PROFESSIONAL ENGINEER

MARK	DATE	DESCRIPTION

Scale	1/4" = 1'-0"
Date	AUGUST 2021
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Designed by	SFP
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RED MILL ROAD WATER TREATMENT PLANT
TOWN OF EASTON, MA

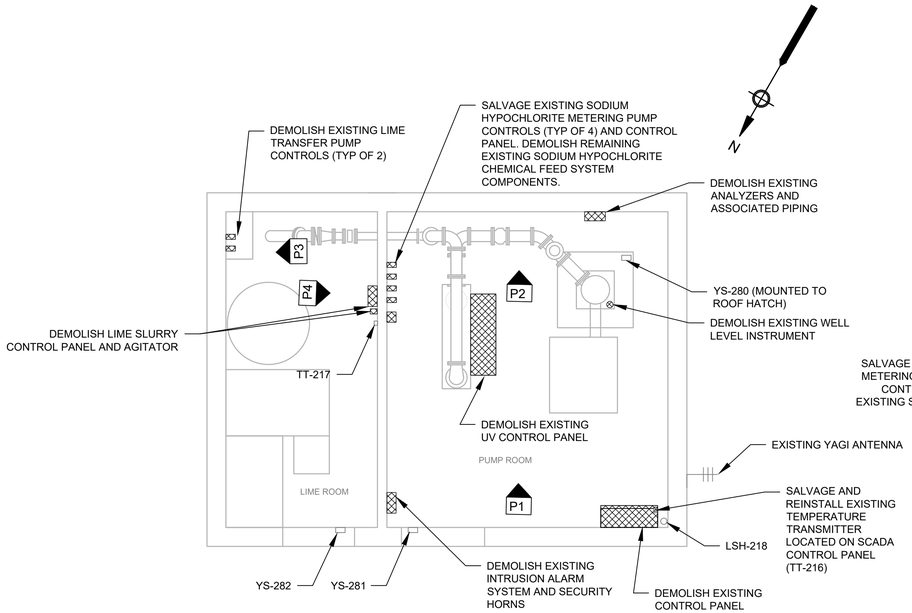
PROCESS AND INSTRUMENTATION CONTROL
WELL STATION 3 LAYOUT PLAN

FOR CONSTRUCTION

Sheet No.

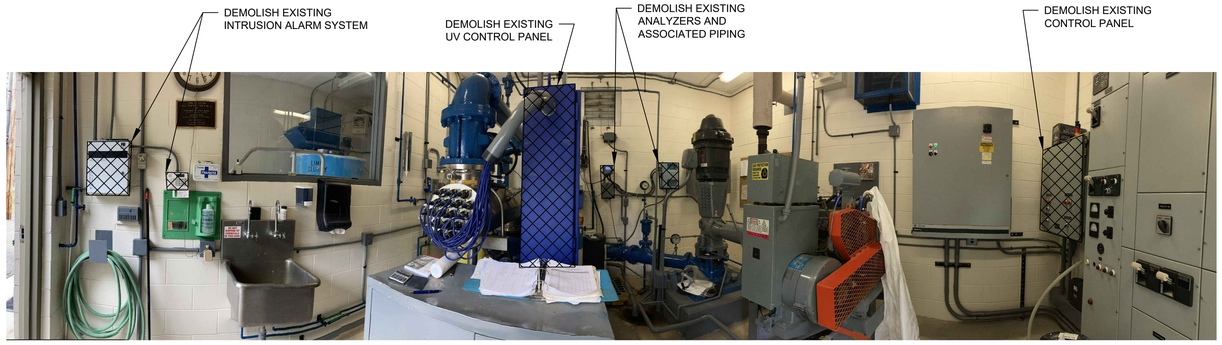
I-6

Drawing file: I:\Easton\307\307-2002 Wells 3, 5 & 7 WTP\01 Design\04 Final Design\Drawings\CAD\12.2 I&C Well Station Layout Plans.dwg Plot Date: Aug 19,2021 - 10:05am



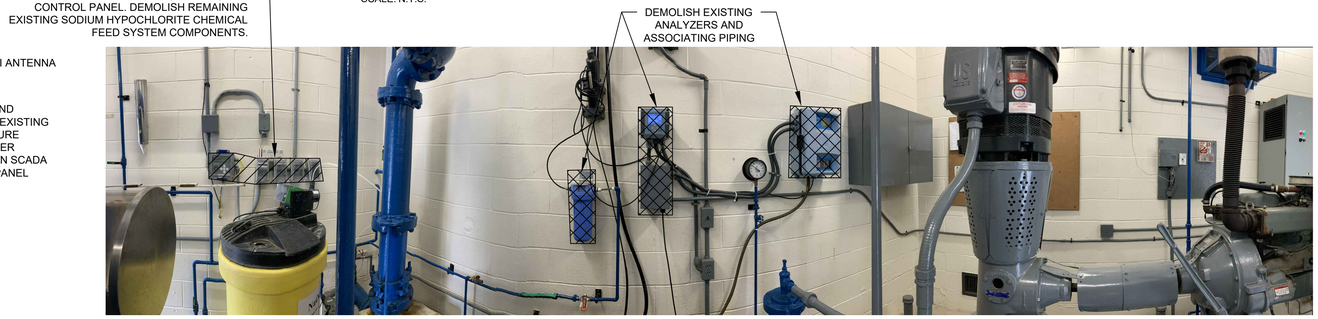
WELL STATION 5 DEMOLITION PLAN

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



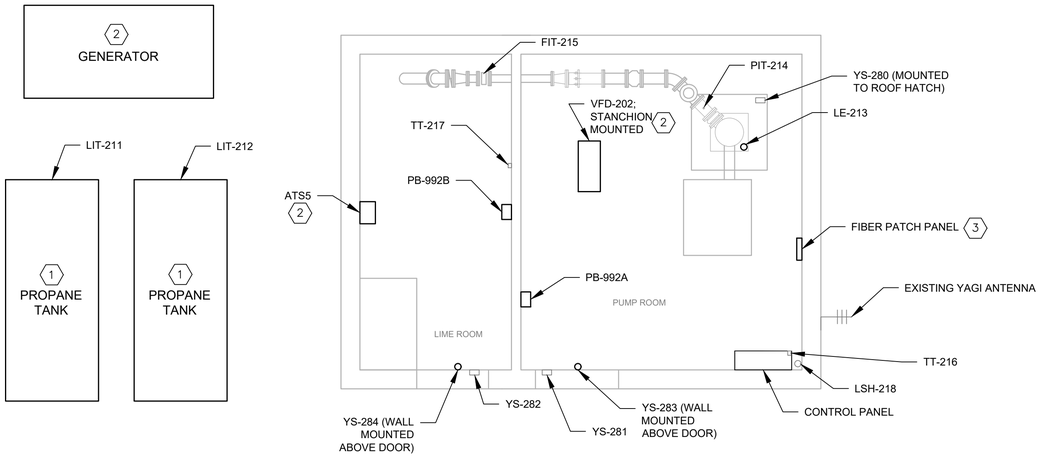
PICTURE 1 (P1) - WELL STATION 5 PUMP ROOM

SCALE: N.T.S.



PICTURE 2 (P2) - WELL STATION 5 PUMP ROOM

SCALE: N.T.S.

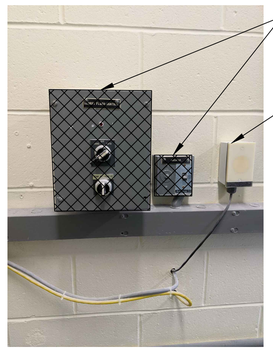


WELL STATION 5 MODIFICATION PLAN

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

PICTURE 3 (P3) - WELL STATION 5 LIME ROOM

SCALE: N.T.S.



PICTURE 4 (P4) - WELL STATION 5 SLURRY CONTROL PANEL

SCALE: N.T.S.

NOTES:

1. GENERATOR AND PROPANE TANKS FOR REFERENCE ONLY. REFER TO C-DRAWINGS FOR LOCATION.

KEYNOTES:

1. FURNISHED AND INSTALLED UNDER DIVISION 15
2. FURNISHED AND INSTALLED UNDER DIVISION 16
3. FURNISHED AND INSTALLED BY PHOENIX COMMUNICATIONS
4. FURNISHED BY APPLICATION ENGINEER AND INSTALLED UNDER DIVISION 13

TOWN OF EASTON MASS INCORPORATED 1725

ENVIRONMENTAL PARTNERS

COMMONWEALTH OF MASSACHUSETTS RYAN J. TRAHAN GNIL No. 47941 REGISTERED PROFESSIONAL ENGINEER

MARK	DATE	DESCRIPTION

Scale	1/4" = 1'-0"
Date	AUGUST 2021
Job No.	307-2002
Designed by	SFP
Drawn by	GAR
Checked by	DNRP
Approved by	RJT

THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

RED MILL ROAD WATER TREATMENT PLANT
TOWN OF EASTON, MA

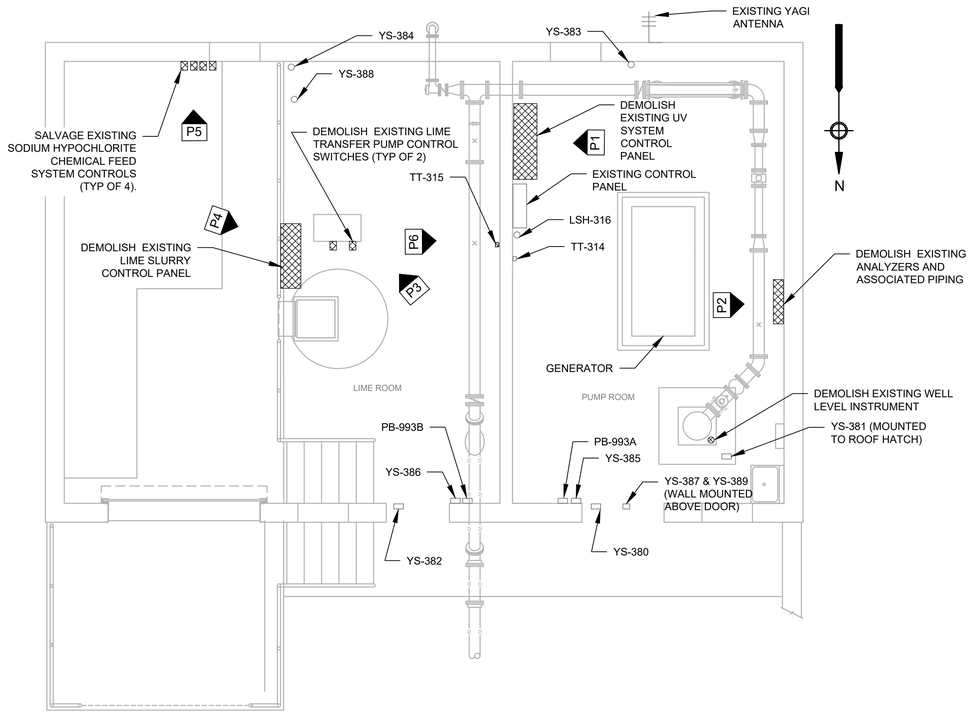
PROCESS AND INSTRUMENTATION CONTROL
WELL STATION 5 LAYOUT PLAN

FOR CONSTRUCTION

Sheet No.

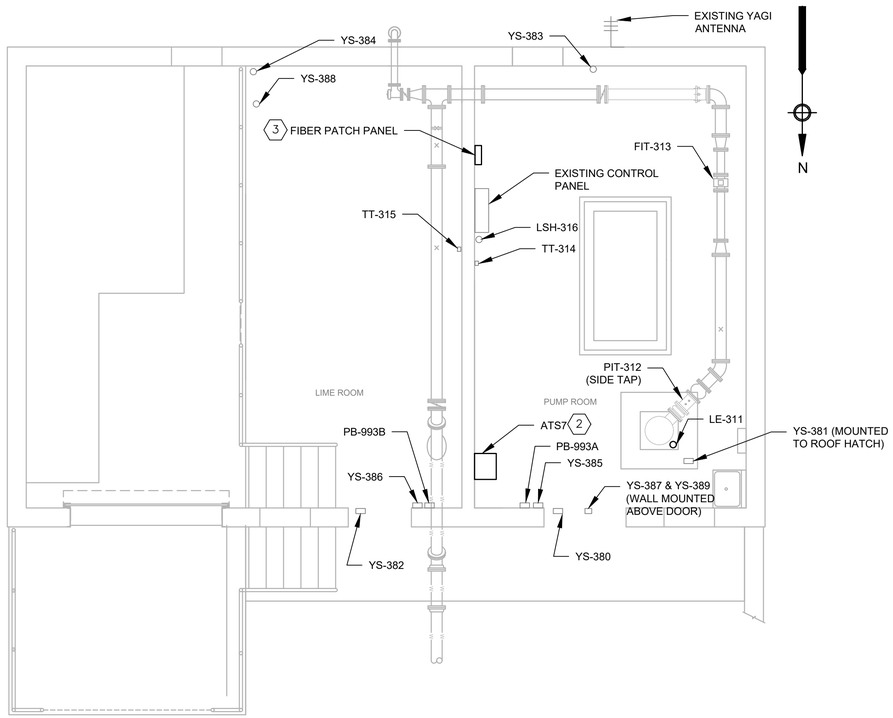
I-7

Drawing file: I:\Easton\307\307-2002 Wells 3, 5 & 7 WTP\01 Design\04 Final Design\Drawings\CAD\12 2 I&C Well Station Layout Plans.dwg Plot Date: Aug 19,2021-10:05am



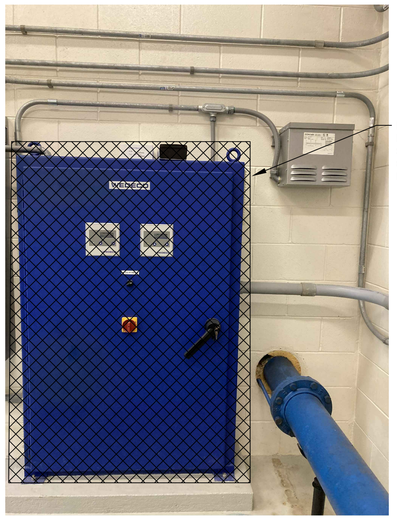
WELL STATION 7 DEMOLITION PLAN

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



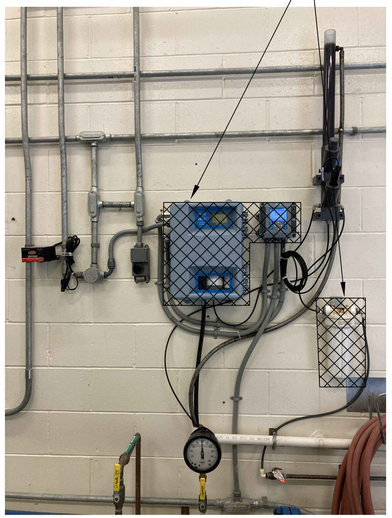
WELL STATION 7 MODIFICATION PLAN

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



PICTURE 1 (P1) - WELL STATION 7 UV SYSTEM CONTROL PANEL

SCALE: N.T.S.

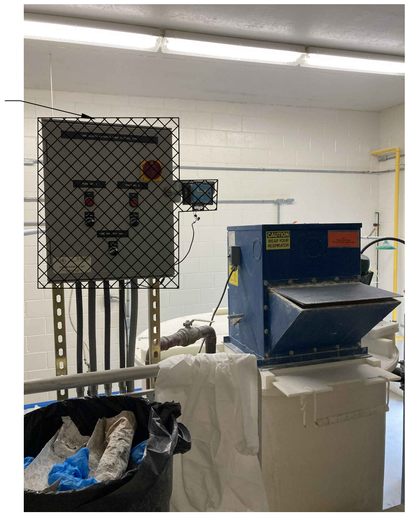


PICTURE 2 (P2) - WELL STATION 7 ANALYZERS

SCALE: N.T.S.

PICTURE 3 (P3) - WELL STATION 7 LIME TRANSFER PUMPS

SCALE: N.T.S.

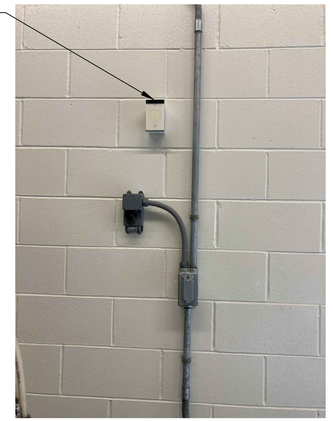


PICTURE 4 (P4) - WELL STATION 7 LIME SLURRY CONTROL PANEL

SCALE: N.T.S.

PICTURE 5 (P5) - WELL STATION 7 NaOCl CONTROL SWITCHES

SCALE: N.T.S.



PICTURE 6 (P6) - WELL STATION 7 TEMPERATURE TRANSMITTER

SCALE: N.T.S.

KEYNOTES:

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3. FURNISHED AND INSTALLED BY PHOENIX COMMUNICATIONS
4. FURNISHED BY APPLICATION ENGINEER AND INSTALLED UNDER DIVISION 13

TOWN OF EASTON MASS INCORPORATED 1725

ENVIRONMENTAL PARTNERS

COMMONWEALTH OF MASSACHUSETTS RYAN J. TRAHAN CIVIL No. 47241 REGISTERED PROFESSIONAL ENGINEER

MARK	DATE	DESCRIPTION

Scale	1/4" = 1'-0"
Date	AUGUST 2021
Job No.	307-2002
Designed by	SFP
Drawn by	GAR
Checked by	DNRP
Approved by	RJT

THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

RED MILL ROAD WATER TREATMENT PLANT
TOWN OF EASTON, MA

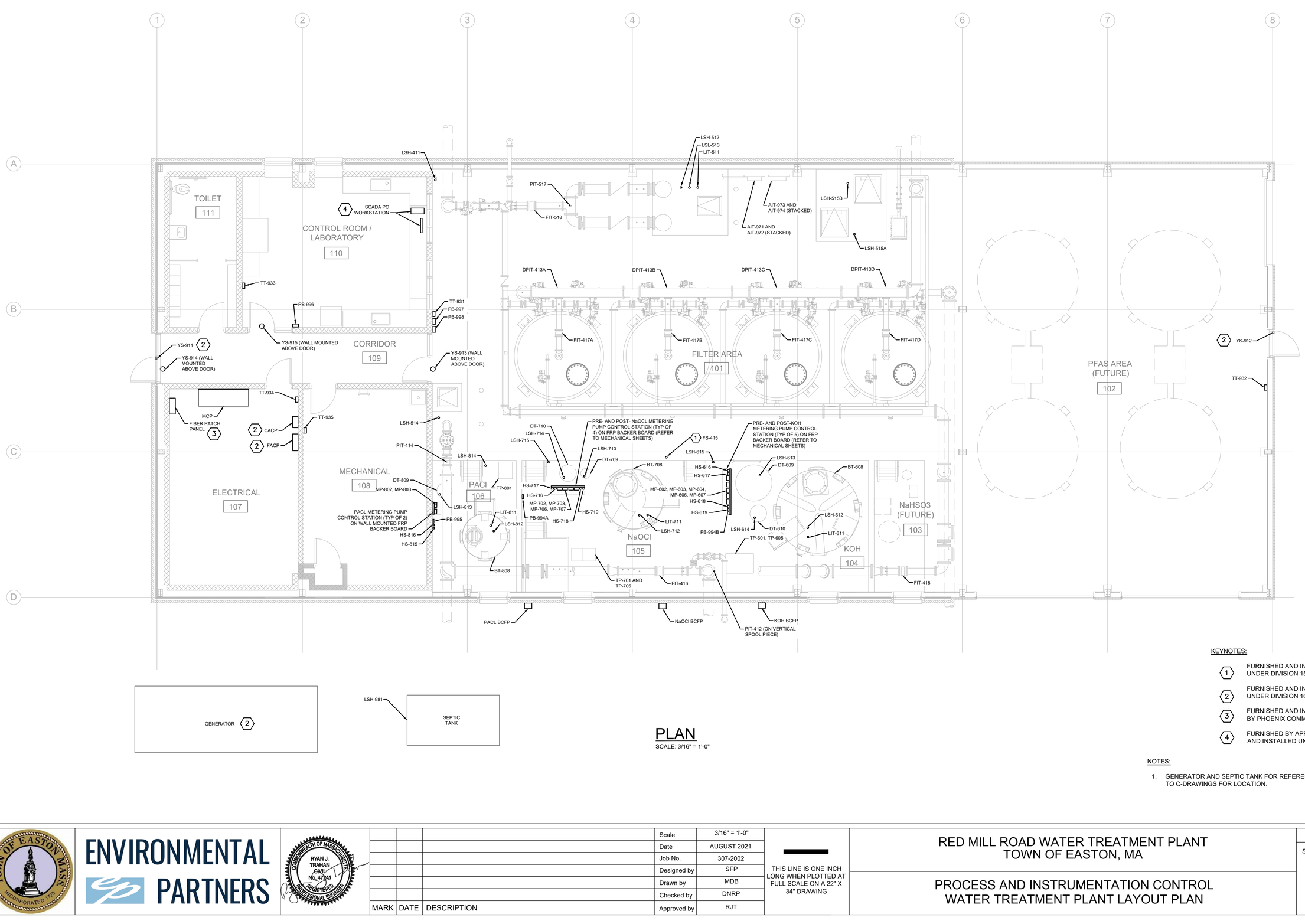
PROCESS AND INSTRUMENTATION CONTROL
WELL STATION 7 LAYOUT PLAN

FOR CONSTRUCTION

Sheet No.

I-8

Drawing file: I:\Easton\307\307-2002 Wells 3, 5 & 7 WTP\01 Design\04 Final Design\Drawings\CAD\12.2 I&C Well Station Layout Plans.dwg Plot Date: Aug 19,2021-10:06am



PLAN

SCALE: 3/16" = 1'-0"

KEYNOTES:

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NOTES:

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TOWN OF EASTON MASS INCORPORATED 1725

ENVIRONMENTAL PARTNERS

COMMONWEALTH OF MASSACHUSETTS RYAN J. TRAHAN CIVIL No. 47241 REGISTERED PROFESSIONAL ENGINEER

MARK	DATE	DESCRIPTION

Scale	3/16" = 1'-0"
Date	AUGUST 2021
Job No.	307-2002
Designed by	SFP
Drawn by	MDB
Checked by	DNRP
Approved by	RJT

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RED MILL ROAD WATER TREATMENT PLANT
TOWN OF EASTON, MA

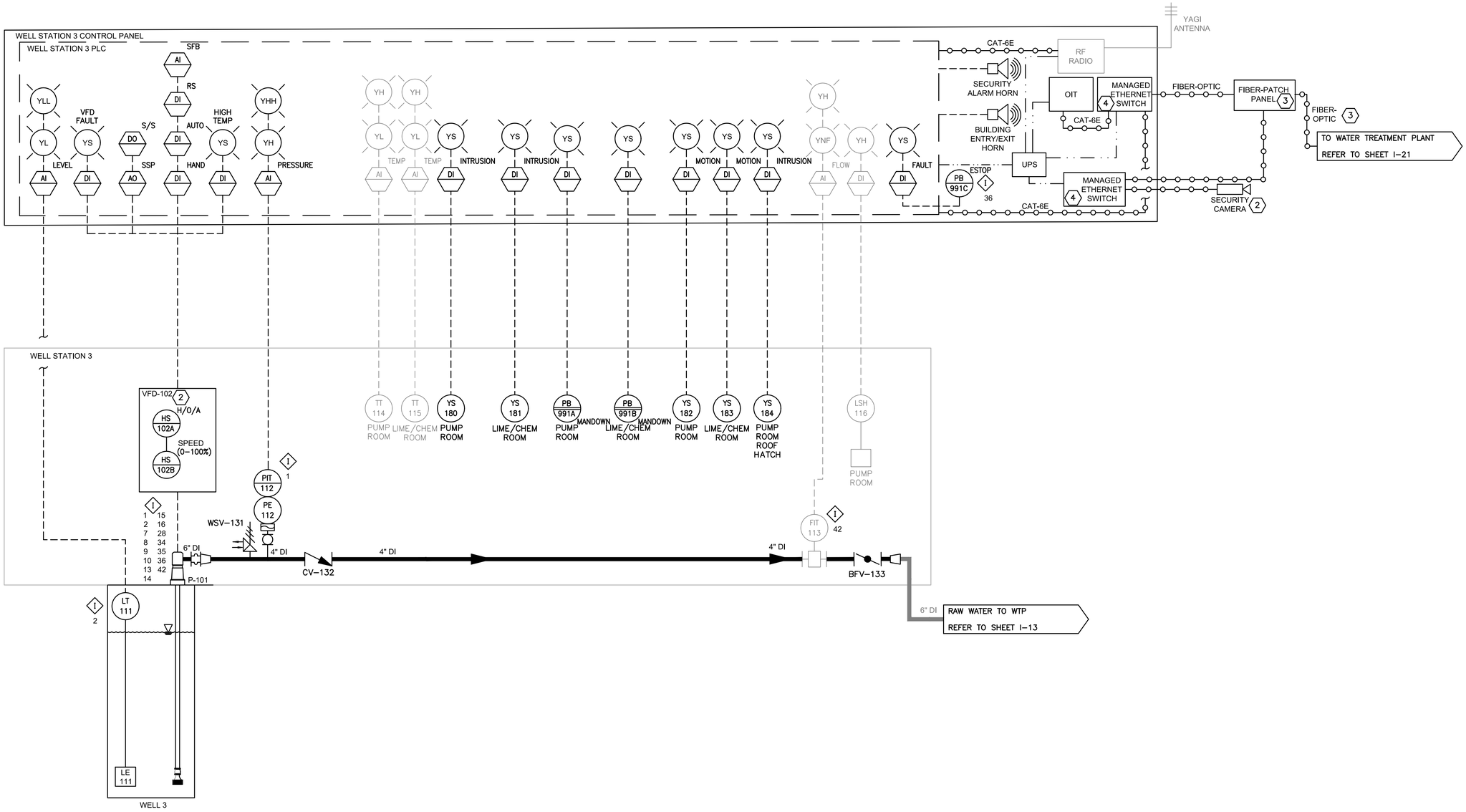
PROCESS AND INSTRUMENTATION CONTROL
WATER TREATMENT PLANT LAYOUT PLAN

FOR CONSTRUCTION

Sheet No.

I-9

Drawing file: I:\Easton,307\307-2002 Wells 3, 5 & 7 WTP\01 Design\04 Final Design\Drawings\CAD\12.3 I&C Water Treatment Plant Layout Plan.dwg Plot Date: Aug 19,2021-10:06am



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ENVIRONMENTAL PARTNERS

RYAN J. TRAHAN, CIVIL, No. 47341, REGISTERED PROFESSIONAL ENGINEER, COMMONWEALTH OF MASSACHUSETTS

MARK	DATE	DESCRIPTION

Scale	NTS
Date	AUGUST 2021
Job No.	307-2002
Designed by	DNRP
Drawn by	GAR
Checked by	DNRP
Approved by	RJT

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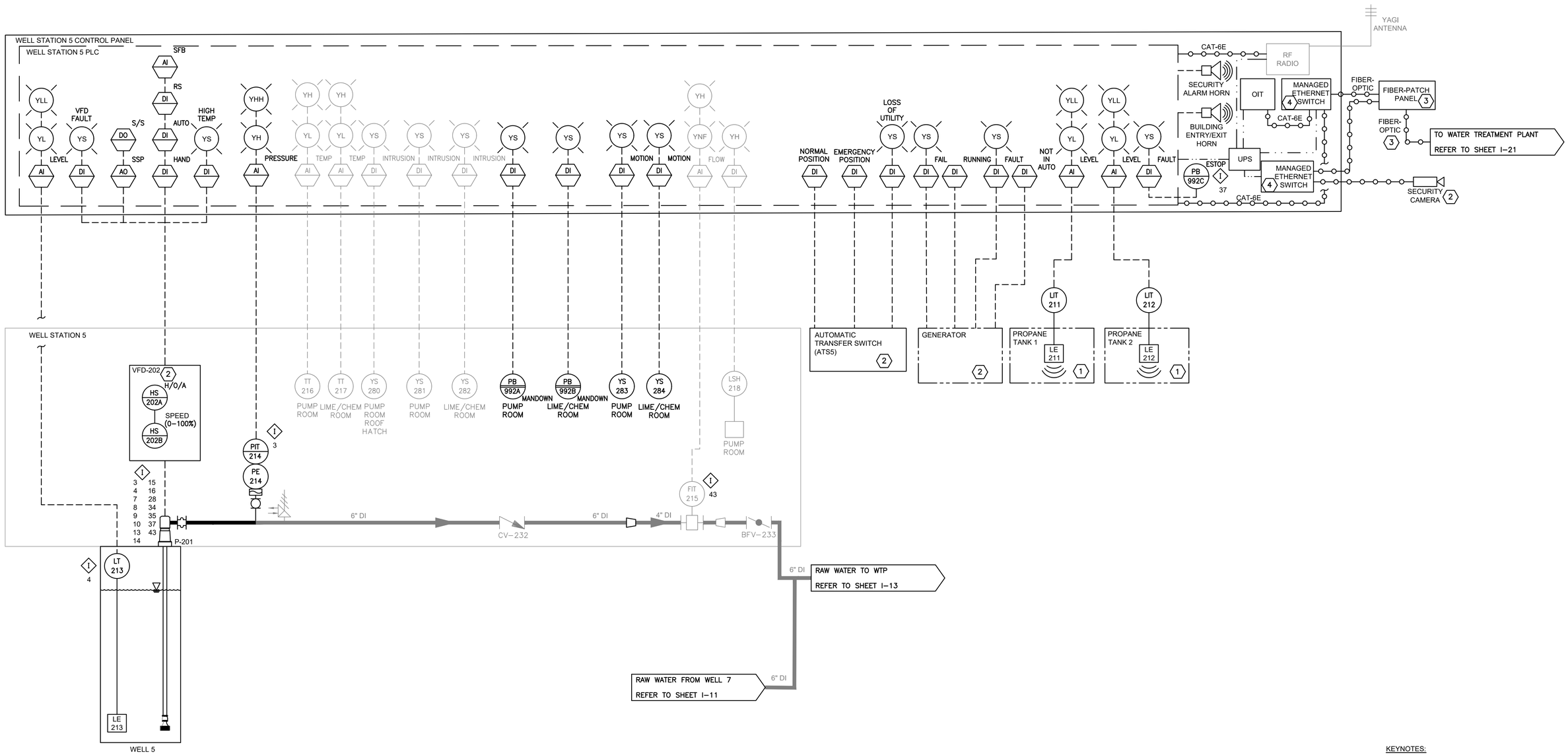
RED MILL ROAD WATER TREATMENT PLANT
TOWN OF EASTON, MA

PROCESS AND INSTRUMENTATION CONTROL
WELL STATION 3 PID

FOR CONSTRUCTION

Sheet No. I-10

Drawing file: I:\Easton\307\307-2002 Wells 3, 5 & 7 WTP\01 Design\04 Final Design\Drawings\CAD\12.4 I&C PIDs.dwg PIDt Date: Sep 21,2021-12:44pm



NOTE:

1. WELL STATION 5 VFD (VFD-202) TO BE SALVAGED AND RELOCATED. REFER TO ELECTRICAL SHEETS.

KEYNOTES:

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2. FURNISHED AND INSTALLED UNDER DIVISION 16
3. FURNISHED AND INSTALLED BY PHOENIX COMMUNICATIONS
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ENVIRONMENTAL PARTNERS

RYAN J. TRAHAN, GINIL, No. 47241, REGISTERED PROFESSIONAL ENGINEER, COMMONWEALTH OF MASSACHUSETTS

MARK	DATE	DESCRIPTION

Scale	NTS
Date	AUGUST 2021
Job No.	307-2002
Designed by	DNRP
Drawn by	GAR
Checked by	DNRP
Approved by	RJT

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RED MILL ROAD WATER TREATMENT PLANT
TOWN OF EASTON, MA

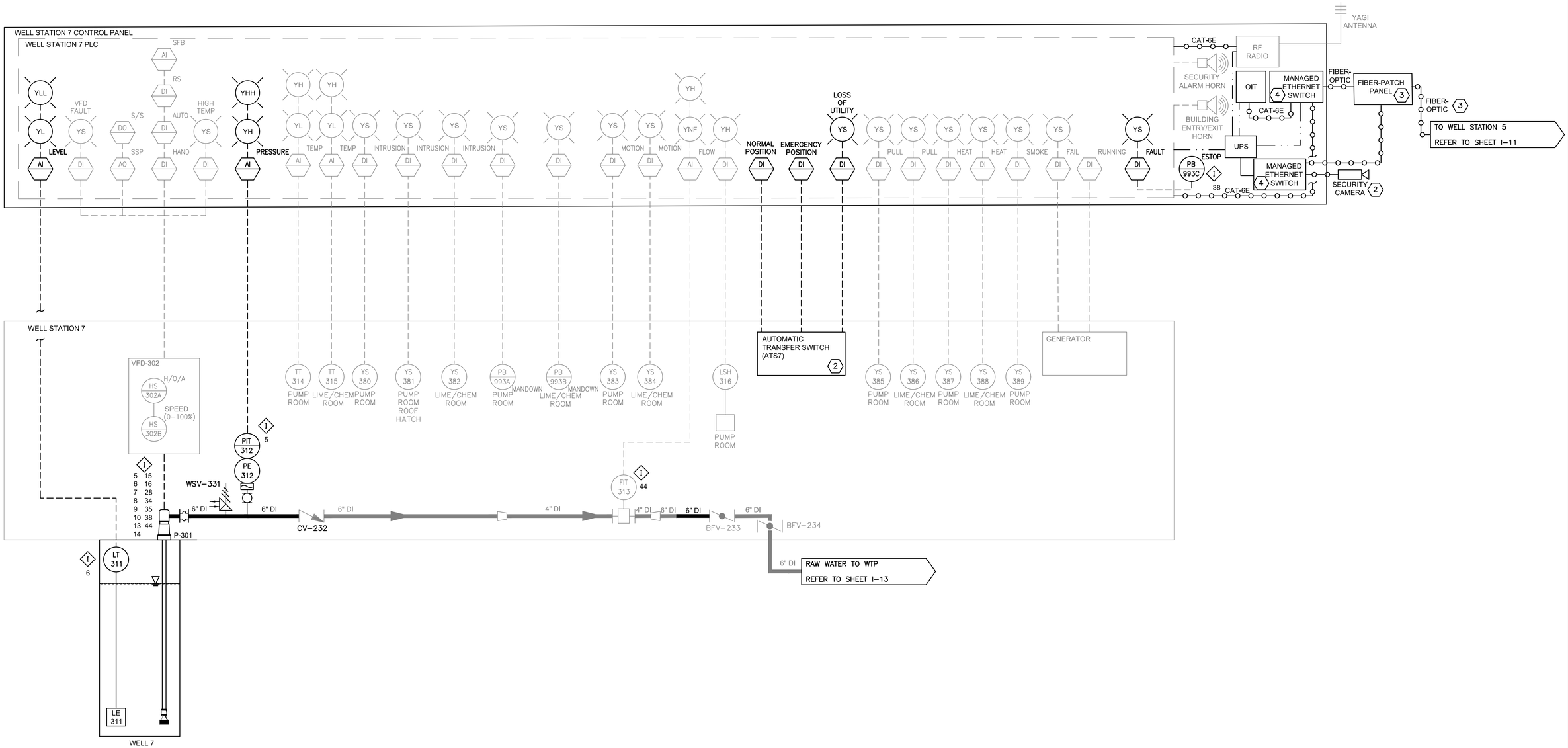
PROCESS AND INSTRUMENTATION CONTROL
WELL STATION 5 PID

FOR CONSTRUCTION

Sheet No.

I-11

Drawing file: I:\Easton.307\307-2002 Wells 3, 5 & 7 WTP\01 Design\04 Final Design\Drawings\CAD\12.4 I&C PIDs.dwg Plot Date: Sep 21, 2021-12:44pm



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ENVIRONMENTAL PARTNERS

RYAN J. TRAHAN, CIVIL, No. 47341, REGISTERED PROFESSIONAL ENGINEER, COMMONWEALTH OF MASSACHUSETTS

MARK	DATE	DESCRIPTION

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Date	AUGUST 2021
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Drawn by	GAR
Checked by	DNRP
Approved by	RJT

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RED MILL ROAD WATER TREATMENT PLANT
TOWN OF EASTON, MA

PROCESS AND INSTRUMENTATION CONTROL
WELL STATION 7 PID

FOR CONSTRUCTION

Sheet No.

I-12

Drawing file: I:\Easton\307\307-2002 Wells 3, 5 & 7 WTP\01 Design\04 Final Design\Drawings\CAD\12.4 I&C PIDs.dwg Plot Date: Sep 21,2021-12:44pm

MAIN CONTROL PANEL

PLANT PLC

YH YH YL YNF PRESSURE FLOW AI AI

YH PRESSURE AI

YH YS FAULT DI MODE FLOW POS AI AI AO

FAIL TO CLOSE/OPEN YS FAULT YS DI MODE DI OPEN DO CLOSE POS DI DO

ZSO 435A ZCO 435A ZIT 435A

ZSO 444A ZSC 444A

ZSO 445A ZSC 445A

ZSO 440A ZSC 440A

ZSO 441A ZSC 441A

ZSO 442A ZSC 442A

ZSO 438A ZSC 438A

ZSO 443A ZSC 443A

CONTINUES ON SHEET I-14

ARV-434B

12" DI OXIDIZED WATER

BFV-436A INFLUENT ISOLATION

ARV-437A

6" DI BACKWASH WASTE

BFV-435A FILTER INFLUENT

PI 455A

FIT 417A

BFV-444A DRAINDOWN AIR

12" DI OXIDIZED WATER

OXIDIZED WATER

3" SS AIR SUPPLY

BACKWASH AIR FROM AIR SCOUR BLOWER REFER TO SHEET I-21

BFV-440A BACKWASH WASTE

6" DI BACKWASH WASTE

ARV-434A

PIT 412 PE 412

39 FIT 416 PI 458

COMBINED RAW WATER FROM WELLS 3, 5, & 7 REFER TO SHEET 1-12

12" DI 8" DI 12" DI

BFV-433A BFV-433B

BLIND FLANGE

4" DI FILTER DRAINDOWN

BFV-441A DRAINDOWN

PRESSURE FILTER #1

10' Ø FILTER AREA 77 SQ FT

DPIT 413A

PI 456A S

BFV-445A AIR SCOUR

6" DI WASHWATER FILTER EFFLUENT

BFV-442A FILTER TO WASTE

BFV-443A SLOW REFILL

BFV-438A FILTER EFFLUENT

BFV-439A EFFLUENT ISOLATION

BFV-431

SRV-432

4" DI

SURGE RELIEF LINE TO WTP EXTERIOR

¾" CU

RAW WATER SAMPLE LINE REFER TO SHEET I-15

POTASSIUM HYDROXIDE PRE-FILTRATION INJECTION REFER TO SHEET I-16

SPARE PRE-FILTRATION INJECTION

SODIUM HYPOCHLORITE PRE-FILTRATION INJECTION REFER TO SHEET I-18

TEMPORARY FILTER BYPASS REFER TO SHEET I-14

POLYALUMINUM CHLORIDE PRE-FILTRATION INJECTION REFER TO SHEET I-20

¾" CU OXIDIZED WATER SAMPLE LINE PRE-FILTRATION INJECTION REFER TO SHEET I-15

6" DI BACKWASH WASTE

TO RESIDUALS HANDLING LAGOONS

10" DI BACKWASH WASTE

8" DI BACKWASH WASTE

FLUSHING PORT WITH QUICK DISCONNECT

12" DI

6" DI

EMERGENCY WASHWATER SUPPLY REFER TO SHEET I-14

CV-509D

FILTERED WATER SAMPLE LINE REFER TO SHEET I-15

¾" CU

ARV-446A

BLIND FLANGE FOR FUTURE SECONDARY TREATMENT

BFV-447

BLIND FLANGE FOR FUTURE SECONDARY TREATMENT

8" DI FILTERED WATER TO CLEAR WELL REFER TO SHEET I-14

BFV-435B: INFLUENT ISOLATION
FIT-417B: FLOW METER
BFV-436B: FILTER INFLUENT
ARV-437B: AIR RELEASE
BFV-438B: FILTER EFFLUENT
BFV-439B: EFFLUENT ISOLATION
BFV-440B: BACKWASH WASTE
BFV-441B: DRAINDOWN
BFV-442B: FILTER TO WASTE
BFV-443B: SLOW REFILL
BFV-444B: DRAINDOWN AIR
BFV-445B: AIR SCOUR
DPIT-413B: DIFFERENTIAL PRESSURE
PI-455B: INFLUENT PRESSURE GAUGE
PI-456B: EFFLUENT PRESSURE GAUGE

PRESSURE FILTER #2 (TYP.)

BFV-435C: INFLUENT ISOLATION
FIT-417C: FLOW METER
BFV-436C: FILTER INFLUENT
ARV-437C: AIR RELEASE
BFV-438C: FILTER EFFLUENT
BFV-439C: EFFLUENT ISOLATION
BFV-440C: BACKWASH WASTE
BFV-441C: DRAINDOWN
BFV-442C: FILTER TO WASTE
BFV-443C: SLOW REFILL
BFV-444C: DRAINDOWN AIR
BFV-445C: AIR SCOUR
DPIT-413C: DIFFERENTIAL PRESSURE
PI-455C: INFLUENT PRESSURE GAUGE
PI-456C: EFFLUENT PRESSURE GAUGE

PRESSURE FILTER #3 (TYP.)

BFV-435D: INFLUENT ISOLATION
FIT-417D: FLOW METER
BFV-436D: FILTER INFLUENT
ARV-437D: AIR RELEASE
BFV-438D: FILTER EFFLUENT
BFV-439D: EFFLUENT ISOLATION
BFV-440D: BACKWASH WASTE
BFV-441D: DRAINDOWN
BFV-442D: FILTER TO WASTE
BFV-443D: SLOW REFILL
BFV-444D: DRAINDOWN AIR
BFV-445D: AIR SCOUR
DPIT-413D: DIFFERENTIAL PRESSURE
PI-455D: INFLUENT PRESSURE GAUGE
PI-456D: EFFLUENT PRESSURE GAUGE

PRESSURE FILTER #4 (TYP.)

KEYNOTES:

1. FURNISHED AND INSTALLED UNDER DIVISION 15
2. FURNISHED AND INSTALLED UNDER DIVISION 16
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4. FURNISHED BY APPLICATION ENGINEER AND INSTALLED UNDER DIVISION 13

TOWN OF EASTON MASS INCORPORATED 1725

ENVIRONMENTAL PARTNERS

COMMONWEALTH OF MASSACHUSETTS RYAN J. TRAHAN CIVIL No. 47941 REGISTERED PROFESSIONAL ENGINEER

MARK	DATE	DESCRIPTION

Scale	NTS
Date	AUGUST 2021
Job No.	307-2002
Designed by	SFP
Drawn by	GAR
Checked by	DNRP
Approved by	RJT

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RED MILL ROAD WATER TREATMENT PLANT
TOWN OF EASTON, MA

PROCESS AND INSTRUMENTATION CONTROL
RAW WATER AND PRESSURE FILTRATION PID

FOR CONSTRUCTION

Sheet No.

I-13

Drawing file: I:\Easton\307\307-2002 Wells 3, 5 & 7 WTP\01 Design\04 Final Design\Drawings\CAD\12 4 I&C PIDs.dwg Plot Date: Sep 21,2021-12:44pm

MAIN CONTROL PANEL
PLANT PLC

CONTINUES ON SHEET I–13

CONTINUES ON SHEET I–15

YH YNF FLOW AI

YH YL PRESSURE AI

DO OPEN AI POSITION AO POSITION DI OPEN DI CLOSED

YHH DI

YHH DI

YHH DI

YH YL LEVEL AI

YLL DI

YHH DI

VFD FAULT YS DI

DO S/S AO SSP

SFB AI RS DI AUTO HAND DI

HIGH TEMP YS DI

VFD FAULT YS DI

DO S/S AO SSP

SFB AI RS DI AUTO HAND DI

HIGH TEMP YS DI

FAIL TO CLOSE/OPEN YS YS OPEN DI CLOSE DI

FAULT YS MODE DI OPEN DO CLOSE DO

YHH YH PRESSURE AI

FAIL TO CLOSE/OPEN YS YS OPEN DI CLOSE DI

FAULT YS MODE DI OPEN DO CLOSE DO

YH FLOW AI

FAIL TO CLOSE/OPEN YS YS OPEN DI CLOSE DI

FAULT YS MODE DI OPEN DO CLOSE DO

ZSO 509B

ZSC 509B

ZSO 509A

ZSC 509A

RED MILL ROAD WTP

ZSO 506B

ZSC 506A

VFD-510A (2) H/O/A HS 510A–1 SPEED (0–100%) HS 510A–2

VFD-510B (2) H/O/A HS 510B–1 SPEED (0–100%) HS 510B–2

PIT 517 PE 517 I 12

FIT 518 I 41

12" DI FINISHED WATER

8" DI FINISHED WATER

M BFV–506

FINISHED WATER TO DISTRIBUTION REFER TO SHEET C–7

CV–505

BFV–504A

CV–503A

PI 516A

WSV–502A

BFV–504B

CV–503B

PI 516B

WSV–502B

BFV–507 SRV–508

SURGE RELIEF TO WTP EXTERIOR

6" M BFV–509A NORMALLY CLOSED

6" M BFV–509B NORMALLY CLOSED

PI 509E

I 40 FIT 418 PI 459

8" DI FILTERED WATER

FILTERED WATER FROM FILTERS 1–4 REFER TO SHEET I–13

BFV–448A

BLIND FLANGE

BFV–448B

12" DI TREATED WATER

ARV–446B

PE 414 PIT 414

SV–450C

BFV–449

8" DI TREATED WATER

PSV–450

8" TEMPORARY FILTER BYPASS CONNECTION

POTASSIUM HYDROXIDE POST–FILTRATION INJECTION REFER TO SHEET I–17

SPARE POST–FILTRATION INJECTION

SODIUM HYPOCHLORITE POST–FILTRATION INJECTION REFER TO SHEET I–19

TERMPORARY FILTER BYPASS REFER TO SHEET I–13

ZSO 450B

ZSC 450A

ZIT 450C

VENT (TYP. OF 2)

LSH 514

LSH 515A

LSH 515B

LIT 511

LE 511

LSH 512

HI HI ALARM ELEV. 110.99

HI HI ALARM ELEV. 110.99

HI HI ALARM ELEV. 110.99

HI HI ALARM ELEV. 110.99

LSL 513 I 11 LO LO ALARM ELEV. 107.99

G–531A G–531B TYP. OF 2

G–532A G–532B TYP. OF 2

FINISHED WATER DISTRIBUTION BOX

FINISHED WATER CLEARWELL (TWO EQUAL COMPARTMENTS)

D–O

CLEARWELL OVERFLOW TO BIORETENTION POND 2 (BP2) REFER TO SHEET C–6

12" DI

FWP–501A

FWP–501B

I 11 12 13 14 15 16 34 35

FINISHED WATER PUMP WETWELL

HI ALARM ELEV. 110.49

WELL PUMPS STOP ELEV. 109.99

FWP HIGH SPEED ELEV. 109.74

FWP LOW SPEED ELEV. 109.24

WELL PUMPS START ELEV. 108.99

LO ALARM ELEV. 108.49

CT LEVEL ELEV. 107.99

MIN. BACKWASH LEVEL ELEV. 105.63

CAPPED EMERGENCY CHEMICAL INJECTION TAP

FINISHED WATER SAMPLE TAP

ARV–509C

EMERGENCY WASHWATER SUPPLY TO FILTER EFFLUENT HEADER REFER TO SHEET I–13

6" DI EMERGENCY WASHWATER

100 FOOT SAMPLE LINE REFER TO SHEET I–15

KEYNOTES:

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TOWN OF EASTON MASS INCORPORATED 1725

ENVIRONMENTAL PARTNERS

COMMONWEALTH OF MASSACHUSETTS RYAN J. TRAHAN CIVIL No. 47841 REGISTERED PROFESSIONAL ENGINEER

MARK	DATE	DESCRIPTION

Scale	NTS
Date	AUGUST 2021
Job No.	307-2002
Designed by	SFP
Drawn by	GAR
Checked by	DNRP
Approved by	RJT

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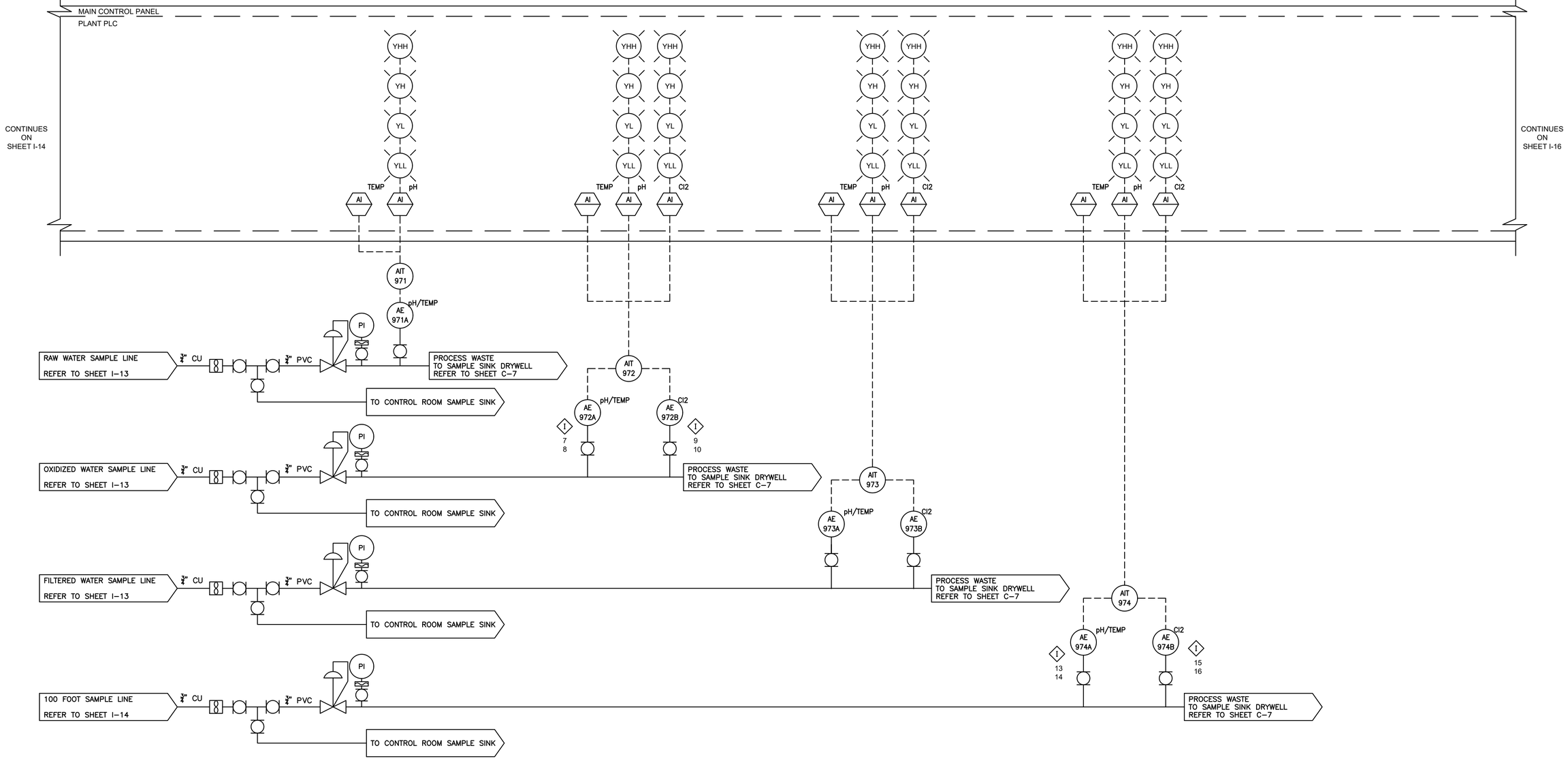
RED MILL ROAD WATER TREATMENT PLANT
TOWN OF EASTON, MA

PROCESS AND INSTRUMENTATION CONTROL CLEARWELL AND FINISHED WATER PUMPING PID

FOR CONSTRUCTION

Sheet No. I-14

Drawing file: I:\Easton\307\307-2002 Wells 3, 5 & 7 WTP\01 Design\04 Final Design\Drawings\CAD\12.4 I&C PIDs.dwg Plot Date: Sep 21,2021-12:44pm



KEYNOTES:

1. FURNISHED AND INSTALLED UNDER DIVISION 15
2. FURNISHED AND INSTALLED UNDER DIVISION 16
3. FURNISHED AND INSTALLED BY PHOENIX COMMUNICATIONS
4. FURNISHED BY APPLICATION ENGINEER AND INSTALLED UNDER DIVISION 13

ENVIRONMENTAL PARTNERS

RYAN J. TRAHAN, CIVIL, No. 47241, REGISTERED PROFESSIONAL ENGINEER, COMMONWEALTH OF MASSACHUSETTS

MARK	DATE	DESCRIPTION

Scale	NTS
Date	AUGUST 2021
Job No.	307-2002
Designed by	SFP
Drawn by	GAR
Checked by	DNRP
Approved by	RJT

THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

RED MILL ROAD WATER TREATMENT PLANT
TOWN OF EASTON, MA

PROCESS AND INSTRUMENTATION CONTROL ANALYZERS PID

FOR CONSTRUCTION

Sheet No. I-15

Drawing file: I:\Easton\307\307-2002 Wells 3, 5 & 7 WTP\01 Design\04 Final Design\Drawings\CAD\12.4 I&C PIDs.dwg Plot Date: Sep 21,2021-12:44pm

MAIN CONTROL PANEL
PLANT PLC

CONTINUES ON SHEET I-15

CONTINUES ON SHEET I-17

OPEN CLOSED OPEN CLOSE OPEN/CLOSED
DI DI DO DO DI
ZSO 616A
ZSC 616B
HS 616 (2)

OPEN CLOSED OPEN CLOSE OPEN/CLOSED
DI DI DO DO DI
ZSO 617A
ZSC 617B
HS 617 (2)

RUN PERMISSIVE
DO

YH
DI
LSH 613 (1) 29

FAULT
YS
DI
SSP
AO

ON STOP
DI DO
AUTO START
DI DO

METERING PUMP CONTROL PANEL
RUNNING
G
HS 602A
PB 602B (I) 17
ESTOP
HS 602C SPEED
HS 602D STROKE LENGTH (0-100%)

METERING PUMP CONTROL PANEL
RUNNING
G
HS 603A
PB 603B (I) 18
ESTOP
HS 603C SPEED
HS 603D STROKE LENGTH (0-100%)

METERING PUMP CONTROL PANEL
RUNNING
G
HS 604A
PB 604B (I) 19
ESTOP
HS 604C SPEED
HS 604D STROKE LENGTH (0-100%)

PB 994B MANDOWN

PI 639

TO KOH (PRE) INJECTION POINT
REFER TO SHEET I-13

MP-602 (I) 17 28 34 35 39
MP-603 (I) 18 28 34 35 39
MP-604 (I) 19 28 34 35 39

ARV-631
BV-635 (M)
KOH (PRE) DAY TANK DT-609
PI 638
FROM KOH BULK CHEMICAL STORAGE
REFER TO SHEET I-17
BV-634 (M)
TP-601 (I) 29

KEYNOTES:

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2. FURNISHED AND INSTALLED UNDER DIVISION 16
3. FURNISHED AND INSTALLED BY PHOENIX COMMUNICATIONS
4. FURNISHED BY APPLICATION ENGINEER AND INSTALLED UNDER DIVISION 13

TOWN OF EASTON MASS INCORPORATED 1725

ENVIRONMENTAL PARTNERS

RYAN J. TRAHAN 61MIL No. 47241 REGISTERED PROFESSIONAL ENGINEER COMMONWEALTH OF MASSACHUSETTS

MARK	DATE	DESCRIPTION

Scale	NTS
Date	AUGUST 2021
Job No.	307-2002
Designed by	DNRP
Drawn by	GAR
Checked by	DNRP
Approved by	RJT

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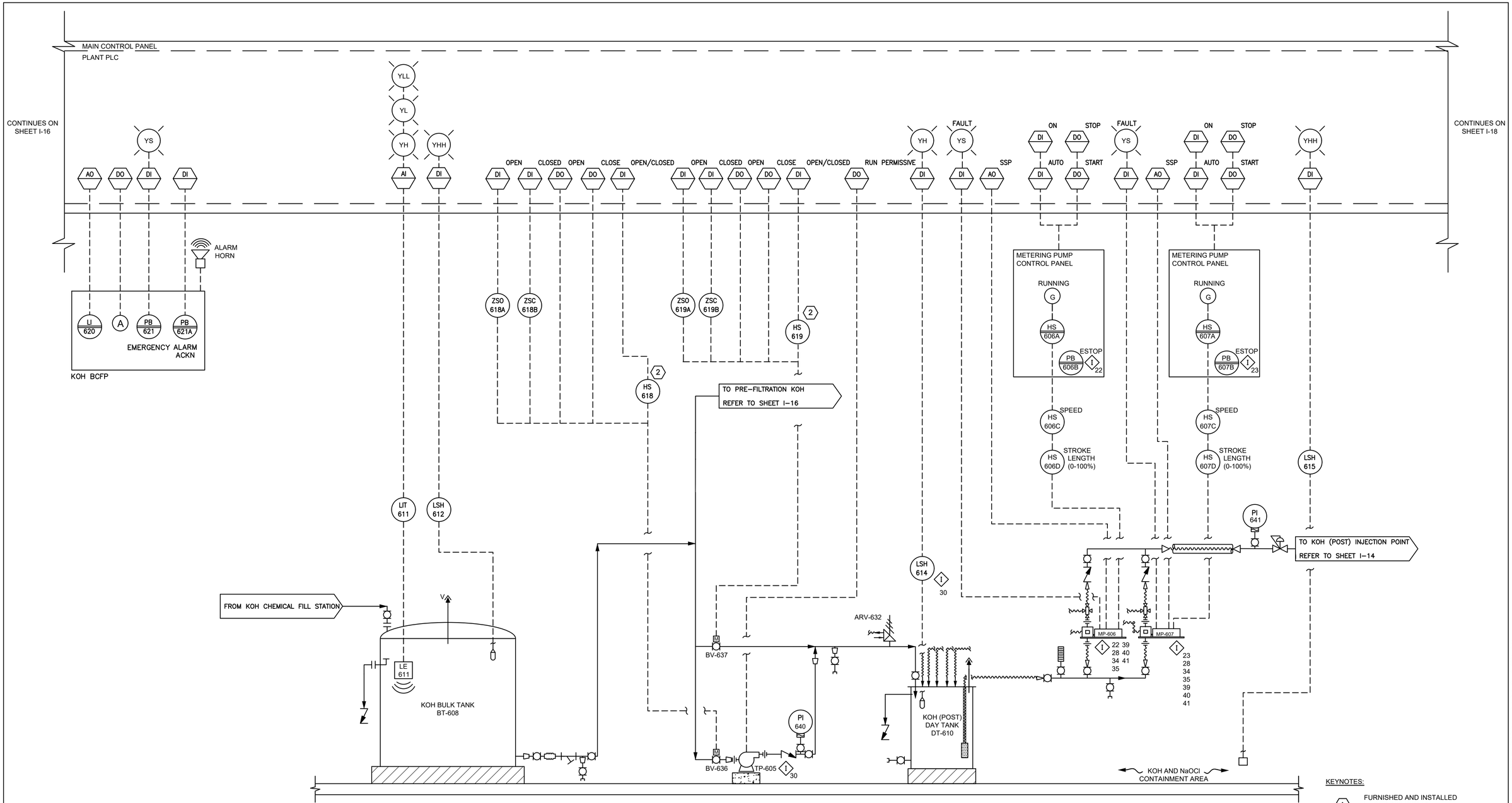
RED MILL ROAD WATER TREATMENT PLANT
TOWN OF EASTON, MA

PROCESS AND INSTRUMENTATION CONTROL
POTASSIUM HYDROXIDE PRE-FILTRATION PID

FOR CONSTRUCTION

Sheet No.
I-16

Drawing file: I:\Easton\307\307-2002 Wells 3, 5 & 7 WTP\01 Design\04 Final Design\Drawings\CAD\12.4 I&C PIDs.dwg Plot Date: Sep 21,2021-12:44pm



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2. FURNISHED AND INSTALLED UNDER DIVISION 16
3. FURNISHED AND INSTALLED BY PHOENIX COMMUNICATIONS
4. FURNISHED BY APPLICATION ENGINEER AND INSTALLED UNDER DIVISION 13

ENVIRONMENTAL PARTNERS

RYAN J. TRAHAN, GMIL, No. 47841, REGISTERED PROFESSIONAL ENGINEER, COMMONWEALTH OF MASSACHUSETTS

MARK	DATE	DESCRIPTION

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Date	AUGUST 2021
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Drawn by	GAR
Checked by	DNRP
Approved by	RJT

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RED MILL ROAD WATER TREATMENT PLANT
TOWN OF EASTON, MA

PROCESS AND INSTRUMENTATION CONTROL
POTASSIUM HYDROXIDE BULK TANK AND POST-FILTRATION PID

FOR CONSTRUCTION

Sheet No. I-17

Drawing file: I:\Easton\307\307-2002 Wells 3, 5 & 7 WTP\01 Design\04 Final Design\Drawings\CAD\12.4 I&C PIDs.dwg Plot Date: Sep 21, 2021-12:44pm

MAIN CONTROL PANEL
PLANT PLC

CONTINUES ON SHEET I-17

CONTINUES ON SHEET I-19

OPEN | CLOSED | OPEN | CLOSE | OPEN/CLOSED — DI DI DO DO DI
ZSO 716A
ZSC 716B
HS 716 (2)

OPEN | CLOSED | OPEN | CLOSE | OPEN/CLOSED — DI DI DO DO DI
ZSO 717A
ZSC 717B
HS 717 (2)

RUN PERMISSIVE — DO

YH — DI
LSH 713 (1) 31

FAULT — YS — DI
SSP — AO

ON | STOP — DI DO
AUTO | START — DI DO

METERING PUMP CONTROL PANEL
RUNNING — G
HS 702A
PB 702B — ESTOP (I) 20
SPEED — HS 702C
HS 702D — STROKE LENGTH (0-100%)

FAULT — YS — DI
SSP — AO

ON | STOP — DI DO
AUTO | START — DI DO

METERING PUMP CONTROL PANEL
RUNNING — G
HS 703A
PB 703B — ESTOP (I) 21
SPEED — HS 703C
HS 703D — STROKE LENGTH (0-100%)

YS — DI
PB 994A — MANDOWN

PI 739

TO NaOCl (PRE) INJECTION POINT
REFER TO SHEET I-13

MP-702 — (I) 20 28 34 35 39
MP-703 — (I) 21 28 34 35 39

ARV-731

BV-735 (M V)

BV-734 (M V)

FROM NaOCl BULK STORAGE
REFER TO SHEET I-19

TP-701 (I) 31

PI 738

NaOCl (PRE)
DAY TANK
DT-709

KEYNOTES:

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4. FURNISHED BY APPLICATION ENGINEER AND INSTALLED UNDER DIVISION 13

TOWN OF EASTON MASS — INCORPORATED 1725

ENVIRONMENTAL PARTNERS

COMMONWEALTH OF MASSACHUSETTS — RYAN J. TRAHAN — CIVIL — No. 47241 — REGISTERED PROFESSIONAL ENGINEER

MARK	DATE	DESCRIPTION

Scale	NTS
Date	AUGUST 2021
Job No.	307-2002
Designed by	DNRP
Drawn by	GAR
Checked by	DNRP
Approved by	RJT

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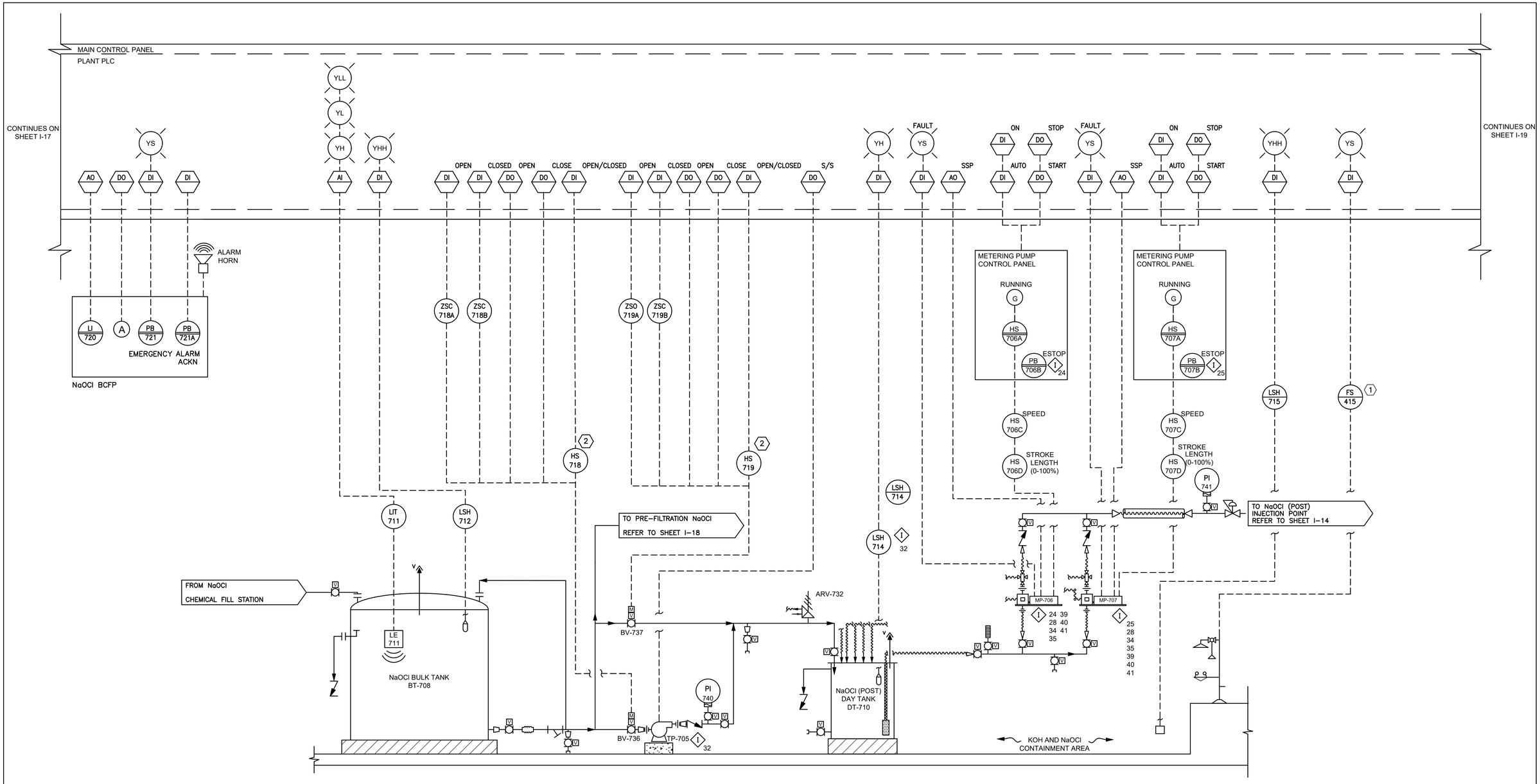
RED MILL ROAD WATER TREATMENT PLANT
TOWN OF EASTON, MA

PROCESS AND INSTRUMENTATION CONTROL
SODIUM HYPOCHLORITE PRE-FILTRATION PID

FOR CONSTRUCTION

Sheet No.
I-18

Drawing file: I:\Easton.307\307-2002 Wells 3, 5 & 7 WTP\01 Design\04 Final Design\Drawings\CAD\12.4 I&C PIDs.dwg Plot Date: Sep 21, 2021-12:44pm



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ENVIRONMENTAL PARTNERS

RYAN J. TRAHAN GMIL No. 47941 REGISTERED PROFESSIONAL ENGINEER

MARK	DATE	DESCRIPTION

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Designed by	DNRP
Drawn by	GAR
Checked by	DNRP
Approved by	RJT

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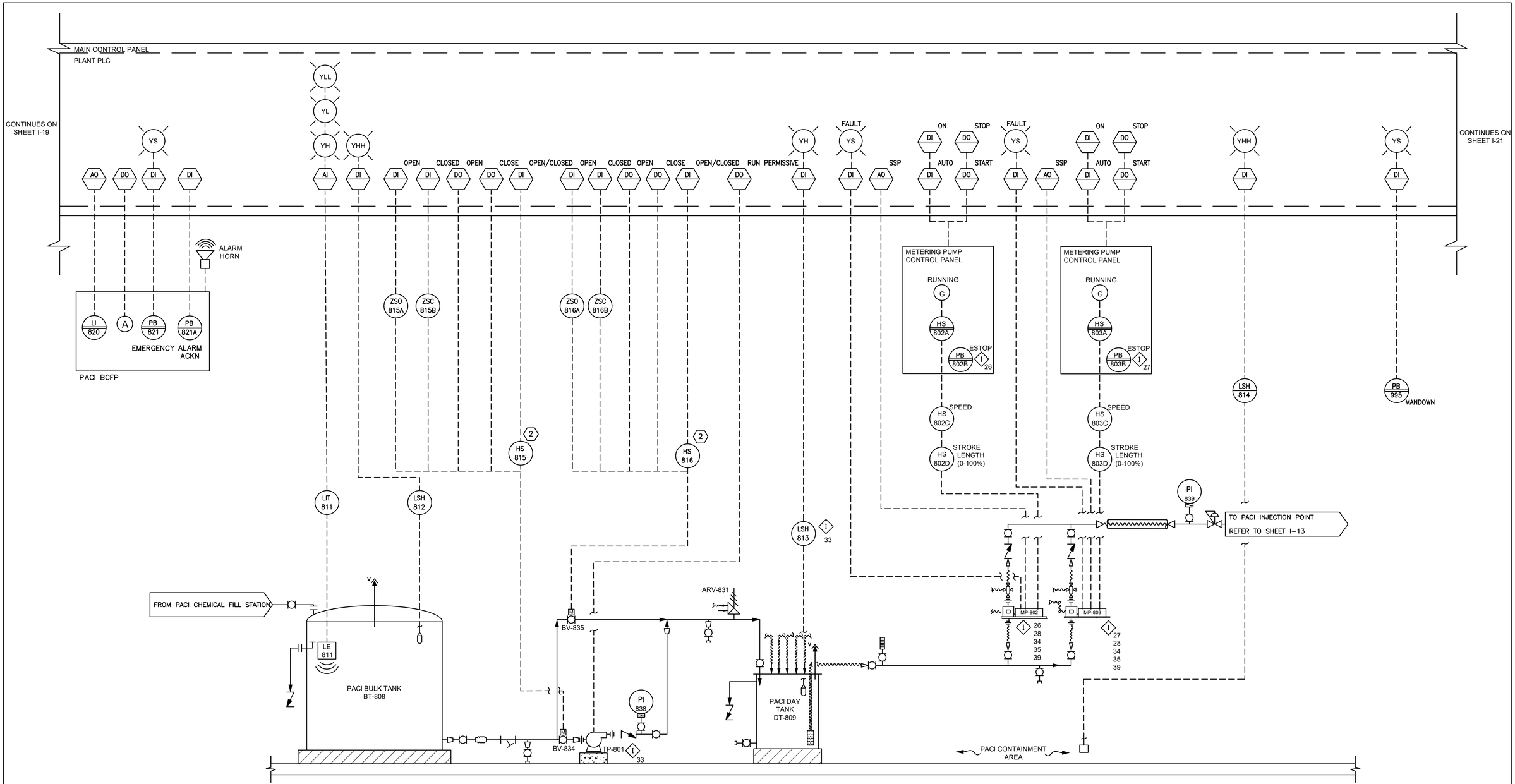
RED MILL ROAD WATER TREATMENT PLANT
TOWN OF EASTON, MA

PROCESS AND INSTRUMENTATION CONTROL
SODIUM HYPOCHLORITE POST-FILTRATION PID

FOR CONSTRUCTION

Sheet No. I-19

Drawing file: I:\Easton\307\307-2002 Wells 3, 5 & 7 WTP\01 Design\04 Final Design\Drawings\CAD\12.4 I&C PIDs.dwg Plot Date: Sep 21, 2021-12:44pm



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TOWN OF EASTON MASS INCORPORATED 1725

ENVIRONMENTAL PARTNERS

COMMONWEALTH OF MASSACHUSETTS
RYAN J. TRAHAN
CIVIL
No. 47941
REGISTERED PROFESSIONAL ENGINEER

MARK	DATE	DESCRIPTION

Scale	NTS
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Job No.	307-2002
Designed by	DNRP
Drawn by	GAR
Checked by	DNRP
Approved by	RJT

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RED MILL ROAD WATER TREATMENT PLANT
TOWN OF EASTON, MA

PROCESS AND INSTRUMENTATION CONTROL POLYALUMINUM CHLORIDE PID

FOR CONSTRUCTION

Sheet No. I-20

Drawing file: I:\Easton\307\307-2002 Wells 3, 5 & 7 WTP\01 Design\04 Final Design\Drawings\CAD\12.4 I&C PIDs.dwg Plot Date: Sep 21,2021-12:44pm

MAIN CONTROL PANEL
PLANT PLC

CONTINUES ON SHEET I-21

YH YL YS TEMP DI AI DI
YS YI FAULT MOTION DI DI
YS YL YS INTRUSION TEMP DI AI DI
YH YL YS TEMP FIRE AI AI DI DI
YH SUPERVISORY DI
NORMAL POSITION DI
EMERGENCY POSITION DI
YS LOSS OF UTILITY DI
YS CHEMICAL ALARM DI
YH YL TEMP AI
YH HUMIDITY DI
YS YS YS YL YS INTRUSION MOTION MOTION TEMP DI DI DI AI DI
YS YS FAIL RUNNING DI DI
YS YS FAULT DI DI
YH NOT IN AUTO DI
YS OVERLOAD DI
DI RS
DI AUTO
DO S/S
YS DO O/C
YS DI FAULT

RF RADIO (WATER OFFICE)
YAGI ANTENNA
CAT-6E
OIT
MANAGED ETHERNET SWITCH 4
FIREWALL 4
PB 999 ESTOP I 35
FIBER OPTIC
HMI SCADA PC WORKSTATION 4
POE ETHERNET SWITCH 2
FIBER-PATCH PANEL 3
FIBER OPTIC
FROM WELL STATION 3 CONTROL PANEL REFER TO SHEET I-10
FROM WELL STATION 5 CONTROL PANEL REFER TO SHEETS I-11
TOWN FIBER NETWORK

ISB
LSH 981

FILTER AREA 101
TT 931
PB 997 MANDOWN
YS 913
PB 998 ESTOP I 34
LSH 411

FUTURE PFAS AREA 102
YS 912 2
TT 932

ELECTRICAL ROOM 107
TT 934
FIRE ALARM CONTROL PANEL (FACP) 2

AUTOMATIC TRANSFER SWITCH (ATS) 2
CHEMICAL ALARM SYSTEM CONTROL PANEL (CACP) 2

MECHANICAL ROOM 108
TT 935
DHU-1 (UPPER LEVEL ABOVE MECHANICAL ROOM) 1

CORRIDOR 109
YS 911 2
YS 914

CONTROL ROOM/ LABORATORY 110
YS 915
TT 933
PB 996 MANDOWN

GENERATOR 2

SEPTIC TANK

2 H/O/A
HS 405A

OUTSIDE AIR
BFV-451A
3" INLET AIR
PI 457A
INLET SILENCER
ASB-405 AIR SCOUR BLOWER I 34 35
DISCHARGE SILENCER
PRV-455
PI 457B
3" BACKWASH AIR SUPPLY
BFV-451B
CV-452
SV-454 (N.O.)
S
D
BACKWASH AIR SUPPLY TO FILTERS REFER TO SHEET I-13

KEYNOTES:

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ENVIRONMENTAL PARTNERS

RYAN J. TRAHAN 0ANL No. 47941 REGISTERED PROFESSIONAL ENGINEER COMMONWEALTH OF MASSACHUSETTS

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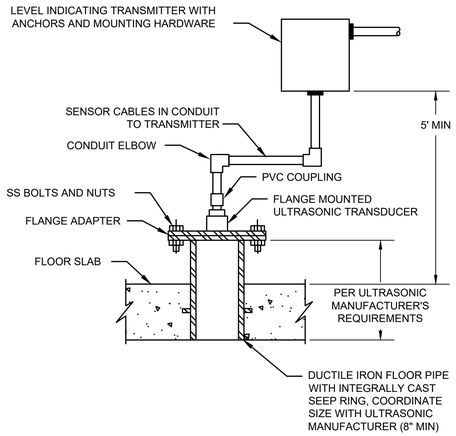
RED MILL ROAD WATER TREATMENT PLANT
TOWN OF EASTON, MA

PROCESS AND INSTRUMENTATION CONTROL
WATER TREATMENT PLANT AIR SCOUR BLOWER, TEMPERATURE SENSORS, FLOOD SWITCH, AND POWER MONITORING PID

FOR CONSTRUCTION

Sheet No. I-21

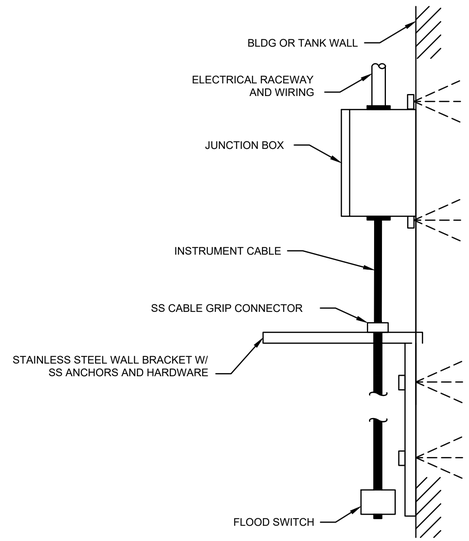
Drawing file: I:\Easton\307\307-2002 Wells 3, 5 & 7 WTP\01 Design\04 Final Design\Drawings\CAD\12-4 I&C PIDs.dwg Plot Date: Sep 21,2021-12:44pm



NOTES:

1. COAT FLOOR PIPE WITH SPECIFIED PAINT SYSTEM PRIOR TO CONCRETE PLACEMENT.
2. ULTRASONIC LEVEL SHALL BE SUITABLE FOR SUBMERSIBLE APPLICATIONS.
3. ELECTRICAL CONTRACTOR TO PROVIDE ALL DIVISION 16 DEVICES, EQUIPMENT, COMPONENTS, AND ANCILLARY ITEMS ASSOCIATED WITH POWER AND SIGNAL WIRING FOR I&C DEVICES.
4. THE MOUNTING DETAILS PROVIDED ARE GENERIC FOR ULTRASONIC LEVEL MEASURING DEVICES OF VARIOUS MANUFACTURERS. THE INSTALLING CONTRACTOR MUST STRICTLY COMPLY WITH MANUFACTURER'S INSTRUCTION IN THE INSTALLATION OF THESE DEVICES. IF THERE ARE ANY ENGINEERING ISSUES THEY MUST BE REFERRED TO THE ENGINEER PRIOR TO INSTALLATION.

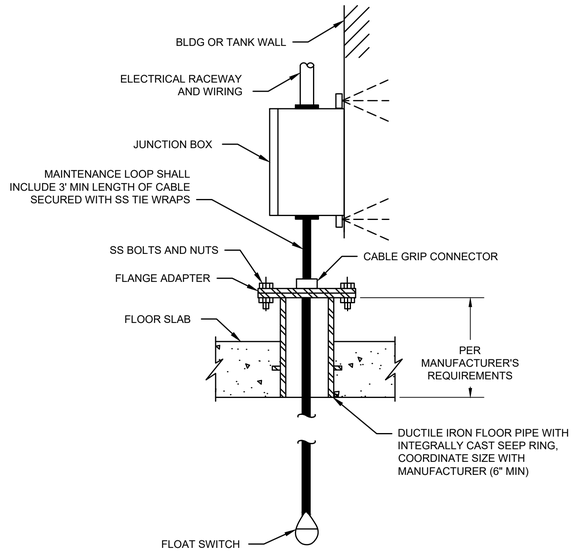
ULTRASONIC TANK
SCALE: N.T.S.



NOTES:

1. THE MOUNTING DETAILS PROVIDED ARE GENERAL FOR LEVEL SWITCH DEVICES OF VARIOUS MANUFACTURERS. THE INSTALLING CONTRACTOR MUST STRICTLY COMPLY WITH MANUFACTURER'S INSTRUCTIONS IN THE INSTALLATION OF THESE DEVICES. IF THERE ARE ANY ENGINEERING ISSUES THEY MUST BE REFERRED TO THE ENGINEER PRIOR TO INSTALLATION.
2. ELECTRICAL CONTRACTOR TO PROVIDE ALL DIVISION 16 DEVICES, EQUIPMENT, COMPONENTS, AND ANCILLARY ITEMS ASSOCIATED WITH POWER AND SIGNAL WIRING FOR I&C DEVICES.

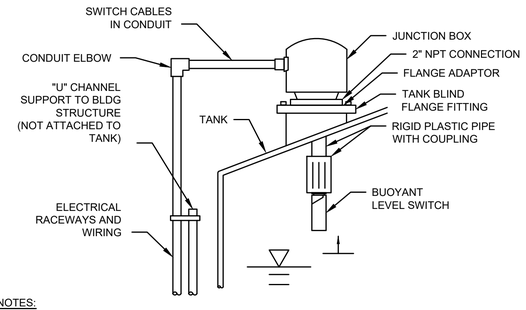
FLOOD SWITCH
SCALE: N.T.S.



NOTES:

1. COAT FLOOR PIPE WITH SPECIFIED PAINT SYSTEM PRIOR TO CONCRETE PLACEMENT.
2. THE MOUNTING DETAILS PROVIDED ARE GENERAL FOR LEVEL SWITCH DEVICES OF VARIOUS MANUFACTURERS. THE INSTALLING CONTRACTOR MUST STRICTLY COMPLY WITH MANUFACTURER'S INSTRUCTIONS IN THE INSTALLATION OF THESE DEVICES. IF THERE ARE ANY ENGINEERING ISSUES THEY MUST BE REFERRED TO THE ENGINEER PRIOR TO INSTALLATION.
3. ELECTRICAL CONTRACTOR TO PROVIDE ALL DIVISION 16 DEVICES, EQUIPMENT, COMPONENTS, AND ANCILLARY ITEMS ASSOCIATED WITH POWER AND SIGNAL WIRING FOR I&C DEVICES.

FLOAT SWITCH - TANK
SCALE: N.T.S.



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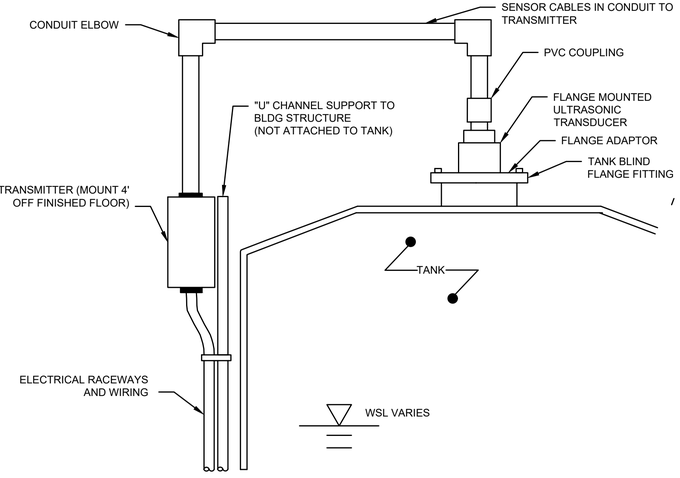
2. ELECTRICAL CONTRACTOR TO PROVIDE ALL DIVISION 16 DEVICES, EQUIPMENT, COMPONENTS, AND ANCILLARY ITEMS ASSOCIATED WITH POWER AND SIGNAL WIRING FOR I&C DEVICES.

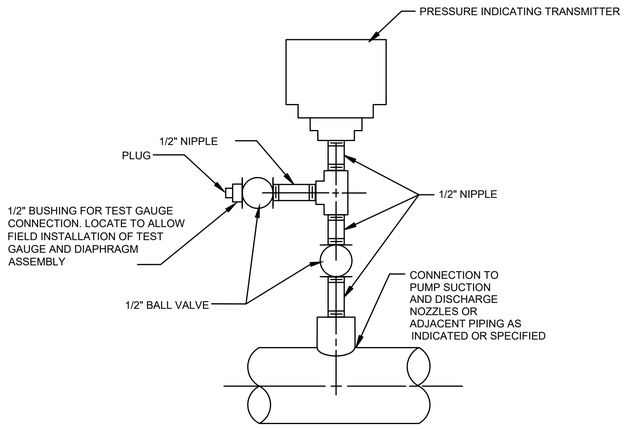
CHEMICAL TANK FLOAT SWITCH
SCALE: N.T.S.



NOTES:

1. THE MOUNTING DETAILS PROVIDED ARE GENERIC FOR ULTRASONIC DEVICES OF VARIOUS MANUFACTURERS. THE INSTALLING CONTRACTOR MUST STRICTLY COMPLY WITH MANUFACTURER'S INSTRUCTION IN THE INSTALLATION OF THESE DEVICES. IF THERE ARE ANY ENGINEERING ISSUES THEY MUST BE REFERRED TO THE ENGINEER PRIOR TO INSTALLATION.
2. ELECTRICAL CONTRACTOR TO PROVIDE ALL DIVISION 16 DEVICES, EQUIPMENT, COMPONENTS, AND ANCILLARY ITEMS ASSOCIATED WITH POWER AND SIGNAL WIRING FOR I&C DEVICES.

CHEMICAL TANK ULTRASONIC LEVEL
SCALE: N.T.S.



NOTES:

1. ELECTRICAL CONTRACTOR TO PROVIDE ALL DIVISION 16 DEVICES, EQUIPMENT, COMPONENTS, AND ANCILLARY ITEMS ASSOCIATED WITH POWER AND SIGNAL WIRING FOR I&C DEVICES.

PRESSURE INDICATING TRANSMITTER MOUNTING
SCALE: N.T.S.

TOWN OF EASTON MASS INCORPORATED 1725

ENVIRONMENTAL PARTNERS

COMMONWEALTH OF MASSACHUSETTS — RYAN J. TRAHAN — GM/L — No. 47341 — REGISTERED PROFESSIONAL ENGINEER

MARK	DATE	DESCRIPTION

Scale	NTS
Date	AUGUST 2021
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Designed by	DNRP
Drawn by	GAR
Checked by	DNRP
Approved by	RJT

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RED MILL ROAD WATER TREATMENT PLANT
TOWN OF EASTON, MA

PROCESS AND INSTRUMENTATION CONTROL
INSTRUMENTATION DETAILS

FOR CONSTRUCTION

Sheet No.

I-22

Drawing file: I:\Easton\307-2002 Wells 3, 5 & 7 WTP\01 Design\04 Final Design\Drawings\CAD\12.4 I&C PIDs.dwg Plot Date: Sep 21,2021-12:44pm

ELECTRICAL SYMBOLS

	LIMIT SWITCH NORMALLY CLOSED
	LIMIT SWITCH HELD CLOSED
	LIMIT SWITCH NORMALLY OPEN
	LIMIT SWITCH HELD OPEN
	FLOAT SWITCH NORMALLY OPEN
	PRESSURE SWITCH NORMALLY OPEN
	TEMPERATURE SWITCH NORMALLY OPEN
	TIME SWITCH (DROP OUT) NORMALLY OPEN
	TIME SWITCH (PULL IN) NORMALLY OPEN
	FLOW SWITCH NORMALLY OPEN
	PUSH BUTTON NORMALLY CLOSED
	PUSH BUTTON NORMALLY OPEN
OFF ON OX	SELECTOR SWITCH 2 POSITION
H O A XOO OOX	SELECTOR SWITCH 3 POSITION
H L O A XOOO OXOO OOOX	SELECTOR SWITCH 4 POSITION
	CONTACT NORMALLY CLOSED
	CONTACT NORMALLY OPEN
	SWITCH
R	PILOT LIGHT (W/ LENS COLOR)
	SOLENOID
	COIL
	HORN
	CIRCUIT BREAKER
	FUSE
	CHASSIS GROUND
	THERMAL OVERLOAD

	TRANSFORMER
	CURRENT TRANSFORMER
	THERMOCOUPLE
	RTD SENSOR
	MOTOR
	MUSHROOM PUSH BUTTON NORMALLY OPEN
#	REVISION REFERENCE
#	ITEM REFERENCE
#	NOTE REFERENCE
######	TERMINAL NUMBER
	BREAK
	PANEL WIRING
	FIELD WIRING
	SHIELDED CABLE
	WIRES CROSSING
	WIRES CONNECTING
	3 PHASE HEATER (DELTA)
	3 PHASE HEATER (WYE)
	3-POLE CIRCUIT BREAKER
L1 T1 L2 T2 L3 T3	MOTOR PROTECTOR
L1 T1 L2 T2 L3 T3	3-POLE CONTACTOR
	3-POLE DISCONNECT

PANEL NOTES

1) INCLUDE A DRAWING POCKET INSIDE THE PANEL LARGE ENOUGH TO STORE A COMPLETE SET OF SYSTEM DIAGRAMS, AND DRAWINGS.

2) ANALOG CABLES:2 CONDUCTOR WITH SHIELD. BELDEN #8760 OR EQUAL.

3) LEAVE FREE SPACE ABOVE PLC FOR VENTILATION.

4) IDENTIFY ALL WIRES AS SPECIFIED BY THE NATIONAL ELECTRICAL CODE HANDBOOK AND THE FOLLOWING:

POWER DISTRIBUTION WIRES.....BLACK
NEUTRAL WIRES.....WHITE
AC CONTROL CIRCUIT WIRES.....RED
DC CONTROL CIRCUIT WIRES.....BLUE
DC COMMON WIRES.....WHITE W/BLUE STRIPE
GROUND WIRES.....GREEN W/YELLOW STRIPE
WIRES THAT MAY REMAIN.....ORANGE
ENERGIZED WHEN THE MAIN DISCONNECT IS IN THE OFF POSITION

5) SIZE ALL WIRE IN ACCORDANCE WITH NEC CODES. SINGLE CONDUCTORS: STRANDED COPPER WITH THWN INSULATION, RATED FOR 600 VAC, AND UL LISTED AS MTW, UNLESS NOTED OTHERWISE. MINIMUM CONDUCTOR SIZE:#14AWG. #16 AWG MAY BE USED ONLY FOR THE INDIVIDUAL WIRES CONNECTING DIRECTLY TO AN I/O TERMINAL ON THE PLC SWING ARM. THE HOT AND NEUTRAL CONDUCTOR SUPPLYING EACH SWING ARM SHALL REMAIN #14 AWG. GROUND CONDUCTOR SIZE:AS INDICATED ON THE DRAWINGS. WHERE NOT INDICATED, THEY SHALL BE #14 AWG OR LARGER.

6) BOND PLC CHASSIS, PANEL DOORS, SIDE PANELS, BACK PANELS AND GROUND BUS TOGETHER WITH WIRES SIZED AS SHOWN ON THE DRAWING.

7) TAG ALL WIRES AT EVERY TERMINATION POINT. SHORT WIRE LENGTHS, (LESS THAN 8") WHERE THE ENTIRE CONDUCTOR IS VISIBLE MAY BE TAGGED AT JUST ONE END. WIRE LABELS FOR WIRES SMALLER THAN NO. 4. SHALL BE VINYL, SELF ADHESIVE, WRAPAROUND, WITH MACHINE PRINTED NUMBERS AND LETTERS. WIRE SIZES NO. 4 AND LARGER AND MULTI CONDUCTOR CABLES SHALL BE MARKED WITH ONE-PIECE, NYLON LOCKING MACHINE PRINTED MARKER TIES EQUAL TO PANDUIT PLM SERIES. WIRE TAG NUMBER SHALL BE AS INDICATED ON THE DRAWINGS

8) DO NOT ROUTE ANY COMMUNICATION CABLES IN WIREWAYS WITH 120 VAC WIRING. ROUTE ALL THESE CABLES AWAY FROM 120 VAC WIRING. WHERE 120 VAC CONDUCTORS MUST BE CROSSED, DO SO AT RIGHT ANGLES AND PROVIDE AT LEAST 1" SEPARATION.

9) CONNECT NO MORE THAN TWO WIRES TO ANY ONE TERMINAL. PROVIDE TERMINAL BLOCKS WITH A SAFETY COVER OR BE FINGER SAFE TO PROTECT PERSONNEL FROM SHOCK. MOUNT ALL TERMINAL BLOCKS ON DIN RAILS. SUPPLY ALL HARDWARE NEEDED TO PROVIDE A COMPLETE TERMINAL STRIP ASSEMBLY, INCLUDING BUT NOT LIMITED TO: MISCELLANEOUS SEPARATORS, TOP JUMPER BARS, SIDE JUMPER BARS, MACHINE PRINTED TERMINAL BLOCK TAGS, FASTENERS, BRACKETS FOR RAISING 35MM RAIL, ETC

10) RAISE ALL TERMINAL STRIPS SET BETWEEN WIREWAYS TO FACILITATE WIRING. INSTALL END BARRIERS FOR EACH STYLE OF TERMINAL. INSTALL END STOPS ON EACH SECTION OF TERMINALS OR RELAYS. USE MACHINE PRINTED TAGS TO MARK TERMINAL STRIPS. WHEREVER POSSIBLE, MAKE ALL TERMINAL BLOCK CONNECTIONS FOR THE PANEL WIRING ON THE TOP OR RIGHT SIDE OF THE TERMINAL STRIP AND LEAVE THE BOTTOM OR LEFT SIDE FREE FOR FIELD TERMINATIONS, UNLESS NOTED OTHERWISE.

11) PROVIDE ENGRAVED PLASTIC NAMEPLATES. EITHER PAINT FILLED ENGRAVINGS OR 2 COLOR LAMINATIONS ARE ACCEPTABLE.

12) ALL OPERATOR CONTROL DEVICES (BUTTONS, SWITCHES, METERS, DISPLAYS, ETC.) SHALL HAVE NAMEPLATES.

13) PROVIDE A SET OF AS-BUILT DRAWINGS WITH THE PANEL. THESE SHALL BE COMPLETE, ALLOWING ENGINEER TO PRODUCE A SET OF "RECORD" DRAWINGS SHOWING ALL WIRE NUMBERS WITHIN THE PANEL AND THE DEVICE TERMINAL NUMBERS TO WHICH THEY CONNECT. REQUIRED INFORMATION SHALL INCLUDE BUT NOT BE LIMITED TO:
   A. ALL WIRE TAG NUMBERS.
   B. TERMINAL CONNECTION POINTS FOR POWER AND NEUTRAL FEEDS.
   C. ANY DEVIATIONS FROM THE EQUIPMENT LOCATIONS SHOWN ON THE DRAWINGS. PRIOR APPROVAL SHOULD BE OBTAINED BEFORE MAKING SUCH CHANGES.

14) SAVE ALL MATERIAL DATA SHEETS AND LITERATURE. WHERE PRODUCT DATA IS PROVIDED ON THE PACKAGE, MAKE A CLEAR COPY OF THE DATA AND INCLUDE WITH OTHER DATA SHEETS. INCLUDE ALL THIS MATERIAL WITH THE PANEL DURING DELIVERY.

15) EQUIPMENT LOCATIONS SHALL BE AS SHOWN ON THE DRAWINGS. THE PANEL BUILDER SHALL NOTIFY ENGINEER OF ANY PHYSICAL CONFLICTS OR OTHER PROBLEMS THAT COULD CAUSE PROBLEMS WITH THE INSTALLATION OR OPERATION OF THE PANEL BEFORE ASSEMBLING THE PANEL. RESOLUTION OF SUCH CONFLICTS SHALL BE APPROVED BY ENGINEER PRIOR TO PANEL ASSEMBLY.

16) PROVIDE ALL EQUIPMENT AS SHOWN ON THE BILL OF MATERIALS INCLUDED IN THIS DRAWING PACKAGE. SUBMIT ANY DEVIATION FROM THE BILL OF MATERIALS FOR APPROVAL IN WRITING PRIOR TO FABRICATION.

MISCELLANEOUS SYMBOLS

FIELD NOTES

1) TAKE CARE WHEN CONDUIT ENTRY PENETRATIONS ARE MADE INTO ENCLOSURE TO PREVENT SCATTERING OF DRILL CHIPS & KNOCK-OUT SLUGS. DE-BUR PENETRATIONS AND REMOVE DEBRIS. SEAL ALL CONDUIT ENTRIES INTO ENCLOSURE FROM LIQUIDS & CONTAMINANTS. AVOID CONDUIT ENTRIES OVER CRITICAL COMPONENTS, SUCH AS PLCs AND DRIVES.

2) ANALOG CABLES: 2 CONDUCTOR WITH SHIELD. BELDEN #8760 OR EQUAL.

3) IDENTIFY ALL WIRES AS SPECIFIED BY THE NATIONAL ELECTRICAL CODE HANDBOOK AND THE FOLLOWING:

460 VAC	120/208 VAC
(L1).....BROWN (L2).....ORANGE (L3).....YELLOW (NEUT)....GREY	(L1).....BLACK (L2).....RED (L3).....BLUE (NEUT)....WHITE
24 VDC	**INTRINSICALLY SAFE**
(ALL).....BLUE	(ALL).....LIGHT BLUE

4) SIZE ALL WIRES IN ACCORDANCE WITH NEC CODES. SINGLE CONDUCTORS SHALL BE STRANDED COPPER WITH THWN INSULATION, RATED FOR 600 VAC, AND UL LISTED AS MTW, UNLESS NOTED OTHERWISE. MINIMUM CONDUCTOR SIZE SHALL BE #14 AWG. GROUND CONDUCTOR SIZE SHALL BE AS INDICATED ON THE DRAWINGS. WHERE NOT INDICATED, IT SHALL BE #14 AWG OR LARGER.

5) LOCATE CONDUIT ENTRIES INTO ENCLOSURES TO ASSURE ADEQUATE WIRE BENDING SPACE. ROUTE WIRING SO THAT DOOR MOUNTED EQUIPMENT WILL NOT INTERFERE WITH IT WHEN THE DOOR IS CLOSED.

6) LOCATE INTRINSICALLY SAFE WIRING CONDUIT ENTRIES INTO ENCLOSURE AS CLOSE AS POSSIBLE TO THE WIREWAY PROVIDED FOR INTRINSICALLY SAFE FIELD WIRING SO THAT ALL INTRINSIC WIRING IS ISOLATED (AT LEASED 2") FROM ALL OTHER FIELD AND PANEL WIRING AND SECURED. ROUTE INTRINSICALLY SAFE FIELD WIRING THROUGH THE WIREWAY PROVIDED EXCLUSIVELY FOR INTRINSICALLY SAFE WIRING. ALL WIRING SHALL BE IN COMPLIANCE WITH THE NATIONAL ELECTRICAL CODE ARTICLE 504. OTHER APPLICABLE ARTICLES INCLUDE 501 & 515.

7) ENGINEER HAS IDENTIFIED AS MANY OF THE PLC INPUTS AND OUTPUTS AS POSSIBLE THAT WILL BE NEEDED TO MAKE THE CONTROL PROGRAM OPERATE AS REQUIRED. ADDITIONAL I/O MAY BE IDENTIFIED WHEN THE CONTROL PROGRAM IS WRITTEN AND REQUIRE WIRING. THESE SHALL BE CONSIDERED PART OF THESE SHOP DRAWINGS. THE INSTALLING CONTRACTOR SHALL INSTALL 20% SPARE CONDUCTORS TERMINATED ON TERMINAL BLOCKS ON BOTH ENDS TO MEET ADDITIONAL I/O REQUIREMENTS.

8) TAG ALL WIRES AT EVERY TERMINATION POINT. SHORT WIRE LENGTHS, (LESS THAN 8") WHERE THE ENTIRE CONDUCTOR IS VISIBLE MAY BE TAGGED AT JUST ONE END. WIRE LABELS FOR WIRES SMALLER THAN NO. 4. SHALL BE VINYL, SELF ADHESIVE, WRAPAROUND, WITH MACHINE PRINTED NUMBERS AND LETTERS. WIRE SIZES NO. 4 AND LARGER AND MULTI CONDUCTOR CABLES SHALL BE MARKED WITH ONE-PIECE, NYLON LOCKING MACHINE PRINTED MARKER TIES EQUAL TO PANDUIT PLM SERIES. WIRE TAG NUMBER SHALL BE AS INDICATED ON THE DRAWINGS.

9) DO NOT ROUTE ANY COMMUNICATION CABLES IN WIREWAYS WITH 120 VAC WIRING. ROUTE ALL THESE CABLES AWAY FROM 120 VAC WIRING. WHERE 120 VAC CONDUCTORS MUST BE CROSSED, DO SO AT RIGHT ANGLES AND PROVIDE AT LEAST 1" SEPARATION.

10) DO NOT CONNECT MORE THAN TWO WIRES TO ANY ONE TERMINAL.

TOWN OF EASTON MASS. INCORPORATED 1725

ENVIRONMENTAL PARTNERS

WOODARD & CURRAN
150 Royall Street, Suite 200E
Canton, Massachusetts 02021
800.446.5518 | www.woodardcurran.com
COMMITMENT & INTEGRITY DRIVE RESULTS

John Greenleaf Trinward, Jr.
Digitally signed by John Greenleaf Trinward, Jr.
DN: cn=John Greenleaf Trinward, Jr., o=Woodard & Curran, ou=Engineering, email=jtrinward@woodardcurran.com, c=US
Date: 2021.08.18 15:39:52-04'00'

COMMONWEALTH OF MASSACHUSETTS
JOHN GREENLEAF TRINWARD, JR.
No. 55533
REGISTERED PROFESSIONAL ENGINEER

08/02/2021

MARK	DATE	DESCRIPTION

Scale	NTS
Date	AUGUST 2021
Job No.	307-2002
Designed by	PS
Drawn by	PS
Checked by	JT/BA
Approved by	JT

THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

RED MILL ROAD WATER TREATMENT PLANT
TOWN OF EASTON, MA

INSTRUMENTATION AND CONTROLS LEGEND AND NOTES

FOR CONSTRUCTION

Sheet No.

I-001

Drawing file: \\woodardcurran.net\shared\Projects\02260410.09 Easton - New Filter Plant\wip\Drawings\I&C\02260410.09-I101-I1XX.dwg Plot Date: Aug 18,2021 -10:48am

BILL OF MATERIAL

ITEM	QTY.	MANUFACTURER	PART NUMBER	DESCRIPTION	DESIGNATION
				****ENCLOSURE & RELATED EQUIPMENT****	
1	1	HOFFMAN	A907224FSD	ENCLOSURE, NEMA 12, 90.00" x 72.00" x 24.00"	ENCLOSURE
2	1	HOFFMAN	A90P72F1	BACK PANEL, 78.00" x 68.00"	REAR SUB PANEL
3	1	HOFFMAN	A90SMP14	SIDE PANEL, 78.00" x 14.00"	LEFT SIDE SUB PANEL
4	2	HOFFMAN	LEDA20C	ENCLOSURE LIGHT INPUT CONNECTOR/CABLE ASSEMBLY	ENCLOSURE LIGHTS
5	2	HOFFMAN	LEDA2M35	ENCLOSURE LIGHT KIT, LED, MAG. MOUNT, MOTION SENSOR	ENCLOSURE LIGHTS
6	1	HOFFMAN	LEDA10E	ENCLOSURE LIGHT EXTENSION CONNECTOR/CABLE ASSEMBLY	ENCLOSURE LIGHTS
7	1	FEDERAL SIGNAL	450-024-31	VIBRATONE HORN	
8	1	AUTOMATION DIRECT	EXC2071-24R	AUDIBLE ALARM BUZZER	
9					
10					
11					
12					
				****PLC & RELATED EQUIPMENT****	
16	2	ALLEN BRADLEY	1756-A17	CONTROLLOGIX 17 SLOT RACK	PLC RACK 0, RACK 1
17	2	ALLEN BRADLEY	1756-PB75	CONTROLLOGIX POWER SUPPLY	PWS2, PWS3
18	9	ALLEN BRADLEY	1756-N2	CONTROLLOGIX SLOT FILLER	
19	1	ALLEN BRADLEY	1756-L81E	CONTROLLOGIX PROCESSOR, 3 MB MEMORY	PLC RACK 0, SLOT 0
20	3	ALLEN BRADLEY	1756-EN2T	CONTROLLOGIX ETHERNET BRIDGE MODULE	PLC RACK 0, SLOT 1 & 2, RACK 1, SLOT 0
21					
22	1	ALLEN BRADLEY	2711P-T15C22D9P	15" PANELVIEW PLUS 7 PERFORMANCE TOUCH SCREEN	OIT
23					
24	4	ALLEN BRADLEY	1756-IF16	ANALOG INPUT MODULE, 16 PT.	PLC RACK 0, SLOTS 2 THROUGH 7
25	4	ALLEN BRADLEY	1492-AIFM16-F-3	IFM MODULE ANALOG INPUTS	IFM-R0-S02 THROUGH IFM-R0-S07
26	4	ALLEN BRADLEY	1492-ACABLE025UB	IFM CABLE, ANALOG INPUTS, 2.5 METER, (SINGLE ENDED CURRENT)	IFM-R0-S02 THROUGH IFM-R0-S07
27					
28	5	ALLEN BRADLEY	1756-OF8	24VDC ANALOG OUTPUT MODULE, 8 PT.	PLC RACK 0, SLOTS 8 THROUGH 12
29	5	ALLEN BRADLEY	1492-AIFM8-3	IFM MODULE ANALOG OUTPUTS	IFM-R0-S08 THROUGH IFM-R0-S12
30	5	ALLEN BRADLEY	1492-ACABLE025WB	IFM CABLE, ANALOG OUTPUTS, (2.5 METER)	IFM-R0-S08 THROUGH IFM-R0-S12
31					
32	8	ALLEN BRADLEY	1756-IB32	24VDC DIGITAL INPUT MODULE, 32PT.	PLC RACK 0, SLOTS 3 THROUGH 6, RACK 1, SLOTS 1 THROUGH 4
33	8	ALLEN BRADLEY	1492-IFM40F-2	IFM MODULE DIGITAL INPUTS	IFM-R0-S03 THROUGH 6, IFM-R1-S01 THROUGH 4
34	4	ALLEN BRADLEY	1492-CABLE010Z	IFM CABLE, DIGITAL INPUTS, (1 METER)	IFM-R0-S03 THROUGH 5, IFM-R1-S04
35	4	ALLEN BRADLEY	1492-CABLE025Z	IFM CABLE, DIGITAL INPUTS, (2.5 METER)	IFM-R0-S06, IFM-R1-S01 THROUGH 3
36					
37	5	ALLEN BRADLEY	1756-OB16E	24VDC DIGITAL OUTPUT MODULE, 16 PT.	PLC RACK 1, SLOTS 12 THROUGH 16
38	5	ALLEN BRADLEY	1492-XIM2024-16RF	IFM MODULE DIGITAL OUTPUTS	IFM-R1-S12 THROUGH IFM-R1-S16
39	1	ALLEN BRADLEY	1492-CABLE010X	IFM CABLE, DIGITAL OUTPUTS, (1 METER)	IFM-R1-S12 THROUGH IFM-R1-S12
40	4	ALLEN BRADLEY	1492-CABLE025X	IFM CABLE, DIGITAL OUTPUTS, (2.5 METER)	IFM-R1-S13 THROUGH IFM-R1-S16
41	60	ALLEN BRADLEY	1492-SJM5-10	IFM MODULE TERMINAL INSULATED SIDE JUMPER, 10-POLE	
42					
				****TERMINAL BLOCKS & RELATED EQUIPMENT****	
50	35	ALLEN BRADLEY	1492-JD3	TERMINAL BLOCK 2 TIER	TB1, TB3, TB4, TB5, TB6
51	9	ALLEN BRADLEY	1492-EBJD3	TERMINAL BLOCK END BARRIER, 2 TIER	TB1, TB3, TB4, TB5, TB6
52	42	ALLEN BRADLEY	1492-EAJ35	TERMINAL BLOCK END ANCHOR	TB1, TB2, TB3, TB4, TB5, TB6, TB7
53	2	ALLEN BRADLEY	1492-CJJ5-3	TERMINAL BLOCK JUMPER, 3 POLE	TB1
54	10	ALLEN BRADLEY	1492-CJJ5-10	TERMINAL BLOCK JUMPER, 10 POLE	TB2, TB3, TB4, TB5, TB6
55	4	ALLEN BRADLEY	199-DR1	DIN RAIL, STANDARD (1 METER)	PLC & MISC. COMPONENT MOUNTING
56	10	ALLEN BRADLEY	1492-DR6	DIN RAIL, RAISED (1 METER)	TB1, TB2, TB3, TB4, TB5, TB6, TB7
57	6	ALLEN BRADLEY	1492-H4	FUSED TERMINAL BLOCK, NEON INDICATOR	FU1-FU6
58	39	ALLEN BRADLEY	1492-H5	FUSED TERMINAL BLOCK, LED INDICATOR	FU6-FU45
59	2	ALLEN BRADLEY	1492-N37	FUSED TERMINAL BLOCK END BARRIER	FU6, FU45
60	5	ALLEN BRADLEY	1492-N49	FUSE BLOCK SIDE JUMPERS 10 POLE	FU1-FU6, FU7-FU45
61	5	ALLEN BRADLEY	1492-SJS	FUSE BLOCK SIDE JUMPER INSULATING SLEEVE	FU1-FU6, FU7-FU45
62					
63	2	ALLEN BRADLEY	1492-M5X8	TERMINAL BLOCK BLANK MARKING TAGS, 2 TIER, 144 CT.	TB3, TB4, TB5, TB6
64	1	ALLEN BRADLEY	1492-MS8X12	FUSE BLOCK BLANK MARKING TAGS, 100 CT.	FU1-FU45
65	10	ALLEN BRADLEY	1492-J4	TERMINAL BLOCK 1 TIER	TB1 (120VAC POWER)
66	5	ALLEN BRADLEY	1492-JG4	TERMINAL BLOCK GROUNDING	TB1 (120VAC POWER)
67	2	ALLEN BRADLEY	1492-EBJ3	TERMINAL BLOCK END BARRIER, 1 TIER	TB1 (120VAC POWER)
68	1	ALLEN BRADLEY	1492-M6X12	TERMINAL BLOCK BLANK MARKING TAGS, 1 TIER, 120 CT.	TB1 (120VAC POWER)
69	1	ALLEN BRADLEY	1492-CJJ6-3	1-TIER TERMINAL BLOCK JUMPER, 3-POLE	TB1 (120VAC POWER)
70	1	ALLEN BRADLEY	1492-CJJ6-10	1-TIER TERMINAL BLOCK JUMPER, 10-POLE	TB1 (120VAC POWER)
71	4	ALLEN BRADLEY	1492-J6	TERMINAL BLOCK 1 TIER	TB1 (120VAC POWER)
72	1	ALLEN BRADLEY	1492-JG6	TERMINAL BLOCK GROUNDING	TB1 (120VAC POWER)
73	2	ALLEN BRADLEY	1492-EBJ3	TERMINAL BLOCK END BARRIER, 1 TIER	TB1 (120VAC POWER)
74	1	ALLEN BRADLEY	1492-MR6X12	TERMINAL BLOCK BLANK MARKING TAGS, 1 TIER, 144 CT.	TB1 (120VAC POWER)
75	2	ALLEN BRADLEY	1492-CJJ6-2	1-TIER TERMINAL BLOCK JUMPER, 2-POLE	TB1 (120VAC POWER)
76					
77					
78	1	ALLEN BRADLEY	700-HK36A1-4	RELAY, SPDT, 120VAC COIL	PFR1
79	1	ALLEN BRADLEY	700-HN121	SPDT RELAY SOCKET	PFR1
80	1	ALLEN BRADLEY	800H-FRXT6A1	MUSHROOM HEAD E-STOP PUSHBUTTON, 1 N.O, 1 N.C.	SYSTEM STOP
81	1	ALLEN BRADLEY	800H-W373	LEGEND PLATE, "SYSTEM STOP"	SYSTEM STOP
82	2	PHOENIX CONTACT	2905348	VALVETRAB 120VAC SURGE PROTECTOR	SUP1, PLUS SPARE
83	6	ALLEN BRADLEY	4983-DD24	ANALOG LOOP SURGE PROTECTOR	SUP2-SUP5, PLUS SPARES
84					
85	1	ALLEN BRADLEY	1489-M1C200	CIRCUIT BREAKER, 20 AMP, SINGLE POLE	CB1
86	6	BUSSMAN	MDL-5-R	FUSE, 5A, 250V, TIME DELAY	FU5-FU6, FU8, FU9, FU10, PLUS SPARES
87	2	BUSSMAN	AGC-5-R	FUSE, 5A, 250V, FAST ACTING	FU2, PLUS SPARE
88	40	BUSSMAN	AGC-1-R	FUSE, 1A, 250V, FAST ACTING	FU1, FU3-FU4, FU7, FU11, FU15-FU30, FU41-FU45, PLUS SPARES
89					
90	15	BUSSMAN	AGC-1/2-R	FUSE, 1/2A, 250V, FAST ACTING	FU36-FU40, PLUS SPARES
91	4	BUSSMAN	MDL-3-R	FUSE, 3A, 250V, TIME DELAY	FU12, PLUS SPARES
92	15	BUSSMAN	AGC-2-R	FUSE, 2A, 250V, FAST ACTING	FU13-FU14, FU27-FU35, PLUS SPARES
93					
94	100	BUSSMAN	GMA-2A-R	FUSE, 2A, 5X20mm	ON-BOARD IFM FUSING FOR DIGITAL OUTPUTS, PLUS SPARES
95	150	BUSSMAN	GMA-63-R	FUSE, 0.63mA, 5X20mm	ON-BOARD IFM FUSING FOR ANALOG INPUTS, PLUS SPARES
				****WIREDUCT****	
96	6FT	PANDUIT	F1X4LG6	WIRING DUCT, 1"W x 4"H	
97	6FT	PANDUIT	C1LG6	WIRING DUCT COVER, 1"W	
98	30FT	PANDUIT	F2X4LG6	WIRING DUCT, 2"W x 4"H	
99	30FT	PANDUIT	C2LG6	WIRING DUCT COVER, 2"W	

ITEM	QTY.	MANUFACTURER	PART NUMBER	DESCRIPTION	DESIGNATION
				****WIREDUCT (CONT.)****	
100	24FT	PANDUIT	F3X4LG6	WIRING DUCT, 3"W x 4"H	
101	24FT	PANDUIT	C3LG6	WIRING DUCT COVER, 3"W	
102	18FT	PANDUIT	F4X4LG6	WIRING DUCT, 4"W x 4"H	
103	18FT	PANDUIT	C4LG6	WIRING DUCT COVER, 4"W	
104	6FT	PANDUIT	F6X4LG6	WIRING DUCT, 6"W x 4"H	
105	6FT	PANDUIT	C6LG6	WIRING DUCT COVER, 6"W	
106					
				****HIGH VOLTAGE RELATED EQUIPMENT****	
108					
109					
110					
111					
112					
113					
114					
115					
116					
117					
118					
119					
120					
121					
122					
123					
124					
125					
126					
127					
128					
129					
				****POWER SUPPLIES****	
138	2	SOLA	SDN 20-24-100C	POWER SUPPLY, 120VAC IN, 24VDC, 20AMP	PWS1A, PWS1B
139	1	SOLA	SDU 20-24	POWER MODULE, 24VDC IN, 24VDC OUT, 20AMP	PWM1
140	1	SOLA	SDU 2.5-20RED	24VDC REDUNDANCY MODULE	RM1
141	2	SOLA	SDU 24-BAT	BATTERY MODULE, 24VDC	BM1, BM2
142	2	SOLA	SDU 24EXTBC6	BATTERY MODULE EXTENSION CABLE, 6 FT.	BM1 TO BM2, BM2 TO BM3
143					
144	1	AUTOMATION DIRECT	PSP12-DC24-2	DC TO DC CONVERTER, 18-75 VDC INPUT, 12 VDC OUTPUT, 2A, 25W	PWS4
145					
				****COMMUNICATIONS****	
146					
147	1	CISCO	IE-3300-8T2S-E	NETWORK SWITCH 8 FE COPPER RJ-45 PORTS, 2 FE PORTS	SUPPLIED BY APPLICATION ENGINEER
148	1	CISCO	IEM-3300-8S	NETWORK SWITCH EXPANSION SFP MODULE, 8 SFP PORTS	SUPPLIED BY APPLICATION ENGINEER
149	3	CISCO	GLC-LX-SM-RGD	SINGLEMODE SFP MODULE	SUPPLIED BY APPLICATION ENGINEER
150	1	PALO ALTO	PA-220R	INDUSTRIAL FIREWALL APPLIANCE WITH DIN RAIL KIT (WITH PAN-PA-220-GP, PAN-PA-220-TP, PAN-SVC-PREM-220)	SUPPLIED BY APPLICATION ENGINEER
151					
152					
153					
154	1	CALAMP	140-5048-502	VIPER SC-400, 450-512 MHZ LICENSED FREQUENCY RADIO MODEM	RADIO
155	1	POLYPHASER	VHG50HN-B	TYPE N F/F COAXIAL RF SURGE PROTECTOR, 100MHZ - 512MHZ	SEE COMMUNICATIONS DRAWING
156	1	L-COM	CA-NMRNMF002	N-MALE TO N-MALE 400 FLEX CABLE ASSEMBLY, 2 FT.	SEE COMMUNICATIONS DRAWING
157					
158	4	BLACK BOX	EVNSL641-0003	CAT6 ETHERNET STANDARD PATCH CORD, 3 FT.	SEE COMMUNICATIONS DRAWING
159	2	BLACK BOX	EVNSL641-0004	CAT6 ETHERNET STANDARD PATCH CORD, 10 FT.	SEE COMMUNICATIONS DRAWING
160	1	BLACK BOX	EVNSL641-0010	CAT6 ETHERNET STANDARD PATCH CORD, 10 FT.	SEE COMMUNICATIONS DRAWING
161					
162					
				****MISCELLANEOUS PANEL EQUIPMENT****	
164	2	PANDUIT	UGB2/0-414-6	GROUND BAR	
165					
166	7	PANEL FABRICATOR		NAMEPLATE, PHENOLIC, ENGRAVED	SEE SCHEDULE ON EQUIPMENT LAYOUT DRAWING
167	1	PANEL FABRICATOR		RADIO SUPPORT SHELF	
168	1	ALLEN BRADLEY	1492-REC15G	GFCI RECEPTACLE	PROGRAMMING RECEPTACLE
169					
170					
171					
172					
173					
174					
175	1	EMEDCO	QS3743	WARNING LABEL "ARC FLASH AND SHOCK HAZARD"	
176	1	EMEDCO	SQS110	WARNING LABEL "DEVICE POWERED FROM SEVERAL SOURCES"	
177					
178					
179					

TOWN OF EASTON MASS INCORPORATED 1725

ENVIRONMENTAL PARTNERS

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08/02/2021

MARK	DATE	DESCRIPTION

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Designed by	PS
Drawn by	PS
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THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

RED MILL ROAD WATER TREATMENT PLANT
TOWN OF EASTON, MA

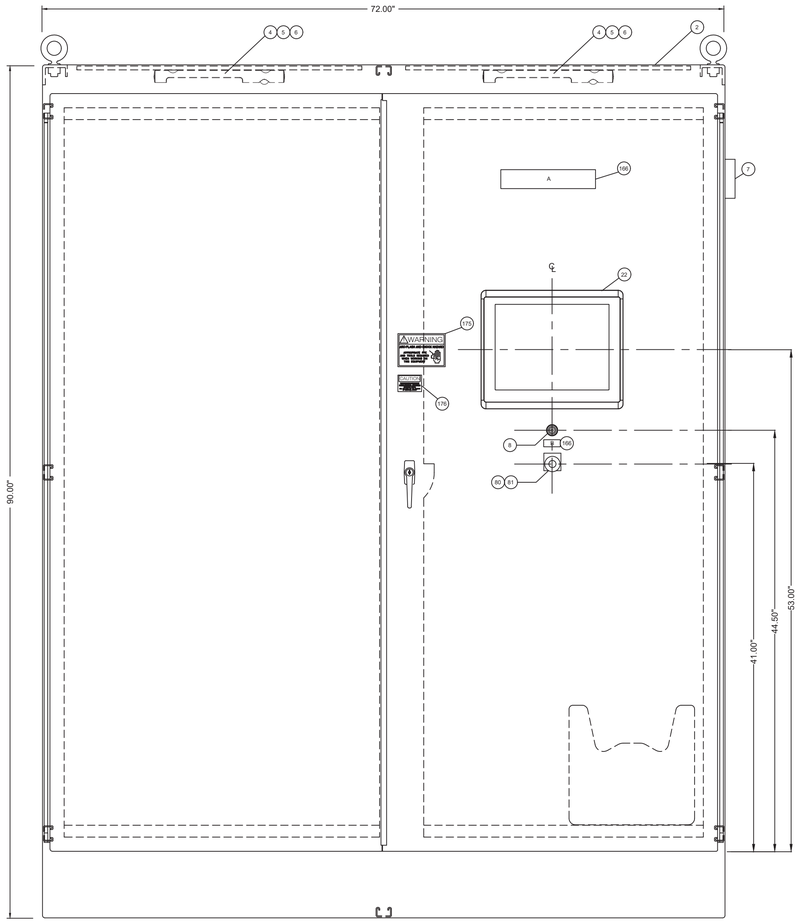
MAIN CONTROL PANEL BILL OF MATERIAL

FOR CONSTRUCTION

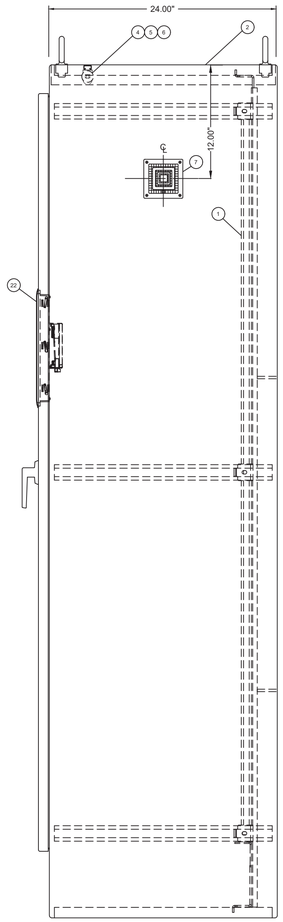
Sheet No.

I-101

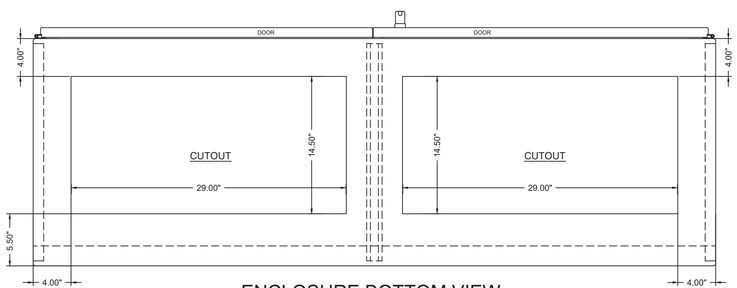
NAMEPLATE SCHEDULE			
ITEM	DIMENSION	DESCRIPTION	FABRICATION COMMENTS
A	8" x 1"	MAIN CONTROL PANEL	NAMEPLATE TO BE WHITE WITH BLACK LETTERS WITH ADHESIVE BACK. TEXT SIZE TO BE .5
B	2.25" x .50"	SYSTEM STOP	NAMEPLATE TO BE WHITE WITH BLACK LETTERS WITH ADHESIVE BACK. TEXT SIZE TO BE .25



ENCLOSURE FRONT VIEW



ENCLOSURE RIGHT SIDE VIEW



ENCLOSURE BOTTOM VIEW
CUTOUT DETAIL

(SUB PANEL ASSEMBLIES NOT SHOWN FOR CLARITY)

03

PANEL FABRICATOR NOTE:

1. PANEL FABRICATOR SHALL PROVIDE (2) 29 INCH X 14.50 INCH CUTOUTS IN BOTTOM OF ENCLOSURE IN LOCATION SHOWN. ALL CUT EDGES SHALL BE GROUND SMOOTH. BARE EDGES SHALL BE PRIMED AND FINISHED IN ANSI 61 GRAY POWDER COAT PAINT.

INSTALLING CONTRACTOR NOTE:

1. CONTRACTOR SHALL PROVIDE SILICONE CALKING TO SEAL BOTTOM OF CABINET AGAINST FLOOR OR CONCRETE PAD AT TIME OF INSTALLATION. PROVIDE ADDITIONAL CAULKING AROUND EDGES OF CUTOUTS AFTER CABINET IS IN POSITION AND SECURED IN PLACE.

TOWN OF EASTON MASS INCORPORATED 1725

ENVIRONMENTAL PARTNERS

WOODARD & CURRAN

150 Royall Street, Suite 200E
Canton, Massachusetts 02021
800.446.5518 | www.woodardcurran.com

COMMITMENT & INTEGRITY DRIVE RESULTS

COMMONWEALTH OF MASSACHUSETTS
JOHN GREENLEAF TRINWARD, JR.
No. 55533
REGISTERED PROFESSIONAL ENGINEER

08/02/2021

MARK	DATE	DESCRIPTION

Scale	NTS
Date	AUGUST 2021
Job No.	307-2002
Designed by	PS
Drawn by	PS
Checked by	JT/BA
Approved by	JT

THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

RED MILL ROAD WATER TREATMENT PLANT
TOWN OF EASTON, MA

MAIN CONTROL PANEL EQUIPMENT LAYOUT (EXTERIOR)

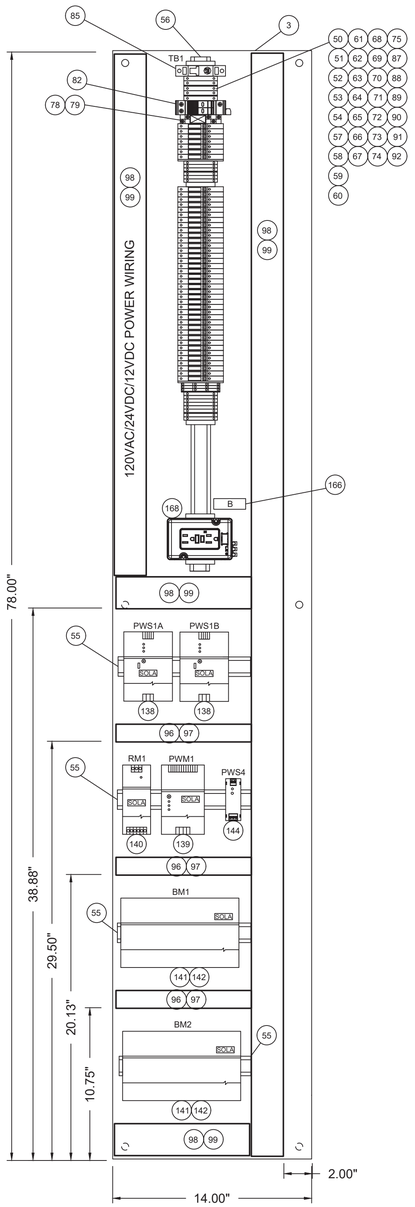
FOR CONSTRUCTION

Sheet No.

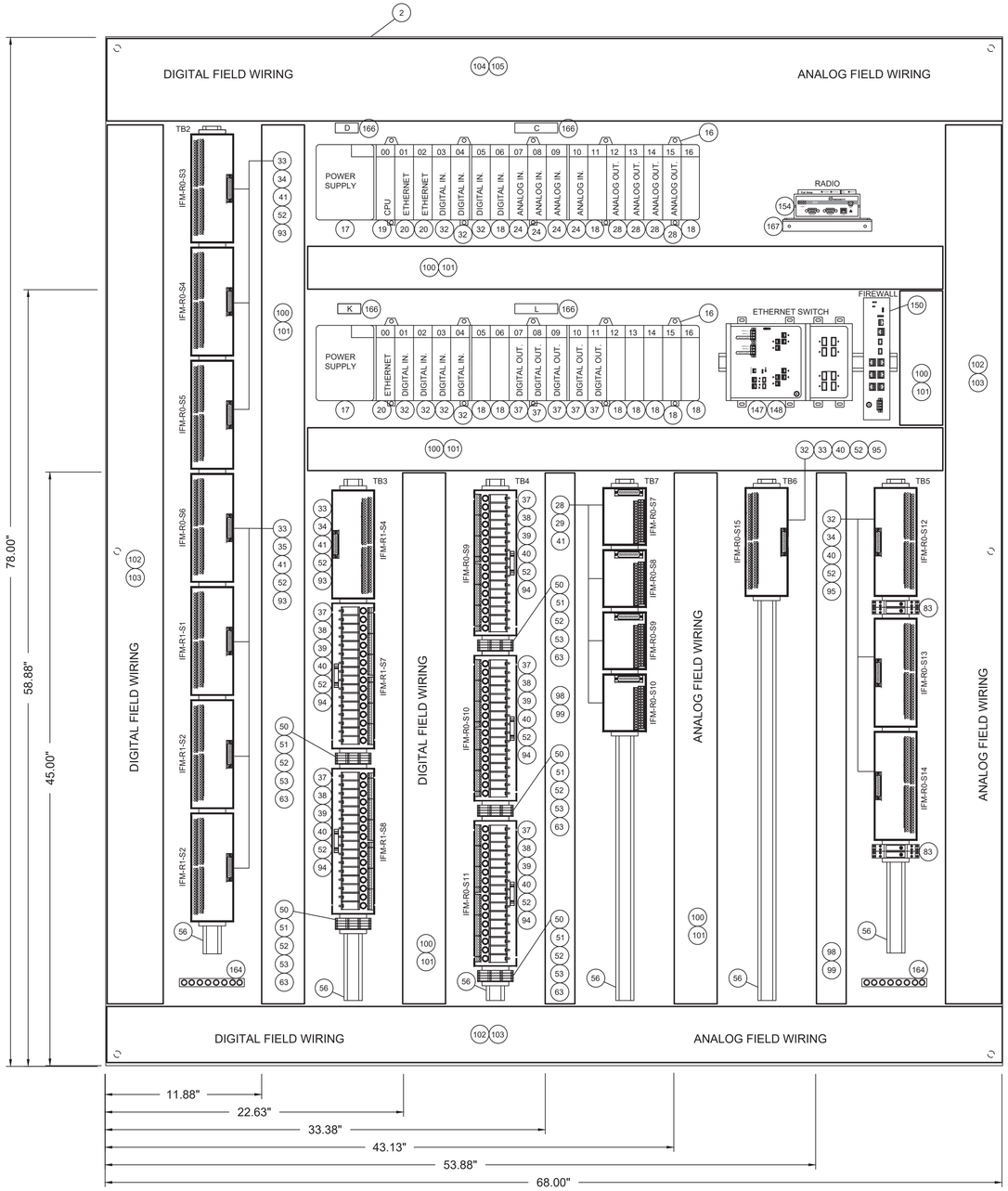
I-102

Drawing file: \\woodardcurran.net\shared\Projects\02\26041.09 Easton - New Filter Plant\wip\Drawings\I&C\02\26041.09-1101-I1XX.dwg Plot Date: Aug 18,2021 - 10:46am

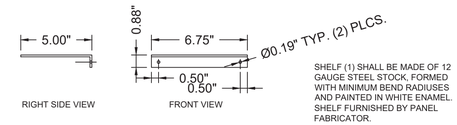
NAMEPLATE SCHEDULE			
ITEM	DIMENSION	DESCRIPTION	FABRICATION COMMENTS
C	2.25" x .75"	RACK R0	NAMEPLATE TO BE BLACK WITH WHITE LETTERS WITH ADHESIVE BACK. TEXT SIZE TO BE .25
D	1.75" x .75"	PWS2	NAMEPLATE TO BE BLACK WITH WHITE LETTERS WITH ADHESIVE BACK. TEXT SIZE TO BE .25
L	2.25" x .75"	RACK R1	NAMEPLATE TO BE BLACK WITH WHITE LETTERS WITH ADHESIVE BACK. TEXT SIZE TO BE .25
M	1.75" x .75"	PWS3	NAMEPLATE TO BE BLACK WITH WHITE LETTERS WITH ADHESIVE BACK. TEXT SIZE TO BE .25
N	2.25" x .75"	GFCI OUTLET FOR PROGRAMMING ONLY	NAMEPLATE TO BE BLACK WITH WHITE LETTERS WITH ADHESIVE BACK. TEXT SIZE TO BE .25



LEFT SIDE SUB PANEL



REAR SUB PANEL



SHELF (1) SHALL BE MADE OF 12 GAUGE STEEL STOCK, FORMED WITH MINIMUM BEND RADIUSES AND PAINTED IN WHITE ENAMEL. SHELF FURNISHED BY PANEL FABRICATOR.

RADIO SUPPORT SHELF DETAIL

INSTALLING CONTRACTOR NOTES:

1. CONTRACTOR SHALL ENSURE THAT ALL CONDUITS ENTER THE ENCLOSURE AS CLOSE AS POSSIBLE TO FIELD WIRE WAY LOCATIONS TO KEEP WIRE BUNDLES IN A NEAT AND ORDERLY FASHION.

TOWN OF EASTON MASS. INCORPORATED 1725

ENVIRONMENTAL PARTNERS

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COMMONWEALTH OF MASSACHUSETTS
JOHN GREENLEAF TRINWARD, JR.
No. 55533
REGISTERED PROFESSIONAL ENGINEER
08/02/2021

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Approved by	JT

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RED MILL ROAD WATER TREATMENT PLANT
TOWN OF EASTON, MA

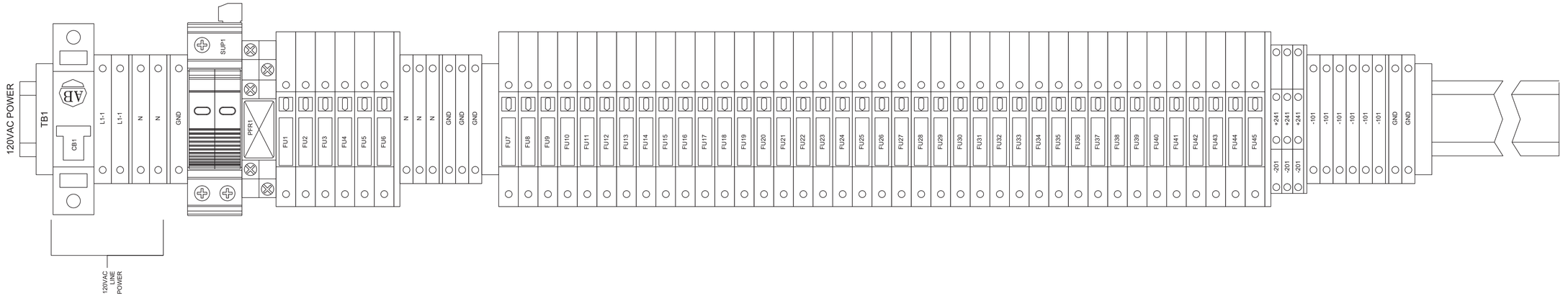
MAIN CONTROL PANEL EQUIPMENT LAYOUT (INTERIOR)

FOR CONSTRUCTION

Sheet No.

I-103

Drawing file: \\woodardcurran.net\shared\Projects\02260411.09 Easton - New Filter Plant\wip\Drawings\I&C\02260411.09-I101-I1HXX.dwg Plot Date: Aug 18,2021-10:46am



(1) 20 AMP CIRCUIT BREAKER
(12) 1-TIER TERMINALS
(3) 1-TIER END BARRIERS
(6) GROUNDING TERMINALS
(6) 15VAC SURGE PROTECTOR
(1) 120VAC, 1-POLE RELAY (PFR1)
(45) FUSE BLOCKS
(2) FUSE BLOCK END BARRIERS
(3) END ANCHORS

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RED MILL ROAD WATER TREATMENT PLANT
TOWN OF EASTON, MA

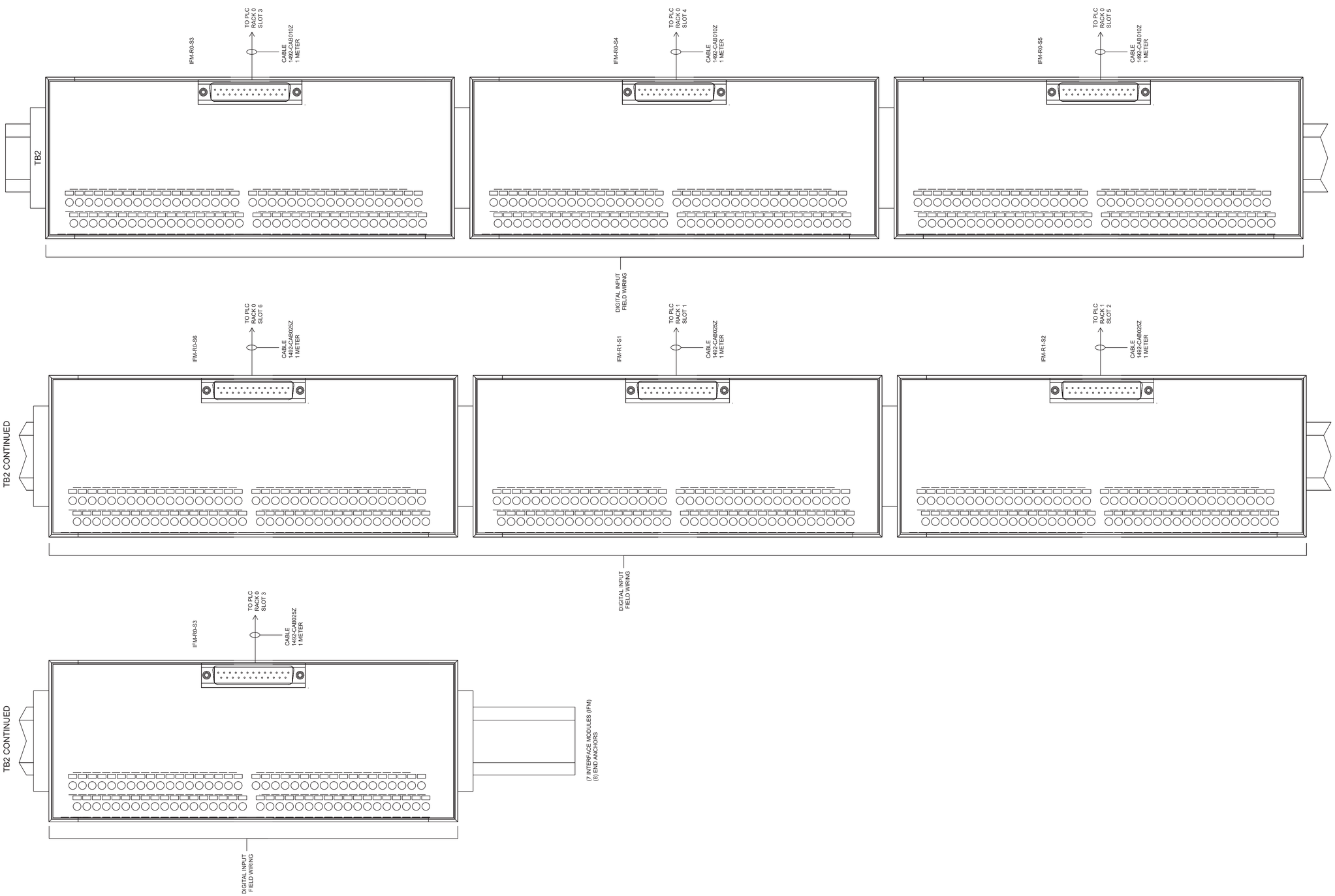
MAIN CONTROL PANEL TERMINAL BLOCK LAYOUT (1 OF 5)

FOR CONSTRUCTION

Sheet No.

I-104

Drawing file: \\woodardcurran.net\shared\Projects\02260411.09 Easton - New Filter Plant\wip\Drawings\IA\02260411.09-I101-I11XX.dwg Plot Date: Aug 18,2021-10:46am



TOWN OF EASTON MASS — INCORPORATED 1725

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RED MILL ROAD WATER TREATMENT PLANT
TOWN OF EASTON, MA

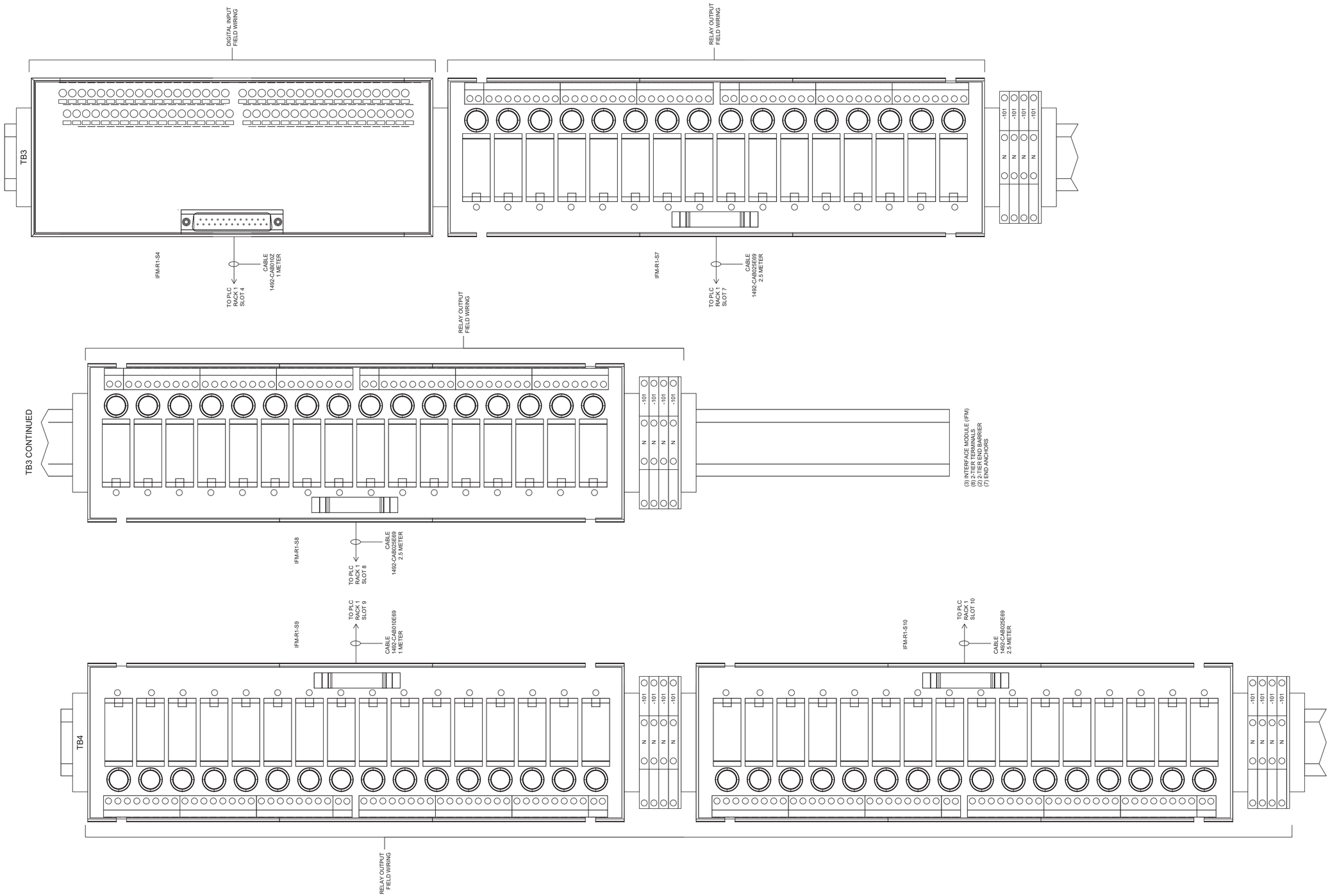
MAIN CONTROL PANEL TERMINAL BLOCK LAYOUT (2 OF 5)

FOR CONSTRUCTION

Sheet No.

I-105

Drawing file: \\woodardcurran.net\shared\Projects\022604\1.09 Easton - New Filter Plant\wip\Drawings\ByCAD\022604 I.09-I101-I1XX.dwg Plot Date: Aug 18,2021 - 10:48am



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08/02/2021

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Approved by	JT

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RED MILL ROAD WATER TREATMENT PLANT
TOWN OF EASTON, MA

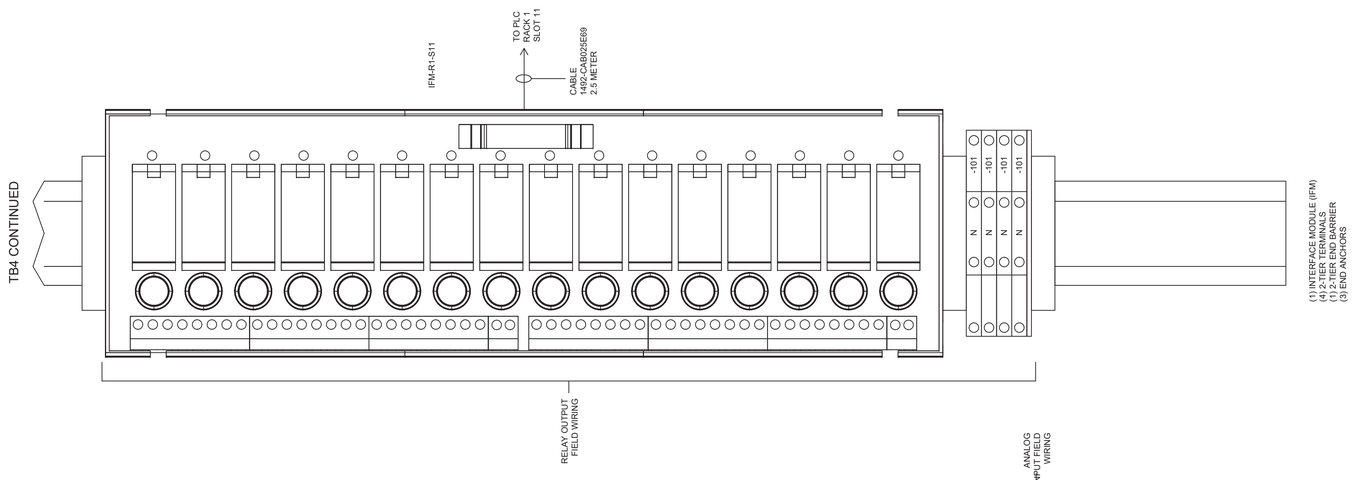
MAIN CONTROL PANEL TERMINAL BLOCK LAYOUT (3 OF 5)

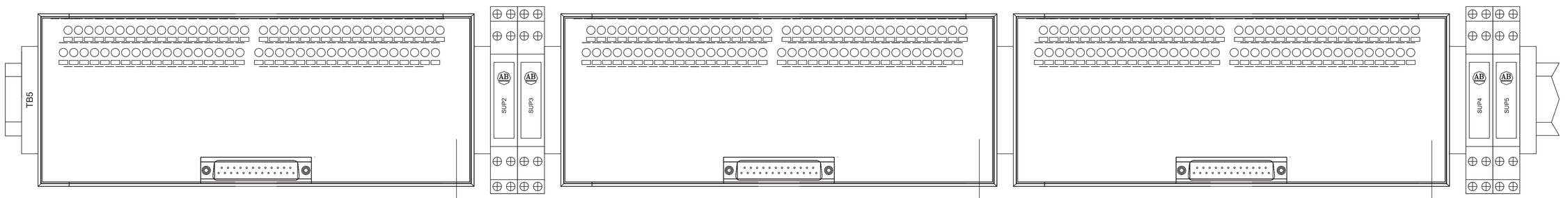
FOR CONSTRUCTION

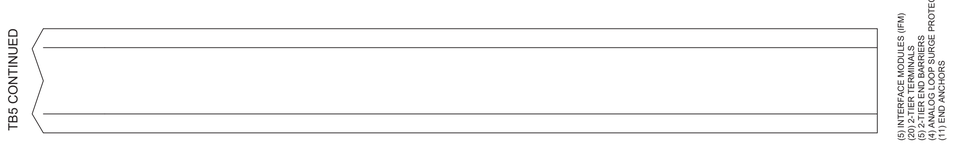
Sheet No.

I-106

Drawing file: \\woodardcurran.net\shared\Projects\022604\1.09 Easton - New Filter Plant\wip\Drawings\ltr&C\022604 I.09-I101-I1XX.dwg Plot Date: Aug 18,2021 - 10:48am







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RED MILL ROAD WATER TREATMENT PLANT
TOWN OF EASTON, MA

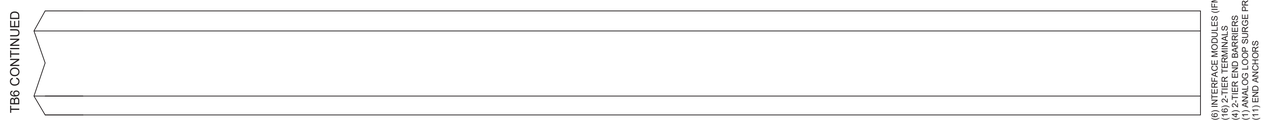
MAIN CONTROL PANEL TERMINAL BLOCK LAYOUT (4 OF 5)

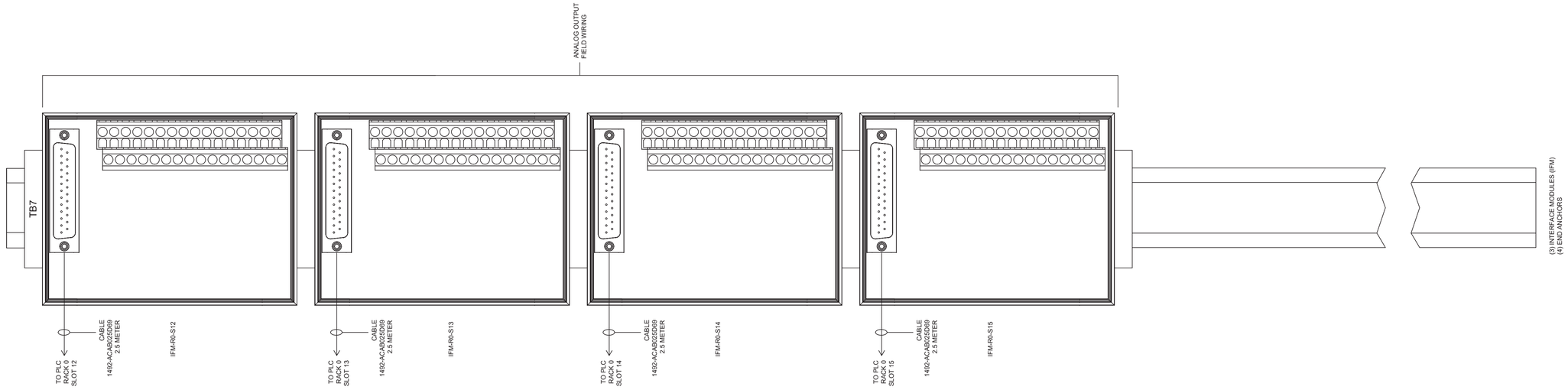
FOR CONSTRUCTION

Sheet No.

I-107

Drawing file: \\woodardcurran.net\shared\Projects\02226041.09 Easton - New Filter Plant\wip\Drawings\8.C\02260410901-11XX.dwg Plot Date: Aug 18,2021 - 10:46am





TOWN OF EASTON MASS INCORPORATED 1725

ENVIRONMENTAL PARTNERS

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JOHN GREENLEAF TRINWARD, JR.
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08/02/2021

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Drawn by	PS
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RED MILL ROAD WATER TREATMENT PLANT
TOWN OF EASTON, MA

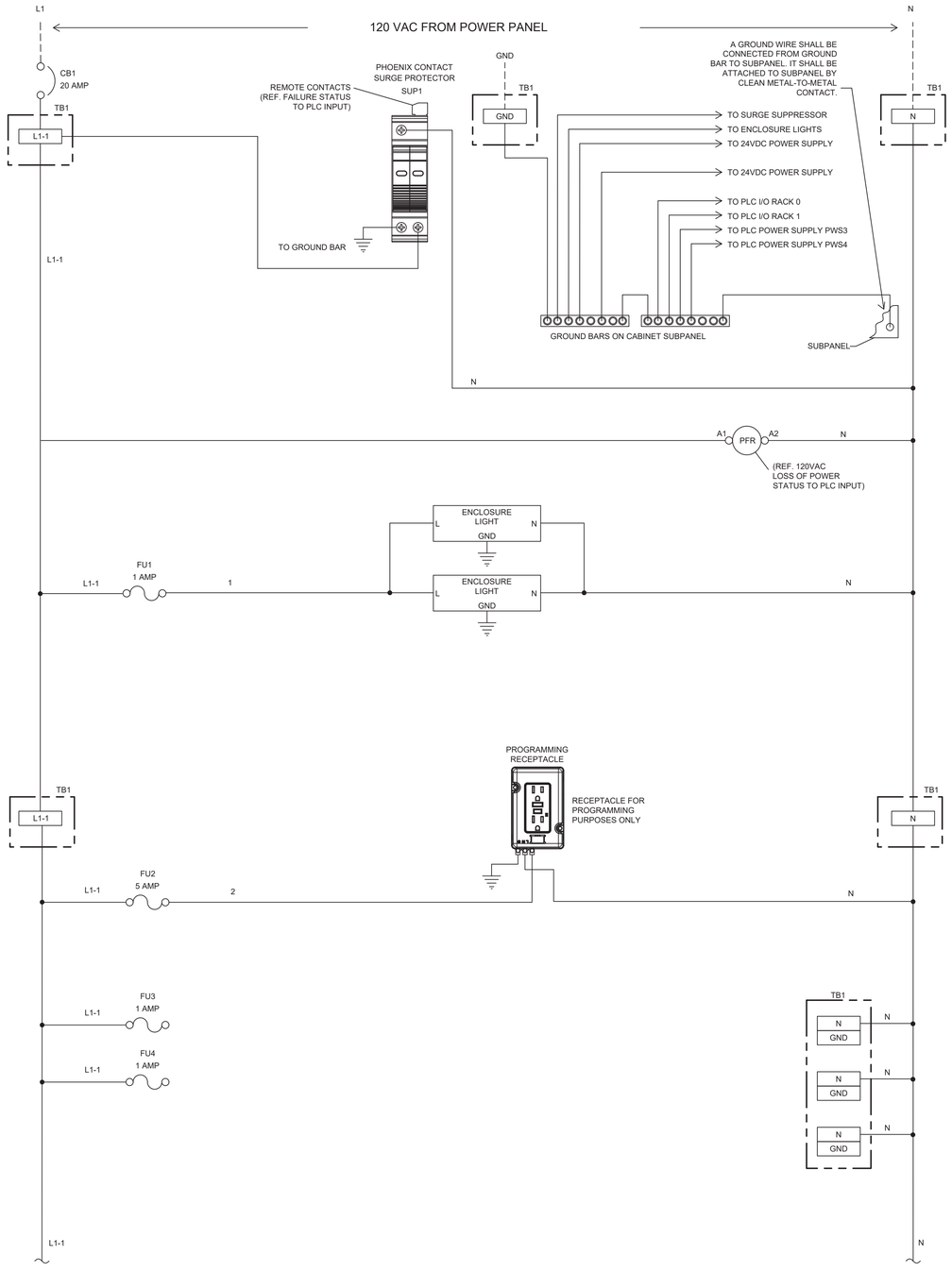
MAIN CONTROL PANEL TERMINAL BLOCK LAYOUT (5 OF 5)

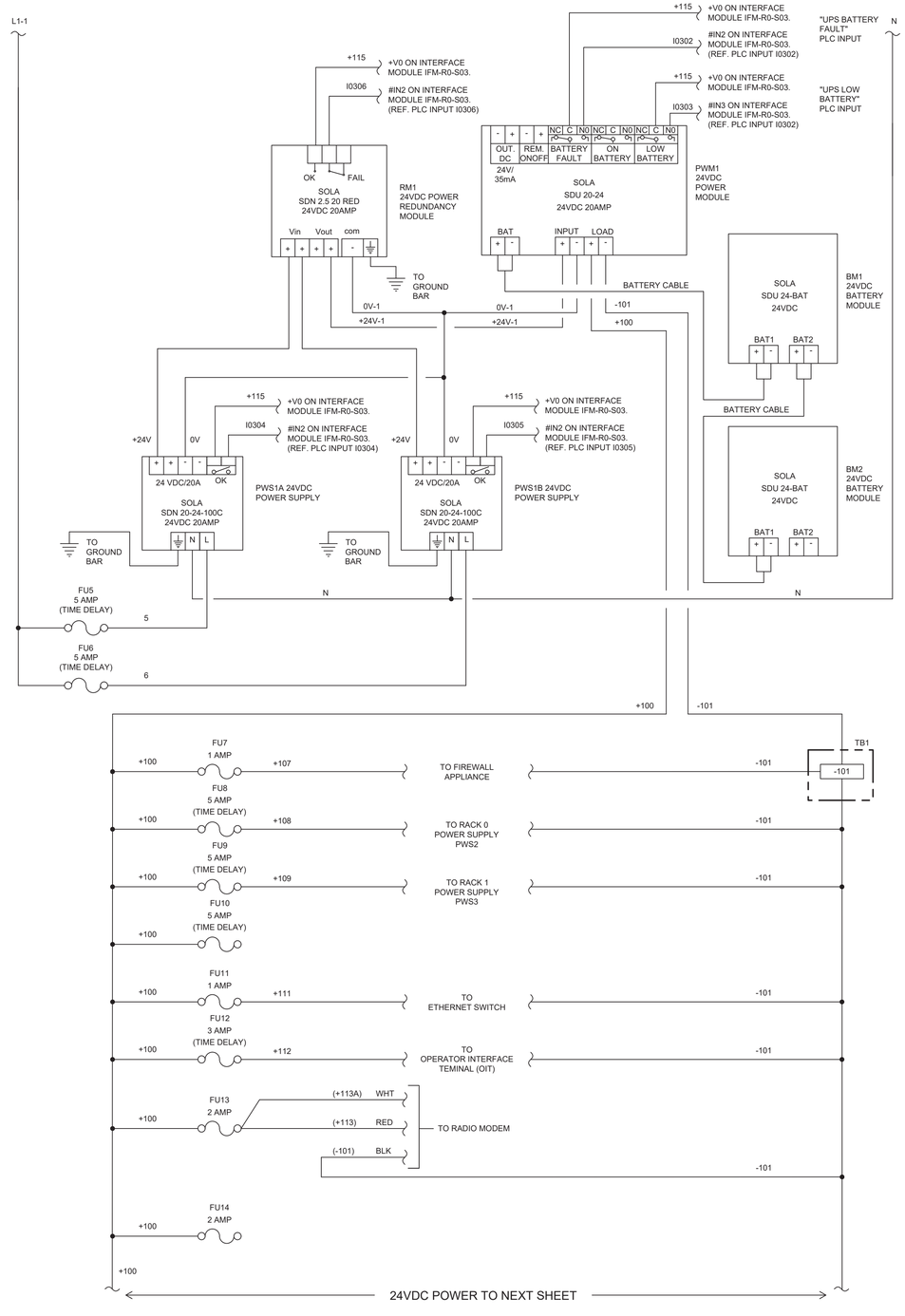
FOR CONSTRUCTION

Sheet No.

I-108

Drawing file: \\woodardcurran.net\shared\Projects\02260411.09 Easton - New Filter Plant\wip\Drawings\I&C\02260411.09-1101-I1XX.dwg Plot Date: Aug 18,2021 - 10:46am





			Scale	NTS	THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING
			Date	AUGUST 2021	
			Job No.	307-2002	
			Designed by	PS	
			Drawn by	PS	
			Checked by	JT/BA	
MARK	DATE	DESCRIPTION	Approved by	JT	

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COMMITMENT & INTEGRITY DRIVE RESULTS

JOHN GREENLEAF TRINWARD, JR. No. 55533 REGISTERED PROFESSIONAL ENGINEER
COMMONWEALTH OF MASSACHUSETTS
08/02/2021

RED MILL ROAD WATER TREATMENT PLANT
TOWN OF EASTON, MA

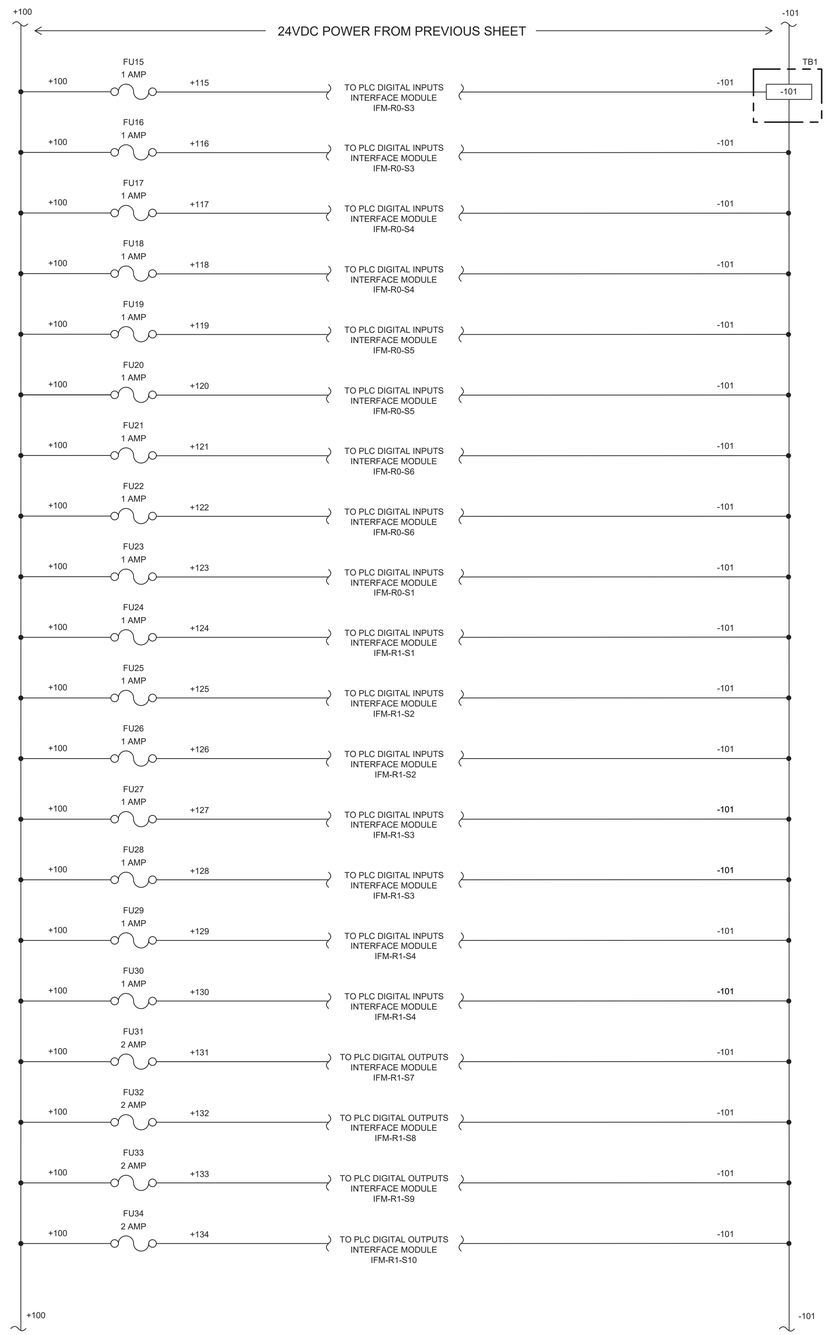
MAIN CONTROL PANEL POWER DISTRIBUTION (1 OF 2)

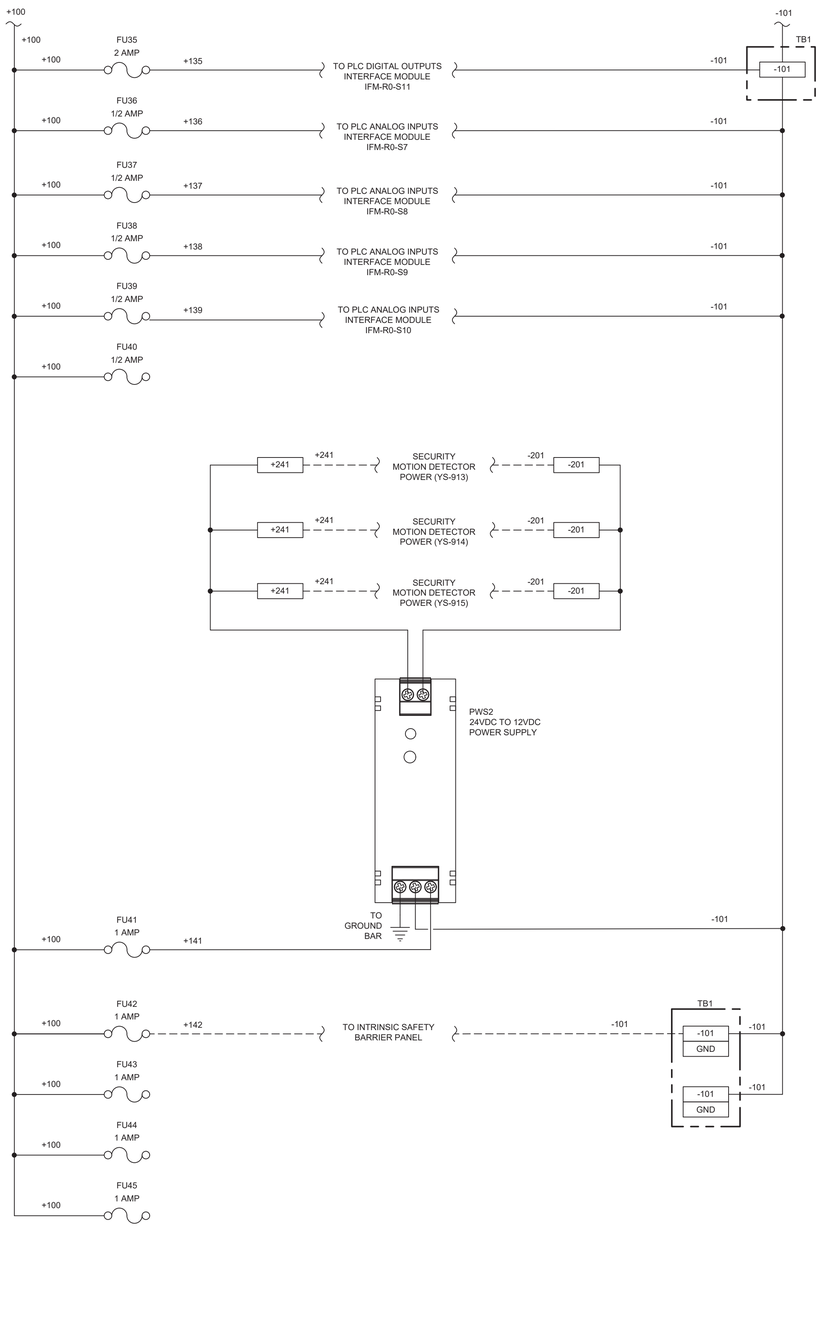
FOR CONSTRUCTION

Sheet No.

I-109

Drawing file: \\woodardcurran.net\shares\Projects\022604\1.09 Easton - New Filter Plant\wip\Drawings\ByCX\022604\1.09-I101-I1XX.dwg Plot Date: Aug 18,2021-10:46am





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RED MILL ROAD WATER TREATMENT PLANT
TOWN OF EASTON, MA

MAIN CONTROL PANEL POWER DISTRIBUTION (2 OF 2)

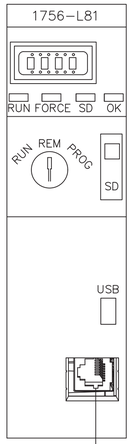
FOR CONSTRUCTION

Sheet No.

I-110

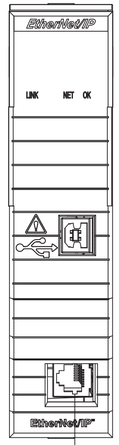
Drawing file: \\woodardcurran.net\shared\Projects\02226041.09 Easton - New Filter Plant\wip\Drawings\I&C\02226041.09-I101-I1XX.dwg Plot Date: Aug 18,2021-10:46am

RACK 0, SLOT 0
PLC PROCESSOR
ALLEN BRADLEY CONTROLLOGIX
1756-L81



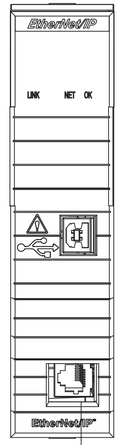
CAT6 ETHERNET
PATCH CABLE
LENGTH: 4 FT.

RACK 0, SLOT 1
ETHERNET I/P COMM MODULE
ALLEN BRADLEY CONTROLLOGIX
1756-EN2T

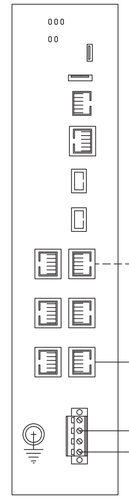


CAT6 ETHERNET
PATCH CABLE
LENGTH: 3 FT.

RACK 1, SLOT 0
ETHERNET I/P COMM MODULE
ALLEN BRADLEY CONTROLLOGIX
1756-EN2T



FIREWALL APPLIANCE
PALO ALTO PA-220R



CAT6 ETHERNET
LENGTH: DETERMINED IN FIELD

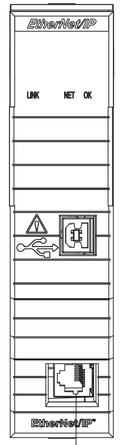
TELECOM NETWORK SWITCH

-101 0VDC FROM TB1

+107 +24VDC FROM FU7

CAT6 ETHERNET
PATCH CABLE
LENGTH: 3 FT.

RACK 0, SLOT 2
ETHERNET I/P COMM MODULE
ALLEN BRADLEY CONTROLLOGIX
1756-EN2T



TO ANTENNA

COMMUNICATING TO
WATER DEPARTMENT OFFICE

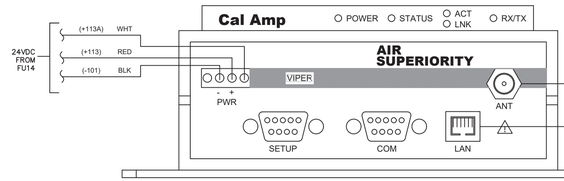
LMR900 COAXIAL CABLE
(FIELD INSTALLED CABLE)

POLYPHASER

NOTE:
POLYPHASER MUST
BE GROUNDED.

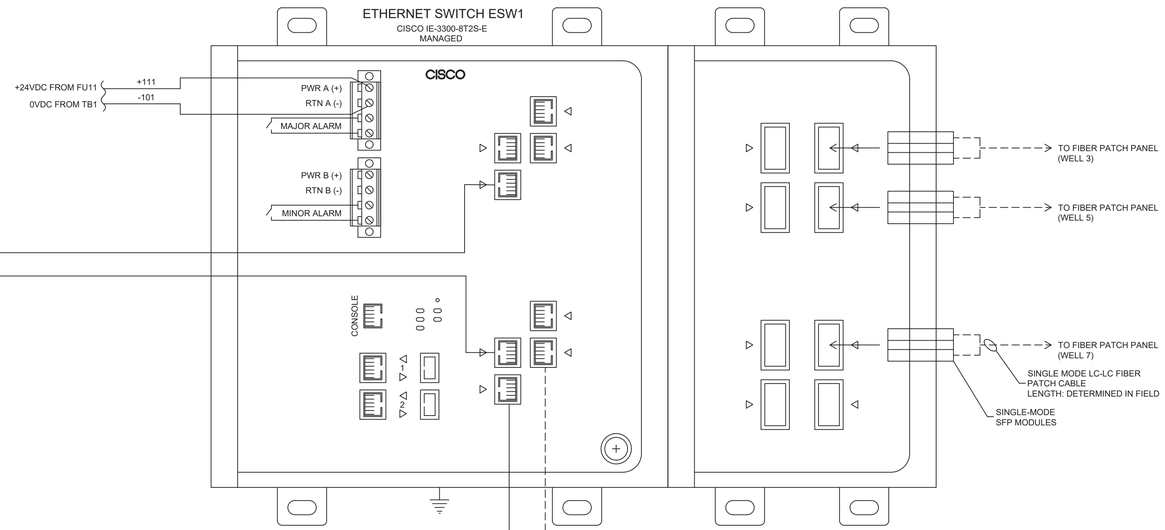
LMR400 COAXIAL JUMPER CABLE
LENGTH: 2 FT.

RADIO MODEM
CAL AMP VIPER

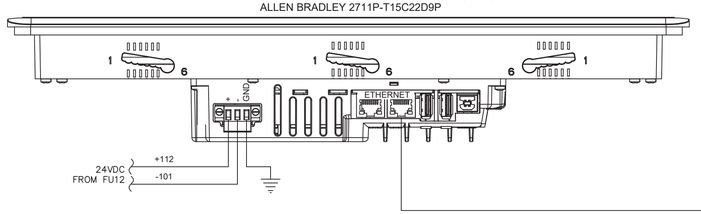


CAT6 ETHERNET
PATCH CABLE
LENGTH: 4 FT.

ETHERNET SWITCH ESW1
CISCO IE-3300-8T2S-E
MANAGED



OPERATOR INTERFACE TERMINAL (OIT)
ALLEN BRADLEY 2711P-T15C22D9P



CAT6 ETHERNET
PATCH CABLE
LENGTH: 10 FT.

SCADA PC (CONTROL ROOM/LAB)

CAT6 ETHERNET
LENGTH: DETERMINED IN FIELD

ENVIRONMENTAL PARTNERS

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RED MILL ROAD WATER TREATMENT PLANT
TOWN OF EASTON, MA

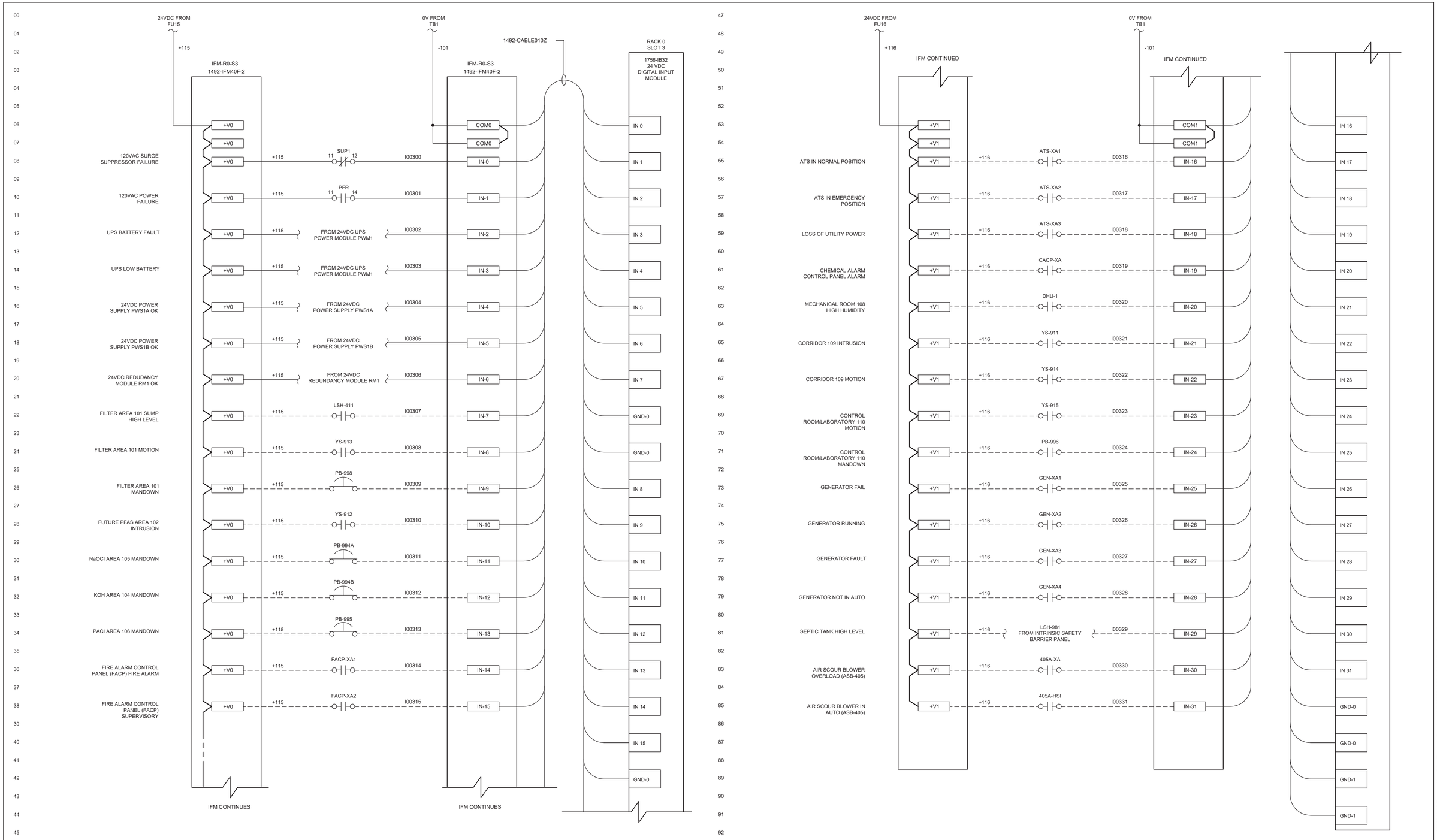
MAIN CONTROL PANEL COMMUNICATIONS

FOR CONSTRUCTION

Sheet No.

I-111

Drawing file: \\woodardcurran.net\shared\Projects\02260411.09 Easton - New Filter Plant\wip\Drawings\I&C\02260411.09-I101-I1XX.dwg Plot Date: Aug 18,2021-10:46am



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COMMONWEALTH OF MASSACHUSETTS
JOHN GREENLEAF TRINWARD, JR.
No. 55533
REGISTERED PROFESSIONAL ENGINEER
08/02/2021

MARK	DATE	DESCRIPTION

Scale	NTS
Date	AUGUST 2021
Job No.	307-2002
Designed by	PS
Drawn by	PS
Checked by	JT/BA
Approved by	JT

THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

RED MILL ROAD WATER TREATMENT PLANT
TOWN OF EASTON, MA

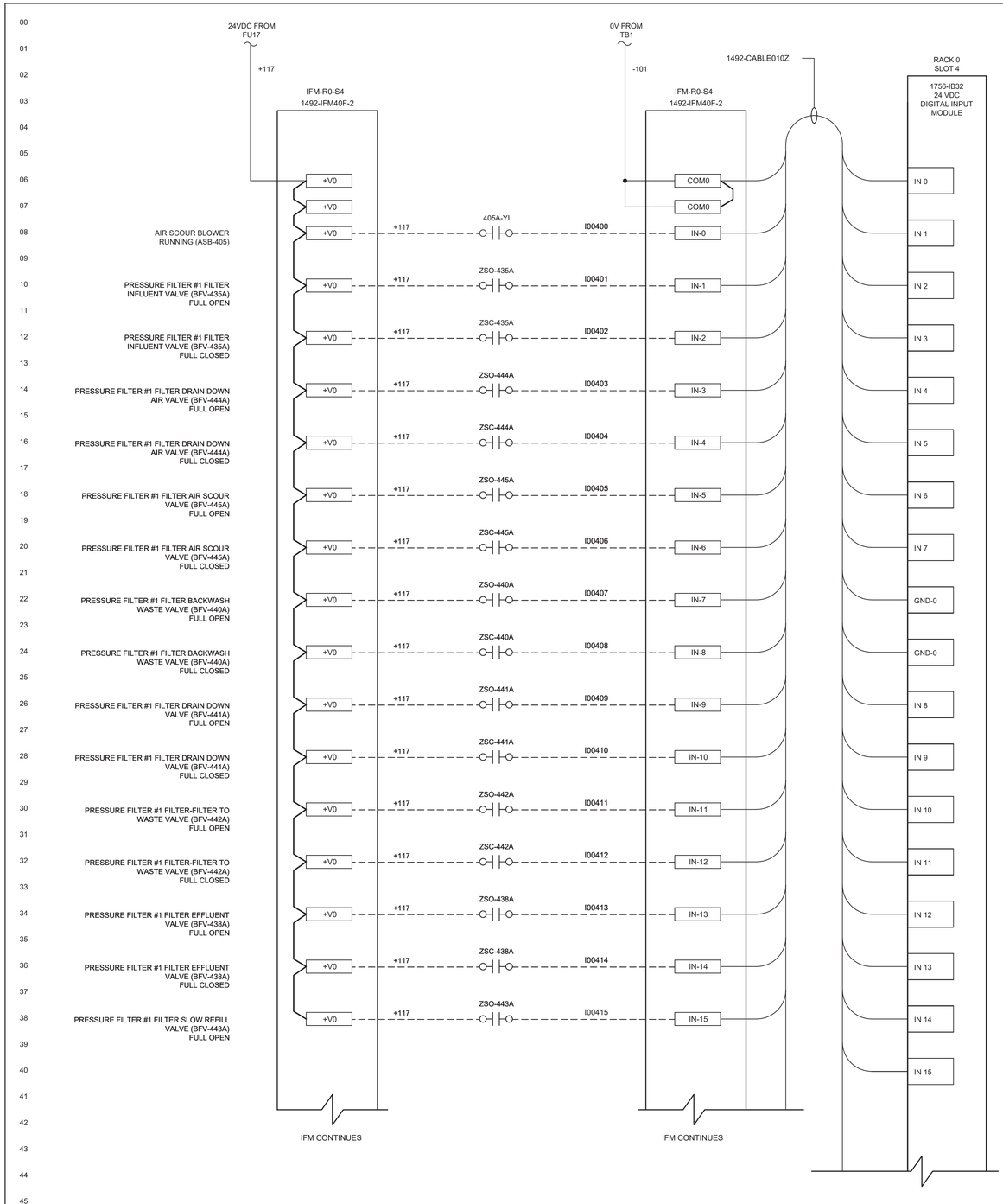
MAIN CONTROL PANEL DIGITAL INPUTS

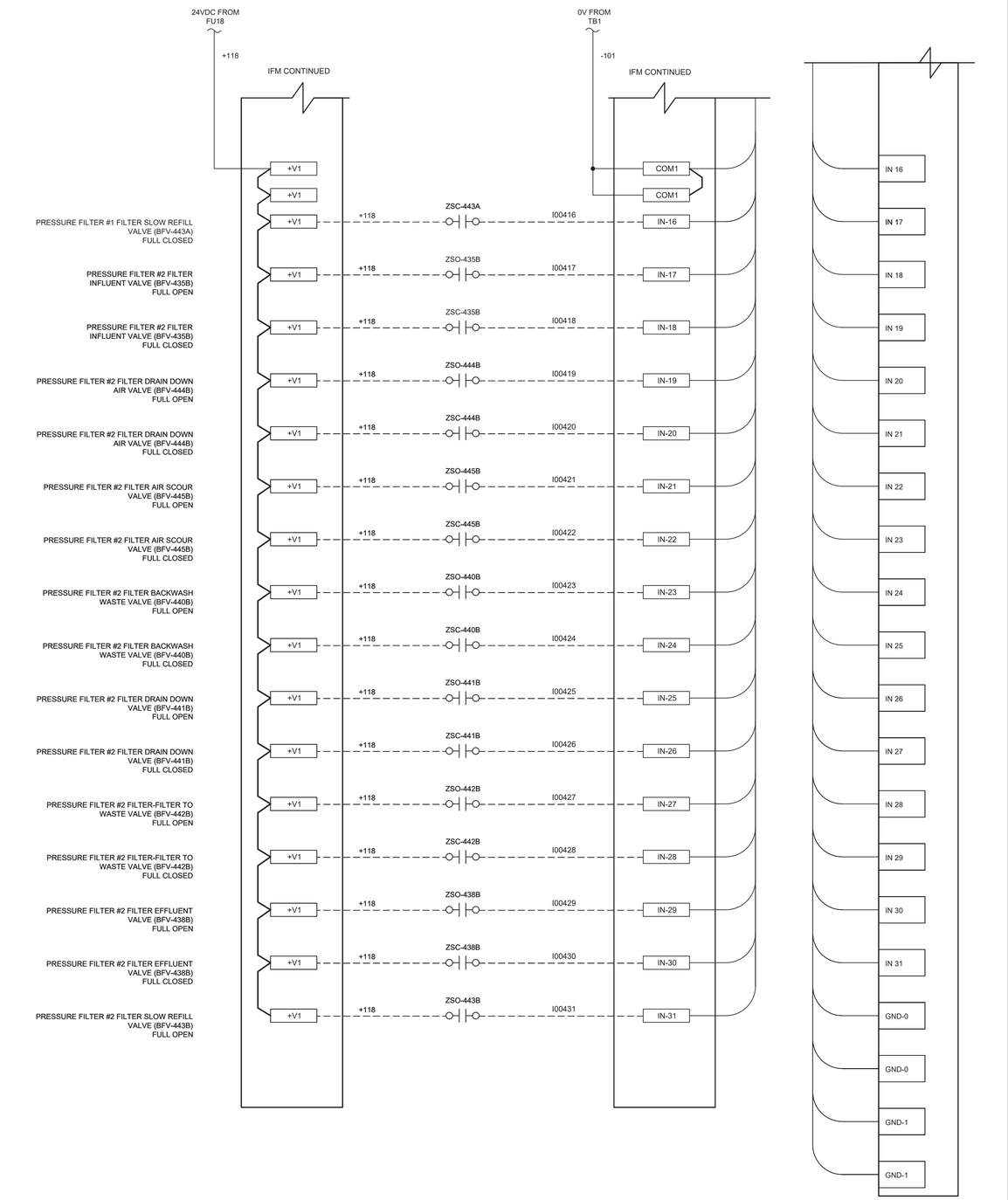
FOR CONSTRUCTION

Sheet No.

I-112

Drawing file: \\woodardcurran.net\shared\Projects\02260411.09 Easton - New Filter Plant\wip\Drawings\I&C\02260411.09-1101-I1XX.dwg Plot Date: Aug 18,2021-10:46am





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JOHN GREENLEAF TRINWARD, JR.
No. 55533
REGISTERED PROFESSIONAL ENGINEER
08/02/2021

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RED MILL ROAD WATER TREATMENT PLANT
TOWN OF EASTON, MA

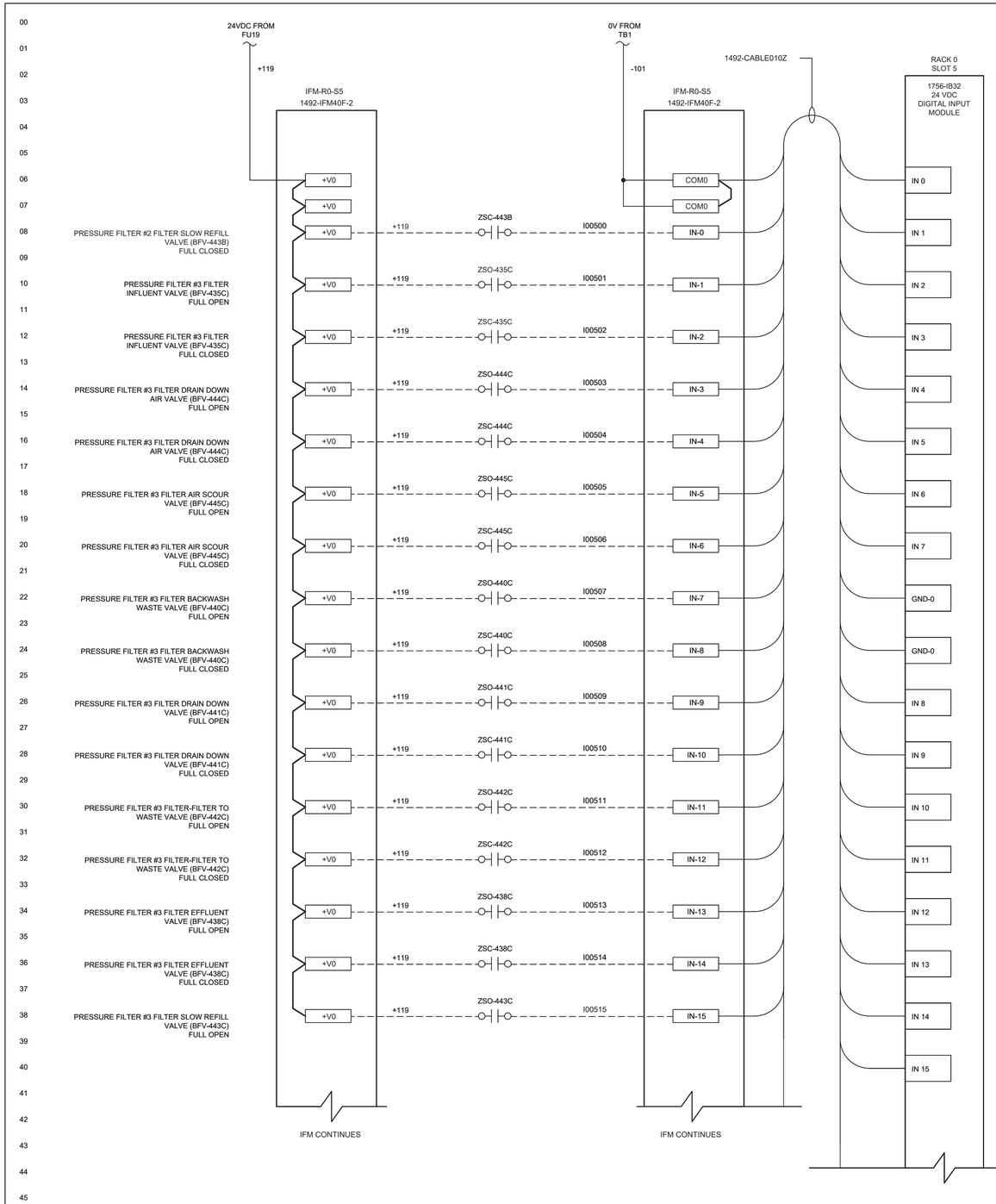
MAIN CONTROL PANEL DIGITAL INPUTS

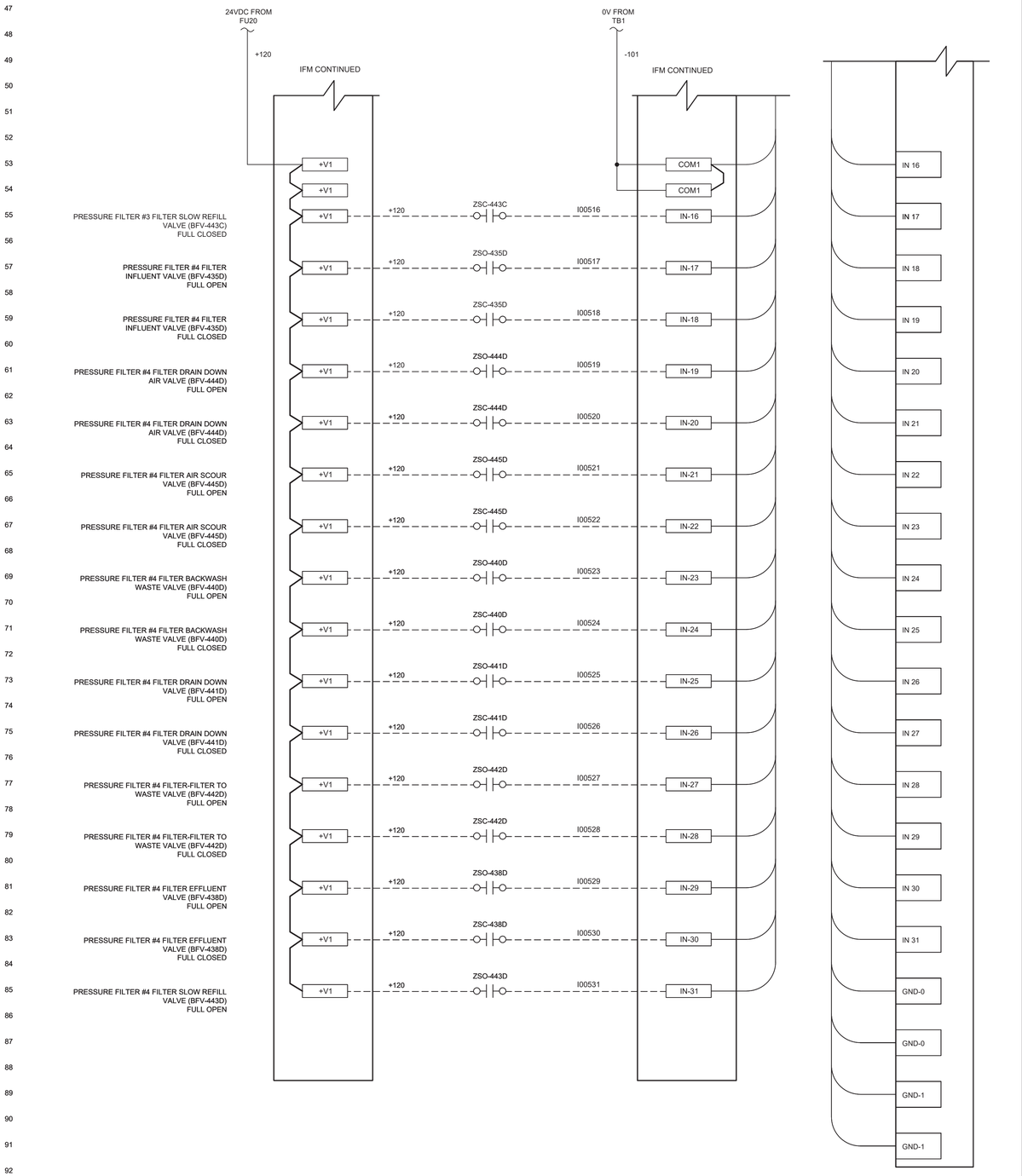
FOR CONSTRUCTION

Sheet No.

I-113

Drawing file: \\woodardcurran.net\shares\Projects\022604.09 Easton - New Filter Plant\wip\Drawings\sk\CW2260401.09-I101-I1XX.dwg Plot Date: Aug 18,2021-10:48am





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08/02/2021

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Approved by	JT

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RED MILL ROAD WATER TREATMENT PLANT
TOWN OF EASTON, MA

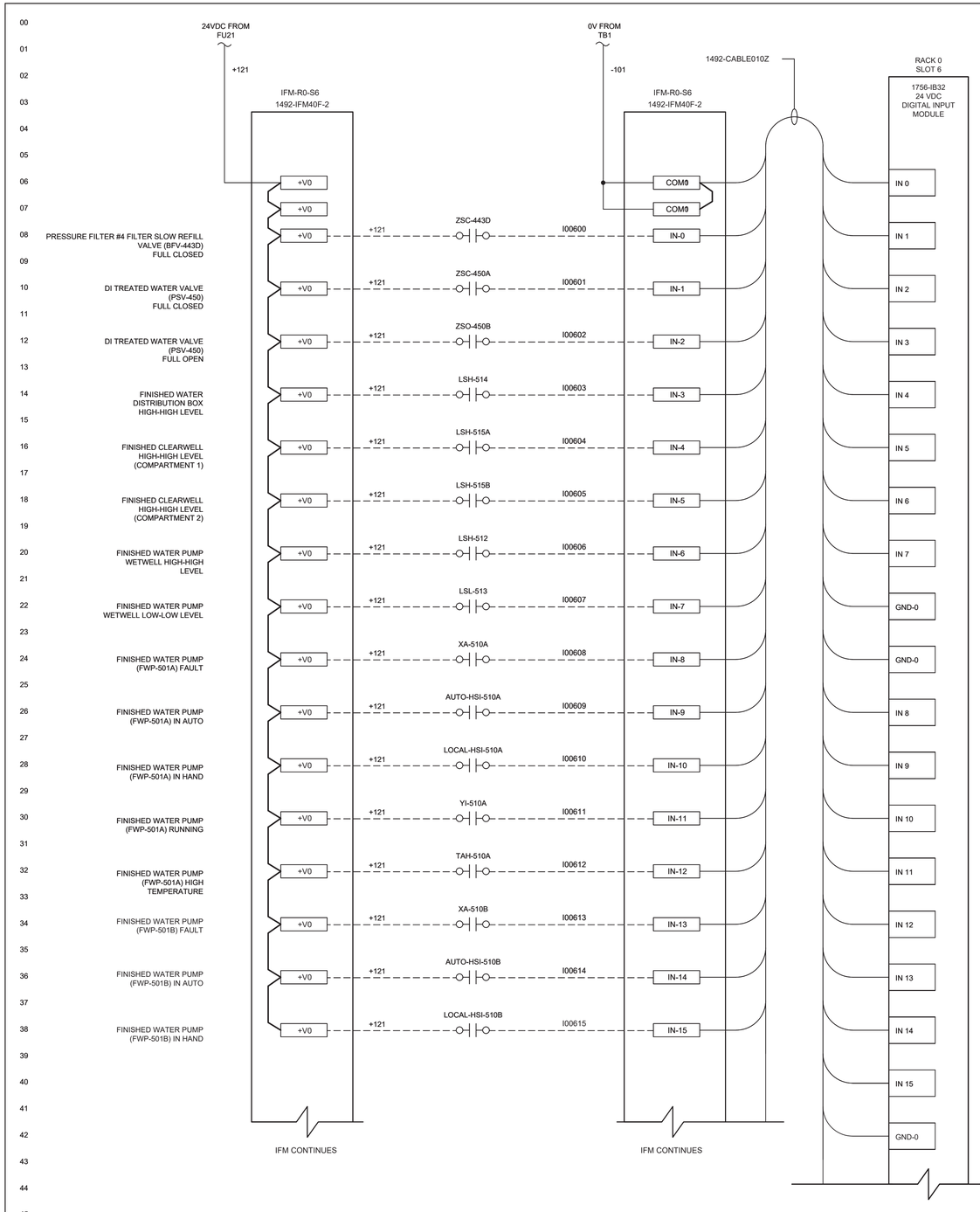
MAIN CONTROL PANEL DIGITAL INPUTS

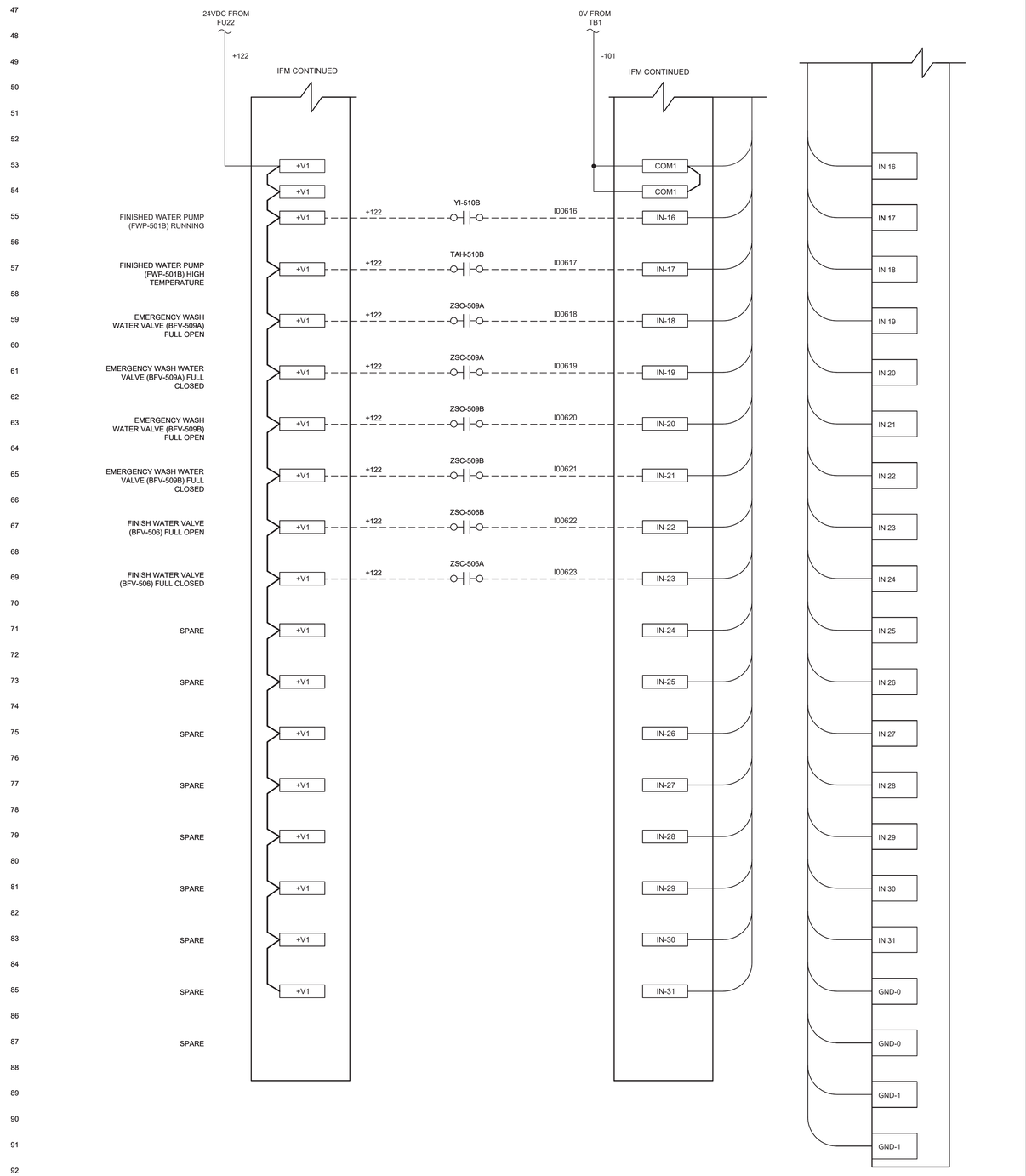
FOR CONSTRUCTION

Sheet No.

I-114

Drawing file: \\woodardcurran.net\shares\Projects\022604.09 Easton - New Filter Plant\wip\Drawings\sk\CW2260401.09-1101-11XX.dwg Plot Date: Aug 18,2021-10:47am





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JOHN GREENLEAF TRINWARD, JR.
No. 55533
REGISTERED PROFESSIONAL ENGINEER
08/02/2021

MARK	DATE	DESCRIPTION

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RED MILL ROAD WATER TREATMENT PLANT
TOWN OF EASTON, MA

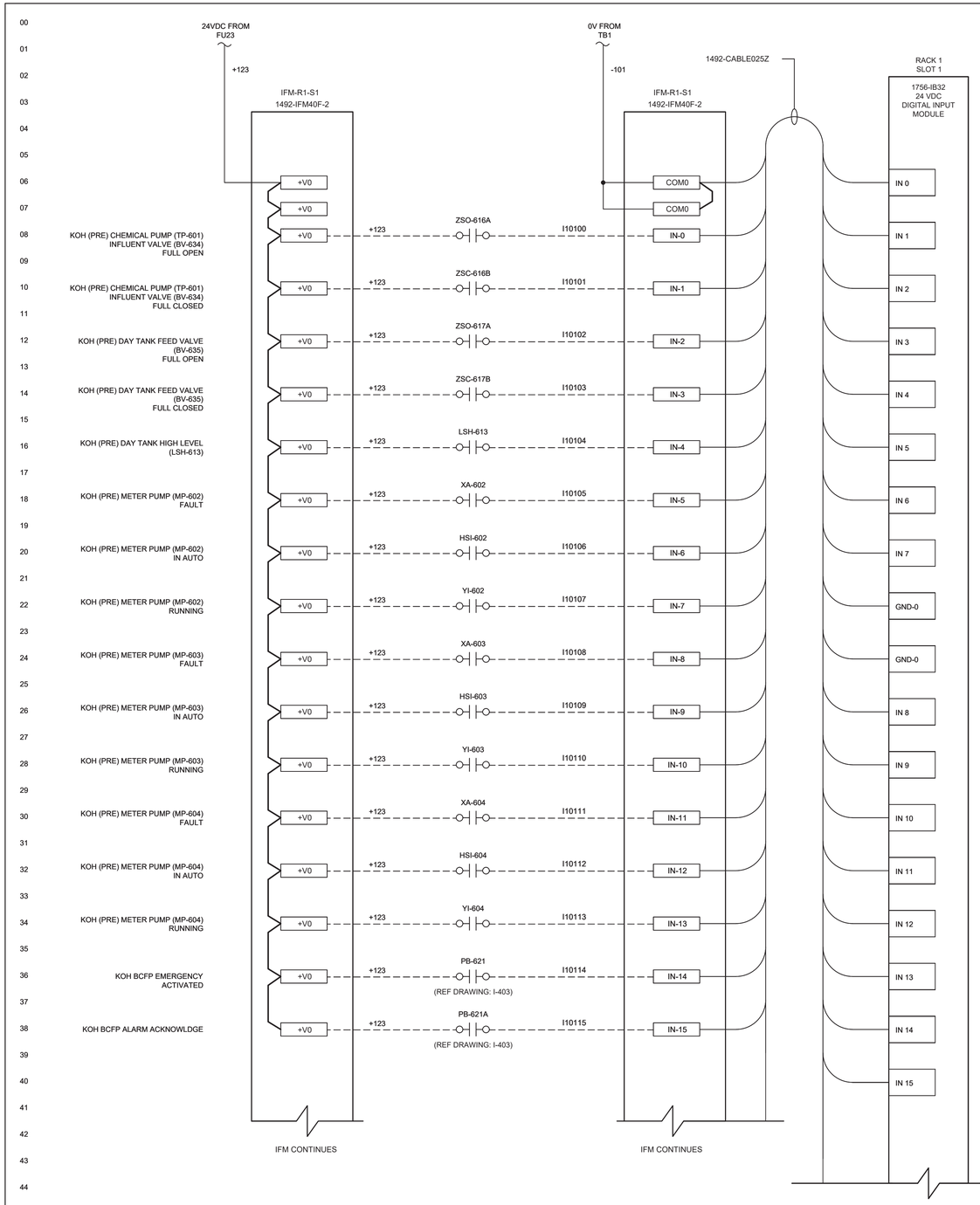
MAIN CONTROL PANEL DIGITAL INPUTS

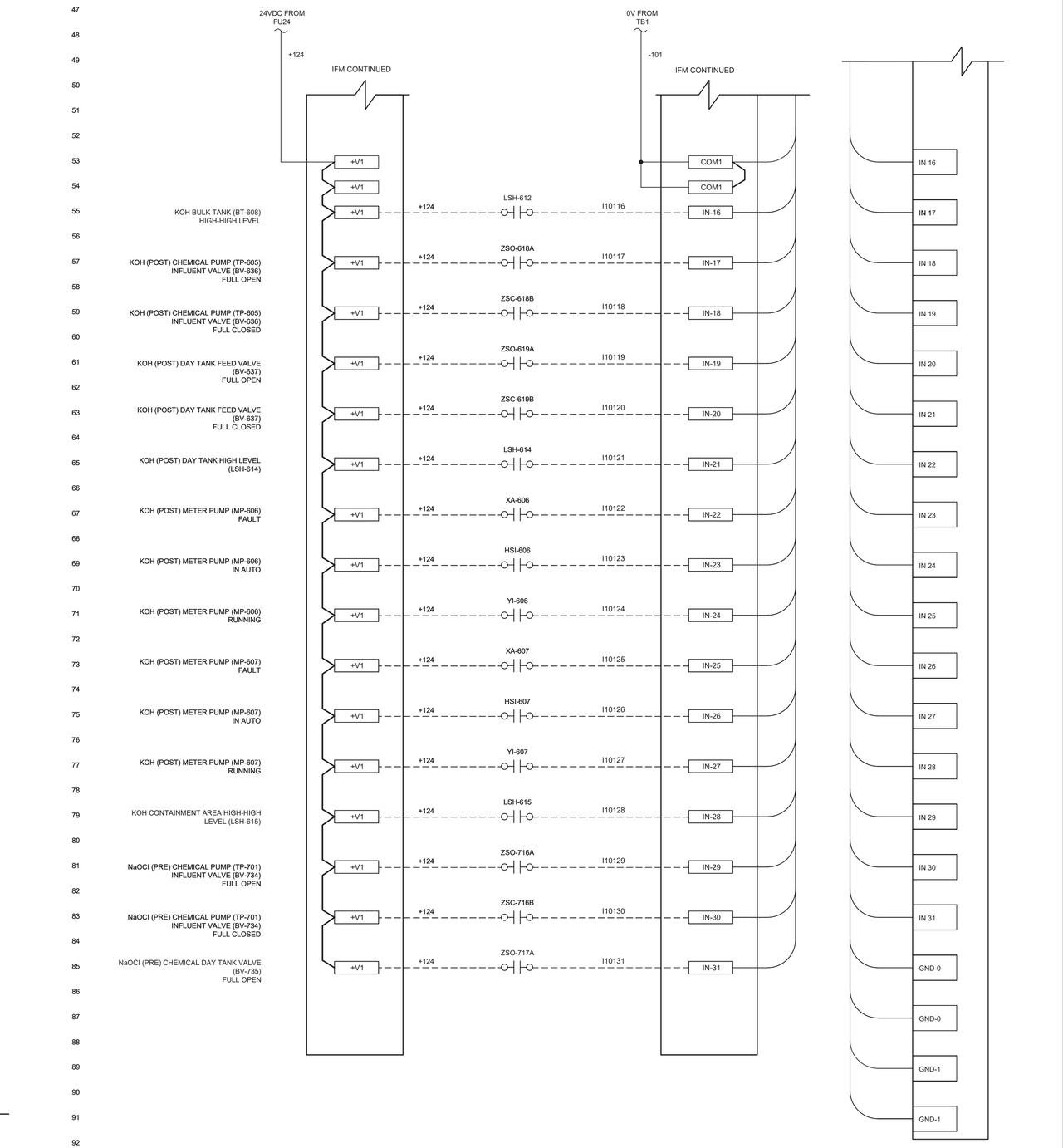
FOR CONSTRUCTION

Sheet No.

I-115

Drawing file: \\woodardcurran.net\shared\Projects\02260441.09 Easton - New Filter Plant\wip\Drawings\I&C\02260441.09-I101-I1XX.dwg Plot Date: Aug 18,2021-10:47am





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08/02/2021

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RED MILL ROAD WATER TREATMENT PLANT
TOWN OF EASTON, MA

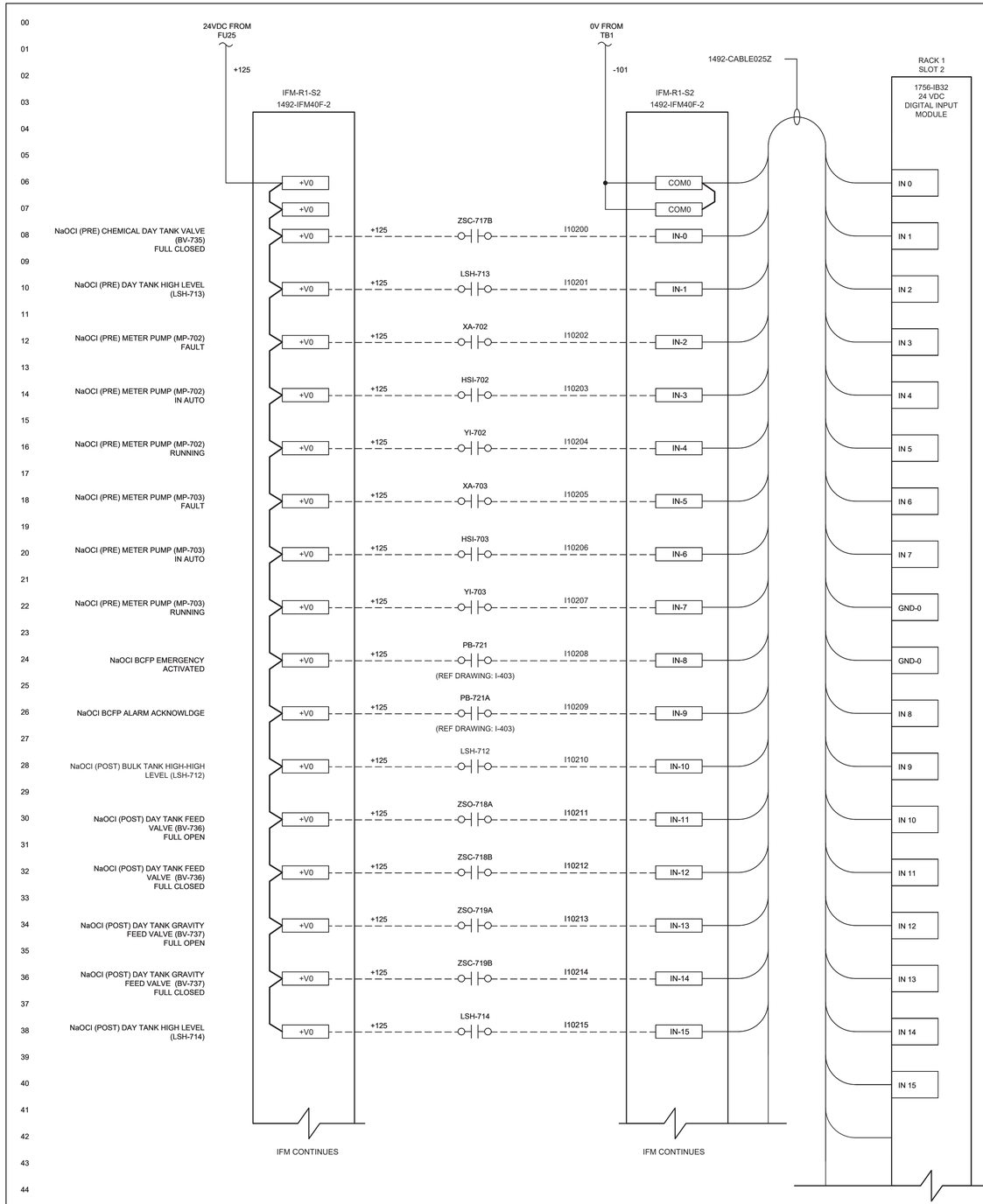
MAIN CONTROL PANEL DIGITAL INPUTS

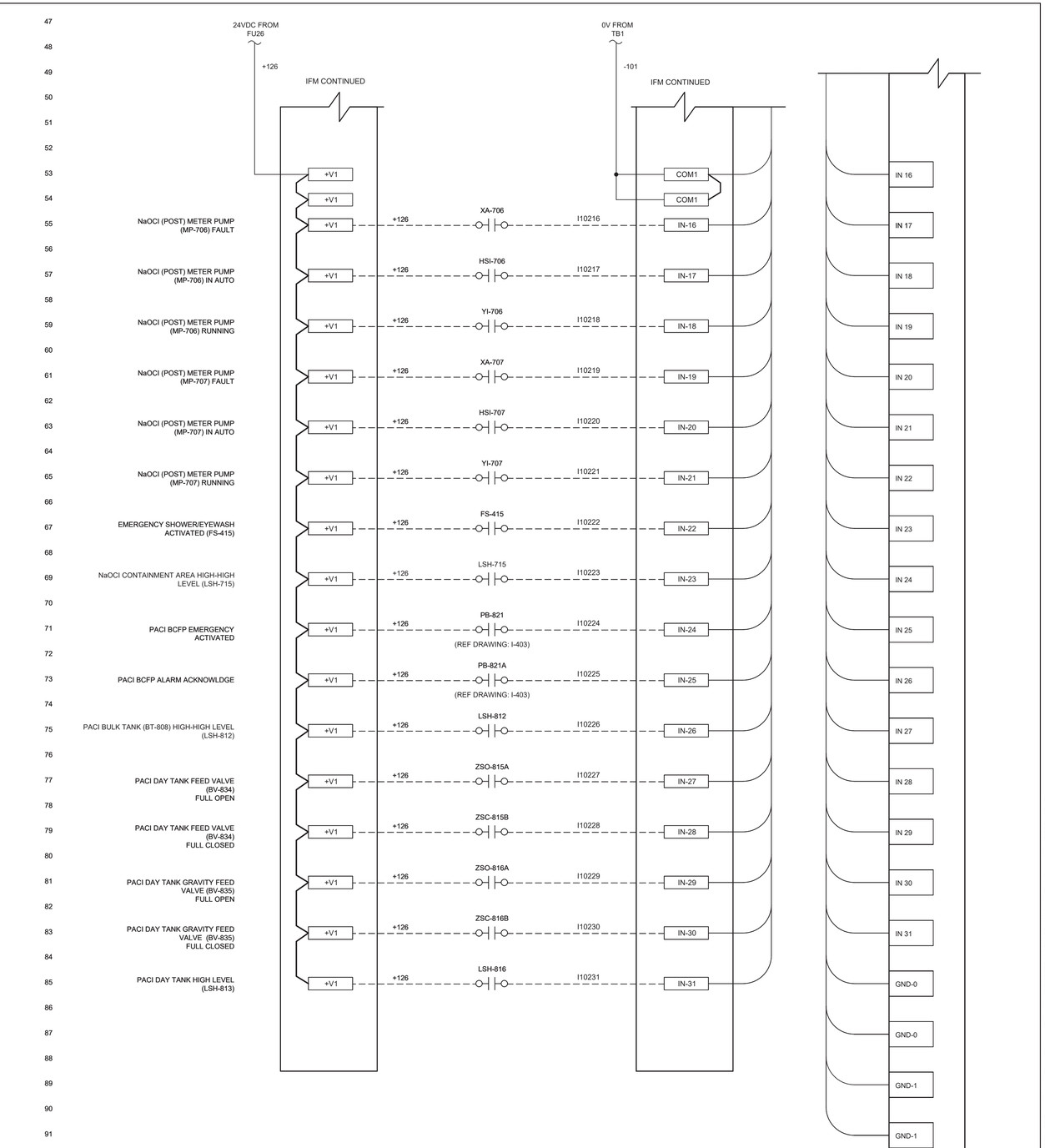
FOR CONSTRUCTION

Sheet No.

I-116

Drawing file: \\woodardcurran.net\shared\Projects\02260411.09 Easton - New Filter Plant\wip\Drawings\I&C\02260411.09-1101-I1XX.dwg Plot Date: Aug 18,2021-10:47am





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08/02/2021

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RED MILL ROAD WATER TREATMENT PLANT
TOWN OF EASTON, MA

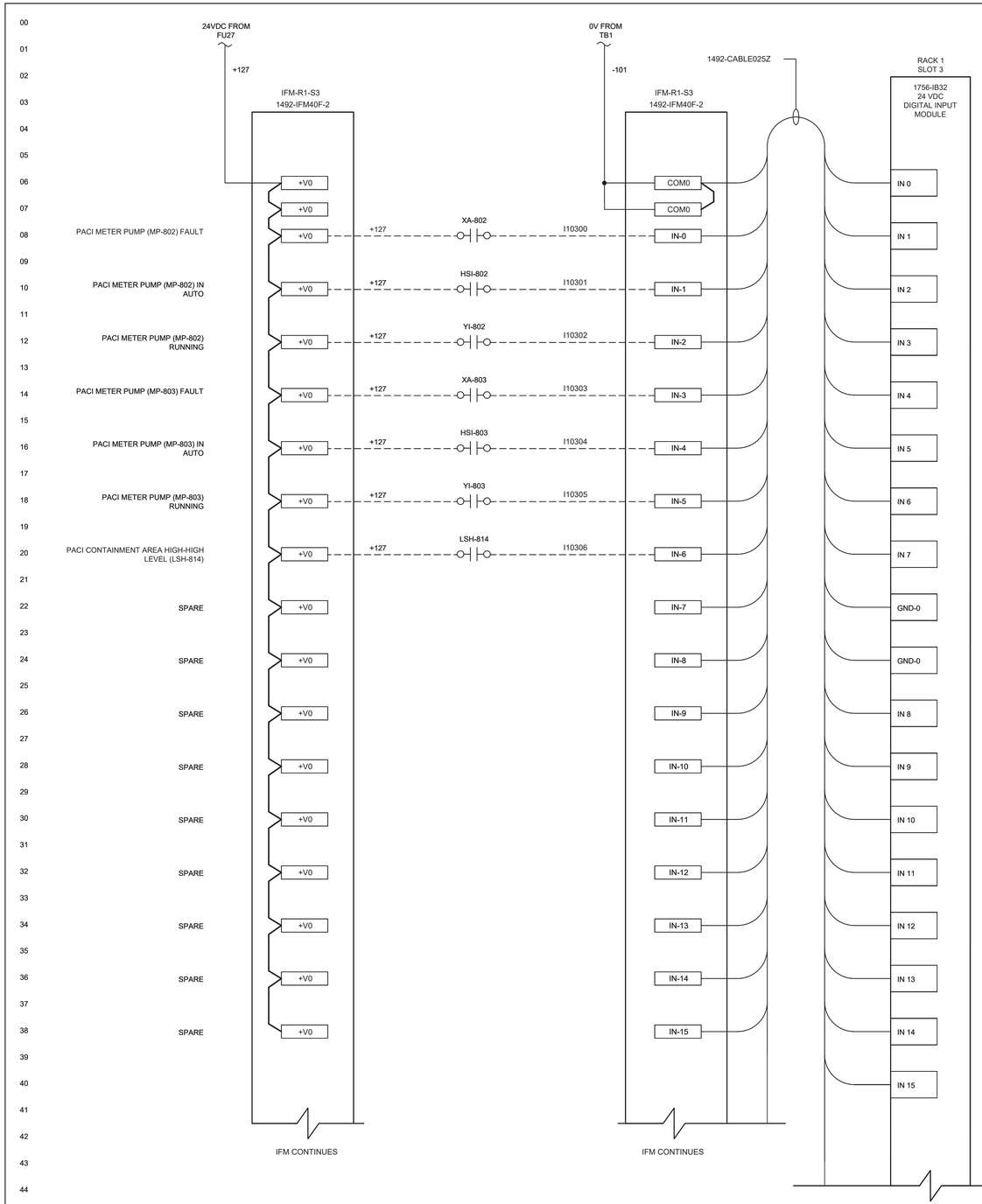
MAIN CONTROL PANEL DIGITAL INPUTS

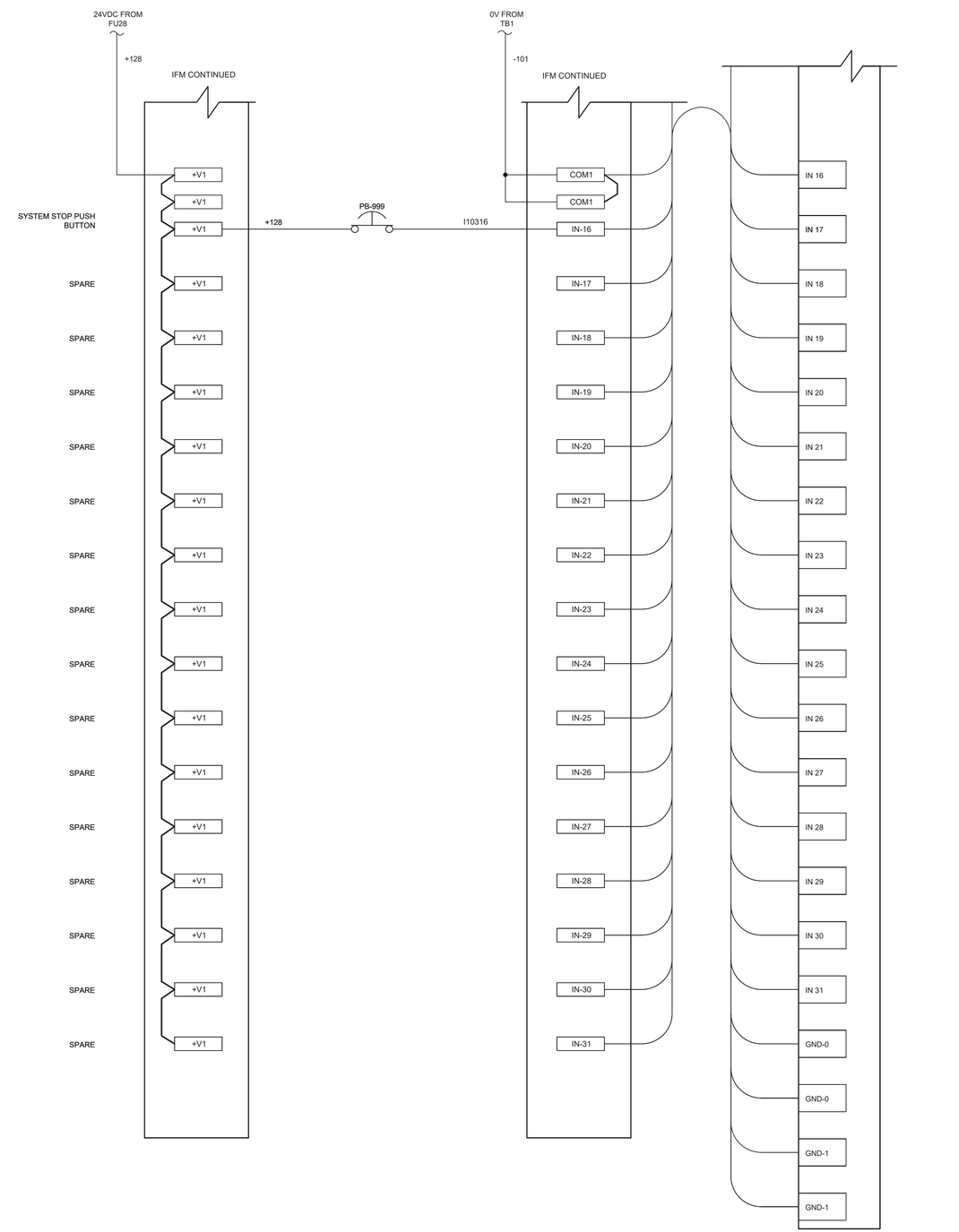
FOR CONSTRUCTION

Sheet No.

I-117

Drawing file: \\woodardcurran.net\shared\Projects\02226041.09 Easton - New Filter Plant\wip\Drawings\I&C\02226041.09-1101-I1XX.dwg Plot Date: Aug 18,2021-10:47am





			Scale	NTS
			Date	AUGUST 2021
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			Designed by	PS
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			Checked by	JT/BA
MARK	DATE	DESCRIPTION	Approved by	JT

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RED MILL ROAD WATER TREATMENT PLANT
TOWN OF EASTON, MA

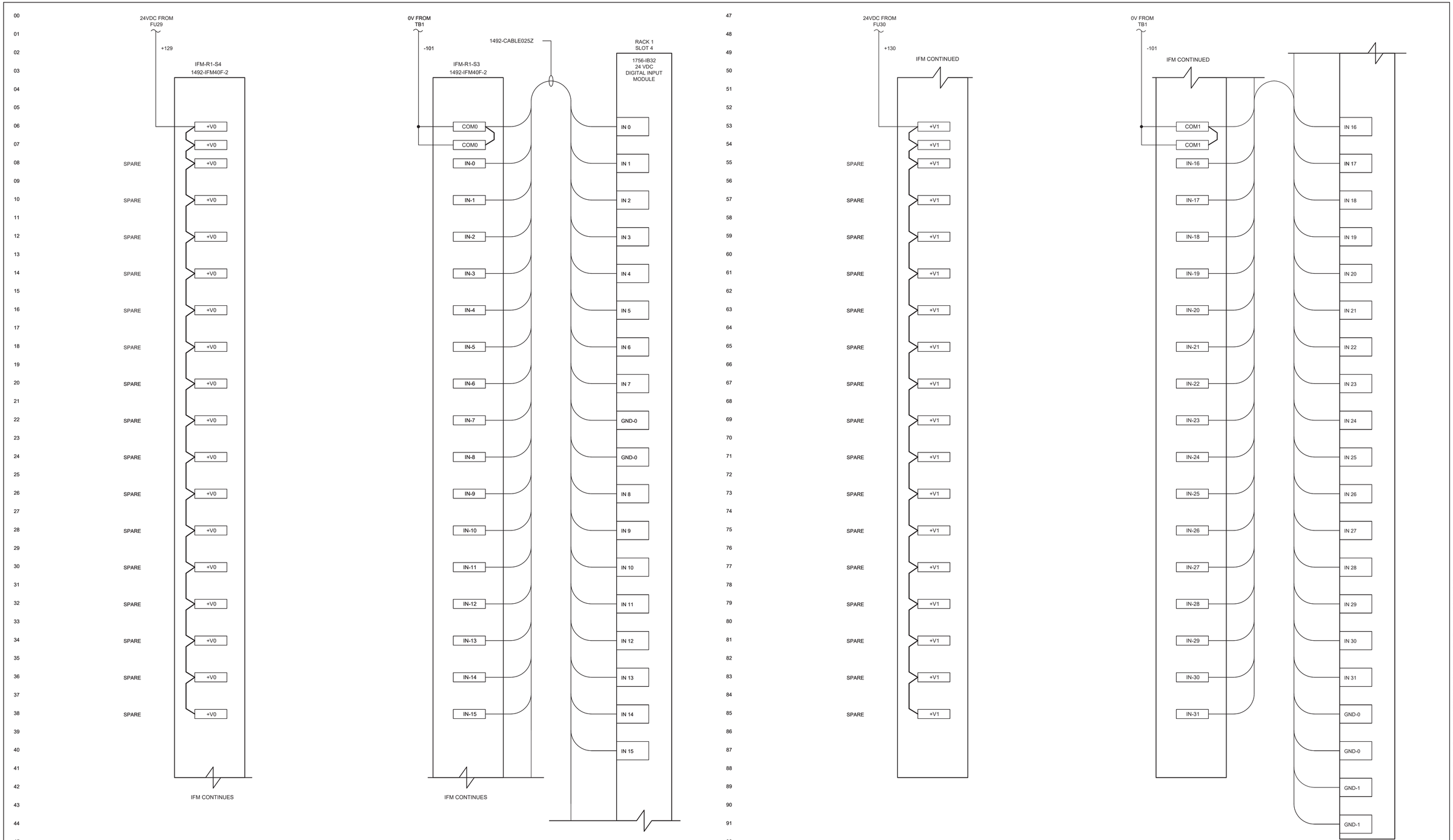
MAIN CONTROL PANEL DIGITAL INPUTS

FOR CONSTRUCTION

Sheet No.

I-118

Drawing file: \\woodardcurran.net\shared\Projects\02260411.09 Easton - New Filter Plant\wip\Drawings\I&C\02260411.09-1101-I1XX.dwg Plot Date: Aug 18,2021-10:47am



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RED MILL ROAD WATER TREATMENT PLANT
TOWN OF EASTON, MA

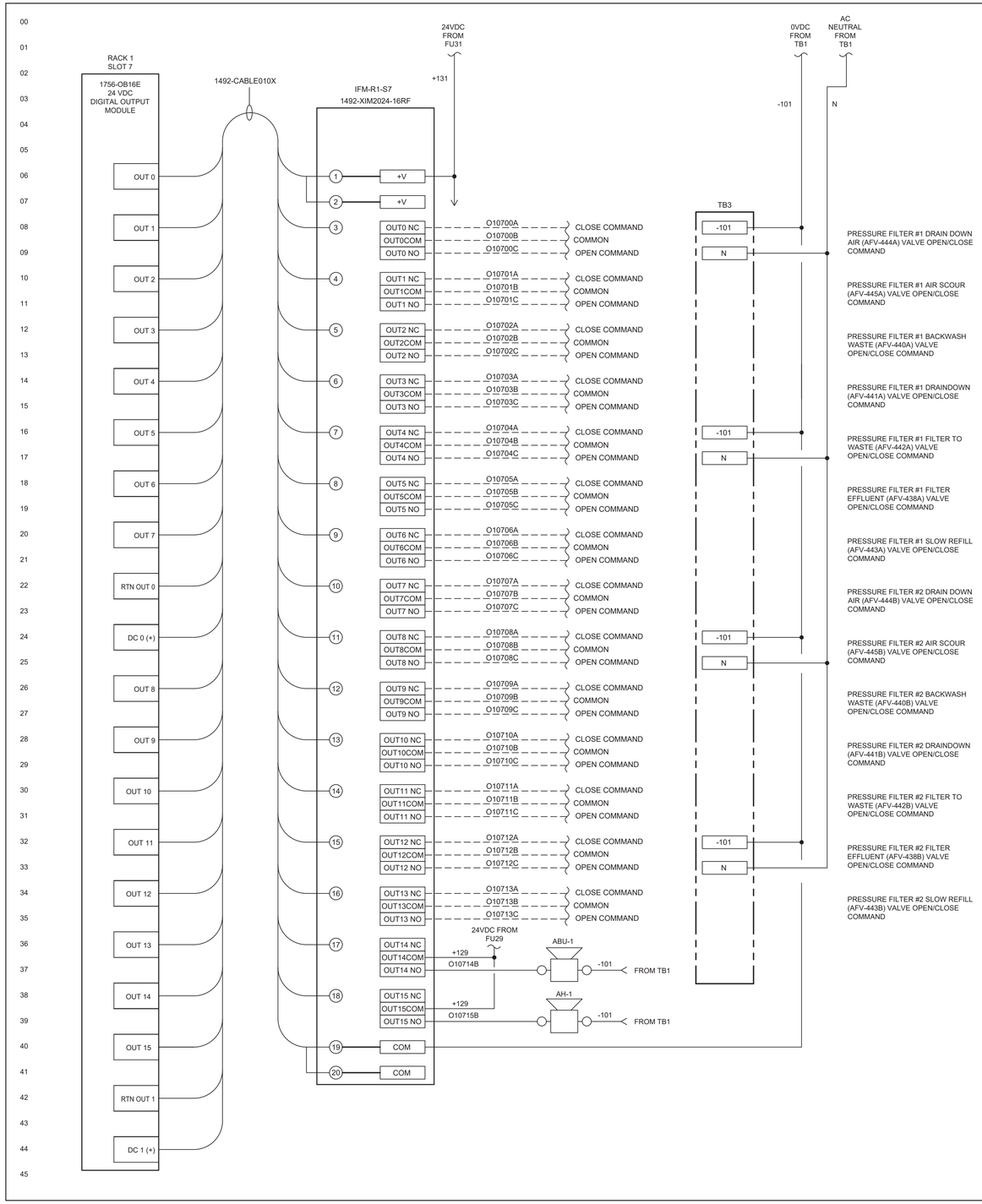
MAIN CONTROL PANEL DIGITAL OUTPUTS

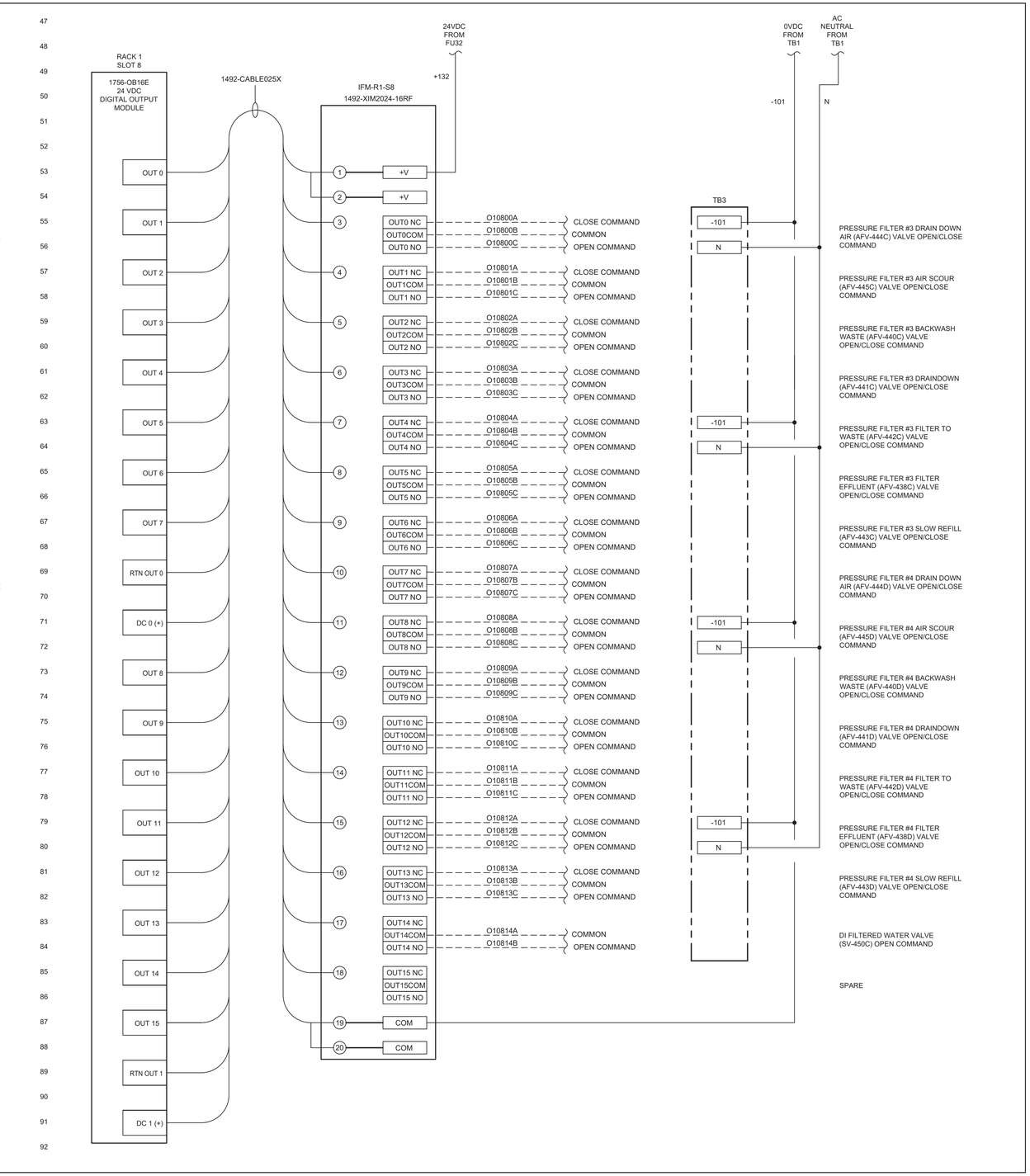
FOR CONSTRUCTION

Sheet No.

I-119

Drawing file: \\woodardcurran.net\shared\Projects\02226041.09 Easton - New Filter Plant\wip\Drawings\I&C\02226041.09-I101-I1XX.dwg Plot Date: Aug 18,2021-10:47am





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COMMONWEALTH OF MASSACHUSETTS
08/02/2021

MARK	DATE	DESCRIPTION

Scale	NTS
Date	AUGUST 2021
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Designed by	PS
Drawn by	PS
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Approved by	JT

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RED MILL ROAD WATER TREATMENT PLANT
TOWN OF EASTON, MA

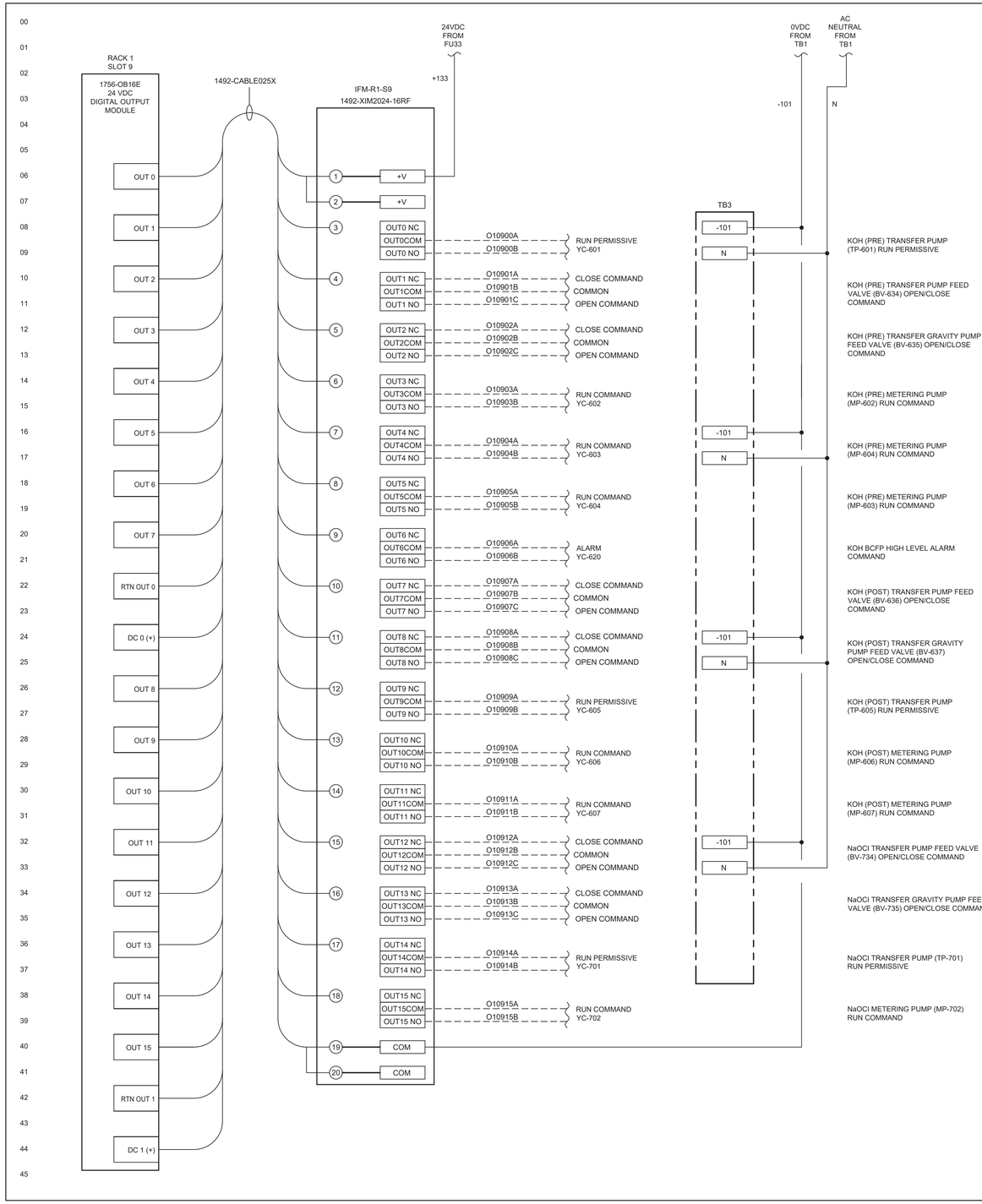
MAIN CONTROL PANEL DIGITAL OUTPUTS

FOR CONSTRUCTION

Sheet No.

I-120

Drawing file: \\woodardcurran.net\shared\Projects\02260410.09 Easton - New Filter Plant\wip\Drawings\8X11\02260410.09-I101-I1XX.dwg Plot Date: Aug 18,2021 - 10:47am



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08/02/2021

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RED MILL ROAD WATER TREATMENT PLANT
TOWN OF EASTON, MA

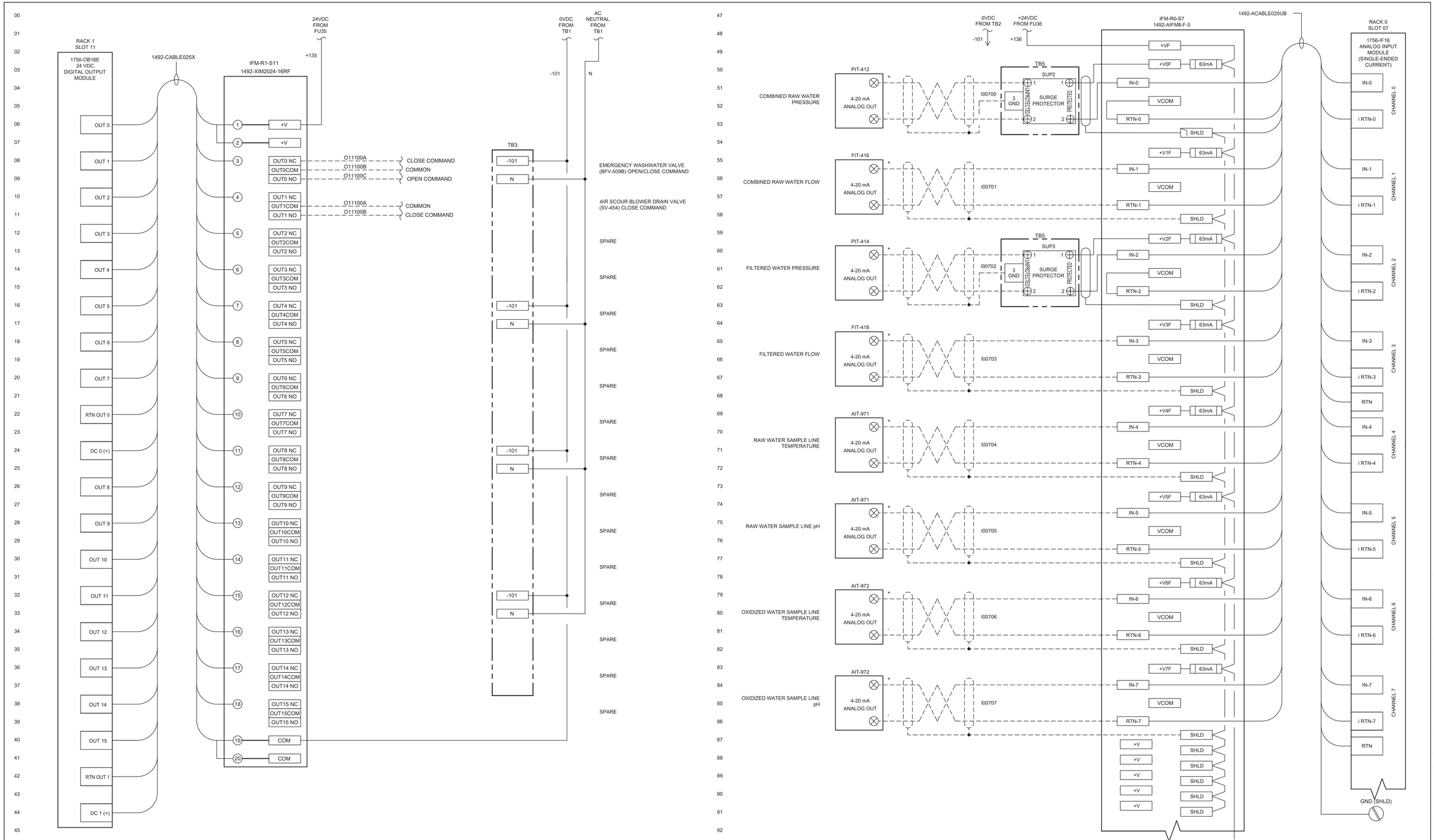
MAIN CONTROL PANEL RELAY OUTPUTS & ANALOG INPUTS

FOR CONSTRUCTION

Sheet No.

I-121

Drawing file: \\woodardcurran.net\shared\Projects\02260410\9-Easton - New Filter Plant\wip\Drawings\MCO2260410I-I101-I1XX.dwg Plot Date: Aug 18,2021 - 10:47am



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08/02/2021

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RED MILL ROAD WATER TREATMENT PLANT
TOWN OF EASTON, MA

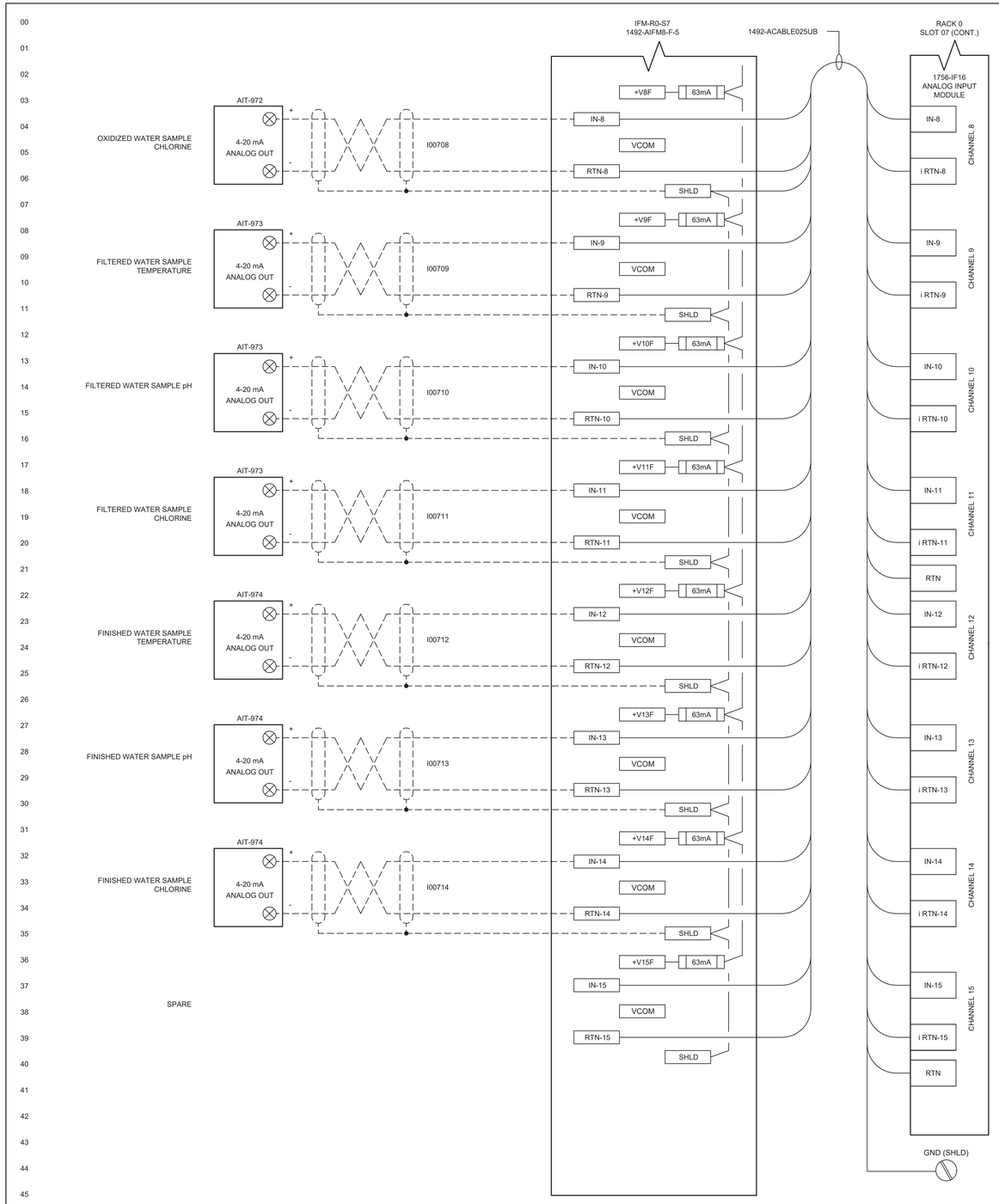
MAIN CONTROL PANEL ANALOG INPUTS I

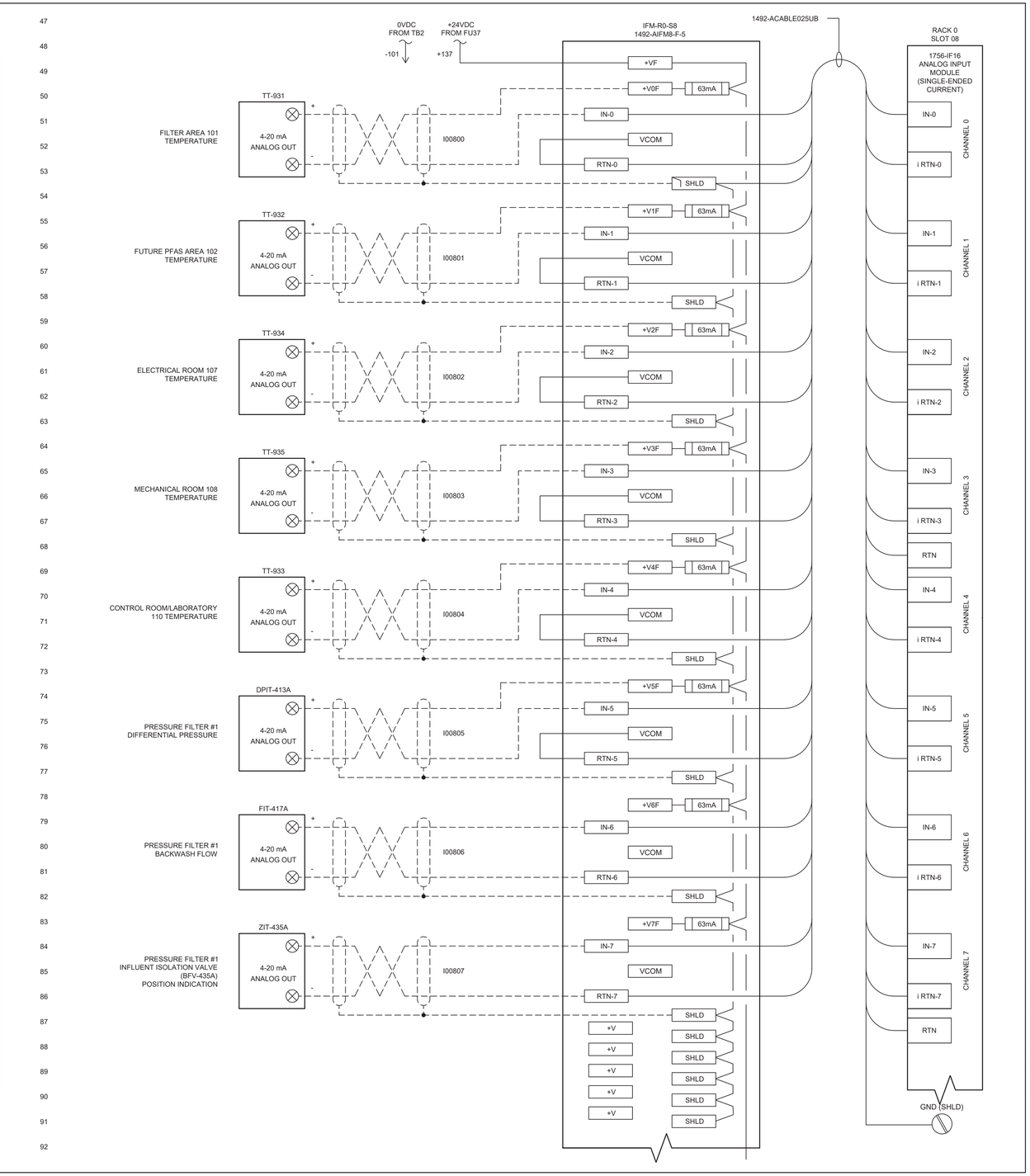
FOR CONSTRUCTION

Sheet No.

I-122

Drawing file: \\woodardcurran.net\shared\Projects\02260411.09 Easton - New Filter Plant\wip\Drawings\I&C\02260411.09-I101-I1XX.dwg Plot Date: Aug 18,2021 -10:47am





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08/02/2021

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RED MILL ROAD WATER TREATMENT PLANT
TOWN OF EASTON, MA

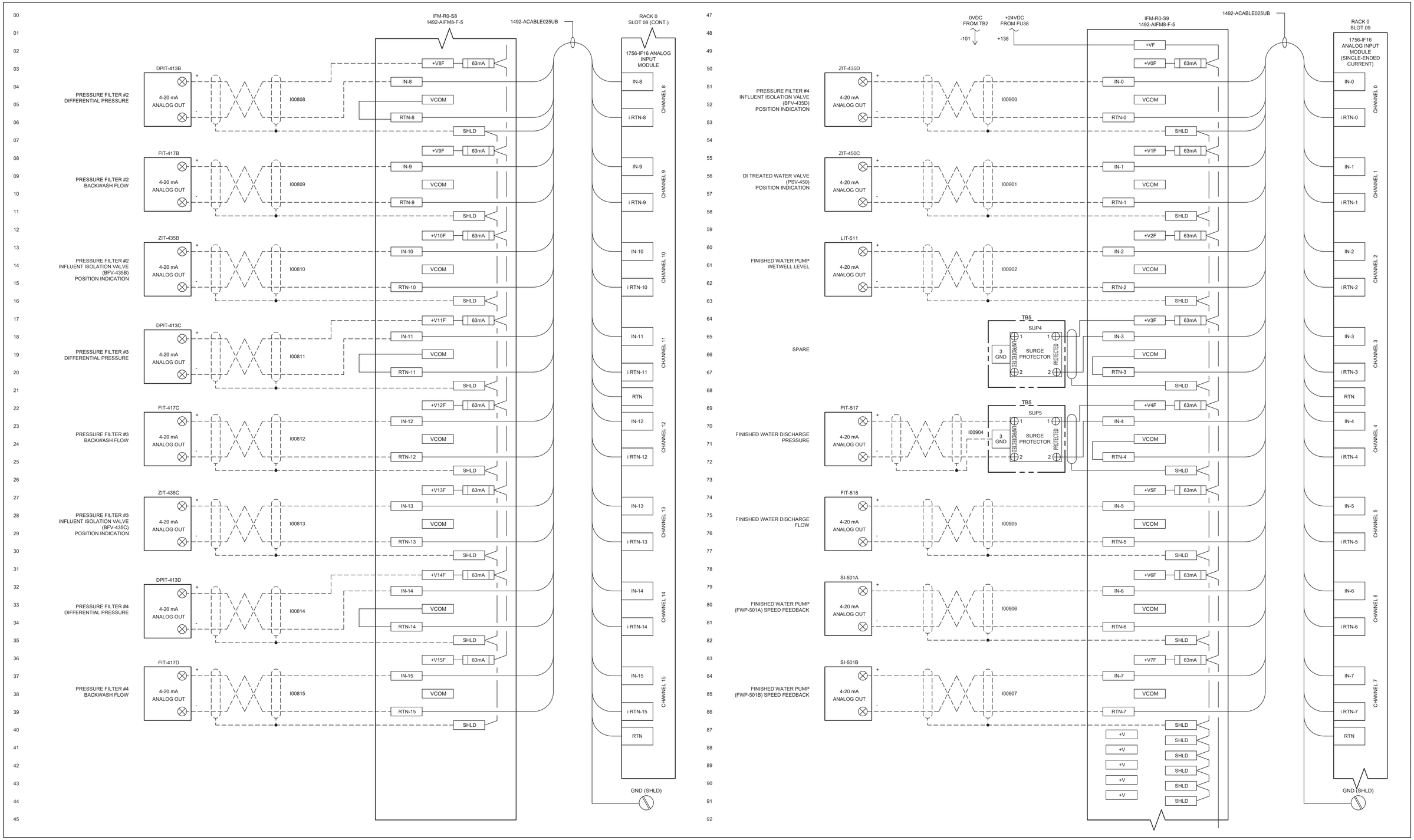
MAIN CONTROL PANEL ANALOG INPUTS II

FOR CONSTRUCTION

Sheet No.

I-123

Drawing file: \\woodardcurran.net\shared\Projects\02260411.09 Easton - New Filter Plant\wip\Drawings\IA\02260411.09-1101-11XX.dwg Plot Date: Aug 18,2021-10:47am



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RED MILL ROAD WATER TREATMENT PLANT
TOWN OF EASTON, MA

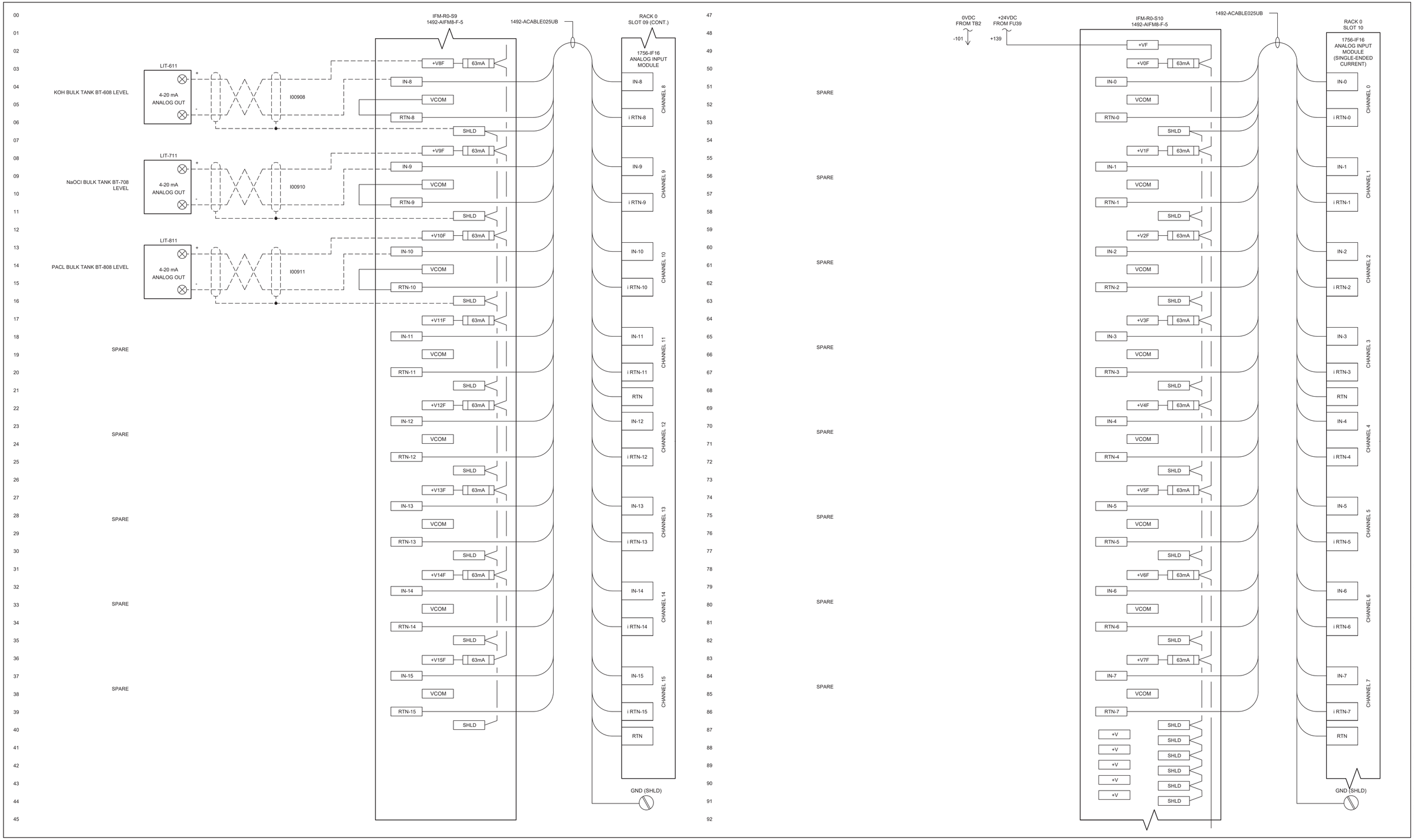
MAIN CONTROL PANEL ANALOG INPUTS III

FOR CONSTRUCTION

Sheet No.

I-124

Drawing file: \\woodardcurran.net\shared\Projects\02226041 (9) Easton - New Filter Plant\wip\Drawings\I&C\02226041-09-1101-I1XX.dwg Plot Date: Aug 18,2021-10:47am



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RED MILL ROAD WATER TREATMENT PLANT
TOWN OF EASTON, MA

MAIN CONTROL PANEL ANALOG INPUTS IV

FOR CONSTRUCTION

Sheet No.

I-125

Drawing file: \\woodardcurran.net\shared\Projects\02260441.09 Easton - New Filter Plant\wip\Drawings\IA\02260441.09-I101-I11XX.dwg Plot Date: Aug 18,2021 - 10:47am

SPARE

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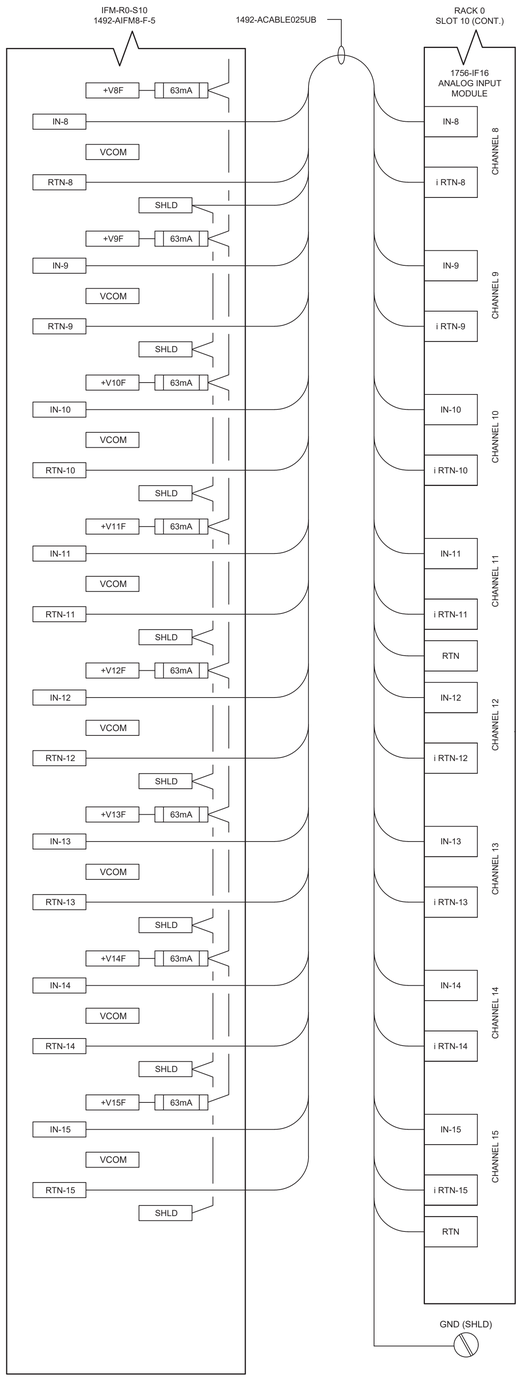

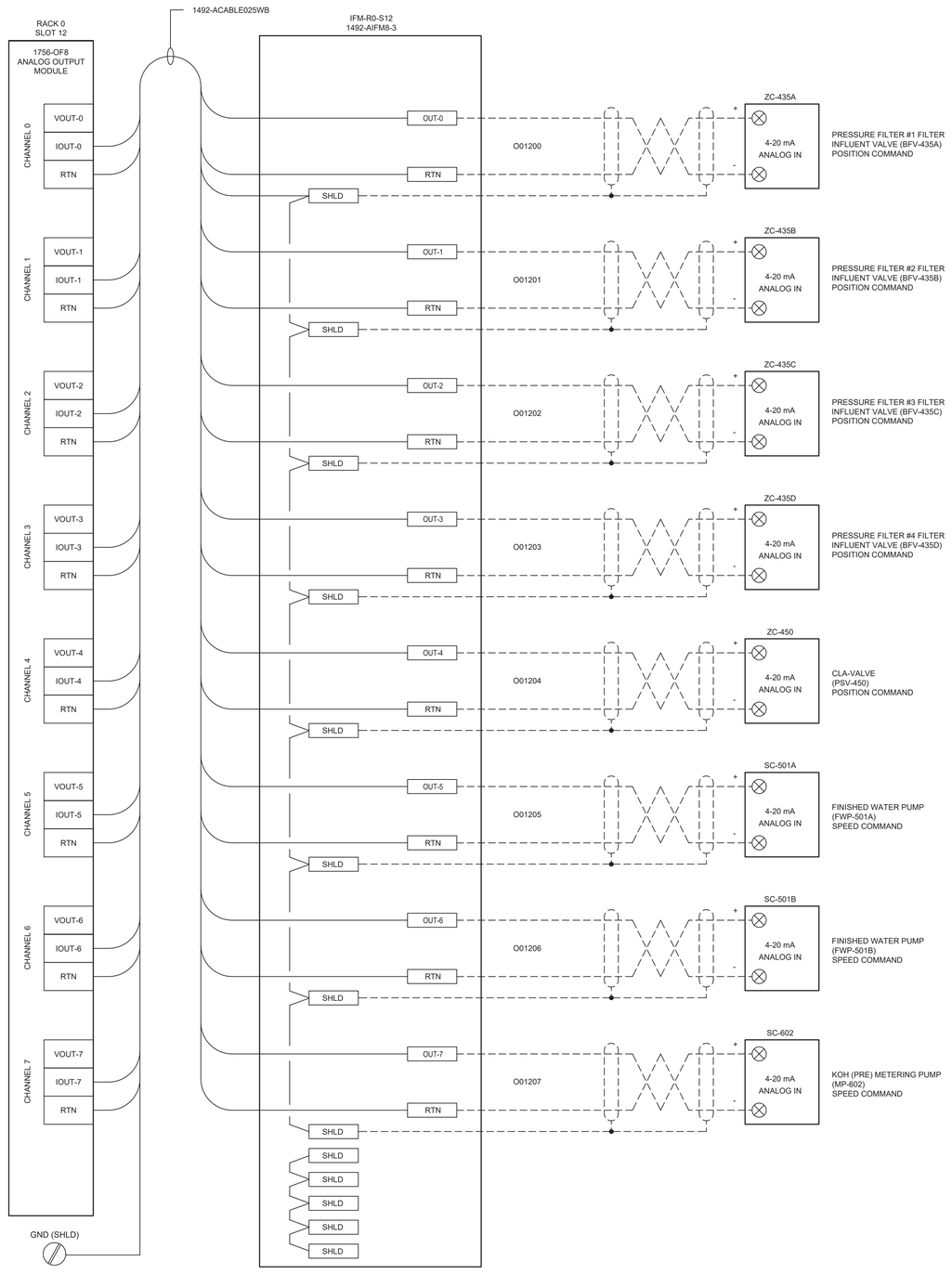

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COMMITMENT & INTEGRITY DRIVE RESULTS

JOHN GREENLEAF TRINWARD, JR. No. 55533 REGISTERED PROFESSIONAL ENGINEER
COMMONWEALTH OF MASSACHUSETTS
08/02/2021

MARK	DATE	DESCRIPTION

Scale	NTS
Date	AUGUST 2021
Job No.	307-2002
Designed by	PS
Drawn by	PS
Checked by	JT/BA
Approved by	JT

THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

RED MILL ROAD WATER TREATMENT PLANT
TOWN OF EASTON, MA

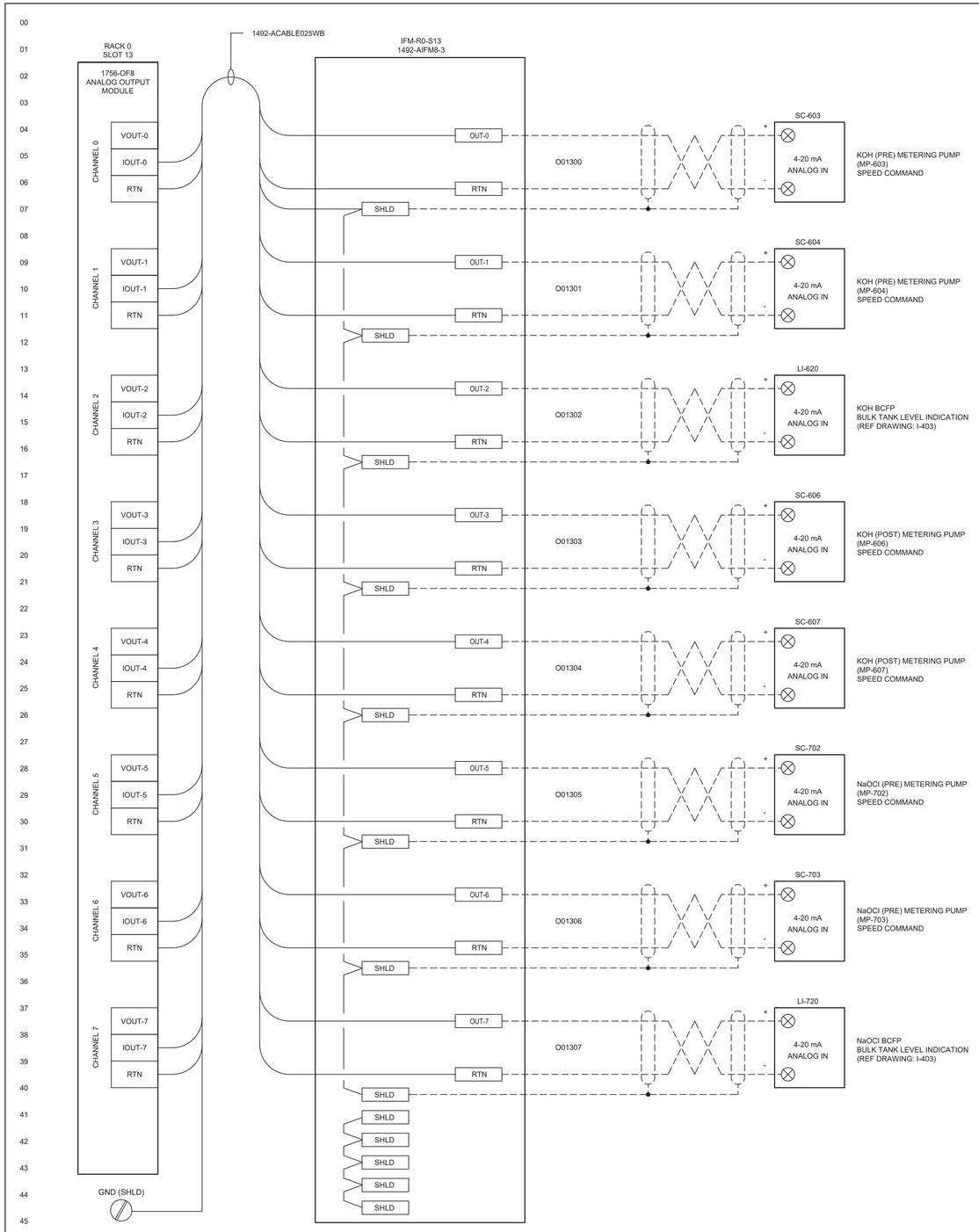
MAIN CONTROL PANEL ANALOG INPUTS & OUTPUTS

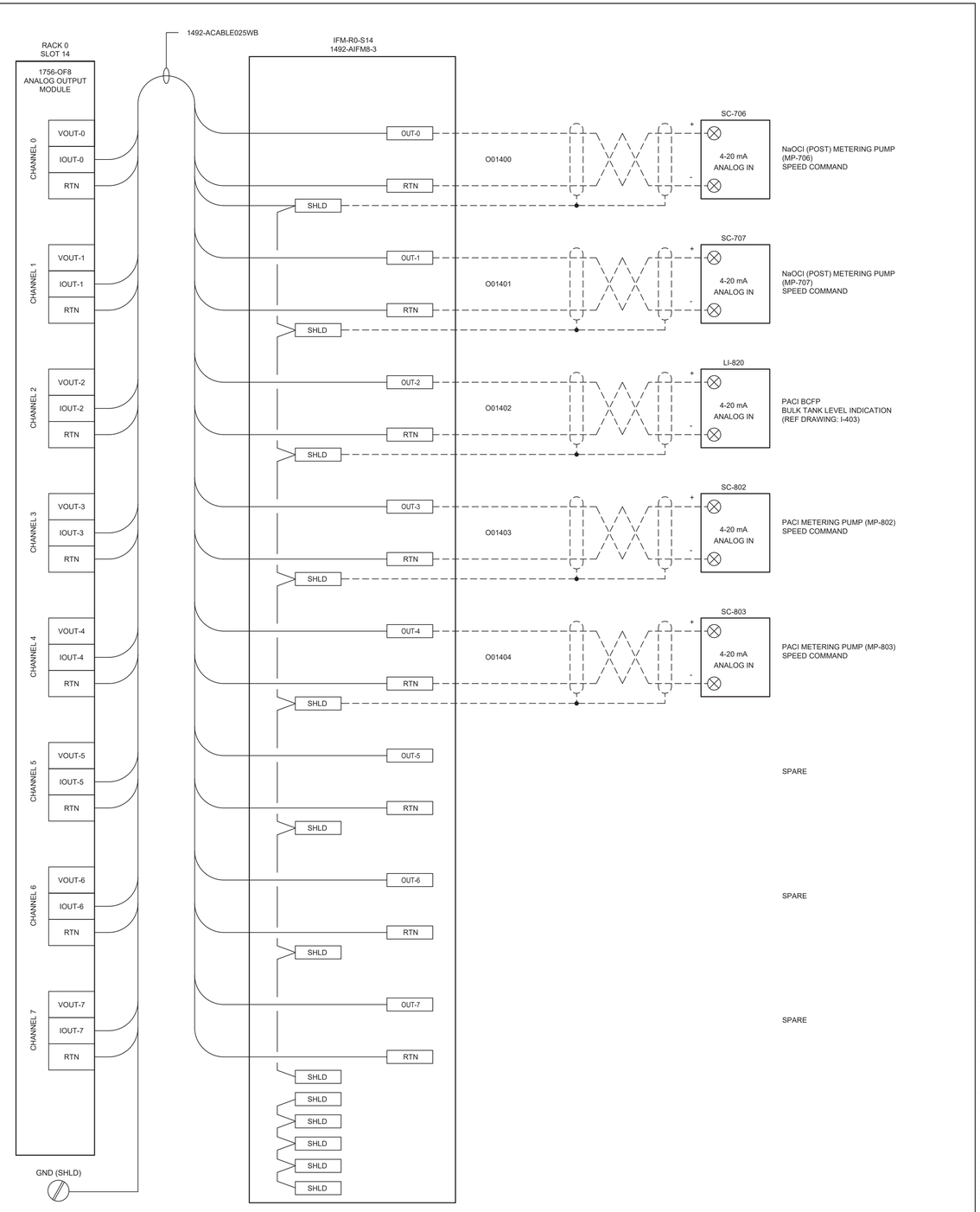
FOR CONSTRUCTION

Sheet No.

I-126

Drawing file: \\woodardcurran.net\shared\Projects\02226041.09 Easton - New Filter Plant\wip\Drawings\I&C\02226041.09-I101-I1XX.dwg Plot Date: Aug 18,2021-10:47am





TOWN OF EASTON MASS INCORPORATED 1725

ENVIRONMENTAL PARTNERS

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COMMITMENT & INTEGRITY DRIVE RESULTS

COMMONWEALTH OF MASSACHUSETTS
JOHN GREENLEAF TRINWARD, JR.
No. 55533
REGISTERED PROFESSIONAL ENGINEER

08/02/2021

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RED MILL ROAD WATER TREATMENT PLANT
TOWN OF EASTON, MA

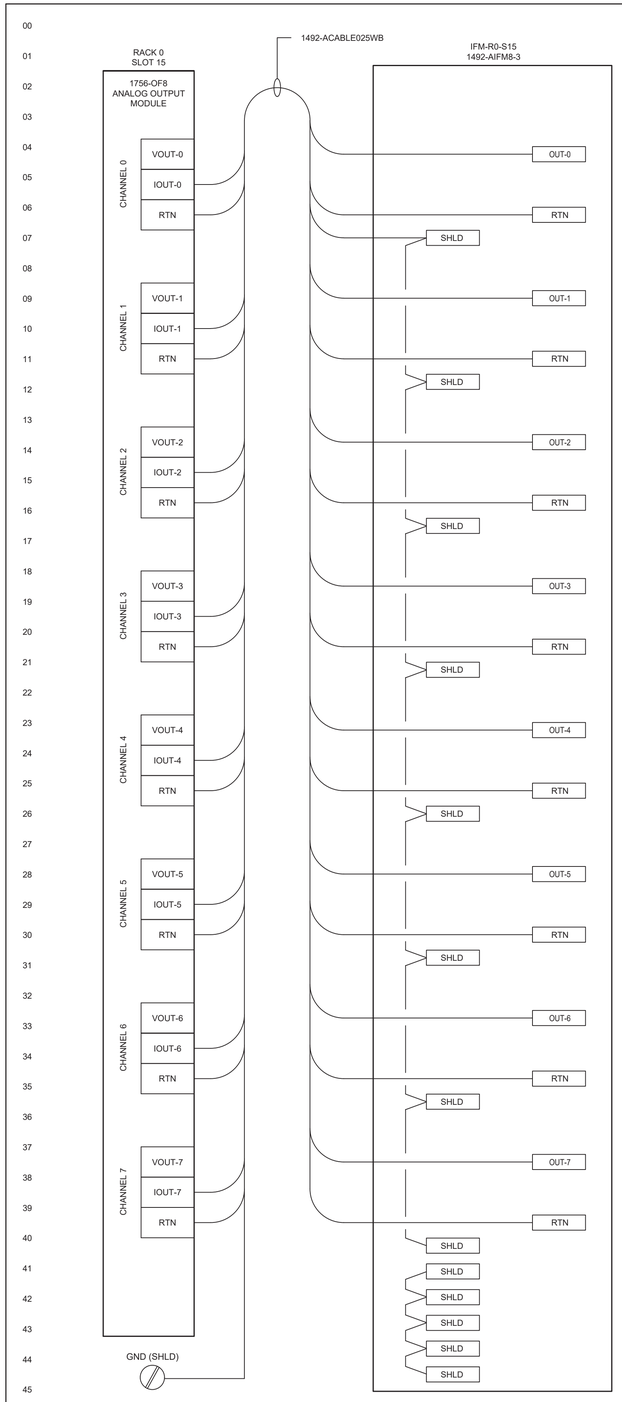
MAIN CONTROL PANEL ANALOG OUTPUTS I

FOR CONSTRUCTION

Sheet No.

I-127

Drawing file: \\woodardcurran.net\shared\Projects\02226041 (9) Easton - New Filter Plant\wip\Drawings\I&C\02226041.09-1101-I1XX.dwg Plot Date: Aug 18,2021-10:47am



SPARE

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COMMITMENT & INTEGRITY DRIVE RESULTS

COMMONWEALTH OF MASSACHUSETTS
JOHN GREENLEAF TRINWARD, JR.
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REGISTERED PROFESSIONAL ENGINEER

08/02/2021

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RED MILL ROAD WATER TREATMENT PLANT
TOWN OF EASTON, MA

MAIN CONTROL PANEL ANALOG OUTPUTS II

FOR CONSTRUCTION

Sheet No.

I-128

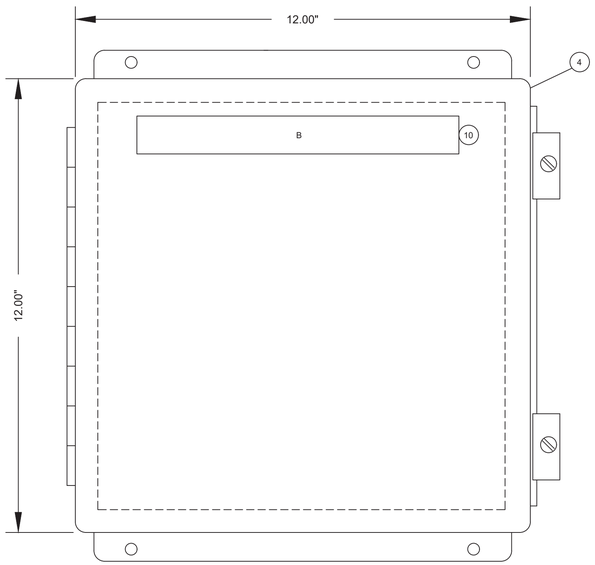
Drawing file: \\woodardcurran.net\shared\Projects\02226041.09 Easton - New Filter Plant\wip\Drawings\I&C\02226041.09-I101-I1XX.dwg Plot Date: Aug 18,2021-10:47am

BILL OF MATERIAL

ITEM	QTY.	MANUFACTURER	PART NUMBER	DESCRIPTION	DESIGNATION
1	1	PEPPERL & FUCHS	KFD2-SR2-EX2.W	SWITCH ISOLATOR WITH RELAY OUTPUT	INTRINSIC BARRIER ISB1
2					
3	1	HOFFMAN	A12P12	BACK PANEL, 10.75" x 10.88"	
4	1	HOFFMAN	A-1212CHNF	ENCLOSURE, NEMA 4, 12.00" x 12.00" x 6.00"	
5	6FT	PANDUIT	F1X4IB6	WIRING DUCT, 1"W x 4"H, INTRINSIC BLUE	
6	6FT	PANDUIT	C1IB6	WIRING DUCT COVER, 1"W, INTRINSIC BLUE	
7	6FT	PANDUIT	F1X4LG6	WIRING DUCT, 1"W x 4"H, LIGHT GRAY	
8	6FT	PANDUIT	C1LG6	WIRING DUCT COVER, 1"W, LIGHT GRAY	
9	1	ALLEN BRADLEY	199-DR1	DIN RAIL, STANDARD	
10	3	PANEL FABRICATOR		NAMEPLATE, PHENOLIC, ENGRAVED	SEE SCHEDULE THIS SHEET
11					

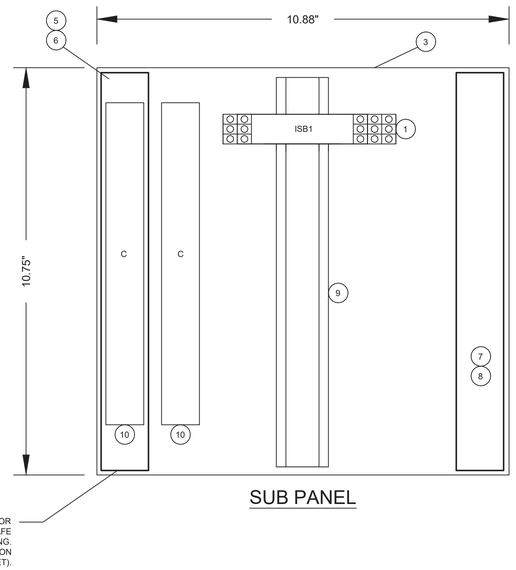
NAMEPLATE SCHEDULE

ITEM	DIMENSION	DESCRIPTION	FABRICATION COMMENTS
B	8.50" x 1"	INTRINSIC BARRIER PANEL	NAMEPLATE TO BE BLACK WITH WHITE LETTERS WITH ADHESIVE BACK. TEXT SIZE TO BE .375. QUANTITY: 1
C	8.50" x 1"	INTRINSICALLY SAFE WIRING	NAMEPLATE TO BE YELLOW WITH BLACK LETTERS WITH ADHESIVE BACK. TEXT SIZE TO BE .375. QUANTITY: 2



ENCLOSURE

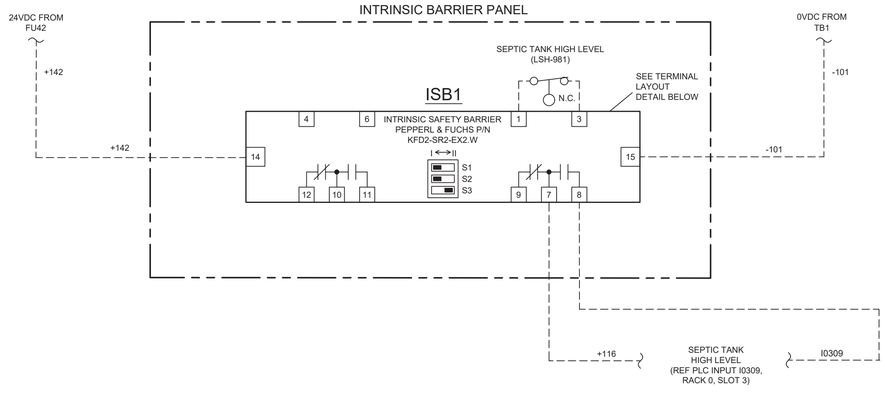
LOCATION SHALL BE VERIFIED BY CONTRACTOR AND APPROVED BY ENGINEER.

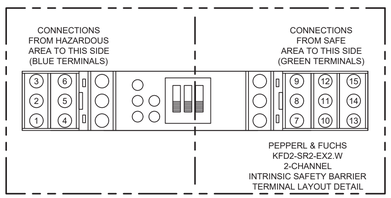


SUB PANEL

WIREWAY (BLUE) FOR INTRINSICALLY SAFE FIELD WIRING. (SEE "FIELD NOTE" #6 ON LEGEND & NOTES SHEET).

INTRINSIC BARRIER ISB1 - DIGITAL CIRCUITS





TOWN OF EASTON MASS. INCORPORATED 1725

ENVIRONMENTAL PARTNERS

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COMMONWEALTH OF MASSACHUSETTS
JOHN GREENLEAF TRINWARD, JR.
No. 55533
REGISTERED PROFESSIONAL ENGINEER
08/02/2021

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RED MILL ROAD WATER TREATMENT PLANT
TOWN OF EASTON, MA

MAIN CONTROL PANEL INTRINSIC SAFETY BARRIER

FOR CONSTRUCTION

Sheet No.

I-129

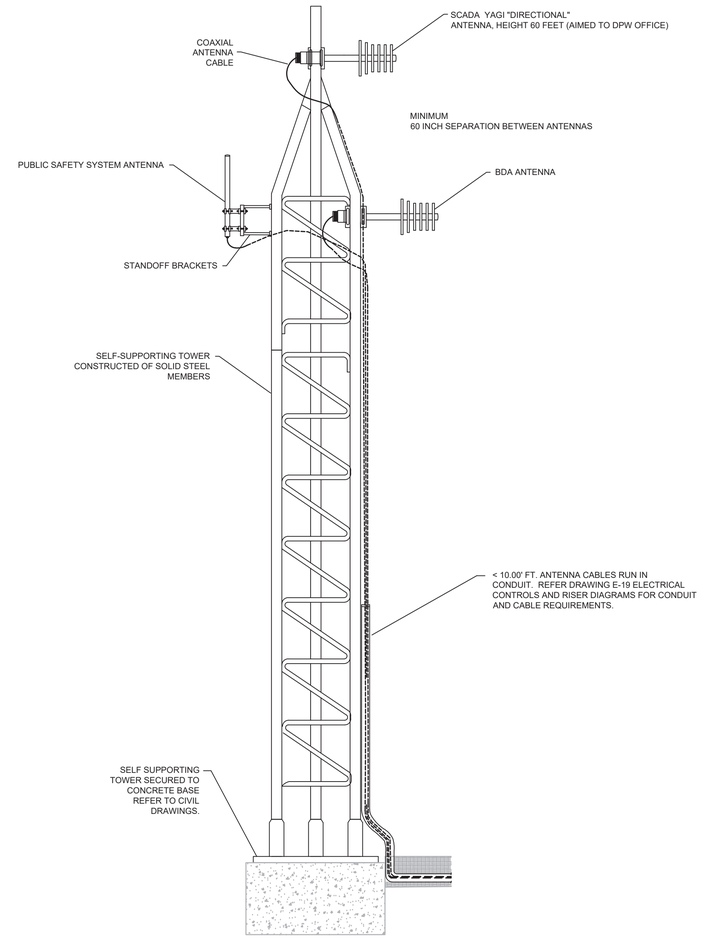
Drawing file: \\woodardcurran.net\shared\Projects\02260041.09 Easton - New Filter Plant\wip\Drawings\I&C\02260041.09-I101-I1XX.dwg Plot Date: Aug 18,2021-10:47am

ANTENNA INSTALLATION BILL OF MATERIALS

ITEM	QTY.	MANUFACTURER	PART NUMBER	DESCRIPTION	DESIGNATION
1	1	MOBILE MARK	Y3343D-C	ANTENNA, YAGI DIRECTIONAL, 450-470MHz, 7db GAIN	SCADA COMMUNICATIONS
2					
3					
4					
5					

ANTENNA INSTALLATION & GROUNDING NOTES:

1. ANTENNAS SHALL BE SECURED TO TOWER AS SHOWN. ANTENNA CABLE CONNECTION AT THE ANTENNAS SHALL BE WRAPPED IN "ALL-WEATHER VINYL INSULATING TAPE. (3M PART #: #SUPER 33+ OR APPROVED EQUAL). ANTENNA CABLE SHALL RUN THE LENGTH OF TOWER AND BE SECURED TO TOWER WITH UV RESISTANT CABLE MOUNTS EVERY 6 FEET. AT 10 FEET ABOVE GRADE CABLE SHALL BE ROUTED INSIDE 1 1/2" GRS CONDUIT.
2. REFER TO ELECTRICAL DRAWINGS FOR GROUNDING REQUIREMENTS.
3. REFER TO ELECTRICAL DRAWINGS AND SHEET C-7 FOR EXTERIOR UTILITY LIMITS OF WORK.
4. FIELD VERIFY SITE CONDITIONS AND MAKE NECESSARY ADJUSTMENTS PRIOR TO AND DURING INSTALLATION.



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RED MILL ROAD WATER TREATMENT PLANT
TOWN OF EASTON, MA

ANTENNA INSTALLATION AND MOUNTING DETAILS

FOR CONSTRUCTION

Sheet No.

I-130

Drawing file: \\woodardcurran.net\shared\Projects\02260411.09 Easton - New Filter Plant\wip\Drawings\I&C\02260411.09-1101-I1XX.dwg Plot Date: Aug 18,2021-10:47am

BILL OF MATERIAL

ITEM	QTY.	MANUFACTURER	PART NUMBER	DESCRIPTION	DESIGNATION
			****ENCLOSURE & RELATED EQUIPMENT****		
1	1	HOFFMAN	A48P36	BACK PANEL, 33.00" X 33.00"	SUB PANEL
2	1	HOFFMAN	A483612LP	ENCLOSURE, NEMA 12, 48.00" X 36.00" X 12.00"	ENCLOSURE
3					
4	1	HOFFMAN	LEDA2M35	ENCLOSURE LIGHT KIT, LED, MAG. MOUNT, MOITION SENSOR	
5	1	HOFFMAN	LEDA20C	ENCLOSURE LIGHT POWER CORD ASSEMBLY	
6					
7	1	FEDERAL SIGNAL	450-024-31	VIBRATONE HORN	
8	1	AUTOMATION DIRECT	EXC2071-24R	AUDILE ALARM BUZZER	
9					
10	1	HOFFMAN	ADP2	ENCLOSURE LITERATURE POCKET	
11					
12					
			****PLC & RELATED EQUIPMENT****		
16	1	ALLEN BRADLEY	5069-L306ER	COMPACTLOGIX 5380 CONTROLLER, 600KB	PLC
17	2	ALLEN BRADLEY	5069-IB16	5069 COMPACT I/O 24V DC INPUT MODULE, 16 PT.	PLC, SLOTS 1 & 2
18	1	ALLEN BRADLEY	5069-OB8	5069 COMPACT I/O RELAY OUTPUT MODULE, 8 PT.	PLC, SLOT 3
19	2	ALLEN BRADLEY	5069-IF8	5069 COMPACT I/O ANALOG INPUT MODULE, 8 CHANNEL	PLC, SLOTS 4 & 5
20	1	ALLEN BRADLEY	5069-OF4	5069 COMPACT I/O ANALOG OUTPUT MODULE, 4 CHANNEL	PLC, SLOT 6
21	6	ALLEN BRADLEY	5069-RTB18-SCREW	5069 COMPACT I/O REMOVABLE TERMINAL BLOCKS	
22	1	ALLEN BRADLEY	5069-RTB64-SCREW	5069 CONTROLLER REMOVABLE TERMINAL BLOCK (KIT)	INCLUDES MOD & SA POWER TERMINAL BLOCKS
23					
24					
25					
26					
27					
28					
29					
30					
			****OPERATOR INTERFACE EQUIPMENT****		
36	1	ALLEN BRADLEY	2711P-T10C21D85	PANELVIEW PLUS 7 STANDARD, 10-INCH TOUCH SCREEN	OPERATOR INTERFACE (OIT)
37	1	ALLEN BRADLEY	800H-FRXT6A1	MUSHROOM HEAD E-STOP PUSHBUTTON, 1 N.O, 1 N.C.	SYSTEM STOP
38	1	ALLEN BRADLEY	800H-W373	LEGEND PLATE, "SYSTEM STOP"	SYSTEM STOP
39					
40					
41					
42					
43					
44					
45					
46					
47					
			****TERMINAL BLOCKS & RELATED EQUIPMENT****		
50	73	ALLEN BRADLEY	1492-JD3	TERMINAL BLOCK 2 TIER	TB1, TB2
51	29	ALLEN BRADLEY	1492-EBJD3	TERMINAL BLOCK END BARRIER, 2 TIER	TB1, TB2
52	6	ALLEN BRADLEY	1492-EAJ35	TERMINAL BLOCK END ANCHOR	TB1, TB2, & PLC MOUNTING
53	4	ALLEN BRADLEY	1492-CJJ5-10	TERMINAL BLOCK JUMPER, 10 POLE	TB1
54	25	ALLEN BRADLEY	1492-JG3	TERMINAL BLOCK, GROUNDING	TB2
55	2	ALLEN BRADLEY	199-DR1	DIN RAIL, STANDARD	PLC, & MISC. COMPONENT MOUNTING
56	2	ALLEN BRADLEY	1492-DR6	DIN RAIL, RAISED	TB1, TB2
57	6	ALLEN BRADLEY	1492-H4	FUSED TERMINAL BLOCK, NEON INDICATOR	FU1-FU6
58	15	ALLEN BRADLEY	1492-H5	FUSED TERMINAL BLOCK, LED INDICATOR	FU7-FU21
59	2	ALLEN BRADLEY	1492-N37	FUSED TERMINAL BLOCK END BARRIER	FU6, FU21
60	2	ALLEN BRADLEY	1492-N49	FUSE BLOCK SIDE JUMPERS 10 POLE	FU1-FU6, FU7-FU21
61	2	ALLEN BRADLEY	1492-SJS	FUSE BLOCK SIDE JUMPER INSULATING SLEEVE	FU1-FU6, FU7-FU21
62	1	ALLEN BRADLEY	1492-M5X12	GROUNDING TERMINAL BLOCK BLANK MARKING TAGS, 144 CT.	TB2
63	1	ALLEN BRADLEY	1492-M5X8	TERMINAL BLOCK BLANK MARKING TAGS, 2 TIER, 144 CT.	TB1, TB2
64	1	ALLEN BRADLEY	1492-MS8X12	FUSE BLOCK BLANK MARKING TAGS, 100 CT.	FU1-FU21
65	1	ALLEN BRADLEY	700-HK36A1-4	RELAY, SPDT, 120VAC COIL	PFR
66	6	ALLEN BRADLEY	700-HK36Z24-4	RELAY, SPDT, 24VDC COIL	CR0-CR5
67	7	ALLEN BRADLEY	700-HN121	RELAY SOCKET	PFR, CR0-CR5
68					
69					
70	1	ALLEN-BRADLEY	1489-M1C150	CIRCUIT BREAKER, 15AMP, SINGLE POLE	CB1
71					
72					
73	8	BUSSMANN	MDL-3-R	FUSE 3A, 250V TIME DELAY	FU5, FU6, FU7, FU10, PLUS SPARES
74	15	BUSSMANN	AGC-1-R	FUSE, 1A, 250V, FAST ACTING	FU2, FU4, FU8-FU9, FU12-FU16 PLUS SPARES
75	5	BUSSMANN	AGC-3-R	FUSE, 3A, 250V, FAST ACTING	FU1, FU3-FU4, PLUS SPARES
76	5	BUSSMANN	AGC-5-R	FUSE, 5A, 250V, FAST ACTING	FU11, PLUS SPARES
77	5	BUSSMANN	AGC-2-R	FUSE, 2A, 250V, FAST ACTING	FU9, FU18, PLUS SPARES
78	5	BUSSMANN	AGC-1/4-R	FUSE, 0.25A, 250V, FAST ACTING	FU19, PLUS SPARES
79					
80	1	PHOENIX CONTACT	2905348	120VAC SURGE PROTECTOR	SUP1
81	3	ALLEN BRADLEY	4983-DD	ANALOG SURGE PROTECTOR	SUP2, SUP3, PLUS SPARE
82					
83	4	ALLEN BRADLEY	1492-J4	TERMINAL BLOCK 1 TIER	TB1 (120VAC POWER)
84	2	ALLEN BRADLEY	1492-JG4	TERMINAL BLOCK GROUNDING	TB1 (120VAC POWER)
85	2	ALLEN BRADLEY	1492-EBJ3	TERMINAL BLOCK END BARRIER, 1 TIER	TB1 (120VAC POWER)
86	1	ALLEN BRADLEY	1492-M6X12	TERMINAL BLOCK BLANK MARKING TAGS, 1 TIER, 120 CT.	TB1 (120VAC POWER)
87	2	ALLEN BRADLEY	1492-CJJ6-2	1-TIER TERMINAL BLOCK JUMPER, 2 POLE	TB1 (120VAC POWER)
88					
89					
			****WIREDUCT****		
93	6FT	PANDUIT	F1X4LG6	WIRING DUCT, 1"W x 4"H	
94	6FT	PANDUIT	C1LG6	WIRING DUCT COVER, 1"W	
95	12FT	PANDUIT	F1.5X4LG6	WIRING DUCT, 1.5"W x 4"H	
96	12FT	PANDUIT	C1.5LG6	WIRING DUCT COVER, 1.5"W	
97	6FT	PANDUIT	F2X4LG6	WIRING DUCT, 2"W x 4"H	
98	6FT	PANDUIT	C2LG6	WIRING DUCT COVER, 2"W	

ITEM	QTY.	MANUFACTURER	PART NUMBER	DESCRIPTION	DESIGNATION
			****WIREDUCT (CONT.)****		
99					
100					
101					
102					
103					
104					
			****HIGH VOLTAGE RELATED EQUIPMENT****		
108					
109					
110					
111					
112					
113					
114					
115					
116					
117					
118					
119					
120					
121					
122					
123					
124					
125					
126					
			****POWER SUPPLIES****		
135	1	CISCO	PWR-IE65W-PC-DC	POE POWER SUPPLY, 24VDC TO 52VDC CONVERTER, 65W	PWS2
136	2	SOLA	SDN 10-24-100C	24VDC POWER SUPPLY, 10 AMP	PWS1A, PWS1B
137	1	SOLA	SDN 2.5-20RED	24VDC REDUNDANCY MODULE	RM1
138	1	SOLA	SDU 10-24	DC POWER MODULE	PWM1
139	1	SOLA	SDU 24-BAT	BATTERY MODULE	BM
140	1	SOLA	SDU 24EXTBCR	BATTERY MODULE CABLE	
141	1	AUTOMATION DIRECT	PSP05-DC24-5	DC TO DC CONVERTER, 18-75VDC INPUT, 5VDC OUTPUT	PWS3
142	1	AUTOMATION DIRECT	PSP12-DC24-2	DC TO DC CONVERTER, 18-75VDC INPUT, 12VDC OUTPUT	PWS4
			****COMMUNICATIONS****		
143					
144					
145					
146	2	BLACK BOX	EVNSL641-0003	CAT5E ETHERNET PATCH CABLE, 3 FT.	SEE COMMUNICATIONS
147	1	BLACK BOX	EVNSL641-0010	CAT5E ETHERNET PATCH CABLE, 10 FT.	SEE COMMUNICATIONS
148					
149					
150					
151	1	CISCO	IE-1000-4T1T-LM	4 COPPER PORTS, 2 SFP SLOTS, LITE SOFTWARE	SCADA ETHERNET SWITCH
152	1	CISCO	IE-1000-4P2S-LM	4 POE COPPER PORTS, 2 SFP SLOTS, LITE SOFTWARE	SECURITY ETHERNET SWITCH
153					
154					
155	4	CISCO	GLC-LX-SM-RGD	SINGLEMODE SFP MODULE	SFP MODULES, PLUS SPARES
156					
157					
158					
159					
160					
161					
162					
163					
			****MISCELLANEOUS PANEL EQUIPMENT****		
164	1	PANDUIT	UGB2/0-414-6	GROUND BAR	
165					
166	1	PANEL FABRICATOR		NAMEPLATE, PHENOLIC, ENGRAVED	SEE SCHEDULE ON EQUIPMENT LAYOUT
167					
168					
169					
170					
171					
172					
173					
174					
175	1	EMEDCO	QS3743	WARNING LABEL "ARC FLASH AND SHOCK HAZARD"	
176	1	EMEDCO	SQS110	WARNING LABEL "DEVICE POWERED FROM SEVERAL SOURCES"	
177					
178					
179					

NOTE:
THIS DRAWING SET REPRESENTS A TYPICAL DESIGN FOR THE FOLLOWING SITES:

-WELL 3
-WELL 5

QUANTITIES SHOWN ON BILL OF MATERIAL REPRESENT ONE SITE.

TOWN OF EASTON MASS INCORPORATED 1725

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RED MILL ROAD WATER TREATMENT PLANT
TOWN OF EASTON, MA

WELL 3 AND 5 CONTROL PANEL BILL OF MATERIAL

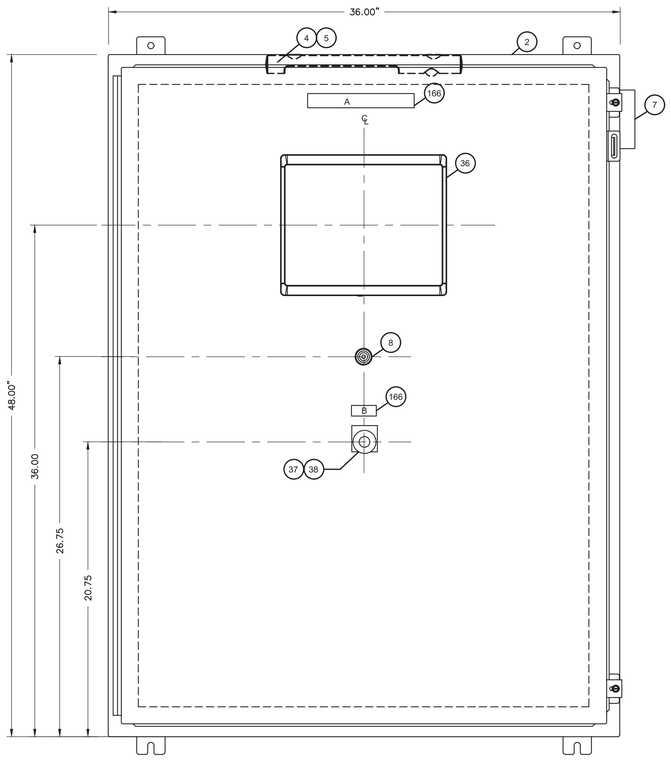
FOR CONSTRUCTION

Sheet No.

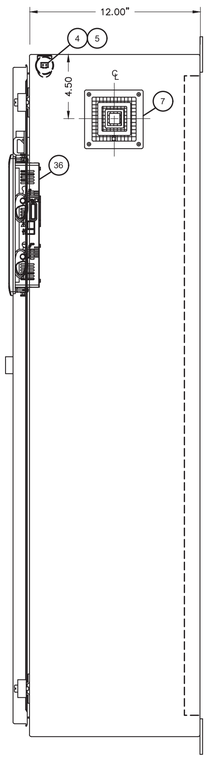
I-201

Drawing file: \\woodardcurran.net\shared\Projects\02260411.09 Easton - New Filter Plant\wip\Drawings\I&C\02260411.09-I201-I2XX.dwg Plot Date: Aug 18,2021-10:47am

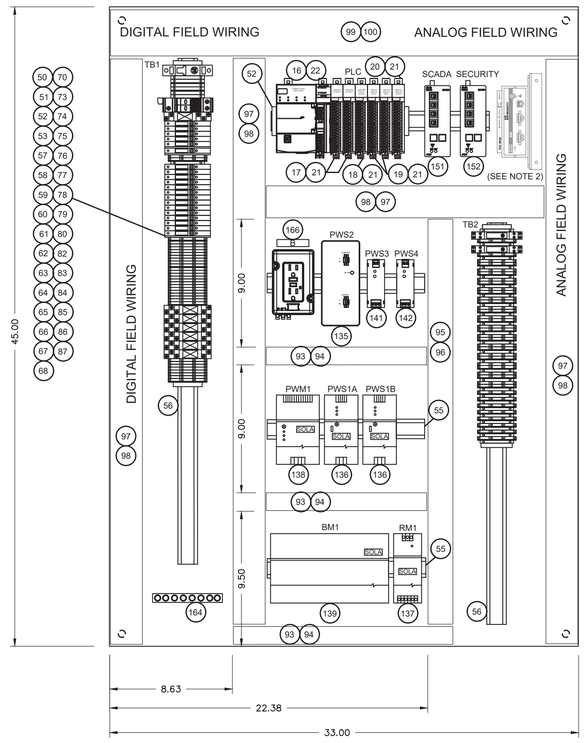
NAMEPLATE SCHEDULE			
ITEM	DIMENSION	DESCRIPTION	FABRICATION COMMENTS
A	5" x 1"	CONTROL PANEL	NAMEPLATE TO BE BLACK WITH WHITE LETTERS WITH ADHESIVE BACK. TEXT SIZE TO BE .375
B	2.25" x .50"	RECEPTACLE FOR PROGRAMMING ONLY	NAMEPLATE TO BE RED WITH WHITE LETTERS WITH ADHESIVE BACK. TEXT SIZE TO BE .125
C	2.25" x .50"	SYSTEM STOP	NAMEPLATE TO BE RED WITH WHITE LETTERS WITH ADHESIVE BACK. TEXT SIZE TO BE .125



ENCLOSURE FRONT VIEW



ENCLOSURE RIGHT SIDE VIEW



NEW SUB PANEL

INSTALLING CONTRACTOR NOTES:

1) CONTRACTOR SHALL INSTALL ENCLOSURE SO THAT BOTTOM OF CABINET IS APPROXIMATELY 36" FROM GROUND/FLOOR LEVEL TO FACILITATE USE OF OPERATOR INTERFACE (ITEM 36).
2) EXISTING RADIO TO BE RELOCATED FROM EXISTING CONTROL PANEL AND INSTALLED IN LOCATION SHOWN.

TOWN OF EASTON MASS INCORPORATED 1725

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COMMONWEALTH OF MASSACHUSETTS
JOHN GREENLEAF TRINWARD, JR.
No. 55533
REGISTERED PROFESSIONAL ENGINEER
08/02/2021

MARK	DATE	DESCRIPTION

Scale	NTS
Date	AUGUST 2021
Job No.	307-2002
Designed by	PS
Drawn by	PS
Checked by	JT/BA
Approved by	JT

THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

RED MILL ROAD WATER TREATMENT PLANT
TOWN OF EASTON, MA

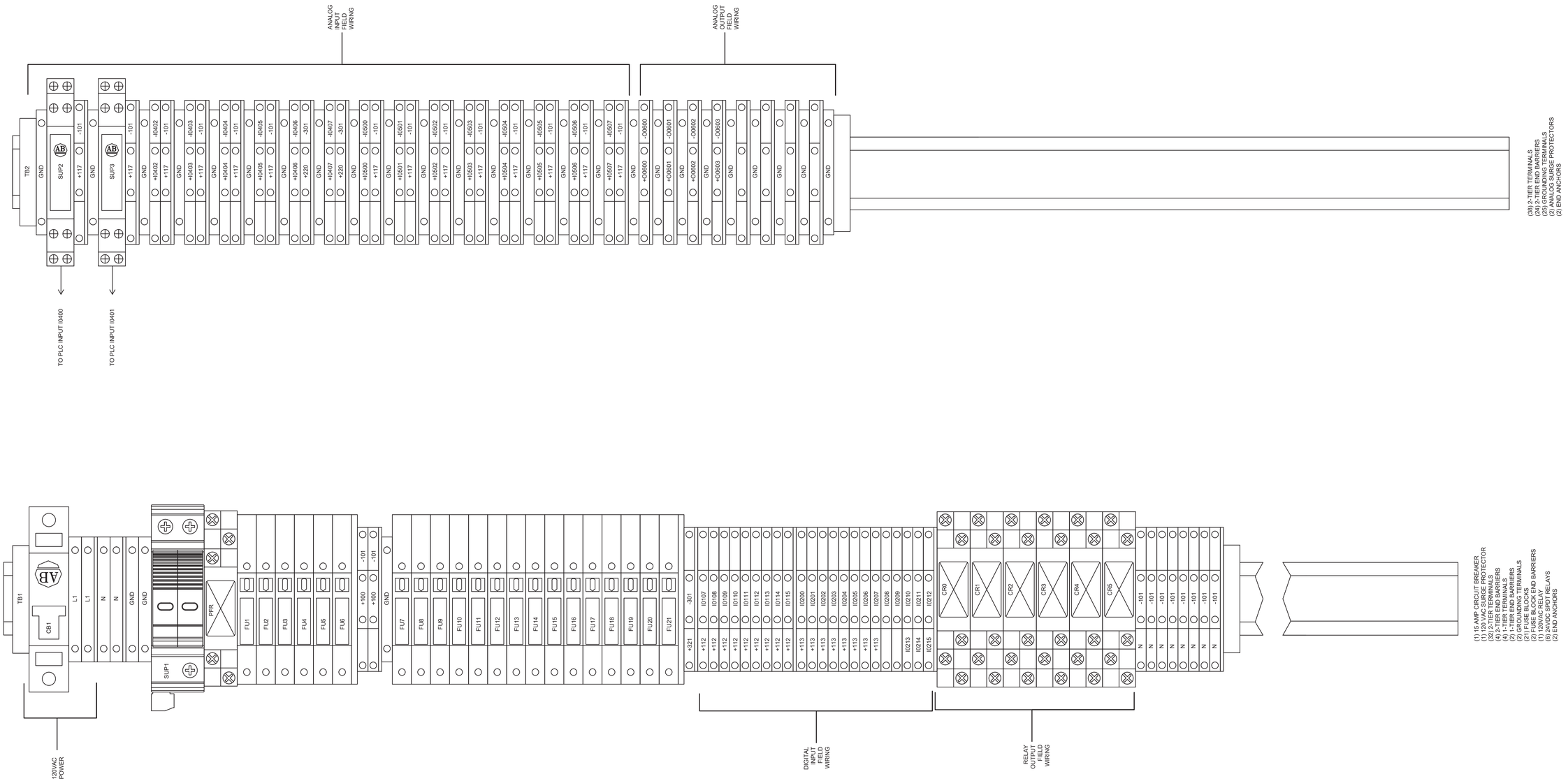
WELL 3 AND 5 CONTROL PANEL EQUIPMENT LAYOUT

FOR CONSTRUCTION

Sheet No.

I-202

Drawing file: \\woodardcurran.net\shared\Projects\02260410\9 Easton - New Filter Plant\wip\Drawings\8.CAD\2260410\9-I202-12XX.dwg Plot Date: Aug 18,2021-10:47am



TOWN OF EASTON MASS INCORPORATED 1725

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RED MILL ROAD WATER TREATMENT PLANT
TOWN OF EASTON, MA

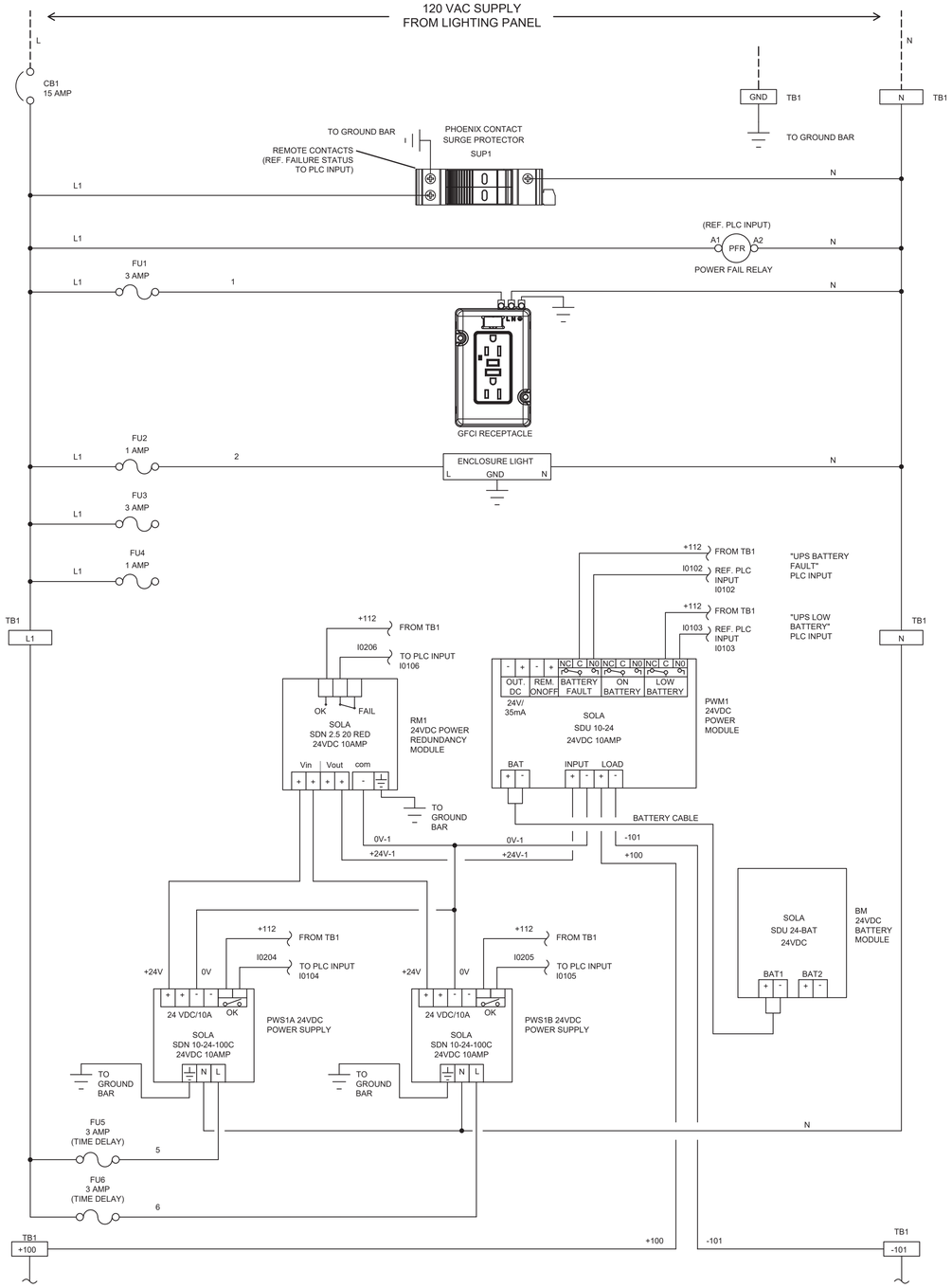
WELL 3 AND 5 CONTROL PANEL TERMINAL BLOCK LAYOUT

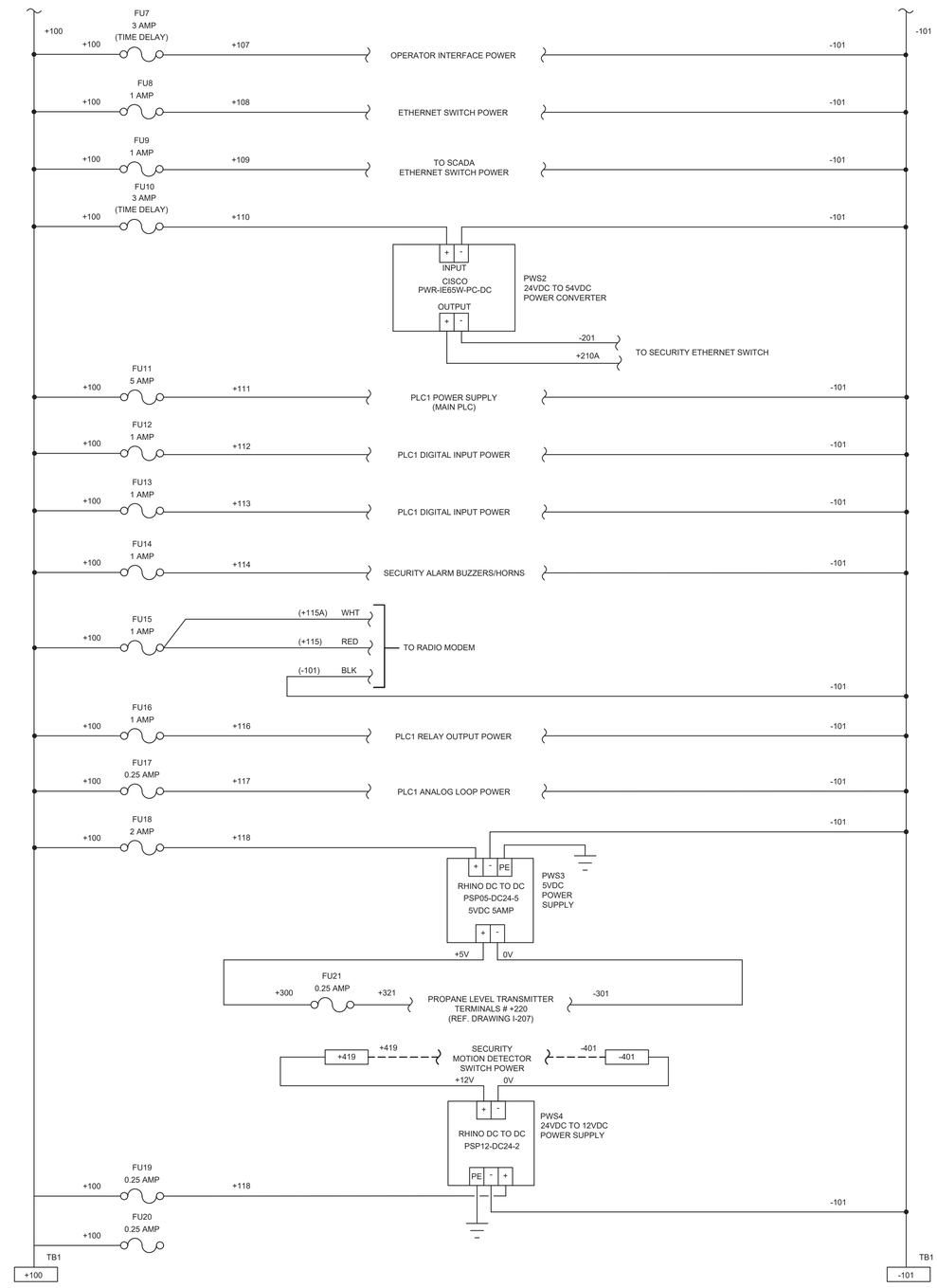
FOR CONSTRUCTION

Sheet No.

I-203

Drawing file: \\woodardcurran.net\shared\Projects\02226041.09 Easton - New Filter Plant\wip\Drawings\I&C\02226041.09-I201-I2XX.dwg Plot Date: Aug 18,2021-10:47am





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08/02/2021

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RED MILL ROAD WATER TREATMENT PLANT
TOWN OF EASTON, MA

WELL 3 AND 5 SCADA CONTROL PANEL POWER DISTRIBUTION

FOR CONSTRUCTION

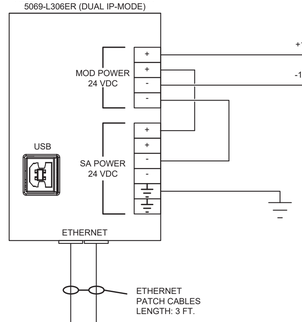
Sheet No.

I-204

Drawing file: \\woodardcurran.net\shared\Projects\02260041.00 Easton - New Filter Plant\wip\Drawings\I&C\02260041.00-I-201-I-2XX.dwg Plot Date: Aug 18,2021 - 10:47am

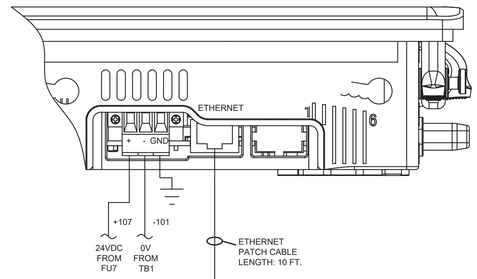
PLC1 PROCESSOR/POWER SUPPLY

ALLEN BRADLEY COMPACTLOGIX
5069-L306ER (DUAL IP-MODE)



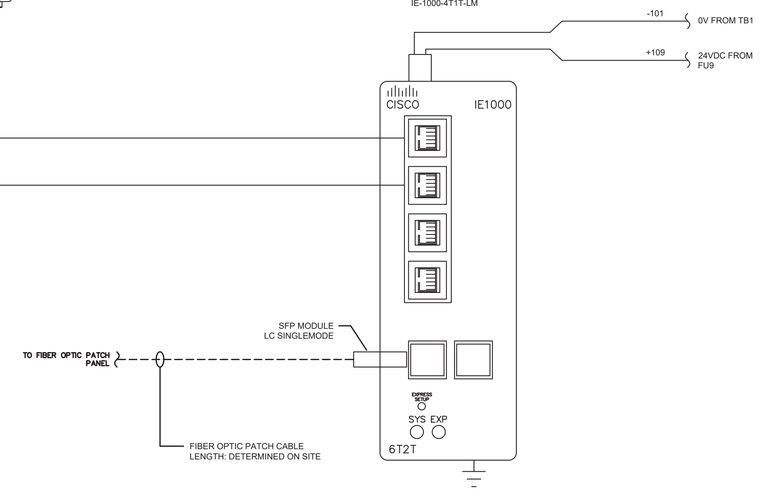
OPERATOR INTERFACE TERMINAL (OIT)

ALLEN BRADLEY PANELVIEW PLUS 7
2711P-T10C21D8S



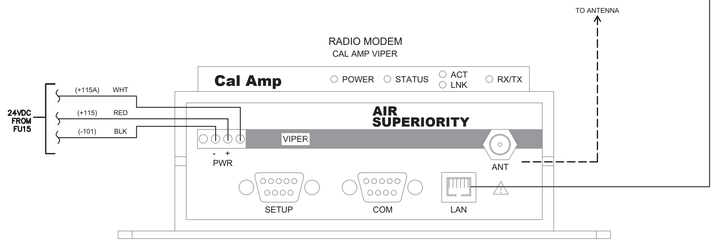
SCADA - ETHERNET SWITCH (MANAGED)

CISCO IE-1000
IE-1000-4T1T-LM



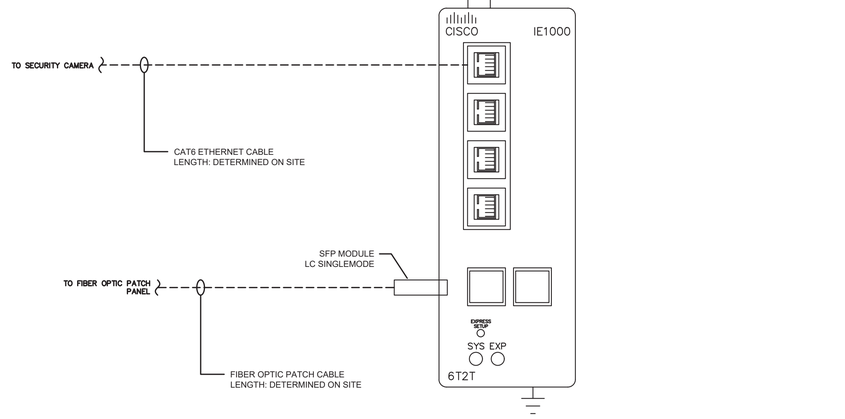
RADIO MODEM

CAL AMP VIPER



SECURITY - ETHERNET SWITCH (MANAGED) POE

CISCO IE-1000
IE-1000-4P2S-LM



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COMMONWEALTH OF MASSACHUSETTS
08/02/2021

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RED MILL ROAD WATER TREATMENT PLANT
TOWN OF EASTON, MA

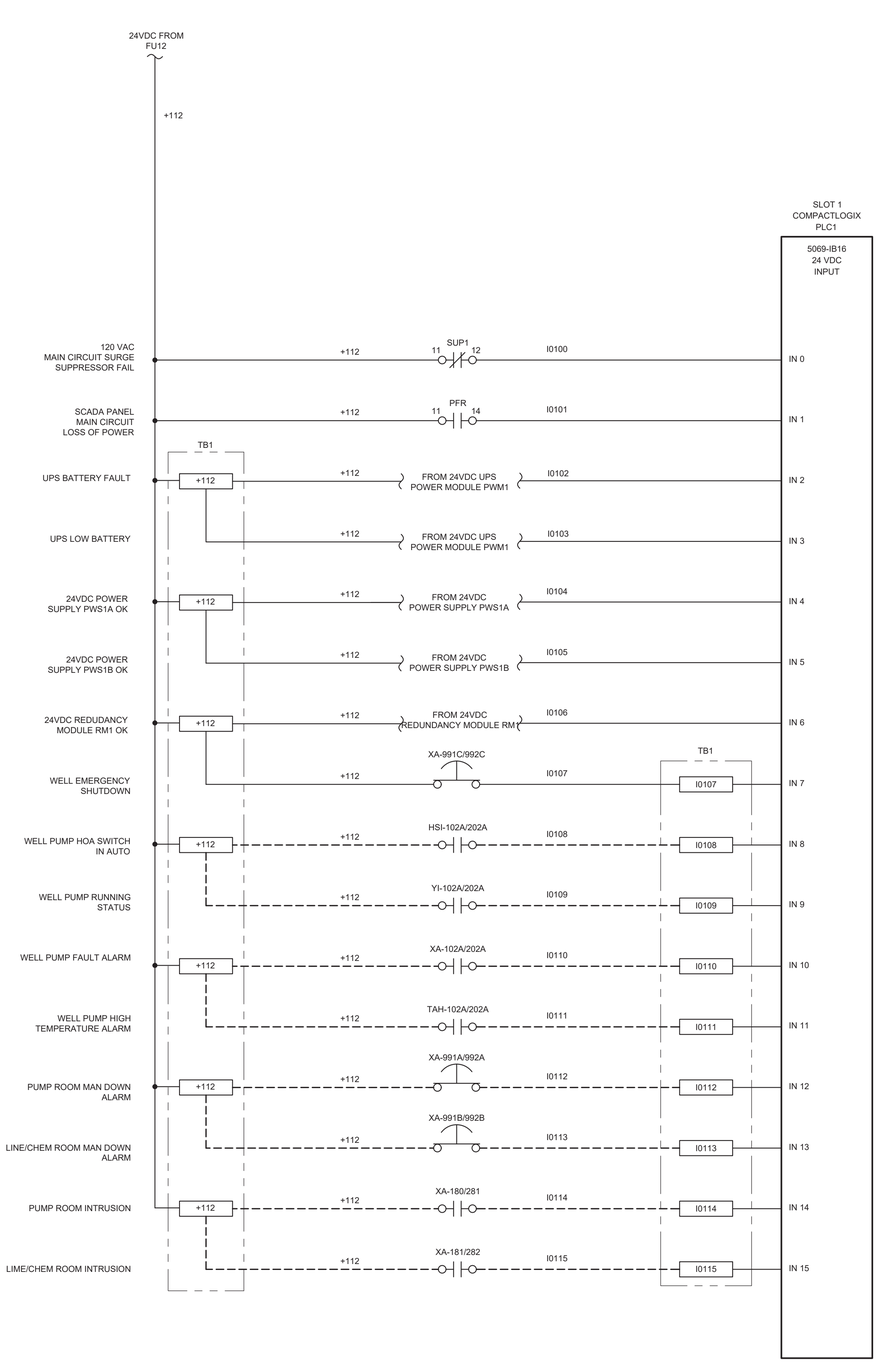
WELL 3 AND 5 CONTROL PANEL COMMUNICATIONS

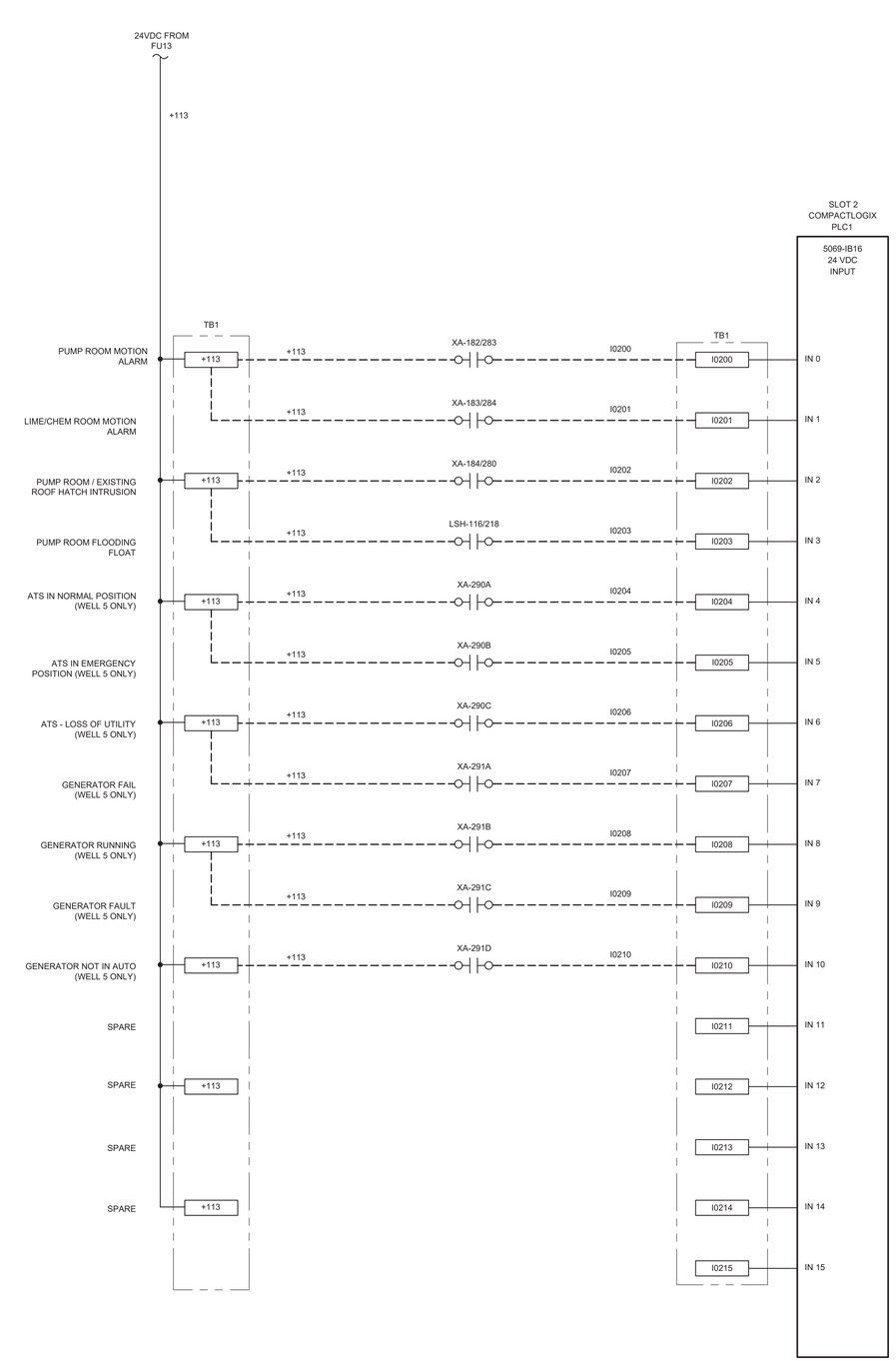
FOR CONSTRUCTION

Sheet No.

I-205

Drawing file: \\woodardcurran.net\shared\Projects\02226041.06 Easton - New Filter Plant\wip\Drawings\I&C\02226041.06-I-20X.dwg Plot Date: Aug 18,2021 - 10:47am





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COMMONWEALTH OF MASSACHUSETTS

08/02/2021

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RED MILL ROAD WATER TREATMENT PLANT
TOWN OF EASTON, MA

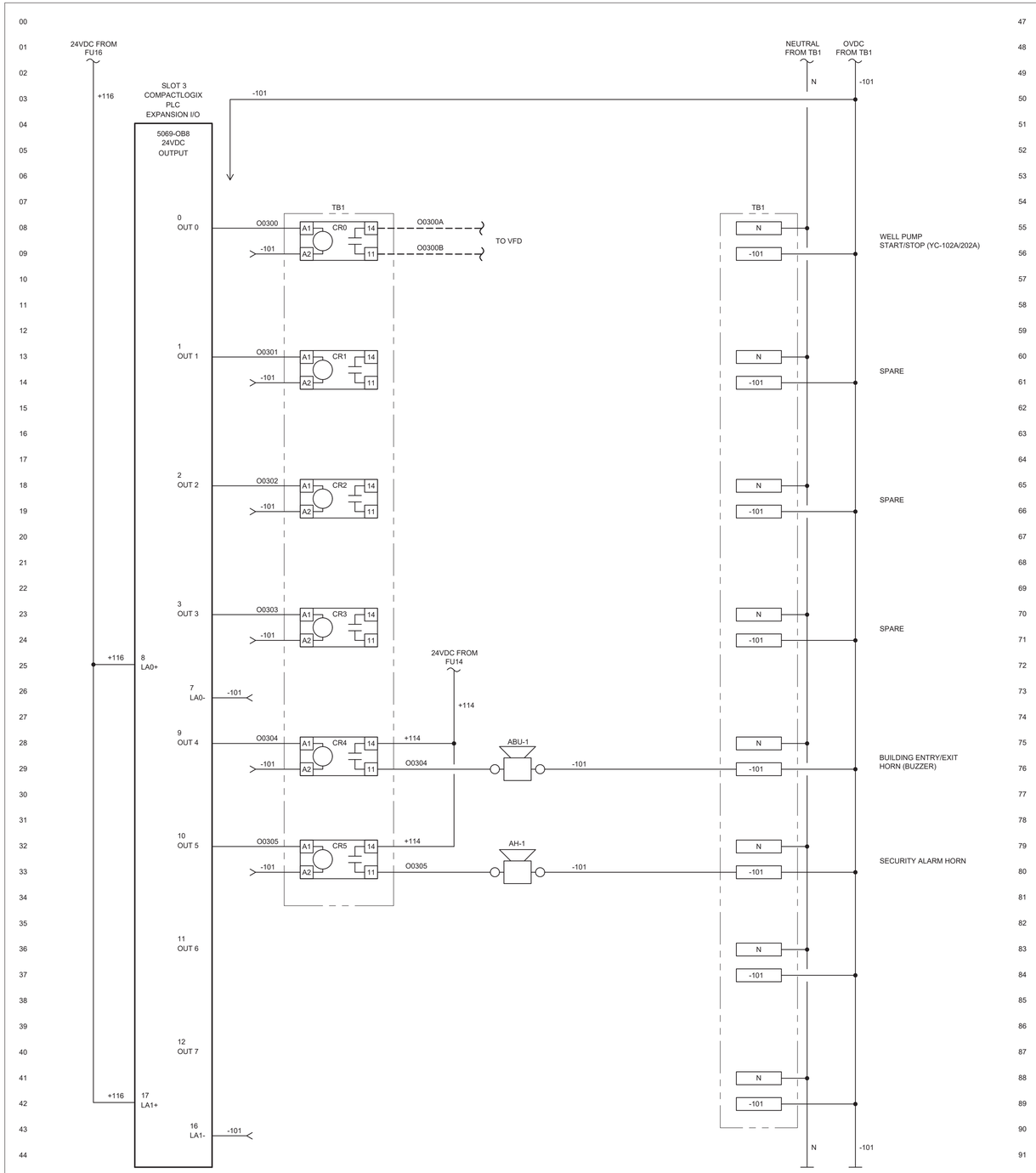
WELL 3 AND 5 CONTROL PANEL DIGITAL INPUTS

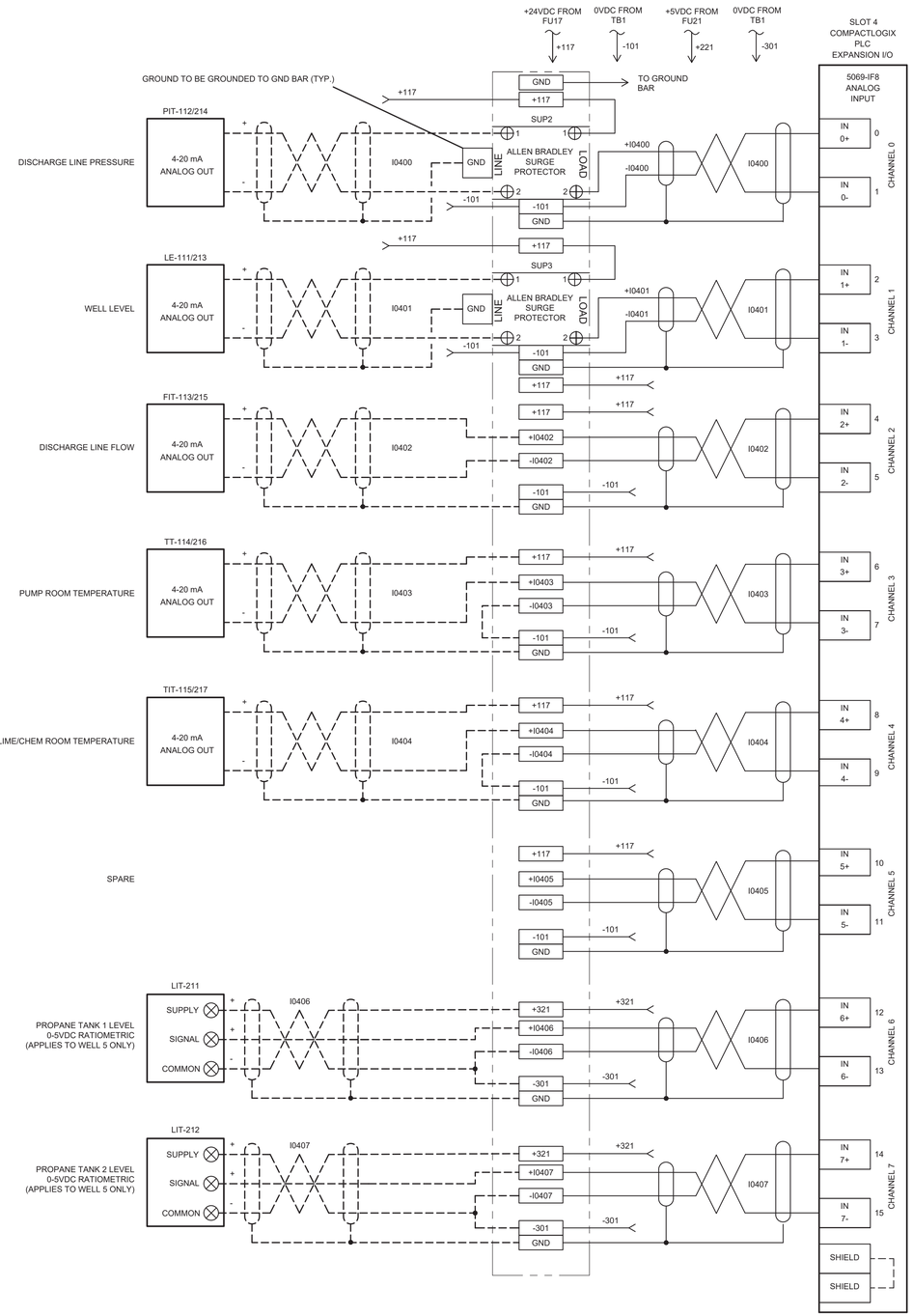
FOR CONSTRUCTION

Sheet No.

I-206

Drawing file: \\woodardcurran.net\shared\Projects\02226041.09 Easton - New Filter Plant\wip\Drawings\I&C\02226041.09-I201-I-2XX.dwg Plot Date: Aug 18,2021-10:47am





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JOHN GREENLEAF TRINWARD, JR.
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REGISTERED PROFESSIONAL ENGINEER
08/02/2021

MARK	DATE	DESCRIPTION

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Job No.	307-2002
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RED MILL ROAD WATER TREATMENT PLANT
TOWN OF EASTON, MA

WELL 3 AND 5 CONTROL PANEL DIGITAL OUTPUTS AND ANALOG INPUTS

FOR CONSTRUCTION

Sheet No.

I-207

Drawing file: \\woodardcurran.net\shared\Projects\30226041.09 Easton - New Filter Plant\wip\Drawings\I&C\30226041.09-I-207-I-2XX.dwg Plot Date: Aug 18,2021 - 10:47am

SPARE

SPARE

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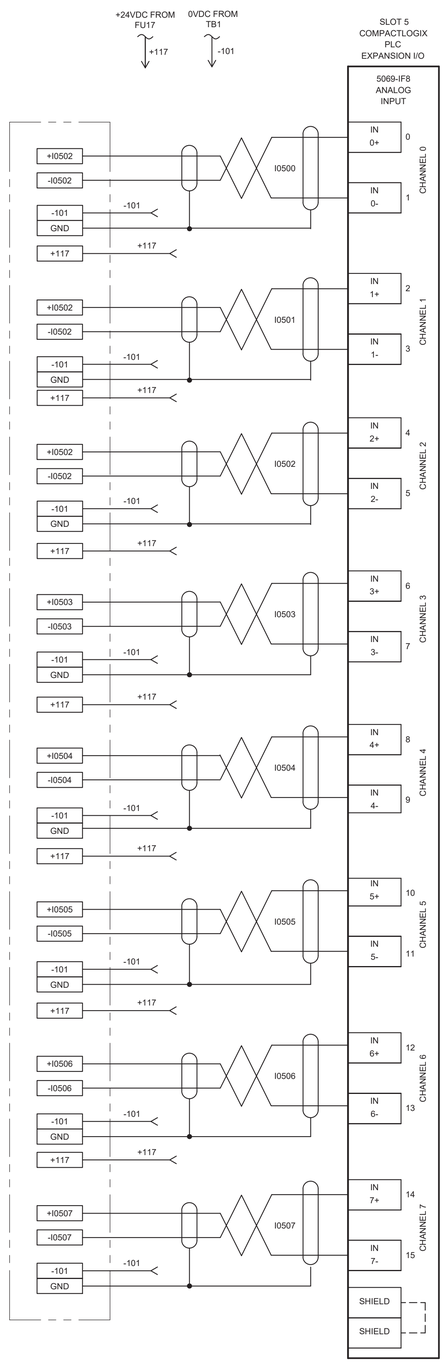

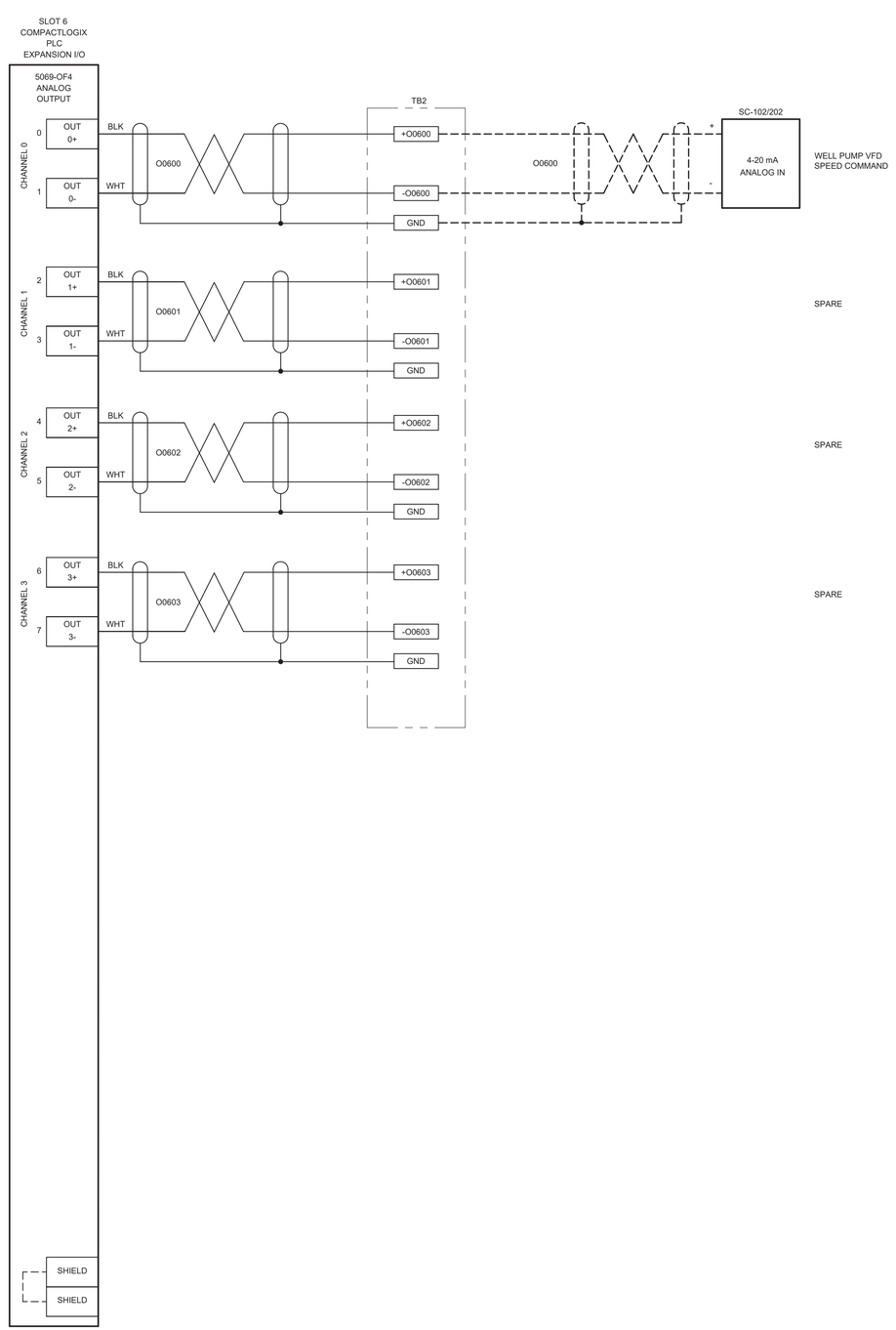

			Scale	NTS
			Date	AUGUST 2021
			Job No.	307-2002
			Designed by	PS
			Drawn by	PS
			Checked by	JT/BA
MARK	DATE	DESCRIPTION	Approved by	JT

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COMMONWEALTH OF MASSACHUSETTS

08/02/2021

RED MILL ROAD WATER TREATMENT PLANT
TOWN OF EASTON, MA

WELL 3 AND 5 CONTROL PANEL ANALOG INPUTS & OUTPUTS

FOR CONSTRUCTION

Sheet No.

I-208

Drawing file: \\woodardcurran.net\shared\Projects\02226041.09 Easton - New Filter Plant\wip\Drawings\I&C\02226041.09-I201-I2XX.dwg Plot Date: Aug 18,2021-10:47am

BILL OF MATERIAL

ITEM	QTY.	MANUFACTURER	PART NUMBER	DESCRIPTION	DESIGNATION
			****ENCLOSURE & RELATED EQUIPMENT****		
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
			****PLC & RELATED EQUIPMENT****		
16	1	ALLEN BRADLEY	5069-L306ER	COMPACTLOGIX 5380 CONTROLLER, 600KB	PLC
17	3	ALLEN BRADLEY	5069-IA16	5069 COMPACT I/O 120V AC INPUT MODULE, 16 PT.	PLC, SLOTS 1, 2 & 3
18	1	ALLEN BRADLEY	5069-IB16	5069 COMPACT I/O 24V DC INPUT MODULE, 16 PT.	PLC, SLOT 4
19	2	ALLEN BRADLEY	5069-OW4I	5069 COMPACT I/O ISOLATED RELAY OUTPUT MODULE, 4 PT.	PLC, SLOTS 5 & 6
20	1	ALLEN BRADLEY	5069-IF8	5069 COMPACT I/O ANALOG INPUT MODULE, 8 CHANNEL	PLC, SLOT 7
21	1	ALLEN BRADLEY	5069-OF4	5069 COMPACT I/O ANALOG OUTPUT MODULE, 4 CHANNEL	PLC, SLOT 8
22	8	ALLEN BRADLEY	5069-RTB18-SCREW	5069 COMPACT I/O REMOVABLE TERMINAL BLOCKS	
23	1	ALLEN BRADLEY	5069-RTB64-SCREW	5069 CONTROLLER REMOVABLE TERMINAL BLOCK (KIT)	INCLUDES MOD & SA POWER TERMINAL BLOCKS
24					
25					
26					
27					
28					
29					
30					
			****OPERATOR INTERFACE EQUIPMENT****		
36	1	ALLEN BRADLEY	2711P-T10C21D8S	PANELVIEW PLUS 7 STANDARD, 10-INCH TOUCH SCREEN	OPERATOR INTERFACE (OIT)
37	1	ALLEN BRADLEY	800H-FRXT6A1	MUSHROOM HEAD E-STOP PUSHBUTTON, 1 N.O, 1 N.C.	SYSTEM STOP
38	1	ALLEN BRADLEY	800H-W373	LEGEND PLATE, "SYSTEM STOP"	SYSTEM STOP
39					
40					
41					
42					
43					
44					
45					
46					
47					
			****TERMINAL BLOCKS & RELATED EQUIPMENT****		
50	1	ALLEN BRADLEY	1492-DR1	DIN RAIL, STANDARD	PLC & MISC. COMPONENT MOUNTING
51	2	ALLEN BRADLEY	1492-EAJ35	TEMRINAL BLOCK END ANCHOR	
52					
53					
54					
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88					
89					
			****WIREDUCT****		
93					
94					
95					
96					
97					
98					

ITEM	QTY.	MANUFACTURER	PART NUMBER	DESCRIPTION	DESIGNATION
			****WIREDUCT (CONT.)****		
99	6FT	PANDUIT	F3X4LG6	WIRING DUCT, 3"W x 4"H	
100	6FT	PANDUIT	C3LG6	WIRING DUCT COVER, 3"W	
101					
102					
103					
104					
			****HIGH VOLTAGE RELATED EQUIPMENT****		
108					
109					
110					
111					
112					
113					
114					
115					
116					
117					
118					
119					
120					
121					
122					
123					
124					
125					
126					
			****POWER SUPPLIES****		
135	1	CISCO	PWR-IE65W-PC-DC	POE POWER SUPPLY, 120VAC TO 52VDC CONVERTER, 65W	PWS6
136	1	ALLEN BRADLEY	1606-XLE80E	24VDC POWER SUPPLY, 3.3 AMP	PWS1
137					
138					
139					
140					
141					
142					
			****COMMUNICATIONS****		
143					
144					
145					
146	2	AUTOMATION DIRECT	C5E-STPBL-S3	CAT5E ETHERNET PATCH CABLE, 3 FT.	SEE COMMUNICATIONS
147	1	AUTOMATION DIRECT	C5E-STPBL-S10	CAT5E ETHERNET PATCH CABLE, 10 FT.	SEE COMMUNICATIONS
148					
149					
150	1	CISCO	IE-1000-4T1T-LM	4 COPPER PORTS, 1 SFP SLOTS, LITE SOFTWARE	SUPPLIED BY APPLICATION ENGINEER
151	1	CISCO	IE-1000-4P2S-LM	4 POE COPPER PORTS, 1 SFP SLOTS, LITE SOFTWARE	SUPPLIED BY APPLICATION ENGINEER
152	2	CISCO	GLC-LX-SM-RGD	SINGLEMODE SFP MODULE	SUPPLIED BY APPLICATION ENGINEER
153					
154					
155					
156					
157					
158					
159					
160					
161					
162					
163					
			****MISCELLANEOUS PANEL EQUIPMENT****		
164					
165					
166	1	PANEL FABRICATOR		NAMEPLATE, PHENOLIC, ENGRAVED	SEE SCHEDULE ON EQUIPMENT LAYOUT
167					
168					
169					
170					
171					
172					
173					
174					
175					
176					
177					
178					
179					

TOWN OF EASTON MASS INCORPORATED 1725

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RED MILL ROAD WATER TREATMENT PLANT
TOWN OF EASTON, MA

WELL 7 CONTROL PANEL BILL OF MATERIAL

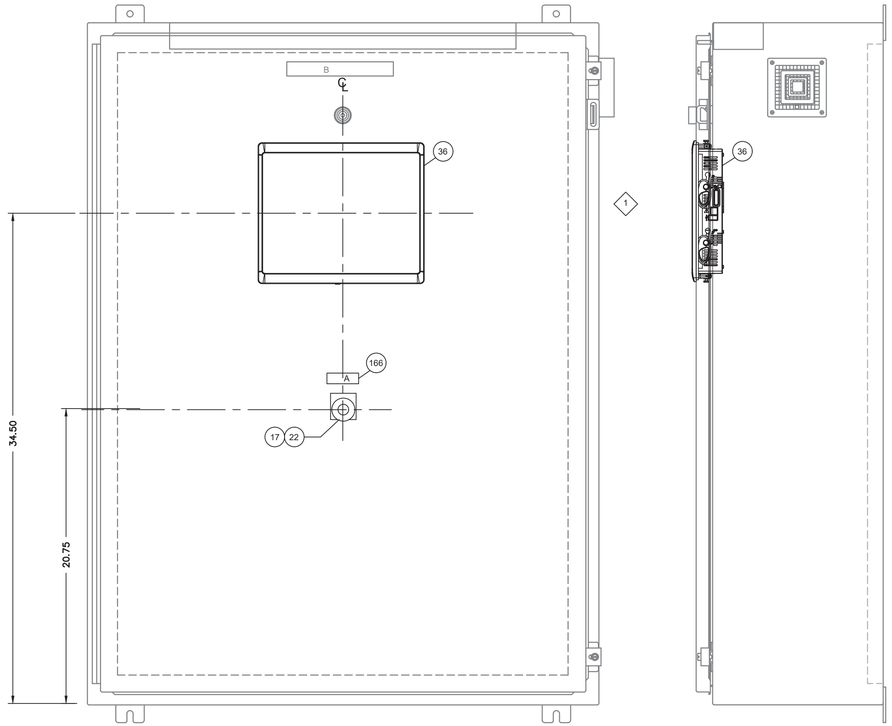
FOR CONSTRUCTION

Sheet No.

I-301

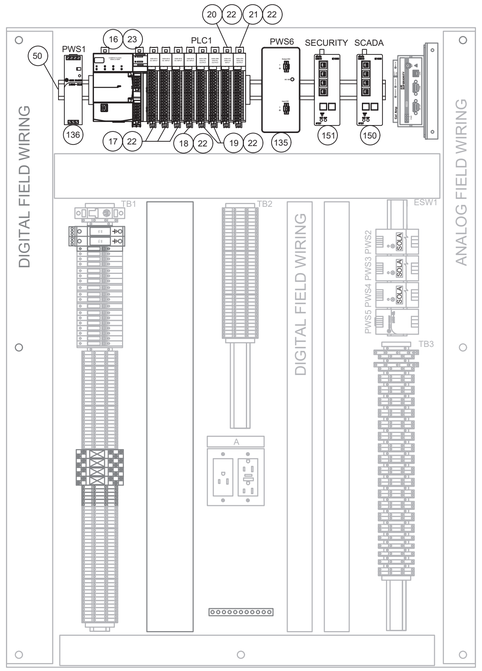
Drawing file: \\woodardcurran.net\shared\Projects\02226041.09 Easton - New Filter Plant\wip\Drawings\8.CO\226041.09-3301-13XX.dwg Plot Date: Aug 18,2021-10:48am

NAMEPLATE SCHEDULE			
ITEM	DIMENSION	DESCRIPTION	FABRICATION COMMENTS
A	2.25" x .50"	SYSTEM STOP	NAMEPLATE TO BE RED WITH WHITE LETTERS WITH ADHESIVE BACK. TEXT SIZE TO BE .125



EXISTING ENCLOSURE FRONT VIEW

EXISTING ENCLOSURE RIGHT SIDE VIEW



SUB PANEL

EXISTING SUB PANEL EQUIPMENT LAYOUT

GENERAL NOTES:

1. ALL ITEMS SHOWN WITH LIGHT DESIGNATION INDICATES EXISTING EQUIPMENT. ALL ITEMS SHOWN WITH BOLD DESIGNATION INDICATES NEW WORK AND/OR NEW EQUIPMENT.
2. RETURN SLC 5/05 PLC AND CHASSIS TO OWNER. TAG AND DE-TERMINATE EXISTING FIELD WIRING THAT IS TO REMAIN AS REQUIRED.

KEYED NOTES:

1. REMOVE EXISTING OPERATOR INTERFACE TERMINAL ON ENCLOSURE DOOR. ENLARGE CUTOUT TO ACCEPT A 10" PANELVIEW PLUS.
2. REPLACE EXISTING SLC 505 PLC AND ASSOCIATED I/O CARDS. RETURN TO OWNER. INSTALL NEW COMPACTLOGIX PLC AND I/O CARDS.
3. REMOVE CALAMP RADIO AND RETURN TO OWNER.
4. DEMOLISH EXISTING ETHERNET SWITCH.

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RED MILL ROAD WATER TREATMENT PLANT
TOWN OF EASTON, MA

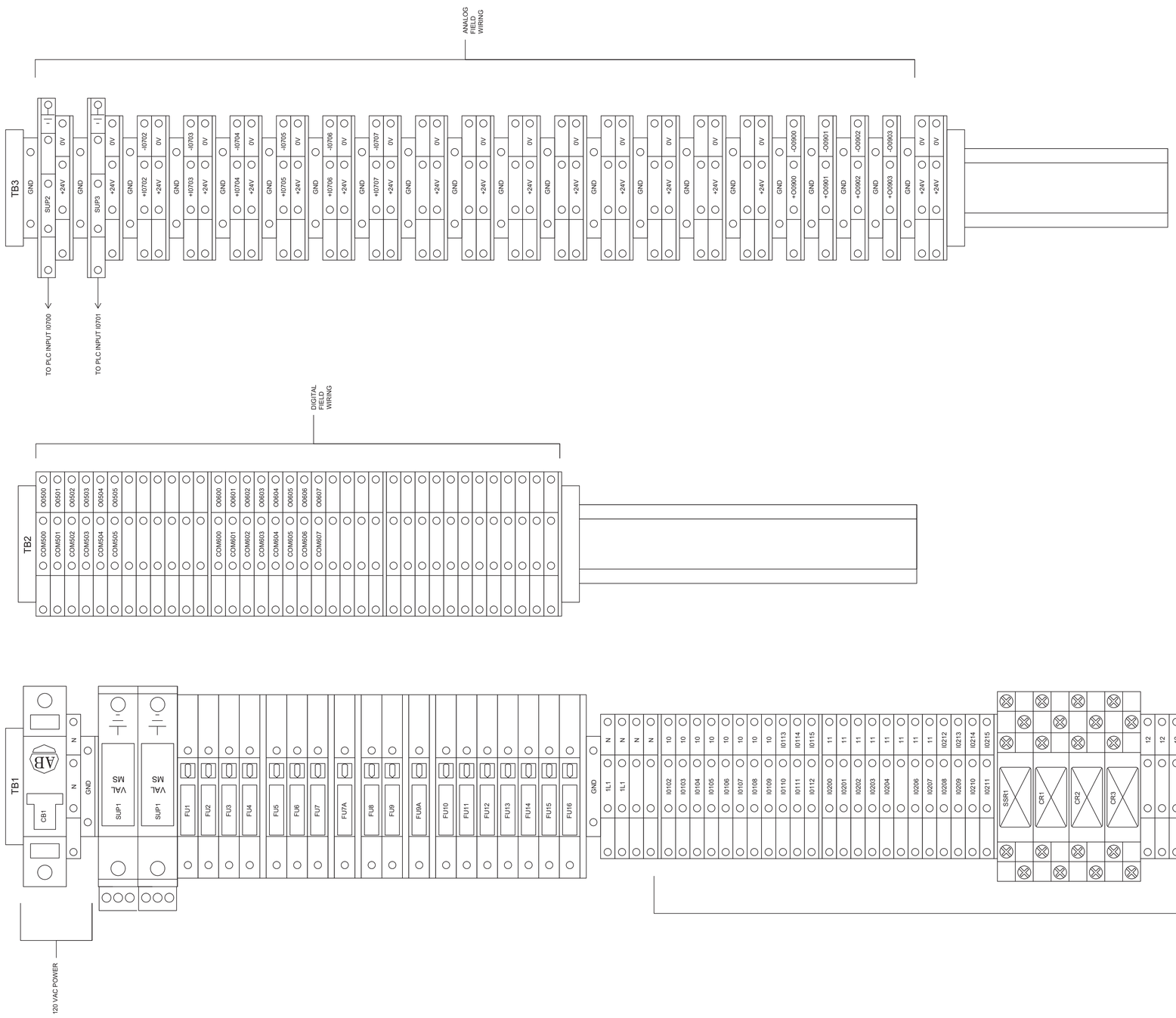
WELL 7 CONTROL PANEL EQUIPMENT LAYOUT

FOR CONSTRUCTION

Sheet No.

I-302

Drawing file: \\woodardcurran.net\shares\Projects\022604.09 Easton - New Filter Plant\wip\Drawings\I&C\022604.09-I301-I3XX.dwg Plot Date: Aug 16,2021-10:48am



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RED MILL ROAD WATER TREATMENT PLANT
TOWN OF EASTON, MA

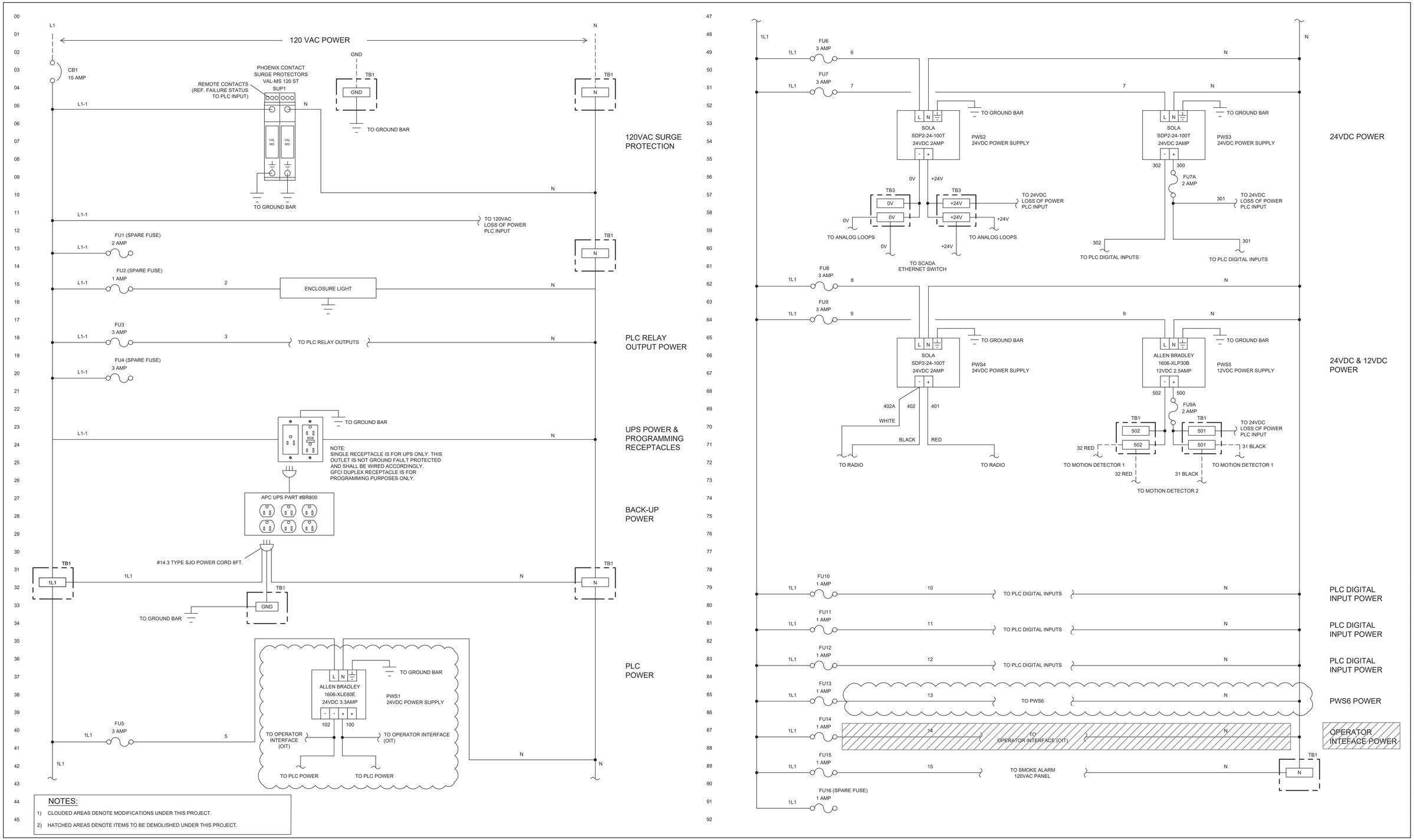
WELL 7 SCADA PANEL TERMINAL BLOCK LAYOUT

FOR CONSTRUCTION

Sheet No.

I-303

Drawing file: \\woodardcurran.net\shared\Projects\02226041.09 Easton - New Filter Plant\wip\Drawings\I&C\02226041.09-I301-I3XX.dwg Plot Date: Aug 18,2021-10:48am



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COMMITMENT & INTEGRITY DRIVE RESULTS

COMMONWEALTH OF MASSACHUSETTS
JOHN GREENLEAF TRINWARD, JR.
No. 55533
REGISTERED PROFESSIONAL ENGINEER
08/02/2021

MARK	DATE	DESCRIPTION

Scale	NTS
Date	AUGUST 2021
Job No.	307-2002
Designed by	PS
Drawn by	PS
Checked by	JT/BA
Approved by	JT

THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

RED MILL ROAD WATER TREATMENT PLANT
TOWN OF EASTON, MA

WELL 7 CONTROL PANEL POWER DISTRIBUTION

FOR CONSTRUCTION

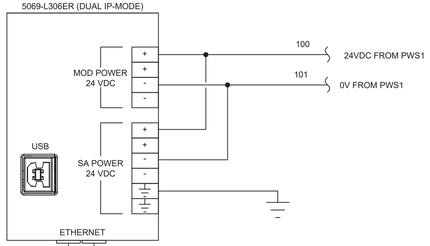
Sheet No.

I-304

Drawing file: \\woodardcurran.net\shared\Projects\02226041.09 Easton - New Filter Plant\wip\Drawings\I&C\02226041.09-I301-I3XX.dwg Plot Date: Aug 18,2021-10:48am

PLC1 PROCESSOR/POWER SUPPLY

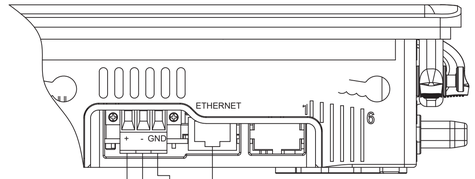
ALLEN BRADLEY COMPACTLOGIX
5069-L306ER (DUAL IP-MODE)



ETHERNET PATCH CABLE
LENGTH: 3 FT.

OPERATOR INTERFACE TERMINAL (OIT)

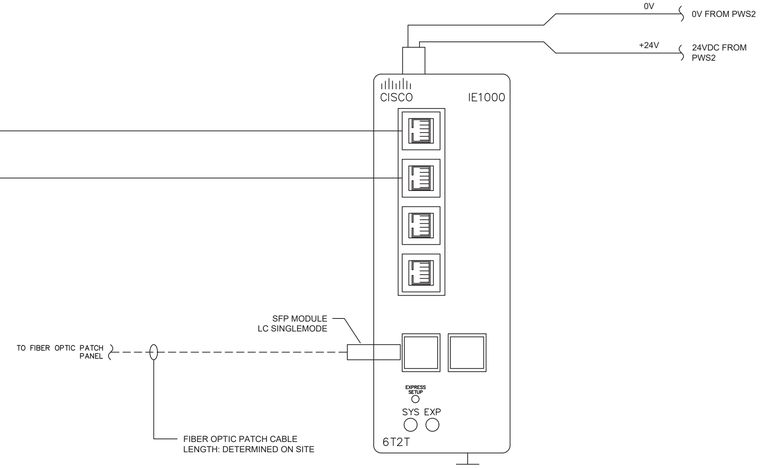
ALLEN BRADLEY PANELVIEW PLUS 7
2711P-T10C21D8S



ETHERNET PATCH CABLE
LENGTH: 10 FT.

SCADA - ETHERNET SWITCH (MANAGED)

CISCO IE-1000
IE-1000-4T1T-LM

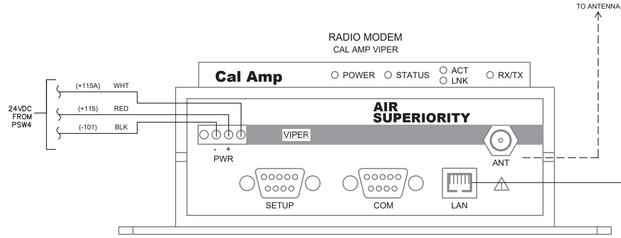


FIBER OPTIC PATCH CABLE
LENGTH: DETERMINED ON SITE

ETHERNET PATCH CABLE
LENGTH: 3 FT.

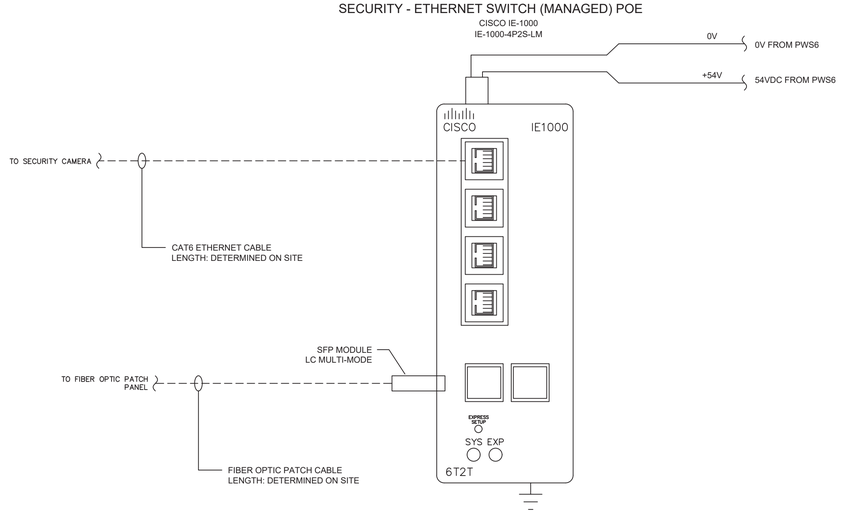
RADIO MODEM

CAL AMP VIPER



SECURITY - ETHERNET SWITCH (MANAGED) POE

CISCO IE-1000
IE-1000-4P2S-LM



CAT6 ETHERNET CABLE
LENGTH: DETERMINED ON SITE

FIBER OPTIC PATCH CABLE
LENGTH: DETERMINED ON SITE

TOWN OF EASTON MASS INCORPORATED 1725

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COMMONWEALTH OF MASSACHUSETTS
JOHN GREENLEAF TRINWARD, JR.
No. 55533
REGISTERED PROFESSIONAL ENGINEER

08/02/2021

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Approved by	JT

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RED MILL ROAD WATER TREATMENT PLANT
TOWN OF EASTON, MA

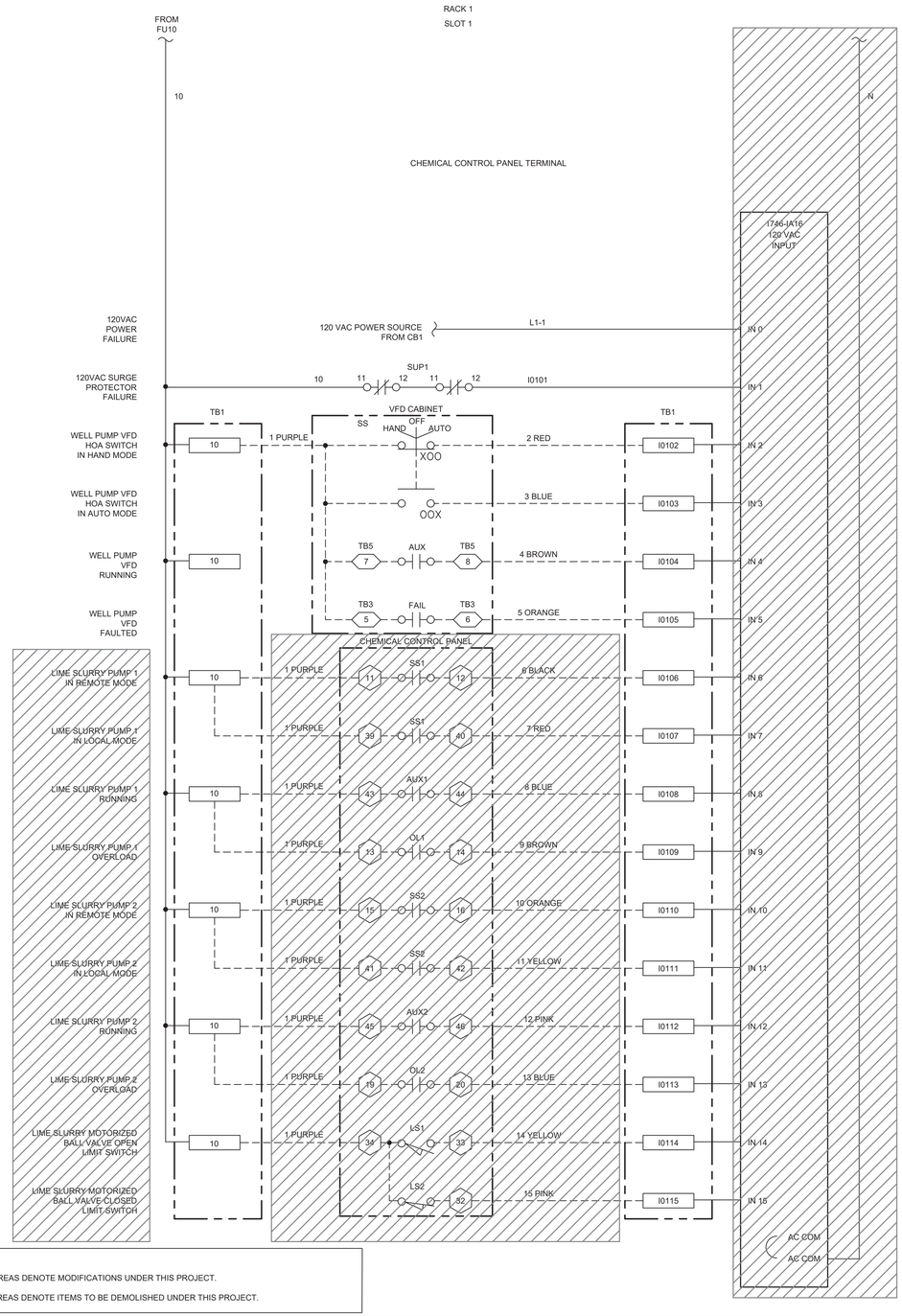
WELL 7 CONTROL PANEL COMMUNICATIONS

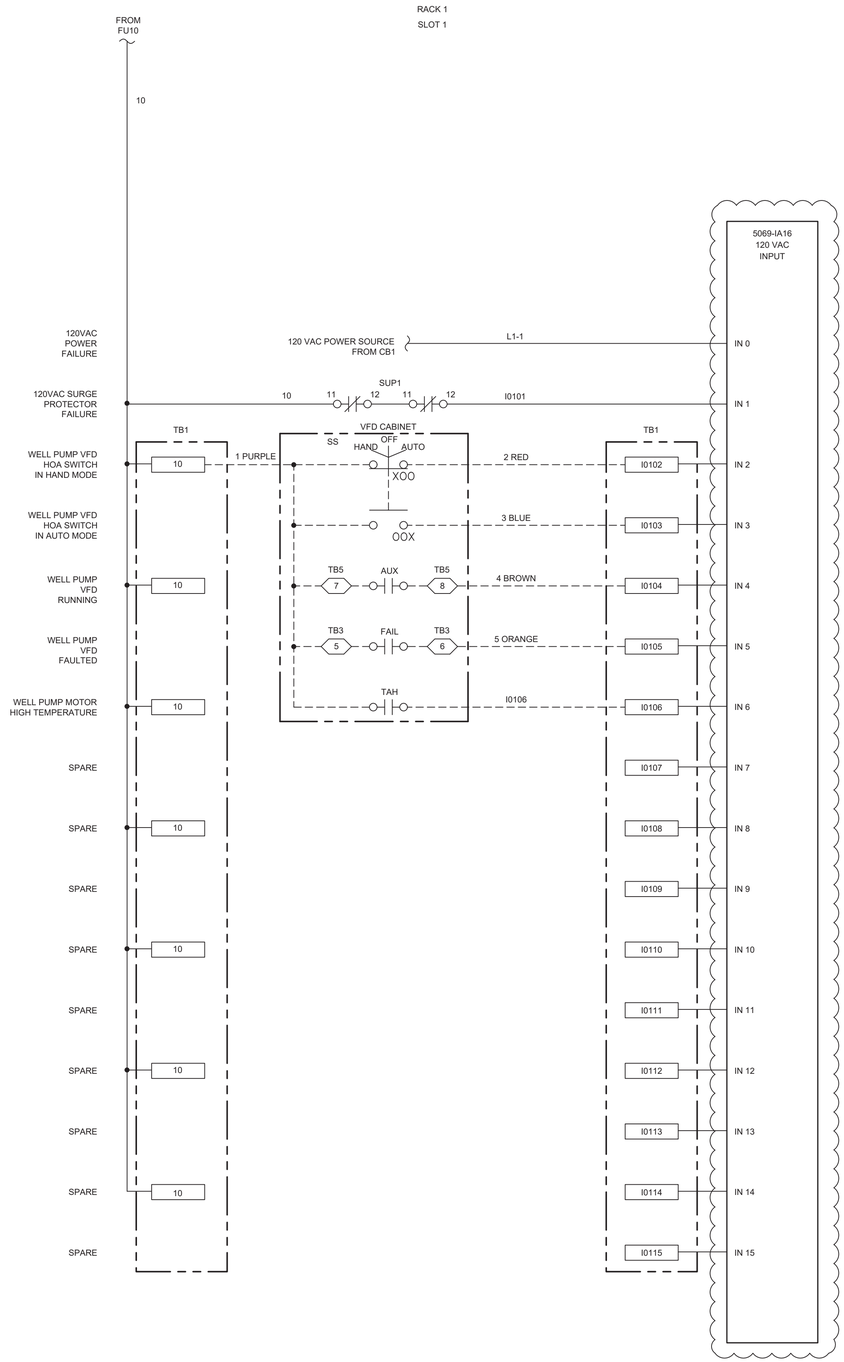
FOR CONSTRUCTION

Sheet No.

I-305

Drawing file: \\woodardcurran.net\shared\Projects\02226041.06 Easton - New Filter Plant\wip\Drawings\I&C\02226041.06-I301-I3XX.dwg Plot Date: Aug 18,2021 - 10:48am





NOTES:

1) CLOUDED AREAS DENOTE MODIFICATIONS UNDER THIS PROJECT.
2) HATCHED AREAS DENOTE ITEMS TO BE DEMOLISHED UNDER THIS PROJECT.

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REGISTERED PROFESSIONAL ENGINEER
08/02/2021

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RED MILL ROAD WATER TREATMENT PLANT
TOWN OF EASTON, MA

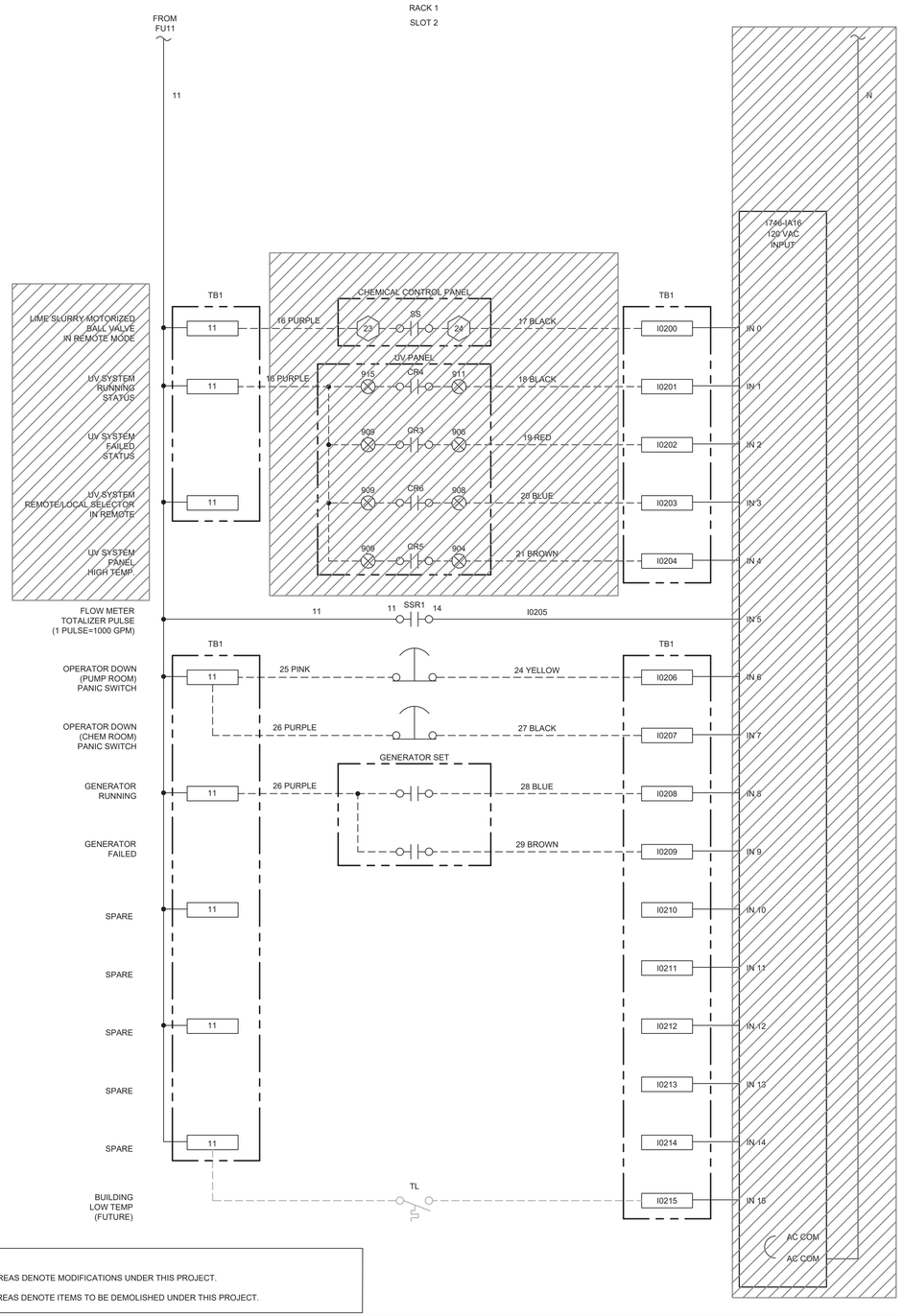
WELL 7 CONTROL PANEL DIGITAL INPUTS I

FOR CONSTRUCTION

Sheet No.

I-306

Drawing file: \\woodardcurran.net\shared\Projects\0226041.09 Easton - New Filter Plant\wip\Drawings\I&C\0226041.09-I301-I3XX.dwg Plot Date: Aug 18,2021-10:48am



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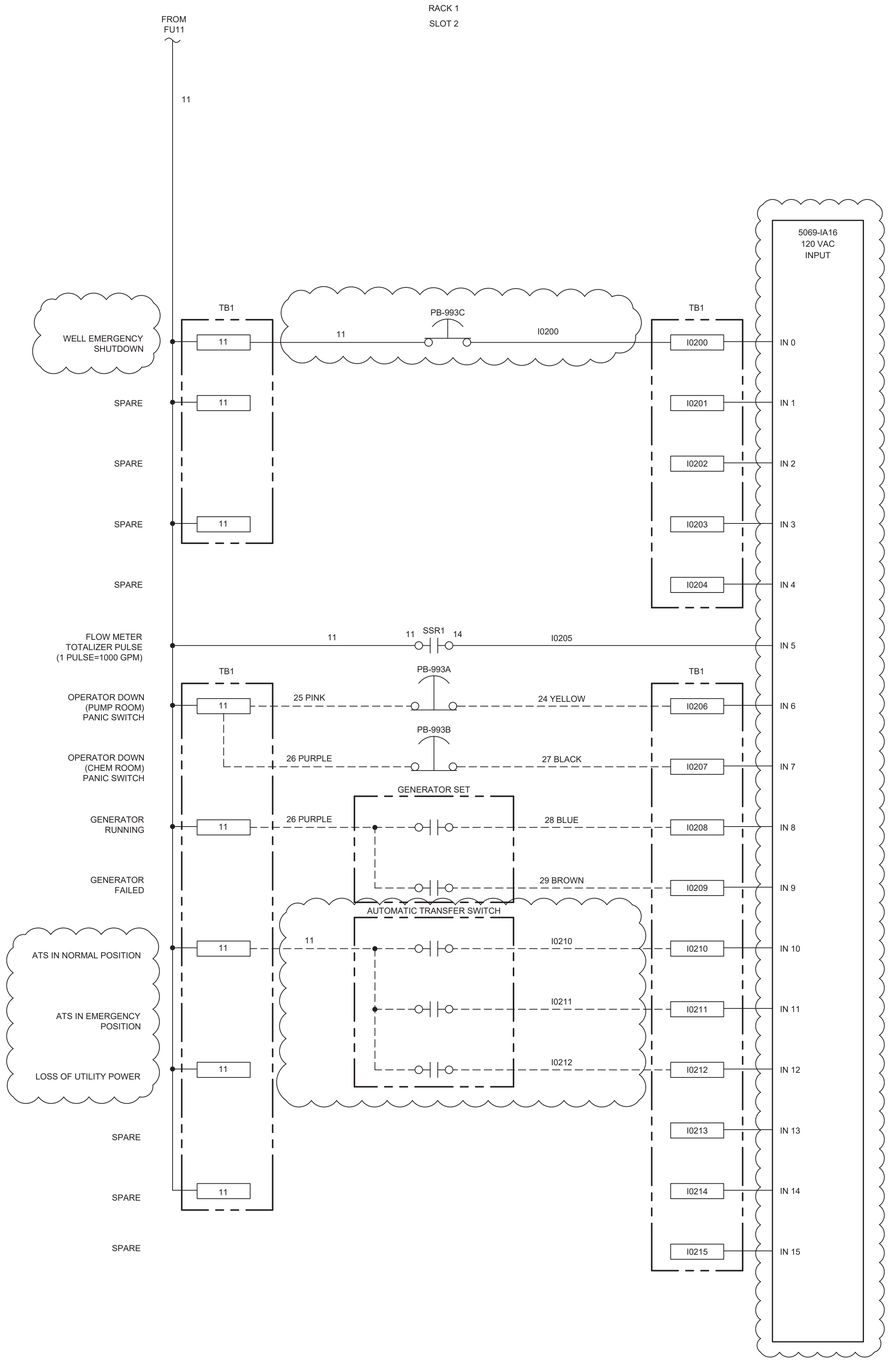

TOWN OF EASTON MASS INCORPORATED 1725

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COMMONWEALTH OF MASSACHUSETTS
JOHN GREENLEAF TRINWARD, JR.
No. 55533
REGISTERED PROFESSIONAL ENGINEER
08/02/2021

MARK	DATE	DESCRIPTION

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Approved by	JT

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RED MILL ROAD WATER TREATMENT PLANT
TOWN OF EASTON, MA

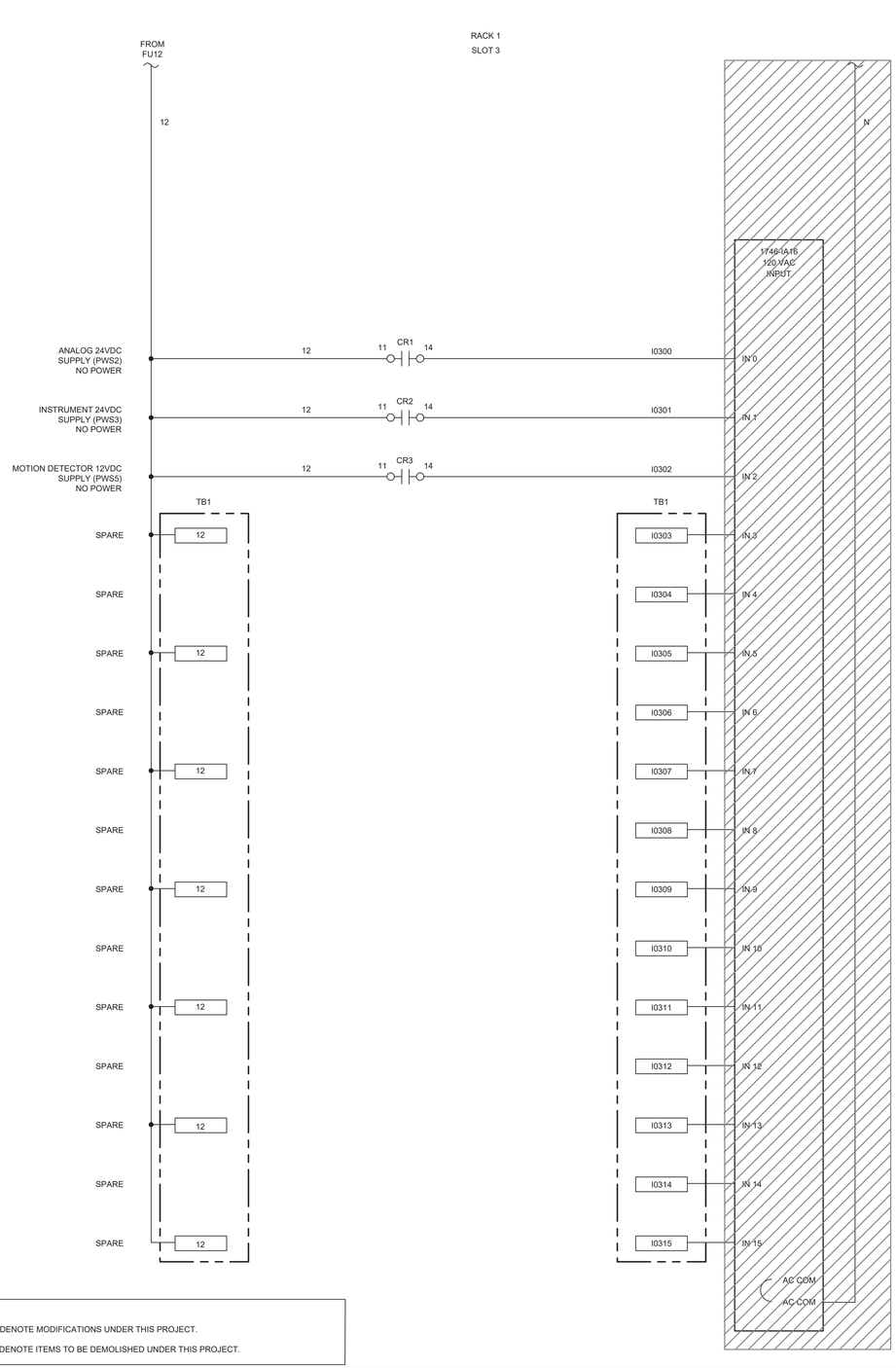
WELL 7 CONTROL PANEL DIGITAL INPUTS II

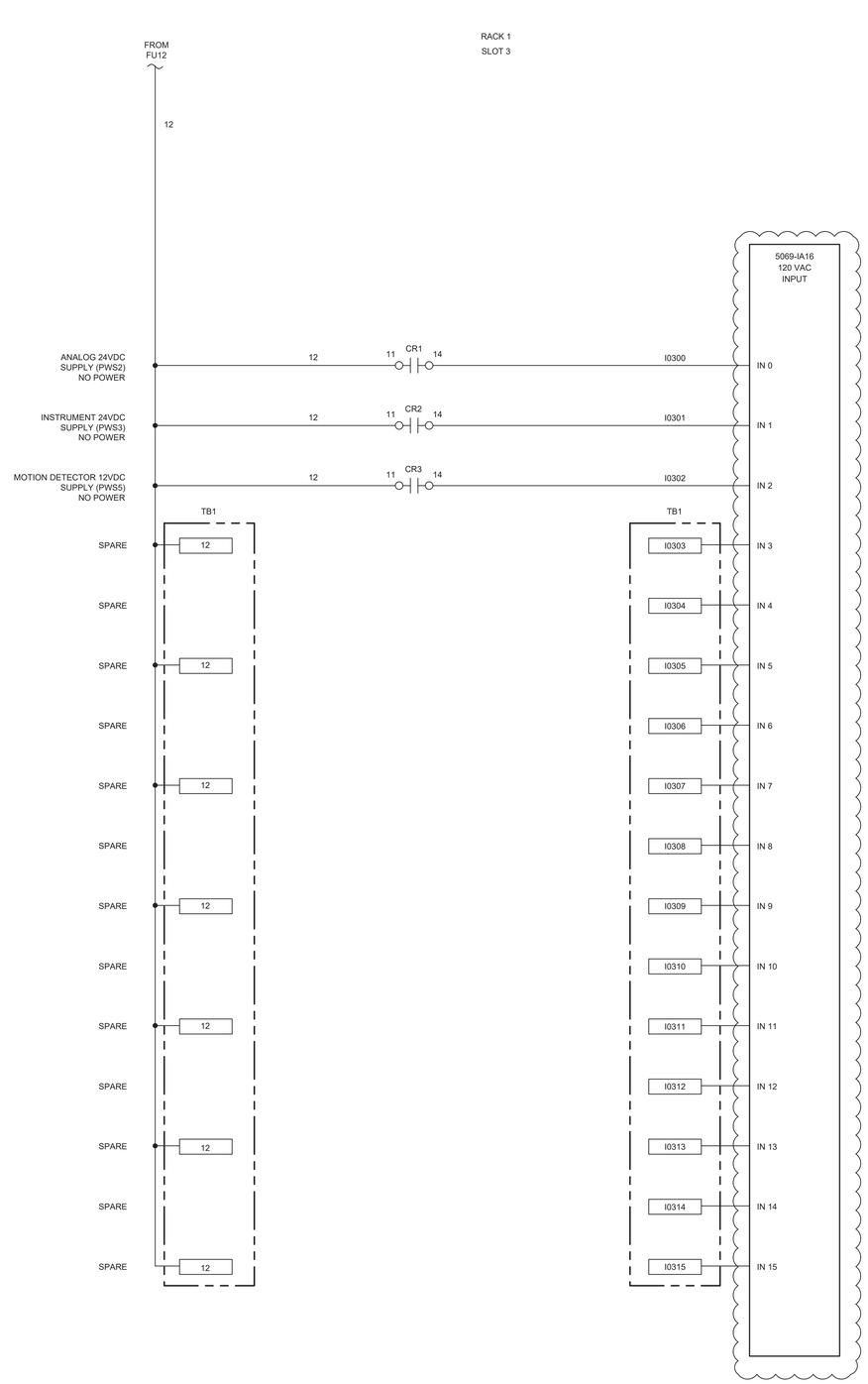
FOR CONSTRUCTION

Sheet No.

I-307

Drawing file: \\woodardcurran.net\shared\Projects\02226041 09 Easton - New Filter Plant\wip\Drawings\I&C\D2226041 09-1301-I3XX.dwg Plot Date: Aug 18,2021-10:48am





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TOWN OF EASTON MASS. INCORPORATED 1725

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REGISTERED PROFESSIONAL ENGINEER

08/02/2021

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RED MILL ROAD WATER TREATMENT PLANT
TOWN OF EASTON, MA

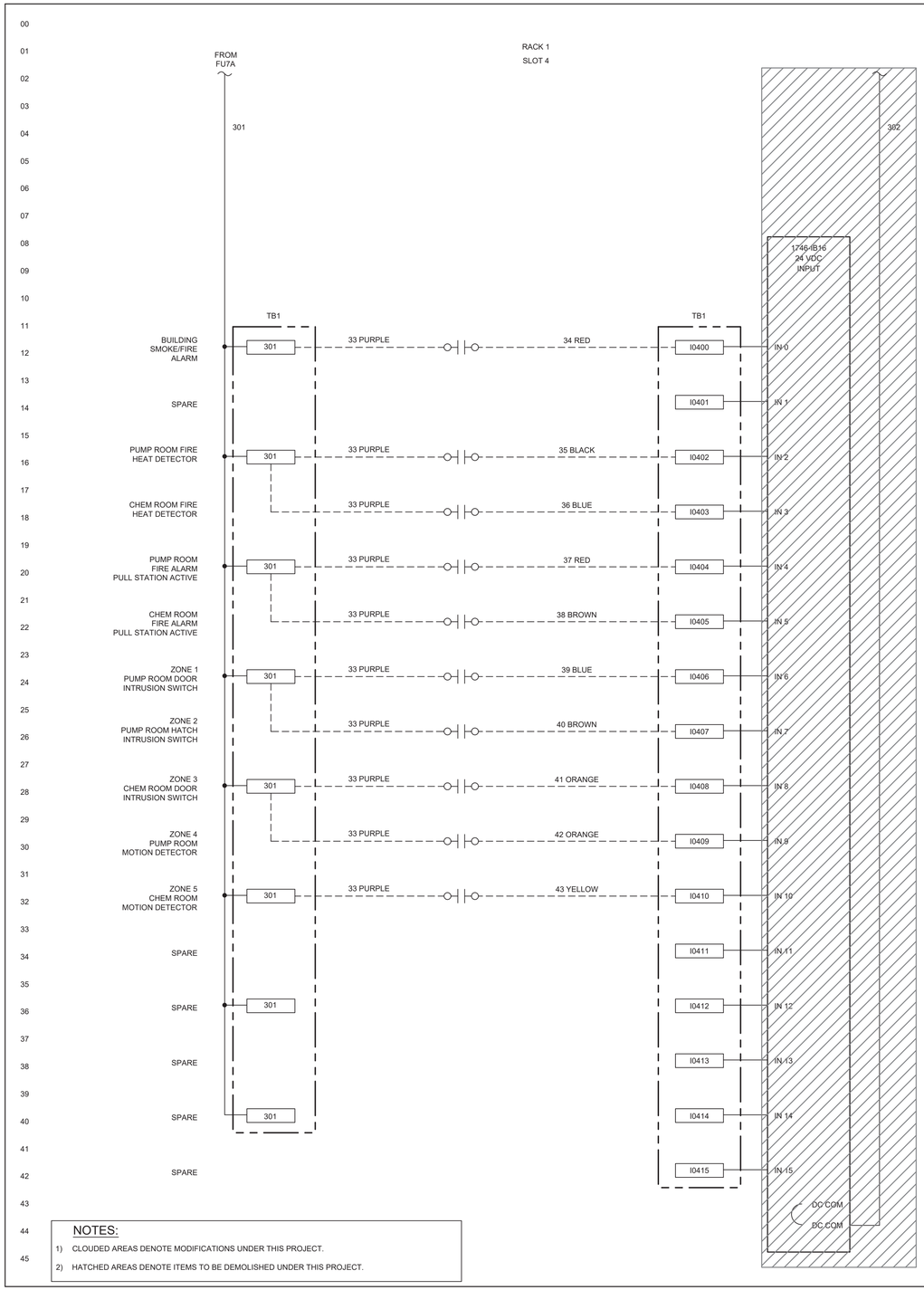
WELL 7 CONTROL PANEL DIGITAL INPUTS III

FOR CONSTRUCTION

Sheet No.

I-308

Drawing file: \\woodardcurran.net\shared\Projects\0226041.09 Easton - New Filter Plant\wip\Drawings\I&C\0226041.09-I301-I3XX.dwg Plot Date: Aug 18,2021-10:48am



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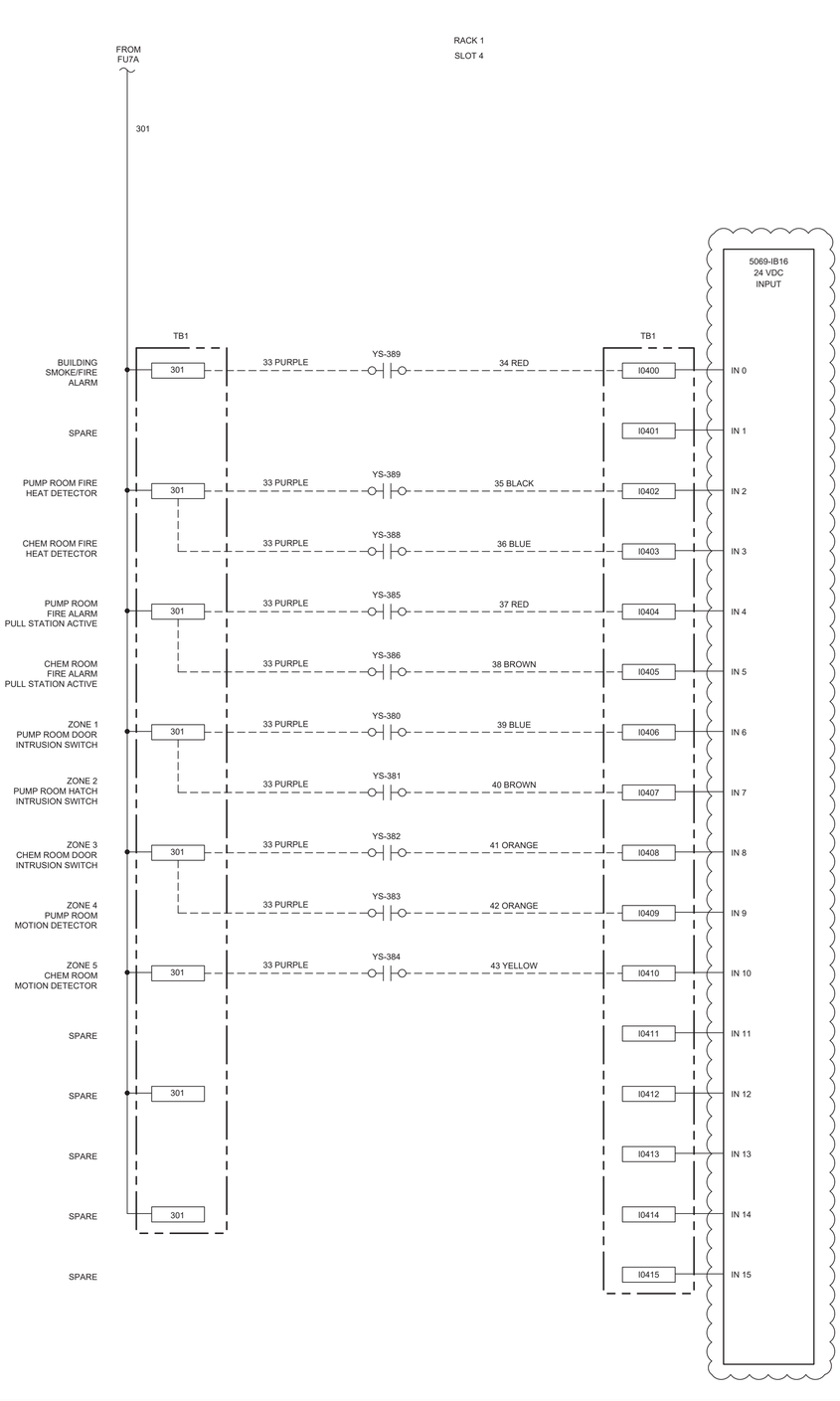
2) HATCHED AREAS DENOTE ITEMS TO BE DEMOLISHED UNDER THIS PROJECT.



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08/02/2021

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RED MILL ROAD WATER TREATMENT PLANT
TOWN OF EASTON, MA

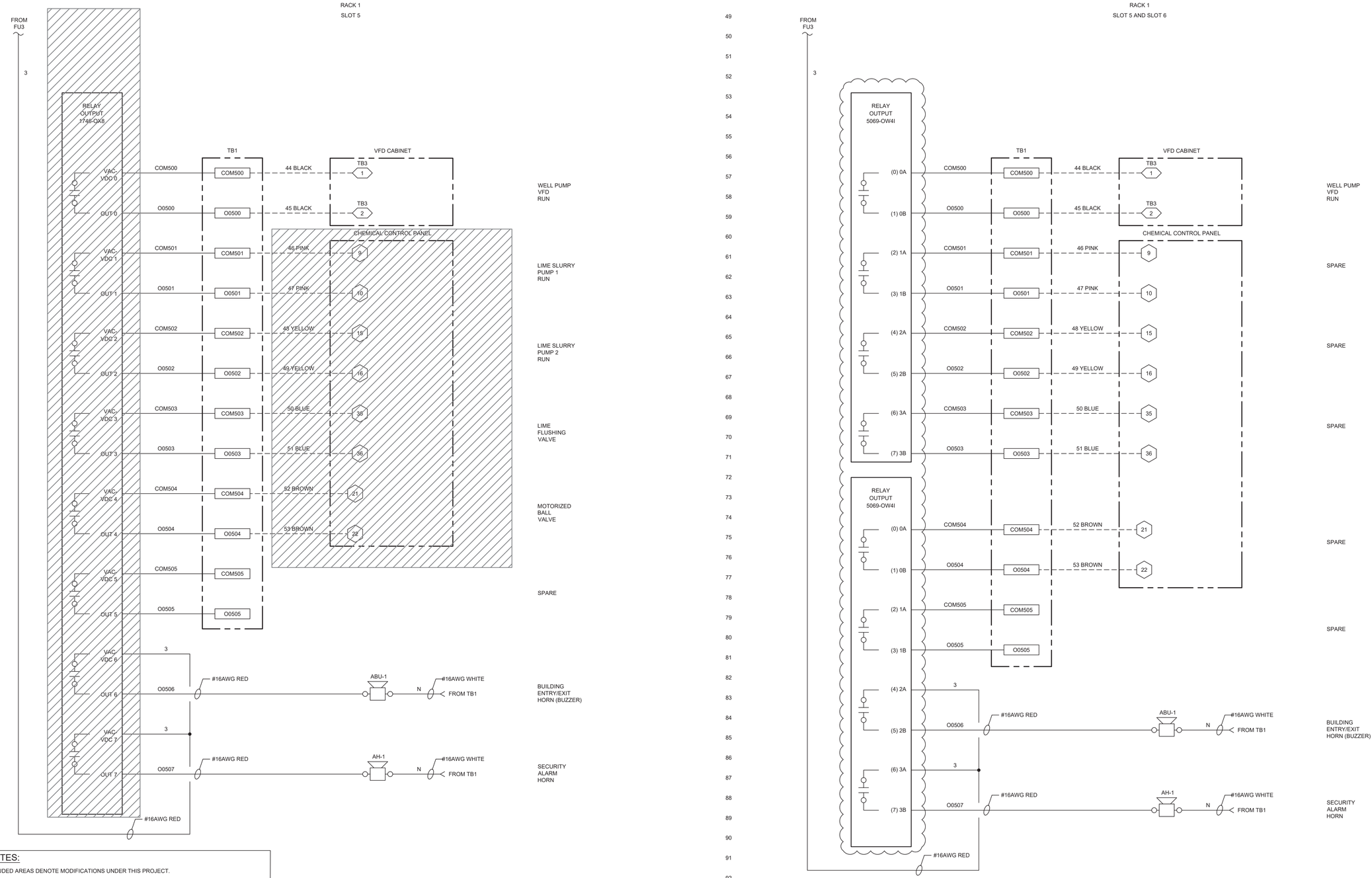
WELL 7 CONTROL PANEL DIGITAL INPUTS IV

FOR CONSTRUCTION

Sheet No.

I-309

Drawing file: \\woodardcurran.net\shared\Projects\02226041.09 Easton - New Filter Plant\wip\Drawings\I&C\02226041.09-I301-I3XX.dwg Plot Date: Aug 18,2021 - 10:48am



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JOHN GREENLEAF TRINWARD, JR. No. 55533 REGISTERED PROFESSIONAL ENGINEER
COMMONWEALTH OF MASSACHUSETTS
08/02/2021

MARK	DATE	DESCRIPTION

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RED MILL ROAD WATER TREATMENT PLANT
TOWN OF EASTON, MA

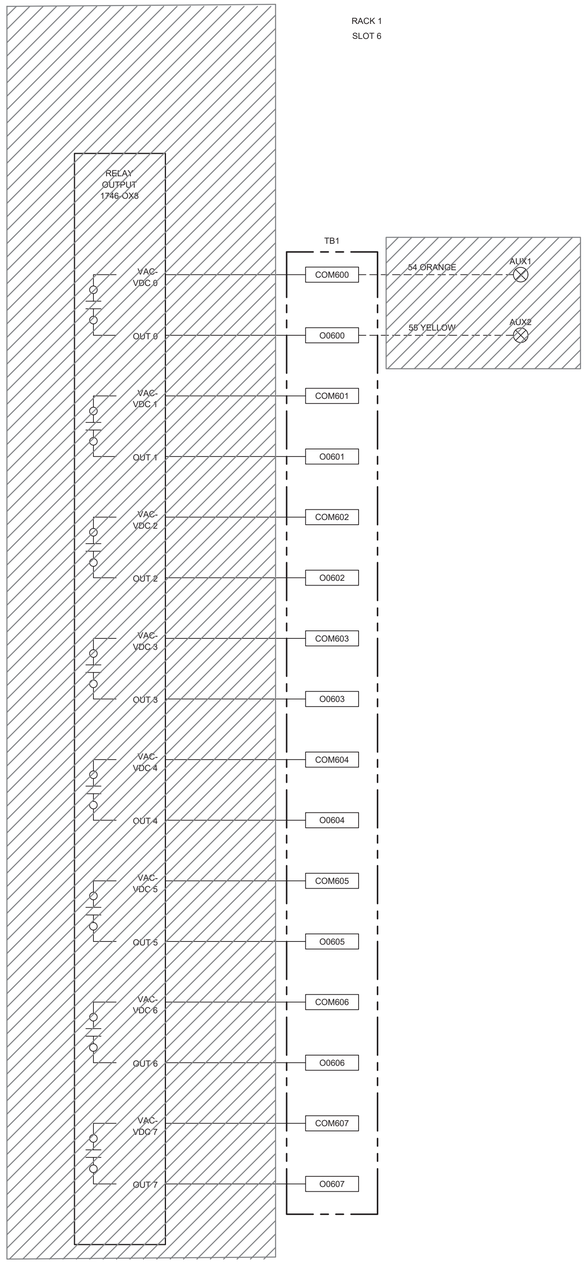
WELL 7 CONTROL PANEL DIGITAL OUTPUTS I

FOR CONSTRUCTION

Sheet No.

I-310

Drawing file: \\woodardcurran.net\shared\Projects\022604\1.09 Easton - New Filter Plant\wip\Drawings\I&C\022604.1.09-1301-13XX.dwg Plot Date: Aug 18,2021-10:48am



47	
48	
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57	UV SYSTEM REMOTE ON/OFF
58	
59	
60	
61	SPARE
62	
63	
64	
65	SPARE
66	
67	
68	
69	SPARE
70	
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77	SPARE
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81	SPARE
82	
83	
84	
85	SPARE
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88	
89	
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92	

THIS AREA INTENTIONALLY LEFT BLANK

NOTES:

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TOWN OF EASTON MASS INCORPORATED 1725

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RED MILL ROAD WATER TREATMENT PLANT
TOWN OF EASTON, MA

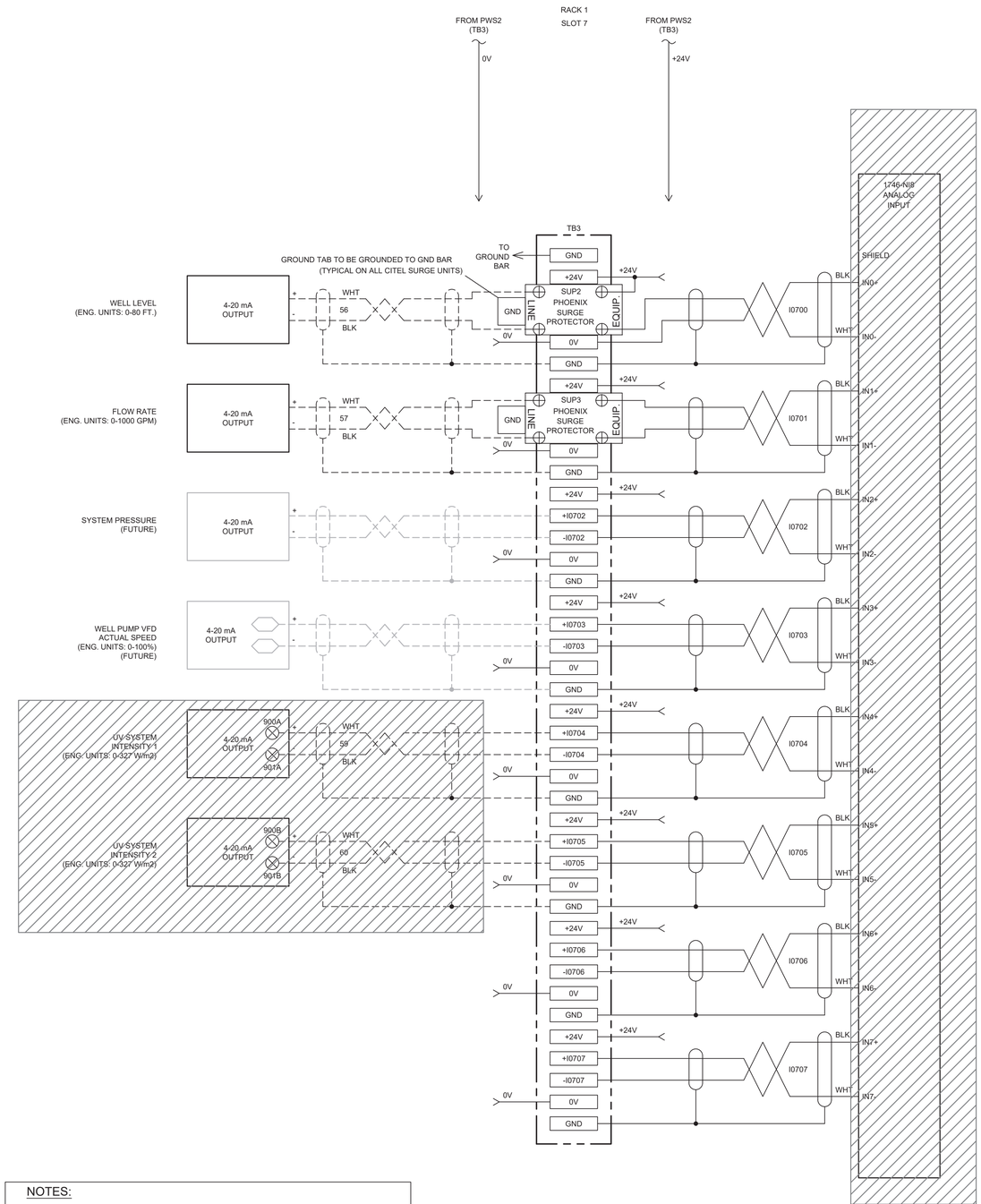
WELL 7 CONTROL PANEL DIGITAL OUTPUTS II

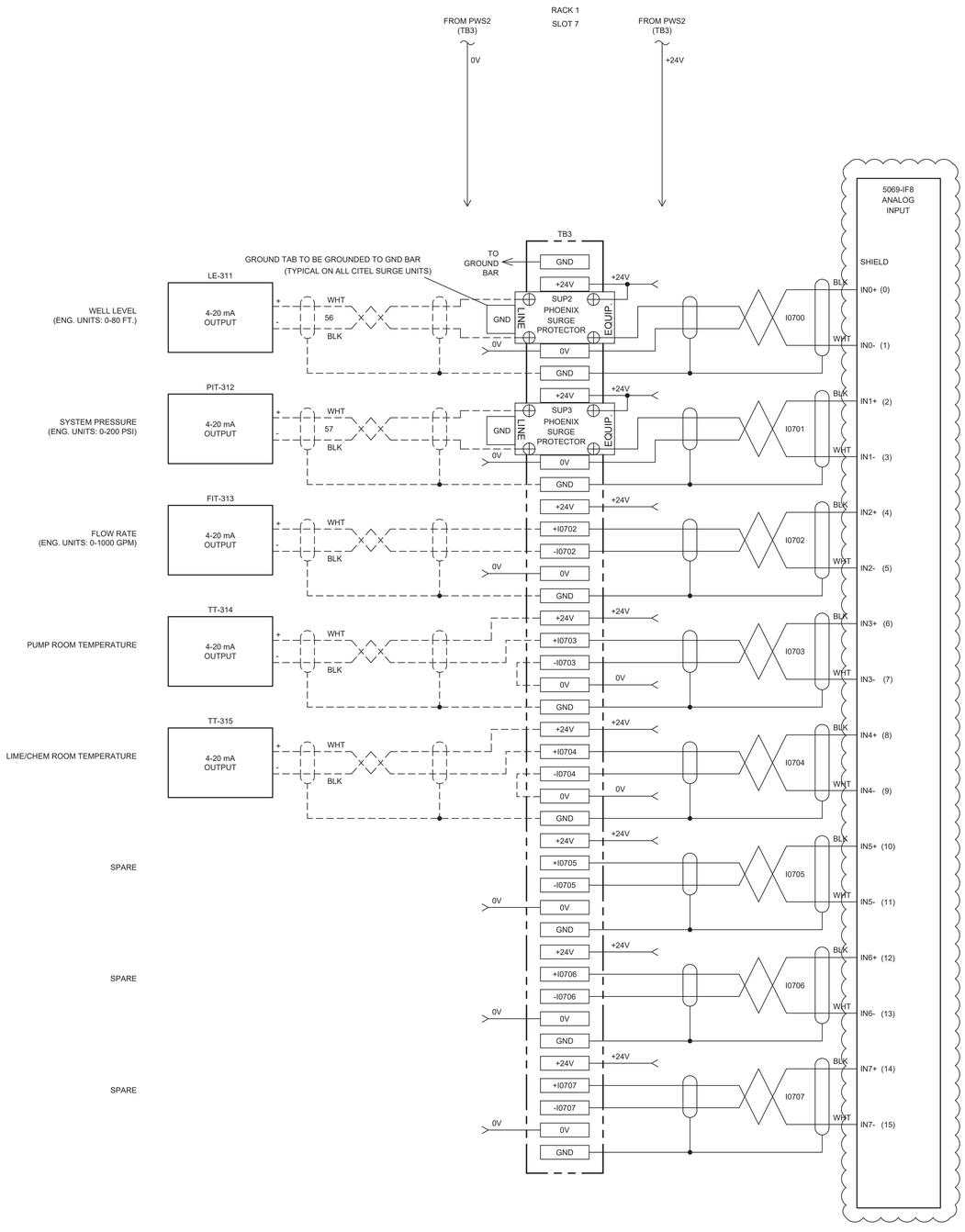
FOR CONSTRUCTION

Sheet No.

I-311

Drawing file: \\woodardcurran.net\shared\Projects\02226041.09 Easton - New Filter Plant\wip\Drawings\I&C\02226041.09-I301-I3XX.dwg Plot Date: Aug 18,2021-10:48am





NOTES:

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TERMINAL LEGEND

TOWN OF EASTON MASS INCORPORATED 1725

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RED MILL ROAD WATER TREATMENT PLANT
TOWN OF EASTON, MA

WELL 7 CONTROL PANEL ANALOG INPUTS

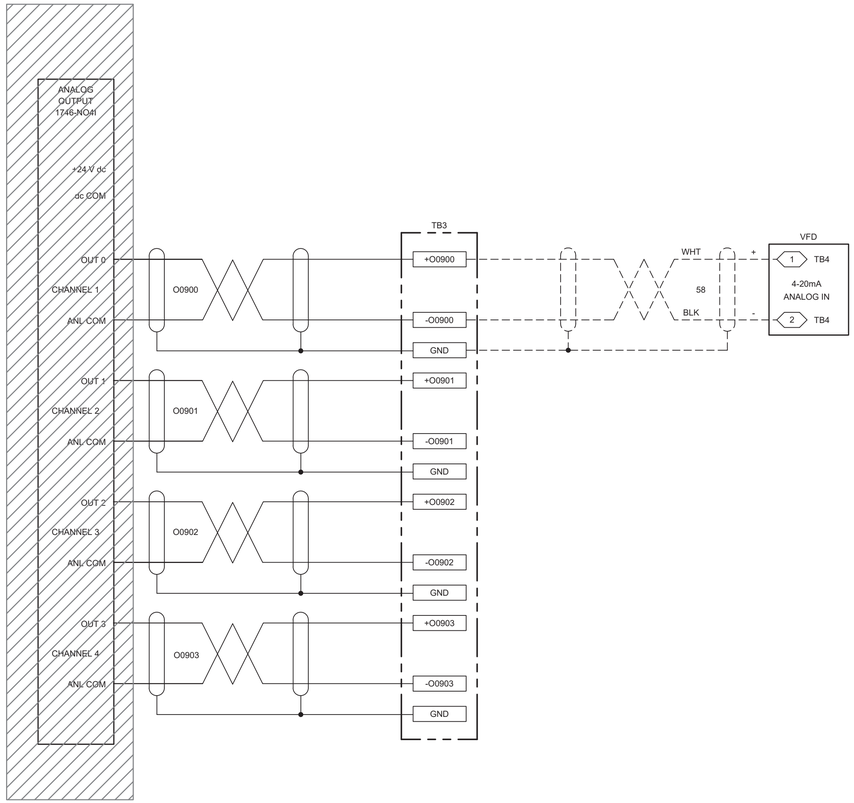
FOR CONSTRUCTION

Sheet No.

I-312

Drawing file: \\woodardcurran.net\shared\Projects\02226041.09 Easton - New Filter Plant\wip\Drawings\I&C\02226041.09-I0I-I-3XX.dwg Plot Date: Aug 18,2021-10:48am

RACK 1
SLOT 9



WELL PUMP VFD
REFERENCE SPEED
0-100%

SPARE

SPARE

SPARE

NOTES:

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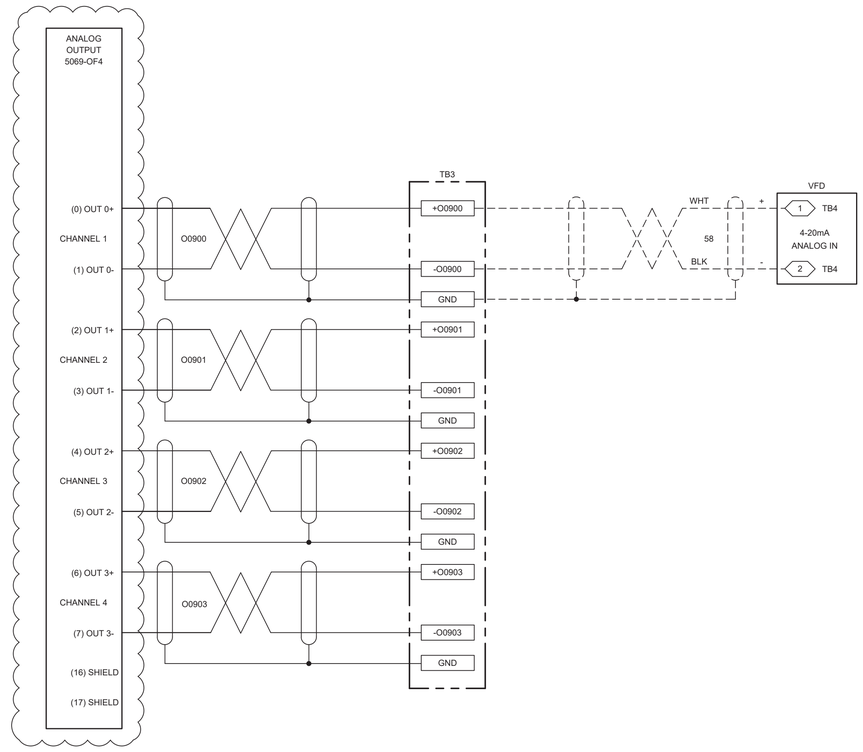
RACK 1
SLOT 9



WELL PUMP VFD
REFERENCE SPEED
0-100%

SPARE

SPARE

SPARE

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RED MILL ROAD WATER TREATMENT PLANT
TOWN OF EASTON, MA

WELL 7 CONTROL PANEL ANALOG OUTPUTS

FOR CONSTRUCTION

Sheet No.

I-313

Drawing file: \\woodardcurran.net\shared\Projects\02226041.09 Easton - New Filter Plant\wip\Drawings\I&C\02226041.09-I301-I3XX.dwg Plot Date: Aug 18,2021 - 10:48am

BILL OF MATERIAL

ITEM	QTY.	MANUFACTURER	PART NUMBER	DESCRIPTION	DESIGNATION
			****ENCLOSURE & RELATED EQUIPMENT****		
1	1	USA BLUE BOOK (ALLIED MOULDED PRODUCTS)	42955	NEMA 4X ENCLOSURE (8"WX10"HX6"D), WITH 1/8 DIN CUTOUT	ENCLOSURE
2	1	USA BLUE BOOK	56138	STEEL BACK PANEL	
3					
			****TERMINAL BLOCKS & RELATED EQUIPMENT****		
4	9	ALLEN BRADLEY	1492-J4	TERMINAL BLOCK 1 TIER	TB1
5	2	ALLEN BRADLEY	1492-JG4	TERMINAL BLOCK GROUNDING	TB1
6	3	ALLEN BRADLEY	1492-EBJ3	TERMINAL BLOCK END BARRIER, 1 TIER	CB1
7	1	ALLEN BRADLEY	1492-M6X12	TERMINAL BLOCK BLANK MARKING TAGS, 1 TIER, 120 CT.	TB1
8	2	ALLEN BRADLEY	1492-CJJ6-2	1-TIER TERMINAL BLOCK JUMPER, 2 POLE	TB1
9	2	ALLEN BRADLEY	1492-EAJ35	TERMINAL BLOCK END ANCHOR	TB1
10	1	PHOENIX CONTACT	2905348	VALVETRAB VAL-CP-1S-175, 120VAC SURGE PROTECTOR	SUP1
11	1	ALLEN BRADLEY	4983-DD06	ANALOG LOOP SURGE PROTECTOR	SUP2
12					
13					
14	1	ALLEN BRADLEY	1489-M1C050	CIRCUIT BREAKER, 5 AMP, SINGLE POLE	CB1
15	1	ALLEN BRADLEY	700-HK32A1	RELAY, DPDT, 120VAC COIL	SR
16	1	ALLEN BRADLEY	700-HN122	RELAY SOCKET	SR
17					
18	1	ALLEN BRADLEY	199-DR1	DIN RAIL, STANDARD	
19					
20					
			****WIREDUCT****		
21	6FT	PANDUIT	F1X2LG6	WIRING DUCT, 1"W x 2"H	
22	6FT	PANDUIT	C1LG6	WIRING DUCT COVER, 2"W	
23					
			****MISCELLANEOUS PANEL EQUIPMENT****		
24					
25	1	PANEL FABRICATOR		NAMEPLATE, PHENOLIC, ENGRAVED	SEE SCHEDULE
26	1	ALLEN BRADLEY	855T-B10DD4	STEADY RED INCANDESCENT LAMP WITH SOUND MODULE	
27					
28					
29	1	EMEDCO	QS3743	WARNING LABEL "ARC FLASH AND SHOCK HAZARD"	
30	1	PRECISION DIGITAL	PD765-6X0-00	TRIDENT DIGITAL PROCESS METER, 120VAC	LEVEL INDICATOR
31	1	ALLEN BRADLEY	800H-AR2A2	PUSH BUTTON, 2 N.O.	PB1
32	1	ALLEN BRADLEY	800H-W100	LEGEND PLATE, ENGRAVED, "ALARM SILENCE"	PB1
33	1	ALLEN BRADLEY	800H-FRXT6A	RED MUSHROOM HEAD PUSH-PULL PUSHBUTTON, 1 N.O, 1 N.C.	PB2
34	1	ALLEN BRADLEY	800T-XD5	CONTACT BLOCK, 1 N.O.	PB2
35	1	ALLEN BRADLEY	800H-W373	LEGEND PLATE, "EMERGENCY STOP"	PB2

NOTE:
THIS DRAWING SET REPRESENTS A TYPICAL DESIGN FOR THE FOLLOWING CONTROL PANELS:

-KOH BCFP
-NaOCl BCFP
-PACl BCFP

QUANTITIES SHOWN ON BILL OF MATERIAL REPRESENT ONE CONTROL PANEL.

TOWN OF EASTON MASS INCORPORATED 1725

ENVIRONMENTAL PARTNERS

WOODARD & CURRAN
150 Royall Street, Suite 200E
Canton, Massachusetts 02021
800.446.5518 | www.woodardcurran.com
COMMITMENT & INTEGRITY DRIVE RESULTS

COMMONWEALTH OF MASSACHUSETTS
JOHN GREENLEAF TRINWARD, JR.
No. 55533
REGISTERED PROFESSIONAL ENGINEER
08/02/2021

MARK	DATE	DESCRIPTION

Scale	NTS
Date	AUGUST 2021
Job No.	307-2002
Designed by	PS
Drawn by	PS
Checked by	JT/BA
Approved by	JT

THIS LINE IS ONE INCH LONG WHEN PLOTTED AT FULL SCALE ON A 22" X 34" DRAWING

RED MILL ROAD WATER TREATMENT PLANT
TOWN OF EASTON, MA

CHEMICAL FILL PANEL BILL OF MATERIALS

FOR CONSTRUCTION

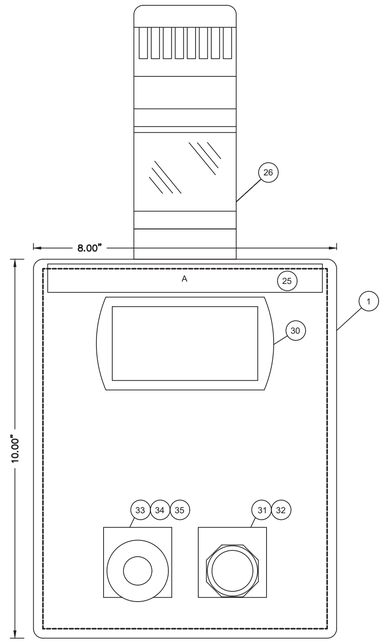
Sheet No.

I-401

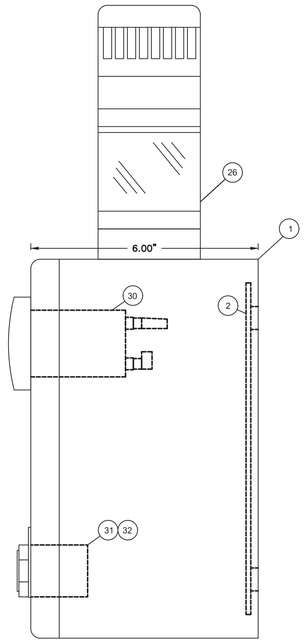
Drawing file: \\woodardcurran.net\shared\Projects\02260411.09 Easton - New Filter Plant\wip\Drawings\tk\C02260411.09-4401-I-404.dwg Plot Date: Aug 18,2021 - 10:48am

NAMEPLATE SCHEDULE			
ITEM	DIMENSION	DESCRIPTION	FABRICATION COMMENTS
A	7.0" x 0.75"	*** BCFP	NAMEPLATE TO BE BLACK WITH WHITE LETTERS WITH ADHESIVE BACK. TEXT SIZE TO BE .25

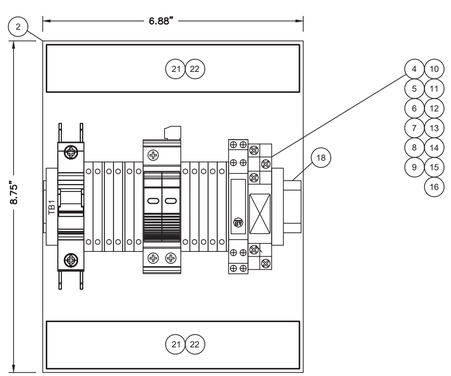
NOTE: SUBSTITUTE *** WITH THE FOLLOWING: KOH, NaOCl AND PACl



ENCLOSURE
FRONT VIEW



ENCLOSURE
RIGHT SIDE VIEW



SUB PANEL

ENVIRONMENTAL PARTNERS

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COMMONWEALTH OF MASSACHUSETTS
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RED MILL ROAD WATER TREATMENT PLANT
TOWN OF EASTON, MA

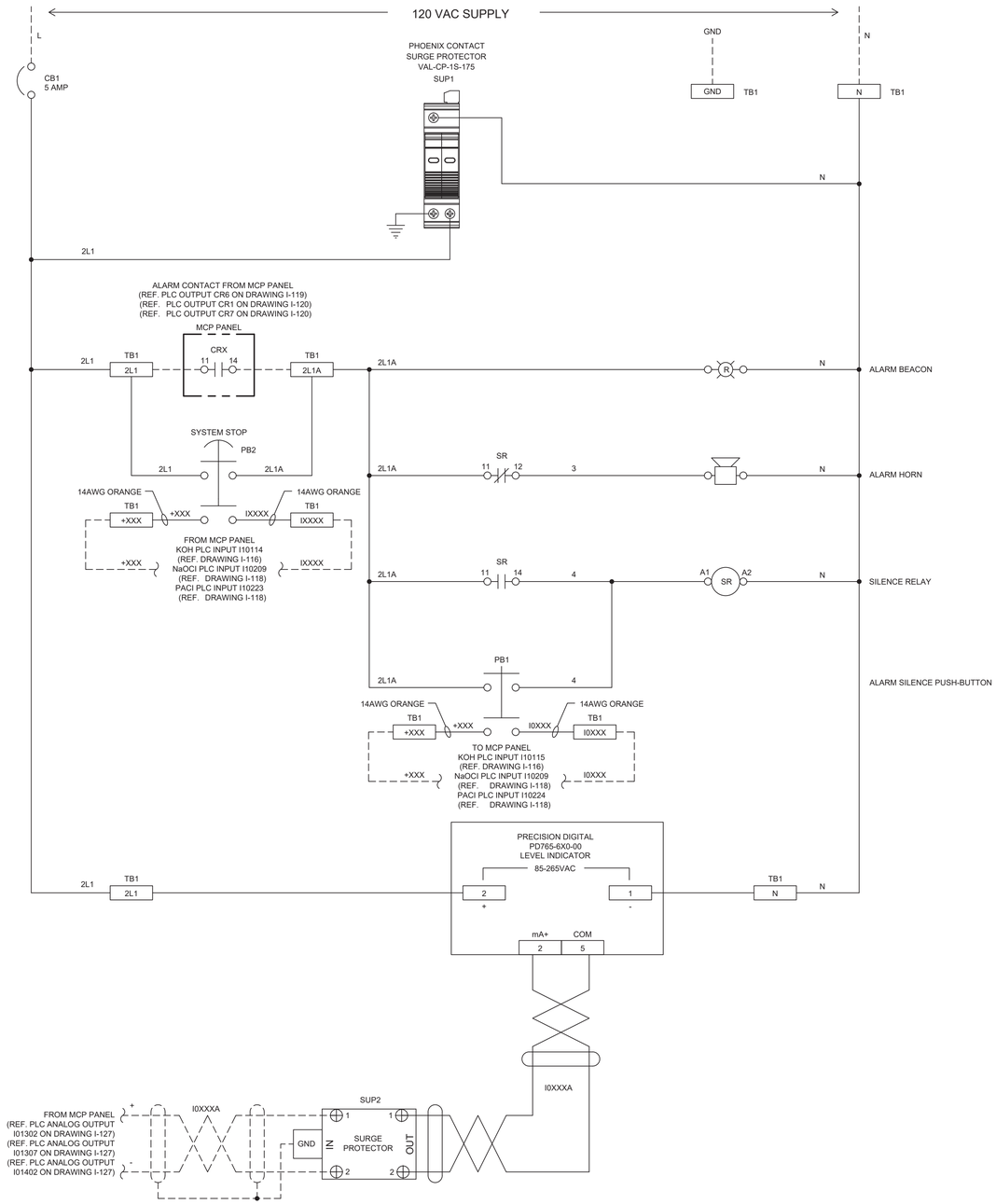
CHEMICAL FILL PANEL EQUIPMENT LAYOUT

FOR CONSTRUCTION

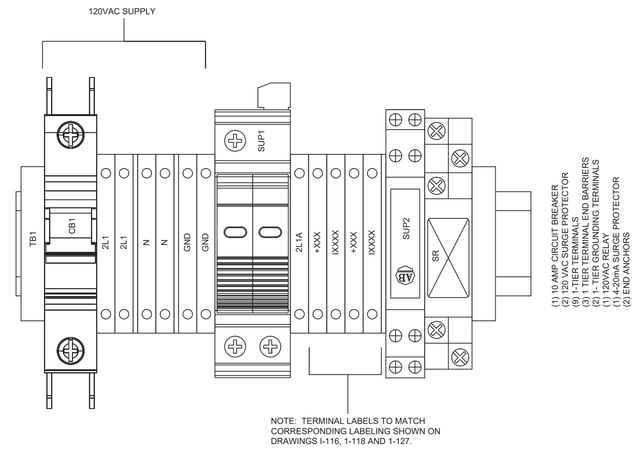
Sheet No.

I-402

Drawing file: \\woodardcurran.net\shared\Projects\022604\1.09 Easton - New Filter Plant\wip\Drawings\I&C\022604 I.09-I401-I404.dwg Plot Date: Aug 18,2021-10:48am



TERMINAL BLOCK LAYOUT



NOTE: TERMINAL LABELS TO MATCH CORRESPONDING LABELING SHOWN ON DRAWINGS I-116, 1-118 AND 1-127.

TOWN OF EASTON MASS INCORPORATED 1725

ENVIRONMENTAL PARTNERS

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RED MILL ROAD WATER TREATMENT PLANT
TOWN OF EASTON, MA

CHEMICAL FILL PANEL POWER DISTRIBUTION & TERMINAL LAYOUT

FOR CONSTRUCTION

Sheet No.

I-403

Drawing file: \\woodardcurran.net\shared\Projects\02260411.09 Easton - New Filter Plant\wip\Drawings\I&C\02260411.09-I401-I404.dwg Plot Date: Aug 18,2021 -10:48am