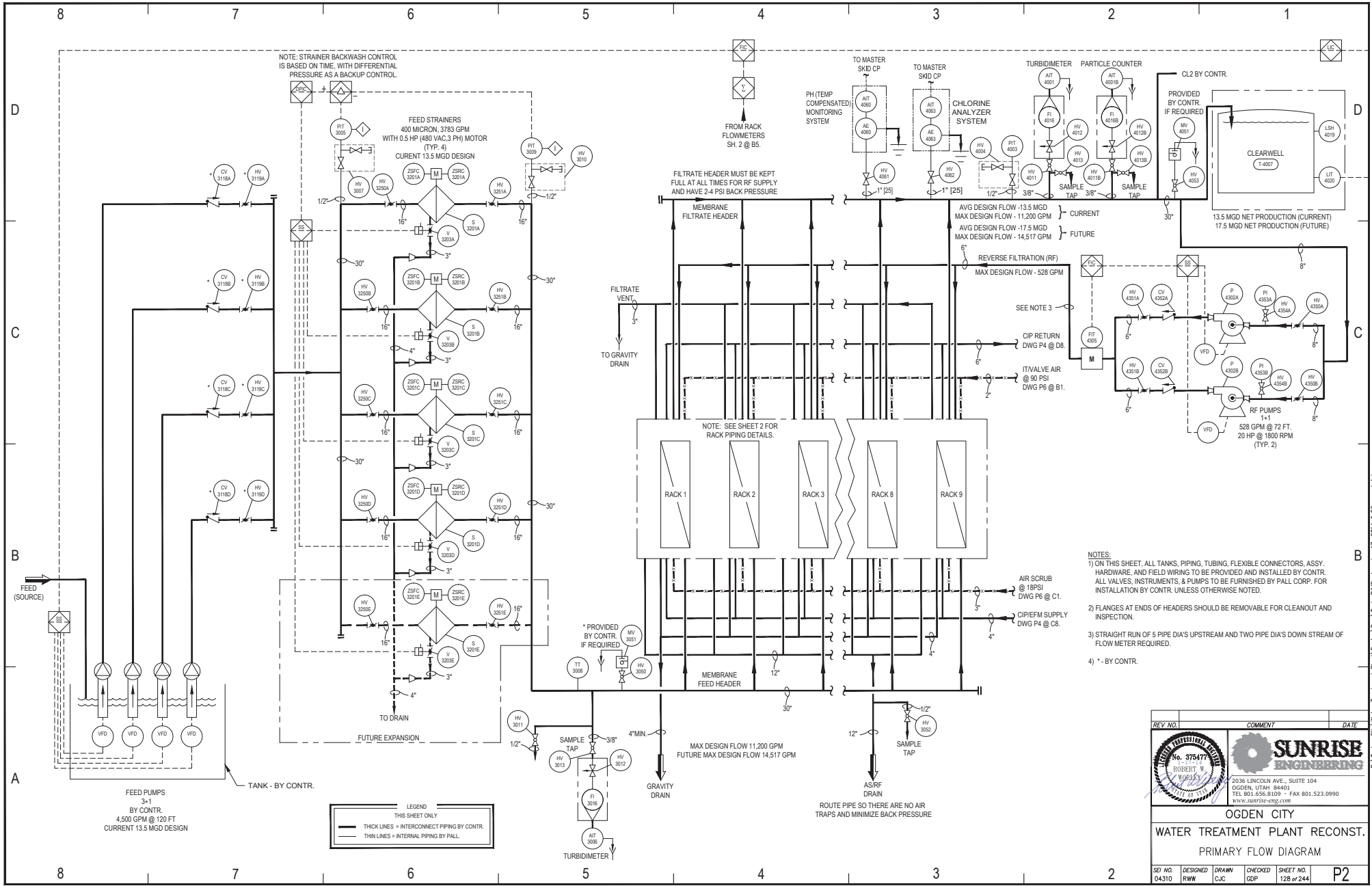


REV. NO.	COMMENT	DATE
04310	RWW	CJC

OGDEN CITY WATER TREATMENT PLANT RECONST. ACH DOSING FLOW DIAGRAM			
SET NO. 04310	DESIGNED RWW	DRAWN CJC	CHECKED GDP
SHEET NO. 127 of 244			P1



REV. NO.	COMMENT	DATE

ROBERT W. WOODS
 PROFESSIONAL ENGINEER
 No. 375477

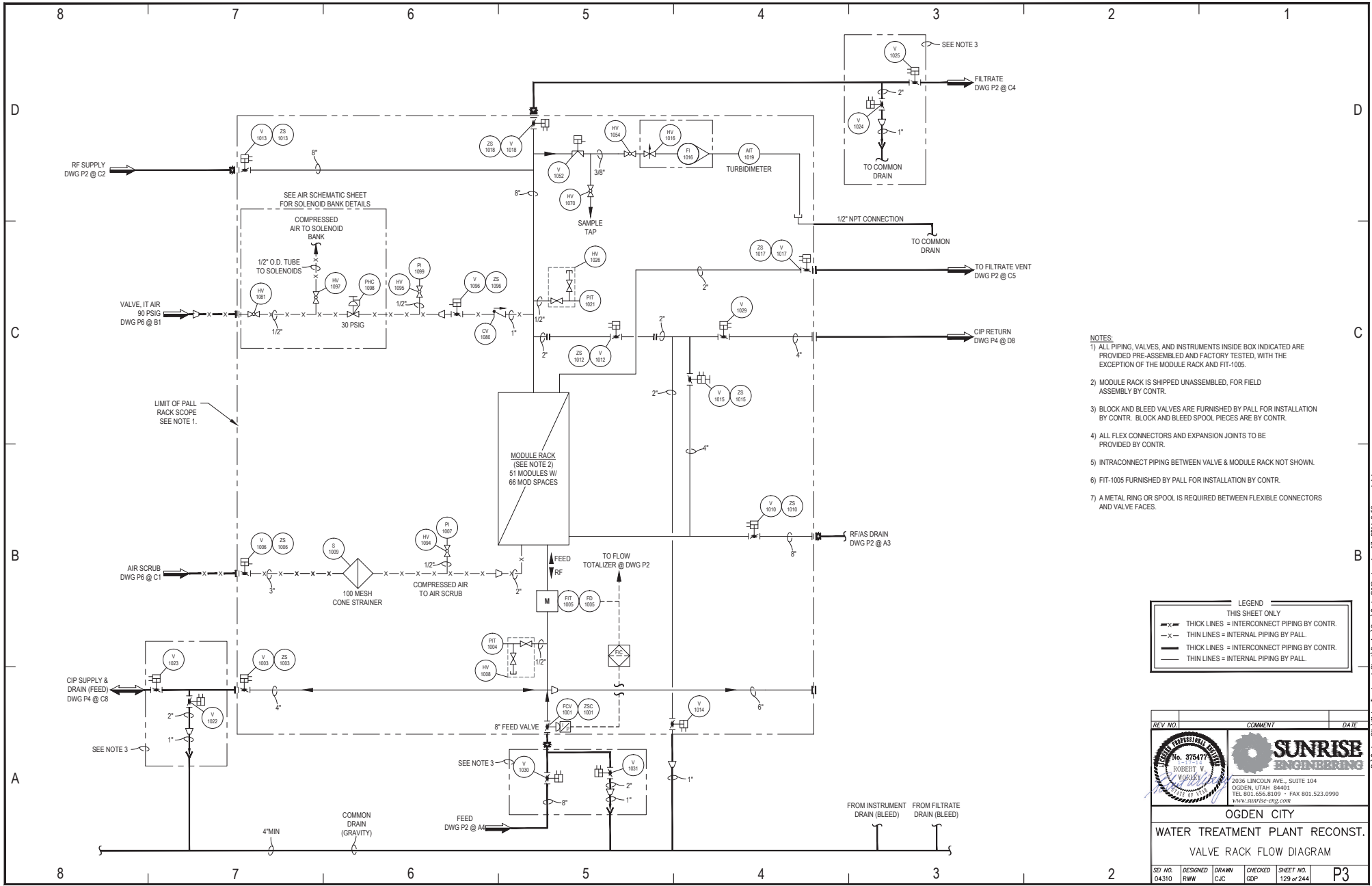
SUNRISE ENGINEERING

2036 LINCOLN AVE., SUITE 104
 OGDEN, UTAH 84403
 TEL: 801.656.8109 • FAX: 801.523.0990
 www.sunrise-eng.com

OGDEN CITY
WATER TREATMENT PLANT RECONST.
PRIMARY FLOW DIAGRAM

REV. NO.	DESIGNED	DRAWN	CHECKED	SHEET NO.	SHEET TOTAL
04310	RWW	CJC	GDP	128 of 244	P2

P:\Open City Water Treatment Plant\Design\Draw\Ogden\K&S-Dwg-Jan 17, 2014 8:52am christensen



- NOTES:
- 1) ALL PIPING, VALVES, AND INSTRUMENTS INSIDE BOX INDICATED ARE PROVIDED PRE-ASSEMBLED AND FACTORY TESTED, WITH THE EXCEPTION OF THE MODULE RACK AND FIT-1005.
 - 2) MODULE RACK IS SHIPPED UNASSEMBLED, FOR FIELD ASSEMBLY BY CONTR.
 - 3) BLOCK AND BLEED VALVES ARE FURNISHED BY PALL FOR INSTALLATION BY CONTR. BLOCK AND BLEED SPOOL PIECES ARE BY CONTR.
 - 4) ALL FLEX CONNECTORS AND EXPANSION JOINTS TO BE PROVIDED BY CONTR.
 - 5) INTRACONNECT PIPING BETWEEN VALVE & MODULE RACK NOT SHOWN.
 - 6) FIT-1005 FURNISHED BY PALL FOR INSTALLATION BY CONTR.
 - 7) A METAL RING OR SPOOL IS REQUIRED BETWEEN FLEXIBLE CONNECTORS AND VALVE FACES.

LEGEND

THIS SHEET ONLY

- THICK LINES = INTERCONNECT PIPING BY CONTR.
- - - THIN LINES = INTERNAL PIPING BY PALL.
- THICK LINES = INTERCONNECT PIPING BY CONTR.
- - - THIN LINES = INTERNAL PIPING BY PALL.

REV. NO.	COMMENT	DATE

ROBERT W. WOODS
Professional Engineer
No. 375477
State of Utah

SUNRISE ENGINEERING

2036 LINCOLN AVE., SUITE 104
OGDEN, UTAH 84403
TEL 801.656.8109 • FAX 801.523.0990
www.sunrise-eng.com

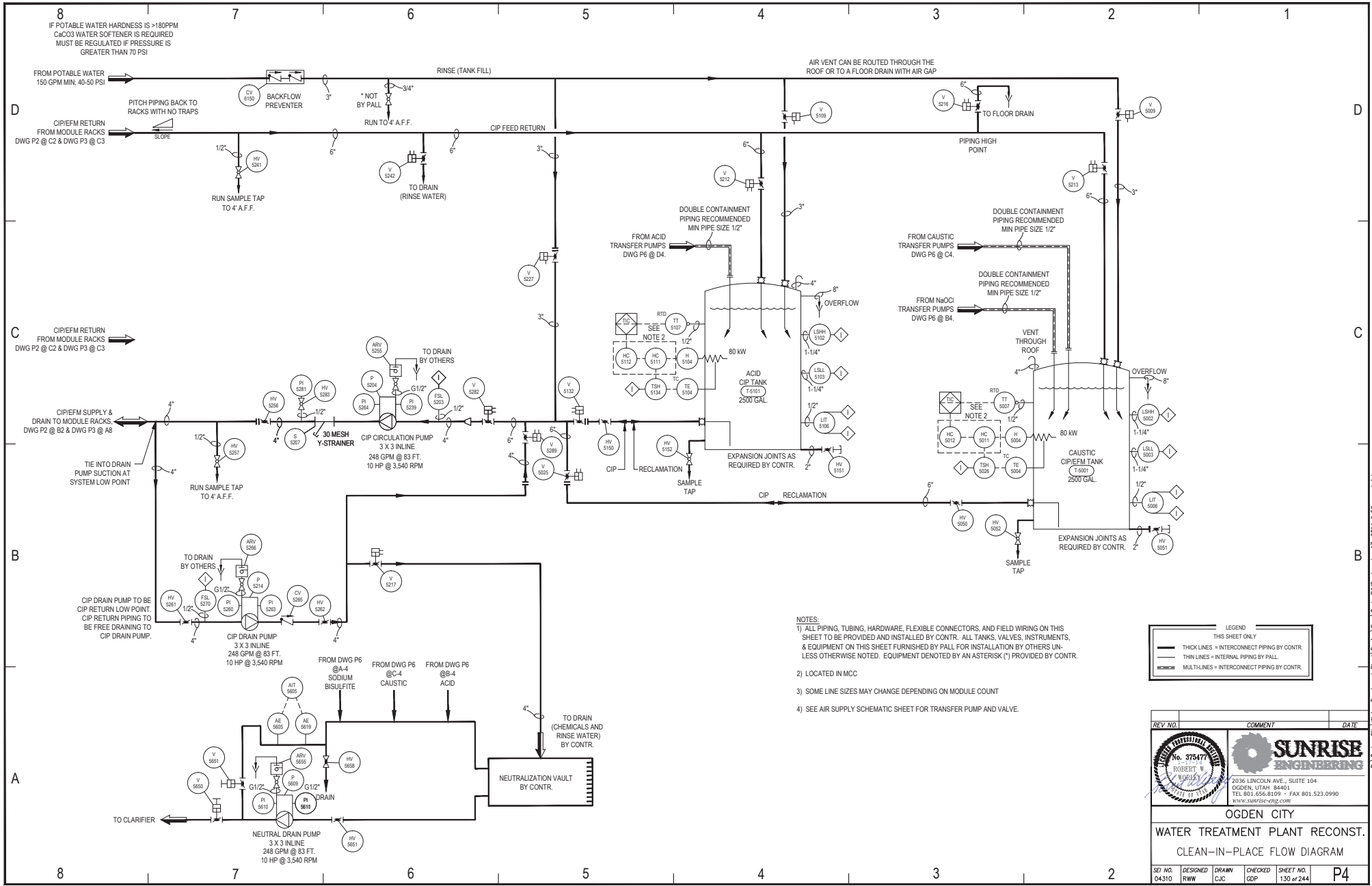
OGDEN CITY

WATER TREATMENT PLANT RECONST.

VALVE RACK FLOW DIAGRAM

REV. NO.	DESIGNED	DRAWN	CHECKED	SHEET NO.
04310	RWW	CJC	GDP	129 of 244

P3



IF POTABLE WATER HARDNESS IS >180PPM
CaCO3 WATER SOFTENER IS REQUIRED
MUST BE REGULATED IF PRESSURE IS
GREATER THAN 70 PSI

AIR VENT CAN BE ROUTED THROUGH THE
ROOF OR TO A FLOOR DRAIN WITH AIR GAP

- NOTES:
- 1) ALL PIPING, TUBING, HARDWARE, FLEXIBLE CONNECTORS, AND FIELD WIRING ON THIS SHEET TO BE PROVIDED AND INSTALLED BY CONTR. ALL TANKS, VALVES, INSTRUMENTS, & EQUIPMENT ON THIS SHEET FURNISHED BY PALL FOR INSTALLATION BY OTHERS UNLESS OTHERWISE NOTED. EQUIPMENT DENOTED BY AN ASTERISK (*) PROVIDED BY CONTR.
 - 2) LOCATED IN MCC
 - 3) SOME LINE SIZES MAY CHANGE DEPENDING ON MODULE COUNT
 - 4) SEE AIR SUPPLY SCHEMATIC SHEET FOR TRANSFER PUMP AND VALVE.

LEGEND	
	THICK LINES = INTERCONNECT PIPING BY CONTR.
	THIN LINES = INTERNAL PIPING BY PALL.
	MULTI-LINES = INTERCONNECT PIPING BY CONTR.

REV. NO.	COMMENT	DATE

ROBERT W. WOODS
Professional Engineer
No. 375477

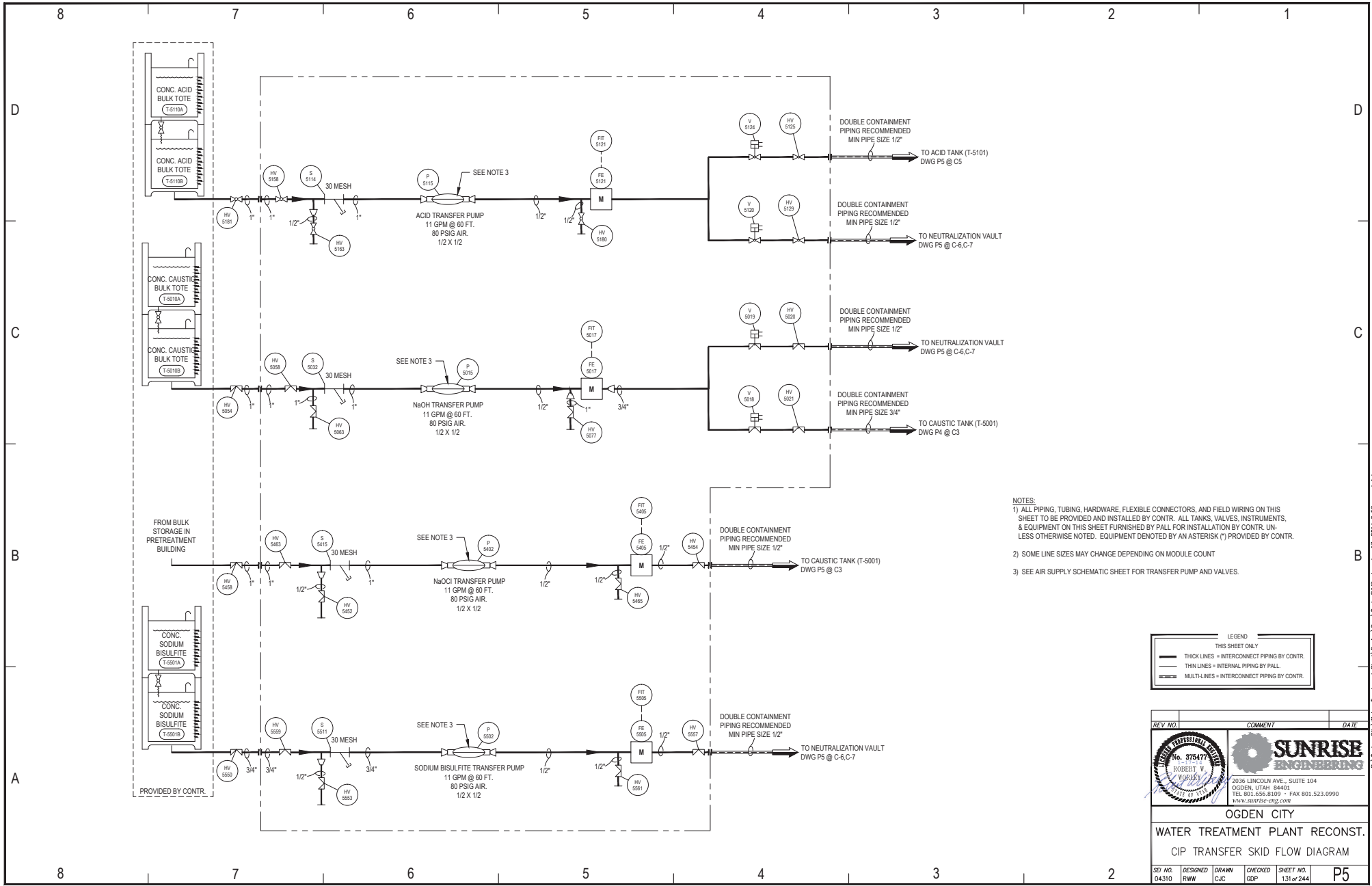
**SUNRISE
ENGINEERING**

2036 LINCOLN AVE., SUITE 104
OGDEN, UTAH 84401
TEL: 801.656.8109 • FAX: 801.523.0990
www.sunrise-eng.com

OGDEN CITY
WATER TREATMENT PLANT RECONST.
CLEAN-IN-PLACE FLOW DIAGRAM

REV. NO.	DESIGNED	DRAWN	CHECKED	SHEET NO.
04310	RWW	CJC	GDP	130 of 244

P4



- NOTES:
- 1) ALL PIPING, TUBING, HARDWARE, FLEXIBLE CONNECTORS, AND FIELD WIRING ON THIS SHEET TO BE PROVIDED AND INSTALLED BY CONTR. ALL TANKS, VALVES, INSTRUMENTS, & EQUIPMENT ON THIS SHEET FURNISHED BY PALL FOR INSTALLATION BY CONTR. UNLESS OTHERWISE NOTED. EQUIPMENT DENOTED BY AN ASTERISK (*) PROVIDED BY CONTR.
 - 2) SOME LINE SIZES MAY CHANGE DEPENDING ON MODULE COUNT
 - 3) SEE AIR SUPPLY SCHEMATIC SHEET FOR TRANSFER PUMP AND VALVES.

LEGEND	
THIS SHEET ONLY	
	THICK LINES = INTERCONNECT PIPING BY CONTR.
	THIN LINES = INTERNAL PIPING BY PALL
	MULTI-LINES = INTERCONNECT PIPING BY CONTR.

REV. NO.	COMMENT	DATE

ROBERT W. WOELKE
Professional Engineer
No. 375477
State of Utah

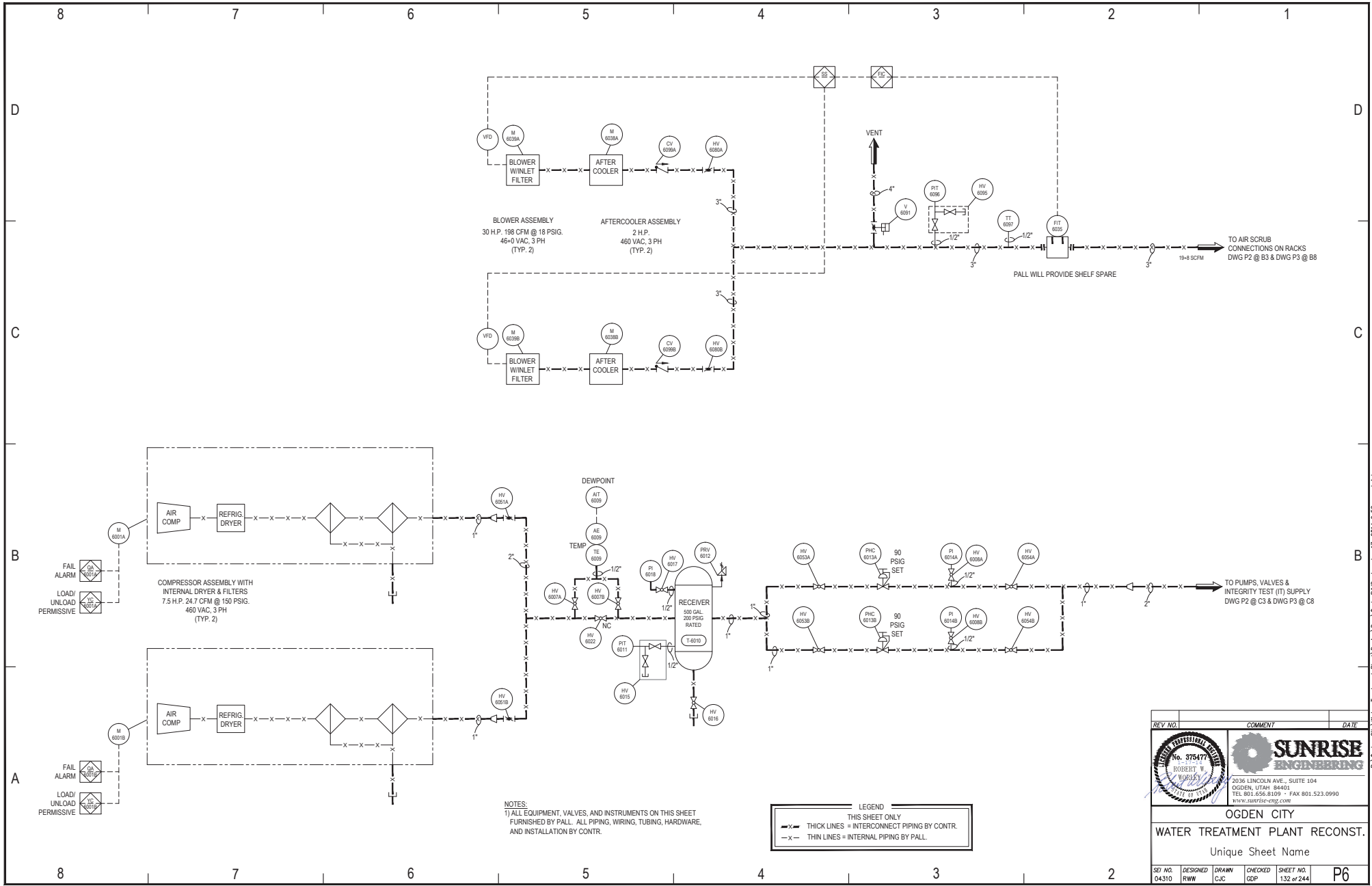
SUNRISE ENGINEERING

2036 LINCOLN AVE., SUITE 104
OGDEN, UTAH 84403
TEL: 801.656.8109 • FAX: 801.523.0990
www.sunrise-eng.com

OGDEN CITY
WATER TREATMENT PLANT RECONST.
CIP TRANSFER SKID FLOW DIAGRAM

REV. NO.	DESIGNED	DRAWN	CHECKED	SHEET NO.
04310	RWW	CJC	GDP	131 of 244

P5



FAIL
ALARM
LOAD/
UNLOAD
PERMISSIVE

FAIL
ALARM
LOAD/
UNLOAD
PERMISSIVE

**COMPRESSOR ASSEMBLY WITH
INTERNAL DRYER & FILTERS**
 7.5 H.P. 24.7 CFM @ 150 PSIG.
 460 VAC, 3 PH
 (TYP. 2)

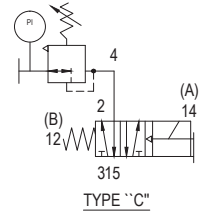
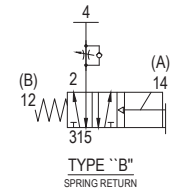
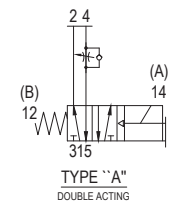
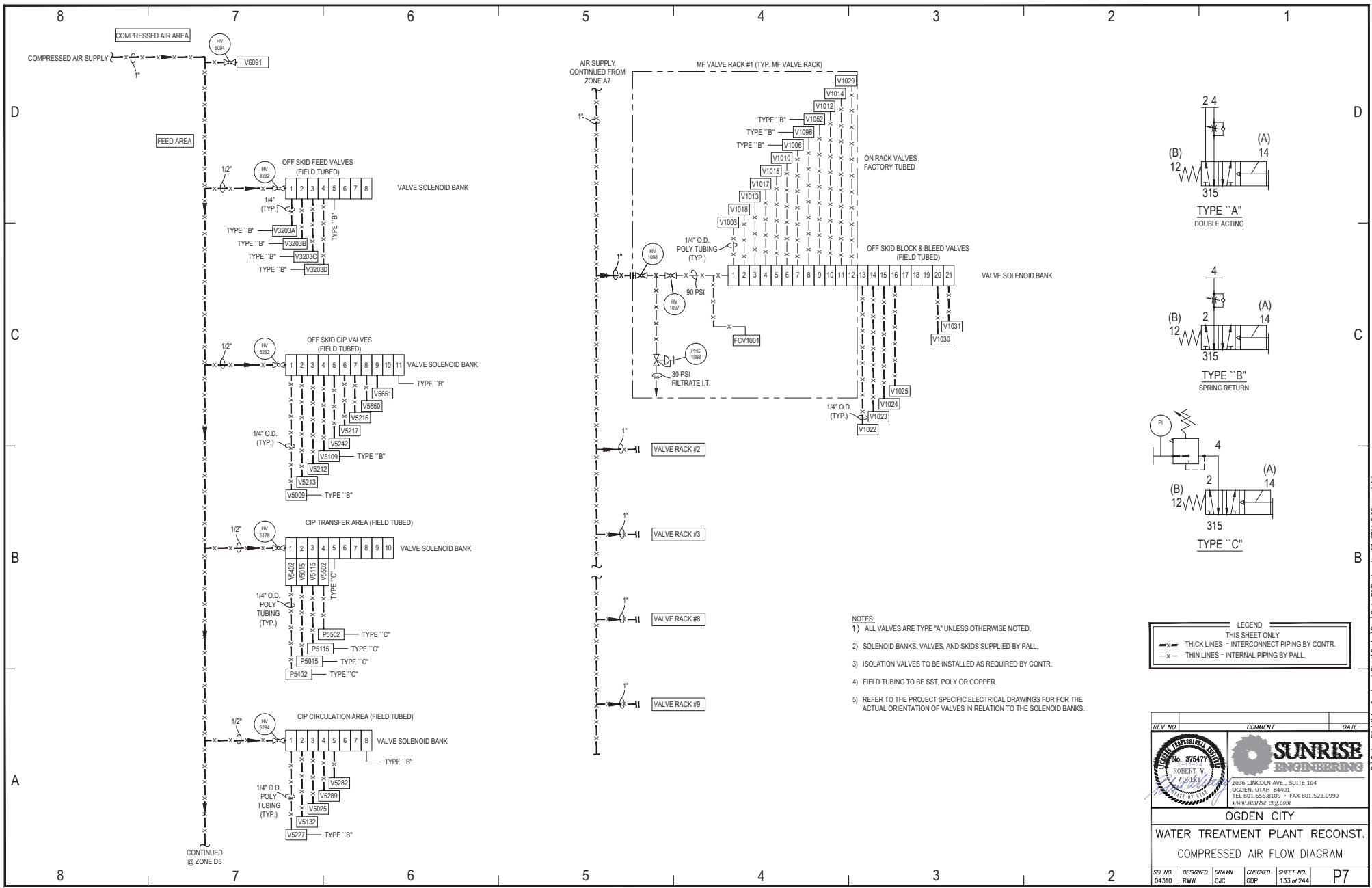
BLOWER ASSEMBLY
 30 H.P. 198 CFM @ 18 PSIG.
 46+0 VAC, 3 PH
 (TYP. 2)

AFTERCOOLER ASSEMBLY
 2 H.P.
 460 VAC, 3 PH
 (TYP. 2)

NOTES:
 1) ALL EQUIPMENT, VALVES, AND INSTRUMENTS ON THIS SHEET
 FURNISHED BY PALL. ALL PIPING, WIRING, TUBING, HARDWARE,
 AND INSTALLATION BY CONTR.

LEGEND
 THIS SHEET ONLY
 —X— THICK LINES = INTERCONNECT PIPING BY CONTR.
 -X- THIN LINES = INTERNAL PIPING BY PALL.

REV. NO.	COMMENT	DATE
SUNRISE ENGINEERING 2036 LINCOLN AVE., SUITE 104 OGDEN, UTAH 84403 TEL 801.656.8109 • FAX 801.523.0990 www.sunrise-eng.com		
OGDEN CITY WATER TREATMENT PLANT RECONST. Unique Sheet Name		
SET NO. 04310	DESIGNED RWW	DRAWN CJC
CHECKED GDP	SHEET NO. 132 of 244	P6



- NOTES:
- 1) ALL VALVES ARE TYPE "A" UNLESS OTHERWISE NOTED.
 - 2) SOLENOID BANKS, VALVES, AND SKIDS SUPPLIED BY PALL.
 - 3) ISOLATION VALVES TO BE INSTALLED AS REQUIRED BY CONTR.
 - 4) FIELD TUBING TO BE SST, POLY OR COPPER.
 - 5) REFER TO THE PROJECT SPECIFIC ELECTRICAL DRAWINGS FOR THE ACTUAL ORIENTATION OF VALVES IN RELATION TO THE SOLENOID BANKS.

LEGEND	
—x—	THIS SHEET ONLY THICK LINES = INTERCONNECT PIPING BY CONTR.
-x-	INTERNAL PIPING BY PALL.

REV. NO.	COMMENT	DATE

ROBERT W. WOODS
Professional Engineer
No. 375477
STATE OF UTAH

SUNRISE ENGINEERING

2036 LINCOLN AVE., SUITE 104
OGDEN, UTAH 84403
TEL 801.656.8109 • FAX 801.523.0990
www.sunrise-eng.com

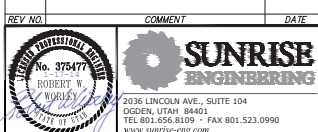
OGDEN CITY
WATER TREATMENT PLANT RECONST.
COMPRESSED AIR FLOW DIAGRAM

REV. NO.	DESIGNED	DRAWN	CHECKED	SHEET NO.
04310	RWW	CJC	GDP	133 of 244

P7

	8	7	6	5	4	3	2	1
	VALVE SYMBOLS	TYPICAL SYMBOLS	TYPICAL SYMBOLS	TYPICAL SYMBOLS	TYPICAL SYMBOLS	TYPICAL SYMBOLS	FLOW INSTRUMENTS	MISCELLANEOUS (CONT.)
D	GATE VALVE OR MISCELLANEOUS GLOBE VALVE CHECK VALVE SPRING LOADED CHECK VALVE PLUG VALVE 3-WAY PLUG VALVE MANUAL ROTARY/BALL VALVE ACTUATED ROTARY/BALL VALVE MANUAL 3-WAY BALL VALVE ACTUATED 3-WAY BALL VALVE MANUAL BUTTERFLY VALVE ACTUATED BUTTERFLY VALVE BUTTERFLY VALVE (W/ FIXED ORIFICE IN DISC) NEEDLE VALVE ANGLE VALVE CONTROL VALVE FLOAT VALVE AIR RELEASE VALVE CORPORATION STOP VALVE/INJECTOR BACKFLOW PREVENTER DIAPHRAGM VALVE SAFETY RELIEF VALVE 2 WAY SOLENOID VALVE 3 WAY SOLENOID VALVE 4 WAY SOLENOID VALVE PNEUMATIC ACTUATOR CONTROL VALVE PRESSURE REDUCING VALVE (REGULATOR)	GENERIC ACTUATOR W/ & W/O TRAVEL STOPS ACTUATOR, AIR TO CLOSE (SPRING RETURN) W/ & W/O TRAVEL STOPS ACTUATOR, AIR TO OPEN (SPRING RETURN) W/ & W/O TRAVEL STOPS ACTUATOR, AIR TO ACTUATE (DOUBLE ACTING) W/ & W/O TRAVEL STOPS TRAVEL STOP PNEUMATIC VALVE ACTUATOR SECONDARY CONTAINMENT UNDEFINED SIGNAL PNEUMATIC SIGNAL COMPRESSED AIR PIPING ELECTRIC SIGNAL FIELD MOUNTED DEVICE PANEL FACE MOUNTED DEVICE INSIDE OF PANEL MOUNTED DEVICE DEVICE MOUNTED ON AUXILIARY PANEL FACE DEVICE MOUNTED INSIDE OF AUXILIARY PANEL PROGRAMMABLE LOGIC CONTROLLER IN MAIN PANEL PROGRAMMABLE LOGIC CONTROLLER IN AUXILIARY PANEL DISPLAY ON MAIN PANEL COMPUTER FUNCTION PRIMARY LOCATION COMPUTER FUNCTION AUXILIARY LOCATION SUMMATION CRT DISPLAY ELECTRIC OPERATOR INTERLOCK VENTURI TUBE FLOWMETER MAGNETIC FLOWMETER W/ INTEGRAL ELECTRONICS VARIABLE AREA FLOWMETER THERMAL MASS FLOWMETER	TWO (2) ITEMS IN ONE (1) DEVICE GUAGE (PRESSURE) FLOW CONVERTER (ADD IDENTIFYING INFORMATION OUTSIDE BALLOON TO CLARIFY FUNCTION OF ITEM INSIDE BALLOON, EXT. IP: CURRENT TO PNEUMATIC CONVERTER). PULSATION DAMPENERS AIR GAPI/GRAVITY DRAIN STATIC MIXER "Y" STRAINER STRAINER/FILTER BATTERY DATUM MECHANICAL BATTERY LIMIT (CUSTOMER) (PALL) ELECTRICAL BATTERY LIMIT (CUSTOMER) (PALL) SPRAY BALL VENT LINE SIZE LINE BREAK FLOW ARROW SLOPE PROXIMITY ULTRASOUND SENSOR SWING ELBOW SIGHT GLASS & CALIBRATION COLUMN EDUCTOR (W/ GATE VALVE & FUNNEL) ITEM OR EQUIPMENT NO.	ANTIFORM INLET SNUBBER THERMOWELL DIAPHRAGM SEAL SLIP JOINT/EXPANSION CONNECTION CONSTANT FLOW FITTING FLEXIBLE CONNECTOR/ EXPANSION JOINT ECCENTRIC REDUCERS FLEXIBLE REDUCER CONCENTRIC REDUCER FLANGED CONNECTION AIR GAP CAPPED OR PLUGGED CONNECTION PRESSURE CALIBRATION MANIFOLD (SINGLE UNIT) FLOWMETER- GEAR DISPLACEMENT DIGITAL POSITIONER MUFFLER AIR RECEIVER DRYER COMPRESSOR DIFFERENTIAL (FLOW) HEATER (TANK)	TANK MIXER TOTE- SINGLE/ STACKED STORAGE TANK PUMP SYMBOLS GENERIC PUMP CENTRIFUGAL PUMP ROTARY PUMP (TUBING) PERISTALTIC PUMP DOUBLE HEAD PERISTALTIC PUMP MOTORIZED DIAPHRAGM PUMP PNEUMATIC DIAPHRAGM PUMP METERING PUMP VERTICAL PUMP SUBMERGED PUMP PUMP (GENERIC) INLINE PUMP	FC FLOW CONTROLLER (BLIND) FD FLOW CONTROL VALVE FE FLOW DIRECTION FE FLOW ELEMENT FFC FLOW RATIO CONTROLLER FG FLOW SIGHT GLASS FI FLOW INDICATOR FC FLOW INDICATOR CONTROLLER FIT FLOW INDICATOR TRANSMITTER FM FLOW METER FQ FLOW TOTALIZER FOC FLOW TOTALIZER CONTROLLER FR FLOW RECORDER FRC FLOW RECORDER CONTROLLER FSH FLOW SWITCH HIGH FSHH FLOW SWITCH HIGH HIGH FSL FLOW SWITCH LOW FX FLOW INTEGRATOR DSPI DIFFERENTIAL SET POINT INDICATOR PC PRESSURE CONTROLLER (BLIND) PDC PRESSURE DIFFERENTIAL CONTROLLER PDH DIFFERENTIAL PRESSURE HIGH PDHH DIFFERENTIAL PRESSURE HIGH HIGH POI DIFFERENTIAL PRESSURE INDICATOR POIC PRESSURE DIFFERENTIAL INDICATING CONTROLLER POS DIFFERENTIAL PRESSURE SWITCH PHC PRESSURE HAND CONTROL (REGULATOR) PI PRESSURE INDICATOR PIC PRESSURE INDICATING CONTROLLER PIS PRESSURE INDICATING SWITCH PIT PRESSURE INDICATING TRANSMITTER PLH PRESSURE LIMIT HIGH PR PRESSURE RECORDER PRC PRESSURE RECORDER CONTROLLER PRV PRESSURE REDUCING VALVE PSH PRESSURE SWITCH HIGH PSHH PRESSURE SWITCH HIGH HIGH PSL PRESSURE SWITCH LOW PSLL PRESSURE SWITCH LOW LOW PT PRESSURE TRANSMITTER (BLIND) LC LEVEL CONTROLLER (BLIND) LCV LEVEL CONTROL VALVE LE LEVEL ELEMENT LG LEVEL GAGE GLASS LJ LEVEL INDICATOR LIC LEVEL INDICATING CONTROLLER LIT LEVEL INDICATING TRANSMITTER LR LEVEL RECORDER LRC LEVEL RECORDING CONTROLLER LSH LEVEL SWITCH HIGH LSHH LEVEL SWITCH HIGH HIGH LSL LEVEL SWITCH LOW LSLL LEVEL SWITCH LOW LOW LSM LEVEL SWITCH MID LT LEVEL TRANSMITTER (BLIND) TC TEMPERATURE CONTROLLER (BLIND) TCV TEMPERATURE CONTROL VALVE TE TEMPERATURE ELEMENT TI TEMPERATURE INDICATOR TIC TEMPERATURE INDICATING CONTROLLER TIT TEMPERATURE INDICATING TRANSMITTER TLH TEMPERATURE LIMIT HIGH TRC TEMPERATURE RECORDER CONTROLLER TSH TEMPERATURE SWITCH HIGH TSHH TEMPERATURE SWITCH HIGH HIGH TSL TEMPERATURE SWITCH LOW TSSL TEMPERATURE SWITCH LOW LOW TT TEMPERATURE TRANSMITTER A ANALYTICAL INSTRUMENT AC AIR COMPRESSOR AE ANALYTICAL ELEMENT AFF ABOVE FINISHED FLOOR AUT ANALYTICAL INSTRUMENT TRANSMITTER A.S. AIR SUPPLY A.T.A. AIR TO ACTIVATE A.T.C. AIR TO CLOSE A.T.O. AIR TO OPEN BR BACKWASH DISCHARGE BS BACKWASH SUPPLY BT BULK TOTE	CA CITRIC ACID CIP CLEAN-IN-PLACE CIPR CLEAN-IN-PLACE RETURN CIPS CLEAN-IN-PLACE SUPPLY CLS SODIUM HYPOCHLORITE CV CHECK VALVE DE DE-ENERGIZE DPI DIFFERENTIAL PRESSURE INDICATOR E ENERGIZE EX EXHAUST FT FILTRATE FW FINISHED WATER FP FEED PUMP H HEATER HTR HEATER HV HAND VALVE (MANUAL) IP CURRENT TO PNEUMATIC TRANSDUCER LS LIMIT SWITCH M MECHANICAL DEVICE/MISCELLANEOUS MEM MEMBRANE MV MISCELLANEOUS VALVE MX MIXER N.C. NORMALLY CLOSED NEU NEUTRALIZATION N.O. NORMALLY OPEN O/C/A OPEN-CLOSE-AUTO ORP OXIDATION REDUCTION POTENTIAL P PUMP PA PLANT AIR P/A PULSE TO ANALOG PD PROCESS DRAIN PI PNEUMATIC TO CURRENT TRANSDUCER PRD PRESSURE RUPTURE DISK PRV PRESSURE RELIEF VALVE PS PUMP SPEED PVC POLYVINYL CHLORIDE QA FAIL ALARM SYSTEM ROVR RECEIVER REV. REVERSING REV. REVERSE FILTRATION S STRAINER SBS SODIUM BISULFITE SC SPEED CONTROL SG SIGHT GLASS SH SODIUM HYDROXIDE SS SELECTOR SWITCH SSTL STAINLESS STEEL SW SETTLED WATER T TANK TP TRANSFER PUMP TR TRAIN TS TRAVEL STOP TW TREATED WATER UA MULTIVARIABLE ALARM VALVE (ACTUATED) V VOLT FREE CONTACT VFC VARIABLE FREQUENCY DRIVE VFD VARIABLE FREQUENCY DRIVE WIT WEIGHT INDICATING TRANSMITTER Y EXCESS RECIRCULATION CONVERTER YC LOAD/UNLOAD SIGNAL ZS LIMIT SWITCH OPEN & CLOSED ZSFC LIMIT SWITCH FORWARD CLOSED ZSO LIMIT SWITCH OPEN ZSC LIMIT SWITCH CLOSED ZSRC LIMIT SWITCH REVERSE CLOSED NOTES: 1) SOME SYMBOLS ON THIS SHEET MAY NOT APPEAR ON THIS PARTICULAR SYSTEM PAID.	
A								
B								
C								
D								

REV. NO.	DESIGNED	DRAWN	CHECKED	SHEET NO.	DATE
04310	RRW	CJC	GDP	134 of 244	P8



SUNRISE ENGINEERING

2036 LINCOLN AVE., SUITE 104
 OGDEN, UTAH 84403
 TEL: 801.656.8109 • FAX: 801.523.0990
www.sunrise-eng.com

OGDEN CITY
WATER TREATMENT PLANT RECONST.
 LEGEND AND ABBREVIATIONS

P:\Ogden City Water Treatment Plant\Design\Ogden\Drawings\Legend.dwg Jan 17, 2014 8:52am christensen

EQUIPMENT SCHEDULE

FEED WATER SYSTEM					
NO.	DESCRIPTION	SIZE	REMARKS	FURNISHED BY	TAG NO.
101	ACH STORAGE TANK			CONTRACTOR	
102	TRUE UNION BALL VALVE	1/2		PALL	HW-3301, 3303, 3306, 3307, 3309
103	CALIBRATION COLUMN	1/2		PALL	CC-3300
104	STRAINER	1/2		PALL	S-3302
105	CHEMICAL INJECTION PUMP			PALL	P-3304
106	PRESSURE GAUGE	1/2		PALL	PI-3308
107	PULSATON DAMPENER	1/4		PALL	PD-3310
108	PRESSURE RELIEF VALVE	1/4		PALL	PRV-3310
109	BACK PRESSURE VALVE	1/4		PALL	BPV-3312
110	FEED PUMP AND MOTOR			CONTRACTOR	
111	FLEXIBLE EXPANSION JOINT	14	SEE SHEET P34 DETAIL E	CONTRACTOR	
112	STEEL PIPE AND FITTINGS	14		CONTRACTOR	
113	CHECK VALVE	14	WAFFER CHECK VALVE	CONTRACTOR	CV-3118
114	BUTTERFLY VALVE	14		CONTRACTOR	HW-3119
115	STEEL PIPE AND FITTINGS	30		CONTRACTOR	
116	DUCTILE IRON PIPE AND FITTINGS	30		CONTRACTOR	
117	STEEL PIPE AND FITTINGS	16		CONTRACTOR	
118	BUTTERFLY VALVE	16		PALL	HW-3250
119	FEED STRAINER	16		PALL	S-3201
120	NOT USED				
121	PRES IND & HAND VALVE	1/2		PALL	PIT-3005, 3009 & HW-3007, 3010
122	PEX IN CONDUIT	5/8		CONTRACTOR	
123	BUTTERFLY VALVE	3		CONTRACTOR	
124	TURBIDIMETER			PALL	AIT-3006
125	TEMPERATURE TRANSMITTER			PALL	TT-3008
126	STEEL PIPE AND FITTINGS	8		CONTRACTOR	
127	BUTTERFLY VALVE	8	W/ AIR ACTUATOR	PALL	V-1030
128	PVC SCHEDULE 80	2		CONTRACTOR	
129	BUTTERFLY VALVE	2	W/ AIR ACTUATOR	PALL	V-1031
130	STEEL PIPE AND FITTINGS	1		CONTRACTOR	
131	FLEXIBLE EXPANSION JOINT	8	SEE SHEET P34 DETAIL E	CONTRACTOR	
132	FILTER SADDLE AND VALVE BACK			PALL	
133	HDPE DR 17 PIPE AND FITTINGS	36		CONTRACTOR	
134	HDPE DR 17 PIPE AND FITTINGS	16		CONTRACTOR	
135	HDPE DR 17 PIPE AND FITTINGS	8		CONTRACTOR	
136	PVC SCHEDULE 80	1/2		CONTRACTOR	

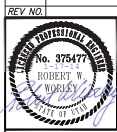

AIR SYSTEM					
NO.	DESCRIPTION	SIZE	REMARKS	FURNISHED BY	TAG NO.
401	AIR COMPRESSOR		ATLAS COPCO 7.5 HP	PALL	M-6001
402	RIGID COPPER PIPE AND FITTINGS	1	TYPE K	CONTRACTOR	
403	RIGID COPPER PIPE AND FITTINGS	2	TYPE K	CONTRACTOR	
404	BUTTERFLY VALVE	2		PALL	HW-6051
405	BALL VALVE	2		PALL	HW-6007, 6022
406	RIGID COPPER PIPE AND FITTINGS	1/2	TYPE K	CONTRACTOR	
407	TEMP AND DEWPOINT INST	1/2		PALL	TE-6009
408	AIR RECEIVER		500 GALLON	PALL	T-6010
409	BALL VALVE	1		PALL	HW-6053, 6054
410	PRESSURE REGULATOR	1		PALL	PRC-6013
411	BALL VALVE	1/2		PALL	HW-6008
412	PRESSURE GAUGE	1/2		PALL	PI-6014
413	BLOWER		AERZEN	PALL	M-6039
414	AFTER COOLER		XCHANGER	PALL	M-6038
415	RIGID COPPER PIPE AND FITTINGS	3	TYPE K	CONTRACTOR	
416	CHECK VALVE	3	WAFFER CHECK VALVE	PALL	CV-6099
417	BUTTERFLY VALVE	3		PALL	HW-6080
418	RIGID COPPER PIPE AND FITTINGS	4	TYPE K	CONTRACTOR	
419	NON USED	4		CONTRACTOR	
420	BUTTERFLY VALVE	4	W/ AIR ACTUATOR	PALL	V-6091
421	PRESSURE INDICATOR			PALL	PIT-6096
422	TEMPERATURE TRANSMITTER			PALL	TT-6076
423	FLOW METER	2		PALL	FT-6035

FILTRATE WATER SYSTEM					
NO.	DESCRIPTION	SIZE	REMARKS	FURNISHED BY	TAG NO.
201	FLEXIBLE EXPANSION JOINT	8	SEE SHEET P34 DETAIL E	CONTRACTOR	
202	STEEL PIPE AND FITTINGS	8		CONTRACTOR	
203	BUTTERFLY VALVE	8	W/ AIR ACTUATOR	PALL	V-1025
204	STEEL PIPE AND FITTINGS	2		CONTRACTOR	
205	BUTTERFLY VALVE	2	W/ AIR ACTUATOR	PALL	V-1024
206	PVC SCHEDULE 80	1		CONTRACTOR	
207	STEEL PIPE AND FITTINGS	30		CONTRACTOR	
208	STEEL PIPE AND FITTINGS	36		CONTRACTOR	
209	STAINLESS STEEL ORIFICE PLATE	36	1/2" PLATE W/ 22" OPENING IN O.P.	CONTRACTOR	
210	DUCTILE IRON PIPE AND FITTINGS	36		CONTRACTOR	
211	COMBINATION AIR VALVE & BPV	18	APCO AWD 1800 W/ SPING AST. FLT	CONTRACTOR	
212	STEEL PIPE AND FITTINGS	1		CONTRACTOR	
213	CHLORINE INJECTION ASSBLY	1	LMI CORP STOP & NZL OR EQ	CONTRACTOR	
214	ISOLATION VALVE	1		PALL	HW-4061, 4062
215	PH MONITOR			PALL	AIT-4960
216	CHLORINE ANALYZER			PALL	AIT-4963
217	ISOLATION VALVE	3/8		PALL	HW-4011, 4013
218	TURBIDIMETER			PALL	AIT-4001
219	VALVE AND PRESSURE GAUGE	1/2		PALL	HW-4004 & PIT 4003
220	PEX IN CONDUIT	5/8		CONTRACTOR	
221	NOT USED				
222	STEEL PIPE AND FITTINGS	12		CONTRACTOR	
223	STEEL PIPE AND FITTINGS	10		CONTRACTOR	
224	FLOW METER	10	SEE 11305 SP	CONTRACTOR	
225	NOT USED				
226	DUCTILE IRON PIPE AND FITTINGS	8		CONTRACTOR	
227	BUTTERFLY VALVE	8		PALL	HW-4350
228	PRESSURE GAUGE	1/2		PALL	PI-4353
229	FLEXIBLE EXPANSION JOINT	8x4	SEE SHEET P34 DETAIL E	CONTRACTOR	
230	RF PUMPS AND MOTORS			PALL	P-4302
231	FLEXIBLE EXPANSION JOINT	6x4	SEE SHEET P34 DETAIL E	CONTRACTOR	
232	DUCTILE IRON PIPE AND FITTINGS	6		CONTRACTOR	
233	CHECK VALVE	6	WAFFER CHECK VALVE	PALL	CV-4352
234	BUTTERFLY VALVE	6		PALL	HW-4351
235	FLOW METER	6		PALL	FT-4305
236	STEEL PIPE AND FITTINGS	4		CONTRACTOR	
237	STEEL PIPE AND FITTINGS	3		CONTRACTOR	
238	BUTTERFLY VALVE	4		CONTRACTOR	
239	BACKFLOW PREVENTER		RPZ DOUBLE CHECK VALVE	PALL	CV-6150
240	BUTTERFLY VALVE	3	W/ AIR ACTUATOR	PALL	V-5227, 5109 & 5009
241	FLEXIBLE EXPANSION JOINT	3	SEE SHEET P34 DETAIL E	CONTRACTOR	
242	BUTTERFLY VALVE	10		CONTRACTOR	
243	STEEL PIPE AND FITTINGS	2		CONTRACTOR	
244	BUTTERFLY VALVE	2		CONTRACTOR	
245	DUCTILE IRON PIPE AND FITTINGS	10		CONTRACTOR	
246	STEEL PIPE AND FITTINGS	18		CONTRACTOR	
247	CHECK VALVE	10	WAFFER CHECK VALVE	CONTRACTOR	

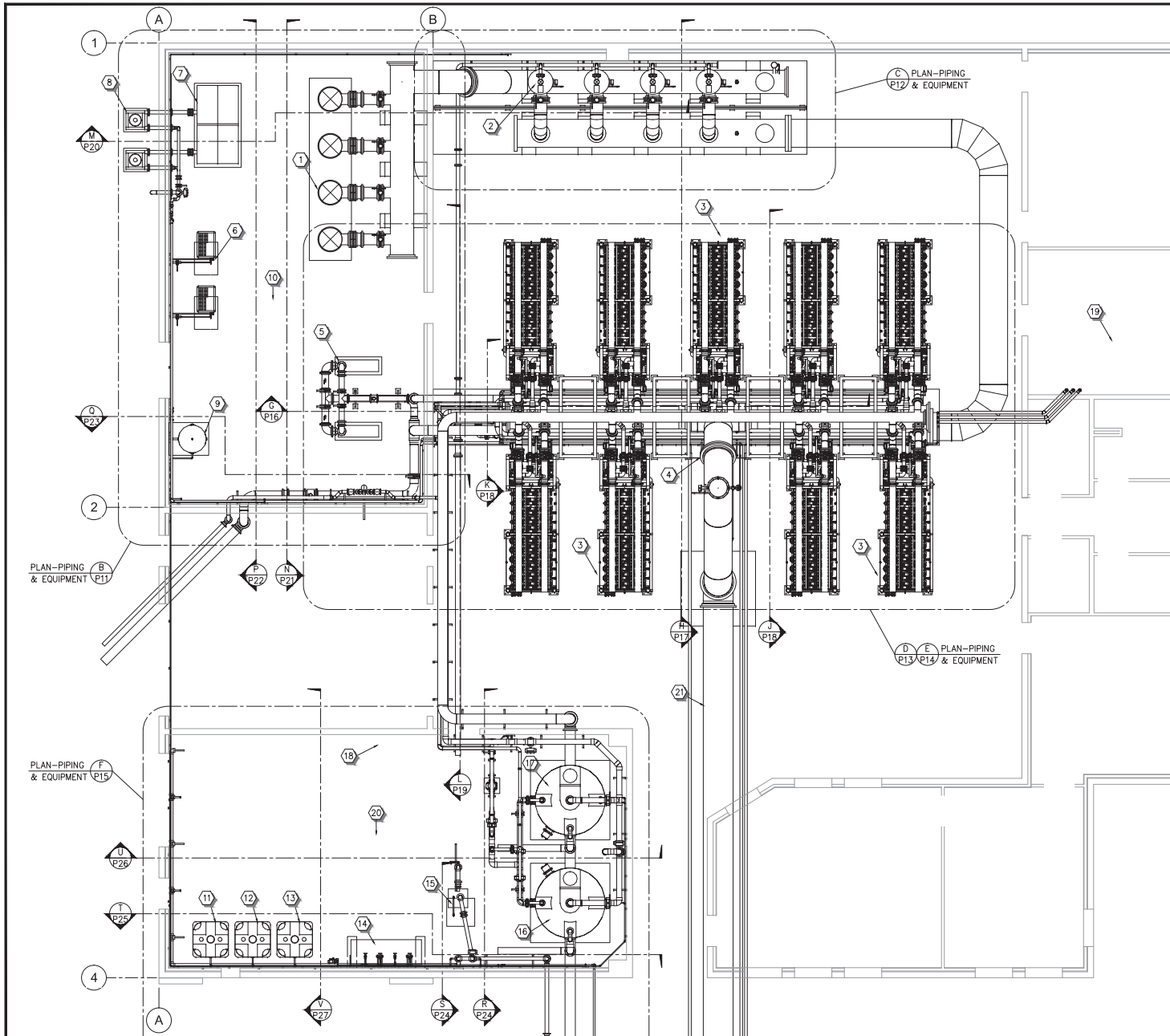
DRAIN WATER SYSTEM					
NO.	DESCRIPTION	SIZE	REMARKS	FURNISHED BY	TAG NO.
301	PVC SCHEDULE 80	1		CONTRACTOR	
302	PVC SCHEDULE 80	2		CONTRACTOR	
303	PVC SCHEDULE 80	3		CONTRACTOR	
304	PVC SCHEDULE 80	4		CONTRACTOR	
305	DUCTILE IRON PIPE AND FITTINGS	4		CONTRACTOR	
306	BUTTERFLY VALVE	2	W/ AIR ACTUATOR	PALL	V-1024, 1031, 1022
307	BUTTERFLY VALVE	3	W/ AIR ACTUATOR	PALL	V-3203
308	STEEL PIPE AND FITTINGS	2		CONTRACTOR	
309	STEEL PIPE AND FITTINGS	3		CONTRACTOR	
310	STEEL PIPE AND FITTINGS	4		CONTRACTOR	
311	DUCTILE IRON PIPE AND FITTINGS	6		CONTRACTOR	
312	BUTTERFLY VALVE	6	W/ AIR ACTUATOR	PALL	V-5242, 5216
313	PVC SCHEDULE 80	6		CONTRACTOR	
314	PVC SCHEDULE 80	8		CONTRACTOR	
315	FLEXIBLE EXPANSION JOINT	8	SEE SHEET P34 DETAIL E	CONTRACTOR	
316	STEEL PIPE AND FITTINGS	8		CONTRACTOR	
317	STEEL PIPE AND FITTINGS	12		CONTRACTOR	
318	DUCTILE IRON PIPE AND FITTINGS	12		CONTRACTOR	
319	STEEL PIPE AND FITTINGS	1		CONTRACTOR	
320	CLEAR FLEXIBLE TUBING	1/2		CONTRACTOR	

CHEMICAL SYSTEM					
NO.	DESCRIPTION	SIZE	REMARKS	FURNISHED BY	TAG NO.
501	ACID TANK		2500 GALLON	PALL	T-5101
502	CAUSTIC TANK		2500 GALLON	PALL	T-5001
503	TANK HEATER	8	WATLOW, 80KW IMM HEATER	PALL	H-5104, 5004
504	BALL VALVE	2		PALL	HW-5051, 5151
505	PVC SCHEDULE 80	2		CONTRACTOR	
506	PVC SCHEDULE 80	3			
507	PVC SCHEDULE 80	4			
508	PVC SCHEDULE 80	6		CONTRACTOR	
509	PITE LINED FLEXIBLE EXP. JOINT	6	SEE SHEET P34 DETAIL E	CONTRACTOR	
510	BUTTERFLY VALVE	6		PALL	HW-5150,5050, 5256
511	BUTTERFLY VALVE	6	W/ AIR ACTUATOR	PALL	V-5132, 5025, 5282, 5212, 5213
512	FLOW SWITCH	1/2		PALL	FSL-5203
513	PITE LINED FLEXIBLE EXP. JOINT	6x4	SEE SHEET P34 DETAIL E	CONTRACTOR	
514	CIP CIRCULATION PUMP			PALL	P-5204
515	STRAINER	4		PALL	S-5207
516	PRESSURE GAUGE	1/2		PALL	PI-5281
517	BALL VALVE	1/2		PALL	HW-5283, 5257, 5052, 5152, 5241
518	CIP DRAIN PUMP			PALL	P-5214
519	CHECK VALVE	4	WAFFER CHECK VALVE	PALL	CV-5265
520	NEUTRALIZATION DRAIN PUMP			PALL	P-5609
521	BUTTERFLY VALVE	4	W/ AIR ACTUATOR	PALL	V- 5289, 5217, 1023, 5651, 5650
522	ORP ANALYZER			PALL	AE-5619
523	PH ANALYZER			PALL	AE-5605
524	PVC SCHEDULE 80	3/4		CONTRACTOR	
525	PVC SCHEDULE 80	1		CONTRACTOR	
526	ACID BULK TOTE	330	SEE 11236 SP	CONTRACTOR	
527	CAUSTIC BULK TOTE	330	SEE 11236 SP	CONTRACTOR	
528	SODIUM BISULFITE BULK TOTE	330	SEE 11236 SP	CONTRACTOR	
529	METERING PUMP		SEE 11305 SP	CONTRACTOR	
530	TRUE UNION BALL VALVE	3/4		CONTRACTOR	
531	CHEMICAL TRANSFER SKID			PALL	
532	BUTTERFLY VALVE	4		PALL	HW- 5261, 5262
533	PITE LINED FLEXIBLE EXP. JOINT	4	SEE SHEET P34 DETAIL E	CONTRACTOR	
534	FLEX HOSE ASSEMBLY	1/2	SEE SHEET P31 DETAIL A	CONTRACTOR	
535	CV - SS BODY W/ TEE SEAT	4	WAFFER CV - KEYSTONE 810-004	CONTRACTOR	
536	TRUE UNION BALL VALVE	1/2	SEE SHEET P31 DETAIL A	CONTRACTOR	
537	STRAINER	1/2		CONTRACTOR	

PIPE SUPPORTS					
NO.	DESCRIPTION	SIZE	REMARKS	FURNISHED BY	TAG NO.
PS1	WALL PIPE SUPPORT		SEE SHEET P33	CONTRACTOR	
PS2	WALL PIPE SUPPORT		SEE SHEET P33	CONTRACTOR	
PS3	WALL PIPE SUPPORT		SEE SHEET P33	CONTRACTOR	
PS4	PIPE HANGER		SEE SHEET P33	CONTRACTOR	
PS5	PIPE SUPPORT		SEE SHEET P33	CONTRACTOR	
PS6	PIPE SUPPORT		SEE SHEET P33	CONTRACTOR	
PS7	PIPE SUPPORT		SEE SHEET P33	CONTRACTOR	
PS8	CONCRETE PIPE SUPPORT		SEE SHEET P34 DETAIL A	CONTRACTOR	

REV NO.	COMMENT	DATE
 		
SUNRISE ENGINEERING 2036 LINCOLN AVE., SUITE 104 OGDEN, UTAH 84403 TEL 801.656.8100 • FAX 801.523.0990 www.sunrise-eng.com		
OGDEN CITY WATER TREATMENT PLANT RECONST. EQUIPMENT SCHEDULE		
DESIGNED 04310	DRAWN RWW	CHECKED CJC
DATE 135 of 244	SHEET NO. P9	

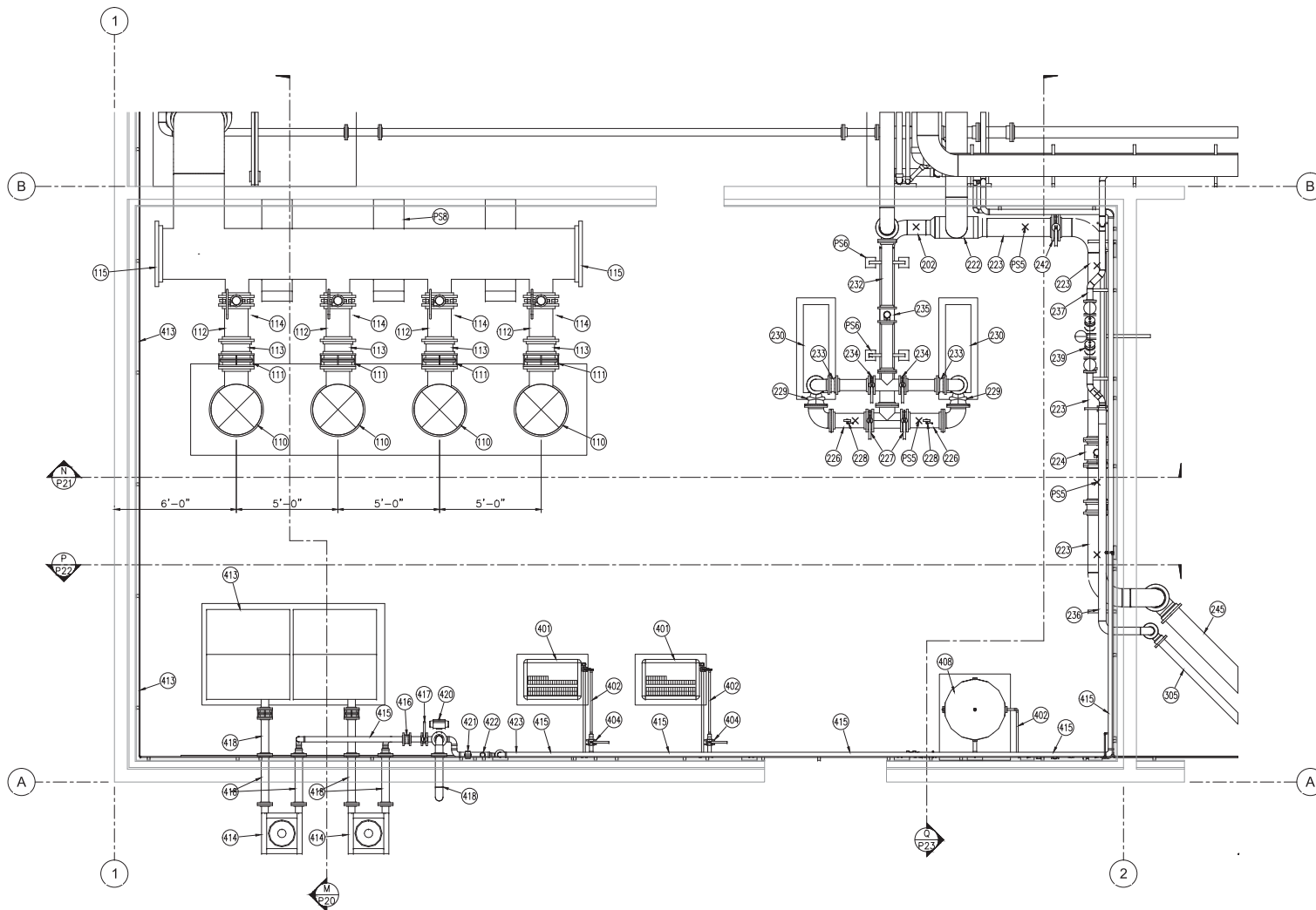
P:\Ogden City Water Treatment Plant\Design\Drawings\OgdenR&S.dwg Jan 17, 2014 9:52am christensen



- 01 FEED PUMPS
- 02 FEED STRAINER
- 03 FILTER RACK
- 04 ANALYTICAL EQUIPMENT
- 05 REVERSE FILTRATION PUMPS
- 06 AIR COMPRESSORS
- 07 BLOWERS
- 08 AFTER COOLER
- 09 AIR RECEIVER
- 10 FEED WATER VAULT
- 11 ACIC TOTE
- 12 SODIUM BISULFITE TOTE
- 13 CAUSTIC TOTE
- 14 CHEMICAL TRANSFER SKID
- 15 NEUTRALIZATION PUMP
- 16 ACID TANK
- 17 CAUSTIC TANK
- 18 EYE WASH / SHOWER
- 19 LABORATORY
- 20 NEUTRALIZATION VAULT
- 21 FILTRATE

A PLAN - PIPING & EQUIPMENT
P10 3/16" = 1'-0"

REV. NO.	COMMENT	DATE
SUNRISE ENGINEERING 2036 LINCOLN AVE., SUITE 104 OGDEN, UTAH 84401 TEL: 801.656.8109 • FAX: 801.523.0990 www.sunrise-eng.com		
OGDEN CITY WATER TREATMENT PLANT RECONST. GENERAL LAYOUT PLAN		
REV. NO. 04310	DESIGNED RWW	DRAWN CJC
CHECKED GDP	SHEET NO. 136 of 244	P10



PLAN - PIPING & EQUIPMENT
 3/8" = 1'-0"

REV. NO.	COMMENT	DATE

ROBERT W. WORLEY
 PROFESSIONAL ENGINEER
 No. 375477
 STATE OF UTAH

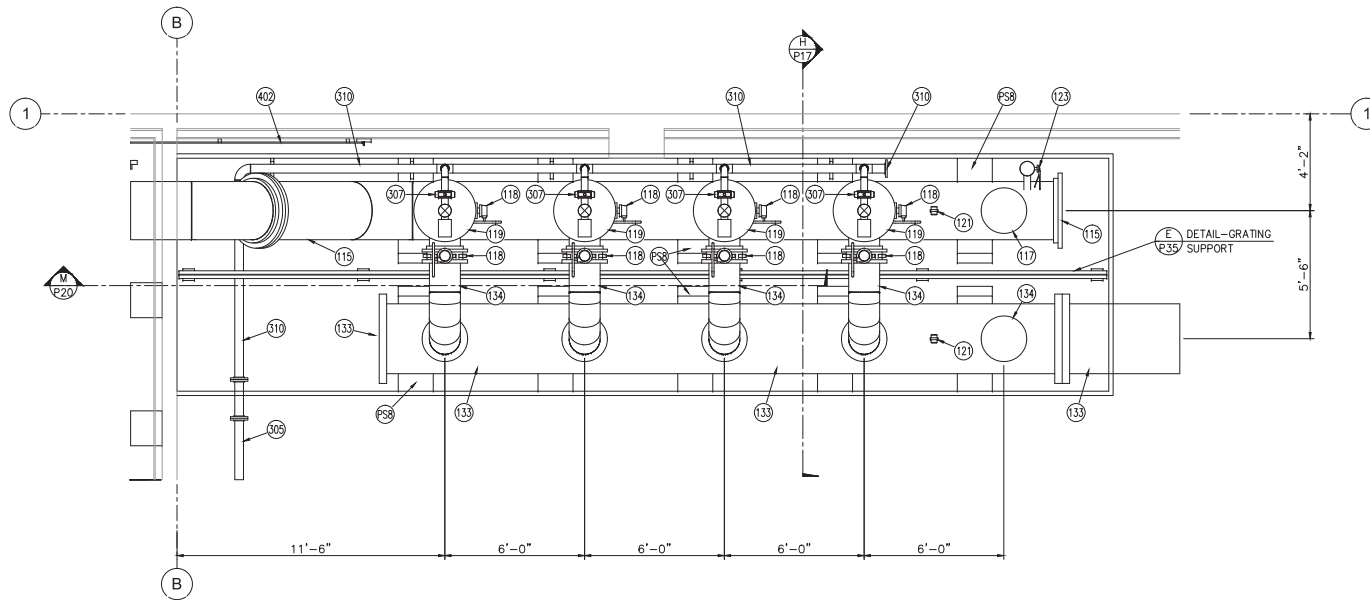
SUNRISE ENGINEERING

2036 LINCOLN AVE., SUITE 104
 OGDEN, UTAH 84403
 TEL 801.656.8109 • FAX 801.523.0990
 www.sunrise-eng.com



OGDEN CITY
WATER TREATMENT PLANT RECONST.
PIPING & EQUIPMENT LAYOUT

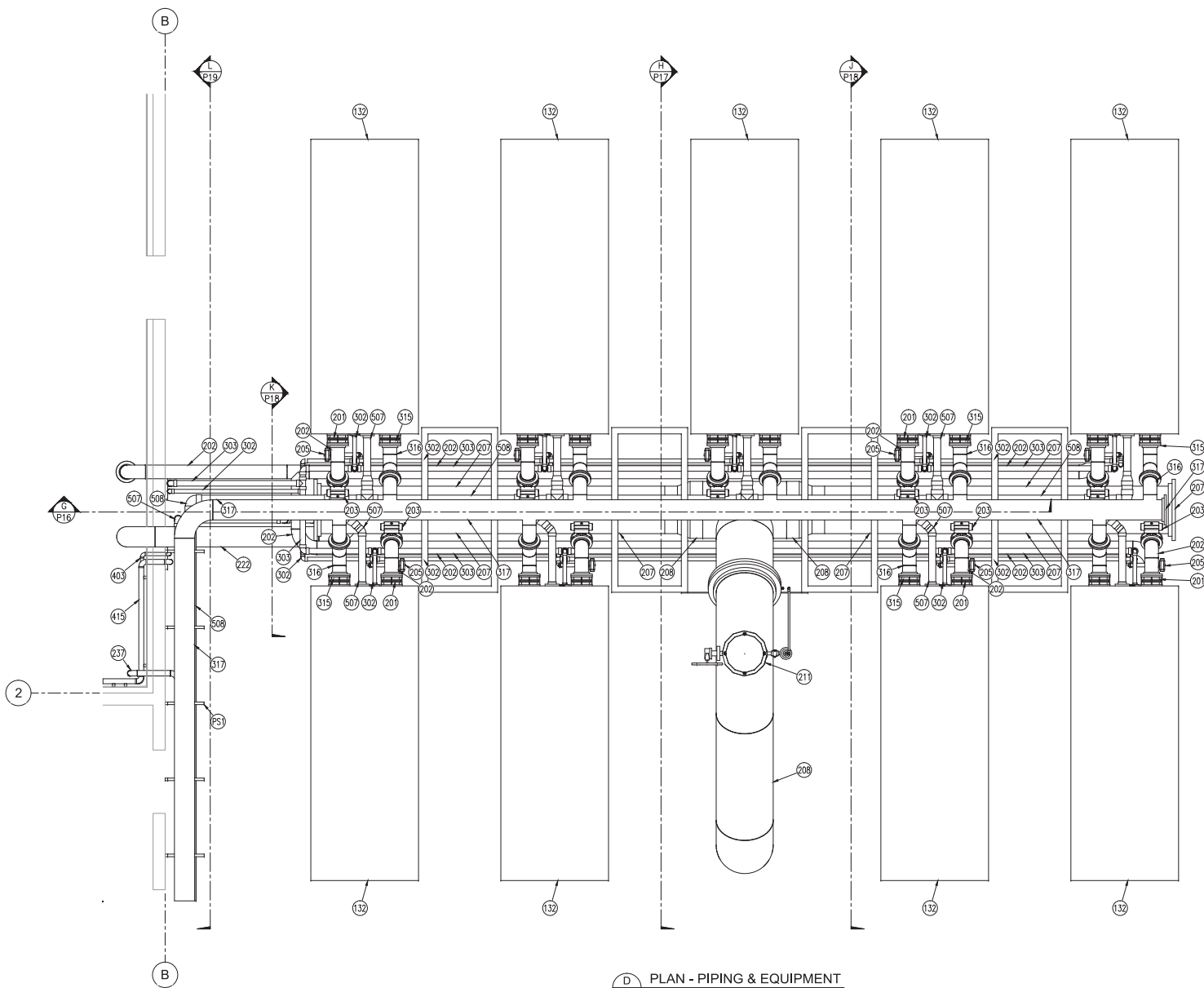
REV. NO.	DESIGNED	DRAWN	CHECKED	SHEET NO.
04310	RWW	CJC	GDP	137 of 244

P11





C PLAN - PIPING & EQUIPMENT
P10 3/8" = 1'-0"

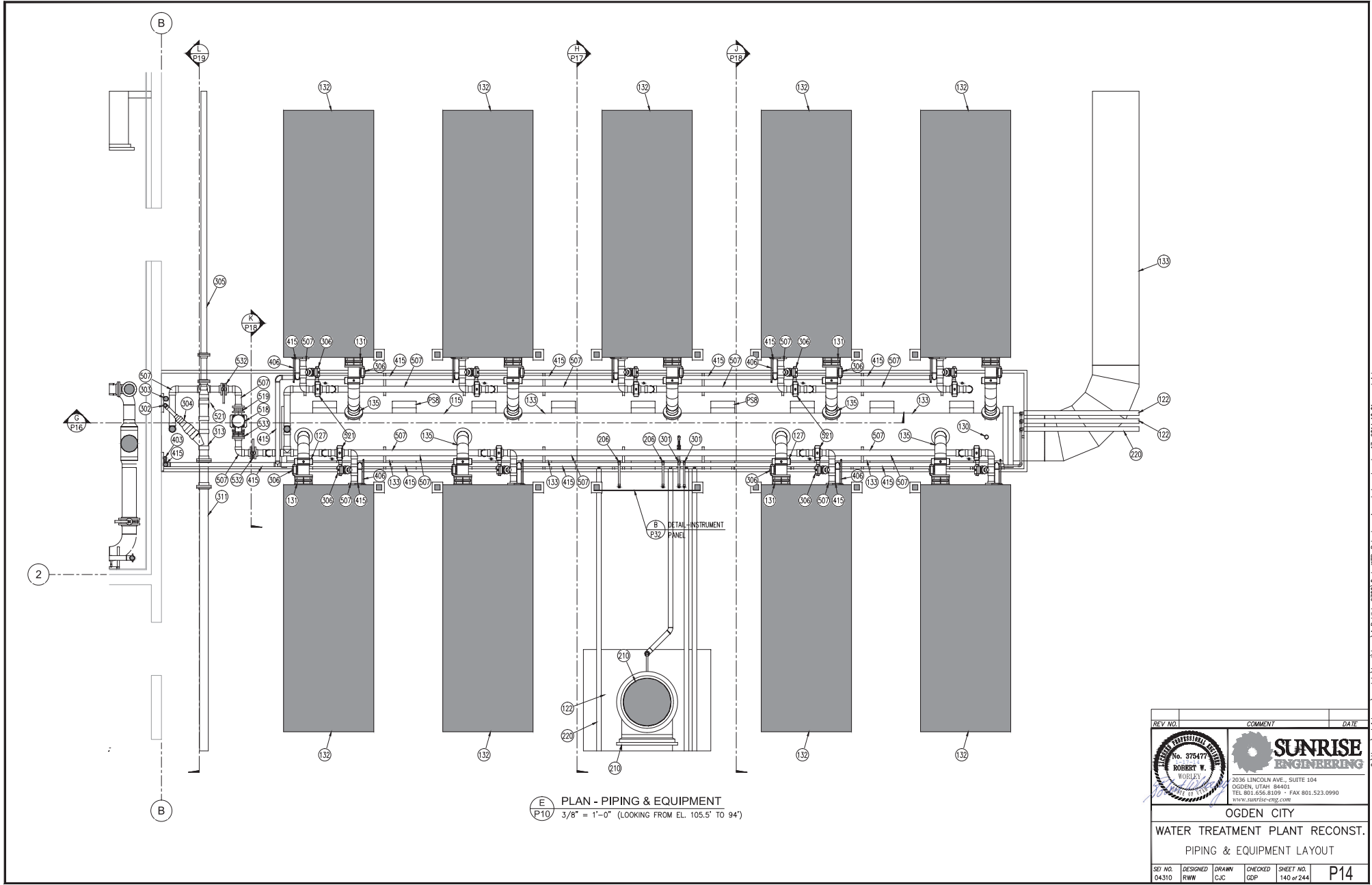
REV. NO.	COMMENT	DATE
 		
SUNRISE ENGINEERING 2036 LINCOLN AVE., SUITE 104 OGDEN, UTAH 84403 TEL 801.656.8109 • FAX 801.523.0990 www.sunrise-eng.com		
OGDEN CITY WATER TREATMENT PLANT RECONST. PIPING & EQUIPMENT LAYOUT		
DESIGNED	DRAWN	CHECKED
04310	RWW	CJC
SHEET NO.	138 of 244	P12



D PLAN - PIPING & EQUIPMENT
P10 3/8" = 1'-0" (LOOKING FROM EL. 117' TO 105.5')

REV. NO.	COMMENT	DATE
  <p>SUNRISE ENGINEERING 2036 LINCOLN AVE., SUITE 104 OGDEN, UTAH 84403 TEL 801.656.8109 • FAX 801.523.0990 WWW.SUNRISE-ENG.COM</p>		
OGDEN CITY WATER TREATMENT PLANT RECONST. PIPING & EQUIPMENT LAYOUT		
DESIGNED	DRAWN	CHECKED
04310	RWW	CJC
SHEET NO.	139 of 244	P13

C:\Users\cristiansen\Public\Temp\chubala_2780\OgdenWP-robert-worley-equipment-lugs.dwg Jan 17, 2014 10:01am cristiansen



E PLAN - PIPING & EQUIPMENT
 P10 3/8" = 1'-0" (LOOKING FROM EL. 105.5' TO 94')

REV. NO.	COMMENT	DATE

ROBERT W. WORLEY
 No. 375477
 UTAH PROFESSIONAL ENGINEER

SUNRISE ENGINEERING

2036 LINCOLN AVE., SUITE 104
 OGDEN, UTAH 84403
 TEL 801.656.8109 • FAX 801.523.0990
 www.sunrise-eng.com

OGDEN CITY

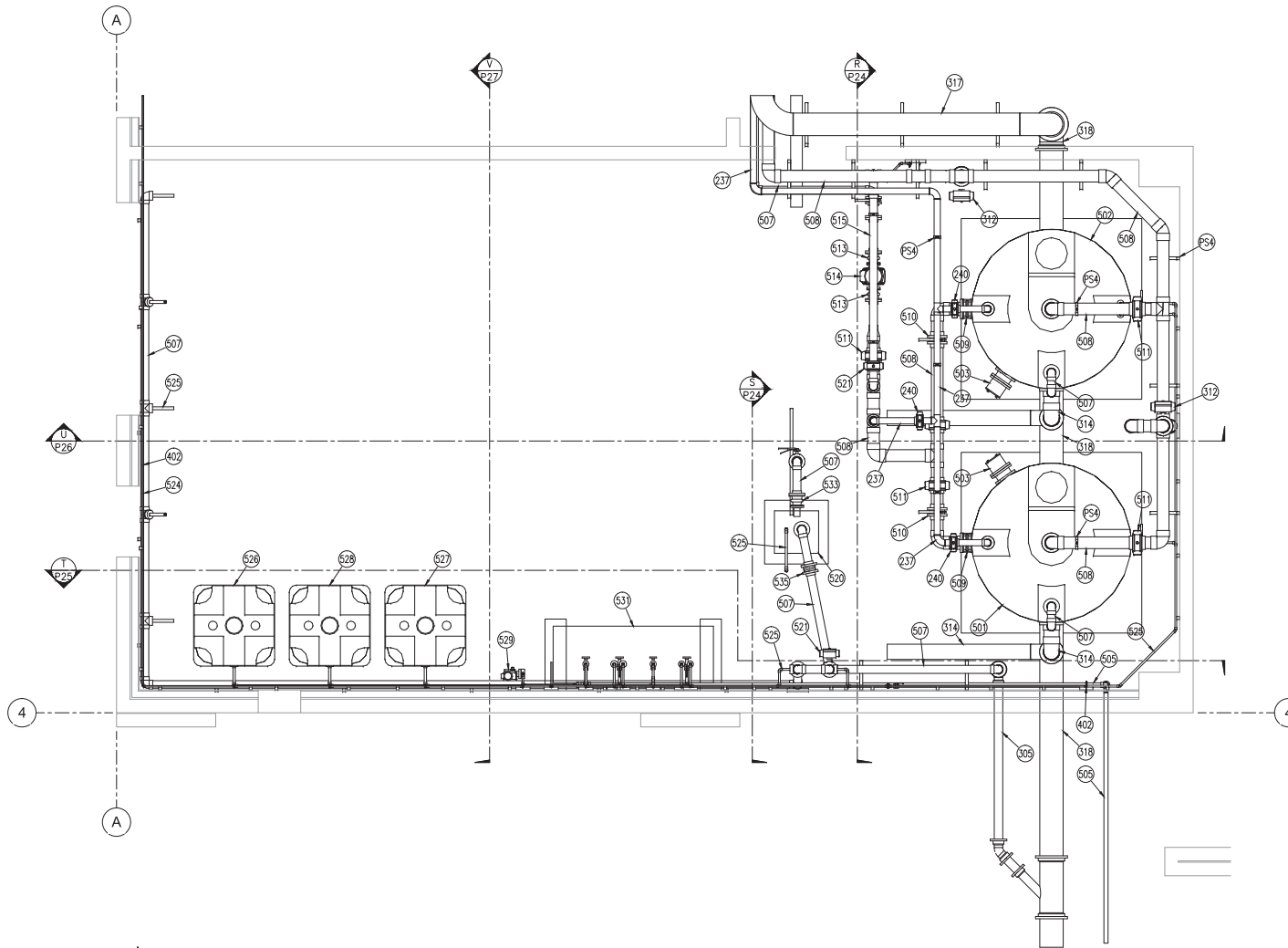
WATER TREATMENT PLANT RECONST.

PIPING & EQUIPMENT LAYOUT



REV. NO.	DESIGNED	DRAWN	CHECKED	SHEET NO.
04310	RWW	CJC	GDP	140 of 244

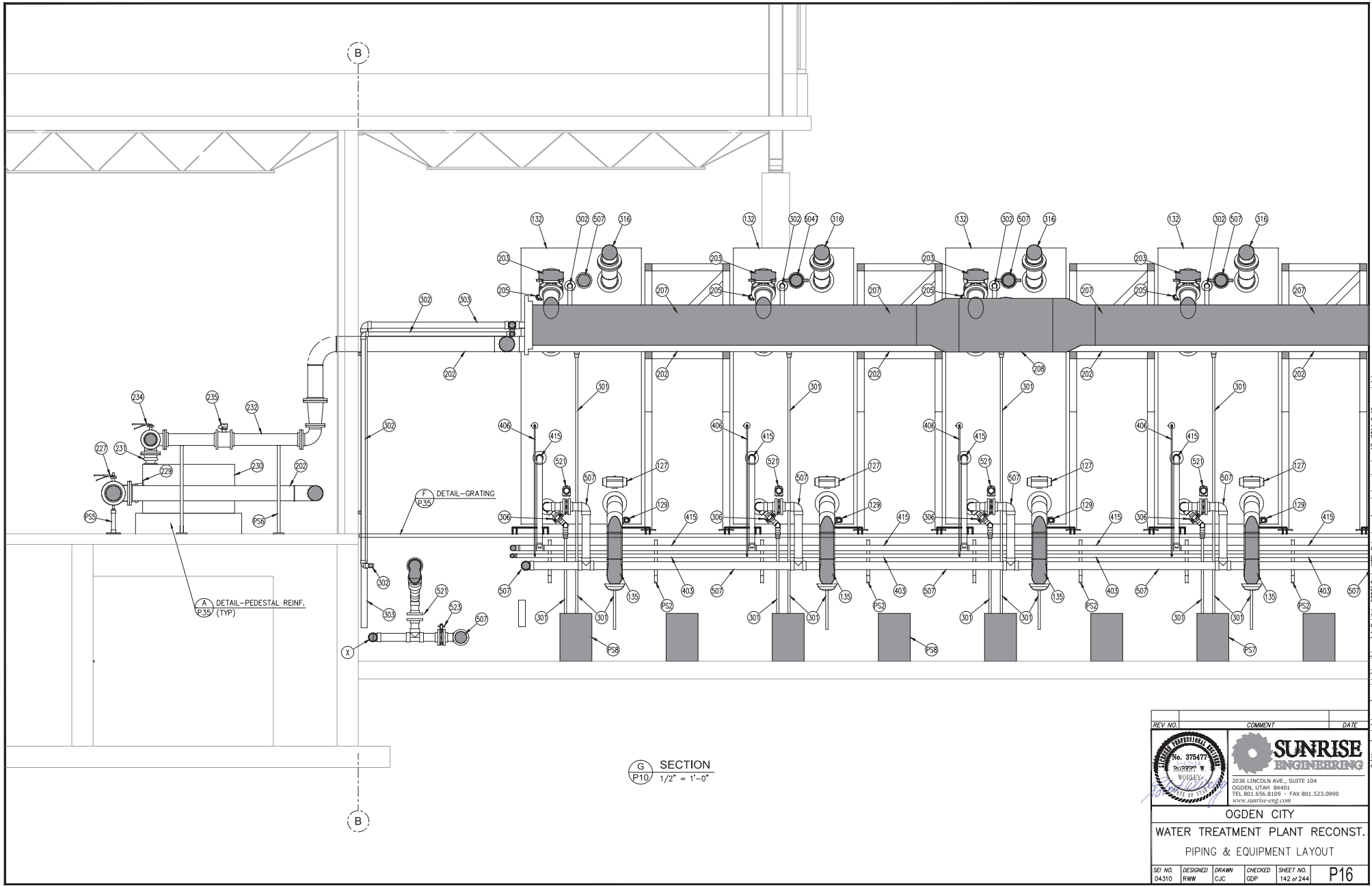
P14

C:\Users\cristiansen\Public\Local\Temp\Wch\ch\ch\2780\OgdenWP-roboter-equipment-logs.dwg Jan 17, 2014 10:01am cristiansen



F PLAN - PIPING & EQUIPMENT
 P10 3/8" = 1'-0"

REV. NO.	COMMENT	DATE
 		
SUNRISE ENGINEERING 2036 LINCOLN AVE., SUITE 104 OGDEN, UTAH 84403 TEL 801.656.8109 • FAX 801.523.0990 www.sunrise-eng.com		
OGDEN CITY WATER TREATMENT PLANT RECONST. PIPING & EQUIPMENT LAYOUT		
DESIGNED	DRAWN	CHECKED
04310	RWW	CJC
SHEET NO.	141 of 244	P15



REV. NO.	COMMENT	DATE

ROBERT W. WOBLEY
Professional Engineer
No. 375477
State of Utah

SUNRISE ENGINEERING

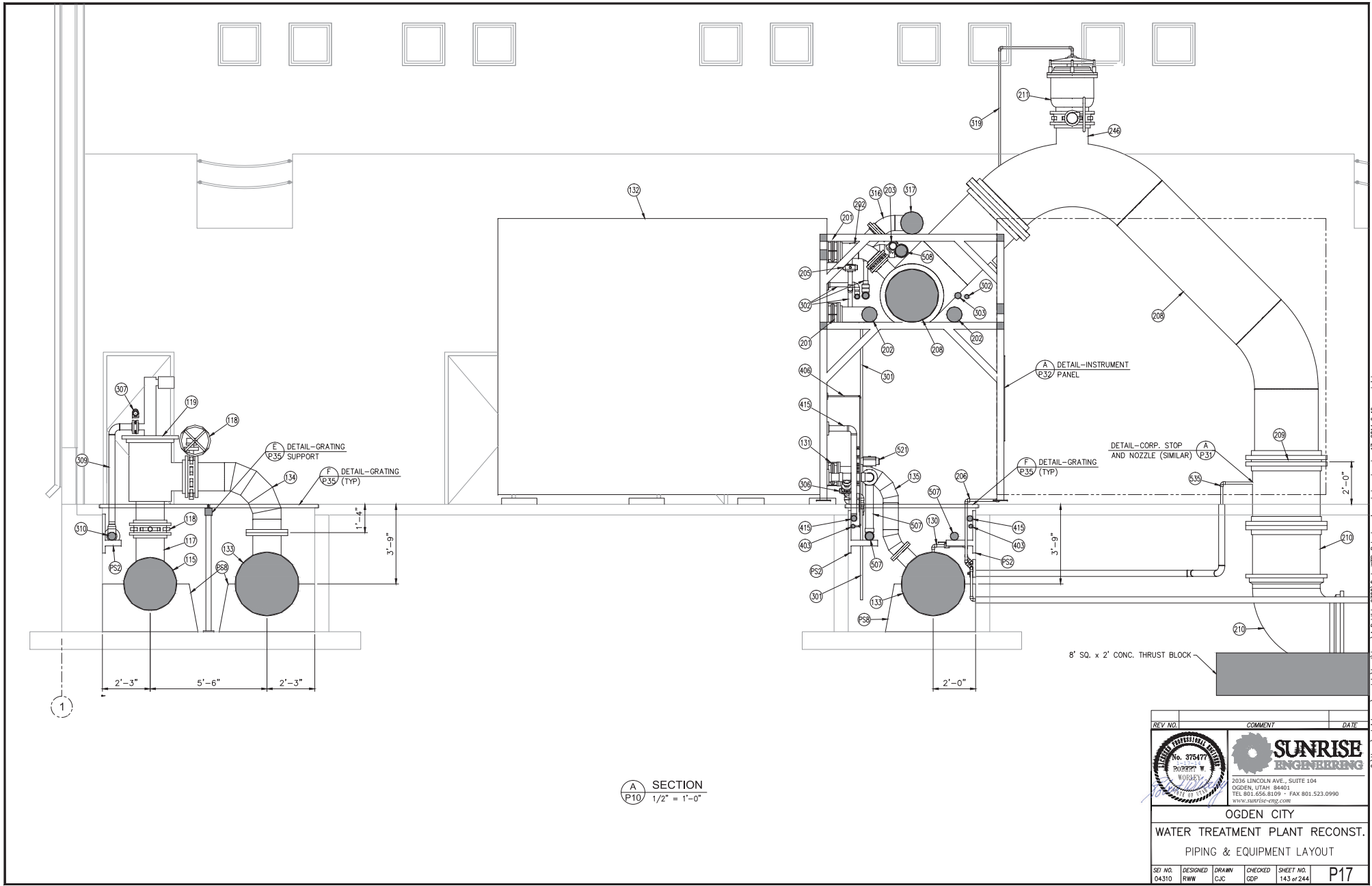
2036 LINCOLN AVE., SUITE 104
OGDEN, UTAH 84403
TEL 801.656.8109 • FAX 801.523.0990
www.sunrise-eng.com

OGDEN CITY
WATER TREATMENT PLANT RECONST.
PIPING & EQUIPMENT LAYOUT

REV. NO.	DESIGNED	DRAWN	CHECKED	SHEET NO.
04310	RWW	CJC	GDP	142 of 244

P16

C:\Users\christensen\AppData\Local\Temp\VsChulalar_2780\OgdenWP-foeier-equipment-logs.dwg Jan 17, 2014 9:48am christensen



A SECTION
P10 1/2" = 1'-0"

REV. NO.	COMMENT	DATE

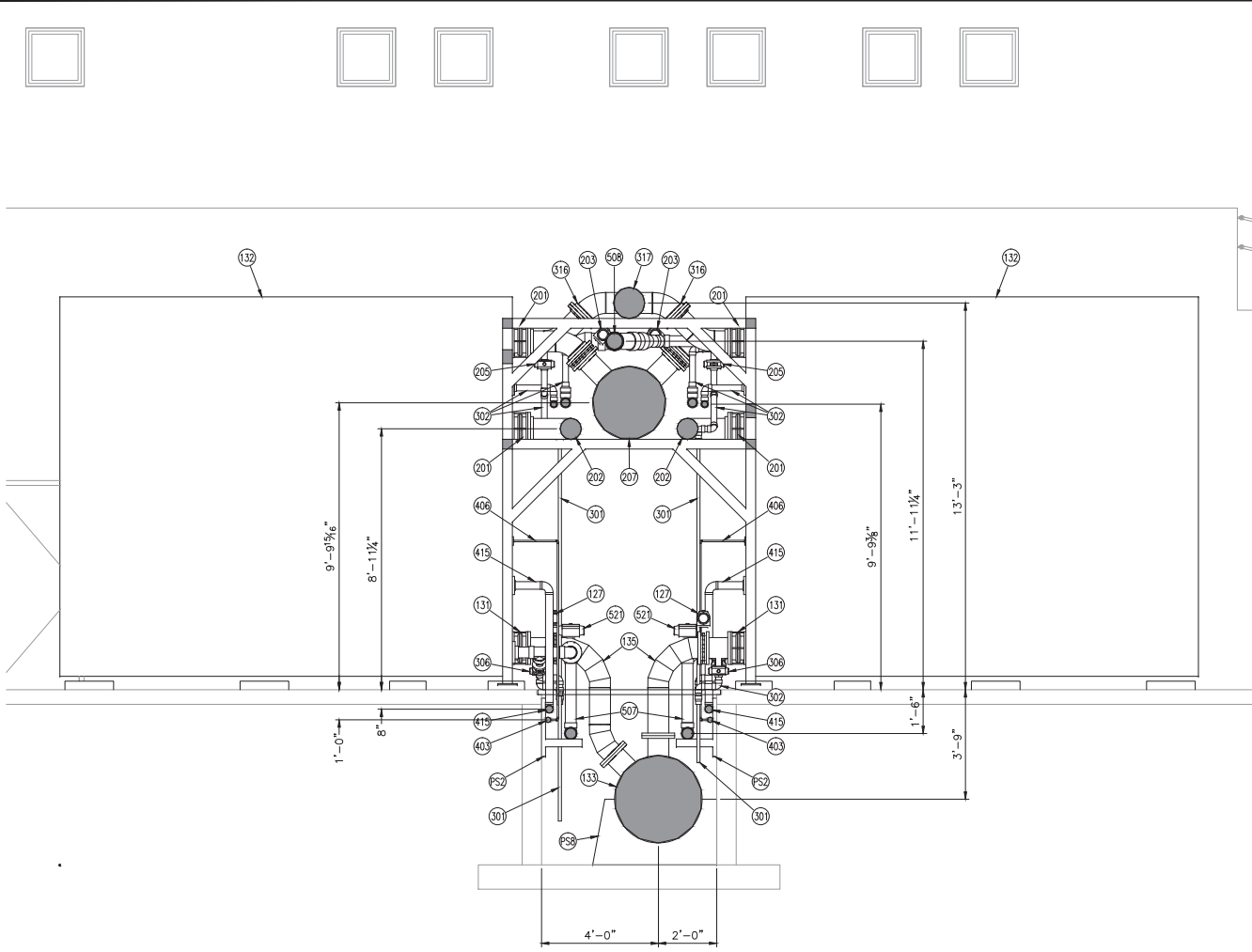
PROFESSIONAL ENGINEER
 No. 375477
 ROBERT W. WOODLEY
 LICENSED IN UTAH

SUNRISE ENGINEERING
 2036 LINCOLN AVE., SUITE 104
 OGDEN, UTAH 84403
 TEL. 801.656.8109 • FAX 801.523.0990
 www.sunrise-eng.com

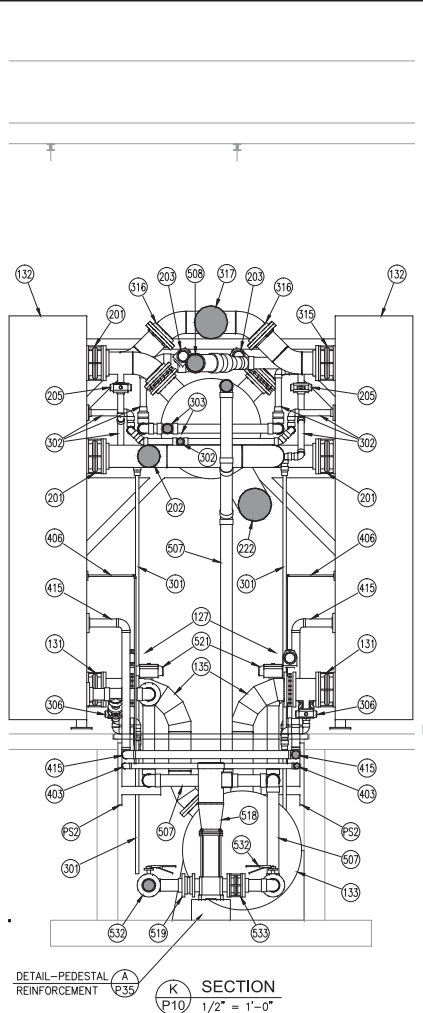
OGDEN CITY
WATER TREATMENT PLANT RECON.
PIPING & EQUIPMENT LAYOUT

REV. NO. 04310	DESIGNED RWW	DRAWN CJC	CHECKED GDP	SHEET NO. 143 of 244	P17
-------------------	-----------------	--------------	----------------	-------------------------	-----

C:\Users\christensen\AppData\Local\Temp\VsCache\2780\OgdenWP-Robert-Woodley-2014-08-11-10-30-30.dwg Jan 17, 2014 9:48am christensen



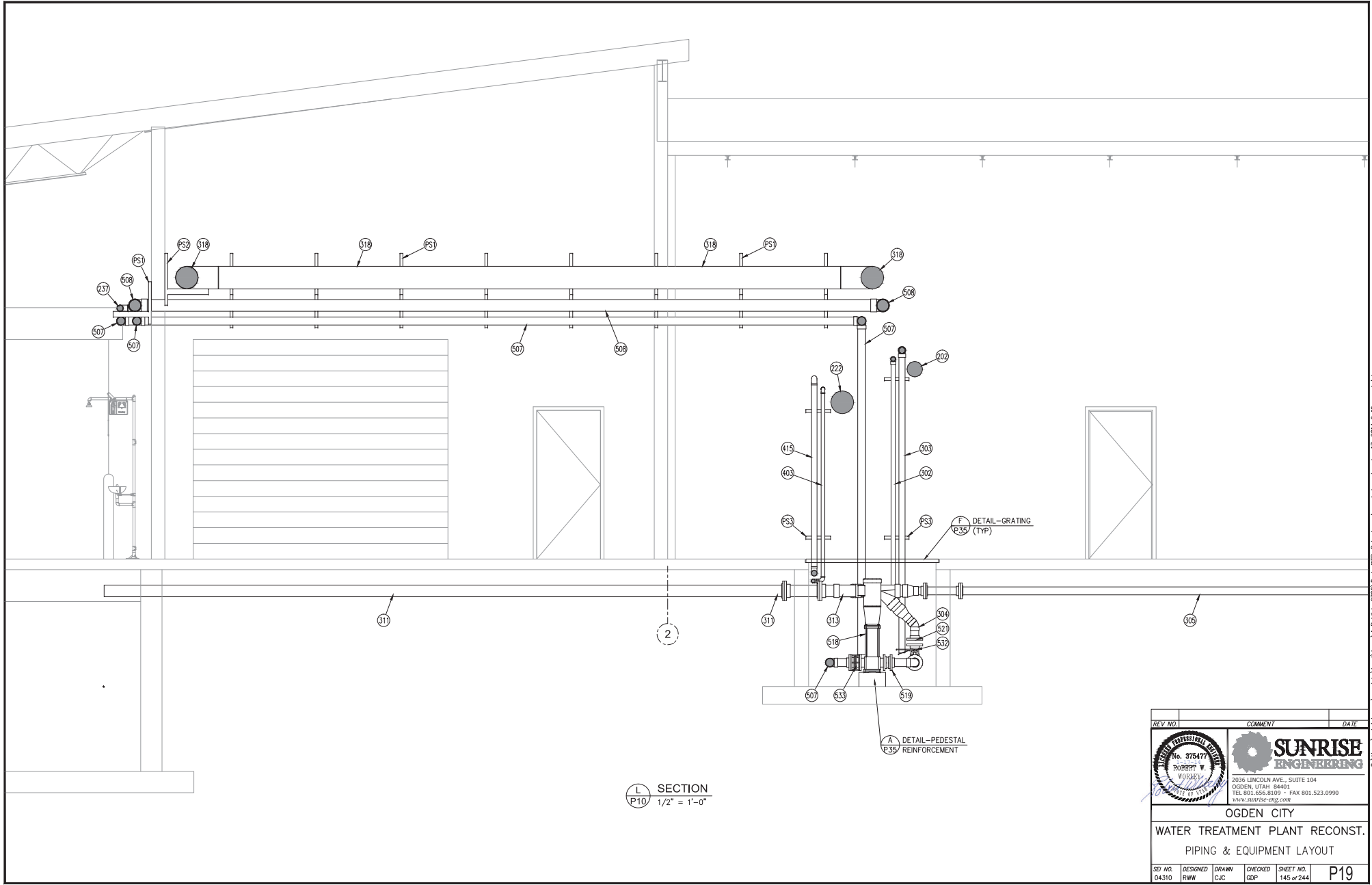
J SECTION
1/2" = 1'-0"



K SECTION
1/2" = 1'-0"

REV. NO.	COMMENT	DATE			
2036 LINCOLN AVE., SUITE 104 OGDEN, UTAH 84403 TEL: 801.656.8109 • FAX: 801.523.0990 WWW.SUNRISE-ENG.COM					
OGDEN CITY WATER TREATMENT PLANT RECON. PIPING & EQUIPMENT LAYOUT					
REV. NO.	DESIGNED	DRAWN	CHECKED	SHEET NO.	P18
04310	RWW	CJC	GDP	144 of 244	

C:\Users\christensen\AppData\Local\Temp\Vsopadst\Local\Temp\Vsopadst\2780\OgdenWP-Robert-woodbury-ogden-jan 17, 2014 9:48am christensen



L SECTION
P10 1/2" = 1'-0"

REV. NO.	COMMENT	DATE

No. 375477
ROBERT W. WOODLEY
PROFESSIONAL ENGINEER
STATE OF UTAH

**SUNRISE
ENGINEERING**

2036 LINCOLN AVE., SUITE 104
OGDEN, UTAH 84403
TEL 801.656.8109 • FAX 801.523.0990
www.sunrise-eng.com

OGDEN CITY

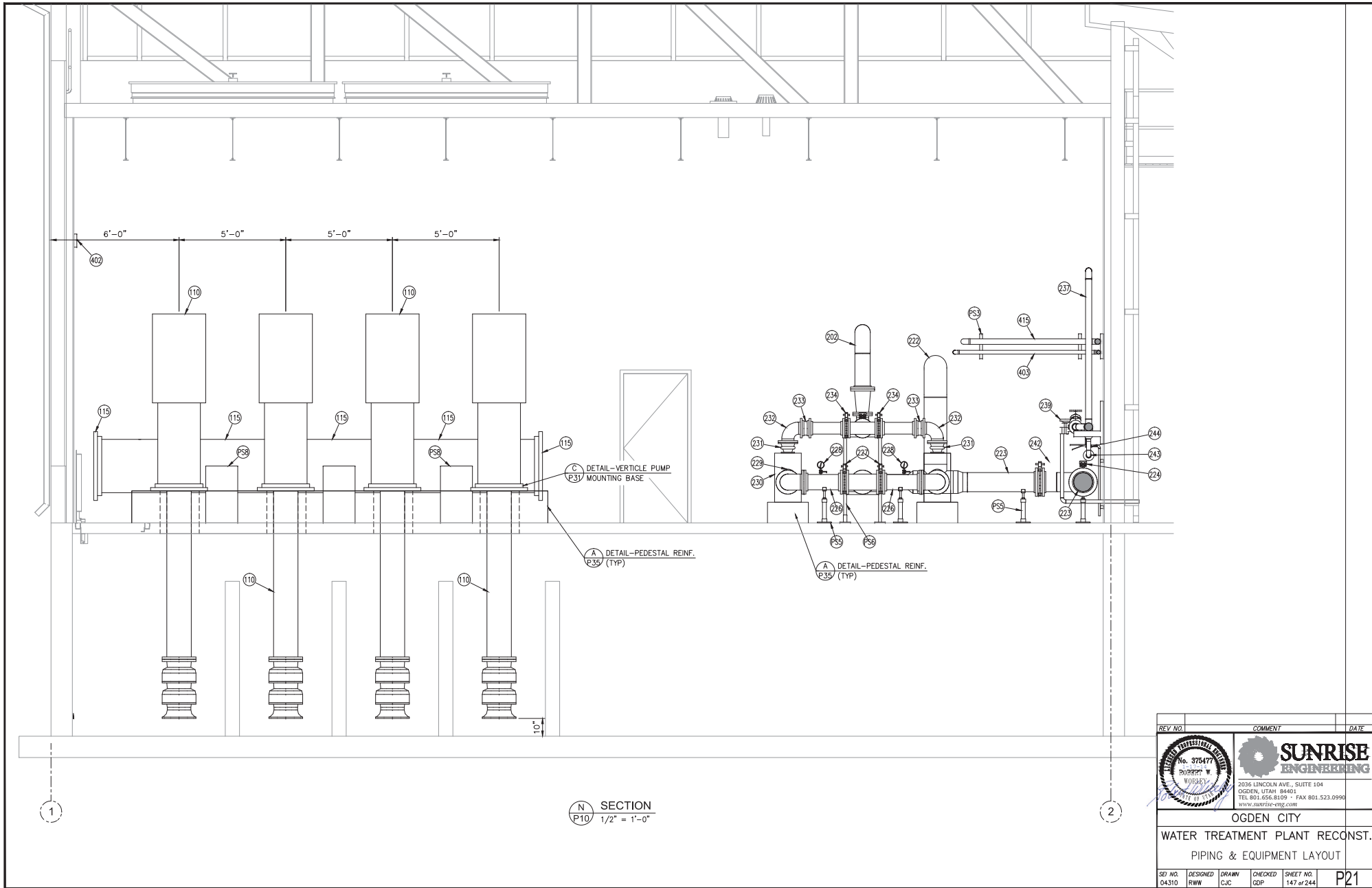
WATER TREATMENT PLANT RECON.

PIPING & EQUIPMENT LAYOUT

REV. NO.	DESIGNED	DRAWN	CHECKED	SHEET NO.
04310	RWW	CJC	GDP	145 of 244

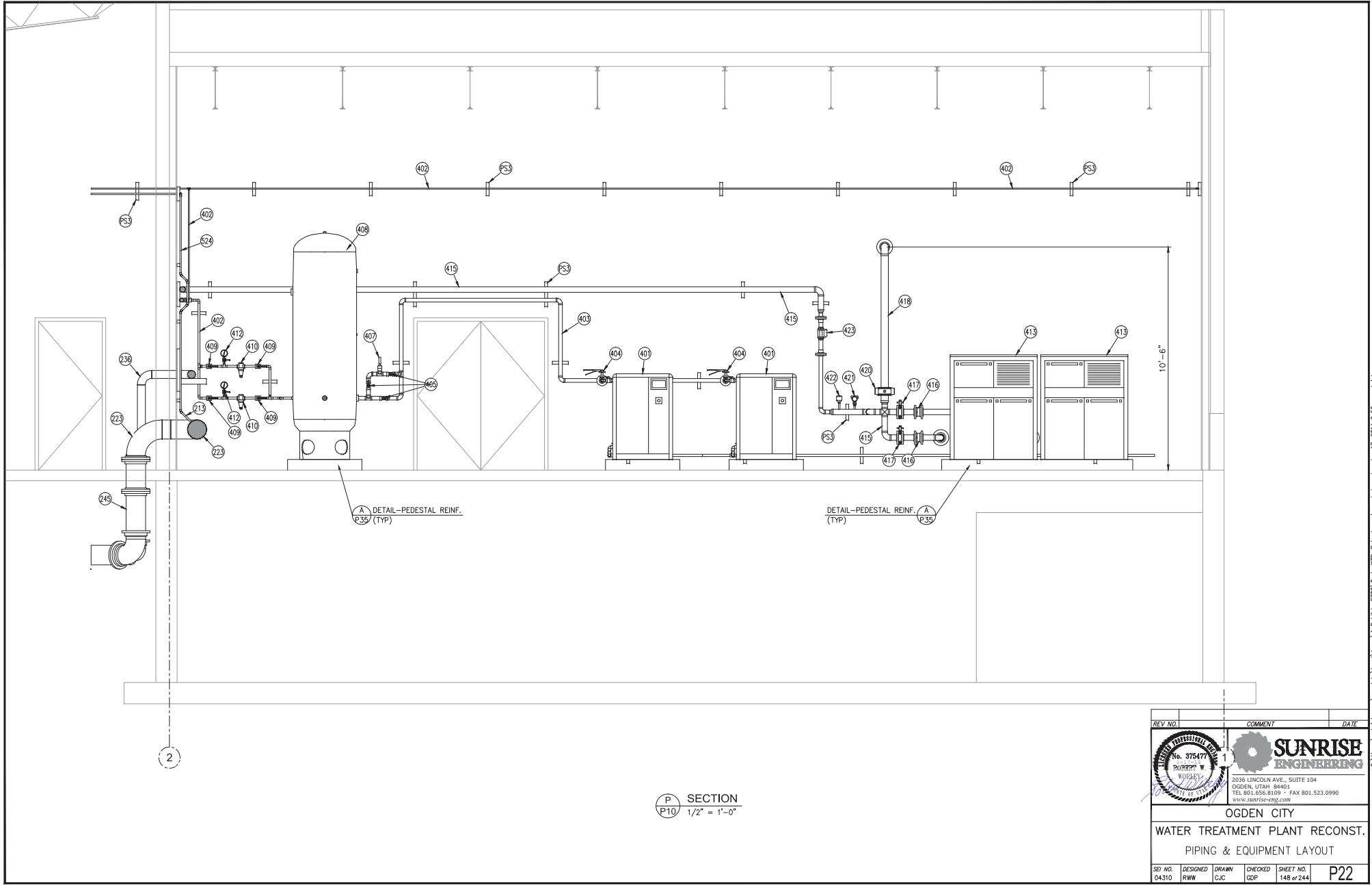
P19

C:\Users\christensen\AppData\Local\Temp\Vsop\chubala_2780\OgdenWP-Equipment-logs.dwg Jan 17, 2014 9:48am christensen



REV. NO.	COMMENT	DATE			
2036 LINCOLN AVE., SUITE 104 OGDEN, UTAH 84403 TEL: 801.656.8109 • FAX: 801.523.0996 www.sunrise-eng.com					
OGDEN CITY					
WATER TREATMENT PLANT RECONST. PIPING & EQUIPMENT LAYOUT					
REV. NO.	DESIGNED	DRAWN	CHECKED	SHEET NO.	P21
04310	RWW	CJC	GDP	147 of 244	

C:\Users\christensen\AppData\Local\Temp\VsChadla_2780\OgdenWP-Rober-equipment-logs.dwg Jan 17, 2014 9:50am christensen



A DETAIL-PEDESTAL REINF.
P35 (TYP)

DETAIL-PEDESTAL REINF. A
(TYP) P35

P SECTION
P10 1/2" = 1'-0"

REV. NO.	COMMENT	DATE

ROBERT W. WOBBSLEY
No. 375477
STATE OF UTAH

**SUNRISE
ENGINEERING**

2036 LINCOLN AVE., SUITE 104
OGDEN, UTAH 84403
TEL 801.656.8109 • FAX 801.523.0990
www.sunrise-eng.com

OGDEN CITY

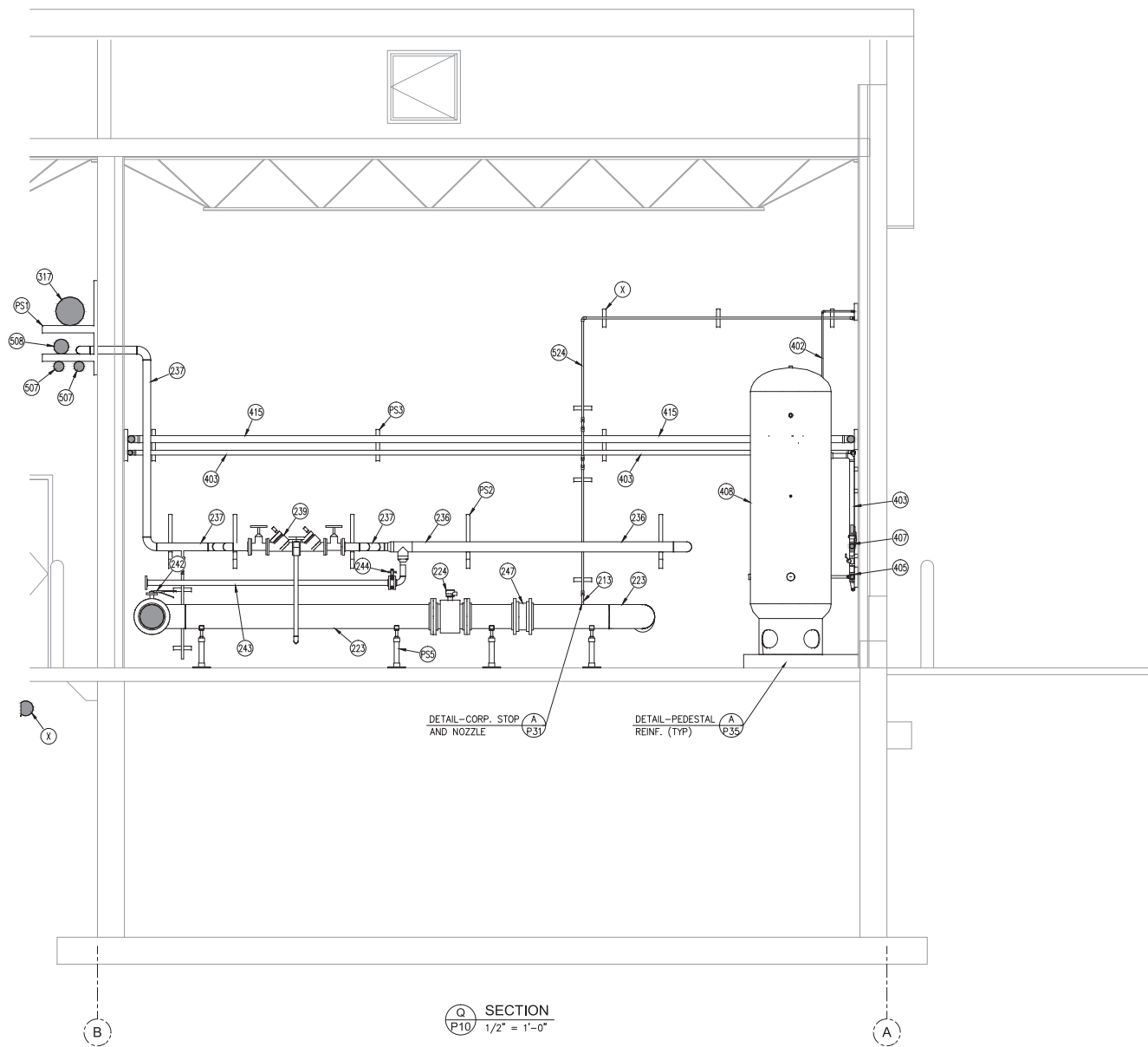
WATER TREATMENT PLANT RECONST.

PIPING & EQUIPMENT LAYOUT

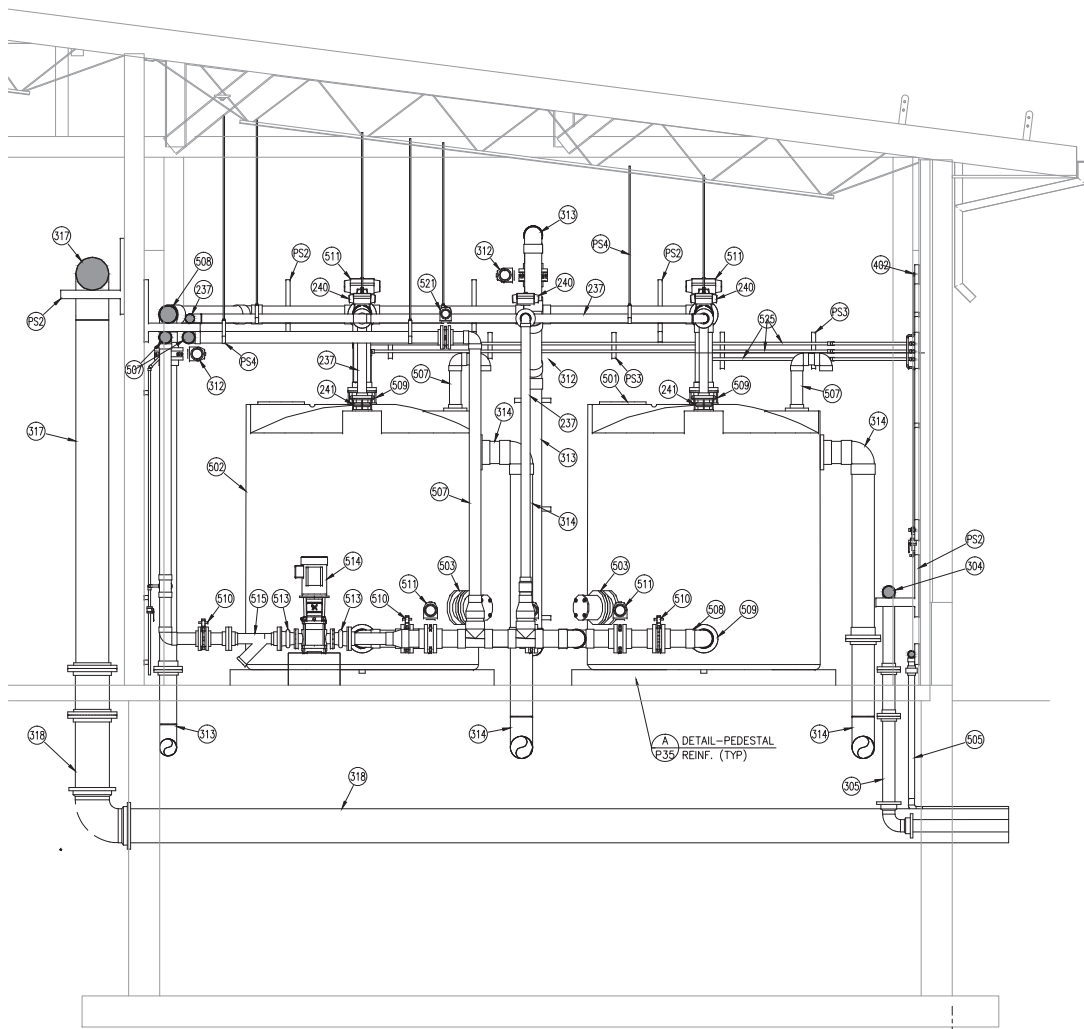
SET NO.	DESIGNED	DRAWN	CHECKED	SHEET NO.
04310	RWW	CJC	GDP	148 of 244

P22

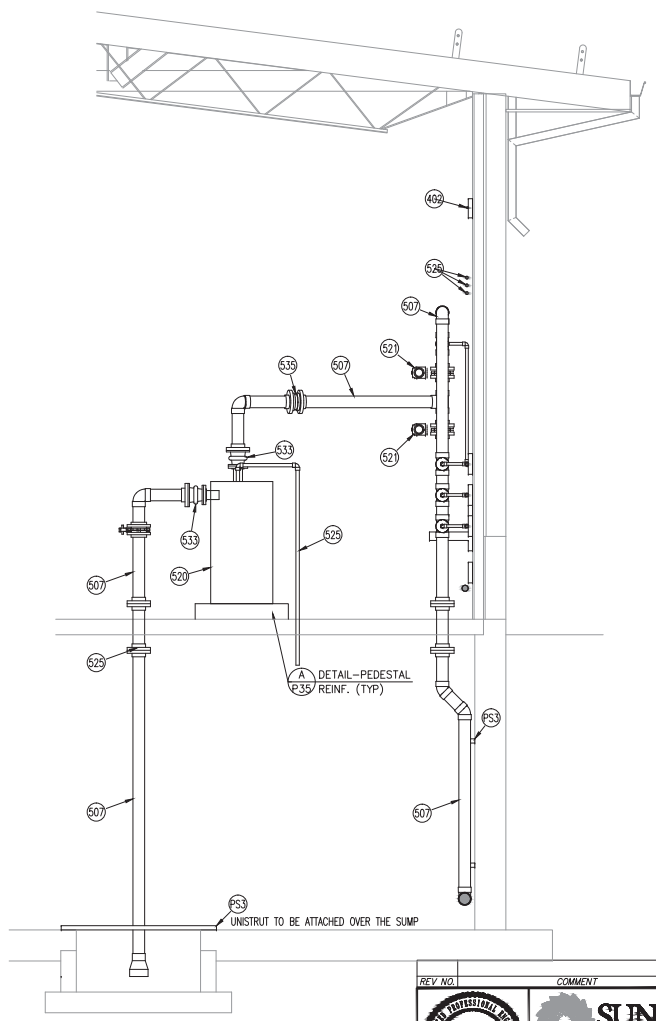
C:\Users\christiansen\AppData\Local\Temp\Copy\chubala_2780\OgdenWP-Robert-equipment-log.dwg Jan 17, 2014 9:50am christiansen





REV. NO.	COMMENT	DATE			
2036 LINCOLN AVE., SUITE 104 OGDEN, UTAH 84403 TEL 801.656.8109 • FAX 801.523.0990 www.sunrise-eng.com					
OGDEN CITY					
WATER TREATMENT PLANT RECON.					
PIPING & EQUIPMENT LAYOUT					
SET NO. 04310	DESIGNED RWW	DRAWN CJC	CHECKED GDP	SHEET NO. 149 of 244	P23



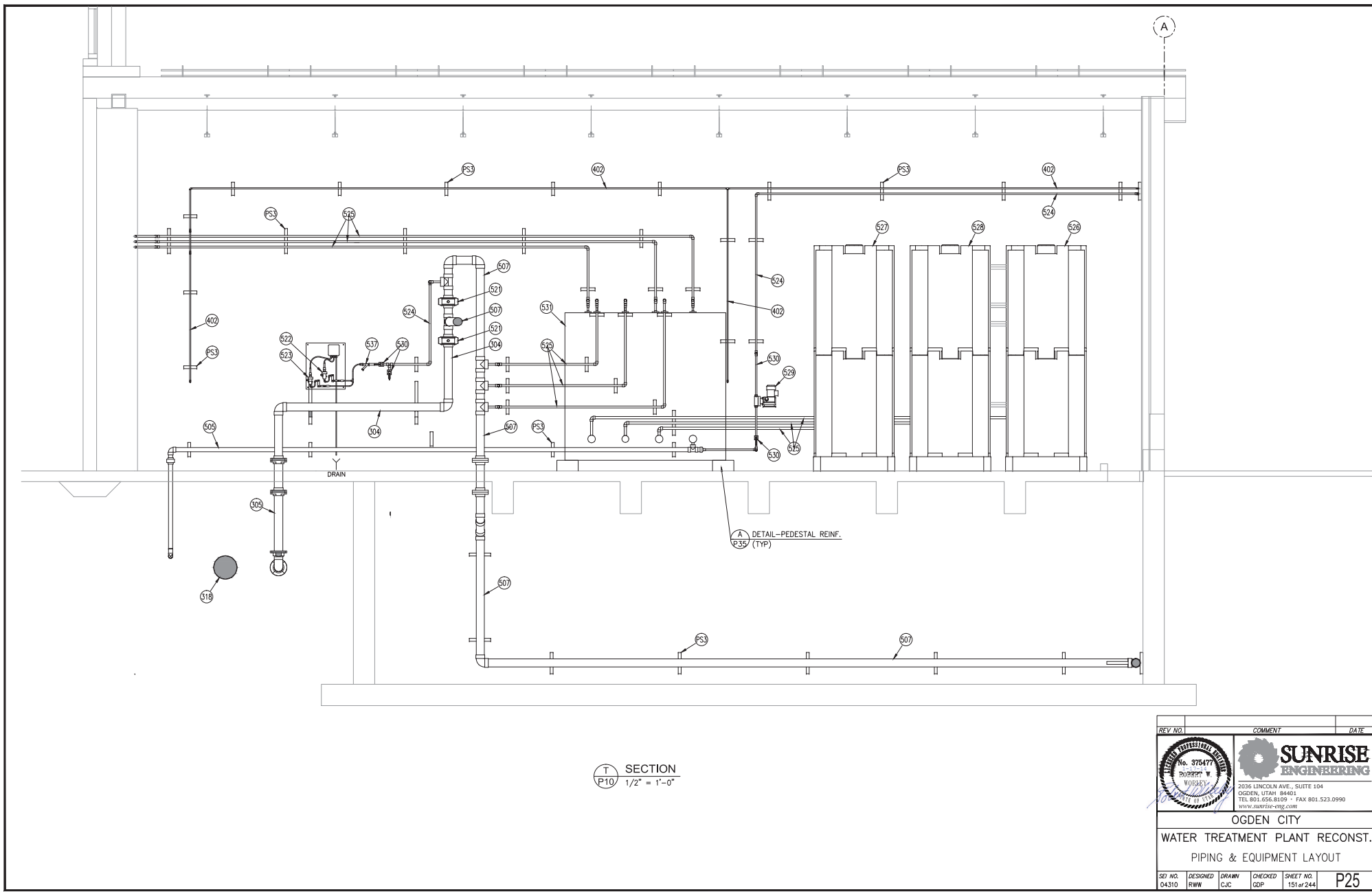
R SECTION
P10 1/2" = 1'-0"



S SECTION
P10 1/2" = 1'-0"

REV. NO.	COMMENT	DATE
  <p>SUNRISE ENGINEERING</p> <p>2036 LINCOLN AVE., SUITE 104 OGDEN, UTAH 84403 TEL 801.656.8109 • FAX 801.523.0990 WWW.SUNRISE-ENG.COM</p>		
<p>OGDEN CITY</p> <p>WATER TREATMENT PLANT RECONST.</p> <p>PIPING & EQUIPMENT LAYOUT</p>		
DESIGNED	DRAWN	CHECKED
04310	RWW	CJC
DESIGNED	DRAWN	CHECKED
04310	RWW	GDP
SHEET NO.	SHEET NO.	
150 of 244	P24	

C:\Users\christensen\AppData\Local\Temp\Vsca\Temp_Vsca\haha_2780\OgdenWP-Rebert-equipment-logs.dwg Jan 17, 2014 9:50am christensen



SECTION
P10
1/2" = 1'-0"

REV. NO.	COMMENT	DATE

ROBERT W. WOODLEY
No. 375477
UTAH PROFESSIONAL ENGINEER

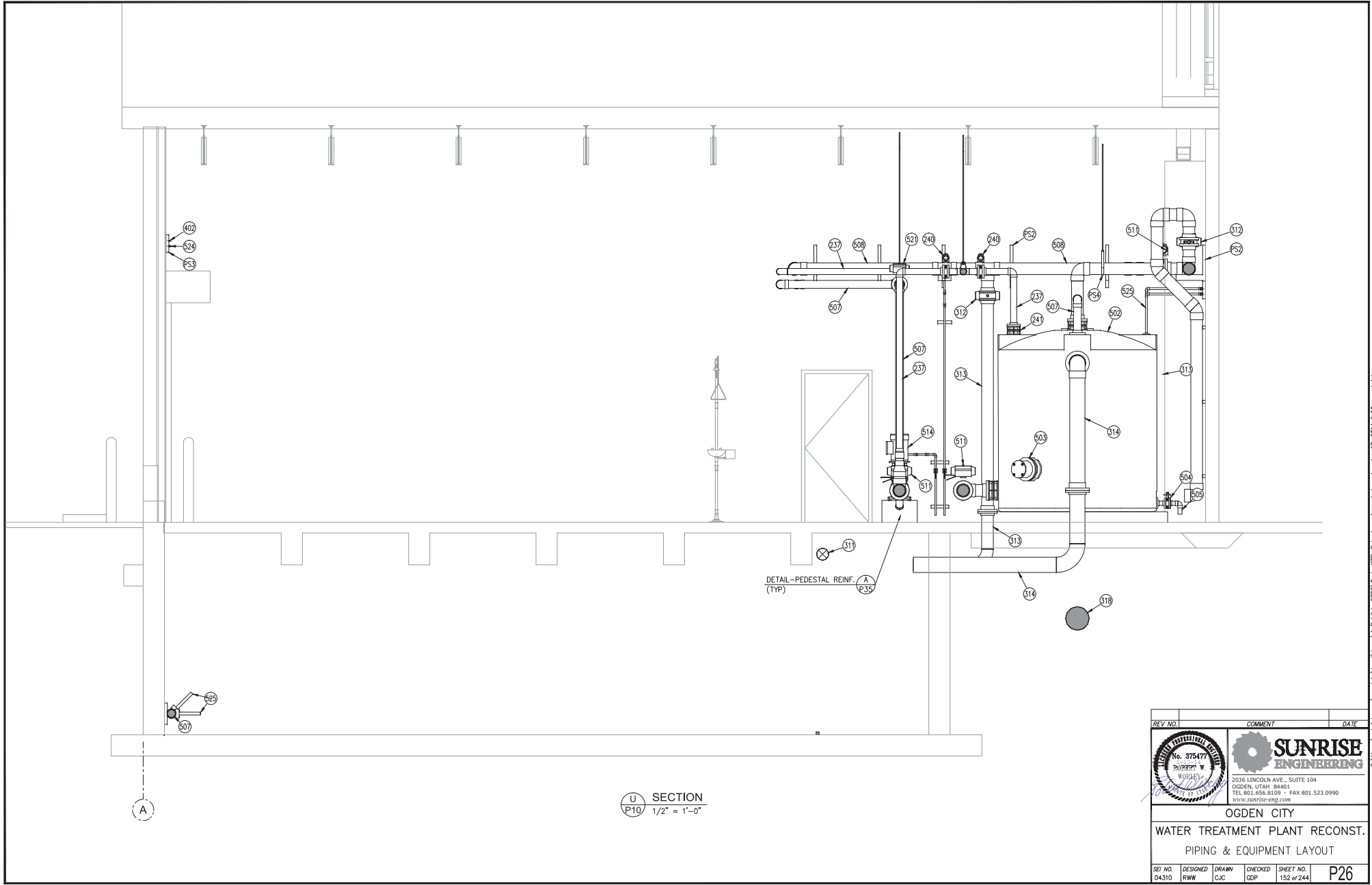
**SUNRISE
ENGINEERING**

2036 LINCOLN AVE., SUITE 104
OGDEN, UTAH 84403
TEL 801.656.8109 • FAX 801.523.0990
www.sunrise-eng.com

OGDEN CITY
WATER TREATMENT PLANT RECONST.
PIPING & EQUIPMENT LAYOUT

SET NO.	DESIGNED	DRAWN	CHECKED	SHEET NO.	
04310	RWW	CJC	GDP	151 of 244	P25

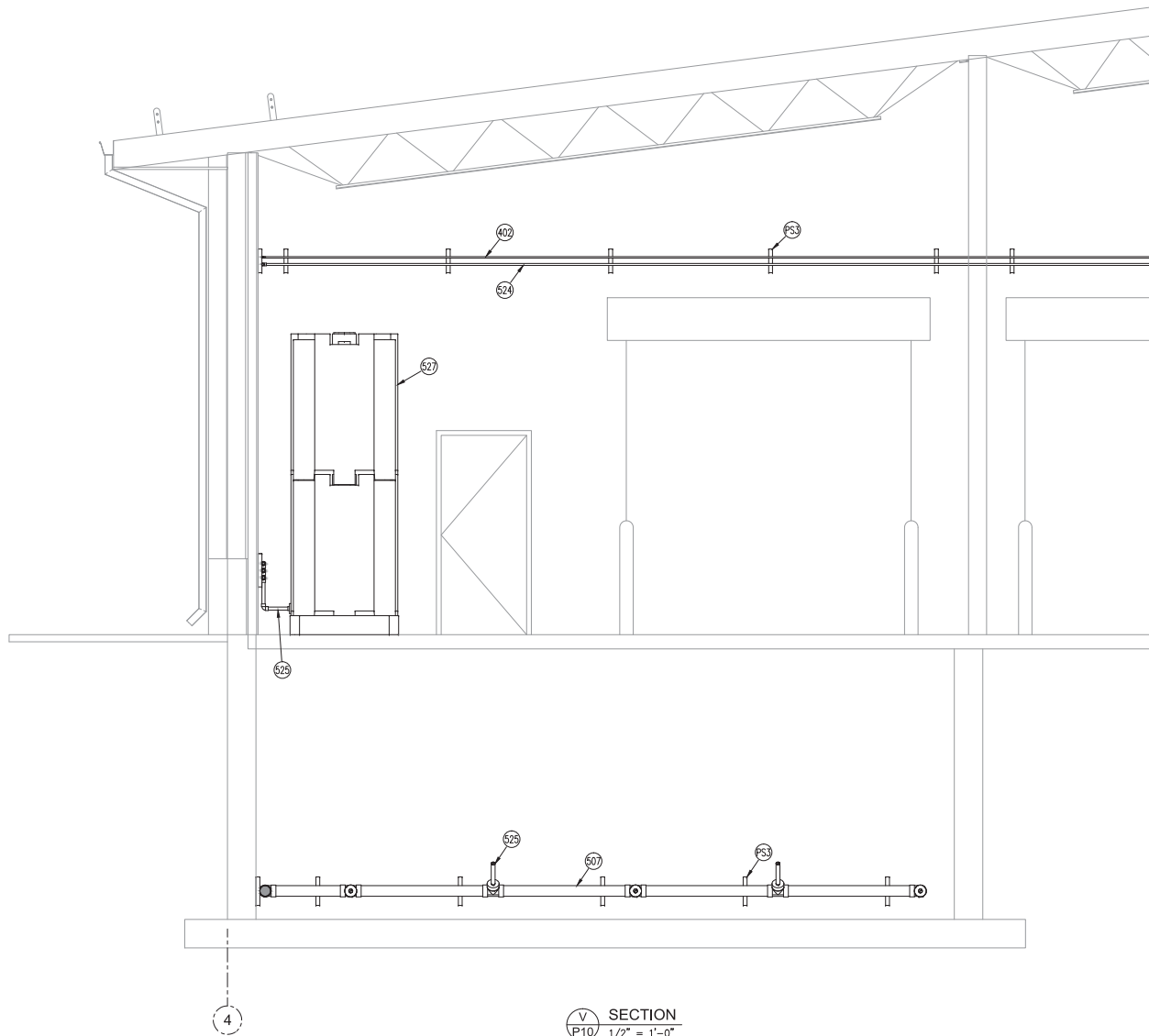
C:\Users\christensen\AppData\Local\Temp\Vsopadst\Local\Temp\Vsopadst\2780\OgdenWP-Robert-woodley-equipment-log.dwg Jan 17, 2014 9:50am christensen





U SECTION
 1/2" = 1'-0"

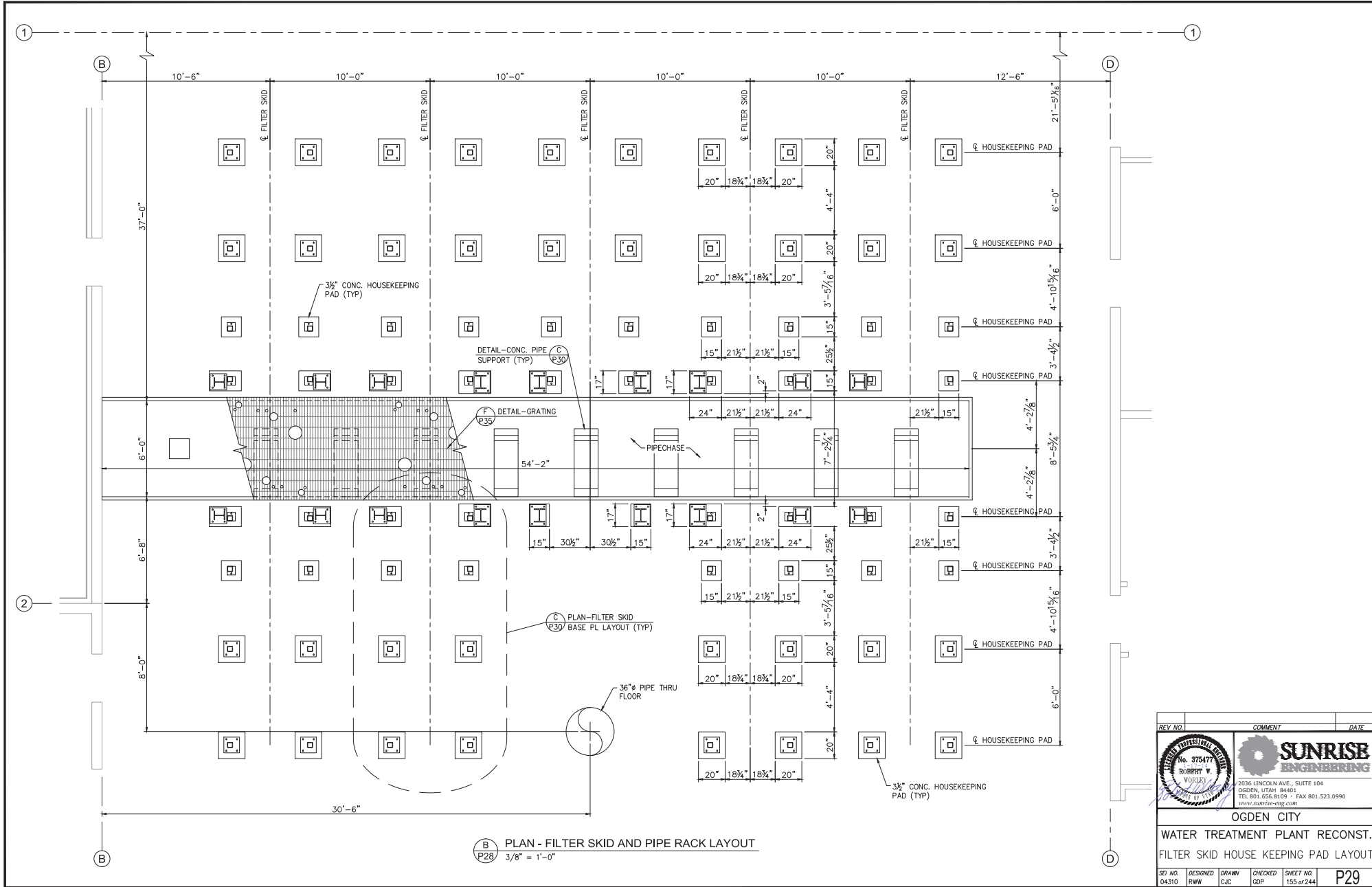
REV. NO.	COMMENT	DATE			
SUNRISE ENGINEERING 2036 LINCOLN AVE., SUITE 104 OGDEN, UTAH 84403 TEL. 801.656.8109 • FAX 801.523.0990 www.sunrise-eng.com					
OGDEN CITY WATER TREATMENT PLANT RECONST. PIPING & EQUIPMENT LAYOUT					
REV. NO.	DESIGNED	DRAWN	CHECKED	SHEET NO.	P26
04310	RWW	CJC	GDP	152 of 244	

C:\Users\christensen\Documents\Projects\2780\OgdenWP-Reconst-equipment-layout.dwg Jan 17, 2014 9:50am christensen



V SECTION
 P10 1/2" = 1'-0"

REV. NO.	COMMENT	DATE			
  <p>SUNRISE ENGINEERING 2036 LINCOLN AVE., SUITE 104 OGDEN, UTAH 84403 TEL: 801.656.8109 • FAX: 801.523.0990 www.sunrise-eng.com</p>					
OGDEN CITY					
WATER TREATMENT PLANT RECONST.					
PIPING & EQUIPMENT LAYOUT					
REV. NO.	DESIGNED	DRAWN	CHECKED	SHEET NO.	
04310	RWW	CJC	GDP	153 of 244	P27



B PLAN - FILTER SKID AND PIPE RACK LAYOUT
P28 3/8" = 1'-0"

REV. NO.	COMMENT	DATE

ROBERT W. WORLEY
 PROFESSIONAL ENGINEER
 No. 375477
 STATE OF UTAH

SUNRISE ENGINEERING

2036 LINCOLN AVE., SUITE 104
 OGDEN, UTAH 84403
 TEL: 801.656.8109 • FAX: 801.523.0990
 www.sunrise-eng.com

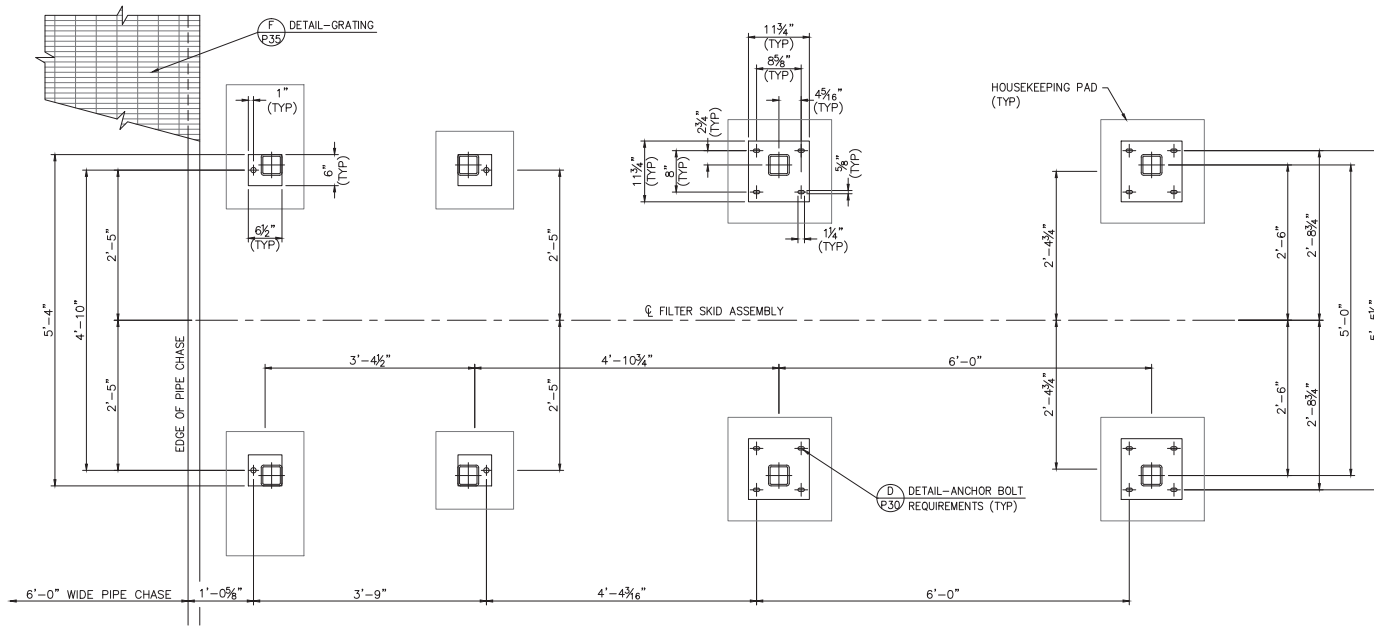
OGDEN CITY

WATER TREATMENT PLANT RECONST.

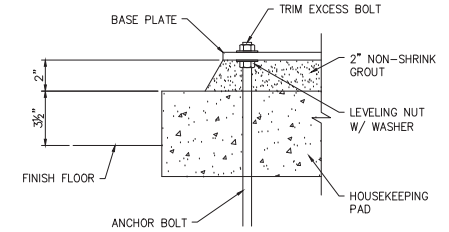
FILTER SKID HOUSE KEEPING PAD LAYOUT

SET NO. 04310	DESIGNED RWW	DRAWN CJC	CHECKED GDP	SHEET NO. 155 of 244	P29
------------------	-----------------	--------------	----------------	-------------------------	------------

C:\Users\cchriftenan\Public\Local\Items\Work\04310\04310-Filterskids.dwg Jan 17, 2014 9:46am cchriftenan

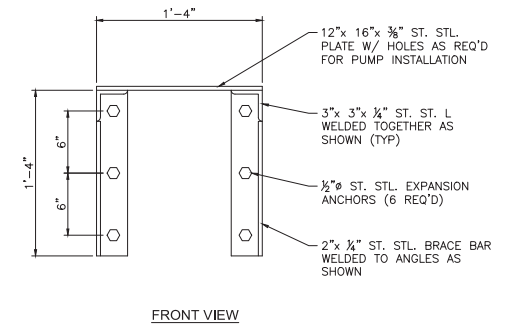
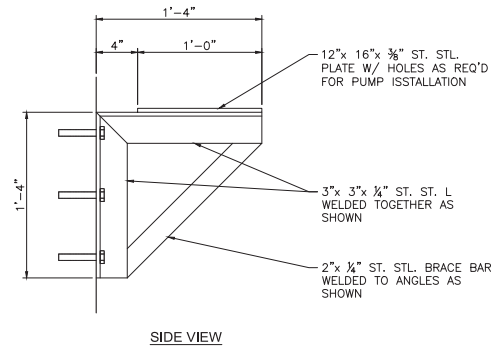
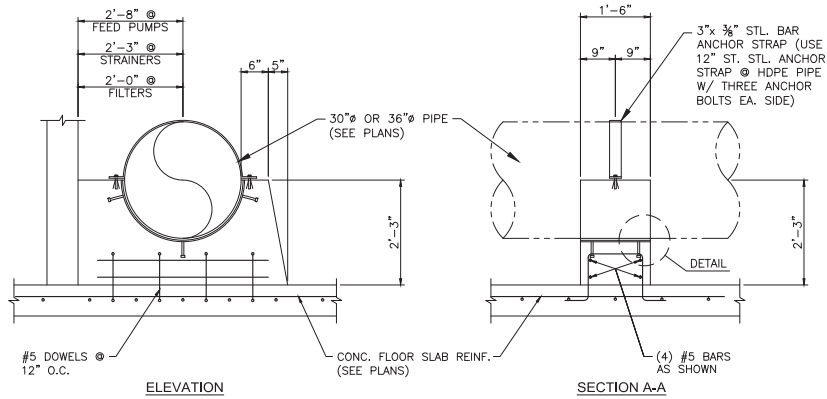
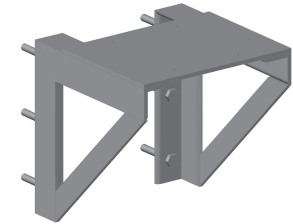
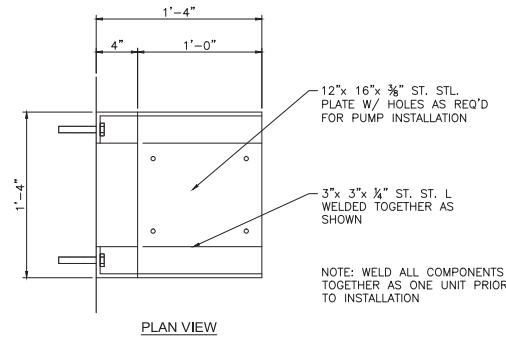
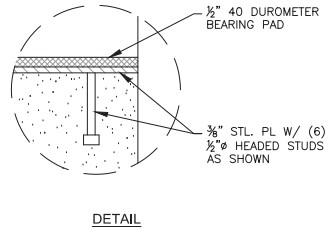
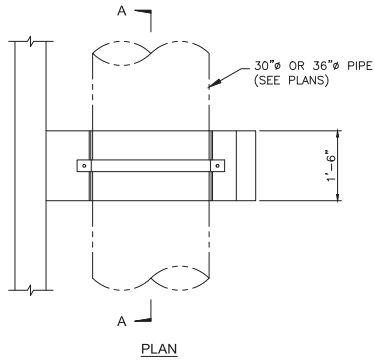


C PLAN - FILTER SKID BASE PL LAYOUT
 P29 1" = 1'-0"



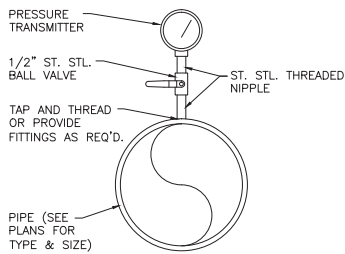
D DETAIL - ANCHOR BOLT REQUIREMENTS
 P30 1" = 1'-0"

REV. NO.	COMMENT	DATE			
SUNRISE ENGINEERING 2036 LINCOLN AVE., SUITE 104 OGDEN, UTAH 84403 TEL: 801.656.8109 • FAX: 801.523.0990 www.sunrise-eng.com					
OGDEN CITY WATER TREATMENT PLANT RECONST. FILTER SKID BASE PL LAYOUT					
REV. NO.	DESIGNED	DRAWN	CHECKED	SHEET NO.	P30
04310	RWW	CJC	GDP	156 of 244	

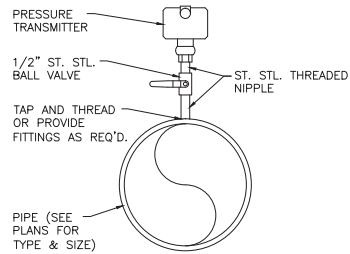


A TYP NTS
DETAIL - CONC. PIPE SUPPORTS

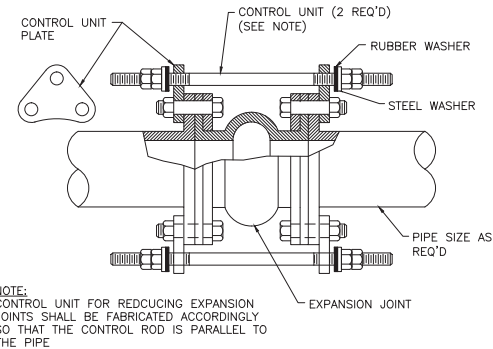
B TYP 1" = 1'-0"
DETAIL - PUMP SUPPORT BRACKET



C TYP NOT TO SCALE
DETAIL - PRESSURE GAUGE

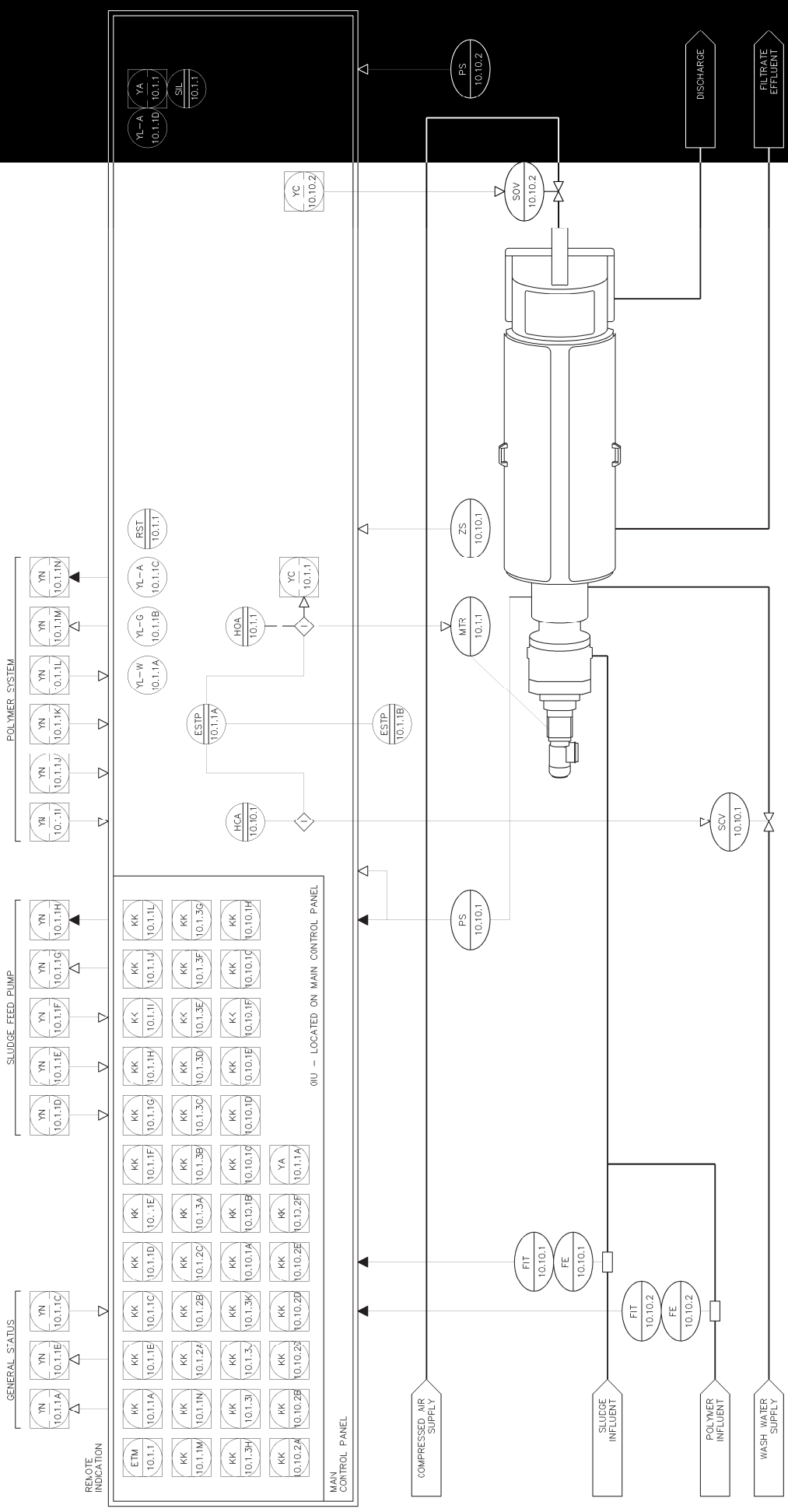


D TYP NOT TO SCALE
DETAIL - PRESSURE TRANSMITTER



E TYP NOT TO SCALE
DETAIL - EXPANSION JOINT

REV. NO.	COMMENT	DATE
SUNRISE ENGINEERING 2036 LINCOLN AVE., SUITE 104 OGDEN, UTAH 84401 TEL 801.656.8109 • FAX 801.523.0990 www.sunrise-eng.com		
OGDEN CITY WATER TREATMENT PLANT RECONST. DETAILS		
REV. NO.	DESIGNED	DRAWN
04310	RWW	CJC
	CHECKED	SHEET NO.
	GDP	160 of 244



REV. NO.	COMMENT	DATE
1		



SUNRISE ENGINEERING
 2222 S. BUSINESS PARK DR. SUITE 200
 DAVIS, UTAH 84005
 WWW.SUNRISE-ENG.COM

OGDEN CITY
WATER TREATMENT PLANT RECONSTRUCTION
MECHANICAL DEWATERING BUILDING
PROCESS DIAGRAM

REV. NO.	DESCRIPTION	DATE
1		

FIELD DEVICES	LOOP NUMBERS
DESCRIPTION	10.1.X, 10.1.CX
RS50 - SLUDGE DEWATERING UNIT INSTRUMENTATION AND LOOP DIAGRAM	

TAG	DESCRIPTION	FUNCTION
ESTP 10.1.1A	PUSHBUTTON - PANEL MOUNTED MUSHROOM HEAD, PUSH-PULL TYPE	PROVIDES OPERATOR WITH PROVISION TO STOP THE SYSTEM IN THE EVENT OF AN EMERGENCY
ESTP 10.1.1B	PUSHBUTTON - FIELD MOUNTED MUSHROOM HEAD, PUSH-PULL TYPE	PROVIDES OPERATOR WITH PROVISION TO STOP THE SYSTEM IN THE EVENT OF AN EMERGENCY
FE 10.10.1	FLOW METER SLUDGE FEED	FLOW ELEMENT PART OF FLOW METER
FIT 10.10.1	FLOW METER SLUDGE FEED	PROVIDES SLUDGE FEED FLOW RATE SIGNAL TO MAIN CONTROL PANEL
FE 10.10.2	FLOW METER POLYMER FEED	FLOW ELEMENT PART OF FLOW METER
FIT 10.10.2	FLOW METER POLYMER FEED	PROVIDES POLYMER FEED FLOW RATE SIGNAL TO MAIN CONTROL PANEL
HOA 10.10.1	SELECTOR SWITCH - SPRAY/WASH HAND-OFF-AUTO HOA LOCATED IN PANEL	PROVIDES OPERATOR WITH PROVISION TO SELECT HAND, OFF, OR AUTO
HOA 10.10.1	SELECTOR SWITCH - SPRAY/WASH HAND-OFF-AUTO HOA LOCATED IN PANEL	PROVIDES OPERATOR WITH PROVISION TO SELECT HAND, OFF, OR AUTO
MTR 10.1.1	PRESS DRIVE MOTOR	
PS 10.10.1	PRESSURE SENSOR PRESS INLET	DETECTS INLET PRESSURE TO THE PRESS
PS 10.10.2	PRESSURE SENSOR AIR SUPPLY	DETECTS AIR SUPPLY PRESSURE OF THE PNEUMATIC CONE
RST 10.1.1	PUSHBUTTON SYSTEM RESET FLUSH HEAD, MOMENTARY	PROVIDES OPERATOR WITH PROVISION TO RESET SYSTEM FAULT'S
SIL 10.1.1	PUSHBUTTON ALARM SILENCE EXTENDED HOLD, MOMENTARY	PROVIDES OPERATOR WITH PROVISION TO SILENCE AN ALARM ONCE THE ALARM HORN SOUNDS
SOV 10.10.1	SOLENOID VALVE SPRAY WASH	PROVIDES WASH WATER TO THE PRESS
SOV 10.10.2	SOLENOID VALVE PNEUMATIC CONE	PROVIDES PNEUMATIC PRESSURE TO THE PRESS CONE
YA 10.1.1	HORN COMMON ALARM HORN	PROVIDES AUDIBLE INDICATION OF SYSTEM FAULT
YC 10.1.1	PRESS CALL TO RUN VARIABLE FREQUENCY DRIVE - STANDARD	PROVIDES PRESS WITH CALL TO RUN COMMAND
YC 10.10.2	PNEUMATIC CONE CALL TO RUN	PROVIDES PNEUMATIC CONE WITH CALL WITH ENGAGE AND DISENGAGE COMMANDS
YL-W 10.1.1A	INDICATOR LIGHT - WHITE CONTROL POWER ON	PROVIDES OPERATOR INDICATION THAT CONTROL POWER IS PRESENT AND ALL SAFETY INTERLOCKS ARE ENABLED
YL-G 10.1.1B	INDICATOR LIGHT - GREEN DEWATERING MODE	PROVIDES OPERATOR INDICATION THAT THE SYSTEM IS IN DEWATERING MODE
DESCRIPTION		LOOP NUMBERS
RoS30 - SLUDGE DEWATERING UNIT INSTRUMENTATION AND LOOP DIAGRAM		10.1.X, 10.10.X

TAG	DESCRIPTION	FUNCTION
YL-A 10.1.1C	INDICATOR LIGHT - AMBER SYSTEM DISTURBANCE	PROVIDES OPERATOR INDICATION OF A SYSTEM FAULT
YL-A 10.1.1D	INDICATION BEACON - AMBER COMMON ALARM	PROVIDES OPERATOR INDICATION OF A SYSTEM FAULT
ZS 10.1.1	PROXIMITY SWITCH BASKET ROTATION	DETECTS ROTATION OF THE BASKET
DESCRIPTION		LOOP NUMBERS
RoS30 - SLUDGE DEWATERING UNIT INSTRUMENTATION AND LOOP DIAGRAM		10.1.X, 10.10.X

TAG	DESCRIPTION	FUNCTION
YN 10.1.1A	REMOTE INDICATION DEWATERING MODE	PROVIDES REMOTE INDICATION THAT DEWATERING MODE IS ON. TYPICALLY 120VAC, SAMP DRY CONTACT
YN 10.1.1B	REMOTE INDICATION SYSTEM DISTURBANCE	PROVIDES REMOTE INDICATION THAT SYSTEM DISTURBANCE IS ON. TYPICALLY 120VAC, SAMP DRY CONTACT
YN 10.1.1C	REMOTE INDICATION DEWATERING SYSTEM START COMMAND	RECEIVES REMOTE INDICATION TO START DEWATERING SYSTEM. TYPICALLY 120VAC, SAMP DRY CONTACT
YN 10.1.1D	REMOTE INDICATION SLUDGE PUMP IN REMOTE	RECEIVES REMOTE INDICATION THAT SLUDGE PUMP IS IN REMOTE. TYPICALLY 120VAC, SAMP DRY CONTACT
YN 10.1.1E	REMOTE INDICATION SLUDGE PUMP RUNNING	RECEIVES REMOTE INDICATION THAT SLUDGE PUMP IS RUNNING. TYPICALLY 120VAC, SAMP DRY CONTACT
YN 10.1.1F	REMOTE INDICATION SLUDGE PUMP FAULT	RECEIVES REMOTE INDICATION THAT SLUDGE PUMP IS IN FAULT. TYPICALLY 120VAC, SAMP DRY CONTACT
YN 10.1.1G	REMOTE INDICATION SLUDGE PUMP START COMMAND	RECEIVES REMOTE INDICATION TO START THE SLUDGE PUMP. TYPICALLY 120VAC, SAMP DRY CONTACT
YN 10.1.1H	REMOTE INDICATION SLUDGE PUMP SPEED REFERENCE	PROVIDES REMOTE INDICATION FOR SLUDGE PUMP SPEED REFERENCE. TYPICALLY 4-20mA ANALOG SIGNAL
YN 10.1.1I	REMOTE INDICATION POLYMER SYSTEM IN REMOTE	RECEIVES REMOTE INDICATION THAT POLYMER SYSTEM IS IN REMOTE. TYPICALLY 120VAC, SAMP DRY CONTACT
YN 10.1.1J	REMOTE INDICATION POLYMER SYSTEM RUNNING	RECEIVES REMOTE INDICATION THAT POLYMER SYSTEM IS RUNNING. TYPICALLY 120VAC, SAMP DRY CONTACT
YN 10.1.1K	REMOTE INDICATION POLYMER SYSTEM LOW POLYMER FLOW	RECEIVES REMOTE INDICATION OF POLYMER SYSTEM LOW POLYMER FLOW. TYPICALLY 120VAC, SAMP DRY CONTACT
YN 10.1.1L	REMOTE INDICATION POLYMER SYSTEM LOW WATER PRESSURE	RECEIVES REMOTE INDICATION OF POLYMER SYSTEM LOW WATER PRESSURE. TYPICALLY 120VAC, SAMP DRY CONTACT
YN 10.1.1M	REMOTE INDICATION POLYMER SYSTEM START COMMAND	PROVIDES REMOTE INDICATION TO START THE POLYMER SYSTEM. TYPICALLY 120VAC, SAMP DRY CONTACT
YN 10.1.1N	REMOTE INDICATION POLYMER SYSTEM SPEED REFERENCE	PROVIDES REMOTE INDICATION FOR POLYMER SYSTEM SPEED REFERENCE. TYPICALLY 4-20mA ANALOG SIGNAL
DESCRIPTION		LOOP NUMBERS
RoS30 - SLUDGE DEWATERING UNIT INSTRUMENTATION AND LOOP DIAGRAM		10.1.X, 10.10.X

- NOTES:
1. SYMBOLS AND DESCRIPTIONS USED ARE THOSE PUBLISHED IN THE INSTRUMENT SOCIETY OF AMERICA, ISA, PLEASE REFER TO THE INSTRUMENT SOCIETY OF AMERICA WEBSITE FOR THESE DETAILS. THESE DETAILS ARE BASED ON TYPICAL INSTALLATIONS, AND ARE SUBJECT TO CHANGE BASED ON SPECIFIC PROJECT REQUIREMENTS.
 2. * DEVICES THAT MAY BE REMOVED FROM CONTROL PANEL DOOR AND MOUNTED NEAR EQUIPMENT IN A LUS.
 3. ** INDICATES OPTIONAL ITEM OR OPTIONAL UPGRADE.



SUNRISE ENGINEERING
 12227 S. BUSINESS PARK DR. SUITE 200
 DOWNEY, UTAH 84003
 WWW.SUNRISE-ENG.COM TEL: 801.553.0999


OGDEN CITY
WATER TREATMENT PLANT RECONSTRUCTION
MECHANICAL DEWATERING BUILDING
PROCESS DIAGRAM

REV. NO. 10374-001
 DATE 08/27/2014
 DRAWN BY 10374-001
 CHECKED BY 10374-001
 PROJECT NO. 10374-001
 SHEET NO. P37

TAG	DESCRIPTION	FUNCTION	DESCRIPTION	FUNCTION	DESCRIPTION	FUNCTION
ETM 10.1.1	ELAPSED TIMER METER PRESS RUN TIME	PROVIDES OPERATOR TOTALIZED MOTOR RUN TIME ACCESSIBLE THROUGH OUI			YA 10.1.1.A	ALARM INDICATION ROS30 SYSTEM FAULT ACCESSIBLE THROUGH OUI
KK 10.1.1.B	SETPOINT PRESS DIRECTION CHANGE DWELL TIME SETPOINT: 1 SEC, RANGE 0-60 SEC	SETPOINT ACCESSIBLE THROUGH OUI	KK 10.1.3D	SETPOINT INLET PRESSURE 20mA SIGNAL SETPOINT: 20 PSI, RANGE 0-30 PSI	SETPOINT ACCESSIBLE THROUGH OUI	
KK 10.1.1.C	SETPOINT PRESS HAND SPEED REFERENCE SETPOINT: 100 %, RANGE 20-100 %	SETPOINT ACCESSIBLE THROUGH OUI	KK 10.1.3E	SETPOINT HIGH INLET PRESSURE SETPOINT SETPOINT: 12 PSI, RANGE 0-30 PSI	SETPOINT ACCESSIBLE THROUGH OUI	
KK 10.1.1.D	SETPOINT PRESS MINIMUM SPEED SETPOINT: 20 %, RANGE 0-100 %	SETPOINT ACCESSIBLE THROUGH OUI	KK 10.1.3F	SETPOINT HIGH INLET PRESSURE FEED INTERRUPT DURATION SETPOINT: 10 SEC, RANGE 1-60 SEC	SETPOINT ACCESSIBLE THROUGH OUI	
KK 10.1.1.E	SETPOINT PRESS MAXIMUM SPEED SETPOINT: 100 %, RANGE 0-100 %	SETPOINT ACCESSIBLE THROUGH OUI	KK 10.1.3G	SETPOINT HIGH INLET PRESSURE FAULT COUNTER SETPOINT: 5 COUNTS, RANGE 1-10 COUNTS	SETPOINT ACCESSIBLE THROUGH OUI	
KK 10.1.1.F	SETPOINT PRESS SHUTDOWN DELAY TIMER SETPOINT: 10 MIN, RANGE 0-30 MIN	SETPOINT ACCESSIBLE THROUGH OUI	KK 10.1.3H	SETPOINT HIGH INLET PRESSURE COUNT RESET TIME SETPOINT: 60 MIN, RANGE 1-600 MIN	SETPOINT ACCESSIBLE THROUGH OUI	
KK 10.1.1.G	SETPOINT HIGH CURRENT INTERRUPT PRESS SPEED SETPOINT: 100 %, RANGE 0-100 %	SETPOINT ACCESSIBLE THROUGH OUI	KK 10.1.3J	SETPOINT HIGH INLET PRESSURE SHUTDOWN DELAY TIME SETPOINT: 10 SEC, RANGE 1-60 SEC	SETPOINT ACCESSIBLE THROUGH OUI	
KK 10.1.1.H	SETPOINT HIGH CURRENT INTERRUPT SETPOINT SETPOINT: 5.0 AMPS, RANGE 0-10.0 AMPS	SETPOINT ACCESSIBLE THROUGH OUI	KK 10.1.3K	SETPOINT PROX SWITCH FAIL TIMER SETPOINT: 5 SEC, RANGE 1-25 SEC	SETPOINT ACCESSIBLE THROUGH OUI	
KK 10.1.1.I	SETPOINT HIGH CURRENT INTERRUPT HYSTERESIS SETPOINT: 10 %, RANGE 1-50 %	SETPOINT ACCESSIBLE THROUGH OUI	KK 10.1.3L	SETPOINT WASH CYCLE SHUTDOWN DURATION TIMER SETPOINT: 30 SEC, RANGE: 1-60 SEC	SETPOINT ACCESSIBLE THROUGH OUI	
KK 10.1.1.J	SETPOINT HIGH CURRENT INTERRUPT DURATION SETPOINT: 10 SEC, RANGE 1-60 SEC	SETPOINT ACCESSIBLE THROUGH OUI	KK 10.10.1.A	SETPOINT SLUDGE FEED RATE SETPOINT: 30 GPM, RANGE 5-150 GPM	SETPOINT ACCESSIBLE THROUGH OUI	
KK 10.1.1.K	SETPOINT HIGH CURRENT FAULT COUNTER SETPOINT: 5 COUNTS, RANGE 1-10 COUNTS	SETPOINT ACCESSIBLE THROUGH OUI	KK 10.10.1.B	SETPOINT SLUDGE CONCENTRATION SETPOINT: 1.5 %, RANGE 1-10 %	SETPOINT ACCESSIBLE THROUGH OUI	
KK 10.1.1.L	SETPOINT HIGH CURRENT COUNT RESET TIME SETPOINT: 60 MIN, RANGE: 1-600 MIN	SETPOINT ACCESSIBLE THROUGH OUI	KK 10.10.1.C	SETPOINT SLUDGE PUMP SPEED SIGNAL PID GAIN SETPOINT: 1.2, RANGE 0-5	SETPOINT ACCESSIBLE THROUGH OUI	
KK 10.1.1.M	SETPOINT HIGH CURRENT SHUTDOWN DELAY TIME SETPOINT: 10 SEC, RANGE 1-60 SEC	SETPOINT ACCESSIBLE THROUGH OUI	KK 10.10.1.D	SETPOINT SLUDGE PUMP SPEED SIGNAL PID TIME SETPOINT: 1.2 MS, RANGE 0-1000 MS	SETPOINT ACCESSIBLE THROUGH OUI	
KK 10.1.1.N	SETPOINT HIGH CURRENT OVERLOAD SETPOINT SETPOINT: 8.0 AMPS, RANGE 0-10.0 AMPS	SETPOINT ACCESSIBLE THROUGH OUI	KK 10.10.1.E	SETPOINT SLUDGE FLOW METER MIN CAPACITY SETPOINT: 0 GPM, RANGE 0-50 GPM	SETPOINT ACCESSIBLE THROUGH OUI	
KK 10.1.2A	SETPOINT SPRAY WASH CYCLE DELAY TIMER SETPOINT: 15 MIN, RANGE 1-60 MIN	SETPOINT ACCESSIBLE THROUGH OUI	KK 10.10.1.F	SETPOINT SLUDGE FLOW METER MAX CAPACITY SETPOINT: 100 GPM, RANGE 0-500 GPM	SETPOINT ACCESSIBLE THROUGH OUI	
KK 10.1.2B	SETPOINT SPRAY WASH CYCLE COUNTER SETPOINT: 4 COUNTS, RANGE 1-10 COUNTS	SETPOINT ACCESSIBLE THROUGH OUI	KK 10.10.2A	SETPOINT POLYMER CONCENTRATION SETPOINT: 100 %, RANGE 1-100 %	SETPOINT ACCESSIBLE THROUGH OUI	
KK 10.1.2C	SETPOINT BASKET ENFORCEMENT BARS SETPOINT: 4 BARS, RANGE 1-10 BARS	SETPOINT ACCESSIBLE THROUGH OUI	KK 10.10.2B	SETPOINT POLYMER DOSING RATE SETPOINT: 10 LBS NEAT/TON DS, RANGE 0.1-199.9	SETPOINT ACCESSIBLE THROUGH OUI	
KK 10.1.3A	SETPOINT INLET PRESSURE AT MIN PRESS SPEED SETPOINT: 3 PSI, RANGE 0-30 PSI	SETPOINT ACCESSIBLE THROUGH OUI	KK 10.10.2C	SETPOINT POLYMER SYSTEM MIN CAPACITY SETPOINT: 0 GPM, RANGE 0.1-99.9 GPH	SETPOINT ACCESSIBLE THROUGH OUI	
KK 10.1.3B	SETPOINT INLET PRESSURE AT MAX PRESS SPEED SETPOINT: 15 PSI, RANGE 0-30 PSI	SETPOINT ACCESSIBLE THROUGH OUI	KK 10.10.2D	SETPOINT POLYMER SYSTEM MAX CAPACITY SETPOINT: 3 GPM, RANGE 0.1-999.0 GPH	SETPOINT ACCESSIBLE THROUGH OUI	
KK 10.1.3C	SETPOINT INLET PRESSURE 4mA SETPOINT SETPOINT: 0 PSI, RANGE 0-30 PSI	SETPOINT ACCESSIBLE THROUGH OUI	KK 10.10.2E	SETPOINT POLYMER FLOW METER MIN CAPACITY SETPOINT: 0 GPM, RANGE 0-2 GPM	SETPOINT ACCESSIBLE THROUGH OUI	
			KK 10.10.2F	SETPOINT POLYMER FLOW METER MAX CAPACITY SETPOINT: 5 GPM, RANGE 0-50 GPM	SETPOINT ACCESSIBLE THROUGH OUI	

TAG	DESCRIPTION	FUNCTION	DESCRIPTION	FUNCTION	DESCRIPTION	FUNCTION
KK 10.1.1.A	ALARM INDICATION ROS30 SYSTEM FAULT ACCESSIBLE THROUGH OUI					
KK 10.1.3D	SETPOINT INLET PRESSURE 20mA SIGNAL SETPOINT: 20 PSI, RANGE 0-30 PSI	SETPOINT ACCESSIBLE THROUGH OUI	KK 10.1.3E	SETPOINT HIGH INLET PRESSURE SETPOINT SETPOINT: 12 PSI, RANGE 0-30 PSI	SETPOINT ACCESSIBLE THROUGH OUI	
KK 10.1.3F	SETPOINT HIGH INLET PRESSURE FEED INTERRUPT DURATION SETPOINT: 10 SEC, RANGE 1-60 SEC	SETPOINT ACCESSIBLE THROUGH OUI	KK 10.1.3G	SETPOINT HIGH INLET PRESSURE FAULT COUNTER SETPOINT: 5 COUNTS, RANGE 1-10 COUNTS	SETPOINT ACCESSIBLE THROUGH OUI	
KK 10.1.3H	SETPOINT HIGH INLET PRESSURE COUNT RESET TIME SETPOINT: 60 MIN, RANGE 1-600 MIN	SETPOINT ACCESSIBLE THROUGH OUI	KK 10.1.3I	SETPOINT HIGH INLET PRESSURE SHUTDOWN DELAY TIME SETPOINT: 10 SEC, RANGE 1-60 SEC	SETPOINT ACCESSIBLE THROUGH OUI	
KK 10.1.3J	SETPOINT PROX SWITCH FAIL TIMER SETPOINT: 5 SEC, RANGE 1-25 SEC	SETPOINT ACCESSIBLE THROUGH OUI	KK 10.1.3K	SETPOINT WASH CYCLE SHUTDOWN DURATION TIMER SETPOINT: 30 SEC, RANGE: 1-60 SEC	SETPOINT ACCESSIBLE THROUGH OUI	
KK 10.10.1.A	SETPOINT SLUDGE FEED RATE SETPOINT: 30 GPM, RANGE 5-150 GPM	SETPOINT ACCESSIBLE THROUGH OUI	KK 10.10.1.B	SETPOINT SLUDGE CONCENTRATION SETPOINT: 1.5 %, RANGE 1-10 %	SETPOINT ACCESSIBLE THROUGH OUI	
KK 10.10.1.C	SETPOINT SLUDGE PUMP SPEED SIGNAL PID GAIN SETPOINT: 1.2, RANGE 0-5	SETPOINT ACCESSIBLE THROUGH OUI	KK 10.10.1.D	SETPOINT SLUDGE PUMP SPEED SIGNAL PID TIME SETPOINT: 1.2 MS, RANGE 0-1000 MS	SETPOINT ACCESSIBLE THROUGH OUI	
KK 10.10.1.E	SETPOINT SLUDGE FLOW METER MIN CAPACITY SETPOINT: 0 GPM, RANGE 0-50 GPM	SETPOINT ACCESSIBLE THROUGH OUI	KK 10.10.1.F	SETPOINT SLUDGE FLOW METER MAX CAPACITY SETPOINT: 100 GPM, RANGE 0-500 GPM	SETPOINT ACCESSIBLE THROUGH OUI	
KK 10.10.2A	SETPOINT POLYMER CONCENTRATION SETPOINT: 100 %, RANGE 1-100 %	SETPOINT ACCESSIBLE THROUGH OUI	KK 10.10.2B	SETPOINT POLYMER DOSING RATE SETPOINT: 10 LBS NEAT/TON DS, RANGE 0.1-199.9	SETPOINT ACCESSIBLE THROUGH OUI	
KK 10.10.2C	SETPOINT POLYMER SYSTEM MIN CAPACITY SETPOINT: 0 GPM, RANGE 0.1-99.9 GPH	SETPOINT ACCESSIBLE THROUGH OUI	KK 10.10.2D	SETPOINT POLYMER SYSTEM MAX CAPACITY SETPOINT: 3 GPM, RANGE 0.1-999.0 GPH	SETPOINT ACCESSIBLE THROUGH OUI	
KK 10.10.2E	SETPOINT POLYMER FLOW METER MIN CAPACITY SETPOINT: 0 GPM, RANGE 0-2 GPM	SETPOINT ACCESSIBLE THROUGH OUI	KK 10.10.2F	SETPOINT POLYMER FLOW METER MAX CAPACITY SETPOINT: 5 GPM, RANGE 0-50 GPM	SETPOINT ACCESSIBLE THROUGH OUI	

TAG	DESCRIPTION	FUNCTION	DESCRIPTION	FUNCTION	DESCRIPTION	FUNCTION
ETM 10.1.1	ELAPSED TIMER METER PRESS RUN TIME	PROVIDES OPERATOR TOTALIZED MOTOR RUN TIME ACCESSIBLE THROUGH OUI				
KK 10.1.1.B	SETPOINT PRESS DIRECTION CHANGE DWELL TIME SETPOINT: 1 SEC, RANGE 0-60 SEC	SETPOINT ACCESSIBLE THROUGH OUI	KK 10.1.3D	SETPOINT INLET PRESSURE 20mA SIGNAL SETPOINT: 20 PSI, RANGE 0-30 PSI	SETPOINT ACCESSIBLE THROUGH OUI	
KK 10.1.1.C	SETPOINT PRESS HAND SPEED REFERENCE SETPOINT: 100 %, RANGE 20-100 %	SETPOINT ACCESSIBLE THROUGH OUI	KK 10.1.3E	SETPOINT HIGH INLET PRESSURE SETPOINT SETPOINT: 12 PSI, RANGE 0-30 PSI	SETPOINT ACCESSIBLE THROUGH OUI	
KK 10.1.1.D	SETPOINT PRESS MINIMUM SPEED SETPOINT: 20 %, RANGE 0-100 %	SETPOINT ACCESSIBLE THROUGH OUI	KK 10.1.3F	SETPOINT HIGH INLET PRESSURE FEED INTERRUPT DURATION SETPOINT: 10 SEC, RANGE 1-60 SEC	SETPOINT ACCESSIBLE THROUGH OUI	
KK 10.1.1.E	SETPOINT PRESS MAXIMUM SPEED SETPOINT: 100 %, RANGE 0-100 %	SETPOINT ACCESSIBLE THROUGH OUI	KK 10.1.3G	SETPOINT HIGH INLET PRESSURE FAULT COUNTER SETPOINT: 5 COUNTS, RANGE 1-10 COUNTS	SETPOINT ACCESSIBLE THROUGH OUI	
KK 10.1.1.F	SETPOINT PRESS SHUTDOWN DELAY TIMER SETPOINT: 10 MIN, RANGE 0-30 MIN	SETPOINT ACCESSIBLE THROUGH OUI	KK 10.1.3H	SETPOINT HIGH INLET PRESSURE COUNT RESET TIME SETPOINT: 60 MIN, RANGE 1-600 MIN	SETPOINT ACCESSIBLE THROUGH OUI	
KK 10.1.1.G	SETPOINT HIGH CURRENT INTERRUPT PRESS SPEED SETPOINT: 100 %, RANGE 0-100 %	SETPOINT ACCESSIBLE THROUGH OUI	KK 10.1.3I	SETPOINT HIGH INLET PRESSURE SHUTDOWN DELAY TIME SETPOINT: 10 SEC, RANGE 1-60 SEC	SETPOINT ACCESSIBLE THROUGH OUI	
KK 10.1.1.H	SETPOINT HIGH CURRENT INTERRUPT SETPOINT SETPOINT: 5.0 AMPS, RANGE 0-10.0 AMPS	SETPOINT ACCESSIBLE THROUGH OUI	KK 10.1.3J	SETPOINT PROX SWITCH FAIL TIMER SETPOINT: 5 SEC, RANGE 1-25 SEC	SETPOINT ACCESSIBLE THROUGH OUI	
KK 10.1.1.I	SETPOINT HIGH CURRENT INTERRUPT HYSTERESIS SETPOINT: 10 %, RANGE 1-50 %	SETPOINT ACCESSIBLE THROUGH OUI	KK 10.1.3K	SETPOINT WASH CYCLE SHUTDOWN DURATION TIMER SETPOINT: 30 SEC, RANGE: 1-60 SEC	SETPOINT ACCESSIBLE THROUGH OUI	
KK 10.1.1.J	SETPOINT HIGH CURRENT INTERRUPT DURATION SETPOINT: 10 SEC, RANGE 1-60 SEC	SETPOINT ACCESSIBLE THROUGH OUI	KK 10.10.1.A	SETPOINT SLUDGE FEED RATE SETPOINT: 30 GPM, RANGE 5-150 GPM	SETPOINT ACCESSIBLE THROUGH OUI	
KK 10.1.1.K	SETPOINT HIGH CURRENT FAULT COUNTER SETPOINT: 5 COUNTS, RANGE 1-10 COUNTS	SETPOINT ACCESSIBLE THROUGH OUI	KK 10.10.1.B	SETPOINT SLUDGE CONCENTRATION SETPOINT: 1.5 %, RANGE 1-10 %	SETPOINT ACCESSIBLE THROUGH OUI	
KK 10.1.1.L	SETPOINT HIGH CURRENT COUNT RESET TIME SETPOINT: 60 MIN, RANGE: 1-600 MIN	SETPOINT ACCESSIBLE THROUGH OUI	KK 10.10.1.C	SETPOINT SLUDGE PUMP SPEED SIGNAL PID GAIN SETPOINT: 1.2, RANGE 0-5	SETPOINT ACCESSIBLE THROUGH OUI	
KK 10.1.1.M	SETPOINT HIGH CURRENT SHUTDOWN DELAY TIME SETPOINT: 10 SEC, RANGE 1-60 SEC	SETPOINT ACCESSIBLE THROUGH OUI	KK 10.10.1.D	SETPOINT SLUDGE PUMP SPEED SIGNAL PID TIME SETPOINT: 1.2 MS, RANGE 0-1000 MS	SETPOINT ACCESSIBLE THROUGH OUI	
KK 10.1.1.N	SETPOINT HIGH CURRENT OVERLOAD SETPOINT SETPOINT: 8.0 AMPS, RANGE 0-10.0 AMPS	SETPOINT ACCESSIBLE THROUGH OUI	KK 10.10.1.E	SETPOINT SLUDGE FLOW METER MIN CAPACITY SETPOINT: 0 GPM, RANGE 0-50 GPM	SETPOINT ACCESSIBLE THROUGH OUI	
KK 10.1.2A	SETPOINT SPRAY WASH CYCLE DELAY TIMER SETPOINT: 15 MIN, RANGE 1-60 MIN	SETPOINT ACCESSIBLE THROUGH OUI	KK 10.10.1.F	SETPOINT SLUDGE FLOW METER MAX CAPACITY SETPOINT: 100 GPM, RANGE 0-500 GPM	SETPOINT ACCESSIBLE THROUGH OUI	
KK 10.1.2B	SETPOINT SPRAY WASH CYCLE COUNTER SETPOINT: 4 COUNTS, RANGE 1-10 COUNTS	SETPOINT ACCESSIBLE THROUGH OUI	KK 10.10.2A	SETPOINT POLYMER CONCENTRATION SETPOINT: 100 %, RANGE 1-100 %	SETPOINT ACCESSIBLE THROUGH OUI	
KK 10.1.2C	SETPOINT BASKET ENFORCEMENT BARS SETPOINT: 4 BARS, RANGE 1-10 BARS	SETPOINT ACCESSIBLE THROUGH OUI	KK 10.10.2B	SETPOINT POLYMER DOSING RATE SETPOINT: 10 LBS NEAT/TON DS, RANGE 0.1-199.9	SETPOINT ACCESSIBLE THROUGH OUI	
KK 10.1.3A	SETPOINT INLET PRESSURE AT MIN PRESS SPEED SETPOINT: 3 PSI, RANGE 0-30 PSI	SETPOINT ACCESSIBLE THROUGH OUI	KK 10.10.2C	SETPOINT POLYMER SYSTEM MIN CAPACITY SETPOINT: 0 GPM, RANGE 0.1-99.9 GPH	SETPOINT ACCESSIBLE THROUGH OUI	
KK 10.1.3B	SETPOINT INLET PRESSURE AT MAX PRESS SPEED SETPOINT: 15 PSI, RANGE 0-30 PSI	SETPOINT ACCESSIBLE THROUGH OUI	KK 10.10.2D	SETPOINT POLYMER SYSTEM MAX CAPACITY SETPOINT: 3 GPM, RANGE 0.1-999.0 GPH	SETPOINT ACCESSIBLE THROUGH OUI	
KK 10.1.3C	SETPOINT INLET PRESSURE 4mA SETPOINT SETPOINT: 0 PSI, RANGE 0-30 PSI	SETPOINT ACCESSIBLE THROUGH OUI	KK 10.10.2E	SETPOINT POLYMER FLOW METER MIN CAPACITY SETPOINT: 0 GPM, RANGE 0-2 GPM	SETPOINT ACCESSIBLE THROUGH OUI	
KK 10.1.3C	SETPOINT INLET PRESSURE 4mA SETPOINT SETPOINT: 0 PSI, RANGE 0-30 PSI	SETPOINT ACCESSIBLE THROUGH OUI	KK 10.10.2F	SETPOINT POLYMER FLOW METER MAX CAPACITY SETPOINT: 5 GPM, RANGE 0-50 GPM	SETPOINT ACCESSIBLE THROUGH OUI	



SUNRISE ENGINEERING
 12222 S. BUSINESS PARK DR. SUITE 200
 DOWNEY, UTAH 84003
 801.353.6999
 WWW.SUNRISE-ENG.COM



Professional Engineer
 State of Utah
 License No. 100000000

OGDEN CITY

**WATER TREATMENT PLANT RECONSTRUCTION
 MECHANICAL DEWATERING DIAGRAM
 PROCESS DIAGRAM**

REV NO.	DESCRIPTION	DATE
001	ISSUED FOR CONSTRUCTION	08/14/24
002	REVISED	08/14/24
003	REVISED	08/14/24

DESCRIPTION
 ROS30 - SLUDGE DEWATERING UNIT INSTRUMENTATION AND LOOP DIAGRAM

DESCRIPTION
 ROS30 - SLUDGE DEWATERING UNIT INSTRUMENTATION AND LOOP DIAGRAM

DESCRIPTION
 ROS30 - SLUDGE DEWATERING UNIT INSTRUMENTATION AND LOOP DIAGRAM

DESCRIPTION
 ROS30 - SLUDGE DEWATERING UNIT INSTRUMENTATION AND LOOP DIAGRAM

DESCRIPTION
 ROS30 - SLUDGE DEWATERING UNIT INSTRUMENTATION AND LOOP DIAGRAM

DESCRIPTION
 ROS30 - SLUDGE DEWATERING UNIT INSTRUMENTATION AND LOOP DIAGRAM

DESCRIPTION
 ROS30 - SLUDGE DEWATERING UNIT INSTRUMENTATION AND LOOP DIAGRAM

DESCRIPTION
 ROS30 - SLUDGE DEWATERING UNIT INSTRUMENTATION AND LOOP DIAGRAM

NOTES:
 1. SYMBOLS AND DESCRIPTIONS USED ARE THOSE PUBLISHED IN THE INSTRUMENT SOCIETY OF AMERICA, ISA.
 2. THESE DETAILS ARE BASED ON TYPICAL INSTALLATIONS, AND ARE SUBJECT TO CHANGE BASED ON SPECIFIC PROJECT REQUIREMENTS.
 3. * DEVICES THAT MAY BE REMOVED FROM CONTROL PANEL DOOR AND MOUNTED NEAR EQUIPMENT IN A LUGS.
 4. ** INDICATES OPTIONAL ITEM OR OPTIONAL USAGE.

LOOP NUMBERS
 10.1.X, 10.10.X

LOOP NUMBERS
 10.1.X, 10.10.X

LOOP NUMBERS
 10.1.X, 10.10.X

LOOP NUMBERS
 10.1.X, 10.10.X

LOOP NUMBERS
 10.1.X, 10.10.X

LOOP NUMBERS
 10.1.X, 10.10.X

LOOP NUMBERS
 10.1.X, 10.10.X

LOOP NUMBERS
 10.1.X, 10.10.X

LOOP NUMBERS
 10.1.X, 10.10.X

LOOP NUMBERS
 10.1.X, 10.10.X

LOOP NUMBERS
 10.1.X, 10.10.X

LOOP NUMBERS
 10.1.X, 10.10.X

LOOP NUMBERS
 10.1.X, 10.10.X

LOOP NUMBERS
 10.1.X, 10.10.X

LOOP NUMBERS
 10.1.X, 10.10.X

LOOP NUMBERS
 10.1.X, 10.10.X

LOOP NUMBERS
 10.1.X, 10.10.X

LOOP NUMBERS
 10.1.X, 10.10.X

REV NO. COMMENT

REV NO. COMMENT

REV NO. COMMENT

REV NO. COMMENT

REV NO. COMMENT

REV NO. COMMENT

REV NO. COMMENT

REV NO. COMMENT

REV NO. COMMENT

REV NO. COMMENT

REV NO. COMMENT

REV NO. COMMENT

REV NO. COMMENT

REV NO. COMMENT

REV NO. COMMENT

REV NO. COMMENT

REV NO. COMMENT

REV NO. COMMENT

REV NO. COMMENT

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DATE

DESCRIPTION

DESCRIPTION

DESCRIPTION

DESCRIPTION

DESCRIPTION

DESCRIPTION

DESCRIPTION

DESCRIPTION

DESCRIPTION

DESCRIPTION

DESCRIPTION

DESCRIPTION

DESCRIPTION

DESCRIPTION

DESCRIPTION

DESCRIPTION

DESCRIPTION

DESCRIPTION

DESCRIPTION

FUNCTION

FUNCTION

FUNCTION

FUNCTION

FUNCTION

FUNCTION

FUNCTION

FUNCTION

FUNCTION

FUNCTION

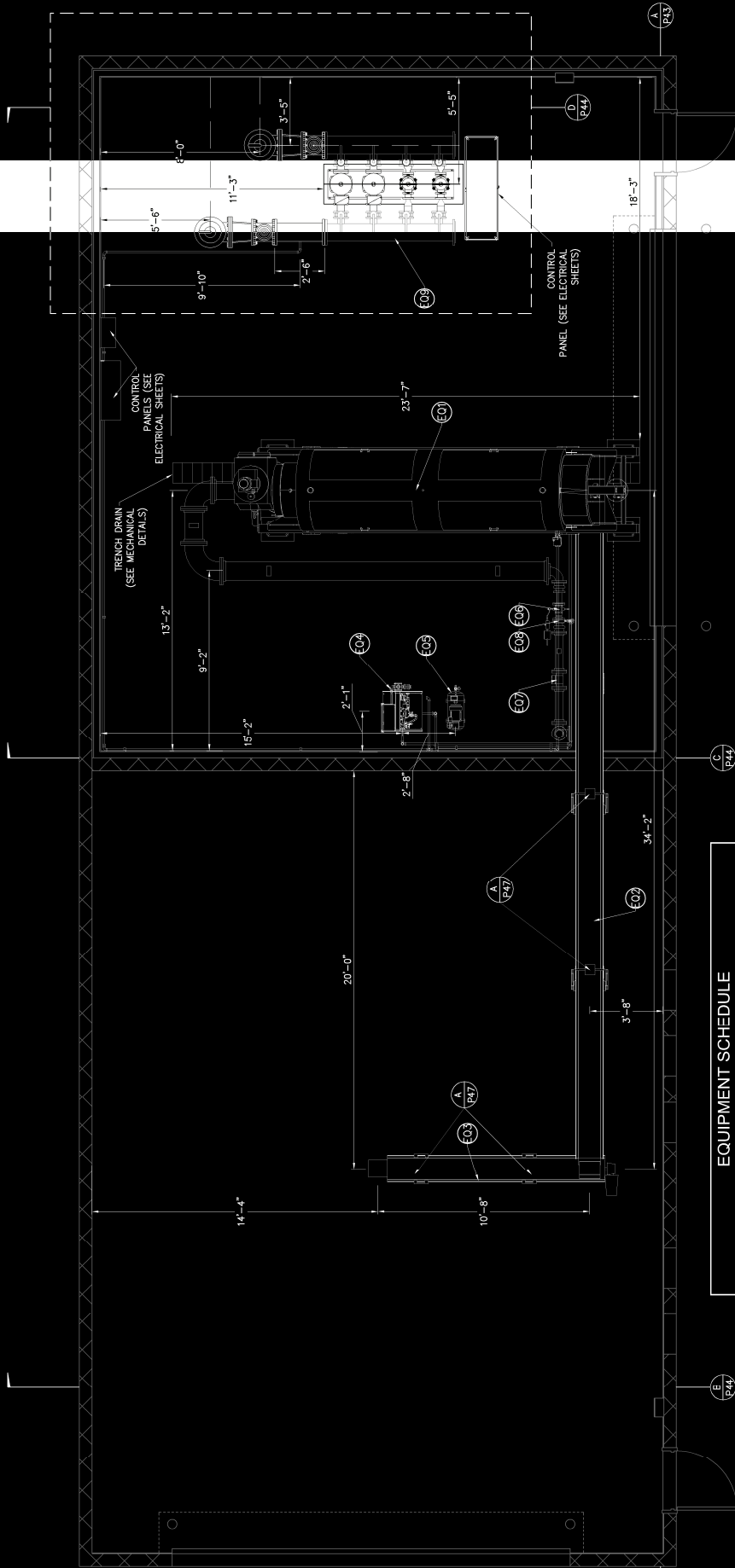
FUNCTION

FUNCTION

FUNCTION

FUNCTION

FUNCTION



EQUIPMENT SCHEDULE

NO.	DESCRIPTION	SIZE	DETAIL	FURNISHED BY
EQ1	SCREW PRESS	ROSK8000	(A) P45	OWNER
EQ2	INCLINED SCREW CONVEYOR	R08 T 355	(A) P47	OWNER
EQ3	HORIZ. SCREW CONVEYOR	R08 T 355	(A) P47	OWNER
EQ4	POLYMER FEED ASSEMBLY	L4	(A) P45	OWNER
EQ5	AIR COMPRESSOR	13 GAL	SPEEDAIRE 120/240	OWNER
EQ6	SWING CHECK VALVE (FL)	2.5"	DN65 ANSI 2.5" (A) P43	OWNER
EQ7	PROMAG FLOWMETER (FL)	4"	PROMAG-50, 2-300 GPM	OWNER
EQ8	POLYMER INJECTION DEVICE	4"	(A) P43	CONTRACTOR
EQ9	BOOSTER PUMP PACK	10"	CSUNPFC (A) ANSI CLASS 150	CONTRACTOR

A PLAN - EQUIPMENT OVERVIEW
 3/8" = 1'-0" X 3/4"
 3/4" = 1'-0" X 11/8"

SUNRISE ENGINEERING
 2222 S. BUSINESS PARK DR. SUITE 200
 DOWNEY, UTAH 84005
 801.533.6999
 WWW.SUNRISE-ENG.COM

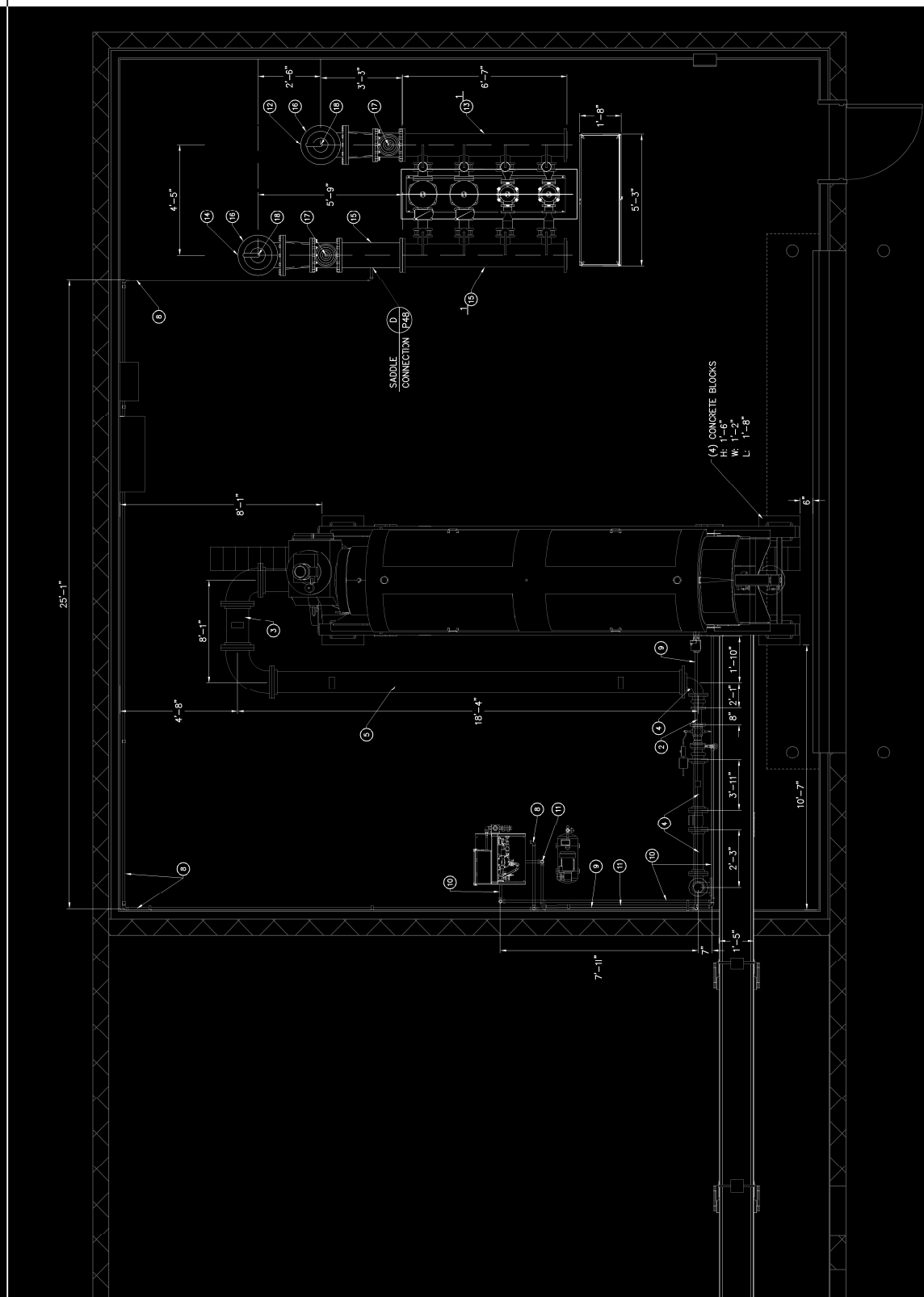
PROFESSIONAL ENGINEER
 LICENSE NO. 15377 UES
 EXPIRES 12/31/2014

DATE

OCDEN CITY

WATER TREATMENT PLANT RECONSTRUCTION
MECHANICAL DEWATERING BUILDING
EQUIPMENT OVERVIEW

NO. 15377 UES
DATE 10/27/2014
SCALE 3/8" = 1'-0" X 3/4"



NOTES:
 1. THESE SPEC. PIECES ARE CALLED OUT FOR SIZING PURPOSES, BUT ARE NOT PART OF THE PUMP ASSEMBLY

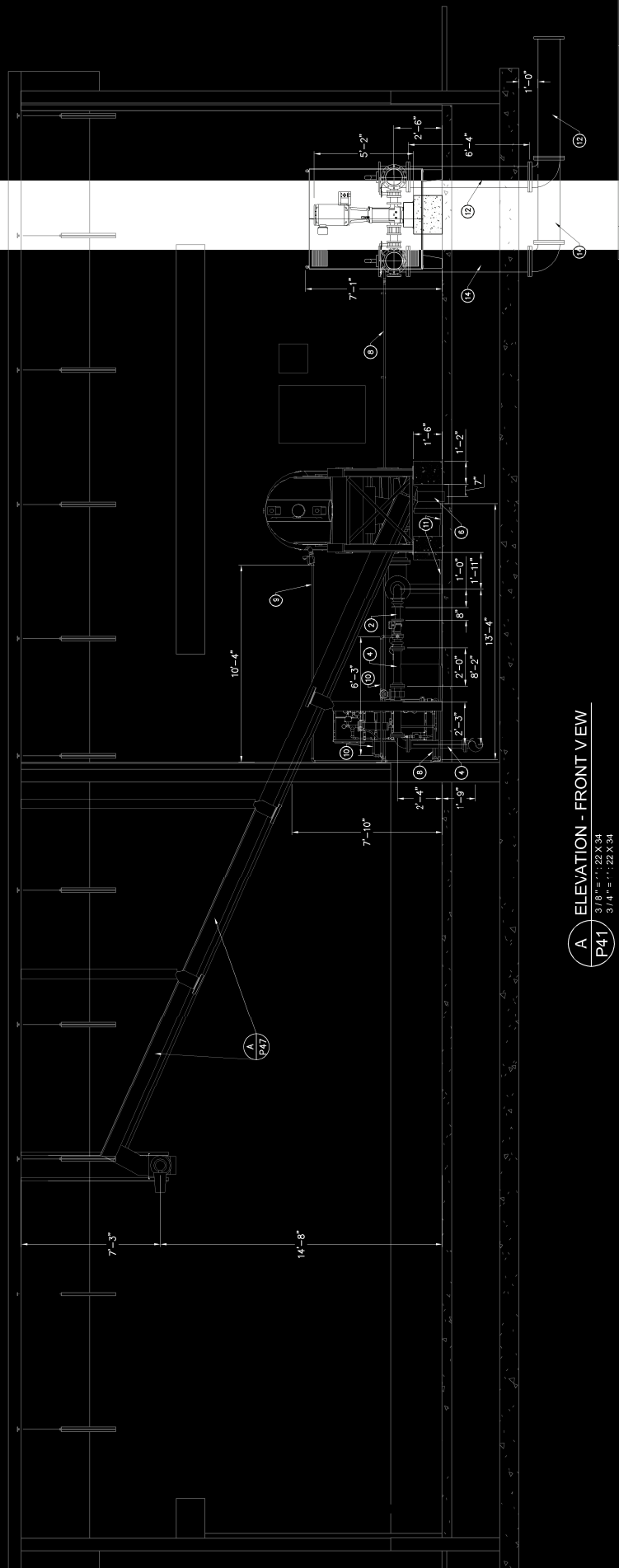


SUNRISE ENGINEERING
 2222 S. BUSINESS PARK DR. SUITE 200
 DRAPER, UTAH 84020
 PH: 801.553.0999
 WWW.SUNRISE-ENG.COM

OCDEN CITY
 WATER TREATMENT PLANT RECONSTRUCTION
 MECHANICAL DEWATERING BUILDING
 PLAN VIEW

REV. NO.	DESCRIPTION	DATE
04/05	ISSUE FOR PERMIT	05/11/14
04/05	ISSUE FOR PERMIT	05/11/14

A PLAN - PIPING LAYOUT
 1/2" = 1' - 22 X 34
 1" = 1' - 11 X 17



A ELEVATION - FRONT VIEW
 P41 3/8" = 1'-22 X 34
 3/4" = 1'-22 X 34

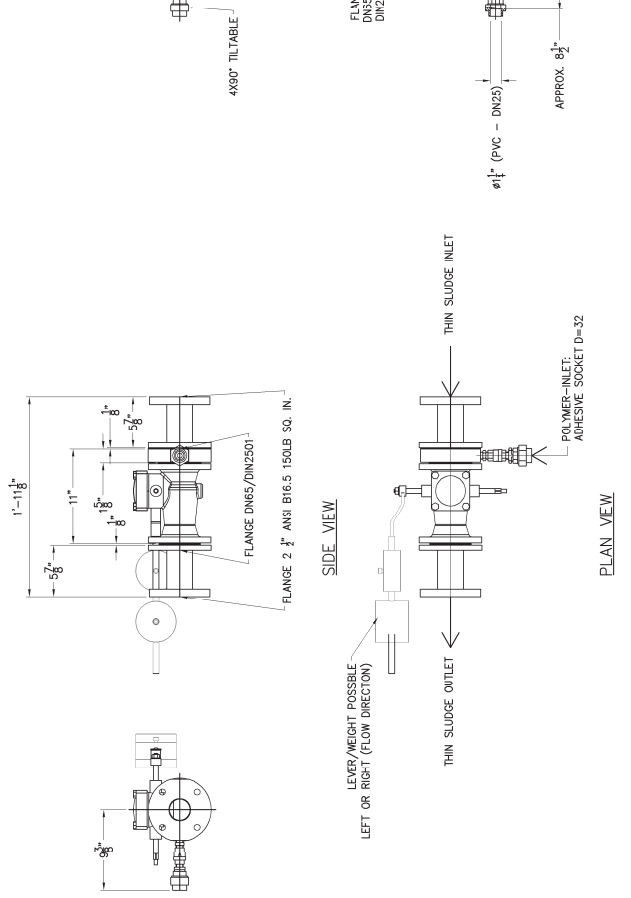
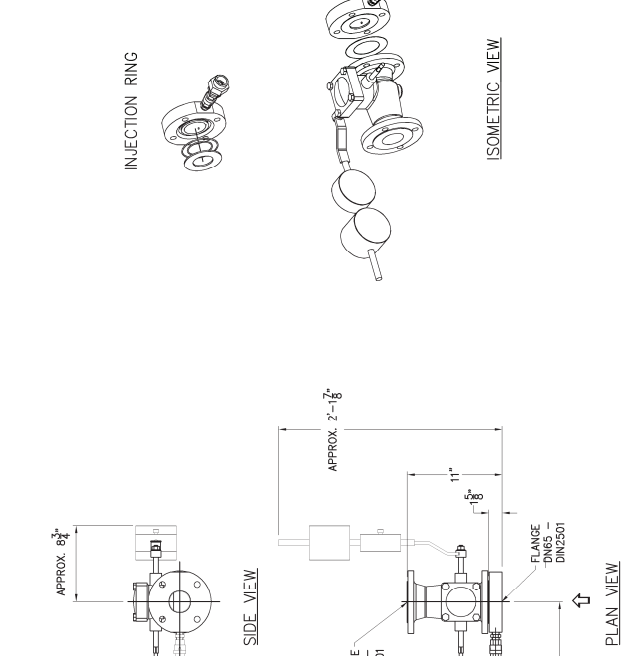
DATE	COMMENTS

SUNRISE ENGINEERING
 2222 S. BUSINESS PARK DR. SUITE 200
 DAVIS, UTAH 84005
 WWW.SUNRISE-ENG.COM PH: 801.533.6999

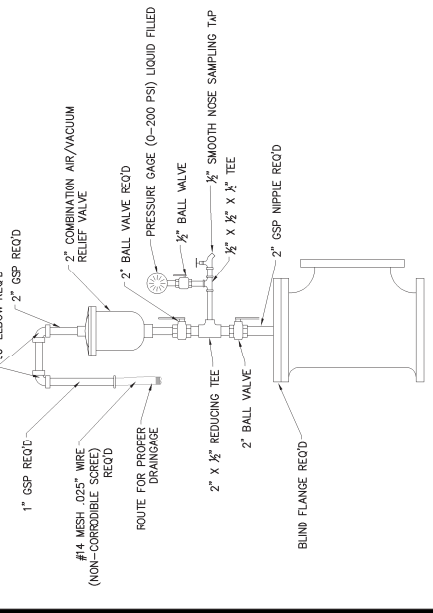
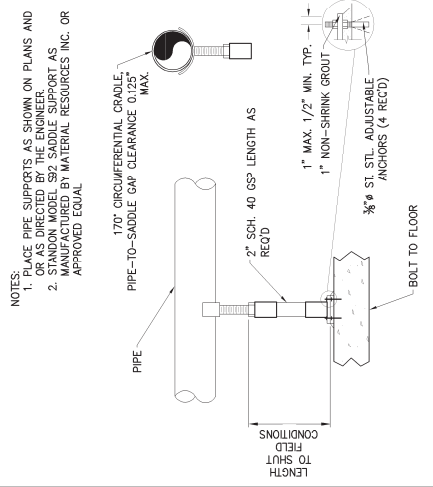
PROFESSIONAL ENGINEER
 CLAYTON LINDORF
 No. 10000
 UTAH

OGDEN CITY
WATER TREATMENT PLANT RECONSTRUCTION
MECHANICAL DEWATERING BUILDING
FRONT SECTION VIEW

NO.	DATE	BY	CHK.	DESCRIPTION
1	10/22/14	ML	ML	ISSUE FOR PERMIT
2	10/22/14	ML	ML	ISSUE FOR PERMIT

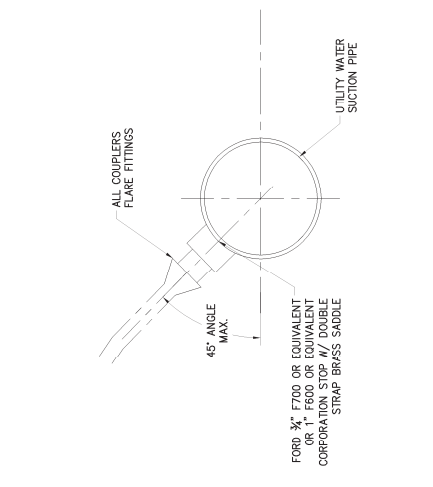


A DETAIL - MIXING VALVES
 DN65-ANSI-2 1/2"



C DETAIL - PIPE SUPPORT
 TYP

B DETAIL - COMBINATION AIR/VACUUM RELIEF VALVE
 TYP



D DETAIL - SADDLE CONNECTION
 TYP

REV	NO.	DATE	COMMENT

SUNRISE ENGINEERING
 2222 S. BUSINESS PARK DR. SUITE 200
 DANDY, UTAH 84002
 WWW.SUNRISE-ENG.COM TEL: 801.523.0999

OGDEN CITY WATER TREATMENT PLANT RECONSTRUCTION
VALVES
DETAIL SHEET

DATE PLOTTED: 11/27/10
 PLOTTER: HPGL
 SCALE: 1"=4'-0"
 SHEET NO.: P48