

14 February 2025

ADDENDUM NO. 3

RE: Chisholm Creek Utility Authority

Wastewater Treatment Facility Improvements

WCI File: 20-600-514-00

To All Prospective Bidders:

The Contract Documents for the referenced project are hereby amended in the following particulars only, with all other conditions remaining unchanged.

A. Plans

1. Sheet No. D-504 CLARIFICATION that both existing plan views and the section view have a scale of $\frac{1}{2}$ " = 1'.

2. Sheet No. S-116

CLARIFICATION to Concrete Water Cement Ratio shall not exceed 0.45 as stated in the specifications.

3. Sheet No. D-508

CLARIFICATION that V920 (2" Ball Valve) is a manual valve as indicated on D-301, and <u>not</u> an actuated valve as indicated on Valve Schedule sheet D-508.

4. Sheet No. D-312

CLARIFICATION that V410 and V411 shown in Section A8 are provided by Evoqua as part of their scope in Section 11400C in the Project Manual, and are <u>not</u> to be provided by Contractor as indicated on Valve Schedule sheet D-508.

5. Sheet No. D-124

REMOVE and REPLACE sheet with attached Sheet D-124. The new sheet adds Construction Notes and Callouts #15-#17.





6. Sheet No. D-316

REMOVE and REPLACE sheet with attached Sheet D-316. The new sheet adds Section View D8 to reference Construction Notes #16 & #17 from Revised Sheet D-124.

7. Sheets No. D-104 & D-110

ADDITION of Keynotes #1 and #2 referencing installation of Thermal Expansion Joints and Threaded Connection with Ball Valve for draining.

8. Sheet No. A-501

MODIFICATION of Section View A1 with revised insulation note.

9. Sheet No. A-502

ADDITION to Door Schedule for Door #106 located at the proposed chemical feed room West of existing SBR Building #3 & #4 (See S-105).

10. Sheet No. G-001

CLARIFICATION that E-702 contains Belt Filter Press Control Block Diagram.

11. Sheet No. G-016

ADDITION of influent flow signal to the PLC.

12. Sheet No. G-021

ADDITION of Belt Filter Press common alarm signal XA-940.

MODIFIED flow meter location and flow signal to the Belt Filter Press. Also, assigned I/O tag numbers to the flow meter.

MODIFIED the Reuse Meter Pit flow meter to be shown as "bold" for new equipment.

13. Sheet No. E-002

ADDITION of conduits C106, C107, and C108.

14. <u>Sheet No. E-401</u>

ADDITION of conduit C108.

15. Sheet No. E-431

MODIFIED the "Aerator 2 (Floating)" disconnect to show 100A/3P.

16. Sheet No. E-451

ADDITION of North arrow.

ADDITION of conduits C106 and C107.

ADDITION of Keyed Note 7.

17. <u>Sheet No. E-471</u>

ADDITION of conduit C108.

ADDITION of Keyed Note 5.

18. <u>Sheet No. E-604</u>

ADDITION of cable tag C106, C107, and C108 to the Communications – Conduit and Cable Schedule.



19. Sheet No. E-620

ADDITION of UV Building PLC Inputs XC501, XC502, and XA940 to the I/O schedule. ADDITION of UV Building PLC Outputs XI501 and XI502 to the I/O schedule.

20. Sheet No. E-621

ADDITION of Headworks Building PLC Input I/O schedule.

21. Sheet No. E-701

REMOVED connection between the New Belt Filter Press Control Panel and existing hardwired controls.

ADDITION of the Belt Filter Press Interface Panel and associated control signals.

REVISED notes heading to say Block Diagram Notes instead of One-Line Notes.

ADDITION of Block Diagram Note 7 and 8.

22. Sheet No. E-702

MODIFIED the Belt Filter Press Control Block Diagram for improved clarity and to ensure consistency with sheet E-701.

REVISED sheet title to be Belt Filter Press Control Block Diagram.

ADDITION of control signals between the Belt Filter Press Interface Panel and existing Belt Press Control Panel.

23. Sheet No. E-710

ADDITION of sludge pump control diagram detail.



B. PROJECT MANUAL

1. Section 00020 – Invitation To Bid:

MODIFICTION to the Bid Date. Bids are now due on Tuesday February 25th at 11:00 AM. Electronic bidding procedures remain unchanged. Bid date has been modified on Planroom website.

2. <u>Section 11260 – Rotary Lobe Pumps:</u>

CLARIFICATION that Vogelsang rotary lobe pumps will be allowed as an approved equal.

3. <u>Section 11350 – Surface Aerator and Section 11260 – Submersible Mixer:</u>

CLARIFICATION that Aqua Turbo will be allowed as an approved equal for both the surface aerators and submersible mixers.

4. <u>Section 02610 – Water/Sewer Pipes, Fittings, & Appurtenances, 2.5 Special Use Fittings,</u>

Paragraph F:

ADD the following paragraph for air piping thermal expansion joints. "

F. Thermal Expansion Joints:

Joint type: Flanged per ANSI B16.5

Retaining ring (as required): Rigid, baked enamel ductile iron.

Provide limit/control rods.

Tube: EDPM Cover: EDPM

Pressure rating: 190 psig. Temperature rating: 250° F. For use in blower/air applications.

Model / Manufacturer:

Proco Products, Inc., Stockton, CA; Series 232 FA. Substitutions: Under provisions of Section 01600."

5. <u>Section 02610 – Water/Sewer Pipes, Fittings, & Appurtenances, 2.4 Stainless Steel Air Pipe Fittings, Paragraph C:</u>

ADD the following paragraph for air piping stainless steel fittings. "

C. Stainless Steel:

- 1. Shall conform to ASTM A774, A403, ANSI B16.9, B36.19.
- 2. Shall be constructed of 304L.
- 3. Shall comply with Schedule 10 outside diameter. "

6. <u>Section 16511A – Pre-Negotiated Telemetry Scope of Services</u>

REMOVE and REPLACE with attached modified pre-negotiated telemetry scope of services.



7. Section 00300 – Bid Form

REMOVE Section and REPLACE with modified section. This revised Bid Form includes a modified price for Bid Item #6 to reflect the modified pre-negotiated telemetry scope of services. This revised Bid Form also adds three bid alternates which are referenced on Sheet E-451.

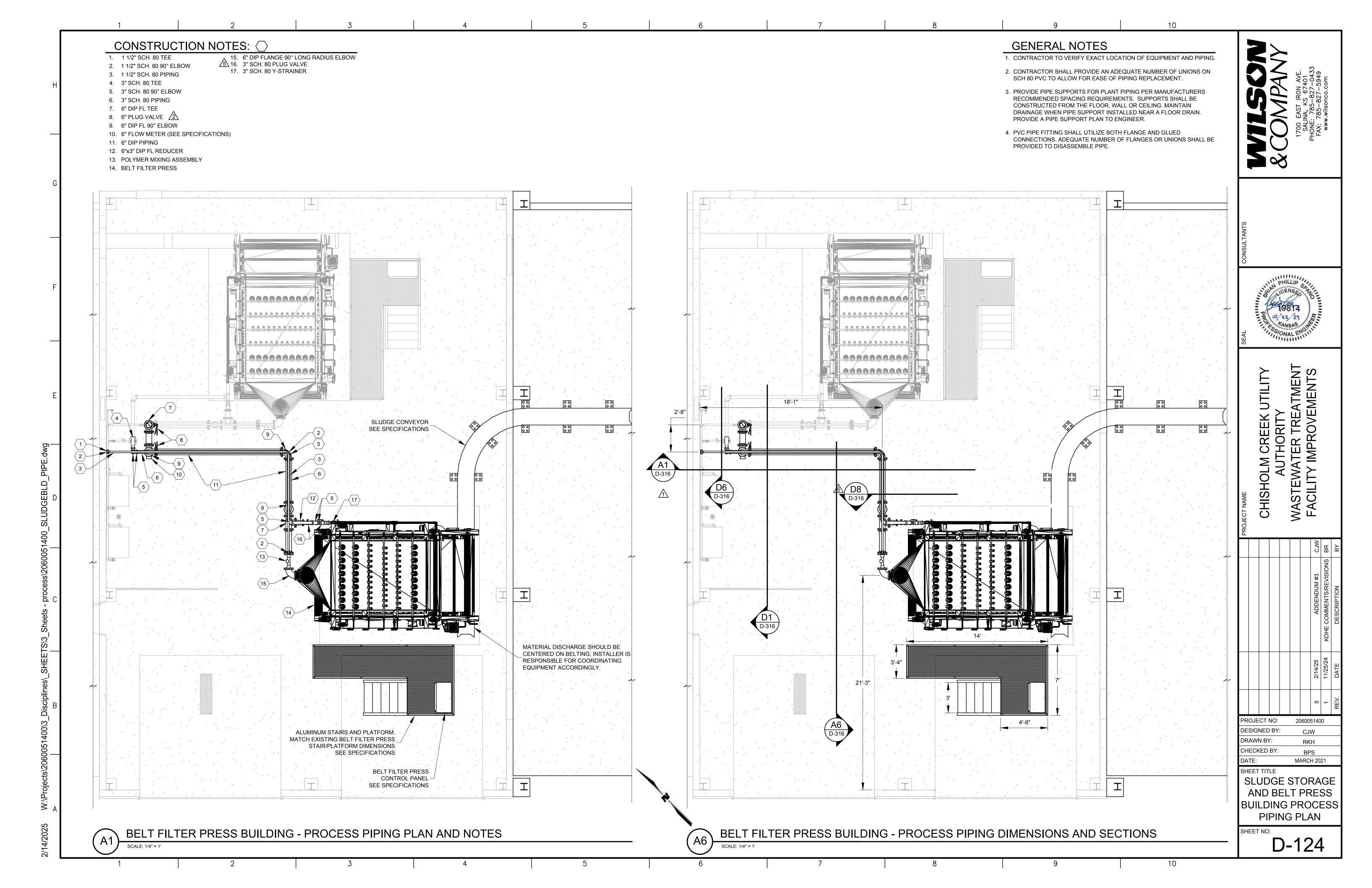
This ADDENDUM is hereby made a part of the Bidding Documents to the same extent as though contained in the original documents. Work to be included shall not be limited to narrative description contained herein, but shall also include adjustments or revisions to other work not mentioned, in order to accomplish the Work described.

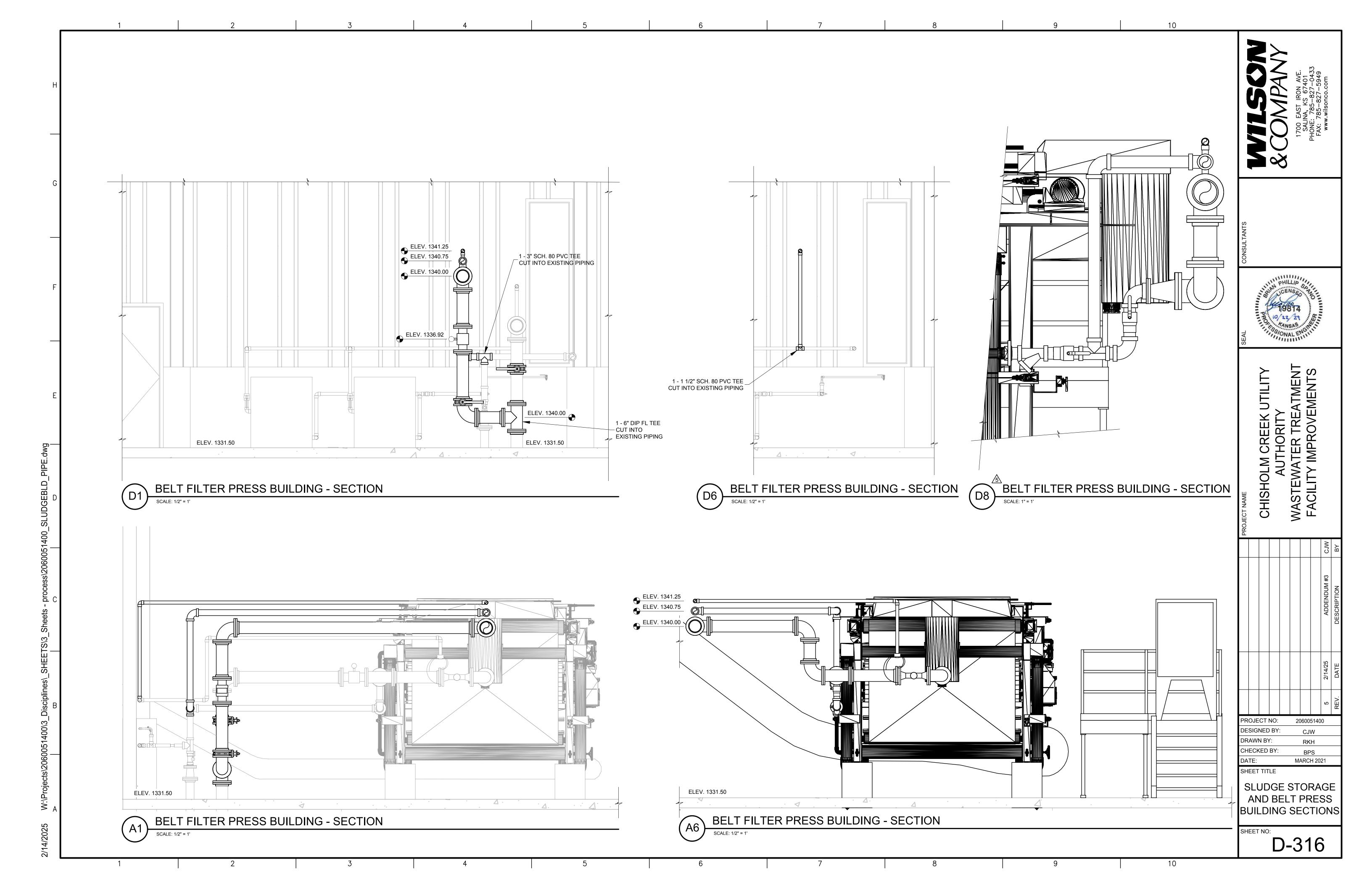
Each Bidder shall acknowledge receipt of this ADDENDUM in the space provided on the Bid Form.

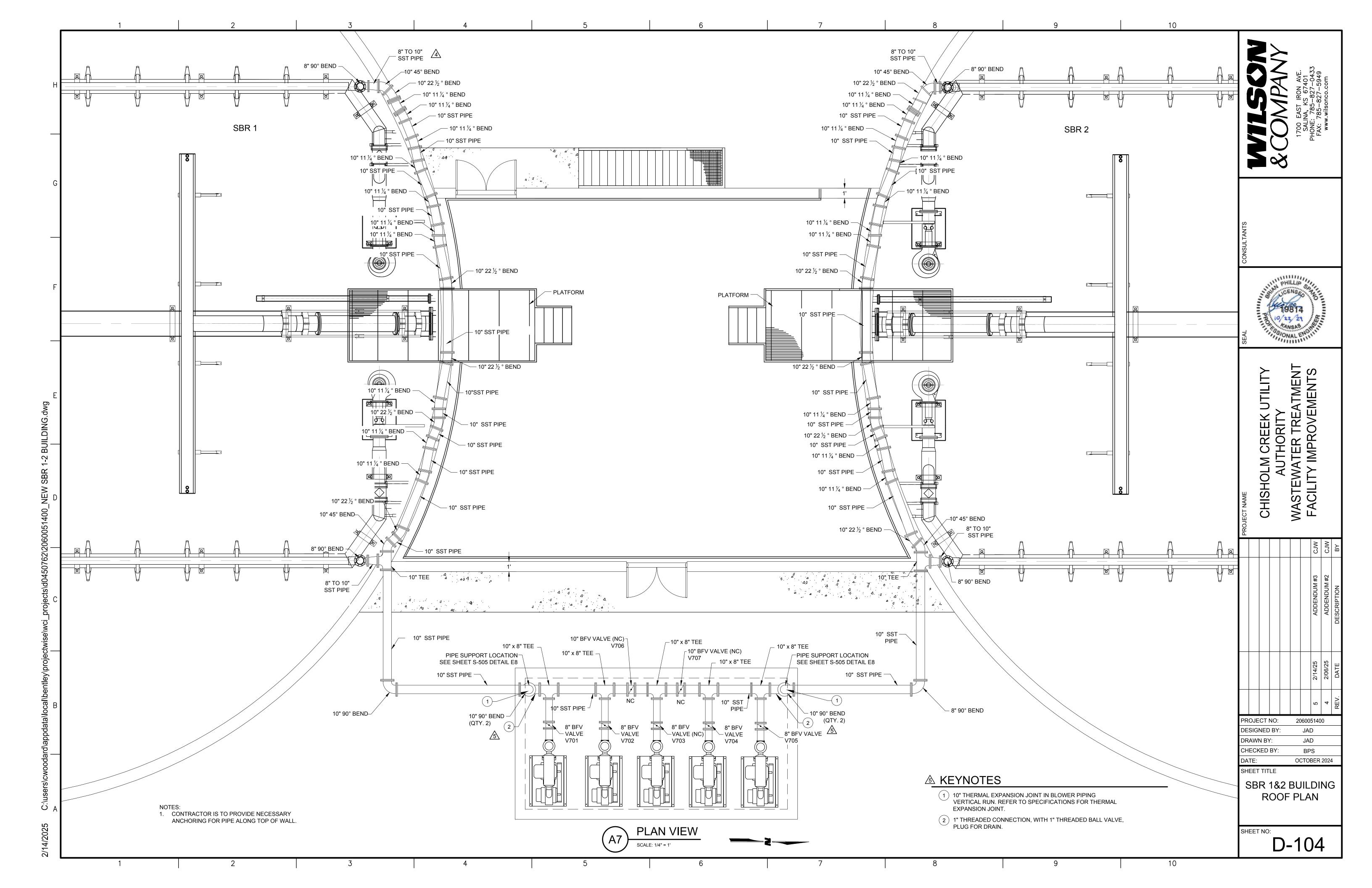
WILSON & COMPANY

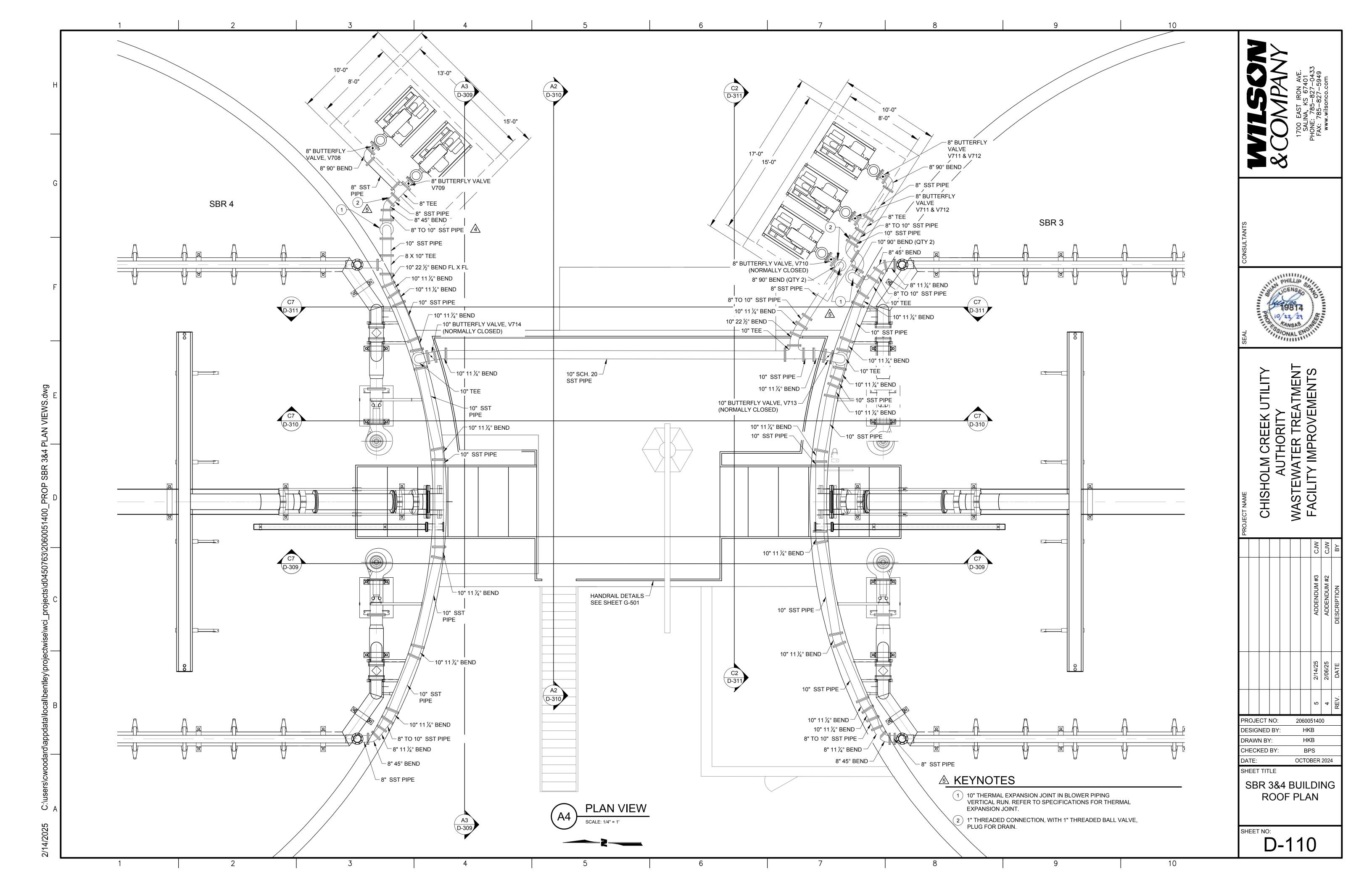
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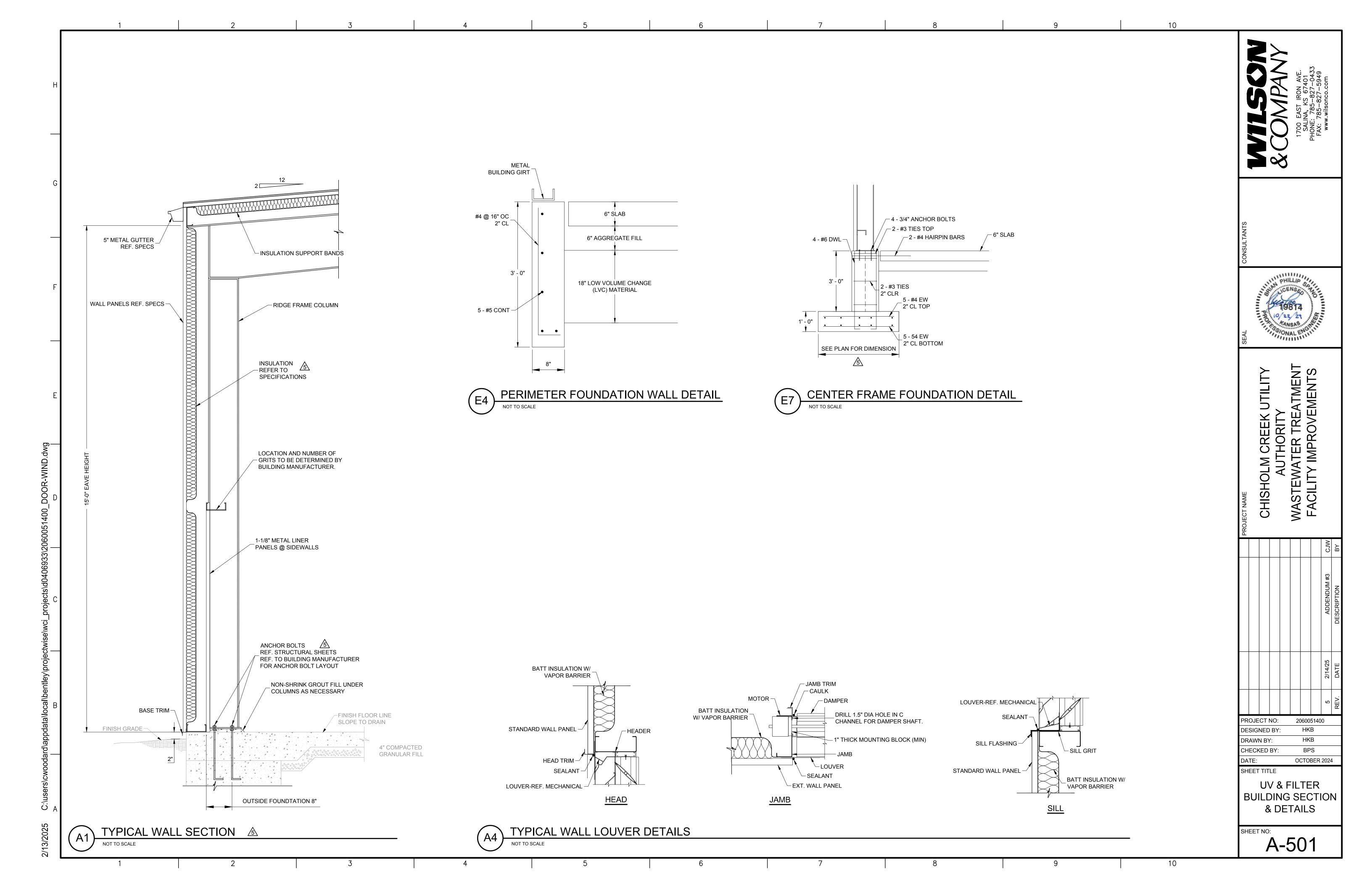
Colton Woodard Project Manager

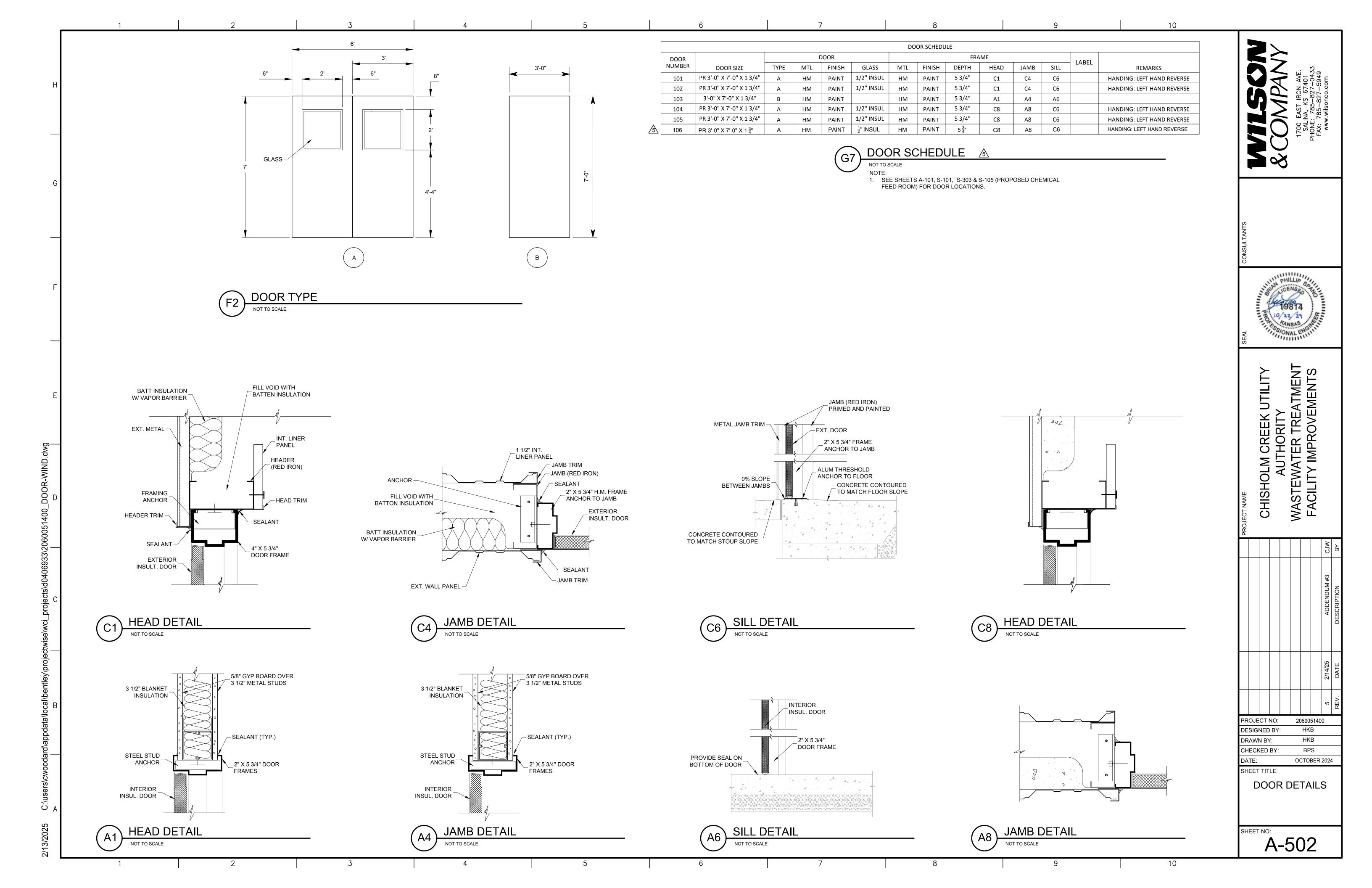


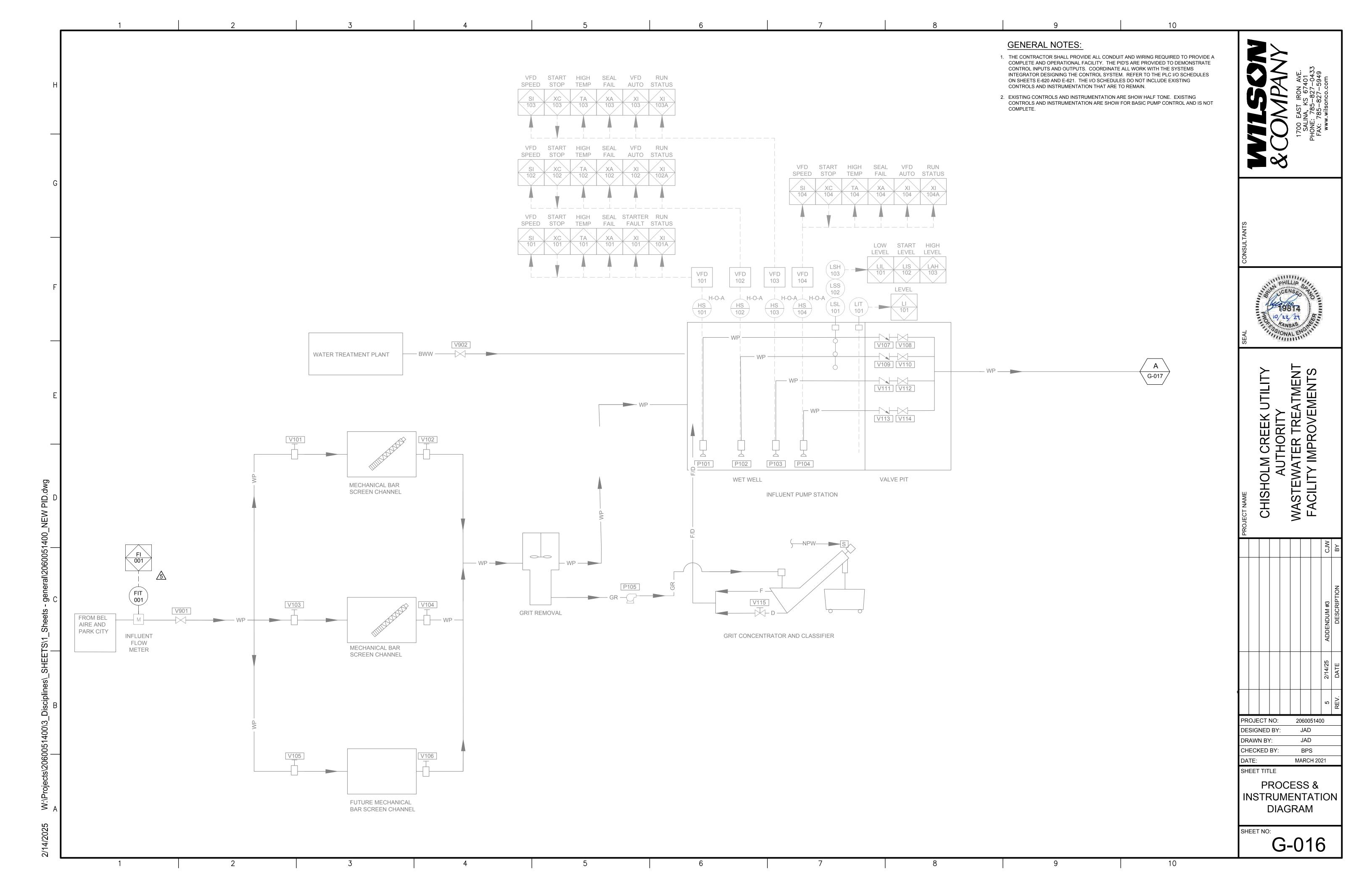


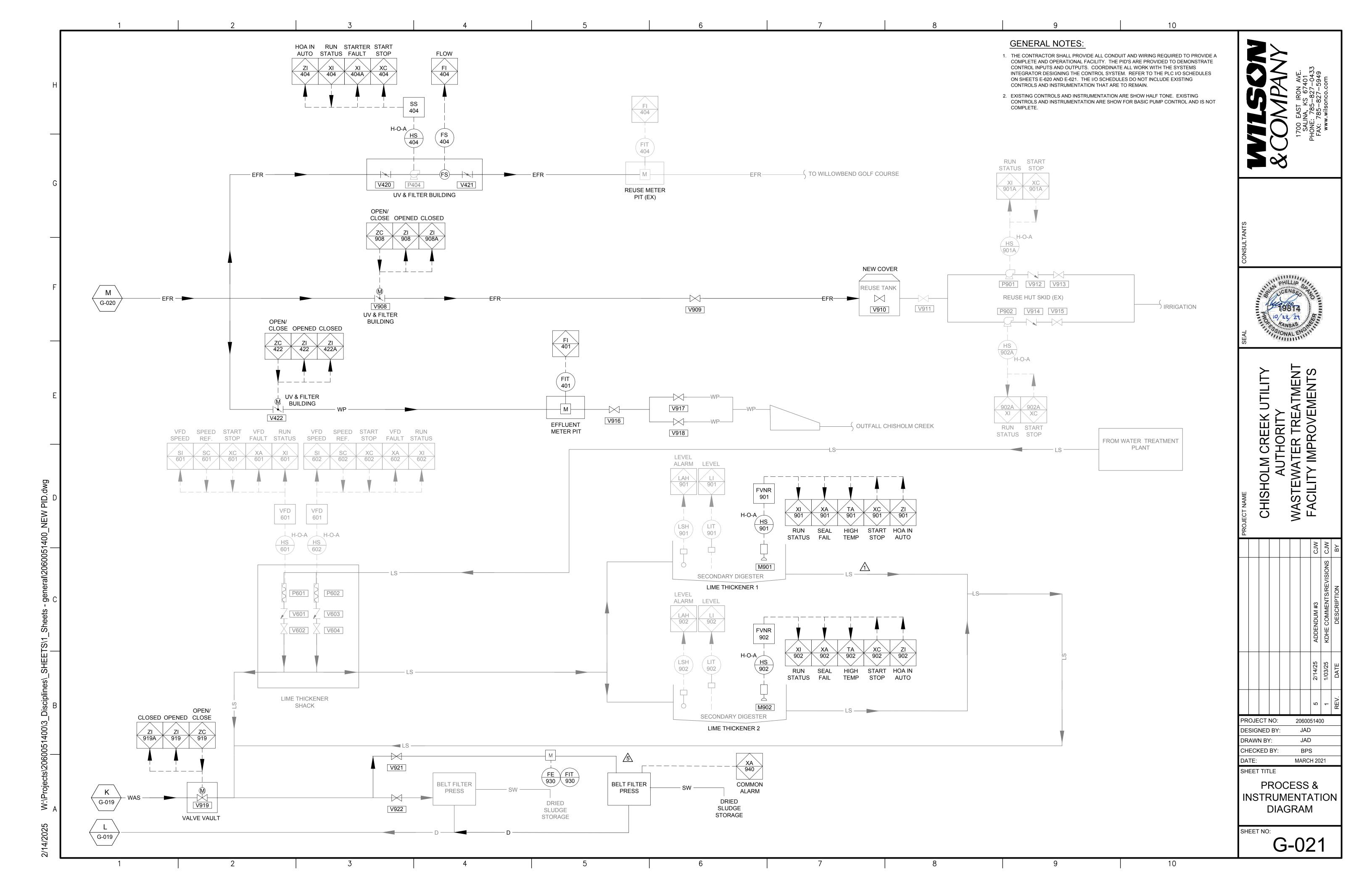


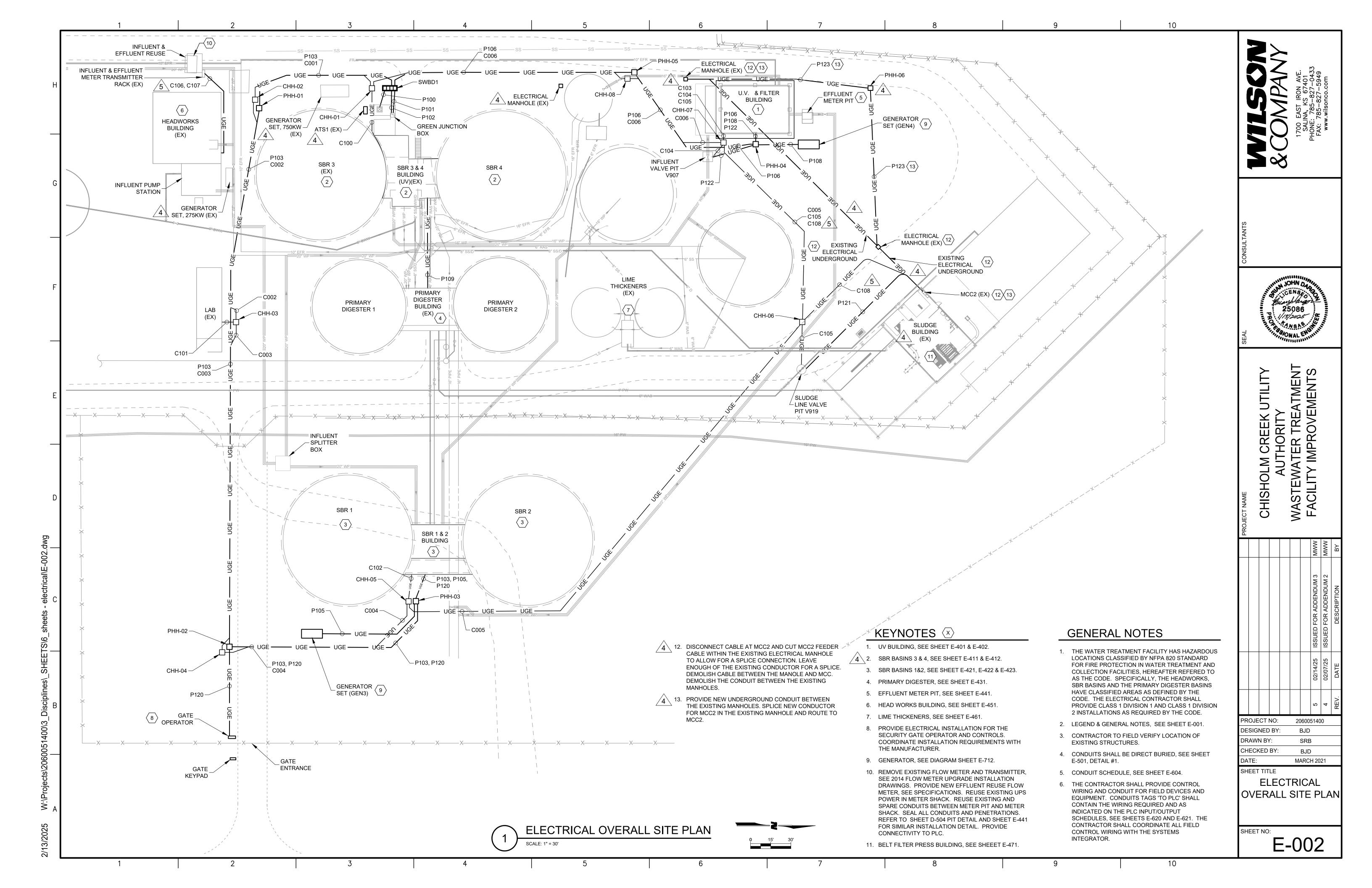


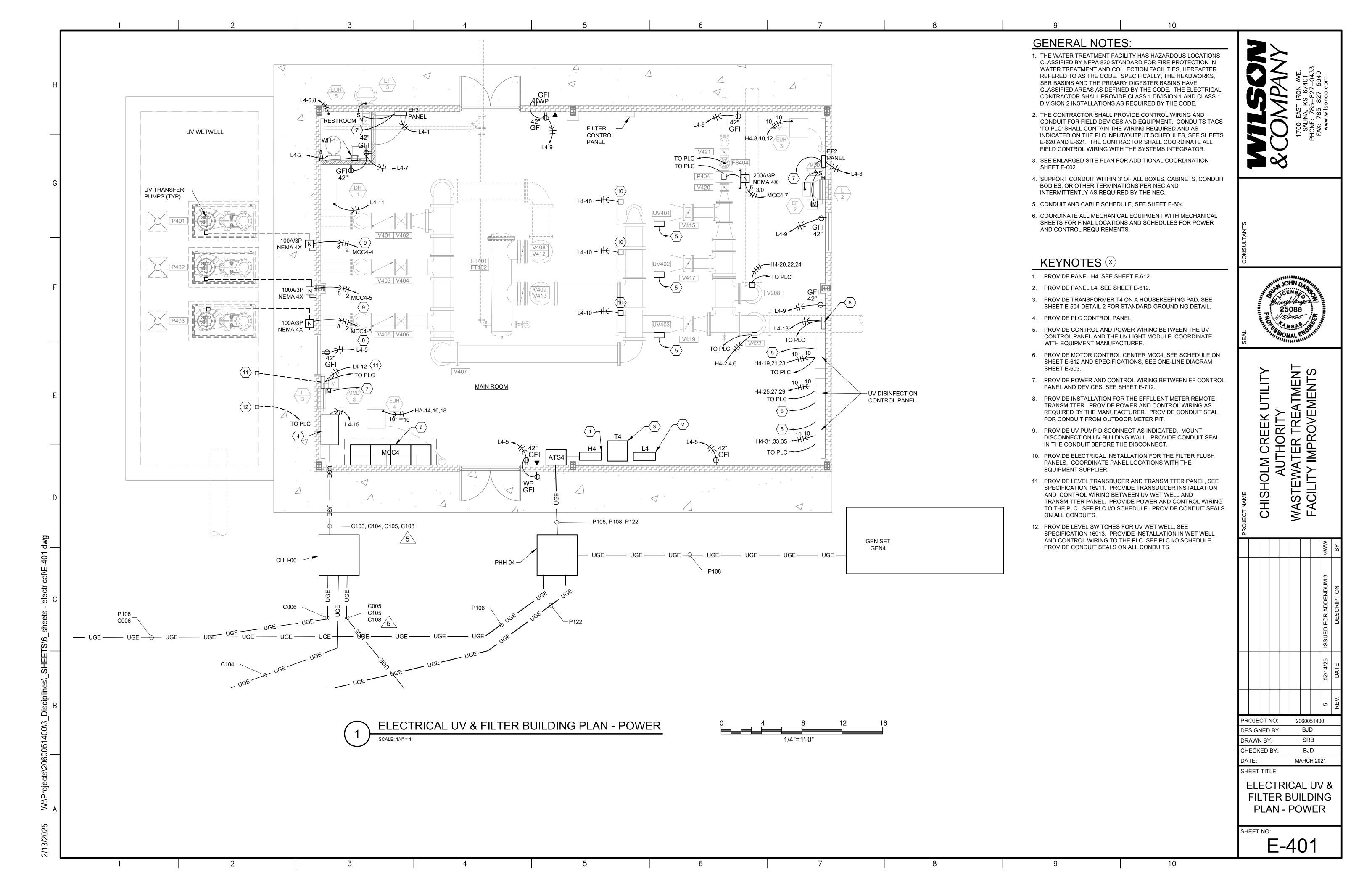


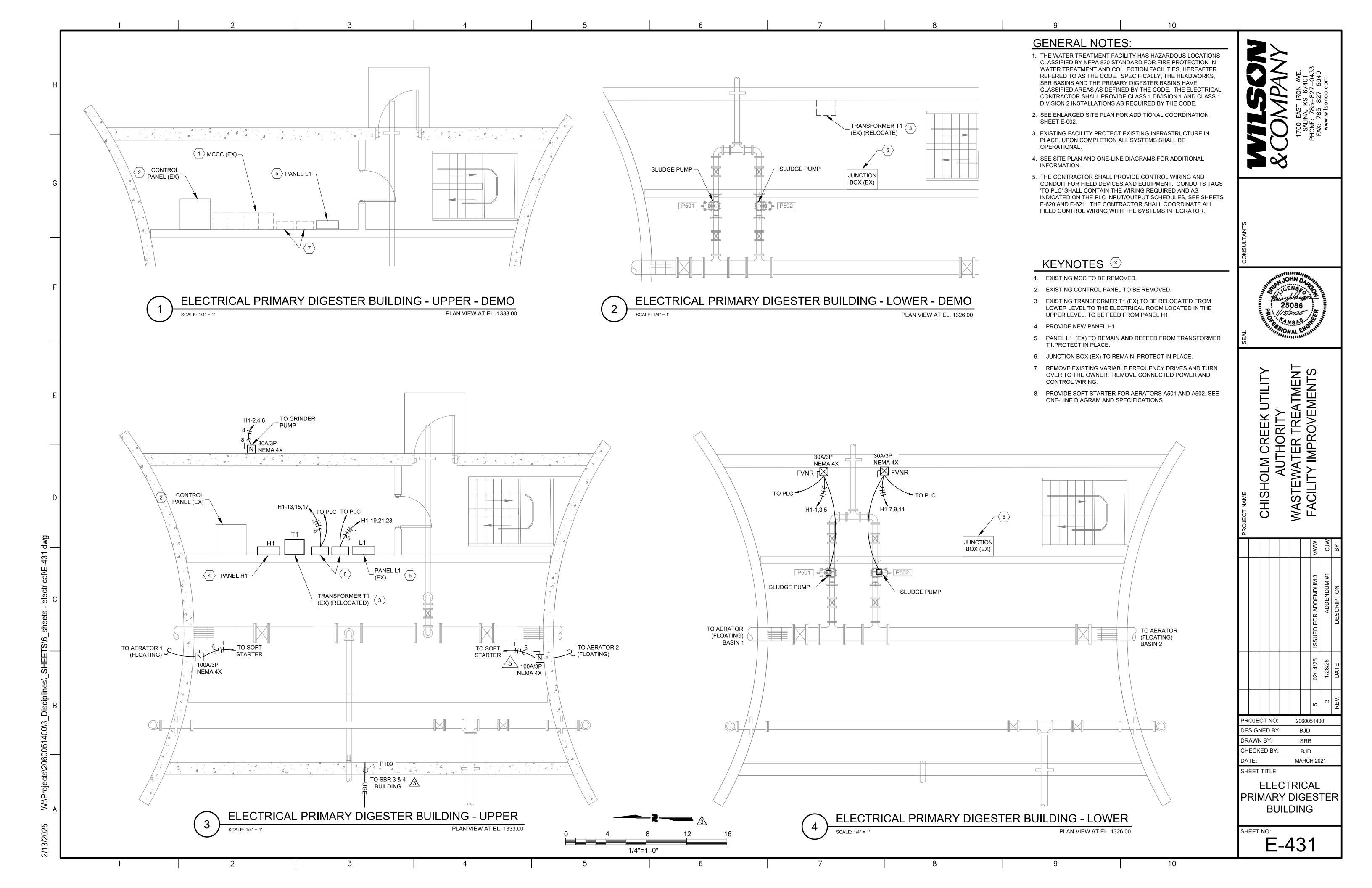


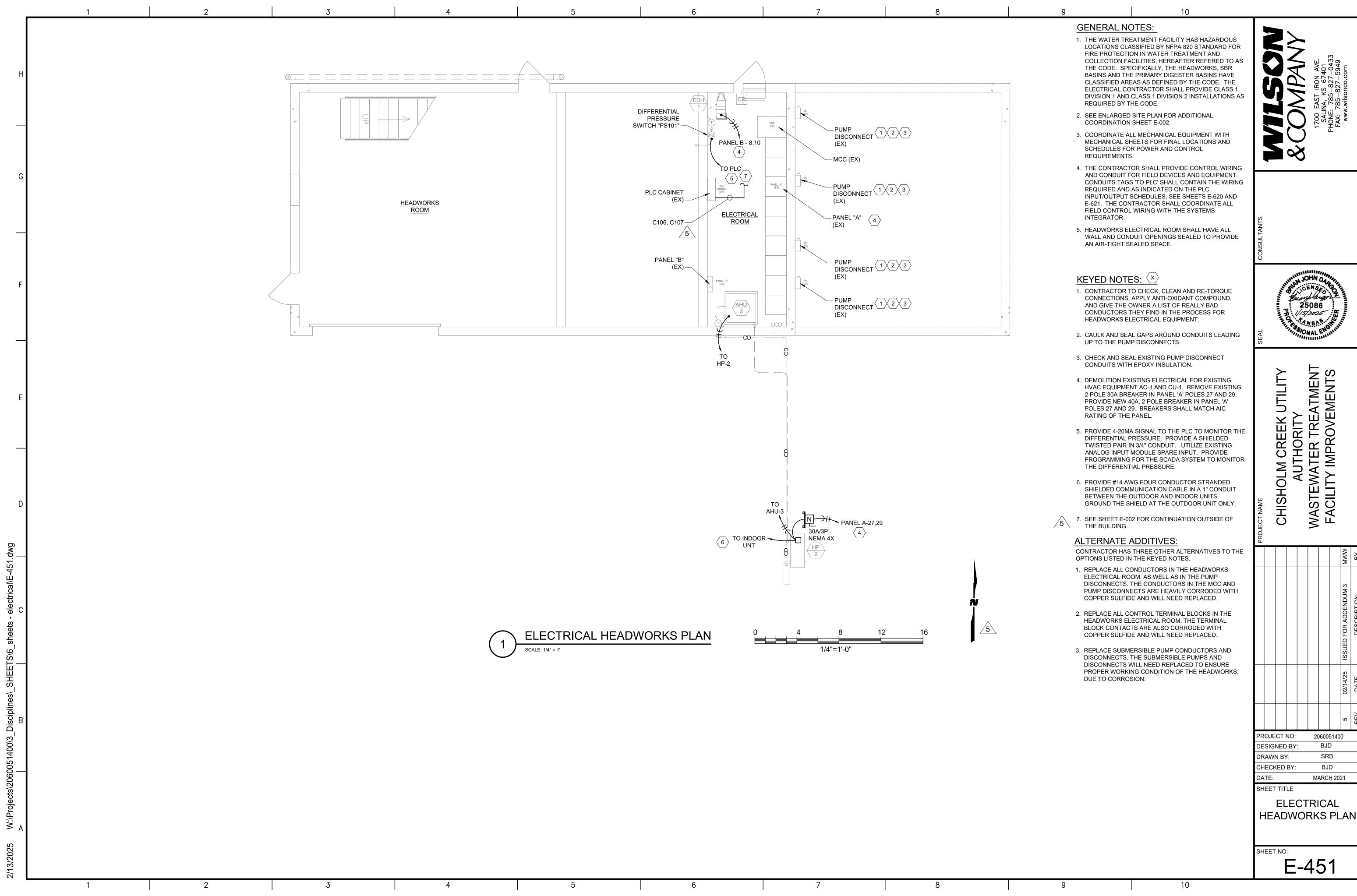


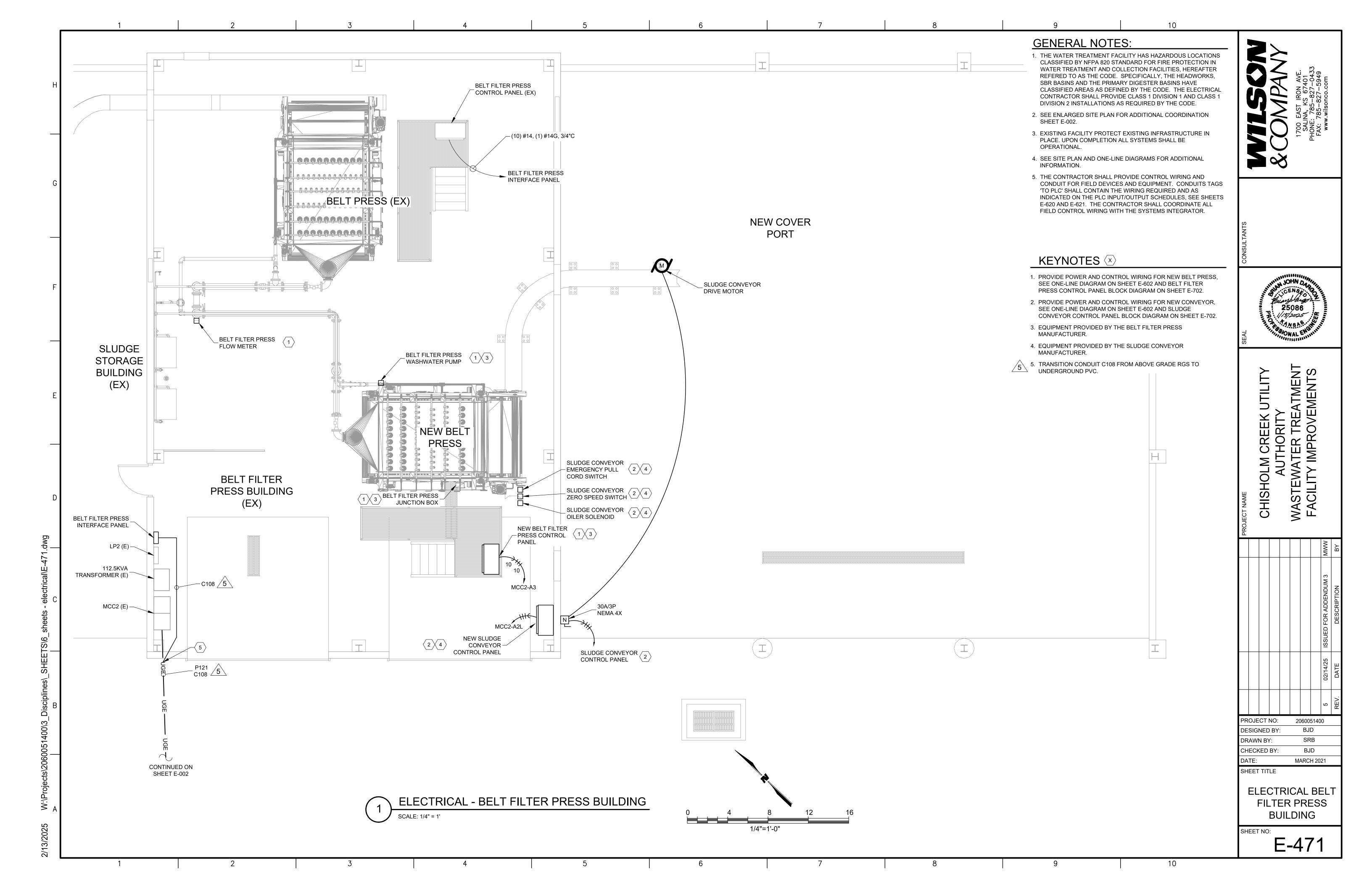












POWER - CONDUIT AND CABLE SCHEDULE									
	TAG	FROM	то	CONDUIT SIZE	TYPE	SETS	CONDUCTOR SIZE	NOTES	
	P100	UTIL. TRANS	SWBD1	4"	PVC	5 SETS	4-600Kcmil.	COORDINATE WORK WITH EVERGY	
	P101	SWBD1	GREEN JUNCTION BOX	4"	PVC	3 SETS	4-600Kcmil, 3/0G.	SBR 3,4 MCC1, SPLICE TO EXISTING FEEDER	
	P102	SWBD1	GREEN JUNCTION BOX	4"	PVC	2 SETS	4-600Kcmil, 1/0G.	HEADWORKS MCC, SPLICE TO EXISTING FEEDER	
	P103	SWBD1	ATS3	3"	PVC	2 SETS	4-350Kcmil, #1G.	SBR 1,2 ATS3 FEEDER	
	P104	ATS3	MCC3	3"	PVC	2 SETS	4-350Kcmil, #1G.	SBR 1,2 MCC3 FEEDER	
	P105	GEN3	ATS3	3"	PVC	2 SETS	4-350Kcmil, #1G.	SBR 1,2 ATS3 FEEDER	
	P106	SWBD1	ATS4	3"	PVC	2 SETS	4-350Kcmil, #1G.	UV BLD. ATS4 FEEDER	
	P107	ATS4	MCC4	3"	PVC	2 SETS	4-350Kcmil, #1G.	UV BLD. MCC4 FEEDER	
	P108	GEN4	ATS4	3"	PVC	2 SETS	4-350Kcmil, #1G.	UV BLD. ATS4 FEEDER	
	P109	MCC1	PANEL H1	3"	PVC	1 SET	4-350Kcmil, #1G.	PANEL H1 FEEDER PRIMARY DIGESTER BLD.	
	P110	MCC1	EXISTING 75KVA XFMR	1-1/2"	METALIC	1 SET	3-#1, #6G.	75KVA XFMR PRIMARY FEED	
	P111	MCC1	PANEL H1A	2"	METALIC	1 SET	4-#3/0, #6G.	PANEL H1A FEED	
	P112	MCC4	PANEL H4	2"	METALIC	1 SET	4-#3/0, #6G.	PANEL H4 FEED	
	P113	PANEL H4	TRANS, T4	1"	METALIC	1 SET	3-#6, #10G.	TRANS. T4 FEED	
	P114	TRANS. T4	PANEL L4	1-1/2"	METALIC	1 SET	4-#1, #6G.	PANEL L4 FEED	
	P115	MCC3	PANEL H3	1-1/2"	METALIC	1 SET	4-#1/0, #6G.	PANEL H3 FEED	
	P116	PANEL H3	TRANS. T3	1"	METALIC	1 SET	3-#6, #10G.	TRANS. T3 FEED	
	P117	TRANS. T3	PANEL L3	1-1/2"	METALIC	1 SET	4-#1, #6G.	PANEL L3 FEED	
	P118	PANEL H1	TRANS. T1	1"	METALIC	1 SET	3-#6, #10G.	TRANS. T1 FEED	
	P119	TRANS. T1	PANEL L1	1-1/2"	METALIC	1 SET	4-#1, #6G.	PANEL L1 FEED	
	P120	PANEL L3	GATE OPERATOR	2"	PVC	1	2-#10, #10G.	GATE OPERATOR POWER	
	P121	MCC2	V919	2"	PVC	1	3-#10, #10G.	V919 FEEDER	
	P122	PANEL H4	V907	2"	PVC	1	3-#10, #10G.	V907 FEEDER	
	P123	ELECTRICAL MANHOLE SPLICE	MCC2	3"	PVC	1 SET	4-350Kcmil, #4G.	MCC2 REFEED	

GENERAL NOTES:

A. ALL CONDUITS IN CLASSIFIED AREAS SHALL BE SEALED AS REQUIRED BY NFPA 820. B. EACH SET OF CONDUCTORS INDICATED SHALL BE INSTALLED IN A CONDUIT OF THE SIZE INDICATED.

C. DIRECT BURIED PVC CONDUITS SHALL BE SCHEDULE 80, SEE SPECIFICATION 16130.

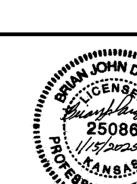
D. CONDUITS ABOVE GRADE SHALL BE METALIC, SEE SPECIFICATION 16130.

TAG	FROM	то	CONDUIT SIZE	TYPE	NOTES
C001	CHH-01	CHH-02	2"	PVC	EMPTY
C002	CHH-02	CHH-03	2"	PVC	EMPTY
C003	CHH-03	CHH-04	2"	PVC	PROVIDE MULTI-MODE FIBER FOR NETWORK, SEE E-701
C004	CHH-04	CHH-05	2"	PVC	PROVIDE MULTI-MODE FIBER FOR NETWORK, SEE E-701
C005	CHH-05	CHH-07	2"	PVC	PROVIDE MULTI-MODE FIBER FOR NETWORK, SEE E-701
C006	CHH-07	CHH-01	2"	PVC	PROVIDE MULTI-MODE FIBER FOR NETWORK, SEE E-701
C100	CHH-01	SBR 3&4 PLC CABINET	2"	PVC	PROVIDE MULTI-MODE FIBER FOR NETWORK, SEE E-701
C101	CHH-03	LAB SCADA SWITCH	2"	PVC	PROVIDE MULTI-MODE FIBER FOR NETWORK, SEE E-701
C102	CHH-05	SBR 1&2 PLC CABINET	2"	PVC	PROVIDE MULTI-MODE FIBER FOR NETWORK, SEE E-701
C103	CHH-07	UV BLD PLC CABINET	2"	PVC	PROVIDE MULTI-MODE FIBER FOR NETWORK, SEE E-701
C104	VALVE V907	UV BLD PLC CABINET	2"	PVC	INFLUENT VALVE PIT, CONTROL WRING SEE PLC I/O SCHEDUL
C105	VALVE V919	UV BLD PLC CABINET	2"	PVC	SLUDGE VALVE PIT, CONTROL WIRING SEE PLC I/O SCHEDUL
C106	FIT-404	HEADWORKS PLC CABINET	- 2"	PVC	CONTROL WIRING SEE PLC I/O SCHEDULE
C107	FIT-001	HEADWORKS PLC CABINET		FVC	CONTROL WIRING SEE PLC I/O SCHEDULE
C108	BELT FILTER PRESS INTERFACE PANEL	UV BLD PLC CABINET	2"	PVC	(20) #14, (1) #14G, ROUTED VIA CHH-06 & CHH-07

GENERAL NOTES:

- A. ALL CONDUITS IN CLASSIFIED AREAS SHALL BE SEALED AS REQUIRED BY NFPA 820.
- B. EACH SET OF CONDUCTORS INDICATED SHALL BE INSTALLED IN A CONDUIT OF THE SIZE INDICATED.
- C. DIRECT BURIED PVC CONDUITS SHALL BE SCHEDULE 80, SEE SPECIFICATION 16130.

D. CONDUITS ABOVE GRADE SHALL BE METALIC, SEE SPECIFICATION 16130.



HISHOLM CREEK UTILITY
AUTHORITY
ASTEWATER TREATMENT
ACILITY IMPROVEMENTS CHISHOLI

						MWW	MWW	ВУ	
						ISSUED FOR ADDENDUM 3	ISSUED FOR ADDENDUM 2	DESCRIPTION	
						02/14/25	02/07/25	DATE	
						2	4	REV.	
ROJ	ECT	NO:		20	0600	5140	0		
ESIC	SNEC	BY	:		BJD				
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PROJECT NO:	2060051400
DESIGNED BY:	BJD
DRAWN BY:	SRB
CHECKED BY:	BJD
DATE:	MARCH 2021
SHEET TITLE	

ELECTRICAL CONDUIT SCHEDULES

SHEET NO:

10

E-604

		SBR 1,2	DULE	
	PL	C INPUTS		
ĪD	DESCRIPTION	TYPE	SIGNAL	SOURCE
AH301		DISCRETE	CONTACT	LEVEL SWITCH LSH301
ZI301 ZI301A	SBR 1 INFLUENT VALVE OPENED SBR 1 INFLUENT VALVE CLOSED	DISCRETE DISCRETE	CONTACT	VALVE V301 VALVE V301
ZI302	SBR 1 DECANT VALVE OPENED	DISCRETE	CONTACT	VALVE V302
302A	SBR 1 DECANT VALVE CLOSED	DISCRETE	CONTACT	VALVE V302
21311	SBR 1 EFFLUENT VALVE OPENED	DISCRETE	CONTACT	VALVE V311
311A	SBR 1 EFFLUENT VALVE CLOSED	DISCRETE	CONTACT	VALVE V311
(1307	SBR 1 MOTIVE PUMP P307 RUNNING	DISCRETE	CONTACT	P307 SOFTSTART
307A A307	SBR 1 MOTIVE PUMP P307 FAULT SBR 1 MOTIVE PUMP P307 SEAL FAIL - NOTE 2	DISCRETE DISCRETE	CONTACT	P307 SOFTSTART P307 MINICAS
4307	SBR 1 MOTIVE PUMP P307 SEAL FAIL - NOTE 2	DISCRETE	CONTACT	P307 MINICAS
1307	SBR 1 MOTIVE PUMP P307 HOA IN AUTO	DISCRETE	CONTACT	HS307
1308	SBR 1 MOTIVE PUMP P308 RUNNING	DISCRETE	CONTACT	P308 SOFTSTART
308A		DISCRETE	CONTACT	P308 SOFTSTART
4308	SBR 1 MOTIVE PUMP P308 SEAL FAIL - NOTE 2	DISCRETE	CONTACT	P308 MINICAS
4308	SBR 1 MOTIVE PUMP P308 HIGH TEMP - NOTE 2	DISCRETE	CONTACT	P308 MINICAS
1308 .H302	SBR 1 MOTIVE PUMP P308 HOA IN AUTO SBR 2 HIGH LEVEL	DISCRETE DISCRETE	CONTACT	HS308 LEVEL SWITCH LS302
1303	SBR 2 INFLUENT VALVE OPENED	DISCRETE	CONTACT	VALVE V303
303A	SBR 2 INFLUENT VALVE CLOSED	DISCRETE	CONTACT	VALVE V303
1304	SBR 2 DECANT VALVE OPENED	DISCRETE	CONTACT	VALVE V304
304A	SBR 2 DECANT VALVE CLOSED	DISCRETE	CONTACT	VALVE V304
1312	SBR 2 EFFLUENT VALVE OPENED	DISCRETE	CONTACT	VALVE V312
312A		DISCRETE	CONTACT	VALVE V312
1309 309A	SBR 2 MOTIVE PUMP P309 RUNNING SBR 2 MOTIVE PUMP P309 FAULT	DISCRETE DISCRETE	CONTACT	P309 SOFTSTART P309 SOFTSTART
309A 4309	SBR 2 MOTIVE PUMP P309 FAULT SBR 2 MOTIVE PUMP P309 SEAL FAIL - NOTE 2	DISCRETE	CONTACT	P309 SOFTSTART P309 MINICAS
1309	SBR 2 MOTIVE PUMP P309 HIGH TEMP - NOTE 2	DISCRETE	CONTACT	P309 MINICAS
309	SBR 1 MOTIVE PUMP P309 HOA IN AUTO	DISCRETE	CONTACT	HS309
310	SBR 2 MOTIVE PUMP P310 RUNNING	DISCRETE	CONTACT	P310 SOFTSTART
310A	SBR 2 MOTIVE PUMP P310 FAULT	DISCRETE	CONTACT	P310 SOFTSTART
310		DISCRETE	CONTACT	P310 MINICAS
\310 310	SBR 2 MOTIVE PUMP P310 HIGH TEMP - NOTE 2 SBR 1 MOTIVE PUMP P310 HOA IN AUTO	DISCRETE DISCRETE	CONTACT	P310 MINICAS HS310
301A		DISCRETE	CONTACT	B301 VFD
301A		DISCRETE	CONTACT	B301 VFD
301B		DISCRETE	CONTACT	HS301A
302A	SBR 1 BLOWER B302 RUNNING	DISCRETE	CONTACT	B302 VFD
302A		DISCRETE	CONTACT	B302 VFD
302B		DISCRETE	CONTACT	HS302A
303A 303A		DISCRETE DISCRETE	CONTACT	B303 VFD B303 VFD
303B		DISCRETE	CONTACT	HS303A
304A		DISCRETE	CONTACT	B304 VFD
304A		DISCRETE	CONTACT	B304 VFD
304B	SBR 2 BLOWER B304 HOA IN AUTO	DISCRETE	CONTACT	HS304A
305A		DISCRETE	CONTACT	B305 VFD
305A		DISCRETE	CONTACT	B305 VFD
305B (301	SBR 2 BLOWER B305 HOA IN AUTO SBR 1/2 RAS PUMP P301 RUNNING	DISCRETE DISCRETE	CONTACT	HS305A P301 STARTER
301C		DISCRETE	CONTACT	HS301
1302	SBR 1/2 RAS PUMP RUNNING	DISCRETE	CONTACT	P302 STARTER
302C	SBR 1/2 RAS PUMP P302 HOA IN AUTO	DISCRETE	CONTACT	HS302
1001	GENERATOR RUNNING	DISCRETE	CONTACT	SBR 1,2 BLD. GENERATOR
1002		DISCRETE	CONTACT	SBR 1,2 BLD. GENERATOR
1003	GENERATOR ATS NOT IN AUTO	DISCRETE	CONTACT	SBR 1,2 BLD. GENERATOR
	PLC	OUTPUTS		
ID	DESCRIPTION	TYPE	SIGNAL	DESTINATION
C301		ANALOG	4-20mA	B301 VFD
2302	·	ANALOG	4-20mA	B302 VFD
2303		ANALOG	4-20mA	B303 VFD
C304 C305		ANALOG ANALOG	4-20mA 4-20mA	B304 VFD B305 VFD
	OSIVE DEGINERO OF LED GORINGE	ANALOG	r ZUIIIA	5000 11 5
	SBR 1 INFLUENT VALVE OPEN CALL	DISCRETE	CONTACT	VALVE V301
301				VALVE V302
302		DISCRETE	CONTACT	
302 311	SBR 1 EFFLUENT VALVE OPEN CALL	DISCRETE	CONTACT	VALVE V311
302 311 307	SBR 1 EFFLUENT VALVE OPEN CALL SBR 1 MOTIVE PUMP A CALL TO RUN	DISCRETE DISCRETE	CONTACT CONTACT	P307 SOFTSTART
C302 C311 C307 L307	SBR 1 EFFLUENT VALVE OPEN CALL SBR 1 MOTIVE PUMP A CALL TO RUN SBR 1 MOTIVE PUMP A RUN/FAIL	DISCRETE DISCRETE DISCRETE	CONTACT CONTACT CONTACT	P307 SOFTSTART PANEL LIGHT
0302 0311 0307 -307 307A	SBR 1 EFFLUENT VALVE OPEN CALL SBR 1 MOTIVE PUMP A CALL TO RUN SBR 1 MOTIVE PUMP A RUN/FAIL	DISCRETE DISCRETE	CONTACT CONTACT CONTACT	P307 SOFTSTART
0302 0311 0307 307 307A 0308	SBR 1 EFFLUENT VALVE OPEN CALL SBR 1 MOTIVE PUMP A CALL TO RUN SBR 1 MOTIVE PUMP A RUN/FAIL SBR 1 MOTIVE PUMP A THERMAL/SEAL ALARM	DISCRETE DISCRETE DISCRETE DISCRETE	CONTACT CONTACT CONTACT	P307 SOFTSTART PANEL LIGHT PANEL LIGHT
2302 2311 2307 2307 307A 2308 2308 308A	SBR 1 EFFLUENT VALVE OPEN CALL SBR 1 MOTIVE PUMP A CALL TO RUN SBR 1 MOTIVE PUMP A RUN/FAIL SBR 1 MOTIVE PUMP A THERMAL/SEAL ALARM SBR 1 MOTIVE PUMP B CALL TO RUN SBR 1 MOTIVE PUMP B RUN/FAIL SBR 1 MOTIVE PUMP B THERMAL/SEAL ALARM	DISCRETE DISCRETE DISCRETE DISCRETE DISCRETE DISCRETE DISCRETE DISCRETE	CONTACT CONTACT CONTACT CONTACT CONTACT CONTACT CONTACT	P307 SOFTSTART PANEL LIGHT PANEL LIGHT P308 SOFTSTART PANEL LIGHT PANEL LIGHT
0302 0311 0307 0307 307A 0308 0308 308A 0303	SBR 1 EFFLUENT VALVE OPEN CALL SBR 1 MOTIVE PUMP A CALL TO RUN SBR 1 MOTIVE PUMP A RUN/FAIL SBR 1 MOTIVE PUMP A THERMAL/SEAL ALARM SBR 1 MOTIVE PUMP B CALL TO RUN SBR 1 MOTIVE PUMP B RUN/FAIL SBR 1 MOTIVE PUMP B THERMAL/SEAL ALARM SBR 2 INFLUENT VALVE OPEN CALL	DISCRETE DISCRETE DISCRETE DISCRETE DISCRETE DISCRETE DISCRETE DISCRETE DISCRETE	CONTACT CONTACT CONTACT CONTACT CONTACT CONTACT CONTACT CONTACT	P307 SOFTSTART PANEL LIGHT PANEL LIGHT P308 SOFTSTART PANEL LIGHT PANEL LIGHT VALVE V303
0302 0311 0307 307A 0308 308A 0303 0304	SBR 1 EFFLUENT VALVE OPEN CALL SBR 1 MOTIVE PUMP A CALL TO RUN SBR 1 MOTIVE PUMP A RUN/FAIL SBR 1 MOTIVE PUMP A THERMAL/SEAL ALARM SBR 1 MOTIVE PUMP B CALL TO RUN SBR 1 MOTIVE PUMP B RUN/FAIL SBR 1 MOTIVE PUMP B THERMAL/SEAL ALARM SBR 2 INFLUENT VALVE OPEN CALL SBR 2 DECANT VALVE OPEN CALL	DISCRETE	CONTACT	P307 SOFTSTART PANEL LIGHT PANEL LIGHT P308 SOFTSTART PANEL LIGHT PANEL LIGHT VALVE V303 VALVE V304
302 311 307 307 307A 308 308 308A 308A 303 303 3304	SBR 1 EFFLUENT VALVE OPEN CALL SBR 1 MOTIVE PUMP A CALL TO RUN SBR 1 MOTIVE PUMP A RUN/FAIL SBR 1 MOTIVE PUMP A THERMAL/SEAL ALARM SBR 1 MOTIVE PUMP B CALL TO RUN SBR 1 MOTIVE PUMP B RUN/FAIL SBR 1 MOTIVE PUMP B THERMAL/SEAL ALARM SBR 2 INFLUENT VALVE OPEN CALL SBR 2 DECANT VALVE OPEN CALL	DISCRETE	CONTACT	P307 SOFTSTART PANEL LIGHT PANEL LIGHT P308 SOFTSTART PANEL LIGHT PANEL LIGHT VALVE V303 VALVE V304 VALVE V312
0302 0311 0307 307A 0308 308A 0303 0304 0312 0309	SBR 1 EFFLUENT VALVE OPEN CALL SBR 1 MOTIVE PUMP A CALL TO RUN SBR 1 MOTIVE PUMP A RUN/FAIL SBR 1 MOTIVE PUMP A THERMAL/SEAL ALARM SBR 1 MOTIVE PUMP B CALL TO RUN SBR 1 MOTIVE PUMP B RUN/FAIL SBR 1 MOTIVE PUMP B THERMAL/SEAL ALARM SBR 2 INFLUENT VALVE OPEN CALL SBR 2 DECANT VALVE OPEN CALL SBR 2 EFFLUENT VALVE OPEN CALL SBR 2 MOTIVE PUMP A CALL TO RUN	DISCRETE	CONTACT	P307 SOFTSTART PANEL LIGHT PANEL LIGHT P308 SOFTSTART PANEL LIGHT PANEL LIGHT VALVE V303 VALVE V304 VALVE V312 P309 SOFTSTART
0302 0311 0307 307A 0308 308A 0303 0304 0312 0309 309	SBR 1 EFFLUENT VALVE OPEN CALL SBR 1 MOTIVE PUMP A CALL TO RUN SBR 1 MOTIVE PUMP A RUN/FAIL SBR 1 MOTIVE PUMP A THERMAL/SEAL ALARM SBR 1 MOTIVE PUMP B CALL TO RUN SBR 1 MOTIVE PUMP B RUN/FAIL SBR 1 MOTIVE PUMP B THERMAL/SEAL ALARM SBR 2 INFLUENT VALVE OPEN CALL SBR 2 DECANT VALVE OPEN CALL SBR 2 EFFLUENT VALVE OPEN CALL SBR 2 MOTIVE PUMP A CALL TO RUN SBR 2 MOTIVE PUMP A RUN/FAIL	DISCRETE	CONTACT	P307 SOFTSTART PANEL LIGHT PANEL LIGHT P308 SOFTSTART PANEL LIGHT PANEL LIGHT VALVE V303 VALVE V304 VALVE V312
302 311 307 307 307A 308 308 308 308A 303 304 312 309 309 309A	SBR 1 EFFLUENT VALVE OPEN CALL SBR 1 MOTIVE PUMP A CALL TO RUN SBR 1 MOTIVE PUMP A RUN/FAIL SBR 1 MOTIVE PUMP A THERMAL/SEAL ALARM SBR 1 MOTIVE PUMP B CALL TO RUN SBR 1 MOTIVE PUMP B RUN/FAIL SBR 1 MOTIVE PUMP B THERMAL/SEAL ALARM SBR 2 INFLUENT VALVE OPEN CALL SBR 2 DECANT VALVE OPEN CALL SBR 2 EFFLUENT VALVE OPEN CALL SBR 2 MOTIVE PUMP A CALL TO RUN SBR 2 MOTIVE PUMP A RUN/FAIL SBR 2 MOTIVE PUMP A THERMAL/SEAL ALARM	DISCRETE	CONTACT	P307 SOFTSTART PANEL LIGHT P308 SOFTSTART PANEL LIGHT PANEL LIGHT PANEL LIGHT VALVE V303 VALVE V304 VALVE V312 P309 SOFTSTART PANEL LIGHT
2302 2311 2307 307A 2308 308 308A 2303 2304 2312 2309 309A 2310 310	SBR 1 EFFLUENT VALVE OPEN CALL SBR 1 MOTIVE PUMP A CALL TO RUN SBR 1 MOTIVE PUMP A RUN/FAIL SBR 1 MOTIVE PUMP A THERMAL/SEAL ALARM SBR 1 MOTIVE PUMP B CALL TO RUN SBR 1 MOTIVE PUMP B RUN/FAIL SBR 1 MOTIVE PUMP B THERMAL/SEAL ALARM SBR 2 INFLUENT VALVE OPEN CALL SBR 2 DECANT VALVE OPEN CALL SBR 2 EFFLUENT VALVE OPEN CALL SBR 2 MOTIVE PUMP A CALL TO RUN SBR 2 MOTIVE PUMP A RUN/FAIL SBR 2 MOTIVE PUMP A THERMAL/SEAL ALARM SBR 2 MOTIVE PUMP B CALL TO RUN SBR 2 MOTIVE PUMP B CALL TO RUN	DISCRETE	CONTACT	P307 SOFTSTART PANEL LIGHT PANEL LIGHT P308 SOFTSTART PANEL LIGHT PANEL LIGHT VALVE V303 VALVE V304 VALVE V312 P309 SOFTSTART PANEL LIGHT
2302 2311 2307 307A 2308 2308 308A 2303 2304 2312 2309 309A 2310 310 310A	SBR 1 EFFLUENT VALVE OPEN CALL SBR 1 MOTIVE PUMP A CALL TO RUN SBR 1 MOTIVE PUMP A RUN/FAIL SBR 1 MOTIVE PUMP A THERMAL/SEAL ALARM SBR 1 MOTIVE PUMP B CALL TO RUN SBR 1 MOTIVE PUMP B RUN/FAIL SBR 1 MOTIVE PUMP B THERMAL/SEAL ALARM SBR 2 INFLUENT VALVE OPEN CALL SBR 2 DECANT VALVE OPEN CALL SBR 2 EFFLUENT VALVE OPEN CALL SBR 2 MOTIVE PUMP A CALL TO RUN SBR 2 MOTIVE PUMP A RUN/FAIL SBR 2 MOTIVE PUMP A THERMAL/SEAL ALARM SBR 2 MOTIVE PUMP B CALL TO RUN SBR 2 MOTIVE PUMP B CALL TO RUN SBR 2 MOTIVE PUMP B CALL TO RUN SBR 2 MOTIVE PUMP B RUN/FAIL	DISCRETE	CONTACT	P307 SOFTSTART PANEL LIGHT P308 SOFTSTART PANEL LIGHT PANEL LIGHT PANEL LIGHT VALVE V303 VALVE V304 VALVE V312 P309 SOFTSTART PANEL LIGHT
C302 C311 C307 S307A C308 S308 S308A C303 C304 C312 C309 S309 S309A C310 S310 S310 S310A	SBR 1 EFFLUENT VALVE OPEN CALL SBR 1 MOTIVE PUMP A CALL TO RUN SBR 1 MOTIVE PUMP A RUN/FAIL SBR 1 MOTIVE PUMP A THERMAL/SEAL ALARM SBR 1 MOTIVE PUMP B CALL TO RUN SBR 1 MOTIVE PUMP B RUN/FAIL SBR 1 MOTIVE PUMP B THERMAL/SEAL ALARM SBR 2 INFLUENT VALVE OPEN CALL SBR 2 DECANT VALVE OPEN CALL SBR 2 DECANT VALVE OPEN CALL SBR 2 EFFLUENT VALVE OPEN CALL SBR 2 MOTIVE PUMP A CALL TO RUN SBR 2 MOTIVE PUMP A RUN/FAIL SBR 2 MOTIVE PUMP B CALL TO RUN SBR 2 MOTIVE PUMP B CALL TO RUN SBR 2 MOTIVE PUMP B CALL TO RUN SBR 2 MOTIVE PUMP B RUN/FAIL SBR 1 MOTIVE PUMP B THERMAL/SEAL ALARM SBR 1 MOTIVE PUMP B THERMAL/SEAL ALARM	DISCRETE	CONTACT	P307 SOFTSTART PANEL LIGHT P308 SOFTSTART PANEL LIGHT PANEL LIGHT PANEL LIGHT VALVE V303 VALVE V304 VALVE V312 P309 SOFTSTART PANEL LIGHT
302 3311 307 307 307A 308 308 308 308A 3303 3304 3312 3309 3309 3310 310 310A 301A	SBR 1 EFFLUENT VALVE OPEN CALL SBR 1 MOTIVE PUMP A CALL TO RUN SBR 1 MOTIVE PUMP A RUN/FAIL SBR 1 MOTIVE PUMP A THERMAL/SEAL ALARM SBR 1 MOTIVE PUMP B CALL TO RUN SBR 1 MOTIVE PUMP B RUN/FAIL SBR 1 MOTIVE PUMP B THERMAL/SEAL ALARM SBR 2 INFLUENT VALVE OPEN CALL SBR 2 DECANT VALVE OPEN CALL SBR 2 EFFLUENT VALVE OPEN CALL SBR 2 MOTIVE PUMP A CALL TO RUN SBR 2 MOTIVE PUMP A RUN/FAIL SBR 2 MOTIVE PUMP B CALL TO RUN SBR 2 MOTIVE PUMP B CALL TO RUN SBR 2 MOTIVE PUMP B CALL TO RUN SBR 2 MOTIVE PUMP B THERMAL/SEAL ALARM SBR 2 MOTIVE PUMP B RUN/FAIL SBR 1 MOTIVE PUMP B THERMAL/SEAL ALARM SBR 1 BLOWER 1 CALL TO RUN SBR 1 BLOWER 1 VFD FAULT	DISCRETE	CONTACT	P307 SOFTSTART PANEL LIGHT P308 SOFTSTART PANEL LIGHT PANEL LIGHT PANEL LIGHT VALVE V303 VALVE V304 VALVE V312 P309 SOFTSTART PANEL LIGHT
C302 C311 C307 S307 S308 S308 S308 C303 C304 C312 C309 S309 S309 S310 S310 S310 S310 S310 S310 S301A S301A	SBR 1 EFFLUENT VALVE OPEN CALL SBR 1 MOTIVE PUMP A CALL TO RUN SBR 1 MOTIVE PUMP A RUN/FAIL SBR 1 MOTIVE PUMP A THERMAL/SEAL ALARM SBR 1 MOTIVE PUMP B CALL TO RUN SBR 1 MOTIVE PUMP B RUN/FAIL SBR 1 MOTIVE PUMP B THERMAL/SEAL ALARM SBR 2 INFLUENT VALVE OPEN CALL SBR 2 DECANT VALVE OPEN CALL SBR 2 EFFLUENT VALVE OPEN CALL SBR 2 MOTIVE PUMP A CALL TO RUN SBR 2 MOTIVE PUMP A RUN/FAIL SBR 2 MOTIVE PUMP B CALL TO RUN SBR 2 MOTIVE PUMP B CALL TO RUN SBR 2 MOTIVE PUMP B CALL TO RUN SBR 1 MOTIVE PUMP B THERMAL/SEAL ALARM SBR 1 MOTIVE PUMP B THERMAL/SEAL ALARM SBR 1 BLOWER 1 CALL TO RUN SBR 1 BLOWER 1 CALL TO RUN SBR 1 BLOWER 2 CALL TO RUN	DISCRETE	CONTACT	P307 SOFTSTART PANEL LIGHT PANEL LIGHT P308 SOFTSTART PANEL LIGHT PANEL LIGHT VALVE V303 VALVE V304 VALVE V312 P309 SOFTSTART PANEL LIGHT B301 VFD PANEL LIGHT B302 VFD
2302 2311 2307 307A 2308 308 308A 2303 2304 2312 2309 309A 2310 310A 301A 301A 301A 302A	SBR 1 EFFLUENT VALVE OPEN CALL SBR 1 MOTIVE PUMP A CALL TO RUN SBR 1 MOTIVE PUMP A RUN/FAIL SBR 1 MOTIVE PUMP A THERMAL/SEAL ALARM SBR 1 MOTIVE PUMP B CALL TO RUN SBR 1 MOTIVE PUMP B RUN/FAIL SBR 1 MOTIVE PUMP B THERMAL/SEAL ALARM SBR 2 INFLUENT VALVE OPEN CALL SBR 2 DECANT VALVE OPEN CALL SBR 2 EFFLUENT VALVE OPEN CALL SBR 2 MOTIVE PUMP A CALL TO RUN SBR 2 MOTIVE PUMP A RUN/FAIL SBR 2 MOTIVE PUMP B CALL TO RUN SBR 2 MOTIVE PUMP B CALL TO RUN SBR 2 MOTIVE PUMP B CALL TO RUN SBR 1 MOTIVE PUMP B THERMAL/SEAL ALARM SBR 1 MOTIVE PUMP B THERMAL/SEAL ALARM SBR 1 BLOWER 1 CALL TO RUN SBR 1 BLOWER 1 CALL TO RUN SBR 1 BLOWER 2 CALL TO RUN	DISCRETE	CONTACT	P307 SOFTSTART PANEL LIGHT P308 SOFTSTART PANEL LIGHT PANEL LIGHT PANEL LIGHT VALVE V303 VALVE V304 VALVE V312 P309 SOFTSTART PANEL LIGHT
2302 2311 2307 307A 2308 308A 2303 2304 2312 2309 309A 2310 310A 301A 301A 302A 303A	SBR 1 EFFLUENT VALVE OPEN CALL SBR 1 MOTIVE PUMP A CALL TO RUN SBR 1 MOTIVE PUMP A RUN/FAIL SBR 1 MOTIVE PUMP A THERMAL/SEAL ALARM SBR 1 MOTIVE PUMP B CALL TO RUN SBR 1 MOTIVE PUMP B RUN/FAIL SBR 1 MOTIVE PUMP B THERMAL/SEAL ALARM SBR 2 INFLUENT VALVE OPEN CALL SBR 2 DECANT VALVE OPEN CALL SBR 2 EFFLUENT VALVE OPEN CALL SBR 2 MOTIVE PUMP A CALL TO RUN SBR 2 MOTIVE PUMP A RUN/FAIL SBR 2 MOTIVE PUMP B CALL TO RUN SBR 2 MOTIVE PUMP B CALL TO RUN SBR 2 MOTIVE PUMP B CALL TO RUN SBR 1 MOTIVE PUMP B THERMAL/SEAL ALARM SBR 1 MOTIVE PUMP B THERMAL/SEAL ALARM SBR 1 BLOWER 1 CALL TO RUN SBR 1 BLOWER 1 CALL TO RUN SBR 1 BLOWER 2 VFD FAULT SBR 1 BLOWER 2 VFD FAULT SBR 1/2 BLOWER 3 CALL TO RUN	DISCRETE	CONTACT	P307 SOFTSTART PANEL LIGHT PANEL LIGHT P308 SOFTSTART PANEL LIGHT PANEL LIGHT VALVE V303 VALVE V304 VALVE V312 P309 SOFTSTART PANEL LIGHT B301 VFD PANEL LIGHT B302 VFD PANEL LIGHT
302 3311 307 307 307A 308 308 308 308 308 308 309 309 309 309 310 310 310 310 301A 301A 302A 303A	SBR 1 EFFLUENT VALVE OPEN CALL SBR 1 MOTIVE PUMP A CALL TO RUN SBR 1 MOTIVE PUMP A RUN/FAIL SBR 1 MOTIVE PUMP A THERMAL/SEAL ALARM SBR 1 MOTIVE PUMP B CALL TO RUN SBR 1 MOTIVE PUMP B RUN/FAIL SBR 1 MOTIVE PUMP B THERMAL/SEAL ALARM SBR 2 INFLUENT VALVE OPEN CALL SBR 2 DECANT VALVE OPEN CALL SBR 2 DECANT VALVE OPEN CALL SBR 2 MOTIVE PUMP A CALL TO RUN SBR 2 MOTIVE PUMP A RUN/FAIL SBR 2 MOTIVE PUMP B CALL TO RUN SBR 2 MOTIVE PUMP B RUN/FAIL SBR 1 MOTIVE PUMP B RUN/FAIL SBR 1 MOTIVE PUMP B THERMAL/SEAL ALARM SBR 1 BLOWER 1 CALL TO RUN SBR 1 BLOWER 1 VFD FAULT SBR 1 BLOWER 2 VFD FAULT SBR 1/2 BLOWER 3 CALL TO RUN SBR 1/2 BLOWER 3 VFD FAULT	DISCRETE	CONTACT	P307 SOFTSTART PANEL LIGHT P308 SOFTSTART PANEL LIGHT PANEL LIGHT PANEL LIGHT VALVE V303 VALVE V304 VALVE V312 P309 SOFTSTART PANEL LIGHT PANEL LIGHT PANEL LIGHT PANEL LIGHT PANEL LIGHT P310 SOFTSTART PANEL LIGHT PANEL LIGHT PANEL LIGHT B301 VFD PANEL LIGHT B302 VFD PANEL LIGHT B303 VFD
302A 303A 303A 304A 304A	SBR 1 EFFLUENT VALVE OPEN CALL SBR 1 MOTIVE PUMP A CALL TO RUN SBR 1 MOTIVE PUMP A RUN/FAIL SBR 1 MOTIVE PUMP A THERMAL/SEAL ALARM SBR 1 MOTIVE PUMP B CALL TO RUN SBR 1 MOTIVE PUMP B RUN/FAIL SBR 1 MOTIVE PUMP B THERMAL/SEAL ALARM SBR 2 INFLUENT VALVE OPEN CALL SBR 2 DECANT VALVE OPEN CALL SBR 2 DECANT VALVE OPEN CALL SBR 2 EFFLUENT VALVE OPEN CALL SBR 2 MOTIVE PUMP A CALL TO RUN SBR 2 MOTIVE PUMP A RUN/FAIL SBR 2 MOTIVE PUMP B CALL TO RUN SBR 2 MOTIVE PUMP B CALL TO RUN SBR 1 MOTIVE PUMP B THERMAL/SEAL ALARM SBR 1 MOTIVE PUMP B THERMAL/SEAL ALARM SBR 1 BLOWER 1 CALL TO RUN SBR 1 BLOWER 1 VFD FAULT SBR 1 BLOWER 2 VFD FAULT SBR 1/2 BLOWER 3 CALL TO RUN SBR 1/2 BLOWER 3 VFD FAULT SBR 2 BLOWER 4 CALL TO RUN SBR 2 BLOWER 4 CALL TO RUN	DISCRETE	CONTACT	P307 SOFTSTART PANEL LIGHT PANEL LIGHT P308 SOFTSTART PANEL LIGHT PANEL LIGHT VALVE V303 VALVE V304 VALVE V312 P309 SOFTSTART PANEL LIGHT B301 VFD PANEL LIGHT B302 VFD PANEL LIGHT B303 VFD PANEL LIGHT B304 VFD PANEL LIGHT B304 VFD PANEL LIGHT
2302 2311 2307 307A 2308 308A 2303 2304 2312 2309 309A 2310 310A 301A 301A 301A 302A 303A 303A 304A 304A 305A	SBR 1 EFFLUENT VALVE OPEN CALL SBR 1 MOTIVE PUMP A CALL TO RUN SBR 1 MOTIVE PUMP A RUN/FAIL SBR 1 MOTIVE PUMP A THERMAL/SEAL ALARM SBR 1 MOTIVE PUMP B CALL TO RUN SBR 1 MOTIVE PUMP B RUN/FAIL SBR 1 MOTIVE PUMP B THERMAL/SEAL ALARM SBR 2 INFLUENT VALVE OPEN CALL SBR 2 DECANT VALVE OPEN CALL SBR 2 DECANT VALVE OPEN CALL SBR 2 MOTIVE PUMP A CALL TO RUN SBR 2 MOTIVE PUMP A RUN/FAIL SBR 2 MOTIVE PUMP A THERMAL/SEAL ALARM SBR 2 MOTIVE PUMP B CALL TO RUN SBR 2 MOTIVE PUMP B CALL TO RUN SBR 1 MOTIVE PUMP B THERMAL/SEAL ALARM SBR 1 BLOWER 1 CALL TO RUN SBR 1 BLOWER 1 VFD FAULT SBR 1 BLOWER 2 VFD FAULT SBR 1 BLOWER 3 CALL TO RUN SBR 1/2 BLOWER 3 VFD FAULT SBR 2 BLOWER 4 CALL TO RUN SBR 2 BLOWER 4 CALL TO RUN SBR 2 BLOWER 5 CALL TO RUN	DISCRETE	CONTACT	P307 SOFTSTART PANEL LIGHT PANEL LIGHT P308 SOFTSTART PANEL LIGHT PANEL LIGHT VALVE V303 VALVE V304 VALVE V312 P309 SOFTSTART PANEL LIGHT B301 VFD PANEL LIGHT B302 VFD PANEL LIGHT B303 VFD PANEL LIGHT B304 VFD PANEL LIGHT B305 VFD
302 3311 3307 307A 3308 3308 3308 3308 3304 3312 3309 3309 3310 310A 3310A 331A 301A 302A 303A 303A 303A 304A 305A	SBR 1 EFFLUENT VALVE OPEN CALL SBR 1 MOTIVE PUMP A CALL TO RUN SBR 1 MOTIVE PUMP A RUN/FAIL SBR 1 MOTIVE PUMP A THERMAL/SEAL ALARM SBR 1 MOTIVE PUMP B CALL TO RUN SBR 1 MOTIVE PUMP B RUN/FAIL SBR 1 MOTIVE PUMP B THERMAL/SEAL ALARM SBR 2 INFLUENT VALVE OPEN CALL SBR 2 DECANT VALVE OPEN CALL SBR 2 DECANT VALVE OPEN CALL SBR 2 MOTIVE PUMP A CALL TO RUN SBR 2 MOTIVE PUMP A RUN/FAIL SBR 2 MOTIVE PUMP B CALL TO RUN SBR 2 MOTIVE PUMP B CALL TO RUN SBR 2 MOTIVE PUMP B CALL TO RUN SBR 1 MOTIVE PUMP B RUN/FAIL SBR 1 MOTIVE PUMP B THERMAL/SEAL ALARM SBR 1 BLOWER 1 CALL TO RUN SBR 1 BLOWER 1 CALL TO RUN SBR 1 BLOWER 3 CALL TO RUN SBR 1 BLOWER 3 CALL TO RUN SBR 1/2 BLOWER 3 VFD FAULT SBR 2 BLOWER 4 CALL TO RUN SBR 2 BLOWER 5 VFD FAULT	DISCRETE	CONTACT	P307 SOFTSTART PANEL LIGHT PANEL LIGHT P308 SOFTSTART PANEL LIGHT PANEL LIGHT VALVE V303 VALVE V304 VALVE V312 P309 SOFTSTART PANEL LIGHT B301 VFD PANEL LIGHT B302 VFD PANEL LIGHT B303 VFD PANEL LIGHT B304 VFD PANEL LIGHT B305 VFD PANEL LIGHT B305 VFD PANEL LIGHT
302 3311 307 307 307A 308 308 308 308A 3304 3312 339 339A 3310 310A 301A 301A 301A 302A 303A 303A 303A 303A 304A 305A 305A	SBR 1 EFFLUENT VALVE OPEN CALL SBR 1 MOTIVE PUMP A CALL TO RUN SBR 1 MOTIVE PUMP A RUN/FAIL SBR 1 MOTIVE PUMP B CALL TO RUN SBR 1 MOTIVE PUMP B CALL TO RUN SBR 1 MOTIVE PUMP B RUN/FAIL SBR 1 MOTIVE PUMP B THERMAL/SEAL ALARM SBR 2 INFLUENT VALVE OPEN CALL SBR 2 DECANT VALVE OPEN CALL SBR 2 DECANT VALVE OPEN CALL SBR 2 EFFLUENT VALVE OPEN CALL SBR 2 MOTIVE PUMP A CALL TO RUN SBR 2 MOTIVE PUMP A THERMAL/SEAL ALARM SBR 2 MOTIVE PUMP B CALL TO RUN SBR 2 MOTIVE PUMP B CALL TO RUN SBR 1 MOTIVE PUMP B RUN/FAIL SBR 1 MOTIVE PUMP B THERMAL/SEAL ALARM SBR 1 BLOWER 1 CALL TO RUN SBR 1 BLOWER 1 CALL TO RUN SBR 1 BLOWER 2 VFD FAULT SBR 1 BLOWER 3 VFD FAULT SBR 1/2 BLOWER 3 VFD FAULT SBR 2 BLOWER 4 CALL TO RUN SBR 2 BLOWER 5 CALL TO RUN SBR 2 BLOWER 5 VFD FAULT SBR 2 BLOWER 5 VFD FAULT	DISCRETE	CONTACT	P307 SOFTSTART PANEL LIGHT PANEL LIGHT P308 SOFTSTART PANEL LIGHT PANEL LIGHT VALVE V303 VALVE V304 VALVE V312 P309 SOFTSTART PANEL LIGHT B301 VFD PANEL LIGHT B302 VFD PANEL LIGHT B303 VFD PANEL LIGHT B304 VFD PANEL LIGHT B305 VFD PANEL LIGHT B305 VFD PANEL LIGHT PANEL LIGHT
2302 2311 2307 307A 2308 308 308A 2303 2304 2312 2309 309A 2310 310A 301A 301A 301A 302A 303A 303A 303A 303A 303A 303A 303	SBR 1 EFFLUENT VALVE OPEN CALL SBR 1 MOTIVE PUMP A CALL TO RUN SBR 1 MOTIVE PUMP A RUN/FAIL SBR 1 MOTIVE PUMP A THERMAL/SEAL ALARM SBR 1 MOTIVE PUMP B CALL TO RUN SBR 1 MOTIVE PUMP B RUN/FAIL SBR 1 MOTIVE PUMP B THERMAL/SEAL ALARM SBR 2 INFLUENT VALVE OPEN CALL SBR 2 DECANT VALVE OPEN CALL SBR 2 EFFLUENT VALVE OPEN CALL SBR 2 MOTIVE PUMP A CALL TO RUN SBR 2 MOTIVE PUMP A RUN/FAIL SBR 2 MOTIVE PUMP A THERMAL/SEAL ALARM SBR 2 MOTIVE PUMP B CALL TO RUN SBR 2 MOTIVE PUMP B CALL TO RUN SBR 1 MOTIVE PUMP B RUN/FAIL SBR 1 MOTIVE PUMP B THERMAL/SEAL ALARM SBR 1 BLOWER 1 CALL TO RUN SBR 1 BLOWER 1 CALL TO RUN SBR 1 BLOWER 2 VFD FAULT SBR 1 BLOWER 3 CALL TO RUN SBR 1/2 BLOWER 3 VFD FAULT SBR 2 BLOWER 4 CALL TO RUN SBR 2 BLOWER 5 CALL TO RUN SBR 2 BLOWER 5 CALL TO RUN SBR 2 BLOWER 5 VFD FAULT SBR 2 BLOWER 5 VFD FAULT SBR 1/2 RAS PUMP 1 CALL TO RUN	DISCRETE	CONTACT	P307 SOFTSTART PANEL LIGHT PANEL LIGHT P308 SOFTSTART PANEL LIGHT PANEL LIGHT VALVE V303 VALVE V304 VALVE V312 P309 SOFTSTART PANEL LIGHT B301 VFD PANEL LIGHT B302 VFD PANEL LIGHT B303 VFD PANEL LIGHT B304 VFD PANEL LIGHT B305 VFD PANEL LIGHT
C302 C311 C307 L307 J307A C308 L308 J308 C304 C312 C309 L309 L309 L309 L310 J310 J310A C311A C301A C301A C302A C303A C30	SBR 1 EFFLUENT VALVE OPEN CALL SBR 1 MOTIVE PUMP A CALL TO RUN SBR 1 MOTIVE PUMP A RUN/FAIL SBR 1 MOTIVE PUMP A THERMAL/SEAL ALARM SBR 1 MOTIVE PUMP B CALL TO RUN SBR 1 MOTIVE PUMP B RUN/FAIL SBR 1 MOTIVE PUMP B THERMAL/SEAL ALARM SBR 2 INFLUENT VALVE OPEN CALL SBR 2 DECANT VALVE OPEN CALL SBR 2 EFFLUENT VALVE OPEN CALL SBR 2 MOTIVE PUMP A CALL TO RUN SBR 2 MOTIVE PUMP A RUN/FAIL SBR 2 MOTIVE PUMP A THERMAL/SEAL ALARM SBR 2 MOTIVE PUMP B CALL TO RUN SBR 2 MOTIVE PUMP B CALL TO RUN SBR 1 MOTIVE PUMP B RUN/FAIL SBR 1 MOTIVE PUMP B THERMAL/SEAL ALARM SBR 1 BLOWER 1 CALL TO RUN SBR 1 BLOWER 1 CALL TO RUN SBR 1 BLOWER 2 VFD FAULT SBR 1 BLOWER 3 CALL TO RUN SBR 1/2 BLOWER 3 VFD FAULT SBR 2 BLOWER 4 CALL TO RUN SBR 2 BLOWER 5 CALL TO RUN SBR 2 BLOWER 5 CALL TO RUN SBR 2 BLOWER 5 VFD FAULT SBR 2 BLOWER 5 VFD FAULT SBR 1/2 RAS PUMP 1 CALL TO RUN	DISCRETE	CONTACT	P307 SOFTSTART PANEL LIGHT P308 SOFTSTART PANEL LIGHT PANEL LIGHT PANEL LIGHT VALVE V303 VALVE V304 VALVE V312 P309 SOFTSTART PANEL LIGHT PANEL LIGHT PANEL LIGHT PANEL LIGHT PANEL LIGHT P310 SOFTSTART PANEL LIGHT PANEL LIGHT B301 VFD PANEL LIGHT B302 VFD PANEL LIGHT B303 VFD PANEL LIGHT B304 VFD PANEL LIGHT B305 VFD PANEL LIGHT B305 VFD PANEL LIGHT P301 STARTER
C302 C311 C307 L307 L307 L307 L307 L308 L308 L308 L308 L308 L309 L309 L309 L309 L309 L310 L310 L310 L310 L301 L301 L301 L301	SBR 1 EFFLUENT VALVE OPEN CALL SBR 1 MOTIVE PUMP A CALL TO RUN SBR 1 MOTIVE PUMP A RUN/FAIL SBR 1 MOTIVE PUMP A THERMAL/SEAL ALARM SBR 1 MOTIVE PUMP B CALL TO RUN SBR 1 MOTIVE PUMP B RUN/FAIL SBR 1 MOTIVE PUMP B RUN/FAIL SBR 1 MOTIVE PUMP B THERMAL/SEAL ALARM SBR 2 INFLUENT VALVE OPEN CALL SBR 2 DECANT VALVE OPEN CALL SBR 2 DECANT VALVE OPEN CALL SBR 2 MOTIVE PUMP A CALL TO RUN SBR 2 MOTIVE PUMP A RUN/FAIL SBR 2 MOTIVE PUMP A THERMAL/SEAL ALARM SBR 2 MOTIVE PUMP B CALL TO RUN SBR 2 MOTIVE PUMP B RUN/FAIL SBR 1 MOTIVE PUMP B RUN/FAIL SBR 1 MOTIVE PUMP B THERMAL/SEAL ALARM SBR 1 BLOWER 1 CALL TO RUN SBR 1 BLOWER 1 CALL TO RUN SBR 1 BLOWER 2 CALL TO RUN SBR 1 BLOWER 3 CALL TO RUN SBR 1 BLOWER 3 VFD FAULT SBR 1/2 BLOWER 3 VFD FAULT SBR 2 BLOWER 4 VFD FAULT SBR 2 BLOWER 5 CALL TO RUN SBR 2 BLOWER 5 CALL TO RUN SBR 2 BLOWER 5 VFD FAULT SBR 2 BLOWER 5 VFD FAULT SBR 1/2 RAS PUMP 1 CALL TO RUN SBR 1/2 RAS PUMP 1 CALL TO RUN SBR 1/2 RAS PUMP 2 CALL TO RUN	DISCRETE	CONTACT	P307 SOFTSTART PANEL LIGHT PANEL LIGHT P308 SOFTSTART PANEL LIGHT PANEL LIGHT VALVE V303 VALVE V304 VALVE V312 P309 SOFTSTART PANEL LIGHT PANEL LIGHT PANEL LIGHT PANEL LIGHT PANEL LIGHT PANEL LIGHT B301 VFD PANEL LIGHT B302 VFD PANEL LIGHT B303 VFD PANEL LIGHT B304 VFD PANEL LIGHT B305 VFD PANEL LIGHT PANEL LIGHT B305 VFD PANEL LIGHT PANEL LIGHT B305 VFD PANEL LIGHT P301 STARTER PANEL LIGHT

	UV	BUILDING							
PLC INPUTS ID DESCRIPTION TYPE SIGNAL SOURCE									
ID	DESCRIPTION	TYPE	SIGNAL	SOURCE					
FT401	EFFLUENT METER	ANALOG	4-20mA	FLOW METER FIT401					
LT401	UV WETWELL LEVEL TRANSMITTER UV WETWELL HIGH LEVEL FLOAT	ANALOG DISCRETE	4-20mA CONTACT	LEVEL TRANSMITTER LIT401 LEVEL SWITCH LS401					
LI401 LI402	UV WETWELL HIGH LEVEL FLOAT	DISCRETE	CONTACT	LEVEL SWITCH LS401					
XI401	UV PUMP P401 RUNNING	DISCRETE	CONTACT	P401 SOFTSTART					
ZI401	UV PUMP P401 HOA IN AUTO	DISCRETE	CONTACT	HS401					
XI401A		DISCRETE	CONTACT	P401 SOFTSTART					
XA401	UV PUMP P401 SEAL FAIL - NOTE 2	DISCRETE	CONTACT	P401 MINICAS					
TA401	UV PUMP P401 HIGH TEMP - NOTE 2	DISCRETE	CONTACT	P401 MINICAS					
XI402	UV PUMP P402 RUNNING	DISCRETE	CONTACT	P402 SOFTSTART					
ZI402	UV PUMP P402 HOA IN AUTO	DISCRETE	CONTACT	HS402					
XI402A XA402		DISCRETE DISCRETE	CONTACT	P402 SOFTSTART P402 MINICAS					
TA402		DISCRETE	CONTACT	P402 MINICAS					
XI403	UV PUMP P403 RUNNING	DISCRETE	CONTACT	P403 SOFTSTART					
ZI403	UV PUMP P403 HOA IN AUTO	DISCRETE	CONTACT	HS403					
XI403A		DISCRETE	CONTACT	P403 SOFTSTART					
XA403	UV PUMP P403 SEAL FAIL - NOTE 2	DISCRETE	CONTACT	P403 MINICAS					
TA403		DISCRETE	CONTACT	P403 MINICAS					
XI404	EFFLUENT REUSE PUMP P404 RUNNING	DISCRETE	CONTACT	P404 SOFTSTART					
XI404A		DISCRETE	CONTACT	P404 SOFTSTART					
ZI404 FI404	EFFLUENT REUSE PUMP P404 HOA IN AUTO FLOW SWITCH	DISCRETE DISCRETE	CONTACT	HS404 FLOW SWITCH FS404					
ZI907	UV INFLUENT VALVE OPENED	DISCRETE	CONTACT	VALVE V907					
ZI907A		DISCRETE	CONTACT	VALVE V907					
ZI908	REUSE TANK INFLUENT VALVE OPENED	DISCRETE	CONTACT	VALVE V908					
ZI908A		DISCRETE	CONTACT	VALVE V908					
ZI422	UV EFFLUENT OUTFALL VALVE OPENED	DISCRETE	CONTACT	VALVE V422					
ZI422A	UV EFFLUENT OUTFALL VALVE CLOSED	DISCRETE	CONTACT	VALVE V422					
<i>Z</i> I919	WAS SLUDGE VALVE OPENED	DISCRETE	CONTACT	VALVE V919					
ZI919A		DISCRETE	CONTACT	VALVE V919					
XI411	UV MODULE 1 FAIL	DISCRETE	CONTACT	UV MODULE UV401					
XI411A		DISCRETE	CONTACT	UV MODULE UV401 UV MODULE UV402					
XI412 XI412A	UV MODULE 2 FAIL UV MODULE 2 RUNNING	DISCRETE DISCRETE	CONTACT	UV MODULE UV402					
XI413	UV MODULE 3 FAIL	DISCRETE	CONTACT	UV MODULE UV403					
XI413A		DISCRETE	CONTACT	UV MODULE UV403					
XI2001		DISCRETE	CONTACT	UV BLD. GENERATOR					
XI2002	GENERATOR FAIL	DISCRETE	CONTACT	UV BLD. GENERATOR					
XI2003	GENERATOR NOT IN AUTO	DISCRETE	CONTACT	UV BLD. GENERATOR					
XC501	PRIMARY DIGESTER 1,2 SLUDGE PUMP CALL TO RUN	DISCRETE	CONTACT	P501 STARTER					
XC502	· · · · · · · · · · · · · · · · · · ·	DISCRETE	CONTACT	P502 STARTER					
XA940	BELT FILTER PRESS COMMON ALARM	DISCRETE	CONTACT	NEW BELT FILTER PRESS CONTROL PA					
		OUTPUTS							
ID	DESCRIPTION	TYPE	SIGNAL	DESTINATION					
1 1 404	UV WETWELL HIGH LEVEL ALARM UV WETWELL LOW LEVEL	DISCRETE DISCRETE	CONTACT	PANEL LIGHT PANEL LIGHT					
LL401			IODINIACI						
LL402				IP401 SOFTSTART					
LL402 XC401	UV PUMP P401 START STOP	DISCRETE	CONTACT	P401 SOFTSTART PANEL LIGHT					
LL402	UV PUMP P401 START STOP UV PUMP P401 RUN FAIL			P401 SOFTSTART PANEL LIGHT PANEL LIGHT					
XC401 XL401	UV PUMP P401 START STOP UV PUMP P401 RUN FAIL UV PUMP P401 THERMAL/SEAL ALARM	DISCRETE DISCRETE	CONTACT CONTACT	PANEL LIGHT					
XC401 XL401 XL401A	UV PUMP P401 START STOP UV PUMP P401 RUN FAIL UV PUMP P401 THERMAL/SEAL ALARM UV PUMP P402 START STOP	DISCRETE DISCRETE DISCRETE	CONTACT CONTACT CONTACT	PANEL LIGHT PANEL LIGHT					
XC401 XL401 XL401A XC402 XL402 XL402A	UV PUMP P401 START STOP UV PUMP P401 RUN FAIL UV PUMP P401 THERMAL/SEAL ALARM UV PUMP P402 START STOP UV PUMP P402 RUN FAIL UV PUMP P402 THERMAL/SEAL ALARM	DISCRETE DISCRETE DISCRETE DISCRETE DISCRETE DISCRETE DISCRETE	CONTACT CONTACT CONTACT CONTACT CONTACT CONTACT	PANEL LIGHT PANEL LIGHT P402 SOFTSTART PANEL LIGHT PANEL LIGHT					
XC401 XL401 XL401A XC402 XL402 XL402A XC403	UV PUMP P401 START STOP UV PUMP P401 RUN FAIL UV PUMP P401 THERMAL/SEAL ALARM UV PUMP P402 START STOP UV PUMP P402 RUN FAIL UV PUMP P402 THERMAL/SEAL ALARM UV PUMP P403 START STOP	DISCRETE DISCRETE DISCRETE DISCRETE DISCRETE DISCRETE DISCRETE DISCRETE	CONTACT CONTACT CONTACT CONTACT CONTACT CONTACT CONTACT	PANEL LIGHT PANEL LIGHT P402 SOFTSTART PANEL LIGHT PANEL LIGHT P403 SOFTSTART					
XC401 XL401A XL401A XC402 XL402A XC403 XL403	UV PUMP P401 START STOP UV PUMP P401 RUN FAIL UV PUMP P401 THERMAL/SEAL ALARM UV PUMP P402 START STOP UV PUMP P402 RUN FAIL UV PUMP P402 THERMAL/SEAL ALARM UV PUMP P403 START STOP UV PUMP P403 RUN FAIL	DISCRETE DISCRETE DISCRETE DISCRETE DISCRETE DISCRETE DISCRETE DISCRETE DISCRETE	CONTACT CONTACT CONTACT CONTACT CONTACT CONTACT CONTACT CONTACT CONTACT	PANEL LIGHT PANEL LIGHT P402 SOFTSTART PANEL LIGHT PANEL LIGHT P403 SOFTSTART PANEL LIGHT					
LL402 XC401 XL401A XC402 XL402 XL402A XC403 XL403 XL403A	UV PUMP P401 START STOP UV PUMP P401 RUN FAIL UV PUMP P401 THERMAL/SEAL ALARM UV PUMP P402 START STOP UV PUMP P402 RUN FAIL UV PUMP P402 THERMAL/SEAL ALARM UV PUMP P403 START STOP UV PUMP P403 RUN FAIL UV PUMP P403 THERMAL/SEAL ALARM	DISCRETE	CONTACT	PANEL LIGHT PANEL LIGHT P402 SOFTSTART PANEL LIGHT PANEL LIGHT P403 SOFTSTART PANEL LIGHT PANEL LIGHT PANEL LIGHT					
XC401 XL401 XL401A XC402 XL402 XL402A XC403 XL403 XL403 XL403A XC404	UV PUMP P401 START STOP UV PUMP P401 RUN FAIL UV PUMP P401 THERMAL/SEAL ALARM UV PUMP P402 START STOP UV PUMP P402 RUN FAIL UV PUMP P402 THERMAL/SEAL ALARM UV PUMP P403 START STOP UV PUMP P403 RUN FAIL UV PUMP P403 THERMAL/SEAL ALARM EFFLUENT REUSE PUMP P404 START STOP	DISCRETE	CONTACT	PANEL LIGHT PANEL LIGHT P402 SOFTSTART PANEL LIGHT PANEL LIGHT P403 SOFTSTART PANEL LIGHT PANEL LIGHT PANEL LIGHT PANEL LIGHT PANEL LIGHT					
XC401 XL401 XL401A XC402 XL402A XC403 XL403A XL403A XC404 XL404	UV PUMP P401 START STOP UV PUMP P401 RUN FAIL UV PUMP P401 THERMAL/SEAL ALARM UV PUMP P402 START STOP UV PUMP P402 RUN FAIL UV PUMP P402 THERMAL/SEAL ALARM UV PUMP P403 START STOP UV PUMP P403 RUN FAIL UV PUMP P403 RUN FAIL UV PUMP P403 THERMAL/SEAL ALARM EFFLUENT REUSE PUMP P404 START STOP EFFLUENT REUSE PUMP P404 RUNNING	DISCRETE	CONTACT	PANEL LIGHT PANEL LIGHT P402 SOFTSTART PANEL LIGHT PANEL LIGHT P403 SOFTSTART PANEL LIGHT					
XC401 XL401A XL401A XC402 XL402 XL402A XC403 XL403 XL403A XC404 XL404 FL401	UV PUMP P401 START STOP UV PUMP P401 RUN FAIL UV PUMP P401 THERMAL/SEAL ALARM UV PUMP P402 START STOP UV PUMP P402 RUN FAIL UV PUMP P402 THERMAL/SEAL ALARM UV PUMP P403 START STOP UV PUMP P403 START STOP UV PUMP P403 RUN FAIL UV PUMP P403 THERMAL/SEAL ALARM EFFLUENT REUSE PUMP P404 START STOP EFFLUENT REUSE PUMP P404 RUNNING FLOW SWITCH - FLOW	DISCRETE	CONTACT	PANEL LIGHT PANEL LIGHT P402 SOFTSTART PANEL LIGHT PANEL LIGHT P403 SOFTSTART PANEL LIGHT					
XC401 XL401 XL401A XC402 XL402A XC403 XL403A XL403A XC404 XL404	UV PUMP P401 START STOP UV PUMP P401 RUN FAIL UV PUMP P401 THERMAL/SEAL ALARM UV PUMP P402 START STOP UV PUMP P402 RUN FAIL UV PUMP P402 THERMAL/SEAL ALARM UV PUMP P403 START STOP UV PUMP P403 RUN FAIL UV PUMP P403 THERMAL/SEAL ALARM EFFLUENT REUSE PUMP P404 START STOP EFFLUENT REUSE PUMP P404 RUNNING FLOW SWITCH - FLOW UV INFLUENT VALVE OPEN CALL	DISCRETE	CONTACT	PANEL LIGHT PANEL LIGHT P402 SOFTSTART PANEL LIGHT PANEL LIGHT P403 SOFTSTART PANEL LIGHT					
LL402 XC401 XL401A XC402 XL402 XL402A XC403 XL403 XL403 XL403 XL404 FL401 ZC907	UV PUMP P401 START STOP UV PUMP P401 RUN FAIL UV PUMP P401 THERMAL/SEAL ALARM UV PUMP P402 START STOP UV PUMP P402 RUN FAIL UV PUMP P402 THERMAL/SEAL ALARM UV PUMP P403 START STOP UV PUMP P403 RUN FAIL UV PUMP P403 THERMAL/SEAL ALARM EFFLUENT REUSE PUMP P404 START STOP EFFLUENT REUSE PUMP P404 RUNNING FLOW SWITCH - FLOW UV INFLUENT VALVE OPEN CALL REUSE TANK INFLUENT VALVE OPEN CALL	DISCRETE	CONTACT	PANEL LIGHT PANEL LIGHT P402 SOFTSTART PANEL LIGHT PANEL LIGHT PANEL LIGHT P403 SOFTSTART PANEL LIGHT VALVE V907					
LL402 XC401 XL401A XC402 XL402A XC403 XL403A XL403A XC404 XL404 FL401 ZC907 ZC908 ZC422 ZC919	UV PUMP P401 START STOP UV PUMP P401 RUN FAIL UV PUMP P401 THERMAL/SEAL ALARM UV PUMP P402 START STOP UV PUMP P402 RUN FAIL UV PUMP P402 THERMAL/SEAL ALARM UV PUMP P403 START STOP UV PUMP P403 START STOP UV PUMP P403 RUN FAIL UV PUMP P403 THERMAL/SEAL ALARM EFFLUENT REUSE PUMP P404 START STOP EFFLUENT REUSE PUMP P404 RUNNING FLOW SWITCH - FLOW UV INFLUENT VALVE OPEN CALL REUSE TANK INFLUENT VALVE OPEN CALL UV EFFLUENT OUTFALL VALVE OPEN CALL WAS SLUDGE VALVE OPEN CALL	DISCRETE	CONTACT	PANEL LIGHT PANEL LIGHT P402 SOFTSTART PANEL LIGHT PANEL LIGHT P403 SOFTSTART PANEL LIGHT PANEL LIGHT PANEL LIGHT PANEL LIGHT PANEL LIGHT PAO4 SOFTSTART PANEL LIGHT PANEL LIGHT VALVE V907 VALVE V908					
LL402 XC401 XL401A XC402 XL402 XL402A XC403 XL403 XL403 XL403 XL404 FL401 ZC907 ZC908 ZC422 ZC919 XC411	UV PUMP P401 START STOP UV PUMP P401 RUN FAIL UV PUMP P401 THERMAL/SEAL ALARM UV PUMP P402 START STOP UV PUMP P402 RUN FAIL UV PUMP P402 THERMAL/SEAL ALARM UV PUMP P403 START STOP UV PUMP P403 START STOP UV PUMP P403 RUN FAIL UV PUMP P403 THERMAL/SEAL ALARM EFFLUENT REUSE PUMP P404 START STOP EFFLUENT REUSE PUMP P404 RUNNING FLOW SWITCH - FLOW UV INFLUENT VALVE OPEN CALL REUSE TANK INFLUENT VALVE OPEN CALL UV EFFLUENT OUTFALL VALVE OPEN CALL UV MODULE 1 CALL TO RUN	DISCRETE	CONTACT	PANEL LIGHT PANEL LIGHT P402 SOFTSTART PANEL LIGHT PANEL LIGHT P403 SOFTSTART PANEL LIGHT PANEL LIGHT PANEL LIGHT PANEL LIGHT PANEL LIGHT PANEL LIGHT VALVE V907 VALVE V908 VALVE V422 VALVE V919 UV MODULE UV401					
LL402 XC401 XL401A XC402 XL402A XC403 XL403 XL403 XL403 XL404 FL401 ZC907 ZC908 ZC422 ZC919 XC411 XL411	UV PUMP P401 START STOP UV PUMP P401 RUN FAIL UV PUMP P401 THERMAL/SEAL ALARM UV PUMP P402 START STOP UV PUMP P402 RUN FAIL UV PUMP P402 THERMAL/SEAL ALARM UV PUMP P403 START STOP UV PUMP P403 START STOP UV PUMP P403 RUN FAIL UV PUMP P403 THERMAL/SEAL ALARM EFFLUENT REUSE PUMP P404 START STOP EFFLUENT REUSE PUMP P404 RUNNING FLOW SWITCH - FLOW UV INFLUENT VALVE OPEN CALL REUSE TANK INFLUENT VALVE OPEN CALL UV EFFLUENT OUTFALL VALVE OPEN CALL WAS SLUDGE VALVE OPEN CALL UV MODULE 1 CALL TO RUN UV MODULE 1 RUNNING	DISCRETE	CONTACT	PANEL LIGHT PANEL LIGHT P402 SOFTSTART PANEL LIGHT PANEL LIGHT PANEL LIGHT P403 SOFTSTART PANEL LIGHT PANEL LIGHT PANEL LIGHT PANEL LIGHT PANEL LIGHT PANEL LIGHT VALVE V907 VALVE V908 VALVE V919 UV MODULE UV401 PANEL LIGHT					
LL402 XC401 XL401A XC402 XL402A XC403 XL403A XL403A XL404 FL401 ZC907 ZC908 ZC422 ZC919 XC411 XL411 XC412	UV PUMP P401 START STOP UV PUMP P401 RUN FAIL UV PUMP P401 THERMAL/SEAL ALARM UV PUMP P402 START STOP UV PUMP P402 RUN FAIL UV PUMP P402 THERMAL/SEAL ALARM UV PUMP P403 START STOP UV PUMP P403 START STOP UV PUMP P403 RUN FAIL UV PUMP P403 THERMAL/SEAL ALARM EFFLUENT REUSE PUMP P404 START STOP EFFLUENT REUSE PUMP P404 RUNNING FLOW SWITCH - FLOW UV INFLUENT VALVE OPEN CALL REUSE TANK INFLUENT VALVE OPEN CALL UV EFFLUENT OUTFALL VALVE OPEN CALL UV MODULE 1 CALL TO RUN UV MODULE 2 CALL TO RUN	DISCRETE	CONTACT	PANEL LIGHT PANEL LIGHT P402 SOFTSTART PANEL LIGHT PANEL LIGHT PANEL LIGHT P403 SOFTSTART PANEL LIGHT PANEL LIGHT PANEL LIGHT PANEL LIGHT PANEL LIGHT PANEL LIGHT VALVE V907 VALVE V908 VALVE V922 VALVE V919 UV MODULE UV401 PANEL LIGHT UV MODULE UV402					
LL402 XC401 XL401A XC402 XL402A XC403 XL403A XL403A XC404 XL404 FL401 ZC907 ZC908 ZC422 ZC919 XC411 XL411 XC412 XL412	UV PUMP P401 START STOP UV PUMP P401 RUN FAIL UV PUMP P401 THERMAL/SEAL ALARM UV PUMP P402 START STOP UV PUMP P402 RUN FAIL UV PUMP P402 THERMAL/SEAL ALARM UV PUMP P403 START STOP UV PUMP P403 START STOP UV PUMP P403 RUN FAIL UV PUMP P403 THERMAL/SEAL ALARM EFFLUENT REUSE PUMP P404 START STOP EFFLUENT REUSE PUMP P404 RUNNING FLOW SWITCH - FLOW UV INFLUENT VALVE OPEN CALL REUSE TANK INFLUENT VALVE OPEN CALL UV EFFLUENT OUTFALL VALVE OPEN CALL UV MODULE 1 CALL TO RUN UV MODULE 1 RUNNING UV MODULE 2 RUNNING	DISCRETE	CONTACT	PANEL LIGHT PANEL LIGHT P402 SOFTSTART PANEL LIGHT PANEL LIGHT PANEL LIGHT P403 SOFTSTART PANEL LIGHT PANEL LIGHT PANEL LIGHT PANEL LIGHT PANEL LIGHT PANEL LIGHT VALVE V907 VALVE V908 VALVE V908 VALVE V422 VALVE V919 UV MODULE UV401 PANEL LIGHT UV MODULE UV402 PANEL LIGHT					
LL402 XC401 XL401A XC402 XL402A XC403 XL403A XL403A XL403A XC404 XL404 FL401 ZC907 ZC908 ZC422 ZC919 XC411 XL411 XC412 XL412 XC413	UV PUMP P401 START STOP UV PUMP P401 RUN FAIL UV PUMP P401 THERMAL/SEAL ALARM UV PUMP P402 START STOP UV PUMP P402 RUN FAIL UV PUMP P402 THERMAL/SEAL ALARM UV PUMP P403 START STOP UV PUMP P403 RUN FAIL UV PUMP P403 RUN FAIL UV PUMP P403 THERMAL/SEAL ALARM EFFLUENT REUSE PUMP P404 START STOP EFFLUENT REUSE PUMP P404 RUNNING FLOW SWITCH - FLOW UV INFLUENT VALVE OPEN CALL REUSE TANK INFLUENT VALVE OPEN CALL UV EFFLUENT OUTFALL VALVE OPEN CALL UV MODULE 1 CALL TO RUN UV MODULE 2 CALL TO RUN UV MODULE 2 RUNNING UV MODULE 3 CALL TO RUN	DISCRETE	CONTACT	PANEL LIGHT PANEL LIGHT P402 SOFTSTART PANEL LIGHT PANEL LIGHT PANEL LIGHT P403 SOFTSTART PANEL LIGHT PANEL LIGHT PANEL LIGHT PANEL LIGHT PANEL LIGHT PANEL LIGHT VALVE V907 VALVE V908 VALVE V422 VALVE V919 UV MODULE UV401 PANEL LIGHT UV MODULE UV402 PANEL LIGHT UV MODULE UV403					
LL402 XC401 XL401A XL401A XC402 XL402A XC403 XL403 XL403 XL403 XL404 FL401 ZC907 ZC908 ZC422 ZC919 XC411 XL411 XC412 XL412 XC413 XL413	UV PUMP P401 START STOP UV PUMP P401 RUN FAIL UV PUMP P401 THERMAL/SEAL ALARM UV PUMP P402 START STOP UV PUMP P402 RUN FAIL UV PUMP P403 THERMAL/SEAL ALARM UV PUMP P403 START STOP UV PUMP P403 RUN FAIL UV PUMP P403 THERMAL/SEAL ALARM EFFLUENT REUSE PUMP P404 START STOP EFFLUENT REUSE PUMP P404 RUNNING FLOW SWITCH - FLOW UV INFLUENT VALVE OPEN CALL REUSE TANK INFLUENT VALVE OPEN CALL UV EFFLUENT OUTFALL VALVE OPEN CALL UV MODULE 1 CALL TO RUN UV MODULE 2 RUNNING UV MODULE 3 CALL TO RUN UV MODULE 3 RUNNING	DISCRETE	CONTACT	PANEL LIGHT PANEL LIGHT P402 SOFTSTART PANEL LIGHT PANEL LIGHT PANEL LIGHT P403 SOFTSTART PANEL LIGHT PANEL LIGHT PANEL LIGHT PANEL LIGHT PANEL LIGHT PANEL LIGHT VALVE V907 VALVE V908 VALVE V908 VALVE V422 VALVE V919 UV MODULE UV401 PANEL LIGHT UV MODULE UV402 PANEL LIGHT UV MODULE UV403 PANEL LIGHT					
LL402 XC401 XL401A XC402 XL402A XC403 XL403A XL403A XL403A XC404 XL404 FL401 ZC907 ZC908 ZC422 ZC919 XC411 XL411 XC412 XL412 XC413	UV PUMP P401 START STOP UV PUMP P401 RUN FAIL UV PUMP P401 THERMAL/SEAL ALARM UV PUMP P402 START STOP UV PUMP P402 RUN FAIL UV PUMP P403 THERMAL/SEAL ALARM UV PUMP P403 START STOP UV PUMP P403 RUN FAIL UV PUMP P403 THERMAL/SEAL ALARM EFFLUENT REUSE PUMP P404 START STOP EFFLUENT REUSE PUMP P404 RUNNING FLOW SWITCH - FLOW UV INFLUENT VALVE OPEN CALL REUSE TANK INFLUENT VALVE OPEN CALL UV EFFLUENT OUTFALL VALVE OPEN CALL UV MODULE 1 CALL TO RUN UV MODULE 2 RUNNING UV MODULE 3 CALL TO RUN UV MODULE 3 RUNNING	DISCRETE	CONTACT	PANEL LIGHT PANEL LIGHT P402 SOFTSTART PANEL LIGHT PANEL LIGHT PANEL LIGHT P403 SOFTSTART PANEL LIGHT PANEL LIGHT PANEL LIGHT PANEL LIGHT PANEL LIGHT PANEL LIGHT VALVE V907 VALVE V908 VALVE V422 VALVE V919 UV MODULE UV401 PANEL LIGHT UV MODULE UV402 PANEL LIGHT UV MODULE UV403					

- 1. TRANSMITTER IS A 4-WIRE DEVICE AND WILL REQUIRE 120VAC FROM LIGHTING PANEL, FACTORY CABLE FROM TRANSMITTER TO PROBE
- 2. PUMP PROTECTION DEVICE LOCATED IN SBR CONTROL PANEL, WIRING REQUIRED BETWEEN DEVICE AND PUMP

	CONTROL	L SYSTEM I/O SCHE	DULE					
		SBR 1,2						
PLC INPUTS								
ID	DESCRIPTION	TYPE	SIGNAL	SOURCE				
LI301	SBR 1 LEVEL TRANSMITTER	ANALOG	4-20mA	LEVEL TRANSMITTER LT301				
DI301	SBR 1 DO TRANSMITTER - NOTE 1	ANALOG	4-20mA	DO TRANSMITTER DT301				
OI301	SBR 1 ORP TRANMITTER - NOTE 1	ANALOG	4-20mA	ORP TRANSMITTER OT301				
LI302	SBR 2 LEVEL TRANSMITTER	ANALOG	4-20mA	LEVEL TRANSMITTER LT302				
DI302	SBR 2 DO TRANSMITTER - NOTE 1	ANALOG	4-20mA	DO TRANSMITTER DT302				
OI302	SBR 2 ORP TRANMITTER - NOTE 1	ANALOG	4-20mA	ORP TRANSMITTER OT302				
SI301	SBR 1 BLOWER B301 SPEED FEEDBACK	ANALOG	4-20mA	B301 VFD				
SI302	SBR 1 BLOWER B302 SPEED FEEDBACK	ANALOG	4-20mA	B302 VFD				
SI303	SBR 1/2 BLOWER B303 SPEED FEEDBACK	ANALOG	4-20mA	B303 VFD				
SI304	SBR 2 BLOWER B304 SPEED FEEDBACK	ANALOG	4-20mA	B304 VFD				
SI305	SBR 2 BLOWER B305 SPEED FEEDBACK	ANALOG	4-20mA	B305 VFD				

1. TRANSMITTER IS A 4-WIRE DEVICE AND WILL REQUIRE 120VAC FROM LIGHTING PANEL, FACTORY CABLE FROM TRANSMITTER TO PROBE

2. PUMP PROTECTION DEVICE LOCATED IN SBR CONTROL PANEL, WIRING REQUIRED BETWEEN DEVICE AND PUMP

I/O SCHEDULE DESIGN NOTES:

- 1. THE EXISTING SBRS HAVE TWO D.O. TRANSMITTERS EACH. ASSUMPTION IS MADE THAT THERE WILL ONLY BE ONE D.O. TRANSMITTER PER SBR AFTER THE UPGRADE.
- 2. EXISTING SBRS UTILIZE AUTOMATIC AIR VALVES. THEY HAVE BEEN ELIMINATED WITH UPGRADE BECAUSE OF DEDICATED BLOWERS WITH STANDBY BLOWER USING MANUAL VALVES.
- 3. THIS LIST IS FOR THE SBR RELATED I/O AND DOES NOT ATTEMPT TO INCLUDE ADDITIONAL I/O THAT MAY BE REQUIRED FOR MONITOR/CONTROL OF NEW/EXISTING ANCILLARY EQUIPMENT.



CHISHOLM CREEK UTILITY
AUTHORITY
WASTEWATER TREATMENT
FACILITY IMPROVEMENTS

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DRAWN BY: CHECKED BY: MARCH 2021

SHEET TITLE

ELECTRICAL IO SCHEDULES

SHEET NO: E-620

10

	CONTROL SYSTEM I/O SCHEDULE							
	SBR	3,4						
	PLC OUT	<u> </u>						
ID	DESCRIPTION	TYPE	SIGNAL	DESTINATION				
SC306	SBR 3 BLOWER 1 SPEED CONTROL	ANALOG	4-20mA	B306 VFD				
SC307	SBR 3 BLOWER 2 SPEED CONTROL	ANALOG	4-20mA	B307 VFD				
SC308	SBR 3/4 BLOWER 3 SPEED CONTROL	ANALOG	4-20mA	B308 VFD				
SC309	SBR 4 BLOWER 4 SPEED CONTROL	ANALOG	4-20mA	B309 VFD				
SC310	SBR 4 BLOWER 5 SPEED CONTROL	ANALOG	4-20mA	B310 VFD				
ZC313	SBR 3 INFLUENT VALVE OPEN CALL	DISCRETE	CONTACT	VALVE V313				
ZC314	SBR 3 DECANT VALVE OPEN CALL	DISCRETE	CONTACT	VALVE V314				
ZC317	SBR 3 EFFLUENT VALVE OPEN CALL	DISCRETE	CONTACT	VALVE V317				
XC311	SBR 3 MOTIVE PUMP A CALL TO RUN	DISCRETE	CONTACT	P311 SOFTSTART				
XL311	SBR 3 MOTIVE PUMP A RUN/FAIL	DISCRETE	CONTACT	PANEL LIGHT				
	SBR 3 MOTIVE PUMP A THERMAL/SEAL ALARM	DISCRETE	CONTACT	PANEL LIGHT				
XC312	SBR 3 MOTIVE PUMP B CALL TO RUN SBR 3 MOTIVE PUMP B RUN/FAIL	DISCRETE	CONTACT	P312 SOFTSTART PANEL LIGHT				
XL312 XL312A	SBR 3 MOTIVE PUMP B THERMAL/SEAL ALARM	DISCRETE DISCRETE	CONTACT	PANEL LIGHT				
ZC315	SBR 4 INFLUENT VALVE OPEN CALL	DISCRETE	CONTACT	VALVE V315				
ZC316	SBR 4 DECANT VALVE OPEN CALL	DISCRETE	CONTACT	VALVE V315				
ZC318	SBR 4 EFFLUENT VALVE OPEN CALL	DISCRETE	CONTACT	VALVE V318				
XC313	SBR 4 MOTIVE PUMP A CALL TO RUN	DISCRETE	CONTACT	P313 SOFTSTART				
XL313	SBR 4 MOTIVE PUMP A RUN/FAIL	DISCRETE	CONTACT	PANEL LIGHT				
XL313A	SBR 4 MOTIVE PUMP A THERMAL/SEAL ALARM	DISCRETE	CONTACT	PANEL LIGHT				
XC314	SBR 4 MOTIVE PUMP B CALL TO RUN	DISCRETE	CONTACT	P314 SOFTSTART				
XL314	SBR 4 MOTIVE PUMP B RUN/FAIL	DISCRETE	CONTACT	PANEL LIGHT				
XL314A	SBR 4 MOTIVE PUMP B THERMAL/SEAL ALARM	DISCRETE	CONTACT	PANEL LIGHT				
XC306A	SBR 3 BLOWER 1 CALL TO RUN	DISCRETE	CONTACT	B306 VFD				
	SBR 3 BLOWER 1 VFD FAULT	DISCRETE	CONTACT	PANEL LIGHT				
	SBR 3 BLOWER 2 CALL TO RUN	DISCRETE	CONTACT	B307 VFD				
	SBR 3 BLOWER 2 VFD FAULT	DISCRETE	CONTACT	PANEL LIGHT				
	SBR 3/4 BLOWER 3 CALL TO RUN	DISCRETE	CONTACT	B308 VFD				
	SBR 3/4 BLOWER 3 VFD FAULT	DISCRETE	CONTACT	PANEL LIGHT				
	SBR 4 BLOWER 4 CALL TO RUN	DISCRETE	CONTACT	B309 VFD				
	SBR 4 BLOWER 4 VFD FAULT	DISCRETE	CONTACT	PANEL LIGHT				
	SBR 4 BLOWER 5 CALL TO RUN SBR 4 BLOWER 5 VFD FAULT	DISCRETE	CONTACT	B310 VFD PANEL LIGHT				
	SBR 3/4 RAS PUMP 1 CALL TO RUN	DISCRETE	CONTACT	P303 STARTER				
	SBR 3/4 RAS PUMP RUNNING	DISCRETE	CONTACT	PANEL LIGHT				
	SBR 3/4 RAS PUMP 2 CALL TO RUN	DISCRETE	CONTACT	P304 STARTER				
	SBR 3/4 RAS PUMP 2 RUNNING	DISCRETE	CONTACT	PANEL LIGHT				
	PRIMARY DIGESTER 1,2 SLUDGE PUMP CALL TO RUN	DISCRETE	CONTACT	P501 STARTER				
	PRIMARY DIGESTER 1,2 SLUDGE PUMP RUNNING	DISCRETE	CONTACT	PANEL LIGHT				
	PRIMARY DIGESTER 1,2 SLUDGE PUMP CALL TO RUN	DISCRETE	CONTACT	P502 STARTER				
	PRIMARY DIGESTER 1,2 SLUDGE PUMP RUNNING	DISCRETE	CONTACT	PANEL LIGHT				
	PRIMARY DIGESTER 1 AERATOR CALL TO RUN	DISCRETE	CONTACT	A501 SOFTSTART				
XL501A	PRIMARY DIGESTER 1 AERATOR RUNNING	DISCRETE	CONTACT	PANEL LIGHT				
XC502A	PRIMARY DIGESTER 2 AERATOR CALL TO RUN	DISCRETE	CONTACT	A502 SOFTSTART				
	PRIMARY DIGESTER 2 AERATOR RUNNING	DISCRETE	CONTACT	PANEL LIGHT				
	LIME BASIN 1 LIME MIXER CALL TO RUN	DISCRETE	CONTACT	M901 STARTER				
	LIME BASIN 1 LIME MIXER RUNNING	DISCRETE	CONTACT	PANEL LIGHT				
	LIME BASIN 1 LIME MIXER THERMAL/SEAL ALARM	DISCRETE	CONTACT	PANEL LIGHT				
XC902	LIME BASIN 2 LIME MIXER CALL TO RUN	DISCRETE	CONTACT	M902 STARTER				
	LIME BASIN 2 LIME MIXER RUNNING	DISCRETE	CONTACT	PANEL LIGHT				
XL902A	LIME BASIN 1 LIME MIXER THERMAL/SEAL ALARM	DISCRETE	CONTACT	PANEL LIGHT				

1. TRANSMITTER IS A 4-WIRE DEVICE AND WILL REQUIRE 120VAC FROM LIGHTING PANEL, FACTORY CABLE FROM TRANSMITTER TO PROBE

2.	PUMP PROTECTION DEVICE I	OCATED IN SBR CONTR	OL PANEL,	WIRING REQUIRED	BETWEEN	DEVICE A	AND PUMP

	CONTROL SYSTEM I/O SCHEDULE HEADWORKS BUILDING								
\neg \lceil									
			PLC INPUTS						
	ID	DESCRIPTION	TYPE	SIGNAL	SOURCE				
	FI404	REUSE METER	ANALOG	4-20mA	FLOW METER FIT404				
	FI001	INFLUENT METER	ANALOG	4-20mA	FLOW METER FIT001				

	CONTROL SYSTE	M I/O SCHE	DULE	
	SBR	3,4		
I production of the state of th	PLC IN		1 000000	001/005
ID LI303	DESCRIPTION SBR 3 LEVEL TRANSMITTER	TYPE ANALOG	SIGNAL 4-20mA	SOURCE LEVEL TRANSMITTER LT303
	SBR 3 DO TRANSMITTER - NOTE 1	ANALOG	4-20mA	DO TRANSMITTER DT303
	SBR 3 ORP TRANMIITTER - NOTE 1	ANALOG	4-20mA	ORP TRANSMITTER OT303
	SBR 4 LEVEL TRANSMITTER SBR 4 DO TRANSMITTER - NOTE 1	ANALOG ANALOG	4-20mA 4-20mA	LEVEL TRANSMITTER LT304 DO TRANSMITTER DT304
	SBR 4 ORP TRANSMITTER - NOTE 1	ANALOG	4-20mA	ORP TRANSMITTER 0T304
	SBR 3 BLOWER 1 SPEED FEEDBACK	ANALOG	4-20mA	B306 VFD
	SBR 3 BLOWER 2 SPEED FEEDBACK SBR 3/4 BLOWER 3 SPEED FEEDBACK	ANALOG ANALOG	4-20mA 4-20mA	B307 VFD B308 VFD
	SBR 4 BLOWER 4 SPEED FEEDBACK	ANALOG	4-20mA	B309 VFD
SI310	SBR 4 BLOWER 5 SPEED FEEDBACK	ANALOG	4-20mA	B310 VFD
LAH303	SBR 3 HIGH LEVEL	DISCRETE	CONTACT	LEVEL SWITCH LSH303
	SBR 3 INFLUENT VALVE OPENED	DISCRETE	CONTACT	VALVE V313
	SBR 3 INFLUENT VALVE CLOSED	DISCRETE	CONTACT	VALVE V313
	SBR 3 DECANT VALVE OPENED SBR 3 DECANT VALVE CLOSED	DISCRETE DISCRETE	CONTACT	VALVE V314 VALVE V314
	SBR 3 EFFLUENT VALVE OPENED	DISCRETE	CONTACT	VALVE V317
	SBR 3 EFFLUENT VALVE CLOSED	DISCRETE	CONTACT	VALVE V317
	SBR 3 MOTIVE PUMP P311 RUNNING SBR 3 MOTIVE PUMP P311 FAULT	DISCRETE	CONTACT	P311 SOFTSTART P311 SOFTSTART
	SBR 3 MOTIVE PUMP P311 FAULT SBR 3 MOTIVE PUMP P311 SEAL FAIL - NOTE 2	DISCRETE	CONTACT	P311 MINICAS
	SBR 3 MOTIVE PUMP P311 HIGH TEMP - NOTE 2	DISCRETE	CONTACT	P311 MINICAS
	SBR 3 MOTIVE PUMP P311 HOA IN AUTO SBR 3 MOTIVE PUMP P312 RUNNING	DISCRETE	CONTACT	HS311 P312 SOFTSTART
	SBR 3 MOTIVE PUMP P312 ROUNING SBR 3 MOTIVE PUMP P312 FAULT	DISCRETE	CONTACT	P312 SOFTSTART
XA312	SBR 3 MOTIVE PUMP P312 SEAL FAIL - NOTE 2	DISCRETE	CONTACT	P312 MINICAS
	SBR 3 MOTIVE PUMP P312 HIGH TEMP - NOTE 2 SBR 3 MOTIVE PUMP P312 HOA IN AUTO	DISCRETE	CONTACT	P312 MINICAS HS312
	SBR 4 HIGH LEVEL	DISCRETE	CONTACT	LEVEL SWITCH LSH304
ZI315	SBR 4 INFLUENT VALVE OPENED	DISCRETE	CONTACT	VALVE V315
	SBR 4 INFLUENT VALVE CLOSED SBR 4 DECANT VALVE OPENED	DISCRETE	CONTACT	VALVE V315 VALVE V316
	SBR 4 DECANT VALVE OPENED SBR 4 DECANT VALVE CLOSED	DISCRETE	CONTACT	VALVE V316
<i>Z</i> I318	SBR 4 EFFLUENT VALVE OPENED	DISCRETE	CONTACT	VALVE V318
	SBR 4 EFFLUENT VALVE CLOSED SBR 4 MOTIVE PUMP P313 RUNNING	DISCRETE	CONTACT	VALVE V318
	SBR 4 MOTIVE PUMP P313 RUNNING SBR 4 MOTIVE PUMP P313 FAULT	DISCRETE DISCRETE	CONTACT	P313 SOFTSTART P313 SOFTSTART
XA313	SBR 4 MOTIVE PUMP P313 SEAL FAIL - NOTE 2	DISCRETE	CONTACT	P313 MINICAS
	SBR 4 MOTIVE PUMP P313 HIGH TEMP - NOTE 2	DISCRETE	CONTACT	P313 MINICAS
	SBR 4 MOTIVE PUMP P313 HOA IN AUTO SBR 4 MOTIVE PUMP P314 RUNNING	DISCRETE	CONTACT	HS313 P314 SOFTSTART
	SBR 4 MOTIVE PUMP P314 FAULT	DISCRETE	CONTACT	P314 SOFTSTART
	SBR 4 MOTIVE PUMP P314 SEAL FAIL - NOTE 2	DISCRETE	CONTACT	P314 MINICAS
	SBR 4 MOTIVE PUMP P314 HIGH TEMP - NOTE 2 SBR 4 MOTIVE PUMP P314 HOA IN AUTO	DISCRETE DISCRETE	CONTACT	P314 MINICAS HS314
	SBR 3 BLOWER 1 RUNNING	DISCRETE	CONTACT	B306 VFD
	SBR 3 BLOWER B306 VFD FAULT	DISCRETE	CONTACT	B306 VFD
	SBR 3 BLOWER B306 HOA IN AUTO SBR 3 BLOWER B307 RUNNING	DISCRETE	CONTACT	HS306A B307 VFD
	SBR 3 BLOWER B307 VFD FAULT	DISCRETE	CONTACT	B307 VFD
	SBR 3 BLOWER B307 HOA IN AUTO	DISCRETE	CONTACT	HS307A
	SBR 3/4 BLOWER B308 RUNNING SBR 3/4 BLOWER B308 VFD FAULT	DISCRETE DISCRETE	CONTACT	B308 VFD B308 VFD
	SBR 3/4 BLOWER B308 HOA IN AUTO	DISCRETE	CONTACT	HS308A
	SBR 4 BLOWER B309 RUNNING	DISCRETE	CONTACT	B309 VFD
	SBR 4 BLOWER B309 VFD FAULT SBR 4 BLOWER B309 HOA IN AUTO	DISCRETE DISCRETE	CONTACT	B309 VFD HS309A
XI310	SBR 4 BLOWER B310 RUNNING	DISCRETE	CONTACT	B310 VFD
	SBR 4 BLOWER B310 VFD FAULT	DISCRETE	CONTACT	B310 VFD
	SBR 4 BLOWER B310 HOA IN AUTO SBR 3/4 RAS PUMP P303 RUNNING	DISCRETE DISCRETE	CONTACT	HS310A P303 STARTER
	SBR 3/4 RAS PUMP P303 HOA IN AUTO	DISCRETE	CONTACT	HS303
	SBR 3/4 RAS PUMP P304 RUNNING	DISCRETE	CONTACT	P304 STARTER
	SBR 3/4 RAS PUMP P304 HOA IN AUTO PRIMARY DIGESTER 1,2 SLUDGE PUMP P501 RUNNING	DISCRETE DISCRETE	CONTACT	HS304 P501 STARTER (IN PRIM. DIGESTER BLD)
	PRIMARY DIGESTER 1,2 SLUDGE PUMP P501 HOA IN AUTO	DISCRETE	CONTACT	HS501
	PRIMARY DIGESTER 1,2 SLUDGE PUMP P502 RUNNING	DISCRETE	CONTACT	P502 STARTER (IN PRIM. DIGESTER BLD)
	PRIMARY DIGESTER 1,2 SLUDGE PUMP P502 HOA IN AUTO PRIMARY DIGESTER 1 AERATOR A501 RUNNING	DISCRETE DISCRETE	CONTACT	HS502 A501 SOFTSTART (IN PRIM. DIGESTER BLD)
	PRIMARY DIGESTER 1 AERATOR A501 ROUNNING PRIMARY DIGESTER 1 AERATOR A501 FAULT	DISCRETE	CONTACT	A501 SOFTSTART (IN PRIM. DIGESTER BLD)
ZI501A	PRIMARY DIGESTER 1 AERATOR A501 HOA IN AUTO	DISCRETE	CONTACT	HS501A
	PRIMARY DIGESTER 2 AERATOR A502 RUNNING	DISCRETE	CONTACT	A502 SOFTSTART (IN PRIM. DIGESTER BLD)
	PRIMARY DIGESTER 2 AERATOR A502 FAULT PRIMARY DIGESTER 2 AERATOR A502 HOA IN AUTO	DISCRETE DISCRETE	CONTACT	A502 SOFTSTART (IN PRIM. DIGESTER BLD) HS502A
	LIME BASIN 1 LIME MIXER M901 RUNNING	DISCRETE	CONTACT	M901 STARTER
	LIME BASIN 1 LIME MIXER M901 SEAL FAIL - NOTE 2	DISCRETE	CONTACT	M901 MINICAS
	LIME BASIN 1 LIME MIXER M901 HIGH TEMP - NOTE 2 LIME BASIN 1 LIME MIXER M901 HOA IN AUTO	DISCRETE DISCRETE	CONTACT	M901 MINICAS HS901
	LIME BASIN 1 LIME MIXER M901 HOA IN A010	DISCRETE	CONTACT	M902 STARTER
XA902	LIME BASIN 2 LIME MIXER M902 SEAL FAIL - NOTE 2	DISCRETE	CONTACT	M902 MINICAS
	LIME BASIN 2 LIME MIXER M902 HIGH TEMP - NOTE 2	DISCRETE	CONTACT	M902 MINICAS
Z1902	LIME BASIN 1 LIME MIXER M902 HOA IN AUTO	DISCRETE	CONTACT	HS902

I/O SCHEDULE DESIGN NOTES:

- 1. THE EXISTING SBRS HAVE TWO D.O. TRANSMITTERS EACH. ASSUMPTION IS MADE THAT THERE WILL ONLY BE ONE D.O. TRANSMITTER PER SBR AFTER THE UPGRADE.
- 2. EXISTING SBRS UTILIZE AUTOMATIC AIR VALVES. THEY HAVE BEEN ELIMINATED WITH UPGRADE BECAUSE OF DEDICATED BLOWERS WITH STANDBY BLOWER USING MANUAL VALVES.
- 3. THIS LIST IS FOR THE SBR RELATED I/O AND DOES NOT ATTEMPT TO INCLUDE ADDITIONAL I/O THAT MAY BE REQUIRED FOR MONITOR/CONTROL OF NEW/EXISTING ANCILLARY EQUIPMENT.



CHISHOLM CREEK UTILITY
AUTHORITY
WASTEWATER TREATMENT
FACILITY IMPROVEMENTS

L								
							MWW	ВУ
							ISSUED FOR ADDENDUM 3	DESCRIPTION
							02/14/25	DATE
							2	REV.
ROJECT NO: 2060051400								
E	ESIGNED BY: BJD							

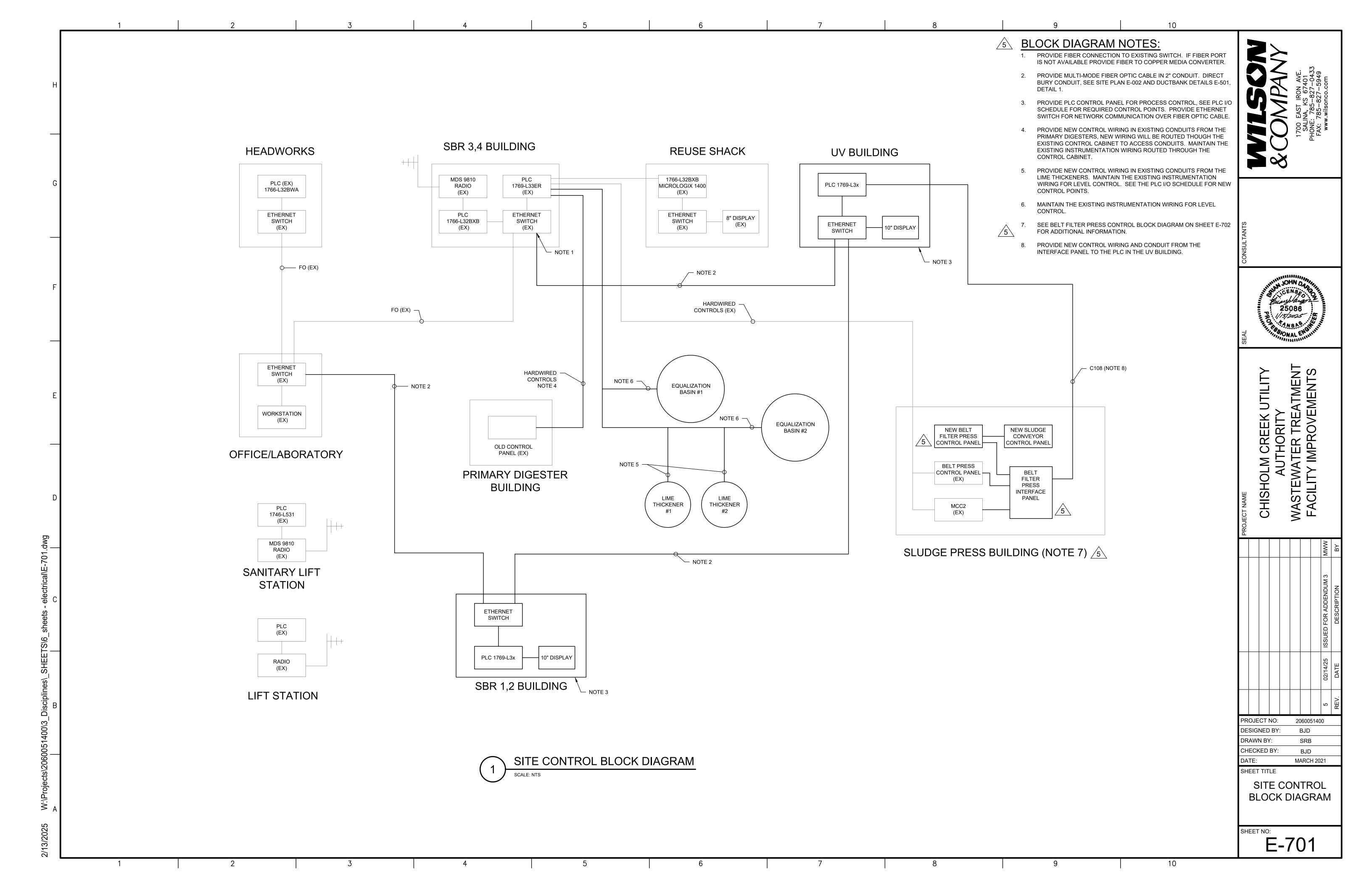
DRAWN BY: CHECKED BY: BJD DATE: MARCH 2021

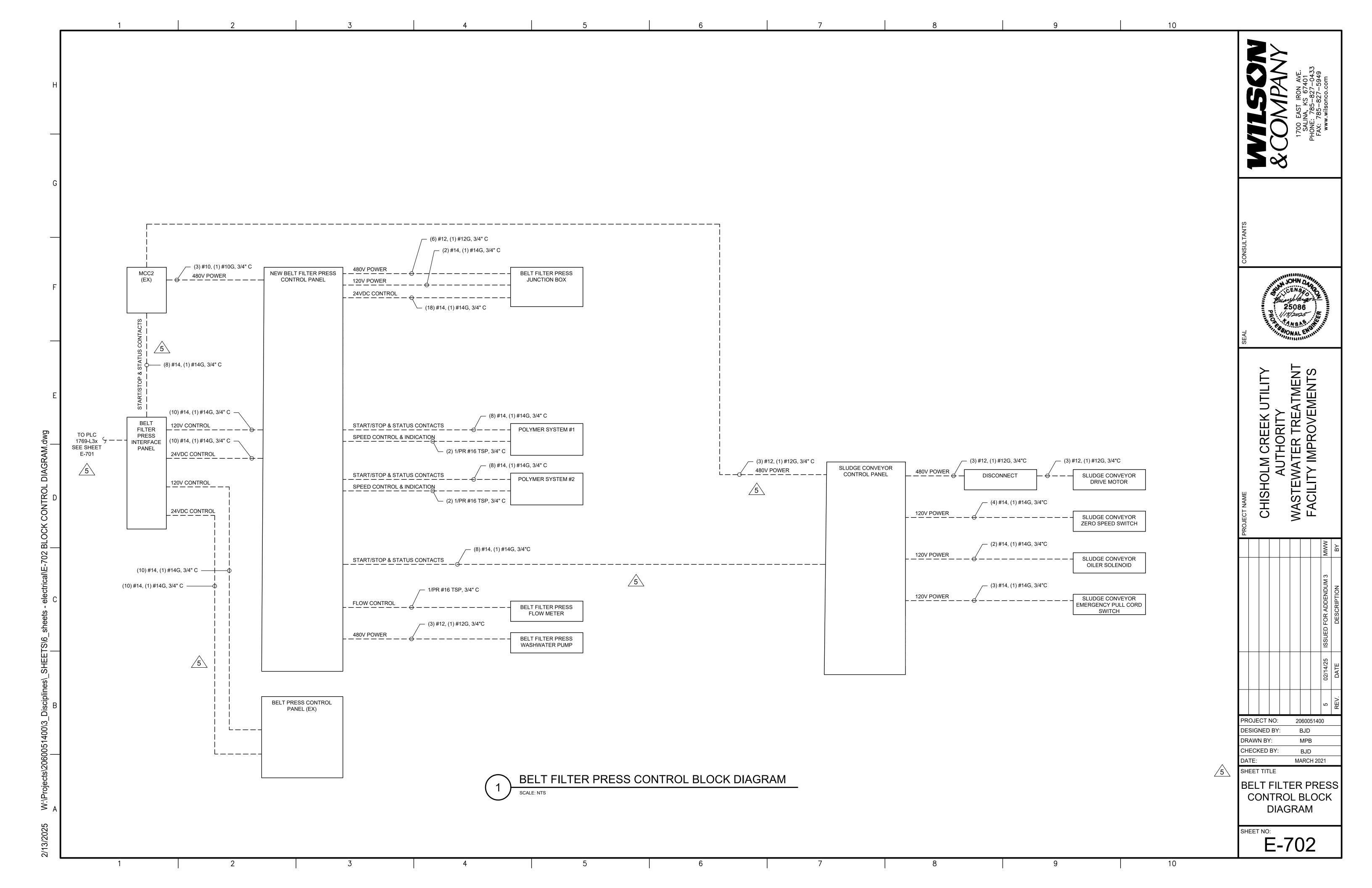
SHEET TITLE

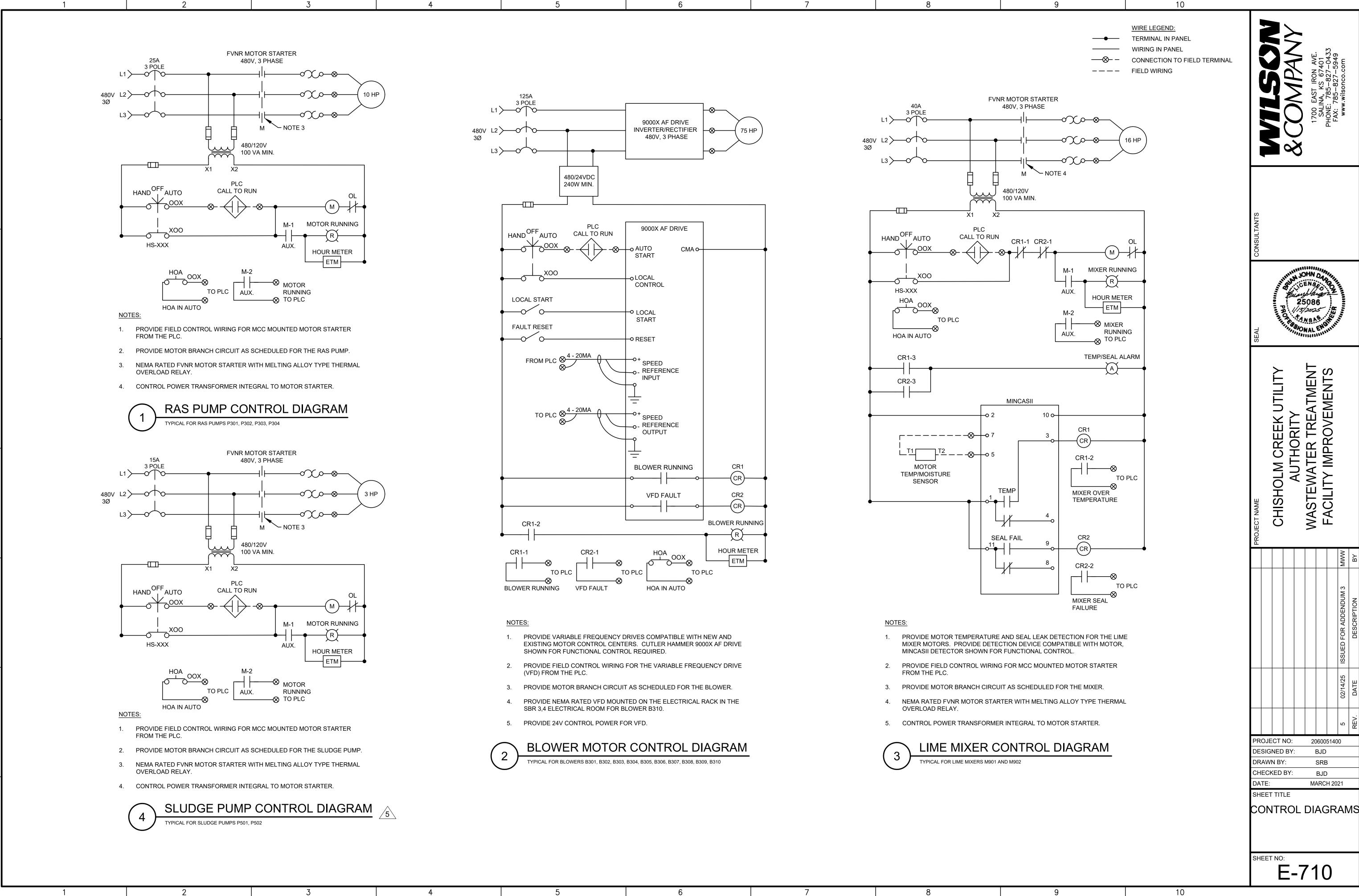
ELECTRICAL IO SCHEDULES

SHEET NO: E-621

10







2060051400

MARCH 2021

SECTION 16511A

PRE-NEGOTIATED TELEMETRY SCOPE OF SERVICES



February 10, 2025

Doug Goetz Wilson & Company Inc. 1700 East Iron Avenue Salina, KS 67401

Re: CCUA Wastewater Treatment Facility

Improvements

Instrumentation and Controls

Doug,

Please consider this proposal for the Instrumentation & Controls for the WTF Improvements project for Chisholm Creek Utility Authority. This proposal includes items from Sections 11300, 16900, 16901, 16905, 16911, 16913, 16914, 16921 and 16511(excluding fiber optic cable) as outlined below. The SBR Control Panel and associated instrumentation are included with the SBR Equipment pre-negotiated line item.

A purchase order will be accepted from the successful general contractor. If a subcontract agreement is required by the GC, then they should contact me prior to bid to discuss any additional costs that may need to be included.

Items Included:

Instrumentation

Section 11300, Meters

- Plant Effluent Flow, FE/FIT-401
 20" Magnetic Flowmeter, Class 150 flange
 Remote Electronics for installation in building, with wall mount bracket
 Cable between meter and transmitter, as required
 Potting kit for accidental submersion
 Programming, commissioning, training
- Effluent ReUse Flow, FE/FIT-404
 10" Magnetic Flowmeter, Class 150 flange
 Remote Electronics, with wall mount bracket
 Cable between meter and transmitter
 Potting kit for accidental submersion, as required
 Programming, commissioning, training
- Belt Filter Press Flow, FE/FIT-XXX
 6" Magnetic Flowmeter, Class 150 flange
 Remote Electronics, with wall mount bracket (or local if required)
 Cable between meter and transmitter
 Programming, commissioning, training

Section 16911, Transmitters and Sensors

- UV Wetwell Level, LIT-401 Submersible pressure sensor Local Display/transmitter Panel
- Headworks Electrical Room Pressure, PS101
 Positive Differential Pressure 4-20mA transmitter with local readout

Other Instruments

- Flow Switch ReUse Flow Established, FS-404
- UV Wetwell Float Switches Wetwell High, LS-401 Wetwell Low, LS-402

UV Building Control Panel

A new PLC control panel will be provided to be installed by the contractor in the new UV Building. The UV Building Control Panel will control and monitor: 3 UV Pumps, Effluent ReUse Pump, Outfall Valve, EQ Basin Isolation Valve, Waste Sludge Valved, UV Influent Valve, UV Request and status (x3), ReUse Tank Influent Valve and ReUse Pump. It will also monitor: Effluent Flow Rate, UV Basin Level, and Generator. Note: HOA switches and status indication that are supplied on the MCC or Equipment Control Panels will not be duplicated on this panel (Status will be available on the 10" touchscreen)

- NEMA 4 painted steel construction, freestanding
- 120VAC incoming power requirement with UPS for temporary power backup
- 10" color Touchscreen
- 24VDC power supply
- Ethernet switch with fiber ports for self-healing ring topography
- Fiber patch panel for incoming multimode fiber
- Allen Bradley CompactLogix PLC with I/O as required
- Alarm horn with silence pushbutton

Belt Filter Press Interface Panel

NEMA 4 painted steel wall-mount control panel to be installed by the contractor in the Sludge Press Building. Includes selector switches and relays to allow the operator to select which feed pumps are controlled by each Belt Filter Press.

SCADA Computer Upgrades

The two existing computers (one in Lab and one in existing SBR Electrical Room) will be replaced with new computers and new graphical interface software. The existing functionality will be duplicated along with the interface for the new equipment.

- 2) Personal Computers with the following minimal specs
 - Windows 11 Pro
 - 1TB hard drive
 - 24" Monitor
 - Keyboard
 - Mouse
 - **UPS**
- Graphical Interface Software
- · Remote internet monitoring capability
- Historical data with trending
- Alarm notification software to replace the existing phone dialer

Spare Parts

- One PLC Processor
- One of each type of I/O card
- Two of each type of power supply
- Spares of each type of fuse supplied

Other Items Included

- Ethernet switch with fiber ports for self-healing ring topography provided and installed in the lab network panel
- Analog input added to Headworks PLC for Elec Room Pressure
- 2) Alum Feed System monitoring and control (Feed Pump x4 Start/Stop and Run indication, and Tank Volume monitoring via 4-20mA from scale)
- Startup, training and travel incidentals
- Submittal data and O&M data in .pdf format
- PLC Programming, Touchscreen, and PC Graphical Interface Development

Price for Above: \$193,162.00

Items NOT included in proposal

The following items are not included in the price above:

- Fiber optic cable or fiber terminations specified in Section 16511, para 2.2.
- Motor starters, VFDs and associated circuitry shown on Sheets E-710 through E-712
- SBR Control Panel or Modification the Existing SBR Control Panel (provided with SBR equipment), except for Chem Feed control/monitoring listed above

- Chemical Feed System (pumps, scales, tanks, etc.)
- Instrumentation not specifically listed above, such as:
 - SBR DO transmitters (provided with SBR equipment)
 - SBR ORP transmitters (provided with SBR equipment)
 - o SBR Level transmitters (provided with SBR equipment)
 - SBR Float switches (provided with SBR equipment)
- Items required for installation of panels/instrumentation such as wall anchors, cord grips, stilling wells, float hooks, etc.
- Any local control panels, junction boxes, or wiring outside control panels listed above as supplied/modified
- Installation of panels, instruments or other items.
- Termination of wiring at control panels or field devices
- UL 508 listing on control panels
- Bonding
- Insurance above current limits. Certificate available upon request.

Please let me know if you have any questions.

Sincerely,

Matt Stallbaumer

matt@systemskc.com 913-485-3307

SECTION 00300

BID FORM

Wastewater Treatment Facility Improvements Chisholm Creek Utility Authority

Wilson & Company File: 20-600-514-00

1. BID RECIPIENT

- 1.1 This Bid is submitted to Chisholm Creek Utility Authority.
- 1.2 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with Owner in the form included in the Bidding Documents to perform and furnish all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.

2. BIDDER'S ACKNOWLEDGEMENTS

2.1 Bidder accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance for sixty (60) days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Owner. Bidder will sign and submit the Agreement with the Bonds and other documents required by the Bidding Requirements within fifteen days after the date of Owner's Notice of Award.

3. BIDDER'S REPRESENTATIONS

- 3.1 In submitting this Bid, Bidder represents, as more fully set forth in the Agreement that:
 - 3.1.1 Bidder has examined and carefully studied the Bidding Documents, other related data identified in the Bidding Documents, and the following Addenda, receipt of which is hereby acknowledged:

<u>Addendum No.</u>	Addendum Date

- 3.1.2 Bidder has familiarized itself with the nature and extent of the Bidding Documents and visited the Site and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
- 3.1.3 Bidder is familiar with and is satisfied as to all Laws and Regulations that may affect cost, progress, and performance of the Work.
- 3.1.4 Bidder has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions relating to

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Bid Form 00300-1

existing surface or subsurface structures at the Site (except Underground Facilities) that have been identified in SC-4.02 as containing reliable "technical data," and (2) reports and drawings of Hazardous Environmental Conditions, if any, at the Site that have been identified in SC-4.06 as containing reliable "technical data."

- 3.1.5 Bidder has considered the information known to Bidder; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and the Site-related reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, including applying the specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents; and (3) Bidder's safety precautions and programs.
- 3.1.6 Based on the information and observations referred to in Paragraph 3.1.5 above, Bidder does not consider that further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid for performance of the Work at the price(s) bid and within the times required, and in accordance with the other terms and conditions of the Bidding Documents.
- 3.1.7 Bidder is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents.
- 3.1.8 Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and the written resolution thereof by Engineer is acceptable to Bidder.
- 3.1.9 The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work for which this Bid is submitted.

4. BIDDER'S CERTIFICATION

- 4.1 Bidder certifies that:
 - 4.1.1 This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation;
 - 4.1.2 Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid:
 - 4.1.3 Bidder has not solicited or induced any individual or entity to refrain from bidding; and
 - 4.1.4 Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 4.1.4:
 - a. "corrupt practice" means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process;
 - b. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Owner, (b) to establish bid prices

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- at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;
- c. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish bid prices at artificial, non-competitive levels; and
- d. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

5. BASIS OF BID

5.1 Bidder will complete the Work including all equipment, materials, labor and installation in accordance with the Contract Documents for the following price(s):

LUMP SUM BID PRICE*:

(written)	
Dollars (\$).

*Note: The Owner negotiated equipment prices and allowance (table below) are to be included in the Lump Sum Bid Price above as follows:

- 1. Parkson Corporation price for the Sequencing Batch Reactor equipment and blowers.
- 2. Glasco UV price for the Ultraviolet Disinfection equipment
- 3. Evoqua VAF Filter price for filtration system equipment.
- 4. Komline price for the belt filter press equipment.
- 5. Serpentix price for the conveyor system equipment.
- 6. Systems Manufacturing price for the telemetry equipment and installation.
- 7. Contractor allowance

Bid Item	Item Description	Amount	
Preneg	gotiated Equipment and Services		
1	SBR Equipment (Parkson)	\$	3,951,200
2	UV Chambers & Controls (Glasco)	\$	334,125
3	Evoqua VAF Filter	\$	233,870
4	K-S Belter Filter Press	\$	462,150
5	Pathwinder Conveyor	\$	140,700
	Controls and Telemetry (Systems		
6	Manufacturing Inc.)	\$	193,162
7	Contract Contingency Allowance	\$	600,000

Contractor Contingency Allowance: The Contract Contingency Allowance (Bid Item #7 in the above chart) shall be included in the Lump Sum Base Bid Price. The contractor's profit and overhead shall be included in the Contract Price so that if these allowances are authorized, no additional Contractor's profit or overhead shall be included. These allowances cannot be expended without a written directive from the Engineer.

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Basin	Diameter (ft)	Estimated Sludge Depth (ft)	Volume of Sludge (cubic ft)
Proposed Lime Sludge Thickener #1	32	2	1,608.5
Proposed Lime Sludge Thickener #2	32	2	1,608.5
Proposed EQ Basin #2	67	1	3,525.6
Proposed Primary Digester #1	67	0.5	1,762.8
Proposed Primary Digester #2	67	0.5	1,762.8
Total			10,268.3

Bid Item	Quantity (cu. ft)	Unit Cost (\$)	Total Cost (\$)
8. Sludge Removal	10,268		

Contractor shall use estimated sludge quantities provided in chart above and the unit price should include amount considered by Bidder to be adequate to cover Contractor's overhead and profit. Contractor shall fill in a unit cost in the event that the total sludge quantity differs in construction so payment can be increase/reduced as needed. The Total Cost of Bid Item #8 shall be included in the Lump Sum Bid Price.

Bidder acknowledges that estimated quantities are not guaranteed and are solely for the purpose of comparison of Bids, and final payment for all Unit Price Work will be based on actual quantities, determined as provided in the Contract Documents.

5.2 **BID ALTERNATES**

The Owner reserves the right to accept or reject the following alternates in any combination. Upon acceptance of the alternate(s) by the Owner, the named items shall be furnished, removed, or adjusted as shown on the Drawings and as specified. The Total Lump Sum will be modified accordingly.

Alternate No. 1: Work includes the addition of replacing all conductors in the headworks electrical room. As well as in the pump disconnects. The conductors in the MCC and and pump disconnects are heavily corroded with copper sulfide and will need replaced (E-451).

otal Price Add \$
Alternate No. 2: Work includes the addition of replacing all control terminal blocks in the neadworks electrical room. The terminal block contacts are also corroded with copper ulfide and will need replaced (E-451).
otal Price Add \$

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Bid Form 00300-4

otal Price Add \$			

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Bid Form 00300-5

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TIME OF COMPLETION

6.

7.

8.

9.

6.1	Bidder agrees that the Work will be substantially complete within calendar days after the date when the Contract Times commence to run as provided in the General Conditions, and will be completed and ready for final payment in accordance with the General Conditions within calendar days after the date when the Contract Times commence to run.					
6.2	Bidder accepts the provisions of the Agreement as to liquidated damages in the event of failure to complete the Work within the times specified above.					
ATTA	CHMEN	TS TO THIS BID				
7.1	The fol	lowing documents are submitted with and made a condition of this Bid:				
	7.1.1 7.1.2 7.1.3	Required Bid security; List of Subcontractors Evidence of authority to do business in the state of the Project; or a written covenant to obtain such authority within the time for acceptance of Bids;				
DEFIN	ED TER	MS				
8.1	The terms used in this Bid which have the meanings assigned to them as defined in the Instruction to Bidders, the General Conditions, and the Supplementary Conditions.					
ADDR	ESS					
9.1	Commu	unications concerning this Bid shall be addressed to:				
	9.1.1	The address of Bidder indicated below.				
BID SU	JBMITT	AL				
10.1	This Bi	d is submitted by:				
If Bidd	ler is:					
An Ind	<u>ividual</u>					
Na	me (type	ed or printed):				
Ву	:	(Individual's signature)				
		(Individual's signature)				
Do	ing busii	ness as:				
A Part	<u>nership</u>					
Pa	rtnership	Name:				
Ву	: (Signat	ure of general partner attach evidence of authority to sign)				

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Name (typed or printed):	_
A Corporation	
Corporation Name:	_(SEAL)
State of Incorporation:	-
By:	
By:(Signature attach evidence of authority to sign)	
Name (typed or printed):	_
Title:	_
(CORPORATE SEAL)	
Attest	_
Date of Qualification to do business in is/	·
A Joint Venture	
Name of Joint Venture:	_
First Joint Venturer Name:	_(SEAL)
By:(Signature of first joint venture partner attach evidence of authority to sign)	
(Signature of first joint venture partner attach evidence of authority to sign)	
Name (typed or printed):	_
Title:	_
Second Joint Venturer Name:	_(SEAL)
By:(Signature of second joint venture partner attach evidence of authority to sign)	_
Name (typed or printed):	<u> </u>
Title:	<u> </u>
(Each joint venturer must sign. The manner of signing for each individual, partnership, and corporation that is a party to the joint venture should be in the manner indicated above.)	

Bid Form 00300-7

Bidder's Business Address	
Phone No.	_ Fax No
E-mail	
DUN & Bradstreet D-U-N-S Number:	
SUBMITTED on, 20	

END OF SECTION

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Bid Form 00300-8