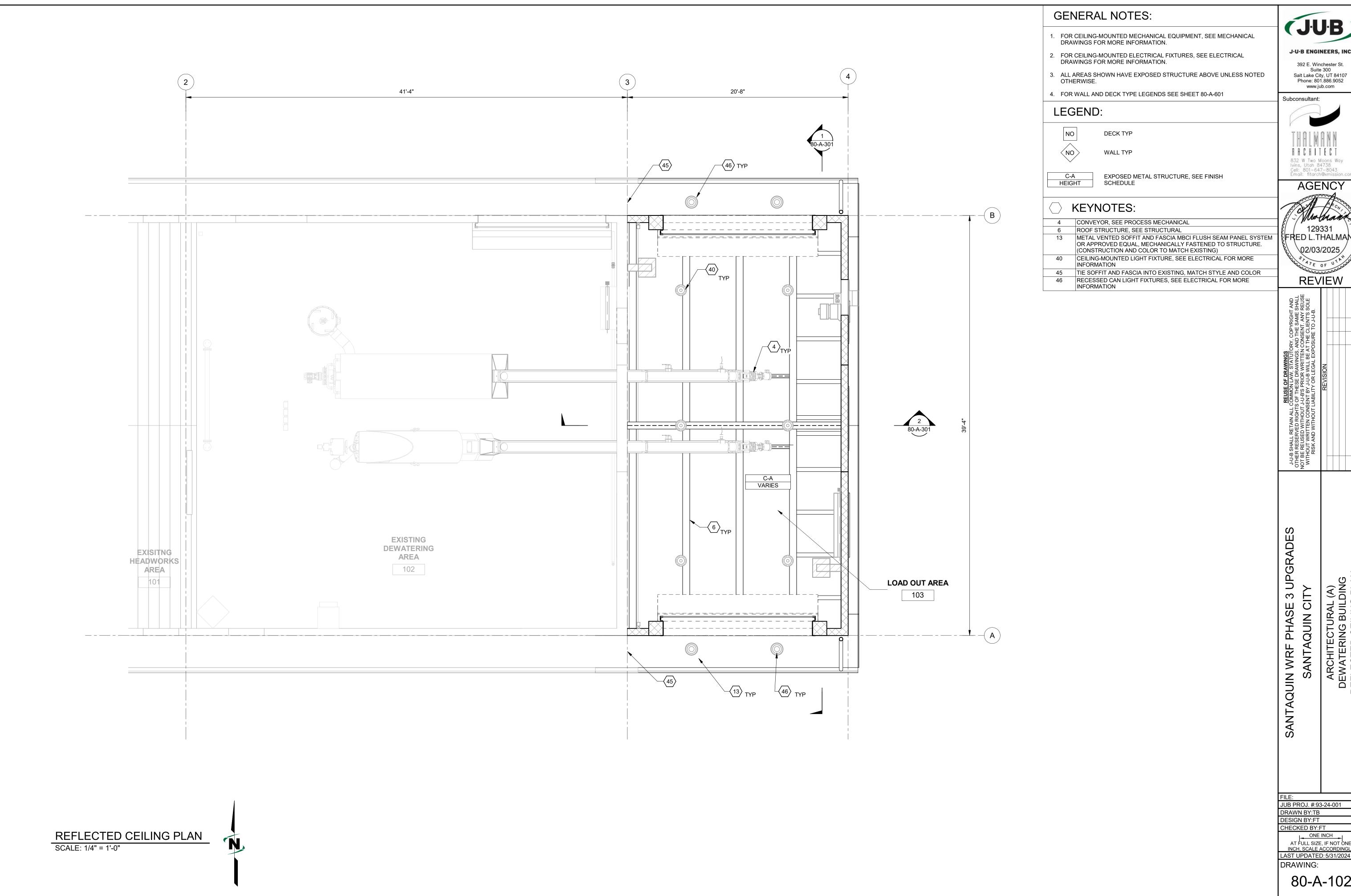


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**REVIEW** 



Subconsultant:

AGENCY

∛FRED L.THALMANN 02/03/2025

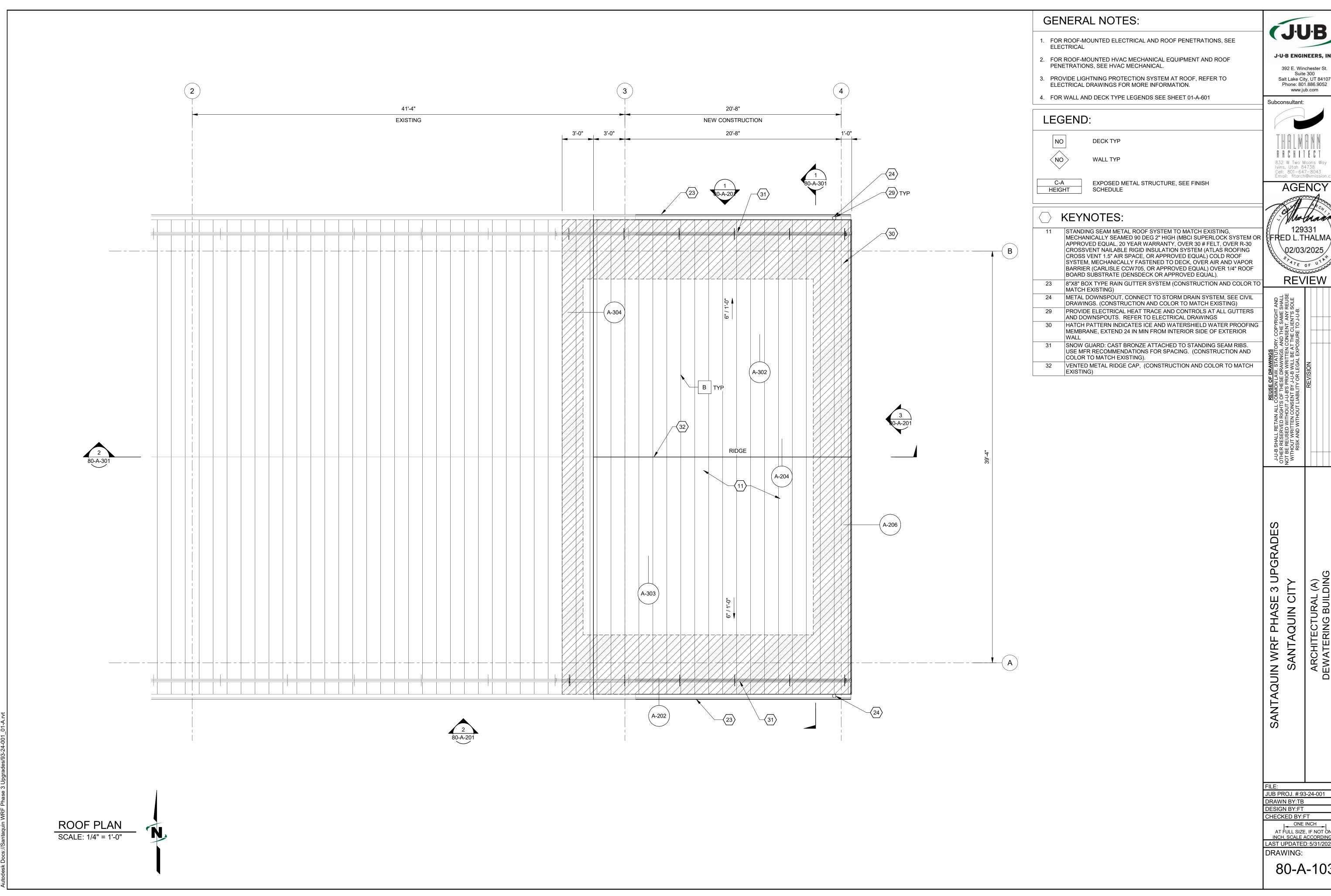
**REVIEW** 

JUB PROJ. #:93-24-001 DRAWN BY:TB DESIGN BY:FT

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**REVIEW** 

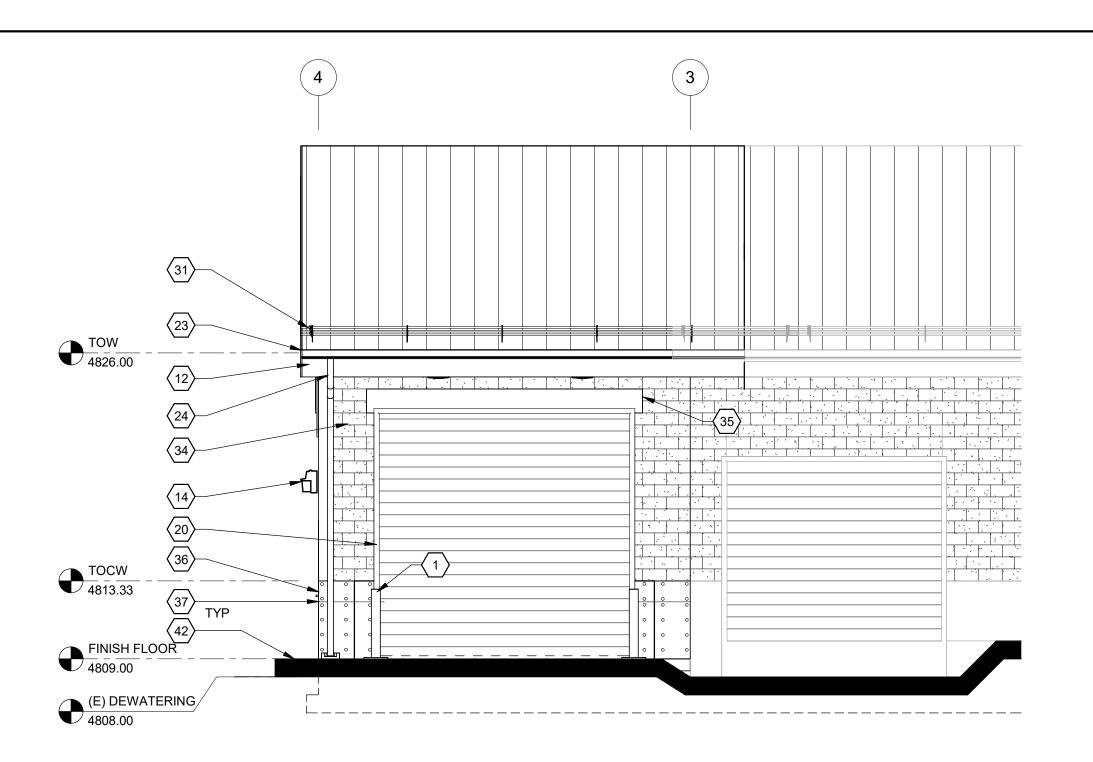
ARCHITECTURAL (A)
DEWATERING BUILDING
ROOF PLAN

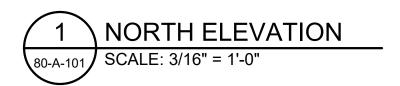
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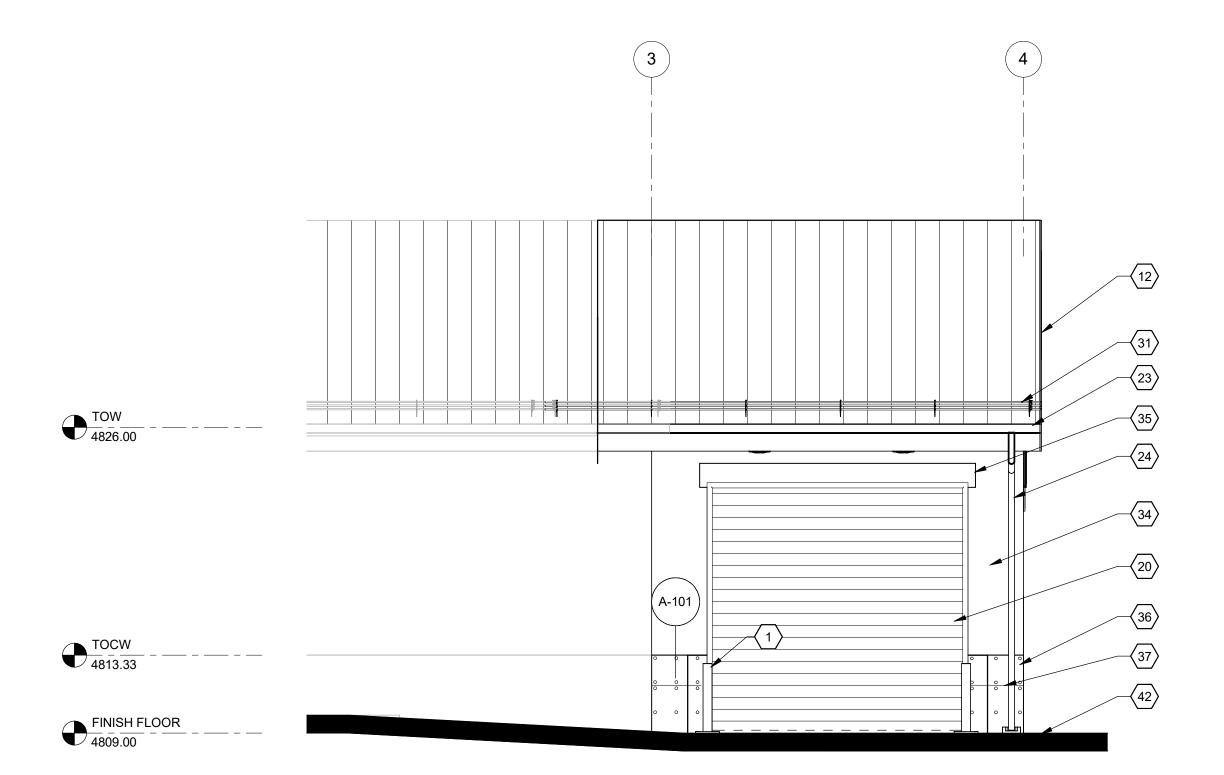
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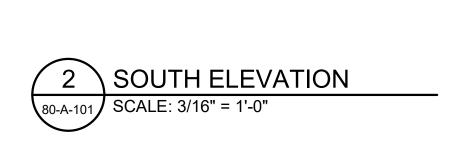
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INCH, SCALE ACCORDINGLY

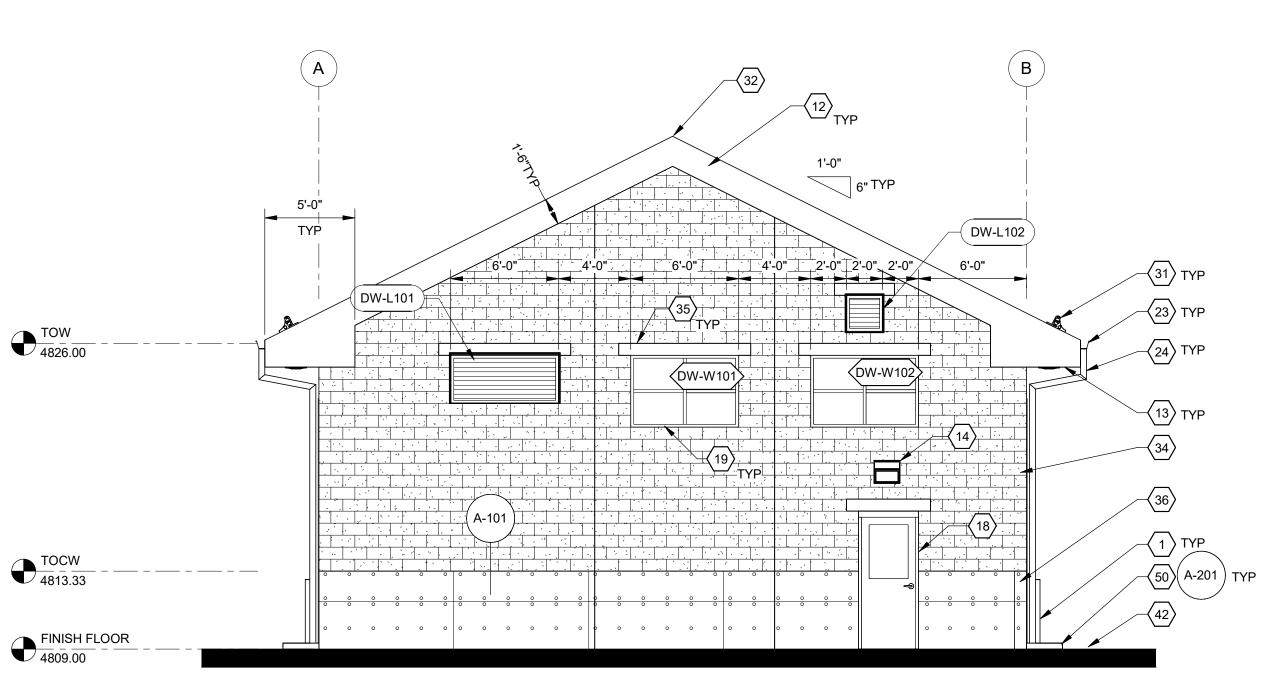
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- FOR SURFACE-MOUNTED LIGHT FIXTURE TYPES AND LOCATIONS, SEE ELECTRICAL DRAWINGS
- 2. SEE ROOF PLAN FOR ICE AND WATERSHIELD NOTES AND EXTENT

- TO STRUCTURAL FOR SIZE AND REINFORCING. (MATCH EXISTING)
- 3/4" CHAMFER REVEAL GROOVE IN CONCRETE HORIZONTAL AND VERTICAL 3/4" CHAMFER REVEAL GROOVES AT 8'-0" OC
- 42 FINISH GRADE, SEE CIVIL 50 SPLASH BLOCK

Salt Lake City, UT 84107 **KEYNOTES:** 1 42" HIGH BOLLARD, SEE CIVIL FOR MORE INFORMATION Subconsultant: 12 FLUSH ALUMINUM FASCIA 13 METAL VENTED SOFFIT AND FASCIA MBCI FLUSH SEAM PANEL SYSTEM OR APPROVED EQUAL, MECHANICALLY FASTENED TO STRUCTURE. (CONSTRUCTION AND COLOR TO MATCH EXISTING) 14 WALL PACK LIGHT FIXTURE, SEE ELECTRICAL 18 FRP DOOR WITH ALUMINUM FRAME, COLOR: BRONZE, WITH INSULATED WINDOW, GRAY TINT 19 INSULATED WINDOW WITH GRAY TINT, ALUMINUM FRAME 832 W Two Moons Way Ivins, Utah 84738 Cell: 801—647—8043 Email: fltarch@xmission.c 20 OVERHEAD COILING DOOR AND FRAME, COLOR: BRONZE 23 8"X8" BOX TYPE RAIN GUTTER SYSTEM (CONSTRUCTION AND COLOR T MATCH EXISTING) 24 METAL DOWNSPOUT, CONNECT TO STORM DRAIN SYSTEM, SEE CIVIL DRAWINGS. (CONSTRUCTION AND COLOR TO MATCH EXISTING) SNOW GUARD: CAST BRONZE ATTACHED TO STANDING SEAM RIBS. USE MFR RECOMMENDATIONS FOR SPACING. (CONSTRUCTION AND COLOR TO MATCH EXISTING). VENTED METAL RIDGE CAP, (CONSTRUCTION AND COLOR TO MATCH EXISTING) SPLIT-FACE CONCRETE MASONRY (FIELD). REFER TO WALL TYPES ON FLOOR PLAN (MATCH EXISTING) FRED L.THALMANN CUT-FACE CONCRETE MASONRY LINTEL ABOVE DOORS, WINDOWS, AND LOUVERS. 8" HIGHT (16" HIGH AT OVERHEAD DOORS) AND EXTEND 8" PAST EDGE OF OPENING BOTH SIDES (MATCH EXISTING) ARCHITECTURAL CONCRETE FOUNDATION WALL WITH CONE-TIES AT 1'-4" OC, EACH WAY, TYPICAL WITH MEDIUM SANDBLAST FINISH. REFER

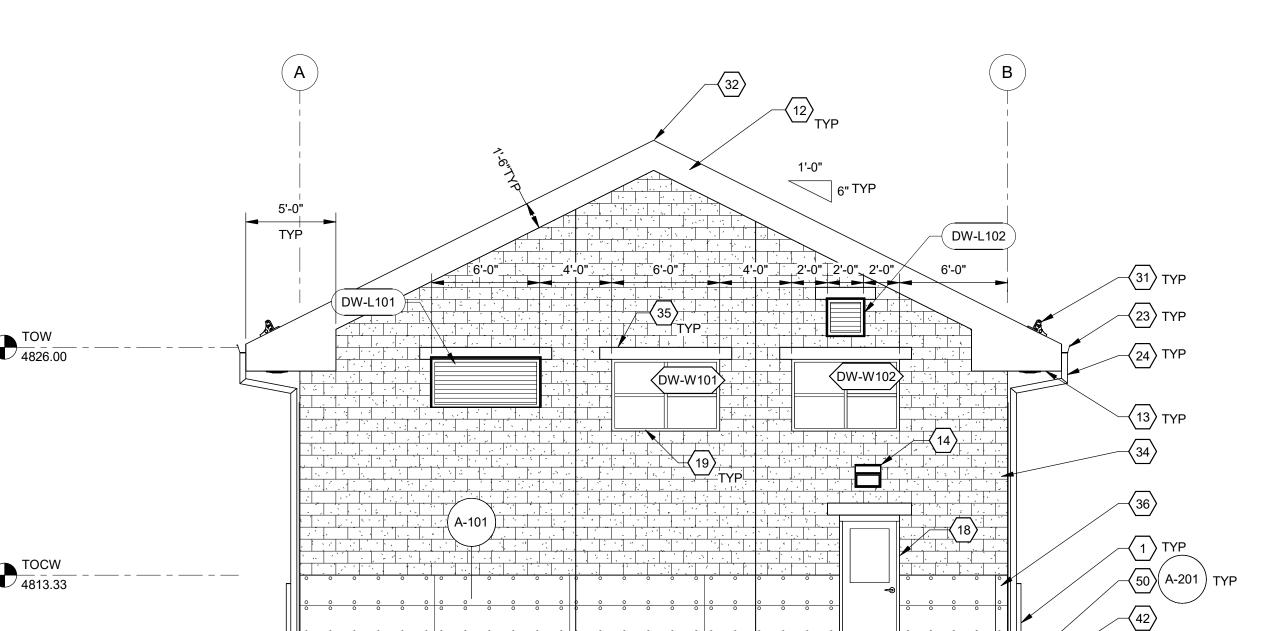
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**AGENCY** 

129331



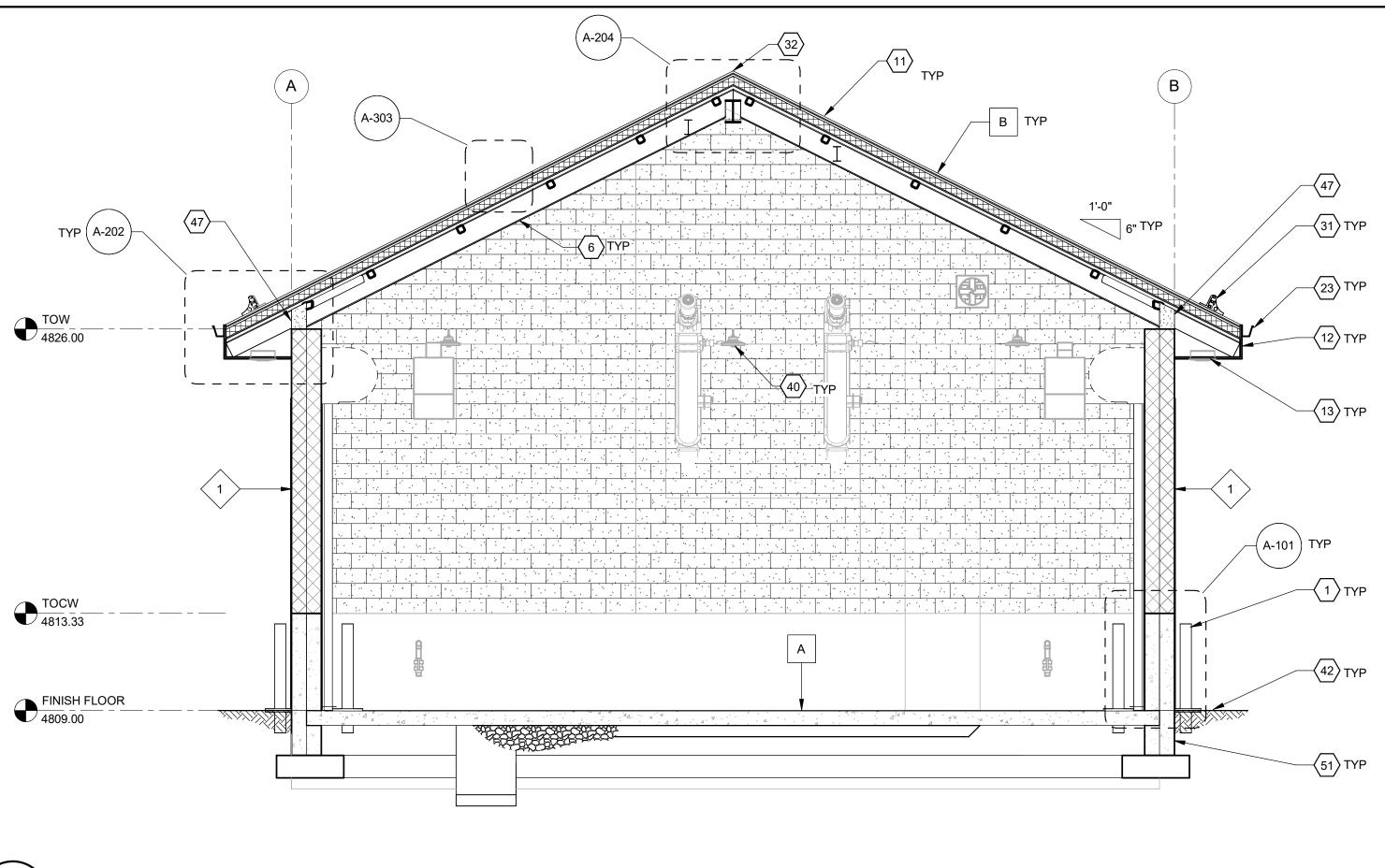
EAST ELEVATION SCALE: 3/16" = 1'-0"

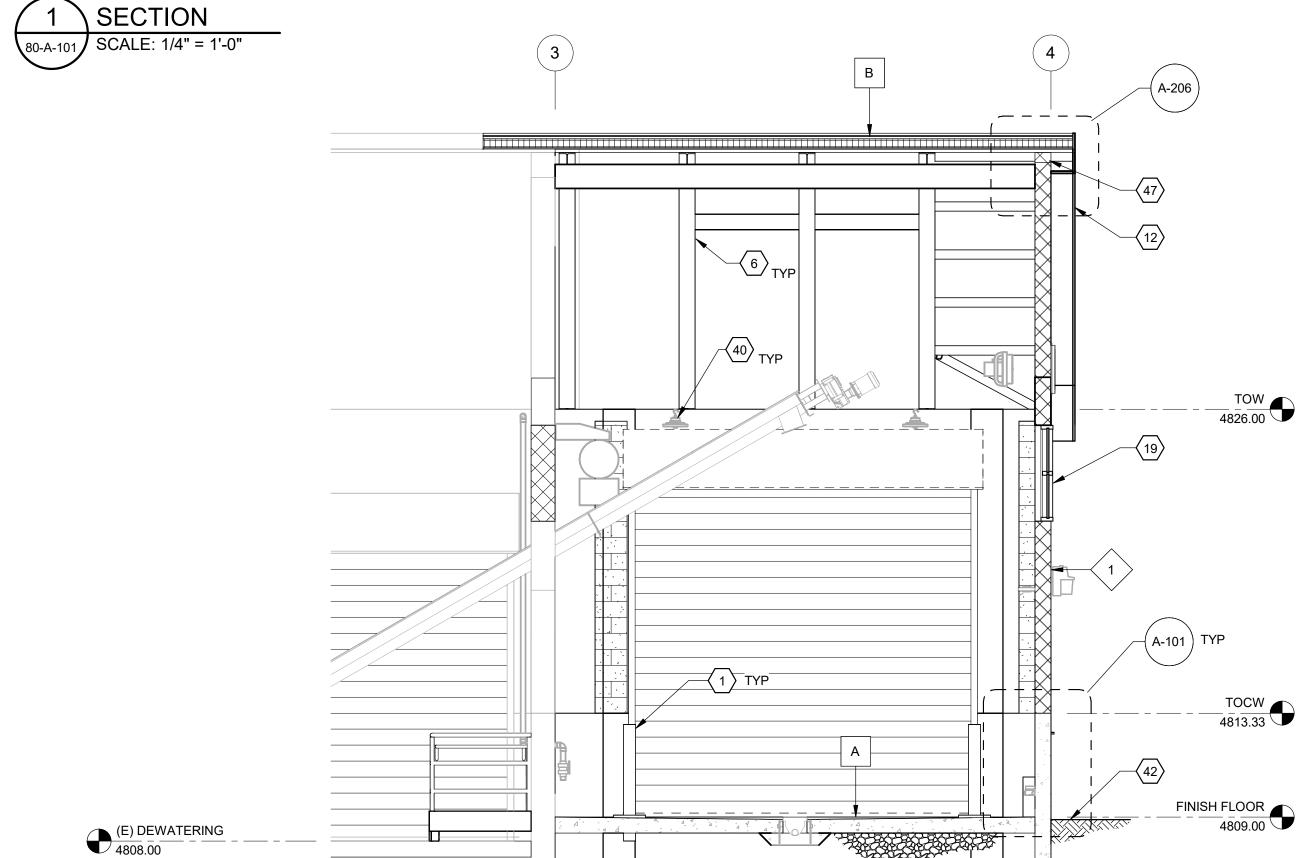
SANTAQUIN WRF PHASE 3 UPGRADES SANTAQUIN CITY ARCHITECTURAL (A)
DEWATERING BUILDING
ELEVATIONS

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AT FULL SIZE, IF NOT ONE
INCH, SCALE ACCORDINGLY
LAST UPDATED: 5/31/2024

DRAWING:







#### **GENERAL NOTES:**

- ALL DIMENSIONS ARE TO FACE OF STUD OR FACE OF STRUCTURAL MASONRY AND/OR CONCRETE.
- 2. DOOR AND WINDOW IN MASONRY AND CONCRETE WALLS LOCATION DIMENSIONS ARE TO ROUGH OPENING UNLESS NOTED OTHERWISE.
- 3. FIELD VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS.
- 4. FOR STRUCTURAL WALLS, FLOORS, FLOOR SLOPING, FRAMING, AND
- OTHER STRUCTURAL COMPONENTS, SEE STRUCTURAL DRAWINGS.
- 5. PROVIDE SOLID GROUTED CMU WALL FOR ALL WALL MOUNTED EQUIPMENT, SEE STRUCTURAL DRAWINGS.
- 6. FOR STAIR AND RAILING CONSTRUCTION AND DETAILING, SEE STRUCTURAL DRAWINGS.
- FOR EXTENT OF METAL OR FRP GRATING AND DETAILS, SEE STRUCTURAL DRAWINGS.
- 8. FOR SIZE AND SPACING OF ALL VERTICAL AND HORIZONTAL REINFORCING BARS, SEE STRUCTURAL DRAWINGS.
- 9. FOR LOCATION AND SIZE OF HVAC EQUIPMENT, SUPPORT PADS, VENTS, AND PIPING, SEE HVAC DRAWINGS.
- 10. FOR FLOOR DRAIN LOCATIONS, SEE MECHANICAL DRAWINGS.
- 11. FOR PROCESS MECHANICAL PIPING PENETRATIONS, SEE PROCESS MECHANICAL DRAWINGS.
- 12. FOR LOCATION AND SIZE OF RECESSED ELECTRICAL DEVICES IN WALLS, SEE ELECTRICAL DRAWINGS.
- 13. FOR LIGHT FIXTURE TYPES AND LOCATIONS, SEE ELECTRICAL DRAWINGS.
- 14. FOR SITE WORK, INCLUDING BUT NOT LIMITED TO WALKWAYS, DRIVES, BOLLARDS, AND EQUIPMENT PADS EXTERIOR TO THE BUILDING
- 15. ITEMS NOT NOTED ON DRAWINGS SHALL BE CONSIDERED THE SAME AS NOTED ITEMS WHICH ARE GRAPHICALLY REPRESENTED IN THE SAME
- 16. FOR WALL AND DECK TYPE LEGENDS SEE SHEET 80-A-601

ENVELOPE, SEE CIVIL DRAWINGS.

### SHEET KEYED NOTES

42" HIGH BOLLARD,	SEE CIVIL	FOR MORE	INFORMATION

6 ROOF STRUCTURE, SEE STRUCTURAL STANDING SEAM METAL ROOF SYSTEM TO MATCH EXISTING,

MECHANICALLY SEAMED 90 DEG 2" HIGH (MBCI SUPERLOCK SYSTEM OF APPROVED EQUAL, 20 YEAR WARRANTY, OVER 30 # FELT, OVER R-30 CROSSVENT NAILABLE RIGID INSULATION SYSTEM (ATLAS ROOFING CROSS VENT 1.5" AIR SPACE, OR APPROVED EQUAL) COLD ROOF SYSTEM, MECHANICALLY FASTENED TO DECK, OVER AIR AND VAPOR BARRIER (CARLISLE CCW705, OR APPROVED EQUAL) OVER 1/4" ROOF BOARD SUBSTRATE (DENSDECK OR APPROVED EQUAL).

12 FLUSH ALUMINUM FASCIA 13 METAL VENTED SOFFIT AND FASCIA MBCI FLUSH SEAM PANEL SYSTEM OR APPROVED EQUAL, MECHANICALLY FASTENED TO STRUCTURE.

(CONSTRUCTION AND COLOR TO MATCH EXISTING) 19 INSULATED WINDOW WITH GRAY TINT, ALUMINUM FRAME

8"X8" BOX TYPE RAIN GUTTER SYSTEM (CONSTRUCTION AND COLOR TO

SNOW GUARD: CAST BRONZE ATTACHED TO STANDING SEAM RIBS. USE MFR RECOMMENDATIONS FOR SPACING. (CONSTRUCTION AND COLOR TO MATCH EXISTING).

VENTED METAL RIDGE CAP, (CONSTRUCTION AND COLOR TO MATCH

CEILING-MOUNTED LIGHT FIXTURE, SEE ELECTRICAL FOR MORE

INFORMATION 42 FINISH GRADE, SEE CIVIL

CONTINUOUS SPRAY FOAM INSULATION R-20 BETWEEN TOP OF WALL AND ROOF DECK

51 DAMPROOFING, REFER TO STRUCTURAL

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**REVIEW** 

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INCH, SCALE ACCORDINGLY

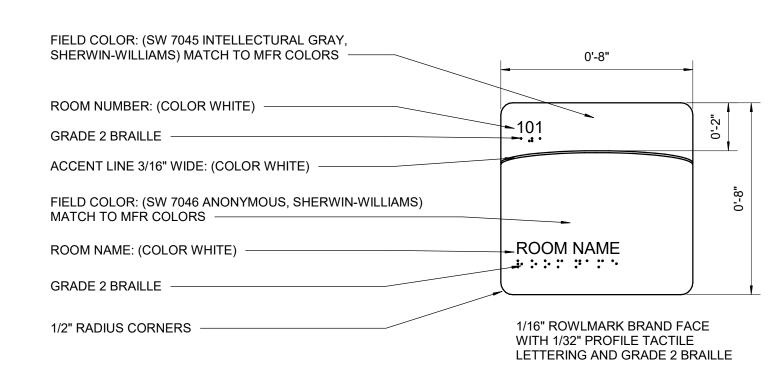
LAST UPDATED: 5/31/2024 DRAWING:

						ROOI	M SCHE	DULE - DE	WATER	ING BUIL	DING							
	NORTH EAST SOUTH WEST CEILING																	
BUILDING	ROOM NAME	NUMBER	FLOOR	WALL	WAINSCOT	BASE	WALL	WAINSCOT	BASE	WALL	WAINSCOT	BASE	WALL	WAINSCOT	BASE	TYPE	HEIGHT	REMARKS
DEWATERING BUILDING	LOAD OUT AREA	103	EP-1	EP-2	-		EP-2			EP-2			EP-2			GALV	VARIES	DOOR JAMBS AN-1

	ROOM SCHEDULE - SOLIDS HANDLING BUILDING																	
	NORTH EAST SOUTH WEST CEILING																	
BUILDING	ROOM NAME	NUMBER	FLOOR	WALL	WAINSCOT	BASE	TYPE	HEIGHT	REMARKS									
SOLIDS HANDLING BUILDING	SOLIDS HANDLING ROOM	101	EP-1	P-1	EP-2 3'-4" HIGH		GALV	VARIES	DOOR JAMBS AN-1									

	ROOM SCHEDULE - CENTER STREET LIFT STATION																	
					NORTH			EAST			SOUTH			WEST		CEIL	ING	
BUILDING	ROOM NAME	NUMBER	FLOOR	WALL	WAINSCOT	BASE	TYPE	HEIGHT	REMARKS									
CENTER STREET LIFT STATION	ELECTRICAL ROOM	101	SC-1	P-1			P-1			P-1			P-1			P-1 GYP BD	VARIES	DOOR JAMBS AN-1

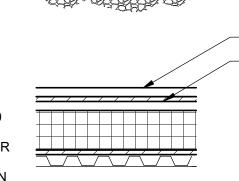
			COL	OR SCHEDULE	
MARK	MATERIAL	MANUFACTURER	COLOR	STYLE NUMBER	REMARKS
SM-1	SEALED MASONRY		CLEAR		CLEAR-SEAL-MASONRY
SC-1	SEALED CONCRETE		CLEAR		CLEAR_SEAL_CONCRETE
P-1	PAINT	SHERWIN WILLIAMS	WESTHIGHLAND WHITE SW7566	SEMI GLOSS	TRIM WALL AND CEILING
P-2	STEEL TRIM	SHERWIN WILLIAMS	MATCH EXISTING BUILDING	SEMI GLOSS	OVER HEAD DOOR STEEL FRAMES
P-3	POWDER COAT ALUM	BY MFR	MATCH EXISTING BUILDING	FROM RAL COLOR CHART	OVER HEAD DOORS
EP-1	NONSKID FLOOR	EPOXY FLOOR COATING	GRAY		FLOOR
EP-2	WALL	EPOXY COATING	GRAY		WALL
AN-1	ALUMINUM	BY MFR	BRONZE ANODIZED	MATCH EXISTING BUILDING	DOOR AND WINDOW FRAMES
FRP-1	FRP	SPECIAL LITE	MATCH EXISTING BUILDING	FROM MFR STANDARD COLORS	PEBBLE FINISH





WALL TYPES

1	TYPICAL STRUCTURAL CMU WALL ON CONCRETE WALL BASE, SEE PLANS AND STRUCTURAL:	XXXXXXXX
$\checkmark$	,	XXXXXXXX
	STRUCTURAL CONCRETE WALL/CURB	
	<ul> <li>STRUCTURAL CMU WALL, SEE STRUCTURAL</li> </ul>	$\times$ $\times$ $\times$ $\times$ $\times$ $\times$ $\times$
	CEE DOOM COLEDUI E FOR INTERIOR FINICIA	



- METAL ROOFING

- AIR SPACE



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	1 H H   W H N N
	A A C H I T F C T

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**REVIEW** 

3 UPGRADE ARCHITECTURAL (A)
DEWATERING BUILDING
SCHEDULES SANTAQUIN WRF PHASE SANTAQUIN C

JUB PROJ. #:93-24-001 DRAWN BY:TB DESIGN BY:FT CHECKED BY:FT

ONE INCH
AT FULL SIZE, IF NOT ONE
INCH, SCALE ACCORDINGLY
LAST UPDATED: 5/31/2024

DRAWING: 80-A-601

 SEE ROOM SCHEDULE FOR INTERIOR FINISH DECK TYPES A TYPICAL SLAB ON GRADE:

• CONCRETE SEALER, SEE ROOM SCHEDULE CONCRETE SLAB, SEE STRUCTURAL FOR SPECIFICATIONS B TYPICAL ROOF:
• STANDING SE STANDING SEAM METAL ROOF SYSTEM TO MATCH EXISTING, MECHANICALLY SEAMED 90 DEG 2" HIGH (MBCI SUPERLOCK SYSTEM OR APPROVED EQUAL, 20 YEAR WARRANTY, OVER 30 # FELT OVER R-30 CROSSVENT NAILABLE RIGID INSULATION SYSTEM (ATLAS ROOFING CROSS VENT 1.5" AIR SPACE, OR APROVED EQUAL) COLD ROOF SYSTEM, MECHANICALLY FASTENED TO DECK, • AIR AND VAPOR BARRIER (CARLISLE CCW705, OR APPROVED EQUAL) OVER 1/4" ROOF BOARD SUBSTRATE (DENSDECK OR APPROVED EQUAL).

#### DOOR SCHEDULE

															DOO	11 30	יוובטי	OLL											
					DOO	R		DOO	R OPENING DET	AILS			FR	AME			VIEW		TRANSOM		-	RANSOM DETA	ILS				DOOR S	IGNAGE	-
BUILDING	NO	TYPE \	WIDTH	HEIGHT	THICK.	MATERIAL	FINISH	HEAD	JAMB	THRESHOLD	TYPE	WIDTH	HEIGHT	MAT	FIN	WIDTH	HEIGHT	MAT THICK	MAT	FIN	HEAD	JAMB	MULLION	RATING GROUP	REMARKS	QTY	RM NAME	ROOM NO.	DETAIL
DEWATERING BUILDING	DW-D101	Α	3'-0"	7'-4"	1 3/4"	FRP	FRP-1	A-102	A-103	A-104	F-1	3'-4"	7'-8"	ALUM	AN-1	2'-2"	3'-0"	G2						01		1	EXIT		2/01-A-601
DEWATERING BUILDING	DW-D102	E	14'-0"	13'-8"	1"	ALUM	P-3	A-110	A-111	A-112		14'-0"	13'-8"	STEEL	P-2									04	COILING DOOR, POWER OPERATED				
DEWATERING BUILDING	DW-D103	E	14'-0"	13'-8"	1"	ALUM	P-3	A-110	A-111	A-112		14'-0"	13'-8"	STEEL	P-2									04	COILING DOOR, POWER OPERATED				
CENTER STREET LIFT STATION	LS-D101	В	3'-0"	7'-8"	1 3/4"	FRP	FRP-1	A-102	A-103	A-104	F-1	3'-4"	8'-0"	ALUM	AN-1									01		1	EXIT		2/01-A-601
CENTER STREET LIFT STATION	LS-D102	D	6'-4"	7'-8"	1 3/4"	FRP	FRP-1	A-102	A-103	A-104	F-1	6'-8"	8'-0"	ALUM	AN-1									03	PAIR OF DOORS	1	EXIT		2/01-A-601
SOLIDS HANDLING BUILDING	SH-D101	Α	3'-0"	7'-0"	1 3/4"	FRP	FRP-1	A-102	A-103	A-104	F-1	3'-4"	7'-4"	ALUM	AN-1	2'-2"	3'-0"	G2						01					2/01-A-601
SOLIDS HANDLING BUILDING	SH-D102	Е	10'-0"	10'-0"	1"	ALUM	P-3	A-110	A-111	A-112		10'-0"	10'-0"	STEEL	P-2									04	COILING DOOR, POWER OPERATED				

		W	/INDOW	SCHEDULE									
BUILDING	WINDOW	WINDOW OPENING DETAILS	FRAME	WINDOW		REMARKS							
BOILDING	WINDOW NO. WIDTH HEIGHT TYPE	HEAD JAMB SILL	MATERIAL	FRAME FINISH GLAZING	HEAD HEIGHT	REWARKS							
DEWATERING BUILDING	DW-W101 6'-0" 4'-0" A	A-105 A-107 A-106	ALUM	AN-1 G1	16'-4"								
DEWATERING BUILDING	DEWATERING BUILDING DW-W102 6'-0" 4'-0" A A-105 A-107 A-106 ALUM AN-1 G1 16'-4"												

						LOUVE	R SCHEDL	ILE	
LC	UVER		LO	UVER OPENING DETAI	ILS	FRAME			REMARKS
LOUVER NO.	WIDTH	HEIGHT	HEAD	JAMB	SILL	MATERIAL	FRAME FINISH	HEAD HEIGHT	REWARKS
DW-L101	6'-0"	2'-8"	A-108	A-108	A-109	ALUM	AN-1	15'-4"	
DW-L102	2'-0"	2'-0"	A-108	A-108	A-109	ALUM	AN-1	19'-8"	
SH-L101	2'-0"	2'-8"	A-108	A-108	A-109	ALUM	AN-1	10'-0"	
SH-L102	2'-0"	2'-8"	A-108	A-108	A-109	ALUM	AN-1	10'-0"	
SH-L103	2'-8"	2'-8"	A-108	A-108	A-109	ALUM	AN-1	9'-4"	

#### **GLAZING TYPES**

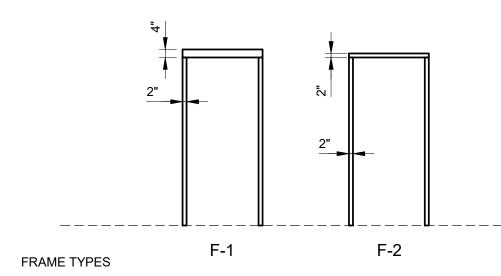
- G1 1" THICK INSULATING GLASS: 1/4" TINTED FLOAT GLASS EXTERIOR AND 1/4" CLEAR FLOAT GLASS INTERIOR WITH 1/2" AIR SPACE. TINT: PPG SOLARBAN 60 GRAY. LOW-E
- G2 1" THICK INSULATING GLASS TEMPERED: 1/4" TINTED TEMPERED GLASS EXTERIOR AND 1/4" CLEAR TEMPERED GLASS INTERIOR WITH 1/2" AIR SPACE. TINT: PPG SOLARBAN 60 ,GRAY. LOW-E. NOTE: EXTERIOR DOOR GLAZING
- G3 CLEAR TEMPERED GLASS SEE DOOR SCHEDULE FOR RATING

#### DOOR HARDWARE SCHEDULE

HW SE		ITEM	MODEL NO	FIN	MANUE
	 DAID		MODEL NO.		MANUF
1 1/2	PAIR	BUTTS	BB5000 NRP 4.5 X 4.5 HD	630	BOMMER
1	EA	EXIT	98NL	630	VON DUPRIN
1	EA	CLOSER	P4041 CUSH		LCN
1	EA	THREASHOLD	171A	630	PEMKO
1	EA	WEATHER STRIP	S88D-17		PEMKO
1	EA	SWEEP	315CN	630	PEMKO
HW SE	T: 02				
QTY		ITEM	MODEL NO.	FIN	MANUF
1 1/2	PAIR	BUTTS	BB5000 NRP 4.5 X 4.5 HD	630	BOMMER
1	EA	LOCKSET STOREROOM	L-SERIES L9080RDX06	630	SCHLAGE
1	EA	CLOSER	P4041 CUSH		LCN
1	EA	WEATHER STRIP	S88D-17		PEMKO
1	EA	SWEEP	315CN		PEMKO
1	EA	THREASHOLD	171A	630	PEMKO
HW SE	T· 03				
QTY		ITEM	MODEL NO.	FIN	MANUF
4	PAIR	BUTTS	BB5000 NRP 4.5 X 4.5 HD	630	BOMMER
2	EA	EXIT	33 L	630	VON DUPRIN
2	EA	CLOSER	P4041 CUSH		LCN
2	EA	WEATHER STRIP	303AS		PEMKO
2	EA	SWEEP	315CN		PEMKO
1	EA	THREASHOLD	171A	630	PEMKO
1	EA	REMOVABLE MULION	KR 4954	630	VON DUPRIN

HW SET: 04 HARDWARE BY MANUFACTURER OVERHEAD DOOR

TO SLAB	DOOR HEIGHT, TYP						
DOOR TYPES		Α	В	С	D	Е	
	<u>*</u> 4		1				



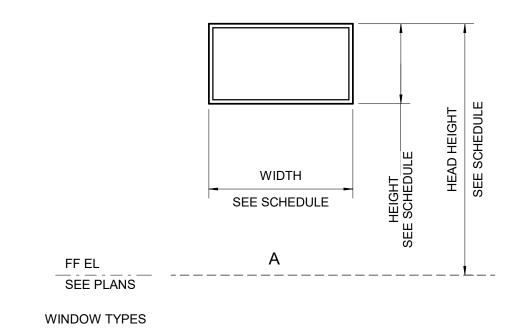
BUILDING

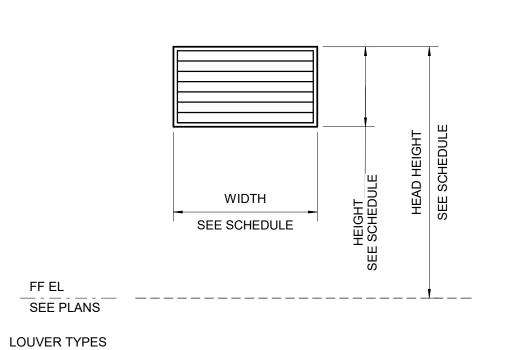
DEWATERING BUILDING

DEWATERING BUILDING

SOLIDS HANDLING BUILDING SOLIDS HANDLING BUILDING

SOLIDS HANDLING BUILDING





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SANTAQUIN WRF PHASE 3 UPGRADES SANTAQUIN CITY

ARCHITECTURAL (A) DEWATERING BUILDING SCHEDULES

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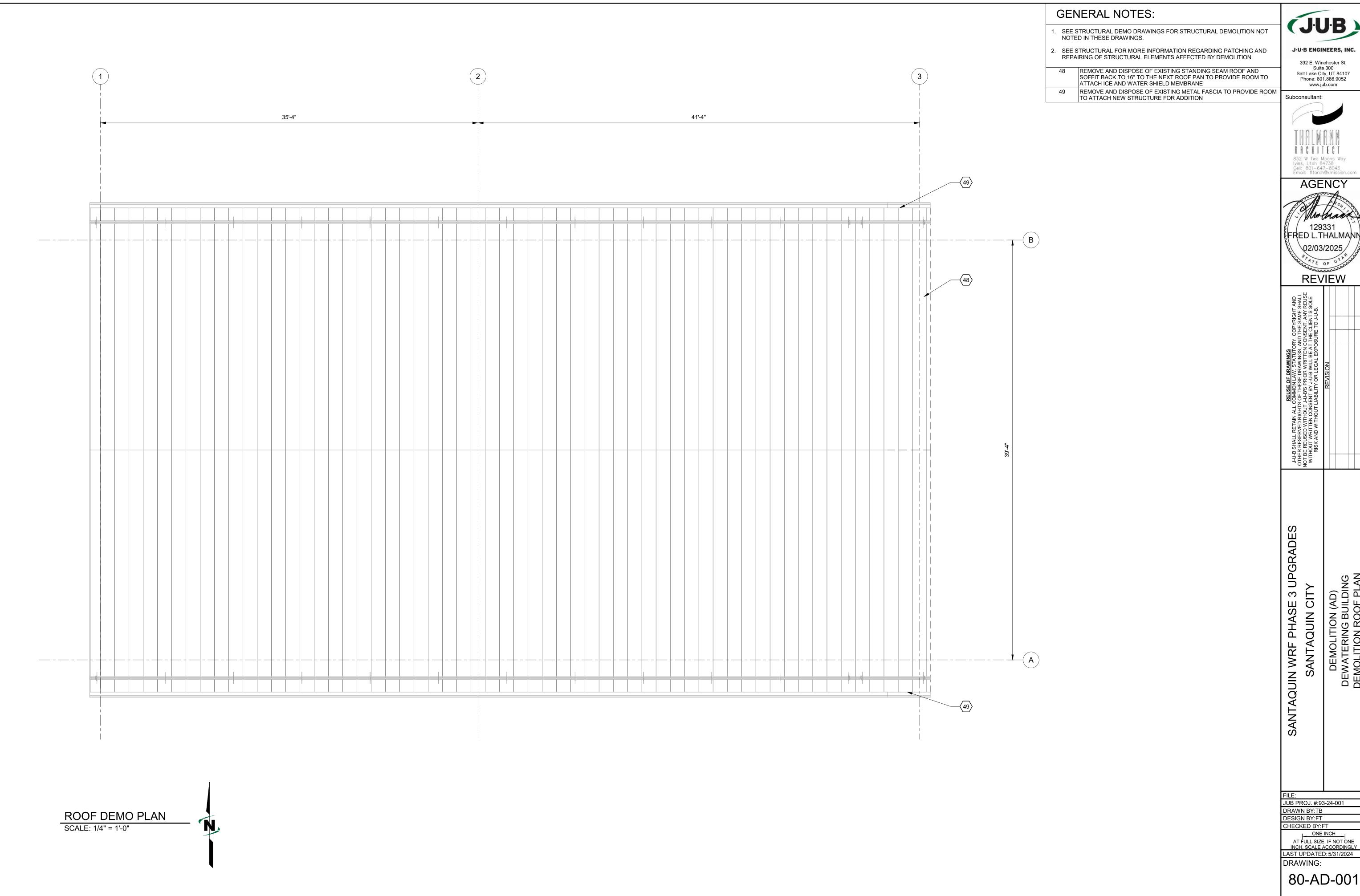
AGENCY

129331 FRED L.THALMANN

**REVIEW** 

Subconsultant:

DRAWING: 80-A-602



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JUB PROJ. #:93-24-001 DRAWN BY:TB

80-AD-001

	S	SOLIDS HAI	NDLING BUI	LDING -	CODE	SUMMAR	Y		
	APPLI	CABLE CODES				TYPE OF CONST PER IBC CHAP			
BUILDING CODE: ELECTRICAL CODE: PLUMBING CODE:	2020 NATIONAL 2021 INTERNAT	TIONAL BUILDING CODE L ELECTRICAL CODE TIONAL PLUMBING CODE		CONSTRUCTION	TYPE IBC TABLE	601: TYP	E II-B		
MECHANICAL CODE: ENERGY CODE:		TIONAL MECHANICAL CODE TIONAL ENERGY CONSERV		EXTERIOR WALL	FIRE RESISTANC	E BASED ON FIRE SEPA	ARATION DISTAN	ICE (TABL	E 602)
FIRE CODE: ACCESSIBILITY CODE: EXISTING BUILDING CODE:	2021 INTERNAT	TIONAL FIRE CODE TIONAL BUILDING CODE (IC TIONAL EXISTING BUILDING		EXTERIOR WALL LOCATION	DIST. TO PF	ROPERTY LINE	FIRE RATING		
				NORTH	X > 30'		0		
RISK CATEGORY:	III WASTEWATE	ER TREATMENT FACILILTY,	IBC TABLE 1604.5	EAST	X > 30'		0		
0.0		A COLFICATION AND		SOUTH	X > 30'		0		
OC		_ASSIFICATION AND   IBC CHAPTER 3	USE	WEST	X > 30'		0		
OCCUPANCY CLASSIFICATION		120 011111 121110		IBC TABLE 601: F	IRE-RISISTANCE F	RATING REQUIREMENT	S FOR BUILDING	ELEMEN	TS (HOURS)
F-1 IBC 306.2 MODERATE-H	AZARD FACTORY	'INDUSTRIAL		BUILDING ELEME	NT FIRE RATING		ALLOWED		
				PRIMARY STRUC	TURAL FRAME		0 HOURS		
				BEARING WALLS	: EXT & INT		0 HOURS		
GEN		NG HEIGHTS AND AF	REAS	NONBEARING W			0 HOURS		
BC TABLE 504.4 ALLOWABLE			<u> </u>		ND ASSOC MEMB		0 HOURS		
ALLOWABLE # OF STORIES		ALLOWED	PROPOSED	ROOF CONST AN	ID ASSOC MEMBE	RS	0 HOURS		
F-1		2	1			EANS OF EGRESS			
					F	PER IBC CHAPTER 10			
	TO 15.5 = 1-	1.0		+		RAVEL DISTANCE			
ALLOWABLE BUILDING HEIGH F-1	IS: IBC TABLE 504	4.3	24'-1"	OCCUPANCY		JT SPRINKLER SYSTEM	` '	1 SPRINKI	LER SYSTEM (FEET)
F-!		40	24-1	F-1	PROPOS	SED < 75'	NA		
IBC TABLE 508.4 REQUIRED SE	PARATION OF O	CCUPANCIES (HOURS)							
OCCUPANCY SEPARATION		ALLOWED	PROPOSED	PROPOSED ARE	 A OF BUILDING PE	R FLOOR (NFPA Class	fication & Occupa	ncy) AF	REA (SF)
NONE SEPARATED		ALLOWED	T NOT COLD	LEVEL1: SOLIDS HAN	IDLING ROOM (Un	classified. F-1)	<u> </u>		296 SF
ALLOW BASE ALLOWABLE FLOOR ARE		R EACH PROPOSED OCCUP	PANCY						
OCCUPANCY		ALLOWED	PROPOSED						
<del>-</del> -1		15,500 SF	1,296 SF						
REA INCREASE FOR YARDS	0.0000000000000000000000000000000000000		0						
REA INCREASE FOR BUILDING	G SPRINKLERS		0						
					IBC TABLE 1	004.5 MAX FLOOR ARE	A PER OCCUPAN	1T	
E	NERGY CODE	E BUILDING ENVELOR	PE	AREA NAME		RATIO		AREA	OCC. LOAD
				LEVEL1: SOLIDS HAN	IDLING ROOM	300 SF/OCCU	PANT 1,296	SF	5 OCCUPANTS
THE ENERGY CODE HAS BEEN THE 2011-2013 TIMEFRAME. TI DRIGINAL STRUCTURES NO LO THE UPDATED ENERGY CODE	HE BASELINE APPONGER COMPLIES	PROACH AND MATERIALS O S WITH TODAY'S ENERGY O	F CONSTRUCTION FOR THE CODE. COMPLIANCE WITH						
T SHOULD BE NOTED THAT TH									
ONLY BE IN THESE BUILDINGS MAINTENANCE. THE INTENT IS	S TO JUST MAINTA	AIN A MINIMUM TEMPERATI	JRE (ASSUME APPROX 50						
DEG F) TO PREVENT FREEZIN ANTICIPATED AN R30 ROOF W	ILL BE PROVIDED	). THE CITY ALSO WANTS T	O MATCH THE "LOOK" AND						
UNCTIONALITY OF THE EXIST THERE WAS NO NEED TO COM	MPLY WITH UPDAT	TED ENERGY CODE REQUIP	REMENTS FOR THE THREE						
S ELECTRICAL BUILDING.	DLIDS LOADOUT AI	REA, SOLIDS HANDLING BU	IILDING, AND CENTER STREET						
									+
			SUPPRESSION, ALARM	M AND STANDPIP		CHAPTER 9)			
	PROVIDED YES / NO		AREA / TYPE OF SYSTEM		COMMENTS				
SPRINKLER SYSTEM	NO								
FIRE ALARM SYSTEM	YES (EXISTING	SYSTEM)							
STANDPIPE SYSTEM									

		_			
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EGRESS PATH WITH TRAVEL DISTANCE TO BUILDING DISCHARGE OR RATED PASSAGE WAY

FIRE EXTINGUISHER

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Subconsultant:

832 W Two Moons Way Ivins, Utah 84738 Cell: 801-647-8043 Email: fltarch@xmission.cc AGENCY

FRED L.THALMANN RFVIFW

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REUSE OF DRAWINGS J-U-B SHALL RETAIN ALL COMMON LAW, STATUTORY, COPYRIGHT AND OTHER RESERVED RIGHTS OF THESE DRAWINGS, AND THE SAME SHALL NOT BE REUSED WITHOUT J-U-B'S PRIOR WRITTEN CONSENT. ANY REUSE WITHOUT WRITTEN CONSENT BY J-U-B WILL BE AT THE CLIENT'S SOLE RISK AND WITHOUT LIABILITY OR LEGAL EXPOSURE TO J-U-B.	REVISION			DESCRIPTION
U-L OTH NOT   WI]				Ŏ.

SANTAQUIN WRF PHASE 3 UPGRADES SANTAQUIN CITY

JUB PROJ. #:93-24-001 DRAWN BY:Author DESIGN BY: Designer

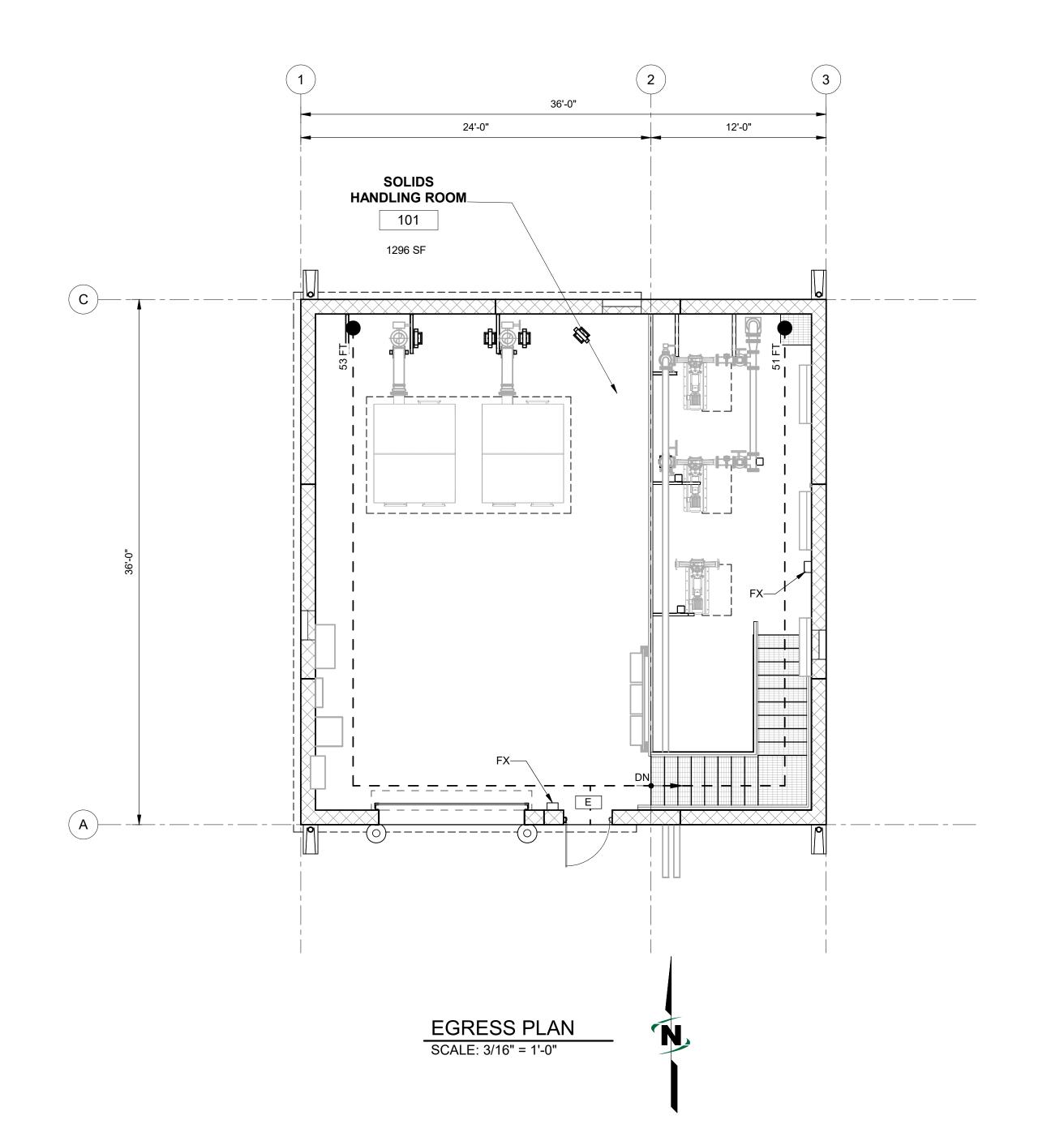
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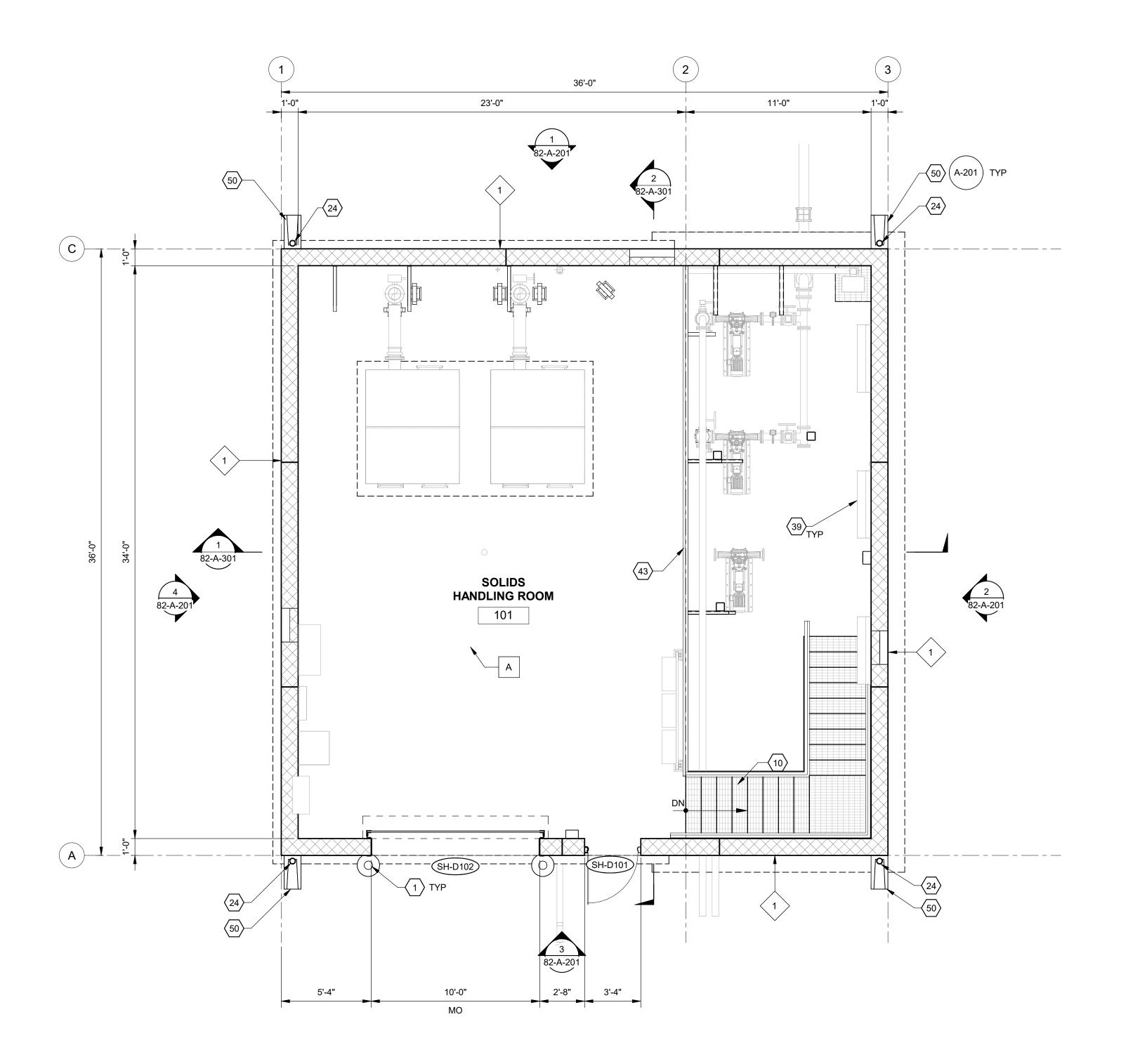
ONE INCH

AT FULL SIZE, IF NOT ONE
INCH, SCALE ACCORDINGLY

LAST UPDATED: 5/31/2024

DRAWING:







- ALL DIMENSIONS ARE TO FACE OF STUD OR FACE OF STRUCTURAL MASONRY AND/OR CONCRETE.
- 2. DOOR AND WINDOW IN MASONRY AND CONCRETE WALLS LOCATION DIMENSIONS ARE TO ROUGH OPENING UNLESS NOTED OTHERWISE.
- 3. FIELD VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS.
- 4. FOR STRUCTURAL WALLS, FLOORS, FLOOR SLOPING, FRAMING, AND OTHER STRUCTURAL COMPONENTS, SEE STRUCTURAL DRAWINGS.
- . PROVIDE SOLID GROUTED CMU WALL FOR ALL WALL MOUNTED EQUIPMENT, SEE STRUCTURAL DRAWINGS.
- 6. FOR STAIR AND RAILING CONSTRUCTION AND DETAILING, SEE STRUCTURAL DRAWINGS.
- FOR EXTENT OF METAL OR FRP GRATING AND DETAILS, SEE STRUCTURAL DRAWINGS.
- 8. FOR SIZE AND SPACING OF ALL VERTICAL AND HORIZONTAL REINFORCING BARS, SEE STRUCTURAL DRAWINGS.
- 9. FOR LOCATION AND SIZE OF HVAC EQUIPMENT, SUPPORT PADS, VENTS, AND PIPING, SEE HVAC DRAWINGS.
- 10. FOR FLOOR DRAIN LOCATIONS, SEE MECHANICAL DRAWINGS.
- 11. FOR PROCESS MECHANICAL PIPING PENETRATIONS, SEE PROCESS MECHANICAL DRAWINGS.
- 12. FOR LOCATION AND SIZE OF RECESSED ELECTRICAL DEVICES IN WALLS, SEE ELECTRICAL DRAWINGS.
- 13. FOR LIGHT FIXTURE TYPES AND LOCATIONS, SEE ELECTRICAL DRAWINGS.
- 14. FOR SITE WORK, INCLUDING BUT NOT LIMITED TO WALKWAYS, DRIVES, BOLLARDS, AND EQUIPMENT PADS EXTERIOR TO THE BUILDING ENVELOPE, SEE CIVIL DRAWINGS.
- 15. ITEMS NOT NOTED ON DRAWINGS SHALL BE CONSIDERED THE SAME AS NOTED ITEMS WHICH ARE GRAPHICALLY REPRESENTED IN THE SAME
- 16. FOR WALL AND DECK TYPE LEGENDS SEE SHEET 80-A-601



NO

DECK TYP

WALL TYP

C-A HEIGHT

EXPOSED METAL STRUCTURE, SEE FINISH

#### SHEET KEYED NOTES

- 42" HIGH BOLLARD, SEE CIVIL FOR MORE INFORMATION NEW STAIR AND LANDING, SEE STRUCTURAL FOR CONSTRUCTION DETAILING
- METAL DOWNSPOUT, CONNECT TO STORM DRAIN SYSTEM, SEE CIVIL DRAWINGS. (CONSTRUCTION AND COLOR TO MATCH EXISTING) WALL-MOUNTED LIGHT FIXTURE, SEE ELECTRICAL FOR MORE INFORMATION
- 43 ALUMINUM GUARDRAIL, SEE STRUCTURAL DRAWINGS
- 50 SPLASH BLOCK

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Subconsultant:





**REVIEW** 

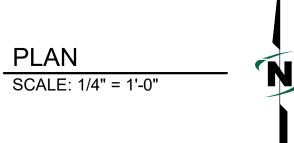
3 UPGRAD

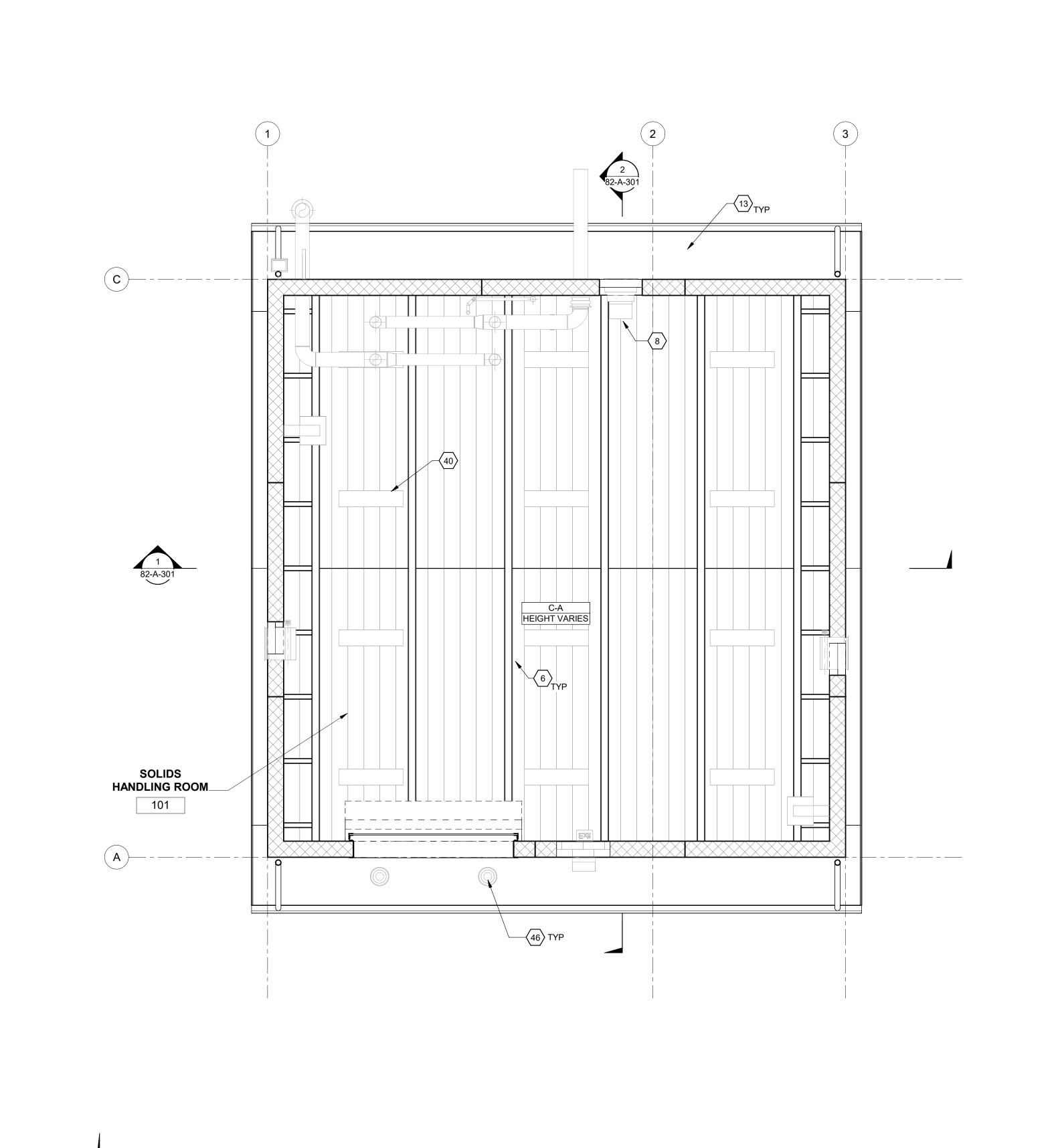
JUB PROJ. #:93-24-001 DRAWN BY:Author DESIGN BY:Designer CHECKED BY:Checker

ONE INCH

AT FULL SIZE, IF NOT ONE
INCH, SCALE ACCORDINGLY LAST UPDATED: 5/31/2024

DRAWING: 82-A-101





REFLECTED CEILING PLAN

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

# **GENERAL NOTES:**

- 1. FOR CEILING-MOUNTED MECHANICAL EQUIPMENT, SEE MECHANICAL DRAWINGS FOR MORE INFORMATION.
- 2. FOR CEILING-MOUNTED ELECTRICAL FIXTURES, SEE ELECTRICAL DRAWINGS FOR MORE INFORMATION.
- 3. ALL AREAS SHOWN HAVE EXPOSED STRUCTURE ABOVE UNLESS NOTED OTHERWISE.
- 4. FOR WALL AND DECK TYPE LEGENDS SEE SHEET 01-A-601

#### LEGEND:

NO

NO

WALL TYP

DECK TYP

HEIGHT

EXPOSED METAL STRUCTURE, SEE FINISH SCHEDULE

### SHEET KEYED NOTES

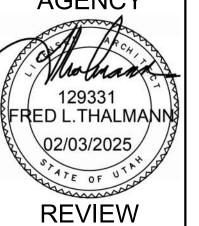
- 6 ROOF STRUCTURE, SEE STRUCTURAL
- 8 HVAC EQUIPMENT, SEE HVAC
- 13 METAL VENTED SOFFIT AND FASCIA MBCI FLUSH SEAM PANEL SYSTEM OR APPROVED EQUAL, MECHANICALLY FASTENED TO STRUCTURE. (CONSTRUCTION AND COLOR TO MATCH EXISTING)
- CEILING-MOUNTED LIGHT FIXTURE, SEE ELECTRICAL FOR MORE INFORMATION
- RECESSED CAN LIGHT FIXTURES, SEE ELECTRICAL FOR MORE INFORMATION

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AGENCY



SANTAQUIN WRF PHASE 3 UPGRADES SANTAQUIN CITY

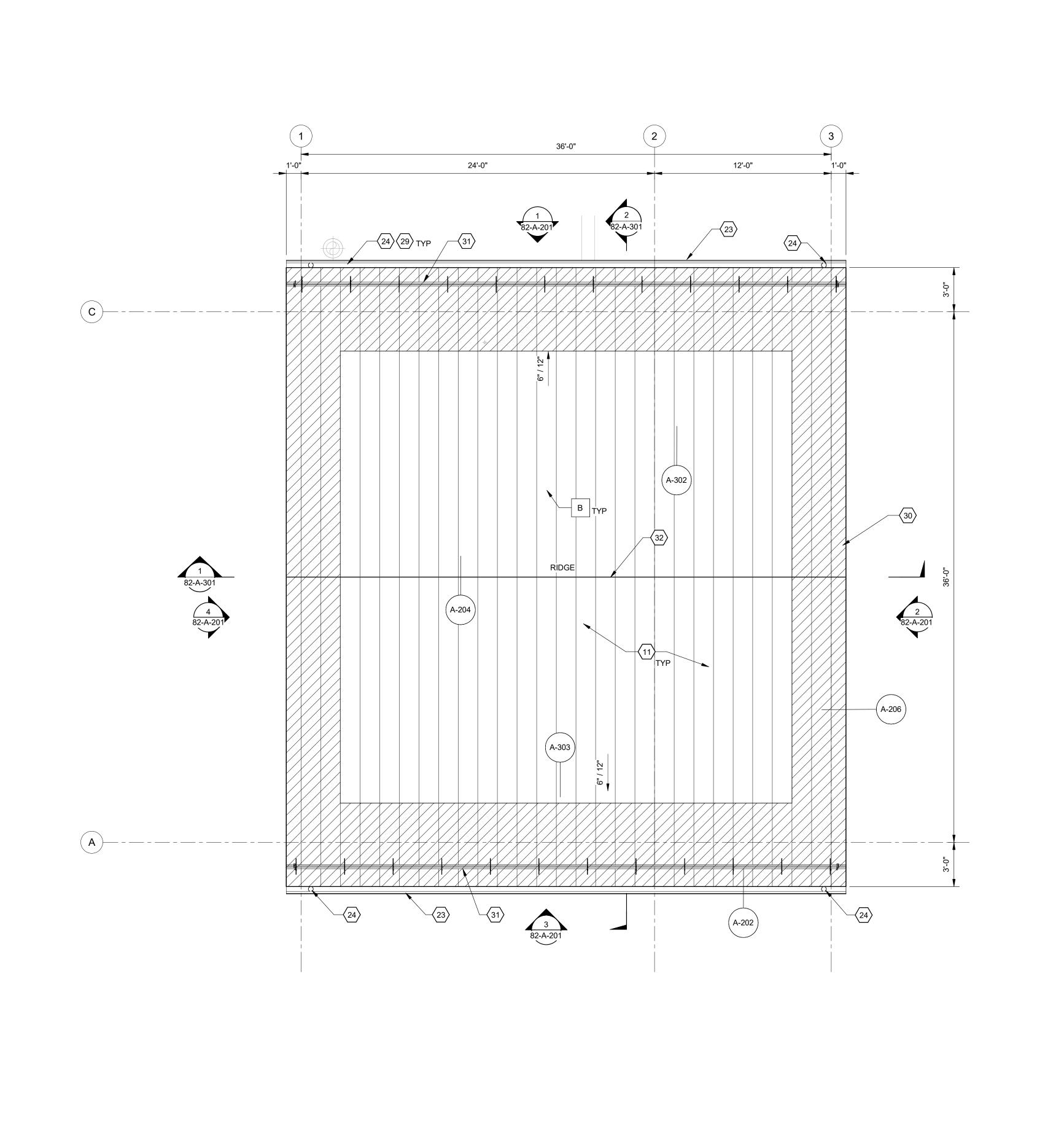
JUB PROJ. #:93-24-001 DRAWN BY:Author DESIGN BY:Designer

CHECKED BY:Checker

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

LAST UPDATED: 5/31/2024

DRAWING: 82-A-102



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

## **GENERAL NOTES:**

- 1. FOR ROOF-MOUNTED ELECTRICAL AND ROOF PENETRATIONS, SEE ELECTRICAL
- 2. FOR ROOF-MOUNTED HVAC MECHANICAL EQUIPMENT AND ROOF PENETRATIONS, SEE HVAC MECHANICAL.
- 3. PROVIDE LIGHTNING PROTECTION SYSTEM AT ROOF, REFER TO
- 4. FOR WALL AND DECK TYPE LEGENDS SEE SHEET 01-A-601

ELECTRICAL DRAWINGS FOR MORE INFORMATION.

### LEGEND:

NO

NO

WALL TYP

DECK TYP

HEIGHT

EXPOSED METAL STRUCTURE, SEE FINISH SCHEDULE

#### SHEET KEYED NOTES

- STANDING SEAM METAL ROOF SYSTEM TO MATCH EXISTING. MECHANICALLY SEAMED 90 DEG 2" HIGH (MBCI SUPERLOCK SYSTEM OR APPROVED EQUAL, 20 YEAR WARRANTY, OVER 30 # FELT, OVER R-30 CROSSVENT NAILABLE RIGID INSULATION SYSTEM (ATLAS ROOFING CROSS VENT 1.5" AIR SPACE, OR APPROVED EQUAL) COLD ROOF SYSTEM, MECHANICALLY FASTENED TO DECK, OVER AIR AND VAPOR BARRIER (CARLISLE CCW705, OR APPROVED EQUAL) OVER 1/4" ROOF BOARD SUBSTRATE (DENSDECK OR APPROVED EQUAL).
- 8"X8" BOX TYPE RAIN GUTTER SYSTEM (CONSTRUCTION AND COLOR T MATCH EXISTING)
- 24 METAL DOWNSPOUT, CONNECT TO STORM DRAIN SYSTEM, SEE CIVIL DRAWINGS. (CONSTRUCTION AND COLOR TO MATCH EXISTING)
- AND DOWNSPOUTS. REFER TO ELECTRICAL DRAWINGS HATCH PATTERN INDICATES ICE AND WATERSHIELD WATER PROOFING

29 PROVIDE ELECTRICAL HEAT TRACE AND CONTROLS AT ALL GUTTERS

- MEMBRANE, EXTEND 24 IN MIN FROM INTERIOR SIDE OF EXTERIOR
- SNOW GUARD: CAST BRONZE ATTACHED TO STANDING SEAM RIBS. USE MFR RECOMMENDATIONS FOR SPACING. (CONSTRUCTION AND COLOR TO MATCH EXISTING).
- VENTED METAL RIDGE CAP, (CONSTRUCTION AND COLOR TO MATCH EXISTING)

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**REVIEW** 

SANTAQUIN WRF PHASE 3 UPGRADES SANTAQUIN CITY

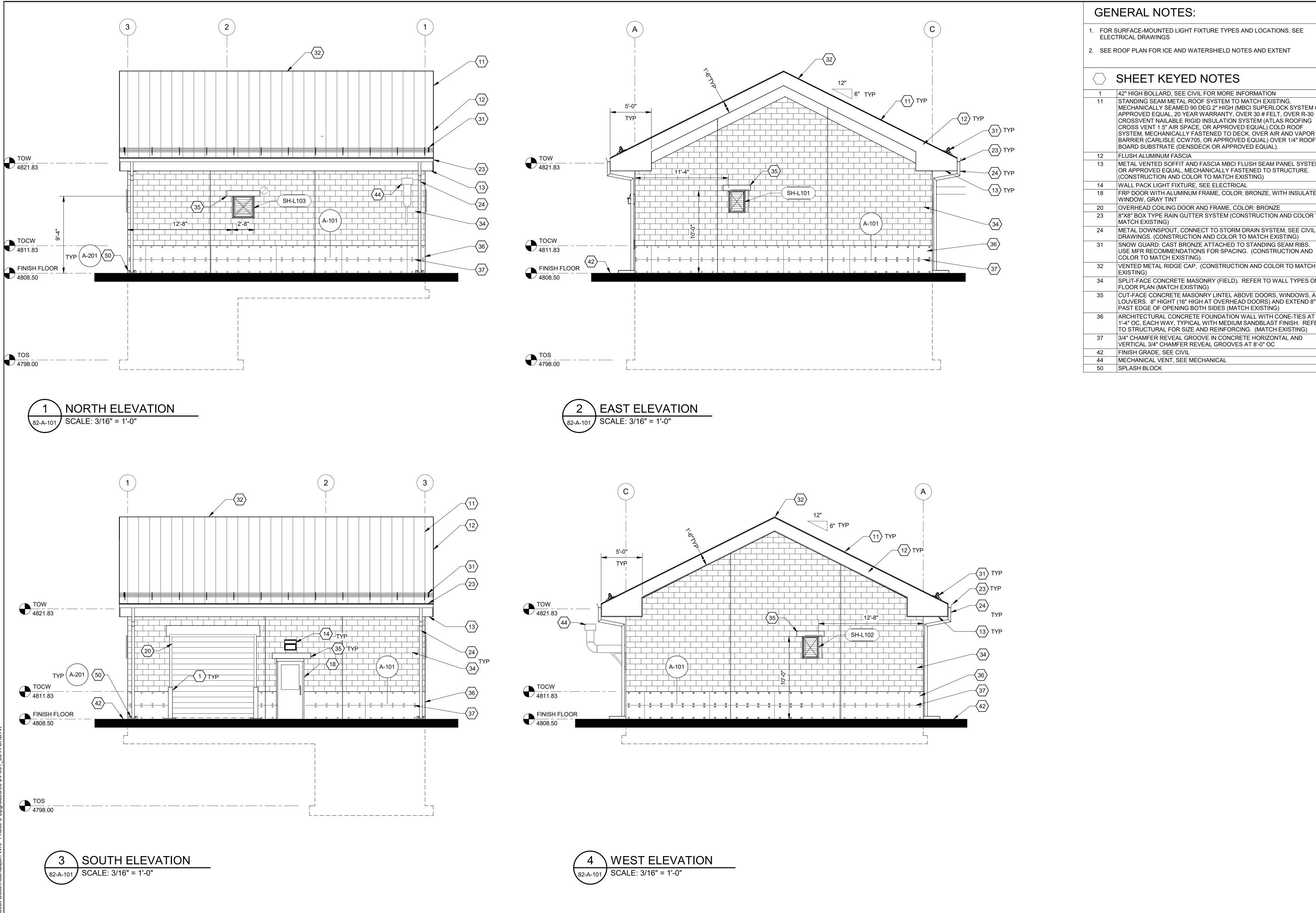
ARCHITECTURAL (A) SOLIDS HANDLING BUILDING ROOF PLAN

JUB PROJ. #:93-24-001 DRAWN BY:Author DESIGN BY:Designer

CHECKED BY:Checker

ONE INCH
AT FULL SIZE, IF NOT ONE
INCH, SCALE ACCORDINGLY
LAST UPDATED: 5/31/2024

DRAWING:



**GENERAL NOTES:** 

FOR SURFACE-MOUNTED LIGHT FIXTURE TYPES AND LOCATIONS, SEE ELECTRICAL DRAWINGS

2. SEE ROOF PLAN FOR ICE AND WATERSHIELD NOTES AND EXTENT

## SHEET KEYED NOTES

42" HIGH BOLLARD, SEE CIVIL FOR MORE INFORMATION STANDING SEAM METAL ROOF SYSTEM TO MATCH EXISTING, MECHANICALLY SEAMED 90 DEG 2" HIGH (MBCI SUPERLOCK SYSTEM OR APPROVED EQUAL, 20 YEAR WARRANTY, OVER 30 # FELT, OVER R-30 CROSSVENT NAILABLE RIGID INSULATION SYSTEM (ATLAS ROOFING CROSS VENT 1.5" AIR SPACE, OR APPROVED EQUAL) COLD ROOF SYSTEM, MECHANICALLY FASTENED TO DECK, OVER AIR AND VAPOR BARRIER (CARLISLE CCW705, OR APPROVED EQUAL) OVER 1/4" ROOF BOARD SUBSTRATE (DENSDECK OR APPROVED EQUAL).

12 FLUSH ALUMINUM FASCIA

13 METAL VENTED SOFFIT AND FASCIA MBCI FLUSH SEAM PANEL SYSTEM OR APPROVED EQUAL, MECHANICALLY FASTENED TO STRUCTURE. (CONSTRUCTION AND COLOR TO MATCH EXISTING)

14 WALL PACK LIGHT FIXTURE, SEE ELECTRICAL FRP DOOR WITH ALUMINUM FRAME, COLOR: BRONZE, WITH INSULATED

WINDOW, GRAY TINT

OVERHEAD COILING DOOR AND FRAME, COLOR: BRONZE 8"X8" BOX TYPE RAIN GUTTER SYSTEM (CONSTRUCTION AND COLOR 1 MATCH EXISTING)

METAL DOWNSPOUT, CONNECT TO STORM DRAIN SYSTEM, SEE CIVIL DRAWINGS. (CONSTRUCTION AND COLOR TO MATCH EXISTING) SNOW GUARD: CAST BRONZE ATTACHED TO STANDING SEAM RIBS.

VENTED METAL RIDGE CAP, (CONSTRUCTION AND COLOR TO MATCH

SPLIT-FACE CONCRETE MASONRY (FIELD). REFER TO WALL TYPES ON FLOOR PLAN (MATCH EXISTING)

CUT-FACE CONCRETE MASONRY LINTEL ABOVE DOORS, WINDOWS, AN LOUVERS. 8" HIGHT (16" HIGH AT OVERHEAD DOORS) AND EXTEND 8"

ARCHITECTURAL CONCRETE FOUNDATION WALL WITH CONE-TIES AT 1'-4" OC, EACH WAY, TYPICAL WITH MEDIUM SANDBLAST FINISH. REFER TO STRUCTURAL FOR SIZE AND REINFORCING. (MATCH EXISTING)

3/4" CHAMFER REVEAL GROOVE IN CONCRETE HORIZONTAL AND VERTICAL 3/4" CHAMFER REVEAL GROOVES AT 8'-0" OC

50 SPLASH BLOCK

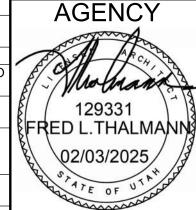
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Subconsultant:

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PHASE 3 UPGRADE

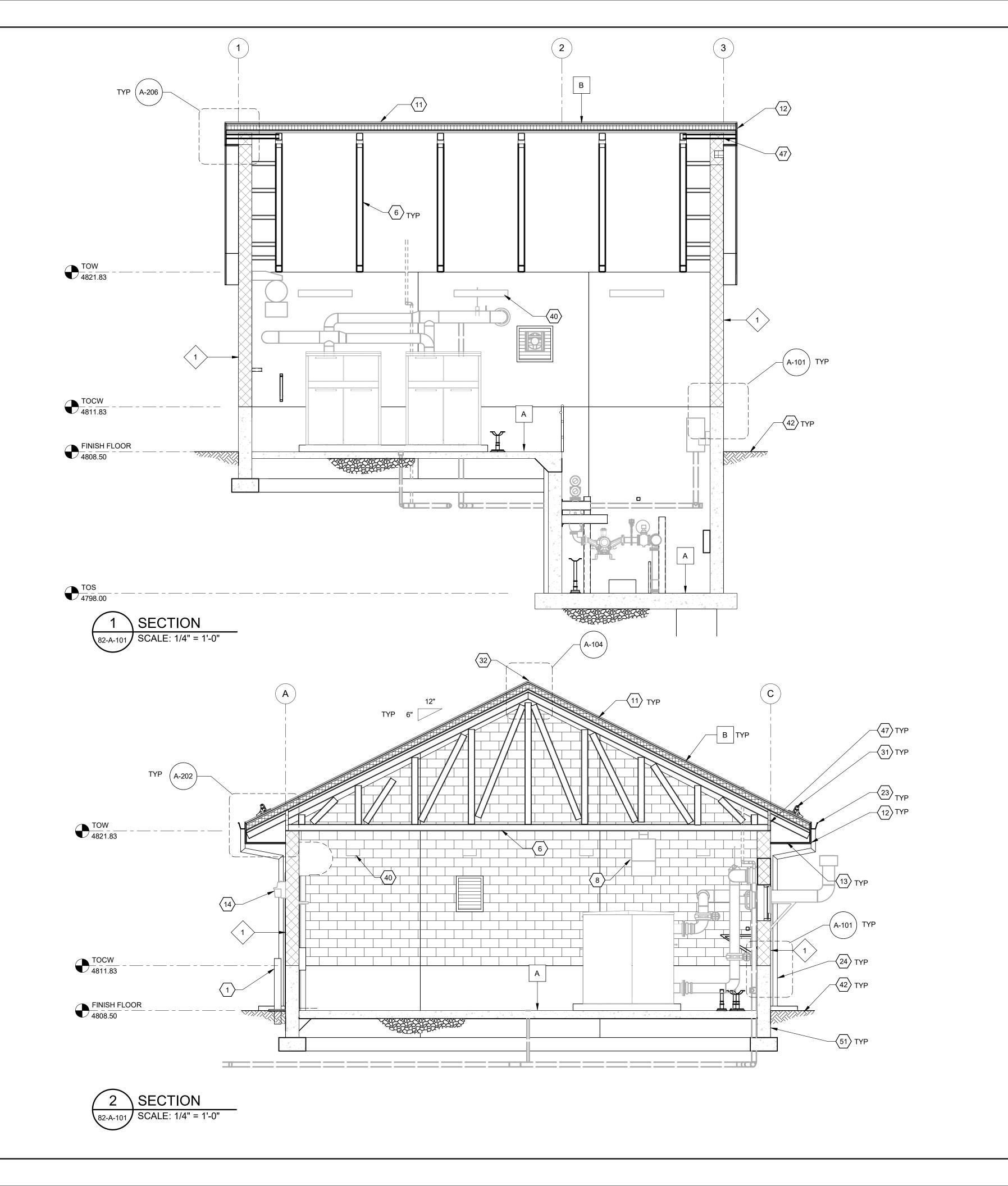
SANTAQUIN WRF

JUB PROJ. #:93-24-001 DRAWN BY:Author DESIGN BY:Designer CHECKED BY: Checker

ONE INCH

AT FULL SIZE, IF NOT ONE
INCH, SCALE ACCORDINGLY LAST UPDATED: 5/31/2024

DRAWING:



## **GENERAL NOTES:**

- ALL DIMENSIONS ARE TO FACE OF STUD OR FACE OF STRUCTURAL MASONRY AND/OR CONCRETE.
- 2. DOOR AND WINDOW IN MASONRY AND CONCRETE WALLS LOCATION DIMENSIONS ARE TO ROUGH OPENING UNLESS NOTED OTHERWISE.
- 3. FIELD VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS.

EQUIPMENT, SEE STRUCTURAL DRAWINGS.

- 4. FOR STRUCTURAL WALLS, FLOORS, FLOOR SLOPING, FRAMING, AND
- OTHER STRUCTURAL COMPONENTS, SEE STRUCTURAL DRAWINGS. PROVIDE SOLID GROUTED CMU WALL FOR ALL WALL MOUNTED
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- FOR EXTENT OF METAL OR FRP GRATING AND DETAILS, SEE STRUCTURAL DRAWINGS.
- 8. FOR SIZE AND SPACING OF ALL VERTICAL AND HORIZONTAL

REINFORCING BARS, SEE STRUCTURAL DRAWINGS.

- 9. FOR LOCATION AND SIZE OF HVAC EQUIPMENT, SUPPORT PADS, VENTS, AND PIPING, SEE HVAC DRAWINGS.
- 10. FOR FLOOR DRAIN LOCATIONS, SEE MECHANICAL DRAWINGS.
- 11. FOR PROCESS MECHANICAL PIPING PENETRATIONS, SEE PROCESS MECHANICAL DRAWINGS.
- 12. FOR LOCATION AND SIZE OF RECESSED ELECTRICAL DEVICES IN WALLS, SEE ELECTRICAL DRAWINGS.
- 13. FOR LIGHT FIXTURE TYPES AND LOCATIONS, SEE ELECTRICAL DRAWINGS.
- 14. FOR SITE WORK, INCLUDING BUT NOT LIMITED TO WALKWAYS, DRIVES, BOLLARDS, AND EQUIPMENT PADS EXTERIOR TO THE BUILDING
- 15. ITEMS NOT NOTED ON DRAWINGS SHALL BE CONSIDERED THE SAME AS NOTED ITEMS WHICH ARE GRAPHICALLY REPRESENTED IN THE SAME
- 16. FOR WALL AND DECK TYPE LEGENDS SEE SHEET 80-A-601



NO

DECK TYP

WALL TYP

ENVELOPE, SEE CIVIL DRAWINGS.

C-A HEIGHT

EXPOSED METAL STRUCTURE, SEE FINISH

# SHEET KEYED NOTES

- 42" HIGH BOLLARD, SEE CIVIL FOR MORE INFORMATION ROOF STRUCTURE, SEE STRUCTURAL 8 HVAC EQUIPMENT, SEE HVAC
- STANDING SEAM METAL ROOF SYSTEM TO MATCH EXISTING, MECHANICALLY SEAMED 90 DEG 2" HIGH (MBCI SUPERLOCK SYSTEM OR | APPROVED EQUAL, 20 YEAR WARRANTY, OVER 30 # FELT, OVER R-30 CROSSVENT NAILABLE RIGID INSULATION SYSTEM (ATLAS ROOFING CROSS VENT 1.5" AIR SPACE, OR APPROVED EQUAL) COLD ROOF SYSTEM, MECHANICALLY FASTENED TO DECK, OVER AIR AND VAPOR BARRIER (CARLISLE CCW705, OR APPROVED EQUAL) OVER 1/4" ROOF BOARD SUBSTRATE (DENSDECK OR APPROVED EQUAL).
- 12 FLUSH ALUMINUM FASCIA
- 13 METAL VENTED SOFFIT AND FASCIA MBCI FLUSH SEAM PANEL SYSTEM OR APPROVED EQUAL, MECHANICALLY FASTENED TO STRUCTURE.
- (CONSTRUCTION AND COLOR TO MATCH EXISTING) 14 WALL PACK LIGHT FIXTURE, SEE ELECTRICAL
- 23 8"X8" BOX TYPE RAIN GUTTER SYSTEM (CONSTRUCTION AND COLOR 1 MATCH EXISTING)
- METAL DOWNSPOUT, CONNECT TO STORM DRAIN SYSTEM, SEE CIVIL DRAWINGS. (CONSTRUCTION AND COLOR TO MATCH EXISTING) SNOW GUARD: CAST BRONZE ATTACHED TO STANDING SEAM RIBS. USE MFR RECOMMENDATIONS FOR SPACING. (CONSTRUCTION AND
- VENTED METAL RIDGE CAP, (CONSTRUCTION AND COLOR TO MATCH
- CEILING-MOUNTED LIGHT FIXTURE, SEE ELECTRICAL FOR MORE
- INFORMATION

COLOR TO MATCH EXISTING).

- 42 FINISH GRADE, SEE CIVIL
- CONTINUOUS SPRAY FOAM INSULATION R-20 BETWEEN TOP OF WALL
- AND ROOF DECK
- 51 DAMPROOFING, REFER TO STRUCTURAL

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**REVIEW** 

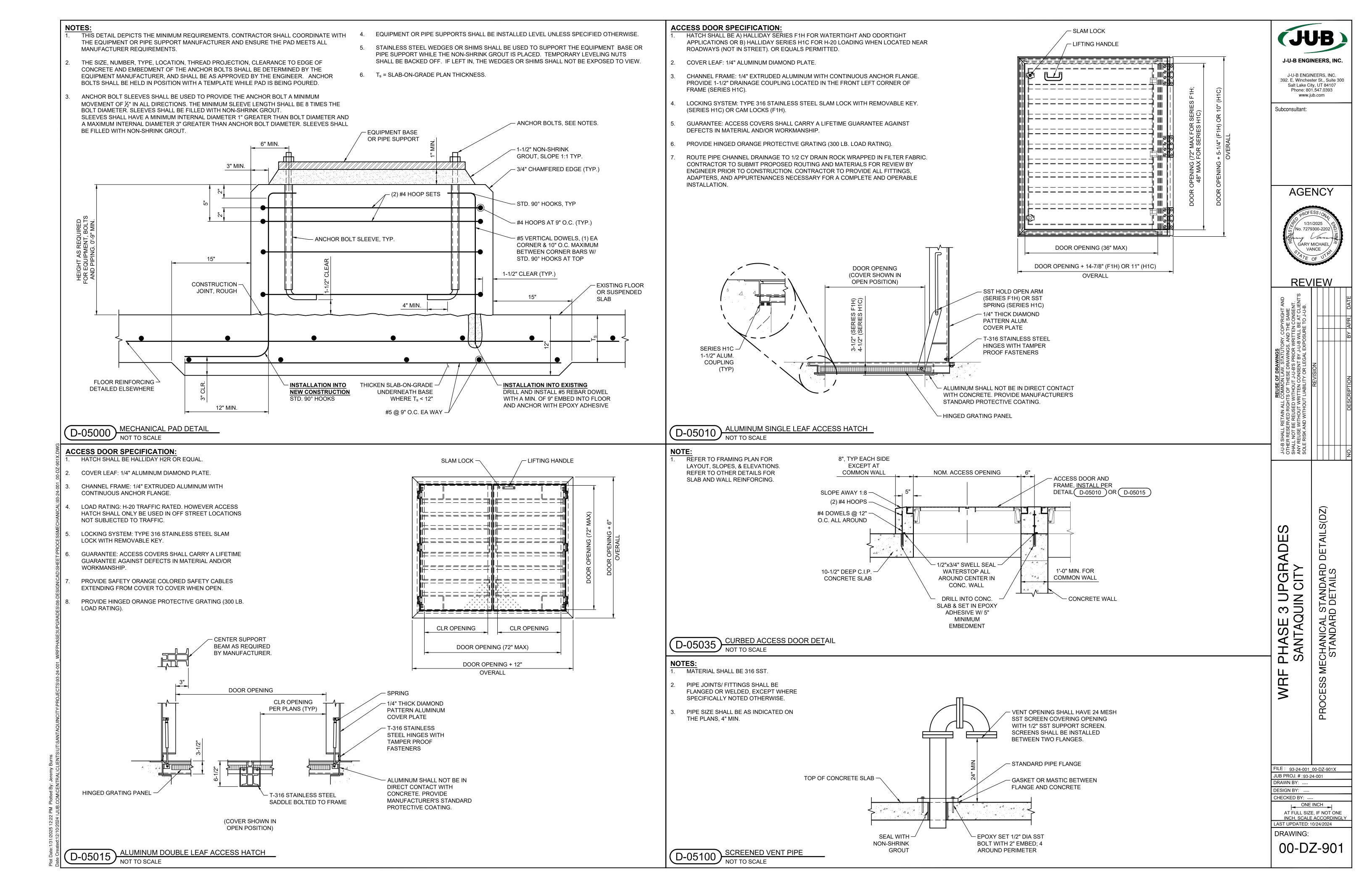
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CHITECTURAL (A) HANDLING BUILDIN SECTIONS

JUB PROJ. #:93-24-001 DRAWN BY:Author DESIGN BY:Designer CHECKED BY:Checker

ONE INCH AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY LAST UPDATED: 5/31/2024

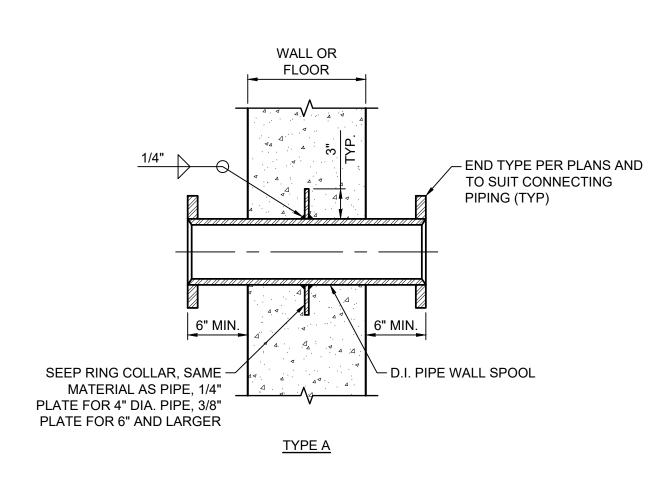
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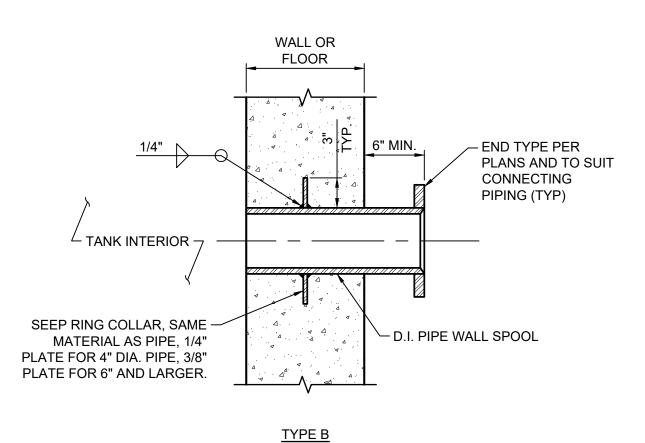


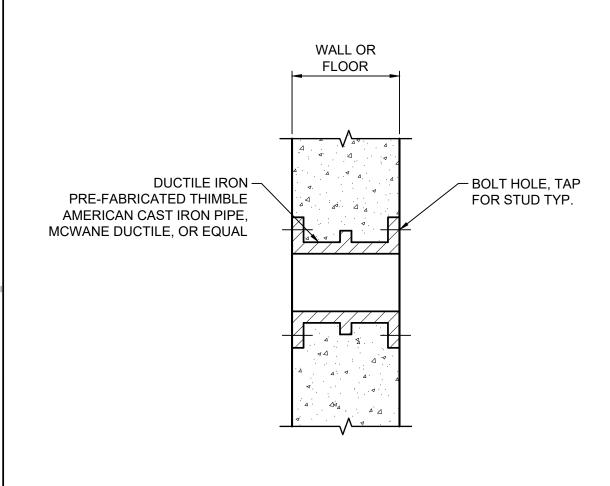


PIPE PENETRATIONS SHALL BE DUCTILE IRON PIPE AND HARDWARE SHALL BE 316 SST, UNLESS SPECIFICALLY STATED OTHERWISE ON THE PLANS.

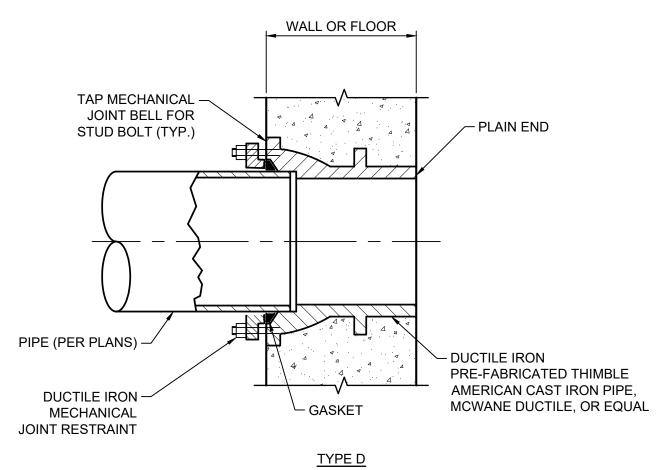
- 2. ALL PENETRATIONS SHALL BE INSTALLED WITH THE ASSOCIATED FORMWORK PRIOR TO THE CONCRETE POUR. BLOCKOUTS AND POUR-BACKS SHALL NOT BE ACCEPTABLE UNLESS PRIOR CONSENT IS RECEIVED FROM THE ENGINEER, AND MAY REQUIRE ADDITIONAL WORK WHICH SHALL BE AT THE CONTRACTOR'S EXPENSE.
- 3. PROVIDE INSULATING GASKET PER STANDARD DETAIL D-15030 WHERE DI PIPE PENETRATION IS USED WITH DISSIMILAR METAL PIPING SYSTEM.





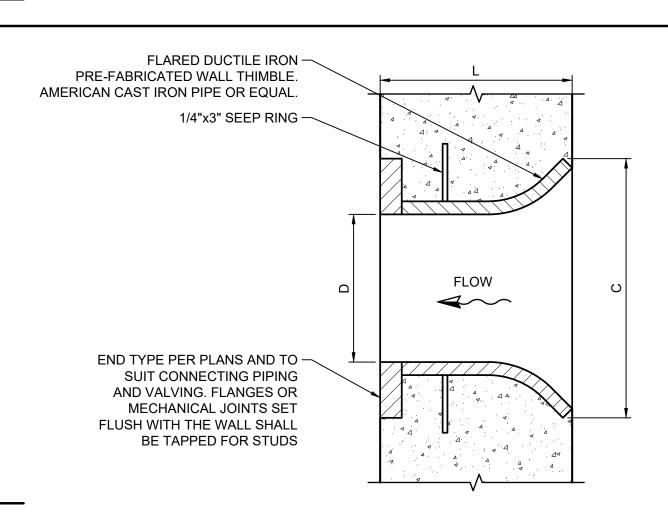


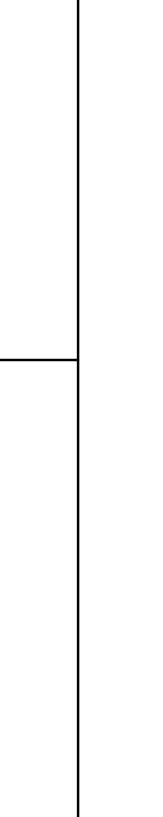
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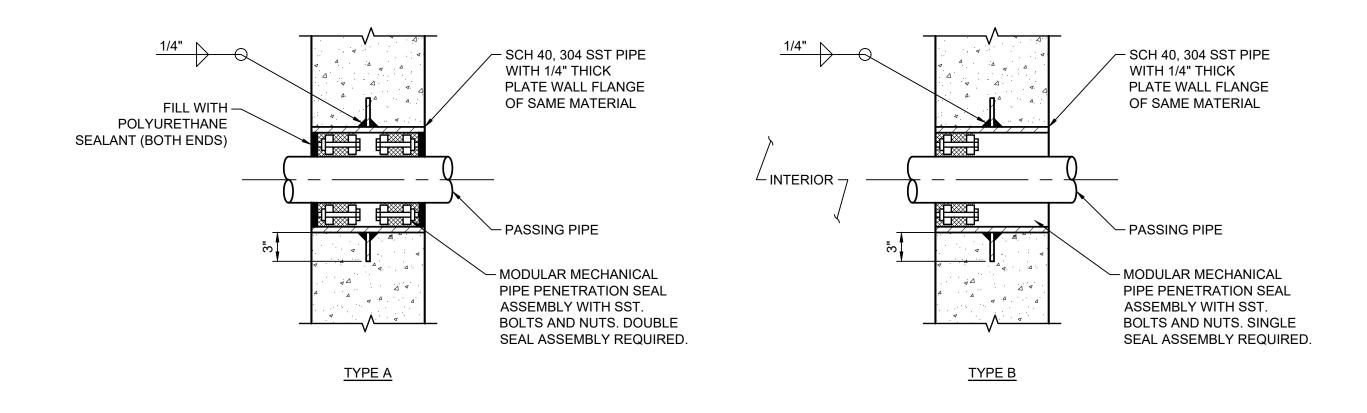


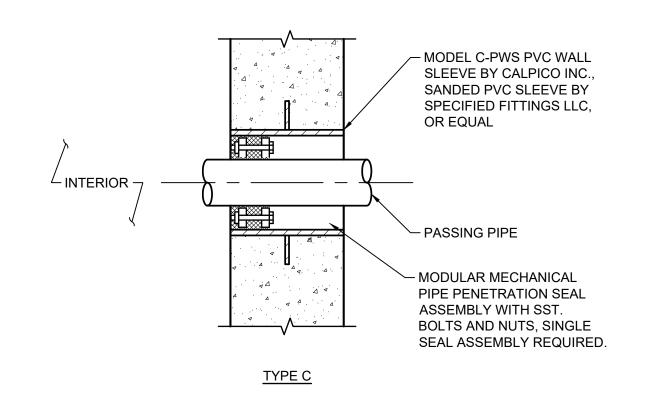
# D-15000 DUCTILE IRON PIPE SPOOL PENETRATIONS NOT TO SCALE

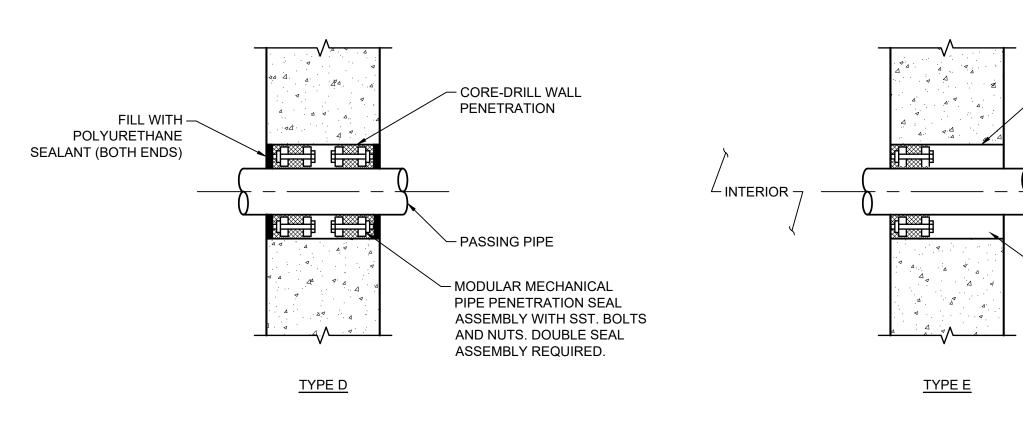
D (IN)	C (IN)	L MIN (IN)	L MAX (IN)
4.00	9.00	8.00	8.00
6.00	11.00	8.00	8.00
8.00	13.50	10.00	10.00
10.00	16.00	10.00	10.00
12.00	19.00	12.00	12.00
14.00	21.00	12.00	36.00
16.00	23.50	14.00	36.00
18.00	25.00	14.00	36.00
20.00	27.50	13.00	36.00
24.00	32.00	16.00	66.00
30.00	38.75	15.00	66.00
36.00	46.00	14.00	66.00
42.00	53.00	12.00	72.00
48.00	59.50	18.00	72.00
54.00	66.25	19.00	72.00
60.00	73.00	21.00	72.00











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Phone: 801.547.0393

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Subconsultant:

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PROFESS/ONA 1/31/2025 No. 7279300-2202 G GARY MICHAEL VANCE VANCE OF UT

GARY MICHAEL VANCE VANCE OF UTER OF UT

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REVISION

REVISION

NO. DESCRIPTION

BY APR. DATE

WRF PHASE 3 UPGRADES
SANTAQUIN CITY
PROCESS MECHANICAL STANDARD DETAILS
STANDARD DETAILS

CORE-DRILL WALL PENETRATION

- PASSING PIPE

- MODULAR MECHANICAL

ASSEMBLY WITH SST.

PIPE PENETRATION SEAL

BOLTS AND NUTS. SINGLE SEAL ASSEMBLY REQUIRED.

FILE: 93-24-001\_00-DZ-901X

JUB PROJ. #:93-24-001

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ONE INCH
AT FULL SIZE, IF NOT ONE
INCH, SCALE ACCORDINGLY
LAST UPDATED: 10/24/2024

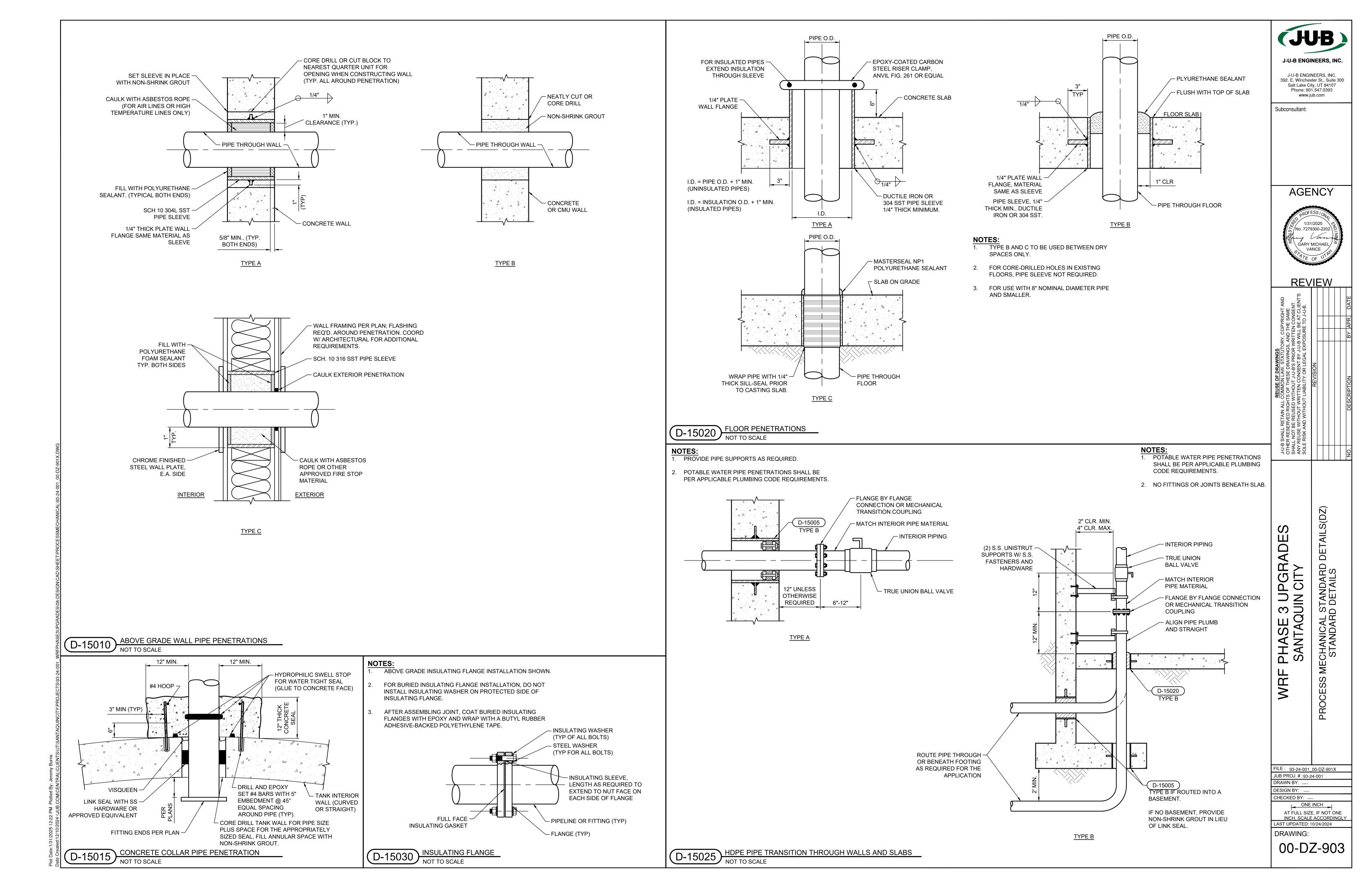
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D-15005 SLEEVED PIPE PENETRATIONS

NOT TO SCALE

-15001 FLARED INLET DUCTILE IRON PIPE SPOOL

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# NOTES: 1. THESE GENERAL NOTES ARE APPLICABLE TO ALL PIPE SUPPORT STANDARD DETAILS. 2. PIPE SUPPORTS SHALL BE HOT-DIPPED GALVANIZED (UNLESS NOTED OTHERWISE ON THE PLANS). ALL HARDWARE, FASTENERS, AND APPURTENANCES SHALL BE 316 SST. 3. PIPE SUPPORTS HEREIN ARE GENERAL IN NATURE. CONTRACTOR SHALL SUBMIT ALL PIPE SUPPORTS (INCLUDING ANCHOR BOLT SIZING CALCULATIONS) AS A DEFERRED SUBMITTAL WHICH SHALL INCLUDE THE PIPE SUPPORT DESIGN AND CALCULATIONS SEALED BY A PROFESSIONAL STRUCTURAL ENGINEER REGISTERED IN THE STATE WHERE THE PROJECT IS TO BE CONSTRUCTED. CONTRACTOR SHALL NOTIFY ENGINEER IMMEDIATELY UPON DISCOVERY OF ANY DISCREPANCIES BETWEEN THESE DETAILS AND ANY OTHER CONTRACT REQUIREMENTS. 5. PIPE SUPPORTS SHALL ACCOMMODATE APPURTENANCES INCLUDING BUT NOT LIMITED TO VALVES, INSTRUMENTS, HEAT TRACE, INSULATION, ETC. AS NECESSARY. 6. PIPE SUPPORTS SHALL NOT CONFLICT WITH ANY OTHER COMPONENT OF THE WORK. CONTRACTOR IS RESPONSIBLE FOR COORDINATING. 7. IT IS RECOMMENDED THAT CONTINUOUS SUPPORT BE USED WHEN INDIVIDUAL SUPPORT SPACING BECOMES ECONOMICALLY PROHIBITIVE OR SUPPORTS CREATE CONFLICTS WITH THE OTHER WORK. 8. PIPE SUPPORT DATA FOR PIPES NOT LISTED SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND ACCEPTANCE PRIOR TO PURCHASE. 9. PROVIDE ADDITIONAL SUPPORTS AT ALL PIPE BENDS, TEES, PLUGS AND ON EACH SIDE OF ALL FLEXIBLE PIPE JOINTS (2/JOINT). 10. THE CHART DOES NOT INCLUDE CONCENTRATED LOAD SUPPORTS. PROVIDE ADDITIONAL SUPPORTS AT ALL VALVES, CHECKS, CONTROL VALVES AND OTHER CONCENTRATED LOAD AREAS.

							MAXIN	IUM PIF	E SUPF	PORT SI	PACING	TABLE								
								PI	PE SIZE	(INCH	ES)									
	TYPE OF PIPE	1/2	3/4	1	1-1/2	2	2-1/2	3	3-1/2	4	6	8	10	12	14	16	18	20	24	30
(FEET)	STEEL OR DUCTILE IRON	5	6	7	9	10	11	12	13	14	17	19	22	23	25	27	28	30	30	30
AN (FE	PVC SCHEDULE 40	4-1/2	4-1/2	5	5-1/2	5-1/2	6-1/2	7	7	7	8	8-1/2	9	10-1/2						
IM SPAN	PVC SCHEDULE 80	4-1/2	5	5-1/2	6	6-1/2	7-1/2	7-1/2	8	8-1/2	9-1/8	10-1/2								
MAXIMUM	COPPER & BRASS TUBING	5	6	6	8	9	10	10	11	12										
Ž						Н	ANGER	DIAME	TER FO	R GIVE	N PIPE S	SIZE (IN	CHES)							
	HANGER ROD	3/8	3/8	3/8	3/8	3/8	1/2	1/2	1/2	5/8	3/4	7/8	1	1-1/4	1-1/4	1-1/4	1-1/4	1-1/2	1-3/4	2

D 15050	PIPE SUPPORTS - GENERAL
D-13030	NOT TO SCALE

FOR WALL MOUNT USE FLAT BAR. USE CHANNEL FOR COLUMN MOUNT, AS RECOMMENDED BY MANUFACTURER.

- HOT DIP GALV. AFTER FABRICATION.
- MAXIMUM SPACING PER STANDARD DETAIL D-15050 OR MAXIMUM SPACING DUE TO MAX CAPACITY OF WALL BRACKET, WHICHEVER GOVERNS.
- WHEN MOUNTING TO STEEL FRAMED MEMBERS, BOLT TO FLANGE OR MOUNT TO 1/2" PLATE WELDED TO FRAMING

W (IN)	C (IN)
12	15.25
18	21.375
24	27.5
30	33.25
36	39
42	46
•	

# D-15055 PIPE SUPPORT - WALL BRACKET NOT TO SCALE

			JSTABLE PIP MATE DIMENS	E SUPPORT SIONS IN INCHES	3	
PIPE SIZE	"A"	"B"	"C" (SQ)	"D" MINIMUM	"D" MAXIMUM	"E" DIA.
4	4	3	7-1/4	12-1/4	16-3/4	5/8
6	4	3	7-1/4	13-3/4	18-1/4	5/8
8	4	3	7-1/4	14-5/8	19-7/8	5/8
10	4	3	7-1/4	15-13/16	20-5/16	5/8
12	4	3	7-1/4	16-13/16	21-5/16	3/4
14	4	3	12	19-1/8	23-5/8	3/4
16	4	3	12	20-1/8	24-5/8	3/4
18	6	4	12	21-5/16	25-13/16	3/4
20	6	4	12	23-5/16	27-13/16	3/4
24	6	4	12	24-5/16	28-13/16	3/4
30	6	4	12	26-7/16	30-15/16	7/8
36	6	4	12	29-7/16	33-15/16	7/8

	- EPOXY SET BOLTS, SIZE AND EMBEDMENT PER MANUFACTURER'S REQUIREMENTS
'U' BOLT PIPE SUPPORT, ANVIL FIG. 259, ANVIL FIG. 265, OR EQUAL.	
±- ∑	"A" "C" (SQ)  150 LB. THREA REDUCING FLA GALVANIZED NON-SHRINK (

BACK PLATE, SEE NOTE 1

- SS EPOXY ANCHOR BOLTS

EADED LANGE GROUT (4) SST BOLTS "E" DIA AT 90 DEG -ANCHOR BOLT OR EPOXY-SET CONCRETE ANCHOR WITH TWO (2) NUTS EACH SIDE TO SUIT FLANGE. ALL HARDWARE SHALL BE SST.

- PIPE ANCHOR CHAIR,

APPROVED EQUIVALENT

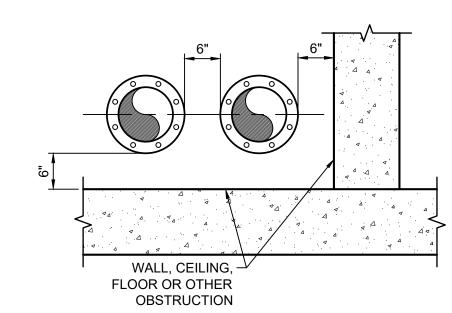
MAX. CAPACITY 3,000#.

ANVIL FIG. 137 OR

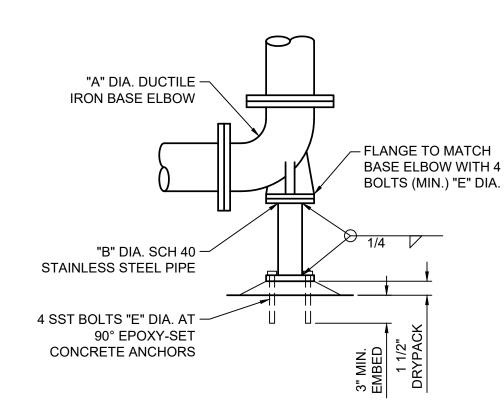
- ANVIL FIG. 199, OR

APPROVED EQUIVALENT. MAX. CAPACITY 3,000#

MINIMUM OBSTRUCTION CLEARANCE AS SHOWN HEREIN, UNLESS SHOWN OTHERWISE ON PLANS.



TYPICAL PIPE CLEARANCES



#### **DUCTILE IRON ELBOW**

D-15075 PIPE BASE ELBOW SUPPORT NOT TO SCALE

ELBOW "A" DIA.		DIMENSION	NS IN INCHES	
ELBOW A DIA.	"B" DIA.	"C" THICK	"D" SQ.	"E" DIA.
4	2	3/8	6	5/8
6	2-1/2	3/8	8	5/8
8	4	3/8	8	5/8
10	4	3/8	8	5/8
12	6	3/8	10	3/4
14	6	3/8	10	3/4
16	6	3/8	10	3/4
18	8	3/8	14	3/4
20	8	3/8	14	3/4
24	8	3/8	14	3/4
30	12	1/2	18	7/8
36	12	1/2	18	7/8
42	16	1/2	22	1

**AGENCY** 

J-U-B ENGINEERS, INC.

J-U-B ENGINEERS, INC.

392. E. Winchester St., Suite 300 Salt Lake City, UT 84107 Phone: 801.547.0393

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√ ĞARY MICHAEL/

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MECHANICAL STANDARD DETAILS(DZ) STANDARD DETAILS PHASE 3 UPGRADE SANTAQUIN CITY WRF **PROCESS** 

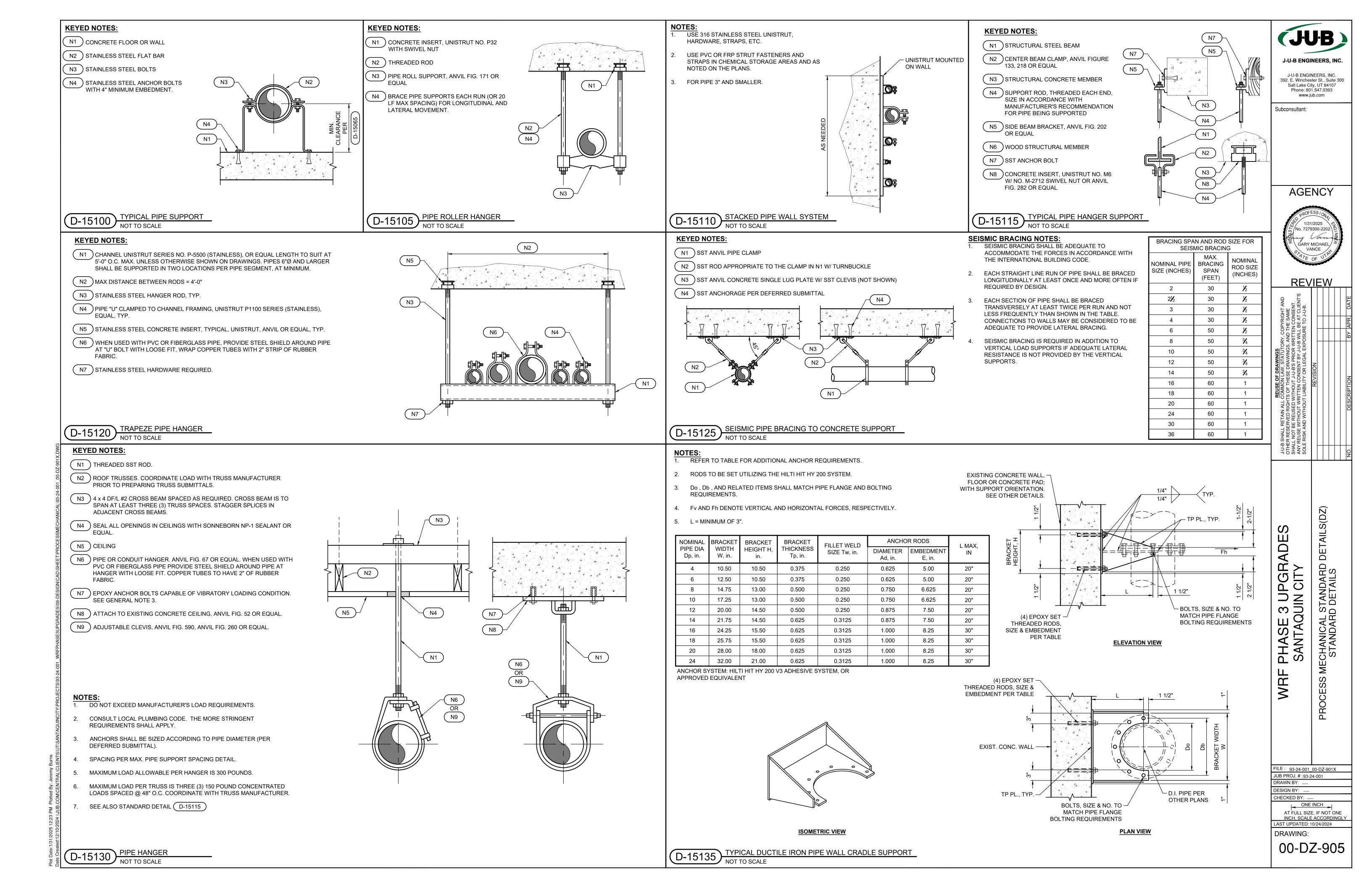
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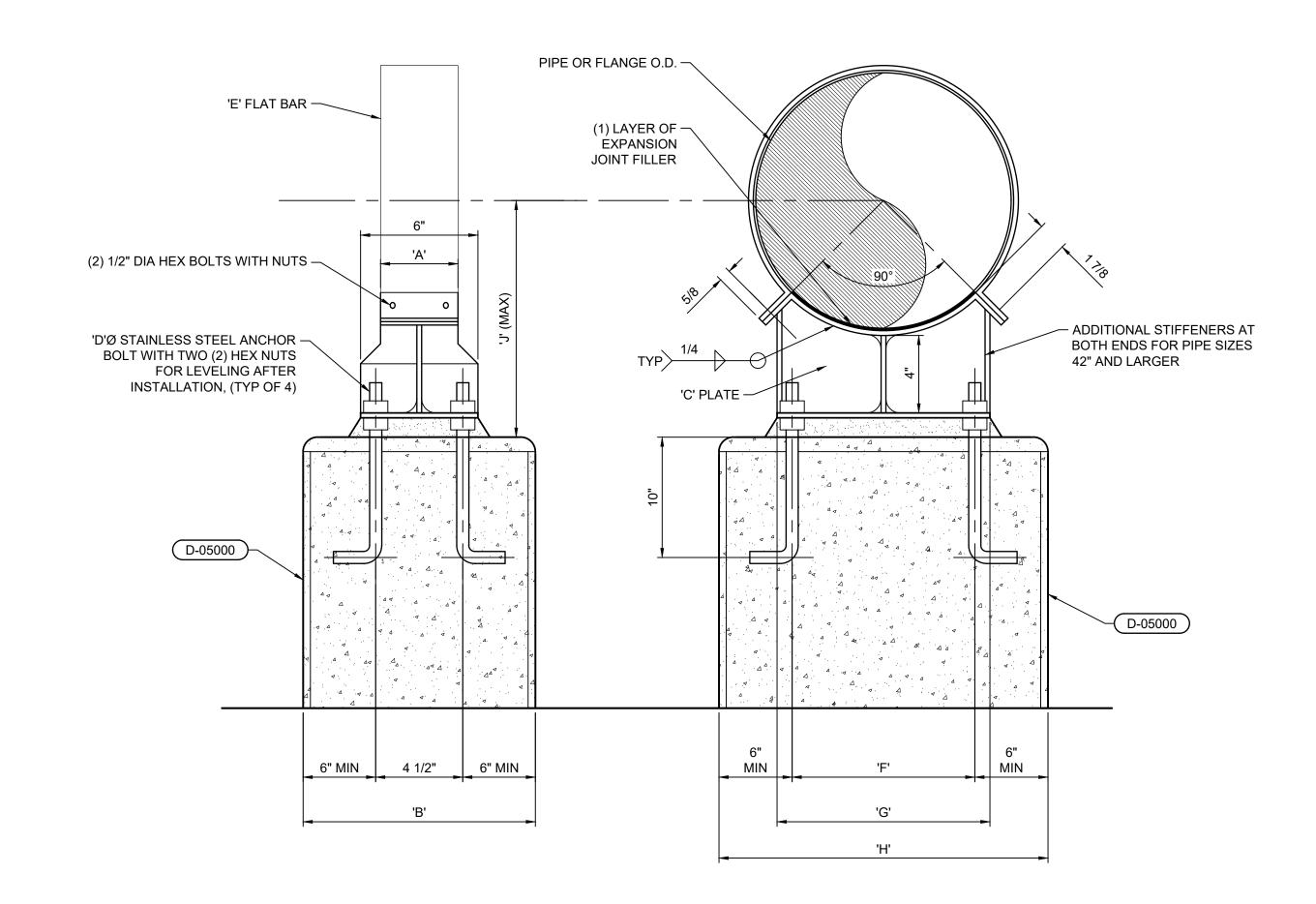
PIPE SUPPORT ADJUSTABLE



#### NOTES:

- WHEN SUPPORTING PIPE AND FLANGE ALTERNATELY ON THE SAME LINE CONCRETE PIERS FOR PIPE SUPPORTS SHALL ALL HAVE THE SAME DIMENSION 'H' FOR FLANGE SUPPORT.
- 2. HARDWARE AND FASTENERS, INCLUDING ANCHOR BOLTS, SHALL BE STAINLESS STEEL. ALL OTHER STEEL COMPONENTS SHALL BE CARBON STEEL COATED PER THE TECHNICAL SPECIFICATIONS.
- 3. COORDINATE SUPPORT HEIGHT TO ACHIEVE REQUIRED PIPE ELEVATION AS STATED ON THE PLANS.

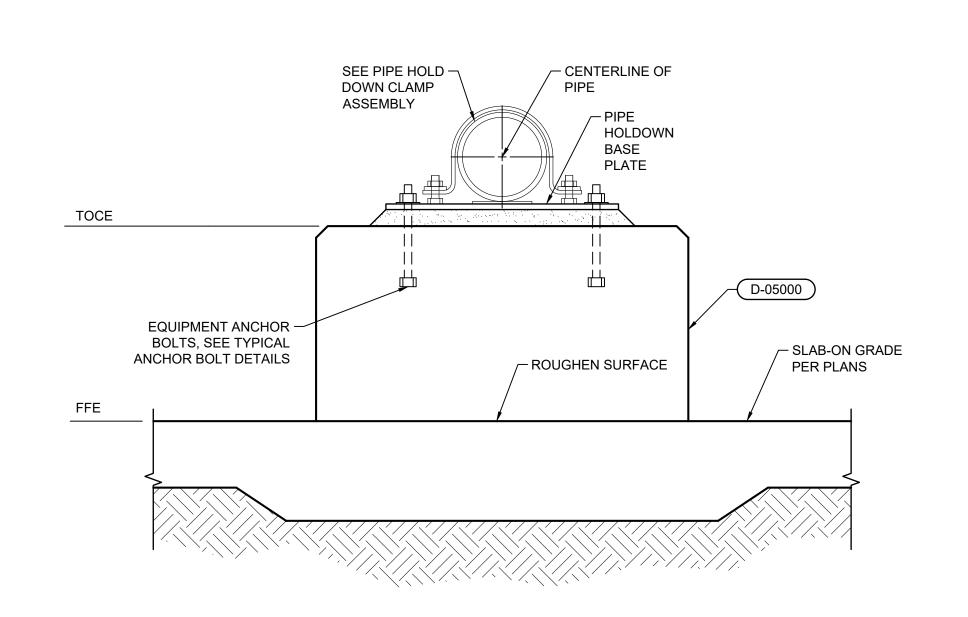
DIMENSIONS IN INCHES													
						SUPPORTING							
NOMINAL PIPE SIZE			PI	PIPE			FLANGE						
111 6 6126	Α	В	С	D	Е	F	G	Н	J(MAX)	F	G	Н	J(MAX)
4 & 6	4	12	3/8	5/8	1/4	41/2	6	12	10	6½	9	16	13
8	4	12	3/8	5/8	1/4	5	8	13	11	71/2	9	16	14
10	4	12	3/8	5/8	1/4	6	9	15	12	9	13	18	15
12	4	12	3/8	5/8	1/4	7	11	17	13	10	15	20	16
14	4	12	3/8	5/8	1/4	8	12	17	14	11	16	21	17
16	4	12	3/8	5/8	1/4	9	13	19	15	12	18	24	18
18	4	12	3/8	5/8	1/4	10	14	20	16	13	19	24	19
20	5	12	3/8	5/8	3/8	10	15	21	17	15	21	26	21
22	5	12	3/8	5/8	3/8	12	18	24	18	16	23	28	22
24	5	12	3/8	5/8	3/8	13	19	24	19	16	24	30	23
26	5	12	3/8	3/4	3/8	14	21	27	20	18	26	32	24
30	5	12	3/8	3/4	3/8	15	23	28	22	20	29	34	26
34	5	15	3/8	3/4	3/8	18	26	32	24	22	33	39	29
36	6	15	3/8	3/4	3/8	19	27	32	25	24	34	40	30
42	6	18	1/2	1	3/8	21	31	36	28	27	39	45	33



D-15136) PIPE SUPPORT - CONCRETE PEDESTAL WITH OR WITHOUT STRAP

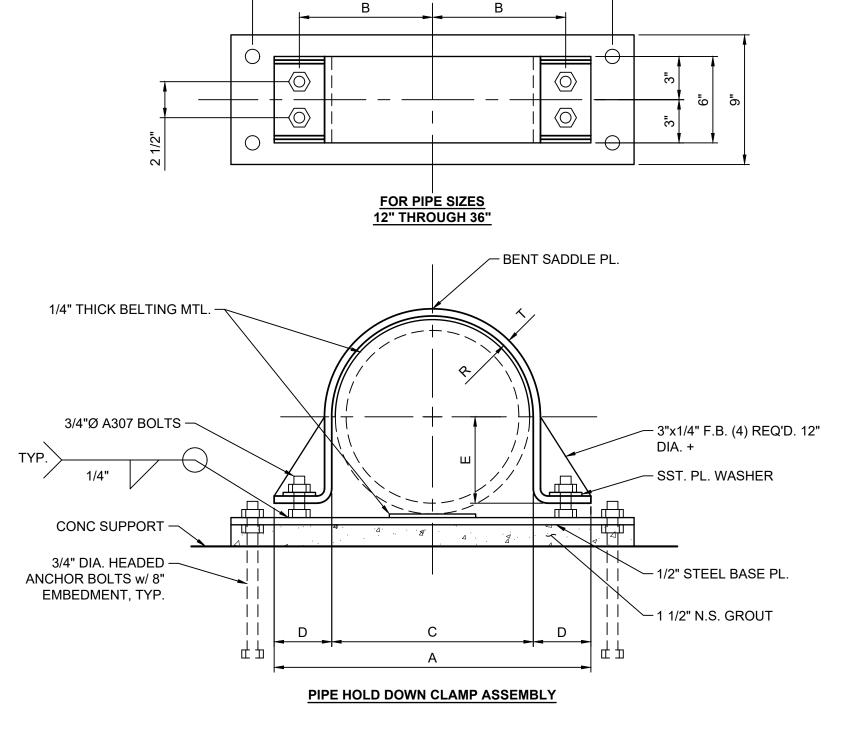
#### NOTES:

- 1. SEE OTHER PLANS & DETAILS FOR SLAB-ON-GRADE REQUIREMENTS.
- 2. COORDINATE PAD DIMENSIONS WITH OTHER COMPONENTS OF THE WORK, INCLUDING BUT NOT LIMITED TO EQUIPMENT, AS NECESSARY.
- 3. HARDWARE AND FASTENERS, INCLUDING ANCHOR BOLTS, SHALL BE STAINLESS STEEL. ALL OTHER STEEL COMPONENTS SHALL BE CARBON STEEL COATED PER THE TECHNICAL SPECIFICATIONS.



	DIMENSI	ONS IN IN	ICHES	
NOMINAL	BASE	PLATE	CONCRE DIMEN	TE BASE SIONS
PIPE SIZE I.D.	WIDTH	LENGTH	WIDTH	LENGTH
8"	4"	21.50"	12"	2.0"
10"	4"	25.50"	12"	32.0"
12"	4"	27.50"	12"	34.0"
14"	9"	29.50"	15"	36.0"
16"	9"	31.50"	15"	38.0"
18"	9"	33.50"	15"	40.0"
20"	9"	35.50"	18"	42.0"
24"	9"	39.50"	18"	46.0"
30"	9"	45.50"	20"	52.0"
36"	9"	51.50"	24"	58.0"
-				-

		PIPE CLAN	MP HOLD DO	OWN ASSEM	IBLY		
PIPE SIZE	А	В	С	D	Е	R	Т
2"	9 7/8"	3 7/16"	2 7/8"	3 1/2"	1 3/16"	1 7/16"	1/4"
3"	11"	4"	4"	3 1/2"	1 3/4"	2"	3/8"
4"	12"	4 1/2"	5"	3 1/2"	2 1/4"	2 1/2"	3/8"
6"	14 1/8"	5 9/16"	7 1/8"	3 1/2"	3 5/16"	3 9/16"	3/8"
8"	16 1/2"	6 3/4"	9 1/8"	3 1/2"	4 5/16"	4 9/16"	3/8"
10"	19 1/2"	8 1/2"	11 1/4"	3 11/16"	5 3/8"	5 5/8"	3/8"
12"	21 1/2"	9 1/4"	13 1/4"	4 1/8"	6 3/8"	6 5/8"	1/2"
14"	23 1/2"	10 1/4"	14 1/2"	4 1/8"	7"	7 1/2"	1/2"
16"	25 1/2"	11 1/4"	16 1/2"	4 1/2"	8"	8 1/4"	1/2"
18"	27 1/2"	12 1/4"	18 1/2"	4 1/2"	9"	9 1/4	1/2"
20"	29 1/2"	13 1/4"	20 1/2"	4 1/2"	10"	10 1/4"	1/2"
24"	33 1/2"	15 1/4"	24 1/2"	4 1/2"	12"	12 1/4"	1/2"
30"	39 1/2"	18 1/4"	30 1/2"	4 1/2"	15"	15 1/4"	1/2"
36"	45 1/2"	21 1/4"	36 1/2"	4 1/2"	18"	18 1/4"	1/2"



HOLES FOR 3/4" DIA. —

1 1/2"

ANCHOR BOLTS, TYP.

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WRF PHASE 3 UPGRADES

SANTAQUIN CITY

SANTAQUIN CITY

PROCESS MECHANICAL STANDARD DETAILS(DZ)

STANDARD DETAILS

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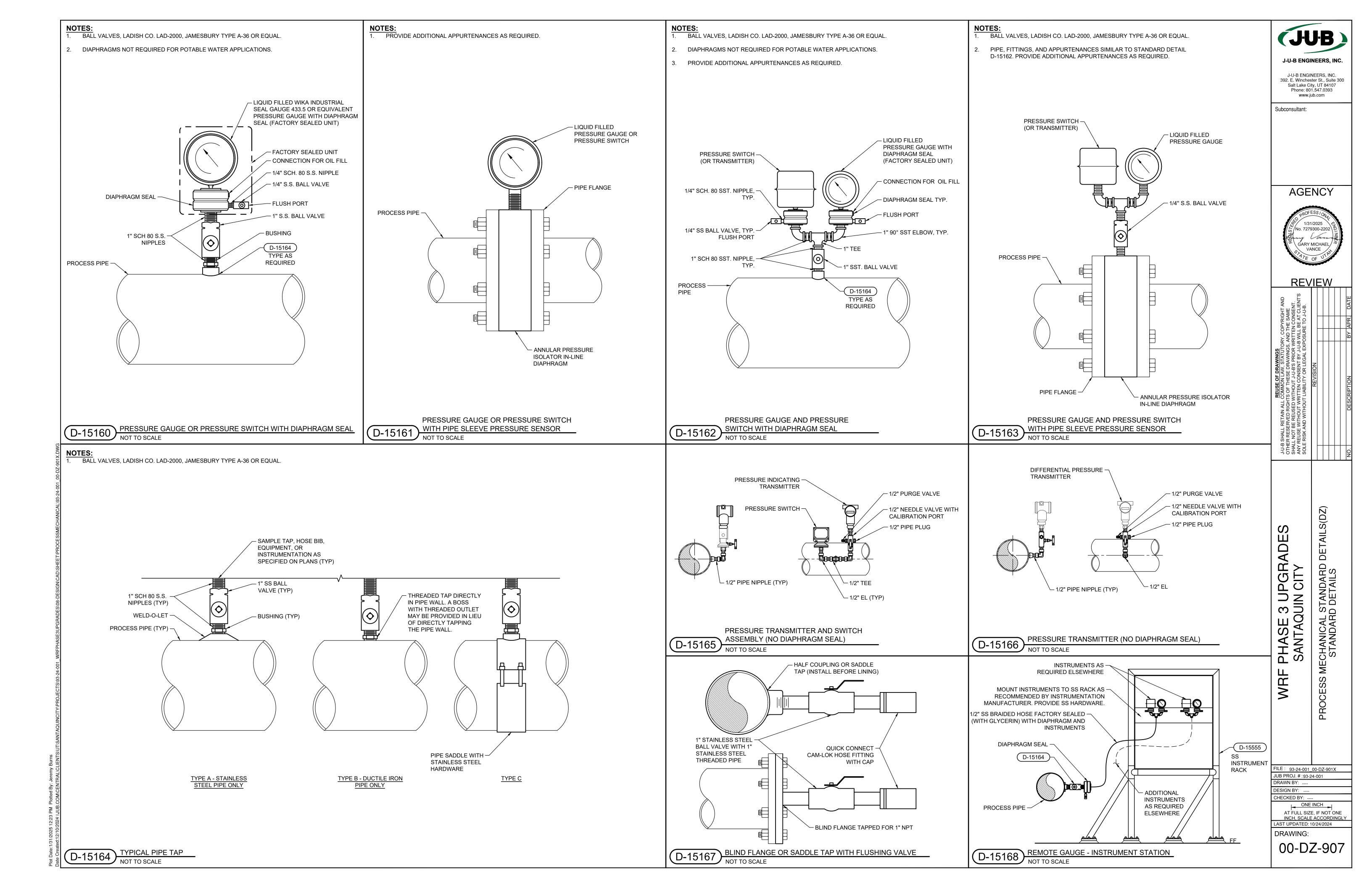
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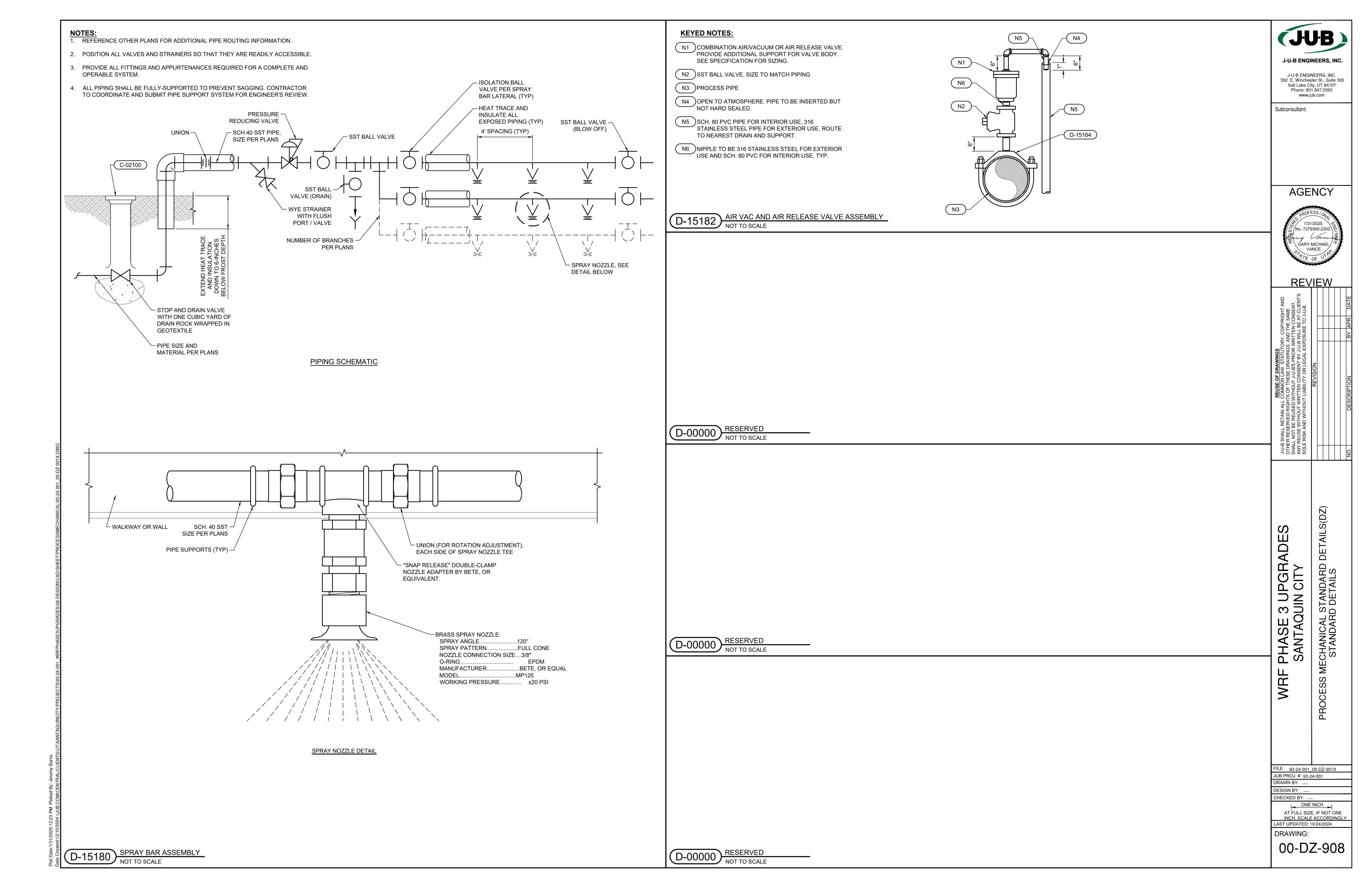
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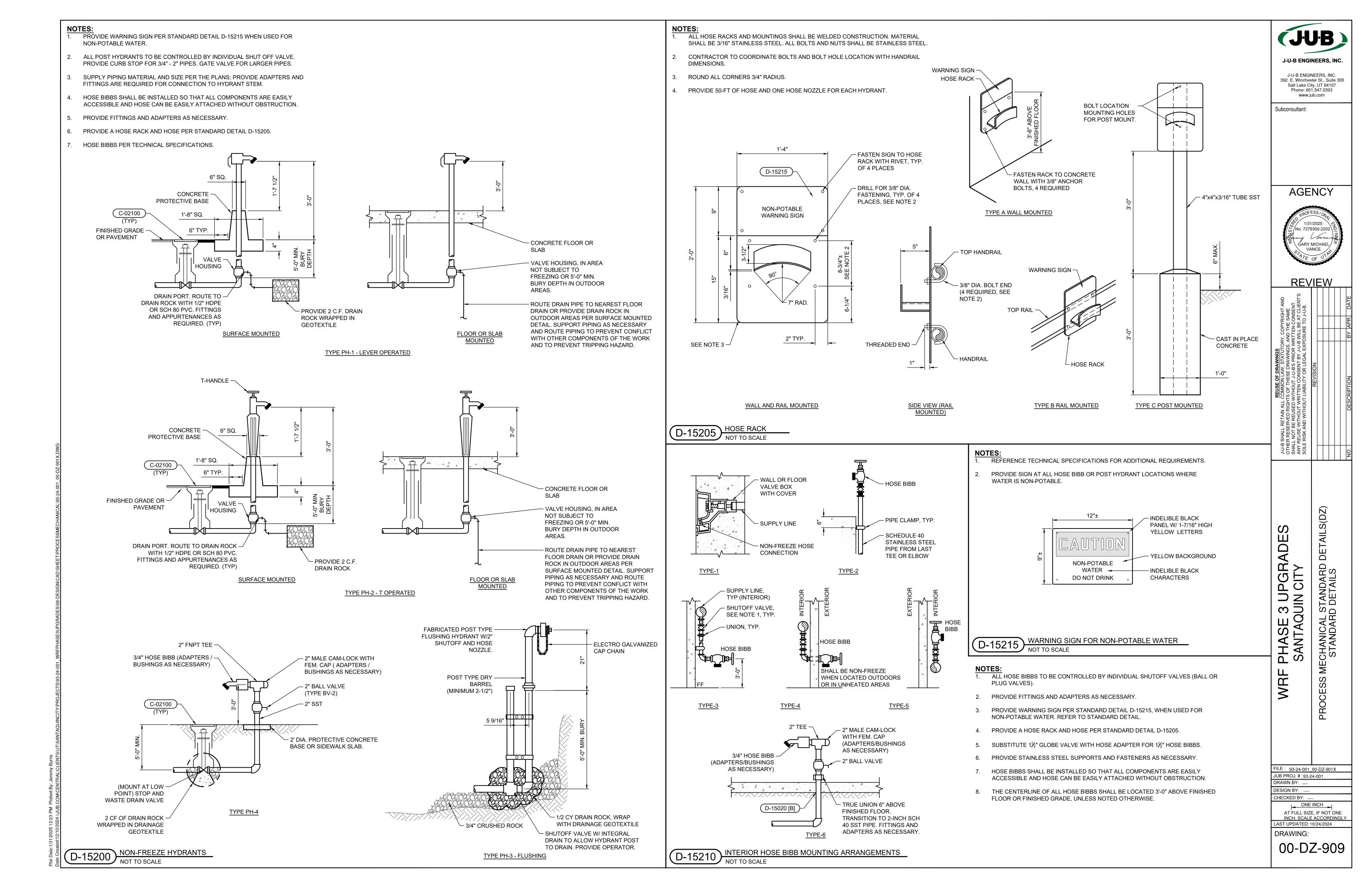
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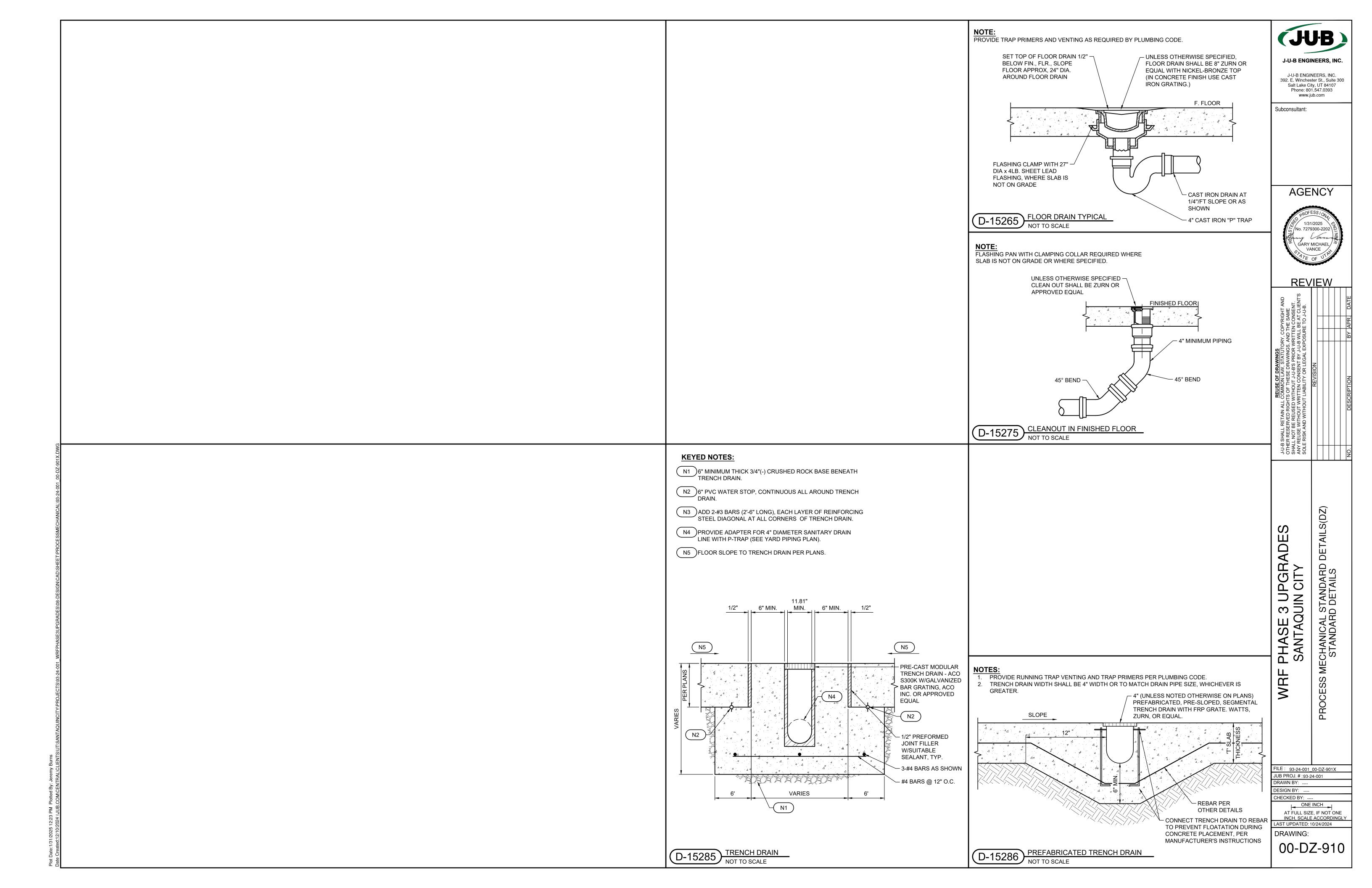
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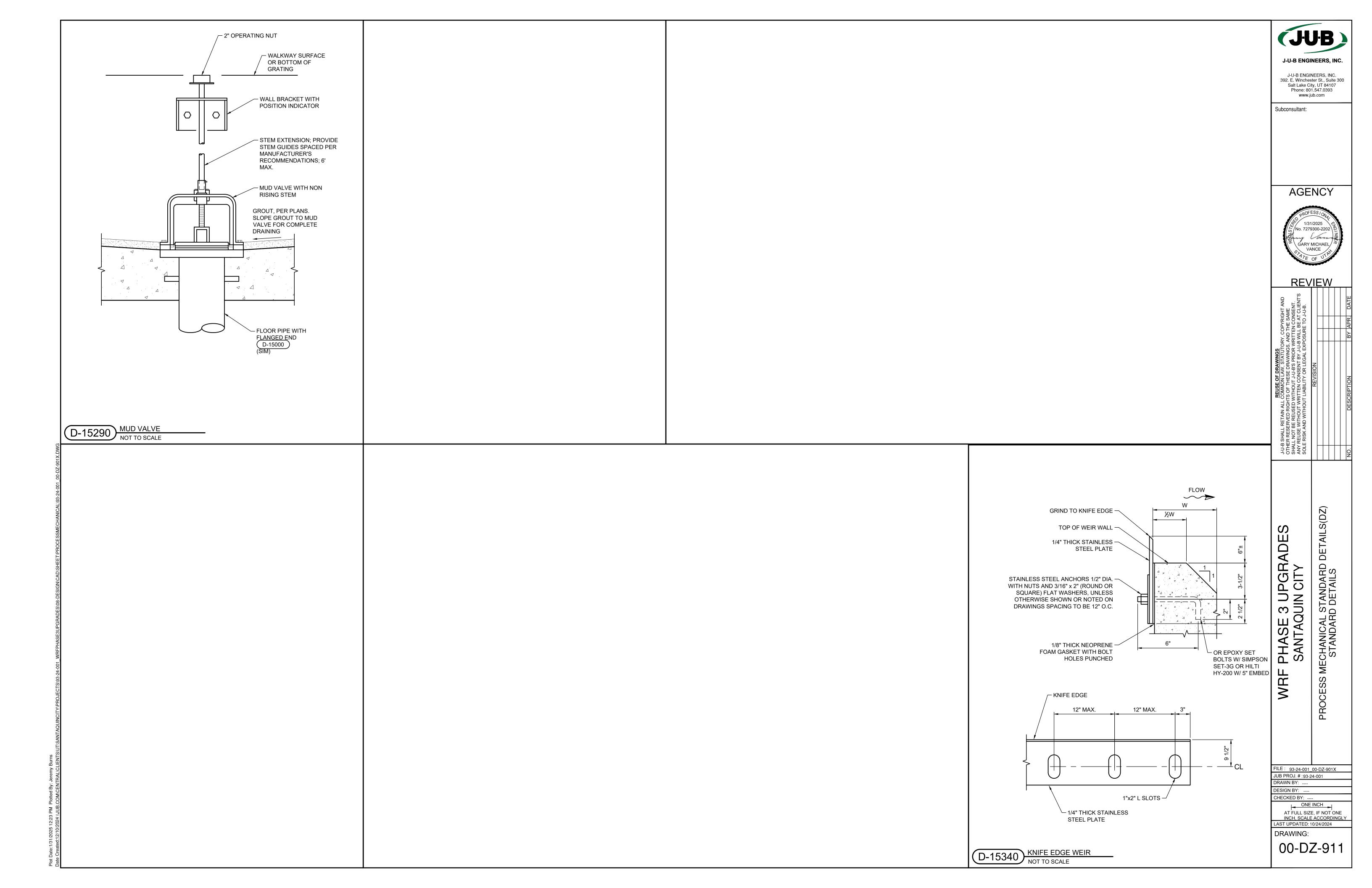
D-15137 TYPE 2 CONCRETE PIPE SUPPORT NOT TO SCALE

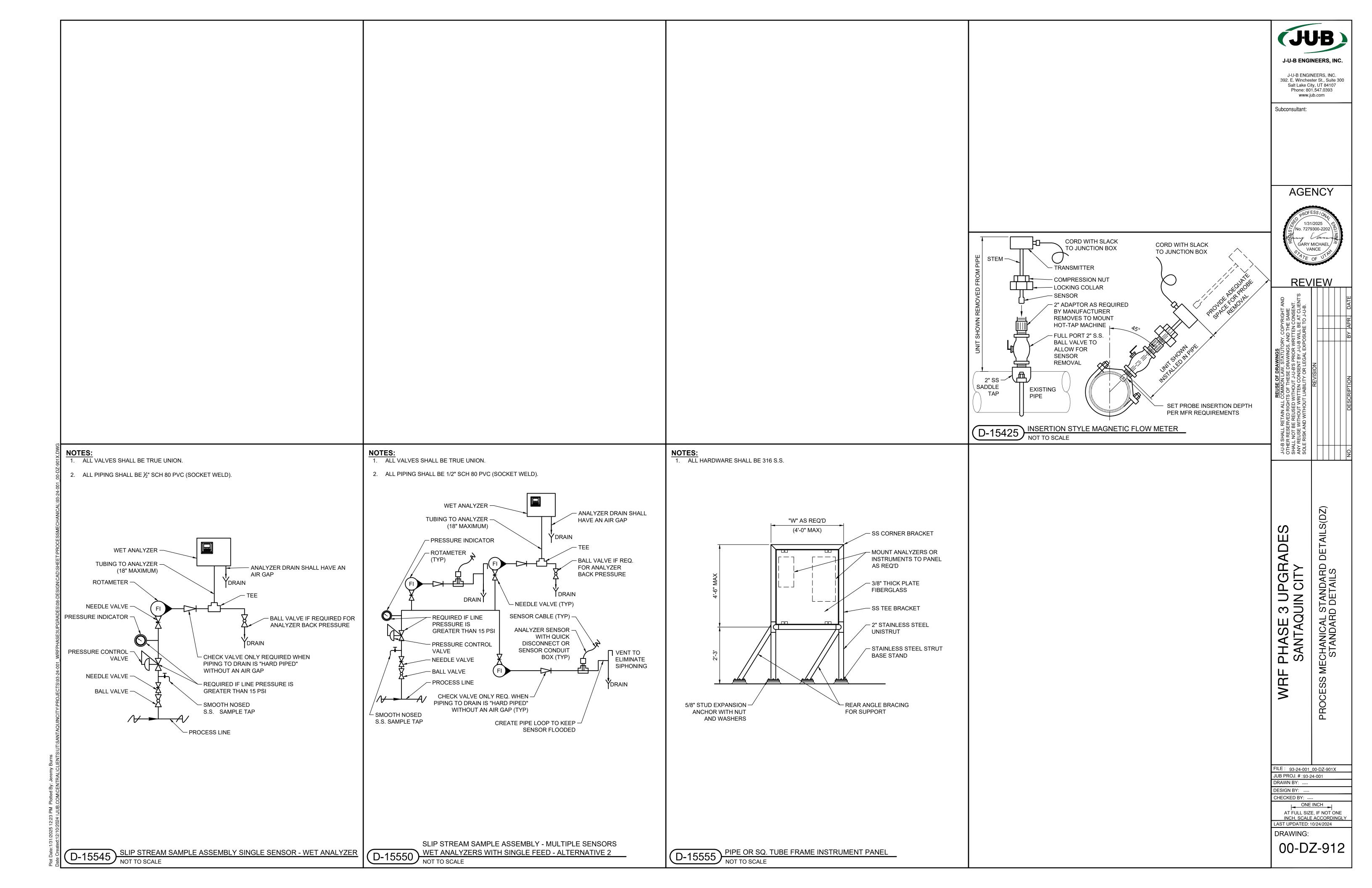


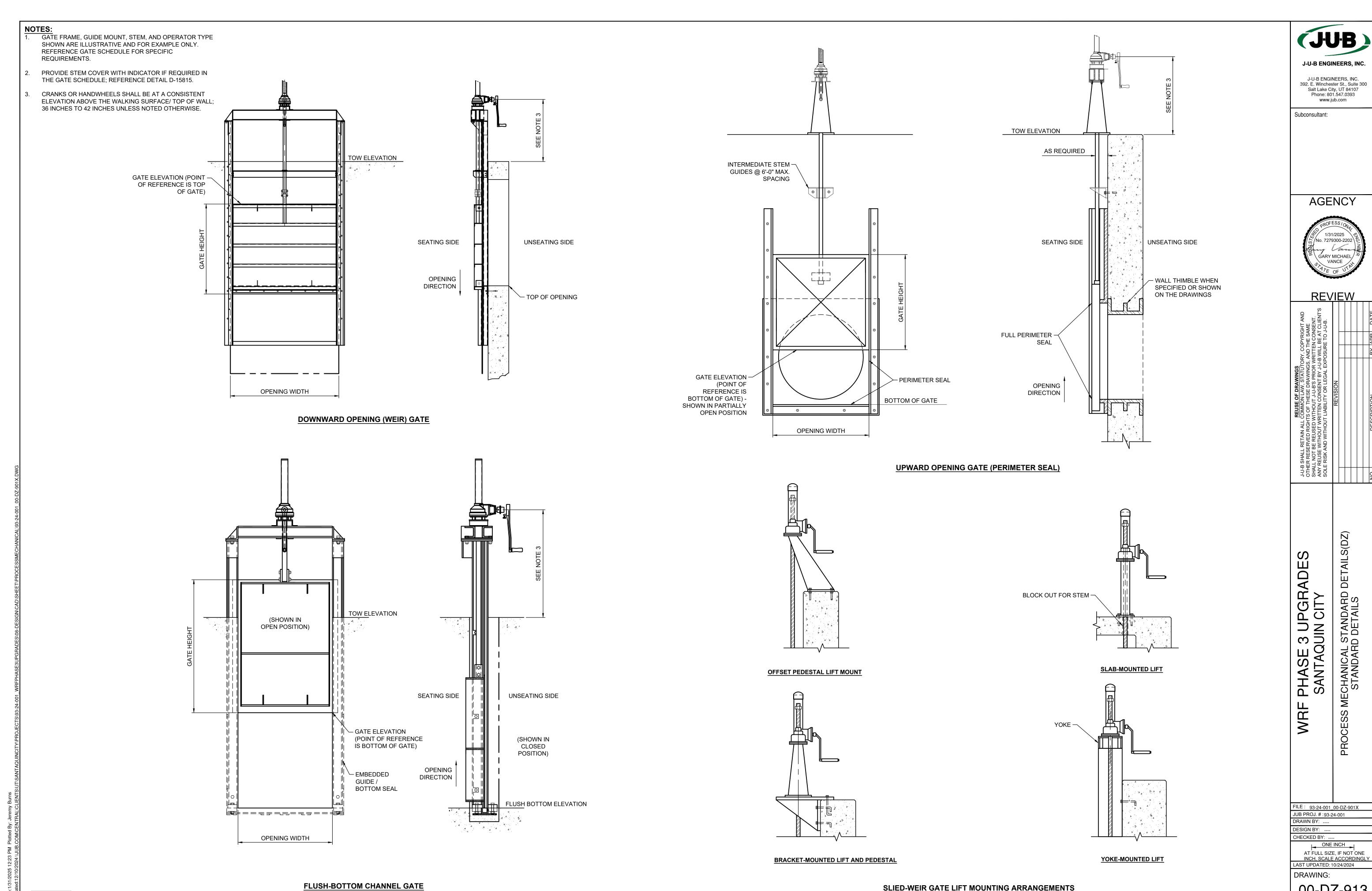










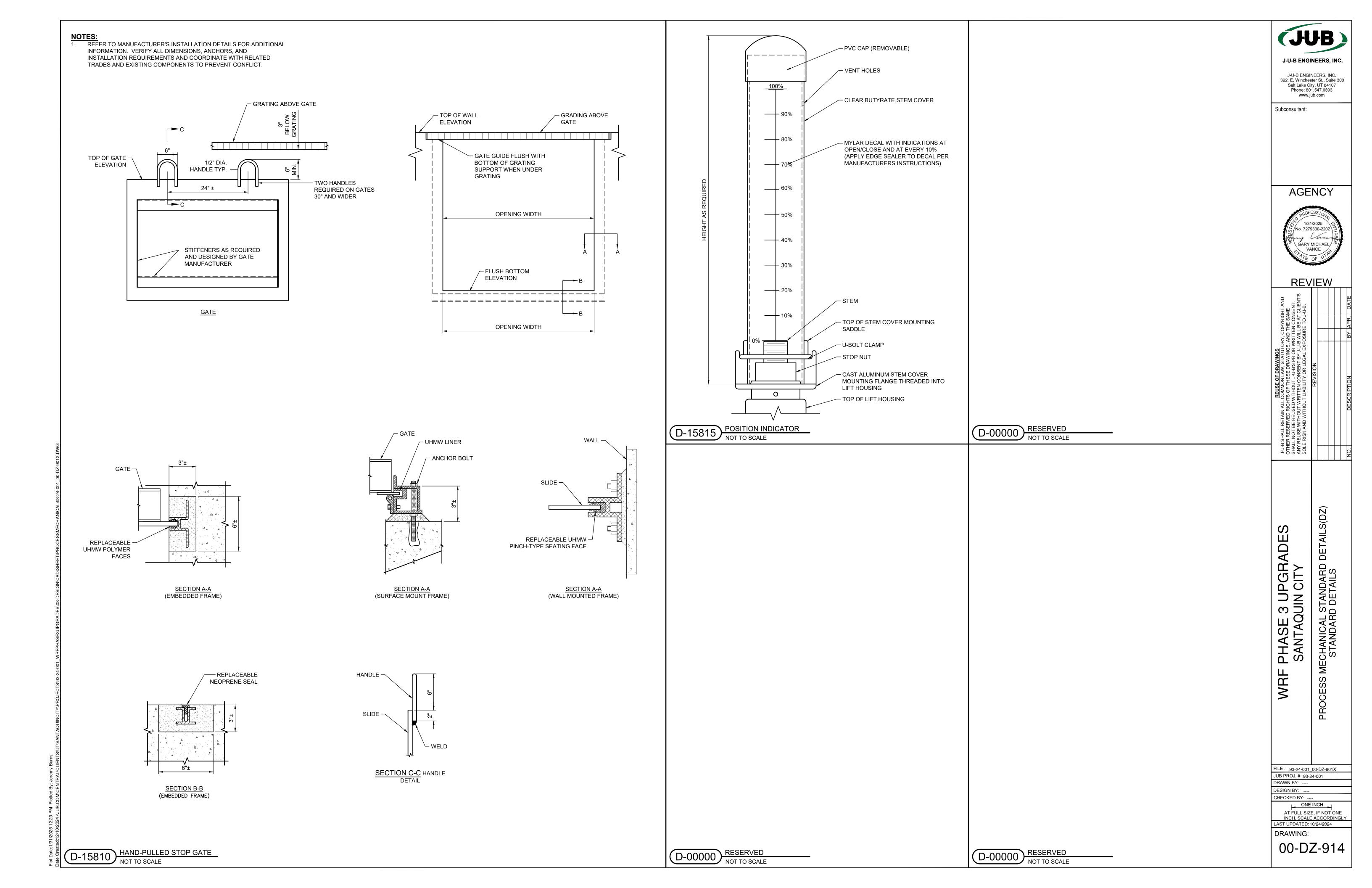


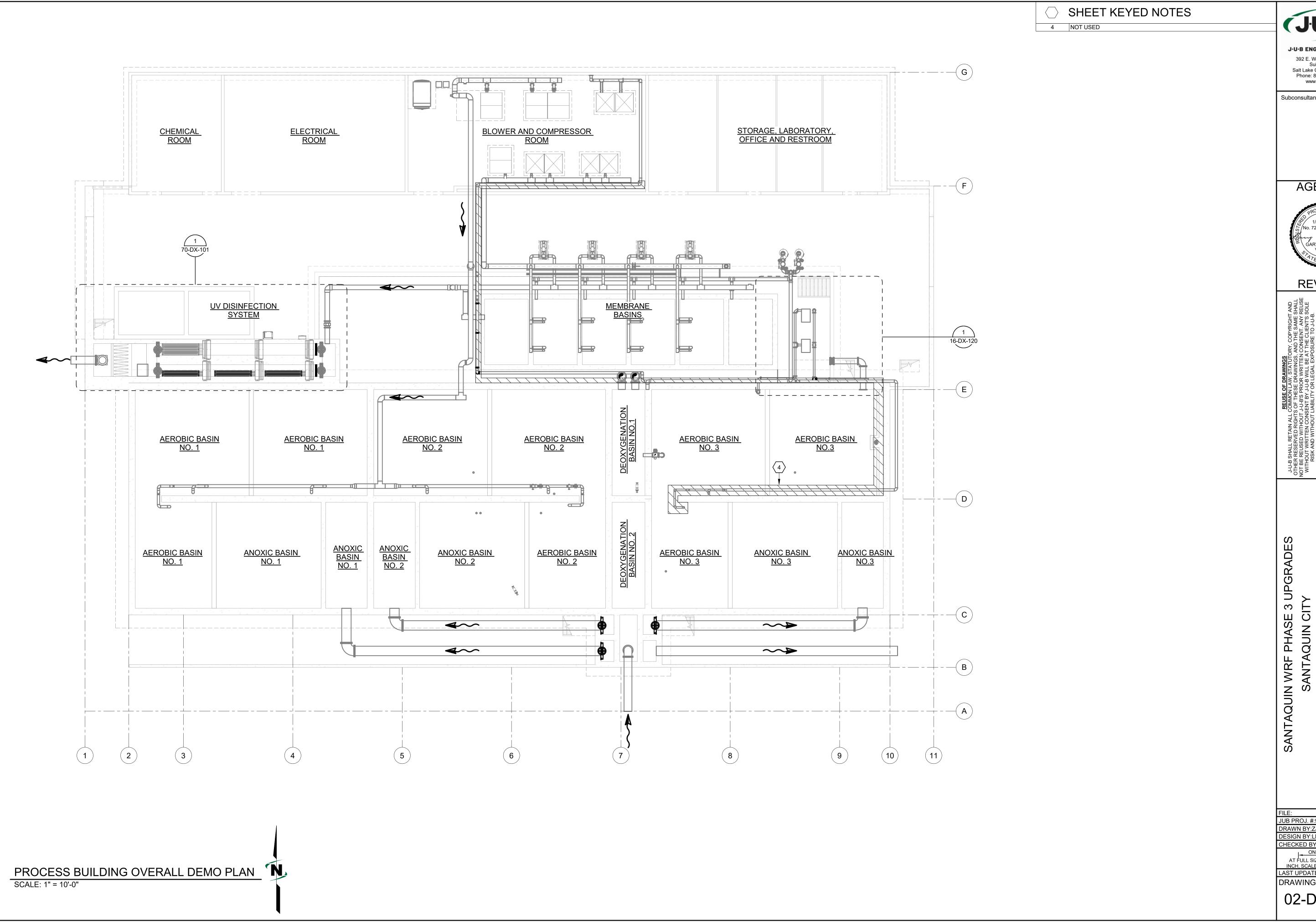
D-15800 SLIDE GATE DETAILS

NOT TO SCALE

**SLIED-WEIR GATE LIFT MOUNTING ARRANGEMENTS** 

00-DZ-913





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**REVIEW** 

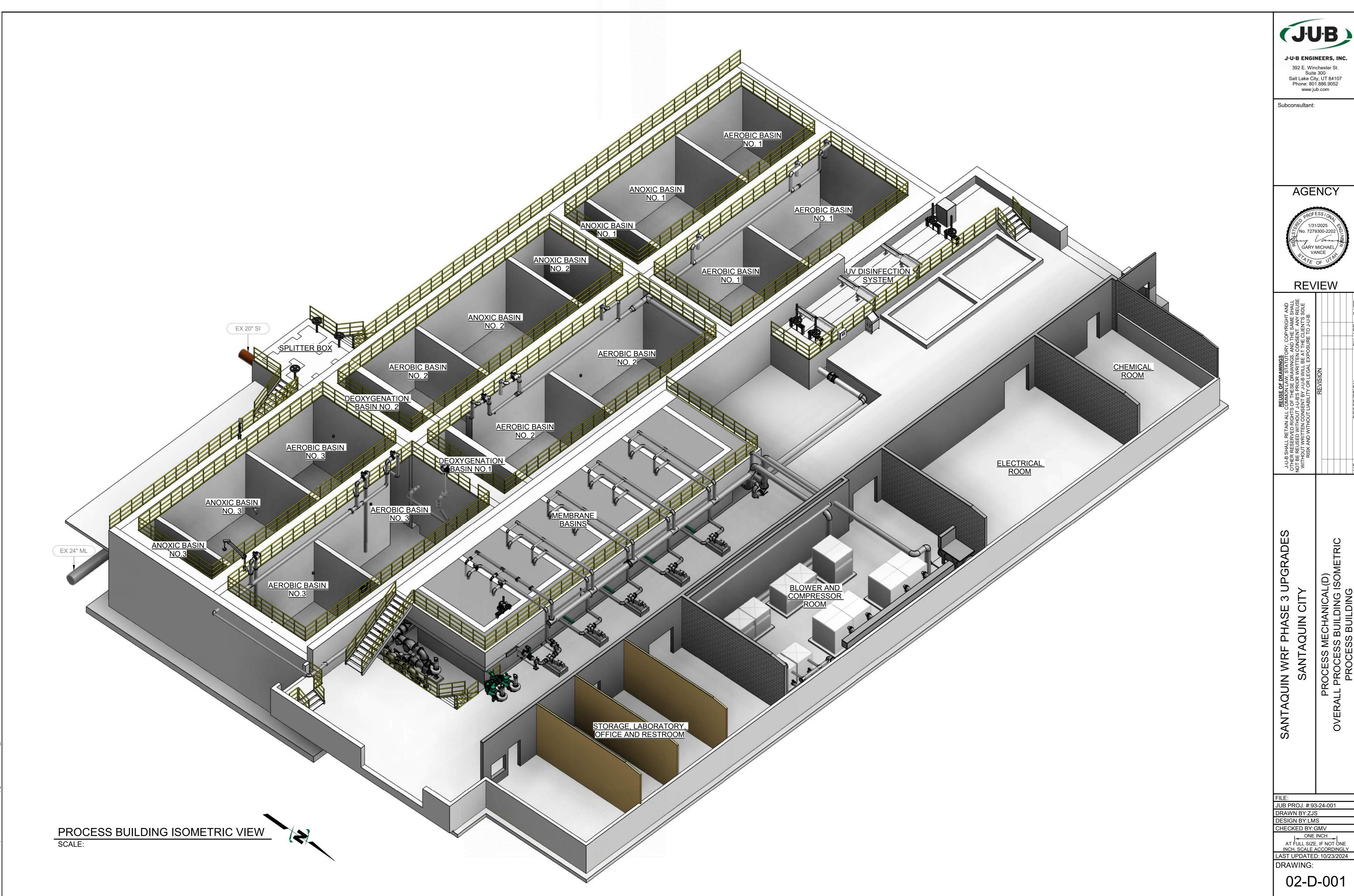
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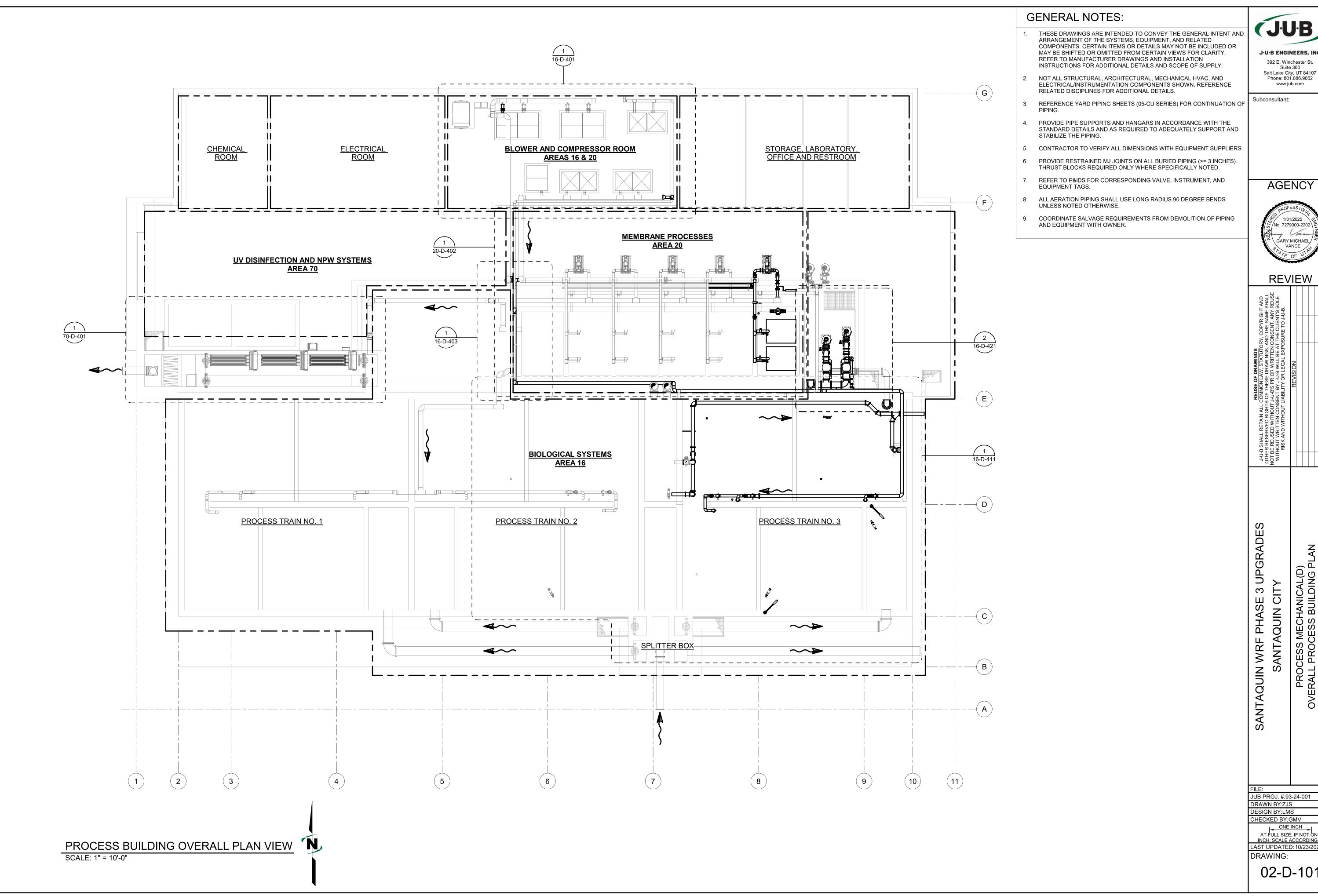
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## **KEYED NOTES:**

- EXISTING SUBMERSIBLE WASTEWATER PUMP. PRESERVE AND PROTECT.
- 6" PUMP QUICK DISCONNECT DISCHARGE ELBOW AND MOUNTING BASE w/ EPOXY-SET S.S. ANCHOR BOLTS, VERIFY SIZE WITH PUMP MFR.
- 8" UNI-FLANGE
- 4 8" FLANGE COUPLING (FLGxFLG) ADAPTER
- 10" MAGNETIC FLOW METER (FLGxFLG)
- 8" DI PIPE SPOOL, LENGTH AS NECESSARY (PEXPE)
- MECHANICAL SEAL WATERTIGHT WALL PENETRATION, SEE DETAIL D-15005, TYPE C
- 8" DI PIPE SPOOL, LENGTH AS NECESSARY, (FLGxPE)

PUMP STATION MECHANICAL MATERIAL/EQUIPMENT SHOWN IS

INSTALLATION. VERIFY ALL DIMENSIONS (BOTH VERTICAL AND

2. INITIAL LEVEL CONTROLLER SETTINGS (FIELD ADJUST TO OPTIMIZE

WORK WITH RELATED TRADES TO AVOID CONFLICTS.

OR RISING LEVEL

LAG PUMP ON LEAD PUMP ON

PUMP OFF

SCHEMATIC. CONTRACTOR IS RESPONSIBLE FOR CORRECT QUANTITIES

AND PIPE SPOOL LENGTHS AS REQUIRED FOR A FULLY FUCTIONAL

HORIZONTAL). VERIFY MANUFACTURERS CONNECTION DETAILS AND

INSTALLATION REQUIREMENTS. PROVIDE A DIMENSIONED DRAWING

SHOWING ALL VALVES, GATES, FITTINGS, PIPE SPOOLS, AND PUMP

CONNECTIONS WITH SHOP DRAWING SUBMITTAL. COORDINATE ALL

| CONTROLLER FUNCTION | CONTROLLER FUNCTION

HIGH WATER ALARM ON HIGH WATER ALARM OF

LOW WATER ALARM OFF LOW WATER ALARM ON

HIGH HIGH LEVEL ALARM, ALL PUMPS ON

LOW LOW LEVEL ALARM, ALL PUMPS OFF

INITIAL FLOAT SWITCH CONTROL SETTINGS (FIELD ADJUST TO OPTIMIZE

CONTROLLER FUNCTION

FOR FALLING LEVEL

MIN

- PIPE TO STRUCTURE TRANSITION DETAIL, SEE SHEET 05-D-502, A1
- 6" DI PIPE SPOOL, (FLGxPE)

**CONSTRUCTION NOTES:** 

PERFORMANCE AS REQUIRED):

PERFORMANCE AS REQUIRES).

ELEVATION

4782.50

- 8" SWING CHECK VALVE (FLGxFLG)
- 10" 90° MJ BEND.
- VALVE/PIPE SUPPORT, SEE DETAIL D-15070

- $11'-6" \times 12'-0" \times 8'-6"$  (INSIDE DIMENSIONS) HIGH PRECAST CONCRETE VALVE VAULT w/ PLASTIC COATED STEPS. 8" MIN. WALL THICKNESS. 300 PSF RATED. MODIFY OPENINGS AS REQ'D TO ACCOMMODATE PIPING AND ACCESS HATCH AS SHOWN. COAT EXTERIOR WITH WATERPROOFING TREATMENT.
- 10" TEE (FLG)
- EXISTING CONCRETE WET WELL. FILL, SEAL, AND MODIFY OPENINGS AS REQ'D TO ACCOMMODATE PIPING AND ACCESS HATCH AS SHOWN, CONTRACTOR TO VERIFY EXISTING DIMENSIONS.
- NEW SUBMERSIBLE WASTEWATER PUMP TO MATCH EXISTING PUMPS, SEE SECTION 43 25 05
- FLOAT SWITCHES FOR PUMP CONTROL, SEE ELECTRICAL SHEETS
- SCREENED VENT, SEE DETAIL D-05100
- EXISTING 18" PVC INLET SEWER. PRESERVE AND PROTECT.
- 6" PLUG VALVE w/ HANDWHEEL (FLGxFLG)
  - 96"x48" MIN. CLEAR OPENING ALUMINUM TRIPLE LEAF ACCESS DOORS w/ STAINLESS STEEL HARDWARE. HATCH OPENING MUST PROVIDE 48"x30" MIN AROUND EACH PUMP. HATCH SHALL BE 300 PSF RATED. PROVIDE RECESSED, LOCKABLE HASP COVERED w/ HINGED LID FLUSH WITH SURFACE. INSTALL DOOR SUCH THAT RAIL SYSTEM IS NOT IN CONFLICT WITH DOOR. SAFETY BAR GRATING IS REQ'D. SEE DETAIL D-05015

- 10"x6" RED. TEE (FLGxFLG)
- CONCRETE PEDESTAL PIPE SUPPORT, SEE
- DETAIL D-15137 REMOVE EXISTING LID AND INSTALL NEW CAST-IN-PLACE CONCRETE LID. SEE STRUCTURAL.
- STAINLESS STEEL LIFTING CHAIN OR CABLE (MIN. STRENGTH 2,000 LBS.) w/ S.S. CLEVIS FITTING AT EACH
- THRUST RESTRAINT PIPE SUPPORT, SEE SHEET DETAIL D-15135.
- DISMANTLING JOINT.
- CRUSHED AGGREGATE BASE TYPE A2 (3/4" MINUS) COMPACTED TO 98% ASTM D-698
  - 6" PIPE SPOOL, LENGTH AS NECESSARY, (FLGxCAM-LOCK(MALE)).
- NOT USED.
- PIPE BRACE, SEE SHEET DETAIL D-15100.
- LOCATING WIRE. PROVIDE SUFFICIENT LENGTH FOR WIRE TO BE PULLED TO GROUND SURFACE.
- INSTALL VAULT ACCESS STEPS DOWN WALL BELOW ACCESS HATCH CENTERLINE. STEPS TO BE MANUFACTURED IN ACCORDANCE WITH SANTAQUIN CITY STANDARDS, CHAPTER 4, SECTION 5.04(A)
- FUTURE GRINDER, SEE ELECTRICAL FOR PROVISIONS TO BE INSTALL IN CURRENT PROJECT

- 10" 90° ELBOW (FLGxFLG)
- NOT USED.
- RADAR LEVEL TRANSMITTER. SEE ELECTRICAL PLANS AND SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
- DAVIT CRANE. THERN PORTABLE CRANE MODEL 5PT220-E2 COMMANDER 2000 SERIES WITH 4WP2 ELECTRIC WINCH AND PEDESTAL BASE (2 EACH).
- CABLE SUPPORT BRACKET, SEE SHEET 05-D-501.
- 6" DI SPOOL (FLGxFLG).
- 18"x18" MIN. CLEAR OPENING ALUMINUM SINGLE LEAF ACCESS DOOR w/ STAINLESS STEEL HARDWARE. SEE DETAIL D-05010.
- 36"x48" MIN. CLEAR OPENING ALUMINUM SINGLE LEAF ACCESS DOOR w/ STAINLESS STEEL HARDWARE. HATCH SHALL BE 300 PSF RATED. PROVIDE RECESSED. LOCKABLE HASP COVERED w/ HINGED LID FLUSH WITH SURFACE. SAFETY BAR GRATING IS REQ'D. SEE DETAIL D-05010.
- 3" DRAIN ROCK
- 30"x30" MIN. CLEAR OPENING ALUMINUM SINGLE LEAF ACCESS DOOR w/ STAINLESS STEEL HARDWARE. HATCH SHALL BE 300 PSF RATED WITH CHANNEL FRAME FOR DRAINAGE. SEE DETAIL D-05010
- 10" DI SPOOL (FLGxFLG)

- 6" CAM-LOCK CAP (FEMALE)
- 8" PLUG VALVE w/ HANDWHEEL (FLGxFLG)
- 6"x8" ECCENTRIC REDUCER (FLGxFLG) 10"x18" CONCENTRIC REDUCER (MJxMJ)
  - 18" HDPE
  - 8"x10" CONCENTRIC REDUCER (FLGxFLG)
- 10" FLANGE COUPLING (FLGxFLG) ADAPTER
- 10" DI PIPE SPOOL, LENGTH AS NECESSARY, (FLxPE)
- 10" PLUG VALVE w/ HANDWHEEL (FLGxFLG)
- 10" DI PIPE SPOOL (FLxFL)
- 10" DI PIPE SPOOL, LENGTH AS NECESSARY, (PEXPE)
- 12"x12" DRAINAGE HOLE
- $6'-0" \times 10'-0" \times 7'-6"$  (INSIDE DIMENSIONS) HIGH PRECAST CONCRETE METER VAULT w/ PLASTIC COATED STEPS. 8" MIN. WALL THICKNESS. 300 PSF RATED. MODIFY OPENINGS AS REQ'D TO ACCOMMODATE PIPING AND ACCESS HATCH AS SHOWN. COAT EXTERIOR WITH WATERPROOFING TREATMENT.

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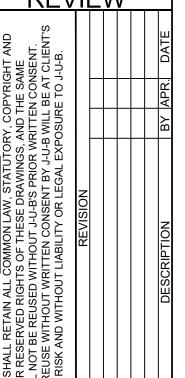
392. E. Winchester St., Suite 30

Subconsultant:

**AGENCY** 



REVIEW



UPGRADE PHASE 3 UF SANTAQUIN

FILE: 93-24-01 D-101X JB PROJ. #:93-24-001 RAWN BY: AMP / JTB

WRF

DESIGN BY: AMN CHECKED BY: GMV ONE INCH

AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY
LAST UPDATED: 1/28/2025

DRAWING: 05-D-101

YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES

LIFT STATION - MECHANICAL PLAN

18" RSFM-PVC05

4. INSTALL PUMP AND ALL RELATED PUMP EQUIPMENT IN STRICT ACCORDANCE WITH THE DRAWINGS, SPECIFICATIONS, AND MANUFACTURERS RECOMMENDATIONS.

- 5. PROTECT SIGNS, POWER POLES, DITCHES AND OTHER EXISTING FEATURES ADJACENT TO THE SITE, UNLESS NOTED OTHERWISE. DAMAGE BY CONTRACTORS OPERATIONS SHALL BE REPAIRED AT CONTRACTORS EXPENSE.
- 6. UNLESS NOTED OTHERWISE, ALL PIPING AND FITTINGS FROM THE PUMPS THROUGH THE VALVE VAULT SHALL BE DUCTILE IRON CLASS 53 AND SHALL BE COATED/LINED IN ACCORDANCE WITH THE TECHNICAL SPECIFICATIONS.
- 7. ALL BOLTS, NUTS, WASHERS, FASTENERS, ETC. SHALL BE STAINLESS STEEL, TYPE 304 OR 316.
- 8. INSTALL EXPANSION JOINT MATERIAL BETWEEN CONCRETE STRUCTURES AND ANY CONCRETE SLABS.
- 9. NOT ALL FEATURES ARE SHOWN IN BOTH PLAN AND SECTION VIEWS FOR CLARITY.
- 10. THE PRECAST CONCRETE VAULT SHALL CONSIST OF PRECAST CONCRETE FOUNDATION, WALLS, AND LID AS REQUIRED. THE PRECAST CONCRETE MANUFACTURER WILL BE RESPONSIBLE FOR DETERMINING THE FOUNDATION. THICKNESS, AND CONFIGURATION OF THE PRECAST CONCRETE STRUCTURE IN ACCORDANCE WITH THE PROJECT DRAWINGS AND THE DESIGN REQUIREMENTS AS SPECIFIED ON SHEET 00-S-002 CONTRACTOR SHALL SUBMIT STRUCTURAL DESIGN AND ANTI-FLOTATION CALCULATIONS FOR THE PRECAST CONCRETE VAULTS.

MIN

(05-FE-101)

05-HV-104-3

**5**7-

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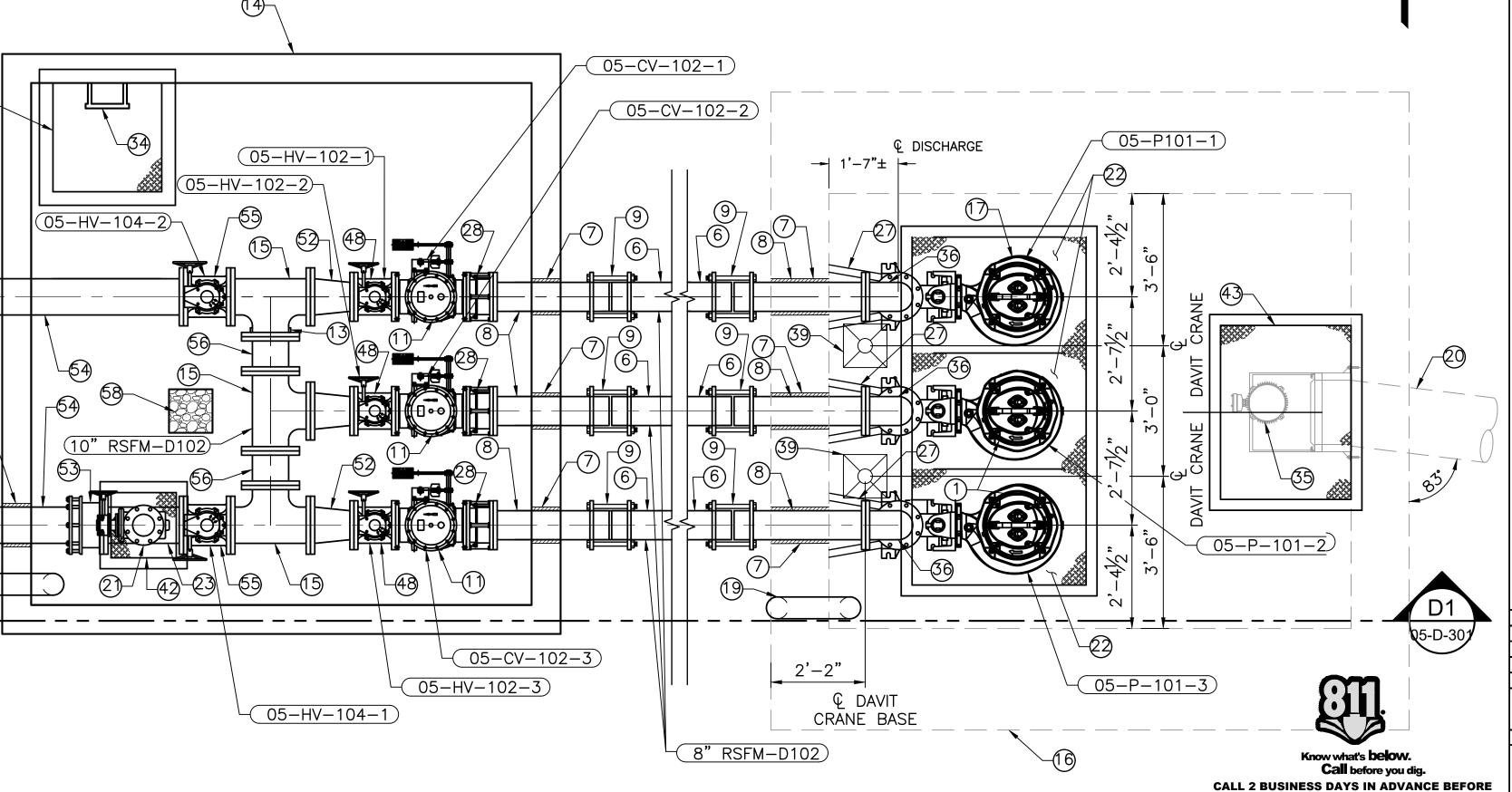
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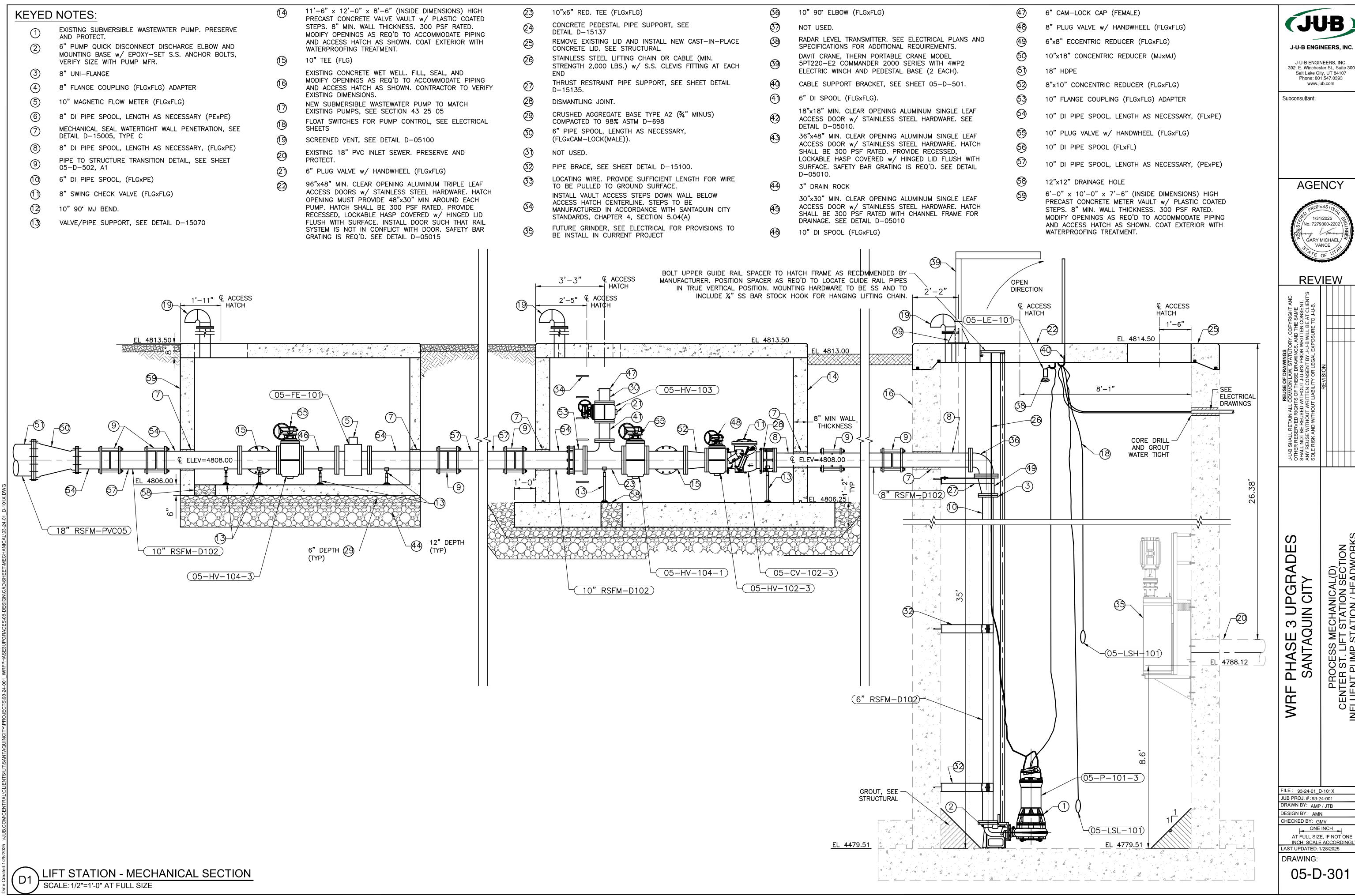
19-/

10" RSFM-D102

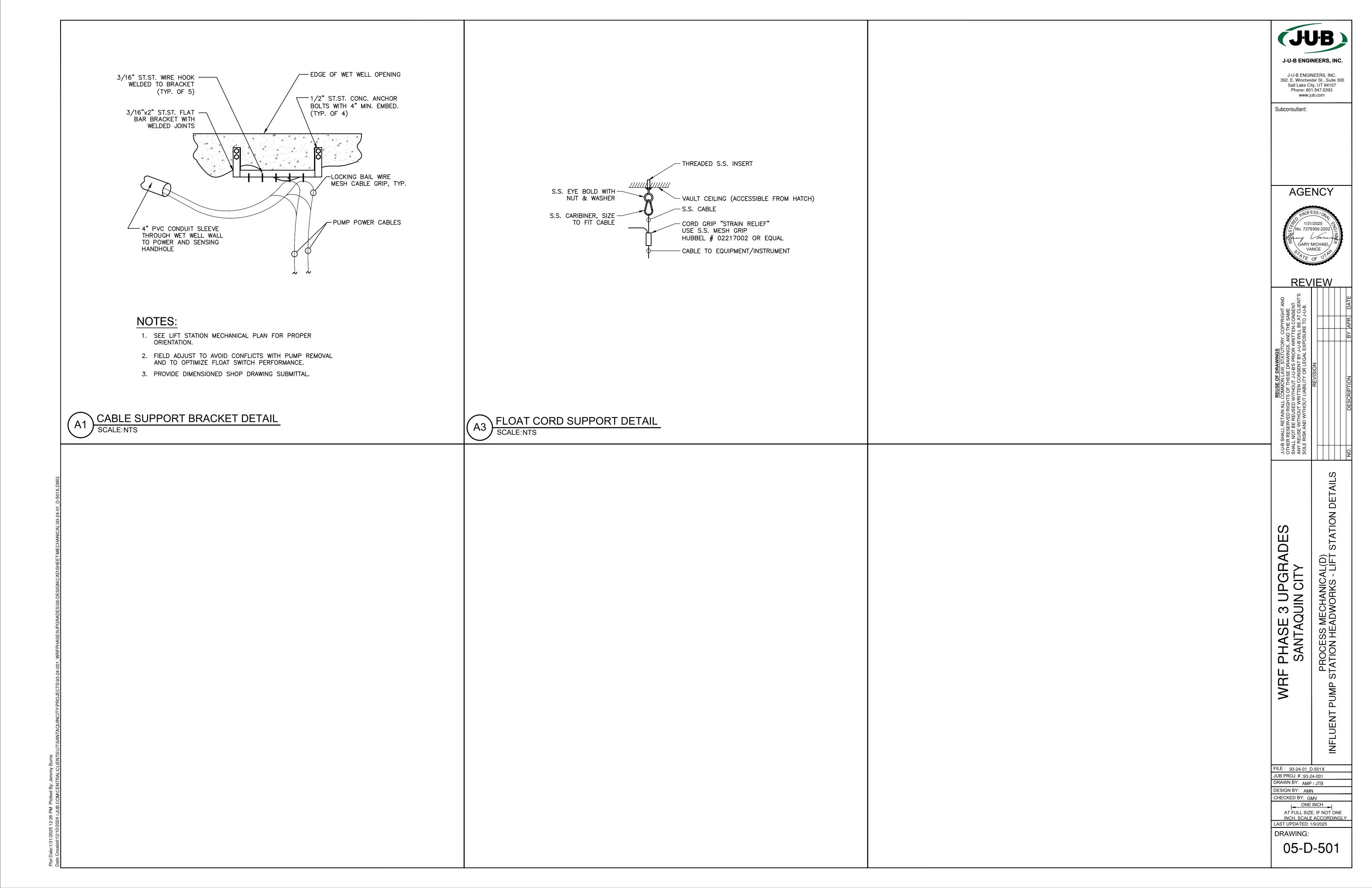
STRUCTURAL DESIGN SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER CURRENTLY LICENSED IN THE STATE OF UTAH. SEE SHEET 00-S-001 THROUGH 00-S-004 FOR GENERAL AND SPECIFIC STRUCTURAL DESIGN CRITERIA.

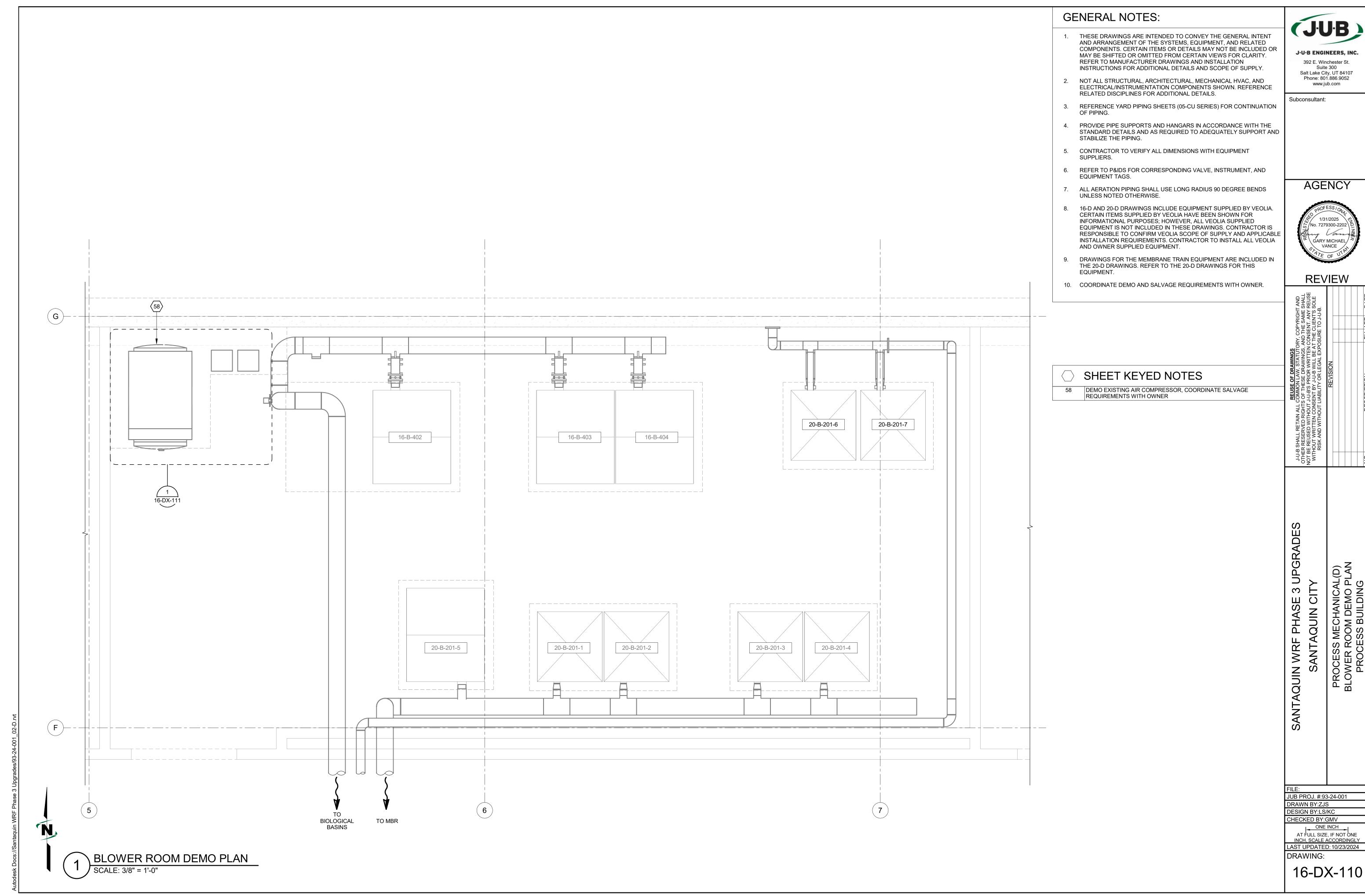
- 11. WALL PENETRATIONS FOR THE PRECAST CONCRETE VAULTS WELLS DO NOT NEED TO BE CAST WITH A SLEEVE. THE PENETRATIONS MAY BE PROVIDED BY THE PRECAST MANUFACTURER OR CORE DRILLED IN THE FIELD.
- 12. PROVIDE HYDROSTATIC TESTING OF WET WELL PER THE SPECIFICATIONS.
- 13. APPLY ANTI-GALLING COMPOUND TO STAINLESS STEEL BOLT / SCREW THREADS.
- 14. SEWER SERVICE MUST ME MAINTAINED THROUGHOUT THE ENTIRETY OF CONSTRUCTION. THE CONTRACTOR SHALL SUBMIT A BYPASS PUMPING PLAN IN ACCORDANCE WITH SECTION 33 30 00 SEWER BYPASS PUMPING PRIOR TO THE START OF CONSTRUCTION.



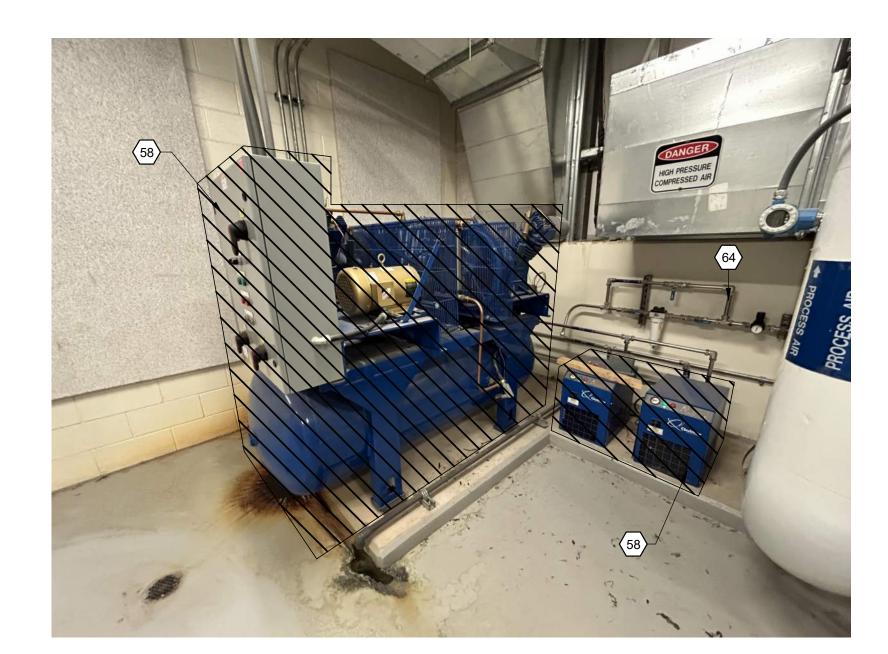


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AIR COMPRESSOR DEMO



# **GENERAL NOTES:**

1. REFER TO 16-DX-110 FOR GENERAL NOTES.

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Subconsultant:

# SHEET KEYED NOTES

PROTECT AND RETAIN EXISTING PIPE SUPPORTS TO REUSE FOR 8"
PIPING. NEW CLEVIS NEEDED TO LARGER PIPE DIAMETER DEMO EXISTING 6" PIPING TO INSTALL NEW 8" AIR PIPING; CAP AND LEAVE IN PLACE WHEN DEMO NOT REQUIRED. ROUTE NEW 8" SST AIR PIPING IN SAME LOCATION AS EXISTING 6" BIOSOLIDS PIPING. MATCH FLANGE, FITINGS AND WELD LOCATIONS IN ORDER TO MATCH

45 ESTIMATED END OF REQUIRED DEMO. MAY BE BROUGHT FURTHER UPSTREAM, COORDINATE WITH OWNER.

DEMO EXISTING AIR COMPRESSOR, COORDINATE SALVAGE REQUIREMENTS WITH OWNER

PROTECT IN PLACE ALL EXISTING HIGH PRESSURE AIR PIPING, VALVES AND APPURTENANCES

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SANTAQUIN WRF PHASE 3 UPGRADES

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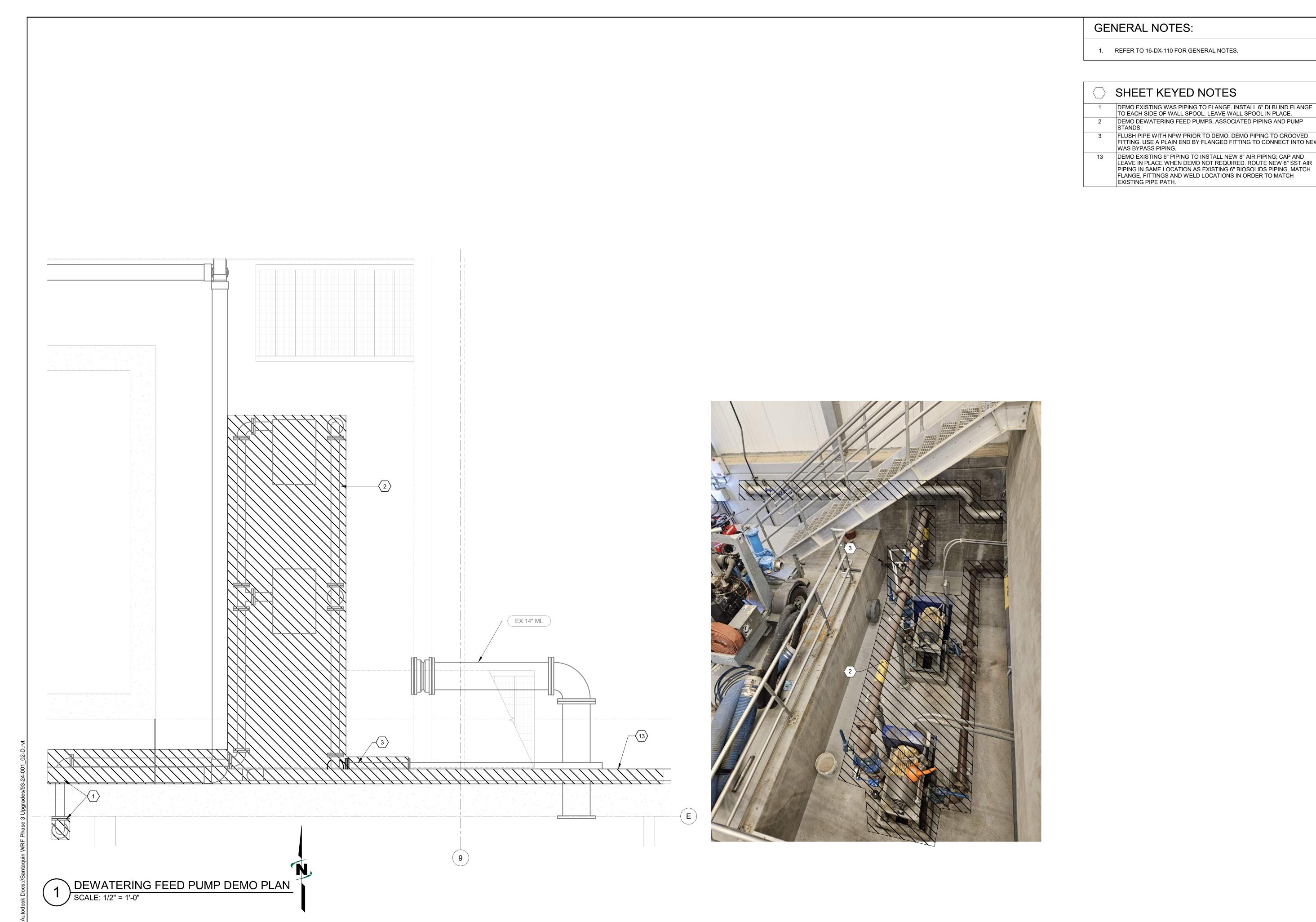
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DRAWING:

16-DX-111





WAS BYPASS PIPING.

EXISTING PIPE PATH.

1. REFER TO 16-DX-110 FOR GENERAL NOTES.

SHEET KEYED NOTES

DEMO EXISTING WAS PIPING TO FLANGE. INSTALL 6" DI BLIND FLANGE TO EACH SIDE OF WALL SPOOL. LEAVE WALL SPOOL IN PLACE.

FLUSH PIPE WITH NPW PRIOR TO DEMO. DEMO PIPING TO GROOVED FITTING. USE A PLAIN END BY FLANGED FITTING TO CONNECT INTO NEW

PIPING IN SAME LOCATION AS EXISTING 6" BIOSOLIDS PIPING. MATCH FLANGE, FITTINGS AND WELD LOCATIONS IN ORDER TO MATCH

DEMO DEWATERING FEED PUMPS, ASSOCIATED PIPING AND PUMP STANDS.

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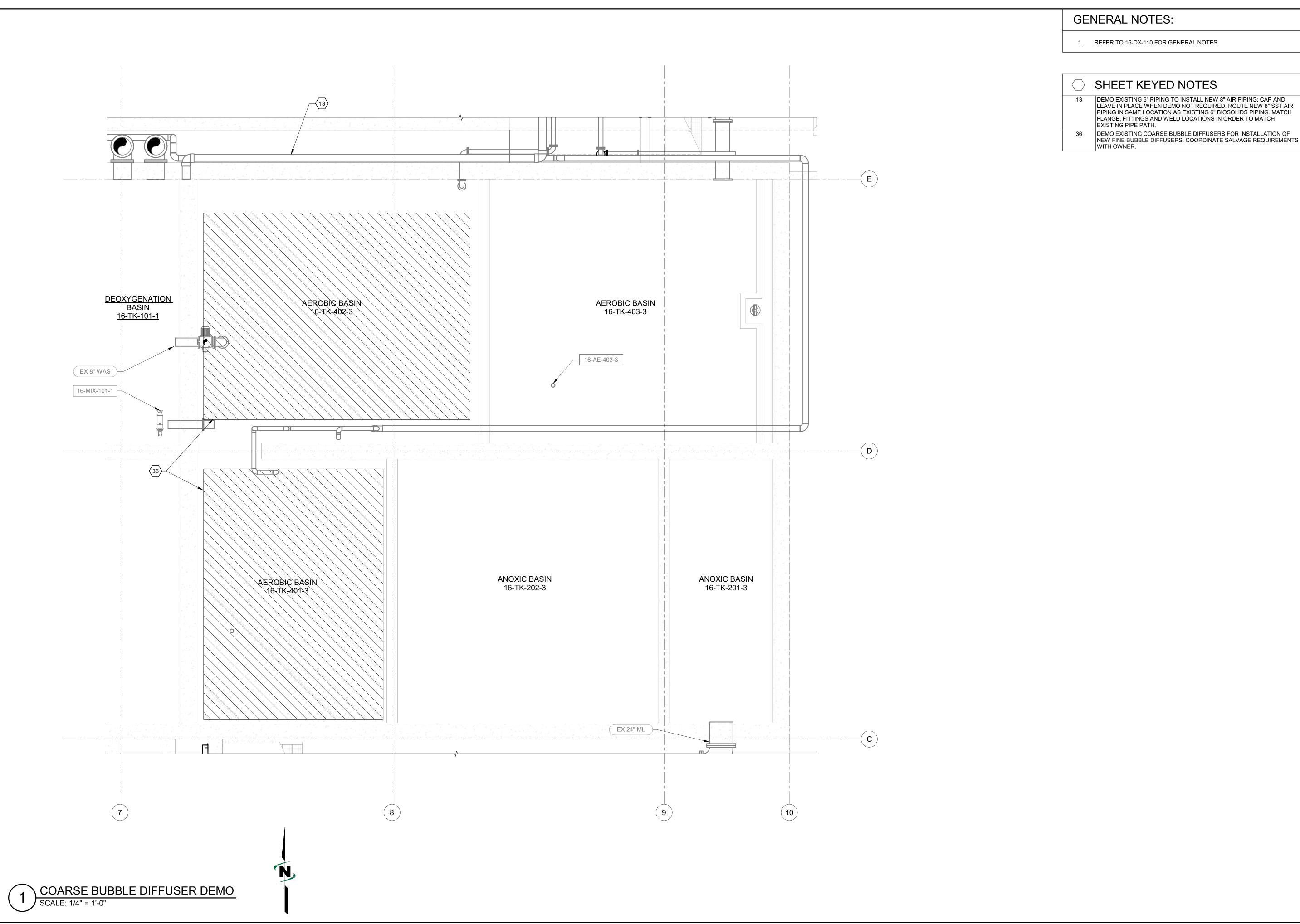
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16-DX-120



1. REFER TO 16-DX-110 FOR GENERAL NOTES.

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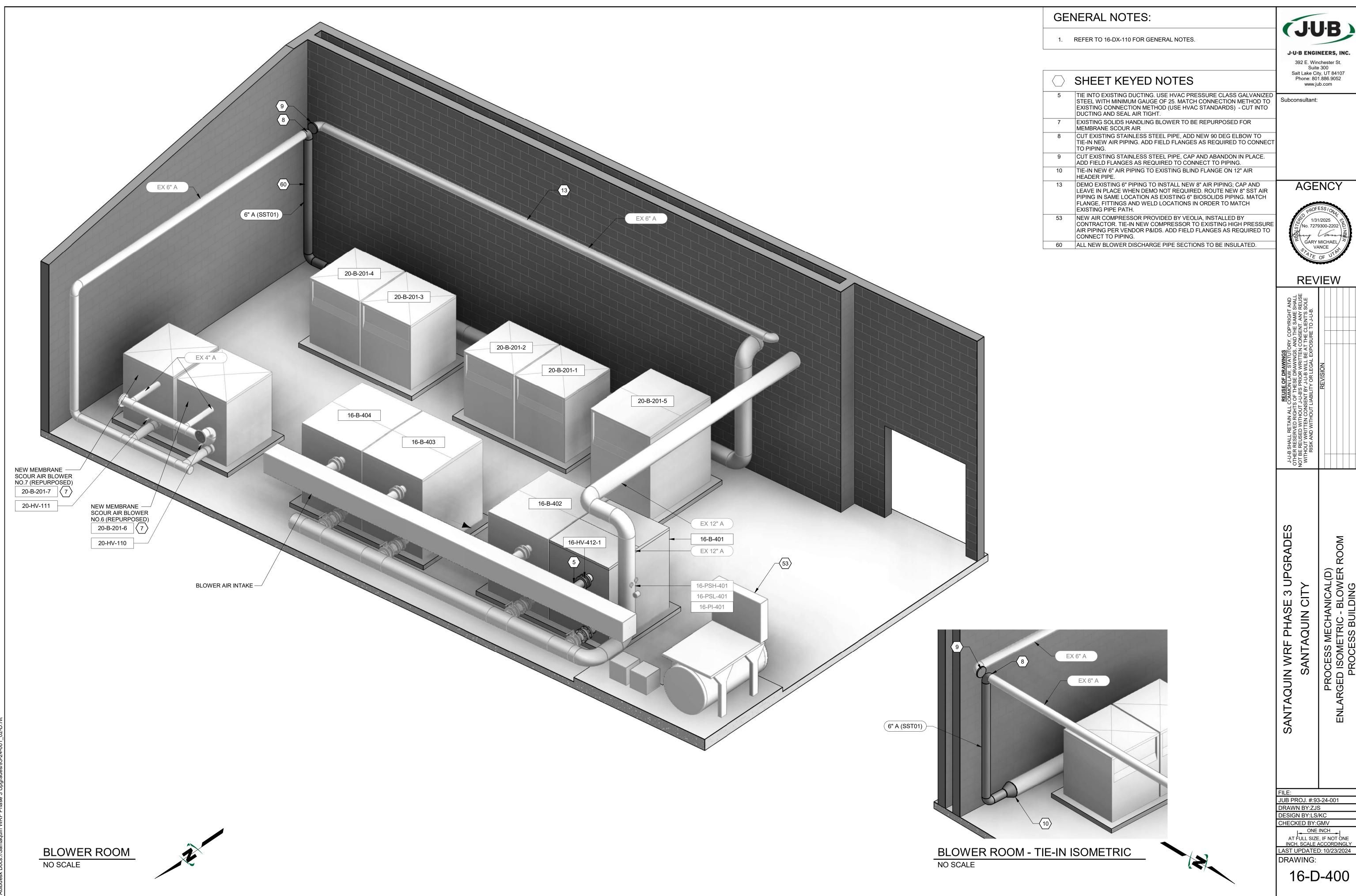
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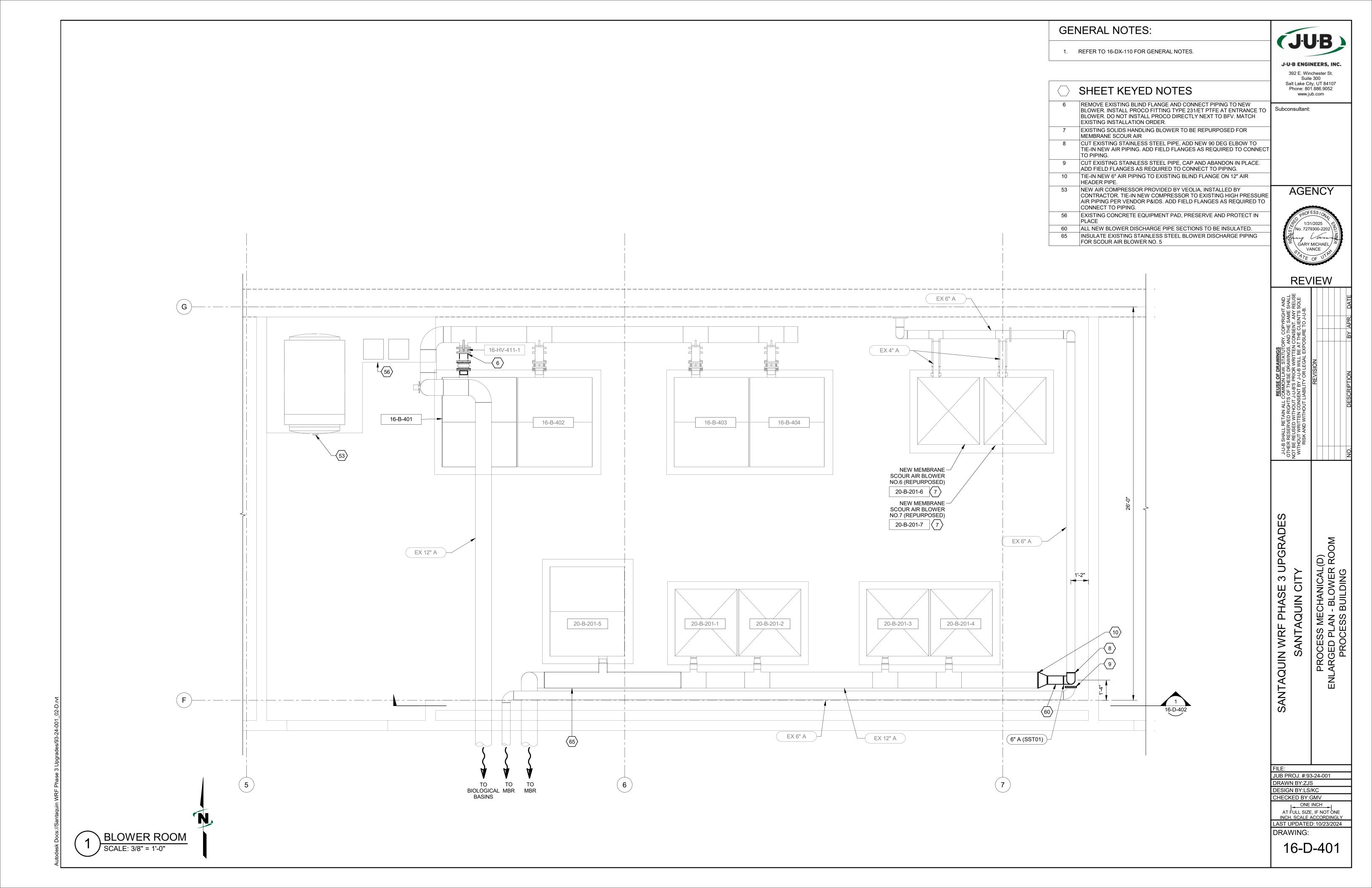
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LAST UPDATED: 10/23/2024

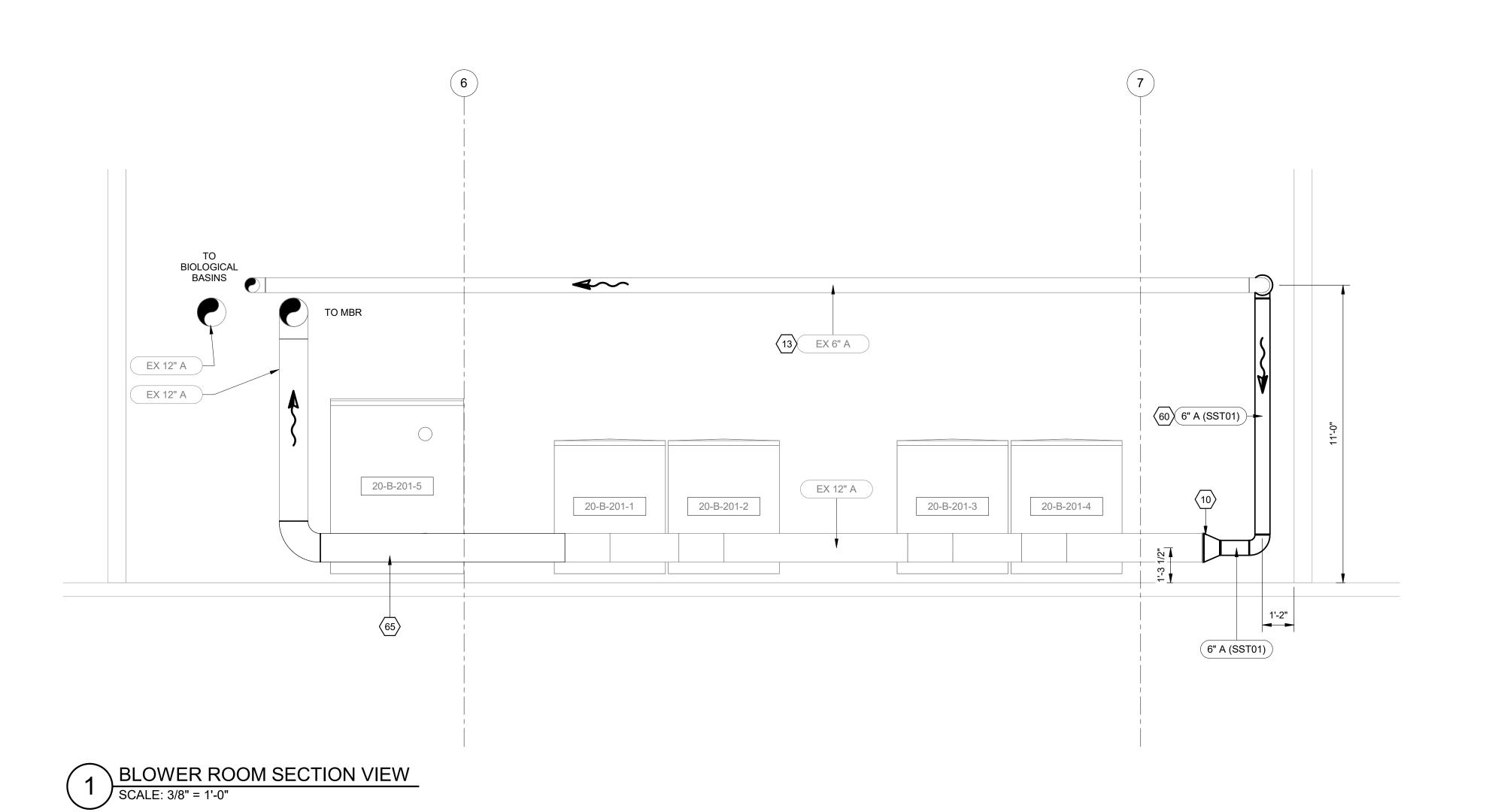
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16-DX-121



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1. REFER TO 16-DX-110 FOR GENERAL NOTES.

EXISTING PIPE PATH.

SHEET KEYED NOTES

10 TIE-IN NEW 6" AIR PIPING TO EXISTING BLIND FLANGE ON 12" AIR HEADER PIPE.

60 ALL NEW BLOWER DISCHARGE PIPE SECTIONS TO BE INSULATED. 65 INSULATE EXISTING STAINLESS STEEL BLOWER DISCHARGE PIPING FOR SCOUR AIR BLOWER NO. 5

PIPING IN SAME LOCATION AS EXISTING 6" BIOSOLIDS PIPING. MATCH FLANGE, FITTINGS AND WELD LOCATIONS IN ORDER TO MATCH

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Subconsultant: DEMO EXISTING 6" PIPING TO INSTALL NEW 8" AIR PIPING; CAP AND LEAVE IN PLACE WHEN DEMO NOT REQUIRED. ROUTE NEW 8" SST AIR

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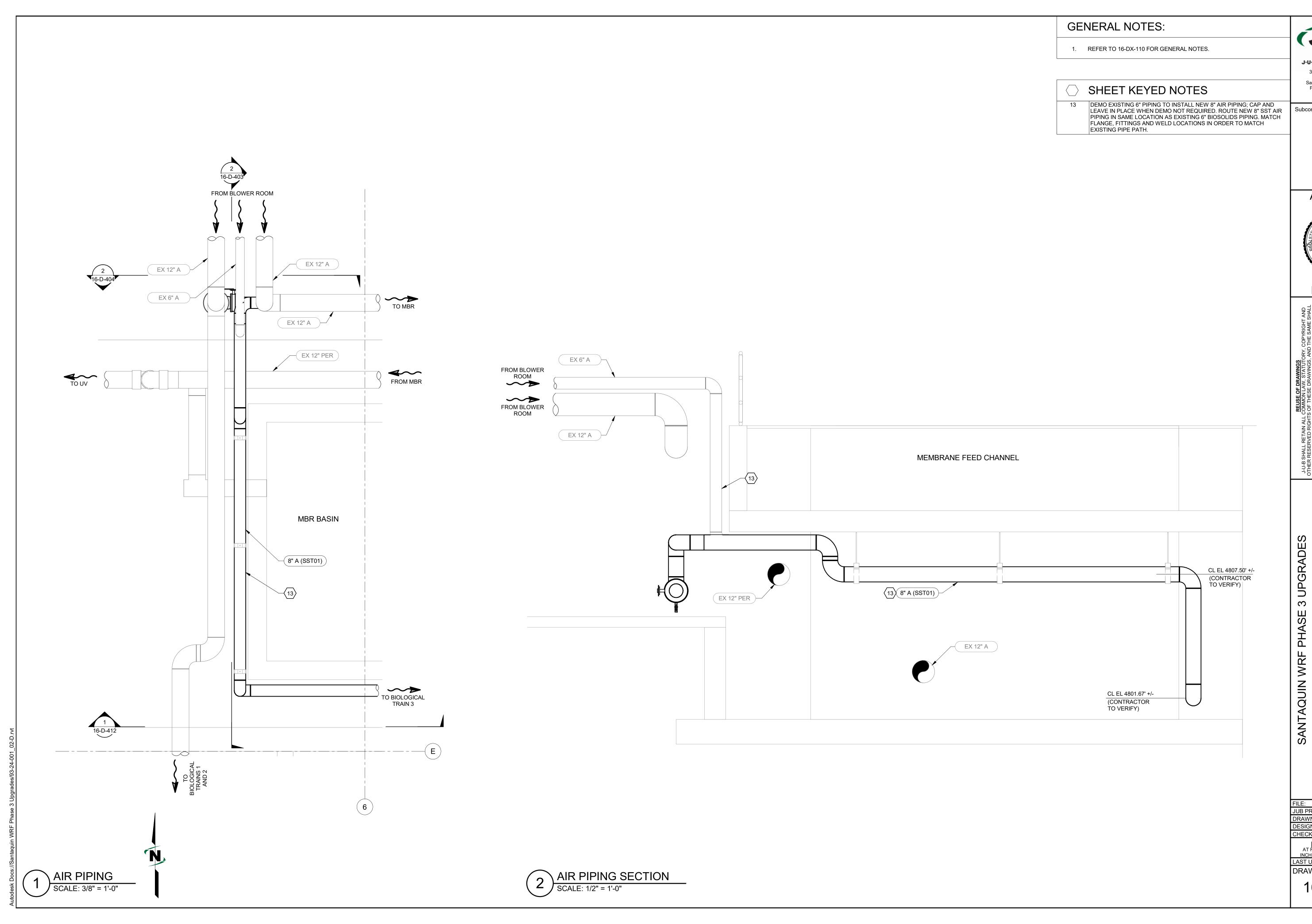
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1. REFER TO 16-DX-110 FOR GENERAL NOTES.

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## SHEET KEYED NOTES

DEMO EXISTING 6" PIPING TO INSTALL NEW 8" AIR PIPING; CAP AND LEAVE IN PLACE WHEN DEMO NOT REQUIRED. ROUTE NEW 8" SST AIR PIPING IN SAME LOCATION AS EXISTING 6" BIOSOLIDS PIPING. MATCH FLANGE, FITTINGS AND WELD LOCATIONS IN ORDER TO MATCH EXISTING PIPE PATH.

15 WELDED 8" SST 90 DEGREE FITTING

16 SST SPOOL, CONTRACTOR TO FIELD MEASURE AND DETERMINE REQUIRED LENGTH TO SATISFY DESIGN REQUIREMENTS.

CONNECT NEW PIPING INTO EXISTING 12" FLANGE. 12"x8" SST FLANGED REDUCING 90.

18 8" FLANGED BY PLAIN END SPOOL. FIELD WELD TO DOWNSTREAM

PIPE SUPPORTS BY CONTRACTOR. PLACE AS NEEDED. UTILIZE J-U-B STANDARD DETAILS UNLESS OTHERWISE SPECIFIED. TYP.

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**REVIEW** 

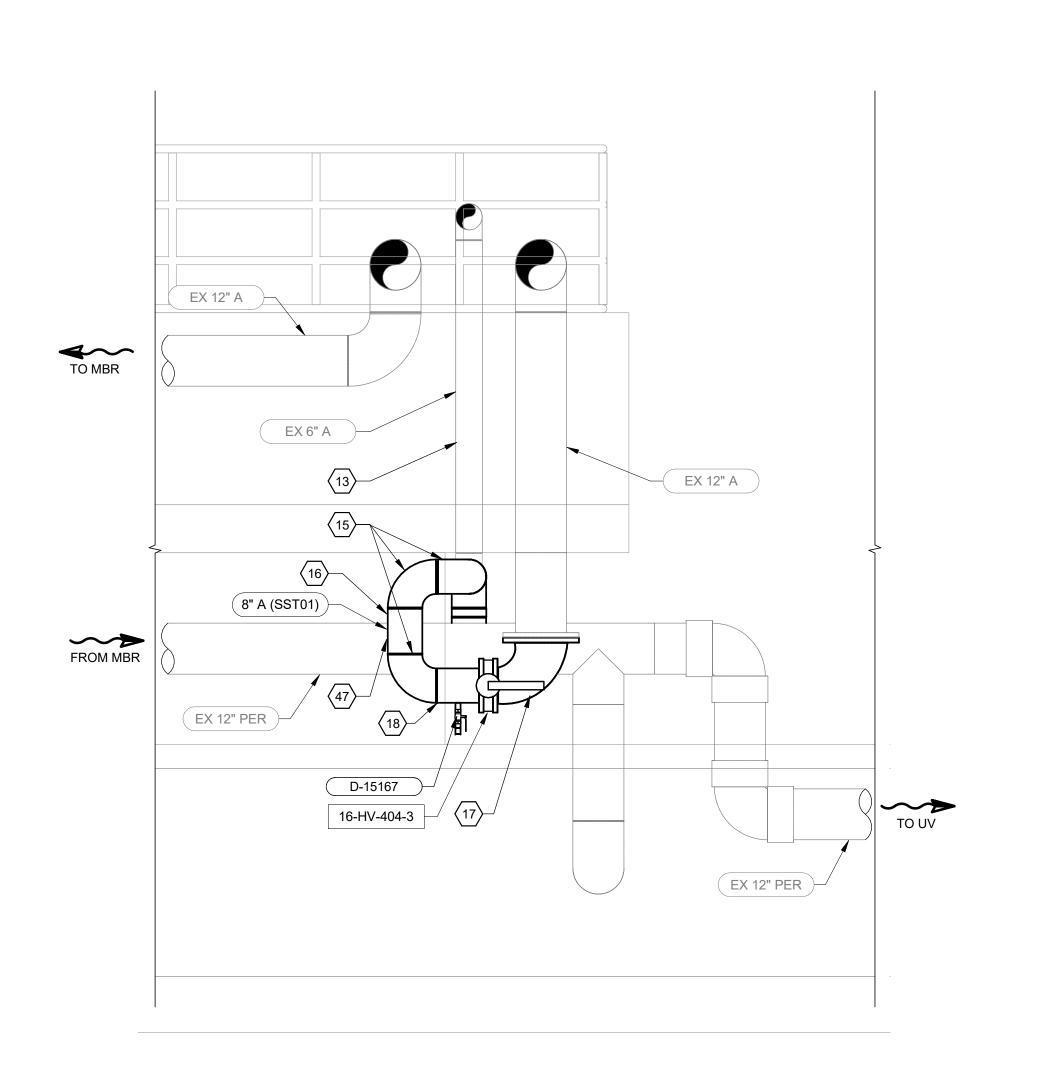
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1. REFER TO 16-DX-110 FOR GENERAL NOTES.

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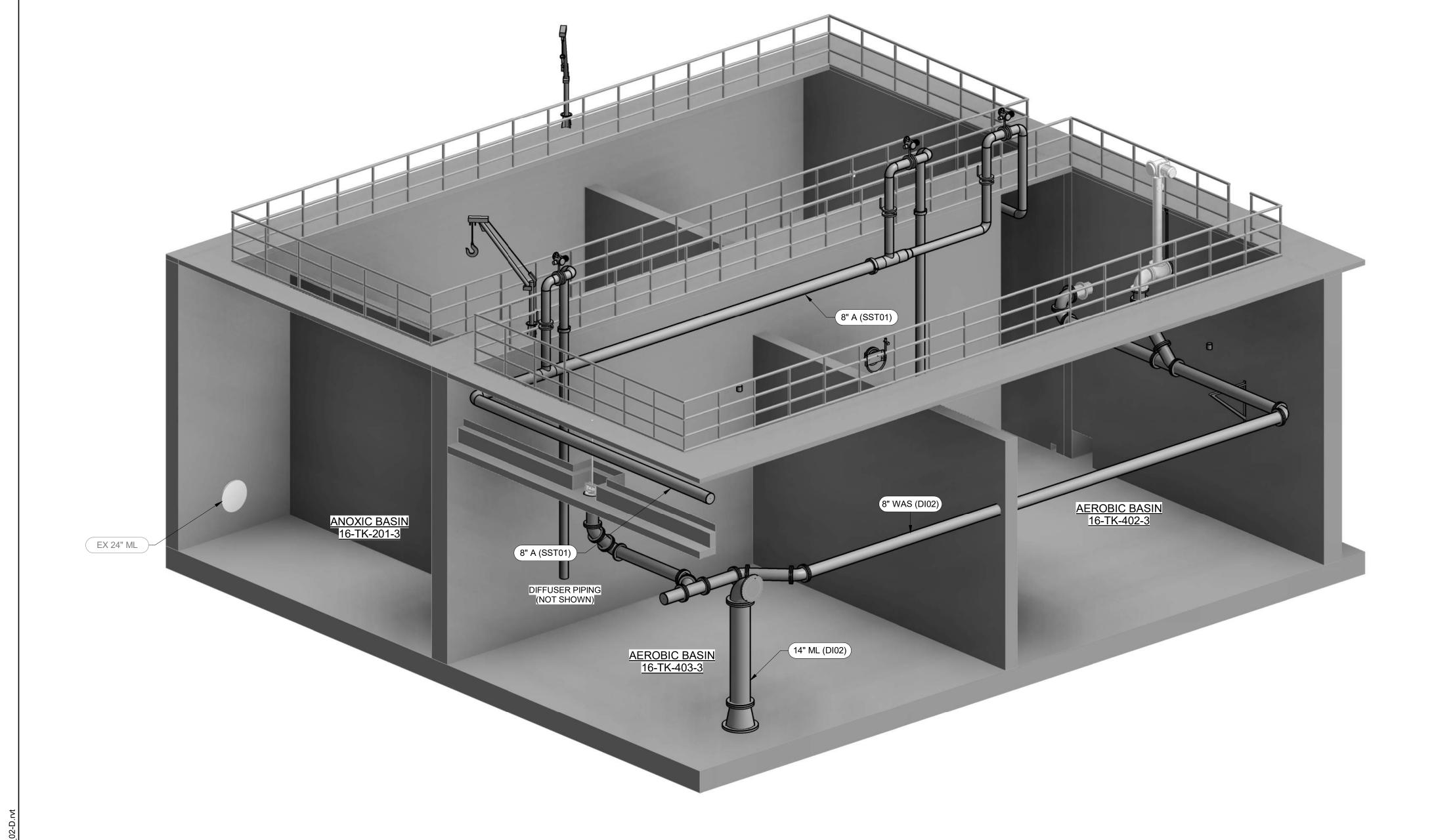
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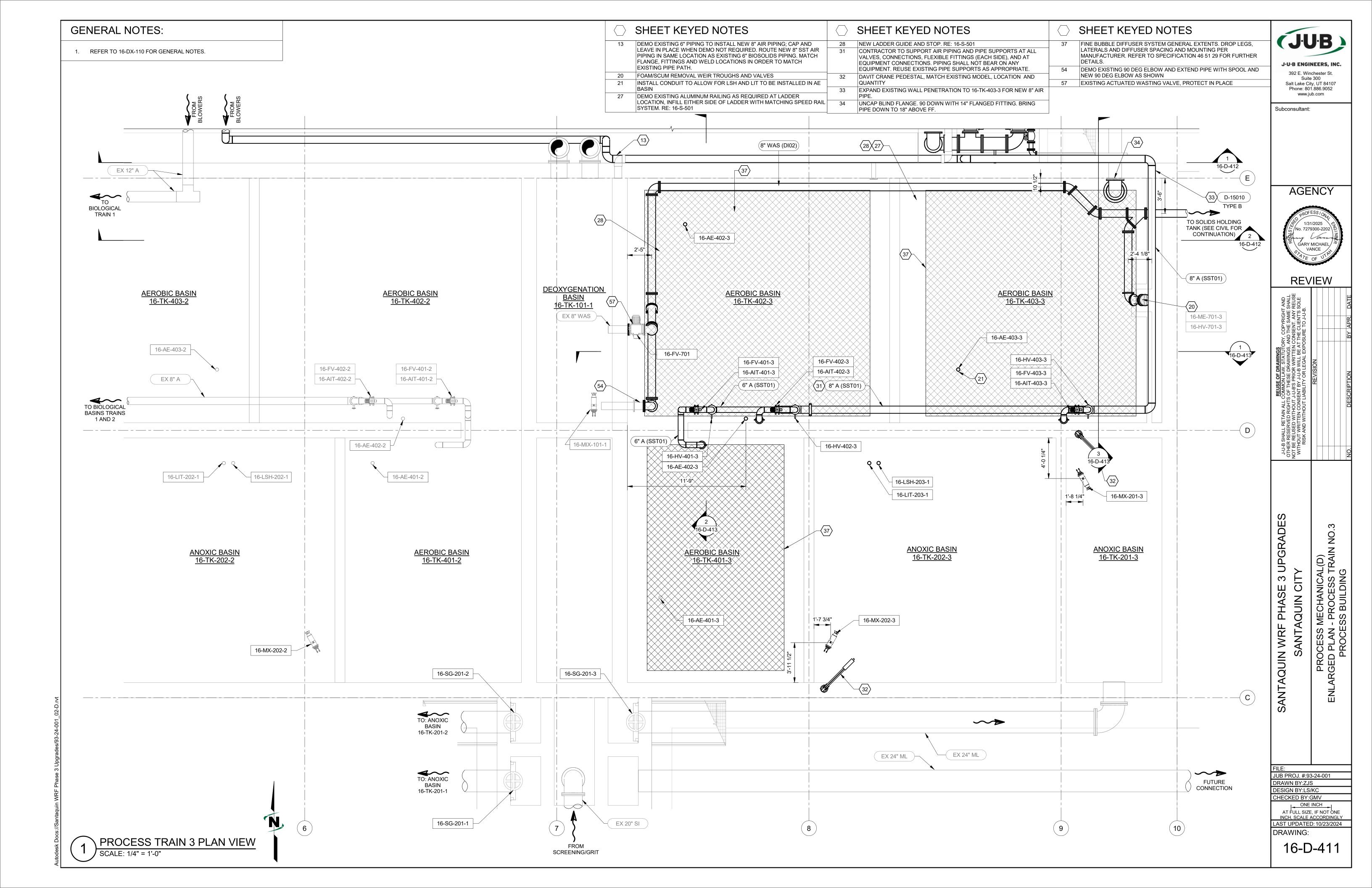
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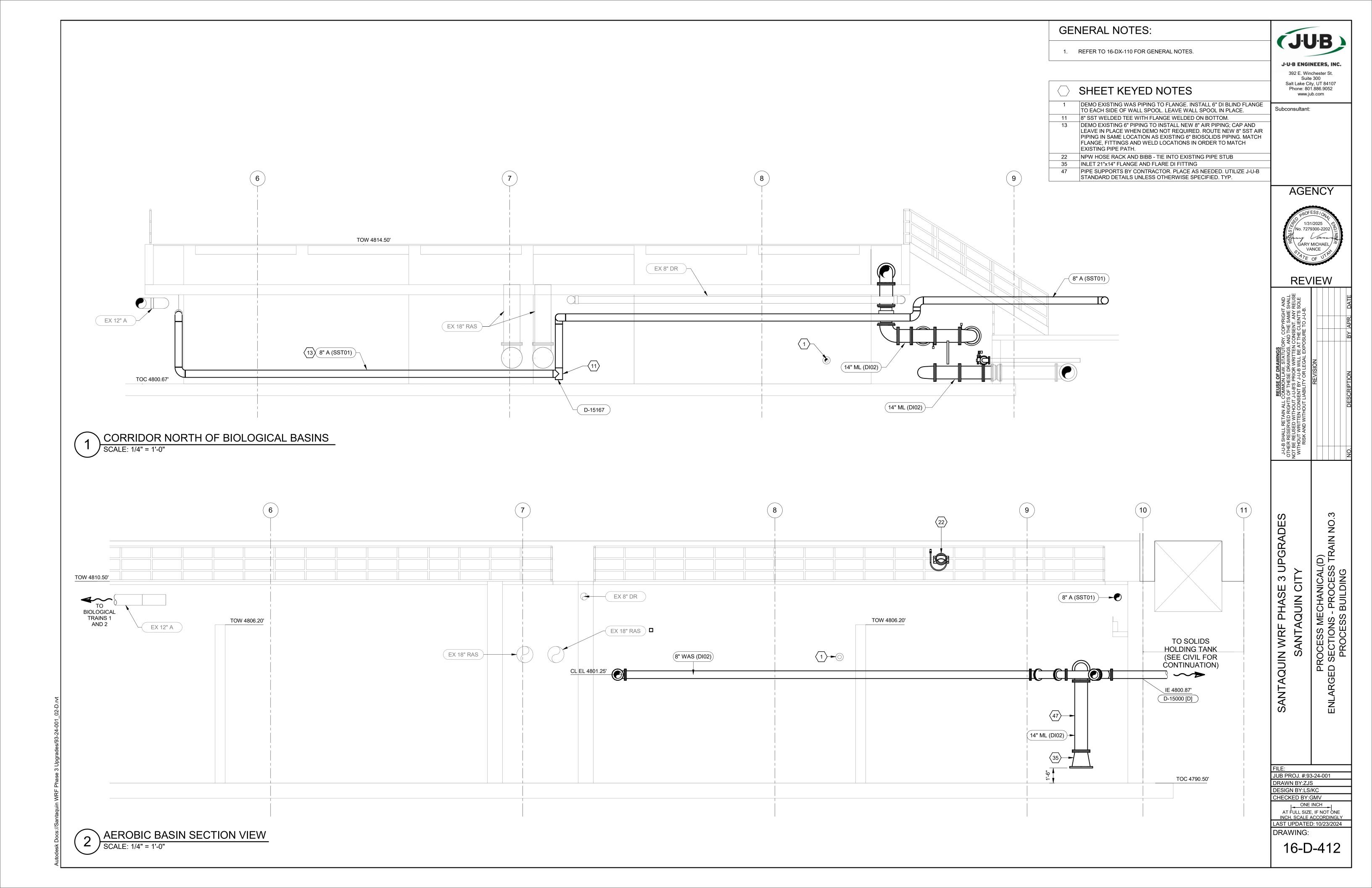
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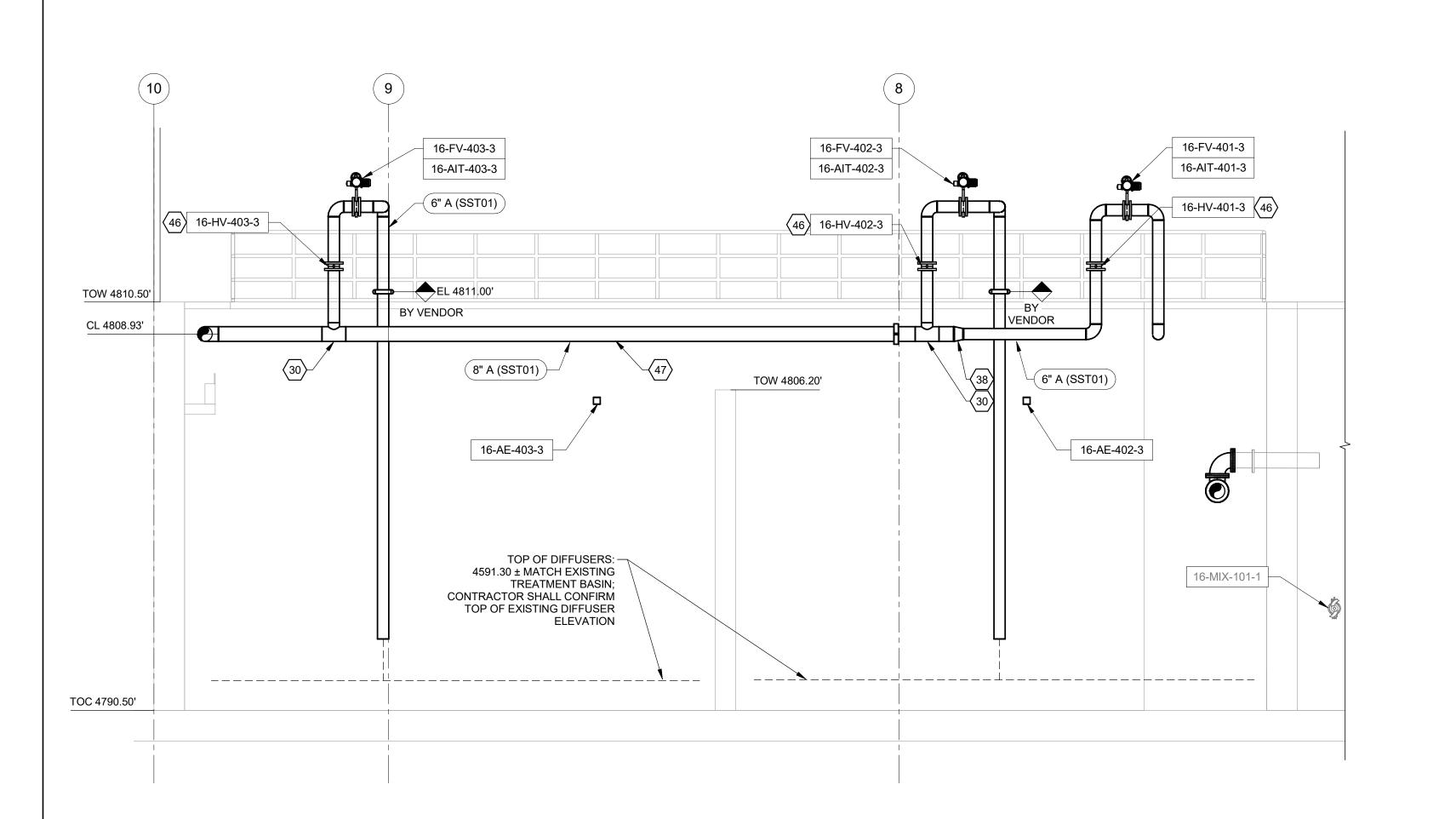


PROCESS TRAIN 3 ISOMETRIC VIEW

NO SCALE







14 TIE-IN TO EXISTING PIPING

38 8"x6" CONCENTRIC SST REDUCER

NEW 90 DEG ELBOW AS SHOWN

26 6" X 6" DRAIN PORT 30 8"X6" SST REDUCING TEE

1. REFER TO 16-DX-110 FOR GENERAL NOTES.

SHEET KEYED NOTES

24 CONDENSATE TRAP AND PURGE ASSEMBLY, TYP OF 3

23 CONNECT ONTO VALVE FLANGE AND ROUTE PIPING AS SHOWN.

25 24" X 24" FLOW PORT - NEW CONCRETE WALL INFILL. RE: 16-S-501

46 POSITION LEVER SO IT IS ACCESSIBLE THROUGH HANDRAILING

STANDARD DETAILS UNLESS OTHERWISE SPECIFIED. TYP.

PIPE SUPPORTS BY CONTRACTOR. PLACE AS NEEDED. UTILIZE J-U-B

DEMO EXISTING 90 DEG ELBOW AND EXTEND PIPE WITH SPOOL AND

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INCH, SCALE ACCORDINGLY LAST UPDATED: 10/23/2024

DRAWING: 16-D-413

AEROBIC BASIN PHOTO DETAIL

-( 8" A (SST01) )

8" WAS (DI02)

TOP OF DIFFUSERS:

TREATMENT BASIN;

**ELEVATION** 

4591.30 ± MATCH EXISTING

CONTRACTOR SHALL CONFIRM TOP OF EXISTING DIFFUSER

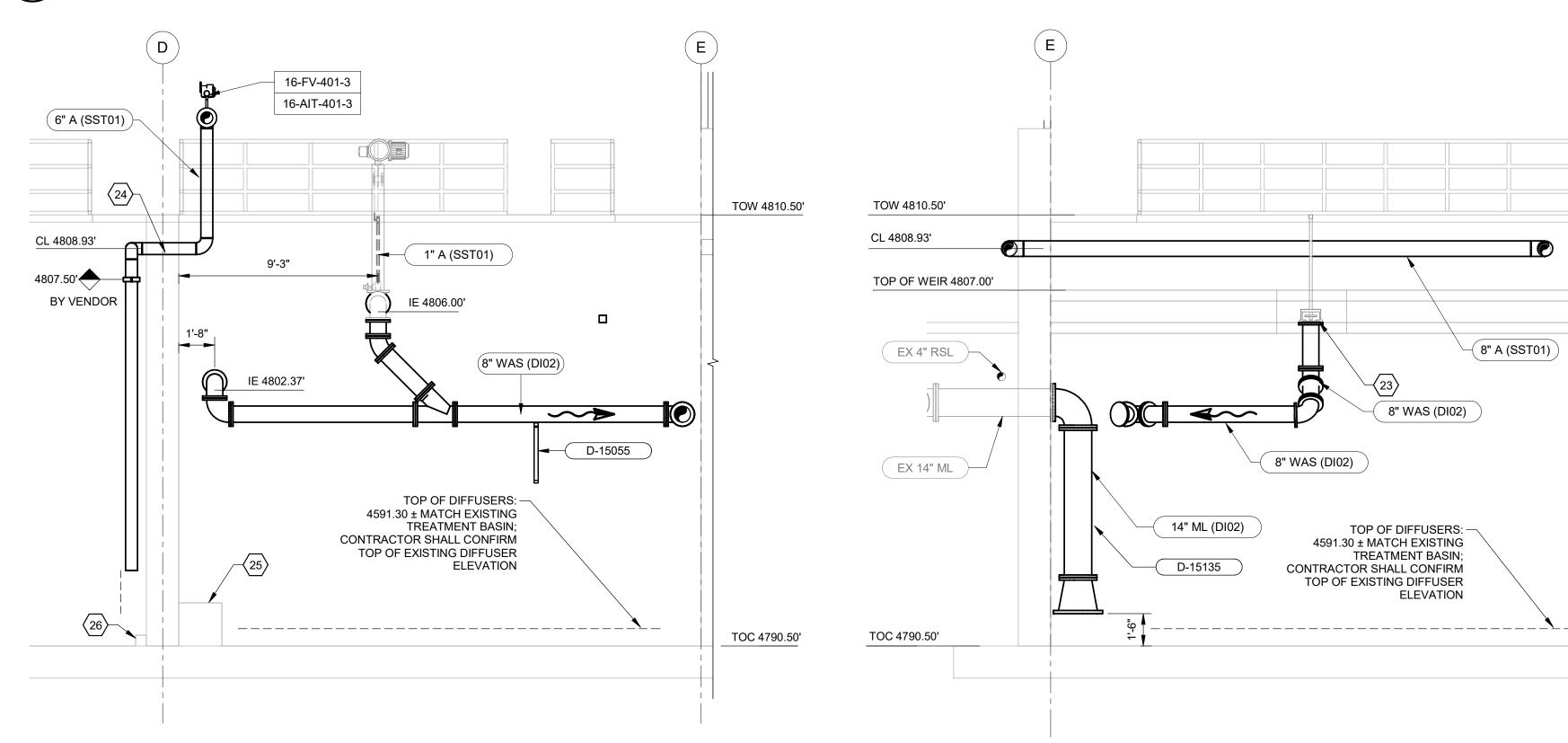
8" WAS (DI02)

AEROBIC BASIN SECTION VIEW 3

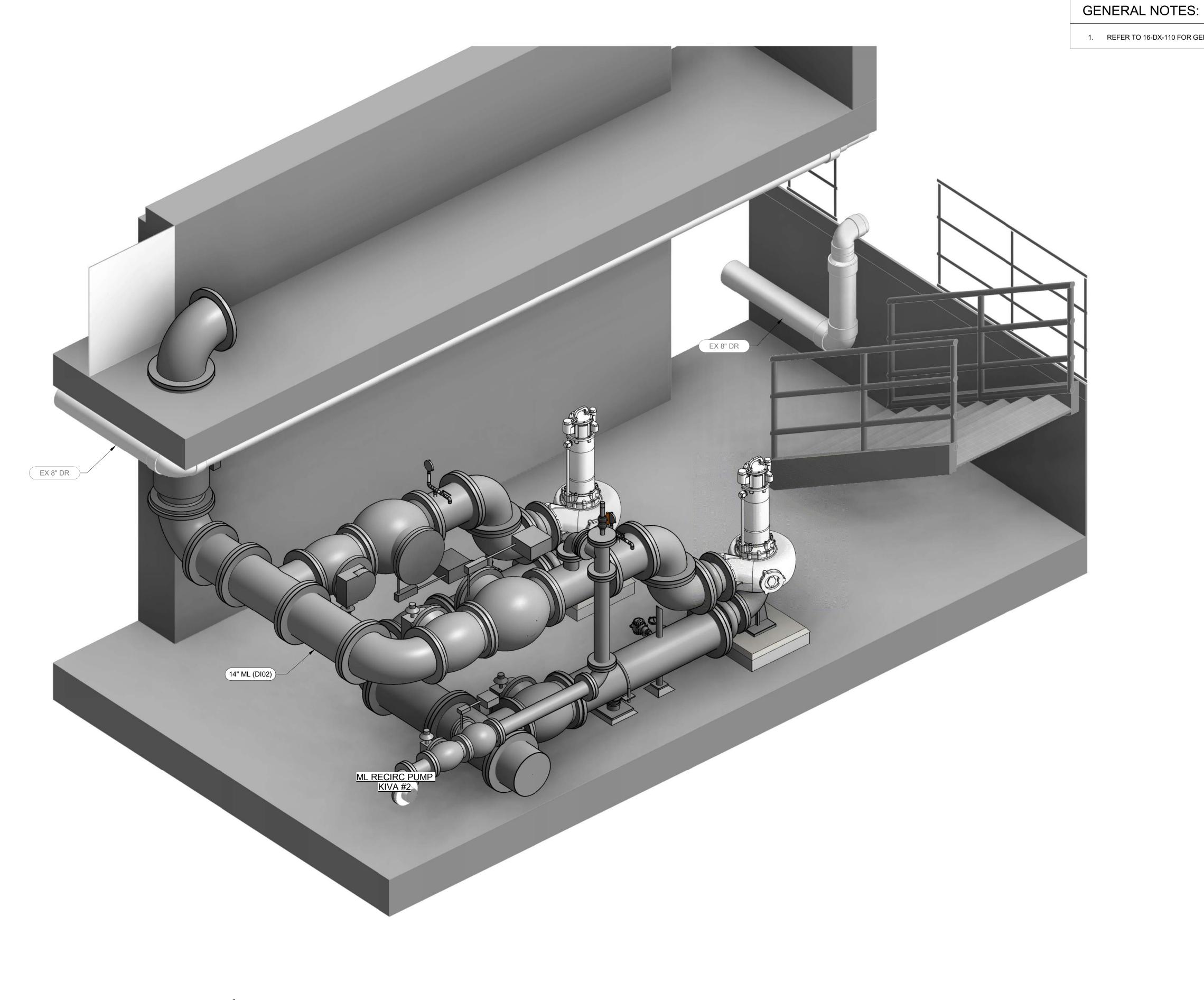
SCALE: 1/4" = 1'-0"

# **AEROBIC BASIN SECTION VIEW 1** SCALE: 1/4" = 1'-0"

AEROBIC BASIN SECTION VIEW 2







1. REFER TO 16-DX-110 FOR GENERAL NOTES.

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SANTAQUIN WRF PHASE 3 UPGRADES SANTAQUIN CITY

FILE:

JUB PROJ. #:93-24-001

DRAWN BY:ZJS

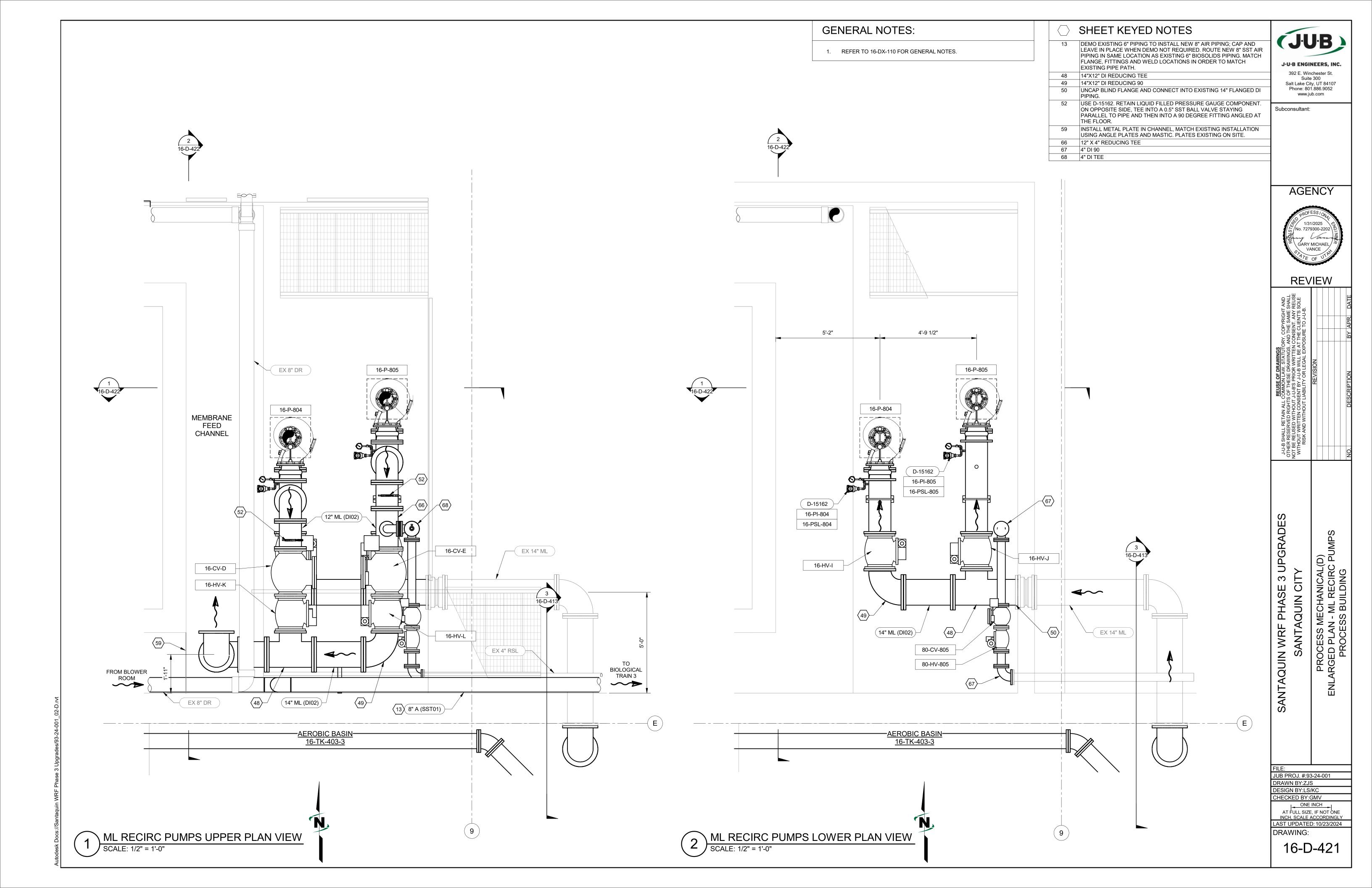
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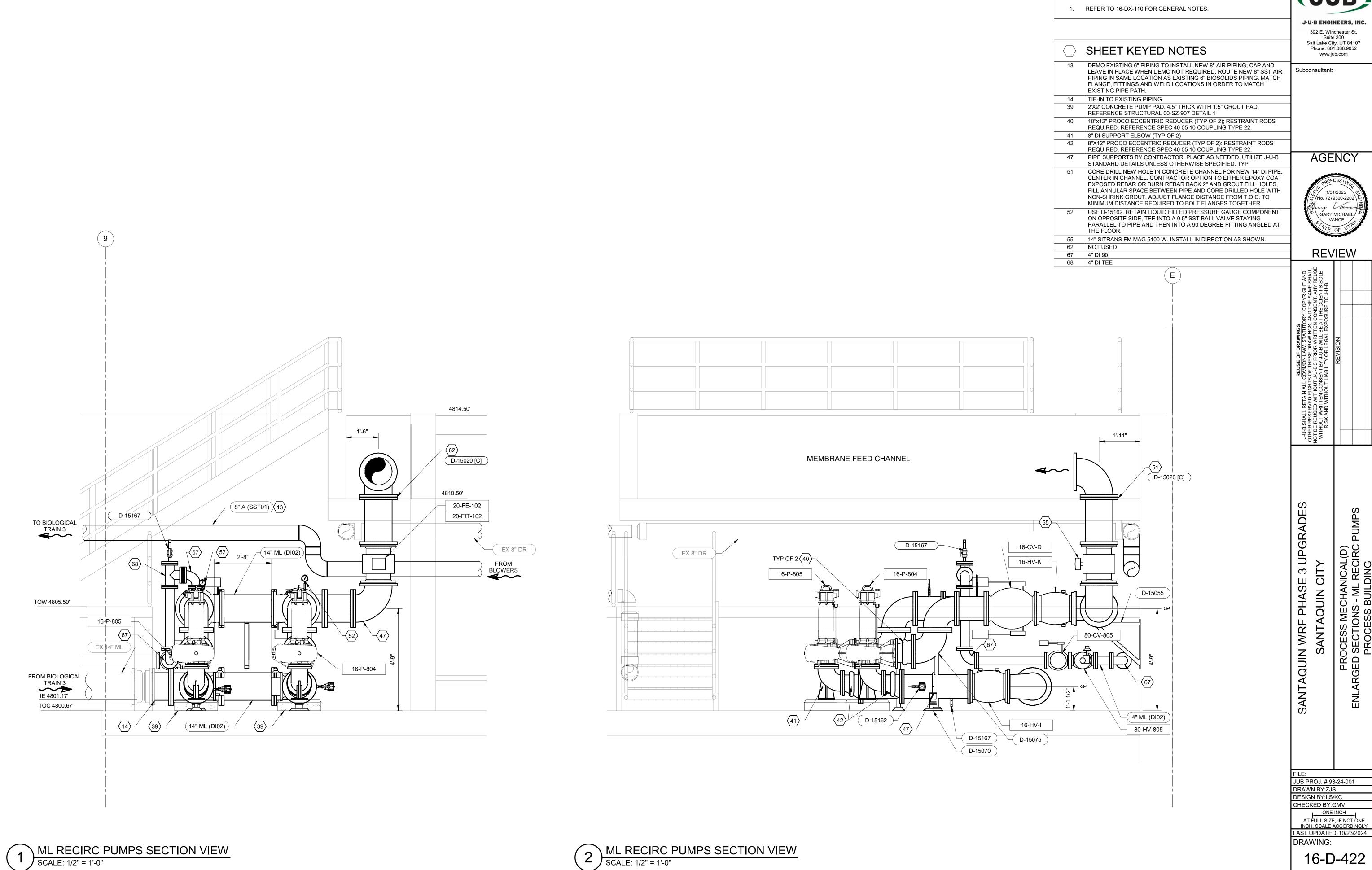
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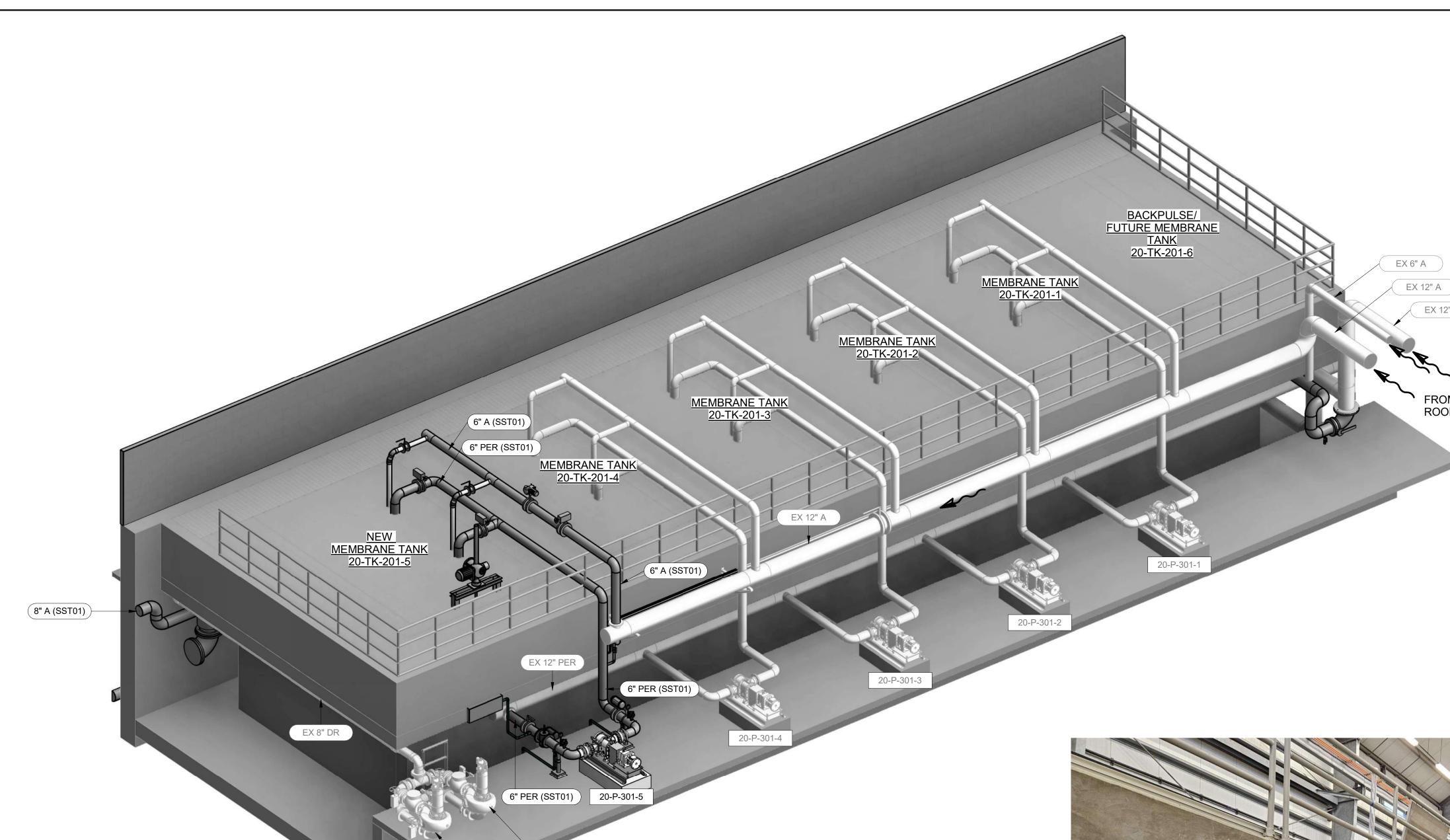
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DRAWING:







20-P-501-2

**GENERAL NOTES:** 

- 1. THESE DRAWINGS ARE INTENDED TO CONVEY THE GENERAL INTENT AND ARRANGEMENT OF THE SYSTEMS, EQUIPMENT, AND RELATED COMPONENTS. CERTAIN ITEMS OR DETAILS MAY NOT BE INCLUDED OR MAY BE SHIFTED OR OMITTED FROM CERTAIN VIEWS FOR CLARITY. REFER TO MANUFACTURER DRAWINGS AND INSTALLATION INSTRUCTIONS FOR ADDITIONAL DETAILS AND SCOPE OF SUPPLY.
- NOT ALL STRUCTURAL, ARCHITECTURAL, MECHANICAL HVAC, AND ELECTRICAL/INSTRUMENTATION COMPONENTS SHOWN. REFERENCE RELATED DISCIPLINES FOR ADDITIONAL DETAILS.
- REFERENCE YARD PIPING SHEETS (05-CU SERIES) FOR CONTINUATION OF PIPING.
- PROVIDE PIPE SUPPORTS AND HANGARS IN ACCORDANCE WITH THE STANDARD DETAILS AND AS REQUIRED TO ADEQUATELY SUPPORT AND STABILIZE THE PIPING.
- CONTRACTOR TO VERIFY ALL DIMENSIONS WITH EQUIPMENT SUPPLIERS.
- REFER TO P&IDS FOR CORRESPONDING VALVE, INSTRUMENT, AND EQUIPMENT TAGS.
- ALL AERATION PIPING SHALL USE LONG RADIUS 90 DEGREE BENDS UNLESS NOTED OTHERWISE.
- 20-D DRAWINGS INCLUDE EQUIPMENT SUPPLIED BY VEOLIA. CERTAIN ITEMS SUPPLIED BY VEOLIA HAVE BEEN SHOWN FOR INFORMATIONAL PURPOSES; HOWEVER, ALL VEOLIA SUPPLIED EQUIPMENT IS NOT INCLUDED IN THESE DRAWINGS. CONTRACTOR IS RESPONSIBLE TO CONFIRM VEOLIA SCOPE OF SUPPLY AND APPLICABLE INSTALLATION REQUIREMENTS. CONTRACTOR TO INSTALL ALL VEOLIA AND OWNER SUPPLIED EQUIPMENT.
- DRAWINGS FOR THE MEMBRANE PROCESS BLOWERS AND COMPRESSED AIR SYSTEM ARE INCLUDED IN THE 16-D DRAWINGS. REFER TO THE 16-D DRAWINGS FOR THIS EQUIPMENT. REFERENCE VOLUME IV AND SPECIFICATION SECTION 11 30 10.
- 10. COORDINATE DEMO SALVAGE REQUIREMENTS WITH OWNER.
- 11. ALL PRESSURE GAUGES, SWITCHES, INSTRUMENTS, SAMPLE TAPS/DRAINS, ETC. SHALL BE TAPPED TO THE PIPING AND MOUNTED PER STANDARD DETAIL D-15164 OR SIMILAR.

SHEET KEYED NOTES

108 TIE-IN AT BLIND FLANGE TO EXISTING PIPING

MEMBRANE TRAIN ISOMETRIC VIEW



EX 12" A

FROM BLOWER ROOM

MEMBRANE TRAIN 5 CONNECTION

J.U.B ENGINEERS, INC.

392 E. Winchester St. Suite 300 Salt Lake City, UT 84107 Phone: 801.886.9052 www.jub.com

Subconsultant:

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No. 7279300-2202<sup>\</sup> \ GARY MICHAEL/ VANCE

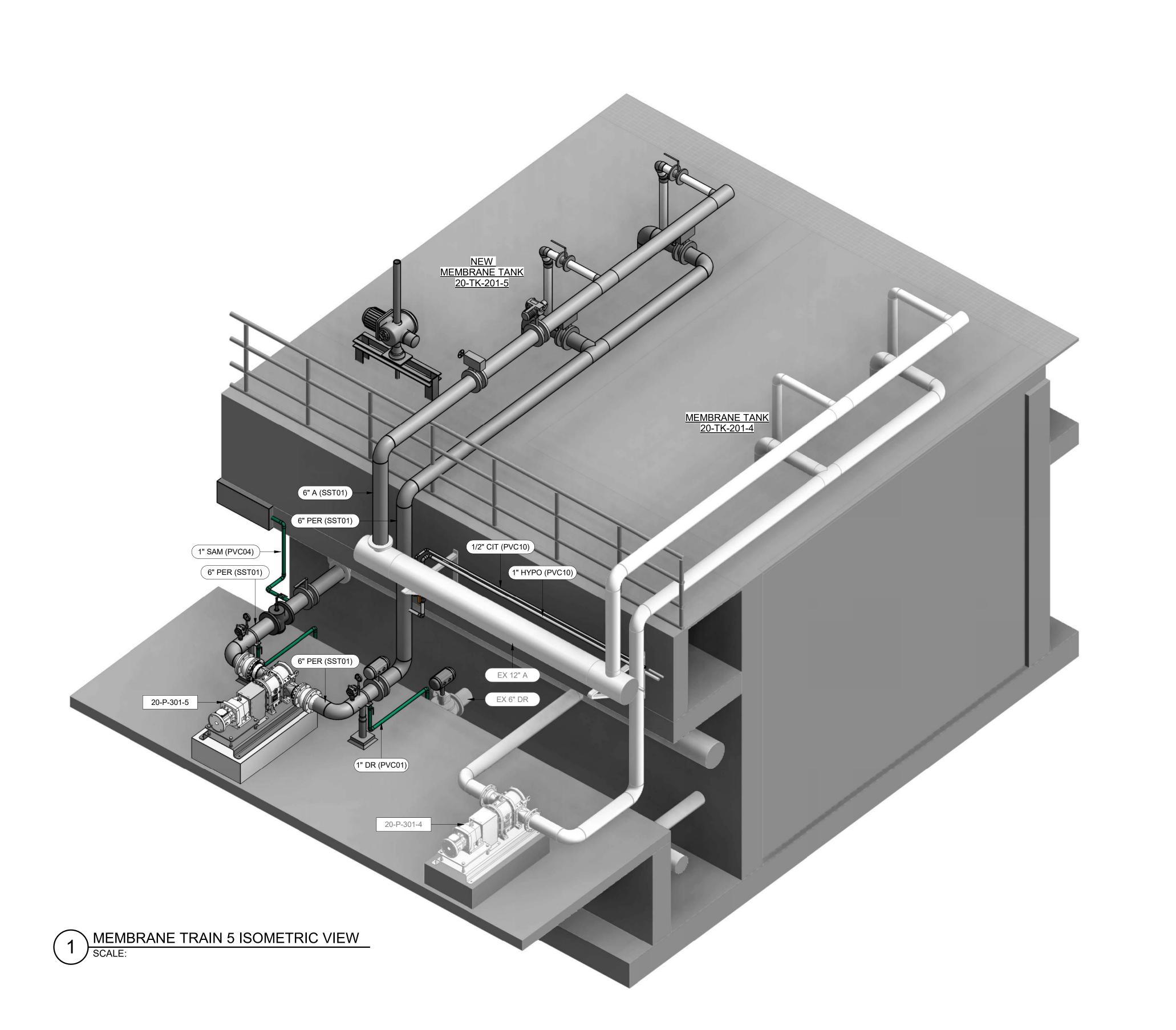
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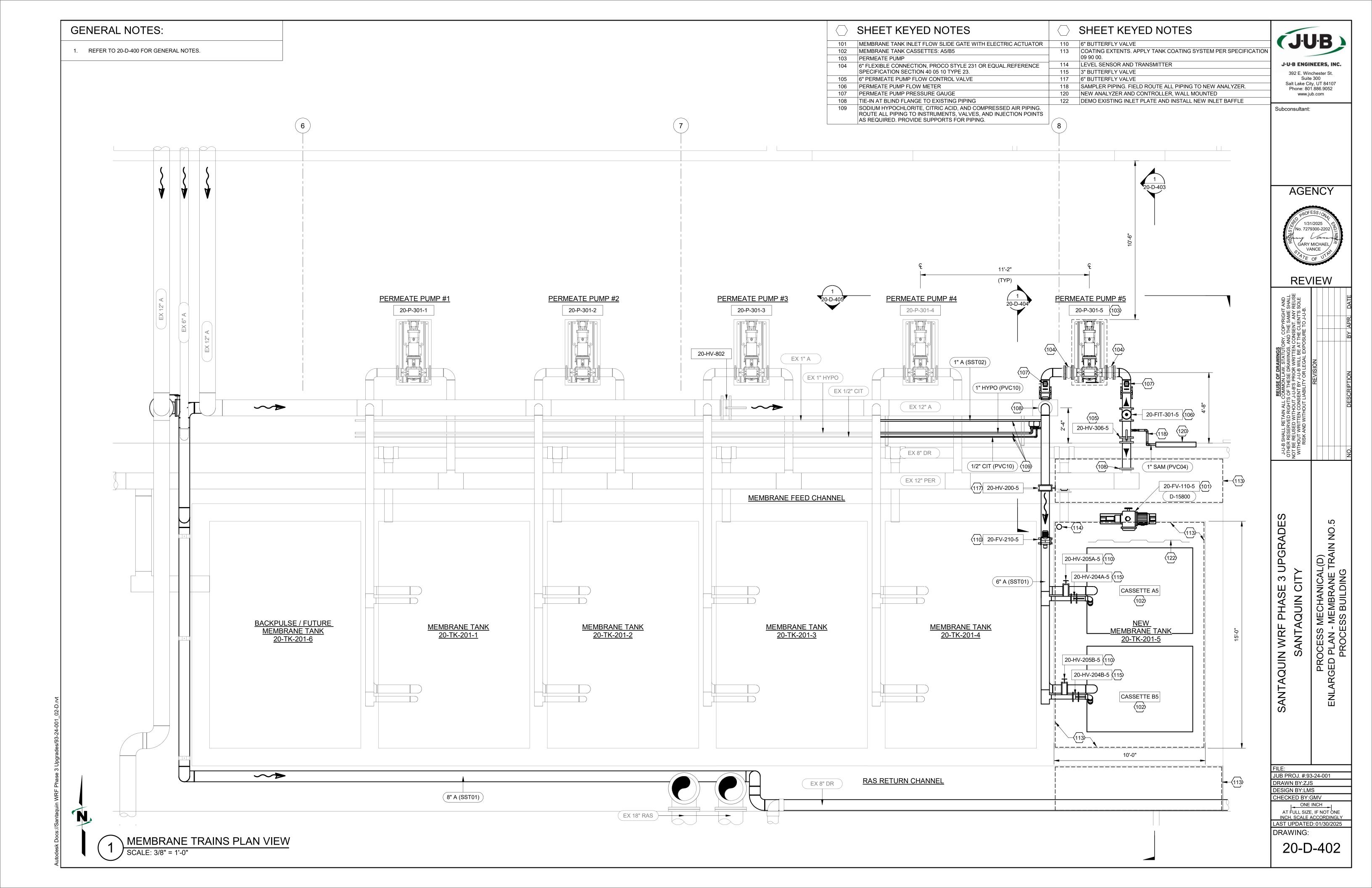
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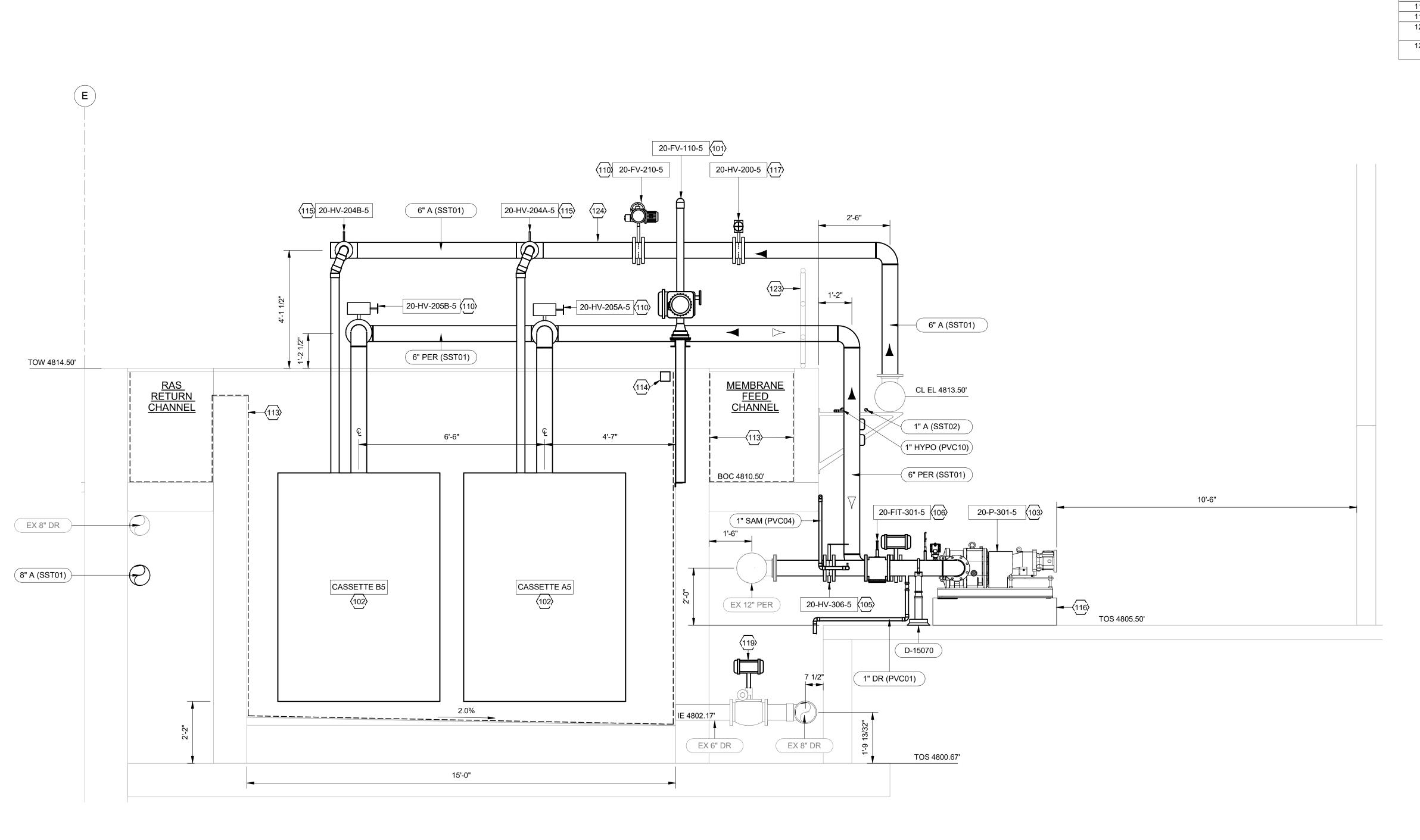
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SANTAQUIN WRF PHASE 3 UPGRADES
SANTAQUIN CITY

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MBR TRAIN 5 SECTION VIEW

### **GENERAL NOTES:**

1. REFER TO 20-D-400 FOR GENERAL NOTES.

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101 MEMBRANE TANK INLET FLOW SLIDE GATE WITH ELECTRIC ACTUATOR Subconsultant:

102 MEMBRANE TANK CASSETTES: A5/B5 103 PERMEATE PUMP

105 6" PERMEATE PUMP FLOW CONTROL VALVE 106 PERMEATE PUMP FLOW METER

SHEET KEYED NOTES

110 6" BUTTERFLY VALVE 113 COATING EXTENTS. APPLY TANK COATING SYSTEM PER SPECIFICATION

114 LEVEL SENSOR AND TRANSMITTER

115 3" BUTTERFLY VALVE 116 CONCRETE EQUIPMENT PAD, SEE STRUCTURAL SHEETS

117 6" BUTTERFLY VALVE

119 NEW VALVE ACTUATOR 123 EXISTING HANDRAIL, MODIFY RAILING AS NEEDED TO ACCOMODATE

NEW PIPING.

124 ALL AIR PIPING MUST BE SUPPORTED. MATCH EXISTING PIPE SUPPORTS.

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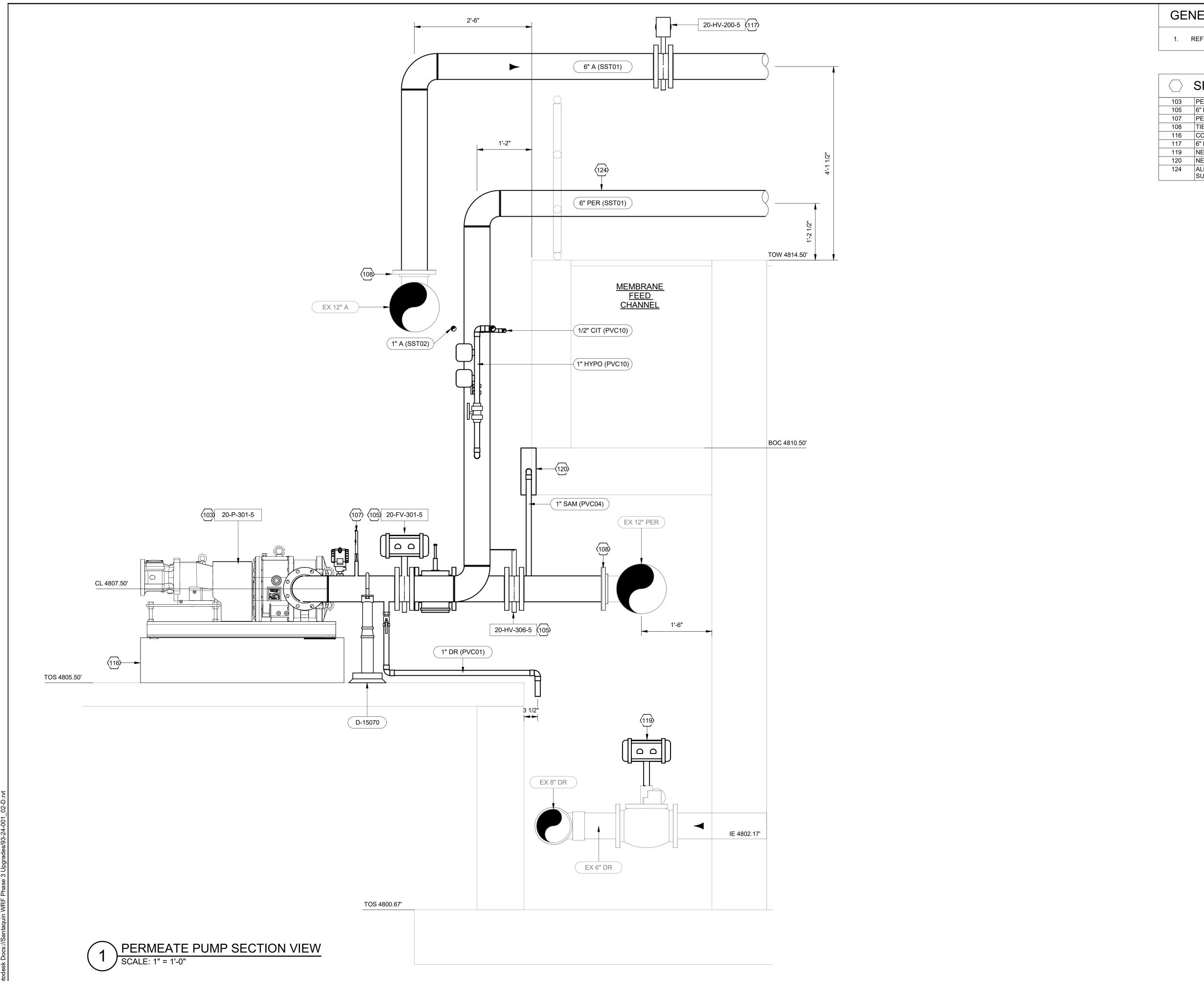
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1. REFER TO 20-D-400 FOR GENERAL NOTES.

○ SHEET KEYED NOTES

103 PERMEATE PUMP 105 6" PERMEATE PUMP FLOW CONTROL VALVE

107 PERMEATE PUMP PRESSURE GAUGE
 108 TIE-IN AT BLIND FLANGE TO EXISTING PIPING
 116 CONCRETE EQUIPMENT PAD, SEE STRUCTURAL SHEETS

117 6" BUTTERFLY VALVE
119 NEW VALVE ACTUATOR

119 NEW VALVE ACTUATOR120 NEW ANALYZER AND CONTROLLER, WALL MOUNTED

124 ALL AIR PIPING MUST BE SUPPORTED. MATCH EXISTING PIPE

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PROCESS ME LARGED SECTION - MEMB PROCESS

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103 PERMEATE PUMP

1. REFER TO 20-D-400 FOR GENERAL NOTES.

SHEET KEYED NOTES

SPECIFICATION SECTION 40 05 10 TYPE 23. 108 TIE-IN AT BLIND FLANGE TO EXISTING PIPING

116 CONCRETE EQUIPMENT PAD, SEE STRUCTURAL SHEETS 120 NEW ANALYZER AND CONTROLLER, WALL MOUNTED

112 MEMBRANE CASSETTE PIPING HEADER

109 SODIUM HYPOCHLORITE, CITRIC ACID, AND COMPRESSED AIR PIPING.

ROUTE ALL PIPING TO INSTRUMENTS, VALVES, AND INJECTION POINTS AS REQUIRED. PROVIDE SUPPORTS FOR PIPING.

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101 MEMBRANE TANK INLET FLOW SLIDE GATE WITH ELECTRIC ACTUATOR Subconsultant: 104 6" FLEXIBLE CONNECTION, PROCO STYLE 231 OR EQUAL.REFERENCE

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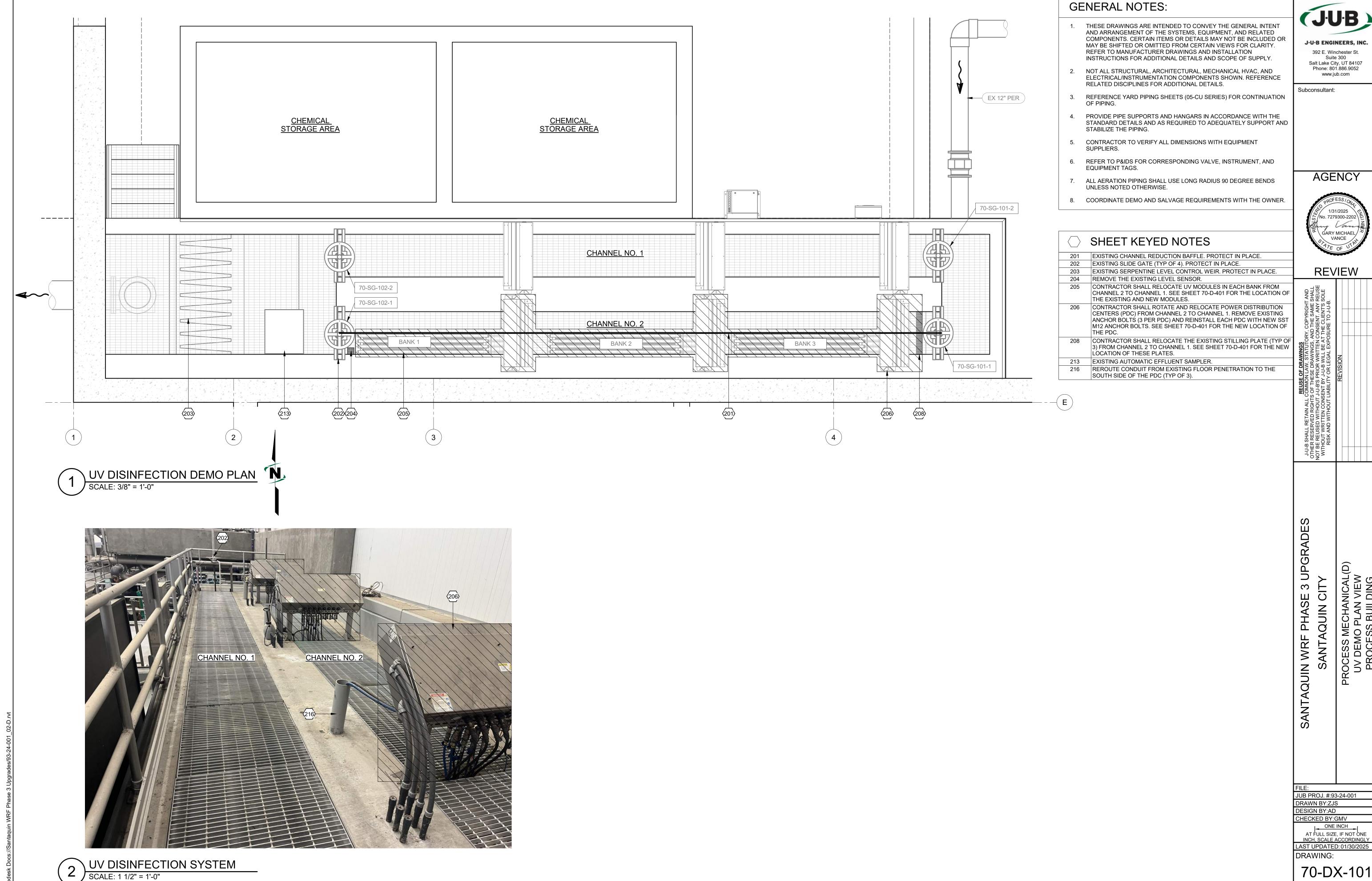
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LAST UPDATED: 01/30/2025

DRAWING:

20-D-405

PERMEATE PUMP SECTION VIEW
SCALE: 3/4" = 1'-0"



70-DX-101

1. REFER TO 70-DX-101 FOR GENERAL NOTES.

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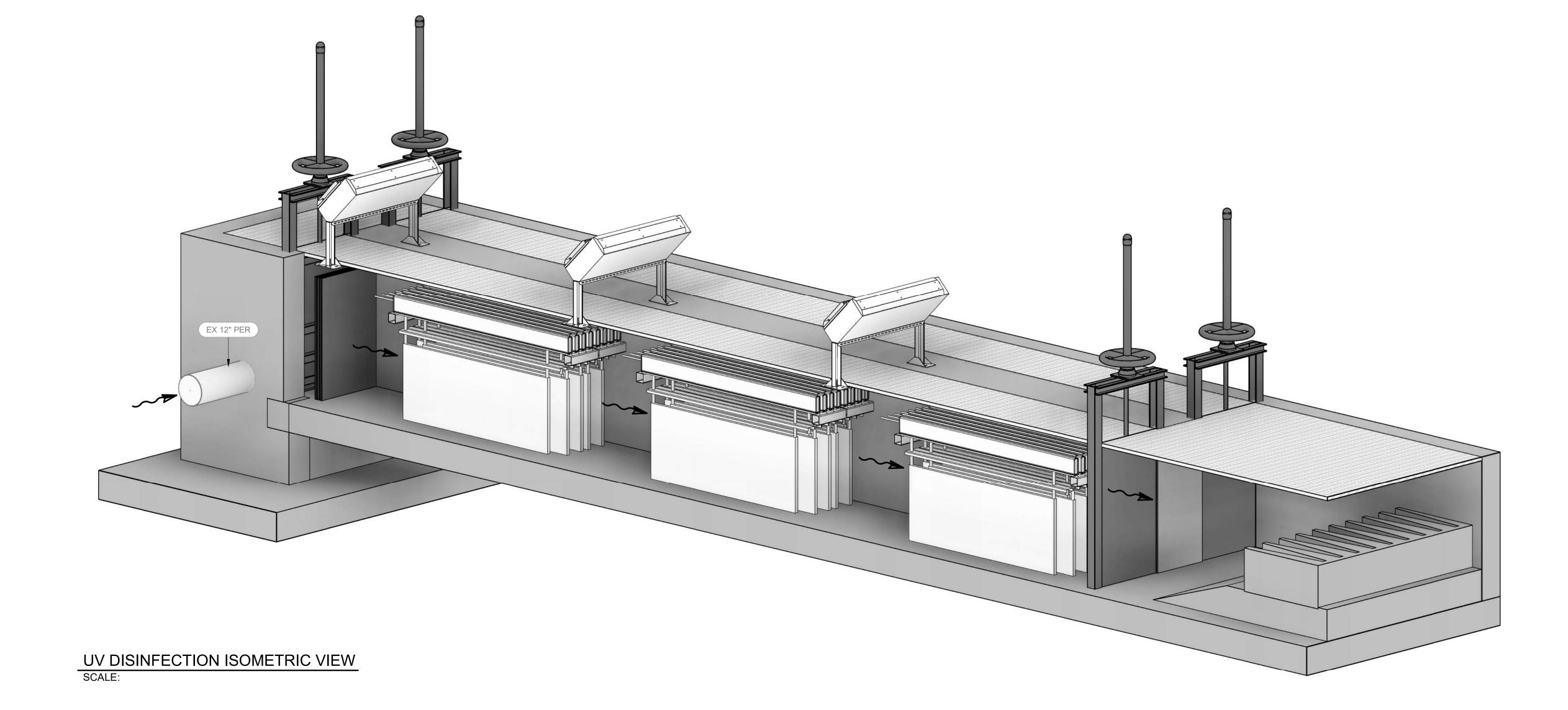
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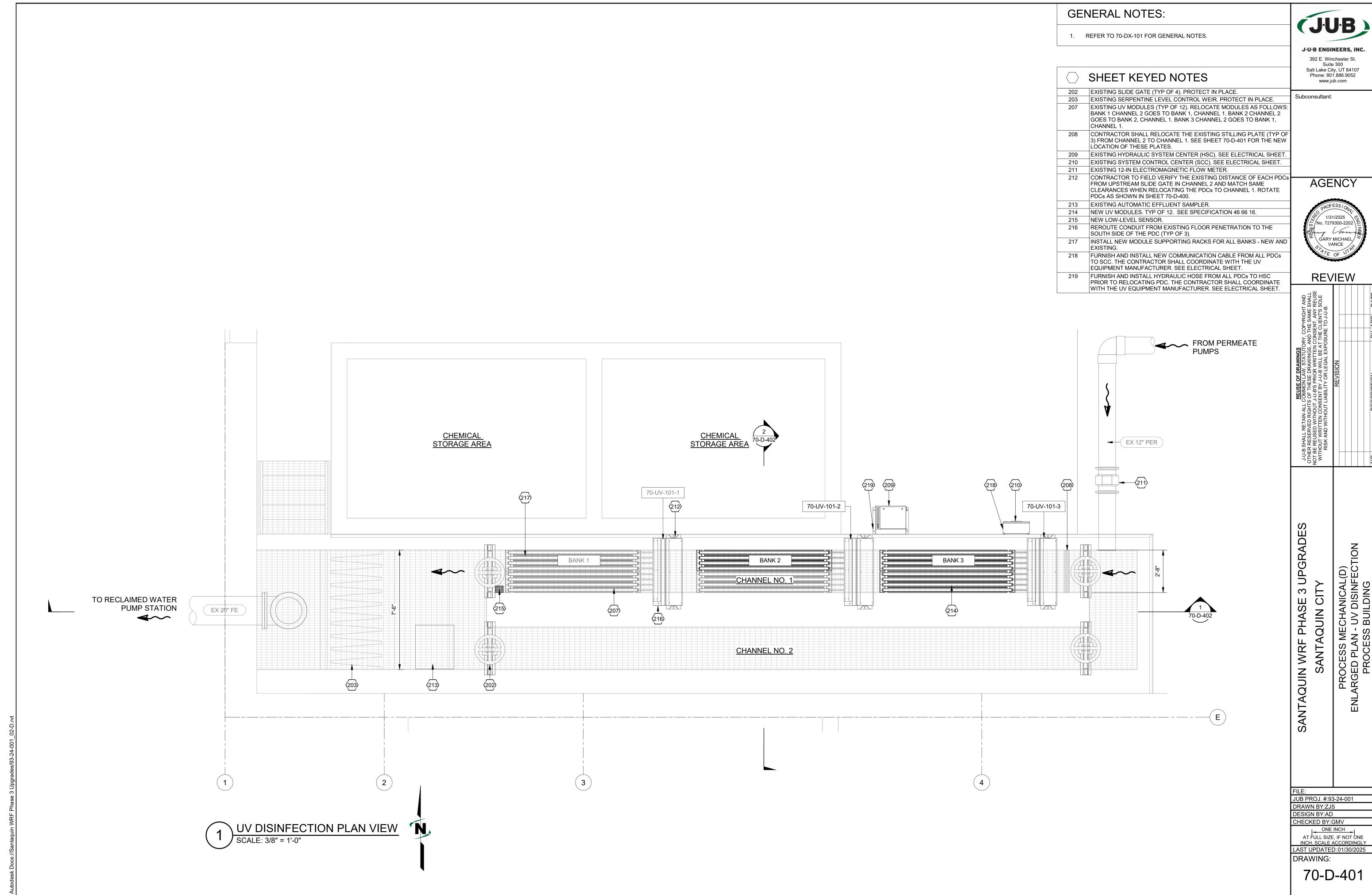
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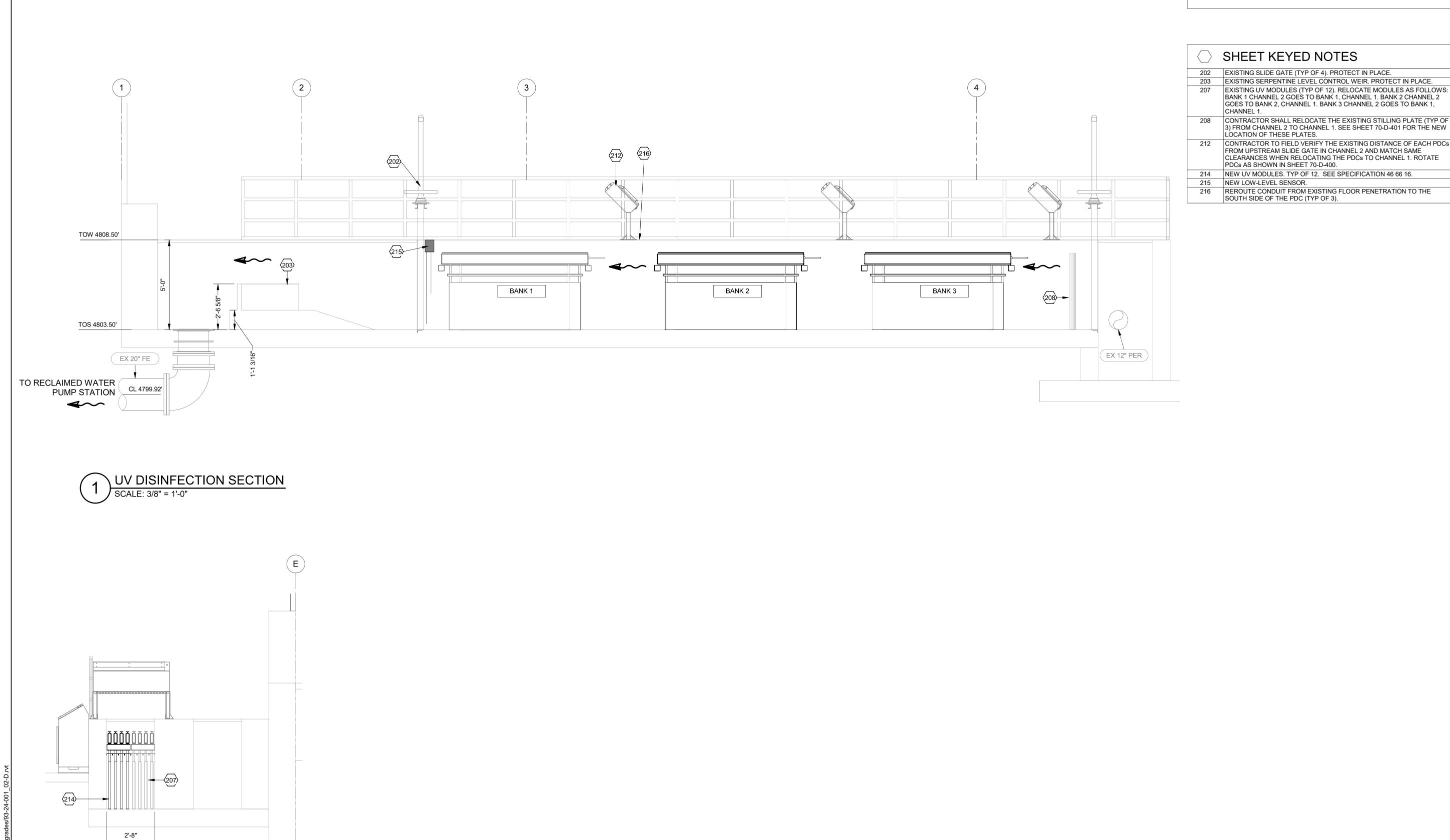
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UV DISINFECTION SECTION
SCALE: 3/8" = 1'-0"

**GENERAL NOTES:** 

1. REFER TO 70-DX-101 FOR GENERAL NOTES.

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SANTAQUIN WRF PHASE 3 UPGRADES SANTAQUIN CITY

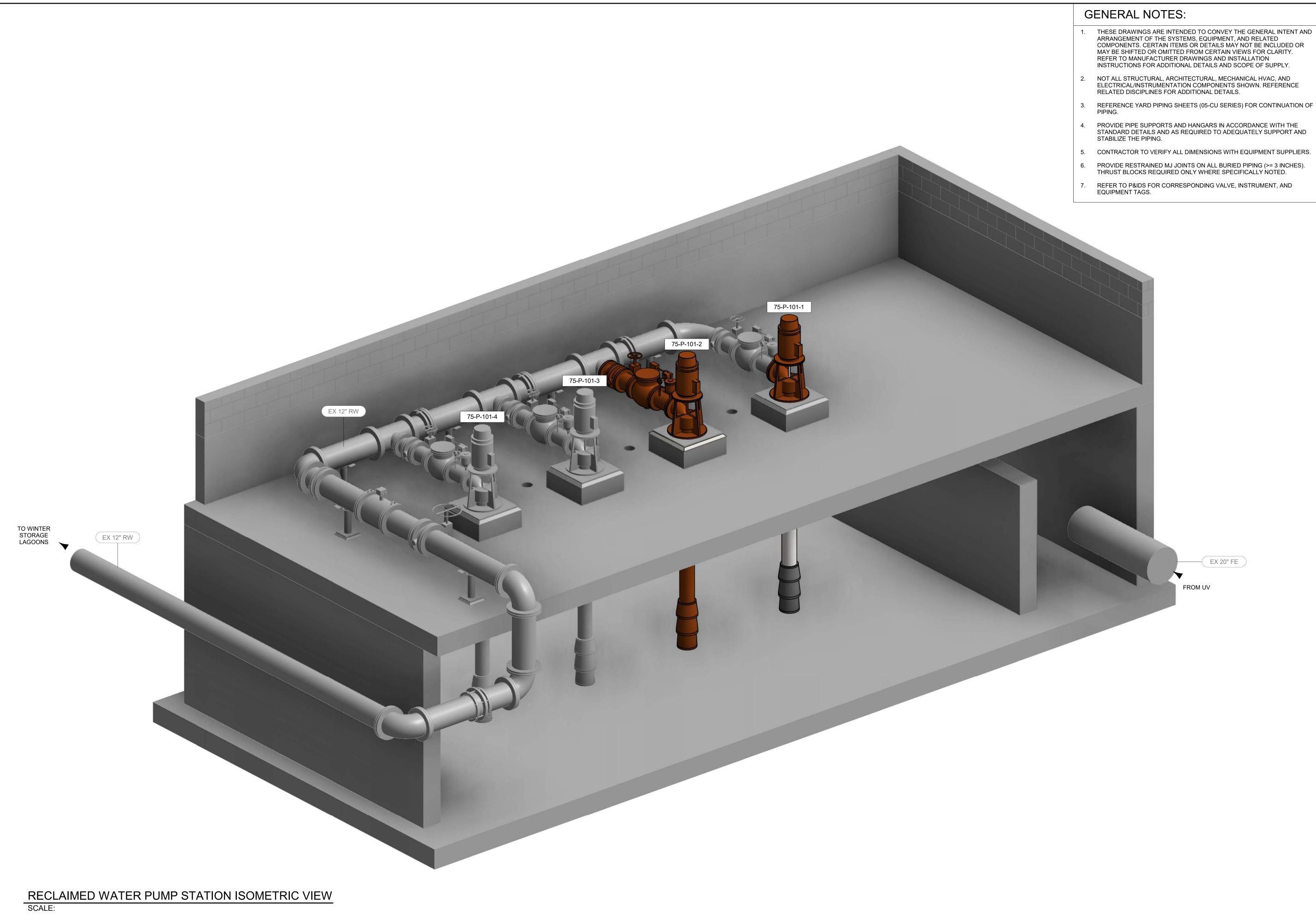
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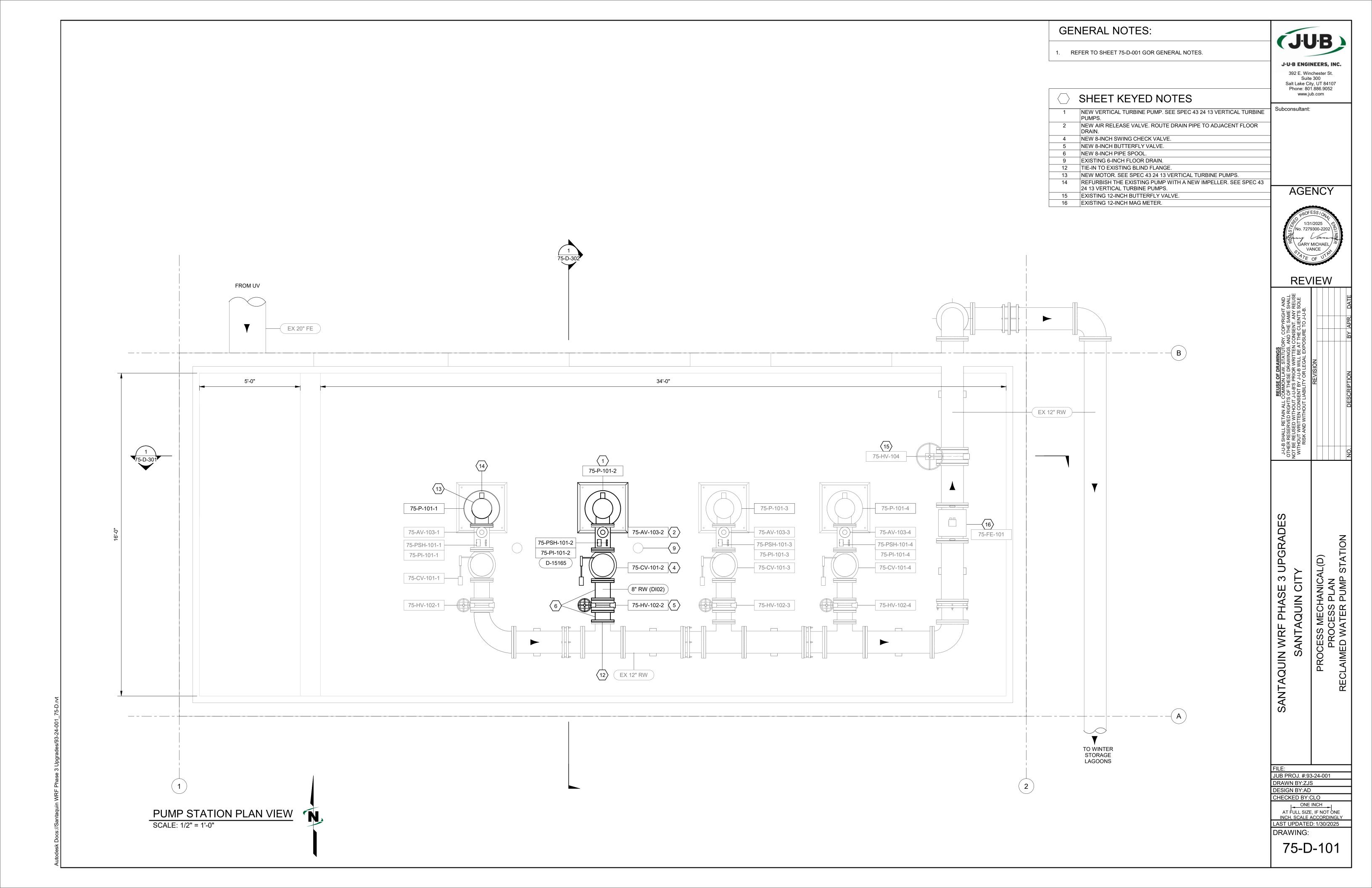
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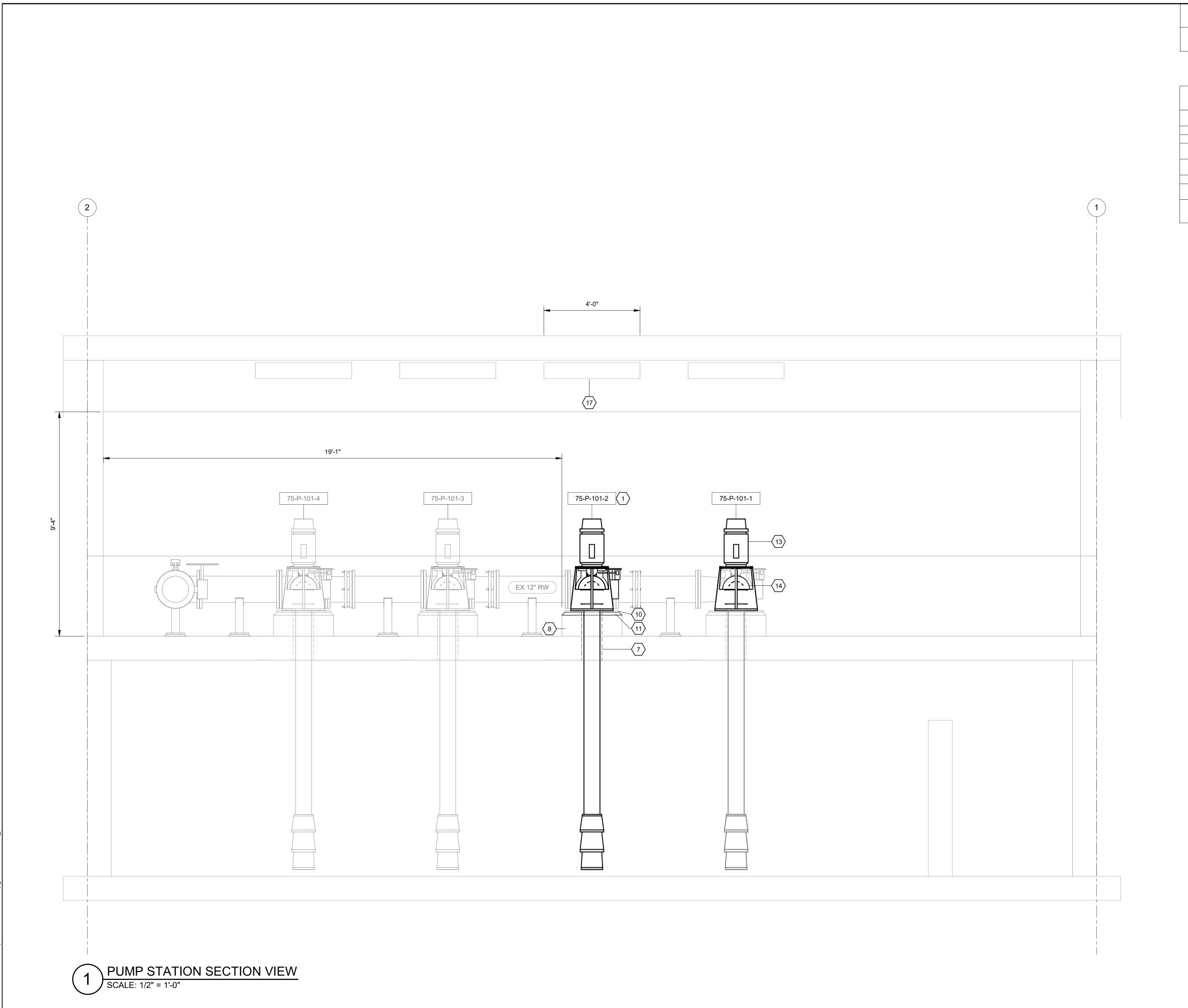
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1. REFER TO SHEET 75-D-001 GOR GENERAL NOTES.

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SHEET KEYED NOTES

NEW VERTICAL TURBINE PUMP. SEE SPEC 43 24 13 VERTICAL TURBINE 7 EXISTING A53 GRADE B STEEL CASING 16" O.D. 8 EXISTING EQUIPMENT PAD. 10 EXISTING BASE PLATE. CONTRACTOR SHALL REMOVE AND REINSTALL THE BASE PLATE BEFORE AND AFTER INSTALLING THE NEW PUMP. 11 INSTALL GROUT FILL BETWEEN EXISTING BASE PLATE AND EQUIPMENT

13 NEW MOTOR. SEE SPEC 43 24 13 VERTICAL TURBINE PUMPS. 14 REFURBISH THE EXISTING PUMP WITH A NEW IMPELLER. SEE SPEC 43 24 13 VERTICAL TURBINE PUMPS.

17 CONTRACTOR SHALL USE EXISTING ROOF HATCHES TO INSTALL NEW AND REFURBISHED PUMPS. ROOF HATCHES TO BE RETURNED TO THE EXISTING CONDITION AFTER INSTALLATION OF PUMPS. AGENCY



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SANTAQUIN CITY

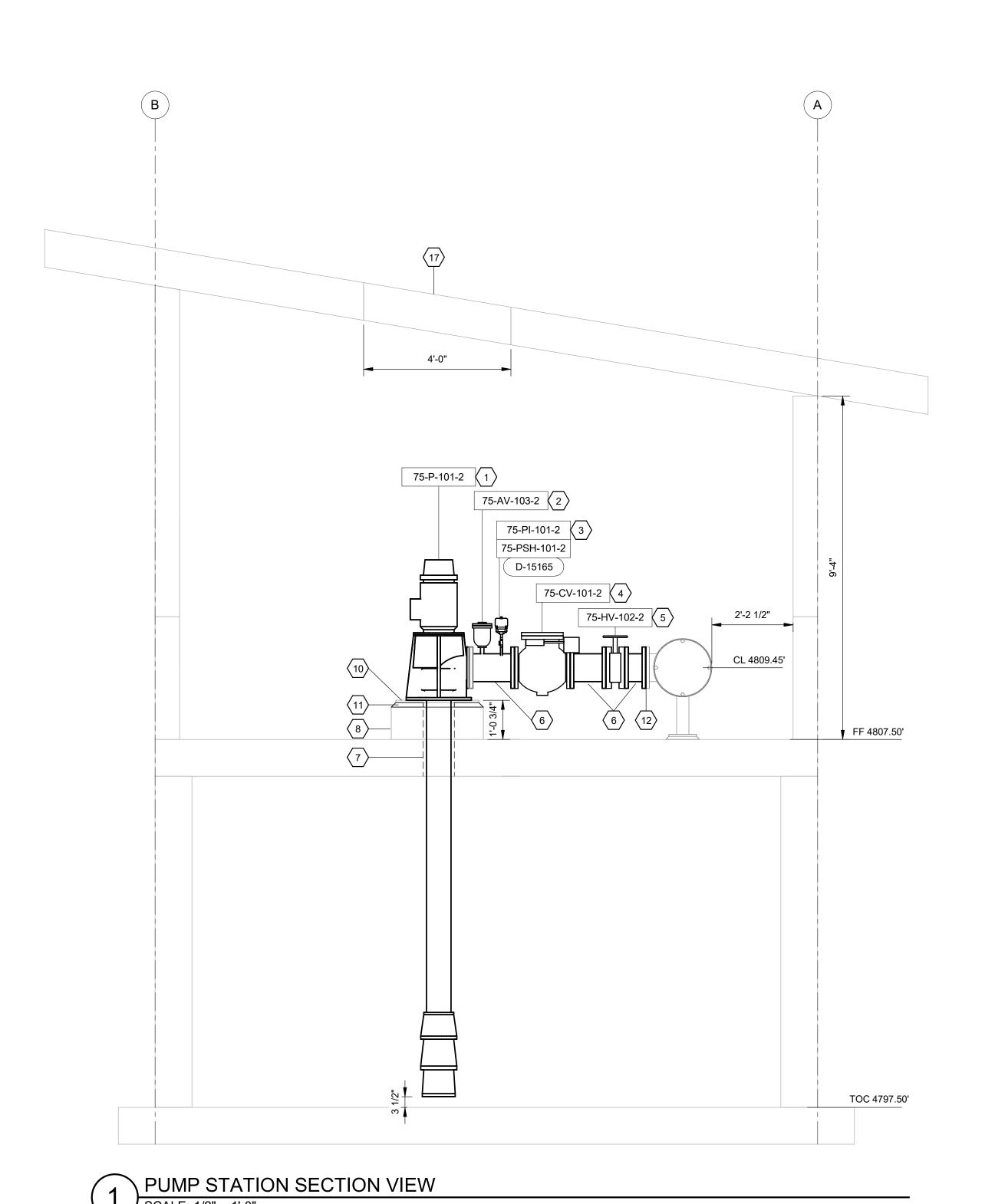
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1. REFER TO SHEET 75-D-001 GOR GENERAL NOTES.

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CLIEET	IZEVED NOTE	-
SHEET	<b>KEYED NOTE</b>	:5

1 NEW VERTICAL TURBINE PUMP. SEE SPEC 43 24 13 VERTICAL TURBINE 2 NEW AIR RELEASE VALVE. ROUTE DRAIN PIPE TO ADJACENT FLOOR

3 NEW PRESSURE SWITCH/PRESSURE GAUGE. SEE STANDARD DETAIL

4 NEW 8-INCH SWING CHECK VALVE. 5 NEW 8-INCH BUTTERFLY VALVE.

6 NEW 8-INCH PIPE SPOOL.

7 EXISTING A53 GRADE B STEEL CASING 16" O.D.

8 EXISTING EQUIPMENT PAD. 10 EXISTING BASE PLATE. CONTRACTOR SHALL REMOVE AND REINSTALL THE BASE PLATE BEFORE AND AFTER INSTALLING THE NEW PUMP.

11 INSTALL GROUT FILL BETWEEN EXISTING BASE PLATE AND EQUIPMENT

12 TIE-IN TO EXISTING BLIND FLANGE.

17 CONTRACTOR SHALL USE EXISTING ROOF HATCHES TO INSTALL NEW AND REFURBISHED PUMPS. ROOF HATCHES TO BE RETURNED TO THE EXISTING CONDITION AFTER INSTALLATION OF PUMPS.

AGENCY



### REVIEW

SANTAQUIN WRF PHASE 3 UPGRADES SANTAQUIN CITY

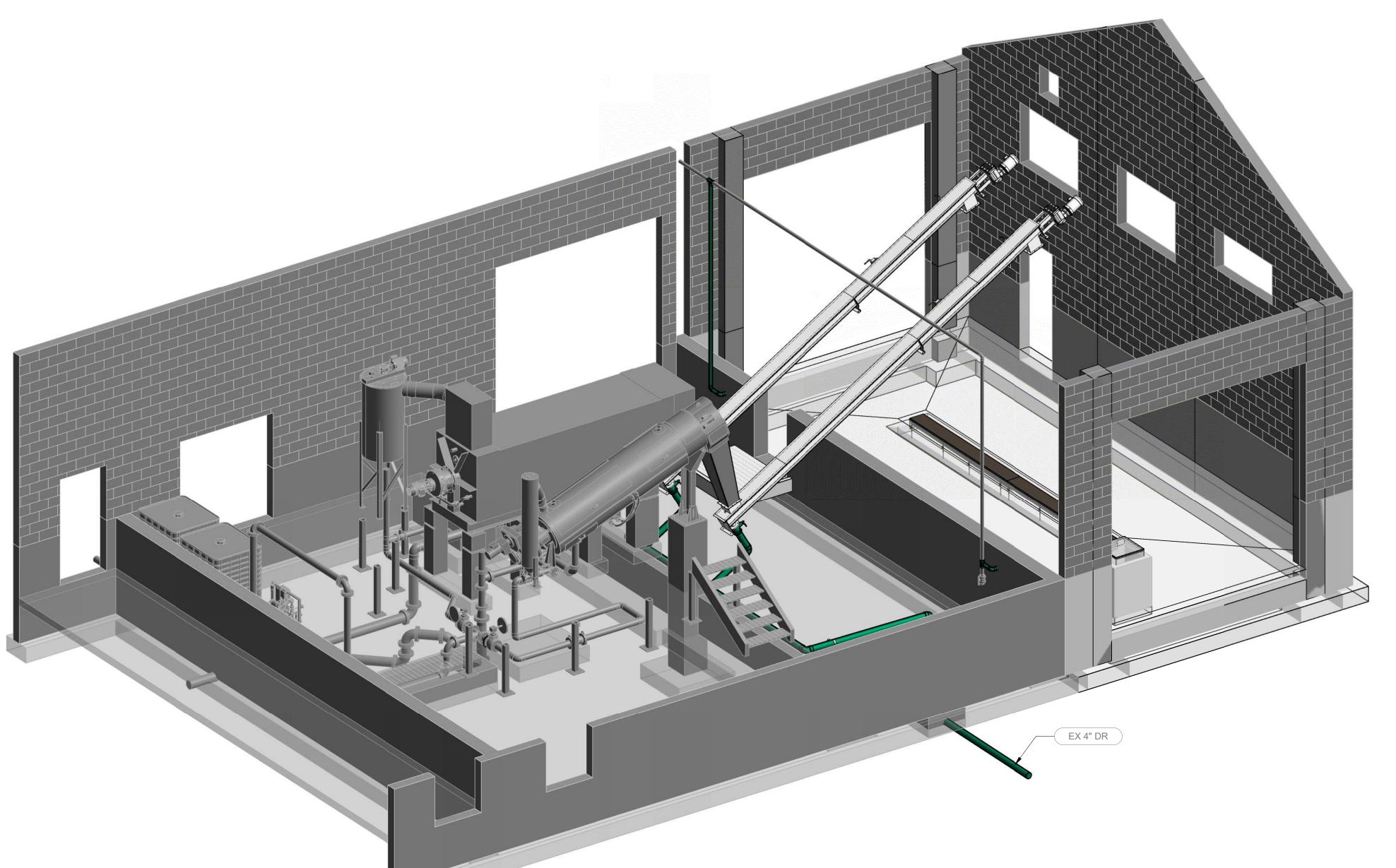
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- THESE DRAWINGS ARE INTENDED TO CONVEY THE GENERAL INTENT AND ARRANGEMENT OF THE SYSTEMS, EQUIPMENT, AND RELATED COMPONENTS. CERTAIN ITEMS OR DETAILS MAY NOT BE INCLUDED OR MAY BE SHIFTED OR OMITTED FROM CERTAIN VEIWS FOR CLARITY.
  REFER TO MANUFACTURER DRAWINGS AND INSTALLATION INSTRUCTIONS FOR ADDITIONAL DETAILS AND SCOPE OF SUPPLY.
- NOT ALL STRUCTURAL, ARCHITECTURAL, MECHANICAL HVAC, AND ELECTRAL/INSTRUMENTATION COMPONENTS SHWON. REFERENCE RELATED DISCIPLINES FOR ADDITIONAL DETAILS.
- REFERENCE YARD PIPING SHEETS (05-CU SERIES) FOR CONTINUATION OF
- 4. PROVIDE PIPE SUPPORTS AND HANGARS IN ACCORDANCE WITH THE STANDARD DETAILS AND AS REQUIRED TO ADEQUATELY SUPPORT AND STABILIZE PIPING.
- 5. CONTRACTOR TO VERIFY ALL DIMENSIONS WITH EQUIPMENT SUPLIERS.
- 6. PROVIDE RESTRAINED MJ JOINTS ON ALL BURIED PIPING (>-3 INCHES) THRUST BLOCKS REQUIRED ONLY WHERE SPECIFICALLY NOTED.
- REFER TO P&IDS FOR CORRESPONDING VALVE, INSTRUMENT, AND EQUIPMENT TAGS.

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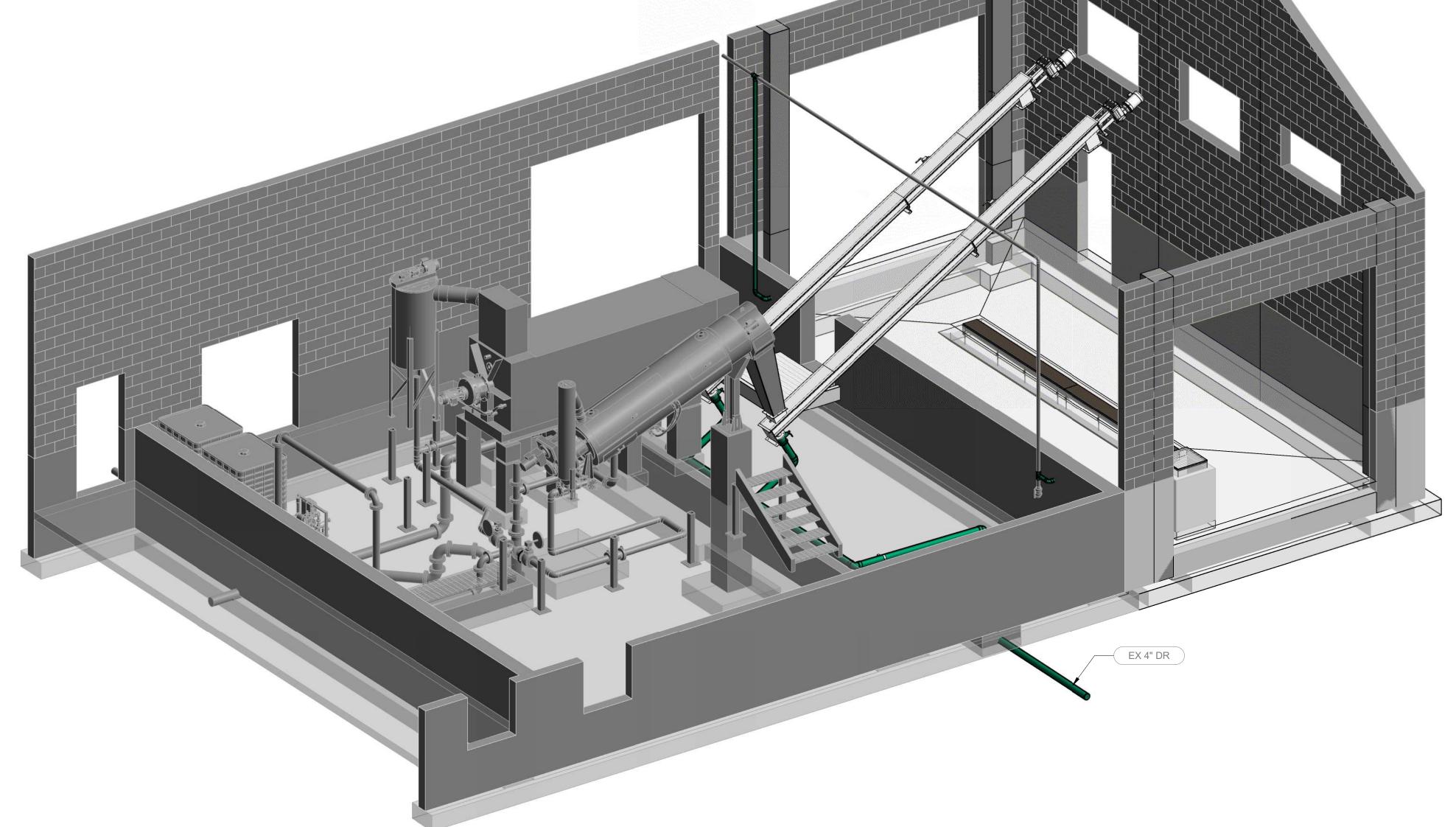
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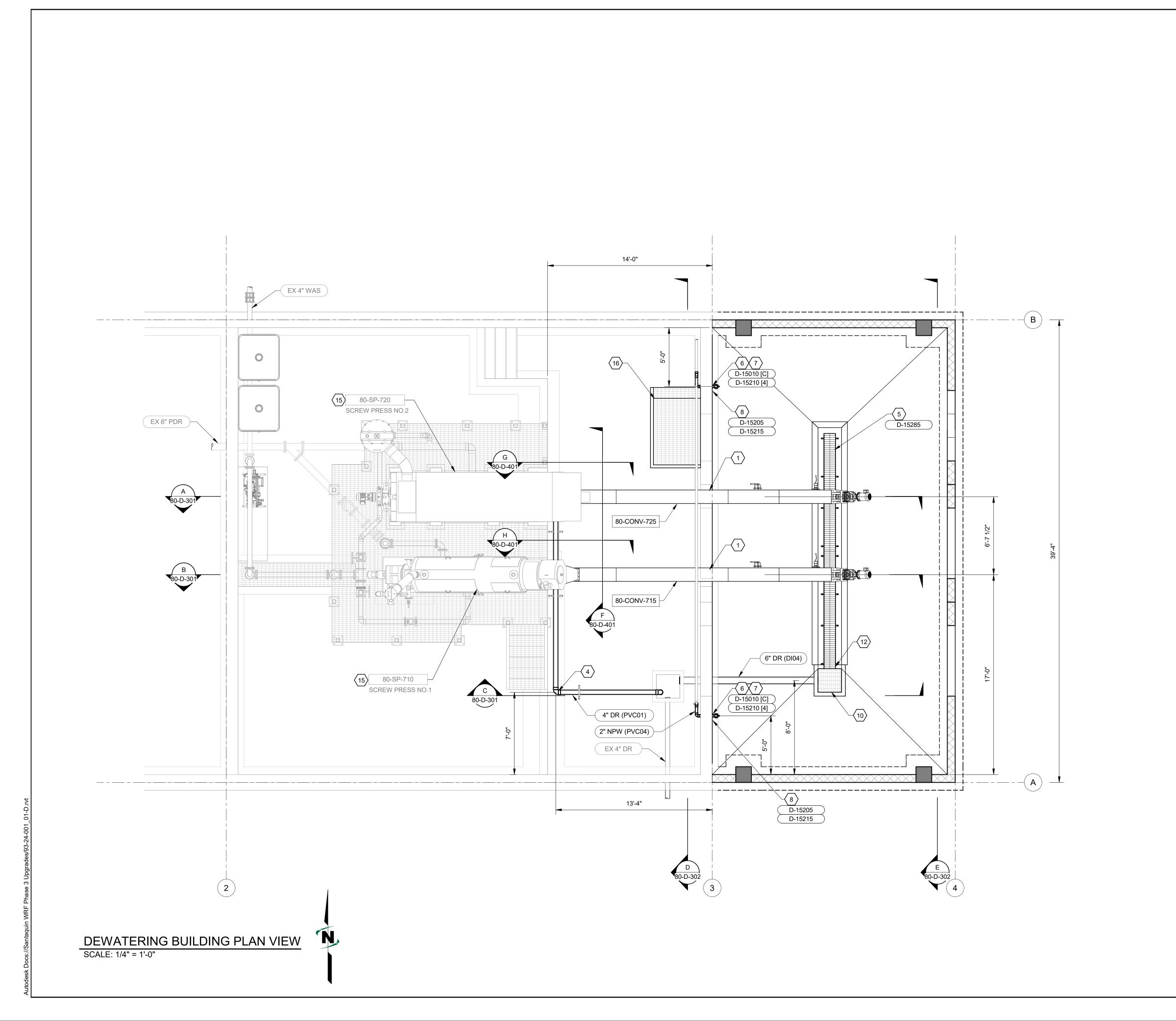
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80-D-001



DEWATERING AREA ISOMETRIC VIEW

SCALE:



1. REFER TO 80-D-001 FOR GENERAL NOTES

# SHEET KEYED NOTES

1 NEW SHAFTLESS SCREW CONVEYOR (SEE SPEC #41 12 13)

4 CONTRACTOR TO VERIFY EXISTING SUMP LOCATION TO DRAIN 5 TRENCH DRAIN

6 SLEEVED PIPE PENETRATION 7 HOSE BIBB

8 HOSE RACK AND NON-POTABLE WARNING SIGN 10 2'-0" x 2'-0" (INSIDE DIMENSIONS) SUMP, SEE 80-S SERIES SHEETS

12 DO NOT INSTALL P-TRAP

15 PROTECT IN PLACE 16 NEW STAIR AND LANDING, SEE STRUCTURAL FOR CONSTRUCTION DETAILING.

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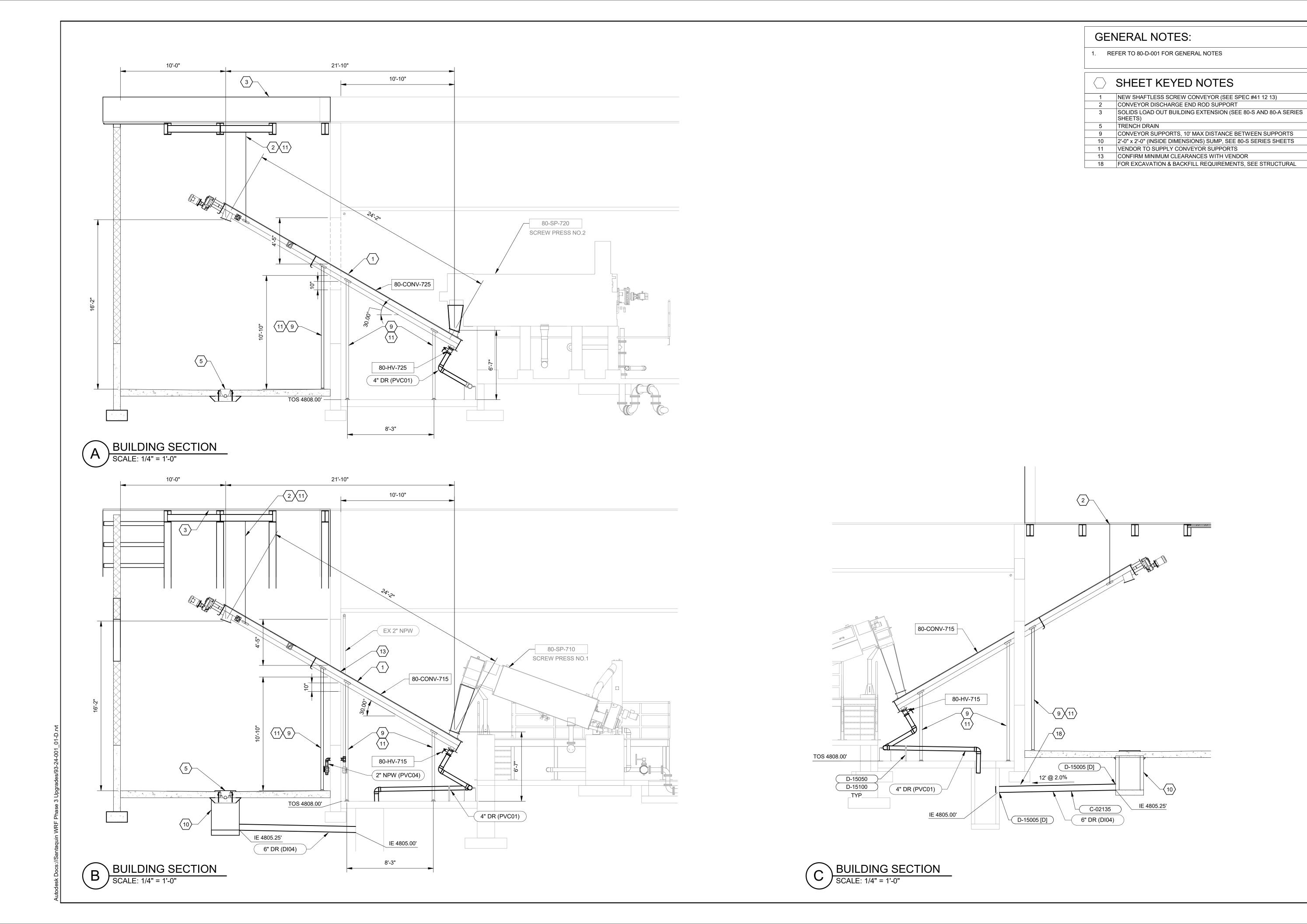
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1. REFER TO 80-D-001 FOR GENERAL NOTES



- 1 NEW SHAFTLESS SCREW CONVEYOR (SEE SPEC #41 12 13)
- 7 HOSE BIBB 17 WALL CUT, SEE 80-S SHEETS

6 SLEEVED PIPE PENETRATION

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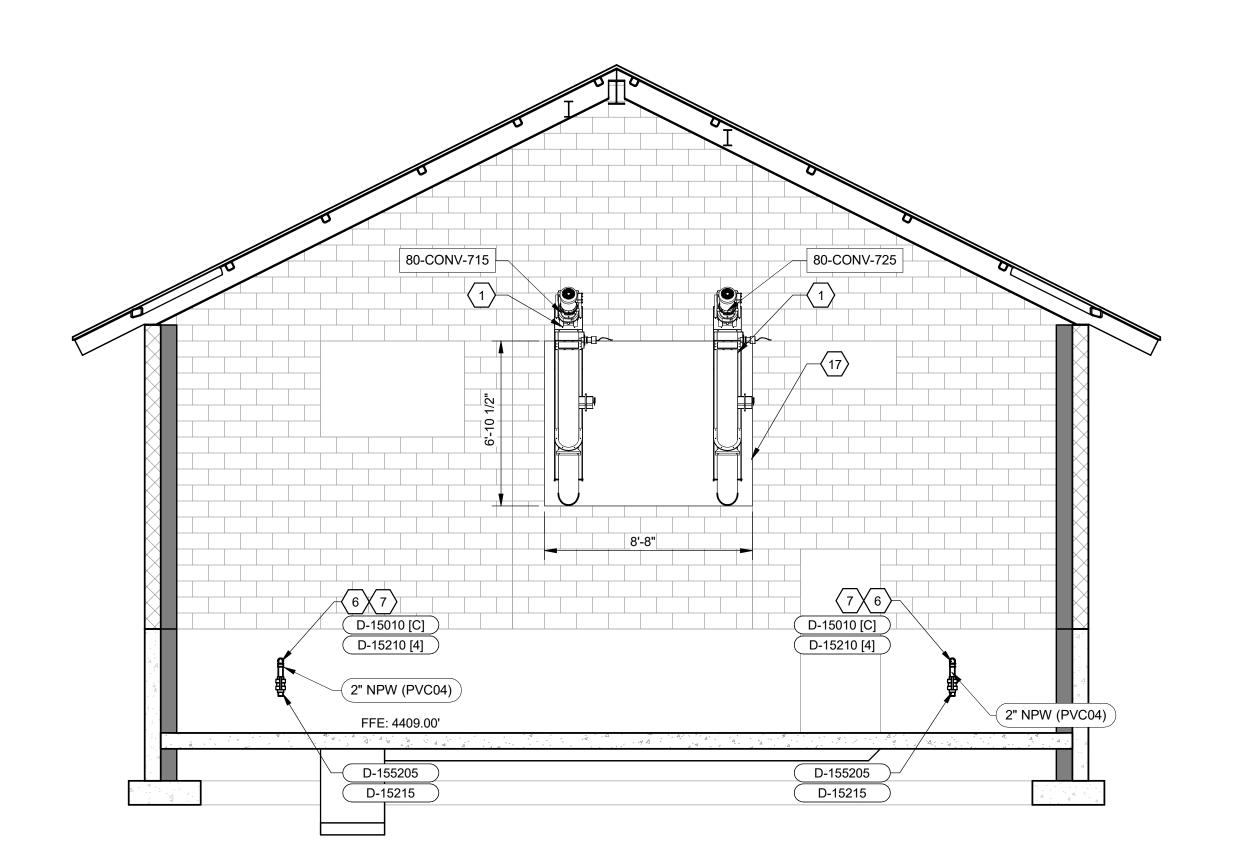
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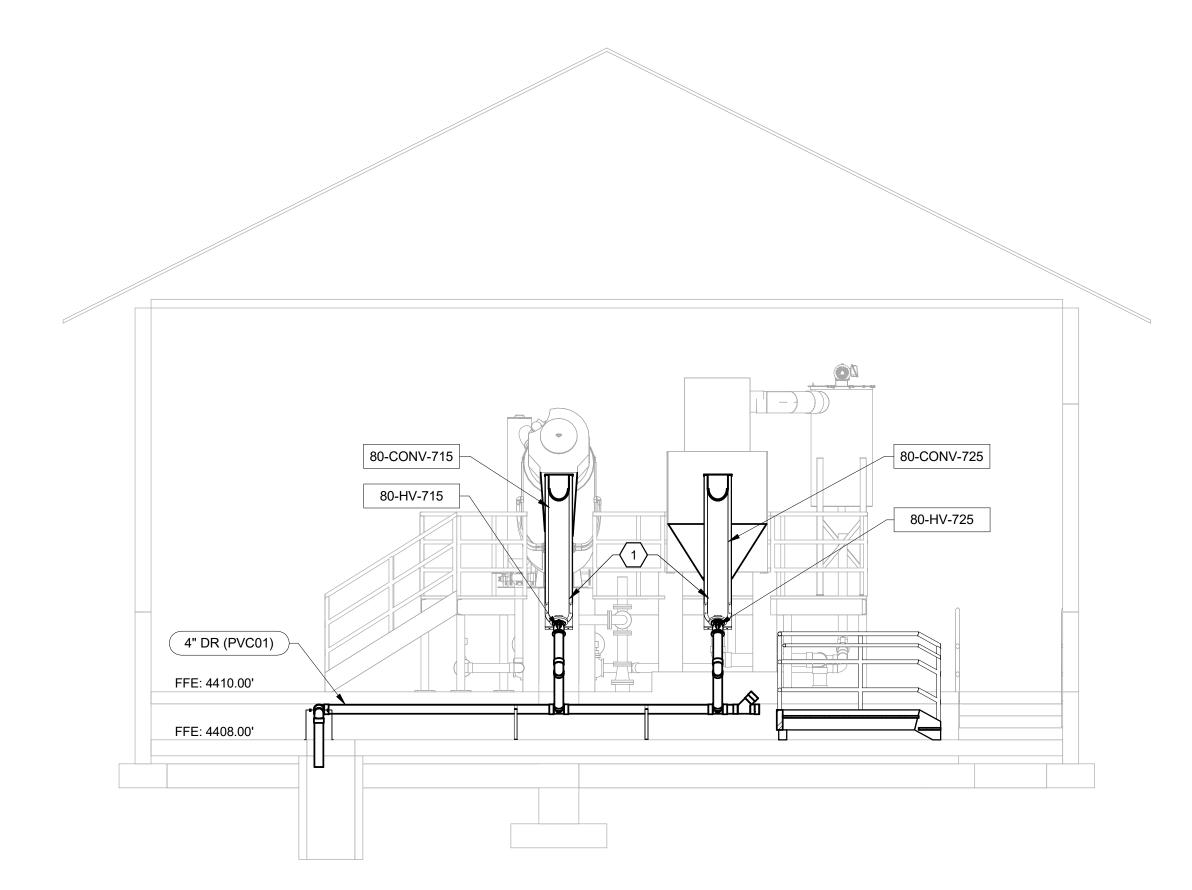
SANTAQUIN WRF PHASE 3 UPGRADES SANTAQUIN CITY

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1. REFER TO 80-D-001 FOR GENERAL NOTES

SHEET KEYED NOTES

1 NEW SHAFTLESS SCREW CONVEYOR (SEE SPEC #41 12 13) 14 CLEANOUT

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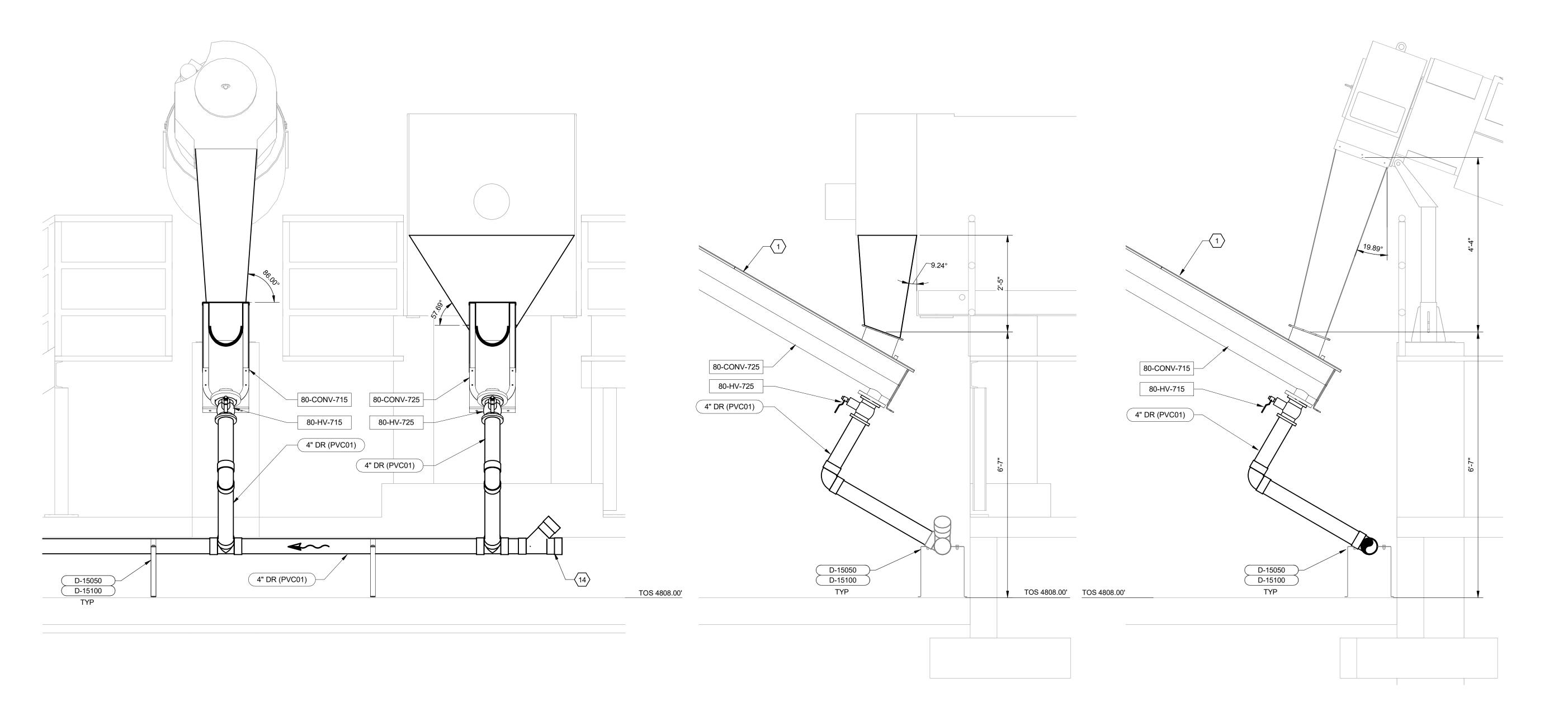
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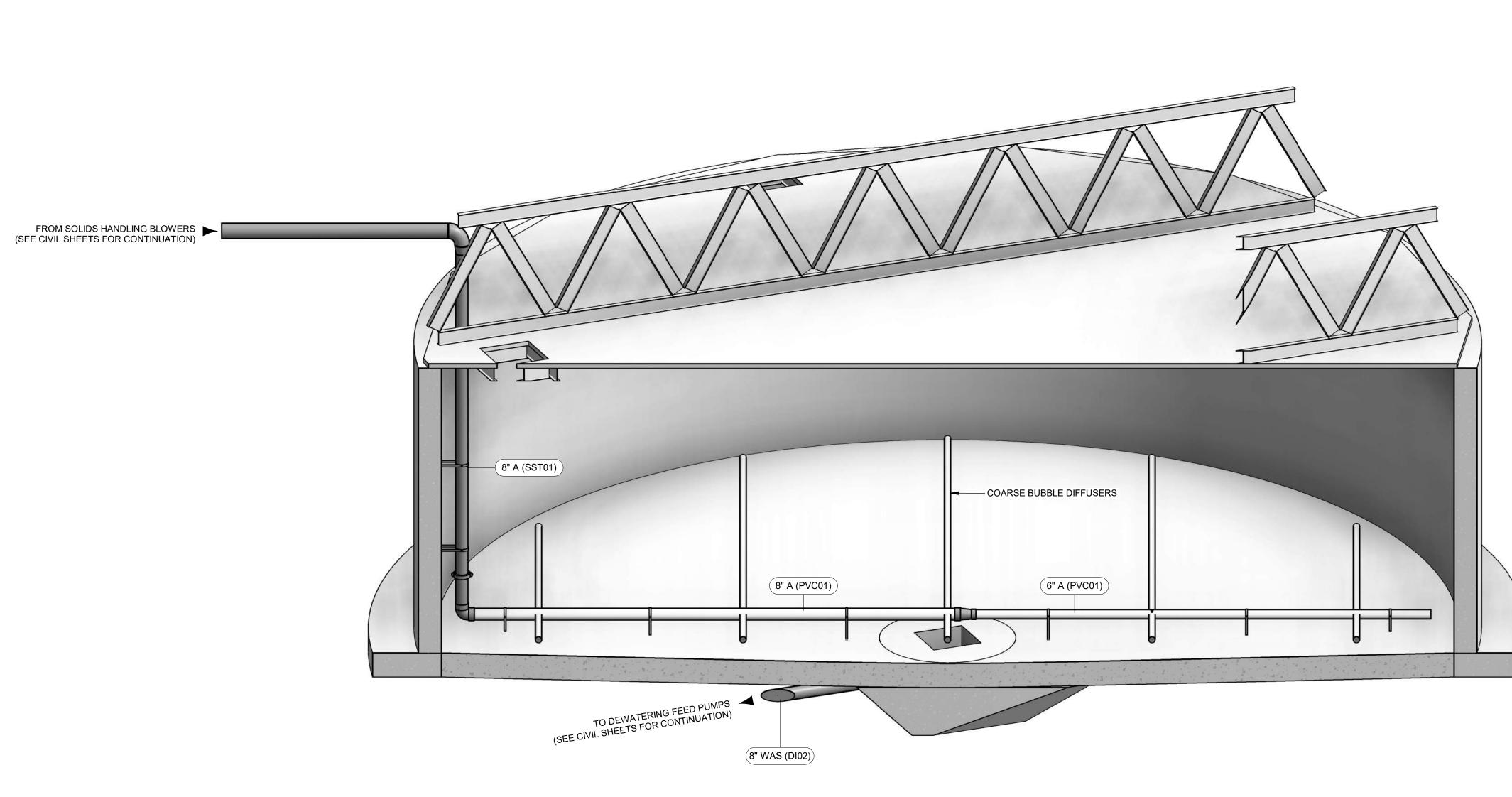
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DRAWING: 80-D-401



ENLARGED HOPPER SECTION





SOLIDS HOLDING TANK ISOMETRIC VIEW
SCALE:

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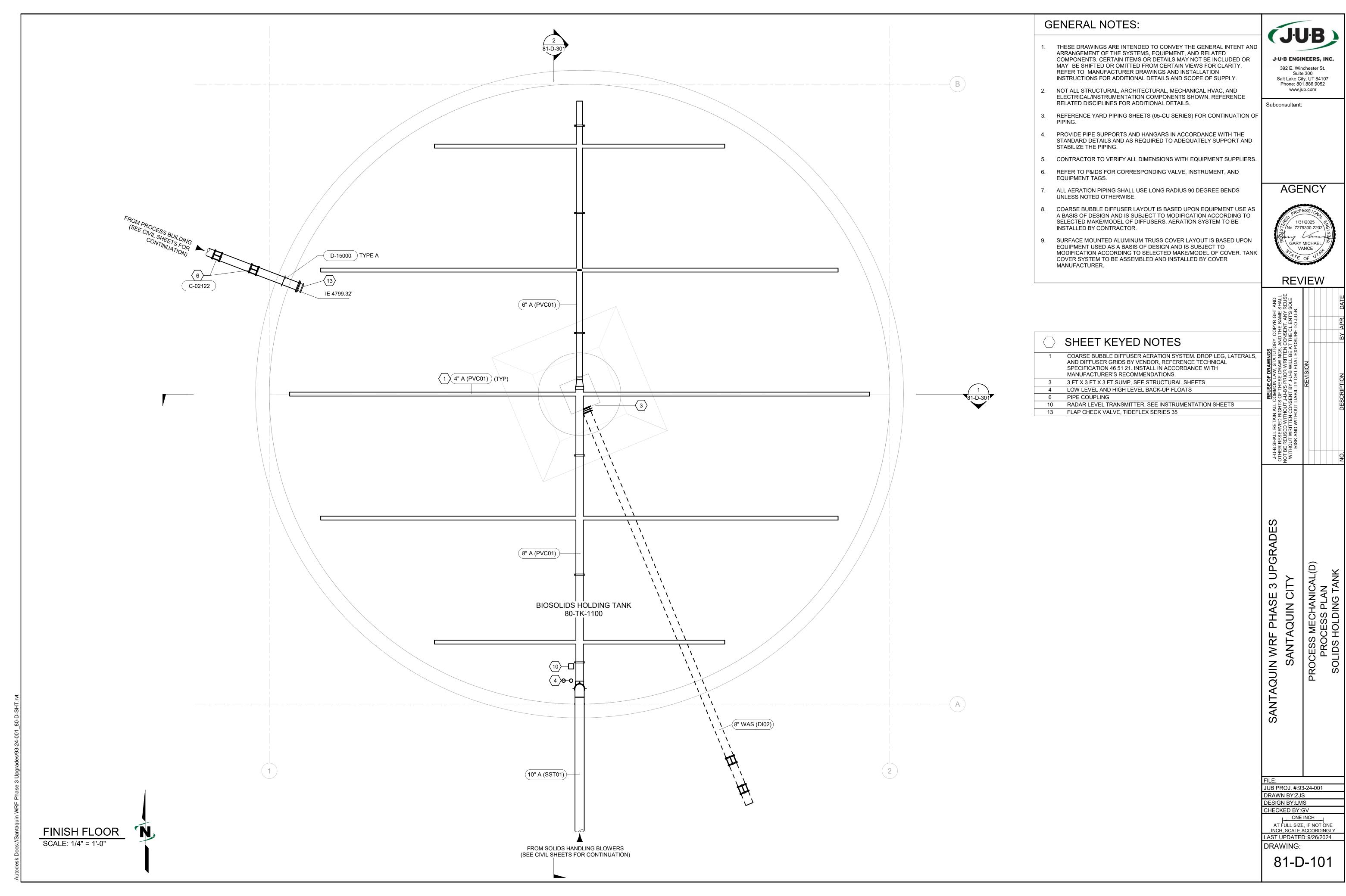
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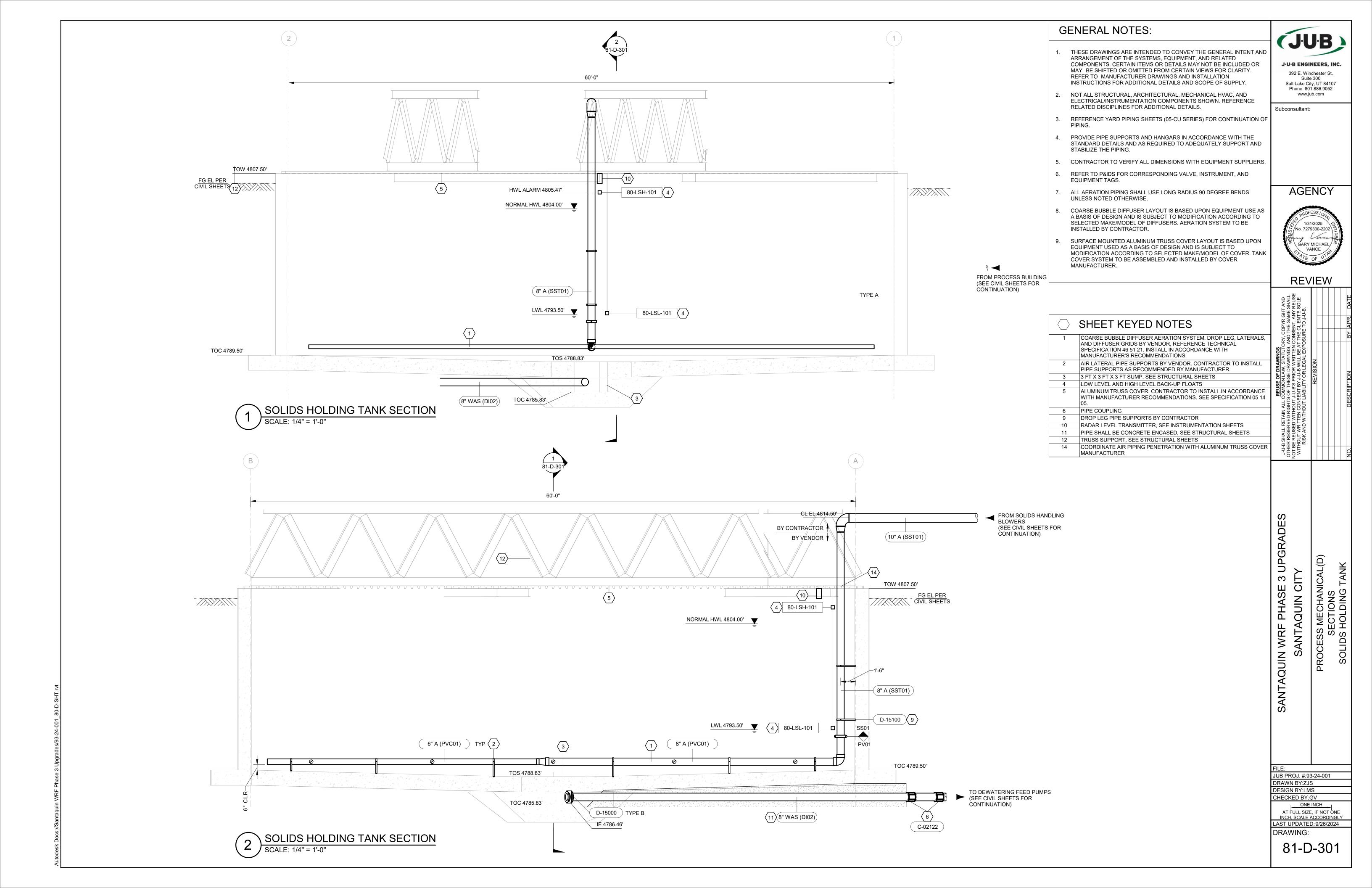
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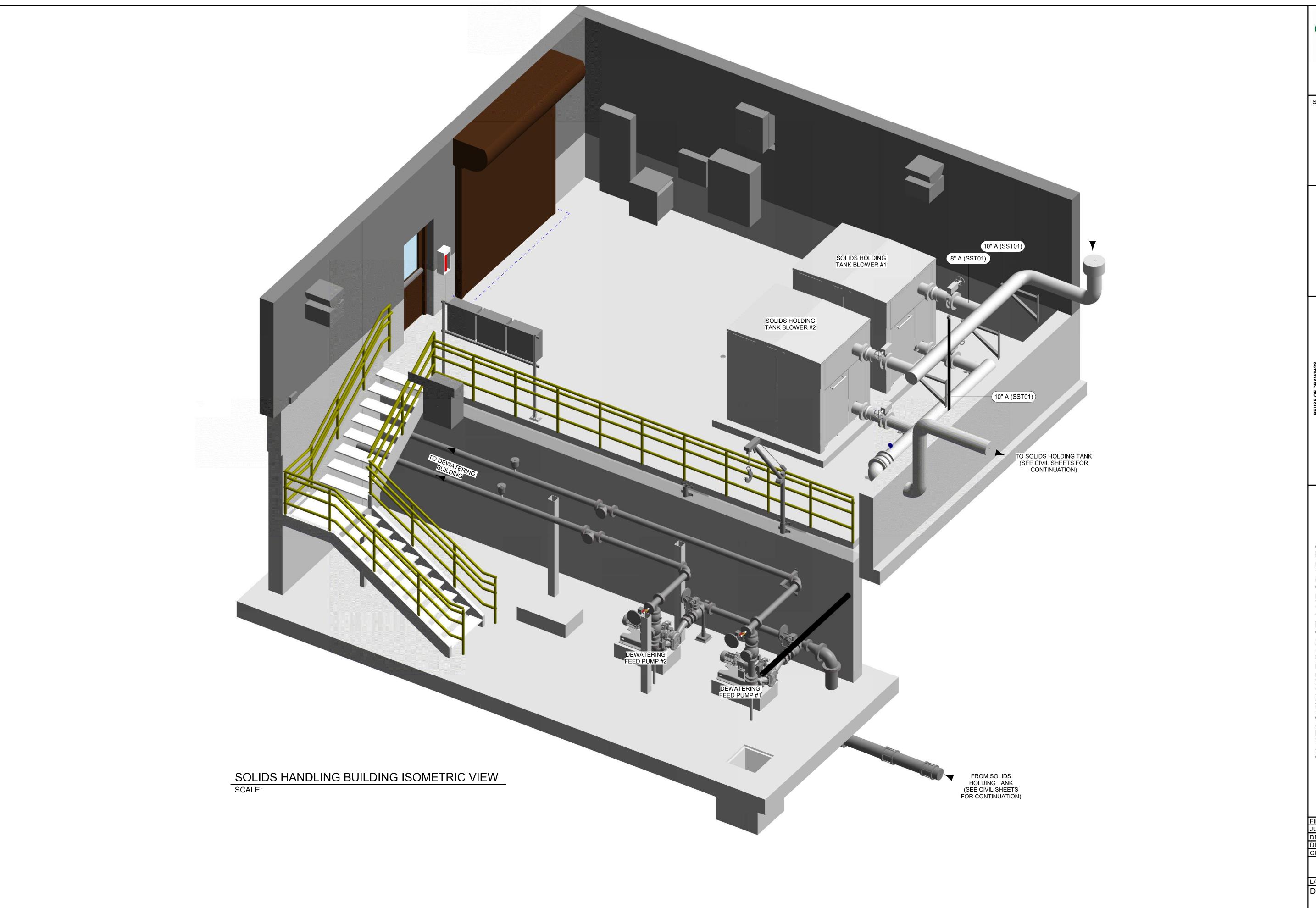
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SANTAQUIN WRF PHASE 3 UPGRADES SANTAQUIN CITY

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DESIGN BY:LMS

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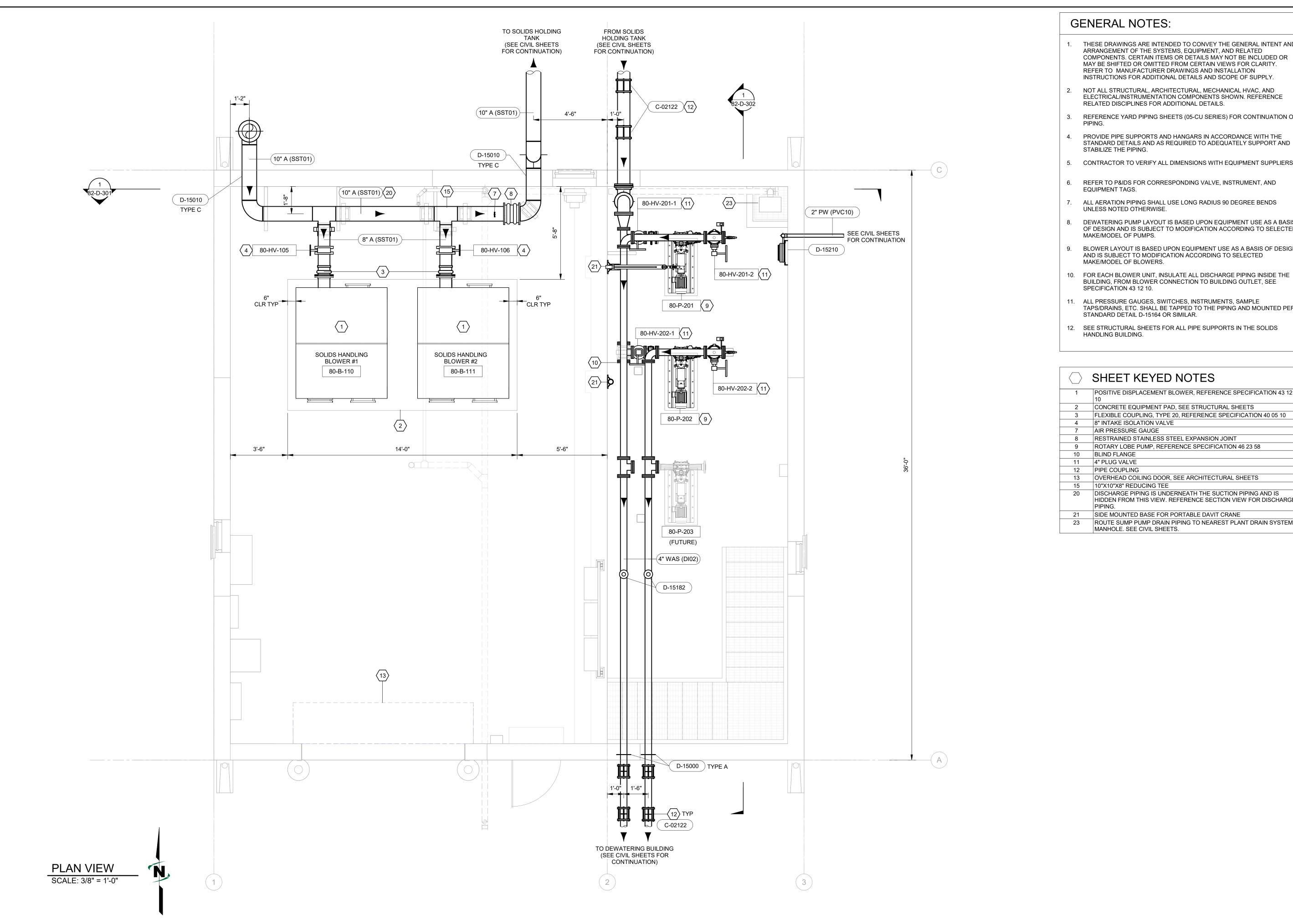
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DRAWING:

82-D-001



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- NOT ALL STRUCTURAL, ARCHITECTURAL, MECHANICAL HVAC, AND ELECTRICAL/INSTRUMENTATION COMPONENTS SHOWN. REFERENCE RELATED DISCIPLINES FOR ADDITIONAL DETAILS.
- 3. REFERENCE YARD PIPING SHEETS (05-CU SERIES) FOR CONTINUATION OF
- 4. PROVIDE PIPE SUPPORTS AND HANGARS IN ACCORDANCE WITH THE STANDARD DETAILS AND AS REQUIRED TO ADEQUATELY SUPPORT AND
- 5. CONTRACTOR TO VERIFY ALL DIMENSIONS WITH EQUIPMENT SUPPLIERS.
- 6. REFER TO P&IDS FOR CORRESPONDING VALVE, INSTRUMENT, AND
- 7. ALL AERATION PIPING SHALL USE LONG RADIUS 90 DEGREE BENDS
- DEWATERING PUMP LAYOUT IS BASED UPON EQUIPMENT USE AS A BASIS OF DESIGN AND IS SUBJECT TO MODIFICATION ACCORDING TO SELECTED
- 9. BLOWER LAYOUT IS BASED UPON EQUIPMENT USE AS A BASIS OF DESIGN AND IS SUBJECT TO MODIFICATION ACCORDING TO SELECTED MAKE/MODEL OF BLOWERS.
- BUILDING, FROM BLOWER CONNECTION TO BUILDING OUTLET, SEE
- 11. ALL PRESSURE GAUGES, SWITCHES, INSTRUMENTS, SAMPLE TAPS/DRAINS, ETC. SHALL BE TAPPED TO THE PIPING AND MOUNTED PER STANDARD DETAIL D-15164 OR SIMILAR.
- 12. SEE STRUCTURAL SHEETS FOR ALL PIPE SUPPORTS IN THE SOLIDS

#### SHEET KEYED NOTES

POSITIVE DISPLACEMENT BLOWER, REFERENCE SPECIFICATION 43 12

3 FLEXIBLE COUPLING, TYPE 20, REFERENCE SPECIFICATION 40 05 10

8 RESTRAINED STAINLESS STEEL EXPANSION JOINT 9 ROTARY LOBE PUMP, REFERENCE SPECIFICATION 46 23 58

13 OVERHEAD COILING DOOR, SEE ARCHITECTURAL SHEETS

20 DISCHARGE PIPING IS UNDERNEATH THE SUCTION PIPING AND IS HIDDEN FROM THIS VIEW. REFERENCE SECTION VIEW FOR DISCHARGE

21 SIDE MOUNTED BASE FOR PORTABLE DAVIT CRANE 23 ROUTE SUMP PUMP DRAIN PIPING TO NEAREST PLANT DRAIN SYSTEM MANHOLE. SEE CIVIL SHEETS.

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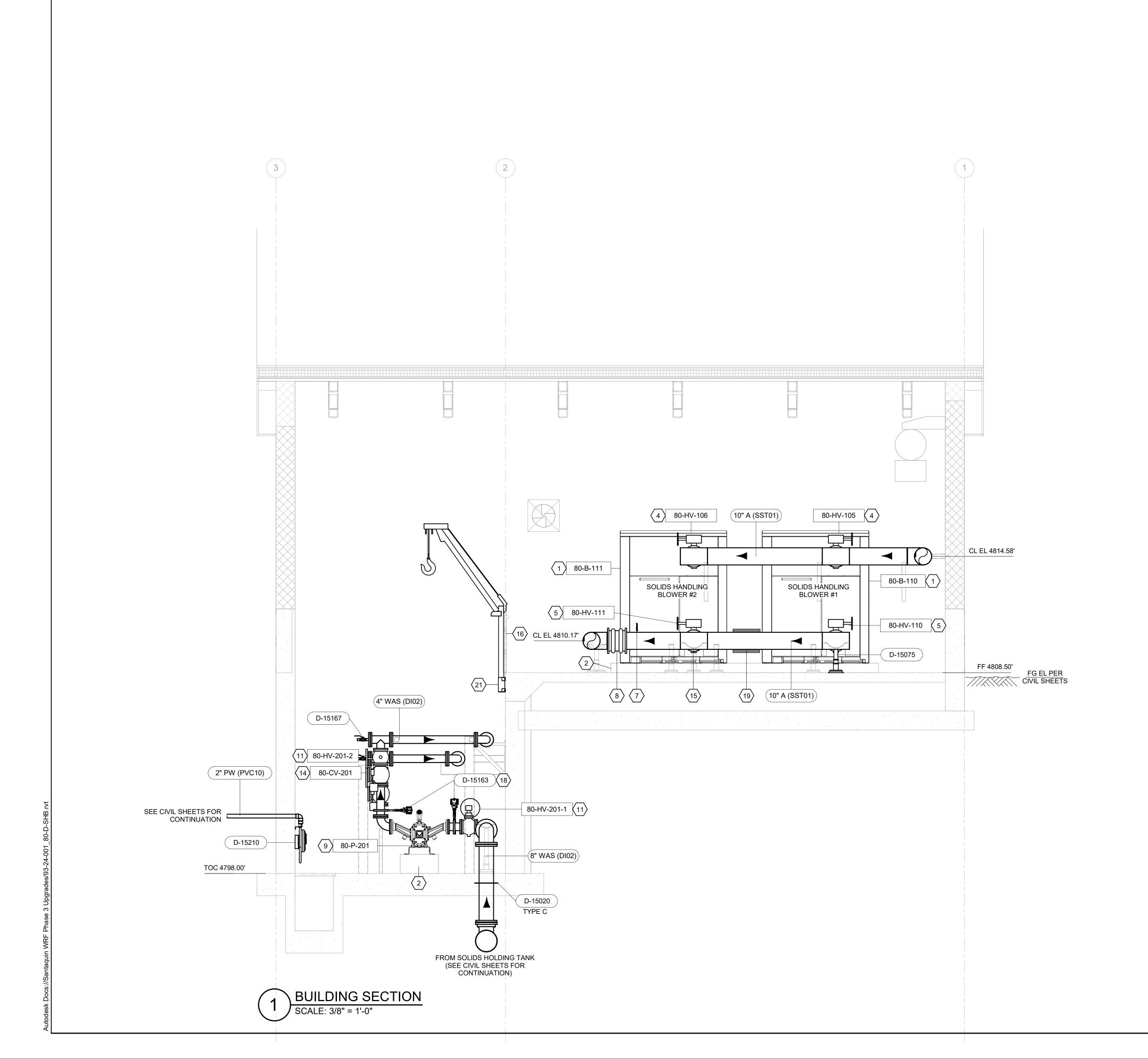
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82-D-101



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- 6. REFER TO P&IDS FOR CORRESPONDING VALVE, INSTRUMENT, AND EQUIPMENT TAGS.
- 7. ALL AERATION PIPING SHALL USE LONG RADIUS 90 DEGREE BENDS UNLESS NOTED OTHERWISE.
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- 10. FOR EACH BLOWER UNIT, INSULATE ALL DISCHARGE PIPING INSIDE THE BUILDING, FROM BLOWER CONNECTION TO BUILDING OUTLET, SEE SPECIFICATION 43 12 10.
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- 12. SEE STRUCTURAL SHEETS FOR ALL PIPE SUPPORTS IN THE SOLIDS HANDLING BUILDING.

	SHEET KEYED NOTES
1	POSITIVE DISPLACEMENT BLOWER, REFERENCE SPECIFICATION 43 12 10
2	CONCRETE EQUIPMENT PAD, SEE STRUCTURAL SHEETS
4	8" INTAKE ISOLATION VALVE
5	8" DISCHARGE ISOLATION VALVE
7	AIR PRESSURE GAUGE
8	RESTRAINED STAINLESS STEEL EXPANSION JOINT
9	ROTARY LOBE PUMP, REFERENCE SPECIFICATION 46 23 58
11	4" PLUG VALVE
14	4" SWING CHECK VALVE
15	10"X10"X8" REDUCING TEE
16	REMOVABLE ALUMINUM HANDRAIL, SEE STRUCTURAL SHEETS
18	4" FLANGED PRESSURE SENSOR WITH PRESSURE GAUGE

21 SIDE MOUNTED BASE FOR PORTABLE DAVIT CRANE

19 PIPE INSULATION



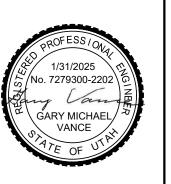
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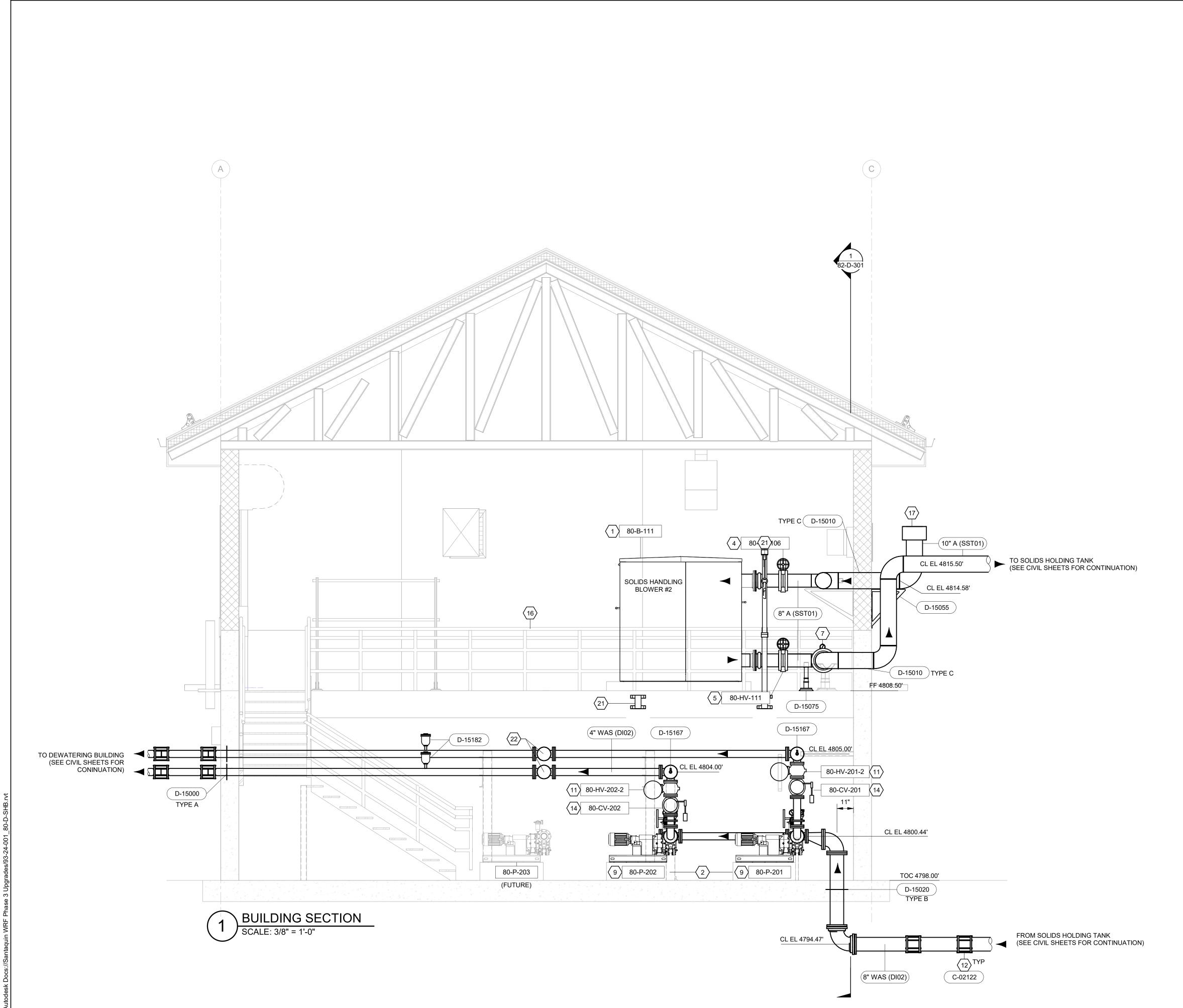
SANTAQUIN WRF PHASE 3 UPGRADES

PROCESS MECHANICAL(D)
SECTIONS
SOLIDS HANDLING BUILDING

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- 2 CONCRETE EQUIPMENT PAD, SEE STRUCTURAL SHEETS
- 4 8" INTAKE ISOLATION VALVE
- 5 8" DISCHARGE ISOLATION VALVE
- 7 AIR PRESSURE GAUGE
- 9 ROTARY LOBE PUMP, REFERENCE SPECIFICATION 46 23 58
- 11 4" PLUG VALVE 12 PIPE COUPLING
- 14 4" SWING CHECK VALVE 16 REMOVABLE ALUMINUM HANDRAIL, SEE STRUCTURAL SHEETS
- 17 BLOWER INLET FILTER BY VENDOR
- 21 SIDE MOUNTED BASE FOR PORTABLE DAVIT CRANE 22 BLIND FLANGE

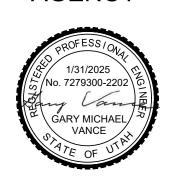
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**REVIEW** 

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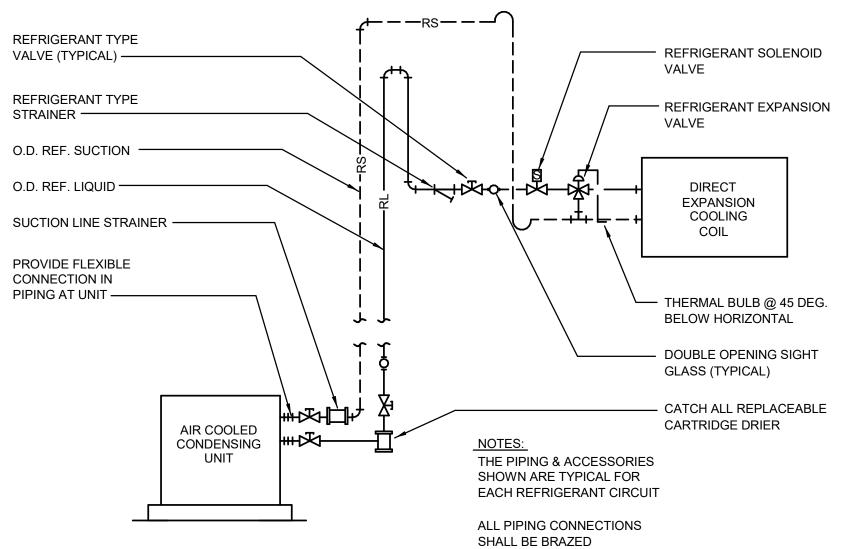
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LAST UPDATED: 10/23/2024

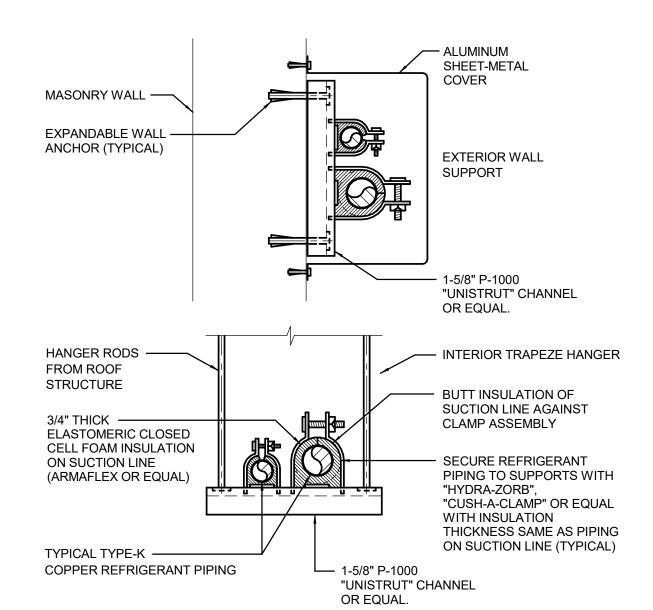
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82-D-302

## ELECTRICAL ROOM A/C UNIT DETAIL







#### REFRIGERANT PIPE SUPPORT M-501

### MECHANICAL EQUIPMENT SCHEDULE

AC-1 DUCT FREE, MINI SPLIT UNIT, HEAT PUMP, WALL MOUNTED INDOOR FAN COIL UNIT WITH OUTDOOR CONDENSING UNIT. TO DELIVER 29,800 BTU/HR COOLING WITH O.A.T = 95°F and EAT 80°F db & 67°F wb. EFFICIENCY 20.0 SEER, 11.4 EER, and (9.2 HSPF heating)

> MANUFACTURER: MODEL:

LENNOX

MWMC030SF-1P (INDOOR) and MPC030S4S-1P (OUTDOOR)

ELECTRICAL:

23 MCA @ 208/1/60 (INDOOR UNIT POWERED THRU OUTDOOR UNIT)

INDOOR UNIT: 646 CFM, UNIT TO BE COMPLETE WITH CLEANABLE FILTER, INTEGRAL CONDENSATE PUMP TO LIFT 24", CHECK & EXPANSION VALVE KIT, PRE-CHARGED LINE SET, DRIP PAN AND DRAIN CONNECTION. TO BE UL LISTED. PROVIDE WALL MOUNTED THERMOSTAT. THERMOSTAT SHALL BE HARD WIRED TO UNIT.

DIMENSIONS: 47" W x11" D x 15" H WEIGHT: 44 LBS

OUTDOOR UNIT: AIR COOLED, HORIZONTAL DISCHARGE, INVERTER COMPRESSOR, UNIT TO BE MOUNTED ON ROOF. UNIT TO BE COMPLETE WITH CRANKCASE HEATER, AMBIENT CONTROL KIT TO -13°F, AND ALL CONTROLS FOR AUTOMATIC OPERATION.

(INDOORS

DIMENSIONS: WEIGHT:

41" W x 16" D x 32" H 142 LBS

#### **GENERAL NOTES:**

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Subconsultant:

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#### SHEET KEYED NOTES

MOUNT INDOOR HEAT PUMP UNIT ABOVE DOOR. PIPING AND WIRING RUN INSIDE WALL UNSEEN FROM EITHER SIDE.
REFRIGERANT PIPING TO RUN UP IN STRUCTURE OF ELECTRICAL ROOI ROOF.
PROVIDE 4" CONCRETE HOUSEKEEPING PAD FOR HEAT-PUMP OUTDOOR UNIT.

4 CONNECT CONDENSATE PIPING TO HEATPUMP INDOOR UNIT. DROP CONDENSATE DRAIN PIPE TO 12" ABOVE FINISHED GRADE AND TERMINATE IN 45° ELBOW. PROVIDE STAINLESS STEEL INSECT SCREEN

WALL MOUNTED, HARD WIRED, UNIT CONTROLLER.

IN OPENING.



#### **REVIEW**

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3 UPGRAD

SANTAQUIN WRF

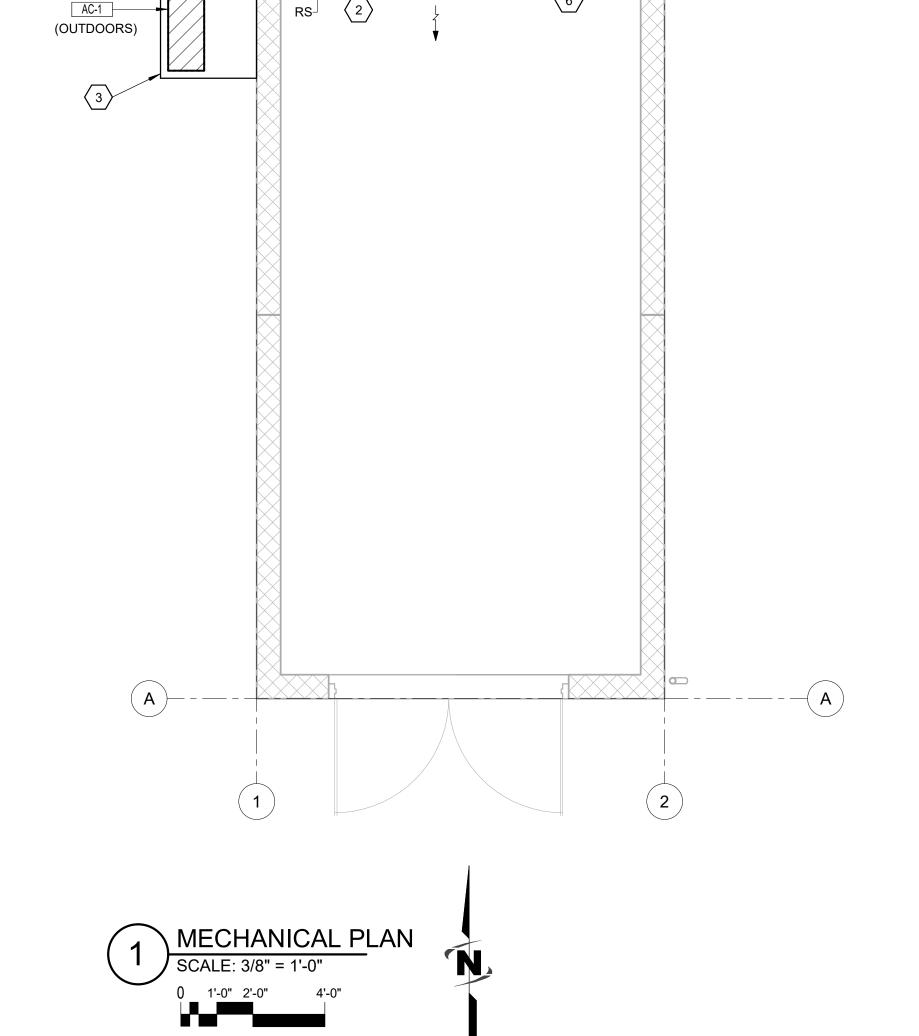
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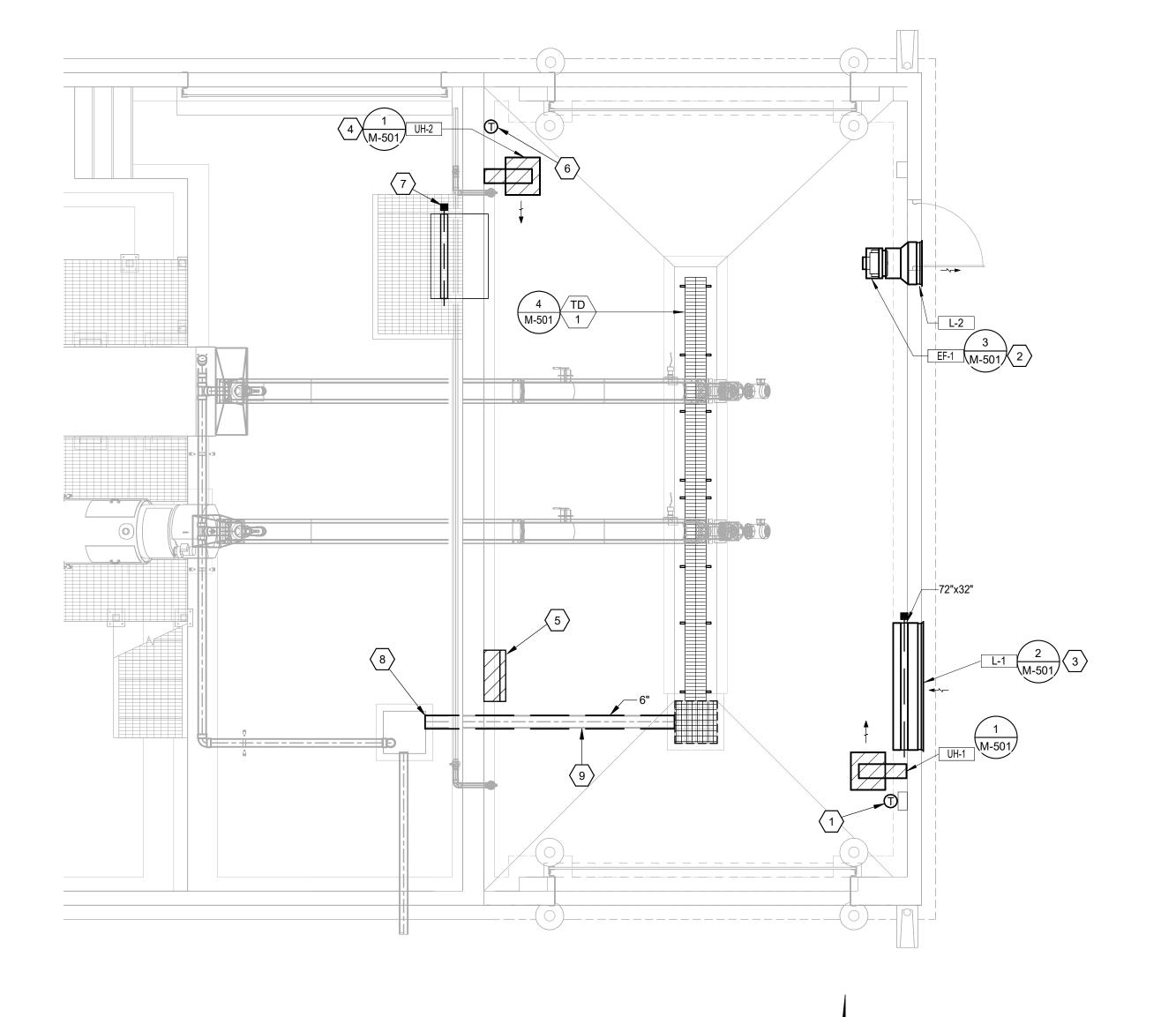
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DESIGN BY:JAB

INCH, SCALE ACCORDINGLY LAST UPDATED: 01/31/25

DRAWING: 05-M-101





MECHANICAL PLAN

SCALE: 1/4" = 1'-0" 0 2' - 0" 4'-0"

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WALL MOUNTED TEMPERATURE SENSOR 48" ABOVE FLOOR. PROVIDE INSULATED WALL MOUNTING BOX WITH 2" RIGID POLYISO INSULATION

NEW WALL MOUNTED PROPELLER EXHAUST FAN WITH BACK DRAFT DAMPER AND LOUVER. PROVIDE ANGLE IRON FRAME MOUNTING AND WALL ADAPTER. BOTTOM OF LOUVER TO BE 17' ABOVE ROOM FLOOR (IN

NEW WALL MOUNTED RELIEF LOUVER WITH MOTORIZED DAMPER.

DISCONNECT EXISTING ACTUATOR. LOCK DAMPER IN OPEN POSITION.
 RUN NEW WASTE PIPING UNDER EXISTING FOOTING AND FOUNDATION.

PROCESS SECTION C/80-D-301 FOR INVERT ELEVATIONS.

CONNECT TO EXISTING SUMP AT APPROXIMATELY THIS LOCATION. SEE

DAMPER TO REMAIN OPEN WHEN FAN IS OPERATING AND CLOSE WHEN FAN IS SHUT-DOWN OR FAILS. BOTTOM OF LOUVER TO BE 17' ABOVE

SHEET KEYED NOTES

AND SUITABLE 1/4" POLYETHELENE HOUSING.

BLOCK COURSE.) FAN IS TO RUN CONTINUALLY

BOTTOM OF UNIT HEATER TO BE 10FT ABOVE ROOM FLOOR.
 MECHANICAL HVAC EQUIPMENT CONTROL PANEL. PROVIDE HAND/ON/OFF SWITCH FOR EXHAUST FAN WITH INDICATOR LIGHT.

6 WALL MOUNTED TEMPERATURE SENSOR 48" ABOVE FLOOR.

ROOM FLOOR (IN BLOCK COURSE.)

(GREEN WHEN ON).

9 PIPING TO RUN UNDERFLOOR.



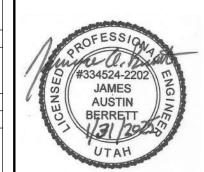
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Subconsultant:

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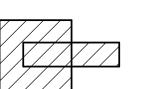
MECHANICAL LEGEND

WASTE PIPING

TEMPERATURE SENSOR

T

ELECTRIC UNIT HEATER



LOUVER WITH AUTOMATIC DAMPER



	PLU	JMBII	NG F	IXTU	RE S	CHEDULE
SYMBOL	FIXTURE	WASTE	VENT	C.W.	H.W.	NOTES
$\langle TD \rangle$	TRENCH DRAIN	4"	2"			SEE PLANS FOR LENGTH AND SHAPE CATCH BASIN WITH HD GRATE AT OUTLET

FILE:
JUB PROJ. #:93-24-001
DRAWN BY:JP
DESIGN BY:JAB

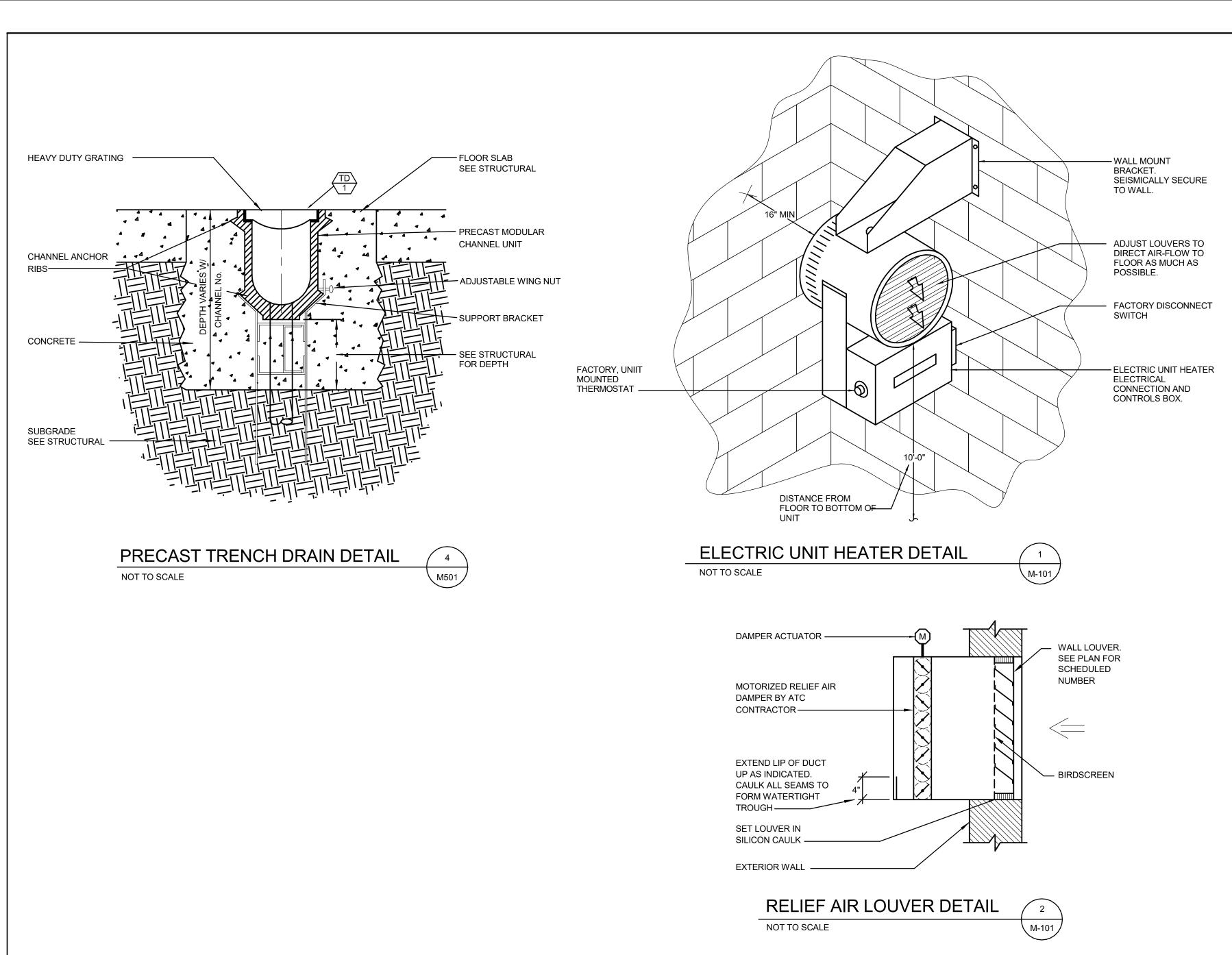
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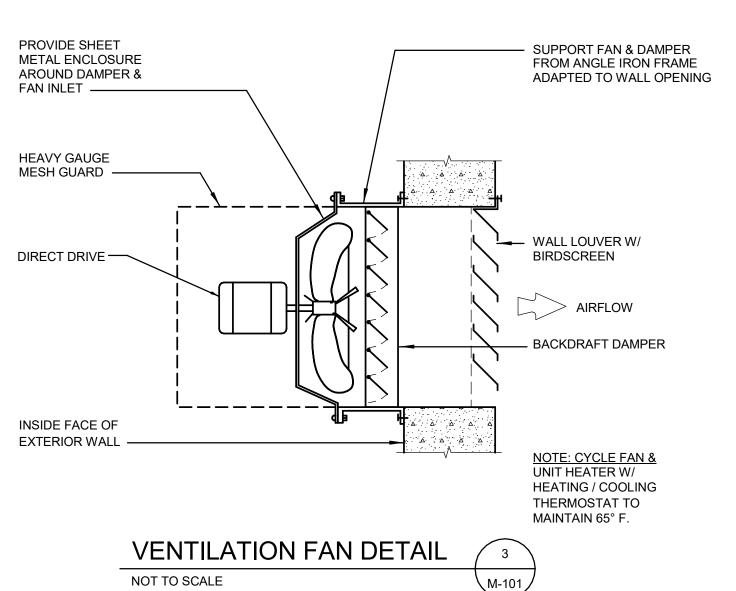
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DRAWING:

80-M-101





#### MECHANICAL EQUIPMENT SCHEDULE

ELECTRIC UNIT HEATER: CORROSION RESISTANT, PROP FAN, ELECTRIC ELEMENT. PROVIDE WALL MOUNT BRACKET, AND PROVIDE FACTORY UNIT MOUNTED THERMOSTAT, DISCONNECT, SELECTOR SWITCH, AND PILOT LIGHT. 1,330 CFM. UH-2

MANUFACTURER: CHROMALOX MODEL: HD3D-2500 TSP ELECTRICAL: 20 KW - 20.1 AMPS @ 480/3/60 DIMENSIONS: 16"W x 18"D x 28"H WEIGHT: 61 LBS

	EXHAUST FAN SCHEDULE									
SYMBOL	TYPE	C.F.M.	S.P.	RPM	MOTOR	DRIVE	WEIGHT	(1)(2) MAKE & MODEL		
EF-1	WALL MOUNTED PROP	1,600	0.25"	1,739	1/4 HP @ 115/1/60	DIRECT	100 LBS	TWIN CITY WPD 14E8		

(1) CFM AND STATIC PRESSURE FOR PROJECT ALTITUDE. HORIZONTAL, WALL MOUNTED APPLICATION. NOT TO EXCEED 11.3 SONES. PROVIDE WALL MOUNTING BOX, HINGED GUARD, UNIT MOUNTED SPEED CONTROLLER, BACKDRAFT DAMPER, & FACTORY DISCONNECT.

		LOUVE	ER SCHEDUL	-E	
SYMBOL	SIZE (W x H)	SERVICE	TYPE	MAKE & MODEL	(1)(2)(3)(4)
L-1	72" x 32"	RELIEF	4" DEEP - DRAINABLE	AIROLITE K609	
L-2	24" x 24"	EXHAUST	4" DEEP - DRAINABLE	AIROLITE K609	

#### NOTES:

- (1) PROVIDE 1/2" MESH GALVANIZED BIRDSCREEN.
- (2) PROVIDE CUSTOM KYNAR FINISH (COLOR BY ARCHITECT)
- (3) COORDINATE EXACT LOCATIONS WITH ARCHITECTURAL ELEVATIONS.
- (4) PROVIDE FLUSH TYPE MOUNTING FRAME.

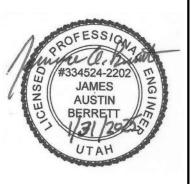
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J-U-B SHALL RETAIN ALL COMMON LAW, STATUTORY, COPYRIGHT AND OTHER RESERVED RIGHTS OF THESE DRAWINGS, AND THE SAME SHALL NOT BE REUSED WITHOUT J-U-B'S PRIOR WRITTEN CONSENT. ANY REUSE WITHOUT WRITTEN CONSENT BY J-U-B WILL BE AT THE CLIENT'S SOLE RISK AND WITHOUT LIABILITY OR LEGAL EXPOSURE TO J-U-B.	REVISION	NO. DESCRIPTION

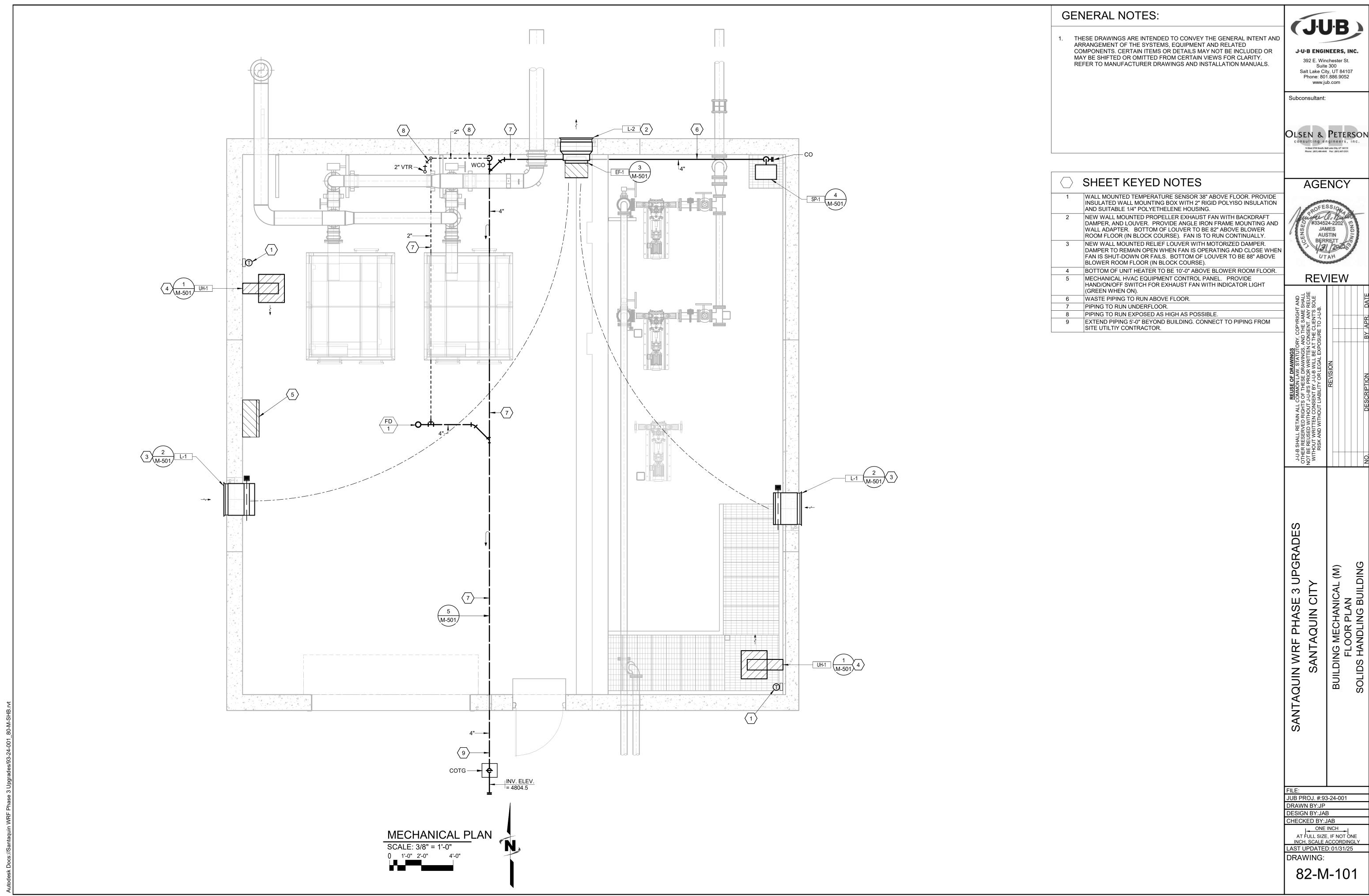
3 UPGRAD SANTAQUIN WRF

JUB PROJ. #:93-24-001 DRAWN BY:JP DESIGN BY:JAB CHECKED BY:JAB

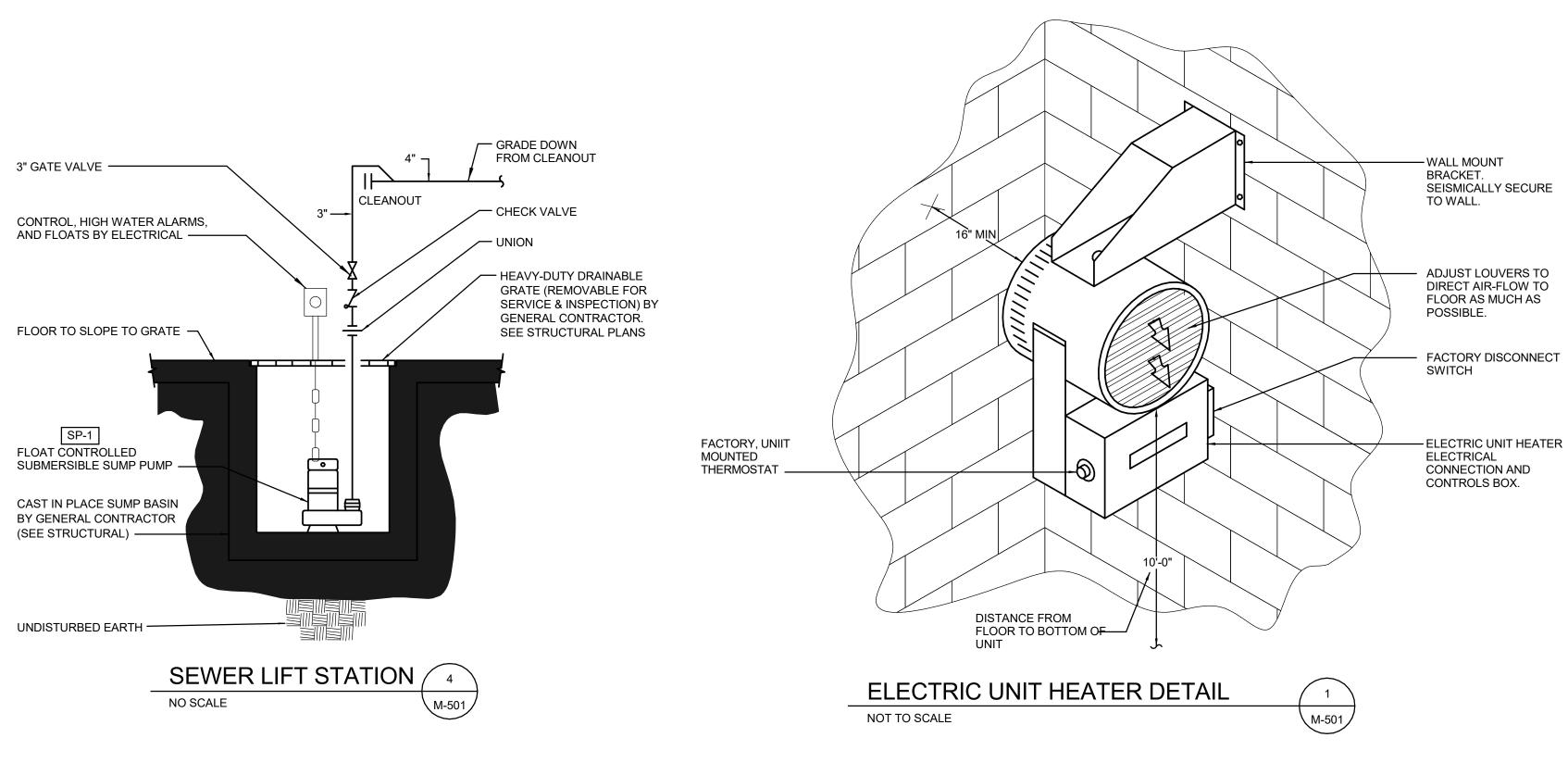
ONE INCH
AT FULL SIZE, IF NOT ONE
INCH, SCALE ACCORDINGLY LAST UPDATED: 1/31/2025

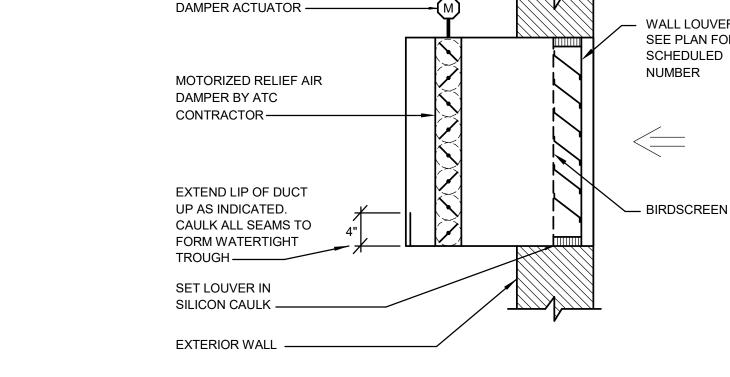
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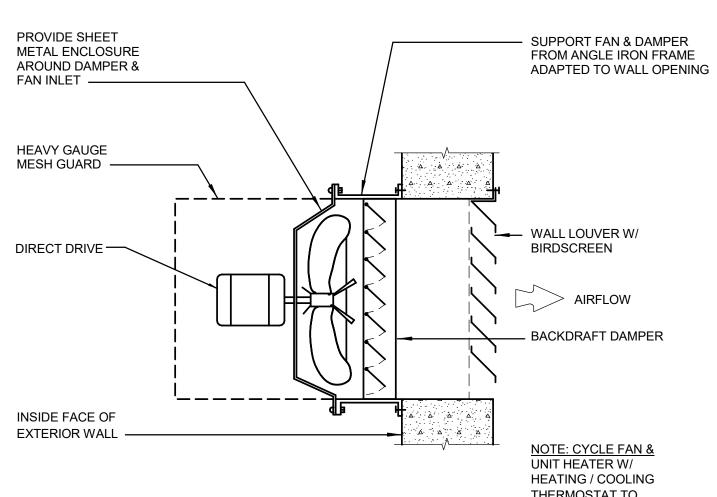
80-M-501



J-U-J OTHE NOT B WIT	SEUSE OF DRAWINGS J-U-B SHALL RETAIN ALL COMMON LAW, STATUTORY, COPYRIGHT AND OTHER RESERVED RIGHTS OF THESE DRAWINGS, AND THE SAME SHALL NOT BE REUSED WITHOUT J-U-B'S PRIOR WRITTEN CONSENT. ANY REUSE WITHOUT WRITTEN CONSENT BY J-U-B WILL BE AT THE CLIENT'S SOLE RISK AND WITHOUT LIABILITY OR LEGAL EXPOSURE TO J-U-B.	Y, CC ND TH ONSE THE C	PYRIGI HE SAM INT. AN CLIENT' TO J-U	HT AND E SHALL Y REUSE S SOLE -B.
	REVISION			
NO.	DESCRIPTION	ВУ	APR.	BY APR. DATE







#### MECHANICAL EQUIPMENT SCHEDULE

ELECTRIC UNIT HEATER: CORROSION RESISTANT, PROP FAN, ELECTRIC ELEMENT. PROVIDE WALL MOUNT BRACKET, AND PROVIDE FACTORY UNIT MOUNTED THERMOSTAT, DISCONNECT, SELECTOR SWITCH, AND PILOT LIGHT. 2,700 CFM.

> MANUFACTURER: CHROMALOX MODEL: HD3D-3000 TSP ELECTRICAL: 30 kW - 36.1 AMPS @ 480/3/60 DIMENSIONS: 20"W x 22"D x 33"H WEIGHT: 100 LBS

ELECTRIC UNIT HEATER: CORROSION RESISTANT, PROP FAN, ELECTRIC ELEMENT. PROVIDE WALL MOUNT BRACKET, AND PROVIDE FACTORY UNIT MOUNTED THERMOSTAT, DISCONNECT, SELECTOR SWITCH, AND PILOT LIGHT. 2,700 CFM.

MANUFACTURER: CHROMALOX MODEL: HD3D-3500 TSP ELECTRICAL: 35 kW - 42.1 AMPS @ 480/3/60 DIMENSIONS: 20"W X 22"D X 33"H WEIGHT: 100 LBS

SUMP PUMP: SIMPLEX SUBMERSIBLE SEWAGE PUMP. DOUBLE SEAL, CAST IRON CONSTRUCTION, HERMETICALLY SEALED OIL FILLED MOTOR, 3" DISCHARGE, FOR 2" DIAMETER SOLIDS. (CONTROL BY ELECTRICAL).

MANUFACTURER: ZOELLER PUMP CO. MODEL: N4292 ELECTRICAL: 1/2 HP @ 115/1/60 DIMENSIONS: 11"W x 13"L x 22"H

			EXHAUST FAN SCHEDULE					
SYMBOL	TYPE	C.F.M.	S.P.	RPM	MOTOR	DRIVE	WEIGHT	(1)(2) MAKE & MODEL
EF-1	WALL MOUNTED PROP	2,600	0.25"	1,706	1/2 HP @ 115/1/60	DIRECT	100 LBS	TWIN CITY WPD 16E8

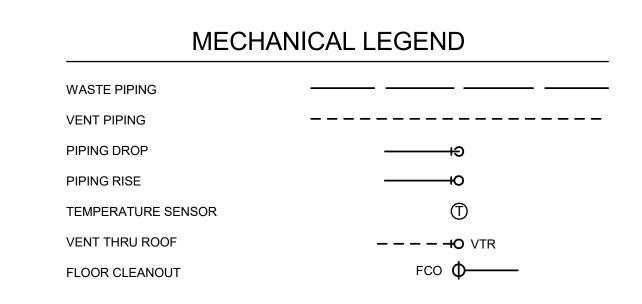
(1) CFM AND STATIC PRESSURE FOR PROJECT ALTITUDE. HORIZONTAL, WALL MOUNTED APPLICATION. NOT TO EXCEED 23 SONES. PROVIDE WALL MOUNTING BOX, HINGED GUARD, UNIT MOUNTED SPEED CONTROLLER, BACKDRAFT DAMPER, & FACTORY DISCONNECT.

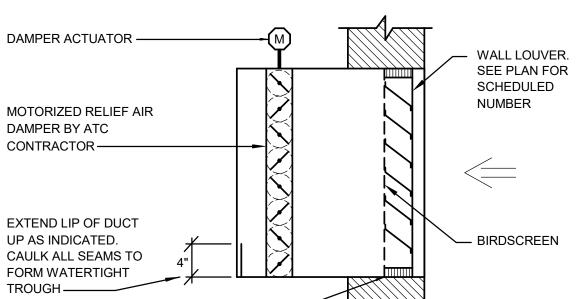
	LOUVER SCHEDULE						
SYMBOL	SIZE (W x H)	SERVICE	TYPE	(1)(2)(3)(4) MAKE & MODEL			
L-1	24" x 32	RELIEF	4" DEEP - DRAINABLE	AIROLITE K609			
L-2	32" x 32"	EXHAUST	4" DEEP - DRAINABLE	AIROLITE K609			

#### NOTES:

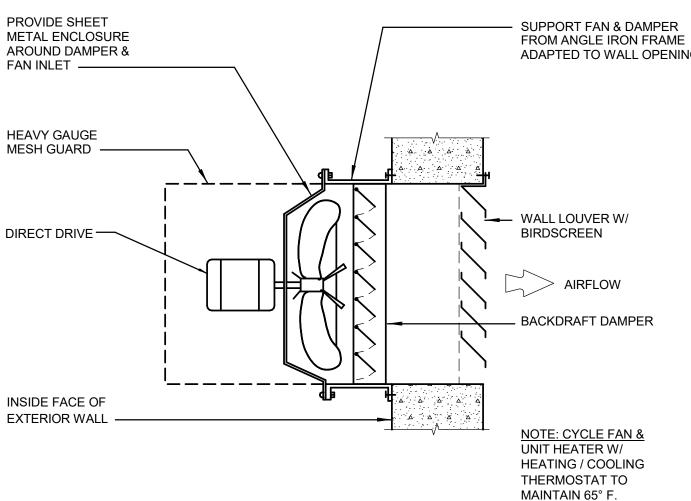
- (1) PROVIDE 1/2" MESH GALVANIZED BIRDSCREEN.
- (2) PROVIDE CUSTOM KYNAR FINISH (COLOR BY ARCHITECT)
- (3) COORDINATE EXACT LOCATIONS WITH ARCHITECTURAL ELEVATIONS.
- (4) PROVIDE FLUSH TYPE MOUNTING FRAME.

PLUMBING FIXTURE SCHEDULE						
SYMBOL	FIXTURE	WASTE	WASTE VENT NOTES			
FD 1	FLOOR DRAIN	4"	2"	MEDIUM DUTY WITH SEDIMENT BUCKET, DEEP SEAL P-TRAP, AND ASSE TRAP GUARD		









WASTE PIPING TRENCH DETAIL	5
NOT TO SCALE	M-501

 $o^{\triangle} \circ o^{\triangle} \circ$ 

^ 0 0 °

—CONCRETE FLOOR LINE

APPROVED BACKFILL MATERIAL.

COMPACT TO 95% DENSITY

WASTE PIPING

SEE SPECIFICATION SECTION 15050.

6" MIN. SAND ABOVE AND BELOW PIPE.

INSTALL PIPE ON STABLE SHAPED

TRENCH TO FIT BOTTOM OF PIPE



Phone: 801.886.9052

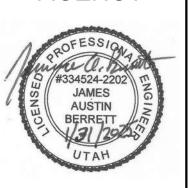
www.jub.com

J-U-B ENGINEERS, INC. 392 E. Winchester St. Suite 300 Salt Lake City, UT 84107

Subconsultant:

OLSEN & PETERSON consulting engineers,

**AGENCY** 



**REVIEW** 

UPGRAD

 $\mathcal{C}$ 

SANTAQUIN WRF

JUB PROJ. #:93-24-001 DRAWN BY:JP DESIGN BY:JAB CHECKED BY:JAB

ONE INCH AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY LAST UPDATED: 01/31/25

**DRAWING:** 

82-M-501

INSTRUMENT LINE SYMBOLS

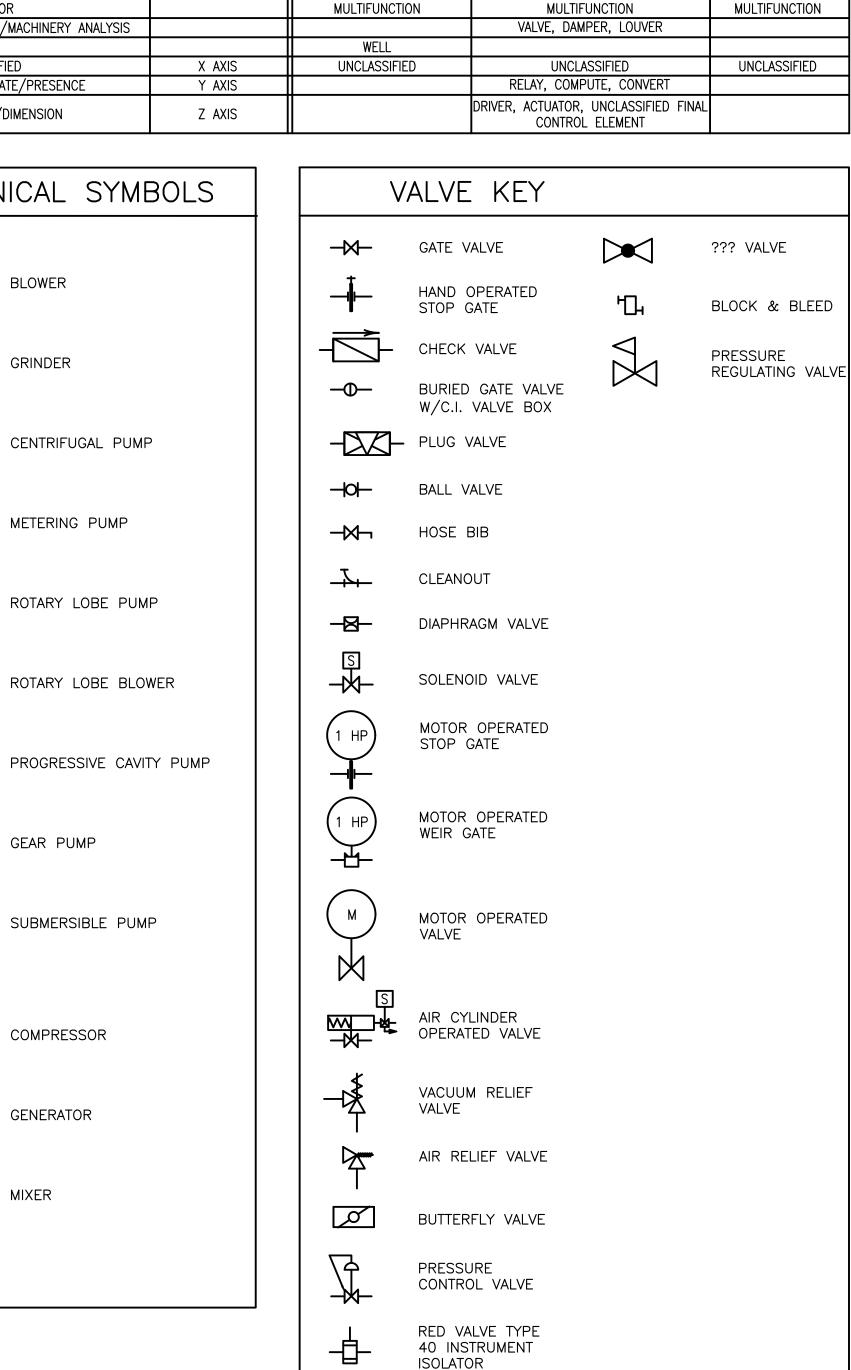
\_\_\_\_\_\_

PROCESS OR DEVICE

ELECTRICAL SIGNAL

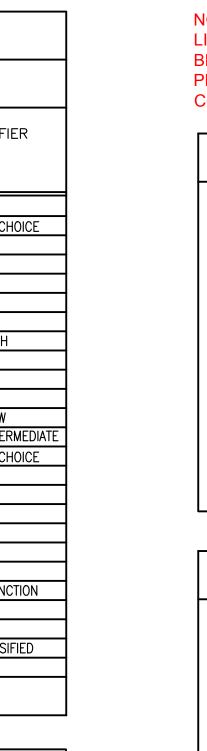
CONNECTION

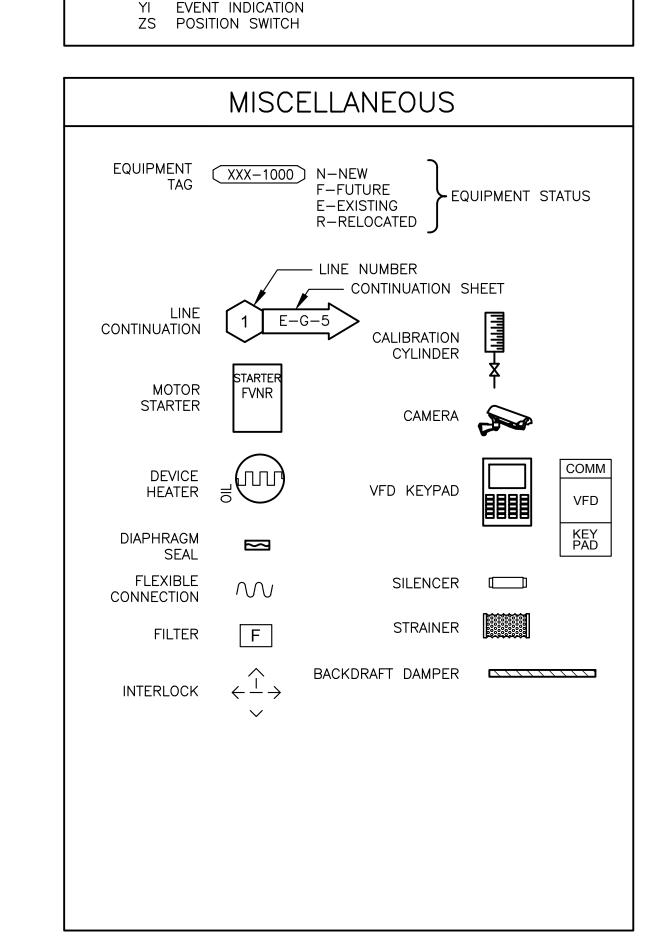
	INSTRUMENT	AND CON	TROL IDENTIFICATION LETTERS				
FIRST	T LETTER AND MODIFIER WHE	RE REQUIRED	SUCCEEDING LETTERS AND MODIFIERS WHERE REQUIRED				
FIRST LETTERS	INITIATING OR MEASURED VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER		
A	ANALYSIS	+	ALARM				
В	BURNER/COMBUSTION		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE		
C	USER'S CHOICE	+	USER S CHOICE	CONTROL	USER S CHOICE		
D	USER'S CHOICE	DIFFERENTIAL		CONTROL	-		
E	VOLTAGE	DITTENSENTAL	SENSOR (PRIMARY ELEMENT)	<del>                                     </del>	<del> </del>		
F	FLOW RATE	RATIO (FRACTION)	SENSON (FINIMINAL ELEMENT)	<del>                                     </del>	-		
G	USER'S CHOICE	TATIO (TIMOTOTA)	GLASS, VIEWING DEVICE	<del>                                     </del>	-		
Н	HAND	+	OLAGO, VILITINO DEVICE	<del>                                     </del>	HIGH		
''	CURRENT	+	INDICATE	<del>                                     </del>	TIIOH		
J	POWER	SCAN	INDIONIL	<del>                                     </del>	<del> </del>		
K	TIME	TIME RATE OF CHANGE		CONTROL STATION	<del> </del>		
	LEVEL	TIME TALL OF CHANGE	LIGHT	CONTROL STATION	LOW		
M	MOISTURE	MOMENTARY	LIGITI	<u> </u>	MIDDLE, INTERMEDIATE		
N N	SAFETY	MUMENTANT	HSED'S CHOICE	USER'S CHOICE	USER'S CHOICE		
	USER'S CHOICE	+ +	USER'S CHOICE ORIFICE, RESTRICTION	USEK 5 CHUICE	USEK S CHOICE		
0		+	11	<u> </u>	<del> </del>		
P	PRESSURE/VACUUM	INTERDATE TOTALIZE	POINT (TEST CONNECTION)	<u> </u>	<u> </u>		
Q	QUANTITY	INTEGRATE, TOTALIZE	DECODE	<u> </u>	<u> </u>		
R	RUNNING	CAFETY	RECORD	CWITOLI			
S	SPEED/FREQUENCY	SAFETY	<del> </del>	SWITCH			
T	TEMPERATURE	<u> </u>	<u>                                     </u>	TRANSMIT			
U	CALCULATOR		MULTIFUNCTION	MULTIFUNCTION	MULTIFUNCTION		
V	VIBRATION/MACHINERY ANALYSIS	<u> </u>	<u> </u>	VALVE, DAMPER, LOUVER	<u> </u>		
W	TORQUE		WELL		<u> </u>		
X	UNCLASSIFIED	X AXIS	UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED		
Y	EVENT/STATE/PRESENCE	Y AXIS	<u> </u>	RELAY, COMPUTE, CONVERT			
Z	POSITION/DIMENSION	Z AXIS		DRIVER, ACTUATOR, UNCLASSIFIED FINAL CONTROL ELEMENT			
ME	CHANICAL SYMI	BOLS	VALVE	. KEY			
			<b>─</b> ₩─ GATE V	ALVE	??? VALVE		
	BLOWER		HAND C STOP G	OPERATED GATE	BLOCK & BLEED		
華	GRINDER		- СНЕСК	<b>k</b>   <b>a</b>	PRESSURE REGULATING VALVE		

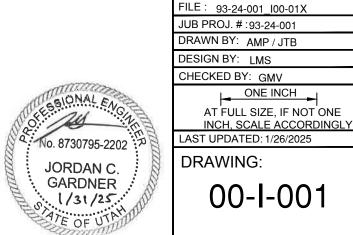


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J-U-B ENGINEERS, INC. J-U-B ENGINEERS, INC.

392. E. Winchester St., Suite 300

Salt Lake City, UT 84107 Phone: 801.547.0393

Subconsultant:

www.jub.com

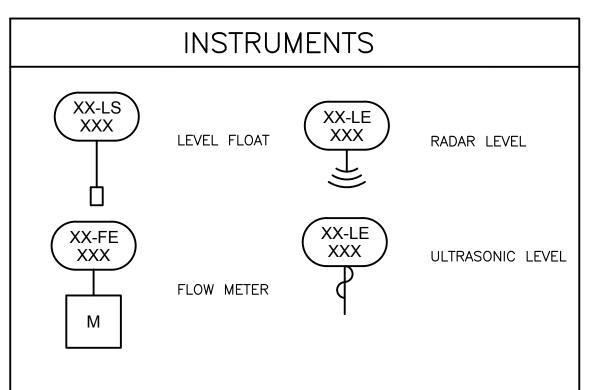
533 W 2600 S, Suite 25

Bountiful, Utah 84010 Phone: (801) 677-0011

**AGENCY** 

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LINEWORK SHOWN ON THE P&ID'S THAT IS RED IS NEW OR HAS BEEN UPDATED FOR PHASE 3 OR MEMBRANE TRAIN 5 UPGRADE PROJECT. ALL P&ID SHEETS ARE INTENDED TO BE PRINTED IN COLOR. THIS NOTE SHOULD BE DISPLAYED IN RED TEXT.



OTHER COMBINATIONS

FYIT FLOW CALCULATING INDICATING TRANSMITTER

LY LEVEL RELAY (USED IN ISR BOXES)

PCP PLANT CONTROL PANEL

ESD EMERGENCY SHUTDOWN

HMS HAND MOMENTARY SWITCH

OCA OPEN-CLOSED-AUTOMATIC

IQ CURRENT TOTALIZATION KY TIME DELAY RELAY

FCV FLOW CONTROL VALVE

AI ANALOG INPUT

DI DIGITAL INPUT DO DIGITAL OUTPUT DOX DISSOLVED OXYGEN

AO ANALOG OUTPUT

GA GENERAL ALARM

HOA HAND-OFF-AUTO

MA MOISTURE ALARM NA SAFETY ALARM

OL'D OVERLOAD (MOTOR)

UU COMPLEX CALCULATION

NS SAFETY SWITCH

RC CALL TO RUN

YA EVENT ALARM

OC OPEN CLOSE

HS HAND SWITCH

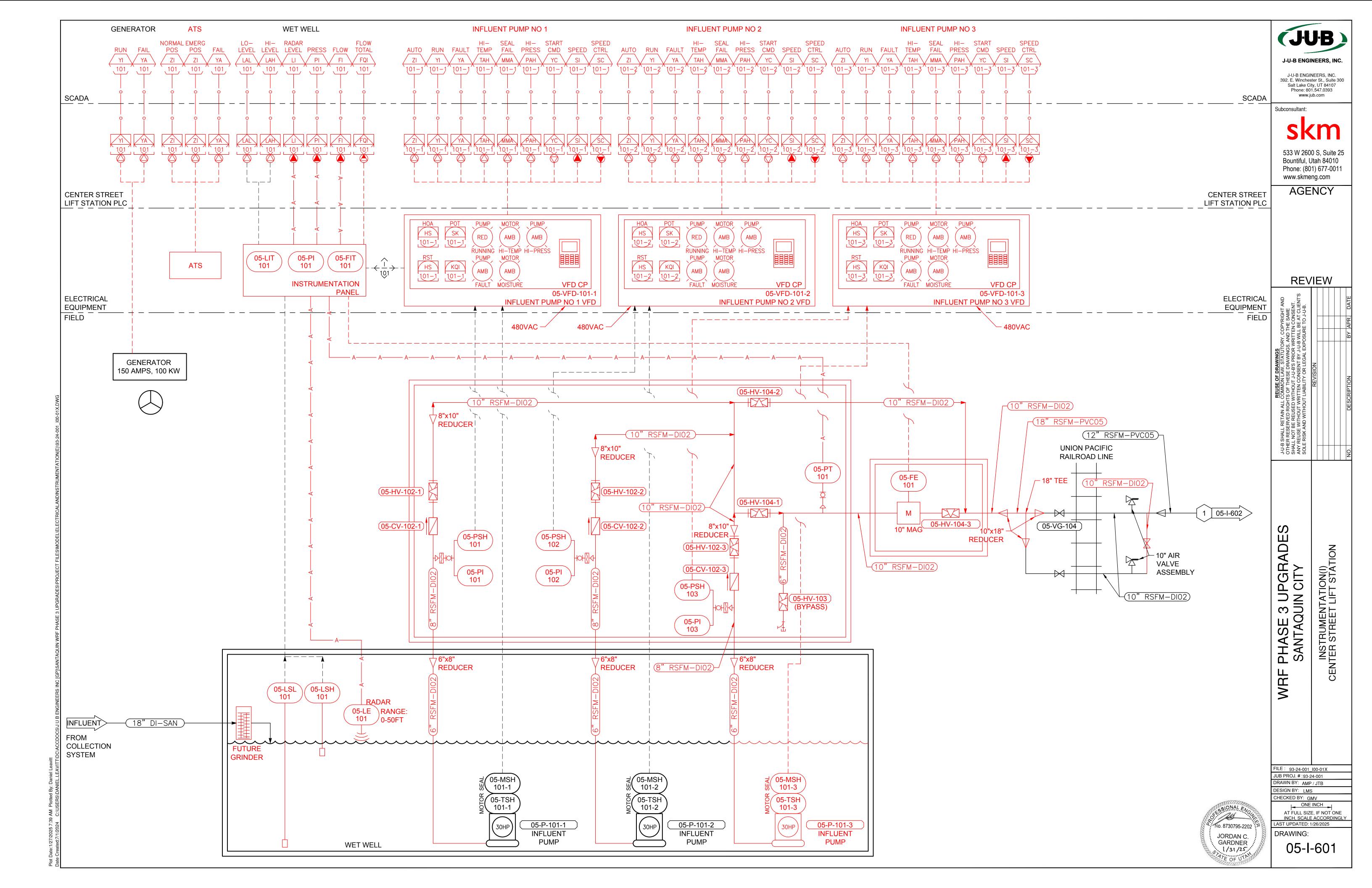
GE GE PROCESS CONTROL PANEL

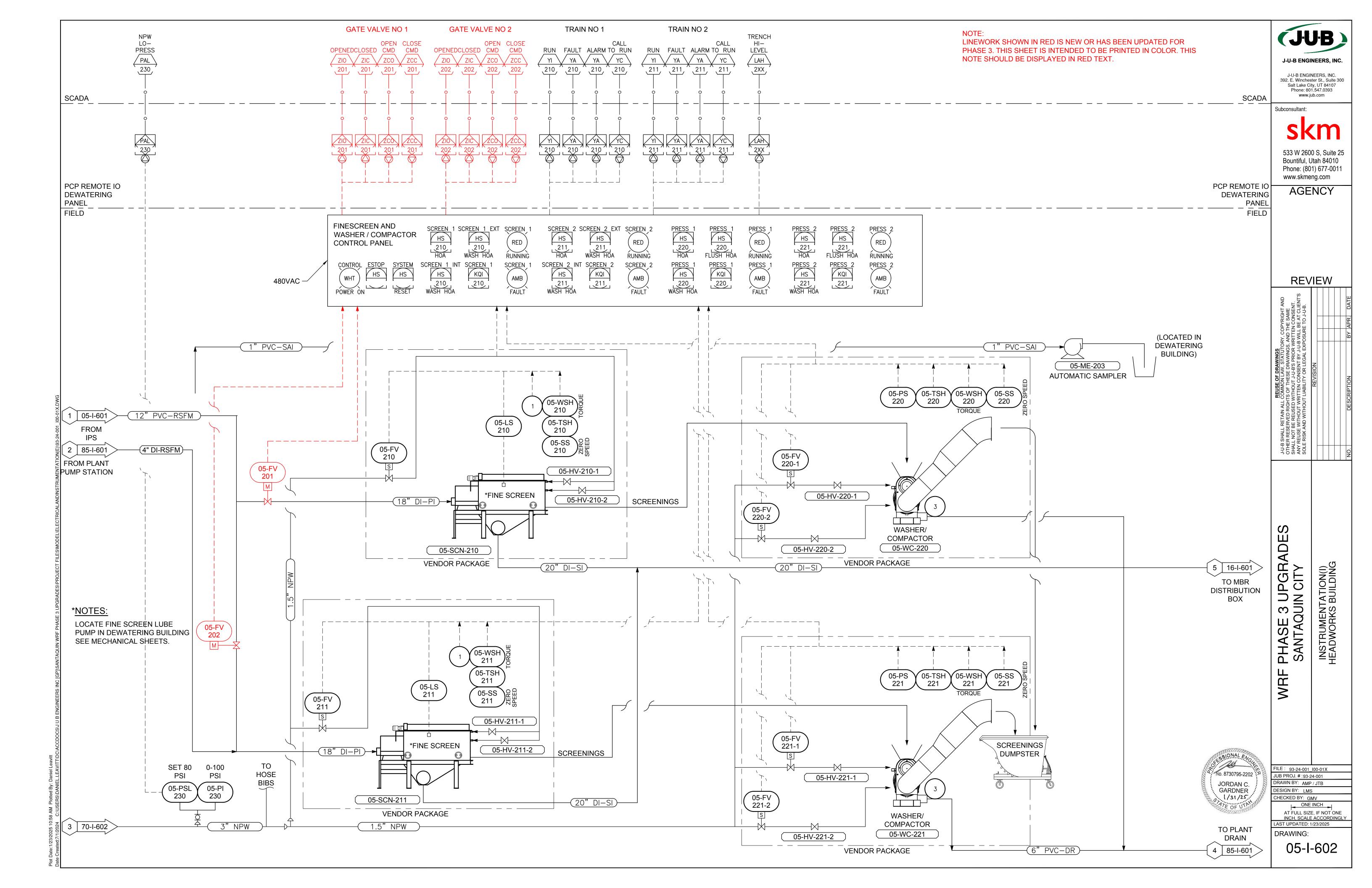
REV	<u>IEW</u>
AWINGS STATUTORY, COPYRIGHT AND STATUTORY, COPYRIGHT AND RAWINGS, AND THE SAME S PRIOR WRITTEN CONSENT. NT BY J-U-B WILL BE AT CLIENT'S LEGAL EXPOSURE TO J-U-B.	N BY APR, DATE
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WRF PHASE 3 UPGRADES SANTAQUIN CITY	INSTRUMENTATION(I) LEGEND AND NOTES

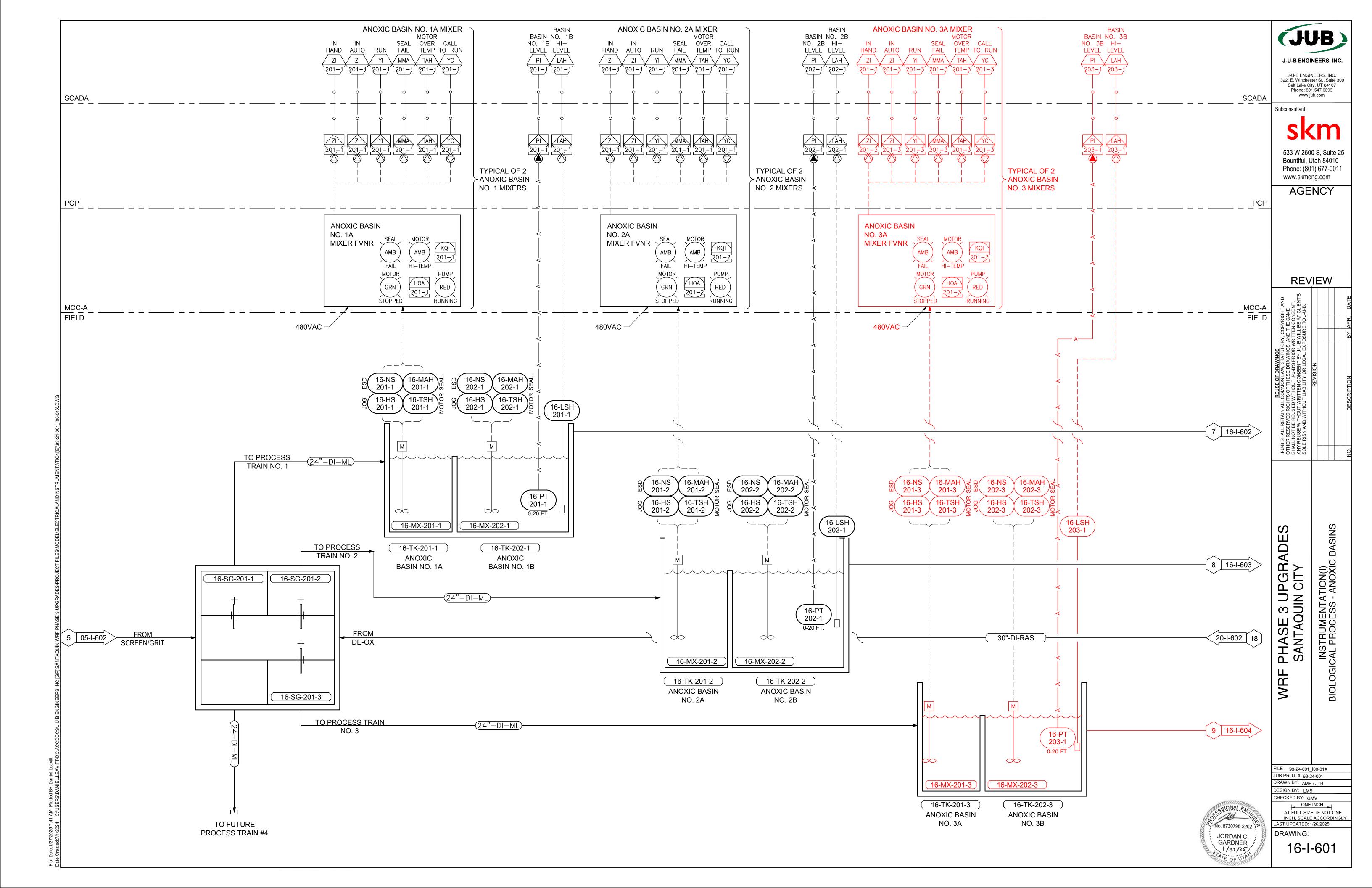
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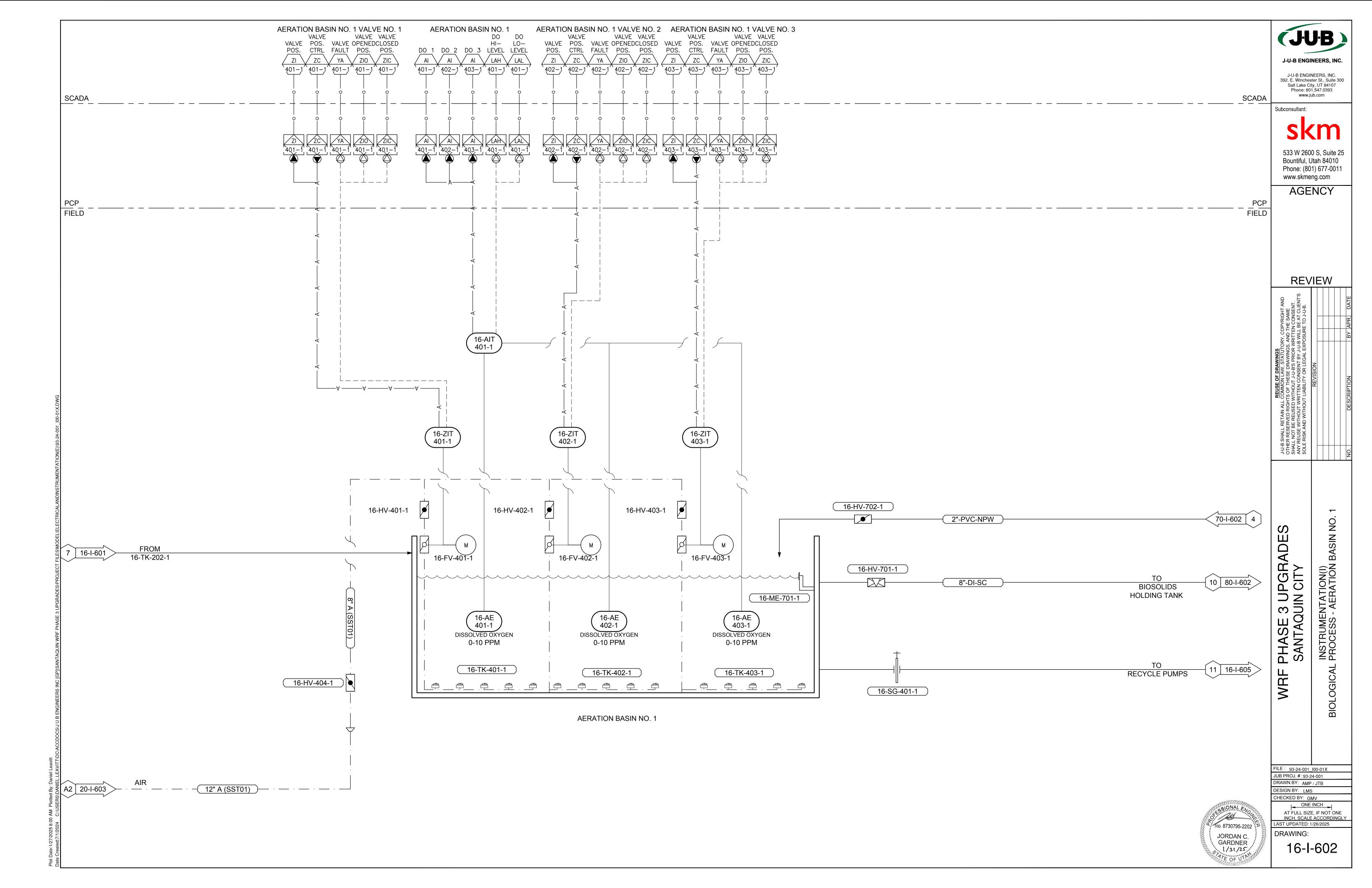
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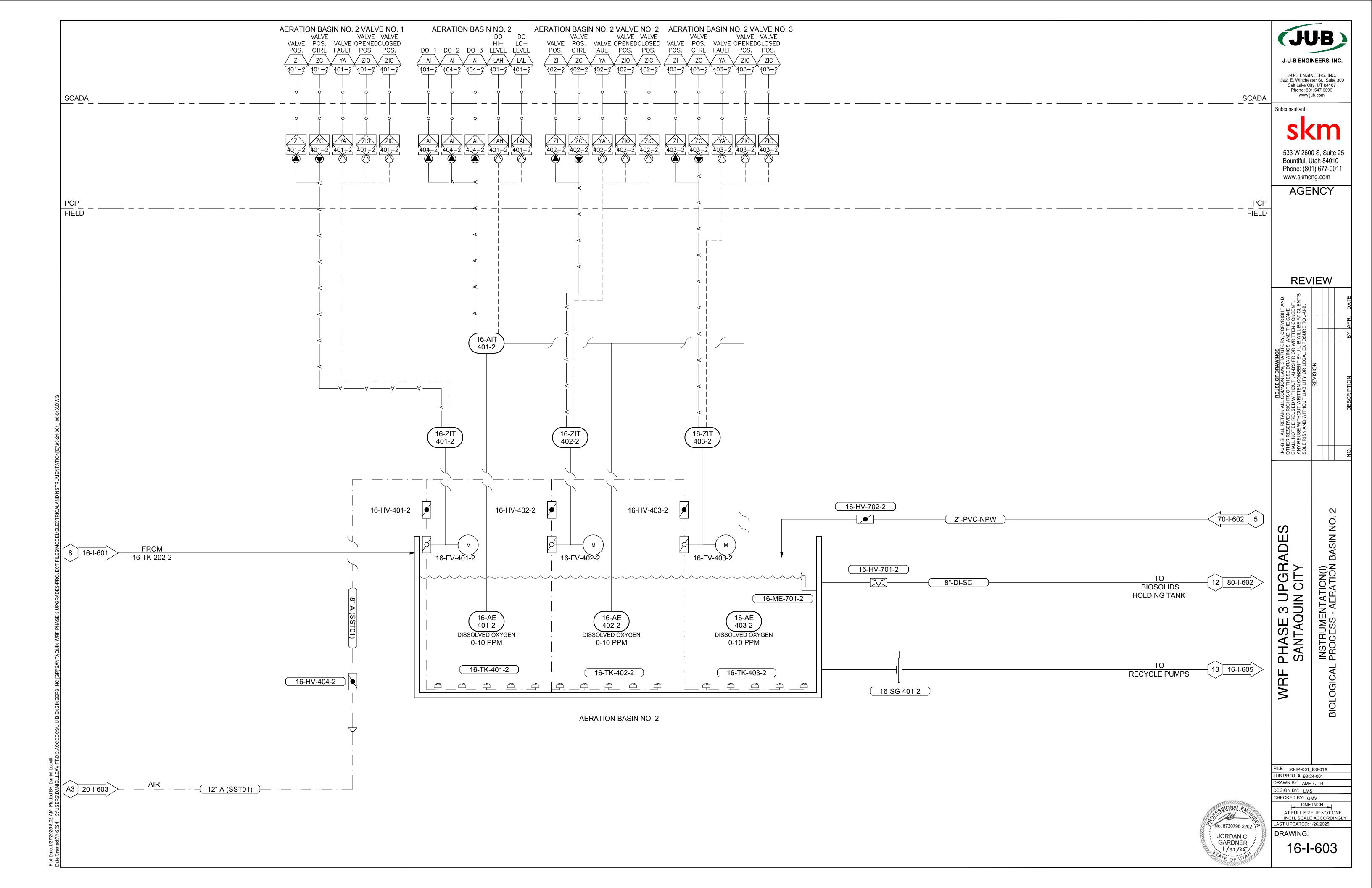
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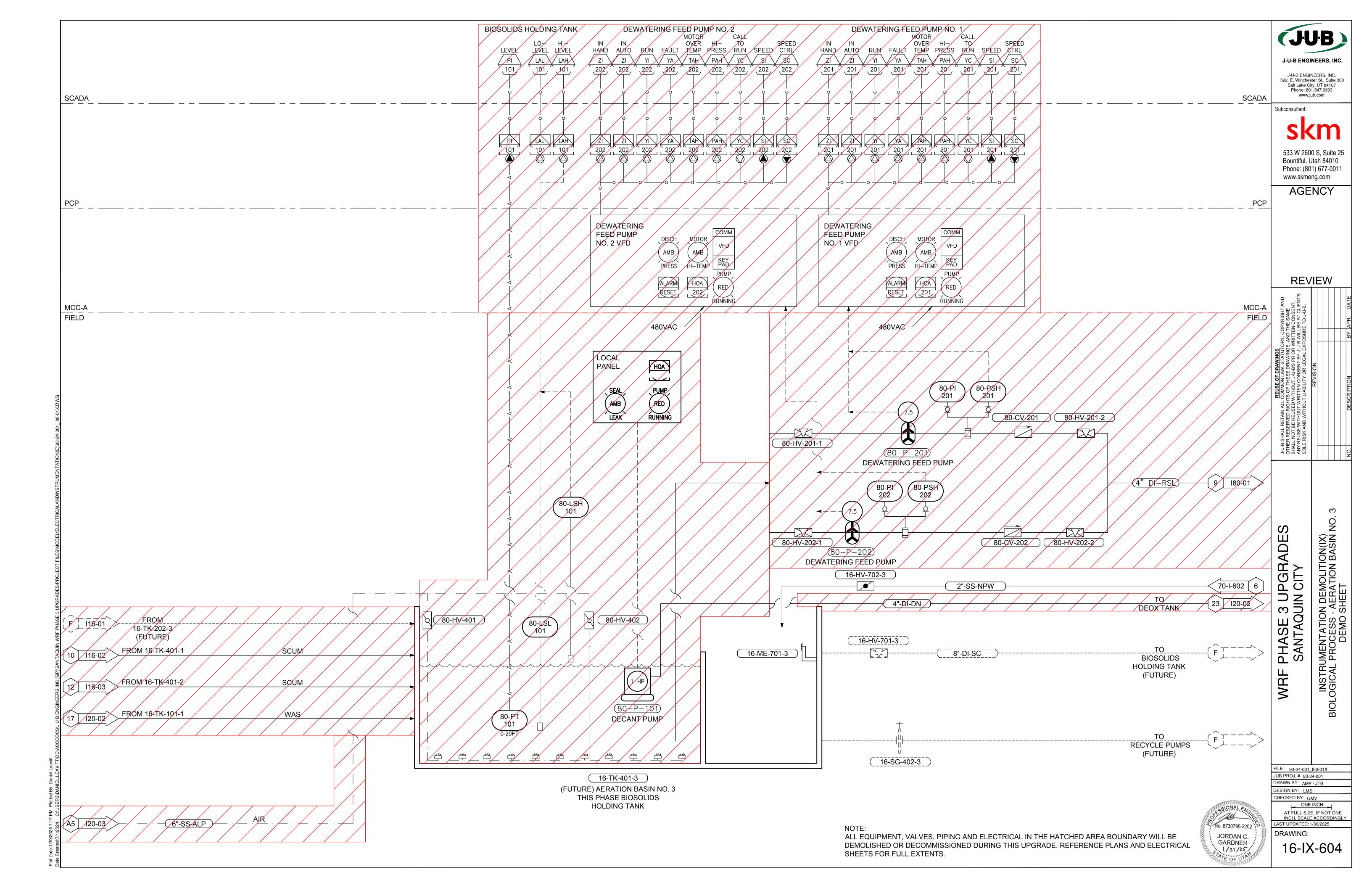


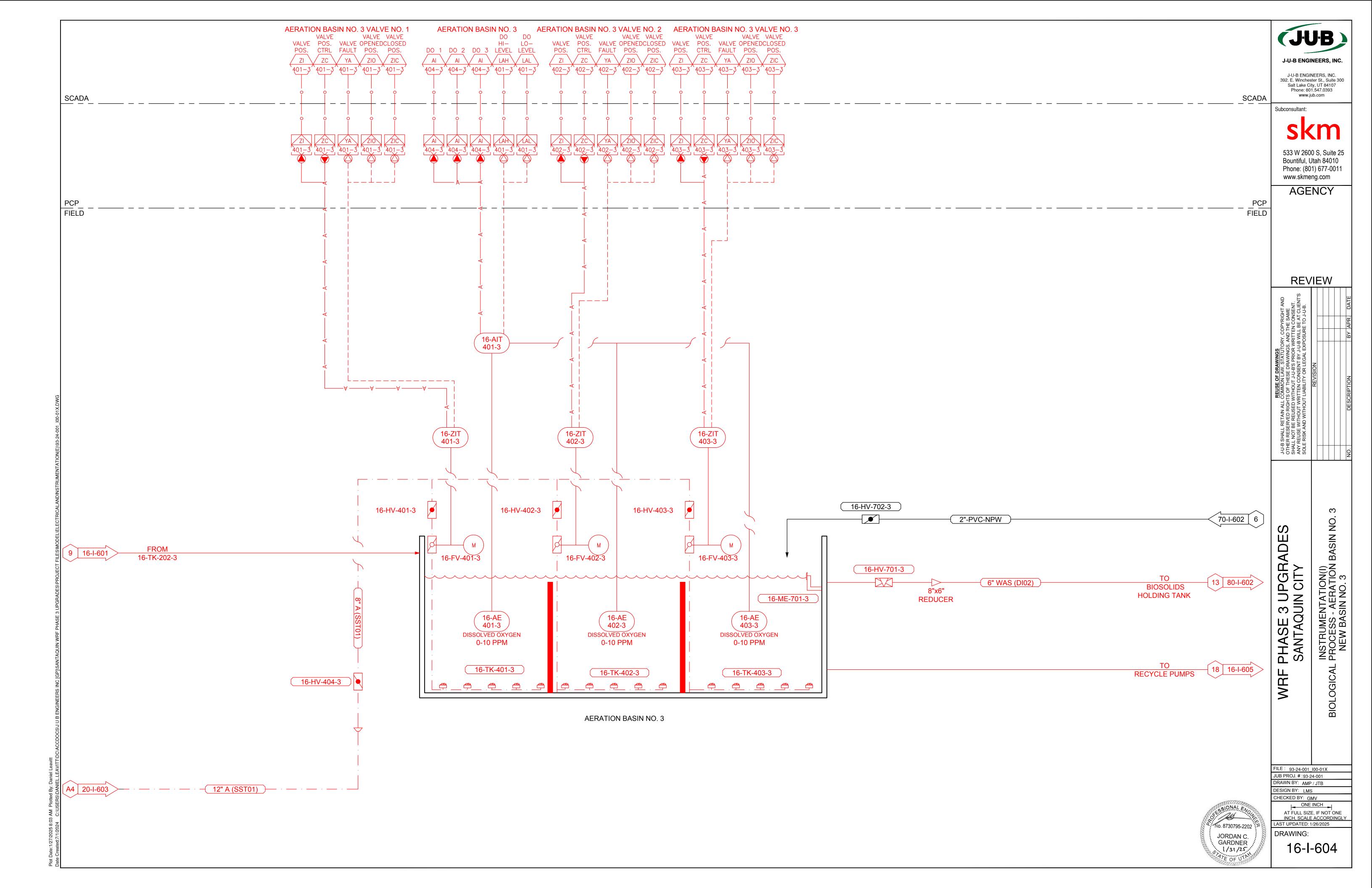


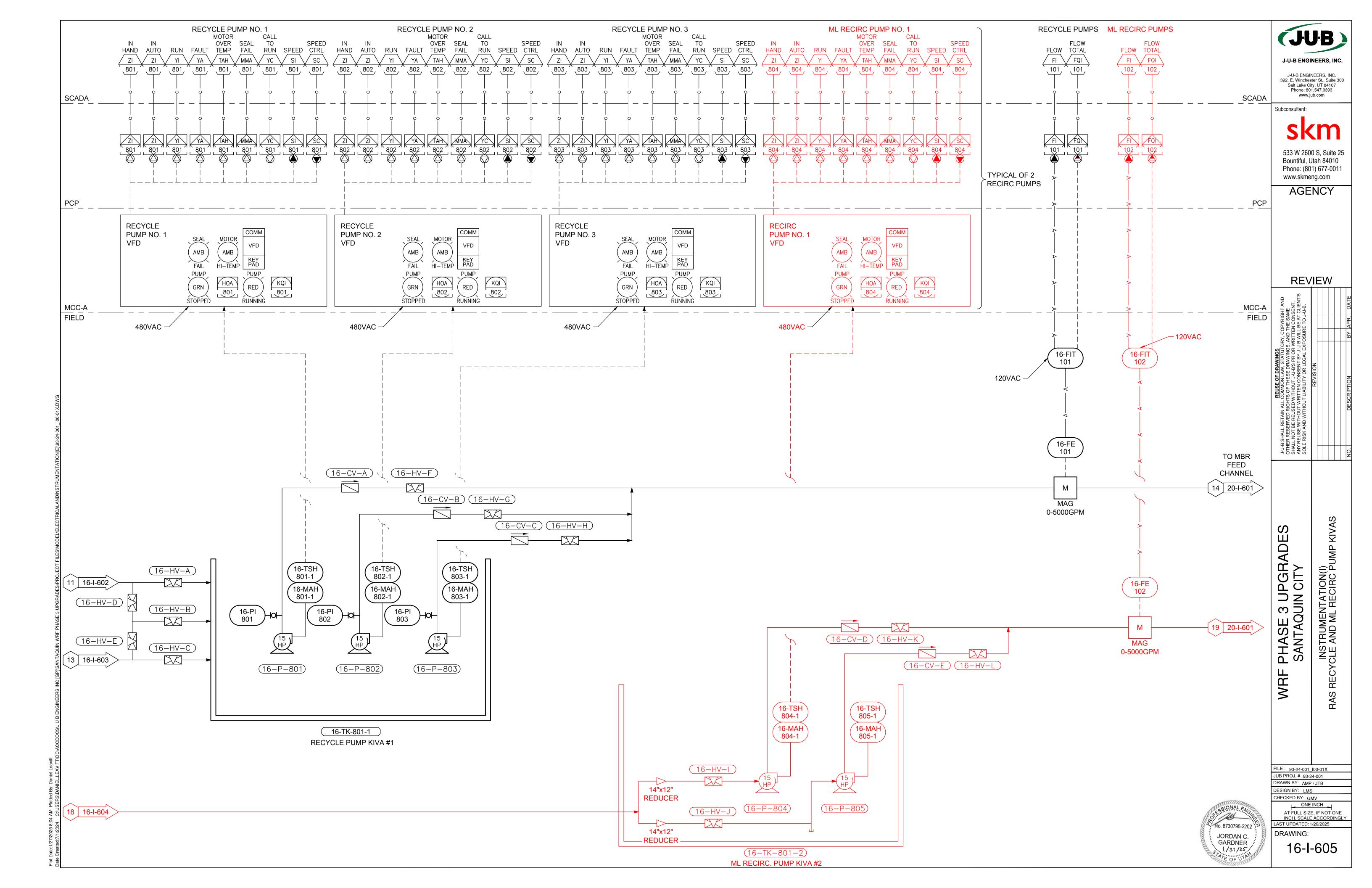


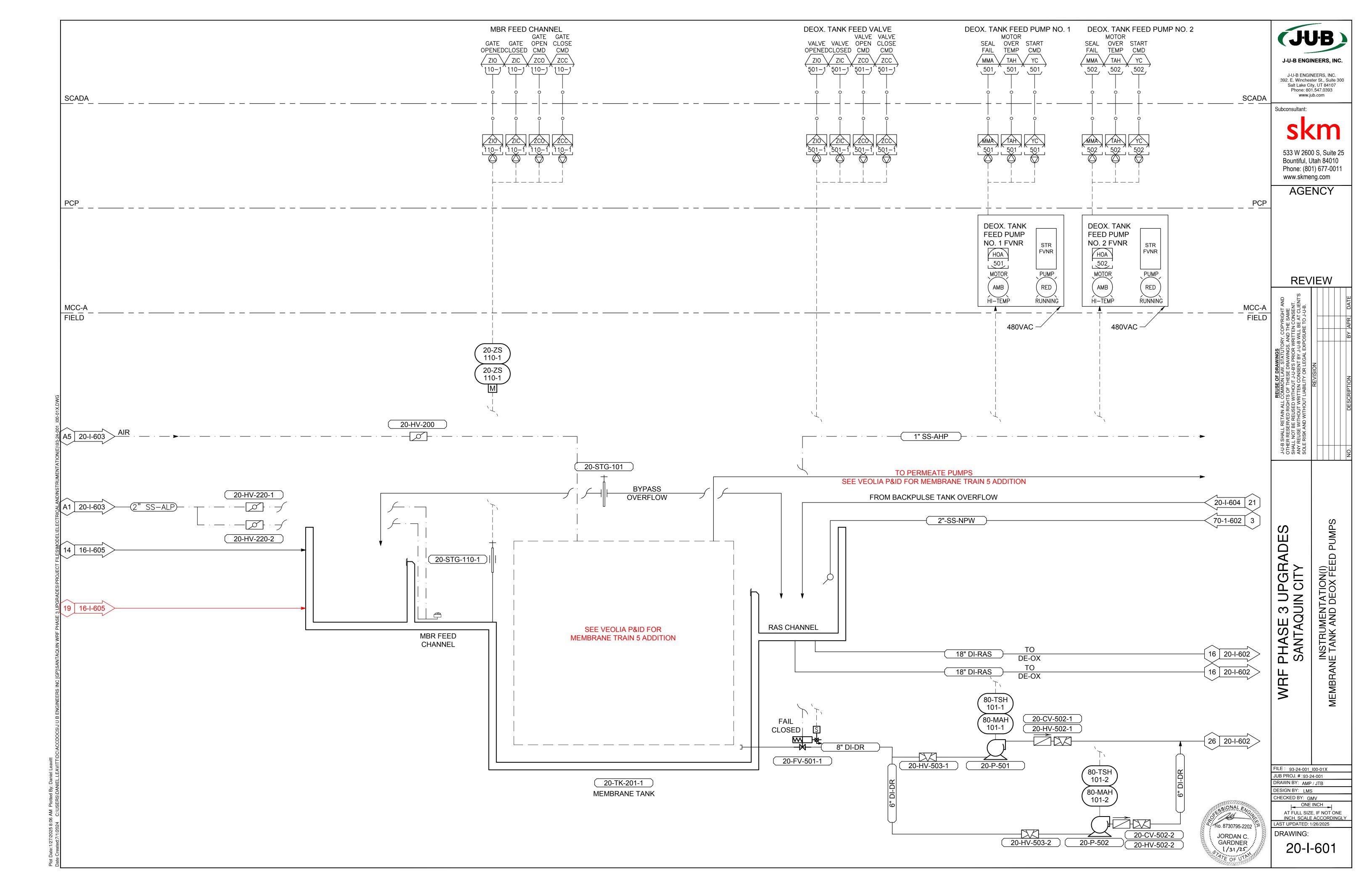


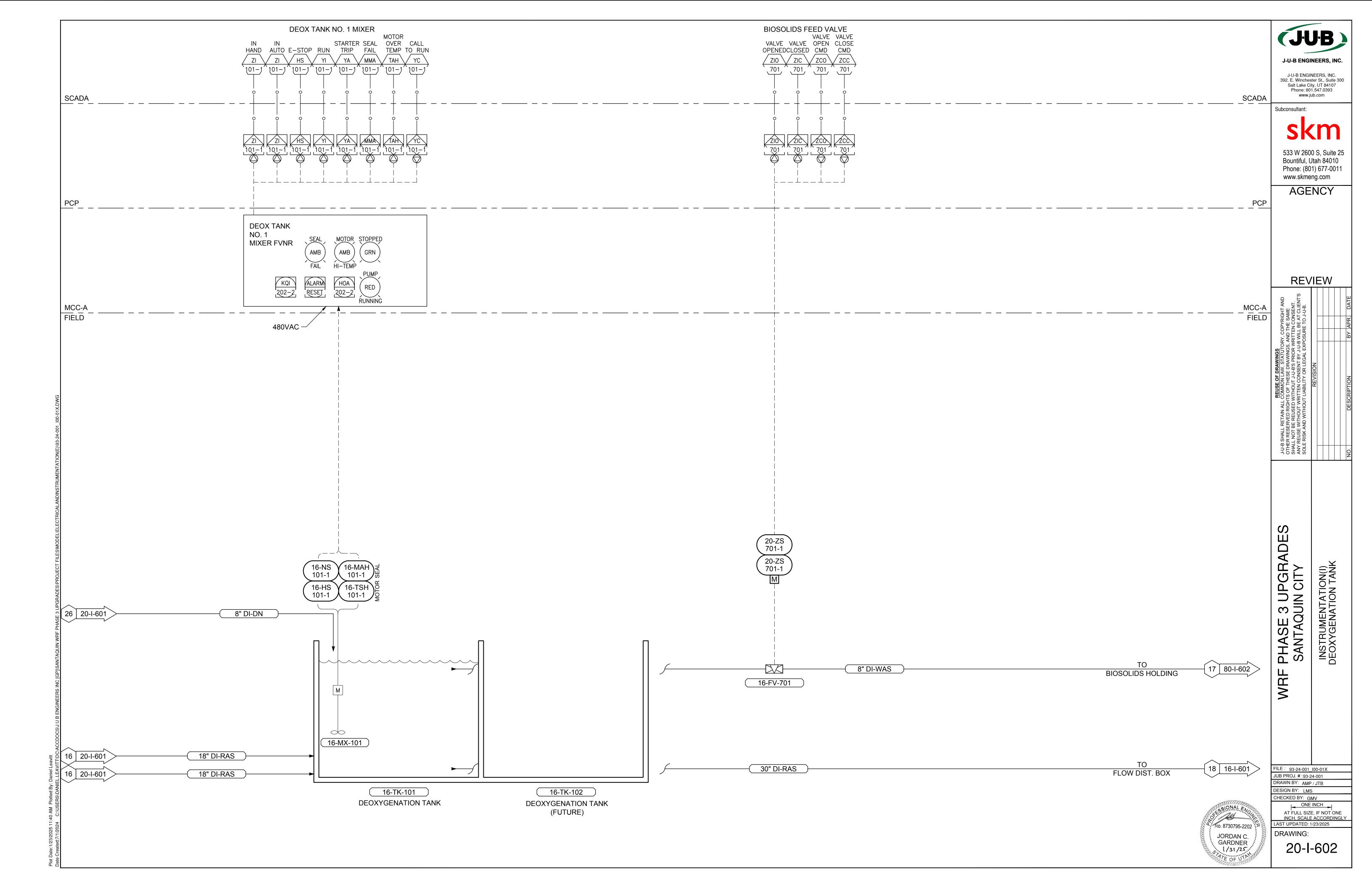


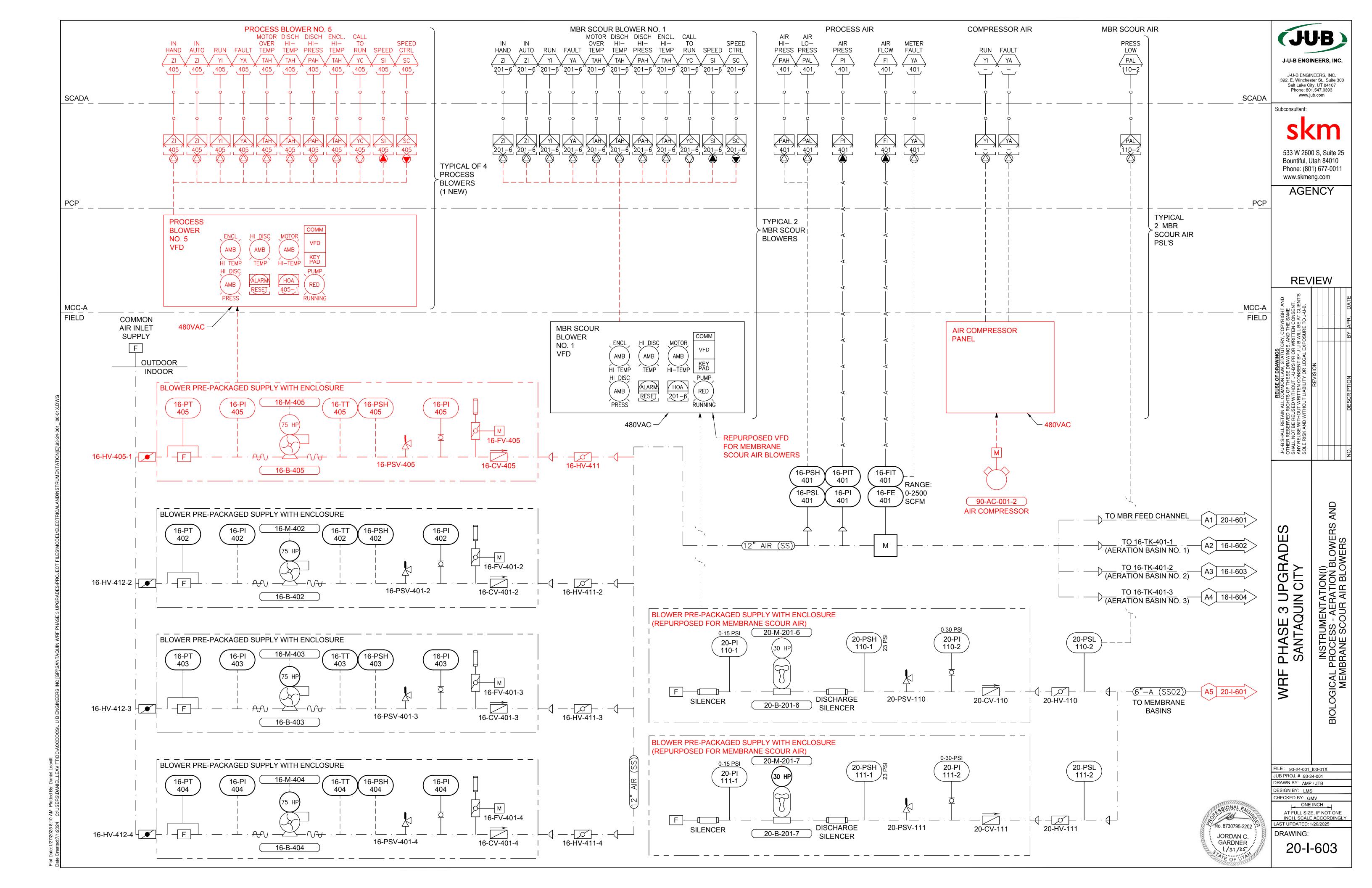


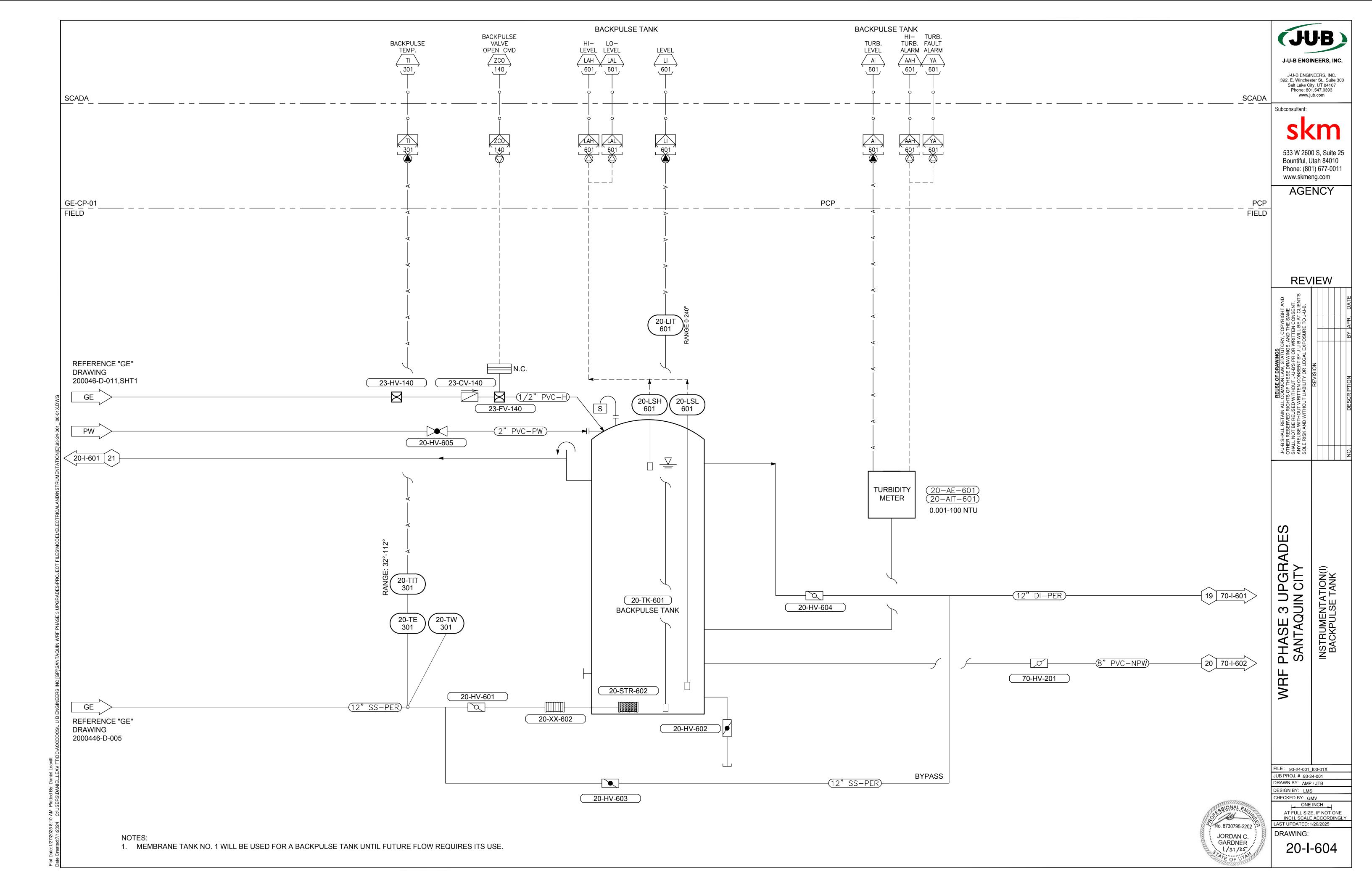


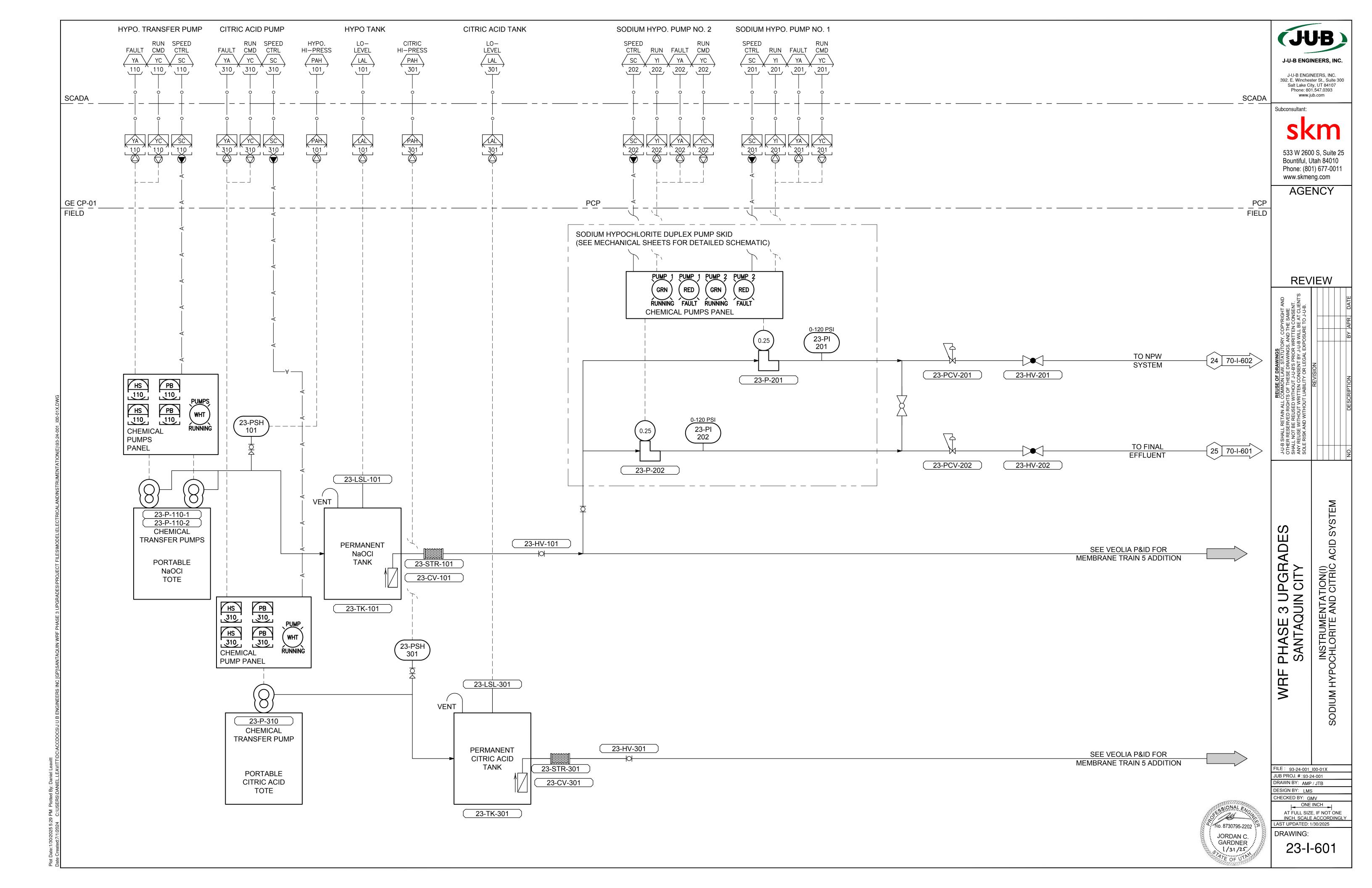


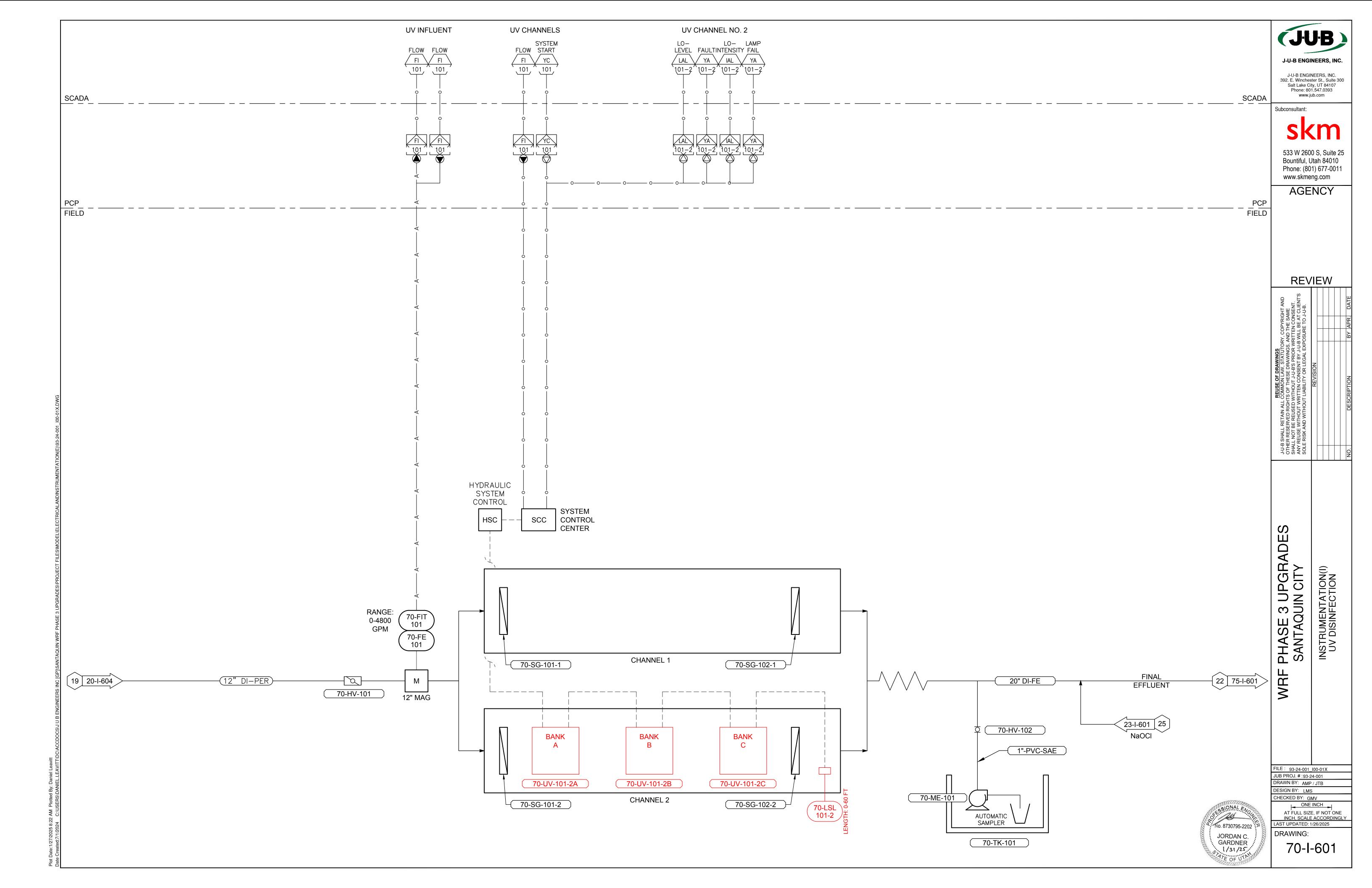


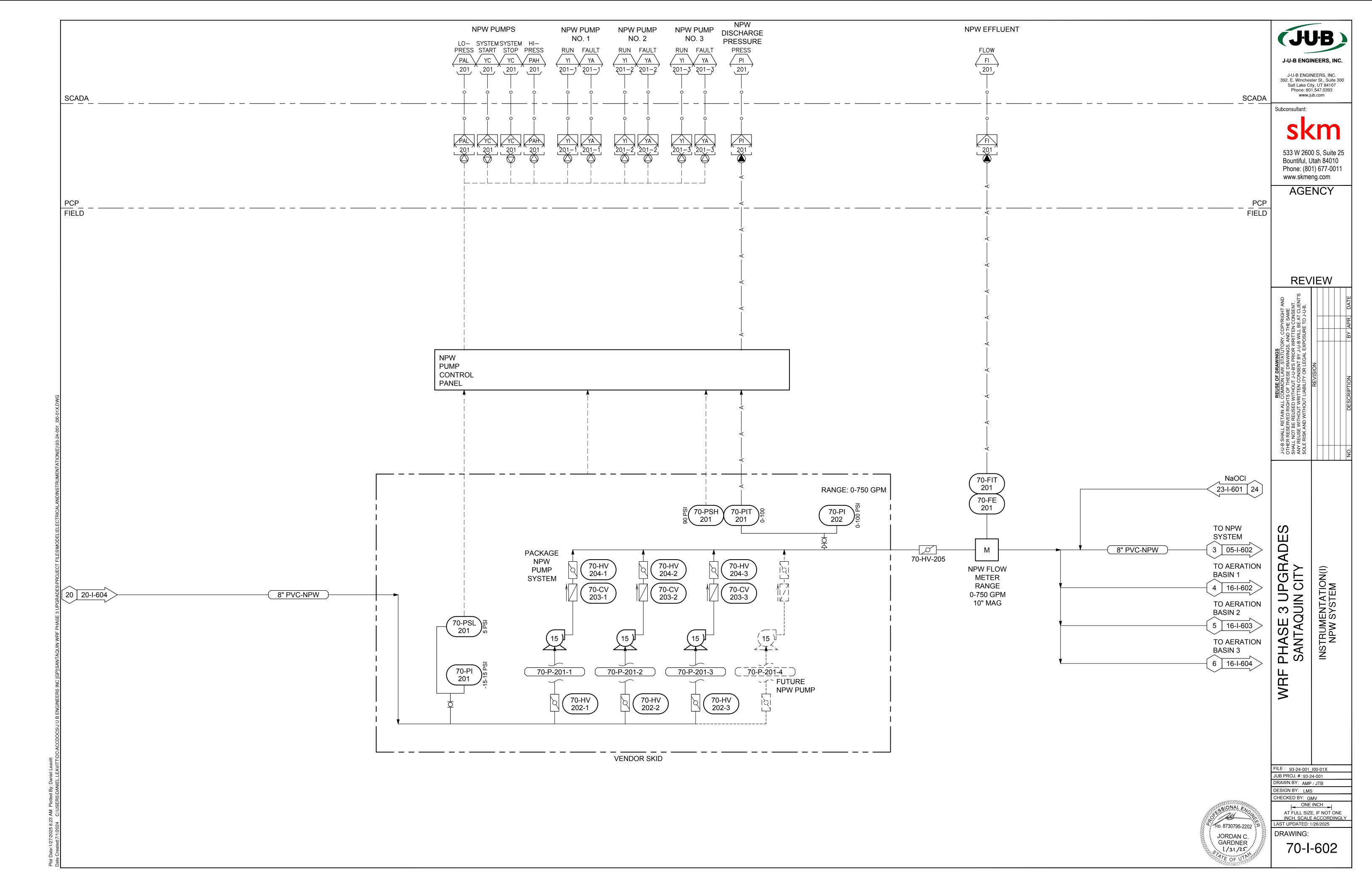


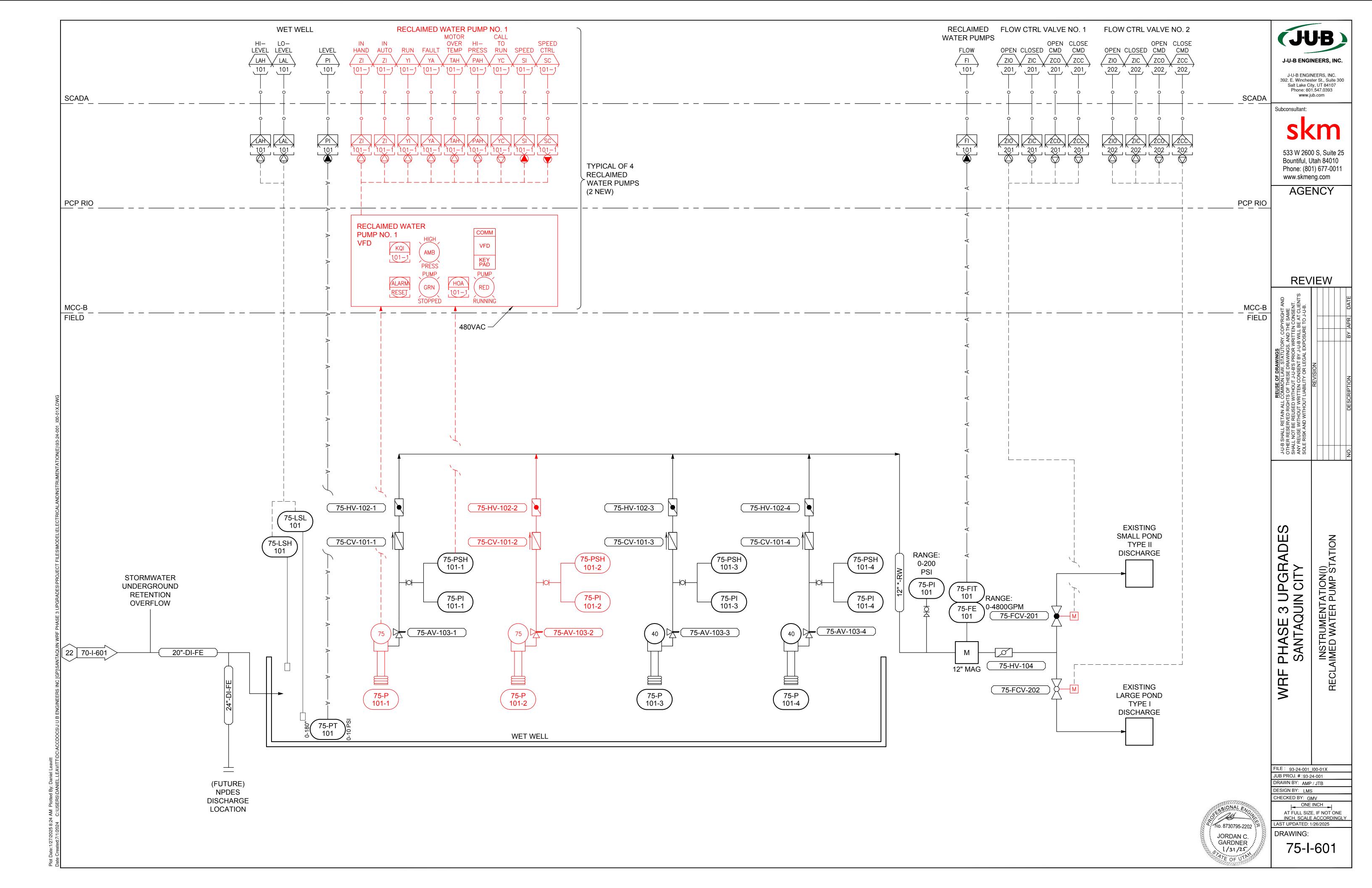


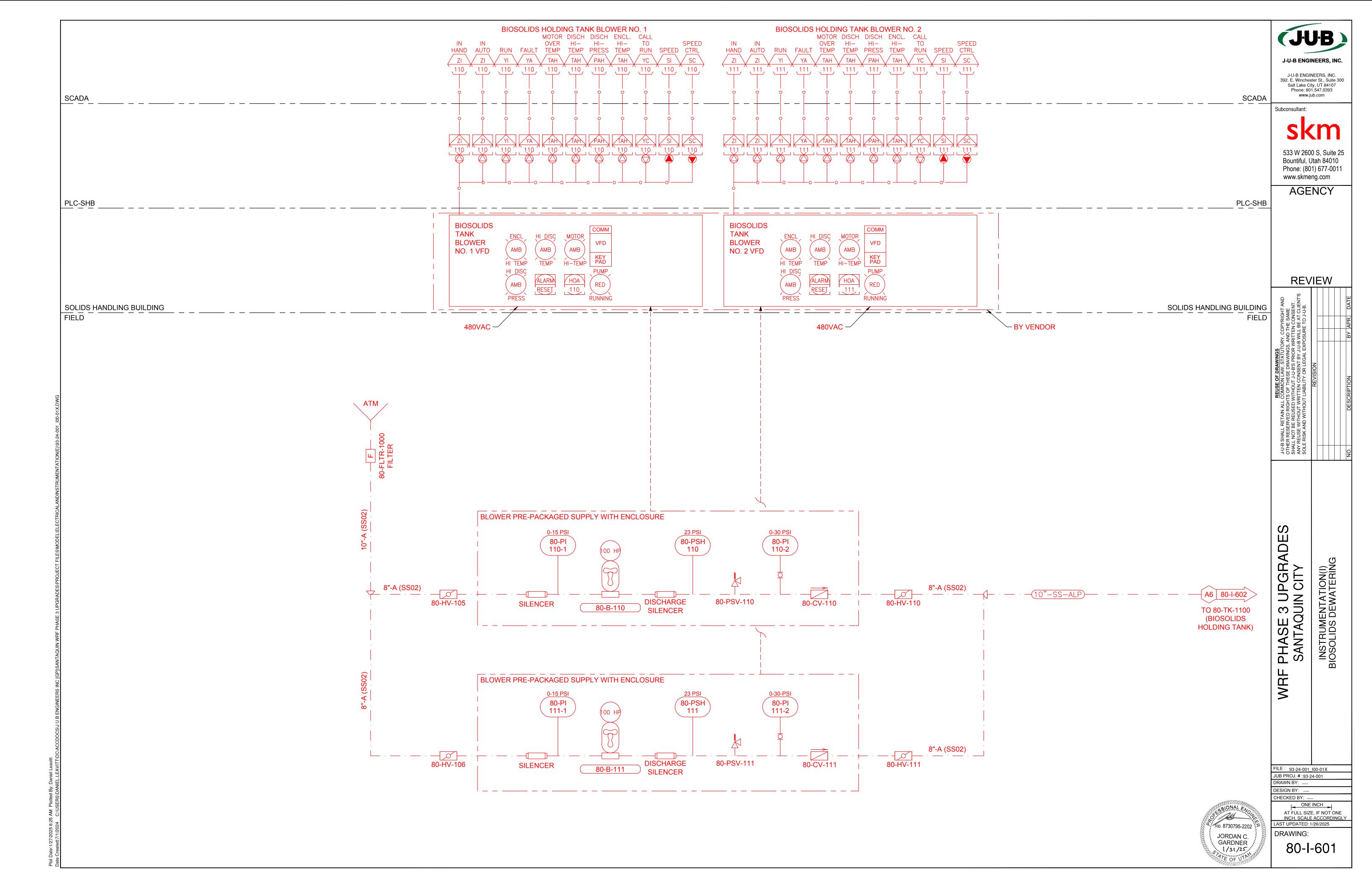


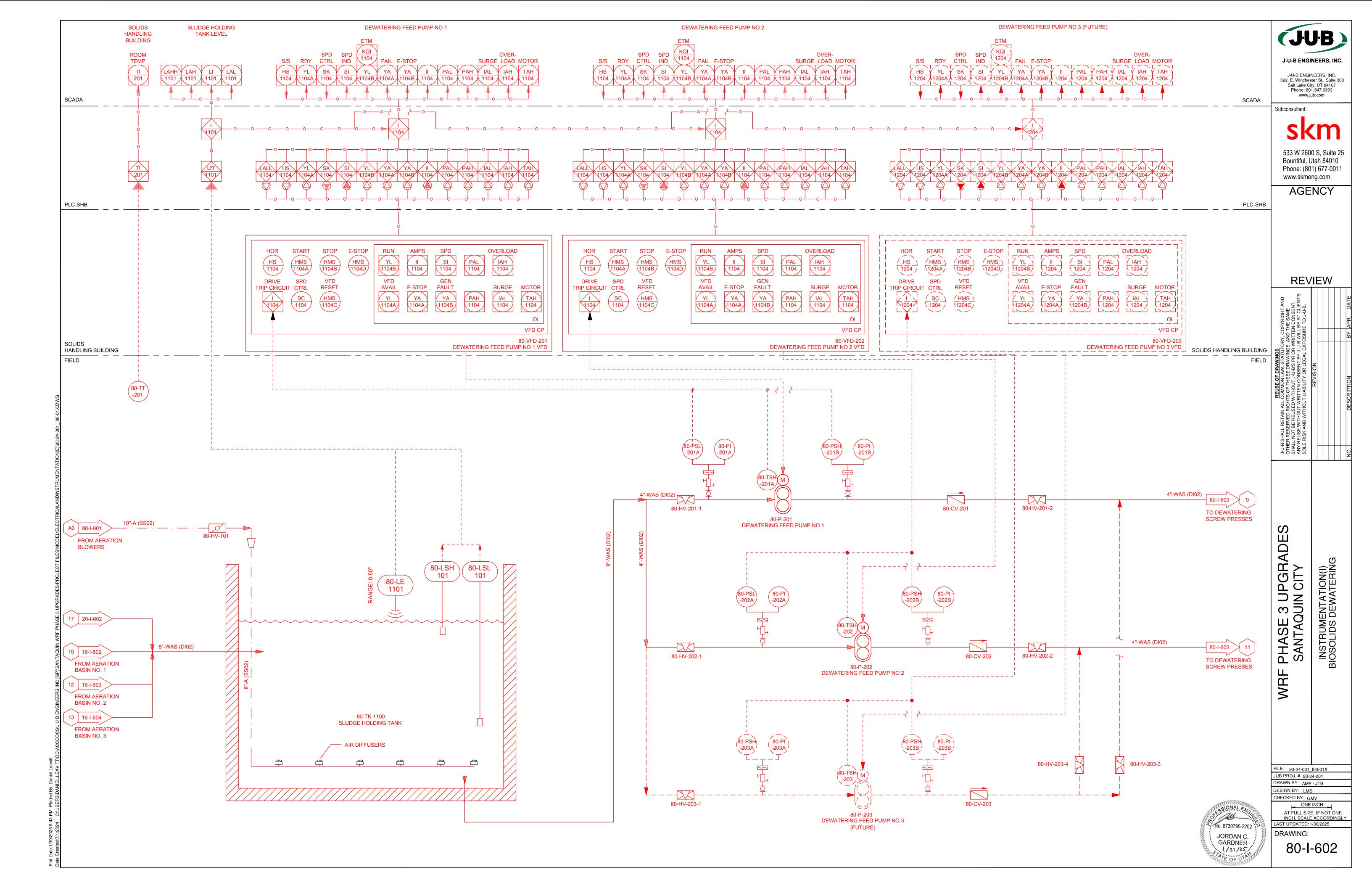


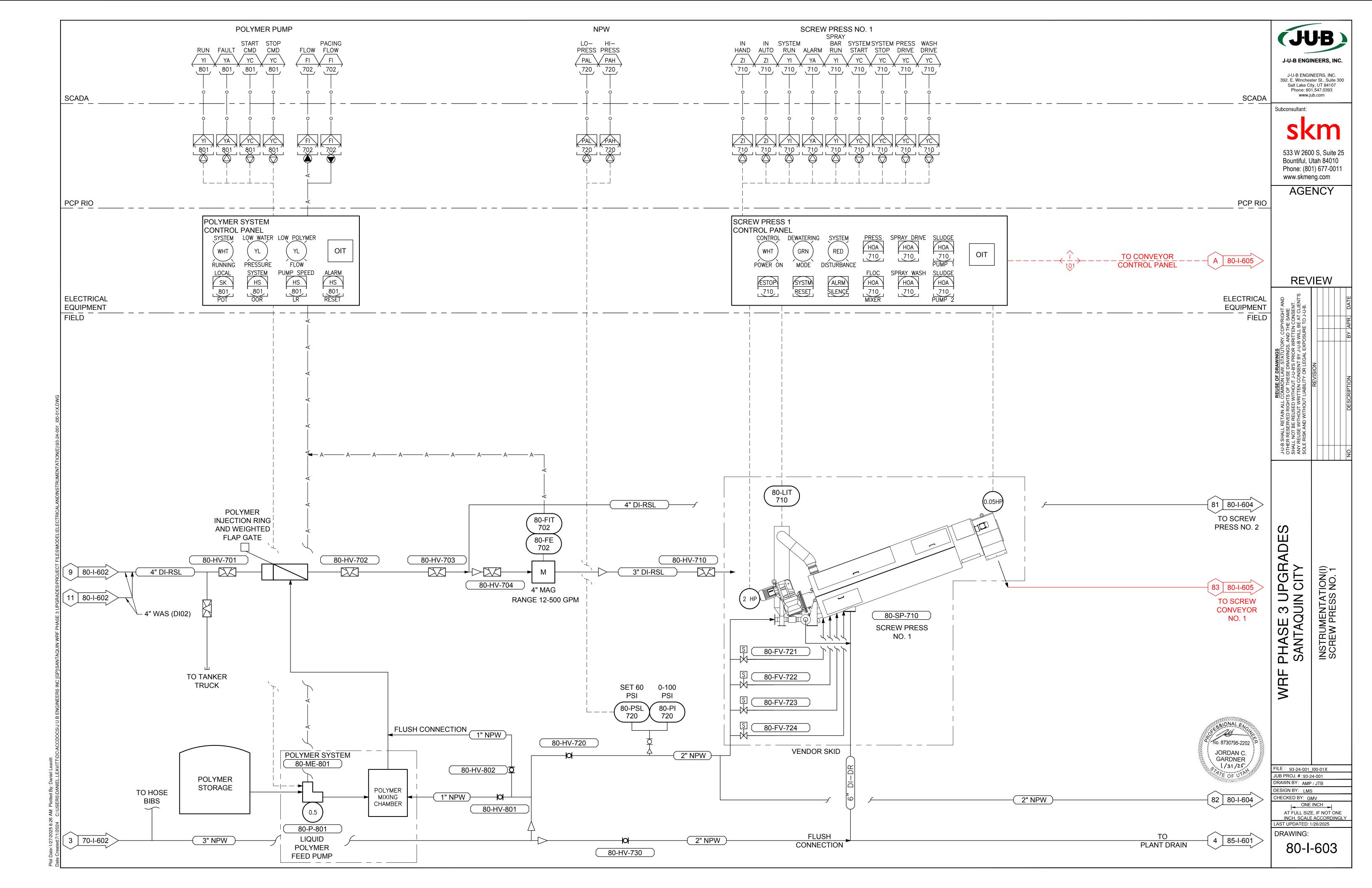


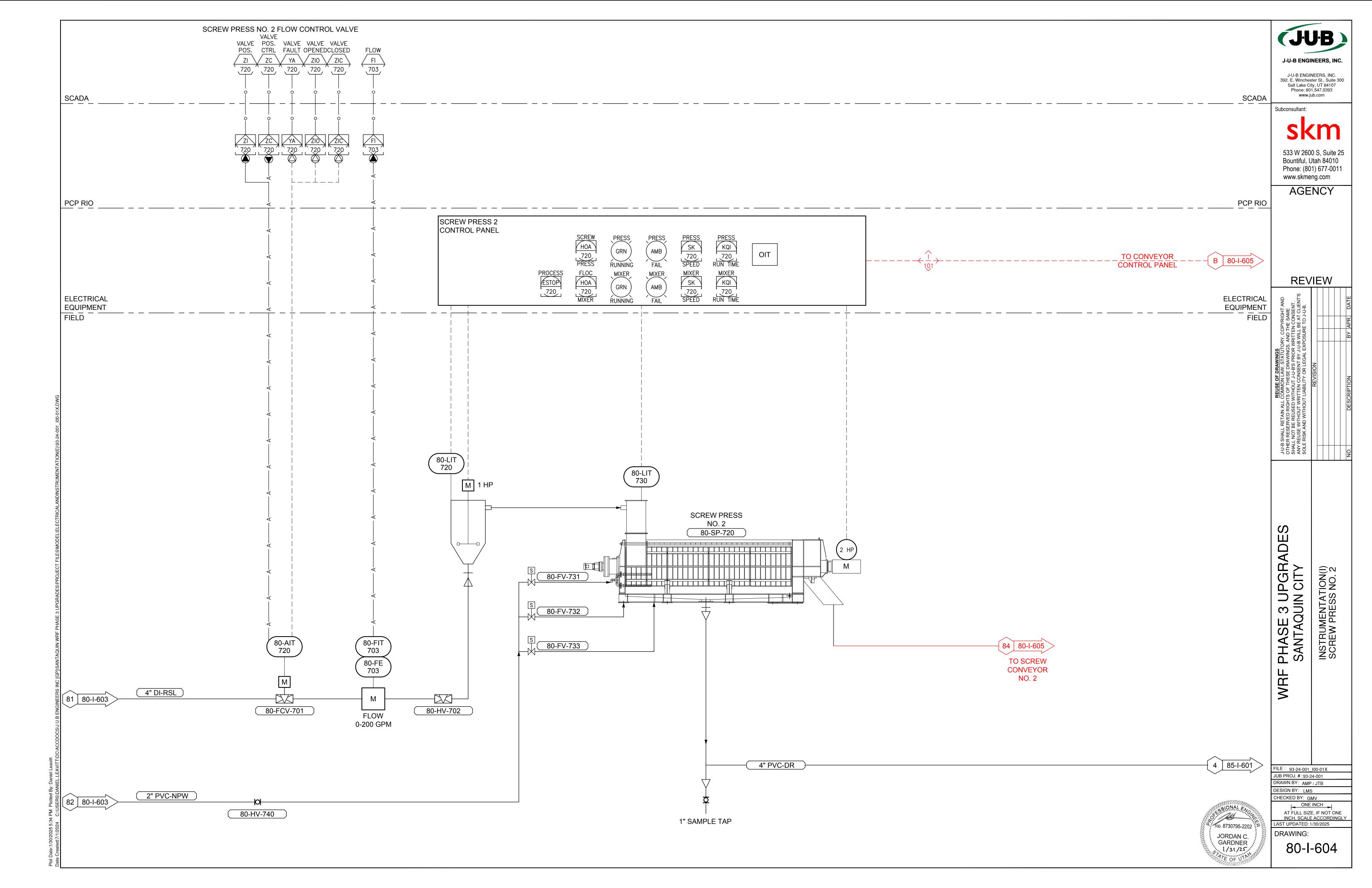


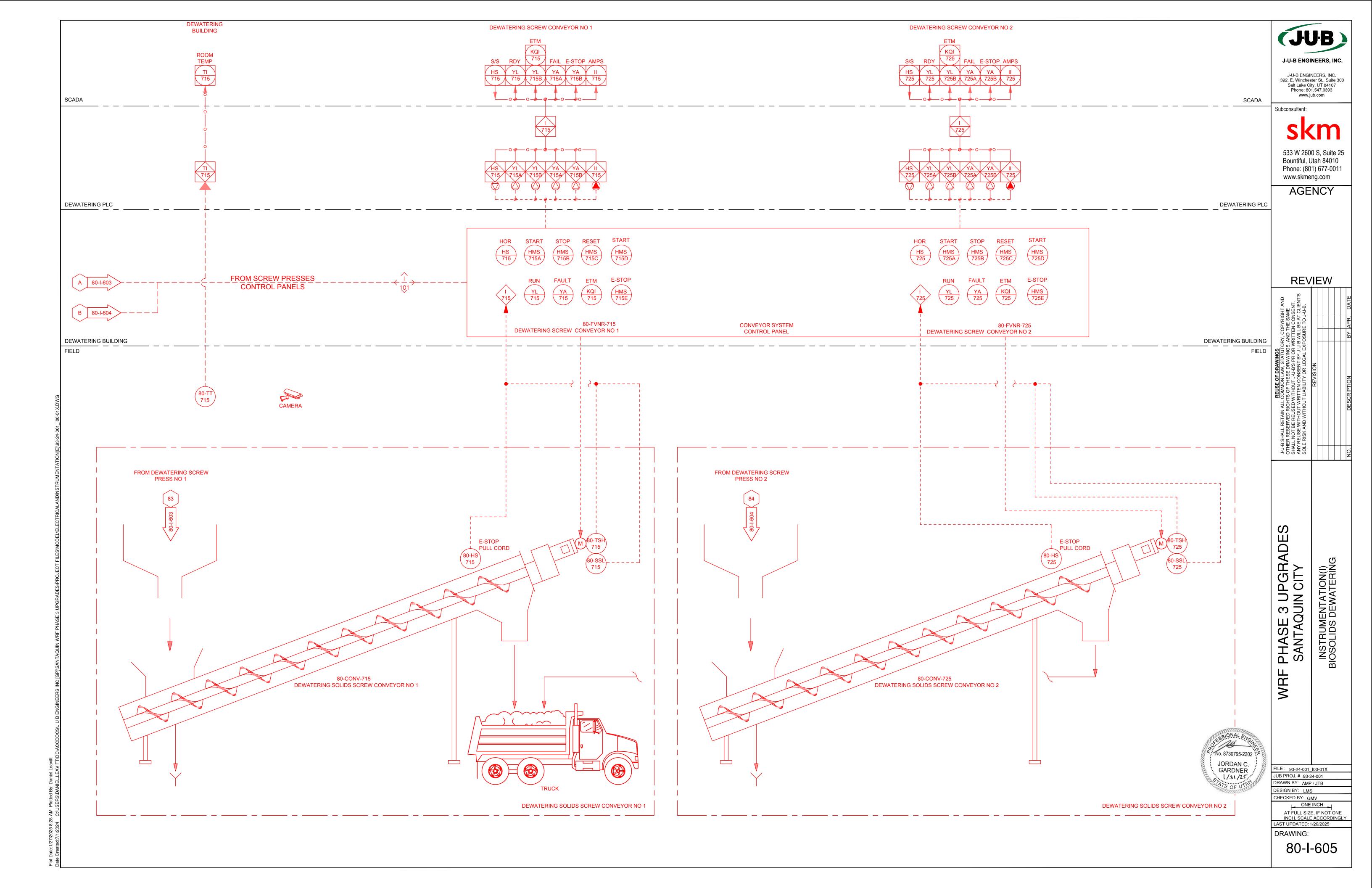


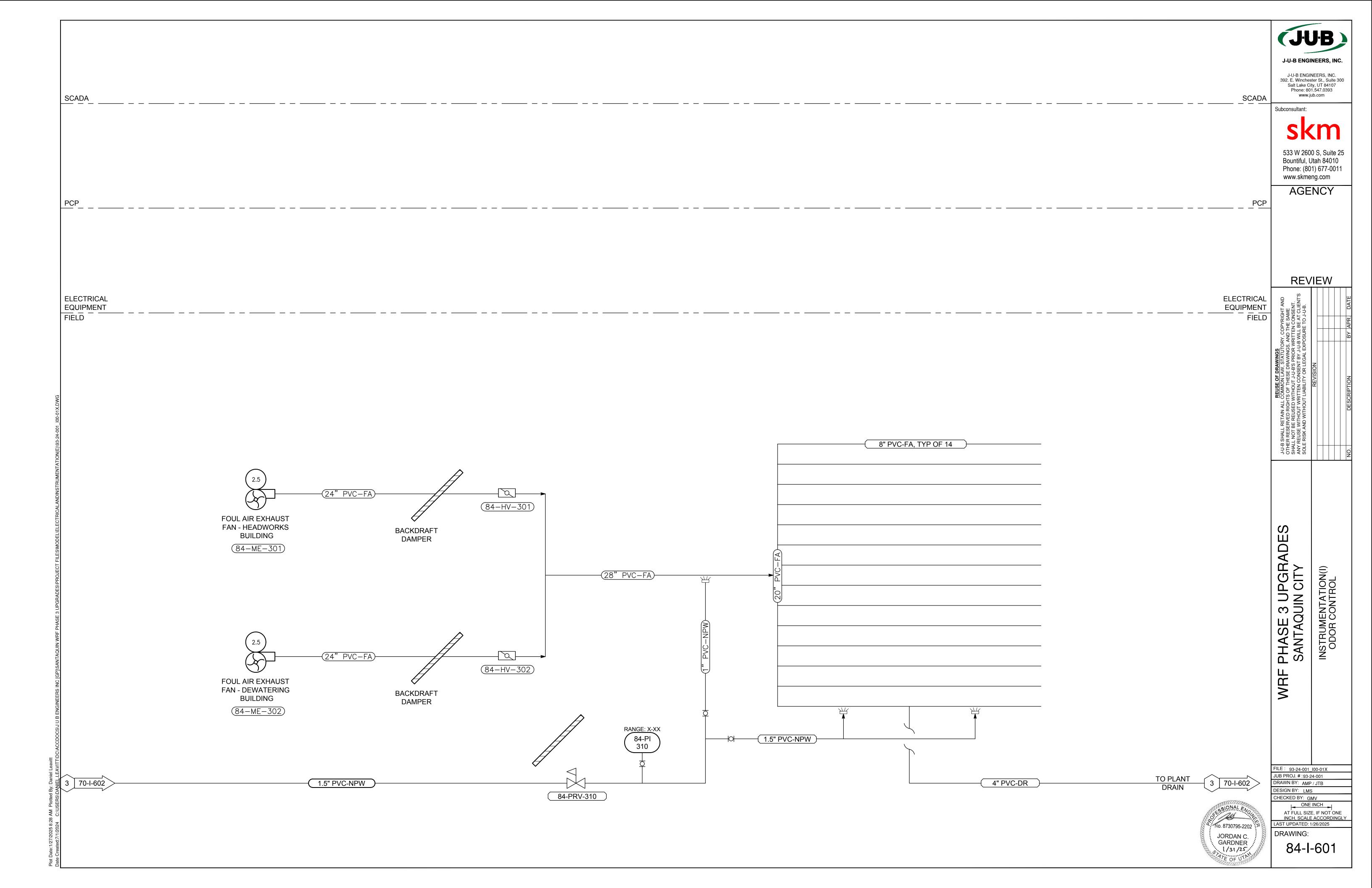


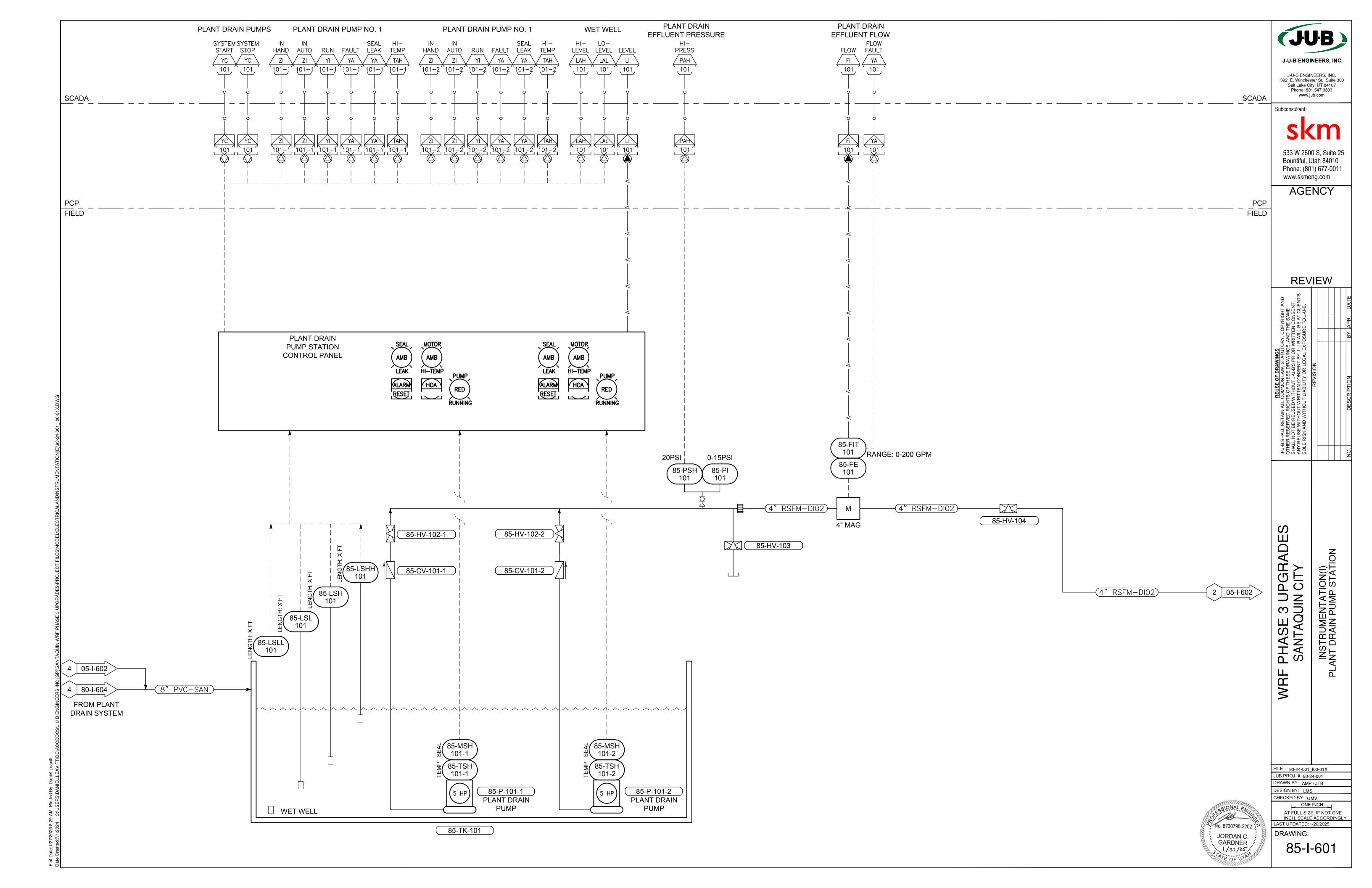


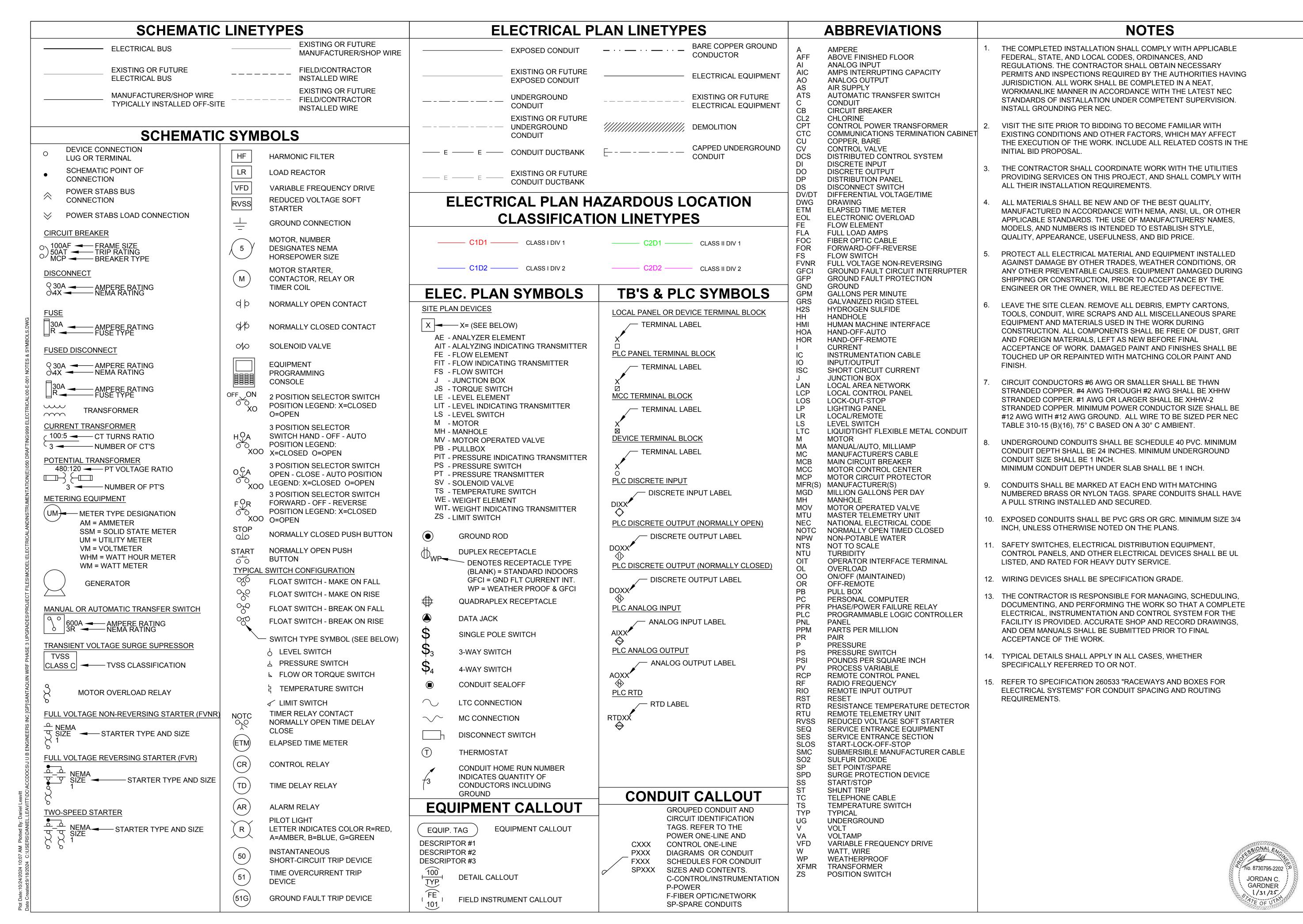












JUB)

J-U-B ENGINEERS. INC

J-U-B ENGINEERS, INC. 392 E. Winchester St., Suite 300 Salt Lake City, UT 84107 Phone: 801-547-0393 www.jub.com

Subconsultant:

533 W 2600 S, Suite 25

Phone: (801) 677-001 www.skmeng.com

Bountiful, Utah 84010

**AGENCY** 

**REVIEW** 

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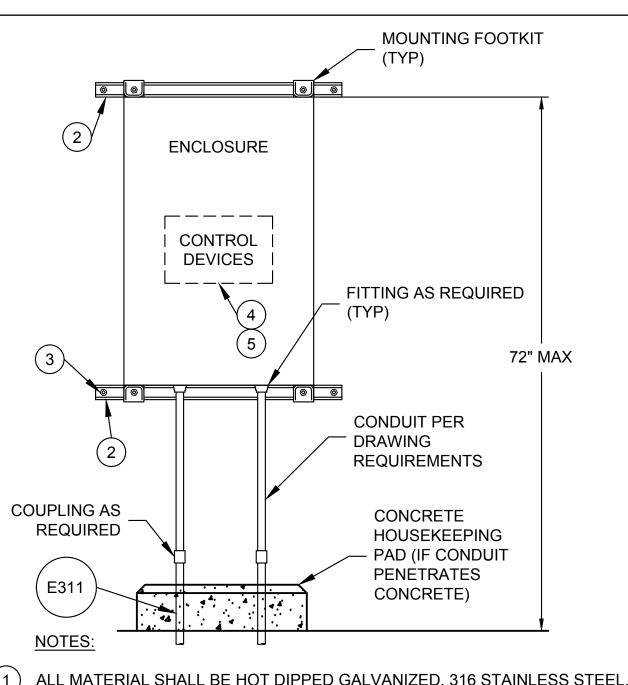
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JUB PROJ. #: 93-24-001 DRAWN BY: EGK / DCL DESIGN BY: JCG CHECKED BY: MPJ

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

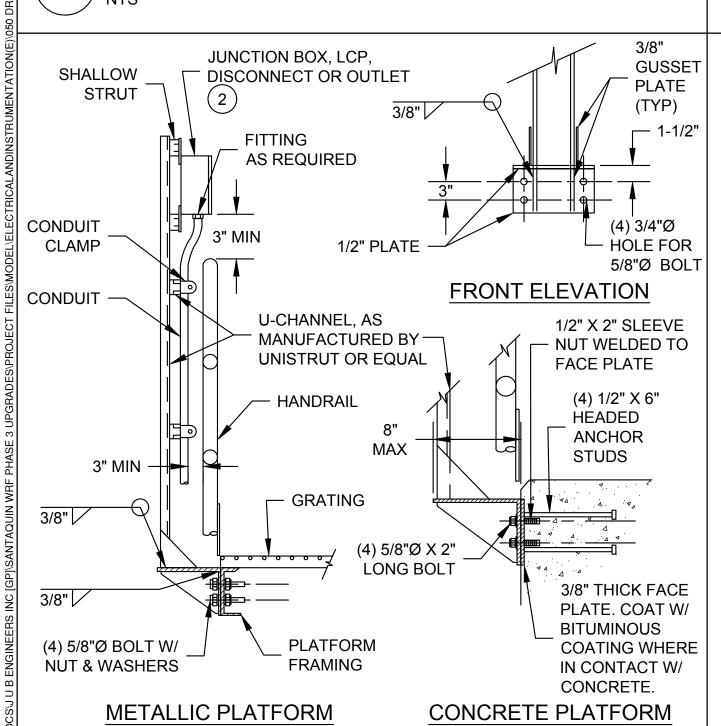
LAST UPDATED: 10/3/2024 DRAWING:

00-E-001



- 1 ALL MATERIAL SHALL BE HOT DIPPED GALVANIZED, 316 STAINLESS STEEL, OR PVC COATED GALVANIZED STEEL; AS NOTED IN THE DRAWINGS AND SPECIFICATIONS. FOR CHEMICAL ROOMS SEE COMPATIBLE MATERIALS IN SPECIFICATIONS.
- (2) 1-5/8" X 1-5/8" UNISTRUT CHANNEL
- 3 1/2" X 3" 316 SS ANCHOR BOLT OR LAG BOLT WITH WASHER, ANCHORED TO WALL (EVERY 18", 2 MIN.).
- (4) CENTER OF INSTRUMENT DISPLAYS SHALL BE 62".
- (5) CENTER OF LOCAL CONTROL STATIONS SHALL BE 52".

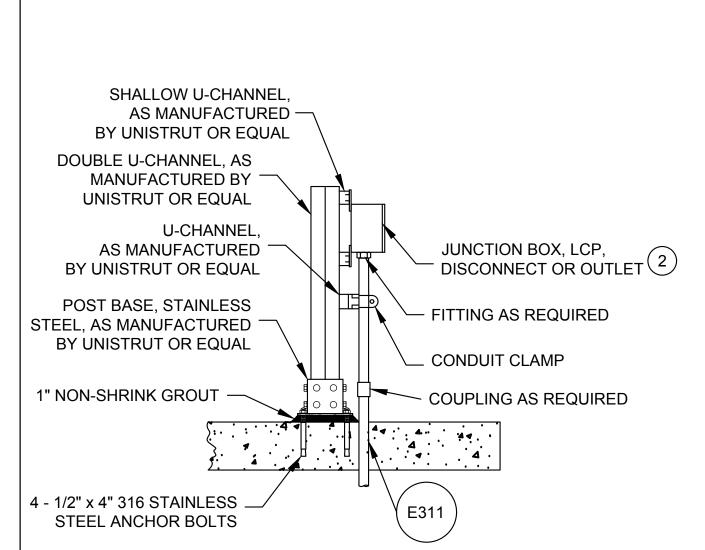
### WALL MOUNTED ENCLOSURE



#### NOTES:

- 1 ALL MATERIAL SHALL BE HOT DIPPED GALVANIZED, 316 STAINLESS STEEL OR PVC COATED GALVANIZED STEEL; AS NOTED IN THE DRAWINGS AND SPECIFICATIONS.
- 2 MAXIMUM EQUIPMENT DIMENSIONS OF 18"H x 12"W x 12"D. WEIGHT OF DEVICE(S) SHALL NOT EXCEED 100 POUNDS.

# MOUNTED ELECTRICAL PANEL AT HANDRAIL NTS

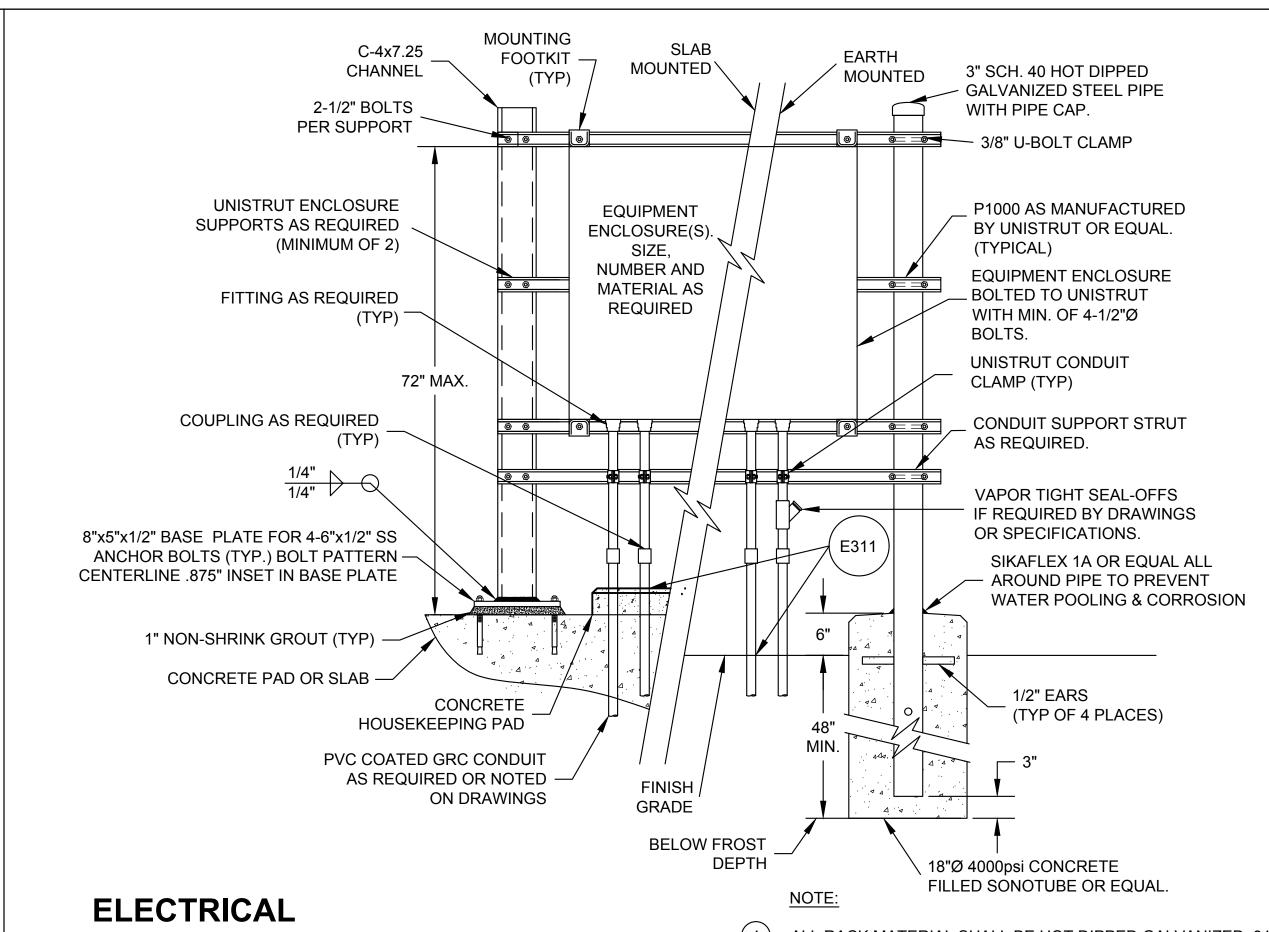


#### NOTES:

- 1 ALL MATERIAL SHALL BE HOT DIPPED GALVANIZED, 316 STAINLESS STEEL, OR PVC COATED GALVANIZED STEEL; AS NOTED IN THE DRAWINGS AND SPECIFICATIONS. FOR CHEMICAL ROOMS SEE COMPATIBLE MATERIALS IN SPECIFICATIONS.
- (2) MAXIMUM EQUIPMENT DIMENSIONS OF 18"H x 12"W x 12"D. WEIGHT OF DEVICE(S) SHALL NOT EXCEED 100 POUNDS.

## ELECTRICAL EQUIPMENT MOUNTING

(E011) NTS

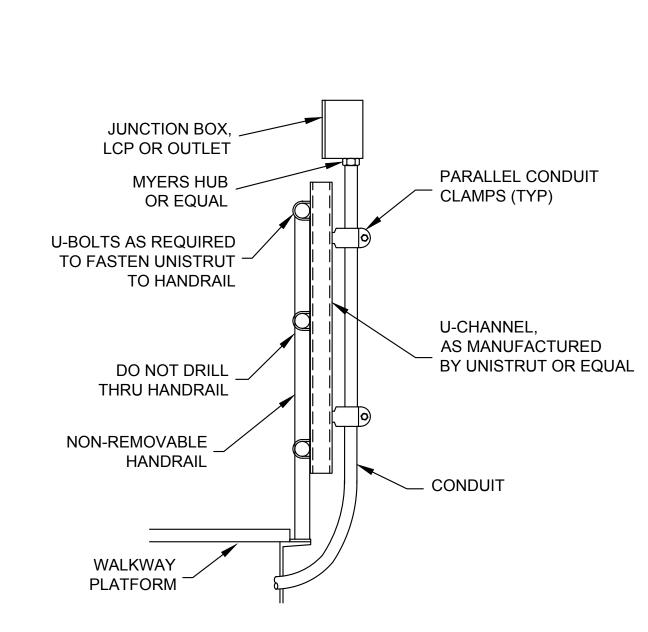


ELECTRICAL

EQUIPMENT RACK MOUNTING

NTS

ALL RACK MATERIAL SHALL BE HOT DIPPED GALVANIZED, 316
STAINLESS STEEL, OR PVC COATED GALVANIZED STEEL; AS NOTED IN
THE DRAWINGS AND SPECIFICATIONS.



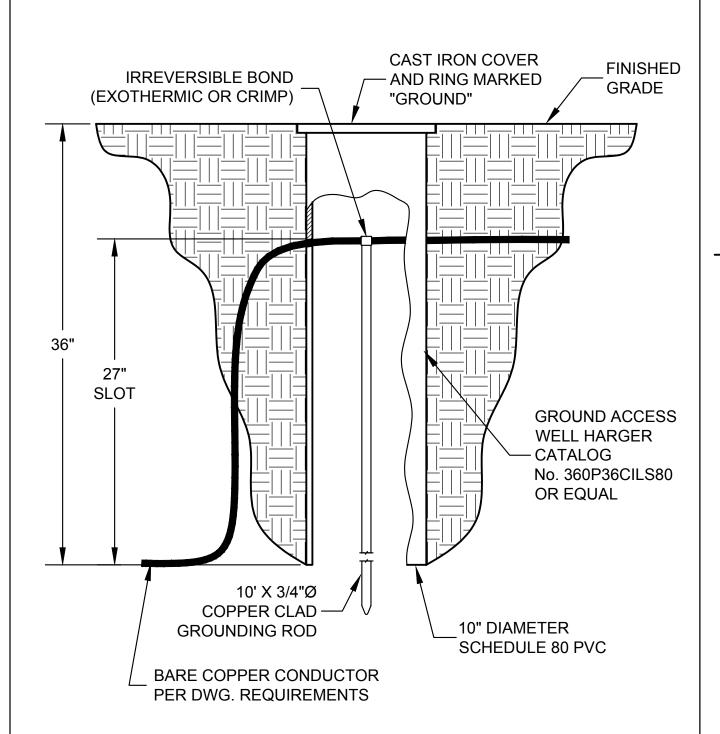
#### NOTES:

- 1 ALL MATERIAL SHALL BE HOT DIPPED GALVANIZED, 316 STAINLESS STEEL OR PVC COATED GALVANIZED STEEL; AS NOTED IN THE DRAWINGS AND SPECIFICATIONS.
- 2 MAXIMUM EQUIPMENT DIMENSIONS OF 18"H x 12"W x 12"D. WEIGHT OF DEVICE(S) SHALL NOT EXCEED 100 POUNDS.

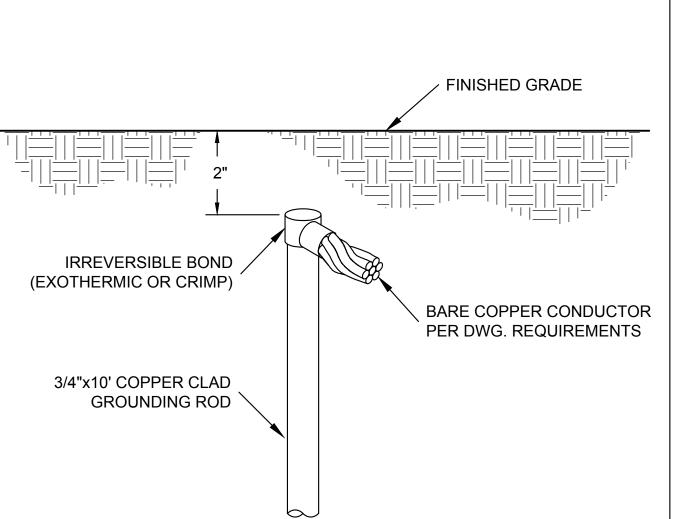
#### HANDRAIL

MOUNTED ELECTRICAL PANEL

E101



GROUND ROD
WITH ACCESS WELL
NTS



GROUND ROD CONNECTION

J-U-B ENGINEERS, INC.

392 E. Winchester St., Suite 300 Salt Lake City, UT 84107 Phone: 801-547-0393 www.jub.com

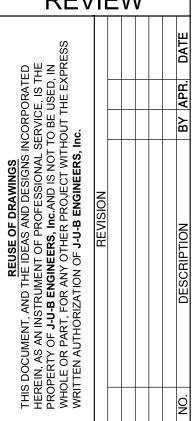
Subconsultant:

533 W 2600 S, Suite 25 Bountiful, Utah 84010 Phone: (801) 677-0011

AGENCY

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REVIEW



WRF PHASE 3 UPGRADES
SANTAQUIN CITY
ELECTRICAL - DETAIL (EZ)
DETAILS 1

JUB PROJ. #:93-24-001

DRAWN BY: EGK / DCL

DESIGN BY: JCG

CHECKED BY: MPJ

ONE INCH

AT FULL SIZE, IF NOT ONE
INCH, SCALE ACCORDINGLY
LAST UPDATED: 10/9/2024

DRAWING:

2U

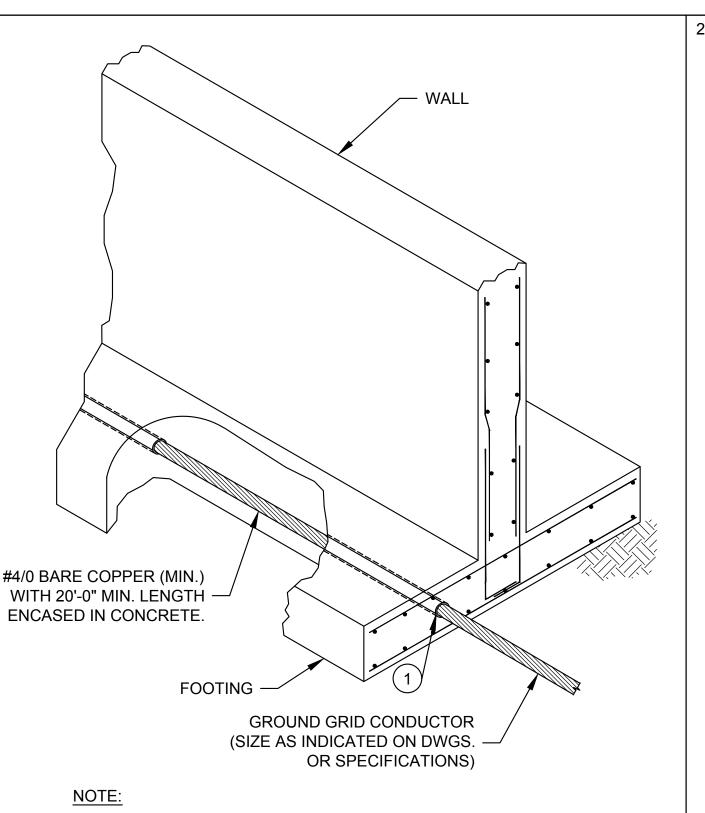
No. 8730795-2202

JORDAN C.

GARDNER

. 1/31/25.

00-EZ-901



GROUND GRID CONDUCTOR TO BE FULLY ENCASED IN CONCRETE.

PROVIDE MINIMUM 2" CLEAR BETWEEN CONDUCTOR AND FACE OF

**GROUNDING CONNECTION** 

TO FOOTING (UFER)

2 BOLTS TO EQUIPMENT WITH LOCK NUT AND WASHER, STAINLESS STEEL **CLEAN ALL PAINTED SURFACES** TO BARE METAL BEFORE BOLTING ON THE GROUND LUG HEAVY DUTY IRREVERSIBLE STEEL BUILDING COMPRESSION OR CAD-WELD COLUMN OR -TERMINAL PER AREA MATERIAL **EQUIPMENT** REQUIREMENTS **GROUND GRID INSULATED CONDUCTOR** 1" MIN BARE COPPER CONDUCTOR 3/4" PVC SCHEDULE 80 SLEEVE. FILL WITH DUCTSEAL CAD WELD OR IRREVERSIBLE **CONTINUE TO GROUND** CRIMP "T" CONNECTION RING OR GROUND ROD

NOTE:

(E112

- ALL EXPOSED GROUND GRID CONDUCTOR TO BE PROTECTED WITH XHHW INSULATION.
- (2) PROVIDE A 4/0 (OR MAIN GROUNDING CONDUCTOR SIZE IF SMALLER) BARE CONTINUOUS COPPER GROUND. SEE GROUNDING SPECIFICATION **SECTION 16170.**

### STRUCTURE OR EQUIPMENT **GROUNDING CONNECTION**

#### NOTES:

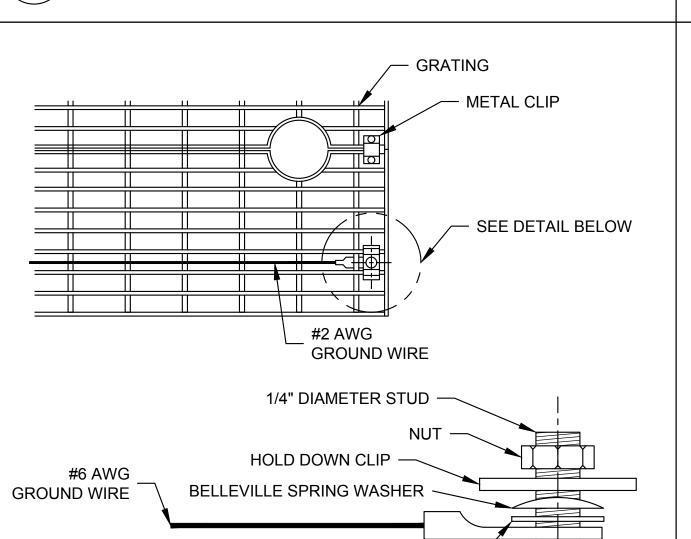
- HARGER GM STYLE PREFABRICATED COPPER GROUND MESH OR REINFORCING BAR MAT.
- (2) EXOTHERMIC CONNECTION (BURNDY PT STYLE ULTRAWELD OR CADWELD TYPE RR) CONNECTION.
- (3) PROVIDE A 4/0 (OR MAIN GROUNDING CONDUCTOR SIZE IF SMALLER) BARE CONTINUOUS COPPER GROUND. SEE GROUNDING SPECIFICATION **SECTION 16170.**
- EXOTHERMIC CAD WELD CONNECTION TO STRUCTURAL REBAR. GRIND AWAY ANY SURFACE RUST DOWN TO BARE STEEL BEFORE MAKING



ALUMINUM METAL HANDRAIL **ALUMINUM BONDING** PIPE CLAMP, HARGER — APC SERIES OR EQUAL #6 GROUND WIRE AWG FINISHED GRADE

ALL EXPOSED GROUND GRID CONDUCTORS TO BE PROTECTED WITH XHHW INSULATION.

**GROUNDING TO METALLIC HANDRAIL** 



NOTE:

CONCRETE

- SEQUENTIAL INSTRUCTIONS FOR ATTACHING CONNECTOR TO CLIP: 1. TIGHTEN LOCKNUT ON STUD TO APPROPRIATE LEVEL TO ALLOW FOR ADDITIONAL ATTACHMENTS (I.E. WASHER, NUTS AND CONNECTOR). 2. CRIMP CONNECTOR TO GROUND WIRE
  - 3. ASSEMBLE BELLEVILLE WASHER, FLAT WASHER, CONNECTOR AND CLIP AS SPECIFIED.

FLAT WASHER

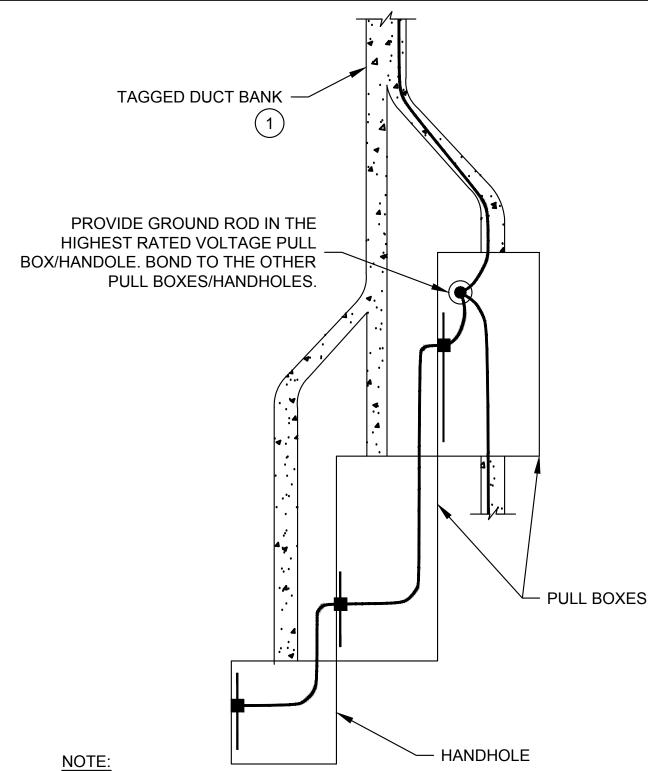
LOCK NUT

4. TIGHTEN NUT TO BELLEVILLE WASHER MANUFACTURER'S RECOMMENDATION USING TORQUE WRENCH.

COPPER TIN PLATED ON-HOLE

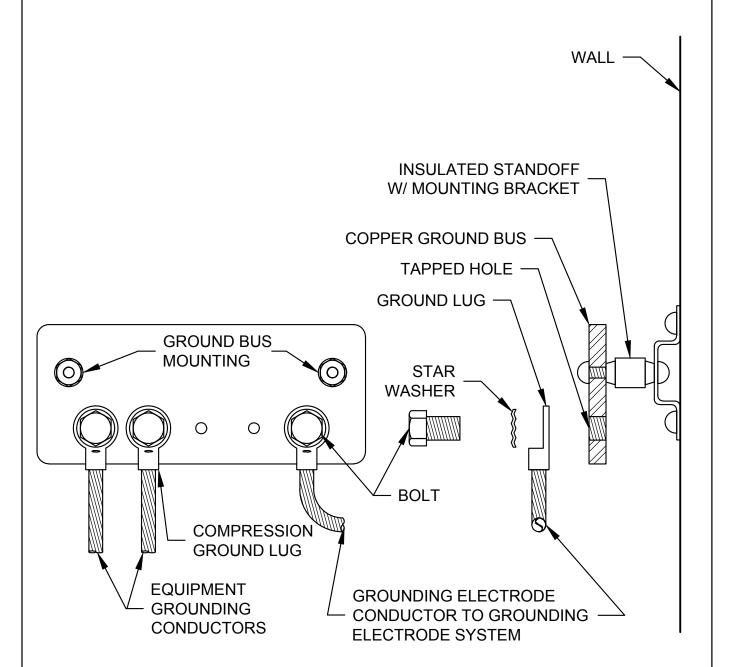
**COMPRESSION CONNECTOR** 

**GROUNDING TO METALLIC GRATING** 



(1) ROUTE CONDUITS FROM TAGGED DUCT BANK TO THE ELECTRICAL PULL BOX OR HANDHOLE PER THE CONDUIT SCHEDULES. CONTINUE THE DUCT BANK TYPE (REINFORCED CONCRETE, DIRECT BURIED) TO THE PULL BOX OR HANDHOLE.

#### **GROUNDING AT** PULL BOX OR HANDHOLE ( E131



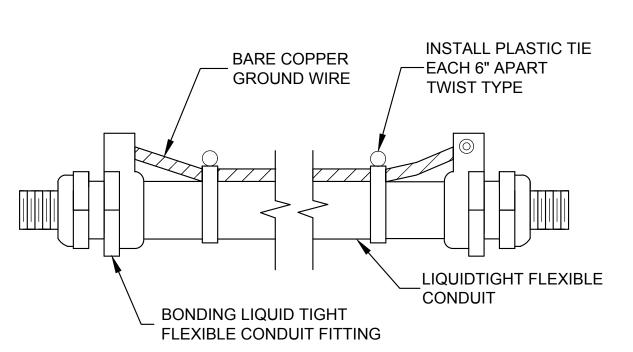
**GROUND BUS FRONT VIEW** 

**GROUND BUS SIDE VIEW** 

NOTE:

- ALL EXPOSED GROUND GRID CONDUCTORS TO BE PROTECTED WITH XHHW INSULATION.
- 2 PROVIDE A 4/0 (OR MAIN GROUNDING CONDUCTOR SIZE IF SMALLER) BARE CONTINUOUS COPPER GROUND. SEE GROUNDING SPECIFICATION **SECTION 16170.**

**GROUND BUS CONNECTIONS** 



NOTE

1) 3/4" AND LARGER LFMC EXTERNAL BONDING REQUIRED FOR CIRCUITS OVER 60 AMPS.

FLEXIBLE CONDUIT GROUNDING

No. 8730795-2202 JORDAN C. GARDNER . 1/31/25.

J-U-B ENGINEERS, INC J-U-B ENGINEERS, INC. 392 E. Winchester St., Suite 300 Salt Lake City, UT 84107 Phone: 801-547-0393 www.jub.com

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**REVIEW** 

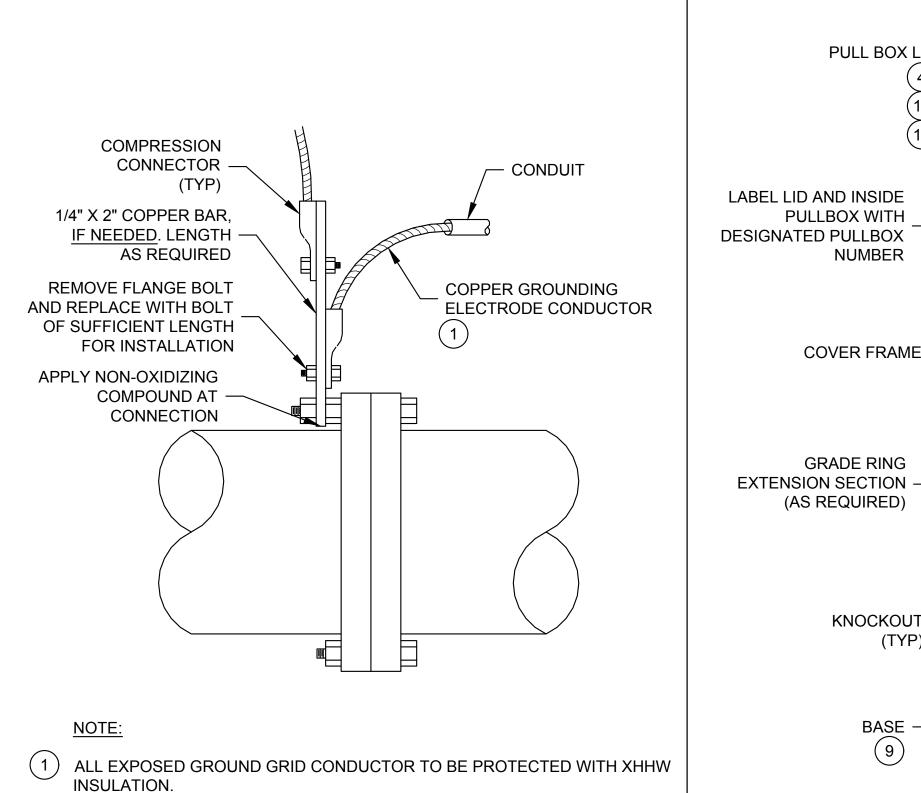
ELECTRICAL - DETAIL (EZ) DETAILS 2 WRF PHASE 3 UPGRADI SANTAQUIN CITY

JUB PROJ. #: 93-24-001 DRAWN BY: EGK / DCL DESIGN BY: JCG CHECKED BY: MPJ

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

LAST UPDATED: 10/9/2024 **DRAWING:** 

00-EZ-902



(2) PROVIDE A 4/0 (OR MAIN GROUNDING CONDUCTOR SIZE IF SMALLER) BARE

CONTINUOUS COPPER GROUND. SEE GROUNDING SPECIFICATION

**SECTION 16170.** 

PIPE GROUNDING

#### PULL BOX LID GFCI, WEATHER (11)PROOF RECEPTACLE (MOUNT BELOW LID FOR EASY ACCESS) **PULLBOX WITH** SLOPE GRADE NUMBER AWAY FROM **PULL BOX COVER FRAME** CABLE RACK (TYP STAINLESS STEEL.

JOINT SEAL

COMPOUND

(TYP)

**PULLING EYE** 

**GROUND ROD** 

(AS REQUIRED)

**GROUT ALL** 

**ENTRIES** 

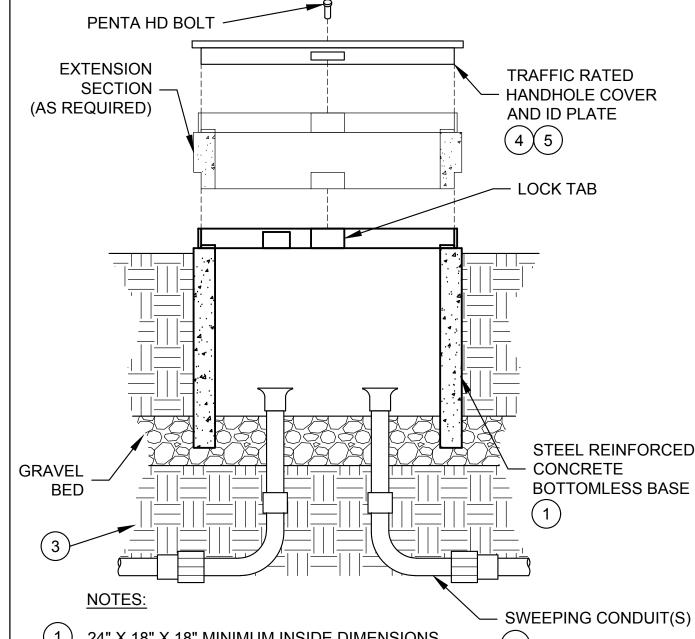
FLOOR SLOPES TO SUMP

**PULL IRON** 

IN CORNER

NOTES:

- (1) 3'-11" X 3'-11" X 4'-1" MINIMUM INSIDE DIMENSIONS. INSTALL A GROUND ROD AND CONNECT TO DUCT BANK GROUND. TRAIN CABLES AROUND INTERIOR PERIMETER ON CABLE RACKS.
- EACH PULL BOX TO INCLUDE A 120VAC, 20A WEATHER PROOF GFCI PROTECTED RECEPTACLE FOR PORTABLE
- (3) CONDUITS SHALL TERMINATE IN PVC END BELLS.
- (4) IN SMALLER PULL BOXES, LID TO BE A COVER SUITABLE FOR H-20 LOADING WITH PENTA HEAD LOCKING BOLTS. IN LARGER PULL BOXES, LID IS TO BE A TWO PIECE HINGED PULL BOX COVER SUITABLE FOR H-20 LOADING AND TORSION SPRING ASSISTED. IN CORROSIVE AREAS, LID IS TO BE GALVANIZED, ALUMINUM OR
- JOINT SEALING COMPOUND SHALL BE PLACED BETWEEN PULLBOX BASE AND ALL GRADE RINGS SEALING COMPOUND OR GROUT SHALL BE REQUIRED BETWEEN LAST GRADE RING AND TOP COVER SECTION PER DISTRICT'S INSPECTOR.
- ALL TOP COVER SECTIONS SHALL BE PROVIDED WITH 3/4" DIA. ADJUSTABLE BOLTS FOR GRADE AND SLOPE (4 REQUIRED).
- (7) COMPACT ALL BACKFILLS TO A MINIMUM OF 90%
- (8) FINISHED GRADES MUST BE ESTABLISHED PRIOR TO PULLBOX INSTALLATION. CONTRACTOR TO FURNISH GRADE RINGS AS REQUIRED TO INSTALL FLUSH WITH FINISHED GRADE.
- (9) BASE SECTION OF PULLBOX MUST BE LEVEL PRIOR TO ADDITION OF GRADE RINGS, ETC.
- ALL TOP COVERS MUST BE MARKED "MEDIUM VOLTAGE", "POWER", "CONTROLS" OR "COMMUNICATION".
- WHEN INSTALLED IN ROADWAY, LID SHALL BE TRAFFIC



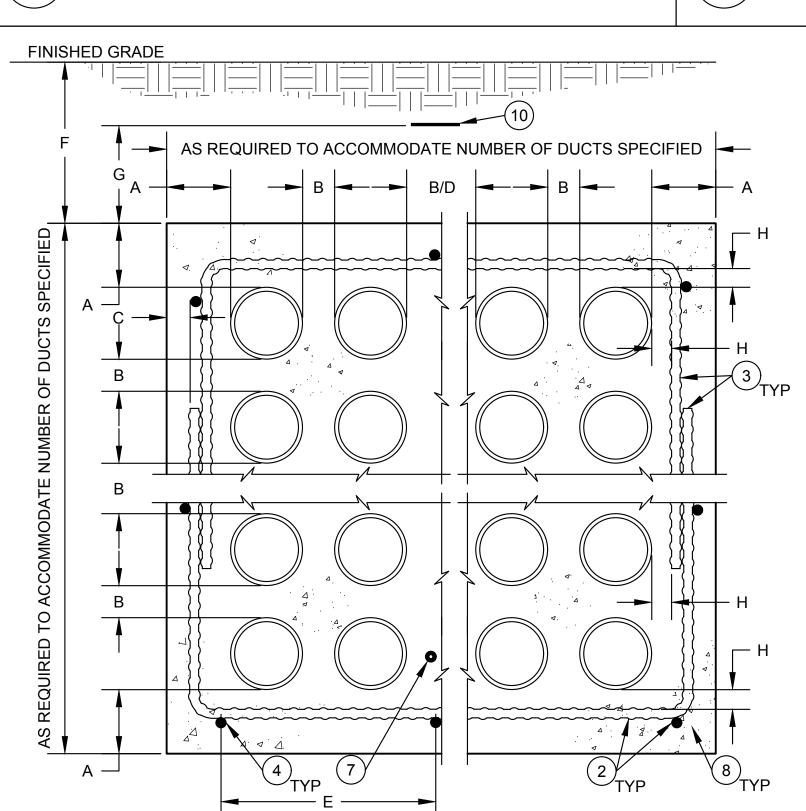
- (1) 24" X 18" X 18" MINIMUM INSIDE DIMENSIONS.
- 3 COMPACT ALL BACKFILLS TO A MINIMUM OF 90%

CONDUITS SHALL TERMINATE IN PVC END BELLS

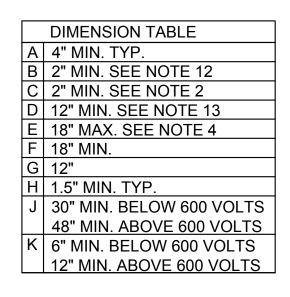
- 4) ALL TOP COVERS MUST BE MARKED "MEDIUM VOLTAGE", "POWER", "CONTROLS" OR "COMMUNICATION".
- (5) LID TO BE A COVER SUITABLE FOR H-20 LOADING WITH PENTA HEAD LOCKING BOLTS. IN CORROSIVE AREAS, LID IS TO BE GALVANIZED, **ALUMINUM OR STAINLESS STEEL**







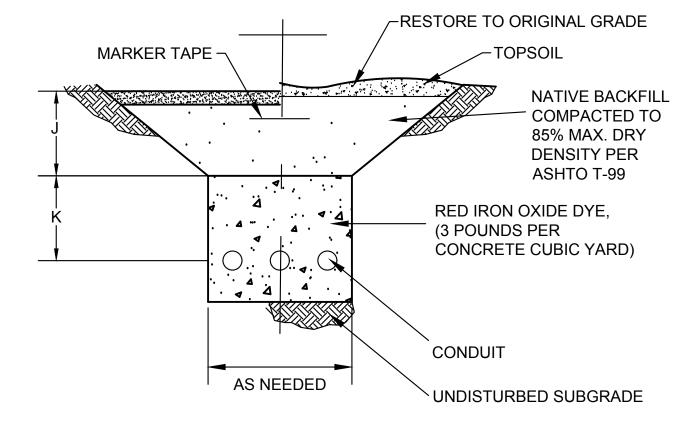
MULTIPLE DUCTS

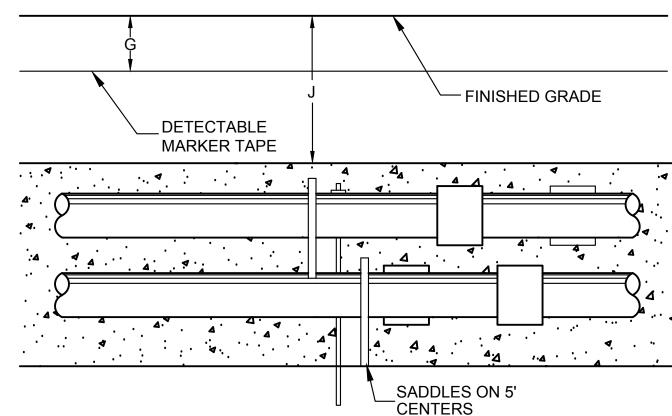


(TYP)

**CONCRETE PULL BOX** 

(E231



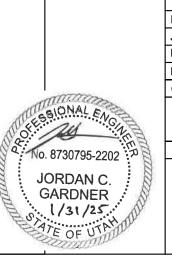


**DUCT BANK TRENCH** 

**DUCT BANK SECTION** 

#### NOTES:

- $(\ { ext{1}}\ )\ \$  ALL DIMENSIONS SHOWN ARE <code>MINIMUM</code> DIMENSIONS. UNLESS NOTED OTHERWISE ON THE DRAWINGS.
- (2) ALL REBAR SHALL BE #4 BAR AND HAVE A MINIMUM CONCRETE EMBEDMENT OF 2" (EDGE OF REBAR TO OUTSIDE SURFACE OF CONCRETE).
- (3) REBAR HOOPS SHALL OVERLAP 9" MINIMUM AND SHALL BE PROVIDED EVERY 4 FEET HORIZONTALLY. HOOPS SHALL NOT BE REQUIRED ON SINGLE ROW DUCT BANKS.
- (4) HORIZONTAL REBAR SHALL BE PLACED @ A MAXIMUM OF 18" ON CENTER ALL AROUND THE DUCT BANK ENVELOPE AND SHALL BE SUPPORTED EVERY 4 FEET LONGITUDINALLY. SINGLE ROW DUCT BANKS LESS THAN 24" WIDE SHALL HAVE A MIN. OF 2 HORIZONTAL BARS.
- (5) DUCT SPACERS (SADDLES) SHALL BE PROVIDED FOR PROPER SUPPORT OF CONDUIT DUCTS. SPACERS SHALL BE PROVIDED HORIZONTALLY AS RECOMMENDED BY THE MANUFACTURER AND TO PREVENT ANY SAGGING OF THE DUCTS (LOW SPOTS WILL NOT BE ALLOWED).
- (6) DUCTS SHALL BE SECURED TO PREVENT FLOATING DURING THE CONCRETE ENCASEMENT.
- PROVIDE A 4/0 (OR MAIN GROUNDING CONDUCTOR SIZE IF SMALLER) BARE CONTINUOUS COPPER GROUND. SEE GROUNDING SPECIFICATION SECTION 16170. THE GROUND CONDUCTOR SHALL RUN CONTINUOUSLY THROUGH PULL BOXES AND HAND HOLES AND SHALL CONTINUE FROM THE DUCT BANK INTO THE ELECTRICAL EQUIPMENT OR BUILDING GROUNDING SYSTEM AND SHALL BE BONDED TO EACH RIDGID METAL CONDUIT. BOND CONDUCTORS TO BE SOILD COPPER #10 AWG OR LARGER AS REQUIRED BY THE NEC. AND ELSEWHERE IN THESE PLANS.
- DUCT BANK CONCRETE SHALL BE COLOR DYED RED BY MIXING 3 LBS. IRON OXIDE PER CUBIC YARD OF CONCRETE.
- (9) ALL DUCT BANKS SHALL BE SLOPED @ 1/4" PER 10 FEET TO ALLOW DRAINAGE. NO LOW SPOTS WILL BE ALLOWED IN RACEWAY
- (10) A 3" WIDE DETECTABLE PLASTIC MARKER TAPE WITH INSCRIPTION "CAUTION ELECTRICAL LINES BURIED BELOW" (BLACK LETTERS ON RED BACKGROUND) SHALL BE INSTALLED 12" ABOVE THE TOP OF ALL CONCRETE ENCASED DUCT BANKS.
- (11) REFER TO CONDUIT SCHEDULE FOR WIRE FILL OF ALL DUCTS.
- (12) ALL DUCTS OF THE SAME DUTY (480V POWER, 120V POWER, 120V CONTROLS, AND SIGNAL) SHALL BE SEPARATED BY A MINIMUM OF 2".
- (13) SIGNAL AND FIBER DUCTS SHALL BE SEPARATED FROM 480V POWER BY A MIN. OF 12", FROM 120V POWER BY A MIN. OF 6" AND FROM 120V CONTROL BY MIN. OF 4" UNLESS NOTED OTHERWISE ON THE DRAWINGS. 120V POWER AND 120V CONTROL DUCTS SHALL BE SEPARATED FROM 480V POWER BY A MIN. OF 4" UNLESS NOTED OTHERWISE ON THE DRAWINGS.



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**REVIEW** 

ELECTRICAL - DETAIL (EZ) DETAILS 3 PHASE 3 UPGRAD ANTAQUIN CITY WRF F S/

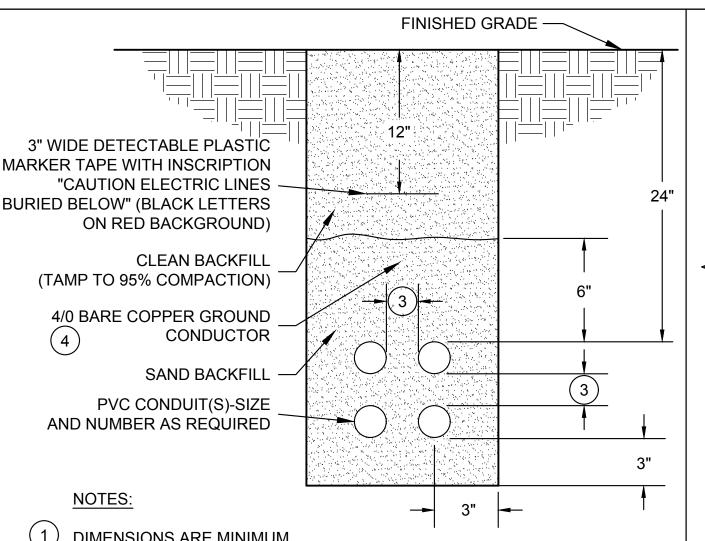
JUB PROJ. #: 93-24-001 DRAWN BY: EGK / DCL DESIGN BY: JCG

CHECKED BY: MPJ ONE INCH AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY

LAST UPDATED: 1/27/2025 **DRAWING:** 

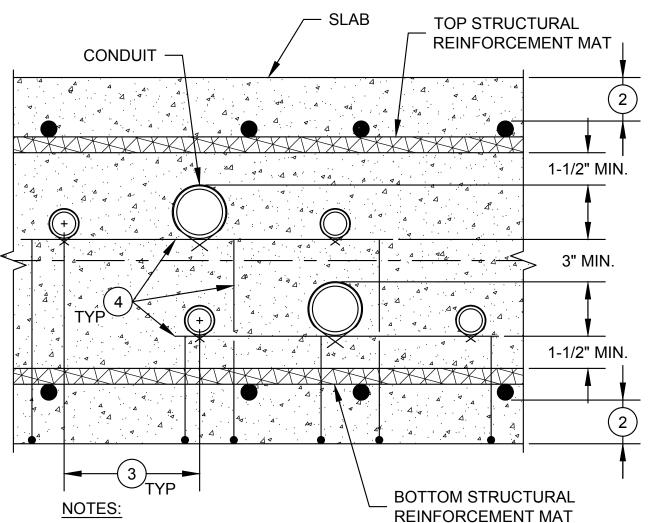
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**CONCRETE ENCASED DUCT BANK** 



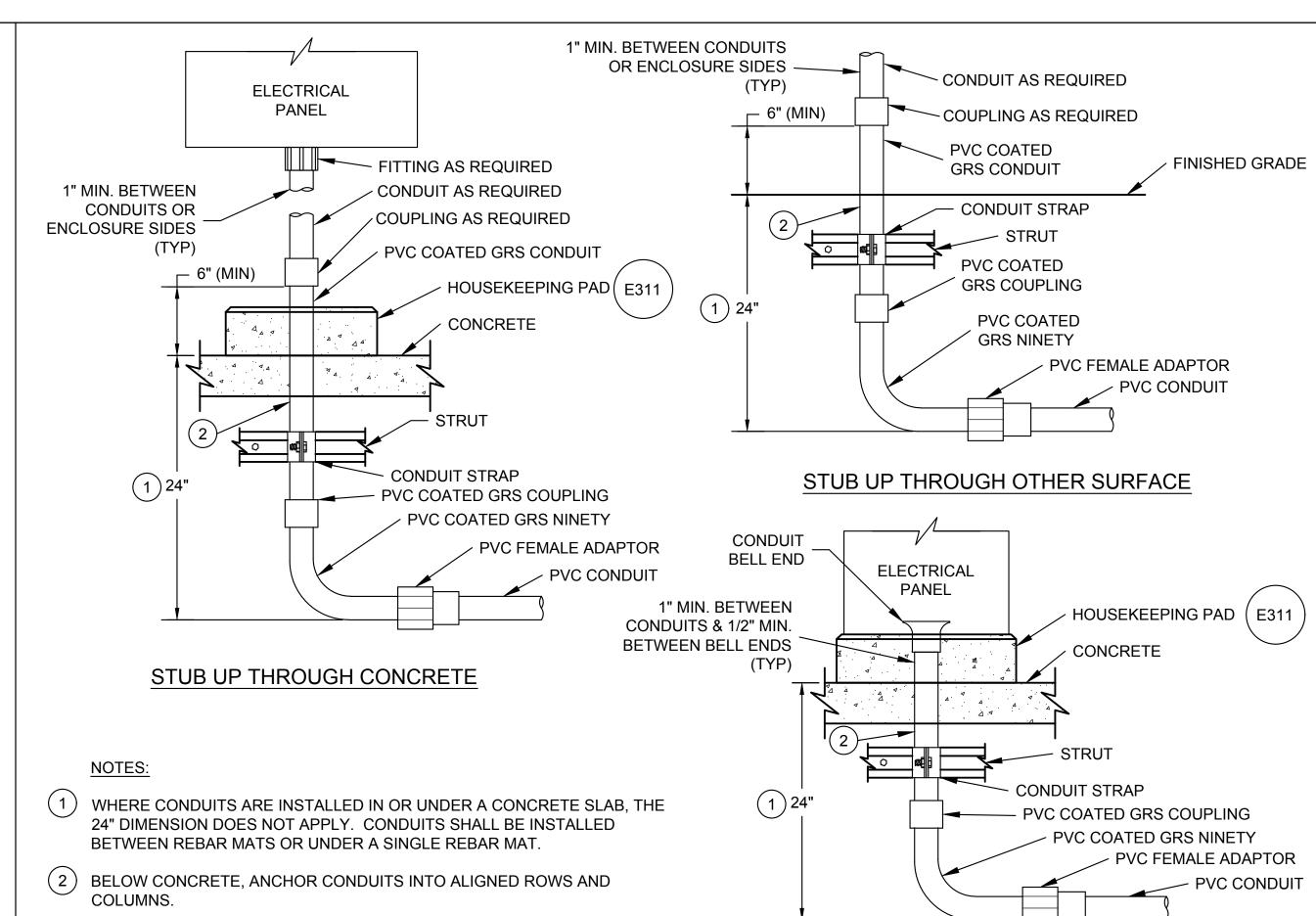
- (1) DIMENSIONS ARE MINIMUM.
- THE GROUND CONDUCTOR SHALL RUN CONTINUOUSLY THROUGH PULL BOXES AND HAND HOLES AND SHALL CONTINUE FROM THE DUCT BANK INTO THE ELECTRICAL EQUIPMENT OR BUILDING GROUNDING SYSTEM AND SHALL BE BONDED TO EACH RIDGID METAL CONDUIT. BOND CONDUCTORS TO BE SOLID COPPER #10 AWG OR LARGER AS REQUIRED BY THE NEC.
- ALL DUCTS OF THE SAME DUTY (480V POWER, 120V POWER, 120V CONTROLS, AND SIGNAL/FIBER) SHALL BE SEPARATED BY A MINIMUM OF 2". SIGNAL AND FIBER DUCTS SHALL BE SEPARATED FROM 480V POWER BY A MIN. OF 12", FROM 120V POWER BY A MIN. OF 6" AND FROM 120V CONTROL BY MIN. OF 4" UNLESS NOTED OTHERWISE ON THE DRAWINGS. 120V POWER AND 120V CONTROL DUCTS SHALL BE SEPARATED FROM 480V POWER BY A MIN. OF 4" UNLESS NOTED OTHERWISE ON THE DRAWINGS.
- (4) PROVIDE A 4/0 (OR MAIN GROUNDING CONDUCTOR SIZE IF SMALLER) BARE CONTINUOUS COPPER GROUND. SEE GROUNDING SPECIFICATION **SECTION 16170.**

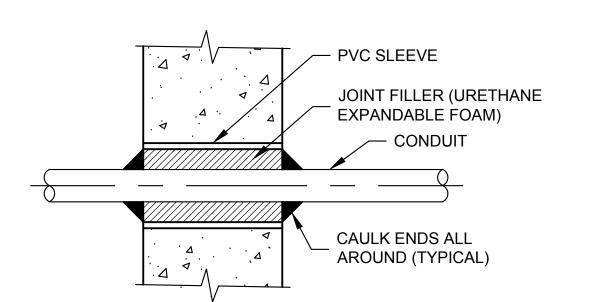




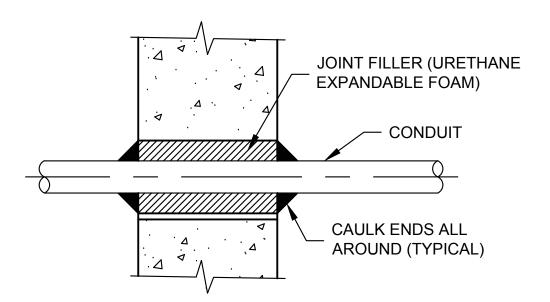
- MOVE CONDUIT TO AVOID CONFLICTS WITH WATERSTOPS. WHERE HORIZONTAL AND VERTICAL CLEARANCES CANNOT BE MAINTAINED, CONTACT ENGINEER FOR INSTRUCTIONS BEFORE PLACING CONCRETE
- (2) FOR REQUIRED TOP AND BOTTOM COVER OVER REINFORCEMENT, SEE STRUCTURAL DETAILS.
- (3) MINIMUM ON CENTER HORIZONTAL SPACING OF PARALLEL CONDUITS = 4X OUTSIDE DIAMETER OF THE LARGER CONDUIT.
- (4) SUPPORT CONDUITS ON ADDED REINFORCEMENT CHAIRS OR BOLSTERS. TIE CONDUITS TO SUPPORTS & ANCHOR TO PREVENT FLOTATION
- (5) WHERE THERE IS A SINGLE RUN, CENTER LARGEST DIAMETER CONDUIT BETWEEN STRUCTURAL MATS. WHERE MORE THAN 2 RUNS ARE STACKED. PROVIDE HORIZONTAL AND VERTICAL SPACING SHOWN BETWEEN EACH PAIR.

#### **EMBEDDED CONDUIT** IN CONCRETE SLAB (E302 NTS





**NEW CONCRETE WALL/SLAB** 

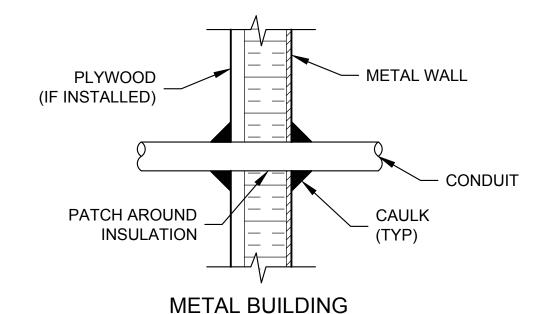


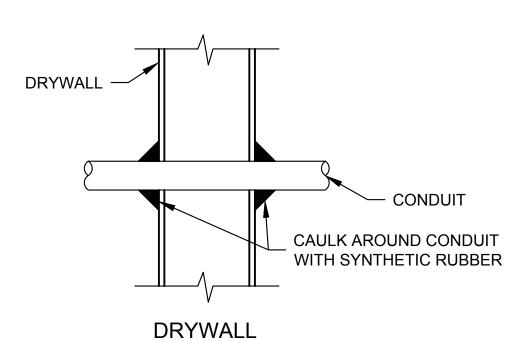
**EXISTING CONCRETE WALL/SLAB** 

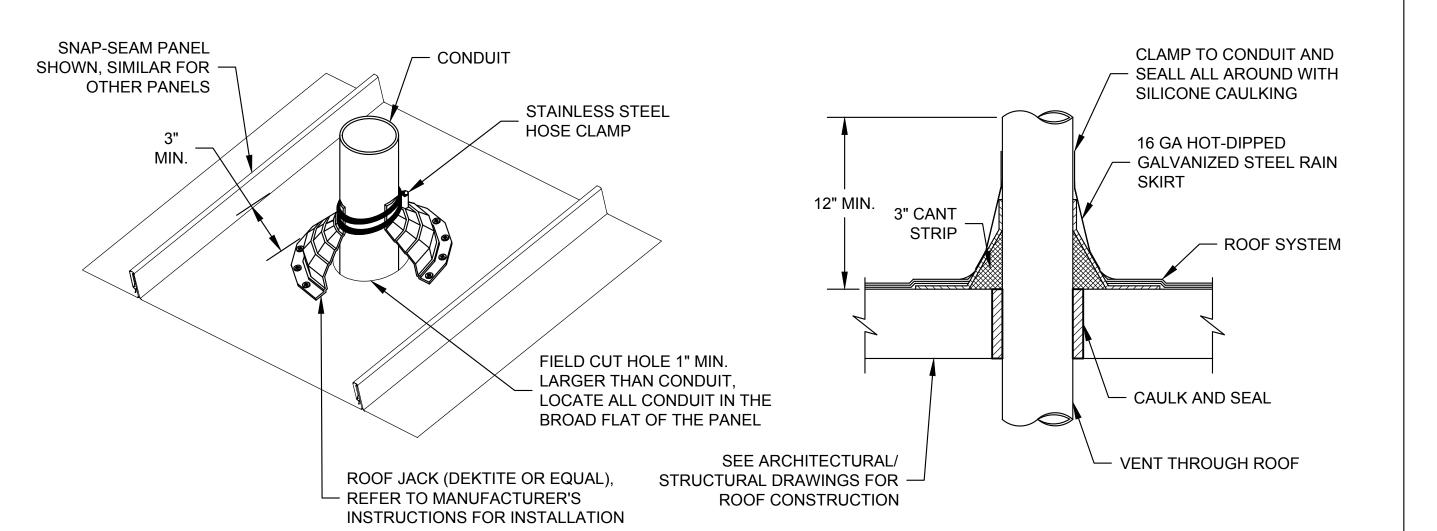
NOTE

IN EXISTING WALL, CORE DRILL HOLE CONDUIT O.D. +1-1/2". IN NEW CONCRETE, INSTALL PVC SCHEDULE 40 SLEEVE, CONDUIT O.D. +1-1/2".

CONDUIT PENETRATION THRU WALL OR SLAB







STUB UP INTO FLOOR-MOUNTED ELECTRICAL PANEL

NOTES:

(E312

PENETRATIONS SHOULD BE CENTERED IN PANELS IF AT ALL POSSIBLE.

**CONDUIT STUB UP** 

SUBSTRATE MUST BE CUT OUT ENOUGH SO THAT DEKTITE IS ONLY ATTACHED TO ROOF PANEL

CONDUIT PENETRATION THRU ROOF

No. 8730795-2202 JORDAN C. GARDNER .1/31/25.

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WRF PHASE 3 UPGRADES SANTAQUIN CITY ELECTRICAL - DETAIL (EZ) DETAILS 4

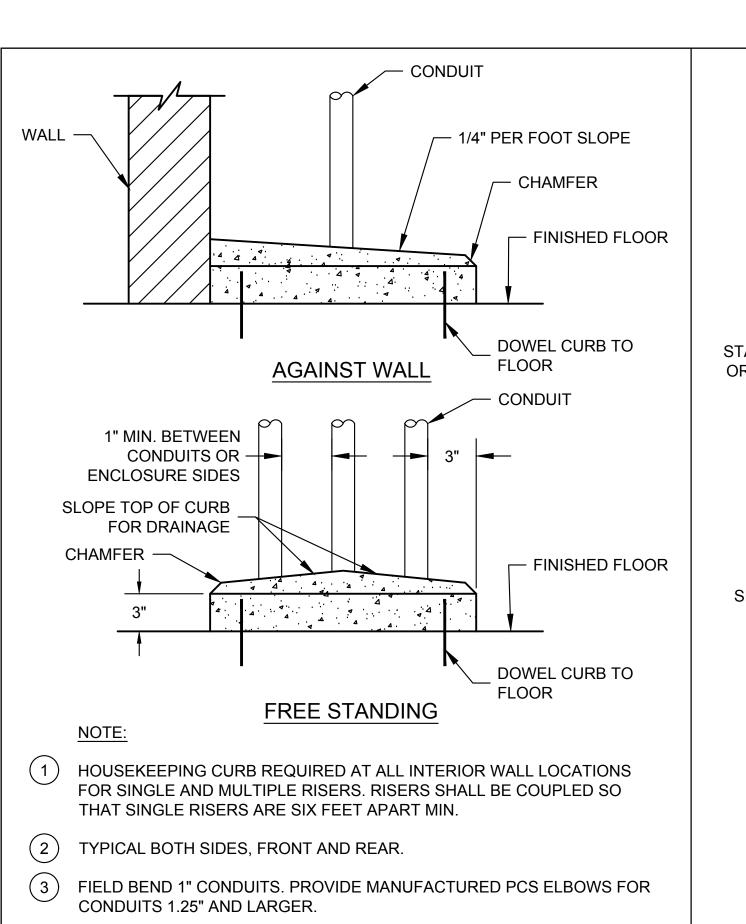
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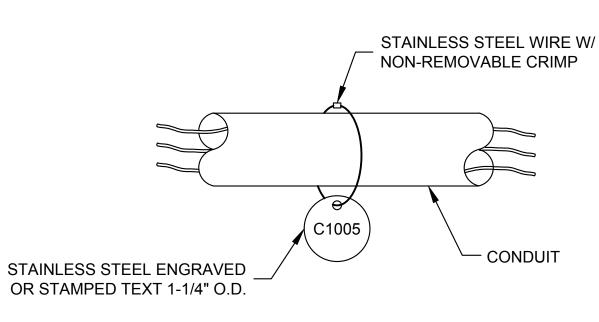
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LAST UPDATED: 10/9/2024

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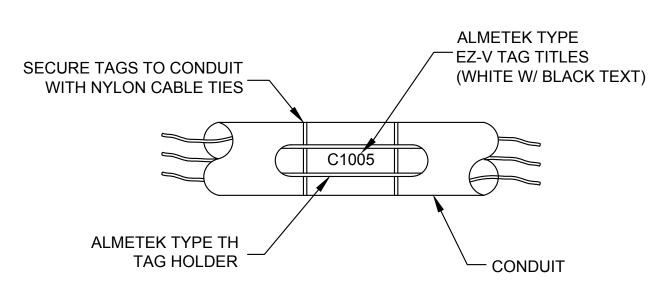
**DRAWING:** 

**CONDUIT PENETRATION** 



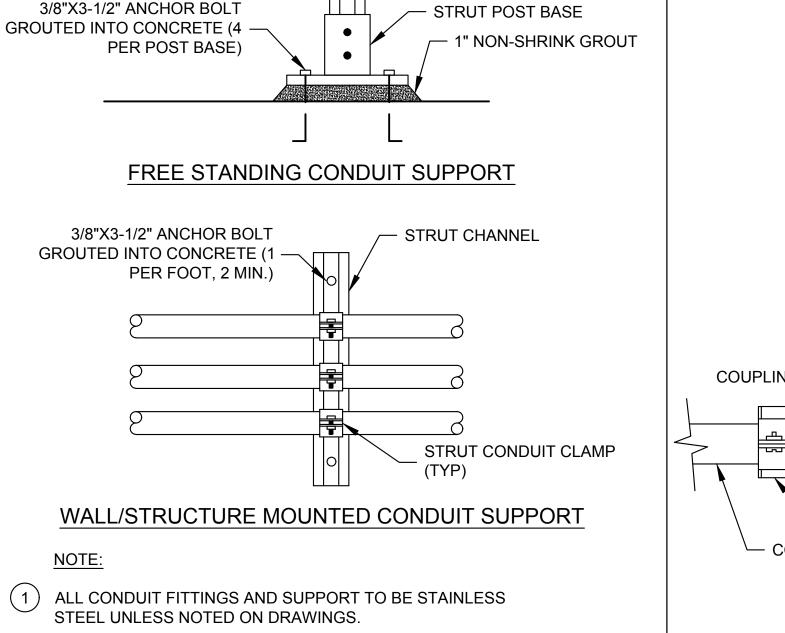


STAINLESS STEEL



ALUMINUM OR POLYETHYLENE





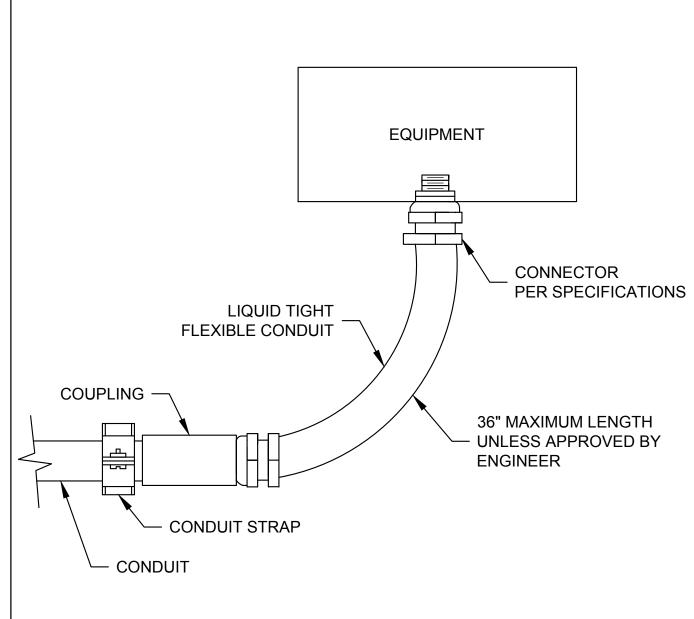
STRUT CONDUIT CLAMP

(TYP)

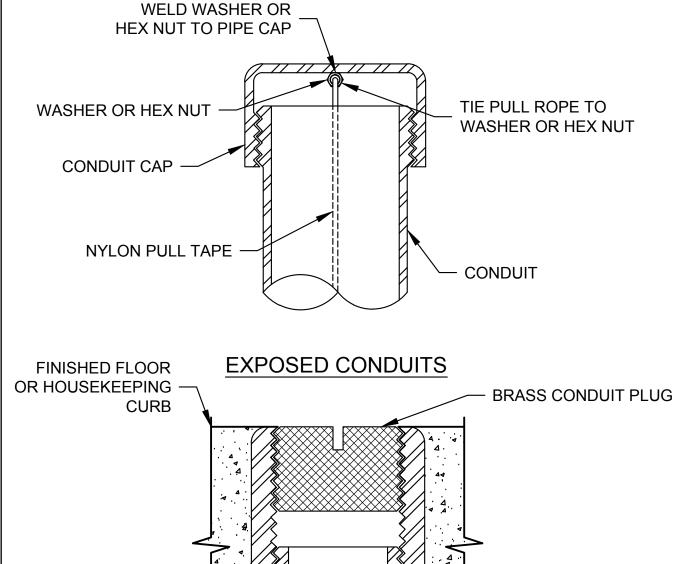
STRUT CHANNEL

**EXPOSED SURFACE** 

**CONDUIT SUPPORT** 

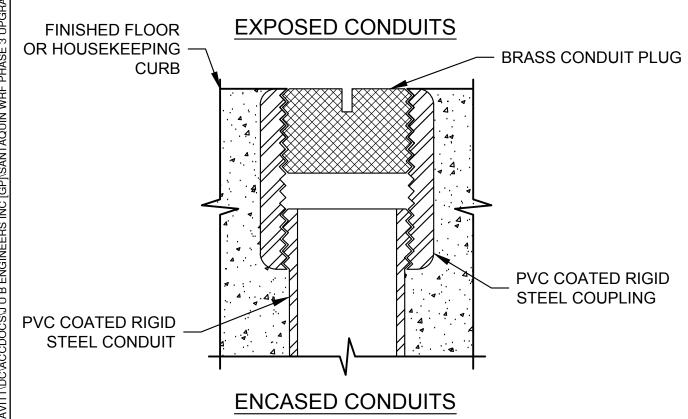






**CONDUIT CONCRETE** 

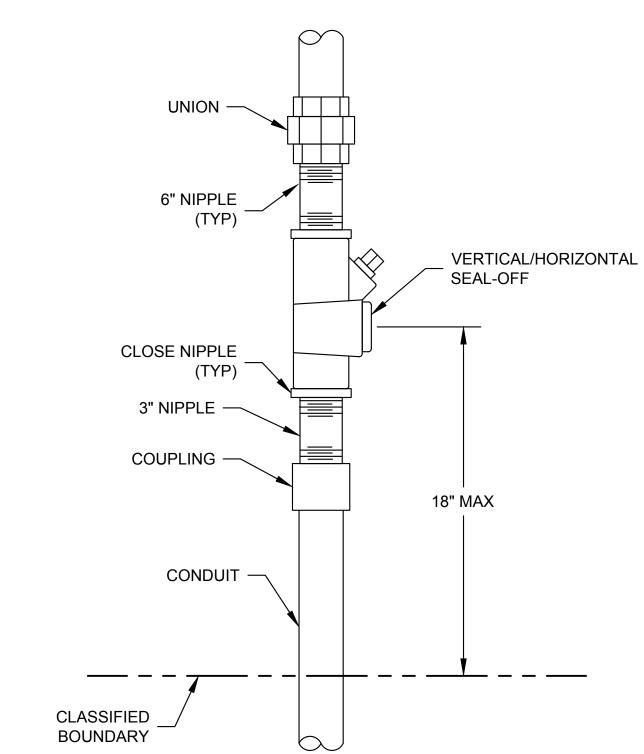
**HOUSEKEEPING CURB** 



NOTE:

(1) PROVIDE 2" MIN. CLEARANCE BETWEEN ADJACENT CONDUITS.

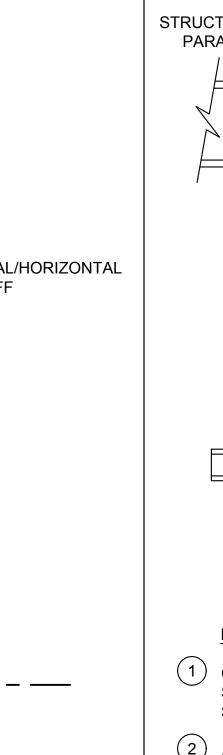
**SPARE CONDUIT** 



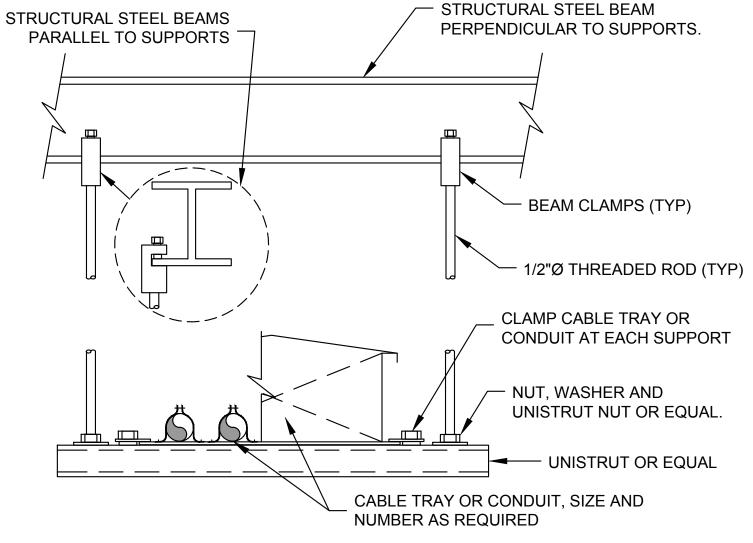
NOTE:

(1) CONDUIT MATERIALS PER AREA CLASSIFICATION REQUIREMENTS.

**CONDUIT SEAL-OFF** E325



(E322

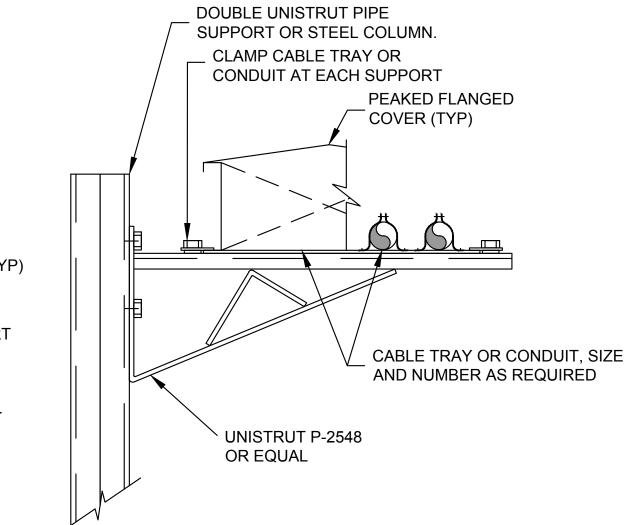


#### TOP MOUNTED RACEWAY HANGER SUPPORTS

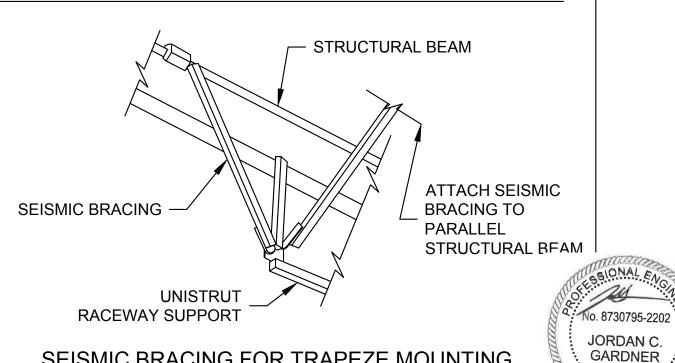
#### NOTES:

- CABLE TRAY SUPPORTS SHALL NOT EXCEED TRAY MANUFACTURERS RECOMMENDED SPACING FOR LOADED CABLE TRAYS. CONDUIT SUPPORTS SHALL NOT EXCEED THOSE SPECIFIED IN THE NEC.
- ALL REQUIRED SUPPLIES AND MATERIAL SHALL BE STAINLESS STEEL UNLESS OTHERWISE NOTED OR SPECIFIED.
- CONTRACTOR TO PROVIDE TOTAL LOAD OF RACEWAY AND CABLES AND SUBMIT TO ENGINEER FOR VERIFICATION OF STRUCTURAL LOADING.
- CONTRACTOR TO PROVIDE AND INSTALL SEISMIC BRACING ACCORDING TO NEC

SUSPENDED RACEWAY SUPPORT



FLOOR OR COLUMN SUPPORTED RACEWAY SUPPORT



SEISMIC BRACING FOR TRAPEZE MOUNTING

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**REVIEW** 

WRF PHASE 3 UPGRADES SANTAQUIN CITY ELECTRICAL - DETAIL (EZ) DETAILS 5

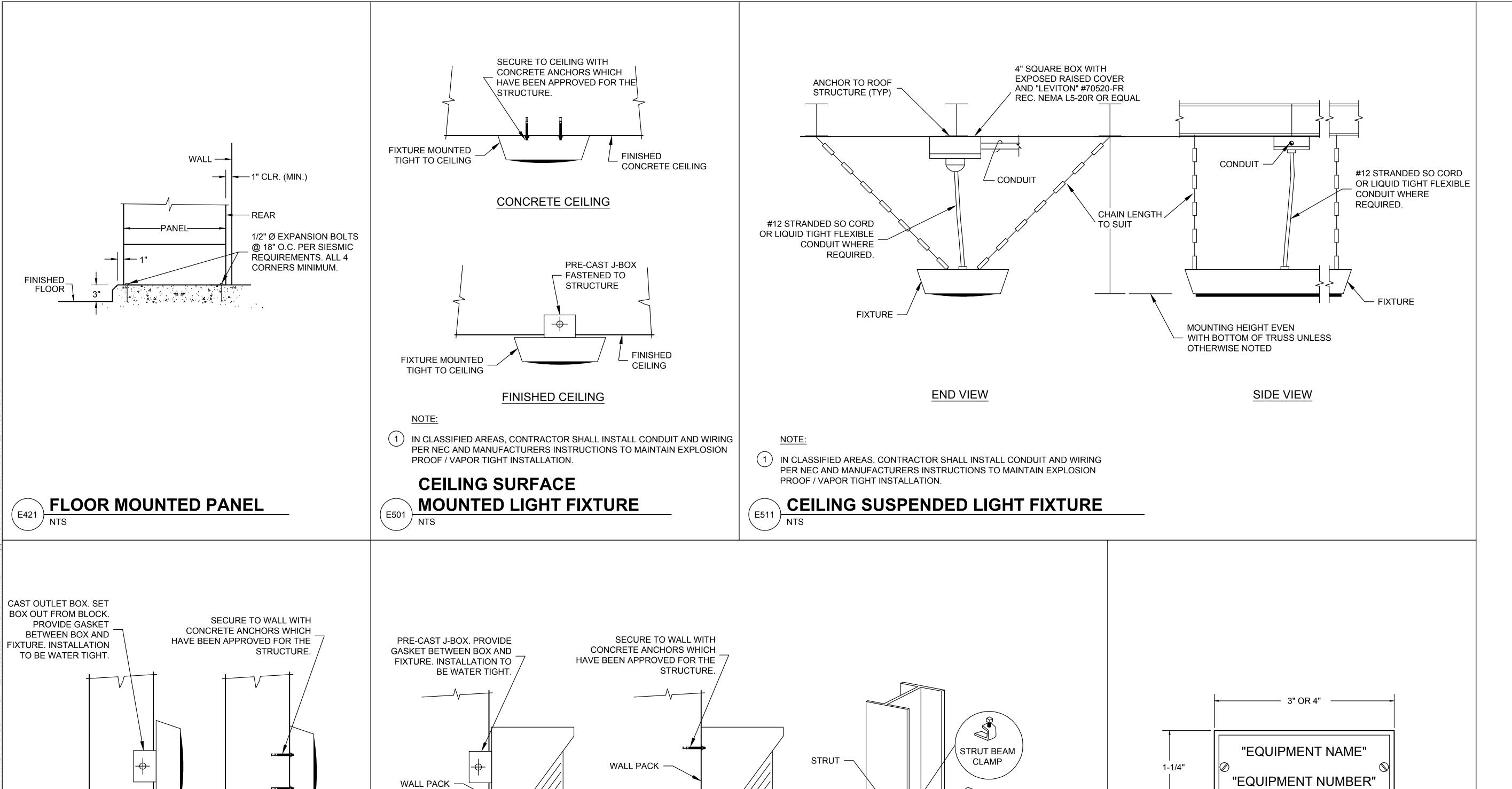
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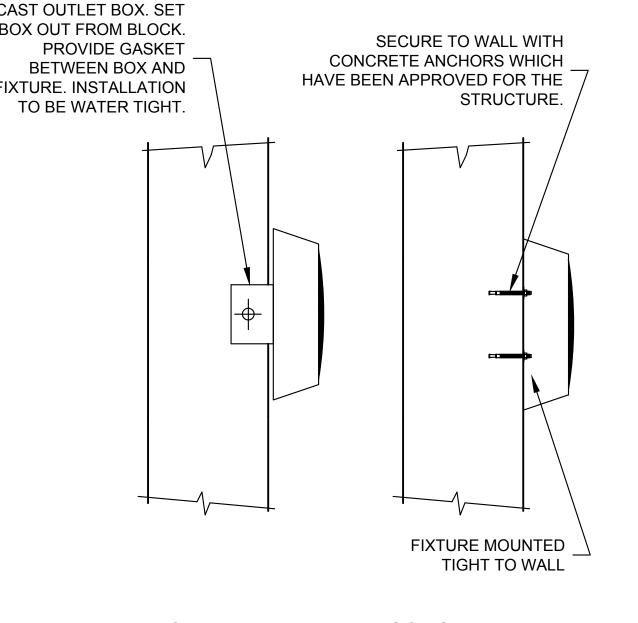
ONE INCH AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY LAST UPDATED: 10/9/2024

**DRAWING:** 

00-EZ-905

.1/31/25.





FINISHED WALL **CONCRETE WALL** 

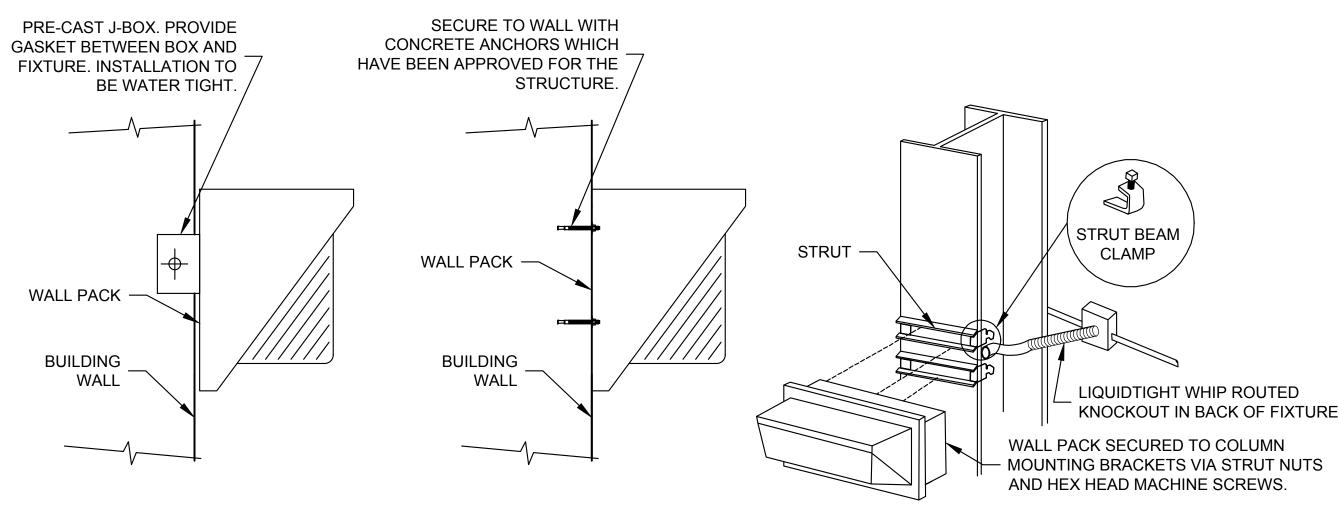
NOTE

(1) IN CLASSIFIED AREAS, CONTRACTOR SHALL INSTALL CONDUIT AND WIRING PER NEC AND MANUFACTURERS INSTRUCTIONS TO MAINTAIN EXPLOSION PROOF / VAPOR TIGHT INSTALLATION.

**WALL SURFACE MOUNTED LIGHT FIXTURE** 

(E531

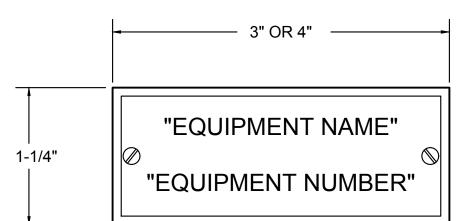
FINISHED WALL



METAL STRUCTURE

**CONCRETE WALL** 

STRUCTURE MOUNTED OUTDOOR LIGHT FIXTURE (WALL PACK)



NOTES:

- ALL LETTERS TO BE 1/4" UNLESS NOTED OTHERWISE.
- 2 ALL NAMEPLATES TO BE MOUNTED ON THE VERTICAL CENTERLINE OF THE CUBICAL OR DEVICE.
- (3) ATTACH ALL NAMEPLATES WITH STAINLESS STEEL SCREWS.
- 4 PROVIDE BLANK NAMEPLATES FOR ALL SPARE AND FUTURE DEVICES.
- (5) NAMEPLATE SHALL BE WHITE BACKGROUND WITH BLACK TEXT.

**ELECTRICAL EQUIPMENT NAMEPLATE**  No. 8730795-2202 JORDAN C. GARDNER

Salt Lake City, UT 84107 Phone: 801-547-0393 www.jub.com Subconsultant:

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**AGENCY** 

**REVIEW** 

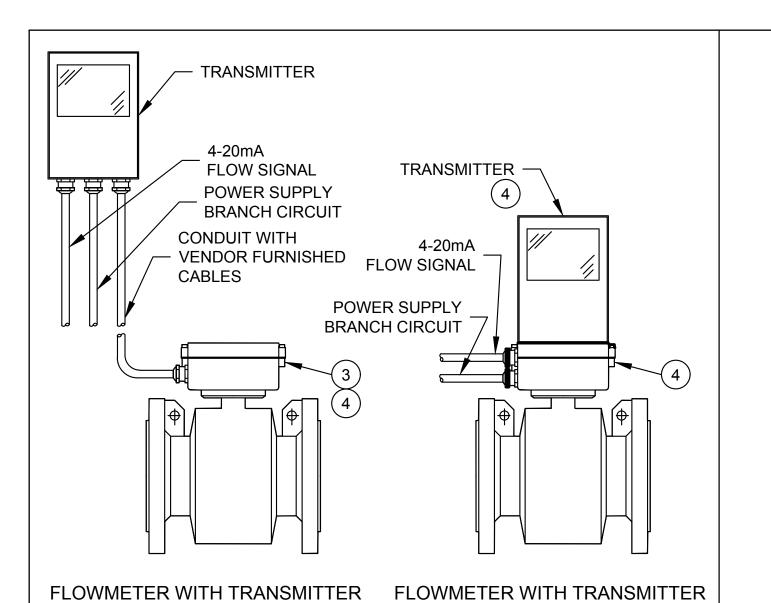
WRF PHASE 3 UPGRADES SANTAQUIN CITY ELECTRICAL - DETAIL (EZ) DETAILS 6

JUB PROJ. #:93-24-001 DRAWN BY: EGK / DCL DESIGN BY: JCG CHECKED BY: MPJ

ONE INCH AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY LAST UPDATED: 1/29/2025

**DRAWING:** 

00-EZ-906

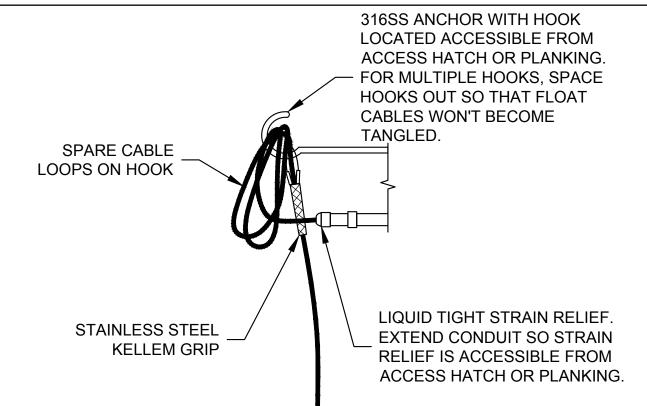


NOTES:

MOUNTED SEPARATELY

- ALL VENDOR FURNISHED CABLES SHALL BE CUT TO LENGTH AND TERMINATED PER MANUFACTURER'S RECOMMENDATIONS.
- (2) GROUND PER MANUFACTURER'S RECOMMENDATIONS.
- (3) IF FLOW SENSOR IS MOUNTED IN A HAZARDOUS, DAMP OR BELOW GRADE LOCATION, IT IS TO BE POTTED TO PROTECT IT FROM MOISTURE AND CORROSIVE AGENTS AND SHALL BE RATED FOR THAT LOCATION.
- (4) IF FLOW SENSOR AND/OR TRANSMITTER ARE TO BE EXPOSED TO DIRECT SUNLIGHT, PROVIDE PROTECTION FROM SUN OR VERIFY THAT EQUIPMENT PROVIDED IS RATED BY MFR. FOR DIRECT EXPOSURE TO

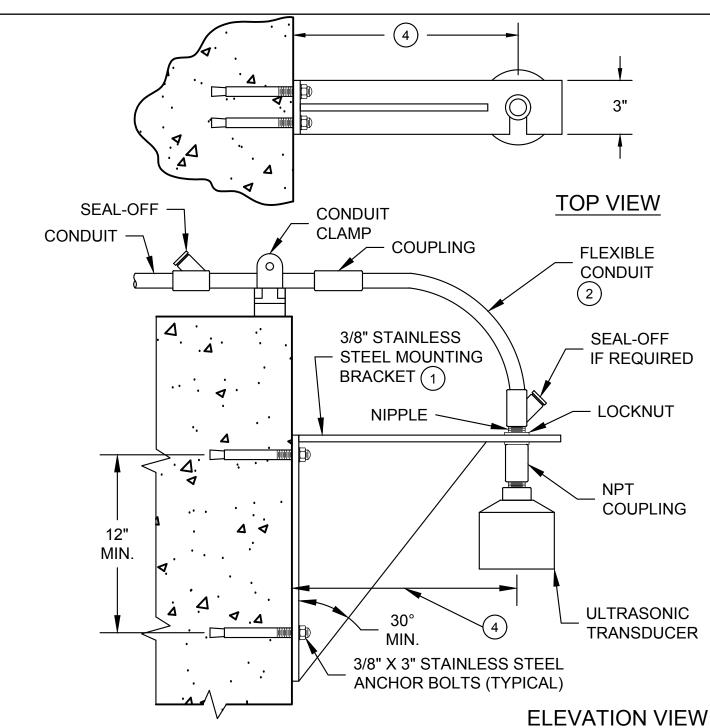


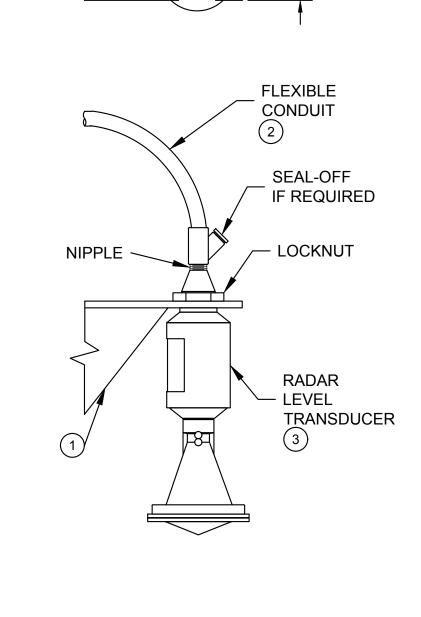


NOTES:

(1) FOLLOW ALL MANUFACTURERS REQUIREMENTS FOR PROPER INSTALLATION.

**ANCHOR HOOK** SUSPENDED FLOAT





4 ---

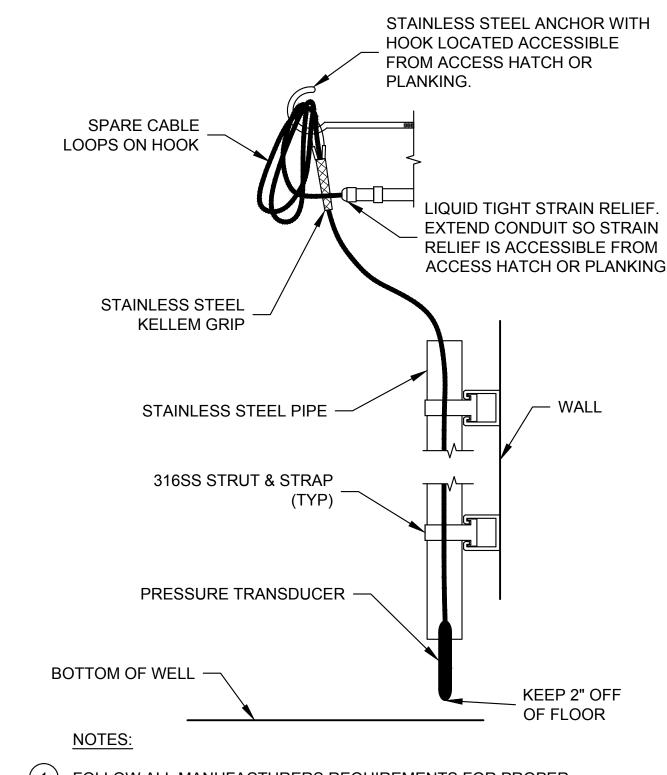
VERIFY BRACKET DIMENSIONS WITH THE TRANSDUCER MANUFACTURER, TO INSURE PROPER OPERATION.

NOTES:

- (2) FLEXIBLE CONDUIT MAY BE REPLACED WITH CORD GRIPS IF AREA IS NON-CLASSIFIED AND MANUFACTURER CABLE IS UV RATED OR CIRCUIT IS INTRINSICALLY SAFE.
  - **OPEN TANK ULTRASONIC/RADAR** LEVEL TRANSDUCER MOUNTING
- NOT MOUNT OVER INFLUENT FLOW PORTS.
- (4) DISTANCE TO WALL SHALL BE 6" MORE THAN BEAMWIIDTH AT BOTTOM OF TANK.

MOUNT WITH A CLEAR LINE OF SITE TO THE BOTTOM OF THE TANK. DO

- ALL HARDWARE TO BE 316SS.
- WHERE GRATING IS PRESENT, COORDINATE INSTRUMENT INSTALLATION LOCATION WITH GRATING PROVIDER TO ENSURE NECESSARY CUT OUT IS PROVIDED FOR INSTRUMENT INSTALLATION AND REMOVAL.

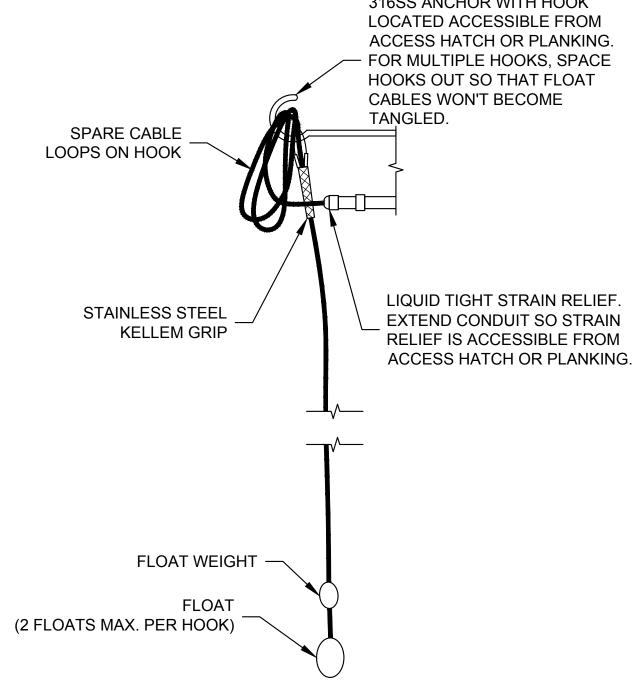


1) FOLLOW ALL MANUFACTURERS REQUIREMENTS FOR PROPER INSTALLATION.

2 CONDUIT SYSTEM TO BE INSTALLED PER NFPA 70 AND NFPA 820 AS REQUIRED.

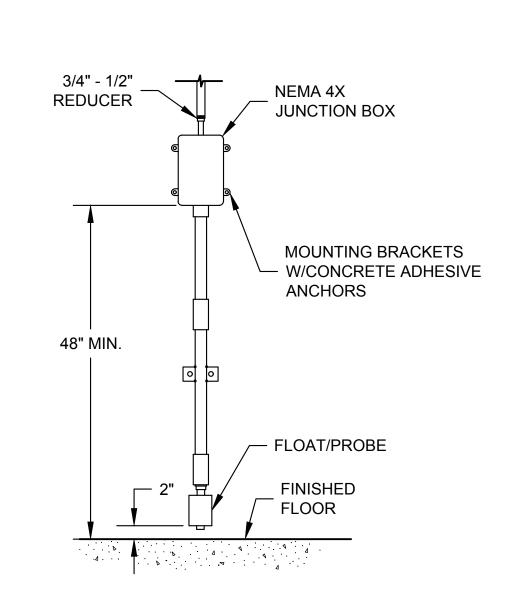
**ANCHOR HOOK** SUSPENDED TRANSDUCER

NTS



INSTALLATION.





NOTES:

(1) FOLLOW ALL MANUFACTURERS REQUIREMENTS FOR PROPER



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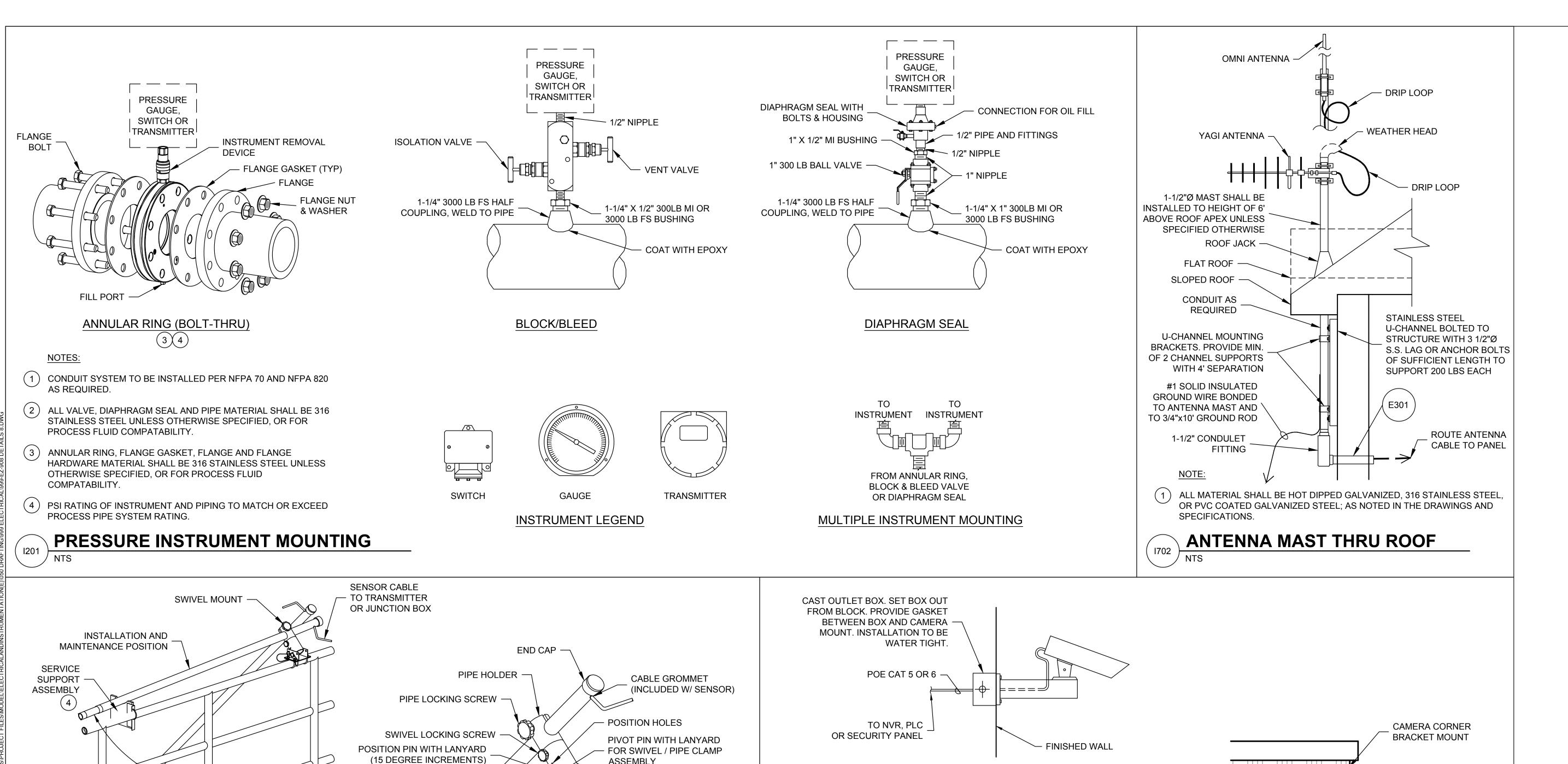
WRF PHASE 3 UPGRADES SANTAQUIN CITY ELECTRICAL - DETAIL (EZ) DETAILS 7

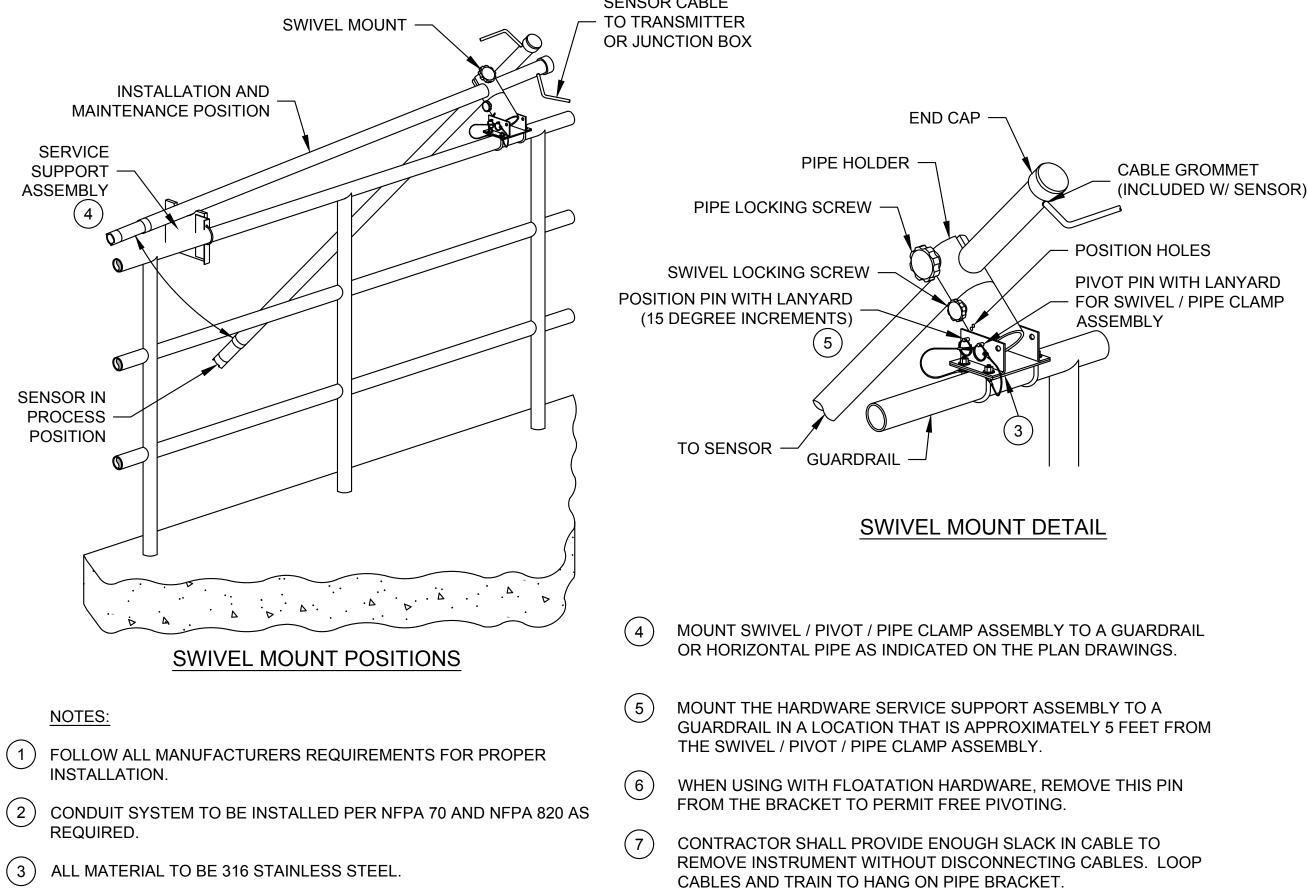
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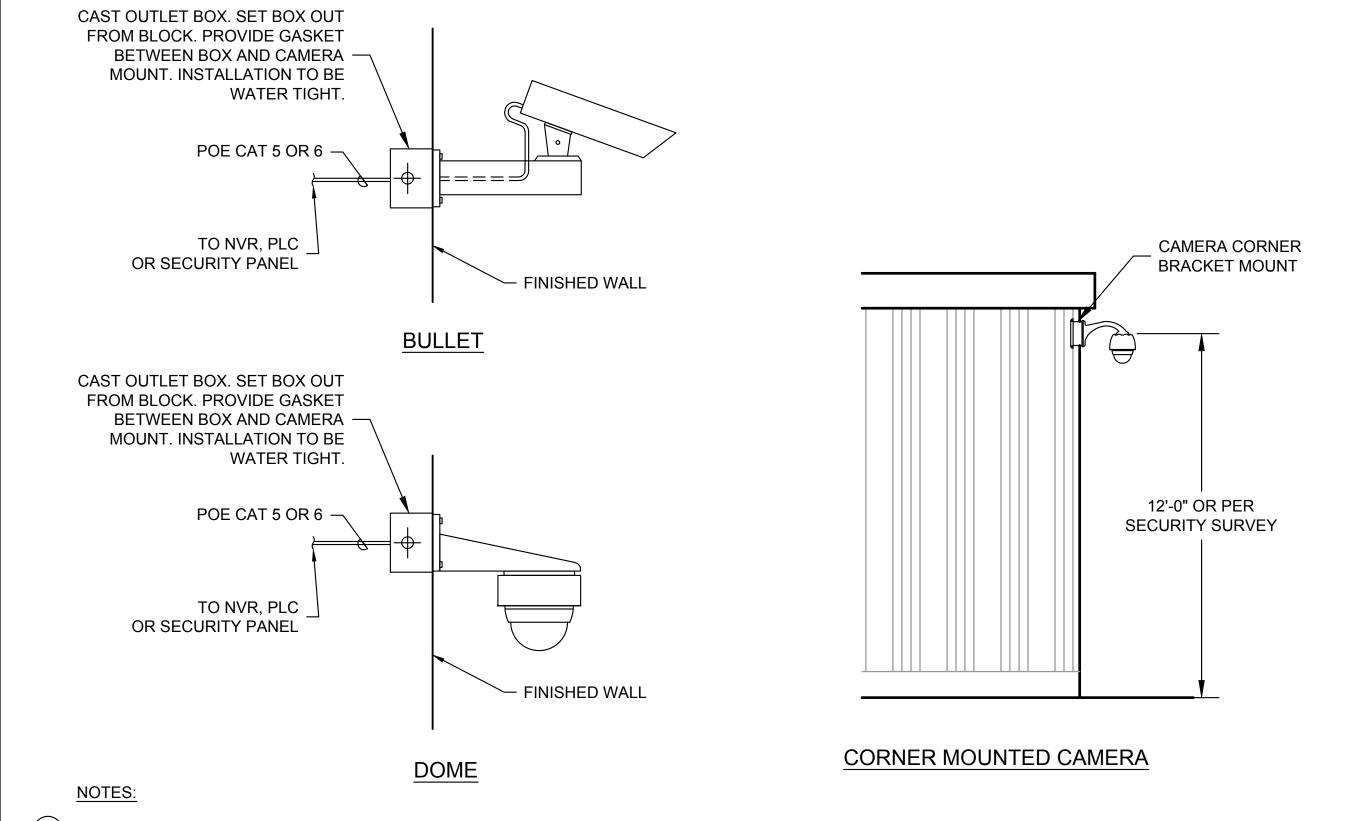
LAST UPDATED: 1/30/2025 **DRAWING:** 

00-EZ-907





IN-BASIN ANALYZER PROBE WITH SWIVEL MOUNT



MOUNT SECURITY CAMERA ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.

MOUNTING HEIGHT SHALL BE DETERMINED BY SECURITY SURVEY.

**WALL MOUNTED CAMERA** 

JUB
DRA
DES
CHE

No. 8730795-2202

JORDAN C.
GARDNER
1/31/25

OF UTAMORD

C

FILE:

JUB PROJ. #:93-24-001

DRAWN BY: EGK / DCL

DESIGN BY: JCG

CHECKED BY: MPJ

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

LAST UPDATED: 1/30/2025

DRAWING:

WRF PHASE 3 UPGRADES SANTAQUIN CITY

ELECTRICAL - DETAIL (EZ) DETAILS 8

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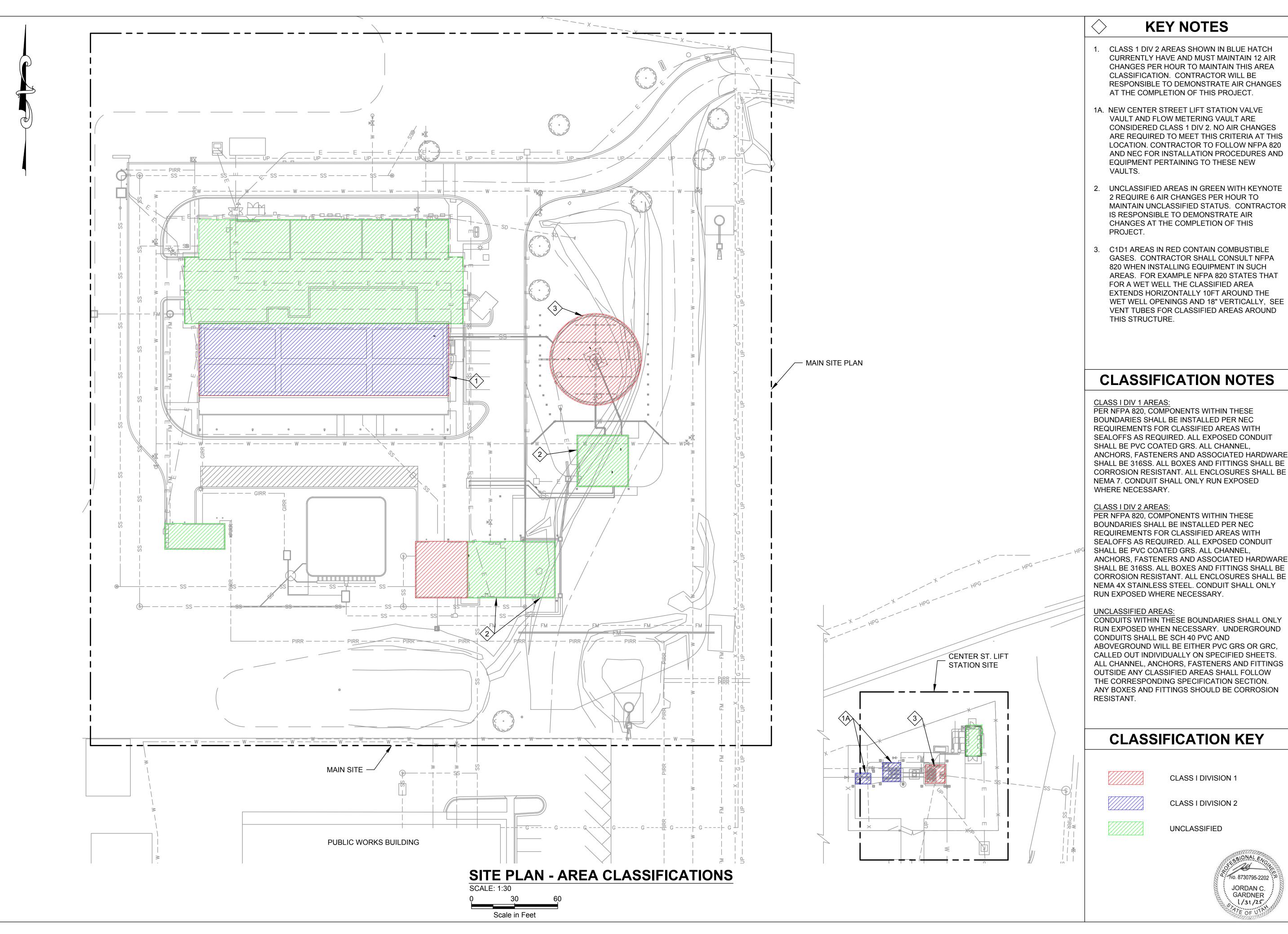
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00-EZ-908





1. CLASS 1 DIV 2 AREAS SHOWN IN BLUE HATCH CURRENTLY HAVE AND MUST MAINTAIN 12 AIR CHANGES PER HOUR TO MAINTAIN THIS AREA CLASSIFICATION. CONTRACTOR WILL BE RESPONSIBLE TO DEMONSTRATE AIR CHANGES

1A. NEW CENTER STREET LIFT STATION VALVE VAULT AND FLOW METERING VAULT ARE CONSIDERED CLASS 1 DIV 2. NO AIR CHANGES ARE REQUIRED TO MEET THIS CRITERIA AT THIS LOCATION. CONTRACTOR TO FOLLOW NFPA 820 AND NEC FOR INSTALLATION PROCEDURES AND EQUIPMENT PERTAINING TO THESE NEW

2. UNCLASSIFIED AREAS IN GREEN WITH KEYNOTE 2 REQUIRE 6 AIR CHANGES PER HOUR TO MAINTAIN UNCLASSIFIED STATUS. CONTRACTOR IS RESPONSIBLE TO DEMONSTRATE AIR CHANGES AT THE COMPLETION OF THIS

3. C1D1 AREAS IN RED CONTAIN COMBUSTIBLE GASES. CONTRACTOR SHALL CONSULT NFPA 820 WHEN INSTALLING EQUIPMENT IN SUCH AREAS. FOR EXAMPLE NFPA 820 STATES THAT FOR A WET WELL THE CLASSIFIED AREA EXTENDS HORIZONTALLY 10FT AROUND THE WET WELL OPENINGS AND 18" VERTICALLY, SEE VENT TUBES FOR CLASSIFIED AREAS AROUND THIS STRUCTURE.

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PER NFPA 820, COMPONENTS WITHIN THESE BOUNDARIES SHALL BE INSTALLED PER NEC REQUIREMENTS FOR CLASSIFIED AREAS WITH SEALOFFS AS REQUIRED. ALL EXPOSED CONDUIT SHALL BE PVC COATED GRS. ALL CHANNEL ANCHORS, FASTENERS AND ASSOCIATED HARDWARE SHALL BE 316SS. ALL BOXES AND FITTINGS SHALL BE CORROSION RESISTANT. ALL ENCLOSURES SHALL BE NEMA 4X STAINLESS STEEL. CONDUIT SHALL ONLY RUN EXPOSED WHERE NECESSARY.

CONDUITS WITHIN THESE BOUNDARIES SHALL ONLY RUN EXPOSED WHEN NECESSARY. UNDERGROUND CONDUITS SHALL BE SCH 40 PVC AND ABOVEGROUND WILL BE EITHER PVC GRS OR GRC, CALLED OUT INDIVIDUALLY ON SPECIFIED SHEETS. ALL CHANNEL, ANCHORS, FASTENERS AND FITTINGS OUTSIDE ANY CLASSIFIED AREAS SHALL FOLLOW THE CORRESPONDING SPECIFICATION SECTION. ANY BOXES AND FITTINGS SHOULD BE CORROSION

## **CLASSIFICATION KEY**

**CLASS I DIVISION 1** 

CLASS I DIVISION 2

**UNCLASSIFIED** 

No. 8730795-2202 JORDAN C. GARDNER . 1/31/25.

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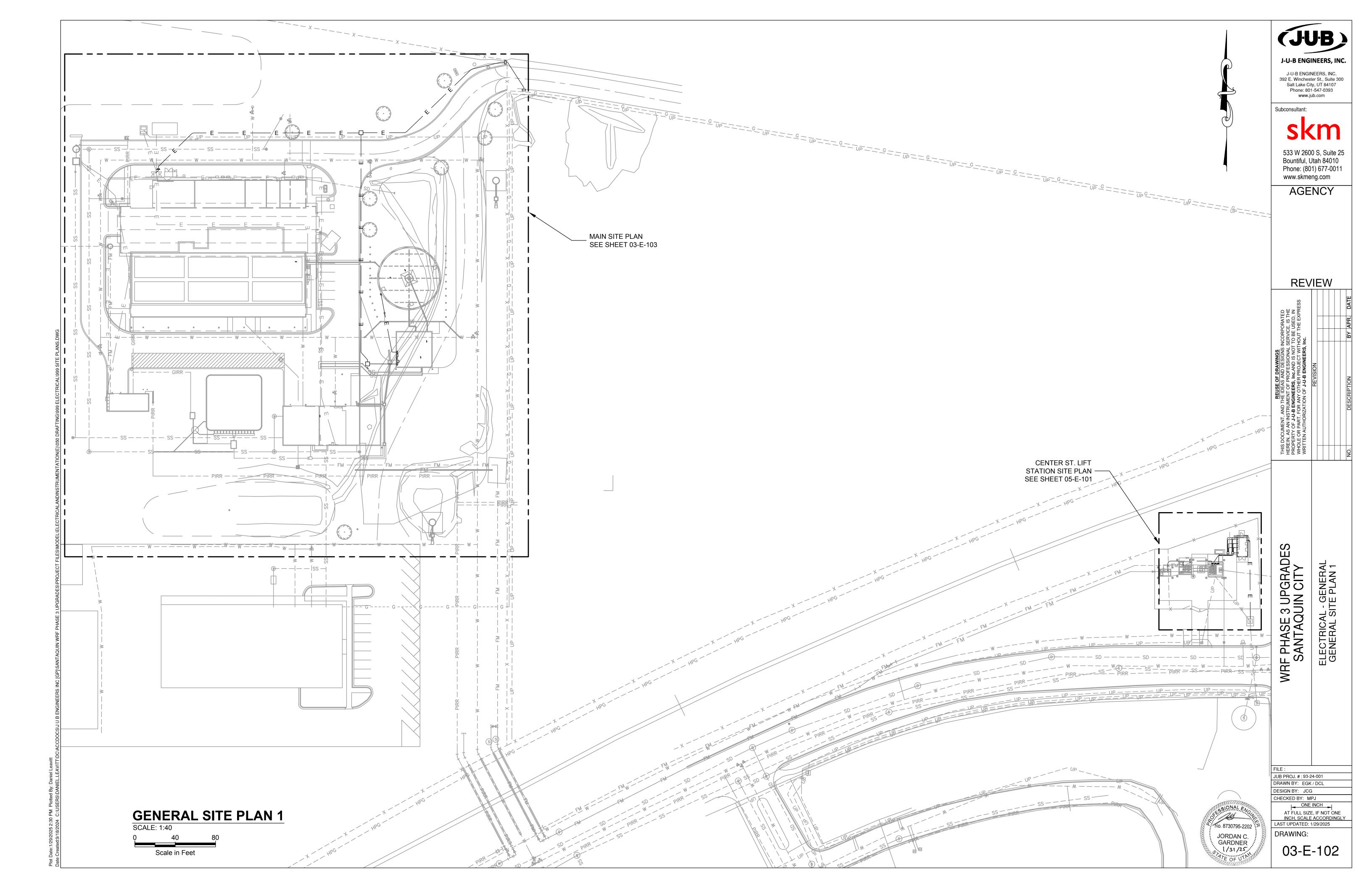
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LAST UPDATED: 1/29/2025

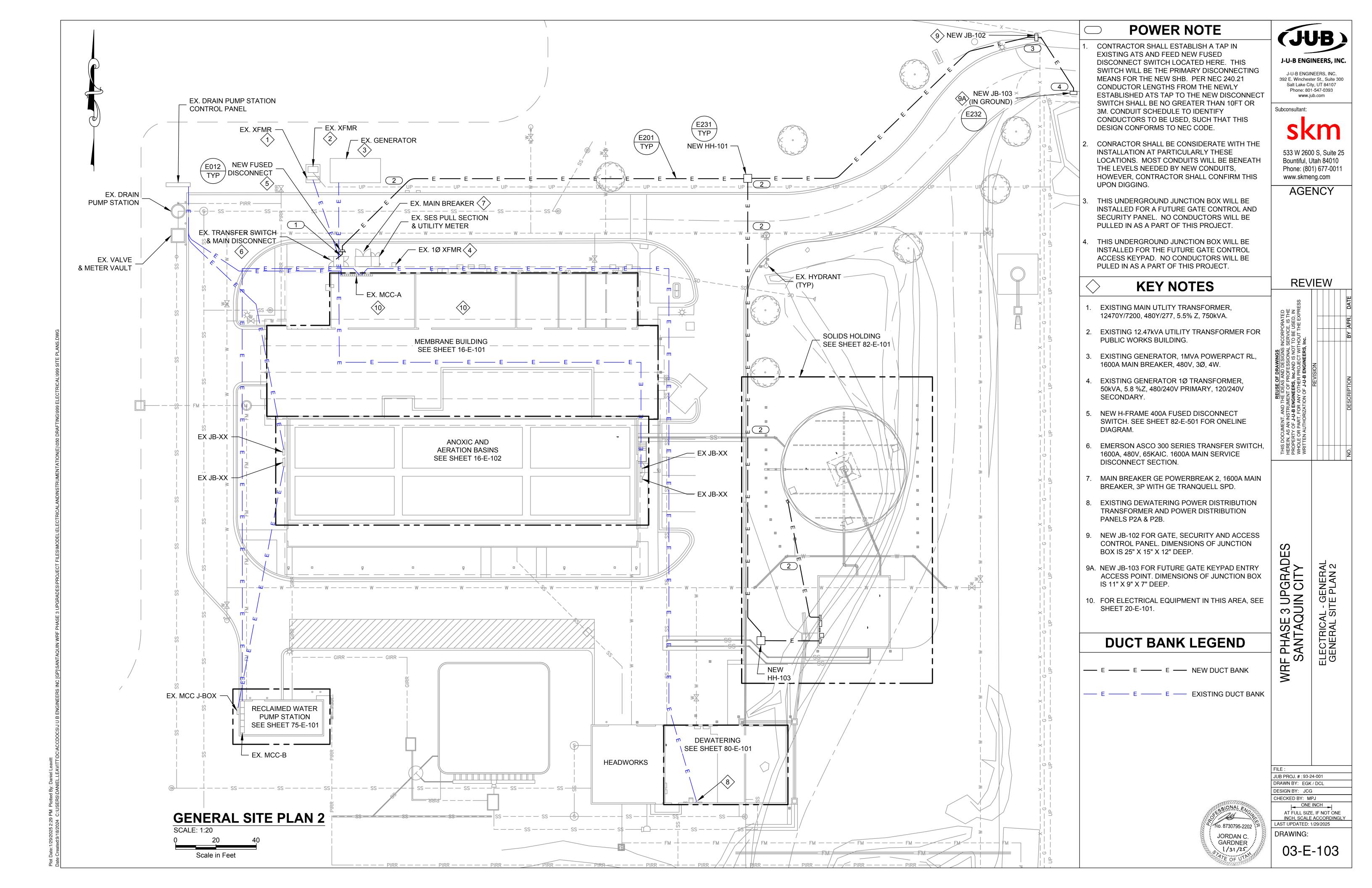
ELECTRICAL - GENERAL PLAN - AREA CLASSIFICATIONS

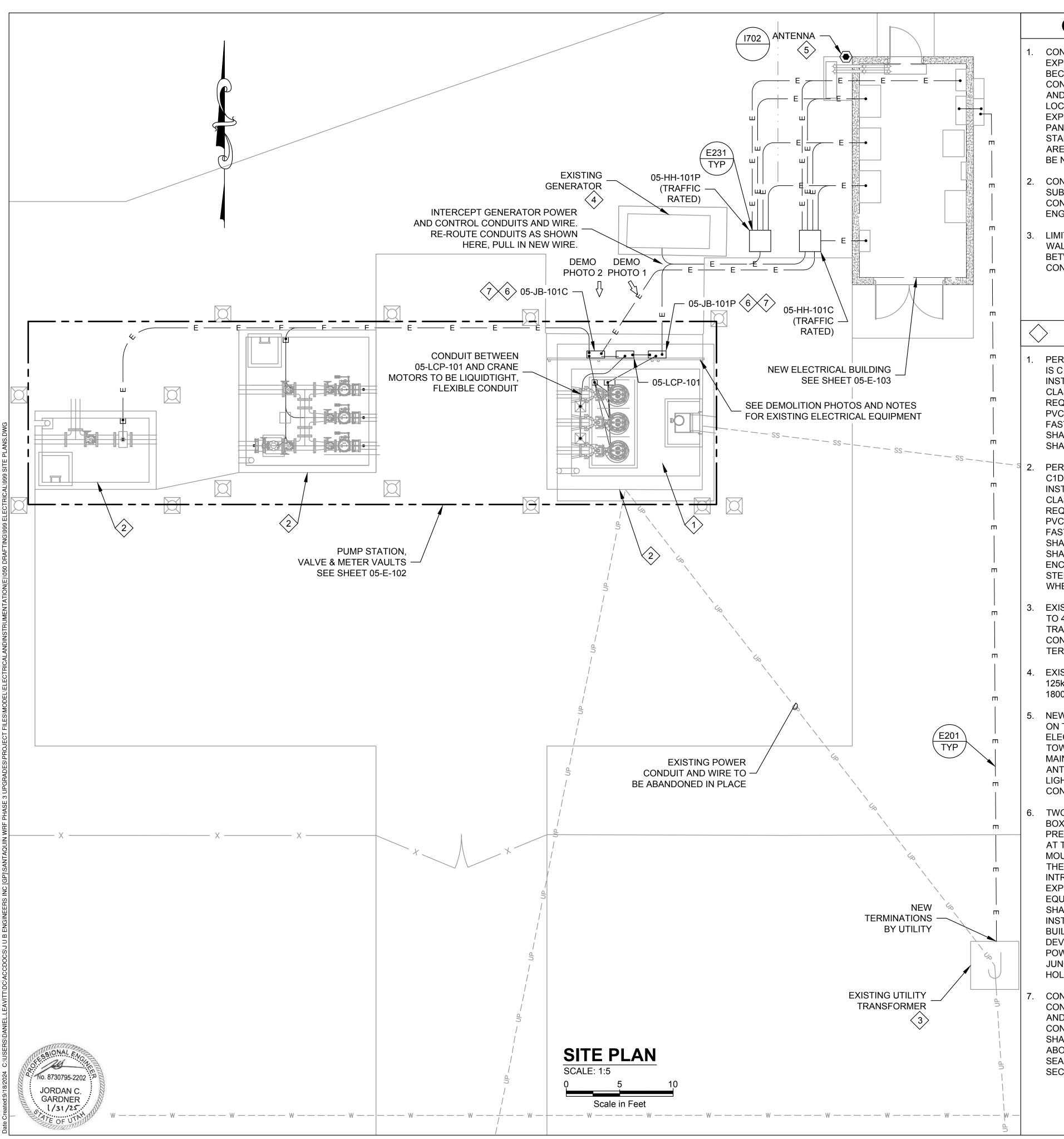
GRADE CITY

WRF PHASE 3 UPG SANTAQUIN C

**DRAWING:** 







### **GENERAL NOTES**

- CONTRACTOR SHALL RUN CONDUIT EXPOSED ONLY WHEN NECESSARY. BECAUSE THESE ARE NEW STRUCTURES CONTRACTOR SHALL UTILIZE UNDERGROUND AND STUBBED UP CONDUIT AT THIS LOCATION IN MOST CASES. CONDUIT THAT IS EXPOSED SHALL BE PVC COATED. NEW PANELS THAT ARE OUTSIDE SHALL BE STANLESS STEEL NEMA 4X. PANELS THAT ARE ON THE INSIDE OF THE BUILDING SHALL BE NEMA 12.
- CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING CONDUIT DETAILS AND A CONDUIT ROUTING PLAN TO THE ELECTRICAL ENGINEER FOR APPROVAL.
- LIMIT EXPOSED CONDUITS, 90° BENDS AND WALL PENETRATIONS. MAINTAIN SEPARATION BETWEEN SIGNAL AND POWER-CARRYING CONDUITS.

## **KEY NOTES**

- PER NFPA 820, INSIDE THE WET WELL VAULT IS C1D1 AND ALL COMPONENETS SHALL BE INSTALLED PER NEC REQUIREMENTS FOR CLASSIFIED AREAS WITH SEALOFFS AS REQUIRED. ALL EXPOSED CONDUIT SHALL BE PVC COATED GRS. ALL CHANNEL, ANCHORS, FASTENERS AND ASSOCIATED HARDWARE SHALL BE 316SS. ALL BOXES AND FITTINGS SHALL BE CORROSION RESISTANT.
- PER NFPA 820, COMPONENTS WITHIN THE C1D2 BOUNDARY ABOVE GROUND SHALL BE INSTALLED PER NEC REQUIREMENTS FOR CLASSIFIED AREAS WITH SEALOFFS AS REQUIRED. ALL EXPOSED CONDUIT SHALL BE PVC COATED GRS. ALL CHANNEL, ANCHORS, FASTENERS AND ASSOCIATED HARDWARE SHALL BE 316SS. ALL BOXES AND FITTINGS SHALL BE CORROSION RESISTANT. ALL **ENCLOSURES SHALL BE NEMA 4X STAINLESS** STEEL. CONDUIT SHALL ONLY RUN EXPOSED WHERE NECESSARY.
- EXISTING UTILITY TRANSFORMER, 12470Y/7200 TO 480V/277, 3%Z, 75kVA. TERMINATIONS TO TRANSFORMER BY UTILITY. DUCT BANK AND CONDUCTORS BY CONTRACTOR. NEW TERMINATIONS TO METER BY UTILITY
- EXISTING CATERPILLAR GENERATOR D100-6, 125kVA (100kW), 480/277V, 3Ø, 60HZ, 150A, 1800RPM.
- NEW YAGI RADIO ANTENNA TO BE INSTALLED ON THE NORTHWEST CORNER OF THE NEW ELECTRICAL BUILDING AND POINTED TOWARDS THE RECEIVING ANTENNA AT THE MAIN PLANT ACCORDING TO DETAIL 1702. ANTENNA SHALL BE CONNECTED TO A LIGHTNING ARRESTOR AND RADIO INSIDE THE CONTROL PANEL.
- TWO NEMA 4X 316SS 12" X 12" X 6" JUNCTION BOXES WILL HOUSE TERMINALS FOR LEVEL, PRESSURE FLOW INSTRUMENTS AND POWER, AT THE LIFT STATION. THESE JB'S SHALL BE MOUNTED AT LEAST 18" ABOVE THE TOP OF THE WET WELL USING DETAIL 012. NEW INTRINSIC BARRIERS WILL BE USED FOR EXPLOSION PROTECTION FOR LEVEL EQUIPMENT IN THE WELL. THE BARRIERS SHALL BE INSTALLED IN THE INSTRUMENTATION PANEL IN THE ELECTRICAL BUILDING. SEE CONDUIT SCHEDULES AND DEVELOPMENTS FOR INSTRUMENT AND POWER ROUTING THROUGH THE NEW JUNCTION BOXES AND IN GROUND HAND HOLES.
- CONTRATOR SHALL INSTALL SEAL OFFS ON CONDUITS THAT ENTER A CLASSIFIED SPACE AND RETURN TO THE NEW POWER AND CONTROL JUNCTION BOXES. THE SEAL OFFS SHALL BE INSTALLED AT A LOCATION JUST ABOVE GRADE WHERE CONDUITS STUB UP. SEAL OFFS SHALL BE INSTALLED PER NEC SECITON 501 AND DETAIL 377.



### **DEMO PHOTO 1**



#### **DEMO PHOTO 2**

### **DEMO PHOTO KEY NOTES**

- 1. EXISTING CONTROL PANEL TO BE REMOVED AND RELOCATED TO THE NEW ELECTRICAL BUILDING. EXTERNAL CONTROL WIRE TO BE DISCARDED. INTERNAL WIRE TO REMAIN AND BE RE-USED AFTER PANEL RELOCATION.
- 2. EXISTING MAIN BREAKER AND UTILITY METER TO BE REMOVED. COORDINATE WITH UTILITY AND OWNER FOR SALVAGED EQUIPMENT.
- 3. EXISTING GENERATOR ATS TO BE REMOVED AND SALVAGED TO OWNER.
- 4. EXISTING PUMP PANEL TO BE REMOVED AND RETURNED TO OWNER.
- 5. EXISTING SCADA PANEL AND ANTENNA TO BE REMOVED AND RETURNED TO OWNER.
- RETURNED TO OWNER. 7. EXISTING MAGMETER DISPLAY TO BE REMOVED AND

RETURNED TO OWNER.

6. EXISTING MINI POWER CENTER TO BE REMOVED AND

- 8. EXISTING STRUT H-FRAME TO REMAIN IN PLACE. ALL WIRE FROM DEMOLISHED EQUIPMENT TO BE REMOVED BACK TO SOURCE AND ANY UNUSED CONDUIT TO BE CAPPED BELOW GROUND AND ABANDONED.
- 9. EXISTING STANCHION MOUNTED LIGHTS TO BE REMOVED.
- 10. EXISTING CONCRETE PAD TO BE DEMOLISHED. CONCRETE WILL BE RE-POURED ACCORDING TO STRUCTURAL DETAILS AFTER NEW CONDUITS HAVE BEEN INSTALLED.
- 11. EXISTING CONDUITS TO BE REMOVED AND REPLACED BY NEW CONDUITS ACCORDING TO THE SITE PLANS AND CONDUIT SCHEDULE.
- 12. EXISTING WET WELL INSTRUMENTS SUCH AS FLOATS, AND LEVEL TRANSDUCER SHALL BE REMOVED AND DISCARDED.

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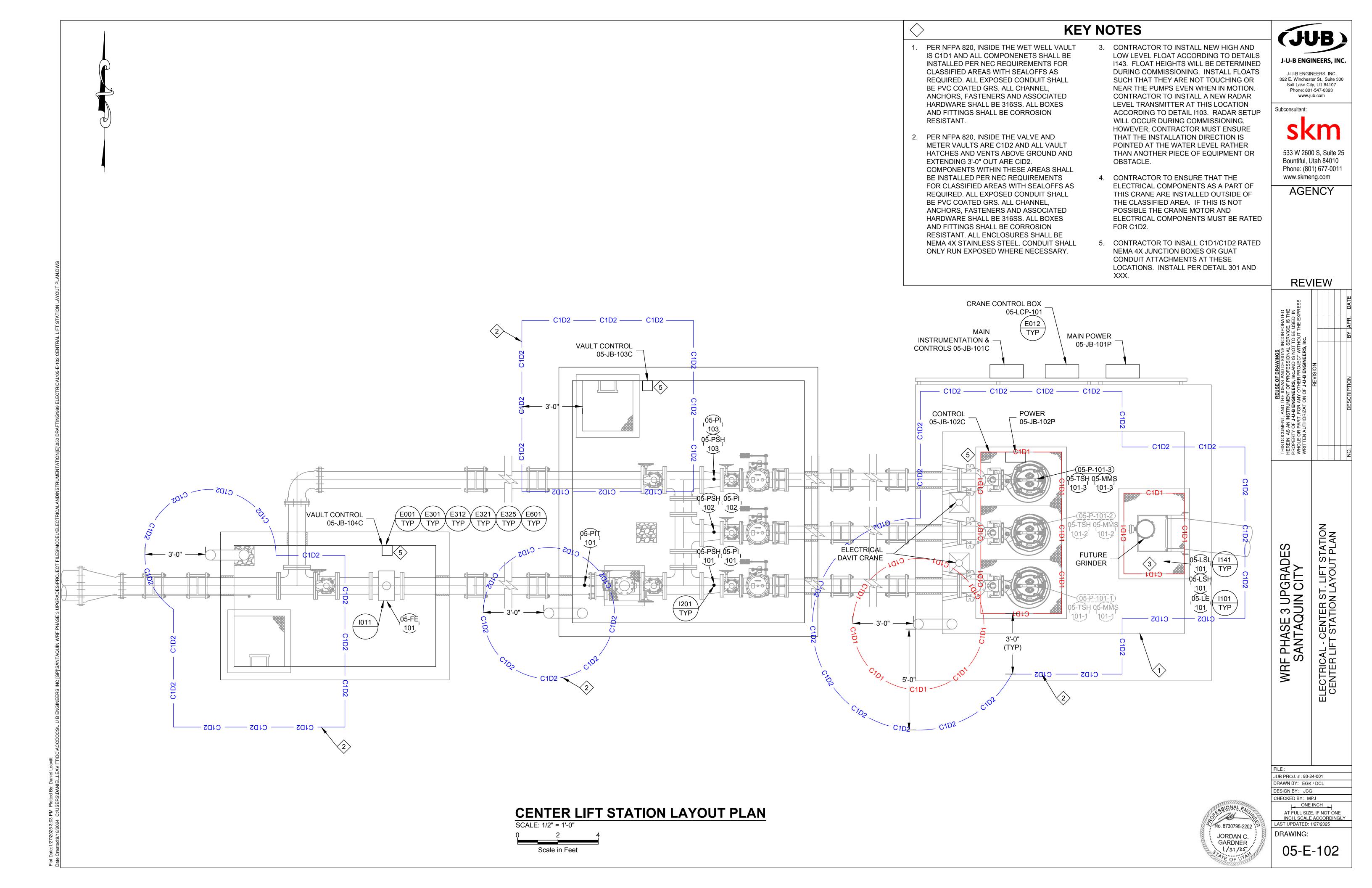
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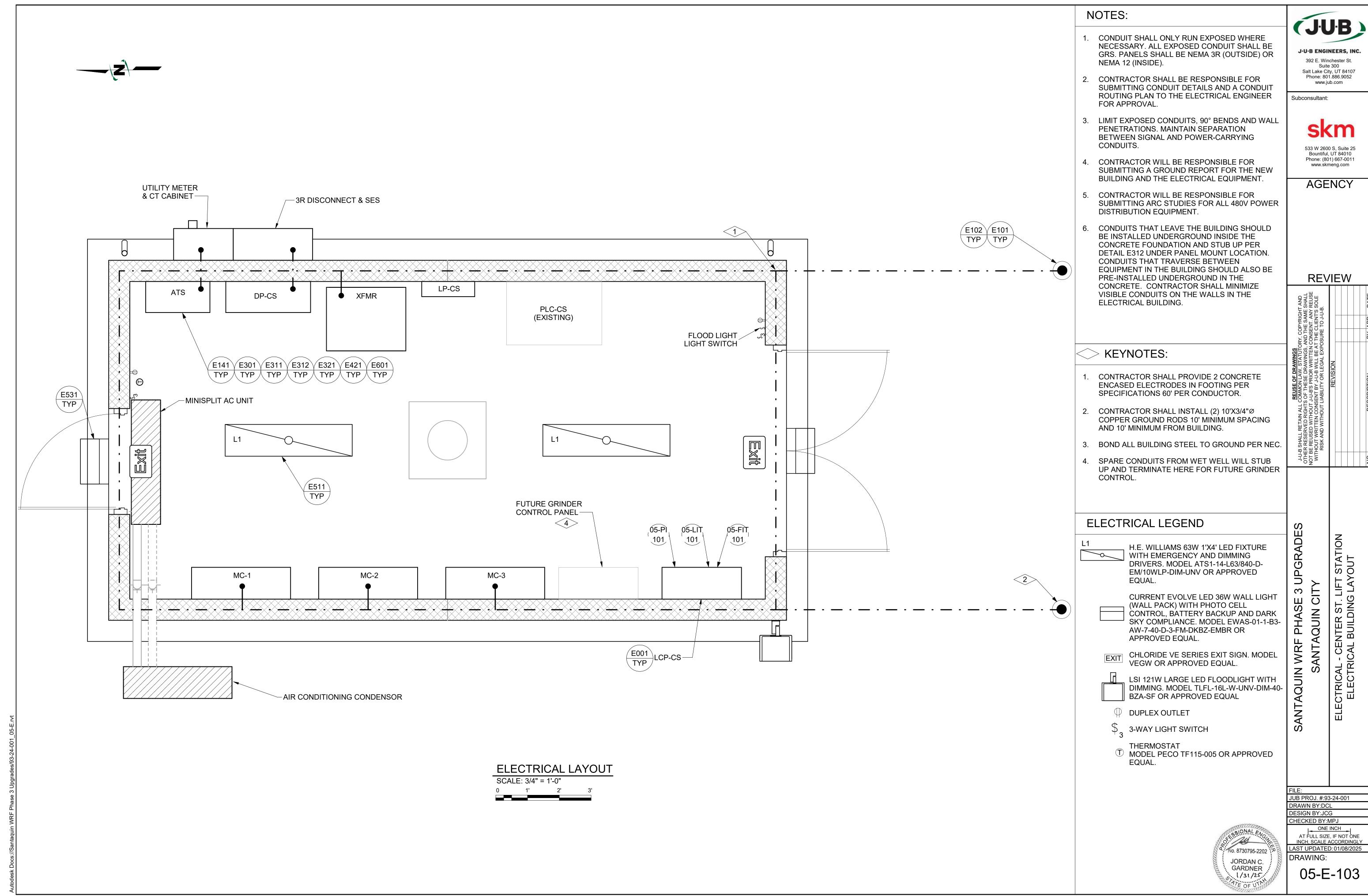
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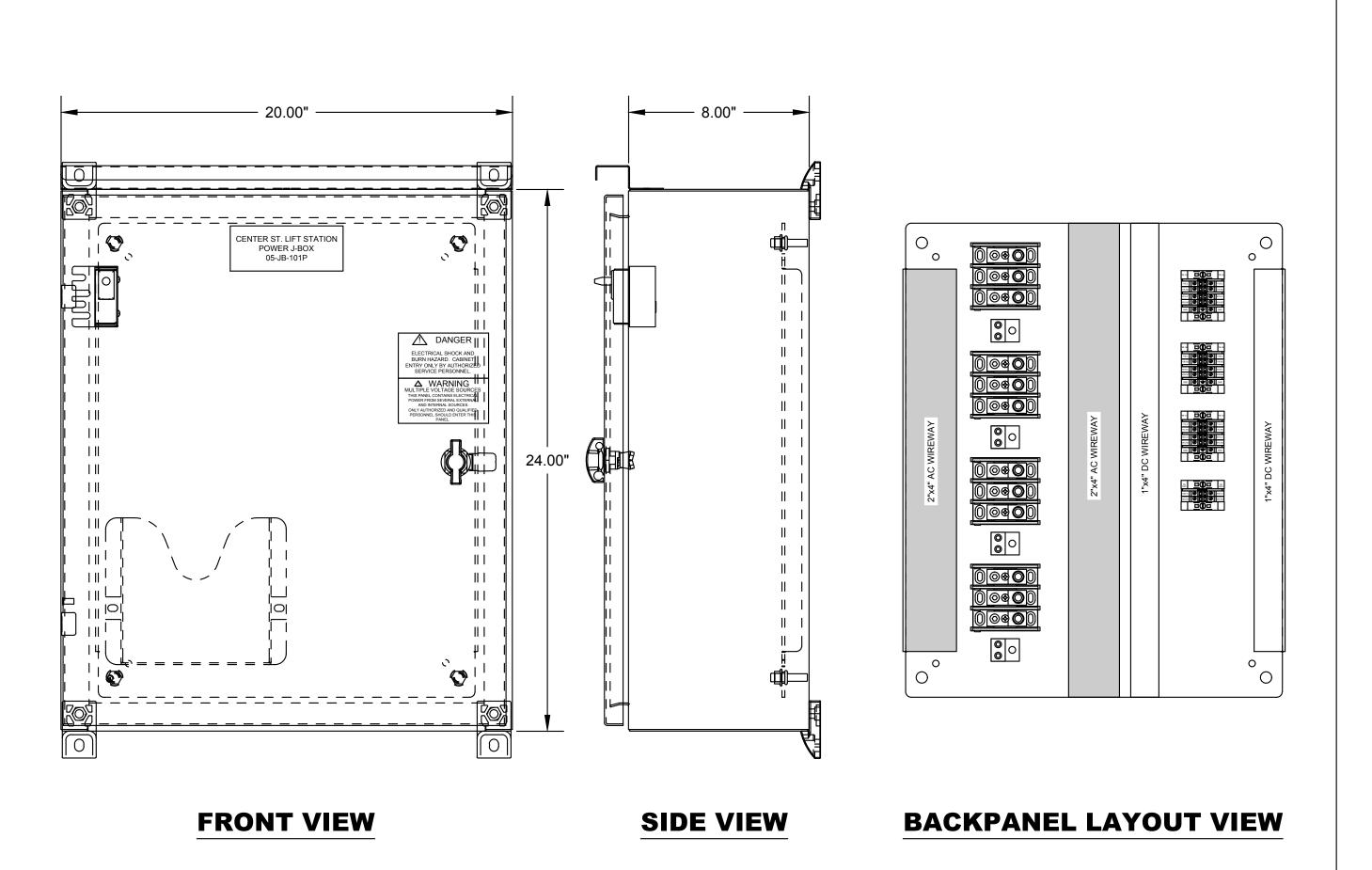
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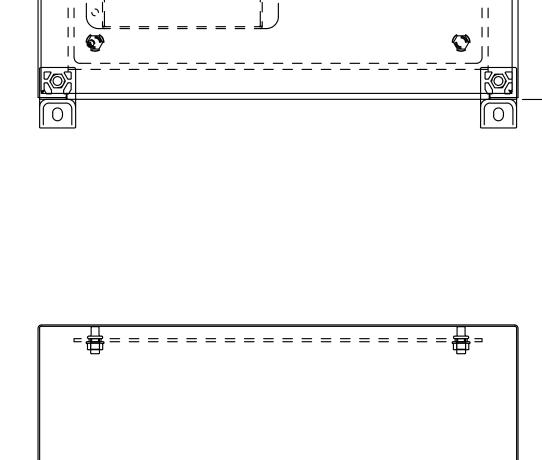
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INSTRUMENTATION J-BOX 05-JB-101C

CENTER ST. LIFT STATION **INSTRUMENTATION J-BOX** 05-JB-101P

WARNING MULTIPLE VOLTAGE SOURCES POWER FROM SEVERAL EXTERNAL AND INTERNAL SOURCES. ONLY AUTHORIZED AND QUALIFIED PERSONNEL SHOULD ENTER THIS PANEL.

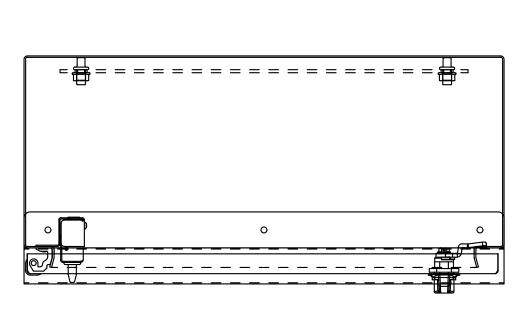
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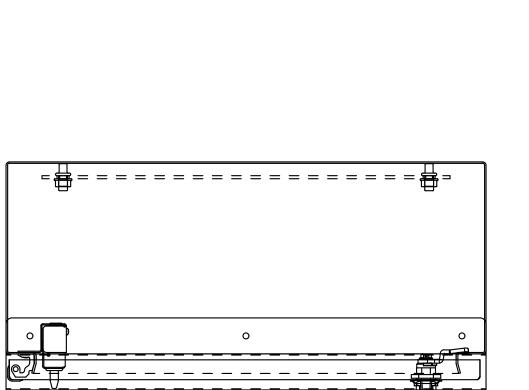
DANGER

**ELECTRICAL SHOCK AND** BURN HAZARD. CABINET **ENTRY ONLY BY AUTHORIZED** SERVICE PERSONNEL

**PANEL LABELS** 

**05-JB-101C PANEL LAYOUT** 





ELECTRICAL - CENTER ST. LIFT STATION J-BOX PANEL LAYOUTS WRF PHASE 3 UPGRADES SANTAQUIN CITY

(JUB)

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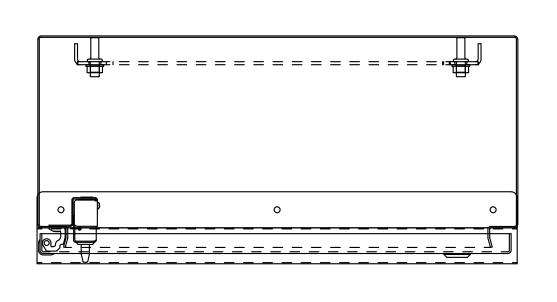
ONE INCH

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No. 8730795-2202 JORDAN C. GARDNER 1/31/25 05-E-201



**TOP VIEW** 

CENTER ST. LIFT STATION **POWER J-BOX** 05-JB-101P

WARNING **MULTIPLE VOLTAGE SOURCES** POWER FROM SEVERAL EXTERNAL AND INTERNAL SOURCES. ONLY AUTHORIZED AND QUALIFIED PERSONNEL SHOULD ENTER THIS PANEL.

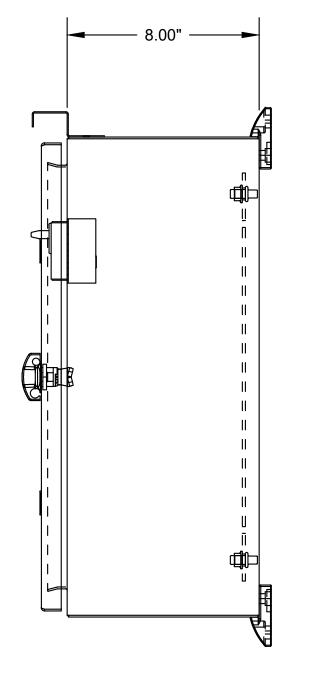


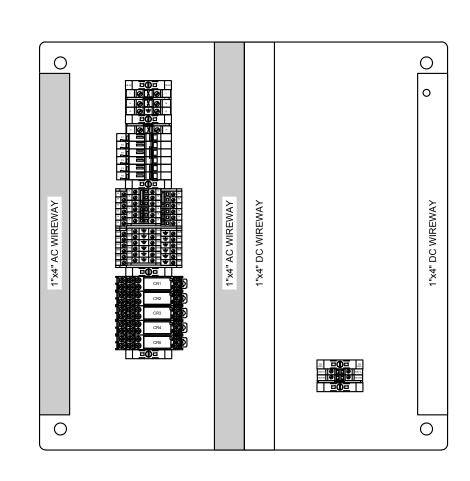
DANGER

**ELECTRICAL SHOCK AND** BURN HAZARD. CABINET ENTRY ONLY BY AUTHORIZED SERVICE PERSONNEL

**PANEL LABELS** 

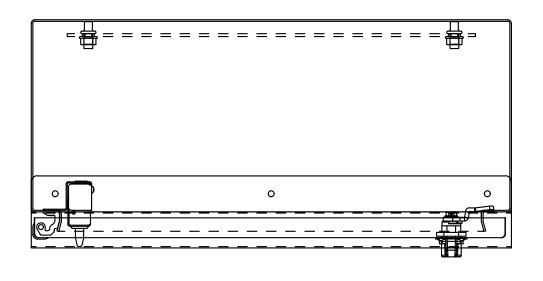
**05-JB-101P PANEL LAYOUT** 





FRONT VIEW SIDE VIEW

**BACKPANEL LAYOUT VIEW** 



**TOP VIEW** 

CENTER ST. LIFT STATION
CRANE CONTROL BOX
05-LCP-101

WARNING
MULTIPLE VOLTAGE SOURCES
THIS PANEL CONTAINS ELECTRICAL
POWER FROM SEVERAL EXTERNAL
AND INTERNAL SOURCES.
ONLY AUTHORIZED AND QUALIFIED
PERSONNEL SHOULD ENTER THIS
PANEL.



DANGER

ELECTRICAL SHOCK AND BURN HAZARD. CABINET ENTRY ONLY BY AUTHORIZED SERVICE PERSONNEL.

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WRF PHASE 3 UPGRADES
SANTAQUIN CITY
ELECTRICAL - CENTER ST. LIFT STATION
CRANE CONTROL BOX LAYOUT

FILE:

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DRAWN BY: EGK / DCL

DESIGN BY: JCG

CHECKED BY: MPJ

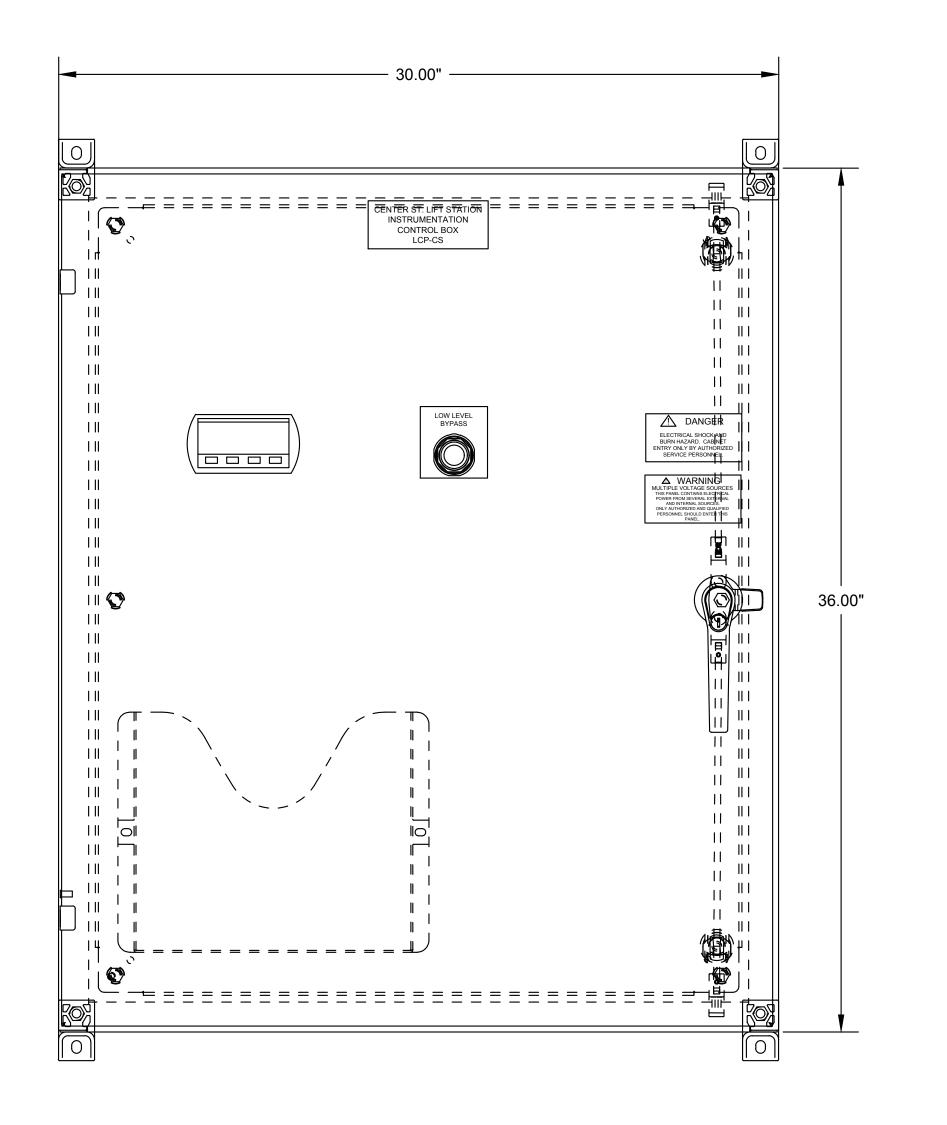
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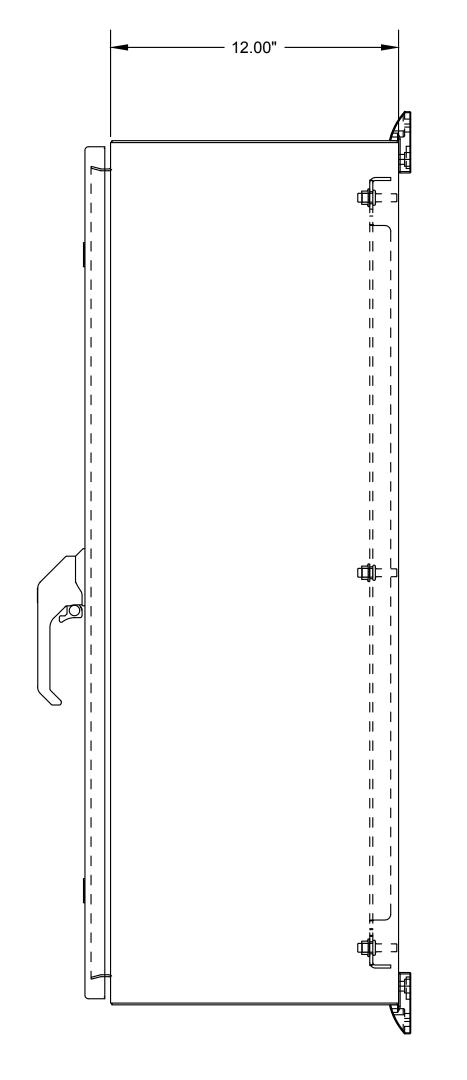
JORDAN C. GARDNER 1/31/25 ONE INCH

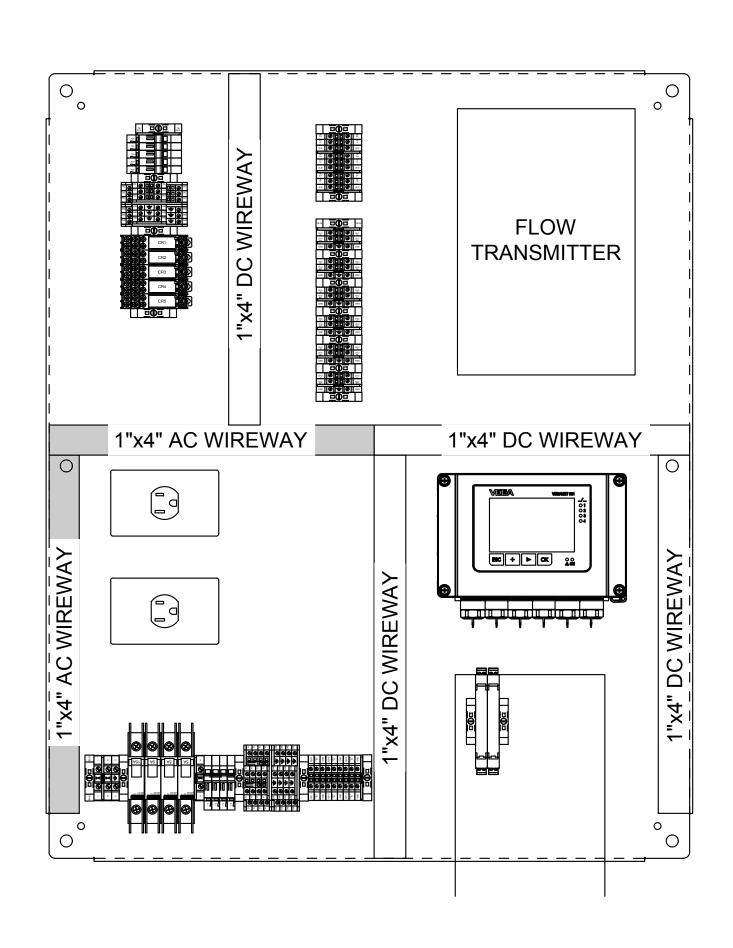
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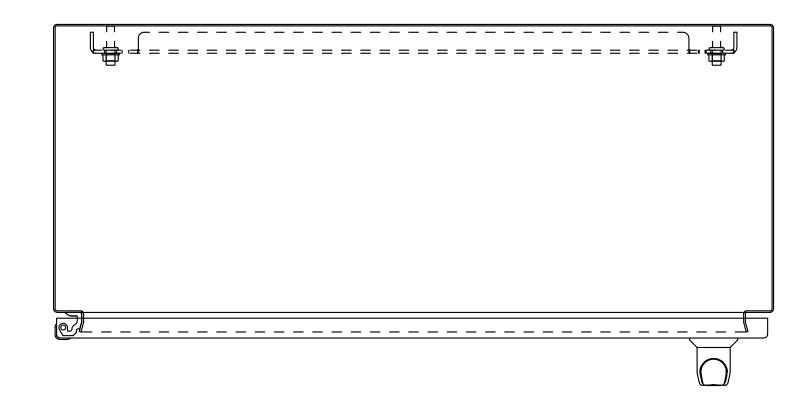




**FRONT VIEW** 

**SIDE VIEW** 

**BACKPANEL LAYOUT VIEW** 



**TOP VIEW** 

CENTER ST. LIFT STATION INSTRUMENTATION CONTROL BOX LCP-CS

DANGER

**ELECTRICAL SHOCK AND** BURN HAZARD. CABINET ENTRY ONLY BY AUTHORIZED SERVICE PERSONNEL.

**PANEL LABELS** 

# WARNING MULTIPLE VOLTAGE SOURCES

THIS PANEL CONTAINS ELECTRICAL POWER FROM SEVERAL EXTERNAL AND INTERNAL SOURCES. ONLY AUTHORIZED AND QUALIFIED PERSONNEL SHOULD ENTER THIS PANEL.

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No. 8730795-2202 JORDAN C. GARDNER 1/31/25

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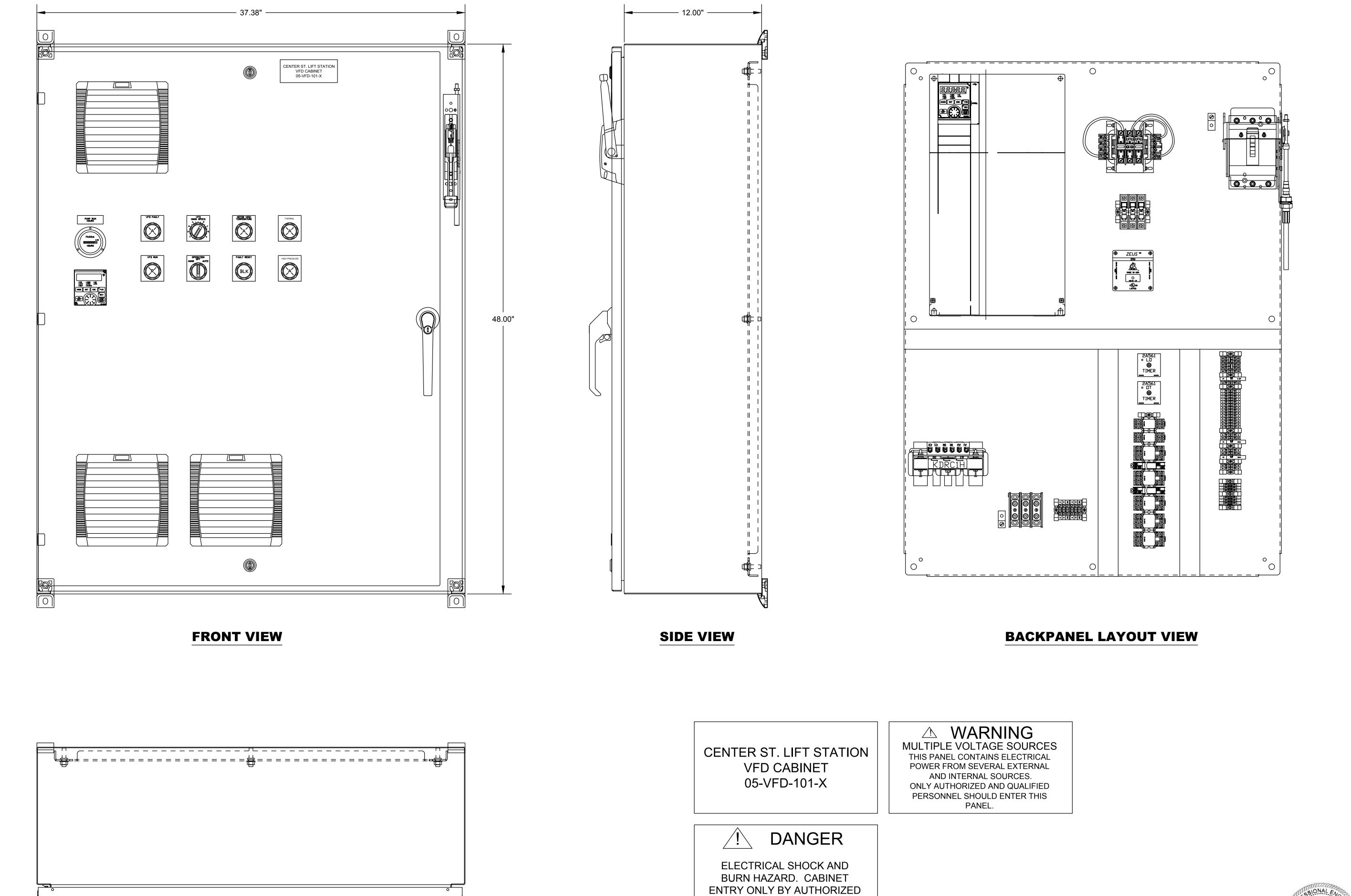
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ELECTRICAL - CENTER ST. LIFT STATION INSTRUMENTATION CONTROL BOX LAYOUT

WRF PHASE 3 UPGRADES SANTAQUIN CITY



**TOP VIEW** 

SERVICE PERSONNEL.

DESIGN BY: JCG CHECKED BY: MPJ ONE INCH

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ELECTRICAL - CENTER ST. LIFT STATION TYPICAL VFD CABINET LAYOUT

WRF PHASE 3 UPGRADES SANTAQUIN CITY

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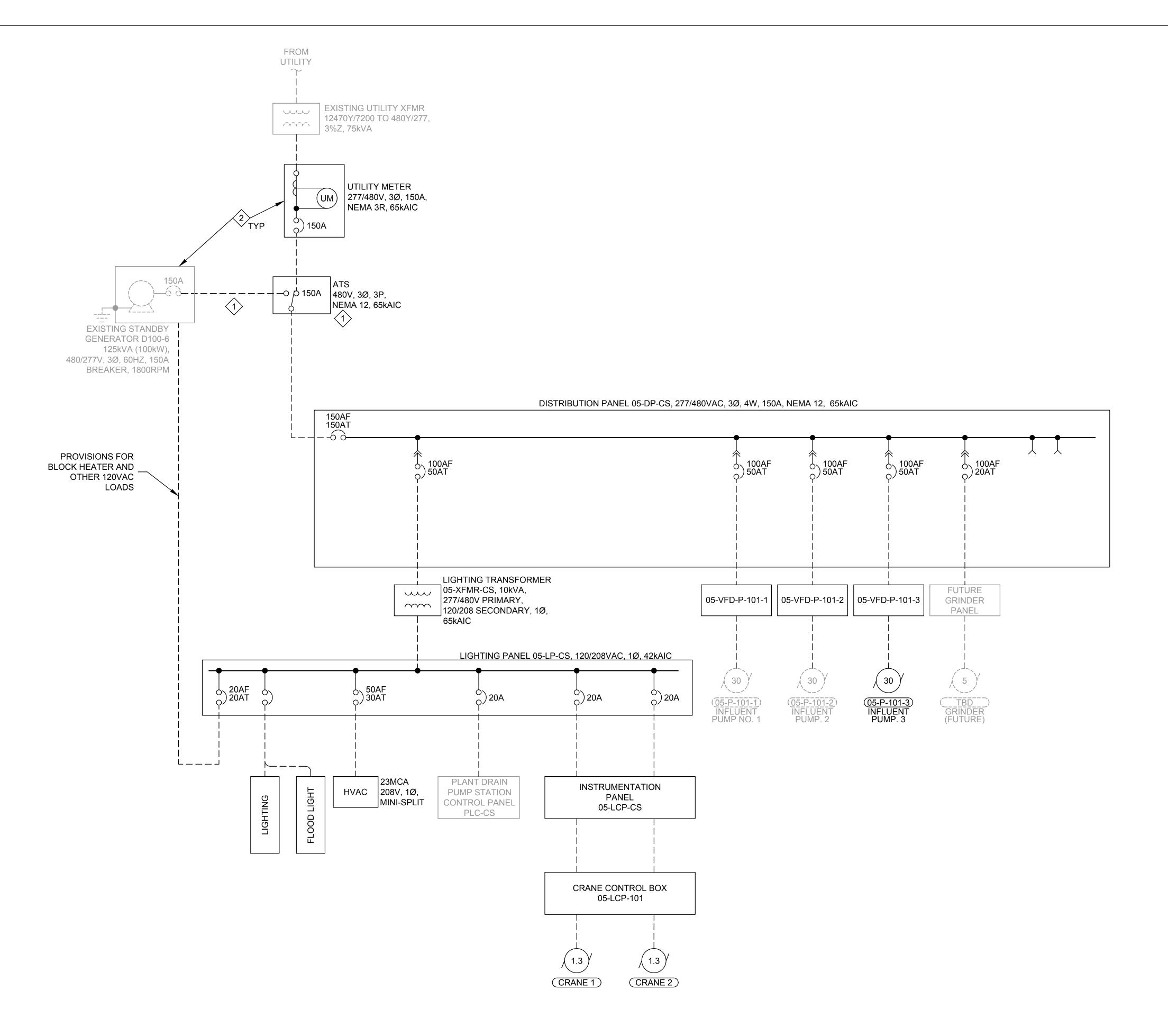
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**PANEL LABELS** 



ONELINE DIAGRAM



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WRF PHASE 3 UPGRADES
SANTAQUIN CITY
ELECTRICAL - CENTER ST. LIFT STATION
ONELINE DIAGRAM

## JORDAN C. GARDNER 1/31/25

135

# > KEY NOTES

- 1. CONTRACTOR TO REMOVE EXISTING ATS AND INSTALL A NEW ATS INSIDE THE NEW ELECTRICAL BUILDING ACCORDING TO DETAIL E001 AND SHEET 05-E-102. NEW CONDUCTORS SHALL BE SUPPLIED AND INSTALLED BETWEEN THE GENERATOR AND ATS.
- 2. CONTRACTOR SHALL TIE NEW AND EXISTING EQUIPMENT IN THE ELECTRICAL BUILDING TO THE NEWLY ESTABLISHED GROUND GRID PER THE NEC.

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**05-DP-CS CALCULATIONS** 

PANEL:LP-CS		VOLTAGE	: 120/208	MAIN CB: L	.UG	BUS AMPS	S: 100	AMP
PANEL:LP-C5		BUS A.I	.C: 42KA	BKR AI	C: 42KA	MOUNTING	G: SUF	RFACE
CIRCUIT DESCRIPTION	BKR	CIRCUIT	LOAD	PHASE	LOAD	CIRCUIT	BKR	CIRCUIT DESCRIPTION
SPARE	20/1	1		Α		2		
FLOOD LIGHT	20/1	3	168	В		4		
SPARE	20/1	5		С		6		
PLC	20/1	7	500	Α		8		
CRANE 05-LCP-101	30/1	9	2014	В		10		
INSTRUMENT PANEL 05-LCP-CS	20/1	11	960	С		12		
SPARE	20/1	13		Α		14		
INTERIOR LIGHTING	20/1	15	175	В		16		
LIVAC MINI CDI IT	20/2	17	2250	С		18		
HVAC MINI-SPLIT	30/2	19	2250	Α		20		
SPARE	20/1	21		В		22		
SPARE	20/1	23		С		24		
			PHASE A	PHASE B	PHASE C	NOTES:		
CONNECTED VA PER PHASE			2750.0	2357.3	3210.0			
CONNECTED AMPS PER PHASE			22.9	19.6	26.8			
25% OF CONTINUOUS & LIGHTIN	G LOA	D (VA)	687.5	589.3	802.5			
CODE VA PER PHASE	-		3437.5	2946.6	4012.5			
CODE AMPS PER PHASE			28.6	24.6	33.4			

**05-LP-CS CALCULATIONS** 

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WRF PHASE 3 UPGRADES SANTAQUIN CITY

ELECTRICAL - CENTER ST. LIFT STATION CALCULATIONS

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No. 8730795-2202

JORDAN C. GARDNER J/31/25

05-E-502

DRAWING:

POWER CONDUIT

# CONDUIT SCHEDULE



**NOTE** 

1. SHADED CELLS REPRESENT EXISTING CONDUITS

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STATION

ELECTRICAL - CENTER ST. LIFT CONDUIT SCHEDULE

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TAG	DESCRIPTION	MAKE	MODEL	SUPPLY	RANGE	COMMENTS
05-LT-101	WET WELL ANALOG RADAR LEVEL TRANSDUCER	VEGA	VEGAPULS C21	LOOP-24VDC	0-20FT	CLASSIFICATION C1D1 RATED; OR APPROVED EQUAL
05-LIT-101	RADAR LEVEL TRANSMITTER	VEGA	VEGAMET 861	120VAC		CLASSIFICATION C1D1 RATED; OR APPROVED EQUAL
05-LSL-101	WET WELL LOW LEVEL SWITCH	DWYER	CFS2-OGDSN-20	LOOP-24VDC	NO CONTACT	CLASSIFICATION C1D1 FED FROM INTRINSIC BARRIER; OR APPROVED EQUAL
05-LSH-101	WET WELL HIGH LEVEL SWITCH	DWYER	CFS2-CGDSN-30	LOOP-24VDC	NC CONTACT	CLASSIFICATION C1D1 FED FROM INTRINSIC BARRIER; OR APPROVED EQUAL
05-PI-101	PRESSURE GAUGE	ASHCROFT	1279 SERIES		0-160PSI	REQUIRES DIAPHGRAM SEAL - ASHCROFT 100 SERIES; OR APPROVED EQUAL
05-PSH-101	HIGH PRESSURE SWITCH	ASHCROFT	B SERIES	LOOP-24VDC	0-160PSI	REQUIRES DIAPHGRAM SEAL - ASHCROFT 100 SERIES; OR APPROVED EQUAL
05-PI-102	PRESSURE GAUGE	ASHCROFT	1279 SERIES		0-160PSI	REQUIRES DIAPHGRAM SEAL - ASHCROFT 100 SERIES; OR APPROVED EQUAL
05-PSH-10	HIGH PRESSURE SWITCH	ASHCROFT	B SERIES	LOOP-24VDC	0-160PSI	REQUIRES DIAPHGRAM SEAL - ASHCROFT 100 SERIES; OR APPROVED EQUAL
05-PI-103	PRESSURE GAUGE	ASHCROFT	1279 SERIES		0-160PSI	REQUIRES DIAPHGRAM SEAL - ASHCROFT 100 SERIES; OR APPROVED EQUAL
05-PSH-103	HIGH PRESSURE SWITCH	ASHCROFT	B SERIES	LOOP-24VDC	0-160PSI	REQUIRES DIAPHGRAM SEAL - ASHCROFT 100 SERIES; OR APPROVED EQUAL
05-PIT-101	SIEMENS SITRANS P320	SIEMENS	P320	LOOP-24VDC	0-200PSI	REQUIRES DIAPHGRAM SEAL - ASHCROFT 100 SERIES; OR APPROVED EQUAL
05-FE-101	MAGNETIC FLOW ELEMENT	SIEMENS	MAG6000	FROM FIT		
05-FIT-101	FLOW INDICATING TRANSMITTER	SIEMENS	MAG6000	120VAC	0-1000GPM	10"; OR APPROVED EQUAL
05-MSH-101-1	MOTOR MOISTURE SENSOR	FLYGT	MINCAS	LOOP-24VDC		EXISTING
05-TSH-101-1	MOTOR THERMAL SENSOR	FLYGT	MINCAS	LOOP-24VDC		EXISTING
05-MSH-101-2	MOTOR MOISTURE SENSOR	FLYGT	MINCAS	LOOP-24VDC		EXISTING
05-TSH-101-2	MOTOR THERMAL SENSOR	FLYGT	MINCAS	LOOP-24VDC		EXISTING
05-MSH-101-3	MOTOR MOISTURE SENSOR	FLYGT	MINCAS	LOOP-24VDC		INCLUDED WITH NEW PUMP - CONFIRM IN SUBMITTAL
05-TSH-101-3	MOTOR THERMAL SENSOR	FLYGT	MINCAS	LOOP-24VDC		INCLUDED WITH NEW PUMP - CONFIRM IN SUBMITTAL
05-ZS-102	HATCH INTRUSION SWITCH 1	VARIOUS	WHEEL-TYPE	LOOP-24VDC	NO CONTACT	CLASSIFICATION C1D1 RATED; OR APPROVED EQUAL
05-ZS-103	HATCH INTRUSION SWITCH 2	VARIOUS	WHEEL-TYPE	LOOP-24VDC	NO CONTACT	CLASSIFICATION C1D1 RATED; OR APPROVED EQUAL
05-ZS-104	HATCH INTRUSION SWITCH 3	VARIOUS	WHEEL-TYPE	LOOP-24VDC	NO CONTACT	CLASSIFICATION C1D1 RATED; OR APPROVED EQUAL

# **INSTRUMENT SCHEDULE**

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ELECTRICAL - CENTER ST. LIFT STATION INSTRUMENTATION SCHEDULE WRF PHASE 3 UPGRADES SANTAQUIN CITY

JORDAN C. GARDNER 1/31/25

# NOTE

1. SHADED CELLS REPRESENT EXISTING CONDUITS

FILE:

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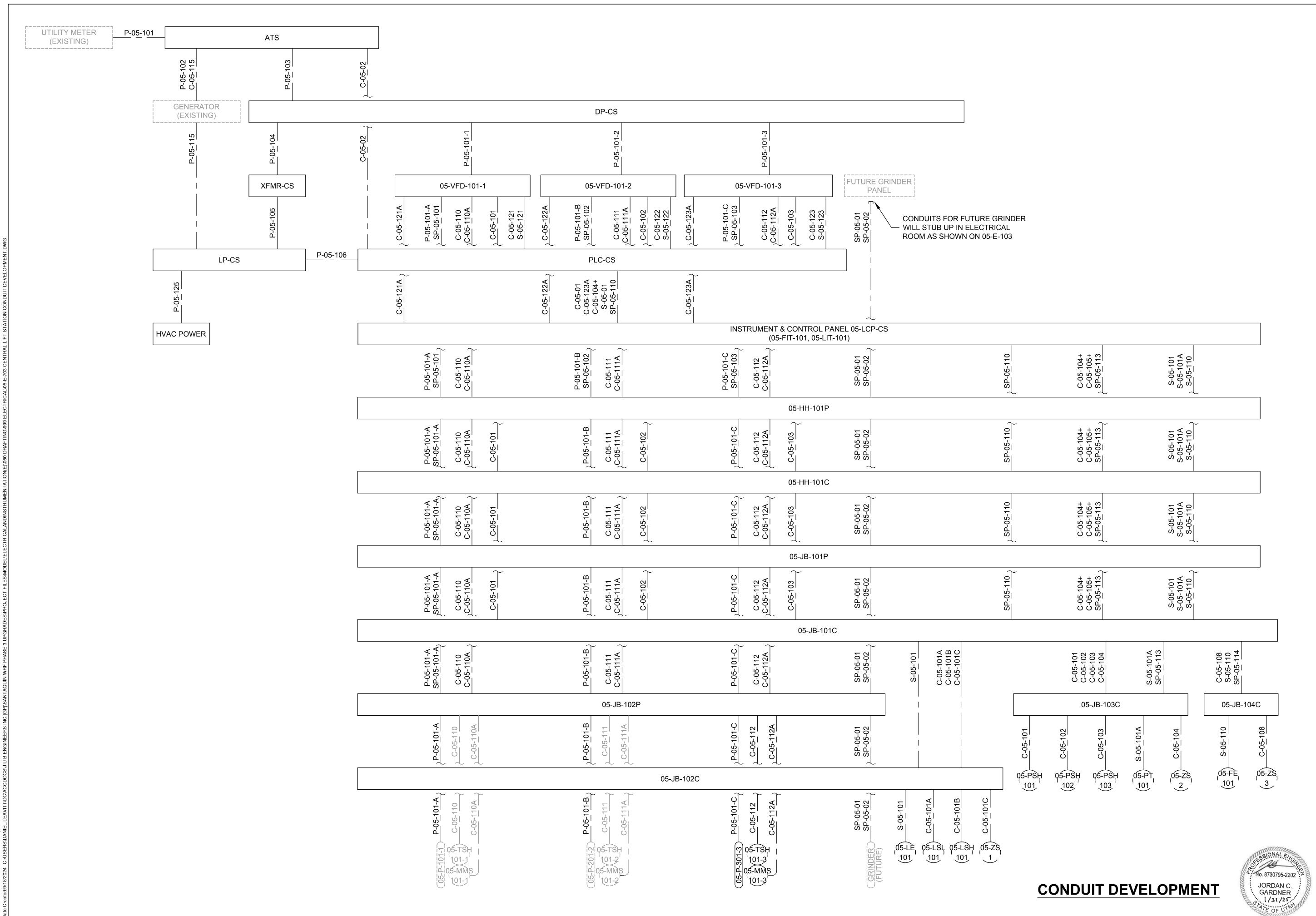
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WRF PHASE 3 UPGRADES SANTAQUIN CITY

ELECTRICAL - CENTER ST. LIFT STATION CONDUIT DEVELOPMENT

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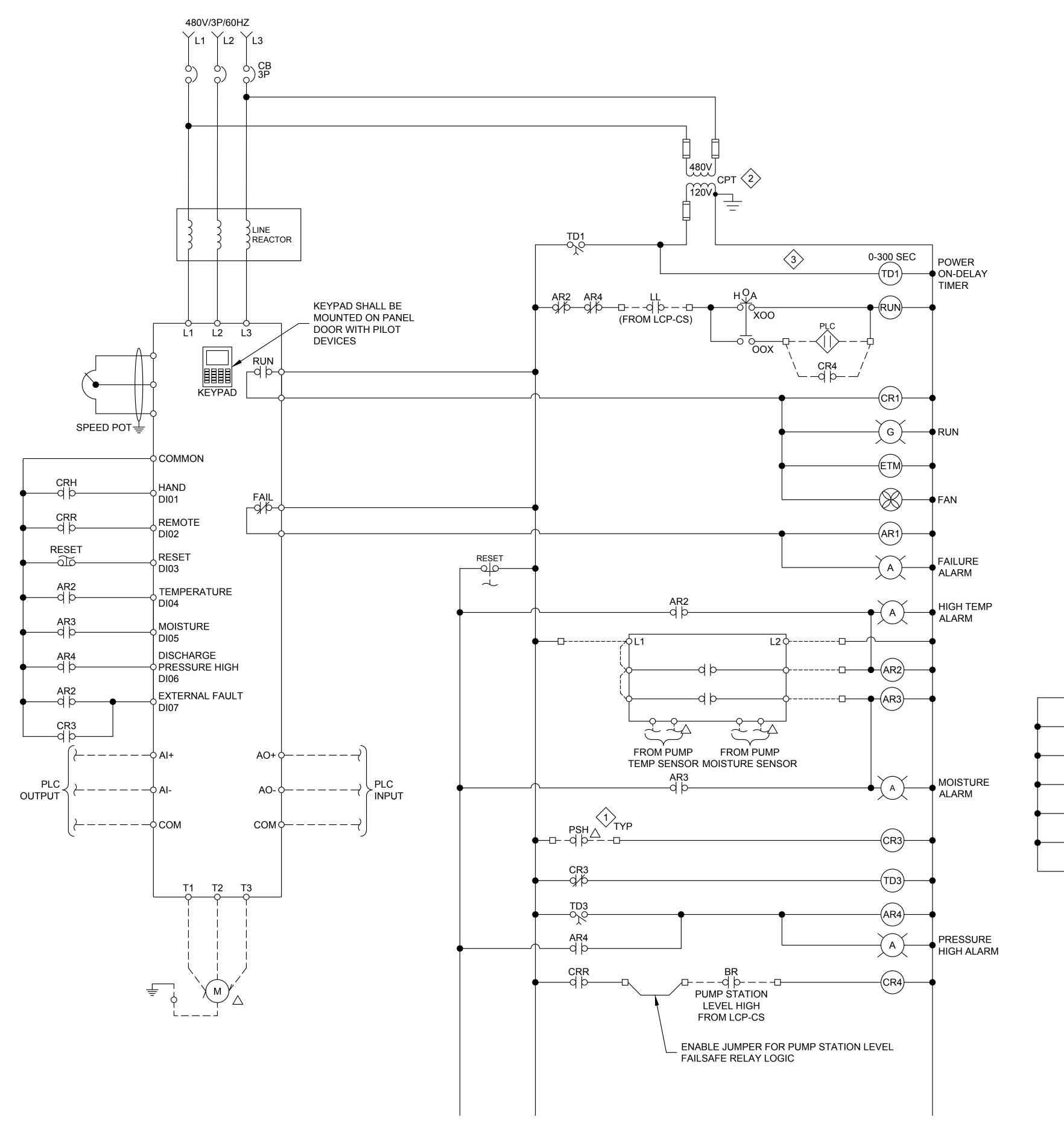
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#### **GENERAL NOTES**

- 1. TYPICAL SCHEMATIC DIAGRAMS ARE INTENDED TO REFLECT THE GENERAL CONTROL STRATEGY. ACTUAL CIRCUITRY MAY VARY FOR SPECIFIC EQUIPMENT SUPPLIED. THE NUMBER AND TYPE OF DEVICES SHALL BE FURNISHED AS REQUIRED FOR PROPER OPERATION OF THE EQUIPMENT.
- 2. FUSES SHALL BE ADEQUATELY SIZED PER THE EQUIPMENT MANUFACTURER'S RECOMMENDATIONS.
- CONTROL SWITCHES SHALL BE DOOR MOUNTED ON THEIR RESPECTIVE PANELS. DEVICES SHALL BE RATED FOR LINE VOLTAGE AND 125% OF LOAD CURRENT.



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#### **KEY NOTES**

- 1. LOCAL CONTROLS SHALL BE INSTALLED ACCORDING TO P&ID'S AND NOT NECESSARILY AS SHOWN ON SCHEMATICS. SEE CONDUIT SCHEDULE FOR EXACT WIRING.
- 2. CONTROL POWER TRANSFORMERS (CPT) SHALL BE ADEQUATELY SIZED AND SHALL BE PROVIDED WITH PROPERLY SIZED FUSES FOR BOTH THE PRIMARY AND SECONDARY WINDINGS.
- 3. ADJUST TIME DELAY RELAYS PRIOR TO STARTUP. STAGGER TIMER SETTINGS FOR POWER ON-DELAY RELAYS.

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# VFD CONTROL DESCRIPTION

\_\_\_\_ <u>COMMON</u> \_ \_

RUNNING

VFD FAILURE ALARM

-Ø- — HI-TEMP — —

MOISTURE \_

\_\_\_\_\_HI-PRESS \_\_ \_ \_\_

 $-\square$  -  $\square$  AUTO - -  $\square$  TO PLC

HOA

X00

WHEN THE HOA SWITCH IS IN THE HAND POSITION, THE MOTOR SHOULD RUN, WHEN THE HOA SWITCH IS IN THE OFF POSITION, THE MOTOR SHOULD STOP AND WHEN THE HOA SWITCH IS IN THE AUTO POSITION, THE MOTOR IS CONTROLLED BY THE PLC THROUGH ETHERNET. THE PLC WILL BE ABLE TO MONITOR WHETHER THE HOA IS IN THE HAND OR AUTO POSITION.

WHEN THE HOA SWITCH IS IN THE HAND POSITION, THE SPEED COMMAND COMES FROM THE POTENTIOMETER. WHEN IN THE AUTO POSITION, THE SPEED COMMAND COMES FROM THE PLC THROUGH ETHERNET.

TYPICAL OPERATION IS FOR THE PLC TO CALL THE PUMP ON WHEN A HIGH LEVEL HAS BEEN REACHED. IF A PROBLEM WITH THE PLC EXISTS AND DOES NOT CALL THE PUMP TO RUN, THE BY PASS FLOAT LOGIC WILL TAKE OVER. IF THE PUMP IS IN AUTO AND THE HIGH FLOAT IS HIT THE BR RELAY WILL ENERGIZE AND START THE PUMP. THIS BR RELAY WILL HOLD UNTIL A TIMER REMOVES BR OR THE LOW LEVEL WAS HIT.

PUMPS WILL HAVE LEAD LAG CONTROL WITH 2
PUMPS THROUGH THE VEGAMET AND PLC
CONTROLLERS. THEY WILL ALSO ALTERNATE BASED
UPON PUMP STARTS USING A RELAY.

WRF PHASE 3 UPGRADES
SANTAQUIN CITY
ELECTRICAL - CENTER ST. LIFT STATION
VFD CONTROL SCHEMATIC

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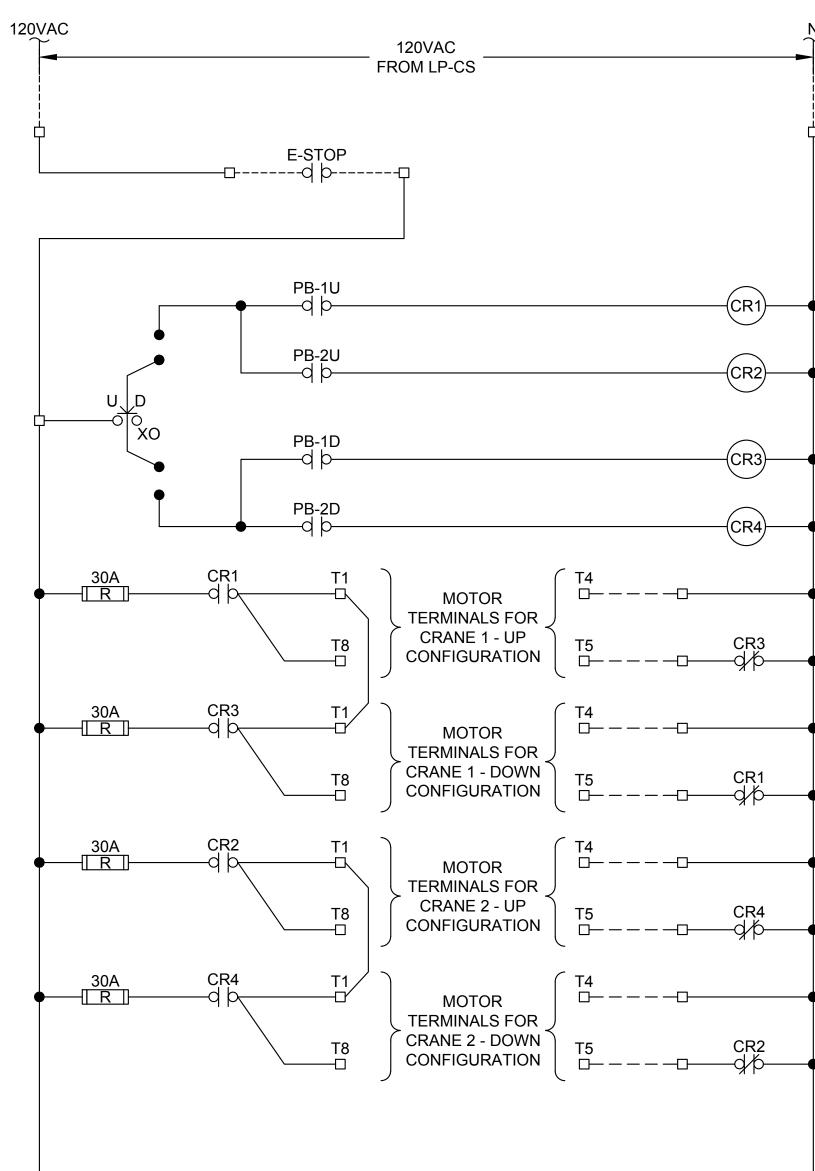
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JORDAN C.
GARDNER
1/31/25

VFD CONTROL SCHEMATIC

TYPICAL FOR: INFLUENT PUMPS



CRANE CONTROL BOX SCHEMATIC

# **GENERAL NOTES**

1. TYPICAL SCHEMATIC DIAGRAMS ARE INTENDED TO REFLECT THE GENERAL CONTROL STRATEGY. ACTUAL CIRCUITRY MAY VARY FOR SPECIFIC EQUIPMENT SUPPLIED. THE NUMBER AND TYPE OF DEVICES SHALL BE FURNISHED AS REQUIRED FOR PROPER OPERATION OF THE EQUIPMENT.

2. FUSES SHALL BE ADEQUATELY SIZED PER THE **EQUIPMENT MANUFACTURER'S** RECOMMENDATIONS AND SHOULD BE SLOW DELAY FUSES TO HANDLE STARTING CURRENTS.

3. CONTROL SWITCHES SHALL BE DOOR MOUNTED ON THEIR RESPECTIVE PANELS. DEVICES SHALL BE RATED FOR LINE VOLTAGE, 125% OF LOAD CURRENT AND HORSEPOWER OF MOTOR.

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ELECTRICAL - CENTER ST. LIFT STATION CRANE CONTROL BOX SCHEMATIC WRF PHASE 3 UPGRADES SANTAQUIN CITY

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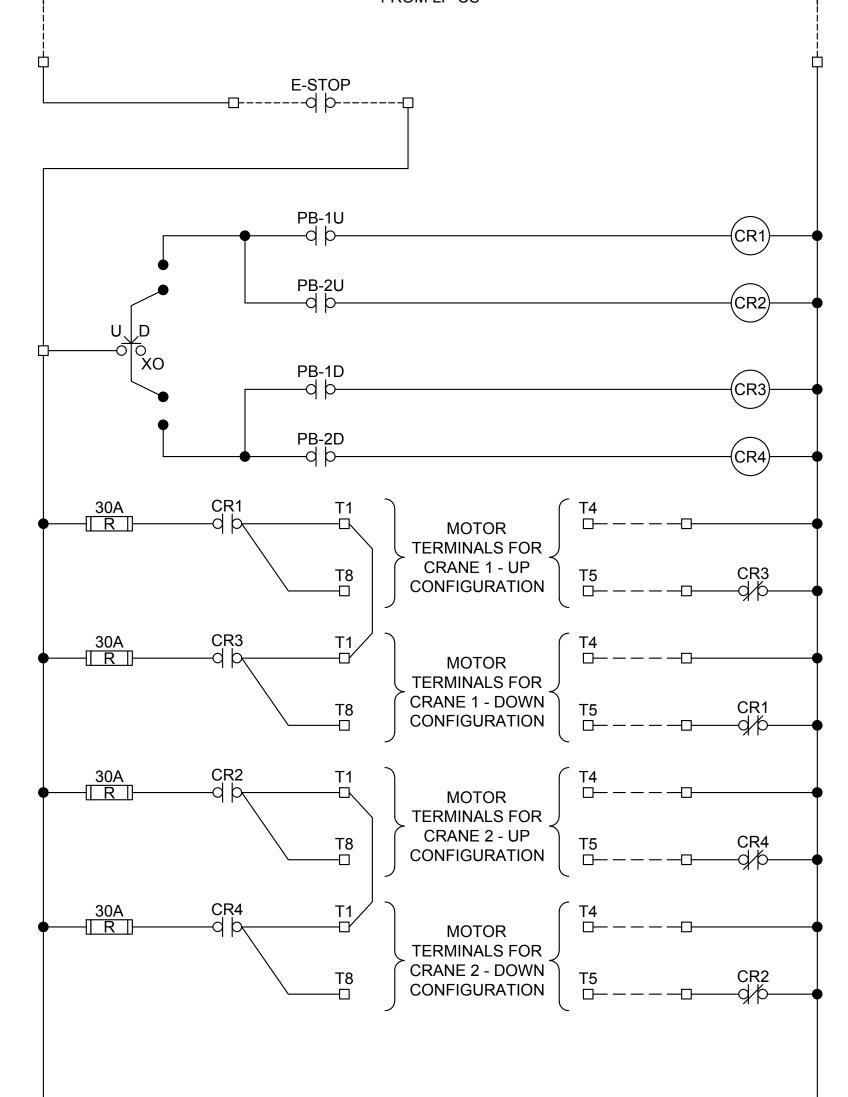
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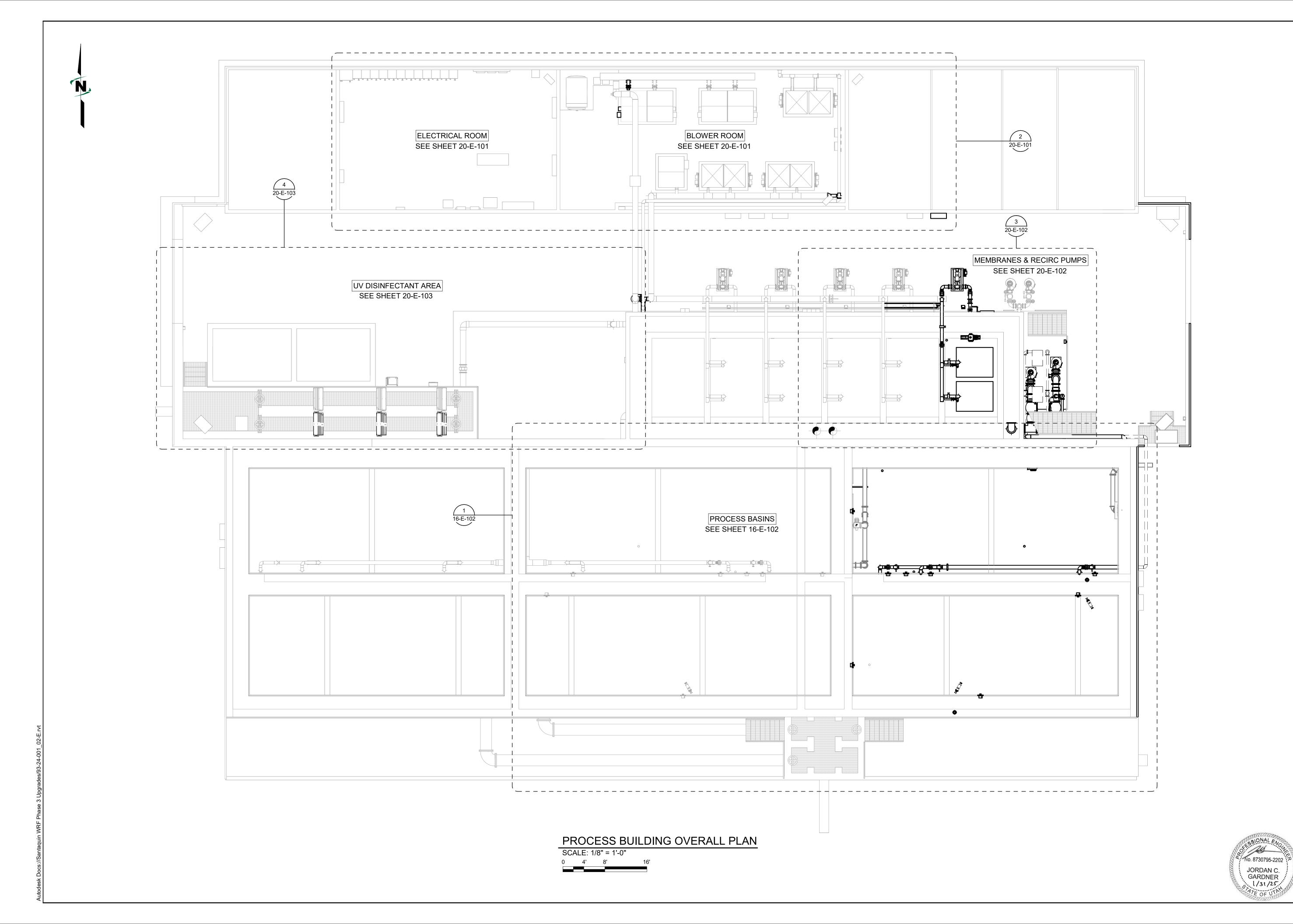
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SANTAQUIN WRF PHASE 3 UPGRADES SANTAQUIN CITY ELECTRICAL - PROCESS BUILDING OVERALL PLAN

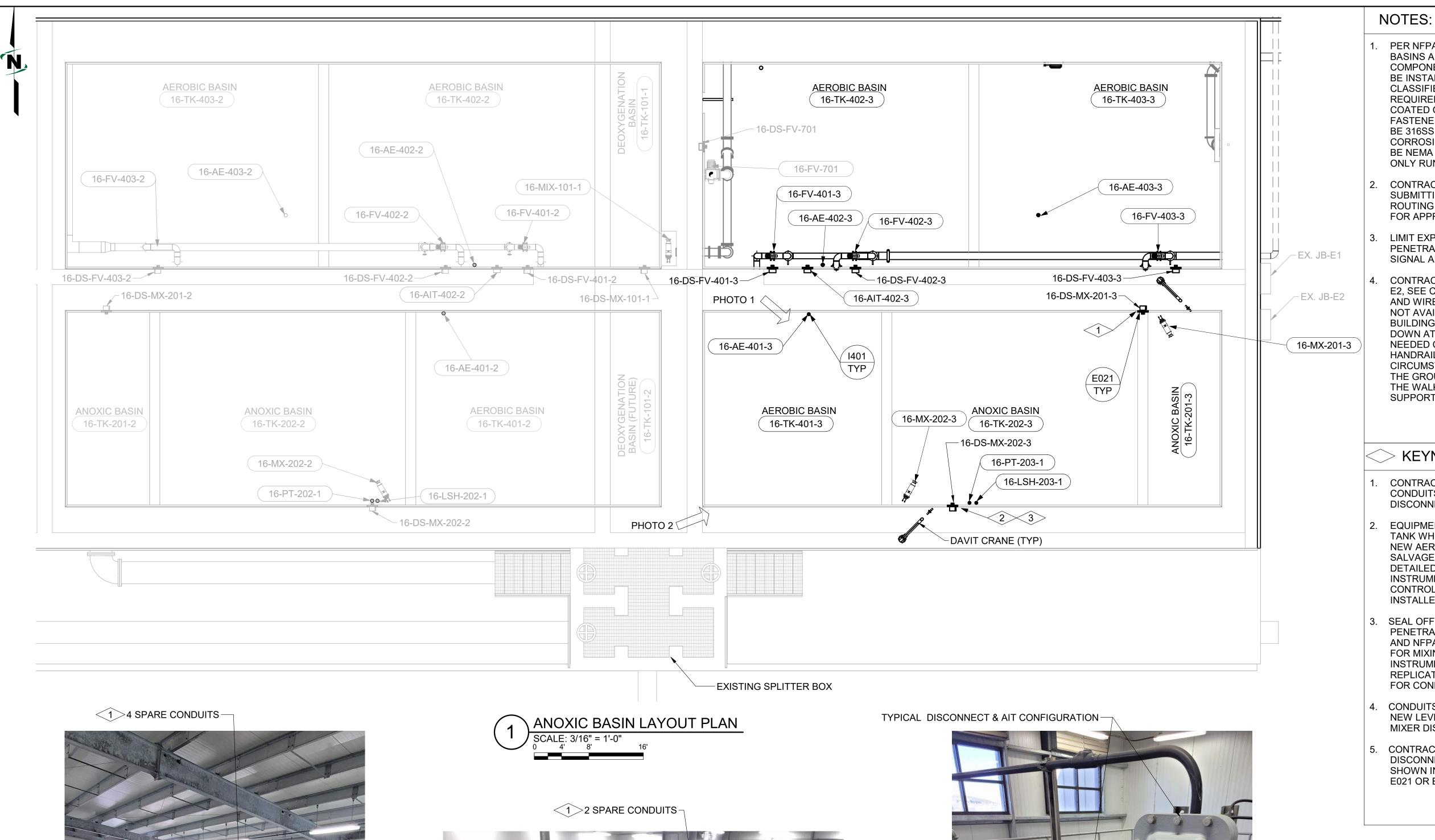
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- PER NFPA 820, EXTENDING OUT 10' FROM THE BASINS AND 18" ABOVE IS A CLASS I DIV 2 AREA COMPONENTS WITHIN THESE BOUNDARIES SHALL BE INSTALLED PER NEC REQUIREMENTS FOR CLASSIFIED AREAS WITH SEALOFFS AS REQUIRED. ALL EXPOSED CONDUIT SHALL BE PVC COATED GRS. ALL CHANNEL, ANCHORS FASTENERS AND ASSOCIATED HARDWARE SHALL BE 316SS. ALL BOXES AND FITTINGS SHALL BE CORROSION RESISTANT. ALL ENCLOSURES SHALL BE NEMA 7 EXPLOSION-PROOF. CONDUIT SHALL ONLY RUN EXPOSED WHERE NECESSARY.
- CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING CONDUIT DETAILS AND A CONDUIT ROUTING PLAN TO THE ELECTRICAL ENGINEER FOR APPROVAL.
- LIMIT EXPOSED CONDUITS, 90° BENDS AND WALL PENETRATIONS. MAINTAIN SEPARATION BETWEEN SIGNAL AND POWER-CARRYING CONDUITS.
- CONTRACTOR TO UTILIZE EXISTING JB-E1 AND JB-E2, SEE CONDUIT SCHEDULE, FOR NEW CONDUITS AND WIRE WHEN PRE-INSTALLED CONDUITS ARE NOT AVAILABLE. NEW CONDUITS IN THE PROCESS BUILDING WILL BE RUN OVERHEAD AND DROP DOWN AT EQUIPMENT LOCATION. FROM THERE IF NEEDED CONDUIT SHALL BE RUN ALONG HANDRAIL TO OTHER EQUIPMENT. UNDER NO CIRCUMSTANCES SHALL CONDUIT BE RUN ALONG THE GROUND ON THE WALKWAY OR UNDERNEATH THE WALKWAY. SEE DETAIL E331 FOR CONDUIT SUPPORT.

#### **KEYNOTES:**

- CONTRACTOR SHALL UTILIZE EXISTING STUBBED CONDUITS AT THIS LOCATION FOR NEW MIXER DISCONNECT SWITCH.
- **EQUIPMENT IN THE EXISTING BIO SOLIDS HOLDING** TANK WHICH IS BEING CONVERTED IN THE THE NEW AERATION BASIN 3 SHALL BE REMOVED AND SALVAGED TO OWNER. THE EQUIPMENT IS DETAILED ON THE P&IDS, FOR EXAMPLE LEVEL INSTRUMENTS, DECANT PUMP, AND PUMP CONTROL PANEL. NEW INSTRUMENTS SHALL BE INSTALLED PER THIS DRAWING AND THE P&IDS.
- SEAL OFFS MUST BE USED ON ANY CONDUIT THAT PENETRATES INTO A CLASSIFIED SPACE PER NEC AND NFPA 820. EXISTING CONDUITS HAVE SEALS FOR MIXING DISCONNECT SWITCHES, AND INSTRUMENTATION. CONTRACTOR SHALL REPLICATE WHAT IS EXISTING BY INSTALL SEALS FOR CONDUITS USED TO ADD NEW EQUIPMENT.
- CONDUITS AT THIS LOCATION SHALL BE USED FOR NEW LEVEL SWITCH, LEVEL TRANSDUCER AND MIXER DISCONNECT SWITCH.
- CONTRACTOR TO MOUNT NEW DO PROBES AND DISCONNECT SWITCHES TO THE HANDRAIL AS SHOWN IN THE PICTURE BELOW AND DETAILS E021 OR E022 AND I401.

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SANTAQUIN WRF

ECTRICAL - ANOXIC LAYOUT PLAN

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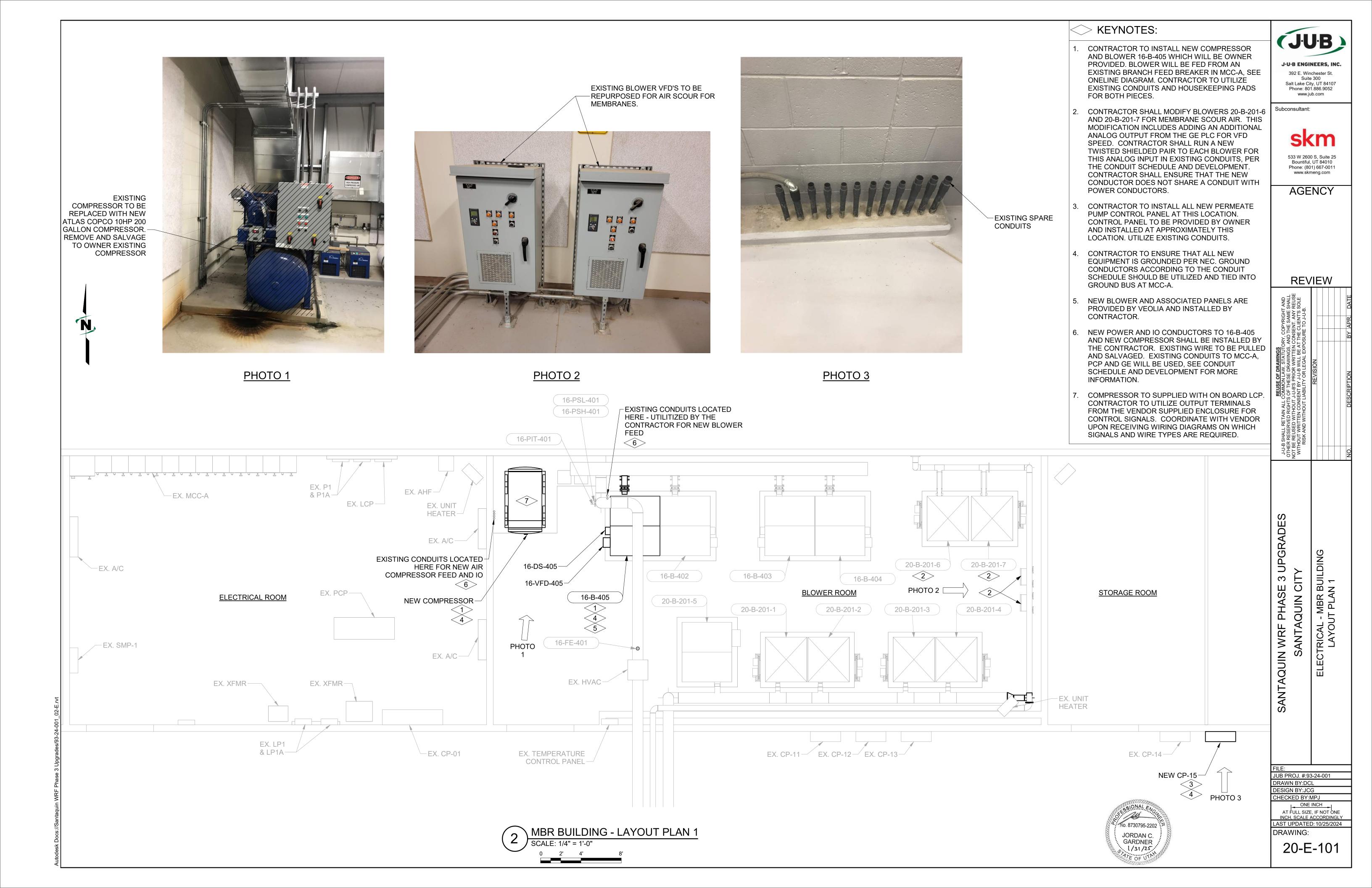
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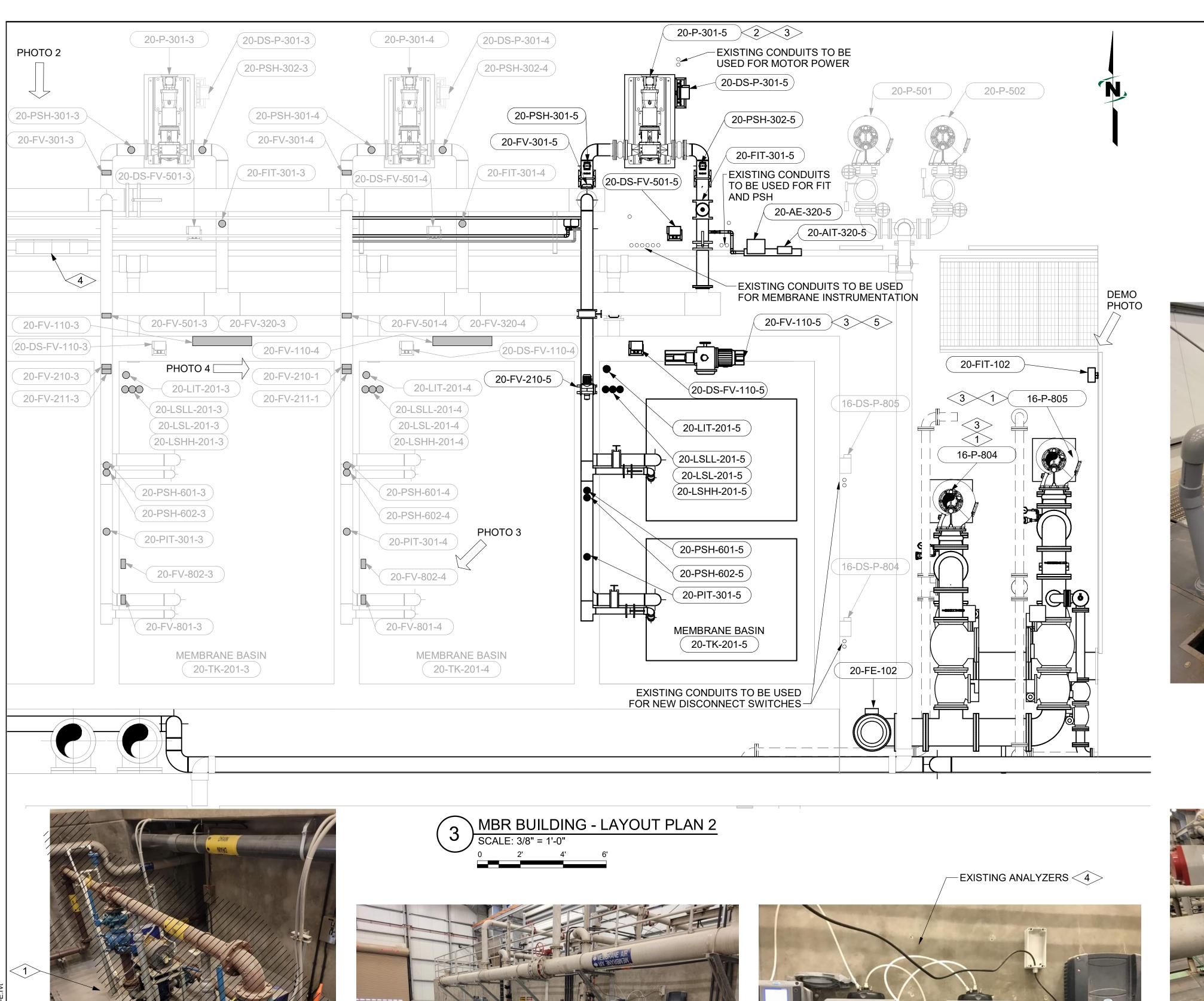
No. 8730795-2202 JORDAN C. GARDNER

PHOTO 2

PHOTO 1

PHOTO 3





#### NOTES:

- CONDUIT SHALL ONLY RUN EXPOSED WHERE NECESSARY. ALL EXPOSED CONDUIT SHALL BE PVC COATED. PANELS SHALL BE STAINLESS STEEL NEMA 3R OR NEMA 4.
- CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING CONDUIT DETAILS AND A CONDUIT ROUTING PLAN TO THE ELECTRICAL ENGINEER FOR APPROVAL.
- LIMIT EXPOSED CONDUITS, 90° BENDS AND WALL PENETRATIONS. MAINTAIN SEPARATION BETWEEN SIGNAL AND POWER CARRYING CONDUITS.

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#### **KEYNOTES:**

- CONTRACTOR SHALL REMOVE EXISTING WAS SLUDGE PUMPS AND APPERTENANCES AND RETURN TO OWNER. NEW RAS RECYCLE PUMPS SHALL BE INSTALLED BY THE CONTRACTOR AT THIS LOCATION. CONTRACTOR SHALL REUSE CONDUIT FOR NEW PUMPS. SEE CONDUIT SCHEDULE AND DEVELOPMENT.
- CONTRACTOR SHALL INSTALL OWNER PROVIDED PERMEATE PUMP AND MEMBRANE **ELECTRICAL EQUIPMENT AND** INSTRUMENTATION ACCORDING TO THIS DRAWING AND THE CONDUIT DEVELOPMENT. EXISTING CONDUITS SHOWN WILL BE USED FOR ALL NEW EQUIPMENT. INSTRUMENTS SHALL BE INSTALLED IN A SIMLIAR FASHION AS THE PREVIOUS 4 TRAINS. SEE PHOTOS.
- CONTRACTOR SHALL UTILIZE NEW GROUND CONDUCTORS INSTALLED FOR THE NEW EQUIPMENT TO TIE INTO EXISTING GROUND GRID. EQUIPMENT SUCH AS THE NEW PEARMEAT PUMPS AND RECYCLE PUMPS NEED TO BE GROUNDED PER THE NEC. CONTRACTOR TO ENSURE PROPER GROUNDING ON ALL NEWLY INSTALLED EQUIPMENT PRIOR TO USE.
- EXISTING TURBIDITY METERS 20-AIT-320-1. 20-AIT-320-2, 20-AIT-320-3, 20-AIT-320-4.
- CONTRACTOR TO ENSURE THAT THE FLEX CONDUIT LENGTH USED BETWEEN DISCONNECT AND VALVE IS LONG ENOUGH, SUCH THAT WHEN THE VALVE IS RAISED FOR MAINTENANCE, DISCONNECTION IS NOT REQUIRED.
- EXISTING DISCONNECT SWITHES FOR OLD DEWATERING FEED PUMPS SHALL BE REMOVED AND SALVAGED TO OWNER. NEW **DISCONNECT SWITCHES SIZED** APPROPRIATELY FOR 15HP PUMPS SHALL BE INSTALLED AT APPROXIMATELY THE SAME LOCATIONS.

# **REVIEW**

SHT AND ME SHALL NY REUSE "S SOLE J-B.				BY APR. DATE	
DPYRIG HE SAN ENT. AN CLIENT				APR.	
RY, CC AND TH CONSE I THE C				ВУ	
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JUB PROJ. #:93-24-001 DRAWN BY:DCL **DESIGN BY:JCG** 

CHECKED BY:MPJ ONE INCH
AT FULL SIZE, IF NOT ONE
INCH, SCALE ACCORDINGLY AST UPDATED: 10/25/2024 No. 8730795-2202 DRAWING: JORDAN C. GARDNER 1/31/25 20-E-102

20-P-301-2

PHOTO 3

FMBER 2013





PHOTO 2

**DEMO PHOTO** PHOTO 1

20-P-301-4

20-P-301-3

20-P-301-2

PHOTO 4

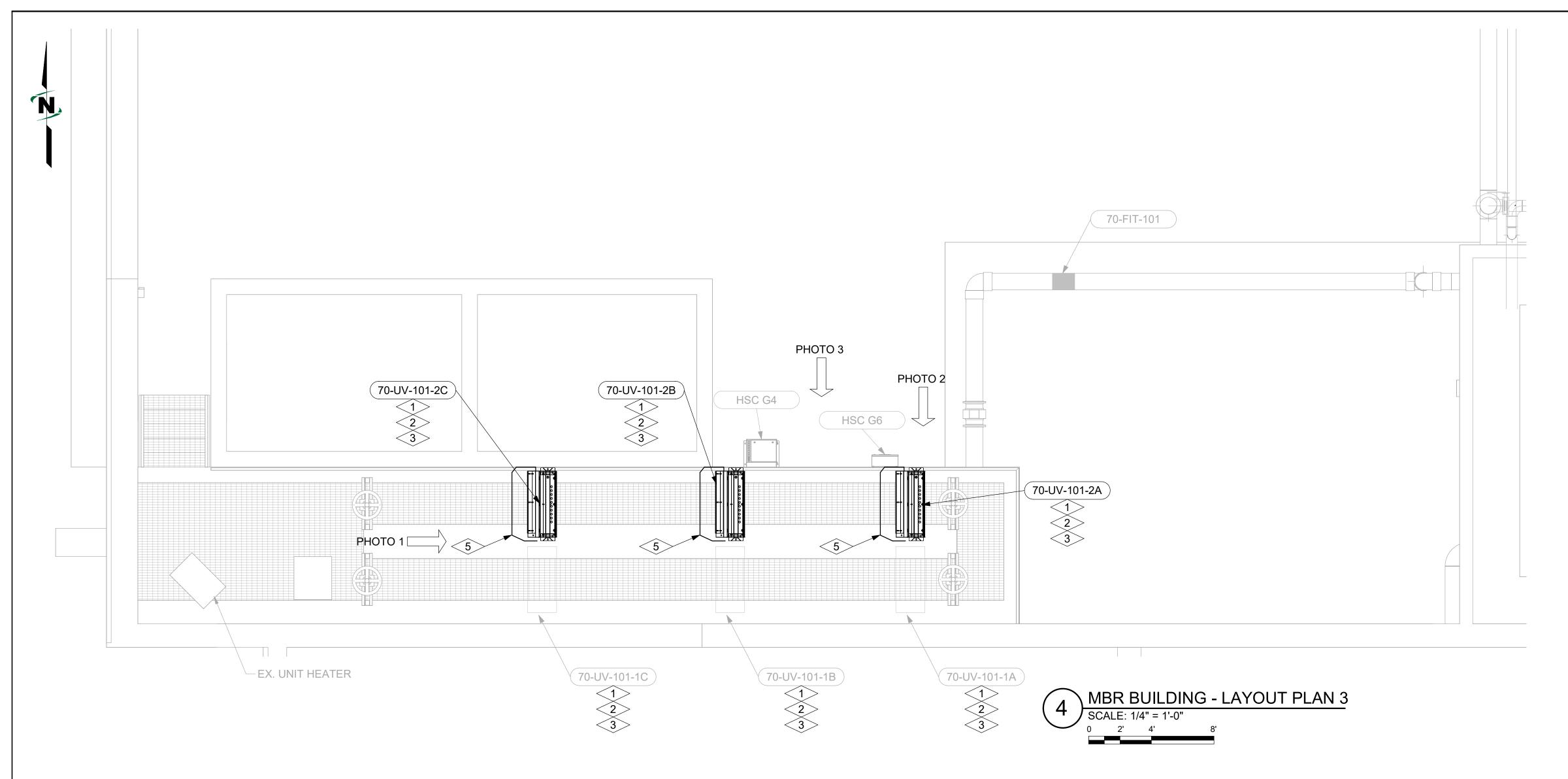




PHOTO 1

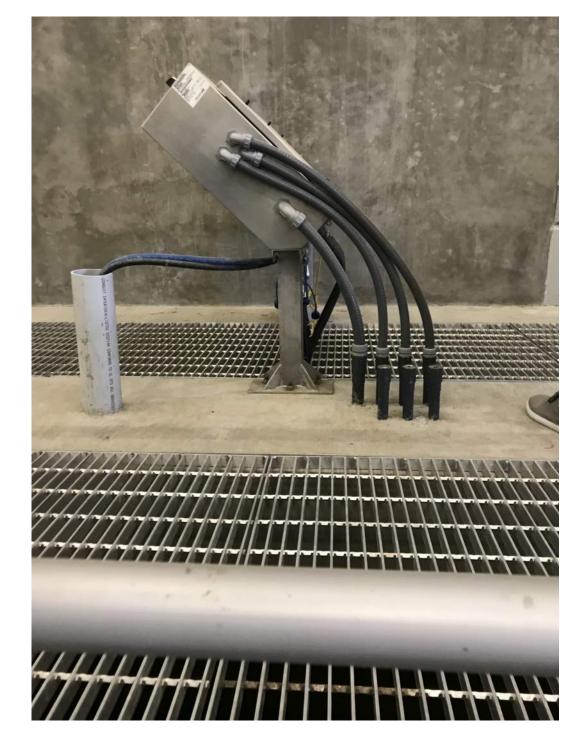


PHOTO 2



PHOTO 3

#### KEYNOTES:

- CONTRACTOR SHALL INSTALL THE EXISTING UV BANKS SUCH THAT THEY COVER CHANNEL 2 INSTEAD OF CHANNEL 1. CONTRACTOR SHALL REMOVE THE EXISTING CHANNEL 1 UV BANKS AND INSTALL THEM PARALLEL TO THE NEW BANKS OVER CHANNEL OVER CHANNEL 2.
- 2. THE EXISTING BANKS THAT ARE BEING MOVED TO CHANNEL 2 MUST BE ROTATED 180° SUCH THAT THE CONDUCTORS LEAVE THE BANK FROM THE SOUTH.
- CONTRACTOR SHALL PULL WIRE FEEDING THE UV BANKS FROM EXISTING CONDUITS AND SALVAGE IT. CONTRACTOR TO PULL NEW WIRE FEEDING THE NEW CHANNEL TO UV BANKS USING THE EXISTING CONDUITS CLOSEST TO THAT CHANNEL. BECAUSE THE BANKS ARE ROTATED 180 DEGREES, THIS MEANS THAT THE INCOMING CONDUITS WILL BE ON THE NORTH SIDE OF CHANNEL 2, THUS INCREASING THE SIZE OF THE FLEX CONDUIT AND WIRE NEEDED TO MAKE THE NEW TERMINATIONS.
- CONTRACTOR TO CONSULT CONDUIT SCHEDULE AND DEVELOPMENT FOR WIRE TERMINATIONS. SOURCE LOCATIONS AND CONDUCTOR SIZING FOR THE UV SYSTEM.
- 5. NEW FLEX CONDUITS NEEDED FROM EXISTING IN GROUND CONDUITS TO UV BANK.

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**REVIEW** 

SANTAQUIN WRF PHASE 3 UPGRADES

JUB PROJ. #:93-24-001 DRAWN BY:DCL DESIGN BY:JCG

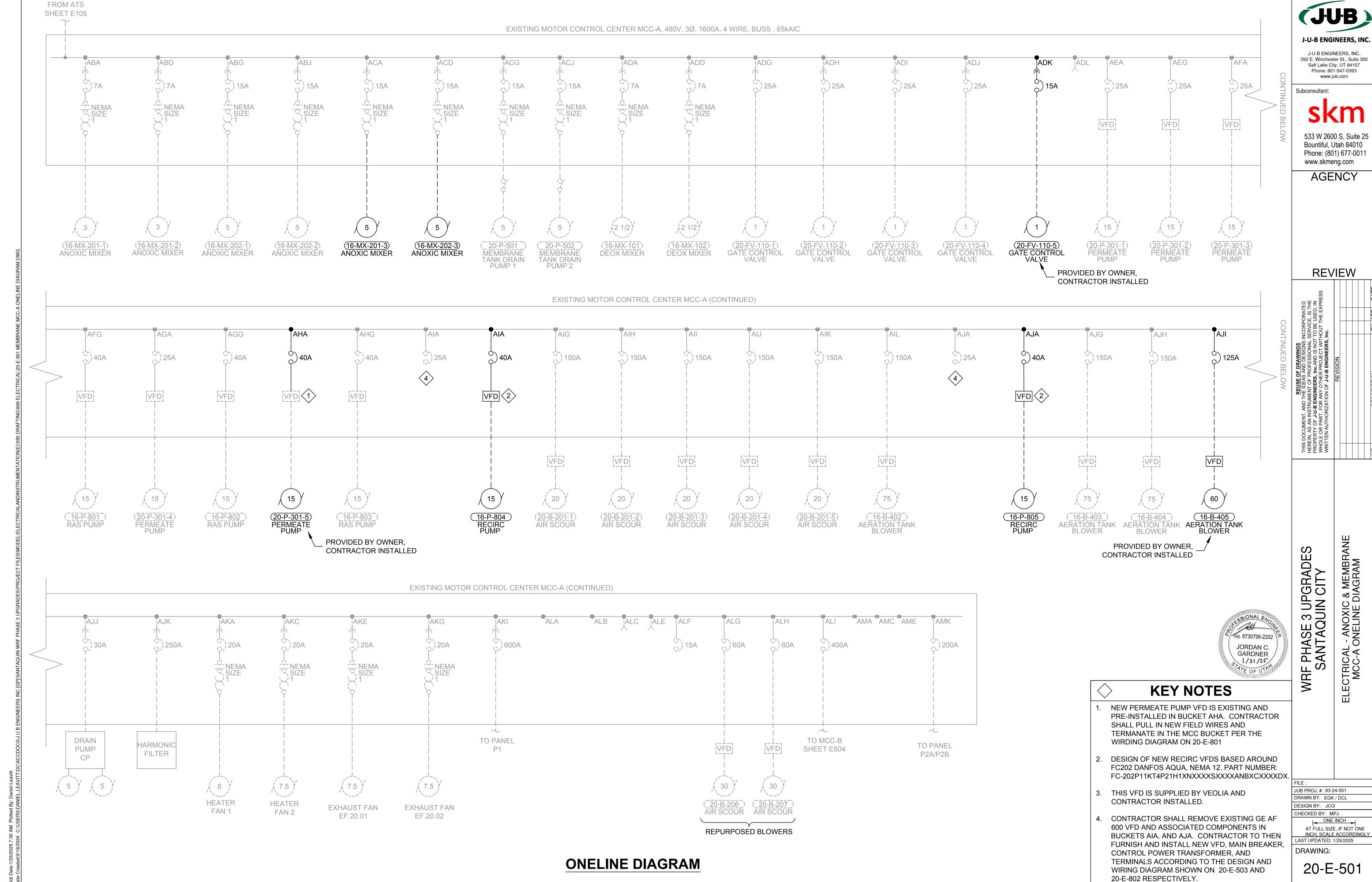
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INCH, SCALE ACCORDINGLY

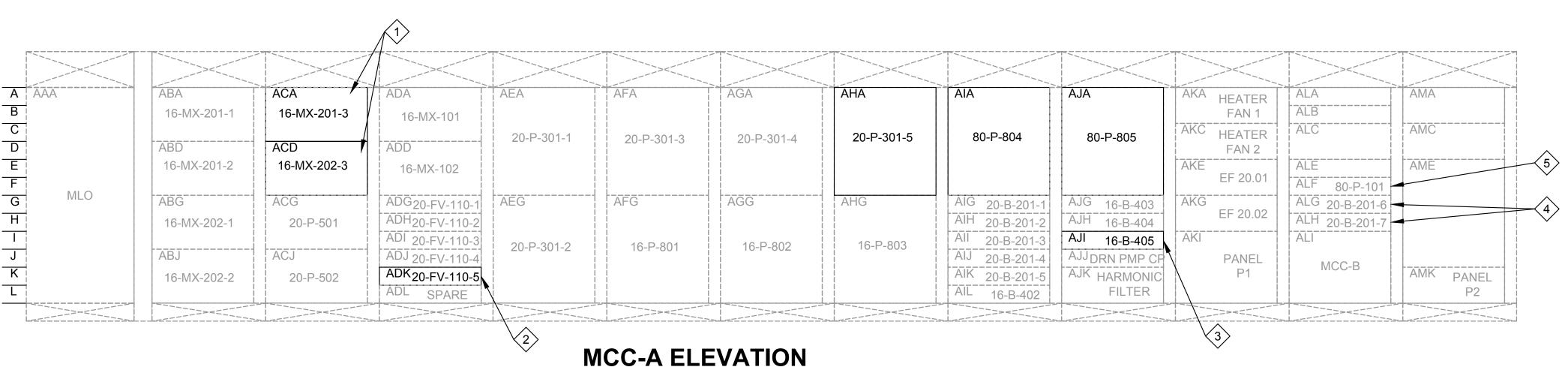
LAST UPDATED: 10/25/2024

DRAWING: 20-E-103

No. 8730795-2202 JORDAN C. GARDNER 1/31/25



J-U-B ENGINEERS, INC.





- EXISTING STARTERS HAVE BEEN INSTALLED PROACTIVELY FOR THE MIXERS BY THE OWNER IN BUCKETS ACA AND ACD. CONTRACTOR TO PULL IN NEW WIRE AND TERMINATE INSIDE THE **BUCKETS ACCORDING TO THE CONDUIT** SHCEDULES AND DEVELOPMENTS.
- BRANCH FEEDER FOR THE NEW FV-110-5 VALVE HAS BEEN PROACTIVELY INSTALLED IN THIS BUCKET BY THE OWNER. CONTRACTOR TO PULL IN NEW WIRE AND TERMINATE ACCORDING TO THE CONDUIT SCHEDULE AND DEVELOPMENTS.
- BRANCH FEEDER FOR NEW BLOWER 16-B-405 HAS BEEN PROACTIVELY INSTALLED BY THE OWNER. CONTRACTOR TO PULL IN NEW CONDUCTORS ACCORDING TO THE OCNDUIT DEVELOPMENTS AND SCHEDULES AND TERMINATE IN THIS BUCKET.
- 4. THE TWO BLOWERS 20-B-201-6 AND 20-B-201-7 BEING RE-PURPOSED FOR MEMBRANE AIR ARE CURRENTLY BEING FED FROM BUCKETS ALG AND ALH. THERE IS NOTHING THAT THE CONTRACTOR NEEDS TO DO WITH THIS BUCKET OR FEEDER. PLEASE NOTE THAT I BELIEVE THE LABEL ON THE MCC IS INCORRECT, IT READS 80-B-110 AND 80-B-111 WHICH DO NOT EXIST.
- 5. THE EXISTING SLUDGE HOLDING DECANT PUMP FED FROM THIS BUCKET WILL NOT BE IN SERVICE AS THE DECANT PUMP IS BEING DEMOLISHED AND RETURNED TO OWNER. CONTRACTOR TO PULL WIRE FROM THIS BUCKET AND LOCK OUT THE BREAKER.

80-P-101

20-B-201-6 -

4 20-B-201-7

J-U-B ENGINEERS, INC. J-U-B ENGINEERS, INC. 392 E. Winchester St., Suite 300

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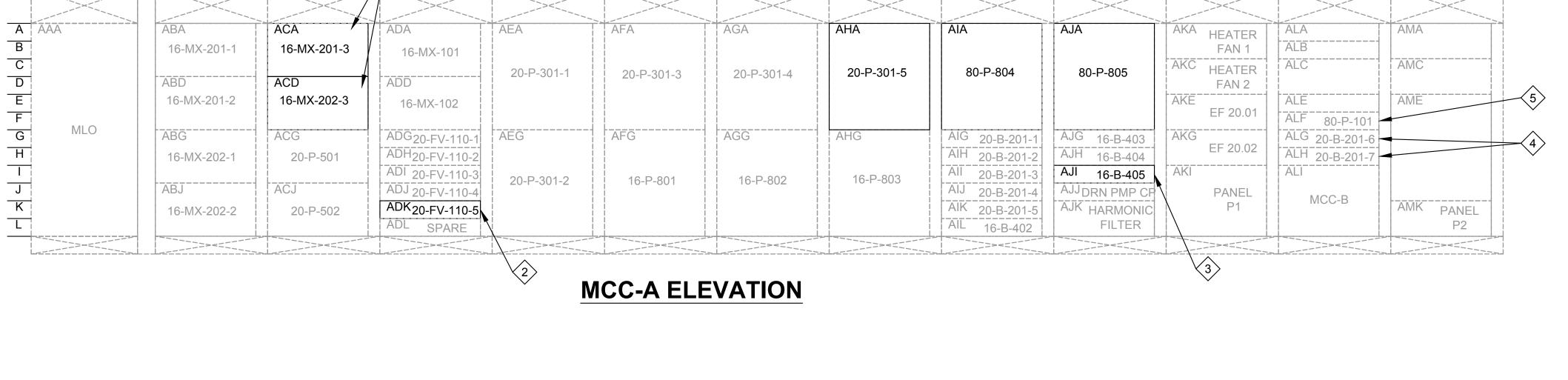
**REVIEW** 

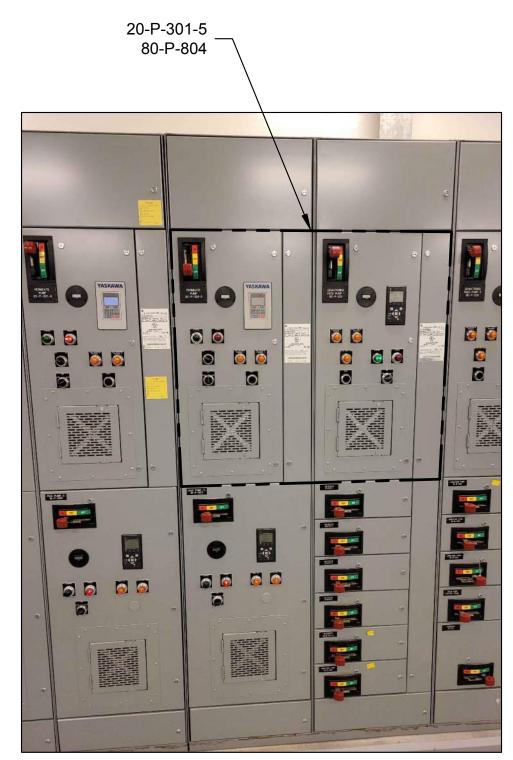
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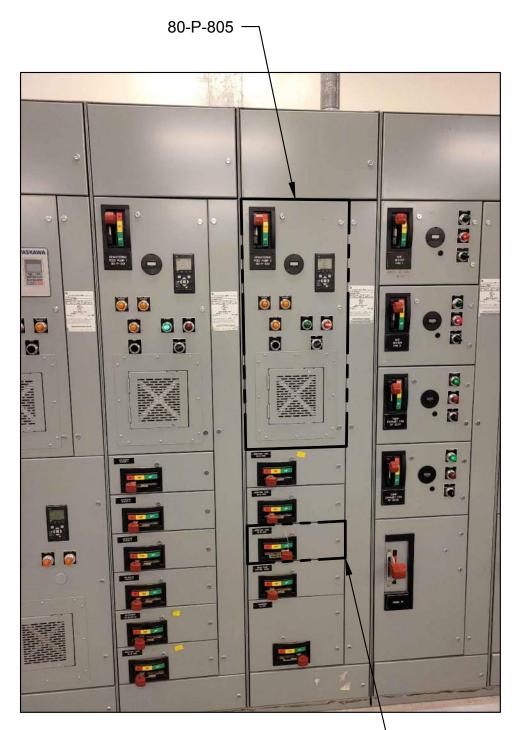
ELECTRICAL - ANOXIC & MEMBRANE MCC-A ELEVATION WRF PHASE 3 UPGRADES SANTAQUIN CITY

JUB PROJ. #:93-24-001 DRAWN BY: EGK / DCL DESIGN BY: JCG CHECKED BY: MPJ

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INCH, SCALE ACCORDINGLY
LAST UPDATED: 1/29/2025 DRAWING: 20-E-502











16-MX-201-3 16-MX-202-3

227.05

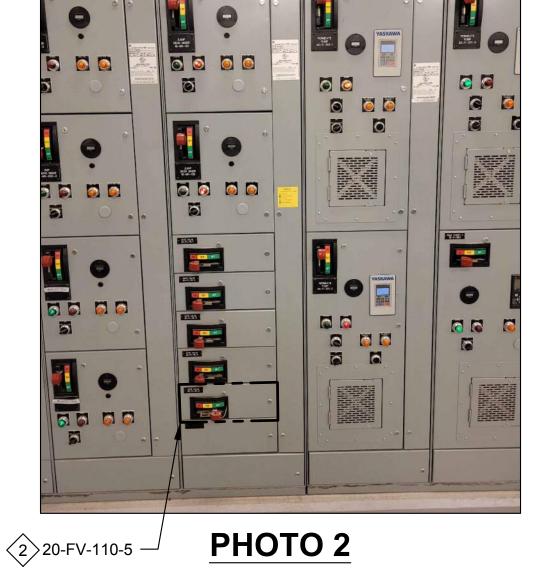


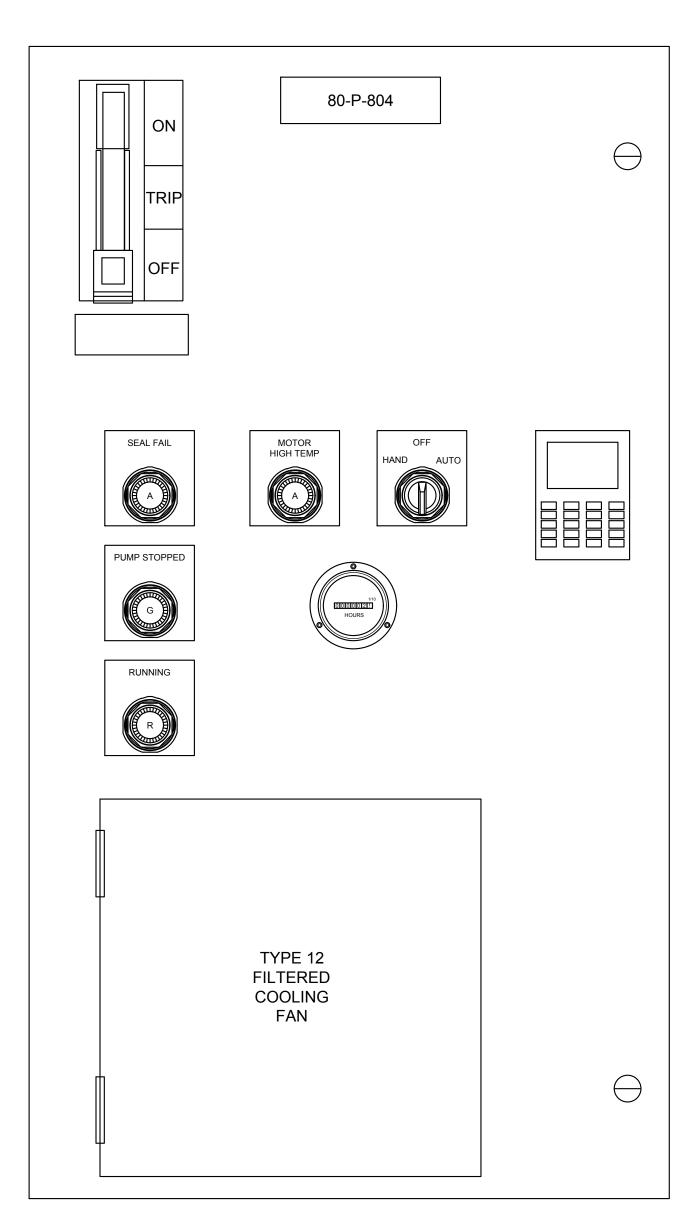
PHOTO 3

**PHOTO 4** 16-B-405 3

PHOTO 5

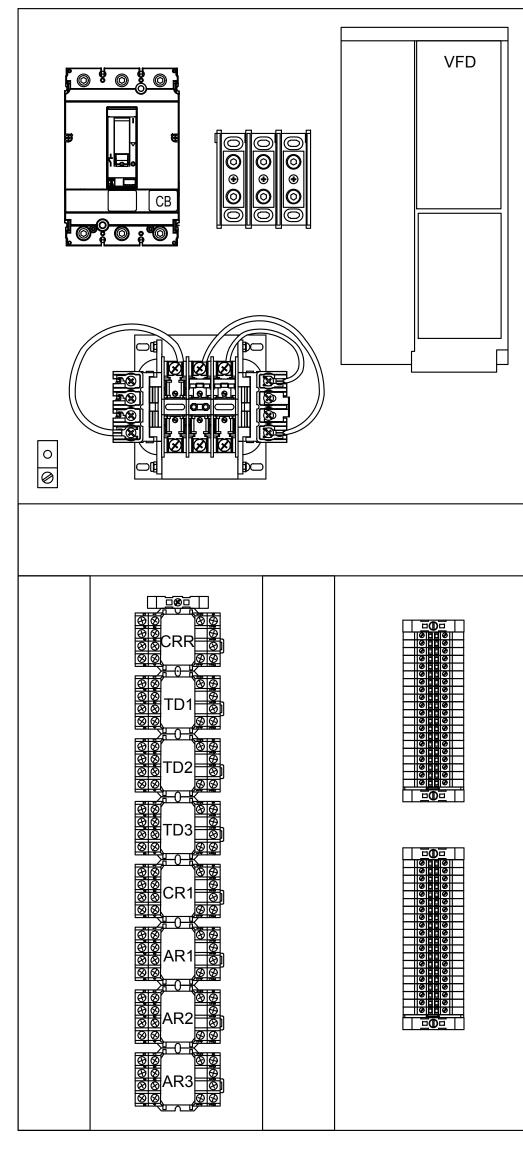
IKAAITHI IKU AAP 2 IK-F-201

No. 8730795-2202 JORDAN C. GARDNER 1/31/25



#### **RECIRC PUMP FRONT VIEW**

80-P-804 & 80-P-805 MCC BUCKETS AIA AND AIJ RESPECTIVELY



#### **RECIRC PUMP BACKPANEL VIEW**

80-P-804 & 80-P-805 MCC BUCKETS AIA AND AIJ RESPECTIVELY



# **KEY NOTES**

CONTRACTOR TO RE-BUILD MCC DOORS AND INTERIORS FOR THE RECIRC PUMPS. EXISTING EQUIPMENT TO BE REMOVE SALVAGED TO OWNER AND REPLACED WITH NEW PER THE DESIGN DETAILS BELOW. CONTRACTOR TO SUBMIT ON ALL NEW EQUIPMENT TO THE ENGINEER AND TRY TO MATCH EXISTING EQUIPMENT AS BEST AS POSSIBLE. THIS INCLUDES BREAKERS, PILOT DEVICES, TERMINAL BLOCKS, RELAYS, ETC. DESIGN OF NEW RECIRC VFDS BASED AROUND FC202 DANFOS AQUA,

DESIGN BY: JCG CHECKED BY: MPJ ONE INCH
AT FULL SIZE, IF NOT ONE
INCH, SCALE ACCORDINGLY
LAST UPDATED: 1/29/2025

JUB PROJ. #:93-24-001

DRAWN BY: EGK / DCL

DRAWING:

20-E-503

ELECTRICAL - ANOXIC & MEMBRANE RECIRC PUMP VFD SECTIONS

WRF PHASE 3 UPGRADES SANTAQUIN CITY

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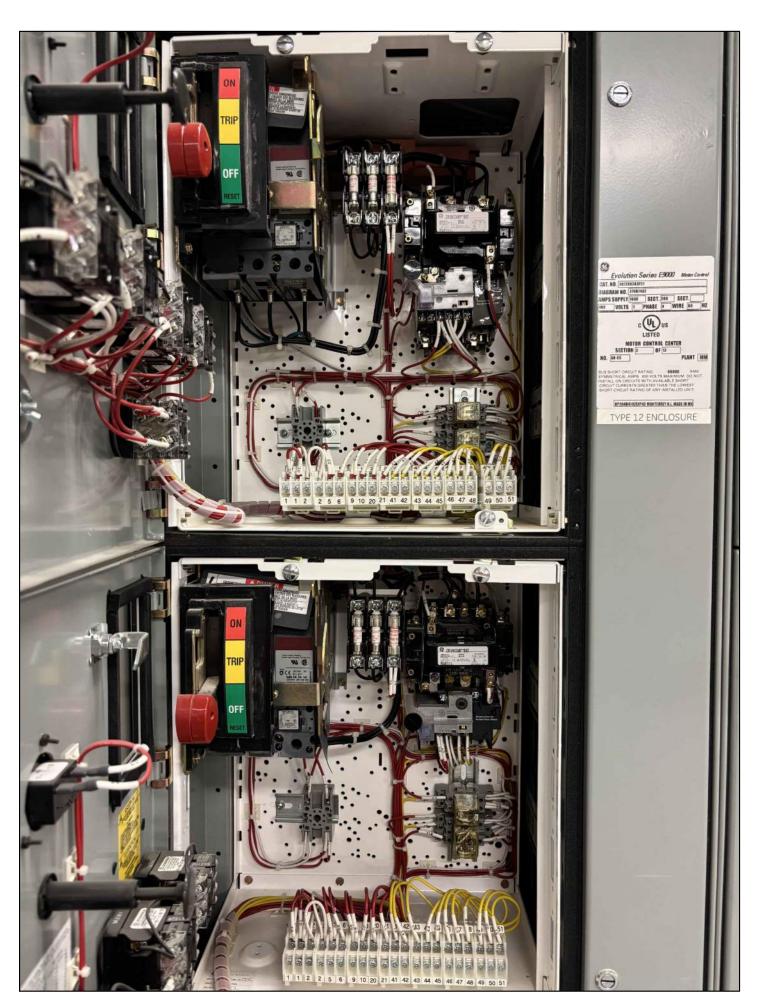
**REVIEW** 

www.skmeng.com

Subconsultant:

MCC-A DEMOLITION PHOTO

NEMA 12. PART NUMBER: FC-202P11KT4P21H1XNXXXXSXXXXANBXCXXXXDX



**MIXER SECTION** 

**MIXER WIRING DIAGRAM** 

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THI: PRC WH				ġ.

WRF PHASE 3 UPGRADES SANTAQUIN CITY

ELECTRICAL - ANOXIC & MEMBRANE MIXER SECTION AND WIRING DIAGRAM

JUB PROJ. #: 93-24-001 DRAWN BY: EGK / DCL DHAWN BY: EGK / DCL

DESIGN BY: JCG

CHECKED BY: MPJ

ONE INCH

AT FULL SIZE, IF NOT ONE
INCH, SCALE ACCORDINGLY

LAST UPDATED: 1/29/2025 No. 8730795-2202

JORDAN C. GARDNER 1/31/25

DRAWING:

### MCC-A EXISTING LOAD CALCULATIONS

CIRCUIT/DESCRIPTION	KVA	HP	FLA
MOTOR LOADS			
16-MX-201-3		5.0	7.6
16-MX-202-3		5.0	7.6
20-FV-110-5		1.0	2.1
16-P-804		15.0	21.0
16-P-805		15.0	21.0
16-B-404		60.0	77.0
PERMEATE PUMP 20-P-301-5		15.0	21.0
GATE CONTROL VALVE 20-FV-110-5		1.0	2.1
NON-MOTOR LOADS			
UV BANK 1	18.5		22.3
UV BANK 2	18.5		22.3
UV BANK 3	18.5		22.3
SHB-DP			471.0
SUBTOTAL			697.2
+ 25% OF LARGEST MOTOR			19.3
TOTAL AMPS @ 480V/3PHASE			716.5
SERVICE SIZE (AMPS)			

### 

DESIGN WATTS:

MIN. RATING (AMPS):

LOCATION: ELECTRICAL ROOM

MOUNTING: SURFACE

A P DESCRIPTION

20 1 SUMP KIVA 1

20 1 SUMP KIVA 2

FEED: BOTTOM

BRKR

23=3

20.

DIMENSIONS: 20"W x 5.75"D x 43.5"H

40 2 CONDENSING UNIT CU.02.01

20 1 KIVA FLOW METER 20-FIT-101

20 1 CONTROL PANEL CP-11

20 1 CONTROL PANEL CP-12

20 1 CONTROL PANEL CP-13

20 1 CONTROL PANEL CP-14

20 1 CONTROL PANEL CP-15

\_

# LP1 LOAD CALCULATIONS

PANELBOARD LP1

225 AMPS

200 M.C.B.

22,000 A.I.C.

2,800

3,520

2,080

2,080

3,580

3,828

17,888

PHASE LOADS

0

50

800

900

2,750

4,500

WATTS NO CONT. N-CONT. CONT. N-CONT. N-CONT. NO WATTS WATTS SIZE DESCRIPTION

2,440

2,080

2,080

3,500

3,616

13,716

1,600

VOLTS: 208Y/120

FED FROM: TRANSFORMER T-1

ELECTRICAL ROOM OUTLETS.

CONDENSING UNIT CU.01.01

CONDENSING UNIT CU.01.02

CONDENSING UNIT CU.01.03

CONDENSING UNIT CU.01.04

BLOWER ROOM HVAC CONTROL PANEL

BLOWER ROOM GENERAL POWER

ELECTRIC UNIT HEATER EUH.01.02

ELECTRIC DUCT HEATER EDH.02.02

AIR COMPRESSOR

SPACE

LAB MUFFLE FURNACE

TELEPHONE TERMINAL BOARD

PHASE: 3

WIRES: 4

N-CONT. CONT. WIRE

360

2,080

2,080

2,080

2,080

2,080

2,080

2,080

2,080

900

1,500

1,500

3,000

3,000

3,328

3,328

100

2,750

2,750

34,276 5,600

4

10

14

16

20

22

26

28

32

34

.38

40

0 42

3,520 6

2,080 12

2,080 18

2,980 24

5,000 30

3,616 36

19,276

MFGR: GENERAL ELECTRIC

CONT.

50

800

800

800

4,850

10,450

13,063 50,880

63,943

178

SIZE WATTS

N-CONT.

2,080 1

2,080 3

1,440 5

1,440 7

9

11

13

15

17

19

21

2,080 23

2,080 25

2,000 27

2,000 29

828 31

288 33

288 35

16,604

37

39

41

800

800

0

2,750

4,350

TYPE: AQ

NEMA: 1

WIRE

NEW LOAD SHOWN IN RED TEXT

# MCC-A NEW LOAD CALCULATIONS

PANEL: P1B	VOLTAGE: 277/480		MAIN CB: 60	0 AMP	BUS AMPS: 600 AMP				
PANEE. PID	BUS A.	BUS A.I.C: 22KA		BKR AIC: 22KA		MOUNTING: SURFACE			
CIRCUIT DESCRIPTION BKR		CIRCUIT	LOAD	PHASE	LOAD	CIRCUIT	BKR	CIRCUIT DESCRIPTION	
AERATION BASIN N.1A		1	73	Α	73	2		AERATION BASIN N.2C	
16-FV-401-1	15/3	3	73	В	73	4	15/3	16-FV-402-2	
10-FV-401-1		5	73	С	73	6		10-F V-402-2	
AERATION BASIN N-1B		7	73	Α	292	8		DEOXYGENATING BASIN N.3	
16-FV-402-1	15/3	9	73	В	292	10	15/3	16-FV-701	
10-F <b>V-4</b> 02-1		11	73	С	292	12		10-7-01	
AERATION BASIN N.1C		13	73	Α	73	14		AERATION BASIN N.2A	
16-FV-403-1	15/3	15	73	В	73	16	15/3	16-FV-401-2	
10-F V-403-1		17	73	С	73	18		10-1 0-401-2	
AERATION BASIN N.2B	15/3	19	73	Α	TBD	20			
16-FV-403-2		21	73	В	TBD	22	15/3	STORAGE ROOM HEATER	
10-1 V-405-2		23	73	С	TBD	24			
	NEL 100/3	25	TBD	Α	TBD	26			
NON-POTABLE WATER PANEL		27	TBD	В	TBD	28	15/3	20" VALVE	
		29	TBD	С	TBD	30			
		31	TBD	Α	TBD	32		20-FV-501-3 SOLENOID	
HEAT TRACE PANEL	100/3	33	TBD	В	TBD	34	30/3	20-FV-501-4 SOLENOID	
		35	TBD	С		36			
			PHASE A	PHASE B	PHASE C	NOTES:			
CONNECTED VA PER PHASE			730.0	730.0	730.0				
CONNECTED AMPS PER PHASE			2.6	2.6	2.6				
25% OF CONTINUOUS & LIGHTING LOAD (VA)			182.5	182.5	182.5				
CODE VA PER PHASE			912.5	912.5	912.5				
CODE AMPS PER PHASE			3.3	3.3	3.3				

PANEL: P1A		VOLTAGE	277/480	MAIN CB: 60	0 AMP	BUS AMPS	: 600 AM	P		
PANEL: PIA		BUS A.	I.C: 22KA	BKR AIC: 22KA		MOUNTING	S: SURFA	ACE		
CIRCUIT DESCRIPTION	BKR	CIRCUIT	LOAD	PHASE	LOAD	CIRCUIT	BKR	CIRCUIT DESCRIPTION		
		1	22200	Α	25000	2				
LCP	60/3	3	22200	В	25000	4	60/3	LP1 - TRANSFORMER		
		5	22200	С	25000	6				
		7	8333	Α	2200	8				
LP5 XFMR	60/3	9	8333	В	2200	10	60/3	BRIDGE CRANE		
		11	8333	С	2200	12				
		13	5600	Α	TBD	14				
UV-A	30/3	15	5600	В	TBD	16	30/3	HSC		
		17	5600	С	TBD	18				
		19	5600	Α	3500	20				
UV-B	30/3	21	5600	В	3500	22	20/3	AIR COMPRESSOR		
		23	5600	С	3500	24				
		25	5600	Α	TBD	26		20-FV-501-1 SOLENOID		
UV-C	30/3	27	5600	В	TBD	28	30/3	20-FV-501-2 SOLENOID		
		29	5600	С	TBD	30		20-FV-501-5 SOLENOID		
		31	250	Α	250	32				
ROLL-UP DOOR - WEST	15/3	33	250	В	250	34	15/3	ROLL-UP DOOR - EAST		
		35	250	С	250	36				
		37	TBD	Α	TBD	38				
ELECTRIC ROOM HEATER	15/3	39	TBD	В	TBD	40	15/3	BLOWER ROOM HEATER		
		41	TBD	С	TBD	42				
			PHASE A	PHASE B	PHASE C	NOTES:				
CONNECTED VA PER PHASE			78533.0	78533.0	78533.0					
CONNECTED AMPS PER PHASE			283.5	283.5	283.5					
25% OF CONTINUOUS & LIGHTING LOAD (VA)			19633.3	19633.3	19633.3					
CODE VA PER PHASE			98166.3	98166.3	98166.3					
CODE AMPS PER PHASE	,,,,,,		354.4	354.4	354.4					

# **EXISTING P1A LOAD CALCULATIONS**



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Subconsultant:

BRKR

A P

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REVISION

BY APR. DATE

WRF PHASE 3 UPGRADES
SANTAQUIN CITY
ELECTRICAL - ANOXIC & MEMBRANE
CALCULATION

FILE:
JUB PROJ. #:93-24-001
DRAWN BY: EGK / DCL
DESIGN BY: JCG
CHECKED BY: MPJ
ONE INCH

HECKED BY: MPJ

ONE INCH
AT FULL SIZE, IF NOT ONE
INCH, SCALE ACCORDINGI
AST UPDATED: 1/29/2025

DRAWING:

JORDAN C. GARDNER

. 1/31/25.

**POWER CONDUIT** 

# PROCESS BASIN CONDUIT SCHEDULE 1

J-U-B ENGINEERS, INC.

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WRF PHASE 3 UPGRADES SANTAQUIN CITY

ELECTRICAL - ANOXIC & MEMBRANE PROCESS BASINS CONDUIT SCHEDULE

JORDAN C.
GARDNER
1/31/25

## NOTE

1. SHADED CELLS REPRESENT EXISTING CONDUITS

JUB PROJ. #:93-24-001

DRAWN BY: EGK / DCL

DESIGN BY: JCG

CHECKED BY: MPJ

AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY LAST UPDATED: 1/29/2025

DRAWING: 20-E-701

Plot Date:1/29/2025 11:57 AM Plotted By: Daniel Leavitt
Date Created:9/18/2024 C:\USERS\DANIEL.LEAVITT\DC\ACCDOCS\U U B ENGINEERS INC IGP\\SANTAQUIN WRF PHASE 3 UPG

				SIG	NAL CONDUIT		
CONDUIT	SIZE	CONDUCTORS	SERVICE	FROM	ТО	DUCTBANKS	NOTES
S-16-01	3/4"	6 #18 TSP		PLANT CONTROL PCP	DO TRANSMITTER 16-AIT-404-1		THROUGH JB
S-16-02A	3/4"	1 #18 TSP		PLANT CONTROL PCP	AERATION VALVE 16-FV-403-1		THROUGH JB
S-16-02B	3/4"	MAN. SUPP.		PLANT CONTROL PCP	DO ANALYZER 16-AIT-403-1	HAMBAKAN TITORI BANGKAN ANDAKAN BANGAN BARI BARI BANGAN BANGAN BANGAN BANGA	THROUGH JB, MANUFACTURED SUPPLIED CABLE
S-16-03A	3/4"	1 #18 TSP		PLANT CONTROL PCP	AERATION VALVE 16-FV-402-1		THROUGH JB
S-16-03B	3/4"	MAN. SUPP.		PLANT CONTROL PCP	DO ANALYZER 16-AIT-402-1		THROUGH JB, MANUFACTURED SUPPLIED CABLE
S-16-04A	3/4"	1 #18 TSP	Militaria di Nassassa i interita esperimente de la casa de la casa de la compansión de la compansión de la com Na compansión de la compansión de la casa de la compansión de la compansión de la compansión de la compansión	PLANT CONTROL PCP	AERATION VALVE 16-FV-401-1	rii kanesyy i syle ele ele en kalendariakan kanesyin element. Kirin ili ikan jaran kalendaria kanesyin elementa ili ina ya element.	THROUGH JB
S-16-04B	3/4"	MAN. SUPP.		PLANT CONTROL PCP	DO ANALYZER 16-AIT-401-1		THROUGH JB, MANUFACTURED SUPPLIED CABLE
S-16-05	3/4"	1 #18 TSP		PLANT CONTROL PCP	LEVEL TRANSMITTER 16-LIT-201-1		
S-16-06A	3/4"	1 #18 TSP	inyakupun lunggi malung ilingka palag Panggang panggangan	PLANT CONTROL PCP	AERATION VALVE 16-FV-403-2	r karangan kanada na mangan kanada kanad Kanada kanada kanad	THROUGH JB
S-16-06B	3/4"	MAN. SUPP.		PLANT CONTROL PCP	DO ANALYZER 16-AIT-403-2		THROUGH JB, MANUFACTURED SUPPLIED CABLE
S-16-07A	3/4"	1 #18 TSP		DO CONTROLLER	AERATION VALVE 16-FV-402-2		THROUGH JB
S-16-07B	3/4"	MAN. SUPP.	ure avis arresta i militara il la sulla di la della seria della di la seria di la seria di la seria di la seri Il la signi vidi seria di la la seria di la seria d	DO CONTROLLER	DO ANALYZER 16-AIT-402-2	irin kan mengala salah salah salah sebagai di menengan persebagai sebagai di salah salah sebagai sebagai sebag Mengalah sebagai sebag	THROUGH JB, MANUFACTURED SUPPLIED CABLE
S-16-08A	3/4"	1 #18 TSP		DO CONTROLLER	AERATION VALVE 16-FV-401-2		THROUGH JB
S-16-08B	3/4"	MAN. SUPP.		DO CONTROLLER	DO ANALYZER 16-AIT-401-2		THROUGH JB, MANUFACTURED SUPPLIED CABLE
S-16-09	3/4"	1 #18 TSP	nieses augenparii este suspani evit as paris var autra una una Divini en este aug	PLANT CONTROL PCP	ANOXIC BASIN LEVEL 16-LIT-202-2	r den de de la companya de de deserva de	
S-16-10	1"	MAN. SUPP.	4-20mA	PLANT CONTROL PCP	ANOXIC BASIN LEVEL 16-PT-203-1		THROUGH JB-E2
S-16-10A							NOT USED
S-16-10B						ornasti kurungan kemalangan berasakan Managan Kangan kangan berasak	NOT USED
S-16-11	1"	2 # 18 TSP	4-20mA	PLANT CONTROL PCP	AERATION BASIN 3 VALVE CONTROL 16-FV-401-3		
S-16-11A	1"	2 # 18 TSP	4-20mA	PLANT CONTROL PCP	AERATION BASIN 3 VALVE CONTROL 16-FV-401-3		
S-16-11B	1"	2 # 18 TSP	4-20mA	PLANT CONTROL PCP	AERATION BASIN 3 VALVE CONTROL 16-FV-401-3		
S-16-12	1"	3 #18 TSP	4-20mA	PLANT CONTROL PCP	AERATION BASIN 3 DO TRANSMITTER 16-AIT-401-3		THROUGH JB-E2
S-16-12A							NOT USED
S-16-12B							NOT USED
S-16-13			HERRESARTHER RELIGIONE PERFECTION FOR REASON FOR REASON FOR REASON FOR THE PERFECT OF THE PERFEC			PROGRAM BURGORIA DI BURGORIA DE BARRANA. PROGRAM POR CARRANA BURGORIA DE BARRANA.	NOT USED
S-16-14	3/4"	2 #18 TSP		PLANT CONTROL PANEL PCP	AERATION BLOWER 16-B-401		
S-16-15	3/4"	2 #18 TSP		PLANT CONTROL PANEL PCP	AERATION BLOWER 16-B-402		
S-16-16	3/4"	2 #18 TSP		PLANT CONTROL PANEL PCP	AERATION BLOWER 16-B-403	radistratorio dell'estre delle della signatoria della estre estre della signate della signate della signate de La inclumenta di construire della signate della signatoria della signatoria della signatoria della signatoria d	
S-16-17	3/4"	2 #18 TSP		PLANT CONTROL PANEL PCP	AERATION BLOWER 16-B-404		
S-16-18	3/4"	2 #18 TSP		PLANT CONTROL PANEL PCP	AERATION BLOWER 16-B-405		
S-16-20	3/4"	4 #18 TSP		PLANT CONTROL PCP	MCC-A RECIRC VFDS SPEED CONTROL		
				COMMUN	IICATION CONDUIT		
				SPA	ARE CONDUIT		
SP-16-01	1"	PULL STRING	TBD	JB-W1	OVERHEAD - WEST AEROBIC BASIN 3 FUTURE EQUIPMENT		CONFIRM WITH PLANT STAFF EXACT LOCATION
SP-16-02	1"	PULL STRING	TBD	JB-W1	OVERHEAD - WEST AEROBIC BASIN 3 FUTURE EQUIPMENT		CONFIRM WITH PLANT STAFF EXACT LOCATION

# PROCESS BASIN CONDUIT SCHEDULE 2

TAG	DESCRIPTION	MAKE	MODEL	SUPPLY	RANGE	COMMENTS
16-PT-203-1	ANOXIC BASIN 3 LEVEL TRANSMITTER	DWYER	SBLT2	LOOP-24VDC	0-20FT	OR APPROVED EQUAL
16-LSH-203-1	ANOXIC BASIN 3 HIGH LEVEL SWITCH	DWYER	CFS2-CGDSN-30	LOOP-24VDC	NC CONTACT	OR APPROVED EQUAL
16-AIT-401-3	AERATION BASIN 3 DO TRANSMITTER	HACH	SC200	LOOP-24VDC		
16-AE-401-3	AERATION DO PROBE 1	HACH	LDO SC MODEL 2	FROM TRANSMITTER	0-10PPM	
16-AE-402-3	AERATION DO PROBE 2	HACH	LDO SC MODEL 2	FROM TRANSMITTER	0-10PPM	
16-AE-403-3	AERATION DO PROBE 3	HACH	LDO SC MODEL 2	FROM TRANSMITTER	0-10PPM	
16-TSH-201-3	ANOXIC BASIN 3A MIXER HIGH TEMP SWITCH	BY MFG	BY MFG	LOOP-24VDC		INCLUDED BY MIXER SUPPLIER
16-MAH-201-3	ANOXIC BASIN 3A MIXER MOISTURE SWITCH	BY MFG	BY MFG	LOOP-24VDC		INCLUDED BY MIXER SUPPLIER
16-TSH-202-3	ANOXIC BASIN 3B MIXER HIGH TEMP SWITCH	BY MFG	BY MFG	LOOP-24VDC		INCLUDED BY MIXER SUPPLIER
16-MAH-202-3	ANOXIC BASIN 3B MIXER MOISTURE SWITCH	BY MFG	BY MFG	LOOP-24VDC		INCLUDED BY MIXER SUPPLIER
16-PI-801	RECIRC PUMP 804 PRESSURE GAUGE	ASHCROFT	1279 SERIES		0-160PSI	
16-PI-805	RECIRC PUMP 805 PRESSURE GAUGE	ASHCROFT	1279 SERIES		0-160PSI	
16-TSH-804-1	RECIRC PUMP 804 HIGH TEMP SWITCH	KSB	MODEL A	LOOP-24VDC		INCLUDED WITH PUMP BY MANUFACTURER
16-MAH-804-1	RECIRC PUMP 804 MOISTURE SWITCH	KSB	MODEL A	LOOP-24VDC		INCLUDED WITH PUMP BY MANUFACTURER
16-TSH-805-1	RECIRC PUMP 805 HIGH TEMP SWITCH	KSB	MODEL A	LOOP-24VDC		INCLUDED WITH PUMP BY MANUFACTURER
16-MAH-805-1	RECIRC PUMP 805 MOISTURE SWITCH	KSB	MODEL A	LOOP-24VDC		INCLUDED WITH PUMP BY MANUFACTURER

# PROCESS BASIN INSTRUMENT SCHEDULE



# **NOTE**

1. SHADED CELLS REPRESENT EXISTING CONDUITS

J-U-B ENGINEERS, INC.

J-U-B ENGINEERS, INC. 392 E. Winchester St., Suite 300 Salt Lake City, UT 84107 Phone: 501-547-0393 www.jub.com

Subconsultant:

533 W 2600 S, Suite 25 Bountiful, Utah 84010 Phone: (801) 677-0011 www.skmeng.com

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WRF PHASE 3 UPGRADES SANTAQUIN CITY

ELECTRICAL - ANOXIC & MEMBRANE PROCESS BASINS CONDUIT & INSTRUMENT SCHEDU

JUB PROJ. # : 93-24-001

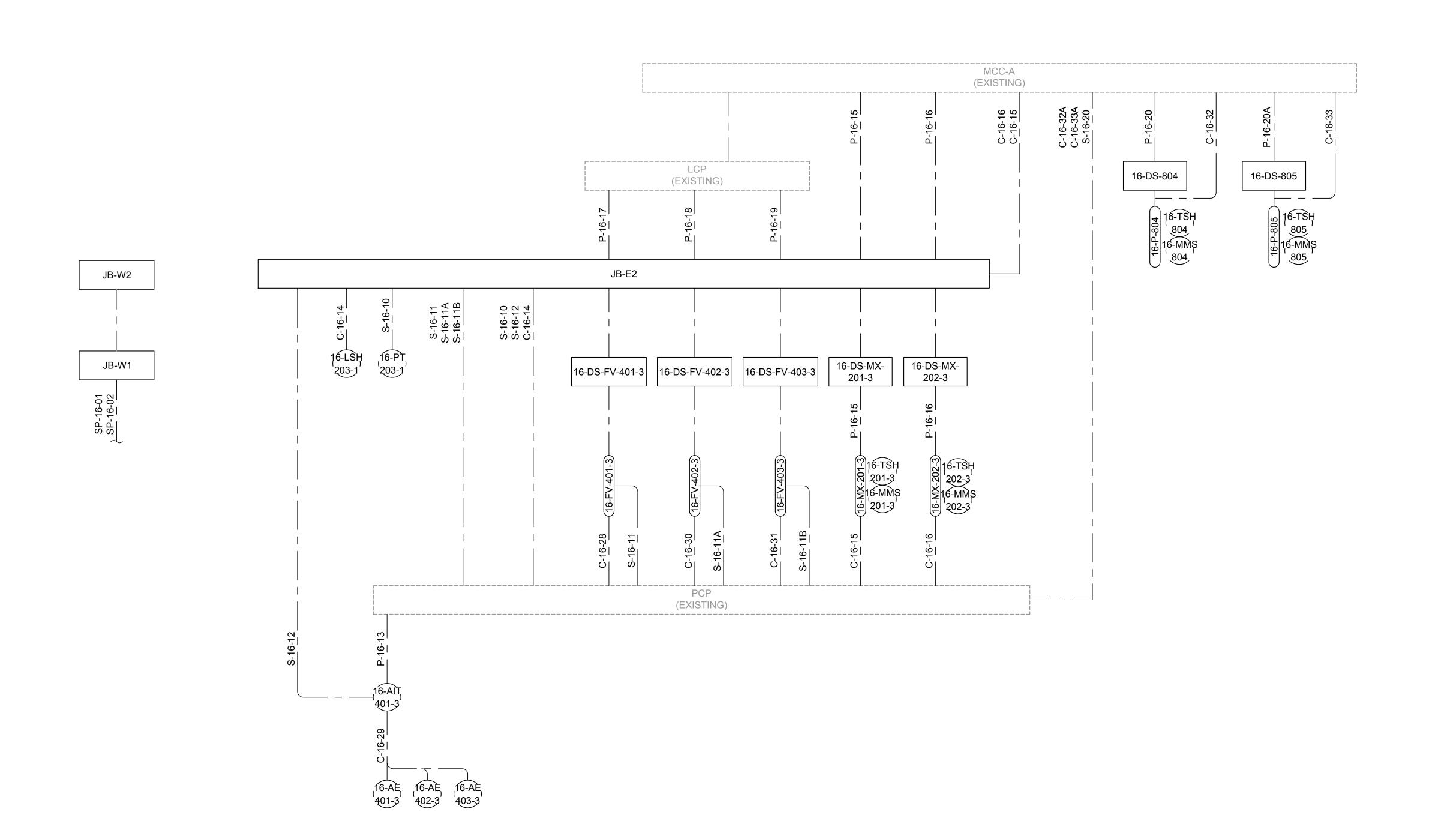
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ELECTRICAL - ANOXIC & MEMBRANE PROCESS BASINS CONDUIT DEVELOPMENT WRF PHASE 3 UPGRADES SANTAQUIN CITY

# JORDAN C. GARDNER 1/31/25 ATE OF UTPATH **KEY NOTES**

No. 8730795-2202

- CONTRACTOR TO USE EXISTING CONDUITS WHEN POSSIBLE. SEE SITE PLAN FOR PICTURES AND LOCATIONS OF EXISTING CONDUITS IN PROCESS BUILDING. CONTRACTOR TO CONFIRM CONDUITS BETWEEN MCC-A AND PCP, USE EXISTING BEFORE RUNNING NEW CONDUITS OVERHEAD IN ELECTRICAL ROOM.
- 2. 4 JUNCTION BOXES ARE LOCATED ON THE EXTERIOR WALLS OF THE ANOXIC AND AEROBIC BASIN BUILDING. 2 ON THE EAST AND 2 ON THE WEST SIDE. IT IS ANTICIPATED THAT JB-E3 SHOWN ON THE SITE LAYOUT WILL BE THE PRIMARY JUNCTION BOX FROM WHICH EXISTING CONDUITS RUN TO NEW EQUIPMENT FOR THE NEW ANOXIC AND AEROBIC BASINS. CONTRACTORS ARE TO VERIFY THIS INFORMATION PRIOR TO CONDUCTOR INSTALLATION.

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ONE INCH

AT FULL SIZE, IF NOT ONE
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LAST UPDATED: 1/30/2025

DRAWING:

					R CONDUIT		
CONDUIT	SIZE 4"	2 PARALLEL 4#250 W #2 GND	SERVICE 480V	FROM CT CABINET & METER	TO FUSED DISCONNECT	DUCTBANKS	NOTES
ingerpaster en en kanne. Skiellingsberen en en en en en en Greater kannen en en en en en en	4"	2 PARALLEL 4#250 W #2 GND 2 PARALLEL 4#250 W #2 GND	480V 480V	FUSED DISCONNECT GEN	ATS-20310 ATS-20310	A DITESSA DEL PARTICIO DE LES ANTICIONES PARTICIONES P	
	4"	2 PARALLEL 4#250 W #2 GND 2 PARALLEL 4#250 W #2 GND	480V	ATS-20310	DP-BLS		
	1" 1"	3 #10 W/ #10 GND 4 #6 W/ #10 GND	480V 208/120V	DP-BLS XFMR-BLS	XFMR-BLS LP-BLS		
	1"	4 #12 W/ #12 GND	120V	LP-BLS	GEN		
	1" 1"	2 #12 W/ #12 GND 2 #12 W/ #12 GND	120V 120V	LP-BLS LP-BLS	RTU-BLS LCP-20110		
	2"	3 #4 W/ #8 GND	480V	DP-BLS	VFD-P-20210	DD 000	TUPO LIGIT ID 20404
	2" 2"	3 #4 W/ #8 GND 3 #4 W/ #8 GND	480V 480V	VFD-P-20210 DP-BLS	P-20210 VFD-P-20220	DB-203	THROUGH JB-20101
	2" 2"	3 #4 W/ #8 GND WIRE FUTURE	480V 480V	VFD-P-20220 DP-BLS	P-20220 VFD-P-20230 (FUTURE)	DB-203	THROUGH JB-20101
	2"	WIRE FUTURE	480V	VFD-P-20230 (FUTURE)	P-20230 (FUTURE)	DB-203	THROUGH JB-20101
P-20-01	1" 1-1/2"	2 #14 W/ #14 GND 4 #2 W/ #6 GND	120V	LP-BLS MCC-A	EF-20801 MEMBRANE BLOWER 1 20-B-201		
P-20-02	1-1/2" 1-1/2"	4 #2 W/ #6 GND		MCC-A MCC-A	MEMBRANE BLOWER 2 20-B-202		
P-20-03 P-20-04	1-1/2"	4 #2 W/ #6 GND 4 #2 W/ #6 GND		MCC-A	MEMBRANE BLOWER 3 20-B-203 MEMBRANE BLOWER 4 20-B-204		
P-20-05 P-20-06	1" 1"	3 #10 W/ #10 GND 3 #10 W/ #10 GND		MCC-A MCC-A	PERMEATE PUMP 1 20-P-301-1 PERMEATE PUMP 2 20-P-301-2		THROUGH DISCONNECT THROUGH DISCONNECT
P-20-07		3 #10 W/ #10 GND		MCC-A	PERMEATE PUMP 3 20-P-301-3		THROUGH DISCONNECT
P-20-08 P-20-09		3 #10 W/ #10 GND 3 #10 W/ #10 GND		MCC-A MCC-A	PERMEATE PUMP 4 20-P-301-4 PERMEATE PUMP 5 20-P-301-5		
P-20-10	3/4"	3 #12 W/ #12 GND		MCC-A	GATE CONTROL VALVE 1 20-FV-110-1	1394 - 1444 - 1444 - 1444 - 1444 - 1444 - 1444 - 1444 - 1444 - 1444 - 1444 - 1444 - 1444 - 1444 - 1444 - 1444 1444 - 1444 - 1444 - 1444 - 1444 - 1444 - 1444 - 1444 - 1444 - 1444 - 1444 - 1444 - 1444 - 1444 - 1444 - 1444	
P-20-11 P-20-12	3/4" 3/4"	3 #12 W/ #12 GND 3 #12 W/ #12 GND		MCC-A MCC-A	GATE CONTROL VALVE 2 20-FV-110-2 GATE CONTROL VALVE 3 20-FV-110-3		
P-20-13 P-20-14	3/4" 3/4"	3 #12 W/ #12 GND 3 #12 W/ #12 GND		MCC-A MCC-A	GATE CONTROL VALVE 4 20-FV-110-4 GATE CONTROL VALVE 5 20-FV-110-5		
P-20-15	3/4"	3 #12 W/ #12 GND		PANELBOARD PL1	FLOW METER 20-FIT-301-1		
P-20-16 P-20-17	3/4" 3/4"	3 #12 W/ #12 GND 3 #12 W/ #12 GND		PANELBOARD PL1 PANELBOARD PL1	FLOW METER 20-FIT-301-2 FLOW METER 20-FIT-301-3		
P-20-18	3/4"	3 #12 W/ #12 GND		PANELBOARD PL1	FLOW METER 20-FIT-301-4		
P-20-19 P-20-20	3/4" 3/4"	3 #12 W/ #12 GND 3 #12 W/ #12 GND		PANELBOARD PL1 PANELBOARD PL1	FLOW METER 20-FIT-301-5 COOLING FAN CF.20.01		
P-20-21 P-20-22	3/4" 3/4"	2 #12 W/ #12 GND 2 #12 W/ #12 GND		PANELBOARD PL1 PANELBOARD PL1	COOLING FAN CF.20.02 COOLING FAN CF.20.03	CONTROL DE LES ESTANDOS PROPERTOS DE LA COME CONTROL DE LA CONTROL DE LA COMENCIA br>CONTROL DE LA COMENCIA DE LA COMENC	
P-20-22 P-20-23	3/4"	2 #12 W/ #12 GND 2 #12 W/ #12 GND		PANELBOARD PL1 PANELBOARD PL1	GAS UNIT HEATER UH.20.01		
P-20-24 P-20-25	3/4" 3/4"	2 #12 W/ #12 GND 2 #12 W/ #12 GND		PANELBOARD PL1 PANELBOARD PL1	GAS UNIT HEATER UH.20.02 GAS UNIT HEATER UH.20.03	en e	
P-20-26	3/4"	2 #12 W/ #12 GND		MCC-A	EXHAUST FAN EF.20.01		
P-20-27 P-20-28	3/4"	2 #12 W/ #12 GND 2 #12 W/ #12 GND		PANELBOARD LP1 PANELBOARD LP1	CONTROL PANEL CP-11 CONTROL PANEL CP-12		
P-20-29	3/4"	2 #12 W/ #12 GND		PANELBOARD LP1	CONTROL PANEL CP-13		
P-20-30 P-20-31	3/4" 3/4"	2 #12 W/ #12 GND 2 #12 W/ #12 GND		PANELBOARD LP1 PANELBOARD LP1	CONTROL PANEL CP-14 CONTROL PANEL CP-15	HIII BAADIN MARKANIO HARIA BAARI BARIN BARIN BAADI BARIN BARING BARING BARING BA	
P-20-32 P-20-33	3/4" 3/4"	3 #12 W/ #12 GND 3 #12 W/ #12 GND		MCC-A PANELBOARD P1	EXAHUST FAN EF.20.02 ROLL-UP DOOR DISCONNECT		
P-20-34	1-1/4"	4 #4 W/ #10 GND		PANELBOARD P1	HOIST/CRANE DISCONNECT		
P-20-35 P-20-40	1" 1"	3 1/0 W/ #6 GND 2 #12 W/ #12 GND	480VAC 480VAC	16-VFD-B-405 NEW AIR COMPRESSOR	MCC-A PANEL P1A		
P-20-41	1"	2 #12 W/ #12 GND	120VAC	PANEL LP-1	CP-15		
P-20-42 P-20-43	1" 1"	2 #12 W/ #12 GND 2 #12 W/ #12 GND	120VAC 480VAC	PANEL LP-1 PANEL P1A	20-FIT-102 20-FV-501-5		THROUGH 20-DS-FV-501-5
P-20-44	1"	2 #8 W/ #10 GND 2 #12 W/ #12 GND	480VAC 120VAC	20-P-301-5 CP-15	MCC-A 20-AIT-320-5		THROUGH 20-DS-P-301-5
P-20-45 P-20-46	1"	2 #12 W/ #12 GND	120VAC	CP-15	20-Ai1-320-3 20-FIT-301-5		
P-70-47 P-70-47A	1" 1"	PER TROJAN PER TROJAN	480VAC 480VAC	PANEL P1A PANEL P1A	70-UV-101-1A 70-UV-101-2A		
P-70-47B	1"	PER TROJAN	480VAC	PANEL P1A	70-UV-101-3A		
				CONTRO	DL CONDUIT		
C-20-01	3/4"	12 #14 W/ #14 GND		CP-01	MEMBRANE BLOWER 1 20-B-201		
C-20-02 C-20-03	3/4" 3/4"	12 #14 W/ #14 GND 12 #14 W/ #14 GND		CP-01 CP-01	MEMBRANE BLOWER 2 20-B-202 MEMBRANE BLOWER 3 20-B-203		
C-20-04	3/4"	12 #14 W/ #14 GND		CP-01	MEMBRANE BLOWER 4 20-B-204		
C-20-05 C-20-06A	3/4" 3/4"	2 #14 W/ #14 GND 4 #14 W/ #14 GND		CP-11 CP-11	SUCTION VALVE 20-FV-301-1 DRAIN VALVE 20-FV-501-1, 20-ZS-501-1	artin alektrologiskerekter beskirt er front fr et syn elset for et fisk er fill beskirt en skriver et skriver at teknikarisk et fisk et fisk er fisk er fisk	THROUGH JB
C-20-06B C-20-06C	3/4" 3/4"	2 #14 W/ #14 GND		CP-11 CP-11	SOLENOID VALVE 20-FV-320-1		THROUGH JB
		4 #14 W/ #14 GND			GATE CONTROL VALVE 20-FV-110-1 LEVEL SWITCHES 20-LSL-201, 20-LSLL-201-1, 20-LSHH-201-1 &		THROUGH JB
C-20-06D C-20-07A	3/4" 3/4"	10 #14 W/ #14 GND 4 #14 W/ #14 GND		CP-11 CP-11	MEMBRANE AIR VALVE 20-FV-210-1, 20-FV-211-1 PRESSURE SWITCHES 20-PSH-301-1, 20-PSH-302-1		THROUGH JB THROUGH JB
C-20-07B	3/4"	4 #14 W/ #14 GND		CP-11	VALVES 20-FV-801-1, 20-FV-802-1		THROUGH JB
C-20-08 C-20-09	3/4" 3/4"	4 #14 W/ #14 GND 2 #14 W/ #14 GND		MCC-A CP-12	PERMEATE PUMP 20-P-301-1 SUCTION VALVE 20-FV-301-2	es pentrologia de la comencia de la Comencia de la comencia del comencia del comencia de la comencia del la comencia de  la comencia de la co	
C-20-10A	3/4"	4 #14 W/ #14 GND		CP-12	DRAIN VALVE 20-FV-501-2, 20-ZS-501-1		THROUGH JB
C-20-10B C-20-10C	3/4" 3/4"	2 #14 W/ #14 GND 4 #14 W/ #14 GND		CP-12 CP-12	SOLENOID VALVE 20-FV-320-2 GATE CONTROL VALVE 20-FV-110-2		THROUGH JB THROUGH JB
					LEVEL SWITCHES 20-LSL-201-2, 20-LSLL-201-2, 20-LSHH-201-1		
C-20-10D C-20-11A	3/4" 3/4"	10 #14 W/ #14 GND 4 #14 W/ #14 GND		CP-12 CP-12	MEMBRANE AIR VALVE 20-FV-210-2, 20-FV-211-2 PRESSURE SWITCHES 20-PSH-601-2, 20-PSH-602-2	andros de la compania de la compani La compania de la co	THROUGH JB THROUGH JB
C-20-11B	3/4"	4 #14 W/ #14 GND		CP-12	VALVES 20-FV-801-2, 20-FV-802-2 PERMEATE PUMP 20-P-301-2		THROUGH JB
C-20-12	3/4"	4 # 4 \\\/ # 4 (-NI)	jakor girangarangan perdaman pada kanangan kanangan kanangan kanangan bangan bersakan dan kanangan kanangan ka	CORD BRESONES OF CARREST AND			- Company of the control of the cont
C-20-12 C-20-13	3/4" 3/4"	4 #14 W/ #14 GND 2 #14 W/ #14 GND		MCC-A CP-13	SUCTION VALVE 20-FV-301-3		
							THROUGH JB THROUGH JB



J-U-B ENGINEERS, INC.

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ELECTRICAL - ANOXIC & MEMBRANE MEMBRANE CONDUIT & INSTRUMENT SCHEDULES

JORDAN C. GARDNER 1/31/25 TE OF UTATION

### **NOTE**

I. SHADED CELLS REPRESENT EXISTING CONDUITS

FILE:

JUB PROJ. #:93-24-001

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DESIGN BY: JCG

CHECKED BY: MPJ

ONE INCH

AT FULL SIZE, IF NOT ONE
INCH, SCALE ACCORDINGLY

LAST UPDATED: 1/29/2025

DRAWING: 20-E-704

MEMBRANE CONDUIT SCHEDULE 1

			CONTRO	DL CONDUIT	
CONDUIT	SIZE	CONDUCTORS SERVICE	FROM		DUCTBANKS NOTES
				LEVEL SWITCHES 20-LSL-201-3, 20-LSLL-201-3, 20-LSHH-201-3	
C-20-14D	3/4"	10 #14 W/ #14 GND	CP-13	& MEMBRANE AIR VALVE 20-FV-210-3, 20-FV-211-3	THROUGH JB
C-20-15A C-20-15B	3/4" 3/4"	4 #14 W/ #14 GND 4 #14 W/ #14 GND	CP-13 CP-13	PRESSURE SWITCHES 20-PSH-601-3, 20-PSH-602-3 VALVE 20-FV-801-3, 20-FV-802-3	THROUGH JB THROUGH JB
C-20-16	3/4"	4 #14 W/ #14 GND	MCC-A	PERMEATE PUMP 20-P-301-3	THROUGH 3B
C-20-17	3/4"	8 #14 W/ #14 GND	PLANT CONTROL PANEL PCP	VALVE CONTROL 16-FV-201	
C-20-18	3/4"		CP-14		
C-20-19	3/4"		MCC-A		
C-20-20	3/4"		CP-15		
C-20-21	3/4"	0 444 VAV 444 CNID	MCC-A	LUCULI EVEL CWITCH 20 LCH 604	TUPOUGUUP
C-20-22A C-20-22B	3/4" 3/4"	2 #14 W/ #14 GND 2 #14 W/ #14 GND	CP-01 CP-01	HIGH LEVEL SWITCH 20-LSH-601 LOW LEVEL SWITCH 20-LSL-601	THROUGH JB THROUGH JB
C-20-40	1"	6 #14 W/ #14 GND	AIR COMPRESSOR	GE CP-01	I I I I COCIT OF
C-20-41	1"	MAN. SUPP.	20-FIT-102	20-FE-102	
C-20-42	1"	8 #14 W/ #14 GND	20-FV-501-5	CP-15	
C-20-43	1"	2 #14 W/ #14 GND	20-PSH-301-5	CP-15	
C-20-44	<u>1"</u>	2 #14 W/ #14 GND	20-PSH-302-5	CP-15	
C-20-45 C-20-46	<u> </u> 1"	MAN. SUPP. 6 #14 W/ #14 GND	20-AE-320-5 20-FV-210-5	20-AIT-320-5 CP-15	
C-20-47	<u>'</u> 1"	2 #14 W/ #14 GND	20-FV-301-5	CP-15	
C-20-48	1"	8 #14 W/ #14 GND	20-FV-110-5	CP-15	
C-20-49	1"	2 #14 W/ #14 GND	20-FV-801-5	CP-15	
C-20-50	1"	2 #14 W/ #14 GND	20-FV-130-5	CP-15	
C-20-51	1" 1"	2 #14 W/ #14 GND 2 #14	20-FV-330-5 20-LSLL-201-5	CP-15 CP-15	
C-20-52 C-20-52A	<u>'</u> 1"	2 #14	20-LSL-201-5 20-LSL-201-5	CP-15 CP-15	
C-20-52B	<u>.</u> 1"	2 #14	20-LSHH-201-5	CP-15	
C-20-53	1"	2 #14 W/ #14 GND	20-PSH-601-5	CP-15	
C-20-53A	1"	2 #14 W/ #14 GND	20-PSH-602-5	CP-15	
C-20-55	1"	18 #14 W/ #14 GND	16-VFD-B-405	PCP	TUDOUGULMOO A AND DOD
C-20-20A C-20-21A	<u>1"</u>	6 #14 W/ #14 GND 6 #14 W/ #14 GND	20-VFD-B-201-6 20-VFD-B-201-7	GE CP-01 GE CP-01	THROUGH MCC-A, AND PCP THROUGH MCC-A, AND PCP
C-20-56	<u>'</u> 1"	2 #14 W/ #14 GND	20-VFD-B-201-7 20-VFD-B-201-6	20-FSL-206	THROUGH WOU-A, AND FOR
C-20-57	1"	2 #14 W/ #14 GND	20-VFD-B-201-7	20-FSL-207	
S-20-01	3/4"	2 #18 TSP	CP-01	CONDUIT  MEMBRANE BLOWER 1 20-B-201	
S-20-01	3/4"	2 #16 TSP	CP-01	MEMBRANE BLOWER 1 20-B-201	
S-20-03	3/4"	2 #18 TSP	CP-01	MEMBRANE BLOWER 3 20-B-203	
S-20-04	3/4"	2 #18 TSP	CP-01	MEMBRANE BLOWER 4 20-B-204	
S-20-05	3/4"	1 #18 TSP	CP-11	FLOW METER 20-FIT-301-1	
S-20-06	3/4"	1 #18 TSP	CP-11	LEVEL TRANSMITTER 20-LIT-101-1	
S-20-07 S-20-08	3/4" 3/4"	1 #18 TSP 1 #18 TSP	CP-11 CP-12	PRESSURE TRANSMITTER 20-PIT-301-1 FLOW METER 20-FIT-301-2	
S-20-09	3/4"	1 #18 TSP	CP-12	LEVEL TRANSMITTER 20-LIT-101-2	
S-20-10	3/4"	1 #18 TSP	CP-12	PRESSURE TRANSMITTER 20-PIT-301-2	
S-20-11	3/4"	1 #18 TSP	CP-13	FLOW METER 20-FIT-301-3	
S-20-12	3/4"	1 #18 TSP	CP-13	LEVEL TRANSMITTER 20-LIT-101-3	
S-20-13	3/4" 3/4"	1 #18 TSP 1 #18 TSP	CP-13 CP-14	PRESSURE TRANSMITTER 20-PIT-301-3	
S-20-14 S-20-15	3/4"	1 #18 TSP	CP-14 CP-15		
S-20-16A	3/4"	1 #18 TSP	CP-01	TEMPERATURE TRANSMITTER 20-TIT-301	THROUGH JB
S-20-16B	3/4"	1 #18 TSP	CP-01	LEVEL TRANSMITTER 20-LIT-601	THROUGH JB
S-20-16C	3/4"	1 #18 TSP	CP-01	TURBIDITY METER 20-AIT-601	THROUGH JB
S-20-16D	3/4"	1 #18 TSP	CP-01	FLOW TRANSMITTER 20-FIT-101	THROUGH JB
S-20-17A S-20-17B	3/4" 3/4"	1 #18 TSP 1 #18 TSP	CP-11 CP-12	TURBIDITY METER 20-AIT-320-1 TURBIDITY METER 20-AIT-320-2	
S-20-17B S-20-17C	3/4"	1 #18 TSP	CP-12 CP-13	TURBIDITY METER 20-AIT-320-2 TURBIDITY METER 20-AIT-320-3	
S-20-20	1"	2 #18 TSP 4-20mA	PLANT CONTROL PANEL PCP	OUTPUT BLOWER SPEED 20-VFD-201-6	THROUGH MCC-A, AND PCP
S-20-21	1"	2 #18 TSP 4-20mA	PLANT CONTROL PANEL PCP	OUTPUT BLOWER SPEED 20-VFD-201-7	THROUGH MCC-A, AND PCP
S-20-41	1"	1 #18 TSP 4-20mA	PLANT CONTROL PANEL PCP	20-FIT-102	
S-20-45	1"	1 #18 TSP 4-20mA	CP-15	20-AIT-320-5	
S-20-46 S-20-55	I 1"	1 #18 TSP 4-20mA 2 #18 TSP 4-20mA	CP-15 PLANT CONTROL PANEL PCP	20-FIT-301-5 16-VFD-B-405	
S-20-56	<u> </u> 1"	1 #18 TSP 4-20mA	CP-15	20-PIT-301-5	
	•	1201101			
1				ATION CONDUIT	
F-20-01	1"	1 CAT 6 SHIELDED ETHERNET CABLE COMMS	GE CP-01	CP-15	

## MEMBRANE CONDUIT SCHEDULE 2

	INSTRUMENT SCHEDULE									
TAG	DESCRIPTION	MAKE	MODEL	SUPPLY	RANGE	COMMENTS				
16-PT-404	BLOWER B-405 INFLUENT PRESSURE TRANS					PROVIDED BY VEOLIA, PART OF BLOWER SKID				
16-PI-404	BLOWER B-405 INFLUENT PRESSURE GAUGE					PROVIDED BY VEOLIA, PART OF BLOWER SKID				
16-TT-404	BLOWER B-405 EFFLUENT TEMP TRANS					PROVIDED BY VEOLIA, PART OF BLOWER SKID				
16-PSH-404	BLOWER B-405 EFFLUENT HIGH PRESS SWITCH					PROVIDED BY VEOLIA, PART OF BLOWER SKID				
16-PI-404	BLOWER B-405 EFFLUENT PRESSURE GAUGE									

# MEMBRANE INSTRUMENT SCHEDULE



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# skn

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WRF PHASE 3 UPGRADES
SANTAQUIN CITY
ELECTRICAL - ANOXIC & MEMBRANE
MEMBRANE CONDUIT SCHEDULE

JORDAN C. GARDNER L/31/25

### **NOTE**

1. SHADED CELLS REPRESENT EXISTING CONDUITS

FILE:

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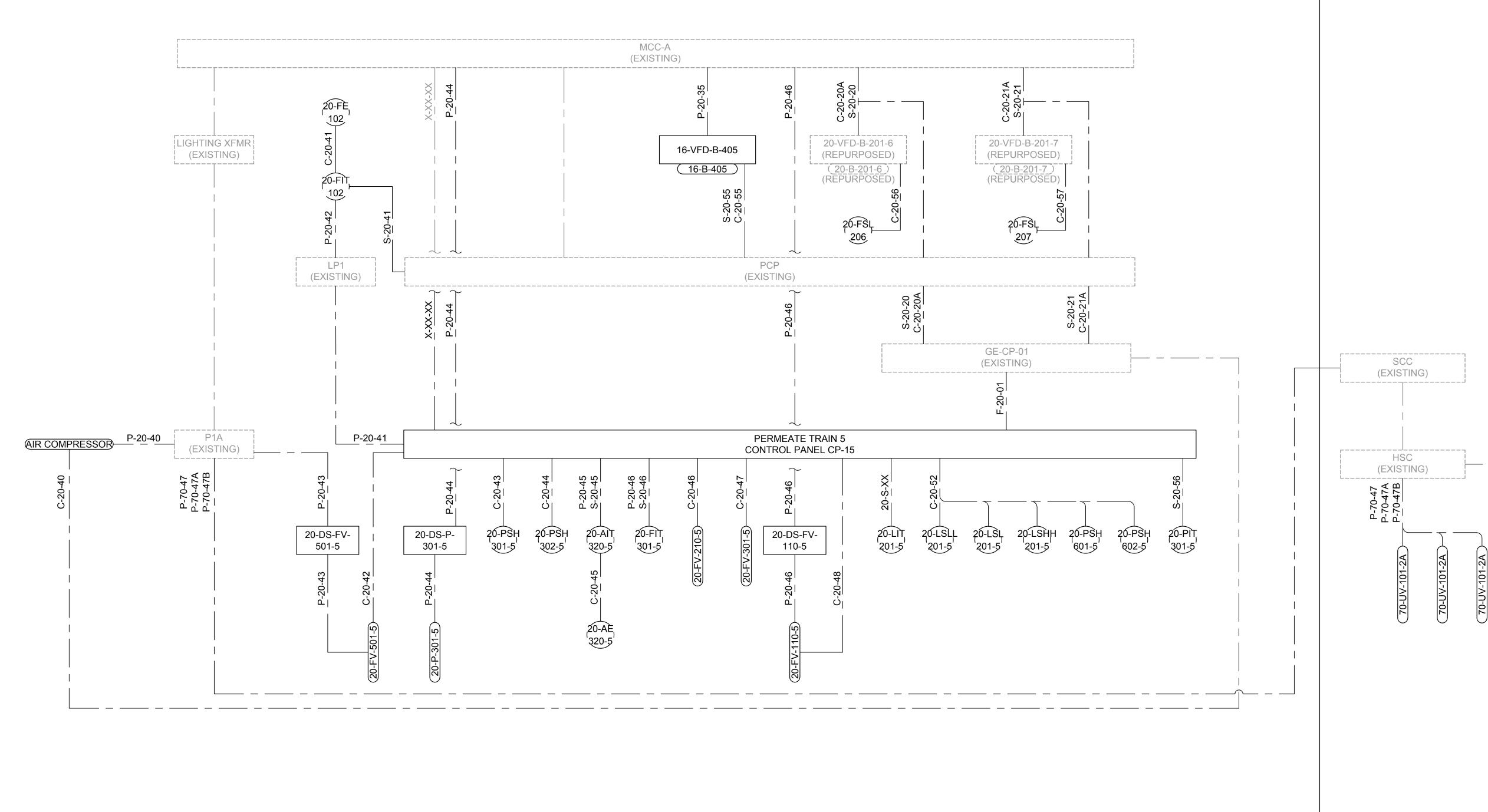
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## MEMBRANE CONDUIT DEVELOPMENT

### **NOTES**

CONTRACTOR TO USE EXISTING CONDUITS WHEN POSSIBLE. SEE SITE PLAN FOR PICTURES AND LOCATIONS OF EXISTING CONDUITS IN MEMBRANE BUILDING. CONTRACTOR TO CONFIRM CONDUITS BETWEEN MCC-A, GE-CP-01, AND PCP. USE EXISTING BEFORE RUNNING NEW CONDUITS OVERHEAD IN ELECTRICAL ROOM.



## **UV DISINFECTION CONDUIT DEVELOPMENT**

## **NOTES**

CONTRACTOR TO VERIFY LENGTHS OF POWER CONDUCTORS TO EACH BANK. IF POWER CONDUCTORS ARE LONG ENOUGH AFTER THE BANKS HAVE BEEN ROTATED THIS SECTION OF THE DESIGN CAN BE IGNORED. IF THE CONDUCTORS ARE NOT LONG ENOUGH AFTER BANKS HAVE BEEN ROTATED, CONTRACTOR TO PULL IN NEW LONGER CONDUCTORS. THE EXISTING CONDUCTORS MAY SPLICE IN HSC OR SCC PRIOR TO TERMINATING AT P1A, IF SO CONTRACTOR MAY ADD THE NEW LONGER CONDUCTORS FROM THE SPLICE OR TERMINATION POINT.

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ELECTRICAL - ANOXIC & MEMBRANE MEMBRANE CONDUIT DEVELOPMENT WRF PHASE 3 UPGRADES SANTAQUIN CITY

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480V/3P/60HZ

**EXISTING VFD EXAMPLE** 

### **GENERAL NOTES**

1. TYPICAL SCHEMATIC DIAGRAMS ARE INTENDED TO REFLECT THE GENERAL CONTROL STRATEGY. ACTUAL CIRCUITRY MAY VARY FOR SPECIFIC EQUIPMENT SUPPLIED. THE NUMBER AND TYPE OF DEVICES SHALL BE FURNISHED AS REQUIRED FOR PROPER OPERATION OF THE EQUIPMENT.



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**KEY NOTES** 

1. ADJUST TIME DELAY RELAYS PRIOR TO STARTUP. STAGGER TIMER SETTINGS FOR POWER ON-DELAY RELAYS.

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### **VFD CONTROL DESCRIPTION**

WHEN THE HOA SWITCH IS IN THE HAND POSITION, AND THE FWD/REV SELECTOR IS IN THE FWD POSITION THE MOTOR WILL RUN FWD. WHEN THE HOA IS IN THE HAND POSITION AND THE FWD/REV SELECTOR IS IN THE REV POSITION THE MOTOR WILL RUN REV. IF THE HOA IS IN THE REMOTE POSITION THE MOTOR IS CONTROLLED BY THE PLC WHICH WILL ENERGIZE EITHER THE FWD OR REV RELAYS RUNNING THE MOTOR IN THE CORRESPONDING DIRECTION. THE PLC WILL BE ABLE TO MONITOR WHEN THE HOA IS IN THE REMOTE POSITION OR IS RUNNING.

WHEN THE HOA IS IN THE HAND POSITION THE SPEED COMMAND COMES FROM THE POTENTIOMETER. WHEN IN THE AUTO POSITION, THE SPEED COMMAND COMES FROM THE PLC THROUGH A HARD WIRED ANALOG OUTPUT.

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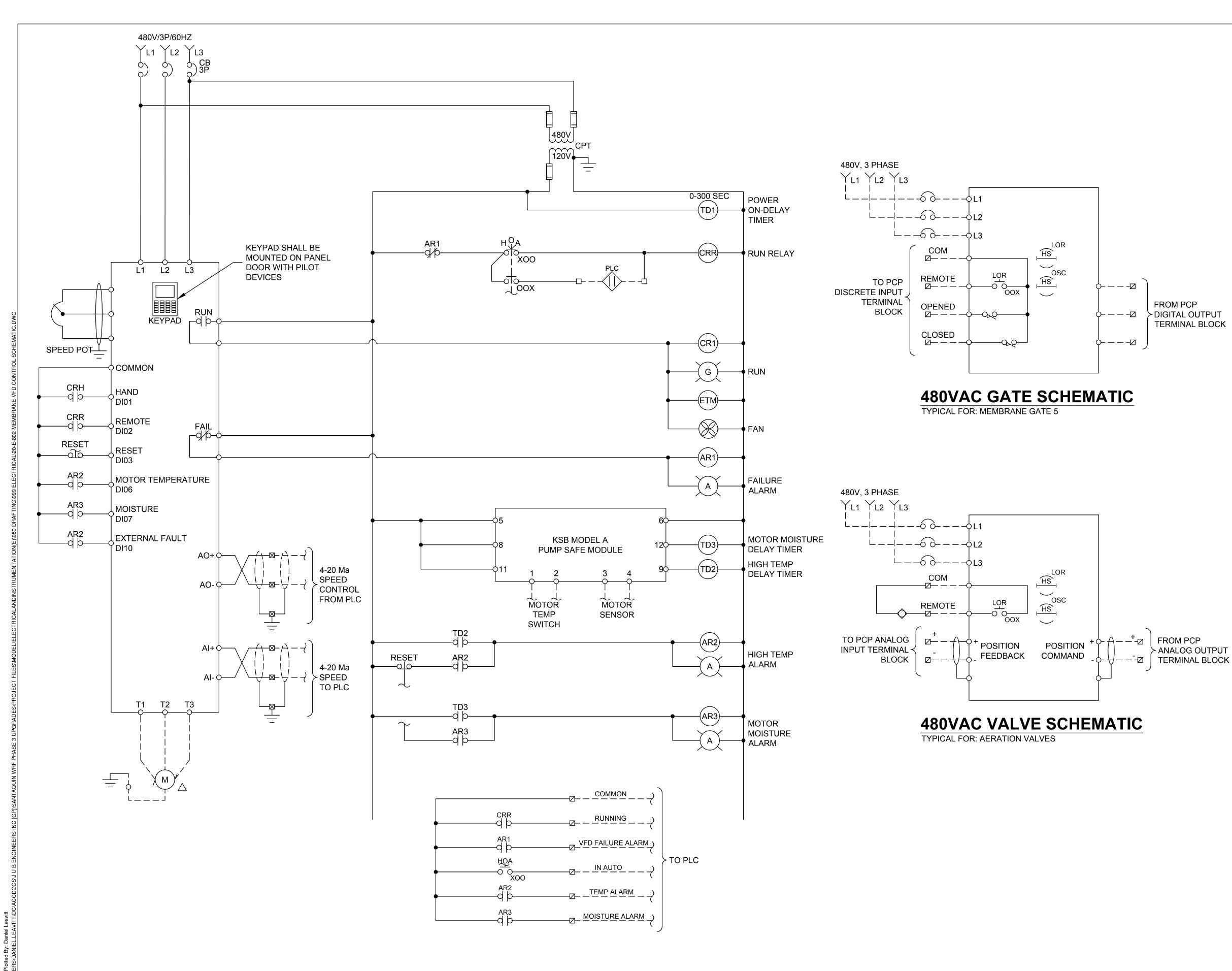
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ELECTRICAL - ANOXIC & MEMBRANE PERMEATE VFD CONTROL SCHEMATIC

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LAST UPDATED: 1/29/2025 No. 8730795-2202 JORDAN C. GARDNER

**VFD CONTROL SCHEMATIC** 

TYPICAL FOR: PERMEATE PUMP 5



### **GENERAL NOTES**

- 1. TYPICAL SCHEMATIC DIAGRAMS ARE INTENDED TO REFLECT THE GENERAL CONTROL STRATEGY. ACTUAL CIRCUITRY MAY VARY FOR SPECIFIC EQUIPMENT SUPPLIED. THE NUMBER AND TYPE OF DEVICES SHALL BE FURNISHED AS REQUIRED FOR PROPER OPERATION OF THE EQUIPMENT.
- 2. FUSES SHALL BE ADEQUATELY SIZED PER THE EQUIPMENT MANUFACTURER'S RECOMMENDATIONS.
- CONTROL SWITCHES SHALL BE DOOR MOUNTED ON THEIR RESPECTIVE PANELS. DEVICES SHALL BE RATED FOR LINE VOLTAGE AND 125% OF LOAD CURRENT.

# (JUB)

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### **♦ KEY NOTES**

- 1. LOCAL CONTROLS SHALL BE INSTALLED ACCORDING TO P&ID'S AND NOT NECESSARILY AS SHOWN ON SCHEMATICS. SEE CONDUIT SCHEDULE FOR EXACT WIRING.
- 2. CONTROL POWER TRANSFORMERS (CPT) SHALL BE ADEQUATELY SIZED AND SHALL BE PROVIDED WITH PROPERLY SIZED FUSES FOR BOTH THE PRIMARY AND SECONDARY WINDINGS.
- 3. ADJUST TIME DELAY RELAYS PRIOR TO STARTUP. STAGGER TIMER SETTINGS FOR POWER ON-DELAY RELAYS.

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**REVIEW** 

# VFD CONTROL DESCRIPTION

WHEN THE HOA SWITCH IS IN THE HAND POSITION, THE MOTOR SHOULD RUN, WHEN THE HOA SWITCH IS IN THE OFF POSITION, THE MOTOR SHOULD STOP AND WHEN THE HOA SWITCH IS IN THE AUTO POSITION, THE MOTOR IS CONTROLLED BY THE PLC. THE PLC WILL BE ABLE TO MONITOR WHETHER THE HOA IS IN THE HAND OR AUTO POSITION.

WHEN THE HOA SWITCH IS IN THE HAND POSITION, THE SPEED COMMAND COMES FROM THE POTENTIOMETER. WHEN IN THE AUTO POSITION, THE SPEED COMMAND COMES FROM THE PLC.

WRF PHASE 3 UPGRADES
SANTAQUIN CITY
ELECTRICAL - ANOXIC & MEMBRANE
VFD AND GATE SCHEMATICS

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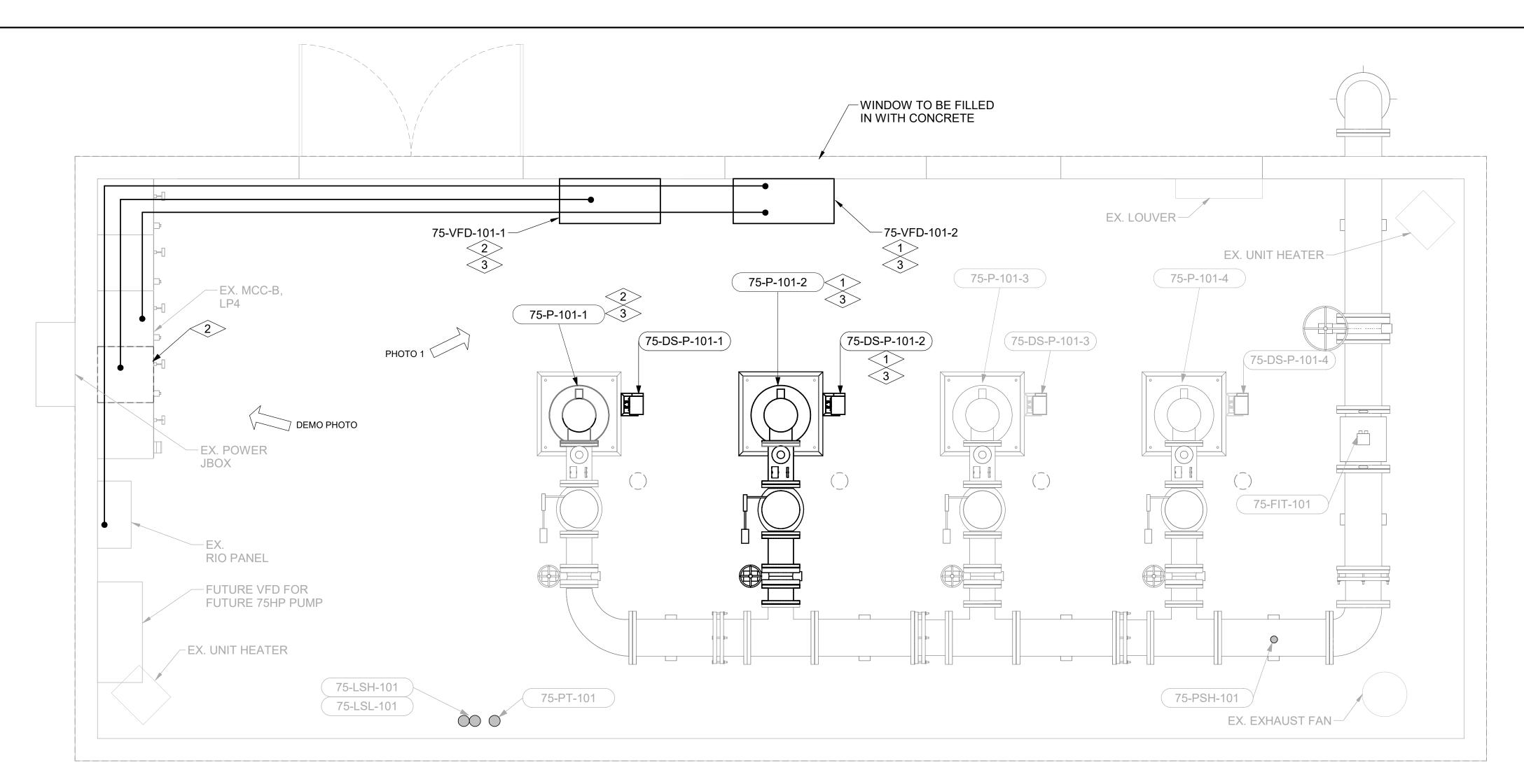
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JORDAN C. GARDNER 20-E-802

**VFD CONTROL SCHEMATIC** 

TYPICAL FOR: RECIRCULATION PUMP 1 & 2



### RECLAIMED WATER PUMP STATION LAYOUT PLAN

SCALE: 1/2" = 1'-0" 0 1' 2' 4

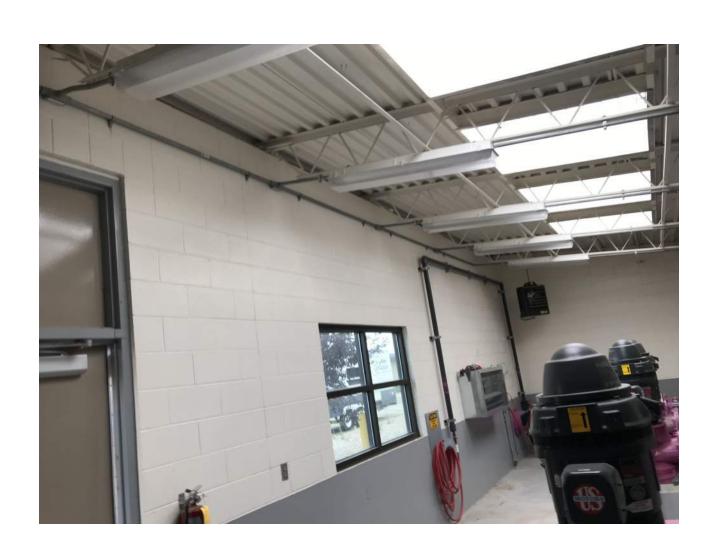


PHOTO 1



**DEMO PHOTO** 

REMOVE MCC BUCKETS AND REPLACE

WITH FEEDERS FOR EXTERNAL VFD'S

### NOTES:

- 1. CONDUIT SHALL ONLY RUN EXPOSED WHERE NECESSARY. ALL EXPOSED CONDUIT SHALL BE PVC COATED. PANELS SHALL BE STAINLESS STEEL NEMA 3R OR NEMA 4.
- 2. CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING CONDUIT DETAILS AND A CONDUIT ROUTING PLAN TO THE ELECTRICAL ENGINEER FOR APPROVAL.
- 3. LIMIT EXPOSED CONDUITS, 90° BENDS AND WALL PENETRATIONS. MAINTAIN SEPARATION BETWEEN SIGNAL AND POWER-CARRYING CONDUITS.

**KEYNOTES**:



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### REVIEW

- 1. CONTRACTOR SHALL INSTALL A NEW 75HP PUMP AND DISCONNECT SWITCH AT THIS LOCATION. CONTRACTOR SHALL UTILIZE EXISTING UNDERGROUND CONDUITS FROM MCC-B TO FEE THE NEW MOTOR. A NEW VFD, 75-VFD-101-2 SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR AT THIS LOCATION, SEE VFD DESIGN ON SHEET 75-E-502. NEW VFD WILL BE FED FROM THE EXISTING MCC BUCKET USING NEW 200A MAIN BREAKER. CONTRACTOR TO ROUTE CONDUIT FROM MCC-B OVERHEAD TO THE NEW VFD AND RETURN IN THE SAME PATH TO UTILZE EXISTING UNDERGROUND CONDUIT FROM MCC TO THE NEW PUMP, SEE CONDUIT SCHEDULE. CONTRACTOR TO SUBMIT A CONDUIT ROUTING PLAN AND EQUIPMENT USED PRIOR TO PURCHASE FOR ENGINEER REVIEW.
- 2. CONTRACTOR SHALL REMOVE EXISTING PUMP 75 P-101-1 AND REPLACE WITH NEW 75HP PUMP AT THIS LOCATION. CONTRACTOR SHALL REMOVE WIRING FEEDING EXISTING PUMP FROM MCC-B AND DISCONNECT SWITCH ASSOCAITED WITH P-101-1 AND SALVAGE TO OWNER. THE EXISTING BUCKET THAT FEEDS PUMP 101-1 WILL BE DEMOLISHED AND MODIFIED TO FEED THE NEW 75HP PUMP USING 200A MAIN BREAKER. CONTRACTOR SHALL REMOVE EXISTING VFD, POWER AND CONTROL APPERTANNACES INSIDE THIS BUCKET AND RETURN TO OWNER. CONTRACTOR SHALL REMOVE DOOR, PILOT DEVICES, MAIN BREAKER, AND RETURN TO OWNER. CONTRATOR SHALL FURNISH AND INSTALL A NEW BLANK MCC DOOR WHICH INDICATES A FEED TO THE NEW VFD. CONTRACTOR TO ROUTE CONDUIT FROM MCC-B OVERHEAD TO THE NEW VFD AND RETURN IN THE SAME PATH TO UTILZE EXISTING UNDERGROUND CONDUIT FROM MCC TO THE NEW PUMP, SEE CONDUIT SCHEDULE. CONTRACTOR TO SUBMIT A CONDUIT ROUTING PLAN AND EQUIPMENT USED PRIOR TO PURCHASE FOR ENGINEER REVIEW.
- 3. CONTRACTOR SHALL ENSURE NEC GROUNDING CODE IS FOLLOWED AT THIS LOCATION FOR THE NEW EQUIPMENT. PUMP CASINGS MUST BE GROUNDED AND TIED INTO EXISTING BUILDING GROUND GRID. VFDS AND CABINETS MUST BE GROUNDED AND TIED INTO EXISTING BUILDING GROUND GRID. NEC GROUDING CODES SHALL BE FOLLOWED TO ENSURE SAFETY AT THIS PUMP STATION.

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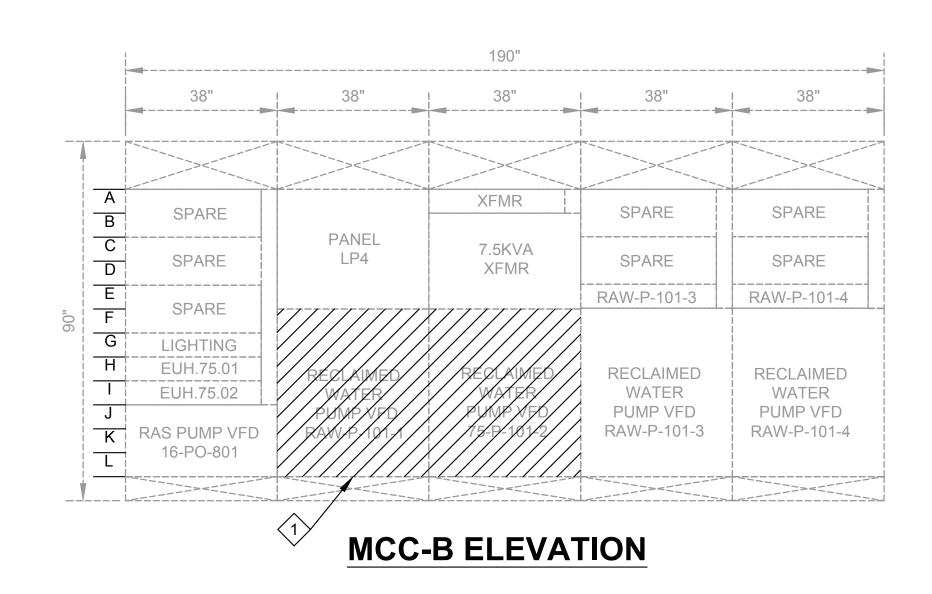
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JORDAN C.
GARDNER
1/31/25

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### **ONELINE DIAGRAM**



CIRCUIT/DESCRIPTION	KW	KVA	HP	FLA
EXISTING MOTOR LOADS				
EUH.75.01	10.0	11.1		13.4
EUH.75.02	10.0	11.1		13.4
75-P-101-3			40.0	52.0
75-P-101-4			40.0	52.0
				0.0
EXISTING NON-MOTOR LOADS				
XFMR T-4		7.5		9.0
SUBTOTAL + 25% OF LARGEST MOTOR TOTAL AMPS @ 480V/3PHASE EXISTING SERVICE SIZE (AMPS)				139.8 13.0 152.8 400.0

MCC-B EXISTING LOAD CALCULATIONS

CIRCUIT/DESCRIPTION	KVA	HP	FLA
NEW MOTOR LOADS			
75-P-101-2		75.0	96.0
75-P-101-1		75.0	96.0
			0.0
			0.0
			0.0
NEW NON-MOTOR LOADS			
			0.0
			0.0
SUBTOTAL	wa		192.0
+ 25% OF LARGEST MOTOR	₹		24.0
TOTAL AMPS @ 480V/3PHASE	<u> </u>		216.0
SERVICE SIZE (AMPS)			400.0

MCC-B NEW LOAD CALCULATIONS



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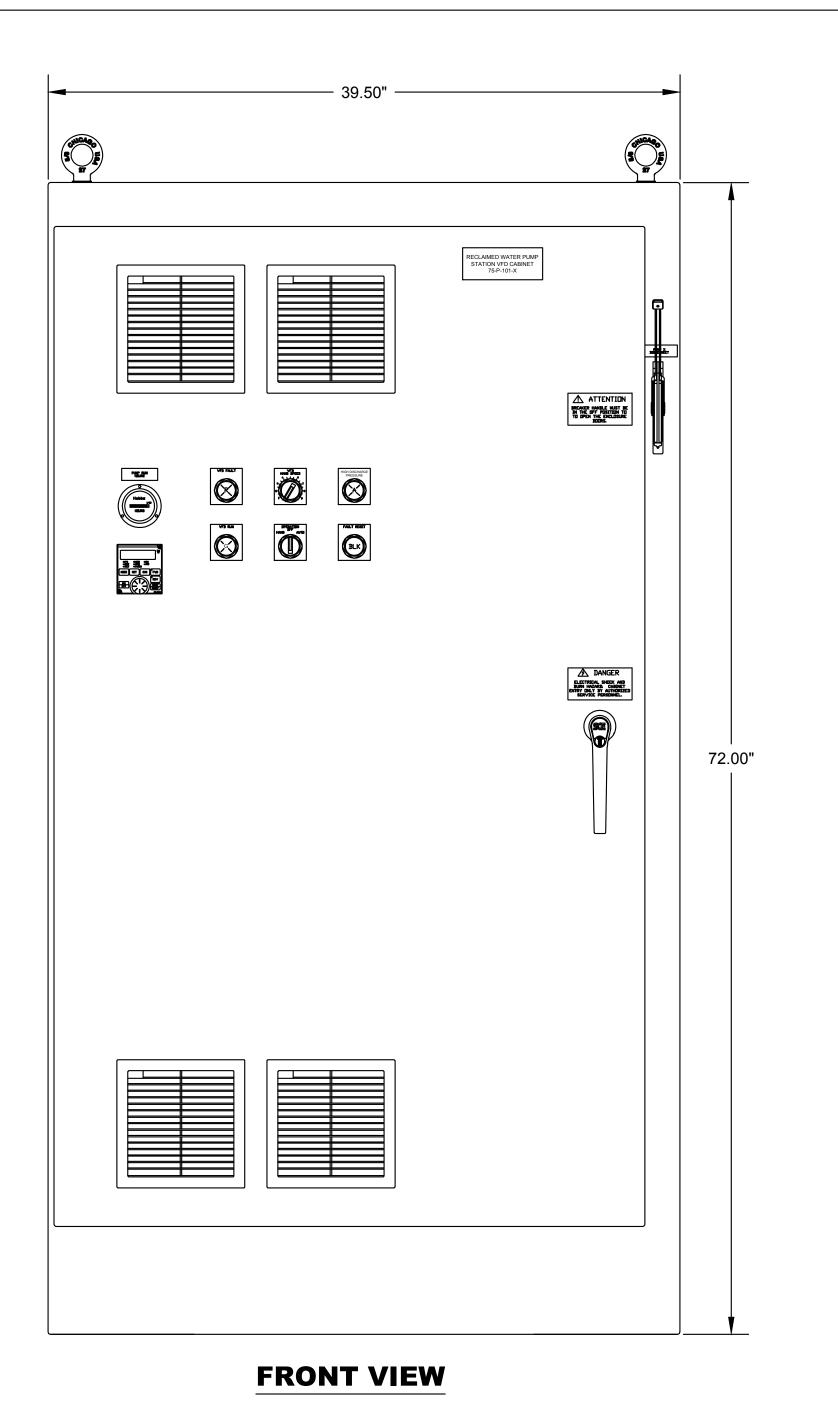
RECLAIMED WATER PUMP ONELINE DIAGRAM

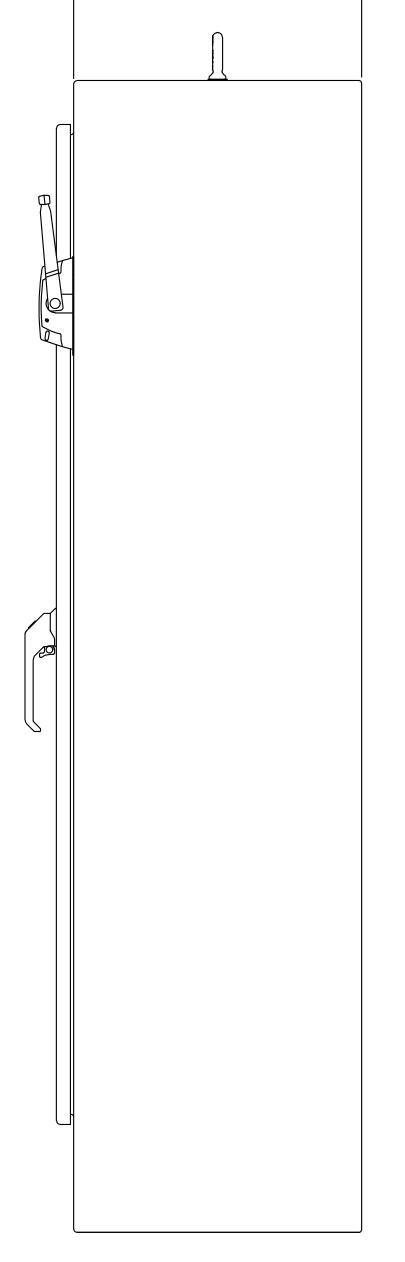
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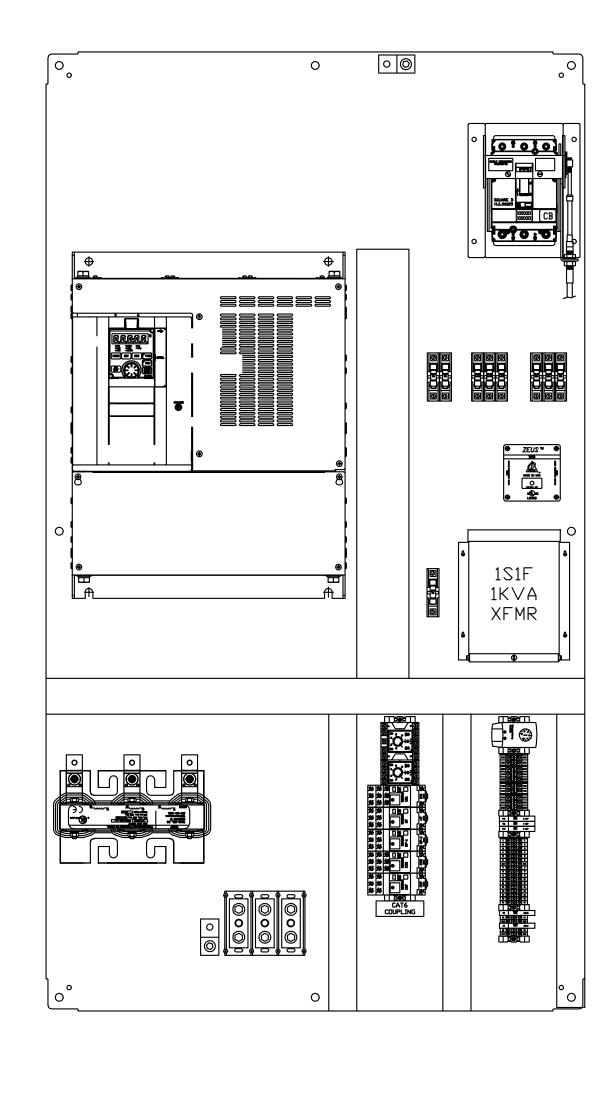
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INCH, SCALE ACCORDINGLY

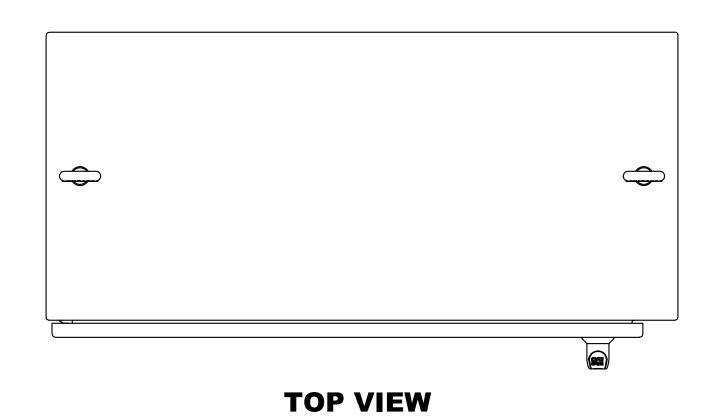
LAST UPDATED: 1/29/2025







**SIDE VIEW BACKPANEL LAYOUT VIEW** 



RECLAIMED WATER PUMP STATION VFD CABINET 75-P-101-X

WARNING MULTIPLE VOLTAGE SOURCES THIS PANEL CONTAINS ELECTRICAL POWER FROM SEVERAL EXTERNAL AND INTERNAL SOURCES.
ONLY AUTHORIZED AND QUALIFIED PERSONNEL SHOULD ENTER THIS PANEL.



DANGER

ELECTRICAL SHOCK AND BURN HAZARD. CABINET ENTRY ONLY BY AUTHORIZED SERVICE PERSONNEL

**PANEL LABELS** 



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**REVIEW** 

ELECTRICAL - RECLAIMED WATER PUMP STATION YPICAL RECLAIM PUMP 75HP VFD CABINET LAYOL WRF PHASE 3 UPGRADES SANTAQUIN CITY

JUB PROJ. #:93-24-001 DRAWN BY: EGK / DCL DESIGN BY: JCG

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INCH, SCALE ACCORDINGLY

LAST UPDATED: 1/29/2025

DRAWING:

75-E-502

No. 8730795-2202 JORDAN C. GARDNER 1/31/25

				POWER CO	ONDUIT		
CONDUIT	SIZE	CONDUCTORS	SERVICE	FROM	ТО	DUCTBANKS	NOTES
P-75-01	2.5"	3 3/0 W/ #6 GND	480VAC	RECLAIMED PUMP 1 75-P-101-1	RECLAIMED PUMP 1 VFD 75-VFD-101-1		THROUGH EXISTING CONDUITS, 75-DS-P-101-1 AND MCC-B
P-75-02	2.5"	3 3/0 W/ #6 GND	480VAC	RECLAIMED PUMP 2 75-P-101-2	RECLAIMED PUMP 2 VFD 75-VFD-101-2		THROUGH EXISTING CONDUITS, 75-DS-P-101-1 AND MCC-B
P-75-01A	2.5"	3 3/0 W/ #6 GND	480VAC	RECLAIMED PUMP 1 VFD 75-VFD-101-1	MCC-B		
P-75-01B	2.5"	3 3/0 W/ #6 GND	480VAC	RECLAIMED PUMP 2 VFD 75-VFD-101-2	MCC-B		
				CONTROL C	CONDUIT		
C-75-01	1"	12 #14 W #14 GND	24VDC	PCP-RIO	75-VFD-101-1		
C-75-02	<u>'</u> 1"	12 #14 W #14 GND	24VDC	PCP-RIO	75-VFD-101-2		
C-75-10	<u>'</u> 1"	2 #14 W #14 GND	24VDC	75-VFD-101-1	75-P-101-1		THROUGH EXISTING CONDUITS, AND MCC-B
C-75-12	<u>.</u> 1"	2 #14 W #14 GND	24VDC	75-VFD-101-2	75-P-101-2		THROUGH EXISTING CONDUITS, AND MCC-B
C-75-04	3/4"	2 #14 W #14 GND	24VDC	75-VFD-101-1	PUMP 1 DISCHARGE HIGH PRESS 75-PSH-101-1		THROUGH EXISTING CONDUITS, AND MCC-B
C-75-03	3/4"	2 #14 W #14 GND	24VDC	75-VFD-101-2	PUMP 2 DISCHARGE HIGH PRESS 75-PSH-101-2		THROUGH EXISTING CONDUITS, AND MCC-B
				SIGNAL CO	DNDUIT		
S-75-01	3/4"	2 #18 TSP	4-20mA	PCP-RIO	75-VFD-101-1		
S-75-02	3/4"	2 #18 TSP	4-20mA	PCP-RIO	75-VFD-101-2		
				SPARE CO	NDUIT		
SP-75-10	1"	PULL STRING	TBD	MCC-B	75-VFD-101-1		
SP-75-12	1"	PULL STRING	TBD	MCC-B	75-VFD-101-2		

## **CONDUIT SCHEDULE**

TAG	DESCRIPTION	MAKE	MODEL	SUPPLY	RANGE	COMMENTS
75-PSH-101-2	HIGH PRESSURE SWITCH FOR PUMP P-101-2	ASHCROFT	B SERIES	LOOP POWERED - 24VDC	TBD	
75-PI-101-2	PRESSURE GAUGE FOR PUMP P-101-2	ASHCROFT	1279 SERIES		0-60PSI	

## **INSTRUMENT SCHEDULE**



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ELECTRICAL - RECLAIMED WATER PUMP STATION CONDUIT & INSTRUMENT SCHEDULES WRF PHASE 3 UPGRADES SANTAQUIN CITY

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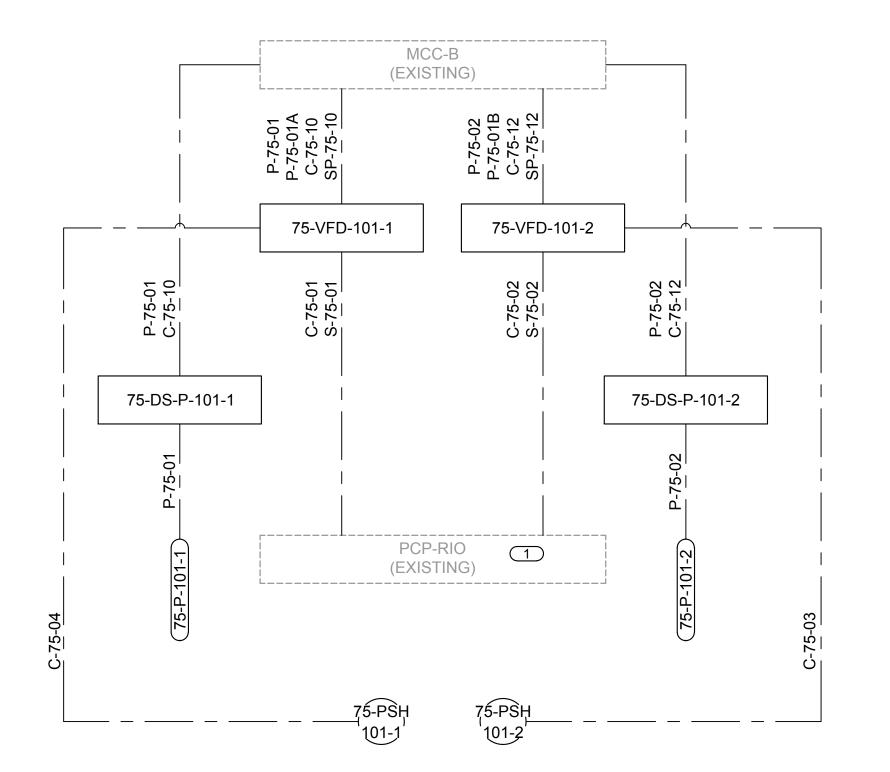
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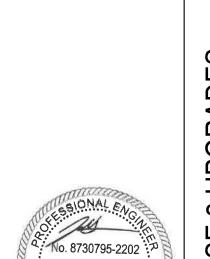
LAST UPDATED: 1/29/2025

No. 8730795-2202

JORDAN C. GARDNER J/31/25 J/E OF UTA

DRAWING:





# JORDAN C. GARDNER 1/31/25 1/E OF UTP **KEY NOTES**

- CONTRACTOR TO REMOVE ALL CONTROL WIRE FROM EXISTING VFD-101-1 AND CORRESPONDING MCC BUCKET GOING TO THE RIO PANEL. NEW CONTROL WIRE WILL BE ROUTED FROM THE NEW VFD TO THE RIO, SEE CONDUIT SCHEDULE.
- 2. DUE TO THE INCREASE IN HP, THE FEED CONDUCTORS ARE INCREASING IN SIDE. THERE IS A SCENARIO WHERE THE IN GROUND EXISTING FILE: CONDUITS WILL NOT BE LARGER ENOUGH FOR THE NEW INCOMING CONDUCTORS. IF THIS IS THE CASE, NEW OVERHEAD CONDUITS MAY BE USED. OTHERWISE IT IS MANDATORY TO USE UNDERGROUND AND EXISTING CONDUITS FOR THE NEW PUMPS.

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REVIEW

WRF PHASE 3 UPGRADES SANTAQUIN CITY ELECTRICAL - RECLAIMED WATER PUMP CONDUIT DEVELOPMENT

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INCH, SCALE ACCORDINGLY

LAST UPDATED: 1/30/2025

DRAWING: 75-E-702

**CONDUIT DEVELOPMENT** 

## **VFD CONTROL SCHEMATIC**

TYPICAL FOR: RECLAIMED WATER PUMPS

### **GENERAL NOTES**

- 1. TYPICAL SCHEMATIC DIAGRAMS ARE INTENDED TO REFLECT THE GENERAL CONTROL STRATEGY. ACTUAL CIRCUITRY MAY VARY FOR SPECIFIC EQUIPMENT SUPPLIED. THE NUMBER AND TYPE OF DEVICES SHALL BE FURNISHED AS REQUIRED FOR PROPER OPERATION OF THE EQUIPMENT.
- 2. FUSES SHALL BE ADEQUATELY SIZED PER THE **EQUIPMENT MANUFACTURER'S** RECOMMENDATIONS.
- 3. CONTROL SWITCHES SHALL BE DOOR MOUNTED ON THEIR RESPECTIVE PANELS. DEVICES SHALL BE RATED FOR LINE VOLTAGE AND 125% OF LOAD CURRENT.



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### **KEY NOTES**

- 1. CONTROL POWER TRANSFORMERS (CPT) SHALL BE ADEQUATELY SIZED AND SHALL BE PROVIDED WITH PROPERLY SIZED FUSES FOR BOTH THE PRIMARY AND SECONDARY WINDINGS.
- 2. ADJUST TIME DELAY RELAYS PRIOR TO STARTUP. STAGGER TIMER SETTINGS FOR POWER ON-DELAY RELAYS.

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### **VFD CONTROL DESCRIPTION**

WHEN THE HOA SWITCH IS IN THE HAND POSITION, THE MOTOR SHOULD RUN, WHEN THE HOA SWITCH IS IN THE OFF POSITION, THE MOTOR SHOULD STOP AND WHEN THE HOA SWITCH IS IN THE AUTO POSITION, THE MOTOR IS CONTROLLED BY THE PLC. THE PLC WILL BE ABLE TO MONITOR WHETHER THE HOA IS IN THE HAND OR AUTO POSITION.

WHEN THE HOA SWITCH IS IN THE HAND POSITION, THE SPEED COMMAND COMES FROM THE POTENTIOMETER. WHEN IN THE AUTO POSITION, THE SPEED COMMAND COMES FROM THE PLC.

STATION WRF PHASE 3 UPGRADES SANTAQUIN CITY ELECTRICAL - RECLAIMED WATER PUMP VFD CONTROL SCHEMATIC

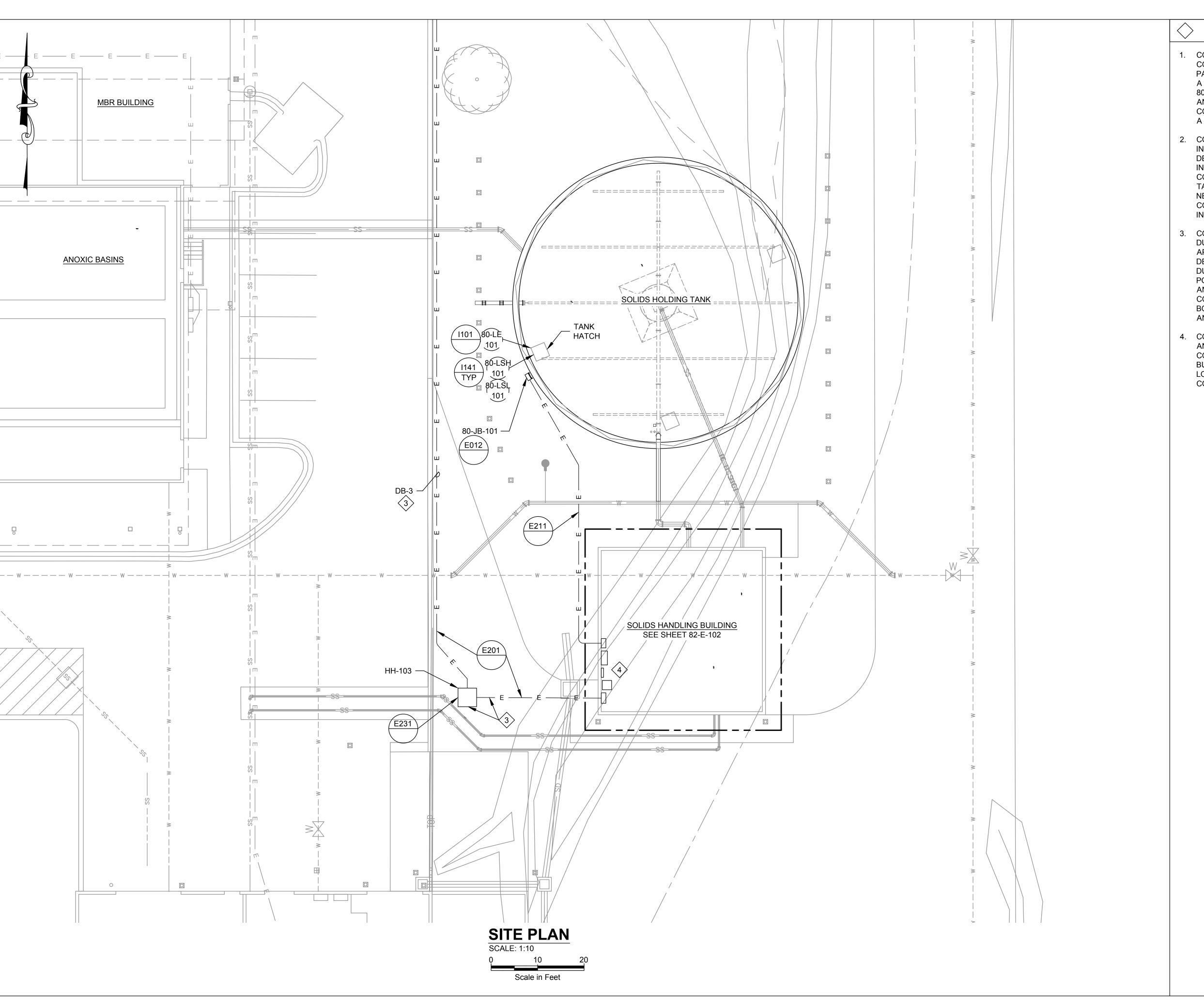
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ONE INCH AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY LAST UPDATED: 1/29/2025

DRAWING:

75-E-801

No. 8730795-2202 JORDAN C. GARDNER





1. CONTRACTOR TO INSTALL SEAL OFFS ON CONDUITS THAT ENTER CLASSIFIED AREAS. PANELS SHALL BE NEMA 4X AND BE INSTALLED IN A LOCATION OUTSIDE OF THE CLASSIFIED AREA. 80-JB-101 SHALL BE INSTALLED PER DETAIL E012 AND REQUIRES SEAL OFFS, AS THIS BOX WILL CONTAIN JUNCTIONS FOR INSTRUMENTS INSIDE A CLASSIFIED AREA.

2. CONTRACTOR TO FURNISH AND INSTALL INSTRUMENT JUNCTION BOX 80-JB-101 PER DETAIL E201. JUNCTION BOX SHALL BE INSTALLED OUTSIDE OF THE CLASSIFIED AREA, CONSULT NEC AND NFPA 820. SLUDGE HOLDING TANK INSTRUMENTS SHALL BE INSTALLED AT OR NEAR THE TANK HATCH FOR ACCESSABILITY. CONTRACTOR TO INSTALL THE TANK INSTRUMENTS PER DETAILS 1101 AND 1141.

3. CONTRACTOR TO INSTALL CONCRETE ENCASED DUCTBANKS AND UNDERGROUND PULLBOX AT APPROXIMATELY THESE LOCATIONS, PER DETAILS E201 AND E231 RESPECTIVELY. DUCTBANKS AND PULLBOXES SHOULD KEEP POWER CONDUCTORS SEPARATE FROM SIGNAL AND COMMUNICATION CONDUCTORS. CONCRETE ENCASED DUCTANKS AND GROUND BOXES SHOULD BE GROUNDED PER THE NEC AND DETAILS E201 AND E231.

4. CONTRACTOR SHALL MINIMIZE ABOVE GRADE AND INTERIOR CONDUITS. UNDERGROUND CONDUITS SHALL BE INSTALLED PRIOR TO BUILDING CONSTRUCTION AND STUB UP IN THE LOCATIONS FOR SPECIFIED POWER AND CONTROL PANELS.



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**REVIEW** 

ELECTRICAL - SOLIDS HOLDING SITE PLAN WRF PHASE 3 UPGRADES SANTAQUIN CITY

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CHECKED BY: MPJ

ONE INCH

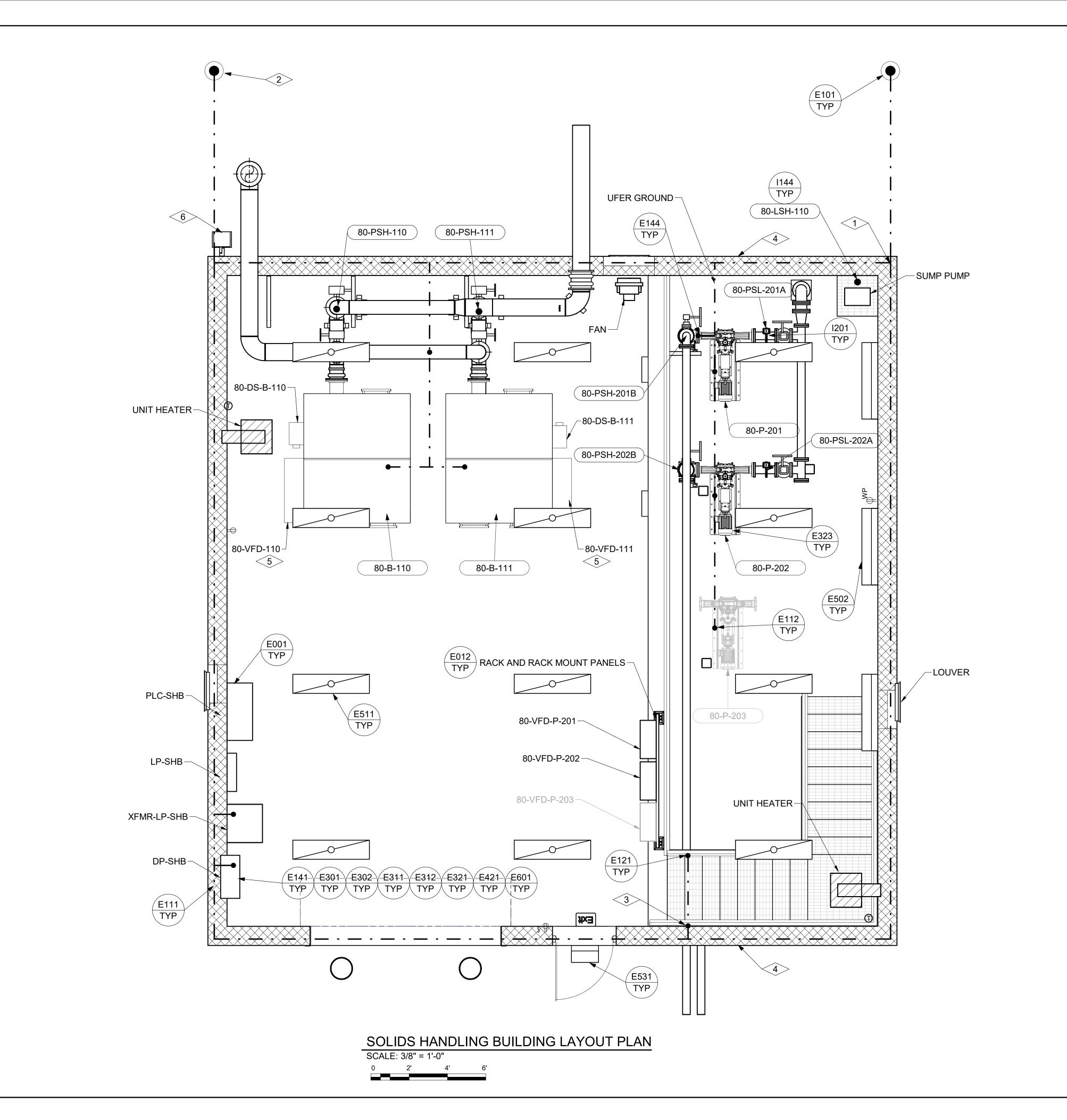
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LAST UPDATED: 1/29/2025

DRAWING:

No. 8730795-2202

JORDAN C. GARDNER



### NOTES:

- CONDUIT SHALL ONLY RUN EXPOSED WHERE NECESSARY.
   ALL EXPOSED CONDUIT SHALL BE PVC COATED. PANELS
   SHALL BE STAINLESS STEEL NEMA 3R OR NEMA 4.
- 2. CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING CONDUIT DETAILS AND A CONDUIT ROUTING PLAN TO THE ELECTRICAL ENGINEER FOR APPROVAL.
- 3. LIMIT EXPOSED CONDUITS, 90° BENDS AND WALL PENETRATIONS. MAINTAIN SEPARATION BETWEEN SIGNAL AND POWER-CARRYING CONDUITS.
- 4. CONTRACTOR WILL BE RESPONSIBLE FOR SUBMITTING A GROUND REPORT FOR THE NEW BUILDING AND THE ELECTRICAL EQUIPMENT IT HOUSES.
- 5. CONTRACTOR WILL BE RESPONSIBLE FOR SUBMITTING ARC STUDIES FOR ALL 480V POWER DISTRIBUTION EQUIPMENT.
- CONDUITS THAT ENTER THE BUILDING SHOULD BE INSTALLED UNDERGROUND INSIDE THE CONCRETE FOUNDATION AND STUB UP PER DETAIL E312 UNDER PANEL MOUNT LOCATION. CONDUITS THAT TRAVERSE BETWEEN EQUIPMENT IN THE BUILDING SHOULD ALSO BE PRE-INSTALLED UNDERGROUND IN THE CONCRETE. CONTRACTOR SHALL MINIMIZE VISIBLE CONDUITS ON THE WALLS IN THE ELECTRICAL BUILDING.

# (JUB)

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**REVIEW** 

### > KEYNOTES:

- CONTRACTOR SHALL PROVIDE 2 CONCRETE ENCASED ELECTRODES IN FOOTING PER SPECIFICATIONS 60' PER CONDUCTOR.
- 2. CONTRACTOR SHALL INSTALL (2) 10'X3/4"Ø COPPER GROUND RODS 10' MINIMUM SPACING AND 10' MINIMUM FROM BUILDING.
- CONTRACTOR SHALL ENSURE NEC GROUNDING CODE IS FOLLOWED AT THIS LOCATION FOR THE NEW EQUIPMENT AND APPERTANACNES. PUMP CASINGS, RAILINGS, AND NEW BLOWERS MUST BE GROUNDED AND TIED INTO EXISTING BUILDING GROUND GRID. VFDS AND CABINETS MUST BE GROUNDED AND TIED INTO EXISTING BUILDING GROUND GRID. NEC GROUDING CODES SHALL BE FOLLOWED TO ENSURE SAFETY AT THIS PUMP STATION.
- 4. CONTRACTOR TO PROVIDE POWER TO HEAT TAPE IN GUTTERS ON THE NORTH AND SOUTH SIDES OF THE BUILDING WITH A DEDICATED, WEATHER-PROOF OUTLET.
- 5. BLOWER VFD'S TO BE PROVIDED BY OWNER AND INSTALLED BY THE CONTRACTOR.
- 6. CONTRACTOR TO INSTALL A FLOOD LIGHT ACCORDING TO THE ELECTRICAL LEGEND AND DETAILS AT APPROXIMATELY THIS LOCATION. THE FLOOD LIGHT SHALL BE INSTALLED SUCH THAT IT ILLUMINATES THE NEW SOLIDS HOLDING TANK PARTICULARLY THE HATCH AND CONTROLS JUNCTION BOX.

### ELECTRICAL LEGEND

CURRENT ALBEO 34W 1'X4' WET LOCATION LED FIXTURE WITH EMERGENCY DRIVER. MOUNT AT 12'-0" AFF. MODEL ALR2-0-4T-05-T-48-1D-S-Q-Q-E-ST-K-Q-W OR APPROVED EQUAL.

CURRENT ALBEO 34W 1'X4' WET LOCATION LED FIXTURE WITH EMERGENCY DRIVER. WALL MOUNT AT 45° AND 10'-0" AFF OF PUMP ROOM. MODEL ALR2-0-4T-05-T-48-1D-S-Q-Q-E-45-K-Q-W OR APPROVED EQUAL.

CURRENT EVOLVE LED 36W WALL LIGHT (WALL PACK) WITH BATTERY BACKUP AND DARK SKY COMPLIANCE. MODEL EWAS-01-1-B3-AW-7-40-D-1-FM-DKBZ-EMBR OR APPROVED EQUAL.

CURRENT BEACON LED 29W RECESSED LIGHT WITH DIMMING DRIVER. MODEL CLO-18L-25-4K7-4F-UNV-RD-DBT-LS OR APPROVED EQUAL.

CHLORIDE VE SERIES EXIT SIGN. MODEL VEGW OR APPROVED EQUAL.

LSI 121W LARGE LED FLOOD LIGHT WITH

DIMMING. MODEL TLFL-16L-W-UNV-DIM-40-BZA-SF OR APPROVED EQUAL.

DUPLEX OUTLET
WP: WEATHER-PROOF OUTLET GFCI

PROTECTED.

THERMOSTAT

LIGHT SWITCH

JORDAN C.
GARDNER

1/31/25

FILE:

JUB PROJ. #:93-24-001

DRAWN BY:DCL

DESIGN BY:JCG

CHECKED BY:MPJ

ONE INCH

AT FULL SIZE, IF NOT ONE

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PHASE

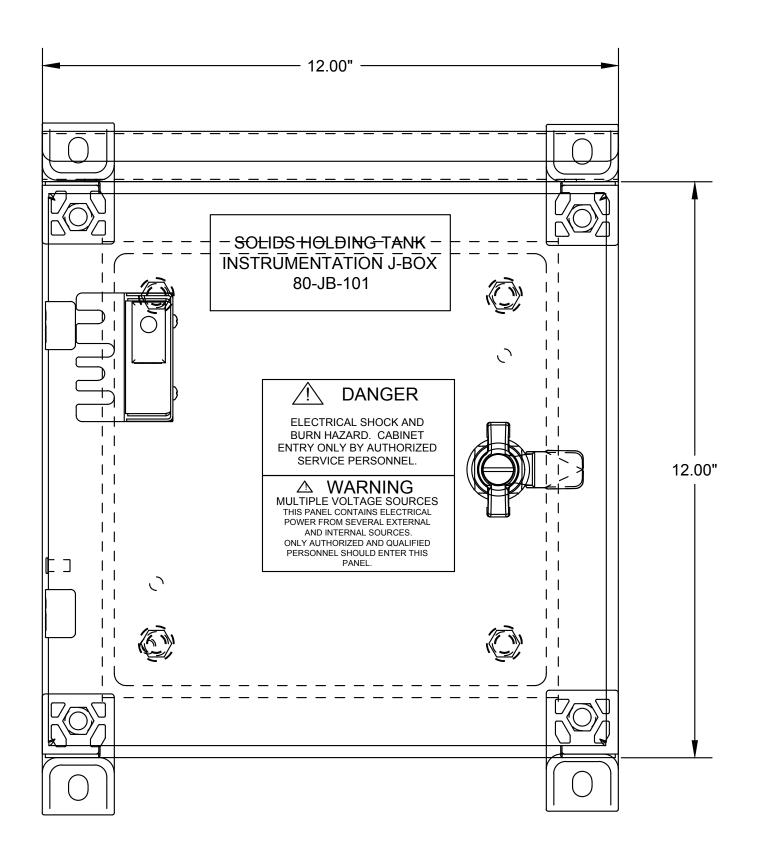
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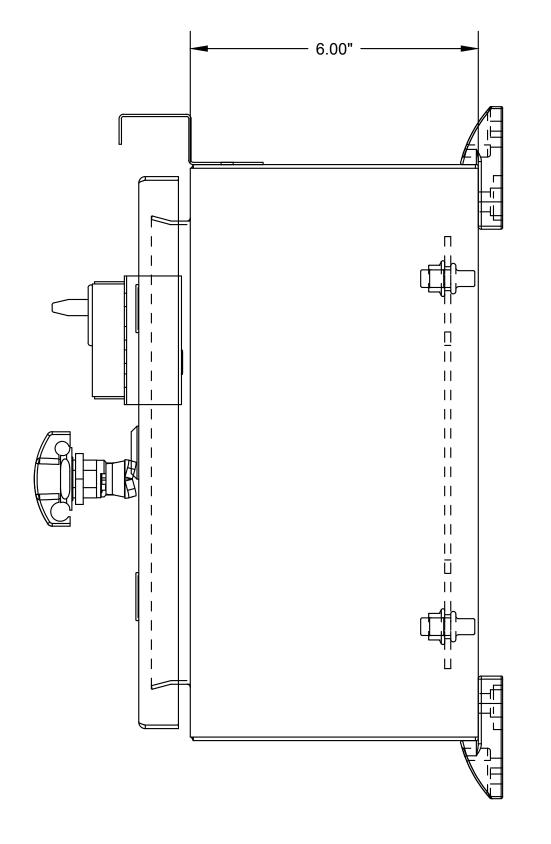
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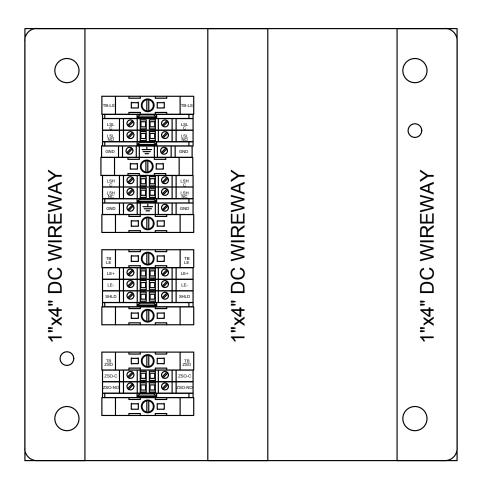
- SOLIDS HOLDING BUILDING LAYOUT

ELECTRICAL -

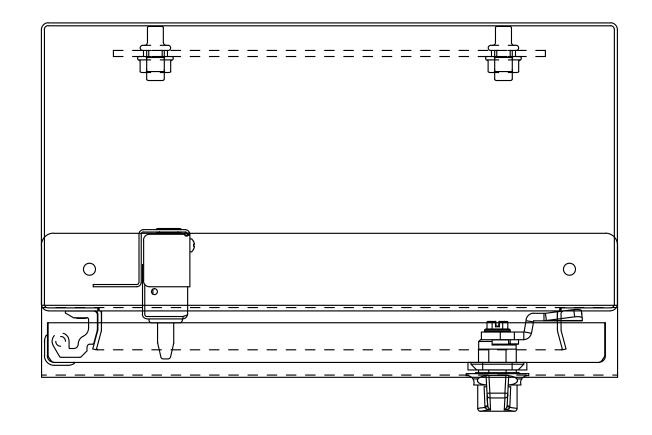
INCH, SCALE ACCORDINGLY
LAST UPDATED: 10/25/2024
DRAWING:







**FRONT VIEW SIDE VIEW BACKPANEL LAYOUT** 



**TOP VIEW** 

SOLIDS HOLDING TANK **INSTRUMENTATION J-BOX** 80-JB-101

DANGER

ELECTRICAL SHOCK AND BURN HAZARD. CABINET ENTRY ONLY BY AUTHORIZED SERVICE PERSONNEL

**PANEL LABELS** 

# △ WARNING

MULTIPLE VOLTAGE SOURCES THIS PANEL CONTAINS ELECTRICAL POWER FROM SEVERAL EXTERNAL AND INTERNAL SOURCES. ONLY AUTHORIZED AND QUALIFIED PERSONNEL SHOULD ENTER THIS PANEL.

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ELECTRICAL - SOLIDS HOLDING SOLIDS HOLDING TANK J-BOX LAYOUT WRF PHASE 3 UPGRADES SANTAQUIN CITY

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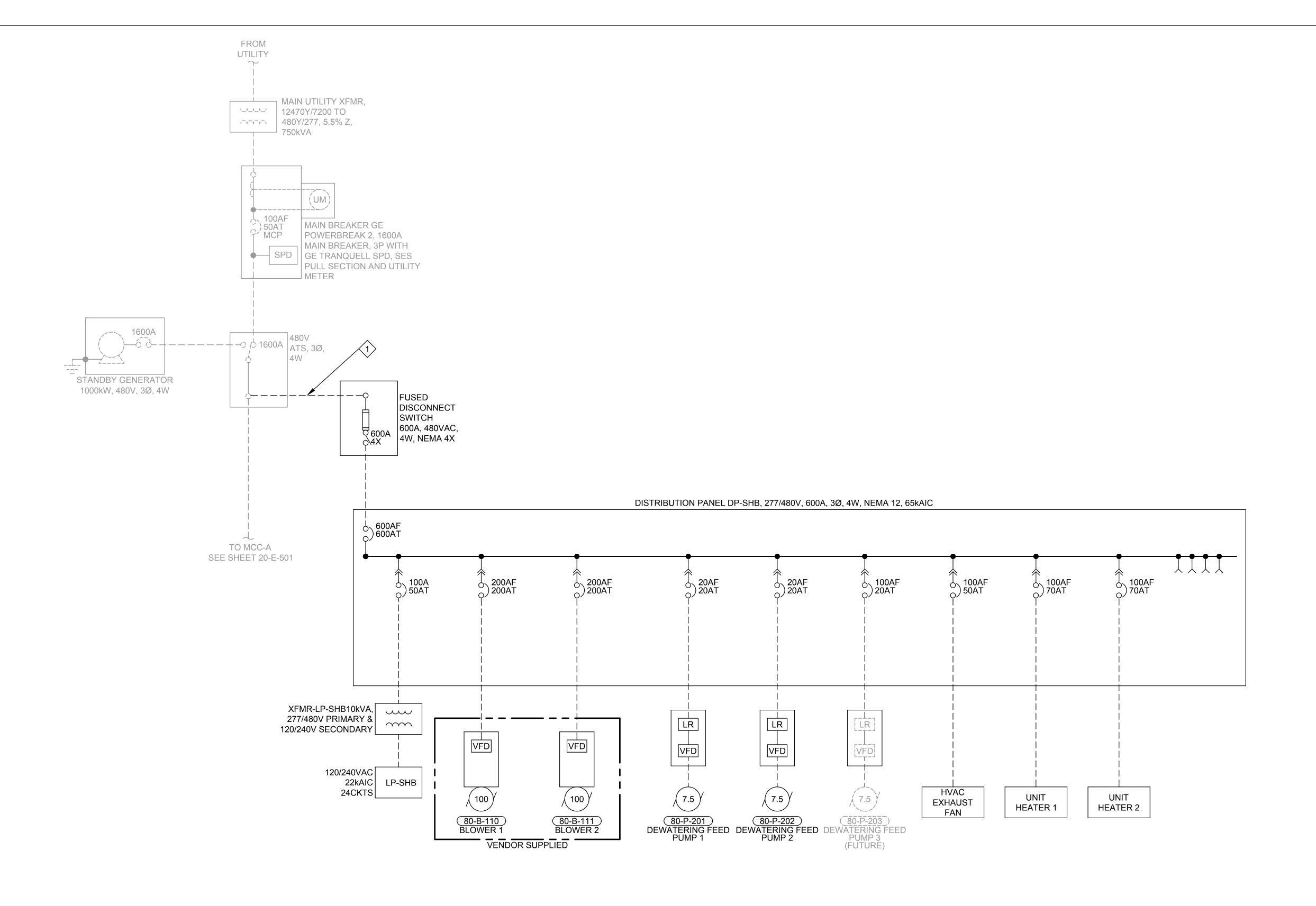
JORDAN C. GARDNER 1/31/25

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DRAWING:



**ONELINE DIAGRAM** 



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WRF PHASE 3 UPGRADES SANTAQUIN CITY

ELECTRICAL - SOLIDS HOLDING ONELINE DIAGRAM

No. 8730795-2202 JORDAN C. GARDNER 0. 1/31/25.

## **KEY NOTES**

CONTRACTOR SHALL ESTABLISH A TAP IN EXISTING ATS AND FEED NEW FUSED DISCONNECT SWITCH. THIS SWITCH WILL BE THE PRIMARY DISCONNECTING MEANS FOR THE NEW SHB. PER NEC 240.21 CONDUCTOR LENGTHS FROM THE NEWLY ESTABLISHED ATS TAP TO THE NEW DISCONNECT SWITCH SHALL BE NO GREATER THAN 10FT OR 3M. CONDUIT SCHEDULE TO IDENTIFY CONDUCTORS TO BE USED.

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INCH, SCALE ACCORDINGLY
LAST UPDATED: 1/30/2025

DRAWING:

## **DP-SHB CALCULATIONS**

DANEL I DOUD	VOLTAGE: 120/240 BUS A.I.C: 22KA		MAIN CB: 100 AMP BKR AIC: 22KA		BUS AMPS: 100 AMP MOUNTING: SURFACE			
PANEL:LP-SHB								
CIRCUIT DESCRIPTION	BKR	CIRCUIT	LOAD	PHASE	LOAD	CIRCUIT	BKR	CIRCUIT DESCRIPTION
HEAT TRACING FOR GUTTERS	20/1	1	250	Α		2	TBD	
INTERIOR LIGHTING	20/1	3	500	В		4	TBD	
INTERIOR LIGHTING WALL	20/1	5	150	Α		6	TBD	
PLC-SHB	20/1	7	750	В		8	TBD	
SUMP PUMP	20/1	9	750	Α		10	TBD	
FLOOD LIGHT	20/1	11	168	В		12	TBD	
EXTERIOR LIGHTING	20/1	13	100	Α		14	TBD	
SPARE	20/1	15		В		16	TBD	
SPARE	20/1	17		Α		18	TBD	
SPARE	20/1	19		В		20	TBD	
SPARE	20/1	21		Α		22	TBD	
SPARE	20/1	23		В		24	TBD	
			PHASE A		PHASE B	NOTES:		
CONNECTED VA PER PHASE			1250.0		1418.0			
CONNECTED AMPS PER PHASE			10.4		11.8			
25% OF CONTINUOUS & LIGHTING LOAD (VA)			312.5		354.5			
CODE VA PER PHASE			1562.5		1772.5			
CODE AMPS PER PHASE			13.0		14.8			

## **LP-SHB CALCULATIONS**

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ELECTRICAL - SOLIDS HOLDING CALCULATIONS WRF PHASE 3 UPGRADES SANTAQUIN CITY

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DESIGN BY: JCG

CHECKED BY: MPJ

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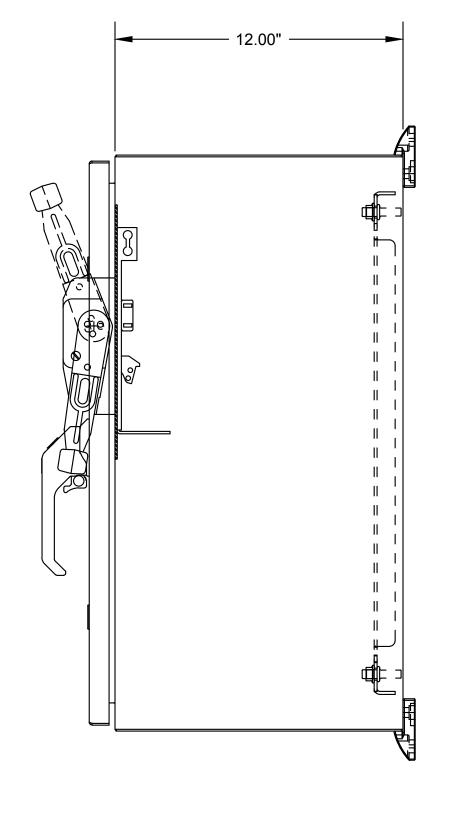
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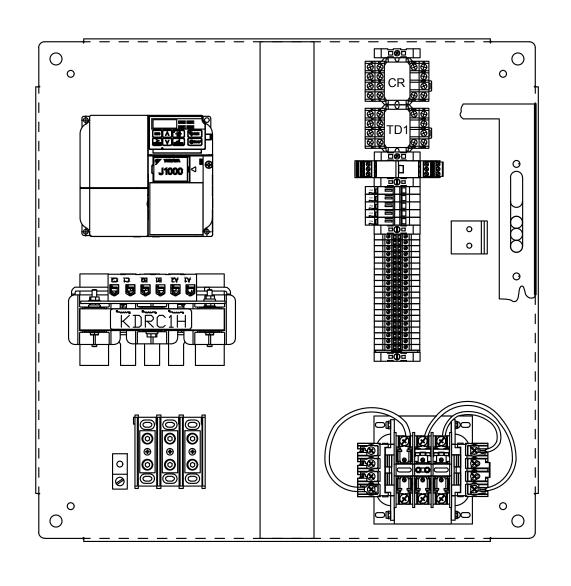
LAST UPDATED: 1/30/2025

DRAWING:

No. 8730795-2202

JORDAN C. GARDNER 1/31/25





**SIDE VIEW BACKPANEL LAYOUT VIEW** 

**FRONT VIEW** 

**TOP VIEW** 

DEWATERING FEED PUMP #20X VFD CABINET 80-VFD-20X

DANGER

**ELECTRICAL SHOCK AND** BURN HAZARD. CABINET ENTRY ONLY BY AUTHORIZED SERVICE PERSONNEL.

**PANEL LABELS** 

## △ WARNING

MULTIPLE VOLTAGE SOURCES THIS PANEL CONTAINS ELECTRICAL POWER FROM SEVERAL EXTERNAL AND INTERNAL SOURCES. ONLY AUTHORIZED AND QUALIFIED PERSONNEL SHOULD ENTER THIS PANEL.

J-U-B ENGINEERS, INC.

J-U-B ENGINEERS, INC. 392 E. Winchester St., Suite 300 Salt Lake City, UT 84107 Phone: 801-547-0393 www.jub.com

Subconsultant:

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AGENCY

**REVIEW** 

WRF PHASE 3 UPGRADES SANTAQUIN CITY

ELECTRICAL - SOLIDS HOLDING DEWATERING FEED PUMP VFD PANEL

JUB PROJ. #:93-24-001 DRAWN BY: EGK / DCL DESIGN BY: JCG CHECKED BY: MPJ

No. 8730795-2202

JORDAN C. GARDNER 1/31/25

ONE INCH

AT FULL SIZE, IF NOT ONE
INCH, SCALE ACCORDINGLY

LAST UPDATED: 1/30/2025

DRAWING:

BILL OF MATERIALS							
ITEM	MANUFACTURE	MODEL	EQUIPMENT DESCRIPTION	QTY	NOTES		
1	ALLEN BRADLEY	5069-L320ER	ALLEN BRADLEY 5069 SERIES CONTROLLER	1	OR APPROVED EQUAL		
2	ALLEN BRADLEY	5069-IB16	ALLEN BRADLEY 16 POINT DISCRETE INPUT MODULE	2	OR APPROVED EQUAL		
3	ALLEN BRADLEY	5069-OB16	ALLEN BRADLEY 16 POINT DISCRETE OUTPUT MODULE	1	OR APPROVED EQUAL		
4	ALLEN BRADLEY	5069-IF8	ALLEN BRADLEY 8 POINT ANALOG INPUT MODULE	1	OR APPROVED EQUAL		
6	PHOENIX	2904601	QUINT4 24VDC POWER SUPPLY 10A OUTPUT	1	OR APPROVED EQUAL		
7	PHOENIX	2907918	120VAC 26A IN-LINE SPD	1	OR APPROVED EQUAL		
8	PHOENIX	2907571	CIRCUIT BREAKER, 1 POLE, 15A	2	OR APPROVED EQUAL		
12	PHOENIX	2907562	CIRCUIT BREAKER, 1 POLE, 5A	3	OR APPROVED EQUAL		
13	PHOENIX	2320225	QUINT4 10A 24VDC UPS	1	OR APPROVED EQUAL		
14	PHOENIX	2320322	12aH BATTERY PACK	1	OR APPROVED EQUAL		
15	PHOENIX	3044131	8.2MM TERMINAL BLOCK, FITS UP TO #8, UT6	LOT	OR APPROVED EQUAL		
16	PHOENIX	3044157	8.2MM GND TERMINAL BLOCK UT6-PE	LOT	OR APPROVED EQUAL		
17	PHOENIX	3047028	END COVERS FOR UT4/UT6 TB	LOT	OR APPROVED EQUAL		
18	PHOENIX	3044814	6.2MM DOULBE LEVEL TERMINAL BLOCKS UTTB4	LOT	OR APPROVED EQUAL		
19	PHOENIX	3044759	6.2MM DOUBLE LEVEL GROUND TERMINAL UTTB4	LOT	OR APPROVED EQUAL		
20	PHOENIX	3047303	SPACER PLATE	LOT	OR APPROVED EQUAL		
21	PHOENIX	3047293	DOUBLE LEVEL TERMINAL END PLATE	LOT	OR APPROVED EQUAL		
22	PHOENIX	0800886	DIN RAIL TERMINAL BLOCK END CLAMPS	LOT	OR APPROVED EQUAL		
23	PHOENIX	3046414	8.2MM FUSE BLOCK, 24VDC LED	LOT	OR APPROVED EQUAL		
24	PHOENIX	3046430	8.2MM FUSE BLOCK, 120VAC LED	LOT	OR APPROVED EQUAL		
25	PHOENIX	3032224	UT4 JUMPER BAR, 50 PIECES, RED	LOT	OR APPROVED EQUAL		
26	PHOENIX	3032211	UT4 JUMPER BAR, 50 PIECES, BLUE	LOT	OR APPROVED EQUAL		
27	PHOENIX	3030323	UT6 JUMPER BAR, 10 PIECES, RED	LOT	OR APPROVED EQUAL		
28	PHOENIX	3032198	UT6 JUMPER BAR, 10 PIECES, BLUE	LOT	OR APPROVED EQUAL		
29	PHOENIX	3214301	UT2.5 TRIPLE LEVEL TERMINAL WITH GROUND	LOT	OR APPROVED EQUAL		
30	PHOENIX	2858894	UT2.5 TRIPLE LEVEL TERMINAL END COVER	LOT	OR APPROVED EQUAL		
31	PHOENIX	3214321	UT4 24VDC FUSED DOUBLE LEVEL TERMINAL W/GROUND	LOT	OR APPROVED EQUAL		
32	PHOENIX	EML	CUSTOM ENGRAVED PANEL LABELS	LOT	OR APPROVED EQUAL		
33	PHOENIX	TMT	WIRE AND TERMINAL BLOCK LABELS	LOT	OR APPROVED EQUAL		
34	ALLEN BRADLEY	2711P-T10C21D8S	PANELVIEW PLUS 7 10.4" TOUCHSCREEN	1 1	OR APPROVED EQUAL		
35	SAGINAW	SCE-48N3612SSLP	NEMA 4X SS ENCLOSURE 48" X 36" X 12"	1 1	OR APPROVED EQUAL		
36	SAGINAW	SCE-48P36	BACK PANEL FOR 48" X 36" ENCLOSURE	1	OR APPROVED EQUAL		
37	PANDUIT	F1X4LG6	1" X 4" WIRE DUCT, LT. GRAY	LOT	OR APPROVED EQUAL		
38	PANDUIT	C1LG6	1" WIRE COVER, LT. GRAY	LOT	OR APPROVED EQUAL		
39	PANDUIT	F1X4WH6	1" X 4" WIRE DUCT, LT. WHITE	LOT	OR APPROVED EQUAL		
40	PANDUIT	C1WH6	1" WIRE COVER, LT. WHITE	LOT	OR APPROVED EQUAL		
41	PANDUIT	F2X4WH6	2" X 4" WIRE DUCT, WHITE	LOT	OR APPROVED EQUAL		
42	PANDUIT	C2WH6	2" WIRE COVER, WHITE	LOT	OR APPROVED EQUAL		
43	PANDUIT	PLM	CABLE TIES  SINCLE DOLE DOLINE THROW BELAY 24/70C COIL WITH LICHT	LOT	OR APPROVED EQUAL		
44	IDEC	RJ1S-CL-D24	SINGLE POLE DOUBLE THROW RELAY 24VDC COIL WITH LIGHT	12	OR APPROVED EQUAL		
45	IDEC	SJ1S-05BW	SINGLE POLE DIN MOUNT PLUG IN RELAY BASE	12	OR APPROVED EQUAL		
46	BELDEN	8760 OM2AE	#18 TWISTED SHIELDED PAIR	LOT	OR APPROVED EQUAL		
47 48	IBOCO UBUIQUITY	OM2AF UNIFI AC AP PRO	DIN RAIL WIRELESS ACCESS POINT	LOT	OR APPROVED EQUAL OR APPROVED EQUAL		
<del>48</del>	ALLEN BRADLEY	STRATIX 5700	INDUSTRIAL MANAGED ETHERNET/FIBER SWITCH	1	OR APPROVED EQUAL		
<del>5</del> 0	BAPI		TEMPERATURE TRANSMITTER	1 1	OR APPROVED EQUAL		
IJΙ	DATI	STAT-4	ILIVIF LIVATURE TRANSIVITTER	1	ON AFFROVED EQUAL		

RILL OF MATERIALS

	SCHEMATIC SYMBOLS	SCHEMATIC LINETYPES
LU SC	EVICE CONNECTION G OR TERMINAL CHEMATIC POINT OF DINNECTION  FRAME SIZE TRIP RATING TRIP RATING BREAKER TYPE  AMPERE RATING FUSE FUSE TYPE	MANUFACTURER/SHOP WIRE TYPICALLY INSTALLED OFF-SITE  FIELD/CONTRACTOR INSTALLED WIRE  EXISTING OR FUTURE FIELD/CONTRACTOR INSTALLED WIRE  EXISTING OR FUTURE MANUFACTURER/SHOP WIRE
	GROUND CONNECTION  NORMALLY OPEN CONTACT	TB'S & PLC SYMBOLS
g/p	NORMALLY CLOSED CONTACT	LOCAL PANEL OR DEVICE TERMINAL BLOCK
	SOLENOID VALVE	X <del>✓</del> TERMINAL LABEL
OFF ON OX HOA XOO	2 POSITION SELECTOR SWITCH POSITION LEGEND: X=CLOSED O=OPEN 3 POSITION SELECTOR SWITCH HAND - OFF - AUTO POSITION LEGEND: X=CLOSED O=OPEN	PLC PANEL TERMINAL BLOCK  X TERMINAL LABEL  MCC TERMINAL BLOCK  X TERMINAL LABEL  X TERMINAL LABEL
STOP	NORMALLY CLOSED PUSH BUTTON	DEVICE TERMINAL BLOCK
	NORMALLY OPEN PUSH BUTTON	X TERMINAL LABEL
<u></u>	FLOAT SWITCH - MAKE ON FALL	
90	FLOAT SWITCH -BREAK ON RISE TYPICAL SWITCH CONFIGURATION	
	FLOAT SWITCH - BREAK ON FALL FLOAT SWITCH - MAKE ON RISE	
SOLDANIEL	- SWITCH TYPE SYMBOL (SEE BELOW)	
U.S.	LEVEL SWITCH	
2002/02/02	<ul><li>△ PRESSURE SWITCH</li><li>△ FLOW OR TORQUE SWITCH</li></ul>	
0		

✓ LIMIT SWITCH

### IO SCHEDULE AB PLC (NEW) NOTES TYPE SLOT:POINT INPUT/OUTPUT DESCRIPTION DEWATERING PUMP 1 PRESS ALARM LOW 1:01 DEWATERING PUMP 1 PRESS ALARM HIGH 1:02 DEWATERING PUMP 2 PRESS ALARM LOW 1:03 DEWATERING PUMP 2 PRESS ALARM HIGH 1:04 DEWATERING PUMP 3 PRESS ALARM LOW FUTURE DEWATERING PUMP 3 PRESS ALARM HIGH | FUTURE 1:05 1:06 SLUDGE HOLDING TANK LEVEL ALARM HIGH THRU ISB DI 1:07 SLUDGE HOLDING TANK LEVEL ALARM LOW THRU ISB 1:08 FLOOD SWITCH 1:09 SPARE SPARE 1:10 SPARE 1:12 SPARE 1:13 SPARE SPARE 1:14 SPARE 1:15 DI 2:00 SPARE SPARE 2:01 2:02 SPARE DI 2:03 SPARE 2:04 SPARE SPARE 2:05 2:06 SPARE DI 2:07 SPARE 2:08 SPARE 2:09 SPARE SPARE 2:10 SPARE SPD FAIL DC PS FAIL 2:13 2:14 UPS FAIL 2:15 UPS ON BATTERY DEWATERING PUMP 1 START CMD HAND DEWATERING PUMP 2 START CMD HAND DEWATERING PUMP 3 START CMD HAND FUTURE SPARE SPARE SPARE SPARE SPARE 3:8 SPARE SPARE 3:10 SPARE SPARE SPARE SPARE SPARE

SPARE

SPARE

SPARE

SPARE

SPARE

SPARE

SLUDGE HOLDING TANK LEVEL

TEMPERATURE TRANSMITTER

THRU ISB

3:15

4:01

4:03

4:04

### **NOTES ABBI**

AS

CB

CU

CV

DWG

ETM

EOL

FΕ

FLA

FOC

FOR

GFP

GND

GPM

GRS

H2S

Ю

ISC

LCP

LOS

LS

MC

MCB

MCC

MCP

MH

OIT

OL

00

OR

PB

PPM

PR

PV

RF

RST

ST

TC

TS

UG

FS

- THE COMPLETED INSTALLATION SHALL COMPLY WITH APPLICABLE FEDERAL, STATE, AND LOCAL CODES, ORDINANCES, AND REGULATIONS. ALL WORK SHALL BE COMPLETED IN A NEAT, WORKMANLIKE MANNER IN ACCORDANCE WITH THE LATEST NEC STANDARDS OF INSTALLATION UNDER COMPETENT SUPERVISION. INSTALL GROUNDING PER NEC.
- ALL MATERIALS SHALL BE NEW AND OF THE BEST QUALITY, MANUFACTURED IN ACCORDANCE WITH NEMA, ANSI, UL, OR OTHER APPLICABLE STANDARDS. THE USE OF MANUFACTURERS' NAMES, MODELS, AND NUMBERS IS INTENDED TO ESTABLISH STYLE, QUALITY, APPEARANCE, USEFULNESS, AND BID PRICE.
- PROTECT ALL ELECTRICAL MATERIAL AND EQUIPMENT INSTALLED AGAINST DAMAGE BY OTHER TRADES, WEATHER CONDITIONS, OR ANY OTHER PREVENTABLE CAUSES. EQUIPMENT DAMAGED DURING SHIPPING OR CONSTRUCTION, PRIOR TO ACCEPTANCE BY THE ENGINEER OR OWNER, WILL BE REJECTED AS DEFECTIVE.
- ALL COMPONENTS SHALL BE FREE OF DUST, GRIT, AND FOREIGN MATERIALS, AND LEFT AS NEW BEFORE FINAL ACCEPTANCE OF WORK. DAMAGED PAINT AND FINISHES SHALL BE TOUCHED UP OR PAINTED WITH MATCHING COLOR PAINT AND FINISH.
- CIRCUIT CONDUCTORS #6 AWG OR SMALLER SHALL BE THWN STRANDED COPPER. #4 TO #2 AWG SHALL BE XHHW STRANDED COPPER. #1 AWG OR LARGER SHALL BE XHHW-2 STRANDED COPPER. MINIMUM POWER CONDUCTOR SIZE SHALL BE #12 AWG WITH #12 GROUND. ALL WIRE TO BE SIZED PER NEC TABLE 316-10, 75°C BASED ON 30°C AMBIENT.
- SAFETY SWITCHES, ELECTRICAL DISTRIBUTION EQUIPMENT, CONTROL PANELS AND OTHER ELECTRICAL DEVICES SHALL BE UL LISTED, AND RATED FOR HEAVY DUTY SERVICE.
- DEVICE WIRING SHALL BE SPECIFICATION GRADE.
- 8. TYPICAL DETAILS SHALL APPLY IN ALL CASES. WHETHER SPECIFICALLY REFERRED TO OR NOT.
- PLC DRAWINGS INCLUDED HERE DEMONSTRATE A TYPICAL DESIGN, IO AND EQUIPMENT. CONTRACTOR SHALL SUBMIT TO ENGINEER EQUIPMENT PRIOR TO PURCHASE. IO LIST, IO TAGGING, POWER DISTRIBUTION, AND NETWORK DRAWINGS ARE SHOWN WITH XXX LABELS SUCH THAT THE CONTRACTOR CAN ADJUST AS REQUIRED PER SITE CONDITIONS.

REVIATIONS	
RE	<b>(JUB</b>

ABOVE FINISHED FLOOR

AMPS INTERRUPTING CAPACITY

**AUTOMATIC TRANSFER SWITCH** 

CONTROL POWER TRANSFORMER

DISTRIBUTED CONTROL SYSTEM

**COMMUNICATIONS TERMINATION CABINET** 

**ANALOG INPUT** 

AIR SUPPLY

CONDUIT

CHLORINE

DRAWING

ANALOG OUTPUT

CIRCUIT BREAKER

COPPER, BARE

CONTROL VALVE

DISCRETE INPUT

FLOW ELEMENT

**FULL LOAD AMPS** 

FLOW SWITCH

GROUND

CURRENT

FIBER OPTIC CABLE

DISCRETE OUTPUT

DISTRIBUTION PANEL

DISCONNECT SWITCH

DV/DT DIFFERENTIAL VOLTAGE/TIME

ELAPSED TIME METER

ELECTRONIC OVERLOAD

FORWARD-OFF-REVERSE

FVNR FULL VOLTAGE NON-REVERSING

GALLONS PER MINUTE

HYDROGEN SULFIDE

HAND-OFF-AUTO

INPUT/OUTPUT

JUNCTION BOX

LOCK-OUT-STOP

LIGHTING PANEL

LOCAL/REMOTE

LEVEL SWITCH

MOTOR

MFR(S) MANUFACTURER(S)

MANHOLE

NPW NON-POTABLE WATER

NTS NOT TO SCALE

TURBIDITY

OVERLOAD

OFF-REMOTE

PULL BOX

**PRESSURE** 

PANEL

PAIR

RESET

HAND-OFF-REMOTE

GALVANIZED RIGID STEEL

**INSTRUMENTATION CABLE** 

SHORT CIRCUIT CURRENT

LOCAL AREA NETWORK

LOCAL CONTROL PANEL

MANUAL/AUTO, MILLIAMP

MANUFACTURER'S CABLE

MOTOR CONTROL CENTER

MILLION GALLONS PER DAY

MOTOR OPERATED VALVE

MASTER TELEMETRY UNIT

NOTC NORMALLY OPEN TIMED CLOSED

ON/OFF (MAINTAINED)

PERSONAL COMPUTER

PARTS PER MILLION

PRESSURE SWITCH

PROCESS VARIABLE

RADIO FREQUENCY REMOTE INPUT OUTPUT

RTU REMOTE TELEMETRY UNIT

SLOS START-LOCK-OFF-STOP

SULFUR DIOXIDE SET POINT/SPARE

TELEPHONE CABLE

UNDERGROUND

WEATHERPROOF

TEMPERATURE SWITCH

START/STOP

SHUNT TRIP

TYPICAL

VOLTAMP

XFMR TRANSFORMER

ZS POSITION SWITCH

WATT, WIRE

NATIONAL ELECTRICAL CODE

OPERATOR INTERFACE TERMINAL

PHASE/POWER FAILURE RELAY

POUNDS PER SQUARE INCH

RTD RESISTANCE TEMPERATURE DETECTOR

SMC SUBMERSIBLE MANUFACTURER CABLE

SURGE PROTECTION DEVICE

VARIABLE FREQUENCY DRIVE

AU.

No. 8730795-2202

JORDAN C.

GARDNER

. 1/31/25.

TE OF UT M

RVSS REDUCED VOLTAGE SOFT STARTER SERVICE ENTRANCE EQUIPMENT SERVICE ENTRANCE SECTION

REMOTE CONTROL PANEL

PROGRAMMABLE LOGIC CONTROLLER

MOTOR CIRCUIT PROTECTOR

MAIN CIRCUIT BREAKER

**GROUND FAULT PROTECTION** 

HUMAN MACHINE INTERFACE

GROUND FAULT CIRCUIT INTERRUPTER

LIQUIDTIGHT FLEXIBLE METAL CONDUIT

J-U-B ENGINEERS, INC.

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AGENCY

**REVIEW** 

HOLDING IO LIST & L RADI ITY  $\overline{\Omega}$ ELECTRICAL - SOLIDS B BILL OF MATERIALS, 3 UP

JUB PROJ. #:93-24-001

DRAWN BY: EGK / DCL DESIGN BY: JCG CHECKED BY: MPJ

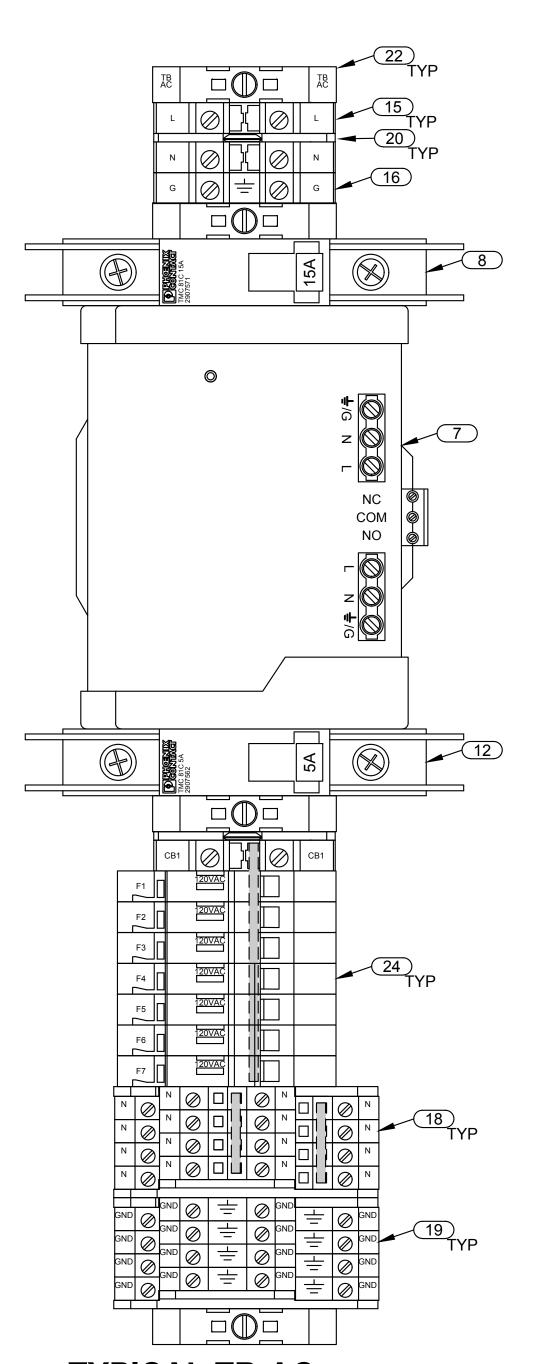
ONE INCH AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY

LAST UPDATED: 1/30/2025 DRAWING:

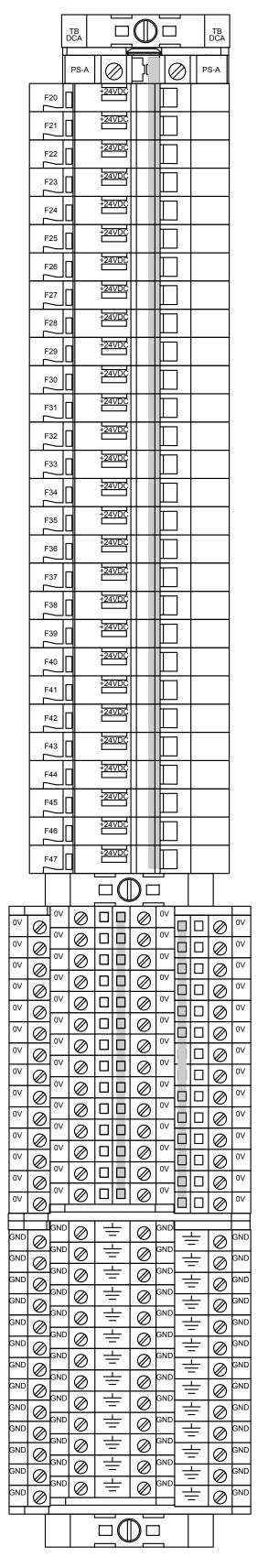
	LOI	OR APPROVED EQUAL	
	LOT	OR APPROVED EQUAL	DO
	LOT	OR APPROVED EQUAL	DO
	12	OR APPROVED EQUAL	DO
	12	OR APPROVED EQUAL	DO
	LOT	OR APPROVED EQUAL	DO
	LOT	OR APPROVED EQUAL	DO
		OR APPROVED EQUAL	DO
	1	OR APPROVED EQUAL	DO
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### NOTES:

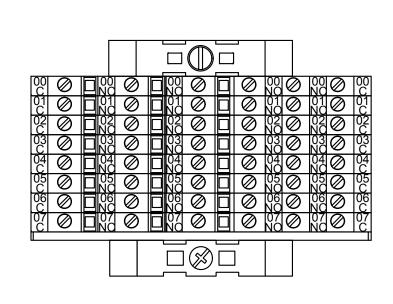
- 1 THESE DETAILS REFLECT THE GENERAL STRATEGY IN LAYING OUT THE TERMINAL BLOCKS. THE ACTUAL LAYOUTS WILL VARY BASED ON THE NUMBER OF COMPONENTS REQUIRED FOR EACH GROUP. PROVIDE A MINIMUM OF 100% SPARE NEUTRAL AND GROUND TERMINALS.
- 2 USE JUMPER BARS TO BUS TOGETHER THE FUSE TERMINALS, NEUTRAL TERMINALS, AND 0V TERMINALS.
- (3) REFER TO SHEET I-01 FOR BILL OF MATERIALS



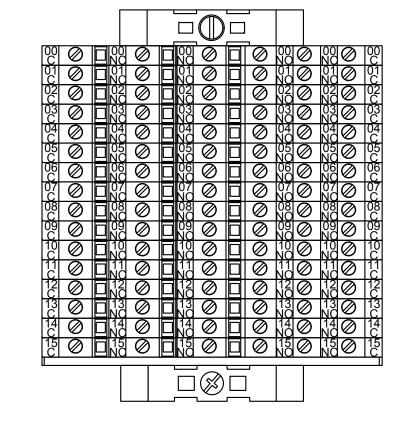
TYPICAL TB-AC
TERMINAL BLOCK LAYOUT



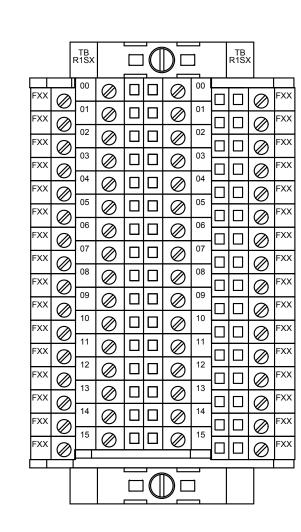
TYPICAL TB-DC
TERMINAL BLOCK LAYOUT



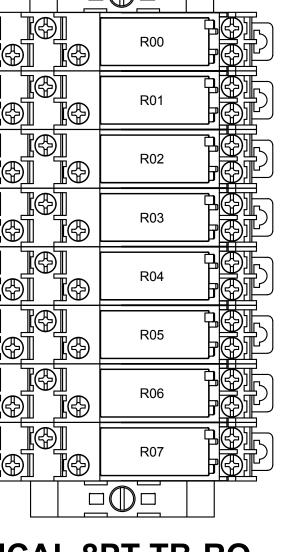
TYPICAL 8PT TB-DO
TERMINAL BLOCK LAYOUT



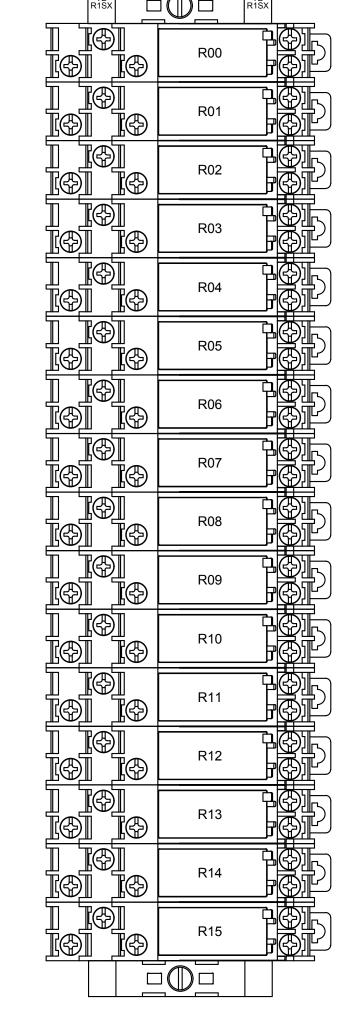
TYPICAL 16PT TB-DO
TERMINAL BLOCK LAYOUT



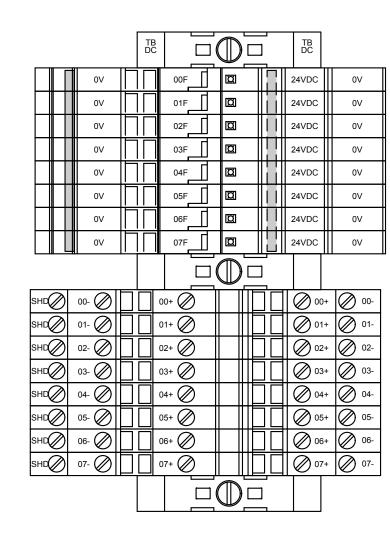
TYPICAL 16PT TB-DI
TERMINAL BLOCK LAYOUT



TYPICAL 8PT TB-RO
TERMINAL BLOCK LAYOUT



TYPICAL 16PT TB-RO
TERMINAL BLOCK LAYOUT



TYPICAL 8PT TB-AI
TERMINAL BLOCK LAYOUT

J-U-B ENGINEERS, INC.

J-U-B ENGINEERS, INC.

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REVISION

REVISION

BY APR, DATE

FAQUIN CITY

L - SOLIDS HOLDING

TERMINAL BLOCK LAYOLTS

SANTAQUIN ELECTRICAL - SOLID

FILE:
JUB PROJ. #:93-24-001
DRAWN BY: EGK / DCL
DESIGN BY: JCG
CHECKED BY: MPJ

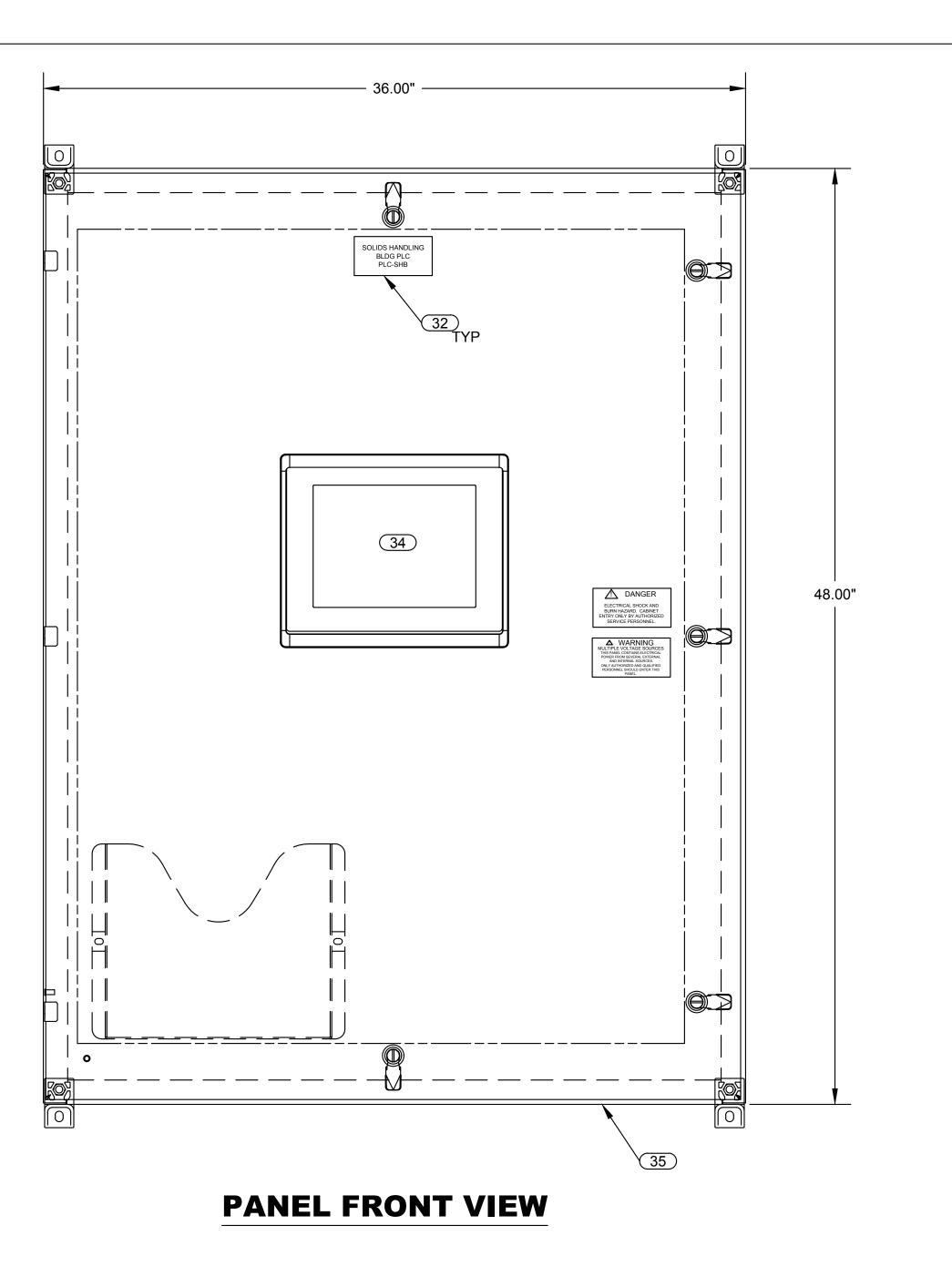
DESIGN BY: JCG

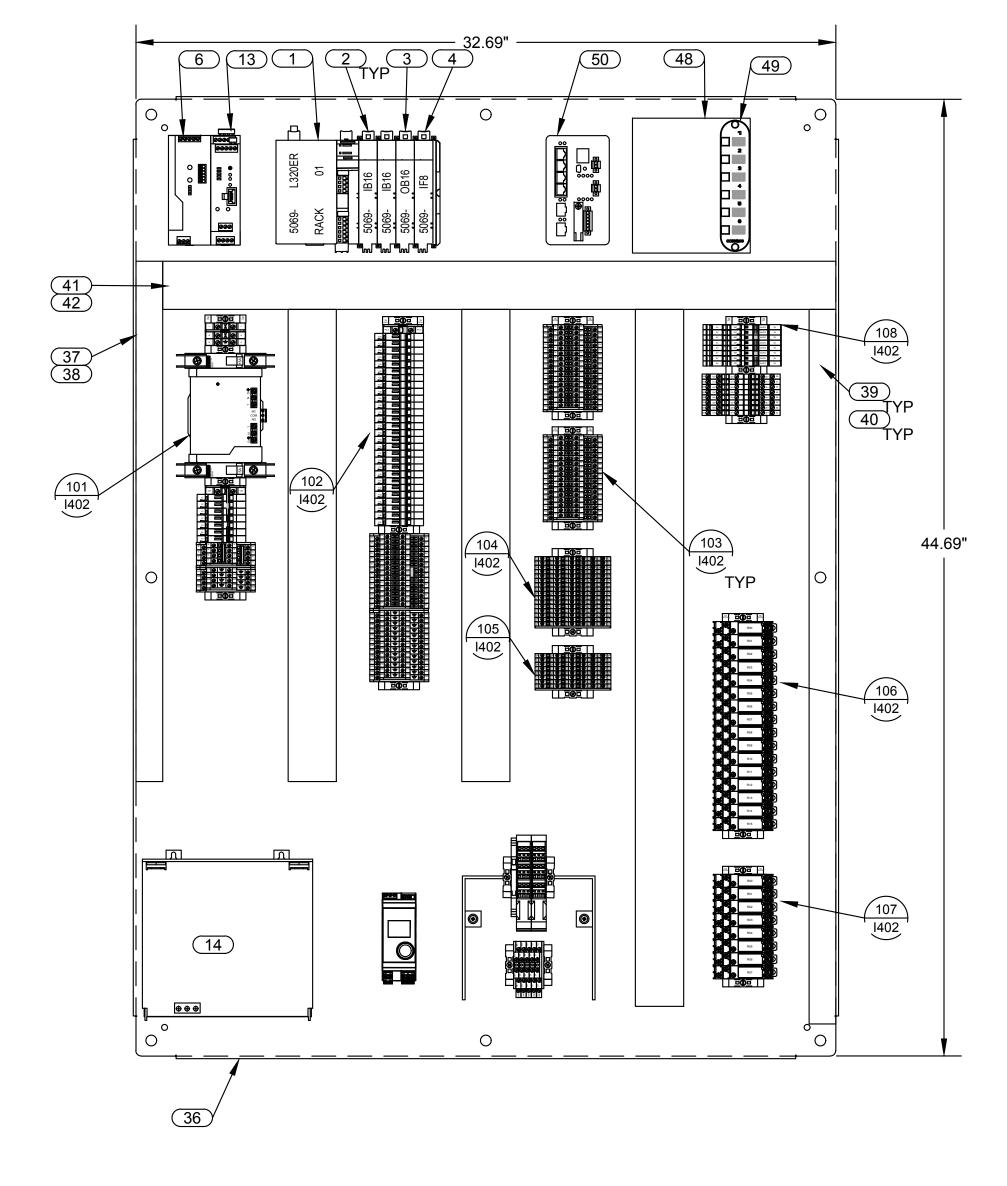
CHECKED BY: MPJ

ONE INCH

AT FULL SIZE, IF NOT ONE
INCH, SCALE ACCORDING

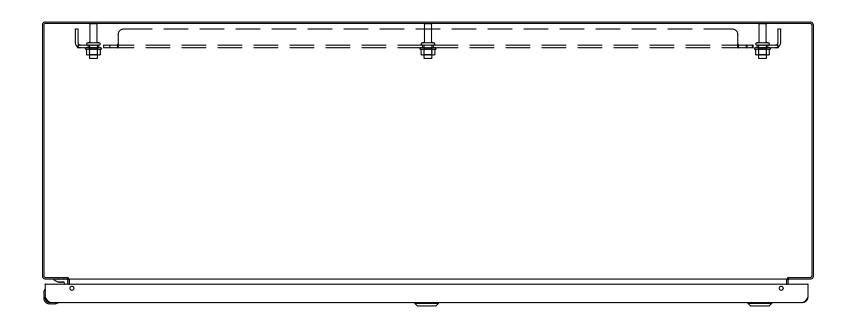
DRAWING:





### **PANEL SIDE VIEW**

### **BACKPANEL LAYOUT VIEW**



**PANEL TOP VIEW** 

SOLIDS HANDLING **BLDG PLC** PLC-SHB

MULTIPLE VOLTAGE SOURCES THIS PANEL CONTAINS ELECTRICAL POWER FROM SEVERAL EXTERNAL AND INTERNAL SOURCES. ONLY AUTHORIZED AND QUALIFIED PERSONNEL SHOULD ENTER THIS



DANGER

ELECTRICAL SHOCK AND BURN HAZARD. CABINET ENTRY ONLY BY AUTHORIZED SERVICE PERSONNEL.

**PANEL LABELS** 



Subconsultant:

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**REVIEW** 

ELECTRICAL - SOLIDS HOLDING PLC -SHB PLC PANEL LAYOUT

WRF PHASE 3 UPGRADES SANTAQUIN CITY

JUB PROJ. #:93-24-001 DRAWN BY: EGK / DCL DESIGN BY: JCG CHECKED BY: MPJ

No. 8730795-2202

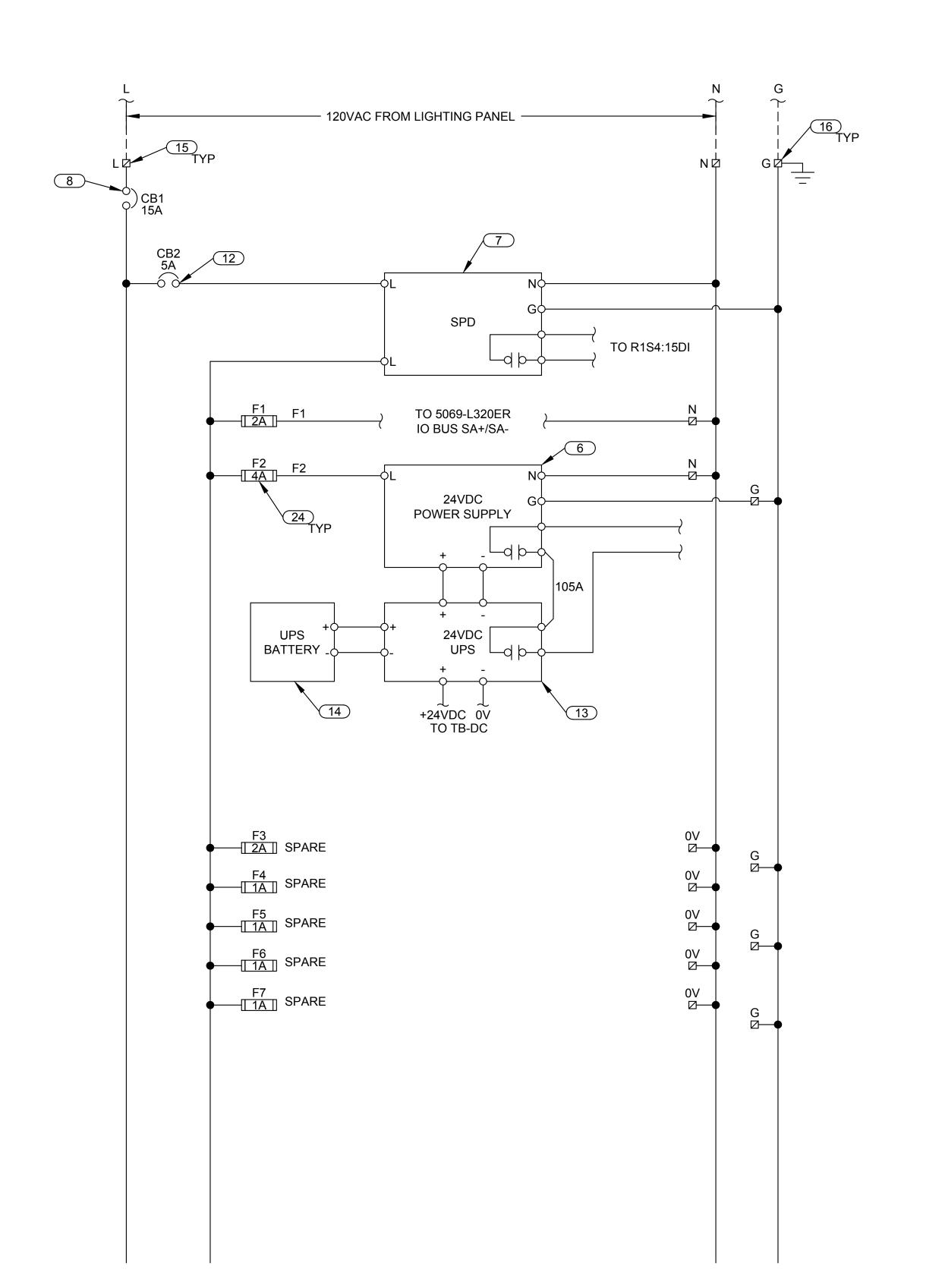
JORDAN C. GARDNER 1/31/25

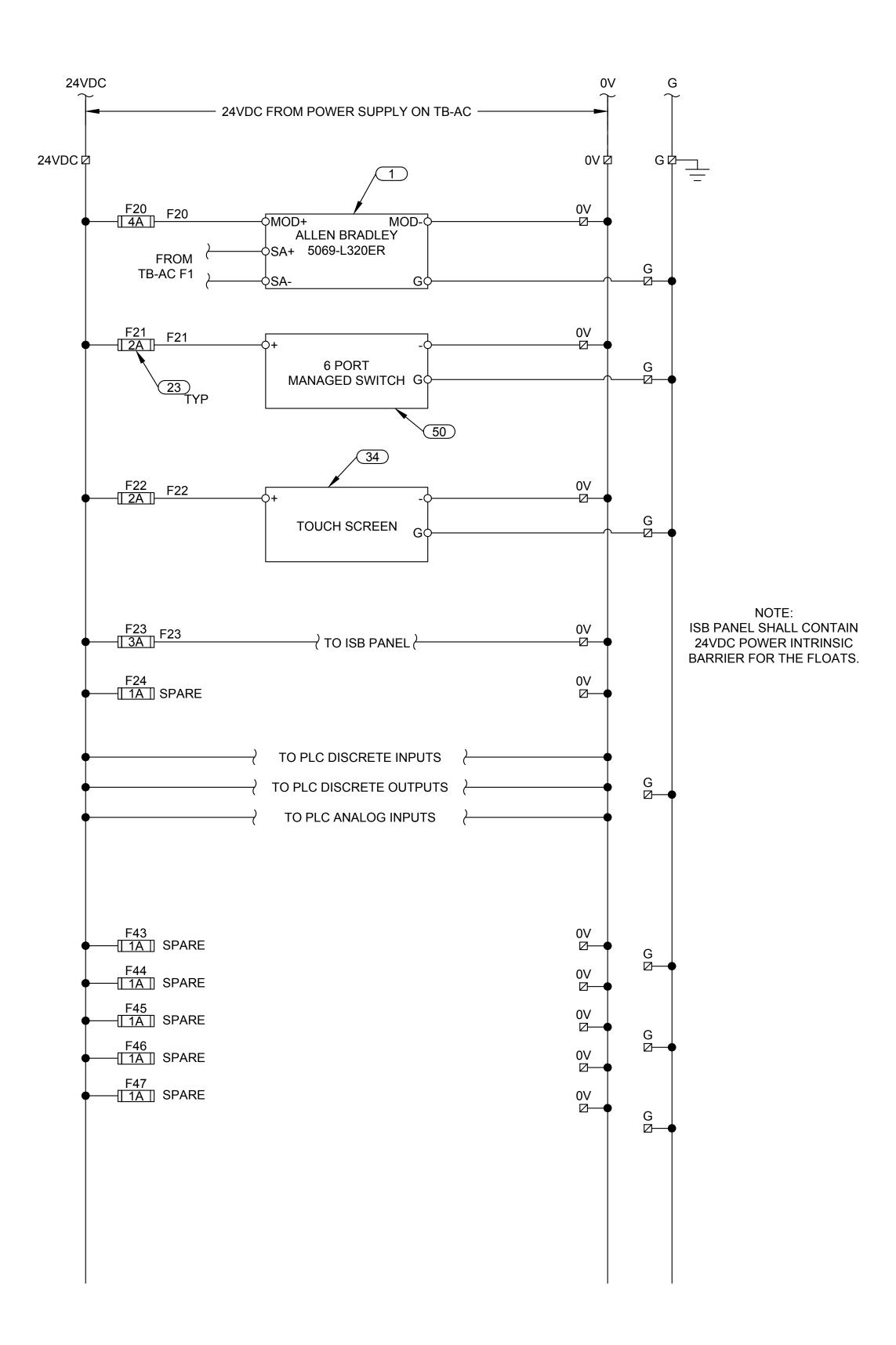
ONE INCH

AT FULL SIZE, IF NOT ONE
INCH, SCALE ACCORDINGLY

LAST UPDATED: 1/30/2025

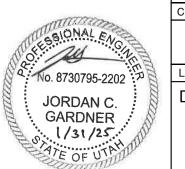
DRAWING:





**AC POWER WIRING DIAGRAM** 

DC POWER WIRING DIAGRAM



J-U-B ENGINEERS, INC. J-U-B ENGINEERS, INC. 392 E. Winchester St., Suite 300 Salt Lake City, UT 84107 Phone: 801-547-0393

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**REVIEW** 

ELECTRICAL - SOLIDS HOLDING TYPICAL AC-DC POWER WIRING DIAGRAM

WRF PHASE 3 UPGRADES SANTAQUIN CITY

JUB PROJ. #: 93-24-001 DRAWN BY: EGK / DCL CHECKED BY: MPJ

ONE INCH

AT FULL SIZE, IF NOT ONE
INCH, SCALE ACCORDINGLY

LAST UPDATED: 1/30/2025

DRAWING: 82-E-604



J-U-B ENGINEERS, INC.

J-U-B ENGINEERS, INC.

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# skn

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WRF PHASE 3 UPGRADES
SANTAQUIN CITY
ELECTRICAL - SOLIDS HOLDING
YPICAL DISCRETE INPUTS WIRING DIAC

1 TERMINAL BLOCKS SHALL BE ARRANGED BY SLOT AS SHOWN ON DETAIL 103 ON SHEET 1402.

**KEYED NOTES:** 

- POWER FOR DC INPUTS SHALL BE FUSED BY DEVICE AS SHOWN AND SHALL COME FROM TB-DC. FUSE LABELING SHALL BE PER FUSE NUMBERS SEQUENTIALLY USED FROM TB-DC. FOR SPARE INPUTS, PROVIDE A FUSE FOR EVERY SET OF FOUR SPARE INPUTS. JUMPER BARS SHOULD BE USED TO CONNECT THE FUSE TERMINAL BLOCKS AS SHOWN.
- 3 FIELD WIRE LABELS SHALL HAVE TO/FROM LABELING.



DRAWN BY: EGK / DCL

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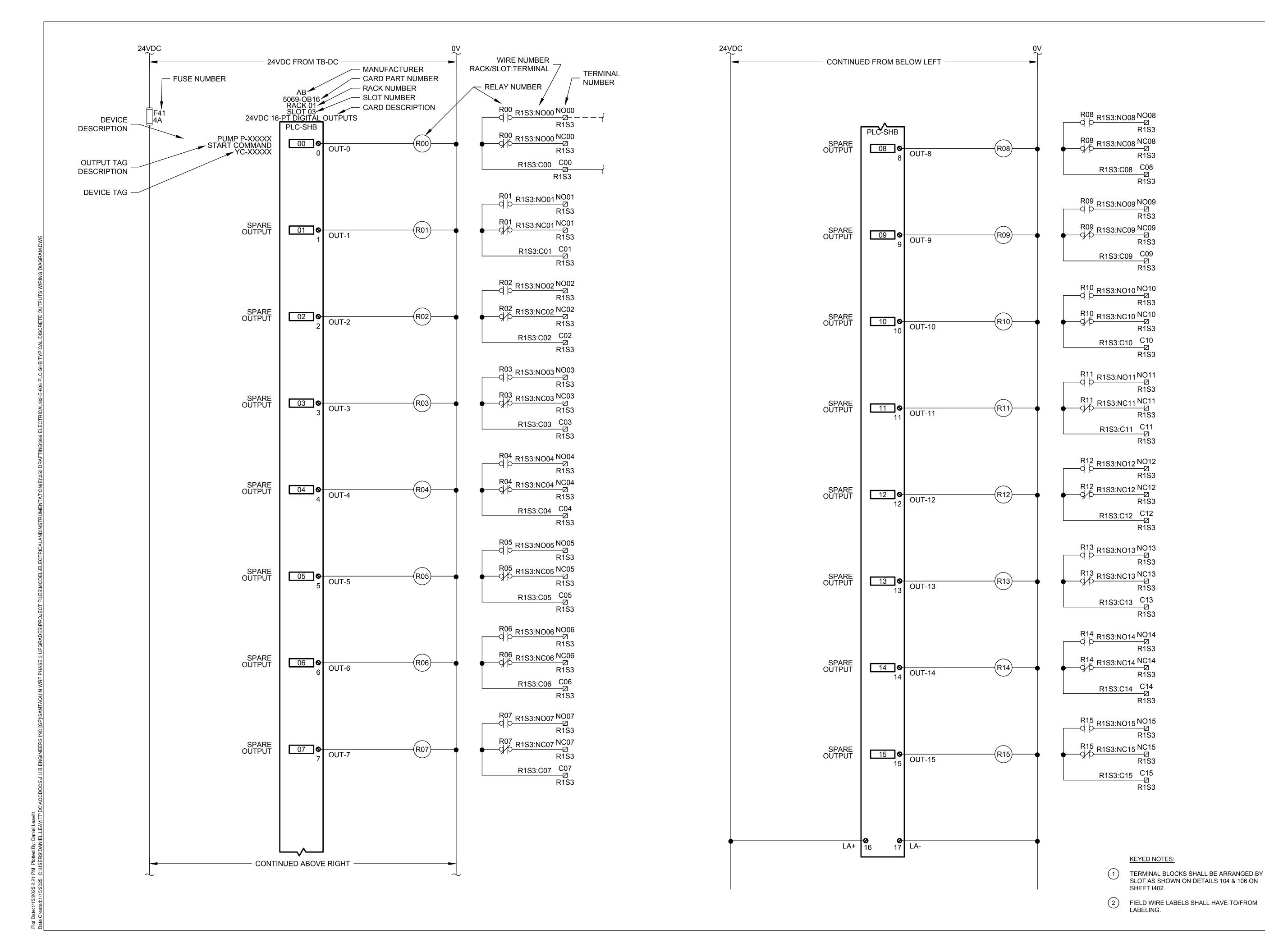
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**REVIEW** 

ELECTRICAL - SOLIDS HOLDING YPICAL DISCRETE OUTPUTS WIRING WRF PHASE 3 UPGRADES SANTAQUIN CITY

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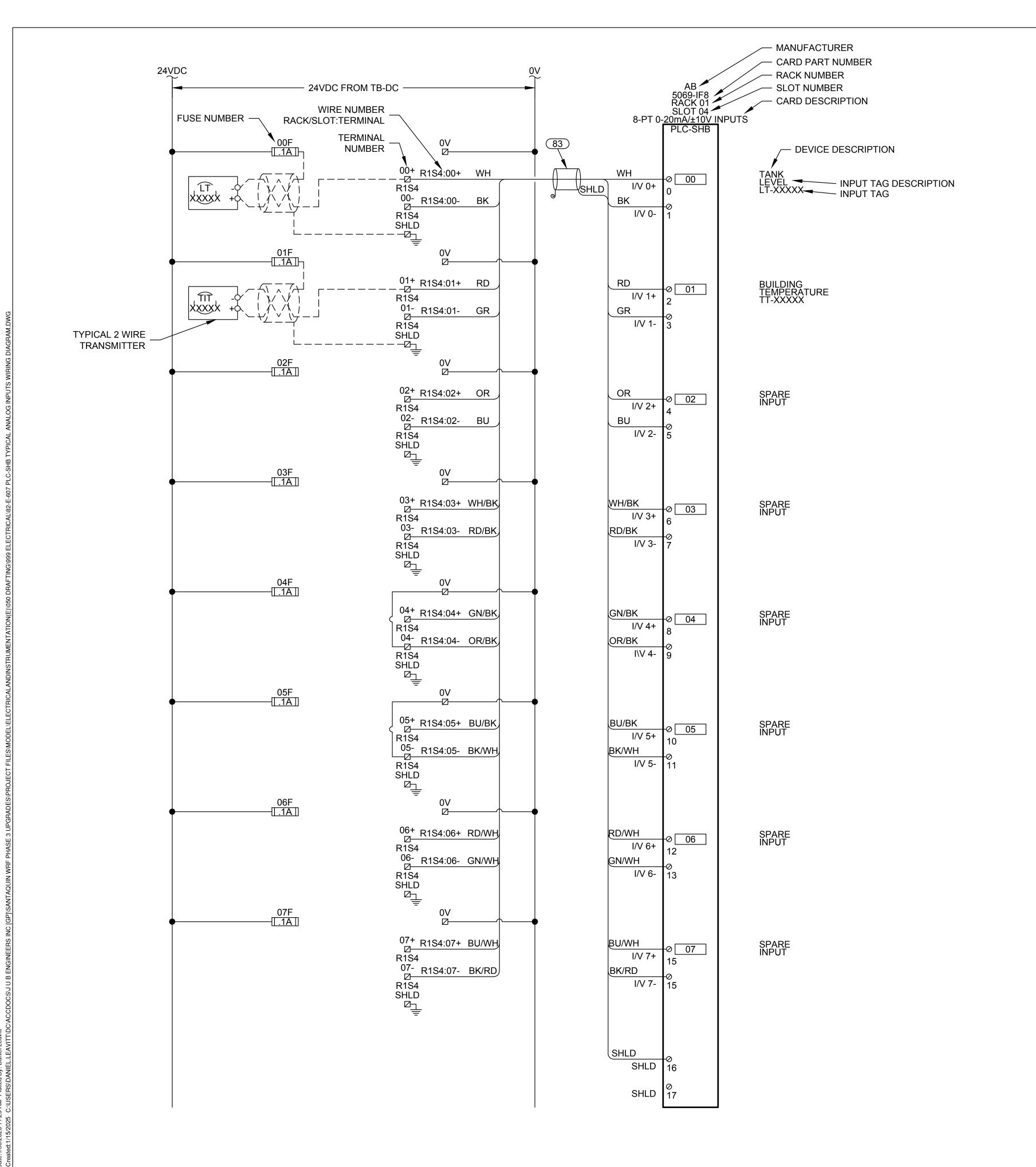
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No. 8730795-2202

JORDAN C. GARDNER

1/31/25.



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WRF PHASE 3 UPGRADES
SANTAQUIN CITY
ELECTRICAL - SOLIDS HOLDING
YPICAL ANALOG INPUTS WIRING DIAGR.

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FILE :

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### KEYED NOTES:

- TERMINAL BLOCKS SHALL BE ARRANGED BY SLOT AS SHOWN ON DETAIL 108 ON SHEET I402. PROVIDE FUSING FOR ALL 2-WIRE, 3-WIRE AND 4-WIRE DC POWERED INSTRUMENTS. FOR SPARE INPUTS, PROVIDE A SPARE FUSE FOR EVERY OTHER SPARE INPUT.
- 2) FIELD WIRE LABELS SHALL HAVE TO/FROM LABELING.

CONDUIT	SIZE	CONDUCTORS	SERVICE	POWER CO	TO	DUCTBANKS	NOTES
P-80-01		4 #4/0 W/ #2 GND		MCC-A	PANELBOARD P2		
P-80-01 P-80-02		2 #8 W/ #8 GND 3 #12 W/ #12 GND		PANELBOARD P2 PANELBOARD P2	PANELBOARD LP3 SCREEN WASHER/COMP. PANEL		
P-80-03	3/4"	3 #12 W/ #12 GND		PANELBOARD P2	DEWATERING CONTROL PANEL		
P-80-04 P-80-05		3 #12 W/ #12 GND 2 #12 W/ #12 GND		PANELBOARD P2 PANELBOARD LP3	ELECTRICAL UNIT HEATER EUH. 80.01 LIQUID POLYMER SYSTEM 80-P-801, 80-P-802		THROUGH DISCONNECT THROUGH DISCONNECT
P-80-05		2 #12 W/ #12 GND		PANELBOARD LP3	LOUVER L80.01		THROUGH DISCONNECT
P-80-07		3 #12 W/ #12 GND		SCREW PRESS CONTROL PANEL	LIQUID POLYMER SYSTEM 80-P-801, 80-P-802		
P-80-08 P-80-08A		3 #12 W/ #12 GND 3 #10 W/ #10 GND		PANELBOARD P2 PANELBOARD P2	LOUVER L80.01 POWER WINCH 80-ME-750		
P-80-08B		2 #12 W/ #12 GND		PANELBOARD P2	EYWASH HEATER		
P-80-09	3/4"	3 #12 W/ #12 GND		PANELBOARD P2	ELECTRICAL FAN EF.80.01		
P-80-10 P-80-11	3/4" 3/4"	3 #12 W/ #12 GND 3 #12 W/ #12 GND		MCC-A SCREW PRESS CONTROL PANEL	DECANT PUMP 80-P-101 SCREEN PRESS MOTOR 80-SP-711		
P-80-12	3/4"	3 #12 W/ #12 GND		MCC-A	DEWATERING FEED PUMP 80-P-201		
P-80-13 P-80-14	3/4" 1"	3 #12 W/ #12 GND 3 #6 W/ #10 GND		MCC-A MCC-A	DEWATERING FEED PUMP 80-P-202 BLOWER 80-B-110		DOES NOT EXIST
P-80-14 P-80-15	1 1"	3 #6 W/ #10 GND		MCC-A	BLOWER 80-B-111		DOES NOT EXIST
P-80-16			480VAC	SHB BLOWER 1 VFD 80-VFD-110	BLOWER 80-B-110		
P-80-16A P-80-17			480VAC 480VAC	SHB PANELBOARD DP-SHB SHB BLOWER 2 VFD 80-VFD-111	SHB BLOWER 1 VFD 80-VFD-110 BLOWER 80-B-111		
P-80-17A			480VAC	SHB PANELBOARD DP-SHB	SHB BLOWER 2 VFD 80-VFD-111		
P-80-18			480VAC	DEWATERING FEED PUMP 1 80-P-201	DEWATERING FEED VFD 80-VFD-201		
P-80-18A P-80-19		р.,	480VAC 480VAC	DEWATERING FEED PUMP 2 80-P-202	DEWATERING FEED VFD 80-VFD-202		
P-80-19A			480VAC				
P-80-20			480VAC	DEWATERING FEED PUMP 3 80-P-203	DEWATERING FEED VFD 80-VFD-203		
P-80-20A P-80-21			480VAC 480VAC				
P-80-21A			480VAC				
P-80-22 P-80-23			480VAC				
P-80-23 P-80-24			480VAC 480VAC				
P-80-24A			480VAC				
P-80-24B P-80-30			480VAC 120VAC				
P-80-31			120VAC				
P-80-32			120VAC				
P-80-33 P-80-34			120VAC 120VAC				
P-80-35			120VAC				
P-80-36			120VAC				
6 00 04	3/411	8 #14 W// #14 CND		CONTROL DANIEL DOD			
C-80-01 C-80-02A		8 #14 W/ #14 GND 2 #12 W/ #12 GND		PLANT CONTROL PANEL PCP SCREW PRESS CONTROL PANEL CTL	SCREW PRESS CONTROL PANEL CTL SPRAY SOLENOID VALVE 80-FV-721		THROUGH JB
C-80-02B		2 #12 W/ #12 GND		SCREW PRESS CONTROL PANEL CTL	SPRAY SOLENOID VALVE 80-FV-722		THROUGH JB
C-80-02C C-80-02D		2 #12 W/ #12 GND 2 #12 W/ #12 GND		SCREW PRESS CONTROL PANEL CTL SCREW PRESS CONTROL PANEL CTL	SPRAY SOLENOID VALVE 80-FV-723 SPRAY SOLENOID VALVE 80-FV-724		THROUGH JB THROUGH JB
C-80-02E	3/4"	2 #14 W/ #12 GND		SCREW PRESS CONTROL PANEL CTL	LOW PRESSURE SWITCH 80-PSL-720		THROUGH JB
C-80-02F		2 #14 W/ #12 GND		SCREW PRESS CONTROL PANEL CTL PLANT CONTROL PANEL PCP	HIGH PRESSURE SWITCH 80-PSH-720		THROUGH JB
C-80-03 C-80-04A	3/4" 3/4"	4 #14 W/ #14 GND 6 #14 W/ #14 GND		MCC-A	LEVEL SENSOR 80-LSH-101, 80-LSL-101 HIGH TEMPERATURE SWITCH 80-TSH-201		THROUGH JB
C-80-04B	3/4"	6 #14 W/ #14 GND		MCC-A	HIGH PRESSURE SWITCH 80-PSH-7201		THROUGH JB
C-80-05A C-80-05B	3/4" 3/4"	6 #14 W/ #14 GND 6 #14 W/ #14 GND		MCC-A MCC-A	HIGH TEMPERATURE SWITCH 80-TSH-201 HIGH PRESSURE SWITCH 80-PSH-201		THROUGH JB THROUGH JB
C-80-05B	3/4"	y πιτινι πιτ OND		WICO-A	MOMENTALOGONE SVITIGITOU-FSH-ZU		
C-80-07	2"	18 #12 W/ #12 GND		SCREW PRESS CONTROL PANEL CTL	PLANT CONTROL PANEL PCP		
C-80-08 C-80-09	3/4" 3/4"	8 #14 W/ #14 GND 8 #14 W/ #14 GND		MCC-A MCC-A	BIOSOLIDS BLOWER 1 BIOSOLIDS BLOWER 2		
C-80-10		2 #14 W/ #14 GND	LOOP - 24VDC	DEWATERING FEED VFD 80-VFD-201	DEWATERING FEED PUMP LOW INTAKE PRESS 80-PSL-201A		
C-80-11	3/4"	2 #14 W/ #14 GND	LOOP - 24VDC	DEWATERING FEED VFD 80-VFD-202	DEWATERING FEED PUMP LOW INTAKE PRESS 80-PSL-202A		
C-80-12	3/4"	2 #14 W/ #14 GND	LOOP - 24VDC	DEWATERING FEED VFD 80-VFD-203	DEWATERING FEED PUMP LOW INTAKE PRESS 80-PSL-203A DEWATERING FEED PUMP HIGH DISCHARGE PRESS 80-PSH-		
C-80-13	3/4"	2 #14 W/ #14 GND	LOOP - 24VDC	DEWATERING FEED VFD 80-VFD-201	201B DEWATERING FEED PUMP HIGH DISCHARGE PRESS 80-PSH-		
C-80-14		2 #14 W/ #14 GND	LOOP - 24VDC	DEWATERING FEED VFD 80-VFD-202	202B DEWATERING FEED PUMP HIGH DISCHARGE PRESS 80-PSH-		
C-80-15		2 #14 W/ #14 GND	LOOP - 24VDC	DEWATERING FEED VFD 80 VFD 201	203B DEWATERING FEED DUMP 1 HIGH TEMP 80 TSH 201A		
C-80-16 C-80-17	3/4" 3/4"	2 #14 W/ #14 GND 2 #14 W/ #14 GND	LOOP - 24VDC LOOP - 24VDC	DEWATERING FEED VFD 80-VFD-201 DEWATERING FEED VFD 80-VFD-202	DEWATERING FEED PUMP 1 HIGH TEMP 80-TSH-201A DEWATERING FEED PUMP 1 HIGH TEMP 80-TSH-202A		
C-80-18	3/4"	2 #14 W/ #14 GND	LOOP - 24VDC	DEWATERING FEED VFD 80-VFD-203	DEWATERING FEED PUMP 1 HIGH TEMP 80-TSH-203A		
C-80-19	3/4"	2 #14 W/ #14 GND	LOOP - 24VDC	RADAR LEVEL TRANSMITTER 80-LIT-1101	SH TANK HIGH LEVEL FLOAT 80-LSH-101		THROUGH INTRINSICALLY SAFE BARRIERS
C-80-20	······································	2 #14 W/ #14 GND	LOOP - 24VDC	RADAR LEVEL TRANSMITTER 80-LIT-1101	SH TANK LOW LEVEL FLOAT 80-LSL-101		THROUGH INTRINSICALLY SAFE BARRIERS
C-80-30	1.5"	20 #14 W/ #14 GND	LOOP - 24VDC	CONVEYOR STARTER PANEL 80-XX-XXX	CONVEYOR PLC PANEL 80-PLC-XXX		
C-80-31 C-80-32	3/4" 3/4"	10 #14 W/ #14 GND 10 #14 W/ #14 GND	LOOP - 24VDC	CONVEYOR PLC PANEL 80-PLC-XXX CONVEYOR PLC PANEL 80-PLC-XXX	HUBER PRESS CONTROL PANEL 80-LCP-XXX FKC PRESS CONTROL PANEL 80-LCP-XXX		
C-80-33		4 #14 W/ #14 GND	LOOP - 24VDC	CONVEYOR STARTER PANEL 80-XX-XXX	CONVEYOR 1 MOTOR SWITCHES 80-TSH-715 & 80-SSL-715		
	3/4"					1	
C-80-34	3/4"	4 #14 W/ #14 GND	LOOP - 24VDC	CONVEYOR STARTER PANEL 80-XX-XXX	CONVEYOR 2 MOTOR SWITCHES 80-TSH-725 & 80-SSL-725		
			LOOP - 24VDC LOOP - 24VDC		CONVEYOR 2 MOTOR SWITCHES 80-TSH-725 & 80-SSL-725  CONVEYOR 1 E-STOP 80-HS-715  CONVEYOR 2 E-STOP 80-HS-725		
C-80-34 C-80-35	3/4" 3/4"	4 #14 W/ #14 GND 2 #14 W/ #14 GND	LOOP - 24VDC LOOP - 24VDC	CONVEYOR STARTER PANEL 80-XX-XXX CONVEYOR STARTER PANEL 80-XX-XXX	CONVEYOR 1 E-STOP 80-HS-715		

POWER CONDUIT

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WRF PHASE 3 UPGRADES SANTAQUIN CITY

ELECTRICAL - SOLIDS HOLDING SOLIDS HANDLING & DEWATERING CONDUIT

No. 8730795-2202 JORDAN C. GARDNER 1/31/25.

## **NOTE**

1. SHADED CELLS REPRESENT EXISTING CONDUITS

FILE:

JUB PROJ. #:93-24-001

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DRAWING:

82-E-701

**SOLIDS HANDLING & DEWATERING CONDUIT SCHEDULE 1** 

				SIGNAL COND	DUIT		
CONDUIT	SIZE	CONDUCTORS	SERVICE	FROM	ТО	DUCTBANKS	NOTES
S-80-01	3/4"	2 #18 TSP		PLANT CONTROL PANEL PCP	LIQUID POLYMER CONTROL PANEL		
S-80-02	3/4"	1 #18 TSP		LIQUID POLYMER CONTROL PANEL	MAGNETIC FLOW METER 80-FIT-702		
S-80-03	3/4"	1 #18 TSP		SCREW PRESS CONTROL PANEL	LEVEL INDICATOR TRANSMITTER 80-LIT-710		
S-80-04	3/4"	1 #18 TSP		SCREW PRESS CONTROL PANEL	LEVEL INDICATOR TRANSMITTER 80-LIT-711	KARLIKII MAHAMIKI KARKINI KARLIKI KARLIKI KARLIKI KARLIKI KARLIKI KARLIKI KARLIKI	
S-80-05	3/4"	1 #18 TSP		PLANT CONTROL PANEL PCP	LEVEL TRANSMITTER 80-LIT-101		THROUGH JB
S-80-06	3/4"	MFG CABLE		RADAR LEVEL SENSOR 80-LE-1101	RADAR LEVEL TRANSMITTER 80-LIT-1101		
S-80-07	3/4"	1 #18 TSP		RADAR LEVEL TRANSMITTER 80-LIT-1101	SHB PS PLC-SHB		
S-80-08	3/4"	2 #18 TSP		CONVEYOR STARTER PANEL 80-XX-XXX	CONVEYOR PLC PANEL 80-PLC-XXX		
				COMMUNICATION	CONDUIT		
F-80-01	3/4"	1 CAT 6 SHIELDED ETHERNET CABLE	COMMS	SHB PS PLC-SHB	DEWATERING FEED VFD 80-VFD-201		
F-80-02	3/4"	1 CAT 6 SHIELDED ETHERNET CABLE	COMMS	SHB PS PLC-SHB	DEWATERING FEED VFD 80-VFD-202		
F-80-03	3/4"	1 CAT 6 SHIELDED ETHERNET CABLE	COMMS	SHB PS PLC-SHB	DEWATERING FEED VFD 80-VFD-203		
F-80-04	3/4"	1 CAT 6 SHIELDED ETHERNET CABLE	COMMS	CONVEYOR PLC 80-PLC-XXX	DEWATERING RIO 80-RIO-XXX		

### SOLIDS HANDLING & DEWATERING CONDUIT SCHEDULE 2

	INSTRUMENT SCHEDULE										
TAG	DESCRIPTION	MAKE	MODEL	SUPPLY	RANGE	COMMENTS					
80-PI-110-1	SUCTION BLOWER 1 GAUGE	ASHCROFT	1279 SERIES		0-60PSI	PROVIDED BY VEOLIA AS PART OF THE SKID					
80-PSH-110	BLOWER 1 HIGH PRES SWITCH	ASHCROFT	B SERIES	LOOP-24VDC		PROVIDED BY VEOLIA AS PART OF THE SKID					
80-PI-110-2	DISCHARGE BLOWER 1 GAUGE	ASHCROFT	1279 SERIES		0-60PSI	PROVIDED BY VEOLIA AS PART OF THE SKID					
80-PI-111-1	SUCTION BLOWER 2 GAUGE	ASHCROFT	1279 SERIES		0-60PSI	PROVIDED BY VEOLIA AS PART OF THE SKID					
80-PSH-111	BLOWER 2 HIGH PRES SWITCH	ASHCROFT	B SERIES	LOOP-24VDC		PROVIDED BY VEOLIA AS PART OF THE SKID					
80-PI-111-2	DISCHARGE BLOWER 2 GAUGE	ASHCROFT	1279 SERIES		0-60PSI	PROVIDED BY VEOLIA AS PART OF THE SKID					
80-LT-1101	HOLDING TANK LEVEL TRANSMITTER	VEGA	C21	LOOP-24VDC							
80-LSH-101	HOLDING TANK HIGH LEVEL SWITCH	DWYER	CFS2-CGDSN-20	LOOP-24VDC	NC CONTACT						
80-LSL-101	HOLDING TANK LOW LEVEL SWITCH	DWYER	CFS2-OGDSN-30	LOOP-24VDC	NO CONTACT						
80-PSL-201A	SUCTION PUMP 1 LOW PRES SWITCH	ASHCROFT	B SERIES	LOOP-24VDC							
80-PI-201A	SUCTION PUMP 1 GAUGE	ASHCROFT	1279 SERIES								
80-PSL-202A	SUCTION PUMP 2 LOW PRES SWITCH	ASHCROFT	B SERIES	LOOP-24VDC							
80-PI-202A	SUCTION PUMP 2 GAUGE	ASHCROFT	1279 SERIES		0-60PSI						
80-PSL-203A	SUCTION PUMP 3 LOW PRES SWITCH	ASHCROFT	B SERIES	LOOP-24VDC							
80-PI-203A	SUCTION PUMP 3 GAUGE	ASHCROFT	1279 SERIES		0-60PSI						
80-TSH-201A	PUMP 1 HIGH TEMP SWITCH	MAN. SUPP.	TBD	TBD	THERMAL NO	PROVIDED BY PUMP SUPPLIER					
80-TSH-202	PUMP 2 HIGH TEMP SWITCH	MAN. SUPP.	TBD	TBD	THERMAL NO	PROVIDED BY PUMP SUPPLIER					
80-TSH-203	PUMP 3 HIGH TEMP SWITCH	MAN. SUPP.	TBD	TBD	THERMAL NO	PROVIDED BY PUMP SUPPLIER					
80-PSH-201B	DISCHARGE PUMP 1 HIGH PRES SWITCH	ASHCROFT	B SERIES	LOOP-24VDC							
80-PI-201B	DISCHARGE PUMP 1 GAUGE	ASHCROFT	1279 SERIES		0-60PSI						
80-PSH-202B	DISCHARGE PUMP 2 HIGH PRES SWITCH	ASHCROFT	B SERIES	LOOP-24VDC							
80-PI-202B	DISCHARGE PUMP 2 GAUGE	ASHCROFT	1279 SERIES		0-60PSI						
80-PSH-203B	DISCHARGE PUMP 3 HIGH PRES SWITCH	ASHCROFT	B SERIES	LOOP-24VDC							
80-PI-203B	DISCHARGE PUMP 3 GAUGE	ASHCROFT	1279 SERIES		0-60PSI						
80-TT-201	BUILDING TEMP TRANS	DWYER	BTT-N00-3	LOOP-24VDC							
80-LSH-110	SUMP FLOOD SWITCH	VARIOUS	GROUND - PUCK TYPE	LOOP-24VDC	NO CONTACT						

### SOLIDS HANDLING & DEWATERING INSTRUMENT SCHEDULE

JORDAN C. GARDNER 1/31/25

**NOTE** 

1. SHADED CELLS REPRESENT EXISTING CONDUITS

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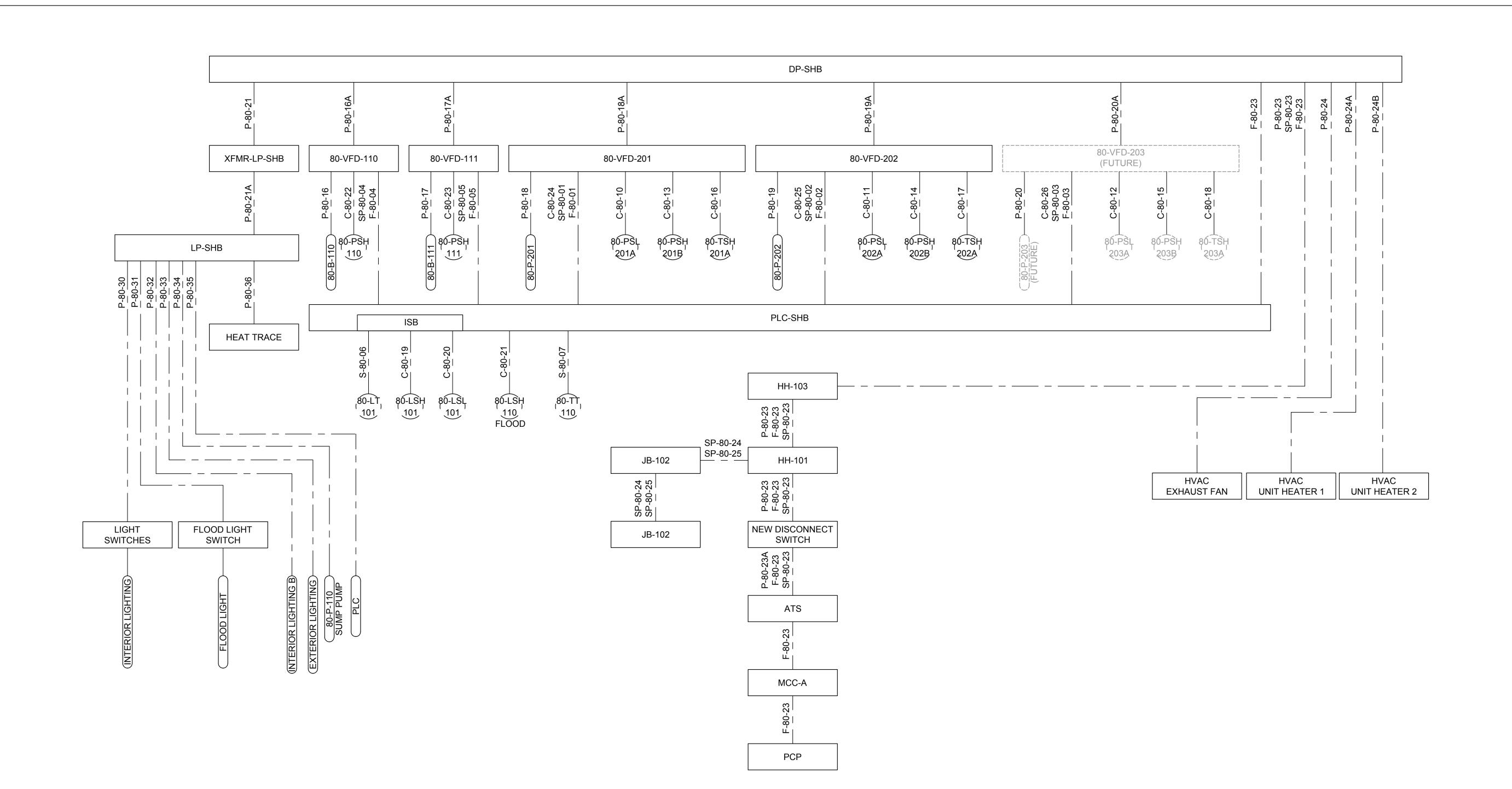
ELECTRICAL - SOLIDS HOLDING SOLIDS HANDLING & DEWATERING SCHEDULES WRF PHASE 3 UPGRADES SANTAQUIN CITY

FILE : JUB PROJ. # : 93-24-001 DESIGN BY: JCG CHECKED BY: MPJ

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LAST UPDATED: 1/30/2025



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WRF PHASE 3 UPGRADES SANTAQUIN CITY

ELECTRICAL - SOLIDS HOLDING CONDUIT DEVELOPMENT

JUB PROJ. #:93-24-001 DESIGN BY: JCG

No. 8730795-2202

JORDAN C. GARDNER 1/31/25

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LAST UPDATED: 1/30/2025

DRAWING: 82-E-703

## VFD CONTROL SCHEMATIC

TYPICAL FOR: DEWATERING FEED PUMPS

### **GENERAL NOTES**

- 1. TYPICAL SCHEMATIC DIAGRAMS ARE INTENDED TO REFLECT THE GENERAL CONTROL STRATEGY. ACTUAL CIRCUITRY MAY VARY FOR SPECIFIC EQUIPMENT SUPPLIED. THE NUMBER AND TYPE OF DEVICES SHALL BE FURNISHED AS REQUIRED FOR PROPER OPERATION OF THE EQUIPMENT.
- 2. FUSES SHALL BE ADEQUATELY SIZED PER THE EQUIPMENT MANUFACTURER'S RECOMMENDATIONS.
- 3. CONTROL SWITCHES SHALL BE DOOR MOUNTED ON THEIR RESPECTIVE PANELS. DEVICES SHALL BE RATED FOR LINE VOLTAGE AND 125% OF LOAD CURRENT.
- 4. THE VFD WILL HAVE ETHERNET CAPABILITIES AND ITS PRIMARY CONTROL WILL BE THROUGH ITS UTILIZATION.

# (JUB)

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**KEY NOTES** 

- 1. LOCAL CONTROLS SHALL BE INSTALLED ACCORDING TO P&ID'S AND NOT NECESSARILY AS SHOWN ON SCHEMATICS. SEE CONDUIT SCHEDULE FOR EXACT WIRING.
- 2. CONTROL POWER TRANSFORMERS (CPT) SHALL BE ADEQUATELY SIZED AND SHALL BE PROVIDED WITH PROPERLY SIZED FUSES FOR BOTH THE PRIMARY AND SECONDARY WINDINGS.
- 3. ADJUST TIME DELAY RELAYS PRIOR TO STARTUP. STAGGER TIMER SETTINGS FOR POWER ON-DELAY RELAYS.

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# VFD CONTROL DESCRIPTION

WHEN THE HOA SWITCH IS IN THE HAND POSITION, THE MOTOR SHOULD RUN, WHEN THE HOA SWITCH IS IN THE OFF POSITION, THE MOTOR SHOULD STOP AND WHEN THE HOA SWITCH IS IN THE AUTO POSITION, THE MOTOR IS CONTROLLED BY THE PLC OVER ETHERNET. THE PLC WILL BE ABLE TO MONITOR WHETHER THE HOA IS IN THE HAND OR AUTO POSITION.

WHEN THE HOA SWITCH IS IN THE HAND POSITION, THE SPEED COMMAND COMES FROM THE POTENTIOMETER. WHEN IN THE AUTO POSITION, THE SPEED COMMAND COMES FROM THE PLC OVER ETHERNET.

WRF PHASE 3 UPGRADES SANTAQUIN CITY

ELECTRICAL - SOLIDS HOLDING VFD CONTROL SCHEMATIC

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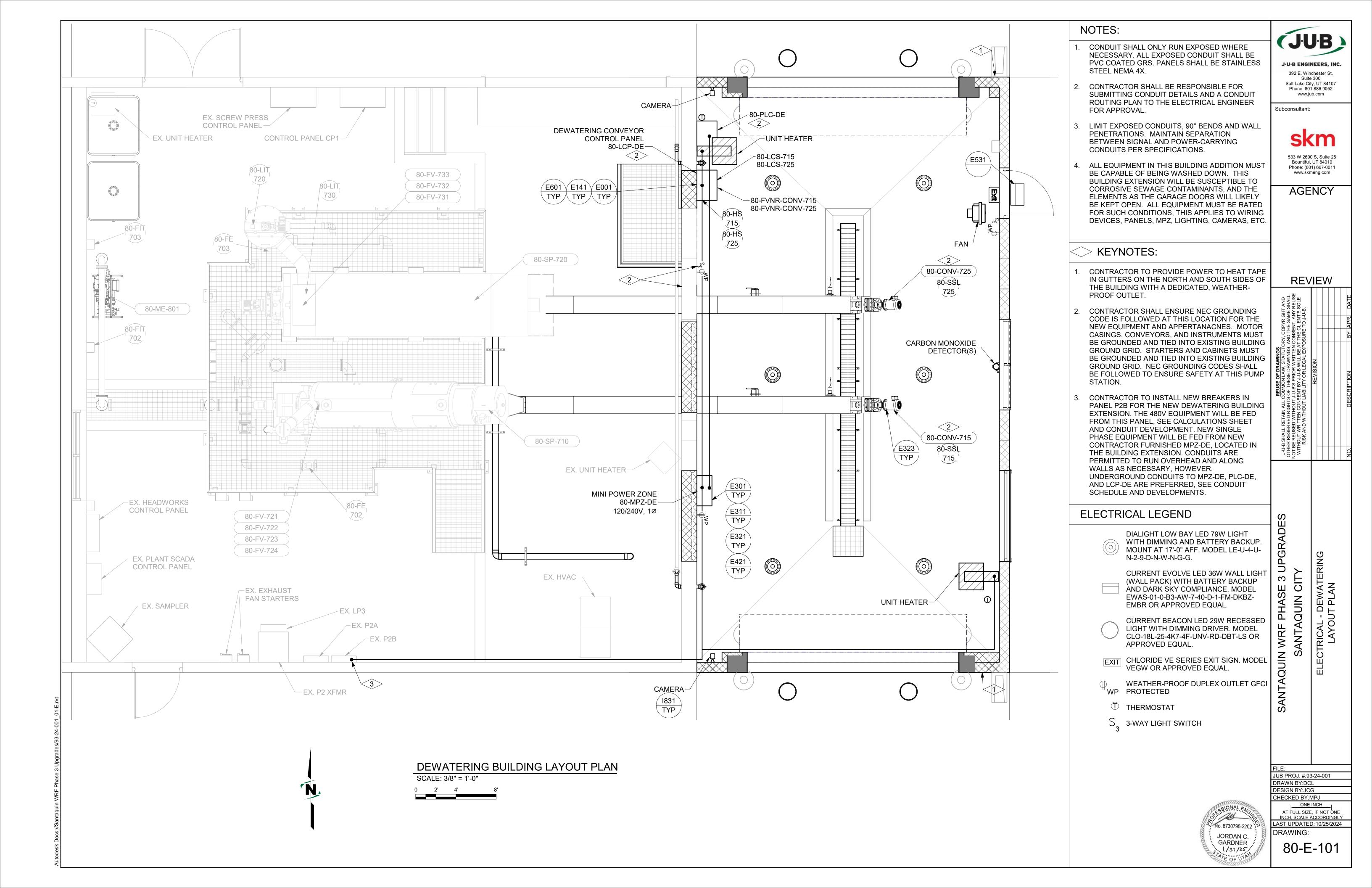
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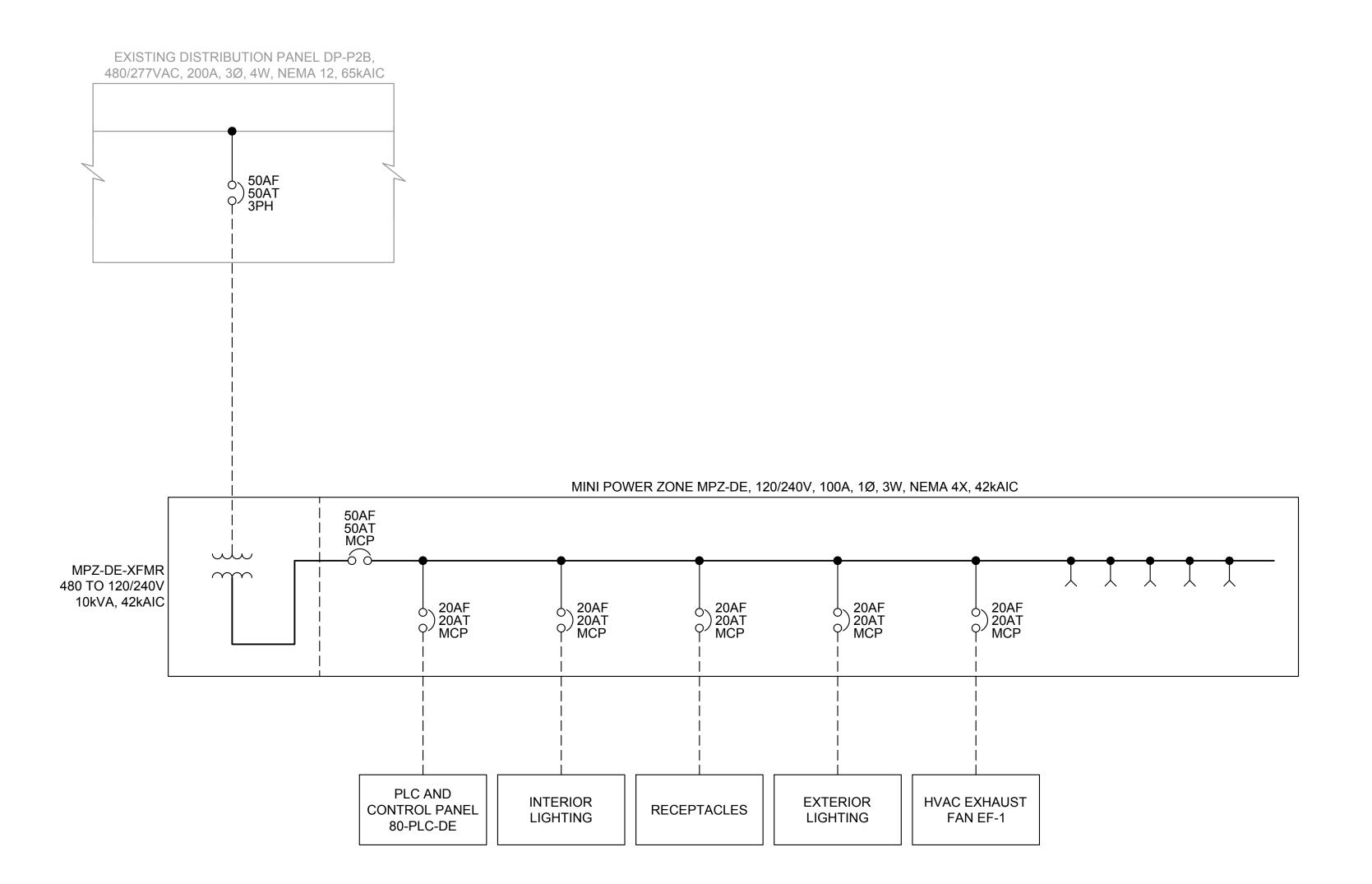
AT FULL SIZE, IF NOT ONE
INCH. SCALE ACCORDING!

INCH, SCALE ACCORDINGLY
LAST UPDATED: 1/31/2025

No. 8730795-2202

JORDAN C. GARDNER DRAWING:





**ONELINE DIAGRAM** 

J-U-B ENGINEERS, INC.

J-U-B ENGINEERS, INC. 392 E. Winchester St., Suite 300 Salt Lake City, UT 84107 Phone: 801-547-0393 www.jub.com

Subconsultant:

533 W 2600 S, Suite 25 Bountiful, Utah 84010 Phone: (801) 677-0011 www.skmeng.com

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S DOCUMENT, AND THE IDEAS AND DESIGNS INCREIN, AS AN INSTRUMENT OF PROFESSIONAL SE OPERTY OF J.U.B ENGINEERS, INC. AND ITTEN AUTHORIZATION OF J.U.B ENGINEERS, IN REVISION  REVISION  DESCRIPTION	:D HE IN PRESS					DATE
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z	REUSE OF DRAWINGS THIS DOCUMENT, AND THE IDEAS AND DESIGNS INVITEREIN, AS AN INSTRUMENT OF PROFESSIONAL SEPROPERTY OF J.U.B ENGINEERS, Inc. AND IS NOT TAMHOLE OR PART, FOR ANY OTHER PROJECT WITHWARITTEN AUTHORIZATION OF J.U.B ENGINEERS, IN	REVISION				
						Z

WRF PHASE 3 UPGRADES SANTAQUIN CITY

ELECTRICAL - DEWATERING DEWATERING BUILDING ONELINE DIAGRAM

JUB PROJ. #:93-24-001 DRAWN BY: EGK / DCL DESIGN BY: JCG

No. 8730795-2202

JORDAN C. GARDNER J. 1/31/25

CHECKED BY: MPJ

ONE INCH

AT FULL SIZE, IF NOT ONE
INCH, SCALE ACCORDINGLY

LAST UPDATED: 1/30/2025

DRAWING:

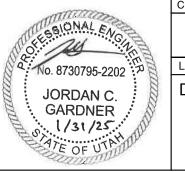
### **EXISTING PANEL P2A CALCULATIONS**

PANEL: P2B		VOLTAGE	: 277/480	MAIN CB: 20	0 AMP	BUS AMPS	: 225 AM	P	
PANEL: PZB		BUS A.I.C: 22KA		BKR AIC: 22KA		MOUNTING	3: SURFA	CE	
CIRCUIT DESCRIPTION	BKR	CIRCUIT	LOAD	PHASE	LOAD	CIRCUIT	BKR	CIRCUIT DESCRIPTION	
		1	500	Α	971	2			
DEWATERING ROLL-UP DOOR	15/3	3	500	В	971	4	15/3	80-FV-701-702	
		5	500	С	971	6			
		7	500	Α	2100	8			
HEADWORKS ROLL-UP DOOR	15/3	9	500	В	2100	10	15/3	CONVEYOR 80-CONV-725	
		11	500	С	2100	12			
		13	2100	Α	580	14			
CONVEYOR 80-CONV-715	15/3	15	2100	В	580	16	15/3	GARAGE DOOR SOUTH	
		17	2100	С	580	18			
CDADE	40/0	19		Α	1000	20	20/1	LIGHTING - DEWATERING	
SPARE	40/2	21		В		22	20/1	SPARE	
LIGHTING - HEADWORKS	20/1	23	1000	С		24	20/1	SPARE	
HEAT TRACING	20/1	25	2000	Α	1000	26	20/1	LIGHTING - OUTSIDE	
HEAT TRACING	15/1	27	2000	В	7010	28		LINIT HEATED 4 (CON)/	
		29	3333	С	7010	30	30/3	30/3	UNIT HEATER 1 (CONV
MPZ	50/3	31	3333	Α	7010	32		ROOM)	
		33	3333	В	7010	34		LINIT LIEATED 2 (CON)/	
		35	580	С	7010	36	30/3	UNIT HEATER 2 (CONV	
GARAGE DOOR NORTH	15/3	37	580	Α	7010	38		ROOM)	
		39	580	В		40			
		41		С		42			
			PHASE A	PHASE B	PHASE C	NOTES:			
CONNECTED VA PER PHASE			28684.0	26684.0	25684.0				
CONNECTED AMPS PER PHASE			103.6	96.3	92.7				
25% OF CONTINUOUS & LIGHTING	7171.0	6671.0	6421.0						
CODE VA PER PHASE		35855.0	33355.0	32105.0					
CODE AMPS PER PHASE			129.4	120.4	115.9				

### **EXISTING PANEL P2B CALCULATIONS**

PANEL:MPZ		VOLTAGE:	120/240	MAIN CB: 50	AMP	BUS AMPS	: 100 AMF	<b>D</b>	
FANLL.WIFZ		BUS A.I.C: 22KA		BKR AIC: 22KA		MOUNTING: SURFACE			
CIRCUIT DESCRIPTION	BKR	CIRCUIT	LOAD	PHASE	LOAD	CIRCUIT	BKR	CIRCUIT DESCRIPTION	
EXHAUST FAN EF-1	20/1	1	1176	Α		2	TBD		
INTERIOR LIGHTING	20/1	3	500	В		4	TBD		
EXTERIOR LIGHTING	20/1	5	200	Α		6	TBD		
INSTRUMENT AND CONTROL	20/1	7	500	В		8	TBD		
PLC-DE	20/1	(	500	Ь			יוסטו		
SPARE	20/1	9		Α		10	TBD		
RECEPTACLES	20/1	11	540	В		12	TBD		
			PHASE A		PHASE B	NOTES:			
CONNECTED VA PER PHASE			1376.0		1540.0				
CONNECTED AMPS PER PHASE			11.5		12.8				
25% OF CONTINUOUS & LIGHTING	LOAD (VA	)	344.0		385.0				
CODE VA PER PHASE			1720.0		1925.0				
CODE AMPS PER PHASE			14.3		16.0				

### PANEL 80-MPZ-DE CALCULATIONS



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**REVIEW** 

WRF PHASE 3 UPGRADES SANTAQUIN CITY ELECTRICAL - DEWATERING CALCULATIONS

JUB PROJ. #:93-24-001 DRAWN BY: EGK / DCL DESIGN BY: JCG CHECKED BY: MPJ

ONE INCH

AT FULL SIZE, IF NOT ONE
INCH, SCALE ACCORDINGLY

LAST UPDATED: 1/30/2025

DRAWING:

	BILL OF MATERIALS									
ITEM	MANUFACTURE	MODEL	EQUIPMENT DESCRIPTION	QTY	NOTES					
1	ALLEN BRADLEY	5069-L320ER	ALLEN BRADLEY 5069 SERIES CONTROLLER	1	OR APPROVED EQUAL					
2	ALLEN BRADLEY	5069-IB16	ALLEN BRADLEY 16 POINT DISCRETE INPUT MODULE	2	OR APPROVED EQUAL					
3	ALLEN BRADLEY	5069-OB16	ALLEN BRADLEY 16 POINT DISCRETE OUTPUT MODULE	1	OR APPROVED EQUAL					
4	ALLEN BRADLEY	5069-IF8	ALLEN BRADLEY 8 POINT ANALOG INPUT MODULE	1	OR APPROVED EQUAL					
5	ALLEN BRADLEY	5069-OF8	ALLEN BRADLEY 8 POINT ANALOG OUTPUT MODULE	1	OR APPROVED EQUAL					
6	PHOENIX	2904601	QUINT4 24VDC POWER SUPPLY 10A OUTPUT	1	OR APPROVED EQUAL					
<del></del>	PHOENIX	2907918	120VAC 26A IN-LINE SPD	1	OR APPROVED EQUAL					
8	PHOENIX	2907571	CIRCUIT BREAKER, 1 POLE, 15A	1	OR APPROVED EQUAL					
12	PHOENIX	2907562	CIRCUIT BREAKER, 1 POLE, 5A	1	OR APPROVED EQUAL					
13	PHOENIX	2320225	QUINT4 10A 24VDC UPS	1	OR APPROVED EQUAL					
14	PHOENIX	2320322	12aH BATTERY PACK	1	OR APPROVED EQUAL					
15	PHOENIX	3044131	8.2MM TERMINAL BLOCK, FITS UP TO #8, UT6	LOT	OR APPROVED EQUAL					
16	PHOENIX	3044157	8.2MM GND TERMINAL BLOCK UT6-PE	LOT	OR APPROVED EQUAL					
17	PHOENIX	3047028	END COVERS FOR UT4/UT6 TB	LOT	OR APPROVED EQUAL					
18	PHOENIX	3044814	6.2MM DOULBE LEVEL TERMINAL BLOCKS UTTB4	LOT	OR APPROVED EQUAL					
19	PHOENIX	3044759	6.2MM DOUBLE LEVEL GROUND TERMINAL UTTB4	LOT	OR APPROVED EQUAL					
20	PHOENIX	3047303	SPACER PLATE	LOT	OR APPROVED EQUAL					
21	PHOENIX	3047293	DOUBLE LEVEL TERMINAL END PLATE	LOT	OR APPROVED EQUAL					
22	PHOENIX	0800886	DIN RAIL TERMINAL BLOCK END CLAMPS	LOT	OR APPROVED EQUAL					
23	PHOENIX	3046414	8.2MM FUSE BLOCK, 24VDC LED	LOT	OR APPROVED EQUAL					
24	PHOENIX	3046430	8.2MM FUSE BLOCK, 120VAC LED	LOT	OR APPROVED EQUAL					
25	PHOENIX	3032224	UT4 JUMPER BAR, 50 PIECES, RED	LOT	OR APPROVED EQUAL					
26	PHOENIX	3032211	UT4 JUMPER BAR, 50 PIECES, RED	LOT	OR APPROVED EQUAL					
27	PHOENIX	3030323	UT6 JUMPER BAR, 10 PIECES, RED	LOT	OR APPROVED EQUAL					
28	PHOENIX	3032198	UT6 JUMPER BAR, 10 PIECES, RED	LOT	OR APPROVED EQUAL					
29	PHOENIX	3214301	UT2.5 TRIPLE LEVEL TERMINAL WITH GROUND	LOT	OR APPROVED EQUAL					
30	PHOENIX	2858894	UT2.5 TRIPLE LEVEL TERMINAL WITH GROUND  UT2.5 TRIPLE LEVEL TERMINAL END COVER	LOT	OR APPROVED EQUAL					
	PHOENIX	3214321	UT4 24VDC FUSED DOUBLE LEVEL TERMINAL W/GROUND	LOT	OR APPROVED EQUAL					
	PHOENIX		CUSTOM ENGRAVED PANEL LABELS		OR APPROVED EQUAL					
32		EML		LOT						
33	PHOENIX	TMT 2744D 740C24D8S	WIRE AND TERMINAL BLOCK LABELS	LOT	OR APPROVED EQUAL					
34	ALLEN BRADLEY	2711P-T10C21D8S	PANELVIEW PLUS 7 10.4" TOUCHSCREEN	1 1	OR APPROVED EQUAL					
35	SAGINAW	SCE-48N3612LP	NEMA 12 ENCLOSURE 48" X 36" X 12"	1 1	OR APPROVED EQUAL					
36	SAGINAW	SCE-48P36	BACK PANEL FOR 48" X 36" ENCLOSURE	IOT	OR APPROVED EQUAL					
37	PANDUIT	F1X4LG6	1" X 4" WIRE DUCT, LT. GRAY	LOT	OR APPROVED EQUAL					
38	PANDUIT	C1LG6	1" WIRE COVER, LT. GRAY	LOT	OR APPROVED EQUAL					
39	PANDUIT	F1X4WH6	1" X 4" WIRE DUCT, LT. WHITE	LOT	OR APPROVED EQUAL					
40	PANDUIT	C1WH6	1" WIRE COVER, LT. WHITE	LOT	OR APPROVED EQUAL					
41	PANDUIT	F2X4WH6	2" X 4" WIRE DUCT, WHITE	LOT	OR APPROVED EQUAL					
42	PANDUIT	C2WH6	2" WIRE COVER, WHITE	LOT	OR APPROVED EQUAL					
43	PANDUIT	PLM PLMC OL POM	CABLE TIES	LOT	OR APPROVED EQUAL					
44	IDEC	RJ1S-CL-D24	SINGLE POLE DOUBLE THROW RELAY 24VDC COIL WITH LIGHT	12	OR APPROVED EQUAL					
45	IDEC	SJ1S-05BW	SINGLE POLE DIN MOUNT PLUG IN RELAY BASE	12	OR APPROVED EQUAL					
46	BELDEN	8760	#18 TWISTED SHIELDED PAIR	LOT	OR APPROVED EQUAL					
47	IBOCO	OM2AF	DIN RAIL	LOT	OR APPROVED EQUAL					
48	CORNING	SPH-01P	SINGLE FAP FIBER TERMINATION ENCLOSURE	1	OR APPROVED EQUAL					
49	CORNING	CCH-CP12-A9	12 STRAND/6 LC SM OS2 FIBER TERMINATION PANEL	_   1	OR APPROVED EQUAL					
50	ALLEN BRADLEY	STRATIX 5700	INDUSTRIAL MANAGED ETHERNET/FIBER SWITCH	1	OR APPROVED EQUAL					
51	VEGA	VEGAMET	LEVEL CONTROLLER	1	OR APPROVED EQUAL					

OMEN T		
STR	SCHEMATIC SYMBOLS	SCHEMATIC LINETYPES
SC LUICAL	VICE CONNECTION G OR TERMINAL HEMATIC POINT OF NNECTION  FRAME SIZE TRIP RATING TRIP RATING BREAKER TYPE  AMPERE RATING FUSE FUSE TYPE  GROUND CONNECTION	MANUFACTURER/SHOP WIRE TYPICALLY INSTALLED OFF-SITE  FIELD/CONTRACTOR INSTALLED WIRE  EXISTING OR FUTURE FIELD/CONTRACTOR INSTALLED WIRE  EXISTING OR FUTURE MANUFACTURER/SHOP WIRE
	NORMALLY OPEN CONTACT	TB'S & PLC SYMBOLS
	NORMALLY CLOSED CONTACT	LOCAL PANEL OR DEVICE TERMINAL BLOCK
ONO	SOLENOID VALVE	X—— TERMINAL LABEL
OFF ON OX	2 POSITION SELECTOR SWITCH POSITION LEGEND: X=CLOSED O=OPEN	PLC PANEL TERMINAL BLOCK  x  TERMINAL LABEL
ENGINEERS INC [GP]/SANTAQUIN WRF PHASE  ENGINEERS INC [GP]/SANTAQUIN WRF PHASE  ON O A O O O O O O O O O O O O O O O O O	3 POSITION SELECTOR SWITCH HAND - OFF - AUTO POSITION LEGEND: X=CLOSED O=OPEN	☑  MCC TERMINAL BLOCK   X  TERMINAL LABEL  ☑
STOP	NORMALLY CLOSED PUSH BUTTON	DEVICE TERMINAL LADEL
	NORMALLY OPEN PUSH BUTTON	X TERMINAL LABEL
	FLOAT SWITCH - MAKE ON FALL	
0 <del>,</del> 00	FLOAT SWITCH -BREAK ON RISE TYPICAL SWITCH	
1	FLOAT SWITCH - BREAK ON FALL CONFIGURATION	
USERS/DANIEL.LEAVITY/DC/ACCDOCS/J U	FLOAT SWITCH - MAKE ON RISE	
S/DANI	SWITCH TYPE SYMBOL (SEE BELOW)	
JSER	LEVEL SWITCH	

占 PRESSURE SWITCH

✓ LIMIT SWITCH

**TEMPERATURE SWITCH** 

	AB PLC (NEW)	NIDUT(OUTDUT DECODIDEION
		INPUT/OUTPUT DESCRIPTION NOTE
DI DI	1:00	CONVEYOR 1 IN HAND
DI	1:01	CONVEYOR 1 IN AUTO
DI DI	1:02	CONVEYOR 1 E-STOP
DI	1:03	CONVEYOR 1 STORRED
DI DI	1:04	CONVEYOR 1 STOPPED CONVEYOR 1 PULL CORD
DI DI	1:06	CONVEYOR 1 FOLL CORD
DI Di	1:07	SPARE
DI	1:08	CONVEYOR 2 IN HAND
DI	1:09	CONVEYOR 2 IN AUTO
DI	1:10	CONVEYOR 2 E-STOP
DI	1:11	CONVEYOR 2 RUNNING
DI	1:12	CONVEYOR 2 STOPPED
DI	1:13	CONVEYOR 2 PULL CORD
DI	1:14	CONVEYOR 2 FAULT
DI	1:15	SPARE
DI	2:00	FROM HUBER PRESS CALL TO START
DI	2:01	FROM HUBER RUNNING
DI	2:02	FROM HUBER STOPPED
DI	2:03	FROM FKC PRESS CALL TO START
DI	2:04	FROM FKC RUNNING
DI	2:05	FROM FKC STOPPED
DI	2:06	SPARE
DI	2:07	SPARE
DI	2:08	SPARE
DI	2:09	SPARE
DI	2:10	SPARE
DI	2:11	COMM FAIL
DI	2:12	SPD FAIL
<u>DI</u>	2:13	DC PS FAIL
DI	2:14	UPS FAIL
DI	2:15	UPS ON BATTERY
DO	3:0	TO HUBER CONVEYOR 1 OK TO START
DO	3:1	TO FKC CONVEYOR 2 OK TO START
DO	3:2	CONVEYOR 1 RUNNING
DO	3:3	CONVEYOR 1 FAULT
DO	3:4	CONVEYOR 1 STOPPED
DO	3:5	CONVEYOR 2 RUNNING
DO	3:6	CONVEYOR 2 FAULT
DO	3:7	CONVEYOR 2 STOPPED
DO	3:8	SPARE
DO	3:9	SPARE
DO	3:10	SPARE
DO	3:11	SPARE
DO	3:12	SPARE
DO	3:13	SPARE
DO	3:14	SPARE
DO	3:15	SPARE
Al	4:00	BUILDING TEMPERATURE
Al	4:01	SPARE
Al	4:02	SPARE
Al	4:03	SPARE
Al	4:04	SPARE
Al	4:05	SPARE
Al	4:06	SPARE
	<b>,</b>	· · · · · · · · · · · · · · · · · · ·

### NOTES **ABBREVIATIONS**

- 2. ALL MATERIALS SHALL BE NEW AND OF THE BEST QUALITY, MANUFACTURED IN ACCORDANCE WITH NEMA, ANSI, UL, OR OTHER APPLICABLE STANDARDS. THE USE OF MANUFACTURERS' NAMES, MODELS, AND NUMBERS IS INTENDED TO ESTABLISH STYLE, QUALITY, APPEARANCE,
- 3. PROTECT ALL ELECTRICAL MATERIAL AND EQUIPMENT INSTALLED AGAINST DAMAGE BY OTHER TRADES, WEATHER CONDITIONS, OR ANY OTHER PREVENTABLE CAUSES. EQUIPMENT DAMAGED DURING SHIPPING OR CONSTRUCTION, PRIOR TO ACCEPTANCE BY THE ENGINEER OR
- 4. ALL COMPONENTS SHALL BE FREE OF DUST, GRIT, AND FOREIGN MATERIALS, AND LEFT AS NEW PAINT AND FINISHES SHALL BE TOUCHED UP OR PAINTED WITH MATCHING COLOR PAINT AND FINISH.
- 5. CIRCUIT CONDUCTORS #6 AWG OR SMALLER SHALL BE THWN STRANDED COPPER. #4 TO #2 AWG SHALL BE XHHW STRANDED COPPER. #1 AWG OR LARGER SHALL BE XHHW-2 STRANDED COPPER. MINIMUM POWER CONDUCTOR SIZE SHALL BE #12 AWG WITH #12 GROUND. ALL WIRE TO BE SIZED PER NEC TABLE 316-10, 75°C BASED
- EQUIPMENT, CONTROL PANELS AND OTHER ELECTRICAL DEVICES SHALL BE UL LISTED, AND RATED FOR HEAVY DUTY SERVICE.

THE COMPLETED INSTALLATION SHALL COMPLY
WITH APPLICABLE FEDERAL, STATE, AND LOCAL
CODES, ORDINANCES, AND REGULATIONS. ALL
WORK SHALL BE COMPLETED IN A NEAT,
WORKMANLIKE MANNER IN ACCORDANCE WITH
THE LATEST NEC STANDARDS OF INSTALLATION
UNDER COMPETENT SUPERVISION. INSTALL
GROUNDING PER NEC.

- USEFULNESS, AND BID PRICE.
- OWNER, WILL BE REJECTED AS DEFECTIVE.
- BEFORE FINAL ACCEPTANCE OF WORK, DAMAGED
- ON 30°C AMBIENT.
- WHETHER SPECIFICALLY REFERRED TO OR NOT.

OMPLY	A
LOCAL	AI
5. ALL	AI
WITH	A:

AMPS INTERRUPTING CAPACITY ANALOG OUTPUT AIR SUPPLY AUTOMATIC TRANSFER SWITCH CONDUIT CIRCUIT BREAKER

ABOVE FINISHED FLOOR

ANALOG INPUT

CU COPPER, BARE CV CONTROL VALVE DISTRIBUTED CONTROL SYSTEM

DISCRETE OUTPUT DISTRIBUTION PANEL DISCONNECT SWITCH DV/DT DIFFERENTIAL VOLTAGE/TIME DWG DRAWING

FLOW ELEMENT FE FULL LOAD AMPS FLA FOC FIBER OPTIC CABLE FORWARD-OFF-REVERSE FOR FS FLOW SWITCH

GROUND FAULT PROTECTION GFP GND GROUND

GRS GALVANIZED RIGID STEEL H2S HYDROGEN SULFIDE

IO ISC J

6. SAFETY SWITCHES, ELECTRICAL DISTRIBUTION

7. DEVICE WIRING SHALL BE SPECIFICATION GRADE.

8. TYPICAL DETAILS SHALL APPLY IN ALL CASES,

CB CHLORINE CONTROL POWER TRANSFORMER COMMUNICATIONS TERMINATION CABINET DISCRETE INPUT ELAPSED TIME METER ETM EOL ELECTRONIC OVERLOAD FVNR FULL VOLTAGE NON-REVERSING GFCI GROUND FAULT CIRCUIT INTERRUPTER GPM GALLONS PER MINUTE HUMAN MACHINE INTERFACE HAND-OFF-AUTO HAND-OFF-REMOTE HOR CURRENT **INSTRUMENTATION CABLE** INPUT/OUTPUT SHORT CIRCUIT CURRENT JUNCTION BOX LOCAL AREA NETWORK LCP LOCAL CONTROL PANEL LOS LOCK-OUT-STOP LIGHTING PANEL LR LOCAL/REMOTE

LEVEL SWITCH LS LIQUIDTIGHT FLEXIBLE METAL CONDUIT MOTOR MANUAL/AUTO, MILLIAMP MANUFACTURER'S CABLE MC MCB MAIN CIRCUIT BREAKER

MCC MOTOR CONTROL CENTER MCP MOTOR CIRCUIT PROTECTOR MFR(S) MANUFACTURER(S)

MILLION GALLONS PER DAY MH MANHOLE MOV MOTOR OPERATED VALVE MASTER TELEMETRY UNIT NEC NATIONAL ELECTRICAL CODE

NOTC NORMALLY OPEN TIMED CLOSED NPW NON-POTABLE WATER NTS NOT TO SCALE TURBIDITY

OPERATOR INTERFACE TERMINAL OVERLOAD OL ON/OFF (MAINTAINED) 00

OR OFF-REMOTE PB PULL BOX PERSONAL COMPUTER

PHASE/POWER FAILURE RELAY PROGRAMMABLE LOGIC CONTROLLER PANEL

PARTS PER MILLION PPMPR PAIR **PRESSURE** PRESSURE SWITCH

POUNDS PER SQUARE INCH PROCESS VARIABLE PV REMOTE CONTROL PANEL RF RADIO FREQUENCY

REMOTE INPUT OUTPUT RST RESET RTD RESISTANCE TEMPERATURE DETECTOR RTU REMOTE TELEMETRY UNIT

RVSS REDUCED VOLTAGE SOFT STARTER SERVICE ENTRANCE EQUIPMENT SERVICE ENTRANCE SECTION SLOS START-LOCK-OFF-STOP SUBMERSIBLE MANUFACTURER CABLE

SULFUR DIOXIDE SET POINT/SPARE SURGE PROTECTION DEVICE

START/STOP ST SHUNT TRIP TC TELEPHONE CABLE

TS TEMPERATURE SWITCH TYPICAL UNDERGROUND UG VOLT

VOLTAMP VARIABLE FREQUENCY DRIVE WATT, WIRE WEATHERPROOF

XFMR TRANSFORMER ZS POSITION SWITCH

AU. No. 8730795-2202 JORDAN C. GARDNER . 1/31/25.

J-U-B ENGINEERS, INC. J-U-B ENGINEERS, INC. 392 E. Winchester St., Suite 300 Salt Lake City, UT 84107

> Phone: 801-547-0393 www.jub.com

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AGENCY

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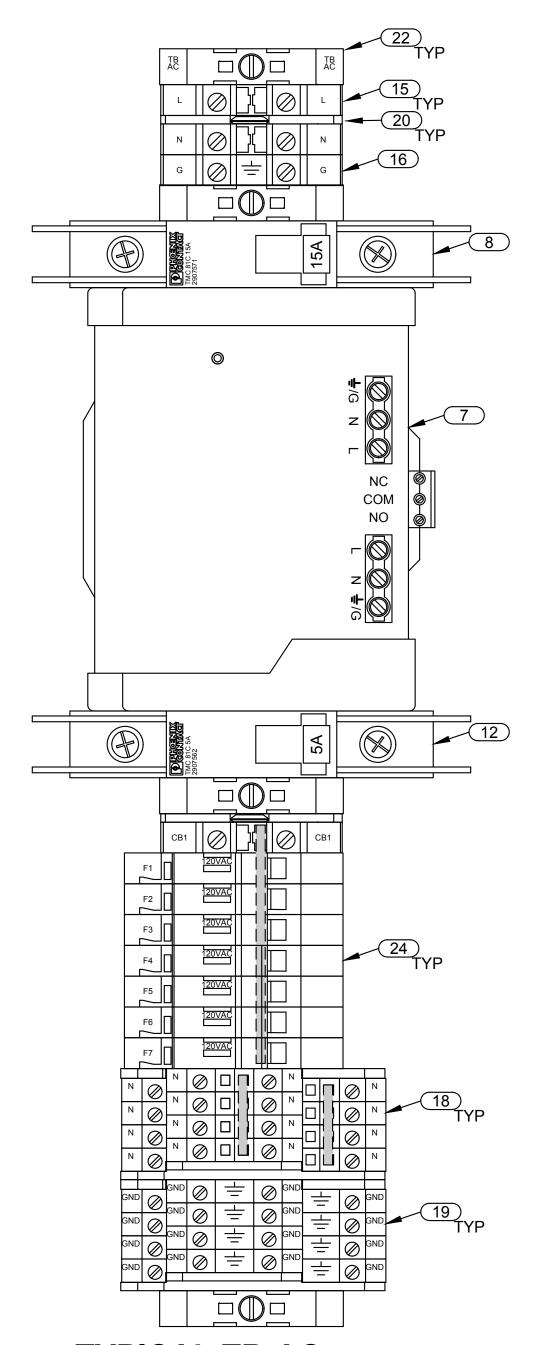
DEWATERING ERIALS, IO LIST RADI ITY <u></u> 回 3 UP ELECTRICAL BILL OF MATE

JUB PROJ. #:93-24-001 DRAWN BY: EGK / DCL DESIGN BY: JCG CHECKED BY: MPJ

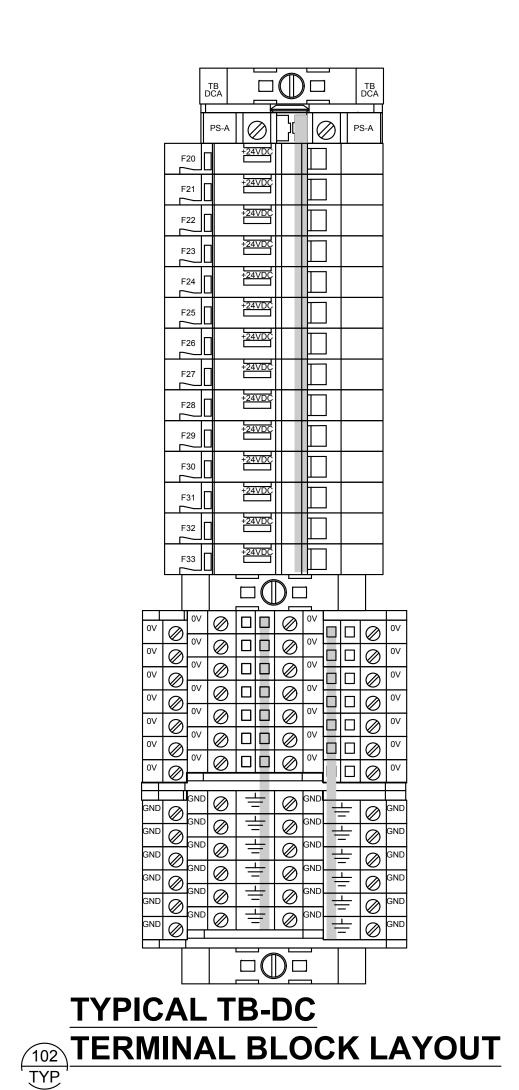
ONE INCH AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY LAST UPDATED: 1/30/2025

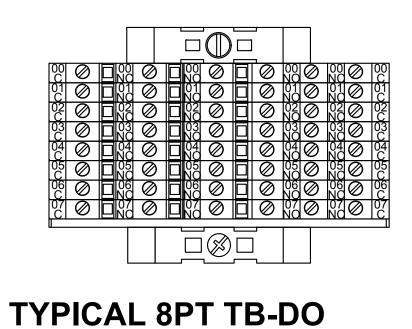
DRAWING:

- (1) THESE DETAILS REFLECT THE GENERAL STRATEGY IN LAYING OUT THE TERMINAL BLOCKS. THE ACTUAL LAYOUTS WILL VARY BASED ON THE NUMBER OF COMPONENTS REQUIRED FOR EACH GROUP. PROVIDE A MINIMUM OF 100% SPARE NEUTRAL AND GROUND TERMINALS.
- 2 USE JUMPER BARS TO BUS TOGETHER THE FUSE TERMINALS, NEUTRAL TERMINALS, AND 0V TERMINALS.
- (3) REFER TO SHEET I-01 FOR BILL OF MATERIALS

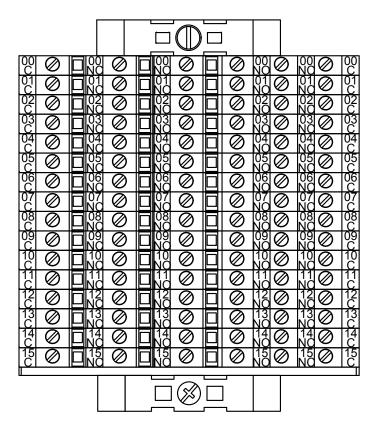




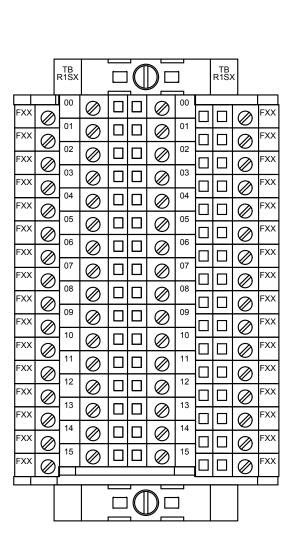




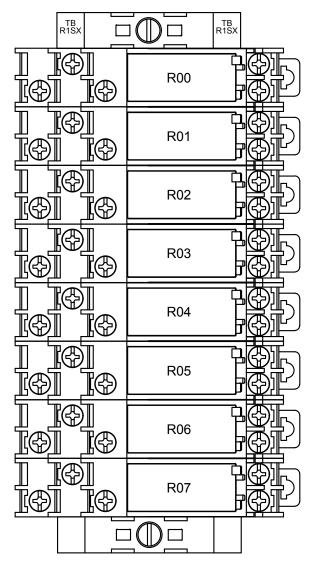
TERMINAL BLOCK LAYOUT



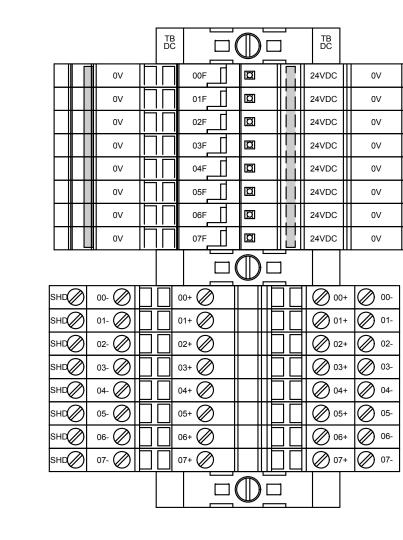
# **TYPICAL 16PT TB-DO** TERMINAL BLOCK LAYOUT



**TYPICAL 16PT TB-DI** TERMINAL BLOCK LAYOUT



**TYPICAL 8PT TB-RO** TERMINAL BLOCK LAYOUT



**TYPICAL 8PT TB-AI** TERMINAL BLOCK LAYOUT J-U-B ENGINEERS, INC.

J-U-B ENGINEERS, INC. 392 E. Winchester St., Suite 300 Salt Lake City, UT 84107 Phone: 801-547-0393 www.jub.com

Subconsultant:

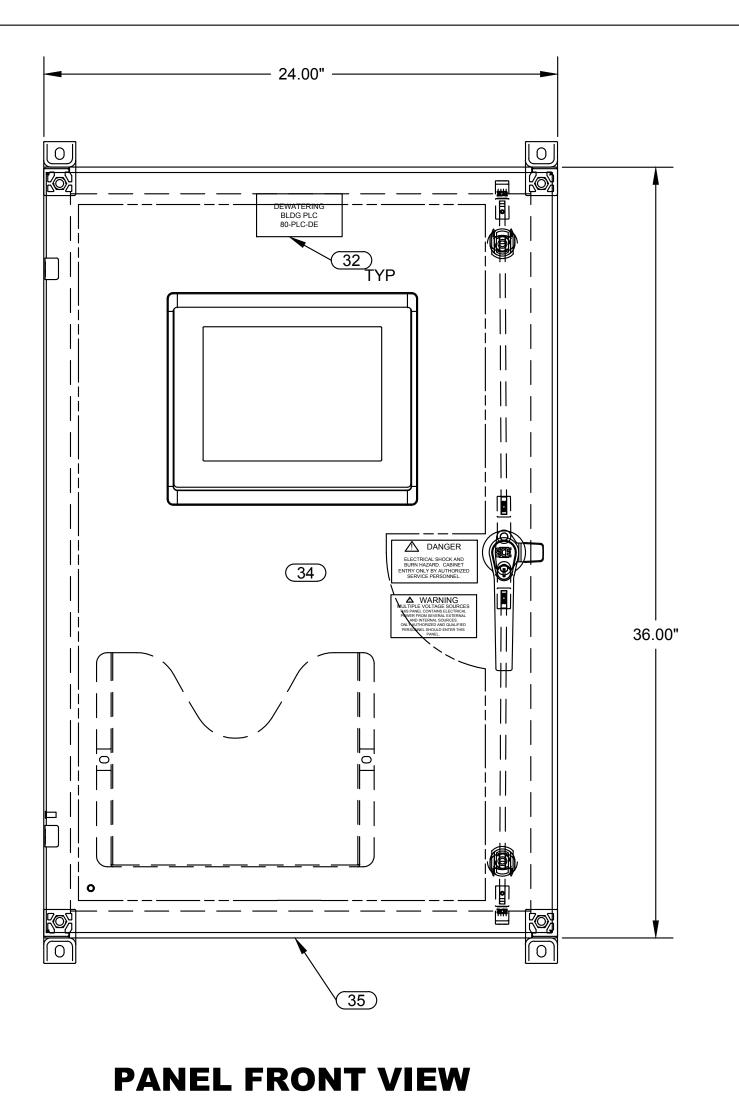
533 W 2600 S, Suite 25 Bountiful, Utah 84010 Phone: (801) 677-0011 www.skmeng.com

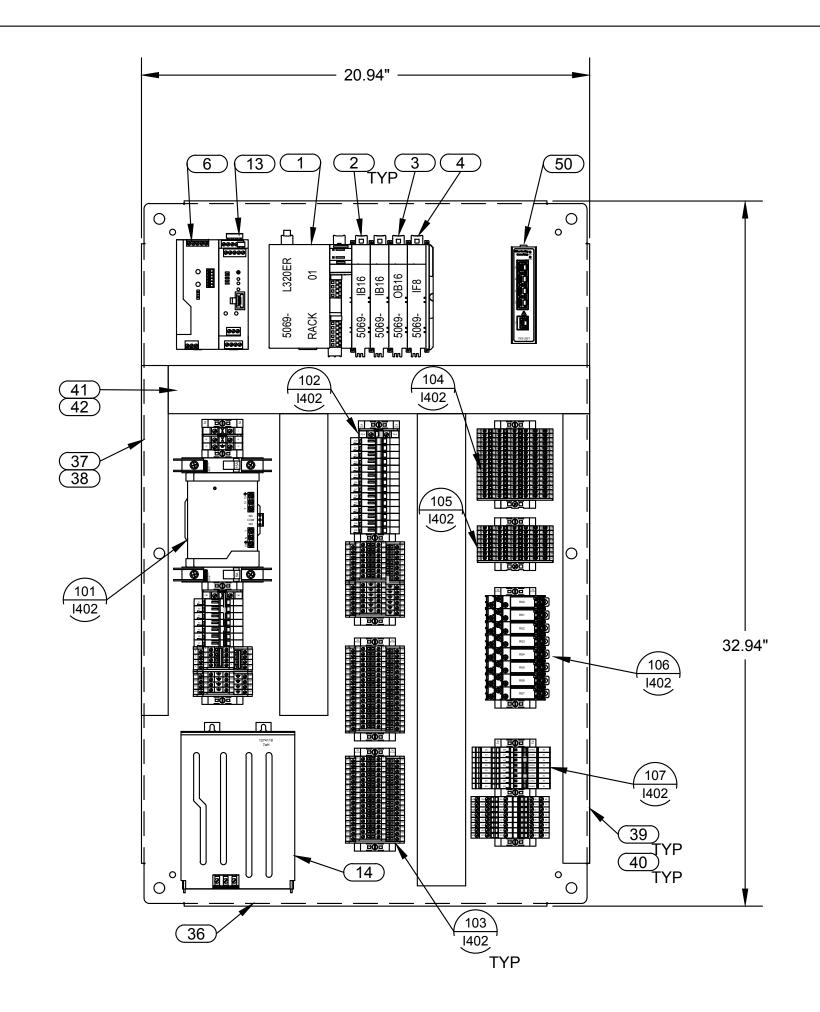
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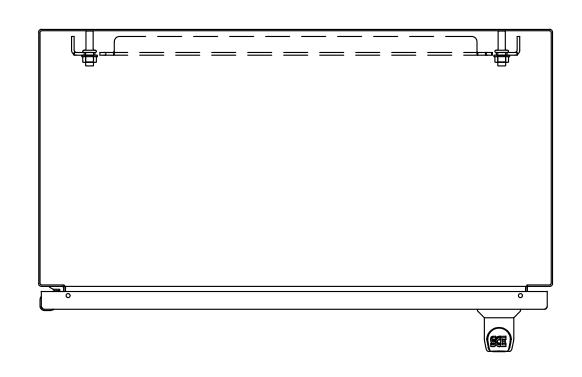
WRF PHASE 3 UPGRADES SANTAQUIN CITY





PANEL SIDE VIEW

**BACKPANEL LAYOUT VIEW** 



**PANEL TOP VIEW** 

DEWATERING BLDG PLC 80-PLC-DE WARNING
MULTIPLE VOLTAGE SOURCES
THIS PANEL CONTAINS ELECTRICAL
POWER FROM SEVERAL EXTERNAL
AND INTERNAL SOURCES.
ONLY AUTHORIZED AND QUALIFIED
PERSONNEL SHOULD ENTER THIS
PANEL.



DANGER

ELECTRICAL SHOCK AND BURN HAZARD. CABINET ENTRY ONLY BY AUTHORIZED SERVICE PERSONNEL.

**PANEL LABELS** 



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WRF PHASE 3 UPGRADES
SANTAQUIN CITY
ELECTRICAL - DEWATERING
80-PLC-DE PLC PANEL LAYOUT

FILE:

JUB PROJ. #:93-24-001

DRAWN BY: EGK / DCL

DESIGN BY: JCG

CHECKED BY: MPJ

ONE INCH

CHECKED BY: MPJ

ONE INCH

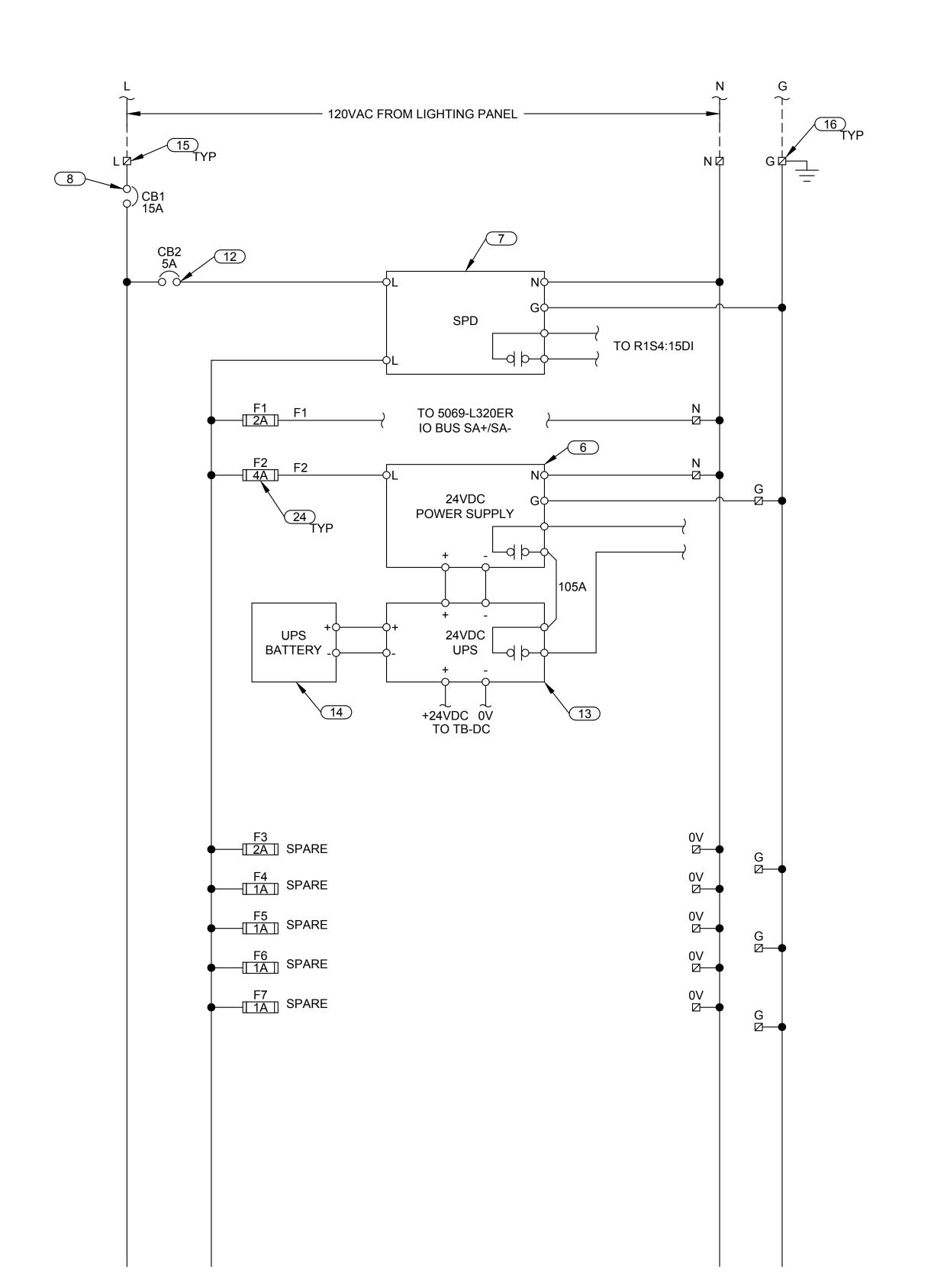
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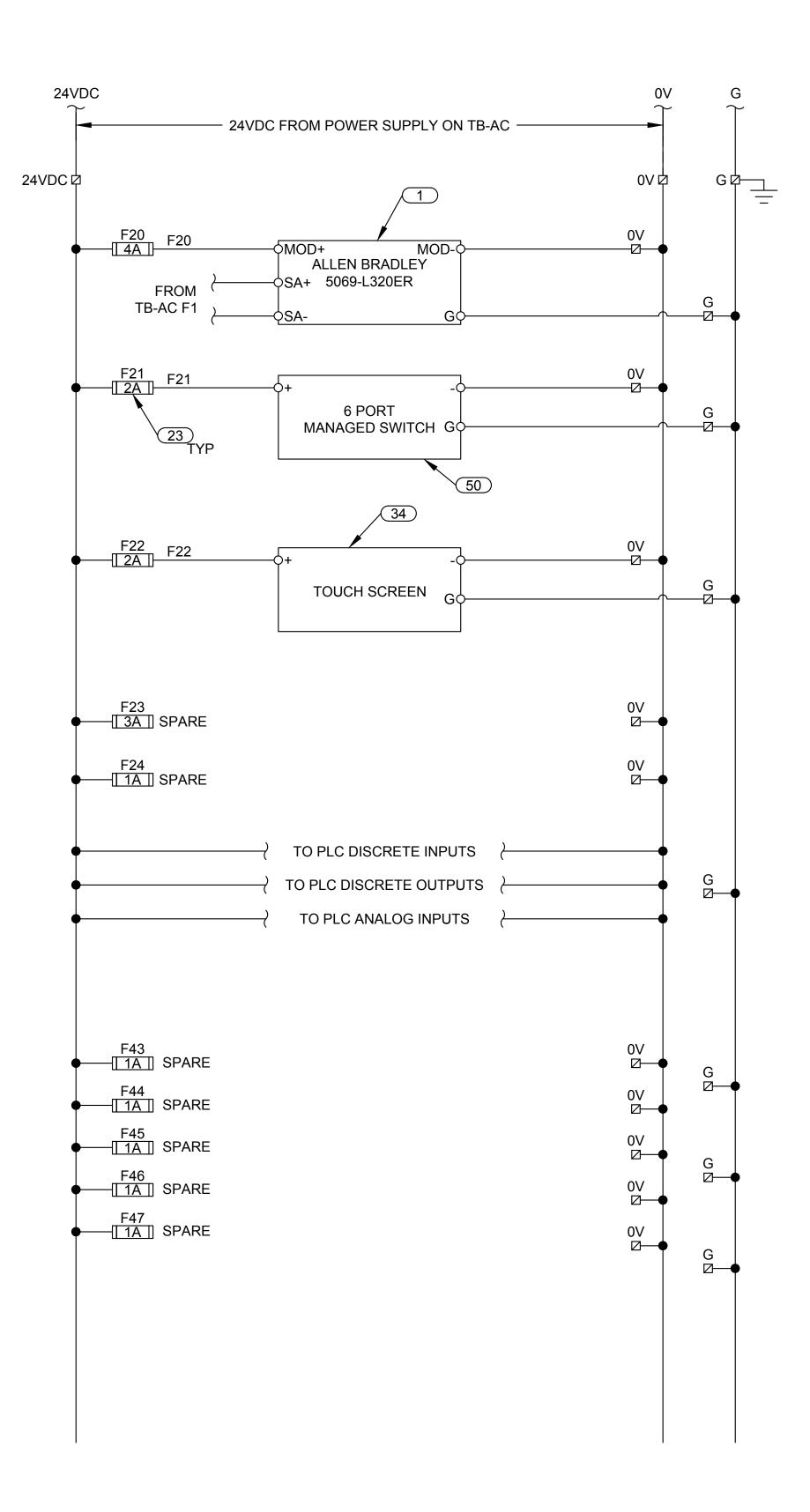
LAST UPDATED: 1/31/2025

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No. 8730795-2202

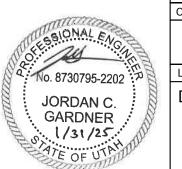
JORDAN C. GARDNER 1/31/25 ATE OF UTAM





**AC POWER WIRING DIAGRAM** 

DC POWER WIRING DIAGRAM



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ELECTRICAL - DEWATERING DE TYPICAL AC-DC WIRING DIAGRAMS WRF PHASE 3 UPGRADES SANTAQUIN CITY

JUB PROJ. #: 93-24-001 DRAWN BY: EGK / DCL CHECKED BY: MPJ

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DIAGF ELECTRICAL - DEWATERING YPICAL DISCRETE INPUTS WIRING WRF PHASE 3 UPGRADES SANTAQUIN CITY

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80-PLC-

JUB PROJ. #:93-24-001

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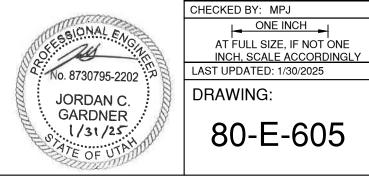
DESIGN BY: JCG

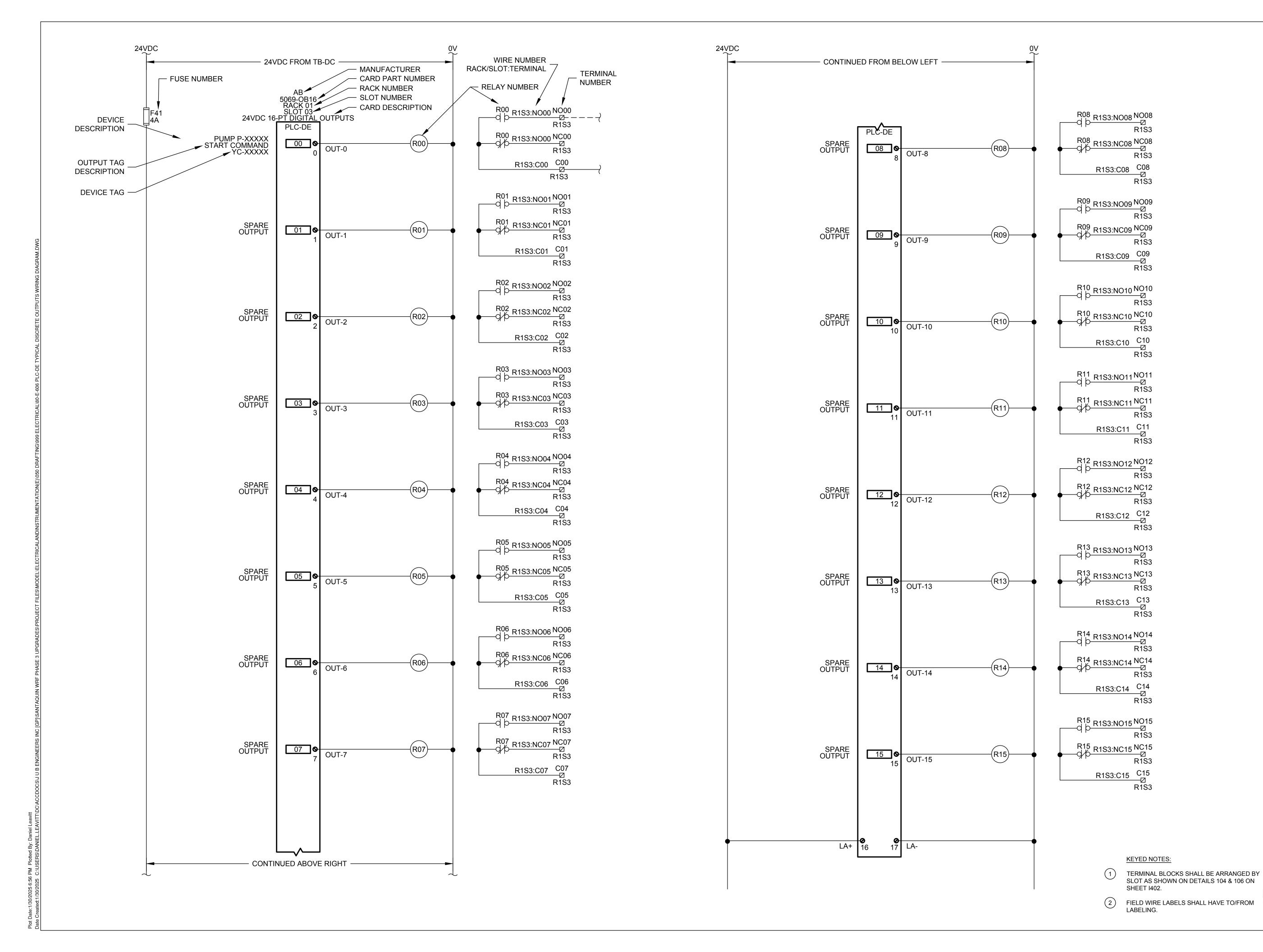
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80-E-605

### **KEYED NOTES:**

- 1 TERMINAL BLOCKS SHALL BE ARRANGED BY SLOT AS SHOWN ON DETAIL 103 ON SHEET 1402.
- 2 POWER FOR DC INPUTS SHALL BE FUSED BY DEVICE AS SHOWN AND SHALL COME FROM TB-DC. FUSE LABELING SHALL BE PER FUSE NUMBERS SEQUENTIALLY USED FROM TB-DC. FOR SPARE INPUTS, PROVIDE A FUSE FOR EVERY SET OF FOUR SPARE INPUTS. JUMPER BARS SHOULD BE USED TO CONNECT THE FUSE TERMINAL BLOCKS AS SHOWN.
- FIELD WIRE LABELS SHALL HAVE TO/FROM LABELING.





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WRF PHASE 3 UPGRADES SANTAQUIN CITY

ELECTRICAL - DEWATERING TYPICAL DISCRETE OUTPUTS WIRING

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CHECKED BY: MPJ ONE INCH

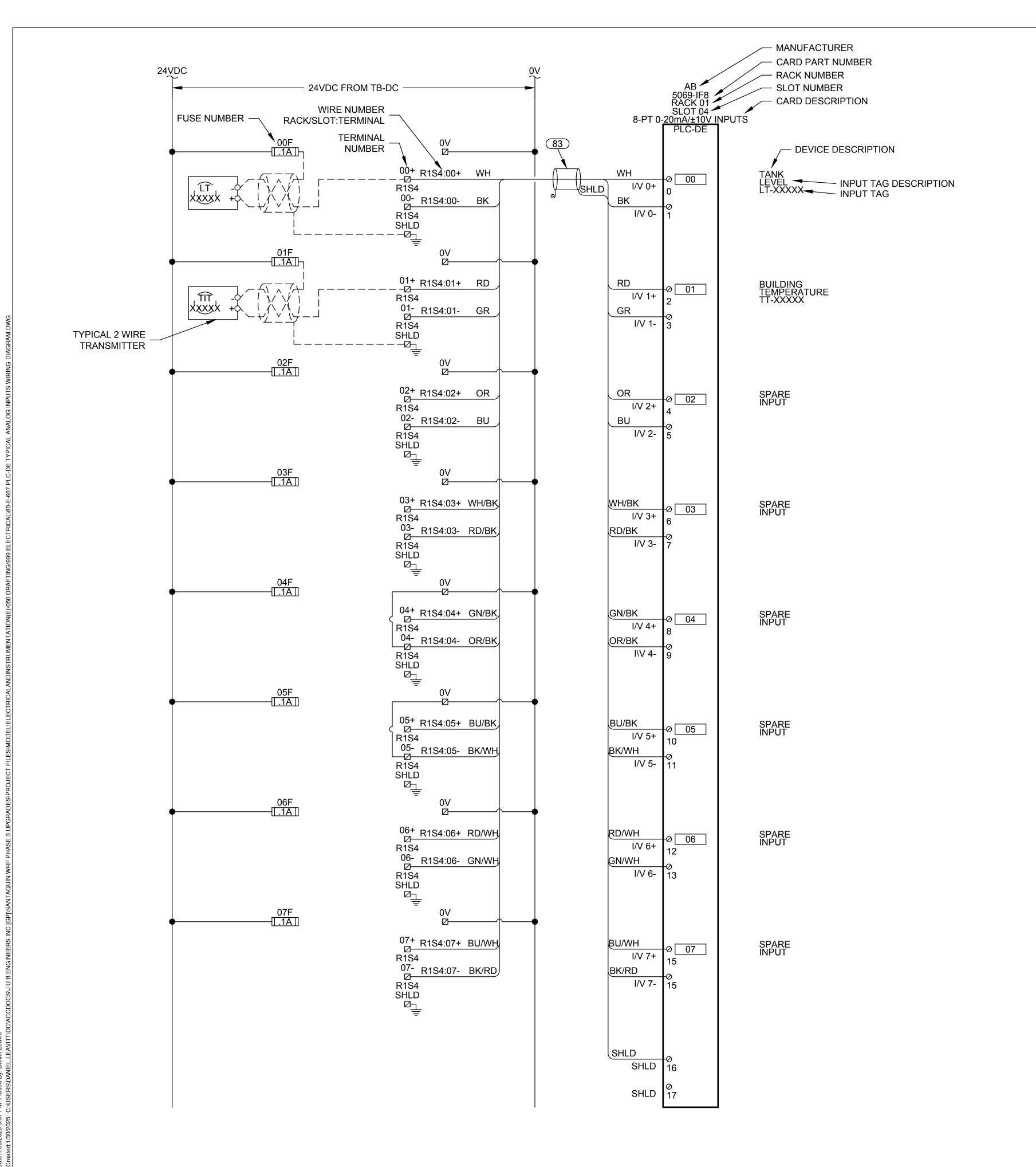
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ELECTRICAL - DEWATERING TYPICAL ANALOG INPUTS WIRING

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No. 8730795-2202

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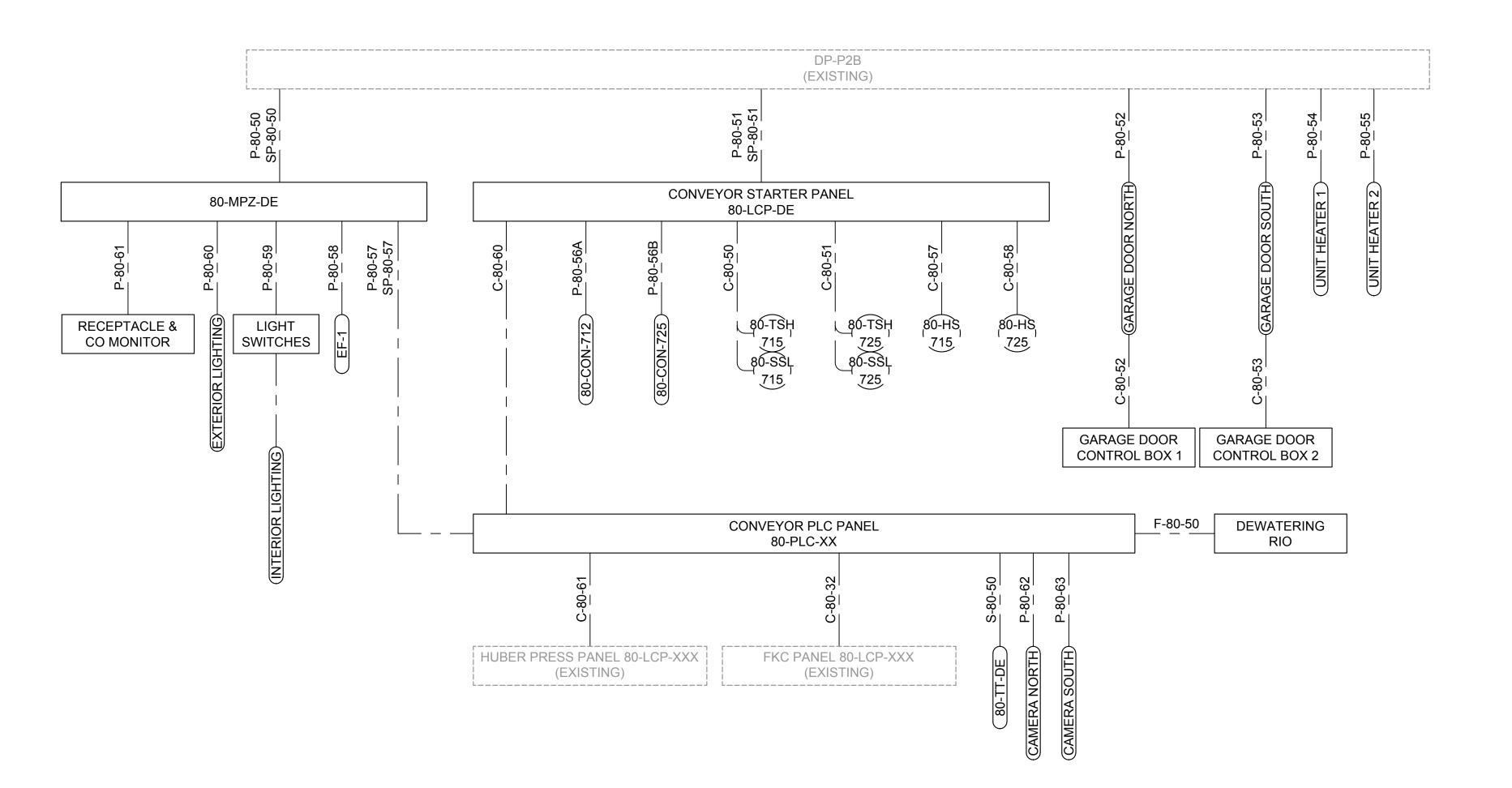
LAST UPDATED: 1/30/2025

DRAWING: 80-E-607

KEYED NOTES:

1 TERMINAL BLOCKS SHALL BE ARRANGED BY SLOT AS SHOWN ON DETAIL 108 ON SHEET I402. PROVIDE FUSING FOR ALL 2-WIRE, 3-WIRE AND 4-WIRE DC POWERED INSTRUMENTS. FOR SPARE INPUTS, PROVIDE A SPARE FUSE FOR EVERY OTHER SPARE INPUT.

2) FIELD WIRE LABELS SHALL HAVE TO/FROM LABELING.



### **CONDUIT DEVELOPMENT**

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WRF PHASE 3 UPGRADES SANTAQUIN CITY ELECTRICAL - DEWATERING CONDUIT DEVELOPMENT

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No. 8730795-2202

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LAST UPDATED: 1/30/2025

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