

FILE NAME: PROJECTS\089 - WEST JORDAN\29.100 - WELL NO. 8 PUMP BUILDING\CAD\G-2 INDEX.DWG
FILE DATE: 2.15.2021 10:25:11 (DCL)

SECTION & DETAIL IDENTIFICATION

SECTION IDENTIFICATION

SECTION CUT ON DRAWING NO. 1:

SECTION NUMBER

4
2

DRAWING ON WHICH SECTION APPEARS

ON DRAWING NO. 2, THIS SECTION IS IDENTIFIED AS:

SECTION

4
1

SECTION NUMBER

DRAWING FROM WHICH SECTION WAS TAKEN

DETAIL IDENTIFICATION

DETAIL CALL-OUT ON DRAWING NO. 1:

DETAIL LETTER

A
2

DRAWING ON WHICH DETAIL APPEARS

ON DRAWING NO. 2, THIS DETAIL IS IDENTIFIED AS:

DETAIL

A
1

DETAIL LETTER

DRAWING FROM WHICH DETAIL WAS TAKEN

NOTES:

- IF SECTION CUT AND SECTION OR DETAIL CALL-OUT AND DETAIL ARE SHOWN ON SAME DRAWING, DRAWING NUMBER IS REPLACED BY A LINE.
- DETAIL LETTERS "I" AND "O" NOT USED.

ABBREVIATIONS

⊙	=	AT	MJ	=	MECHANICAL JOINT
CC	=	CENTER TO CENTER	MM	=	MILLIMETER
CIP	=	CAST IRON PIPE	N.T.S.	=	NOT TO SCALE
℄	=	CENTER LINE	O.C.	=	ON CENTER
CLR.	=	CLEARANCE	OHP	=	OVERHEAD POWER LINE
CMP	=	CORRUGATED METAL PIPE	POLY	=	POLYETHYLENE
∅	=	DIAMETER	PE	=	PLAIN END
DIA.	=	DIAMETER	ℙ	=	PROPERTY LINE
DIP	=	DUCTILE IRON PIPE	PRV	=	PRESSURE REDUCING VALVE
DWG	=	DRAWING	PSF	=	POUNDS PER SQUARE FOOT
EF	=	EACH FACE	PSI	=	POUNDS PER SQUARE INCH
EL.	=	ELEVATION	PVC	=	POLYVINYL CHLORIDE
E.O.	=	EDGE OF OIL	R.O.W.	=	RIGHT OF WAY
E.W.	=	EACH WAY	SCR	=	SCREWED
ES	=	EACH SIDE	SF	=	SQUARE FEET
FL	=	FLOW LINE	HP	=	HIGH PRESSURE
FLG	=	FLANGE	SQ.	=	SQUARE
FPS	=	FEET PER SECOND	SS	=	STAINLESS STEEL
FTG	=	FOOTING	STA.	=	STATION
GIP	=	GALVANIZED IRON PIPE	TBC	=	TOP BACK OF CURB
GPM	=	GALLONS PER MINUTE	THD.	=	THREAD
G.V.	=	GATE VALVE	TYP.	=	TYPICAL
ID	=	INSIDE DIAMETER	UBC	=	UNTREATED BASE COURSE
MAX.	=	MAXIMUM	UGP	=	UNDERGROUND POWER LINE
MG	=	MILLION GALLON(S)	YD.	=	YARD
MIN.	=	MINIMUM			

DESIGNED

MGA

DRAFTED

BKC

CHECKED

MEA

DATE

MARCH 2023

3

2

1

NO.

4/20/23

ADDENDUM #2

DATE

4/20/2023

No. 11762590-2202

JACOB K. NIELSEN

PROFESSIONAL ENGINEER

Jacob K. Nielsen

PROJECT ENGINEER

LEGEND

4-G	EXISTING GAS LINE W/ SIZE
GS	EXISTING GAS SERVICE
10-W	EXISTING WATER LINE W/ SIZE
WS	EXISTING WATER SERVICE
15-SS	EXISTING SANITARY SEWER W/ SIZE
SL	EXISTING SANITARY SEWER LATERAL
24-SD	EXISTING STORM DRAIN W/ SIZE
FD-UG	EXISTING FIBER OPTIC LINE
T-UG	EXISTING UNDERGROUND TELEPHONE
P-UG	EXISTING UNDERGROUND POWER LINE
P-OH	EXISTING OVERHEAD POWER LINE
X	EXISTING FENCE LINE
	12' DEEP EXCAVATION LIMITS
	4' DEEP EXCAVATION LIMITS

	EXISTING FIRE HYDRANT		EXISTING SANITARY SEWER MANHOLE
	EXISTING POWER POLE		EXISTING STORM DRAIN MANHOLE
	EXISTING LIGHT POLE		EXISTING WATER MANHOLE
	EXISTING ELECTRICAL BOX		EXISTING GUY WIRE
	EXISTING WATER METER		EXISTING VALVES

DRAWING INDEX

	SHEET NO.	TITLE
GENERAL	G-1	COVER SHEET
	G-2	DRAWING INDEX
	G-3	SURVEY CONTROL
	G-4	GENERAL NOTES
ARCHITECTURAL	A-1	ELEVATIONS
	A-2	SCHEDULES
	A-3	DETAILS
CIVIL	C-1A	PUMP HOUSE SITE PLAN
	C-1B	PUMP HOUSE UTILITIES SITE PLAN
	C-2	PUMP HOUSE SITE GRADING PLAN
	C-3	PUMP HOUSE FENCE SITE PLAN
	C-4	PUMP HOUSE PIPING
	C-5	PUMP ROOM PIPING SECTIONS & DETAILS
	C-6	PIPE FITTING AND EQUIPMENT SCHEDULE
	C-7	PUMP DETAILS
	C-8	PIPING DETAILS
	C-9	CIVIL DETAILS
	C-10	CITY STANDARD DETAILS SHEET 1
	C-11	CITY STANDARD DETAILS SHEET 2
	C-12	CITY STANDARD DETAILS SHEET 3
	C-13	CITY STANDARD DETAILS SHEET 4
	C-13A	CITY STANDARD DETAILS SHEET 5
C-14	FENCING DETAILS	
C-15	FENCING SECTIONS	
CHEMICAL FEED	CF-1	CHLORINE ROOM PLAN
	CF-2	CHLORINE ROOM DETAILS
PLAN & PROFILE	PP-1	DISCHARGE PRESSURE PIPELINE
	PP-2	DRAIN TO SEWER GRAVITY LINE
	PP-3	PUMP TO WASTE GRAVITY PIPELINE
LANDSCAPE	L1.1	PLANTING PLAN
	L2.1	IRRIGATION PLAN
	L5.1	IRRIGATION DETAILS
	L5.2	IRRIGATION DETAILS
	L5.3	PLANTING AND IRRIGATION DETAILS
STRUCTURAL	S-1A	NOTES
	S-1B	NOTES
	S-2	FOOTING & FOUNDATION PLAN
	S-3	ROOF PLAN
	S-4	FOUNDATION DETAILS
	S-5	TYPICAL ROOFING DETAILS
	S-6	DETAILS 1
S-7	TYPICAL MASONRY DETAILS	

SCALE

NOT TO SCALE

ABO

DWJ

BY

APVD.

DRAWING INDEX cont.

	SHEET NO.	TITLE
MECHANICAL	H-1	HVAC DESIGN
	H-2	HVAC SCHEDULES
	H-3	HVAC SPECIFICATIONS
	H-4	HVAC SPECIFICATIONS
	H-5	HVAC SPECIFICATIONS
ELECTRICAL	E-001	LEGEND
	E-002	LEGEND
	E-101	OVERALL SITE PLAN
	E-102	PUMP HOUSE POWER PLAN
	E-103	PUMP HOUSE INSTR. & CONTROL PLAN
	E-104	PUMP HOUSE LIGHTING PLAN
	E-501	DETAILS, SHT. 1
	E-502	DETAILS, SHT. 2
	E-503	DETAILS, SHT. 3
	E-504	DETAILS, SHT. 4
	E-505	DETAILS, SHT. 5
	E-601	POWER ONE-LINE DIAGRAM
	E-602	I&C DIAGRAM
E-603	TYPICAL VFD CONTROL DIAGRAM	
E-604	SCHEDULES, SHT. 1	
E-605	CP-1 MAIN CONTROL PANEL	
E-606	CP-1 CONTROL DIAGRAM SHT. 1	
E-607	CP-1 CONTROL DIAGRAM SHT. 2	
E-608	CP-2 EXHAUST FAN CONTROL PANEL	

WEST JORDAN CITY WELL #8

GENERAL

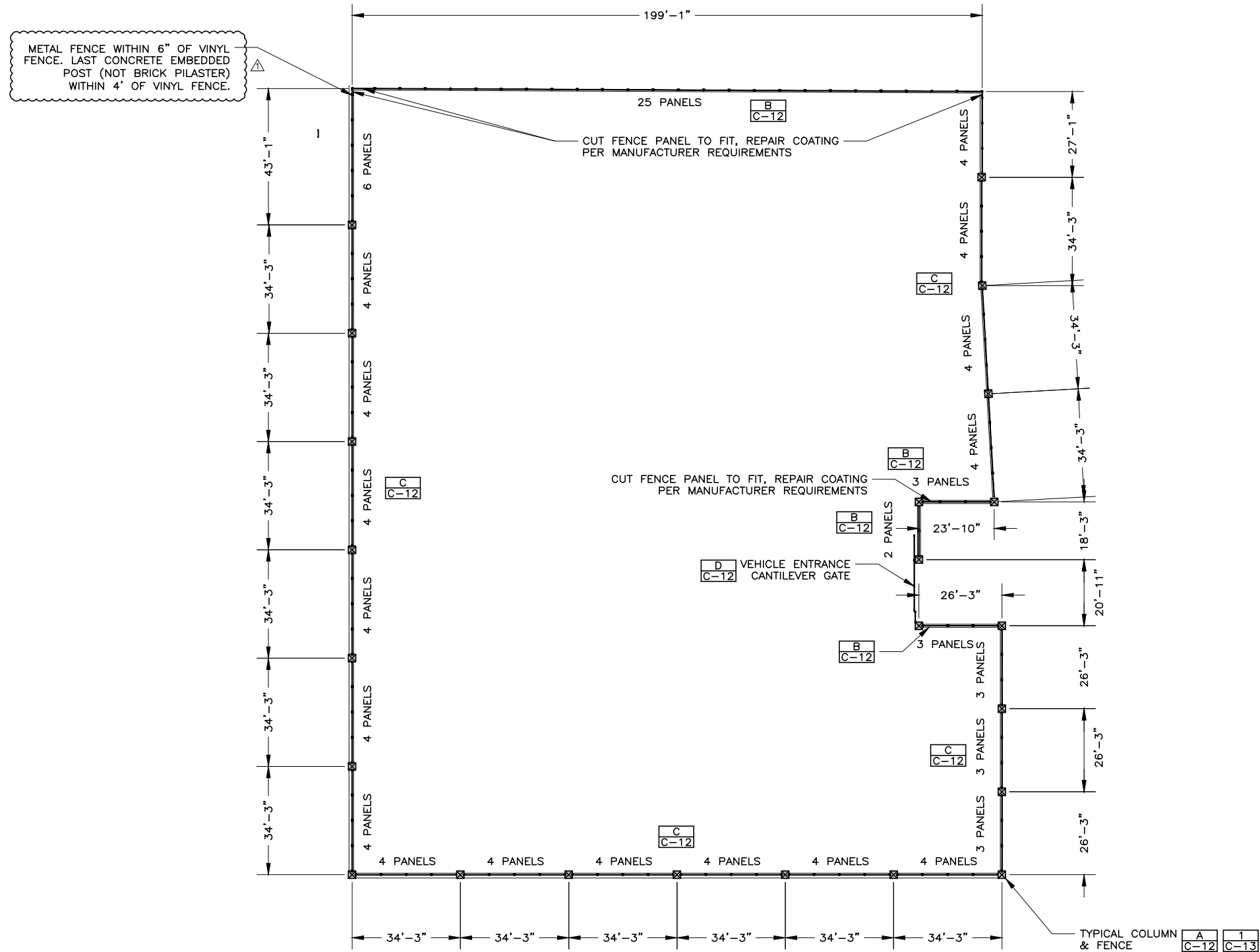
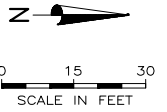
DRAWING INDEX

7/04

089.29.100

FILE NAME: PROJECTS\089 - WEST JORDAN\29.100 - WELL NO. 8 PUMP BUILDING\CAD\C-3 SITE PLAN FENCE.DWG
FILE DATE: 2/12/2021 13:56:41 (DCL)

7/04



DESIGNED	MGA	3
DRAFTED	DCL	2
CHECKED	MEA	1
DATE	MARCH 2023	NO.

NO.	DATE
1	4/20/23

ADDENDUM 2

REVISIONS

BY	APVD.
JEJ	DWJ

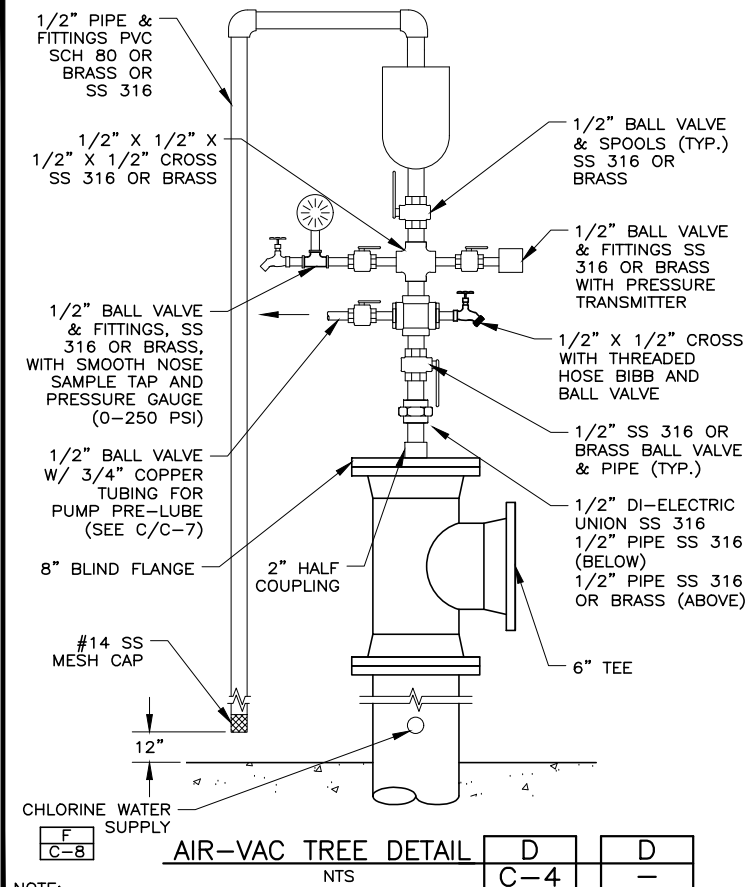
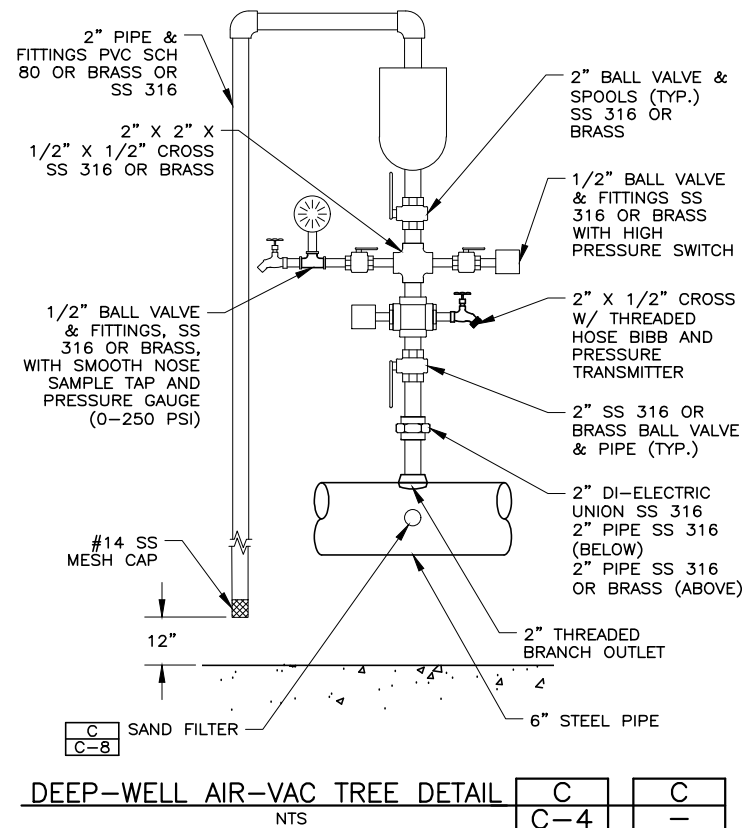
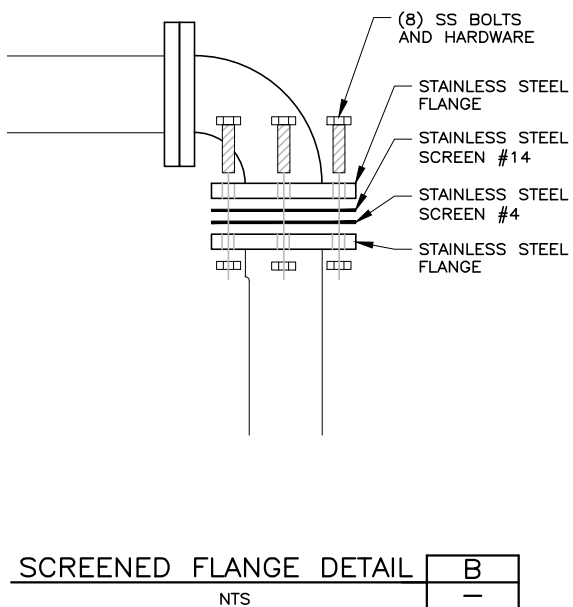
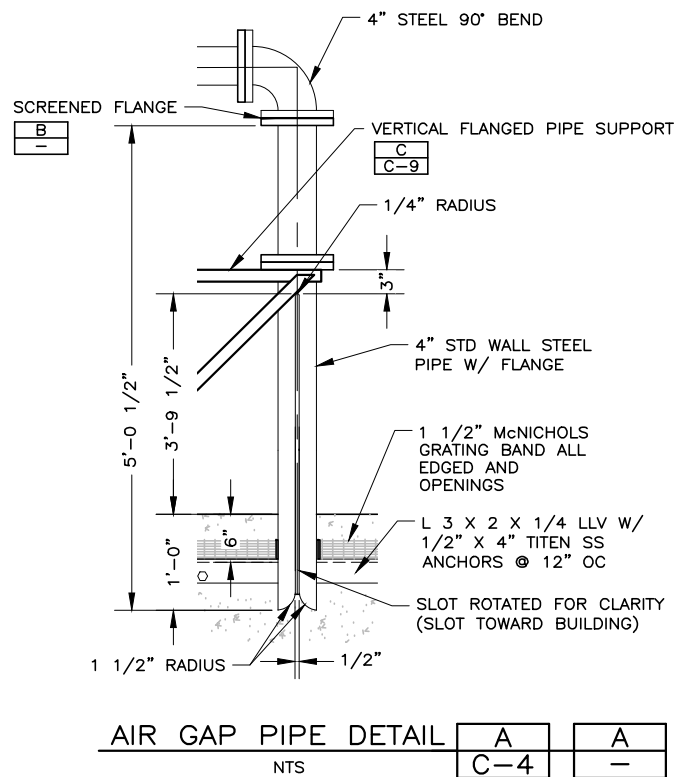
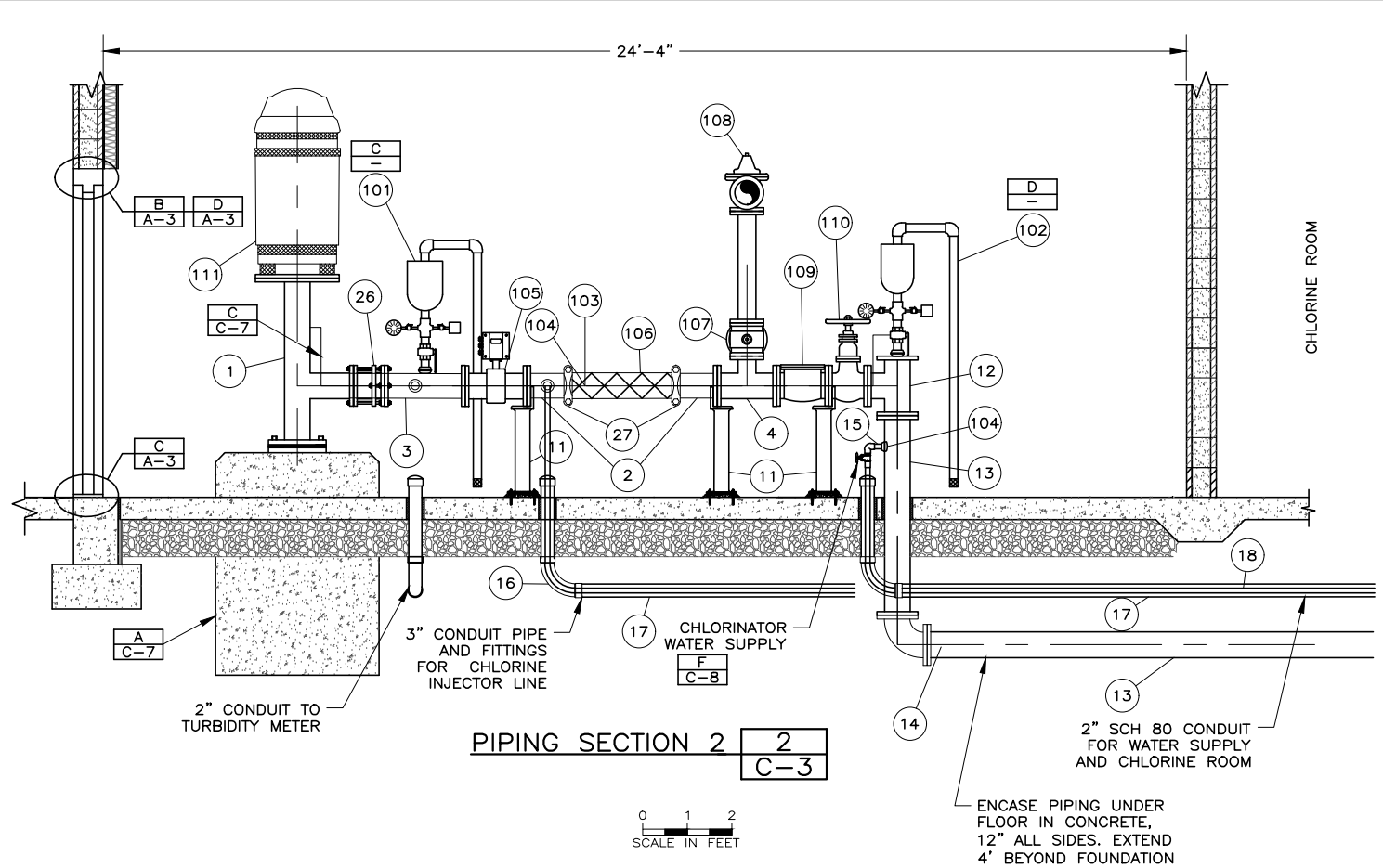
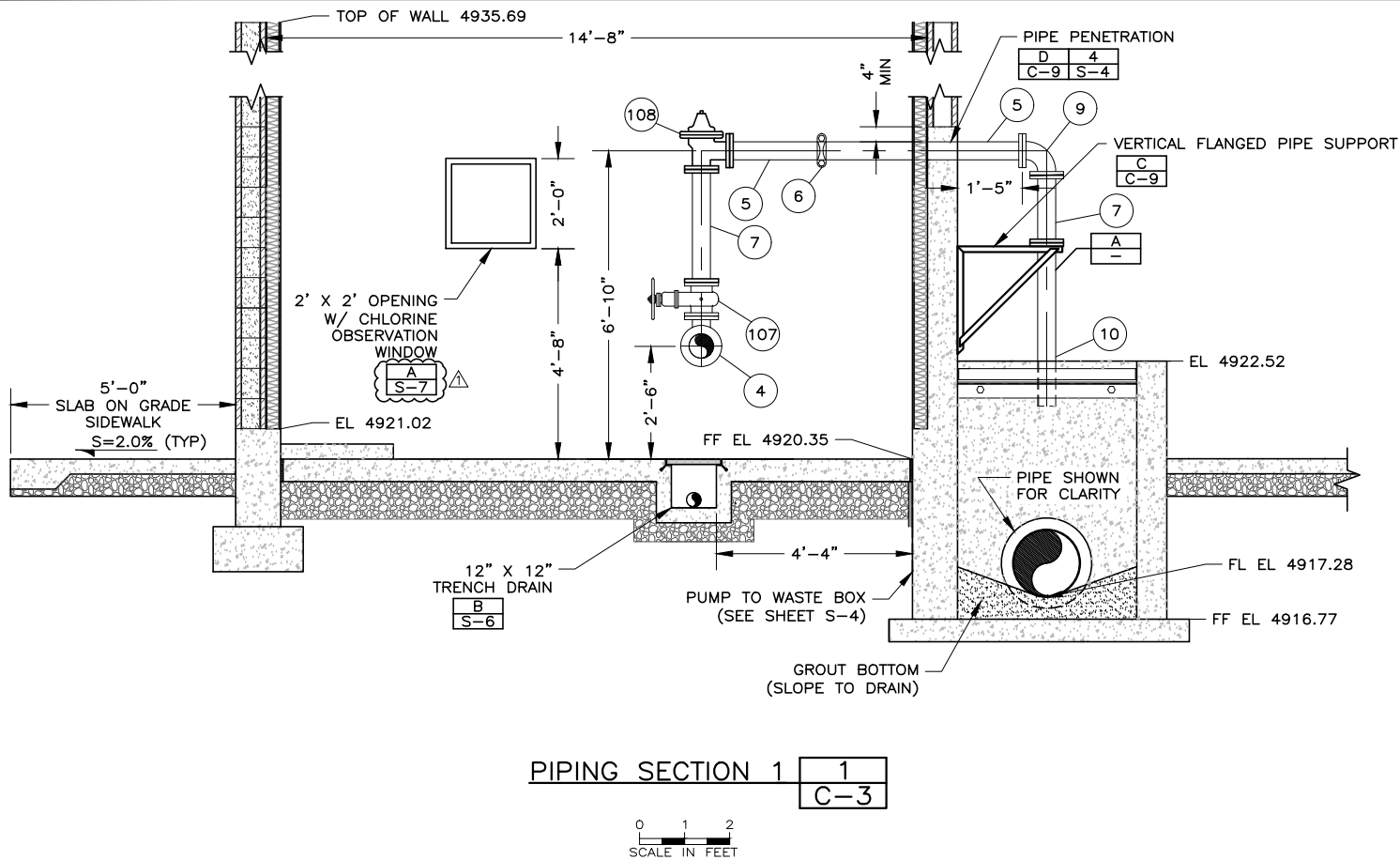
SCALE
AS SHOWN



WEST JORDAN CITY WELL #8
CIVIL
PUMP HOUSE FENCE SITE PLAN

SHEET
C-3
089.29.100

FILE NAME: PROJECTS\089 - WEST JORDAN\29.100 - WELL NO. 8 PUMP BUILDING\CAD\C-5 PUMP ROOM AND DETAILS.DWG
FILE DATE: 5/13/2023 09:57:47 (ABO)



NOTE: SEE SHEET C-6 FOR PIPE FITTING AND EQUIPMENT SCHEDULE.

NOTE: SEE SHEET C-6 FOR PIPE FITTING AND EQUIPMENT SCHEDULE.

HANSEN
ALLAN
& LUCE
ENGINEERS



DESIGNED MGA 3
DRAFTED DCL 2
CHECKED MEA 1
DATE MARCH 2023 NO. 4/17/23

ADDENDUM 2

REVISIONS

SCALE
AS SHOWN
JEJ DWJ
BY APVD.

WEST JORDAN
UTAH

WEST JORDAN CITY WELL #8
CIVIL
PUMP ROOM PIPING SECTIONS & DETAILS

SHEET
C-5
089.29.100

FILE NAME: PROJECTS\089 - WEST JORDAN\29.100 - WELL NO. 8 PUMP BUILDING\CAD\C-6 FITTINGS AND SCHEDULES.DWG
FILE DATE: 4/20/2023 11:41:26 (ABO)

FITTING SCHEDULE								
ITEM NO.	DESCRIPTION	SIZE	MATERIAL	WALL THICKNESS	CONNECTION	FLANGE TYPE	COATING/LINING	NOTES
1	PUMP DISCHARGE HEAD	6"	STEEL	STD	FLG	CLASS D	SYSTEM NO. 1 / SYSTEM NO. 2	
2	PIPE, STRAIGHT NIPPLE	6"	STEEL	SCH 40	FLG x GRV			LENGTH VARIES, MIN. 10"
3	PIPE, STRAIGHT SPOOL	6"	STEEL	SCH 40	FLG	--		
4	TEE, REDUCING	6" x 6" x 4"	STEEL	SCH 40	FLG	WELD NECK	SYSTEM NO. 1 / SYSTEM NO. 1	
5	PIPE, STRAIGHT NIPPLE	4"	STEEL	SCH 40	FLG x GRV			WALL SPOOL WITH THRUST RING
6	COUPLING, FLEXIBLE, GROOVED	4"	DUCTILE IRON	--	GRV	--		VICTUALIC STYLE 177
7	PIPE, STRAIGHT SPOOL	4"	STEEL	SCH 40	FLG x FLG			
8	WELDOLET	1/2"	STEEL		WELD			
9	ELBOW, 90-DEG	4"	STEEL	SCH 40	FLG			
10	PIPE, STRAIGHT SPOOL	4"	STEEL	SCH 40	FLG x PE			
11	SUPPORT, ADJUSTABLE, FLANGE SUPPORT	6"	STEEL	-	-	-		B-LINE B3094, W/ B3089 & B3088T. DETAIL B ON C-9
12	TEE, REDUCING	8" x 8" x 6"	STEEL	SCH 40	FLG	WELD NECK	SYSTEM NO. 1 / SYSTEM NO. 1	
13	PIPE, STRAIGHT SPOOL	8"	DUCTILE IRON	CLASS 52	FLG			USE WAX TAPE COATING SYSTEM FOR BURIED FLANGES
14	ELBOW, 90-DEG	8"	DUCTILE IRON	CLASS 52	FLG			
15	WELDOLET	1"	STEEL	-	WELD			
16	HEAVY WALL PVC HOSE	1"	PVC					KURI TEC K3130 SERIES BF
17	SLEEVE FOR CHLORINE SOLUTIONS	3"	PVC	SCH 80	WELD			
18	HEAVY WALL PVC HOSE	1"	REINFORCED PVC					KURI TEC K3130 SERIES BF
19	SLEEVE FOR SAMPLE LINES	2"	PVC	SCH 80	WELD			
20	HEAVY WALL PVC HOSE	1/2"	REINFORCED PVC					KURI TEC K3130 SERIES BF
21	FLOOR DRAIN	9"	CAST IRON					ZURN - Z508 EXTRA HEAVY DUTY DRAIN W 6" OUTLET PIPE
22	FLOOR DRAIN	6"	PVC	SCH 80	WELD			DETAIL C ON C-10
23	CHECK VALVE	6"	RUBBER		SLIP ON			TIDEFLEX TF-1 W STAINLESS CLAMPS
24	AIR GAP DRAIN	2"	PVC	SCH 80	WELD			DETAIL G ON C-8
25	DRAIN	2"	PVC	SCH 80	WELD			CONNECT TO TRENCH DRAIN
26	COUPLING, DISMANTLING JOINT	6"	STEEL/DUCTILE IRON	STD	FLG	AWWA C207 CLASS D	FBE	ROMAC DJ400
27	COUPLING, FLEXIBLE, GROOVED	6"	DUCTILE IRON	--	GRV	--		VICTUALIC STYLE 177

VALVE & EQUIPMENT SCHEDULE									
ITEM NO.	DESCRIPTION	SIZE	MATERIAL	CLASS	CONNECTION	OPERATOR	MANUFACTURER	MODEL	NOTES
101.	DEEP WELL AIR VALVE ASSEMBLY	2"			THD		APCO DEZURIK	144DAT	W/ AIR RELEASE VALVE
102.	AIR VALVE ASSEMBLY	1"			THD		APCO DEZURIK	140C	
103.	CHLORINE INJECTION QUILL	1/2"	316 STAINLESS				KOFLO	QS- 5-3	ROUTE HOSE THROUGH TRENCH
104.	CHLORINE INJECTION WELDOLET CONNECTION	1/2"	316 STAINLESS		HOSE X THD				1 1/2" x 1/2" REDUCER
105.	MAGNETIC FLOW METER	6"	STAINLESS STEEL	STD (150 PSI)	FLG		ENDRESS & HAUSER	PRO MAG W 400	
106.	STATIC MIXER	6"	STAINLESS STEEL		GRV		STATIFLOW	SERIES 600	2 ELEMENTS (1.5:1 PITCH RATIO) CONFIRM LAY LENGTH
107.	GATE VALVE	4"	DUCTILE IRON	STD (350 PSI)	FLG	HANDWHEEL	MUELLER	A-2361	W/ POSITION INDICATOR
108.	PUMP CONTROL VALVE	4"					CLAVAL	61-02	ANGLE STYLE
109.	CHECK VALVE, SHORT STROKE	6"	DUCTILE IRON	STD (250 PSI)	FLG		VAL-MATIC	SURGE BUSTER	W/ POSITION INDICATOR
110.	GATE VALVE	6"	DUCTILE IRON	STD (350 PSI)	FLG	HANDWHEEL	MUELLER	A-2361	W/ POSITION INDICATOR
111.	PUMP, SUBMERSIBLE, 500 GPM	16"							
112.	TABLET CHLORINATOR	N/A							
113.	TURBIDIMETER	N/A		150 PSI			ATI	Q46/76	TO PROVIDE PIPING PER DETAILS B & E ON C-8
114.	CHLORINE ANALYZER	N/A		150 PSI			ATI	Q46/62-63	WITH pH SENSOR
115.	SAMPLE POINT OUTLET	1-1/2"	WELDED STEEL		WELD X THD				LOCATION PER PLAN PER DETAIL D ON C-8

SHEET NOTES:

1. ALL FLANGES SHALL BE CLASS 125/150.



DESIGNED	MGA	3	
DRAFTED	BKC	2	
CHECKED	MEA	1	4/20/23
DATE	MARCH 2023	NO.	DATE

ADDENDUM #2

REVISIONS

ABO DWJ

SCALE
AS
SHOWN

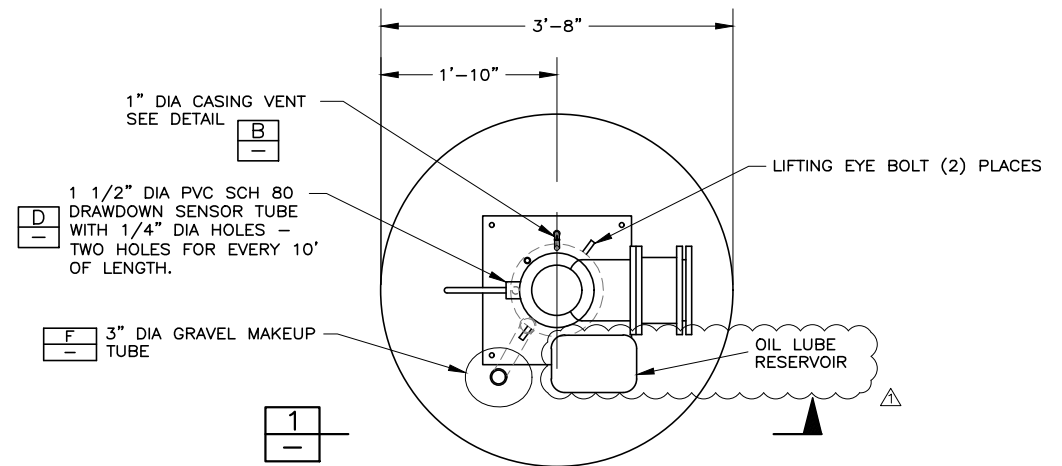


WEST JORDAN CITY WELL #8
CIVIL
PIPE FITTING AND EQUIPMENT SCHEDULE

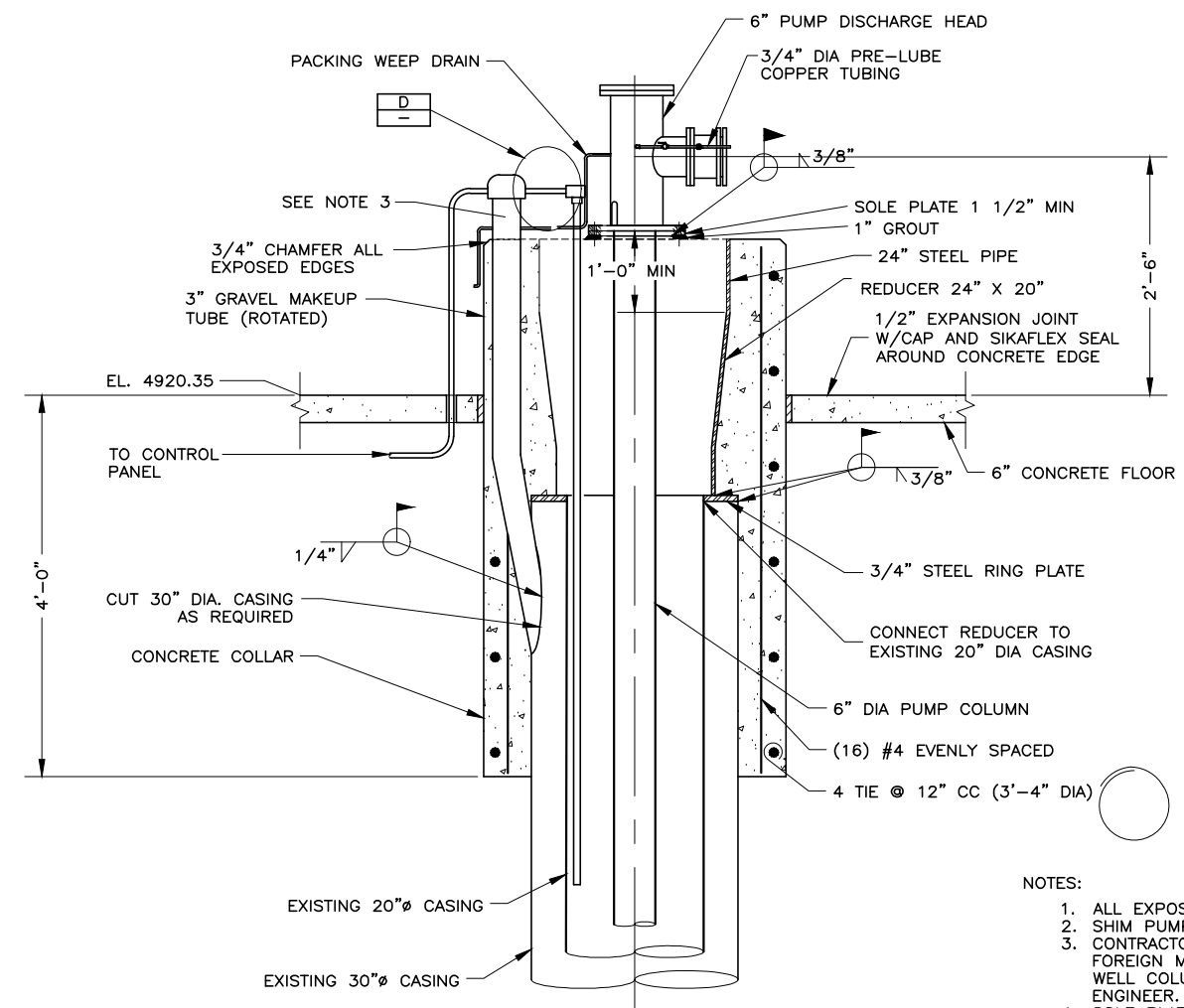
SHEET
C-6

089.29.100

FILE NAME: PROJECTS\089 - WEST JORDAN\29.100 - WELL NO. 8 PUMP BUILDING\CAD\C-7 PUMP DETAILS.DWG
FILE DATE: 4.20.2023 10:50:29 (ABO)

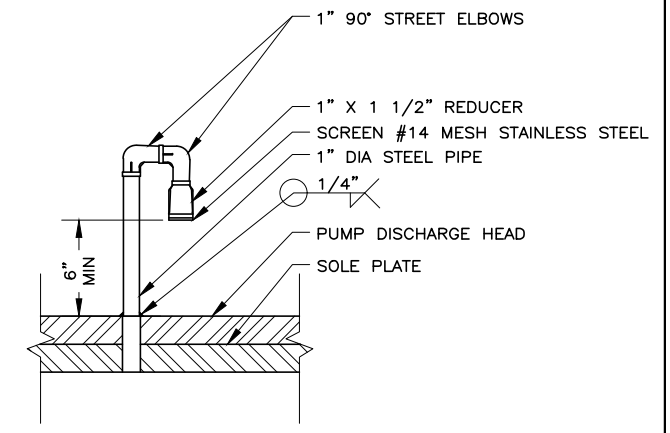


DETAIL A
NTS



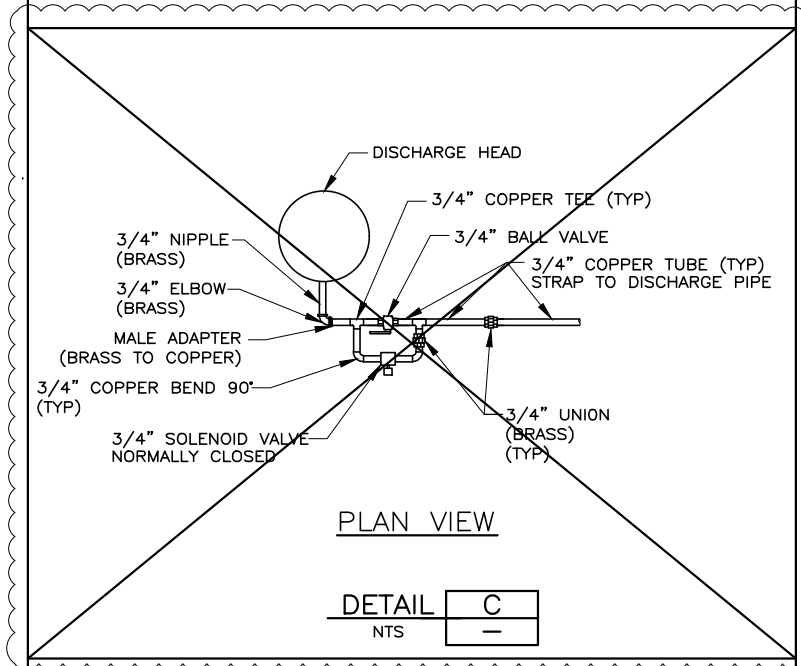
SECTION 1
WELLHEAD DETAIL A A
NTS C-4

- NOTES:
1. ALL EXPOSED STEEL TO BE PAINTED.
 2. SHIM PUMP FOR PROPER ALIGNMENT.
 3. CONTRACTOR SHALL NOT INTRODUCE ANY FOREIGN MATERIAL OR CHEMICAL INTO WELL COLUMN WITHOUT APPROVAL OF ENGINEER.
 4. SOLE PLATE ELEVATION SHALL BE ADJUSTED TO MATCH DIMENSIONS OF SUPPLIED DISCHARGE HEAD.
 5. PUMP DISCHARGE HEAD & SOLE PLATE SHALL BE DESIGNED BY CONTRACTOR FOR ALL LOADS AND PENETRATIONS.
 6. BAND DRAWDOWN SENSOR TUBE TO PUMP COLUMN USING STAINLESS STEEL BANDS AT 10' CENTER TO CENTER.

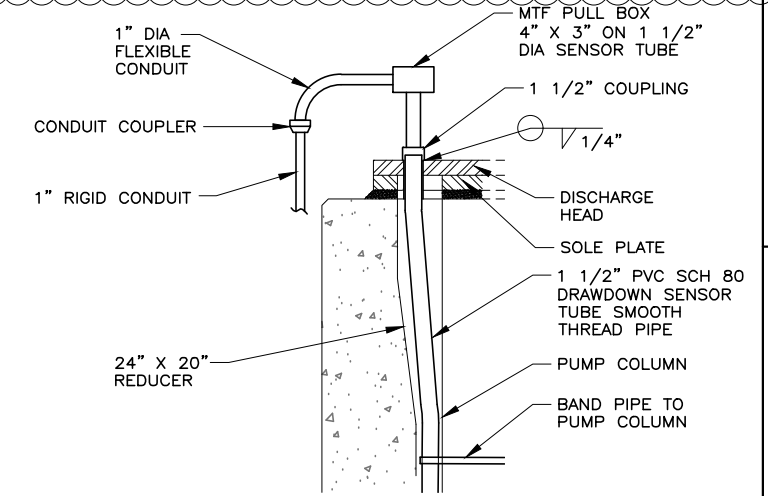


WELL CASING VENT DETAIL B
NTS

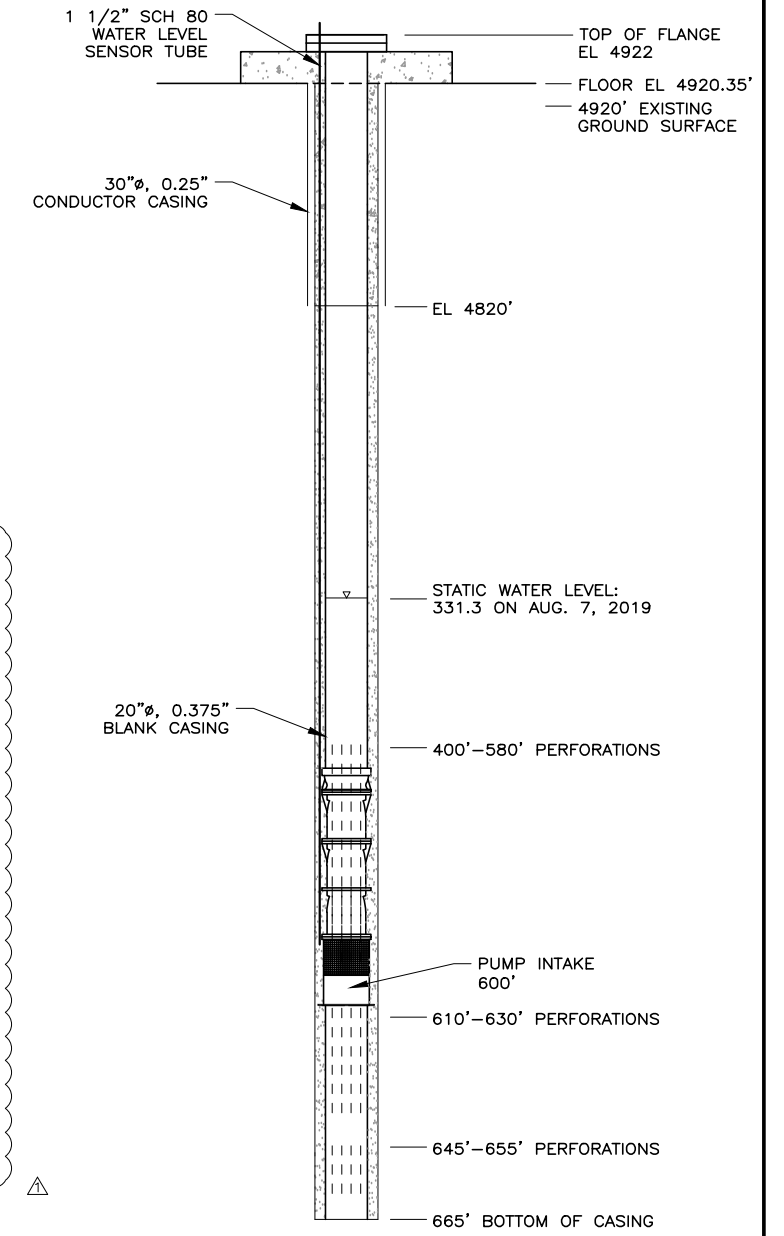
NOTE:
USE 316 STAINLESS STEEL PIPE AND FITTINGS FOR THE AIR VENT.



PLAN VIEW
DETAIL C
NTS

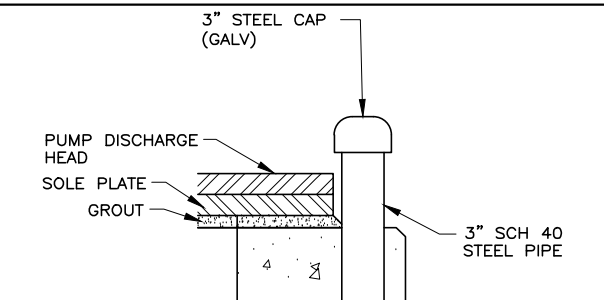


WELL LEVEL TRANSDUCER DETAIL D
NTS



WELL PUMP DETAIL E A
NTS C-4

NOTE:
1. DEPTHS SHOWN ARE ESTIMATED BELOW EXISTING GRADE.



GRAVEL MAKEUP TUBE DETAIL F
NTS



DESIGNED	MGA	3	
DRAFTED	DCL	2	
CHECKED	MEA	1	4/20/23
DATE	MARCH 2023	NO.	DATE

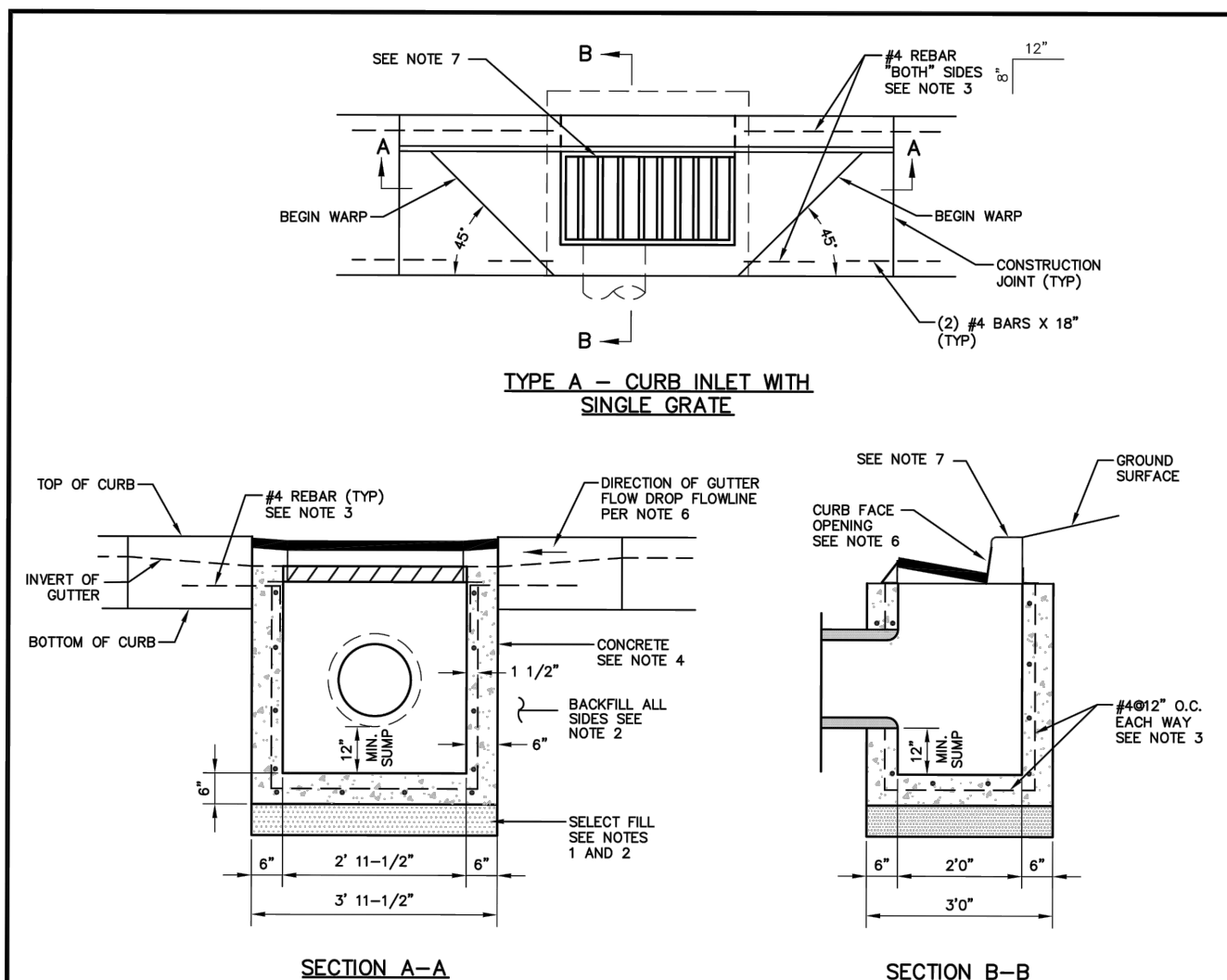
ADDENDUM #2	REVISIONS
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ABO	DWJ
BY	APVD.

SCALE



FILE NAME: PROJECTS\089 - WEST JORDAN\29.100 - WELL NO. 8 PUMP BUILDING\CAD\C-13A STANDARD DET SHEET 5.DWG
FILE DATE: 4/20/2023 11:01:58 (ABO)



1. SELECT FILL:
USE UNTREATED BASE COARSE GRADE 1 OR GRADE 3/4 PER APWA SECTION 32 11 23. USE OF SEWER ROCK OR RECYCLED AGGREGATE REQUIRES ENGINEER'S WRITTEN APPROVAL.
2. BACKFILL:
INSTALL AND COMPACT ALL BACKFILL MATERIAL PER APWA SECTION 31 23 23.
3. REINFORCEMENT:
USE ASTM A 615, GRADE 60, DEFORMED STEEL REBAR PER APWA SECTION 03 20 00.
4. CONCRETE:
CLASS 4,000 PER APWA SECTION 03 30 04. PLACE PER APWA SECTION 03 30 10. APPLY SEALING/CURING COMPOUND PER APWA SECTION 03 39 00.
5. PIPE LATERALS:
THE DRAWING SHOWS ALTERNATE CONNECTIONS TO THE INLET BOX. REFER TO CONSTRUCTION DRAWINGS FOR CONNECTION LOCATIONS.
6. CURB FACE OPENING:
MAKE OPENING 4 INCHES HIGH. PROVIDE AT LEAST A 2 INCH DROP FROM THE GUTTER FLOWLINE TO THE INVERT OF THE CURB FACE OPENING.
7. D&L SUPPLY I-3517 FOR <2% GRADE, TO BE STAMPED "DUMP NO WASTE DRAINS TO WATERWAY" D&L SUPPLY I-3518 >2% GRADE, TO BE STAMPED "DUMP NO WASTE DRAINS TO WATERWAY". EQUIVALENT ONLY BY WRITTEN APPROVAL FROM CITY ENGINEER.

DRAWING UPDATED JANUARY 2020

City of West Jordan, Utah

**CURB INLET WITH SINGLE GRATE**

PLAN
SD-10



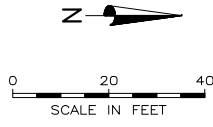
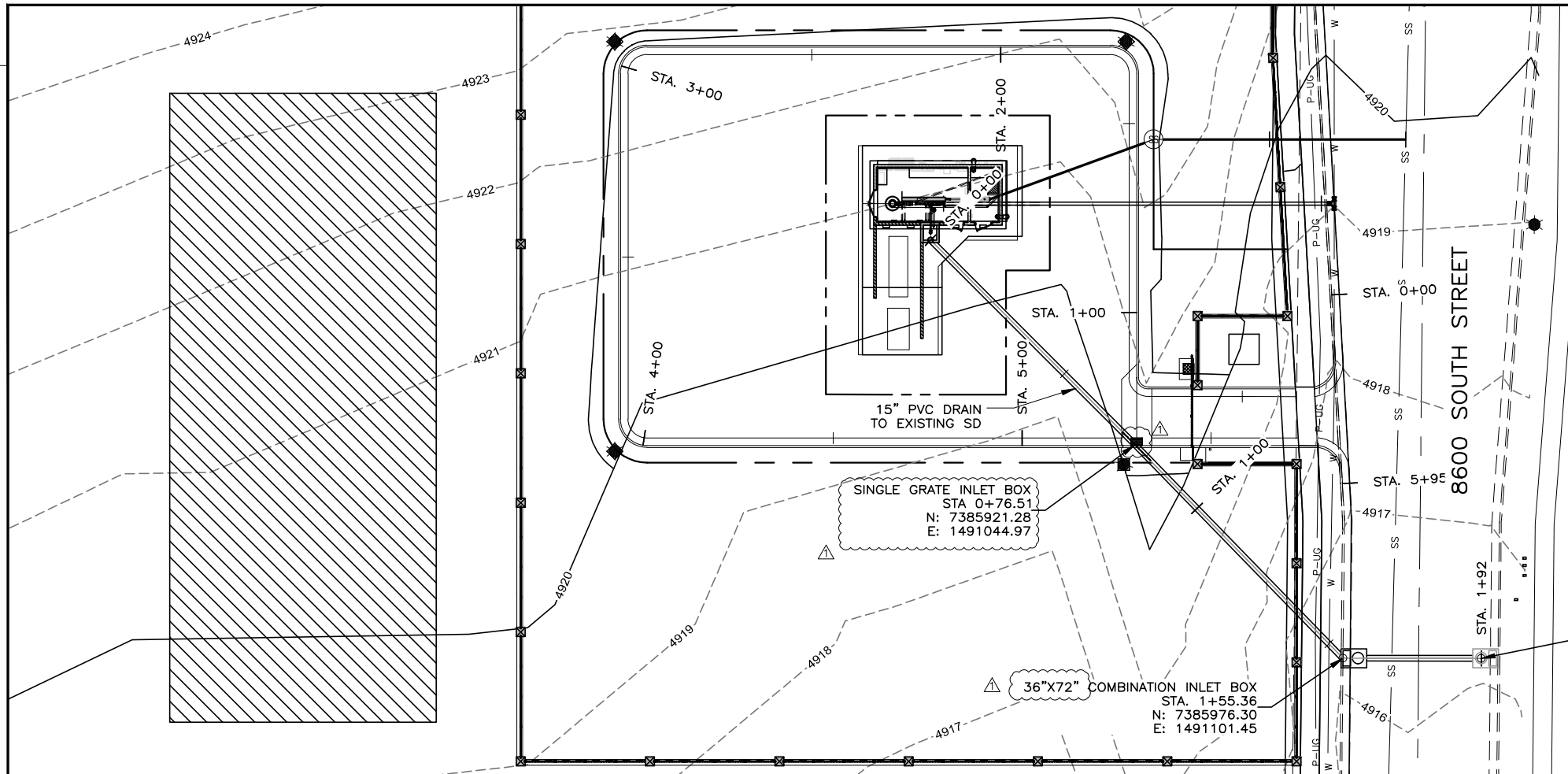
DESIGNED	MGA	3			
DRAFTED	DCL & BKC	2			
CHECKED	MEA	1	4/20/23	ADDENDUM #2	
DATE	MARCH 2023	NO.	DATE	REVISIONS	

ABO DWJ
BY APVD.

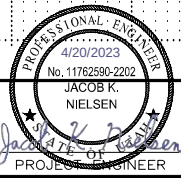
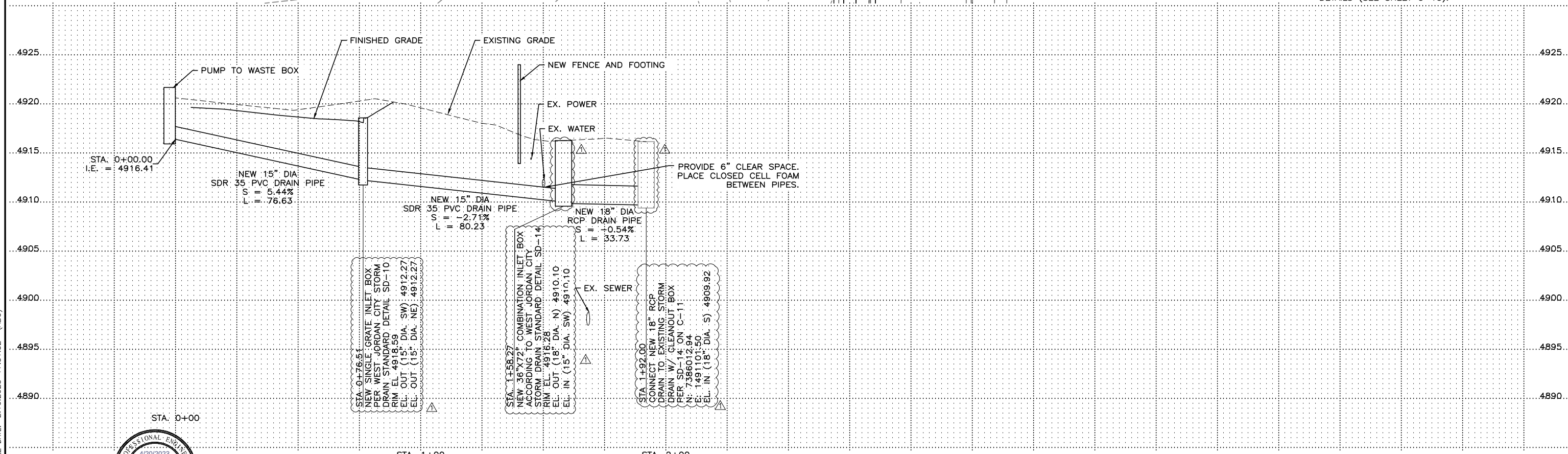
SCALE
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TO
SCALE



FILE NAME: PROJECTS\089 - WEST JORDAN\29.100 - WELL NO. 8 PUMP BUILDING\CAD\PP-3.DWG
FILE DATE: 2/16/2023 17:31:52 (ABO)



- NOTES:
1. PIPE LENGTHS, ELEVATIONS, AND SLOPES ARE TO THE CENTER OF MANHOLES.
 2. INSTALL PIPELINE PER CITY STANDARD TRENCH DETAILS (SEE SHEET C-15).



DESIGNED	MGA	3	
DRAFTED	TPB	2	
CHECKED	MEA	1	4/20/23
DATE	MAY 2020	NO.	DATE

ADDENDUM 2	
REVISIONS	

JEJ	DWJ
BY	APVD.

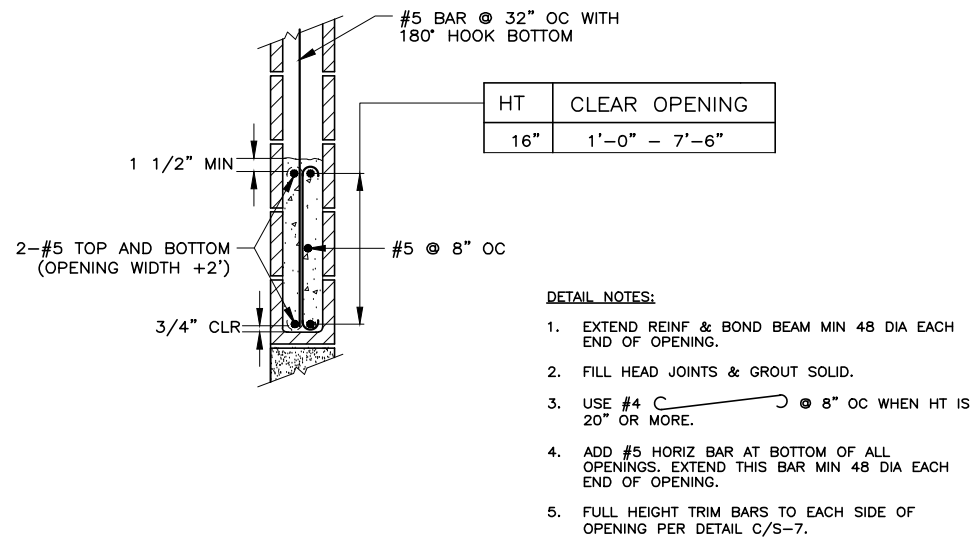
SCALE
AS SHOWN



WEST JORDAN CITY WELL #8
PLAN & PROFILE
PUMP TO WASTE GRAVITY PIPELINE

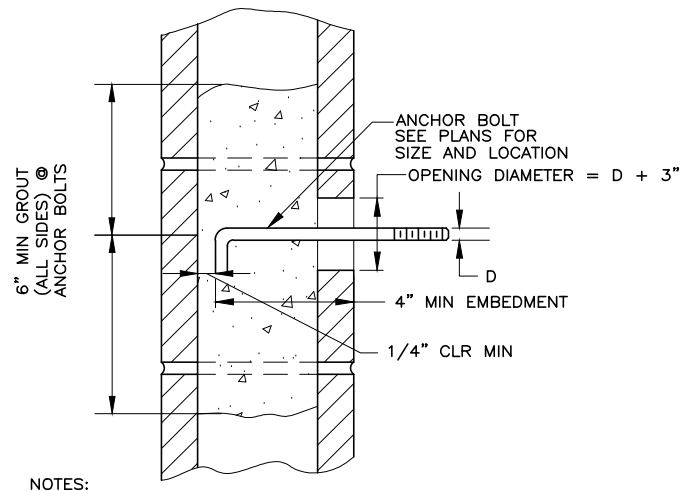
SHEET
PP-3
089.29.100

FILE NAME: PROJECTS\089 - WEST JORDAN\29.100 - WELL NO. 8 PUMP BUILDING\CAD\S-7 TYPICAL MASONRY DETAILS.DWG
FILE DATE: 3/9/2023 15:41:38 (ABO)



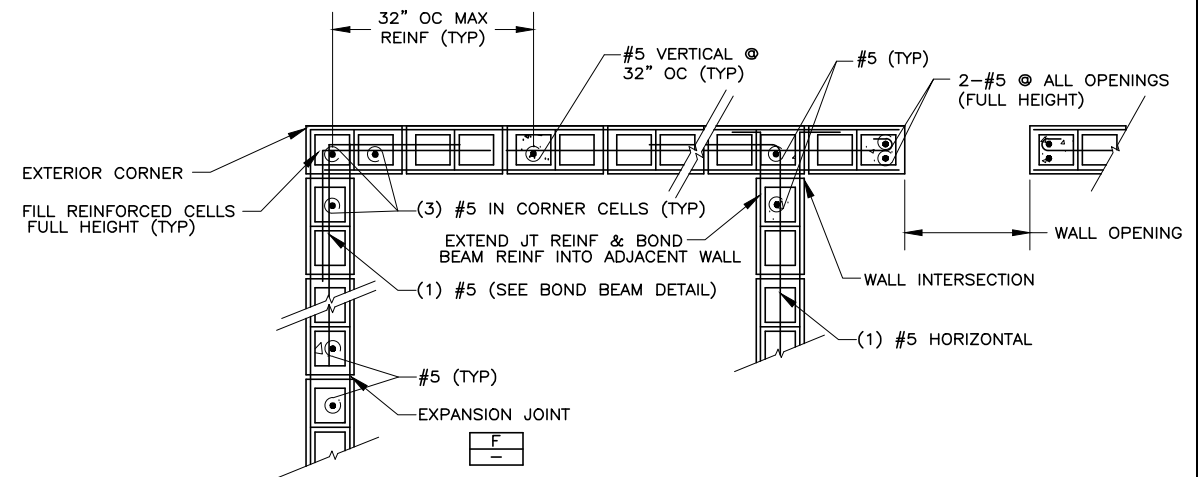
MASONRY LINTEL DETAIL AT WALL OPENINGS
NTS

A	A
C-5	S-3



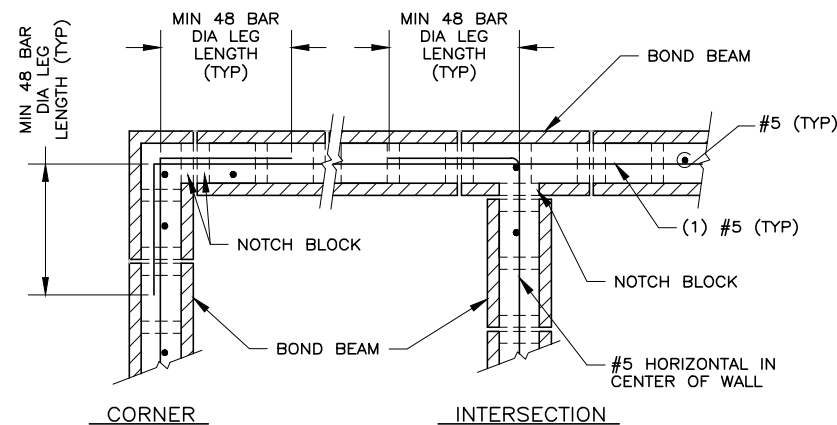
ANCHOR BOLTS IN MASONRY DETAIL
NTS

B	-
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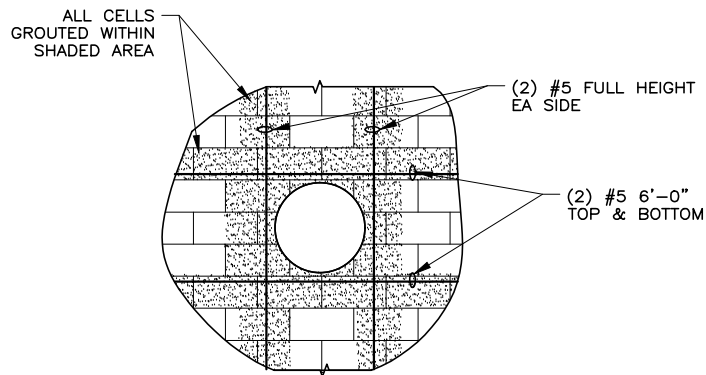
TYPICAL MASONRY WALL REINFORCING DETAIL
NTS

C	-
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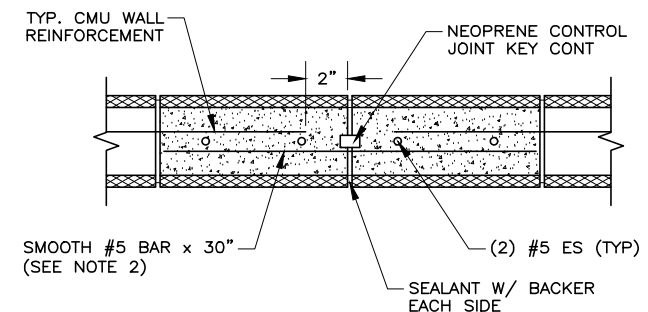
MASONRY WALL REINFORCING AT TYPICAL BOND BEAM DETAIL
NTS

D	-
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PENETRATION THROUGH MASONRY WALLS DETAIL
NTS

E	E
-	A-1



- NOTES:
- EXACT LOCATIONS OF JOINTS TO BE DETERMINED BY THE CONTRACTOR & APPROVED BY THE ENGINEER. SPACING OF JOINTS TO NOT EXCEED 24' MAX.
 - SMOOTH BARS ACROSS JOINT SHALL MATCH HORIZONTAL BAR SPACING. PREVENT BOND BETWEEN BAR AND GROUT ON ONE SIDE OF JOINT WITH GREASE FILLED PVC SLEEVE. CAP AND SIZE SLEEVES TO ALLOW ONE INCH OF MOVEMENT BEYOND END OF PANELS.
 - ROOF LEVEL CHORD REINF. SHALL BE CONTINUOUS THROUGH CONTROL JOINT.
 - CONTROL JOINTS SHALL NOT INTERSECT LINTELS.

CMU EXPANSION JOINT DETAIL
NTS

F	-
---	---



DESIGNED MGA
DRAFTED BKC
CHECKED MEA
DATE MARCH 2023

3
2
1

4/17/23

ADDENDUM 2

REVISIONS

JEJ DWJ

BY APVD.

SCALE



WEST JORDAN CITY WELL #8
STRUCTURAL
TYPICAL MASONRY DETAILS

SHEET
S-7
089.29.100

7/04
FILE NAME:
FILE DATE:

CONDUIT/CONDUCTOR SCHEDULE
THHN, THWN, THWN-2

AMP RATING	DRAWING ID TAG.	CONDUCTOR QTY.* SIZE	MIN. CONDUIT SIZE SIZE EXCEPTIONS
20	212	2	#12 3/4"
	312	3	
	412	4	
30	20	2	#10 3/4"
	30	3	
	40	4	
50	28	2	#8 3/4"
	38	3	
	48	4	
65	26	2	#6 3/4"
	36	3	
	46	4	
85	24	2	#4 3/4"
	34	3	
	44	4	
115	22	2	#2 1"
	32	3	
	42	4	
130	21	2	#1 1-1/4"
	31	3	
	41	4	
150	210	2	1/0 1-1/4"
	310	3	
	410	4	
175	220	2	2/0 1-1/2"
	320	3	
	420	4	
200	230	2	3/0 1-1/2"
	330	3	
	430	4	
230	240	2	4/0 1-1/2"
	340	3	
	440	4	
255	225	2	250 KCMIL 2"
	325	3	
	425	4	
310	235	2	350 KCMIL 2-1/2"
	335	3	
	435	4	
380	250	2	500 KCMIL 3"
	350	3	
	450	4	
475	275	2	750 KCMIL 3-1/2"
	375	3	
	475	4	

* CONDUCTOR QUANTITY DOES NOT INCLUDE GROUNDING CONDUCTORS. SEE EQUIPMENT GROUNDING CONDUCTORS FOR WIRE SIZES.

WHERE: C1 = ELECTRICAL METALLIC TUBING
C2 = ELECTRICAL NON-METALLIC TUBING
C3 = FLEXIBLE STEEL CONDUIT
C4 = INTERMEDIATE METALLIC CONDUIT
C7 = LIQUIDTIGHT FLEXIBLE METAL CONDUIT
C8 = RIGID METALLIC CONDUIT
C9 = PVC SCHEDULE 80 CONDUIT
C10 = PVC SCHEDULE 40 CONDUIT

GROUNDING ELECTRODE
CONDUCTOR SERVICE
ENTRANCE OR SEPARATELY
DERIVED SYSTEM

COPPER CONDUCTOR	WIRE SIZE
#2 OR SMALLER	#8
1 OR 1/0	#6
2/0 OR 3/0	#4
>3/0 THRU 350 KCMIL	#2
>350 KCMIL THRU 600 KCMIL	1/0



PROJECT ENGINEER

EQUIPMENT GROUNDING
CONDUCTORS

FUSE OR CB SIZE	SIZE (COPPER)
15	14
20	12
30	10
40	10
60	10
100	8
200	6
300	4
400	3
500	2
600	1
800	1/0
1000	2/0
1200	3/0
1600	4/0
2000	250
2500	350

WEST JORDAN WELL TAG LIST
H V A C E Q U I P M E N T

TAG	DESCRIPTION	LOCATION	SUPPLIED BY	INSTALLED BY
CU-1	CONDENSING UNIT 1	OUTSIDE	CONTRACTOR	CONTRACTOR
CU-2	CONDENSING UNIT 2	OUTSIDE	CONTRACTOR	CONTRACTOR
EF-1	EXHAUST FAN	CHLORINE ROOM	CONTRACTOR	CONTRACTOR
FC-1	FAN COIL 1	WELL ROOM	CONTRACTOR	CONTRACTOR
FC-2	FAN COIL 2	WELL ROOM	CONTRACTOR	CONTRACTOR
IA-1	EXHAUST FAN INTAKE LOUVER ACTUATOR	CHLORINE ROOM	CONTRACTOR	CONTRACTOR
IA-2	EXHAUST FAN LOUVER ACTUATOR	CHLORINE ROOM	CONTRACTOR	CONTRACTOR
UH-1	UNIT HEATER	WELL ROOM	CONTRACTOR	CONTRACTOR
UH-2	UNIT HEATER	CHLORINE ROOM	CONTRACTOR	CONTRACTOR

P U M P A N D E Q U I P M E N T

TAG	DESCRIPTION	LOCATION	SUPPLIED BY	INSTALLED BY
ATS	AUTOMATIC TRANSFER SWITCH	WELL ROOM	CONTRACTOR	CONTRACTOR
CP-1	MAIN CONTROL PANEL	WELL ROOM	CONTRACTOR	CONTRACTOR
CP-2	EXHAUST FAN CONTROL PANEL	WELL ROOM	CONTRACTOR	CONTRACTOR
CTE	CURRENT TRANSFORMER ENCLOSURE	OUTSIDE	CONTRACTOR	CONTRACTOR
GA-1	GATE ACTUATOR	OUTSIDE	CONTRACTOR	CONTRACTOR
GEN	BACKUP POWER GENERATOR	OUTSIDE	CONTRACTOR	CONTRACTOR
MSD	MAIN SERVICE DISCONNECT	OUTSIDE	CONTRACTOR	CONTRACTOR
P-1	WELL PUMP	WELL ROOM	CONTRACTOR	CONTRACTOR
TC-1	TABLET CHLORINATOR	CHLORINE ROOM	CONTRACTOR	CONTRACTOR
RTU	REMOTE TELEMETRY UNIT	WELL ROOM	OWNER	CONTRACTOR
VFD	WELL VARIABLE FREQUENCY DRIVE	WELL ROOM	CONTRACTOR	CONTRACTOR

S W I T C H E S

TAG	DESCRIPTION	LOCATION	SUPPLIED BY	INSTALLED BY
LSH-1	PUMP ROOM FLOOR HIGH WATER SWITCH	WELL ROOM	CONTRACTOR	CONTRACTOR
PSH-1	WELL PUMP DISCHARGE PRESSURE SWITCH	WELL ROOM	CONTRACTOR	CONTRACTOR
ZS-1	MAN-DOOR POSITION SWITCH	WELL ROOM	CONTRACTOR	CONTRACTOR
ZS-2A	SERVICE DOOR POSITION SWITCH	WELL ROOM	CONTRACTOR	CONTRACTOR
ZS-2B	SERVICE DOOR POSITION SWITCH	WELL ROOM	CONTRACTOR	CONTRACTOR
ZS-3	WELL ROOF HATCH POSITION SWITCH	WELL ROOM	CONTRACTOR	CONTRACTOR
ZS-4	MAN-DOOR POSITION SWITCH	CHLORINE ROOM	CONTRACTOR	CONTRACTOR
ZS-5B	WV-1 IN FULL WASTE POSITION	WELL ROOM	CONTRACTOR	CONTRACTOR
ZS-5A	WV-1 IN FULL SYSTEM POSITION	WELL ROOM	CONTRACTOR	CONTRACTOR
VS-1	MOTOR VIBRATION SWITCH	WELL ROOM	CONTRACTOR	CONTRACTOR

I N S T R U M E N T S

TAG	DESCRIPTION	LOCATION	SUPPLIED BY	INSTALLED BY
AE-3	CHLORINE ANALYZER	CHLORINE ROOM	CONTRACTOR	CONTRACTOR
AE-2	TURBIDITY ANALYZER	WELL ROOM	CONTRACTOR	CONTRACTOR
AIT-3	CHLORINE INDICATOR/TRANSMITTER	WELL ROOM	CONTRACTOR	CONTRACTOR
AIT-2	TURBIDITY INDICATOR/TRANSMITTER	WELL ROOM	CONTRACTOR	CONTRACTOR
FE-1	WELL DISCHARGE FLOW ELEMENT	WELL ROOM	CONTRACTOR	CONTRACTOR
FIT-1	WELL DISCHARGE FLOW INDICATOR/TRANSMITTER	WELL ROOM	CONTRACTOR	CONTRACTOR
LT-1	WELL LEVEL TRANSMITTER	WELL ROOM	CONTRACTOR	CONTRACTOR
PT-1	STATION DISCHARGE PRESSURE TRANSMITTER	WELL ROOM	CONTRACTOR	CONTRACTOR
PT-2	WELL DISCHARGE PRESSURE TRANSMITTER	WELL ROOM	CONTRACTOR	CONTRACTOR
TT-1	ROOM TEMPERATURE TRANSMITTER	WELL ROOM	CONTRACTOR	CONTRACTOR
TT-2	ROOM TEMPERATURE TRANSMITTER	CHLORINE ROOM	CONTRACTOR	CONTRACTOR

V A L V E S

TAG	DESCRIPTION	LOCATION	SUPPLIED BY	INSTALLED BY
V-1	WASTE VALVE	WELL ROOM	CONTRACTOR	CONTRACTOR
SV-1	WELL PRE-LUBE SOLENOID VALVE	WELL ROOM	CONTRACTOR	CONTRACTOR
SV-2	TURBIDITY ANALYZER VALVE	WELL ROOM	CONTRACTOR	CONTRACTOR
SV-3	CHLORINE ANALYZER VALVE	WELL ROOM	CONTRACTOR	CONTRACTOR
V-2	SYSTEM VALVE	WELL ROOM	CONTRACTOR	CONTRACTOR

GENERAL NOTES:

1. NOT USED.

SHEET KEYNOTES:

1. NOT USED.



DESIGNED KBH 3
DRAFTED DAS 2
CHECKED KBH 1
DATE AUGUST 2020 NO.

4/20/23

ADDENDUM #2

REVISIONS

SCALE

NONE

KBH KBH
BY APVD.



WEST JORDAN CITY WELL #8
ELECTRICAL
TABLES AND TAG LIST

SHEET

E002

089.29.100

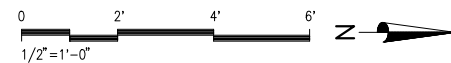
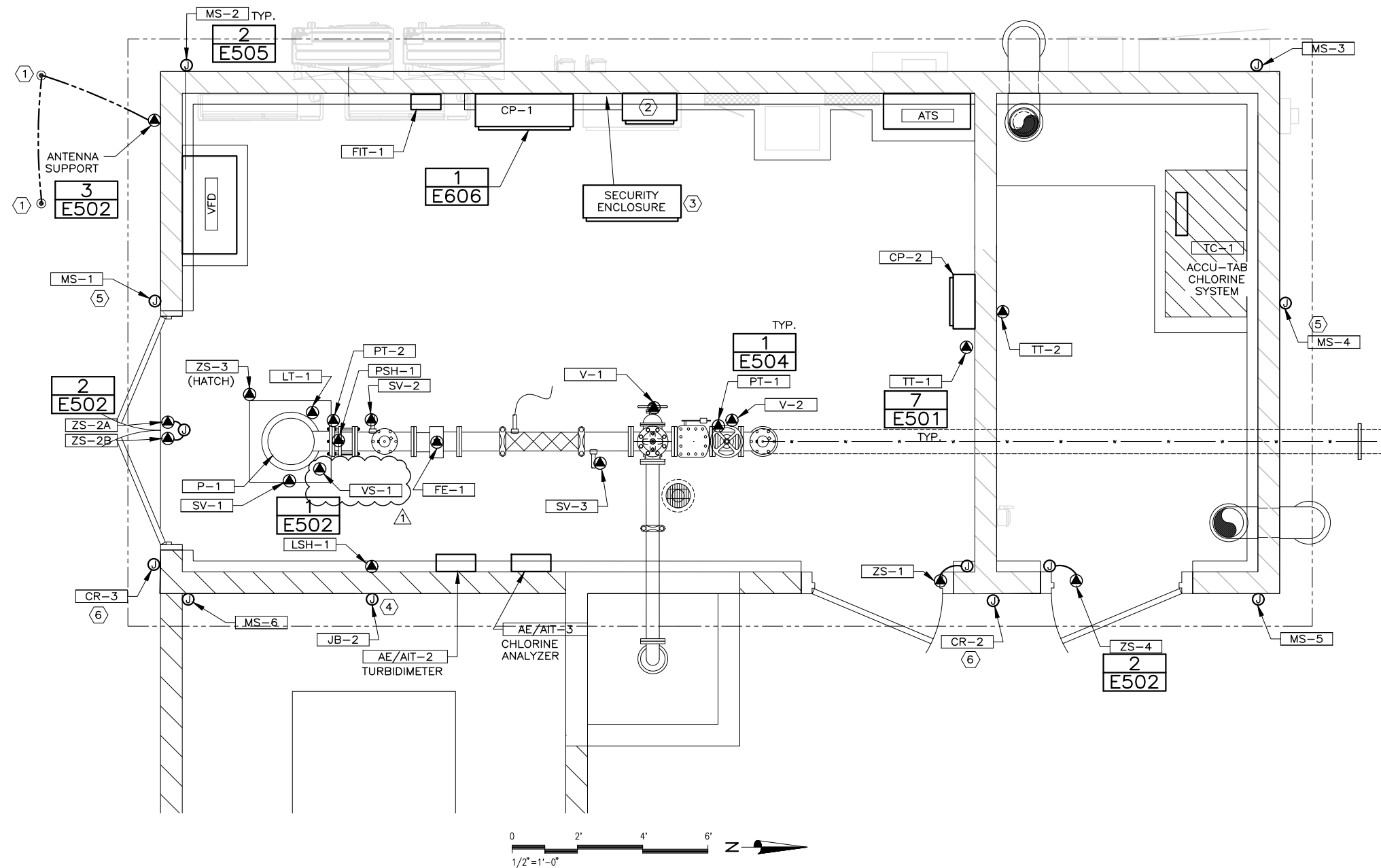
SHEET
E101
089.29.100

GENERAL NOTES:

1. VERIFY LOCATIONS OF ALL DEVICES PRIOR TO CONDUIT ROUGH-IN.
2. FOR WIRE AND CONDUIT REQUIREMENTS, REFER TO INSTRUMENTATION AND CONTROL ONE-LINE DIAGRAM ON E602.

SHEET KEYNOTES:

1. GROUND ANTENNA SUPPORT WITH AWG NO 6 BC. INSTALL TWO 3/4"x10' GROUND RODS APPROXIMATELY 10' APART.
2. SUPPLY AND INSTALL A 20"W x 24"H x 10"D RTU RADIO ENCLOSURE WITH A SUB PANEL. PROVIDE PANEL TO SCADA CONTRACTOR FOR ASSEMBLY OF THE RTU. RTU COMPONENTS PROVIDED AND INSTALLED BY APCO.
3. SECURITY ENCLOSURE INSTALLED BELOW RTU ENCLOSURE.
4. FOR A FUTURE CAMERA, INSTALL A RECESSED CCTV J-BOX IN THE BUILDING WALL 6-IN BELOW SOFFIT CENTERED ABOVE THE GENERATOR.
5. INSTALL BUILDING END J-BOXES AT SAME HEIGHT AS THE SIDE J-BOXES.
6. RECESS 2X4 ELECTRICAL BOX IN MASONRY FOR CARD READER. VERIFY HEIGHT AND LOCATION WITH OWNER DURING CONSTRUCTION.



HANSEN
ALLER
& LUCE
ENGINEERS

PROJECT ENGINEER

DESIGNED	KBH	3
DRAFTED	DAS	2
CHECKED	KBH	1
DATE	AUGUST 2020	NO.

NO.	DATE
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4/20/23	ADDENDUM #2
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REVISIONS

REVISIONS

BY	APVD.
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SCALE	AS SHOWN
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WEST JORDAN
UTAH

WEST JORDAN CITY WELL #8
ELECTRICAL
PUMP HOUSE INSTR. & CONTROL PLAN

SHEET	E103
089.29.100	

GENERAL NOTES:

1. LOCATIONS OF INSTRUMENTS AND DEVICE SHOWN ON THE INSTRUMENTATION AND CONTROL PLAN. SEE E103.

SHEET KEYNOTES:

1. INSTALL SUPPLIED DATA AND SIGNAL WIRE IN CONDUIT AS REQUIRED BY THE METER MANUFACTURER. DO NOT COMBINE SIGNAL AND DATA CONDUCTORS IN THE SAME CONDUIT.
2. INSTALL A 4"x4" ELECTRICAL BOX IN THE CHLORINE ROOM. PROVIDE A THREE-WAY SWITCH FOR THE BUILDING LIGHTS AND A TOGGLE SWITCH FOR THE EXHAUST FAN.
3. SHOWN FOR PRE-LUBE SOLENOID VALVE SV-1. DUPLICATE FOR TURBIDITY ANALYZER VALVE SV-2 AND CHLORINE ANALYZER VALVE SV-3.
4. SHOWN FOR TURBIDITY ANALYZER AIT-1. DUPLICATE FOR RESIDUAL CHLORINE ANALYZER AIT-2
5. SHOWN FOR WELL ROOM TEMPERATURE TRANSMITTER TT-2. DUPLICATE FOR CHLORINE ROOM TEMPERATURE TRANSMITTER TT-2.
6. CABLE SUPPLIED BY PROBE MANUFACTURER.

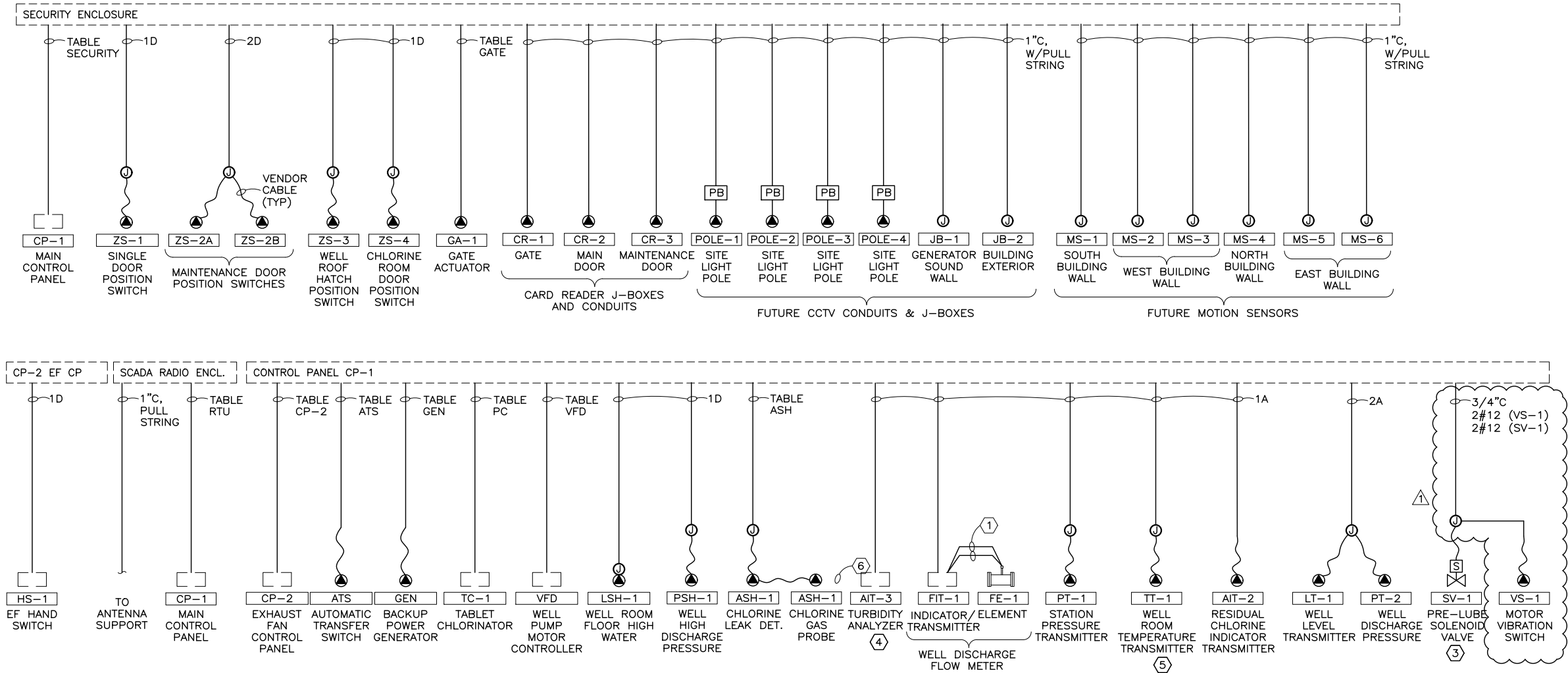


TABLE VFD

CONDUIT SIZE	CONDUCTOR		CP-1 TO VFD SIGNAL DESCRIPTION
	QTY	SIZE	
1"	1	#14	COMMON INPUT
	1	#14	COMMON OUTPUT
	1	#14	120 VAC FUSED COMMON
	1	#14	120 VAC NEUTRAL
	1	#14	BACKSPIN TIME DELAY
	1	#14	SHUTDOWN RESET
	1	#14	VFD CALL RUN
	3	#14	VFD CP-1 START LIGHT
	2	#14	VFD CP-1 START PUSHBUTTON
	1	#14	VFD FAULT
	1	#14	VFD FILTER HIGH TEMP.
	1	#14	VFD HIGH PRESSURE SHUTDOWN
	1	#14	VFD HS IN AUTO MODE
	1	#14	VFD HS IN HAND MODE
	1	#14	VFD LOW LEVEL SHUTDOWN
1"	1	#14	VFD ON
	1	#14	VFD READY TO START
	1	#14	WASTE VALVE HS IN AUTO POS.
	1	#14	WASTE VALVE HS IN WASTE POS.
1"	1	CAT 6U	VFD ETHERNET
	1	CAT 6U	MOTOR RTD TEMPERATURES
	1	CAT 6U	POWER MONITOR
3/4"	1	#18TSP	VFD COMMAND SPEED
	1	#18TSP	VFD RUNNING SPEED
3/4"	-	P. STRING	SPARE CONDUIT

TABLE GATE

CONDUIT SIZE	CONDUCTOR		CP-1 TO GATE ACTUATOR SIGNAL DESCRIPTION
	QTY	SIZE	
1"	1	#14	COMMON INPUT
	1	#14	COMMON OUTPUT
	1	#14	CLOSE COMMAND
	1	#14	GATE OPEN STATUS
	1	#14	GATE CLOSED STATUS
	1	#14	OPEN COMMAND

TABLE CP-2

CONDUIT SIZE	CONDUCTOR		CP-1 TO CP-2 SIGNAL DESCRIPTION
	QTY	SIZE	
3/4"	1	#14	COMMON OUTPUT
	1	#14	COMMON INPUT
	1	#14	EXHAUST FAN ON
	1	#14	EXHAUST FAN RUN

TABLE RTU

CONDUIT SIZE	CONDUCTOR		CP-1 TO RTU
	QTY	SIZE	
3/4"	1	CAT 6U	ETHERNET

TABLE ASH

CONDUIT SIZE	CONDUCTOR		CP-1 TO ASH-1 SIGNAL DESCRIPTION
	QTY	SIZE	
3/4"	1	#14	COMMON OUTPUT
	1	#14	COMMON INPUT
	1	#14	CHLORINE LEAK ALARM
	1	#14	CHLORINE ALARM RESET

TABLE VA

CONDUIT SIZE	CONDUCTOR		CP-1 TO WASTE VALVE SIGNAL DESCRIPTION
	QTY	SIZE	
3/4"	1	#14	COMMON INPUT
	1	#14	COMMON OUTPUT
	3	#14	VALVE FULL CLOSED/NOT FULL CLOSED
	1	#14	VALVE FULL OPEN/NOT FULL OPEN
	1	#14	VALVE CLOSE COMMAND
	1	#14	VALVE OPEN COMMAND

NOT ALL POSITION CONTACTS MAY BE USED IN CP-1

TABLE GEN

CONDUIT SIZE	CONDUCTOR		CP-1 TO GENERATOR SIGNAL DESCRIPTION
	QTY	SIZE	
3/4"	1	#14	COMMON INPUT
	1	#14	GENERATOR RUNNING
	1	#14	GENERATOR FAULT

I&C WIRE/CONDUIT TABLE

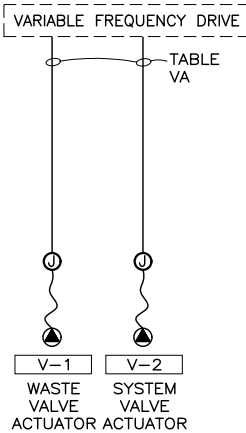
IDENT.	CONDUIT SIZE	CONDUCTOR QTY	CONDUCTOR SIZE	SIGNAL DESCRIPTION
1A	3/4"	1	#18TSP	1 ANALOG SIGNAL
2A	3/4"	2	#18TSP	2 ANALOG SIGNALS
3A	3/4"	3	#18TSP	3 ANALOG SIGNALS
IDENT.	CONDUIT SIZE	CONDUCTOR QTY	CONDUCTOR SIZE	SIGNAL DESCRIPTION
1D	3/4"	2	#14	1 SIGNAL
2D	3/4"	3	#14	1 COMMON, 2 DISCRETE SIG.
3D	3/4"	4	#14	VARIES
4D	3/4"	5	#14	VARIES

TABLE TC

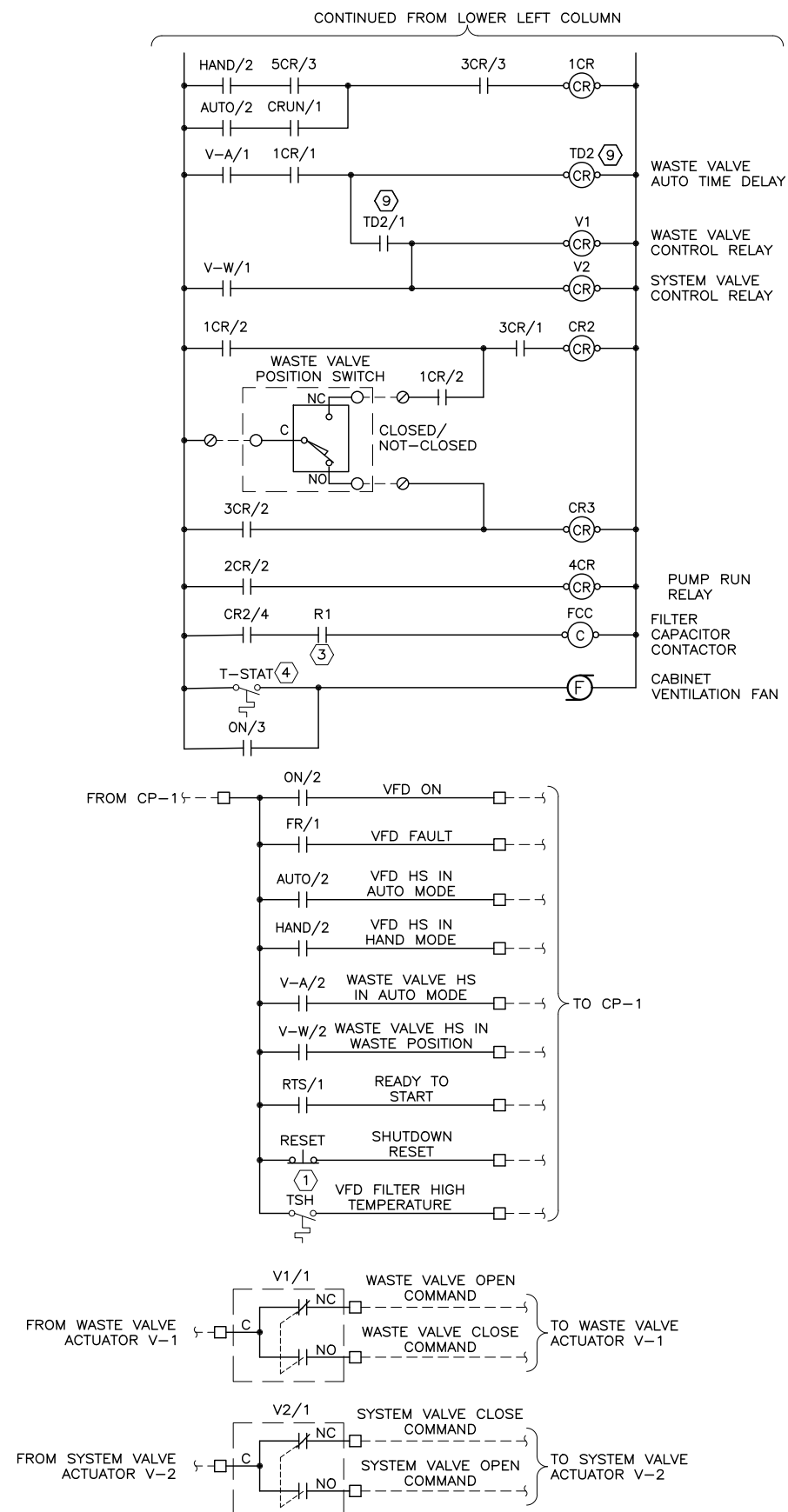
CONDUIT SIZE	CONDUCTOR		CP-1 TO TABLET CHLORINATOR SIGNAL DESCRIPTION
	QTY	SIZE	
3/4"	1	#14	COMMON INPUT
	1	#14	COMMON OUTPUT
	1	#14	CHLORINATOR REMOTE RUN
	1	#14	PUMP RUNNING
	1	#14	SOLUTION TANK HIGH LEVEL
	1	#14	SOLUTION TANK LOW LEVEL
3/4"	1	#14	SPARE
	1	#14	WEIGHT SCALE ALARM
3/4"	1	#18TSP	WELL FLOW

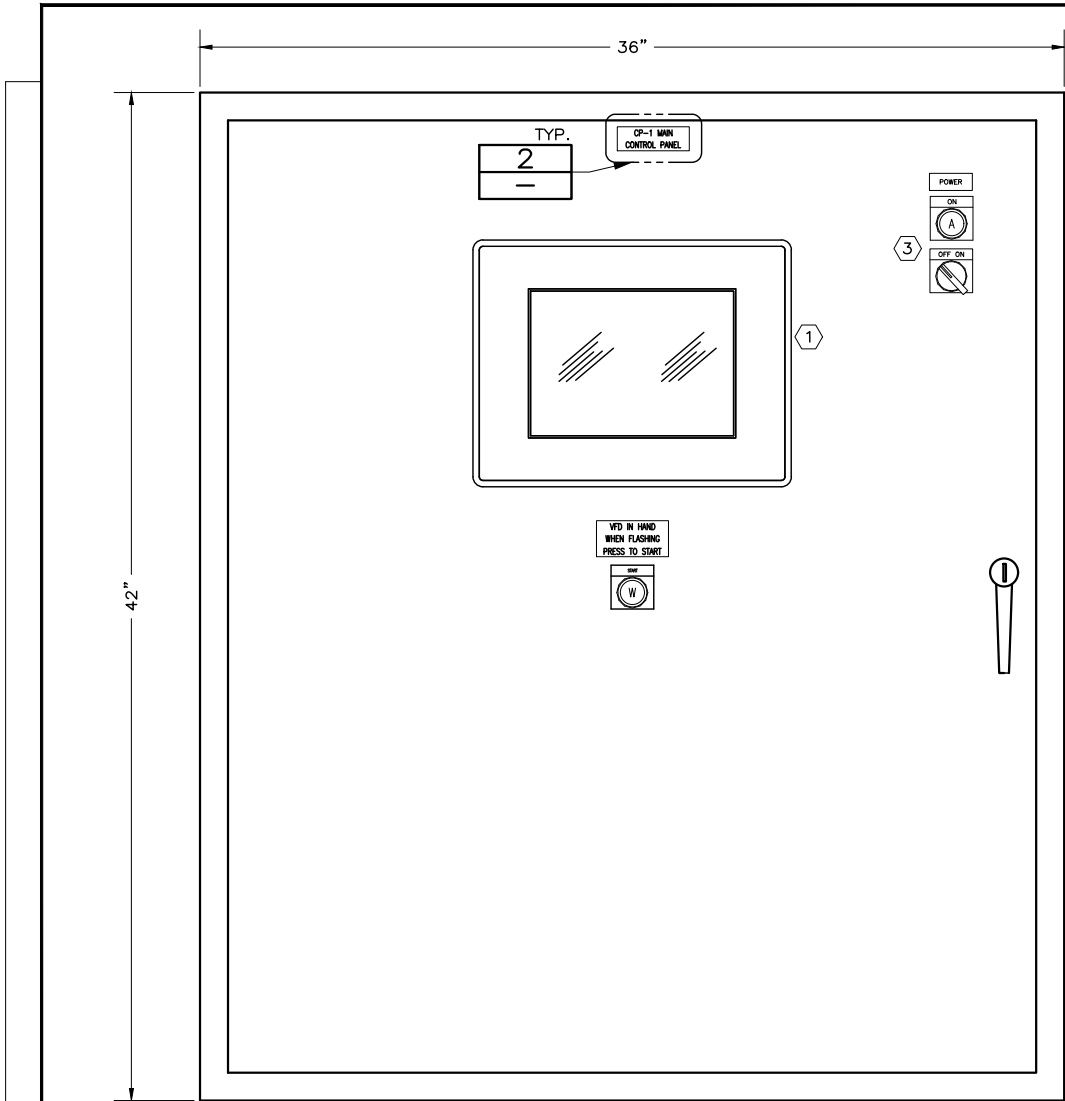
TABLE SECURITY

CONDUIT SIZE	CONDUCTOR		CP-1 TO SECURITY ENCLOSURE SIGNAL DESCRIPTION
	QTY	SIZE	
1-1/2"	1	#14	COMMON INPUT
	1	#14	COMMON OUTPUT
	1	#14	CHLORINE ROOM DOOR POS.
	1	#14	CLOSE COMMAND
	1	#14	GATE CLOSED STATUS
	1	#14	GATE OPEN STATUS
	1	#14	OPEN COMMAND
	1	#14	SITE MOTION SENSOR ALARM
	2	#14	WELL ROOM MAINT. DOOR POS.
	1	#14	WELL ROOM MAN DOOR POS.
	1	#14	WELL ROOM ROOF HATCH POS.
1"	-	-	FUTURE ETHERNET

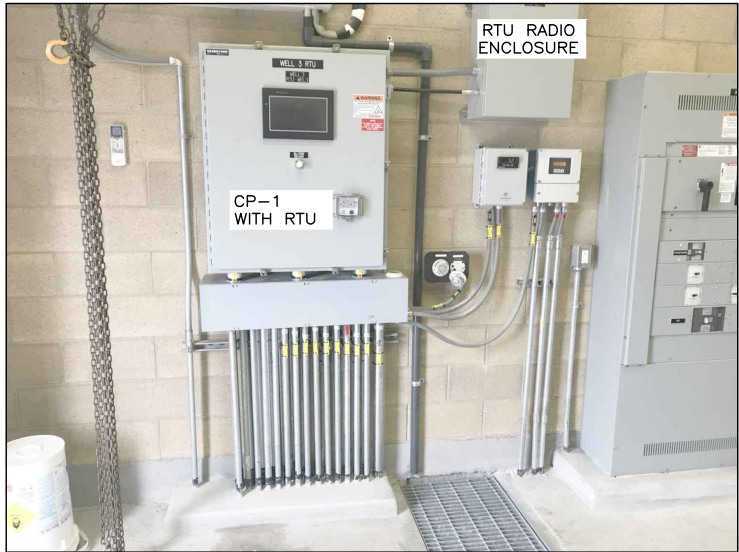


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|-------------------------|------------|
| CONTROL DIAGRAM, SHT. 2 | 089.29.100 |
|-------------------------|------------|

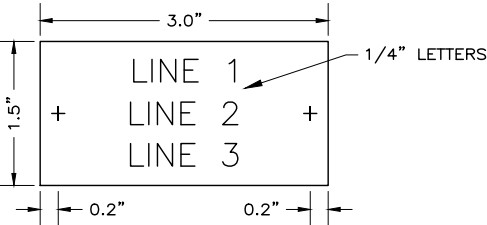
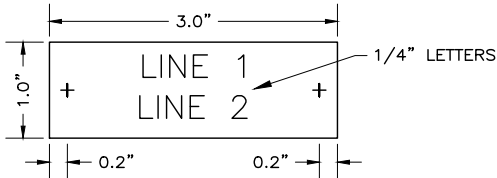
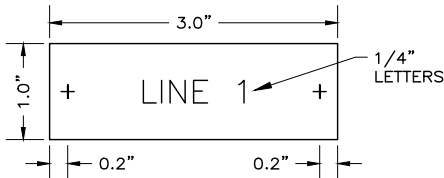
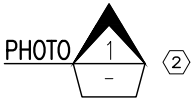




CONTROL PANEL CP-1 WITH RTU 1
3" = 1'-0" E103



(TYPICAL CONTROL PANEL)



NAMEPLATE DETAIL 2
1' = 1'-0" -

SCADA COORDINATION		
SCADA CONTRACTOR: APCO, INC.		
CONTACT INFORMATION: (801) 519-9500		
RTU ENCLOSURE	SUPPLIED BY:	INSTALLED BY:
ENCLOSURE	CONTRACTOR	CONTRACTOR
INTERNAL PANEL	CONTRACTOR	CONTRACTOR
INTERNAL COMPONENTS	SCADA CONTR.	SCADA CONTR.
INTERNAL COMPONENT WIRING	SCADA CONTR.	SCADA CONTR.
WIRING TO/FROM RTU ENCLOSURE	SUPPLIED BY:	INSTALLED BY:
POWER SOURCE	CONTRACTOR	CONTRACTOR
FIELD I/O TO ENCLOSURE TERMINALS	CONTRACTOR	CONTRACTOR
FIELD DEVICE TERMINATIONS	CONTRACTOR	CONTRACTOR
RTU COMPONENT	SUPPLIED BY:	INSTALLED BY:
PROGRAMMABLE LOGIC CONTROLLER	SCADA CONTR.	SCADA CONTR.
SEPARATE RTU CONTROLLER	-	-
INTERNAL WIRING INSIDE RTU	SUPPLIED BY:	INSTALLED BY:
FIELD DEVICE WIRING TERMINATION	-	SCADA CONTR.
RTU SIGNAL	SUPPLIED BY:	INSTALLED BY:
1" CONDUIT FOR SCADA RADIO	CONTRACTOR	CONTRACTOR
DATA RADIO COAXIAL CABLE	SCADA CONTR.	SCADA CONTR.
ANTENNA SUPPORT (SEE PLANS)	CONTRACTOR	CONTRACTOR
DATA RADIO ANTENNA	SCADA CONTR.	SCADA CONTR.

CP-1 MAIN CONTROL PANEL I/O LIST

DISCRETE INPUTS

DESCRIPTION	FROM	TO	NOTES
ATS IN GENERATOR POSITION	ATS	CP-1	
ATS IN UTILITY POSITION	ATS	CP-1	
CHLORINE PUMP ON	PC-1	CP-1	
CHLORINE RM. EF RUNNING	CP-2	CP-1	
CHLORINE ROOM DOOR OPEN	SEC. PNL.	CP-1	
CHLORINE SOLUTION TANK HIGH LEVEL	PC-1	CP-1	
CHLORINE SOLUTION TANK LOW LEVEL	PC-1	CP-1	
CHLORINE SYSTEM FLOW	PC-1	CP-1	
CHLORINE WEIGHT SCALE ALARM	PC-1	CP-1	
CP-1 POWER LOSS	CP-1	CP-1	
GATE CLOSED STATUS	SEC. PNL.	CP-1	
GATE OPEN STATUS	SEC. PNL.	CP-1	
GENERATOR FAULT	GEN	CP-1	
GENERATOR ON	GEN	CP-1	
TABLET CHLORINATOR ALARM	TC-1	CP-1	
TABLET CHLORINATOR ON	TC-1	CP-1	
SYSTEM VALVE FULL CLOSED POSITION	V-2	CP-1	
SYSTEM VALVE FULL SYSTEM POSITION	V-2	CP-1	
VFD ALARM RESET	VFD	CP-1	
VFD FAULT	VFD	CP-1	
VFD FILTER HIGH TEMPERATURE	VFD	CP-1	
VFD HOA IN AUTO MODE	VFD	CP-1	
VFD HOA IN HAND MODE	VFD	CP-1	
VFD ON	VFD	CP-1	
VFD READY-TO-START	VFD	CP-1	
VFD SHUTDOWN RESET	VFD	CP-1	
WASTE VALVE FULL CLOSED POSITION	V-1	CP-1	
WASTE VALVE FULL WASTE POSITION	V-1	CP-1	
WELL HIGH DISCHARGE PRESSURE	PSH-1	CP-1	
WELL ROOM FLOOR HIGH WATER	LSH-3	CP-1	
WELL ROOM MAINTENANCE DOOR A OPEN	SEC. PNL.	CP-1	
WELL ROOM MAINTENANCE DOOR B OPEN	SEC. PNL.	CP-1	
WELL ROOM MAN DOOR OPEN	SEC. PNL.	CP-1	
WELL ROOM ROOF HATCH OPEN	SEC. PNL.	CP-1	
WELL STOP	RTU	CP-1	
MOTOR HIGH VIBRATION	VS-1	CP-1	

NOTES:

1)

DISCRETE OUTPUTS

DESCRIPTION	FROM	TO	NOTES
CHLORINE RM EXHAUST FAN RUN	CP-1	CP-2	
CHLORINE SOLENOID VALVE OPEN	CP-1	SV-3	
GATE CLOSE COMMAND	CP-1	SEC. PNL.	
GATE OPEN COMMAND	CP-1	SEC. PNL.	
PRE-LUBE SOLENOID VALVE OPEN	CP-1	SV-1	
SYSTEM VALVE OPEN COMMAND	CP-1	V-2	
TABLET CHLORINATOR REMOTE RUN	CP-1	TC-1	
TURBIDITY SOLENOID VALVE OPEN	CP-1	SV-2	
VFD BACKSPIN TIME DELAY	CP-1	VFD	
VFD HP SHUTDOWN & INDICATION LIGHT	CP-1	VFD	
VFD LOW LEVEL SHDN & INDICATION LIGHT	CP-1	VFD	
VFD RUN	CP-1	VFD	
VFD SHUTDOWN	CP-1	VFD	
WASTE VALVE CLOSE COMMAND	CP-1	V-1	
HIGH VIBRATION SHUTDOWN	CP-1	VFD	

NOTES: 1)

ANALOG INPUTS

DESCRIPTION	FROM	TO	NOTES
CHLORINE ROOM TEMPERATURE	TT-2	CP-1	1)
RESIDUAL CHLORINE	AIT-3	CP-1	1)
STATION DISCHARGE PRESSURE	PT-1	CP-1	1)
VFD RUNNING SPEED	VFD	CP-1	1)
WELL DISCHARGE FLOW	FIT-1	CP-1	1)
WELL LEVEL	LT-1	CP-1	1)
WELL DISCHARGE PRESSURE	PT-2	CP-1	1)
WELL ROOM TEMPERATURE	TT-1	CP-1	1)
WELL TURBIDITY	AIT-2	CP-1	1)

NOTES:

1) SIGNAL SHALL BE REPEATED AS PLC ANALOG OUTPUT TO RTU.

ANALOG OUTPUTS

DESCRIPTION	FROM	TO	NOTES
CHLORINE DOSE RATE (WELL FLOW)	CP-1	TC-1	
VFD COMMAND SPEED	CP-1	VFD	

NOTES: 1)

GENERAL NOTES:

- INTERNAL COMPONENTS AND ARRANGEMENT NOT SHOWN ON THESE DRAWINGS AND SHALL BE PROVIDED BY APCO, THE CITY'S SCADA CONTRACTOR. APCO SHALL PROVIDE ALL INTERNAL COMPONENTS AND ALL PLC AND HMI PROGRAMMING.

SHEET KEYNOTES:

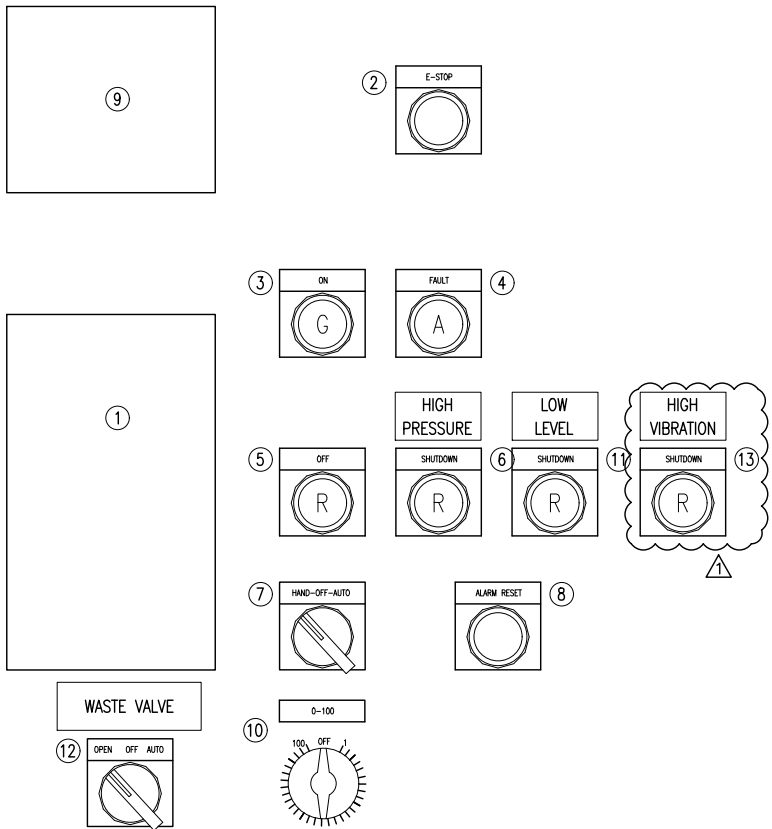
- 10" OPERATOR TOUCH SCREEN SHOWN. PROVIDED AND INSTALLED BY SCADA CONTRACTOR.
- TYPICAL MAIN CONTROL PANEL SHOWN. MODIFY AS REQUIRED BY OWNER.
- CONTROL POWER INDICATION AND OFF/ON SELECTOR SWITCH.

GENERAL NOTES:

- ENCLOSURE DIMENSIONS SHOWN ARE TYPICAL AND SHALL BE MODIFIED BY THE CONTRACTOR AS REQUIRED FOR THE DEVICES USED.
- WIRING DIAGRAM IN TYPICAL. MODIFY AS REQUIRED.

SHEET KEYNOTES:

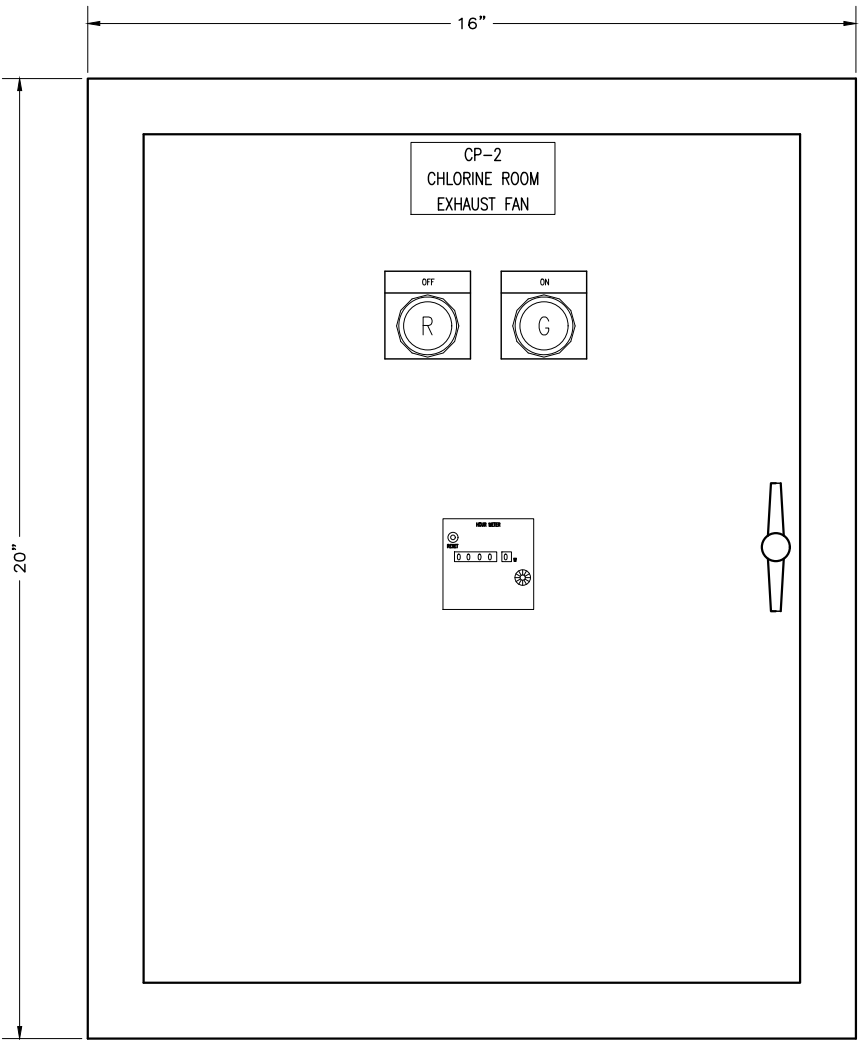
- OFF-ON TOGGLE SWITCH ADJACENT TO ROOM LIGHT SWITCH.
- INSTALL DEVICE IN ENCLOSURE DOOR AND AVAILABLE TO THE OPERATOR.



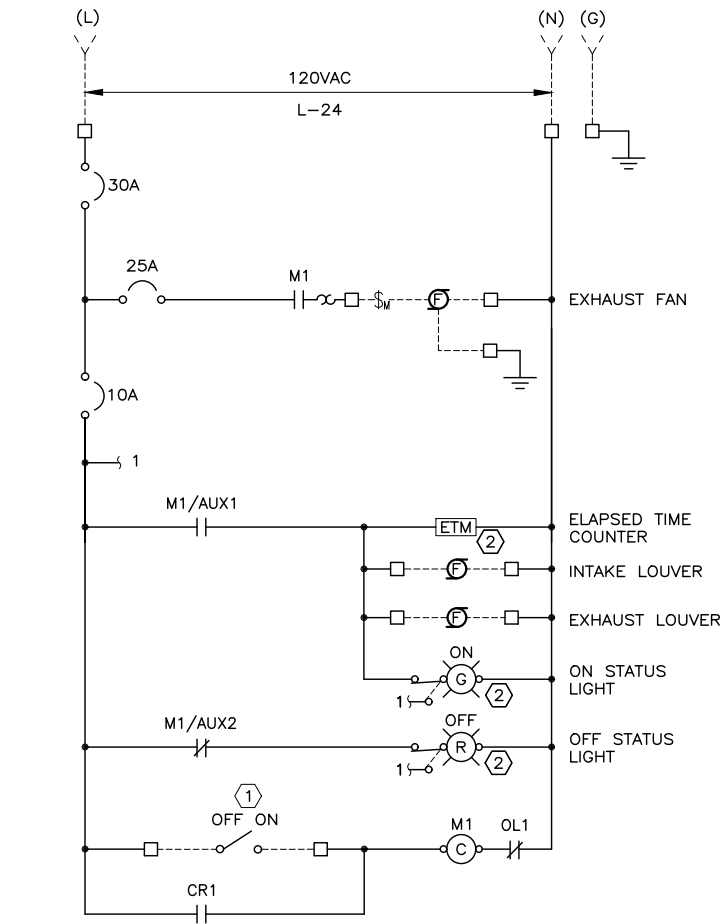
VFD CONTROL LEGEND

- 1 VFD MEMBRAN KEYPAD
- 2 VFD E-STOP MUSHROOM HEAD LATCHING PUSHBUTTON
- 3 VFD STATUS INDICATION LIGHT
- 4 VFD FAULT INDICATION LIGHT
- 5 VFD OFF INDICATION LIGHT
- 6 HIGH DISCHARGE PRESSURE SHUTDOWN INDICATION LIGHT
- 7 HAND-OFF-AUTO SELECTOR SWITCH
- 8 ALARM RESET PUSHBUTTON
- 9 POWER AND ENERGY METER (COMPTON INTEGRA 1530)
- 10 VFD SPEED POTENTIOMETER
- 11 LOW LEVEL SHUTDOWN INDICATION LIGHT
- 12 WASTE VALVE POSITION SWITCH
- 13 HIGH VIBRATION SHUTDOWN INDICATION LIGHT

TYPICAL VFD CONTROLS ARRANGEMENT



CP-2 EXHAUST FAN CONTROL PANEL 1
6" = 1'-0" E102



CP-2 CONTROL DIAGRAM