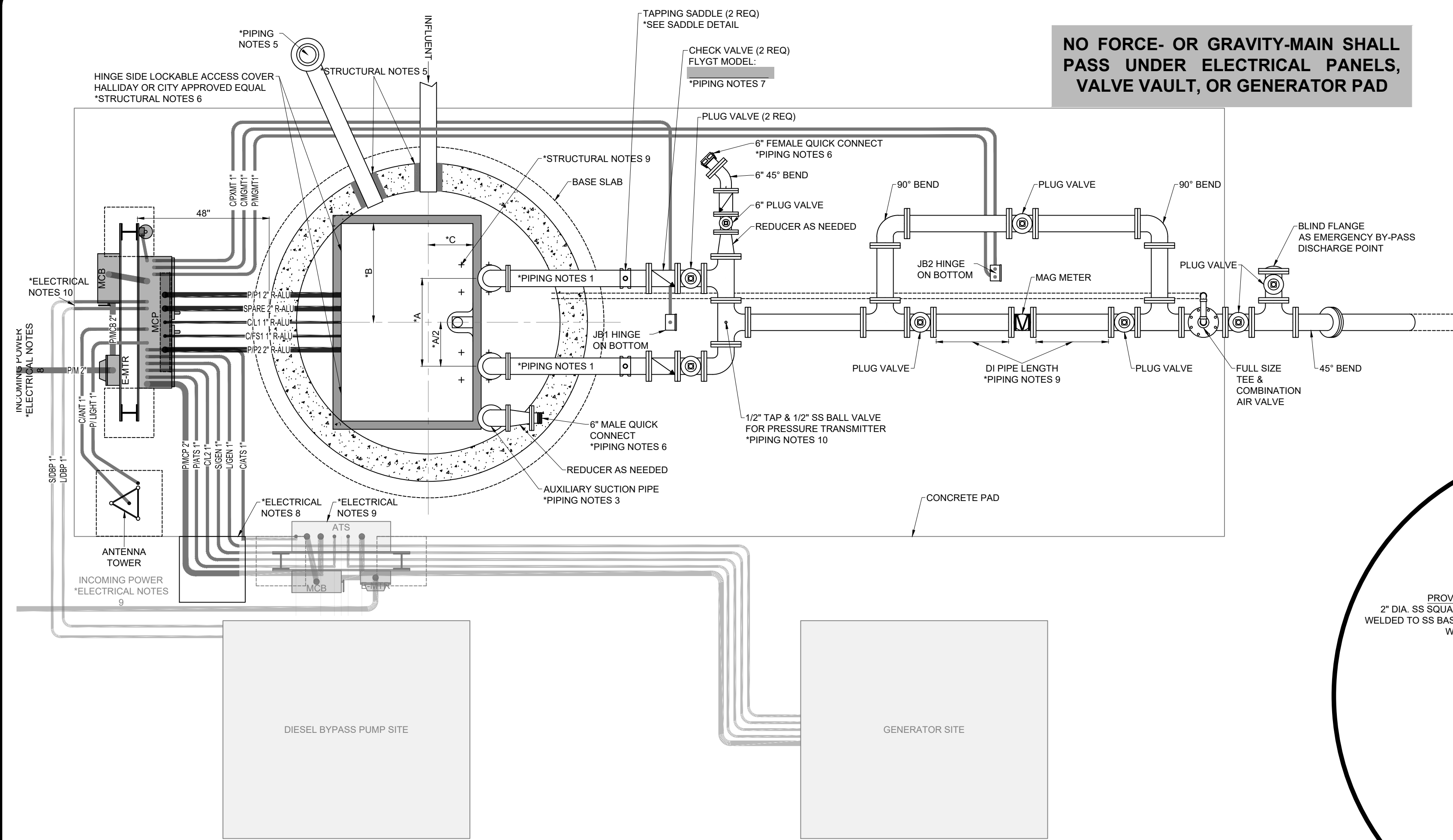


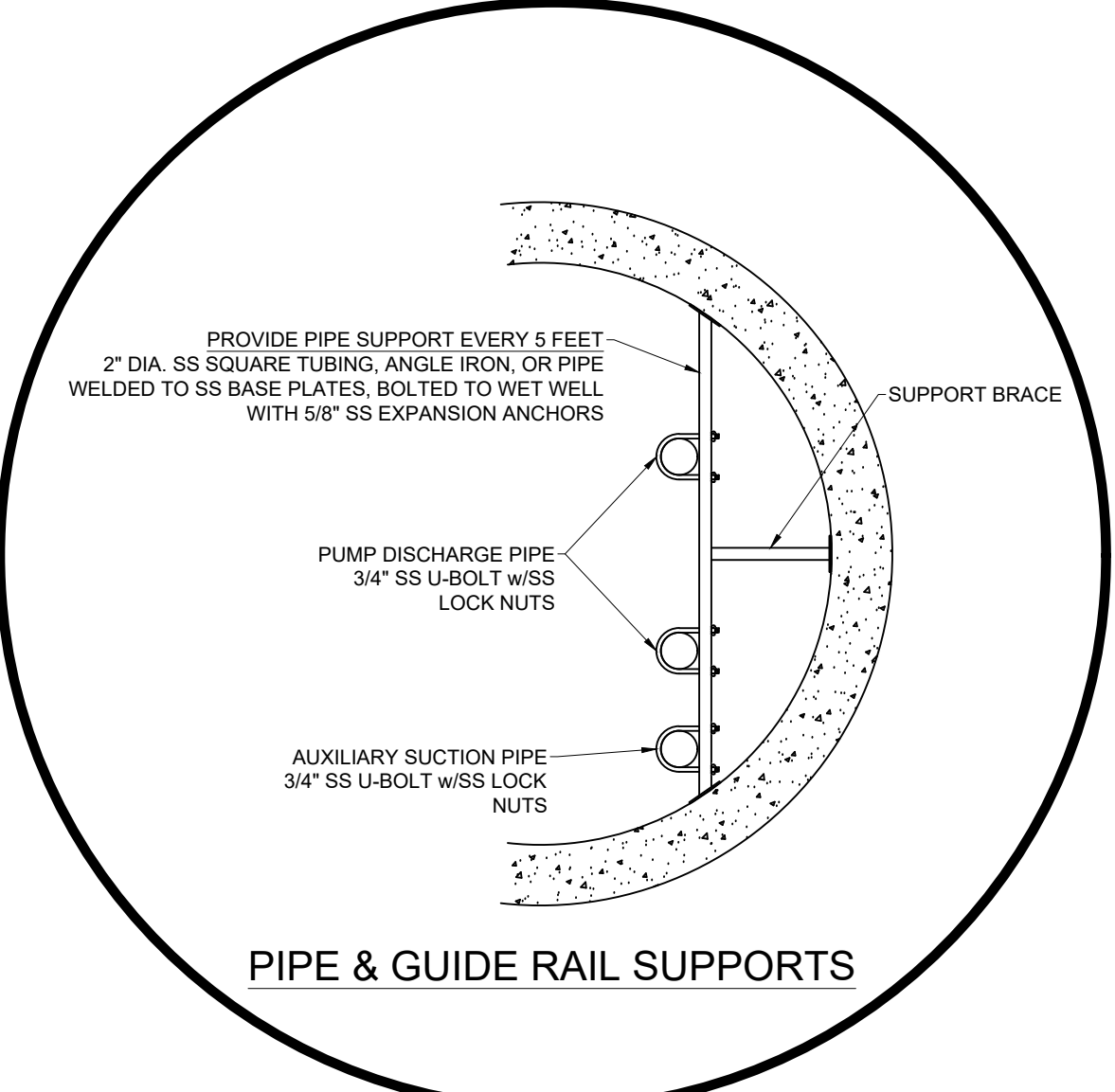


NO FORCE- OR GRAVITY-MAIN SHALL PASS UNDER ELECTRICAL PANELS, VALVE VAULT, OR GENERATOR PAD



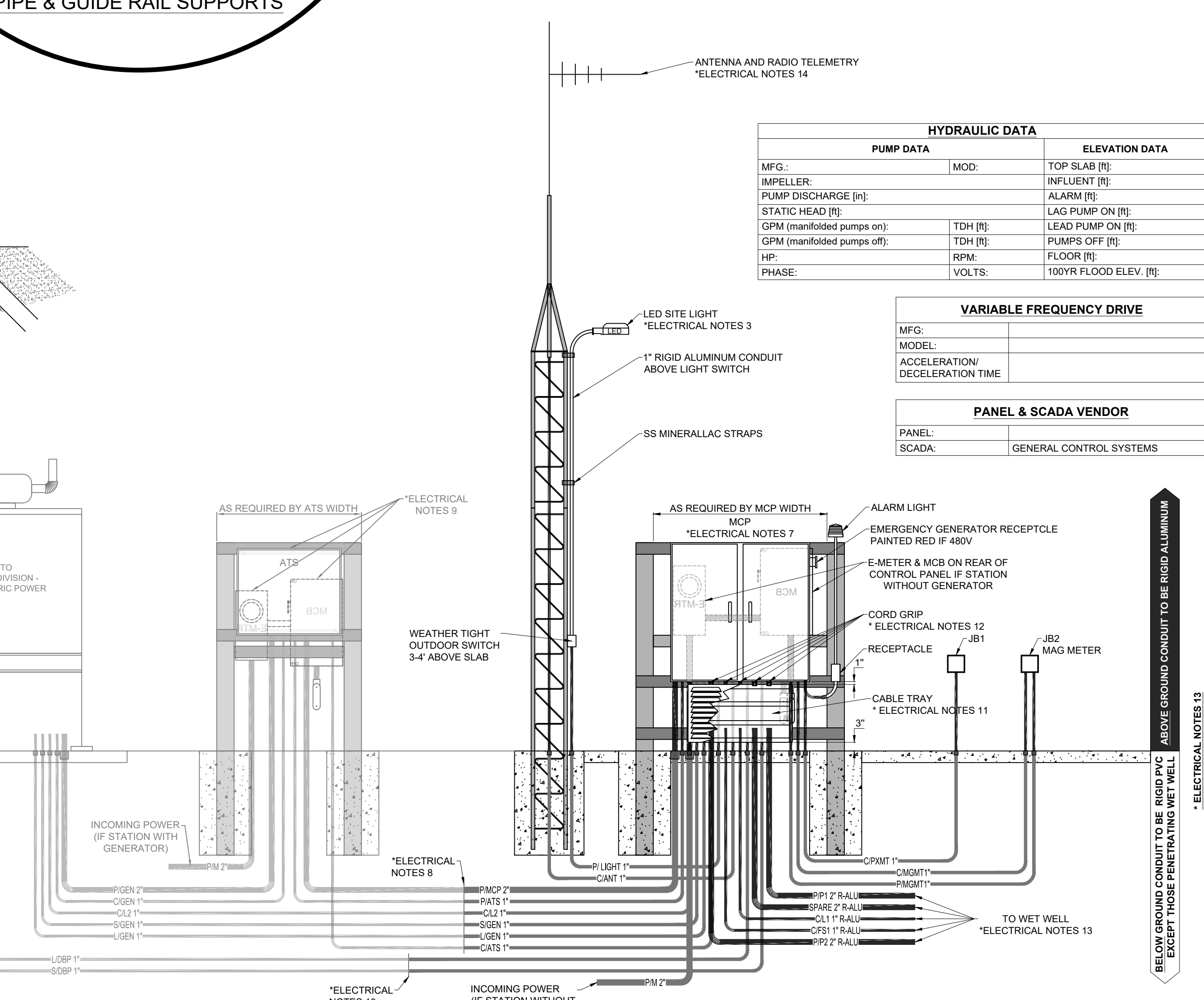
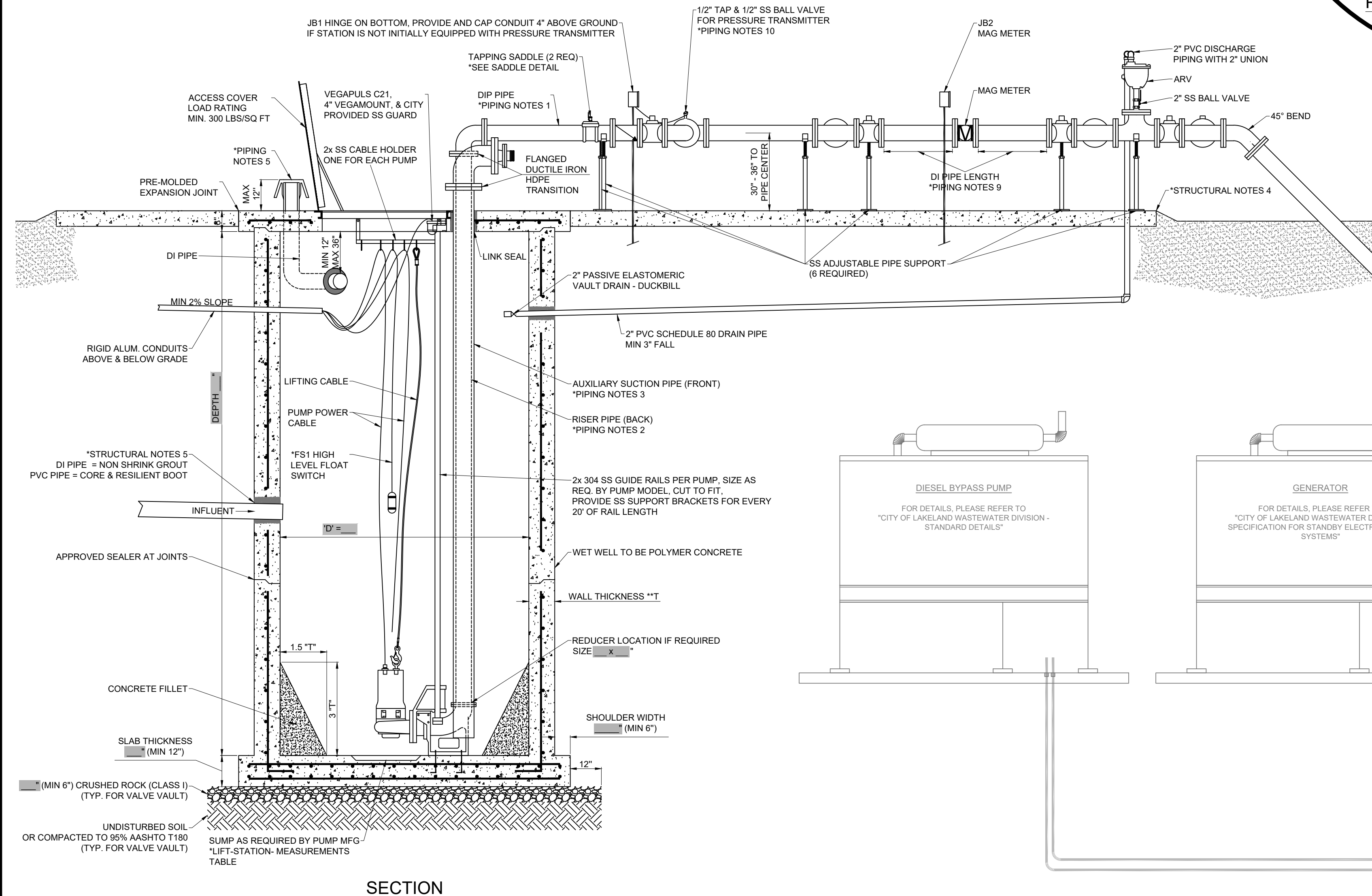
INDICATE SELECTED OPTION	LIFT-STATION MEASUREMENTS		DIMENSIONS [in]			SUMP [in]
	DI PIPE SIZE [in]	AUX SUCTION PIPE SIZE [in]	D [in]	T [in]	ACCESS COVER	
4	6	7	26	*	*	*
4	8	9	26	*	*	*
6	6	7	32	*	*	*
6	8	9	32	*	*	*
8	8	9	45	*	*	*
8	9	10	45	*	*	*
8	10	11	45	*	*	*
10	9	10	48	*	*	*
10	10	11	48	*	*	*

* FILL IN MANUFACTURER'S REQUIRED VALUE
** INDICATE IF OTHER WALL THICKNESS



- GENERAL NOTES:**
- THIS DRAWING PROVIDES DETAILS FOR CONSTRUCTION OF PUMP STATIONS TO BE OWNED AND MAINTAINED BY THE CITY OF LAKELAND. LAYOUT AND ORIENTATION OF FEATURES, SITE DIMENSIONS, TOPOGRAPHY, AND DRAINAGE SHALL BE PROVIDED ON A SEPARATE PUMP STATION SITE PLAN SCALED NOT SMALLER THAN 1"=5'.
 - REFER TO CITY OF LAKELAND "WASTEWATER MATERIALS SPECIFICATION" FOR APPROVED BRANDS, MODELS, AND VENDORS.
- STRUCTURAL NOTES:**
- PRECAST WET WELL STRUCTURE SHOP DRAWING SHALL BE SUBMITTED FOR REVIEW.
 - WET WELL AND KING PIN MH SHALL BE PRECAST POLYMER CONCRETE IN ACCORDANCE WITH ASTM C 478, ASTM C 857, AND ACI 350-06. NO LIFTING HOLES ARE PERMITTED THROUGH PRECAST STRUCTURES. REINFORCEMENT SHALL USE ACID RESISTANT REINFORCEMENT (FRP BAR) IN ACCORDANCE WITH ACI 440.1R-06 AS APPLICABLE FOR POLYMER CONCRETE DESIGN.
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 - TOP OF SLAB TO BE A MINIMUM OF 4" ABOVE FINISHED GRADE. SITE PLAN SHALL DEPICT DRAINAGE TO BE AWAY FROM THE STATION.
 - NON-SHRINK GROUT SHALL SEAL AROUND ALL PIPE UNLESS SPECIFIED OTHERWISE BY THE CITY.
 - FOR DUPLEX STATIONS, HINGES SHALL BE ON LONG SIDE OF OPENING, ON THE PANEL SIDE (FALL PROTECTION)
 - ALL NUTS, BOLTS, AND WASHERS LOCATED IN WET WELL AND VALVE VAULT SHALL BE 304 SS.
 - ALL ANCHORS SHALL BE HILTI TYPE 316 SS OR APPROVED EQUAL WITH TYPE 316 SS FASTENERS.
 - PUMP BASE ANCHOR BOLT LOCATION AND SIZE SHALL BE PER MANUFACTURER'S SHOP DRAWING.
- PIPING NOTES:**
- GENERAL PIPING MUST BE DUCTILE IRON PIPE 401 LINED.
 - RISER PIPES IN WET WELL FROM PUMP TO FIRST BEND ABOVE WET WELL SHALL BE HDPE SDR-11 AND MUST BE ONE PIPE SIZE LARGER THEN CALCULATED DI PIPE SIZE RISER PIPES.
 - AUXILIARY SUCTION PIPE IN WET WELL TO FIRST BEND ABOVE WET WELL SHALL BE HDPE SDR-11 AND MUST BE TWO PIPE SIZES LARGER THEN CALCULATED DI PIPE SIZE RISER PIPES.
 - ALL HDPE AND DI PIPING CAN BE SUBSTITUTED BY STAINLESS STEEL 316 SS, NO UPSIZING REQUIRED EXCEPT AUXILIARY SUCTION PIPE MUST BE ONE PIPE SIZE LARGER THAN RISER PIPES.
 4" = SCHEDULE 40; 6" = SCHEDULE 10
 - VANDAL-PROOF HOODED VENT CAP, LOCATED NEAR CLOSEST FENCE SIDE OR CORNER. UNDERGROUND PIPING TO BE PVC. RISER PIPING ABOVE GROUND TO BE DIP, PROTECTO 401 LINED, PAINTED ORANGE PER SPEC. (SEE SITE PLAN FOR TRUE ORIENTATION)
 - BY-PASS CONNECTION TO BE BRASS QUICK-DISCONNECT TYPE, COUPLER AND PLUG.
 - CHECK VALVES:
 - SWING CHECK VALVE SHALL BE DEZURIK, MUELLER, OR KENNEDY
 - BALL CHECK VALVE SHALL BE FLYGT (MINIMUM 10 FEET OF STATIC HEAD REQUIRED)
 - PUMP SHALL PASS MINIMUM 3" DEFORMABLE SOLIDS.
 - DUCTILE IRON PIPE LENGTH ON EACH SIDE OF MAG METER PER MANUFACTURER'S RECOMMENDATION. MINIMUM 30" FOR CALIBRATION.
 - 1/2" TAP & 1/2" SS BALL VALVE INSTALLED ON ALL STATIONS. PRESSURE TRANSMITTER VEGABAR 38 (1/2") IS INSTALLED ONLY ON STATIONS WITH FORCE-MAIN MANIFOLDS.

- ELECTRICAL NOTES:**
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 - PHASE ROTATION MUST BE CLOCKWISE OR RIGHT-HAND.
 - PHASE MONITOR SHALL BE PROVIDED ON 3 PHASE SYSTEMS.
 - FOR SINGLE PHASE GENERATOR RECEPTACLE, DO NOT USE PIN 2.
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 - CABLE TRAY WITH REMOVABLE LOUVERED COVER 3" ABOVE GRADE AND 1" FROM ABOVE ENCLOSURE PROVIDES AIR GAB PROTECTION FROM CORROSIVE WET WELL GASES.
 - SEALING WASHER & KILLARK CORD GRIP BETWEEN CABLE TRAY AND MCP ENCLOSURE
 PUMP CORDS: KILLARK CGB596SS, CGB5102SS, CGB5138SS
 RADAR/ FLOATS: KILLARK CGB215SS, CGB239SS, CGB255SS
 - ALL ABOVE GROUND CONDUIT TO BE RIGID ALUMINUM. ALL UNDERGROUND CONDUIT SHALL BE PVC. CONDUITS FROM WET WELL SHALL BE RIGID ALUMINUM BELOW AND ABOVE GROUND AND HAVE AIR GAP IN VENTED CABLE TRAY.
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HYDRAULIC DATA		
PUMP DATA	ELEVATION DATA	
MFG:	MOD:	TOP SLAB [ft]:
IMPELLER:		INFLUENT [ft]:
PUMP DISCHARGE [in]:		ALARM [ft]:
STATIC HEAD [ft]:		LAG PUMP ON [ft]:
GPM (manifolded pumps on):	TDH [ft]:	LEAD PUMP ON [ft]:
GPM (manifolded pumps off):	TDH [ft]:	PUMPS OFF [ft]:
HP:	RPM:	FLOOR [ft]:
PHASE:	VOLTS:	100YR FLOOD ELEV. [ft]:

VARIABLE FREQUENCY DRIVE	
MFG:	
MODEL:	
ACCELERATION/ DECELERATION TIME:	

PANEL & SCADA VENDOR	
PANEL:	
SCADA:	GENERAL CONTROL SYSTEMS

REVISION	DESCRIPTION	DATE	BY	CHKD
1	ADDED TAP & 1/2" SS BALL VALVE INSTALLED ON ALL STATIONS. PRESSURE TRANSMITTER VEGABAR 38 (1/2") IS INSTALLED ONLY ON STATIONS WITH FORCE-MAIN MANIFOLDS.	08/24/2023	M. RIESNER	
2	ADDED TAP & 1/2" SS BALL VALVE INSTALLED ON ALL STATIONS. PRESSURE TRANSMITTER VEGABAR 38 (1/2") IS INSTALLED ONLY ON STATIONS WITH FORCE-MAIN MANIFOLDS.	08/24/2023	M. RIESNER	
3	ADDED TAP & 1/2" SS BALL VALVE INSTALLED ON ALL STATIONS. PRESSURE TRANSMITTER VEGABAR 38 (1/2") IS INSTALLED ONLY ON STATIONS WITH FORCE-MAIN MANIFOLDS.	08/24/2023	M. RIESNER	

DRAWN BY: M. RIESNER
 DRAWING DATE: 05/16/2023
 SCALE: NO SCALE

SEWER PUMP STATION DETAILS & SPECIFICATIONS
 DUPLEX STATION 40HP OR LESS
 STRUCTURE & PIPING DETAILS

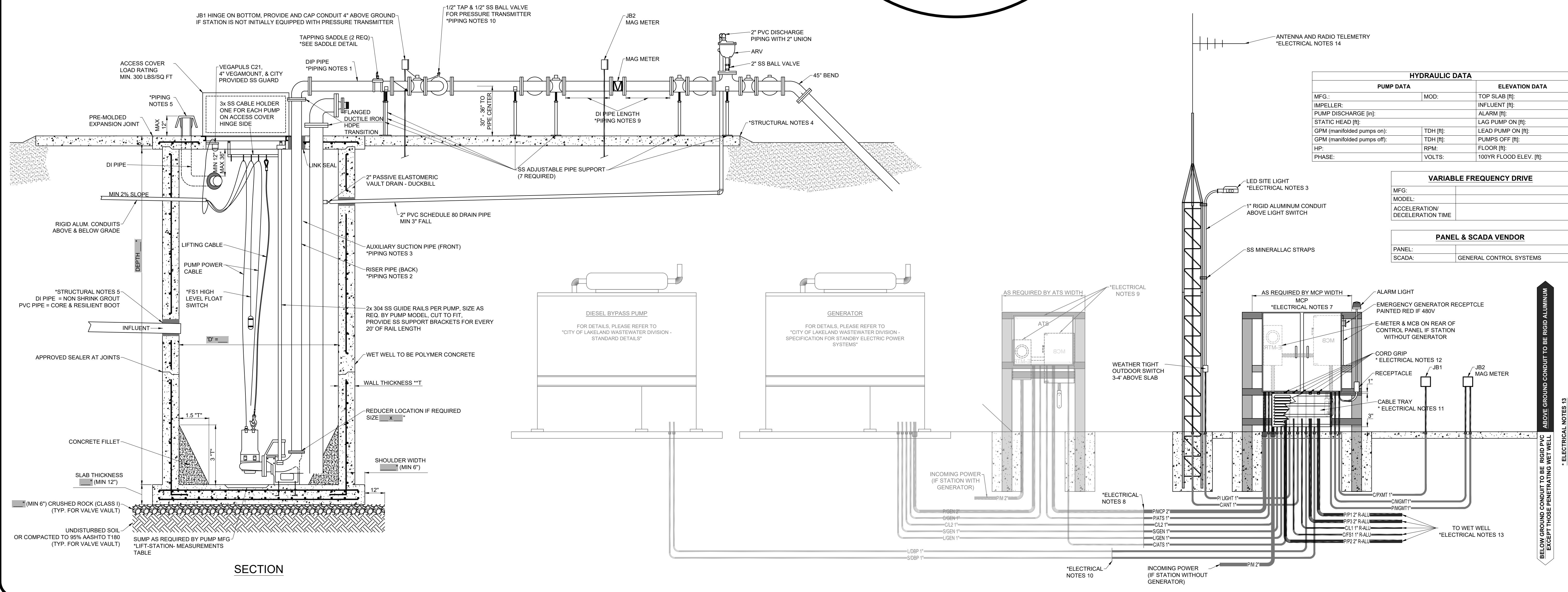
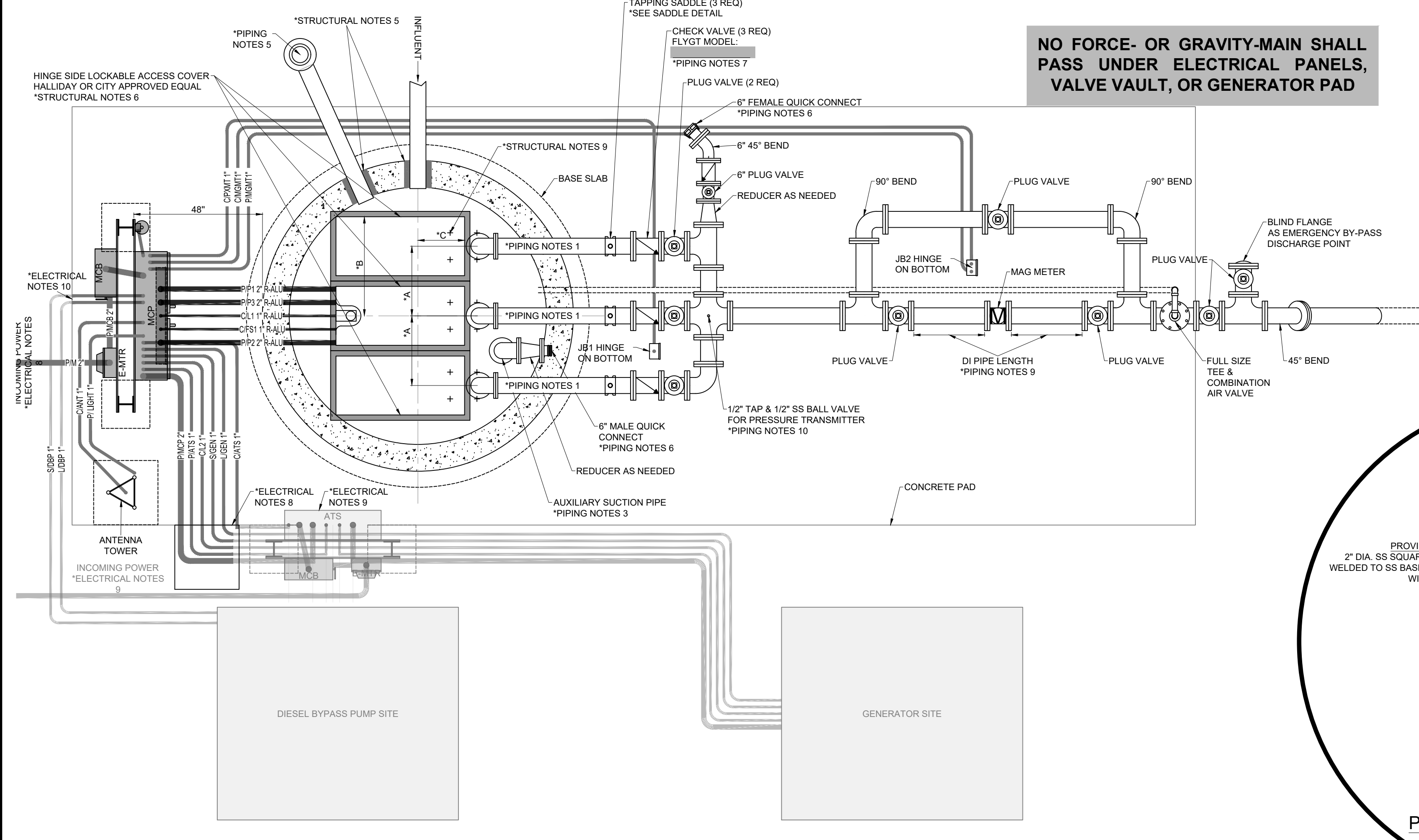
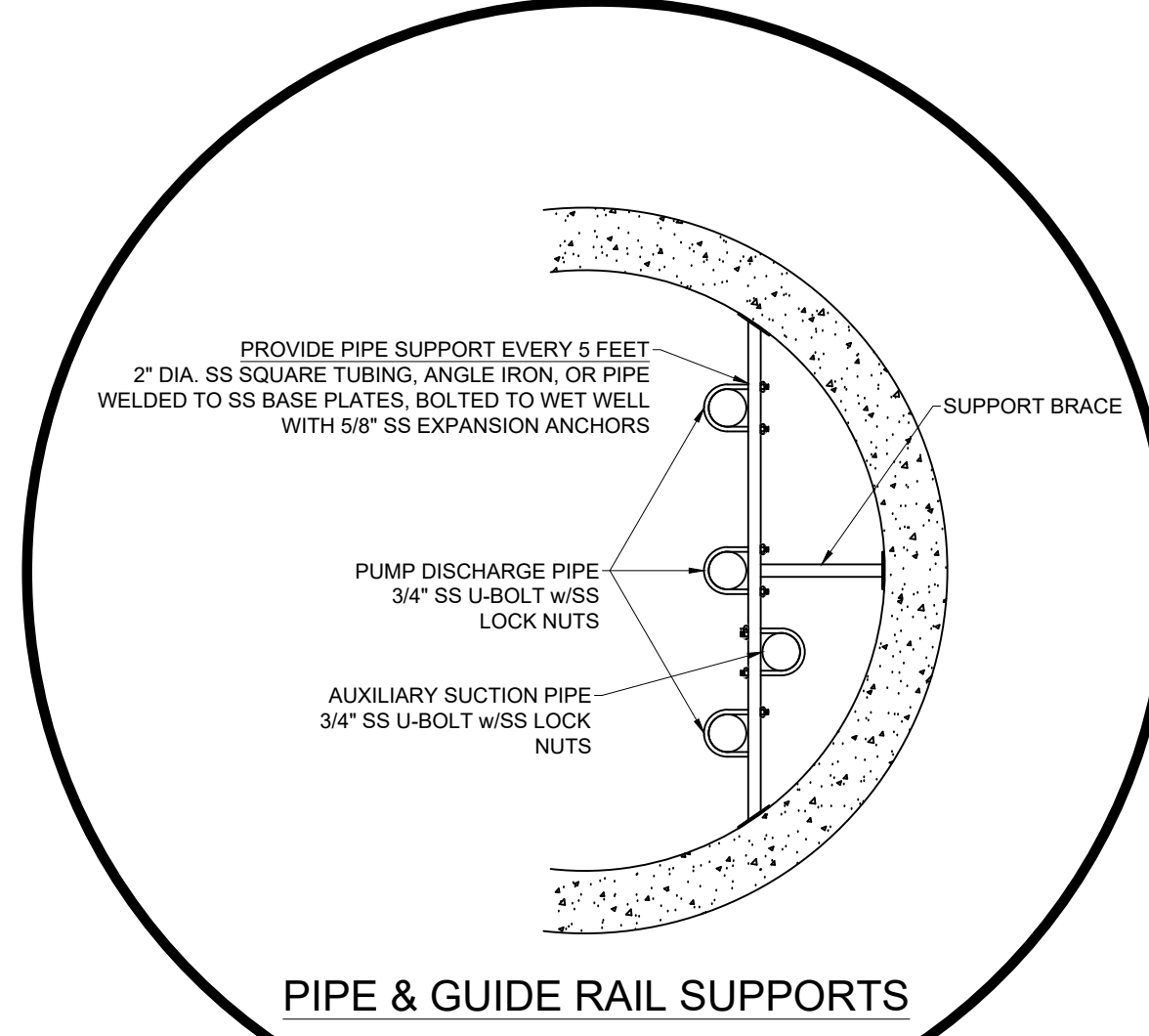
PROJECT NUMBER: ---
 DRAWING TYPE: DETAILS & SPEC.
 SHEET: D1
 ENGINEER: ---
 FLORIDA P.E. LIC NO. ---
 SIG: ---
 DATE: ---

NO FORCE- OR GRAVITY-MAIN SHALL PASS UNDER ELECTRICAL PANELS, VALVE VAULT, OR GENERATOR PAD

LIFT-STATION MEASUREMENTS									
INDICATE SELECTED OPTION	DI PIPE SIZE [in]	AUX SUCTION PIPE SIZE [in]	WET WELL			DIMENSIONS [in]			SUMP [in]
			D [ft]	T ¹ [in]	ACCESS COVER	A	B	C	
4	*	*	6	7	*	26	*	*	*
4	*	*	8	9	*	26	*	*	*
6	*	*	6	7	*	32	*	*	*
6	*	*	8	9	*	32	*	*	*
8	*	*	8	9	*	45	*	*	*
8	*	*	9	10	*	45	*	*	*
10	*	*	9	10	*	48	*	*	*
10	*	*	10	11	*	48	*	*	*

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HYDRAULIC DATA			
PUMP DATA		ELEVATION DATA	
MFG:	MOD:	TOP SLAB [ft]:	
IMPELLER:		INFLUENT [ft]:	
PUMP DISCHARGE [in]:		ALARM [ft]:	
STATIC HEAD [ft]:		LAG PUMP ON [ft]:	
GPM (manifolded pumps on):	TDH [ft]:	LEAD PUMP ON [ft]:	
GPM (manifolded pumps off):	TDH [ft]:	PUMPS OFF [ft]:	
HP:	RPM:	FLOOR [ft]:	
PHASE:	VOLTS:	100YR FLOOD ELEV. [ft]:	

VARIABLE FREQUENCY DRIVE	
MFG:	
MODEL:	
ACCELERATION:	
DECCELERATION:	
TIME:	

PANEL & SCADA VENDOR	
PANEL:	GENERAL CONTROL SYSTEMS
SCADA:	GENERAL CONTROL SYSTEMS

WATER UTILITIES ENGINEERING DIVISION
 501 E. LEON ST. WADSWORTH, FLORIDA 32081-6079
 LAKELAND, FLORIDA 32081-6079
 PHONE (863) 634-6316
 PLOT PAPER SIZE: ARCH FILE (ELECT) CALO (X, 36.00 INCHES)

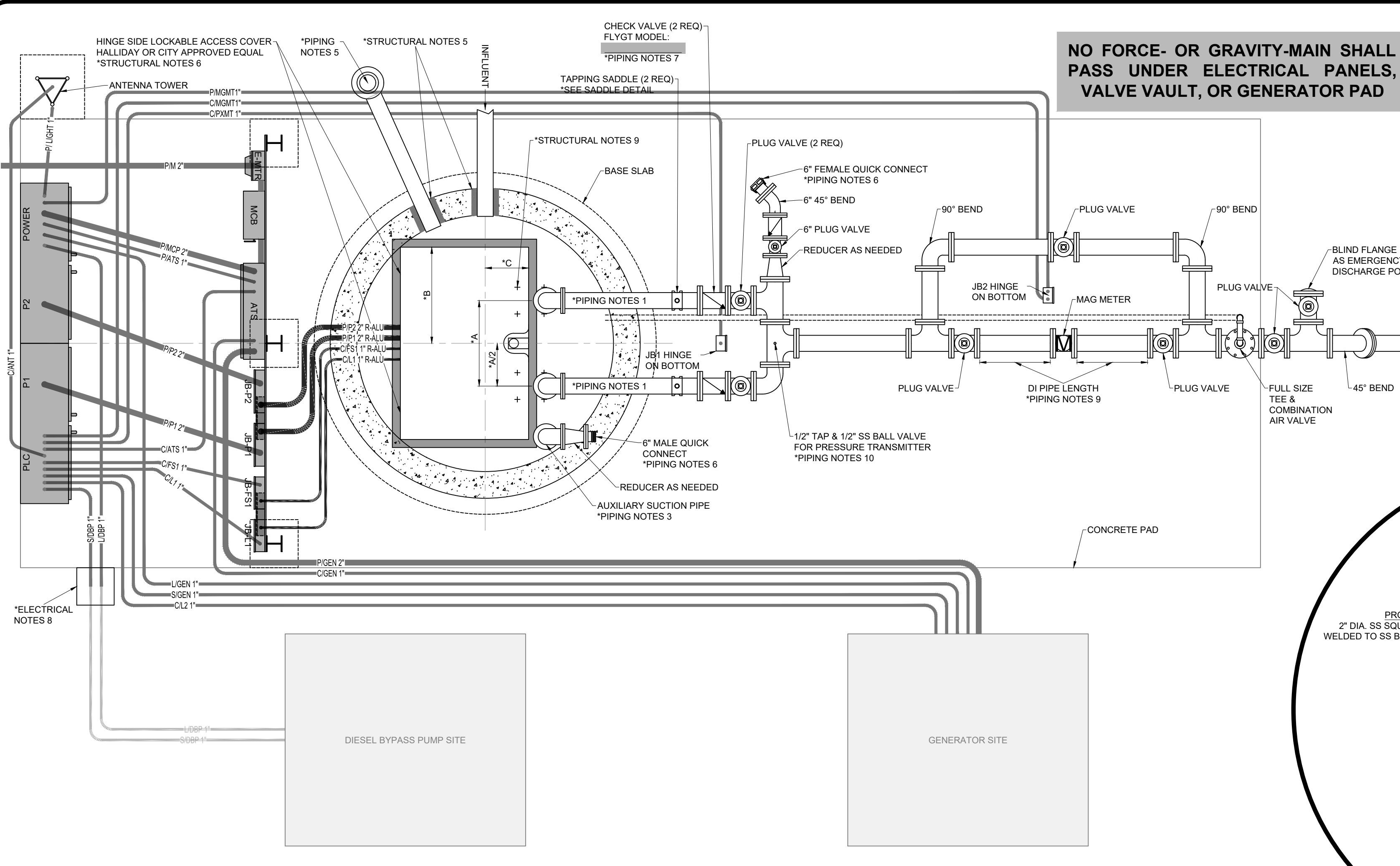
city of Lakeland WATER UTILITIES

REVISION	DESCRIPTION	DATE	BY	CHKD
1	ADDED CONDUIT FROM MPPACT FLOWMETER, ADDED BY-PASS DISCHARGE POINT, CHANGED CONCRETE TYPE TO POLYMER CONCRETE	07/26/2024		
2	ADDED PANEL & SCADA VENDOR TABLE	09/02/2023		
3				
4				

DRAWN BY: **M. RIESNER**
 DRAWING DATE: **05/16/2023**
 SCALE: **NO SCALE**

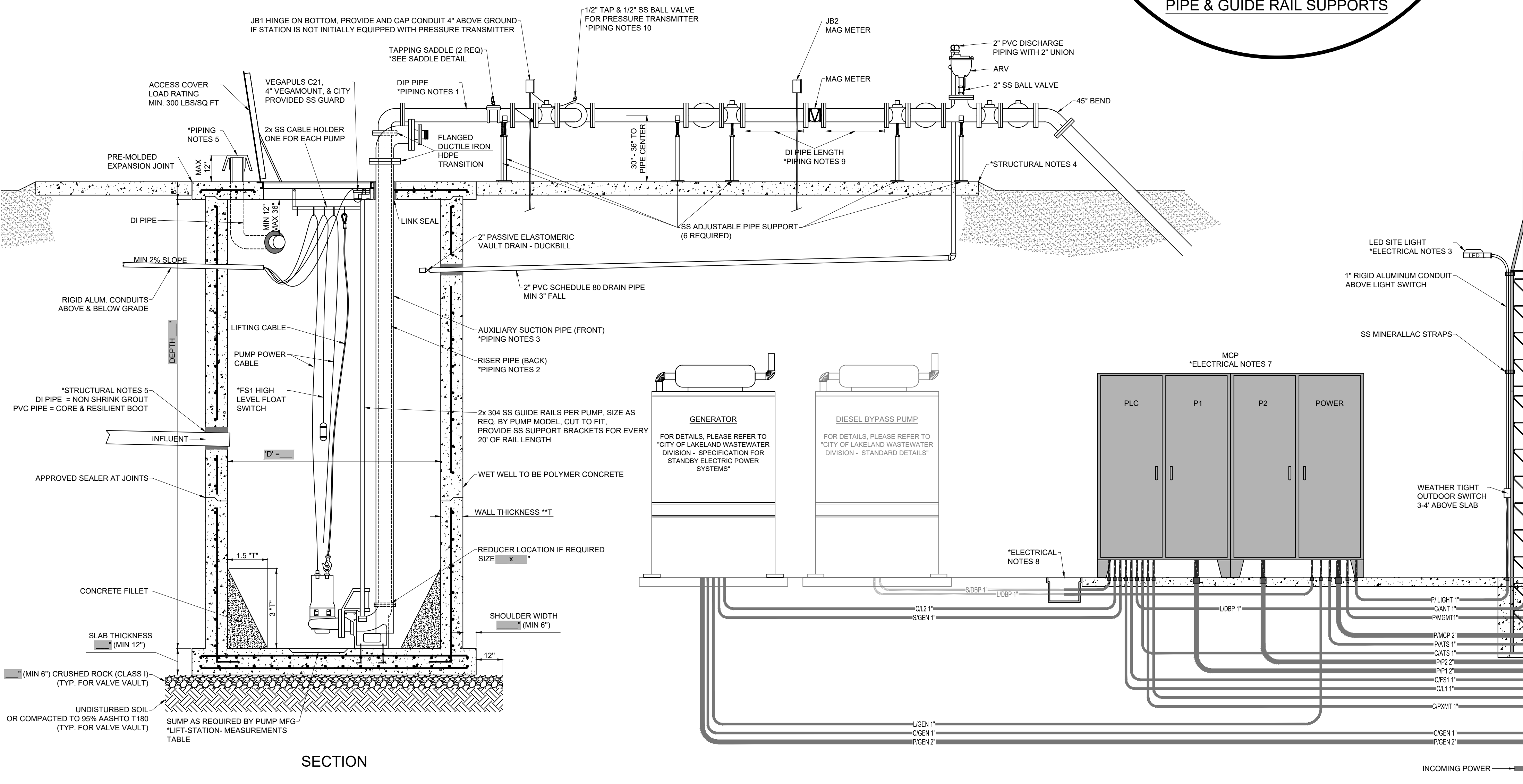
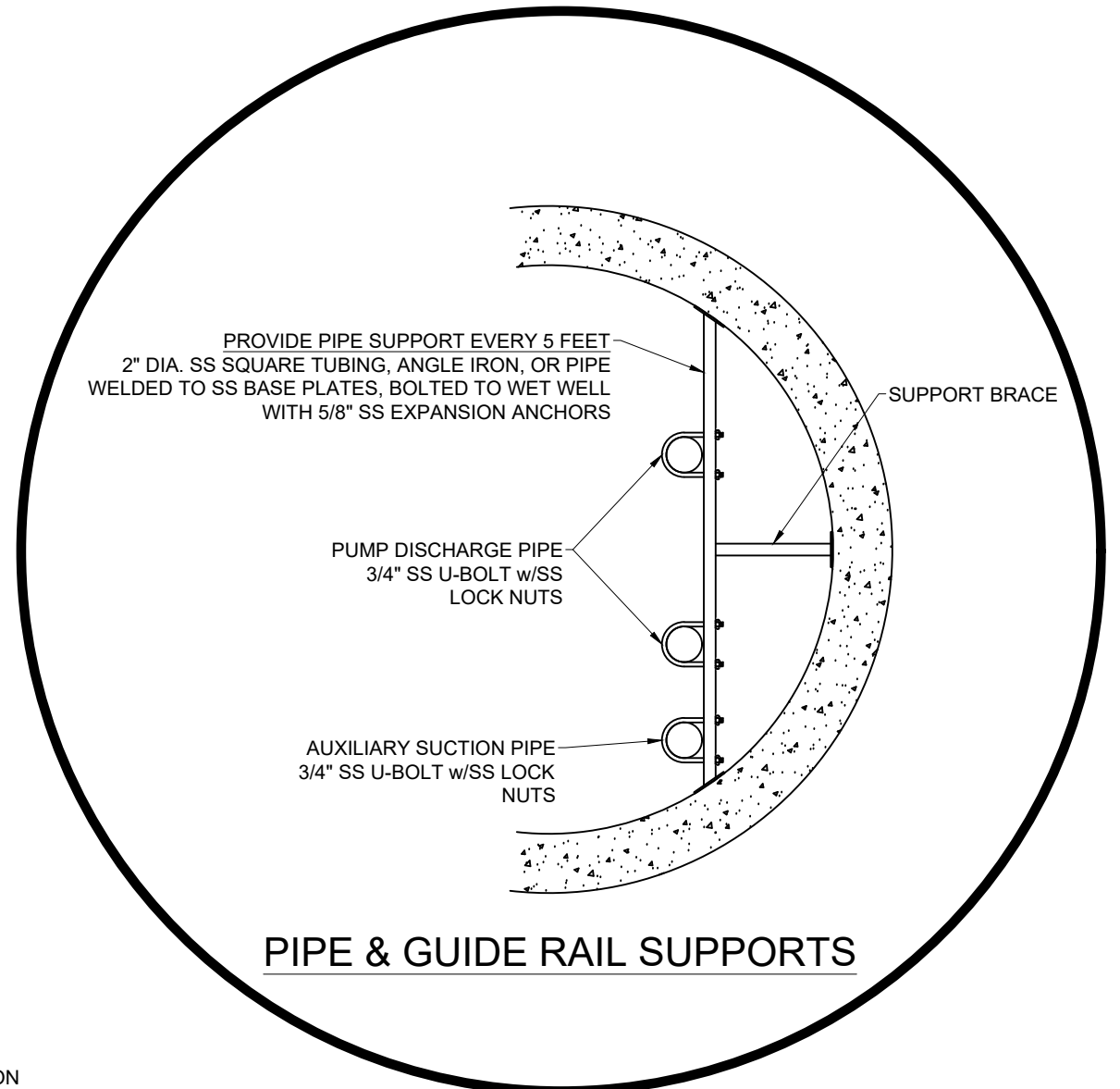
SEWER PUMP STATION DETAILS & SPECIFICATIONS
TRIPLEX STATION 40HP OR LESS STRUCTURE & PIPING DETAILS

PROJECT NUMBER: _____
 DRAWING TYPE: **DETAILS & SPEC.**
 SHEET: **D2**
 ENGINEER: _____
 FLORIDA P.E. LIC NO.: _____
 SIG: _____
 DATE: _____



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 - IF STATION IS NOT INITIALLY BUILT WITH DIESEL BYPASS PUMP CONDUIT FOR FUTURE DIESEL BYPASS PUMP IS TO BE INSTALLED AND TERMINATED IN HAND BOX (QUAZIDE 16X24) OUTSIDE STATION CONCRETE PAD.
 - 16" WIDE CABLE TRAY WITH REMOVABLE LOUVERED COVER 1" FROM ABOVE ENCLOSURE AND 3" FROM GROUND PROVIDES AIR GAB PROTECTION FROM CORROSIVE WET WELL GASES.
 - SEALING WASHER & KILLARK CORD GRIP BETWEEN CABLE TRAY AND JUNCTION BOXES ENCLOSURE
 - PUMP CORDS: KILLARK CGB586SS, CGB5102SS, CGB5138SS
RADAR/ FLOATS: KILLARK CGB215SS, CGB239SS, CGB255SS
 - ALL ABOVE GROUND CONDUIT TO BE RIGID ALUMINUM. ALL UNDERGROUND CONDUIT SHALL BE PVC. CONDUITS FROM WET WELL SHALL BE RIGID ALUMINUM BELOW AND ABOVE GROUND AND HAVE A AIR GAP IN VENTED CABLE TRAY. CONDUITS SHALL HAVE A MINIMUM OF 24" COVER. POWER SUPPLY CONDUIT SHALL HAVE A MINIMUM OF 42" COVER.
 - THE DEVELOPER SHALL PROVIDE AND INSTALL RADIO TELEMETRY IN ACCORDANCE WITH CITY STANDARDS. CITY SHALL PERFORM TELEMETRY START-UP. RADIO TELEMETRY SHALL PROVIDE AUDIBLE AND VISUAL ALARM AT THE CITY'S WASTEWATER DIVISION OFFICE AS WELL AS ALTERNATE THE STARTING OF PUMPS. ANTENNA TYPE AND DIRECTION WILL BE PROVIDED TO CONTRACTOR BY THE CITY.
 - PUMP SHAFT SEAL FAILURE WARNING IS INDICATED BY



PUMP DATA		ELEVATION DATA	
MFG:	MOD:	TOP SLAB [ft]:	
IMPELLER:		INFLUENT [ft]:	
PUMP DISCHARGE [in]:		ALARM [ft]:	
STATIC HEAD [ft]:		LAG PUMP ON [ft]:	
GPM (manifolded pumps on):	TDH [ft]:	LEAD PUMP ON [ft]:	
GPM (manifolded pumps off):	TDH [ft]:	PUMPS OFF [ft]:	
HP:	RPM:	FLOOR [ft]:	
PHASE:	VOLTS:	100% FLOOD ELEV. [ft]:	

VARIABLE FREQUENCY DRIVE	
MFG:	
MODEL:	
ACCELERATION/DECCELERATION TIME	

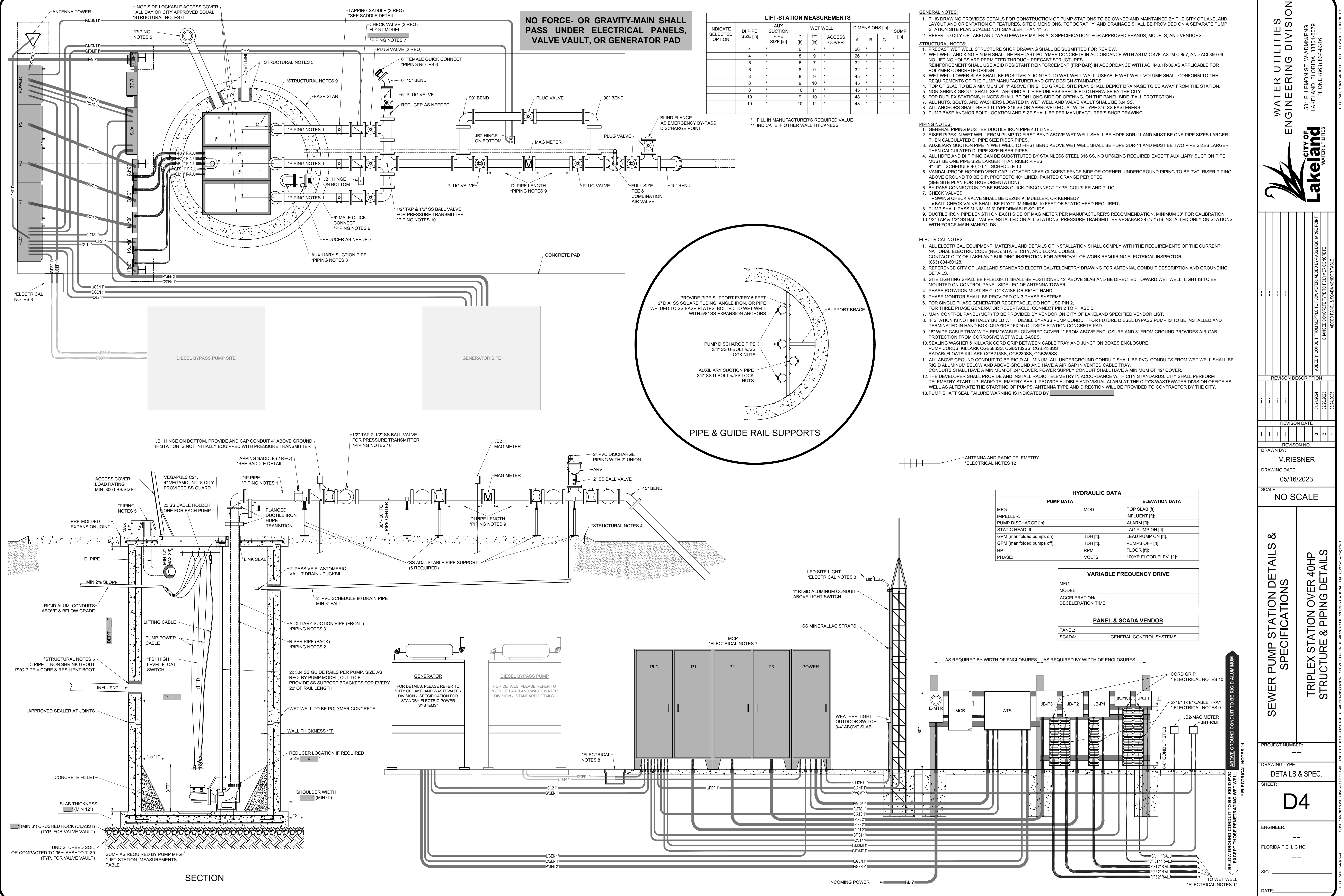
PANEL & SCADA VENDOR	
PANEL:	
SCADA:	GENERAL CONTROL SYSTEMS

REVISION NO.	REVISION DATE	REVISION DESCRIPTION
1	08/24/2023	ADDED CONDUIT FROM MPPACTO FLOWMETER, ADDED BY-PASS DISCHARGE POINT, CHANGED CONCRETE TYPE TO POLYMER CONCRETE, ADDED PANEL & SCADA VENDOR TABLE
2		
3		

DRAWN BY: M. RIESNER
DRAWING DATE: 05/16/2023
SCALE: NO SCALE

SEWER PUMP STATION DETAILS & SPECIFICATIONS
DUPLEX STATION OVER 40HP
STRUCTURE & PIPING DETAILS

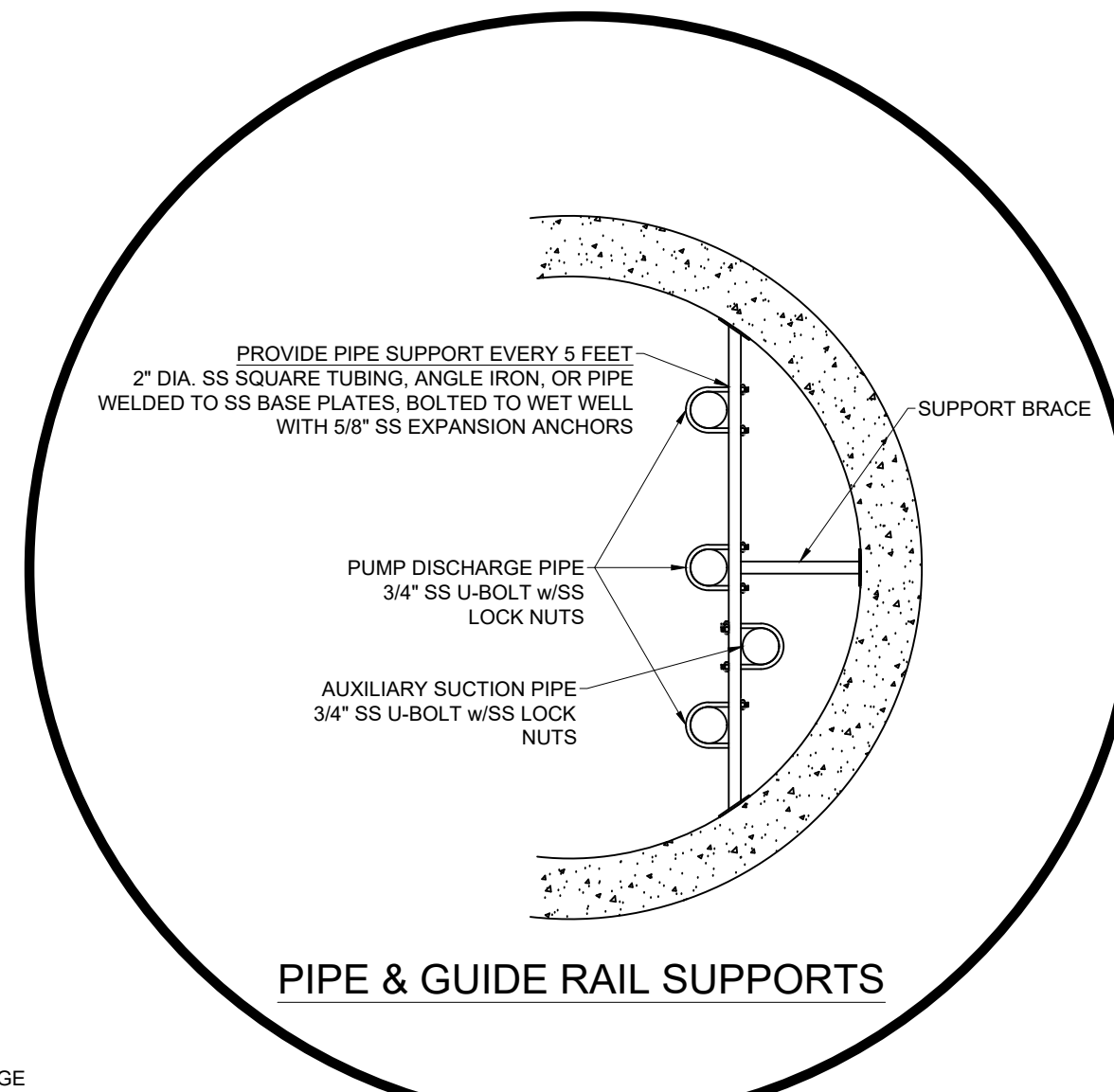
PROJECT NUMBER: ---
DRAWING TYPE: DETAILS & SPEC.
SHEET: **D3**
ENGINEER: ---
FLORIDA P. E. LIC NO. ---
SIG: ---
DATE: ---



NO FORCE- OR GRAVITY-MAIN SHALL PASS UNDER ELECTRICAL PANELS, VALVE VAULT, OR GENERATOR PAD

INDICATE SELECTED OPTION	DI PIPE SIZE [in]	AUX SUCTION PIPE SIZE [in]	WET WELL		DIMENSIONS [in]			SUMP [in]
			D [in]	T** [in]	A	B	C	
	4	6	6	7	28	*	*	*
	4	6	8	9	28	*	*	*
	6	8	8	9	32	*	*	*
	6	8	8	9	32	*	*	*
	8	8	9	9	45	*	*	*
	8	8	9	10	45	*	*	*
	8	8	10	11	45	*	*	*
	10	8	9	10	48	*	*	*
	10	8	10	11	48	*	*	*

- GENERAL NOTES:**
- THIS DRAWING PROVIDES DETAILS FOR CONSTRUCTION OF PUMP STATIONS TO BE OWNED AND MAINTAINED BY THE CITY OF LAKELAND. LAYOUT AND ORIENTATION OF FEATURES, SITE DIMENSIONS, TOPOGRAPHY, AND DRAINAGE SHALL BE PROVIDED ON A SEPARATE PUMP STATION SITE PLAN SCALED NOT SMALLER THAN 1"=5'.
 - REFER TO CITY OF LAKELAND "WASTEWATER MATERIALS SPECIFICATION" FOR APPROVED BRANDS, MODELS, AND VENDORS.
- STRUCTURAL NOTES:**
- PRECAST WET WELL STRUCTURE SHOP DRAWING SHALL BE SUBMITTED FOR REVIEW.
 - WET WELL AND KING PIN MH SHALL BE PRECAST POLYMER CONCRETE IN ACCORDANCE WITH ASTM C 478, ASTM C 857, AND ACI 350-06. NO LIFTING HOLES ARE PERMITTED THROUGH PRECAST STRUCTURES. REINFORCEMENT SHALL USE ACID RESISTANT REINFORCEMENT (FRP BAR) IN ACCORDANCE WITH ACI 440.1R-06 AS APPLICABLE FOR POLYMER CONCRETE DESIGN.
 - WET WELL LOWER SLAB SHALL BE POSITIVELY JOINTED TO WET WELL WALL. USEABLE WET WELL VOLUME SHALL CONFORM TO THE REQUIREMENTS OF THE PUMP MANUFACTURER AND CITY DESIGN STANDARDS.
 - TOP OF SLAB TO BE A MINIMUM OF 4" ABOVE FINISHED GRADE. SITE PLAN SHALL DEPICT DRAINAGE TO BE AWAY FROM THE STATION.
 - NON-SHRINK GROUT SHALL SEAL AROUND ALL PIPE UNLESS SPECIFIED OTHERWISE BY THE CITY.
 - FOR DUPLEX STATIONS, HINGES SHALL BE ON LONG SIDE OF OPENING, ON THE PANEL SIDE (FALL PROTECTION)
 - ALL NUTS, BOLTS, AND WASHERS LOCATED IN WET WELL AND VALVE VAULT SHALL BE 304 SS.
 - ALL ANCHORS SHALL BE MIL-TYPE 316 SS OR APPROVED EQUAL WITH TYPE 316 SS FASTENERS.
 - PUMP BASE ANCHOR BOLT LOCATION AND SIZE SHALL BE PER MANUFACTURER'S SHOP DRAWING.
- PIPING NOTES:**
- GENERAL PIPING MUST BE DUCTILE IRON PIPE 401 LINED.
 - RISER PIPES IN WET WELL FROM PUMP TO FIRST BEND ABOVE WET WELL SHALL BE HDPE SDR-11 AND MUST BE ONE PIPE SIZE LARGER THEN CALCULATED DI PIPE SIZE RISER PIPES.
 - AUXILIARY SUCTION PIPE IN WET WELL TO FIRST BEND ABOVE WET WELL SHALL BE HDPE SDR-11 AND MUST BE TWO PIPE SIZES LARGER THEN CALCULATED DI PIPE SIZE RISER PIPES.
 - ALL HDPE AND DI PIPING CAN BE SUBSTITUTED BY STAINLESS STEEL 316 SS, NO UPSIZING REQUIRED EXCEPT AUXILIARY SUCTION PIPE MUST BE ONE PIPE SIZE LARGER THAN RISER PIPES.
 - NON-SHRINK GROUT SHALL SEAL AROUND ALL PIPE UNLESS SPECIFIED OTHERWISE BY THE CITY.
 - VANDAL-PROOF HOODED VENT CAP, LOCATED NEAR CLOSEST FENCE SIDE OR CORNER. UNDERGROUND PIPING TO BE PVC. RISER PIPING ABOVE GROUND TO BE DIP, PROTECTO 401 LINED, PAINTED ORANGE PER SPEC. (SEE SITE PLAN FOR TRUE ORIENTATION)
 - BY-PASS CONNECTION TO BE BRASS QUICK-DISCONNECT TYPE, COUPLER AND PLUG.
 - CHECK VALVES:
 - SWING CHECK VALVE SHALL BE DEZURIK, MUELLER, OR KENNEDY
 - BALL CHECK VALVE SHALL BE FLYGT (MINIMUM 10 FEET OF STATIC HEAD REQUIRED)
 - PUMP SHALL PASS MINIMUM 3" DEFORMABLE SOLIDS.
 - DUCTILE IRON PIPE LENGTH ON EACH SIDE OF MAG METER PER MANUFACTURER'S RECOMMENDATION. MINIMUM 30" FOR CALIBRATION.
 - 1/2" TAP & 1/2" SS BALL VALVE INSTALLED ON ALL STATIONS. PRESSURE TRANSMITTER VEGABAR 38 (1/2") IS INSTALLED ONLY ON STATIONS WITH FORCE-MAIN MANIFOLDS.
- ELECTRICAL NOTES:**
- ALL ELECTRICAL EQUIPMENT, MATERIAL AND DETAILS OF INSTALLATION SHALL COMPLY WITH THE REQUIREMENTS OF THE CURRENT NATIONAL ELECTRIC CODE (NEC), STATE, CITY, AND LOCAL CODES. CONTACT CITY OF LAKELAND BUILDING INSPECTION FOR APPROVAL OF WORK REQUIRING ELECTRICAL INSPECTOR. (883) 834-60128.
 - REFERENCE CITY OF LAKELAND STANDARD ELECTRICAL TELEMETRY DRAWING FOR ANTENNA, CONDUIT DESCRIPTION AND GROUNDING DETAILS.
 - SITE LIGHTING SHALL BE FFLD39. IT SHALL BE POSITIONED 12" ABOVE SLAB AND BE DIRECTED TOWARD WET WELL. LIGHT IS TO BE MOUNTED ON CONTROL PANEL SIDE LEG OF ANTENNA TOWER.
 - PHASE ROTATION MUST BE CLOCKWISE OR RIGHT-HAND.
 - PHASE MONITOR SHALL BE PROVIDED ON 3 PHASE SYSTEMS.
 - FOR SINGLE PHASE GENERATOR RECEPTACLE, DO NOT USE PIN 2.
 - FOR THREE PHASE GENERATOR RECEPTACLE, CONNECT PIN 2 TO PHASE B.
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GPM (manifolded pumps off):	TDH [ft]:	PUMPS OFF [ft]:	
HP:	RPM:	FLOOR [ft]:	
PHASE:	VOLTS:	100YR FLOOD ELEV. [ft]:	

MFG:	
MODEL:	
ACCELERATION/ DECELERATION TIME	

PANEL:	
SCADA:	GENERAL CONTROL SYSTEMS

WATER UTILITIES ENGINEERING DIVISION

501 E. LEON ST. WADSWORTH, LAKELAND, FLORIDA 32801-6079
PHONE (883) 834-6316

city of Lakeland WATER UTILITIES

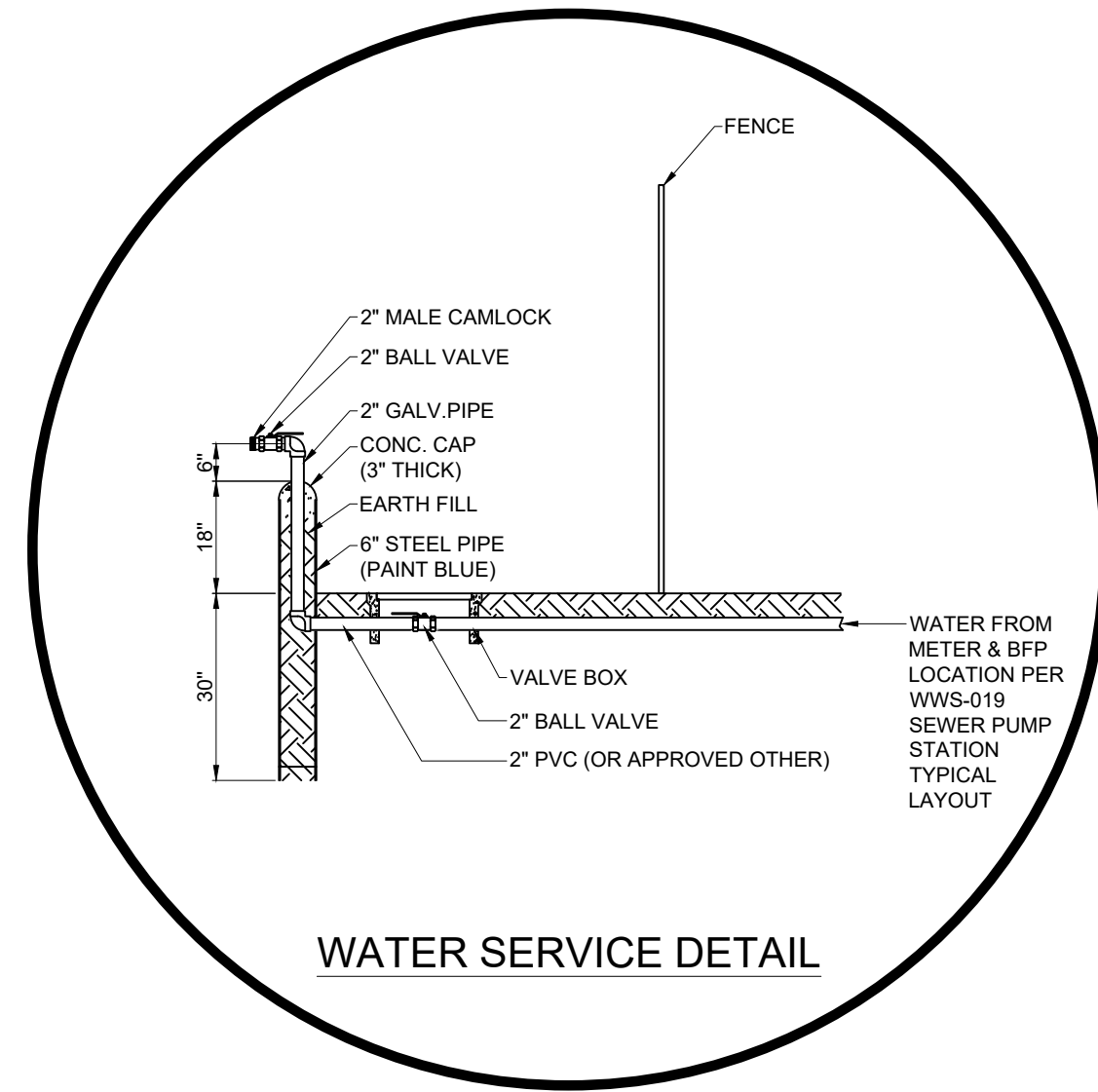
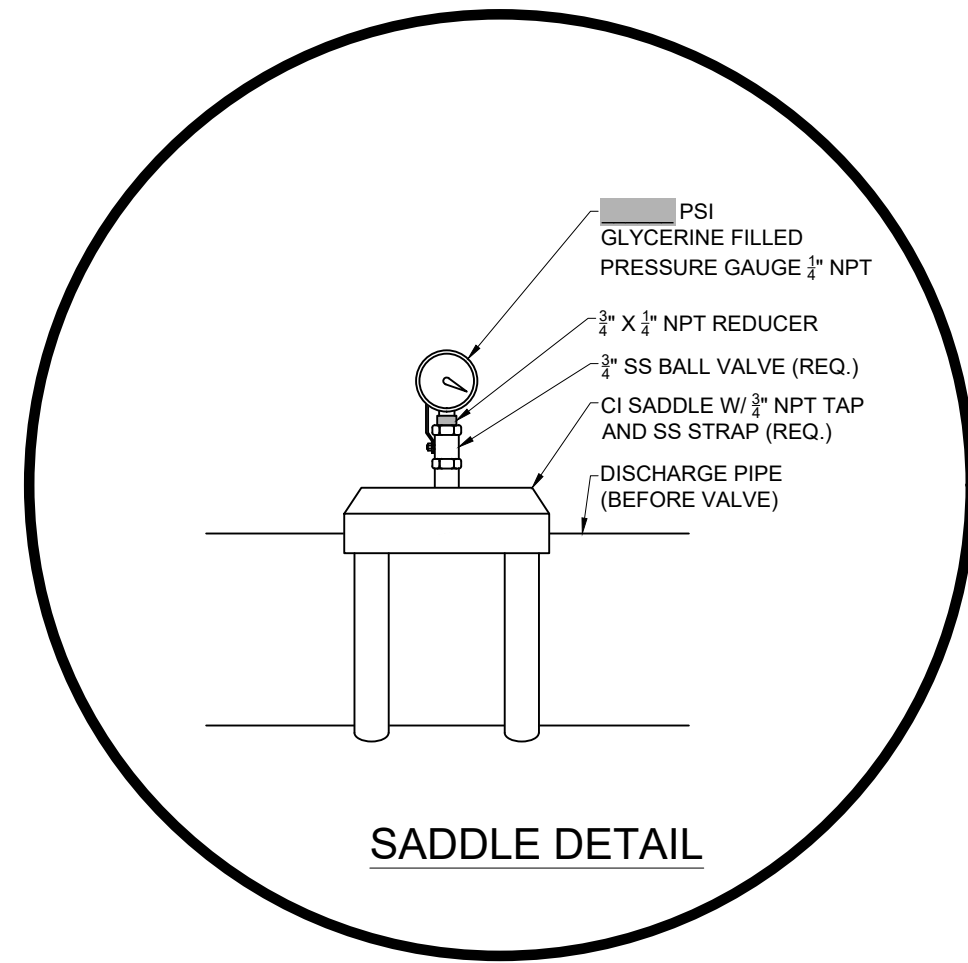
REVISION	DESCRIPTION	DATE
1	ADDED CONDUIT FROM MPPACTO FLOWMETER, ADDED BY-PASS DISCHARGE POINT, CHANGED CONCRETE TYPE TO POLYMER CONCRETE	07/20/2024
2	ADDED PANEL & SCADA VENDOR TABLE	08/01/2023

DRAWN BY: M. RIESNER
DRAWING DATE: 05/16/2023
SCALE: NO SCALE

SEWER PUMP STATION DETAILS & SPECIFICATIONS

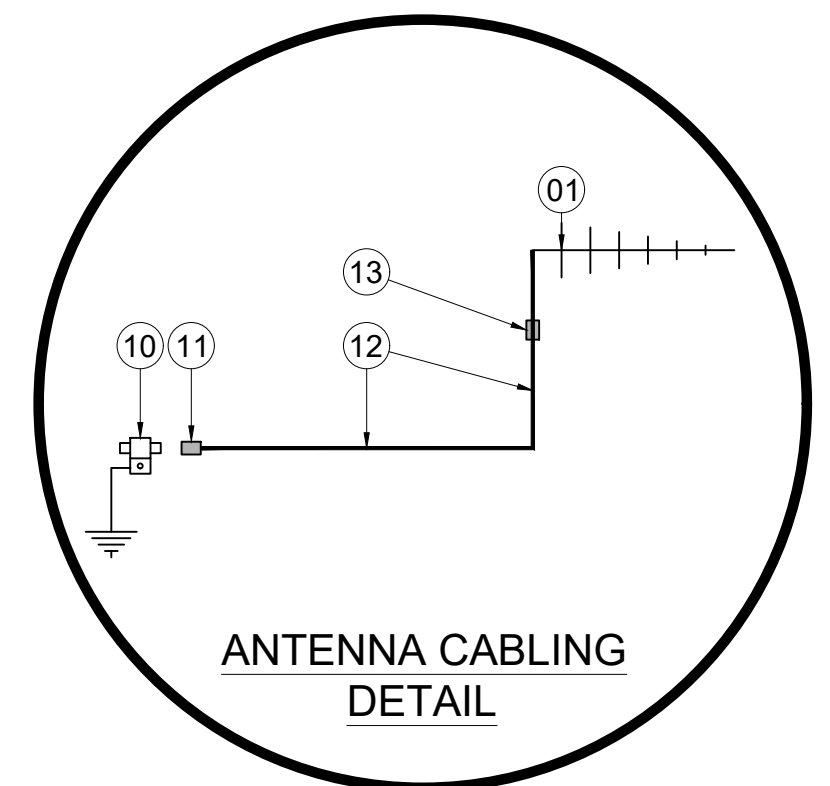
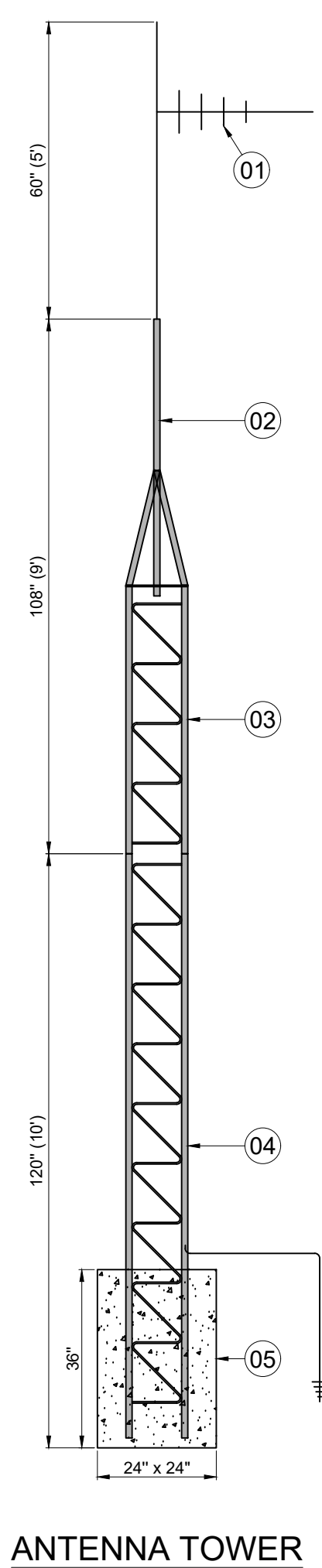
TRIPLEX STATION OVER 40HP STRUCTURE & PIPING DETAILS

PROJECT NUMBER: _____
DRAWING TYPE: DETAILS & SPEC.
SHEET: **D4**
ENGINEER: _____
FLORIDA P.E. LIC. NO.: _____
SIG: _____
DATE: _____

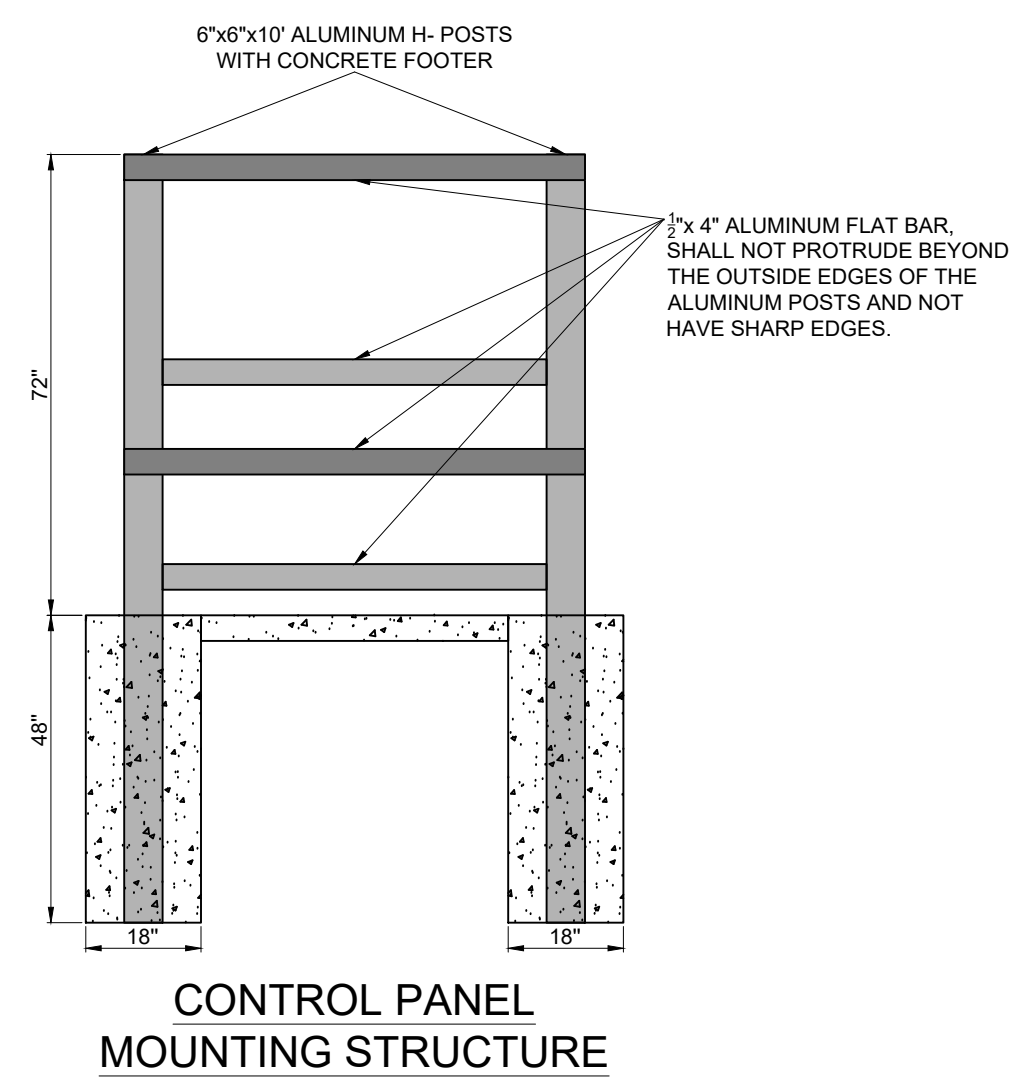


CONDUIT AND CABLE SCHEDULE	
MARK	DESCRIPTION
C/ANT	1" CONDUIT FROM MCP TO ANTENNA
C/ATS	1" CONDUIT FROM RTU TO ATS TO SHOW POSITION OF SWITCH IN EMERGENCY AND NORMAL POSITION --- (4) #14 THHN/THWN
C/FS1	1" CONDUIT FROM JB2 TO FLOAT SWITCH (FS1) IN WET WELL FOR HIGH WELL LEVEL INDICATION. CONDUCTOR PROVIDED WITH FLOAT.
C/GEN	1" CONDUIT FROM EMERGENCY GENERATOR TO ATS FOR GENERATOR CONTROL --- (4) #14 THHN/THWN (IF STATION IS NOT INITIALLY EQUIPPED WITH GENERATOR, CONDUIT IS TO BE INSTALLED AND CAPPED ONLY TO 3' FROM ATS H-POST AND NO CONDUITS ARE PULLED IN.)
C/L1	1" CONDUIT FROM WET WELL TO JB2 FOR L1. --- (1) #18-2 CONDUCTOR PLUS SHIELDED BELDEN #8760 VEGAPULS C23 RADAR
C/L2	1" CONDUIT FROM FUEL TANK LEVEL INDICATOR TO RTU FOR LOW FUEL LEVEL INDICATION. --- 2/C #18 SHIELDED CABLE, BELDEN #8760 (IF STATION IS NOT INITIALLY EQUIPPED WITH GENERATOR, CONDUIT IS TO BE INSTALLED AND CAPPED ONLY TO 3' FROM ATS H-POST AND NO CONDUITS ARE PULLED IN.)
C/MGMT	1" CONDUIT FROM MCP TO JB2 FOR MAG METER
C/PXMT	1" CONDUIT FROM MCP TO JB1 TO FOR PRESSURE TRANSMITTER. IF STATION IS NOT MANIFOLDED, CONDUIT IS TO BE LEFT EMPTY AND PRESSURE TRANSMITTER IS NOT INSTALLED.
L/DBP	1" CONDUIT FROM MCP TO DIESEL BYPASS PUMP
L/GEN	1" CONDUIT FROM 2-POLE CIRCUIT BREAKER IN MCC TO EMERGENCY GENERATOR CONTROL PANEL FOR HEATER, BATTERY CHARGER, AND PUMP. --- (3) #10 THHN/THWN AND (1) #10 GROUND (IF STATION IS NOT INITIALLY EQUIPPED WITH GENERATOR, CONDUIT IS TO BE INSTALLED AND CAPPED ONLY TO 3' FROM ATS H-POST AND NO CONDUITS ARE PULLED IN.)
P/L	1" CONDUIT FROM MCP TO ALARM LIGHT AND 115V RECEPTACLE
P/ATS	1" CONDUIT FROM MCP TO ATS TO PROVIDE CONTROL POWER FOR ATS. --- (2) #12 THHN/THWN
P/GEN	2" CONDUIT FROM ATS TO GENERATOR --- (1) #1 THHN/THWN AND (1) #1 THW GROUND (IF STATION IS NOT INITIALLY EQUIPPED WITH GENERATOR, CONDUIT IS TO BE INSTALLED AND CAPPED ONLY TO 3' FROM ATS H-POST AND NO CONDUITS ARE PULLED IN.)
P/LIGHT	1" CONDUIT FROM MCP TO ANTENNA TOWER FOR LED SITE LIGHT
P/M	CONDUIT FOR VAC _ PHASE _ WIRE SERVICE FROM C.O.L. TRANSFORMER OR POLE TO C.O.L. METER (M) (CONDUCTORS BY CITY ELECTRIC UTILITY)
P/MCP	2" CONDUIT FOR VAC _ PHASE _ WIRE SERVICE FROM MCP TO ATS AND FROM ATS TO MCP --- () # _ THHN/THWN AND (1) # _ THW GROUND.
P/MGMT	1" CONDUIT FROM MCP TO JB2 FOR MAG METER
P/P1 & P/P2	(2) 2" RIGID ALUMINUM FROM CABLE TRAY TO WET-CELL --- () # _ THHN/THWN, (1) # _ THW GROUND FOR MOTOR LEADS AND () # _ THHN/THWN FOR HEAT SENSOR, SEAL FAIL SIGNAL.
S/DBP	1" CONDUIT FROM MCP TO DIESEL BYPASS PUMP
S/GEN	1" CONDUIT FROM EMERGENCY GENERATOR (GEN) CONTROL PANEL TO RTU FOR SIGNALS TO INDICATE GENERATOR RUNNING, GENERATOR OFF, ETC. --- (8) #14 THHN/THWN (IF STATION IS NOT INITIALLY EQUIPPED WITH GENERATOR, CONDUIT IS TO BE INSTALLED AND CAPPED ONLY TO 3' FROM ATS H-POST AND NO CONDUITS ARE PULLED IN.)
SPARE P/P3	2" RIGID ALUMINUM FROM CABLE TRAY TO WET-CELL --- () # _ THHN/THWN, (1) # _ THW GROUND FOR MOTOR LEADS AND () # _ THHN/THWN FOR HEAT SENSOR, SEAL FAIL SIGNAL. CONDUIT EMPTY ON DUPLEX STATIONS.

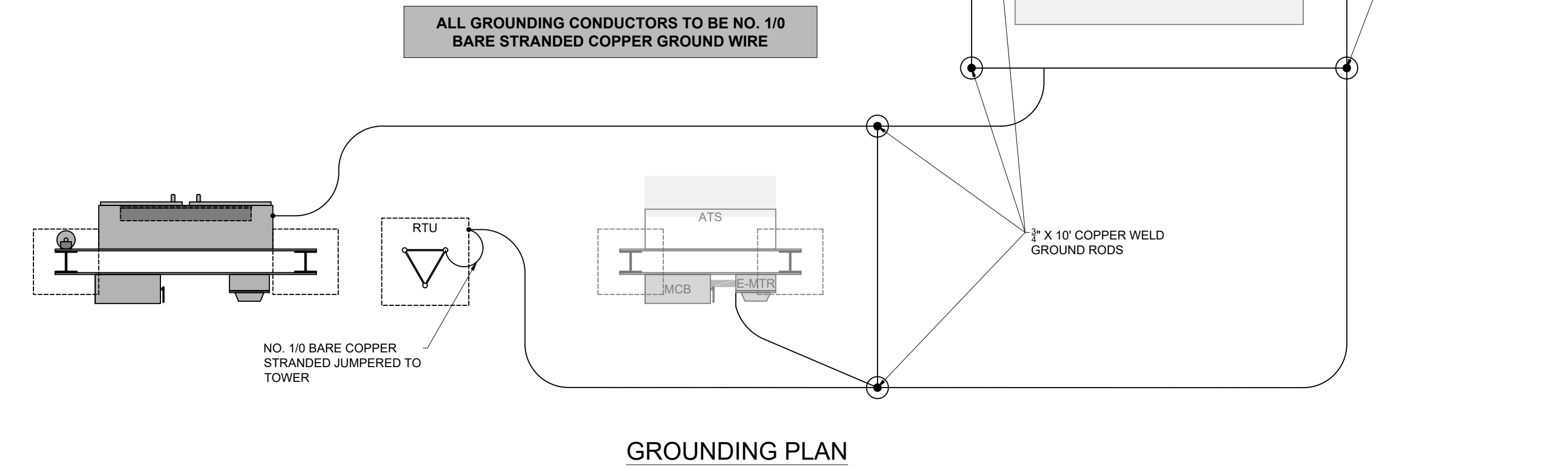
ALL CONDUCTORS SHALL BE STRANDED



BILL OF MATERIALS - RADIO TELEMETRY		
MARK	DESCRIPTION	QUANTITY
01	LAIRD YB4506	1
02	1 1/2" x 10' ALUMINUM CONDUIT	1
03	9' TOWER TOP SECTION, ROHN CLONE 25VG	1
04	10' TOWER BASE SECTION, ROHN CLONE 25V	1
05	READY MIX CONCRETE FILL	AS REQ'D
10	NEXTEC LP-BTR-NFF/ PTI-BB50-NFF	1
11	TYPE N CONNECTOR	1
12	LMR-400 CABLE	AS REQ'D
13	TYPE N CONNECTOR	1



BILL OF MATERIALS - ELECTRICAL		
MARK	QUAN	DESCRIPTION
ATS	1	AUTOMATIC TRANSFER SWITCH PER SPECIFICATIONS.
FS1	1	HIGH LEVEL FLOAT SWITCH
GEN	1	GENERATOR PER SPECIFICATIONS.
JB1	1	NEMA 4X 304 6x6x4 STAINLESS STEEL ENCLOSURE
JB2	1	NEMA 4X 304 6x6x4 STAINLESS STEEL ENCLOSURE
JB-P1	1	NEMA 4X 304 16x20x4 STAINLESS STEEL ENCLOSURE (ONLY OVER 40HP STATIONS)
JB-P2	1	NEMA 4X 304 16x20x4 STAINLESS STEEL ENCLOSURE (ONLY OVER 40HP STATIONS)
JB-P3	1	NEMA 4X 304 16x20x4 STAINLESS STEEL ENCLOSURE (ONLY OVER 40HP TRIPLEX STATIONS)
JB-FS1	1	NEMA 4X 304 12x12x4 STAINLESS STEEL ENCLOSURE (ONLY OVER 40HP STATIONS)
JB-L1	1	NEMA 4X 304 12x12x4 STAINLESS STEEL ENCLOSURE (ONLY OVER 40HP STATIONS)
LA	1	LIGHTNING ARRESTOR LA_30_ SQUARE D, CAT. NO. SP3850.
L1	1	VEGAPULS C21 RADAR & 4" VEGAMOUNT
MCB	1	MAIN CIRCUIT BREAKER, AMP, POLE, VOLT IN NEMA 4X STAINLESS STEEL ENCLOSURE, SQUARE D COMPANY 'H' OR 'J' FRAME CIRCUIT BREAKER AND ENCLOSURE.
MCP	1	MAIN CONTROL PANEL, PROVIDED BY CITY APPROVED VENDOR, INSTALLED BY ELECTRICAL CONTRACTOR.
PXMT	1	VEGABAR 28, PRESSURE TRANSMITTER, ONLY PROVIDED FOR SITES WITH FORCE-MAIN MANIFOLDS



REVISION	DESCRIPTION
1	ADDED 1" CONDUIT FROM MCP TO FLOWMETER, ADDED 1" PASS DISCHARGE POINT
2	CHANGED CONCRETE TYPE TO POLYMER CONCRETE
3	ADDED PANEL & SCADA VENDOR TABLE

REVISION	DATE	BY
1	07/20/2024	1
2	08/02/2023	1

DRAWN BY: **M. RIESNER**
 DRAWING DATE: **05/16/2023**
 SCALE: **NO SCALE**