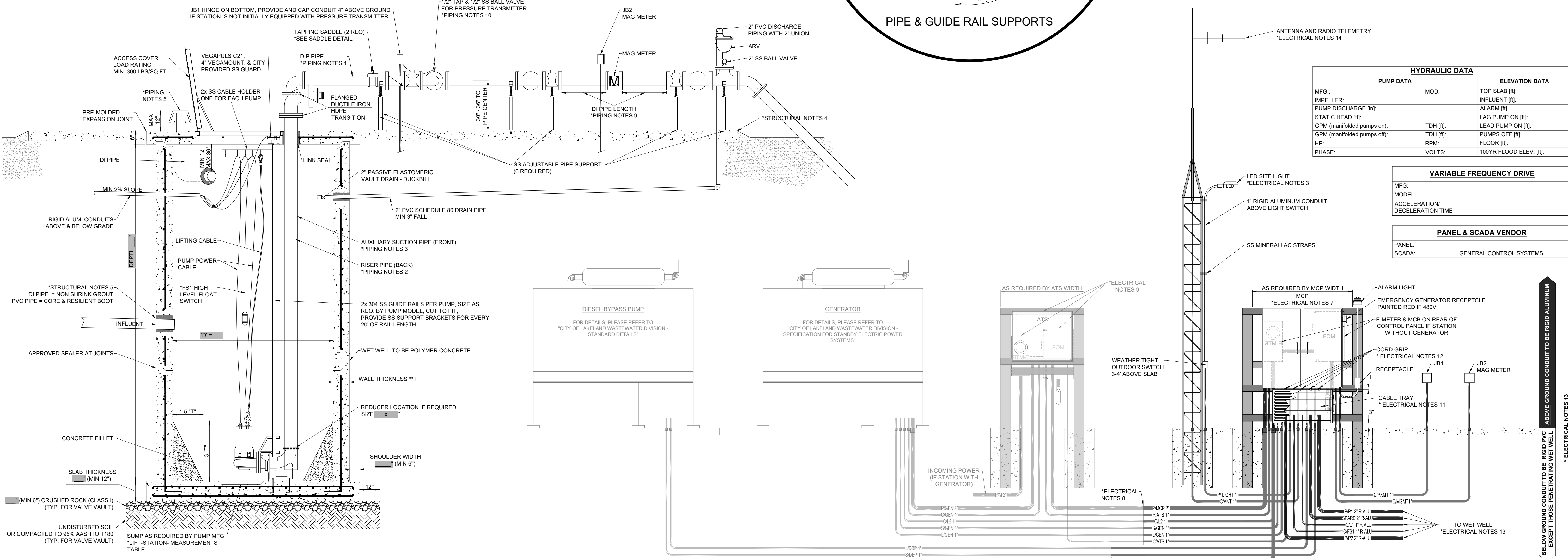
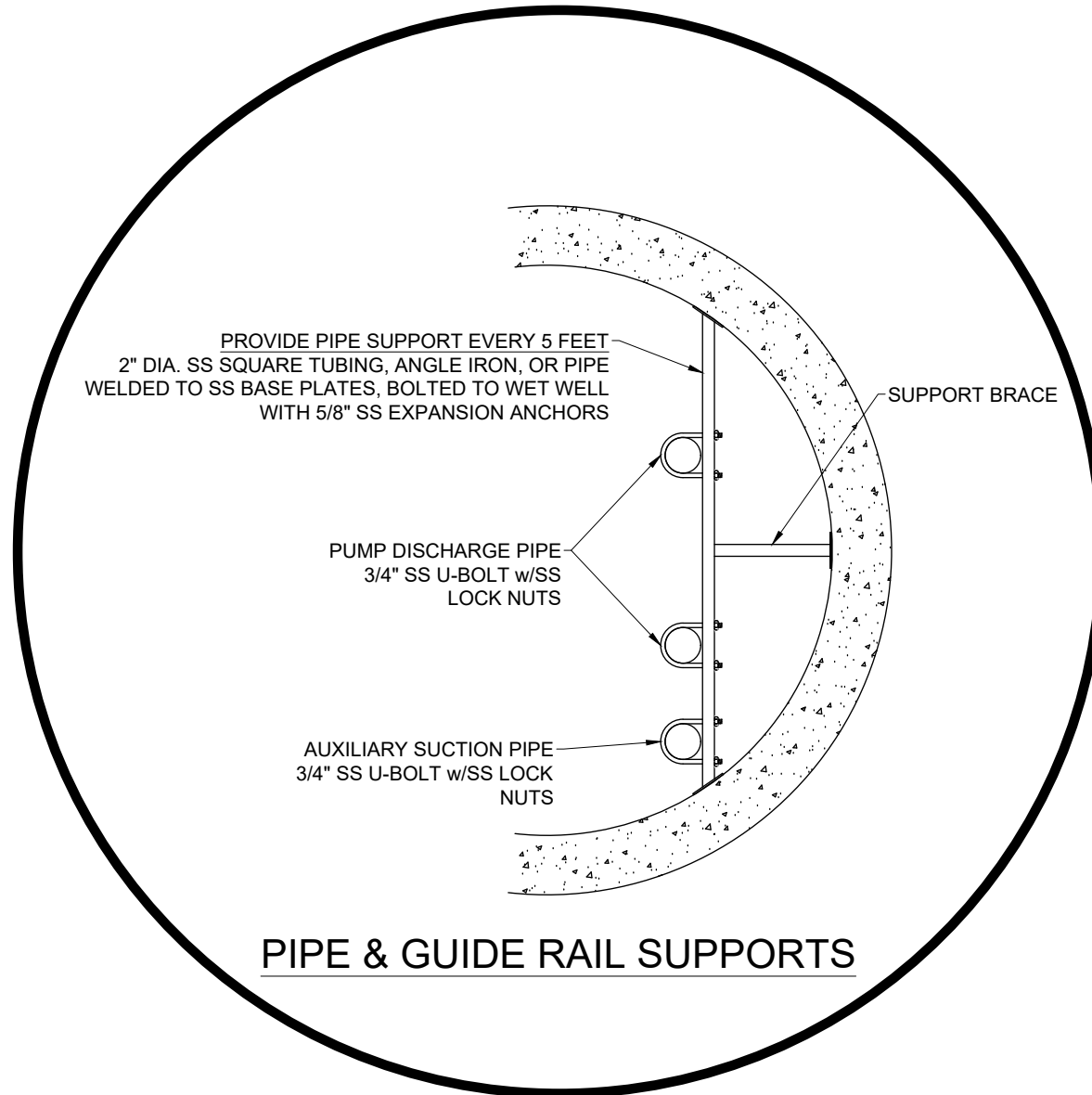


LIFT-STATION MEASUREMENTS									
INDICATE SELECTED OPTION	DI PIPE SIZE [in]	AUX SUCTION PIPE SIZE [in]	WET WELL		DIMENSIONS [in]			SUMP [in]	
			D [in]	T** [in]	ACCESS COVER	A	B		
	4	*	6	7	*	26	*	*	*
	4	*	8	9	*	26	*	*	*
	6	*	6	7	*	32	*	*	*
	6	*	8	9	*	32	*	*	*
	8	*	8	9	*	45	*	*	*
	8	*	9	10	*	45	*	*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

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



WATER UTILITIES

ENGINEERING DIVISION

city of Lakeland

WATER UTILITIES

501 E. LEON ST. WADSWORTH, FLORIDA 32601-5079

PHONE (863) 834-6316

REVISION	DESCRIPTION	DATE	BY	CHKD
1	CHANGED CONCRETE TYPE TO POLYMER CONCRETE	08/20/2023		
2	ADDED PANEL & SCADA VENDOR TABLE	08/20/2023		

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.

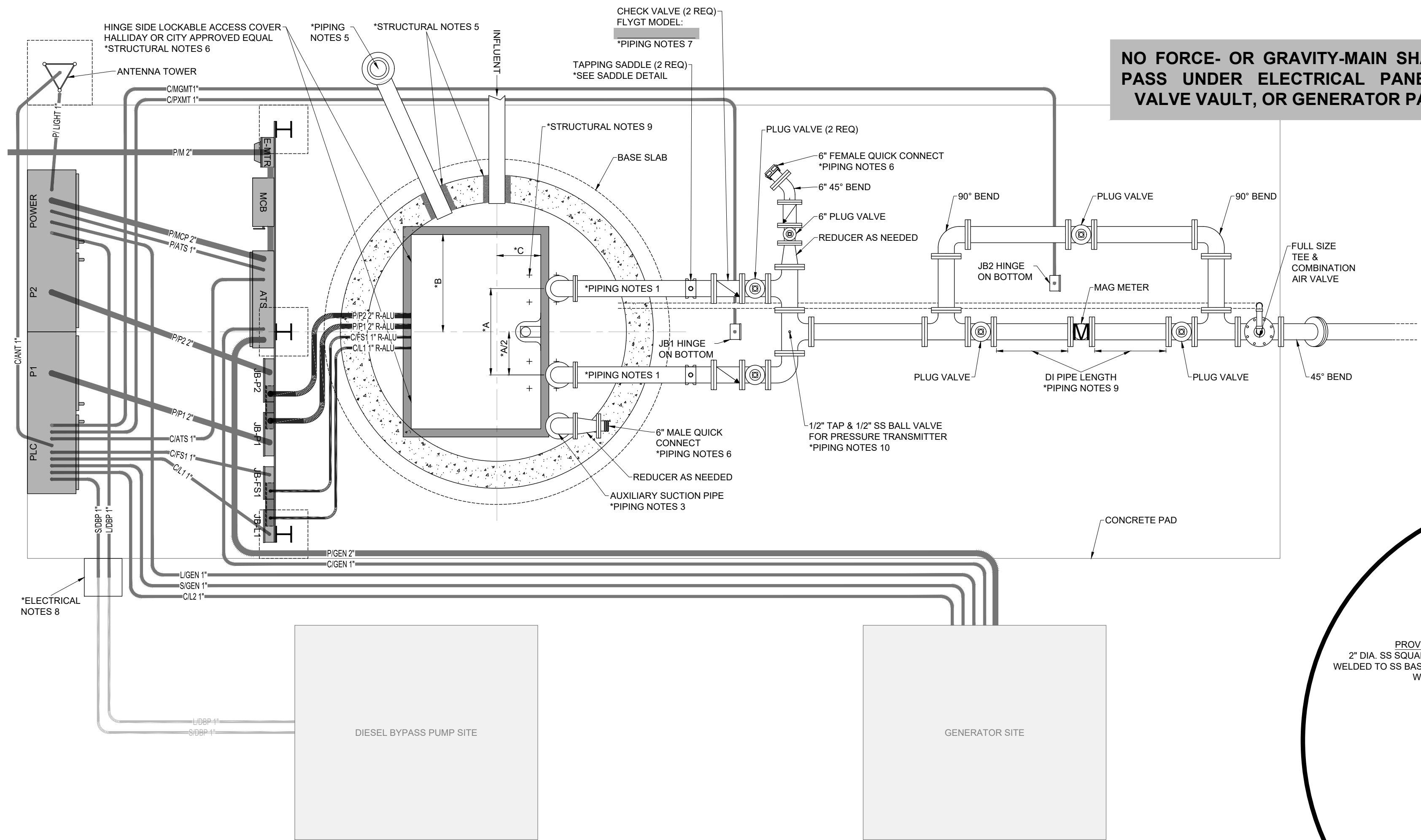
SHEET: D1

ENGINEER: ---

FLORIDA P.E. LIC NO. ---

SIG: ---

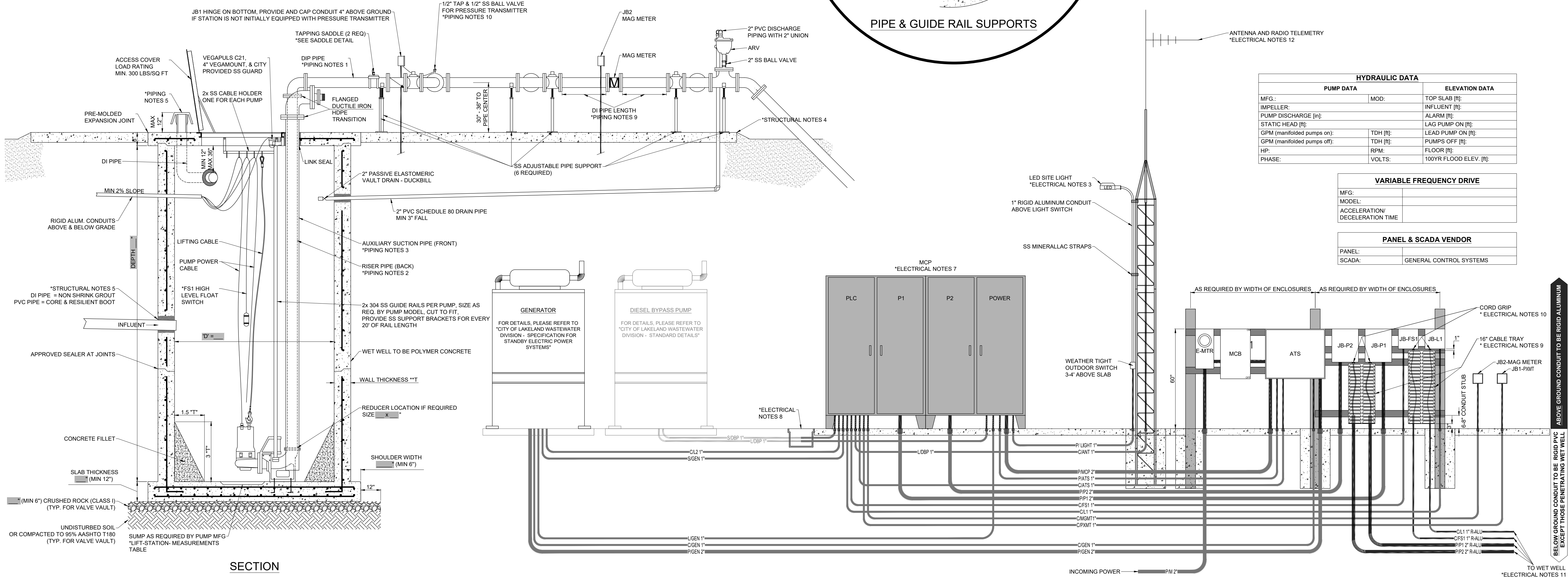
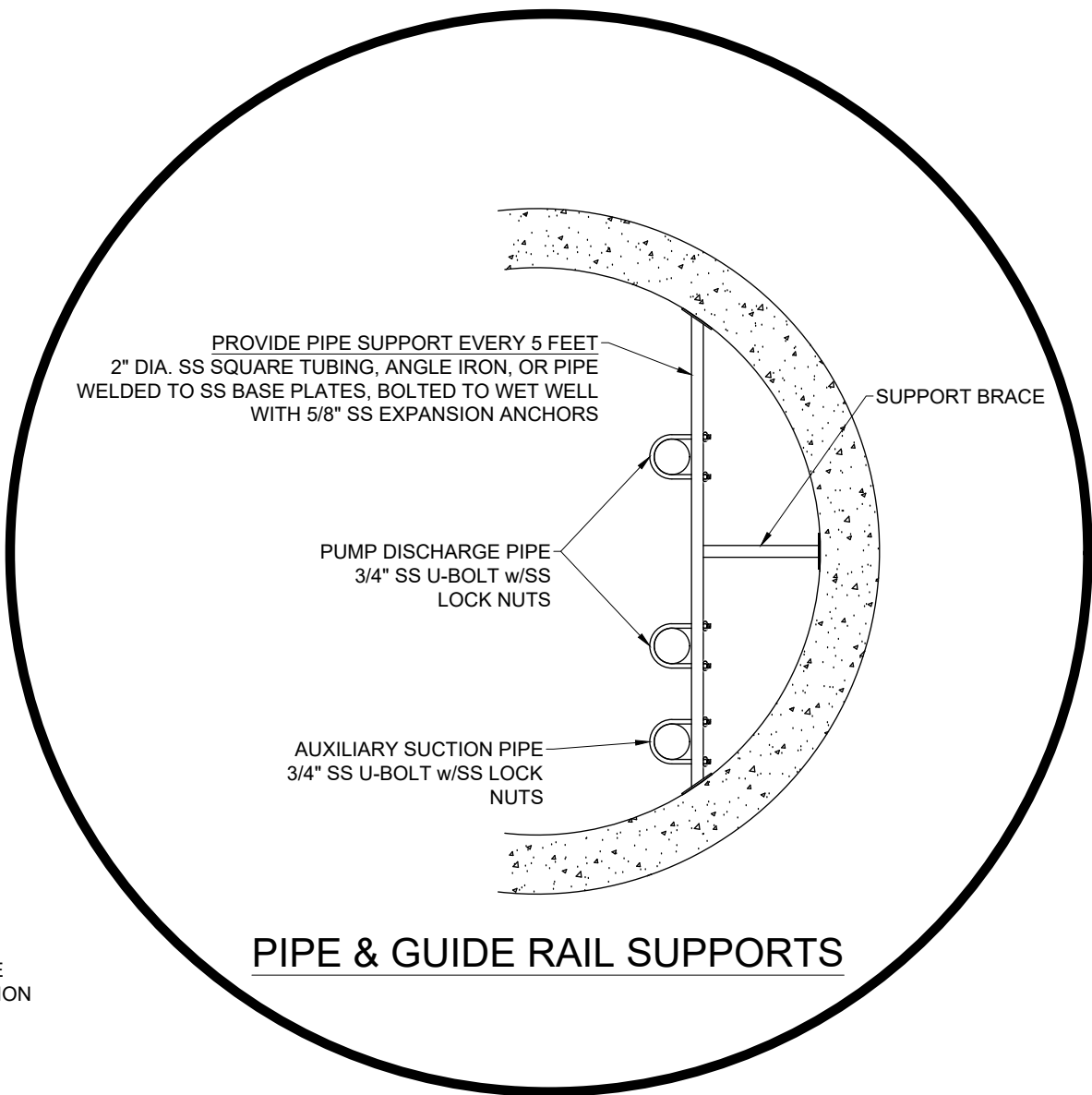
DATE: ---



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 [ft]	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	*	*	*
	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.
 - WET WELL LOWER SLAB SHALL BE POSITIVELY JOINTED TO WET WELL WALL. USABLE 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 HLT 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 SIZES 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" - 8" = SCHEDULE 40; > 8" = 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.
 - 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.
 - 10/12" 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. (863) 834-60128.
 - REFERENCE CITY OF LAKELAND STANDARD ELECTRICAL/TELEMETRY DRAWING FOR ANTENNA, CONDUIT DESCRIPTION AND GROUNDING DETAILS.
 - SITE LIGHTING SHALL BE FFLED39. 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.
 - MAIN CONTROL PANEL (MCP) TO BE PROVIDED BY VENDOR ON CITY OF LAKELAND SPECIFIED VENDOR LIST.
 - 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

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

WATER UTILITIES
ENGINEERING DIVISION

city of
Lakeland
WATER UTILITIES

501 E. LEON ST. WADSWORTH
LAKELAND, FLORIDA 33801-5079
PHONE (863) 834-6316

CHANGED CONCRETE TYPE TO POLYMER CONCRETE
ADDED PANEL & SCADA VENDOR TABLE

REVISION	DESCRIPTION	REVISION DATE	REVISION NO.
1		08/20/2023	1

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.

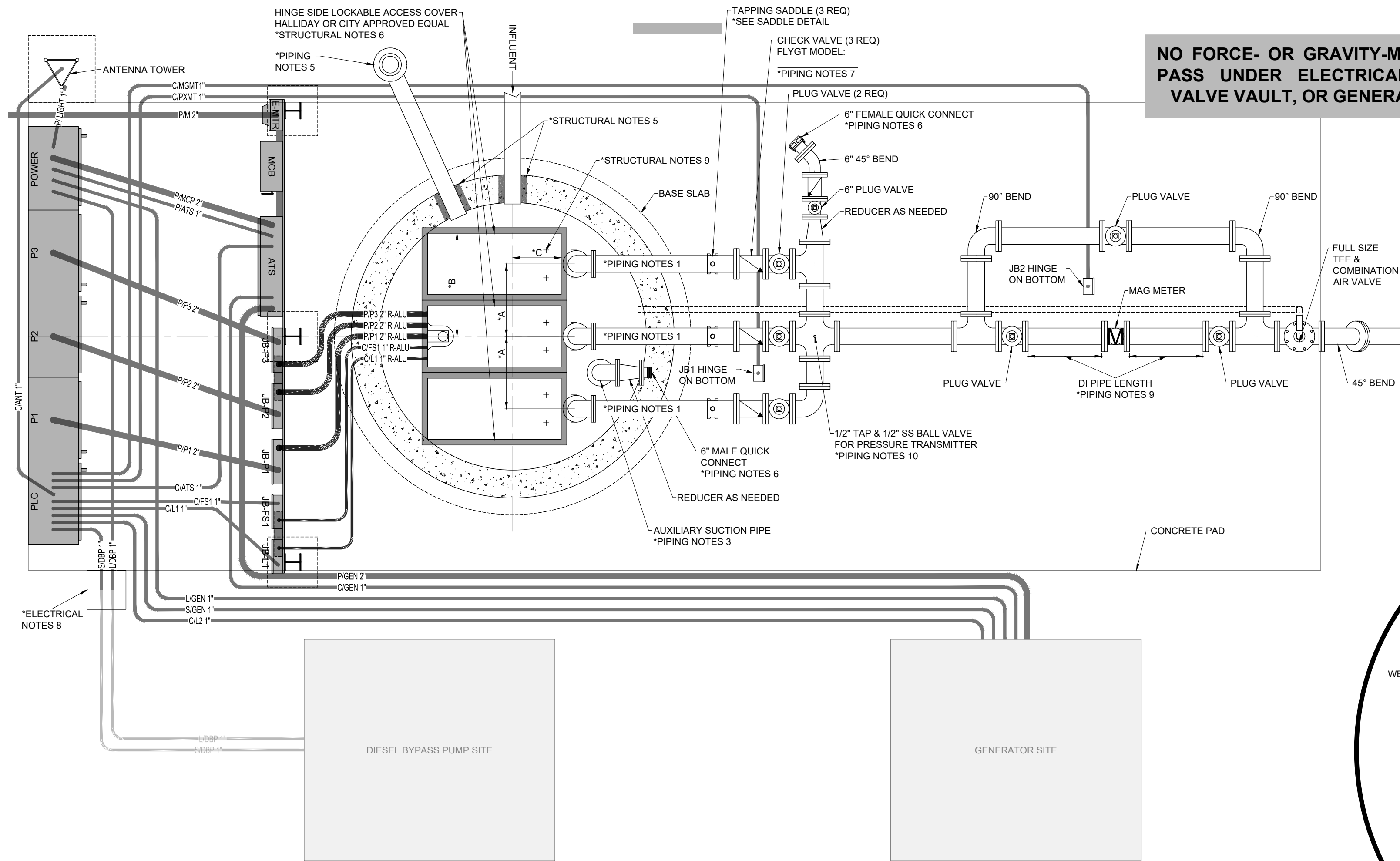
SHEET:
D3

ENGINEER:

FLORIDA P.E. LIC NO.

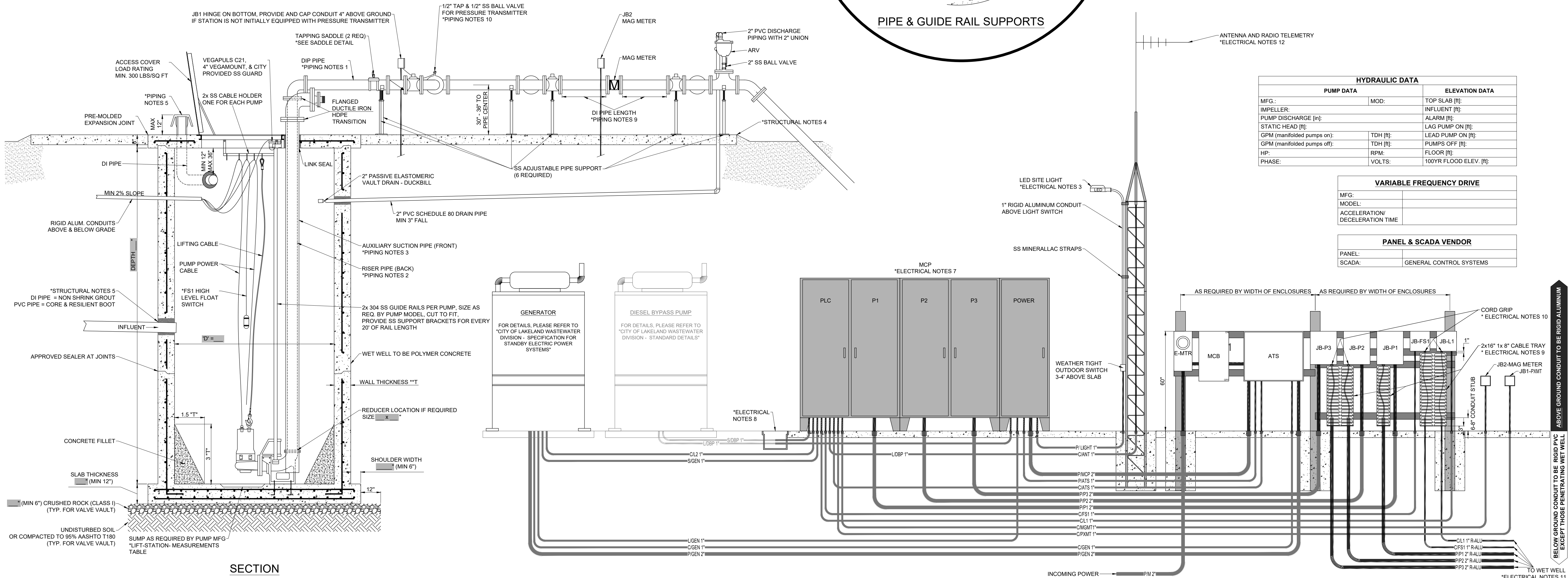
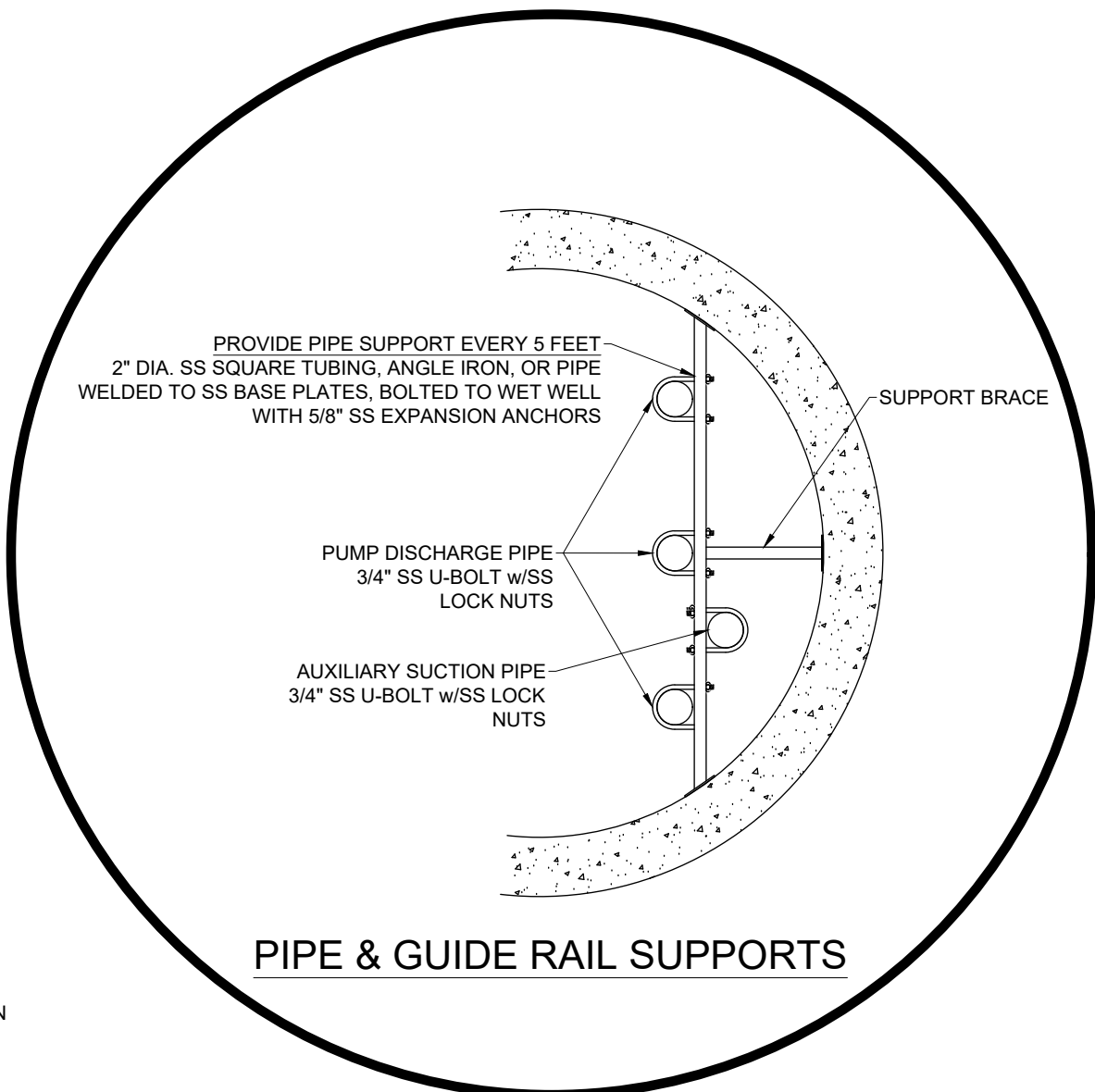
SIG:

DATE:



LIFT-STATION MEASUREMENTS									
INDICATED SELECTED OPTION	DI PIPE SIZE [in]	AUX SUCTION PIPE SIZE [in]	WET WELL			DIMENSIONS [in]			SUMP [in]
			D [ft]	T [ft]	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	*	*	*
	8	*	10	11	*	45	*	*	*
	10	*	9	10	*	48	*	*	*
	10	*	10	11	*	48	*	*	*

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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	CHANGED CONCRETE TYPE TO POLYMER CONCRETE	09/20/2023		
2	ADDED PANEL & SCADA VENDOR TABLE	09/20/2023		

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:	---

