

CITY OF LAKELAND

WATER UTILITIES ENGINEERING

SEWER PUMP STATION DETAILS & SPECIFICATIONS

09/30/2025

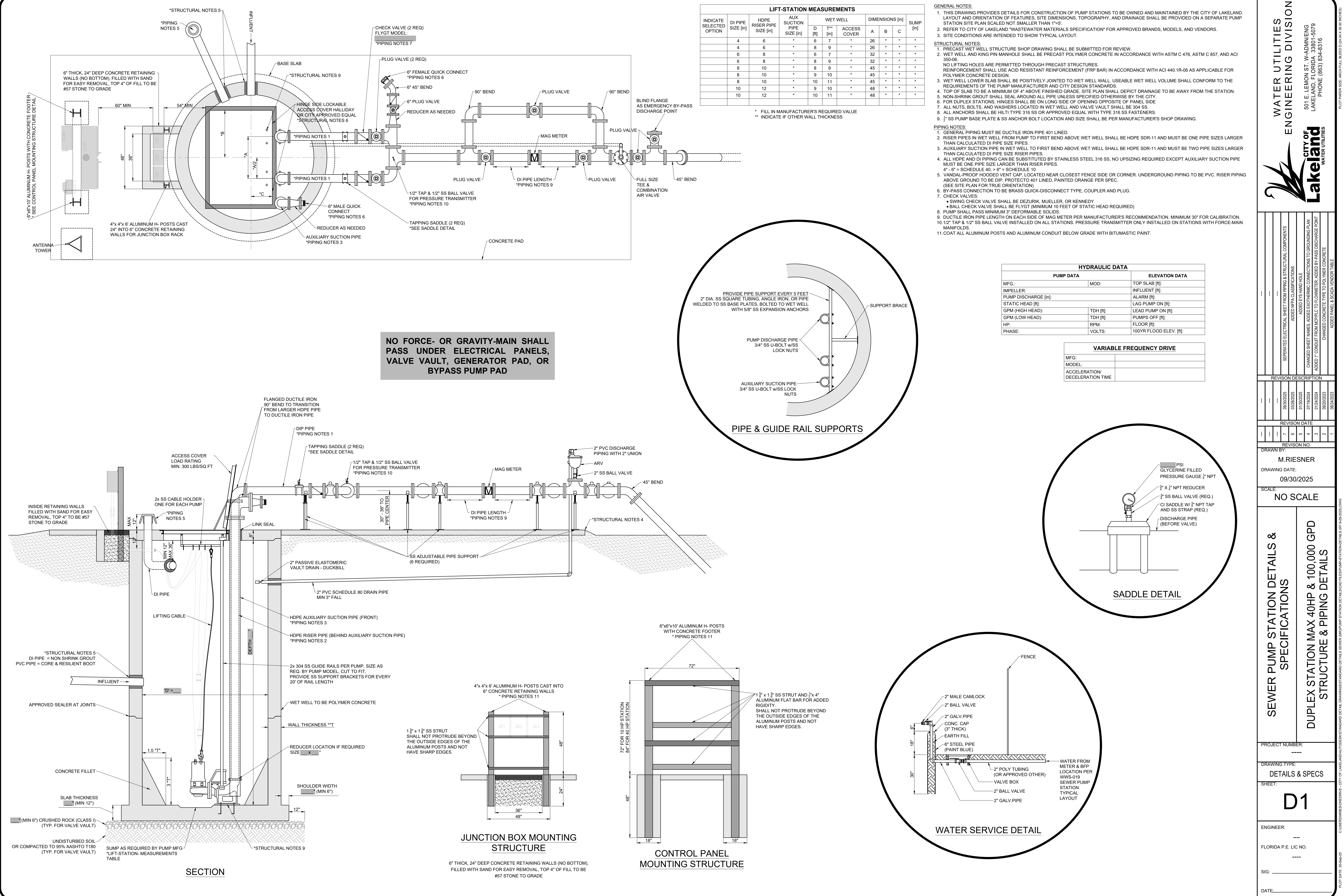
THE CITY OF LAKELAND WATER UTILITIES ENGINEERING DEPARTMENT PROVIDES STANDARD DETAILS & SPECIFICATIONS FOR 3 VERSIONS OF PUMP STATIONS. PLEASE SELECT THE CORRECT FIT BASED ON STATION SIZE AND NUMBER OF PUMPS.

Pump Station Versions		
Version	Structure & Piping Details Page	Electric Details Page
Duplex Stations Max 40HP and Max 100,000GPD	D1	E1
Not Included (reserved for future use)	D2	E2
Duplex Stations Over 40HP and 100,000GPD	D3	E3
Triplex Stations Over 40HP and 100,000GPD	D4	E4

PREPARED BY



ENGINEERING DIVISION
501 E LEMON ST, MAIL CODE W-ADMIN/ENG
LAKELAND, FLORIDA 33801-5050
PHONE (863) 834-8316



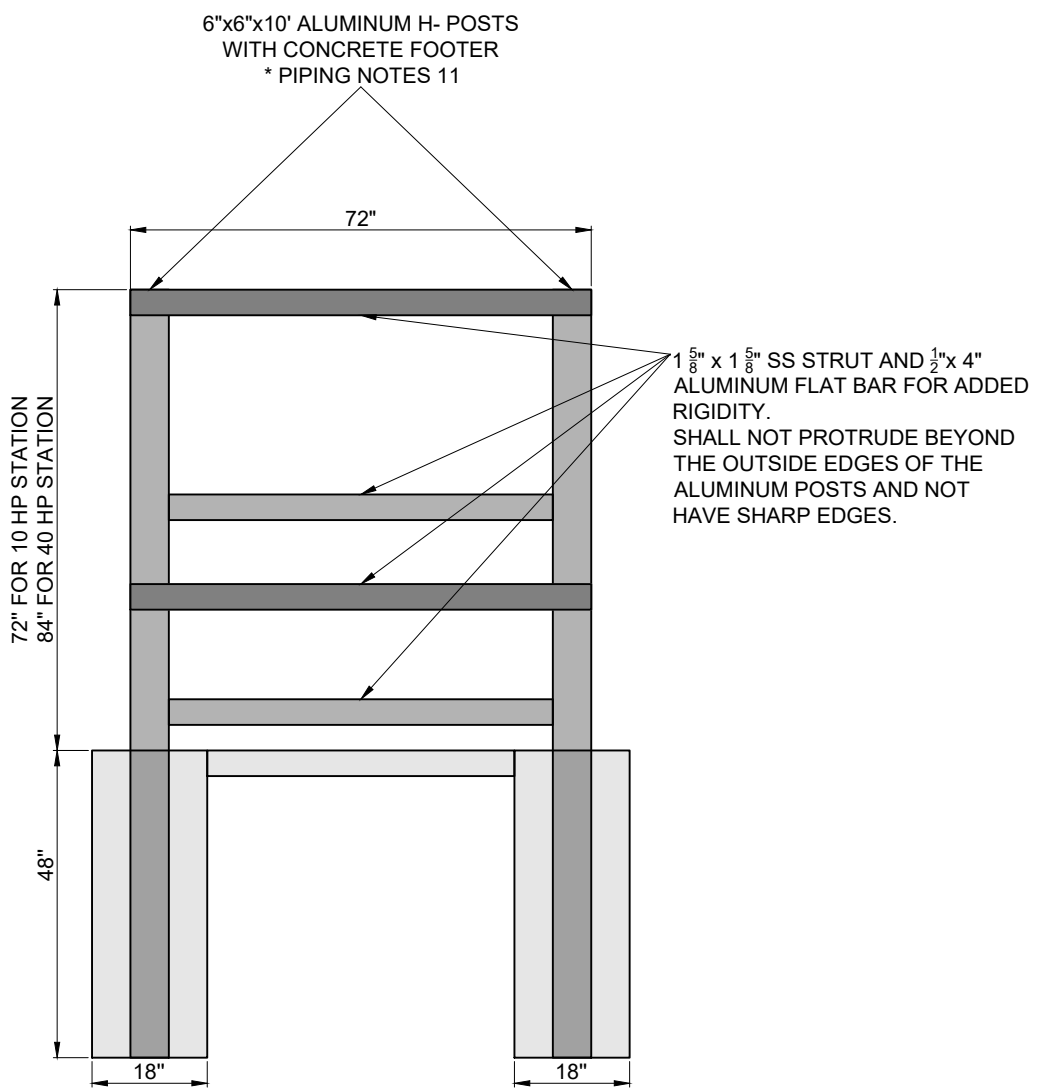
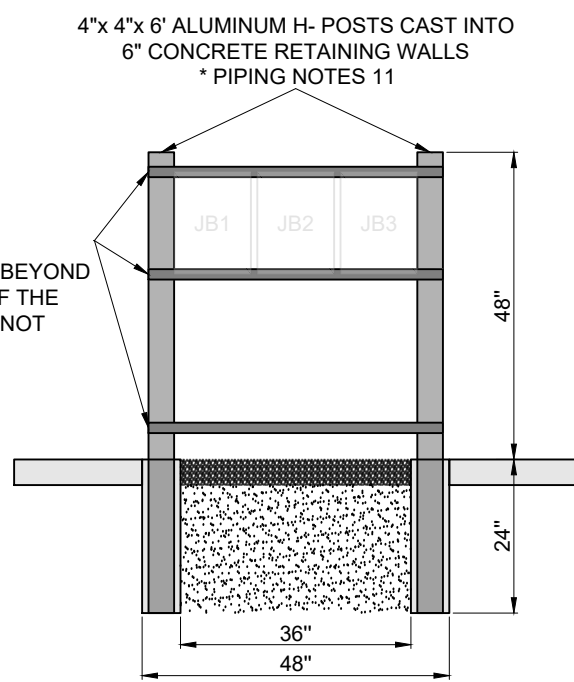
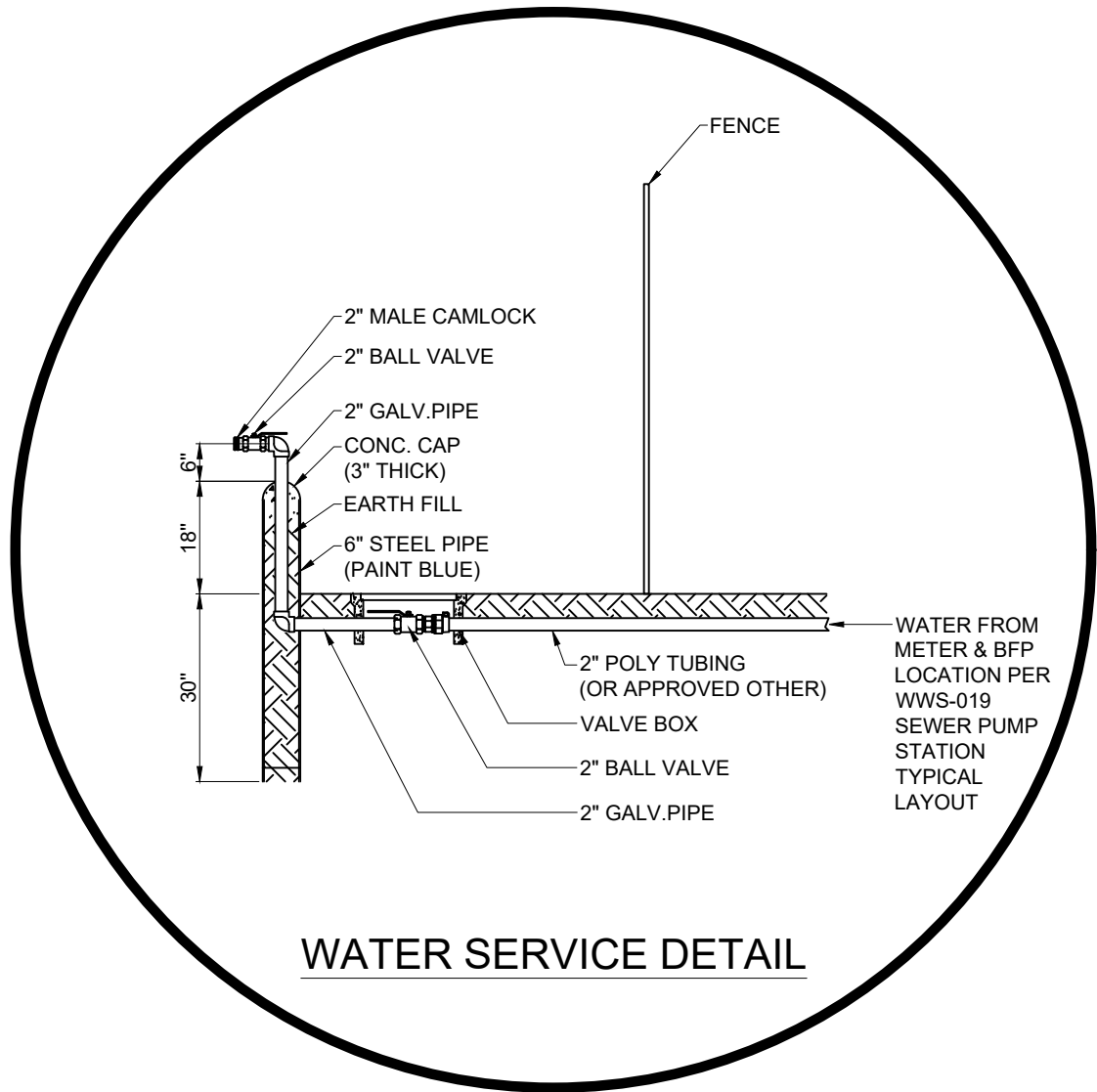
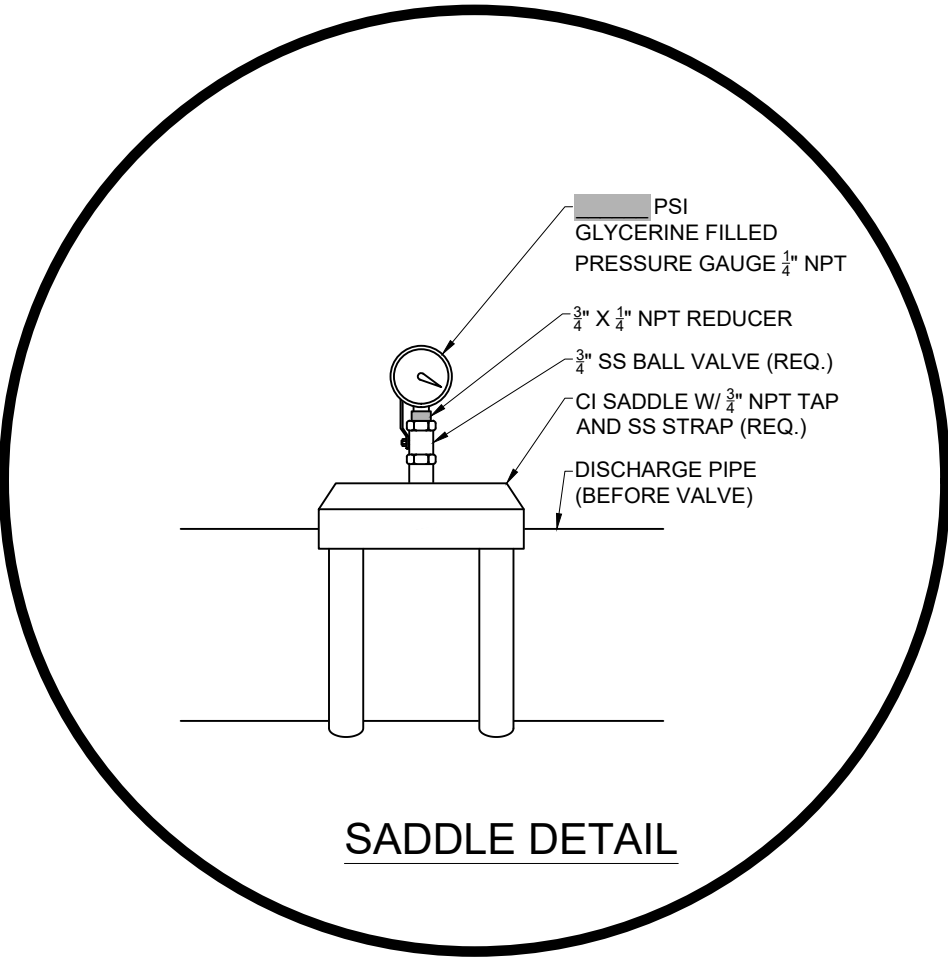
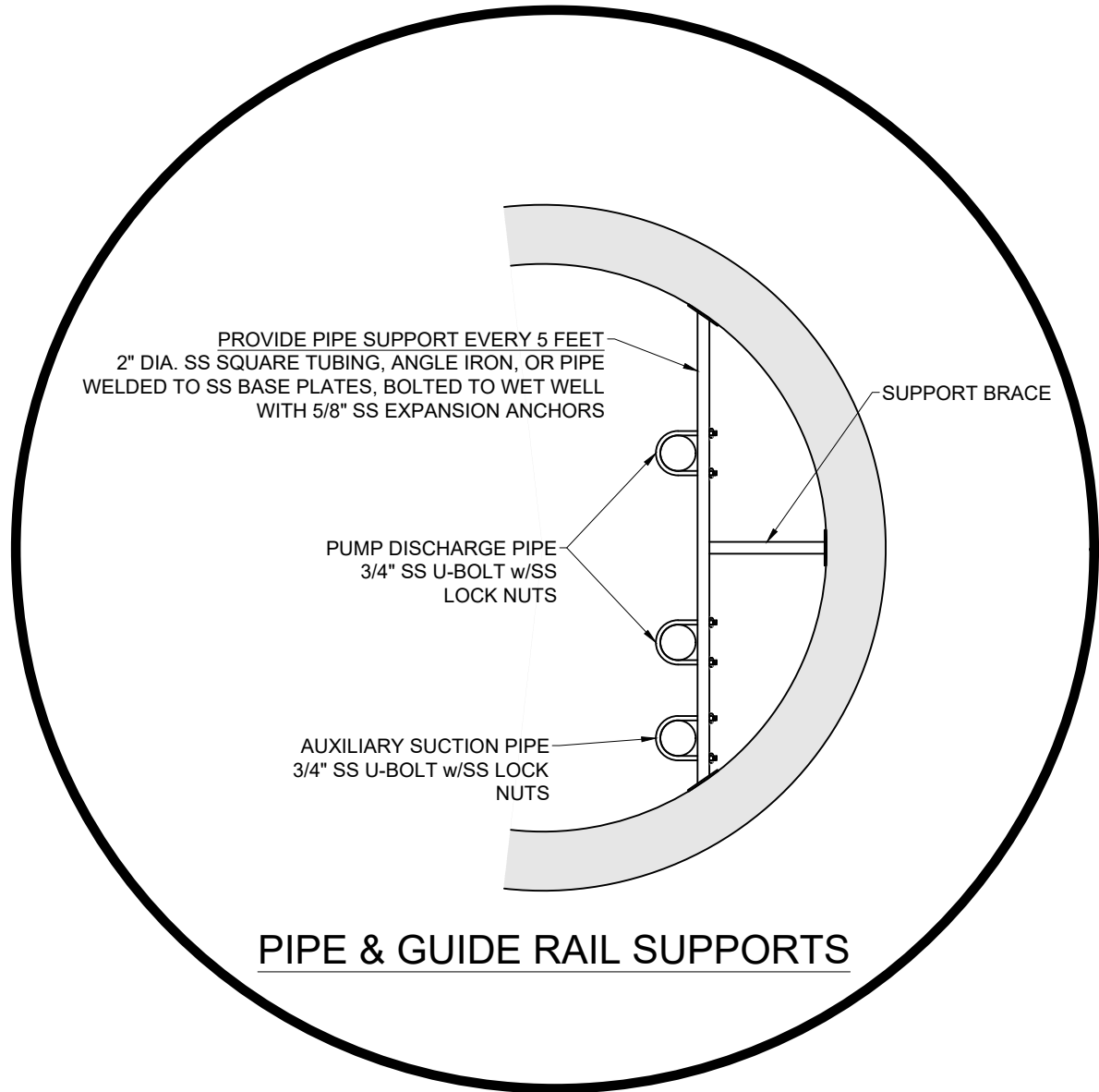
LIFT-STATION MEASUREMENTS									
INDICATE SELECTED OPTION	DI PIPE SIZE [in]	HDPE RISER PIPE SIZE [in]	AUX SUCTION PIPE SIZE [in]	WET WELL			DIMENSIONS [in]		
				D	T**	ACCESS COVER	A	B	C
	4	6	*	6	7	*	26	*	*
	4	6	*	8	9	*	26	*	*
	6	8	*	6	7	*	32	*	*
	6	8	*	8	9	*	32	*	*
	8	10	*	8	9	*	45	*	*
	8	10	*	9	10	*	45	*	*
	8	10	*	10	11	*	45	*	*
	10	12	*	9	10	*	48	*	*
	10	12	*	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.
 - SITE CONDITIONS ARE INTENDED TO SHOW TYPICAL LAYOUT.
- STRUCTURAL NOTES:
- PRECAST WET WELL STRUCTURE SHOP DRAWING SHALL BE SUBMITTED FOR REVIEW.
 - WET WELL AND KING PIN MANHOLE 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 OPPOSITE OF PANEL SIDE.
 - 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.
 - 3" SS PUMP BASE PLATE & SS 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 THAN CALCULATED DI PIPE SIZE 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 THAN 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" - 6" = 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.
 - 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 ONLY INSTALLED ON STATIONS WITH FORCE-MAIN MANIFOLDS.
11. COAT ALL ALUMINUM POSTS AND ALUMINUM CONDUIT BELOW GRADE WITH BITUMASTIC PAINT.

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 (HIGH HEAD):	TDH [ft]:	LEAD PUMP ON [ft]:	
GPM (LOW HEAD):	TDH [ft]:	PUMPS OFF [ft]:	
HP:	RPM:	FLOOR [ft]:	
PHASE:	VOLTS:	100YR FLOOD ELEV. [ft]:	

VARIABLE FREQUENCY DRIVE	
MFG:	
MODEL:	
ACCELERATION/ DECELERATION TIME	

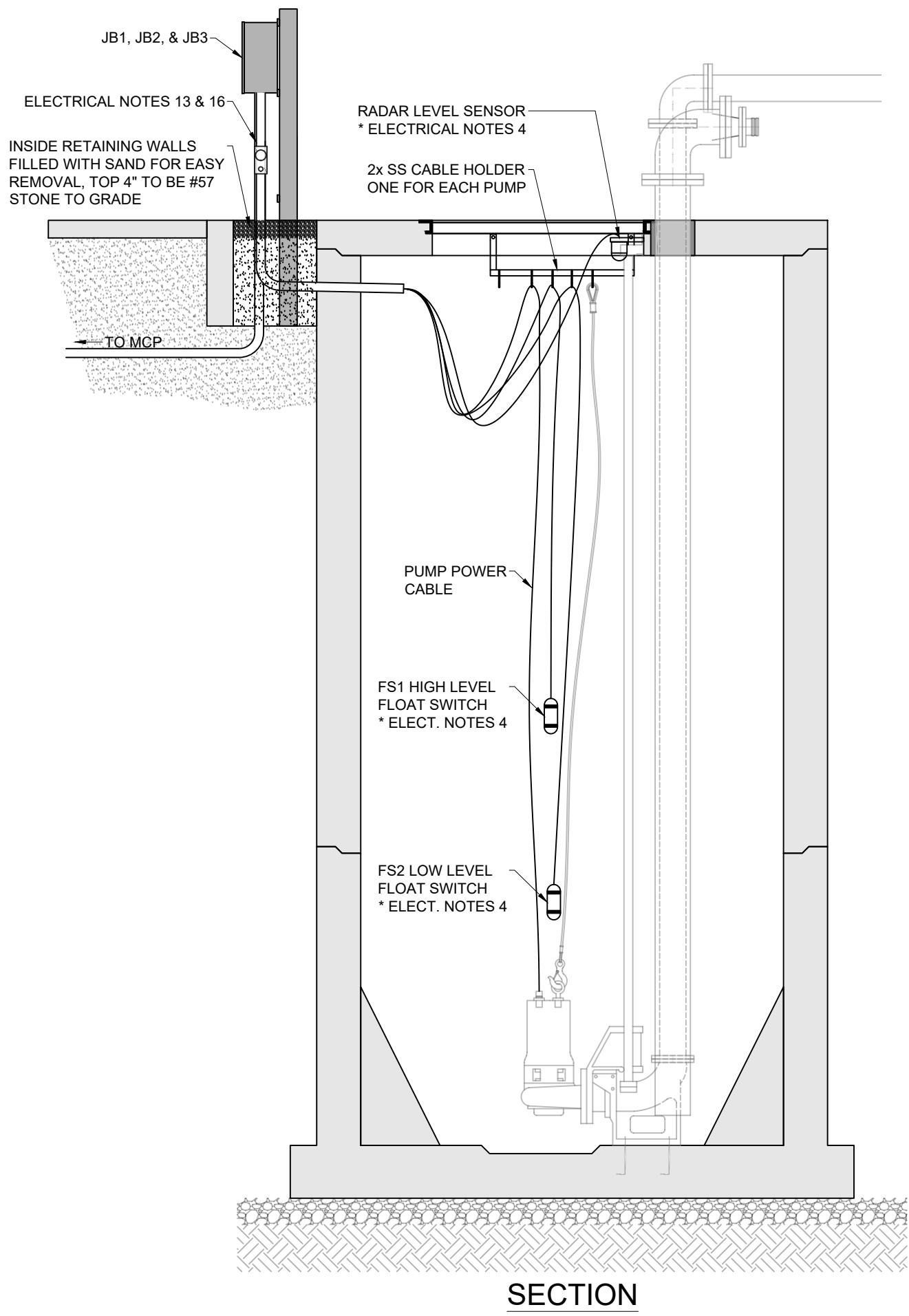
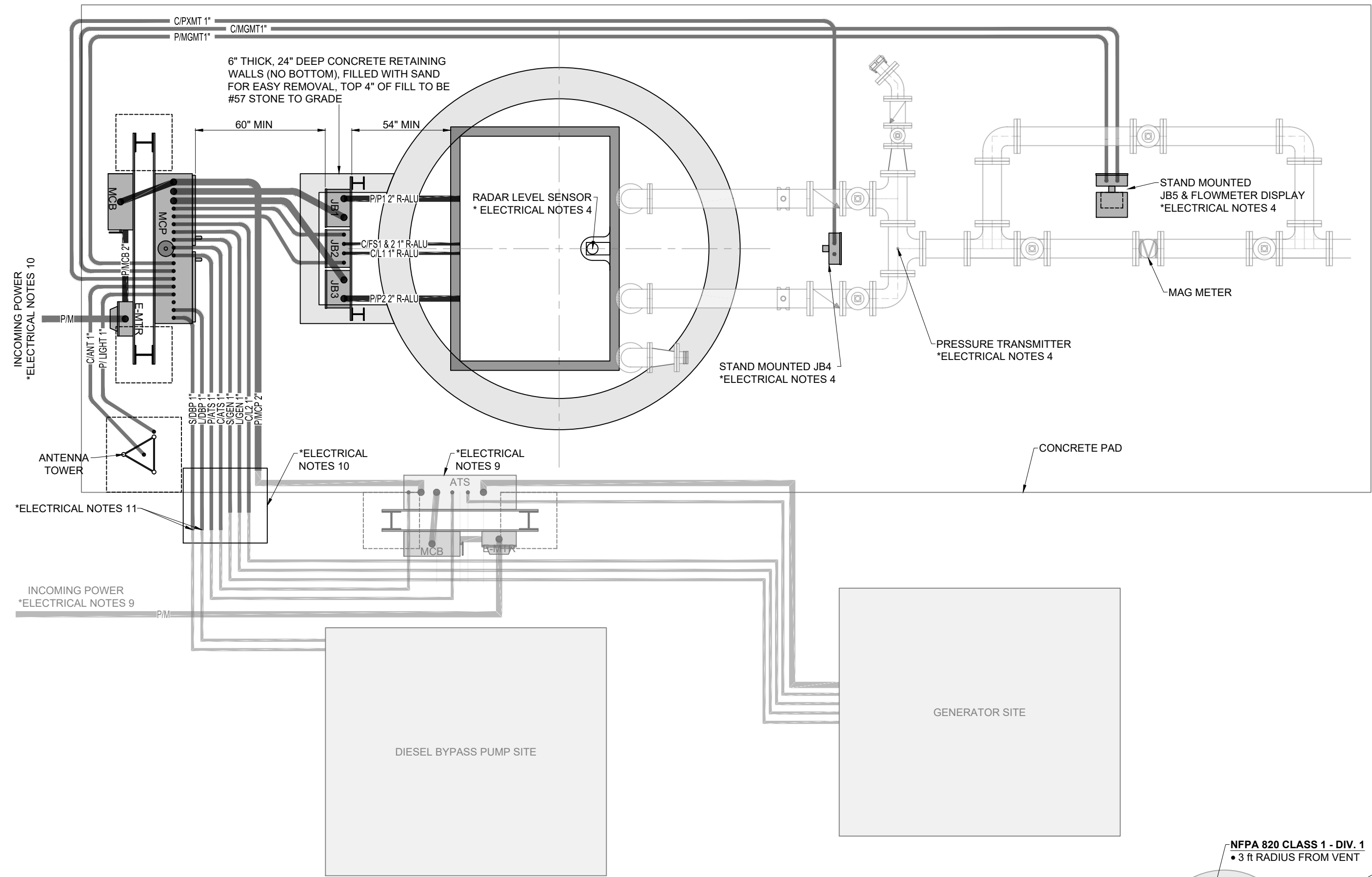


WATER UTILITIES
ENGINEERING DIVISION

city of
Lakeland
WATER UTILITIES

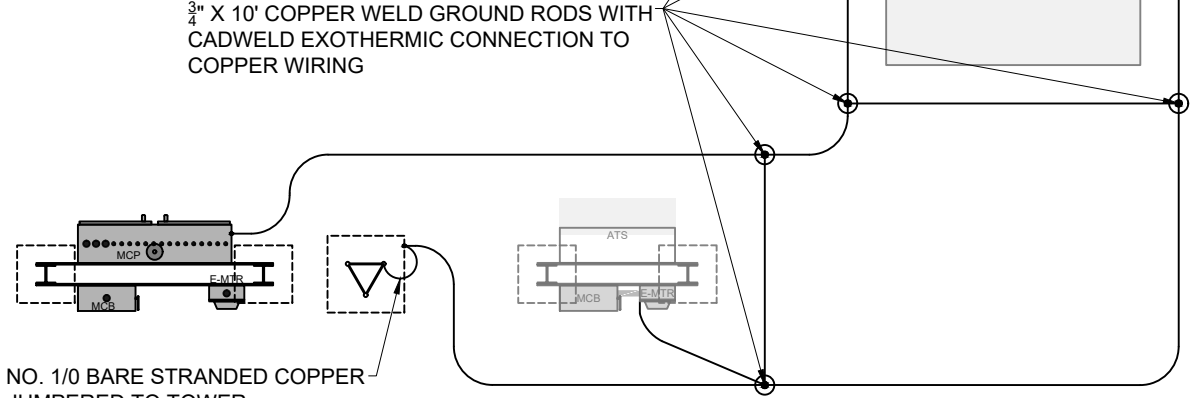
501 E. LEON ST. WADSWORTH
LAKELAND, FLORIDA 33801-5079
PHONE (863) 834-4316

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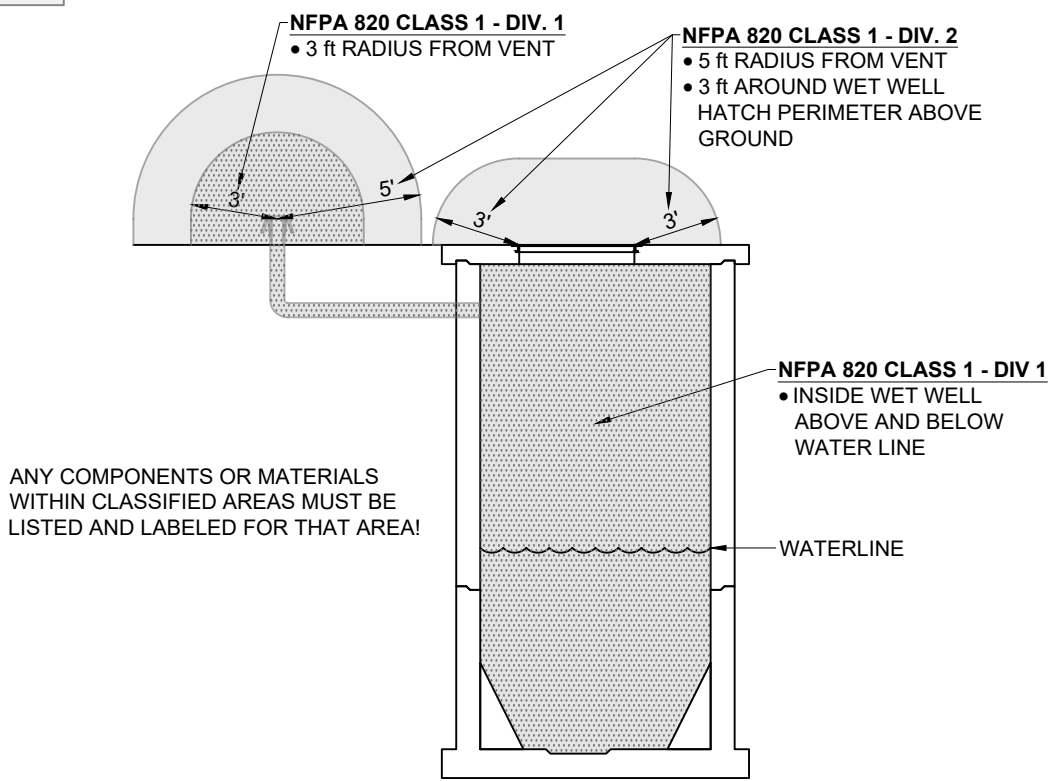


- GENERAL NOTES:
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 - REFER TO CITY OF LAKELAND "WASTEWATER MATERIALS SPECIFICATION" FOR APPROVED BRANDS, MODELS, AND VENDORS.
 - SITE CONDITIONS ARE INTENDED TO SHOW TYPICAL LAYOUT.
- ELECTRICAL NOTES:
- IT IS THE EOR'S RESPONSIBILITY TO ENSURE ALL ELECTRICAL EQUIPMENT, MATERIAL, AND DETAILS OF INSTALLATION COMPLY WITH THE REQUIREMENTS OF THE MOST CURRENT EDITIONS, AS ADOPTED BY THE AHJ, OF NFPA 70 AND NFPA 820 AS WELL AS ALL OTHER STATE, CITY, AND LOCAL CODES.
 - CONTACT CITY OF LAKELAND BUILDING INSPECTION FOR APPROVAL OF WORK REQUIRING ELECTRICAL INSPECTOR. (863) 834-60128
 - CONDUIT ROUTING SHOWN IS DIAGRAMMATIC. CONTRACTOR SHALL COORDINATE ACTUAL ROUTING OF CONDUITS WITH FIELD CONDITIONS TO MINIMIZE CONFLICTS.
 - ALL MOUNTING HARDWARE AND STRUT CHANNELS ARE TO BE STAINLESS STEEL.
 - CONTROL PANEL, ALL JUNCTION BOXES, JB 4 & JB 5 STANDS, FLOW METER, PRESSURE TRANSMITTER, RADAR LEVEL TRANSMITTER, LEVEL FLOATS, ANTENNA (TOWER, CABLING, AND SURGE SUPPRESSOR), AND SITE LIGHT WILL BE SUPPLIED BY PANEL VENDOR AS PART OF THE CONTROL PANEL PACKAGE.
 - APPROVED PANEL VENDORS ARE GENERAL CONTROL SYSTEMS, REVERE CONTROLS, & UNTRON CONTROLS (BY BARNEY'S PUMPS)
 - SITE LIGHTING SHALL BE POSITIONED 12' ABOVE SLAB AND BE DIRECTED TOWARD WET WELL. LIGHT IS TO BE MOUNTED ON LEG OF ANTENNA TOWER FACING THE CONTROL PANEL.
 - 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.
 - IF STATION IS BUILT WITH GENERATOR, E-METER AND MCB TO BE LOCATED AT BACK OF ATS.
 - IF STATION IS NOT INITIALLY BUILT WITH GENERATOR, E-METER AND MCB TO BE LOCATED AT BACK OF MCP. CONDUITS FOR FUTURE GENERATOR ARE TO BE INSTALLED AND TERMINATED IN HAND BOX OUTSIDE STATION CONCRETE PAD AS WELL AS CAPPED OFF MIN 3" ABOVE CONCRETE PAD UNDERNEATH MCP.
 - 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 OUTSIDE STATION CONCRETE PAD AND CAPPED OFF MIN 3" ABOVE CONCRETE PAD UNDERNEATH MCP.
 - MOTOR PROTECTION WIRING BETWEEN JB1/JB3 AND MCP SHALL BE IN THE SAME CONDUIT WITH THE MOTOR POWER WIRING.
 - ALL ABOVE GROUND CONDUIT SHALL BE RIGID ALUMINUM DOWN TO AND INCLUDING THE FIRST UNDERGROUND SWEEP. THE CONDUIT FROM JB1, JB2, AND JB3 TO THE WET WELL SHALL BE RIGID ALUMINUM AND HAVE 12" OF COVER. ALL OTHER UNDERGROUND CONDUIT SHALL BE RIGID PVC. POWER SUPPLY CONDUIT SHALL HAVE A MINIMUM OF 42" COVER. ALL OTHER UNDERGROUND CONDUIT SHALL HAVE A MINIMUM OF 24" COVER.
 - COAT ALL ALUMINUM POSTS AND ALUMINUM CONDUIT BELOW GRADE WITH BITUMASTIC PAINT.
 - ALL CONDUITS FROM AND TO WET WELL, AS WELL AS ALL CONDUITS EXTENDING FROM BELOW GRADE INTO MCP, SHALL BE SEALED WITH EYS FITTING PER NFPA 70 BEFORE ENTERING ENCLOSURE. SEAL OFF FITTING TOP TO BE 18" ABOVE FINISHED GROUND.
 - DEVELOPER SHALL INSTALL RADIO TELEMTRY IN ACCORDANCE WITH CITY STANDARDS. CITY SHALL PERFORM TELEMTRY START UP.
 - PUMP SHAFT SEAL FAILURE WARNING IS INDICATED BY _____
 - CABLES WITHIN DIVISION 1 LOCATIONS SHALL BE SEALED IN ACCORDANCE WITH NEC 501.15
 - BONDING SHALL BE IN ACCORDANCE WITH NEC 501.30

ALL GROUNDING CONDUCTORS TO BE NO. 1/0 BARE STRANDED COPPER GROUND WIRE



GROUNDING PLAN

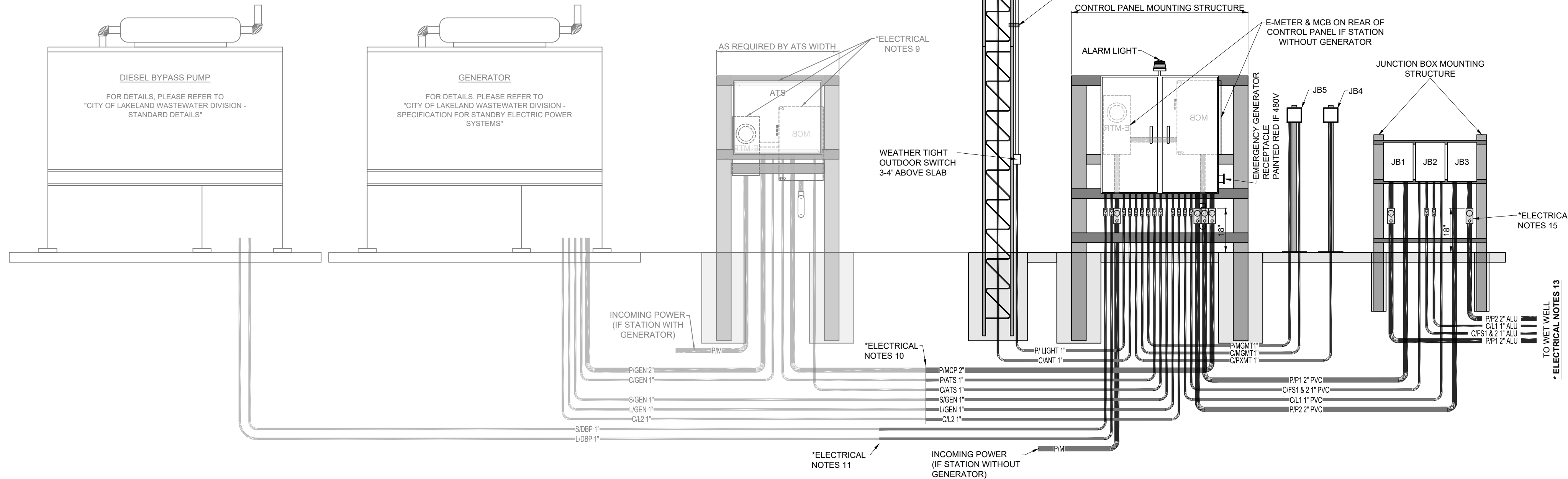


NFPA 820 CLASSIFIED AREAS

PANEL & SCADA VENDOR	
PANEL:	
TELEMETRY, SCADA, PLC PROGRAMMING:	GENERAL CONTROL SYSTEMS

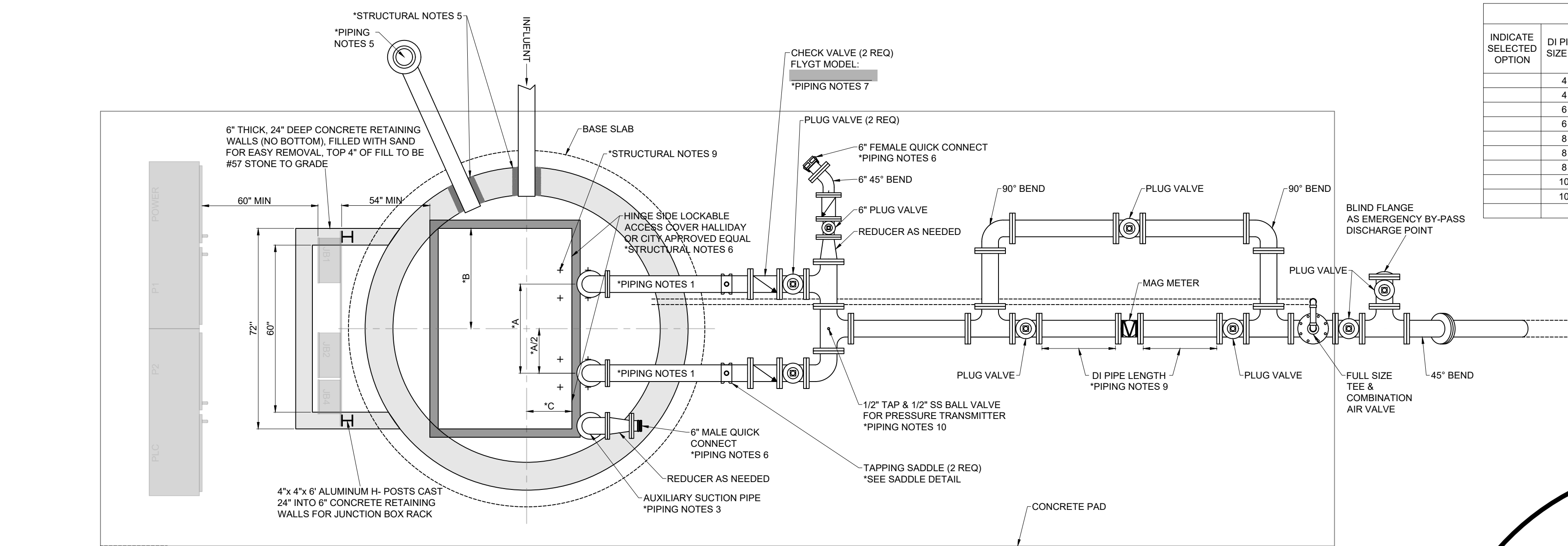
CONDUIT AND CABLE SCHEDULE	
MARK	DESCRIPTION
C/ANT	1" CONDUIT FROM MCP TO ANTENNA
C/ATS	1" CONDUIT FROM RTU TO ATS TO SHOW POSITION OF SWITCH IN EMERGENCY AND NORMAL POSITION. ---- (4) #14 THHN/THWN
C/FS1	1" CONDUIT FROM JB2 TO FLOAT SWITCH (FS1) IN WET WELL FOR HIGH WELL LEVEL INDICATION. CONDUCTOR 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 #8780 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 #8780 (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/PMT	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. ---- () # ____ THHN/THWN AND () # ____ 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 MCB 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" CONDUIT FROM CABLE TRAY TO WET-Well. ---- () # ____ 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.)

ALL CONDUCTORS SHALL BE STRANDED



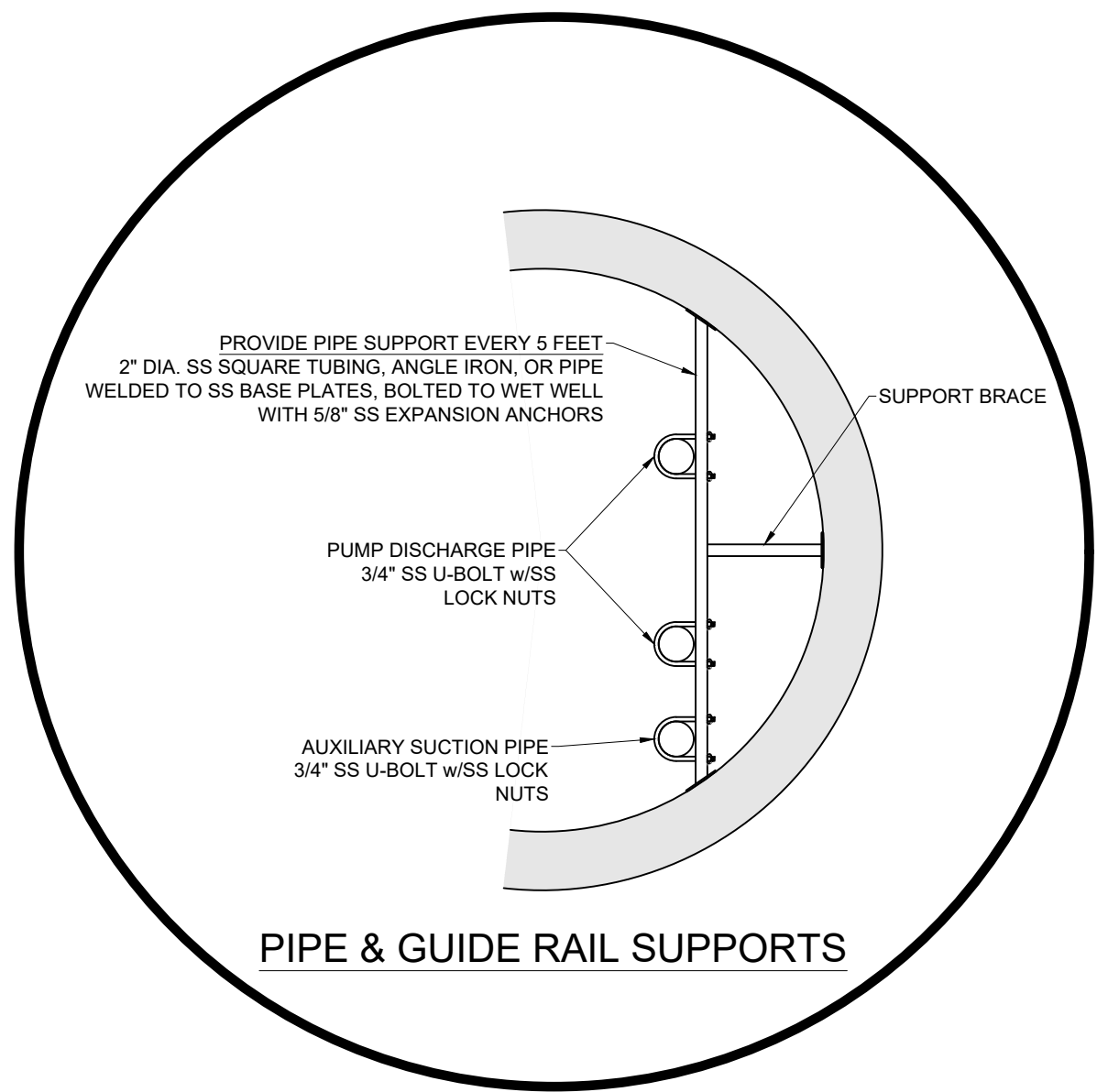
REVISION DESCRIPTION	
1	CHANGED SHEET NAMES. ADDED EXOTHERMIC CONNECTIONS TO GROUNDING PLAN
2	ADDED 1" CONDUIT FROM MCP TO FLOWMETER. ADDED 1" PASS DISCHARGE POINT
3	CHANGED CONCRETE TYPE TO POLYMER CONCRETE
4	ADDED PANEL & SCADA VENDOR TABLE
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PROJECT NUMBER:	----
DRAWING TYPE:	DETAILS & SPECS
SHEET:	E1
ENGINEER:	---
FLORIDA P.E. LIC NO.	---
SIG:	---
DATE:	---



LIFT-STATION MEASUREMENTS										
INDICATE SELECTED OPTION	DI PIPE SIZE [in]	HDPE RISER PIPE SIZE [in]	AUX SUCTION PIPE SIZE [in]	WET WELL			DIMENSIONS [in]			SUMP [in]
				D [in]	T** [in]	ACCESS COVER	A	B	C	
	4	6	*	6	7	*	26	*	*	*
	4	6	*	8	9	*	26	*	*	*
	6	8	*	6	7	*	32	*	*	*
	6	8	*	8	9	*	32	*	*	*
	8	10	*	8	9	*	45	*	*	*
	8	10	*	9	10	*	45	*	*	*
	8	10	*	10	11	*	45	*	*	*
	10	12	*	9	10	*	48	*	*	*
	10	12	*	10	11	*	48	*	*	*

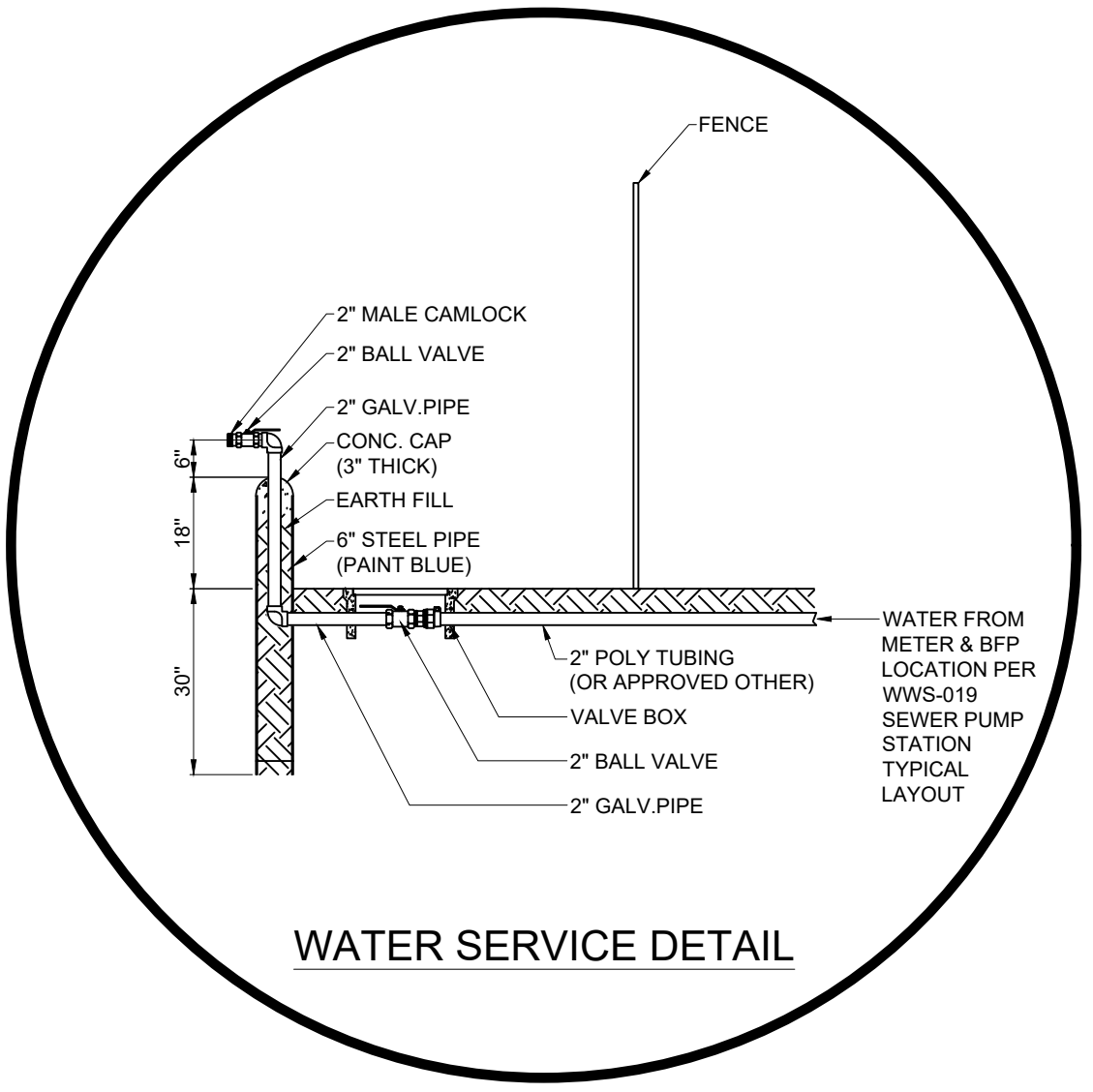
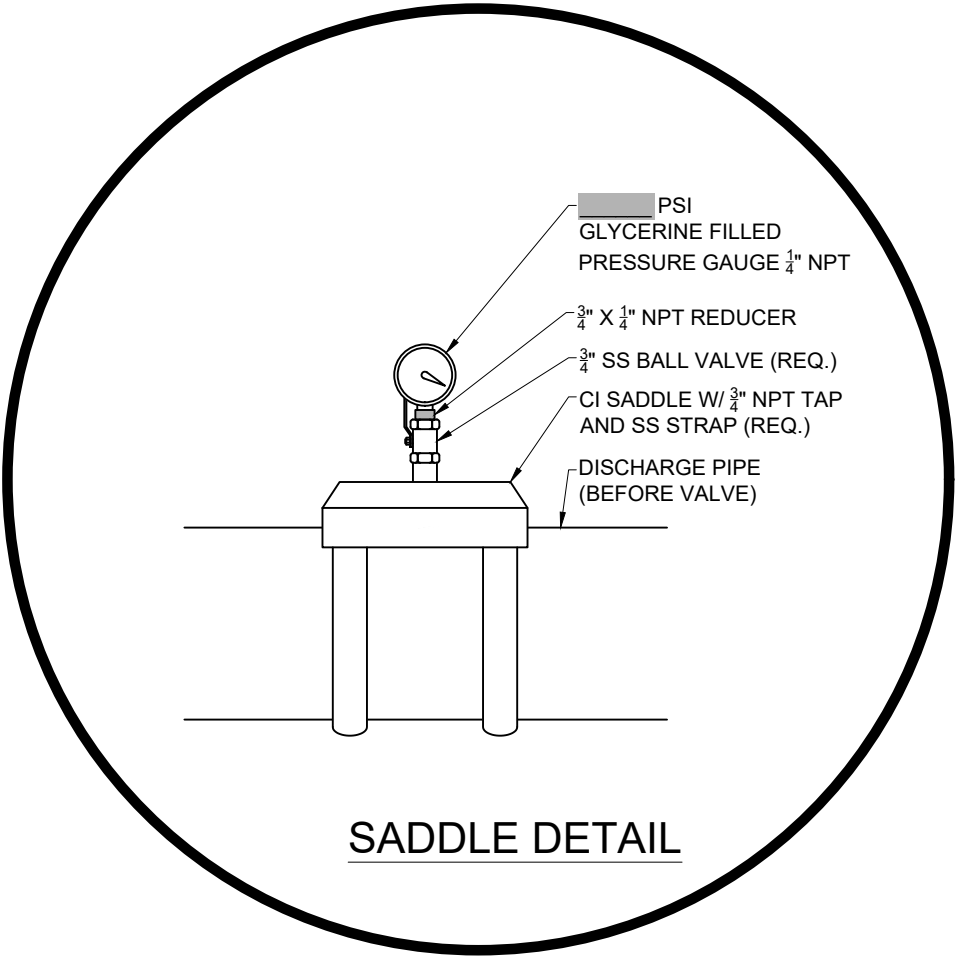
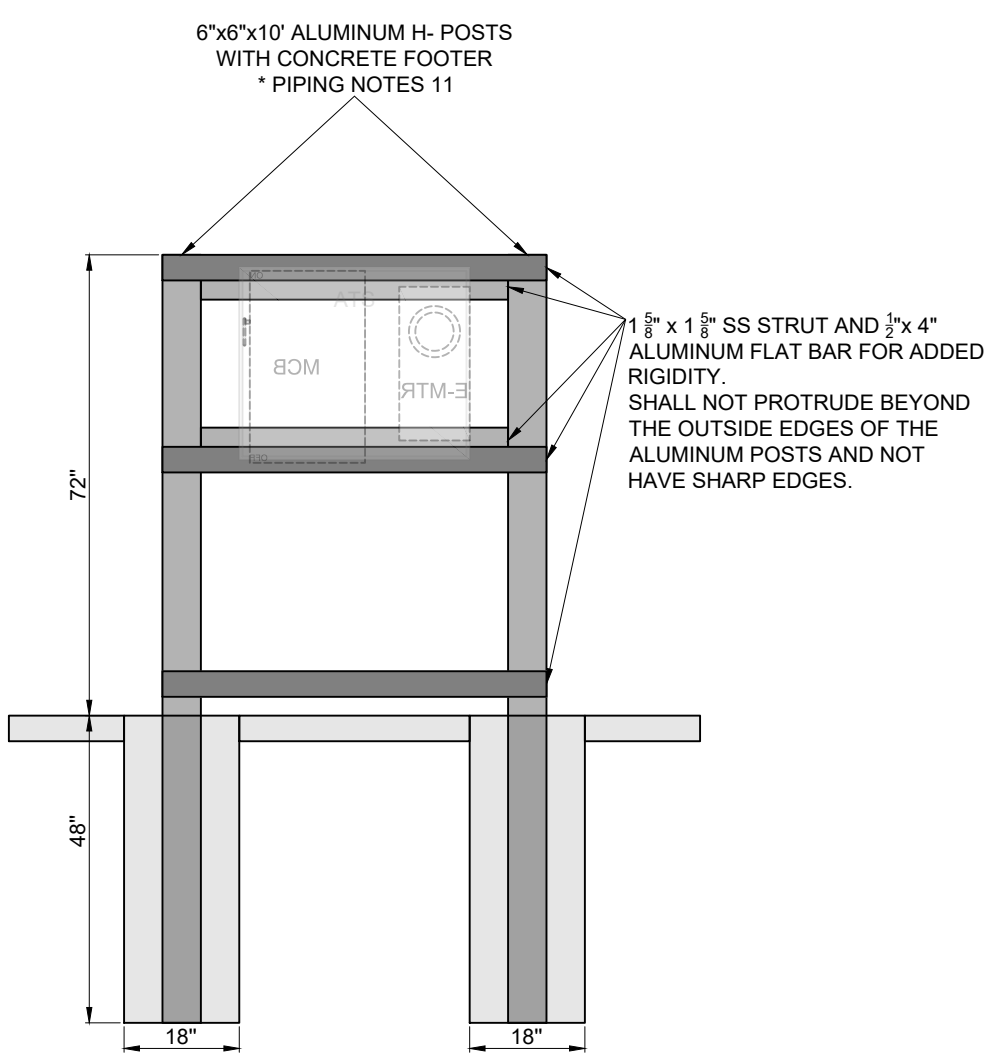
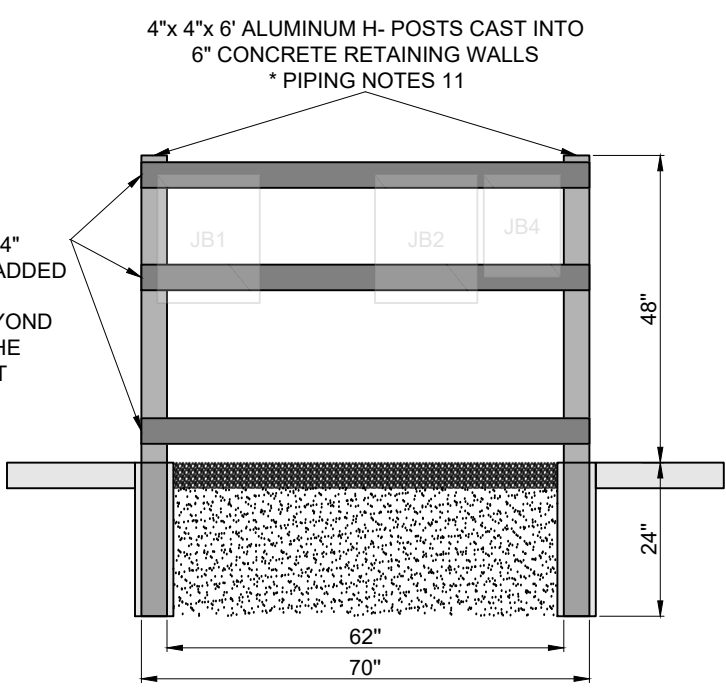
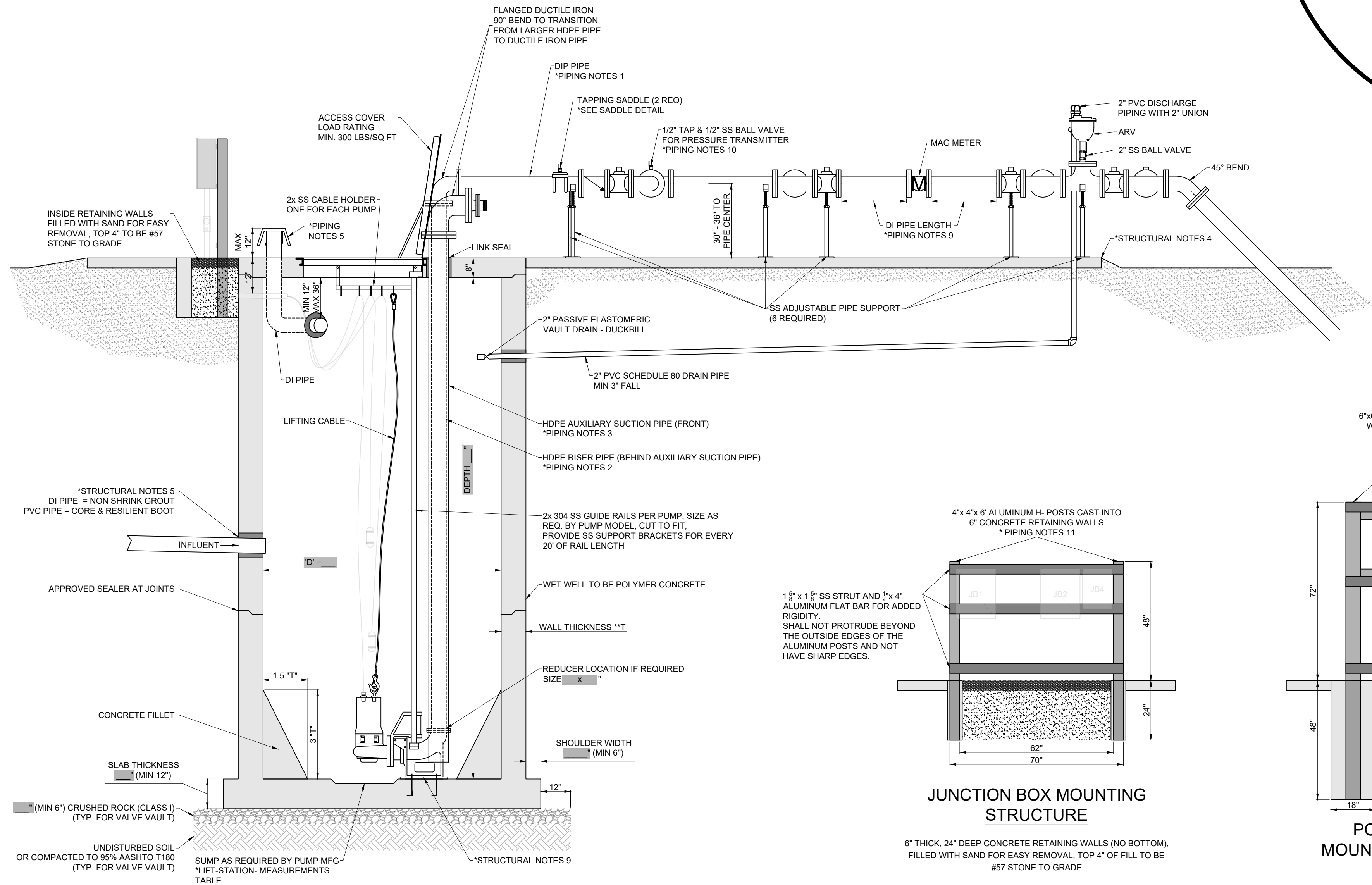
* FILL IN MANUFACTURER'S REQUIRED VALUE
** INDICATE IF OTHER WALL THICKNESS



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 (HIGH HEAD):	TDH [ft]:	LEAD PUMP ON [ft]:
GPM (LOW HEAD):	TDH [ft]:	PUMPS OFF [ft]:
HP:	RPM:	FLOOR [ft]:
PHASE:	VOLTS:	100YR FLOOD ELEV. [ft]:

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

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



SECTION

WATER UTILITIES
ENGINEERING DIVISION

501 E. LEON ST. W. LAKELAND, FLORIDA 33801-5079
PHONE (863) 834-4316

SEWER PUMP STATION DETAILS & SPECIFICATIONS

DUPLEX STATION OVER 40HP & 100,000 GPD
STRUCTURE & PIPING DETAILS

PROJECT NUMBER: ----

DRAWING TITLE: DETAILS & SPECS

SHEET: D3

ENGINEER: ---

FLORIDA P.E. LIC. NO. ----

SIG: _____

DATE: _____

SEPARATED ELECTRICAL SHEET FROM PIPING & STRUCTURAL COMPONENTS

ADDED NPTA CLASSIFICATIONS

ADDED ETS HAND HOLE

CHANGED SHEET NAMES, ADDED EXOTHERMIC CONNECTIONS TO GROUNDING PLAN

ADDED 1\"/>

REVISION DESCRIPTION

REVISION DATE

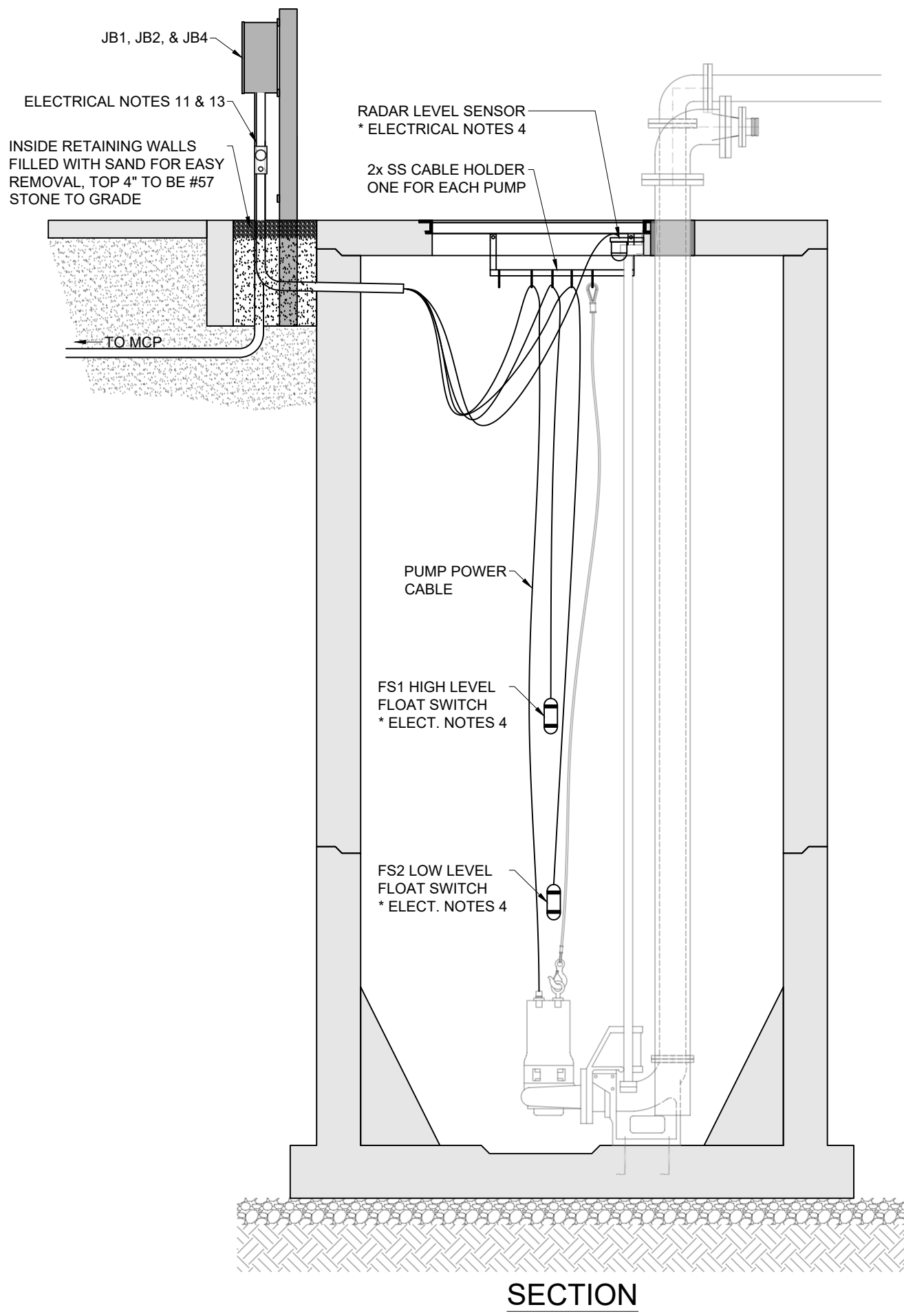
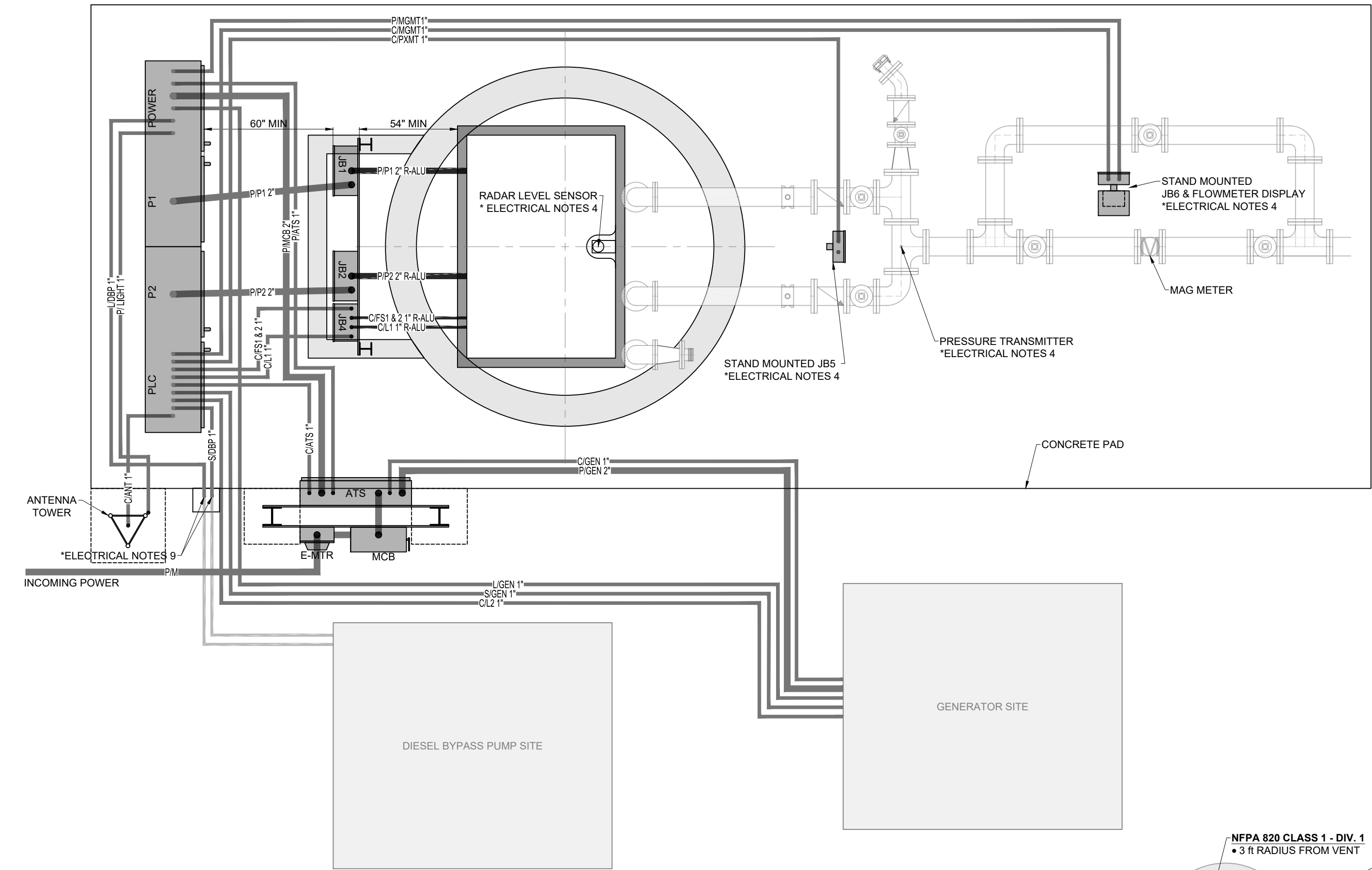
REVISION NO.

DRAWN BY: M.RIESNER

DRAWING DATE: 09/30/2025

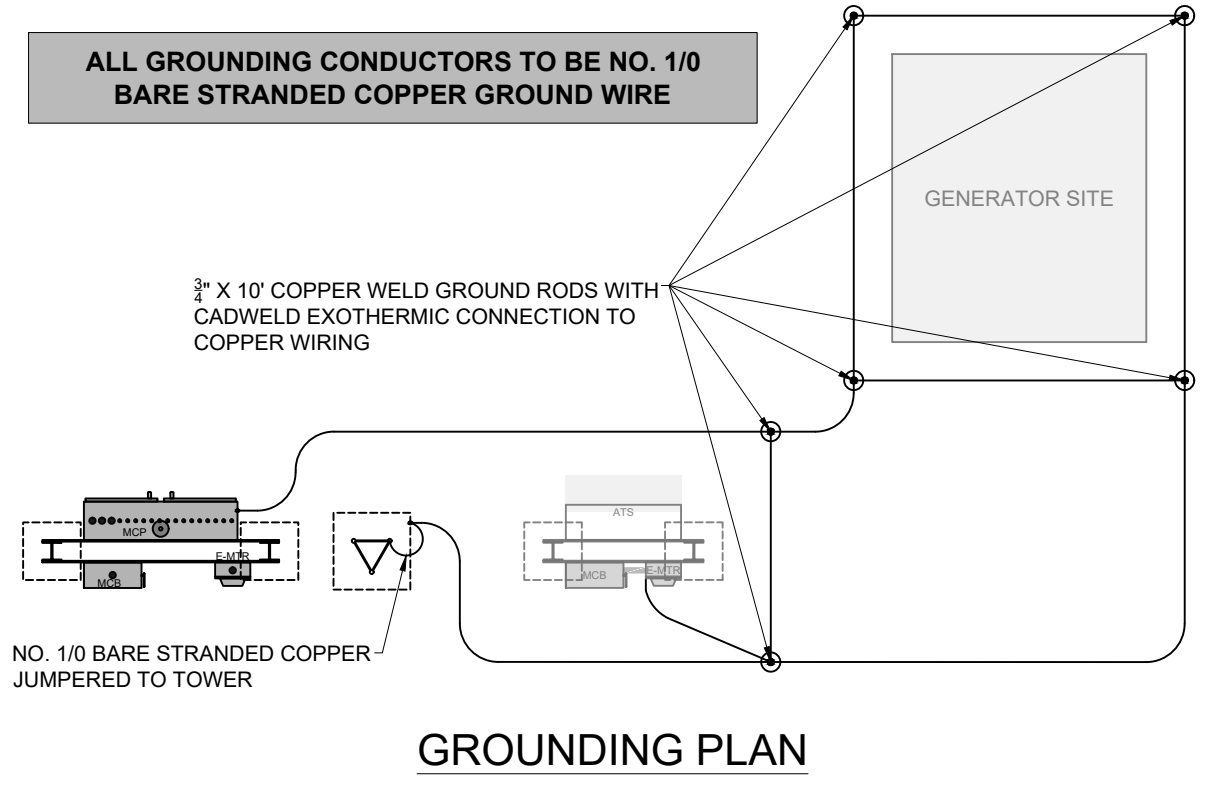
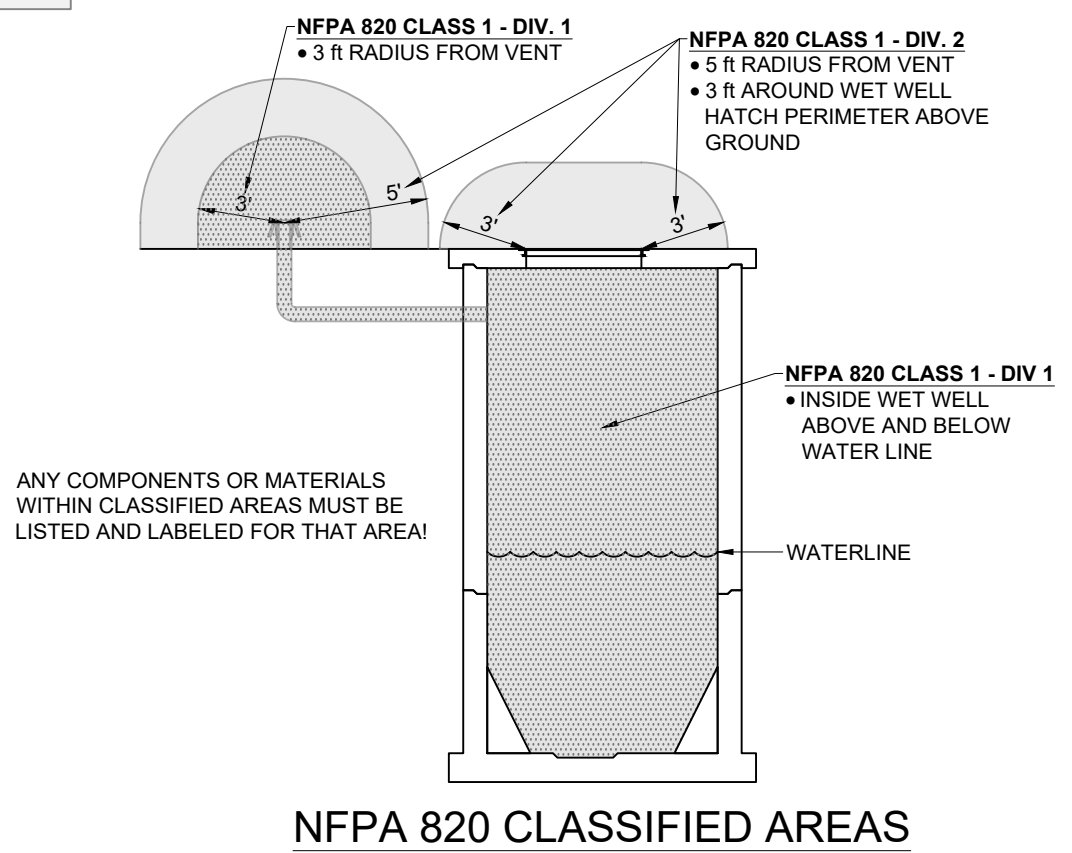
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PLANT PAPER SIZE: ARCH FULL BLEED (24.0\"/>



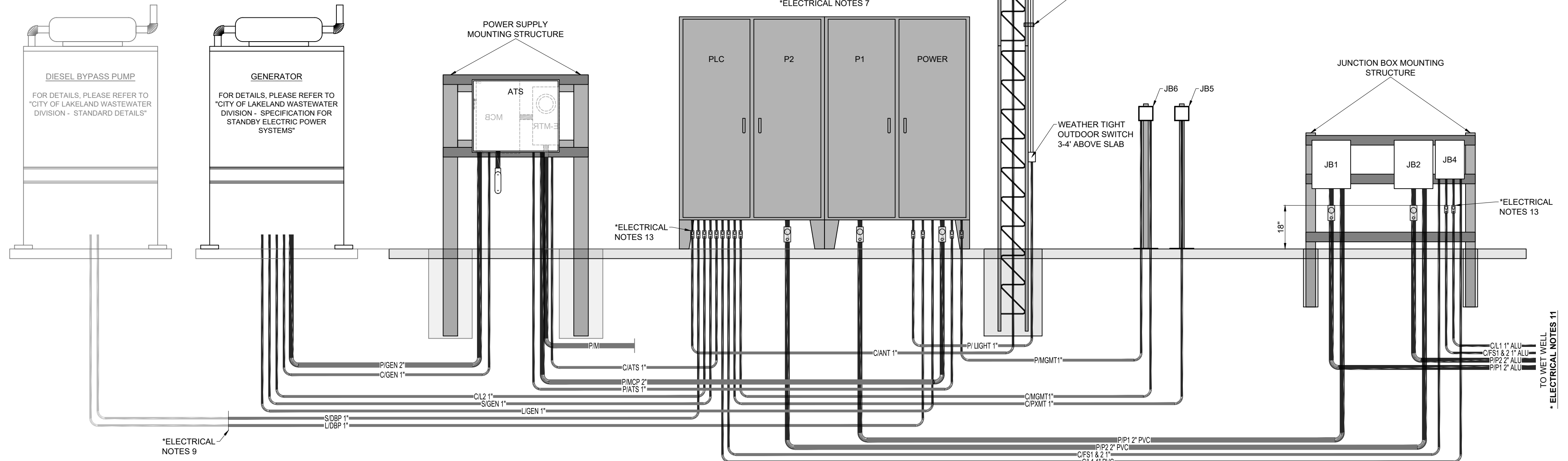
- GENERAL NOTES:
- THIS DRAWING PROVIDES DETAILS FOR CONSTRUCTION OF PUMP STATIONS TO BE OWNED AND MAINTAINED BY THE CITY OF LAKELAND. LAYOUT AND ORIENTATION OF FEATURES, SITE DIMENSIONS, TOPOGRAPHY, AND DRAINAGE SHALL BE PROVIDED ON A SEPARATE PUMP STATION SITE PLAN SCALED NOT SMALLER THAN 1"=5'.
 - REFER TO CITY OF LAKELAND "WASTEWATER MATERIALS SPECIFICATION" FOR APPROVED BRANDS, MODELS, AND VENDORS.
 - SITE CONDITIONS ARE INTENDED TO SHOW TYPICAL LAYOUT.
- ELECTRICAL NOTES:
- IT IS THE EOR's RESPONSIBILITY TO ENSURE ALL ELECTRICAL EQUIPMENT, MATERIAL, AND DETAILS OF INSTALLATION COMPLY WITH THE REQUIREMENTS OF THE MOST CURRENT EDITIONS, AS ADOPTED BY THE AHJ, OF NFPA 70 AND NFPA 820 AS WELL AS ALL OTHER STATE, CITY, AND LOCAL CODES.
 - CONTACT CITY OF LAKELAND BUILDING INSPECTION FOR APPROVAL OF WORK REQUIRING ELECTRICAL INSPECTOR. (863) 834-60128
 - CONDUIT ROUTING SHOWN IS DIAGRAMMATIC. CONTRACTOR SHALL COORDINATE ACTUAL ROUTING OF CONDUITS WITH FIELD CONDITIONS TO MINIMIZE CONFLICTS.
 - ALL MOUNTING HARDWARE AND STRUT CHANNELS ARE TO BE STAINLESS STEEL.
 - CONTROL PANEL, ALL JUNCTION BOXES, JBS & JBS STANDS, FLOW METER, PRESSURE TRANSMITTER, RADAR LEVEL TRANSMITTER, LEVEL FLOATS, ANTENNA (TOWER, CABLING, AND SURGE SUPPRESSOR), AND SITE LIGHT WILL BE SUPPLIED BY PANEL VENDOR AS PART OF THE CONTROL PANEL PACKAGE.
 - APPROVED PANEL VENDORS ARE GENERAL CONTROL SYSTEMS, REVERE CONTROLS, & UNITRON CONTROLS (BY BARNEY'S PUMPS)
 - SITE LIGHTING SHALL BE POSITIONED 12" ABOVE SLAB AND BE DIRECTED TOWARD WET WELL. LIGHT IS TO BE MOUNTED ON LEG OF ANTENNA TOWER FACING THE CONTROL PANEL.
 - 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.
 - 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 OUTSIDE STATION CONCRETE PAD.
 - MOTOR PROTECTION WIRING BETWEEN JB1/ JB3 AND MCP SHALL BE IN THE SAME CONDUIT WITH THE MOTOR POWER WIRING.
 - ALL ABOVE GROUND CONDUIT SHALL BE RIGID ALUMINUM DOWN TO AND INCLUDING THE FIRST UNDERGROUND SWEEP. THE CONDUIT FROM JB1, JB2, AND JB3 TO THE WET WELL SHALL BE RIGID ALUMINUM AND HAVE 12" OF COVER. ALL OTHER UNDERGROUND CONDUIT SHALL BE RIGID PVC. POWER SUPPLY CONDUIT SHALL HAVE A MINIMUM OF 42" COVER. ALL OTHER UNDERGROUND CONDUIT SHALL HAVE A MINIMUM OF 24" COVER.
 - COAT ALL ALUMINUM POSTS AND ALUMINUM CONDUIT BELOW GRADE WITH BITUMASTIC PAINT.
 - ALL CONDUITS FROM AND TO WET WELL, AS WELL AS ALL CONDUITS EXTENDING FROM BELOW GRADE INTO MCP, SHALL BE SEALED WITH EYS FITTING PER NFPA 70 BEFORE ENTERING ENCLOSURE. SEAL OFF FITTING TOP TO BE 18" ABOVE FINISHED GROUND.
 - DEVELOPER SHALL INSTALL RADIO TELEMTRY IN ACCORDANCE WITH CITY STANDARDS. CITY SHALL PERFORM TELEMTRY START UP.
 - PUMP SHAFT SEAL FAILURE WARNING IS INDICATED BY _____
 - CABLES WITHIN DIVISION 1 LOCATIONS SHALL BE SEALED IN ACCORDANCE WITH NEC 501.15
 - BONDING SHALL BE IN ACCORDANCE WITH NEC 501.30

PANEL & SCADA VENDOR	
PANEL:	
TELEMETRY, SCADA, PLC PROGRAMMING:	GENERAL CONTROL SYSTEMS



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.
O/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.)
CL/L1	1" CONDUIT FROM WET WELL TO JB2 FOR L1. --- (1) #18-2 CONDUCTOR PLUS SHIELDED BELDEN #8780 VEGAPULS C23 RADAR
CL/L2	1" CONDUIT FROM FUEL TANK LEVEL INDICATOR TO RTU FOR LOW FUEL LEVEL INDICATION. --- 2/C #18 SHIELDED CABLE. BELDEN #8780 (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.
U/DBP	1" CONDUIT FROM MCP TO DIESEL BYPASS PUMP
U/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/LAL	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 --- () # ___ THHN/THWN AND () # ___ 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" CONDUIT FROM CABLE TRAY TO WET-Well. --- () # ___ 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.)

ALL CONDUCTORS SHALL BE STRANDED



WATER UTILITIES
ENGINEERING DIVISION

city of
Lakeland
WATER UTILITIES

501 E. LEON ST. WADSWORTH
LAKELAND, FLORIDA 33801-5079
PHONE (863) 834-4316

SEPARATED ELECTRICAL SHEET FROM PUMP & STRUCTURAL COMPONENTS	ADDED NFPA CLASSIFICATIONS	CHANGED SHEET NAMES. ADDED EXOTHERMIC CONNECTIONS TO GROUNDING PLAN	ADDED 1" CONDUIT FROM MCP/PLC TO FLOWMETER. ADDED DI-PASS DISCHARGE POINT	CHANGED PANEL & SCADA VENDOR TABLE
09/30/2025	03/20/2025	01/30/2025	07/19/2024	09/30/2023
7	6	5	4	3
1	2	1	2	1

DRAWN BY:
M.RIESNER

DRAWING DATE:
09/30/2025

SCALE:
NO SCALE

SEWER PUMP STATION DETAILS & SPECIFICATIONS

DUPLEX STATION OVER 40HP & 100,000 GPD
ELECTRIC DETAILS

PROJECT NUMBER:

DRAWING TYPE:
DETAILS & SPECS

SHEET:
E3

ENGINEER:

FLORIDA P.E. LIC NO.

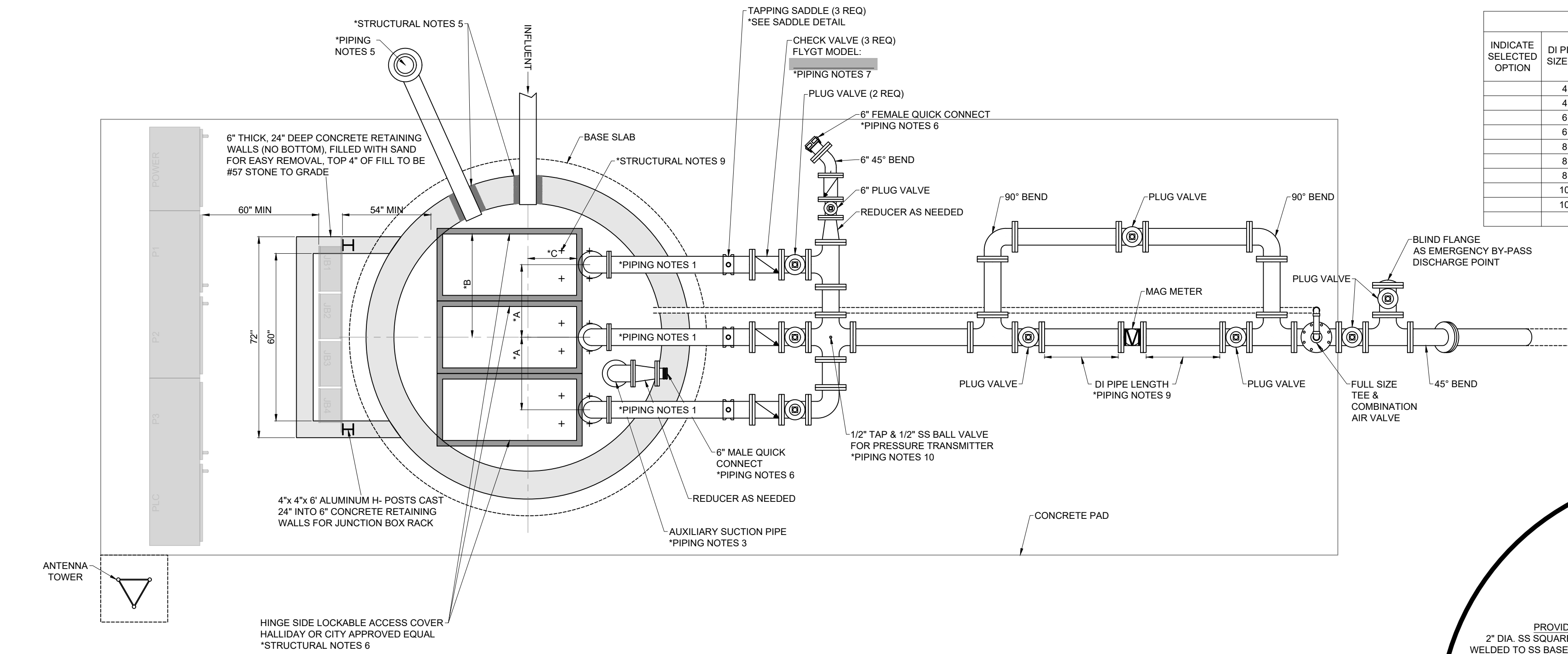
SIG:

DATE:

C:\USERS\JAMES\ONE-DRIVE - CITY OF LAKELAND\AUTODESK\BIM\DRAWING\STANDARD DETAILS\SEWER\PUMP\STATION DETAILS\SCADA FILES\PUMP STATION DETAILS (BY 5-28-2025).DWG

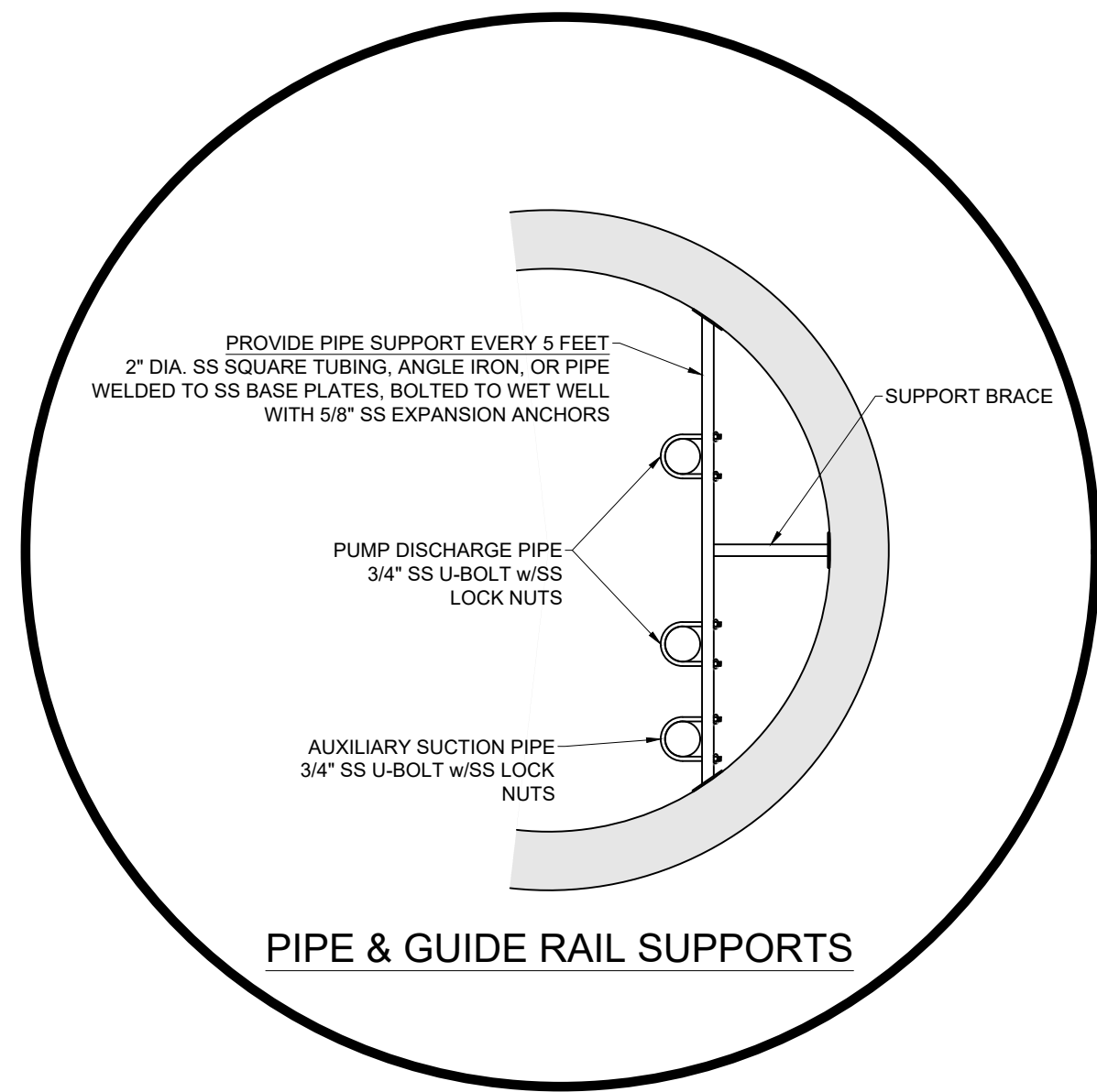
PLOT DATE: 10-26-2025

PLOT PAPER SIZE: ARCH F (11.0" X 17.0")



LIFT-STATION MEASUREMENTS									
INDICATE SELECTED OPTION	DI PIPE SIZE [in]	HDPE RISER PIPE SIZE [in]	AUX SUCTION PIPE SIZE [in]	WET WELL D [in]	WET WELL T** [in]	ACCESS COVER	DIMENSIONS [in]		
							A	B	C
	4	6	*	6	7	*	26	*	*
	4	6	*	8	9	*	26	*	*
	6	8	*	6	7	*	32	*	*
	6	8	*	8	9	*	32	*	*
	8	10	*	8	9	*	45	*	*
	8	10	*	9	10	*	45	*	*
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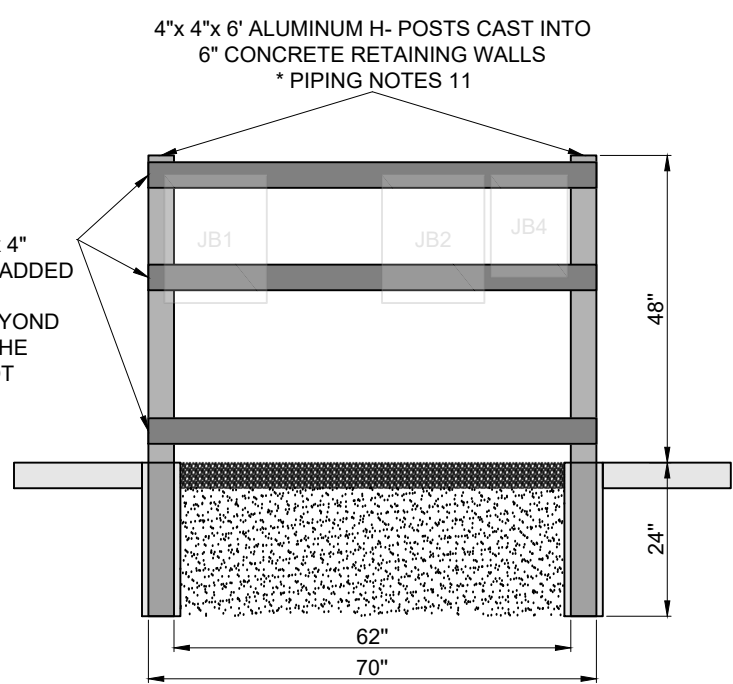
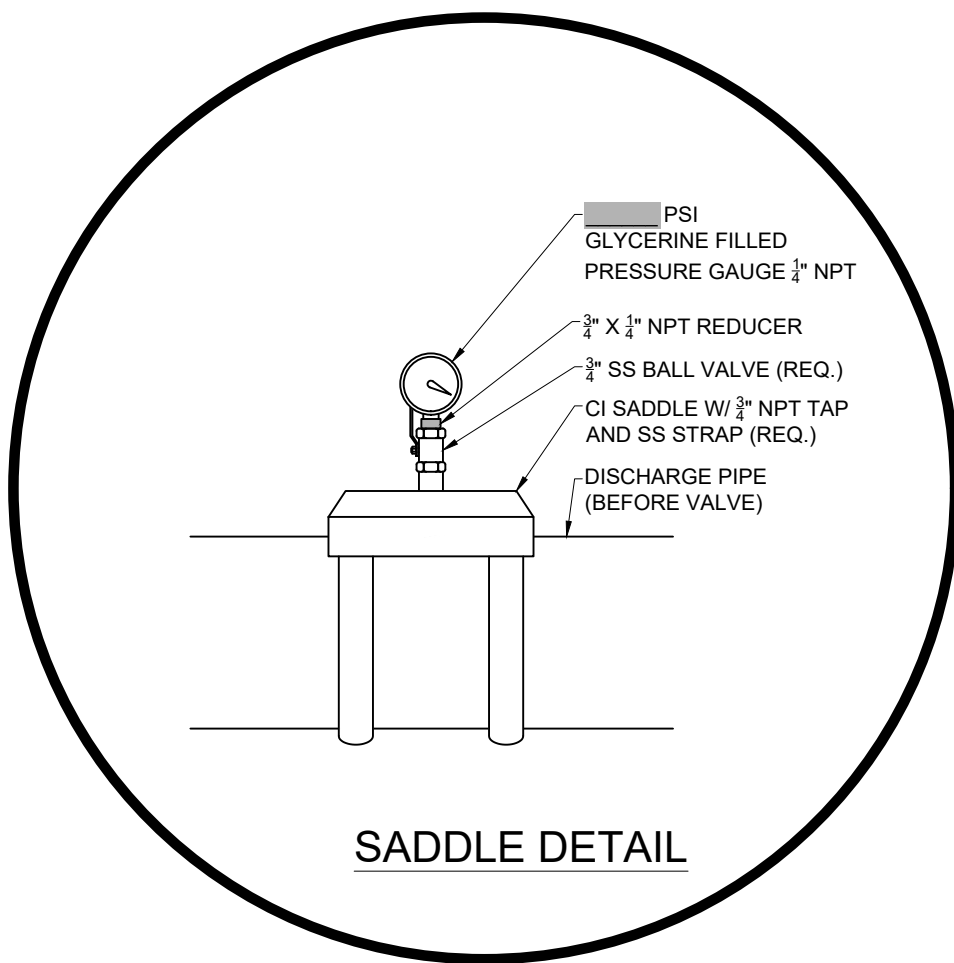
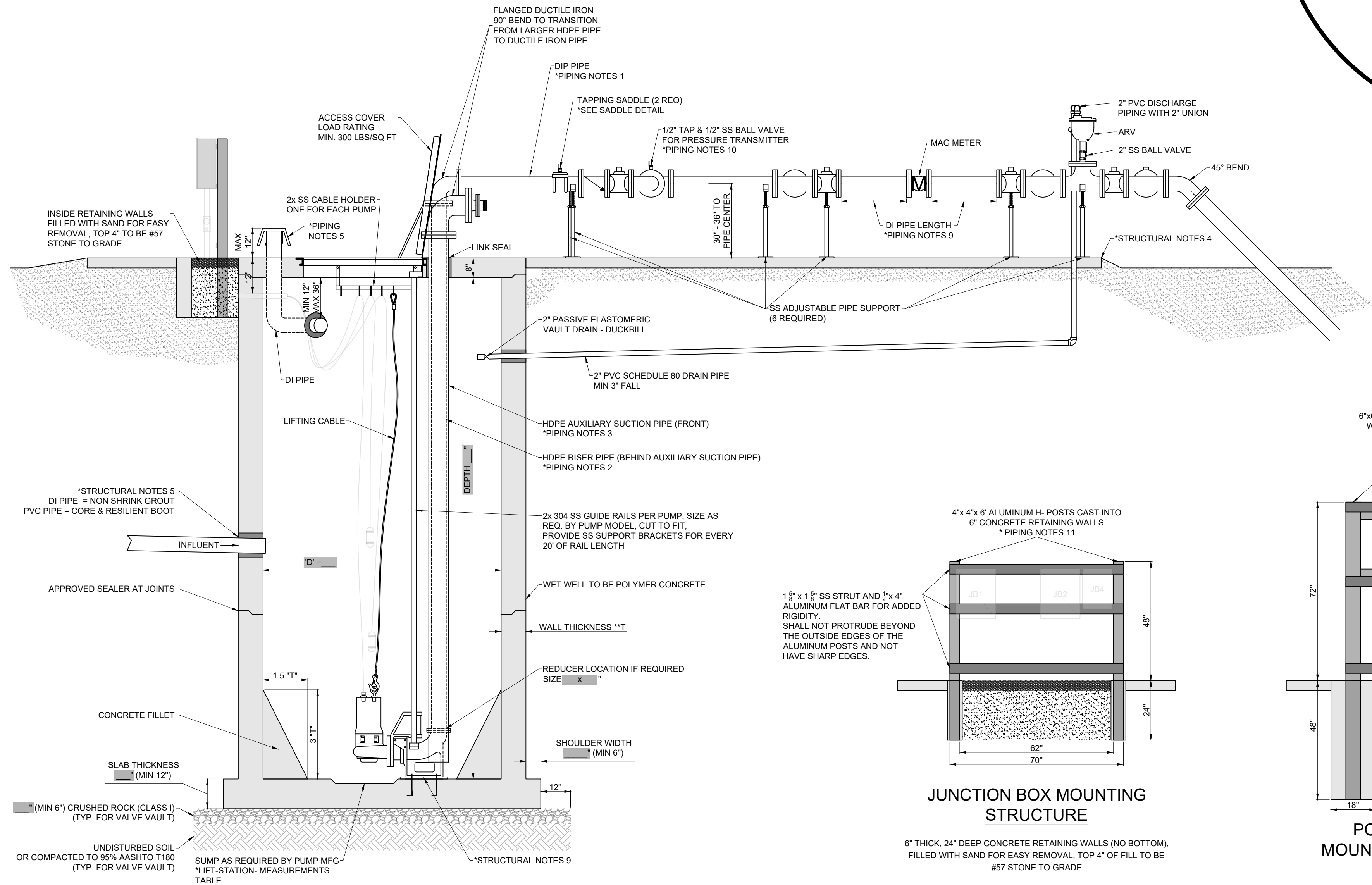
* FILL IN MANUFACTURER'S REQUIRED VALUE
** INDICATE IF OTHER WALL THICKNESS



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 (HIGH HEAD):	TDH [ft]:	LEAD PUMP ON [ft]:
GPM (LOW HEAD):	TDH [ft]:	PUMPS OFF [ft]:
HP:	RPM:	FLOOR [ft]:
PHASE:	VOLTS:	100YR FLOOD ELEV. [ft]:

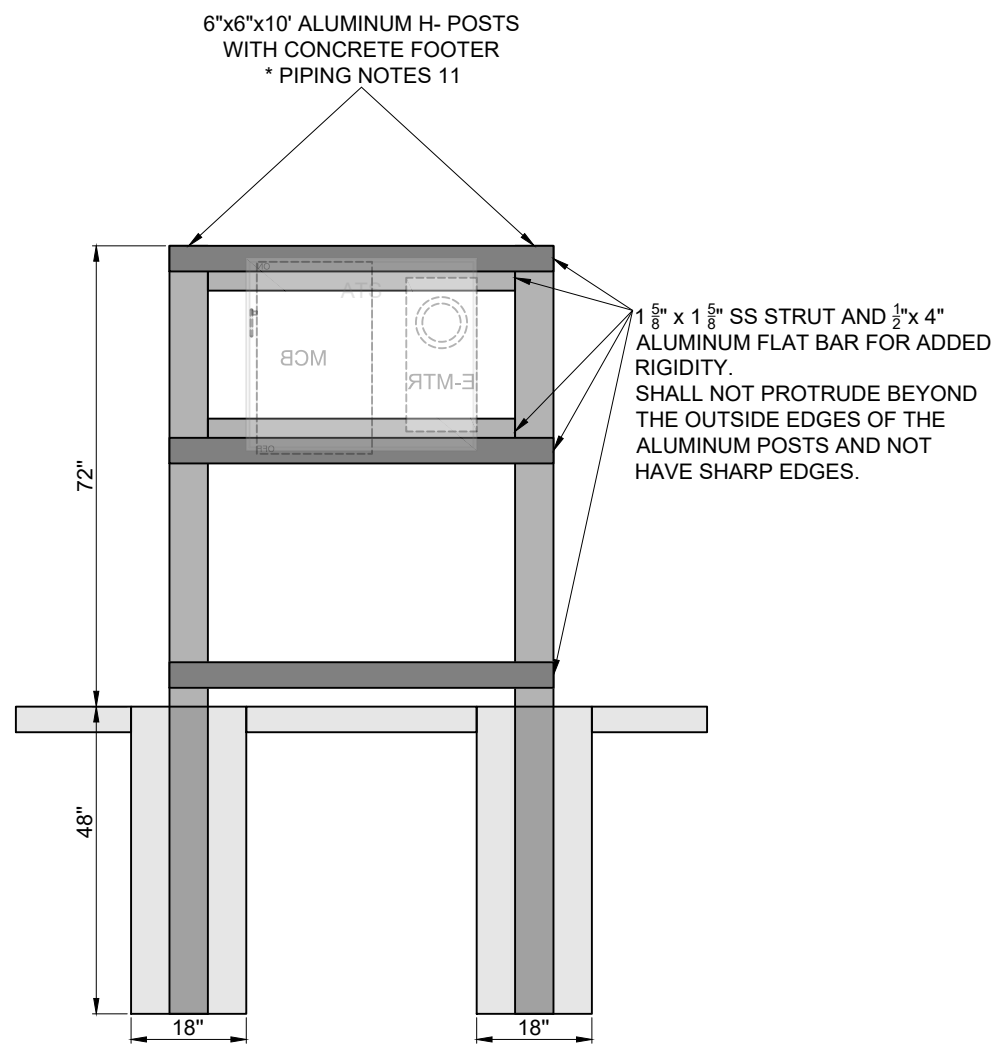
VARIABLE FREQUENCY DRIVE	
MFG.:	
MODEL:	
ACCELERATION/ DECELERATION TIME	

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



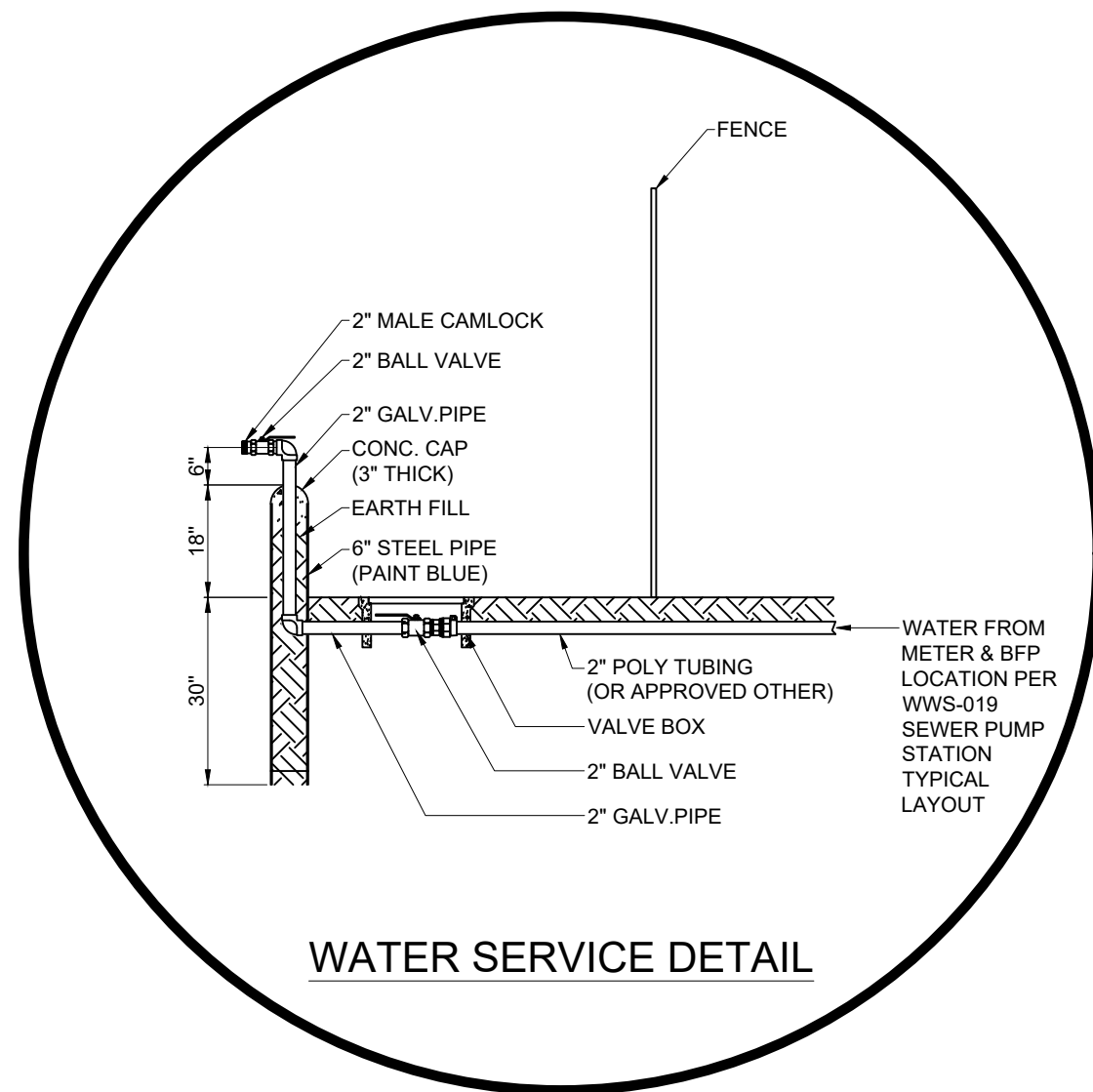
JUNCTION BOX MOUNTING STRUCTURE

6" THICK, 24" DEEP CONCRETE RETAINING WALLS (NO BOTTOM), FILLED WITH SAND FOR EASY REMOVAL. TOP 4" OF FILL TO BE #57 STONE TO GRADE



POWER SUPPLY MOUNTING STRUCTURE

ATS,
MCB & E-METER ON BACKSIDE



WATER SERVICE DETAIL

- 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.
 - SITE CONDITIONS ARE INTENDED TO SHOW TYPICAL LAYOUT.
- STRUCTURAL NOTES:
- PRECAST WET WELL STRUCTURE SHOP DRAWING SHALL BE SUBMITTED FOR REVIEW.
 - WET WELL AND KING PIN MANHOLE SHALL BE PRECAST POLYMER CONCRETE IN ACCORDANCE WITH ASTM C 478, ASTM C 857, AND ACI 350-08.
 - 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 TRIPLEX STATIONS HINGES SHALL BE ON LONG SIDE OF OPENINGS. BOTH EXTERIOR HINGE LOCATIONS ON OUTSIDE
 - 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.
 - 3" SS PUMP BASE PLATE & SS 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 THAN 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 THAN 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" - 6" = 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 ONLY INSTALLED ON STATIONS WITH FORCE-MAIN MANIFOLDS.
 - COAT ALL ALUMINUM POSTS AND ALUMINUM CONDUIT BELOW GRADE WITH BITUMASTIC PAINT.

REVISION DESCRIPTION	
1	ISSUED FOR PERMIT
2	REVISED FOR CITY REVIEW
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PROJECT NUMBER: _____

DRAWING TYPE: _____

DETAILS & SPECS

SHEET: _____

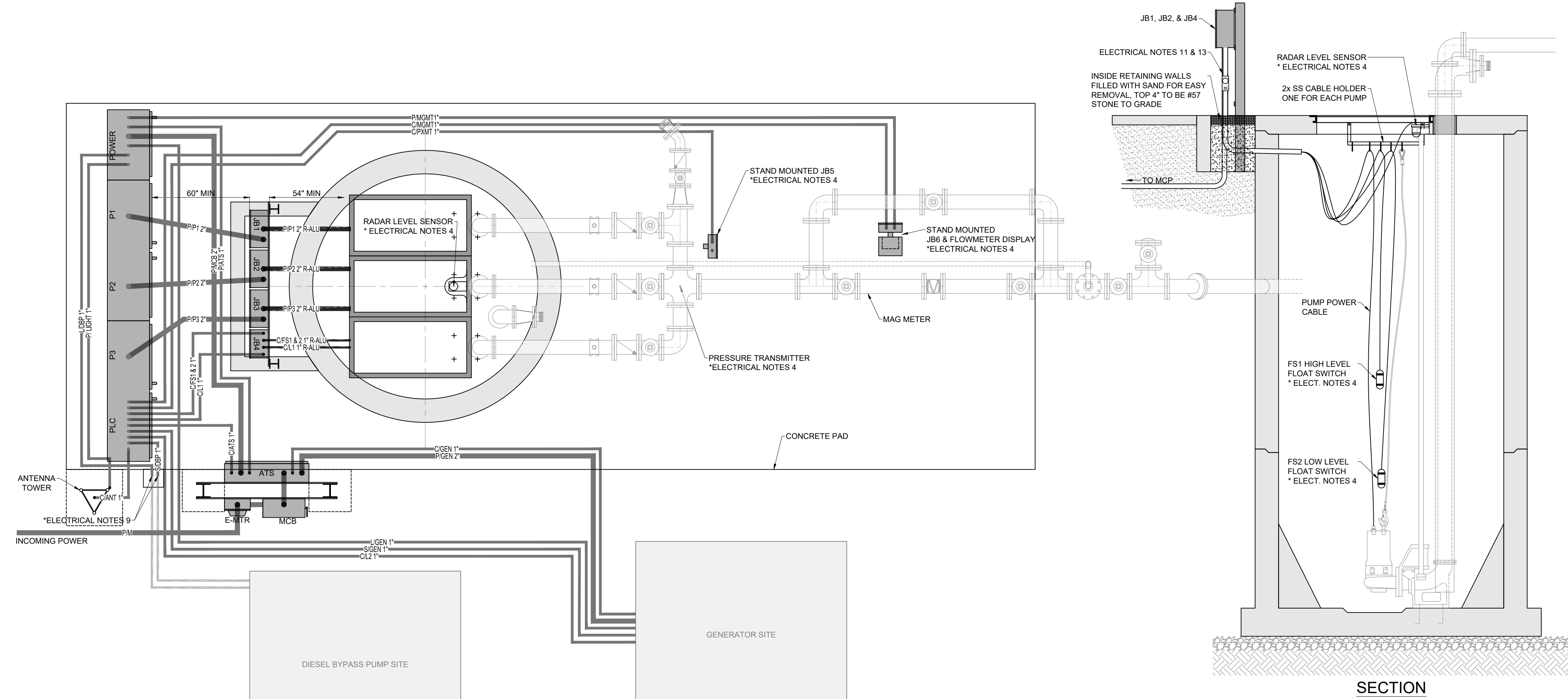
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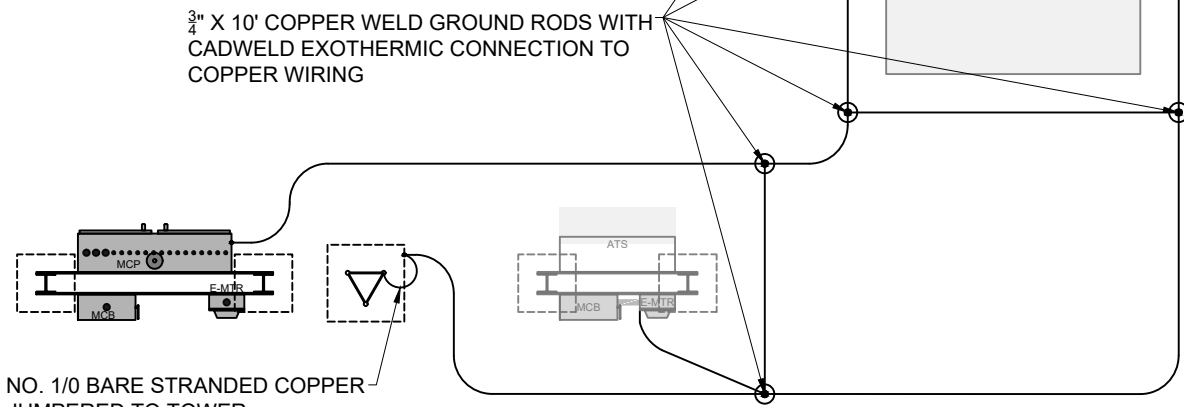
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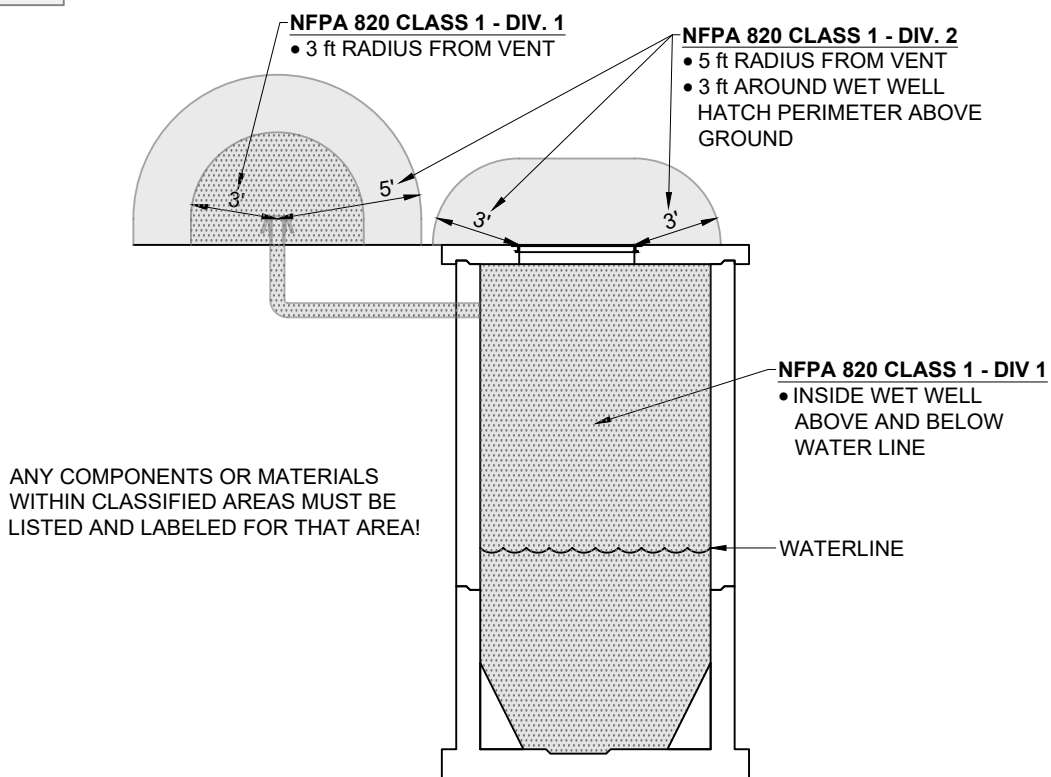
- GENERAL NOTES:
- THIS DRAWING PROVIDES DETAILS FOR CONSTRUCTION OF PUMP STATIONS TO BE OWNED AND MAINTAINED BY THE CITY OF LAKELAND. LAYOUT AND ORIENTATION OF FEATURES, SITE DIMENSIONS, TOPOGRAPHY, AND DRAINAGE SHALL BE PROVIDED ON A SEPARATE PUMP STATION SITE PLAN SCALED NOT SMALLER THAN 1"=5'.
 - REFER TO CITY OF LAKELAND "WASTEWATER MATERIALS SPECIFICATION" FOR APPROVED BRANDS, MODELS, AND VENDORS.
 - SITE CONDITIONS ARE INTENDED TO SHOW TYPICAL LAYOUT.
- ELECTRICAL NOTES:
- IT IS THE EOR'S RESPONSIBILITY TO ENSURE ALL ELECTRICAL EQUIPMENT, MATERIAL, AND DETAILS OF INSTALLATION COMPLY WITH THE REQUIREMENTS OF THE MOST CURRENT EDITIONS, AS ADOPTED BY THE AHJ, OF NFPA 70 AND NFPA 820 AS WELL AS ALL OTHER STATE, CITY, AND LOCAL CODES.
 - CONTACT CITY OF LAKELAND BUILDING INSPECTION FOR APPROVAL OF WORK REQUIRING ELECTRICAL INSPECTOR. (863) 834-60128
 - CONDUIT ROUTING SHOWN IS DIAGRAMMATIC. CONTRACTOR SHALL COORDINATE ACTUAL ROUTING OF CONDUITS WITH FIELD CONDITIONS TO MINIMIZE CONFLICTS.
 - ALL MOUNTING HARDWARE AND STRUT CHANNELS ARE TO BE STAINLESS STEEL.
 - CONTROL PANEL, ALL JUNCTION BOXES, JBS & JBS STANDS, FLOW METER, PRESSURE TRANSMITTER, RADAR LEVEL TRANSMITTER, LEVEL FLOATS, ANTENNA (TOWER, CABLING, AND SURGE SUPPRESSOR), AND SITE LIGHT WILL BE SUPPLIED BY PANEL VENDOR AS PART OF THE CONTROL PANEL PACKAGE.
 - APPROVED PANEL VENDORS ARE GENERAL CONTROL SYSTEMS, REVERE CONTROLS, & UNITRON CONTROLS (BY BARNEY'S PUMPS)
 - SITE LIGHTING SHALL BE POSITIONED 12" ABOVE SLAB AND BE DIRECTED TOWARD WET WELL. LIGHT IS TO BE MOUNTED ON LEG OF ANTENNA TOWER FACING THE CONTROL PANEL.
 - 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.
 - 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 OUTSIDE STATION CONCRETE PAD.
 - MOTOR PROTECTION WIRING BETWEEN JB1/JB3 AND MCP SHALL BE IN THE SAME CONDUIT WITH THE MOTOR POWER WIRING.
 - ALL ABOVE GROUND CONDUIT SHALL BE RIGID ALUMINUM DOWN TO AND INCLUDING THE FIRST UNDERGROUND SWEEP. THE CONDUIT FROM JB1, JB2, AND JB3 TO THE WET WELL SHALL BE RIGID ALUMINUM AND HAVE 12" OF COVER. ALL OTHER UNDERGROUND CONDUIT SHALL BE RIGID PVC. POWER SUPPLY CONDUIT SHALL HAVE A MINIMUM OF 42" COVER. ALL OTHER UNDERGROUND CONDUIT SHALL HAVE A MINIMUM OF 24" COVER.
 - COAT ALL ALUMINUM POSTS AND ALUMINUM CONDUIT BELOW GRADE WITH BITUMASTIC PAINT.
 - ALL CONDUITS FROM AND TO WET WELL, AS WELL AS ALL CONDUITS EXTENDING FROM BELOW GRADE INTO MCP, SHALL BE SEALED WITH EYS FITTING PER NFPA 70 BEFORE ENTERING ENCLOSURE. SEAL OFF FITTING TOP TO BE 18" ABOVE FINISHED GROUND.
 - DEVELOPER SHALL INSTALL RADIO TELEMETRY IN ACCORDANCE WITH CITY STANDARDS. CITY SHALL PERFORM TELEMETRY START UP.
 - PUMP SHAFT SEAL FAILURE WARNING IS INDICATED BY _____
 - CABLES WITHIN DIVISION 1 LOCATIONS SHALL BE SEALED IN ACCORDANCE WITH NEC 501.15
 - BONDING SHALL BE IN ACCORDANCE WITH NEC 501.30

SECTION

ALL GROUNDING CONDUCTORS TO BE NO. 1/0 BARE STRANDED COPPER GROUND WIRE



GROUNDING PLAN

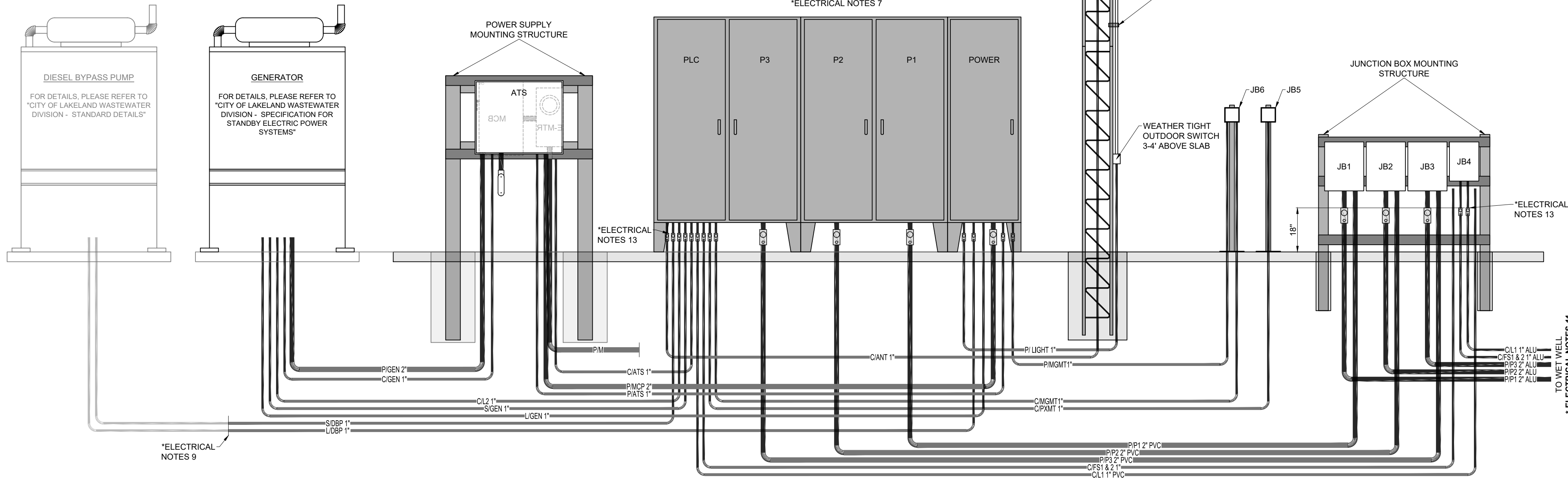


NFPA 820 CLASSIFIED AREAS

PANEL & SCADA VENDOR	
PANEL:	
TELEMETRY, SCADA, PLC PROGRAMMING:	GENERAL CONTROL SYSTEMS

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.
O/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 #8780 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 #8780 (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. ---- () # ___ THHN/THWN AND () # ___ 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" CONDUIT FROM CABLE TRAY TO WET-Well. ---- () # ___ 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.)

ALL CONDUCTORS SHALL BE STRANDED



REVISION DESCRIPTION	
1	CHANGED SHEET NAMES. ADDED EXOTHERMIC CONNECTIONS TO GROUNDING PLAN
2	ADDED 1" CONDUIT FROM MCP TO FLOWMETER. ADDED 1" CONDUIT FROM MCP TO DIESEL BYPASS PUMP
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