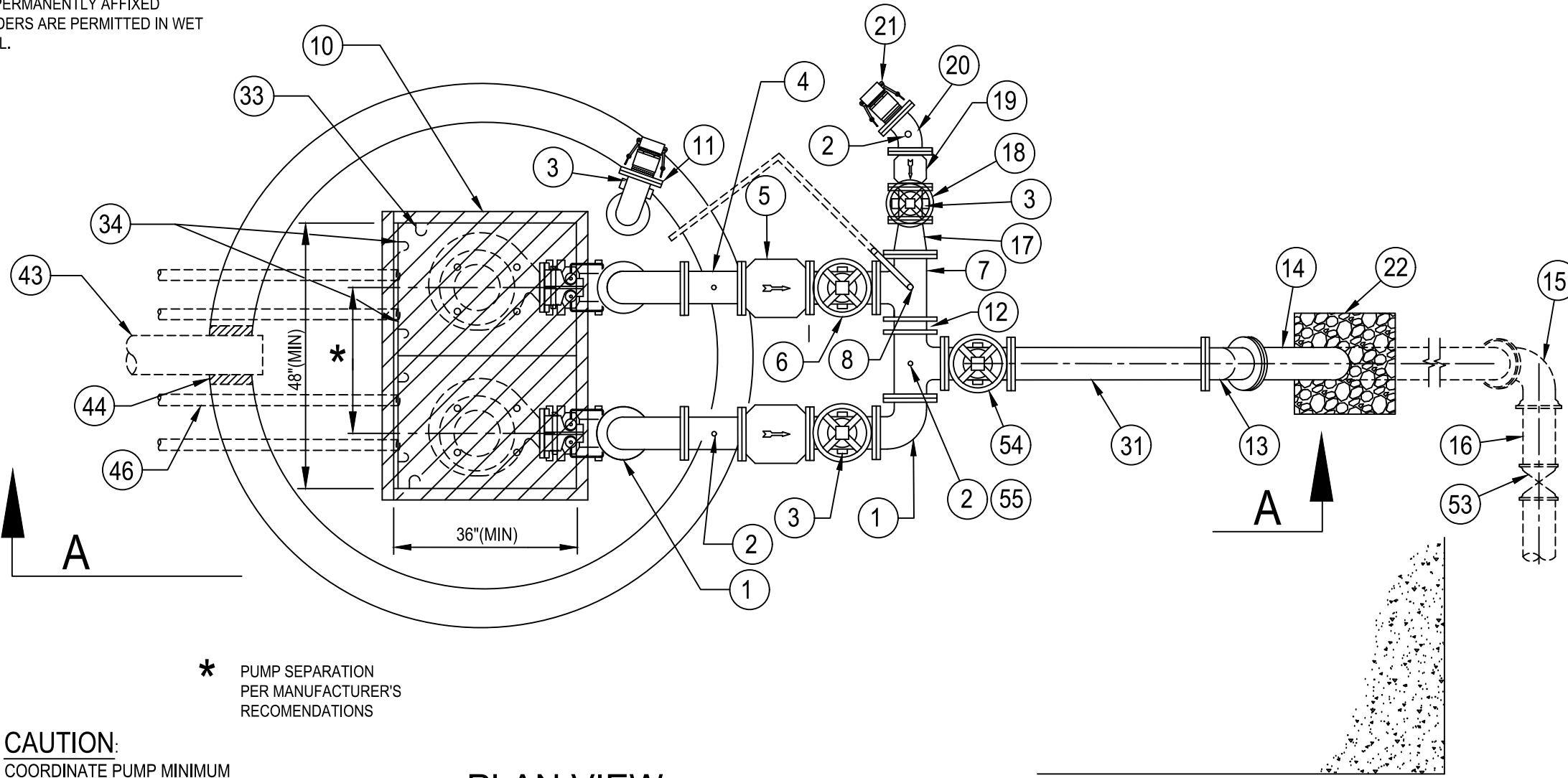


NOTE:  
NO PERMANENTLY AFFIXED  
LADDERS ARE PERMITTED IN WET  
WELL.

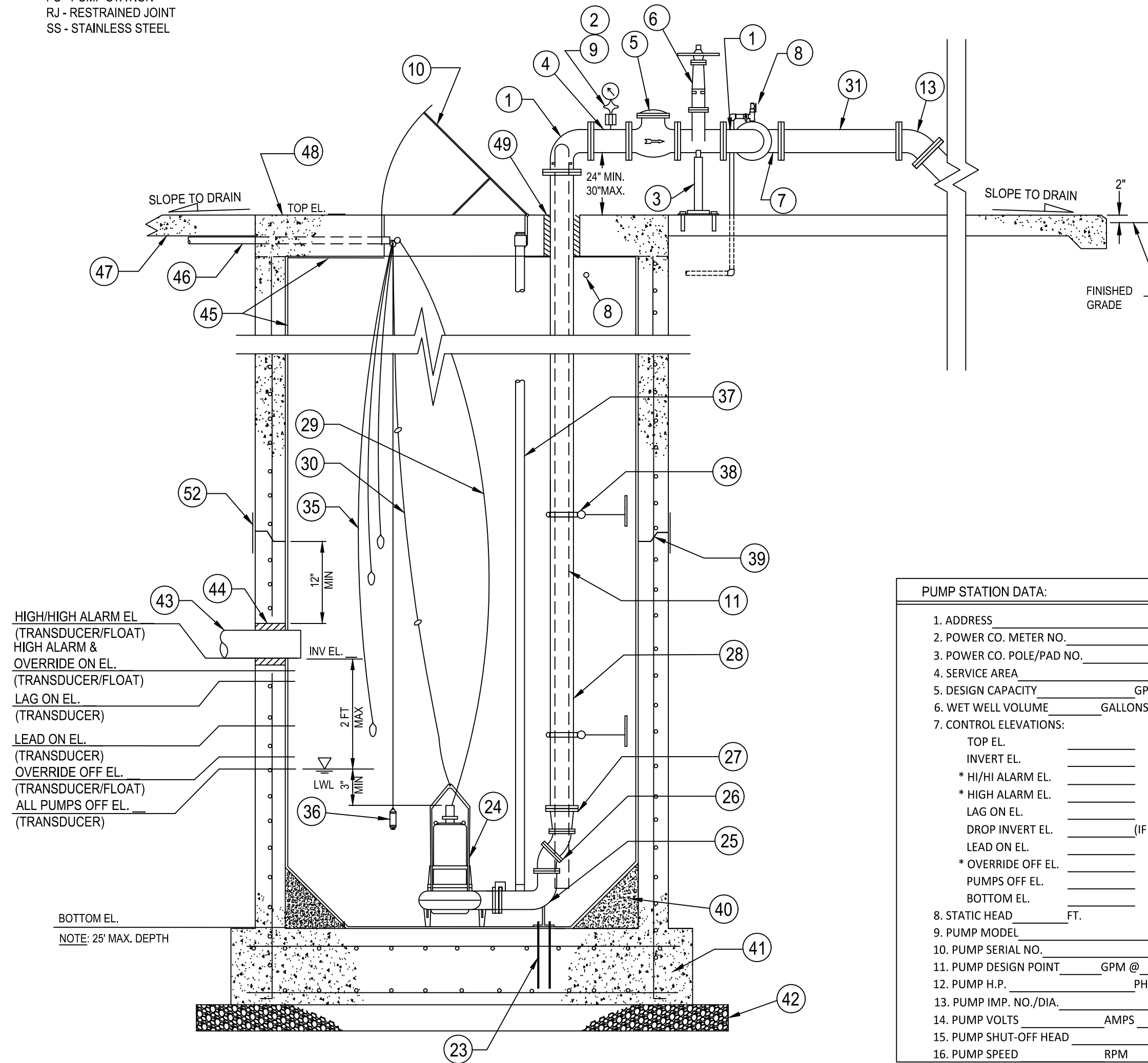


**CAUTION:**  
COORDINATE PUMP MINIMUM  
SPACING W/ DISCHARGE PIPING  
LAYOUT

**PLAN VIEW**  
NOT TO SCALE

**ABBREVIATIONS**

BFP - BACK-FLOW PREVENTER  
DI - DUCTILE IRON  
FG - FLANGED  
MJ - MECHANICAL JOINT  
PE - PLAIN END  
PS - PUMP STATION  
RJ - RESTRAINED JOINT  
SS - STAINLESS STEEL



**SECTION A-A**  
NOT TO SCALE

PUMP STATION DATA:	
1. ADDRESS	
2. POWER CO. METER NO.	
3. POWER CO. POLE/PAD NO.	
4. SERVICE AREA	
5. DESIGN CAPACITY	GPM
6. WET WELL VOLUME	GALLONS
7. CONTROL ELEVATIONS:	
TOP EL.	
INVERT EL.	
* HI/HI ALARM EL.	
* HIGH ALARM EL.	
LAG ON EL.	
DROP INVERT EL.	(IF REQUIRED, SEE DWG M3)
LEAD ON EL.	
* OVERRIDE OFF EL.	
PUMPS OFF EL.	
BOTTOM EL.	
8. STATIC HEAD	FT.
9. PUMP MODEL	
10. PUMP SERIAL NO.	
11. PUMP DESIGN POINT	GPM @ TDH
12. PUMP H.P.	PHASE
13. PUMP IMP. NO./DIA.	
14. PUMP VOLTS	AMPS
15. PUMP SHUT-OFF HEAD	FT.
16. PUMP SPEED	RPM
* LEVEL FLOAT SWITCHES	

**KEY:**

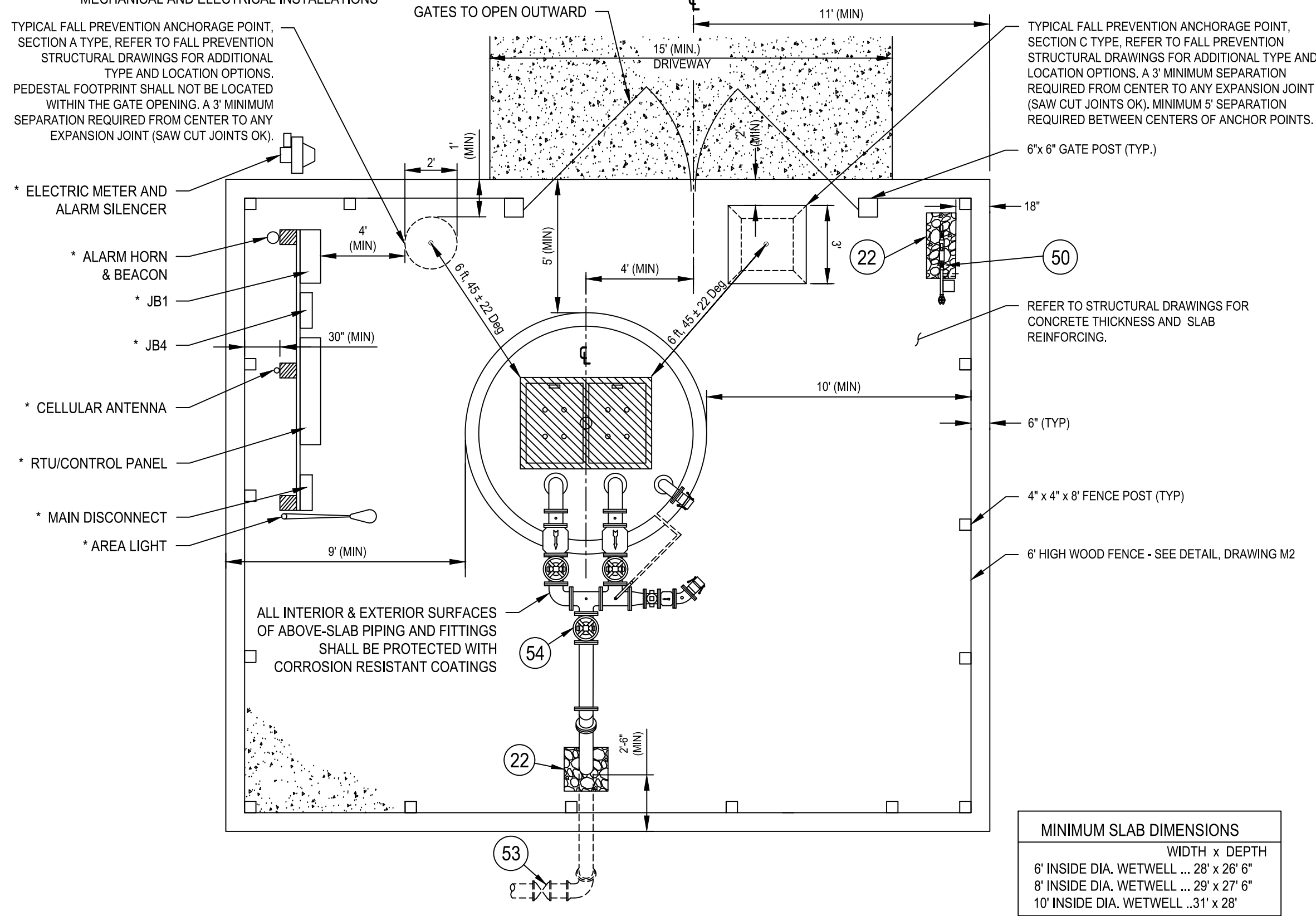
- 1/2" FG 90° DI BEND (3 REQ.)
- 1/2" TAP W/ 1/2" x 2" 316 SS NIPPLE & 1/2" LOCKABLE BALL VALVE W/ SS BALL (4 REQ.)
- ADJUSTABLE PIPE SUPPORT, SIZED AS REQUIRED (5 REQ.) - SEE DETAIL, DRAWING M3
- 1/2" FG DISCHARGE PIPE, LENGTH AS REQUIRED (6" MIN)
- 1/2" FG IRON BODY FLAPPER DISK CHECK VALVE (2 REQ.) PER APP. B
- 1/2" FG IRON BODY RESILIENT SEAT GATE VALVE (2 REQ.)
- 1/2" x 1/2" FG DI TEE W/ BOSS (2 REQ.)
- MANUAL AIR RELEASE ASSEMBLY TO INCLUDE 1" TAP W/ 1" x 2" 316 SS NIPPLE, 1" SS THREADED TEE, 1" x 1/2" SS REDUCING BUSHING, 1/2" SS BALL VALVE W/ 1/2" PVC THREADED PLUG, AND 1" SS BALL VALVE W/ 1" PVC UNDER-SLAB DRAIN - SEE DETAIL, DRAWING M3
- COMPOUND PRESSURE GAUGE (STAINLESS STEEL, SILICONE FILLED, W/ SILICONE FILLED DIAPHRAGM SEAL), PROVIDE ONE PER STATION
- ALUMINUM FRAME & DOUBLE ACCESS HATCHES, HINGED ON DISCHARGE PIPING SIDE CAPABLE OF BEING SECURED IN THE OPEN POSITION. CONTRACTOR SHALL DRILL FOUR 1/2" DIA. HOLES IN EACH HATCH COVER.
- AUXILIARY SUCTION PIPE ASSEMBLY - SEE DETAIL, DRAWING M2  
NOTE: FOR PUMP STATIONS W/ 6" AND LARGER DISCHARGE PIPING, THE AUX. SUCTION PIPE ASSEMBLY SHALL UTILIZE 6" DIA. PIPE AND FITTINGS. IN ADDITION, ALL FITTINGS FOR BYPASS/ PUMP-IN ASSEMBLY SHALL BE UPSIZED TO 6" (I.E., ITEMS 18, 19, 20, & 21 ON THIS SHEET). FOR PUMP STATIONS W/ 6" DIA. WETWELLS, AUX. SUCTION PIPE MAY NEED TO BE LOCATED BETWEEN THE DISCHARGE PIPES.
- 1/2" FG DIP, LENGTH AS REQUIRED
- 1/2" FG 45° BEND
- 1/2" FG x PE DIP, LENGTH AS REQUIRED
- 1/2" MI 90° BEND W/ RESTRAINED JOINTS
- 1/2" PVC C900 W/ RESTRAINED JOINTS AS REQUIRED (MIN DEPTH OF 48" TO CROWN OF PIPE)
- 1/2" x 6" FG REDUCER, AS NEEDED - ONLY FOR PUMP STATIONS W/ 8" OR LARGER DISCHARGE PIPING
- 1/2" FG RESILIENT SEAT GATE VALVE
- 1/2" FG FLAPPER DISK CHECK VALVE PER APP. B
- 1/2" FG 45° BEND
- 1/2" EMERGENCY BYPASS/ PUMP-IN CAMLOCK MALE COUPLER W/ CAP, THREADED NIPPLE AND FLANGE. SEE DETAIL, DRAWING M2.
- OPENING IN CONCRETE SLAB, GRAVEL FILLED - MINIMUM 6" CLEARANCE AROUND PIPE
- 3/4" DIA. SS ANCHOR BOLTS & NUTS (DOUBLE NUTS) PER PUMP MANUFACTURER'S RECOMMENDATIONS, EPOXIED INTO BASE SLAB
- PUMP - HYDROMATIC NON-CLOG OR APPROVED EQUAL W/ FRONT LOAD RAIL SYSTEM (2 REQ.)
- BASE ELBOW TO BE PROVIDED BY PUMP SUPPLIER (2 REQ.)
- 1/2" FG 45° BEND, AS REQUIRED FOR DISCHARGE PIPING OFFSET, LOCKING WASHER REQ'D FOR ALL FG CONNECTIONS IN WET WELL
- 1/2" x 1/2" FG REDUCER, AS REQUIRED, LOCKING WASHER REQ'D FOR ALL FG CONNECTIONS IN WET WELL
- 1/2" 316 SS FLANGED DISCHARGE PIPING, LENGTH AS REQUIRED, LOCKING WASHER REQ'D FOR ALL FG CONNECTIONS IN WET WELL
- PUMP POWER CABLE
- PUMP LIFTING CABLE (3/8" 316 SS) W/ 4" 316 SS RINGS LOCATED @ 5 FT INTERVALS
- 1/2" FG DI PIPE, LENGTH 36"
- N/A
- 316 SS POWER AND TRANSDUCER CABLE HOOKS - SEE DETAIL, DRAWING M2 (2 TYP)
- 316 SS LEVEL CABLE HANGER FOR LEVEL FLOAT SWITCH CABLES - SEE DETAIL, DRAWING M2
- LEVEL FLOAT SWITCHES (3 REQ'D), TO SERVE AS BACK-UP TO PRESSURE TRANSDUCER
- PRESSURE TRANSDUCER FOR WATER LEVEL CONTROL, SUSPENDED FROM CABLE HOOK SET AT 18 INCHES ABOVE BOTTOM
- 2" (O.D.) 316 SS GUIDE RAILS, FRONT MOUNT (2 PER PUMP), OR PER PUMP MANUFACTURER'S RECOMMENDATION
- 316 SS INTERIOR PIPE SUPPORT - SEE DETAIL, DRAWING M3
- ELASTOMERIC GASKET MATERIAL
- NON-SHRINK GROUT FILLET ALL AROUND, 4000 PSI CONCRETE W/ MAX AGGREGATE SIZE OF 3/8" & MIN. SLOPE OF 1:1 (MAX WIDTH/HT. OF 2-FT), TO BE COATED W/ INTERIOR WETWELL PROTECTIVE COATING (SEE #45)
- FIRST WETWELL RISER SECTION & BASE SLAB SHALL BE MONOLITHICALLY OR INTEGRALLY CAST PER ASTM C478 - REFER TO STRUCTURAL DRAWING S1 & S2
- LEVEL COURSE OF CRUSHED STONE - 6" MIN. THICKNESS
- PVC, C900, INFLUENT GRAVITY MAIN, TO EXTEND 4" INSIDE WETWELL FOR INSIDE DROP, SEE DETAIL, DRAWING M3.
- FLEXIBLE BOOT, FOR INSIDE DROP, SEE DETAIL, DRAWING M3
- WETWELL INTERIOR PROTECTIVE COATING
- ELECTRICAL CONDUITS (SCH 80 PVC, 2" MIN.), INSTALLED UNDER GRADE SLAB AND CENTERED IN WETWELL TOP SLAB FOUR TOTAL - SEE ELECTRICAL DETAILS AND STRUCTURAL DRAWING S2
- GRADE SLAB - REFER TO STRUCTURAL DRAWING S4
- WETWELL TOP SLAB - REFER TO STRUCTURAL DRAWING S2
- LINK SEAL
- 1" BRASS WATER SERVICE W/ APPROVED BFP AND METER - TO BE INCREASED TO 2" SERVICE FOR ALL MASTER PUMP STATIONS AND/OR FOR PUMP STATIONS WITH WETWELLS DEEPER THAN 20-FT OR GREATER THAN 8-FT IN DIAMETER - SEE DETAIL, DRAWING M2
- N/A
- WRAP APPLIED AT EXTERIOR OF WETWELL JOINTS
- 1/2" MJ PLUG VALVE W/ RJ - ISOLATION VALVE, TO BE LOCATED ON PUMP STATION PROPERTY AT RIGHT OF WAY
- 1/2" FG IRON BODY RESILIENT SEATED GATE VALVE
- ELECTRONIC PRESSURE TRANSMITTER WITH DIAPHRAGM SEAL (SILICONE FILLED)

NOTE: REFER TO TECHNICAL SPECIFICATIONS AS APPLICABLE FOR MATERIALS  
REQUIREMENTS AND THE LIST OF APPROVED PRODUCTS

**PUMP STATION DESIGN NOTES (TYP):**

- IN ORDER TO COORDINATE THE MECHANICAL, ELECTRICAL AND STRUCTURAL INSTALLATION, THE DESIGN ENGINEER SHALL REFER TO HILLSBOROUGH COUNTY'S MECHANICAL DRAWINGS (M1-M3), ELECTRICAL DRAWINGS (E 0.0-E 5.0), STRUCTURAL DRAWINGS (S1-S4); AND THE "HC WATER, WASTEWATER & RECLAIMED WATER TECHNICAL MANUAL FOR SUBDIVISION AND SITE DEVELOPMENT" (LATEST EDITION), AND THE "HC WATER, WASTEWATER & RECLAIMED WATER TECHNICAL SPECIFICATIONS" (LATEST EDITION).
- THE DESIGN ENGINEER SHALL NOT USE THESE DRAWINGS FOR A SPECIFIC SITE INSTALLATION. A DETAILED SITE PLAN SHALL BE SHOWN IN THE BOX PROVIDED ON THIS SHEET, OR ON A SEPARATE SHEET AS NEEDED. THE SITE PLAN SHALL BE DRAWN TO SCALE AND INCLUDE CRITICAL SITE ELEVATIONS (SUCH AS ROAD, SLAB, DRIVEWAY, AND SURROUNDING AREAS - INCLUDING FINISHED FLOOR OF BUILDINGS ON ADJACENT LOTS), DIMENSIONS, HARDSCAPE ELEMENTS, AND THE PUMP STATION'S RELATIONSHIP TO THE SURROUNDING AREA.
- THESE DRAWINGS REPRESENT THE STANDARD DESIGN FOR ALL HILLSBOROUGH COUNTY WASTEWATER PUMPING STATIONS. IT WAS DEVELOPED TO IMPROVE RELIABILITY AND MAINTAINABILITY, MINIMIZE SPARE PARTS AND INCREASE SERVICE LIFE. ALL REQUESTS FOR DEVIATIONS FROM THIS STANDARD MUST BE MADE IN WRITING TO THE DEVELOPMENT SERVICES DEPARTMENT FOR SUBDIVISION AND SITE DEVELOPMENT, AND TO THE PUBLIC UTILITIES DEPARTMENT (PUD) PROJECT MANAGER FOR ALL CAPITAL IMPROVEMENT PROJECTS. WRITTEN APPROVAL FROM PUD UTILITY DESIGN SECTION MGR. IS REQUIRED BEFORE MODIFICATIONS ARE MADE.
- THE ENGINEER IS RESPONSIBLE FOR COORDINATING WITH THE PUMP SUPPLIER TO ENSURE THAT PROPER PUMP AND PIPE SPACING IS ACCOMMODATED.
- PUMP STATION SLAB DIMENSIONS SHALL MEET OR EXCEED MINIMUM SHOWN.
- THE ENGINEER IS ADVISED THAT COUNTY APPROVAL OF THE PUMP STATION DESIGN DOES NOT CONSTITUTE A RELEASE FROM PROFESSIONAL LIABILITY BY THE ENGINEER NOR SHIFT RESPONSIBILITY FOR ANY DESIGN DECISIONS REPRESENTED HEREIN TO THE COUNTY OR OTHER REGULATORY AGENCY. THE ENGINEER IS RESPONSIBLE FOR THE FINAL ELECTRICAL, MECHANICAL, AND STRUCTURAL DESIGNS.
- DISCHARGE PIPE SUPPORTS ARE REQUIRED FOR WET WELL DEPTHS GREATER THAN 10 FEET.
- IF THE INFLUENT INVERT ELEVATION IS GREATER THAN 2-FEET ABOVE LOW WATER LEVEL (LWL), A DROP INVERT CONNECTION SHALL BE REQUIRED, THE DROP INVERT TO BE SET AT THE LEAD-ON ELEVATION (SEE DROP CONNECTION DETAIL, DRAWINGS S2, S4 & M3).
- LOW WATER LEVEL MUST BE AT LEAST 3" ABOVE TOP OF PUMP. FILL IN THE FOLLOWING INFORMATION: (INSTALLED HEIGHT (PER PUMP MFR.) + 3" = \_\_\_ FT) ≤ (LWL - BOTTOM EL. = \_\_\_ FT)
- DUCTILE IRON IN THE WETWELL MUST BE BELOW THE LOW WATER LEVEL.

\* REFER TO ELECTRICAL DRAWINGS FOR  
STANDARD ELECTRICAL DETAILS, EQUIPMENT  
REQUIRED AND FOR COORDINATION OF  
MECHANICAL AND ELECTRICAL INSTALLATIONS



**STANDARD FOOTPRINT - MIN. DIMENSIONS**  
NOT TO SCALE

SHOW TO SCALE AND INCLUDE ELEVATIONS AS TO ROAD, SLAB, DRIVEWAY AND SURROUNDING  
AREAS.

**DETAILED SITE PLAN**  
(BY ENGINEER) SCALE: 1"=

REV. NO.	DESCRIPTIONS	DATE
2	REVISED TO REFLECT CURRENT COUNTY STANDARDS	8/18/23
1	REVISED SLAB DIMENSION	10/28/21

SEAL
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SEAL
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**Hillsborough  
County Florida**

PUBLIC UTILITIES  
WATER RESOURCES DEPARTMENT  
925 E. TWIGGS STREET/TAMPA FLORIDA 33602/PH. (813) 272-5977

STANDARD WASTEWATER  
DUPLEX PUMP STATION

MECHANICAL LAYOUT AND SITE PLAN

ISSUE DATE: OCTOBER 2023
PROJ. #
DRAWN
DESIGNED
CHECKED
PROJ. MGR.

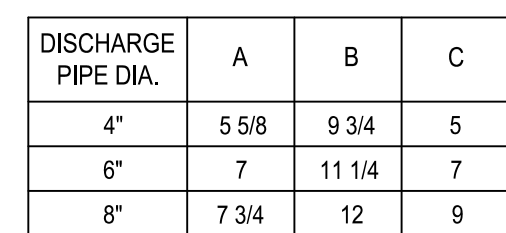
SCALE
HORIZONTAL:
VERTICAL:
NA

FILE NUMBER
DRAWING NUMBER
M1

STATUS: FINAL DESIGN







4" AUXILIARY SUCTION PIPE

2" DIA. S.S. TUBING, ANGLE IRON, OR PIPE WELDED TO S.S. BASE PLATES, BOLT TO WETWELL WITH 5/8" S.S. EXPANSION ANCHORS

PUMP DISCHARGE PIPE  
PROVIDE ADDITIONAL PIPE SUPPORT EVERY 10 FEET

GUIDE RAIL SUPPORT BRACKET.  
MOUNTS ON PUMP DISCHARGE PIPE  
W/ 1/2" SS U-BOLTS AND LOCKNUTS.  
CONTRACTOR TO FABRICATE  
EXTENSION BRACKET WHEN  
REQUIRED, SEE DETAIL.

3/4" S.S. U-BOLTS w/S.S. LOCK NUTS

CONCRETE WETWELL

NOTES:

1. LIST TOP INVERT AND DROP PIPE INVERT ON BOTH M-1 AND M-3.
2. FOR STRUCTURAL STEEL INFO SEE DRAWING S2 & S4, FOR DROP CONNECTION ENCASEMENT DETAIL

[illegible]

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County** Florida

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## STANDARD WASTEWATER DUPLEX PUMP STATION

## MECHANICAL DETAILS

ISSUE DATE: OCTOBER 2023  
 PROJ. # \_\_\_\_\_  
 DRAWN \_\_\_\_\_  
 DESIGNED \_\_\_\_\_  
 CHECKED \_\_\_\_\_  
 PROJ. MGR. \_\_\_\_\_

STATUS: FINAL DESIGN

SCALE
HORIZONTAL:
VERTICAL:

FILE NUMBER

M3