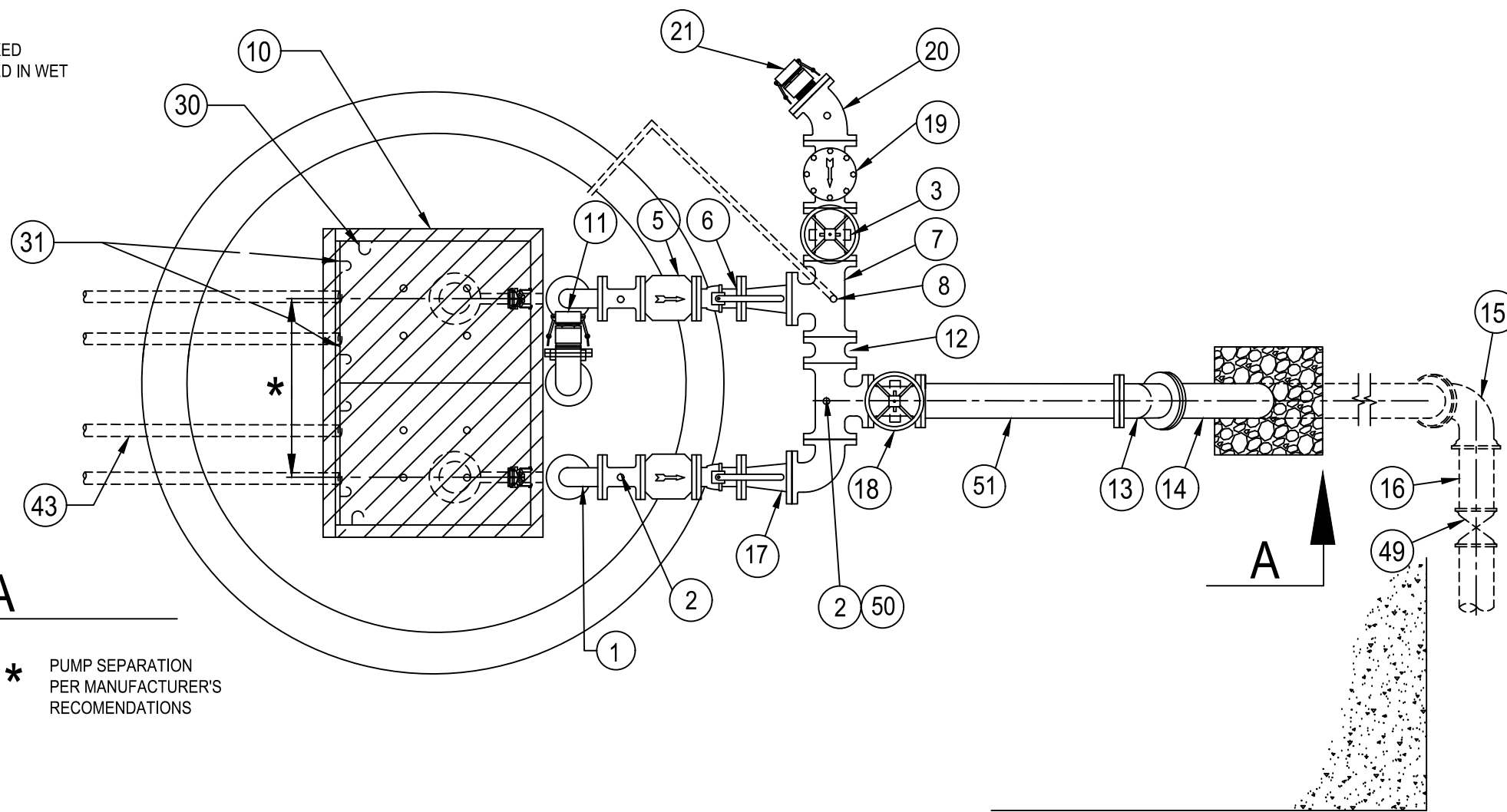


NOTE:
NO PERMANENTLY AFFIXED
LADDERS ARE PERMITTED IN WET
WELL.

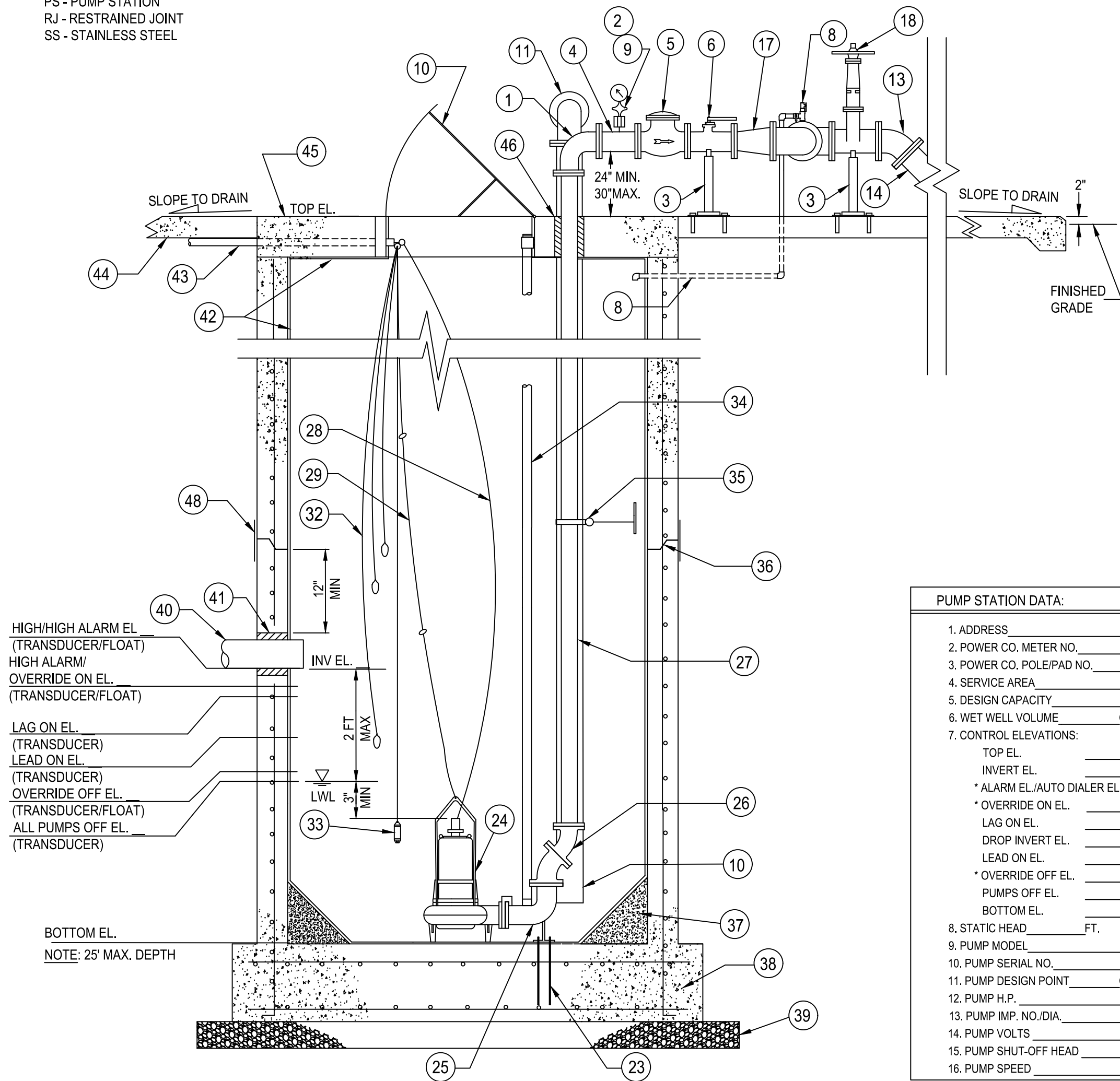


CAUTION:
COORDINATE PUMP MINIMUM
SPACING W/ DISCHARGE PIPING
LAYOUT

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

LOCKING WASHER REQ'D FOR ALL FG CONNECTIONS
IN WET WELL



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 _____ FT. DIA.
7. CONTROL ELEVATIONS:	
TOP EL.	_____
INVERT EL.	_____
* ALARM EL./AUTO DIALER EL.	_____
* OVERRIDE ON EL.	_____
LAG ON EL.	_____ (IF REQUIRED)
DROP INVERT EL.	_____
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:

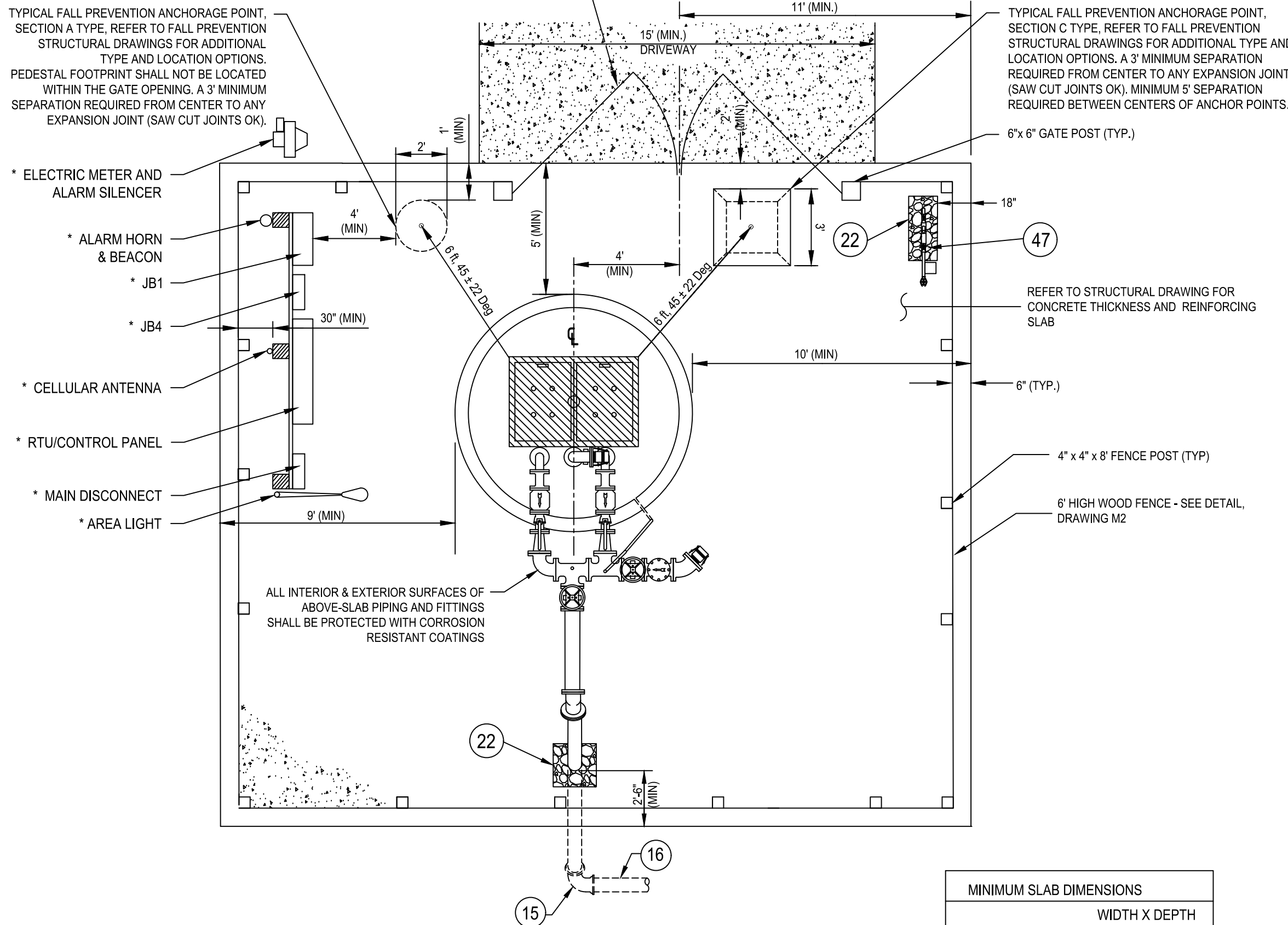
- 2" FG 90° SS BEND (2 REQ.)
- 1/2" TAP W/ 1/2" x 2" 316 SS NIPPLE & 1/2" LOCKABLE BALL VALVE W/ SS BALL (4 TYP.)
- ADJUSTABLE PIPE SUPPORT, SIZED AS REQUIRED (4 REQ.) - SEE DETAIL, DRAWING M3
- 2" FG SS SPOOL PIECE, LENGTH AS REQUIRED (6" MIN)
- 2" FG SS FLAPPER DISK CHECK VALVE (2 REQ.)
- 2" FG SS LOCKABLE BALL VALVE (2 REQ.)
- 4" x 4" FG DI TEE W/ BOSS FOR TAP (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 HATCH W/ 30" x 36" MIN. OPENING, HINGED ON DISCHARGE PIPING SIDE AND CAPABLE OF BEING SECURED IN THE OPEN POSITION. CONTRACTOR SHALL DRILL EIGHT 1/2" DIA. HOLES IN HATCH COVER.
- AUXILIARY SUCTION PIPE ASSEMBLY - SEE DETAIL, DRAWING M2 FOR PUMP STATIONS W/ 6" DIA. WET WELLS, AUX. SUCTION PIPE TO BE LOCATED BETWEEN THE DISCHARGE PIPES.
- 4" FG DIP, LENGTH AS REQUIRED
- 4" FG 45° BEND
- 4" FG x PE DIP, LENGTH AS REQUIRED
- 4" MJ 90° BEND W/ RESTRAINED JOINTS
- 4" PVC C900 W/ RESTRAINED JOINTS AS REQUIRED (MIN DEPTH OF 48" TO CROWN OF PIPE)
- 2" x 4" FG SS REDUCER
- 4" FG RESILIENT SEAT GATE VALVE (2 REQ.)
- 4" FG FLAPPER DISK CHECK VALVE PER APP. B
- 4" FG 45° BEND
- EMERGENCY BYPASS PUMP-IN 4" CAM LOCK MALE COUPLER W/ CAP, THREADED NIPPLE AND FLANGE
- 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, EPOXY INTO BASE SLAB
- PUMP - GRINDER W/ FRONT LOAD RAIL SYSTEM (2 REQ.)
- BASE ELBOW TO BE PROVIDED BY PUMP SUPPLIER (2 REQ.), OUTLET TO HAVE THREADED NIPPLE AND FLANGE.
- 2" FG 45° BEND (2 - AS REQUIRED FOR OFFSET IN WET WELL), LOCKING WASHER REQ'D FOR ALL FG CONNECTIONS IN WET WELL
- 2" 316L SS SCHEDULE 40 FLANGED DISCHARGE PIPING, LENGTH AS REQUIRED. LOCKING WASHER REQ'D FOR ALL FG CONNECTIONS IN WET WELL
- POWER CABLES TO PUMPS
- PUMP LIFTING CABLES (3/8" 316 SS) W/ 4" 316 SS RINGS LOCATED @ 5-FT INTERVALS
- 316 SS POWER CABLE HOOKS - SEE DETAIL, DRAWING M2
- 316 SS CONTROL CABLE HANGER FOR LEVEL TRANSDUCER AND FLOAT SWITCH CABLES - SEE DETAIL, DRAWING M2
- LEVEL FLOAT SWITCHES (3 MIN.), TO SERVE AS BACK-UP LEVEL SENSORS TO PRESSURE TRANSDUCER
- PRESSURE TRANSDUCER FOR WATER LEVEL CONTROL, SUSPENDED FROM CONTROL CABLE HOOK, SET AT 18 INCHES ABOVE BOTTOM
- 3/4" (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
- 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 WET WELL PROTECTIVE COATING (SEE #42)
- FIRST WET WELL RISER SECTION & BASE SLAB SHALL BE MONOLITHICALLY OR INTEGRALLY CAST PER ASTM C478 - REFER TO STRUCTURAL DRAWING S1-S4
- LEVEL COURSE OF CRUSHED STONE - 6" MIN. THICKNESS
- PVC, C900 INFLUENT GRAVITY MAIN, TO EXTEND 4" INSIDE WET WELL
- FLEXIBLE SEAL
- WET WELL INTERIOR PROTECTIVE COATING
- ELECTRICAL CONDUITS (SCH 80 PVC, 2" MIN.), INSTALLED UNDER GRADE SLAB AND CENTERED IN WET WELL
- TOP SLAB, FOUR TOTAL - SEE ELECTRICAL DETAILS AND STRUCTURAL DRAWING S1-S4
- GRADE SLAB - REFER TO STRUCTURAL DRAWING S1-S4
- WET WELL TOP SLAB - REFER TO STRUCTURAL DRAWINGS S1-S4
- LINK SEAL
- 1" BRASS WATER SERVICE W/ APPROVED BFP AND METER - SEE DETAIL, DRAWING M2
- WRAP APPLIED AT EXTERIOR OF WET WELL JOINTS
- 4" MJ PLUG VALVE W/ RJ - ISOLATION VALVE, TO BE LOCATED ON PUMP STATION PROPERTY AT RIGHT OF WAY.
- ELECTRONIC PRESSURE TRANSMITTER WITH DIAPHRAGM SEAL (SILICONE FILLED).
- 4" FG DI PIPE, LENGTH 36"

NOTE: REFER TO TECHNICAL MANUAL AND/OR 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 THE LOW WATER LEVEL (LWL), A DROP INVERT CONNECTION SHALL BE REQUIRED. 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.]

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



STANDARD FOOTPRINT - MIN. DIMENSIONS
SCALE: 1" = 4'-0"

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

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

REV.	DESCRIPTION	DATE
2	REVISED TO REFLECT CURRENT COUNTY STANDARDS	8/17/23
1	REVISED SLAB DIMENSIONS	10/28/21
0	ISSUED FOR DESIGN	10/28/21

SEAL

SEAL

SEAL



Hillsborough
County Florida

PUBLIC UTILITIES DEPARTMENT
TECHNICAL SERVICES DIVISION
925 E. TWIGGS STREET/TAMPA FLORIDA 33602/PH. (813) 272-9977

STANDARD WASTEWATER
GRINDER PUMP STATION

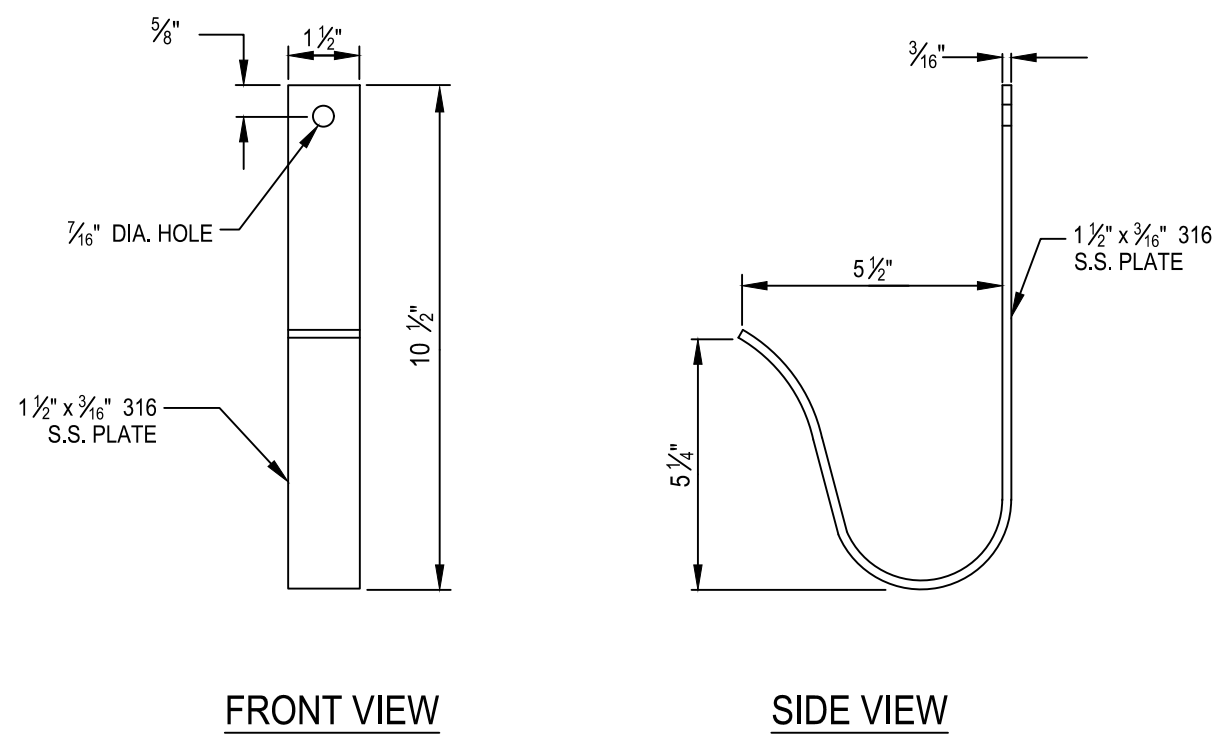
MECHANICAL LAYOUT AND SITE PLAN

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

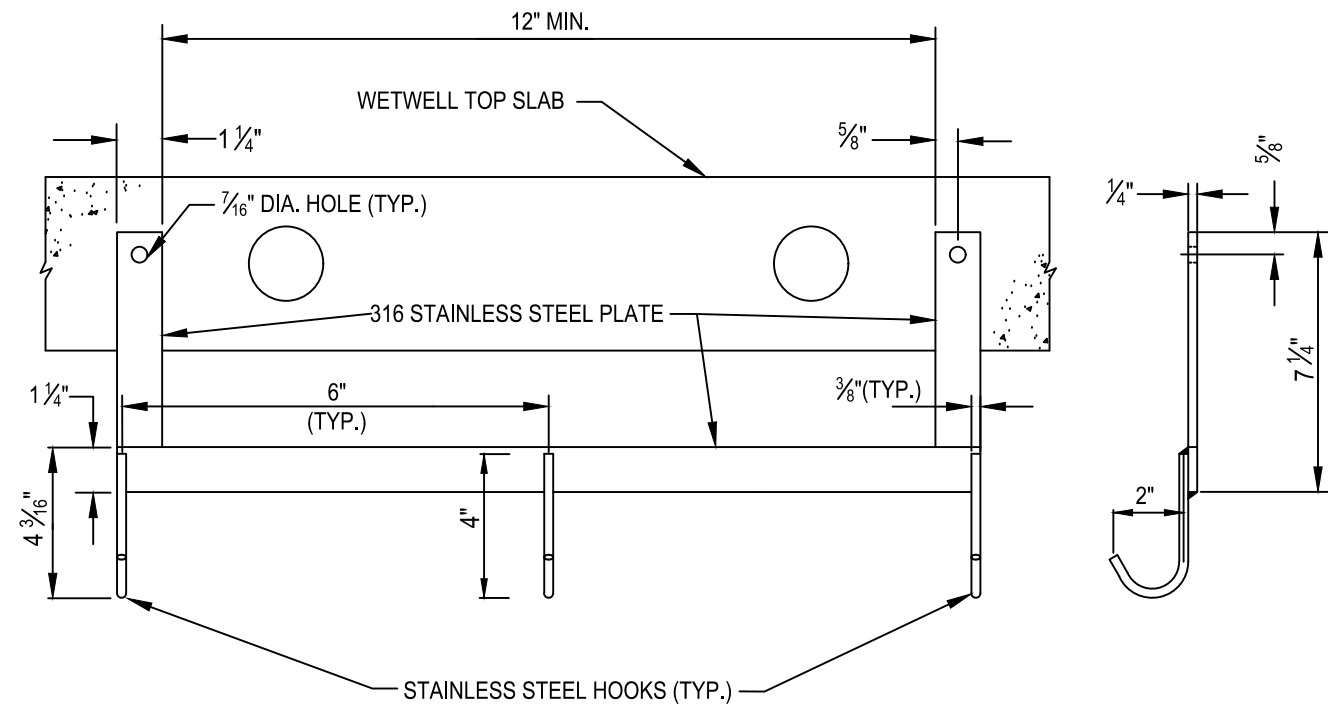
SCALE
HORIZONTAL:
VERTICAL:
NA

FILE NUMBER
DRAWING NUMBER
M1

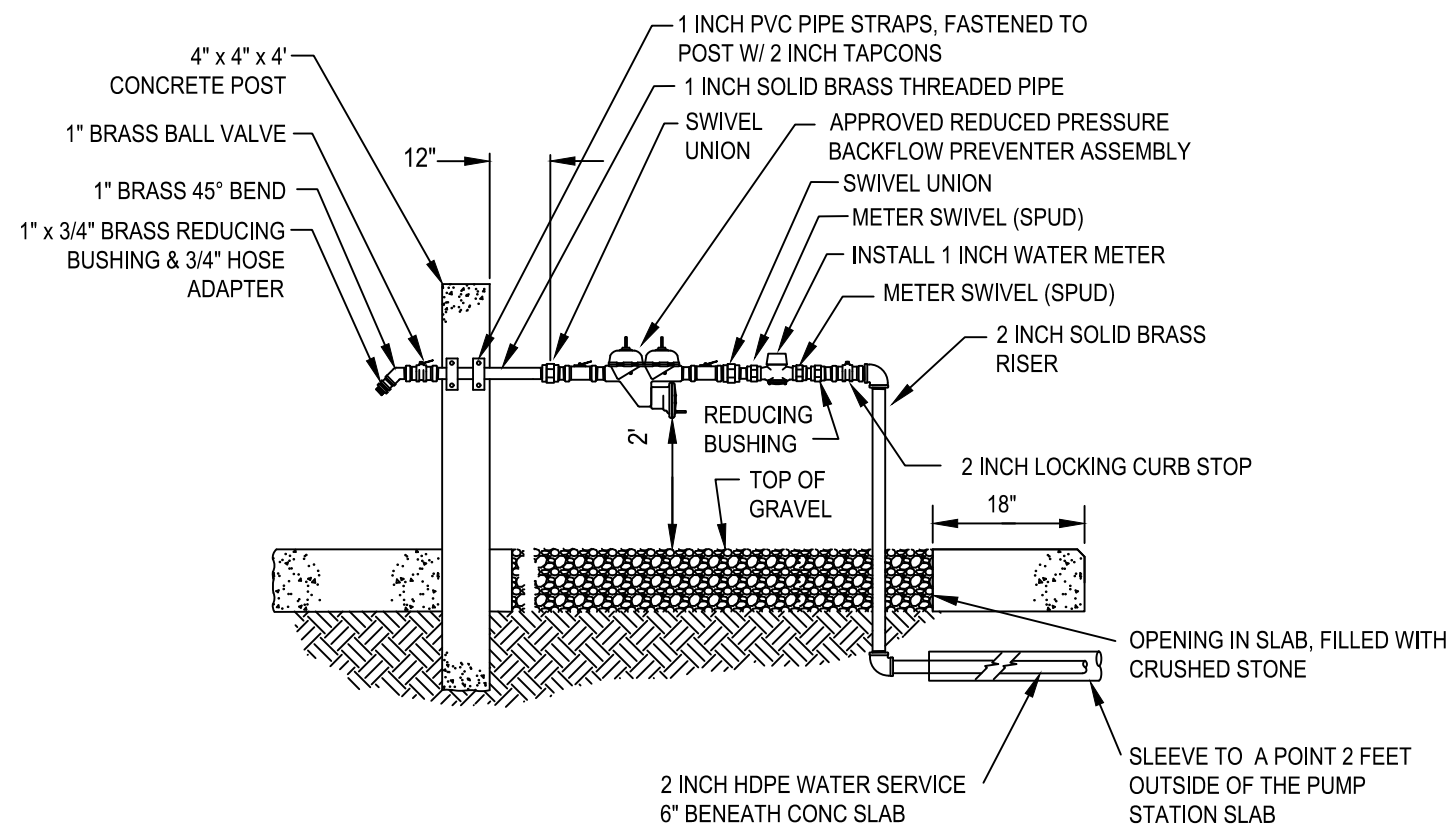
STATUS: FINAL DESIGN



POWER & TRANSDUCER CABLE HOOK DETAIL
NOT TO SCALE

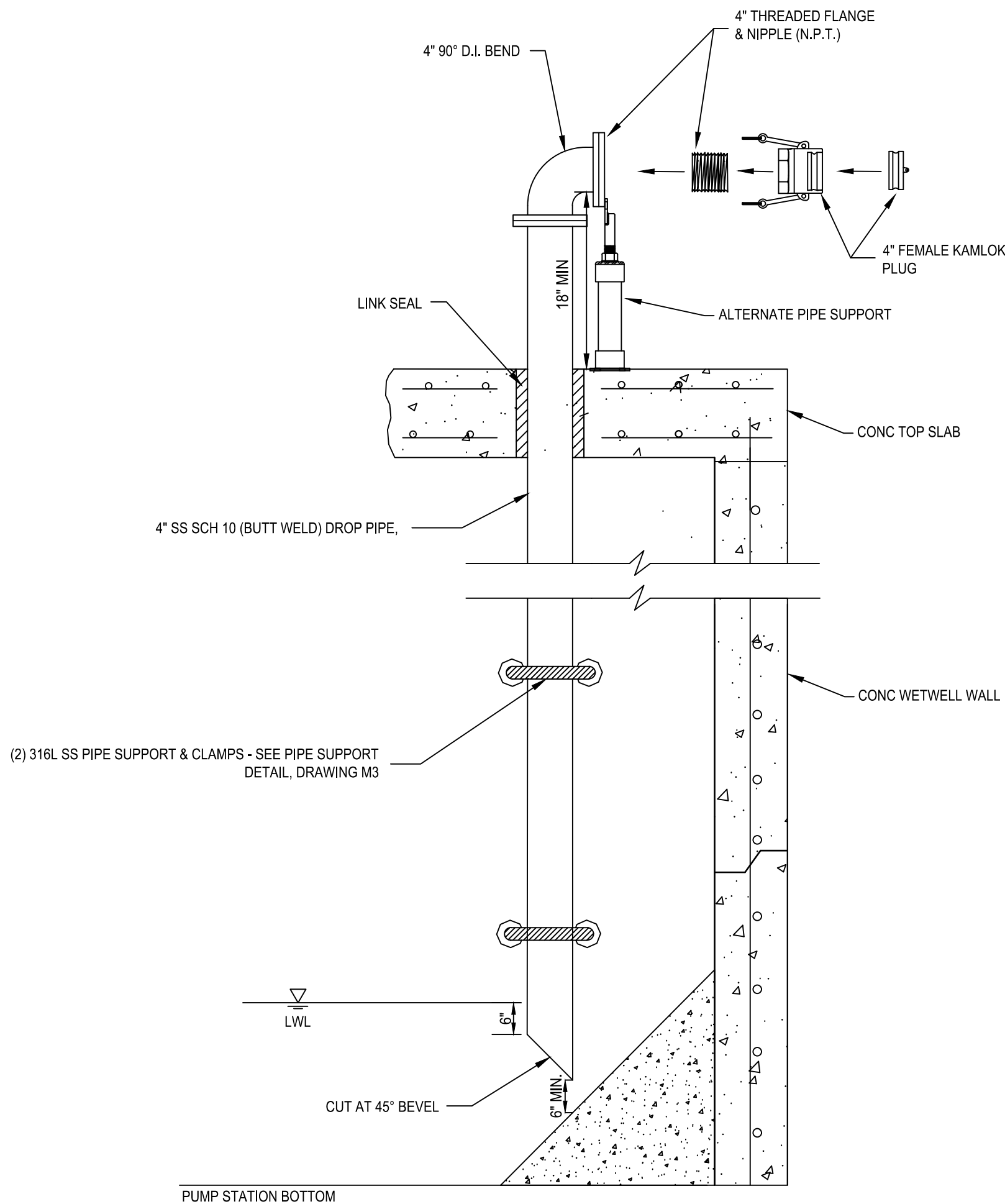


LEVEL CABLE HANGER DETAIL
NOT TO SCALE

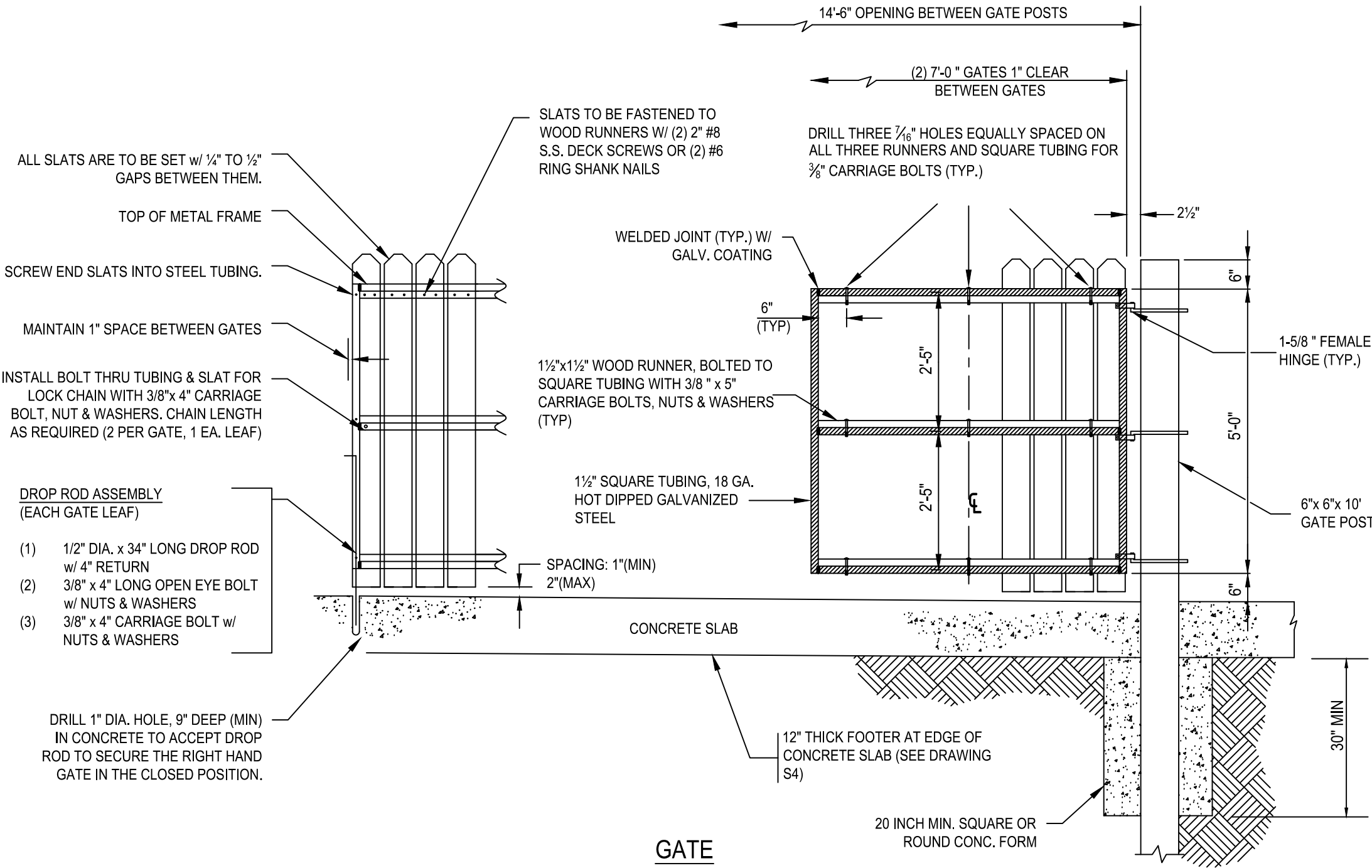


- NOTES:
- ALL PIPING TO BE 2-INCHES UP THROUGH THE LOCKING CURB STOP.
 - 2 INCH SERVICE LINE SHALL USE A 2 INCH TAPPING SLEEVE & VALVE AT THE WATER MAIN CONNECTION.
 - FOR LARGE PUMP STATIONS (WET WELLS 10 FT. DIA. OR GREATER, OR 20 FT. OR MORE DEPTH), A 2 INCH WATER METER AND SERVICE SHALL BE PROVIDED. HOSE CONNECTION TO BE 2 INCH MALE CAMLOCK CONNECTOR.

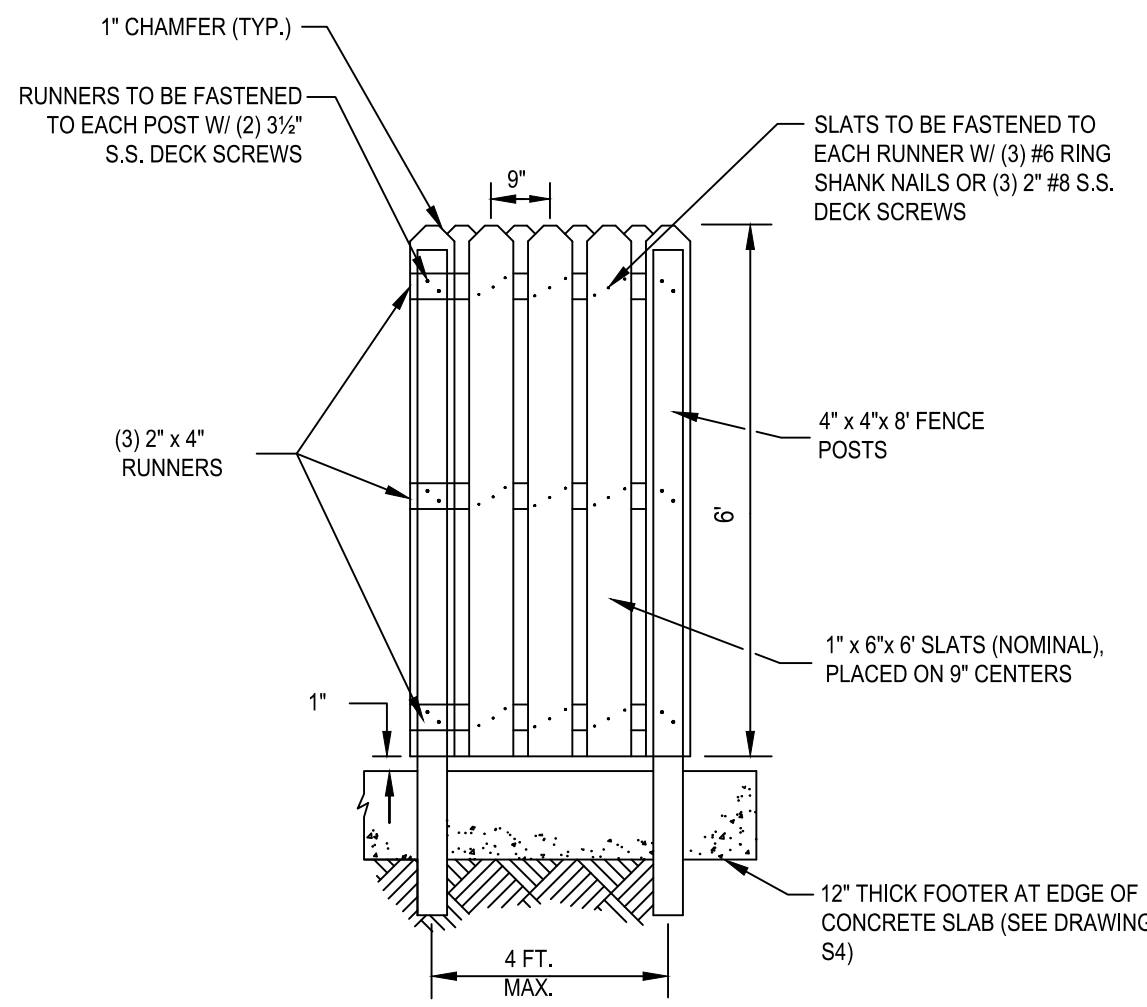
WATER SERVICE DETAIL
NOT TO SCALE



AUX. SUCTION PIPE DETAIL
NOT TO SCALE



GATE



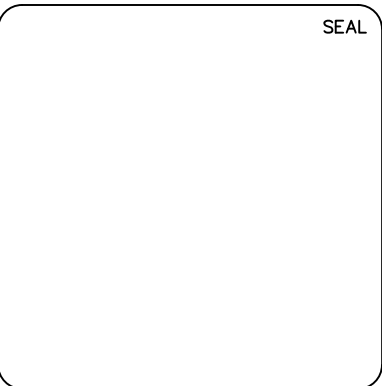
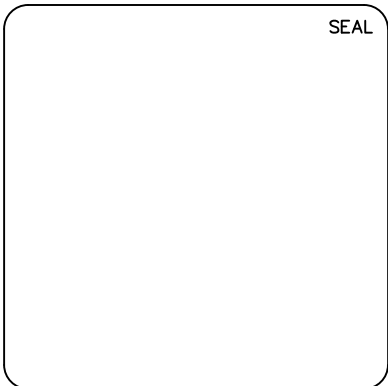
FENCE

- FENCE & GATE CONSTRUCTION NOTES
- ALL WOOD SHALL BE PRESSURE TREATED, POSTS SHALL BE RATED FOR BURIED WOOD.
 - ALL STRUCTURAL MEMBERS AND CROSS BRACING AS SHOWN.
 - CROSS BRACING SHALL BE ON INSIDE OF GATE.
 - USE HOT DIP GALVANIZED OR STAINLESS STEEL HARDWARE, FASTENERS, DROP RODS, CABLES, ETC. FOR ALL FENCE AND GATE CONSTRUCTION.
 - ALL NAIL & SCREW HEADS SHALL BE SET FLUSH W/ WOOD SURFACE (NOT COUNTERSUNK).
 - USE TAMPER PROOF HEAVY DUTY HINGES AND LATCHES ON GATE (MINIMUM OF THREE HINGES PER GATE LEAF).
 - SOME PUMP STATION LOCATIONS MAY REQUIRE ARCHITECTURAL STYLE FENCING - CONSULT COUNTY.

PUMP STATION ENCLOSURE DETAIL
NOT TO SCALE

INSTALLATION NOTE:
CONTRACTOR TO REFER TO DRAWINGS M1-M3, E 0.0-E 6.0 AND S1-S4 IN ORDER TO COORDINATE ALL MECHANICAL, ELECTRICAL AND STRUCTURAL INSTALLATIONS.

REV. NO.	DESCRIPTION	DATE
1	REVISED, TO REFLECT CURRENT COUNTY STANDARDS	8/17/23



Hillsborough
County Florida

PUBLIC UTILITIES DEPARTMENT
TECHNICAL SERVICES DIVISION
925 E. TWIGGS STREET/TAMPA FLORIDA 33602/PH. (813) 272-5977

STANDARD WASTEWATER
GRINDER PUMP STATION

MECHANICAL DETAILS

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

SCALE
HORIZONTAL:
VERTICAL:
NA

FILE NUMBER
DRAWING NUMBER
M2

STATUS:
FINAL DESIGN



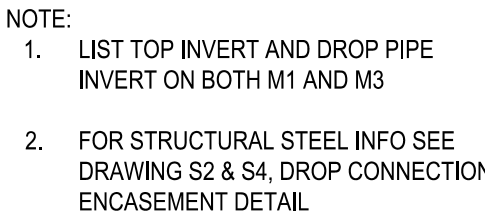
NOT TO SCALE



PIPE FLANGE SUPPORT

EXTERIOR PIPE SUPPORT DETAIL

NOT TO SCALE



DROP CONNECTION DETAIL

NOT TO SCALE



NOT TO SCALE



Hillsborough County Florida

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STANDARD WASTEWATER GRINDER PUMP STATION

MECHANICAL DETAILS

ISSUE DATE: OCTOBER 2023

PROJ. # _____

DRAWN _____

DESIGNED _____

CHECKED _____

PROJ. MGR. _____

STATUS: FINAL DESIGN

SCALE

HORIZONTAL:

VERTICAL:

NA

FILE NUMBER
DRAWING NUMBER
M3