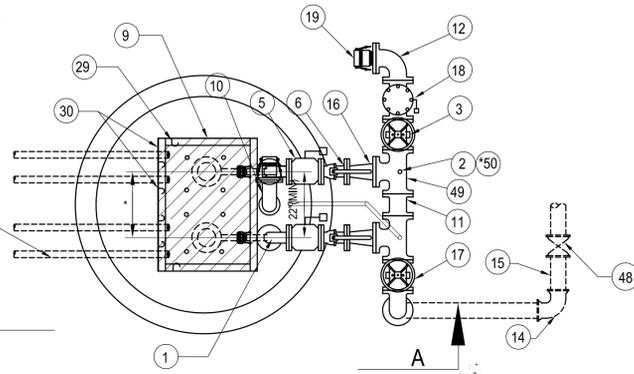


NOTE:
NO PERMANENTLY AFFIXED
LADDERS ARE PERMITTED IN
WET WELL.



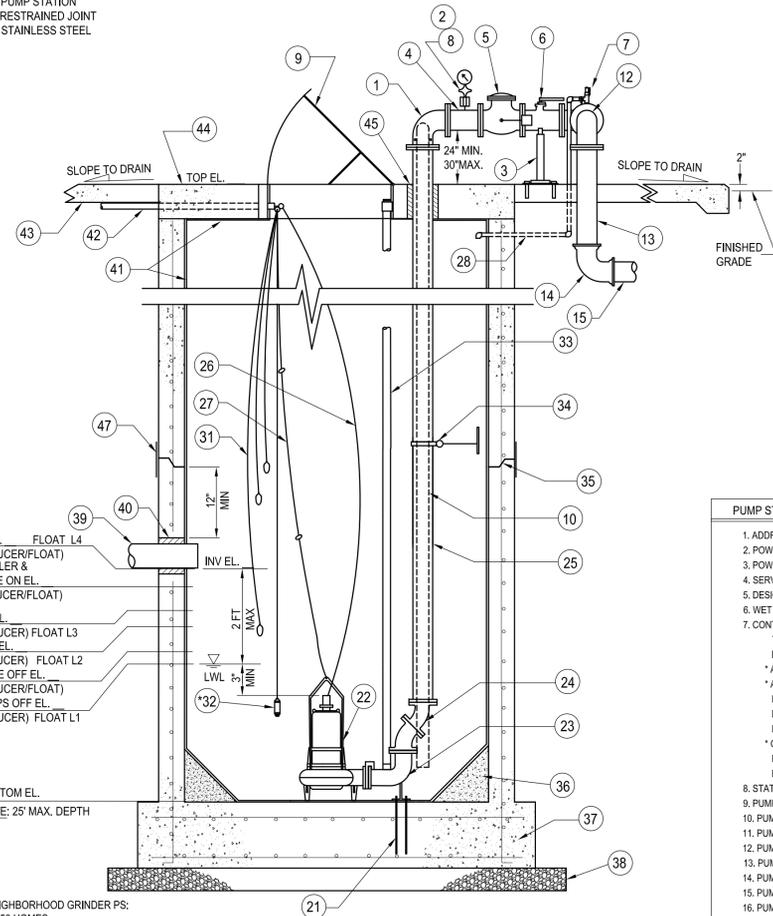
* PUMP SEPARATION
PER MANUFACTURER'S
RECOMMENDATIONS

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



ALARM EL. (TRANSDUCER/FLOAT)
AUTO DIALER &
OVERRIDE ON EL.
(TRANSDUCER/FLOAT)
LAG ON EL.
(TRANSDUCER) FLOAT L3
LEAD ON EL.
(TRANSDUCER) FLOAT L2
OVERRIDE OFF EL.
(TRANSDUCER/FLOAT)
ALL PUMPS OFF EL.
(TRANSDUCER) FLOAT L1

* SMALL NEIGHBORHOOD GRINDER PS:
LESS THAN 50 HOMES
L1 - FLOAT ALL PUMPS OFF/OVERRIDE OFF
L2 - FLOAT LEAD ON
L3 - FLOAT LAG ON
L4 - FLOAT HIGH ALARM SIGNAL TO
HTE/ALARM/OVERRIDE ON

SECTION A-A
NOT TO SCALE

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
- 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 SWING CHECK VALVE (2 REQ.)
- 2" FG SS LOCKABLE BALL VALVE (2 REQ.)
- 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 & SINGLE ACCESS HATCH W/ 30"x36" 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. WETWELLS, AUX. SUCTION PIPE TO BE LOCATED BETWEEN THE DISCHARGE PIPES.
- 4" FG DIP, LENGTH AS REQUIRED
- 4" FG 90° 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 SWING CHECK VALVE PER APP. B
- EMERGENCY BYPASS/PUMP-IN 4" CAMLOCK 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, EPOXIED INTO BASE SLAB
- PUMP - GRINDER W/ FRONT LOAD RAIL SYSTEM (2 REQ.)
- BASE ELBOW TO BE PROVIDED BY PUMP SUPPLIER (2 REQ.)
- 2" FG 45° BEND (AS REQUIRED FOR OFFSET IN WETWELL)
- 2" 316L SS SCHEDULE 40 FLANGED DISCHARGE PIPING, LENGTH AS REQUIRED
- POWER CABLES TO PUMPS
- PUMP LIFTING CABLES (3/8" 316 SS) W/ 4" 316 SS RINGS LOCATED @ 5-FT INTERVALS
- 1" DRAIN FROM ARV
- 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
- SMALL NEIGHBORHOOD GRINDER PS REQUIRES 4 LEVEL FLOAT SWITCHES.
- *PRESSURE TRANSDUCER FOR WATER LEVEL CONTROL, SUSPENDED FROM CONTROL CABLE HOOK, SET AT 18 INCHES ABOVE BOTTOM FOR SMALL NEIGHBORHOOD GRINDER PS (LESS THAN 50 HOMES) NO PRESSURE TRANSDUCER IS REQUIRED. FLOATS ONLY.
- 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 WETWELL PROTECTIVE COATING (SEE #41)
- FIRST WETWELL 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 WETWELL
- FLEXIBLE SEAL
41. 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 S1-S4
- GRADE SLAB - REFER TO STRUCTURAL DRAWING S1-S4
44. WETWELL TOP SLAB - REFER TO STRUCTURAL DRAWING S1-S4
- LINK SEAL
- 1" BRASS WATER SERVICE W/ APPROVED BFP AND METER - SEE DETAIL, DRAWING M2
47. WRAP APPLIED AT EXTERIOR OF WETWELL JOINTS
- 4" MJ PLUG VALVE W/ RJ - ISOLATION VALVE, TO BE LOCATED ON PUMP STATION PROPERTY AT RIGHT OF WAY.
- 4" x 4" FG DI TEE (2 REQ.)
- ELECTRONIC PRESSURE TRANSMITTER WITH DIAPHRAGM SEAL (SILICONE FILLED), FOR SMALL NEIGHBORHOOD GRINDER PS NO PRESSURE TRANSMITTER IS REQUIRED

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

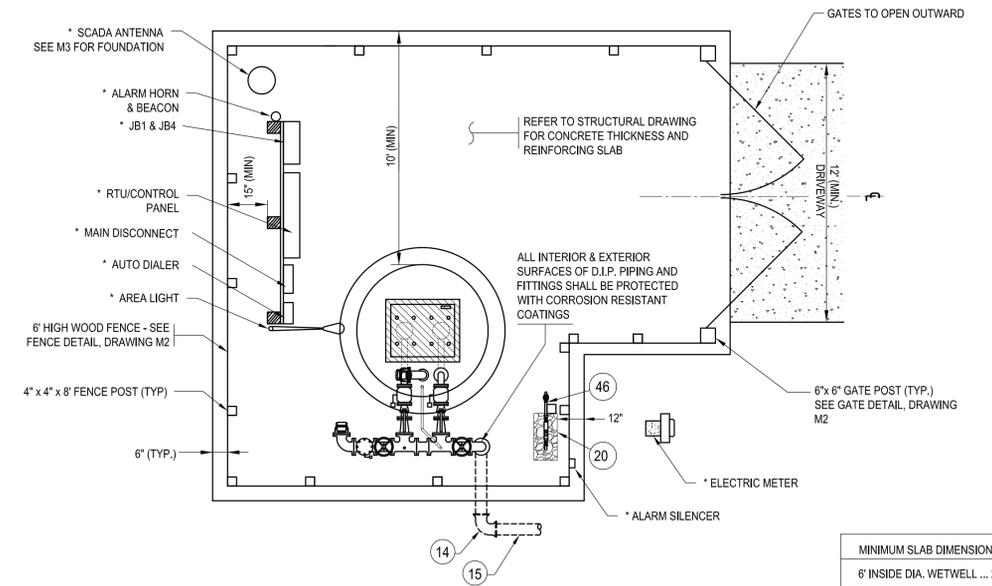
PUMP STATION DESIGN NOTES (TYP):

- 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 DRAWING (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.)

PUMP STATION DATA:	
1. ADDRESS	_____
2. POWER CO. METER NO.	_____
3. POWER CO. POLEPAD 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.	_____
LAG ON EL.	_____
DROP INVERT EL.	_____ (IF REQUIRED)
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 - BACKUP FOR NEIGHBORHOOD STATIONS

* REFER TO ELECTRICAL DRAWINGS FOR
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" =

SCALE	REVISIONS			
As Shown	No.	DATE	DESCRIPTION	APP'VD.

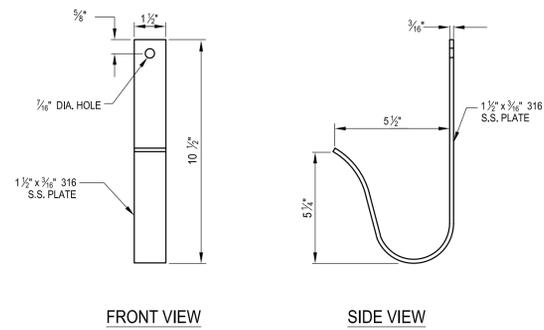


**HILLSBOROUGH COUNTY
PUBLIC UTILITIES DEPARTMENT**
925 E. TWIGGS STREET / TAMPA, FLORIDA 33602

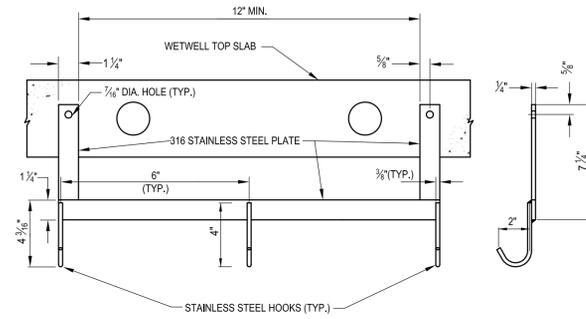
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FILE No.:	
DESIGNED BY:	
DRAWN BY:	
CHECKED BY:	
DATE:	
SCALE:	

NOT VALID UNLESS EMBOSSED
WITH ENGINEER'S SEAL
I hereby certify that the work contained herein was prepared under my
direct supervision and complies with the requirements of Chapter 471,
Florida Statutes and Chapter 61G15, F.A.C.
Florida Professional Engineer's Registration Number _____
Date _____

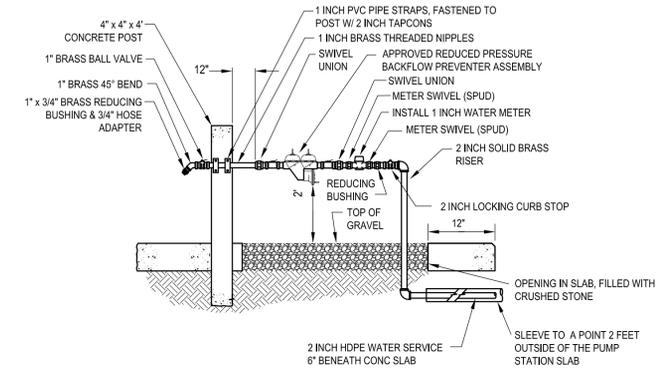
MECHANICAL LAYOUT AND SITE PLAN		OCT 2015
STANDARD WASTEWATER GRINDER PUMP STATION		SHEET
		OF
		DRAWING M1



POWER & TRANSDUCER CABLE HOOK DETAIL
NOT TO SCALE

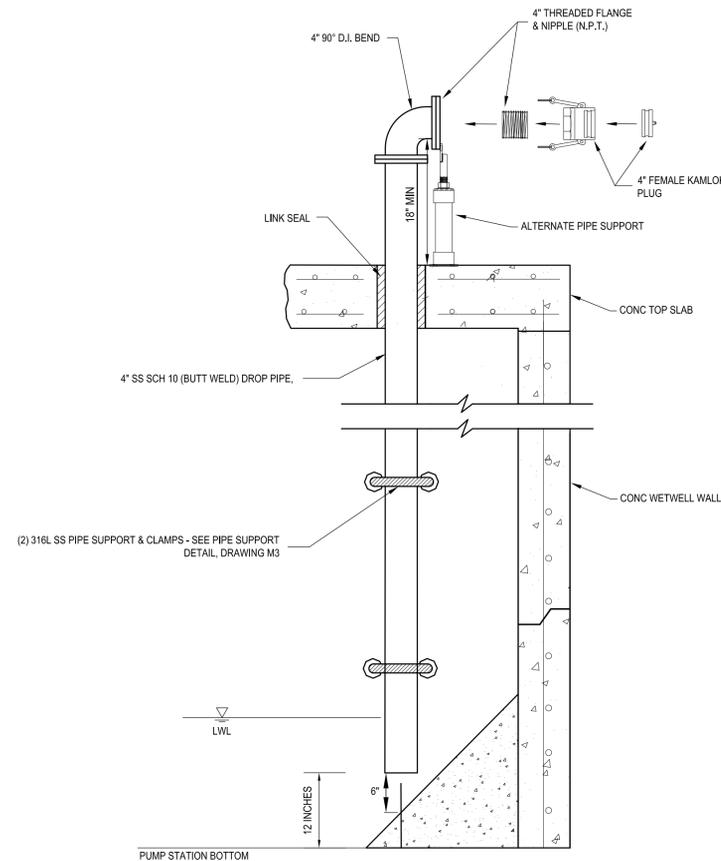


LEVEL CABLE HANGER DETAIL
NOT TO SCALE

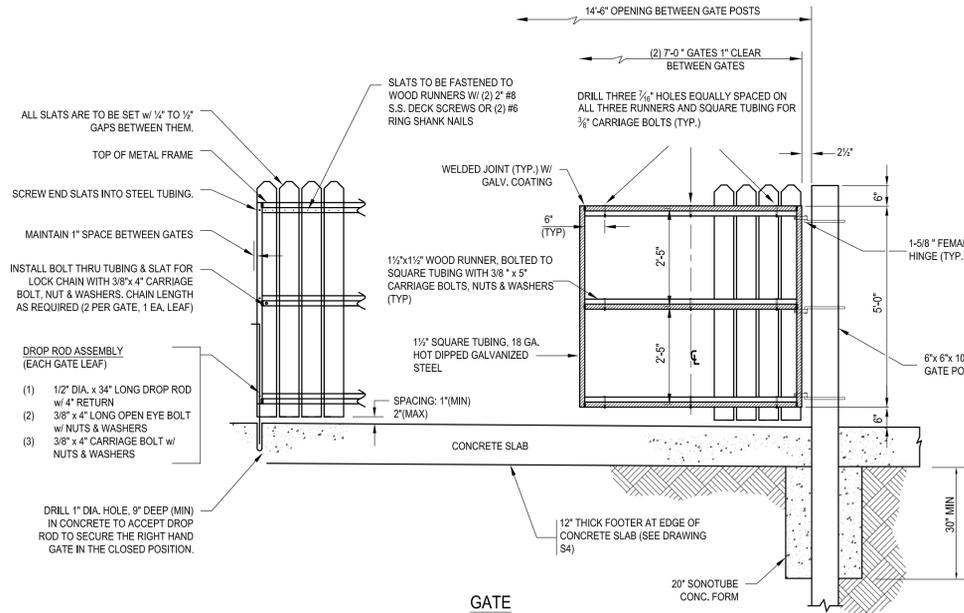


- NOTES:**
- ALL PIPING TO BE 2-INCHES UP THROUGH THE LOCKING CURB STOP.
 - 2 INCH SERVICE LINE SHALL USE A 2 INCH TAPPING SLEEVE & VALVE AT THE WATER MAIN CONNECTION.
 - FOR WET WELLS 20 FT. OR MORE IN DEPTH, A 2 INCH WATER METER AND SERVICE SHALL BE PROVIDED. HOSE CONNECTION TO BE 2 INCH MALE CAMLOCK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

WATER SERVICE DETAIL
NOT TO SCALE

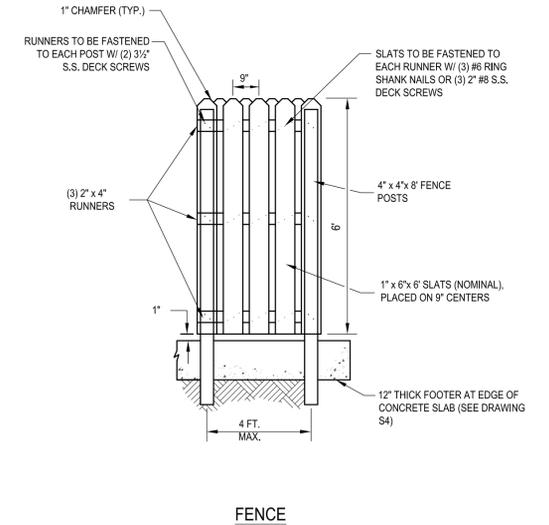


AUX. SUCTION PIPE DETAIL
NOT TO SCALE



- 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 COUNTER-SUNK).
 - 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



FENCE

INSTALLATION NOTE:
CONTRACTOR TO REFER TO DRAWINGS M1-M3, E 0.0-E 5.0 AND S1-S4 IN ORDER TO COORDINATE ALL MECHANICAL, ELECTRICAL AND STRUCTURAL INSTALLATIONS.

SCALE	REVISIONS			
As Shown	No.	DATE	DESCRIPTION	APPV'D.

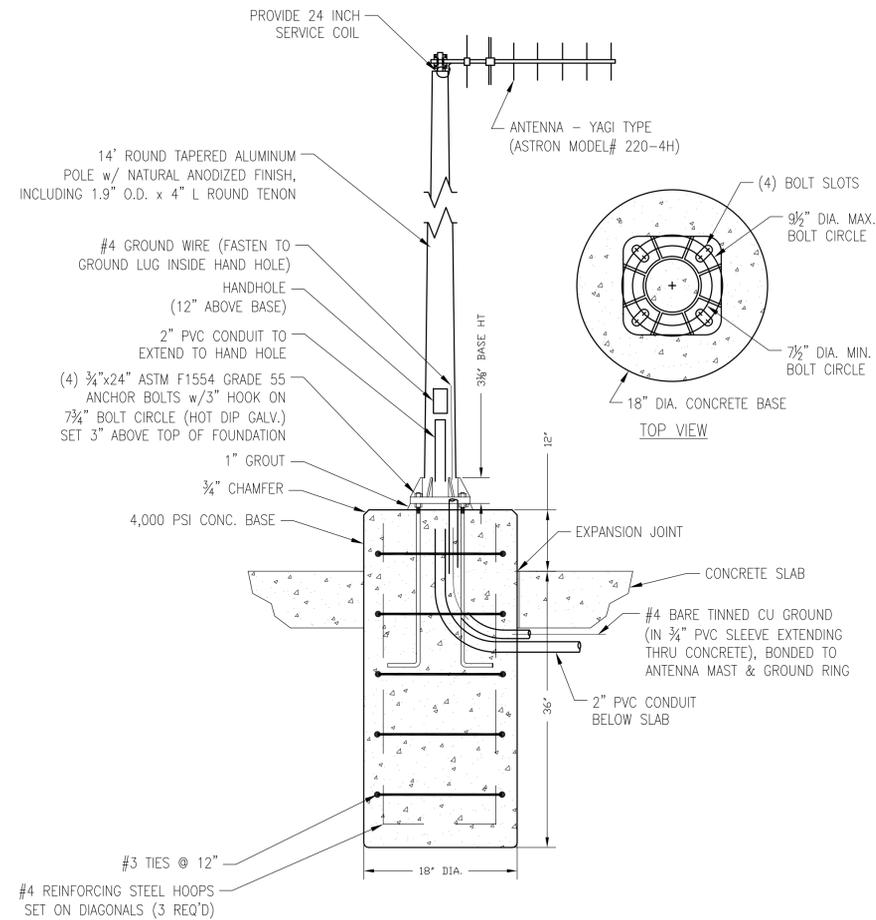


**HILLSBOROUGH COUNTY
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925 E. TWIGGS STREET / TAMPA, FLORIDA 33602

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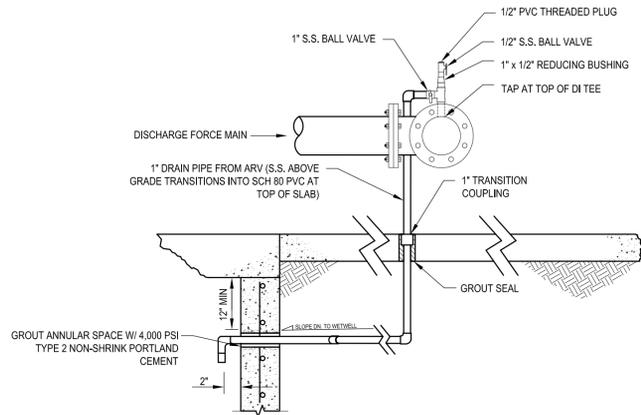
NOT VALID UNLESS EMBOSSED WITH ENGINEER'S SEAL
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Florida Professional Engineer's Registration Number _____
Date _____

DETAILS	OCT 2015
STANDARD WASTEWATER GRINDER PUMP STATION	SHEET
	OF
	DRAWING M2

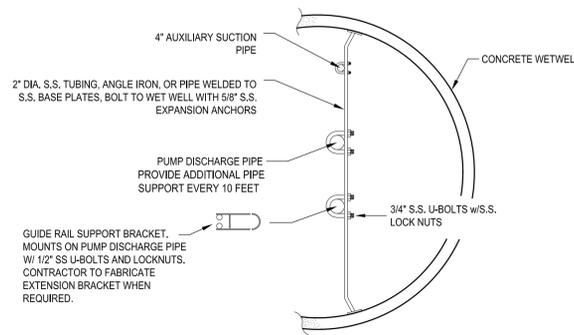


DETAIL NOTES:
 1. PROVIDE ANCHORS, HARDWARE, CONCRETE SUPPORTS, ETC., AS NEEDED TO SECURE ANTENNA POLE.
 2. REFER TO ELECTRICAL DRAWINGS AND SPECIFICATIONS FOR CONDUIT AND GROUNDING DETAILS.

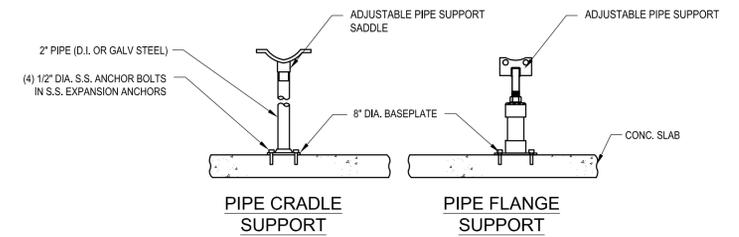
**NEIGHBORHOOD GRINDER (50 HOMES AND GREATER)
 SCADA ANTENNA POLE SUPPORT**
 NOT TO SCALE



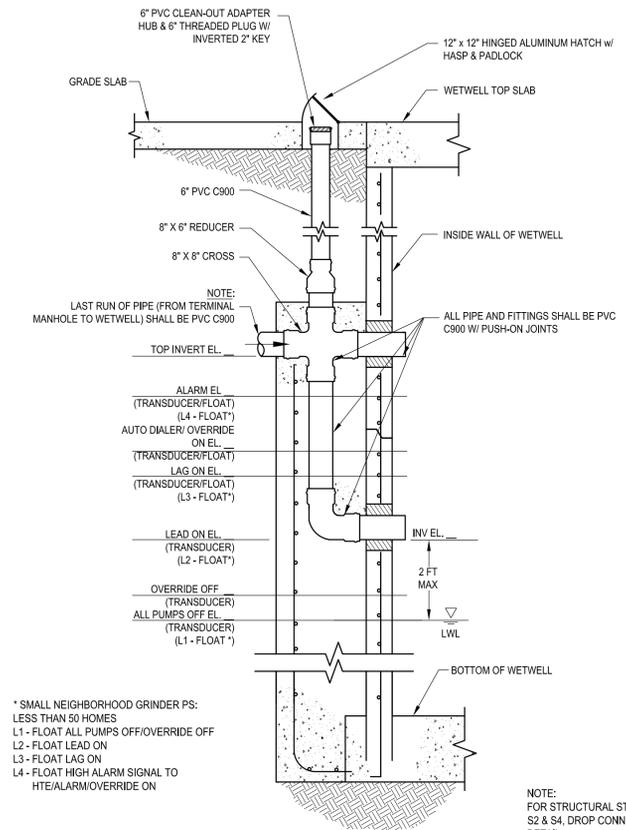
ARV DRAIN PIPE ASSY.
 NOT TO SCALE



INTERIOR PIPE & GUIDE RAIL SUPPORTS - TOP VIEW
 NOT TO SCALE



EXTERIOR PIPE SUPPORT DETAIL
 NOT TO SCALE



* SMALL NEIGHBORHOOD GRINDER PS:
 LESS THAN 50 HOMES
 L1 - FLOAT ALL PUMPS OFF/OVERRIDE OFF
 L2 - FLOAT LEAD ON
 L3 - FLOAT LAG ON
 L4 - FLOAT HIGH ALARM SIGNAL TO
 HTE/ALARM/OVERRIDE ON

NOTE:
 FOR STRUCTURAL STEEL INFO SEE DRAWING
 S2 & S4, DROP CONNECTION ENCASMENT
 DETAIL

DROP CONNECTION DETAIL
 NOT TO SCALE

INSTALLATION NOTE:
 CONTRACTOR TO REFER TO DRAWINGS M1, M2, M3, E 0.0-E 5.0, AND S1-S4 IN ORDER TO COORDINATE ALL
 MECHANICAL, ELECTRICAL AND STRUCTURAL INSTALLATIONS.

SCALE	REVISIONS			
As Shown	No.	DATE	DESCRIPTION	APPVD.



PROJECT No.:	
FILE No.:	
DESIGNED BY:	
DRAWN BY:	
CHECKED BY:	
DATE:	
SCALE:	

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DETAILS
 STANDARD WASTEWATER
 GRINDER PUMP STATION

OCT 2015
SHEET
 OF
DRAWING M3