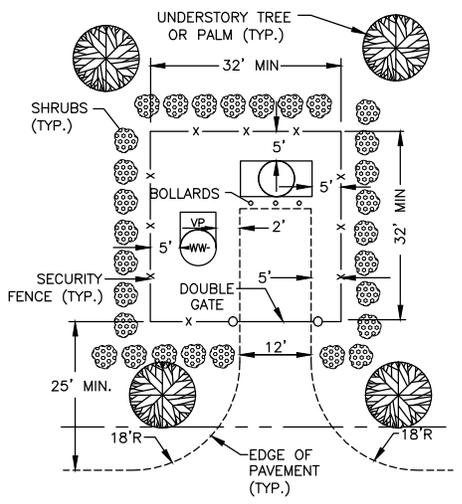


THOROUGHFARE DRIVEWAYS
N.T.S

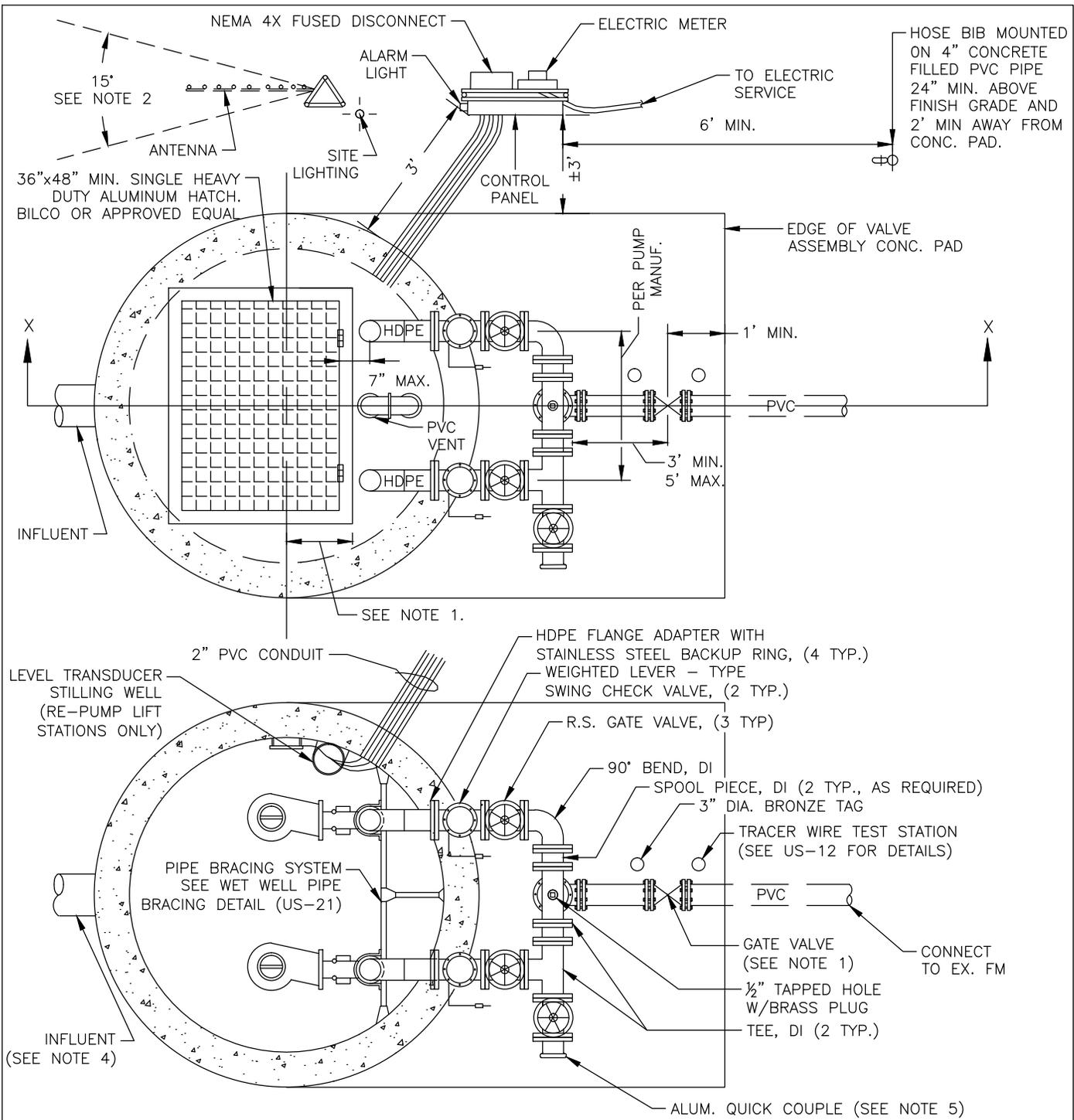
NOTES:

1. A MINIMUM SETBACK OF 5 FT SHALL BE PROVIDED BETWEEN LIFT STATION STRUCTURES/EQUIPMENT/VALVE ASSEMBLY AND THE FENCE.
2. DRIVEWAY SHALL EXTEND UP TO OR BE EVEN WITH THE FURTHEST POINT OF THE WETWELL OR VALVE PAD. IF LIFT STATION IS LOCATED AT THE END OF A DRIVEWAY, BOLLARDS SHALL BE INSTALLED.
3. LIFT STATION EASEMENT SHALL EXTEND A MINIMUM OF 15 FT BEYOND ALL FOUR SIDES OF THE LS SECURITY FENCE.
4. OPTIONS FOR PLACEMENT OF WW & VALVE ASSEMBLY (IF NEEDED) ARE INDICATED FOR CLARITY.
5. A MINIMUM SETBACK OF 5 FT SHALL BE PROVIDED BETWEEN THE SHRUB'S BASE STEM AND THE LS SECURITY FENCE.
6. A MINIMUM SETBACK OF 10 FT SHALL BE PROVIDED BETWEEN THE TRUNK OF SMALL TREES AND THE LS SECURITY FENCE.
7. SPECIFIC LANDSCAPING REQUIREMENTS SHALL BE IN ACCORDANCE WITH SECTION 12.10 OF MANATEE COUNTY UTILITY STANDARDS.
8. DRIVEWAY MATERIALS SHALL BE IN ACCORDANCE WITH MANATEE COUNTY HIGHWAY & TRAFFIC STANDARDS FOR THE ENTIRE LENGTH OF THE DRIVEWAY.
9. DRIVEWAY WILL BE INSTALLED AT GRADE OF SHELL SURROUNDING WELL & VALVE ASSEMBLY.



NON-THOROUGHFARE DRIVEWAY
N.T.S

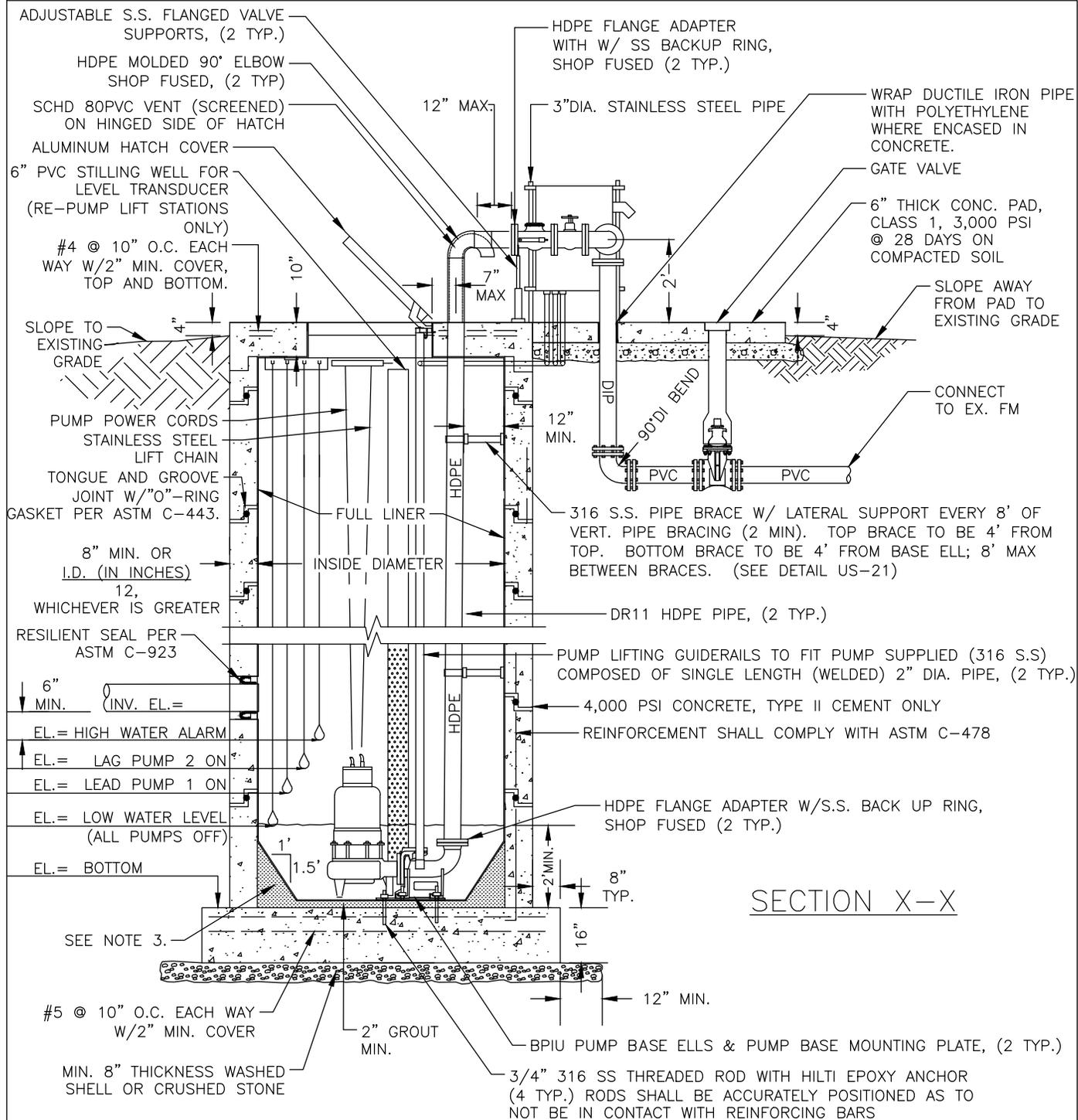
MANATEE COUNTY		MINIMUM ACCESS/EGRESS AND LANDSCAPING REQUIREMENTS FOR PUMP STATIONS
PUBLIC WORKS DEPARTMENT		
REV.BY	DATE	
CLB/BR	11/10	
WT/BR	4/13	
JANUARY 7, 2014 DATE OF APPROVAL		
JSS/BR	12/14	



NOTES:

1. FOR 6' DIA. WET WELLS, THE HINGED SIDE OF THE HATCH OPENING SHALL BE OFFSET 12" FROM CENTERLINE.
2. A FLOW METER AND FLOW METER VAULT SHALL BE INSTALLED UPSTREAM OF GATE VALVE FOR ALL LIFT STATIONS THAT RE-PUMP SEWAGE FROM OTHER LIFT STATIONS.
3. THE ANTENNA FOR THE RADIO TELEMETRY UNIT REQUIRES DIRECT LINE-OF-SIGHT SIGNALING CAPABILITY TO THE UTILITIES DEPARTMENT'S OFFICE THAT WILL RECEIVE THE SIGNAL. THERE SHALL BE AN UNOBSTRUCTED HORIZONTAL ANGLE OF FIFTEEN (15) DEGREES FROM THE ANTENNA MAST (7.5 DEGREES ON BOTH SIDES OF THE DIRECT LINE-OF-SIGHT AZIMUTH). NO TREE SHALL BE PLANTED WITHIN THE DESIGNATED UNOBSTRUCTED ANGLE FOR A TWENTY (20) FEET HORIZONTAL DISTANCE MEASURED FROM THE MAST. LANDSCAPE BUFFER PLANTINGS ARE TO BE FIELD ADJUSTED IN COORDINATION WITH THE LOCATION OF THE CONSTRUCTED TELEMETRY ANTENNA.
4. THE INFLUENT GRAVITY SEWER SHALL BE ALIGNED SO THAT FLOW DROPS BETWEEN THE PUMPS AS SHOWN ABOVE. AS AN OPTION, A DROP PIPE/BOWL MAY BE INSTALLED AS SHOWN IN STANDARD DETAIL US-21.
5. QUICK COUPLE SHALL BE PLACED ON THE SIDE CLOSEST TO THE LIFT STATION DRIVEWAY.
6. CONCRETE SHALL BE TYPE II WITH 4,000 PSI 28-DAY COMPRESSIVE STRENGTH.
7. FOR SECTION X-X SEE SEWAGE PUMP STATION, SECTION VIEW ON DETAIL US-18.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT		SEWAGE PUMP STATION PLAN VIEW	US-18
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NOTES:

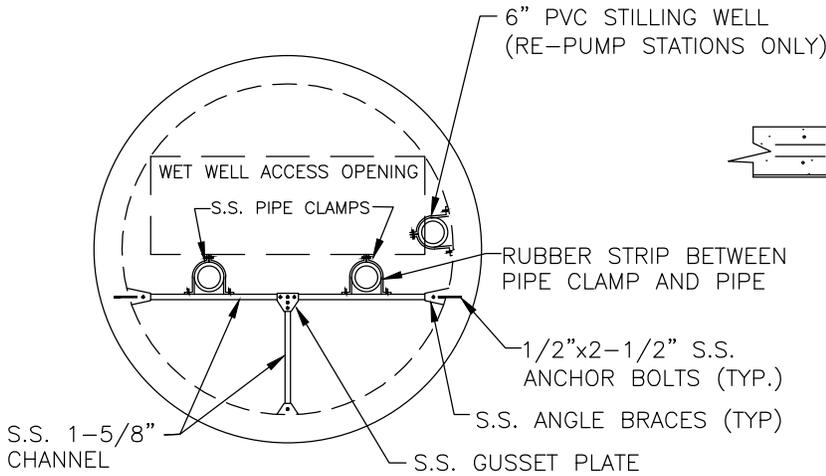
- FOR PROPER ORIENTATION OF CONTROL PANEL, SEE SHEET US-19A.
- 6" MINIMUM VERTICAL SPACING BETWEEN ALL PUMP AND ALARM CONTROL LEVELS.
- 6" FILLET ALL AROUND FOR 6-FOOT DIAMETER WET WELL. 12" FILLET FOR 8-FOOT AND LARGER WET WELLS.
- THE CONCRETE SHALL BE GIVEN A BROOM FINISH. THE SURFACE VARIATIONS SHALL BE NOT MORE THAT 1/4" UNDER A TEN FOOT (10') STRAIGHTEDGE, NOT MORE THAN 1/8" ON A FIVE FOOT (5') TRANSVERSE SECTION. THE EDGE OF THE CONCRETE PAD SHALL BE CAREFULLY FINISHED WITH A EDGING TOOL HAVING A RADIUS OF 1/2".
- EXPANSION JOINT: EXPANSION JOINTS BETWEEN THE CONC. PAD AND THE WET WELL SHALL BE 1/2" MATERIAL AND SHALL MEET THE REQUIREMENTS OF AASHTO M153 OR AASHTO M213.
- THIS DETAIL SHALL APPLY TO LIFT STATIONS WITH 4" OR GREATER FORCE MAINS. LIFT STATIONS WITH FORCE MAINS LESS THAN 4" REFER TO DETAIL US-26.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT		SEWAGE PUMP STATION SECTION VIEW	US-19
REV. BY	DATE		
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JSS/SP	4/15		

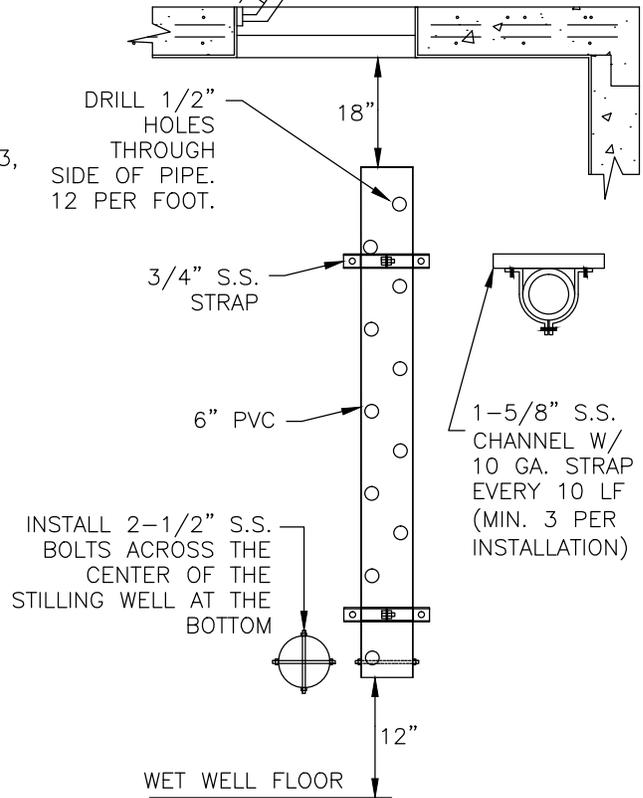
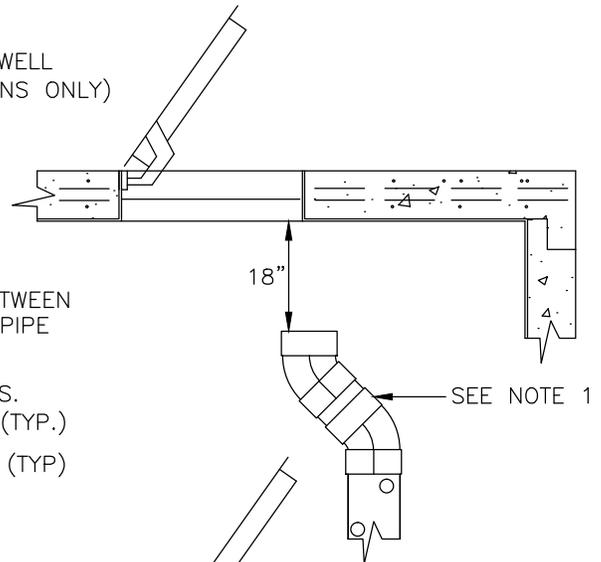
GENERAL LIFT STATION NOTES:

1. ALL ACCESS COVERS SHALL BE ALUMINUM, WITH STAINLESS STEEL HARDWARE AND RATED FOR 300 P.S.F. LOADING. ALL ALUMINUM SURFACES IN CONTACT WITH CONCRETE SHALL HAVE 2 COATS BITUMASTIC EPOXY, TOTAL 16 MILS DFT. ALL ACCESS COVERS SHALL BE EQUIPPED WITH A LOCKING STAPLE OR BAR FOR USE WITH A PADLOCK. PADLOCKS FOR WETWELL, FENCE GATE AND CONTROL PANELS OF PUBLICLY OWNED & MAINTAINED LIFT STATIONS SHALL BE FURNISHED BY THE MANATEE COUNTY UTILITIES DEPARTMENT.
2. INSTALL WET WELL VENT ON THE HINGED SIDE OF THE WET WELL HATCH COVER.
3. GROUND SHALL BE SLOPED AWAY FROM SLAB TO NATURAL GROUND ELEVATION IN ALL DIRECTIONS. SITE SHALL INCLUDE A WEED BARRIER FABRIC THAT IS COVERED WITH WASHED SHELL OR ROCK WITHIN LIFT STATION FENCING, SITE SHALL INCLUDE A WEED BARRIER FABRIC THAT IS COVERED WITH SHREDDED WOOD TYPE MULCH UNDER THE SHRUBS AND UP TO OUTSIDE OF THE FENCE. WEED BARRIER FABRIC THAT IS COVERED WITH SHREDDED WOOD-TYPE MULCH SHALL BE LOCATED UNDER THE TREES FOR A MINIMUM DISTANCE OF 3 FEET FROM THE TREE. SODDING OR SHREDDED WOOD-TYPE MULCH SHALL BE INSTALLED ON THE REMAINDER OF THE SITE TO THE EDGE OF THE EASEMENT.
4. ALL FORCE MAIN PIPING AND FITTINGS IN THE WETWELL AND THE VALVE ASSEMBLY, FROM THE PUMP BASE ELBOW TO THE CHECK VALVE, SHALL BE DR11 HDPE. ALL CONNECTIONS TO IRON BODIED FLANGE FITTINGS IN THE WETWELL (PUMP BASE ELLS) AND TO THE CHECK VALVES SHALL BE MADE USING HDPE FLANGE ADAPTERS WITH 316 STAINLESS STEEL BACKUP RINGS. ALL HDPE CONNECTIONS SHALL BE THERMAL FUSED OR ELECTRO-FUSED. ALL PIPING DOWNSTREAM OF THE VALVE ASSY. TO THE ISOLATION VALVE SHALL BE DUCTILE IRON PIPE (CL-53).
5. ALL PIPING SHALL BE COLOR CODED IN ACCORDANCE WITH THESE STANDARDS. GREEN-RAW SEWAGE; PANTONE 522C PURPLE-RECLAIMED; BLUE-POTABLE WATER.
6. ANCHORS & LIFTING DEVICES SHALL NOT PENETRATE THE WALLS OF THE WET WELL.
7. ALL INTERIOR SURFACES OF WET WELL SHALL BE LINED. SEE STANDARD PRE-CAST SANITARY SEWER MANHOLE FOR TURBULENT FLOW DETAIL.
8. ALL METAL APPURTENANCES INCLUDING BOLTS, NUTS AND WASHERS SHALL BE STAINLESS STEEL (TYPE 316) UNLESS OTHERWISE NOTED. ALL STAINLESS STEEL BOLTS SHALL BE TREATED WITH NEVER-SEIZE PRIOR TO ASSEMBLY.
9. VERTICAL HDPE PUMP DISCHARGE PIPE IN THE WET WELL SHALL BE BRACED PER DETAIL US-18. THE PIPE SHALL BE CLAMPED TO A SINGLE LENGTH OF 1-5/8" STAINLESS STEEL CHANNEL INSTALLED HORIZONTALLY AND ANCHORED TO THE WET WELL WALL AT EACH END WITH A CENTER BRACE OF 1-5/8" CHANNEL ATTACHED TO THE BACK OF THE WET WELL. THE PIPE CLAMPS SHALL BE A MINIMUM OF 1-1/2" WIDE, 12 GA. STAINLESS STEEL. WET WELLS LARGER THAN 8 FEET OR PIPING LARGER THAN 8 INCHES SHALL HAVE BRACING CONSTRUCTED FROM 1/4 INCH X 4 INCH STAINLESS STEEL ANGLE.
10. METER VAULTS SHALL BE PRECAST TYPE II REINFORCED CONCRETE.
11. CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT FLOTATION DURING CONSTRUCTION. ENGINEER SHALL SUBMIT FLOTATION CALCULATIONS ALONG WITH HYDRAULIC CALCULATIONS TO MCPWD ENGINEERING SERVICES DIVISION AT CONSTRUCTION PLAN REVIEW SUBMITTAL.
12. TOP OF WET WELL'S AND VALVE SLABS SHALL BE AT THE SAME ELEVATION.
13. THE EXTERIOR SURFACES OF THE CONCRETE WET WELL AND VALVE ASSEMBLY PAD EXPOSED ABOVE GRADE SHALL BE COATED WITH A LEAST TWO COATS OF H&C SILICONE ACRYLIC CONCRETE STAIN, PATIO GREEN, MANUFACTURED BY FLR PAINTS, INC. ABOVE GROUND VALVE ASSEMBLY & PIPING SHALL BE PAINTED, RUSTOLEUM 7538 HUNTER GREEN. CONTRACTOR SHALL TAKE PRECAUTIONS TO AVOID OVER-SPRAY ONTO THE VALVE ASSEMBLY CONCRETE PAD.
14. FOR 5/8" WATER METER, PROVIDE POTABLE WATER SERVICE CONNECTION WITH 3/4" BRASS LOCKSHIELD AND LOOSE KEY HOSE BIB. PROVIDE WATTS 909 BACKFLOW PREVENTER (OR APPROVED EQUAL). ALL WATER SERVICE PIPING FROM WATER METER TO BE TYPE "K" COPPER OR BRASS, 3/4" MIN. DIAMETER FOR 5/8" METER AND 2" MIN. DIAMETER PIPING FOR 2" METER.
15. LANDSCAPING SHALL BE IRRIGATED WITH NON-POTABLE WATER. A RAIN SENSOR SHALL BE FURNISHED AND INSTALLED.
16. HOSE BIB TO BE A MAXIMUM OF 2 FEET FROM THE VALVE ASSEMBLY, A MINIMUM OF 6 FEET FROM THE ELECTRICAL CONTROL PANEL, 24" ABOVE THE SURROUNDING FINISH GRADE, AND ANCHORED TO A 4" PVC CONCRETE FILLED PIPE.
17. WATER METER ASSEMBLY TO BE INSTALLED BY CONTRACTOR AS PART OF WATER SERVICE CONNECTION WITH FEES PAID BY THE DEVELOPER.
18. BASE AND FIRST WALL SECTION OF WET WELL SHALL BE MONOLITHIC.
19. EVERY EFFORT SHALL BE MADE BY THE CONTRACTOR TO CONSTRUCT WATERTIGHT STRUCTURES WITH NO VISIBLE LEAKS. COMPLETED STRUCTURES THAT ARE NOT WATERTIGHT AND/OR DO NOT MEET THE REQUIREMENTS OF ASTM C-443 WILL BE REJECTED.
20. FLEXIBLE GASKET CONNECTORS SHALL MEET THE REQUIREMENTS OF ASTM C-923 LATEST REVISION AND ARE REQUIRED IN ALL MANHOLES.
21. ALL GATE VALVES SHALL BE RESILIENT SEAT IN ACCORDANCE WITH THESE STANDARDS.
22. ELECTRICAL SERVICE SHALL BE 3 PHASE MINIMUM UNLESS THE ELECTRICAL UTILITY PROVIDES CORRESPONDENCE STATING THAT 3 PHASE SERVICE IS UNAVAILABLE.
23. ELECTRICAL CONDUIT SHALL BE RUN BY THE SHORTEST ROUTE POSSIBLE FROM THE ELECTRICAL SOURCE TO THE CONTROL PANEL AND FROM THE CONTROL PANEL TO THE LIFT STATION WET WELL.
24. A FLOW METER, BACKUP POWER GENERATOR, FUEL STORAGE LEVEL TRANSDUCER AND FORCE MAIN PRESSURE TRANSDUCER SHALL BE REQUIRED FOR ALL LIFT STATIONS THAT REPUMP SEWAGE FROM OTHER LIFT STATIONS.
25. THE CONTROL PANEL, HOSE BIB, EMERGENCY GENERATOR, FUEL STORAGE TANK AND ANTENNA SHALL NOT BE LOCATED BETWEEN THE WETWELL, VALVE ASSEMBLY AND THE DRIVEWAY. THE GENERATOR SHALL NOT BE LOCATED WITHIN 25 FEET OF THE EDGE OF THE LIFT STATION EASEMENT AT THE ROW LINE.

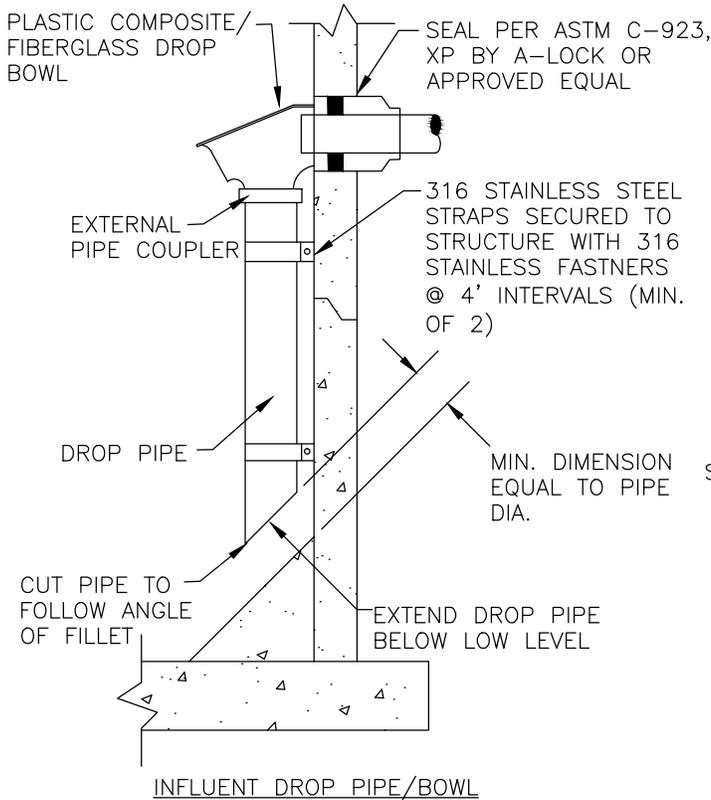
MANATEE COUNTY PUBLIC WORKS DEPARTMENT			PUMP STATION NOTES	US-20
REV.BY	DATE	JANUARY 7, 2014		
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WT/JSS	5/14			
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WET WELL PIPE BRACING
DETAIL



STILLING WELL DETAIL



INFLUENT DROP PIPE/BOWL

NOTES:

1. STILLING WELL FOR LEVEL TRANSDUCER REQUIRED FOR RE-PUMP STATIONS ONLY. FOR LARGER LIFT STATIONS, PROVISIONS SHALL BE MADE TO MAKE THE TOP OF THE STILLING WELL VISIBLE AND ACCESSIBLE FROM THE HATCH OPENING, I.E. 45° FITTINGS, ETC.
2. REFER TO STANDARD DETAILS US-18, US-18 & US-20 FOR PUMP STATION DETAILS.
3. NYLON LOCK NUTS SHALL BE USED AT ALL TIMES IN THE WET WELL, EXCEPT BASE ELLS & PIPE BRACING ANCHOR BOLTS CAN ALSO BE DOUBLE NUT.

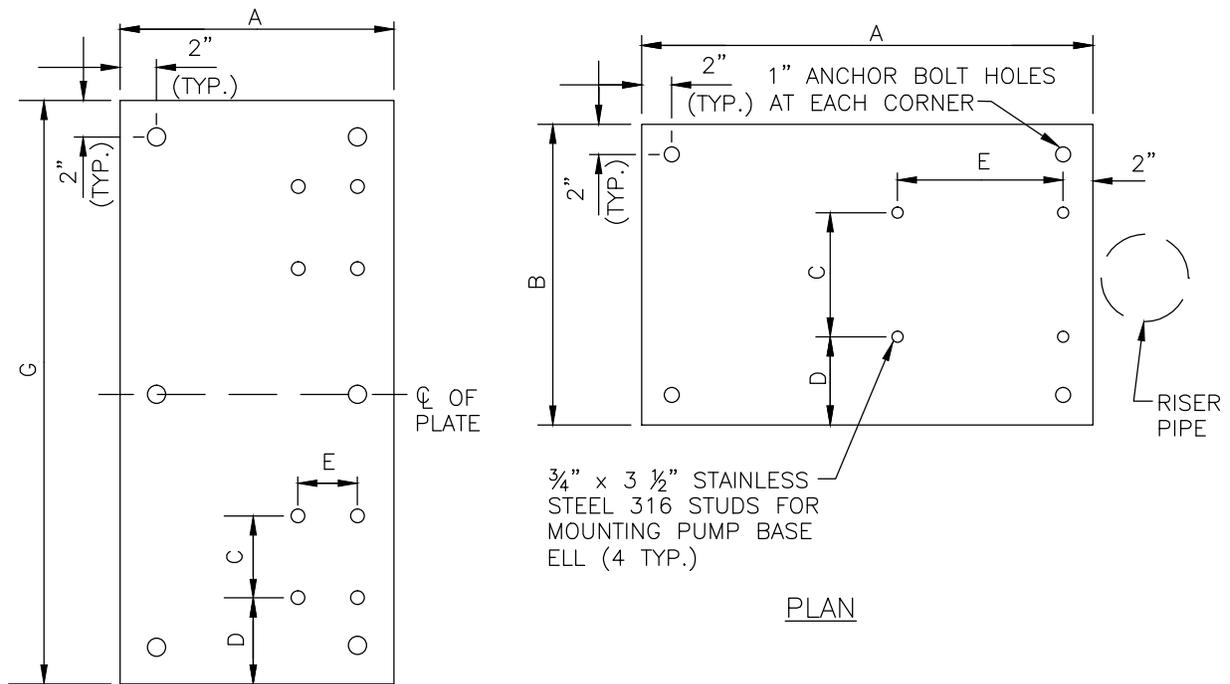
MANATEE COUNTY
PUBLIC WORKS DEPARTMENT

PUMP STATION, DROP,
PIPE BRACING, &
STILLING WELL DETAILS

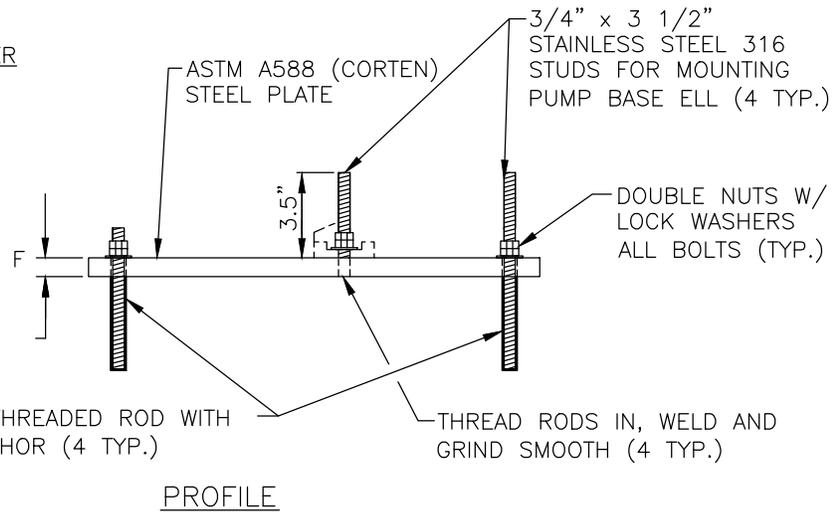
US-21

REV.BY	DATE
CLB/DOM	11/10
JS/BR	4/13

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DATE OF APPROVAL



PLAN FOR PUMPS 2" AND SMALLER

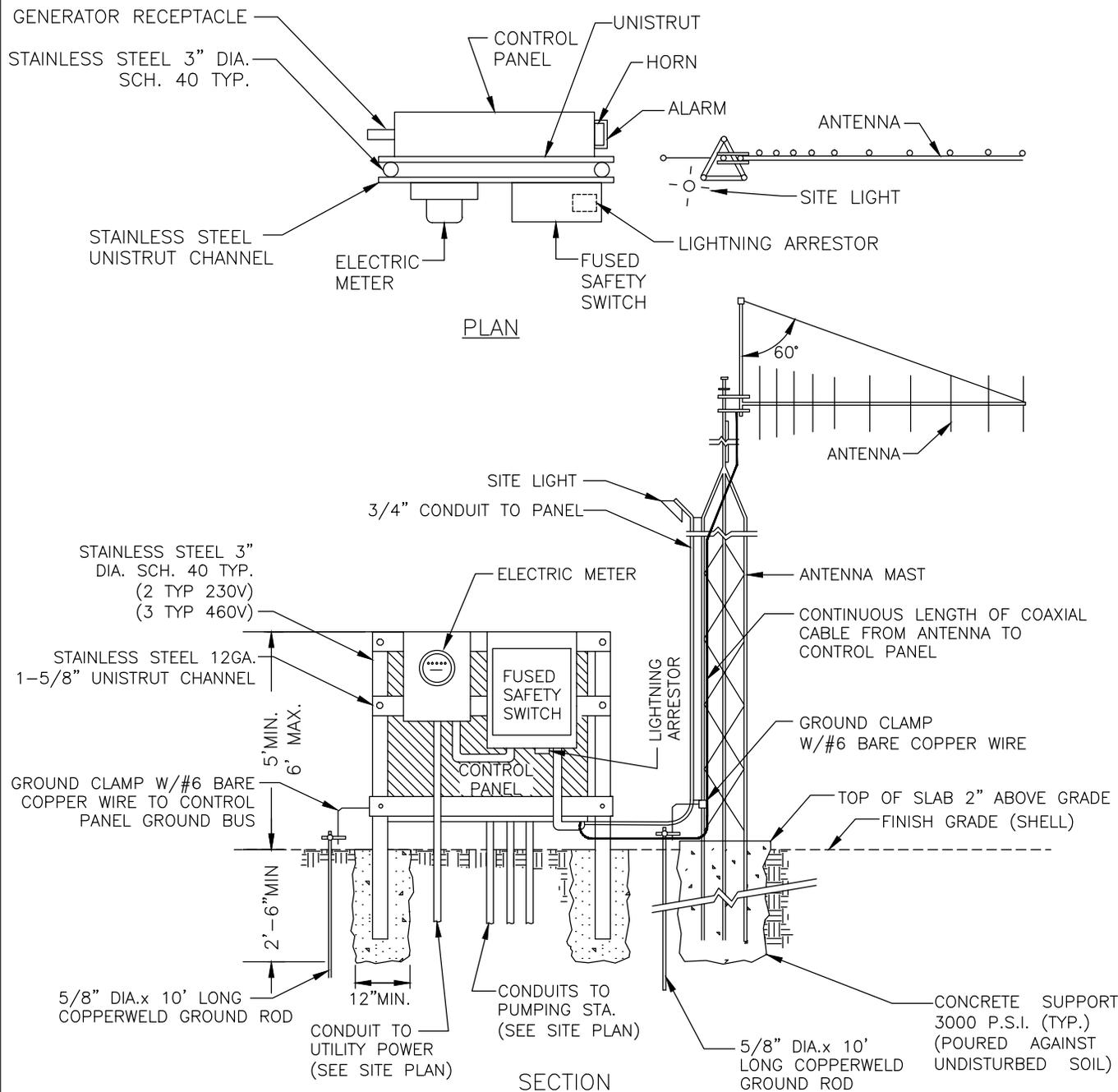


PUMP BASE ELL MOUNTING PLATE DIMENSIONS							
DIMENSIONS	A	B	C	D	E	F	G
FOR 6" PUMPS	24"	20"	8.25"	5.875"	11"	3/4"	N/A
FOR 4" PUMPS	20"	16"	6"	5"	10"	1/2"	N/A
2" PUMPS & SMALLER	15"	N/A	4.5"	4.75"	3.25"	1/2"	32"

NOTES:

1. INSTALL DOUBLE NUTS ON ALL EIGHT (8) THREADED RODS.
2. THE PLATE EDGES AND ALL HOLES SHALL BE GROUND SMOOTH TO REMOVE ALL BURRS.
3. DIMENSIONS "C" & "E" ARE FOR BARNEY'S PUMPS, INC. BASE ELLS.
4. FOR PUMPS WITH A 2-INCH DISCHARGE OR LESS, A SINGLE BASE PLATE SHALL BE INSTALLED UNDER BOTH GRINDER PUMPS.

MANATEE COUNTY PUBLIC WORKS DEPARTMENT		PUMP BASE ELL MOUNTING PLATE	US-22
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TYPICAL SERVICE ENTRANCE STRUCTURE

NOTES

1. ALL EQUIPMENT FURNISHED FOR THE PUMP STATION SHALL CONFORM TO MANATEE COUNTY PUBLIC WORKS UTILITY STANDARDS.
2. POWER TO BE SUPPLIED AS DIRECTED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH PROVIDING TEMPORARY AND PERMANENT ELECTRICAL SERVICE.
3. STAINLESS STEEL CONTROL PANEL SUPPORT POSTS SHALL BE TREATED WITH TWO COATS OF BITUMINOUS EPOXY TO 16 MILS WHERE EMBEDDED IN CONCRETE.
4. CONTROL AND FLOW METER ENCLOSURE TO BE NEMA 3R/12 304 STAINLESS STEEL WITH RAIN SHIELD. DISCONNECT ENCLOSURE TO BE NEMA 4X STAINLESS.

STEEL.

5. ALL P.V.C. CONDUIT SHALL BE SCHEDULE 80.
6. ALL STATIONS WHICH REPUMP SEWAGE FROM OTHER OTHER LIFT STATIONS SHALL BE EQUIPPED WITH A FLOW METER WITH ABOVE GROUND TRANSMITTER IN WEATHER PROOF HOUSING, A PRESSURE TRANSDUCER TO MONITOR FORCE MAIN PRESSURES, AND A TRANSDUCER AS THE PRIMARY LEVEL SENSOR MOUNTED INSIDE A STILLING WELL IN THE WET WELL.
7. ANTENNA MAST SHALL BE RATED FOR 150 MPH WINDS
8. IF ANTENNA MAST IS MORE THAN 18" FROM PANEL RUN CONDUIT FOR SITE LIGHT UNDERGROUND.

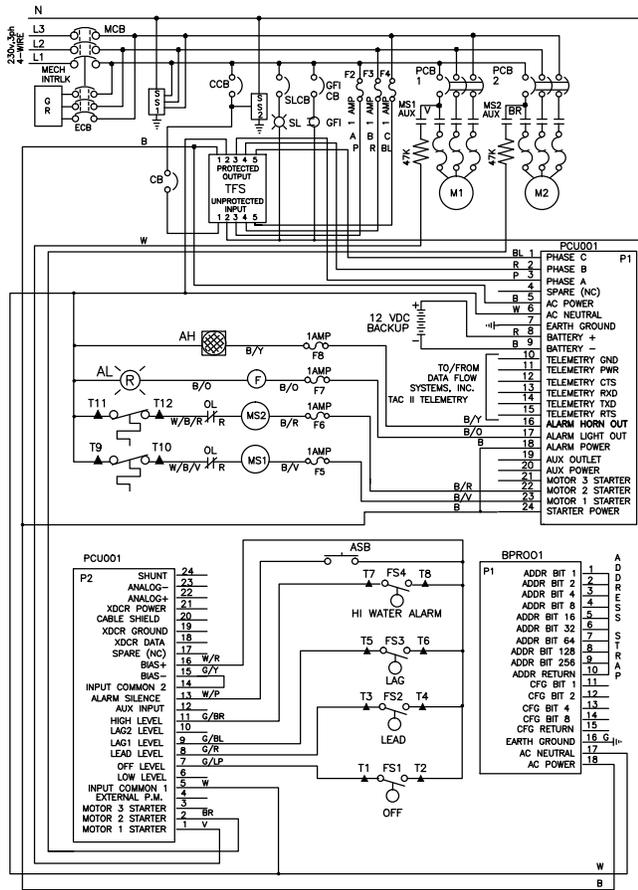
MANATEE COUNTY PUBLIC WORKS DEPARTMENT	
REV. BY	DATE
CLB/DOM	11/10
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JANUARY 7, 2014	
DATE OF APPROVAL	

SEWAGE PUMP STATION
METER & ELECTRICAL
DETAILS

US-23

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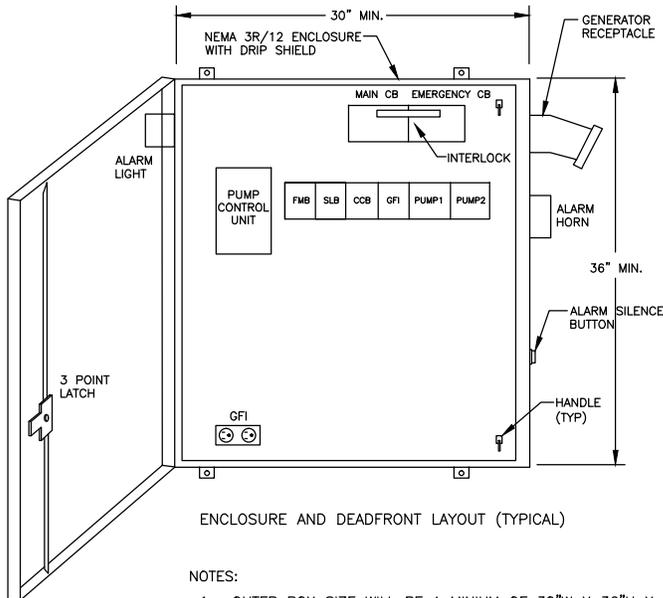
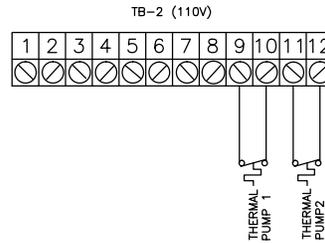
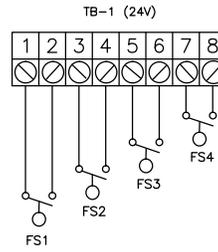
PANEL COMPONENTS



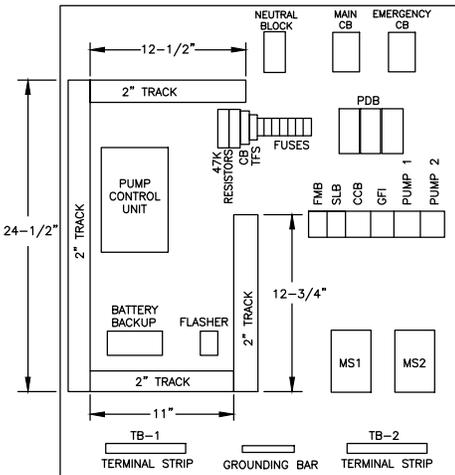
- ENC ENCLOSURE
- MCB MAIN CIRCUIT BREAKER
- ECB EMERGENCY CIRCUIT BREAKER
- PCB PUMP CIRCUIT BREAKER
- CCB CONTROL CIRCUIT BREAKER
- GFICB GF1 CIRCUIT BREAKER
- MS1,2 STARTER
- GR GENERATOR RECEPTACLE
- AH ALARM HORN
- AL ALARM LIGHT
- F FLASHER
- ASB ALARM SILENCE BUTTON
- GF1 CONVENIENCE RECEPTACLE
- TCU TELEMETRY CONTROL UNIT
- CB CIRCUIT BREAKER
- F2-8 FUSE AND HOLDER
- 47K RESISTOR BLOCK
- TFS TRANSIENT FILTER SHIELD
- 12VDC BATTERY BACKUP
- SS1 230V SURGE SUPPRESSOR (TPS001)
- SS2 120V SURGE SUPPRESSOR (SPS001)
- TB1 TERMINAL BLOCK (24V) TERMINAL BLOCK (ALL OTHERS)
- TB2 SITE LIGHTING CIRCUIT BREAKER
- SLB FLOW METER CIRCUIT BREAKER (RE-PUMP LIFT STATIONS ONLY)
- FMB SITE LIGHT
- SL

COLOR CODE

SYMBOL	COLOR
B	BLACK
W	WHITE
G	GREEN
BL	BLUE
R	RED
P	PINK
V	VIOLET
BR	BROWN
B/Y	BLACK/YELLOW
B/O	BLACK/ORANGE
B/R	BLACK/RED
B/V	BLACK/VIOLET
G/LP	GREY/LIGHT PINK
G/R	GREY/RED
G/BL	GREY/BLUE
G/BR	GREY/BROWN
W/P	WHITE/PINK
C/Y	GREY/YELLOW
W/R	WHITE/RED
W/B/V	WHT/BLK/VIOLET
W/B/R	WHT/BLK/RED



ENCLOSURE AND DEADFRONT LAYOUT (TYPICAL)



BACKPLATE LAYOUT (TYPICAL)

NOTES:

1. OUTER BOX SIZE WILL BE A MINIMUM OF 30"W X 36"H X 12"D.
2. DEAD FRONT DOOR SHALL HAVE A MINIMUM OF TWO LATCHES.
3. THIS DETAIL FOR PUMPS 20 H.P. AND BELOW.
4. THE FLOW METER CIRCUIT BREAKER (FMB) IS ONLY REQUIRED FOR RE-PUMP LIFT STATIONS

MANATEE COUNTY
PUBLIC WORKS DEPARTMENT

SEWAGE PUMP STATION
CONTROL PANEL
(230V)

US-24

REV.BY	DATE
CLB/KE	11/10

JANUARY 7, 2014
DATE OF APPROVAL