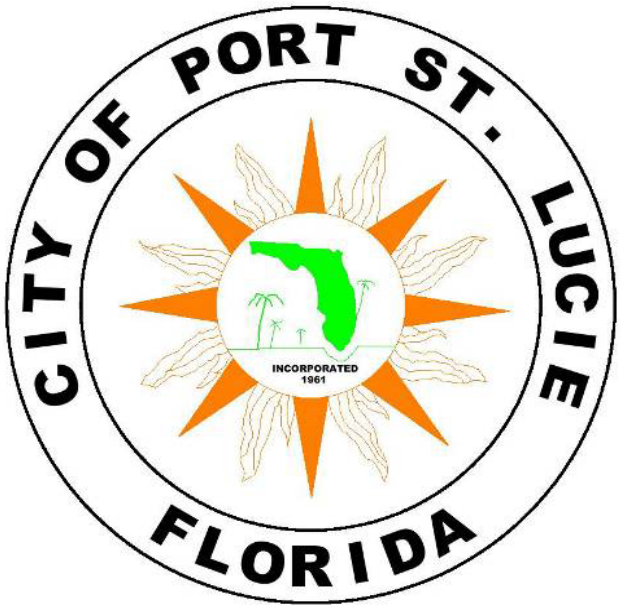

CITY OF PORT ST. LUCIE
UTILITY SYSTEMS DEPARTMENT

UTILITY STANDARD DETAILS

2020 EDITION

EFFECTIVE 01/01/20

PSLUSD Doc No 74

APPENDIX B – 2019 STANDARD DETAILS

DETAIL #	TITLE
General	
G-01	Standard Separation Requirements
G-02	Conflicts
G-03	*For Future Use*
G-04	Standard Pipe Trench Cross Section
G-05	Utility Road Cut Pavement Restoration
G-06	Pipe Casing for Jack & Bore
G-07	Typical Valve Box & Collar
G-08	Pipe Support
G-09	Pipeline Restraint Requirements
G-10	Wet Tap Assembly
G-11	Fence Details
G-12	Pig Launching Station
G-13	Aerial Crossing Detail
G-14	Temporary Jumper Connection
G-15	Bollard Detail
G-16	Canal Crossing Sign
Wastewater Pump Station	
PS-01	Three Phase Duplex Grinder System
PS-02	Duplex Grinder System Control Panel
PS-03	Grinder System Service Line Tap to Main Line
PS-04	Lift Station Wet Well Section
PS-05	Lift Station Control Panel
PS-06	Grinder System Water Meter & Backflow Prevention Assembly
PS-07	Lift Station Water Meter & Backflow Prevention Assembly
PS-08	Lift Station Typical RTU Antenna
PS-09A	Grinder Station Signage
PS-09B	Lift Station Signage
PS-10	ACL with Fiber
PS-11	ACL with Radio
PS-12	Soft Start with Fiber
PS-13	Soft Start with Radio
PS-14	Lift Station Site Plan Sample
Reclaimed Water Metering Station	
RW-01	Reclaimed Water Metering Station
RW-02	Reclaimed Water I/O Schematic
RW-03	Reclaimed Water Conduit & Panel Schematic
RW-04	Reclaimed Water Site Signage
RW-05	Reclaimed Water Metering Facility
RW-06	Reclaimed Water Stilling Well

Potable Water

W-01	Residential Water Service Connection
W-02	Commercial Water Service Connection
W-03	Meter & Backflow Assembly -3” & Larger
W-04	Blow-off Assembly
W-05	Water Sampling Point
W-06	Fire Hydrant Assembly
W-07	Fire Service Backflow Assembly
W-08	Fire Hydrant RPM Placement Guideline
W-09	Temporary Jumper Connection Up to 8” Pipe
W-10	Automatic Air Release Valve
W-11	Automatic Flushing Valve
W-12	Manual Air Release Valve Assembly

Wastewater

WW-01	Invert Flow Channels for Manholes
WW-02	Standard Precast Manhole
WW-03	Drop Manhole
WW-04	Manhole / Wetwell Joint Detail
WW-05	Sanitary Sewer Cleanout
WW-06	Sanitary Sewer Lateral (Shallow)
WW-07	Sanitary Sewer Lateral (Deep)
WW-08	Automatic Air Release Valve Unpaved Areas
WW-09	Force Main Air Valve & Access Manhole
WW-10	Grease/Oil/Sand Interceptor

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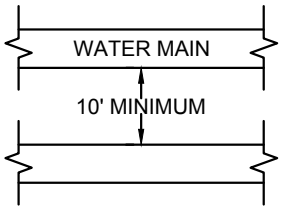
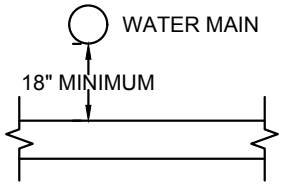
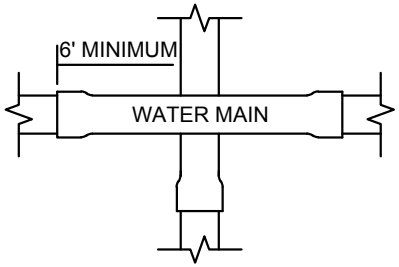
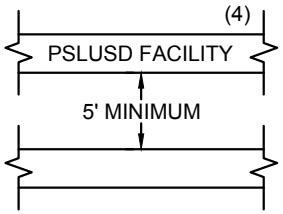
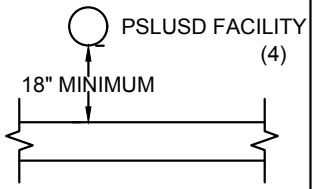
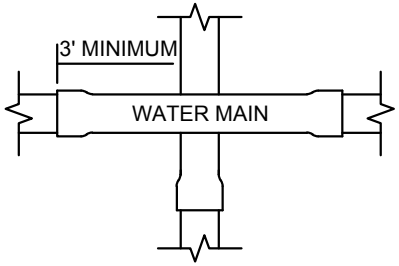
900 S.E. OGDEN LANE
PORT ST. LUCIE, FL 34983
PHONE (772) 873-6400 FAX (772) 873-6433

STANDARD SEPARATION REQUIREMENTS

MINIMUM SEPARATION BETWEEN PSLUSD FACILITIES AND OTHER UTILITIES

OTHER PIPE	HORIZONTAL SEPARATION	CROSSINGS (1)	JOINT SPACING @ CROSSINGS (FULL JOINT CENTERED)
GRAVITY OR PRESSURE SANITARY SEWER, SANITARY SEWER FORCE MAIN, RECLAIMED WATER (2), (3), VACUUM SANITARY SERVICE, STORM SEWER, STORM SEWER FORCE MAIN			
ALL OTHER FACILITIES, INCLUDING BUT NOT LIMITED TO: TELEPHONE, CABLE TV, POWER, ETC.			
ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEM	10' MINIMUM	- - - - -	- - - - -

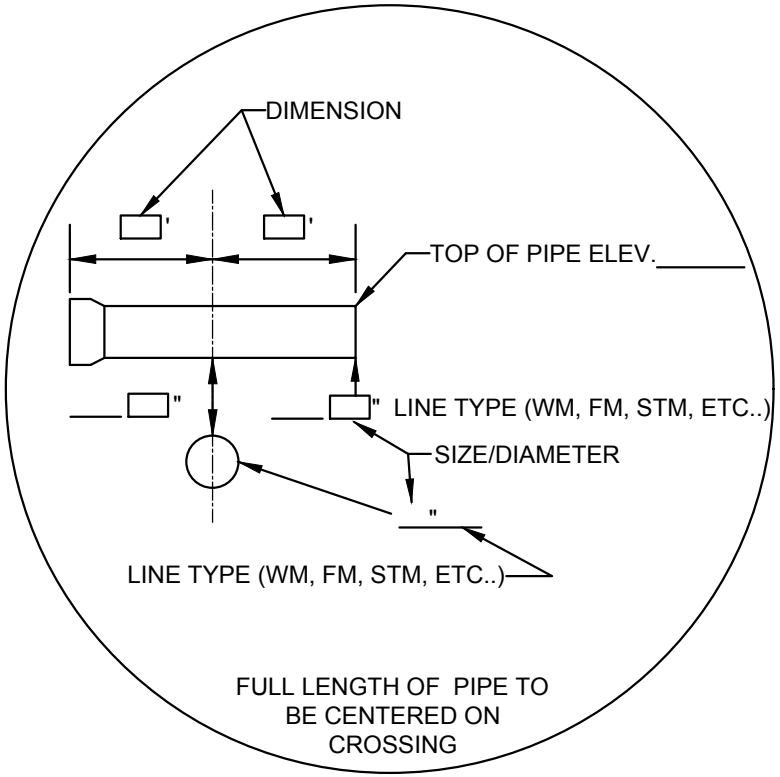
(1) WATER MAIN SHOULD CROSS OVER OTHER PIPE. WHEN WATER MAIN MUST BE BELOW OTHER PIPE, THE MINIMUM SEPARATION IS 18".

(2) RECLAIMED WATER REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.

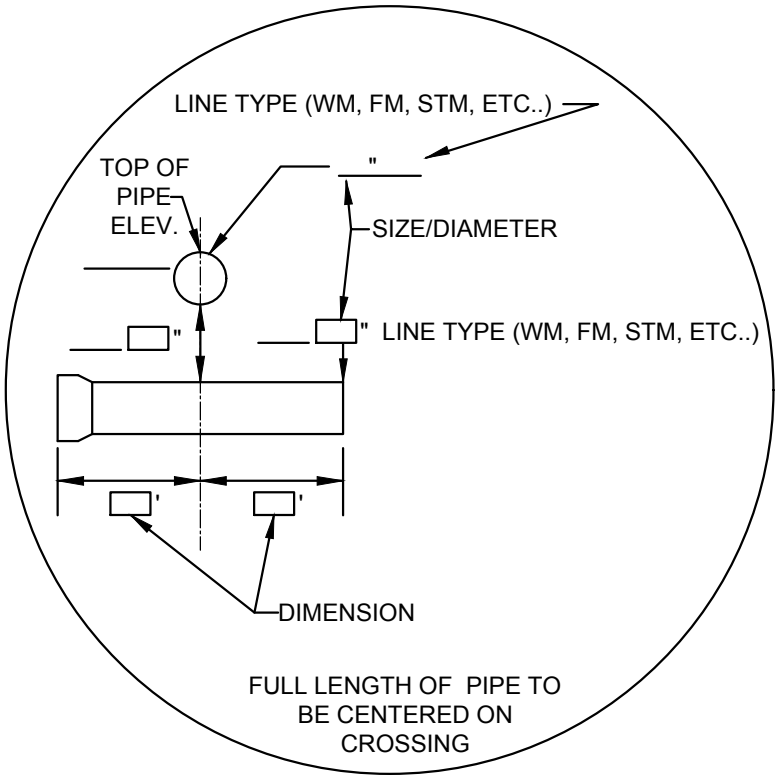
(3) RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.

(4) A PSLUSD FACILITY INCLUDES MAINS AND STRUCTURES FOR POTABLE WATER, WASTEWATER AND RECLAIMED WATER.

DETAIL: G-01
DATE: 2019
SCALE: N.T.S.
SHEET: 1 OF 1



CONFLICT NUMBER_____



CONFLICT NUMBER_____

NOTES:

1. DESIGN PLAN INFORMATION ON THE BLANK LINE.

2. RECORD DRAWING INFORMATION IN THE BOX.

3. CONFLICTS MUST BE IN NUMERICAL SEQUENCE (1, 2, 3, ETC...)

4. MUST MEET PSLUSD STANDARD SEPARATION REQUIREMENTS OF 18" MIN.

DETAIL: G-02
DATE: 2019
SCALE: N.T.S.
SHEET: 1 OF 1

CONFLICT DETAILS

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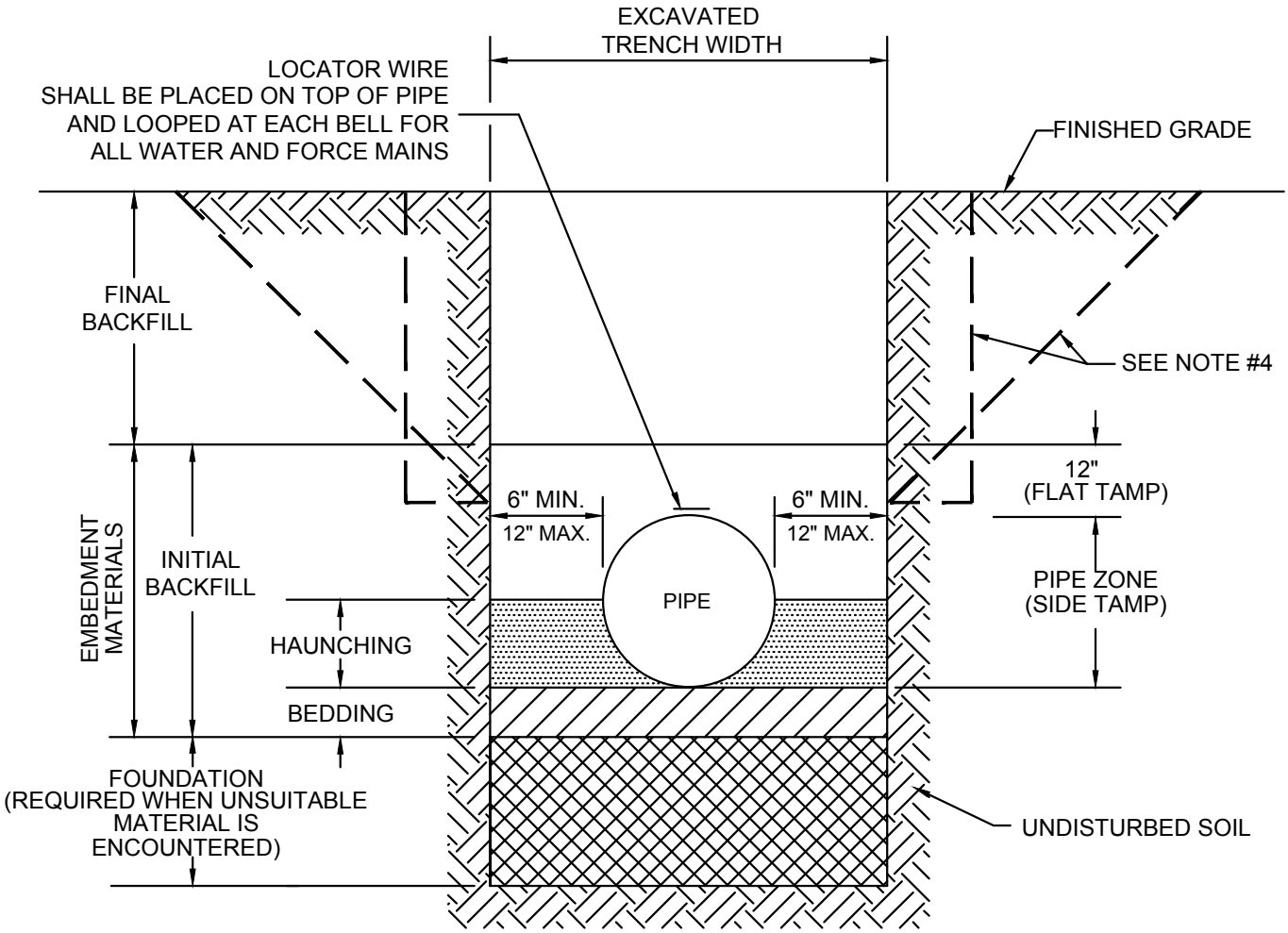
For Future Use



NOTES:

1. FOR TRENCHES REQUIRING SHEETING, SHORING, STAY BRACING, TRENCH JACKS OR TRENCH BOX, DIMENSIONS SHALL BE TAKEN FROM THE INSIDE FACE OF THE SUPPORTS.

2. IF THE MAXIMUM TRENCH WIDTH MUST BE EXCEEDED, THE AREA OUTSIDE OF THE MAXIMUM EMBEDMENT SHALL BE COMPACTED TO FINAL BACKFILL REQUIREMENTS. IF THE PIPE IS INSTALLED IN A COMPACTED EMBANKMENT, THE EMBANKMENT SHALL BE IN PLACE AND COMPACTED TO 12" MIN. COVER BEFORE INSTALLATION OF PIPE.

3. IF BEDDING IS REQUIRED TO BRING TRENCH BOTTOM UP TO GRADE AND PROVIDE UNIFORM AND ADEQUATE LONGITUDINAL SUPPORT UNDER THE PIPE, THEN A MINIMUM COMPACTED DEPTH OF 4 TO 6 INCHES OF SELECT EMBEDMENT MATERIAL IS REQUIRED.

4. THE CONTRACTOR SHALL COMPLY WITH REQUIREMENTS OF THE FLORIDA TRENCH SAFETY ACT.

5. AN APPROVED LOCATOR WIRE SHALL BE USED.

6. EARTHWORK, EXCAVATION, BACKFILL AND COMPACTION SHALL BE IN ACCORDANCE WITH PSLUSD STANDARDS.

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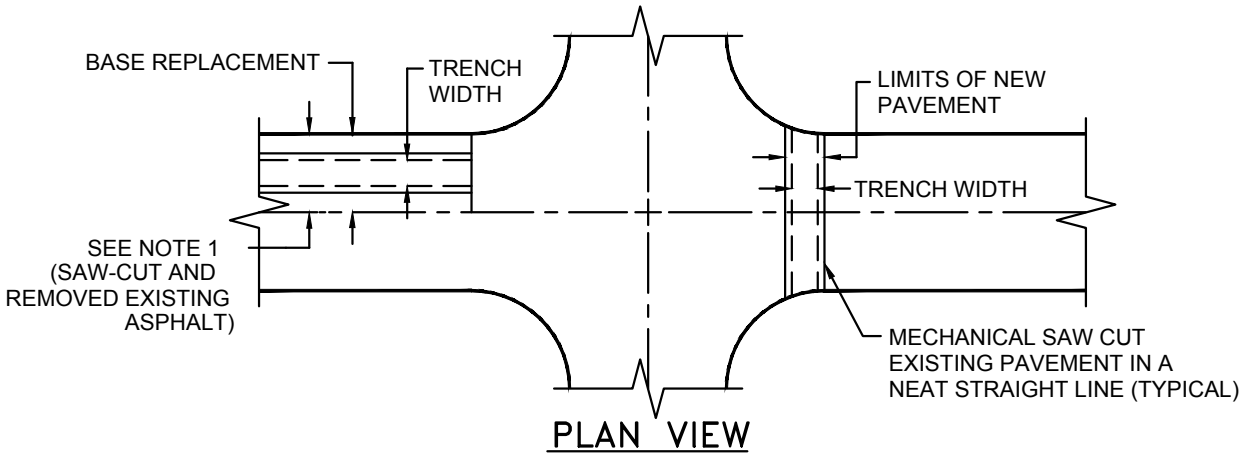
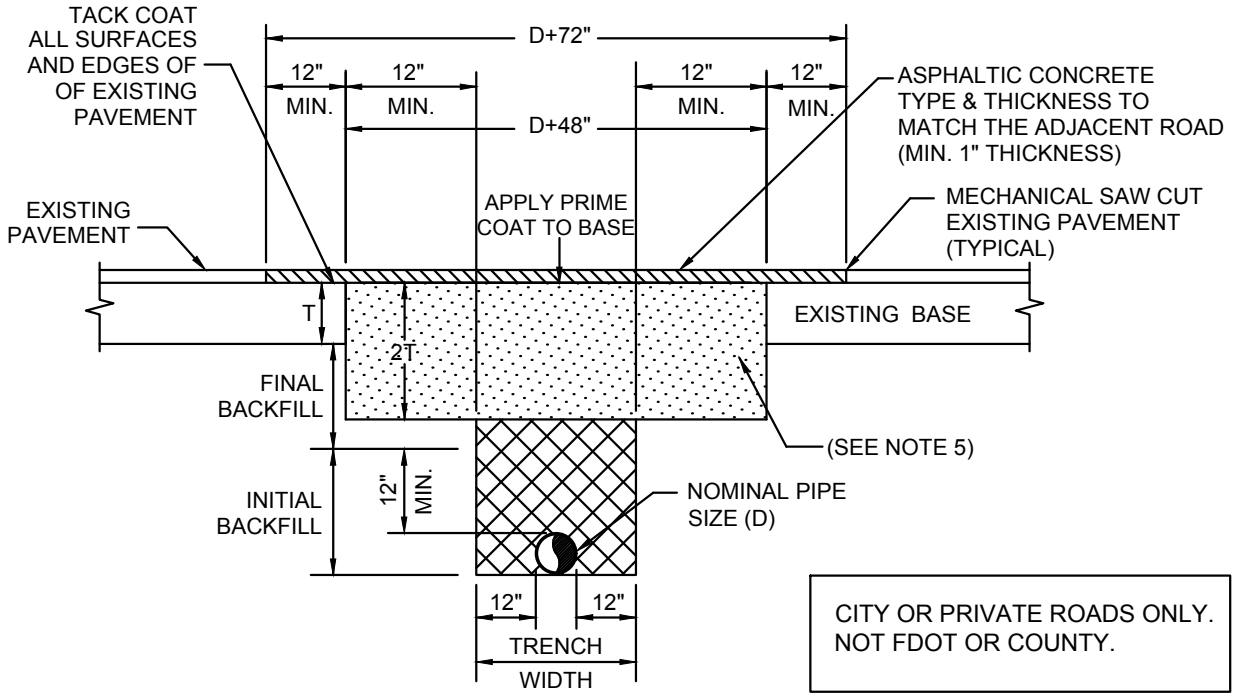
STANDARD PIPE TRENCH CROSS SECTION

DETAIL: G-04	
DATE: 2019	
SCALE: N.T.S.	
SHEET: 1 OF 1	



PLAN VIEW



CITY OR PRIVATE ROADS ONLY.
NOT FDOT OR COUNTY.

SECTION VIEW

NOTES:

1. PAVEMENT RESTORATIONS FOR LONGITUDINAL CUTS IN ALL STREETS SHALL BE FULL LANE WIDTH, WITH FULL LANE WIDTH RESURFACING FOR EACH LANE WITHIN THE LIMITS OF THE CUT.
2. WHEN AN ARTERIAL OR MAJOR COLLECTOR STREET IS OPEN CUT WITHIN THE LIMITS OF THE ROADWAY INTERSECTION, THE ENTIRE INTERSECTION SHALL BE OVERLAID WITH ASPHALTIC CONCRETE.
3. WHEN STREETS OTHER THAN ARTERIALS OR MAJOR COLLECTORS ARE OPEN CUT MORE THAN TWO TIMES AT THE INTERSECTION, THE ENTIRE INTERSECTION SHALL BE OVERLAID WITH ASPHALTIC CONCRETE. TWO OPEN CUTS OR LESS AT THE INTERSECTION WILL REQUIRE OVERLAYING WITH ASPHALT ONLY IN THE OPEN CUT AREA.
4. THE CONTRACTOR SHALL BE REQUIRED TO DOCUMENT ALL PAVEMENT MARKINGS AND RPM'S PRIOR TO OVERLAY. THE CONTRACTOR SHALL THEN PLACE NEW PAVEMENT MARKINGS AT THE SAME LOCATIONS. PAVEMENT MARKINGS SHALL BE IN ACCORDANCE TO F.D.O.T. STANDARDS.
5. COQUINA OR LIMEROCK (16" MIN.) LBR=100
6. EARTHWORK, EXCAVATION, BACKFILL AND COMPACTION SHALL BE IN ACCORDANCE WITH PSLUSD STANDARDS. ALL BACKFILL SHALL MEET DENSITY REQUIREMENTS OF 100% T-180.

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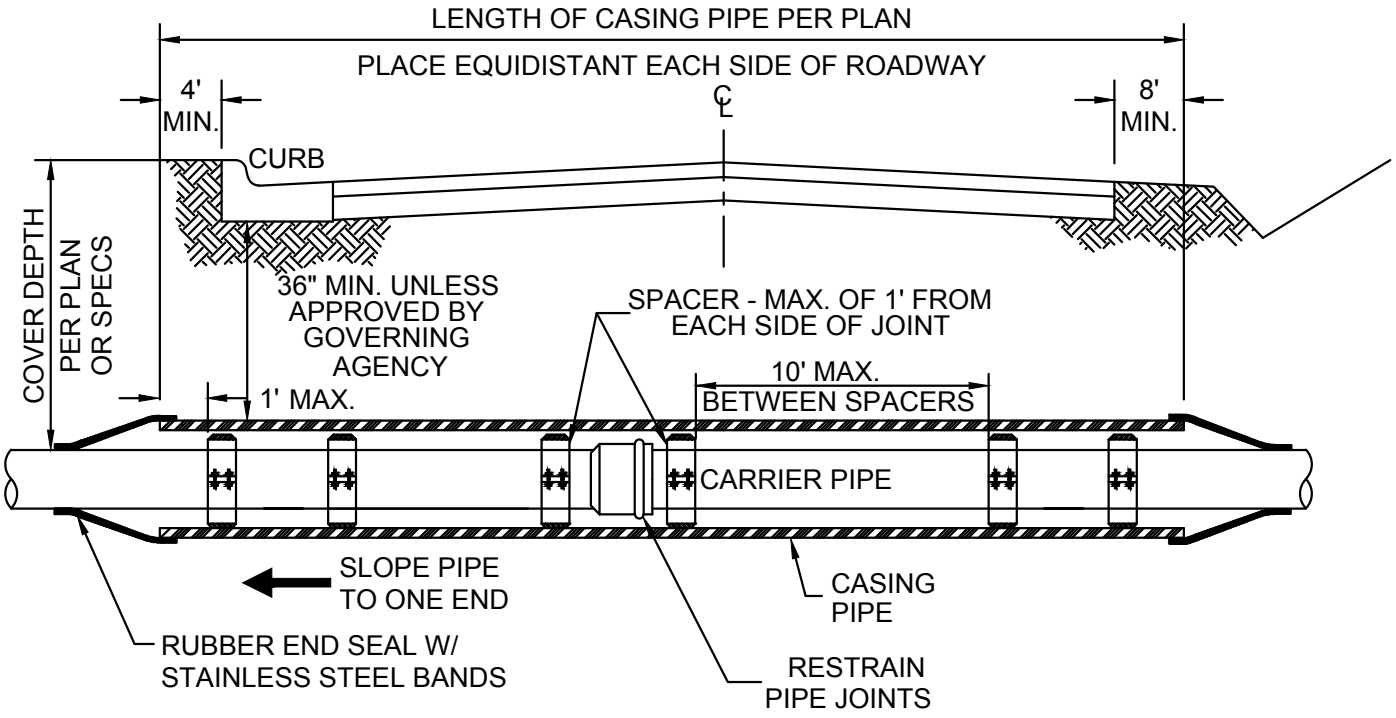
UTILITY ROAD CUT PAVEMENT RESTORATION

DETAIL: G-05
DATE: 2019
SCALE: N.T.S.
SHEET: 1 OF 1



SIDE VIEW

CARRIER PIPE SIZE	STEEL CASING	MINIMUM WALL THICKNESS
4"	12"	.188
6"	14"	.250
8"	16"	.250
10"	20"	.250
12"	24"	.250
16"	32"	.375
20"	40"	.375
24"	48"	.500
30"	60"	.625
36"	72"	.625
42"	84"	.625
48"	96"	.625

NOTES:

1. ALL WORKMANSHIP AND MATERIAL TO MEET PSLUSD UTILITY STANDARDS MANUAL.

2. INSULATOR SHALL BE SIZED TO ALLOW CLEARANCE BETWEEN BELL JOINT AND CASING WALL OR RESTRAINT DEVICE AND CASING WALL.

3. PETROLEUM PRODUCTS SHALL NOT BE USED FOR LUBRICATION ON ANY PORTION OF THIS ASSEMBLY WITH PVC CARRIER PIPE.

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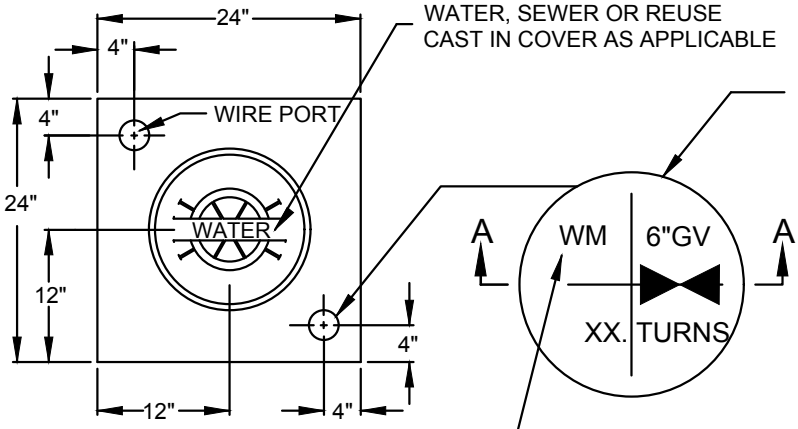
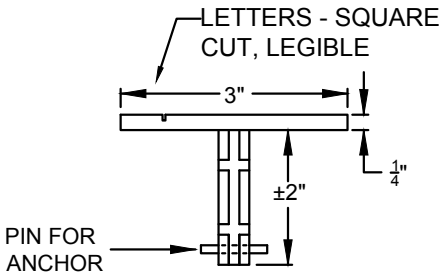
PIPE CASING FOR JACK AND BORE

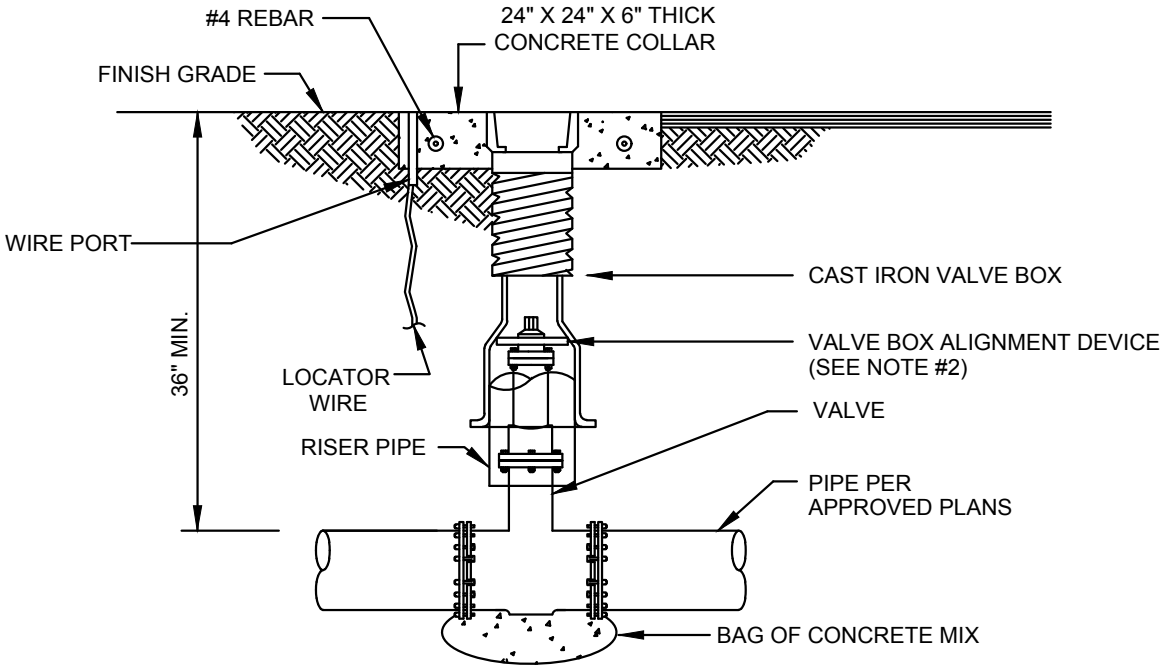
DETAIL: G-06	
DATE: 2019	
SCALE: N.T.S.	
SHEET: 1 OF 1	



CONCRETE VALVE COLLAR



SECTION A-A



NOTES:

1. WHEN TOP OF OPERATING NUT IS DEEPER THAN 30", A HIGH STRENGTH STEEL EXTENSION WILL BE REQUIRED TO BRING OPERATING NUT 24"-30" BELOW FINISHED GRADE. A STEEL CENTERING PLATE, WELDED TO THE EXTENSION, IS ALSO REQUIRED.

2. A VALVE BOX ALIGNMENT DEVICE SHALL BE PROVIDED TO ELIMINATE SHIFTING OF THE VALVE BOX AGAINST THE OPERATING NUT.

3. C900 OR SDR-26 P.V.C. RISER PIPE SHALL BE ADDED TO EXTEND THE VALVE BOX IF NEEDED.

4. RPM'S SHALL NOT BE INSTALLED IN CROSSWALKS OR PEDESTRIAN WALKWAYS.

5. THE TOP SIDE OF THE VALVE BOX COVER AND THE INSIDE OF TOP SECTION OF THE VALVE BOX SHALL BE PAINTED BLUE FOR WATER MAINS, GREEN FOR SEWER MAINS AND PURPLE FOR RECLAIMED WATER MAINS.

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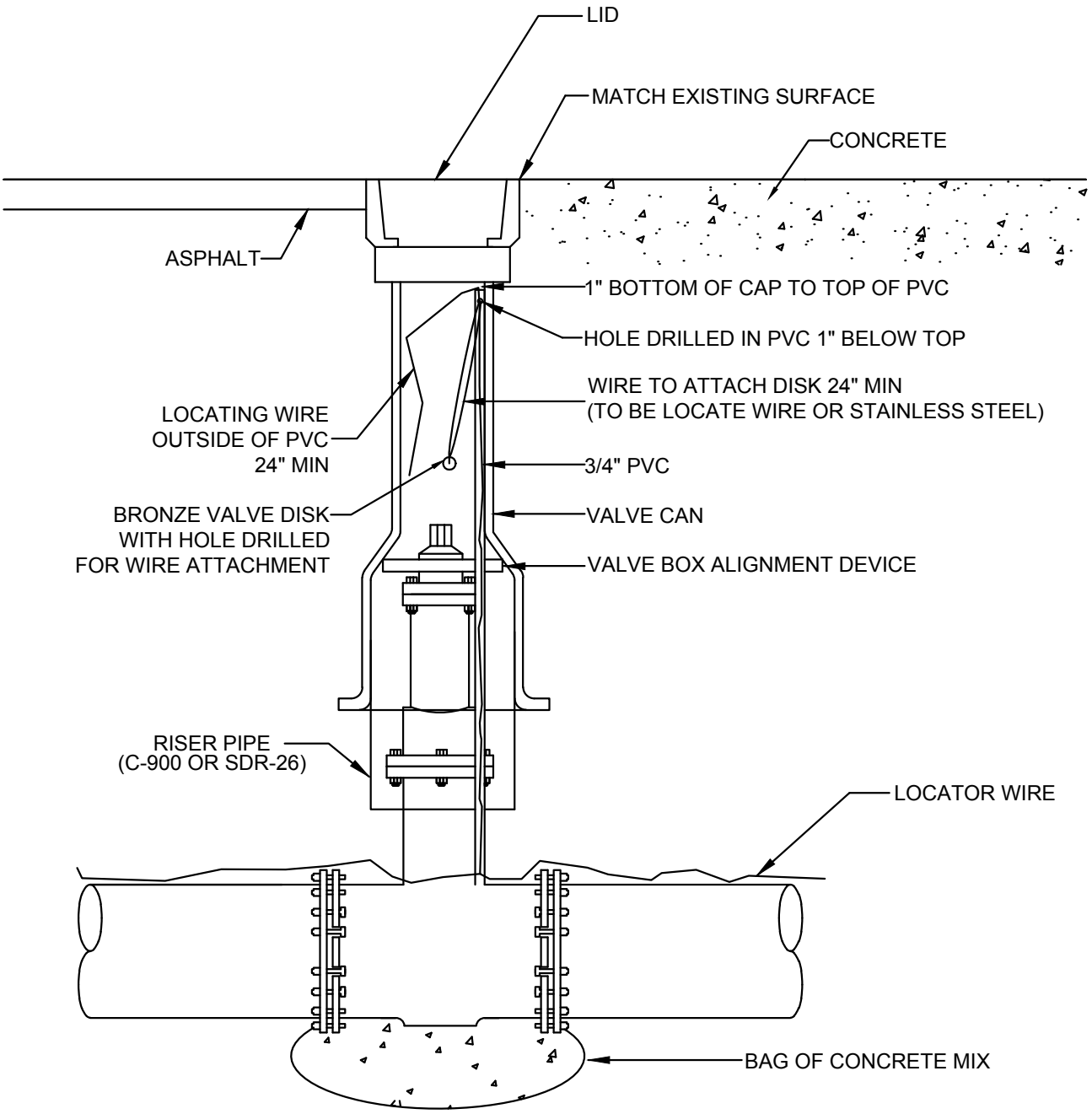
TYPICAL VALVE BOX AND COLLAR IN UN-PAVED AREA

DETAIL: G-07
DATE: 2019
SCALE: N.T.S.
SHEET: 1 OF 2



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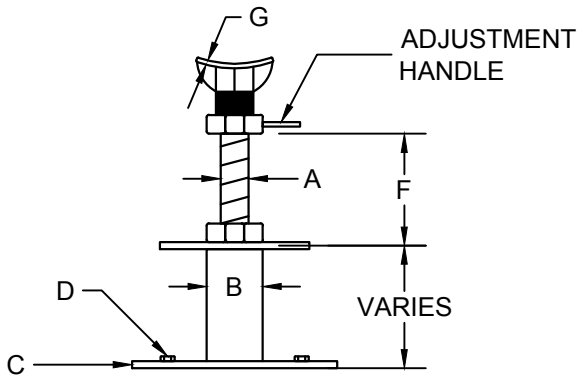
TYPICAL VALVE BOX IN PAVED AREA

DETAIL: G-07
DATE: 2019
SCALE: N.T.S.
SHEET: 2 OF 2



STANDARD

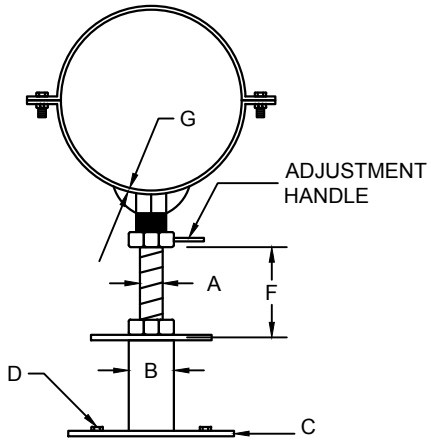
PIPE SIZE	THREAD DIAMETER (A)	PIPE DIAMETER (B)	BASE (C)	HOLE DIAMETER (D)	U-BOLT (E)	VERTICAL ADJUSTMENT (F)	STOCK SIZE (G)
2"	1"	2"	1/4" X 6" X 6"	9/16"	3/8"	6"	3/16" X 2-1/2"
3"	1"	2-1/2"	1/4" X 6" X 6"	9/16"	3/8"	6"	3/16" X 2-1/2"
4"	1"	2-1/2"	1/4" X 6" X 6"	9/16"	1/2"	6"	3/16" X 2-1/2"
6"	1-1/2"	2-1/2"	1/4" X 6" X 6"	9/16"	1/2"	6"	1/4" X 3"
8"	1-1/2"	3"	3/8" X 9" X 9"	11/16"	1/2"	6"	1/4" X 3"
10"	1-1/2"	3"	3/8" X 9" X 9"	11/16"	5/8"	6"	1/4" X 3"
12"	1-1/2"	3"	3/8" X 11" X 11"	13/16"	3/4"	6"	1/4" X 3"

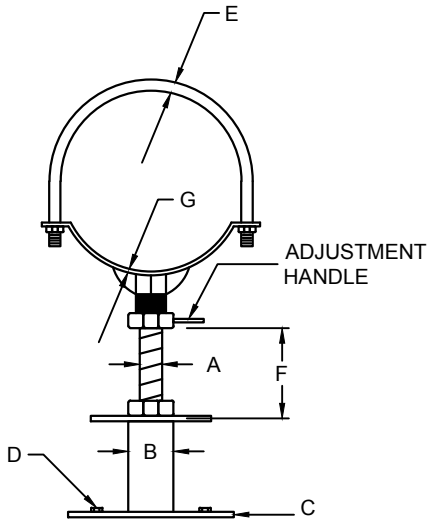
NOTES:

1. 1/4" NEOPRENE SEAT OR GASKET TO BE PLACED BETWEEN PIPE AND SUPPORT.

2. SUPPORT MATERIAL TO BE 316 STAINLESS STEEL.

3. STAINLESS STEEL WEDGE ANCHOR BOLTS.





OPTIONAL CONFIGURATIONS

MINIMUM CONSTRUCTION STANDARDS FOR
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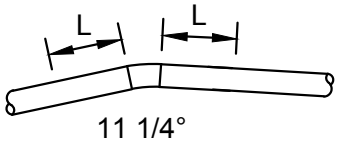
900 S.E. OGDEN LANE
PORT ST. LUCIE, FL 34983
PHONE (772) 873-6400 FAX (772) 873-6433

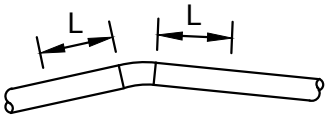
PIPE SUPPORT

FILE NAME: G-08
DATE: 2019
SCALE: N.T.S.
SHEET: 1 OF 1

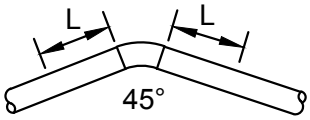
HORIZONTAL BENDS



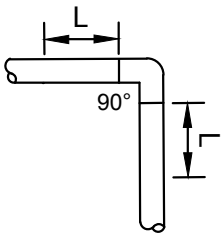
11 1/4°

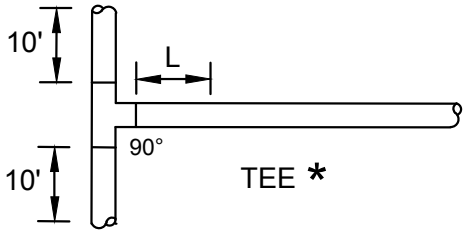


22 1/2°

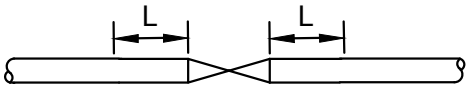


45°





TEE *



IN-LINE VALVE

HORIZONTAL - L (FEET)						
DIAMETER	11-1/4°	22-1/2°	45°	90°	TEE* (BRANCH)	VALVES OR DEAD END
4"	2	4	8	18	20	39
6"	3	5	11	25	36	55
8"	4	7	14	33	52	72
10"	4	8	16	39	65	87
12"	5	9	19	45	80	102
14"	5	11	21	51	93	116
16"	6	12	24	57	107	131
18"	7	13	26	63	120	145
20"	7	14	29	68	133	159
24"	8	16	33	79	157	185
30"	10	19	39	93	192	222
36"	11	21	44	106	225	257
42"	12	24	49	117	254	289
48"	13	26	53	128	283	321

NOTES:

1. THE REQUIREMENTS SET FORTH ABOVE WERE CALCULATED FOR PVC PIPE BASED UPON THE FOLLOWING ASSUMPTIONS:

- SOIL CONDITIONS: SILTY SAND (SM)
- TRENCH TYPE: 3 (PIPE BEDDED IN 4" MINIMUM OF LOOSE SOIL WITH BACKFILL LIGHTLY COMPACTED)
- MINIMUM COVER: 3 FT
- SAFETY FACTOR: 1.5
- TEST PRESSURE: 150 PSI
- * SIZE ON SIZE TEE & 5' LENGTH ALONG RUN

2. IF FIELD CONDITIONS DIFFER FROM THE ABOVE, THE ENGINEER-OF-RECORD (EOR) SHALL SUBMIT CALCULATIONS BASED ON THE FIELD CONDITION FOR REVIEW AND APPROVAL OF PSLUSD.

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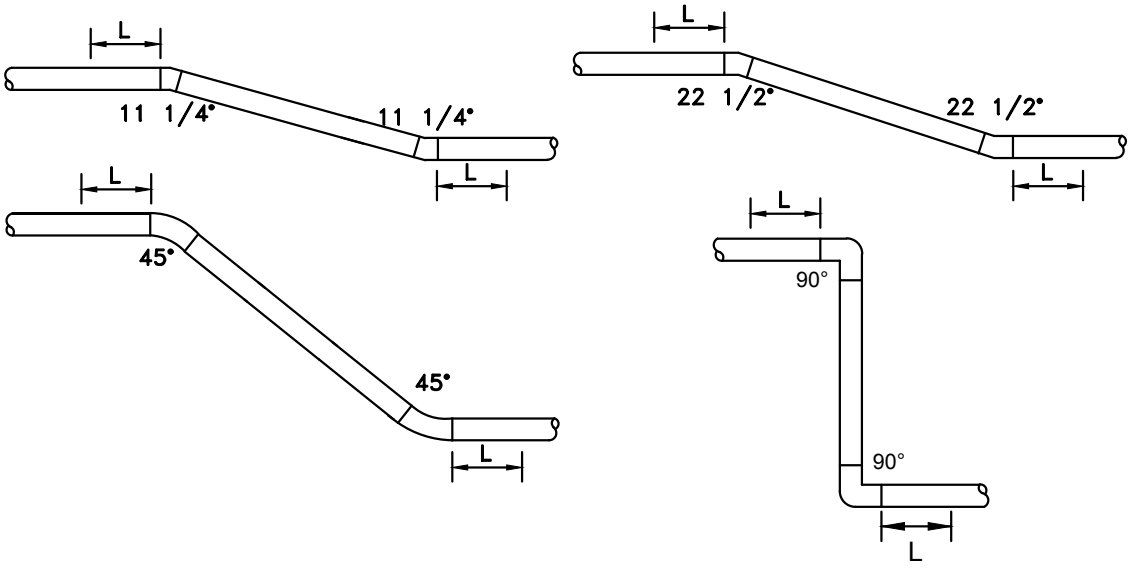
PORT ST. LUCIE, FL 34983
PHONE (772) 873-6400 FAX (772) 873-6433

PIPELINE RESTRAINT REQUIREMENTS (HORIZONTAL)

DETAIL: G-09
DATE: 2019
SCALE: N.T.S.
SHEET: 1 OF 3

VERTICAL BENDS



VERTICAL OFFSET - L (FEET)								
DIAMETER	11-1/4°		22-1/2°		45°		90°	
	UPPER BEND	LOWER BEND	UPPER BEND	LOWER BEND	UPPER BEND	LOWER BEND	UPPER BEND	LOWER BEND
4"	4	2	8	3	17	5	39	11
6"	6	2	11	4	23	7	55	15
8"	8	2	15	4	30	9	72	20
10"	9	3	18	5	36	10	87	24
12"	11	3	21	6	43	12	102	28
14"	12	4	24	7	49	14	116	32
16"	13	4	27	8	55	16	131	36
18"	15	4	29	8	60	17	145	40
20"	16	5	32	9	66	19	158	44
24"	19	6	37	11	77	22	185	51
30"	22	7	45	13	92	26	222	62
36"	26	8	52	15	107	30	256	71
42"	29	8	58	16	120	34	289	80
48"	32	9	64	18	133	37	320	89

NOTES:

1. THE REQUIREMENTS SET FORTH ABOVE WERE CALCULATED FOR PVC PIPE BASED UPON THE FOLLOWING ASSUMPTIONS:

- SOIL CONDITIONS: SILTY SAND (SM)
- TRENCH TYPE: 3 (PIPE BEDDED IN 4" MINIMUM OF LOOSE SOIL WITH BACKFILL LIGHTLY COMPACTED)
- UPPER SIDE MINIMUM COVER: 3 FT
- LOWER SIDE MINIMUM COVER: 5 FT
- SAFETY FACTOR: 1.5
- TEST PRESSURE: 150 PSI

2. WHEN CONDITIONS DIFFER FROM THE ABOVE, THE ENGINEER-OF-RECORD (EOR) SHALL SUBMIT CALCULATIONS FOR REVIEW AND APPROVAL OF PSLUSD.

3. ALL JOINTS BETWEEN UPPER AND LOWER BENDS SHALL BE RESTRAINED.

MINIMUM CONSTRUCTION STANDARDS FOR
CITY OF PORT ST. LUCIE
900 S.E. OGDEN LANE
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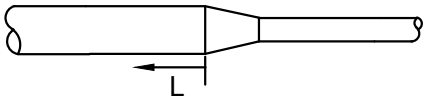
PHONE (772) 873-6400 FAX (772) 873-6433

PIPELINE RESTRAINT REQUIREMENTS (VERTICAL)

DETAIL: G-09
DATE: 2019
SCALE: N.T.S.
SHEET: 2 OF 3

REDUCER



L = RETRAINED LENGTH AT LARGER SIZE OF REDUCER (FEET)														
DIAMETER	4"	6"	8"	10"	12"	14"	16"	18"	20"	24"	30"	36"	42"	48"
4"		29	52	71	89	105	121	136	151	179	217	253	285	318
6"			31	53	74	93	111	127	143	172	211	249	282	315
8"				29	54	76	96	114	131	163	204	243	277	310
10"					30	55	78	98	117	151	195	235	271	305
12"						30	56	79	100	137	184	226	263	299
14"							30	56	79	120	171	216	255	292
16"								30	56	101	156	204	245	283
18"									30	80	140	190	233	273
20"										56	121	175	221	263
24"											78	141	192	238
30"												78	140	194
36"													75	139
42"														75

NOTES:

1. THE REQUIREMENTS SET FORTH ABOVE WERE CALCULATED FOR PVC PIPE BASED UPON THE FOLLOWING ASSUMPTIONS:

- SOIL CONDITIONS: SILTY SAND (SM)
- TRENCH TYPE: 3 (PIPE BEDDED IN 4" MINIMUM OF LOOSE SOIL WITH BACKFILL LIGHTLY COMPACTED)
- MINIMUM COVER: 3 FT
- SAFETY FACTOR: 1.5
- TEST PRESSURE: 150 PSI

2. IF FIELD CONDITIONS DIFFER FROM THE ABOVE, THE ENGINEER-OF-RECORD (EOR) SHALL SUBMIT CALCULATIONS BASED ON THE FIELD CONDITION FOR REVIEW AND APPROVAL OF PSLUSD.

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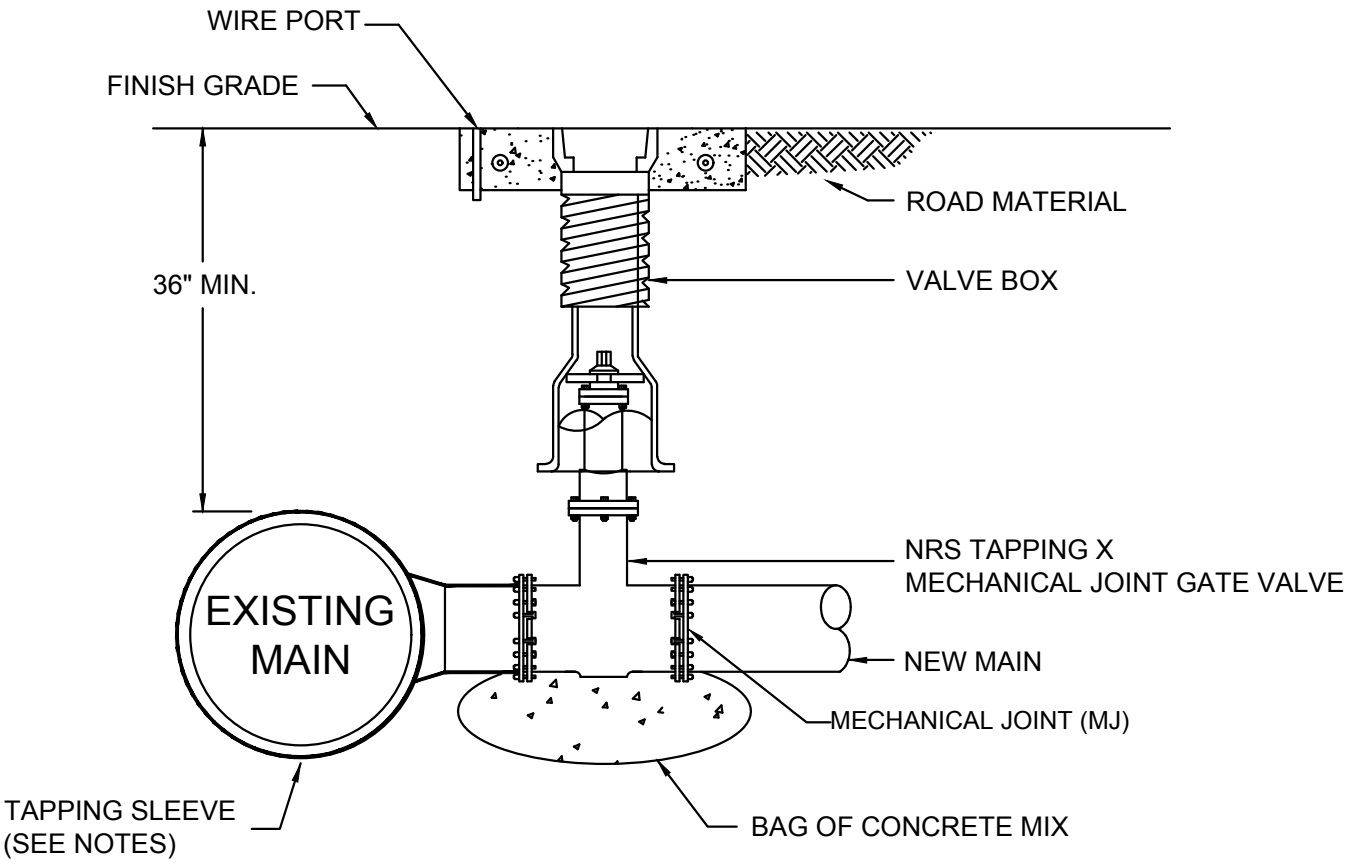
PIPELINE RESTRAINT REQUIREMENTS (REDUCER)



NOTES:

1. THE VALVE BOX SHALL BE IN ACCORDANCE WITH STANDARD DETAIL G-07.

2. THRUST BLOCKS MAY BE REQUIRED AT THE UTILITY'S DIRECTION. (CASE BY CASE)

2. NO TAP WILL BE ALLOWED CLOSER THAN 5 FEET FROM ANY JOINT, FITTING OR EXISTING TAP ALONG THE MAIN.

4. ALL COUPONS MUST BE PROVIDED TO PSLUSD WITH DATE, LOCATION AND PIPE SIZE DOCUMENTED.

5. SIZE ON SIZE TAPS ARE NOT ALLOWED UNLESS APPROVED IN WRITING BY PSLUSD.

6. SEE NOTES ON DETAIL G-07.

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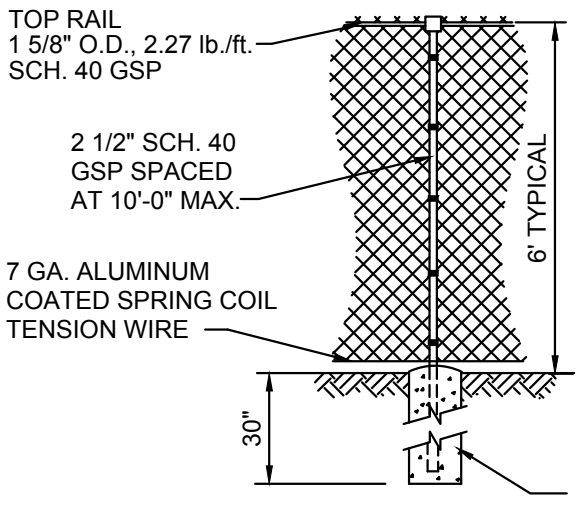
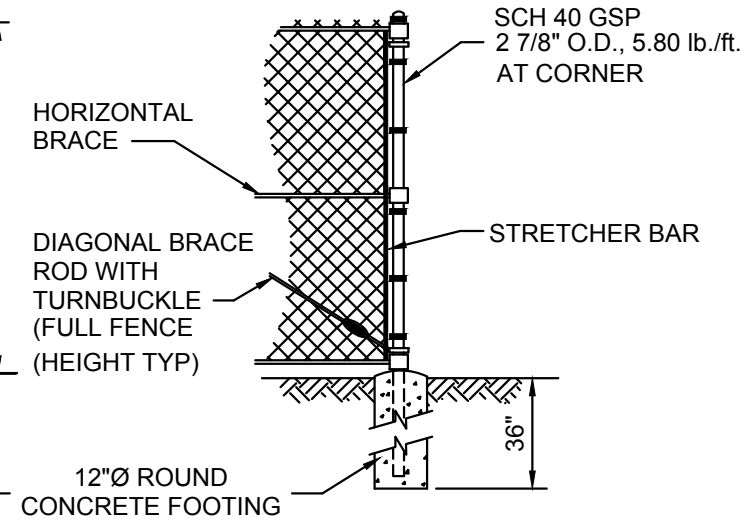
TAPPING SLEEVE AND VALVE ASSEMBLY

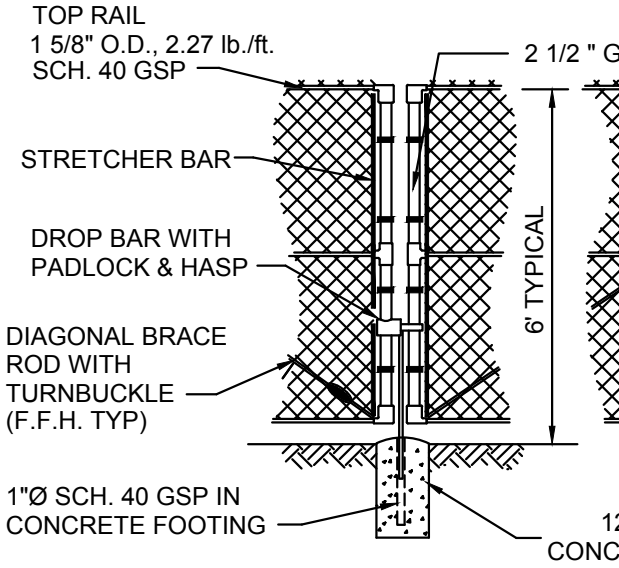
DETAIL: G-10
DATE: 2019
SCALE: N.T.S.
SHEET: 1 OF 1



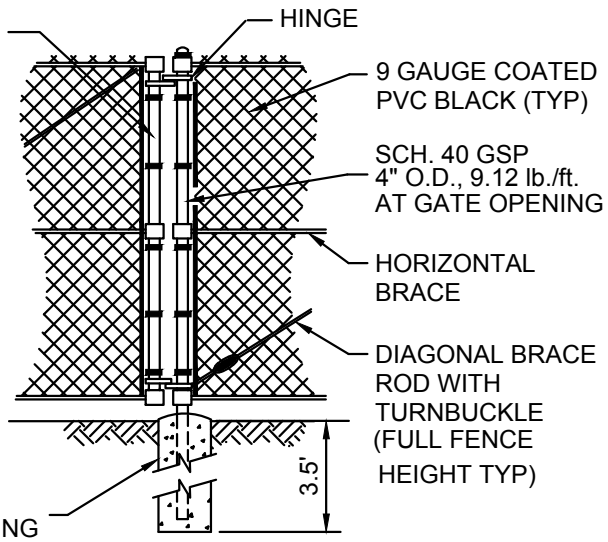
LINE POST



CORNER POST



GATE



GATE POST

NOTES:

1. A CHAIN LINK FENCE, AT LEAST 6' HIGH SHALL BE PROVIDED.

2. VINYL COATED STEEL WOVEN WIRE FABRIC SHALL BE STRETCHED TAUT WITH STRETCHER BARS AND STRAPS. FASTENED TOP & BOTTOM AT LINE POSTS WITH GALVANIZED PIG RING TIES.

3. THE GATE SHALL BE SEMI-TRANSPARENT TO ALLOW FOR VISUAL INSPECTION BY PSLUSD.

4. GATES TO BE SECURED OPEN WITH GATE STOP SET IN CONCRETE.

5. ALL MATERIAL SHALL BE BLACK IN COLOR.

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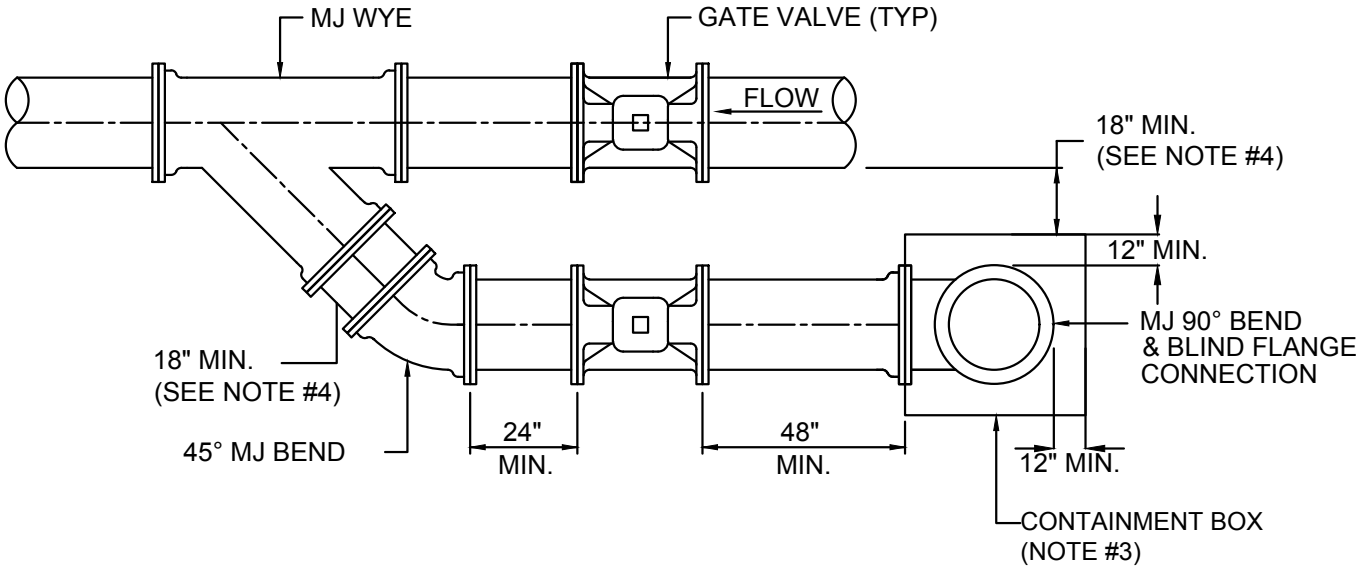
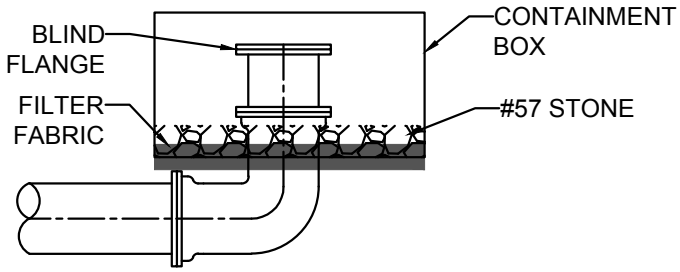
FENCE DETAILS

DETAIL: G-11
DATE: 2019
SCALE: N.T.S.
SHEET: 1 OF 1





SECTION A-A

NOTES:

1. THE ABOVE DETAIL IS FOR A TYPICAL PIG LAUNCHING / RECOVERY STATION. THE ENGINEER-OF-RECORD SHALL SUBMIT DRAWING DETAILS FOR THE PIG LAUNCHING STATION WITH DIMENSIONS FOR THE CONTAINMENT BOX, PIPE SIZES & LENGTH, AND SPECIFICATIONS FOR ALL COMPONENTS AND FITTINGS.

2. PIG RECOVERY STATION WILL BE REVERSE TO FLOW.

3. CONTAINMENT BOX SIZE VARIES TO ALLOW ACCESSIBILITY TO BOLTS OF PLUG. PER QUALIFIED PRODUCT LIST.

4. VARIES WITH MAIN SIZE IN ORDER TO OFFSET CONTAINMENT BOX FROM MAIN LINE.

5. THE BOTTOM OF CONTAINMENT BOX SHALL BE COVERED WITH 8 INCHES OF#57 STONE OVER FILTER FABRIC.

6. ALL FITTINGS BELOW-GROUND SHALL BE MECHANICAL JOINT.

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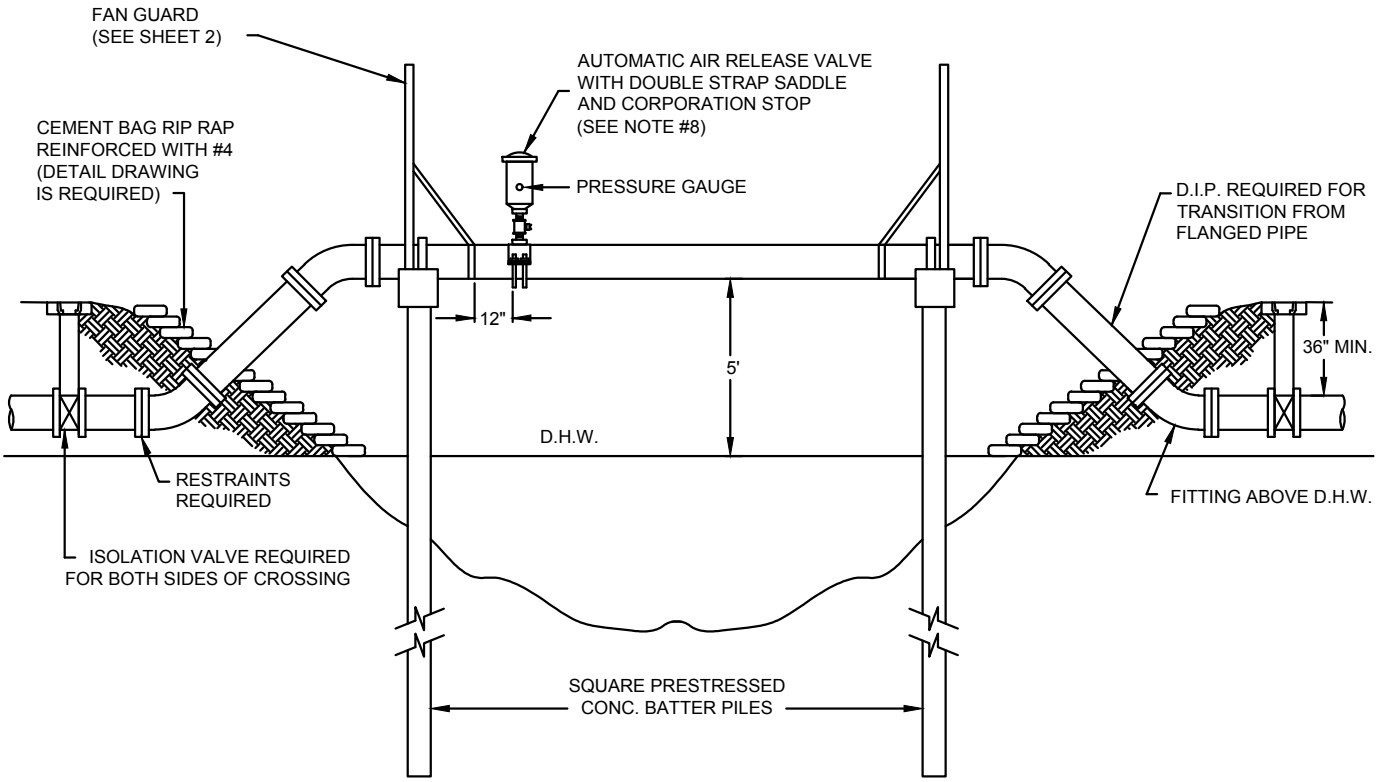
PIG LAUNCHING / RECOVERY STATION

DETAIL: G-12
DATE: 2019
SCALE: N.T.S.
SHEET: 1 OF 1



NOTES:

1. ALL EXPOSED PIPE SHALL BE DUCTILE IRON OR PREFABRICATED STEEL WITH FLANGED FITTINGS AND TORUSEAL GASKETS. RETAINER GLANDS, UNIFLANGE TYPE FITTINGS ARE NOT TO BE SUBSTITUTED FOR FLANGED FITTINGS. PREFABRICATED STEEL PIPE MAY INCORPORATE WELDED ON UPPER BENDS. PREFABRICATED FLANGED PIPE SHALL BE FACTORY TESTED.

2. SPAN LENGTHS AS REQUIRED BY PERMITTING AGENCY AND PIPE MFGR.

3. FAN GUARDS ARE REQUIRED. SEE FAN GUARD / PIPE CAP DESIGN DETAILS (SHEET 2), FOR ADDITIONAL REQUIRMENTS.

4. ALL EXPOSED PIPING AND HARDWARE SHALL BE PAINTED AS SPECIFIED.

5. PIPE SHALL BE CRADLED ON ½" THICK NEOPRENE (DUROMETER GRADE 50). NEOPRENE SHALL EXTEND 1" BEYOND THE EDGES OF CRADLE AND STRAPS. NEOPRENE IS REQUIRED AT ALL STRAPS INSTALLED OVER STEEL PIPE.

6. TIE-DOWNS STRAPS MUST PROPERLY FIT AND SECURE PIPE IN CRADLE.

7. PIPE CRADLE IN CAP SHALL CONTACT ⅓ CIRCUMFERENCE OF PIPE.

8. THE PRESSURE GAUGE SHALL FACE THE CLOSEST FAN GUARD.

9. PILE LIFT CABLE SHALL BE REMOVED BELOW SURFACE; HOLE SHALL BE FILLED WITH EPOXY CEMENT.

10. 10"X10" TYPE 1A BATTER PILES WITH MINIMUM LOAD CAPACITY OF 25 TONS PER PILE IS REQUIRED. PILE PENETRATION BELOW CANAL BOTTOM SHALL BE 15' MINIMUM. SIGNED AND SEALED SHOP DRAWINGS SHALL BE SUBMITTED TO THE PSLUSD.

11. PREFABRICATED STEEL PIPE SHALL HAVE WELDED ON BEARING PADS EXTENDING A MINIMUM OF 1" BEYOND PIPE CRADLE. THE PADS SHALL BE INSTALLED BY STEEL PIPE MANUFACTURER PRIOR TO PAINTING.

12. FORCE MAIN CROSSINGS OVER BODIES OF WATER MAY BE SUBJECT TO PERMIT FROM APPLICABLE REGULATORY AGENCIES.

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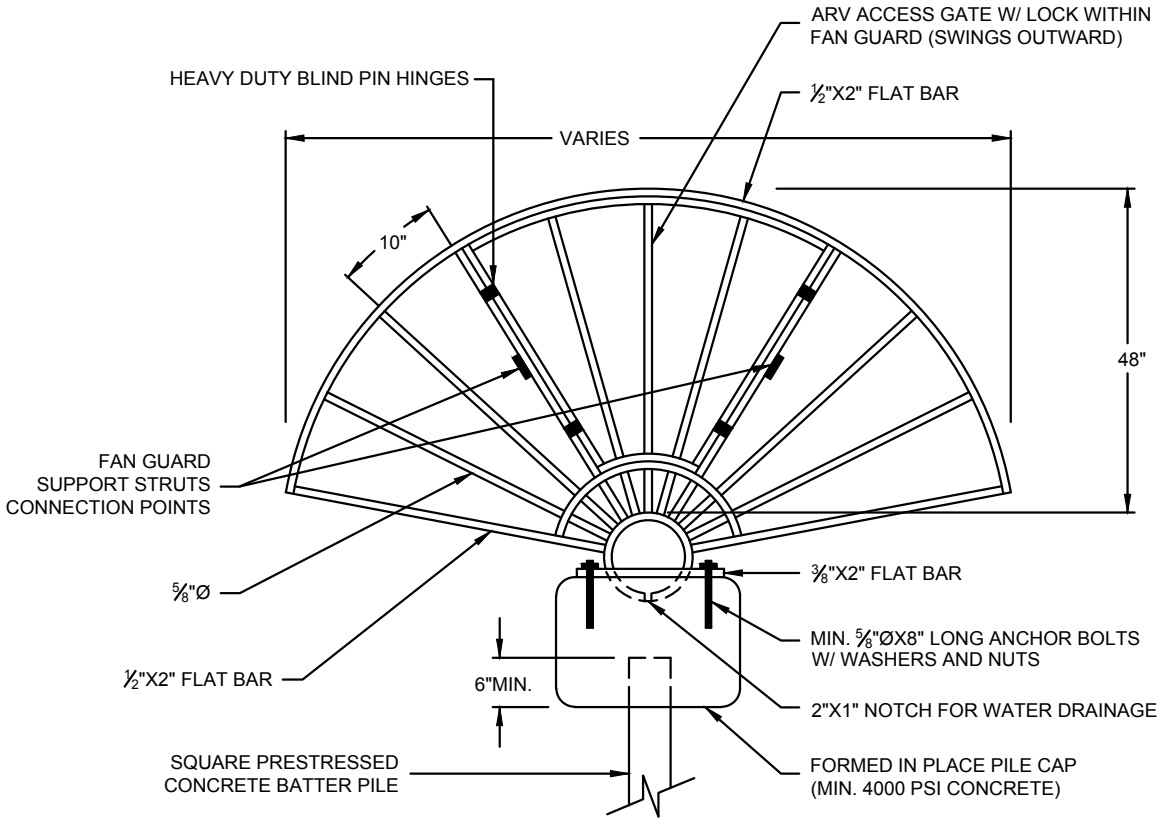
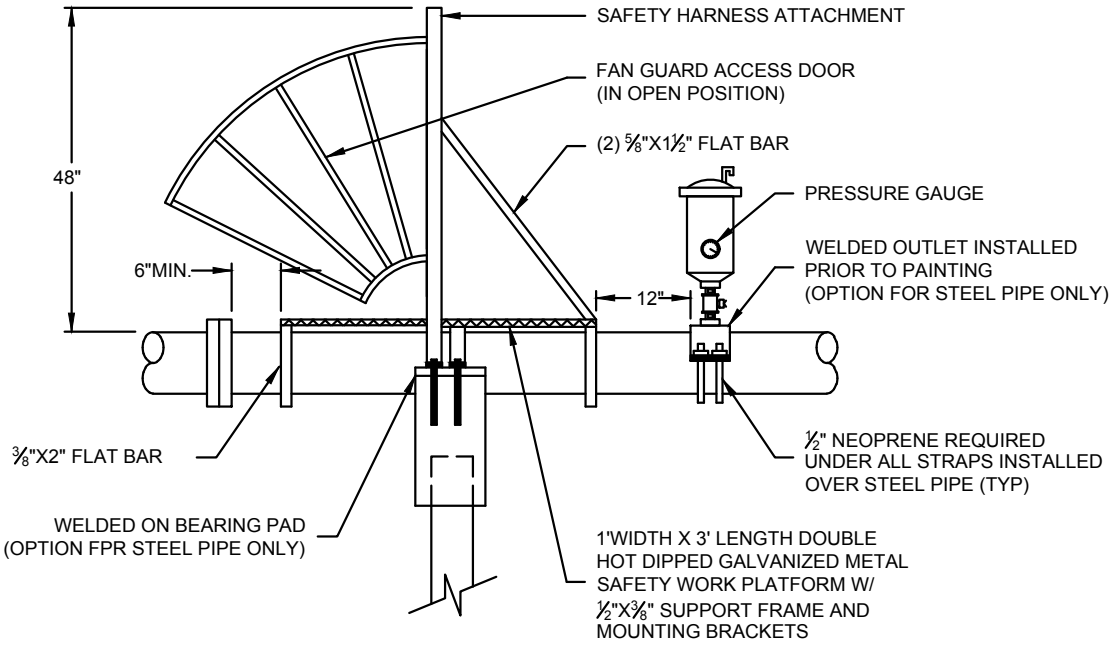
AERIAL CROSSING DETAIL

DETAIL: G-13
DATE: 2019
SCALE: N.T.S.
SHEET: 1 OF 2





NOTES:

1. FAN GUARDS SHALL BE PLACED AT EACH END OF CANAL CROSSING.
2. FANGUARD WITH HARDWARE SHALL BE FABRICATED FROM DOUBLE HOT DIPPED GALVANIZED STEEL.
3. SHOP DRAWINGS FOR FANGUARDS, CAPS AND PILES MUST BE SUBMITTED TO PSLUSD FOR REVIEW AND APPROVAL PRIOR TO PRE-CONSTRUCTION MEETING.
4. CUT PILE, EXTEND PRESTRESSING STRANDS INTO PILE CAP AND TIE WITH CAP STEEL.
5. REINFORCING STEEL SHALL CONFORM TO ASTM A-615, GRADE 60 MIN. 2" CONCRETE COVER OVER ALL STEEL.

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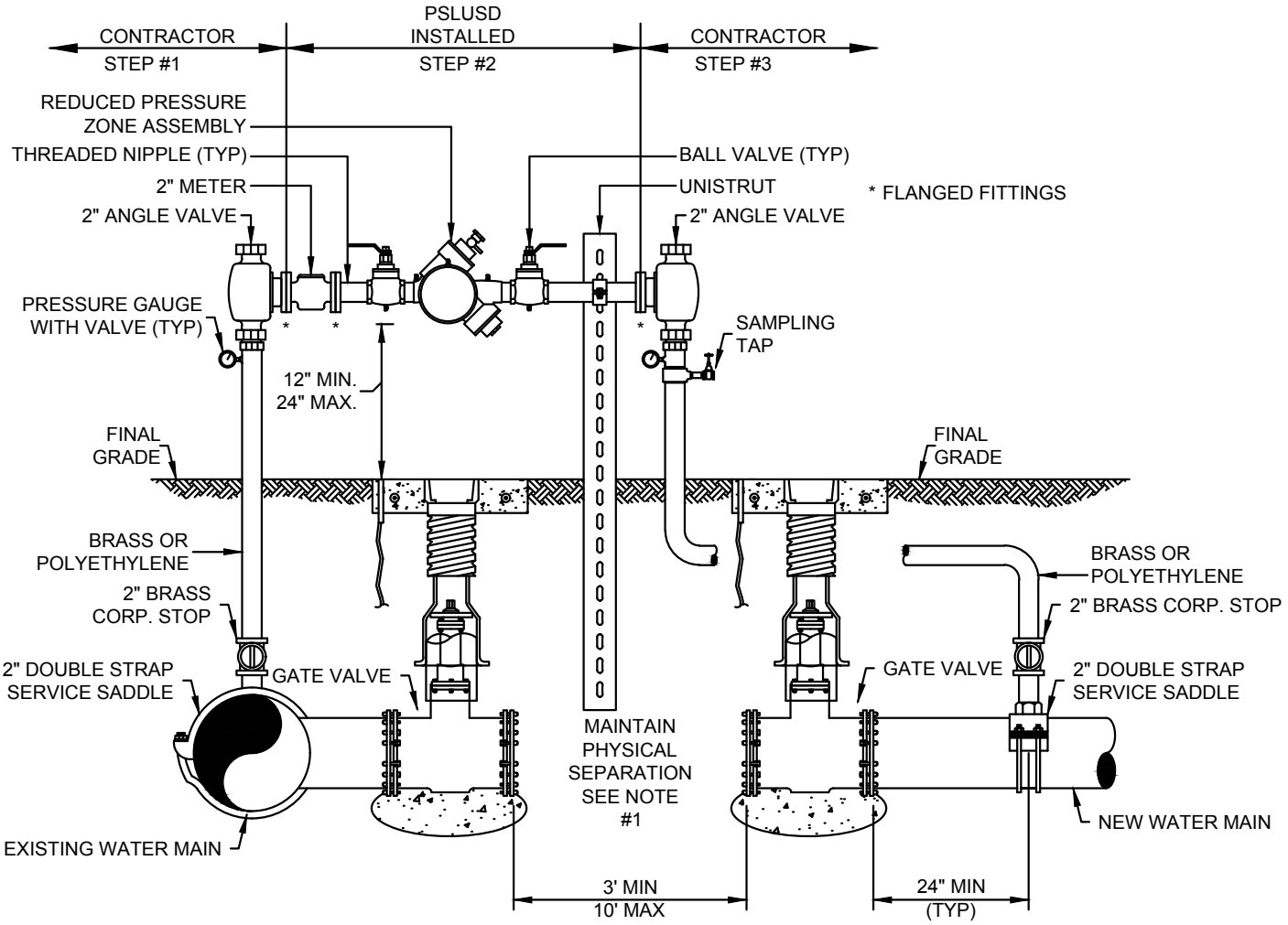
FAN GUARD / PILE CAP DETAIL

DETAIL: G-13
DATE: 2019
SCALE: N.T.S.
SHEET: 2 OF 2



FOR 2" JUMPER CONNECTIONS
UP TO 8" PIPE

MINIMUM CONSTRUCTION STANDARDS FOR
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PORT ST. LUCIE, FL 34983
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TEMPORARY JUMPER CONNECTION

DETAIL: G-14
DATE: 2019
SCALE: N.T.S.
SHEET: 1 OF 2

NOTES:

1. A TEMPORARY JUMPER CONNECTION SHALL BE PROVIDED IN ACCORDANCE WITH THIS DETAIL WHEN AN EXISTING PSLUSD WATER MAIN WILL BE USED FOR FILLING, FLUSHING OR PIGGING A NEWLY CONSTRUCTED POTABLE WATER, WASTEWATER FORCE MAIN OR RECLAIMED WATER MAIN. A DIRECT CONNECTION SHALL NOT BE MADE UNDER ANY CIRCUMSTANCES. THE SIZE OF THE JUMPER CONNECTION SHALL BE SPECIFIED BY THE ENGINEER-OF-RECORD (EOR) BASED ON VELOCITY REQUIRED TO FLUSH THE MAIN.

2. THE CONTRACTOR SHALL CONTACT THE PSLUSD REGARDING SCHEDULING OF REQUIRED INSPECTIONS RELATING TO THE CONNECTION. PSLUSD INSPECTIONS ARE SPECIFICALLY REQUIRED FOR TIE-INS OR WET TAPS TO EXISTING MAINS, JUMPER INSTALLATION, FLUSHING, PIGGING, PRESSURE TESTING, DISINFECTION, SAMPLING, PLUGGING OF SAMPLING POINTS AND PERMANENT CONNECTION OF THE NEW MAIN. THE CONTRACTOR SHALL FOLLOW ALL PROCEDURES STRICTLY IN ACCORDANCE WITH THE PSLUSD UTILITY STANDARDS MANUAL.

3. THE TEMPORARY JUMPER ASSEMBLY (FLANGE TO FLANGE) WILL BE SUPPLIED, INSTALLED AND TESTED BY THE PSLUSD, IN COORDINATION WITH THE EOR AND CONTRACTOR. OTHER MATERIALS AND INSTALLATION REQUIRED FOR THE CONNECTION ARE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL DISINFECT THE PIPE AND FITTINGS USED TO MAKE THE CONNECTION BY SPRAYING AND SWABBING WITH CHLORINE AS NECESSARY. A SUPPORT SHALL BE PROVIDED FOR THE ASSEMBLY AS NECESSARY. THE UNDERGROUND FITTINGS SHALL BE RESTRAINED MECHANICAL JOINT TYPE. ALL MATERIALS SHALL BE PER THE PSLUSD APPROVED QUALIFIED PRODUCTS LIST. THE JUMPER CONNECTION SHALL BE MAINTAINED BY THE CONTRACTOR UNTIL THE ASSEMBLY IS REMOVED BY THE PSLUSD. THE VALVES SHALL BE OPERATED BY PSLUSD PERSONNEL ONLY.

4. ALL NEW WATER MAINS SHALL BE DOUBLE-PIGGED, FLUSHED, PRESSURE TESTED AND DISINFECTED. NEW MAIN SHALL NOT BE PLACED INTO SERVICE UNTIL THE BACTERIOLOGICAL TEST RESULTS ARE SATISFACTORY AND A WRITTEN APPROVAL HAS BEEN OBTAINED FROM THE PSLUSD.

5. PIGGING AND FLUSHING SHALL BE PERFORMED BY THE CONTRACTOR IN THE PRESENCE OF A PSLUSD INSPECTOR. WATER MAINS SHALL BE PRESSURE TESTED AFTER FLUSHING AND PRIOR TO DISINFECTION. ALL VALVES SHALL REMAIN CLOSED DURING THE PRESSURE TEST AND WILL NOT BE OPENED UNTIL THE RESULTS OF PRESSURE TESTING AND BACTERIOLOGICAL TESTING ARE SATISFACTORY AND THE SYSTEM HAS BEEN ACCEPTED FOR OPERATION BY THE PSLUSD. ALL VALVES SHALL BE CLOSED BY PSLUSD PERSONNEL AFTER FLUSHING AND SHALL REMAIN CLOSED DURING THE PRESSURE TEST.

6. DISINFECTION OF POTABLE WATER MAINS SHALL BE CONDUCTED IN ACCORDANCE WITH AWWA C651. A MINIMUM PRESSURE OF 20 PSI SHALL BE MAINTAINED IN THE NEW MAIN AFTER DISINFECTION.

7. CONNECTION TO EXISTING WATER MAINS SHALL NOT BE MADE PRIOR TO BACTERIOLOGICAL CLEARANCE.

8. UPON WRITTEN APPROVAL, THE SAMPLING POINTS SHALL BE REMOVED AND PLUGGED BY THE CONTRACTOR. THE CONTRACTOR SHALL MAKE THE PERMANENT CONNECTION IN THE PRESENCE OF A PSLUSD INSPECTOR. THE PIPE AND FITTINGS FOR CONNECTION SHALL BE DISINFECTED BY SPRAYING AND SWABBING WITH CHLORINE.

9. THE JUMPER ASSEMBLY (FLANGE TO FLANGE) WILL BE REMOVED BY THE PSLUSD IN COORDINATION WITH THE CONTRACTOR. THE CONTRACTOR SHALL REMOVE THE REST OF THE JUMPER CONNECTION PIPING AND PLUG THE CORPORATION STOP VALVES.

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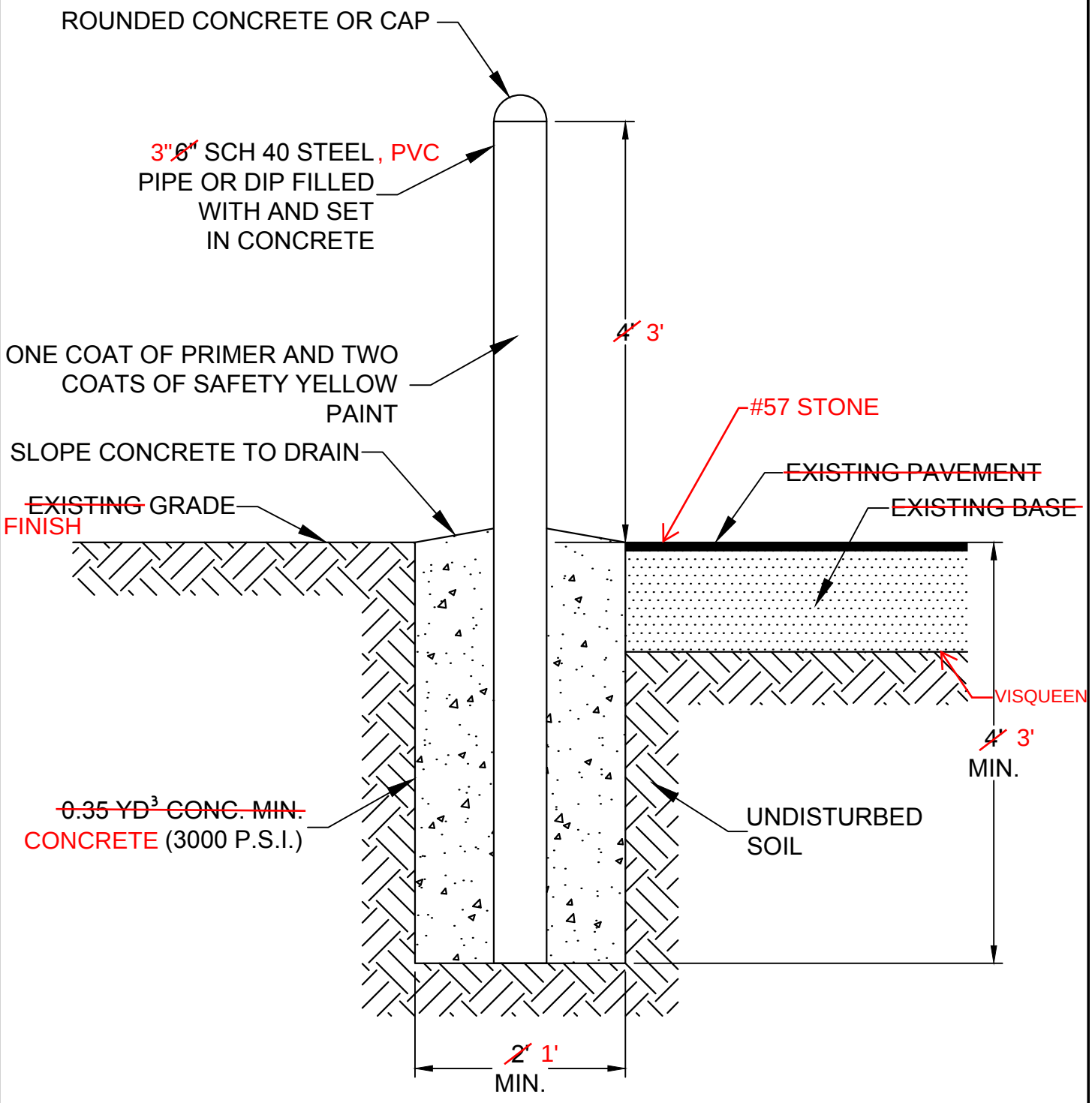
TEMPORARY JUMPER CONNECTION

DETAIL: G-14
DATE: 2019
SCALE: N.T.S.



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PORT ST. LUCIE, FL 34983
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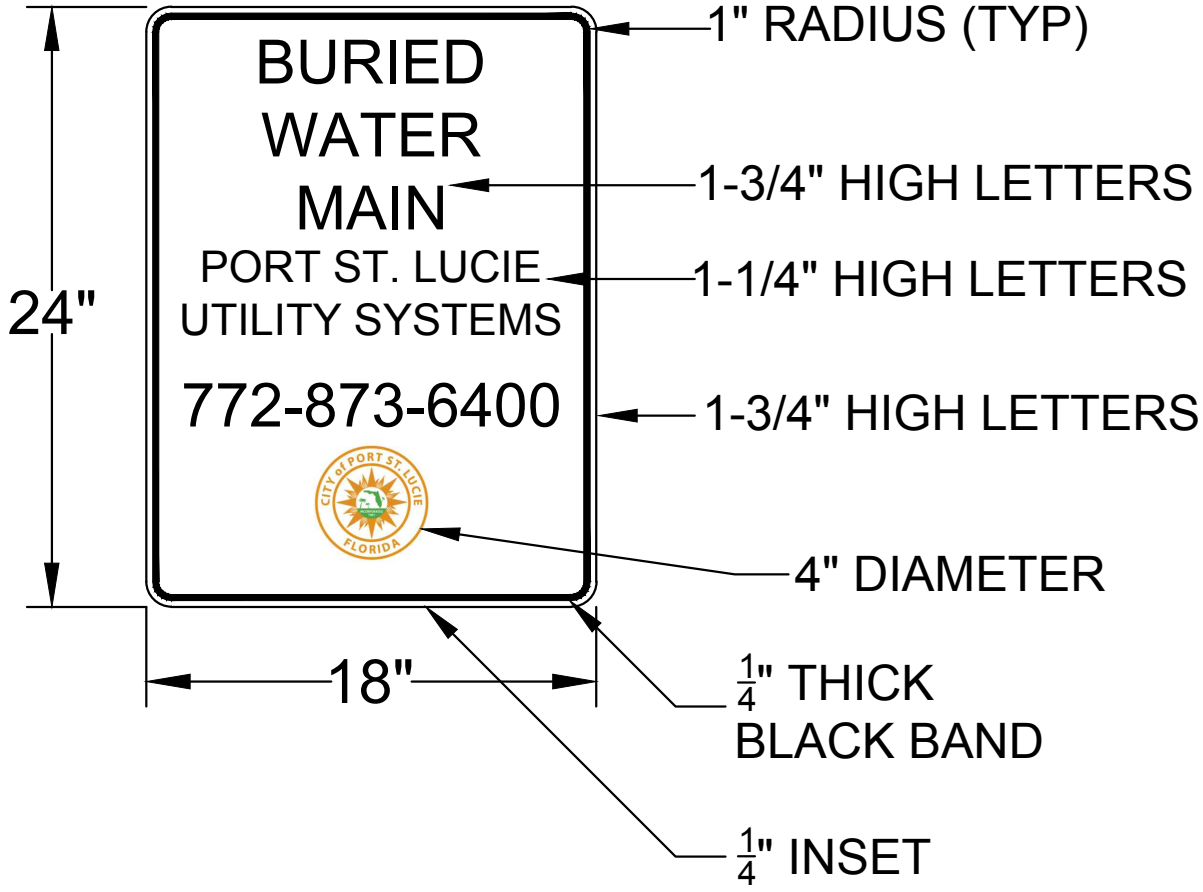
BOLLARD DETAIL (ALT.)

FILE NAME: G-15 A
DATE: 2019
SCALE: N.T.S.
SHEET: 1 OF 1



NOTES:

1. SIGNS SHALL BE PLACED AS REQUIRED UNDER THE PROVISIONS OF PERMIT ISSUED BY PERMITTING AGENCY.

2. THE SIGN SHALL BE 0.080 ALUMINUM WITH REFLECTIVE WHITE BACKGROUND AND BLACK LETTERING WITH COLOR LOGO.

3. THE SIGN SHALL BE MOUNTED ON 1.75" x 1.75", 12 GAUGE GALVANIZED SQUARE TUBE PERFORATED SIGN POST WITH STAINLESS STEEL HARDWARE, 48" FROM BOTTOM AND PARALLEL TO CANAL.

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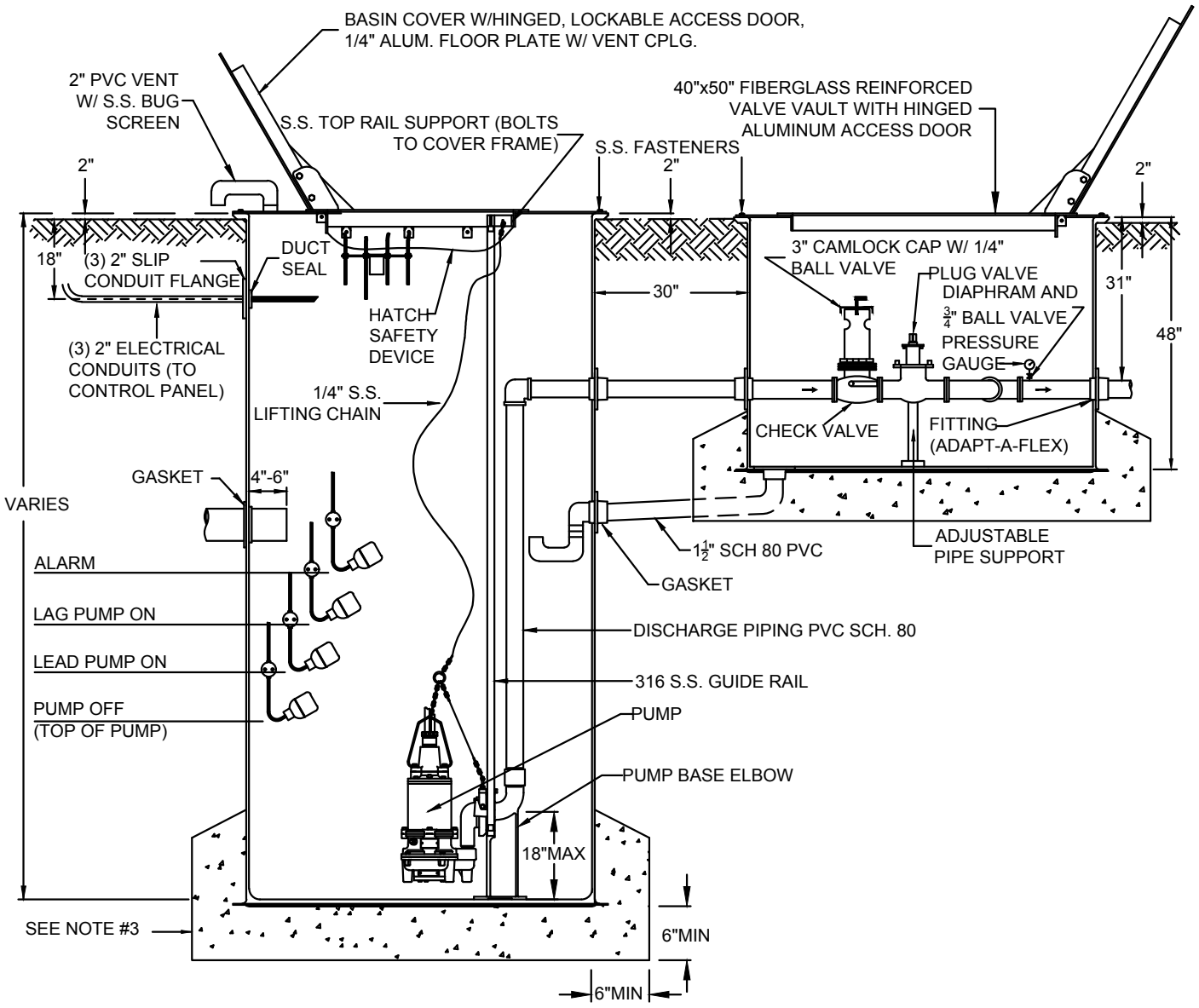
CANAL CROSSING SIGN

DETAIL: G-16
DATE: 2019
SCALE: N.T.S.
SHEET: 1 OF 1



NOTES:

1. THE DESIGN SPECIFICATIONS FOR THE WET WELL, PUMPS, CONTROL ELEVATIONS AND VALVE VAULT SHALL BE AS SPECIFIED BY THE ENGINEER-OF-RECORD (EOR), IN ACCORDANCE WITH THE PSLUSD UTILITY STANDARDS.

2. ALL PIPING FOR VALVE AND PUMPOUT CONNECTION ASSEMBLY SHALL BE SCH 80, FLANGED PVC.

3. EOR SHALL VERIFY AND SUBMIT BUOYANCY CALCULATIONS FOR THE ANTI-FLOTATION SLAB. THE WET WELL AND VALVE VAULT BASE SHALL BE PROVIDED WITH SUITABLE SUPPORT DURING INSTALLATION TO ENSURE COMPLETE ENCAPSULATION OF CONCRETE FOR ANTI-FLOTATION. CONCRETE SHALL BE AT LEAST 6" BELOW DRAIN INLET,OR DISCHARGE PIPES.

4. EXCAVATION, DEWATERING, BACKFILL AND COMPACTION SHALL BE PERFORMED IN ACCORDANCE WITH THE PSLUSD UTILITY STANDARDS. DENSITY TESTS SHALL BE PERFORMED AND SUBMITTED AS REQUIRED.

5. THIS DETAIL SHALL BE USED IN CONJUNCTION WITH DETAIL PS-02

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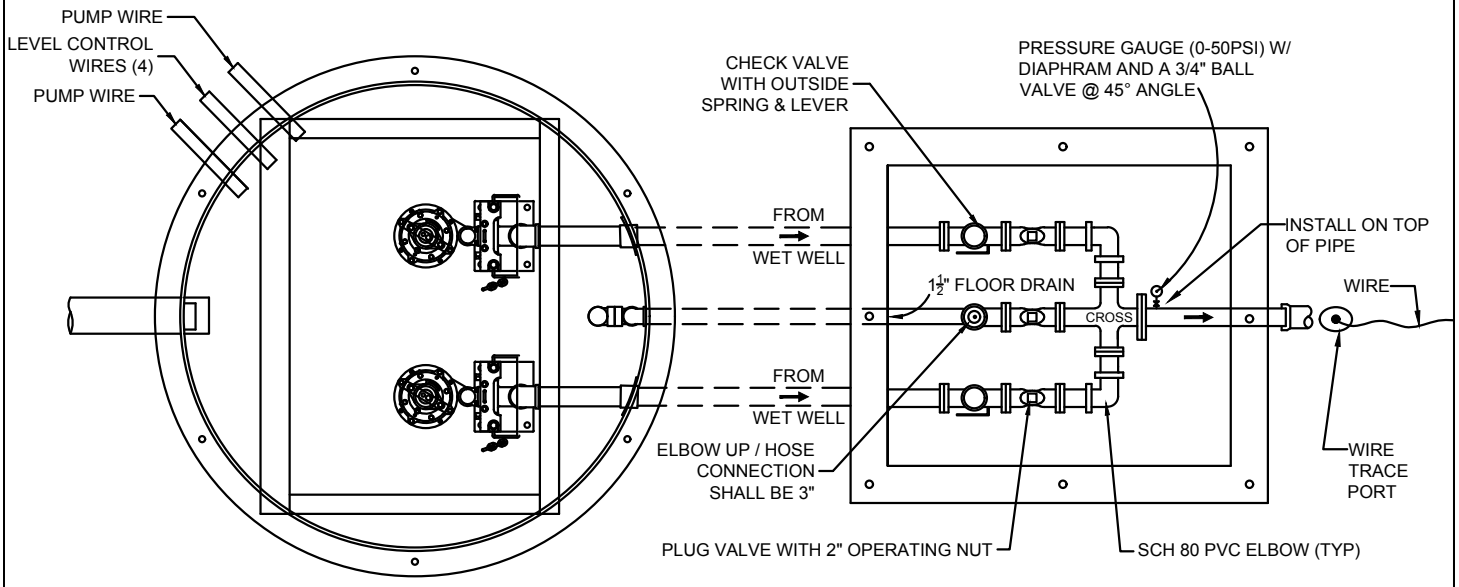
THREE PHASE DUPLEX GRINDER SYSTEM

DETAIL: PS-01
DATE: 2019
SCALE: N.T.S.
SHEET: 1 OF 2



PLAN VIEW

PUMP DATA:

MANUFACTURER ** _____ WETWELL DIAMETER **_____
MODEL NUMBER ** _____ IMPELLER NUMBER ** _____ HP **____ RPM ** _____
VOLTS ** _____ 3 PHASE 60 HERTZ

OPERATING CONDITIONS:

** _____ GPM AT **_____ TDH **_____ % EFFICIENCY

SIZED FOR MINIMUM PUMP CYCLE TIME OF 12 MINUTES AND A MAXIMUM OF 6 PUMP STARTS PER HOUR.

WORKING DEPTH **_____FT. WORKING VOLUME **_____ GALS.

EOR TO COMPLETE ALL FIELDS

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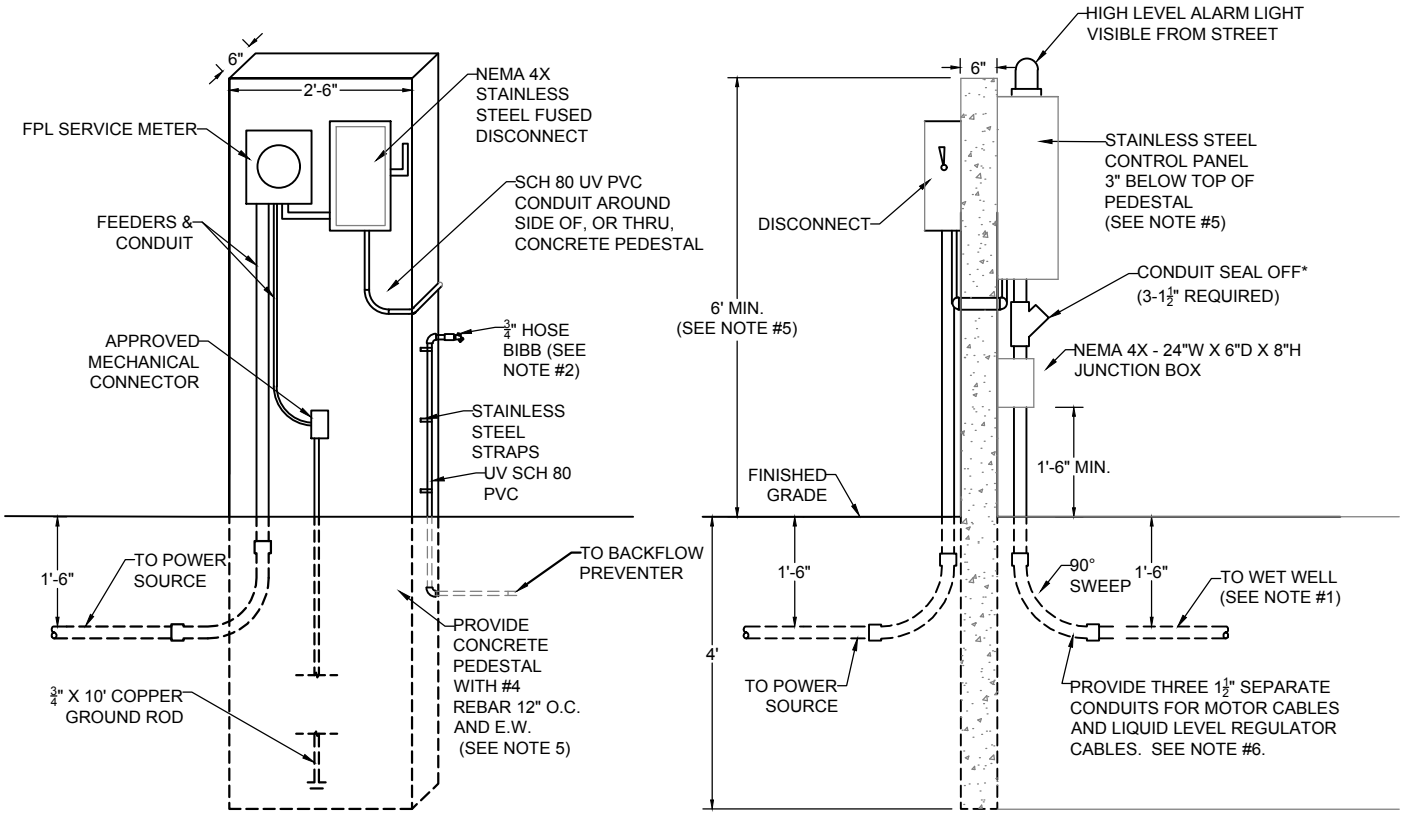
THREE PHASE DUPLEX GRINDER SYSTEM

DETAIL: PS-01
DATE: 2019
SCALE: N.T.S.
SHEET: 2 OF 2



REAR VIEW **SIDE VIEW**

NOTES:

1. THE HORIZONTAL DISTANCE FROM THE FACE OF THE CONTROL PANEL TO THE EDGE OF THE WET WELL SHALL BE A MINIMUM OF 4'.
2. A BACKFLOW PREVENTION ASSEMBLY AND WATER METER SHALL BE PROVIDED PER DETAIL PS-06.
3. * CONDUIT SEAL OFFS TO BE SEALED WITH CHICO COMPOUND.
4. THE PEDESTAL, CONTROL PANEL AND RELATED COMPONENTS SHALL NOT BE PAINTED.
5. THE SIZE OF THE PEDESTAL, DISCONNECT AND CONTROL PANEL SHALL BE SPECIFIED ON THE SHOP DRAWINGS BY THE EOR.
6. CONDUIT FROM THE TOP OF 90 DEGREE SWEEP TO CONTROL PANEL TO BE SCHEDULE 80 IN CITY LIMITS, STAINLESS STEEL OR ALUMINUM OUTSIDE OF CITY LIMITS.

MINIMUM CONSTRUCTION STANDARDS FOR
CITY OF PORT ST. LUCIE
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PORT ST. LUCIE, FL 34983
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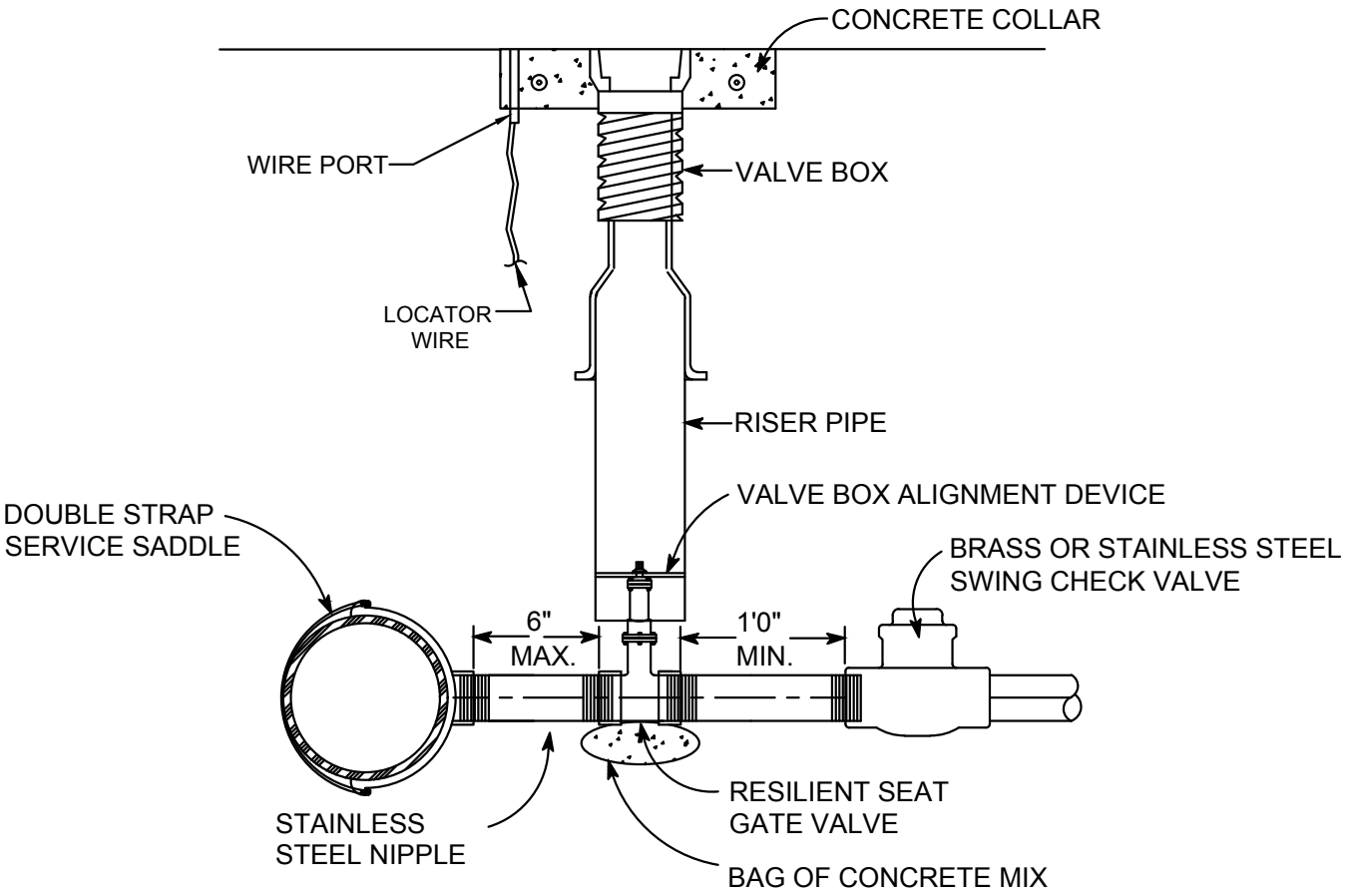
DUPLEX GRINDER SYSTEM
CONTROL PANEL - PEDESTAL DETAIL

DETAIL: PS-02
DATE: 2019
SCALE: N.T.S.
SHEET: 1 OF 1



GRINDER SERVICE CONNECTION

NOTES:

1. THIS DETAIL SHALL BE USED IN CONJUNCTION WITH DETAIL G-07 FOR TYPICAL BOX VALVE.

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GRINDER SYSTEM
SERVICE LINE TAP TO MAIN LINE

DETAIL: PS-03
DATE: 2019
SCALE: N.T.S.
SHEET: 1 OF 1

PUMP DATA:

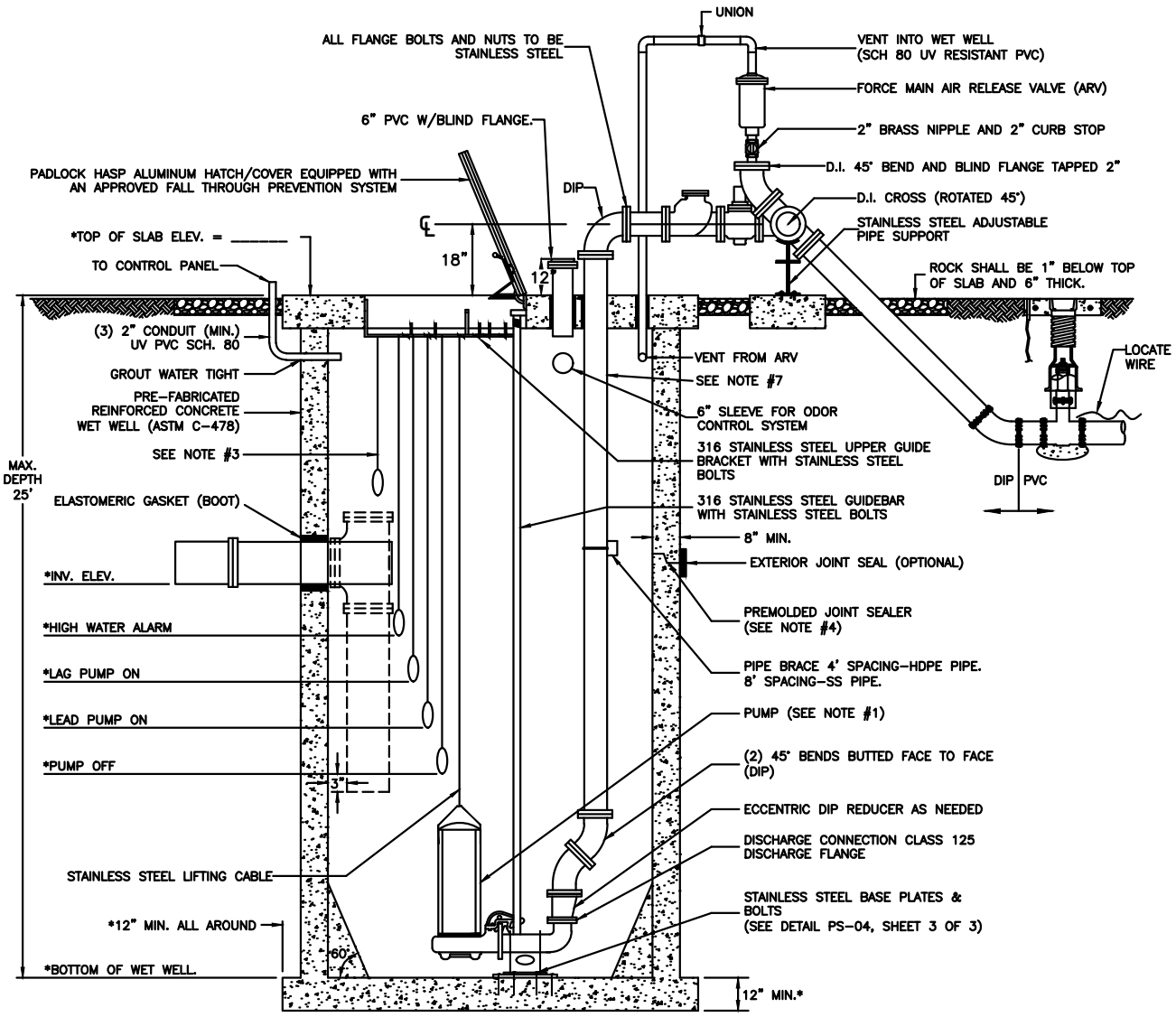
MANUFACTURER ** _____ WETWELL DIAMETER **_____
MODEL NUMBER ** _____ IMPELLER NUMBER ** _____ HP **_____ RPM ** _____
VOLTS ** _____ 3 PHASE 60 HERTZ

OPERATING CONDITIONS:

** _____ GPM AT **_____ TDH **_____ % EFFICIENCY

SIZED FOR MINIMUM PUMP CYCLE TIME OF 12 MINUTES AND A MAXIMUM OF 6 PUMP STARTS PER HOUR.

WORKING DEPTH **_____FT. WORKING VOLUME **_____ GALS.



NOTES:

1. *THE DESIGN SPECIFICATIONS FOR THE WET WELL, PUMPS, CONTROL ELEVATIONS AND DISCHARGE PIPING SHALL BE AS SPECIFIED BY THE ENGINEER-OF-RECORD, IN ACCORDANCE WITH THE PSLUSD UTILITY STANDARDS.

2. WET WELL INTERIOR WALLS SHALL BE PROTECTED WITH A LINER. THE WET-WELL EXTERIOR SHALL BE COATED WITH A PRIMER AND 2 COATS OF A WATER BASED EPOXY 3-5 MILS EACH: APPLICATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATIONS.

3. A FLOAT SHALL BE PROVIDED FOR ALARM AND TO CONTROL BACKUP RELAY SYSTEM FOR THE PUMPS.

4. ALL OPENINGS FOR PIPES AND CONDUITS SHALL BE PRECAST. ALL JOINTS AND TOP SLAB SHALL BE SEALED WITH AN APPROVED SEALANT (SEE DETAIL). THE SPACE BETWEEN THE DISCHARGE PIPES AND THE TOP SLAB SHALL BE FILLED WITH WATERPROOF NON-SHRINKING GROUT.

5. THE INFLUENT PIPE DETAIL SHOWN ABOVE IS FOR A GRAVITY SEWER. FOR FORCE MAINS FROM A LIFT STATION OR LOW PRESSURE SEWER SYSTEM, A TEE SHALL BE INSTALLED AS SHOWN WITH DASHED LINE.

6. ONE PUMP SHALL BE EQUIPPED WITH A MIX-FLUSH VALVE.

7. THE DISCHARGE PIPE SHALL BE SCH-40 STAINLESS STEEL OR DR-11 HDPE PIPE TO THE FLANGE ABOVE THE GROUND.

8. ALL HARDWARE SHALL BE 316 STAINLESS STEEL AND ALL BOLTS AND NUTS SHALL BE 304 STAINLESS STEEL

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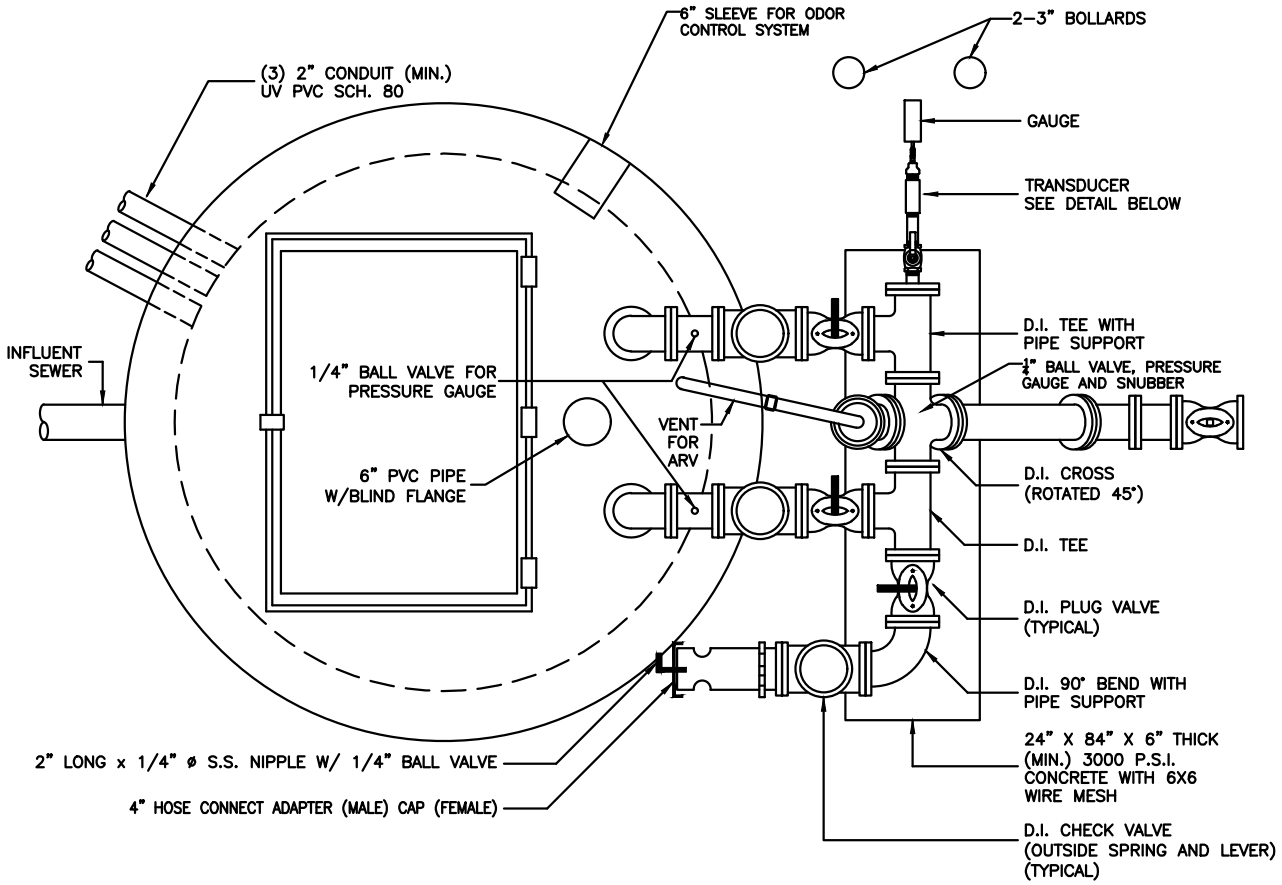
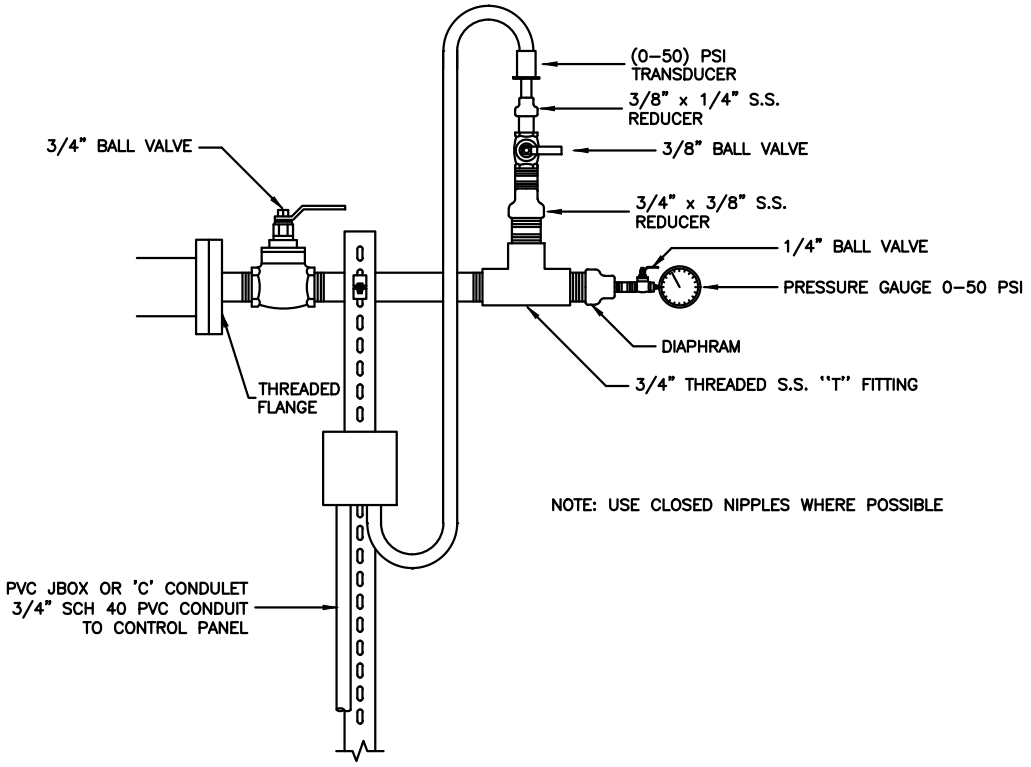
LIFT STATION WET WELL SECTION

DETAIL: PS-04
DATE: 2019
SCALE: N.T.S.
SHEET: 1 OF 3





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LIFT STATION WET WELL PLAN VIEW

DETAIL: PS-04
DATE: 2019
SCALE: N.T.S.
SHEET: 2 OF 3

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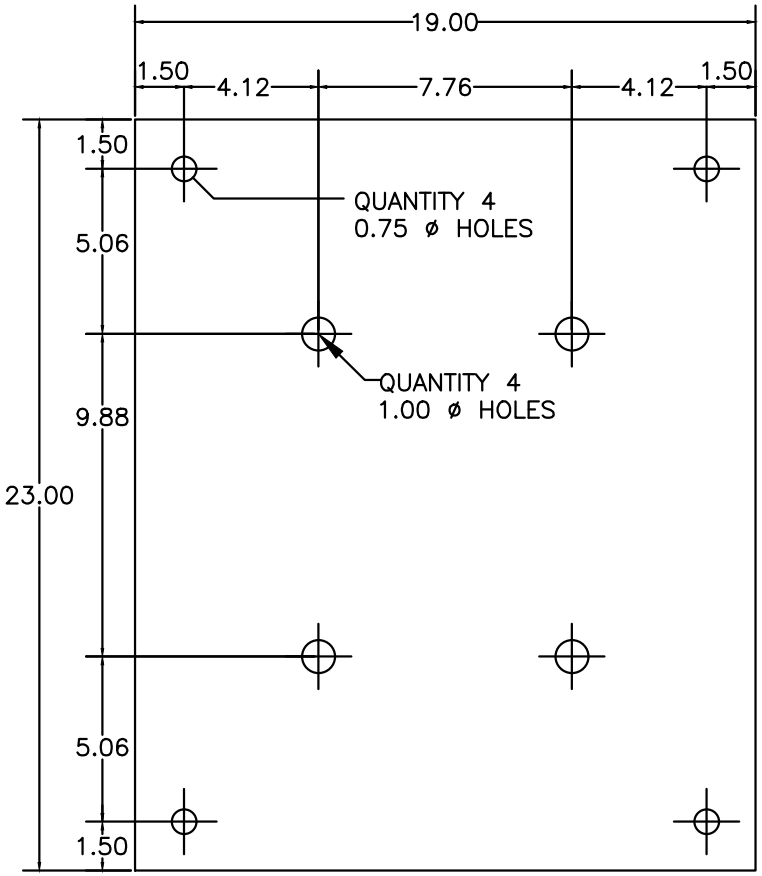
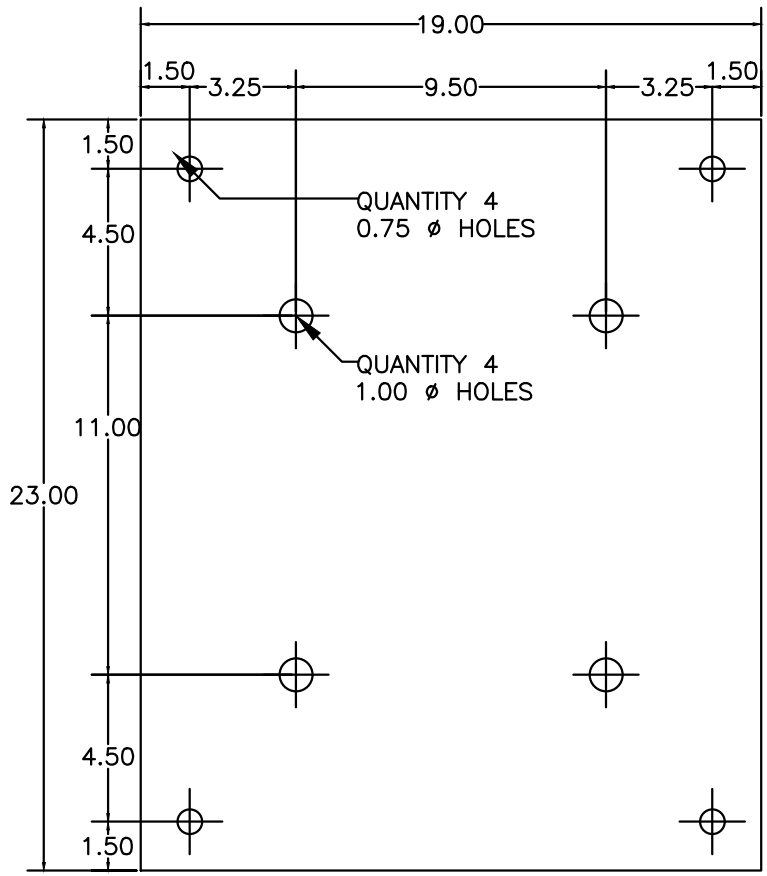
LIFT STATION BASE PLATES

MATERIAL: 316 STAINLESS STEEL 0.50" THICK
ALL MEASUREMENTS IN INCHES



4"x4" ELBOWS



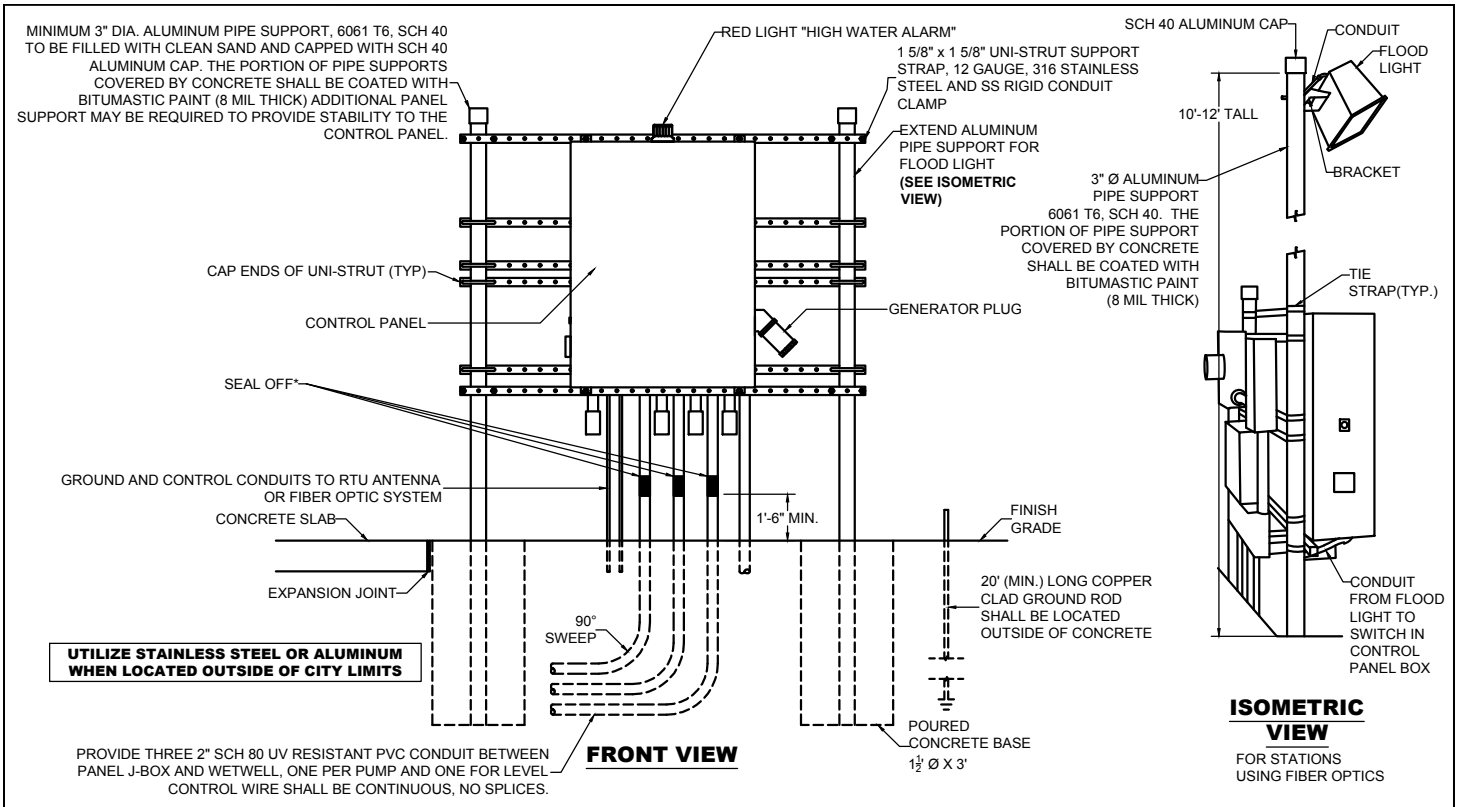
6"X6", 6"X8" & 8"X8" ELBOWS

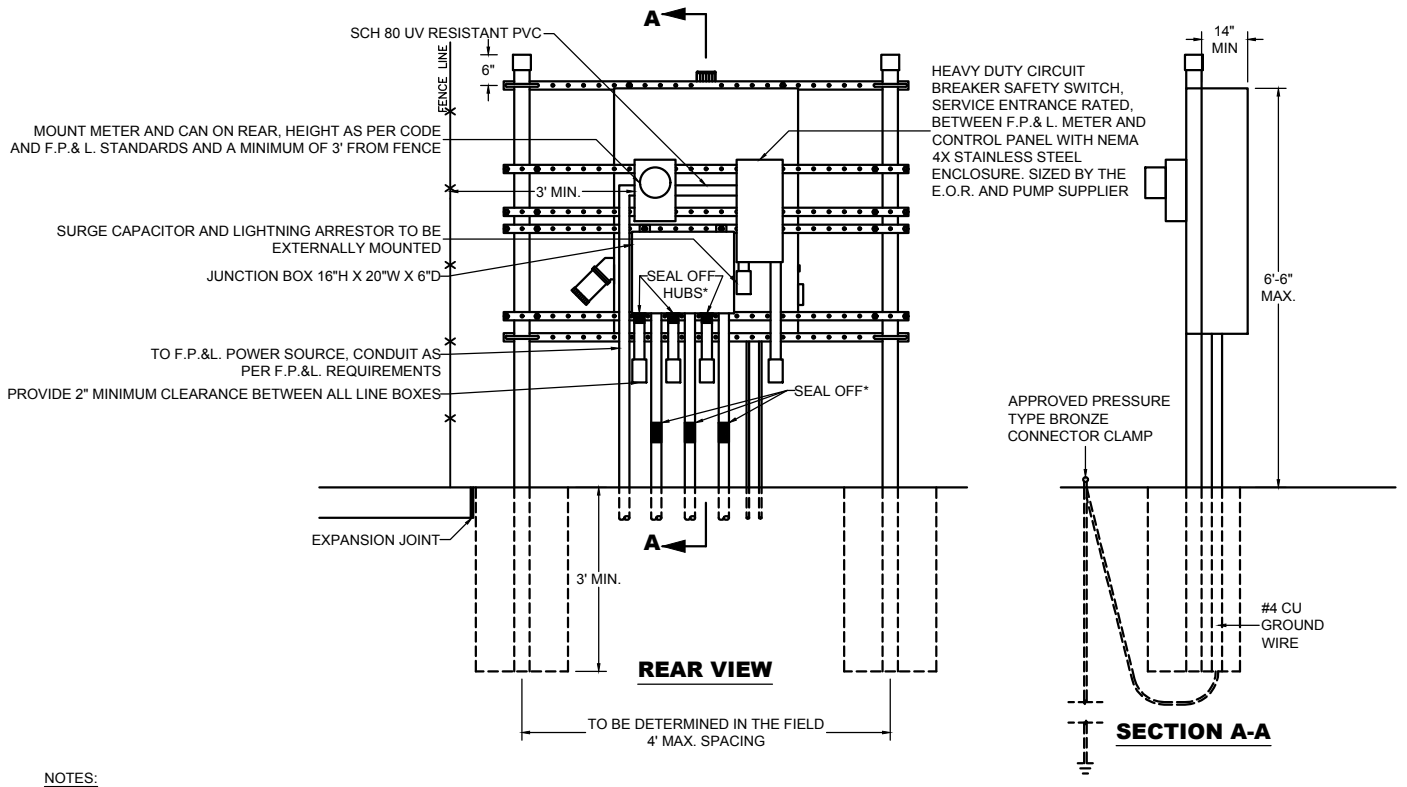
NOTES:

1. EACH BASE ELBOW SHALL BE SECURED TO THE BOTTOM OF THE WET WELL WITH FOUR (4) $\frac{3}{4}$" STEEL WEDGE ANCHOR BOLTS AND STAINLESS STEEL PLATE. THE PLATE SHALL BE SECURED WITH FOUR (4) $\frac{1}{2}$" STAINLESS STEEL ANCHOR BOLTS. THE BOLTS SHALL BE EMBEDDED A MINIMUM OF 4" INTO THE CONCRETE AND TORQUE TO 150 FT. LBS.

2. THE STAINLESS STEEL PLATES AND BOLTS SHALL BE FURNISHED BY THE PUMP MANUFACTURER.

DETAIL: PS-04
DATE: 2019
SCALE: N.T.S.
SHEET: 3 OF 3





NOTES:

1. THE HORIZONTAL DISTANCE FROM THE FACE OF THE CONTROL PANEL TO THE EDGE OF THE WET WELL SHALL BE 4'.
2. A BACKFLOW PREVENTION ASSEMBLY AND WATER METER SHALL BE PROVIDED PER DETAIL PS-07.
3. SEALED WITH CHICO COMPOUND.*
4. THE PEDESTAL, CONTROL PANEL AND RELATED COMPONENTS SHALL NOT BE PAINTED.
5. A TRANSFORMER MAY BE ALLOWED ON A CASE-BY-CASE BASIS WHEN REQUESTED IN ADVANCE BY THE ENGINEER-OF-RECORD (EOR) AND APPROVED IN WRITING BY THE PSLUSD.
6. THE SIZE OF THE PEDESTAL AND CONTROL PANEL SHALL BE SPECIFIED ON THE SHOP DRAWINGS BY THE EOR.
7. SUPPORT LEGS MANUFACTURED BY THE PANEL MANUFACTURER SHALL BE PROVIDED AS NEEDED TO SUPPORT LARGE CONTROL PANELS.

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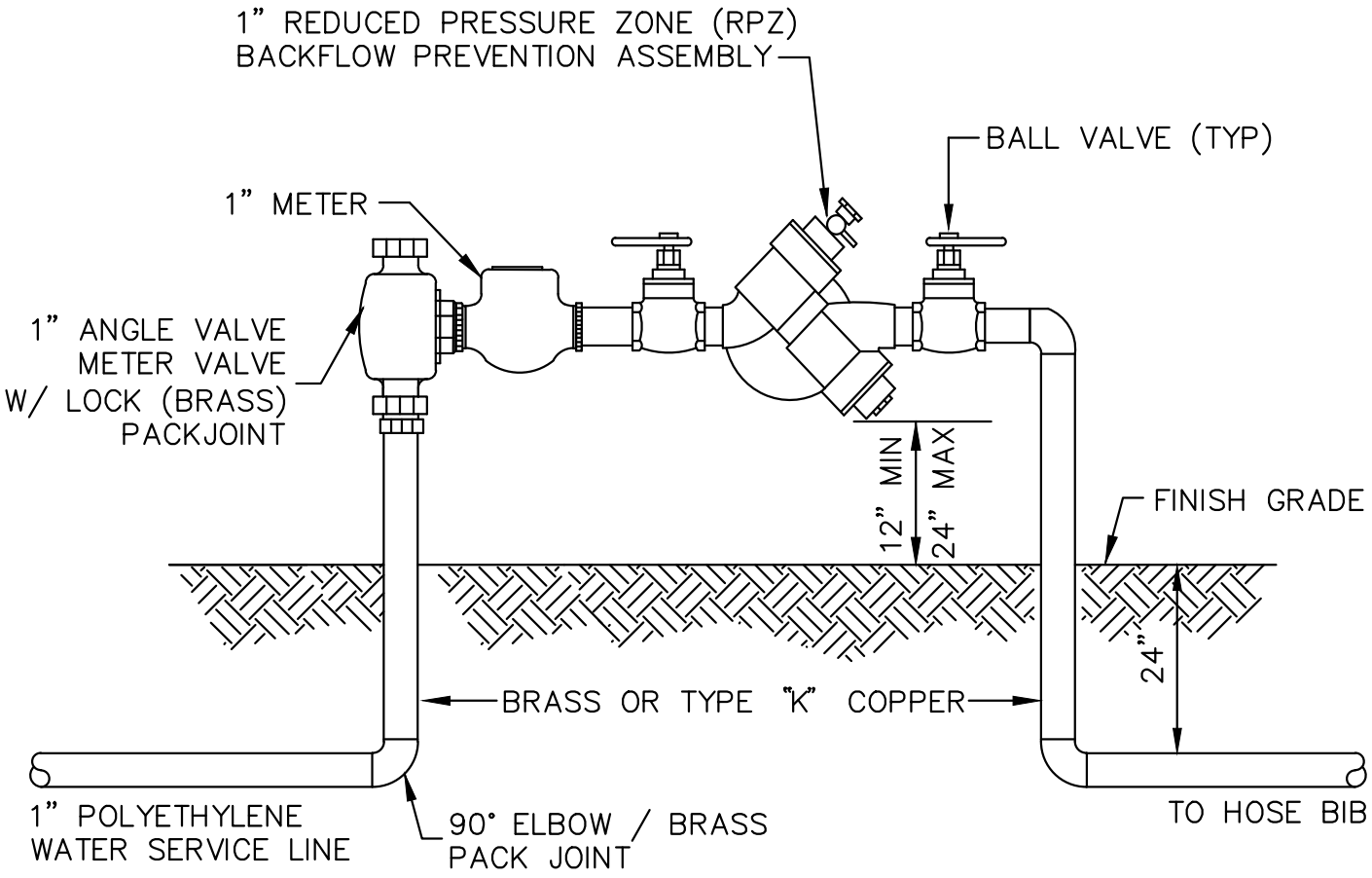
LIFT STATION CONTROL PANEL

DETAIL: PS-05
DATE: 2019
SCALE: N.T.S.
SHEET: 1 OF 1



NOTES:

1. BOTH RISERS SHALL BE BRASS OR TYPE "K" COPPER TUBING (HARD DRAWN) WITH COPPER/BRASS THREADED FITTINGS AND ADAPTERS.

2. PROVIDE ADDITIONAL SUPPORT AS NECESSARY TO SECURELY SUPPORT BACKFLOW PREVENTION ASSEMBLY.

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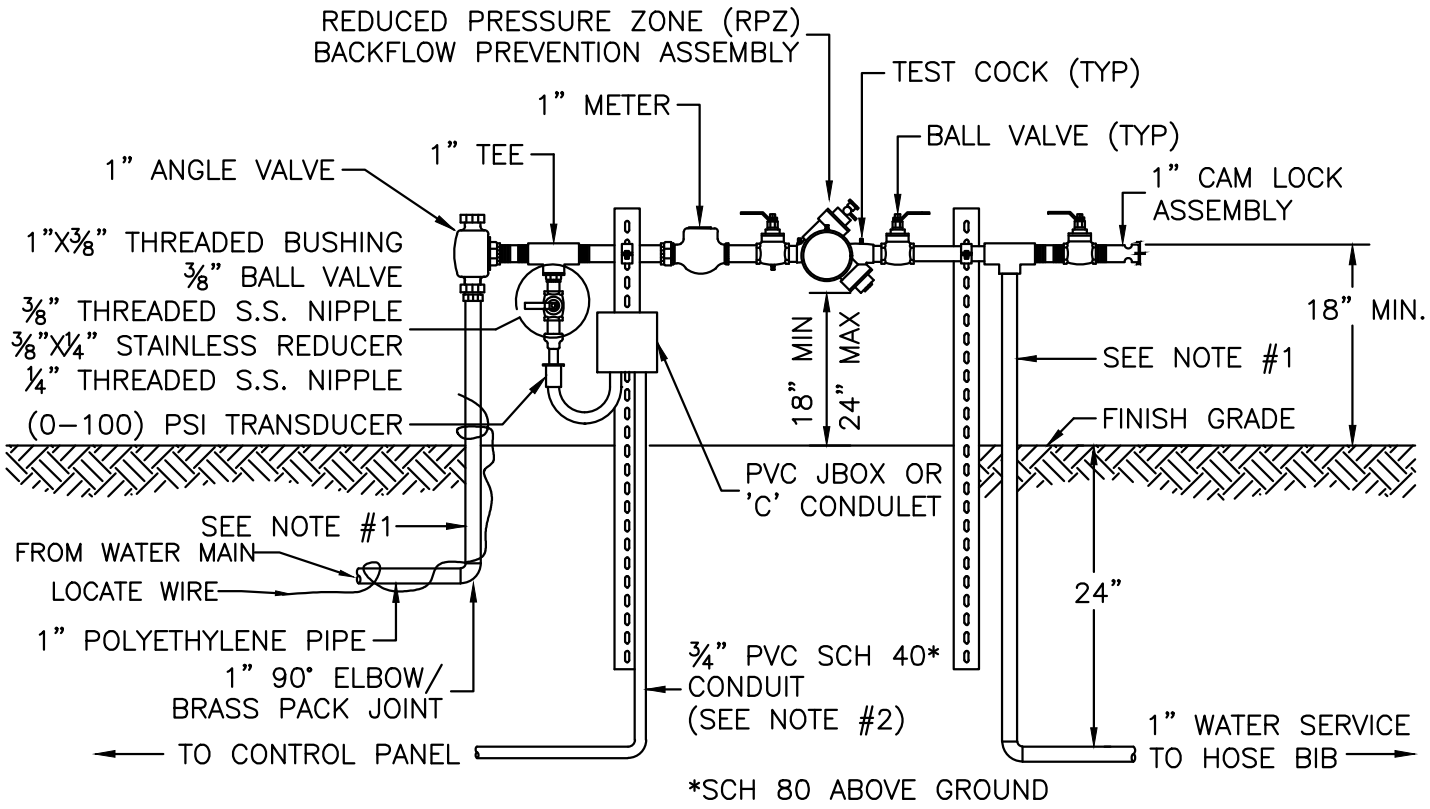
GRINDER SYSTEM WATER METER AND BACKFLOW PREVENTION ASSEMBLY

DETAIL: PS-06
DATE: 2019
SCALE: N.T.S.
SHEET: 1 OF 1



WATER MAIN PRESSURE TRANSDUCER INSTALLATION DETAIL

NOTES:

1. BOTH RISERS SHALL BE BRASS OR TYPE "K" COPPER TUBING (HARD DRAW) WITH COPPER / BRASS FITTINGS AND ADAPTERS (NO CRIMPING JOINTS).

2. A 16 GAUGE STP CABLE SHALL BE INSTALLED IN THE CONDUIT FROM THE PRESSURE TRANSDUCER TO THE CONTROL PANEL WITH 15' OF CABLE COILED IN THE PANEL. A PVC JBOX OR 'C' CONDULET SHALL BE USED.

3. SUPPORT SYSTEM WITH STAINLESS STEEL UNISTRUTE.

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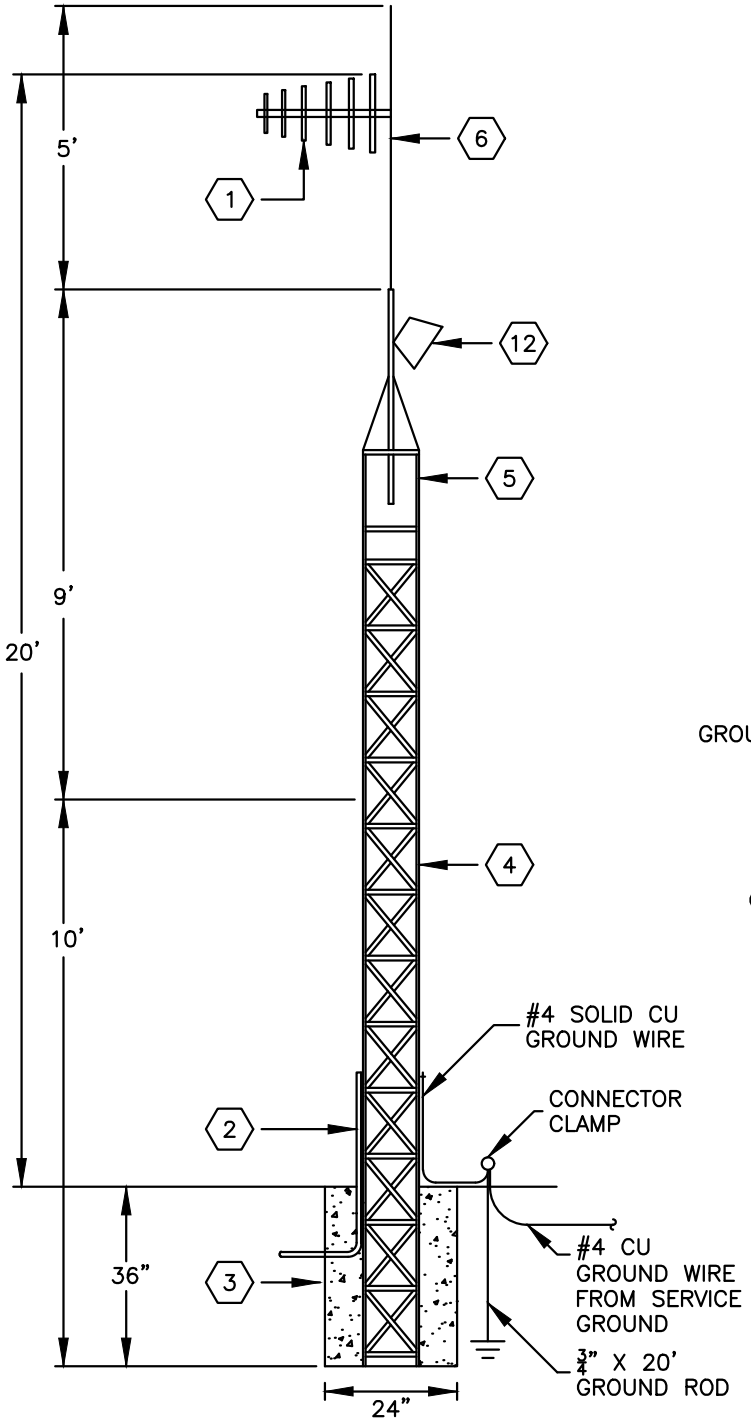
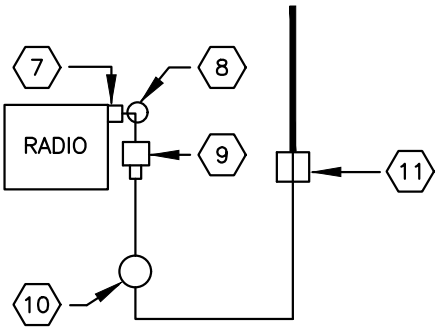
LIFT STATION WATER METER AND BACKFLOW PREVENTION ASSEMBLY

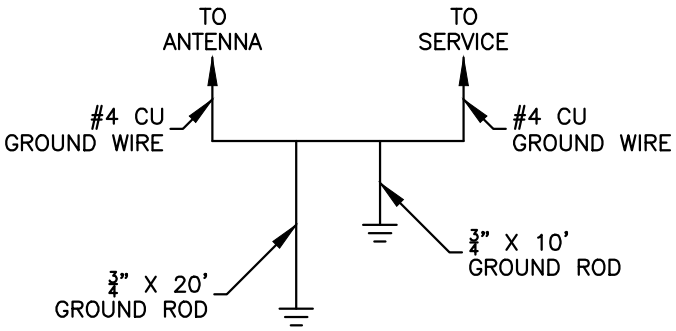
DETAIL: PS-07
DATE: 2019
SCALE: N.T.S.
SHEET: 1 OF 1



ANTENNA CABLING DETAIL



GROUNDING DETAIL



COMPONENTS

01	ANTENNA
02	CONDUIT TO TELEMETRY RADIO/MODEM
03	CONCRETE FILL
04	TOWER 10' BASE
05	TOWER 9' TOP SECTION
06	5' SCHEDULE 40 ALUMINUM CONDUIT
07	BNC–ADAPTER
08	HELIAX LDF4–50A LOW–LOSS COAX
09	POLYPHASER
10	CGB CORD CONNECTOR
11	PL–259 CONNECTOR
12	30 WATT LED FLOOD LIGHT (250 W EQUIV.)

NOTES:

1.THE RTU ANTENNA SHALL BE INSTALLED IN ACCORDANCE WITH THE PSLUSD UTILITY STANDARDS.

2. A SINGLE SUBCONTRACTOR SHALL BE RESPONSIBLE FOR ALL HARDWARE, SOFTWARE SYSTEM INTEGRATION, PROGRAMMING, TESTING AND START UP.

3. THE SYSTEM SUPPLIER SHALL BE RESPONSIBLE FOR INTERFACING WIRING BETWEEN THE PUMP CONTROL PANEL AND THE RTU.

4. GROUND WIRE SHALL BE CONTINUOUS BETWEEN GROUND RODS FOR THE ANTENNA AND SERVICE.

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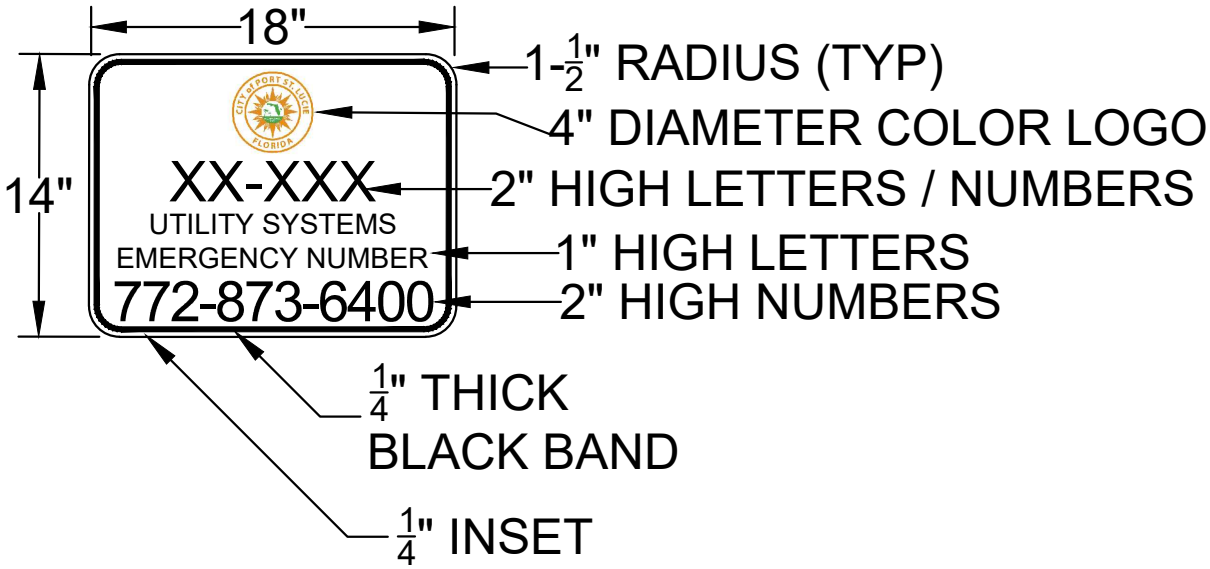
LIFT STATION
TYPICAL RTU ANTENNA

DETAIL: PS-08
DATE: 2019
SCALE: N.T.S.
SHEET: 1 OF 1



NOTES:

1. SIGN SHALL BE FURNISHED AND INSTALLED BY CONTRACTOR.

2. GRINDER STATION DESIGNATION NUMBER (XX-XXX) WILL BE ASSIGNED BY PSLUSD.

3. THE SIGN SHALL BE ADHESIVE BACKED, UV RESISTANT VINYL WITH REFLECTIVE WHITE BACKGROUND AND BLACK LETTERING.

4. THE SIGN SHALL BE MOUNTED TO THE OUTSIDE OF THE CONTROL PANEL DOOR.

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PORT ST. LUCIE, FL 34983
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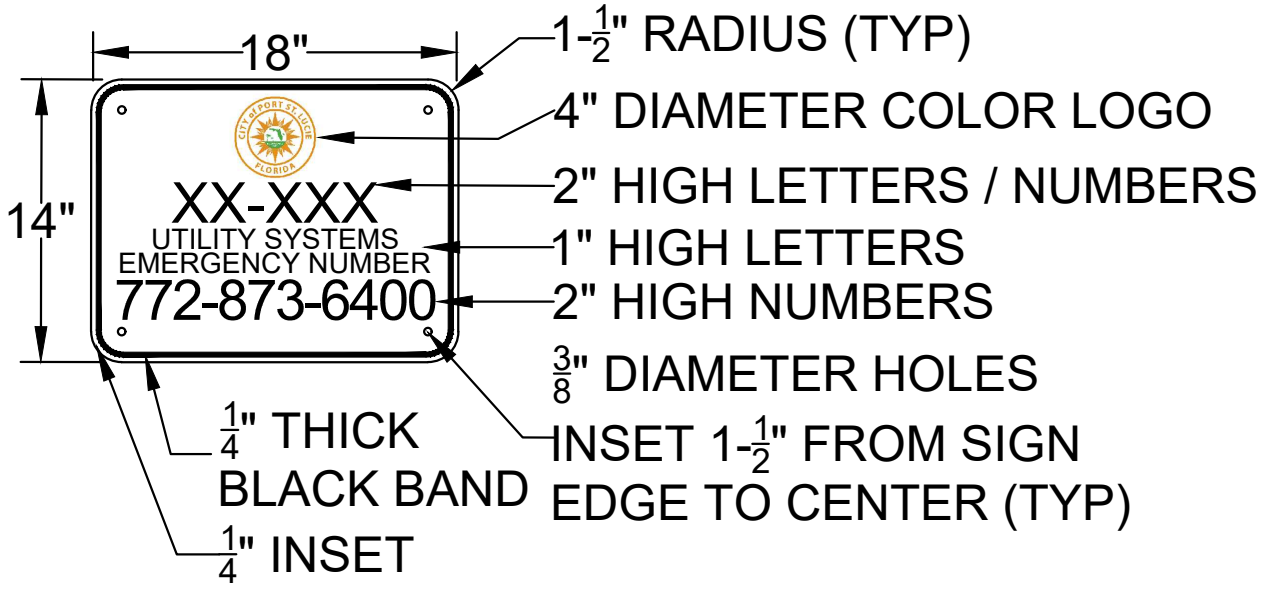
GRINDER STATION SIGNAGE

DETAIL: PS-09A
DATE: 2020
SCALE: N.T.S.
SHEET: 1 OF 1



NOTES:

1. SIGN SHALL BE FURNISHED AND INSTALLED BY CONTRACTOR.

2. LIFT STATION DESIGNATION NUMBER (XX-XXX) WILL BE ASSIGNED BY PSLUSD.

3. THE SIGN SHALL BE $\frac{1}{8}$" ALUMINUM WITH REFLECTIVE WHITE BACKGROUND AND BLACK LETTERING.

4. THE SIGN SHALL BE MOUNTED ON LIFT STATION GATE OR FENCE A MINIMUM 48" FROM BOTTOM OF FENCE AND SHALL BE VISIBLE FROM STREET. THE SIGN SHALL BE PERMANENTLY ATTACHED TO THE FENCE WITH STAINLESS STEEL HARDWARE.

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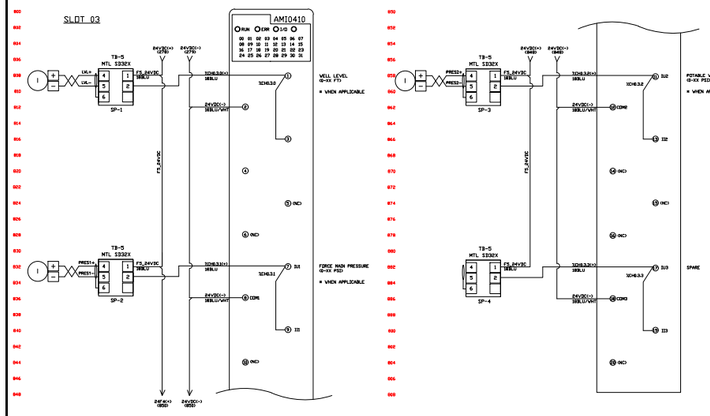
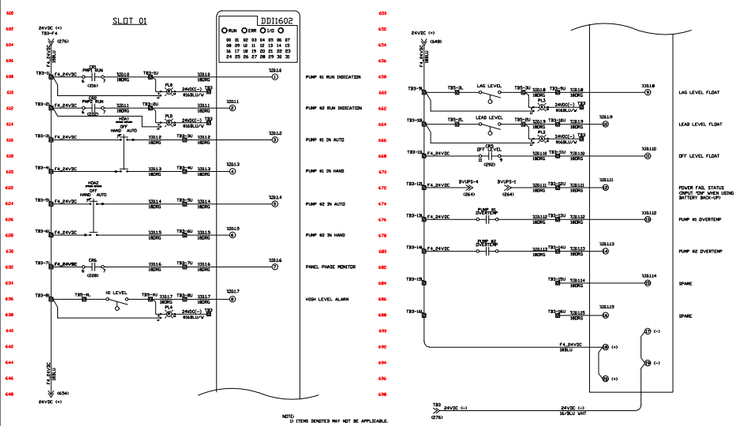
LIFT STATION SIGNAGE

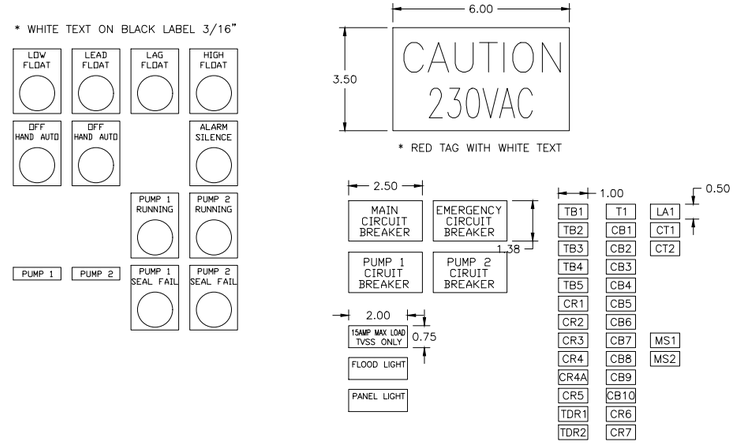
DETAIL: PS-09B
DATE: 2020
SCALE: N.T.S.
SHEET: 1 OF 1



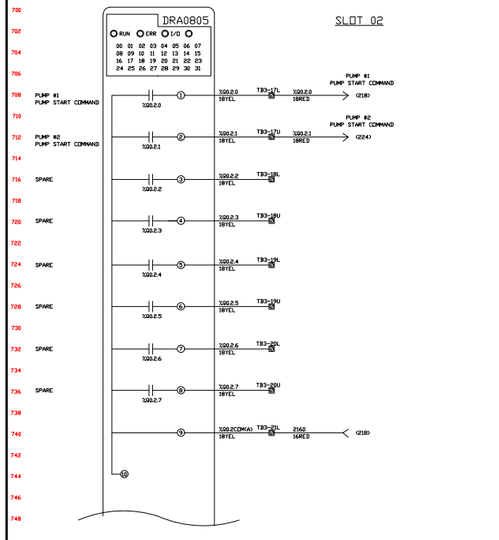
ANALOG INPUT
SLOT 3
DUPLEX
PUMP PANEL



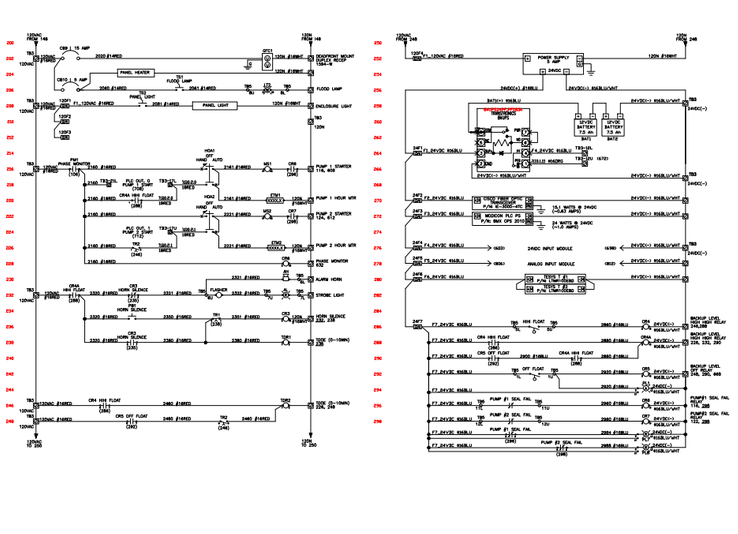
DISCRETE INPUTS
SLOT 1
DUPLEX
PUMP PANEL



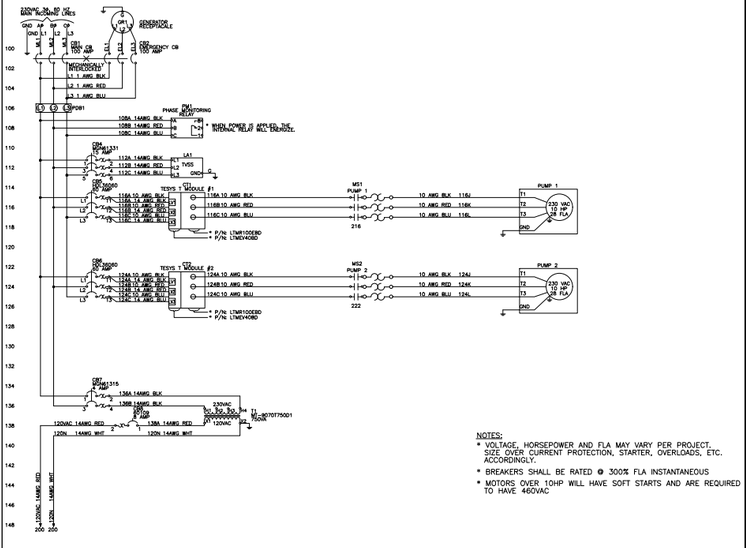
NAMEPLATE DETAILS
230VAC, 3 PHASE, 60 HERTZ
DUPLEX
PUMP PANEL



DISCRETE OUTPUTS
SLOT 2
DUPLEX
PUMP PANEL



POWER CIRCUITS
120VAC
DUPLEX
PUMP PANEL



POWER CIRCUITS

DUPLEX
PUMP PANEL

CITY OF PORT ST. LUCIE
UTILITY SYSTEMS DEPARTMENT
900 S.E. OGDEN LANE
PORT ST. LUCIE, FL 34983
PHONE (772) 873-6400 FAX (772) 873-6433

ACL WITH FIBER

DETAIL: PS-10
DATE: 2019
SCALE: N.T.S.
SHEET: 1 OF 2

Item #	Control Panel Hardware	Manufacturer	Manufacturer Part No.	Curry Part No.	Panel: RTU
ENCL	NEMA 4X Stainless Steel 3 PT Latch Enclosure with Aluminum swing out panel with door stop kit installed on swing out panel (dead front) and panel door.	Hoffman	A48H4812WFSSLP3PT-MOD		1
	48" x48" Sub Panel	Hoffman	A48P48		1
	Corrosion Inhibitor	Hoffman	A-HCI-50	ENC-0007	1
LT1	Enclosure Light Package with Manual Switch	Hoffman	LF120VTH / FSTSCW 18"		1
HEAT	Anti-Condensation Heater	Hoffman	DAH1001A		1
GR1	Generator Receptacle (100 Amp)	Pyle National	JRE-4100-PR		1
LA1	TVSS Surge Protector	Square D	SDSA3650		1
CB1	Main Circuit Breaker 3P 100A	Square D	HDL36100		1
CB2	Generator Receptacle Circuit Breaker 3P 100A	Square D	HDL36100		1
	Mechanical Interlock	Square D	S29354		1
CB5,CB6	Pump Circuit Breaker 3P 60 A	Square D	HDL36060		2
CB4	Control Circuit Breaker 3P 15A	Square D	MND61331		1
CB7	Control Circuit Breaker 2P 4A	Square D	MND63153		1
CB8	Control Circuit Breaker 1P 8A	Square D	60109		1
CB9	Control Circuit Breaker 1P 15A	Square D	60112		1
CB10	Control Circuit Breaker 1P 5A	Square D	60106		1
ETM	Elapse Timer Meters 120vac non-resetable w/ terminal block	Redington	710-0002		2
MS1, MS2	Nema 2 Type Motor Starter	Square D	8536 SDO1V02		2
OL1, OL2	Thermal Overloads for 28 AMP FLA	Square D	B50.0		6
CT1, CT2	TeSys T Motor Management - Main Controller	Square D	LTM8100EBD		2
	TeSys T Motor Management - Expansion Module	Square D	LTME1408BD		2
	TeSys T Motor Management -Connecting Jumpers	Square D	LTMCC004		2
T1	Control Transformer	Square D	9070T0750D1		1
BVUPS	Battery Voltage UPS	Transtronics	BVUPS24PF		1
	8 Pin Relay Base	Omron	PFB8A-E	RLY-0007	1
E1	Battery	Werker	WKA12-7.5F	PWR-0026	2
	24vdc Power Supply 5.0 Amps	Phoenix Contact	85064081		1
	Cisco network switch	Cisco	IE-3000-4TC		1
	Network Switch Transceiver	Addon	GLC-LH-SM-AO		2
	Fiber Optic Patch Panel	Corning	SPH-01P		1
	Fiber Optic Patch Panel ST type filler plate single mode	Corning	CCH-CP12-91T		1
	Fiber Patch cords 1-meter LC-ST single mode				2
	UTP Ethernet Patch Cord / Cat 5,				1
	Radio Shelf				1
HOA1,HOA2	Selector Switch 3 Pos *Spring Return from Left (Hand Mode)	Square D	9001SK363B		2
HOA1,HOA2	Control Block Assembly	Square D	9001KA1		4
PB1	Push Button (Black)	Square D	9001SKR1B05		3
PL1-PL3	30mm 24vdc Push-to-Test Pilot Light (Amber)	Square D	9001SKT3SA31		1
PL4-PL8	30mm 24vdc Push-to-Test Pilot Light (Red)	Square D	9001SKT3SR31		5
CR1-CR3	11 pin 3PDT 120vac Relay	AA Electric	AAE-A301-M		3
CR4-CR7	11 pin 3PDT 24vdc Relay	AA Electric	AAE-D304-M		5
	11 pin Relay Base	AA Electric	PF113A-E		10
PM1	3 Phase Monitoring Relay	Macromatic	PMPU		1
TDR1	Time Delay Relay	IDEC	GT3A-3EAF20		2
AL1	Alarm Beacon	Ingram	LRX-40		1
AH1	Alarm Horn	Ingram	AH115ARG		1
TS1, TS2	Light Switch SPDT			ELE-	2
	End Blk	Wago	249-117	TBL-0082	10
	Two Tier Term Blk gray	Entrelec	M 4/6.2Z/ # 0113.271.22	TBL-0034	50
	Two Tier Barrier gray	Entrelec	FEMdD # 0118 499.21	TBL-0010	4
	Two Tier Term Blk jumper bar	Entrelec	BJMMdM 0173 520.22	TBL-0021	6
	Jumper Bar Coupling	Entrelec	1736272/ 21, 0.6	TBL-0032	1
	Ground Term Blk	Entrelec	M4/6.P # 0165 113.16	TBL-0017	4
	Fuse Holder Term Blk	Entrelec	M4/6.SF #0115 457.25	TBL-0033	10
	Fuse Holder End Barrier	Entrelec	FEMES	TBL-0005	2
	Fuse GMA-3 amp	LITTLEFUSE	235002	FUS-0006	1
	Fuse GMA-2 amp	LITTLEFUSE	235003	FUS-0005	10
	4-20 mA Surge Arrestors	MTL	SD32X		4
	Din Rail (FI)	WEID	#51450	PNL-0040	8
	Wire duct 2" w x 3" h and Cover (FI)	Panduit	E2X3WHL C3WH	PAN-0020 / PAN-0016	20
	Wire duct 1" w x 3" h and Cover (FI)	Panduit	E1X3WHL		2
GFCI	GFCI-15 Amp Receptical	Cooper		ELE-0004	1
	Handy Box		#5836/ 1/2	ELE-0001	1
	Handy Box Cover			ELE-0015	1
	Plastic Bushing	T&B	3210, 1/2"	ELE-0020	1
G	Mechnical Gnd Lug (CED)	Penntech	MCD1-1025		1
	Ground Bus Bar	Square D	PK7GTA	FUS-0032	2
PDB1	Power Distribution Block w/finger safe cover	Square D	9080LBA363206		1

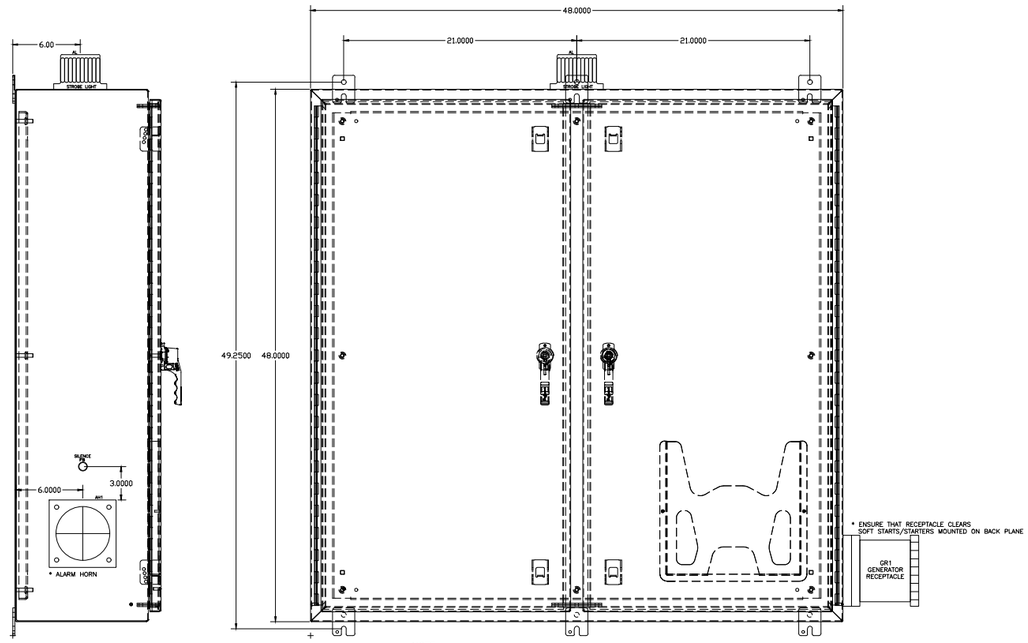
Item #	Control Panel Hardware	Manufacturer	Manufacturer Part No.	Curry Part No.	Panel: RTU
1	M340 04 Slot PLC Backplane	Schneider	BMX XBP 0400 rack		1
2	M340 PLC Power Supply	Schneider	BMX CPS 2010		1
3					
4	M340 PLC Processor	Schneider	BMX P34 2020		1
5					
6	M340 PLC 16 pt 24vdc Digital Input Module	Schneider	BMX DDI 1602		1
7	M340 PLC 4-20 mA 4ch. Analog Input Module	Schneider	BMX AMI 0410		1
8	M340 PLC 16ch Relay Output Module	Schneider	BMX DRA 1605		1
9					
10	M340 PLC I/O Module 20 pt. Terminal Connectors	Schneider	BMX FTB 2010		3
11					
12					
13					
14					
15					

Item #	Electrical Materials	Manufacturer	Manufacturer Part No.	Curry Part No.	Panel: RTU
1	10' x 3/4"ground rod				2
2	1/0 copper bare Stranded				15
3					
4	3-Junior Direct burial ground clamp NSH G-1-S-BS				2
5	3/4" Acorn ground rod clamp Nsll GRC 34H				2
6					
7					
8					
9					
10	150 watt flood lamp	Intermatic	FL150MH		1
11					
12					
13					
14					
15					

Item #	Field Instruments	Manufacturer	Manufacturer Part No.	Curry Part No.	Panel: RTU
1	Float Balls (50 Ft Cable Type 'S' Suspended Normally Open Roto Float)	Anchor Scientific	SSONO		5
2					
3					
4					
5					

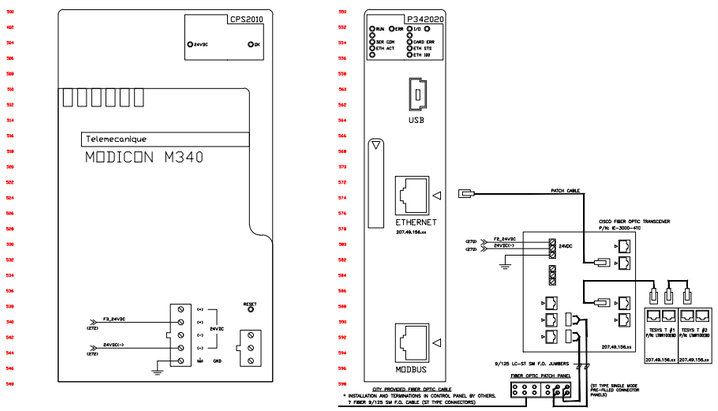
NOTES:
* GR1, CB1, CB2, CB5 & CB6 MAY VARY PER SITE. PLEASE SIZE ACCORDINGLY.

BILL OF MATERIAL
48 X 48 X 14
DUPLEX
PUMP PANEL

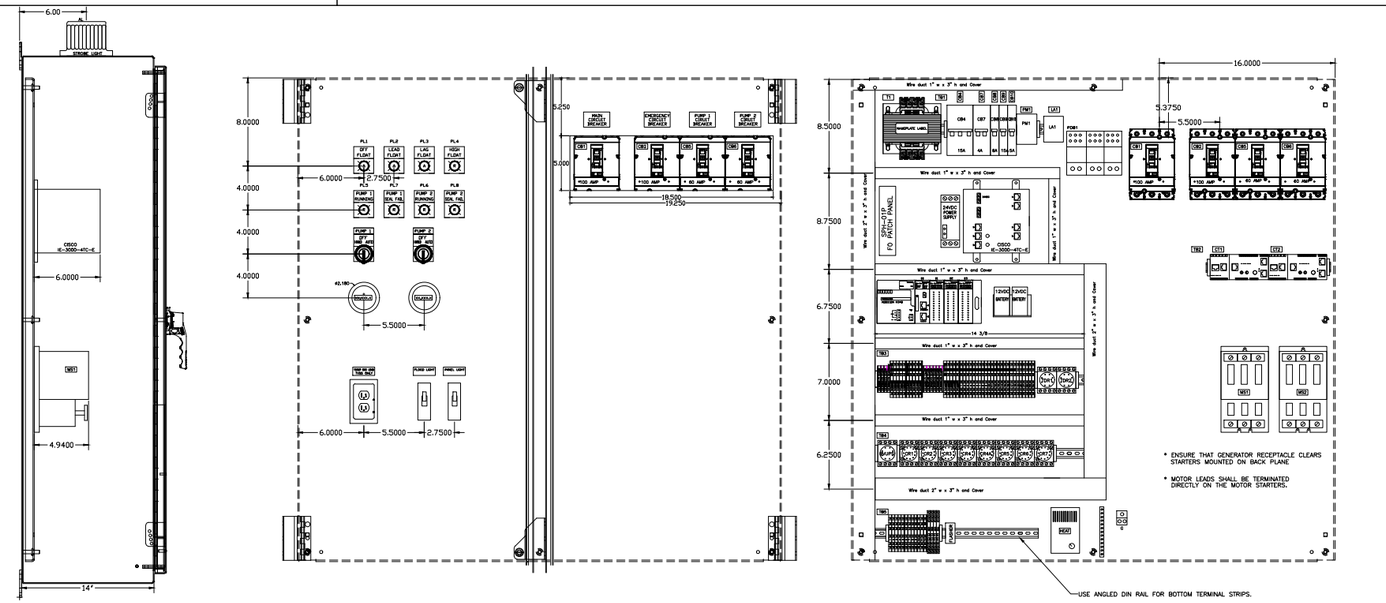


NOTE:
ENCLOSURE DOORS SHALL HAVE DOOR STOPS INCLUDED.
SWING-OUT PANELS SHALL HAVE DOOR STOPS INCLUDED.
ENSURE PANEL ARE SUPPLIED WITH DRIP SHIELDS AND FACTORY GASKETS.
AFFIX LAMINATED DRAWINGS TO THE INSIDE OF PANEL DOOR.

ENCLOSURE LAYOUT
48 X 48 X 14
DUPLEX
PUMP PANEL



COMMUNICATIONS
FIBER OPTIC
DUPLEX
PUMP PANEL



JOB #: JXX-XXXX
ENCLOSURE NAME: XXXX Pump Panel
DRAWING XXXX-LY-002
ENCLOSURE UL TYPE: 4X
VOLTAGE: 230 VAC
S.C.C.R RATING 10 KAIC RMS
FUSE NUMBER, TYPE AND SIZE:
120VAC F1-F4: 2 AMP GMA
24VDC F1: 3 AMP GMA, 24VDC F2-F6: 2 AMP GMA
FREQUENCY: 60 Hz
FLA: 59.26 AMP
PHASE: Three
REC. TORQUE-TERMINAL BLOCKS: 4.4-7.1 LB-IN.

PANEL LAYOUT
48 X 48 X 14
DUPLEX
PUMP PANEL

CITY OF PORT ST. LUCIE
UTILITY SYSTEMS DEPARTMENT
900 S.E. OGDEN LANE
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ACL WITH FIBER

DETAIL: PS-10
DATE: 2019
SCALE: N.T.S.
SHEET: 2 OF 2

TOWER AND ANTENNA
TOWER INSTALLATION DETAILS
DUPLEX
PUMP PANEL

NAMEPLATE DETAILS
230VAC, 3 PHASE, 60 HERTZ
DUPLEX
PUMP PANEL

COMMUNICATIONS
FIBER OPTIC
DUPLEX
PUMP PANEL

POWER CIRCUITS
DUPLEX
PUMP PANEL

DISCRETE INPUTS
SLOT 1
DUPLEX
PUMP PANEL

DISCRETE OUTPUTS
SLOT 2
DUPLEX
PUMP PANEL

ANALOG INPUT
SLOT 3
DUPLEX
PUMP PANEL

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ACL WITH RADIO

DETAIL: PS-11
DATE: 2019
SCALE: N.T.S.
SHEET: 1 OF 2

Item #	Control Panel Hardware	Manufacturer	Manufacturer Part No.	Curry Part No.	Panel: RTU
ENCL	NEMA 4X Stainless Steel 3 PT Latch Enclosure with Aluminum swing out panel with door stop kit installed on swing out panel (dead front) and panel door	Hoffman	A48H48SS3PTSSLP3PT-MOD		1
	48" x48" Sub Panel	Hoffman	A48P48		1
	Corrosion Inhibitor	Hoffman	A-HCI-SE	ENC-0007	1
LT1	Enclosure Light Package with Manual Switch	Hoffman	LF120V1E-1STTCW 18"		1
HEAT	Anti-Condensation Heater	Hoffman	DAH101H1A		1
GR1	Generator Receptacle (100 Amp)	Pyle National	JRE-4100-PR		1
LA1	TVSS Surge Protector	Square D	SDSA3650		1
CB1	Main Circuit Breaker 3P 100A	Square D	HDL36100		1
CB2	Generator Receptacle Circuit Breaker 3P 100A	Square D	HDL36100		1
	Mechanical Interlock	Square D	SJ9354		1
CB5,CB6	Pump Circuit Breaker 3P 60 A	Square D	HDL36060		2
CB4	Control Circuit Breaker 3P 15A	Square D	MND61511		1
CB7	Control Circuit Breaker 2P 4A	Square D	MND61311		1
CB8	Control Circuit Breaker 1P 6A	Square D	60160		1
CB9	Control Circuit Breaker 1P 15A	Square D	60112		1
CB10	Control Circuit Breaker 1P 5A	Square D	60106		1
ETM	Elapse Timer Meters 120vac non-resettable w/ terminal block	Redington	710-00002		2
MS1, MS2	Nema 2 Type Motor Starter	Square D	8536 SDO3V02		2
OL1, OL2	Thermal Overloads for 28 AMP FLA	Square D	B16.0		6
CT1,CT2	Tellyo 5 Motor Management - Main Controller	Square D	1-TMR1045EBD		2
	Tellyo 5 Motor Management - Expansion Module	Square D	1-TMR1540BD		2
	Tellyo 5 Motor Management -Connecting Jumpers	Square D	1-TMC1504		2
T1	Control Transformer	Square D	9070T75D2		1
BVLPS	Battery Voltage UPS	Tranotronics	BVUPS24PS		1
	8 Pin Relay Base	Omron	PYF08A-E	ELY-0007	1
E1	Battery	Weekat	WKA12-7.5F	PWB-0026	2
	24vdc Power Supply 3.0 Amps	Phoenix Contact	85944081		1
	RJ45 DIN MALE ADAPTER				1
	HELIAX CABLE	Andrews	LDF4-50A	RAD0013	50
	MALE HELIAX CONNECTOR	Andrews	L4PNM-RC	RAD0011	1
	FEMALE HELIAX CONNECTOR	Andrews	L4PNF-RC	RAD0012	1
	Broadband De Blocker	Polyphaser	IS-50NX-C2	RAD0006	1
	ANTENNA (Comprod 460-70 or Sinclair SY205-SF3NNMF2)				1
	Radio (Vitpar SC-400 or SC-100)				1
	10' RADIO CABLE RG400/U N45TNCM *Specify Right Angle				1
	Radio Shelf				1
HOA1,HOA2	Selector Switch 3 Pos *Spring Return from Left (Hand Mode)	Square D	9001SK3G3B		2
HOA1,HOA2	Control Block Assembly	Square D	9001KA1		4
PB1	Push Button (Black)	Square D	9001SKR1BH1		1
PL1,PL3	30mm 24vdc Push-to-Test Pilot Light (Amber)	Square D	9001SKTDA31		2
PL4-PL8	30mm 24vdc Push-to-Test Pilot Light (Red)	Square D	9001SKTDR31		5
CR1-CR3	11 pin SPDT 120vac Relay	AA Electric	AAE-A301-M		3
CR4-CR7	11 pin SPDT 24vdc Relay	AA Electric	AAE-D304-M		4
	11 pin Relay Base	AA Electric	PF113A-E		10
PM1	3 Phase Monitoring Relay	Macromatic	PMPU		1
TDR1	Time Delay Relay	IDEC	GT3A-1BAF20		2
AL1	Alarm Beacon	Ingram	LRX-40		1
AH1	Alarm Horn	Ingram	AH115ABG		1
TS1, TS2	Light Switch SPDT			ELE-	2
	End Blk	Weigo	249-117	TBL-0082	10
	Two Tier Term Blk gray	Entrelec	M 4/4.ST.4 0110 271.22	TBL-0014	50
	Two Tier Barrier gray	Entrelec	FEM4/D1# 0110 498.23	TBL-0018	4
	Two Tier Term Blk jumper bar	Entrelec	B4M4/D# 0171 520.22	TBL-0021	6
	Jumper Bar Coupling	Entrelec	1736627.21 .ELA	TBL-0032	1
	Ground Term Blk	Entrelec	M4/4.P 4/4/45 113.16	TBL-0017	4
	Fuse Holder Term Blk	Entrelec	M4/4.SF 4/0 115.67 25	TBL-0013	10
	Fuse Holder End Barrier	Entrelec	FEM4/S	TBL-0005	2
	Fuse GMA-3 amp	LITTLEFUSE	215003	FUS-0006	1
	Fuse GMA-2 amp	LITTLEFUSE	215002	FUS-0005	10
	4-20 mA Surge Arrestors	MTL	SD32X		4
	Din Rail (Ft)	WEID	493450	PNL-0040	8
	Wire duct 2" w x 3" h and Cover (Ft)	Panduit	E2X3WH6, C7WH6	PAN-0020 / PAN-0016	20
	Wire duct 1" w x 3" h and Cover (Ft)	Panduit	E1X3WH6,		2
GFCI	GFCI-15 Amp Receptical	Cooper		ELE-0004	1
	Handy Box		458361 1/2	ELE-0001	1
	Handy Box Cover			ELE-0015	1
	Plastic Bushing	T&B	3210, 1/2"	ELE-0020	1
G	Mechnical Grd Lug (CCO)	Penntech	MCD1-1025		1
	Ground Bus Bar	Square D	PK7G2A	FUS-0032	2

BILL OF MATERIAL
48 X 48 X 14
DUPLEX
PUMP PANEL

Item #	Control Panel Hardware	Manufacturer	Manufacturer Part No.	Curry Part No.	Panel: RTU
1	M340 04 Slot PLC Backplane	Schneider	BMX XBP 0400 rack		1
2	M340 PLC Power Supply	Schneider	BMX CPS 2010		1
3					
4	M340 PLC Processor	Schneider	BMX P34 2020		1
5					
6	M340 PLC 16 pt 24vdc Digital Input Module	Schneider	BMX DDI 1602		1
7	M340 PLC 4-20 mA 4ch. Analog Input Module	Schneider	BMX AMI 0410		1
8	M340 PLC 16ch Relay Output Module	Schneider	BMX DRA 1605		1
9					
10	M340 PLC I/O Module 20 pt. Terminal Connectors	Schneider	BMX FTB 2010		2
11					
12					
13					
14					
15					

Item #	Electrical Materials	Manufacturer	Manufacturer Part No.	Curry Part No.	Panel: RTU
1	10' x 5/4"ground rod				2
2	1/0 copper bare Stranded				15
3					
4	4-hanor Direct burial ground clamp NSS#-U-1-5/8IS				2
5	5/4" Acorn ground rod clamp Noe#:GRC 540				2
6	3/4" Sub CGB connector CU 3075				1
7	1/2" Sub CGB connector CG1850				1
8	1 1/4" Alum conduit				5 Ft
9					
10	150 watt flood lamp	Intermatic	FL150MH		1
11					
12					
13	RHWN Towar 25AG			RAD-0056	1
14	RHWN Towar 25G			RAD-0057	1
15					

Item #	Field Instruments	Manufacturer	Manufacturer Part No.	Curry Part No.	Panel: RTU
1	Float Balls 2G-Ft Cable Type 'S' Suspended Normally Open Rota. Float)	Anchor Scientific	5020#G		9
2					
3					
4					
5					

NOTE:
ENCLOSURE DOORS SHALL HAVE DOOR STOPS INCLUDED
SWING-OUT PANELS SHALL HAVE DOOR STOPS INCLUDED
ENSURE PANEL ARE SUPPLIED WITH DRIP SHIELDS AND FACTORY GASKETS.
AFFIX LAMINATED DRAWINGS TO THE INSIDE OF PANEL DOOR.

ENCLOSURE LAYOUT
48 X 48 X 14
DUPLEX
PUMP PANEL

NOTES:
* VOLTAGE, HORSEPOWER AND FLA MAY VARY PER PROJECT. SIZE OVER CURRENT PROTECTION, STARTER, OVERLOADS, ETC. ACCORDINGLY.
* BREAKERS SHALL BE RATED @ 300% FLA INSTANTANEOUS
* MOTORS OVER 10HP WILL HAVE SOFT STARTS AND ARE REQUIRED TO HAVE 460VAC

POWER CIRCUITS

DUPLEX
PUMP PANEL

JOB #: JXX-XXXX
ENCLOSURE NAME: XXXX Pump Panel
DRAWING: XXXX-LY-002
ENCLOSURE UL TYPE: 4X
VOLTAGE: 230 VAC
S.C.C.R RATING: 10 KAIC RMS
FUSE NUMBER, TYPE AND SIZE:
120VAC F1-F4: 2 AMP GMA
24VDC F1: 3 AMP GMA, 24VDC F2-F6: 2 AMP GMA
FREQUENCY: 60 Hz
FLA: 59.26 AMP
PHASE: Three
REC. TORQUE-TERMINAL BLOCKS: 4.4-7.1 LB.-IN.

PANEL LAYOUT
48 X 48 X 14
DUPLEX
PUMP PANEL

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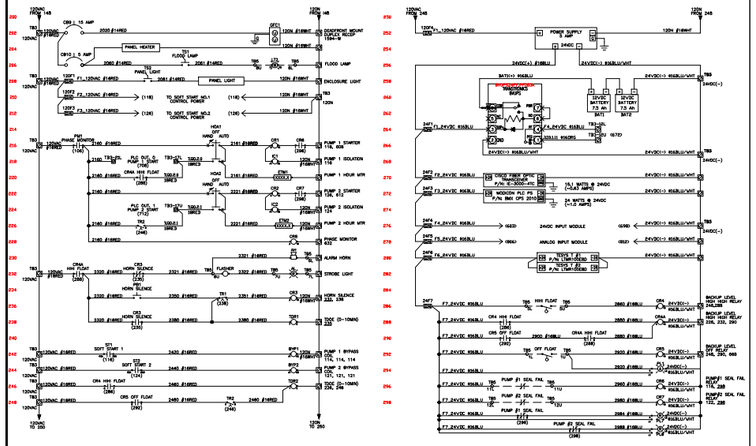
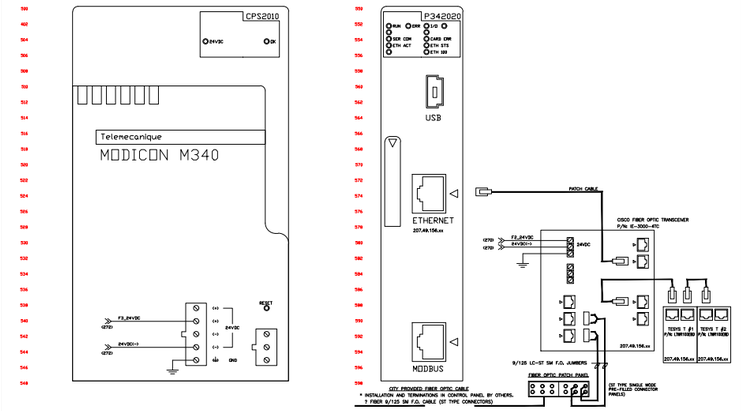
ACL WITH RADIO

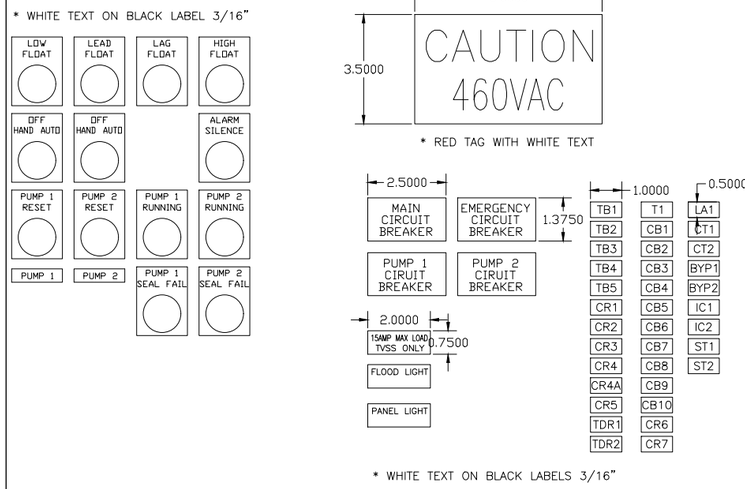
DETAIL: PS-11
DATE: 2019
SCALE: N.T.S.
SHEET: 2 OF 2



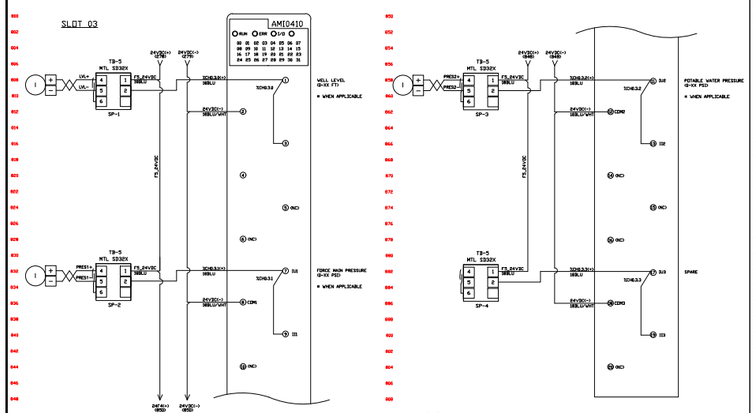
POWER CIRCUITS
120VAC
DUPLEX
PUMP PANEL



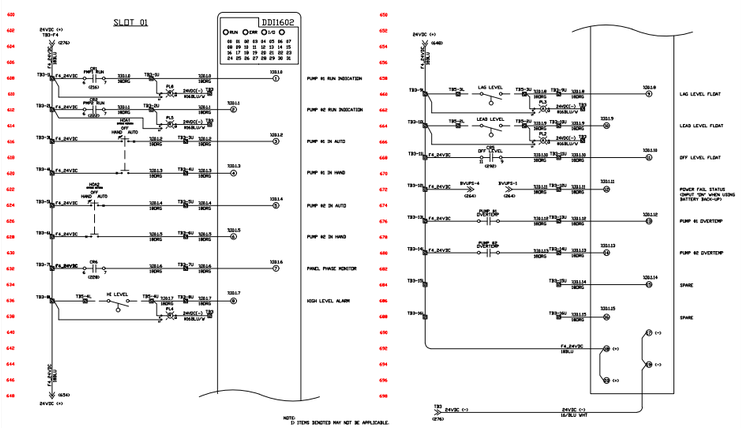
COMMUNICATIONS
FIBER OPTIC
DUPLEX
PUMP PANEL



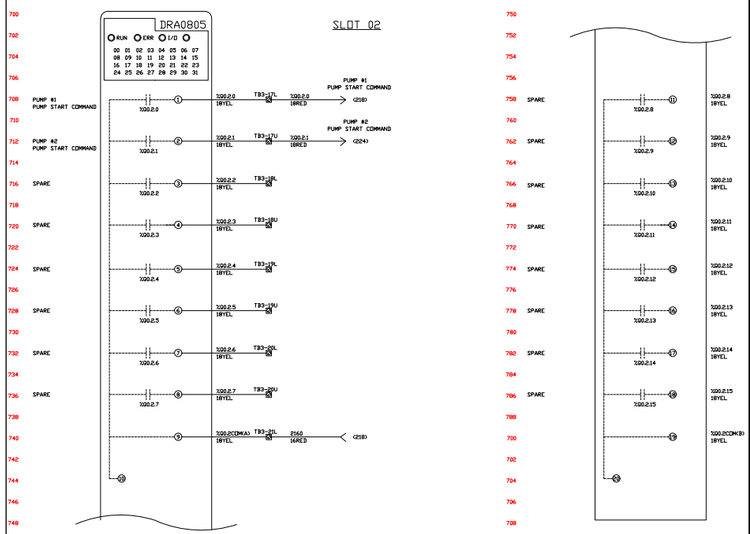
NAMEPLATE DETAILS
460VAC, 3 PHASE, 60 HERTZ
DUPLEX
PUMP PANEL



ANALOG INPUT
SLOT 3
DUPLEX
PUMP PANEL



DISCRETE INPUTS
SLOT 1
DUPLEX
PUMP PANEL



DISCRETE OUTPUTS
SLOT 2
DUPLEX
PUMP PANEL

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SOFT START WITH FIBER

DETAIL: PS-12
DATE: 2019
SCALE: N.T.S.
SHEET: 1 OF 2

Item #	Control Panel Hardware	Manufacturer	Manufacturer Part No.	Curry Part No.	Panel: RTU
ENCL	NEMA 4X Stainless Steel 3 PT Latch Enclosure with Aluminum swing out panel with door stop kit - installed on swing out panel (detail front) and panel door.	Hoffman	A48H48CH4SSLP3PU-MOD		1
	48" x48" Sub Panel	Hoffman	A48P48		1
	Customize Inhibitor	Hoffman	A-IRCI-SE	ENC-0005	1
LT1	Enclosure Light Package with Manual Switch	Hoffman	LF120V/13 / FSTSC/W 18"		1
HEAT	Anti-Condensation Heater	Hoffman	DAT03303-A		1
GR1	Generator Receptacle (100 Amp)	PASt National	JRE-4100-PR		1
LA1	TVSS Surge Protector	Square D	SDSA3650		1
CB1	Main Circuit Breaker 3P 100A	Square D	HDL36100		1
CB2	Generator Receptacle/Circuit Breaker 3P 100A	Square D	HDL36100		1
	Mechanical Interlock	Square D	XJ9354		1
CB5/CB6	Pump Circuit Breaker 3P 80 A	Square D	HDL36080		2
CB4	Control Circuit Breaker 1P 15A	Square D	MND61311		1
CB7	Control Circuit Breaker 2P 6A	Square D	MND61315		1
CB8	Control Circuit Breaker 1P 6A	Square D	60109		1
CB9	Control Circuit Breaker 1P 15A	Square D	60112		1
CB10	Control Circuit Breaker 1P 5A	Square D	60106		1
ETM	Digine Timer Mutrix 120vac non-resetable w/ terminal block	Redington	710-41052		2
ST1, ST2	Soft Starter	Square D	ATS48D47Y		2
K7, 2 & Sync2	Isolation and bypass contactors	Square D	LC1D95A623		4
CT1, CT2	Tellye T Motor Management - Main Controller	Square D	LTMR100EBD		2
	Tellye T Motor Management - Expansion Module	Square D	LTMEV40BD		2
	Tellye T Motor Management- Connecting Jumpers	Square D	LTMCU504		2
T1	Control Transformer	Square D	9070T075D2		1
BSCPS	Battery Voltage CPS	Tunewireless	BSV-PS24PC		1
	8 Pin Relay Base	Omron	PF083A-E	RLY-0007	1
E1	Battery	Werker	WKA12-7.5F	PWR-0026	2
	20-slot Power Supply 5.0 Amps	Phoenix Contact	8594681		1
	Cisco network switch	Cisco	IE-3000-4TC		1
	Network Switch Transceiver	Addon	GLC-LH-SM-A1		2
	Fiber Optic Patch Panel	Corning	SPH-01P		1
	Fiber Optic Patch Panel ST-type fiber plate, single-mode	Corning	CCH-CP12-59T		1
	Fiber Patch cords 1-meter LC-ST single mode				2
	UTP Ethernet Patch Cord / Cat 5.				1
	Radio Shelf				1
HOA1,HOA2	Selector Switch 3 Pos *Spring Return from Left (Hand Mode)	Square D	9001SK36USR		2
HOA3,HOA4	Control Block Assembly	Square D	9001KA1		4
PB1 - PB3	Push Button (Black)	Square D	9001SKR1BH9		3
PL1-PL3	30mm 24vdc Push-to-Test Pilot Light (Amber)	Square D	9001SKT3XA31		3
PL4-PL8	30mm 24vdc Push-to-Test Pilot Light (Red)	Square D	9001SKT3XB31		5
CR1-CR3	11 pin 3PDT 120vac Relay	AA Electric	AAZ-AX01-M		3
CR4-CR7	11 pin 3PDT 24vdc Relay	AA Electric	AAZ-AY004-M		5
	11 pin Relay Base	AA Electric	PF111A-E		10
PM1	3 Phase Monitoring Relay	Macromatic	PMPC		1
TDR1	Time Delay Relay	IDEC	GT3A-3EAF20		2
AL1	Alarm Beacon	Signum	LRX-40		1
AH1	Alarm Horn	Signum	AH115ARG		1
TS1, TS2	Light Switch SPDT			ELE-	2
	End Bib	Wago	249-117	TBL-0082	10
	Two-Tier Term Blk grey	Entrelec	M 4/6 ZZ 4 0113 271 22	TBL-0014	50
	Two-Tier Barrier grey	Entrelec	FESBD 4 0118 498 23	TBL-0010	4
	Two-Tier Term Blk jumper bar	Entrelec	B4MdDd 4/15 1SN 22	TBL-0025	6
	Jumper Bar Coupling	Entrelec	178677 21 03 8	TBL-0032	1
	Ground Term Blk	Entrelec	M4/4 P 4 0165 113 16	TBL-0017	4
	Fuse Holder Term Blk	Entrelec	M4/6 SF 4013 457 25	TBL-0013	10
	Fuse Holder End Barrier	Entrelec	FESBS	TBL-0095	2
	Fuse GMA-3 amp	LITTLEFUSE	215002	FUS-0006	3
	Fuse GMA-2 amp	LITTLEFUSE	215003	FUS-0005	10
	4-20 mA Surge Arrestors	MTL	SD32X		4
	85 AMP Terminal blk grey M16/12	Entrelec	1SNA 115 129 R1400		10
	85 AMP Terminal blk end covers M16/12	Entrelec	1SNA 118 618 R0100		2
	Din Rail (Ft)	WIED	491450	PNL-0040	8
	Wire duct 2" w x 3" h and Cover (Ft)	Panduit	E2X3WH6, C3WH6	PAN-0020 / PAN-0016	20
	Wire duct 1" w x 3" h and Cover (Ft)	Panduit	E1X3WH6,		2
GFCI	GFCI-15 Amp Receptical	Cooper		ELE-0004	1
	Handy Box		69M61 1/2	ELE-0001	1
	Handy Box Cover			ELE-0015	1
	Plastic Bushing	T&B	3238, 1/2"	ELE-0020	1
G	Mechnical Grd Lug (CUD)	Postech	MCD1-1025		1
	Ground Bus Bar	Square D	PK7G1A	FUS-0032	2
PDB1	Power Distribution Block w/finger safe cover	Square D	9080LBA362206		1

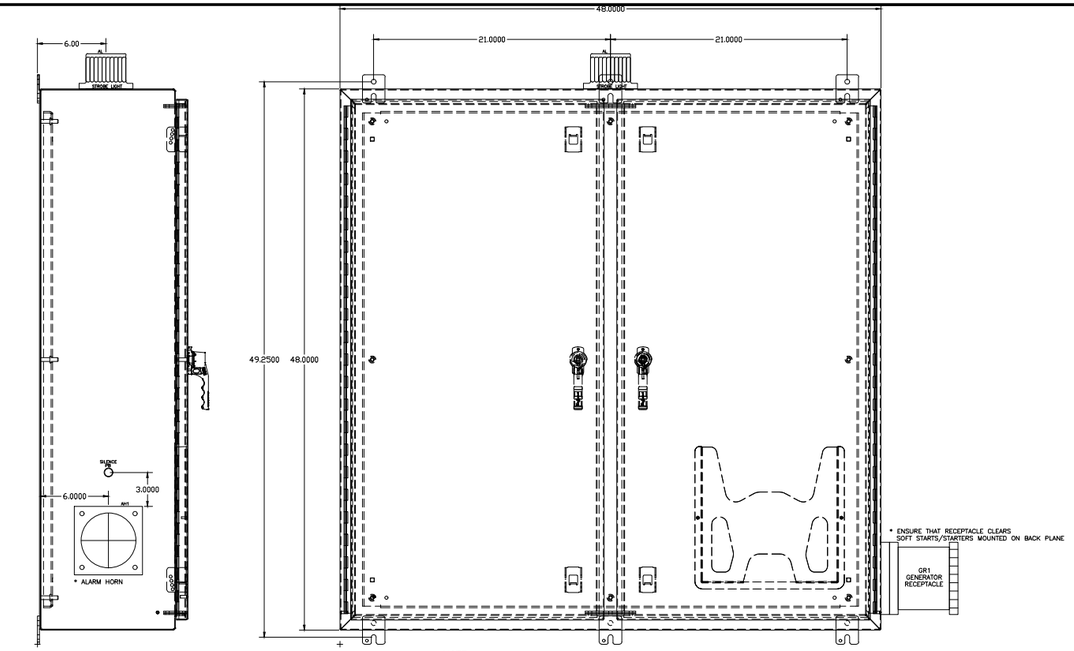
Item #	Control Panel Hardware	Manufacturer	Manufacturer Part No.	Curry Part No.	Panel: RTU
1	M340 04 Slot PLC Backplane	Schneider	BMX XBP 0400 rack		1
2	M340 PLC Power Supply	Schneider	BMX CPS 2010		1
3					
4	M340 PLC Processor	Schneider	BMX P34 2020		1
5					
6	M340 PLC 16 pt 24vdc Digital Input Module	Schneider	BMX DDI 1602		1
7	M340 PLC 4/2Out/4 A/h. Analog Input Module	Schneider	BMX AMI 0410		1
8	M340 PLC 16ch Relay Output Module	Schneider	BMX DRA 1605		1
9					
10	M340 PLC I/O Module 20 pt. Terminal Connectors	Schneider	BMX FTB 2010		3
11					
12					
13					
14					
15					

Item #	Electrical Materials	Manufacturer	Manufacturer Part No.	Curry Part No.	Panel: RTU
1	10' x 3/4" ground rod				2
2	1/0 copper bare Stranded				15
3					
4	4-hanor Direct burial ground clamp NSH G1-5-BS				2
5	3/4" Acorn ground rod clamp NorFGRC 300				2
6					
7					
8					
9					
10	150 watt flood lamp	Intermatic	FL150MS		1
11					
12					
13					
14					
15					

Item #	Field Instruments	Manufacturer	Manufacturer Part No.	Curry Part No.	Panel: RTU
1	Float Balls (SD Ft Cable Type "E Suspended Normally Open Role Float)	Anchor Scientific	SD20G		5
2					
3					
4					
5					

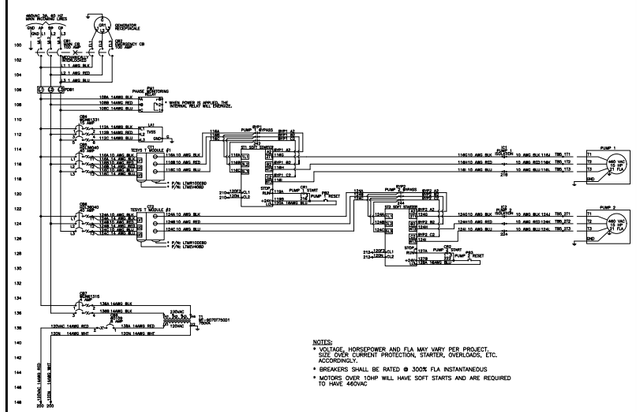
NOTES:
* GR1, CB1, CB2, CB5 & CB6 MAY VARY PER SITE. PLEASE SIZE ACCORDINGLY.

BILL OF MATERIAL
48 X 48 X 14
DUPLEX
PUMP PANEL

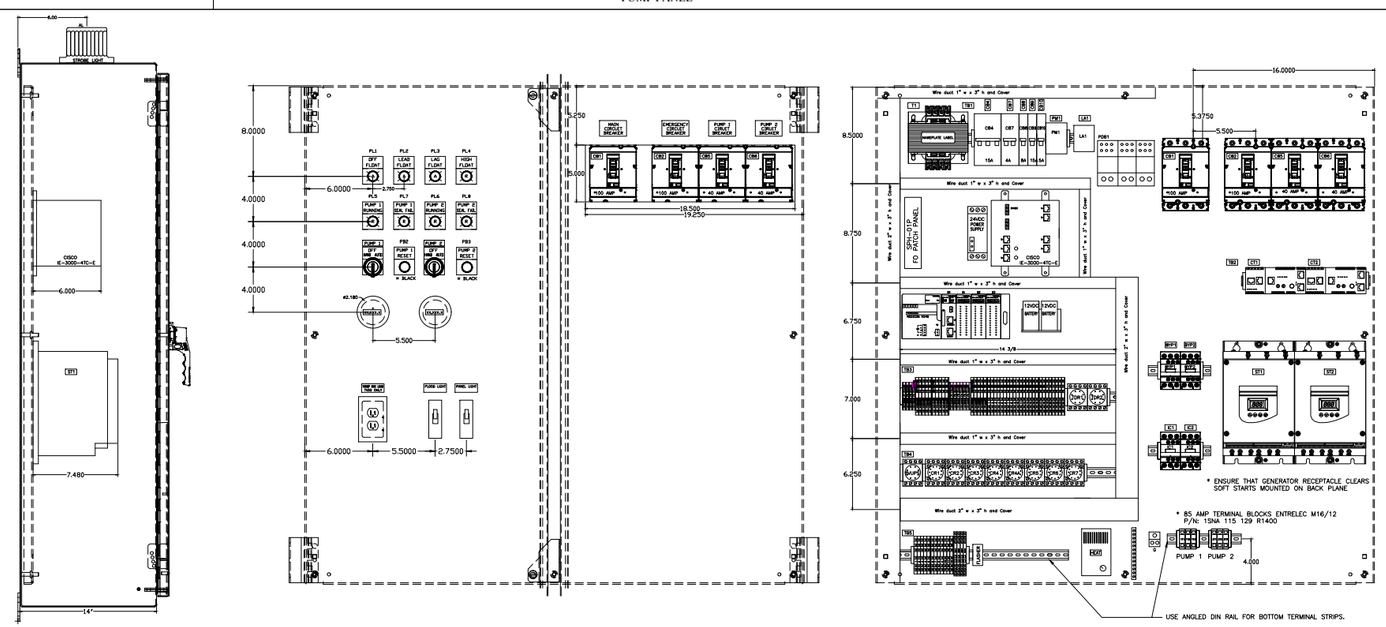


NOTE:
ENCLOSURE DOORS SHALL HAVE DOOR STOPS INCLUDED
SWING-OUT PANELS SHALL HAVE DOOR STOPS INCLUDED
ENSURE PANEL ARE SUPPLIED WITH DRIP SHIELDS AND FACTORY GASKETS.
AFFIX LAMINATED DRAWINGS TO THE INSIDE OF PANEL DOOR.

ENCLOSURE LAYOUT
48 X 48 X 14
DUPLEX
PUMP PANEL



POWER CIRCUITS
460VAC, 3 PHASE, 60 HERTZ
DUPLEX
PUMP PANEL



JOB #: JXX-XXXX
ENCLOSURE NAME: XXXX Pump Panel
DRAWING: XXXX-LY-002
ENCLOSURE UL TYPE: 4X
VOLTAGE: 230 VAC
S.C.C.R RATING: 10 KAIC RMS
FUSE NUMBER, TYPE AND SIZE:
120VAC F1-F4: 5 AMP GMA
24VDC F1: 3 AMP GMA, 24VDC F2-F6: 2 AMP GMA
FREQUENCY: 60 Hz
FLA: 87.125 AMP
PHASE: Three
REC. TORQUE-TERMINAL BLOCKS: 4.4-7.1 LB.-IN.

PANEL LAYOUT
48 X 48 X 14
DUPLEX
PUMP PANEL

CITY OF PORT ST. LUCIE
UTILITY SYSTEMS DEPARTMENT
900 S.E. OGDEN LANE
PORT ST. LUCIE, FL 34983
PHONE (772) 873-6400 FAX (772) 873-6433
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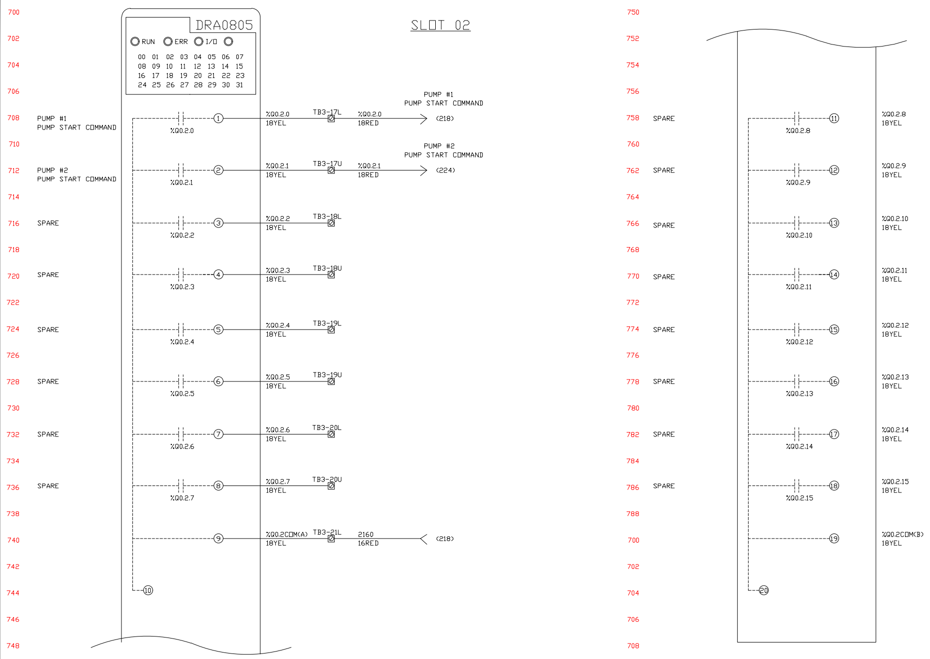
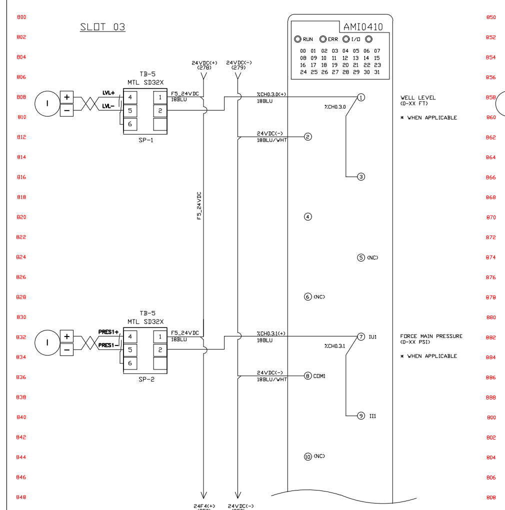
SOFT START WITH FIBER

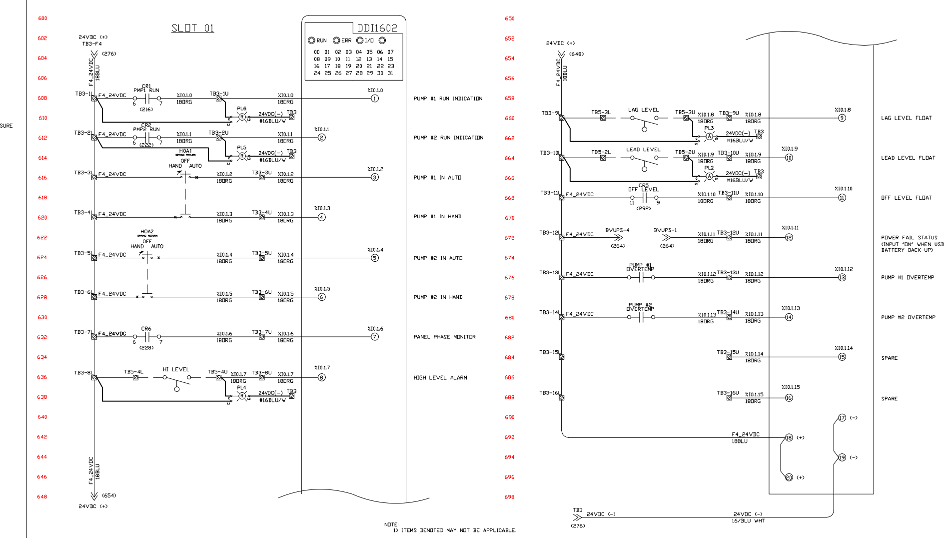
DETAIL: PS-12
DATE: 2019
SCALE: N.T.S.
SHEET: 2 OF 2



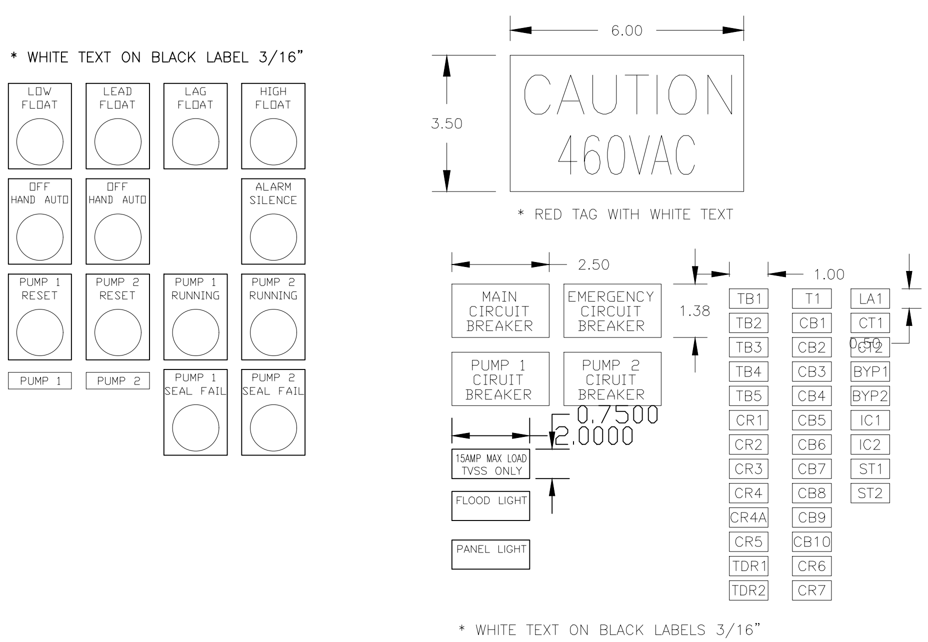
DISCRETE OUTPUTS
SLOT 2
DUPLEX
PUMP PANEL



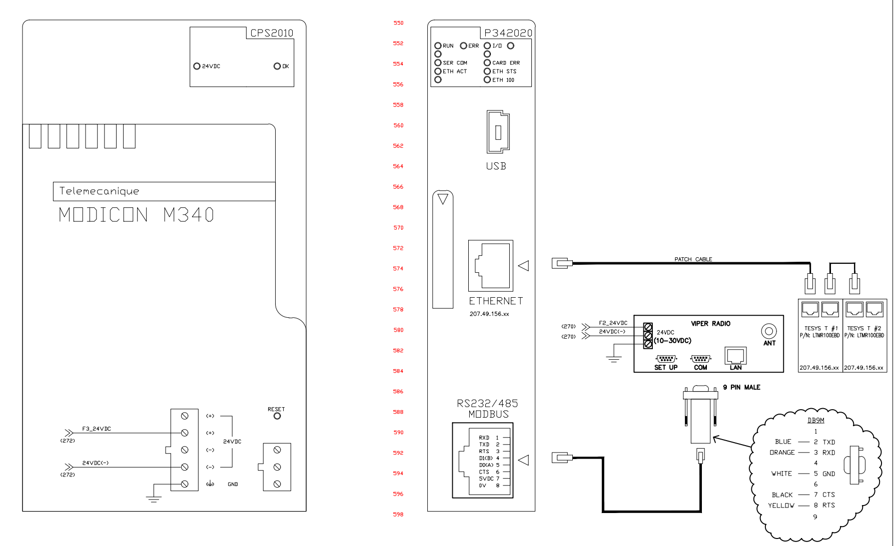
ANALOG INPUT
SLOT 3
DUPLEX
PUMP PANEL



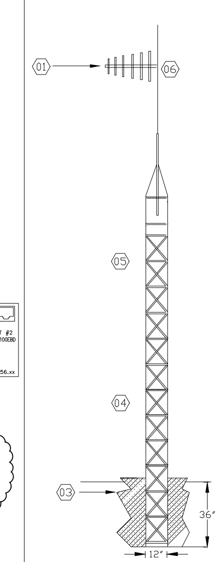
DISCRETE INPUTS
SLOT 1
DUPLEX
PUMP PANEL

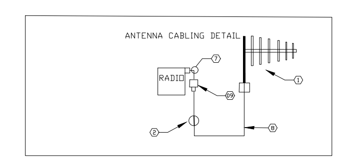


CITY OF PORT ST. LUCIE, FLORIDA
SOFT START
WITH RADIO COMMUNICATION
TYPICAL



COMMUNICATIONS
FIBER OPTIC
DUPLEX
PUMP PANEL





BILL OF MATERIALS

01	Comprod 480-70 or Sinclair SY203-SF3SNM(E)	
02	CGB CORD CONNECTOR	1
03	CONCRETE FILL	AS REQ'D.
04	ROHN 25G 10' BASE	1
05	ROHN 25AG 9' TOP SECTION	1
06	5' SCHEDULE 40 ALUMINUM CONDUIT	1
07	RADIO CABLE RG400T NM/TNCM	18"
08	HELIAX LDF4-50A LOW-LOSS COAX	30'
09	POLYPHASER	1
10	GROUND RODS	2

* PSL HAS TWO DIFFERENT FREQUENCIES
FOR 151.565 MHZ:
SINCLAIR SY203-SF3SNM(E) ; VIPER SC-100
FOR 452.100 MHZ:
COMPROD 480-70 ; VIPER SC-400

TOWER AND ANTENNA
TOWER INSTALLATION DETAILS
DUPLEX
PUMP PANEL

CITY OF PORT ST. LUCIE
UTILITY SYSTEMS DEPARTMENT
900 S.E. OGDEN LANE
PORT ST. LUCIE, FL 34983
PHONE (772) 873-6400 FAX (772) 873-6433

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SOFT START WITH RADIO

DETAIL: PS-13
DATE: 2019
SCALE: N.T.S.
SHEET: 1 OF 2

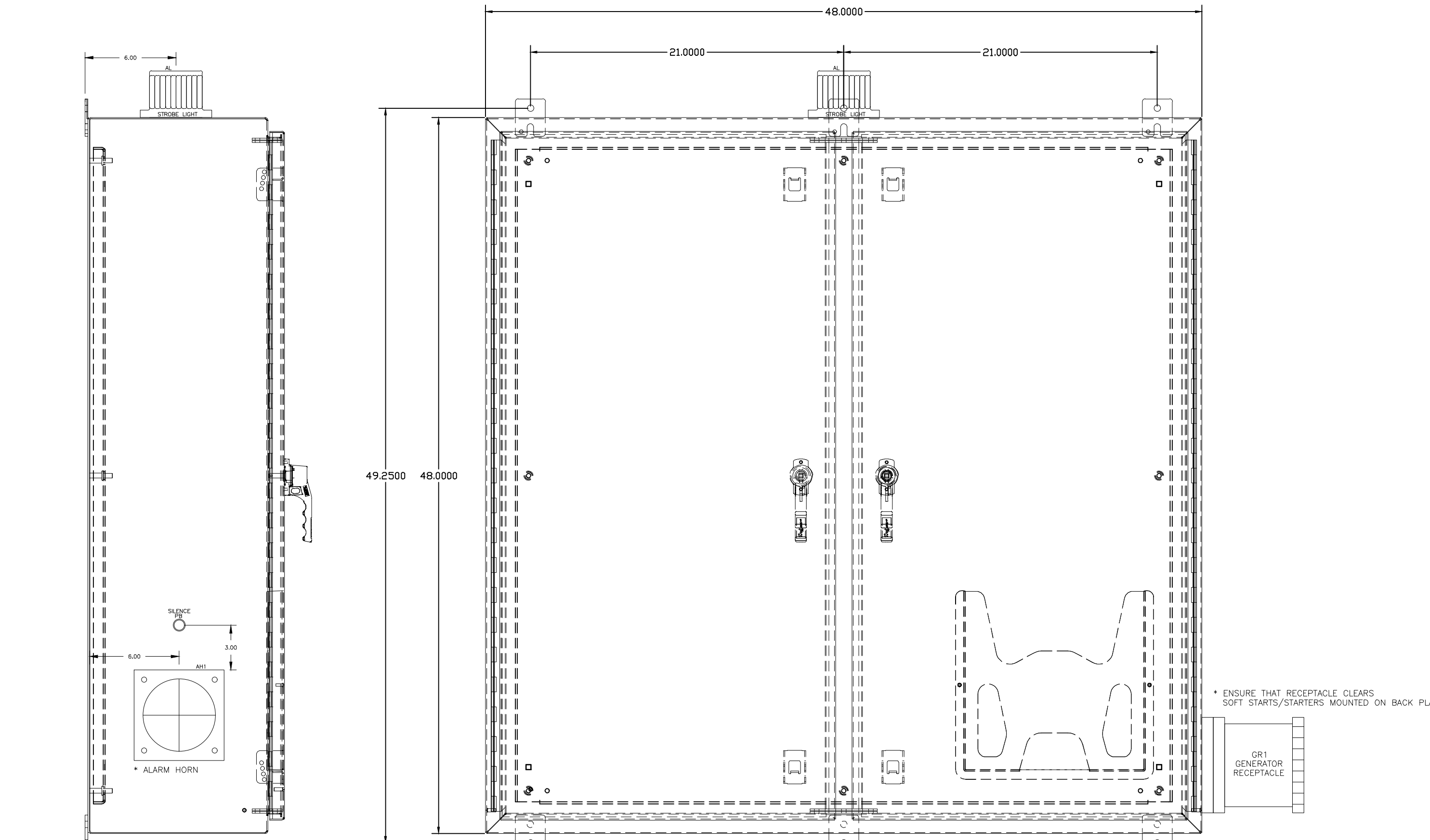
Item #	Control Panel Hardware	Manufacturer	Manufacturer Part No.	Curry Part No.	Panel: RTU
ENCL	NEMA 4X Stainless Steel 3 PT Latch Enclosure with Aluminum swing out panel with door stop kit installed on swing out panel (dead front) and panel door.	Hoffman	A48H4812WFSSLP3PT-MOD		1
	48" x48" Sub Panel	Hoffman	A48P48		1
	Corrosion Inhibitor	Hoffman	A-HCI-5E	ENC-0007	1
LT1	Enclosure Light Package with Manual Switch	Hoffman	LF120V18 / F8T5CW 18"		1
HEAT	Anti-Condensation Heater	Hoffman	DAH1001A		1
GR1	Generator Receptacle (100 Amp)	Pyle National	JRE-4100-PR		1
LA1	TVSS Surge Protector	Square D	SDSA3650		1
CB1	Main Circuit Breaker 3P 100A	Square D	HDL36100		1
CB2	Generator Receptacle Circuit Breaker 3P 100A	Square D	HDL36100		1
	Mechanical Interlock	Square D	S29354		1
CB5,CB6	Pump Circuit Breaker 3P 40 A	Square D	HDL36040		2
CB4	Control Circuit Breaker 3P 15A	Square D	MND61331		1
CB7	Control Circuit Breaker 2P 4A	Square D	MND61315		1
CB8	Control Circuit Breaker 1P 8A	Square D	60109		1
CB9	Control Circuit Breaker 1P 15A	Square D	60112		1
CB10	Control Circuit Breaker 1P 5A	Square D	60106		1
ETM	Elapse Timer Meters 120vac non-resetable w/ terminal block	Redington	710-0002		2
ST1, ST2	Soft Starter	Square D	ATS48D47Y		2
IC1,2 & Byp1,2	Isolation and bypass contactors	Square D	LC1D50AG7		4
CT1,CT2	TeSys T Motor Management - Main Controller	Square D	LTMR100EBD		2
	TeSys T Motor Management - Expansion Module	Square D	LTMEV40BD		2
	TeSys T Motor Management -Connecting Jumpers	Square D	LTMCC004		2
T1	Control Transformer	Square D	9070T0750D1		1
BVUPS	Battery Voltage UPS	Transtronics	BVUPS24PF		1
	8 Pin Relay Base	Omron	PF083A-E	RLY-0007	1
E1	Battery	Werker	WKA12-7.5F	PWR-0026	2
	24vdc Power Supply 5.0 Amps	Phoenix Contact	85044081		1
	RJ45-DB9 MALE ADAPTER				1
	HELIAX CABLE	Andrews	LDF4-50A	RAD0013	50
	MALE HELIAX CONNECTOR	Andrews	L4PNM-RC	RAD0011	1
	FEMALE HELIAX CONNECTOR	Andrews	L4PNF-RC	RAD0012	1
	Broadband Dc Blocker	Polyphaser	IS-50NX-C2	RAD0006	1
	ANTENNA (Comprod 480-70 or Sinclair SY203-SF3SNM[E])				1
	Radio (Viper SC-400 or SC-100)				1
	18" RADIO CABLE RG400T NM/TNCM *Specify Right Angle				1
	Radio Shelf				2
HOA1,HOA2	Selector Switch 3 Pos *Spring Return from Left (Hand Mode)	Square D	9001SKS63B		2
HOA1,HOA2	Control Block Assembly	Square D	9001KA1		4
PB1 - PB3	Push Button (Black)	Square D	9001SKR1BH5		3
PL1-PL3	30mm 24vdc Push-to-Test Pilot Light (Amber)	Square D	9001SKT35A31		3
PL4-PL8	30mm 24vdc Push-to-Test Pilot Light (Red)	Square D	9001SKT35R31		5
CR1-CR3	11 pin 3PDT 120vac Relay	AA Electric	AAE-A301-M		3
CR4-CR7	11 pin 3PDT 24vdc Relay	AA Electric	AAE-D304-M		5
	11 pin Relay Base	AA Electric	PF113A-E		10
PM1	3 Phase Monitoring Relay	Macromatic	PMPU		1
TDR1	Time Delay Relay	IDEC	GT3A-3EAF20		2
AL1	Alarm Beacon	Ingram	LRX-40		1
AH1	Alarm Horn	Ingram	AH115A8G		1
TS1, TS2	Light Swtich SPDT			ELE-	2
	End Blk	Wago	249-117	TBL-0082	10
	Two Tier Term Blk gray	Entrelec	M 4/6.D2 # 0115 271.22	TBL-0014	50
	Two Tier Barrier gray	Entrelec	FEM6D # 0118 499.23	TBL-0010	4
	Two Tier Term Blk jumper bar	Entrelec	BJM6D# 0173 520.22	TBL-0021	6
	Jumper Bar Coupling	Entrelec	173627.21, EL6	TBL-0032	1
	Ground Term Blk	Entrelec	M4/6.P # 0165 113.16	TBL-0017	4
	Fuse Holder Term Blk	Entrelec	M4/8.SF #0115 657.25	TBL-0013	10
	Fuse Holder End Barrier	Entrelec	FEM8S	TBL-0005	2
	Fuse GMA-3 amp	LITTLEFUSE	235002	FUS-0006	1
	Fuse GMA-2 amp	LITTLEFUSE	235003	FUS-0005	10
	4-20 mA Surge Arrestors	MTL	SD32X		4
	85 AMP Terminal blk gray M16/12 *P/N indicates box of 20	Entrelec	1SNA 115 129 R1400		10
	85 AMP Terminal blk end covers M16/12 *P/N indicates box of 20	Entrelec	1SNA 118 618 R0100		2
	Din Rail (Ft)	WEID	#51450	PNL-0040	8
	Wire duct 2" w x 3" h and Cover (Ft)	Panduit	E2X3WH6, C3WH6	PAN-0020 / PAN-0016	20
	Wire duct 1" w x 3" h and Cover (Ft)	Panduit	E1X3WH6,		2
GFCI	GFCI-15 Amp Receptical	Cooper		ELE-0004	1
	Handy Box		#58361 1/2	ELE-0001	1
	Handy Box Cover			ELE-0015	1
	Plastic Bushing	T&B	3210, 1/2"	ELE-0020	1
G	Mechnical Gnd Lug,(CED)	Positech	MCD1-1025		1
	Ground Bus Bar	Square D	PK7GTA	FUS-0032	2

Item #	Control Panel Hardware	Manufacturer	Manufacturer Part No.	Curry Part No.	Panel: RTU
1	M340 04 Slot PLC Backplane	Schneider	BMX XBP 0400 rack		1
2	M340 PLC Power Supply	Schneider	BMX CPS 2010		1
3					
4	M340 PLC Processor	Schneider	BMX P34 2020		1
5					
6	M340 PLC 16 pt 24vdc Digital Input Module	Schneider	BMX DDI 1602		1
7	M340 PLC 4-20 mA 4ch. Analog Input Module	Schneider	BMX AMI 0410		1
8	M340 PLC 16ch. Relay Output Module	Schneider	BMX DRA 1605		1
9					
10	M340 PLC I/O Module 20 pt. Terminal Connectors	Schneider	BMX FTB 2010		3
11					
12					
13					
14					
15					

Item #	Electrical Materials	Manufacturer	Manufacturer Part No.	Curry Part No.	Panel: RTU
1	10' x 3/4"ground rod				2
2	1/0 copper bare Stranded				15
3					
4	J-Junior Direct burial ground clamp NSI# G-1-S-BS				2
5	3/4" Acorn ground rod clamp Nsi# GRC 34H				2
6	3/4" hub CGB connector CG 5075				1
7	1/2" hub CGB connector CG1850				1
8	1 1/4" Alum conduit				5 Ft
9					
10	150 watt flood lamp	Intermatic	FL150MH		1
11					
12					
13	ROHN Tower 25AG			RAD-0056	1
14	ROHN Tower 25G			RAD-0057	1
15					

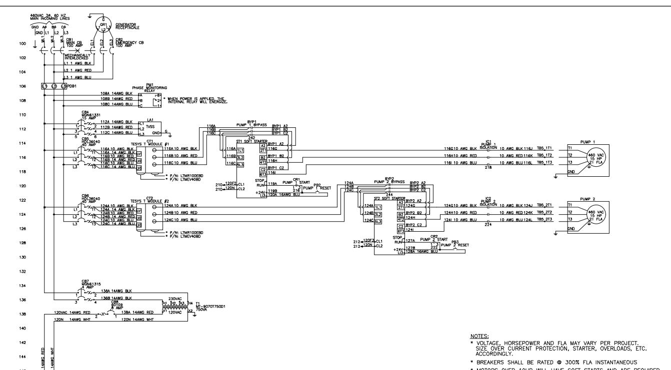
Item #	Field Instruments	Manufacturer	Manufacturer Part No.	Curry Part No.	Panel: RTU
1	Float Balls (50 Ft Cable Type 'S' Suspended Normally Open Roto Float)	Anchor Scientific	S50NO		5
2					
3					
4					
5					

BILL OF MATERIAL
48 X 48 X 12
DUPLEX
PUMP PANEL

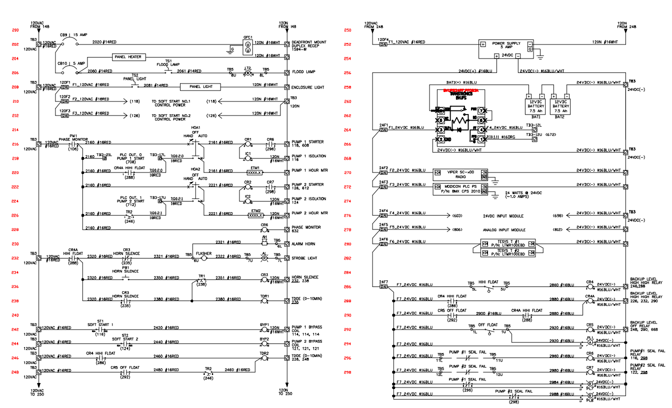


ENCLOSURE LAYOUT
48 X 48 X 14
DUPLEX
PUMP PANEL

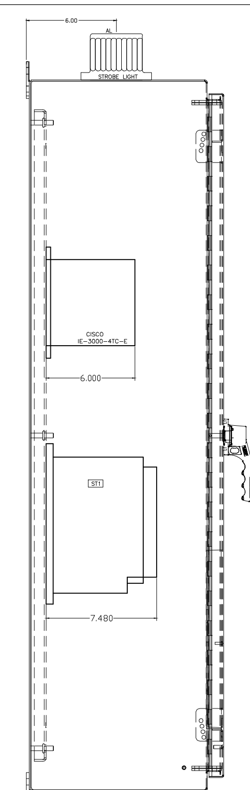
NOTE:
ENCLOSURE DOORS SHALL HAVE DOOR STOPS INCLUDED
SWING-OUT PANELS SHALL HAVE DOOR STOPS INCLUDED
ENSURE PANEL ARE SUPPLIED WITH DRIP SHIELDS AND FACTORY GASKETS.
AFFIX LAMINATED DRAWINGS TO THE INSIDE OF PANEL DOOR.

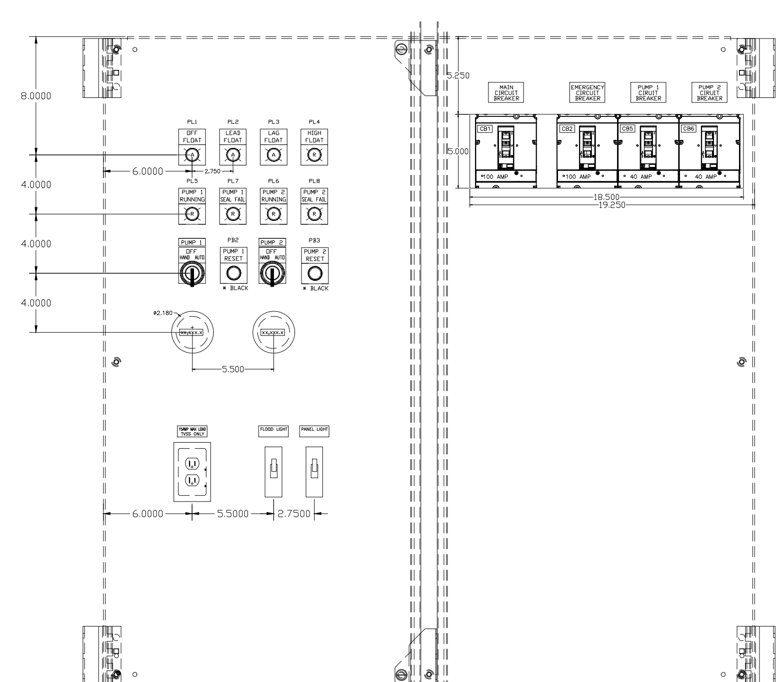


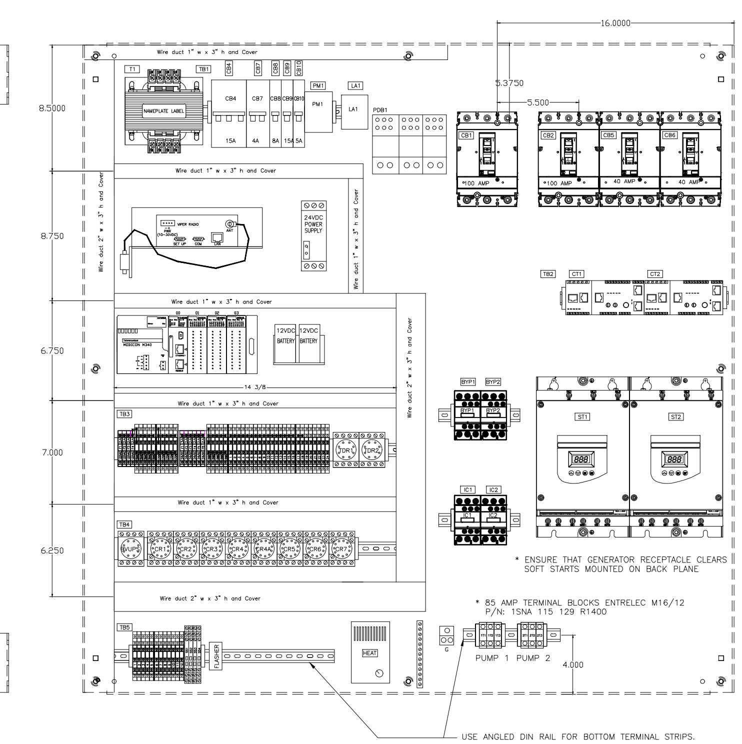
POWER CIRCUITS
460VAC, 3 PHASE, 60 HERTZ
DUPLEX
PUMP PANEL



POWER CIRCUITS
120VAC
DUPLEX
PUMP PANEL







JOB #: JXX-XXXX
ENCLOSURE NAME: XXXX Pump Panel
DRAWING: XXXX-LY-002
ENCLOSURE UL TYPE: 4X
VOLTAGE: 230 VAC
S.C.C.R RATING: 10 KAIC RMS
FUSE NUMBER, TYPE AND SIZE:
120VAC F1-F4: 2 AMP GMA
24VDC F1: 3 AMP GMA, 24VDC F2-F6: 2 AMP GMA
FREQUENCY: 60 Hz
FLA: 87.125 AMP
PHASE: Three
REC. TORQUE-TERMINAL BLOCKS: 4.4-7.1 LB.-IN.

PANEL LAYOUT
48 X 48 X 14
DUPLEX
PUMP PANEL

CITY OF PORT ST. LUCIE
UTILITY SYSTEMS DEPARTMENT
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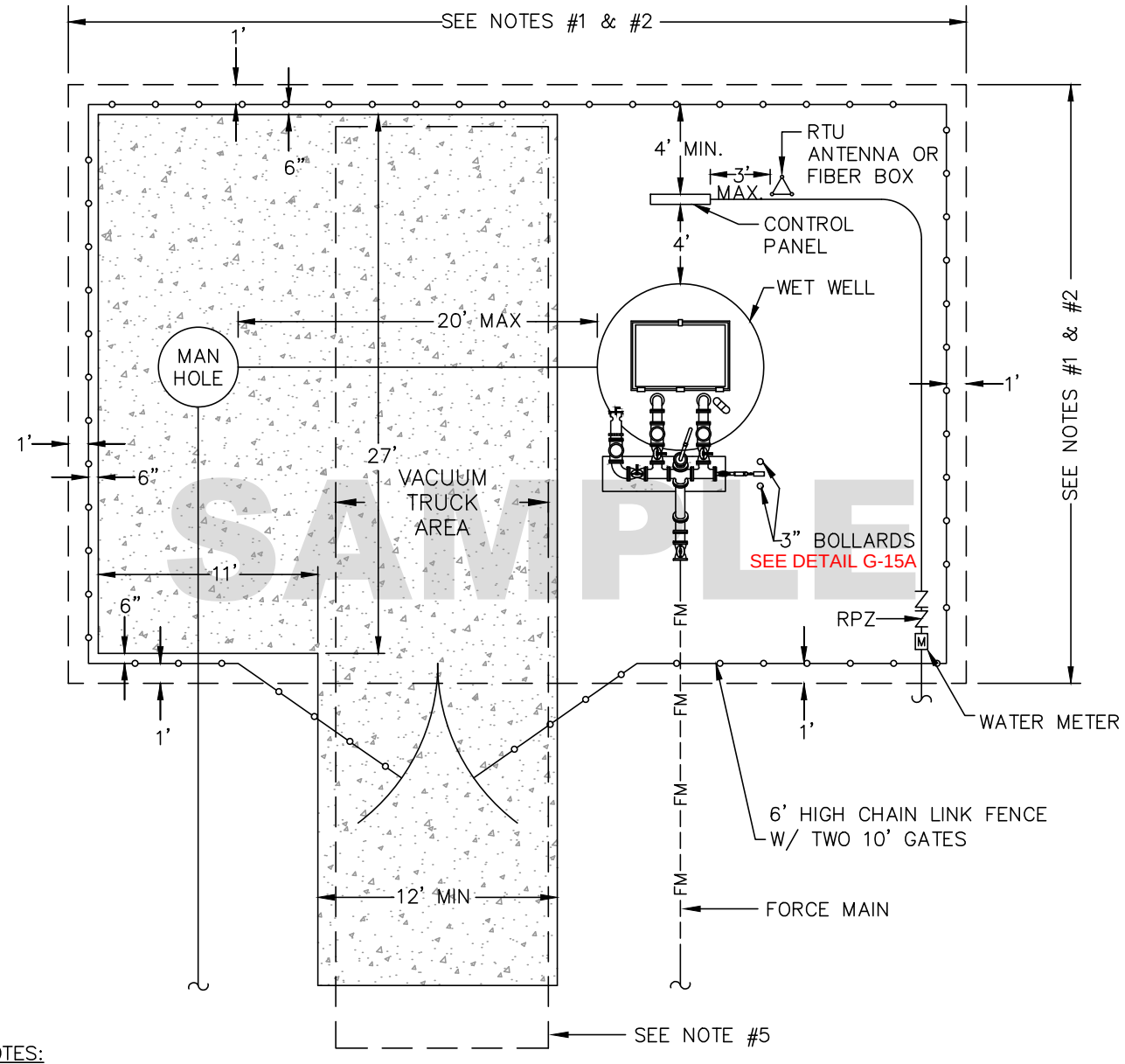
SOFT START WITH RADIO

DETAIL: PS-13
DATE: 2019
SCALE: N.T.S.
SHEET: 2 OF 2



SAMPLE

NOTES:

1. MINIMUM EASEMENTS 30'X45' SHALL BE PROVIDED FOR PUMP SYSTEMS.

2. **ENGINEER TO DETAIL EXACT SITE LAYOUT FOR EACH LIFT STATION WITH ACTUAL DIMENSIONS.** DIMENSIONS SHALL BE BASED ON REQUIREMENTS OF THE UTILITY STANDARDS AND STANDARD DETAILS PERTAINING TO PUMP STATIONS.THE LOCATION OF HINGES ON THE WET WELL SHALL BE INDICATED.

3. ACCESS DRIVE – 6" THICK, 12' WIDE CONCRETE 4000 PSI W/FIBER MESH AND COMPACTED SUBGRADE TO 98% DENSITY EXTENDED 6" BEYOND ALL EDGES.

4. ALL AREAS INSIDE FENCE THAT ARE NOT COVERED BY CONCRETE, STRUCTURES AND EQUIPMENT SHALL HAVE # 57 STONE. THE STONE SHALL BE PLACED OVER 2–PLY 4 MIL. VISQUEEN, A MINIMUM OF 6" BUT NO MORE THAN 8" DEEP.

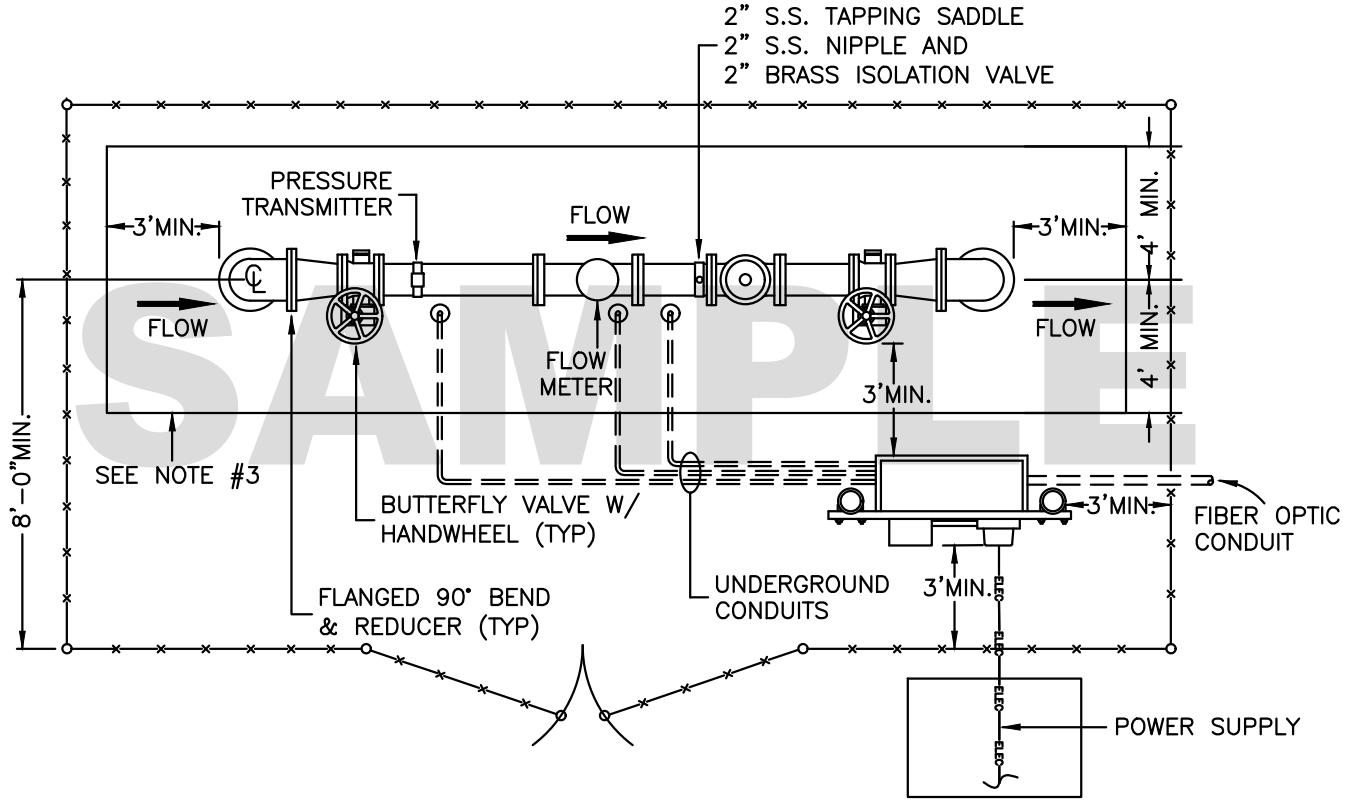
5. A 12'X48' AREA SHALL BE PROVIDED WITHIN 10 FEET OF WET WELL FOR A VACUUM TRUCK. THE AREA SHALL BE SHOWN ON THE SITE PLAN REQUIRED IN NOTE #2 ABOVE.

MINIMUM CONSTRUCTION STANDARDS FOR
CITY OF PORT ST. LUCIE
900 S.E. OGDEN LANE
PORT ST. LUCIE, FL 34983
PHONE (772) 873-6400 FAX (772) 873-6433

LIFT STATION SITE PLAN SAMPLE

DETAIL: PS-14
DATE: 2019
SCALE: NTS
SHEET: 1 OF 1

SAMPLE
(SEE NOTE #1)



SAMPLE

NOTES:

1. THE ABOVE SITE PLAN IS A SAMPLE AND SHALL NOT BE USED AS A STANDARD DETAIL. THE PROPOSED SITE PLAN FOR THE RECLAIMED WATER METERING STATION SHALL BE SUBMITTED TO THE PSLUSD FOR APPROVAL BY THE ENGINEER-OF-RECORD. THE SITE PLAN SHALL BE DRAWN TO SCALE WITH DIMENSIONS AND INDICATE THE SETBACKS AND EASEMENTS FOR ALL THE COMPONENTS. AN EXCLUSIVE UTILITY EASEMENT SHALL BE PROVIDED TO ENCOMPASS THE METERING STATION. AN ACCESS EASEMENT SHALL BE PROVIDED AS DEEMED NECESSARY BY THE PSLUSD.

2. A 6' HIGH CHAIN LINK FENCE AND TWO 6' WIDE SWING GATES SHALL BE PROVIDED PER PSLUSD STANDARD DETAIL G-11.

3. THE AREA SHOWN WITHIN THE FENCE SHALL BE AT LEAST 6" THICK CONCRETE (3000 PSI) WITH 6X6 WIRE MESH. AREA INSIDE THE FENCE THAT IS NOT COVERED BY CONCRETE, STRUCTURES AND EQUIPMENT SHALL HAVE #57 STONE; THE STONE SHALL BE PLACED OVER 2-PLY 4MIL VISQUEEN, A MINIMUM OF 6" BUT NO MORE THAN 8" DEEP.

4. THE GRADING AROUND THE SITE SHALL BE SLOPED TO DIRECT THE RUN-OFF TOWARDS THE DRAINAGE SYSTEM.

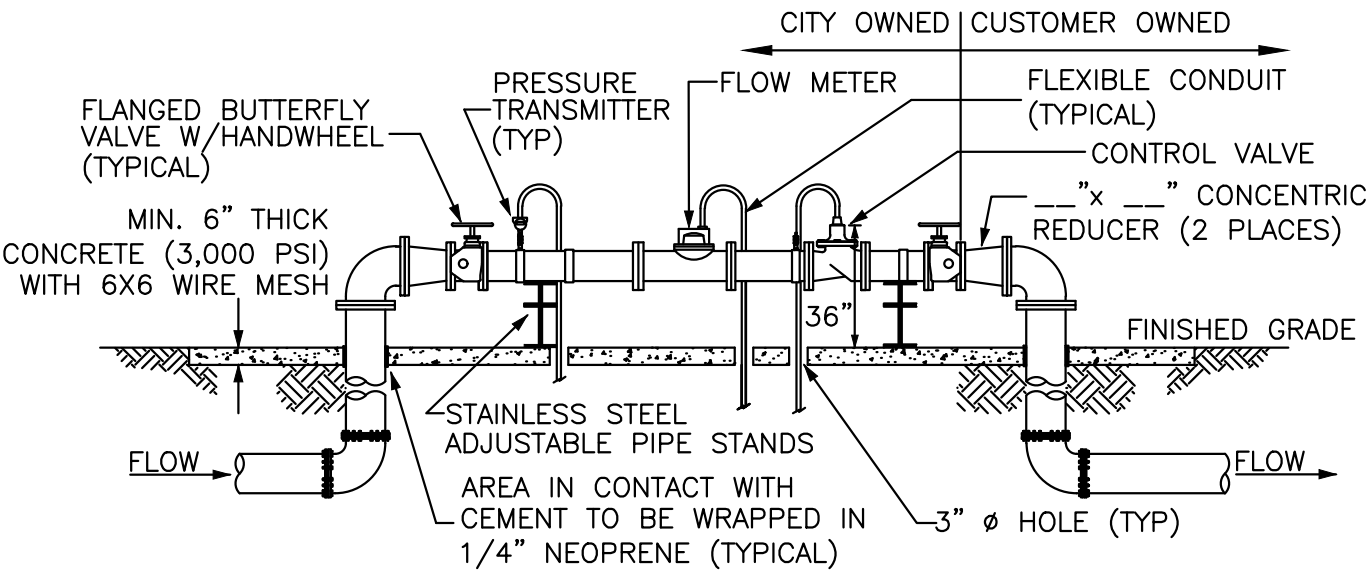
5. STABILIZED ACCESS TO THE STATION SHALL BE PROVIDED, AS APPROVED BY THE PSLUSD.

6. LANDSCAPING AROUND THE FENCE SHALL BE IN ACCORDANCE WITH THE LANDSCAPE PLAN APPROVED BY THE PSLUSD.

MINIMUM CONSTRUCTION STANDARDS FOR
CITY OF PORT ST. LUCIE
900 S.E. OGDEN LANE
PORT ST. LUCIE, FL 34983
PHONE (772) 873-6400 FAX (772) 873-6433

RECLAIMED WATER METERING STATION PLAN VIEW

DETAIL: RW-01
DATE: 2019
SCALE: N.T.S.
SHEET: 1 OF 2



NOTES: (PLEASE REFER TO WRITTEN SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS)

1. MECHANICAL JOINT FITTINGS WITH RESTRAINTS SHALL BE REQUIRED FOR UNDERGROUND AND FLANGED FITTINGS FOR ABOVE GROUND USE. ALL ABOVE GROUND PIPE SHALL BE PAINTED PURPLE.

2. PAINT OR COATINGS SHALL NOT BE APPLIED TO NAME/SERIAL PLATE, STAINLESS STEEL OR BRASS FITTINGS.

3. SPOOL PIECES SHALL BE A MINIMUM LENGTH OF 5 TIMES THE DIAMETER OF THE PIPE UPSTREAM OF THE METER AND A MINIMUM LENGTH OF 3 TIMES THE DIAMETER OF THE PIPE DOWNSTREAM OF THE METER. IF THE METER MANUFACTURERS CRITERIA EXCEEDS THESE MINIMUM LENGTHS, THAT CRITERIA SHALL GOVERN. A 2" STAINLESS STEEL TAPPING SADDLE, 2" S.S. NIPPLE AND 2" BRASS ISOLATION VALVE SHALL BE INSTALLED AT FURTHEST POINT POSSIBLE ON DOWNSTREAM SPOOL PIECE (SEE LOCATION IN DETAIL).

4. ENGINEER-OF-RECORD SHALL FOLLOW DESIGN CRITERIA TO ENSURE THAT THE RECLAIMED WATER DELIVERY SYSTEM REMAINS FULL OF LIQUID AT ALL TIMES. VACUUM BREAKER OR SIPHON BREAKER MAY BE REQUIRED AT STORAGE DISCHARGE.

5. PRESSURE TRANSMITTER OUTPUT SIGNAL (4-20mA DC) SHALL BE LINEAR IN PROPORTION TO PRESSURE RANGE FROM 0 TO 50 PSI.

MINIMUM CONSTRUCTION STANDARDS FOR
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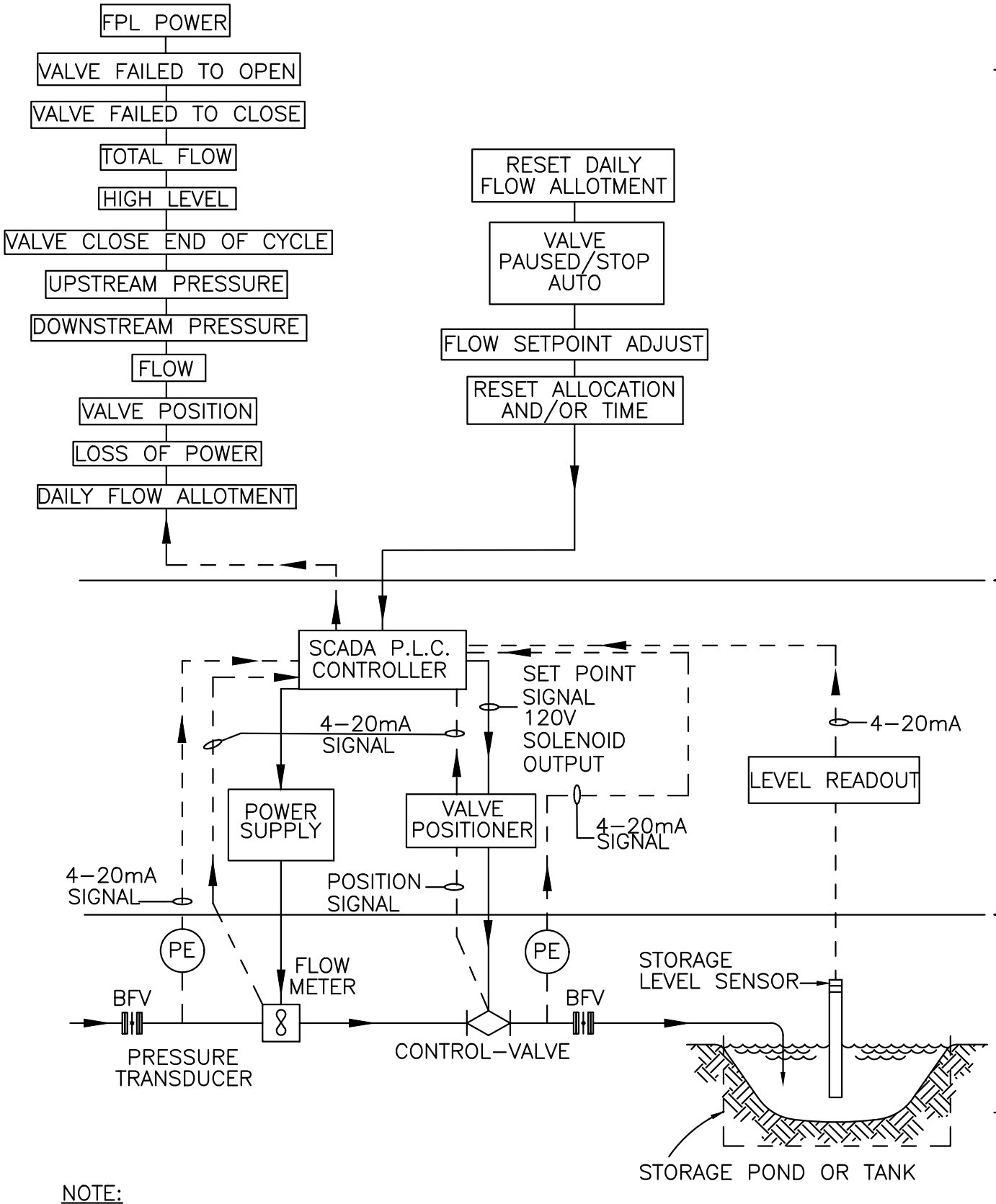
RECLAIMED WATER METERING STATION PLAN VIEW

DETAIL: RW-01
DATE: 2019
SCALE: N.T.S.
SHEET: 2 OF 2



NOTE:

1. PLEASE REFER TO WRITTEN SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

MINIMUM CONSTRUCTION STANDARDS FOR
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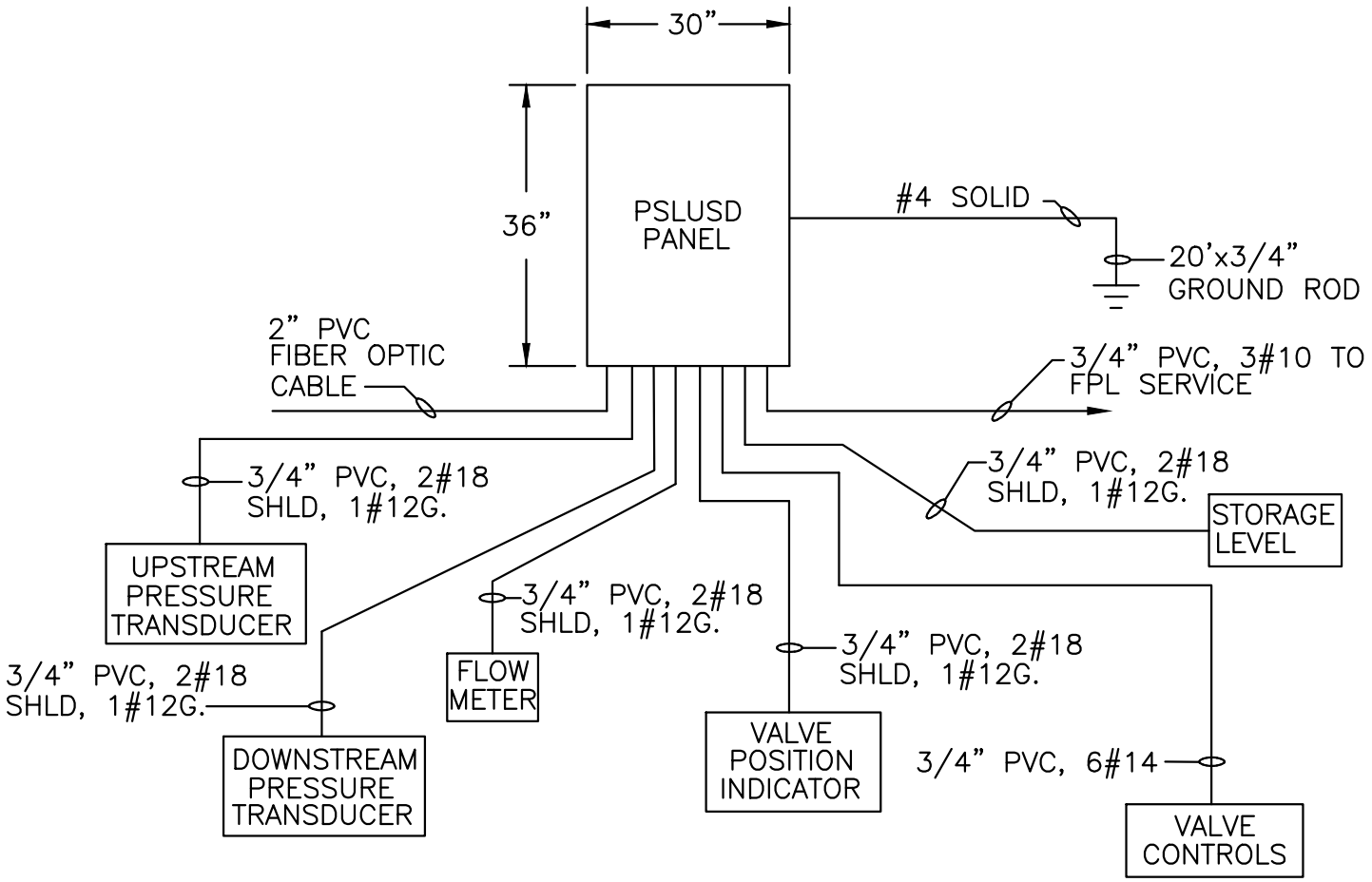
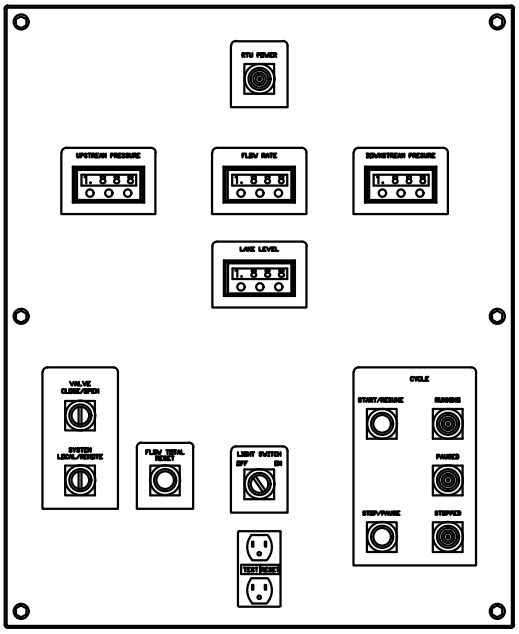
RECLAIMED WATER I/O SCHEMATIC

DETAIL: RW-02
DATE: 2019
SCALE: N.T.S.
SHEET: 1 OF 1



CONDUIT SCHEMATIC



CONTROL PANEL DEAD FRONT LAYOUT

MINIMUM CONSTRUCTION STANDARDS FOR
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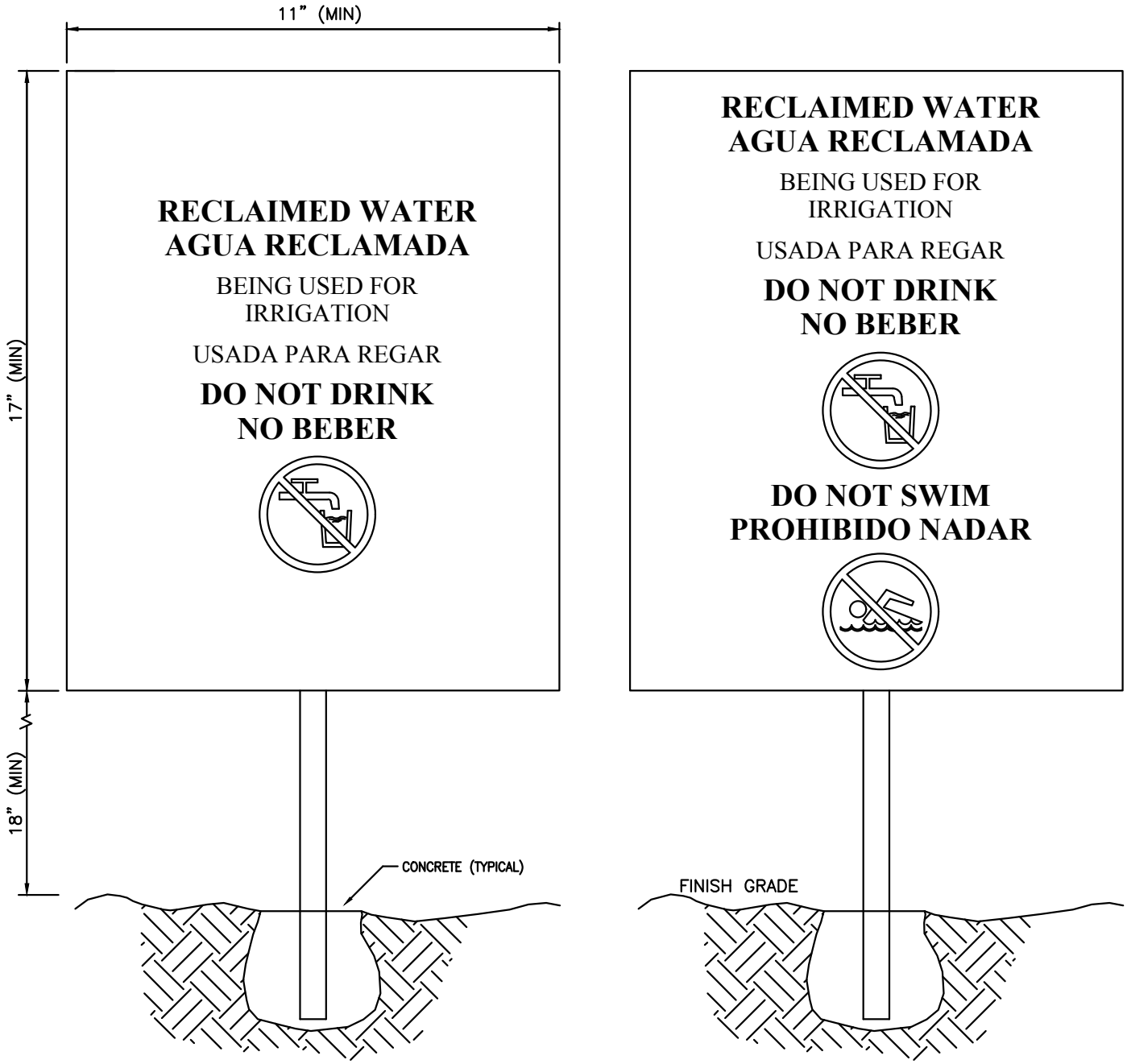
RECLAIMED WATER CONDUIT AND PANEL SCHEMATIC

DETAIL: RW-03
DATE: 2019
SCALE: N.T.S.
SHEET: 1 OF 1



NOTES:

1. SIGNS SHALL BE PLACED AS REQUIRED UNDER THE PROVISIONS OF PERMIT ISSUED BY FDEP. THE ABOVE SIGNS SHALL BE USED WHEN REQUIRED BY FDEP AND/OR PSLUSD.

2. MOUNT SIGN TO STANDARD U-CHANNEL SIGN POST WITH STAINLESS STEEL HARDWARE.

3. SIGN SHALL BE .080 GAUGE ALUMINIUM WITH VINYL COATING.

4. THE LETTERS SHALL BE BLACK AGAINST A WHITE BACKGROUND, OTHER COLORS MAY BE USED WITH PRIOR APPROVAL OF PSLUSD.

MINIMUM CONSTRUCTION STANDARDS FOR
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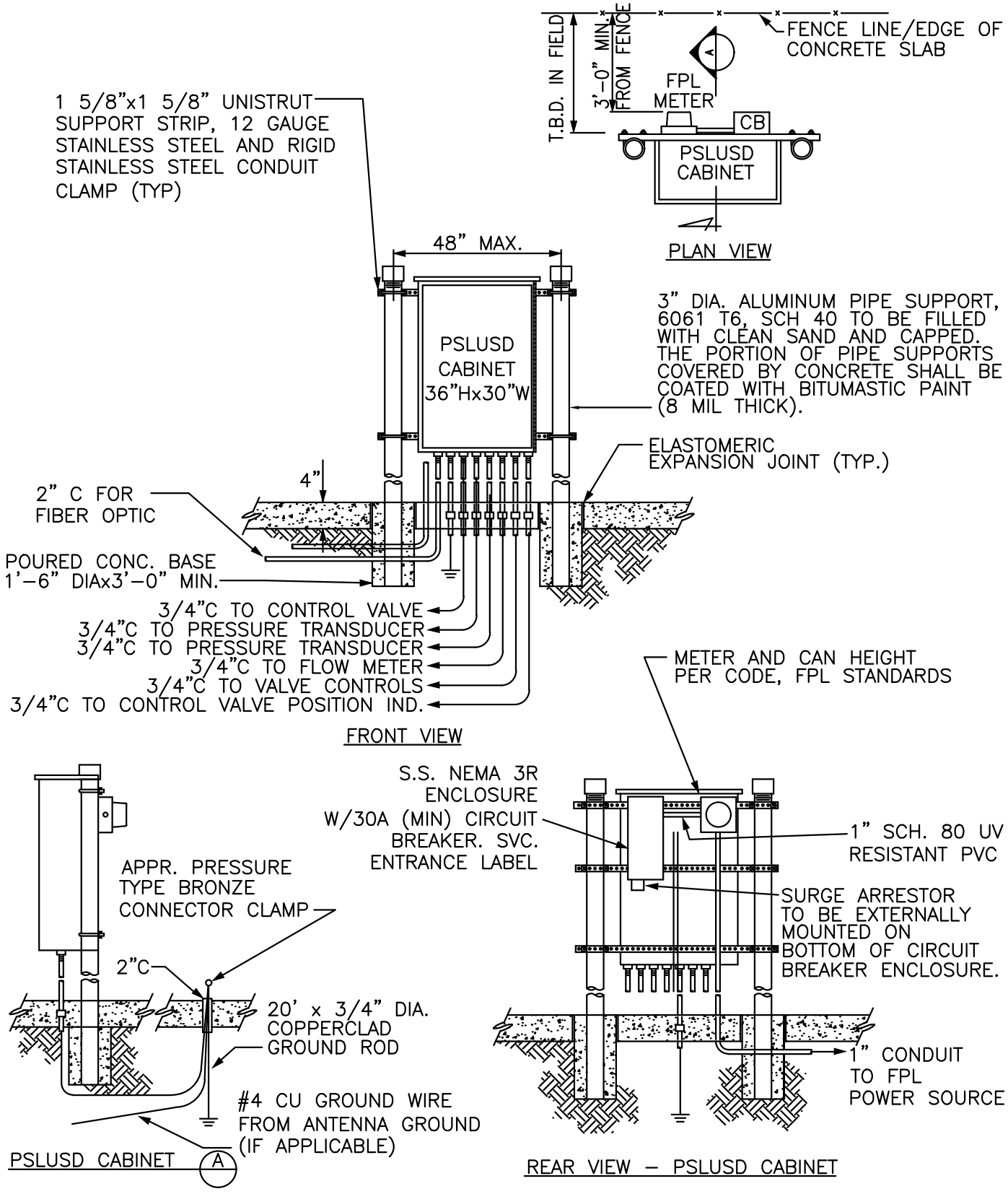
RECLAIMED WATER SITE SIGNAGE

DETAIL: RW-04	
DATE: 2019	
SCALE: N.T.S.	
SHEET: 1 OF 1	



NOTE:

1. ALL UNDERGROUND CONDUIT MIN. 18" DEPTH.

MINIMUM CONSTRUCTION STANDARDS FOR
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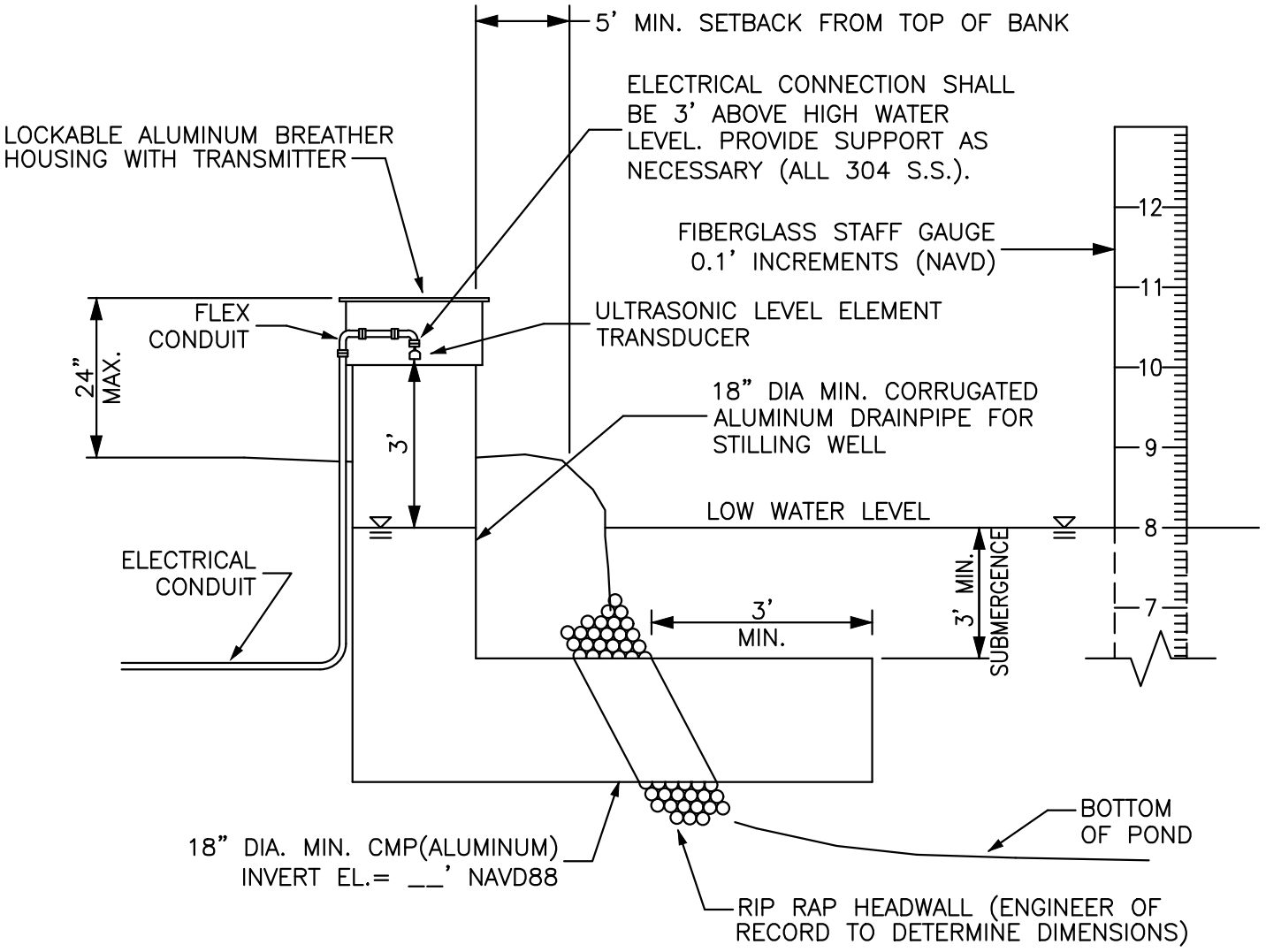
RECLAIMED WATER METERING FACILITY

DETAIL: RW-05
DATE: 2019
SCALE: N.T.S.
SHEET: 1 OF 1



NOTE: PLEASE REFER TO WRITTEN SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS

1. THIS DETAIL IS FOR A STILLING WELL AND STAFF GAUGE IN A RECLAIMED WATER STORAGE POND. THE ENGINEER–OF–RECORD SHALL SUBMIT DRAWING DETAILS FOR A STILLING WELL AND LEVEL INDICATOR IN A STORAGE TANK TO THE PSLUSD FOR APPROVAL PRIOR TO INSTALLATION.

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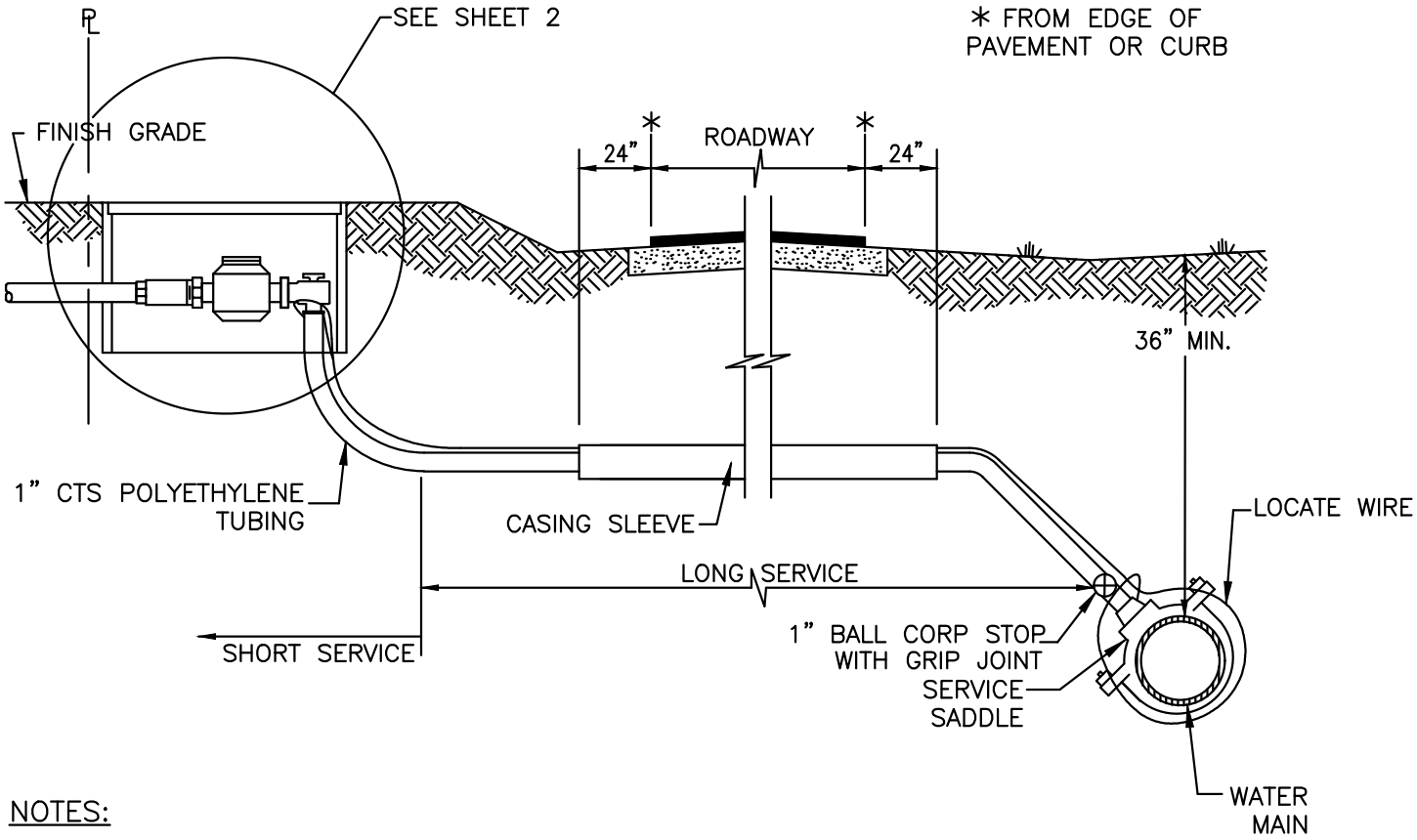
RECLAIMED WATER STILLING WELL

DETAIL: RW-06
DATE: 2019
SCALE: N.T.S.
SHEET: 1 OF 1



NOTES:

1. SUCCESSIVE TAPS INTO THE WATER MAIN SHALL BE A MINIMUM OF 18" ON CENTER.

2. ALL SERVICES REQUIRE 36" MINIMUM COVER AT ALL POINTS ALONG SERVICE.

3. 1"ø SERVICES REQUIRE A 2" MINIMUM I.D. CASING PIPE. CASING PIPE SHALL BE SCHEDULE 40 PVC OR POLYETHYLENE.

4. TRACE WIRE TO BE INSTALLED AS PER THIS DETAIL.

5. METERS SHALL BE LOCATED IMMEDIATELY OUTSIDE THE PROPERTY LINE IN THE RIGHT-OF-WAY UNLESS OTHERWISE DIRECTED BY PSLUSD (SEE SHEET 2).

MINIMUM CONSTRUCTION STANDARDS FOR
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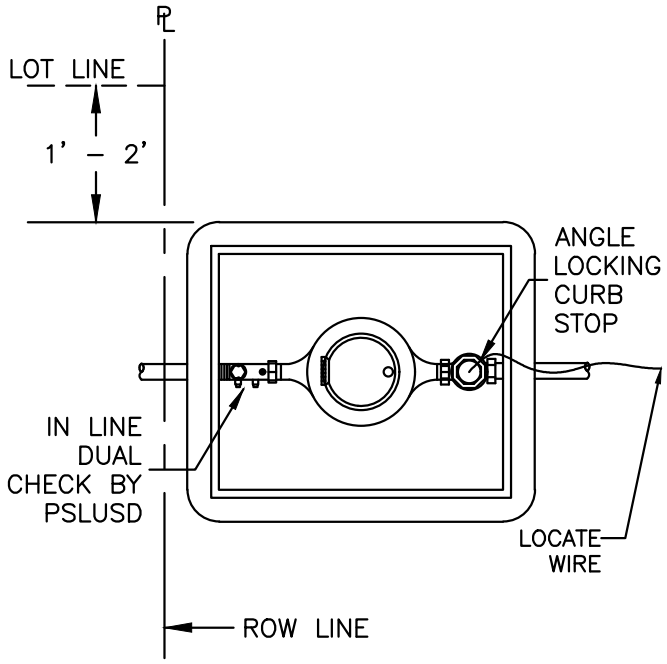
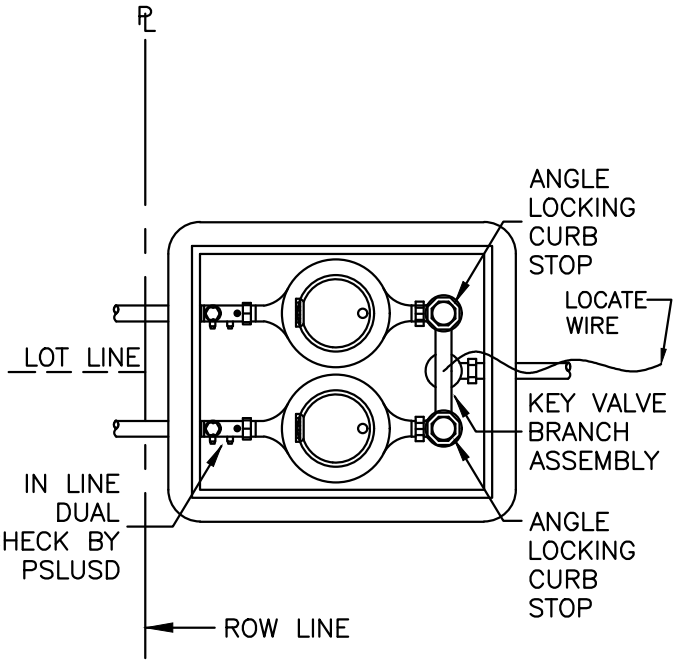
RESIDENTIAL WATER SERVICE CONNECTION

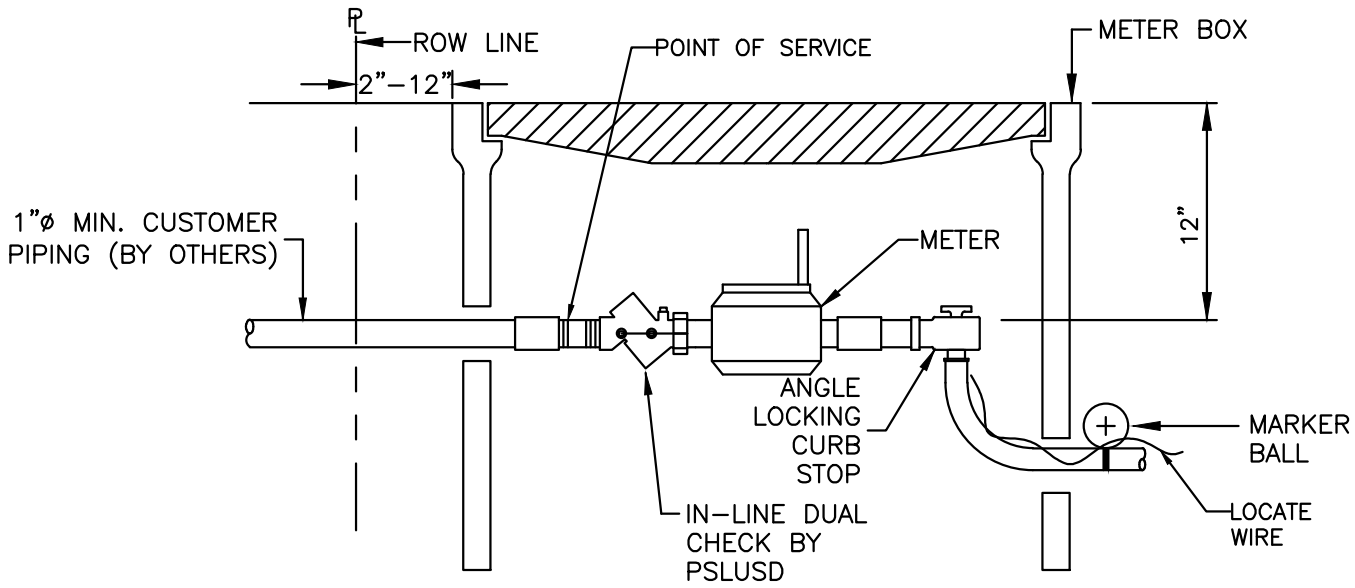
DETAIL: W-01
DATE: 2019
SCALE: N.T.S.
SHEET: 1 OF 2



SINGLE SERVICE



DOUBLE SERVICE



NOTES:

1. METER SHALL BE INSTALLED BY PSLUSD.
2. LOCATE MARKER BALL WITH TIE STRAPS ARE TO BE PLACED AS SHOWN.
3. A KEY VALVE BRANCH ASSEMBLY SHALL BE PROVIDED BY CONTRACTOR FOR DOUBLE SERVICES.

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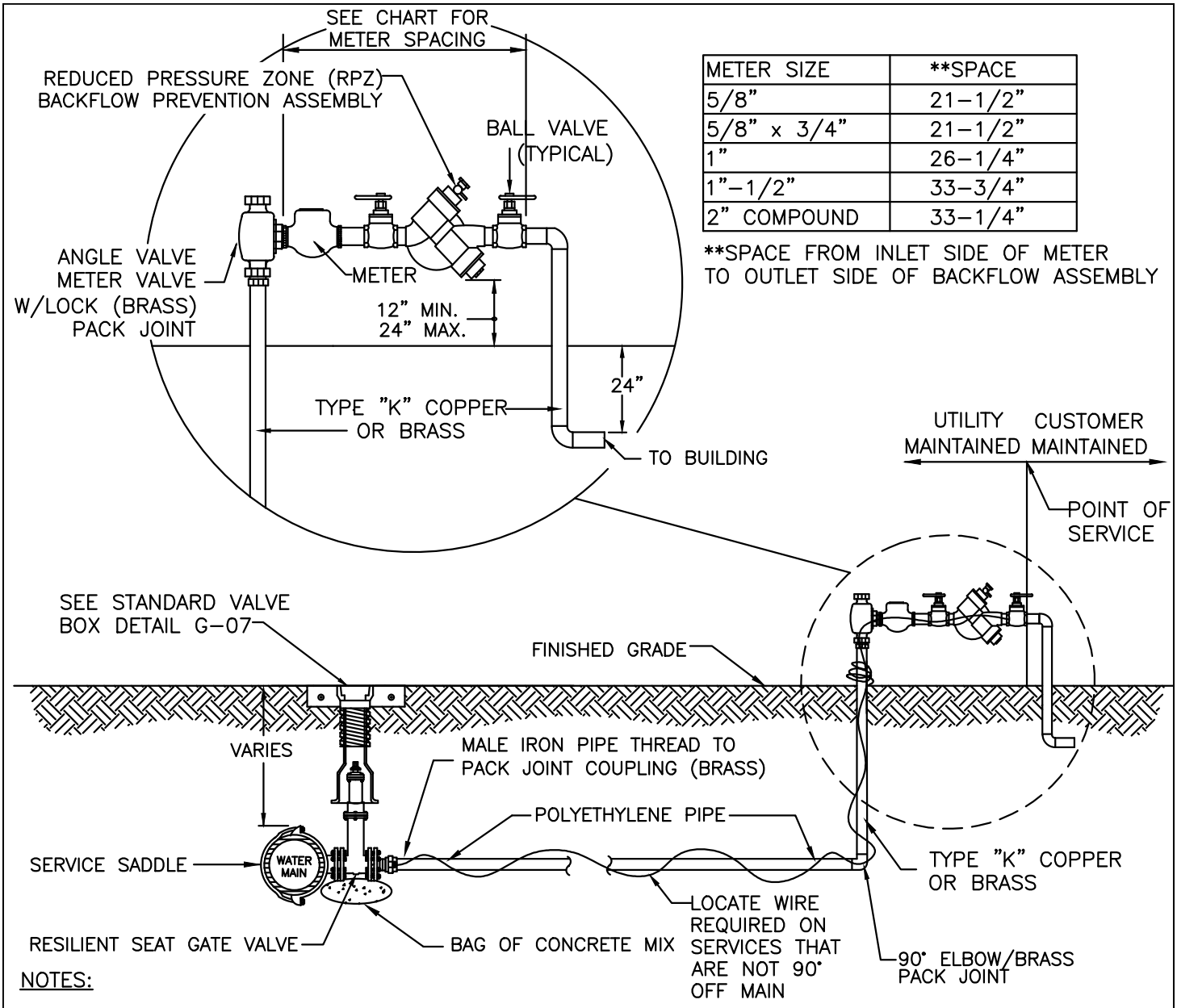
RESIDENTIAL WATER SERVICE CONNECTION

DETAIL: W-01
DATE: 2019
SCALE: N.T.S.
SHEET: 2 OF 2



METER SIZE	**SPACE
5/8"	21-1/2"
5/8" x 3/4"	21-1/2"
1"	26-1/4"
1"-1/2"	33-3/4"
2" COMPOUND	33-1/4"

**SPACE FROM INLET SIDE OF METER TO OUTLET SIDE OF BACKFLOW ASSEMBLY

NOTES:

1. THE ENGINEER-OF-RECORD SHALL SIZE THE PIPE, FITTINGS, VALVES AND APPURTENANCES; THE MINIMUM SHALL BE 2" UP TO THE ANGLE VALVE. METER SIZE CALCULATIONS TO BE SUBMITTED BASED ON AWWA RECOMMENDATIONS (MANUAL M-22)

2. BOTH RISERS SHALL BE BRASS OR TYPE "K" COPPER TUBING (HARD DRAWN) WITH COPPER/BRASS THREADED FITTINGS AND ADAPTERS.

3. ADDITIONAL SUPPORT SHALL BE PROVIDED AS NECESSARY TO SECURELY SUPPORT THE BACK FLOW PREVENTION ASSEMBLY.

4. VALVE, SADDLE AND APPURTENANCES SHALL BE PER THE QUALIFIED PRODUCTS LIST.

5. METERS AND BACKFLOW PREVENTERS 2" OR SMALLER SHALL BE INSTALLED BY PSLUSD. SEE SHEET 2 FOR MULTI-SERVICE METER BANK ASSEMBLY.

6. AT THE DIRECTION OF THE PSLUSD, BOLLARDS MAY BE REQUIRED TO PREVENT DAMAGE FROM ACCIDENTS. REFER TO DETAIL G-15 FOR BOLLARD INSTALLATION.

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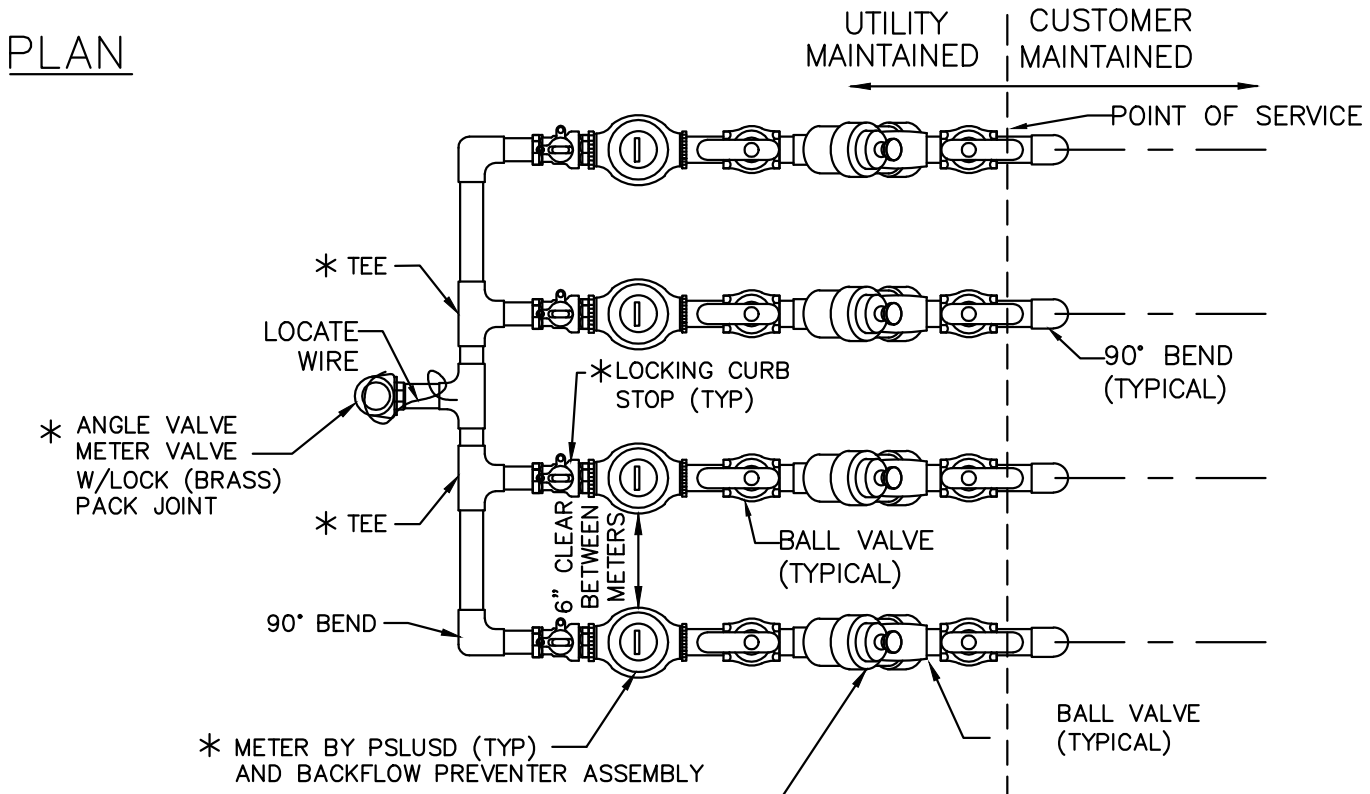
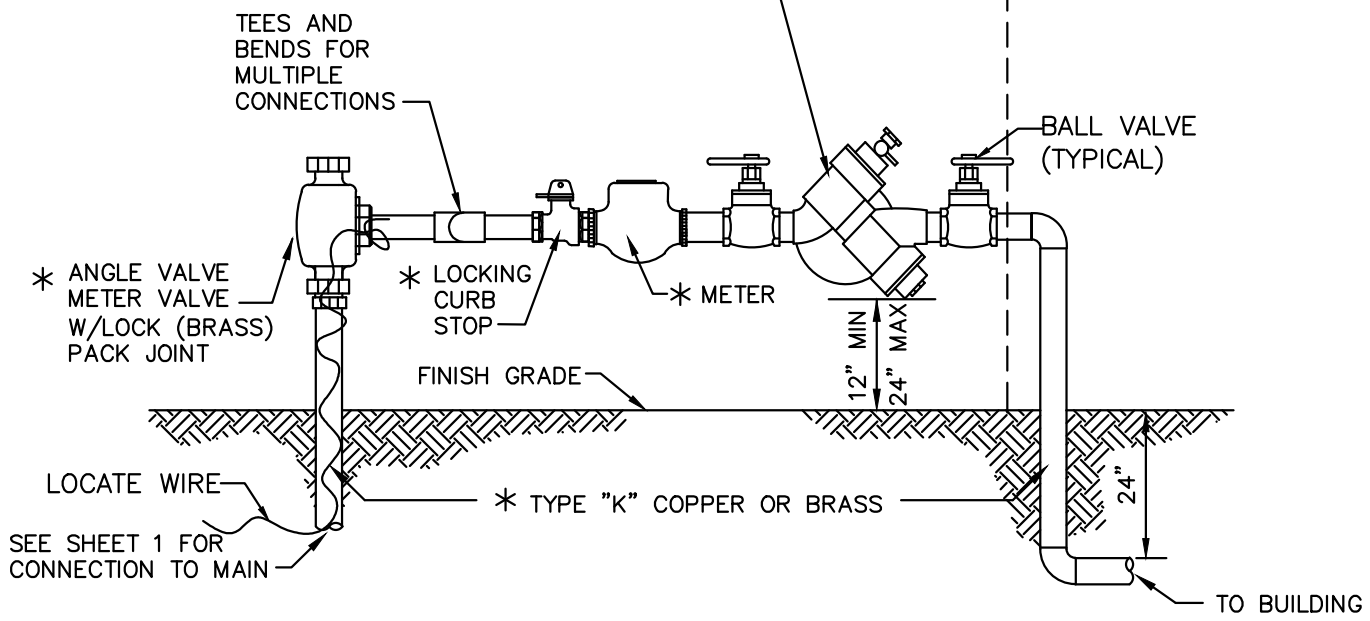
COMMERCIAL WATER SERVICE CONNECTION

DETAIL: W-02
DATE: 2019
SCALE: N.T.S.
SHEET: 1 OF 2

PLAN



PROFILE



* ENGINEER–OF–RECORD TO CALCULATE PIPE AND FITTING SIZES TO ACCOMMODATE NUMBER OF & SIZE OF METER PROPOSED. THE NUMBER OF METERS SHALL BE A MAXIMUM OF 4 AND THE MINIMUM SIZE SERVICE SHALL BE 2".

NOTES: SEE SHEET 1

MINIMUM CONSTRUCTION STANDARDS FOR
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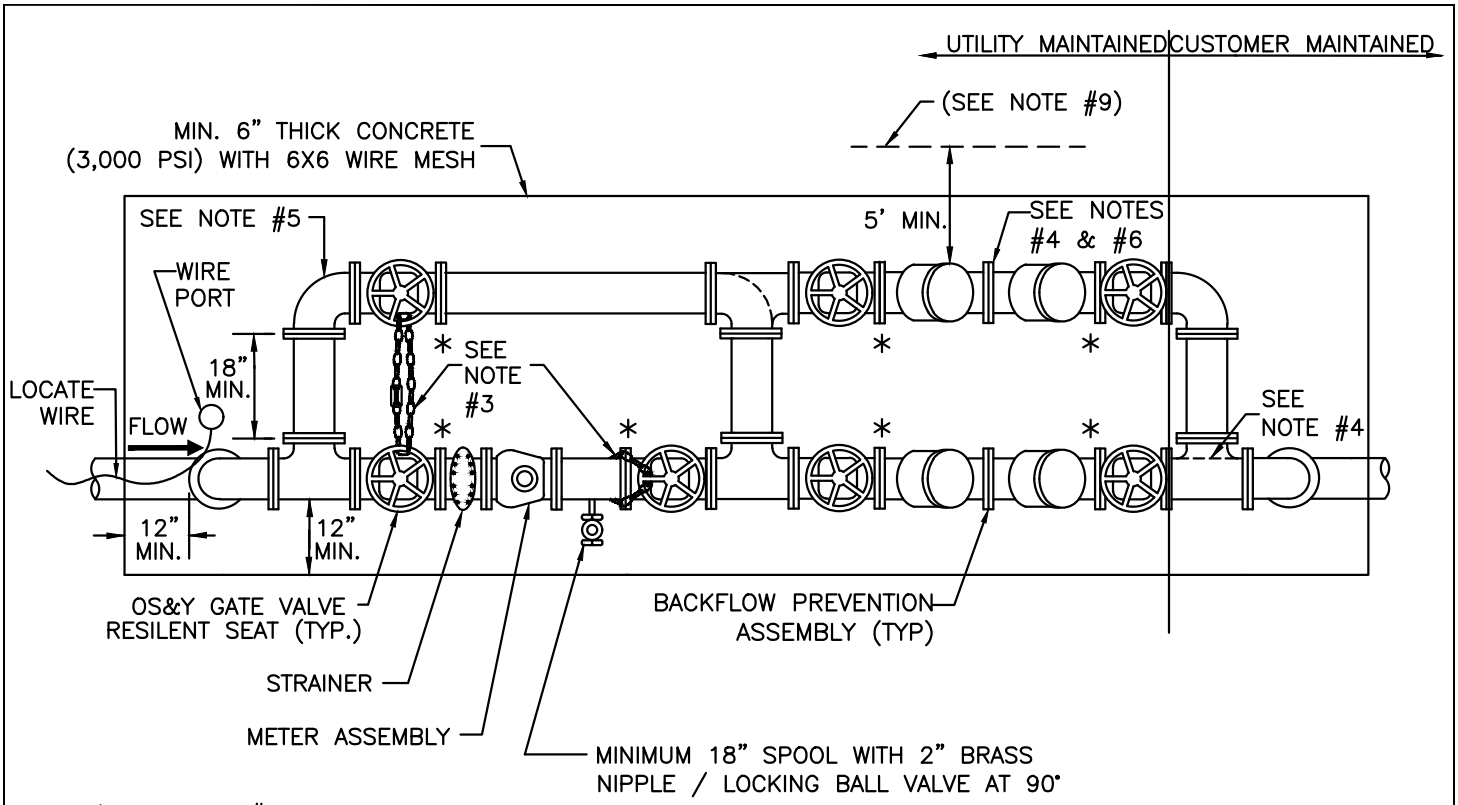
COMMERCIAL MUTIL-SERVICE METER BANK ASSEMBLY

DETAIL: W-02
DATE: 2019
SCALE: N.T.S.
SHEET: 2 OF 2



PLAN VIEW

NOTES:

1. ALL PIPE AND FITTINGS SHALL BE CLASS 53 DUCTILE IRON.

2. ALL UNDERGROUND FITTINGS SHALL BE RESTRAINED MECHANICAL JOINT TYPE & ALL ABOVE GROUND FITTINGS SHALL BE FLANGE JOINTS, FULL FACE NEOPRENE GASKETS WITH STAINLESS STEEL BOLTS.

3. STAINLESS STEEL CHAINS (1/4"MIN.) & LOCKS FOR THE VALVES SHALL BE PROVIDED AS REQUIRED BY THE PSLUSD.

4. A BACKFLOW PREVENTION ASSEMBLY MAY NOT BE REQUIRED ON THE BY–PASS LINE IF THE CUSTOMER SUBMITS A WRITTEN REQUEST TO THE PSLUSD FOR APPROVAL; IF APPROVED, AN ELBOW SHALL BE USED INSTEAD OF THE TEE AND A REVISED DETAIL SHALL BE SUBMITTED TO THE PSLUSD.

5. METER BY–PASS LINE SHALL BE THE SAME SIZE AS SUPPLY TO METER.

6. BACKFLOW PREVENTION ASSEMBLY ON THE BY–PASS LINE SHALL BE SAME SIZE AND TYPE AS THE MAIN BACKFLOW PREVENTION ASEMBLY.

7. THE ENGINEER–OF–RECORD SHALL SIZE METER AND BACKFLOW PREVENTION ASSEMBLY, TAKING INTO CONSIDERATION THE TYPICAL HEAD LOSS FOR EACH.

8. 12" MIN. / 24" MAX. CLEARANCE IS REQUIRED FROM THE TOP OF THE CONCRETE PAD TO THE BOTTOM OF THE RELIEF VALVE.

9. A 5' MIN. CLEAR ZONE SHALL BE LOCATED ON ALL SIDES OF THE BACKFLOW PREVENTION ASSEMBLIES.

10. STAINLESS STEEL ADJUSTABLE PIPE SUPPORTS SHALL BE PROVIDED FOR SUPPORT UNDER EACH GATE VALVE AND ANCHORED IN THE CONCRETE PAD.

11. AT THE DIRECTION OF THE PSLUSD, BOLLARDS MAY BE REQUIRED TO PREVENT DAMAGE FROM ACCIDENTS. REFER TO DETAIL G–15 FOR BOLLARD INSTALLATION.

12. A BRASS PLUG SHALL BE INSTALLED IN ALL TEST PORTS.

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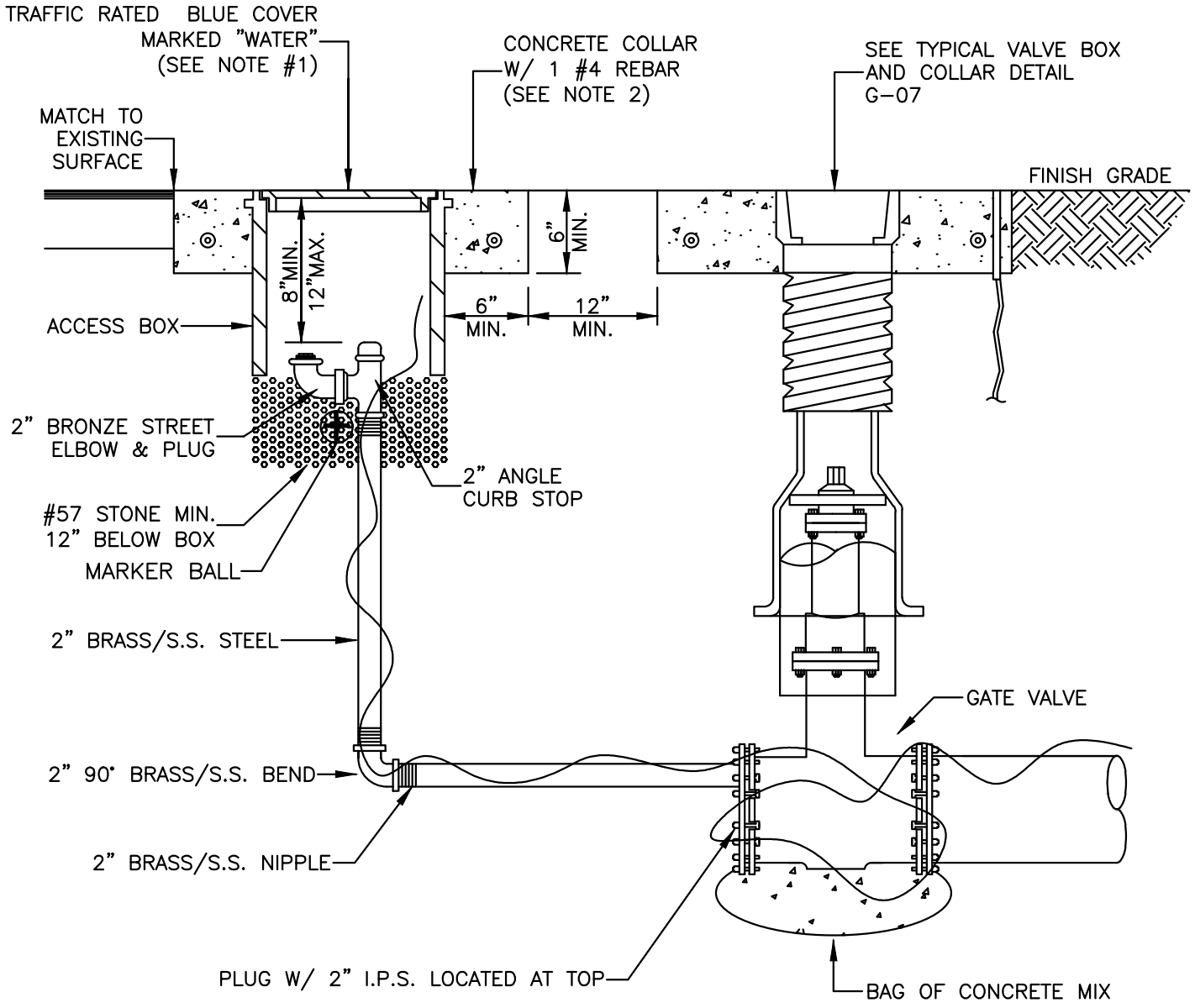
METER AND BACKFLOW PREVENTION ASSEMBLY FOR 3" AND LARGER SERVICES

DETAIL: W-03
DATE: 2019
SCALE: N.T.S.
SHEET: 1 OF 1



NOTES:

1. COVER SHALL BE PAINTED BLUE FOR "WATER".
2. NO CONCRETE COLLAR IF LOCATED IN ASPHALT OR CONCRETE.
3. LOCATE WIRE NOT REQUIRED IF SEPARATION BETWEEN THE VALVE BOX AND ACCESS BOX IS 6' OR LESS.

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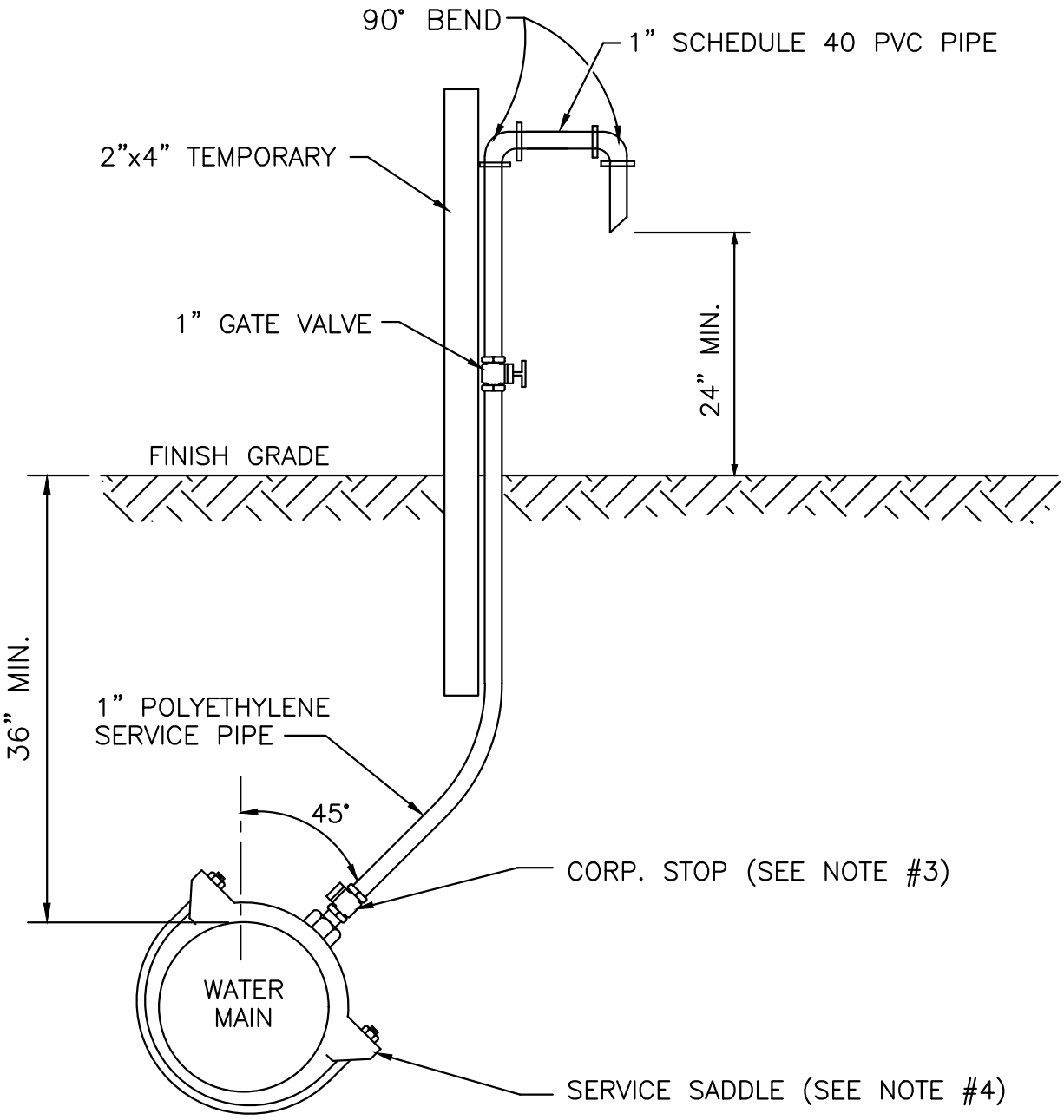
BLOW-OFF ASSEMBLY

DETAIL: W-04
DATE: 2019
SCALE: N.T.S.
SHEET: 1 OF 1



NOTES:

1. SAMPLING POINTS SHALL BE LOCATED AS SHOWN ON PLANS APPROVED BY PSLUSD AND AS REQUIRED BY FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION. A SAMPLE POINT MAP (SINGLE SHEET PDF) SHALL BE SUBMITTED TO PSLUSD FOR REVIEW PRIOR TO DISINFECTION.

2. THE EXCAVATED HOLE FOR THIS INSTALLATION SHALL BE BACKFILLED TO FINISHED GRADE PRIOR TO DISCHARGING ANY WATER ON THE GROUND.

3. AFTER BACTERIOLOGICAL CLEARANCE IS RECEIVED, THE CONTRACTOR SHALL TURN CORPORATION STOP OFF, REMOVE TUBING AND PLUG CORPORATION STOP WITH BRASS PLUG/CAP.

4. NO DIRECT TAPS SHALL BE PERMITTED.

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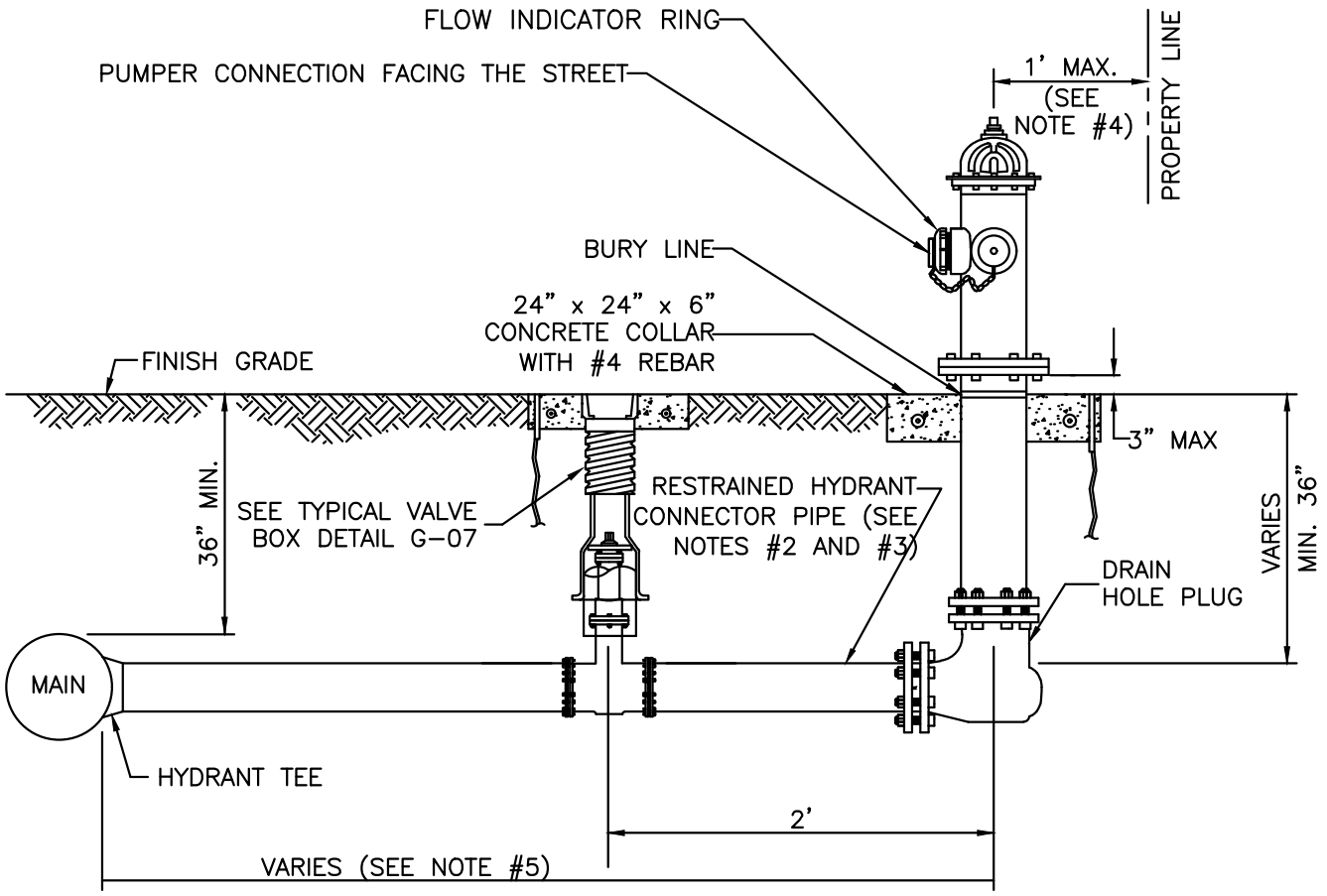
WATER SAMPLING POINT

DETAIL: W-05
DATE: 2019
SCALE: N.T.S.
SHEET: 1 OF 1



NOTES:

1. HYDRANTS SHALL BE INSTALLED IN ACCORDANCE WITH ANSI/AWWA C600. THE HYDRANTS SHALL BE PAINTED BY THE MANUFACTURER WITH 2 COATS (MIN.).
2. VERTICAL BENDS MAY BE NECESSARY TO OBTAIN COVER UNDER SWALES OR AT HYDRANT LOCATION. VERTICAL BENDS OR OFFSETS ARE INCLUDED IN HYDRANT ASSEMBLY. ALL BENDS MUST BE RESTRAINED.
3. CONNECTOR PIPE AND ANY REQUIRED VERTICAL BENDS SHALL HAVE AN ANCHORING FEATURE ON BOTH ENDS SO THAT WHEN USED WITH M.J. SPLIT GLANDS, A RESTRAINED JOINT IS PROVIDED.
4. WHEN INSTALLED WITH SIDEWALK OR CURB, PROVIDE MIN. 2 FOOT CLEARANCE TO ANY PORTION OF THE HYDRANT, UTILIZING THE SIDE LOT EASEMENT IF NECESSARY.
5. A GATE VALVE SHALL BE INSTALLED WITHIN 2 FEET OF THE FIRE HYDRANT. IF DISTANCE FROM THE WATER MAIN TO THE FIRE HYDRANT IS GREATER THAN 20 FEET, A SECOND GATE VALVE SHALL BE INSTALLED WITHIN 2 FEET OF THE MAIN.
6. ANY DEVIATIONS FROM THE CRITERIA ABOVE REQUIRE A WRITTEN RECOMMENDATION FROM THE ENGINEER-OF-RECORD AND WRITTEN APPROVAL BY PSLUSD.

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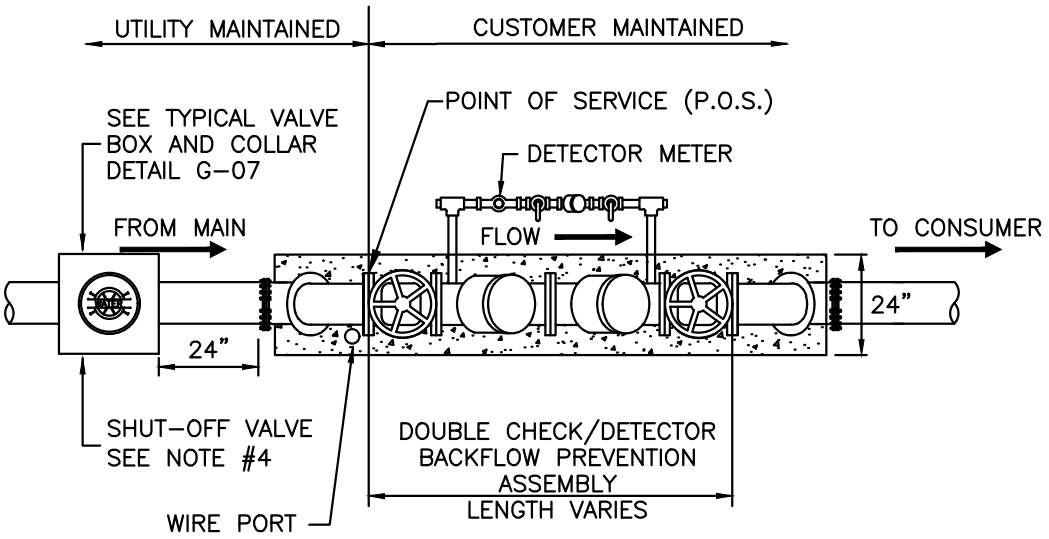
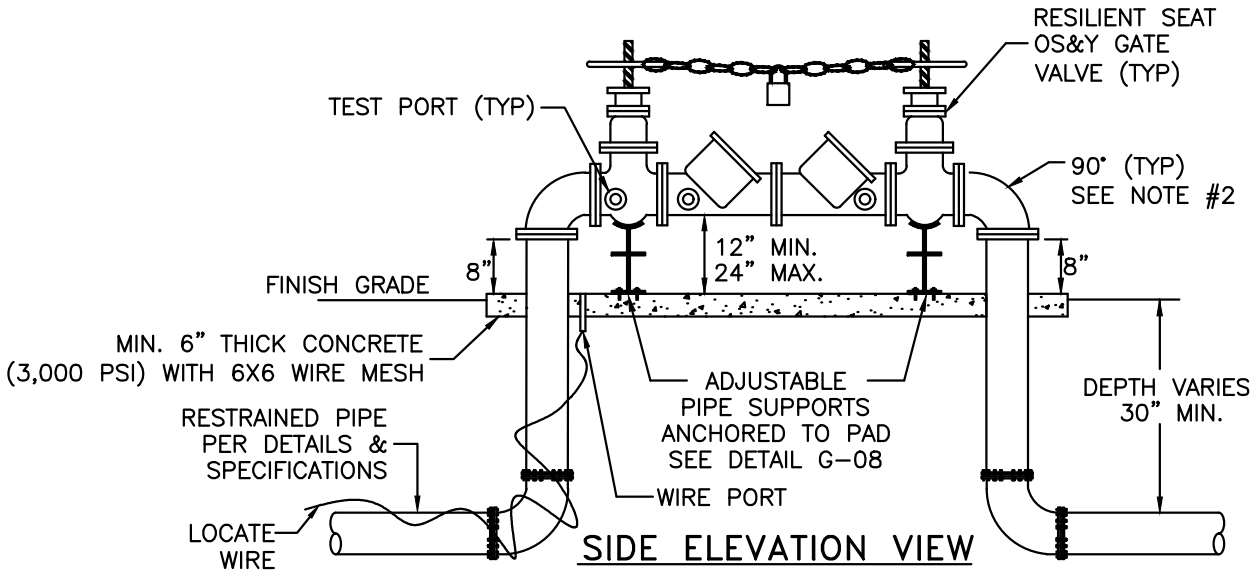
FIRE HYDRANT ASSEMBLY

DETAIL: W-06
DATE: 2019
SCALE: N.T.S.
SHEET: 1 OF 1



PLAN VIEW



SIDE ELEVATION VIEW

NOTES:

1. ALL PIPE AND FITTINGS SHALL BE CLASS 53 DUCTILE IRON INCLUDING AND IN BETWEEN BURIED ELBOWS.

2. ALL UNDERGROUND FITTINGS SHALL BE RESTRAINED MECHANICAL JOINT TYPE & ALL ABOVE GROUND FITTINGS SHALL BE FLANGE JOINTS WITH FULL FACE NEOPRENE GASKETS, WITH STAINLESS STEEL BOLTS.

3. A 3/8" STAINLESS STEEL CHAIN & LOCK SHALL BE PROVIDED BY CONTRACTOR FOR THE VALVES AS REQUIRED BY THE PSLUSD. VALVES TO BE LOCKED IN OPEN POSITION.

4. TO MAINTAIN CONTINUITY OF SERVICE DURING REPAIRS TO THE ASSEMBLY, AN ISOLATION VALVE SHALL BE PROVIDED ON THE UTILITY'S MAIN AS SHOWN.

5. AT THE DIRECTION OF THE PSLUSD, BOLLARDS MAY BE REQUIRED TO PREVENT DAMAGE FROM ACCIDENTS. REFER TO DETAIL G-15 FOR BOLLARD INSTALLATION.

6. A BRASS PLUG SHALL BE INSTALLED IN ALL TEST PORTS.

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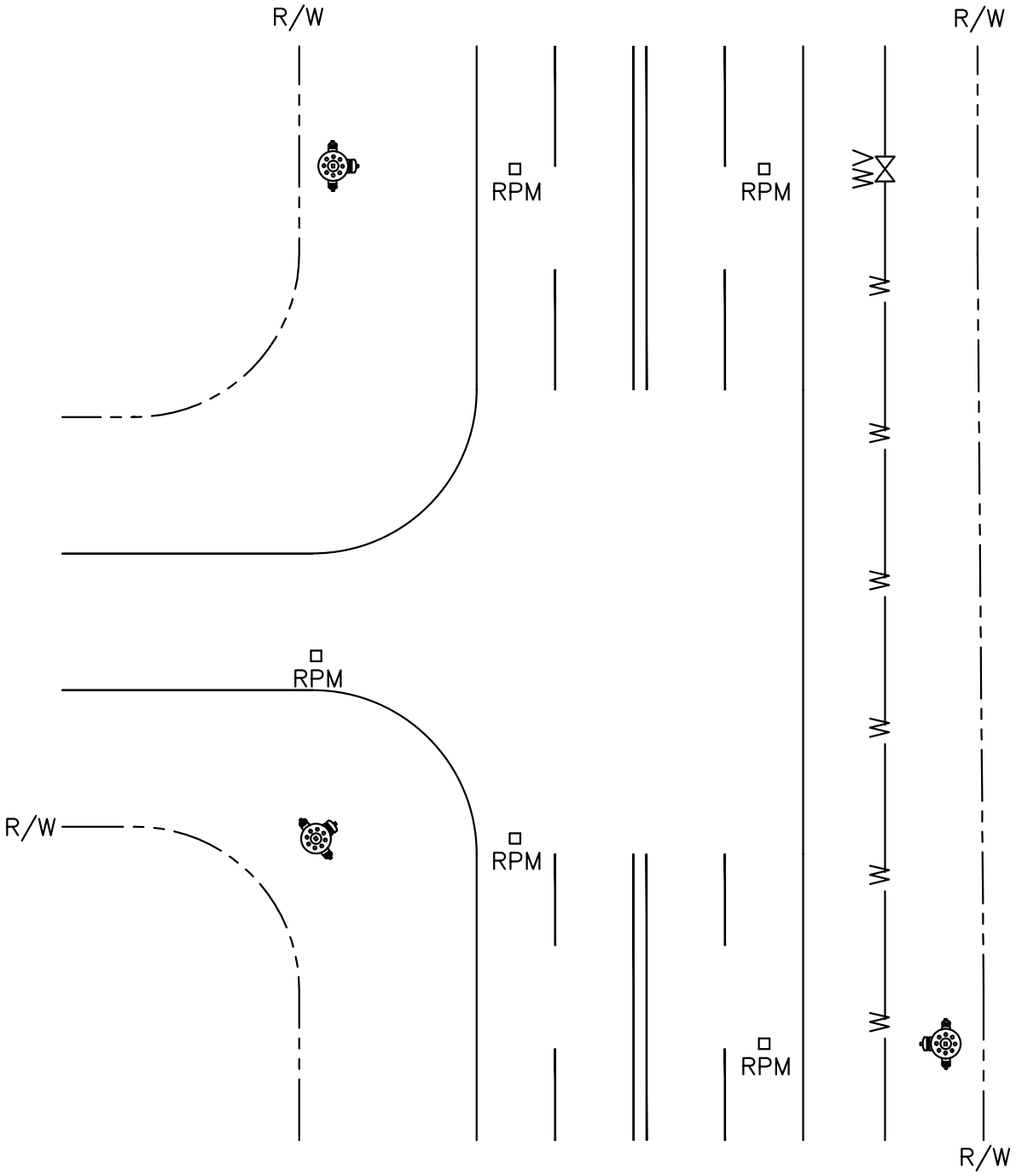
FIRE SERVICE BACKFLOW ASSEMBLY

DETAIL: W-07
DATE: 2019
SCALE: N.T.S.
SHEET: 1 OF 1



NOTES:

1. MARKER COLOR IS BLUE. PLACE IN CENTER OF THE LANE CLOSEST TO THE HYDRANT.

2. IF HYDRANT IS LOCATED WITHIN THE RADIUS OF AN INTERSECTION PLACE A MARKER ON EACH ROADWAY IN THE CENTER LANES CLOSEST TO THE HYDRANT.

3. MARKER IS PLACED PERPENDICULAR (90 DEGREES) TO THE HYDRANT.

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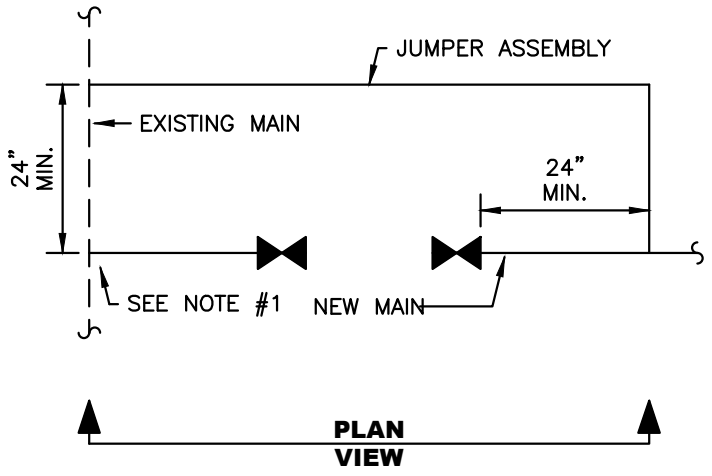
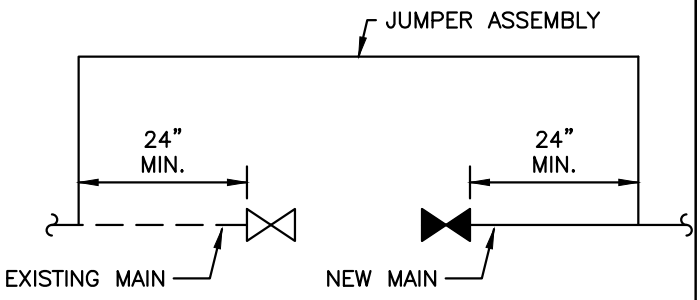
FIRE HYDRANT REFLECTIVE PAVEMENT MARKER PLACEMENT GUIDELINE

DETAIL: W-08
DATE: 2019
SCALE: N.T.S.
SHEET: 1 OF 1

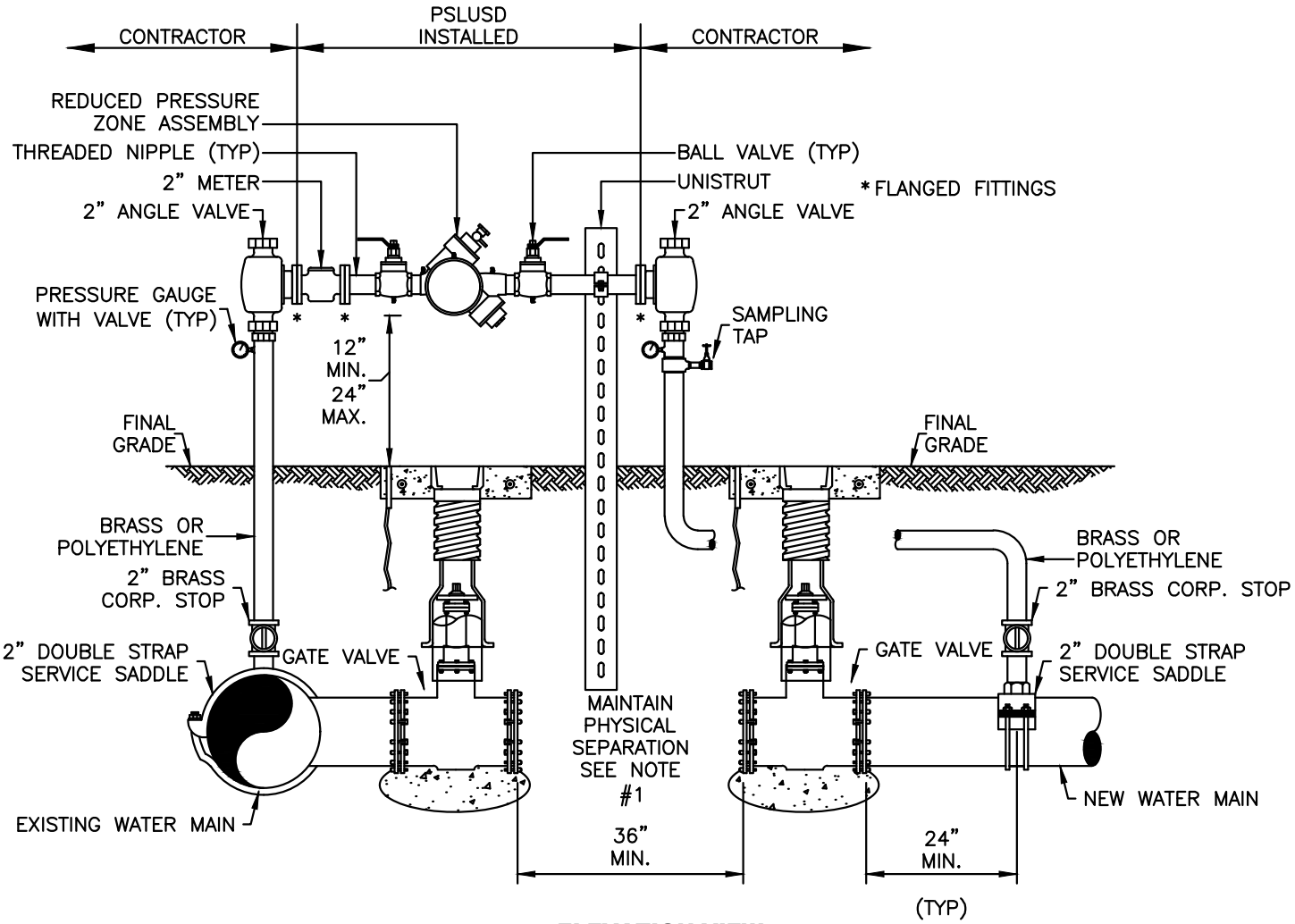


PLAN VIEW



ALTERNATE

ALL PIPES AND APPURTENANCES TO BE 2" FOR NEW MAINS UP TO 8" FOR MAINS OVER 8", ALL PIPES AND APPURTENANCES TO BE SIZED AND DESIGNED BY THE ENGINEER OF RECORD.



ELEVATION VIEW

MINIMUM CONSTRUCTION STANDARDS FOR
CITY OF PORT ST. LUCIE
900 S.E. OGDEN LANE
PORT ST. LUCIE, FL 34983
PHONE (772) 873-6400 FAX (772) 873-6433

TEMPORARY JUMPER CONNECTION (UP TO 8" PIPE)

DETAIL: W-09
DATE: 2019
SCALE: N.T.S.
SHEET: 1 OF 2

NOTES:

1. A TEMPORARY JUMPER CONNECTION IS REQUIRED AT ALL CONNECTIONS BETWEEN EXISTING ACTIVE PSLUSD WATER MAINS AND PROPOSED NEW WATER MAINS. A PHYSICAL SEPARATION SHALL BE MAINTAINED, EXCEPT AS NOTED IN #5 BELOW. THE PROCEDURES ARE APPLICABLE WHEN CONNECTING TO AN EXISTING PSLUSD WATER MAIN, WHETHER BY TAPPING TEE AND VALVE OR BY CONTINUATION OF A PLUGGED STUB OUT WITH AN EXISTING GATE VALVE.

2. THE CONTRACTOR SHALL CONTACT THE PSLUSD REGARDING SCHEDULING OF REQUIRED INSPECTIONS RELATING TO THE CONNECTION. PSLUSD INSPECTIONS ARE SPECIFICALLY REQUIRED FOR TIE-INS OR WET TAPS TO EXISTING WATER MAINS, JUMPER INSTALLATION, FLUSHING, PRESSURE TESTING, DISINFECTION, SAMPLING, PLUGGING OF SAMPLING POINTS AND PERMANENT CONNECTION OF THE NEW WATER MAIN. THE CONTRACTOR SHALL FOLLOW ALL PROCEDURES STRICTLY IN ACCORDANCE WITH THE PSLUSD UTILITY STANDARDS MANUAL.

3. THE TEMPORARY JUMPER ASSEMBLY (FLANGE TO FLANGE) WILL BE SUPPLIED, INSTALLED AND TESTED BY THE PSLUSD, IN COORDINATION WITH THE ENGINEER OF RECORD AND CONTRACTOR. OTHER MATERIALS AND INSTALLATION REQUIRED FOR THE CONNECTION ARE THE RESPONSIBILITY OF THE CONTRACTOR. THE UNDERGROUND FITTINGS SHALL BE RESTRAINED MECHANICAL JOINT TYPE. ALL MATERIALS SHALL BE PER THE PSLUSD APPROVED QUALIFIED PRODUCTS LIST. THE JUMPER CONNECTION SHALL BE MAINTAINED BY THE CONTRACTOR UNTIL THE ASSEMBLY IS REMOVED BY THE PSLUSD.

4. ALL NEW WATER MAINS SHALL BE DOUBLE-PIGGED, FLUSHED, PRESSURE TESTED AND DISINFECTED. NEW MAIN SHALL NOT BE PLACED INTO SERVICE UNTIL THE BACTERIOLOGICAL TEST RESULTS ARE SATISFACTORY AND A WRITTEN APPROVAL HAS BEEN OBTAINED FROM THE PSLUSD.

5. A PHYSICAL SEPARATION SHALL BE MAINTAINED BETWEEN THE EXISTING MAIN AND NEW MAIN, EXCEPT AS NOTED HEREIN. IF THE NEW MAIN IS OF A SIZE OR LENGTH THAT PIGGING/FLUSHING CANNOT BE EFFECTIVELY ACCOMPLISHED WITH THE JUMPER CONNECTION, MORE THAN ONE JUMPER MAY BE USED AS DETERMNED BY THE EOR OR, THE PSLUSD MAY ALLOW A PHYSICAL CONNECTION UNDER CONTROLLED CONDITIONS AS FOLLOWS:

   a. THE PROCEDURE WILL BE CONDUCTED BY THE CONTRACTOR IN THE PRESENCE OF A PSLUSD INSPECTOR AND THE ENGINEER-OF-RECORD (EOR) OR REPRESENTATIVE.
   b. THE NEW VALVE(S) SHOWN IN THIS DETAIL SHALL BE PRESSURE/LEAKAGE TESTED AND REPLACED IF LEAKAGE IS OBSERVED. THE VALVES WILL BE KEPT CLOSED BY THE PSLUSD AND SHALL NOT BE OPERATED BY ANY ONE OTHER THAN PSLUSD PERSONNEL.
   c. THE JUMPER CONNECTION SHALL BE USED TO FILL THE NEW MAIN.
   d. THE CONTRACTOR SHALL DISINFECT THE PIPE AND FITTINGS USED TO MAKE THE CONNECTION BY SPRAYING AND SWABBING WITH CHLORINE.
   e. ALL VALVES IN THE NEW SYSTEM DOWNSTREAM OF THE JUMPER SHALL BE OPENED BY THE CONTRACTOR PRIOR TO FLUSHING. THE VALVES SHOWN IN THIS DETAIL SHALL BE OPENED BY PSLUSD PERSONNEL ONLY.
   f. THE PIGGING AND FLUSHING SHALL BE PERFORMED BY THE CONTRACTOR IN THE PRESENCE OF A PSLUSD INSPECTOR. THE VALVES WILL BE CLOSED BY PSLUSD PERSONNEL AFTER THE MAIN HAS BEEN FLUSHED.

6. THE WATER MAINS SHALL BE PRESSURE TESTED AFTER FLUSHING AND PRIOR TO DISINFECTION. ALL VALVES SHALL REMAIN CLOSED DURING THE PRESSURE TEST AND WILL NOT BE OPENED UNTIL THE RESULTS OF PRESSURE TESTING AND BACTERIOLOGICAL TESTING ARE SATISFACTORY AND THE SYSTEM HAS BEEN ACCEPTED FOR OPERATION BY THE PSLUSD.

7. DISINFECTION SHALL BE CONDUCTED IN ACCORDANCE WITH AWWA C651. A MINIMUM PRESSURE OF 20 PSI SHALL BE MAINTAINED IN THE NEW MAIN AFTER DISINFECTION.

8. CONNECTION TO EXISTING MAINS SHALL NOT BE MADE PRIOR TO BACTERIOLOGICAL CLEARANCE AND UNTIL APPROVED BY THE PSLUSD.

9. UPON WRITTEN ACCEPTANCE OF BACTERIOLOGICAL CLEARANCE BY THE PSLUSD, THE SAMPLING POINTS CAN BE REMOVED AND PLUGGED BY THE CONTRACTOR. THE CONTRACTOR SHALL MAKE THE PERMANENT CONNECTION IN THE PRESENCE OF A PSLUSD INSPECTOR, UNLESS THE CONNECTION WAS PREVIOUSLY MADE AS INDICATED IN NOTE 5D; THE PIPE AND FITTINGS FOR CONNECTION SHALL BE DISINFECTED BY SPRAYING AND SWABBING WITH CHLORINE. ONCE APPROVAL TO PLACE THE WATER SYSTEM INTO OPERATION HAS BEEN RECEIVED, THE JUMPER ASSEMBLY (FLANGE TO FLANGE) WILL BE REMOVED BY THE PSLUSD IN COORDINATION WITH THE CONTRACTOR. THE CONTRACTOR SHALL REMOVE THE REST OF THE JUMPER CONNECTION PIPING AND PLUG THE CORPORATION STOP VALVES.

10. ABANDONED TAP LOCATIONS TO BE SHOWN ON THE AS-BUILTS.

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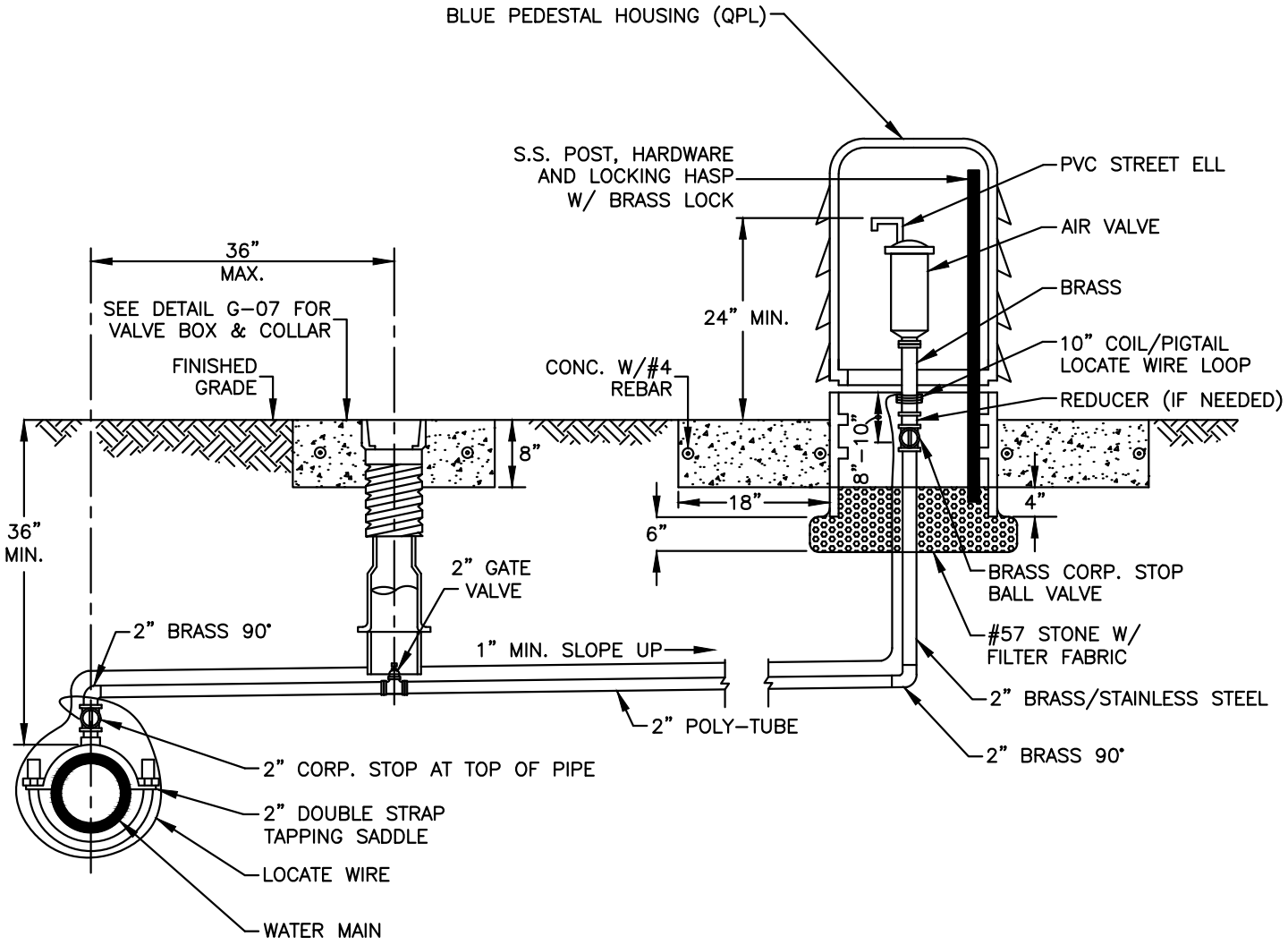
PORT ST. LUCIE, FL 34983
PHONE (772) 873-6400 FAX (772) 873-6433

TEMPORARY JUMPER CONNECTION

DETAIL: W-09
DATE: 2019
SCALE: N.T.S.
SHEET: 2 OF 2



NOTES:

1. AIR VALVE, PIPING AND APPURTENANCES SHALL BE IN ACCORDANCE WITH PSLUSD UTILITY STANDARDS.

2. THE AIR VALVE SHALL BE SIZED BY THE ENGINEER-OF-RECORD (EOR) BASED ON MANUFACTURER'S RECOMMENDATION. THE EOR SHALL CONSULT WITH THE PSLUSD REGARDING THE TYPE OF THE VALVE TO BE USED AND LOCATION.

3. AT THE DIRECTION OF THE PSLUSD, BOLLARDS MAY BE REQUIRED TO PREVENT DAMAGE FROM ACCIDENTS. REFER TO DETAIL G-15 FOR BOLLARD INSTALLATION.

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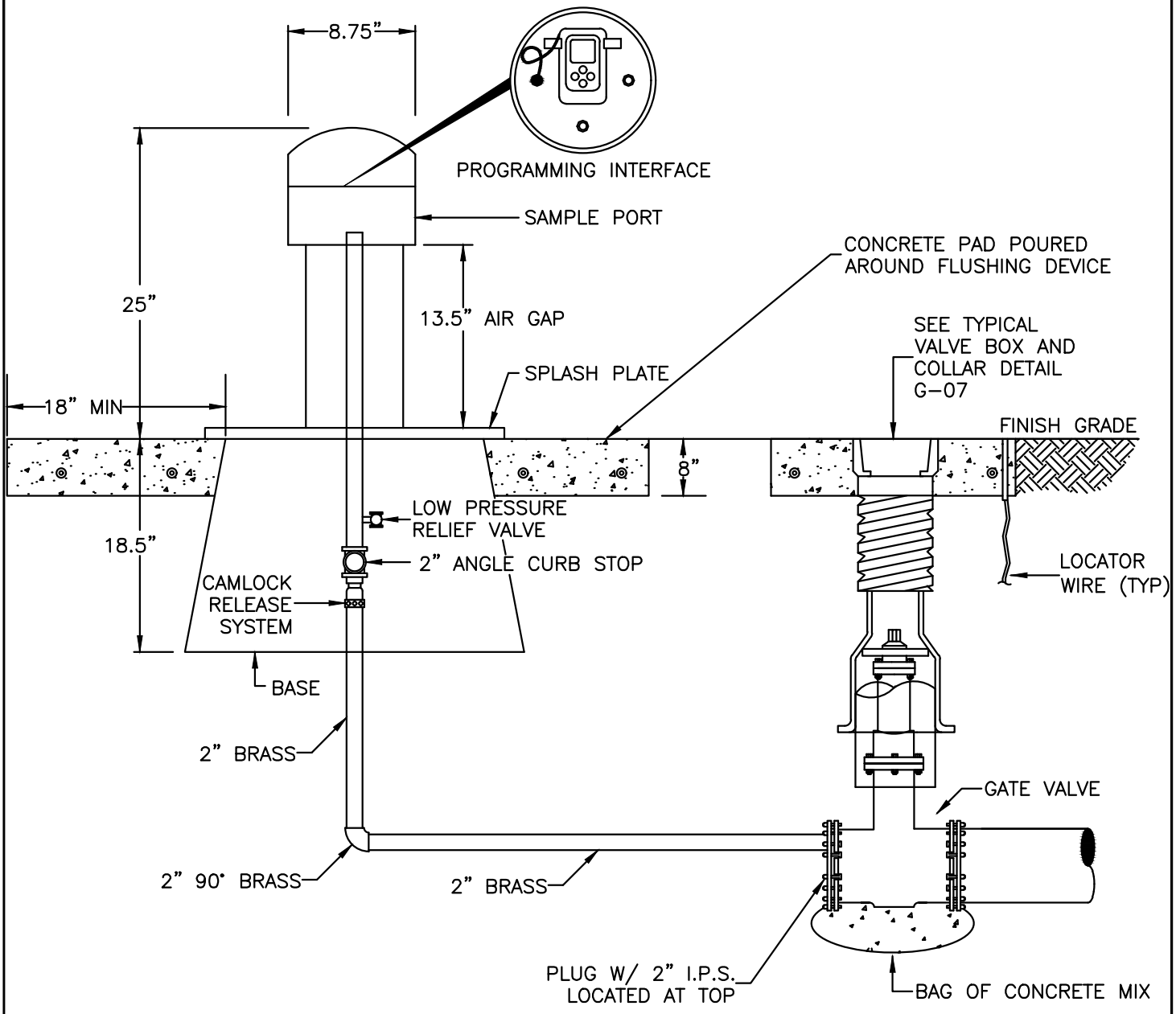
AUTOMATIC AIR RELEASE VALVE FOR WATER MAINS

DETAIL: W-10
DATE: 2019
SCALE: N.T.S.
SHEET: 1 OF 1



Add bollard requirement

NOTES:

1. AUTOMATIC FLUSHING VALVES SHALL BE PROVIDED AT ALL DEAD ENDS UNLESS OTHERWISE APPROVED IN WRITING BY THE PSLUSD.

2. AT THE DIRECTION OF THE PSLUSD, BOLLARDS MAY BE REQUIRED TO PREVENT DAMAGE FROM ACCIDENTS. REFER TO DETAIL G–14 FOR BOLLARD INSTALLATION.

3. UPON WRITTEN REQUEST BY PSLUSD A RESIDENTIAL TYPE WATER METER MAY BE REQUIRED.

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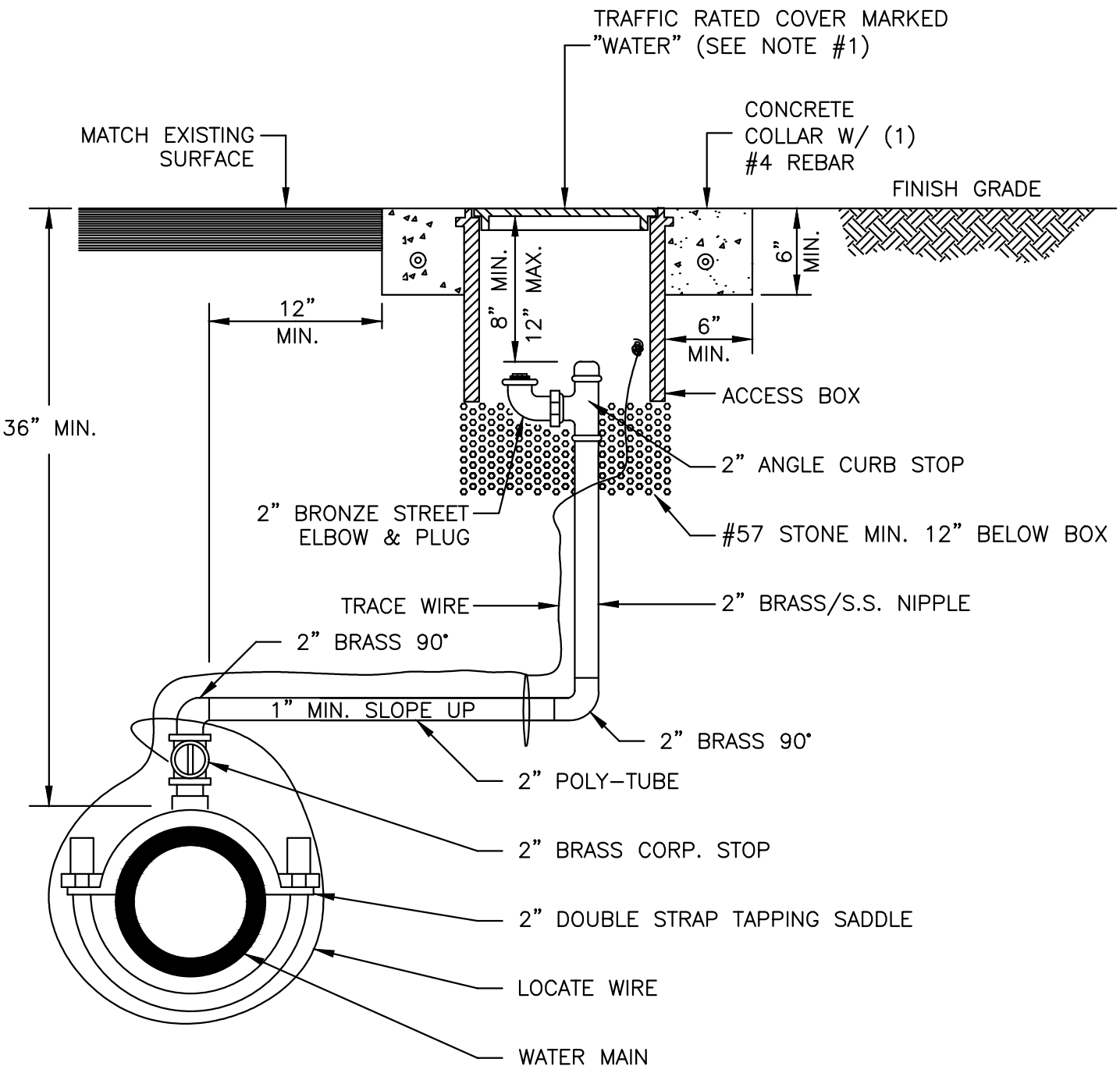
AUTOMATIC FLUSHING VALVE FOR WATER MAINS

DETAIL: W-11
DATE: 2019
SCALE: N.T.S.
SHEET: 1 OF 1



NOTES:

1. COVER SHALL BE PAINTED BLUE.
2. NO CONCRETE COLLAR IN PAVED AREAS.

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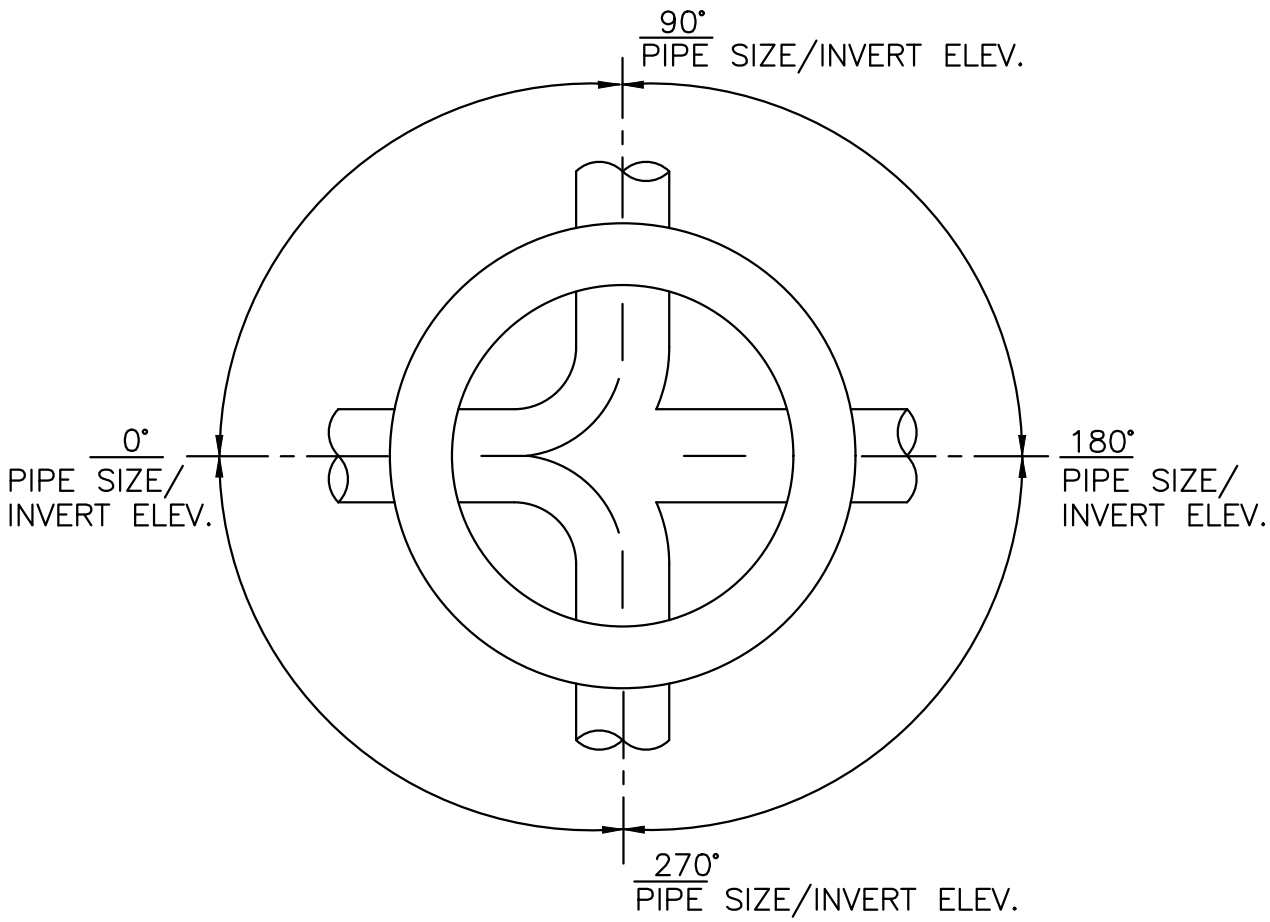
MANUAL AIR RELEASE VALVE ASSEMBLY

DETAIL: W-12
DATE: 2019
SCALE: N.T.S.
SHEET: 1 OF 1



PLAN VIEW

NOTES:

1. THE ENGINEER–OF–RECORD SHALL SUBMIT TO PSLUSD THE SHOP DRAWINGS FOR EACH STRUCTURE, PROVIDING THE DIAMETER OF EACH PIPE, INVERT ELEVATION OF EACH PIPE, RIM ELEVATION AND THE NUMBER OF DEGREES BETWEEN PIPES. (15 DEGREE INCREMENTS IF POSSIBLE)

2. MANHOLE INTERIOR SHALL BE LINED UTILIZING A CORROSION BARRIER SYSTEM. LISTED ON THE PSLUSD QUALIFIED PRODUCT LIST.

3. MANHOLE EXTERIOR SHALL BE COATED WITH A PRIMER AND TWO COATS OF A WATER BASED EPOXY 3–5 MILS EACH PER THE PSLUSD SPECIFICATIONS. APPLICATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATION.

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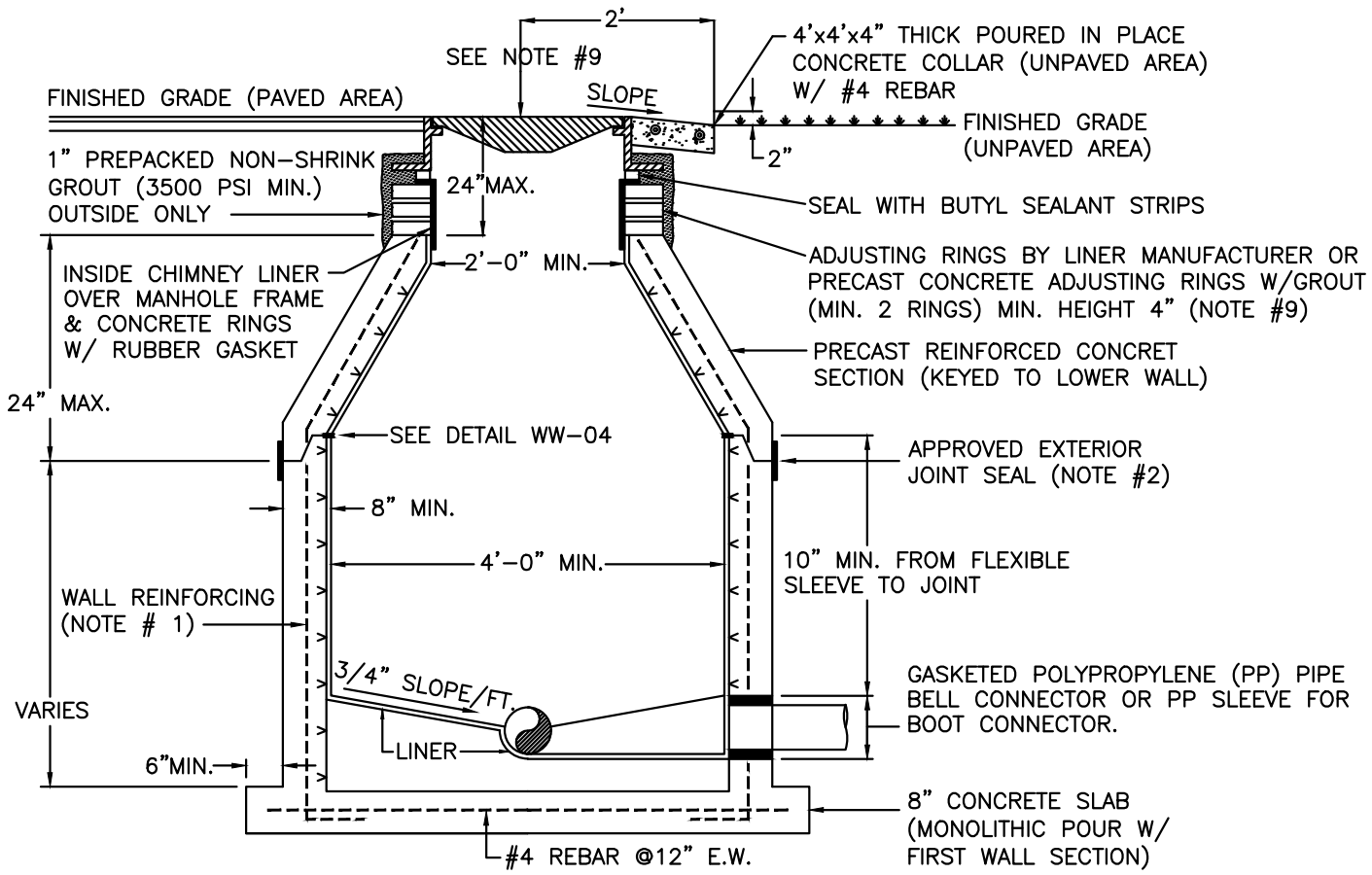
PORT ST. LUCIE, FL 34983
PHONE (772) 873-6400 FAX (772) 873-6433

INVERT FLOW CHANNELS FOR MANHOLES

DETAIL: WW-01
DATE: 2019
SCALE: N.T.S.
SHEET: 1 OF 1



NOTES:

1. MANHOLE FABRICATION SHALL BE IN ACCORDANCE W/ ASTM C-478, LATEST REVISION.

2. SEALANT SHALL BE APPLIED PER MANUFACTURER'S SPECIFICATION BETWEEN MANHOLE SECTIONS & AT ALL JOINTS (SEE DETAIL WW-04). ALSO AN APPROVED EXTERNAL JOINT SEAL MAY BE APPLIED AT THE JOINTS. (EXTERNAL JOINT SEAL IS OPTIONAL)

3. ALL PIPE OPENINGS SHALL BE GAS AND WATER TIGHT WITH NO EXPOSED CONCRETE SURFACES.

4. CAST OPENINGS SHALL BE MANUFACTURED WITH PRECAST HOLE W/ CAST-IN LINER SLEEVE SIZED FOR APPROPIATE PIPE AND FLEXIBLE CONNECTOR. APPROVED FLEXIBLE MANHOLE CONNECTORS SHALL BE USED AT PIPE CONNECTIONS. HOLE SIZE PER BOOT MANUFACTURER'S SPECIFICATIONS. DOUBLE STAINLESS STEEL PIPE CLAMPS MUST BE INSTALLED ON THE FLEXIBLE SLEEVES WHERE REQUIRED BY BOOT MANUFACTURER'S INSTALLATION INSTRUCTIONS.

5. FLOW CHANNELS SHALL BE CONSTRUCTED TO DIRECT FLOW INTO FLOW STREAM (SEE DETAIL WW-01).

6. LIFT HOLES ARE PERMITTED BUT MUST BE GROUTED ONCE MANHOLE IS IN PLACE.

7. MANHOLE AND BASE WILL BE LINED INSIDE WITH AN APPROVED LINER SYSTEM.

8. AN APPROVED COVER & FRAME SHALL BE PROVIDED. APPROVED INSIDE MANHOLE CHIMNEY SEALANT SHALL BE APPLIED OVER THE MANHOLE FRAME, CONCRETE RINGS, AND LINER SECTION IN ACCORDANCE WITH THE SPECIFICATIONS.

9. MAXIMUM HEIGHT OF CHIMNEY SHALL NOT EXCEED 24 INCHES INCLUDING FRAME CASTING.

CONT. ON SHEET 2 OF 2

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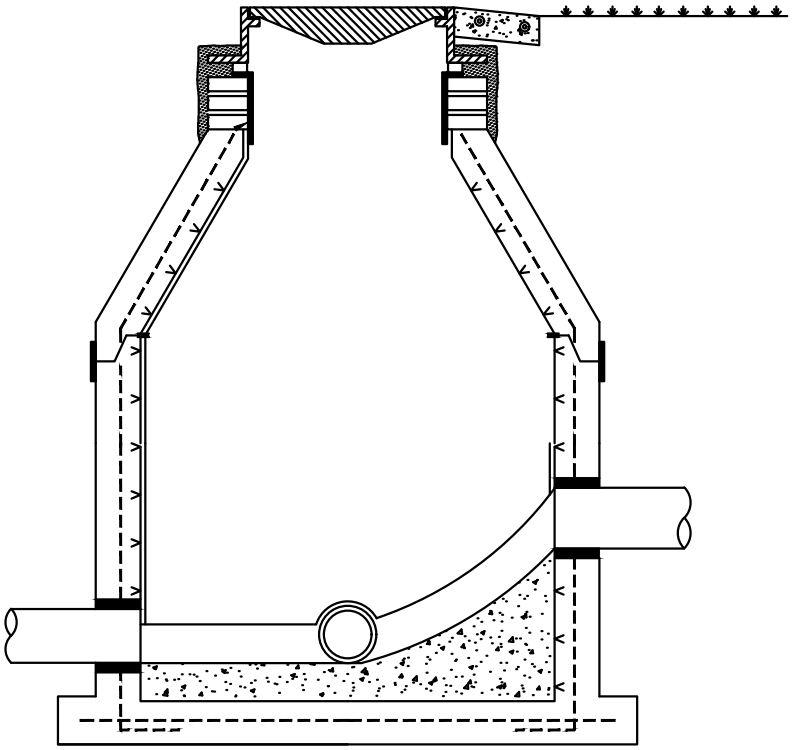
PHONE (772) 873-6400 FAX (772) 873-6433

STANDARD PRECAST MANHOLE

DETAIL: WW-02
DATE: 2019
SCALE: N.T.S.
SHEET: 1 OF 2



NOTES:

10. EXCAVATION, DEWATERING, BACKFILL & COMPACTION SHALL BE CONDUCTED IN ACCORDANCE W/ THE PSLUSD UTILITY STANDARDS. DENSITY TESTS SHALL BE PERFORMED AND SUBMITTED AS REQUIRED.

11. THE MANHOLE BASE SHALL BE CONSTRUCTED AS SHOWN IN THIS DETAIL WHERE THE DROP IN INVERT EXCEEDS 0.1' BUT IS LESS THAN 2'. FOR DROPS 2' OR GREATER A DROP CONNECTION PER DETAIL WW–03 SHALL BE USED.

12. THE MANHOLE SHALL BE CONSTRUCTED AS SHOWN IN THIS DETAIL WHERE THE DROP IN INVERT EXCEEDS 0.1" BUT LESS THAN 2'. FOR DROPS 2' OR GREATER A DROP CONNECTION PER DETAIL WW–03 SHALL BE USED.

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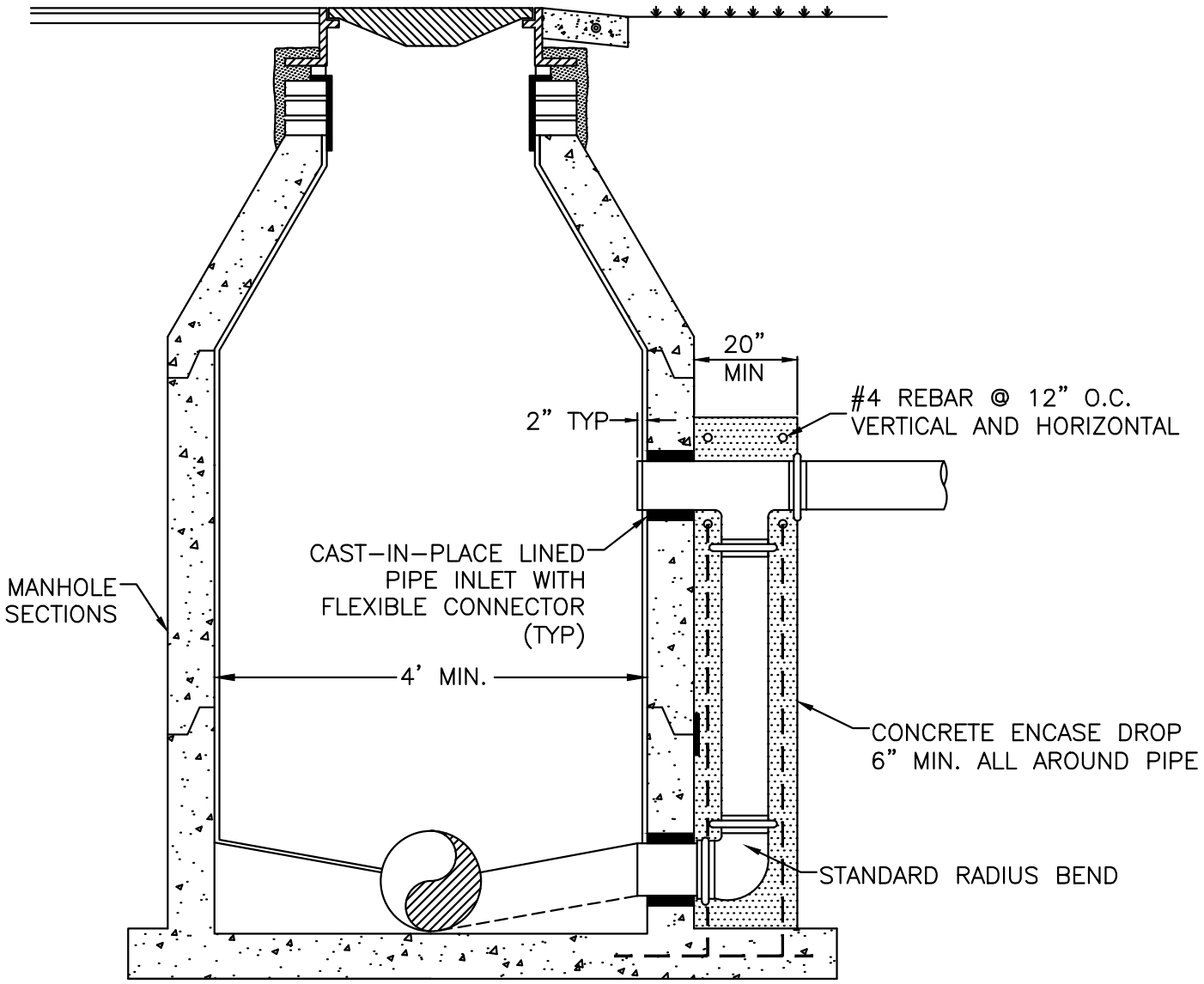
PHONE (772) 873-6400 FAX (772) 873-6433

STANDARD PRECAST MANHOLE (DROP)

DETAIL: WW-02
DATE: 2019
SCALE: N.T.S.
SHEET: 2 OF 2



NOTES:

1. A DROP CONNECTION IS REQUIRED WHENEVER AN INFLUENT INVERT IS LOCATED 2' OR HIGHER THAN THE DOWNSTREAM INVERT CHANNEL. MANHOLES WITH A DROP 2.0 FEET OR LESS SHALL BE IN ACCORDANCE WITH DETAIL WW-02.

2. MANHOLE CONSTRUCTION SHALL BE IN ACCORDANCE WITH DETAIL WW-02.

3. PVC SDR 26 PIPE WITH PVC SDR 26 FITTINGS SHALL BE UTILIZED IN THE DROP ASSEMBLY.

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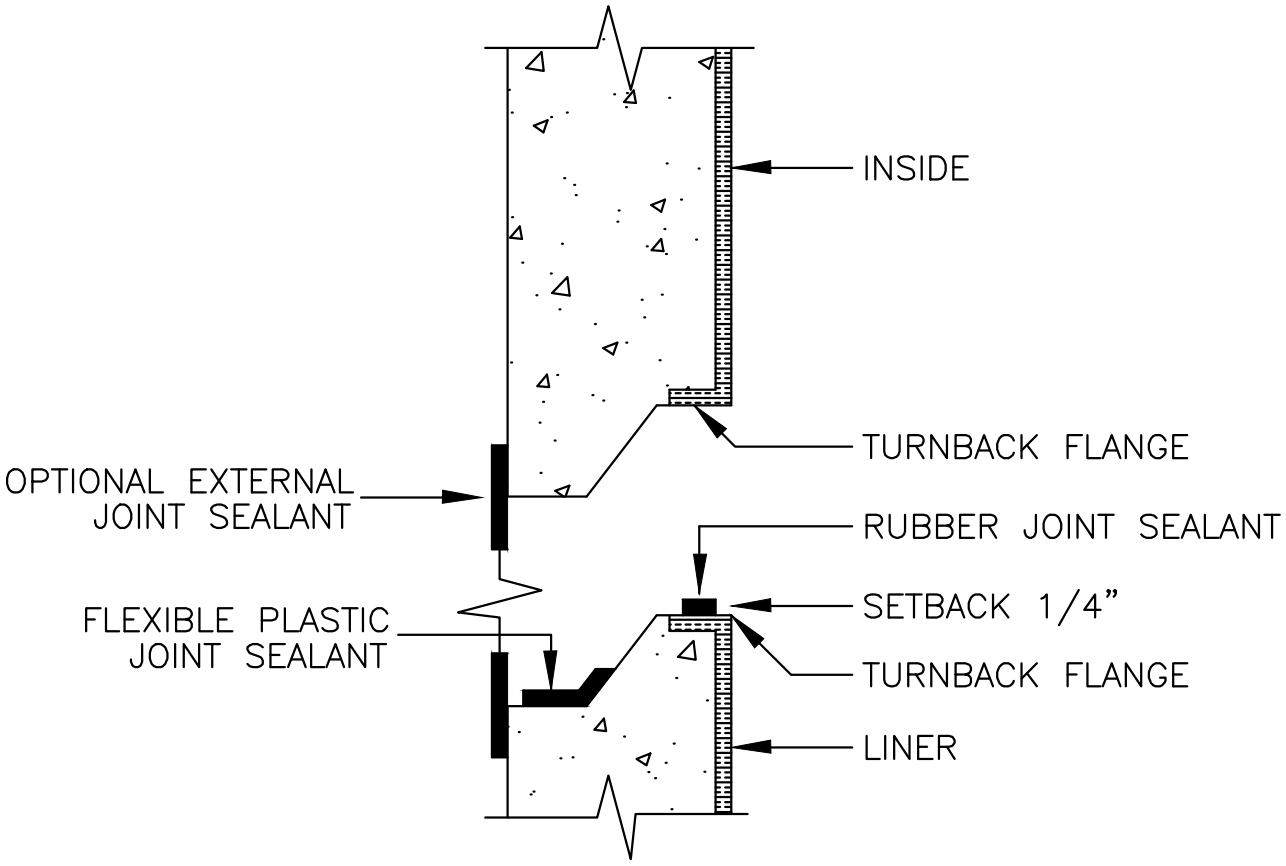
OUTSIDE DROP MANHOLE

DETAIL: WW-03
DATE: 2019
SCALE: N.T.S.
SHEET: 1 OF 1



JOINT SEALANTS

NOTES:

1. APPROVED JOINT SEALANTS SHALL BE USED.

2. WELDED CAP STRIPS AT JOINTS OR WELDED JOINTS MAY BE ACCEPTABLE IF APPROVED IN WRITING BY PSLUSD.

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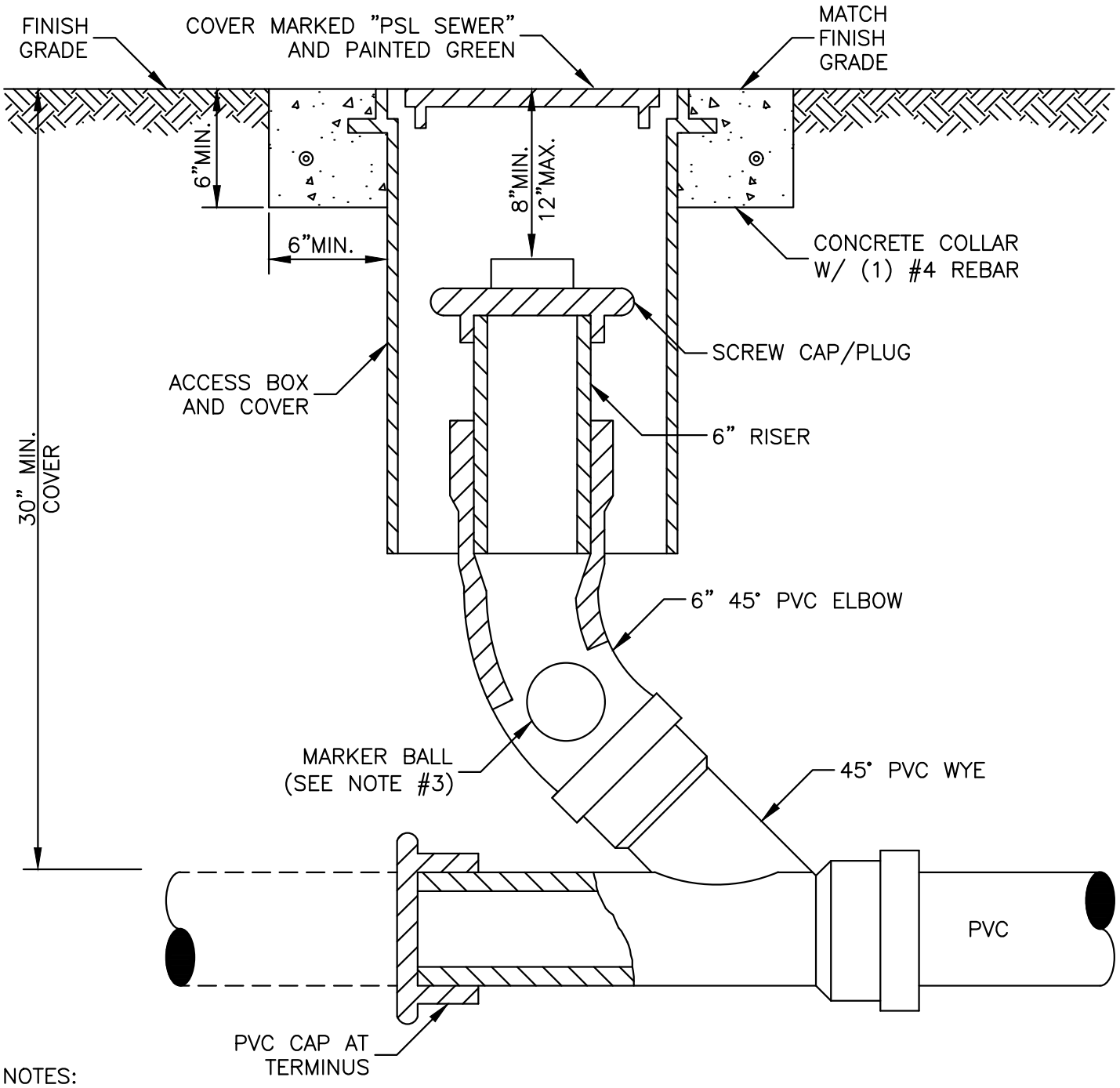
MANHOLE / WETWELL JOINT DETAIL

DETAIL: WW-04
DATE: 2019
SCALE: N.T.S.
SHEET: 1 OF 1



NOTES:

1. AN ACCESS BOX AND COVER SHALL BE USED.

2. CLEANOUT ASSEMBLY SHALL BE INSTALLED AT A MAXIMUM 75' INTERVALS AND AT TERMINAL POINT OF THE PSLUSD RESPONSIBILTY. THE LOCATION SHALL BE IN ACCORDANCE WITH THE PSLUSD UTILITY STANDARDS.

3. MARKER BALL SHALL BE STRAPPED TO THE ELBOW.

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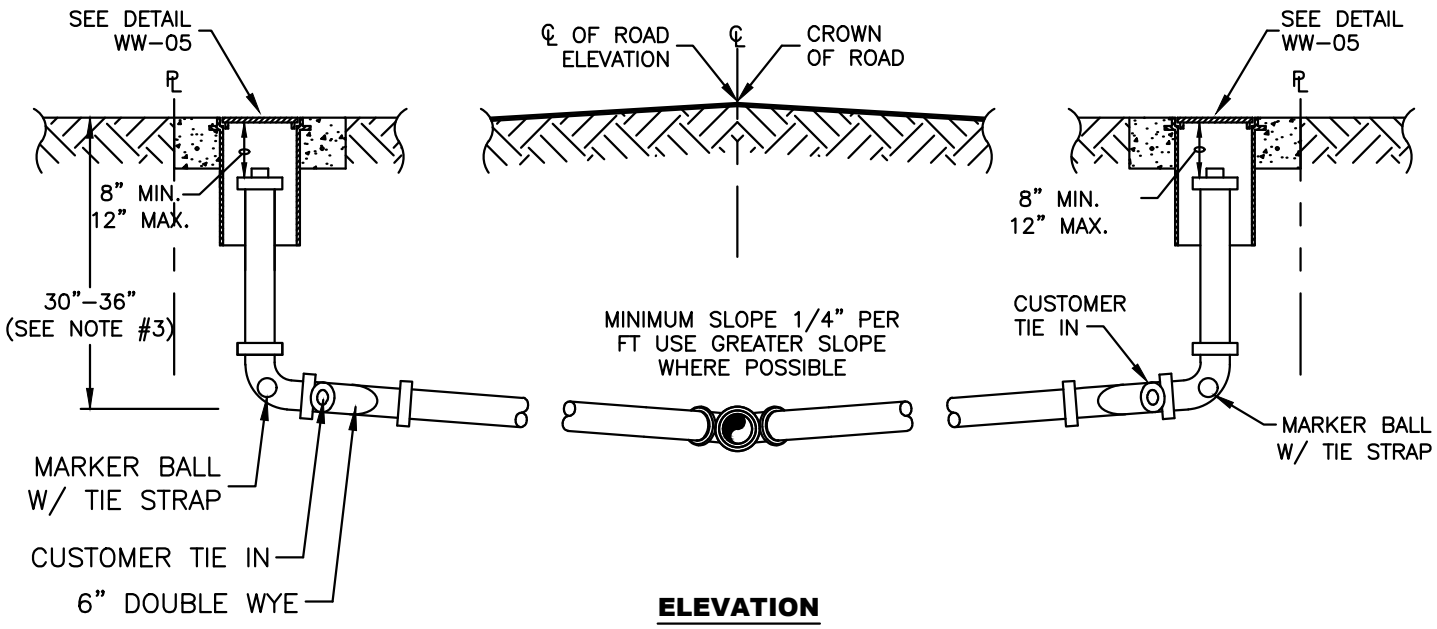
PHONE (772) 873-6400 FAX (772) 873-6433

SANITARY SEWER CLEANOUT

DETAIL: WW-05
DATE: 2019
SCALE: N.T.S.
SHEET: 1 OF 1

DOUBLE SERVICE TYPICAL

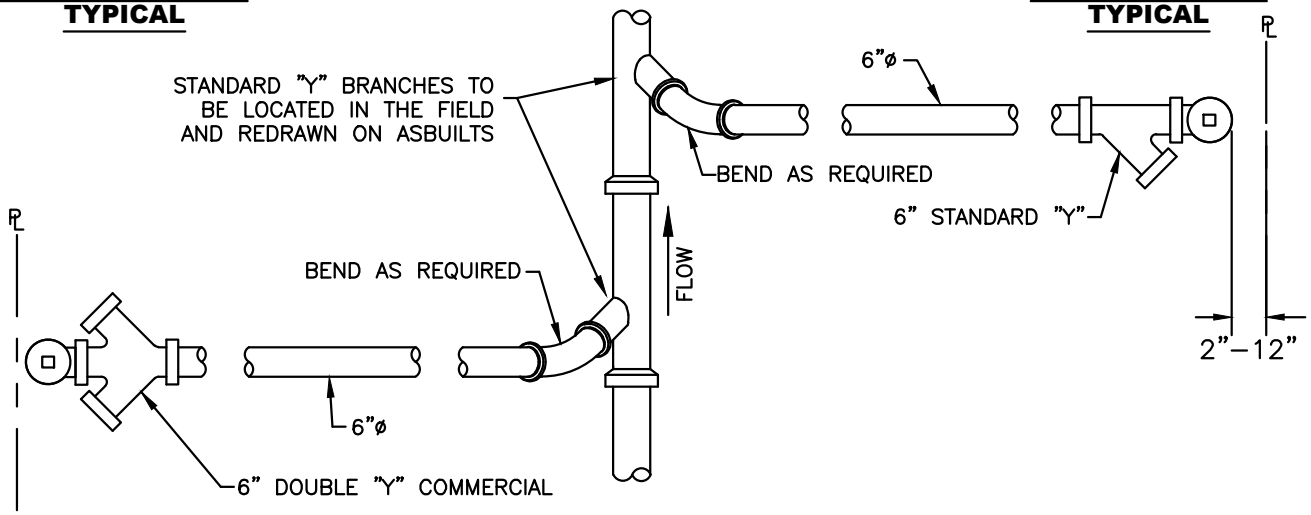
SINGLE SERVICE TYPICAL



ELEVATION

DOUBLE SERVICE TYPICAL

SINGLE SERVICE TYPICAL



*SANITARY SEWER CLEANOUT BOXES NOT SHOWN

PLAN VIEW

NOTES:

1. SANITARY SEWER LATERALS SHALL BE 6" IN DIAMETER.

2. THE ENGINEER OF RECORD SHALL ENSURE THAT THE PROPOSED PLUMBING STUB-OUT ELEVATION FOR EACH BUILDING WILL ALLOW FOR A GRAVITY CONNECTION TO THE SANITARY SEWER LATERAL WITH THE REQUIRED SLOPE. HORIZONTAL AND VERTICAL SEPARATION SHALL BE MAINTAINED AS REQUIRED IN THE UTILITY STANDARDS MANUAL.

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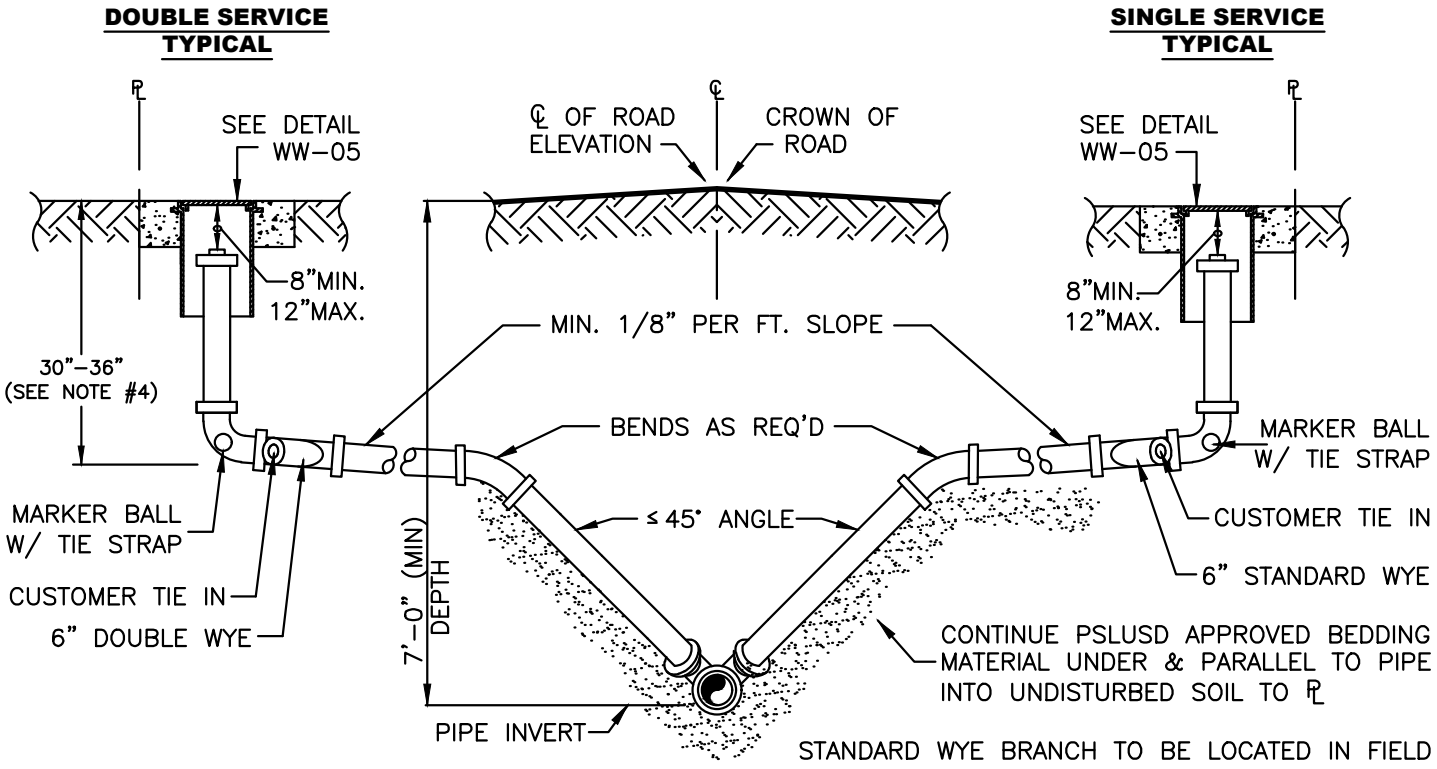
PHONE (772) 873-6400 FAX (772) 873-6433

SANITARY SEWER LATERAL (SHALLOW)

DETAIL: WW-06
DATE: 2019
SCALE: N.T.S.
SHEET: 1 OF 1



ELEVATION

NOTES:

1. PSLUSD APPROVED BEDDING MATERIAL SHALL BE USED FOR EXCAVATION BACK FILL.

2. LOCATE MARKER BALL WITH TIE STRAPS TO BE ATTACHED TO 6" ELBOW.

3. THE ENGINEER OF RECORD SHALL ENSURE THAT THE PROPOSED PLUMBING STUB–OUT ELEVATION FOR EACH BUILDING WILL ALLOW FOR A GRAVITY CONNECTION TO THE SANITARY SEWER LATERAL WITH THE REQUIRED SLOPE. HORIZONTAL AND VERTICAL SEPARATION SHALL BE MAINTAINED AS REQUIRED IN THE UTILITY STANDARDS MANUAL.

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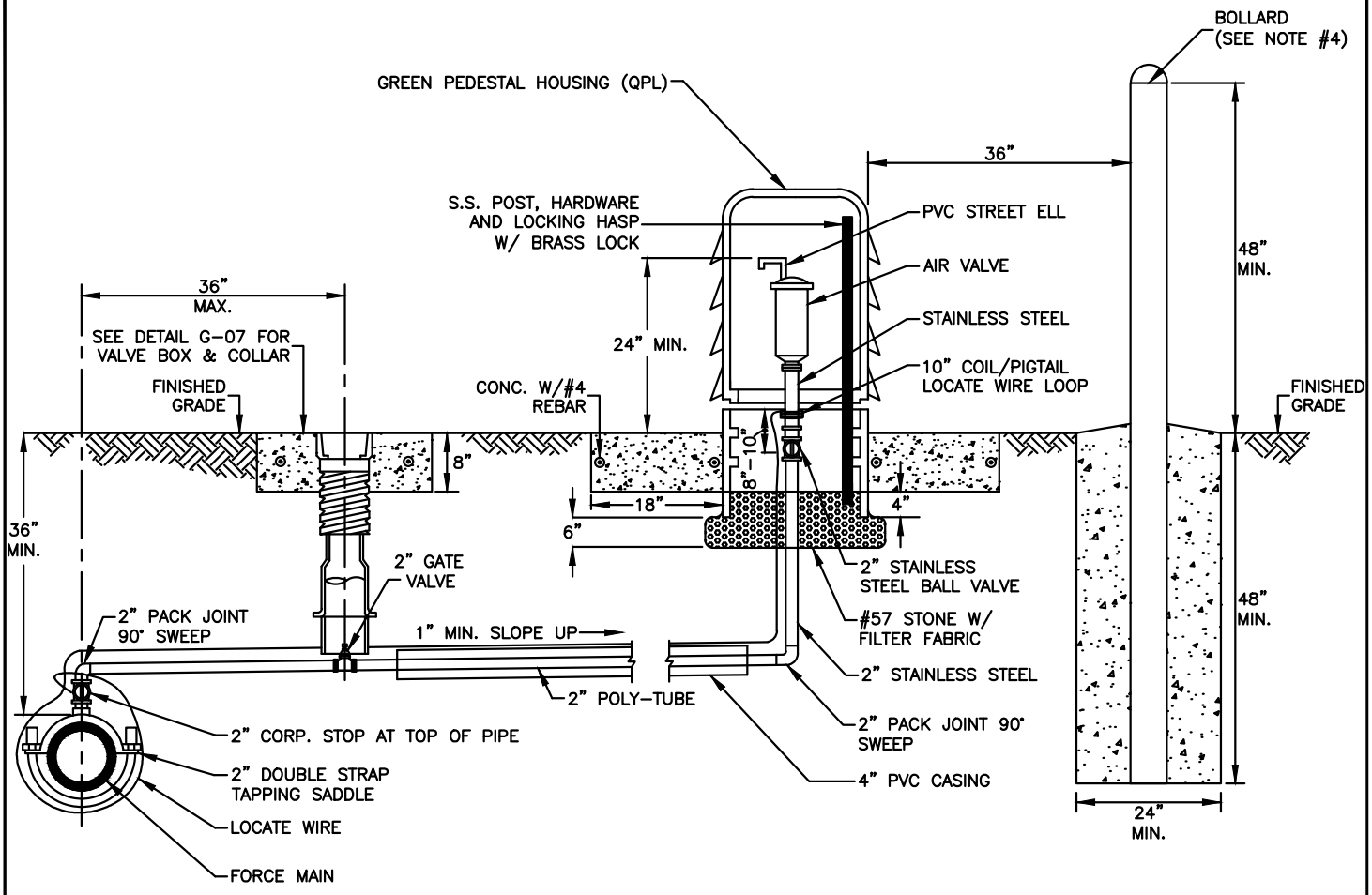
SANITARY SEWER LATERAL
(DEEP)

DETAIL: WW-07
DATE: 2019
SCALE: N.T.S.
SHEET: 1 OF 1



NOTES:

1. ALL AIR RELEASE VALVES SHALL BE INSTALLED IN ACCORDANCE WITH THIS DETAIL. DETAIL WW-09 SHALL BE USED ONLY AS DIRECTED BY PSLUSD IN WRITING.

2. AIR VALVE, PIPING AND APPURTENANCES SHALL BE IN ACCORDANCE WITH PSLUSD UTILITY STANDARDS.

3. THE AIR VALVE SHALL BE SIZED BY THE ENGINEER-OF-RECORD (EOR) BASED ON MANUFACTURER'S RECOMMENDATION. THE EOR SHALL CONSULT WITH THE PSLUSD REGARDING THE TYPE OF THE VALVE TO BE USED AND LOCATION.

4. BOLLARDS (4) ARE REQUIRED AROUND THE PEDESTAL HOUSING UNLESS APPROVED OTHERWISE BY PSLUSD. BOLLARD SHALL BE INSTALLED PER PSLUSD DETAIL G-15.

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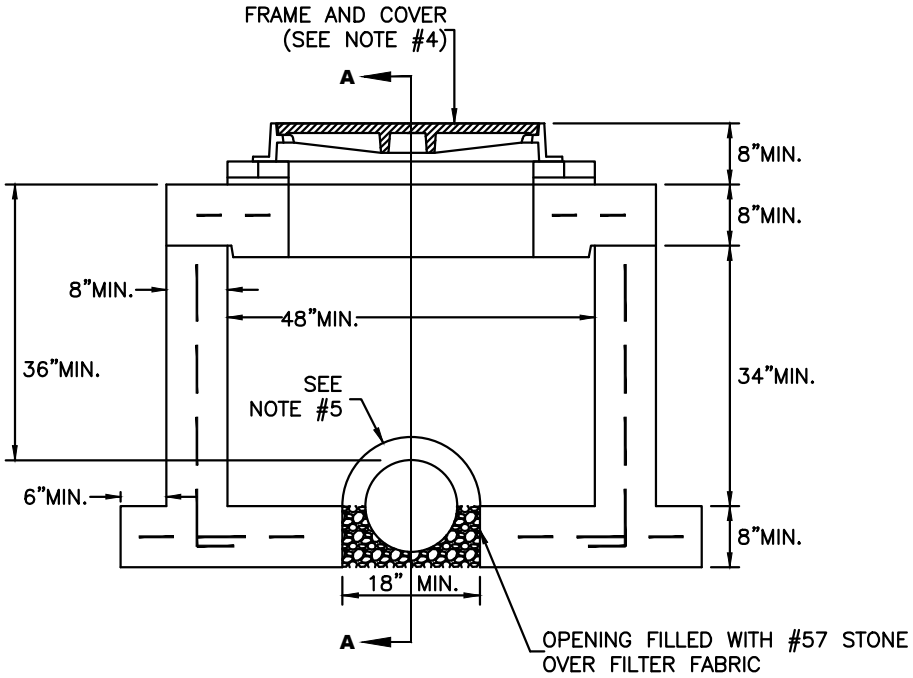
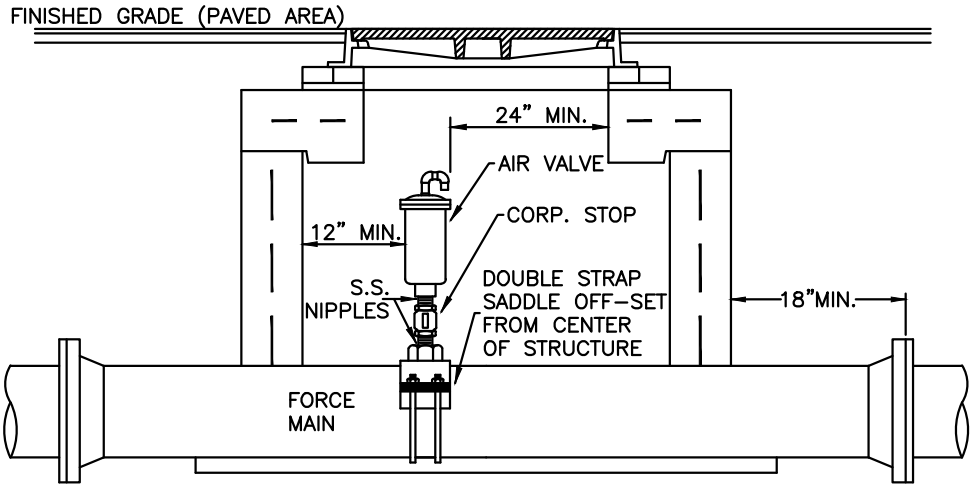
AUTOMATIC AIR RELEASE VALVE FOR FORCE MAINS IN UNPAVED AREAS

DETAIL: WW-08
DATE: 2019
SCALE: N.T.S.
SHEET: 1 OF 1





SECTION A

NOTES:

1. THIS DETAIL CAN ONLY BE USED WHEN PRIOR APPROVAL HAS BEEN OBTAINED FROM PSLUSD IN WRITING.

2. AIR VALVE SHALL BE TYPE AND SIZE APPROPRIATE FOR SERVICE INTENDED. FORCE MAINS REQUIRE 2" MINIMUM.

3. THE ACCESS MANHOLE SHALL MEET THE SPECIFICATIONS OF THE UTILITY STANDARDS MANUAL AND CONFORM TO ASTMC-478.

4. A HINGED COVER AND FRAME SHALL BE PROVIDED FOR A MINIMUM OPENING OF 32". THE COVER SHALL NOT HAVE A GASKET, SO THAT AIR CAN EXIT THE MANHOLE AND SHALL BE MARKED "SEWER ARV".

5. A CLEARANCE OF 2" SHALL BE MAINTAINED BETWEEN THE FORCE MAIN AND THE MANHOLE. THERE SHALL BE NO PIPE JOINTS WITHIN THE MANHOLE.

6. A LARGER MANHOLE WILL BE REQUIRED FOR PIPES LARGER THAN 12":

PIPE SIZE	MANHOLE DIAMETER
16"-24"	60"
30"-42"	72"

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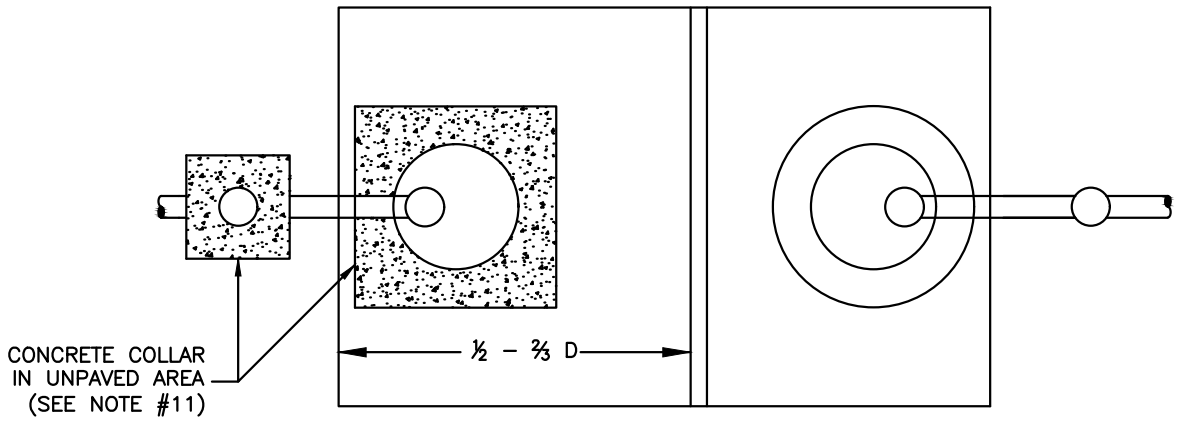
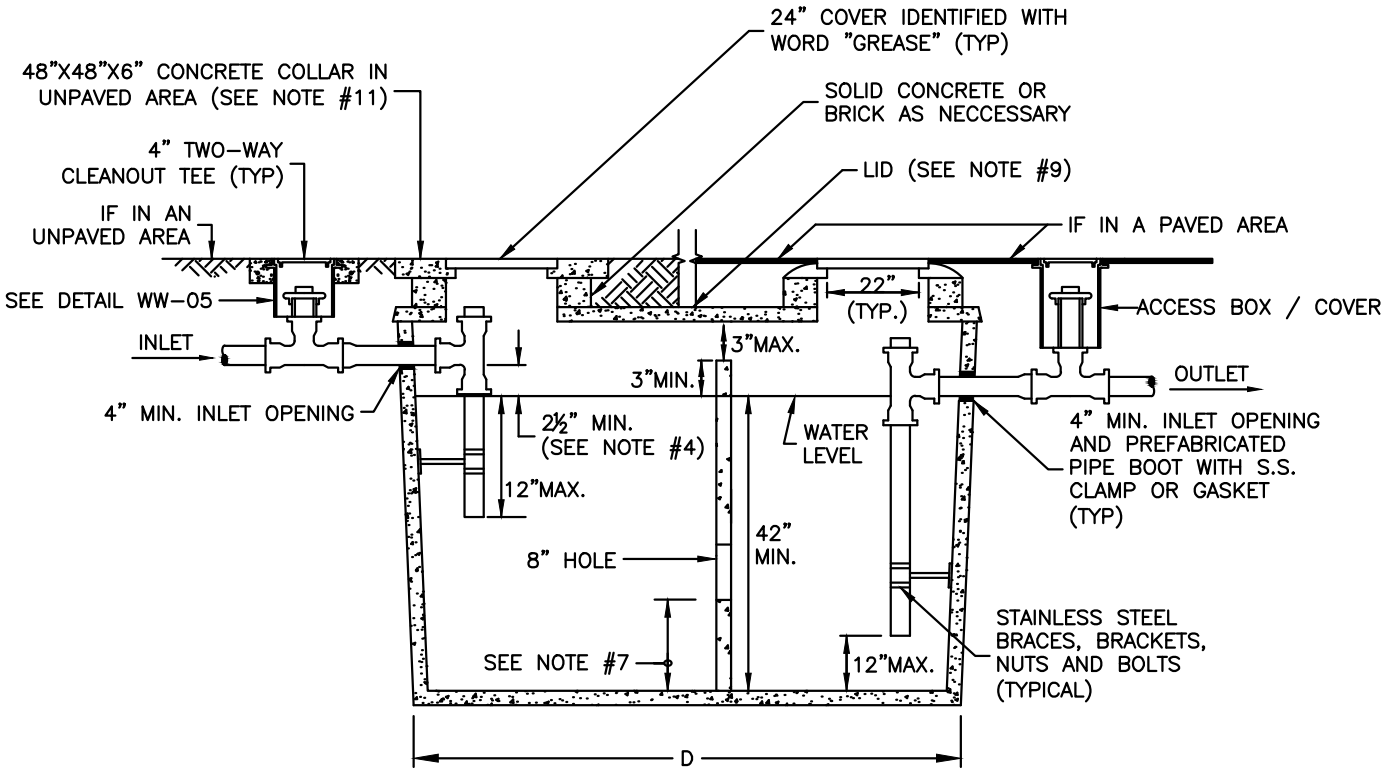
FORCE MAIN AIR VALVE AND ACCESS MANHOLE

DETAIL: WW-09
DATE: 2019
SCALE: N.T.S.
SHEET: 1 OF 1



TOP VIEW



SECTION VIEW

NOTES: SEE SHEET 2

MINIMUM CONSTRUCTION STANDARDS FOR
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PHONE (772) 873-6400 FAX (772) 873-6433

GREASE, OIL, AND SAND INTERCEPTOR

DETAIL: WW-10
DATE: 2019
SCALE: N.T.S.
SHEET: 1 OF 2

STANDARD DETAIL NOTES FOR GREASE/SAND/OIL INTERCEPTORS

THESE NOTES ARE APPLICABLE TO THE STANDARD DETAIL SHEET WW-10A

1. INTERCEPTORS SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER LICENSED IN FLORIDA, IN ACCORDANCE WITH PSLUSD GREASE/OIL/SAND INTERCEPTOR POLICY, APPLICABLE BUILDING CODES AND STATE REGULATIONS. AN APPROVAL MUST BE OBTAINED FROM PSLUSD PRIOR TO INSTALLATION. DEVIATIONS SHALL NOT BE MADE WITHOUT PRIOR APPROVAL.

2. THE INTERCEPTOR SHALL BE BUILT OF PRE-CAST CONCRETE WITH A MINIMUM OF 4" THICK WALLS AND WITH PRE-CAST HOLES FOR THE INLET/OUTLET PIPES. SHOP DRAWINGS SHALL BE SUBMITTED TO THE PSLUSD FOR APPROVAL IF THE TANK IS NOT ON THE APPROVED QUALIFIED PRODUCTS LIST (QPL).

3. ALL PIPING SHALL BE A MINIMUM OF 4" PVC.

4. THE INLET AND OUTLET TEES SHALL BE LOCATED NO MORE THAN 4" FROM END OF THE TANK AND SHALL BE IN ACCORDANCE WITH ASTM C923-98, LATEST REVISION. THE INLET INVERT LEVEL SHALL BE A MINIMUM OF 2½" ABOVE THE WATER LEVEL. THE INLET TEE IS NOT REQUIRED FOR SAND/OIL INTERCEPTORS, HOWEVER, IF USED IT SHALL NOT EXTEND MORE THAN 12" BELOW THE WATER LEVEL. THE OUTLET TEE SHALL EXTEND TO WITHIN 8" OF THE TANK BOTTOM. THE TEES SHALL BE SECURED TO THE TANK WALL AS PER DETAIL SUBMITTED BY THE ENGINEER-OF-RECORD AND APPROVED PSLUSD.

5. THE LIQUID DEPTH SHALL BE AT LEAST 42".

6. INSPECTION PORTS (TWO-WAY CLEAN-OUTS) SHALL BE INSTALLED ON EACH END OF THE INTERCEPTOR, WHICH ARE EASILY ACCESSIBLE FOR INSPECTION/SAMPLING.

7. A BAFFLE SHALL BE INSTALLED ½ (ONE-HALF) TO ⅔ (TWO-THIRDS) 'D' FROM THE INLET SIDE. THE FLOW BETWEEN THE TWO COMPARTMENTS SHALL BE THROUGH AN 8" DIAMETER HOLE IN THE BAFFLE; THE HOLE SHALL BE LOCATED 12" FROM THE TANK BOTTOM FOR A GREASE INTERCEPTOR AND 16" TO 20" FOR A SAND/OIL INTERCEPTOR. A BAFFLE IS NOT REQUIRED IF MULTIPLE INTERCEPTORS ARE INSTALLED IN SERIES, HOWEVER, INSPECTION PORTS SHALL BE INSTALLED ON EACH END OF THE INTERCEPTORS.

8. THE MINIMUM EFFECTIVE CAPACITY OF THE TANK SHALL BE AS REQUIRED BY THE PSLUSD. INSTALLATION OF MULTIPLE TANKS SHALL BE IN SERIES. WHEN MULTIPLE TANKS ARE USED THERE SHALL BE A MINIMUM 4' SEPARATION BETWEEN TANKS WITH THE REQUIRED INSPECTION PORT INSTALLED IN THE CENTER.

9. THE LID SHALL BE AT LEAST 8" THICK. TRAFFIC LIDS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM C890-91, LATEST REVISION.

10. INTERCEPTOR SHALL BE PROVIDED WITH A MANHOLE OVER EACH COMPARTMENT FOR ACCESS. THE MANHOLES SHALL BE BROUGHT TO GRADE AND FITTED WITH COVERS AS SPECIFIED IN THE DETAIL.

11. A CONCRETE COLLAR SHALL BE PROVIDED AROUND THE COVERS AND SANITARY SEWER CLEANOUT BOX WHEN THE INTERCEPTOR IS LOCATED IN AN UNPAVED AREA. GROUND SHALL BE SLOPED AWAY FROM THE INTERCEPTOR TO PREVENT PONDING OF STORM WATER.

12. ALL JOINTS, INCLUDING MID-SEAMS, RISERS AND LIDS SHALL BE SEALED JOINTS AROUND THE RISER AND THE TANK SHALL BE SEALED AND MADE WATERTIGHT.

13. INSTALLATION OF THE INTERCEPTOR AND ITS COMPONENTS SHALL BE PERFORMED BY A LICENSED PLUMBER OR SEPTIC TANK CONTRACTOR REGISTERED WITH THE FLORIDA DEPARTMENT OF HEALTH.

14. INSPECTIONS ARE REQUIRED BY PSLUSD AS PER THE UTILITY STANDARDS. AN INITIAL INSPECTION IS REQUIRED WITH THE TANK ABOVE GROUND.