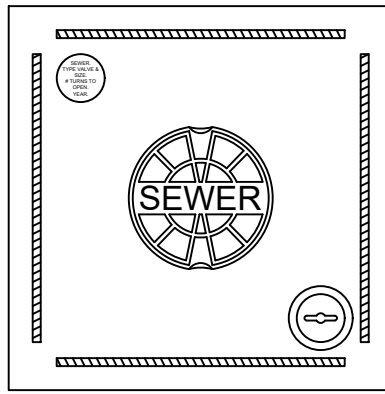
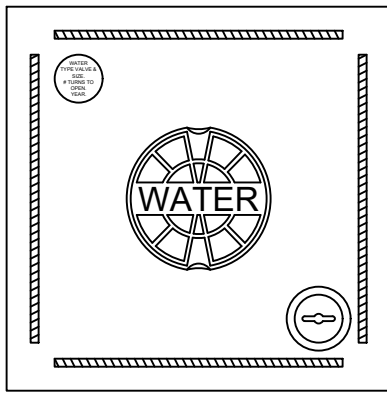


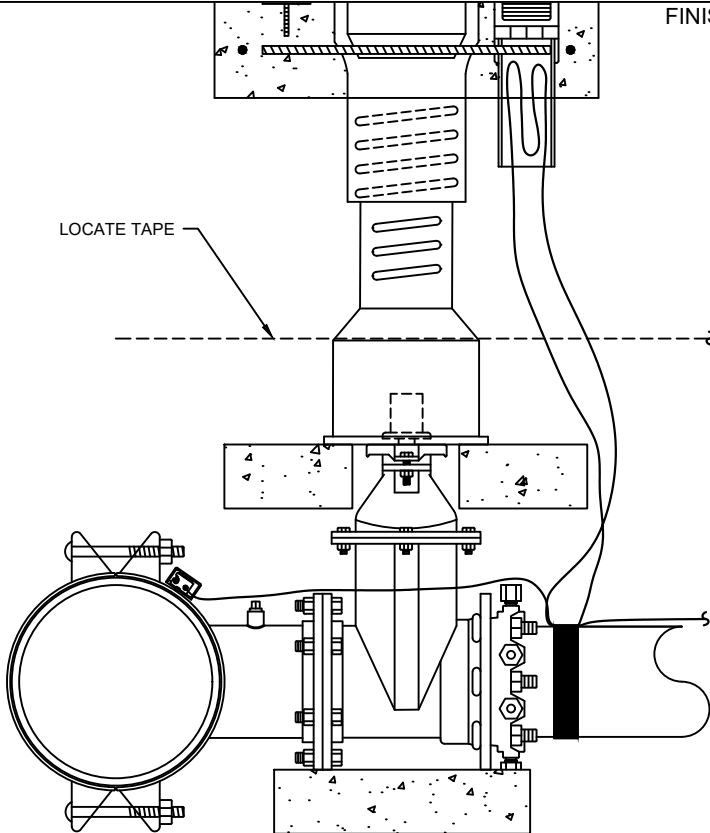
HCUD Construction Details - Updated June 2023

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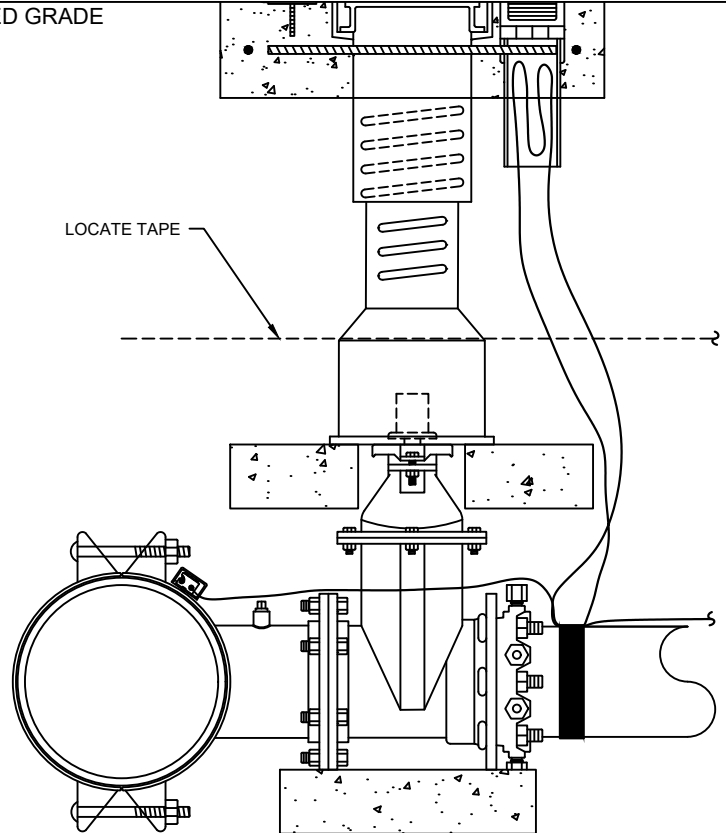


FINISHED GRADE

LOCATE TAPE



LOCATE TAPE



NOTES:

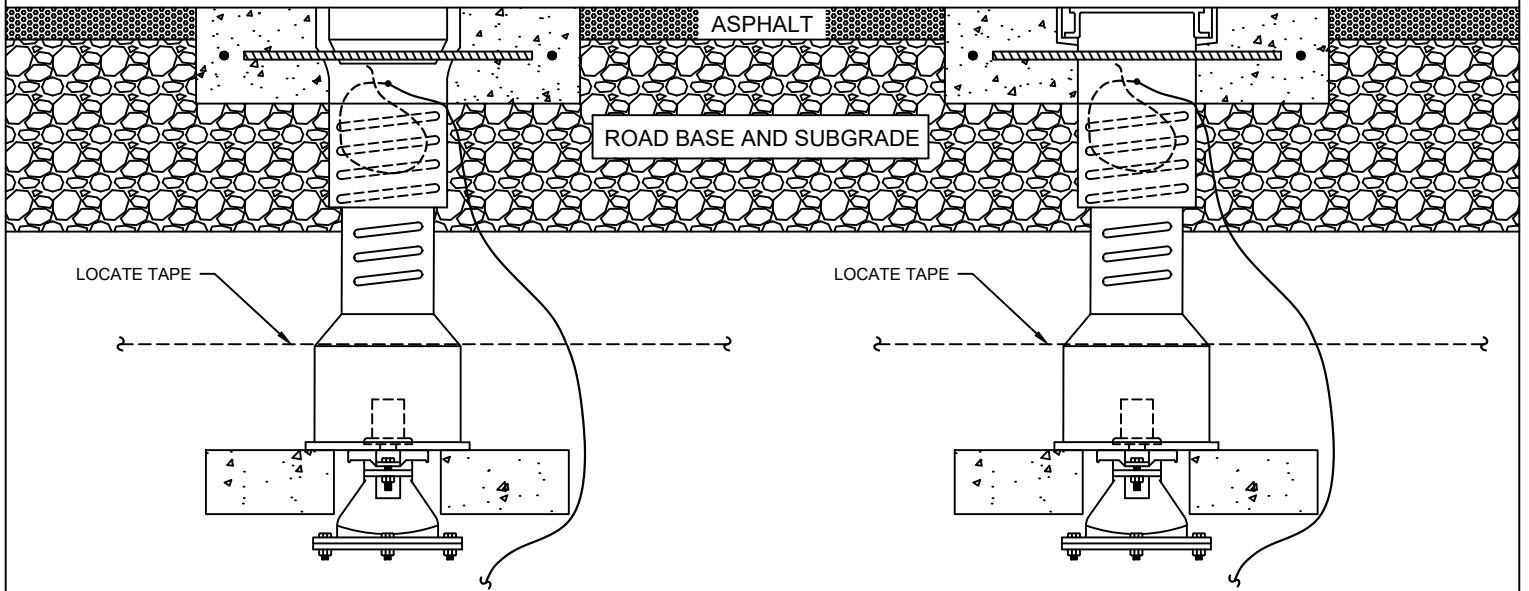
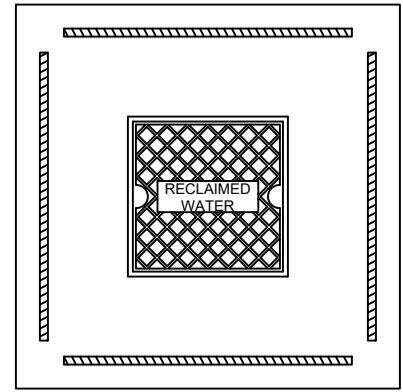
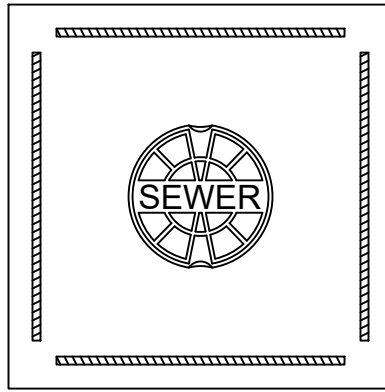
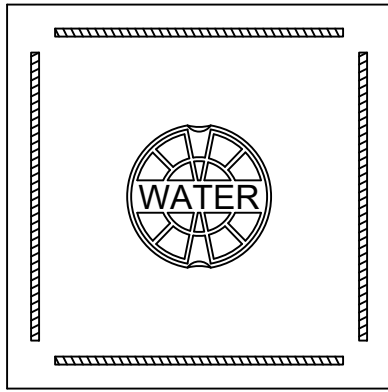
1. 24"x24"x6" POURED IN PLACE 4000 PSI CONCRETE VALVE PAD. INSTALLATION INCLUDES MINIMUM FOUR #4 REBAR AROUND THE PERIMETER OF PAD, ONE 3" SCHEDULE 40 PVC FEMALE ADAPTOR WITH PVC FLUSH MOUNT THREADED CAP AND MINIMUM 8" LENGTH OF PVC PIPE FOR LOCATE WIRE ACCESS PORT, ONE 3" ROUND SOLID CAST BRASS VALVE IDENTIFICATION TAG WITH 2"x 1/4" THEFT PROOF ANCHOR PIN AND ONE 5 1/4" 2 PIECE HEAVY DUTY ADJUSTABLE LENGTH SCREW TYPE CAST IRON VALVE BOX, AS SHOWN. NOTE: SEE VALVE PAD IN DRIVEWAY AND ROADWAY DETAIL FOR VALVES UNDER ASPHALT ROADWAYS OR OTHER TYPE DRIVEWAYS.
2. 3" ROUND SOLID CAST BRASS VALVE IDENTIFICATION TAG SHALL HAVE THE FOLLOWING INFORMATION ENGRAVED IN FOUR ROWS WITH 3/8" LETTER HEIGHT ON THE ROUND DISK: ROW 1 - TYPE OF MAIN "WATER", "SEWER" OR "RECLAIM", ROW 2 - TYPE OF VALVE AND SIZE, ROW 3 - THE AMOUNT OF TURNS TO OPEN OR CLOSE VALVE. ROW 4 - THE YEAR OF INSTALLATION.
3. CAST IRON VALVE BOX ACCESS LIDS SHALL HAVE THE TYPE OF INFRASTRUCTURE IT IS CAST INTO THE LID, "WATER", "SEWER", OR "RECLAIM" AND PAINTED BLUE FOR WATER, GREEN FOR SEWER AND PURPLE FOR RECLAIM.
4. LOCATE WIRE SHALL BE #10 AWG SOLID COPPER OR COPPER CLAD. INSULATION COLOR SHALL BE BLUE FOR WATER, GREEN FOR SEWER AND PURPLE FOR RECLAIMED WATER. LOCATE WIRE SHALL BE CONNECTED TO THE EXISTING LOCATE WIRE ON THE MAIN THAT IS BEING TAPPED WITH AN HCUD APPROVED LOCATE WIRE CONNECTOR. LOCATE WIRE SHALL EXTEND 18" ABOVE PAD. COAT THREADS ON PVC CAP WITH GREASE OR ANTI-SEIZE LUBRICANT AND THREAD CAP ALL THE WAY DOWN FLUSH INTO FEMALE ADAPTOR.
5. TAPPING SADDLE (SLEEVE) SHALL BE FULL WRAP STAINLESS STEEL REGARDLESS OF SIZE WITH STAINLESS STEEL HARDWARE.
6. A PRE-CAST CONCRETE SUPPORT BLOCK FOR THE VALVE SHALL BE INSTALLED AS SHOWN. THE MINIMUM SIZE REQUIRED SHALL BE 16"x8"x4" SOLID CONCRETE BLOCK.
7. A MINIMUM OF TWO 16"x8"x4" CONCRETE SUPPORT BLOCKS SHALL BE INSTALLED UNDER THE BOTTOM OF THE VALVE BOX FOR SUPPORT AS SHOWN.

HERNANDO COUNTY
 UTILITIES DEPARTMENT
 15365 CORTEZ BOULEVARD
 BROOKSVILLE, FLORIDA 34613
 OFFICE: (352) 754-4037 FAX: (352) 754-4485

WET TAP

DATE:
 JUNE 2023

DETAIL: G-01



NOTES:

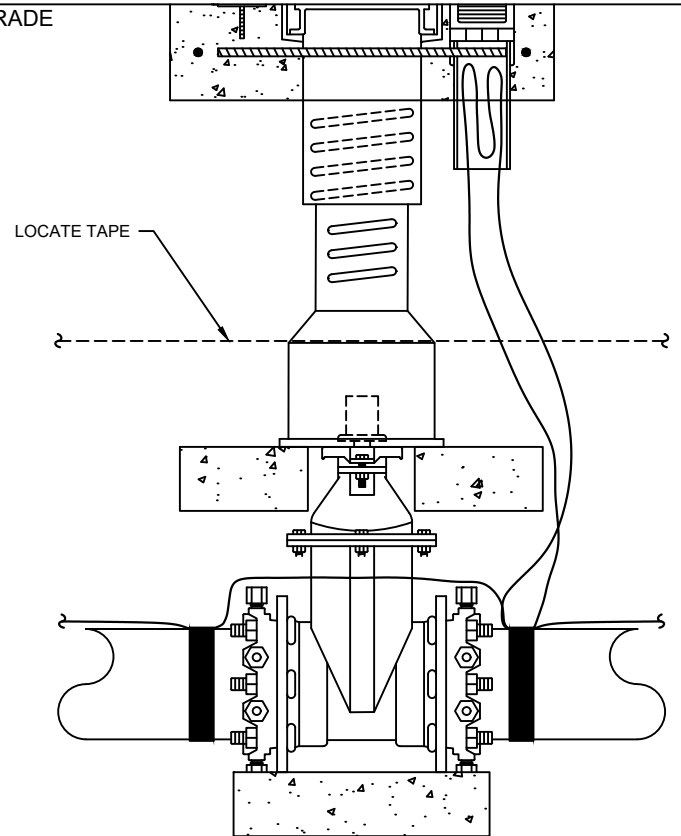
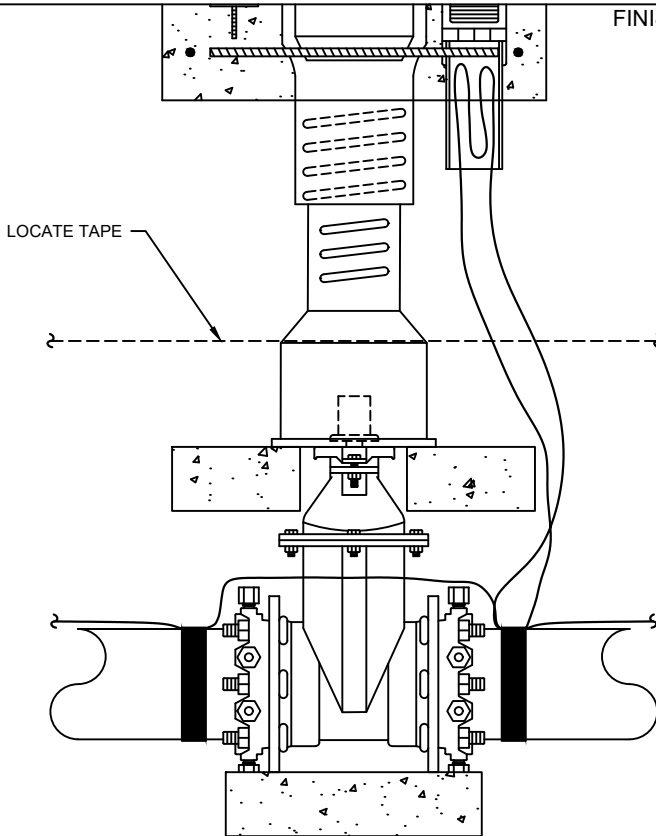
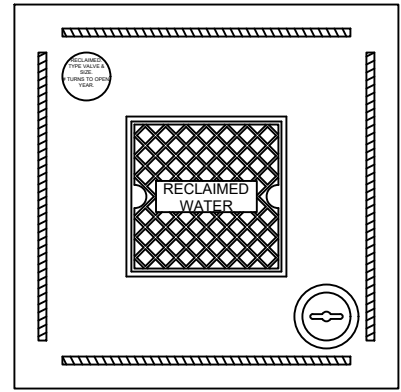
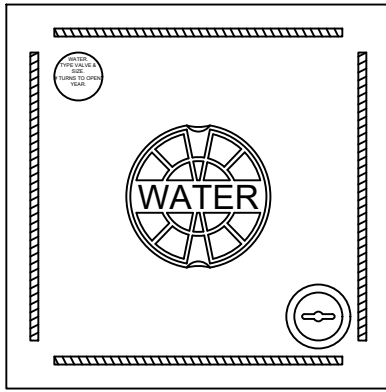
1. HCU requires that no valves shall be installed under pavements or driveways. However, if retrofitting an existing system and the new valve placement is under pavement or a driveway and can not be avoided, these valve pads are to be used.
2. 24"x24"x6" poured in place 4000 PSI concrete valve pad. Installation includes minimum four #4 rebar around the perimeter of pad as shown. No locate wire access port or brass valve identification tag is required.
3. Cast iron valve box access lids shall have the type of infrastructure it is cast into the lid, "WATER", "SEWER", or "RECLAIM" and painted blue for water, green for sewer or purple for reclaim.
4. Locate wire shall be #10 AWG solid copper or copper clad. Insulation color shall be blue for water, green for sewer or purple for reclaimed water. Locate wire shall be installed on the exterior of the valve box then through a hole drilled in the top of the valve box below the lid. The drilled hole shall have a grommet installed in the hole or the locate wire generously taped where the wire makes contact with the valve box to prevent the cast iron valve box cutting the wire insulation. The locate wire shall be long enough to extend 18" above the concrete valve pad.
5. A minimum of two 16"x8"x4" concrete support blocks shall be installed under the bottom of the valve box for support as shown.

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VALVE PADS IN DRIVEWAY OR ROADWAY

DATE:
 JUNE 2023

DETAIL: G-02



NOTES:

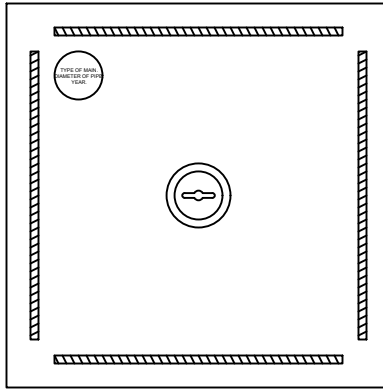
1. 24"x24"x6" POURED IN PLACE 4000 PSI CONCRETE VALVE PAD. INSTALLATION INCLUDES MINIMUM FOUR #4 REBAR AROUND THE PERIMETER OF PAD, ONE 3" SCHEDULE 40 PVC FEMALE ADAPTOR WITH PVC FLUSH MOUNT THREADED CAP AND MINIMUM 8" LENGTH OF PVC PIPE FOR LOCATE WIRE ACCESS PORT, ONE 3" ROUND SOLID CAST BRASS VALVE IDENTIFICATION TAG WITH 2"x 1/4" THEFT PROOF ANCHOR PIN AND ONE 5 1/4" 2 PIECE HEAVY DUTY ADJUSTABLE LENGTH SCREW TYPE CAST IRON VALVE BOX, AS SHOWN. NOTE: SEE VALVE PAD IN DRIVEWAY OR ROADWAY DETAIL FOR VALVES UNDER ASPHALT ROADWAYS OR OTHER TYPE DRIVEWAYS.
2. 3" ROUND SOLID CAST BRASS VALVE IDENTIFICATION TAG SHALL HAVE THE FOLLOWING INFORMATION ENGRAVED IN FOUR ROWS WITH 3/8" LETTER HEIGHT ON THE ROUND DISK: ROW 1 - TYPE OF MAIN "WATER", "SEWER" OR "RECLAIM", ROW 2 - TYPE OF VALVE AND SIZE, ROW 3 - THE AMOUNT OF TURNS TO OPEN OR CLOSE VALVE. ROW 4 - THE YEAR OF INSTALLATION.
3. CAST IRON VALVE BOX ACCESS LIDS SHALL HAVE THE TYPE OF INFRASTRUCTURE IT IS CAST INTO THE LID, "WATER", "SEWER", OR "RECLAIM" AND PAINTED BLUE FOR WATER, GREEN FOR SEWER AND PURPLE FOR RECLAIM.
4. LOCATE WIRE SHALL BE #10 AWG SOLID COPPER OR COPPER CLAD. INSULATION COLOR SHALL BE BLUE FOR WATER, GREEN FOR SEWER AND PURPLE FOR RECLAIMED WATER. LOCATE WIRE SHALL BE PULLED UP IN A CONTINUOUS LOOP INTO THE 3" PVC PIPE. LOCATE WIRE SHALL EXTEND 18" ABOVE PAD. COAT THREADS ON PVC CAP WITH GREASE OR ANTI-SEIZE LUBRICANT AND THREAD CAP ALL THE WAY DOWN FLUSH INTO THE FEMALE ADAPTOR.
5. A PRE-CAST CONCRETE SUPPORT BLOCK FOR THE VALVE SHALL BE INSTALLED AS SHOWN. THE MINIMUM SIZE REQUIRED SHALL BE 16"x8"x4" SOLID CONCRETE BLOCK.
6. A MINIMUM OF TWO 16"x8"x4" CONCRETE SUPPORT BLOCKS SHALL BE INSTALLED UNDER THE BOTTOM OF THE VALVEBOX FOR SUPPORT AS SHOWN.

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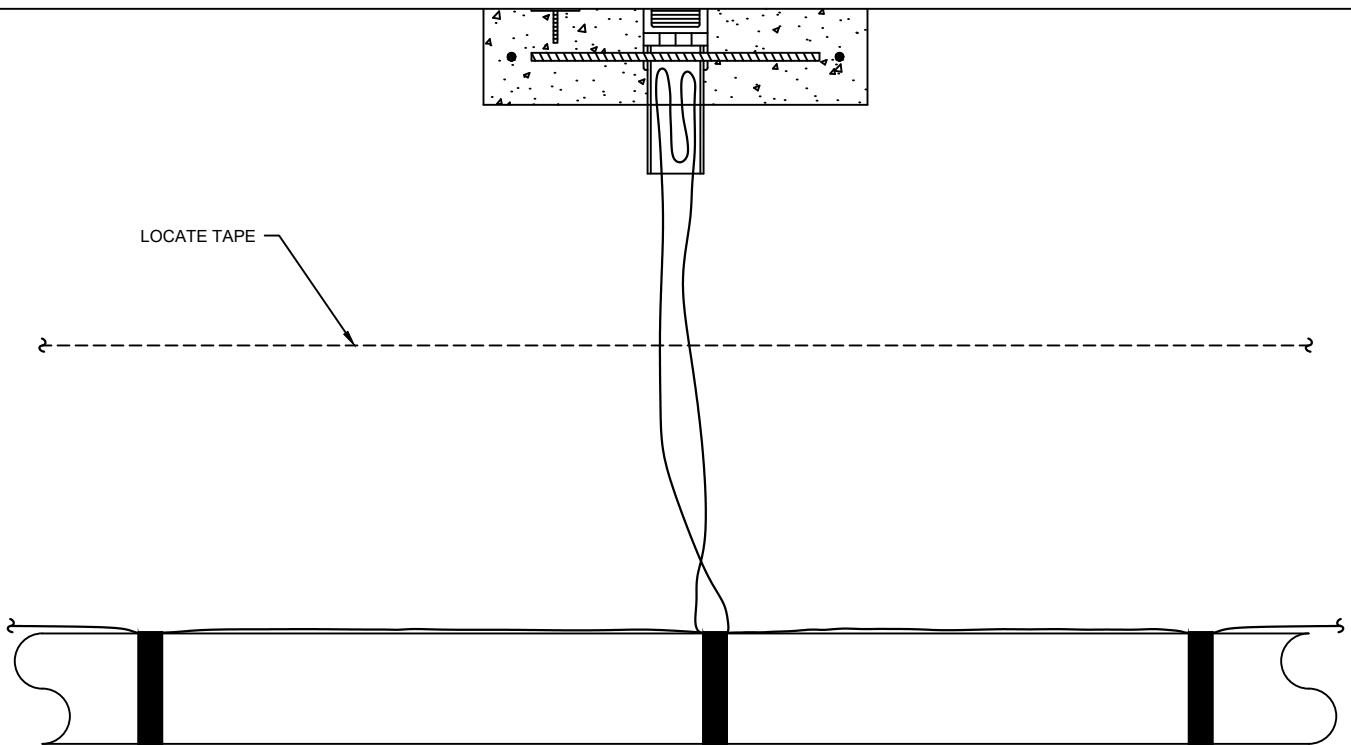
GATE VALVE

DATE:
 JUNE 2023

DETAIL: G-03



FINISHED GRADE



NOTES:

1. 24"x24"x6" POURED IN PLACE 4000 PSI CONCRETE LOCATE WIRE RISER PAD. INSTALLATION INCLUDES MINIMUM FOUR #4 REBAR AROUND THE PERIMETER OF PAD, ONE 3" SCHEDULE 40 PVC FEMALE ADAPTOR WITH PVC FLUSH MOUNT THREADED CAP AND MINIMUM 8" LENGTH OF PVC PIPE FOR LOCATE WIRE ACCESS PORT AND ONE 3" ROUND SOLID CAST BRASS PIPE LINE IDENTIFICATION TAG WITH 2"X 1/4" THEFT PROOF ANCHOR PIN, AS SHOWN. COAT THREADS ON PVC CAP WITH GREASE OR ANTI-SEIZE LUBRICANT AND THREAD CAP ALL THE WAY DOWN FLUSH INTO THE FEMALE ADAPTOR.
2. 3" ROUND SOLID CAST BRASS PIPE LINE IDENTIFICATION TAG SHALL HAVE THE FOLLOWING INFORMATION ENGRAVED IN THREE ROWS WITH 3/8" LETTER HEIGHT ON THE ROUND DISK: ROW 1 -TYPE OF PIPE LINE "WATER", "SEWER" OR "RECLAIM". ROW 2 - SIZE OF MAIN. ROW 3 - THE YEAR OF INSTALLATION.
3. LOCATE WIRE SHALL BE #10 AWG SOLID COPPER OR COPPER CLAD. INSULATION COLOR SHALL BE BLUE FOR WATER, GREEN FOR SEWER AND PURPLE FOR RECLAIMED WATER. LOCATE WIRE SHALL BE PULLED UP IN A CONTINUOUS LOOP INTO THE 3" PVC PIPE. LOCATE WIRE SHALL EXTEND 18" ABOVE PAD.
4. LOCATE WIRE RISERS SHALL BE USED ON LONGER INSTALLATIONS OF PIPE WHERE THERE ARE NO VALVE PADS TO ACCESS THE LOCATE WIRE. TYPICALLY INSTALLED NO MORE THAN EVERY 1000 LF OF PIPE.

NOT TO SCALE

HERNANDO COUNTY
 UTILITIES DEPARTMENT
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 BROOKSVILLE, FLORIDA 34613
 OFFICE: (352) 754-4037 FAX: (352) 754-4485

LOCATE WIRE RISER

DATE:
 JUNE 2023

DETAIL: G-04

PIPE SIZE (INCHES)	4	6	8	10	12	14	16	18	20	24
11¼° BEND	2(3)	3(4)	4(5)	5(6)	6(6)	6(7)	7(8)	8(9)	8(9)	9(11)
22½° BEND	5(5)	6(7)	8(9)	9(11)	11(12)	12(14)	13(16)	15(17)	16(18)	18(21)
45° BEND	9(10)	12(14)	16(18)	19(22)	22(25)	25(28)	27(32)	30(35)	33(38)	37(43)
90° BEND	21(24)	29(33)	37(44)	44(52)	52(60)	59(68)	65(76)	72(83)	78(91)	90(104)
CAPPED END *	43(61)	59(85)	78(111)	93(132)	109(155)	124(177)	139(198)	153(218)	167(238)	194(277)
IN-LINE VALVE **	35(50)	49(71)	64(92)	77(111)	90(130)	103(148)	115(165)	128(182)	139(198)	160(230)

DUCTILE IRON PIPE RESTRAINED JOINTS FOR HORIZONTAL FITTINGS

PIPE SIZE (INCHES)	4	6	8	10	12	14	16	18	20	24
11¼° BEND	5(6)	6(9)	8(11)	10(13)	11(16)	13(18)	14(20)	15(22)	17(24)	20(28)
22½° BEND	9(12)	12(17)	16(22)	19(27)	22(31)	25(36)	28(40)	31(44)	34(48)	39(56)
45° BEND	18(25)	25(35)	32(46)	39(55)	45(65)	52(73)	58(82)	64(91)	69(99)	81(115)
90° BEND	43(61)	59(85)	78(111)	93(132)	109(155)	124(177)	139(198)	153(218)	167(238)	194(277)

DUCTILE IRON PIPE RESTRAINED JOINTS FOR VERTICAL FITTINGS

		BRANCH (INCHES)									
		4	6	8	10	12	14	16	18	20	24
RUN (INCHES)	4	21(30)									
	6	11(15)	38(54)								
	8	0(0)	31(44)	56(79)							
	10	0(0)	23(32)	50(71)	71(101)						
	12	0(0)	15(21)	44(62)	66(94)	87(123)					
	14	0(0)	6(9)	37(53)	61(87)	82(117)	101(144)				
	16	0(0)	0(0)	31(44)	56(79)	78(111)	98(139)	116(166)			
	18	0(0)	0(0)	24(34)	50(71)	73(105)	94(134)	113(161)	130(185)		
	20	0(0)	0(0)	17(24)	45(63)	69(98)	90(128)	109(156)	127(181)	144(205)	
	24	0(0)	0(0)	2(3)	33(46)	59(84)	81(116)	102(146)	121(172)	138(197)	171(244)

DUCTILE IRON PIPE TEE RESTRAINED JOINTS

NOTES:

1. THE PROGRAM "THRUST RESTRAINT DESIGN FOR DUCTILE IRON PIPE" ON THE DUCTILE IRON PIPE RESEARCH ASSOCIATION (DIPRA) WEB SITE WAS USED TO CALCULATE THE LENGTH OF RESTRAINED JOINTS. THE CALCULATIONS ARE BASED ON TYPE 3 LAYING CONDITIONS, SANDY/SILTY SOIL DESIGNATION, 3.0 FEET MINIMUM COVERAGE AND 150 PSI OPERATING PRESSURE WITH A 1.5 TO 1 SAFETY FACTOR. THE LINEAR FEET SHOWN ARE MINIMUM REQUIREMENTS.
2. THE NUMBER IN PARENTHESIS REPRESENTS LINEAR FEET OF RESTRAINT FOR PVC PIPE AND POLY WRAPPED DUCTILE IRON PIPE.
3. THE LINEAR FEET OF PIPE IS MEASURED FROM THE FITTING OR VALVE OUT TO THE AMOUNT SHOWN ON THE CHART. ANY BELL OR JOINT WITHIN THAT MEASUREMENT SHALL HAVE A BELL OR JOINT RESTRAINT INSTALLED.
4. ALL BEND FITTINGS SHALL HAVE RESTRAINTS INSTALLED PER THE CHART IN BOTH DIRECTIONS.
5. BRANCH SIDE OF TEE IS TO BE RESTRAINED PER THE CHART.

* CAPPED ENDS ALSO INCLUDES VALVES INSTALLED AT THE END OF THE PIPE.

** IN-LINE VALVES SHALL BE RESTRAINED IN BOTH DIRECTIONS THE AMOUNT SHOWN ON CHART.

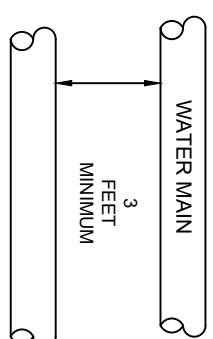
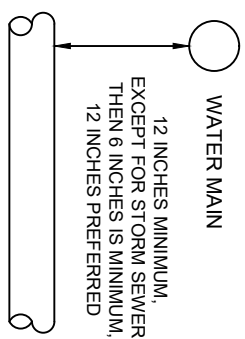
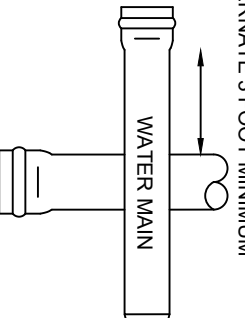
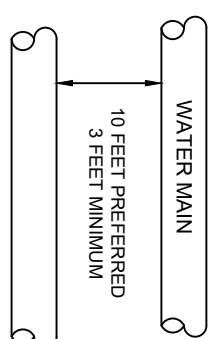
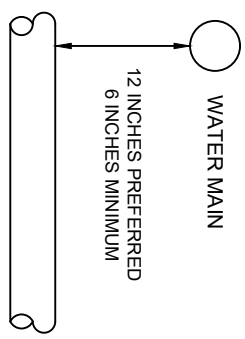
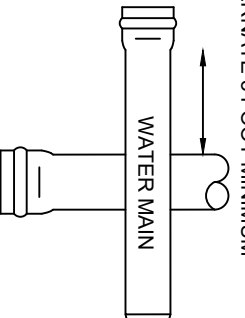
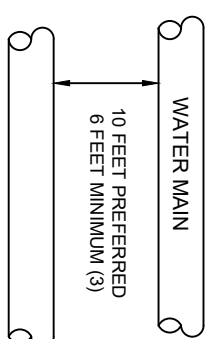
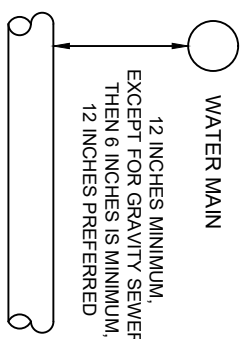
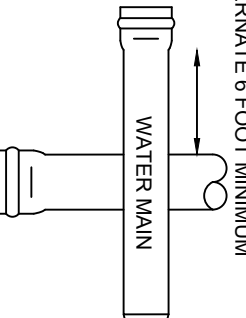
**HERNANDO COUNTY
 UTILITIES DEPARTMENT
 15365 CORTEZ BOULEVARD
 BROOKSVILLE, FLORIDA 34613
 OFFICE: (352) 754-4037 FAX: (352) 754-4485**

PIPELINE JOINT RESTRAINT TABLE

DATE:
 JUNE 2023

DETAIL: G-05

LOCATION OF PUBLIC WATER SYSTEM MAINS IN ACCORDANCE WITH F.A.C. RULE 62-555.314

OTHER PIPE	HORIZONTAL SEPARATION	CROSSINGS (1)	JOINT SPACING AT CROSSINGS (FULL JOINT CENTERED)
STORM SEWER, STORM WATER FORCE MAIN, RECLAIMED WATER (2)	 <p style="text-align: center;">WATER MAIN</p> <p style="text-align: center;">3 FEET MINIMUM</p>	 <p style="text-align: center;">WATER MAIN</p> <p style="text-align: center;">12 INCHES MINIMUM, EXCEPT FOR STORM SEWER, THEN 6 INCHES IS MINIMUM, 12 INCHES PREFERRED</p>	 <p style="text-align: center;">WATER MAIN</p> <p style="text-align: center;">ALTERNATE 3 FOOT MINIMUM</p>
VACUUM SANITARY SEWER	 <p style="text-align: center;">WATER MAIN</p> <p style="text-align: center;">10 FEET PREFERRED 3 FEET MINIMUM</p>	 <p style="text-align: center;">WATER MAIN</p> <p style="text-align: center;">12 INCHES PREFERRED 6 INCHES MINIMUM</p>	 <p style="text-align: center;">WATER MAIN</p> <p style="text-align: center;">ALTERNATE 6 FOOT MINIMUM</p>
GRAVITY OR PRESSURE, SANITARY SEWER, SANITARY SEWER FORCE MAIN, RECLAIMED WATER (4)	 <p style="text-align: center;">WATER MAIN</p> <p style="text-align: center;">10 FEET PREFERRED 6 FEET MINIMUM (3)</p>	 <p style="text-align: center;">WATER MAIN</p> <p style="text-align: center;">12 INCHES MINIMUM, EXCEPT FOR GRAVITY SEWER, THEN 6 INCHES IS MINIMUM, 12 INCHES PREFERRED</p>	 <p style="text-align: center;">WATER MAIN</p> <p style="text-align: center;">ALTERNATE 6 FOOT MINIMUM</p>
ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEM	<p style="text-align: center;">10 FEET MINIMUM</p>	<p style="text-align: center;">----</p>	<p style="text-align: center;">----</p>

NOTES: (1) WATER MAIN SHOULD CROSS ABOVE OTHER PIPE. WHEN WATER MAIN MUST BE BELOW OTHER PIPE, THE MINIMUM SEPARATION IS 12 INCHES.

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

(3) 3 FEET FOR GRAVITY SANITARY SEWER WHERE THE BOTTOM OF THE WATER MAIN IS LAID AT LEAST 6 INCHES ABOVE THE TOP OF THE GRAVITY SANITARY SEWER.

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

DISCLAIMER - THIS DOCUMENT IS PROVIDED FOR YOUR CONVENIENCE ONLY. PLEASE REFER TO F.A.C. RULE 62-555.314 FOR ADDITIONAL CONSTRUCTION REQUIREMENTS.

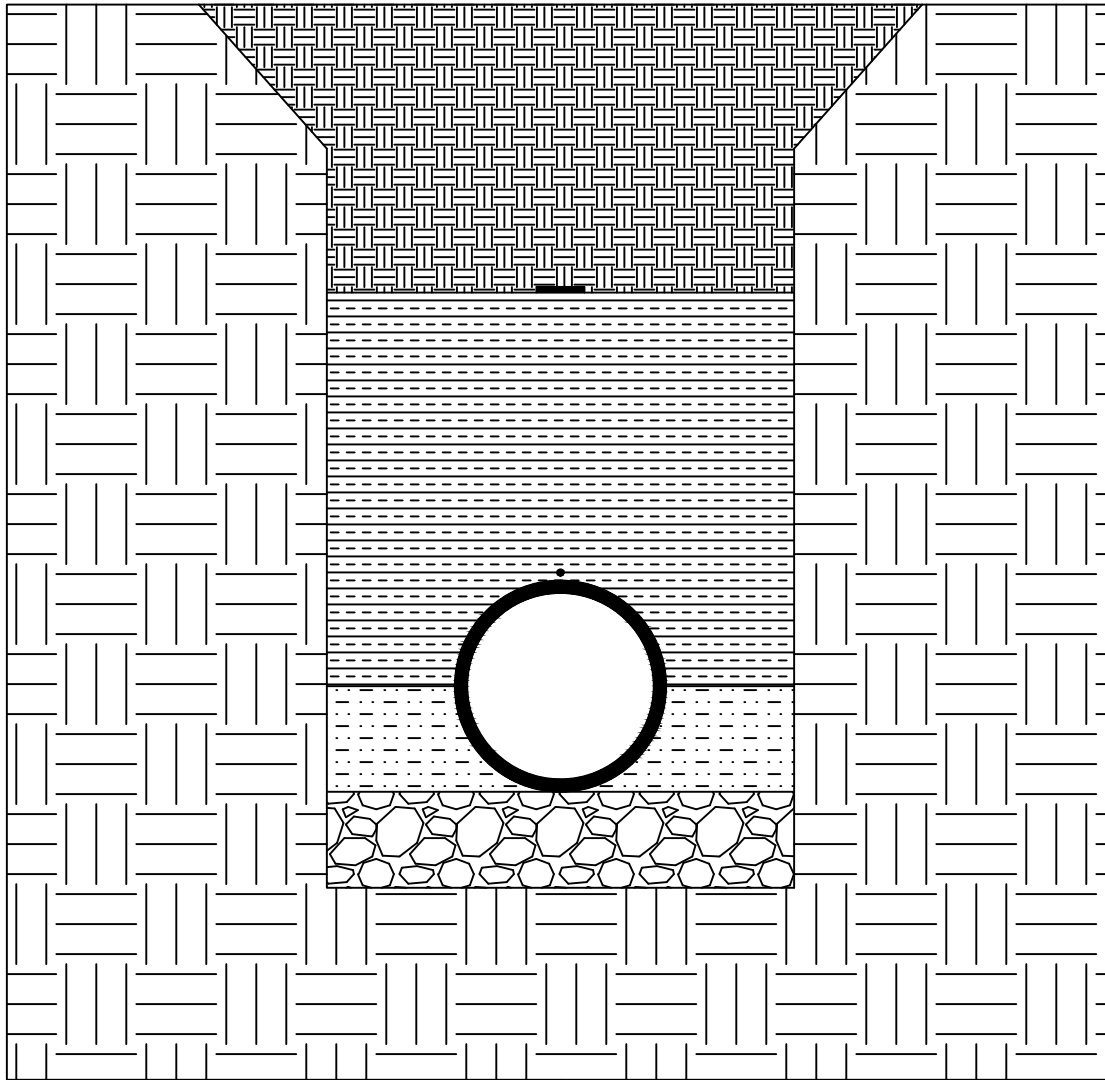
NOT TO SCALE

HERNANDO COUNTY
UTILITIES DEPARTMENT
15365 CORTIZ BOULEVARD
BROOKSVILLE, FLORIDA 34613
OFFICE: (352) 754-4037 FAX: (352) 754-4485

FDEP PIPELINE SEPARATIONS

DATE:
JUNE 2023

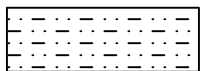
DETAIL: G-06



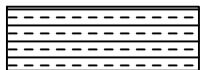
UNDISTURBED GROUND



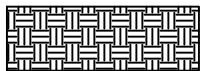
SELECT FILL PIPE BEDDING OR
CRUSHED STONE (WET CONDITIONS)



TAMPED SELECT FILL PIPE BEDDING



SELECT BACKFILL



EXCAVATED MATERIAL



MAGNETIC LOCATE TAPE



#10 AWG LOCATE WIRE

NOTES:

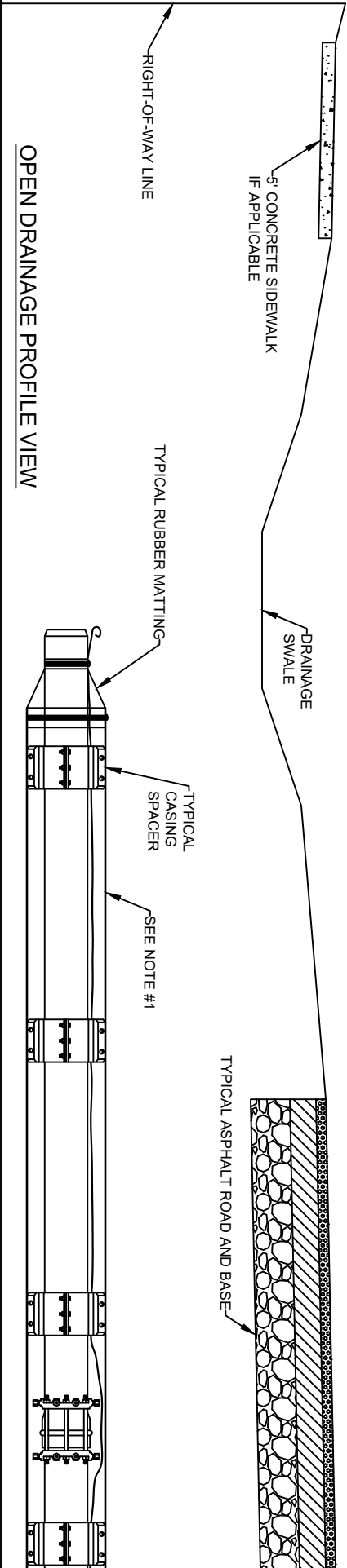
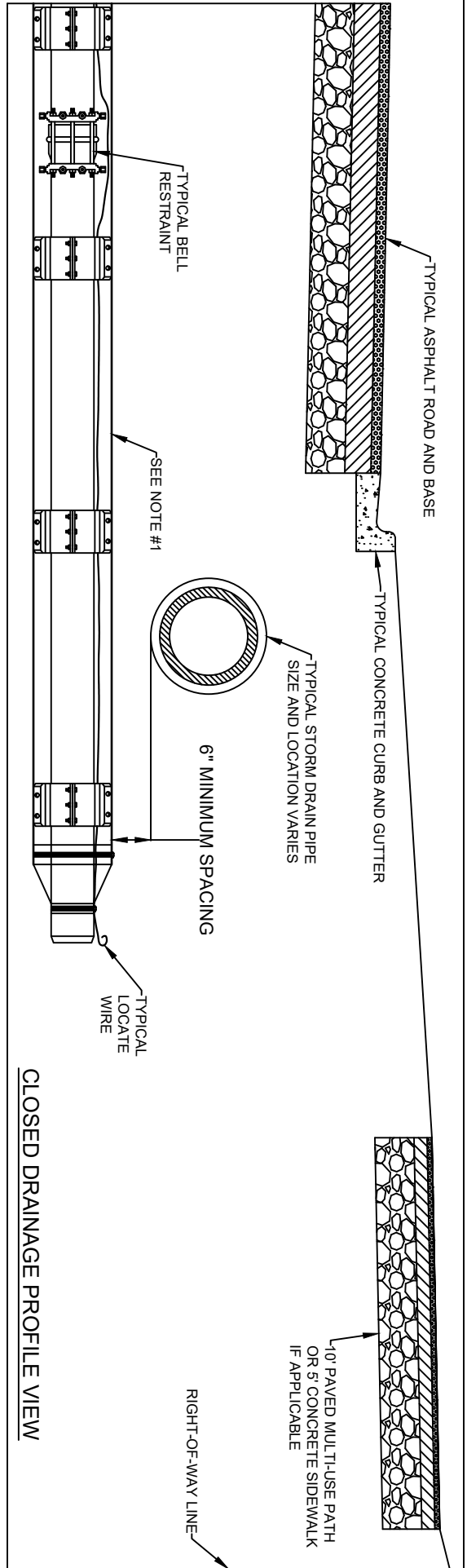
1. SELECT BACKFILL MATERIAL SHALL BE CLEAN SOIL, FREE FROM ROCKS AND OTHER DEBRIS. BACKFILL MATERIAL SHALL BE APPROVED BY HCUD.
2. SELECT PIPE BEDDING MATERIAL SHALL BE CLEAN SOIL, FREE FROM ROCKS AND OTHER DEBRIS, EXCEPT FOR WET CONDITIONS. WET CONDITIONS SHALL REQUIRE CRUSHED STONE PIPE BEDDING. PIPE BEDDING MATERIAL SHALL BE APPROVED BY HCUD.
3. EXCAVATED MATERIAL THAT IS PLACED BACK INTO THE PIPE TRENCH SHALL HAVE ANY LARGE ROCKS, TREE ROOTS AND OTHER UNWANTED DEBRIS REMOVED BEFORE BACKFILLING.
4. #10 AWG LOCATE WIRE SHALL BE SECURELY ATTACHED TO THE TOP OF PIPE.
5. MAGNETIC LOCATE TAPE SHALL BE INSTALLED A MINIMUM OF 18-INCHES ABOVE THE TOP OF PIPE.

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PIPE BACKFILL AND BEDDING

DATE:
JUNE 2023

DETAIL: G-07



- NOTES:**
1. STEEL CASING PIPE AND CASING SPACERS SHALL BE PER HCDU SPECIFICATIONS. STEEL CASING PIPE DIAMETER SHALL BE TWO TIMES THE CARRIER PIPE DIAMETER. CARRIER PIPE SHALL BE SUPPORTED BY A MINIMUM OF THREE CASING SPACERS PER EACH 20-FOOT LENGTH OF PIPE.
 2. THE LENGTH OF STEEL CASING PIPE THAT EXTENDS BEYOND THE EDGE OF PAVEMENT SHALL BE DETERMINED BY THE ENGINEER AND SHALL ALLOW HCDU UNRESTRICTED ACCESS TO THE END OF THE CASING. THE LOCATION SHALL BE AGREED UPON BY BOTH THE ENGINEER AND HCDU.
 3. THE ENDS OF THE STEEL CASING PIPE SHALL BE SEALED WITH RUBBER MATTING.
 4. EACH CARRIER PIPE BELL AND SPIGOT SHALL BE RESTRAINED WITH AN HCDU APPROVED BELL RESTRAINT.
 5. LOCATE WIRE SHALL BE PER HCDU SPECIFICATIONS AND ATTACHED TO CARRIER PIPE EVERY FOUR FEET THROUGHOUT THE ENTIRE LENGTH OF THE JACK AND BORE BY APPROVED METHODS.

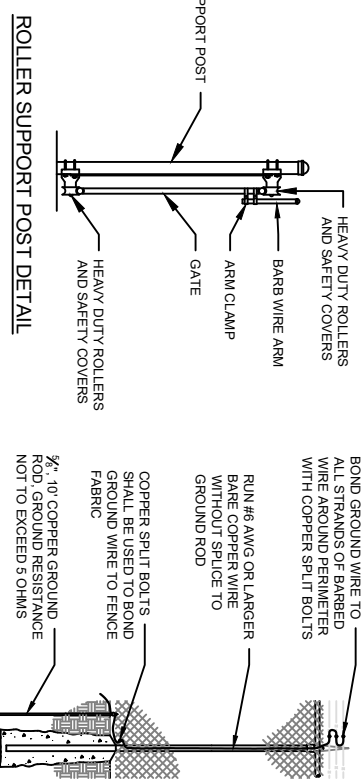
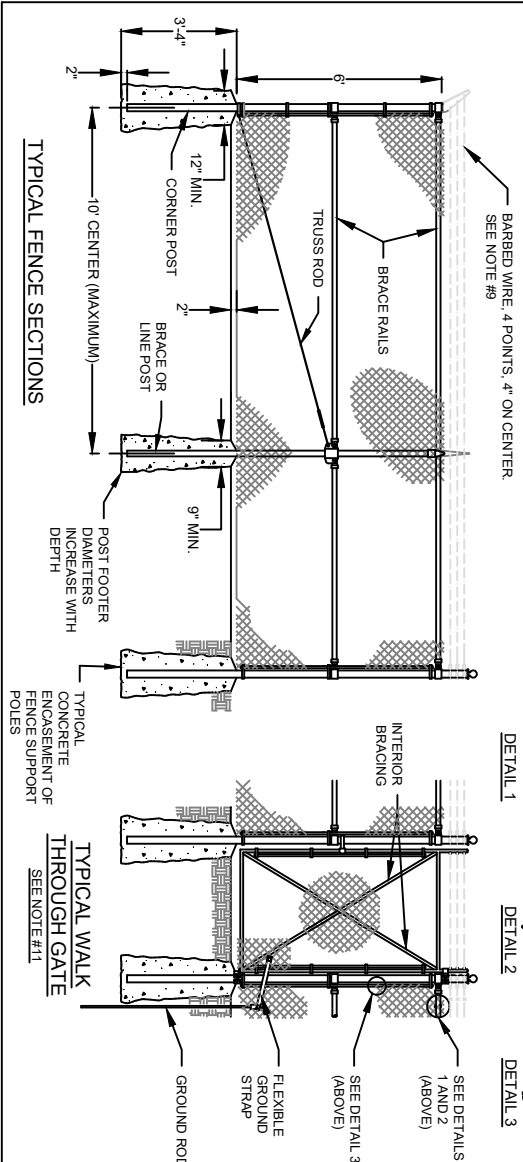
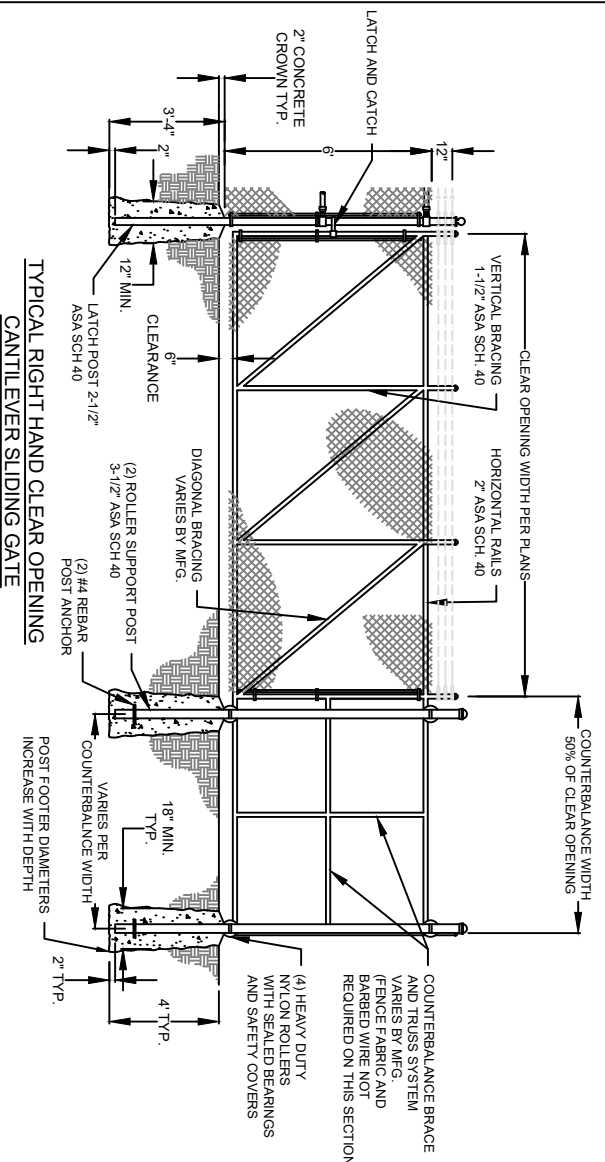
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JACK AND BORE HIGHWAY CROSSING

DATE: JUNE 2023

DETAIL: G-08



- CHAIN LINK FENCE AND CANTILEVER GATE NOTES:**
1. ALL CORNER, END AND PULL POST ARE TO BE TUBULAR, 3 INCH ASA SCH. 40. LINE POSTS ARE TO BE TUBULAR, 2 1/2" ASA SCH. 40.
 2. CORNER AND LINE POSTS MAY BE OF A SECTION OF EQUIVALENT STRUCTURAL STRENGTH AS TUBULAR SECTIONS.
 3. CHAIN LINK FABRIC SHALL BE #9 GAUGE WIRE WITH 2-INCH MESH FABRIC, TWISTED AND BARBED TOP AND BOTTOM SELVAGE.
 4. CHAIN LINK FABRIC SHALL BE TIED TO THE SUPPORT RAILS, 24" ON CENTER USING STANDARD #13 GAUGE ALUMINUM.
 5. ALL FENCING SHALL CONFORM TO APPLICABLE PROVISIONS OF FDOT INDEX NO. 802 OF THE FDOT ROADWAY AND TRAFFIC DESIGN STANDARDS, LATEST EDITION.
 6. ALL FENCE COMPONENTS SHALL BE GALVANIZED COATED.
 7. ALL FENCING SHALL HAVE A #7 GAUGE GALVANIZED TENSION WIRE WOVEN ALONG THE BOTTOM EDGE OF THE CHAIN LINK FABRIC. TENSION WIRE SHALL BE LOOPED AROUND THE BOTTOM OF ALL LINE OR BRACE POSTS AND SECURED WITH A STRETCHER BAR BAND TO ALL CORNER POSTS.
 8. CANTILEVER SLIDING GATE HEAVY DUTY ROLLERS SHALL HAVE SAFETY COVERS INSTALLED ON EACH ROLLER.
- BARBED WIRE NOTES:**
9. SEWER PUMP STATION FENCING DOES NOT REQUIRE BARBED WIRE ON TOP OF THE CHAIN LINK FABRIC. BARBED WIRE IS REQUIRED ON ALL OTHER HCUJ FENCING APPLICATIONS.
 10. SUPPORT ARMS FOR BARBED WIRE APPLICATION SHALL BE POINTED OUTWARDLY. BARBED WIRE SHALL EXTEND 12-INCHES ± ABOVE FENCE.
- WALK THROUGH GATE NOTES:**
11. WALK THROUGH GATE NOT REQUIRED UNLESS SHOWN ON SITE LAYOUT PLANS.
- FENCE FABRIC GROUNDING NOTES:**
12. FENCE GROUNDING SHALL BE BONDED TO THE ELECTRIC SERVICE GROUND.
 13. FENCE GROUND RESISTANCE SHALL NOT EXCEED 5 OHMS.
 14. WALK THROUGH GATE, IF APPLICABLE, SHALL BE GROUND ON THE HINGE SIDE USING A HEAVY DUTY FLEXIBLE GROUNDING STRAP THAT ALLOWS THE GATE TO BE OPENED AND CLOSED.

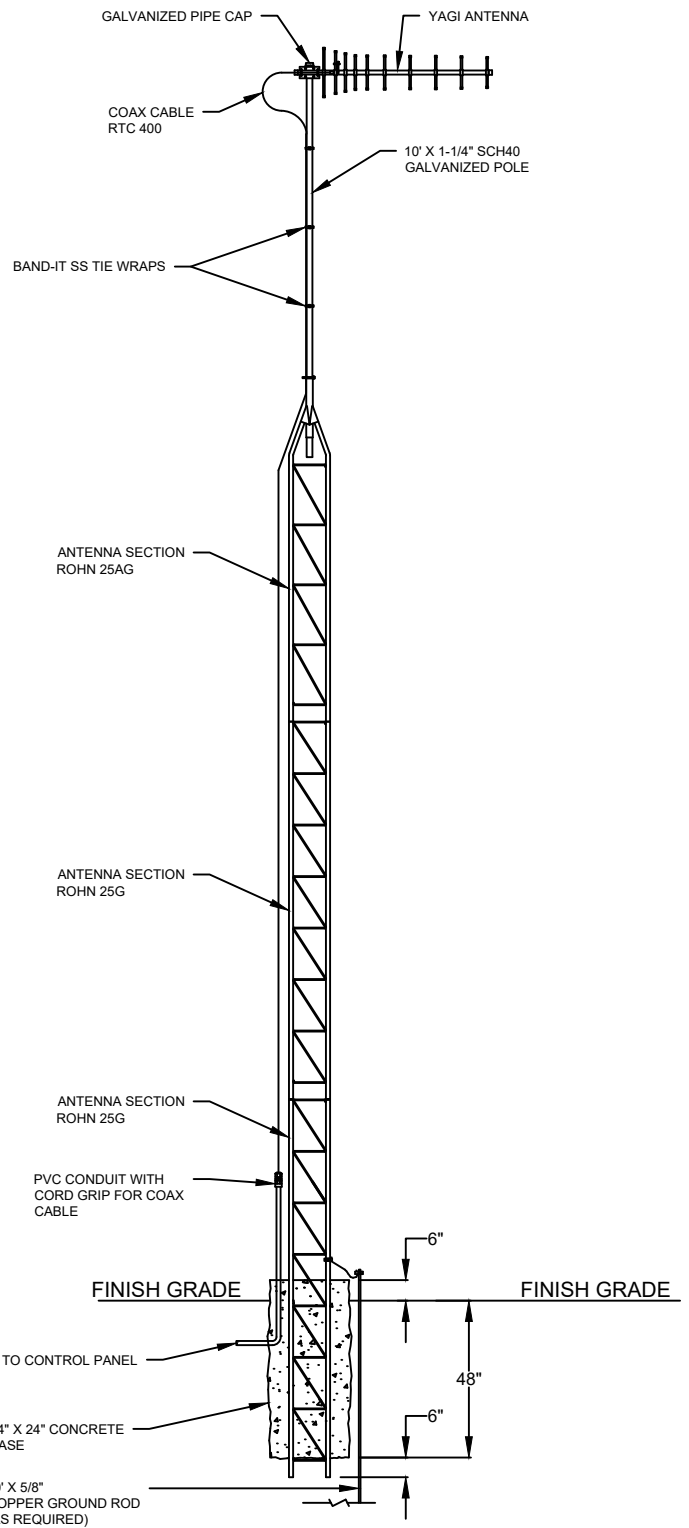
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DATE:
JUNE 2023

DETAIL: G-09

SECURITY FENCING



NOTES:

1. COAX CONNECTORS SHALL BE ENCASED IN ALPHA TYPE FIT HEAT SHRINK TUBING.
2. ANTENNA GROUND TO BE BONDED WITH ELECTRIC CONTROL PANEL GROUND ROD.
3. GROUNDING ROD LENGTH AND QUANTITY AS REQUIRED TO ACHIEVE MAXIMUM GROUND RESISTANCE OF 5.0 OHMS.
4. "YAGI" (HIGHLY DIRECTIONAL) ANTENNA MODEL RTA209 AS SUPPLIED BY DATA FLOW SYSTEMS.
5. ANTENNA HEIGHT SHALL BE DETERMINED BY DATA FLOW SYSTEMS PER THEIR RADIO STUDY.

DATA FLOW SYSTEMS ANTENNA
1-1/4" POLE / 150 MPH WIND RATING

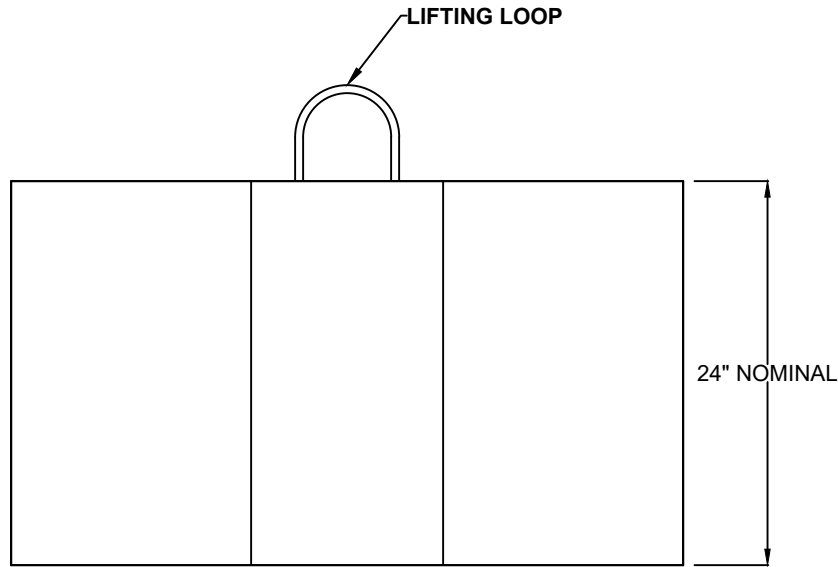
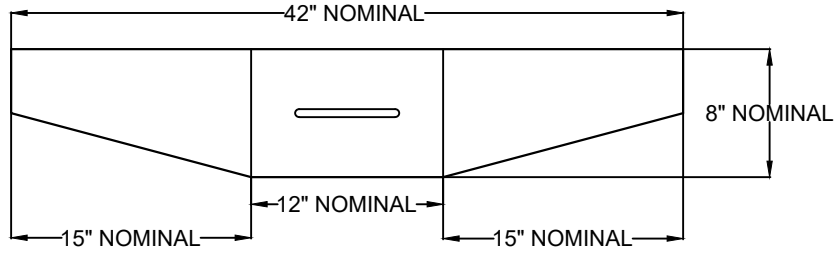
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DATA FLOW SYSTEMS ANTENNA

DATE:
 JUNE 2023

DETAIL: G-10



NOTES:

1. CONCRETE THRUST BLOCK SHALL BE CONSTRUCTED FROM MINIMUM 4,000 PSI CONCRETE.
2. USE OF CONCRETE THRUST BLOCKS IN LIEU OF MECHANICAL JOINT RESTRAINTS MUST BE APPROVED BY HCUD PRIOR TO INSTALLATION.

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500 POUND THRUST BLOCK

DATE:
 JUNE 2023

DETAIL: G-11

GRAVITY SEWER LINE TESTING

LOW PRESSURE AIR TEST TABLE

PIPE DIAMETERS IN INCHES

LENGTH OF PIPE IN FEET	4"	6"	8"	10"	12"	15"	18"	21"	24"
25	0:04	0:10	0:18	0:28	0:40	1:02	1:27	2:01	2:38
50	0:09	0:20	0:35	0:55	1:19	2:04	2:58	4:03	5:17
75	0:13	0:30	0:53	1:23	1:59	3:06	4:27	6:04	7:55
100	0:18	0:40	1:10	1:50	2:38	4:08	5:56	8:05	10:34
125	0:22	0:50	1:28	2:18	3:18	5:09	7:26	9:55	11:20
150	0:26	0:59	1:46	2:45	3:58	6:11	8:30		
175	0:31	1:09	2:03	3:13	4:37	7:05			
200	0:35	1:19	2:21	3:40	5:17				12:06
225	0:40	1:29	2:38	4:08	5:40			10:25	13:36
250	0:44	1:39	2:56	4:35			8:31	11:35	15:07
275	0:48	1:49	3:14	4:43			9:21	12:44	16:38
300	0:53	1:59	3:31						
350	1:02	2:19	3:47			8:16	11:54	16:12	21:10
400	1:28	2:38			6:03	9:27	13:36	18:31	24:12

NOTES:

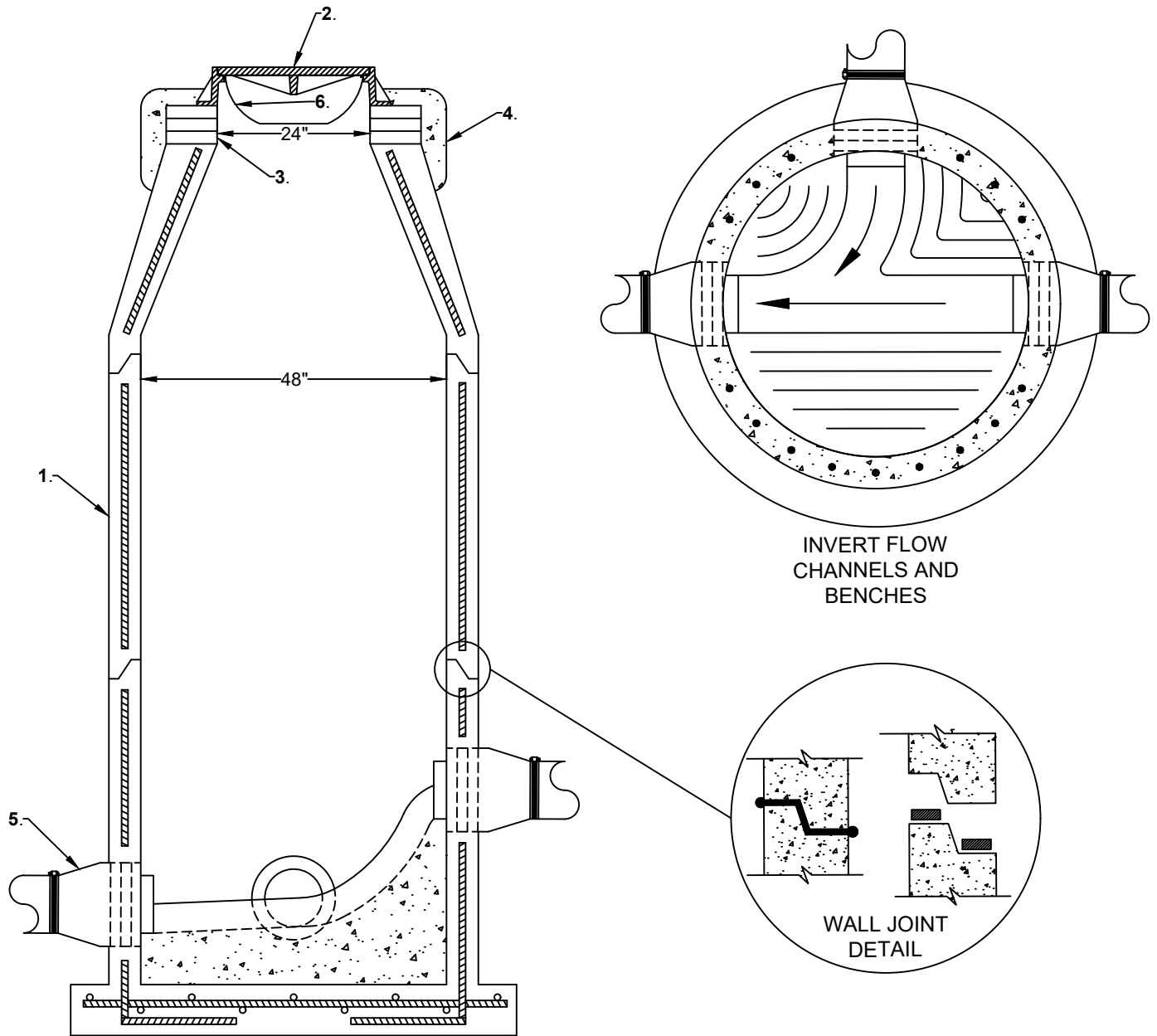
1. AIR TEST SHALL START AT 3.5 PSI AND DROP NO MORE THAN 1 PSI IN THE ELAPSED TIME SHOWN ON TABLE.
2. AIR PRESSURE GAUGE SHALL BE IN 1 PSI INCREMENTS.

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AIR TEST TABLE

DATE:
 JUNE 2023

DETAIL: S-01



INVERT FLOW CHANNELS AND BENCHES

WALL JOINT DETAIL

LEGEND:

- 1. REFER TO THE HCUD STANDARDS AND TECHNICAL SPECIFICATIONS FOR TYPICAL MANHOLE SPECIFICATIONS INCLUDING EXTERIOR AND INTERIOR COATINGS.
- 2. SEE MANHOLE RING AND COVER DETAIL.
- 3. CONCRETE ADJUSTMENT RINGS, 18" MAXIMUM HEIGHT. NO BRICK OR BRICK PAVERS ALLOWED.
- 4. CONCRETE ENCASUREMENT.
- 5. TYPICAL PIPE BOOT.
- 6. INFLOW PROTECTOR.

NOTES:

- 7. WALL JOINT DETAIL - USE A NON-HYDROEXPANSIVE WATERSTOP FOR IMPERMEABLE JOINTS BETWEEN PREFABRICATED STRUCTURES BASED ON BITUMINOUS RESINS, "RAM-NEK".
- 8. TROUGH AND BENCHES SHALL BE POURED WITH NON-SHRINK GROUT, SURFACE SHALL BE SMOOTH.
- 9. ALL EXPOSED CONCRETE SHALL BE COATED PER HCUD SPECIFICATIONS.
- 10. INVERT ELEVATIONS GREATER THAN 24" ABOVE THE LOWEST INVERT ELEVATION SHALL BE AN INSIDE DROP. SEE TYPICAL INSIDE DROP MANHOLE DETAIL.

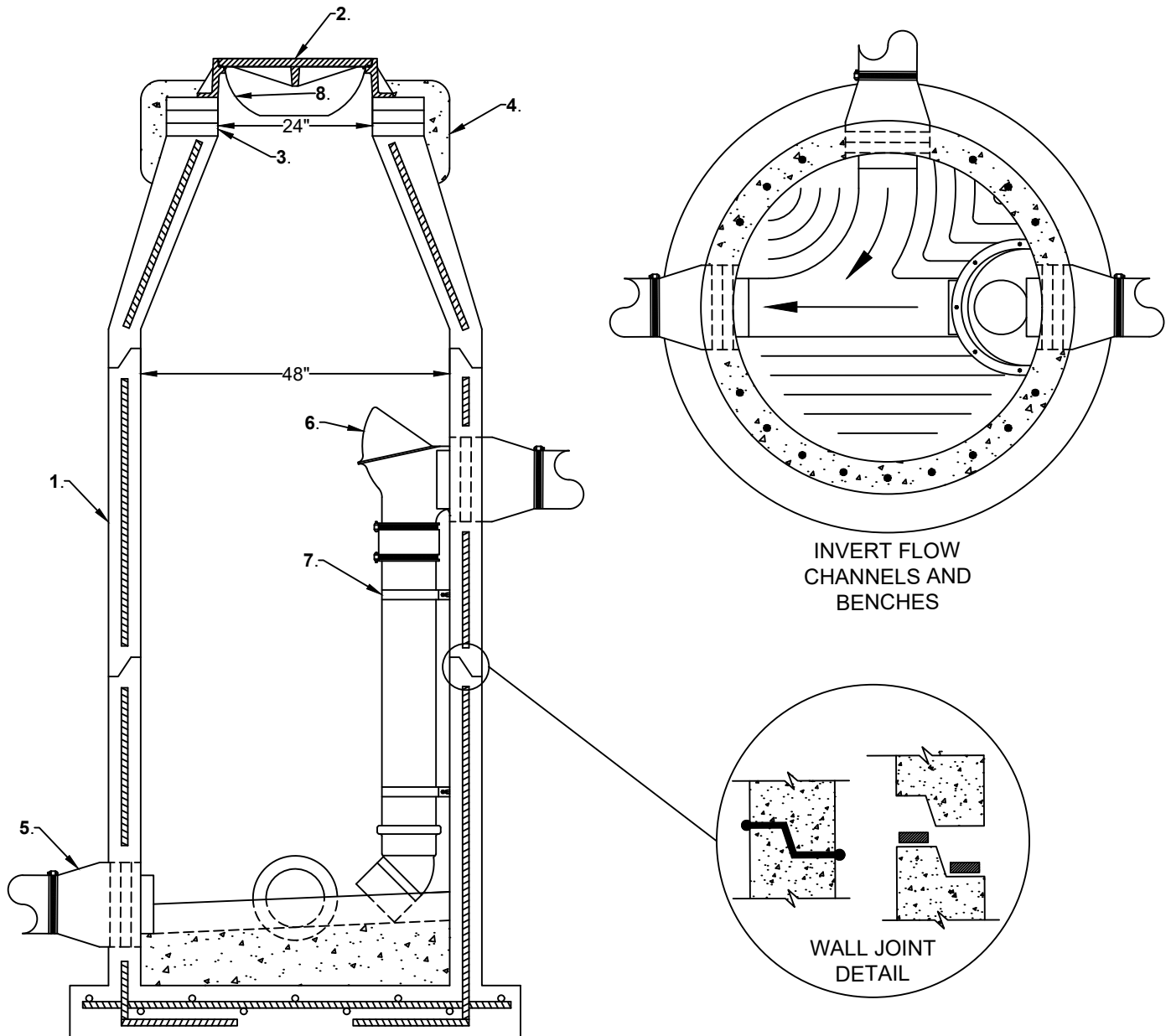
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TYPICAL MANHOLE

DATE:
 JUNE 2023

DETAIL: S-02



LEGEND:

1. REFER TO THE HCUD STANDARDS AND TECHNICAL SPECIFICATIONS FOR TYPICAL MANHOLE SPECIFICATIONS INCLUDING EXTERIOR AND INTERIOR COATINGS.
2. SEE MANHOLE RING AND COVER DETAIL.
3. CONCRETE ADJUSTMENT RINGS, 18" MAXIMUM HEIGHT. NO BRICK OR BRICK PAVERS ALLOWED.
4. CONCRETE ENCASEMENT.
5. TYPICAL PIPE BOOT.
6. SANITARY MANHOLE INSIDE DROP BOWL WITH HOOD. HCUD APPROVED SEALANT SHALL BE USED WHERE DROP BOWL ATTACHES TO INSIDE WALL OF MANHOLE TO PREVENT ANY LEAKAGE.
7. TYPICAL STAINLESS STEEL SUPPORT BRACKET.
8. INFLOW PROTECTOR.

NOTES:

9. WALL JOINT DETAIL - USE A NON-HYDROEXPANSIVE WATERSTOP FOR IMPERMEABLE JOINTS BETWEEN PREFABRICATED STRUCTURES BASED ON BITUMINOUS RESINS, "RAM-NEK".
10. INSIDE DROPS SHALL BE REQUIRED FOR GRAVITY MAINS ENTERING A MANHOLE WHERE THE VERTICAL DISTANCE IS 24" OR MORE ABOVE THE LOWEST INVERT CHANNEL.
11. TROUGH AND BENCHES SHALL BE POURED WITH NON-SHRINK GROUT, SURFACE SHALL BE SMOOTH.
12. ALL EXPOSED CONCRETE SHALL BE COATED PER HCUD SPECIFICATIONS.

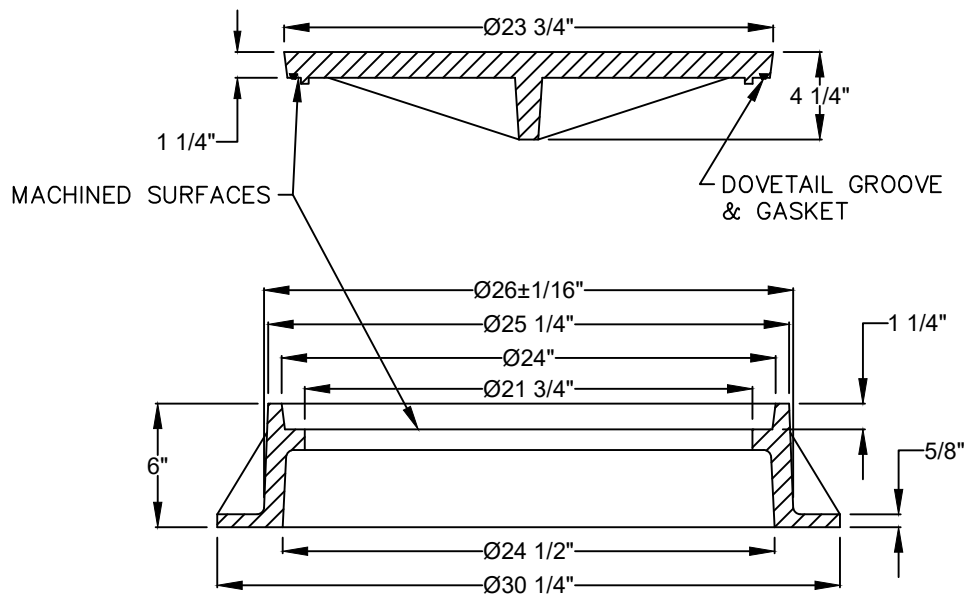
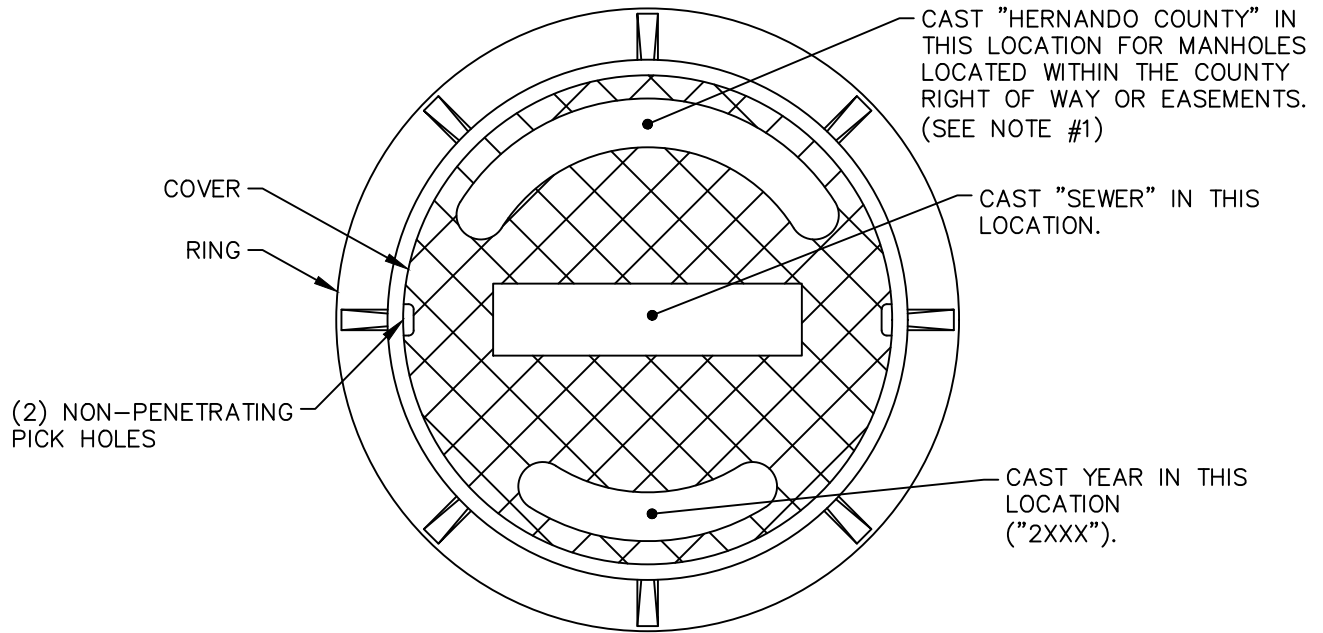
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TYPICAL INSIDE DROP MANHOLE

DATE:
 JUNE 2023

DETAIL: S-03



NOTES:

1. ALL NON-HCUD OWNED SEWER MANHOLE COVERS SHALL HAVE ONLY "SEWER" AND "YEAR" CAST IN COVER AS SHOWN.
2. ALL SEWER MANHOLES SHALL HAVE NON-VENTED INFLOW PROTECTORS INSTALLED UNDER THE COVER.
3. RING WEIGHT: APPROXIMATELY 150 LBS.
4. COVER WEIGHT: APPROXIMATELY 150 LBS.

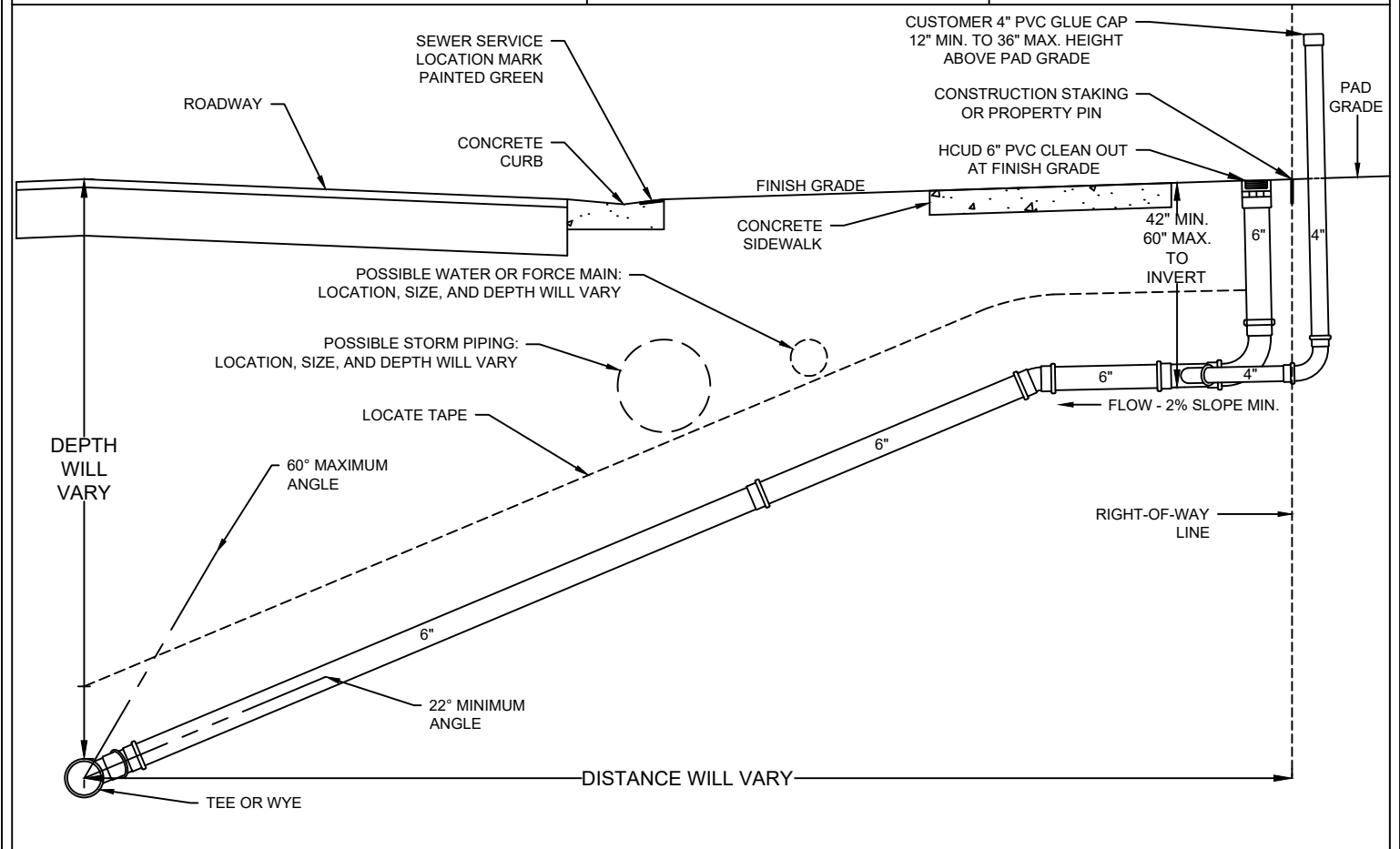
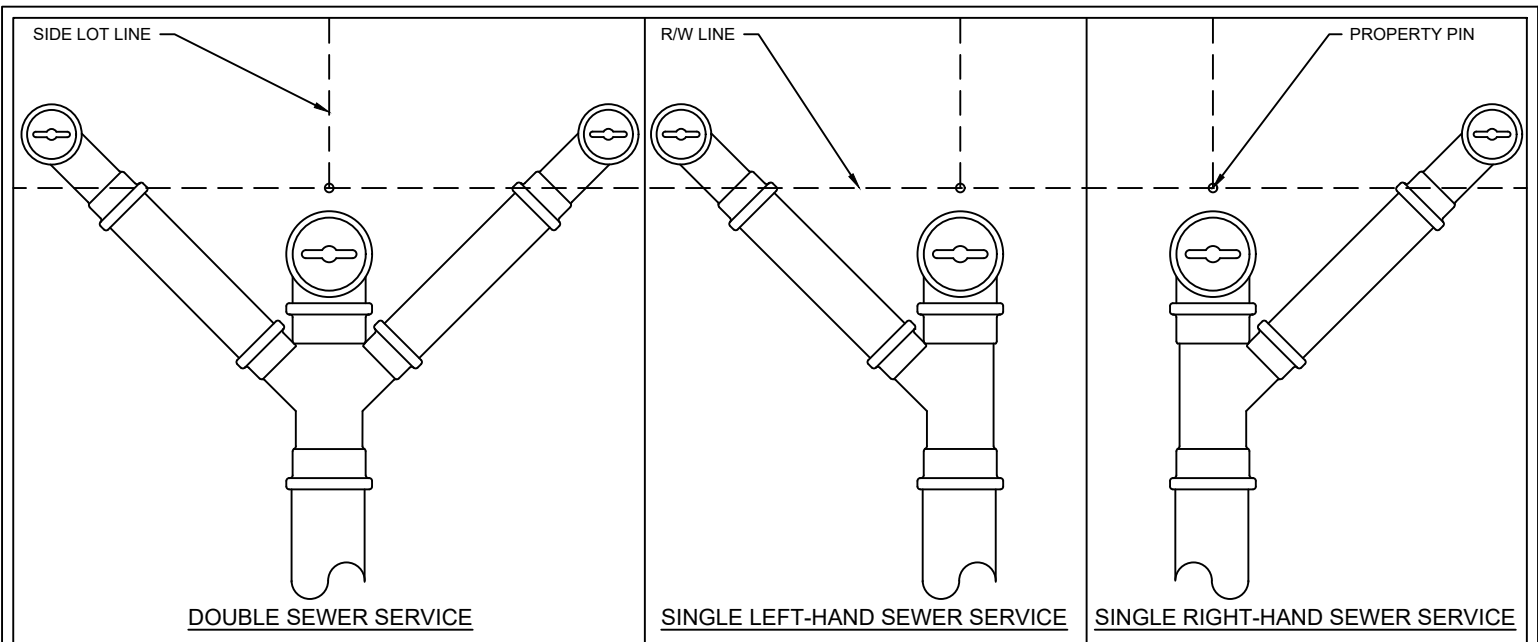
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MANHOLE RING AND COVER

DATE:
 JUNE 2023

DETAIL: S-04



NOTES:

1. CLEAN-OUT SHALL HAVE A PVC FLUSH MOUNT THREADED CAP, NO BRASS CAPS ALLOWED. COAT CAP THREADS WITH GREASE OR ANTI-SEIZE LUBRICANT.
2. SINGLE SEWER SERVICES CAN BE EITHER LEFT-HAND OR RIGHT-HAND DEPENDING ON THE APPLICATION.
3. INSTALL SEWER LOCATE TAPE ON ALL SEWER SERVICES.
4. CONTRACTOR SHALL LOWER HCUD 6" CLEAN-OUTS FLUSH WITH FINISHED GRADE PRIOR TO PRELIMINARY WALK-THROUGH.
5. PLUMBING CONTRACTOR SHALL LOWER CUSTOMER 4" CLEAN-OUT FLUSH WITH PAD GRADE ONCE HOME IS CONNECTED.

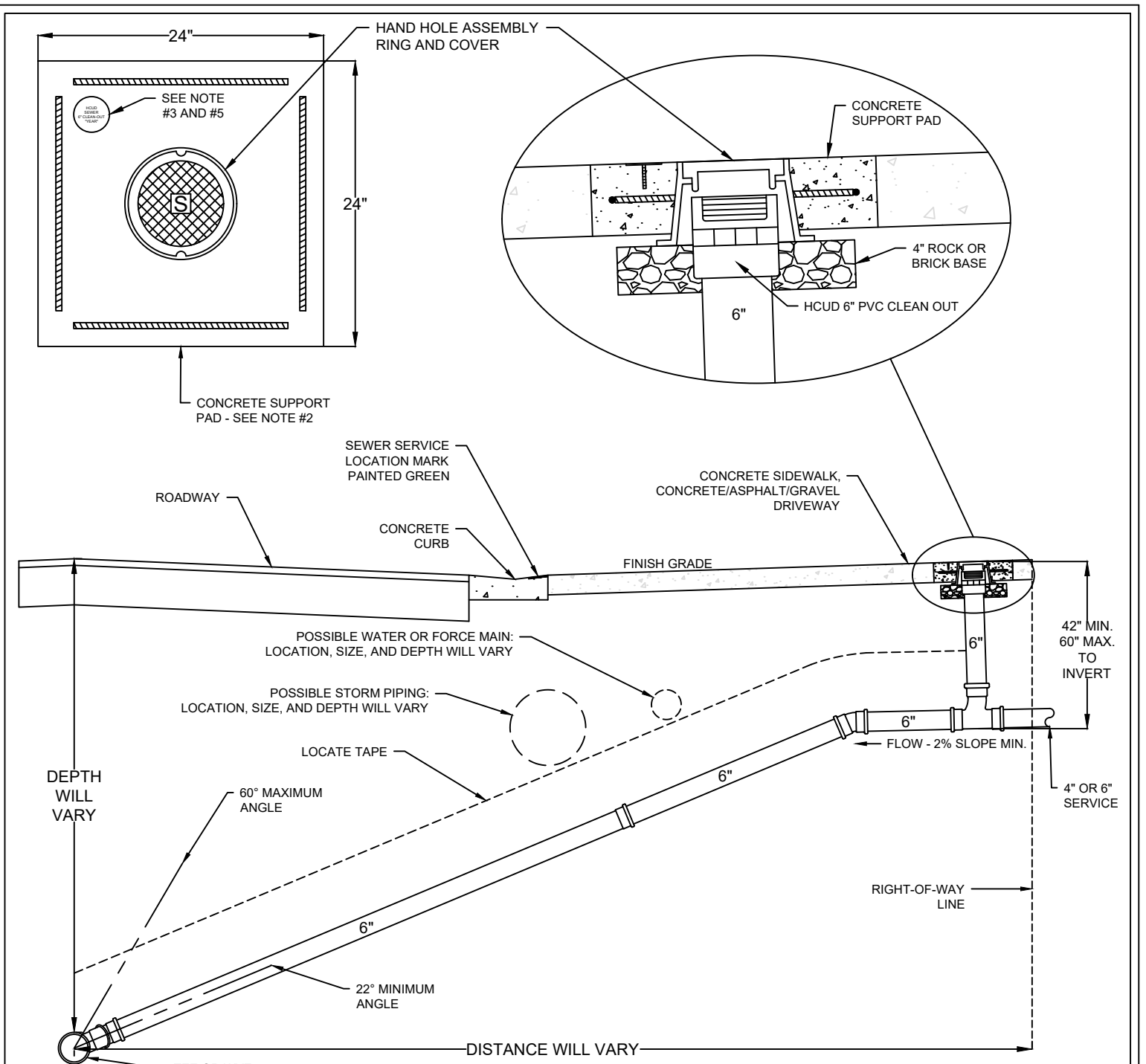
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RESIDENTIAL SEWER SERVICE

DATE:
JUNE 2023

DETAIL: S-05



NOTES:

1. CLEAN-OUT SHALL HAVE A PVC FLUSH MOUNT THREADED CAP, NO BRASS CAPS ALLOWED. COAT CAP THREADS WITH GREASE OR ANTI-SEIZE LUBRICANT.
2. 24"x24"x6" POURED IN PLACE 4000 PSI CONCRETE PAD. INSTALLATION INCLUDES MINIMUM FOUR #4 REBAR AROUND THE PERIMETER OF PAD, ONE 3" ROUND SOLID CAST BRASS VALVE IDENTIFICATION TAG WITH 2"X 1/4" THEFT PROOF ANCHOR PIN AND ONE HAND HOLE ASSEMBLY WITH RING AND COVER, AS SHOWN.
3. 3" ROUND SOLID CAST BRASS VALVE IDENTIFICATION TAG SHALL HAVE THE FOLLOWING INFORMATION ENGRAVED IN FOUR ROWS WITH 3/8" LETTER HEIGHT ON THE ROUND DISK: ROW 1 - "HCUD". ROW 2 - "SEWER" ROW 3 - "6"CLEAN-OUT ". ROW 4 - THE YEAR OF INSTALLATION.
4. INSTALL SEWER LOCATE TAPE ON ALL SEWER SERVICES.
5. IF THE CLEAN-OUT HAS TO BE INSTALLED OUTSIDE OF THE COUNTY RIGHT-OF-WAY OR HCUD EASEMENT, THE BRASS IDENTIFICATION TAG WILL NOT BE REQUIRED. IN THIS INSTANCE, HCUD WILL NOT OWN OR MAINTAIN THE CLEAN-OUT.
6. FOR COMMERCIAL APPLICATIONS, THIS DETAIL SHALL BE FOLLOWED.

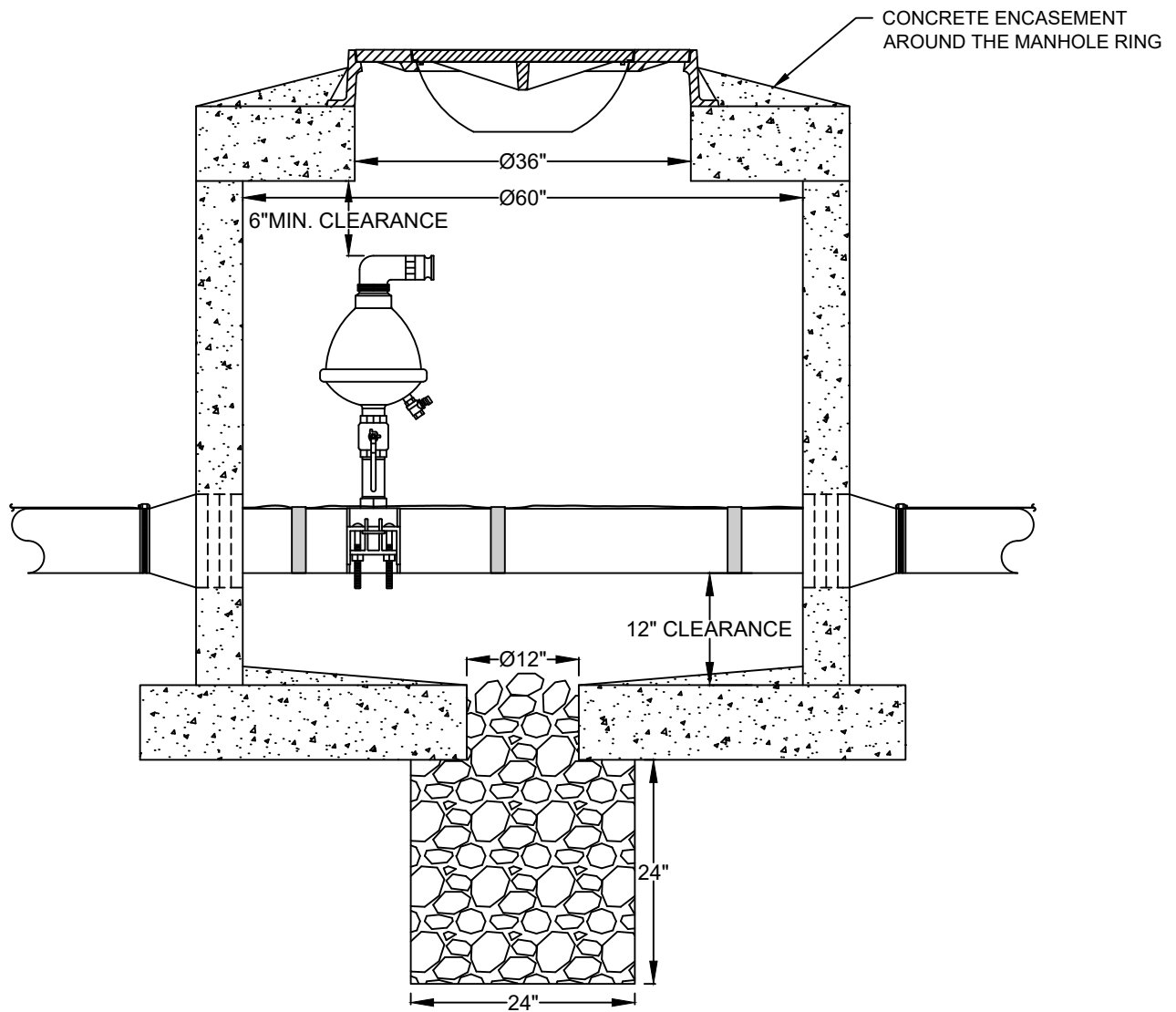
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CLEAN-OUT INSTALLATION IN CONCRETE OR ASPHALT PAVEMENT

DATE:
 JUNE 2023

DETAIL: S-06



NOTES:

1. 36" RING AND COVER, SEE ARV RING AND COVER DETAIL. INFLOW PROTECTOR REQUIRED ON 24" COVER, AS SHOWN. INFLOW PROTECTOR IS UTILIZED TO PREVENT THE INNER AND OUTER COVER FROM STICKING TOGETHER.
2. AIR/VACUUM RELEASE VALVE CONCRETE MANHOLE STRUCTURE SHALL BE PRECAST DESIGN WITH THE BASE SECTION MONOLITHICALLY CAST AND A 12-INCH DIAMETER SUMP OPENING FOR DRAINAGE. THE TOP AND BOTTOM SHALL BE MINIMUM 8" THICK WITH 5" THICK WALL. CONCRETE SHALL BE 4000 PSI MINIMUM. ASPHALT MASTIC JOINT COMPOUND SHALL BE USED TO SEAL THE TOP TO THE BARREL SECTION OF MANHOLE. DOG HOUSE STYLE MANHOLES ARE NOT ACCEPTABLE.
3. THE DRAINAGE SUMP SHALL BE LINED WITH FILTER FABRIC AND FILLED WITH FDOT #57 AGGREGATE TO THE DIMENSIONS SHOWN.
4. PIPE PENETRATION INTO MANHOLE SHALL UTILIZE A FLEXIBLE PIPE BOOT CONNECTOR.
5. TAPPING SADDLE SHALL BE STAINLESS STEEL WITH STAINLESS STEEL HARDWARE.
6. ALL 2" PIPING, FITTINGS, ISOLATION BALL VALVE, AND HARDWARE SHALL BE MINIMUM 316 STAINLESS STEEL. ISOLATION BALL VALVE SHALL BE ONE PIECE DESIGN, FULL PORT OPENING TYPE WITH NON-LOCKING OPERATING HANDLE.
7. AIR/VACUUM RELEASE VALVE SHALL HAVE A 2-INCH MIP THREADED INLET.
8. LOCATE WIRE SHALL BE #10 AWG SOLID COPPER OR COPPER CLAD. INSULATION COLOR SHALL BE GREEN FOR SEWER.
9. SEE HCUJ STANDARDS AND TECHNICAL SPECIFICATIONS FOR INTERIOR OF ARV MANHOLE COATING REQUIREMENTS.

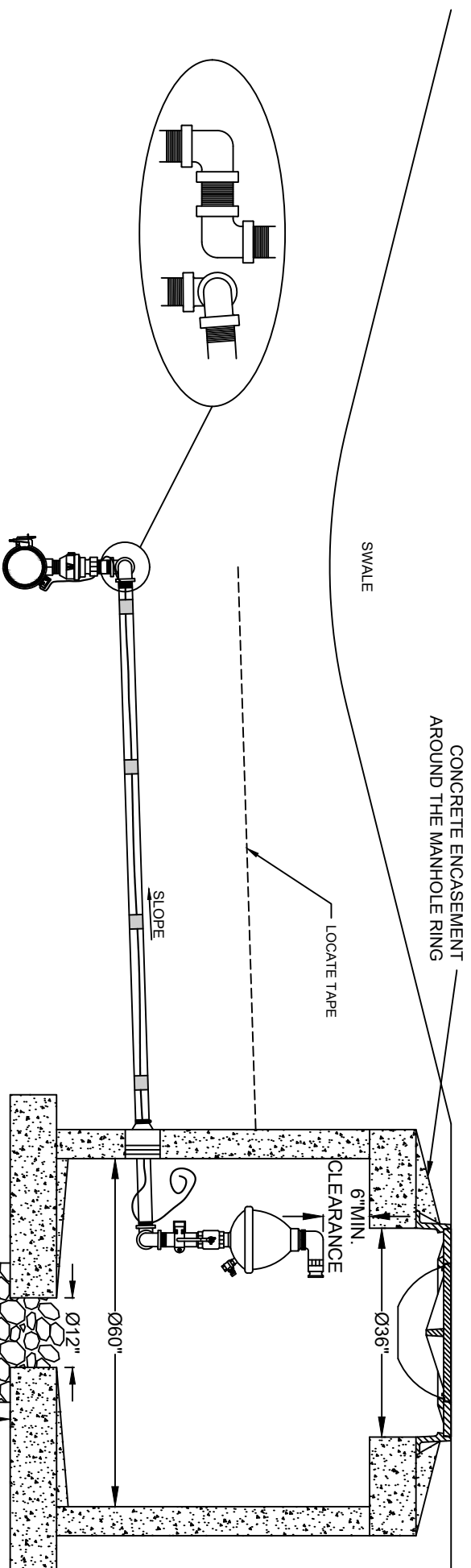
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INLINE ARV MANHOLE

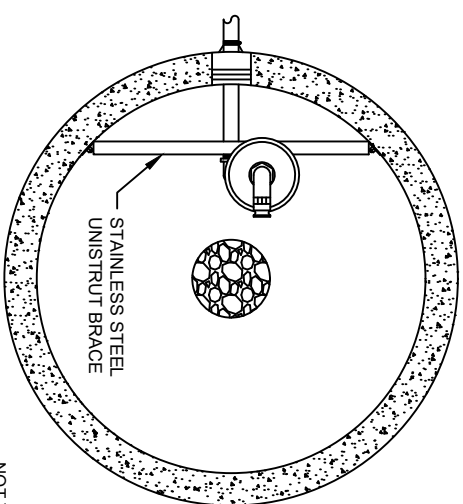
DATE:
 JUNE 2023

DETAIL: S-07



NOTES:

1. 36" RING AND COVER. SEE ARV RING AND COVER DETAIL. INFLOW PROTECTOR REQUIRED ON 24" COVER, AS SHOWN. INFLOW PROTECTOR IS UTILIZED TO PREVENT THE INNER AND OUTER COVER FROM STICKING TOGETHER.
2. AIR/VACUUM RELEASE VALVE CONCRETE MANHOLE STRUCTURE SHALL BE PRECAST DESIGN WITH THE BASE SECTION MONOLITHICALLY CAST AND A 12-INCH DIAMETER SUMP OPENING FOR DRAINAGE. THE TOP AND BOTTOM SHALL BE MINIMUM 8" THICK WITH 5" THICK WALL. CONCRETE SHALL BE 4000 PSI MINIMUM. ASPHALT MASTIC JOINT COMPOUND SHALL BE USED TO SEAL THE TOP TO THE BARREL SECTION OF MANHOLE.
3. THE DRAINAGE SUMP SHALL BE LINED WITH FILTER FABRIC AND FILLED WITH FDOT #57 AGGREGATE TO THE DIMENSIONS SHOWN.
4. PIPE PENETRATION INTO MANHOLE SHALL UTILIZE A FLEXIBLE PIPE BOOT CONNECTOR.
5. TAPPING SADDLE SHALL BE STAINLESS STEEL WITH STAINLESS STEEL HARDWARE. 2" CORPORATION STOP IS BRASS.
6. ALL 2" PIPING, FITTINGS, ISOLATION BALL VALVE, BRACING AND HARDWARE SHALL BE MINIMUM 316 STAINLESS STEEL. ISOLATION BALL VALVE SHALL BE ONE PIECE DESIGN, FULL PORT OPENING TYPE WITH NON-LOCKING OPERATING HANDLE.
7. AIR/VACUUM RELEASE VALVE SHALL HAVE A 2-INCH MIP THREADED INLET.
8. LOCATE WIRE SHALL BE #10 AWG SOLID COPPER OR COPPER CLAD. INSULATION COLOR SHALL BE GREEN FOR SEWER. LOCATE WIRE SHALL ATTACH TO THE FORCE MAIN LOCATE WIRE WITH APPROVED CONNECTOR, AS SHOWN.
9. SEE SPECIFICATIONS FOR WASTEWATER STRUCTURE COATINGS FOR INTERIOR OF MANHOLE COATING REQUIREMENTS.
10. INSTALL GREEN LOCATE TAPE ABOVE STAINLESS STEEL PIPING.



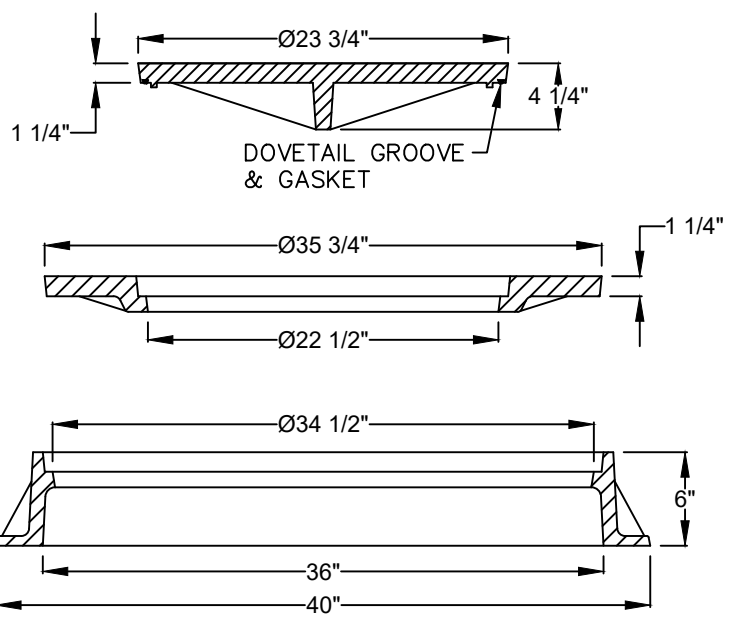
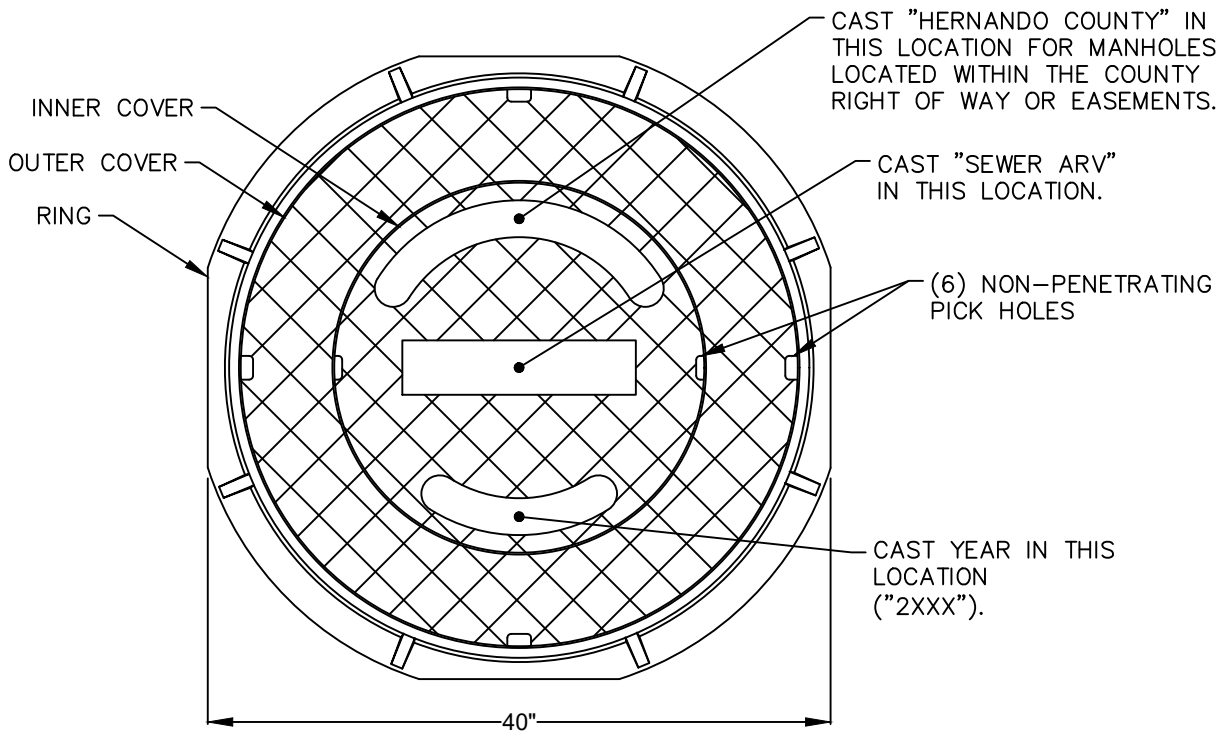
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OFFSET ARV MANHOLE

DATE:
 JUNE 2023

DETAIL: S-08



NOTES:

1. ALL SEWER AIR/VACUUM RELEASE VALVE MANHOLES SHALL HAVE NON-VENTED INFLOW PROTECTORS INSTALLED UNDER THE INNER COVER.
2. RING WEIGHT: APPROXIMATELY 220 LBS.
3. INNER/OUTER COVER WEIGHT: APPROXIMATELY 150/220 LBS.

NOT TO SCALE

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ARV RING AND COVER

DATE:
 JUNE 2023

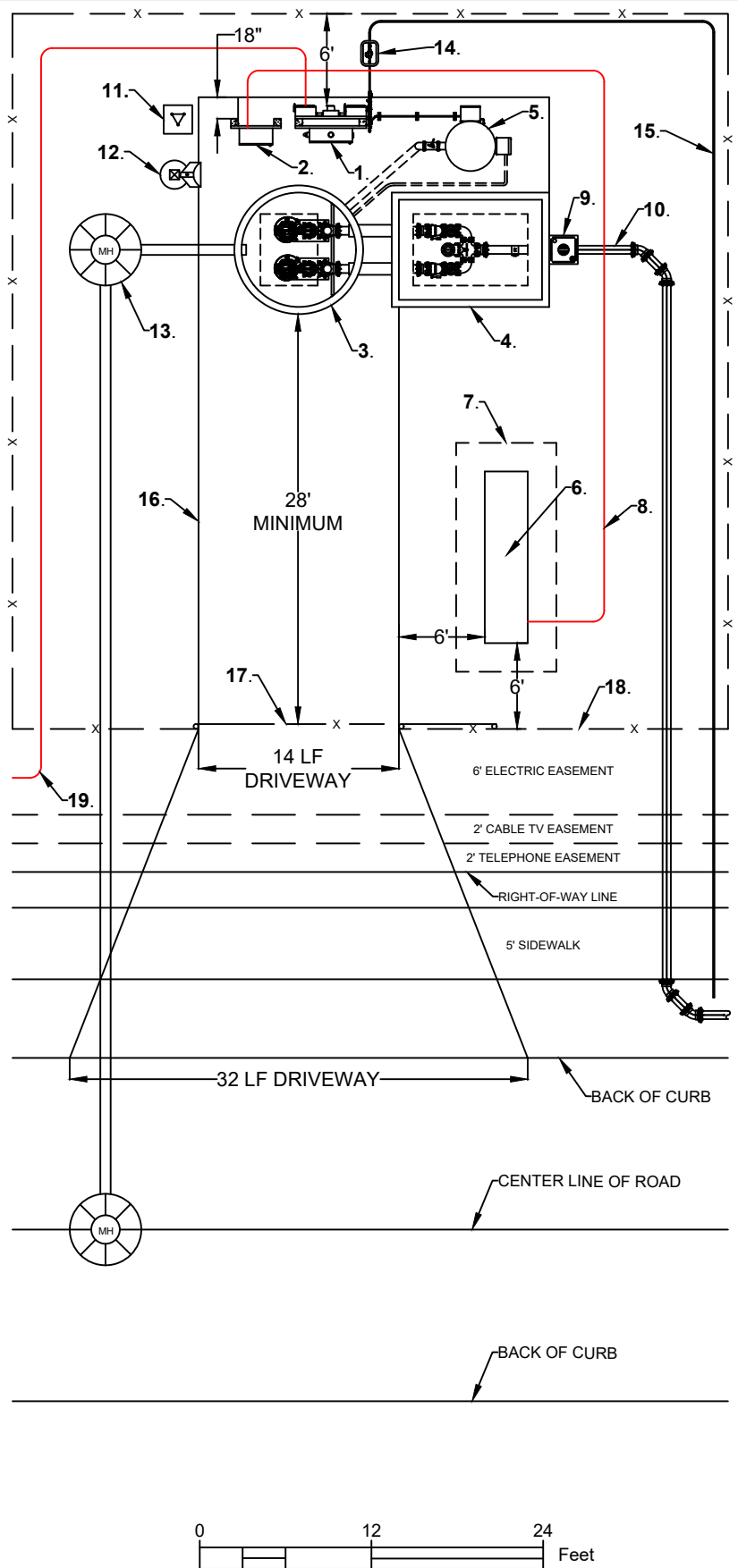
DETAIL: S-09

LEGEND:

1. PUMP CONTROL PANEL, ELECTRIC SERVICE AND WATER SERVICE PER PLANS AND SPECIFICATIONS.
2. TRANSFER SWITCH FOR GENERATOR PER PLANS AND SPECIFICATIONS, IF APPLICABLE.
3. WET WELL PER PLANS AND SPECIFICATIONS. ALSO SEE NOTE #II BELOW.
4. VALVE VAULT PER PLANS AND SPECIFICATIONS.
5. ODOR CONTROL SYSTEM PER PLANS AND SPECIFICATIONS, IF APPLICABLE.
6. GENERATOR PER PLANS AND SPECIFICATIONS, IF APPLICABLE. NOTE: IF DIESEL DRIVEN PUMP IS USED IN LIEU OF GENERATOR, SEE STANDBY DIESEL DRIVEN PUMP DETAIL.
7. CONCRETE SUPPORT PAD FOR GENERATOR PER PLANS AND SPECIFICATIONS, IF APPLICABLE.
8. CONDUITS AND WIRING TO TRANSFER SWITCH FROM GENERATOR PER PLANS AND SPECIFICATIONS.
9. FORCE MAIN VALVE AND CONCRETE VALVE PAD PER PLANS AND SPECIFICATIONS.
10. FORCE MAIN PER PLANS AND SPECIFICATIONS.
11. DATA FLOW SYSTEMS ANTENNA AND CONCRETE SUPPORT PAD.
12. SITE LIGHTING, POLE AND CONCRETE BASE PER PLANS AND SPECIFICATIONS.
13. COLLECTOR MANHOLE PER PLANS AND SPECIFICATIONS.
14. HCUD WATER METER AND METER BOX.
15. POLY TUBING WATER SERVICE LINE WITH #10 AWG LOCATE WIRE FROM WATER MAIN PER PLANS AND SPECIFICATIONS.
16. 14' WIDE 4000 PSI CONCRETE, WITH WIRE, DRIVEWAY WITH 32' WIDE ABUTMENT TO BACK OF CURB, AS SHOWN. CONCRETE DRIVEWAY PER PLANS AND SPECIFICATIONS. DRIVEWAY SHALL BE CENTERED TO WET WELL.
17. SINGLE CANTILEVER SLIDE GATE (NO WHEELS ON BOTTOM) PER PLANS AND SPECIFICATIONS.
18. 50' X 50' FENCED PUMP STATION SITE PER PLANS AND SPECIFICATIONS.
19. CONDUIT AND WIRING FROM THE POWER COMPANY TRANSFORMER TO THE ELECTRIC SERVICE ON THE CONTROL PANEL PER PLANS AND SPECIFICATIONS.

NOTES:

- I. PUMP STATION SITE SHALL BE A MINIMUM OF 60' X 50' IN SIZE. ONLY 50' X 50' SHALL BE FENCED BEHIND THE 10' UTILITY EASEMENT.
- II. DO NOT CENTER THE WET WELL ON THE PUMP STATION SITE. THE SINGLE CANTILEVER SLIDE GATE CAN NOT BE INSTALLED PROPERLY IF IT IS CENTERED. THE SINGLE CANTILEVER GATE REQUIRES A MINIMUM OF 21' IN THE OPEN POSITION.
- III. THE FINISH CONCRETE SLAB ELEVATION OF THE TOP OF THE WET WELL AND VALVE VAULT SHALL BE AT OR ABOVE THE 100 YEAR FLOOD ELEVATION OR A MINIMUM OF ONE FOOT ABOVE THE CROWN OF THE ROAD IN FRONT OF THE PUMP STATION SITE, WHICHEVER IS GREATER.
- IV. THIS IS A TYPICAL LAYOUT, OTHER FACTORS DURING DESIGN MAY ALTER THIS LAYOUT. FINAL LAYOUT CONFIGURATION SHALL BE APPROVED BY HCUD.



**HERNANDO COUNTY
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15365 CORTEZ BOULEVARD
BROOKSVILLE, FLORIDA 34613
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DUPLEX PUMP STATION LAYOUT

**DATE:
JUNE 2023**

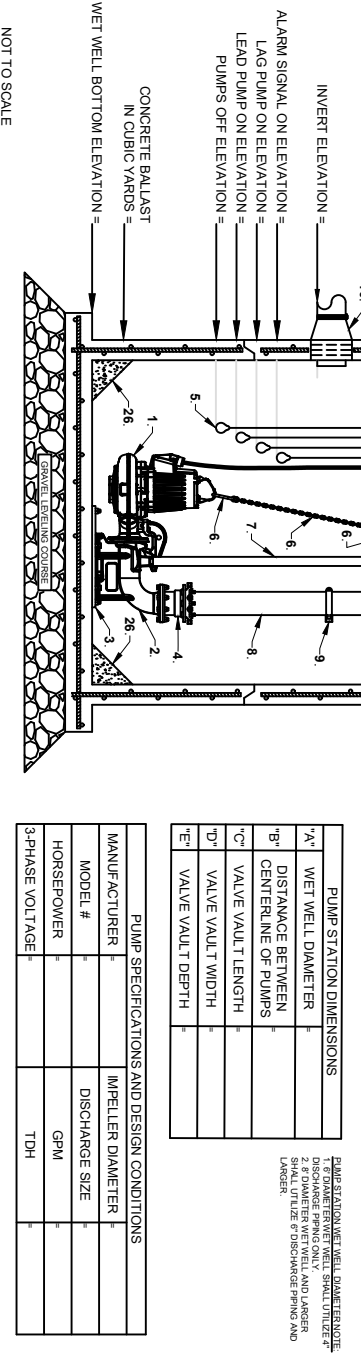
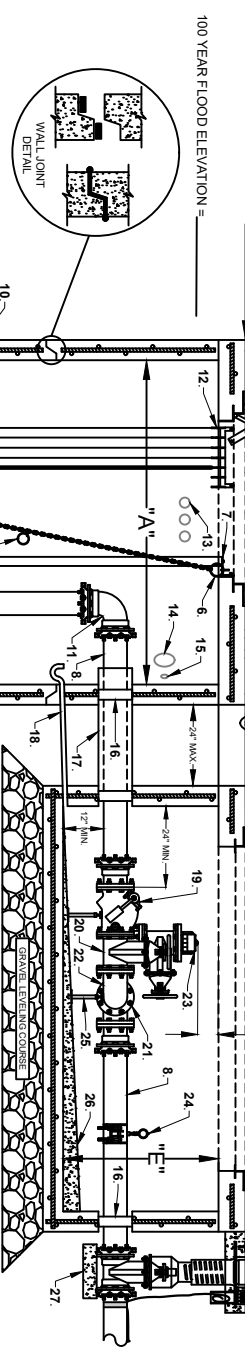
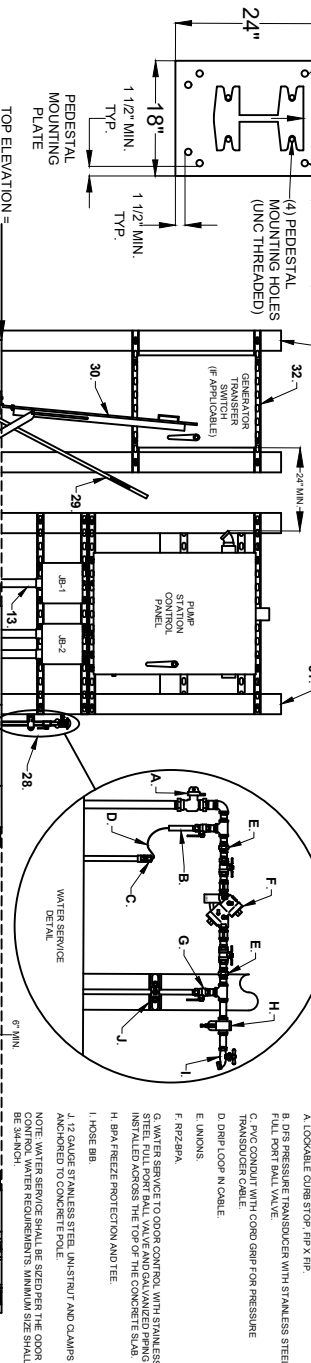
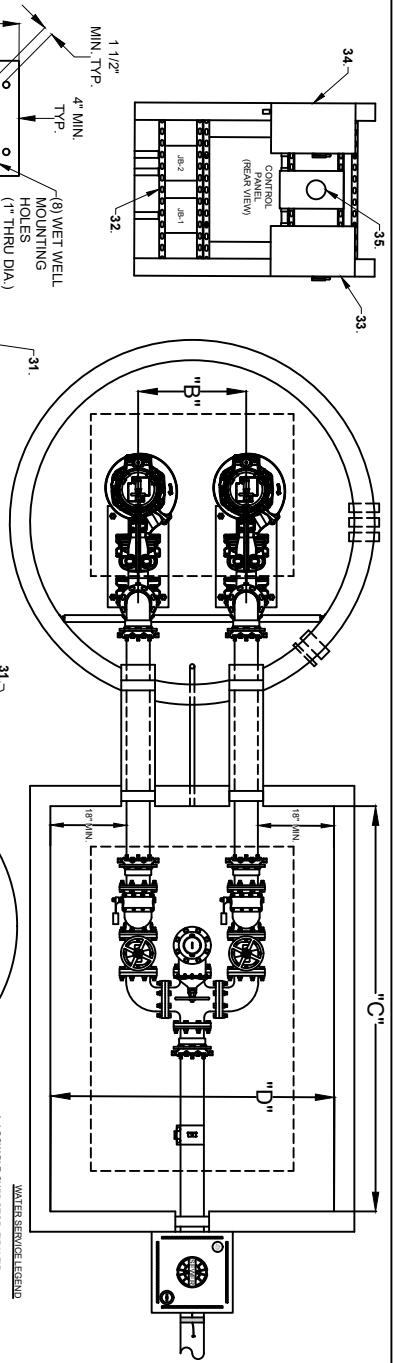
DETAIL: S-10

PUMP STATION LEGEND

1. H.O.U.D. APPROVED SUBMERSIBLE SEWAGE PUMP.
2. PUMP DISCHARGE ELBOW (PEDESTAL).
3. PEDestal MOUNTING PLATE. SEE DETAIL THIS PAGE AND NOTE #1V.
4. EPOXY COATED DIPMECHANICAL JOINT (M) X FLANGED END (F)5) ADAPTOR WITH MOUNTING HOLES (X3).
5. LIQUID LEVEL SWITCH (X3).
6. (4) PEDESTAL MOUNTING HOLES (UNC. THREADED).
7. (8) WET WELL MOUNTING HOLES (1" THRU DIA.).
8. 3/16 STAINLESS STEEL (SS) PUMP LIFTING CHAIN WITH SS LEFT RING EYES AND CLIPSES AT THE TOP, MID POINT OF CHAIN, AND PUMP LIFTING BALL, CHAIN, LEFT RING EYES, AND CLIPSES SHALL BE SIZED PER PUMP MANUFACTURER'S RECOMMENDATION.
9. MINIMUM CHAIN SIZE SHALL BE 5/16".
10. 1/2" SS GUIDE RAIL AND UPPER GUIDE RAIL BRACKET. RAIL DIAMETER SIZE PER PUMP MANUFACTURER'S RECOMMENDATION. CONTRACTOR SHALL CUT TO PROPER LENGTH.
11. C-300 DR-18 PVC PIPE (GREEN). PIPE DIAMETER SHALL BE PER CONSTRUCTION DRAWINGS. LENGTHS OVER 20' SHALL BE FUSIBLE PVC. NO BELL JOINTS ALLOWED.
12. DISCHARGE PIPING SUPPORT. 1/2" GAUGE SS UNISTRUT (B-LINE) AND PIPE CLAMPS. (IF APPLICABLE).
13. PIPE BOOT.
14. EPOXY COATED DIP C-153 MU X MU 90 DEGREE BEND WITH MU RESTRAINTS.
15. 3/16 SS CABLE HOLDER.
16. SCH. 40 PIPE COND. UNITS FROM JB-1 AND JB-2. 2" MINIMUM PIPE SIZE WITH PIPE BOOT.
17. ODOR CONTROL UNIT DRAIN PIPE PENETRATION. 2" MINIMUM PIPE SIZE WITH PIPE BOOT.
18. LINK SEAL, INSIDE PVC SLEEVE (TYPICAL X3).
19. PVC PIPE SLEEVE. DIAMETER SIZE DEPENDS ON DISCHARGE PIPING SIZE.
20. H.O.U.D. APPROVED CHECK VALVE (X2).
21. H.O.U.D. APPROVED X FE GATE VALVE WITH HAND WHEEL (X3).
22. EPOXY COATED DIP FLANGED 90 DEGREE BEND (X3).
23. 4" FEMALE TYPE "D" CAMLOCK WITH DUST PLUG.
24. 1/2" SS SADDLE. 1/2" SS NIPPLE. 1/2" SS FULL PORT BALL VALVE AND 1/2" DIAMETER SS LIQUID FILLED BOTTOM MOUNT PRESSURE GAUGE. 600 PSI MAX WITH 1 PSI INCREMENTS.
25. SS ADJUSTABLE PIPE AND VALVE SUPPORTS (TYPICAL X3).
26. CONCRETE FILLET.
27. MU GATE VALVE WITH 2" OPERATING NUT, MU RESTRAINTS, CONCRETE SUPPORT BLOCK, DUCTILE IRON ADJUSTABLE 5 1/4" VALVE CAN WITH SEWER LID, AND CONCRETE VALVE PAD PER H.O.U.D. SPECIFICATIONS.
28. WATER SERVICE. SEE WATER SERVICE DETAIL THIS SHEET.
29. H.O.U.D. APPROVED SAFETY GRATE (NO NETS).
30. H.O.U.D. APPROVED WET WELL LID.
31. CONCRETE SUPPORT POLES. 6" X 6" X 10' MINIMUM SIZE (TYPICAL X4).
32. ALL UNISTRUT SHALL BE 1/2" GAUGE SS UNISTRUT (B-LINE) WITH SS SPRING NUTS AND SS MOUNTING HARDWARE.
33. SS SAFETY DISCONNECT BEFORE ELECTRICAL METER SHALL BE NON-FUSED ON ALL 3-PHASE 277/480 VAC ELECTRICAL SERVICES. PROVIDE PLASTIC PLACARD THAT READS "ELECTRIC SERVICES NOT REQUIRED. (POWER COMPANY REQUIREMENT).
34. SS SAFETY DISCONNECT AFTER ELECTRICAL METER SHALL BE FUSED TYPE. SHALL BE SERVICE ENTRANCE RATED, AND SHALL HAVE LIGHTNING ARRESTOR EXTERNALLY MOUNTED UNDER DISCONNECT AND WIRED TO THE LOAD SIDE OF DISCONNECT.
35. ELECTRICAL METER SOCKET ENCLOSURE. "METER CAN". ELECTRICAL SERVICE SHALL BE SIZED PER CONSTRUCTION DRAWINGS. HOWEVER 100 AMPS IS THE MINIMUM.

NOTES:

- I. ALL MOUNTING HARDWARE AND FASTENERS, INCLUDING TEE BOLTS AND NUTS FOR MU FITTINGS SHALL BE 316 STAINLESS STEEL.
- II. ENGINEER SHALL FILL IN ALL INFORMATION ON THE LINE OR SPACE PROVIDED AFTER THE EQUAL (-) SIGN ON THIS DETAIL AND SHOW ON CONSTRUCTION DRAWINGS.
- III. ALL PENETRATIONS INTO THE CONTROL PANEL, TRANSFER SWITCH AND OTHER ELECTRICAL EQUIPMENT SHALL BE FROM THE BOTTOM UNLESS SHOWN DIFFERENTLY IN THE DETAIL.
- IV. TYPICAL MOUNTING PLATE DETAIL - 18" X 24" CARBON STEEL PLATE, 1" THICK (X3).
- V. AFHX PLATE TO WET WELL VIA 3/16 SS, 3/4" X 7" EXPANSION (WEDGE) ANCHORS (X4).
- VI. AFHX PUMP PEDestal TO PLATE VIA THREADED HOLES. HOLE DEPTH TO TRAVEL ENTIRE PLATE THICKNESS. ACTUAL HOLE DIAMETER AND PLACEMENT SHALL BE DICTATED BY THE PEDestal BOLT HOLE PATTERN. PEDestal MOUNTING BOLTS SHALL BE GRADE 8 AND HAVE UNC THREADS (X4). MOUNTING BOLTS SHALL BE WELDED FLUSH TO THE PLATE ON THE BOTTOM SIDE. PLEASE NOTE THAT LARGER PUMPS WITH LARGER PEDestALS MAY REQUIRE A LARGER PEDestal PLATE. IE. 18" X 30" OR 24" X 36". PEDestal PLATE SHALL BE SUBMITTED TO H.O.U.D. FOR APPROVAL.



- INVERT ELEVATION =**
- ALARM SIGNAL ON ELEVATION =**
- LAG PUMP ON ELEVATION =**
- LEAD PUMP ON ELEVATION =**
- PUMPS OFF ELEVATION =**
- CONCRETE BALLAST IN CUBIC YARDS =**
- WET WELL BOTTOM ELEVATION =**
- NOT TO SCALE**

PUMP STATION DIMENSIONS

A'	WET WELL DIAMETER
B'	DISTANCE BETWEEN CENTERLINE OF PUMPS
C'	VALVE VAULT LENGTH
D'	VALVE VAULT WIDTH
E'	VALVE VAULT DEPTH

PUMP SPECIFICATIONS AND DESIGN CONDITIONS

MANUFACTURER	IMPELLER DIAMETER
MODEL #	DISCHARGE SIZE
HORSEPOWER	GPM
3-PHASE VOLTAGE	TDH

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DUPLIX PUMP STATION - CONCRETE WET WELL

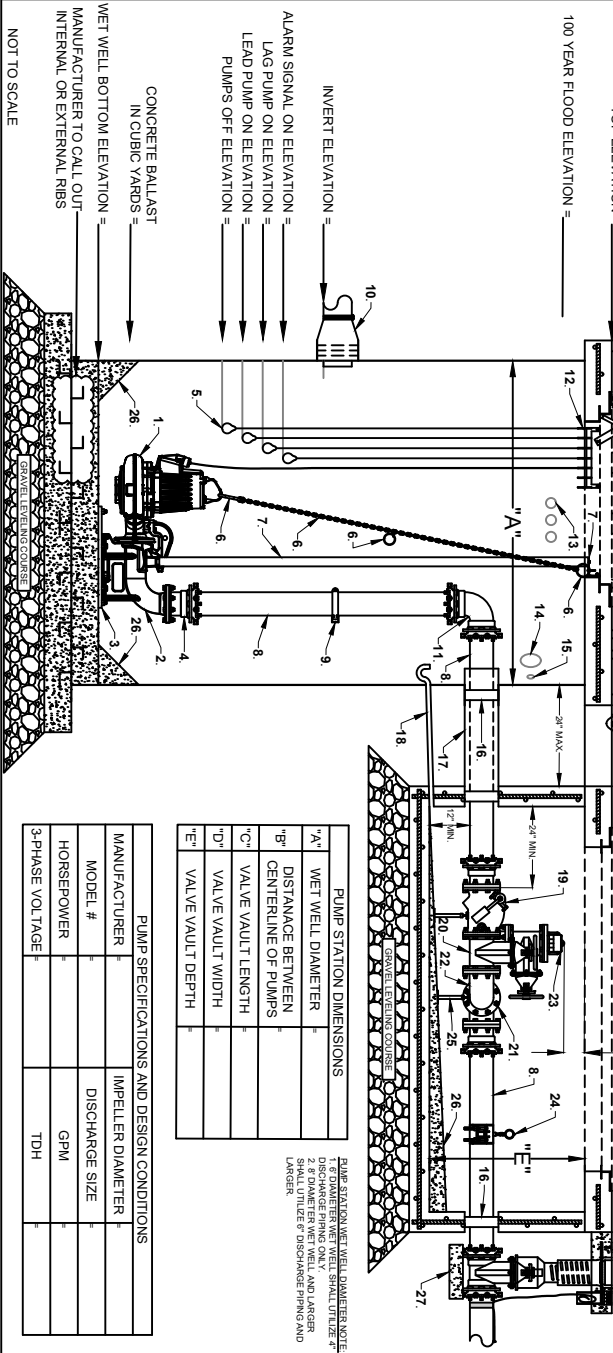
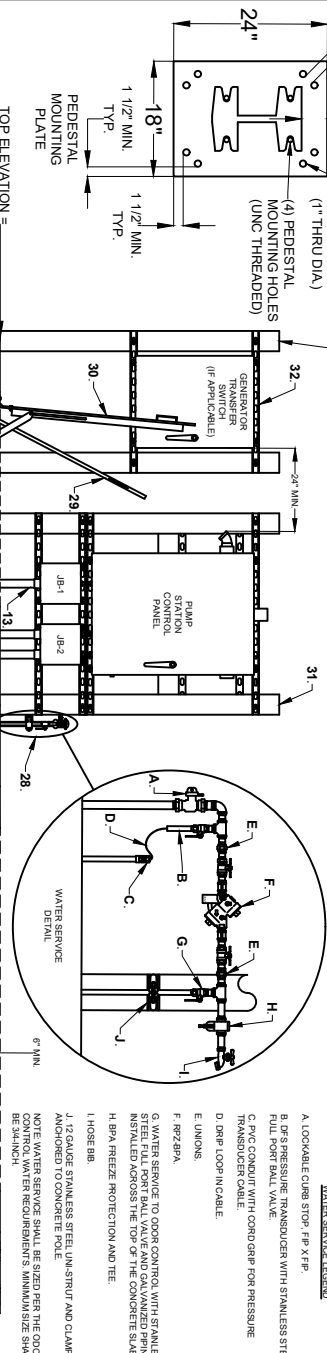
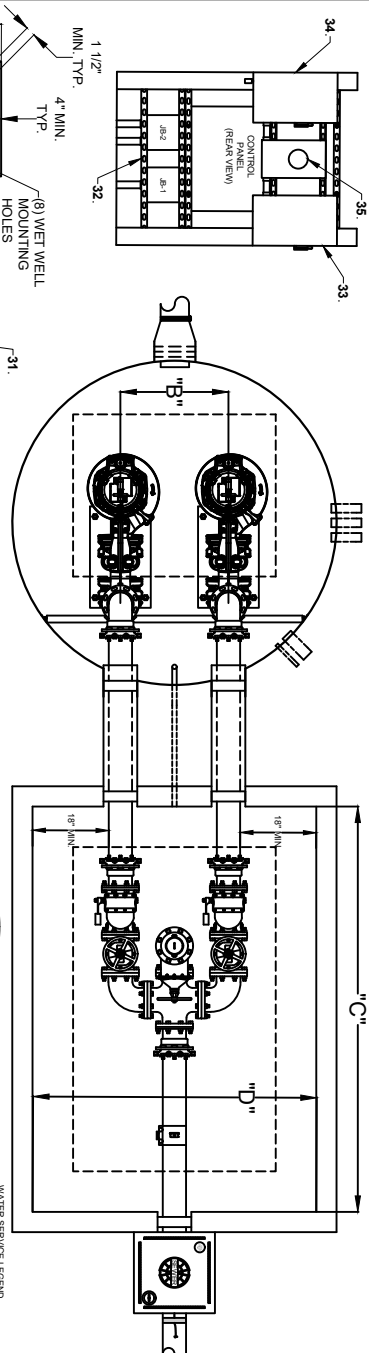
DATE: JUNE 2023

DETAIL: S-11

PUMP STATION LEGEND

1. HCUID APPROVED SUBMERSIBLE SEWAGE PUMP.
2. PUMP DISCHARGE ELBOW (PEDESTAL).
3. PEDESTAL MOUNTING PLATE. SEE DETAIL. THIS PAGE AND NOTE #1V.
4. EPOXY COATED DIP MECHANICAL JOINT (M/J) X FLANGED END (FE) ADAPTOR WITH M/J RESTRAINT (TYPICAL X3).
5. LIQUID LEVEL SWITCH CONTROLS (TYPICAL FLOATS X4).
6. 3/16" STAINLESS STEEL (SS) PUMP LIFTING CHAIN WITH SS LIFT RING EYES AND CLEVIS AT THE TOP, MID POINT OF CHAIN, AND PUMP LIFTING BALL CHAIN. LIFTING MINIMUM CHAIN SIZE SHALL BE 5/16".
7. 3/16" SS GUIDE RAIL AND UPPER GUIDE RAIL BRACKET. RAIL DIAMETER SIZE PER PUMP MANUFACTURER'S RECOMMENDATION. CONTRACTION SHALL CUT TO PROPER LENGTH.
8. C-900 DR-18 PVC (GREEN) PIPE DIAMETER SHALL BE PER CONSTRUCTION DRAWINGS. LENGTHS OVER 20 LF SHALL BE FUSIBLE PVC. NO BELL JOINTS ALLOWED.
9. DISCHARGE PIPING SUPPORT. 12 GAUGE SS UNISTRUT (B-LINE) AND PIPE CLAMPS. (IF APPLICABLE).
10. PIPE BOOT.
11. EPOXY COATED DIP C-153 M/J X M/J 90 DEGREE BEND WITH M/J RESTRAINTS.
12. 3/16" SS CABLE HOLDER.
13. SCH. 40 PVC CONDUITS FROM JB-1 AND JB-2. 2" MINIMUM SIZE (TYPICAL X3).
14. ODOOR CONTROL UNIT SITION PIPE PENETRATION. 6" MINIMUM PIPE SIZE WITH PIPE BOOT.
15. ODOOR CONTROL UNIT DRAIN PIPE PENETRATION. 2" MINIMUM PIPE SIZE WITH PIPE BOOT.
16. LINK SEAL INSIDE PVC SLEEVE (TYPICAL X3).
17. PVC PIPE SLEEVE. DIAMETER SIZE DEPENDS ON DISCHARGE PIPING SIZE.
18. 2" PVC DRAIN FROM VALVE VAULT TO WET WELL WITH P-TRAP.
19. HCUID APPROVED CHECK VALVE (X2).
20. HCUID APPROVED FE X FE GATE VALVE WITH HAND WHEEL (X3).
21. EPOXY COATED DIP FLANGED CROSS.
22. EPOXY COATED DIP FLANGED 90 DEGREE BEND (X3).
23. 4" FEMALE TYPE 'D' CAM LOCK WITH DUST PLUG.
24. TFS 1/2" SADDLE. 1/2" SS NPIPE. 1/2" SS FULL PORT BALL VALVE AND 2 1/2" DIAMETER SS LIQUID FILLED BOTTOM MOUNT PRESSURE GAUGE. 60 PSI MAX WITH 1 PSI INCREMENTS.
25. SS ADJUSTABLE PIPE AND VALVE SUPPORTS (TYPICAL X3).
26. CONCRETE FILLET.
27. M/J GATE VALVE WITH 2" OPERATING NUT, M/J RESTRAINTS, CONCRETE SUPPORT BLOCK, DUCTILE IRON ADJUSTABLE E & 1/4" VALVE CAN WITH SEWER LID, AND CONCRETE VALVE PAD PER HCUID SPECIFICATIONS.
28. WATER SERVICE - SEE WATER SERVICE DETAIL THIS SHEET.
29. HCUID APPROVED SAFETY GATE (NO NETS).
30. HCUID APPROVED WET WELL LID.
31. CONCRETE SUPPORT POLES - 6" X 6" X 10' MINIMUM SIZE (TYPICAL X4).
32. ALL UNISTRUT SHALL BE 12 GAUGE SS UNISTRUT (B-LINE) WITH SS SPRING NUTS AND SS MOUNTING HARDWARE.
33. SS SAFETY DISCONNECT BEFORE ELECTRIC METER SHALL BE NON-FUSED ON ALL 3-PHASE 277/480 VAC ELECTRIC SERVICES. PROVIDE PLASTIC PLACARD THAT READS "ELECTRIC SERVICES NOT REQUIRED. (POWER COMPANY REQUIREMENT)".
34. SS SAFETY DISCONNECT AFTER ELECTRIC METER SHALL BE FUSED TYPE. SHALL BE SERVICE ENTRANCE RATED, AND SHALL HAVE LIGHTNING ARRESTOR EXTERNALLY MOUNTED UNDER DISCONNECT AND WIRED TO THE LOAD SIDE OF THE DISCONNECT.
35. ELECTRIC METER SOCKET ENCLOSURE - "METER CAN". ELECTRIC SERVICE SHALL BE SIZED PER CONSTRUCTION DRAWINGS, HOWEVER 100 AMPS IS THE MINIMUM.

- NOTES:**
1. ALL MOUNTING HARDWARE AND FASTENERS, INCLUDING TEE BOLTS AND NUTS FOR M/J FITTINGS SHALL BE 316 STAINLESS STEEL.
 - II. ENGINEER SHALL FILL IN ALL INFORMATION ON THE LINE OR SPACE PROVIDED AFTER THE EQUAL (+) SIGN ON THIS DETAIL, AND SHOW ON CONSTRUCTION DRAWINGS.
 - III. ALL PENETRATIONS INTO THE CONTROL PANEL, TRANSFER SWITCH AND OTHER ELECTRICAL EQUIPMENT SHALL BE FROM THE BOTTOM UNLESS SHOWN DIFFERENTLY IN THE DETAIL.
 - IV. TYPICAL MOUNTING PLATE DETAIL - 18" X 24" CARBON STEEL, PLATE 1" THICK (X3). AFFIX PLATE TO WET WELL VIA 3/16" SS, 3/4" X 7" EXPANSION (WEDGED) ANCHORS (X4). AFFIX PUMP PEDESTAL TO PLATE VIA THREADED HOLES. HOLE DEPTH TO TRAVEL ENTIRE PLATE THICKNESS. ACTUAL HOLE DIAMETER AND PLACEMENT SHALL BE DICTATED BY THE PEDESTAL BOLT HOLE PATTERN. PEDESTAL MOUNTING BOLTS SHALL BE GRADE 8 AND HAVE UNC THREADS (X4). MOUNTING BOLTS SHALL BE WELDED FLUSH TO PLATE ON THE BOTTOM SIDE. PLEASE NOTE THAT LARGER PUMPS WITH LARGER PEDESTALS MAY REQUIRE A LARGER PEDESTAL PLATE. I.E. 18" X 30" OR 24" X 36". PEDESTAL PLATE SHALL BE SUBMITTED TO HCUID FOR APPROVAL. WET WELL MUST HAVE CONCRETE FLOURED IN THE BOTTOM TO ATTACH MOUNTING PLATE. DO NOT DRILL THROUGH THE BOTTOM OF THE FRP WET WELL.



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DUPLEX PUMP STATION - FRP WET WELL

DATE: JUNE 2023

DETAIL: S-12

PUMP STATION DIMENSIONS	
"A"	WET WELL DIAMETER =
"B"	DISTANCE BETWEEN CENTERLINE OF PUMPS =
"C"	VALVE VAULT LENGTH =
"D"	VALVE VAULT WIDTH =
"E"	VALVE VAULT DEPTH =

PUMP SPECIFICATIONS AND DESIGN CONDITIONS	
MANUFACTURER	IMPELLER DIAMETER
MODEL #	DISCHARGE SIZE
HORSEPOWER	GPM
3-PHASE VOLTAGE	TDH

NOT TO SCALE

WET WELL BOTTOM ELEVATION =

CONCRETE BALLAST IN CUBIC YARDS =

MANUFACTURER TO CALL OUT INTERVAL OR EXTERNAL RISBS

ALARM SIGNAL ON ELEVATION =

LAG PUMP ON ELEVATION =

LEAD PUMP ON ELEVATION =

PUMPS OFF ELEVATION =

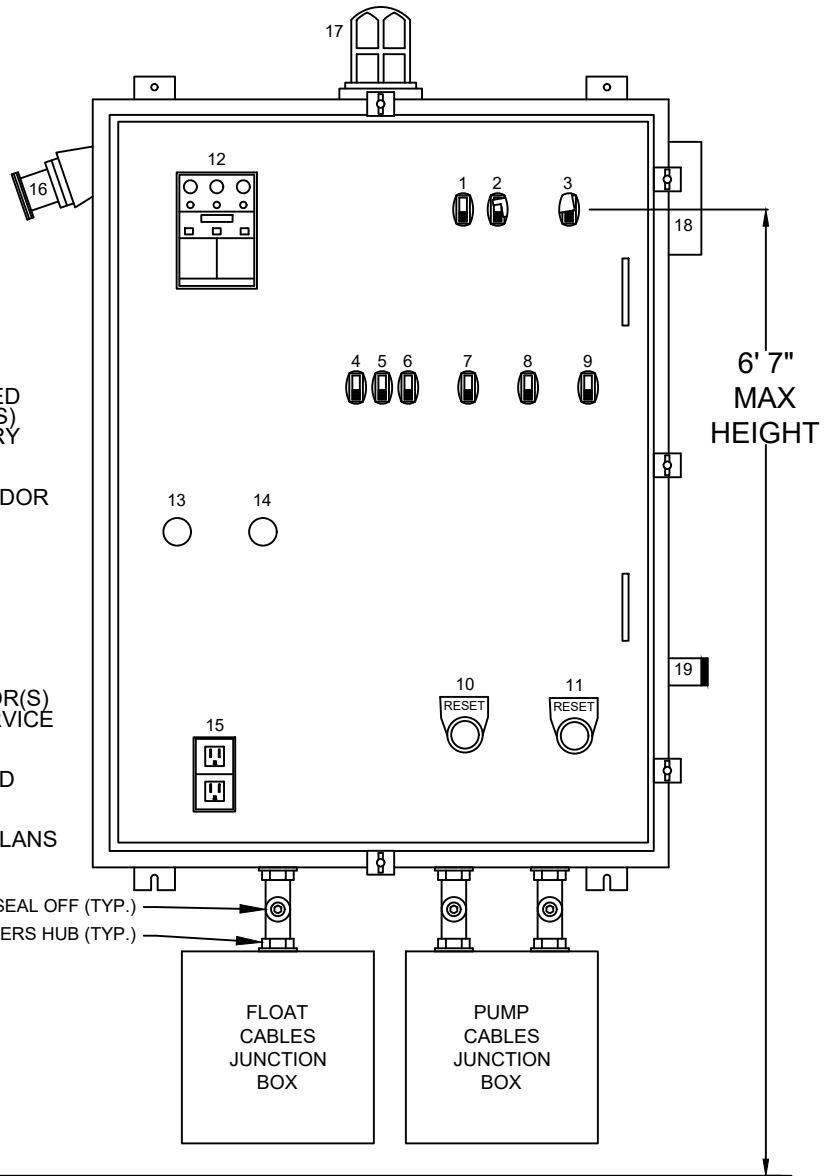
INVERT ELEVATION =

TOP ELEVATION =

100 YEAR FLOOD ELEVATION =

NOTES:

1. OUTER DOORS HAVE A 3 POINT LATCH AND HAS BEEN REMOVED FOR CLARITY.
2. CONTROL PANELS INSTALLED IN GENERATOR EQUIPPED LIFT STATIONS WILL REQUIRE AN ADDITIONAL BREAKER(S) SIZED FOR THE ENGINE BLOCK HEATER AND THE BATTERY CHARGER.
3. ODOR CONTROL BREAKER SHALL BE SIZED FOR THE ODOR CONTROL UNIT INSTALLED.
4. SITE LIGHT BREAKER SHALL BE SIZED FOR THE LIGHT INSTALLED.
5. CONTROL PANELS INSTALLED IN INFLUENT GRINDER EQUIPPED LIFT STATIONS WILL REQUIRE AN ADDITIONAL BREAKER SIZED FOR THE GRINDER.
6. INSTALL THE NECESSARY CONDUIT(S) AND CONDUCTOR(S) FROM THE PRESSURE TRANSDUCER ON THE WATER SERVICE TO THE TCU INSIDE THE CONTROL PANEL.
7. JUNCTION BOXES SHALL BE SIZED 12"x12" MINIMUM AND INSTALLED A MINIMUM 12" ABOVE FINISHED GRADE.
8. MCB AND ECB SHALL BE SIZED PER THE ELECTRICAL PLANS AND SHALL HAVE MANUAL INTERLOCK.



PUMP CONTROL PANEL COMPONENTS (TELEMETRY MODEL)	
1. RTU BREAKER	12. DATA FLOW SYSTEMS CONTROLLER W/REAR MOUNTED TCU
2. MCB (MAIN CIRCUIT BREAKER)	13. PL1 MOISTURE 1
3. ECB (EMERGENCY CIRCUIT BREAKER)	14. PL2 MOISTURE 2
4. DRB (DUPLEX RECEPTACLE BREAKER)	15. DR (DUPLEX RECEPTACLE, GFI)
5. CCB (CONTROL CIRCUIT BREAKER)	16. GR (GENERATOR RECEPTACLE)
6. SLB - SITE LIGHT BREAKER	17. AL (ALARM LIGHT, LED)
7. OCB (ODOR CONTROL BREAKER)	18. AH (ALARM HORN)
8. MB1 (MOTOR BREAKER 1)	19. ASB (ALARM SILENCE BUTTON)
9. MB2 (MOTOR BREAKER 2)	
10. OVERLOAD 1 RESET BUTTON	
11. OVERLOAD 2 RESET BUTTON	

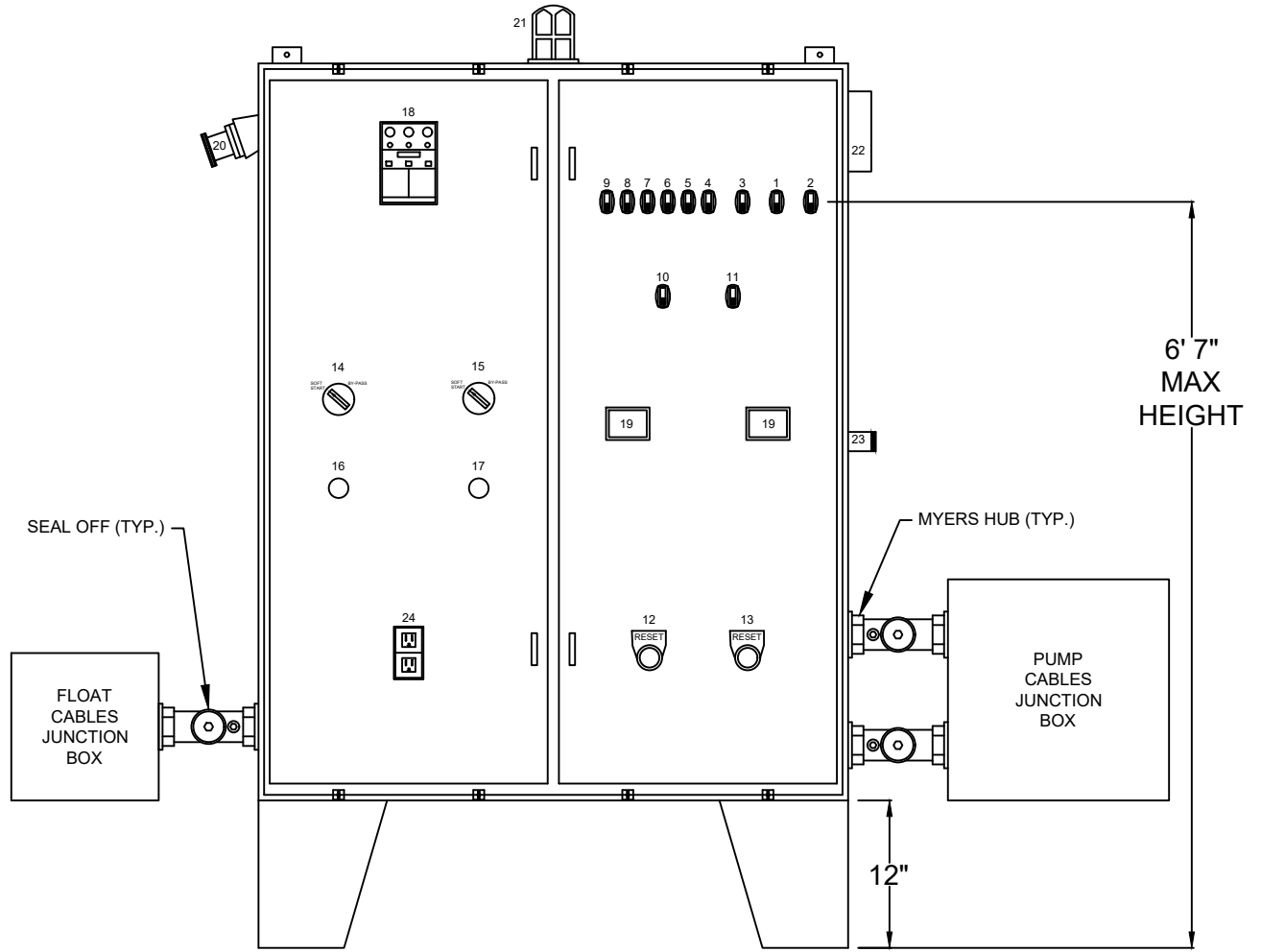
NOT TO SCALE

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**DUPLEX PUMP STATION CONTROL PANEL
 39 HP OR LESS**

DATE:
 JUNE 2023

DETAIL: S-13



NOTES:

1. OUTER DOORS HAVE A 3 POINT LATCH AND HAS BEEN REMOVED FOR CLARITY.
2. 40 HP AND GREATER SHALL HAVE SOFT STARTS WITH ACROSS THE LINE BYPASS MAGNETIC STARTERS FOR EACH PUMP.
3. CONTROL PANELS INSTALLED IN INFLUENT GRINDER EQUIPPED LIFT STATIONS WILL REQUIRE AN ADDITIONAL BREAKER SIZED FOR THE GRINDER.
4. ODOR CONTROL BREAKER SHALL BE SIZED FOR THE ODOR CONTROL UNIT INSTALLED.
5. SITE LIGHT BREAKER SHALL BE SIZED FOR THE LIGHT INSTALLED.
6. INSTALL THE NECESSARY CONDUIT(S) AND CONDUCTOR(S) FROM THE PRESSURE TRANSDUCER ON THE WATER SERVICE TO THE TCU INSIDE THE CONTROL PANEL.
7. JUNCTION BOXES SHALL BE SIZED 12"x12" MINIMUM AND INSTALLED A MINIMUM 12" ABOVE FINISHED GRADE.
8. MCB AND ECB SHALL BE SIZED PER THE ELECTRICAL PLANS AND SHALL HAVE MANUAL INTERLOCK.

LEGEND:

1. MCB - MAIN CONTROL BREAKER	13. OVERLOAD RESET 2
2. GCB - GENERATOR CONTROL BREAKER	14. SOFT START BY-PASS SWITCH 1
3. OCB - ODOR CONTROL BREAKER	15. SOFT START BY-PASS SWITCH 2
4. RTU BREAKER	16. PL1 - MOISTURE 1
5. CCB - CONTROL CIRCUIT BREAKER	17. PL2 - MOISTURE 2
6. DRB - DUPLEX RECEPTACLE BREAKER	18. TCU - DATA FLOW SYSTEMS TELEMETRY CONTROL UNIT
7. SLB - SITE LIGHT BREAKER	19. MSAV 1,2 - MOTOR SAVERS
8. BHB - BLOCK HEATER BREAKER	20. GR - GENERATOR RECEPTACLE
9. BCB - BATTERY CHARGER BREAKER	21. AL - ALARM LIGHT, LED
10. MB1 - MOTOR BREAKER 1	22. AH - ALARM HORN
11. MB2 - MOTOR BREAKER 2	23. ASB - ALARM SILENCE BUTTON
12. OVERLOAD RESET 1	24. DR - DUPLEX RECEPTACLE, GFI

NOT TO SCALE

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**DUPLEX PUMP STATION CONTROL PANEL
 40 HP OR GREATER**

DATE:
 JUNE 2023

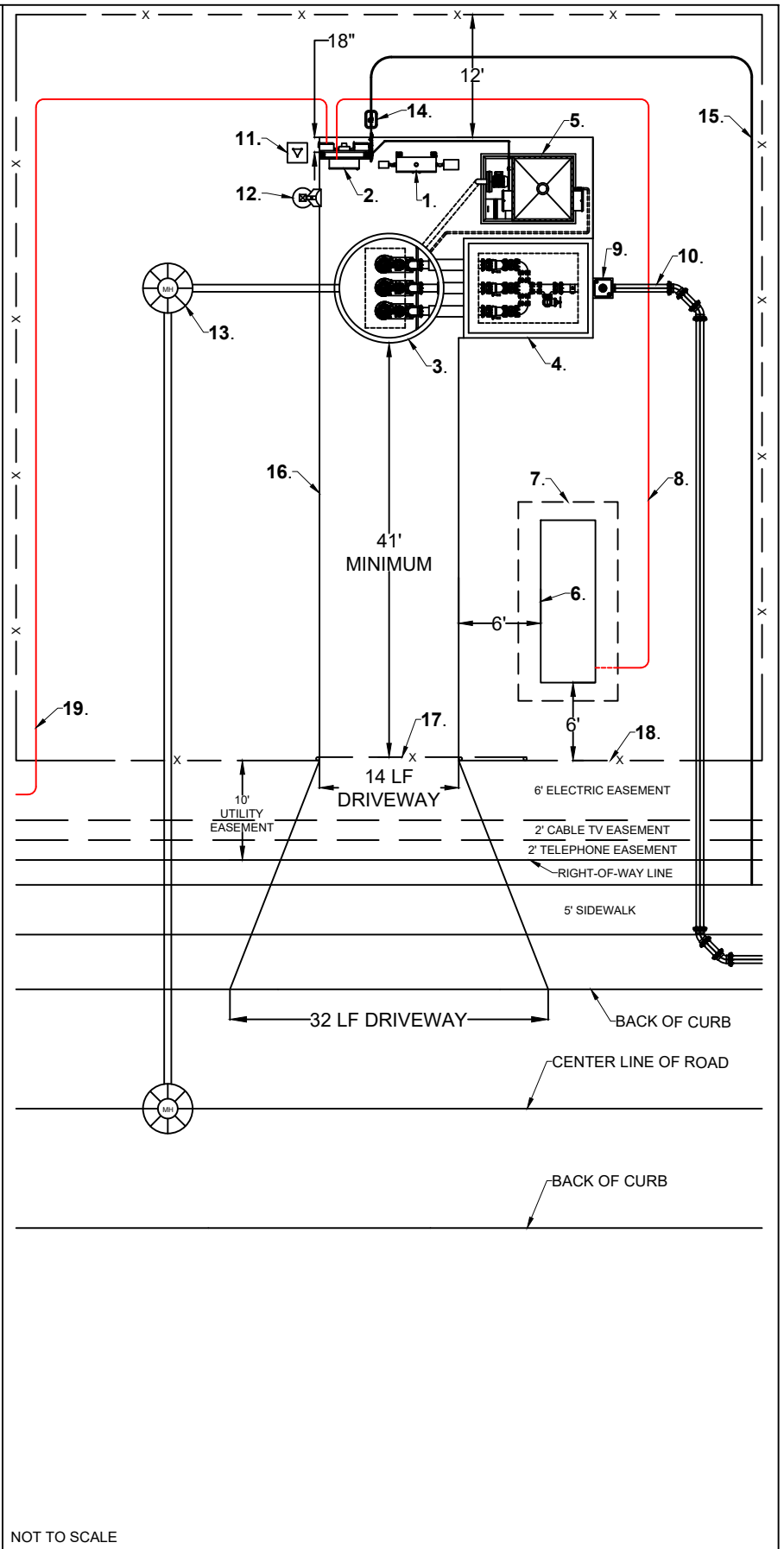
DETAIL: S-14

LEGEND:

1. PUMP CONTROL PANEL PER PLANS AND SPECIFICATIONS.
2. TRANSFER SWITCH FOR GENERATOR, IF APPLICABLE, ELECTRIC SERVICE AND WATER SERVICE PER PLANS AND SPECIFICATIONS.
3. WET WELL PER PLANS AND SPECIFICATIONS.
4. VALVE VAULT PER PLANS AND SPECIFICATIONS.
5. ODOR CONTROL SYSTEM PER PLANS AND SPECIFICATIONS, IF APPLICABLE.
6. GENERATOR PER PLANS AND SPECIFICATIONS, IF APPLICABLE. IF DIESEL DRIVEN PUMP IS USED IN LIEU OF GENERATOR, SEE STANDBY DIESEL DRIVEN PUMP DETAIL.
7. CONCRETE SUPPORT PAD FOR GENERATOR PER PLANS AND SPECIFICATIONS, IF APPLICABLE.
8. CONDUITS AND WIRING TO TRANSFER SWITCH FROM GENERATOR PER PLANS AND SPECIFICATIONS, IF APPLICABLE.
9. FORCE MAIN VALVE AND CONCRETE VALVE PAD PER PLANS AND SPECIFICATIONS.
10. FORCE MAIN PER PLANS AND SPECIFICATIONS.
11. DATA FLOW SYSTEMS ANTENNA AND CONCRETE SUPPORT PAD.
12. SITE LIGHTING, POLE AND CONCRETE BASE PER PLANS AND SPECIFICATIONS.
13. COLLECTOR MANHOLE PER PLANS AND SPECIFICATIONS.
14. HCUD WATER METER AND METER BOX.
15. POLY TUBING WATER SERVICE LINE WITH #10 AWG LOCATE WIRE FROM WATER MAIN PER PLANS AND SPECIFICATIONS.
16. 14' WIDE 4000 PSI CONCRETE, WITH WIRE, DRIVEWAY WITH 32' WIDE ABUTMENT TO BACK OF CURB, AS SHOWN. CONCRETE DRIVEWAY PER PLANS AND SPECIFICATIONS. DRIVEWAY SHALL BE CENTERED TO WET WELL.
17. SINGLE CANTILEVER SLIDE GATE (NO WHEELS ON BOTTOM) PER PLANS AND SPECIFICATIONS.
18. 75' X 75' FENCED PUMP STATION SITE PER PLANS AND SPECIFICATIONS.
19. CONDUIT AND WIRING FROM THE POWER COMPANY TRANSFORMER TO THE ELECTRIC SERVICE PER PLANS AND SPECIFICATIONS.

NOTES:

- I. PUMP STATION SITE SHALL BE A MINIMUM OF 85' X 75' IN SIZE. ONLY 75' X 75' SHALL BE FENCED BEHIND THE 10' UTILITY EASEMENT.
- II. THE FINISH CONCRETE SLAB ELEVATION OF THE TOP OF THE WET WELL AND VALVE VAULT SHALL BE AT OR ABOVE THE 100 YEAR FLOOD ELEVATION OR ONE FOOT HIGHER THAN THE CROWN OF THE ROAD IN FRONT OF THE PUMP STATION, WHICHEVER IS HIGHER.
- III. THIS IS A TYPICAL LAYOUT, OTHER FACTORS DURING DESIGN MAY ALTER THIS LAYOUT. FINAL LAYOUT CONFIGURATION SHALL BE APPROVED BY HCUD.



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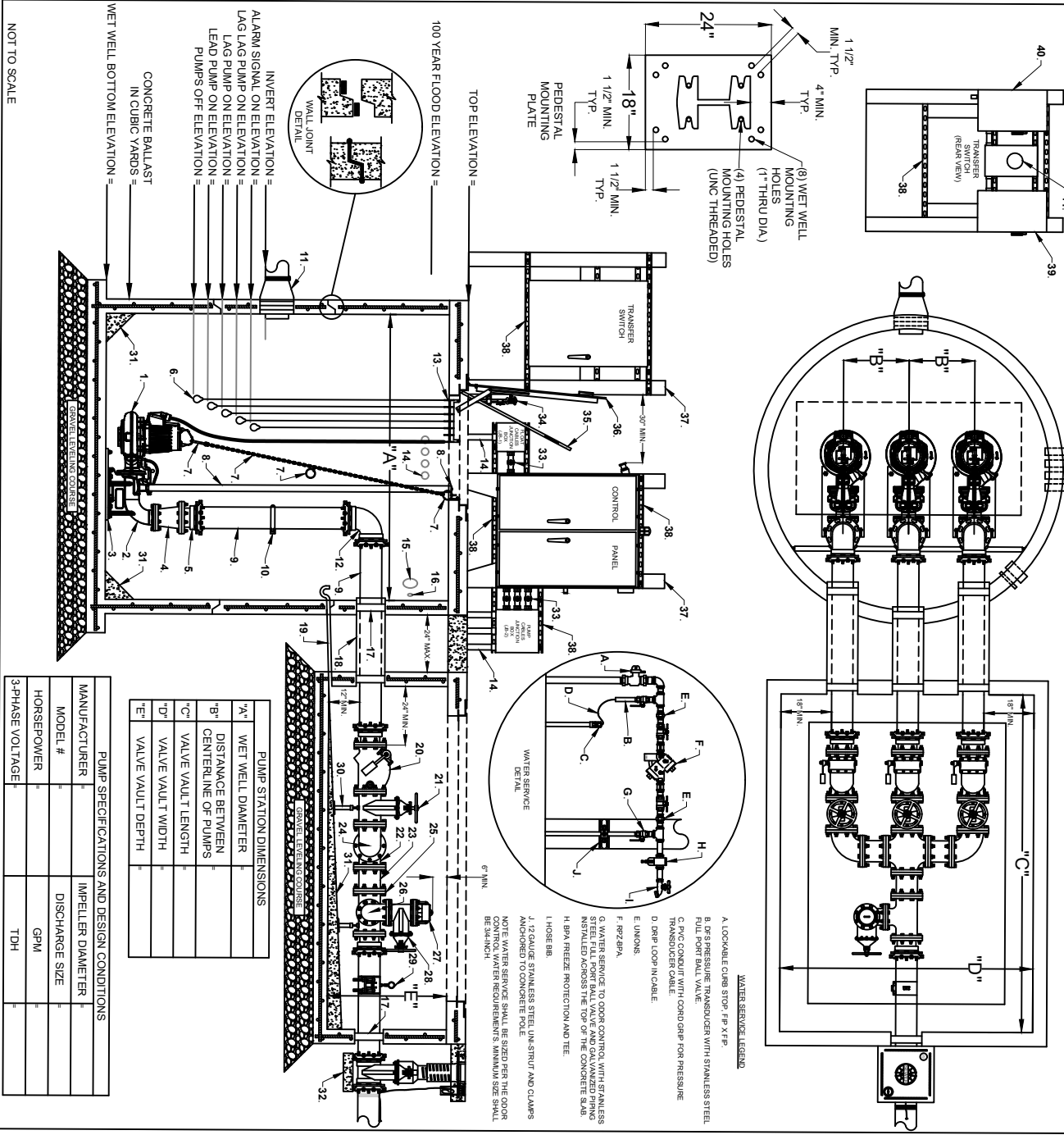
TRIPLEX PUMP STATION LAYOUT

DATE:
 JUNE 2023

DETAIL: S-15

PUMP STATION LEGEND

1. HOUD APPROVED SUBVERSIBLE SEWAGE PUMP
2. PUMP DISCHARGE ELBOW (PEDESTAL)
3. PEDESTAL MOUNTING PLATE. SEE DETAIL. THIS PAGE AND NOTE #V.
4. EPOXY COATED DUCTILE IRON PIPE (DIP) FLANGED END (FE) X FLANGED END (FE) REDUCER (IF APPLICABLE)
5. EPOXY COATED DIP MECHANICAL JOINT (MJ) X FLANGED END (FE) ADAPTOR WITH MJ RESTRAINT (TYPICAL X7)
6. LIQUID LEVEL SWITCH CONTROLS (TYPICAL FLOATS X5)
7. 316 STAINLESS STEEL (SS) PUMP LIFTING CHAIN WITH SS LIFT RING EYES AND CLEVIS AT THE TOP, MID POINT OF CHAIN, AND PUMP LIFTING BALL, CHAIN, LIFT RING EYES, AND CLEVIS SHALL BE SIZED PER PUMP MANUFACTURER'S RECOMMENDATION. MINIMUM CHAIN SIZE SHALL BE 5/16"
8. 3/16 SS GUIDE RAIL AND UPPER GUIDE RAIL BRACKET. RAIL DIAMETER SIZE PER PUMP MANUFACTURER'S RECOMMENDATION. CONTRACTOR SHALL CUT TO PROPER LENGTH.
9. C-900 DR-18 PVC PIPE (GREEN). PIPE DIAMETER SHALL BE PER CONSTRUCTION DRAWINGS. LENGTHS OVER 20 LF SHALL BE FUSIBLE PVC, NO BELL JOINTS ALLOWED.
10. DISCHARGE PIPING SUPPORT. 1/2 GAUGE SS UNISTRUT (B-LINE) AND PIPE CLAMPS (IF APPLICABLE)
11. PIPE BOOT.
12. EPOXY COATED DIP C-153 MJ X MJ 90 DEGREE BEND WITH MJ RESTRAINTS.
13. 3/16 SS CABLE HOLDER.
14. SCH. 40 PVC CONDUITS FROM JB-1 AND JB-2. 2" MINIMUM SIZE (TYPICAL X4).
15. ODOOR CONTROL UNIT SUCTON PIPE PENETRATION. 6" MINIMUM PIPE SIZE WITH PIPE BOOT.
16. ODOOR CONTROL UNIT DRAIN PIPE PENETRATION. 2" MINIMUM PIPE SIZE WITH PIPE BOOT.
17. LINK SEAL INSIDE PVC SLEEVE (TYPICAL X7).
18. PVC PIPE SLEEVE. DIAMETER SIZE DEPENDS ON DISCHARGE PIPING SIZE.
19. 2" PVC DRAIN FROM VALVE VAULT TO WET WELL WITH P-TRAP.
20. HOUD APPROVED CHECK VALVE (X3).
21. HOUD APPROVED FE X FE GATE VALVE WITH HAND WHEEL (X4).
22. EPOXY COATED DIP FLANGED SPOOL CROSS.
23. EPOXY COATED DIP FLANGED SPOOL PIECE.
24. EPOXY COATED DIP FLANGED 90 DEGREE BEND.
25. EPOXY COATED DIP FLANGED DISCHARGE PIPING SIZE X 6" (BRANCH SIDE) TEE.
26. EPOXY COATED DIP FLANGED 60 DEGREE BEND.
27. EPOXY COATED DIP 6" FLANGE X 6" NPT, 6" SS CLOSE NIPPLE AND 6" FEMALE TYPE "D" CAMLOCK WITH DUST PLUG.
28. 6" FLANGED GATE VALVE WITH HAND WHEEL.
29. 1/2" SS SADDLE, 1/2" SS NIPPLE, 1/2" SS FULL PORT BALL VALVE AND 2 1/2" DIAMETER SS LIQUID FILLED BOTTOM MOUNT PRESSURE GAUGE - 60 PSI MAX WITH 1 PSI INCREMENTS.
30. SS ADJUSTABLE PIPE AND VALVE SUPPORTS (TYPICAL X4).
31. CONCRETE FLEET.
32. MJ GATE VALVE WITH 2" OPERATING NUT, MJ RESTRAINTS, CONCRETE SUPPORT BLOCK, DUCTILE IRON ADJUSTABLE 5/16" VALVE CAN WITH SEWER LID, AND CONCRETE VALVE PAD PER HOUD SPECIFICATIONS.
33. GAS SEAL-OFFS WITH WATERS HUBS (TYPICAL X4).
34. WATER SERVICE - SEE WATER SERVICE DETAIL THIS SHEET.
35. HOUD APPROVED SAFETY GRATE (NO NETS).
36. HOUD APPROVED WET WELL LID.
37. CONCRETE SUPPORT POLES - 6" X 6" X 10' MINIMUM SIZE (TYPICAL X4).
38. ALL UNISTRUT SHALL BE 1/2 GAUGE SS UNISTRUT (B-LINE) WITH SS SPRING NUTS AND SS MOUNTING HARDWARE.
39. SS SAFETY DISCONNECT BEFORE ELECTRIC METER SHALL BE NON-FUSED ON ALL 3-PHASE 277/480 VAC ELECTRIC SERVICES. PROVIDE PLASTIC PLACARD THAT READS "METER DISCONNECT NOT SERVICE EQUIPMENT". 3-PHASE 120/209 VAC OR 120/230 VAC ELECTRIC SERVICES NOT REQUIRED. (POWER COMPANY REQUIREMENT)
40. SS SAFETY DISCONNECT AFTER ELECTRIC METER SHALL BE FUSED TYPE. SHALL BE SERVICE ENTRANCE RATED, AND SHALL HAVE LIGHTNING ARRESTOR EXTENDING OUT MOUNTED UNDER DISCONNECT AND WIRED TO THE LOAD SIDE OF THE DISCONNECT.
41. ELECTRIC METER SOCKET ENCLOSURE. METER CAN. ELECTRIC SERVICE SHALL BE SIZED PER CONSTRUCTION DRAWINGS. HOWEVER 100 AMPS IS THE MINIMUM.



NOT TO SCALE

PUMP STATION DIMENSIONS	
"A"	WET WELL DIAMETER
"B"	DISTANCE BETWEEN CENTERLINE OF PUMPS
"C"	VALVE VAULT LENGTH
"D"	VALVE VAULT WIDTH
"E"	VALVE VAULT DEPTH

PUMP SPECIFICATIONS AND DESIGN CONDITIONS	
MANUFACTURER	IMPELLER DIAMETER
MODEL #	DISCHARGE SIZE
HORSEPOWER	GPM
3-PHASE VOLTAGE	TDH

**HERNANDO COUNTY
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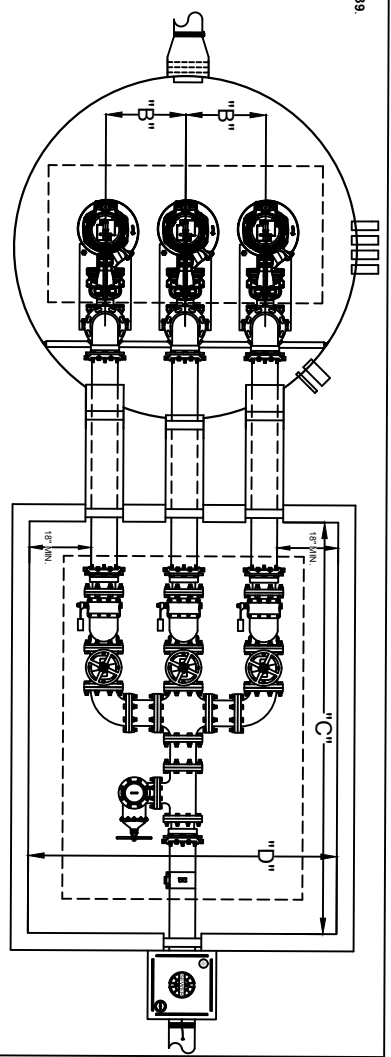
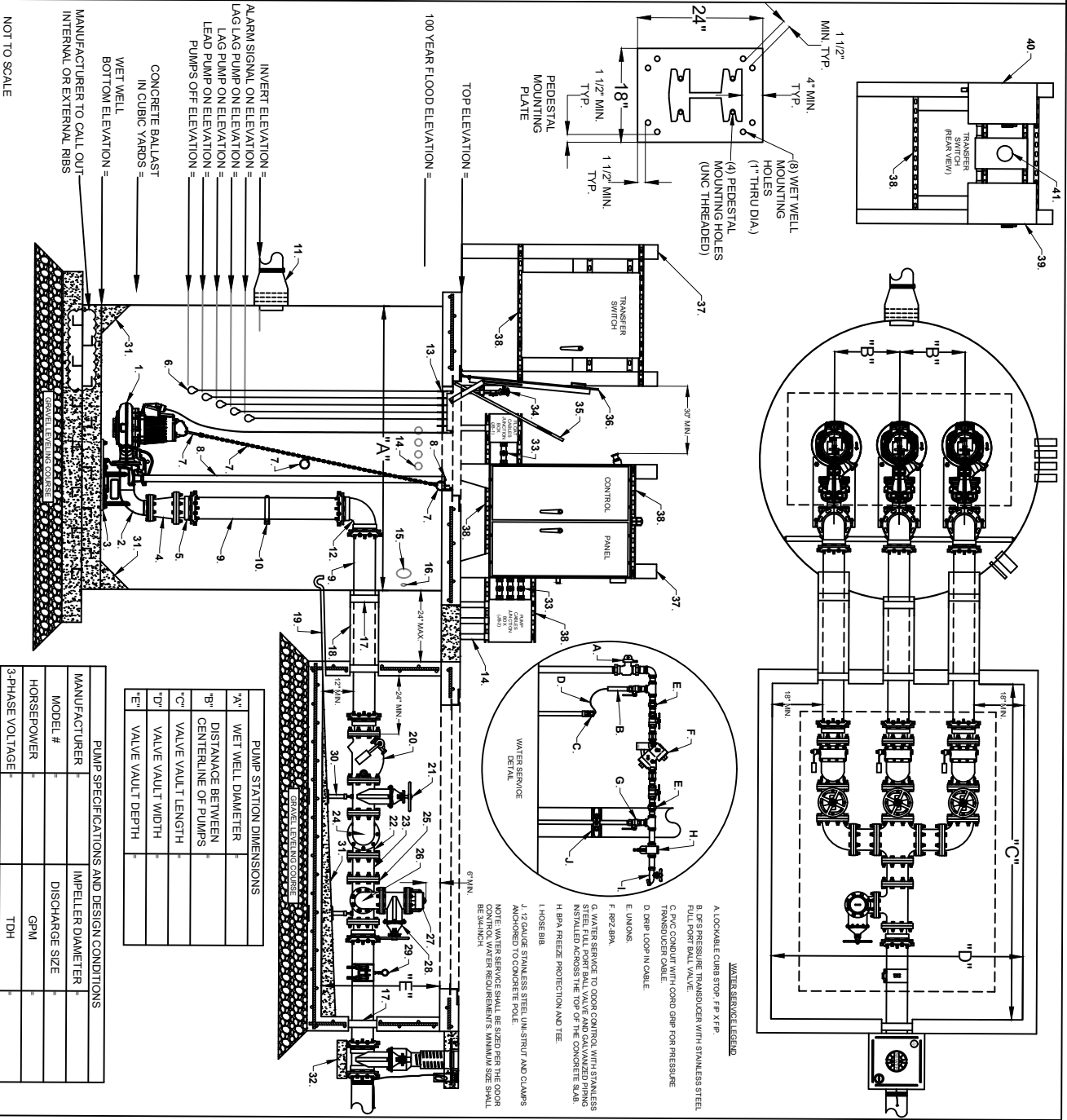
TRIPLEX PUMP STATION - CONCRETE WET WELL

DATE: JUNE 2023

DETAIL: S-16

PUMP STATION LEGEND

1. HOUD APPROVED SUBMERSIBLE SEWAGE PUMP
2. PUMP DISCHARGE ELBOW (PEDESTAL). CONCRETE MUST BE ROUGHED ON THE FLOOR OF WET WELL TO ATTACH PLATE AND PEDESTAL. DO NOT DRILL THROUGH FRP FLOOR.
3. PEDESTAL MOUNTING PLATE. SEE DETAIL, THIS PAGE AND NOTE #IV.
4. EPXY COATED DUCTILE IRON PIPE (DIP) FLANGED END (FE) X FLANGED END (FE) REDUCER (IF APPLICABLE).
5. EPXY COATED DIP MECHANICAL JOINT (MJ) X FLANGED END (FE) ADAPTOR WITH MJ RESTRAINT (TYPICAL X7).
6. LIQUID LEVEL SWITCH CONTROLS (TYPICAL FLOATS X3).
7. 3/16" STAINLESS STEEL (SS) PUMP LIFTING CHAIN WITH SS LIFT RING EYES AND CLEVISES AT THE TOP, MID POINT OF CHAIN, AND PUMP LIFTING BALL CHAIN, LIFT RING EYES, AND CLEVIS SHALL BE SIZED PER PUMP MANUFACTURER'S RECOMMENDATION. MINIMUM CHAIN SIZE SHALL BE 5/16".
8. 3/16" SS GUIDE RAIL AND UPPER GUIDE RAIL BRACKET. RAIL DIAMETER SIZE PER PUMP MANUFACTURER'S RECOMMENDATION. CONTRACTOR SHALL CUT TO PROPER LENGTH.
9. C-900 DR-18 PVC PIPE (GREEN). PIPE DIAMETER SHALL BE PER CONSTRUCTION DRAWINGS. LENGTHS OVER 20' SHALL BE FUSIBLE PVC. NO BELL JOINTS ALLOWED.
10. DISCHARGE PIPING SUPPORT. 12 GAUGE SS UN-STRUT (B-LINE) AND PIPE CLAMPS. (IF APPLICABLE).
11. PIPE BOOT.
12. EPXY COATED DIP C-153 MJ X MJ 90 DEGREE BEND WITH MJ RESTRAINTS.
13. 3/16" SS CABLE HOLDER.
14. SOH. 40 PVC CONDUITS FROM JB-1 AND JB-2. 2" MINIMUM SIZE (TYPICAL X4).
15. ODOOR CONTROL UNIT SUCTION PIPE PENETRATION. 6" MINIMUM PIPE SIZE WITH PIPE BOOT.
16. ODOOR CONTROL UNIT DRAIN PIPE PENETRATION. 2" MINIMUM PIPE SIZE WITH PIPE BOOT.
17. LINK SEAL INSIDE PVC SLEEVE (TYPICAL X7).
18. PVC PIPE SLEEVE. DIAMETER SIZE DEPENDS ON DISCHARGE PIPING SIZE.
19. 2" PVC DRAIN FROM VALVE VALVE I TO WET WELL WITH P-TRAP.
20. HOUD APPROVED CHECK VALVE (X3).
21. HOUD APPROVED FE X FE GATE VALVE WITH HAND WHEEL (X4).
22. EPXY COATED DIP FLANGED CROSS.
23. EPXY COATED DIP FLANGED SPOOL. PIECE.
24. EPXY COATED DIP FLANGED 90 DEGREE BEND.
25. EPXY COATED DIP FLANGED DISCHARGE PIPING SIZE X 6" (BRANCH SIDE) TEE.
26. EPXY COATED DIP FLANGED 6" 90 DEGREE BEND.
27. EPXY COATED DIP 6" FLANGE X 6" NPT, 6" SS CLOSE NIPPLE AND 6" FEMALE TYPE "D" CAML LOCK WITH DUST PLUG.
28. 6" FLANGED GATE VALVE WITH HAND WHEEL.
29. TFS T-3 SADDLE. 1/2" SS NIPPLE. 1/2" SS FULL PORT BALL VALVE AND 2 1/2" DIAMETERS SS LIQUID FILLED BOTTOM MOUNT PRESSURE GAUGE. 60 PSI MAX WITH 1 PSI INCREMENTS.
30. SS ADJUSTABLE PIPE AND VALVE SUPPORTS (TYPICAL X4).
31. CONCRETE FILL-IT.
32. MJ GATE VALVE WITH 2" OPERATING NUT, MJ RESTRAINTS, CONCRETE SUPPORT BLOCK, DUCTILE IRON ADJUSTABLE 5 1/4" VALVE CAN WITH SEWER/LID, AND CONCRETE VALVE PAD PER HOUD SPECIFICATIONS.
33. GAS SEAL-OFFS WITH ANVENS HUBS (TYPICAL X4).
34. WATER SERVICE. - SEE WATER SERVICE DETAIL THIS SHEET.
35. HOUD APPROVED SAFETY GRATE (NO NETS).
36. HOUD APPROVED WET WELL LID.
37. CONCRETE SUPPORT POLES - 6" X 6" X 10' MINIMUM SIZE (TYPICAL X4).
38. MJ UNISTRUT SHALL BE 12 GAUGE SS UNISTRUT (B-LINE) WITH SS SPRING NUTS AND SS MOUNTING HARDWARE.
39. SS SAFETY DISCONNECT BEFORE ELECTRIC METER SHALL BE NON-FUSED ON ALL 3-PHASE 277/480 VAC ELECTRIC SERVICES. PROVIDE PLASTIC PLACARD THAT READS "METER DISCONNECT NOT REQUIRED. (POWER COMPANY REQUIREMENT).
40. SS SAFETY DISCONNECT AFTER ELECTRIC METER SHALL BE FUSED TYPE. SHALL BE SERVICE ENTRANCE RATED, AND SHALL HAVE LIGHTNING ARRESTOR EXTERNALLY MOUNTED UNDER DISCONNECT AND WIRED TO THE LOAD SIDE OF THE DISCONNECT.
41. ELECTRIC METER SOCKET ENCLOSURE. - METER CAN. - ELECTRIC SERVICE SHALL BE SIZED PER CONSTRUCTION DRAWINGS. HOWEVER 100 AMPS IS THE MINIMUM.



WATER SERVICE LEGEND

1. LOCKABLE CURB STOP, FRP X FRP.
2. 1/2" PS PRESSURE REDUCING VALVE WITH STAINLESS STEEL FULL PORT BALL VALVE.
3. PVC CONDUIT WITH 4090 DROP FOR PRESSURE TRANSFER CABLE.
4. 1/2" LOOP IN CABLE.
5. UNIONS.
6. BRZ/BPA.
7. WATER SERVICE TO ODOOR CONTROL WITH STAINLESS STEEL FULL PORT BALL VALVE AND GALVANIZED FRING INSTALLED ACROSS THE TOP OF THE CONCRETE SLAB.
8. BPA FREEZE PROTECTION AND TIE.
9. HOSE BIR.
10. 1/2" GAUGE STAINLESS STEEL UN-STRUT AND CLAMPS APPROVED TO CONCRETE TIE.
11. NOTE WATER SERVICE SHALL BE SIZED PER THE ODOOR MANUFACTURER'S RECOMMENDATION'S MINIMUM SIZE SHALL BE 3/4 INCH.

- INVERT ELEVATION =
- ALARM SIGNAL ON ELEVATION =
- LAG LAG PUMP ON ELEVATION =
- LEAD PUMP ON ELEVATION =
- PUMPS OFF ELEVATION =
- CONCRETE BALLAST IN CUBIC YARDS =
- WET WELL BOTTOM ELEVATION =
- MANUFACTURER TO CALL OUT INTERNAL OR EXTERNAL RIBS

- 100 YEAR FLOOD ELEVATION =
- TOP ELEVATION =
- 100 YEAR FLOOD ELEVATION =
- TOP ELEVATION =
- 100 YEAR FLOOD ELEVATION =
- TOP ELEVATION =

PUMP STATION DIMENSIONS

'A'	WET WELL DIAMETER
'B'	DISTANCE BETWEEN CENTERLINE OF PUMPS
'C'	VALVE VAULT LENGTH
'D'	VALVE VAULT WIDTH
'E'	VALVE VAULT DEPTH

PUMP SPECIFICATIONS AND DESIGN CONDITIONS

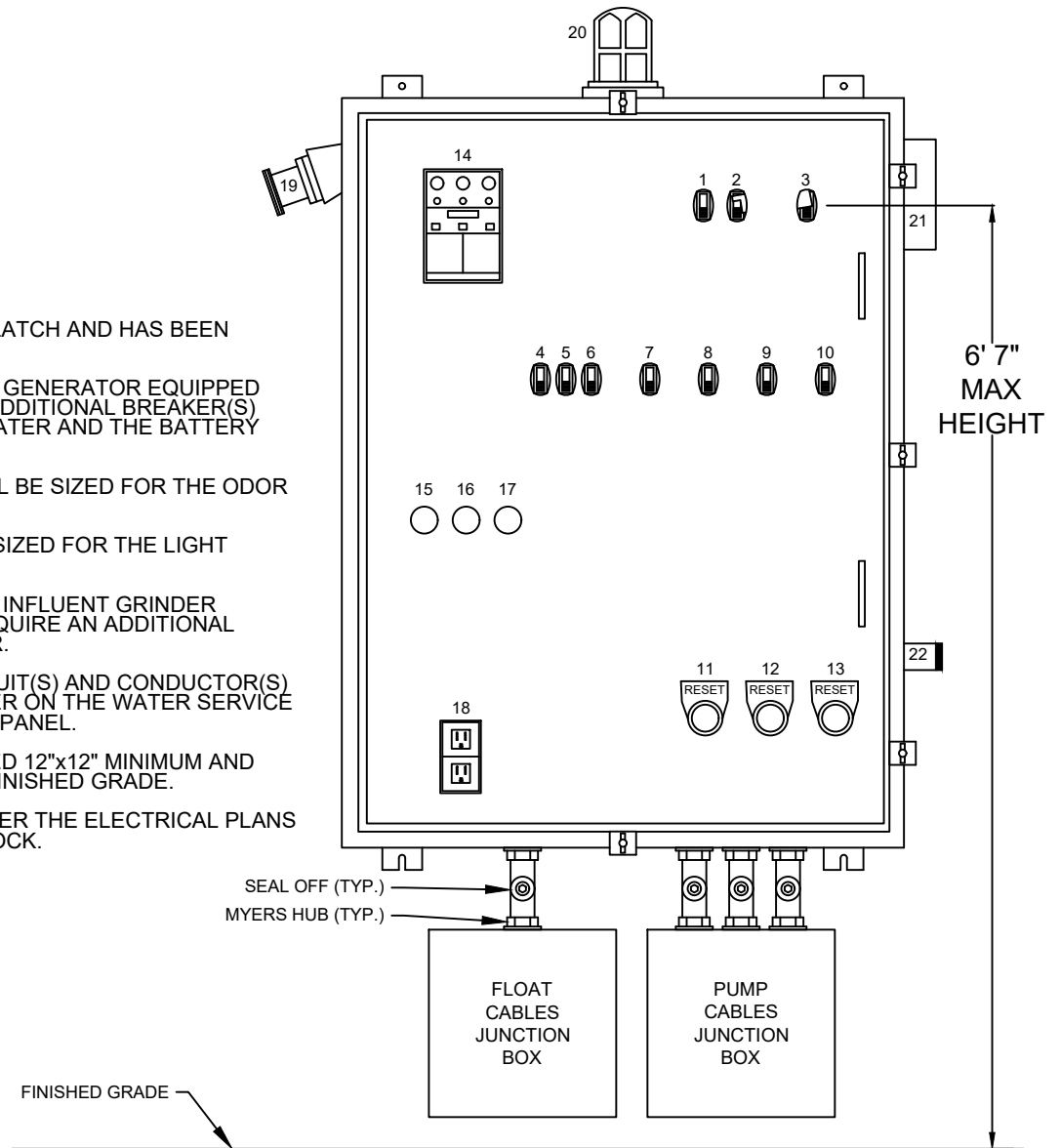
MANUFACTURER	IMPELLER DIAMETER
MODEL #	DISCHARGE SIZE
HORSEPOWER	HP
3-PHASE VOLTAGE	TDH

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**TRIPLEX PUMP STATION - FRP WET WELL
DETAIL: S-17
DATE: JUNE 2023**

NOTES:

1. OUTER DOORS HAVE A 3 POINT LATCH AND HAS BEEN REMOVED FOR CLARITY.
2. CONTROL PANELS INSTALLED IN GENERATOR EQUIPPED LIFT STATIONS WILL REQUIRE AN ADDITIONAL BREAKER(S) SIZED FOR THE ENGINE BLOCK HEATER AND THE BATTERY CHARGER.
3. ODOR CONTROL BREAKER SHALL BE SIZED FOR THE ODOR CONTROL UNIT INSTALLED.
4. SITE LIGHT BREAKER SHALL BE SIZED FOR THE LIGHT INSTALLED.
5. CONTROL PANELS INSTALLED IN INFLUENT GRINDER EQUIPPED LIFT STATIONS WILL REQUIRE AN ADDITIONAL BREAKER SIZED FOR THE GRINDER.
6. INSTALL THE NECESSARY CONDUIT(S) AND CONDUCTOR(S) FROM THE PRESSURE TRANSDUCER ON THE WATER SERVICE TO THE TCU INSIDE THE CONTROL PANEL.
7. JUNCTION BOXES SHALL BE SIZED 12"x12" MINIMUM AND INSTALLED A MINIMUM 12" ABOVE FINISHED GRADE.
8. MCB AND ECB SHALL BE SIZED PER THE ELECTRICAL PLANS AND SHALL HAVE MANUAL INTERLOCK.



PUMP CONTROL PANEL COMPONENTS (TELEMETRY MODEL)	
1. RTU BREAKER	12. OVERLOAD 2 RESET BUTTON
2. MCB (MAIN CIRCUIT BREAKER)	13. OVERLOAD RESET 3 BUTTON
3. ECB (EMERGENCY CIRCUIT BREAKER)	14. DATA FLOW SYSTEMS CONTROLLER W/REAR MOUNTED TCU
4. DRB (DUPLEX RECEPTACLE BREAKER)	15. PL1 MOISTURE 1
5. CCB (CONTROL CIRCUIT BREAKER)	16. PL2 MOISTURE 2
6. SLB (SITE LIGHT BREAKER)	17. PL3 MOISTURE 3
7. OCB (ODOR CONTROL BREAKER)	18. DR (DUPLEX RECEPTACLE, GFI)
8. MB1 (MOTOR BREAKER 1)	19. GR (GENERATOR RECEPTACLE)
9. MB2 (MOTOR BREAKER 2)	20. AL (ALARM LIGHT)
10. MB3 (MOTOR BREAKER 3)	21. AH (ALARM HORN)
11. OVERLOAD 1 RESET BUTTON	22. ASB (ALARM SILENCE BUTTON)

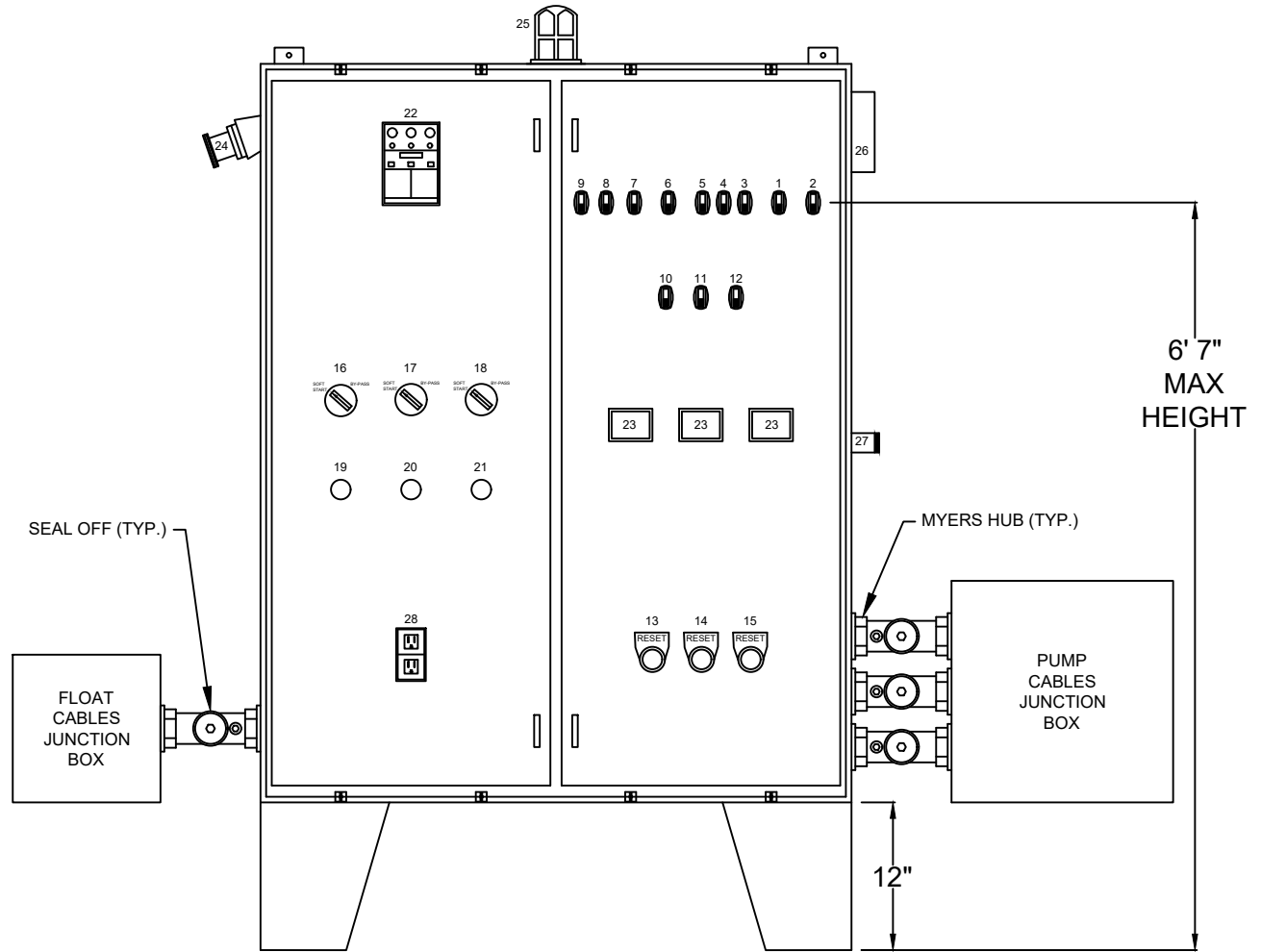
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**TRIPLEX PUMP STATION CONTROL PANEL
39 HP OR LESS**

DATE:
JUNE 2023

DETAIL: S-18



NOTES:

1. OUTER DOORS HAVE A 3 POINT LATCH AND HAS BEEN REMOVED FOR CLARITY.
2. 40 HP AND GREATER SHALL HAVE SOFT STARTS WITH ACROSS THE LINE BYPASS MAGNETIC STARTERS FOR EACH PUMP.
3. CONTROL PANELS INSTALLED IN INFLUENT GRINDER EQUIPPED LIFT STATIONS WILL REQUIRE AN ADDITIONAL BREAKER SIZED FOR THE GRINDER.
4. ODOR CONTROL BREAKER SHALL BE SIZED FOR THE ODOR CONTROL UNIT INSTALLED.
5. INSTALL THE NECESSARY CONDUIT(S) AND CONDUCTOR(S) FROM THE PRESSURE TRANSDUCER ON THE WATER SERVICE TO THE TCU INSIDE THE CONTROL PANEL.
6. SITE LIGHT BREAKER SHALL BE SIZED FOR THE LIGHT INSTALLED.
7. JUNCTION BOXES SHALL BE SIZED 12"x12" MINIMUM AND INSTALLED A MINIMUM 12" ABOVE FINISHED GRADE.
8. MCB AND ECB SHALL BE SIZED PER THE ELECTRICAL PLANS AND SHALL HAVE MANUAL INTERLOCK.

LEGEND:

1. MCB - MAIN CONTROL BREAKER	15. OVERLOAD RESET 3
2. GCB - GENERATOR CONTROL BREAKER	16. SOFT START BY-PASS SWITCH 1
3. CCB - CONTROL CIRCUIT BREAKER	17. SOFT START BY-PASS SWITCH 2
4. RTU BREAKER	18. SOFT START BY-PASS SWITCH 3
5. DRB - DUPLEX RECEPTACLE BREAKER	19. PL1 - MOISTURE 1
6. OCB - ODOR CONTROL BREAKER	20. PL2 - MOISTURE 2
7. SLB - SITE LIGHT BREAKER	21. PL3 MOISTURE 3
8. BHB - BLOCK HEATER BREAKER	22. TCU - DATA FLOW SYSTEMS TELEMETRY CONTROL UNIT
9. BCB - BATTERY CHARGER BREAKER	23. MSAV 1,2,3 - MOTOR SAVERS
10. MB1 - MOTOR BREAKER 1	24. GR - GENERATOR RECEPTACLE
11. MB2 - MOTOR BREAKER 2	25. AL - ALARM LIGHT, LED
12. MB3 - MOTOR BREAKER 3	26. AH - ALARM HORN
13. OVERLOAD RESET 1	27. ASB - ALARM SILENCE BUTTON
14. OVERLOAD RESET 2	28. DR - DUPLEX RECEPTACLE, GFI

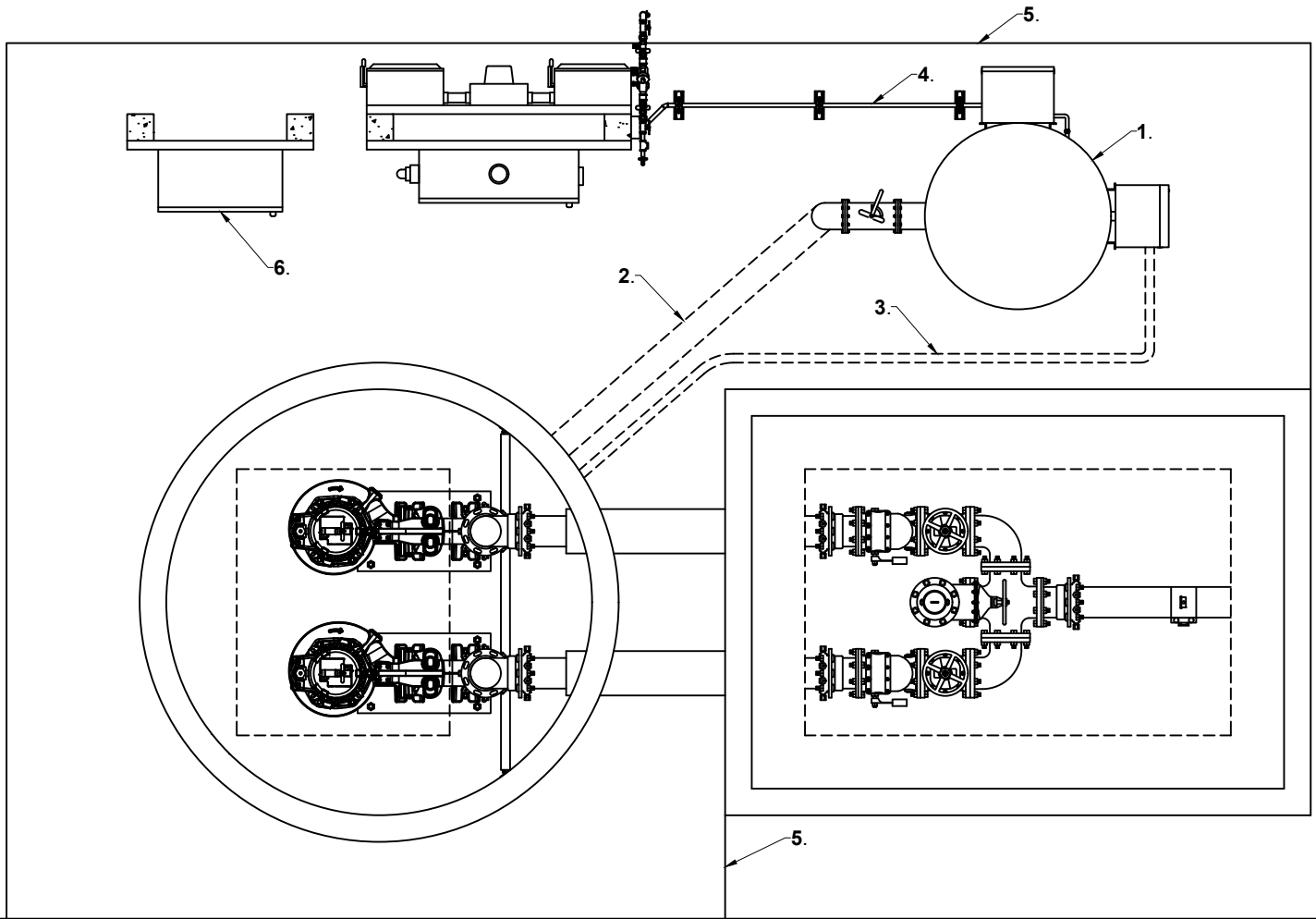
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**TRIPLEX PUMP STATION CONTROL PANEL
 40 HP OR GREATER**

DATE:
 JUNE 2023

DETAIL: S-19



LEGEND:

1. ODOR CONTROL SYSTEM (OCS) PER HCUD SPECIFICATION AND INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
2. OCS SUCTION PIPING: A MINIMUM 6" PVC SCHEDULE 80 SUCTION PIPE SHALL BE INSTALLED UNDER THE CONCRETE SLAB INTO THE SIDE OF THE WET WELL WITH A PIPE BOOT. PIPE MUST BE INSTALLED WITH A MINIMUM 1% SLOPE FLOWING INTO THE WET WELL TO DRAIN WATER CONDENSATION. PIPING SHALL BE THE SAME DIAMETER THROUGHOUT THE INSTALLATION, NO REDUCERS. THE SECTION OF SUCTION PIPE THAT IS ABOVE THE CONCRETE SLAB CONNECTED TO THE OCS SHALL BE SCHEDULE 80 PVC. A REDUCER MAY BE USED ABOVE GROUND TO CONNECT TO THE OCS IF THE OCS SUCTION PIPING IS SIZED FOR 4". IF OCS SUCTION PIPING IS SIZED LARGER THAN 6", THE LARGER PIPE SIZE SHALL BE SCHEDULE 80 PVC AND INSTALLED THROUGHOUT THE PIPING INSTALLATION WITH NO REDUCERS.
3. OCS DRAIN LINE: A MINIMUM 2" PVC SCHEDULE 80 DRAIN PIPE SHALL BE INSTALLED UNDER THE CONCRETE SLAB INTO THE SIDE OF THE WET WELL WITH A PIPE BOOT. PIPING MUST BE INSTALLED WITH A MINIMUM 1% SLOPE FLOWING INTO THE WET WELL. PIPING SHALL BE THE SAME DIAMETER THROUGHOUT THE INSTALLATION, NO REDUCERS. THE SECTION OF DRAIN LINE THAT IS ABOVE THE CONCRETE SLAB CONNECTED TO THE OCS SHALL BE SCHEDULE 80 PVC. A REDUCER MAY BE USED ABOVE GROUND TO CONNECT TO THE OCS IF THE OCS DRAIN SIZE IS SMALLER THAN 2". IF OCS DRAIN PIPING IS SIZED LARGER THAN 2", THE LARGER PIPE SIZE SHALL BE SCHEDULE 80 PVC AND INSTALLED THROUGHOUT THE PIPING INSTALLATION WITH NO REDUCERS.
4. WATER SUPPLY LINE FROM RPZ-BPA, SIZED PER OCS MANUFACTURER'S RECOMMENDATION. THE PIPING SHALL BE 3/4" MINIMUM DIAMETER THROUGHOUT THE INSTALLATION, NO REDUCERS. THE WATER SUPPLY LINE SHALL BE INSTALLED AND ANCHORED ON TOP OF THE CONCRETE SLAB. THE PIPE MATERIAL SHALL BE GALVANIZED.
5. 4,000 PSI 6" THICK CONCRETE SLAB AND SHALL BE REINFORCED WITH 6 X 6 WIRE.
6. GENERATOR TRANSFER SWITCH, IF APPLICABLE.

NOTES:

7. THE PVC ELECTRICAL CONDUIT SHALL BE INSTALLED FROM THE BOTTOM SIDE OF THE PUMP STATION CONTROL PANEL DOWN THROUGH THE CONCRETE SLAB AND OVER TO THE TO THE OCS CONTROL PANEL AND BACK UP THROUGH THE CONCRETE SLAB (ELECTRICAL CONDUIT NOT SHOWN).

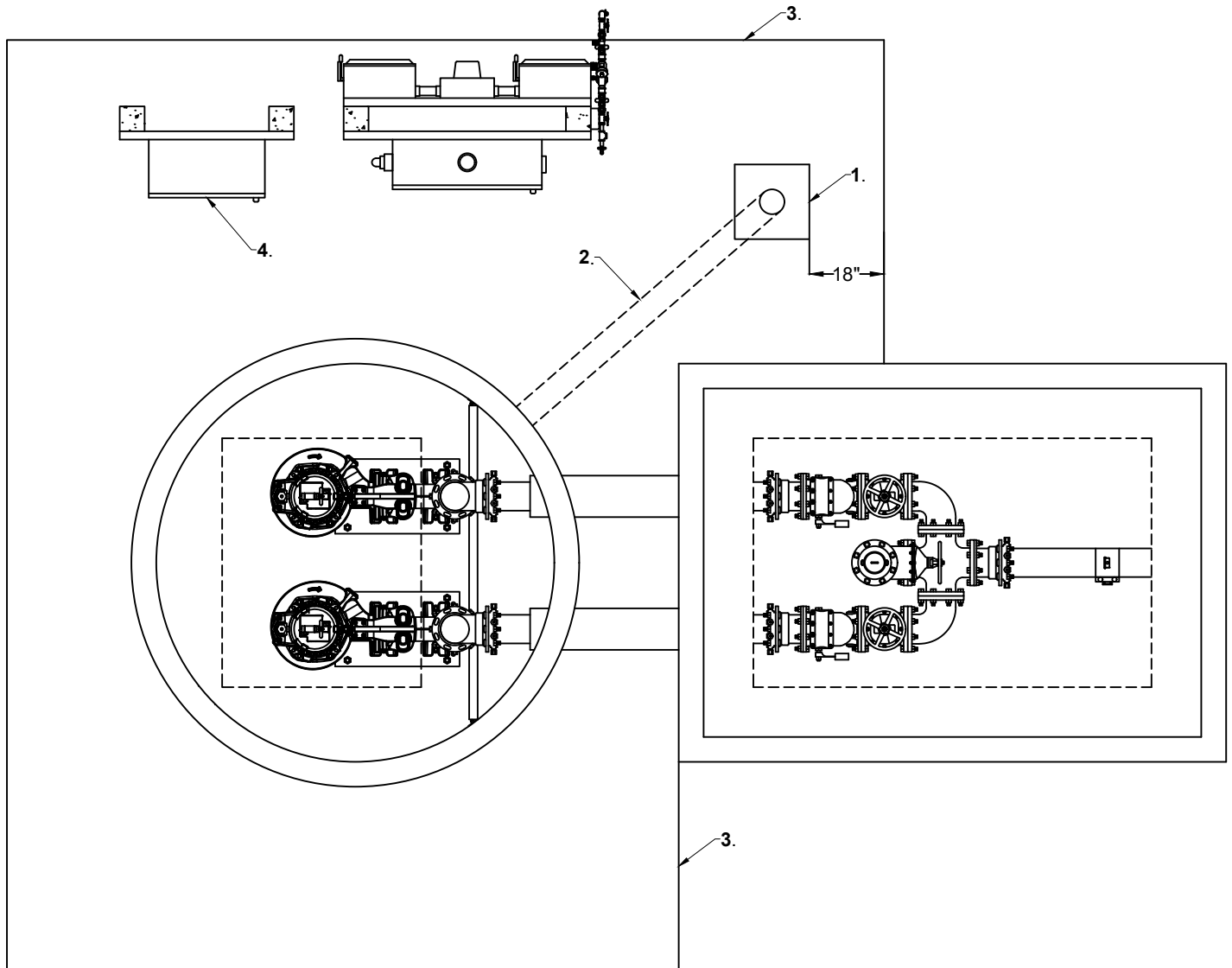
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BIOLOGICAL OXIDATION ODOR CONTROL SYSTEM

DATE:
 JUNE 2023

DETAIL: S-20



LEGEND:

1. ODOR CONTROL SYSTEM (OCS) PER HUCD SPECIFICATION AND INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. ALSO SEE NOTE 5.
2. 6" PVC SCHEDULE 80 SUCTION PIPE, INSTALLED INTO THE SIDE OF WET WELL WITH A PIPE BOOT. PIPE MUST BE INSTALLED WITH A 1% SLOPE MINIMUM FLOWING INTO THE WET WELL TO DRAIN WATER CONDENSATION. PIPING SHALL BE THE SAME DIAMETER THROUGHOUT THE INSTALLATION, NO REDUCERS. THE SECTION OF SUCTION PIPE THAT IS ABOVE THE CONCRETE SLAB INSTALLED INTO THE OCS SHALL BE SCHEDULE 80 PVC.
3. 4,000 PSI 6" THICK CONCRETE SLAB AND SHALL BE REINFORCED WITH 6 X 6 WIRE.
4. GENERATOR TRANSFER SWITCH, IF APPLICABLE.

NOTES:

5. INSTALL THE MOUNTING FLANGE FOR THE PASSIVE VAPOR OCS A MINIMUM OF 18" ABOVE CONCRETE SLAB.

NOT TO SCALE

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PASSIVE VAPOR ODOR CONTROL SYSTEM

DATE:
 JUNE 2023

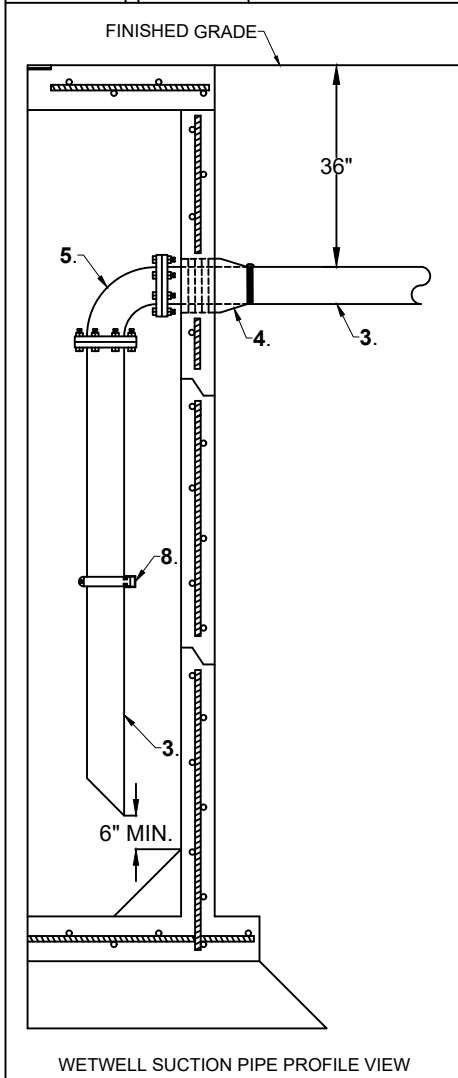
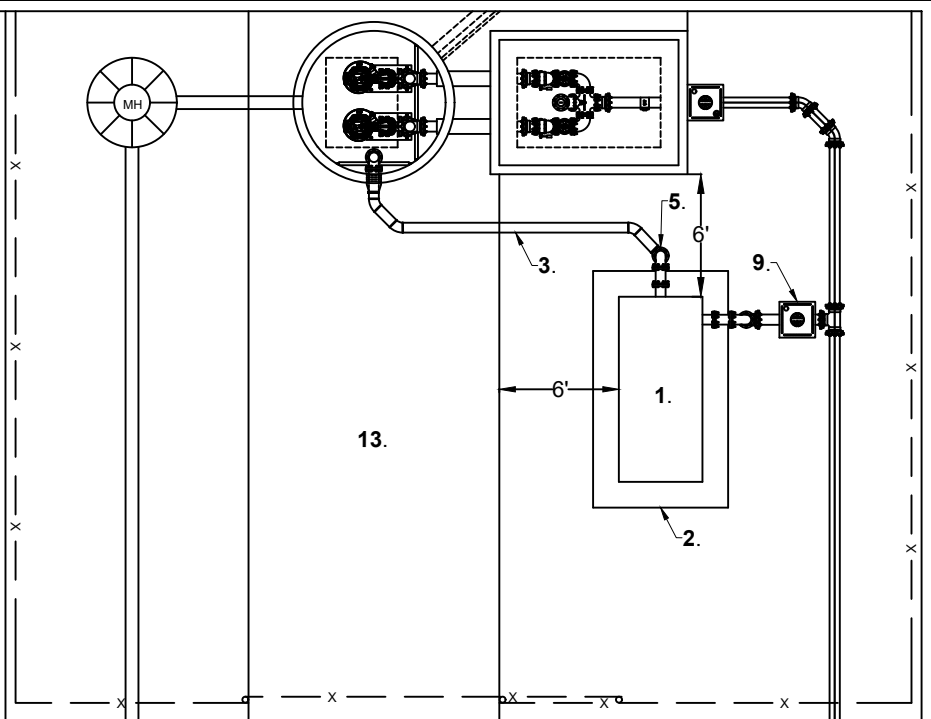
DETAIL: S-21

LEGEND:

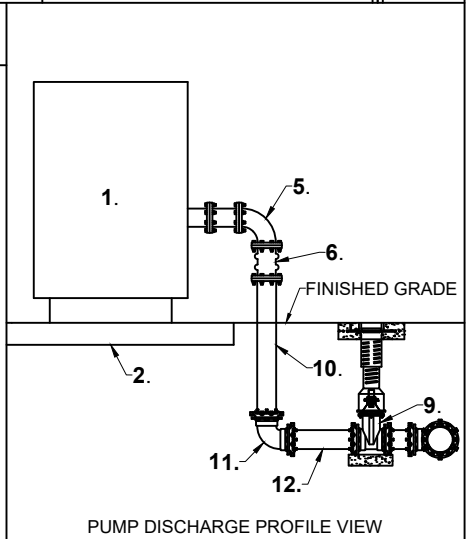
1. STANDBY DIESEL DRIVEN PUMP PER PLANS AND SPECIFICATIONS.
2. CONCRETE SUPPORT PAD FOR STANDBY DIESEL DRIVEN PUMP PER PLANS AND SPECIFICATIONS.
3. 316 STAINLESS STEEL (SS) SCHEDULE 40 SUCTION PIPE AND LONG RADIUS FITTINGS PER PLANS AND SPECIFICATIONS. NOTE: UNLESS SHOWN OR CALLED OUT AS FLANGED, ALL STAINLESS STEEL PIPING AND FITTINGS SHALL BE BUTT WELDED TO FORM A VACUUM TIGHT SEAL. SUCTION PIPING SHALL NOT PENETRATE THROUGH CONCRETE SUPPORT PAD.
4. TYPICAL PIPE BOOT.
5. TYPICAL 316 SS SCHEDULE 40 FLANGED LONG RADIUS 90° FITTING WITH SS FLANGED SPOOL PIECE CONNECTED TO PUMP.
6. TYPICAL FLEXIBLE DOUBLE EXPANSION JOINT.
7. 316 SS SCHEDULE 40 LONG RADIUS 90° FITTING.
8. SUCTION PIPING SUPPORT. 12 GAUGE SS UNI-STRUT (B-LINE) AND PIPE CLAMPS.
9. FORCE MAIN VALVE AND CONCRETE VALVE PAD PER PLANS AND SPECIFICATIONS. NOTE: 3" PVC WIRE PORT IS NOT REQUIRED ON THIS VALVE PAD.
10. PUMP DISCHARGE PIPING, 316 SS SCHEDULE 40 FLG X PE PIPE PER PLANS AND SPECIFICATIONS. DISCHARGE PIPING SHALL NOT PENETRATE THROUGH CONCRETE SUPPORT SLAB.
11. DUCTILE IRON SPECIAL COATED 90° FITTING WITH MECHANICAL JOINT RESTRAINTS.
12. PUMP DISCHARGE PIPING, C900 DR18 PVC SEWER FORCE MAIN PIPE.
13. 14' WIDE CONCRETE DRIVEWAY.

NOTES:

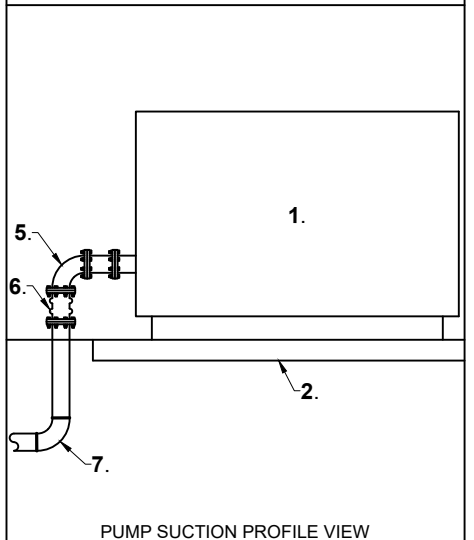
14. THIS IS A TYPICAL LAYOUT FOR THE STANDBY DIESEL DRIVEN PUMP, OTHER FACTORS DURING DESIGN, SUCH AS THE LOCATION OF THE SUCTION AND DISCHARGE PIPING FROM THE PUMP, MAY ALTER THIS LAYOUT. FINAL LAYOUT CONFIGURATION SHALL BE APPROVED BY HCUD.



WETWELL SUCTION PIPE PROFILE VIEW



PUMP DISCHARGE PROFILE VIEW



PUMP SUCTION PROFILE VIEW

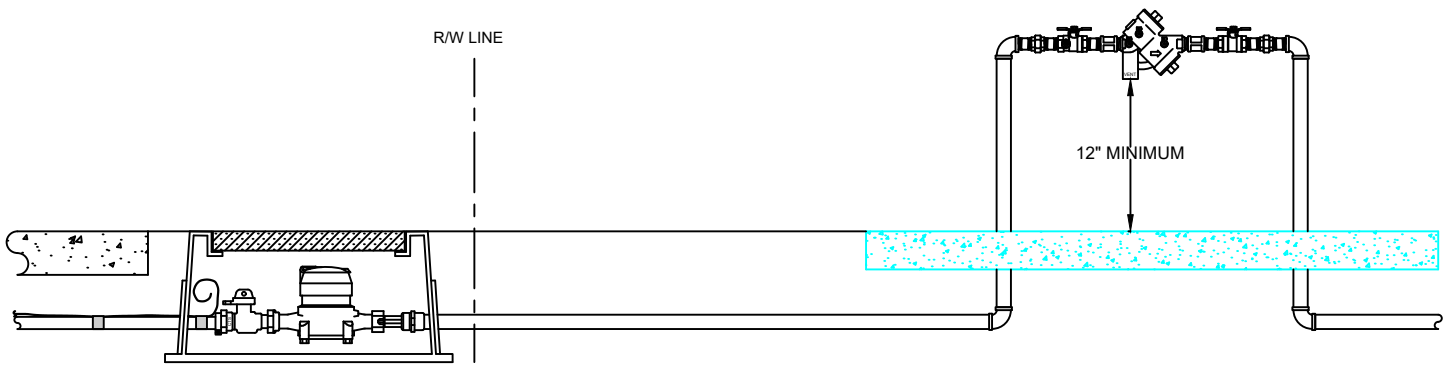
NOT TO SCALE

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 UTILITIES DEPARTMENT
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STANDBY DIESEL DRIVEN PUMP

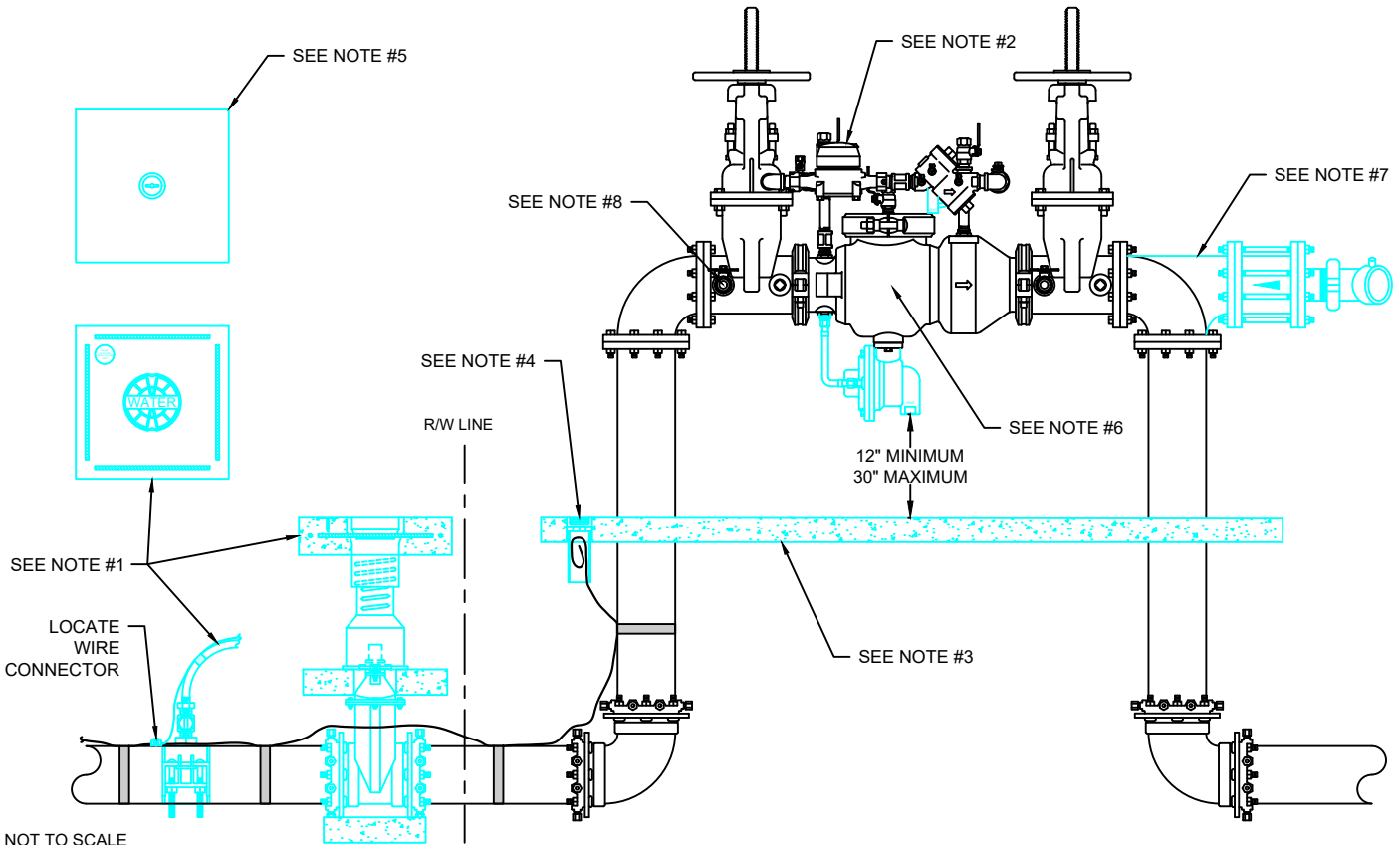
DATE:
 JUNE 2023

DETAIL: S-22



NOTES:

1. DISTANCE BETWEEN RIGHT-OF-WAY (R/W) LINE AND RPZ-BPA SHALL BE BETWEEN 24 AND 48 INCHES.
2. RPZ-BPA CONCRETE SUPPORT SLAB IS OPTIONAL.



NOT TO SCALE

NOTES:

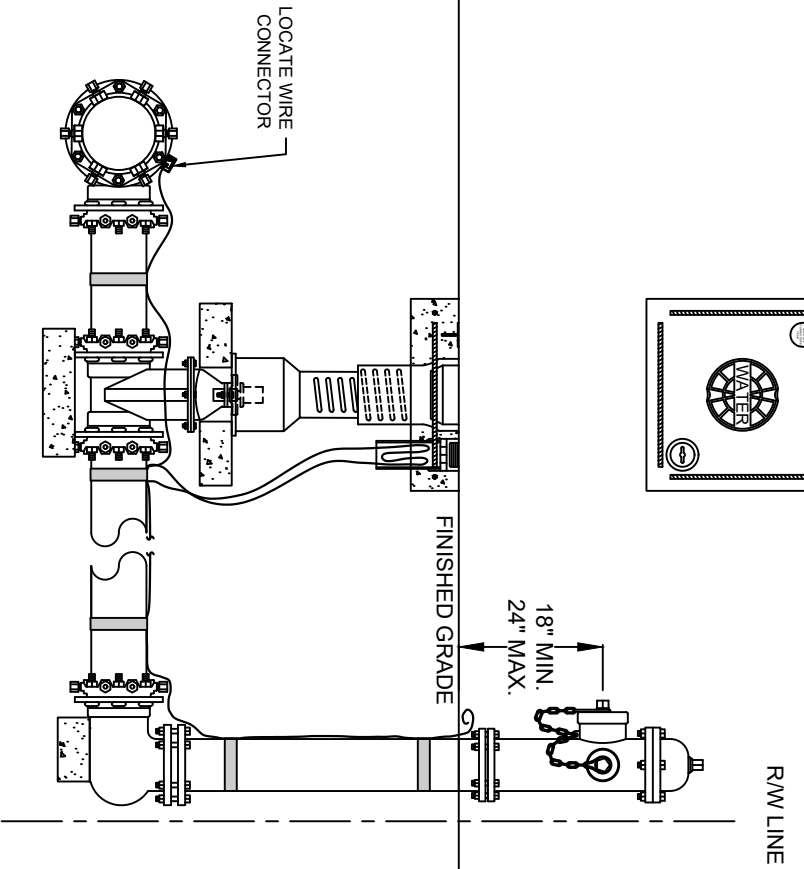
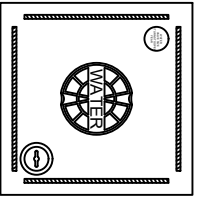
1. IF THE FIRE LINE AND THE POTABLE WATER MAIN ARE THE SAME, A GATE VALVE MUST BE INSTALLED AFTER THE WATER SERVICE CONNECTION AND BEFORE THE FIRE LINE BPA WITHIN THE COUNTY RIGHT-OF-WAY (R/W) LINE FOR ISOLATION.
2. THE BPA SHALL HAVE A LOW FLOW BY-PASS DETECTOR ASSEMBLY WITH A 5/8" x 3/4" NEPTUNE R900i PROCODER RADIO READ METER.
3. BPA CONCRETE SUPPORT SLAB IS OPTIONAL.
4. IF THE SUPPORT SLAB IS INSTALLED, A #10 AWG LOCATE WIRE SHALL BE INSTALLED UP TO THE BEGINNING OF THE FIRE MAIN BPA AND TERMINATE IN A THREE INCH WIRE PORT FOR ACCESS, AS SHOWN. COAT THREADS ON PVC CAP WITH GREASE OR ANTI-SEIZE LUBRICANT.
5. IF THE SUPPORT SLAB IS NOT INSTALLED ON THE FIRE LINE BPA, A 24" x 24" x 6" CONCRETE LOCATE WIRE RISER PAD SHALL BE INSTALLED FOR ACCESS TO THE LOCATE WIRE. CONCRETE PAD SHALL BE PER PLAN AND SPECIFICATION.
6. DEPENDING ON THE FIRE LINE APPLICATION, THE TYPE OF BPA WITH LOW FLOW DETECTOR WILL VARY. SEE THE HCUD CROSS-CONNECTION CONTROL PLAN.
7. AS AN OPTION WITH APPROVAL FROM THE FIRE DEPARTMENT, A TEE, CHECK VALVE, AND FDC CAN BE INSTALLED IN PLACE OF THE 90 DEGREE FITTING DOWN STREAM OF THE BPA, AS SHOWN.
8. WATER SAMPLES CAN BE TAKEN FROM TEST PORT #1 ON THE BPA.

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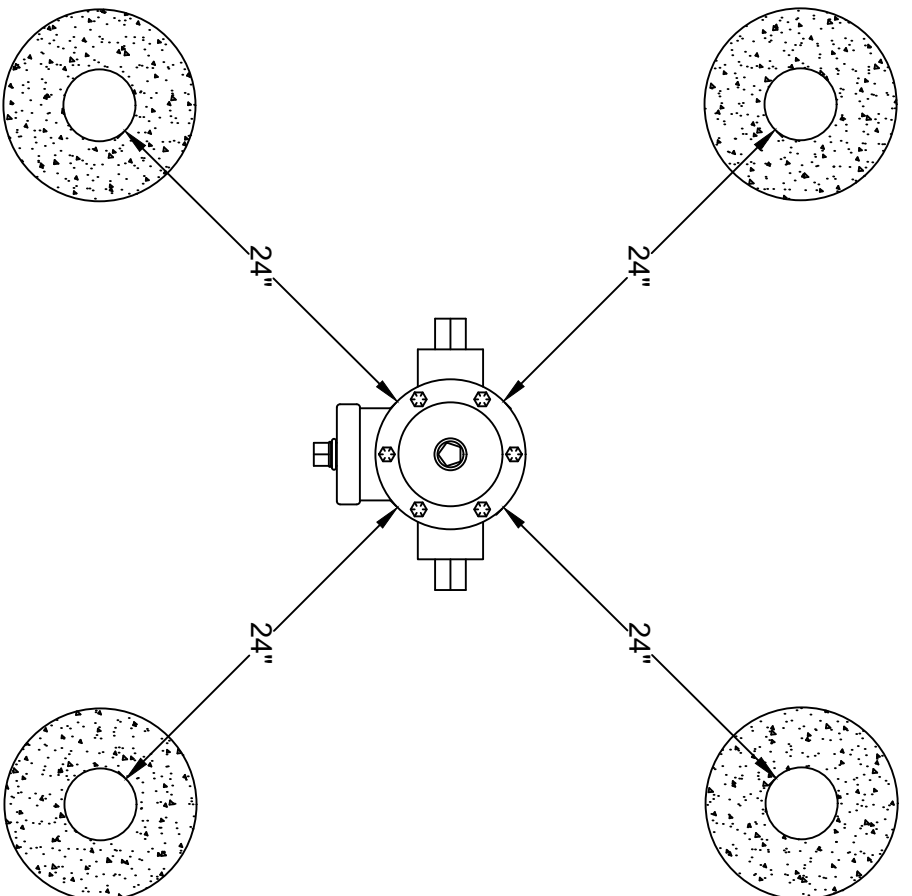
COMMERCIAL WATER SERVICE 2-INCH OR LESS
 AND FIRE LINE

DATE:
 JUNE 2023

DETAIL: W-01



NOT TO SCALE



PROTECTIVE BOLLARD INSTALLATION

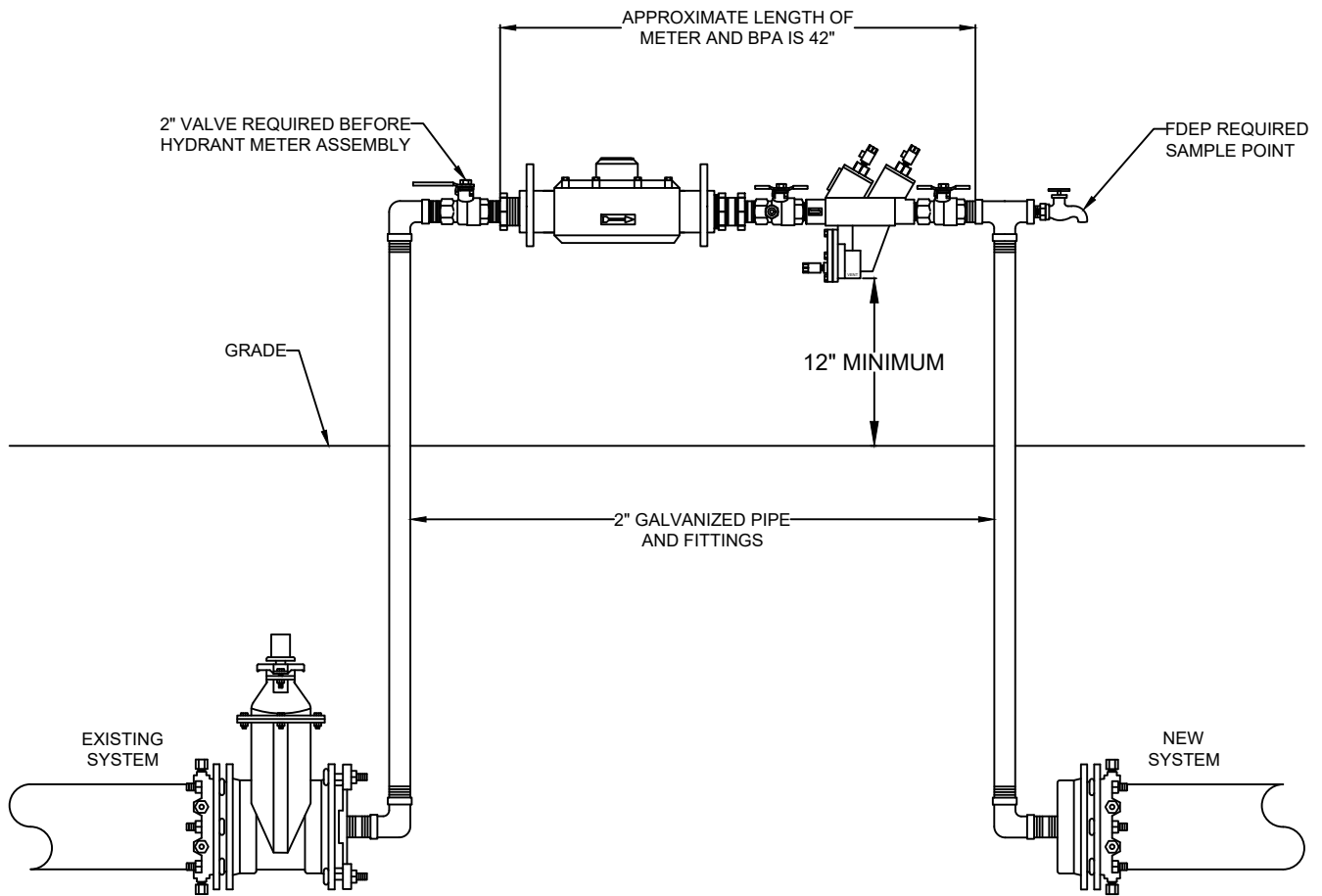
- NOTES:**
1. INSTALL FIRE HYDRANT STEAMER NOZZLE FACING STREET IF INSTALLED WITHIN COUNTY ROAD RIGHT-OF-WAY.
 2. FIRE HYDRANT ASSEMBLY AND ISOLATION GATE VALVE SHALL HAVE A PRE-CAST CONCRETE SUPPORT BLOCK INSTALLED AS SHOWN. 16"x8"x4" MINIMUM SIZE.
 3. ISOLATION GATE VALVES SHALL HAVE A HCUJ SPECIFIED CONCRETE VALVE PAD AND #10 AWG LOCATE WIRE AS SHOWN.
 4. WHEN FIRE HYDRANT ASSEMBLIES ARE INSTALLED IN PAVED SERVICE AREAS, PROTECTIVE BOLLARD STRUCTURES SHALL BE INSTALLED.
 5. PROTECTIVE BOLLARD STRUCTURES SHALL CONSIST OF FOUR 4" SCHEDULE 40 STEEL PIPE, 72" EACH IN LENGTH, INSTALLED IN THE CENTER OF A TWELVE INCH DIAMETER HOLE 36" DEEP, ENCASED IN 4000 PSI CONCRETE MINIMUM AND SPACED AS SHOWN FROM THE FIRE HYDRANT.
 6. BOLLARDS SHALL BE POURED SOLID WITH 4000 PSI MINIMUM CONCRETE AND PAINTED SAFETY YELLOW.
 7. INSTALL BLUE LOCATE TAPE PER HCUJ SPECIFICATIONS.

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FIRE HYDRANT ASSEMBLY

DATE:
 JUNE 2023

DETAIL: W-02



NOTES:

1. CONTACT HCUD TO SIGN UP FOR A HYDRANT METER ACCOUNT.
2. HCUD WILL SUPPLY METER AND BPA ASSEMBLY AFTER ACCOUNT IS SET UP AND FEES ARE PAID.
3. JUMPER METER ASSEMBLY SHALL BE PROPERLY SUPPORTED AT ALL TIMES.

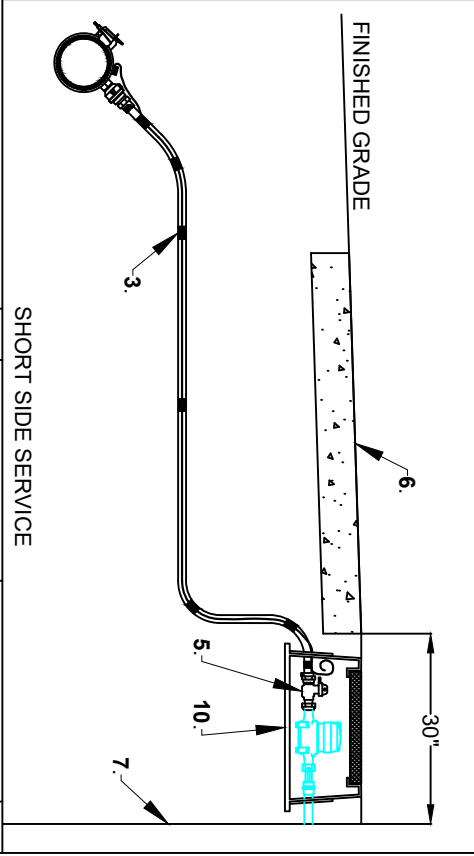
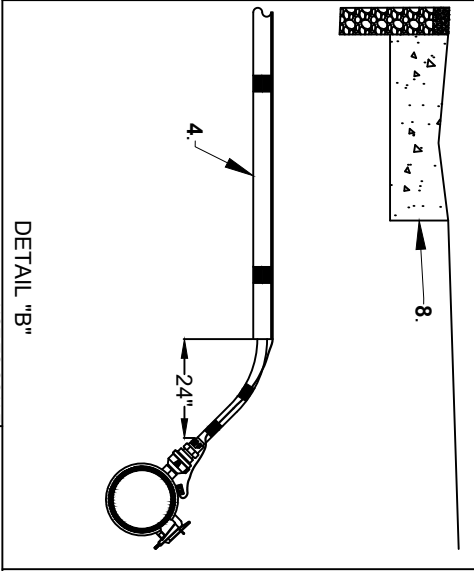
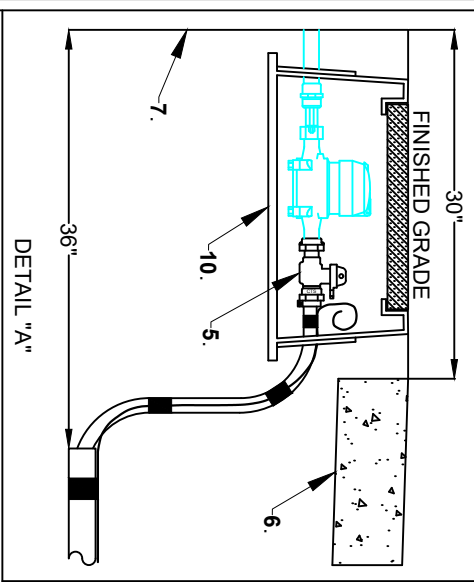
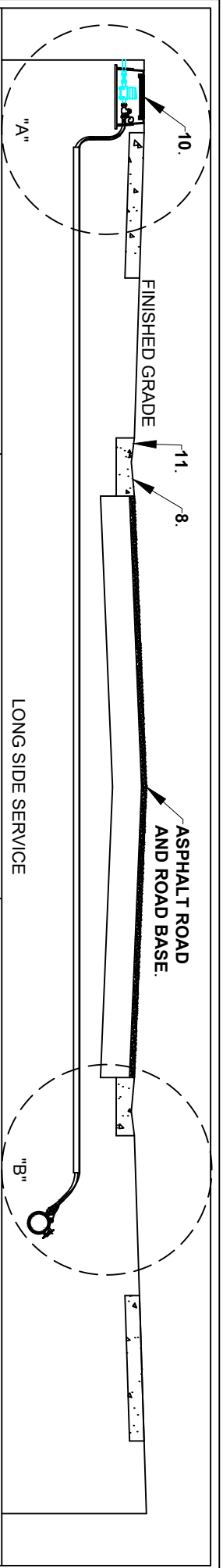
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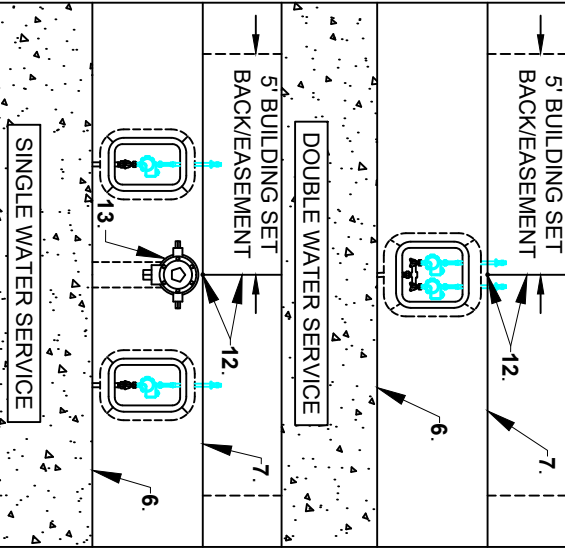
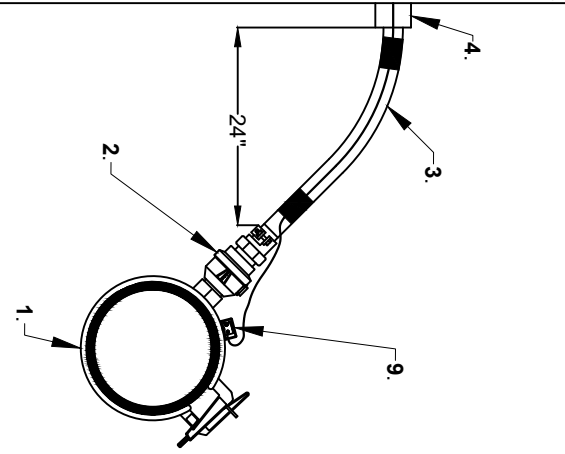
TEMPORARY WATER SERVICE CONNECTION/
 JUMPER METER

DATE:
 JUNE 2023

DETAIL: W-03



- LEGEND:**
1. WATER MAIN AND SERVICE SADDLE PER HCUJ SPECIFICATION.
 2. CORPORATION STOP PER HCUJ SPECIFICATION.
 3. BLUE POLY TUBING WITH STIFFENERS (INSERTS) AND #10 AWG LOCATE WIRE SECURELY ATTACHED TO POLY TUBING PER HCUJ SPECIFICATION.
 4. SCHEDULE 40 PVC SLEEVE UNDER ROAD. 2" MINIMUM. LOCATE WIRE SHALL BE SECURELY ATTACHED TO THE OUTSIDE OF THE PVC SLEEVE.
 5. BRANCH OR SINGLE CURB STOP WITH BARREL LOCKS PER HCUJ SPECIFICATION.
 6. CONCRETE SIDEWALK.
 7. RIGHT-OF-WAY LINE.
 8. CONCRETE CURB.
 9. HCUJ APPROVED LOCATE WIRE CONNECTOR.
 10. CONTRACTOR SHALL INSTALL HCUJ APPROVED METER BOX. NOTE: HCUJ WILL INSTALL WATER METERS AFTER ALL REQUIRED CONNECTION FEES ARE PAID.
 11. PERMANENT IDENTIFICATION MARKER. MARK THE ROADWAY CURB WITH BLUE PAINT INDICATING THE LOCATION OF THE WATER SERVICE. MARK DIMENSIONS SHALL BE 6" X 3". TWO MARKS FOR A DOUBLE SERVICE AND ONE MARK FOR A SINGLE SERVICE. MARKS SHALL BE INLINE WITH WATER SERVICE.
 12. PROPERTY PIN AND SIDE LOT LINE.
 13. THIS CAN BE A FIRE HYDRANT, STORM BOX, LIGHT POLE, ETC.
- NOTE: INSTALL BLUE LOCATE TAPE ON ALL WATER SERVICES IN OPEN CUT AREAS.

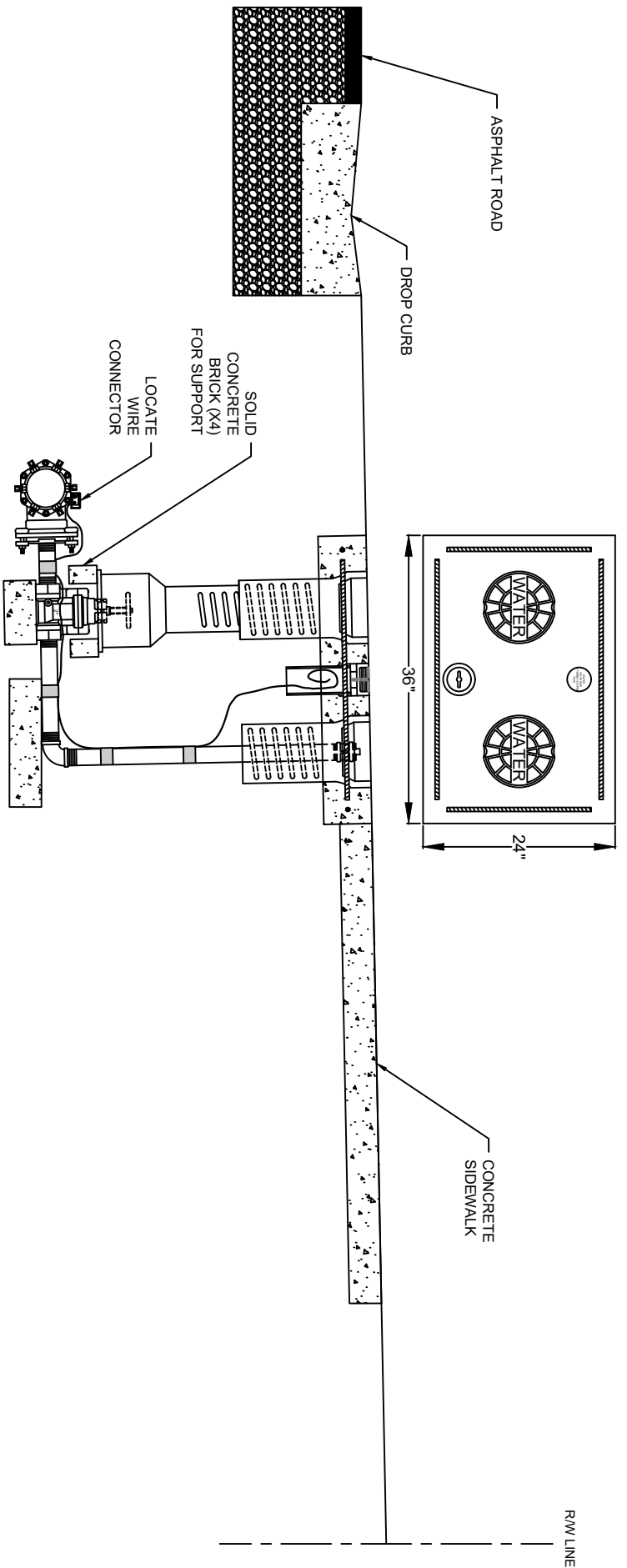


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LONG AND SHORT SIDE WATER SERVICES

DATE: JUNE 2023

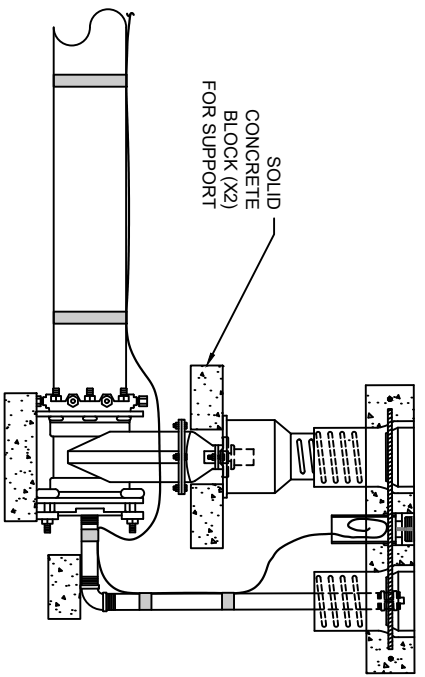
DETAIL: W-04



TYPICAL RESIDENTIAL CUL-DE-SAC INSTALLATION

NOT TO SCALE

- NOTES:**
1. CUL-DE-SAC INSTALLATION: 2" GATE VALVE SHALL BE RESILIENT WEDGE TYPE WITH NPT CONNECTIONS AND A 4.5" DIAMETER HAND WHEEL TO OPERATE VALVE. GATE VALVE AND PIPING SHALL BE SUPPORTED BY A 16"x8"x4" SOLID CONCRETE BLOCK, AS SHOWN.
 2. PIPE SHALL BE 2" NPT GALVANIZED. PIPING SHALL BE THREADED INTO A MECHANICAL JOINT PLUG INSTALLED IN THE MAIN LINE TEE. PIPING WITH THREADED GALVANIZED COUPLING AND PLUG SHALL EXTEND UP INTO CAST IRON VALVE BOX AS CLOSE AS POSSIBLE TO TOP OF VALVE PAD AND STILL ALLOW THE VALVE BOX LID TO CLOSE PROPERLY. PLUG SHALL BE HAND TIGHT ONLY.
 3. A HCUJ SPECIFIED 3/6"x24"x6" POURED IN PLACE CONCRETE VALVE PAD WITH 3" PVC LOCATE WIRE RISER AND 3" BRASS VALVE IDENTIFICATION TAG SHALL BE INSTALLED, AS SHOWN. COAT THREADS ON PVC CAP WITH GREASE OR ANTI-SEIZE LUBRICANT.
 4. END OF WATER MAIN INSTALLATION: NO 2" GATE VALVE IS REQUIRED. GALVANIZED PIPING SHALL BE THREADED INTO MECHANICAL JOINT PLUG INSTALLED IN MAIN LINE GATE VALVE, AS SHOWN. MAIN LINE SHALL BE RESTRAINED PER HCUJ PIPELINE JOINT RESTRAINT DETAIL.



TYPICAL END OF WATER MAIN INSTALLATION

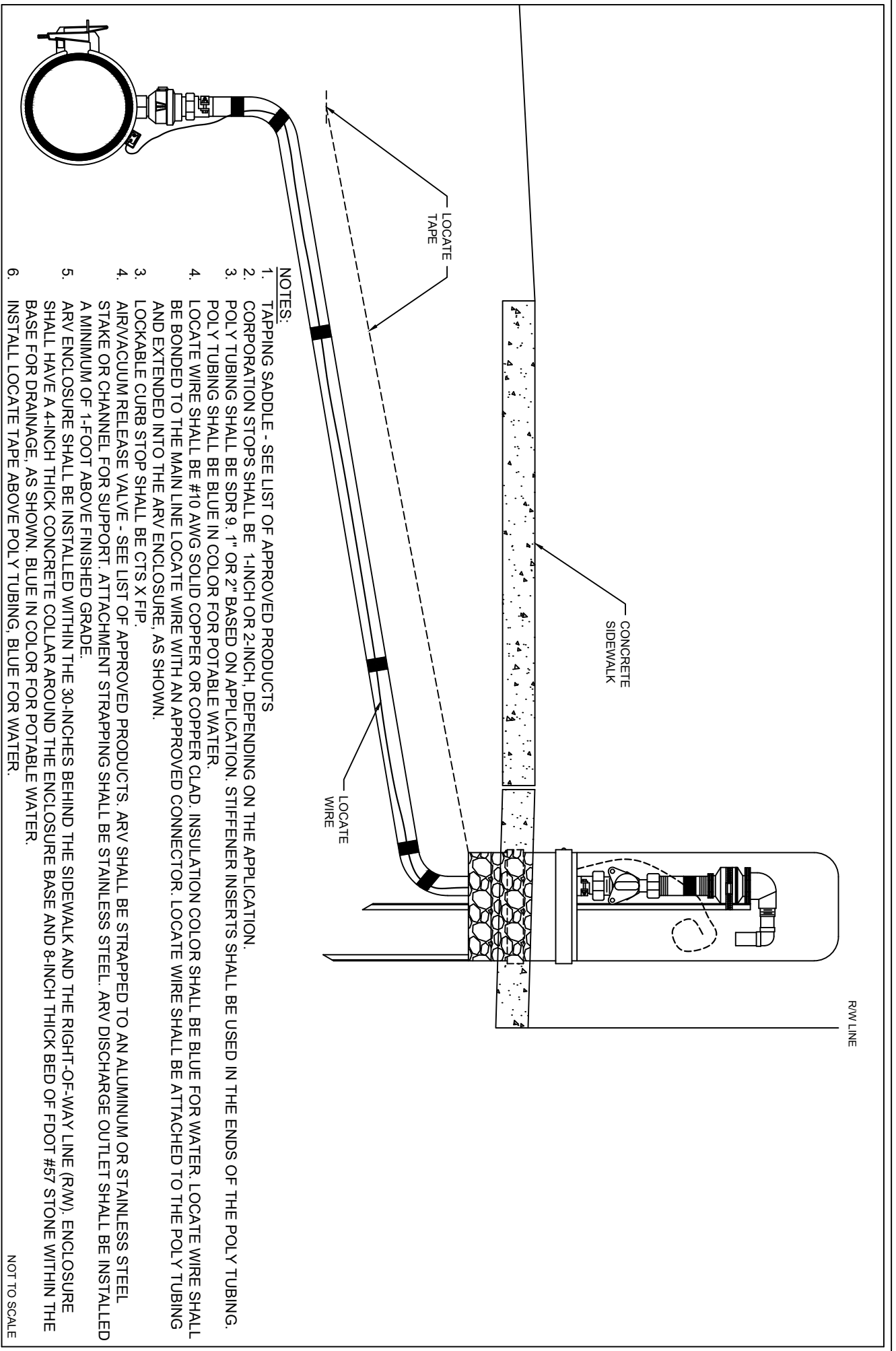
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WATER MAIN BLOW-OFF

DATE:
 JUNE 2023

DETAIL: W-05



- NOTES:
1. TAPPING SADDLE - SEE LIST OF APPROVED PRODUCTS
 2. CORPORATION STOPS SHALL BE 1-INCH OR 2-INCH, DEPENDING ON THE APPLICATION.
 3. POLY TUBING SHALL BE SDR 9, 1" OR 2" BASED ON APPLICATION. STIFFENER INSERTS SHALL BE USED IN THE ENDS OF THE POLY TUBING.
 4. LOCATE WIRE SHALL BE #10 AWG SOLID COPPER OR COPPER CLAD. INSULATION COLOR SHALL BE BLUE FOR WATER. LOCATE WIRE SHALL BE BONDED TO THE MAIN LINE LOCATE WIRE WITH AN APPROVED CONNECTOR. LOCATE WIRE SHALL BE ATTACHED TO THE POLY TUBING AND EXTENDED INTO THE ARV ENCLOSURE, AS SHOWN.
 5. LOCKABLE CURB STOP SHALL BE CTS X FIP.
 6. AIR/VACUUM RELEASE VALVE - SEE LIST OF APPROVED PRODUCTS. ARV SHALL BE STRAPPED TO AN ALUMINUM OR STAINLESS STEEL STAKE OR CHANNEL FOR SUPPORT. ATTACHMENT STRAPPING SHALL BE STAINLESS STEEL. ARV DISCHARGE OUTLET SHALL BE INSTALLED A MINIMUM OF 1-FOOT ABOVE FINISHED GRADE.
 7. ARV ENCLOSURE SHALL BE INSTALLED WITHIN THE 30-INCHES BEHIND THE SIDEWALK AND THE RIGHT-OF-WAY LINE (RAW). ENCLOSURE SHALL HAVE A 4-INCH THICK CONCRETE COLLAR AROUND THE ENCLOSURE BASE AND 8-INCH THICK BED OF FDOT #57 STONE WITHIN THE BASE FOR DRAINAGE, AS SHOWN. BLUE IN COLOR FOR POTABLE WATER.
 8. INSTALL LOCATE TAPE ABOVE POLY TUBING, BLUE FOR WATER.

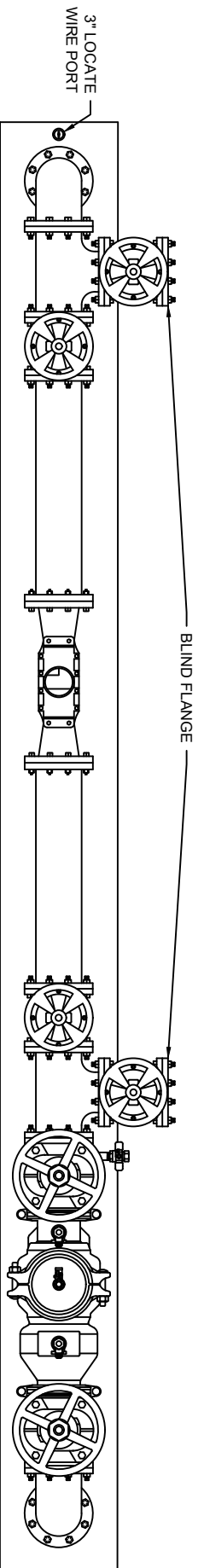
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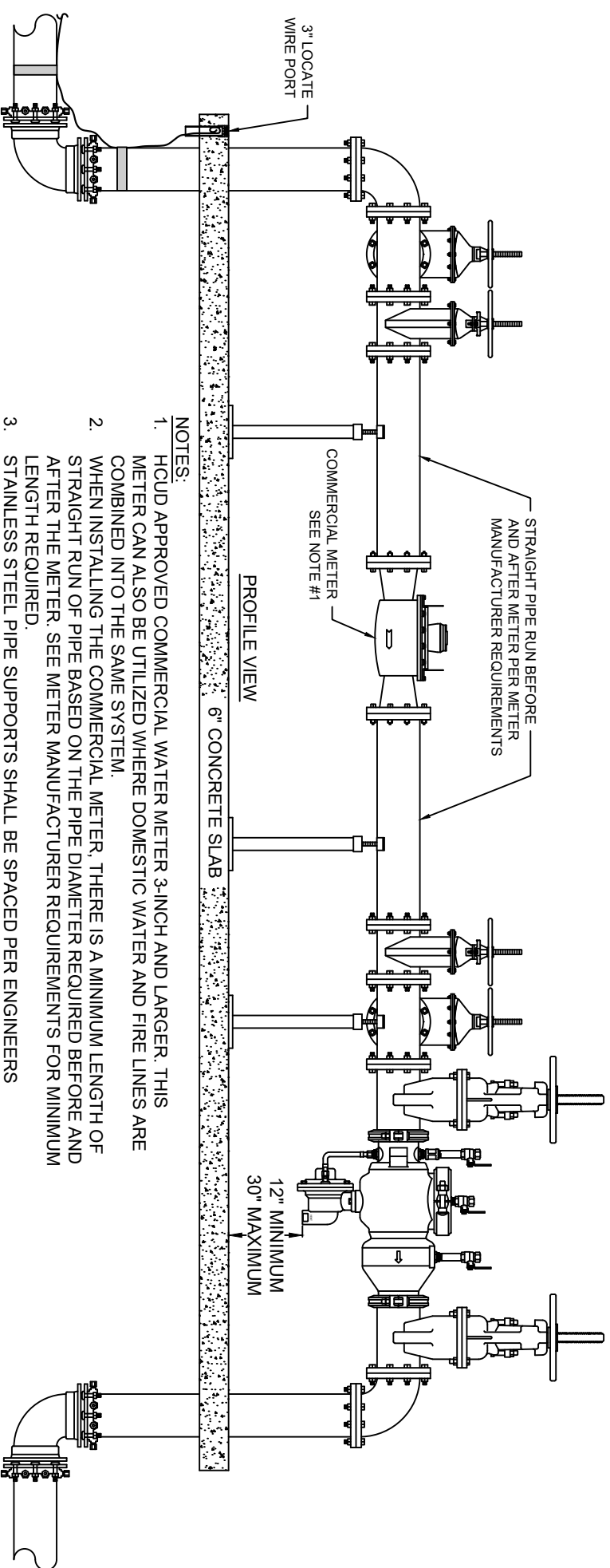
WATER ARV

DATE:
 JUNE 2023

DETAIL: W-06



PLAN VIEW



PROFILE VIEW

- NOTES:**
1. HCUJ APPROVED COMMERCIAL WATER METER 3-INCH AND LARGER. THIS METER CAN ALSO BE UTILIZED WHERE DOMESTIC WATER AND FIRE LINES ARE COMBINED INTO THE SAME SYSTEM.
 2. WHEN INSTALLING THE COMMERCIAL METER, THERE IS A MINIMUM LENGTH OF STRAIGHT RUN OF PIPE BASED ON THE PIPE DIAMETER REQUIRED BEFORE AND AFTER THE METER. SEE METER MANUFACTURER REQUIREMENTS FOR MINIMUM LENGTH REQUIRED.
 3. STAINLESS STEEL PIPE SUPPORTS SHALL BE SPACED PER ENGINEERS RECOMMENDATIONS TO SUPPORT THE METER ASSEMBLY.
 4. THE BACKFLOW PREVENTION DEVICE SHALL BE A REDUCED PRESSURE ZONE ASSEMBLY (RPZ).
 5. ALL ABOVE GROUND FITTINGS AND PIPE SHALL BE FLANGE TO FLANGE DUCTILE IRON PIPE AND PAINTED BLUE PER HCUJ SPECIFICATIONS.
 6. CONCRETE SUPPORT SLAB SHALL BE PER PLANS AND SPECIFICATION, AND EXTEND A MINIMUM OF ONE FOOT FROM THE OUTSIDE OF THE PIPING IN ALL DIRECTIONS AS SHOWN.

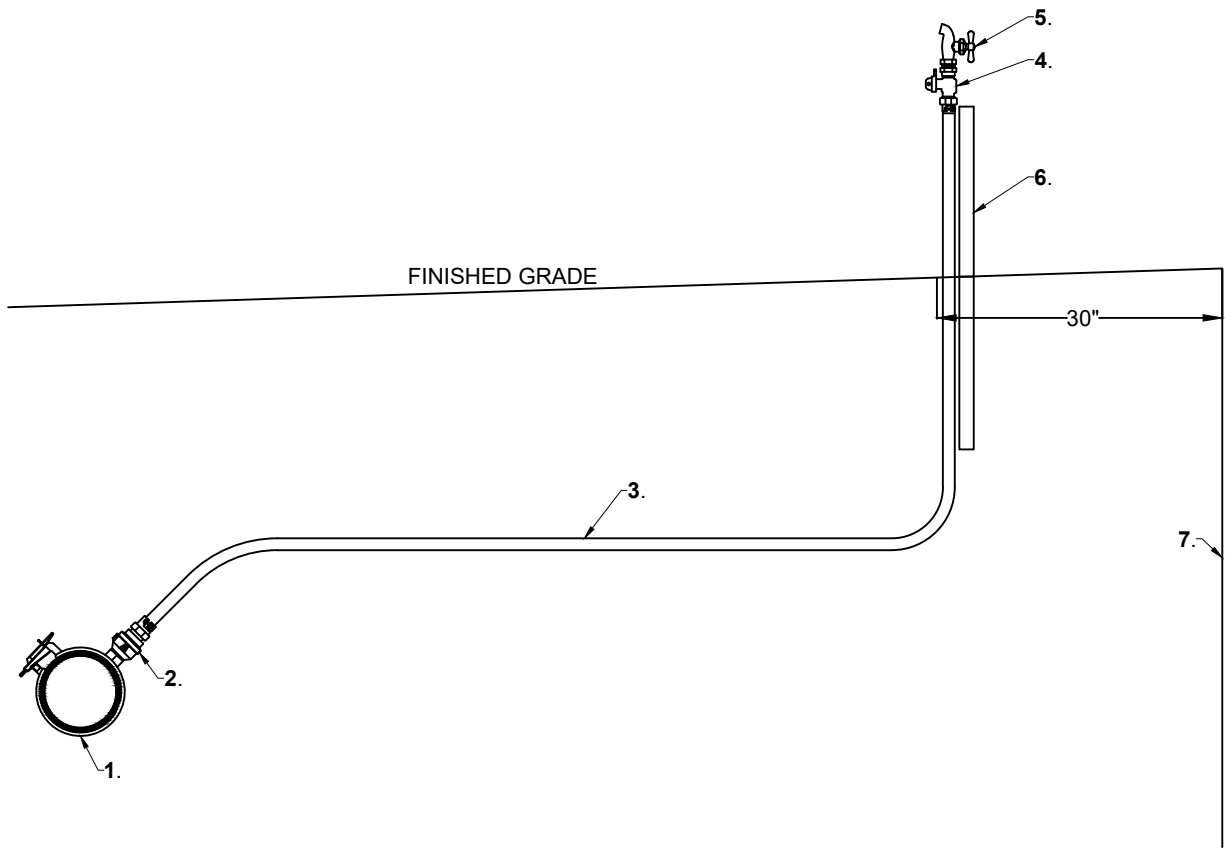
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COMMERCIAL WATER METER
 3-INCH AND LARGER

DATE:
 JUNE 2023

DETAIL: W-07



LEGEND:

1. WATER MAIN AND SERVICE SADDLE PER HCUD SPECIFICATION.
2. CORPORATION STOP PER HCUD SPECIFICATION.
3. BLUE POLY TUBING WITH STIFFENERS (INSERTS). NO LOCATE WIRE IS REQUIRED ON THE TEMPORARY SAMPLE POINT.
4. SINGLE CTS X FIP CURB STOP WITH BARREL LOCK PER HCUD SPECIFICATION.
5. 3/4" HOSE BIB. HOSE BIB SHALL HAVE THE THREADED DISCHARGE END REMOVED SO THAT NO HOSES CAN BE ATTACHED TO IT.
6. WOOD 2X4 SUPPORT STAKE. TEMPORARY WATER SAMPLE POINT SHALL BE SECURELY ATTACHED TO SUPPORT STAKE.
7. RIGHT-OF-WAY LINE.

NOTES:

8. TEMPORARY WATER SAMPLE POINT SHALL BE REMOVED EXCEPT FOR SERVICE SADDLE AND CORPORATION STOP AFTER THE PASSING WATER SAMPLE RESULTS ARE SUBMITTED AND THE WATER SYSTEM IS PLACED INTO SERVICE BY FDEP. THE CORPORATION STOP SHALL BE CLOSED AND THE END CAPPED WITH A SCHEDULE 40 PVC CAP.
9. THE CONTRACTOR CAN NOT COLLECT THEIR OWN WATER SAMPLES. WATER SAMPLES MUST BE COLLECTED AND PROCESSED BY A STATE CERTIFIED LAB.

NOT TO SCALE

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TEMPORARY WATER SAMPLE POINT

DATE:
 JUNE 2023

DETAIL: W-08



UTILITIES DEPARTMENT

WATER ♦ WASTEWATER ♦ RECLAIMED WATER ♦ ENGINEERING ♦ CUSTOMER SERVICE

15365 CORTEZ BOULEVARD ♦ BROOKSVILLE, FLORIDA 34613
P 352.754.4037 ♦ F 352.754.4485 ♦ W www.HernandoCounty.us

I, Ron Patel, professional engineer licensed in Florida, am in responsible charge of preparing the 2023 Details included in the Hernando County Utilities Department's "Water, Reclaimed Water and Wastewater Construction Specifications Manual."

I certify that, to the best of my knowledge and belief, these details, when used in combination with sound engineering principles, will meet applicable local, state, and federal standards for water utilities projects.

This certification does not relieve any design engineer from the responsibility to utilize sound engineering judgment in all projects where these Details will be used.

