



COMMUNITY DEVELOPMENT DISTRICT

Standard Details

www.dunescdd.org

101 Jungle Hut Road ~ Palm Coast, Fl. 32137 ~ Ph: 386.445.9045

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DUNES COMMUNITY DEVELOPMENT DISTRICT

General Details Cover

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GENERAL DETAILS COVER

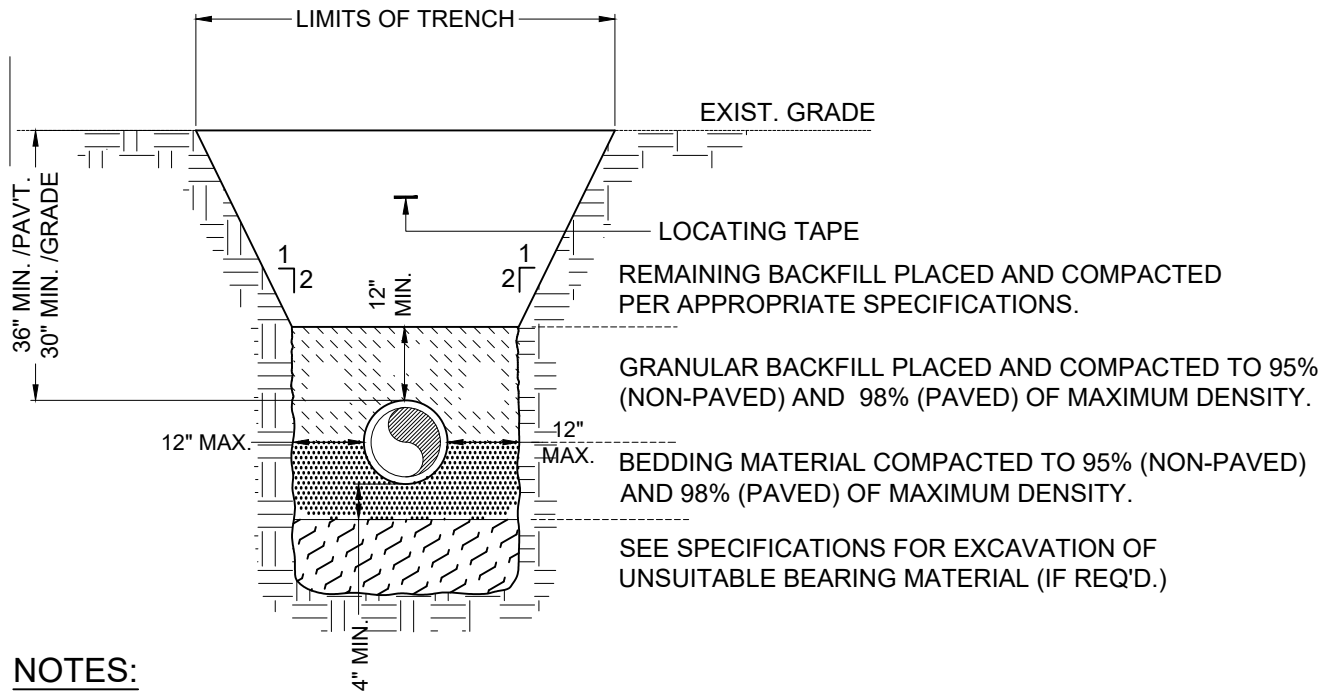
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NOTES:

1. BEDDING AND BACKFILL 12" ABOVE PIPE SHALL CONSIST OF IN-SITU GRANULAR MATERIAL OR WASHED AND GRADED LIMEROCK, 1/2" DIA. FOR PVC & 3/4" DIA. FOR D.I. UNSUITABLE IN-SITU MATERIALS SUCH AS MUCK, DEBRIS AND LARGER ROCK SHALL BE REMOVED.
2. THE PIPE SHALL BE FULLY SUPPORTED FOR ITS ENTIRE LENGTH WITH APPROPRIATE COMPACTION UNDER THE PIPE HAUNCHES.
3. THE PIPE SHALL BE PLACED IN A DRY TRENCH.
4. BACKFILL SHALL BE FREE OF UNSUITABLE MATERIAL SUCH AS MUCK, DEBRIS AND ROCK LARGER THEN 3' 1/2" DIA.



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GENERAL DETAIL PIPE BEDDING AND TRENCHING

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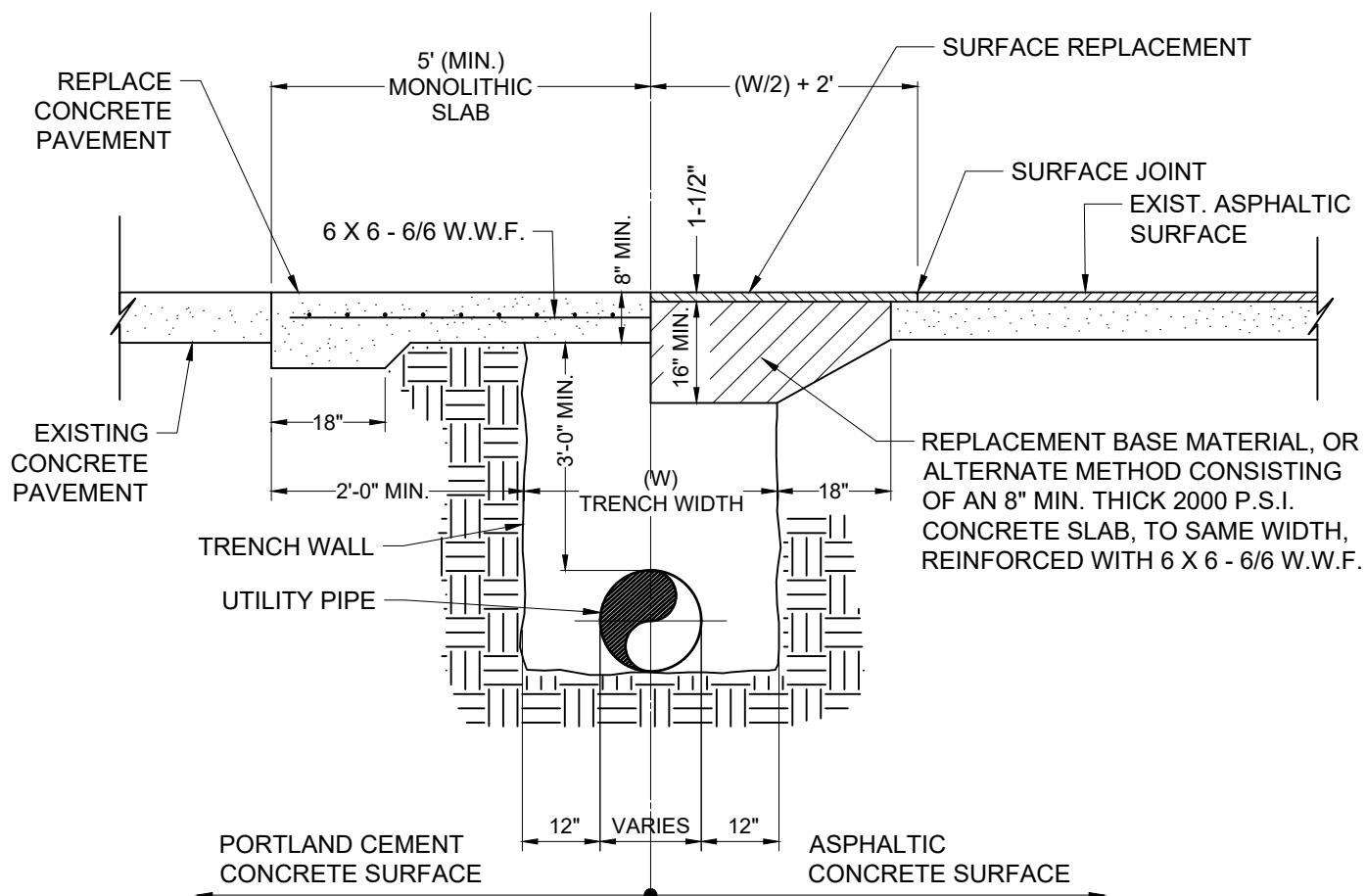
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GENERAL DETAIL PAVEMENT OPEN CUT PIPE INSTALLATION

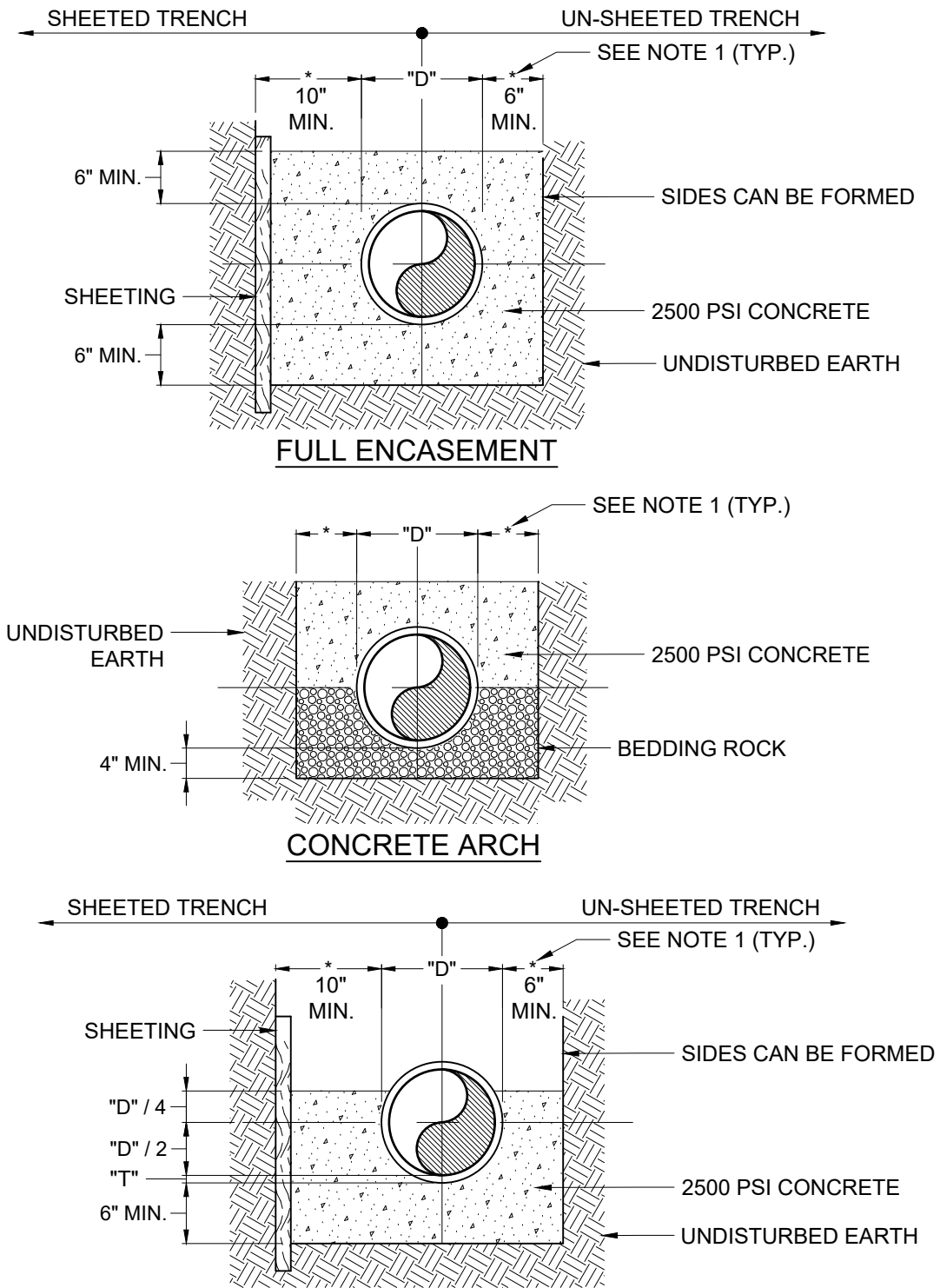
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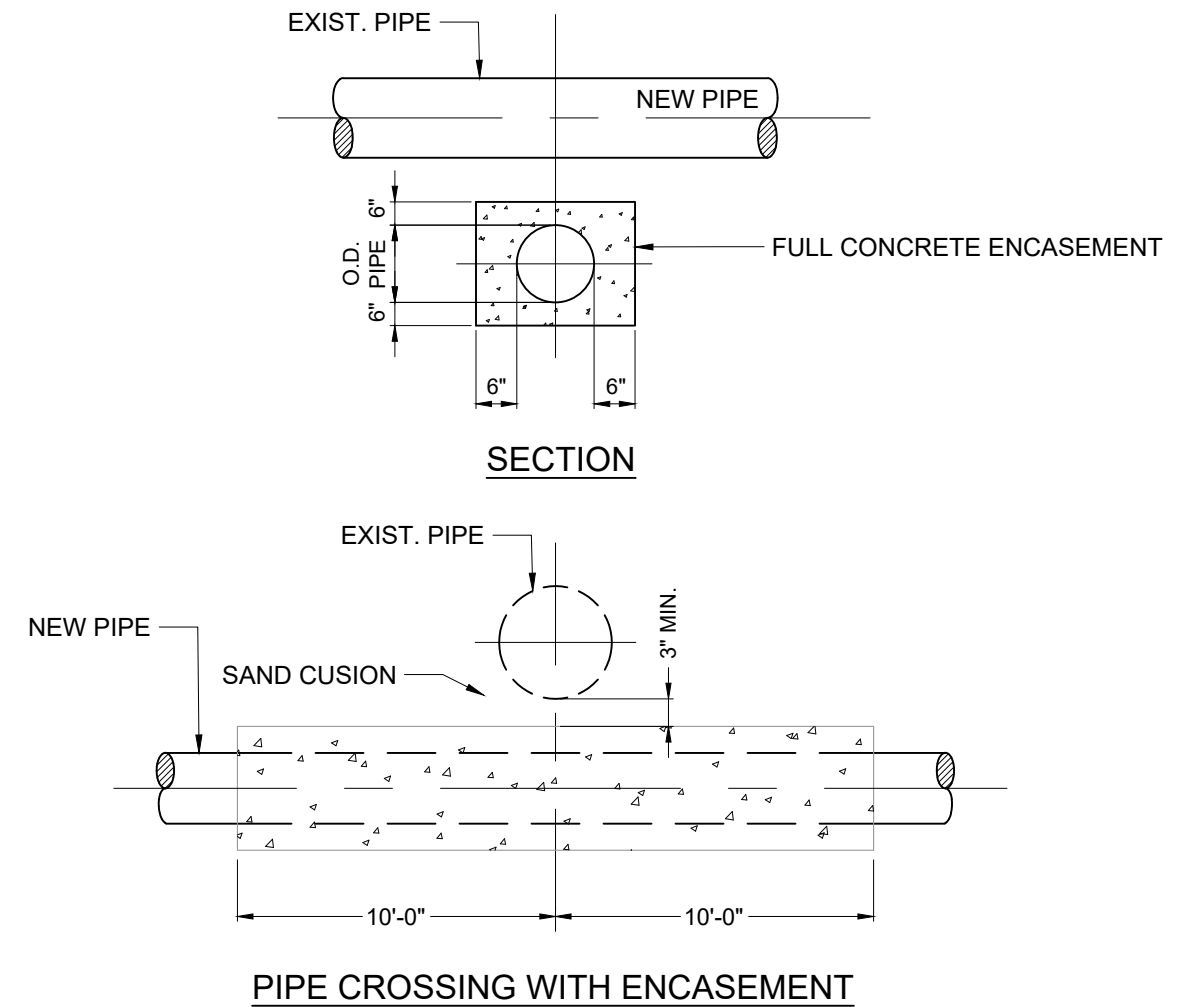
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NOTES:

1. (*): 15" MAX. FOR PIPE DIAMETER LESS THAN 24", AND 24" MAX. FOR PIPE DIA. 24" AND OVER.
2. "D" REFERS TO THE DIAMETER OF THE PIPE.
3. "I" REFERS TO THE THICKNESS OF THE PIPE WALL.
4. USE OF CONCRETE ARCH HALF ENCASEMENT OR FULL ENCASEMENT TO BE DETERMINED IN THE FIELD AS DIRECTED BY THE DISTRICT.
5. REFER TO SPECIFICATIONS FOR SHEETING AND BRACING EVACUATIONS.



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GENERAL DETAIL CONCRETE ENCASEMENT

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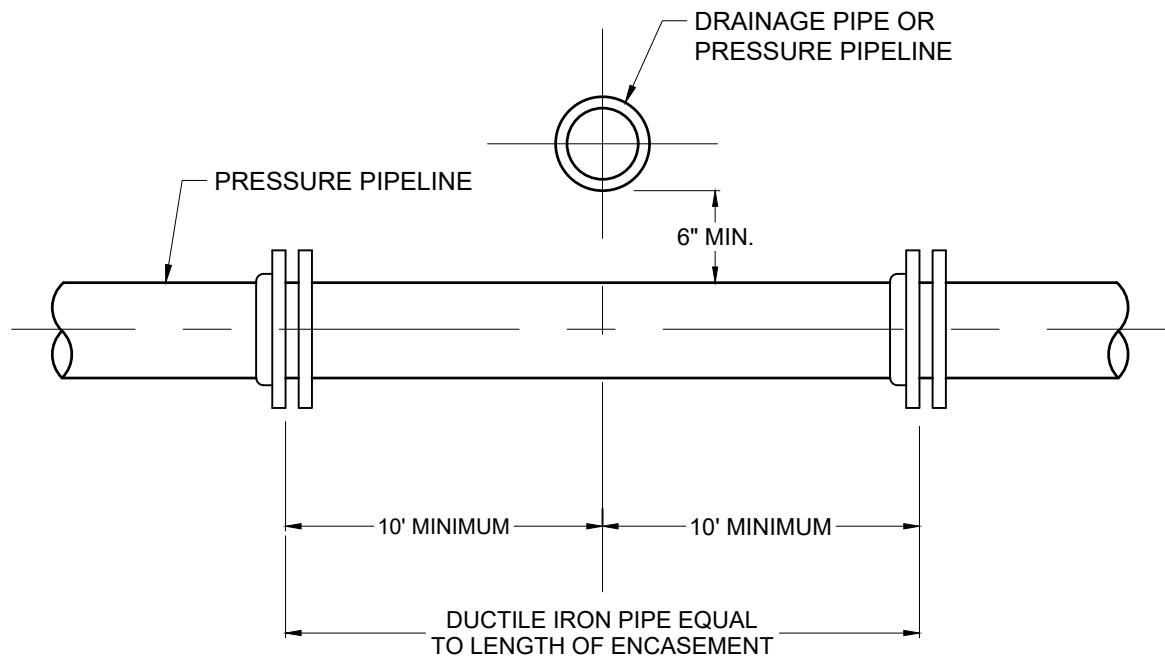
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NOTE:

1. TO UTILIZE THE DUCTILE IRON ALTERNATE, THE CROSSING MUST OCCURE MID JOINT ON BOTH PIPELINES.



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**GENERAL DETAIL
D.I. PIPE ALT. TO
CONC. ENCASEMENT**

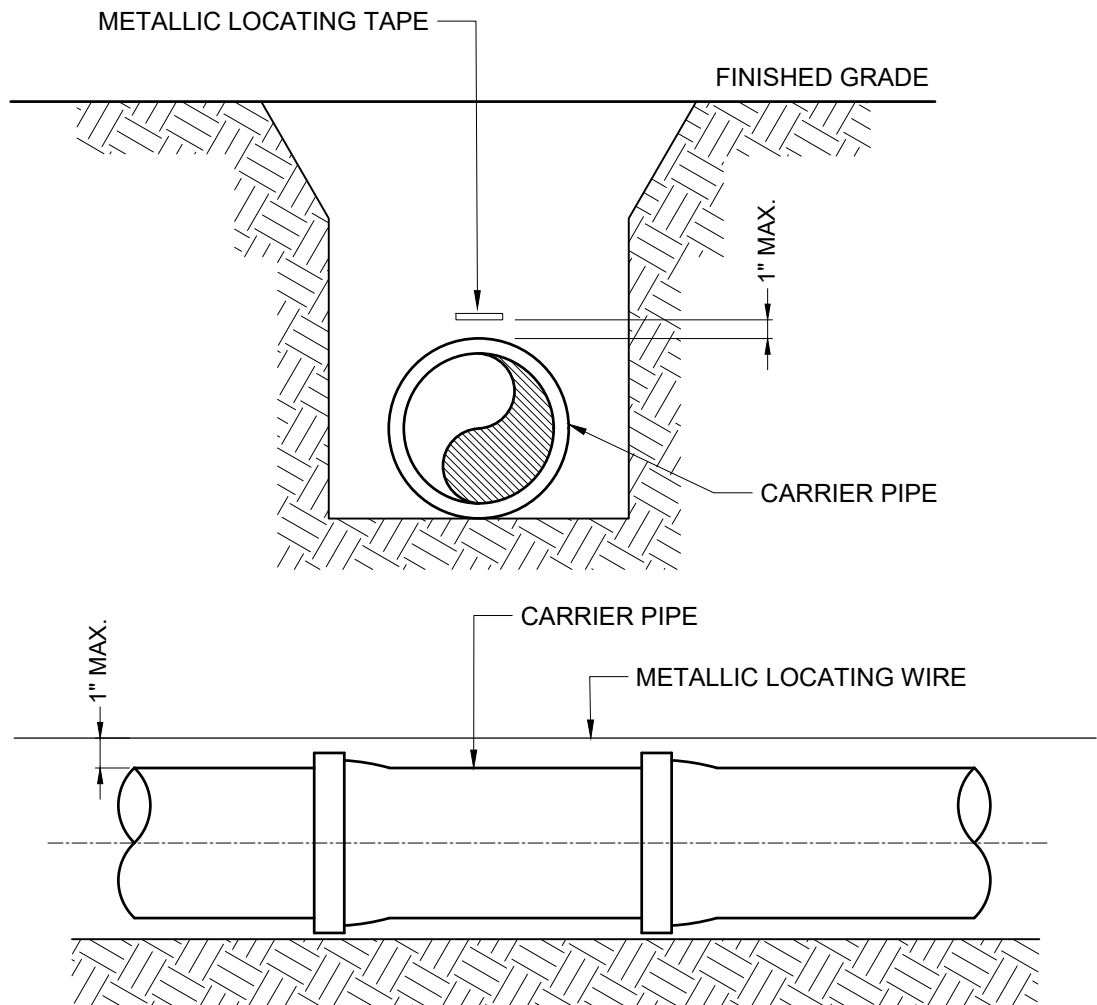
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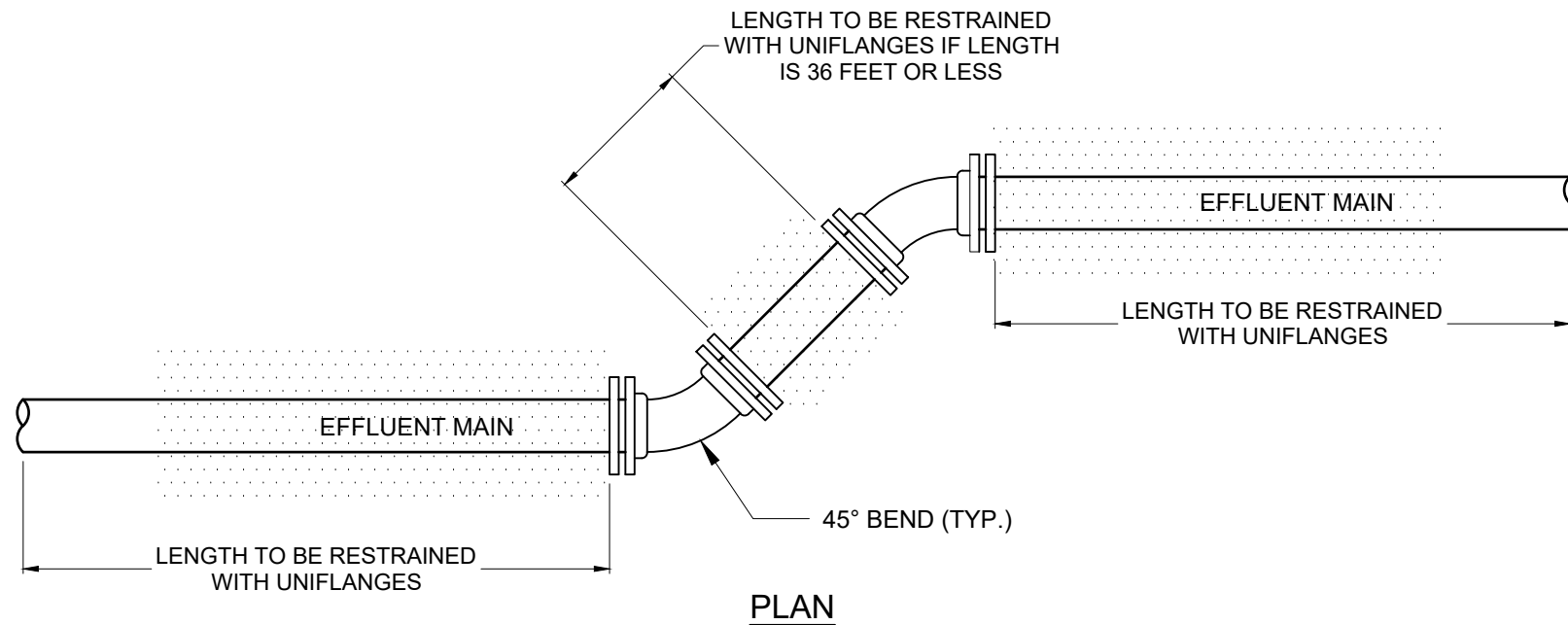
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NOTES:

1. PVC PIPE SHALL REQUIRE INSULATED METALLIC LOCATING WIRE (14 GAUGE COPPER) CAPABLE OF DETECTION BY A CABLE LOCATOR AND SHALL BE BRED DIRECTLY ABOVE THE CENTERLINE OF THE PIPE.
2. LOCATING WIRE SHALL TERMINATE AT THE TOP OF EACH VALVE BOX AND BE CAPABLE OF EXTENDING 12" ABOVE TOP OF BOX IN SUCH A MANNER SO AS NOT TO INTERFERE WITH VALVE OPERATION.
3. USE DUCT TAPE AS NECESSARY TO HOLD WIRE DIRECTLY ON THE TOP OF THE PIPE.

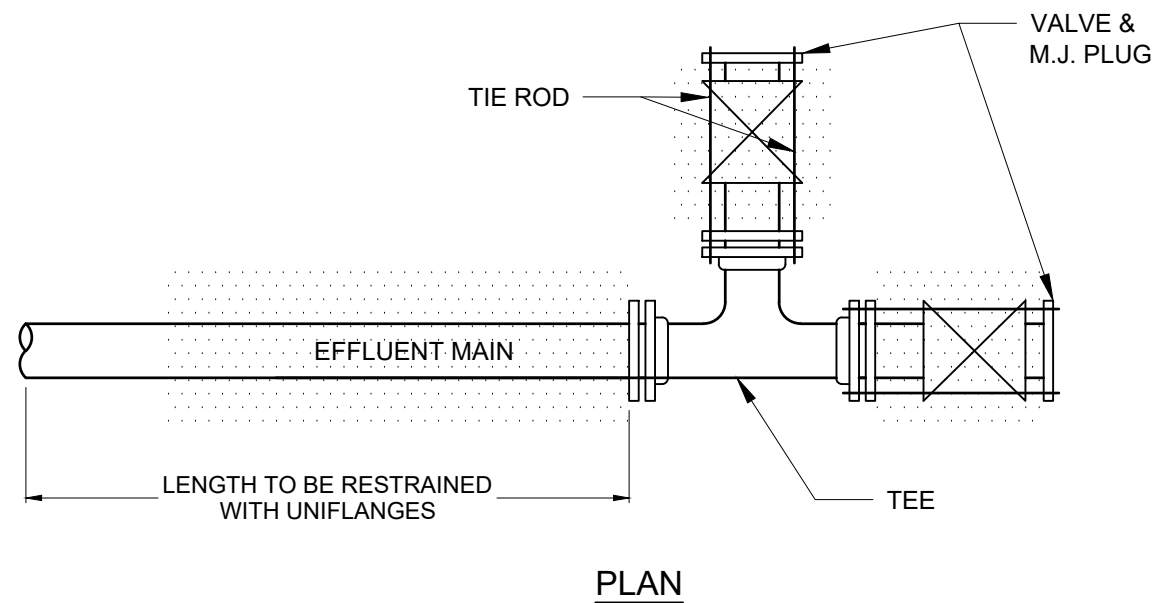
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NOTES

- A. LENGTH OF RESTRAINT REQUIRED FOR PIPE CONNECTING TO BRANCH OF TEE ONLY, IF NO VALVES, PLUGS, ETC. ARE AT THAT LOCATION.
- B. RESTRAINT REQUIRED AT BRANCH OF TEE ONLY.
- C. WHERE A TEE TERMINATES WITH A VALVE OR PLUG, RESTRAIN BACK TO VALVE WITH TIE-RODS.
- D. LENGTHS SHOWN ARE FROM EDGE OF FITTING IN EITHER DIRECTION USING APPROVED JOINT RESTRAINT DEVICES - SEE SPECIFICATIONS. DO NOT USE CONCRETE THRUST BLOCKS.

SCHEDULE



LENGTH OF PIPE TO BE RESTRAINED							
NOM. PIPE SIZE (IN.)	90° BEND	45° BEND	22.5° BEND	11.25° BEND	TEES	REDUCING TEES	VALVES, PLUGS, & DEAD-ENDS
4	17 FT.	7 FT.	3 FT.	2 FT.	B	-	50 FT.
6	22 FT.	10 FT.	5 FT.	2 FT.	3 FT.	-	66 FT.
8	28 FT.	12 FT.	6 FT.	3 FT.	23 FT.	-	88 FT.
10	33 FT.	13 FT.	7 FT.	4 FT.	38 FT.	-	104 FT.
12	41 FT.	18 FT.	10 FT.	5 FT.	57 FT.	-	121 FT.
14	46 FT.	19 FT.	11 FT.	6 FT.	76 FT.	-	142 FT.
16	53 FT.	23 FT.	13 FT.	7 FT.	89 FT.	-	160 FT.
10X6	-	-	-	-	-	B	-
12X6	-	-	-	-	-	B	-
12X10	-	-	-	-	-	26 FT.	-
14X12	-	-	-	-	-	27 FT.	-
16X12	-	-	-	-	-	34 FT.	-



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GENERAL DETAIL RESTRAINED JOINT PIPING

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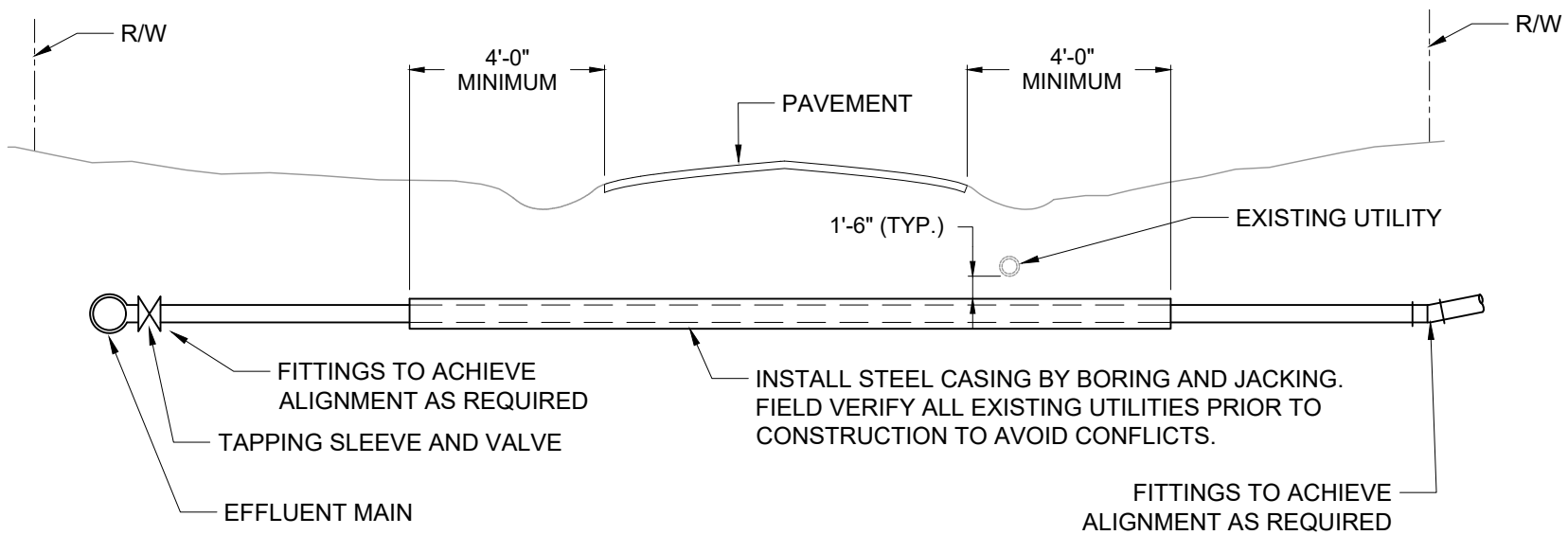
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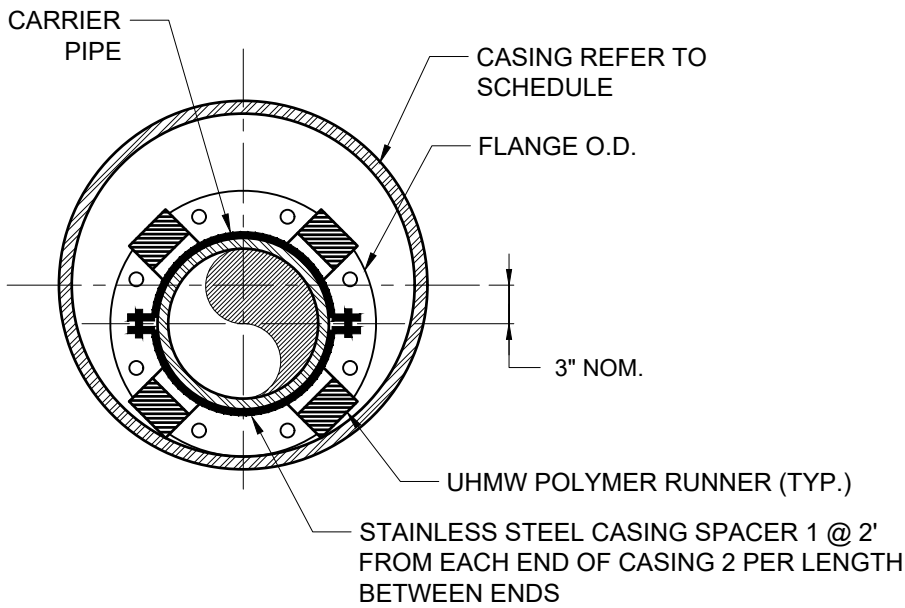
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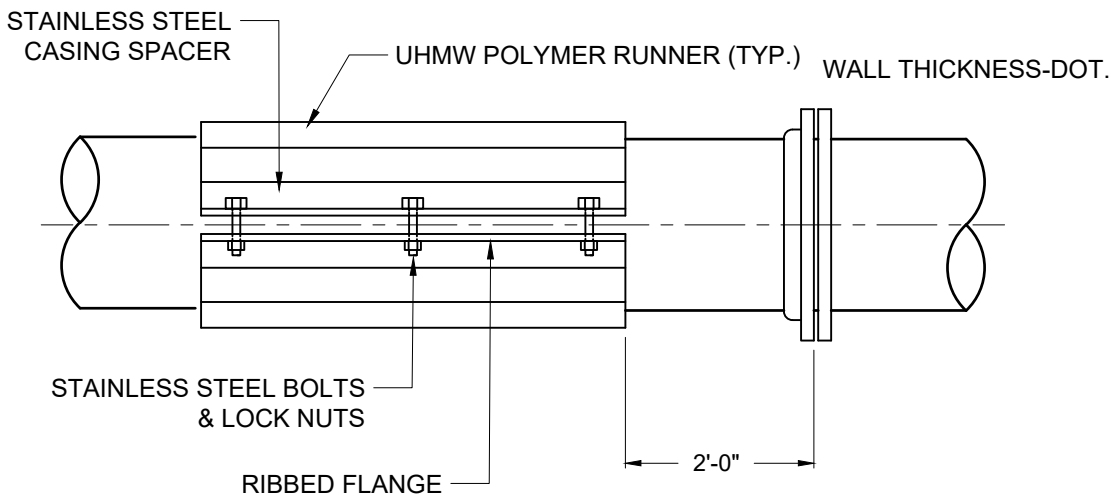
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SECTION



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NOTES:

1. ROTATION OF CARRIER PIPE INSIDE CASING PIPE WILL NOT BE ALLOWED.
2. ANNULAR SPACE SHALL REMAIN EMPTY. SEAL BOTH ENDS WITH 12" THICK CLASS "C" CONCRETE PLUG.
3. MINIMUM CASING WALL THICKNESS 0.25".
4. WHERE INSTALLATION IS TO PROVIDE FOR FUTURE CONNECTION MAINTAIN DESIGN GRADE AND LOCATION FOR BOTH CASING AND CARRIER PIPE.
5. PROVIDE RESTRAINED JOINTS FOR CARRIER PIPE.
6. CARRIER PIPE SHALL CONFORM TO REQUIREMENTS SPECIFIED FOR PIPING IN SYSTEM OF WHICH CROSSING IS A PART.

MIN. CARRIER PIPE AND CASING PIPE SIZES (IN.)								
CARRIER PIPE NOM. DIA.	4	6	8	12	16	18	20	24
CASING PIPE NOM. DIA.	14	16	18	24	30	30	36	36
WALL THICKNESS-F.E.C. RR.	0.281	0.281	0.312	0.406	0.469	0.469	0.625	0.625
WALL THICKNESS-DOT.	0.250	0.250	0.250	0.250	.312	.312	.375	.375



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GENERAL DETAIL
JACK AND BORE

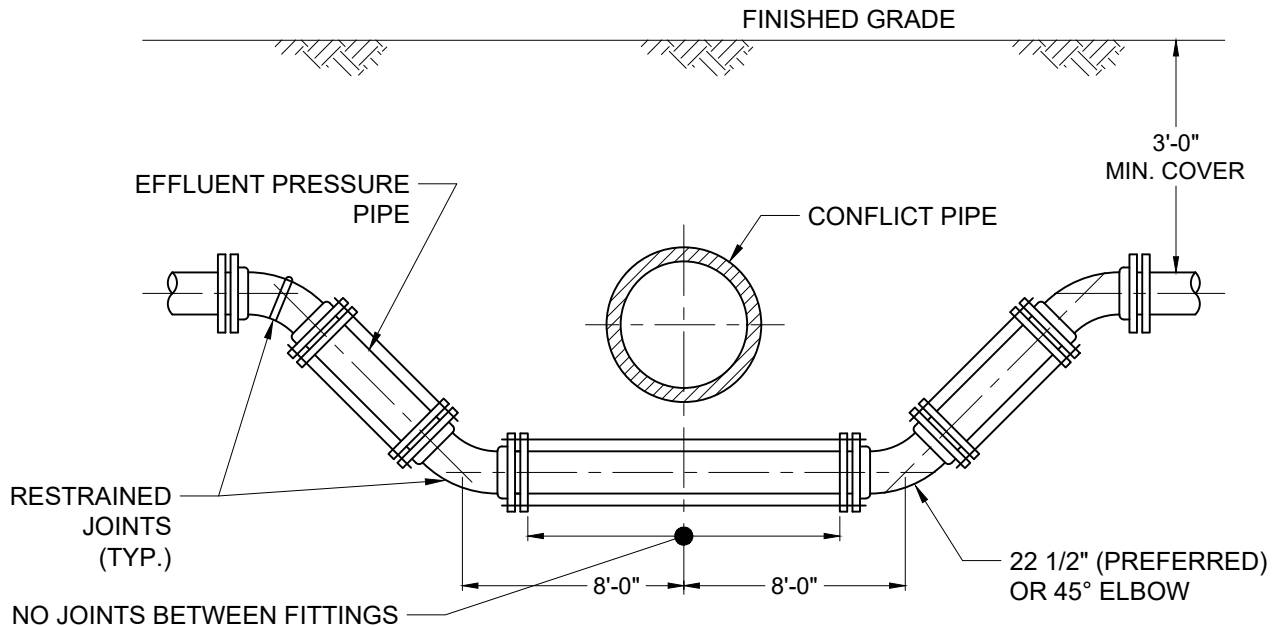
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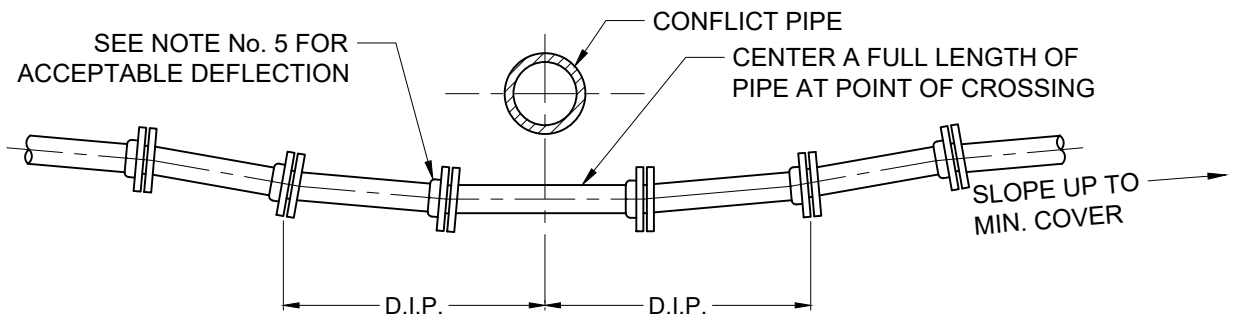
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FITTING TYPE



DEFLECTION TYPE

NOTES:

1. PROVIDE A MINIMUM OF 18" VERTICAL SEPARATION BETWEEN EFFLUENT MAINS AND EITHER WATER OR FORCE MAINS. WHERE THIS MINIMUM SEPARATION CANNOT BE MAINTAINED, ARRANGE CROSSING SO THAT PIPE JOINTS ARE EQUIDISTANT FROM THE POINT OF CROSSING. BOTH PIPES SHALL BE D.I.P. OR CONCRETE ENCASED FOR 10 FEET EACH SIDE OF CROSSING.
2. INSTALL EFFLUENT MAINS UNDER WATER MAINS AND OVER FORCE MAINS OR STORM SEWER.
3. PROVIDE JOINT RESTRAINT FOR FITTINGS.
4. THE DEFLECTION TYPE CROSSING IS PREFERRED.
5. DO NOT EXCEED 75% OF MANUFACTURERS RECOMMENDED MAXIMUM JOINT DEFLECTION.
6. PROVIDED A MINIMUM OF 18" VERTICAL SEPARATION BETWEEN EFFLUENT MAINS AND EITHER WATER OR SEWER MAINS. SEPARATION AS CLOSE AS 5 FEET "C" TO "c" MAY BE ALLOWED WITH ENGINEER'S APPROVAL.

**DUNES COMMUNITY
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Effluent Reuse System Cover

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EF-04	EFFLUENT SYSTEM VALVE AND BOX DETAIL
EF-05	EFFLUENT REUSE SYSTEM BLOW-OFF ASSEMBLY AND BOX
EF-06	EFFLUENT REUSE SYSTEM AIR OR AIR/ VACUUM RELEASE VALVE
EF-07	EFFLUENT WATER SYSTEM FLUSHING HYDRANT ASSEMBLY



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**EFFLUENT REUSE SYSTEM
COVER**

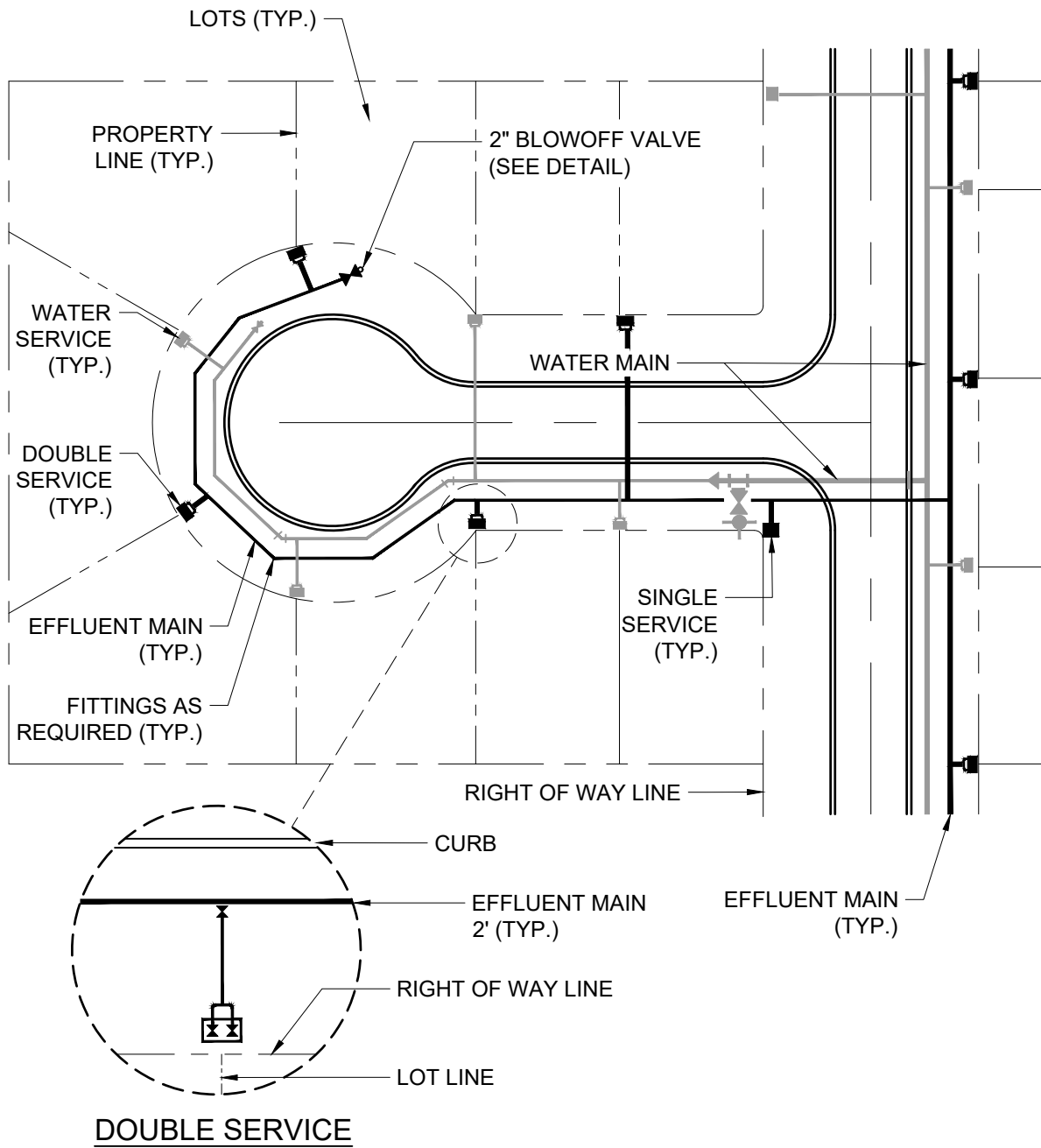
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NOTE:

1. INSTALL REUSE SERVICES AT ALTERNATE LOT LINES FROM THE POTABLE WATER SERVICES.



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**EFFLUENT REUSE SYSTEM
SERVICE CONNECTION
LOCATIONS**

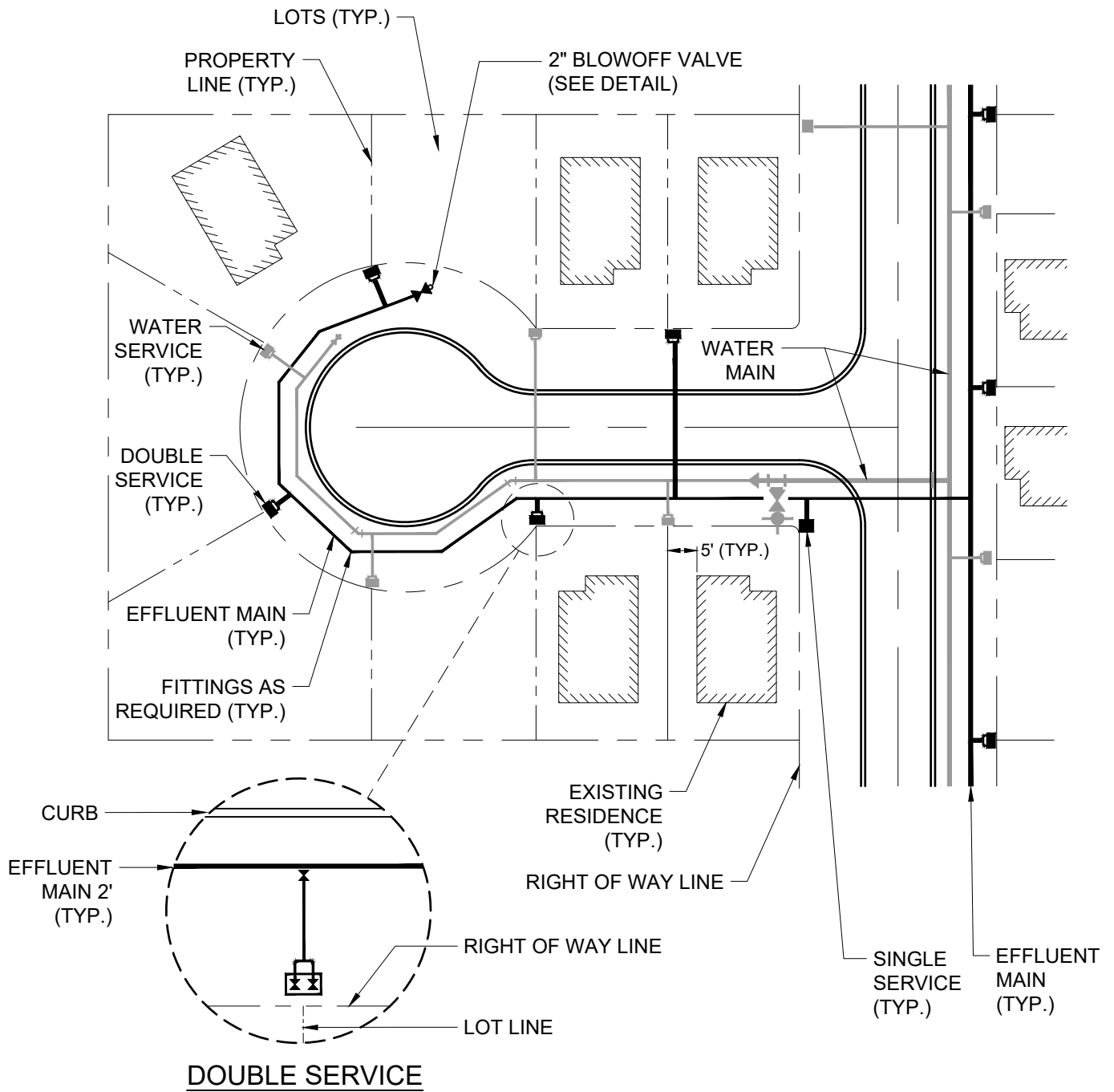
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NOTE:

1. INSTALL REUSE SERVICES AT ALTERNATE LOT LINES FROM THE POTABLE WATER SERVICES.



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**EFFLUENT
WATER SYSTEM SERVICE
CONN. EXIST. SUBDIVISION**

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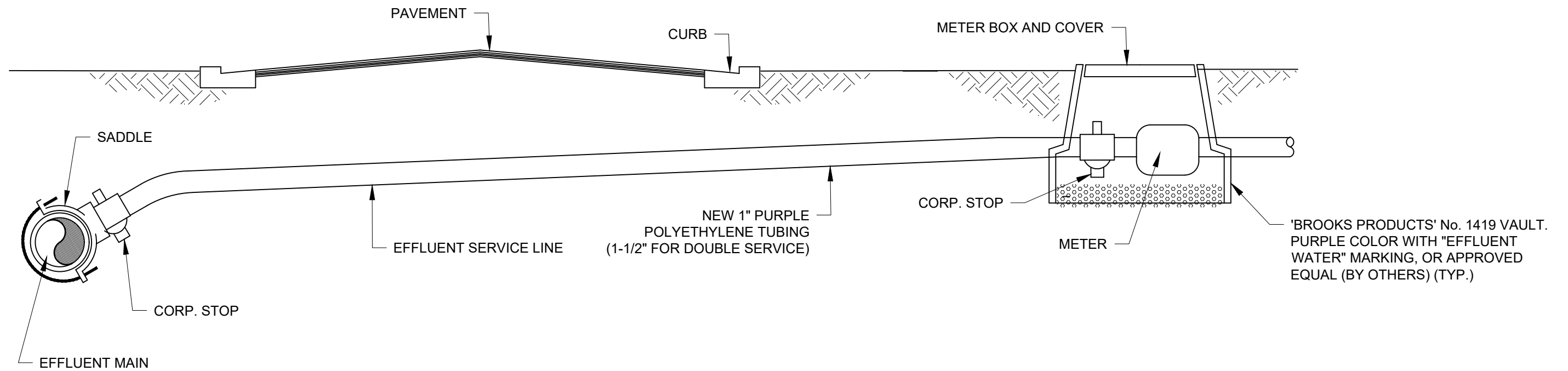
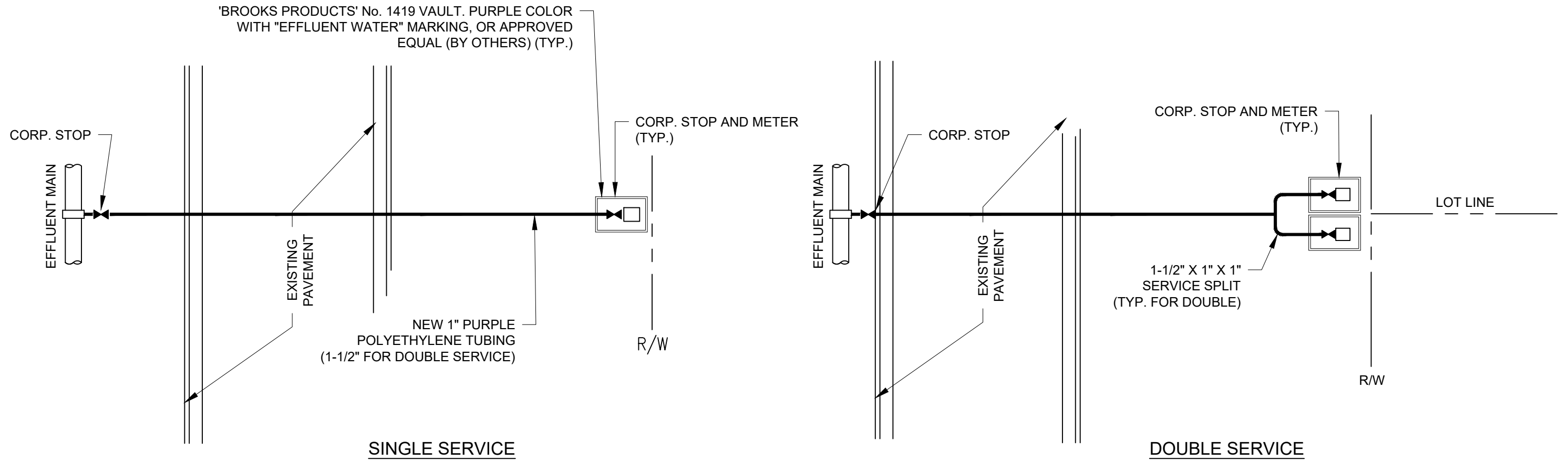
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NEW EFFLUENT SERVICE DETAIL

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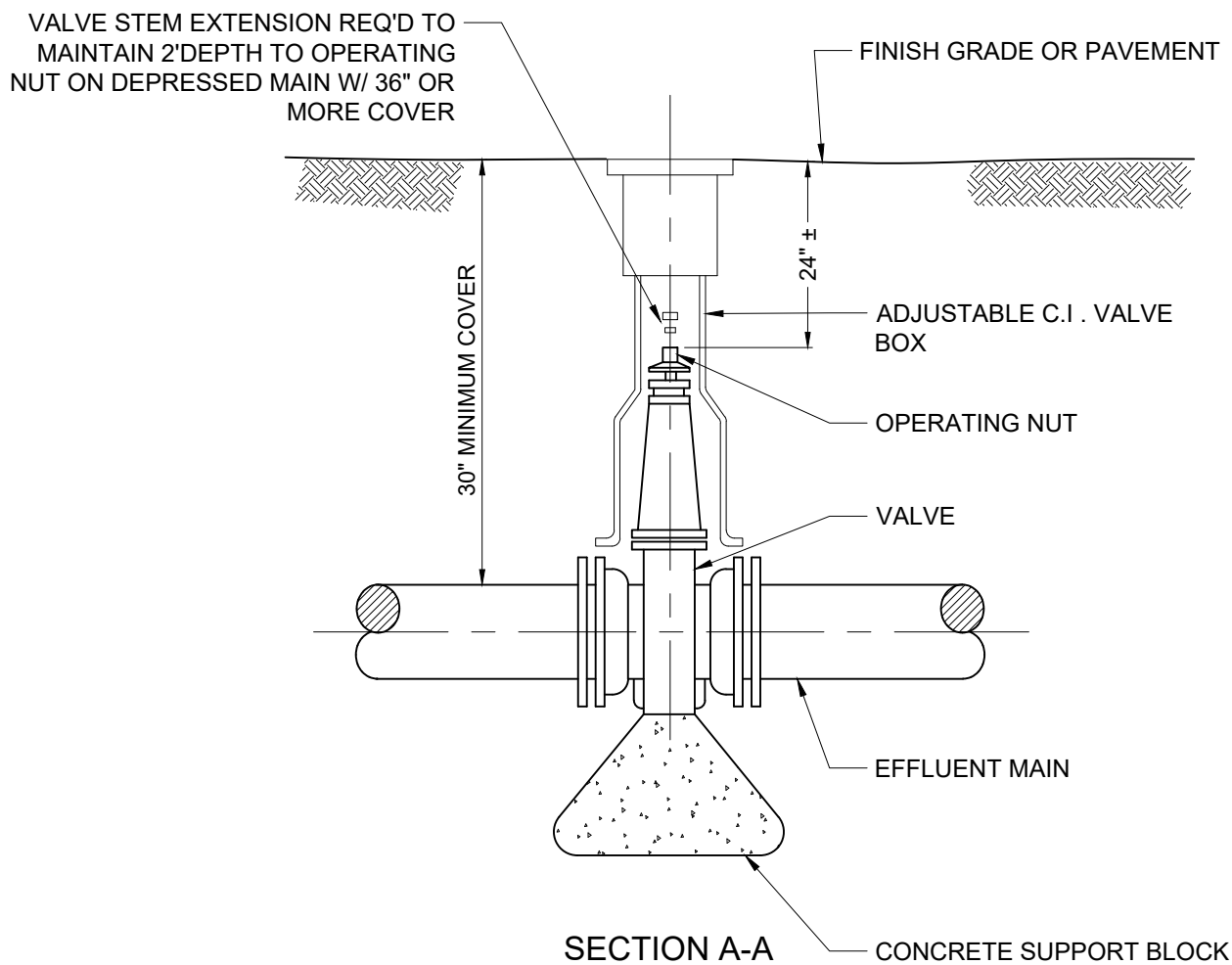
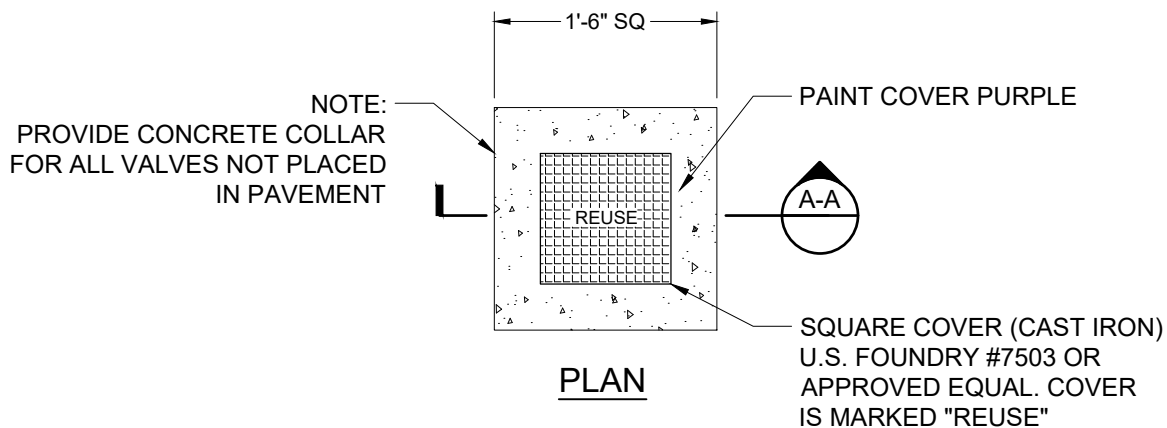
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**EFFLUENT SYSTEM
VALVE AND BOX DETAIL**

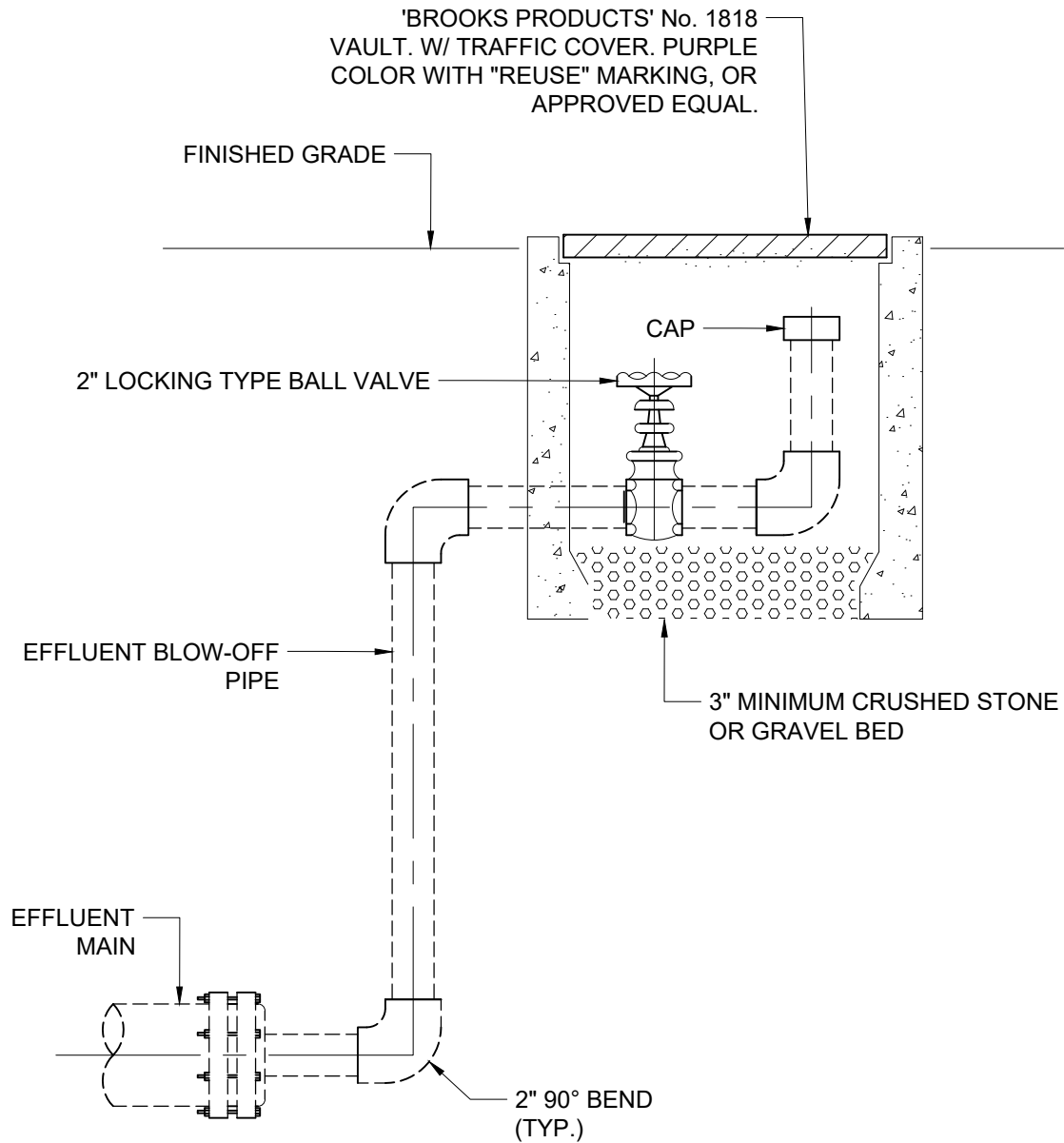
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EFFLUENT REUSE SYSTEM BLOW-OFF ASSEMBLY AND BOX

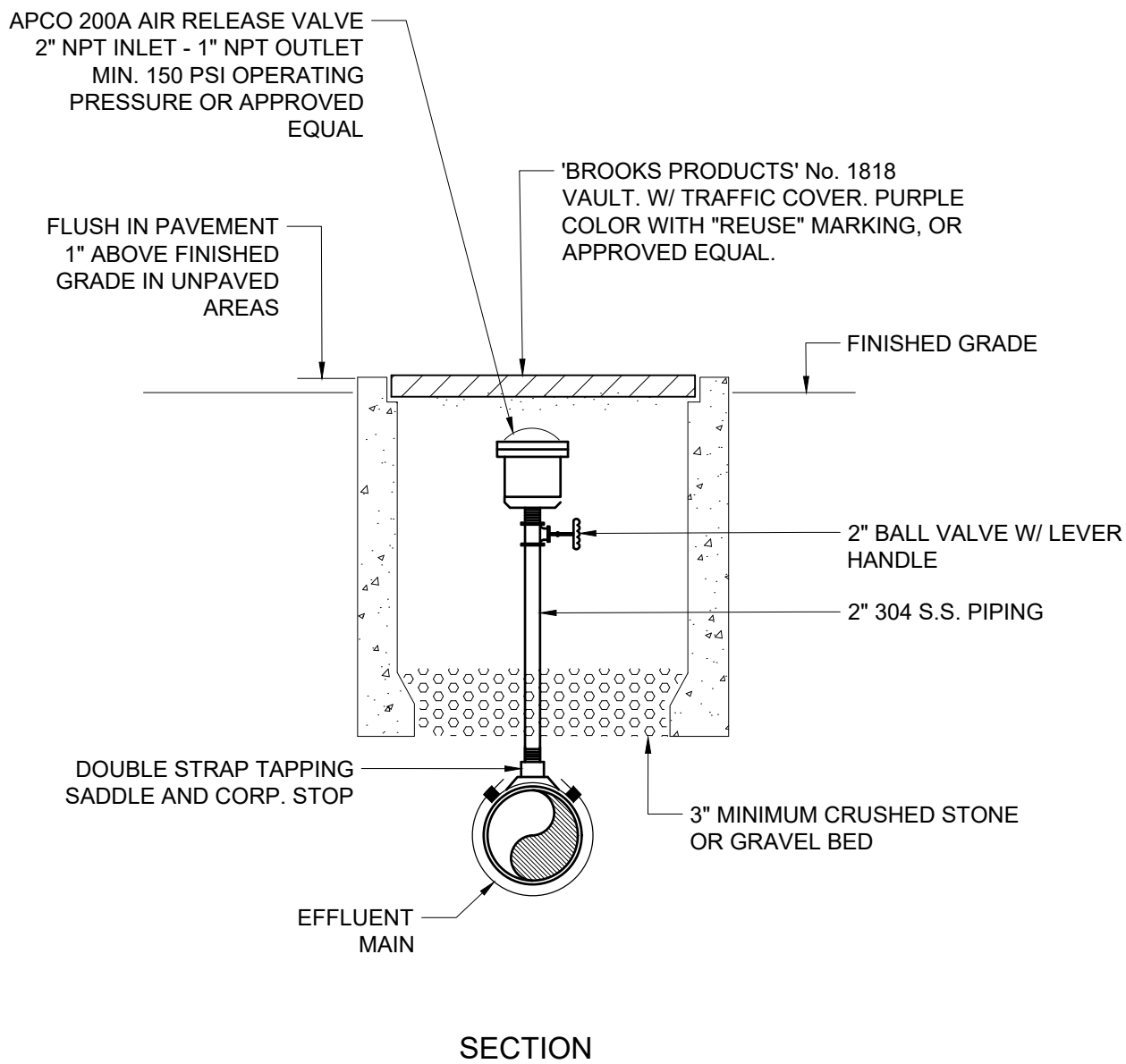
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EFF. REUSE SYSTEM AIR OR AIR/ VACUUM RELEASE VALVE

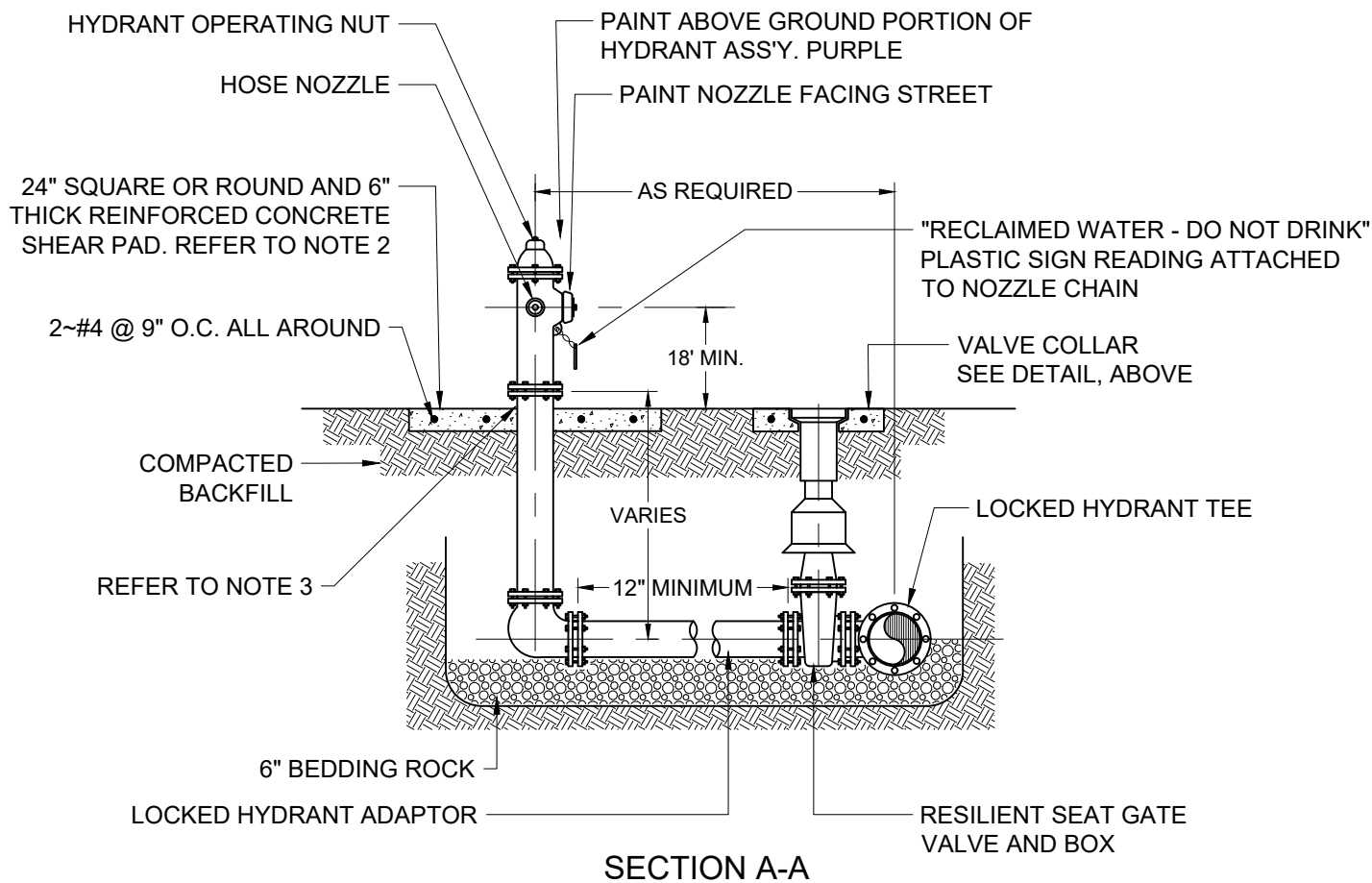
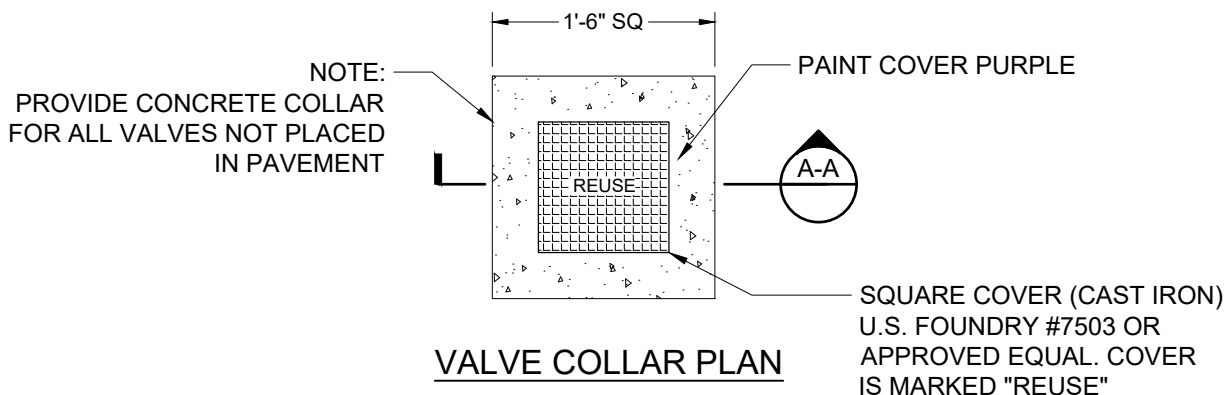
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NOTES:

1. FLUSHING HYDRANT SHALL BE SUPPLIED WITHOUT A WEEP HOLE, OR WITH A PERMANENTLY PLUGGED WEEP HOLE.
2. THE DEVELOPER MAY INSTALL THE SHEAR PAD RECESSED UP TO 4 INCHES BELOW FINISHED GRADE AND SOD THE RECESSED SECTION.
3. CLEARANCE BETWEEN BOTTOM OF BOLTS AND TOP OF SHEAR PAD SHALL BE A 6" MINIMUM.



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EFFLUENT WATER SYSTEM FLUSHING HYDRANT ASSEMBLY

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DUNES COMMUNITY
DEVELOPMENT DISTRICT

Meter Configuration Details
Cover and Notes

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M-03	METER ASSEMBLY CONFIGURATION 5 AND BOX
M-04	METER ASSEMBLY CONFIGURATION 6 & 7 AND BOX

NOTES:

1. BYPASS PIPING AND APPURTENANCES REQUIRED UNLESS UTILITY APPROVES WITHOUT BYPASS PIPING AND APPURTENANCES.
2. ALL VALVES & FITTINGS TO BE DUCTILE IRON RESTRAINED JOINT. OTHER MATERIALS MUST BE APPROVED BY OWNER AND UTILITY PRIOR TO INSTALLATION OR USE.
3. MINIMUM LENGTH OF 5 DIAMETERS OF STRAIGHT PIPE TO BE INSTALLED BETWEEN INLET SIDE OF METER AND ANY FITTING OR VALVE. MINIMUM LENGTH OF 3 PIPE DIAMETERS OF STRAIGHT PIPE TO BE INSTALLED BETWEEN THE OUTLET SIDE OF METER AND ANY FITTING OR VALVE.
4. ALL PIPE AND FITTINGS TO BE SAME SIZE AS METER.
5. TYPICAL METER AND/ OR VALVE BOXES SHALL BE 48" DEEP WITH OPEN BOTTOM, PRECAST WITH NOTCH TO ACCOMMODATE PIPE INSTALLED 36" DEEP, INSTALLED ON 12" OF #57 STONE. ALTERNATE BOX MATERIALS AND DIMENSIONS MUST BE APPROVED BY THE OWNERS AND UTILITY PRIOR TO INSTALLATION OR USE.
6. CONTRACTOR SHALL PROVIDE SHOP DRAWINGS (WITH DIMENSIONS, MATERIALS, AND OTHER TYPICAL SUBMITTAL INFORMATION) OF METER AND VALVE BOXES, BACKFLOW PREVENTION DEVICES, AND PIPING FOR APPROVAL BY OWNER AND UTILITY.
7. METER ASSEMBLY AND BOX SECTIONS FOR VARIOUS CONFIGURATIONS ARE SIMILAR, HOWEVER, EACH CONFIGURATION WILL HAVE VARYING METER BOX LENGTHS, DEPTHS, AND WIDTHS AS INDICATED BY THE PLAN. DIMENSIONS SHOWN ARE MINIMUM AND SHALL BE INCREASED BASED UPON ACTUAL SIZE OF METER PROVIDED, VERIFY DEPTH OF METER BOX WITH UTILITY.
8. BACKFLOW PREVENTION DEVICES SHALL BE IN ACCORDANCE WITH THE APPROVED CROSS CONNECTION CONTROL PROGRAM.CONFIGURATIONS NO. 1 AND 2 ARE NOT ALLOWED WHEN REDUCED PRESSURE ZONE BACKFLOW PREVENTION DEVICES ARE REQUIRED.
9. MINIMUM 5000 P.S.I. CONCRETE REQUIRED.
10. PIPE THREE INCHES AND GREATER SHALL BE DUCTILE IRON. OTHER MATERIALS MUST BE APPROVED BY OWNER AND UTILITY PRIOR TO INSTALLATION OR USE. FLANGES ARE REQUIRED FOR ABOVE GROUND AND INSIDE VAULT PIPING AND FITTINGS. MECHANICAL JOINTS SHALL BE PROVIDED FOR BURIED PIPING AND FITTINGS.
11. ADEQUATE MECHANICAL RESTRAINT SHALL BE PROVIDED. THRUST BLOCKS ARE NOT ALLOWED UNLESS APPROVED BY OWNER AND UTILITY.
12. SEE PROJECT SPECIFICATIONS AND UTILITY STANDARDS FOR EXCAVATION, BACKFILL, AND COMPACTION REQUIREMENTS.
13. UNLESS OTHERWISE SPECIFIED, VALVES THREE INCHES AND LARGER SHALL BE RESILIENT WEDGE GATE VALVES WITH NON-RISING STEMS CONFORMING WITH AWWA C509 AND SHALL HAVE A CLEAR WATERWAY EQUAL TO THE NOMINAL PIPE DIAMETER. BURIED GATE VALVES SHALL BE RUBBER ENCAPSULATED AND SHALL HAVE OPERATING NUTS AND ADJUSTABLE VALVE BOXES AND COVERS. ABOVE GROUND VALVES SHALL HAVE HAND WHEEL OPERATORS. VALVES SMALLER THAN THREE INCH SHALL BE FULL-PORT BALL VALVES WITH CAST BRONZE BODY, BRONZE TEE HEAD, STEM WITH CHECK, FULL ROUNDWAY OPENING AND PROVISIONS FOR LOCKING IN A CLOSED POSITION. CURB STOPS MAY BE USED FOR SERVICES SMALLER THAN THREE INCHES.
14. PIPING, FITTINGS, AND VALVES SHALL BE PAINTED IN ACCORDANCE WITH PROJECT SPECIFICATIONS AND UTILITY STANDARDS.
15. UTILITY TO SPECIFY METER TYPE, INCLUDING STRAINER REQUIREMENTS.



DUNES COMMUNITY
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STANDARD DETAILS

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METER CONFIGURATION DETAILS COVER AND NOTES

Rev:

Date:
2/10/20

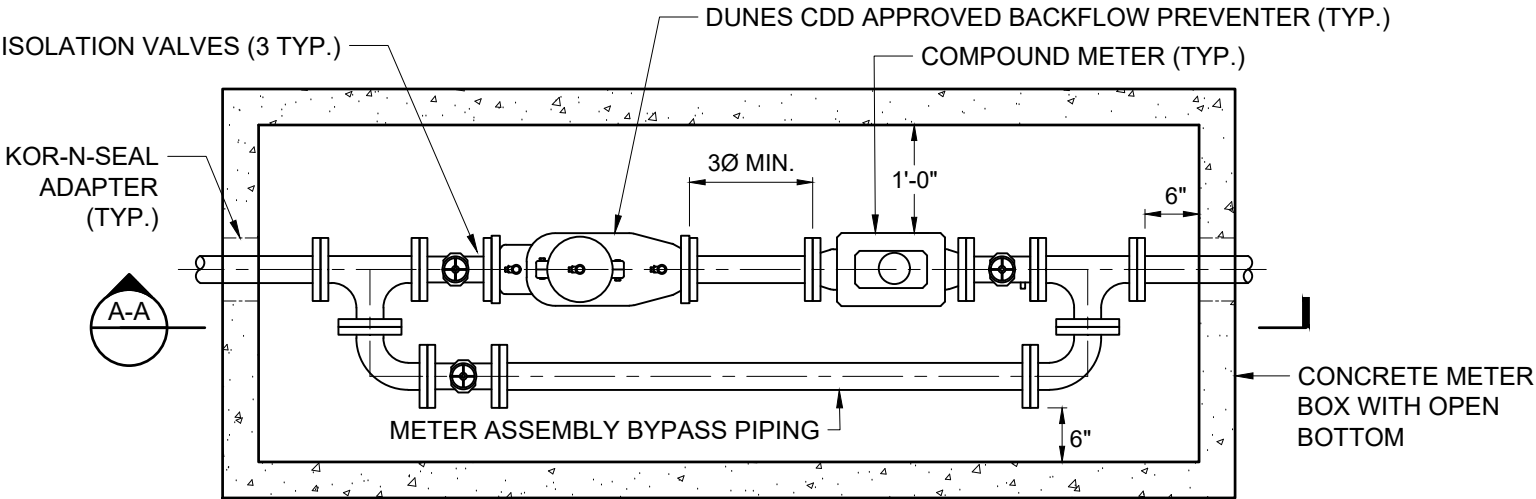
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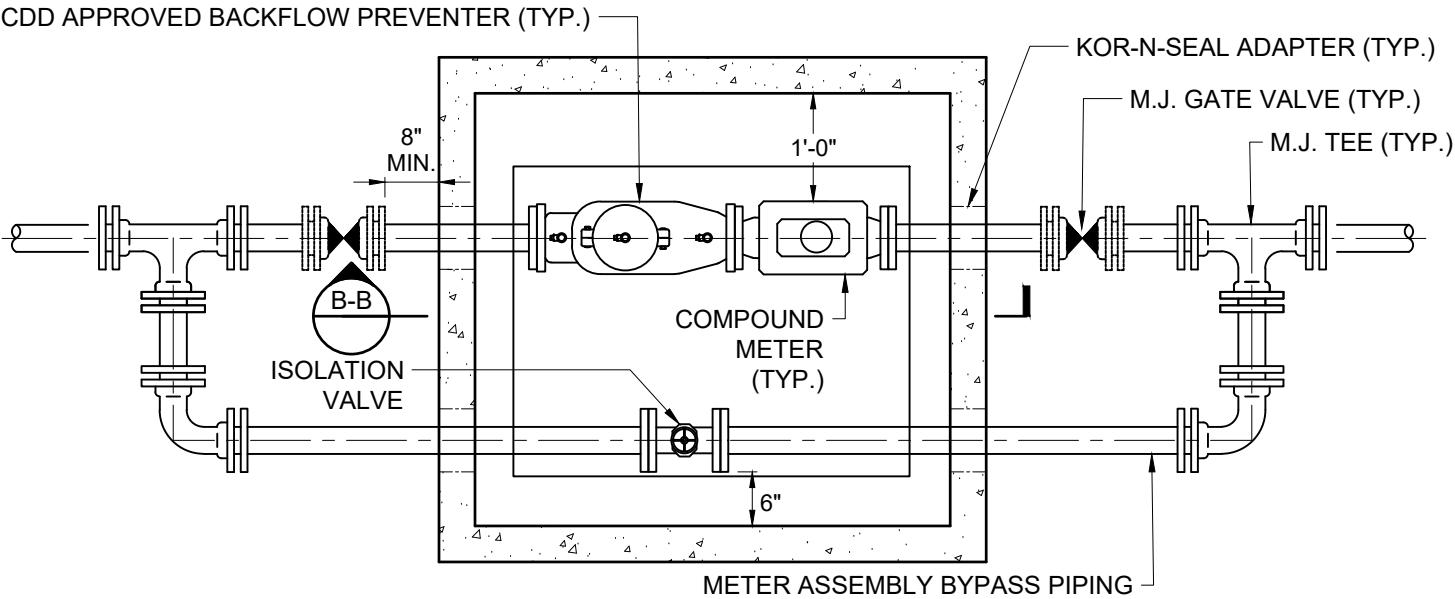
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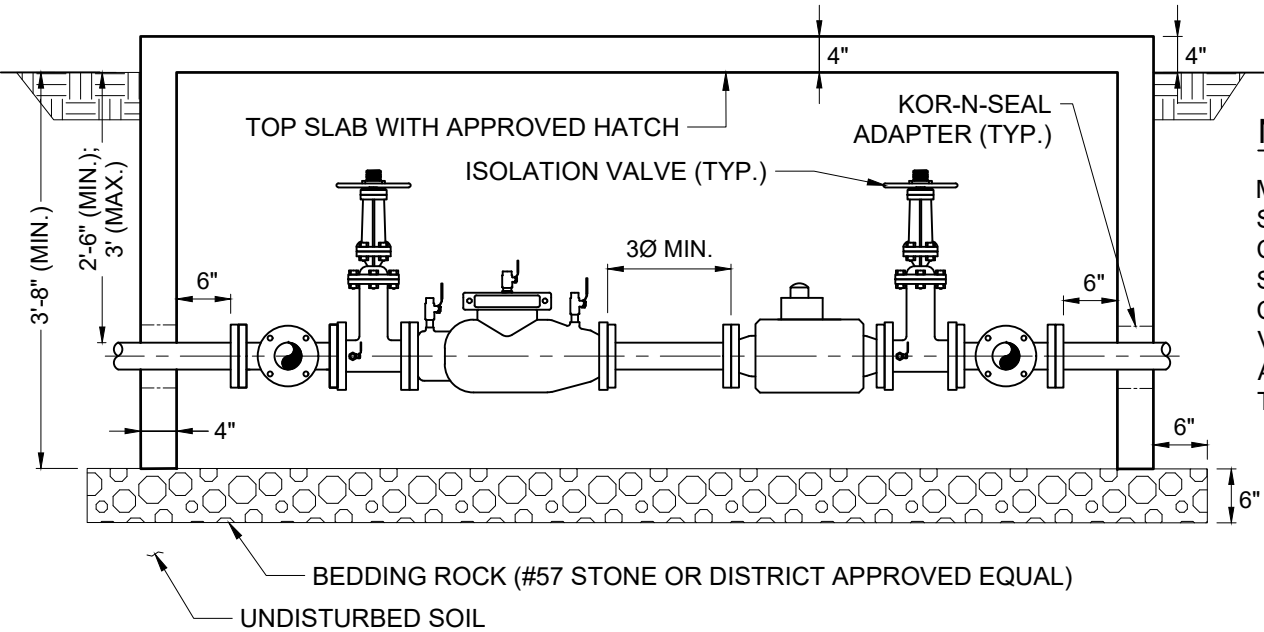
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CONFIGURATION NO. 1 - ENTIRE ASSEMBLY WITHIN METER VAULT

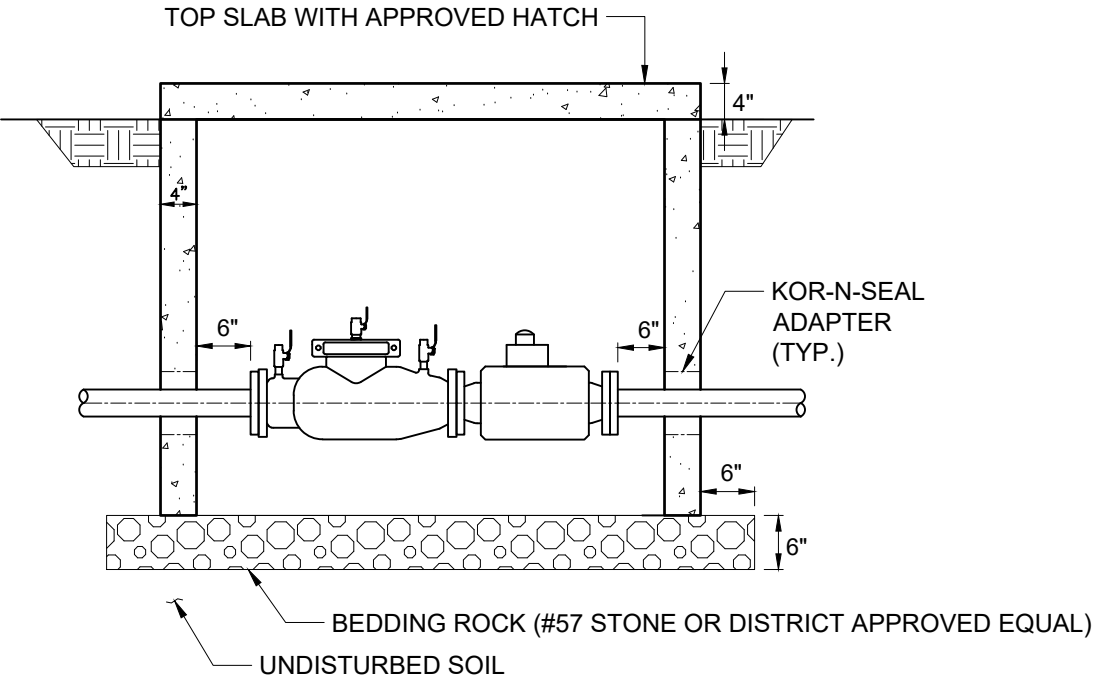


CONFIGURATION NO. 2 - BELOW GROUND BACKFLOW PREVENTER



SECTION A-A

NOTE:
METER ASSEMBLY AND BOX SECTIONS FOR CONFIGURATIONS 1 AND 2 ARE SIMILAR. HOWEVER, EACH CONFIGURATION WILL HAVE VARYING METER BOX LENGTHS AND WIDTHS AS INDICATED BY THE PLAN.



SECTION B-B

SCHEDULE OF VALUES	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
	5'-16"	5'-16"	5'-16"	5'-16"	5'-16"	5'-16"	5'-16"	5'-16"	5'-16"	5'-16"	5'-16"	5'-16"	5'-16"	5'-16"	5'-16"	5'-16"	5'-16"	5'-16"	5'-16"



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METER ASSEMBLY CONFIGURATION 1 & 2 AND BOX

Rev:

Date:

Scale:

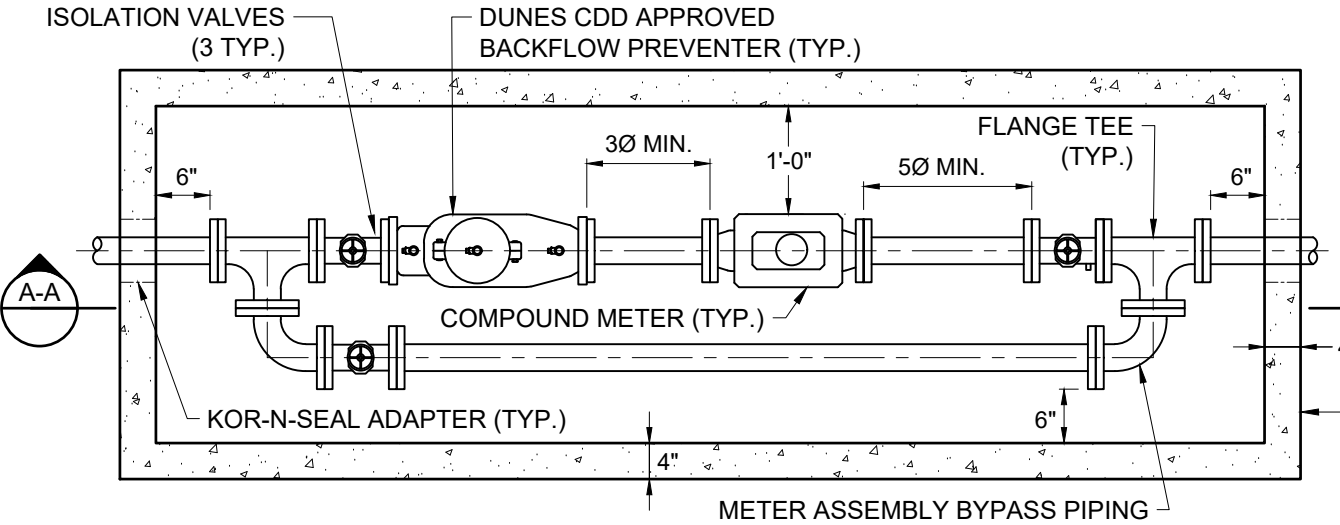
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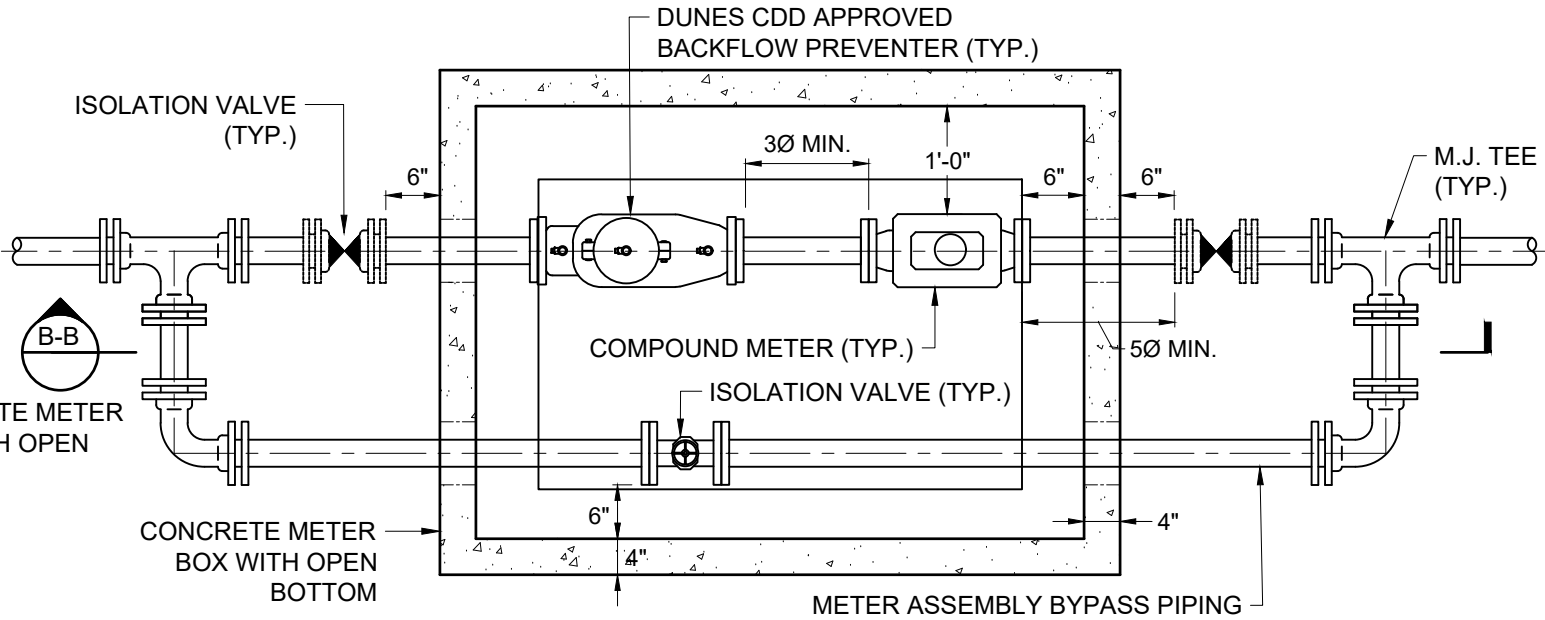
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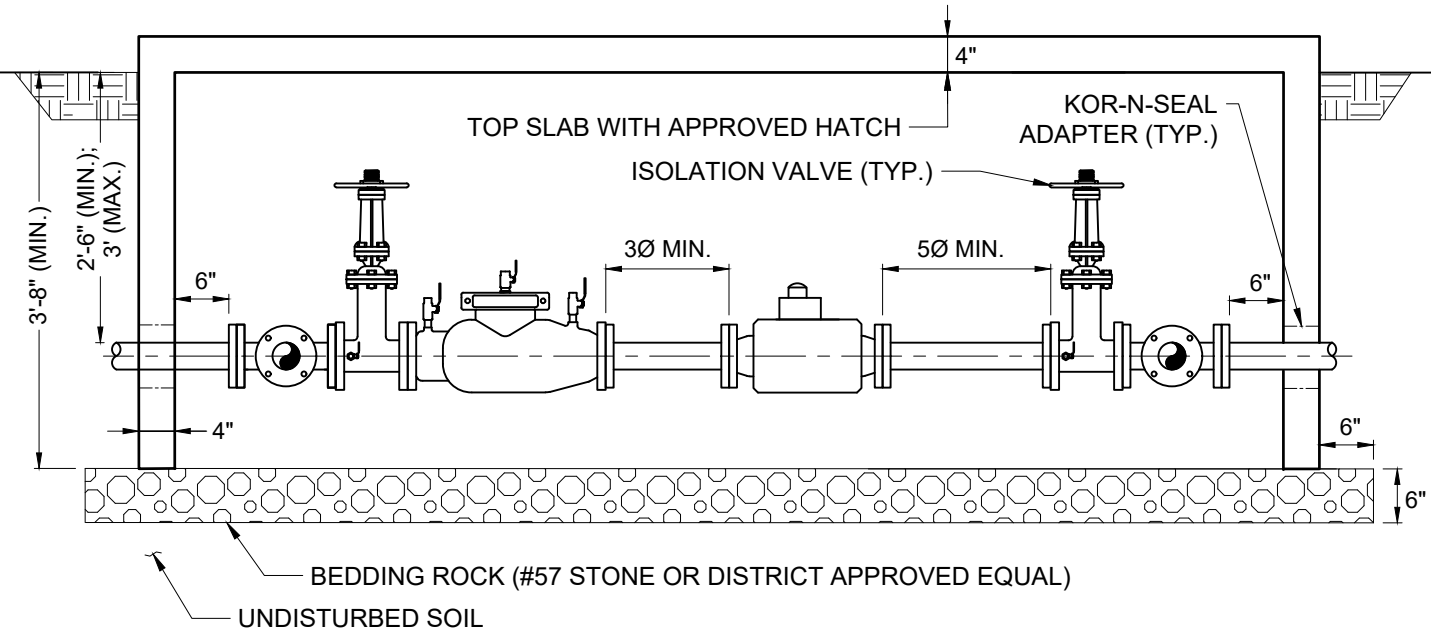


CONFIGURATION NO. 3 - ENTIRE ASSEMBLY WITHIN METER VAULT PLAN

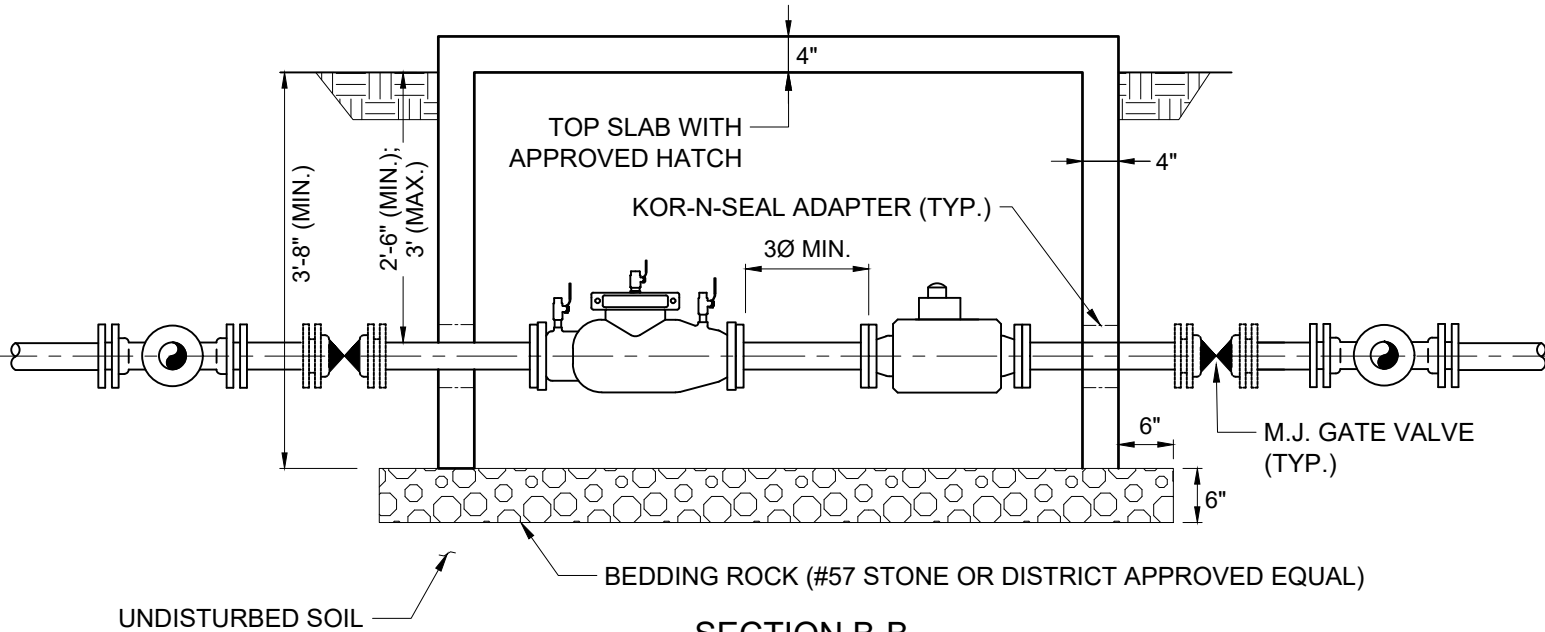


CONFIGURATION NO. 4 - BELOW GROUND BACKFLOW PREVENTER PLAN

NOTE:
METER ASSEMBLY AND BOX SECTIONS FOR CONFIGURATIONS 3 AND 4 ARE SIMILAR. HOWEVER, EACH CONFIGURATION WILL HAVE VARYING METER BOX LENGTHS AND WIDTHS AS INDICATED BY THE PLAN.



SECTION A-A



SECTION B-B

SCHEDULE OF VALUES	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
	5'-16"	5'-16"	5'-16"	5'-16"	5'-16"	5'-16"	5'-16"	5'-16"	5'-16"	5'-16"	5'-16"	5'-16"	5'-16"	5'-16"	5'-16"	5'-16"	5'-16"	5'-16"	5'-16"



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METER ASSEMBLY CONFIGURATION 3 & 4 AND BOX

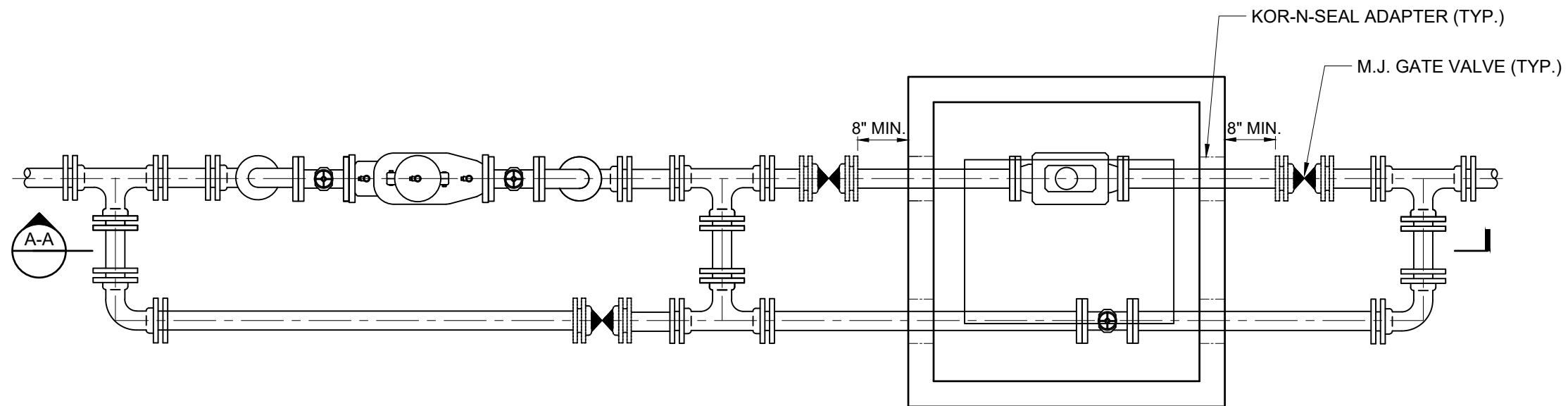
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Date:
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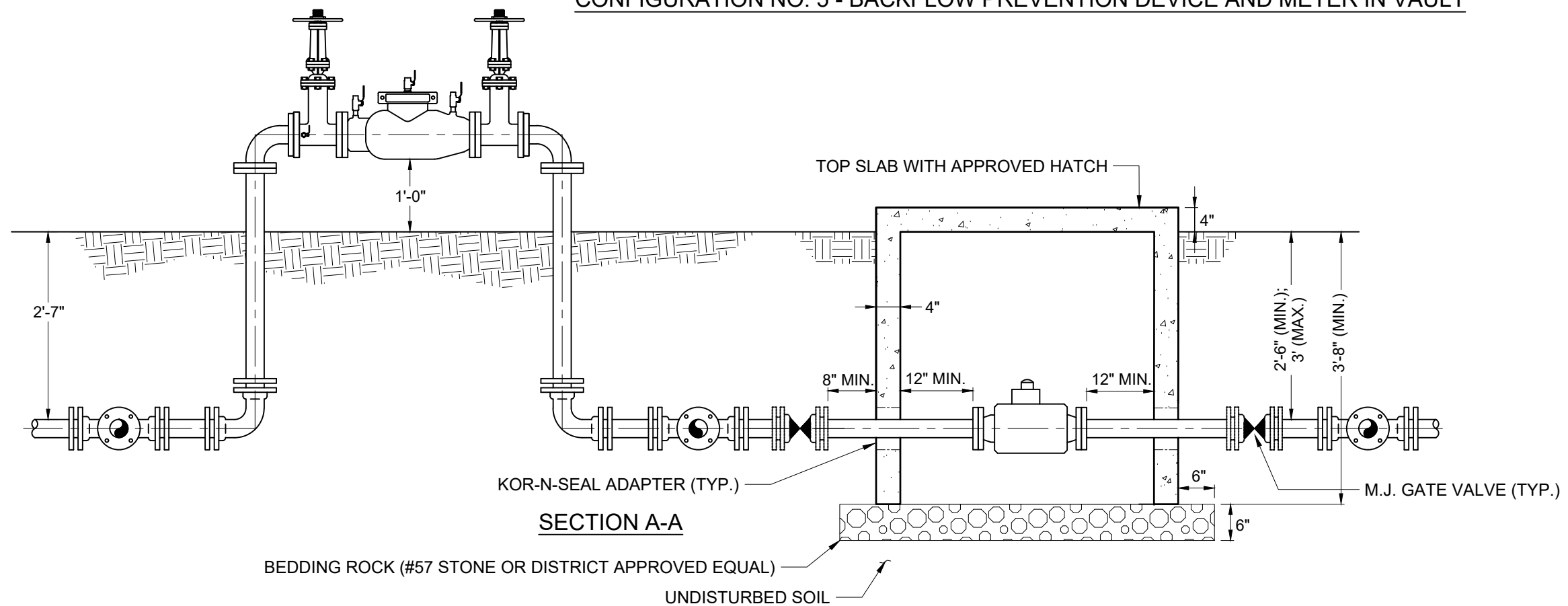
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CONFIGURATION NO. 5 - BACKFLOW PREVENTION DEVICE AND METER IN VAULT



SCHEDULE OF VALUES	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
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METER ASSEMBLY CONFIGURATION 5 AND BOX

Rev:

Date:
2/10/20

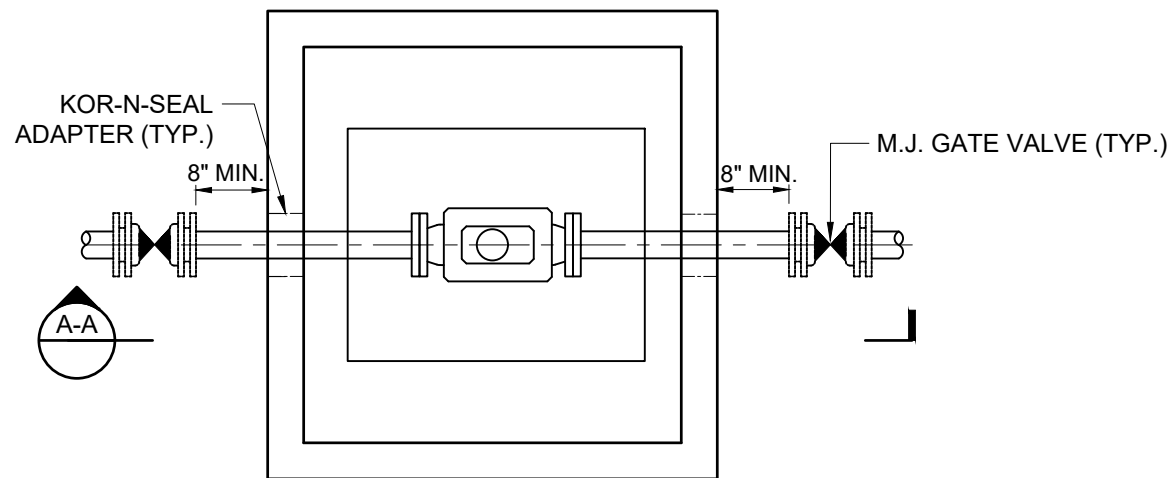
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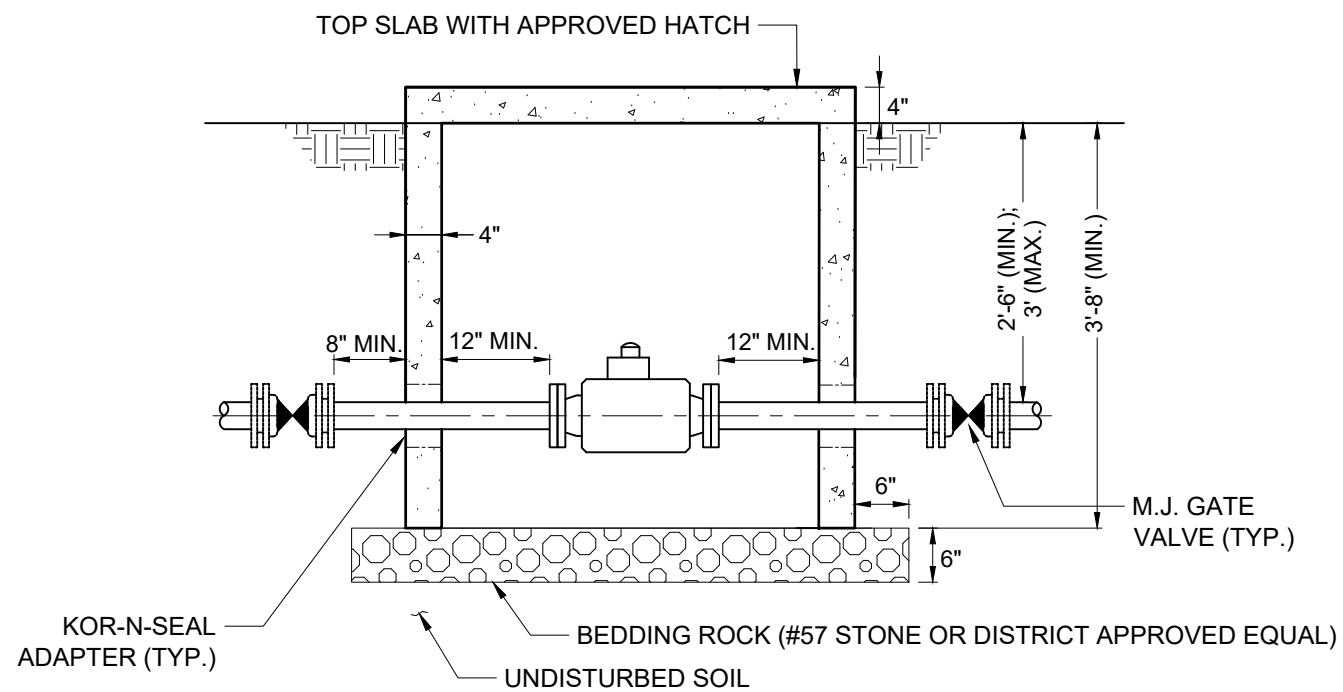
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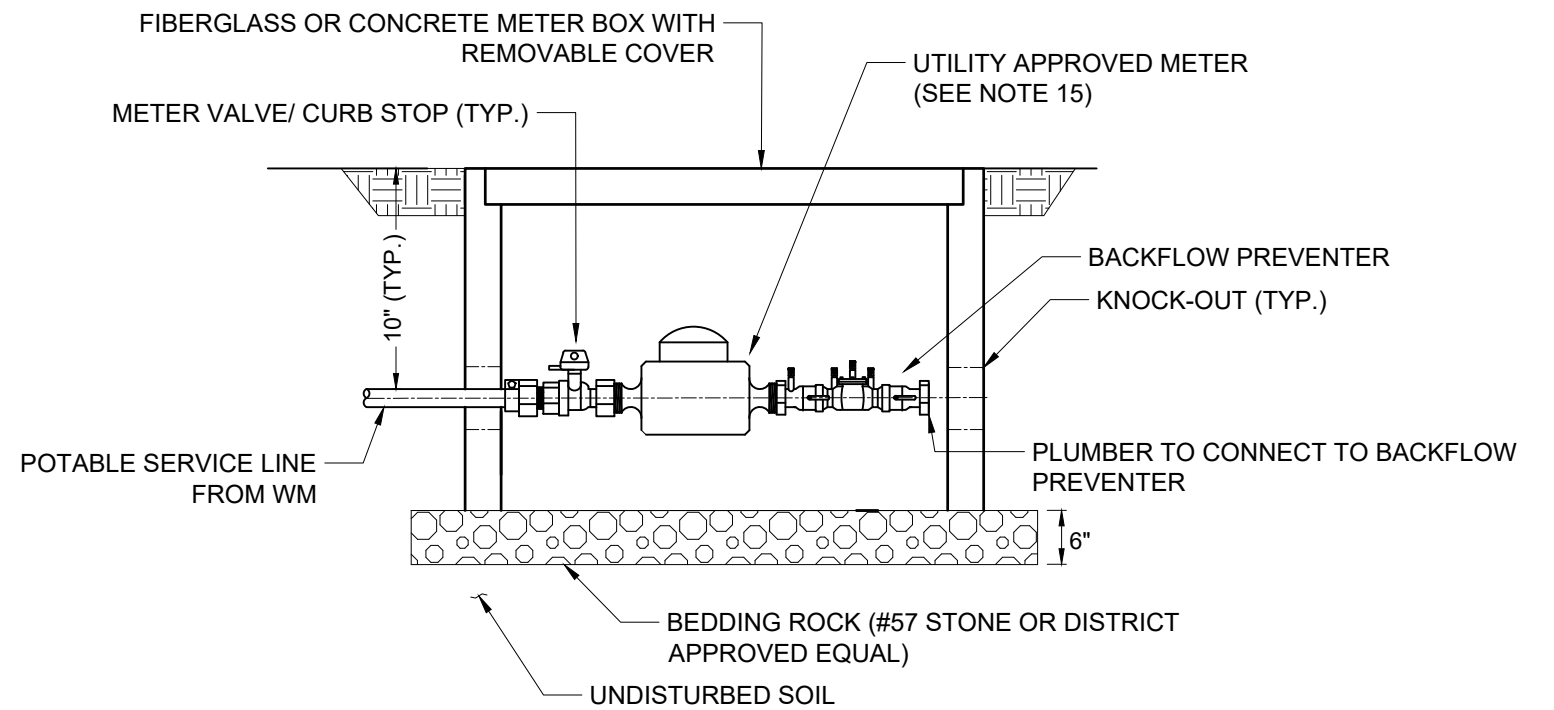
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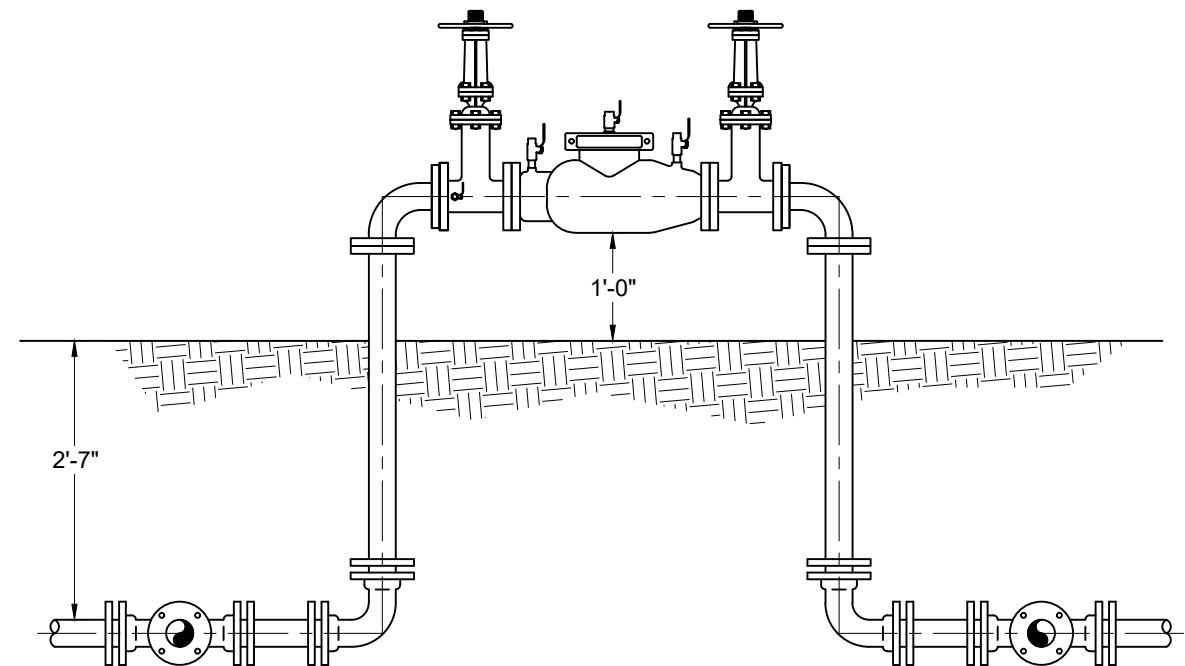
CONFIGURATION NO. 6 - SINGLE METER IN VAULT



SECTION A-A



TYPICAL 5/8" - 2" METER ASSEMBLY AND BOX



CONFIGURATION NO. 7 - ABOVE GROUND BACKFLOW PREVENTER

SCHEDULE OF VALUES	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
	5'-16"	5'-16"	5'-16"	5'-16"	5'-16"	5'-16"	5'-16"	5'-16"	5'-16"	5'-16"	5'-16"	5'-16"	5'-16"	5'-16"	5'-16"	5'-16"	5'-16"	5'-16"	5'-16"



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METER ASSEMBLY CONFIGURATION 6 & 7 AND BOX WITH TYPICAL 5/8" - 2" METER ASSEMBLY AND BOX

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DUNES COMMUNITY DEVELOPMENT DISTRICT

Water System Details Cover

INDEX OF SHEETS

W-00	COVER SHEET
W-01	DOUBLE DETECTOR CHECK VALVE ASSEMBLY WITHOUT ENCLOSURE
W-02	DOUBLE DETECTOR CHECK VALVE ASSEMBLY IN BELOW GROUND CONCRETE VAULT
W-03	POTABLE WATER SERVICE CONNECTION DETAIL (2" METERS AND LARGER)
W-04	WATER SYSTEM SERVICE CONNECTIONS
W-05	WATER SYSTEM PLUG VALVE AND BOX
W-06	WATER SYSTEM BUTTERFLY VALVE AND BOX
W-07	WATER SYSTEM FIRE HYDRANT ASSEMBLY
W-08	WATER SYSTEM POST HYDRANT
W-09	WATER SYSTEM AIR OR AIR/ VACUUM RELEASE VALVE

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**WATER SYSTEM
DETAILS
COVER**

Date:
2/10/20

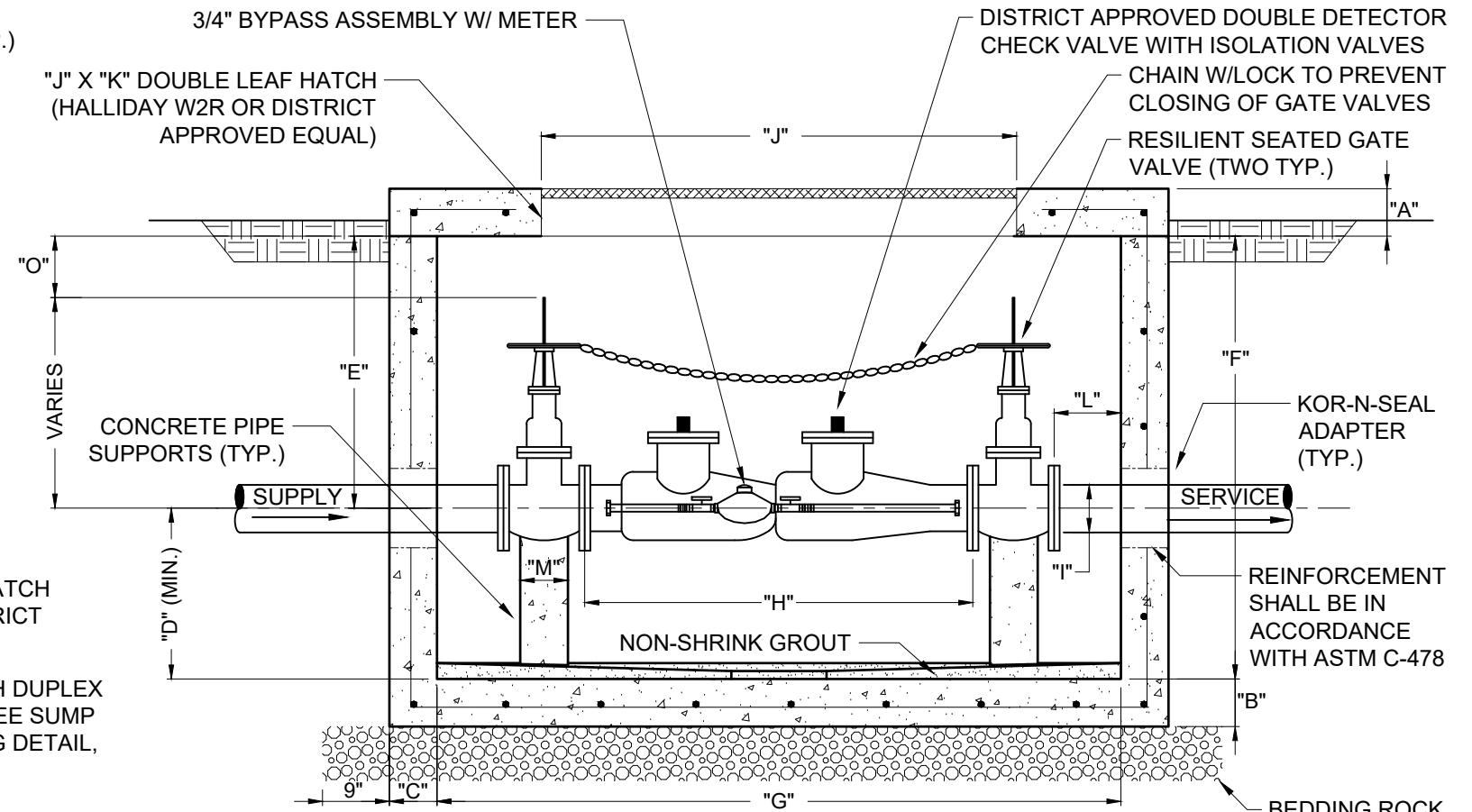
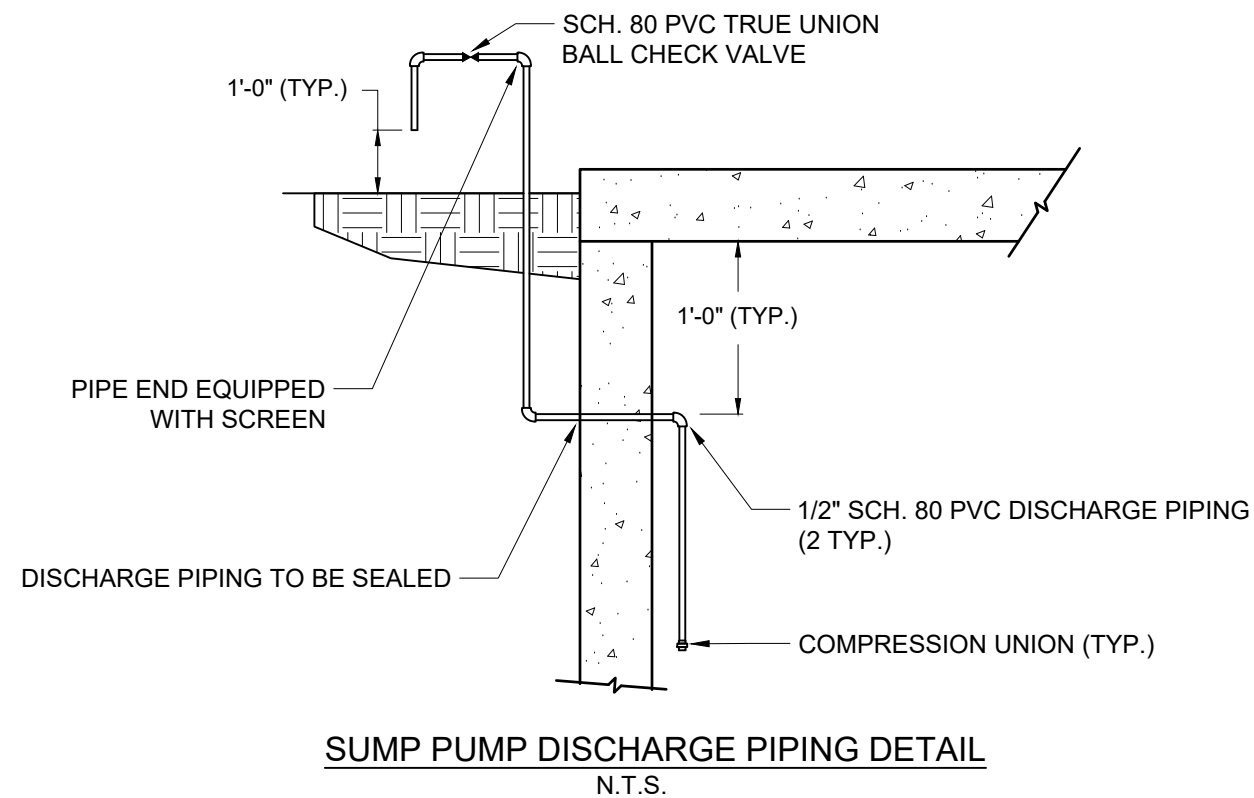
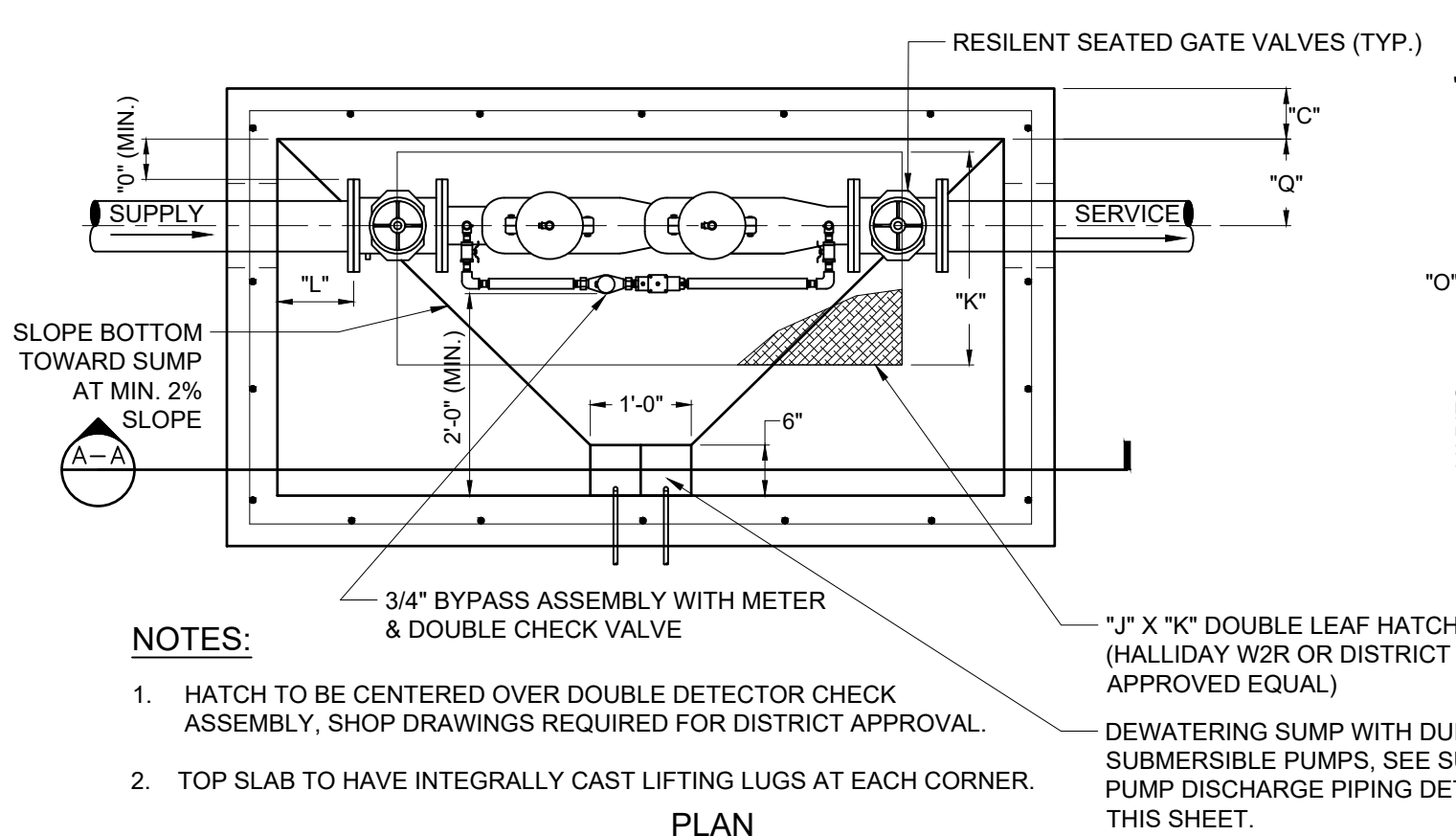
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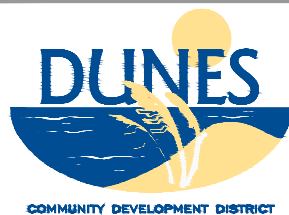
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SCHEDULE OF VALUES	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
	6"	6"	6"	24"	-"	-"	-"	-"	-"	-"	-"	8"	4"	9"	6"	"8"	-"



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WATER SYSTEM DOUBLE DETECTOR CHECK VALVE ASSEMBLY IN BELOW GROUND CONCRETE VAULT

Rev:

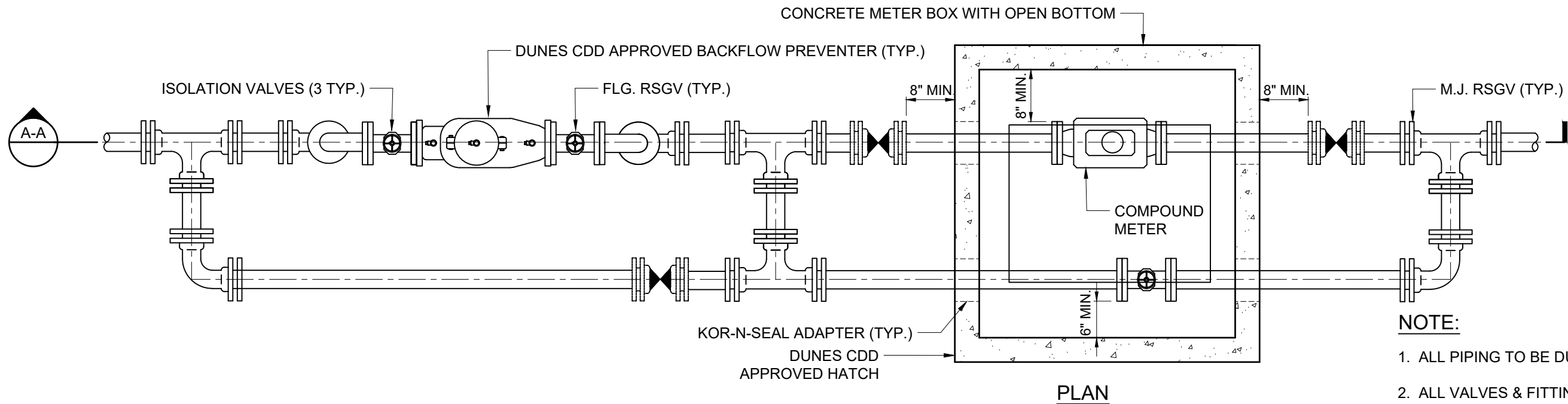
Date:
2/10/20

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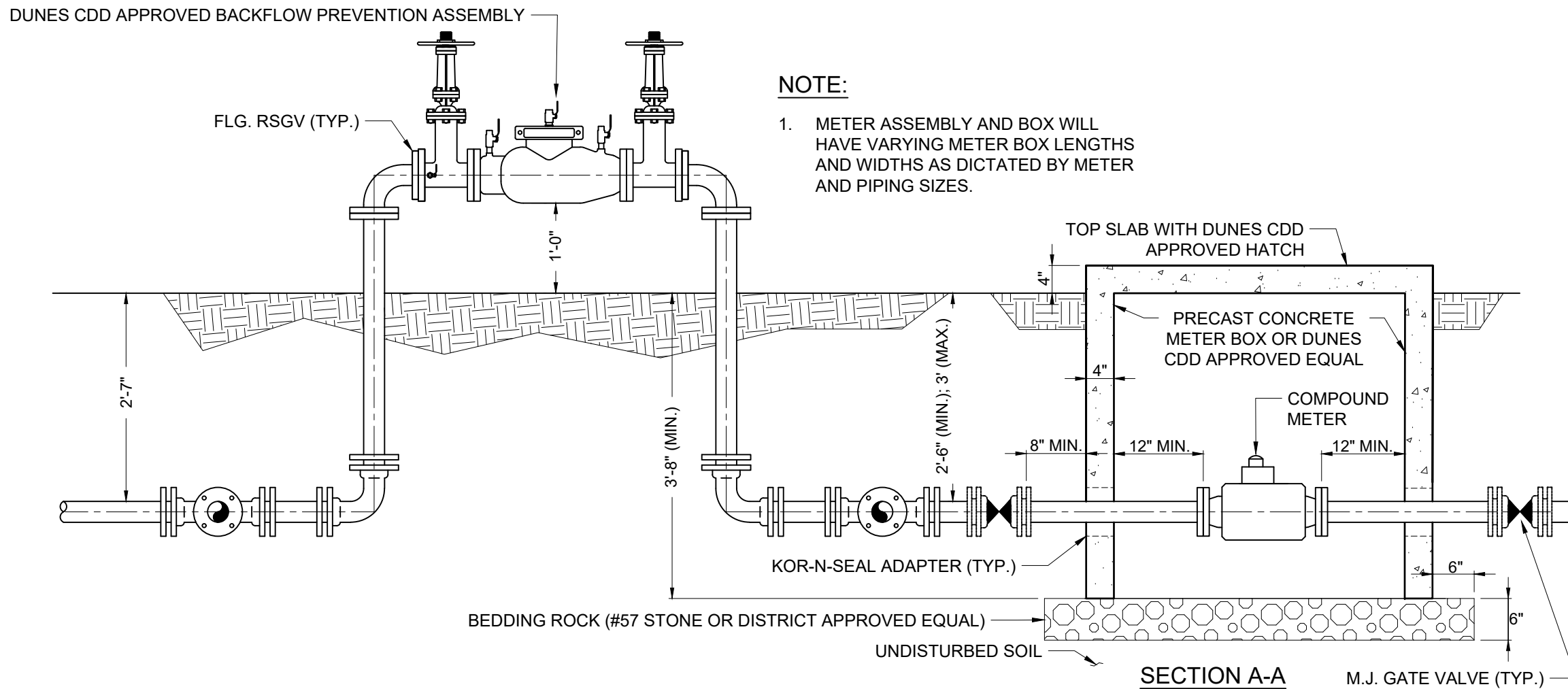
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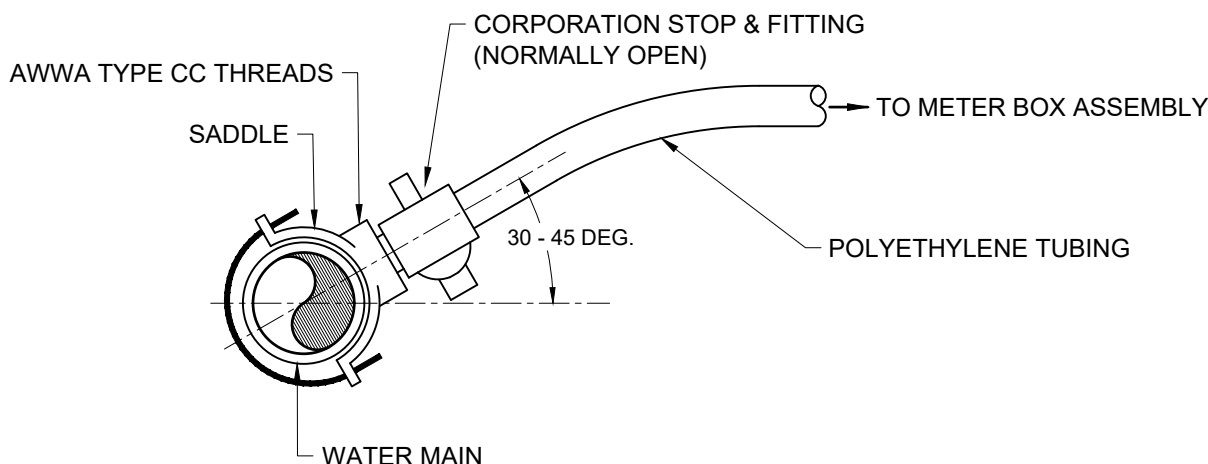
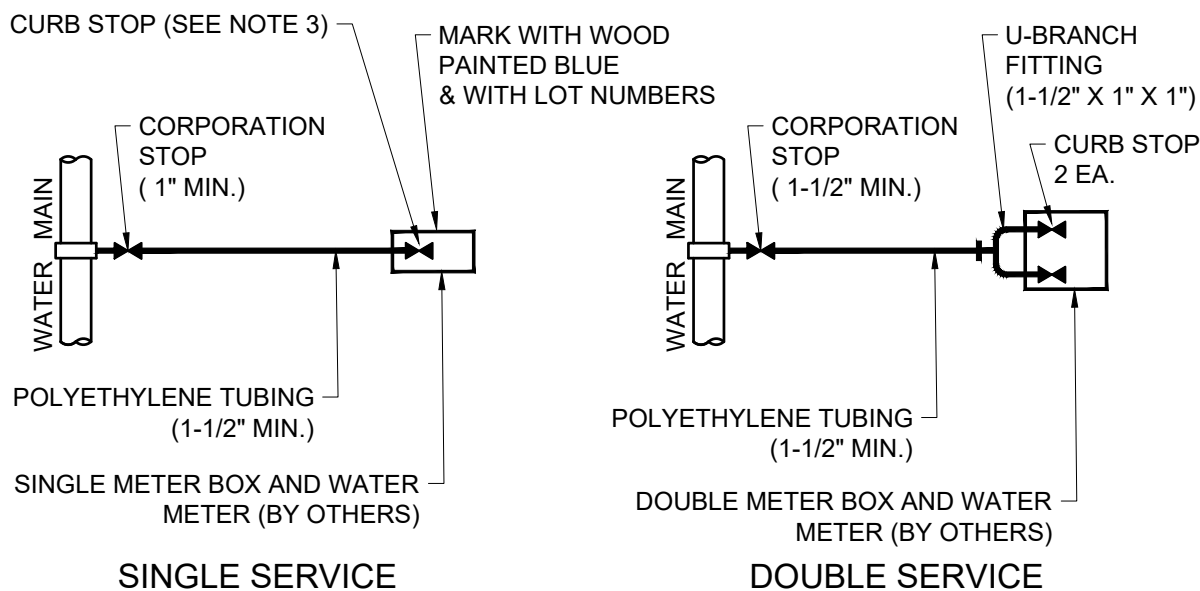
NOTE:

1. ALL PIPING TO BE DUCTILE IRON.
2. ALL VALVES & FITTINGS TO BE DUCTILE IRON.
3. MINIMUM LENGTH OF 5 DIAMETERS OF STRAIGHT PIPE TO BE INSTALLED BETWEEN INLET SIDE OF METER AND ANY FITTING OR VALVE.
4. ALL PIPE AND FITTINGS TO BE SAME SIZE AS METER.
5. CONC. BOX SHALL BE 48" DEEP WITH OPEN BOTTOM, PRECAST WITH NOTCH TO ACCOMMODATE PIPE INSTALLED 36" DEEP, INSTALLED ON 12" OF #57 STONE.
6. CONTRACTOR SHALL PROVIDE SHOP DRAWING OF BOX WITH DIMENSIONS FOR APPROVAL BY DUNES CDD.
7. DIMENSIONS SHOWN ARE MINIMUM AND SHALL BE INCREASED BASED UPON ACTUAL SIZE OF METER PROVIDED.
8. BACKFLOW PREVENTION DEVICES SHALL BE IN ACCORDANCE WITH DUNES COMMUNITY DEVELOPMENT DISTRICT CROSS CONNECTION CONTROL PROGRAM.
9. CONFIGURATIONS NO. 1 AND 2 ARE NOT ALLOWED WHEN REDUCED PRESSURE ZONE BACKFLOW PREVENTION DEVICES ARE REQUIRED.
10. MINIMUM 5000 P.S.I. CONCRETE REQUIRED.



NOTE:

1. METER ASSEMBLY AND BOX WILL HAVE VARYING METER BOX LENGTHS AND WIDTHS AS DICTATED BY METER AND PIPING SIZES.



NOTES:

1. ALL FITTINGS SHALL BE BRASS WITH COMPRESSION/PACK JOINT TYPE CONNECTIONS.
2. NO SERVICE LINE SHALL TERMINATE UNDER A DRIVEWAY.
3. EACH SERVICE SHALL TERMINATE AT A CURB STOP(S) WHICH SHALL BE BURIED APPROXIMATELY 3" BELOW FINAL GRADE AND SHALL BE CLEARLY MARKED WITH A 2" X 2" X 18" STAKE WITH THE TOP PAINTED BLUE AND MARKED WITH THE NUMBER OF THE LOT(S) TO BE SERVED.
4. SUCCESSIVE TAPS INTO THE EFFLUENT MAIN SHALL BE SPACED A MINIMUM OF 18" APART. TAPS SPACED BETWEEN 18" TO 48" SHALL BE OFFSET TO EACH SIDE OF THE MAIN.
5. SET METER BOX SHALL CONFORM TO FINISHED GRADE ADJACENT TO PROPERTY LINE. METER SHALL NOT BE PLACED IN SIDEWALK OR DRIVEWAY AREAS. SERVICE LINES SHALL NOT BE PLACED UNDER DRIVEWAYS. CORPORATION STOP SHALL NOT BE UNDER PAVEMENT.



DUNES COMMUNITY DEVELOPMENT DISTRICT STANDARD DETAILS

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WATER SYSTEM SERVICE CONNECTIONS

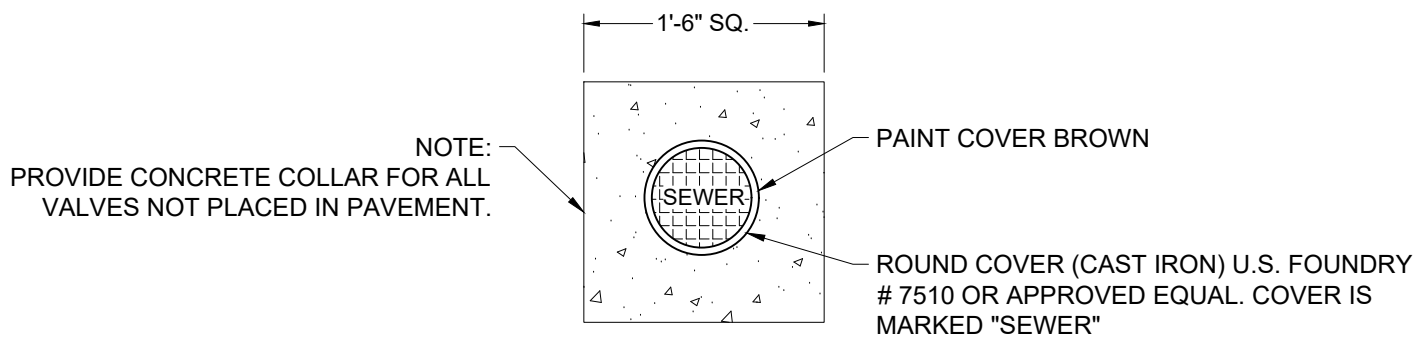
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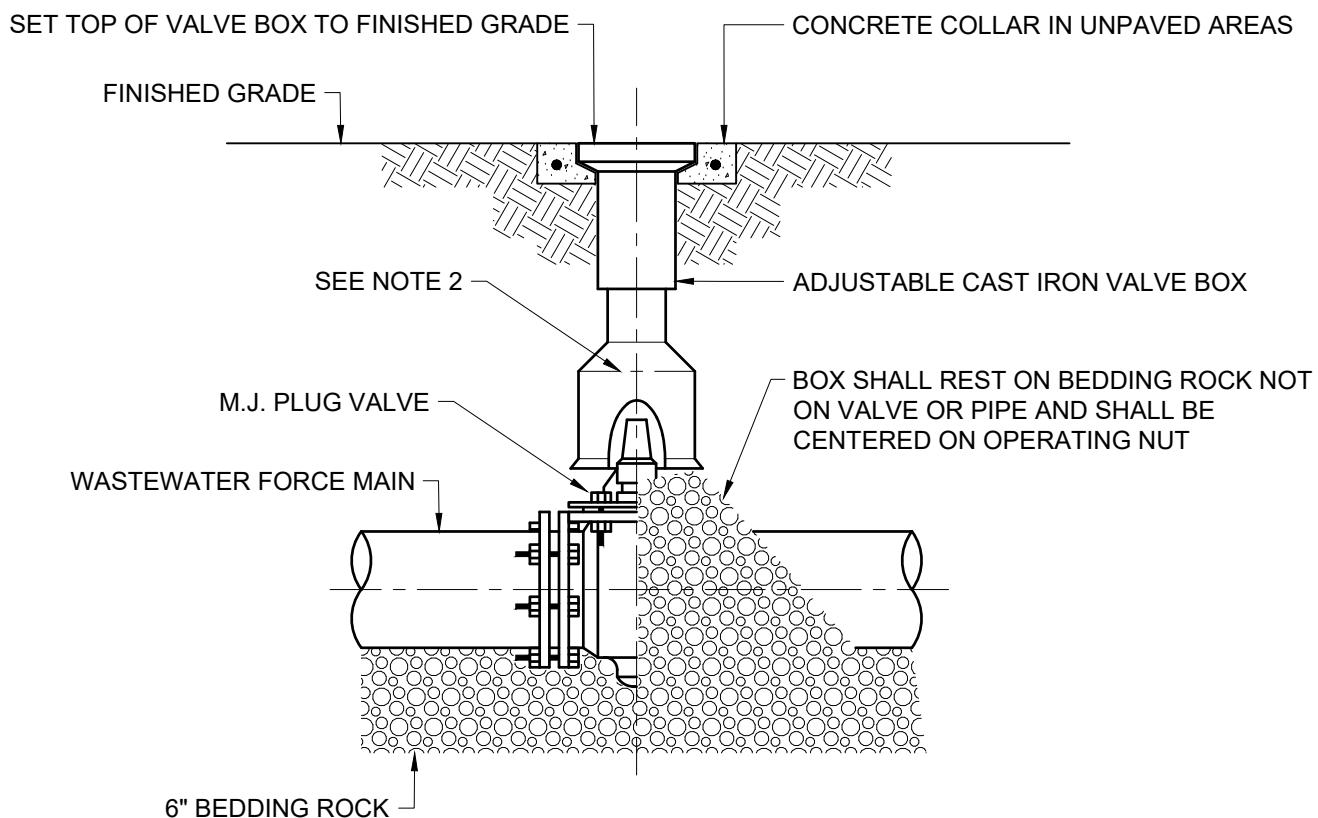
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VALVE COLLAR PLAN



SECTION

NOTES:

1. PVC EXTENSIONS SHALL NOT BE USED ON VALVE BOX INSTALLATION.
2. THE ACTUATING NUT FOR DEEPER VALVES SHALL BE EXTENDED TO COME UP TO 4 FOOT DEPTH BELOW FINISHED GRADE.



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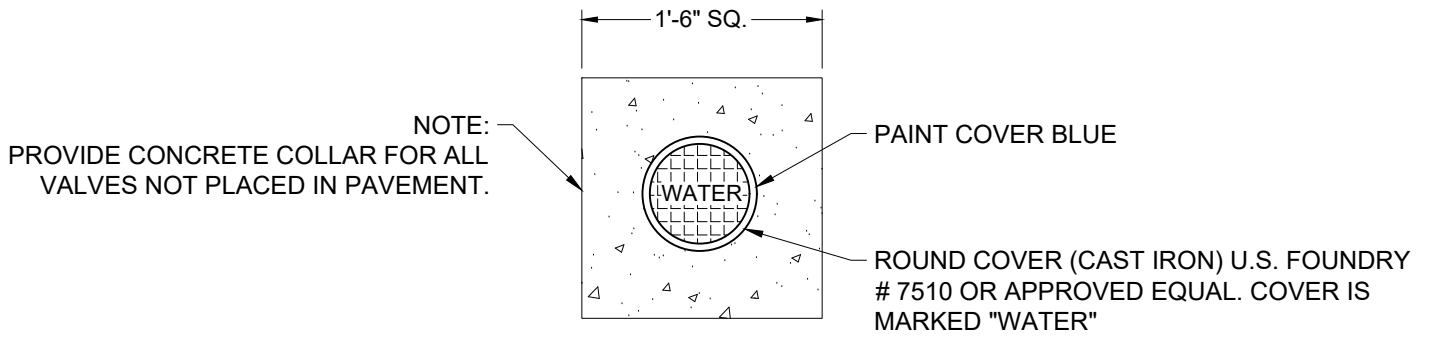
**WATER SYSTEM
PLUG VALVE
AND BOX**

Date:
2/10/20

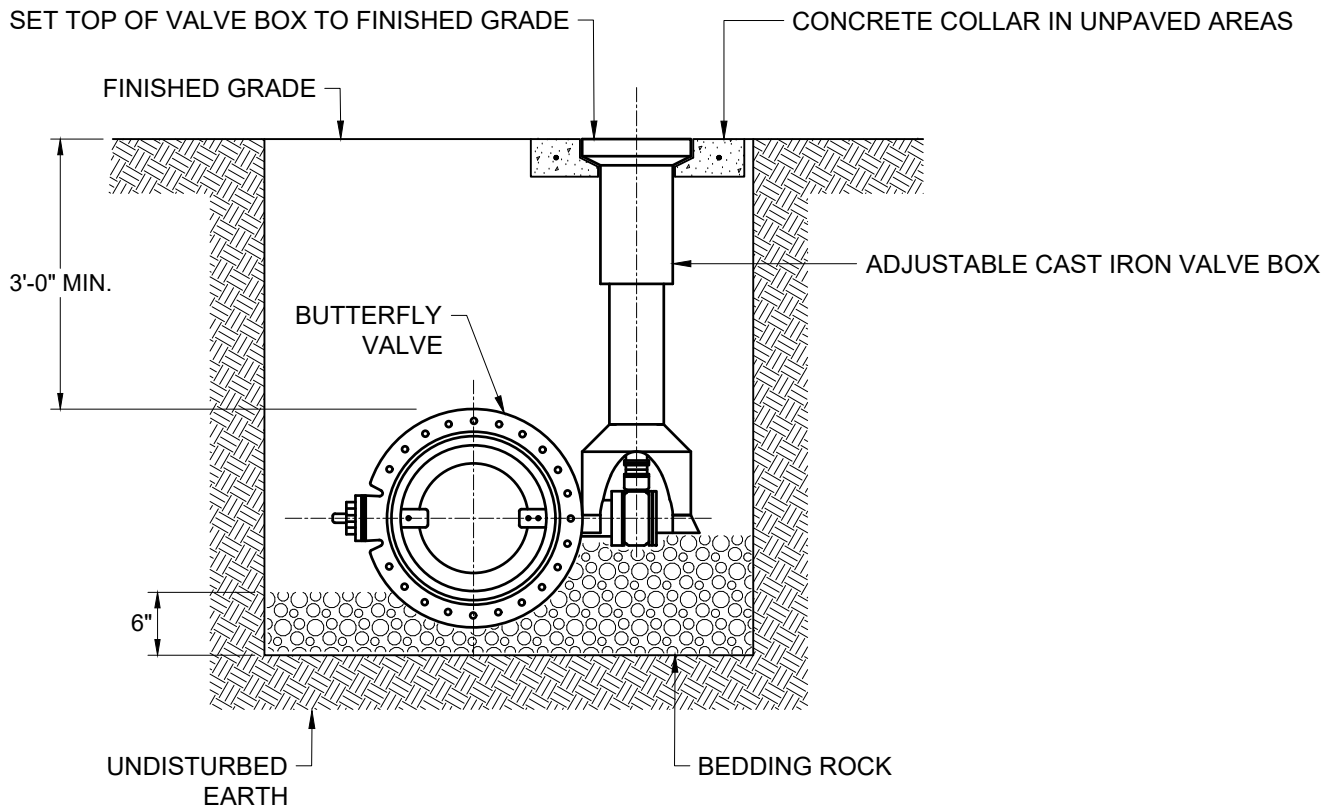
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Rev:
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VALVE COLLAR PLAN



SECTION

NOTES:

1. PVC EXTENSIONS SHALL NOT BE USED ON VALVE BOX INSTALLATION.
2. THE WATER SHUT-OFF VALVES SIXTEEN (16) INCHES AND LARGER SHALL BE BUTTERFLY VALVES UNLESS OTHERWISE NOTED.



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**WATER SYSTEM
BUTTERFLY VALVE
AND BOX**

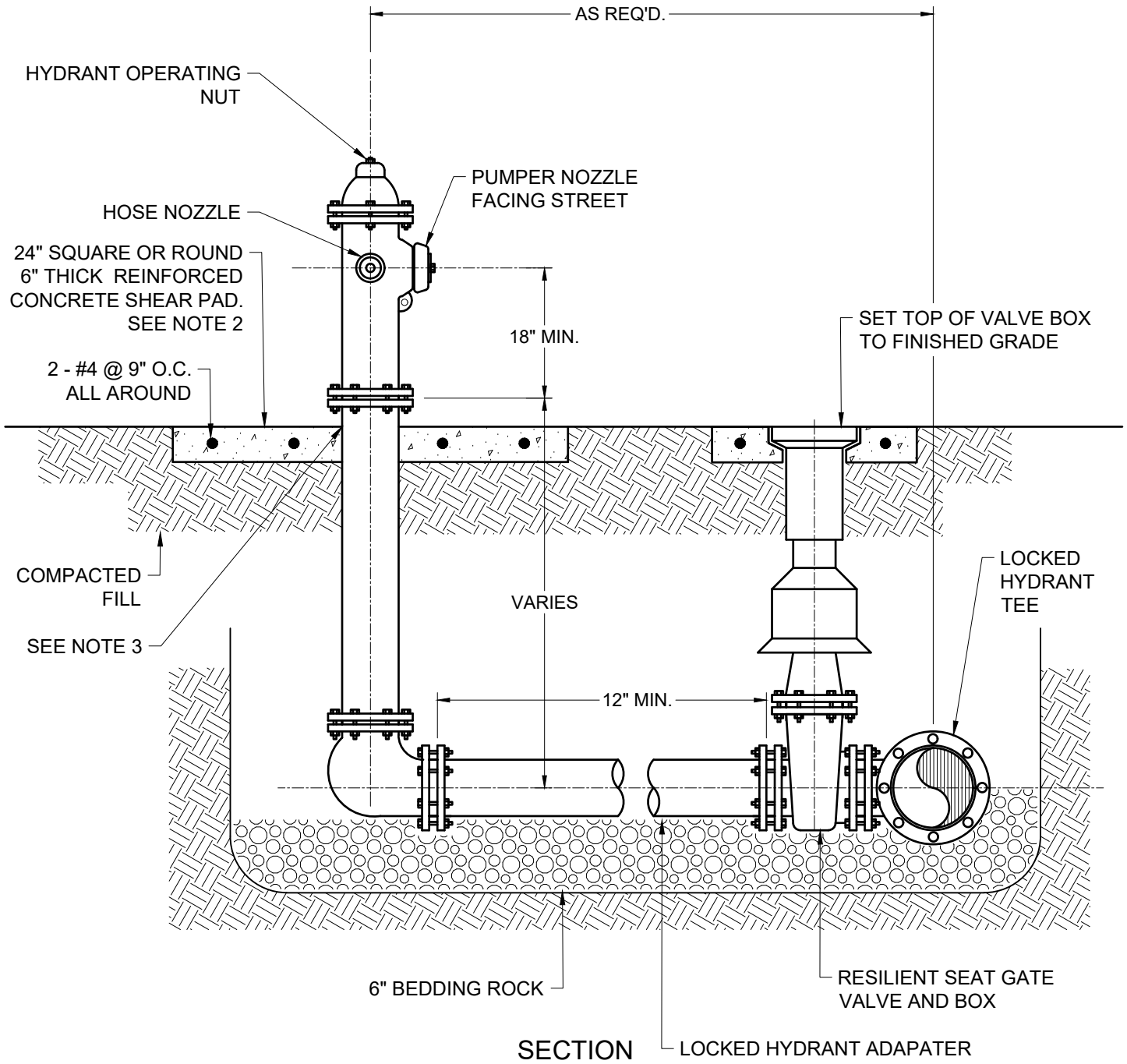
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NOTES:

1. FIRE HYDRANT SHALL BE SUPPLIED WITHOUT A WEEP HOLE, OR WITH A PERMANENTLY PLUGGED WEEP HOLE.
2. THE DEVELOPER MAY INSTALL THE SHEAR PAD RECESSED UP TO 4 INCHES BELOW FINISHED GRADE AND SOD THE RECESSED SECTION.
3. CLEARANCE BETWEEN BOTTOM OF BOLTS AND TOP OF SHEAR PAD SHALL BE A 6" MINIMUM.



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WATER SYSTEM FIRE HYDRANT ASSEMBLY

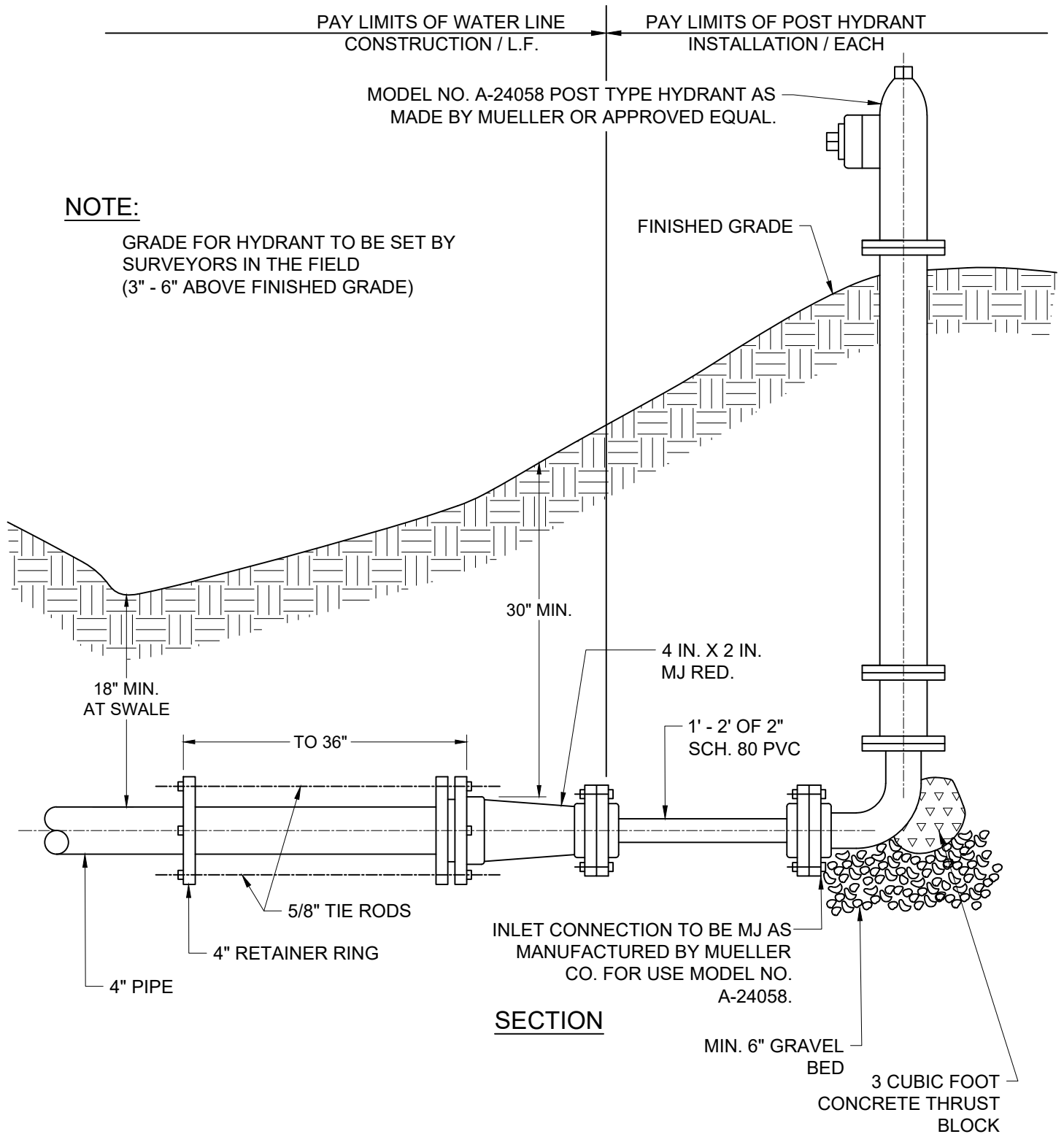
Date:
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WATER SYSTEM POST HYDRANT

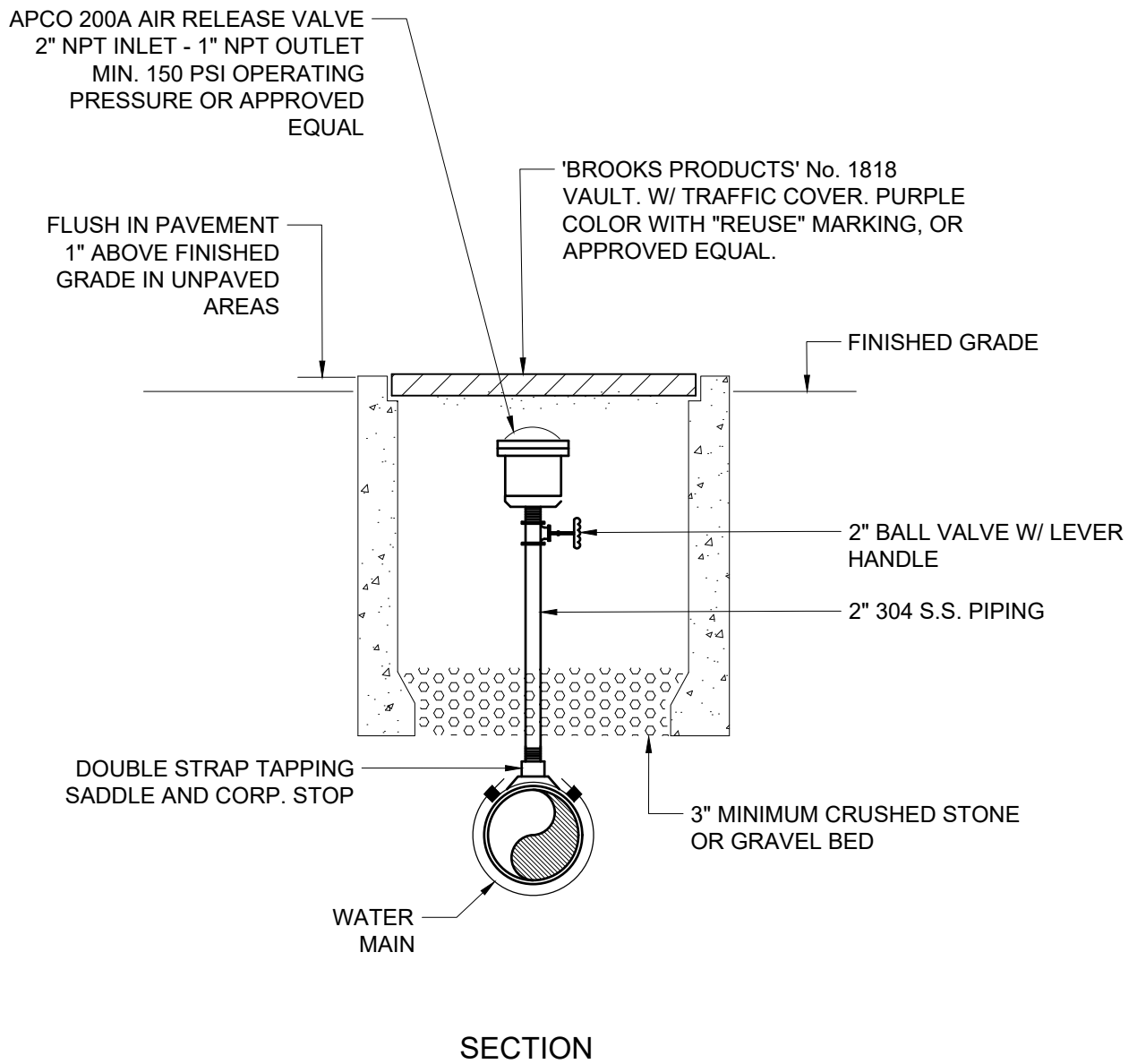
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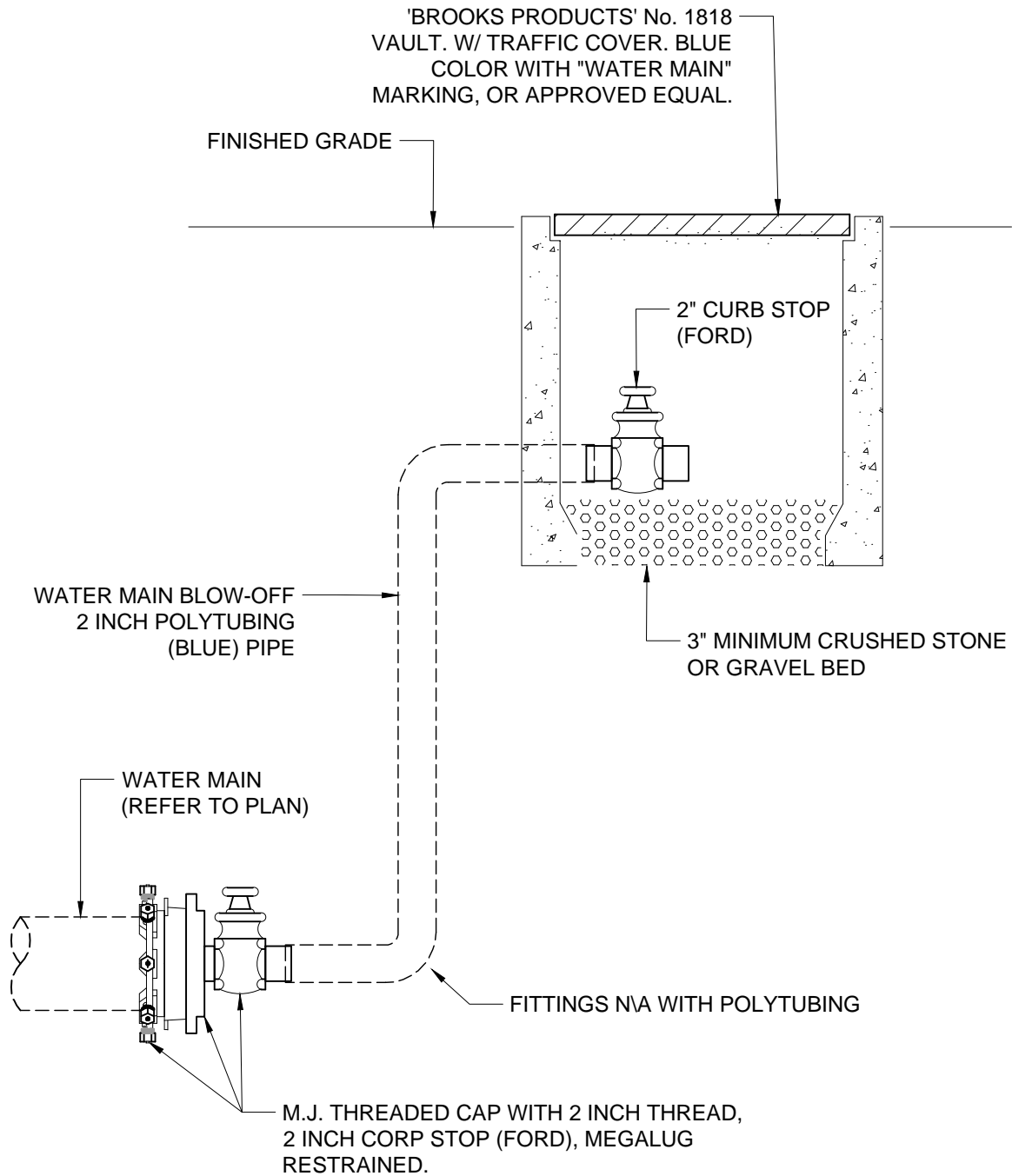
**WATER SYSTEM
AIR OR AIR/ VACUUM
RELEASE VALVE**

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2/10/20

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SECTION



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WATER MAIN SYSTEM BLOW-OFF ASSEMBLY AND BOX

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Water Main Meter Configuration Cover and Notes

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WM-02	TYPICAL 5/8" - 2" METER ASSEMBLY AND BOX
WM-03	TYPICAL ABOVE GROUND BACKFLOW PREVENTION DEVICE
WM-04	BELOW METER ASSEMBLY (CONFIGURATION 1) 2.5" AND LARGER
WM-05	BELOW METER ASSEMBLY (CONFIGURATION 2) 2.5" AND LARGER
WM-06	BACKFLOW PREVENTION DEVICE AND METER IN VAULT (CONFIG. 3)
WM-07	PERMANENT SAMPLING STATION

1. BYPASS PIPING AND APPURTENANCES REQUIRED UNLESS UTILITY APPROVES WITHOUT BYPASS PIPING AND APPURTENANCES.
2. ALL VALVES & FITTINGS TO BE DUCTILE IRON RESTRAINED JOINT. OTHER MATERIALS MUST BE APPROVED BY OWNER AND UTILITY PRIOR TO INSTALLATION OR USE.

3. MINIMUM LENGTH OF 5 DIAMETERS OF STRAIGHT PIPE TO BE INSTALLED BETWEEN INLET SIDE OF METER AND ANY FITTING OR VALVE. MINIMUM LENGTH OF 3 PIPE DIAMETERS OF STRAIGHT PIPE TO BE INSTALLED BETWEEN THE OUTLET SIDE OF METER AND ANY FITTING OR VALVE.
4. ALL PIPE AND FITTINGS TO BE SAME SIZE AS METER.
5. TYPICAL METER AND/ OR VALVE BOXES SHALL BE 48" DEEP WITH OPEN BOTTOM, PRECAST WITH NOTCH TO ACCOMMODATE PIPE INSTALLED 36" DEEP, INSTALLED ON 12" OF #57 STONE. ALTERNATE BOX MATERIALS AND DIMENSIONS MUST BE APPROVED BY THE OWNERS AND UTILITY PRIOR TO INSTALLATION OR USE.
6. CONTRACTOR SHALL PROVIDE SHOP DRAWINGS (WITH DIMENSIONS, MATERIALS, AND OTHER TYPICAL SUBMITTAL INFORMATION) OF METER AND VALVE BOXES, BACKFLOW PREVENTION DEVICES, AND PIPING FOR APPROVAL BY OWNER AND UTILITY.
7. METER ASSEMBLY AND BOX SECTIONS FOR VARIOUS CONFIGURATIONS ARE SIMILAR, HOWEVER, EACH CONFIGURATION WILL HAVE VARYING METER BOX LENGTHS, DEPTHS, AND WIDTHS AS INDICATED BY THE PLAN. DIMENSIONS SHOWN ARE MINIMUM AND SHALL BE INCREASED BASED UPON ACTUAL SIZE OF METER PROVIDED, VERIFY DEPTH OF METER BOX WITH UTILITY.
8. BACKFLOW PREVENTION DEVICES SHALL BE IN ACCORDANCE WITH THE APPROVED CROSS CONNECTION CONTROL PROGRAM.CONFIGURATIONS NO. 1 AND 2 ARE NOT ALLOWED WHEN REDUCED PRESSURE ZONE BACKFLOW PREVENTION DEVICES ARE REQUIRED.
9. MINIMUM 5000 P.S.I. CONCRETE REQUIRED.
10. PIPE THREE INCHES AND GREATER SHALL BE DUCTILE IRON. OTHER MATERIALS MUST BE APPROVED BY OWNER AND UTILITY PRIOR TO INSTALLATION OR USE. FLANGES ARE REQUIRED FOR ABOVE GROUND AND INSIDE VAULT PIPING AND FITTINGS. MECHANICAL JOINTS SHALL BE PROVIDED FOR BURIED PIPING AND FITTINGS.
11. ADEQUATE MECHANICAL RESTRAINT SHALL BE PROVIDED. THRUST BLOCKS ARE NOT ALLOWED UNLESS APPROVED BY OWNER AND UTILITY.
12. SEE PROJECT SPECIFICATIONS AND UTILITY STANDARDS FOR EXCAVATION, BACKFILL, AND COMPACTION REQUIREMENTS.
13. UNLESS OTHERWISE SPECIFIED, VALVES THREE INCHES AND LARGER SHALL BE RESILIENT WEDGE GATE VALVES WITH NON-RISING STEMS CONFORMING WITH AWWA C509 AND SHALL HAVE A CLEAR WATERWAY EQUAL TO THE NOMINAL PIPE DIAMETER. BURIED GATE VALVES SHALL BE RUBBER ENCAPSULATED AND SHALL HAVE OPERATING NUTS AND ADJUSTABLE VALVE BOXES AND COVERS. ABOVE GROUND VALVES SHALL HAVE HAND WHEEL OPERATORS. VALVES SMALLER THAN THREE INCH SHALL BE FULL-PORT BALL VALVES WITH CAST BRONZE BODY, BRONZE TEE HEAD, STEM WITH CHECK, FULL ROUNDWAY OPENING AND PROVISIONS FOR LOCKING IN A CLOSED POSITION. CURB STOPS MAY BE USED FOR SERVICES SMALLER THAN THREE INCHES.
14. PIPING, FITTINGS, AND VALVES SHALL BE PAINTED IN ACCORDANCE WITH PROJECT SPECIFICATIONS AND UTILITY STANDARDS.
15. UTILITY TO SPECIFY METER TYPE, INCLUDING STRAINER REQUIREMENTS.
16. CONTRACTOR RESPONSIBLE FOR INSTALLING PIPING AND APPURTENANCES FROM WATER MAIN TO METER OR BACKFLOW PREVENTION DEVICE (WHICHEVER IS APPLICABLE). CONTRACTOR IS REQUIRED TO COORDINATE WITH UTILITY REGARDING LOCATION OF METER ASSEMBLIES AND BACKFLOW PREVENTION DEVICES. ALL METER ASSEMBLIES AND BACKFLOW PREVENTION DEVICES (FOR FIRE LINES ONLY) SHALL BE LOCKED WITHIN UTILITY EASEMENT OR RIGHT-OF-WAY.



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WATER MAIN METER CONFIGURATION COVER AND NOTES

Rev:

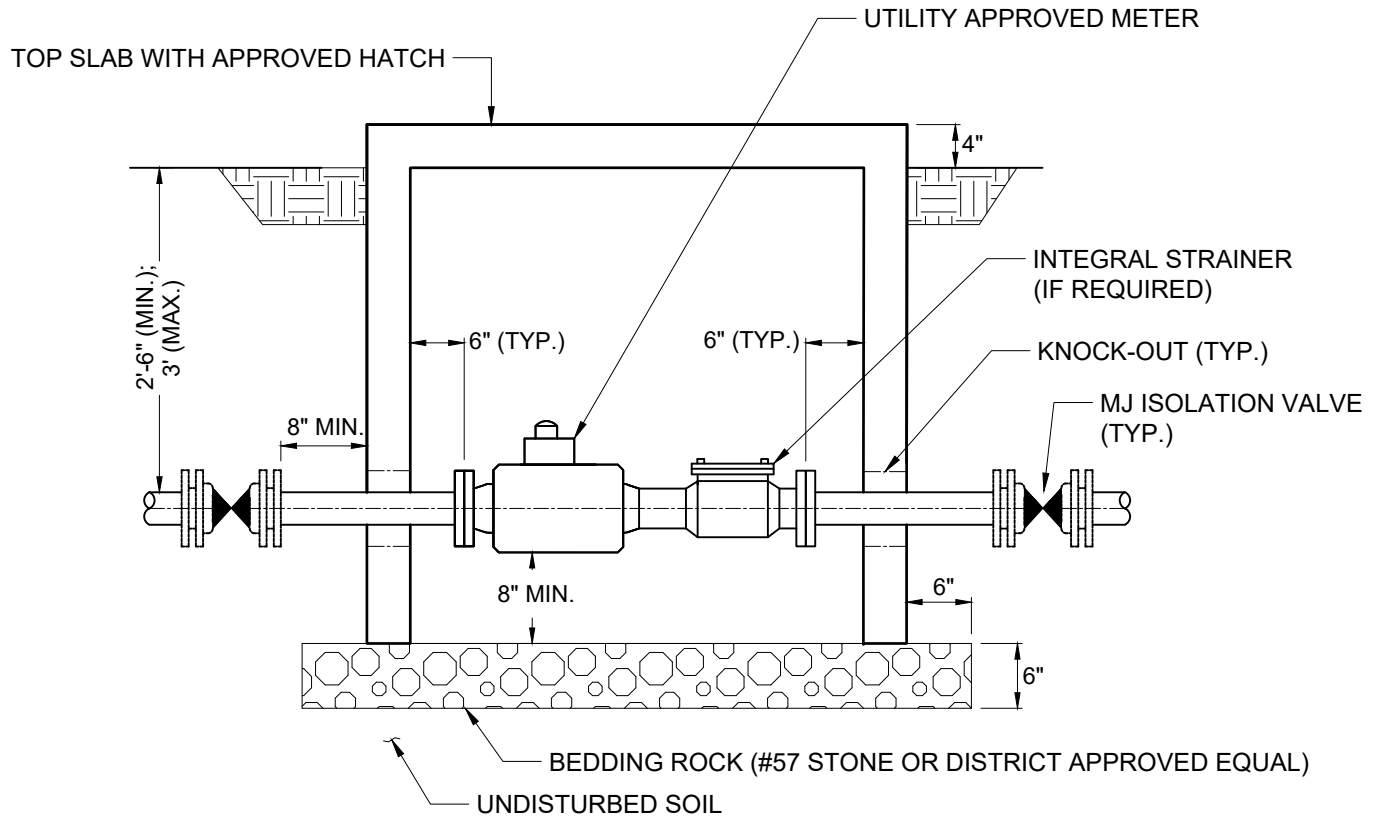
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File:

WM
00



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WM METER CONFIG. TYPICAL METER ASSEMBLY AND BOX

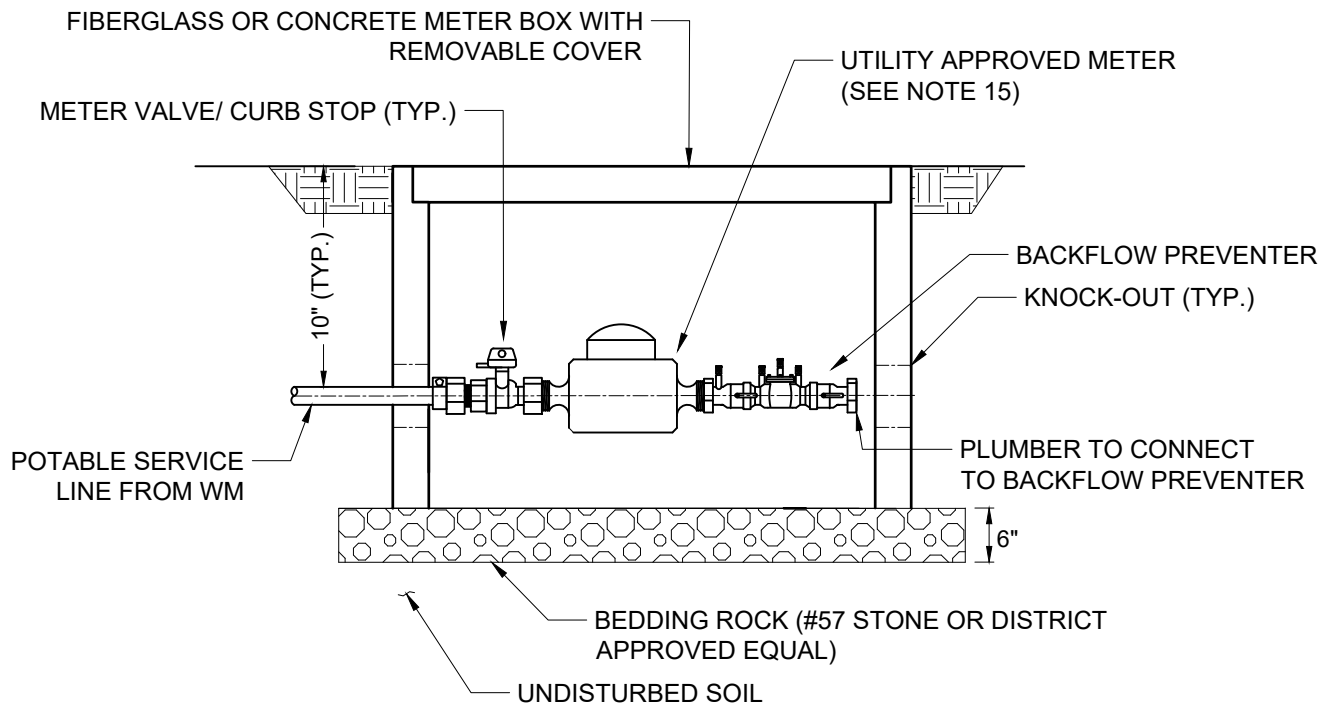
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WM METER CONFIG. TYPICAL 5/8" - 2" METER ASSEMBLY AND BOX

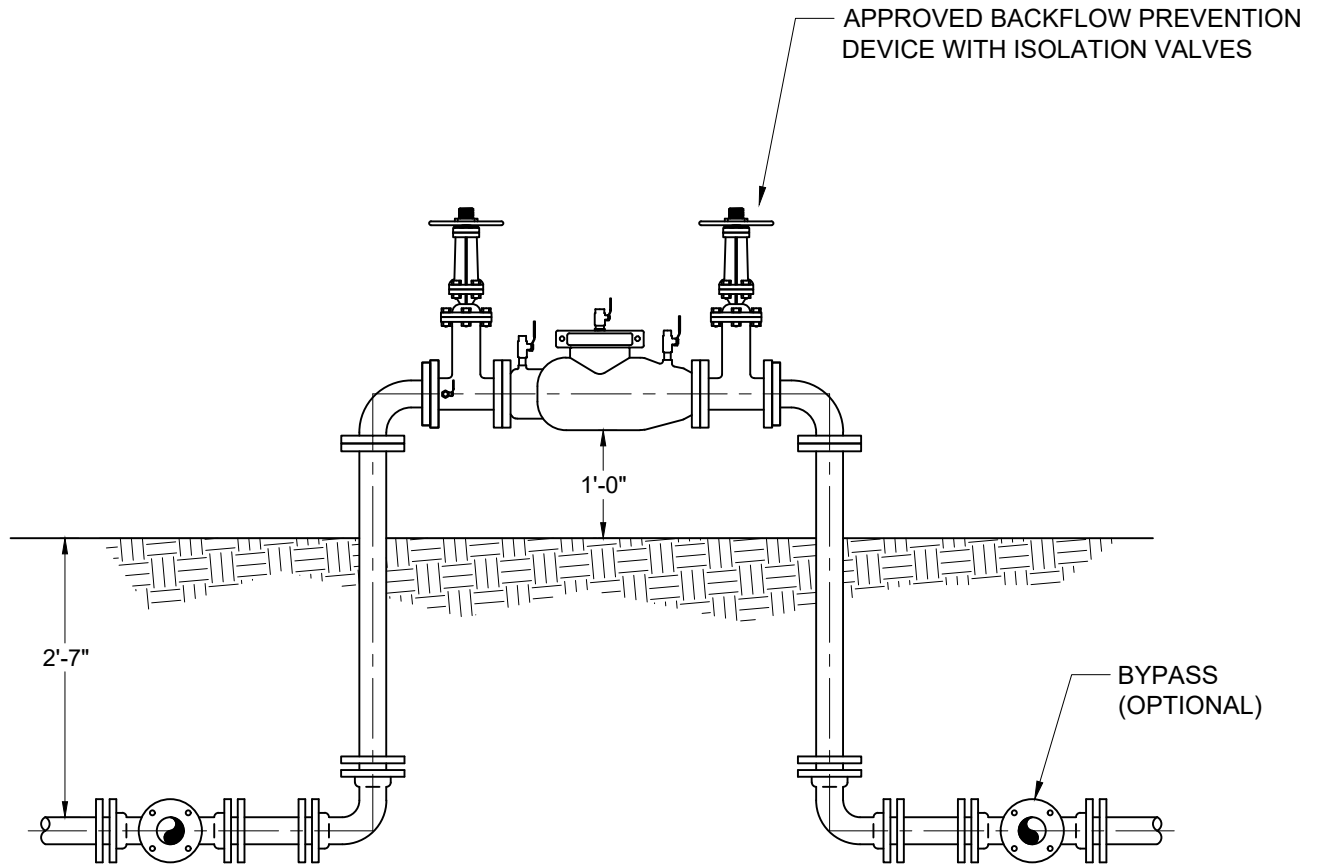
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**WM METER CONFIG.
TYPICAL ABOVE GRND.
BACKFLOW PREV. DEV.**

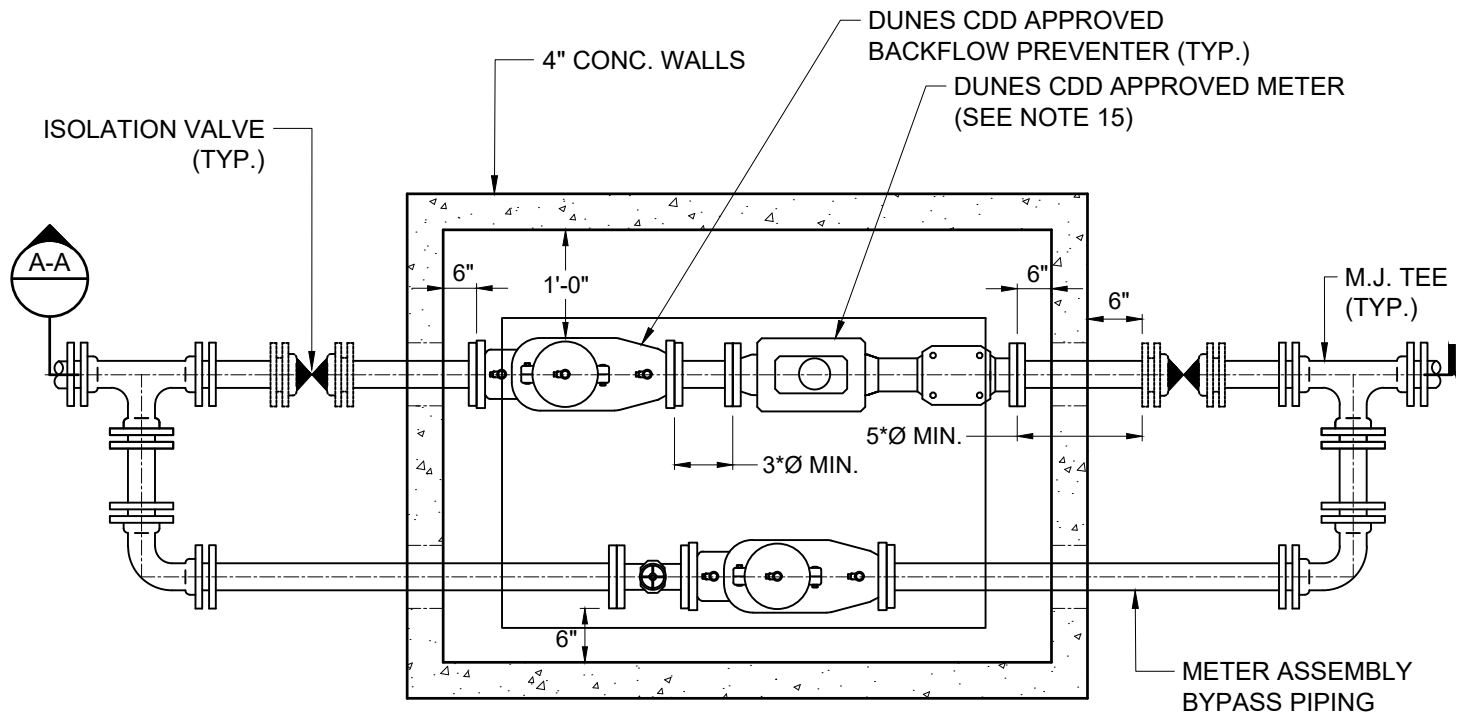
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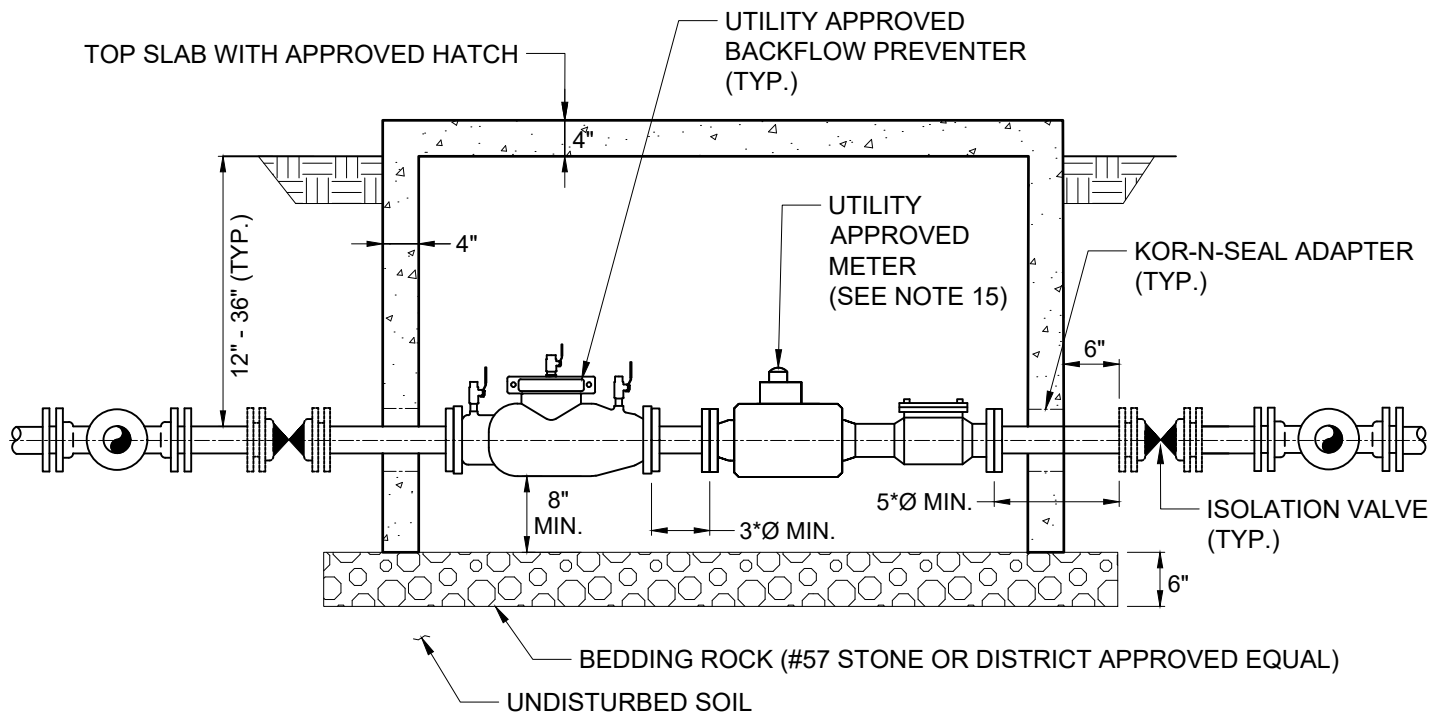
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CONFIGURATION NO. 1 - BELOW METER ASSEMBLY (2.5" AND LARGER)



SECTION A-A



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**WM METER CONFIG.
BELOW METER ASMBY.
(CONFIG. 1) 2.5" & LGR.**

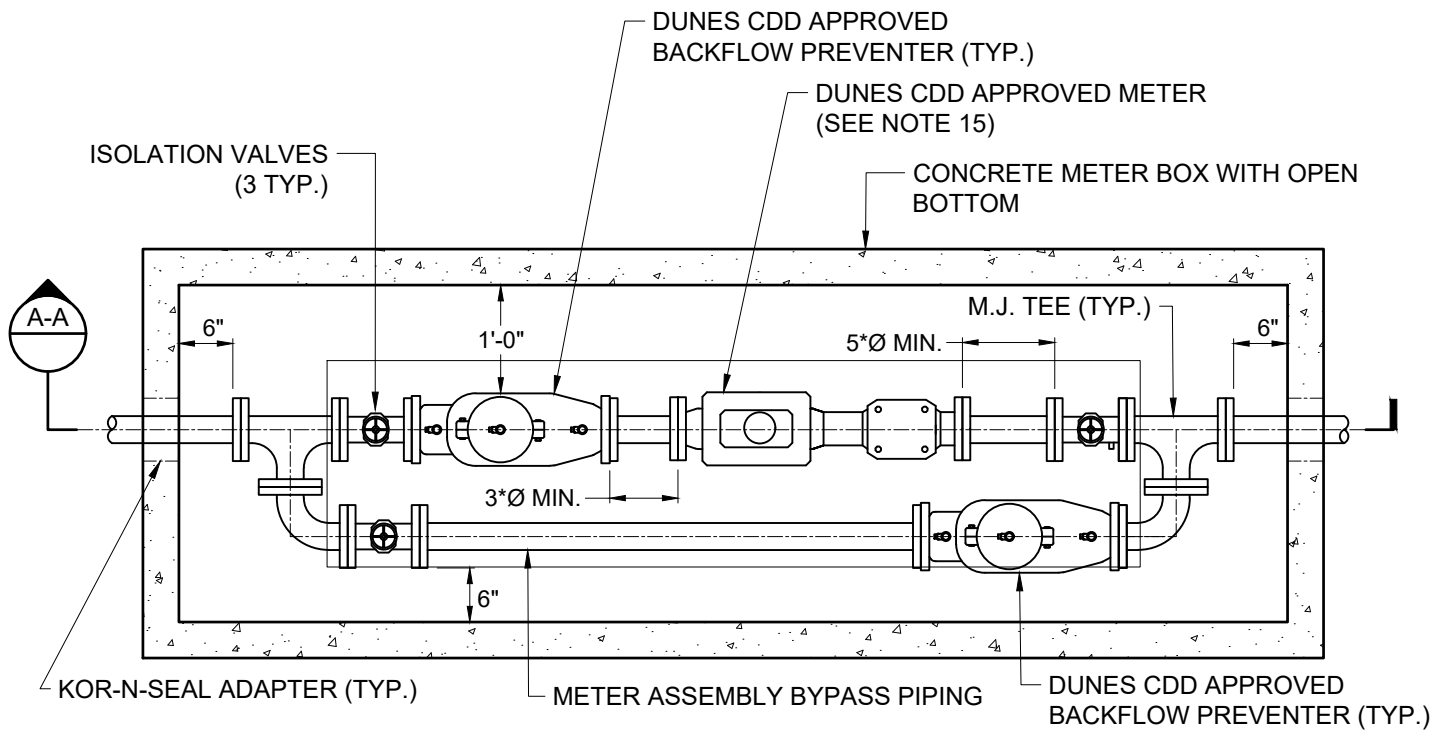
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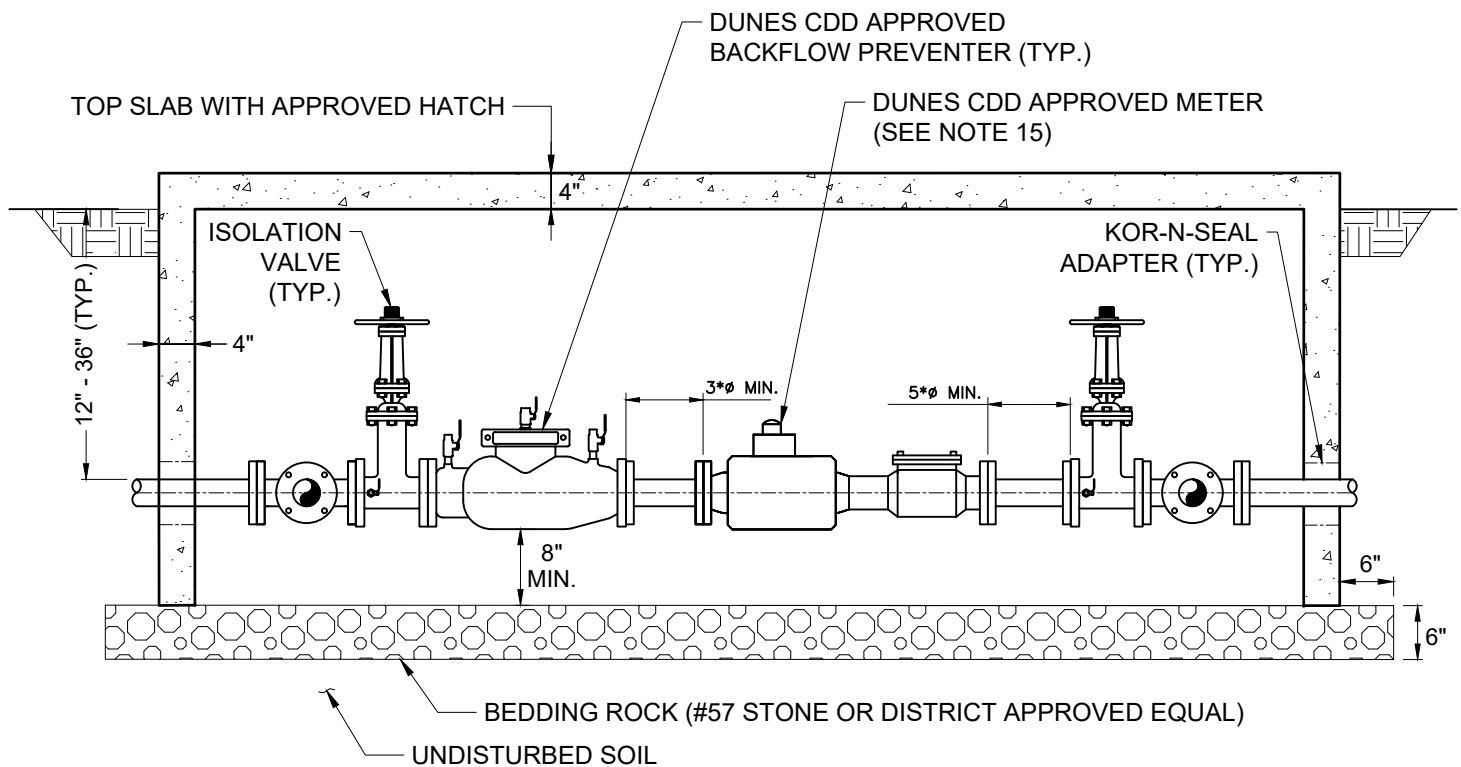
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CONFIGURATION NO. 2 - BELOW METER ASSEMBLY (2.5" AND LARGER)



SECTION A-A



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**WM METER CONFIG.
BELOW METER ASMBY.
(CONFIG. 2) 2.5" & LGR.**

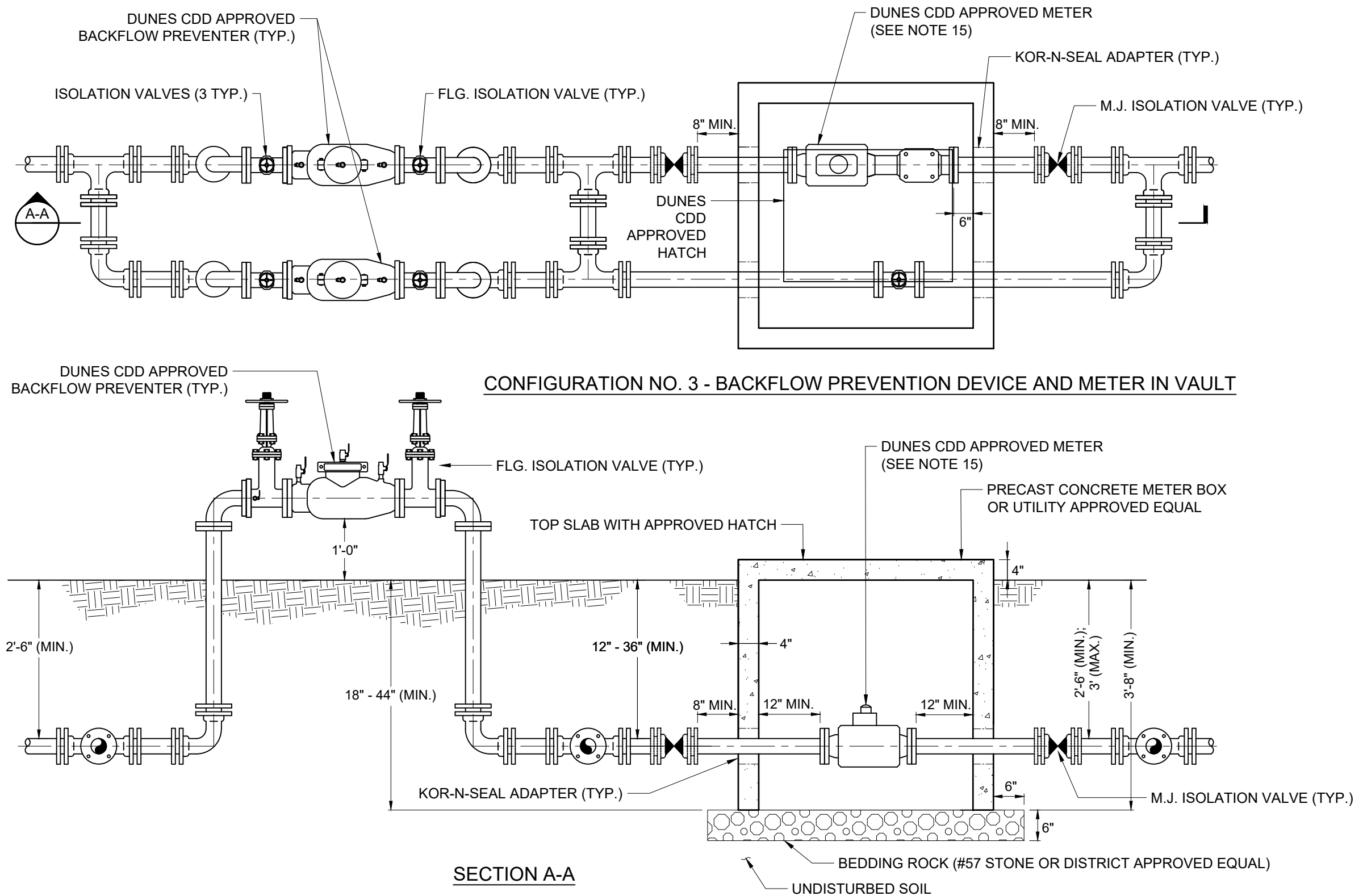
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WATER MAIN METER CONFIGURATION BACKFLOW PREVENTION DEVICE AND METER IN VAULT (CONFIGURATION NO. 3)

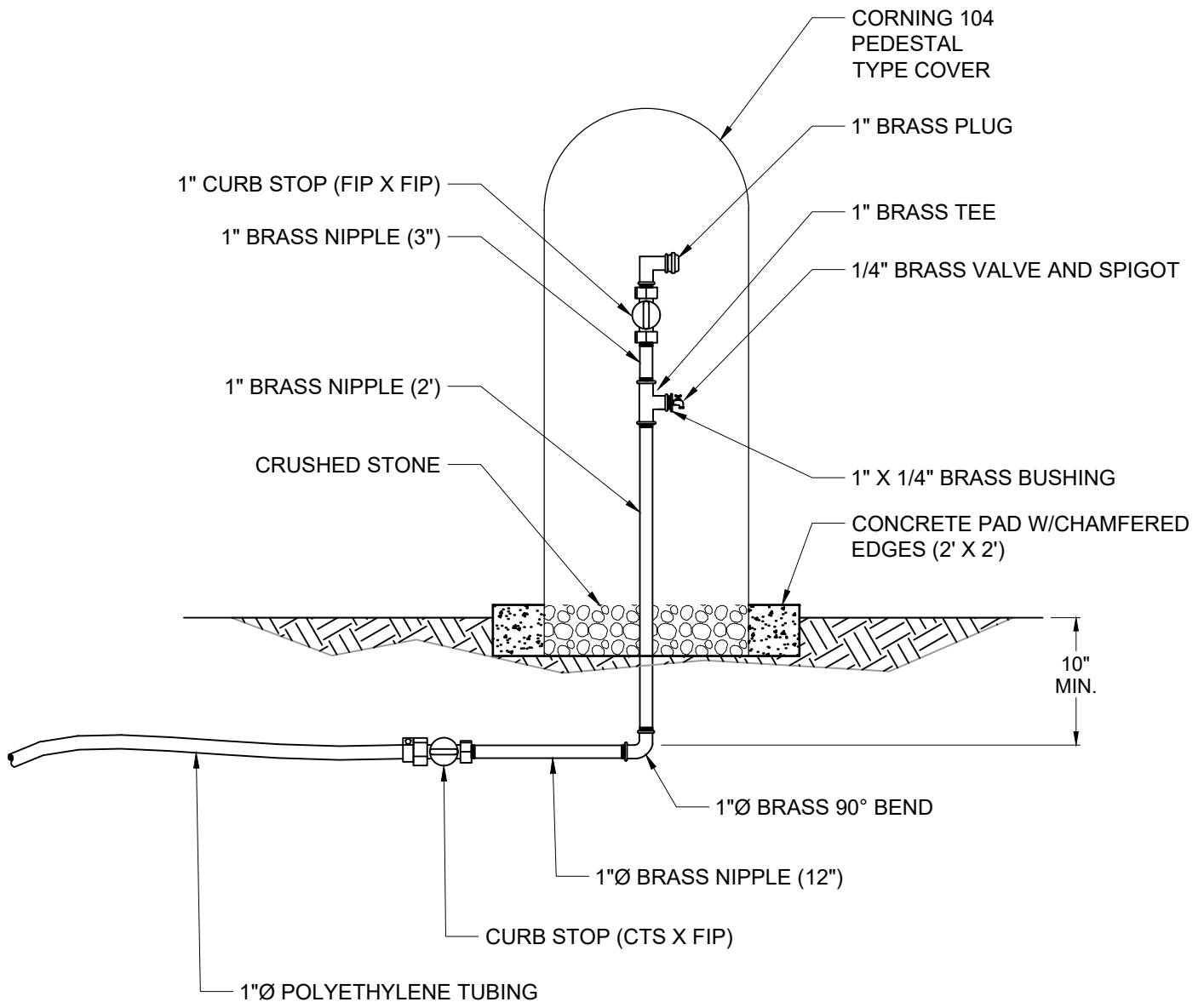
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WM METER CONFIG. PERMANENT SAMPLING STATION

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**DUNES COMMUNITY
DEVELOPMENT DISTRICT**

Sanitary Sewer System Details Cover

INDEX OF SHEETS

S-00	COVER SHEET
S-01	PRECAST CONCRETE MANHOLE
S-02	MANHOLE CONNECTIONS
S-03	MANHOLE FRAME AND COVER
S-04	PLUG VALVE AND BOX
S-05	AIR OR AIR/VACUUM RELEASE VALVE DETAIL
S-06	OFFSET AIR OR AIR/VACUUM RELEASE VALVE DETAIL
S-07	SERVICE LATERAL
S-08	HOME SERVICE LATERAL

FILE: J:\Dunes_Misc\04~DETAILS\Civil\DWG\Current_Plan_Set\S-00.dwg Feb 10, 2020 jshoemaker



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**SANITARY SEWER
SYSTEM DETAILS
COVER**

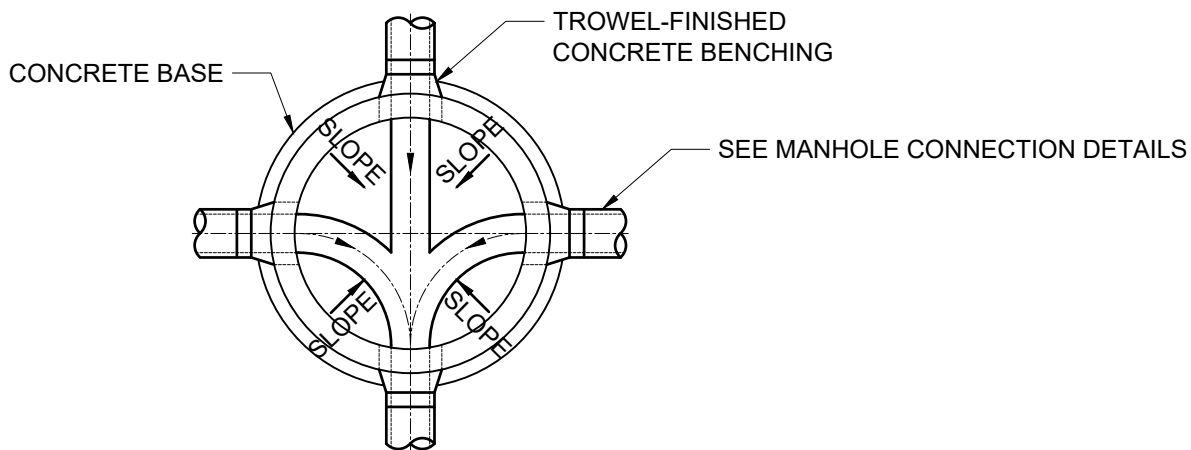
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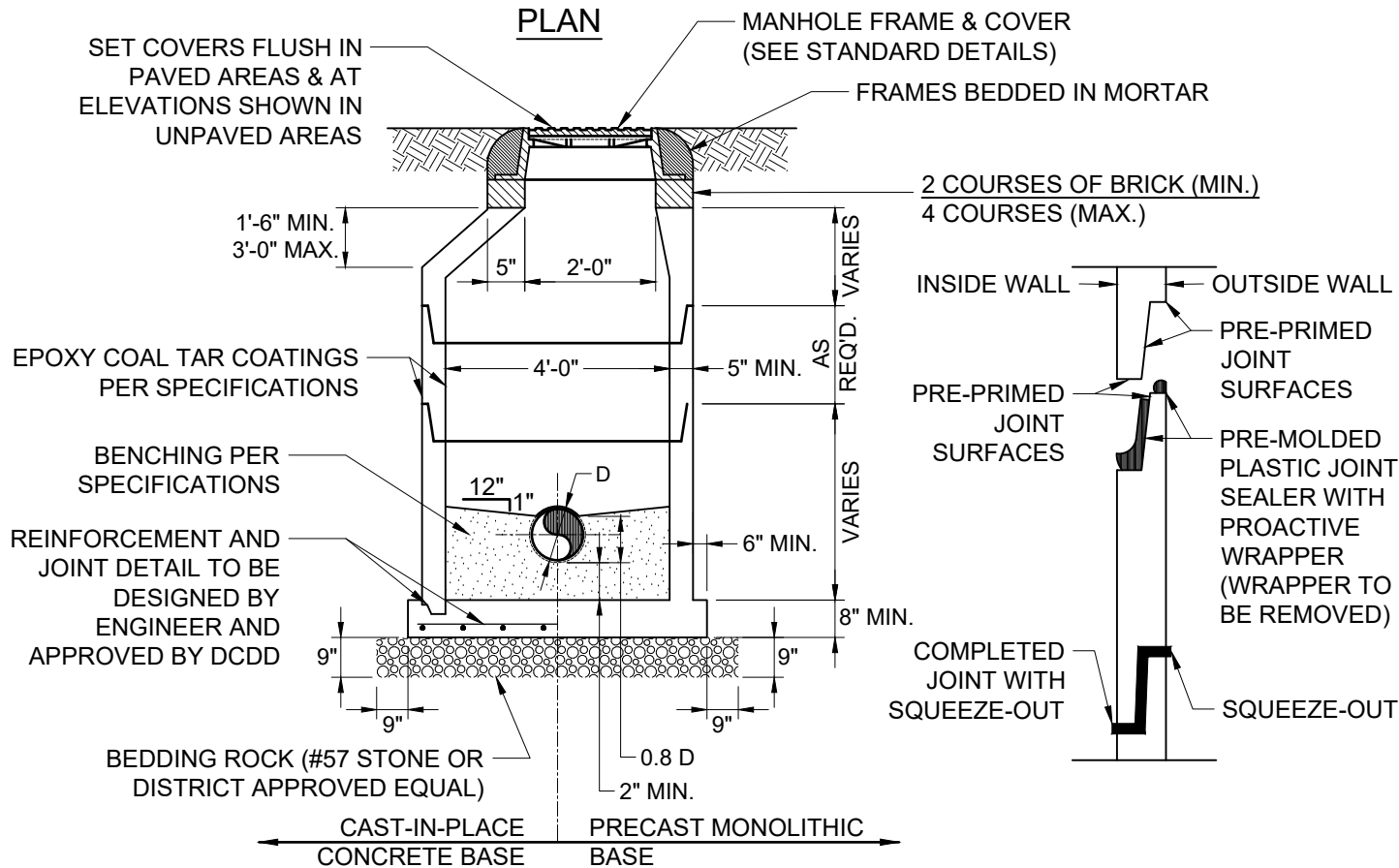
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PLAN



SECTION

NOTES:

1. MANHOLE SHOWN IS FOR SEWER SIZE 8" THRU 24", SEE SECTION 20.4.3 OF THE MANUAL FOR MANHOLE DIAMETER FOR SEWERS LARGER THAN 24".
2. DROP CONNECTIONS ARE REQUIRED WHENEVER INVERT OF INFLUENT SEWER IS 24" OR MORE ABOVE THE INVERT OF THE MANHOLE. SEE MANHOLE CONNECTION DETAILS.
3. APPROVED CONCENTRIC CONE DESIGN MAY BE USED AS AN ALTERNATIVE.



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**SANITARY SEWER
SYSTEM PRECAST
CONCRETE MANHOLE**

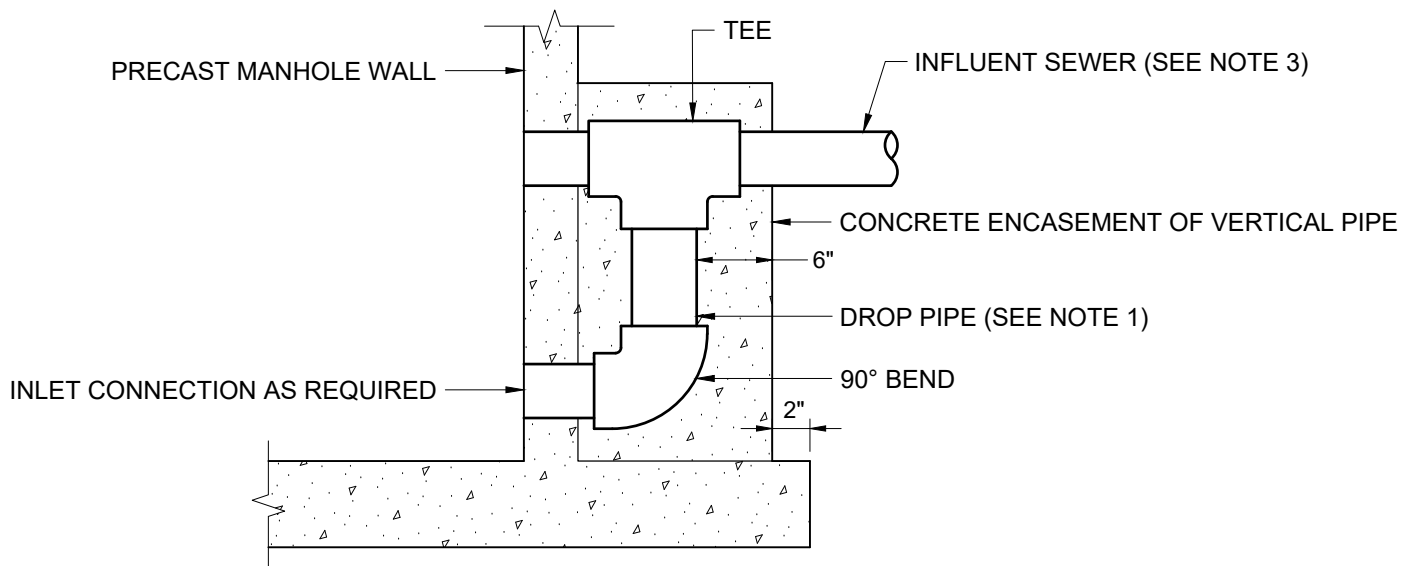
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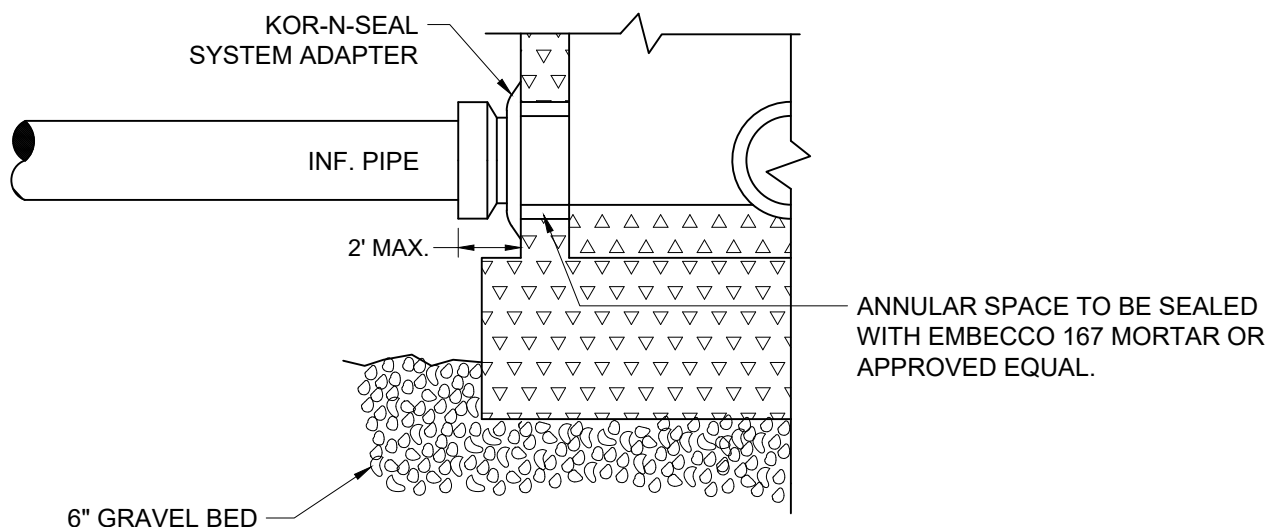
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STANDARD DROP DETAIL



STANDARD PRECAST MANHOLE PIPE CONNECTION

NOTES:

1. DROP PIPE AND FITTINGS SHALL BE OF EQUAL SIZE AND MATERIAL AS THE INFLUENT SEWER.
2. THE DCDD MAY APPROVE ALTERNATE WATER TIGHT CONNECTION DETAILS FOR CONNECTION OF 24" DIAMETER PIPES AND LARGER.
3. AN OUTSIDE DROP CONNECTION SHALL BE REQUIRED FOR ALL INFLUENT WHICH HAVE AN INVERT 2' OR MORE ABOVE THE MANHOLE INVERT.



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**SANITARY SEWER
SYSTEM MANHOLE
CONNECTIONS**

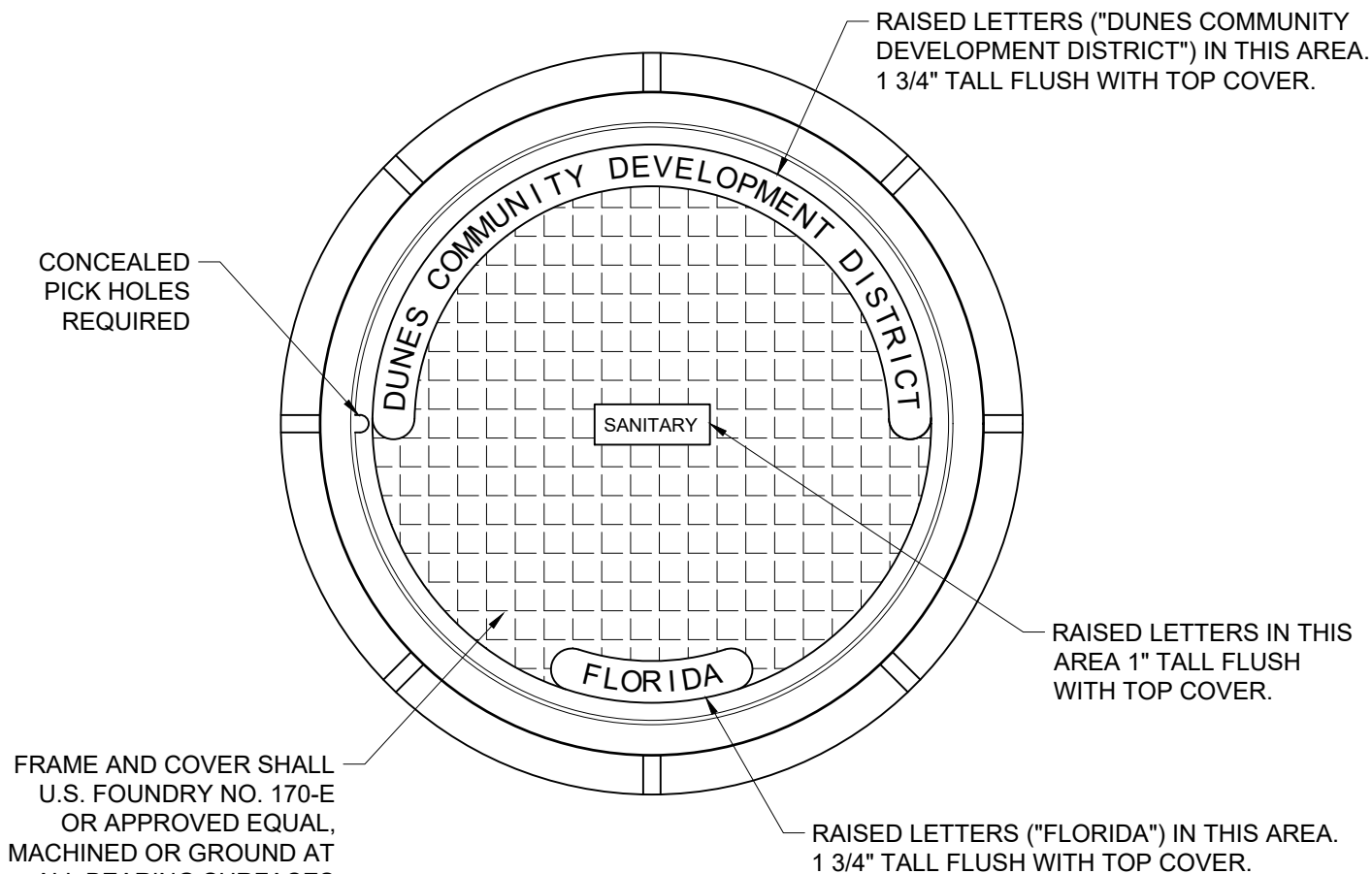
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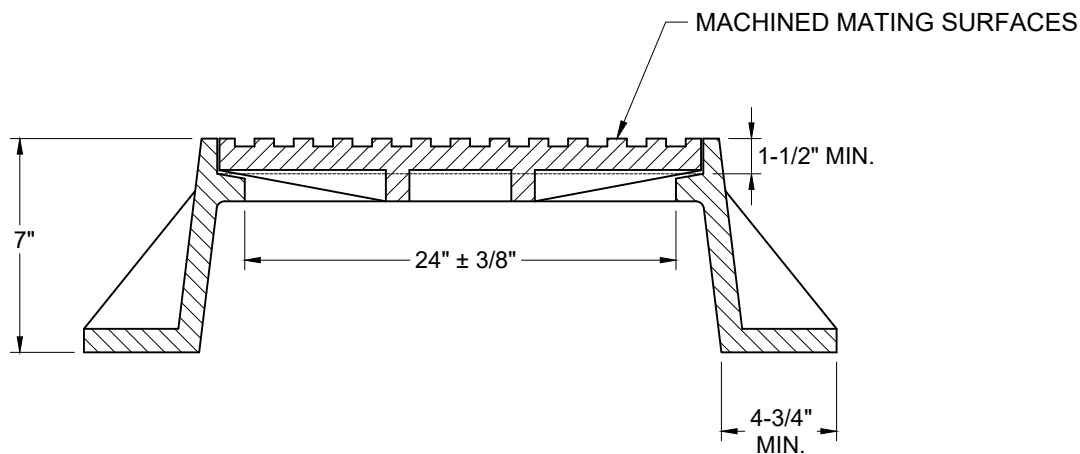
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FRAME AND COVER SHALL U.S. FOUNDRY NO. 170-E OR APPROVED EQUAL, MACHINED OR GROUND AT ALL BEARING SURFACES SO AS TO SEAT FIRMLY AND PREVENT ROCKING

PLAN



ELEVATION



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SANITARY SEWER SYSTEM MANHOLE FRAME AND COVER

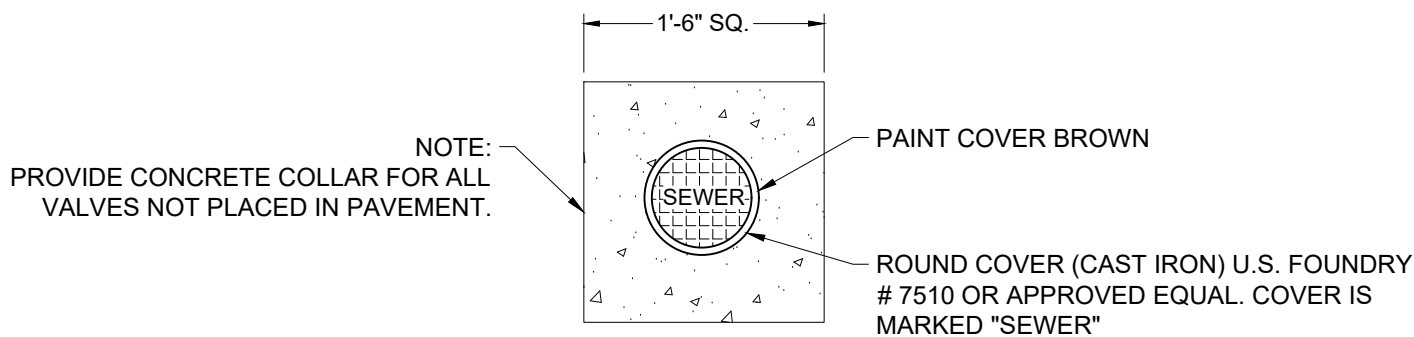
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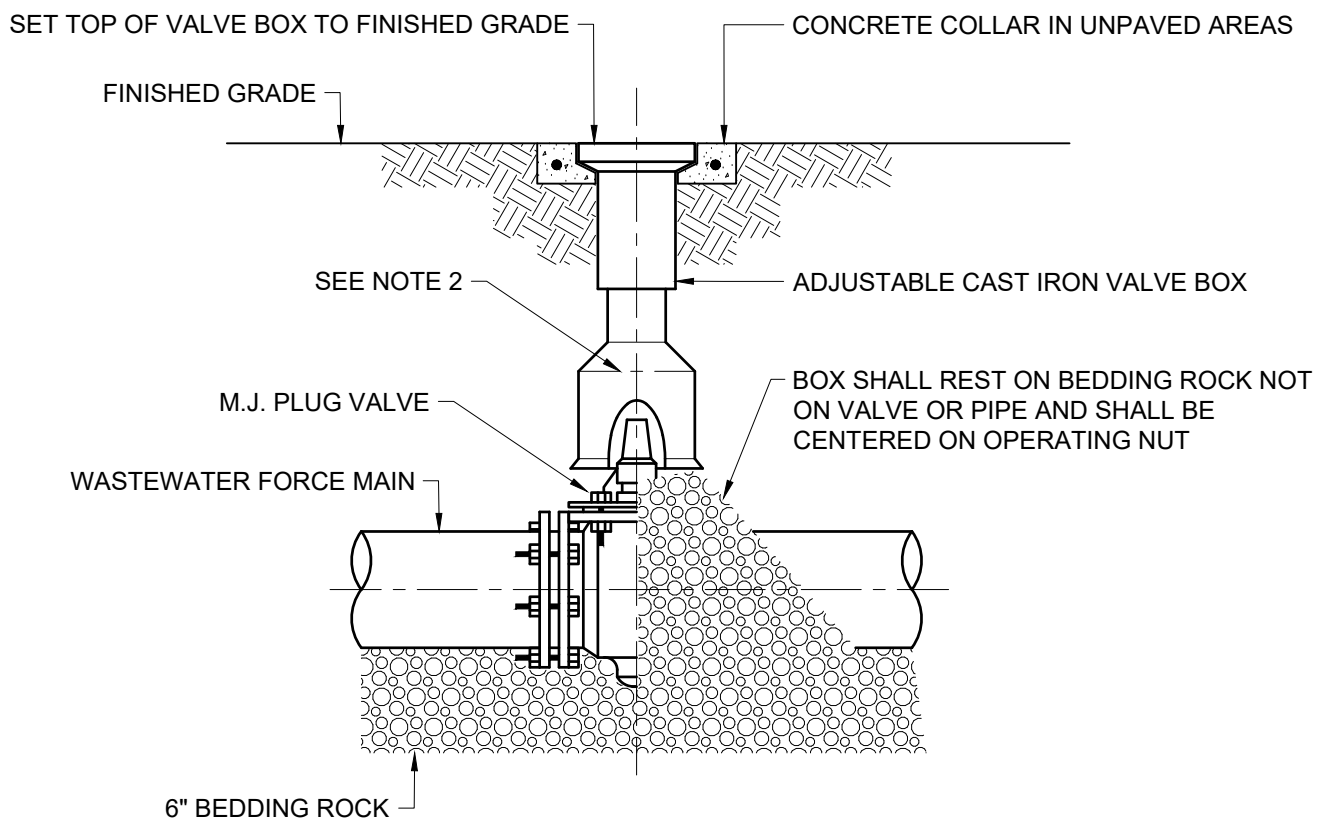
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VALVE COLLAR PLAN



SECTION

NOTES:

1. PVC EXTENSIONS SHALL NOT BE USED ON VALVE BOX INSTALLATION.
2. THE ACTUATING NUT FOR DEEPER VALVES SHALL BE EXTENDED TO COME UP TO 4 FOOT DEPTH BELOW FINISHED GRADE.



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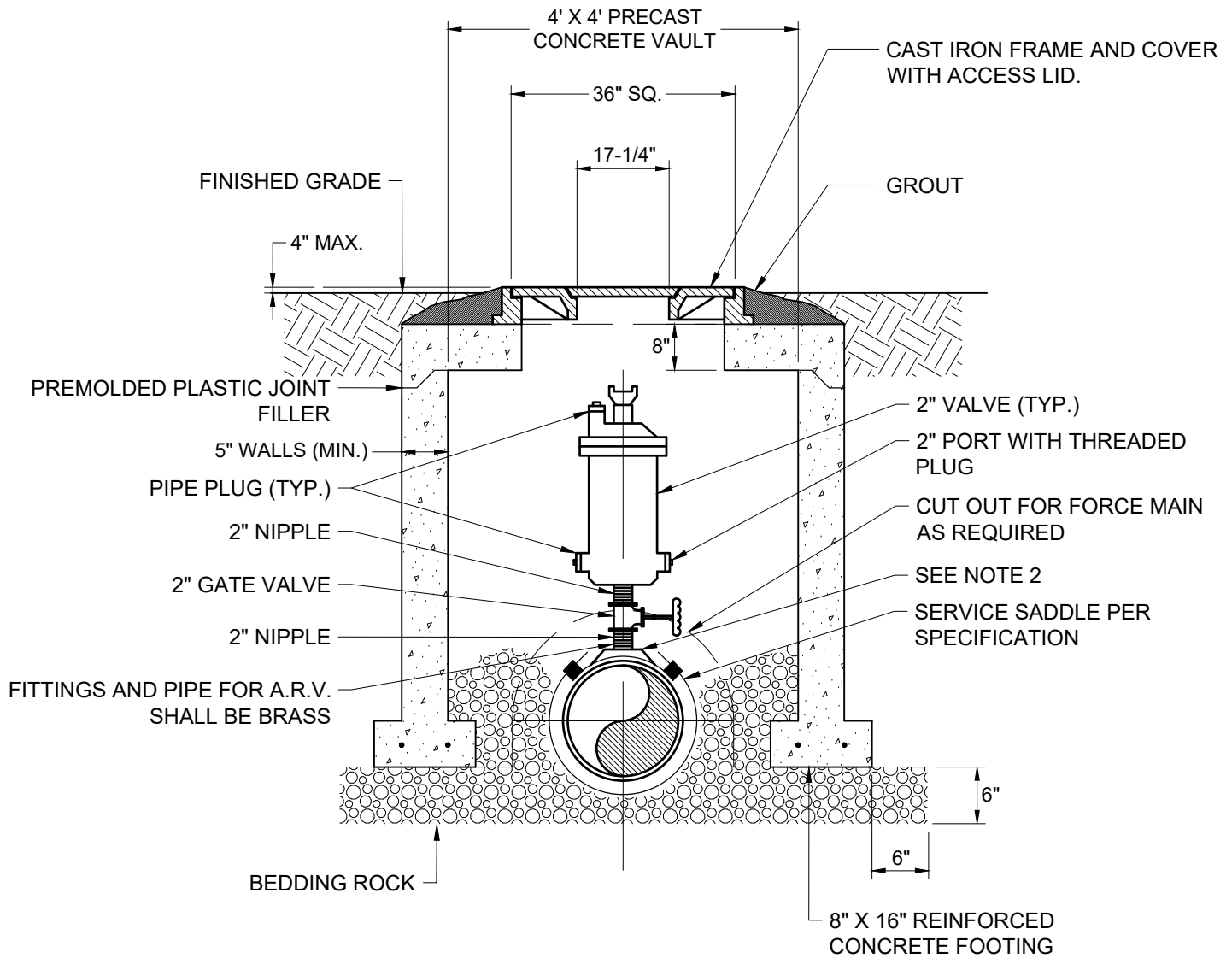
**SANITARY SEWER
SYSTEM PLUG VALVE
AND BOX**

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NOTES:

1. ABOVE DETAIL IS BASED ON 2" COMBINATION AIR/VACUUM RELEASE VALVE. CHANGE PIPE AND FITTINGS ACCORDINGLY FOR OTHER VALVE SIZES AND TYPES. VALVE SIZES TO BE DETERMINED BY THE ENGINEER AND APPROVED BY THE DCDD PRIOR TO INSTALLATION.
2. THE MINIMUM DIMENSION FROM TOP OF PIPE TO FINISHED GRADE SHALL BE 4.0 FEET.



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SANITARY SEWER SYST. AIR OR AIR/VACUUM RELEASE VALVE DETAIL

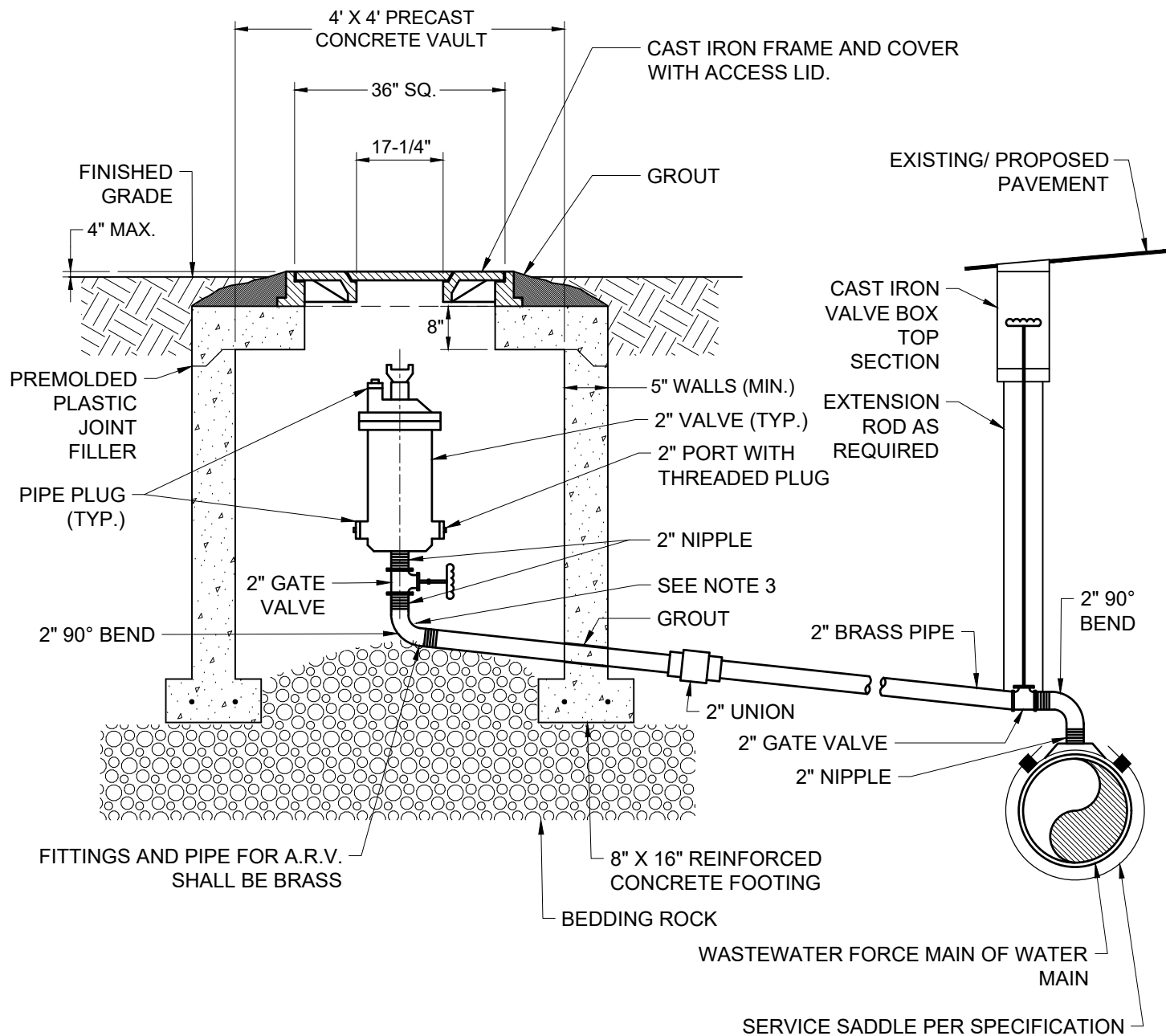
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NOTES:

1. ABOVE DETAIL IS BASED ON 2" COMBINATION AIR/VACUUM RELEASE VALVE.
2. CHANGE PIPE AND FITTINGS ACCORDINGLY FOR OTHER VALVE SIZES AND TYPES. VALVE SIZES TO BE DETERMINED BY THE ENGINEER AND APPROVED BY THE DCDD PRIOR TO INSTALLATION.
3. THE MINIMUM DIMENSION FROM TOP OF PIPE TO FINISHED GRADE SHALL BE 4.0 FEET.



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SANITARY SEWER SYST. OFFS. AIR - AIR/VACUUM RELEASE VALVE DETAIL

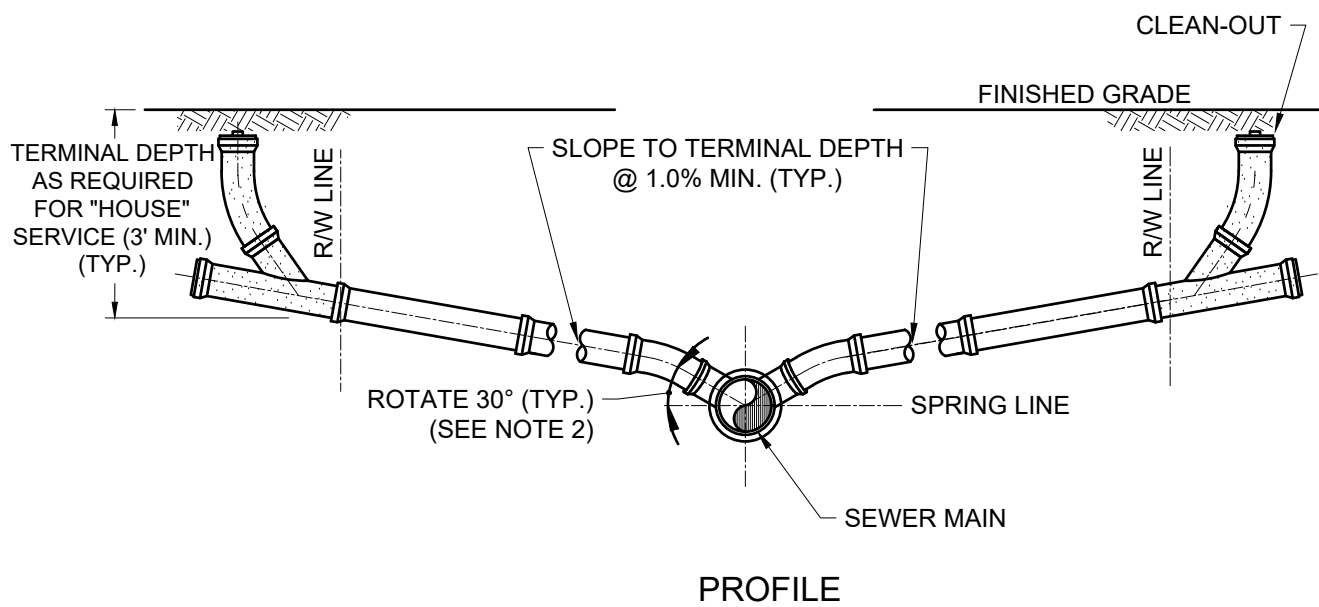
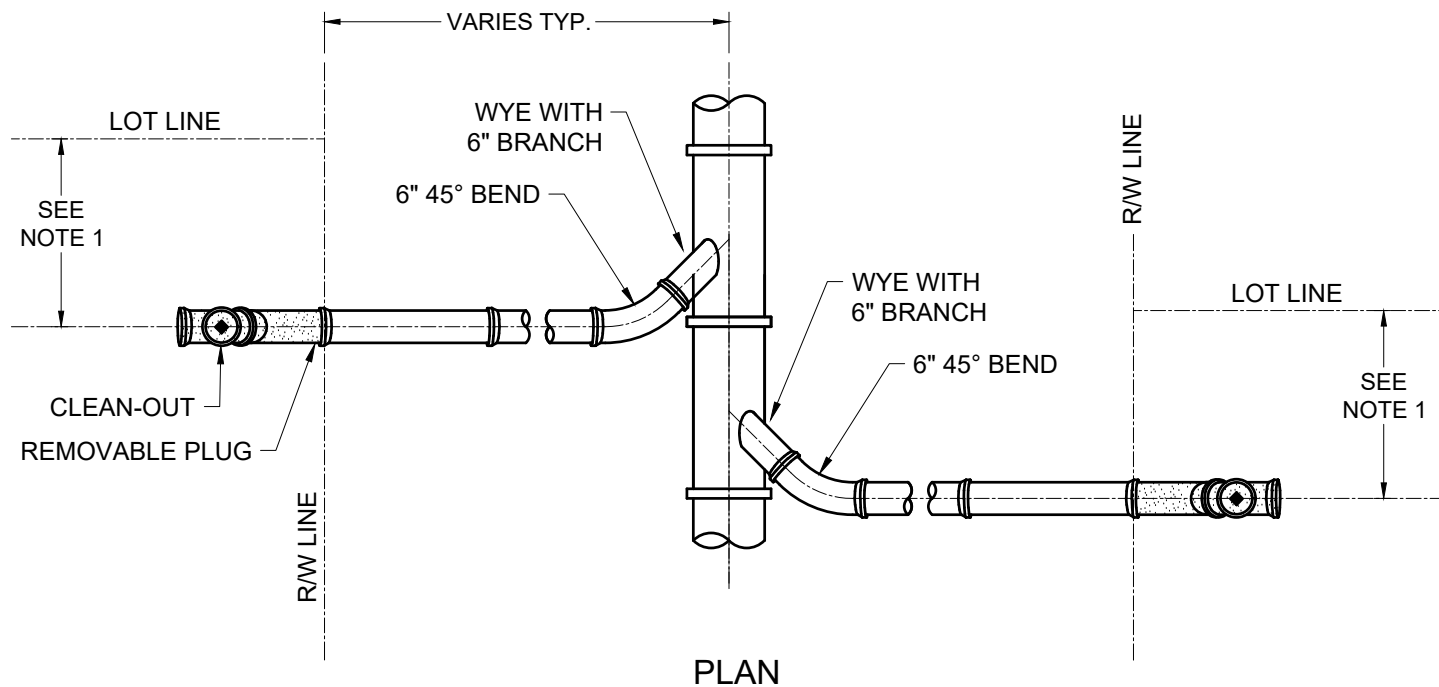
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NOTES:

1. LOCATE LATERAL AS CLOSE TO LOT LINE AS POSSIBLE.
2. INVERT OF SERVICE LATERAL SHALL NOT ENTER SEWER MAIN BELOW SPRING LINE.



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SANITARY SEWER SYSTEM SERVICE LATERAL

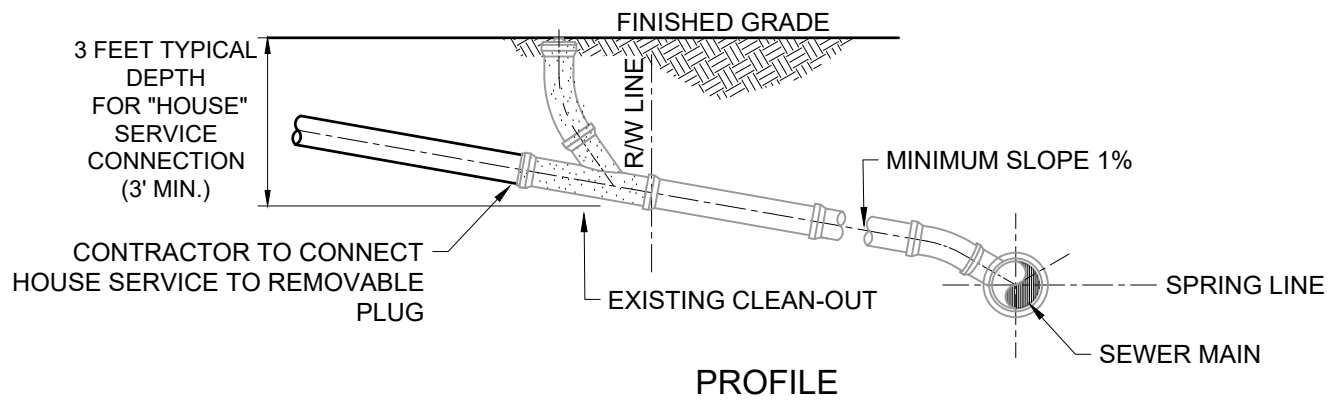
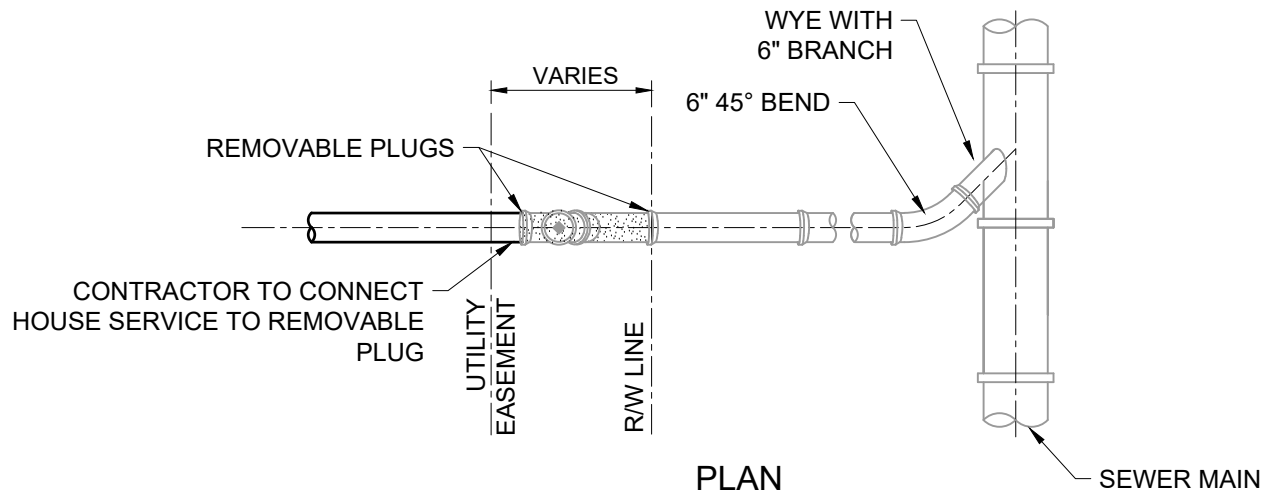
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NOTES:

1. PLUMBING CONTRACTOR SHALL COORDINATE CONNECTION TO CLEAN-OUT WITH UTILITY PRIOR TO CONDUCTING WORK.
2. PLUMBING CONTRACTOR SHALL NOT ALTER CLEAN-OUT WITHOUT WRITTEN AUTHORIZATION FROM UTILITY.
3. IF CLEAN-OUT IS IN AREA OF PROPOSED PAVEMENT, PLUMBING CONTRACTOR SHALL REPLACE PVC CLEAN-OUT CAP WITH BRASS CLEAN-OUT CAN AND INSURE ADEQUATE COMPACTION AROUND CLEAN-OUT PIPING TO PREVENT DAMAGE FROM TRAFFIC LOADING.
4. IF CLEAN-OUT MUST BE RELOCATED, CONTRACTOR SHALL OBTAIN APPROVAL FROM UTILITY AND SHALL RELOCATE CLEAN-OUT ASSEMBLY WITHIN UTILITY EASEMENT OR RIGHT-OF-WAY.
5. UTILITY IS RESPONSIBLE FOR MAINTENANCE OF SANITARY LATERAL FROM THE CLEAN-OUT TO THE SEWER MAN, BUT NO FURTHER THAN THE UTILITY EASEMENT. HOMEOWNER IS RESPONSIBLE FOR SANITARY LATERAL UPSTREAM OF THE CLEAN-OUT.
6. ADDITIONAL CLEAN-OUTS MAY BE NECESSARY. LOCAL REGULATIONS REQUIRE CLEAN-OUTS EVERY 80 FEET. CLEAN-OUT INSTALLATION SHALL BE THE HOMEOWNERS RESPONSIBILITY.
7. CONTRACTOR RESPONSIBLE FOR INSTALLING HOME SERVICE LATERAL AT APPROPRIATE SLOPE.



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SANITARY SEWER SYSTEM HOME SERVICE LATERAL

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**DUNES COMMUNITY
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Reclaimed Water System Details Cover

INDEX OF SHEETS

RW-00	COVER SHEET
RW-01	RECLAIMED WATER SYSTEM SERVICE CONNECTION LOCATIONS
RW-02	RECLAIMED WATER SYSTEM SERVICE CONN. EXISTING SUBDIVISION
RW-03	RECLAIMED WATER SYSTEM NEW EFFLUENT SERVICE DETAIL
RW-04	RECLAIMED WATER SYSTEM VALVE AND BOX DETAIL
RW-05	RECLAIMED WATER SYSTEM BLOW-OFF ASSEMBLY AND BOX
RW-06	RECLAIMED WATER SYSTEM AIR OR AIR/ VACUUM RELEASE VALVE
RW-07	RECLAIMED WATER SYSTEM FLUSHING HYDRANT ASSEMBLY
RW-08	TYPICAL METER ASSEMBLY AND BOX
RW-09	TYPICAL 5/8"-2" METER ASSEMBLY AND BOX



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**RECLAIMED WATER
SYSTEM DETAILS
COVER**

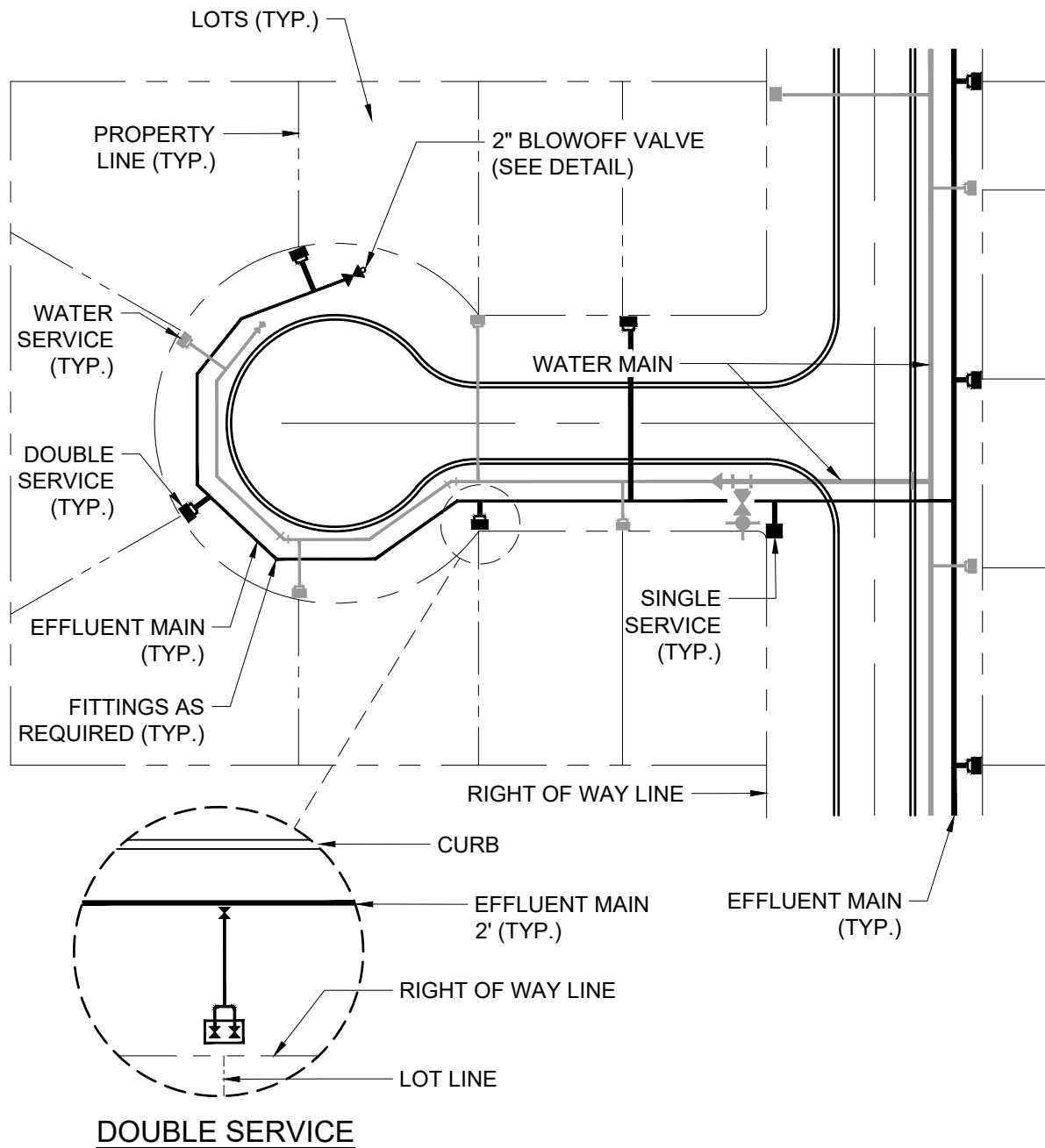
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NOTE:

1. INSTALL REUSE SERVICES AT ALTERNATE LOT LINES FROM THE POTABLE WATER SERVICES.



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101 Jungle Hut Road ~ Palm Coast, FL 32137 ~ Ph: 386.445.9045

**RECLAIMED
WATER SYSTEM SERVICE
CONNECTION LOCATIONS**

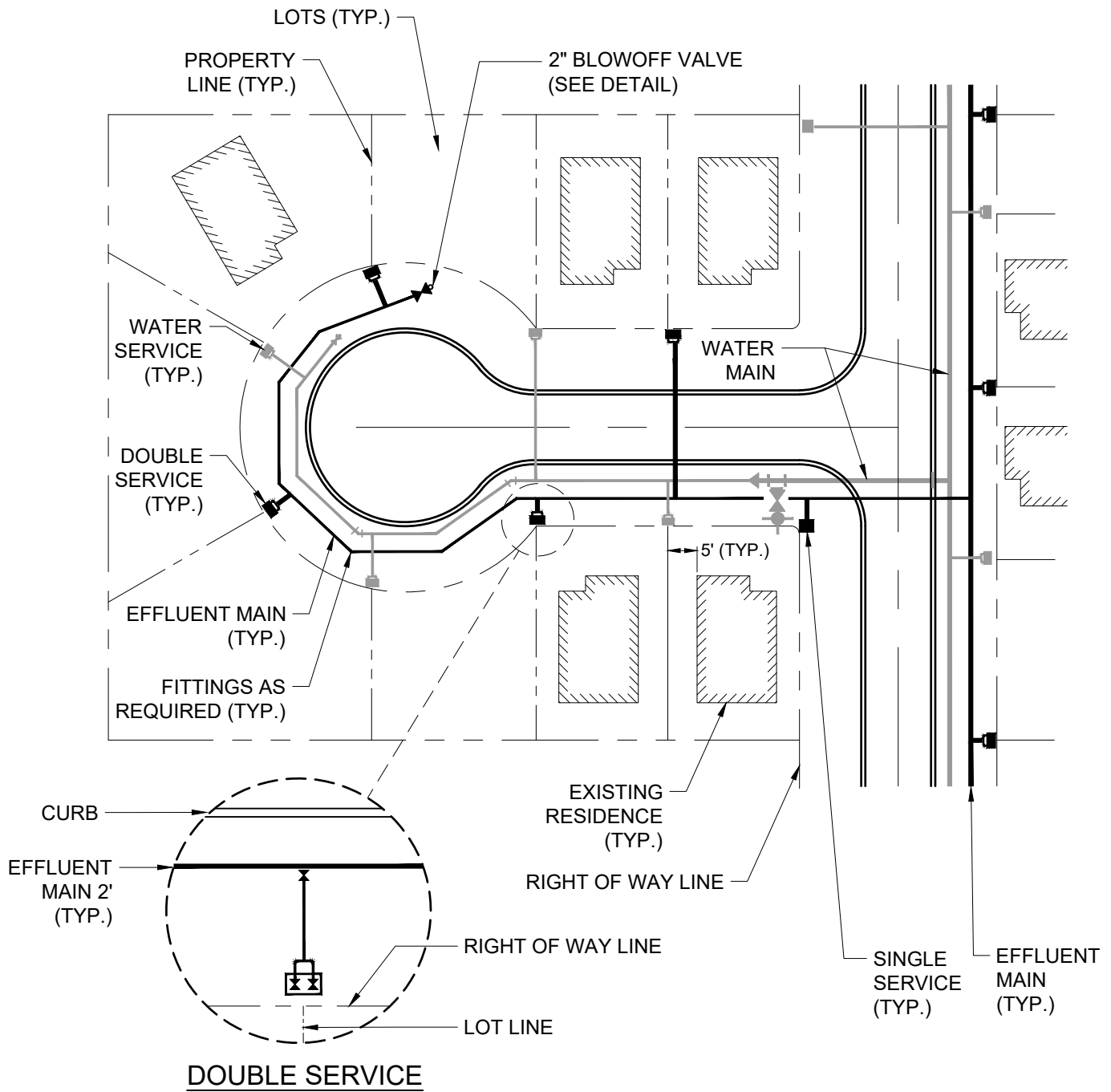
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**RW
01**

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NOTE:

1. INSTALL REUSE SERVICES AT ALTERNATE LOT LINES FROM THE POTABLE WATER SERVICES.



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**RECLAIMED
WATER SYSTEM SERVICE
CONN. EXIST. SUBDIVISION**

Date:
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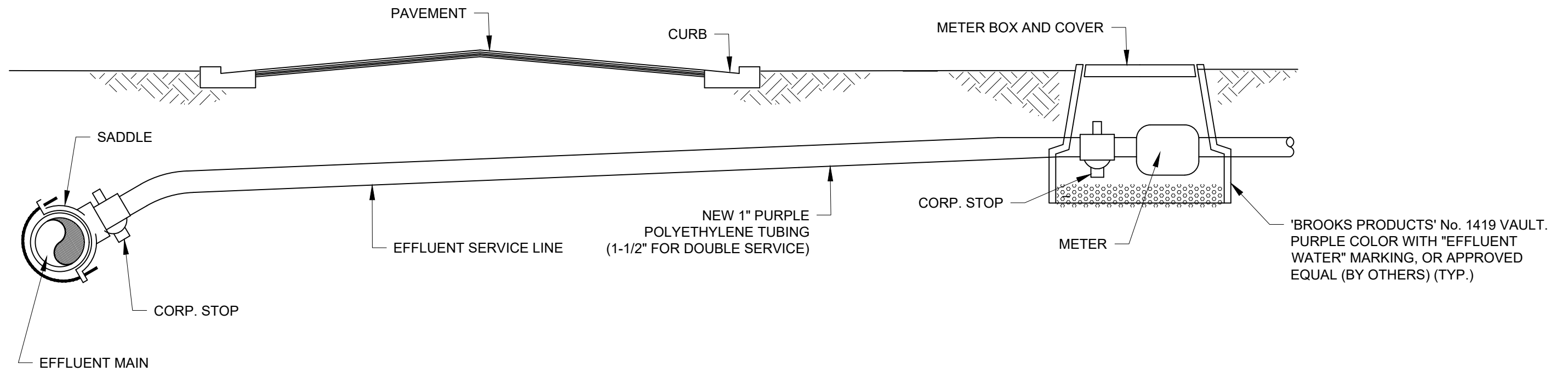
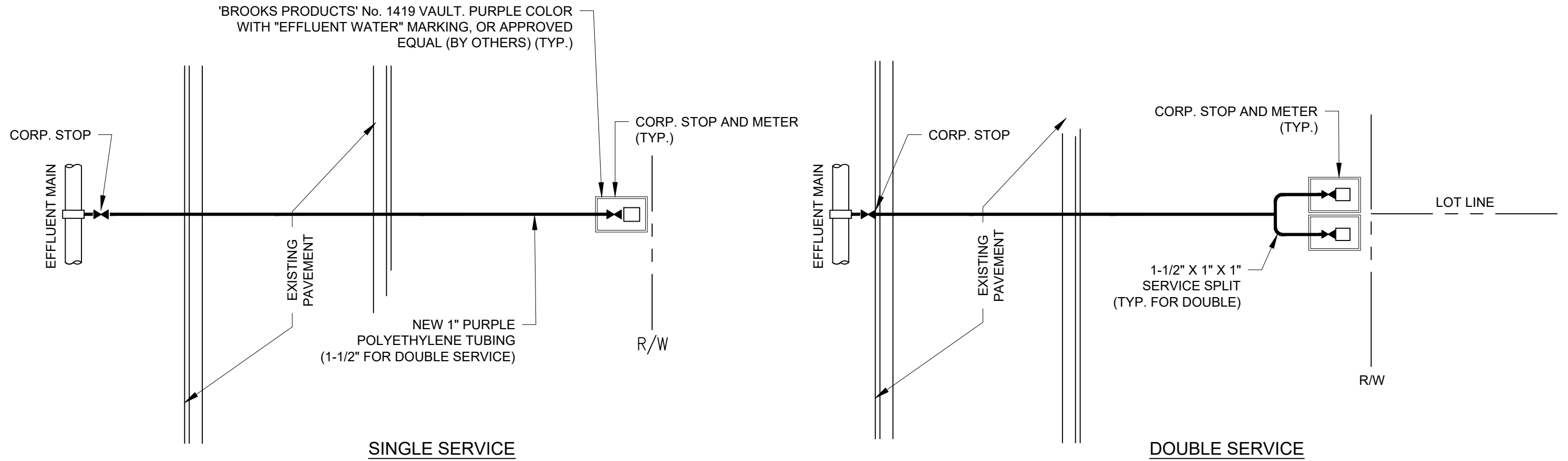
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RECLAIMED WATER SYSTEM NEW EFFLUENT SERVICE DETAIL

Rev:

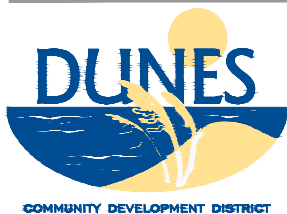
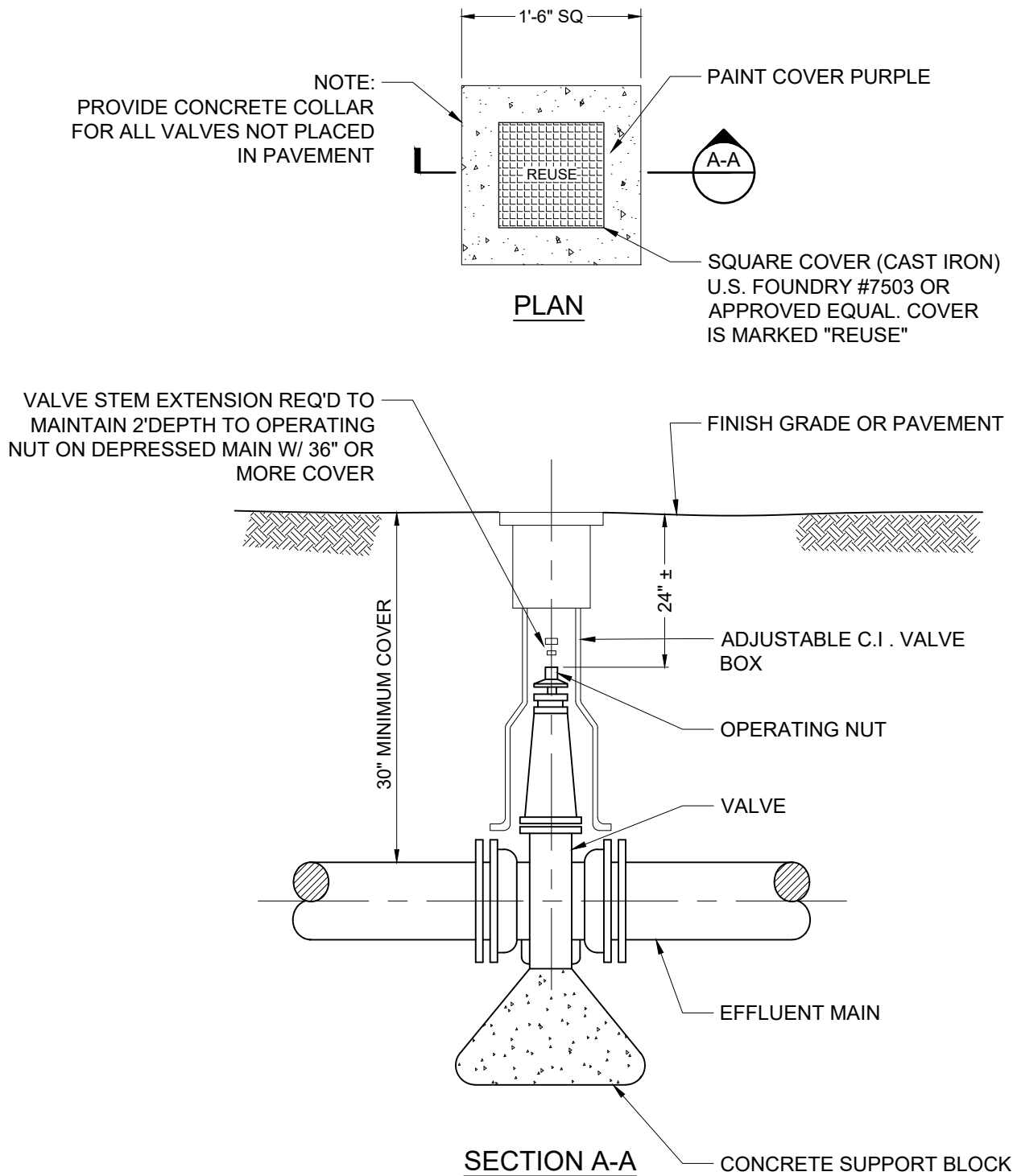
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**RECLAIMED
WATER SYSTEM
VALVE AND BOX DETAIL**

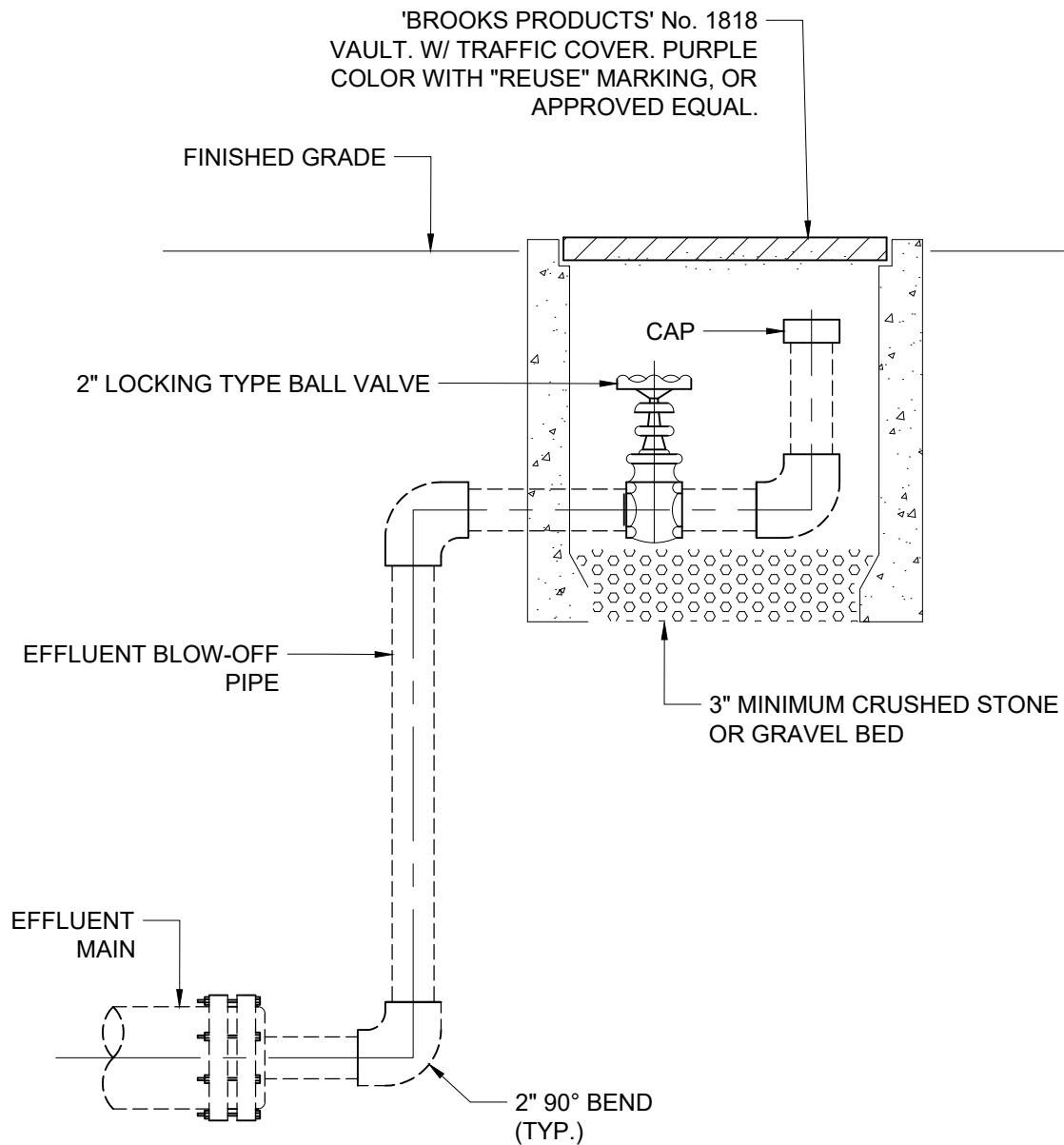
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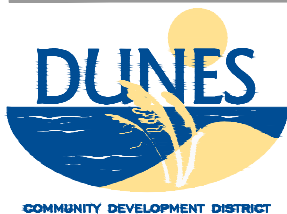
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04**

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SECTION



DUNES COMMUNITY DEVELOPMENT DISTRICT STANDARD DETAILS

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RECLAIMED WATER SYSTEM BLOW-OFF ASSEMBLY AND BOX

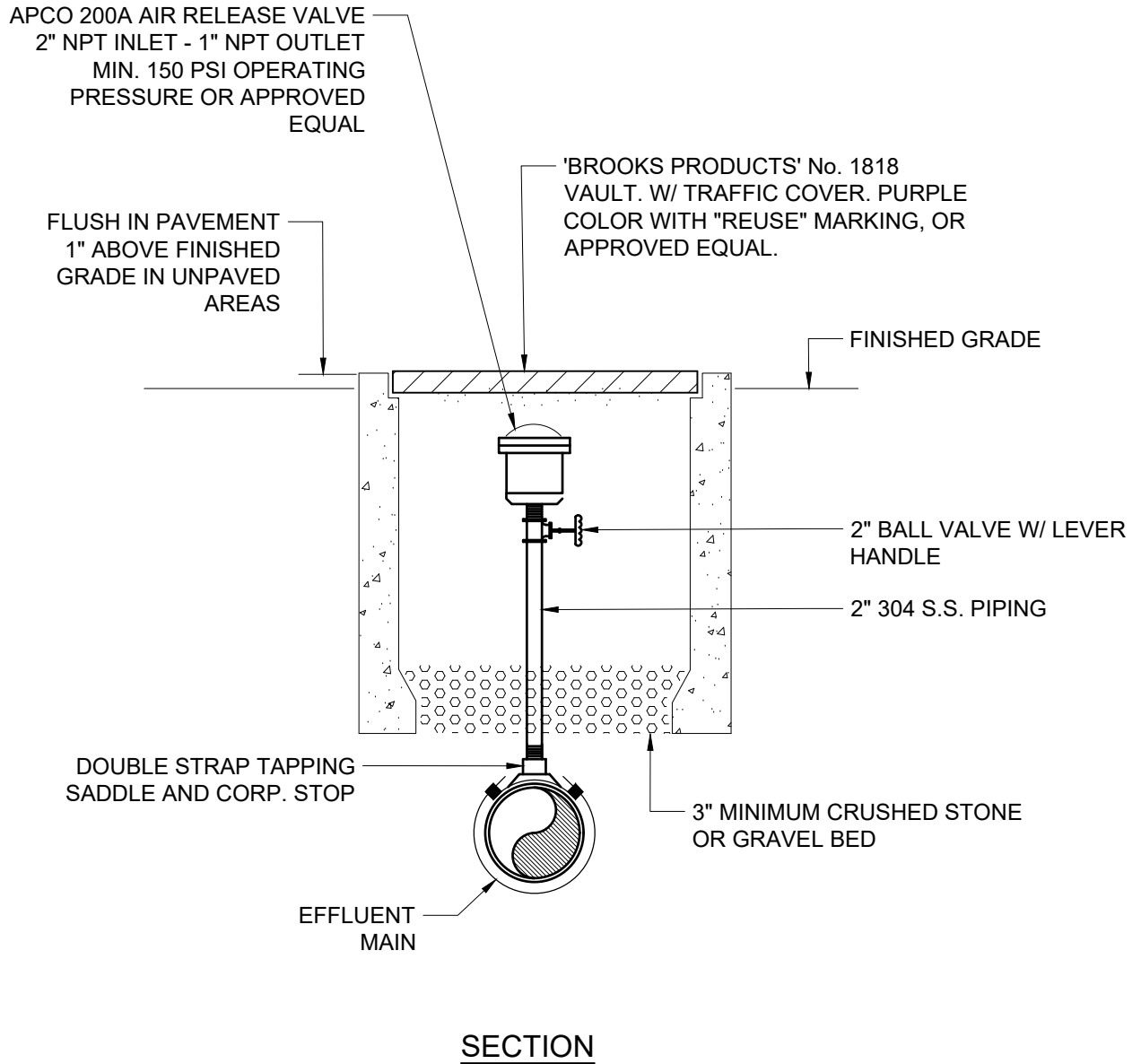
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**RECLAIMED WATER STM.
AIR OR AIR/ VACUUM
RELEASE VALVE**

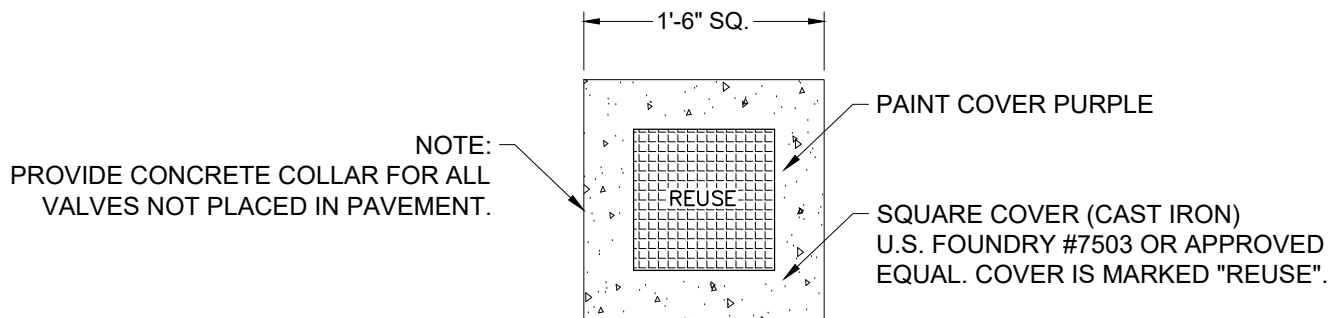
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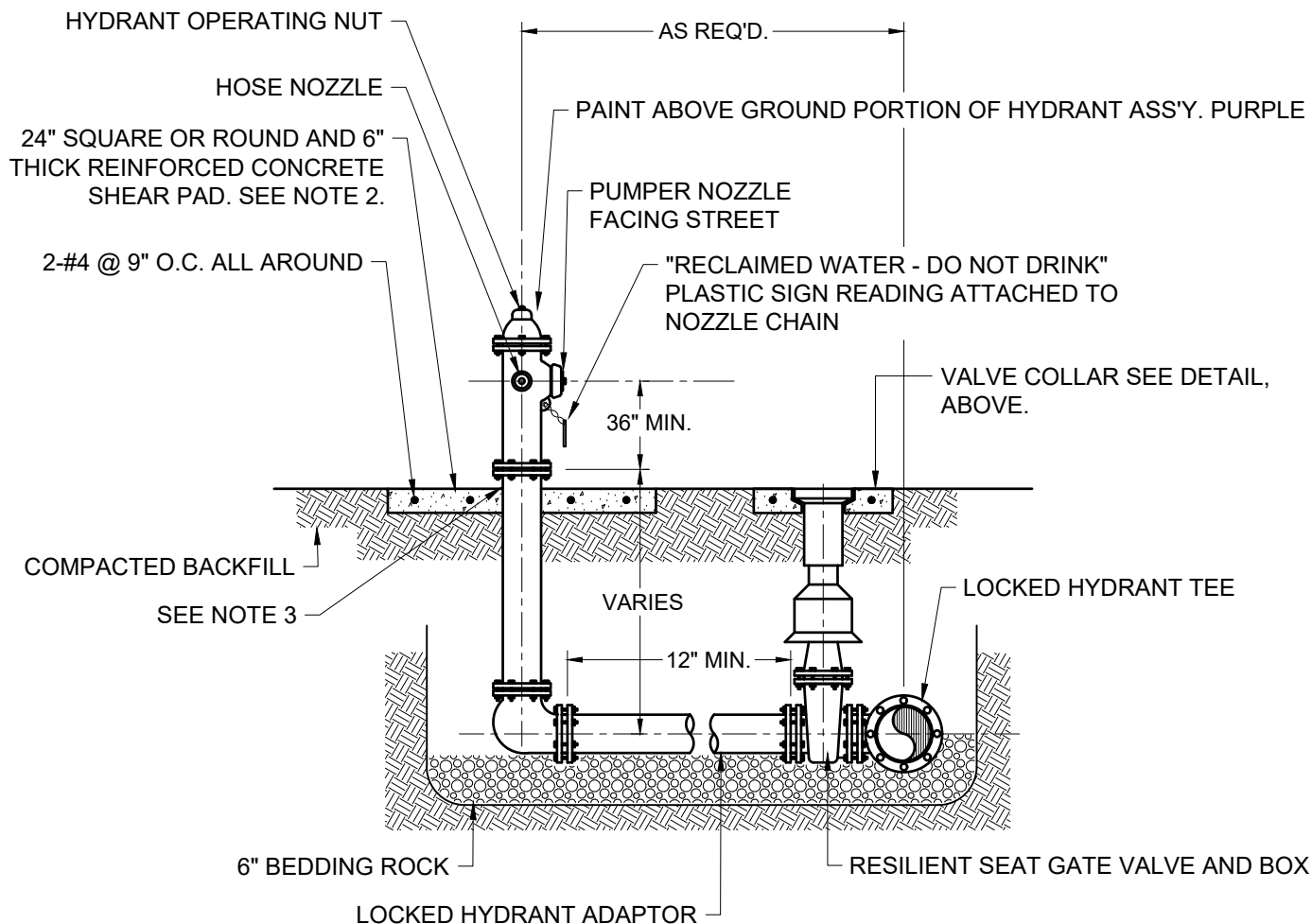
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06**

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0



VALVE COLLAR PLAN



SECTION

NOTES:

1. FLUSHING HYDRANT SHALL BE SUPPLIED WITHOUT A WEEP HOLE, OR WITH A PERMANENTLY PLUGGED WEEP HOLE.
2. THE DEVELOPER MAY INSTALL THE SHEAR PAD RECESSED UP TO 4 INCHES BELOW FINISHED GRADE AND SOD THE RECESSED SECTION.
3. CLEARANCE BETWEEN BOTTOM OF BOLTS AND TOP OF SHEAR PAD SHALL BE A 6" MINIMUM.



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**RECLAIMED WATER
SYSTEM FLUSHING
HYDRANT ASSEMBLY**

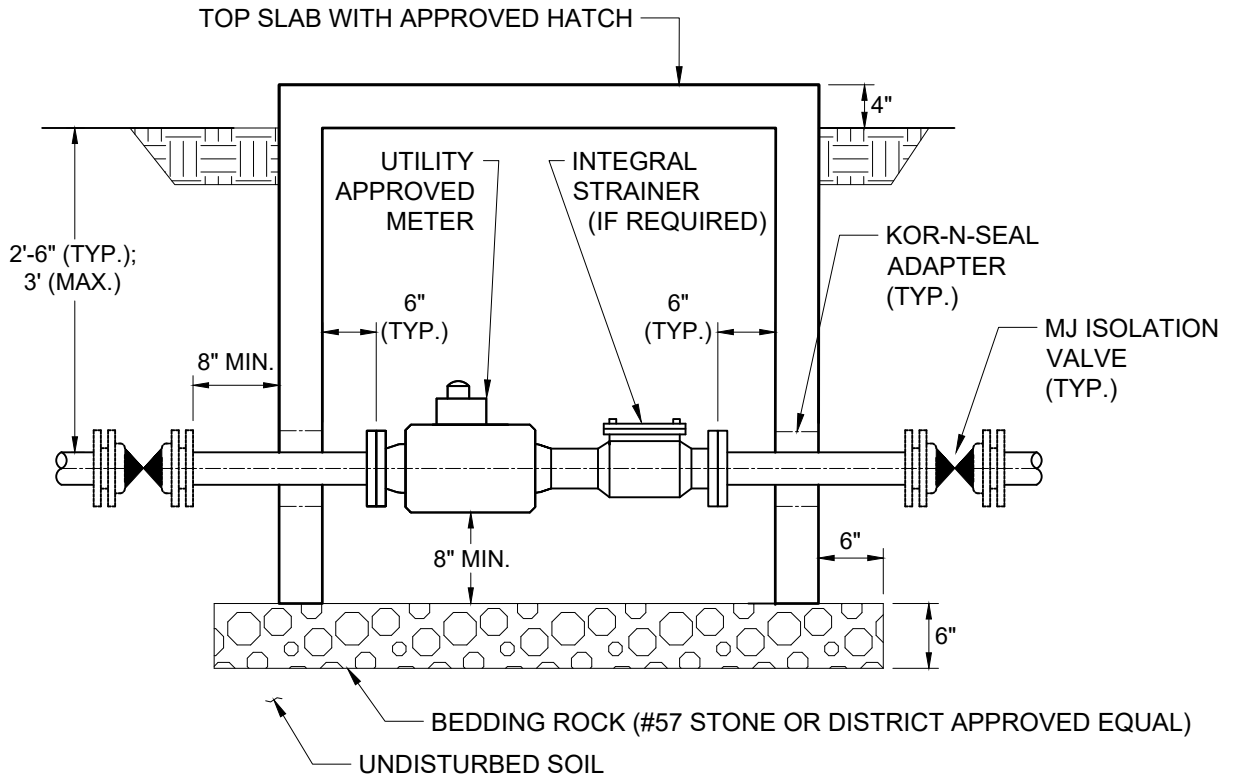
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TYPICAL METER ASSEMBLY AND BOX



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**RECLAIMED WATER
SYSTEM TYPICAL METER
ASSEMBLY AND BOX**

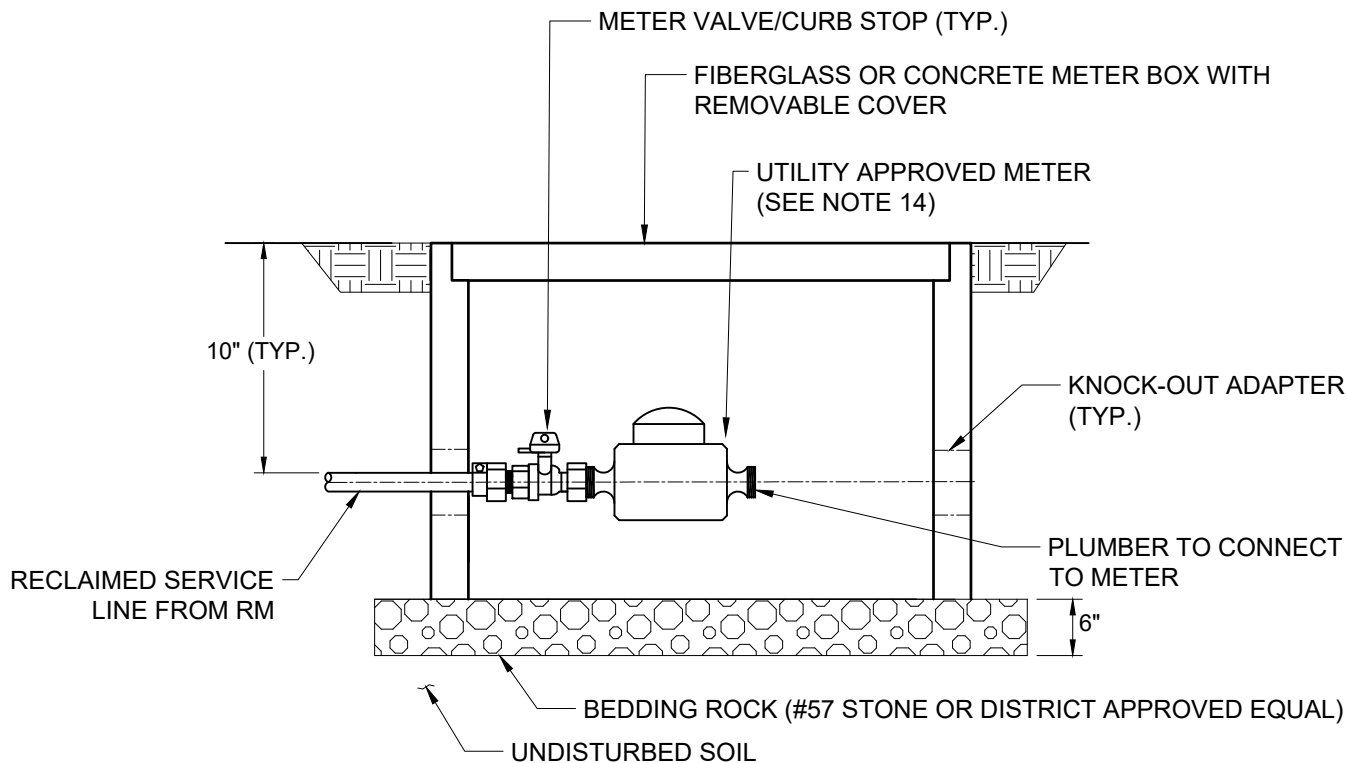
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TYPICAL 5/8"-2" METER ASSEMBLY AND BOX



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**RECLAIMED WATER
SYSTEM TYPICAL 5/8"-2"
METER ASMBY. & BOX**

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09**

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0

**DUNES COMMUNITY
DEVELOPMENT DISTRICT**

Pump Station Details Cover

INDEX OF SHEETS

PS-00	COVER SHEET
PS-01	PUMP STATION SITE PLAN
PS-02	WASTEWATER PUMP STATION TYPICAL PLAN AND SECTION
PS-03	DUPLEX CONTROL PANEL ELECTRICAL EQUIPMENT INSTALLATION DETAIL
PS-04	DUPLEX CONTROL PANEL ENCLOSURE DEAD FRONT LAYOUT & SUBPANEL LAYOUT
PS-05	DUPLEX CONTROL PANEL ENCLOSURE SCHEMATIC
PS-06	DUPLEX CONTROL PANEL ENCLOSURE TERMINAL BLOCK & TORQUE TABLES
PS-07	CHAIN LINK FENCE DETAIL
PS-08	STAINLESS STEEL PIPE SUPPORT DETAIL

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**PUMP STATION DETAILS
COVER**

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3/02/20

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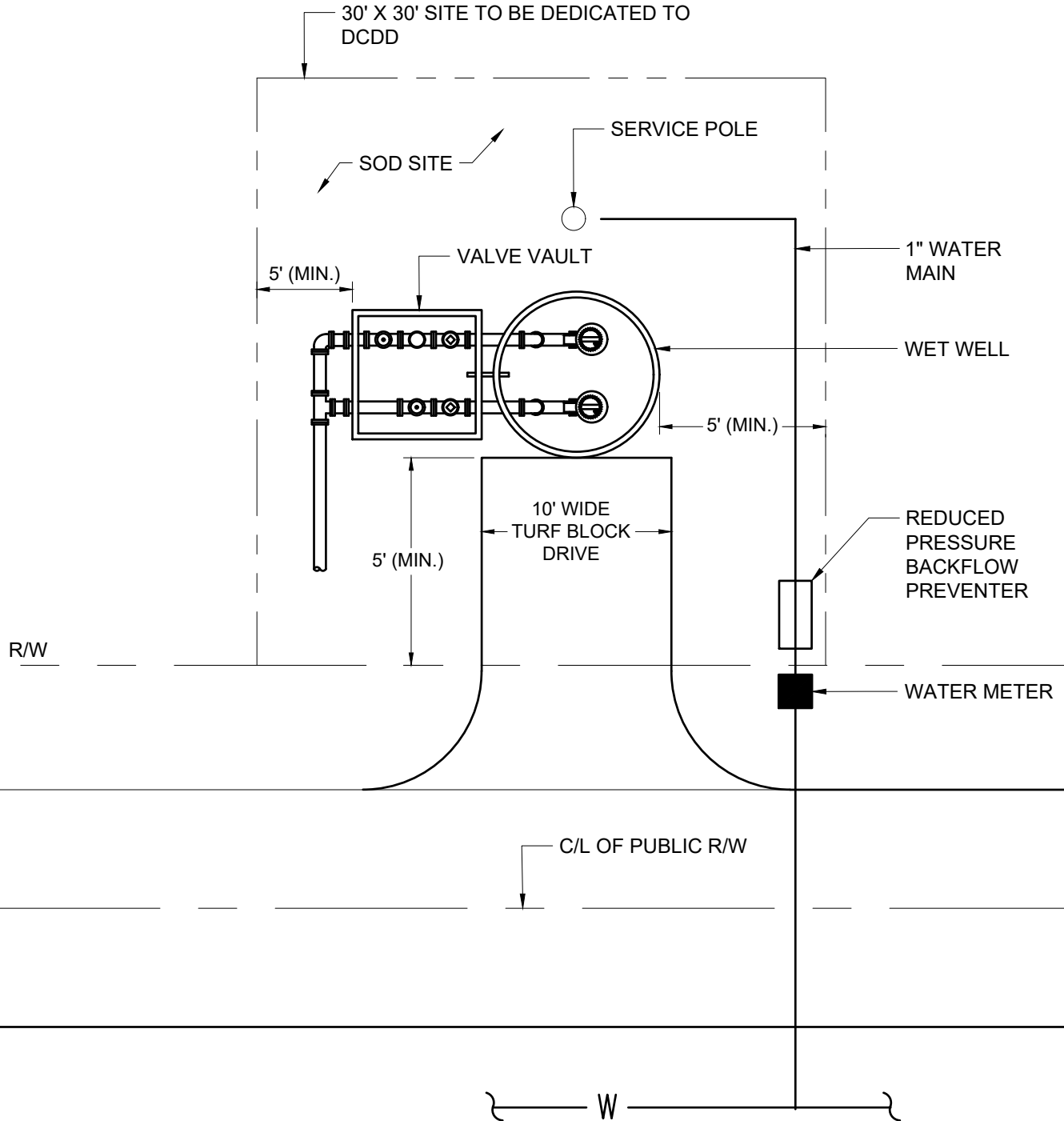
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NOTES:

1. OWNER MAY REQUIRE LANDSCAPING TO PROVIDE BUFFER.



DUNES COMMUNITY DEVELOPMENT DISTRICT STANDARD DETAILS

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PUMP STATION SITE PLAN

Date:
2/10/20

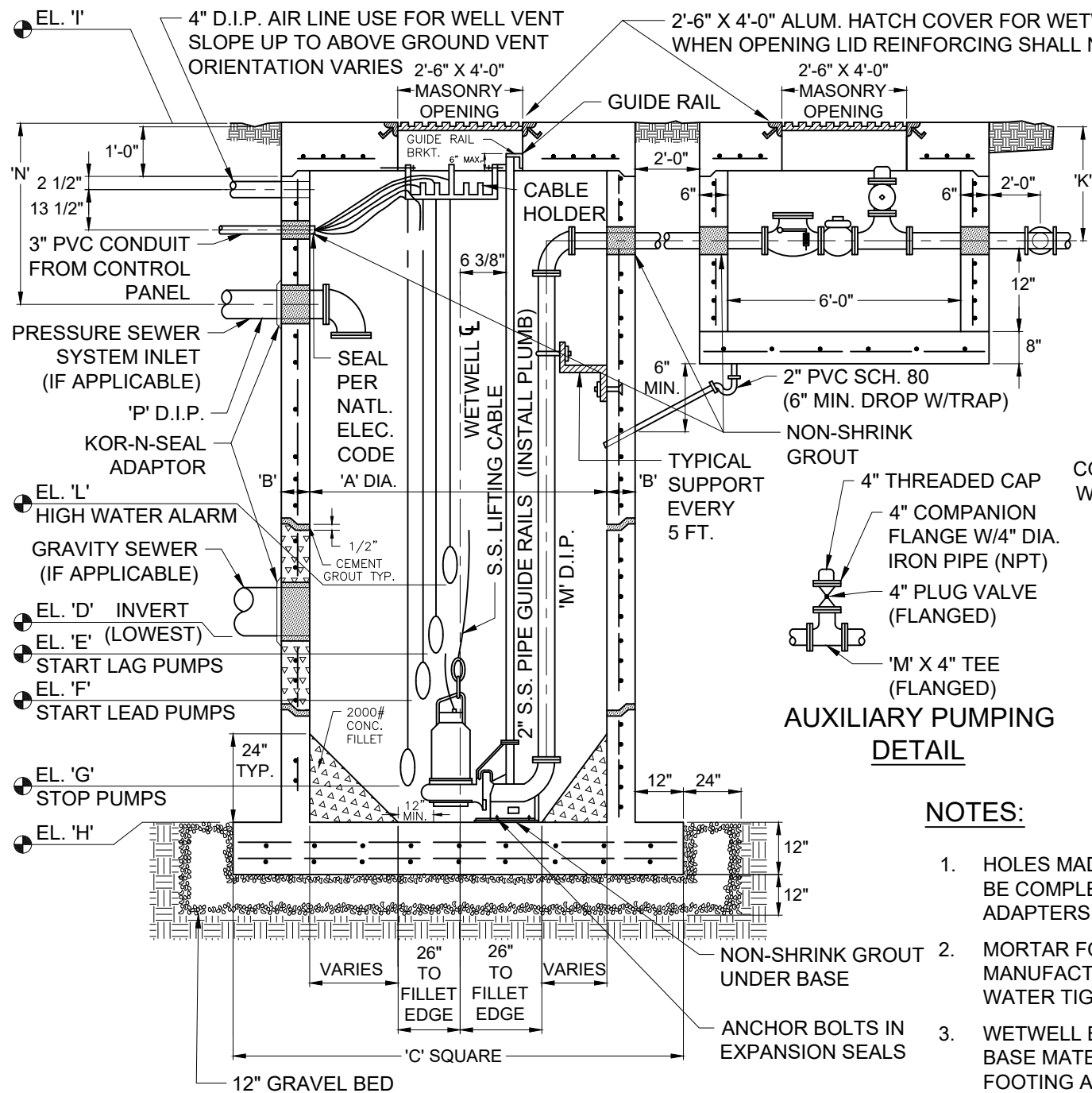
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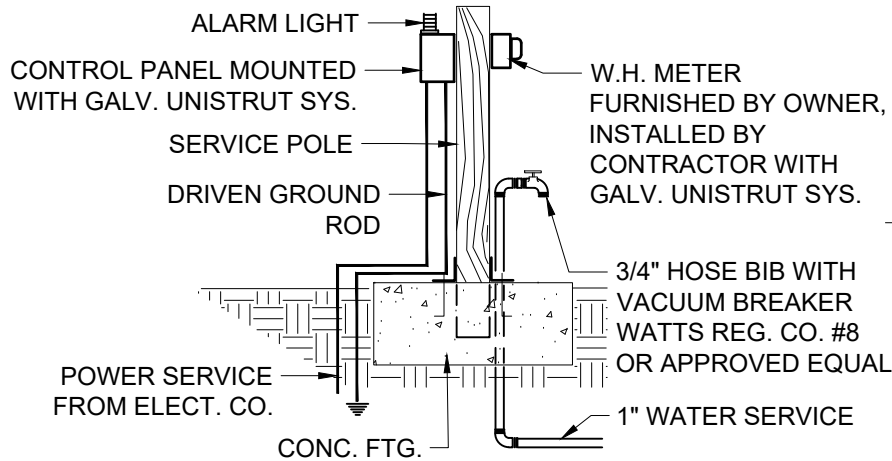
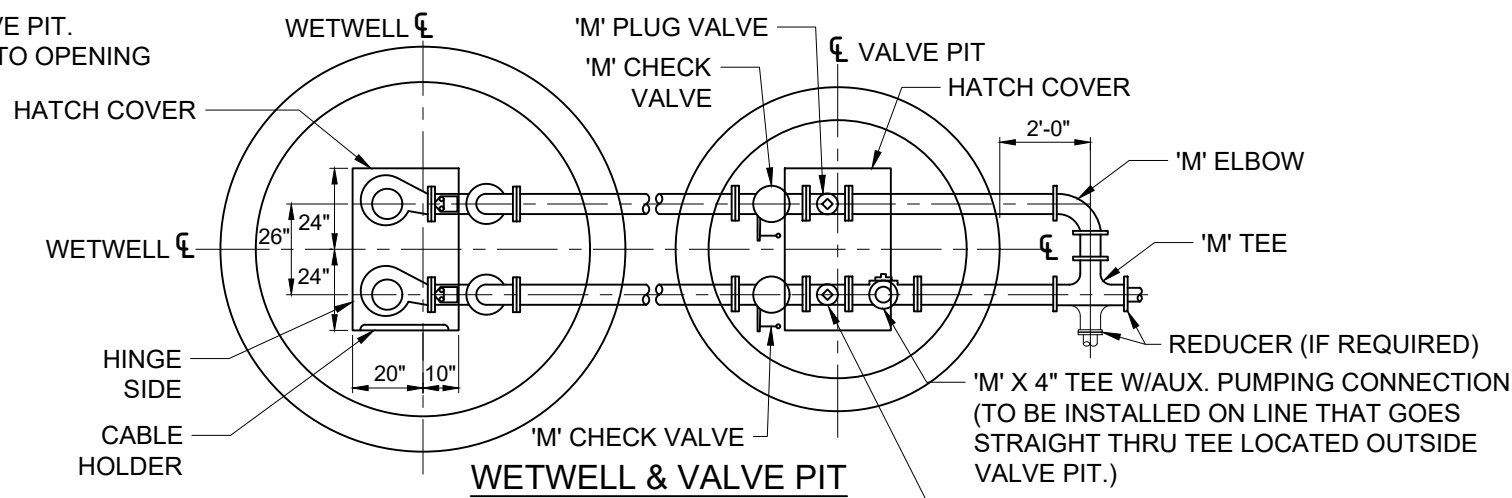
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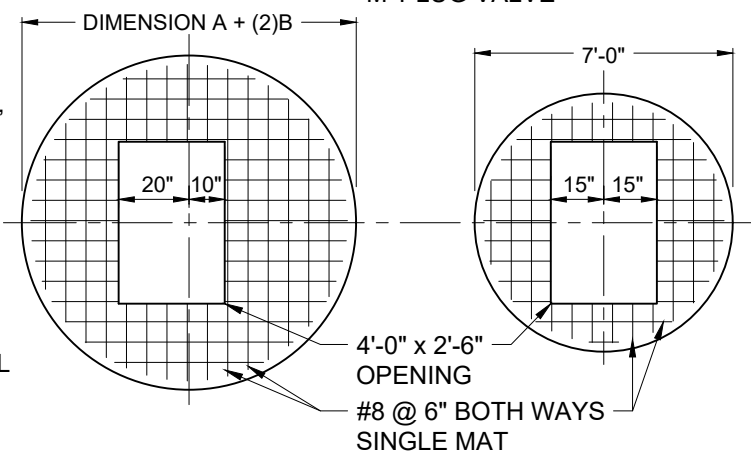
SECTION - PRECAST WETWELL & PRECAST VALVE PIT

SCHEDULE OF DIMENSIONS															
STA. NO.	A	B	C	D	E	F	G	H	I	J	K	L	M	N	P

PUMP SCHEDULE							PUMP DATA
STA. NO.	G.P.M.	T.H.D.	H.P.	ELECTRIC SERVICE	R.P.M.		



SERVICE POLE DETAIL



WETWELL & VALVE PIT TOP SLAB REINFORCING PLAN



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WASTEWATER PUMP STATION
TYPICAL PLAN AND SECTION

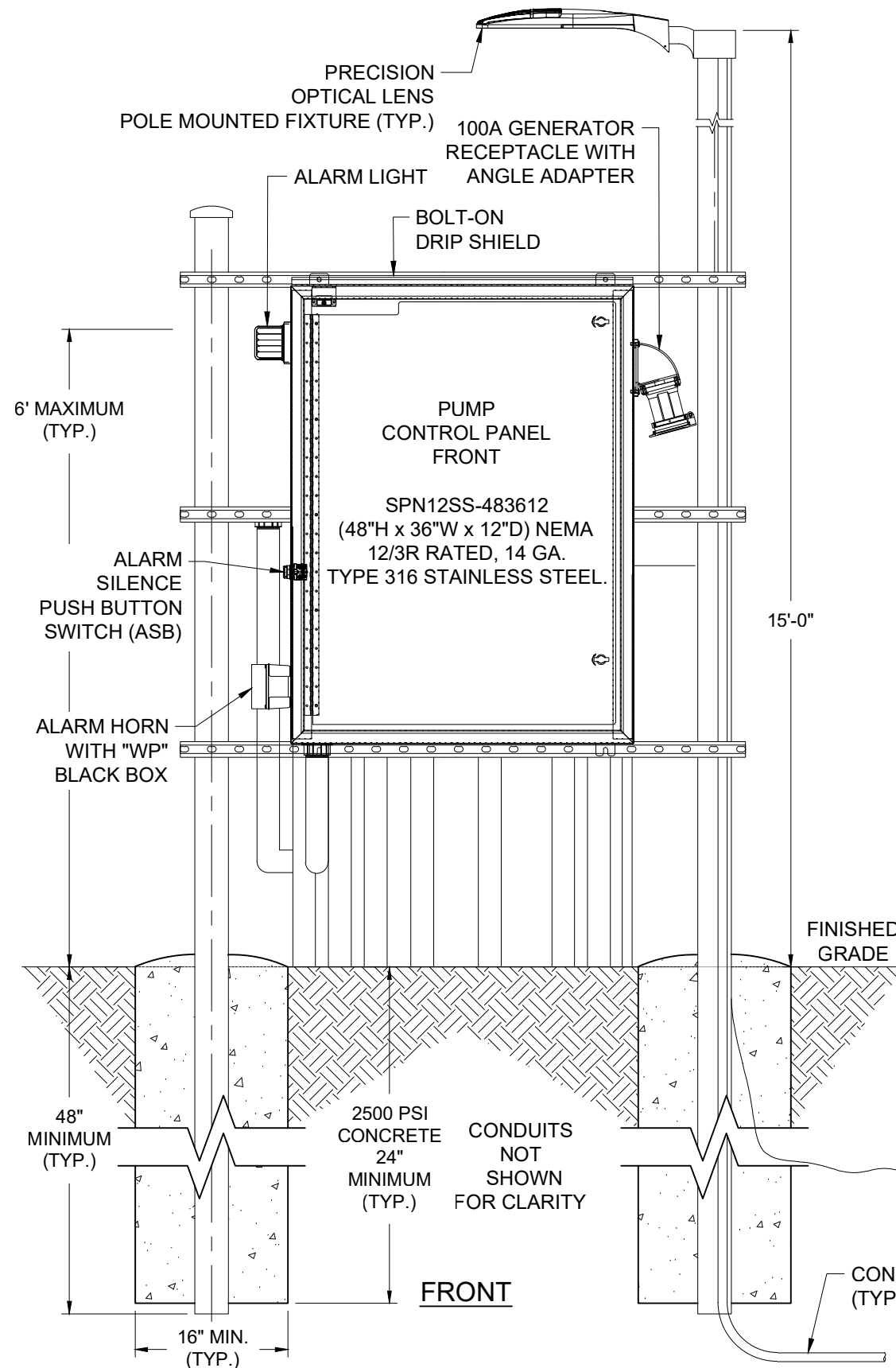
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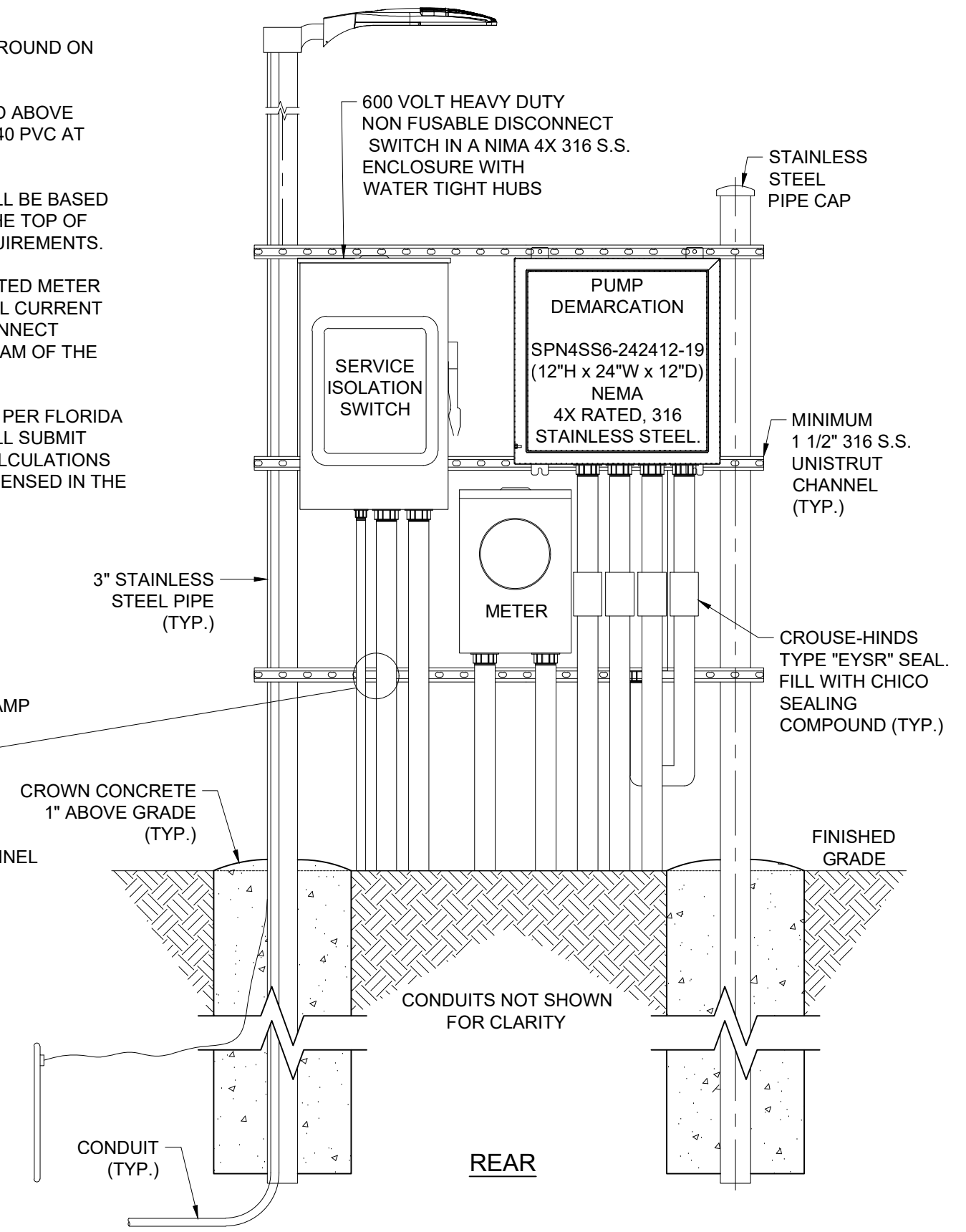
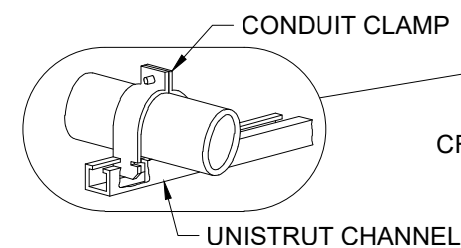
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PS
02

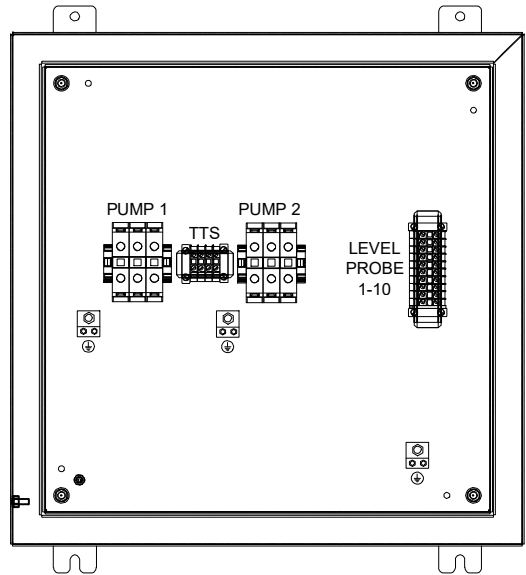
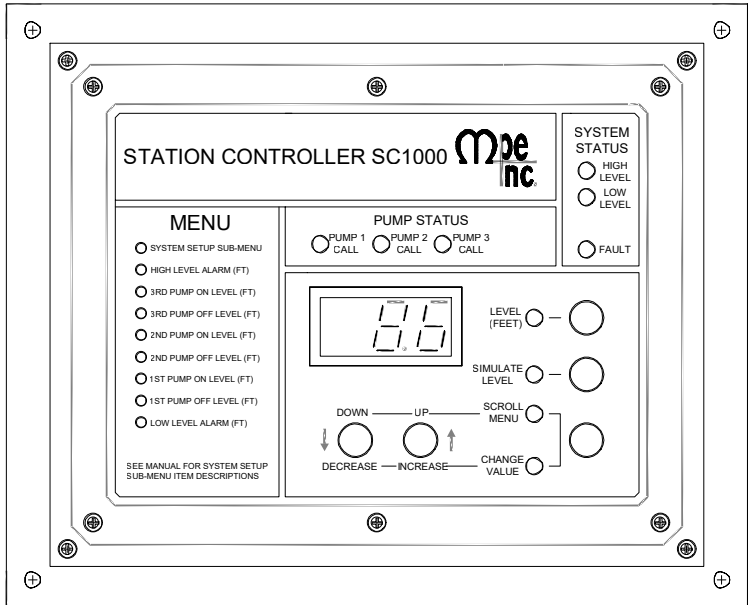
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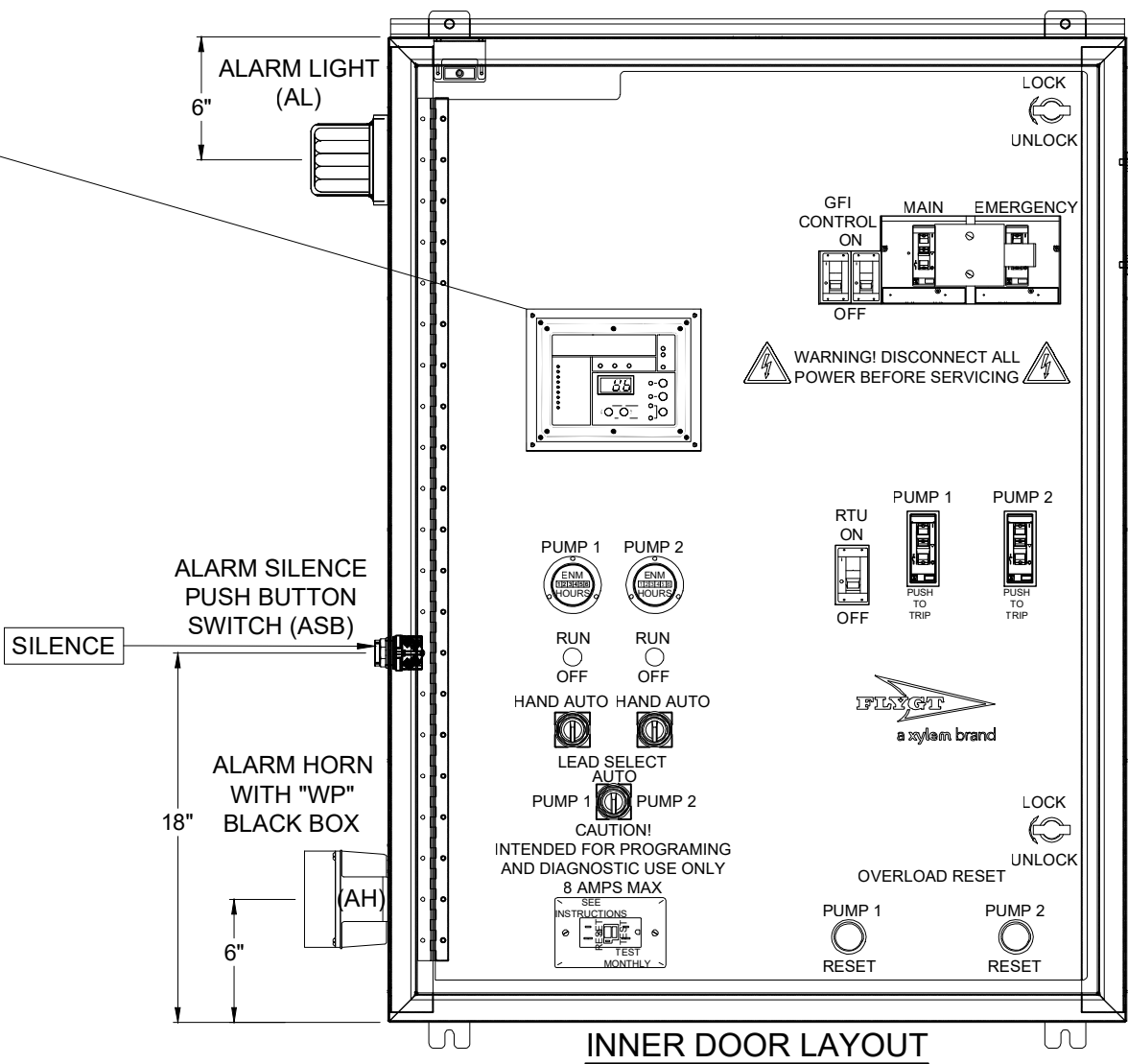
NOTES:

1. POWER SUPPLY SHALL BE UNDERGROUND ON THE PUMP STATION SITE.
2. ALUMINUM CONDUIT SHALL BE USED ABOVE GRADE-TRANSITION TO SCHEDULE 40 PVC AT SWEEP ELBOWS.
3. HEIGHT TO BOTTOM OF PANEL SHALL BE BASED UPON PANEL HEIGHT SUCH THAT THE TOP OF PANEL WILL NOT EXCEED NEC REQUIREMENTS.
4. IF THE METER IS A DIRECT CONNECTED METER WHICH DOES NOT UTILIZE EXTERNAL CURRENT TRANSFORMERS, A SERVICE DISCONNECT SWITCH MAY BE REQUIRED UPSTREAM OF THE METER.
5. RACK STRUCTURE TO BE CERTIFIED PER FLORIDA BUILDING CODE. CONTRACTOR SHALL SUBMIT SIGNED AND SEALED WIND LOAD CALCULATIONS FROM A STRUCTURAL ENGINEER LICENSED IN THE STATE OF FLORIDA.





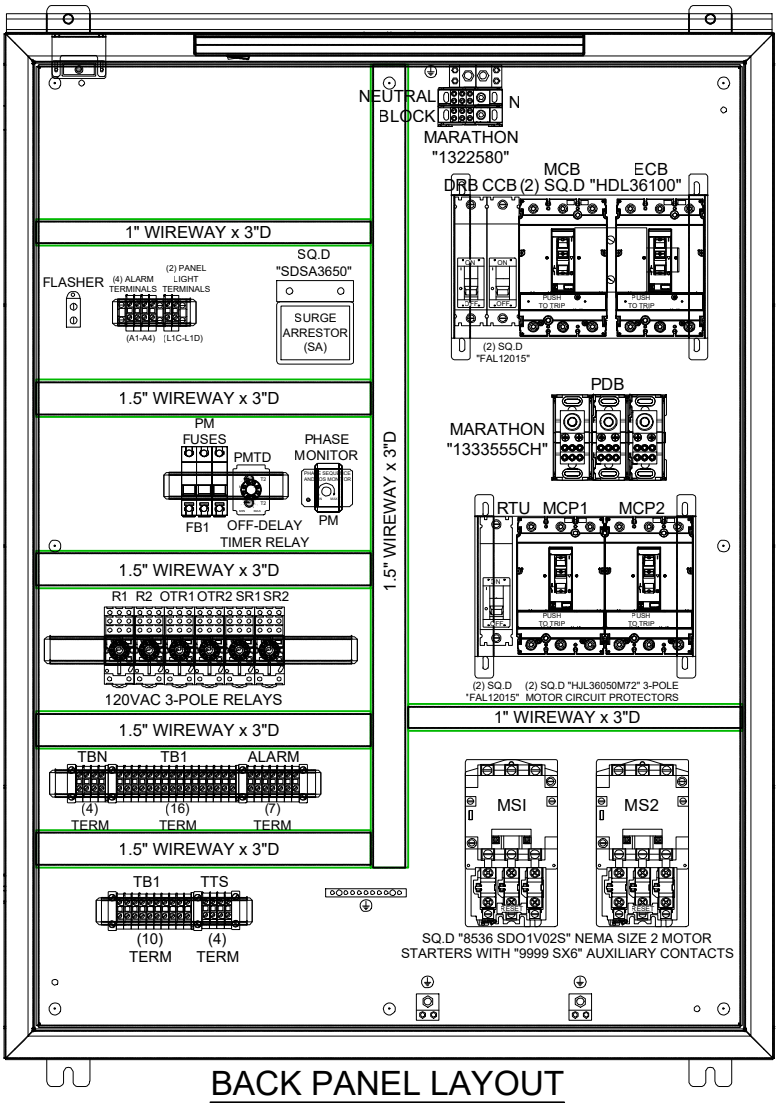
ENCLOSURE:
SPN4SS6-242412-L9 (24"H x 24"W x 12"D) NEMA 4X RATED, FABRICATED FROM 316 STAINLESS STEEL. OUTER DOOR IS FITTED WITH A PADLOCKABLE 3-POINT LATCH.



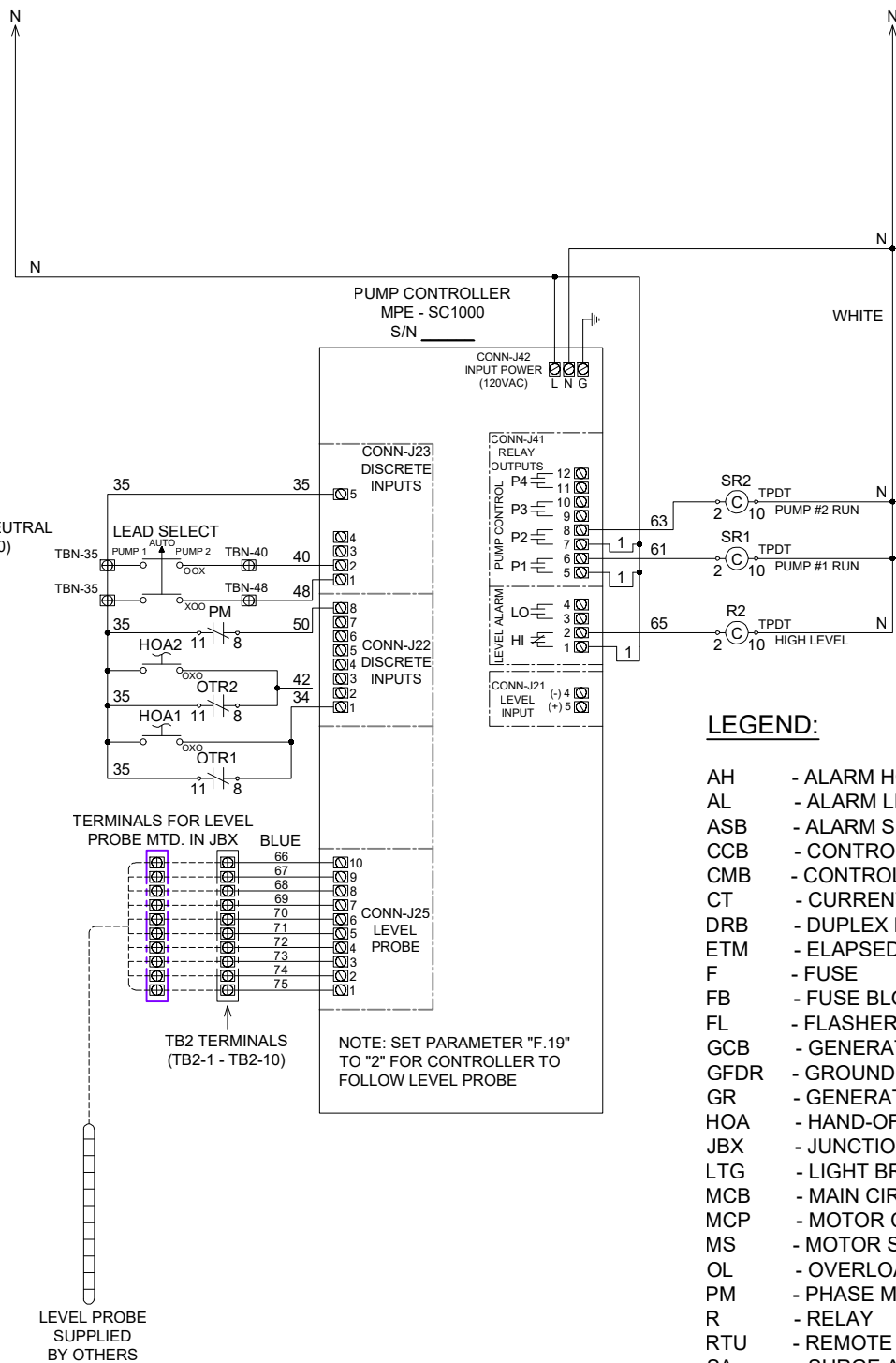
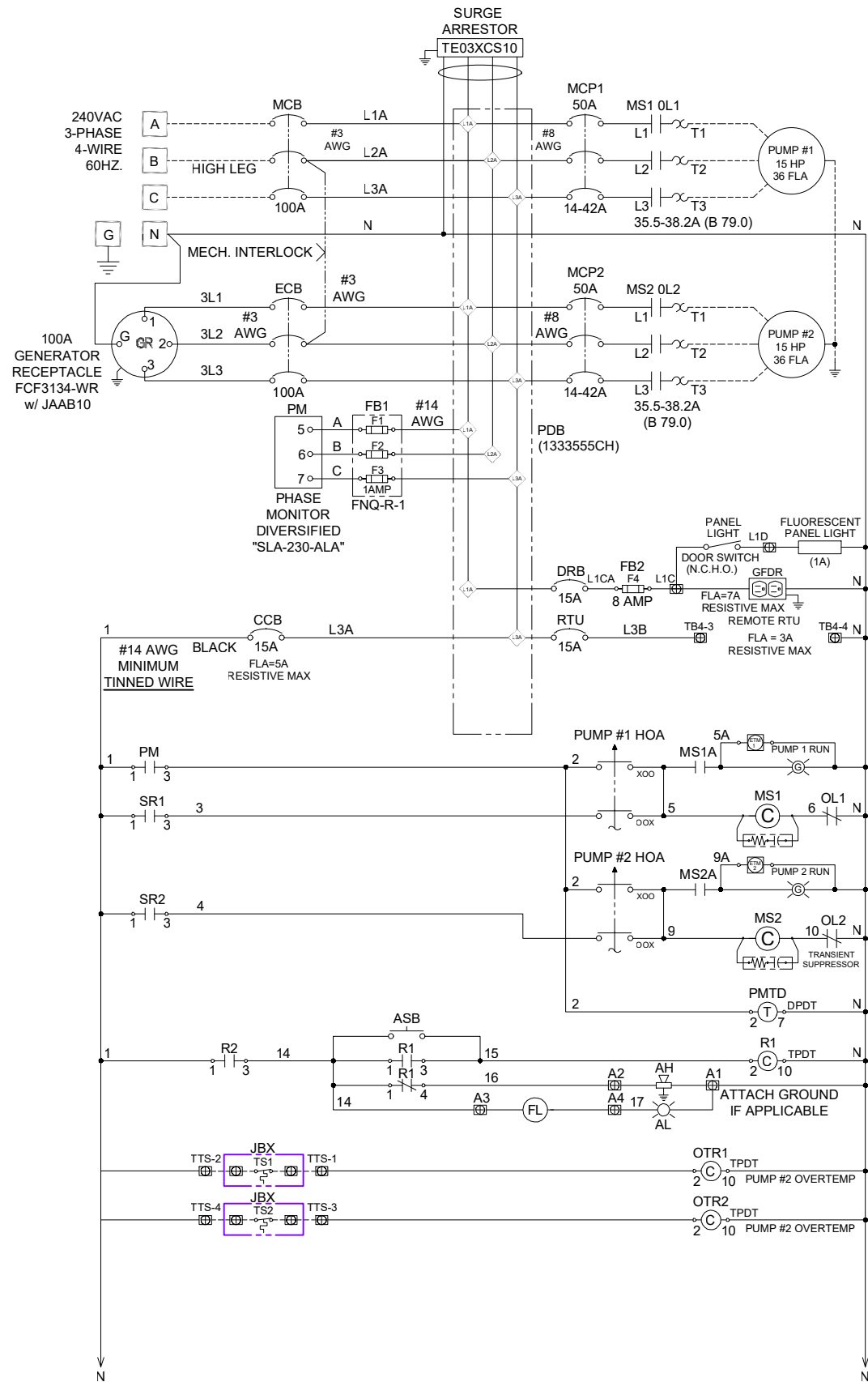
ENCLOSURE:
SPN12SS6-483612 (48"H x 36"W x 12"D) NEMA 12/3R RATED, FABRICATED FROM 14 GA. TYPE 316 STAINLESS STEEL. PADLOCKING PROVISION, WALL MOUNTING BRACKETS, 90° OUTER DOOR STOP, 3-POINT STAINLESS STEEL PAD-LOCKABLE HANDLE, WELDED ON STUDS FOR PRINT POCKET AND BOLT-ON DRIP SHIELD.

INNER DOOR:
HID-4836 FABRICATED FROM .125 BLACK ENGRAVED ALUMINUM WITH CONTINUOUS HINGE, TWIST LATCH, AND 90° STOP.

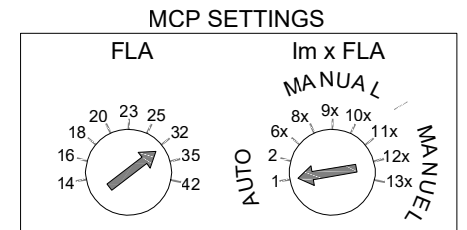
100A GENERATOR RECEPTACLE WITH ANGLE ADAPTER (GR)



BACK PANEL:
SPP-4836 (45"H x 33"W), FABRICATED FROM 12GA. STEEL WITH WHITE POLYESTER POWDER COAT FINISH.



LOAD CALCULATIONS			
LOADS:	HP	VOLTAGE	FLA
PUMP 1	15.0	240	3
PUMP 2	15.0	240	3
CONTROL POWER:			8.00
TOTAL FLA:			80.00



LEGEND:

- AH - ALARM HORN
- AL - ALARM LIGHT
- ASB - ALARM SILENCE BUTTON
- CCB - CONTROL CIRCUIT BREAKER
- CMB - CONTROL MAIN BREAKER
- CT - CURRENT TRANSFORMER
- DRB - DUPLEX RECEPTACLE BREAKER
- ETM - ELAPSED TIME METER
- F - FUSE
- FB - FUSE BLOCK
- FL - FLASHER
- GCB - GENERATOR CIRCUIT BREAKER
- GFDR - GROUND FAULT DUPLEX RECEPTACLE
- GR - GENERATOR RECEPTACLE
- HOA - HAND-OFF AUTO SELECTOR SWITCH
- JBX - JUNCTION BOX
- LTG - LIGHT BREAKER
- MCB - MAIN CIRCUIT BREAKER
- MCP - MOTOR CIRCUIT PROTECTOR
- MS - MOTOR STARTER
- OL - OVERLOAD
- PM - PHASE MONITOR
- R - RELAY
- RTU - REMOTE TELEMETRY UNIT
- SA - SURGE ARRESTOR
- SR - START RELAY
- TB - TERMINAL BLOCK
- TPDT - THREE POLE, DOUBLE THROW
- TTS - THERMAL TERMINAL STRIP
- XCB - TRANSFORMER PRIMARY BREAKER
- XFMR - TRANSFORMER

PUMP STATION DUPLEX CONTROL PANEL ENCLOSURE SCHEMATIC



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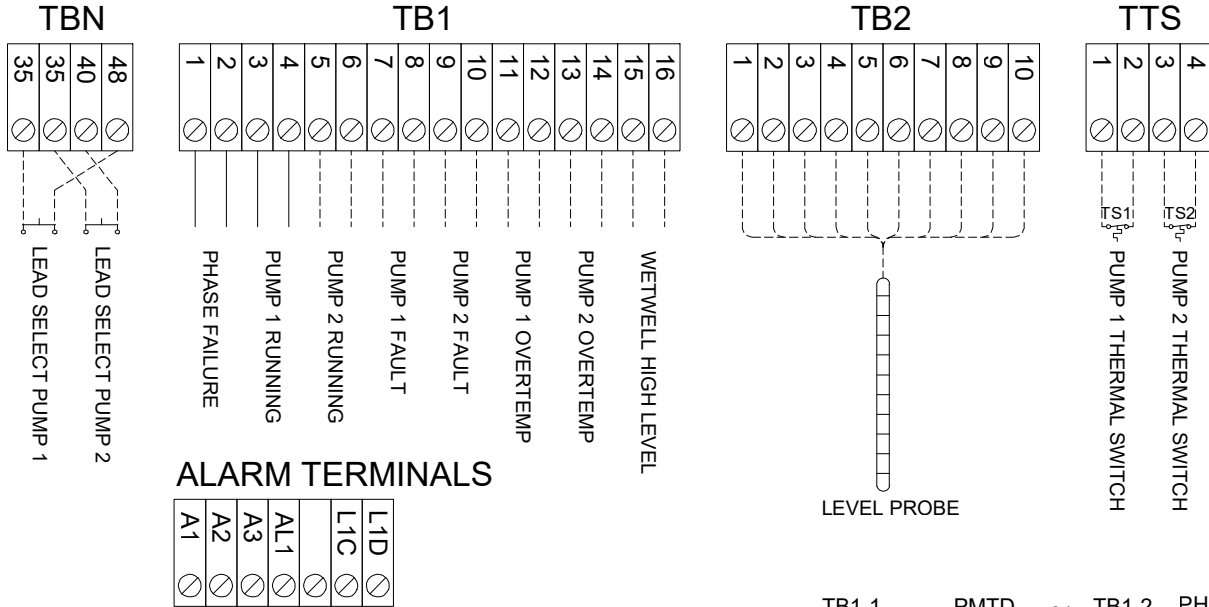
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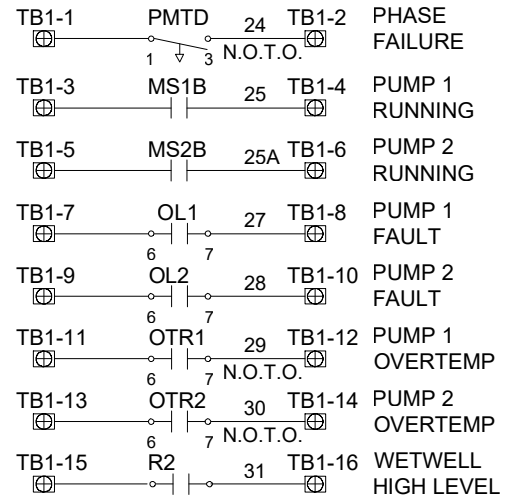
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TERMINAL BLOCK LAYOUTS



NOTES:

- 1) CONTROL WIRING TO BE #14 AWG, TINNED.
- 2) PANEL TO BE U.L. 508A LABELED.
- 3) "TB3" TERMINALS ARE FOR TELEMETRY.
- 4) RELAYS ARE TPDT UNLESS SPECIFIED OTHERWISE.



TORQUE TABLES

CONTROL TERMINALS					
RECOMENDED TIGHTENING TORQUE					
MFG	PART#	RATING (I, E)	WIRE SIZE	WIRE STRIP LENGTH	TORQUE
SQUARE D	9080GR6	60A, 600V	22-8AWG		7-8 lb.in.

POWER DISTRIBUTION BLOCK					
RECOMENDED TIGHTENING TORQUE					
MFG	PART#	WIRE SIZE MAIN	TORQUE	WIRE SIZE BRANCH	TORQUE
MARATHON	132X580	(1) #6-2/0AWG	120 lb.in.	(6) #14-#4AWG	35 lb.in.
		(1) #8AWG	40 lb.in.		
		(1) #14-#10AWG	35 lb.in.		
MARATHON	133X953	(1) #500MCM-#4AWG	375 lb.in.	(8) #2AWG	50 lb.in.
				(8) #6-#4AWG	45 lb.in.
				(8) #8AWG	40 lb.in.
				(8) #14-#10AWG	35 lb.in.

CONTROL TERMINALS			
RECOMENDED TIGHTENING TORQUE			
MFG	PART#	WIRE SIZE	TORQUE - SCREWDRIVER
THOMAS & BETTS	ADR11-21	12AWG	20 lb.in.
		10AWG	20 lb.in.
		8AWG	20 lb.in.
		6AWG	35 lb.in.
		4AWG	35 lb.in.
		2AWG	50 lb.in.
		1AWG	50 lb.in.
		1/0AWG	50 lb.in.
		2/0AWG	50 lb.in.
SQUARE D	PK_GTA	14-10AWG	20 lb.in.
		8AWG	25 lb.in.
		6-4AWG	35 lb.in.



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PUMP STA. DUPLEX CTRL. PNL. ENCL. TERM. BLOCK & TORQUE TBLS.

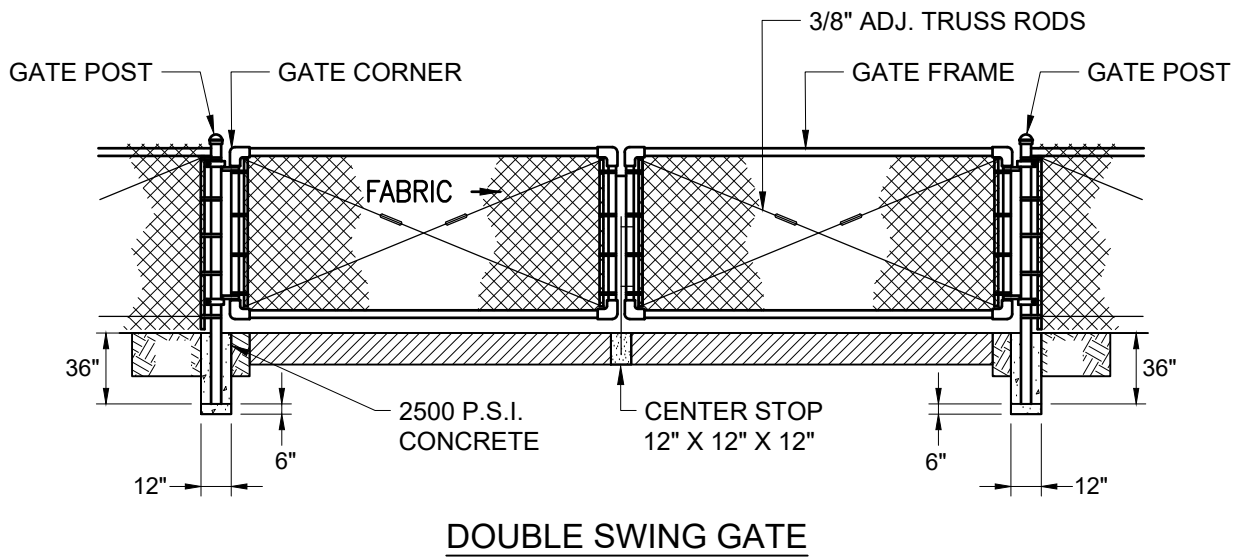
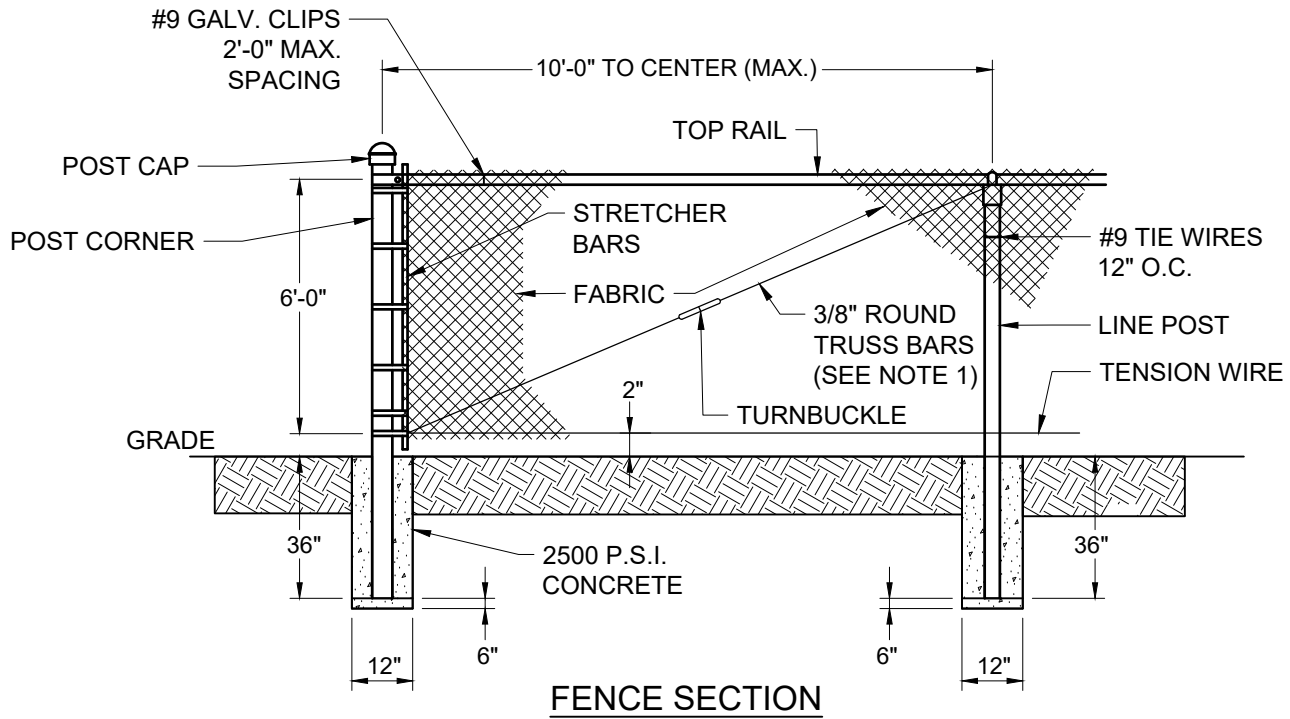
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NOTES:

1. TRUSS BARS ARE REQUIRED FOR EACH GATE SECTION AND THE FIRST SPAN ON EACH SIDE OF A CORNER POST ONLY.



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**PUMP STATION
CHAIN LINK FENCE
DETAIL**

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