KITSAP COUNTY

STANDARD DETAILS

FOR

SANITARY SEWER CONSTRUCTION

614 Division Street

Port Orchard, Washington 98366

(360) 337-5777

Last Revised: May 2025

KITSAP COUNTY

STANDARD DETAILS FOR SANITARY SEWER CONSTRUCTION

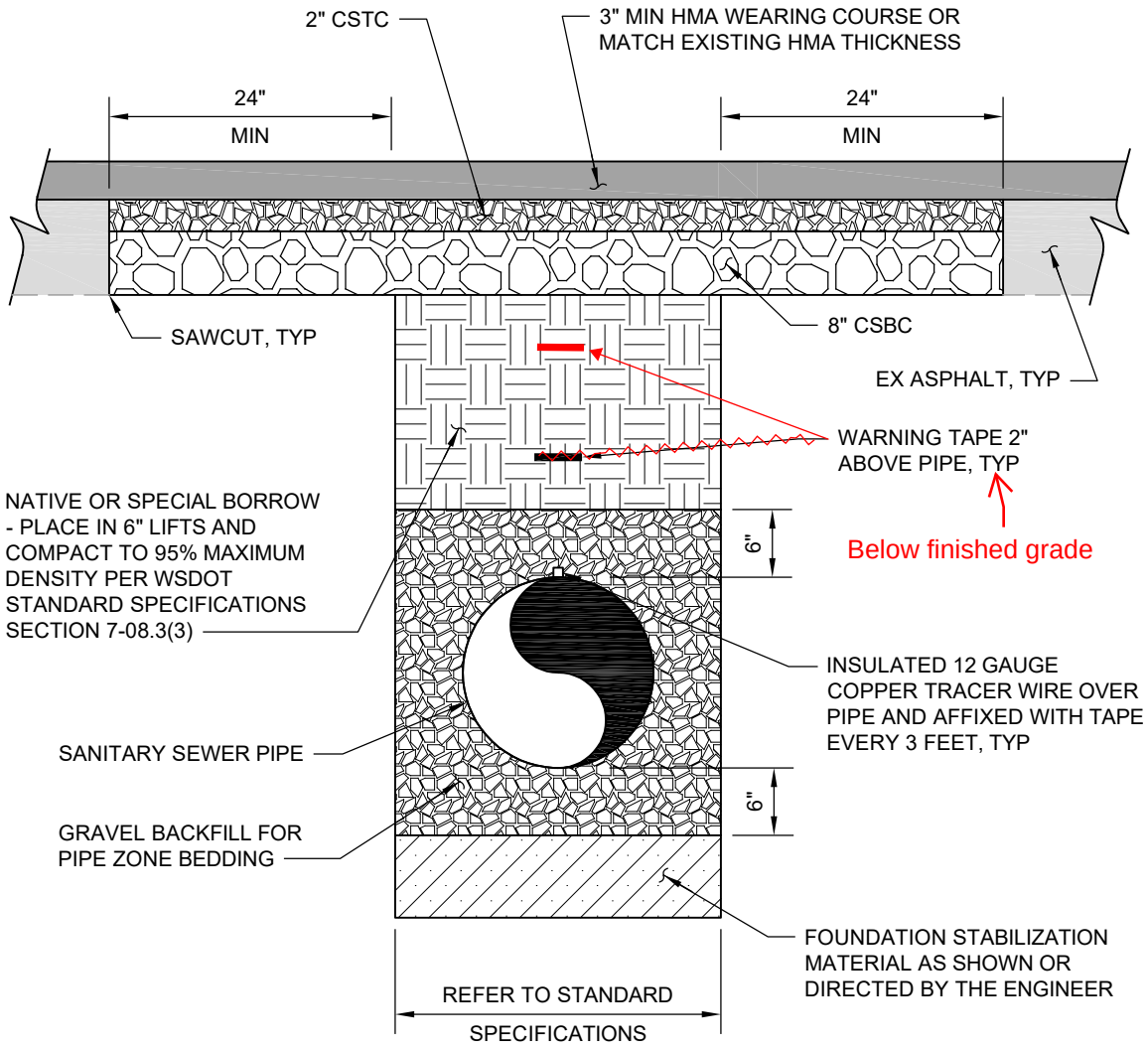
TABLE OF CONTENTS

PIPE DETAILS

MANHOLES AND VAULTS

PUMP STATIONS

MISCELLANEOUS DETAILS



NOTES:

1. 2' "T" PATCH FULL DEPTH SURFACING IS ONLY REQUIRED FOR PERMANENT PAVEMENT RESTORATION
2. PAVEBACK LIMITS FULL LANE MINIMUM. FOR LATERAL CROSSING, THE PAVING LIMITS MUST BE PERPENDICULAR TO THE TRAVEL LANES.
3. MANHOLE LOCATIONS TO BE KEPT OUT OF TRAFFIC TRAVEL PATH.
4. ADDITIONAL REQUIREMENTS MAY BE APPLICABLE PER THE KITSAP COUNTY PUBLIC WORKS ROADS DIVISION.

Kitsap County Public Works
Sewer Division
614 Division Street, MS 26
Port Orchard, WA 98366

PIPE TRENCH

Detail No. **PD-1**

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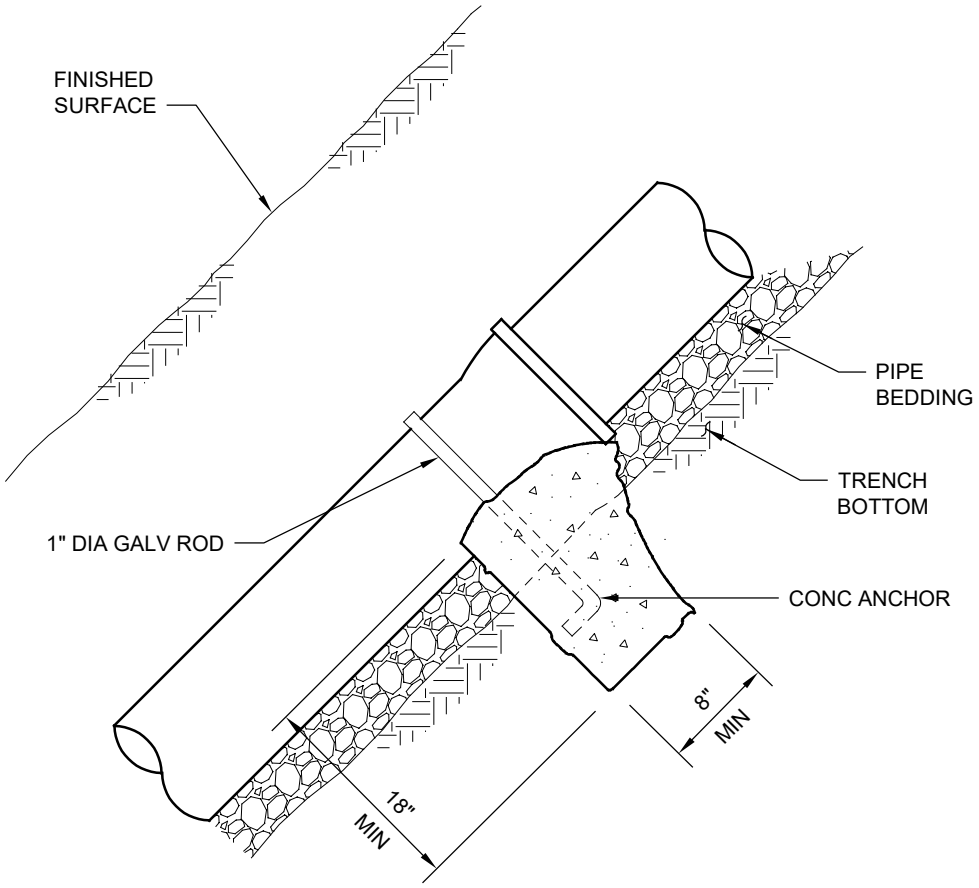

NOTES:

1. MINIMUM ANCHOR BLOCK SIZE 8"x12"x18" UNLESS OTHERWISE NOTED
2. BLOCKING SHALL BE POURED AGAINST UNDISTURBED SOIL.
3. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI.
4. MINIMUM SPACING BETWEEN ANCHORS TO BE 36' ON GRADES OF 20-35%, 24' ON GRADES OF 35-50%, AND 16' ON GRADES OVER 50%.

Kitsap County Public Works
Sewer Division
614 Division Street, MS 26
Port Orchard, WA 98366

PIPE ANCHOR

Detail No. **PD-2**

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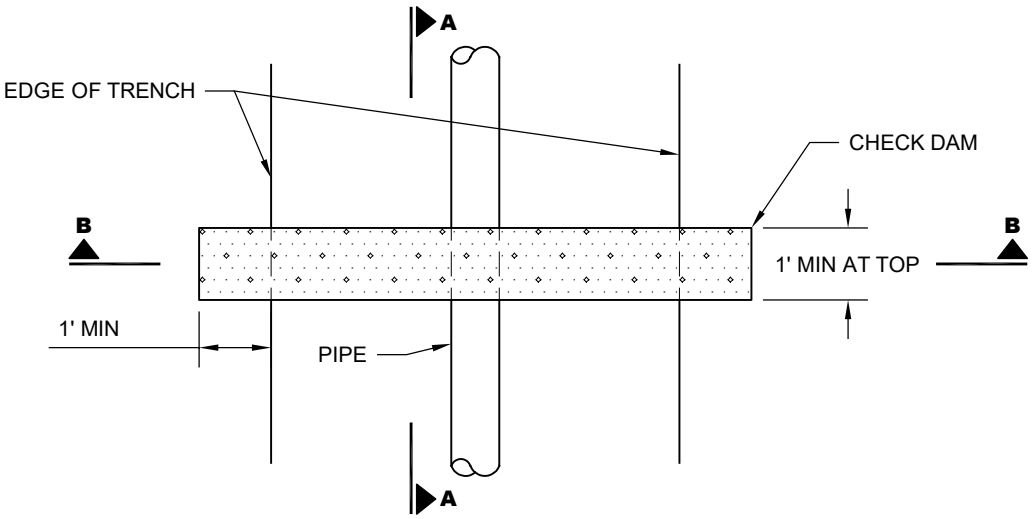
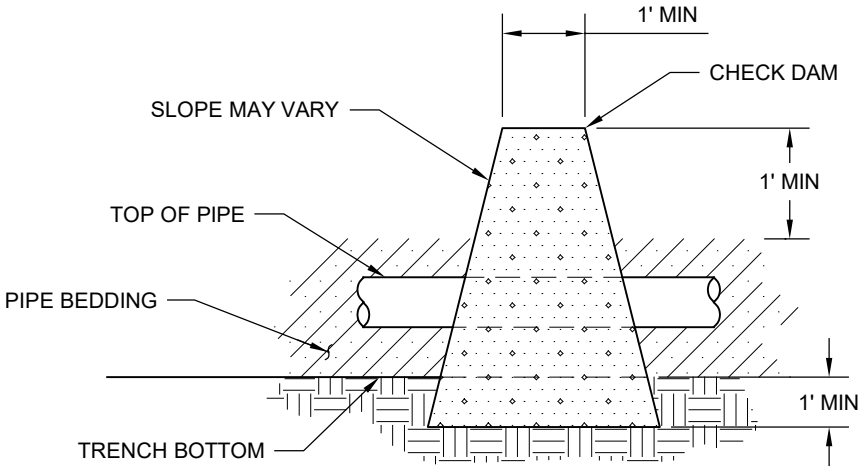
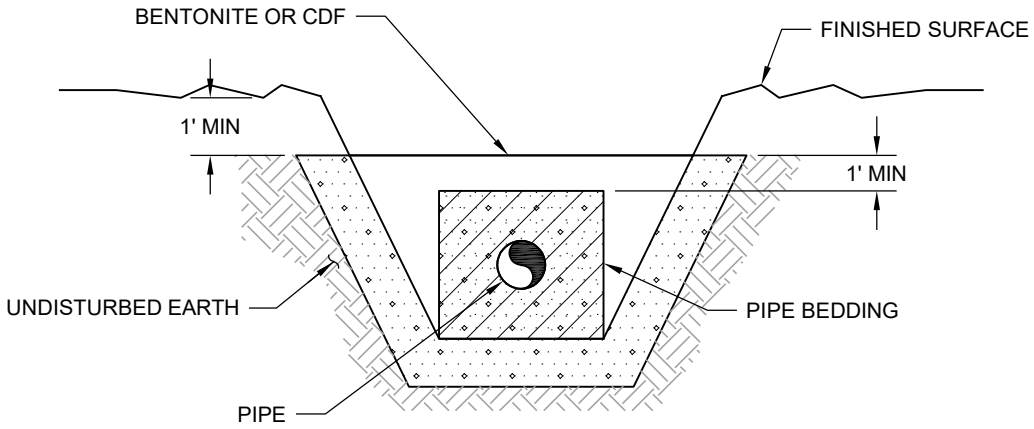


PLAN



SECTION A-A



SECTION B-B

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Sewer Division
614 Division Street, MS 26
Port Orchard, WA 98366

TRENCH CHECK DAM

Detail No. **PD-3**

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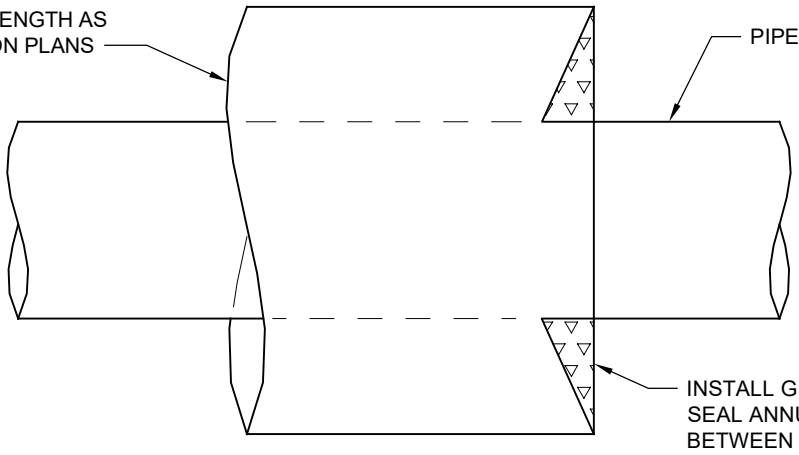
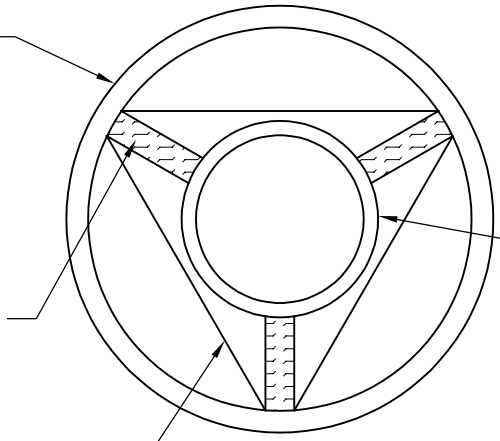




Replace with detail for
"Spider" Pipe Supports

STAINLESS STEEL BANDS NOTCHED
INTO BLOCKS W/ 10 FOOT SPACING
MINIMUM 3 REQIRED

CASING TABLE

SCHEDULE 20 STEEL PIPE
UNLESS OTHERWISE INDICATED

PIPE DIAMETER	MIN. CASING DIAMETER
6	12
8	14
10	16
12	18
14	20
16	22

NOTES:

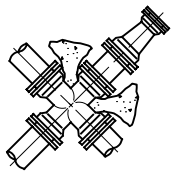
1. COMPLY WITH ALL REGULATORY REQUIREMENTS OF JURISDICTIONAL AUTHORITY.
2. CASING SPACERS CAN BE SUBSTITUTED FOR BLOCKING.
3. PRESENT PROPOSED METHOD FOR BLOCKING AND SUPPORTING PIPE WITHIN CASING TO ENGINEER FOR APPROVAL.

Kitsap County Public Works
Sewer Division
614 Division Street, MS 26
Port Orchard, WA 98366

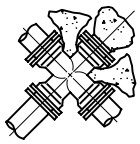
PIPE CASING

Detail No. **PD-4**

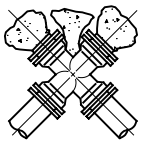
Rev Date: **May 2025**



UNBALANCED CROSS
(USE COLUMN A)

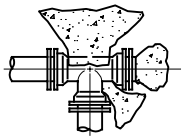


PLUGGED CROSS
(USE COLUMN A)

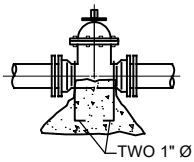


PLUGGED CROSS
(USE COLUMN B)

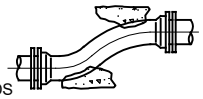
11 1/4° BEND



PLUGGED TEE
(USE COLUMN B)

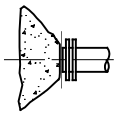


VALVE
(USE COLUMN A)

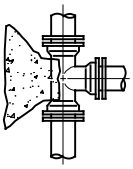


OFFSET
(USE COLUMN B - E)

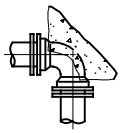
22 1/2° BEND



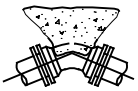
CAP OR PLUG



TEE



90° BEND



45° BEND

NOTES:

1. CONTRACTOR TO PROVIDE BLOCKING ADEQUATE TO WITHSTAND FULL TEST PRESSURE.
2. DIVIDE THRUST BY SAFE BEARING LOAD TO DETERMINE REQUIRED AREA (IN SQUARE FEET) OF CONCRETE TO DISTRIBUTE LOAD.
3. AREAS TO BE ADJUSTED FOR OTHER PRESSURE CONDITIONS.
4. RESTRAINT RODS, NUTS, WASHERS AND APPURTENANCES SHALL BE CONSTRUCTED OF 304 SST. RODS SHALL BE ALL-THREAD DESIGN.
5. JOINTS USING RODS FOR RESTRAINT SHALL NOT EXCEED ALLOWABLE THRUST PER RESTRAINT ROD AS SHOWN IN COLUMN G. IN NO CASE SHALL LESS THAN 2 RODS BE USED.

SOIL TYPE	SAFE BEARING LOAD PSF
MUCK, PEAT, ETS.	0
SOFT CLAY	1,000
SAND	2,000
SAND AND GRAVEL	3,000
SAND AND GRAVEL CEMENTED WITH CLAY	4,000
HARD SHALE	10,000

THRUST AT FITTINGS IN POUNDS

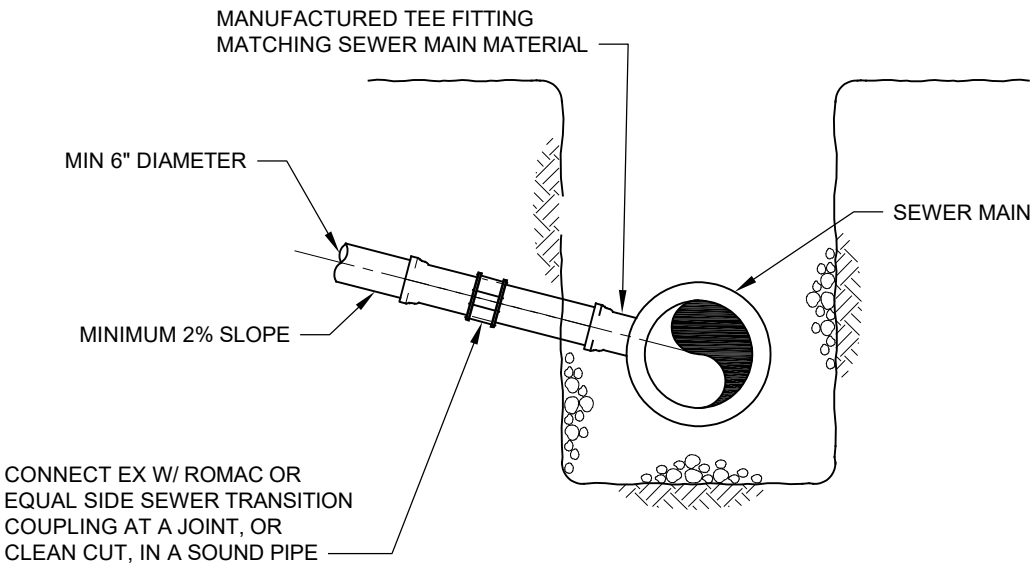
SIZE	TEST PRESSURE	A		B		C		D		E		F	G
		TEE AND DEAD ENDS		90° BEND		45° BEND		22.5° BEND		11.25° BEND		DIAMETER RESTRAINT ROD	ALLOWABLE THRUST PER RESTRAINT ROD (LBS)
		THRUST	CONC VOL	THRUST	CONC VOL	THRUST	CONC VOL	THRUST	CONC VOL	THRUST	CONC VOL		
(IN)	(PSI)	(PSI)	(CF)	(PSI)	(CF)	(PSI)	(CF)	(PSI)	(CF)	(PSI)	(CF)		
4	120	1,510	16	1,510	16	1,070	11	508	6	295	3	5/8"	3,450
6	120	3,395	34	3,395	34	2,405	25	1,300	13	665	7	3/4"	5,150
8	120	6,035	61	6,035	61	4,270	43	2,310	24	1,180	12	3/4"	5,150
10	120	9,425	95	9,425	95	6,665	67	3,610	37	1,840	19	7/8"	7,150
12	120	13,575	136	13,575	136	9,600	96	5,195	52	2,650	27	7/8"	7,150
14	120	18,475	185	18,475	185	13,065	131	7,075	71	3,605	37	1"	9,350
16	120	24,130	242	24,130	242	17,065	171	9,235	93	4,710	48	1"	9,350
18	120	30,540	306	30,540	306	21,600	216	11,690	117	5,960	60	1 1/8"	11,800
20	120	37,700	377	37,700	377	26,660	267	14,430	145	7,355	74	1 1/8"	11,800
24	120	54,290	543	54,290	543	38,390	384	20,780	208	10,595	106	1 1/4"	15,000
30	120	84,825	849	84,825	849	59,985	600	32,465	325	16,550	166	1 1/4"	15,000

Kitsap County Public Works
Sewer Division
614 Division Street, MS 26
Port Orchard, WA 98366

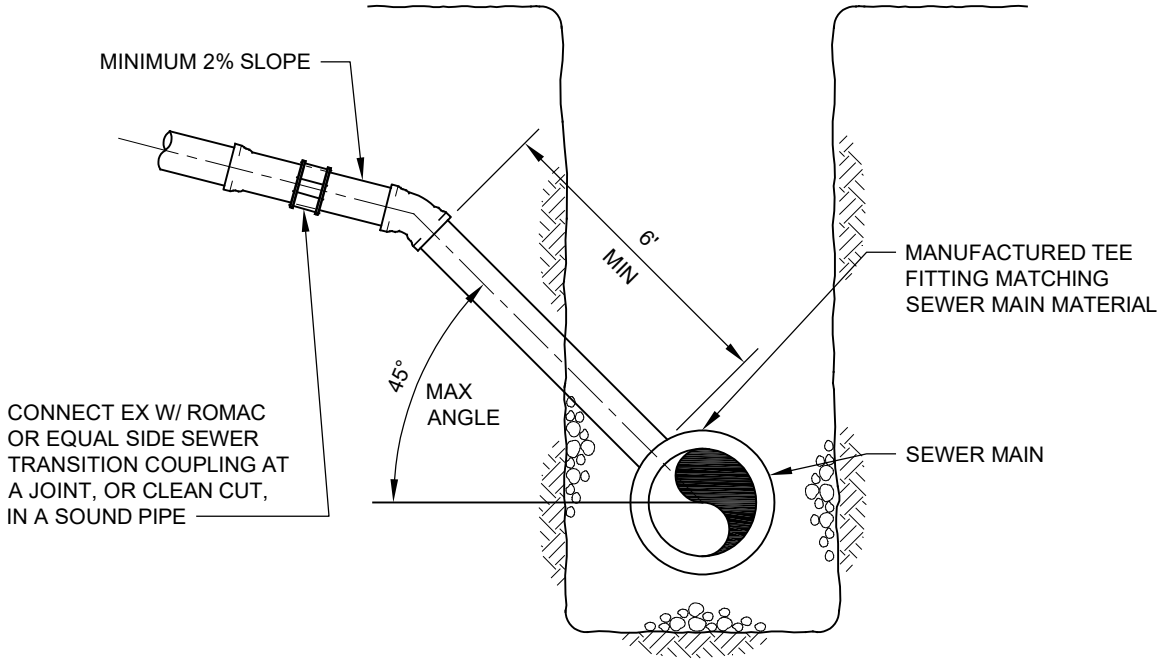
THRUST BLOCKS

Detail No. **PD-5**

Rev Date: **May 2025**



SIDE SEWER CONNECTION



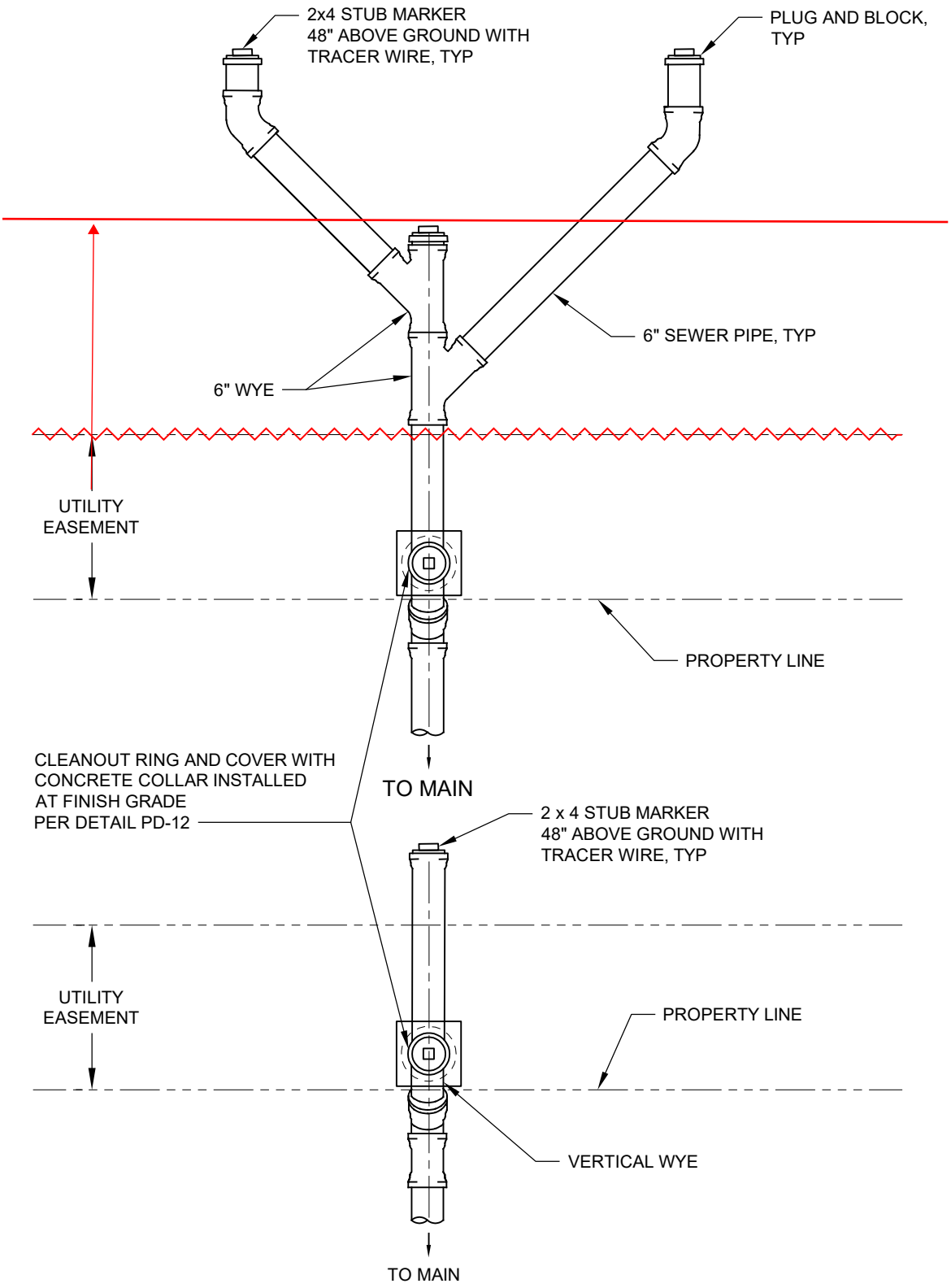
ALTERNATE SIDE SEWER CONNECTION
(AT DISCRETION OF COUNTY SEWER INSPECTOR)

Kitsap County Public Works
Sewer Division
614 Division Street, MS 26
Port Orchard, WA 98366

SIDE SEWER CONNECTION

Detail No. **PD-6**

Rev Date: **May 2025**

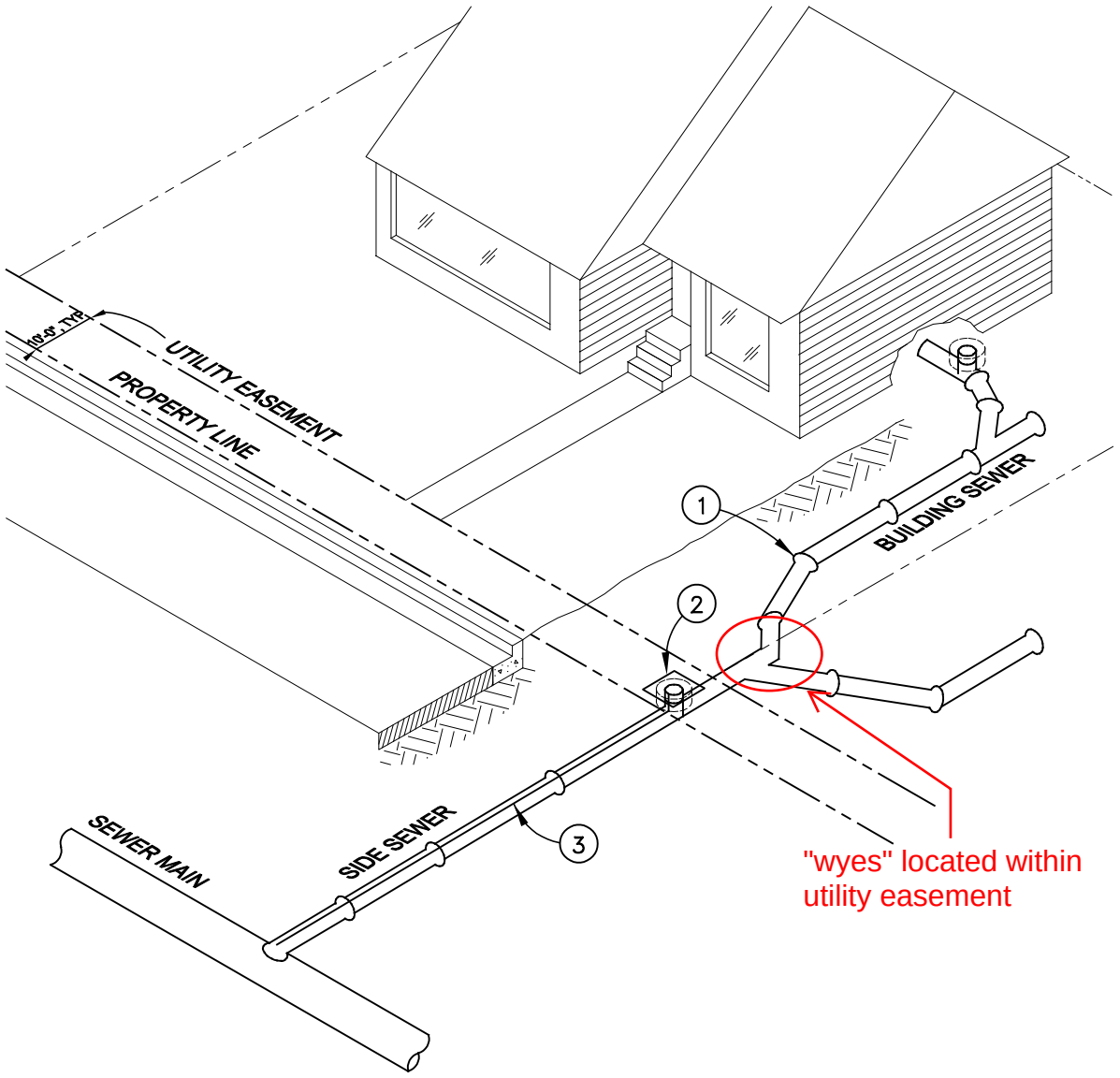


Kitsap County Public Works
Sewer Division
614 Division Street, MS 26
Port Orchard, WA 98366

SIDE SEWER PLAN

Detail No. **PD-7**

Rev Date: **May 2025**



GENERAL NOTES:

A. ALL MATERIALS AND CONSTRUCTION PROCEDURES SHALL COMPLY WITH KITSAP COUNTY STANDARDS FOR SANITARY SEWER EXTENSION BETWEEN THE SEWER MAIN AND PUBLIC CLEANOUT.

B. ALL MATERIALS AND CONSTRUCTION PROCEDURES BETWEEN THE PUBLIC CLEANOUT AND THE STRUCTURE SHALL COMPLY WITH APPLICABLE BUILDING CODES.

CONSTRUCTION NOTES:

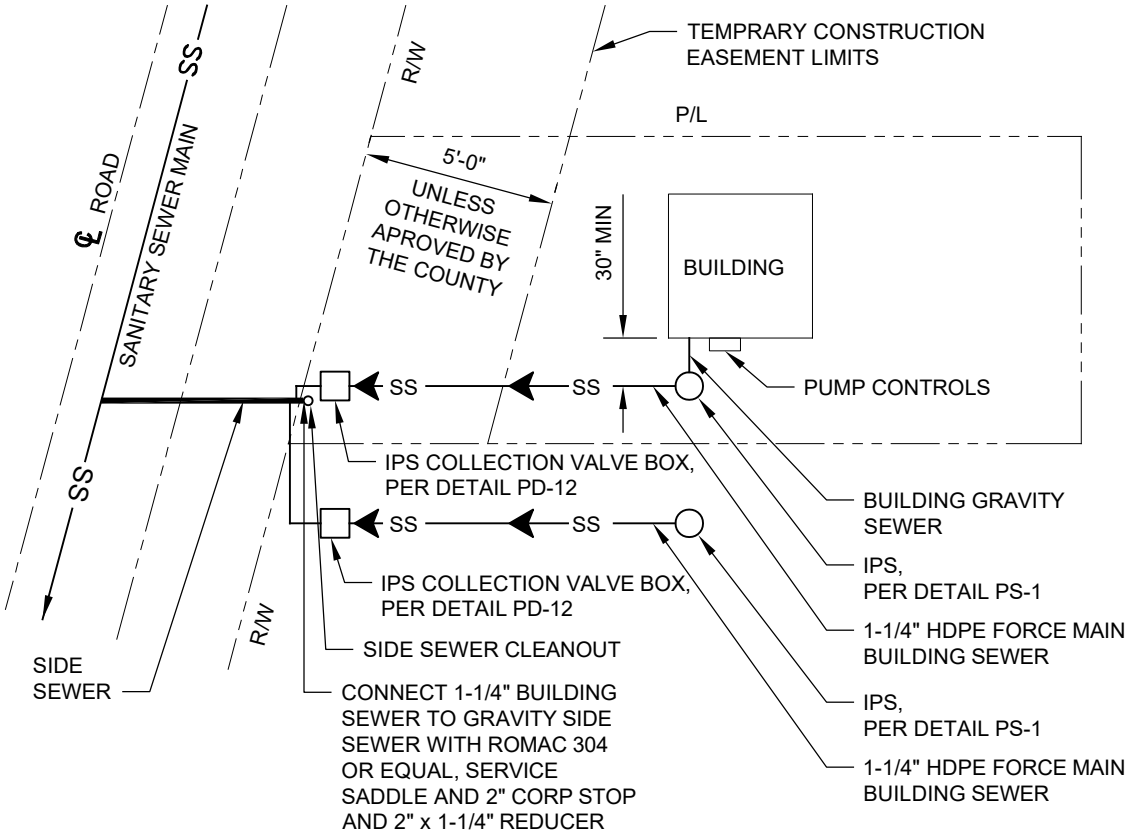
1. INSTALL SIDE SEWER AND BUILDING SEWER PER DCD BUILDING CODE REQUIREMENTS BEYOND UTILITY EASEMENT
2. PUBLIC CLEANOUT = SIDE SEWER CLEANOUT BOX WITH CONCRETE COLLAR PER DETAIL PD-14
3. INSTALL LOCATE TRACER WIRE FROM SEWER MAIN TO PUBLIC CLEANOUT
4. ALL LIDS MUST BE PROVIDED PRIOR TO BUILDING FINAL

Kitsap County Public Works
Sewer Division
614 Division Street, MS 26
Port Orchard, WA 98366

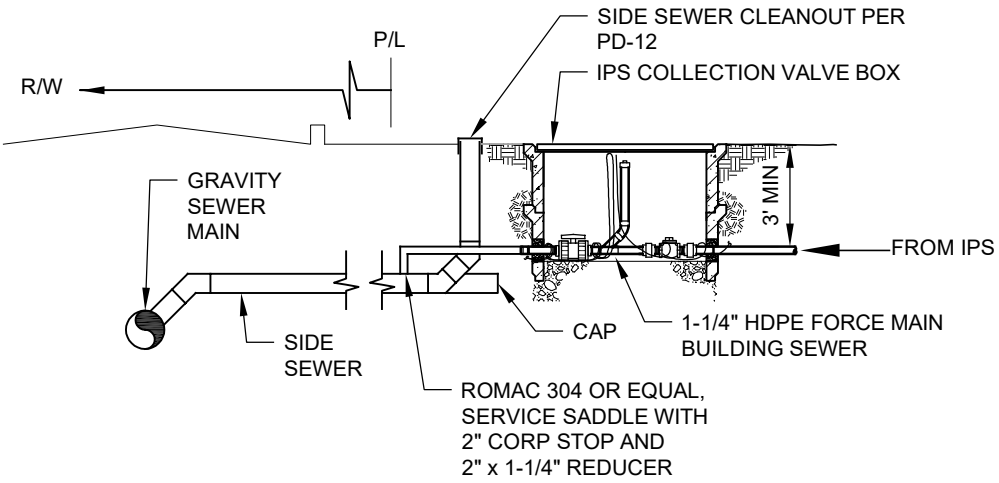
BUILDING SEWER CONNECTION

Detail No. **PD-8**

Rev Date: **May 2025**



TYPICAL SITE PLAN

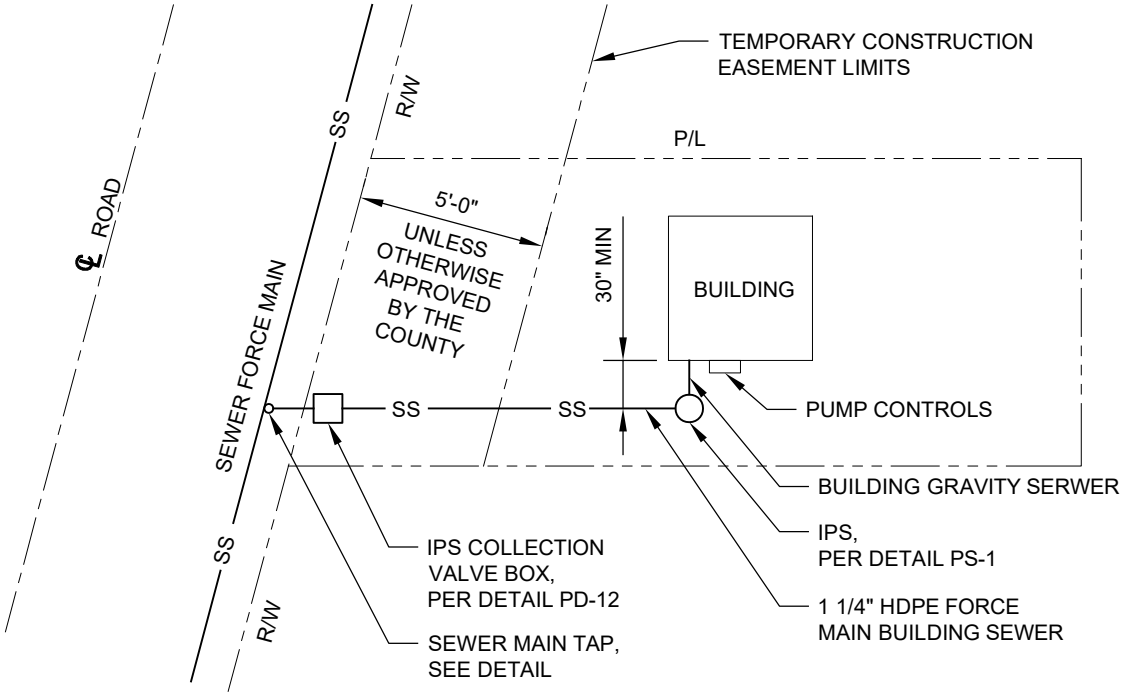


Kitsap County Public Works
Sewer Division
614 Division Street, MS 26
Port Orchard, WA 98366

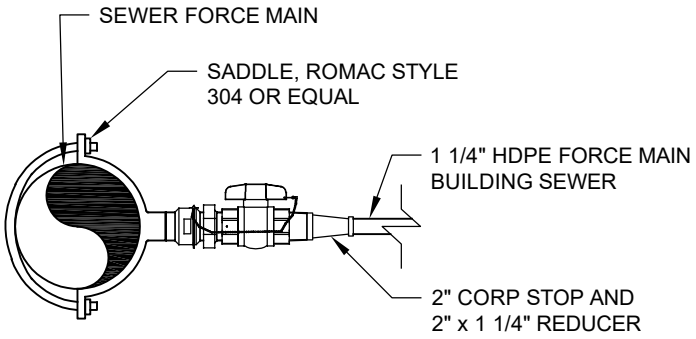
INDIVIDUAL PUMP INSTALLATION A

Detail No. **PD-9**

Rev Date: **May 2025**



TYPICAL SITE PLAN



NOTES:

1. NO PROTRUSIONS INTO BARREL OF THE FORCE MAIN WILL BE ACCEPTABLE.

2. NEW HDPE MAINS MAY REQUIRE FUSION WELDED SADDLE, AS DIRECTED BY THE COUNTY.

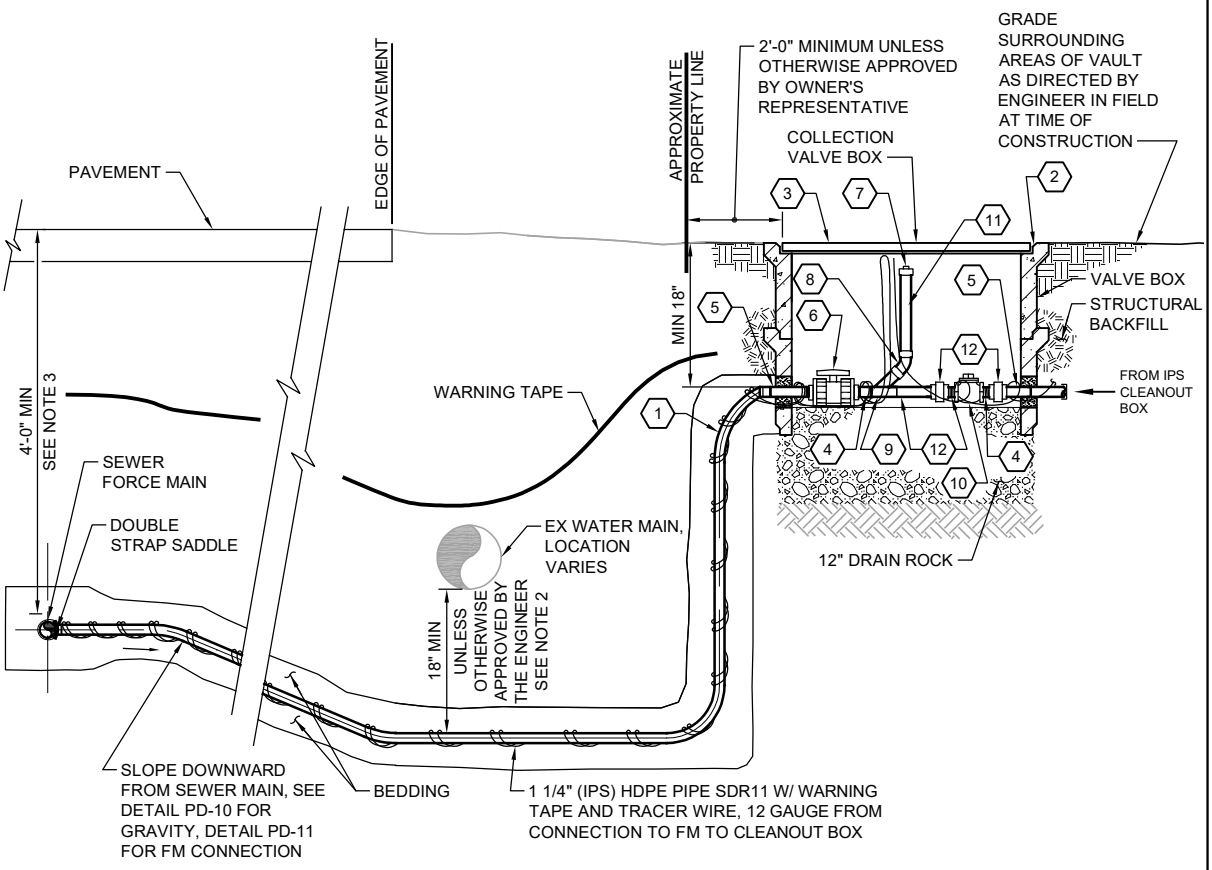
FORCE MAIN CONNECTION

Kitsap County Public Works
Sewer Division
614 Division Street, MS 26
Port Orchard, WA 98366

INDIVIDUAL PUMP INSTALLATION B

Detail No. **PD-10**

Rev Date: **May 2025**



NOTES:

1. ALL PVC PIPE AND FITTINGS SHALL BE SCHEDULE 80.
2. LESS THAN 18" SEPARATION REQUIRES CASING OF THE LATERAL. IF WATER MAIN DEPTH IS GREATER THAN 5 FEET, CONTRACTOR HAS OPTION OF ROUTING LATERAL OVER WATER MAIN AND CASING THE LATERAL.
3. TYPICAL BURY DEPTH OF FORCE MAIN IS 4'-0".
4. ALL PIPE AND FITTINGS INSIDE VALVE BOX SHALL BE LAID FLAT.
5. TRACER WIRE INSULATED 12 GAUGE GREEN COATED WIRE TO BE WRAPPED AROUND THE PIPE FROM COLLECTOR MAINLINE AND CONTINUE WIRE TO IPS CLEANOUT.
6. NEW HDPE MAINS MAY REQUIRE FUSION WELDED SADDLE. TO BE DIRECTED BY THE COUNTY.

MATERIAL LIST:

ALL PIPE, FITTINGS AND VALVES SHALL BE MPT THREADED SCHEDULE 80 PVC, UNLESS OTHERWISE NOTED

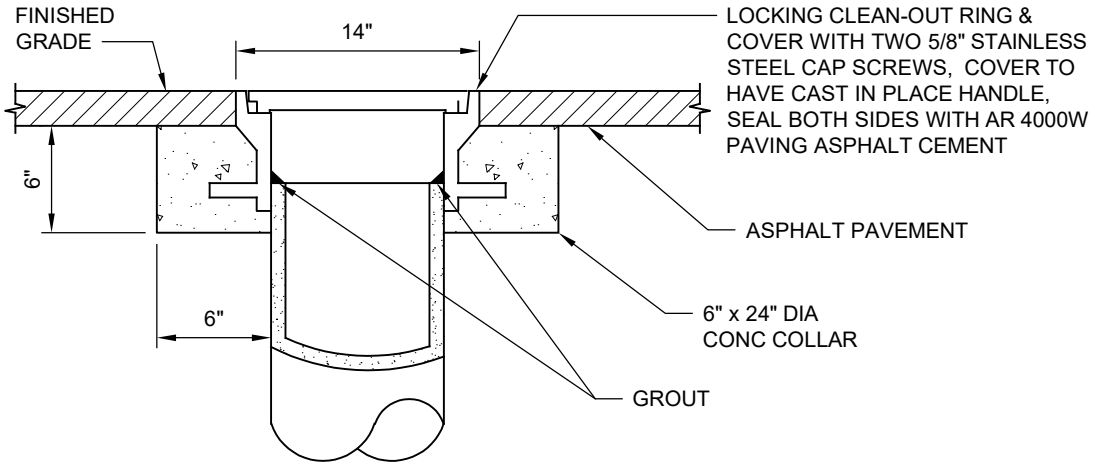
1. 1 - 1/4" POLYETHYLENE PRESSURE PIPE SDR 11
2. CONCRETE BOX (STAKED AS REQUIRED)
3. TRAFFIC RATED METAL LID (MARKED "SEWER")
4. 1 1/4" x 3" NIPPLE
5. 1 1/4" MPT 316 SST IP x HDPE BUTT FUSION TRANSITION FITTING
6. 1 1/4" BALL VALVE TRUE UNION
7. 1 1/4" FEMALE PIPE THREAD x HUB ADAPTER W/ THREADED CAP
8. 1 1/4" 45° BENDS
9. 1 1/4" WYE
10. 1 1/4" SWING CHECK VALVE
11. 1 1/4" PIPE, EXTEND TO WITHIN 3" OF LID UNDER SIDE
12. UNION

Kitsap County Public Works
Sewer Division
614 Division Street, MS 26
Port Orchard, WA 98366

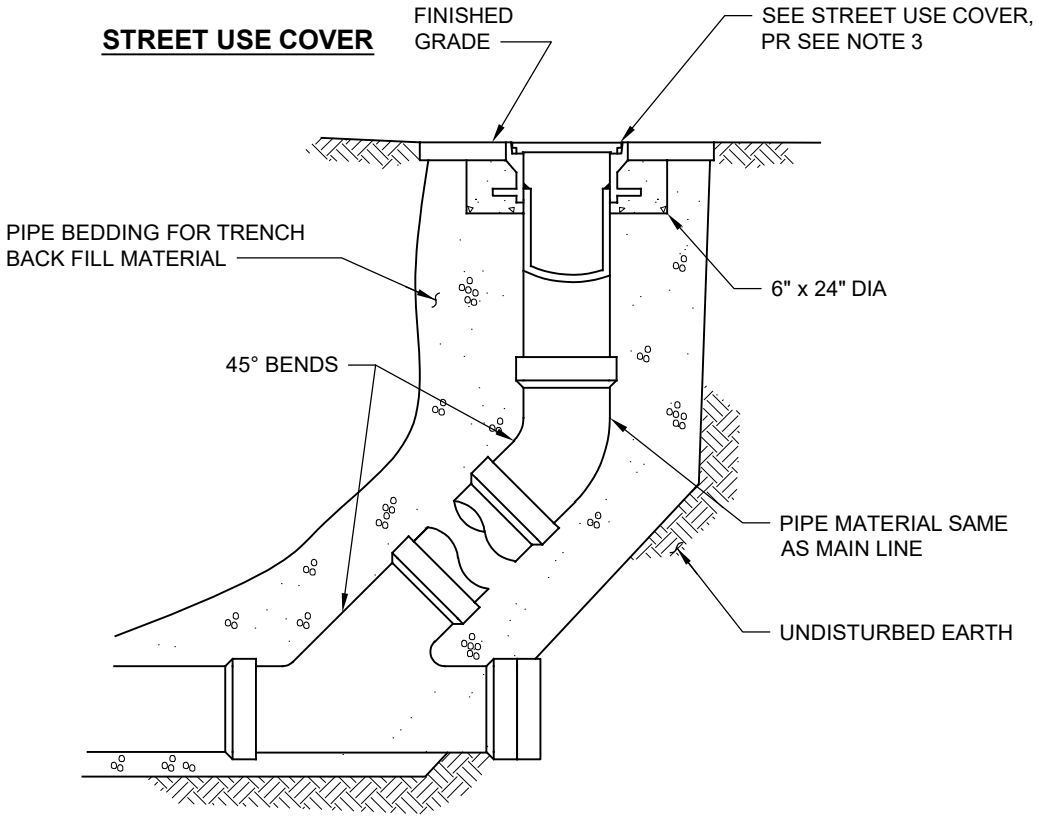
TYPICAL IPS SIDE SEWER INSTALLATION TO PROPERTY LINE

Detail No. **PD-11**

Rev Date: **May 2025**



STREET USE COVER



NOTES:

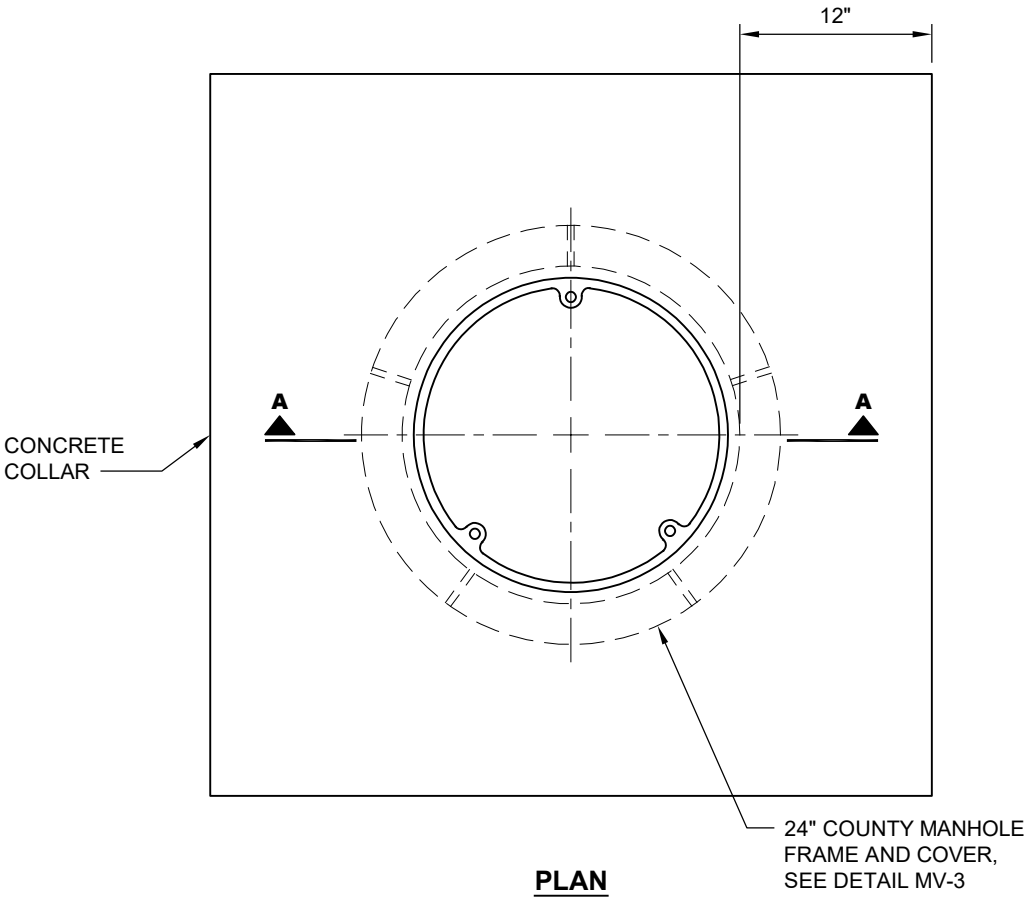
1. RESTORATION SHALL BE IN ACCORDANCE WITH LOCAL REGULATORY REQUIREMENTS.
2. TRENCH BACKFILL SHALL BE COMPACTED AND TESTED IN ACCORDANCE WITH STANDARD SPECIFICATIONS AND LOCAL REQULATORY REQUIREMENTS.
3. SEE EASEMENT CLEANOUT FRAME & COVER DETAIL FOR CLEANOUTS LOCATED IN EASEMENTS.

Kitsap County Public Works
Sewer Division
614 Division Street, MS 26
Port Orchard, WA 98366

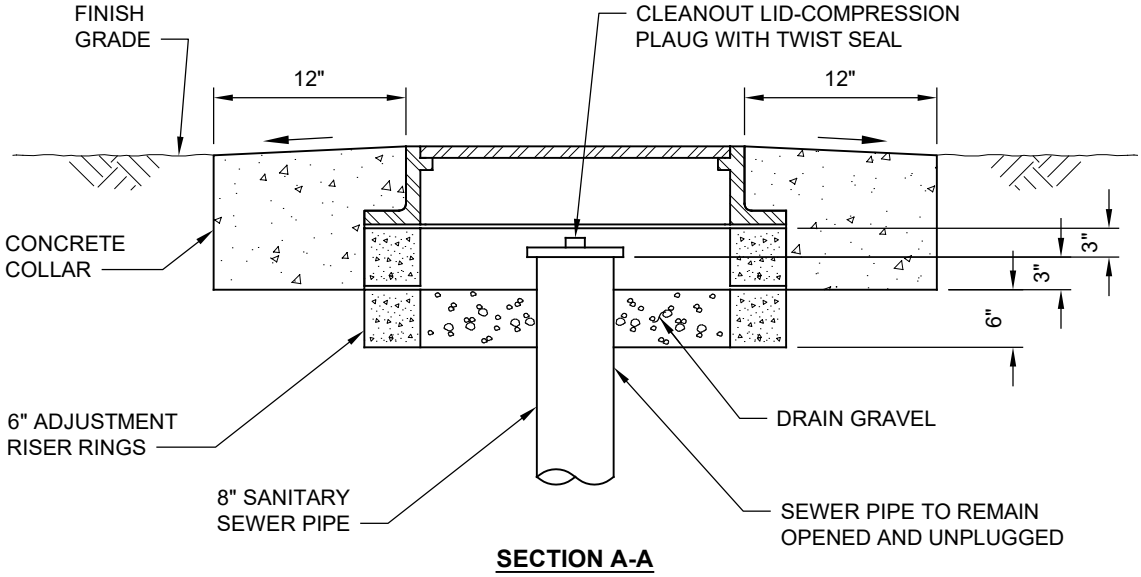
CLEANOUT AND STREET USE COVER

Detail No. **PD-12**

Rev Date: **May 2025**



PLAN



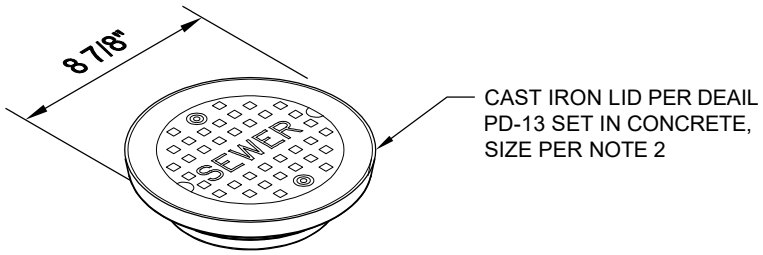
SECTION A-A

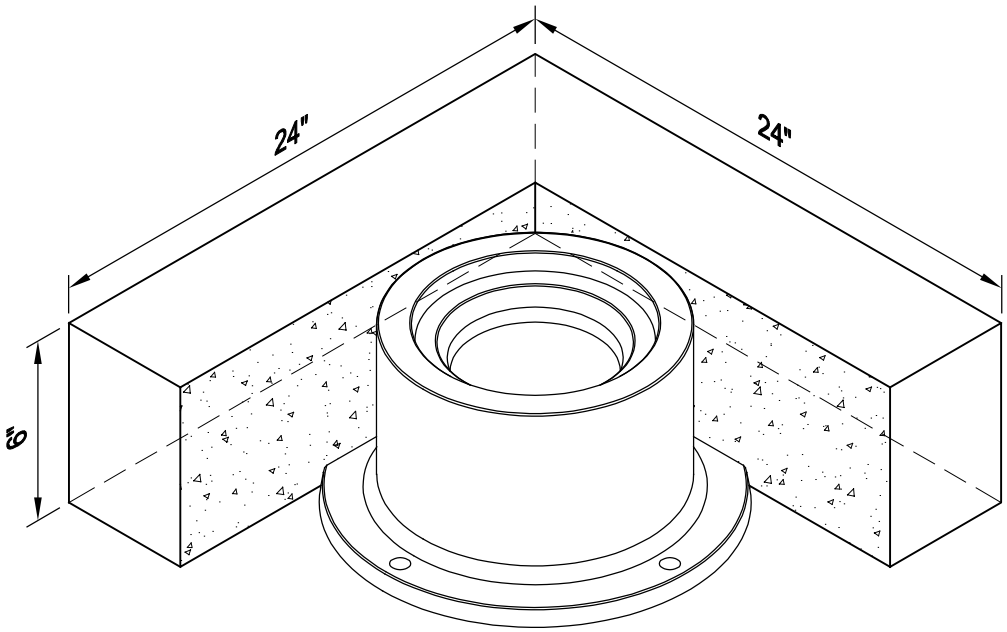
Kitsap County Public Works
Sewer Division
614 Division Street, MS 26
Port Orchard, WA 98366

EASEMENT CLEANUT COVER

Detail No. **PD-13**

Rev Date: **May 2025**





NOTES:

1. TOP OF CLEAN-OUT BOX AND CONCRETE COLLAR TO BE INSTALLED AT GRADE.

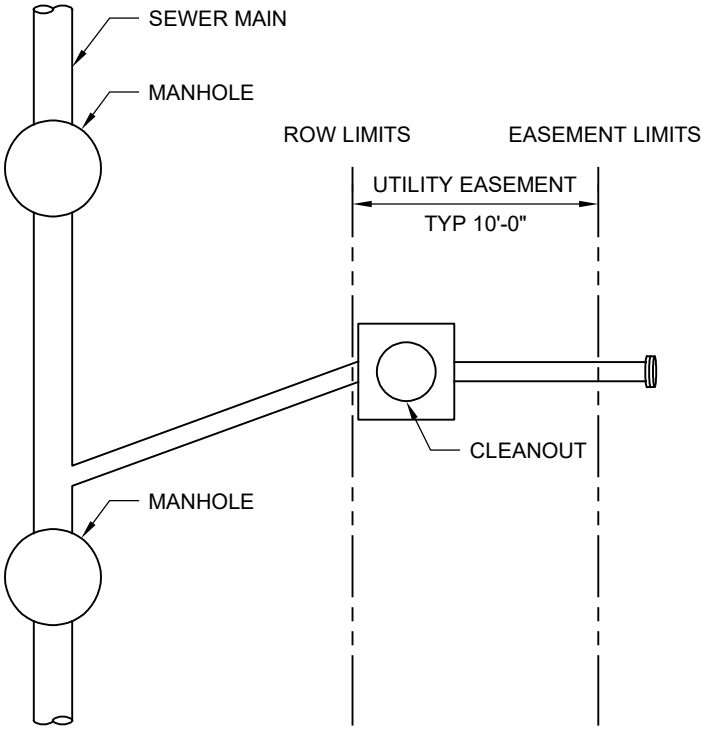
2. 4-INCH CLEANOUT REQUIRED FOR 6-INCH SIDE SEWER
   6-INCH CLEANOUT REQUIRED FOR 8-INCH SIDE SEWER
   8-INCH CLEANOUT REQUIRED FOR 10-INCH SIDE SEWER OR LARGER.

Kitsap County Public Works
Sewer Division
614 Division Street, MS 26
Port Orchard, WA 98366

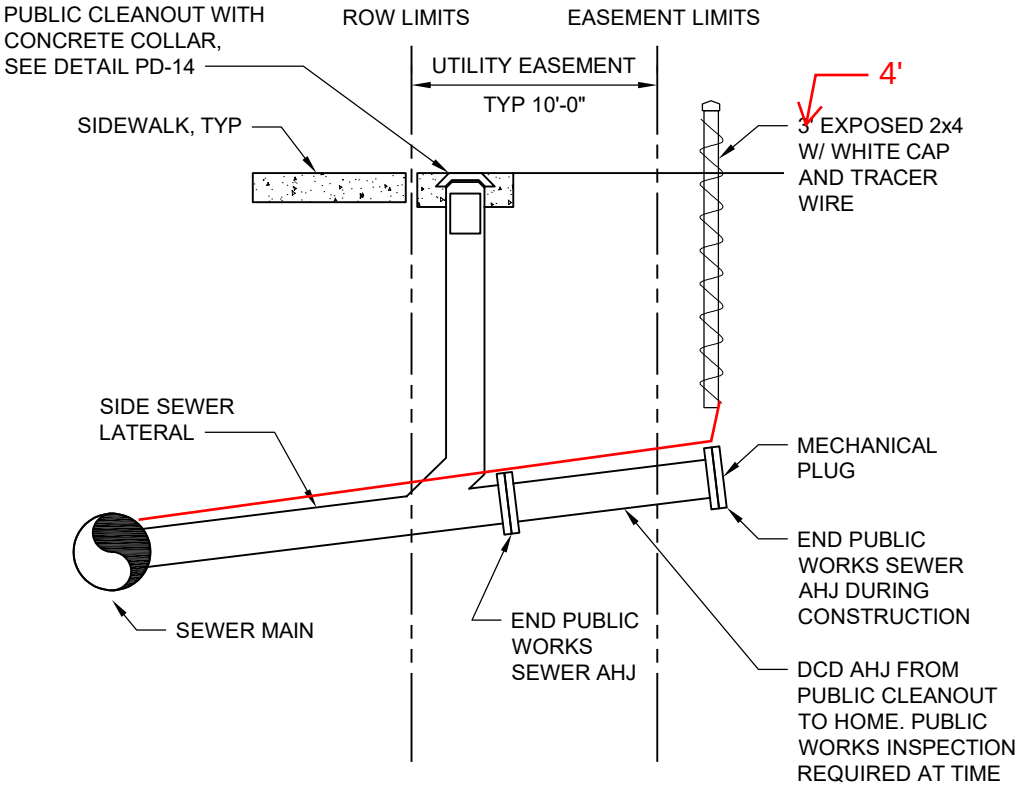
SIDE SEWER CLEAN-OUT BOX

Detail No. **PD-14**

Rev Date: **May 2025**



PLAN
(NTS)



ELEVATION
(NTS)

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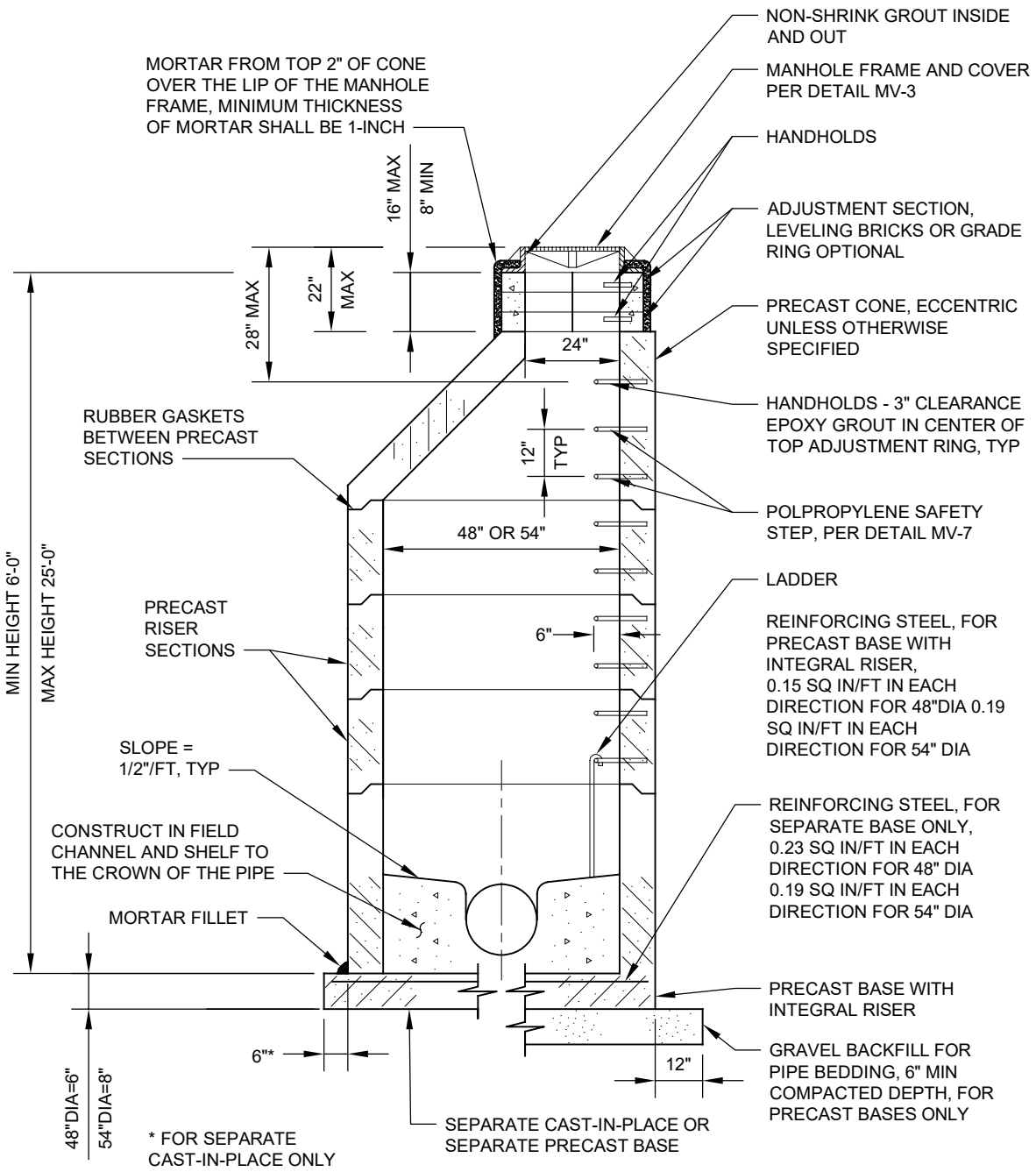
Sewer Division
614 Division Street, MS 26
Port Orchard, WA 98366

SIDE SEWERS: AUTHORITY HAVING JURISDICTION (AHJ) DIAGRAM

Detail No. **PD-15**

Rev Date: **May 2025**



NOTES:

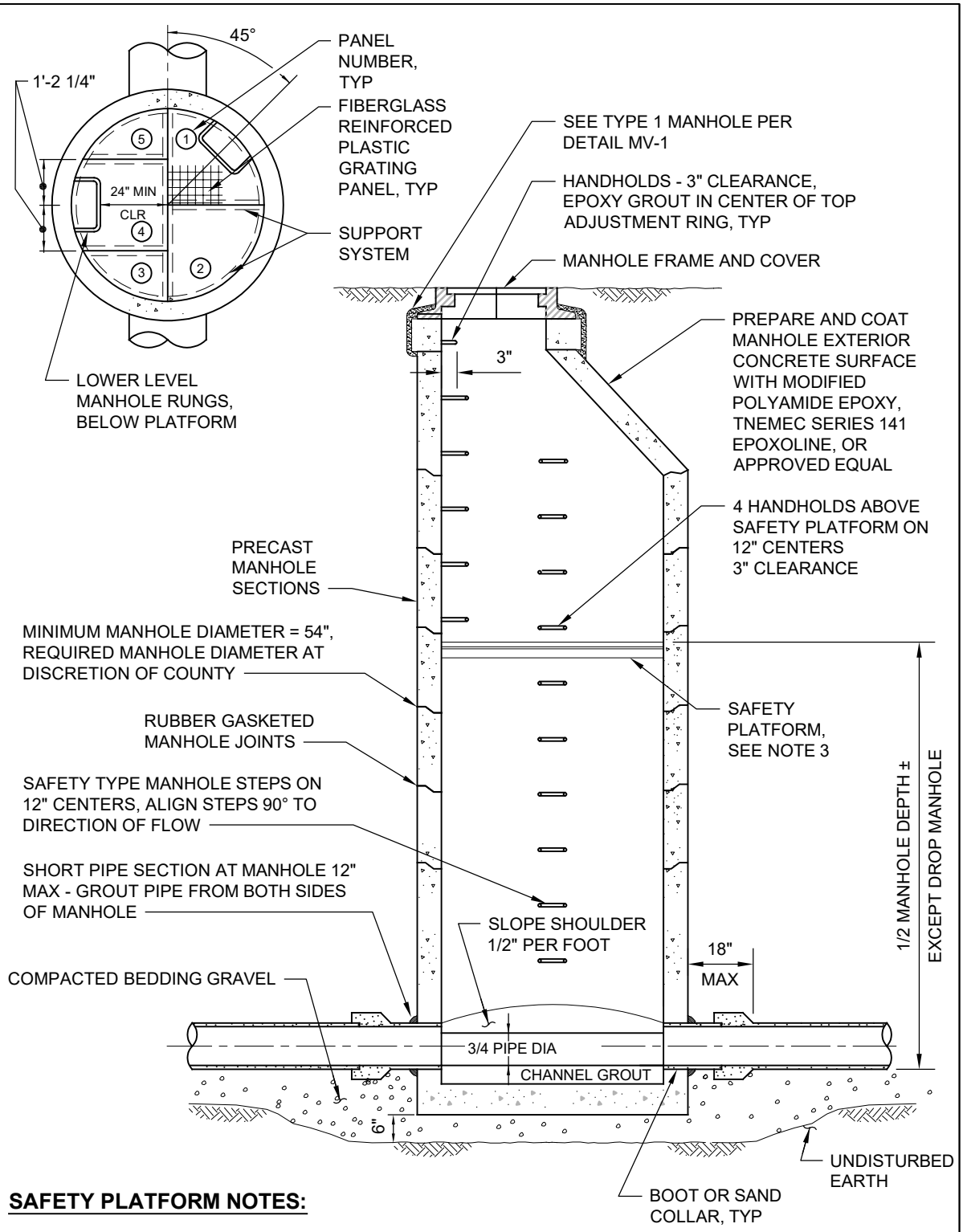
1. HEIGHT: 8' TO 12': SOIL BEARING VALUE EQUALS 3300#/FT^2 (MIN)
2. HEIGHT: OVER 12' TO 20': SOIL BEARING VALUE EQUALS 3800#/FT^2 (MIN)
3. HEIGHT: OVER 20': INTERMEDIATE SAFETY PLATFORMS REQUIRED; SEE DETAIL MV-2.
4. ALL MANHOLE JOINTS SHALL BE WRAPPED WITH WRAPID SEAL OR APPROVED EQUAL.
5. ALL PIPE CONNECTIONS SHALL BE RUBBER BOOTED AND THE MANHOLE BASE SHALL BE PRECHANNELED.

Kitsap County Public Works
Sewer Division
614 Division Street, MS 26
Port Orchard, WA 98366

MANHOLE TYPE 1

Detail No. **MV-1**

Rev Date: **May 2025**



SAFETY PLATFORM NOTES:

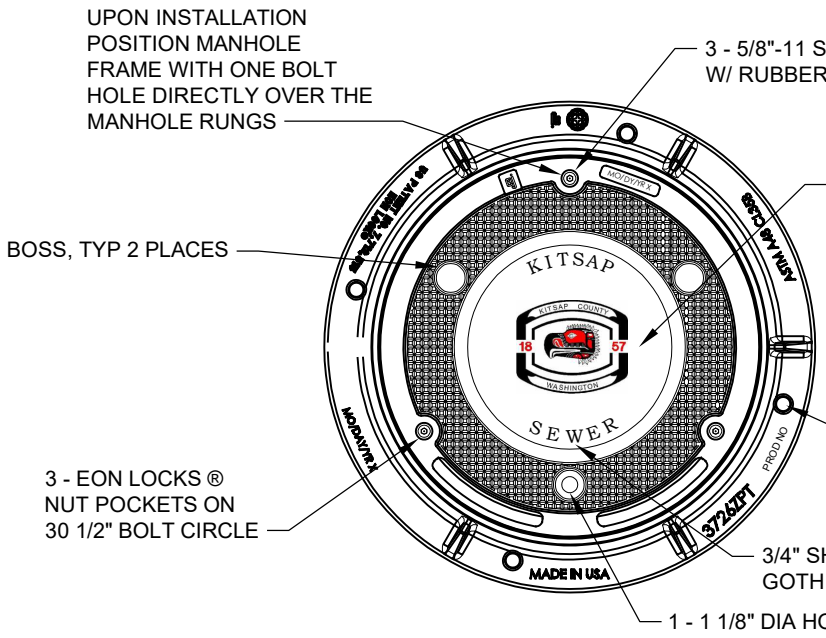
1. MAXIMUM LENGTH OF PANEL SHALL BE 36".
2. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR GRATING, PANEL LAYOUT AND SUPPORT SYSTEM APPROVAL PRIOR TO FABRICATION.
3. SAFETY PLATFORM SHALL HAVE A MINIMUM WORKING LOAD LIMIT OF 1500 LBS AND SHALL BE OSHA APPROVED.

Kitsap County Public Works
Sewer Division
614 Division Street, MS 26
Port Orchard, WA 98366

DEEP MANHOLE DEPTH > 20 FEET

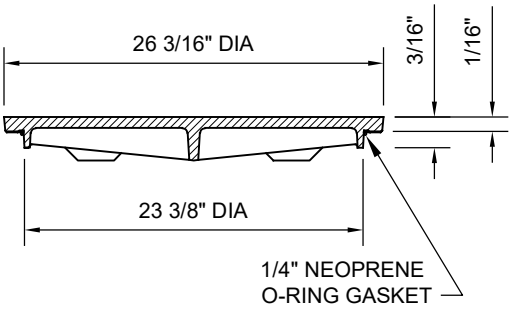
Detail No. **MV-2**

Rev Date: **May 2025**

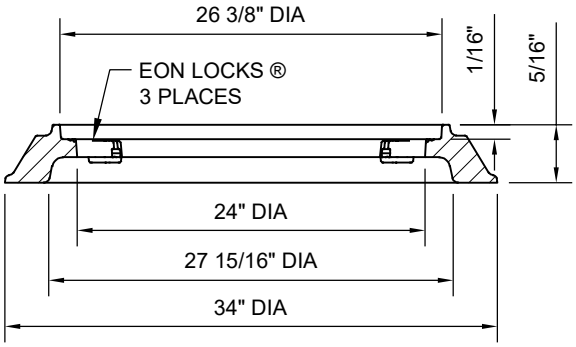


No Name and Logo req. for private systems at discretion of KC

PLAN



COVER SECTION



SECTION VIEW

NOTES:

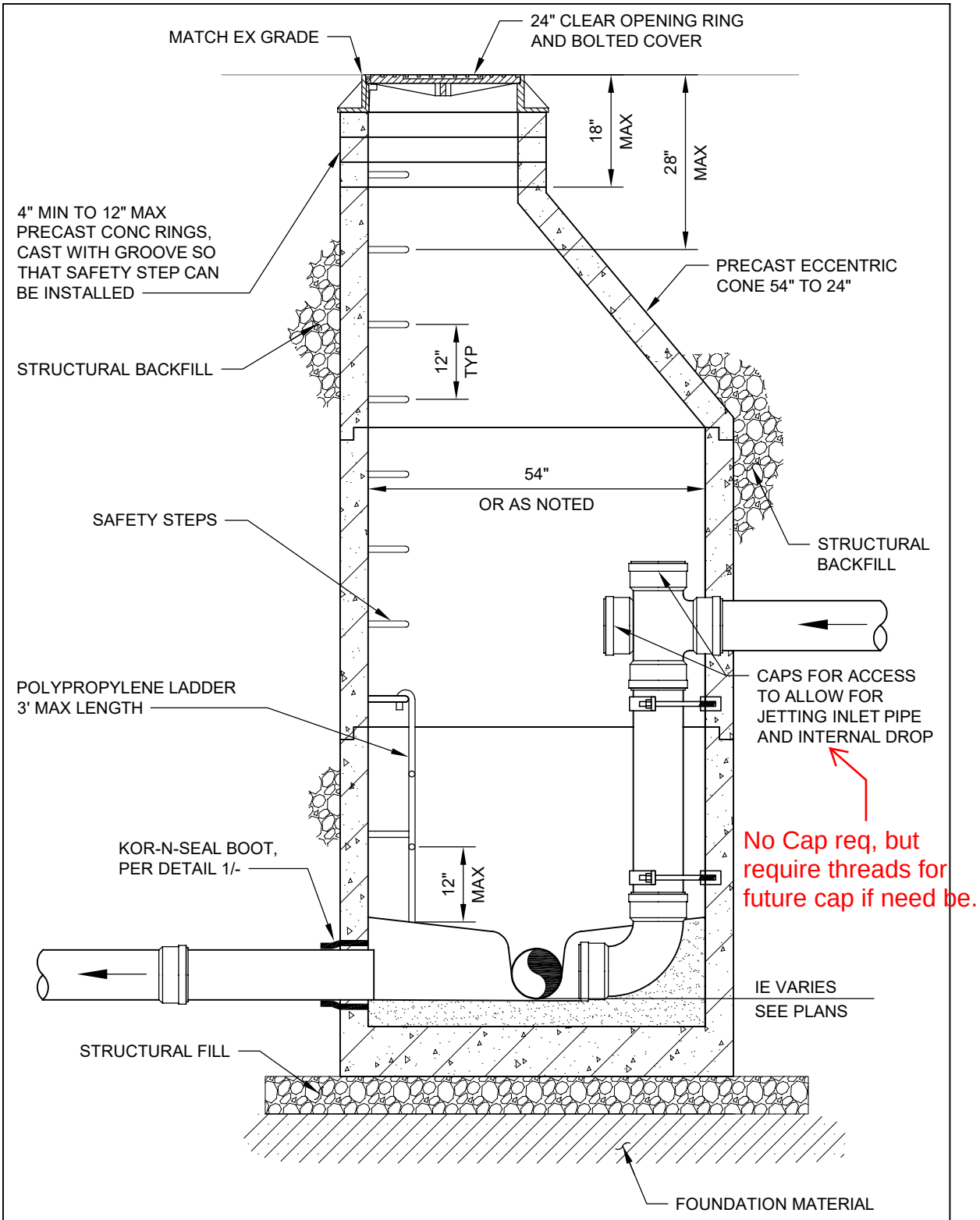
1. MATERIALS: FRAME-GRAY IRON (CL35B), ASTM A48; COVER-DUCTILE IRON (80-55-06), ASTM A536.
2. EJ GROUP INTERNATIONAL NO.3725 APT (OR EQUAL).
3. MANHOLES LOCATED WITHIN NON-PAVED AREAS SHALL REQUIRE THE INSTALLATION OF MARKER POSTS AS MANUFACTURED BY CARSON TYPE CS-225 AND MARKED SEWER (DECAL 37-A).
4. PROVIDE NEOPRENE GASKET AND HOLE PLUGS FOR A WATER-TIGHT ASSEMBLY.

Kitsap County Public Works
Sewer Division
614 Division Street, MS 26
Port Orchard, WA 98366

MANHOLE FRAME AND COVER

Detail No. **MV-3**

Rev Date: **May 2025**

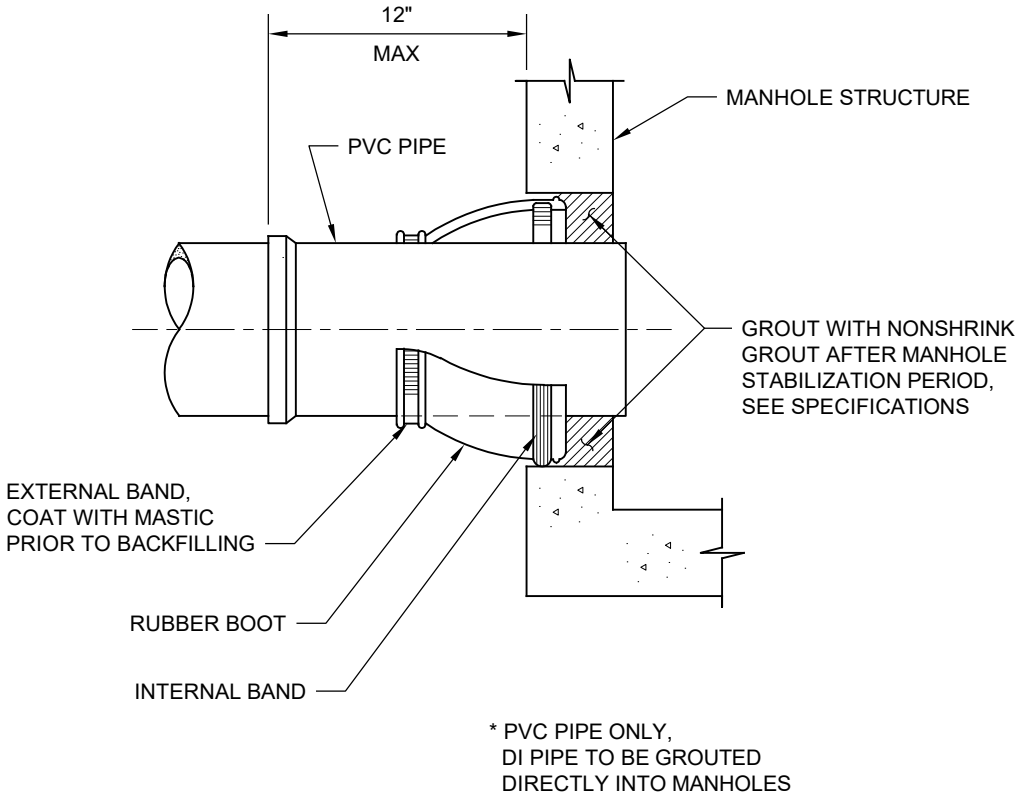


Kitsap County Public Works
Sewer Division
614 Division Street, MS 26
Port Orchard, WA 98366

DROP MANHOLE CONNECTION

Detail No. **MV-4**

Rev Date: **May 2025**

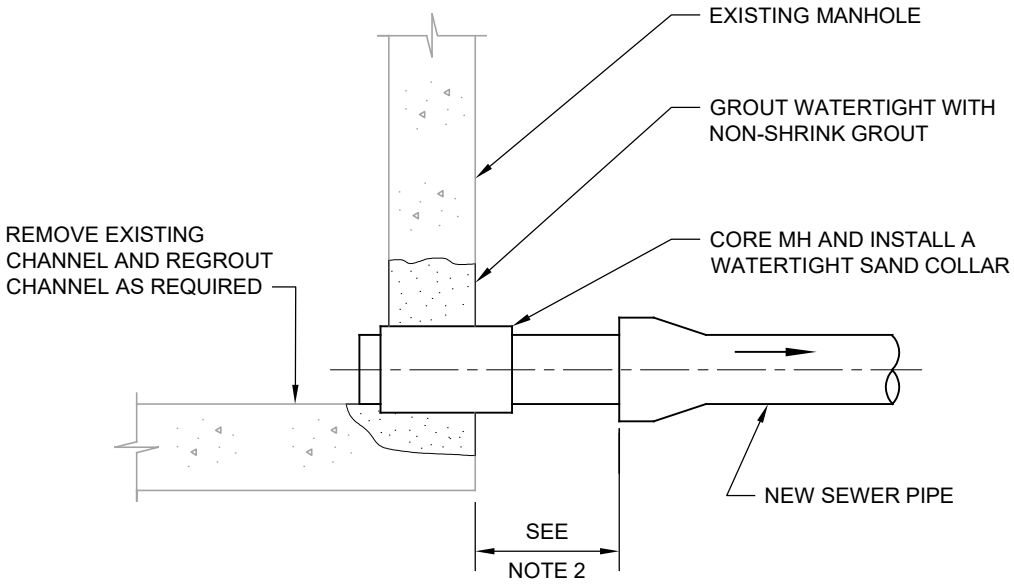


Kitsap County Public Works
Sewer Division
614 Division Street, MS 26
Port Orchard, WA 98366

RUBBER BOOT MANHOLE INSERT

Detail No. **MV-5**

Rev Date: **May 2025**



NOTES:

1. THE OPENING SHALL PROVIDE A MINIMUM CLEARANCE OF 2" AROUND THE CIRCUMFERENCE OF THE PIPE.

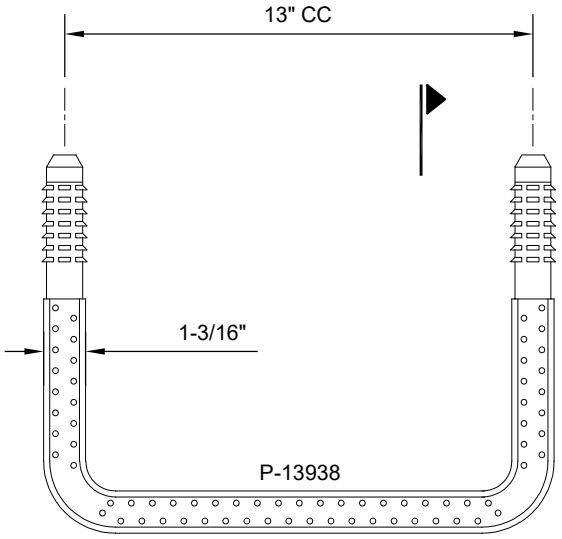
2. ALL PIPES SHALL BE PROVIDED WITH A FLEXIBLE JOINT WITHIN 1/2 OF PIPE DIAMETER OR 12", WHICHEVER IS GREATER.

Kitsap County Public Works
Sewer Division
614 Division Street, MS 26
Port Orchard, WA 98366

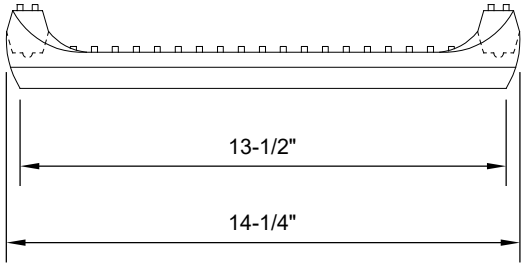
CONNECTIAON TO EXISTING MANHOLE

Detail No. **MV-6**

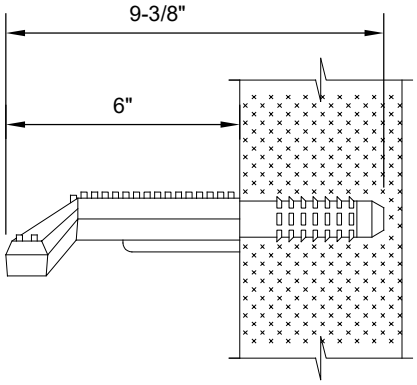
Rev Date: **May 2025**

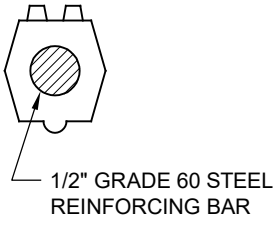


PLAN



ELEVATION





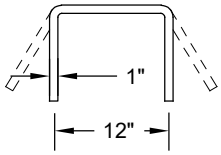
SECTION

Kitsap County Public Works
Sewer Division
614 Division Street, MS 26
Port Orchard, WA 98366

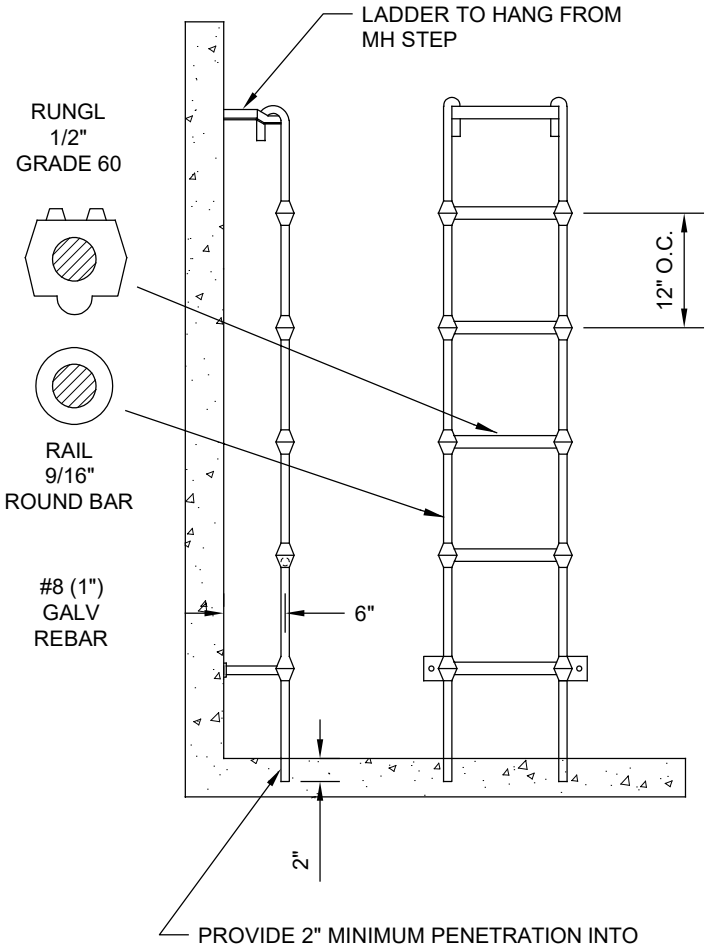
POLYPROPYLENE SAFETY STEP

Detail No. **MV-7**

Rev Date: **May 2025**



LEGS MAY BE PARALLEL OR APPROX RADIAL AT OPTION OF MANUFACTURER EXCEPT THAT ALL STEPS IN ANY MANHOLE SHALL BE SIMILAR



PROVIDE 2" MINIMUM PENETRATION INTO MANHOLE BASE, PROVIDE MEANS TO SECURELY ANCHOR INTO MANHOLE BASE

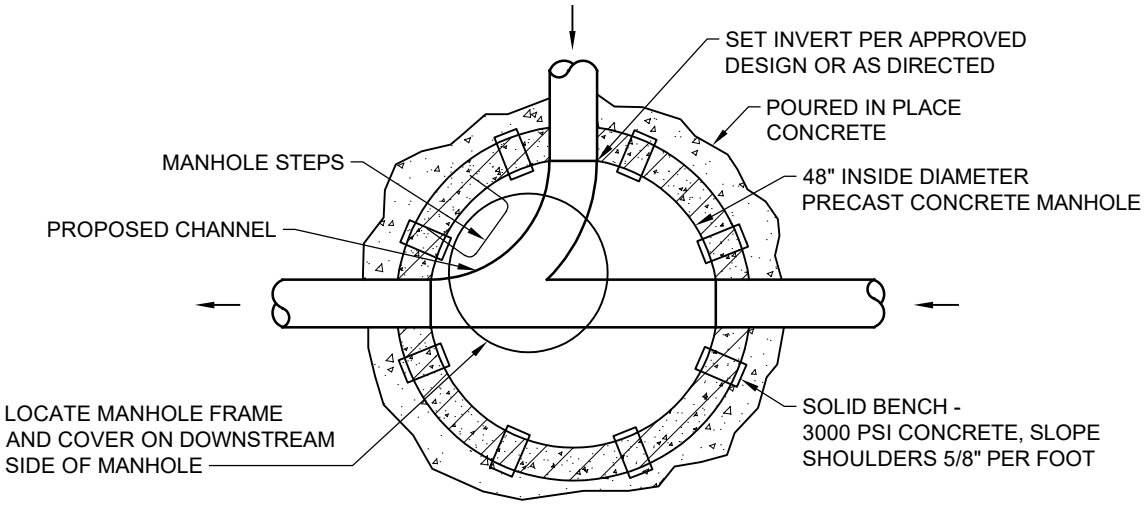
LADDER SHALL CONFORM TO POLYPROPYLENE ASTM D-4101 1/2" GRADE 60 REINFORCING BAR A-615 9/16" COLD DRAWN BAR C-1018

Kitsap County Public Works
Sewer Division
614 Division Street, MS 26
Port Orchard, WA 98366

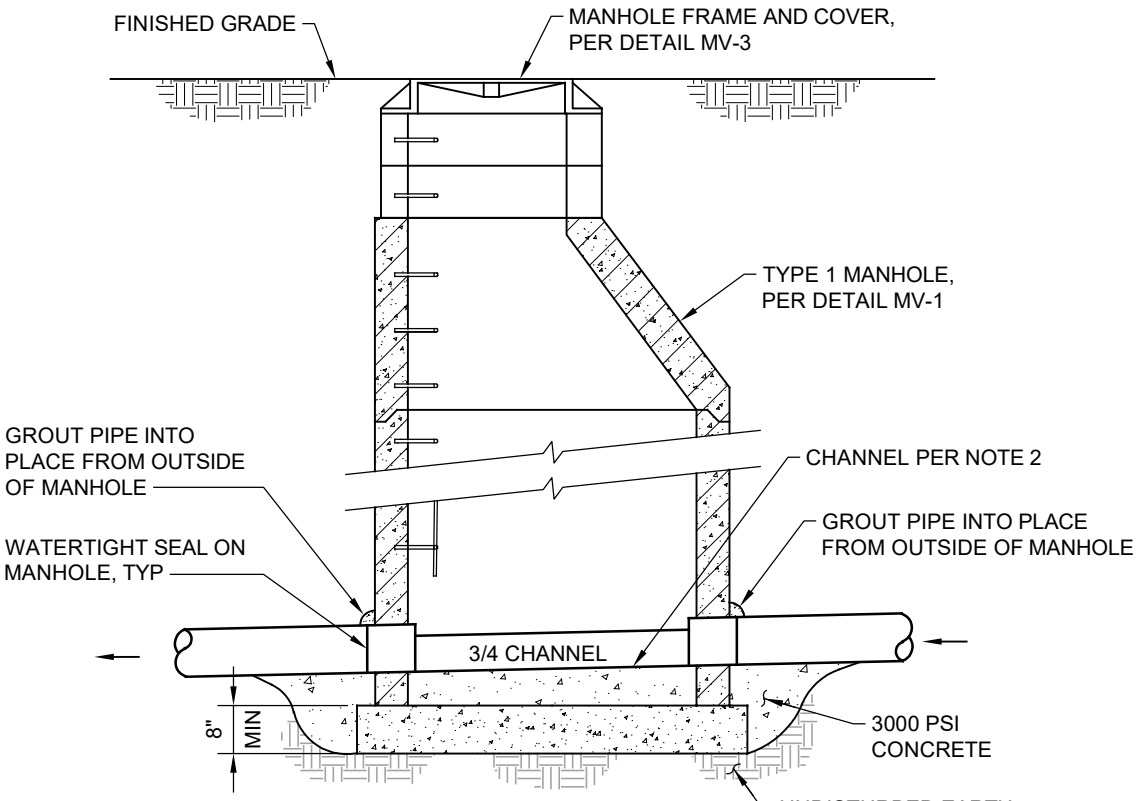
MANHOLE LADDER

Detail No. **MV-8**

Rev Date: **May 2025**



PLAN



SECTION

NOTES:

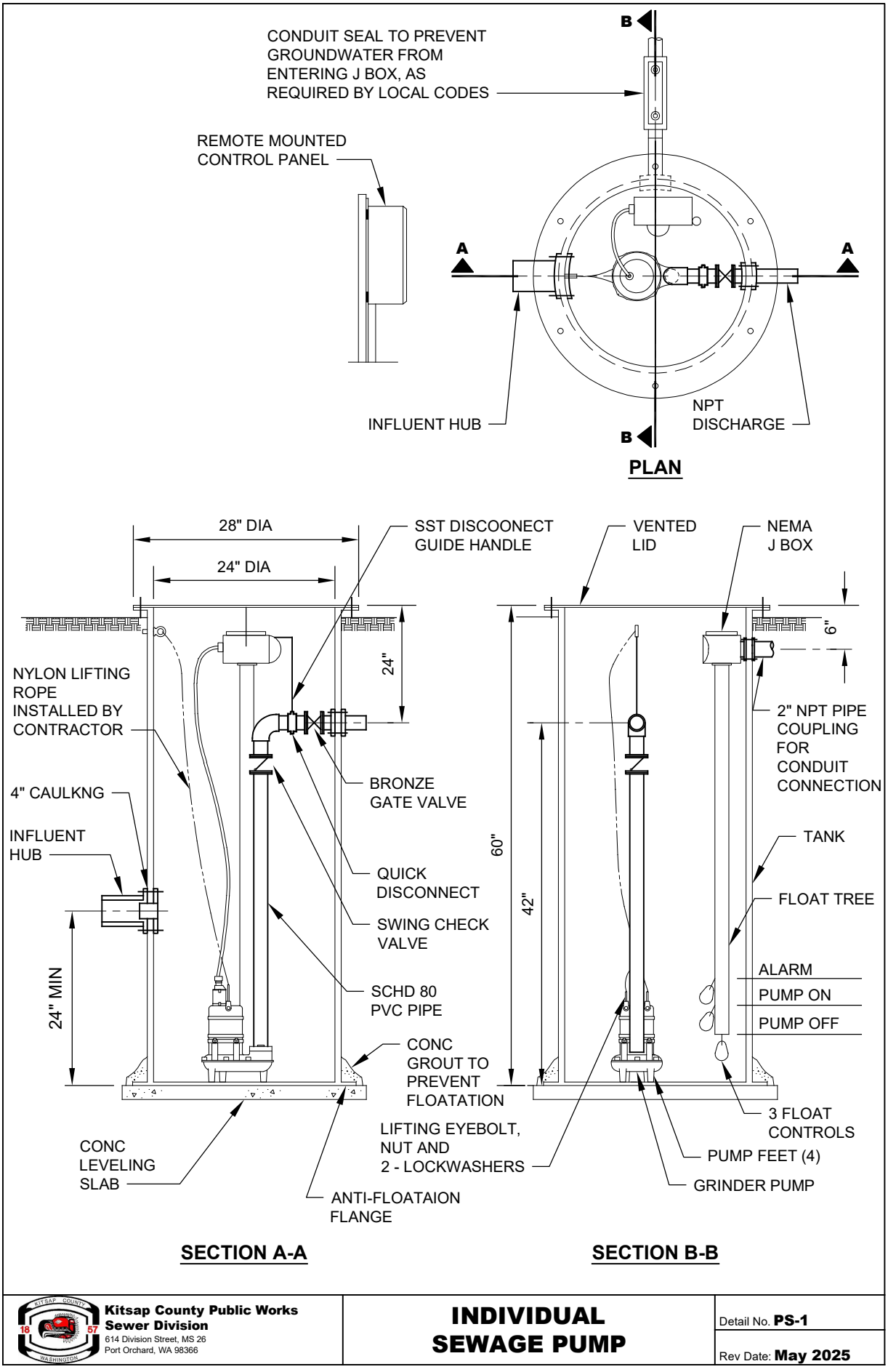
1. MANHOLES SHALL BE WATERTIGHT.
2. TOP OF EXISTING PIPE SHALL BE CUT AND REMOVED ONLY AFTER NEW PIPE IS TESTED, CCTV'D, AND APPROVED BY THE COUNTY.
3. FOR KITSAP COUNTY SEWER DIVISION USE ONLY.

Kitsap County Public Works
Sewer Division
614 Division Street, MS 26
Port Orchard, WA 98366

48" SADDLE MANHOLE
(FOR KITSAP COUNTY SEWER DIVISION USE ONLY

Detail No. **MV-9**

Rev Date: **May 2025**

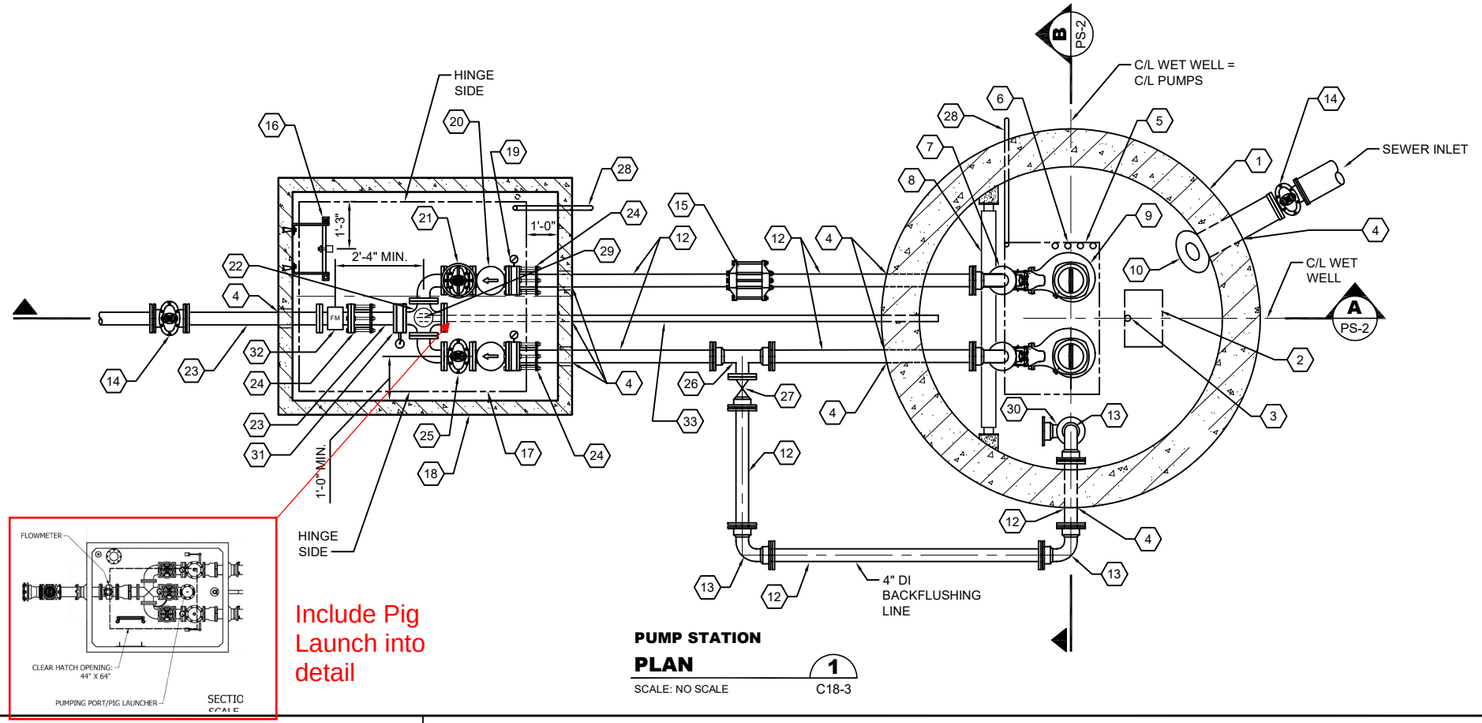


Kitsap County Public Works
Sewer Division
614 Division Street, MS 26
Port Orchard, WA 98366

INDIVIDUAL SEWAGE PUMP

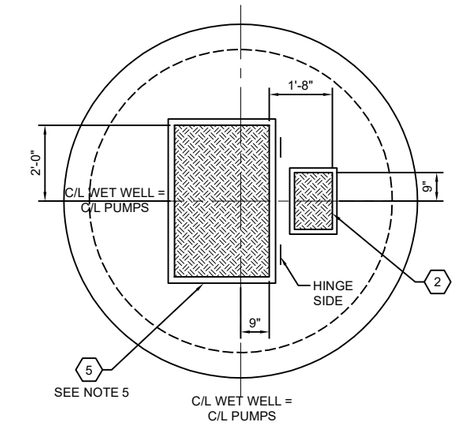
Detail No. **PS-1**

Rev Date: **May 2025**



PUMP STATION PLAN 1

SCALE: NO SCALE C18-3



TOP SLAB ACCESS HATCH LAYOUT DETAIL 1

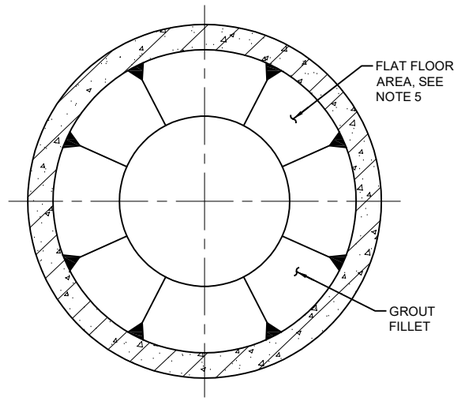
SCALE: NO SCALE -

NOTES:

1. ALL DUCTILE IRON PIPE AND FITTINGS SHALL BE CLASS 52 LINED WITH PROTECTO 401.
2. ALL BOLTED CONNECTIONS IN THE WET WELL AND VALVE VAULT SHALL BE CONSTRUCTED WITH DOUBLE 316L SST NUTS.
3. PRESSURE GAUGES TO BE MOUNTED WITH FACE VERTICALLY UP SUCH THAT THEY CAN BE READ FROM GROUND SURFACE.
4. ALL MECHANICAL AND PLAIN END JOINTS SHALL BE RESTRAINED.
5. HATCH SIZED FOR FLYGT PUMPS. CONFIRM SIZE WITH SELECTED PUMP VENDER. COORDINATE HATCH AND FLAT AREA LOCATIONS AND DIMENSIONS WITH SELECTED PUMP MANUFACTURER. DISTANCES SHOWN ARE FOR FLYGT PUMPS.
6. PROVIDE FABRICATED DI SSFM FLANGED SPOOL TO MATCH LAY LENGTH OF INSTALLED FLOW METER.
7. CAST FLOOR DRAIN IN VAULT BASE. SLOPE FLOOR TO DRAIN.
8. BED AND BACKFILL CISP DRAIN PIPING IN CDF.
9. VALVE STEM EXTENSION SHALL TERMINATE WITHIN 4" OF HATCH. PROVIDE COVERED VALVE STEM OPENING IN HATCH.
10. COAT INTERIOR AND EXTERIOR OF ALL STRUCTURES IN ACCORDANCE WITH KITSAP COUNTY STANDARDS FOR SANITARY SEWER.
11. REFERENCE SECTION 11.10.4 OF THE "KITSAP COUNTY STANDARDS FOR SANITARY SEWER CONSTRUCTION" FOR BYPASS REQUIREMENT.

PUMP STATION COMPONENTS

1. WETWELL, MINIMUM 8' DIAMETER INSIDE DIMENSION
2. 12" x 18" SINGLE LEAF ALUM ACCESS HATCH, H-30 RATED
3. PRESSURE-SENSING LEVEL PROBE
4. WALL PENETRATION TYPE 1, TYP. SEE KITSAP COUNTY STANDARD DETAIL PS-2
5. 30" X 48" MINIMUM CLEAR OPENING, SINGLE LEAF ALUM ACCESS HATCH, H-30 RATED
6. FLOAT SWITCH ASSEMBLY
7. DI LONG RADIUS 90° BEND, MJ x FL, TYP
8. DISCHARGE PIPE SUPPORT ASSEMBLY
9. SUBMERSIBLE PUMP, TYP
10. DROP BOWL ASSEMBLY
11. NOT USED
12. DI SPOOL, PE x PE, LENGTH AS REQUIRED, TYP
13. 4" DI 90° BEND, MJ x MJ, TYP
14. GATE VALVE WITH VALVE BOX, MJ x MJ (MATCH PIPE SIZE) TYP
15. ROMAC™ ALPHA RESTRAINED JOINT COUPLING, CENTER BETWEEN STRUCTURES
16. ACCESS LADDER, WITH RETRACTABLE SAFETY POST
17. ALUM ACCESS HATCH, 5'-0" X 6-0" MINIMUM CLEAR OPENING, CENTERED AND OFFSET AS SHOWN FOR REFERENCE, H-30 RATED
18. VALVE VAULT, MINIMUM 5'-6" x MINIMUM 7'-0" INSIDE DIMENSIONS
19. PRESSURE SENSOR WITH PRESSURE GAUGE, FL x FL, TYP, SEE NOTE 3
20. CHECK VALVE, FL x FL, TYP
21. GATE VALVE, FL x FL WITH HANDWHEEL OPERATOR
22. DI CROSS TEE WITH 90° BEND AND BLIND FLANGE, FL x FL
23. DI SPOOL, FL x PE, LENGTH AS REQUIRED
24. RESTRAINED FLANGE COUPLING ADAPTER (RFCA), TYP
25. GATE VALVE WITH NUT OPERATOR AND VALVE STEM EXTENSION, FL x FL SEE NOTE 9
26. DI TEE, MJ x FL
27. 4" GV WITH VALVE BOX, FL x MJ
28. HATCH DRAIN, SEE KITSAP COUNTY STANDARD DETAIL PS-2
29. CAST IRON FLOOR DRAIN WITH P-TRAP, SEE NOTE 7
30. 4" DI 45° BEND, GROOVED x PE
31. PRESSURE SENSOR WITH TRANSMITTER AND PRESSURE GAUGE, FL x FL, SEE NOTE 3
32. MAGNETIC FLOW METER, SEE NOTE 6
33. 4" CISP VAULT DRAIN, SEE NOTE 8



WET WELL GROUT FILLET DETAIL 2

SCALE: NO SCALE -

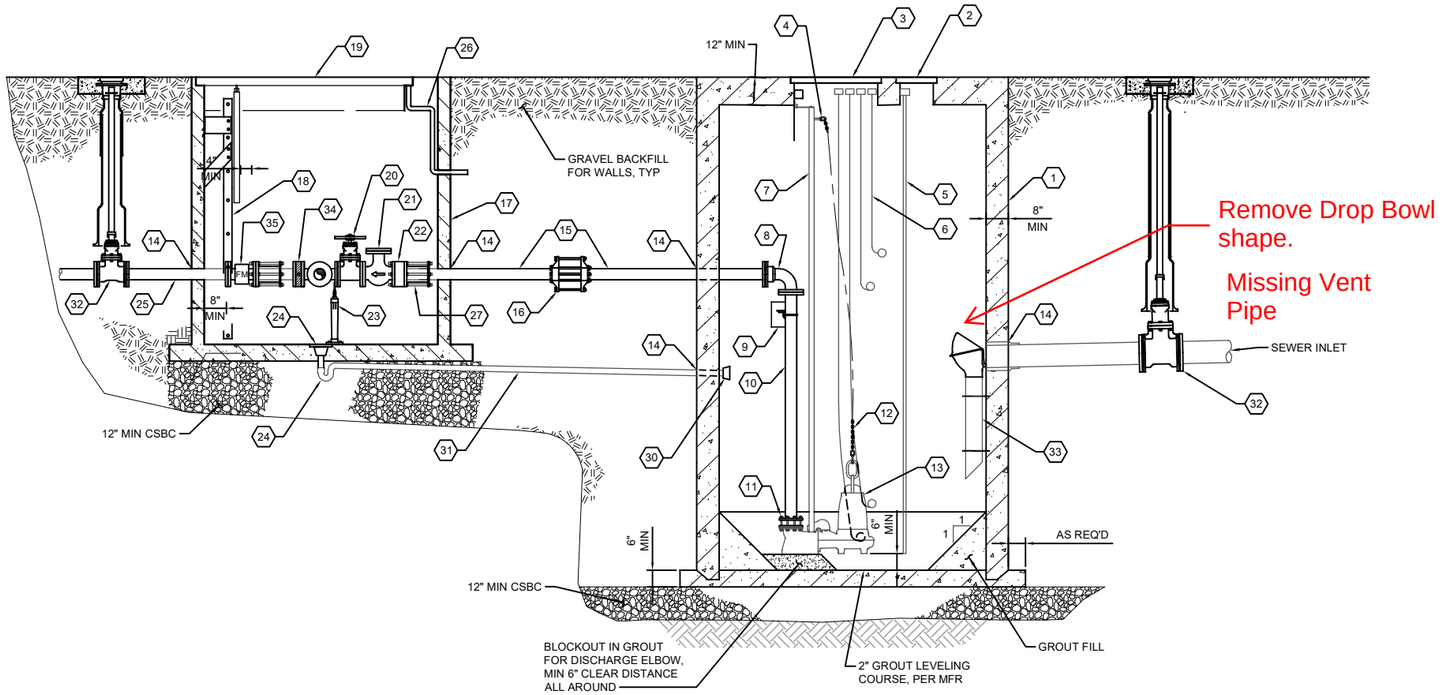
Kitsap County Public Works
Sewer Division
614 Division Street, MS 27
Port Orchard, WA 98366

SCALE: NO SCALE

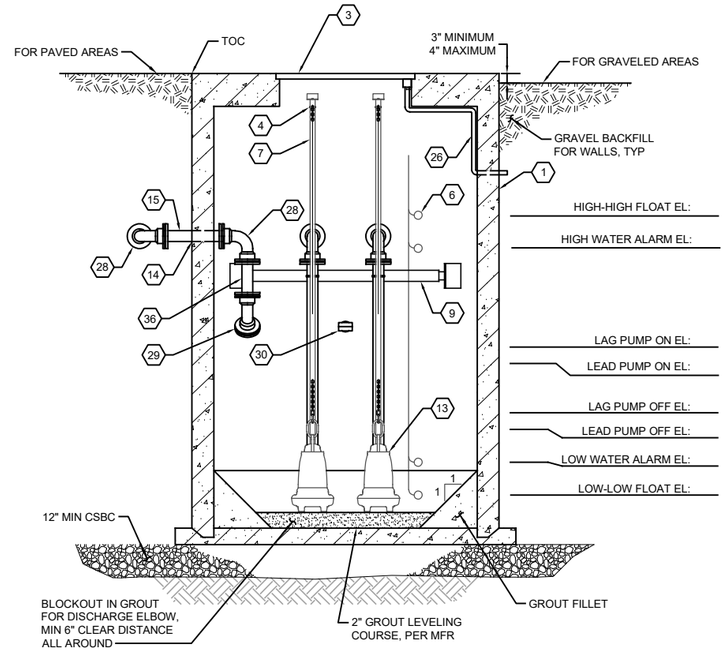
DATE: May 2025

SUBMERSIBLE PUMP VALVE VAULT

DETAIL PS-2



PUMP STATION
SECTION A
NTS PS-3



PUMP STATION
SECTION B
NTS PS-3

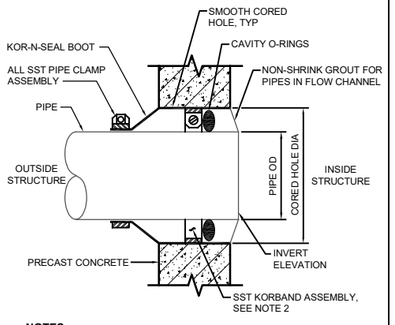
NOTES:

1. ALL DUCTILE IRON PIPE AND FITTINGS SHALL BE CLASS 52 LINED WITH PROTECTO 401.
2. ALL BOLTED CONNECTIONS IN THE WET WELL AND VALVE VAULT SHALL BE CONSTRUCTED WITH DOUBLE 316L SST NUTS.
3. PRESSURE GAUGES TO BE MOUNTED WITH FACE VERTICALLY UP SUCH THAT THEY CAN BE READ FROM GROUND SURFACE.
4. ALL MECHANICAL AND PLAIN END JOINTS SHALL BE RESTRAINED.
5. HATCH SIZED FOR FLYGT PUMPS. CONFIRM SIZE WITH SELECTED PUMP VENDER. COORDINATE HATCH AND FLAT AREA LOCATIONS AND DIMENSIONS WITH SELECTED PUMP MANUFACTURER. DISTANCES SHOWN ARE FOR FLYGT PUMPS.
6. PROVIDE FABRICATED DI SSFM FLANGED SPOOL TO MATCH LAY LENGTH OF INSTALLED FLOW METER.
7. CAST FLOOR DRAIN IN VAULT BASE. SLOPE FLOOR TO DRAIN.
8. SLOPE PIPE AT 1% MINIMUM TOWARDS WET WELL. BED AND BACKFILL CISP DRAIN PIPING IN CDF.
9. NOT USED.
10. COAT INTERIOR AND EXTERIOR OF ALL STRUCTURES IN ACCORDANCE WITH KITSAP COUNTY STANDARDS FOR SANITARY SEWER.
11. REFERENCE SECTION 11.10.4 OF THE "KITSAP COUNTY STANDARDS FOR SANITARY SEWER CONSTRUCTION" FOR BYPASS REQUIREMENT

SECTION VIEW

PUMP STATION COMPONENTS

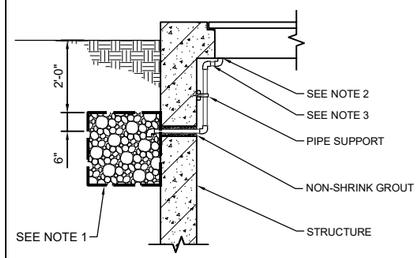
1. WET WELL, MINIMUM 8' DIA INSIDE DIMENSION
2. 12" x 18" SINGLE LEAF ALUM ACCESS HATCH, H-30 RATED
3. 30" x 48" SINGLE LEAF ALUM ACCESS HATCH, H-30 RATED
4. 316I SST HOOK SIZED TO SECURE PUMP LIFTING CHAIN, TYP OF EACH PUMP, LOCATE TO BE ACCESSIBLE WITHOUT ENTERING WETWELL
5. PRESSURE-SENSING LEVEL PROBE
6. FLOAT SWITCH ASSEMBLY, TYP
7. GUIDE RAIL SYSTEM, SIZE PER PUMP MANUFACTURER, MINIMUM SCH 40 316L SST
8. DI LONG RADIUS 90° BEND, FL x MJ, TYP
9. DISCHARGE PIPE SUPPORT ASSEMBLY
10. DI SPOOL, FL x FL, LENGTH AS REQ'D, TYP
11. DISCHARGE ELBOW, TYP
12. PUMP LIFTING CHAIN, 316L SST, TYP
13. SUBMERSIBLE PUMP, TYP
14. WALL PENETRATION TYPE 1, SEE DETAIL 1, TYP
15. DI SPOOL, PE x PE, LENGTH AS REQ'D
16. ROMAC™ ALPHA RESTRAINED JOINT COUPLING, CENTER BETWEEN STRUCTURES
17. VALVE VAULT, MINIMUM 5'-6" x MINIMUM 7'-0" INSIDE DIMENSIONS
18. ACCESS LADDER, WITH RETRACTABLE SAFETY POST
19. ALUM ACCESS HATCH, 5'-0 x 6'-0 CLEARANCE MINIMUM, H-30 RATED
20. GATE VALVE, FL x FL WITH HAND WHEEL OPERATOR
21. CHECK VALVE, FL x FL, TYP
22. PRESSURE SENSOR WITH PRESSURE GAUGE, FL x FL, TYP, SEE NOTE 3
23. PIPE SUPPORT
24. CAST IRON FLOOR DRAIN WITH P-TRAP, SEE NOTE 7
25. DI SPOOL, FL x PE, LENGTH AS REQUIRED
26. HATCH DRAIN, SEE DETAIL 2
27. RESTRAINED FLANGE COUPLING ADAPTER (RFCA), TYP
28. 4" DI 90° BEND, MJ x MJ
29. 4" DI 45° VERTICAL BEND, GROOVED x PE, LOCATE 4' ABOVE WET WELL FLOOR, ROTATE AS DIRECTED BY FIELD INSPECTOR
30. 4" DUCKBILL TYPE CHECK VALVE
31. 4"CISP VAULT DRAIN, SEE NOTE 8
32. GATE VALVE WITH VALE BOX, MJ x MJ (MATCH PIPE SIZE, TYP)
33. DROP BOWL ASSEMBLY
34. PRESSURE SENSOR WITH TRANSMITTER AND PRESSURE GAUGE, FL x FL, SEE NOTE
35. MAGNETIC FLOW METER FL x FL, SEE NOTE 6
36. DI SPOOL, PE x GROOVED, LENGTH AS REQUIRED.



NOTES:

1. CONTRACTOR SHALL COORDINATE CORED HOLE DIAMETER REQUIREMENTS WITH PIPING AND MANHOLE/VAULT MANUFACTURER.
2. FOR PENETRATION INTO EXISTING MANHOLES OR VAULTS, KORBAND ASSEMBLY SHALL CONSIST OF 316 STAINLESS STEEL WEDGES.

WALL PENETRATION TYPE 1
DETAIL 1
NTS TYP



NOTES:

1. 2' x 2' x 2' SUMP FILLED WITH GEOTEXTILE WRAPPED DRAIN ROCK .
2. CONNECT TO HATCH DRAIN PER MANUFACTURER'S RECOMMENDATIONS.
3. 1½" SCH 80 PVC PIPE, MAINTAIN 2% MINIMUM SLOPE.

HATCH DRAIN
DETAIL 2
NTS TYP

Kitsap County Public Works
Sewer Division
614 Division Street, MS 27
Port Orchard, WA 98366

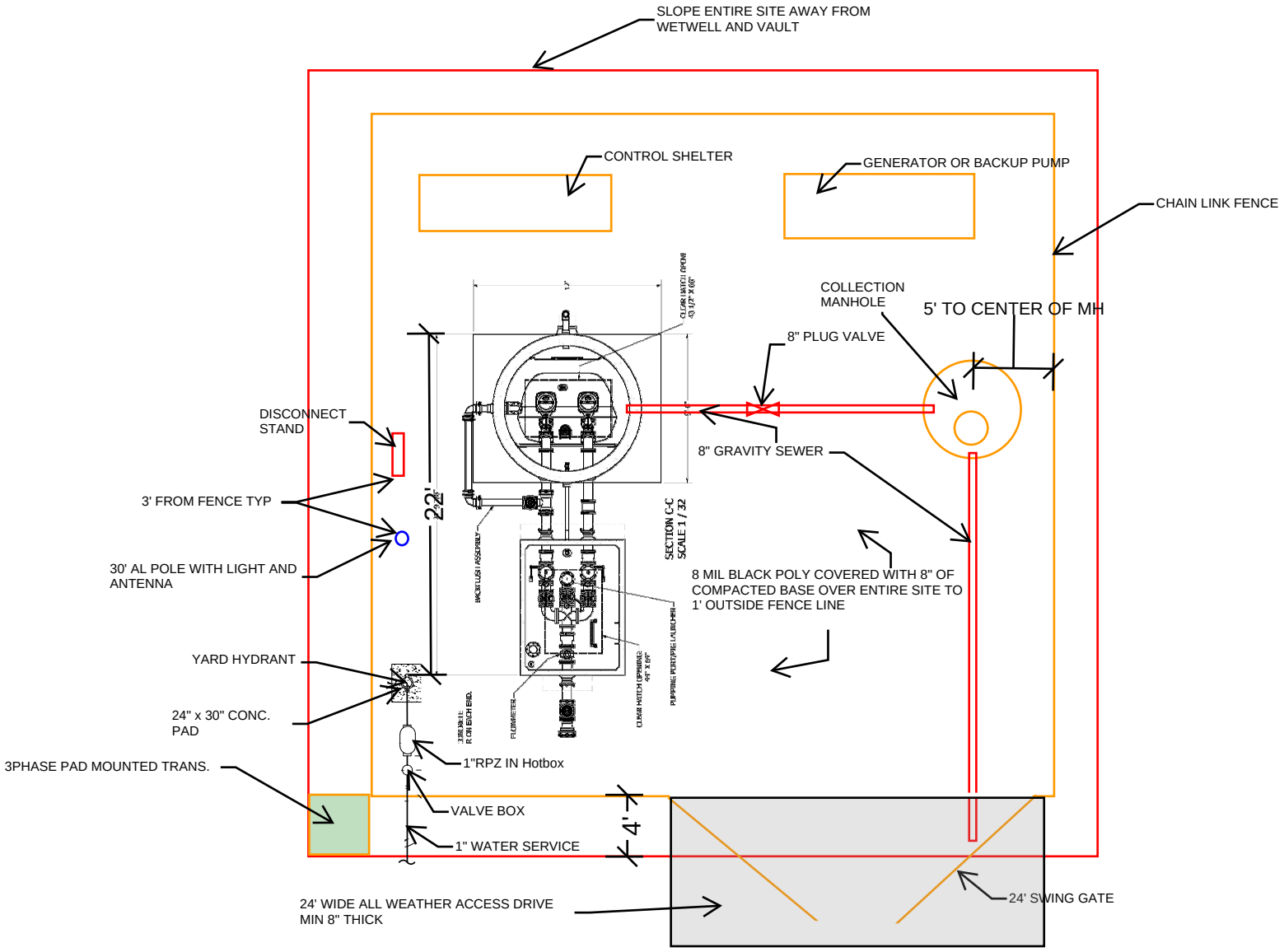
SCALE: NO SCALE
DATE: May 2025

SUBMERSIBLE PUMP STATION

DETAIL PS-3

NEW DETAIL PS-4 LIFT STATION SITE PLAN MIN REQ

PUMP STATION SITE LAYOUT PLAN
(NTS)



GENERAL SANITARY SEWER CONSTRUCTION NOTES:

1. CONSTRUCTION MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE REQUIREMENTS OF THE MOST RECENT EDITION OF "KITSAP COUNTY STANDARDS FOR SANITARY SEWER CONSTRUCTION" IN CONJUNCTION WITH THE MOST RECENT EDITION OF "THE STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION" PREPARED BY THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION AND WASHINGTON STATE CHAPTER OF THE AMERICAN PUBLIC WORKS ASSOCIATION.

2. THE CONTRACTOR SHALL ARRANGE FOR A PRECONSTRUCTION CONFERENCE PRIOR TO COMMENCING CONSTRUCTION. THE ENGINEER AND/OR INSPECTOR FOR THE SEWER UTILITY DIVISION OF THE KITSAP COUNTY PUBLIC WORKS DEPARTMENT SHALL BE IN ATTENDANCE.

3. ALL SEWER INSTALLATION INSPECTIONS AND TEST OBSERVATIONS SHALL BE MADE BY KITSAP COUNTY DEPARTMENT OF PUBLIC WORKS SEWER UTILITY DIVISION. THE COUNTY INSPECTOR SHALL BE NOTIFIED TWO WORK DAYS IN ADVANCE OF COMMENCING WORK ON A SANITARY SEWER EXTENSION. PRIOR TO FINAL ACCEPTANCE OF ALL INSTALLATIONS, THE COUNTY SHALL CONDUCT AN INSPECTION OF ALL MAIN LINES BY THE USE OF TELEVISION EQUIPMENT. FINAL ACCEPTANCE OF SEWER INSTALLATIONS WILL NOT BE MADE UNTIL TESTS AND INSPECTIONS ARE COMPLETE AND PROVE SATISFACTORY.

4. THE PHYSICAL CONNECTION TO AN EXISTING MANHOLE OR SEWER SHALL NOT BE MADE UNTIL AUTHORIZED BY THE COUNTY. SUCH AUTHORIZATION WILL NOT BE GIVEN UNTIL ALL UPSTREAM LINES HAVE BEEN COMPLETELY CLEANED AND ALL DEBRIS REMOVED.

5. GRAVITY MAINS SHALL BE TESTED BY THE LOW PRESSURE AIR METHOD. FORCEMAINS SHALL BE TESTED BY THE HYDROSTATIC TEST METHOD. ALL TESTS SHALL BE MADE IN THE PRESENCE OF THE COUNTY INSPECTOR.

6. DROP MANHOLES SHALL, IN ALL RESPECTS, BE CONSTRUCTED AS A STANDARD MANHOLE WITH THE EXCEPTION OF THE INTERNAL DROP CONNECTION AS SHOWN ON STANDARD DETAIL MV-4 "DROP MANHOLE CONNECTION".

7. MANHOLES SHALL BE PRECAST REINFORCED CONCRETE UNITS WITH ECCENTRIC CONES CONFORMING TO THE STANDARD PLAN "TYPE 1 MANHOLE". JOINTS BETWEEN PRECAST WALL SECTIONS SHALL BE CONFINED O-RING TYPE. ALL JOINTS SHALL BE GROUTED INSIDE AND OUTSIDE OF THE STRUCTURE.

8. MANHOLE FRAME AND COVERS SHALL BE CAST IRON, THREE BOLT LOCKING TYPE, EJ GROUP INTERNATIONAL NO. 00372553B01, OR EQUAL. BOLTS SHALL BE 5/8" STAINLESS STEEL SOCKET HEAD, COUNTERSUNK. THE COVER SHALL HAVE THE KITSAP COUNTY LOGO. REFERENCE DETAIL MV-3.

9. CLEANOUT FRAME AND COVERS SHALL BE CAST IRON TWO BOLT LOCKING TYPE, OLYMPIC FOUNDRY TYPE M1025, OR EQUAL. BOLTS SHALL BE 5/8" STAINLESS STEEL SOCKET HEAD, COUNTERSUNK. REFERENCE DETAIL MV-3.

10. ALL SIDE SEWERS SHALL BE 6" DIAMETER MINIMUM AND LAID ON A MINIMUM SLOPE OF 2 PERCENT. ALL SIDE SEWERS SHALL BE PROVIDED WITH A CLEANOUT.

11. CHECK DAMS PER STANDARD DETAIL PD-3 SHALL BE PLACED AT 100 FOOT INTERVALS ON GRAVITY MAINS LAID ON 6 PERCENT OR GREATER SLOPES.

12. CONCRETE PIPE ANCHORS PER STANDARD DETAIL PD-2 SHALL BE PLACED ON SEWER MAINS WHERE SLOPES EXCEED 20 PERCENT. ANCHORS SHALL BE PLACED ON 36 FOOT CENTERS FOR SLOPES 20 TO 35 PERCENT, ON 24 FOOT CENTERS FOR SLOPES 35 TO 50 PERCENT, AND ON 16 FOOT CENTERS FOR SLOPES 50 PERCENT AND GREATER.

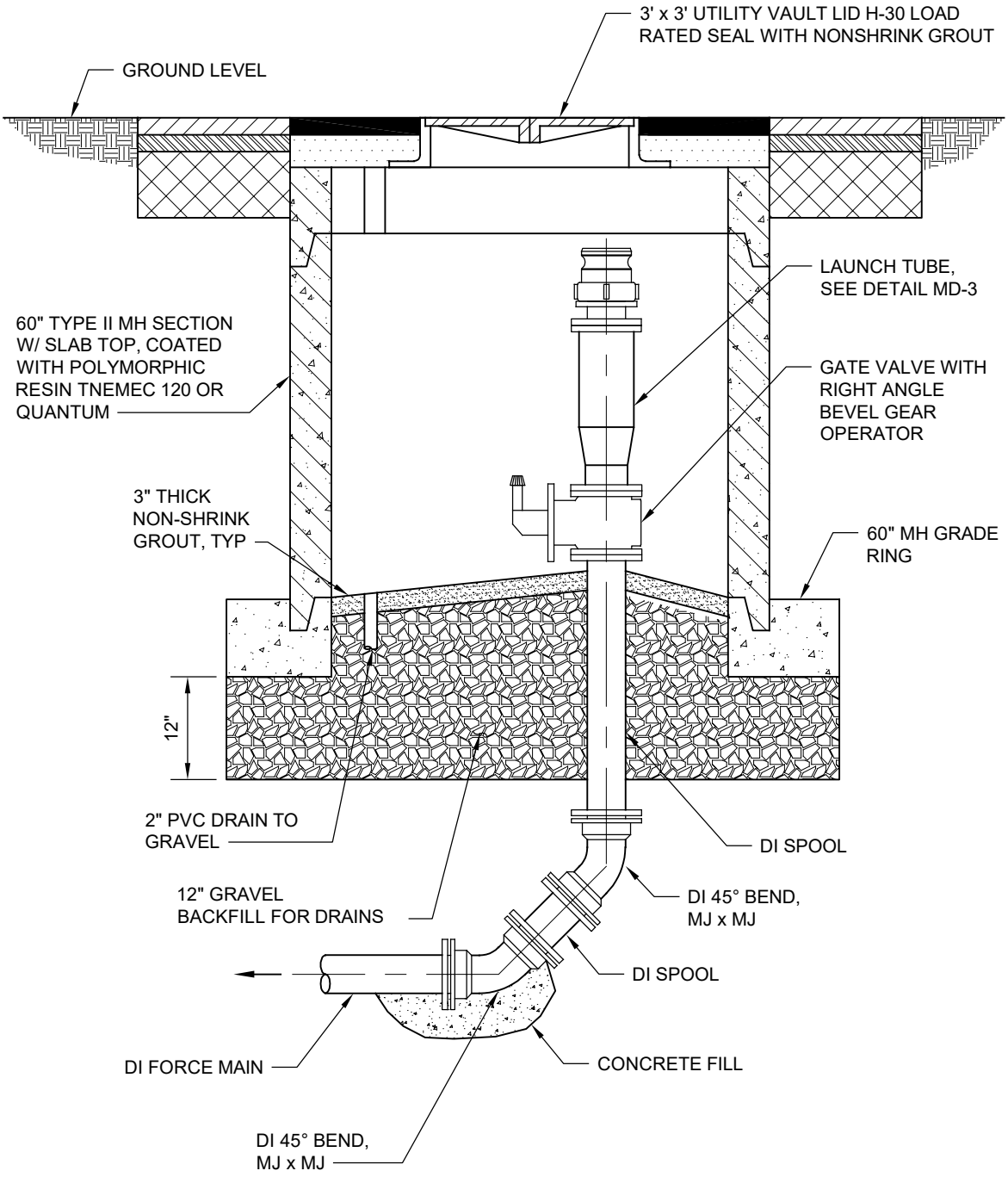
13. CONTRACTOR SHALL EMPLOY THE PROPER STANDARD OF CARE FOR ALL WORK AROUND EXISTING OVERHEAD AND UNDERGROUND UTILITIES. CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING UTILITIES AND SHALL VERIFY ALL UTILITY LOCATIONS PRIOR TO CONSTRUCTION BY CALLING THE ONE CALL AT 1-800-42-555 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION.

14. ALL PIPING SHALL BE CLEANED AND TESTED PRIOR TO PAVING.

15. PRIOR TO BACKFILL, ALL PIPES AND APPURTENANCES SHALL BE INSPECTED BY THE COUNTY. INSPECTION SHALL NOT RELIEVE THE CONTRACTOR OF CORRECTION OF ANY DEFICIENCIES AND/OR FAILURES AS DETERMINED BY SUBSEQUENT TESTING AND INSPECTION.

16. CONTRACTOR SHALL DEVELOP AN APPROPRIATE TEMPORARY BYPASS PLAN PRIOR TO DISRUPTING ANY LIVE UTILITIES. PLAN SHALL ADDRESS COUNTY COORDINATION NEEDS. SUBMIT PLAN TO THE COUNTY FOR APPROVAL PRIOR TO CONSTRUCTION.

17. CONTRACTOR SHALL ADJUST ALL MAINTENANCE HOLE RIMS, DRAINAGE STRUCTURES, LIDS, VALVE BOXES, UTILITY COVERS, AND MONUMENT COVERS TO FINISH GRADE WITHIN AREAS AFFECTED BY THE CONTRACTOR'S WORK.

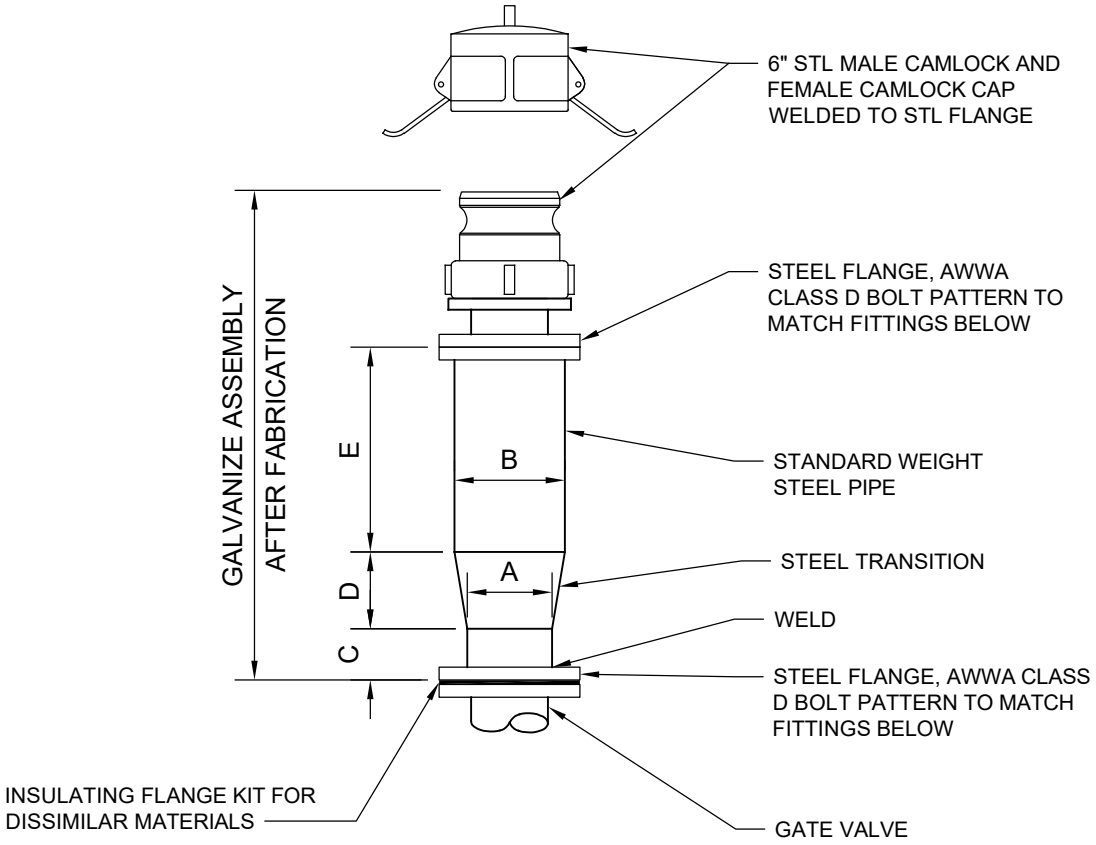


Kitsap County Public Works
Sewer Division
614 Division Street, MS 26
Port Orchard, WA 98366

PIG LAUNCH STATION

Detail No. **MD-2**

Rev Date: **May 2025**



SECTION

FORCE MAIN SIZE	A	B	C	D	E
12"	12"	14"	4"	8"	16"
8"	8"	10"	4"	6"	12"
6"	6"	8"	4"	4"	8"
4"	4"	6"	4"	4"	8"

FOR FORCE MAINS LARGER THAN 12", CONTACT KITSAP COUNTY PUBLIC WORKS SEWER UTILITY DIVISION FOR REQUIREMENTS.

Kitsap County Public Works
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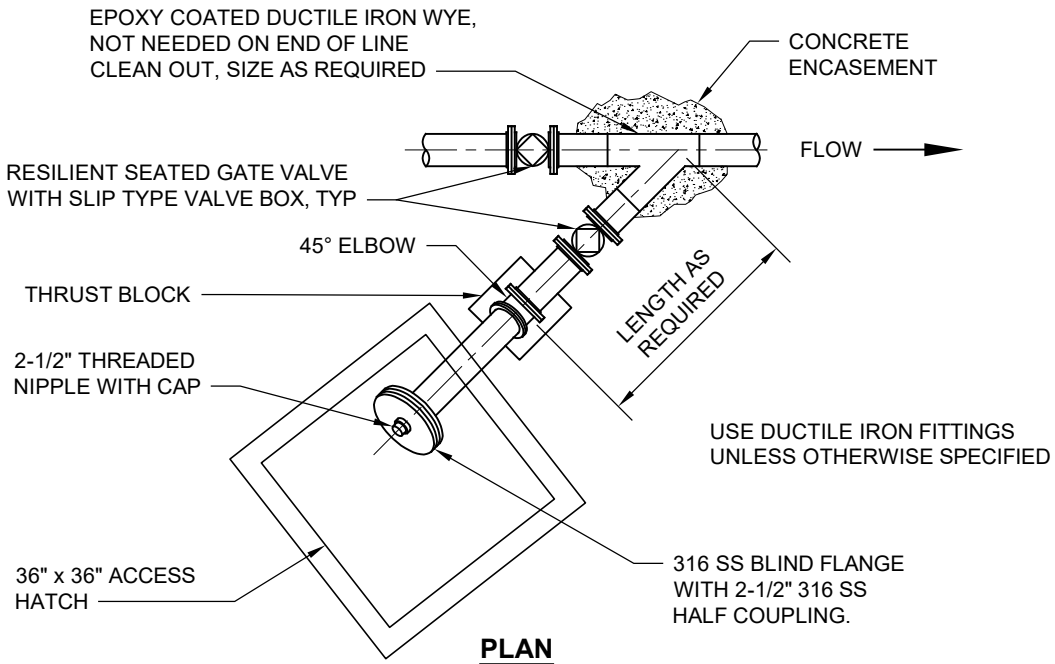
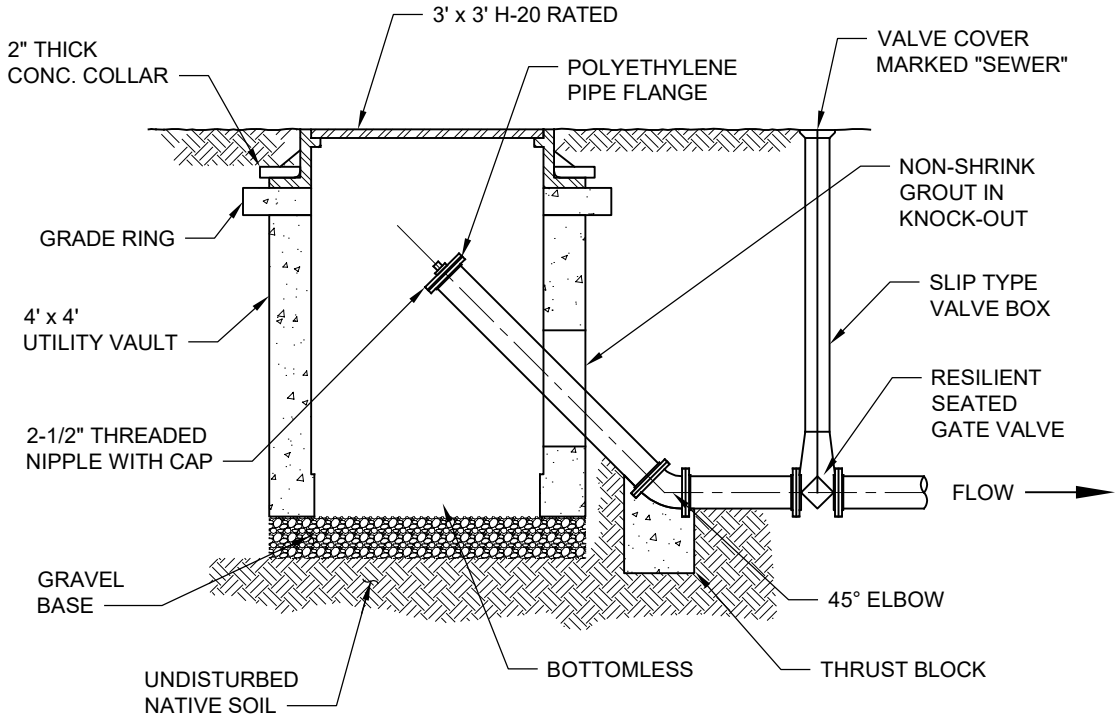
PIG LAUNCH TUBE

Detail No. **MD-3**

Rev Date: **May 2025**



PLAN



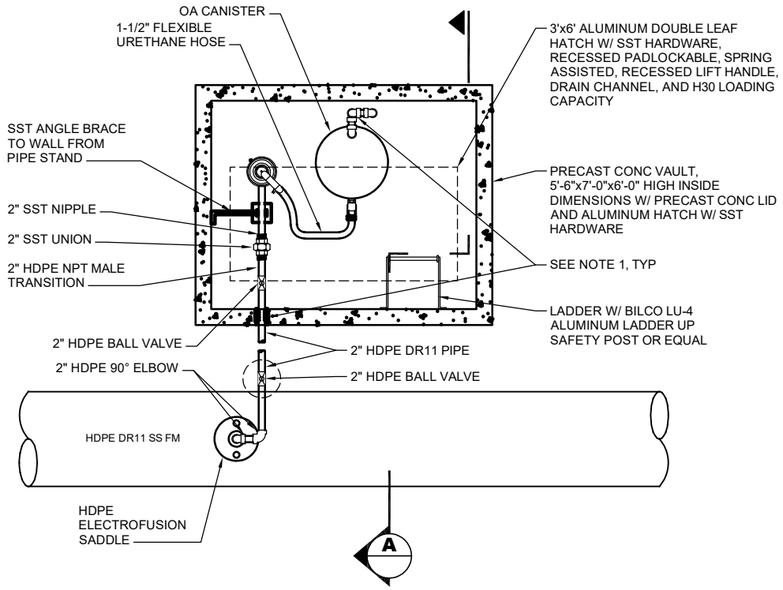
PROFILE

Kitsap County Public Works
Sewer Division
614 Division Street, MS 26
Port Orchard, WA 98366

LOW PRESSURE FORCEMAIN CLEANOUT

Detail No. **MD-4**

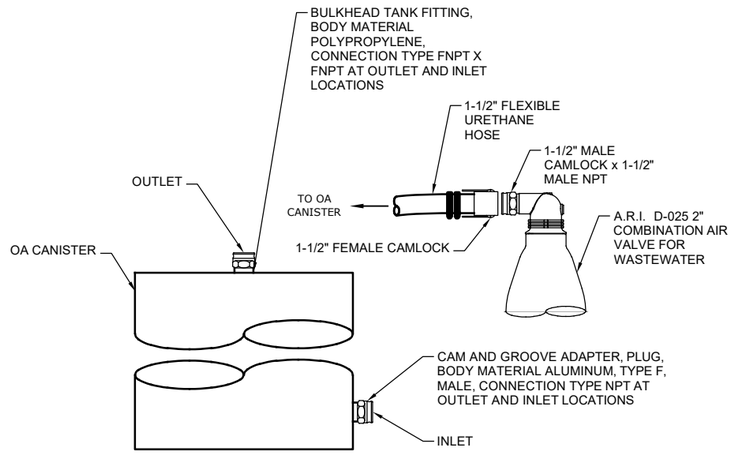
Rev Date: **May 2025**



2" AIR/VACUUM VALVE

DETAIL 1

NTS



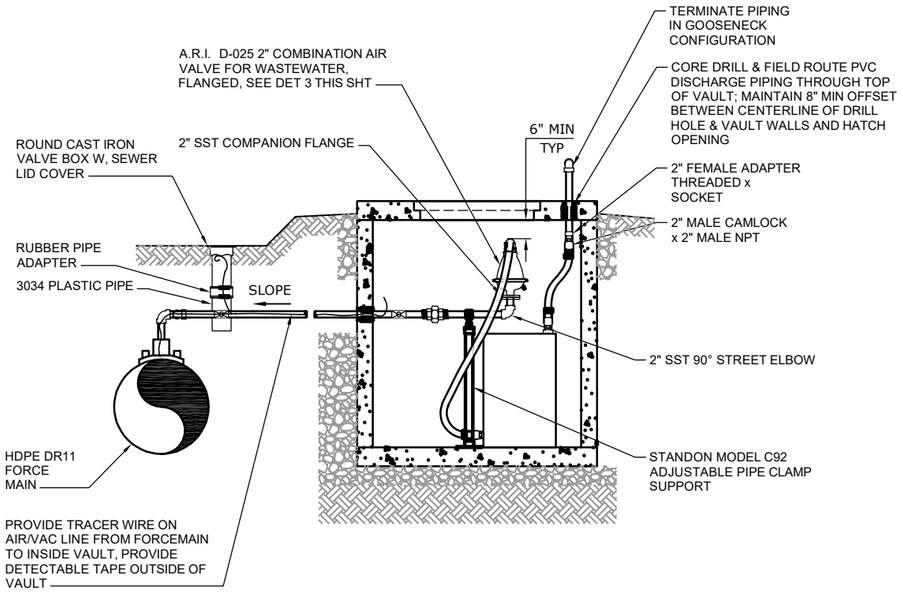
2" AIR/VACUUM VALVE VENT

DETAIL 2

NTS

NOTES:

1. ALL VAULT PENETRATIONS TO BE SEALED WITH WALL SLEEVE SEALS. USE LINK SEAL IN HOLES AROUND PIPE.
2. PROVIDE CAM AND GROOVE COUPLINGS ON BOTH ENDS OF URETHANE HOSE AND ON RECEIVING PIPES.
3. LARGER SIZE AIR/VAC VALVE MAY BE REQUIRED DEPENDING ON FORCE MAIN SIZE AND FLOW RATES.
4. LOCATE AIR RELEASE ASSEMBLY IN SIDEWALK WHEN POSSIBLE.
5. COUNTY MAY REQUIRE GAS-STRUT LIFTING HATCH AT HIGHER RATING DEPENDING ON LOCATION OF THE VALVE VAULT.



SECTION A

NTS

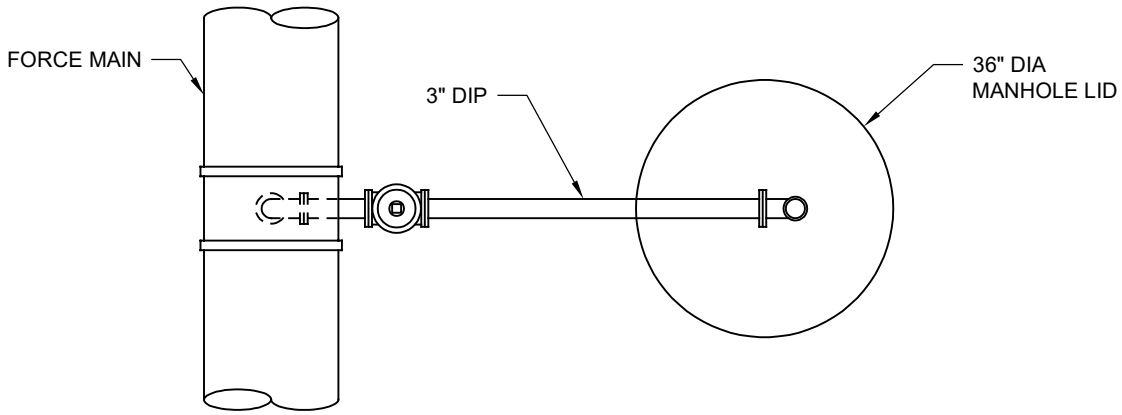
Kitsap County Public Works
Sewer Division
614 Division Street, MS 27
Port Orchard, WA 98366

SCALE: NO SCALE

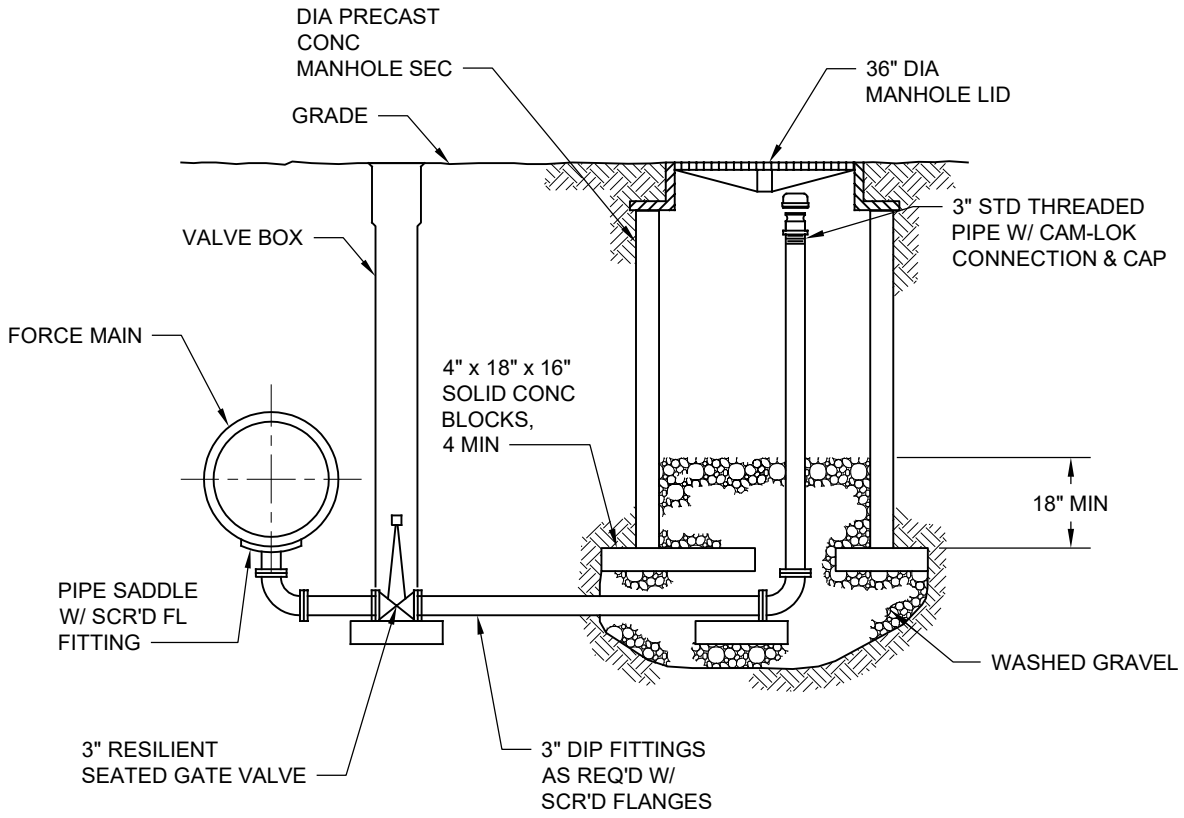
DATE: May 2025

AIR VACUUM RELEASE ASSEMBLY

DETAIL MD-5



PLAN



ELEVATION

Kitsap County Public Works
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BLOW-OFF ASSEMBLY

Detail No. **MD-6**

Rev Date: **May 2025**