



STEP Sewer Details

City of Camas STEP Sanitary Details ~ INDEX

STEP Sanitary Sewer Details

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	STEP TANK - SEE STEF & STEP TANK SECTION		

SEPTIC TANK EFFLUENT PUMP (S.T.E.P.) NOTES:

1. ALL TRENCH EXCAVATION AND PIPE INSTALLATION SHALL CONFORM TO THE MOST RECENTLY ADOPTED EDITION OF THE W.S.D.O.T. STANDARD SPECIFICATIONS SECTION 7-08.3(1) AND SECTION 7-08.3(2). ALL EXCESS MATERIAL FROM THE TRENCH EXCAVATION SHALL BE DISPOSED OF ON AN APPROVED SITE.
2. PIPE BEDDING AND PRE-COVER (PIPE ZONE) MATERIAL SHALL BE 5/8 INCH MINUS CRUSHED ROCK.
3. TRENCH BACKFILL MATERIAL SHALL BE 1-1/4 INCH MINUS CRUSHED ROCK.
4. TRENCH COMPACTION SHALL CONFORM TO THE MOST RECENTLY ADOPTED EDITION OF THE W.S.D.O.T. STANDARD SPECIFICATIONS SECTION 7-08.3(3). CONTRACTOR TO DETERMINE THE TYPE OF EQUIPMENT AND METHOD TO USE TO ACHIEVE THE REQUIRED COMPACTION. EACH LIFT SHALL BE COMPACTED TO A MINIMUM OF 95 PERCENT OF THE MAXIMUM DENSITY AS DETERMINED BY THE A.A.S.H.T.O. T-180 TEST METHOD.
5. SETTLEMENT OF THE FINISHED SURFACE WITHIN THE WARRANTY PERIOD SHALL BE CONSIDERED TO BE A RESULT OF IMPROPER COMPACTION AND SHALL BE PROMPTLY REPAIRED BY THE CONTRACTOR AT NO EXPENSE TO THE CITY.
6. ALL SANITARY SEWER PIPE AND FITTINGS 2 INCHES TO 36 INCHES IN DIAMETER, UNLESS OTHERWISE NOTED, SHALL BE CLASS 200 PVC GASKETED PIPE, WHICH IS FURTHER DEFINED AS ASTM D2241 DR21. ALL SANITARY SEWER PIPE AND FITTINGS SMALLER THAN 2 INCH DIAMETER, UNLESS OTHERWISE NOTED, SHALL BE IRON PIPE SIZE HDPE WITH A GREEN STRIPE TO INDICATE "SEWER," WHICH IS FURTHER DEFINED AS PE4710 SDR11 FOR 200 PSI RATING.
7. 14 GAUGE GREEN HDPE INSULATED COPPER CLAD STEEL TONING WIRE SHALL BE PLACED DIRECTLY OVER ALL SEWER MAINS AND SERVICE LATERALS. THE TONING WIRE SHALL BE ACCESSIBLE AT ALL VALVES, RISERS, A.A.R.V.'S AND SERVICE BOXES. ALL SPLICES AND CONNECTIONS TO TONING WIRE SHALL BE PROTECTED WITH KING GEL CAPS, 3M DBY DIRECT BURY, OR OTHER APPROVED EQUAL CONNECTORS.
8. ALL PIPE AND FITTINGS SHALL BE HYDROSTATICALLY TESTED AT 150 P.S.I. FOR FIFTEEN MINUTES, EXCEPT LATERAL SERVICES, WHICH SHALL FOLLOW MANUFACTURER TEST PROCEDURES FOR HYDROSTATIC TESTING OF HDPE PIPE.
9. ALL S.T.E.P. SANITARY SEWER MAINLINES SHALL BE INSTALLED WITH A MINIMUM COVER OF 5 FEET.
10. ALL S.T.E.P. SANITARY SEWER LATERALS SHALL BE INSTALLED IN A DEDICATED TRENCH FROM THE SERVICE CONNECTION TO THE TANK. SEE TRENCH DETAIL FOR TRENCH BACKFILL MATERIAL AND COMPACTION REQUIREMENTS.



SANITARY SEWER DETAIL
STEP SEWER CONSTRUCTION NOTES
Sam Adams 6-17-2021
DETAIL APPROVED BY DATE

NOT TO SCALE

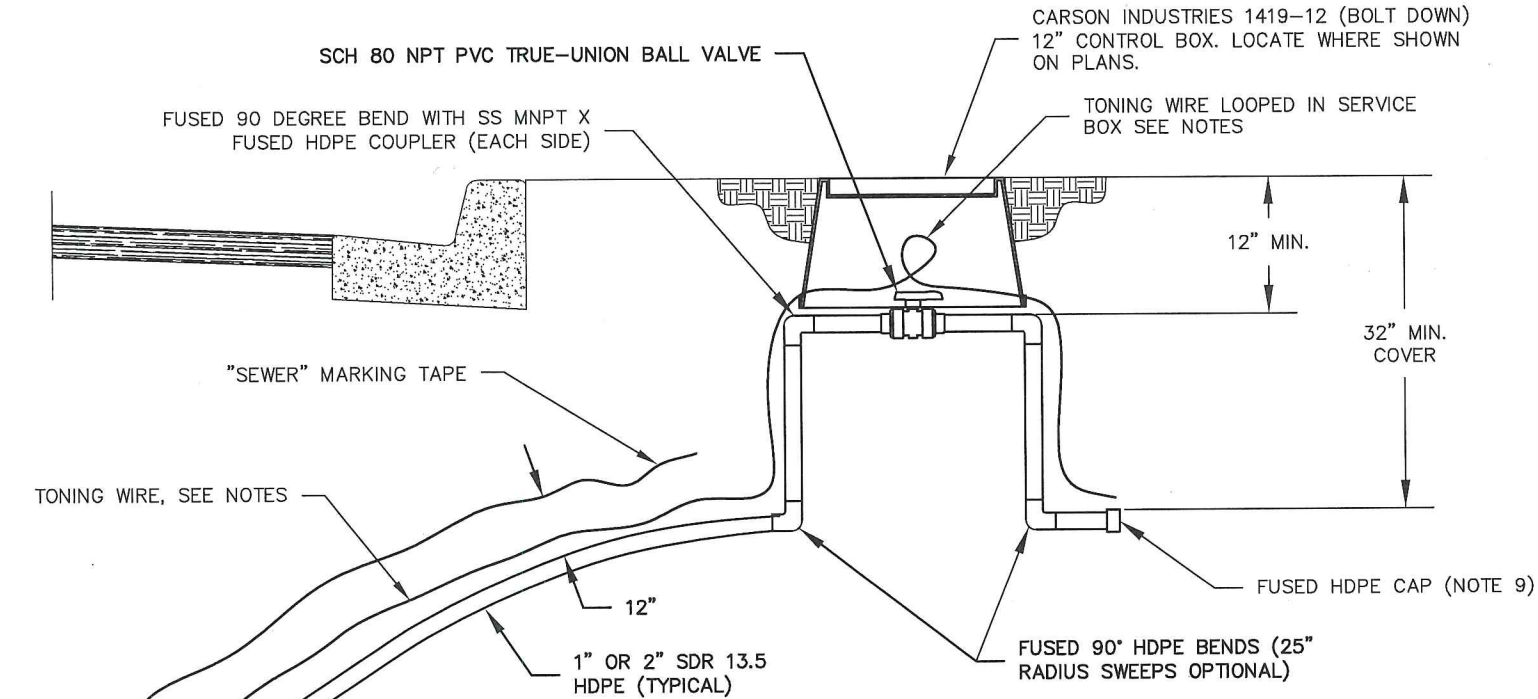
DETAIL NO.

SP1

REVISION: 5

DATE: 5/27/2021

STEP-NOTES.DWG



- SS MNPT X FUSED HDPE COUPLER
- SCH 80 NPT PVC TRUE-UNION SWING CHECK VALVE
- SCH 80 NPT PVC PIPE NIPPLE
- SCH 80 NPT PVC TRUE-UNION BALL VALVE
- SCH 80 NPT PVC PIPE NIPPLE
- MAIN SIZE ASTM D2241 PVC CLASS 200 GASKETED X SERVICE SIZE THREADED TEE (NEW MAIN)

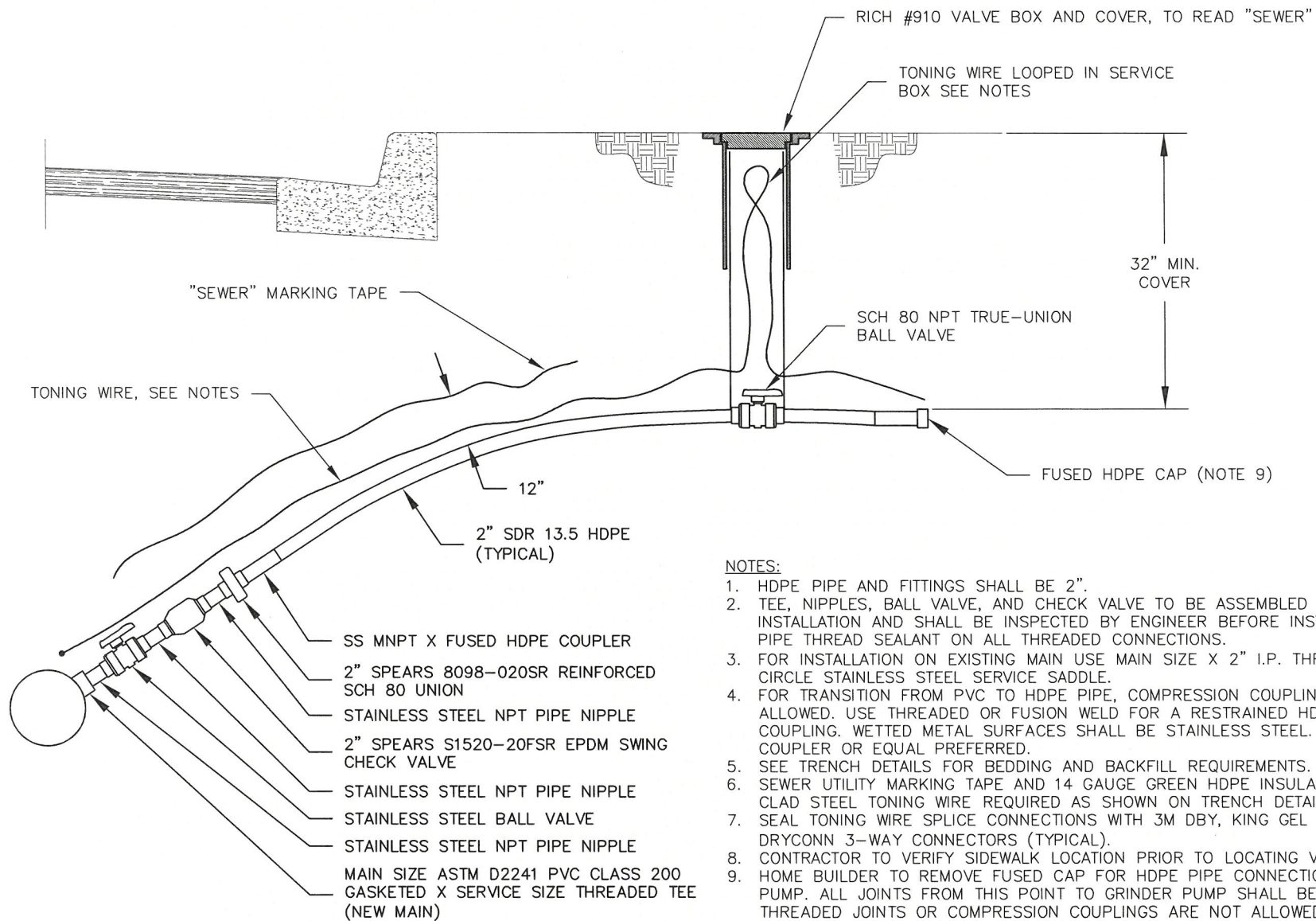
- NOTES:**
1. HDPE PIPE AND FITTINGS SHALL BE SIZED AS INDICATED IN THE PLANS AS EITHER 1" OR 2".
 2. TEE, NIPPLES, BALL VALVE, AND CHECK VALVE TO BE ASSEMBLED PRIOR TO INSTALLATION AND SHALL BE INSPECTED BY ENGINEER BEFORE INSTALLATION. USE PIPE THREAD SEALANT ON ALL THREADED CONNECTIONS.
 3. FOR INSTALLATION ON EXISTING MAIN USE MAIN SIZE X 1" OR 2" I.P. THREAD STAINLESS STEEL SERVICE SADDLE.
 4. FOR TRANSITION FROM PVC TO HDPE PIPE, COMPRESSION COUPLING IS NOT ALLOWED. USE THREADED OR FUSION WELD FOR A RESTRAINED HDPE TRANSITION COUPLING. WETTED METAL SURFACES SHALL BE STAINLESS STEEL. POLY-CAM COUPLER OR EQUAL PREFERRED.
 5. SEE TRENCH DETAILS FOR BEDDING AND BACKFILL REQUIREMENTS.
 6. SEWER UTILITY MARKING TAPE AND 14 GAUGE GREEN HDPE INSULATED COPPER CLAD STEEL TONING WIRE REQUIRED AS SHOWN ON TRENCH DETAIL.
 7. SEAL TONING WIRE SPLICE CONNECTIONS WITH 3M DBY, KING GEL CAPS, OR DRYCONN 3-WAY CONNECTORS (TYPICAL).
 8. CONTRACTOR TO VERIFY SIDEWALK LOCATION PRIOR TO LOCATING VALVE BOX.
 9. HOME BUILDER TO REMOVE FUSED CAP FOR HDPE PIPE CONNECTION TO STEP TANK. ALL JOINTS FROM THIS POINT TO TANK SHALL BE FUSED. THREADED JOINTS OR COMPRESSION COUPLINGS ARE NOT ALLOWED.



SANITARY SEWER DETAIL
 1" AND 2" STEP SEWER SERVICE
Spencer Adams 6-17-2021
 DETAIL APPROVED BY _____ DATE _____

NOT TO SCALE DETAIL NO.
 SP2
 REVISION: 5 DATE: 5/27/2021

STEP-SERV.DWG



NOTES:

1. HDPE PIPE AND FITTINGS SHALL BE 2".
2. TEE, NIPPLES, BALL VALVE, AND CHECK VALVE TO BE ASSEMBLED PRIOR TO INSTALLATION AND SHALL BE INSPECTED BY ENGINEER BEFORE INSTALLATION. USE PIPE THREAD SEALANT ON ALL THREADED CONNECTIONS.
3. FOR INSTALLATION ON EXISTING MAIN USE MAIN SIZE X 2" I.P. THREAD FULL CIRCLE STAINLESS STEEL SERVICE SADDLE.
4. FOR TRANSITION FROM PVC TO HDPE PIPE, COMPRESSION COUPLING IS NOT ALLOWED. USE THREADED OR FUSION WELD FOR A RESTRAINED HDPE TRANSITION COUPLING. WETTED METAL SURFACES SHALL BE STAINLESS STEEL. POLY-CAM COUPLER OR EQUAL PREFERRED.
5. SEE TRENCH DETAILS FOR BEDDING AND BACKFILL REQUIREMENTS.
6. SEWER UTILITY MARKING TAPE AND 14 GAUGE GREEN HDPE INSULATED COPPER CLAD STEEL TONING WIRE REQUIRED AS SHOWN ON TRENCH DETAIL.
7. SEAL TONING WIRE SPLICE CONNECTIONS WITH 3M DBY, KING GEL CAPS, OR DRYCONN 3-WAY CONNECTORS (TYPICAL).
8. CONTRACTOR TO VERIFY SIDEWALK LOCATION PRIOR TO LOCATING VALVE BOX.
9. HOME BUILDER TO REMOVE FUSED CAP FOR HDPE PIPE CONNECTION TO GRINDER PUMP. ALL JOINTS FROM THIS POINT TO GRINDER PUMP SHALL BE FUSED. THREADED JOINTS OR COMPRESSION COUPLINGS ARE NOT ALLOWED.
10. THIS APPLICATION CAN ONLY BE USED WITH PRIOR APPROVAL FROM THE CITY OF CAMAS.



SANITARY SEWER DETAIL
 STEP SEWER SERVICE WITH GRINDER PUMP

DETAIL APPROVED BY *[Signature]* DATE *3/9/24*

NOT TO SCALE DETAIL NO.

SP2A

REVISION: 2 DATE: 2/8/2024

STEP-SERV.DWG

24" SQ. CONCRETE COLLAR WHEN OUTSIDE OF ROADWAY
 RICH #910 VALVE BOX AND COVER, TO READ "SEWER"

3" MIN.
 6" MAX.

6" MPT PLUG
 2" MIN. DEPTH
 4" MAX DEPTH
 PAVEMENT SURFACE

CLEANOUT COVER, CAST IRON, TO READ "SEWER", GENERAL FOUNDRIES OR APPROVED EQUAL. INSTALL IN 24" CONCRETE COLLAR WHEN OUTSIDE OF ROADWAY

ROADWAY BASE ROCK

USE VALVE STEM EXTENSION FOR ALL VALVES W/ OPERATING NUT DEEPER THAN 4 FT.

6" 3034 PVC VALVE RISER
 TONING WIRE—SEE NOTES

FPT PVC CLEANOUT ADAPTER & 4" MPT PVC PLUG
 6" D2241/SW PVC PIPE SPOOL
 TONING WIRE—SEE NOTES

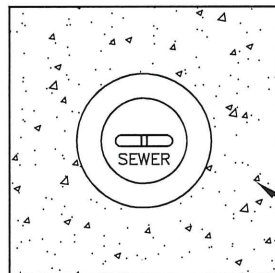
ASTM D2241/SW DR21 PVC SEWER MAIN; SIZE PER PLANS

6" D2241/SW PVC PIPE SPOOL

24" MIN. (TYP.)

6" D2241/SW PVC 45° BEND

SEE STEP MAIN VALVE DETAIL

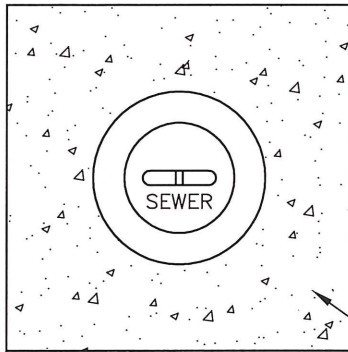


24" MIN. SQUARE COLLAR

CONCRETE COLLAR FOR LOCATIONS OUTSIDE OF ROADWAY

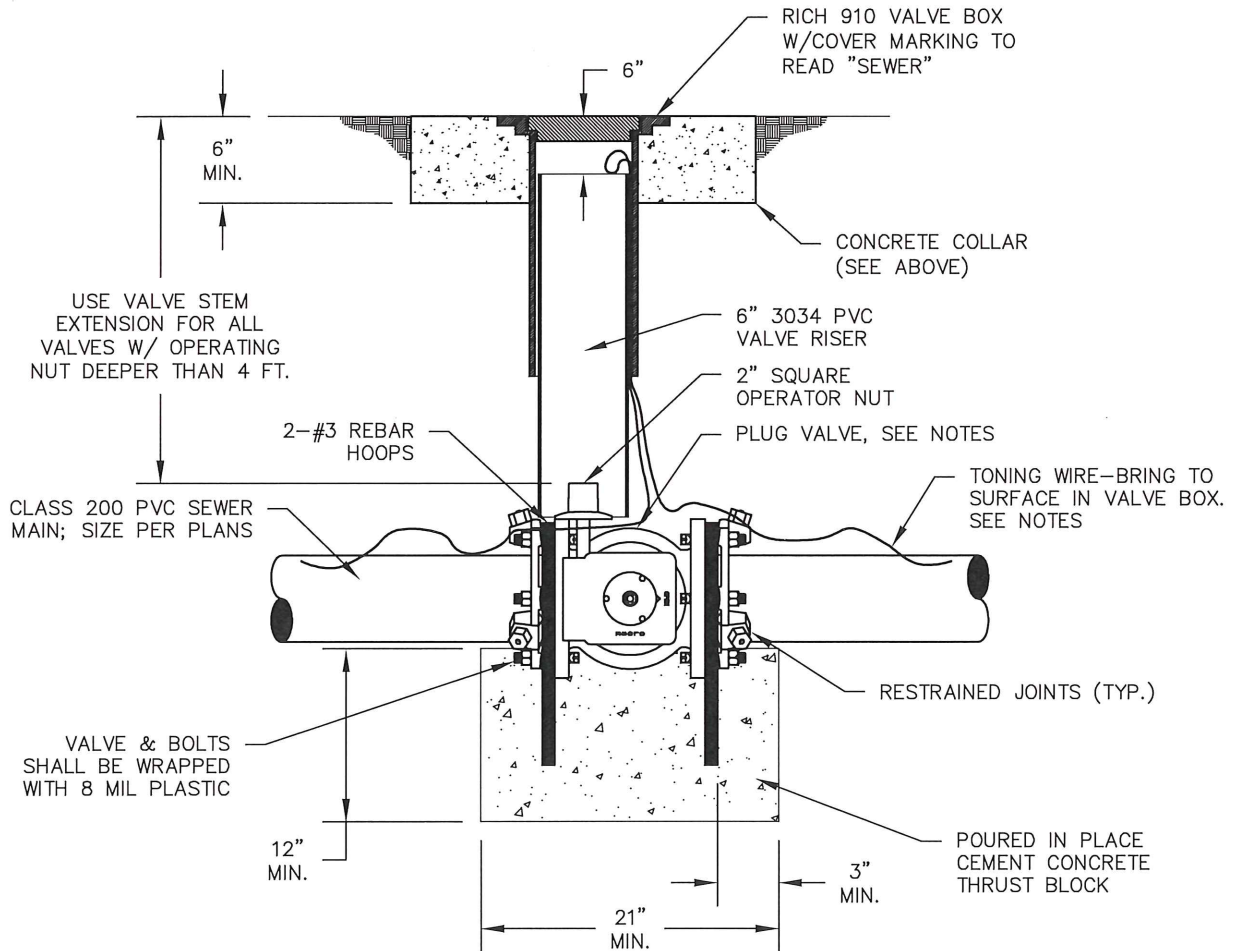
NOTES:

1. PROVIDE 2' SQUARE x 6" DEEP CONCRETE COLLAR AROUND VALVE BOX FOR CLEANOUTS IF OUT OF ROADWAY.
2. ALL CLEAN OUT PIPE AND FITTINGS SHALL BE ASTM D2241/SW (SOLVENT WELD CLASS 200) PVC.
3. SEWER UTILITY MARKING TAPE AND 14 GAUGE GREEN HDPE INSULATED COPPER CLAD STEEL TONING WIRE REQUIRED AS SHOWN ON TRENCH DETAIL.
4. CONNECTIONS AND SPLICES TO MAIN LINE TONING WIRE SHALL BE SEALED WITH KING GEL CAPS, 3M DBY DIRECT BURY CAPS, OR OTHER APPROVED CONNECTION, AT ALL SPLICES.



2' MIN. SQUARE COLLAR

CONCRETE COLLAR
FOR LOCATIONS OUTSIDE OF ROADWAY



NOTES:

1. VALVE SHALL BE A NON-LUBRICATING ECCENTRIC PLUG TYPE, CAST IRON BODY WITH EPOXY COATED LINING, BUNA-N COATED PLUG, AND RATED FOR TIGHT SHUT-OFF IN BOTH DIRECTIONS. VALVE SHALL BE RATED FOR 175 PSI FOR 12 INCH AND SMALLER, AND 150 PSI FOR 14 INCH AND LARGER. INSTALL VALVE WITH SHAFT HORIZONTAL AND ORIENTED SUCH THAT THE PLUG ROTATES TO TOP OF VALVE WHEN OPEN. FLOW DIRECTION SHALL BE INTO THE BACK OF THE PLUG. FOR VALVES THAT HAVE A REDUCED OR RECTANGULAR PORT, THE VALVE SHALL BE ONE-SIZE LARGER THAN MAIN LINE SIZE. LINE-SIZE VALVES SHALL BE MJ X MJ AND OVER-SIZED VALVES SHALL BE FLG X FLG WITH FLG X MJ EPOXY COATED ECCENTRIC REDUCERS.
2. PROVIDE 2' SQ. x 6" DEEP CONCRETE COLLAR AROUND VALVE BOX FOR CLEANOUTS IF OUT OF ROADWAY.
3. SEWER UTILITY MARKING TAPE AND 14 GAUGE GREEN HDPE INSULATED COPPER CLAD STEEL TONING WIRE REQUIRED AS SHOWN ON TRENCH DETAIL.
4. CONNECTIONS AND SPLICES TO MAIN LINE TONING WIRE SHALL BE SEALED WITH KING GEL CAPS, 3M DBY DIRECT BURY CAPS, OR OTHER APPROVED CONNECTION, AT ALL SPLICES.
5. TESTING OF MAIN AND TONING WIRE SHALL BE PER THE CITY OF CAMAS TESTING MATRIX.

REV. NO.	DATE	BY	APPR.
1	5/1/07	SCD	JC
2	1/1/11	SCD	JC
3	10/21/14	SCD	JC



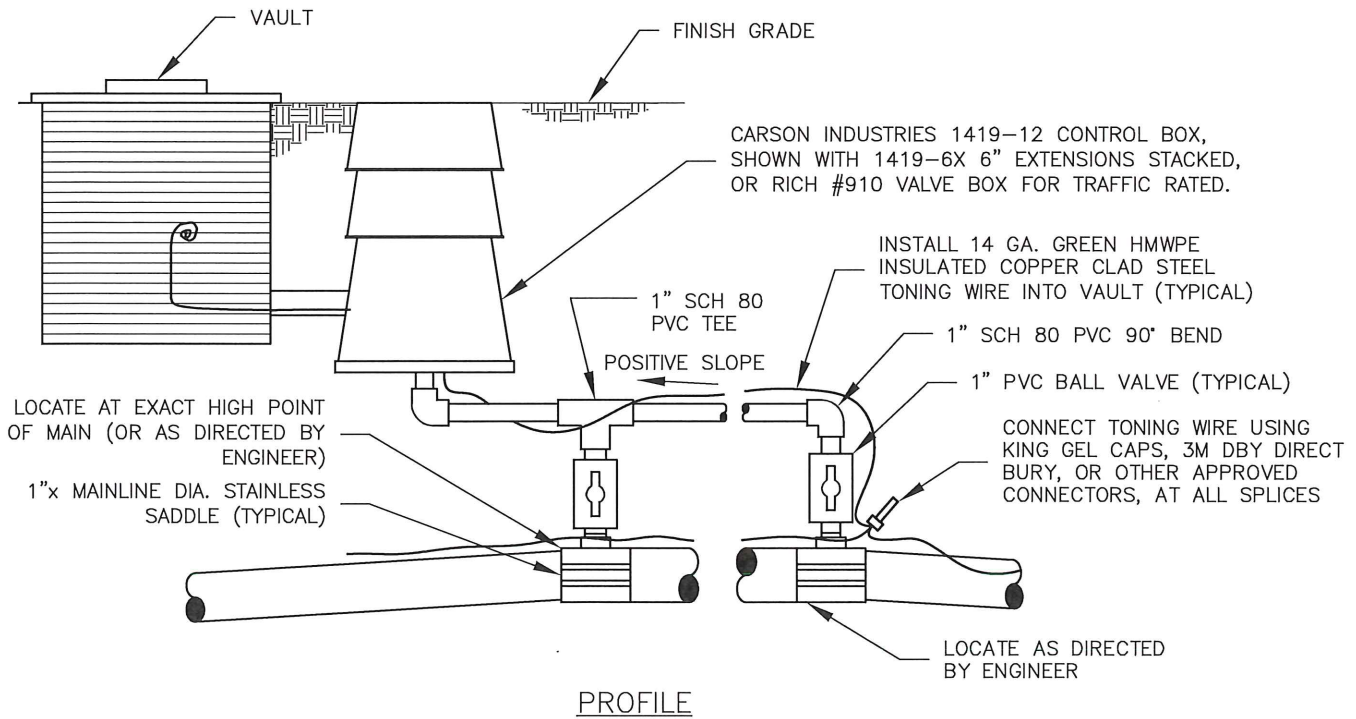
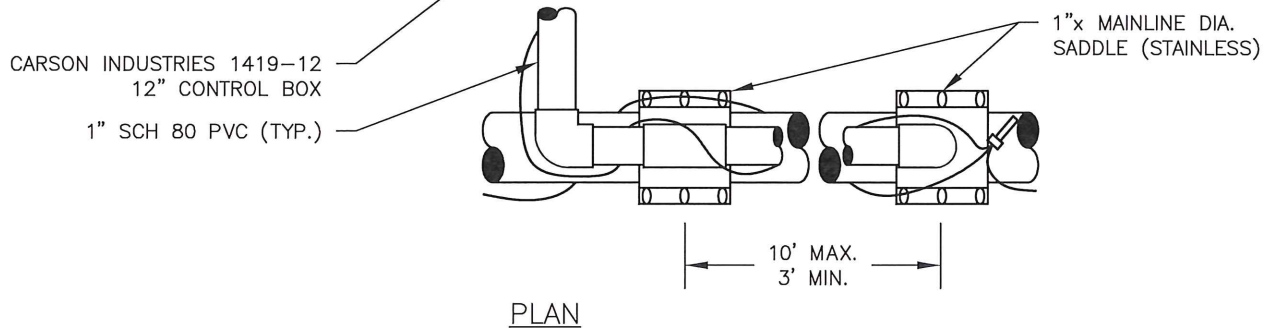
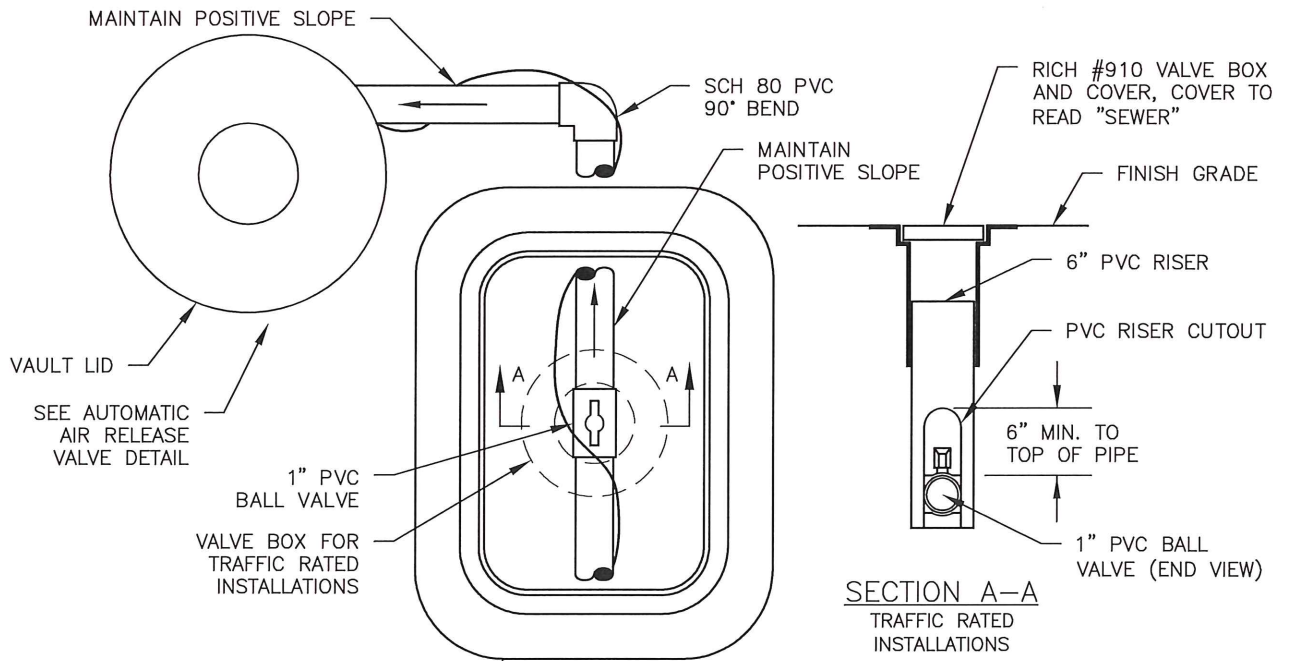
CITY OF CAMAS ~ SANITARY DETAIL
STEP MAIN LINE PLUG VALVE

John P. Crockett 10-21-14
DETAIL APPROVED BY DATE

NOT TO SCALE

DETAIL NO.

SP4



SANITARY SEWER DETAIL
 STEP AARV MANIFOLD ASSEMBLY

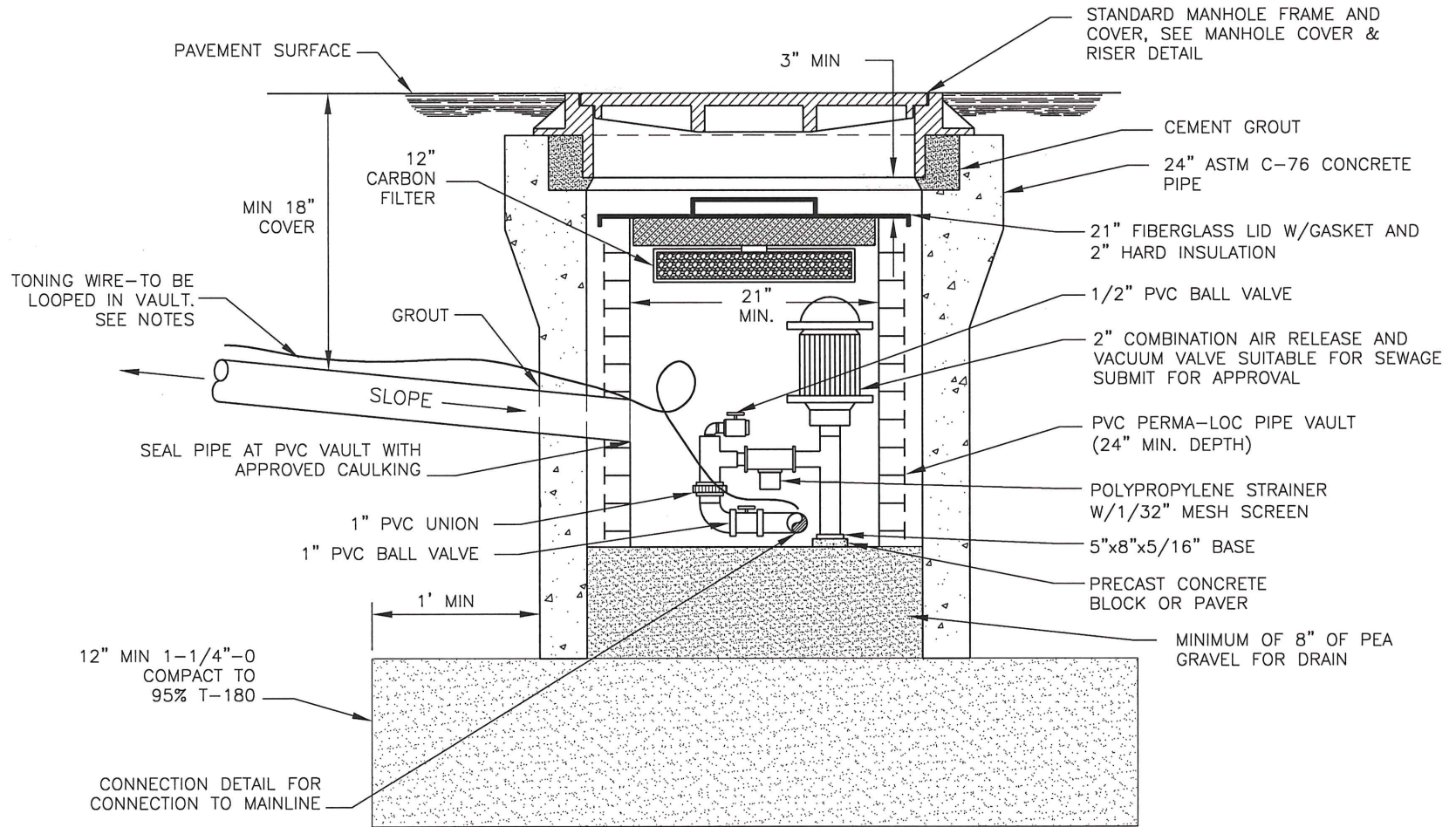
NOT TO SCALE DETAIL NO.

DETAIL APPROVED BY *Jan E. Crockett* 5-16-19
 DATE

REVISION: 3 DATE: 5/3/2019

SP5

STEP-AARV.DWG



NOTE:

1. FOR PLACEMENT IN A TRAFFIC AREA
2. BACKFILL AND COMPACTION PER APPROPRIATE TRENCH DETAIL UNLESS OTHERWISE NOTED
3. AARV UNIT TO BE SUPPLIED COMPLETELY ASSEMBLED BY VENDOR
4. 3" PVC VENT LINE TO CARBON OR SOIL FILTER WHEN SPECIFIED, SEE APPLICABLE DETAIL.
5. MAIN TO BE TESTED WITH ASSEMBLY VALVES "OPEN" AND UNIT ON LINE.
6. CONNECTIONS AND SPLICES TO TONING WIRE SHALL BE SEALED WITH KING GEL CAPS, 3M DBY DIRECT BURY CAPS, OR OTHER APPROVED CONNECTION, AT ALL SPLICES.
7. **14 GAUGE GREEN HMWPE INSULATED COPPER CLAD STEEL TONING WIRE REQUIRED.**

REV. NO.	DATE	BY	APPR.
1	5/1/07	SCD	JC
2	1/1/11	SCD	JC



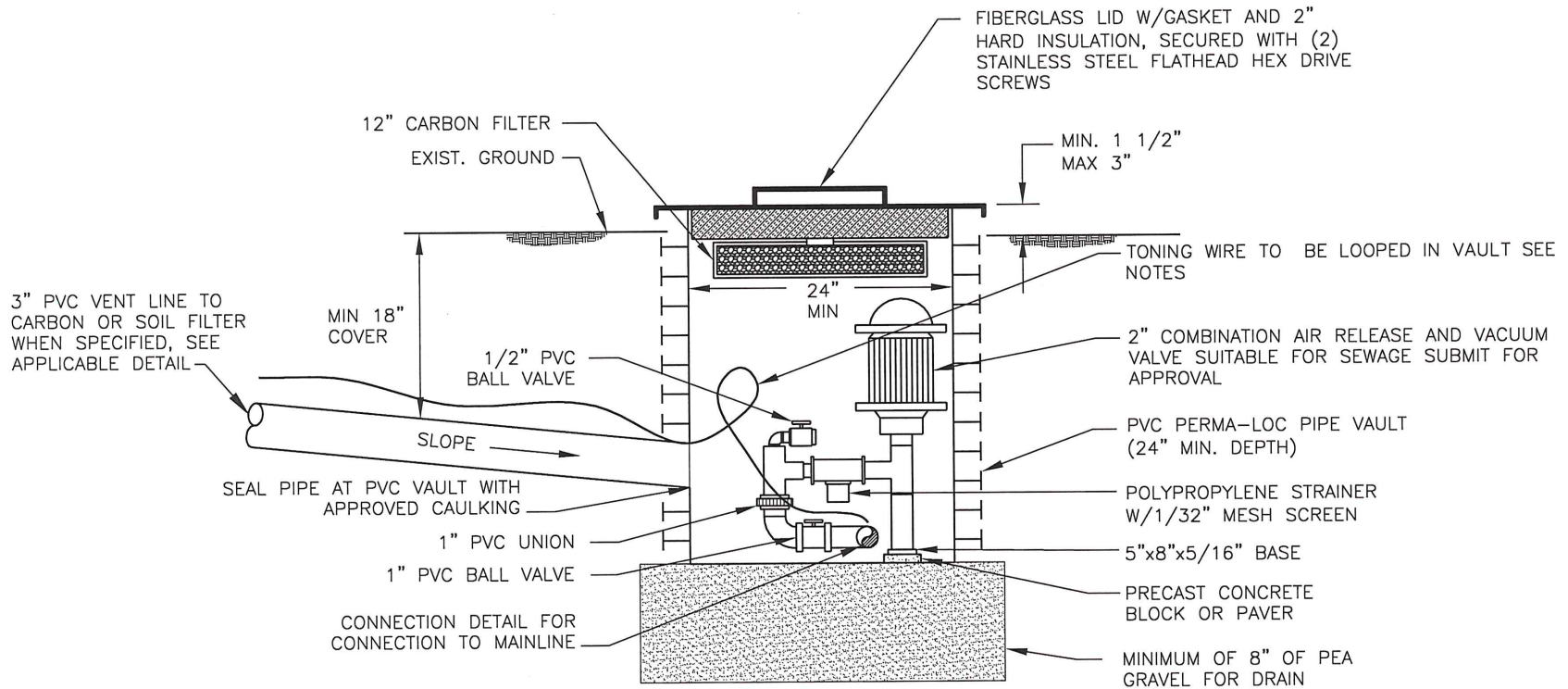
CITY OF CAMAS ~ SANITARY DETAIL
STEP AARV (TRAFFIC RATED)

Sam E. Cauffman 1-4-11
 DETAIL APPROVED BY DATE

DETAIL NO.
 SP6

NOT TO SCALE

STEP-AARV.DWG



NOTE:

1. FOR PLACEMENT IN A NONTRAFFIC AREA
2. BACKFILL AND COMPACTION PER APPROPRIATE TRENCH DETAIL UNLESS OTHERWISE NOTED
3. AARV UNIT TO BE SUPPLIED COMPLETELY ASSEMBLED BY VENDOR
4. CONNECTIONS AND SPLICES TO TONING WIRE SHALL BE SEALED WITH KING GEL CAPS, 3M DBY DIRECT BURY CAPS, OR OTHER APPROVED CONNECTION, AT ALL SPLICES.
5. **14 GAUGE GREEN HMWPE INSULATED COPPER CLAD STEEL TONING WIRE REQUIRED.**

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2	1/1/11	SCD	JC

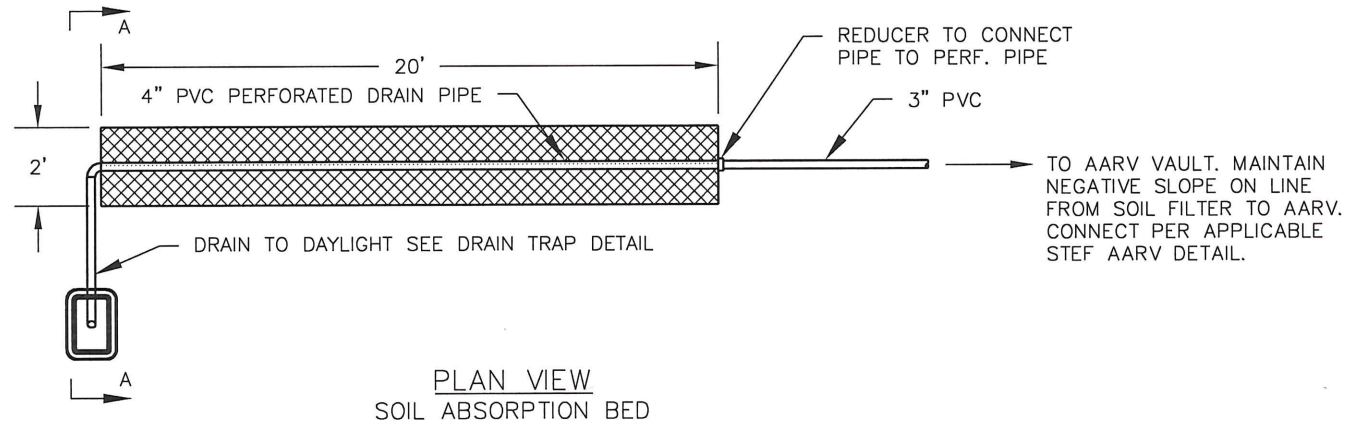
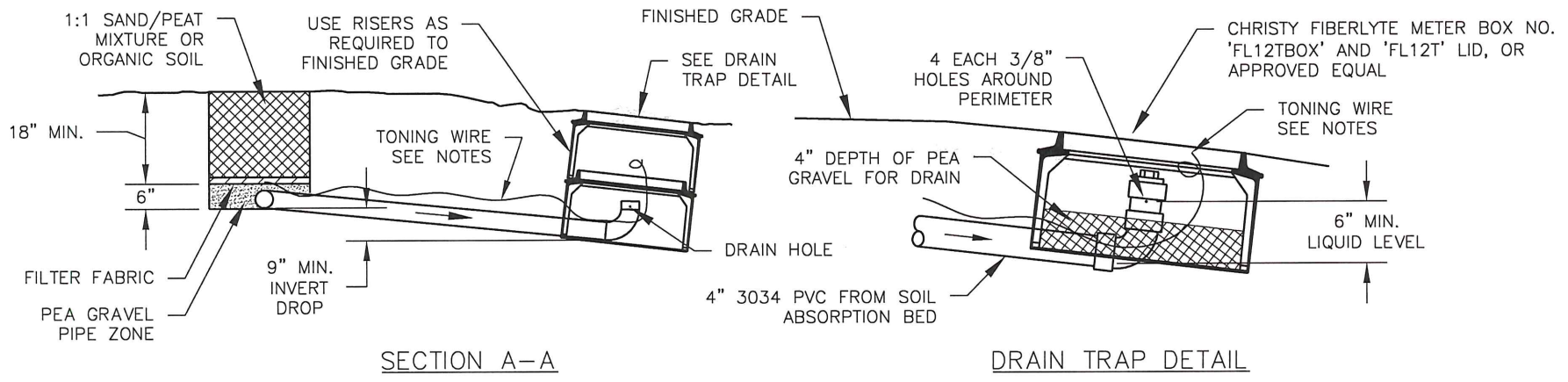


CITY OF CAMAS ~ SANITARY DETAIL
STEP AARV (NON-TRAFFIC RATED)

San P. Crutcher 1-4-11
 DETAIL APPROVED BY DATE

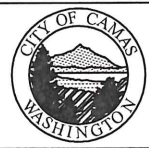
NOT TO SCALE

DETAIL NO.
 SP7



- NOTE:**
1. BASED ON ANALYSIS OF VOLUME, OTHER METHODS OF ODOR CONTROL MAY BE REQUIRED BY CITY.
 2. FILTER FABRIC SHOULD BE USED TO LINE ENTIRE TRENCH.
 3. IF GROUND WATER IS AN ISSUE, THE TRENCH SHOULD BE LINED WITH POND LINER AND CLAMPED TO THE PIPE AT EACH END OF THE FILTER BED, OR A CARBON FILTER CAN BE USED.
 4. TRENCH TO FOLLOW CONTOUR OF LANDSCAPING. PERF PIPE DOES NOT NEED TO BE LEVEL.
 5. CONNECTIONS AND SPLICES TO TONING WIRE SHALL BE SEALED WITH KING GEL CAPS, 3M DBY DIRECT BURY CAPS, OR OTHER APPROVED CONNECTION, AT ALL SPLICES.
 6. **14 GAUGE GREEN HMWPE INSULATED COPPER CLAD STEEL TONING WIRE REQUIRED.**

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1	5/1/07	SCD	JC
2	1/1/11	SCD	JC

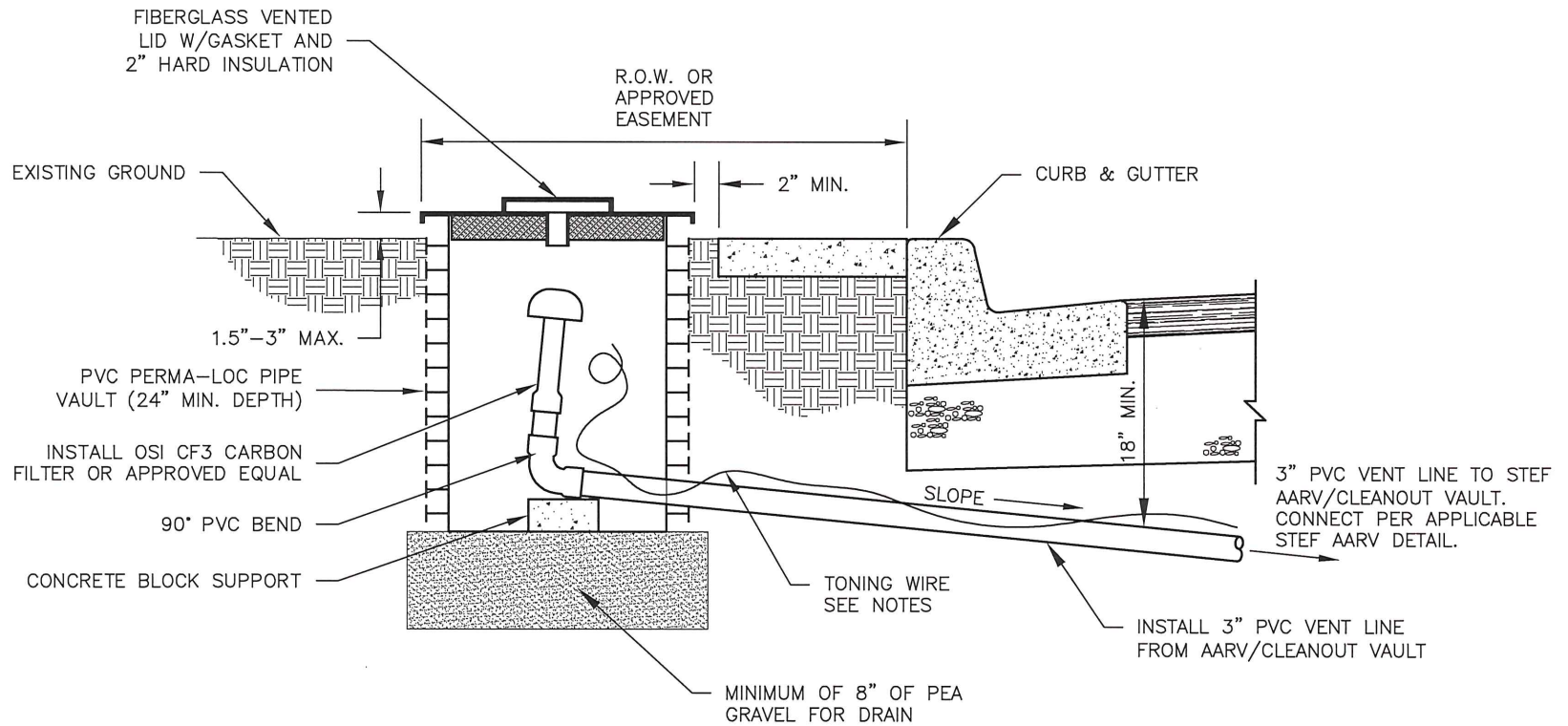


CITY OF CAMAS ~ SANITARY DETAIL
 STEP SOIL FILTER
Jan E. Crutcher 1-4-11
 DATE

DETAIL NO.
 SP8

NOT TO SCALE

STEP-FILTER.DWG



NOTE:

1. SEE PLAN AND STREET SECTIONS FOR SIDEWALK LOCATION
2. CONNECTIONS AND SPLICES TO TONING WIRE SHALL BE SEALED WITH KING GEL CAPS, 3M DBY DIRECT BURY CAPS, OR OTHER APPROVED CONNECTION, AT ALL SPLICES.
3. 14 GAUGE GREEN HDPE INSULATED COPPER CLAD STEEL TONING WIRE REQUIRED.

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1	5/1/07	SCD	JC
2	1/1/11	SCD	JC
3	10/21/14	SCD	JC



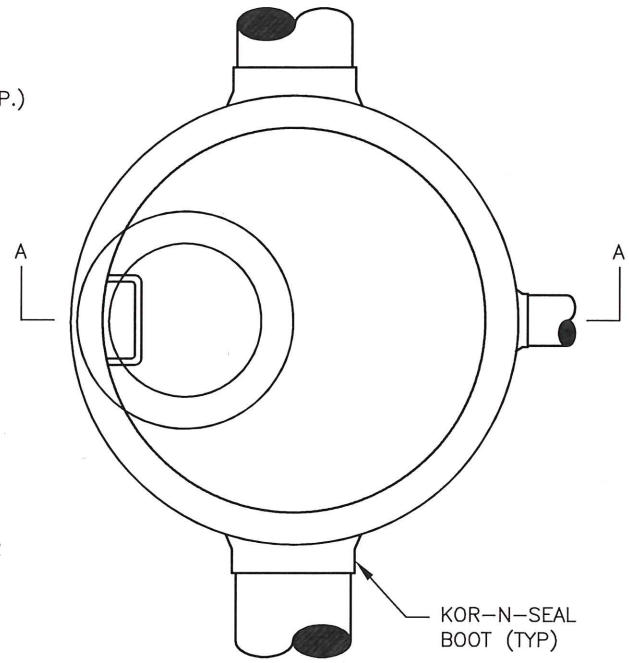
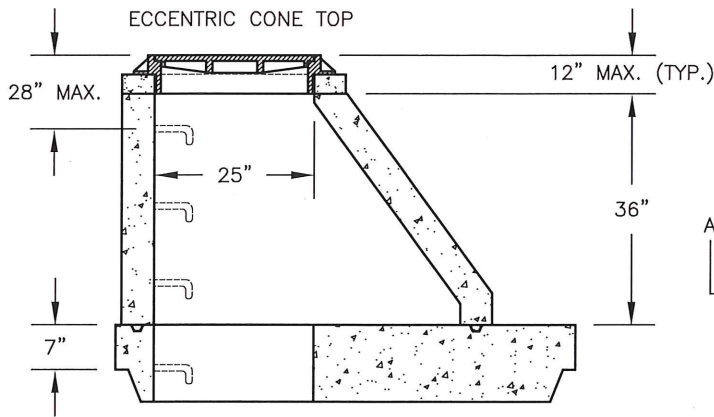
CITY OF CAMAS ~ SANITARY DETAIL
STEP CARBON FILTER

Joe P. Carter 10-21-14
 DETAIL APPROVED BY DATE

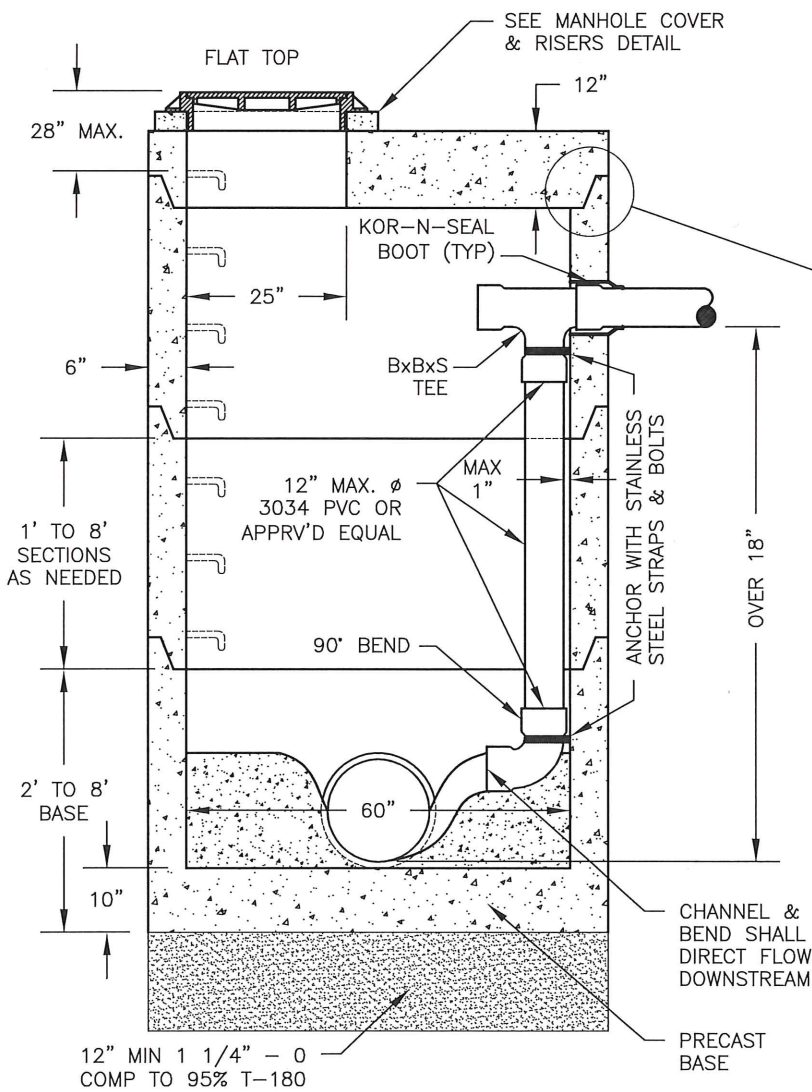
NOT TO SCALE

DETAIL NO.

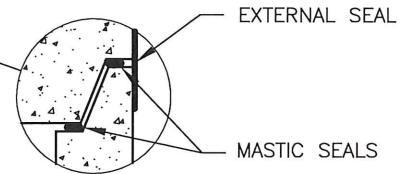
SP9



PLAN VIEW



SECTION VIEW A-A



NOTES:

1. MANHOLES WITH GREATER THAN 18" DROP SHALL BE 60" DIAMETER WITH AN INTERIOR DROP
2. ALL PIPE OPENINGS SHALL BE CORED AND RUBBER BOOTED
3. MASTIC SEAL REQ'D IN ALL KEYLOCK JOINTS.
4. 12" WIDE +/- EXTERNAL SEALS REQUIRED AROUND ALL MANHOLE SECTION JOINTS. INSTALL MACWRAP, INFI-SHIELD, EZ WRAP, RISER-WRAP, OR OTHER MANHOLE EXTERNAL SEAL BAND SYSTEM.
5. MANHOLES SHALL CONFORM TO ASTM C-478
6. FLAT TOP SECTION MAY BE USED FOR SHALLOW MANHOLES
7. INSIDE JOINTS SHALL BE STRUCK SMOOTH & EVEN WITH THE INSIDE WALLS
8. MANHOLE BASE TO HAVE SHAPED CHANNELS. FLOW LINE & INSIDE SURFACES SHALL BE TROWLED SMOOTH & UNIFORM
9. MANHOLE TO BE VACUUM TESTED IN ACCORDANCE WITH C.O.C. STANDARDS
10. MANHOLE TO BE SPRAY LINED WITH HYDROGEN SULFIDE RESISTANT MATERIAL RAVEN 405 OR APPROVED EQUAL SUBMITTAL REQUIRED

MATCH
EXIST. GRADE

12" MIN

6" MIN

CLASS III BACKFILL TO BE
COMPACTED IN 8" LIFTS BY
PORTABLE HAND OPERATED
COMPACTING DEVICE.

NOTE:
TANKS REQUIRING TRAFFIC
BEARING COVERS MAY
REQUIRE ADDITIONAL DEPTH
TO MATCH EXISTING GRADES.

24" MIN.
RISER HEIGHT

COVER PLATE AND
FRAME UTILITY
VAULT NO. 332P.
TOTAL WT. 140 lbs.

2" MIN.

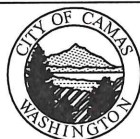
LOCKING LATCH W/
3/8" PENTHEAD BOLT.

SPRING ASSISTED
DOOR W/ RECESSED
LIFT HANDLE.

24" DIA. PVC TANK RISER
OR AIR/VACUUM RELEASE
ASSEMBLY VAULT.

ANGLE IRON FRAME TO BE
CAST IN CONCRETE. CLEAR
OPENING 32 3/8" X 33 3/8".

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1	5/1/07	SCD	JC
2	1/1/11	SCD	JC



CITY OF CAMAS ~ SANITARY DETAIL
STEP TRAFFIC BEARING RISER LID

Don E. Carothers 1-4-11
DETAIL APPROVED BY DATE

DETAIL NO.

SP12

NOT TO SCALE

STEP-TANK.DWG