

## **STEF Sewer Details**

## City of Camas STEF Sanitary Details ~ INDEX

### STEF Sanitary Sewer Details

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	STEF TANK - SEE STEF & STEP TANK SECTION		

SEPTIC TANK EFFLUENT FILTER (S.T.E.F.) 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 & 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 PIPE SHALL BE CLASS 200 PVC GASKETED PIPE, WHICH IS FURTHER DEFINED AS ASTM D2241 DR21 FOR SIZES 2" THROUGH 36", UNLESS OTHERWISE NOTED.
7. 14 GAUGE GREEN HDPE (HMWPE) 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 SERVICE LATERAL MARKER BOARDS, A.A.R.V.'S, RISERS, AND CLEANOUTS. ALL SPLICES AND CONNECTIONS TO TONING WIRE SHALL BE PROTECTED WITH KING GEL CAPS, 3M DBY DIRECT BURY, OR OTHER APPROVED EQUAL CONNECTORS. ALL TONING WIRE CONNECTIONS SHALL BE TONE TESTED PRIOR TO INSTALLING BASE ROCK.
8. MAINLINE CLEANOUTS SHALL BE SPACED A MAXIMUM OF 400 FEET AND/OR FOR EVERY 90 DEGREES OF BENDS.
9. ALL PIPE AND FITTINGS SHALL BE AIR TESTED AT FIVE P.S.I. FOR ONE MINUTE PER EVERY 100 FEET OF MAINLINE.
10. SANITARY SERVICE LATERAL ENDS SHALL EXTEND 8 FEET PAST THE STREET RIGHT-OF-WAY LINE OR AS SHOWN ON THE PLANS AND MARKED WITH A 10 FOOT LONG 2 X 4.
11. ALL SANITARY LINES SHALL BE INSTALLED WITH A MINIMUM COVER OF 6 FEET AND A MINIMUM GRADE OF 0.4% UNLESS OTHERWISE SHOWN ON THE PLANS.
12. ALL S.T.E.F. 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  
STEF SEWER CONSTRUCTION NOTES

*J. P. Crothers* 7-23-18  
DETAIL APPROVED BY DATE

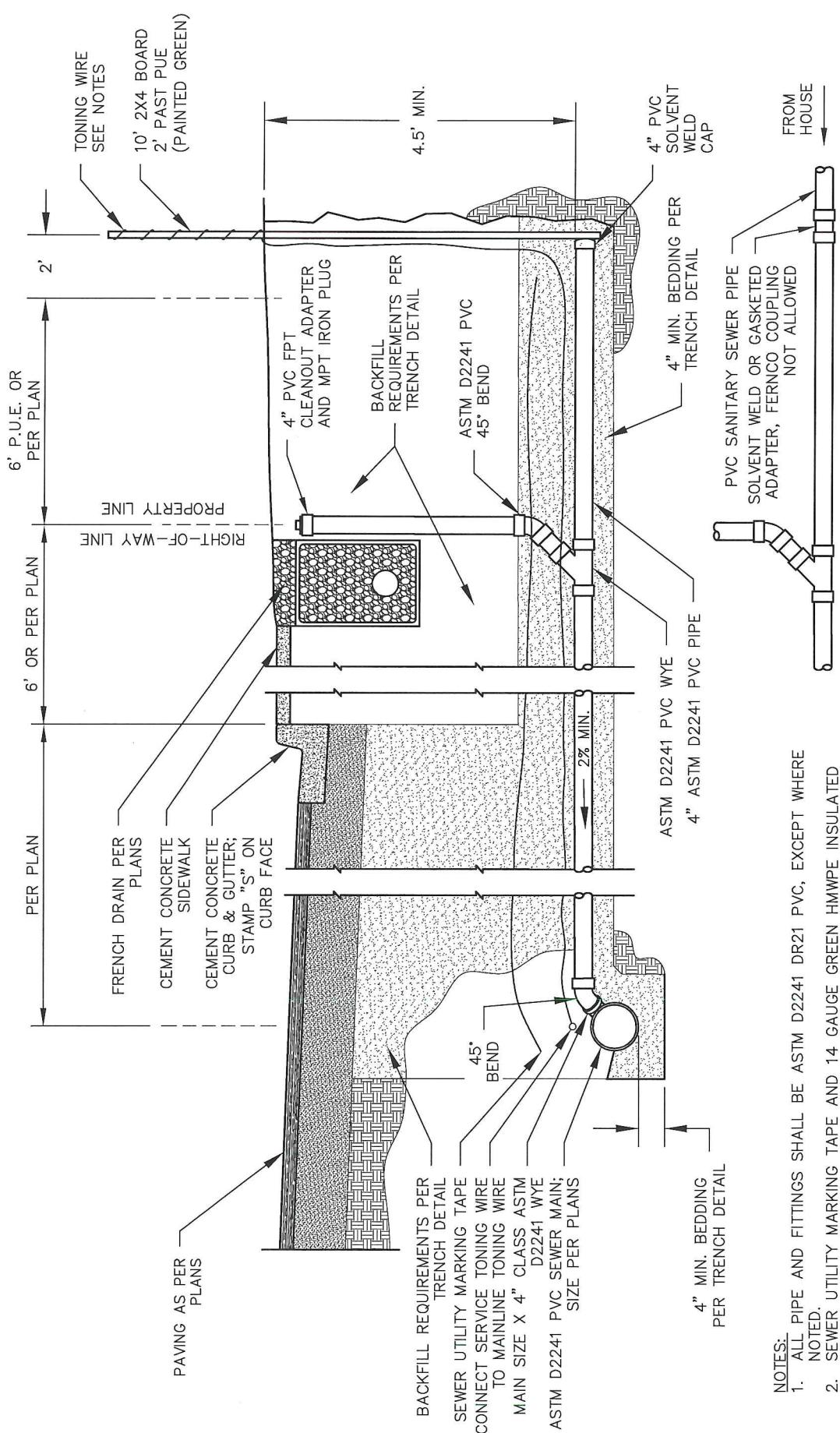
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DETAIL NO.

SF1

REVISION: 4

DATE: 7/17/2018



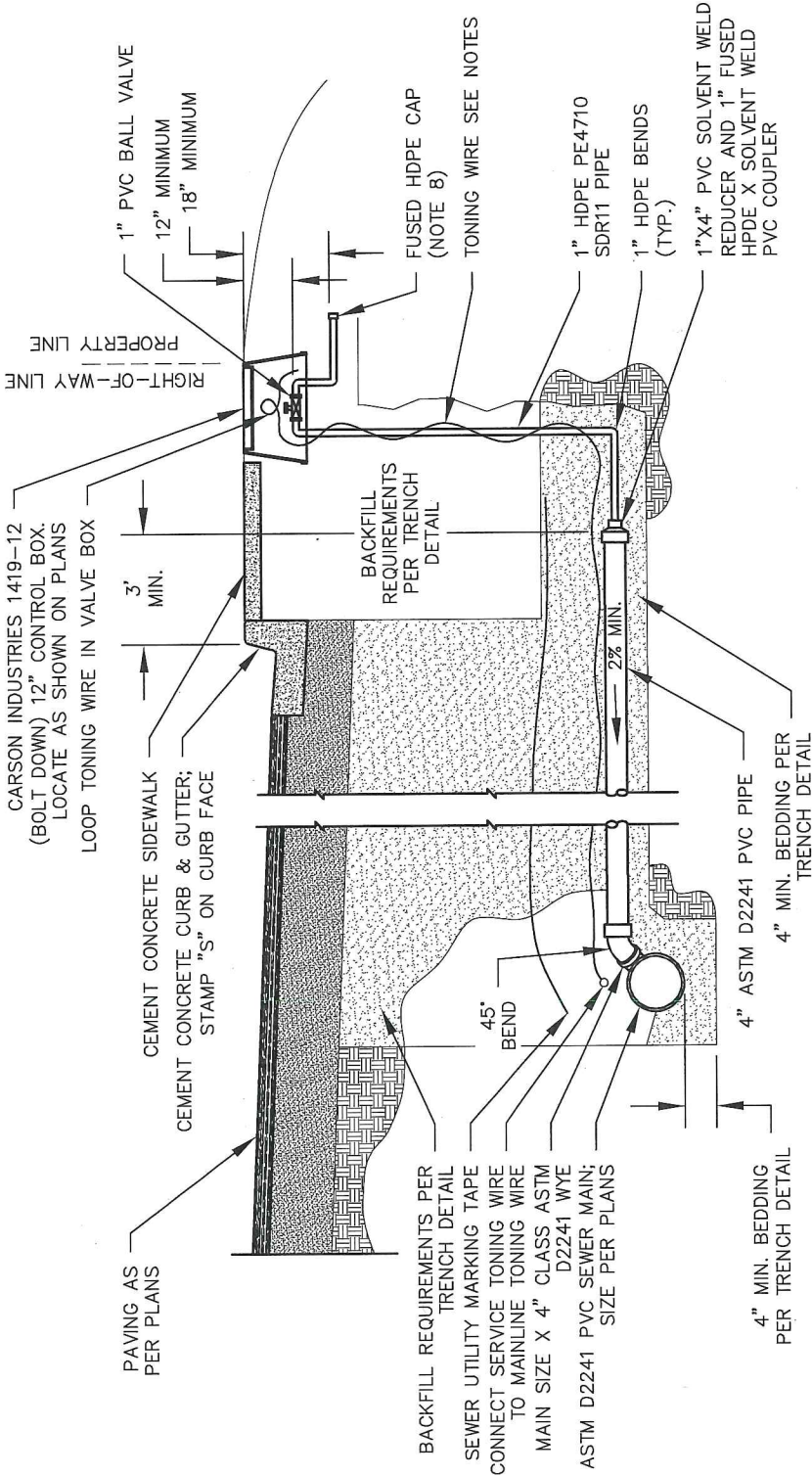
CONNECTION AT BUILD-OUT

- NOTES:
1. ALL PIPE AND FITTINGS SHALL BE ASTM D2241 DR21 PVC, EXCEPT WHERE NOTED.
  2. SEWER UTILITY MARKING TAPE AND 14 GAUGE GREEN HMWPE INSULATED COPPER CLAD STEEL TONING WIRE REQUIRED AS SHOWN ON TRENCH DETAIL.
  3. 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.
  4. ELEVATION OF SERVICE STUB OUT AND CONNECTION SHALL BE NOTED ON AS-BUILT DRAWINGS.

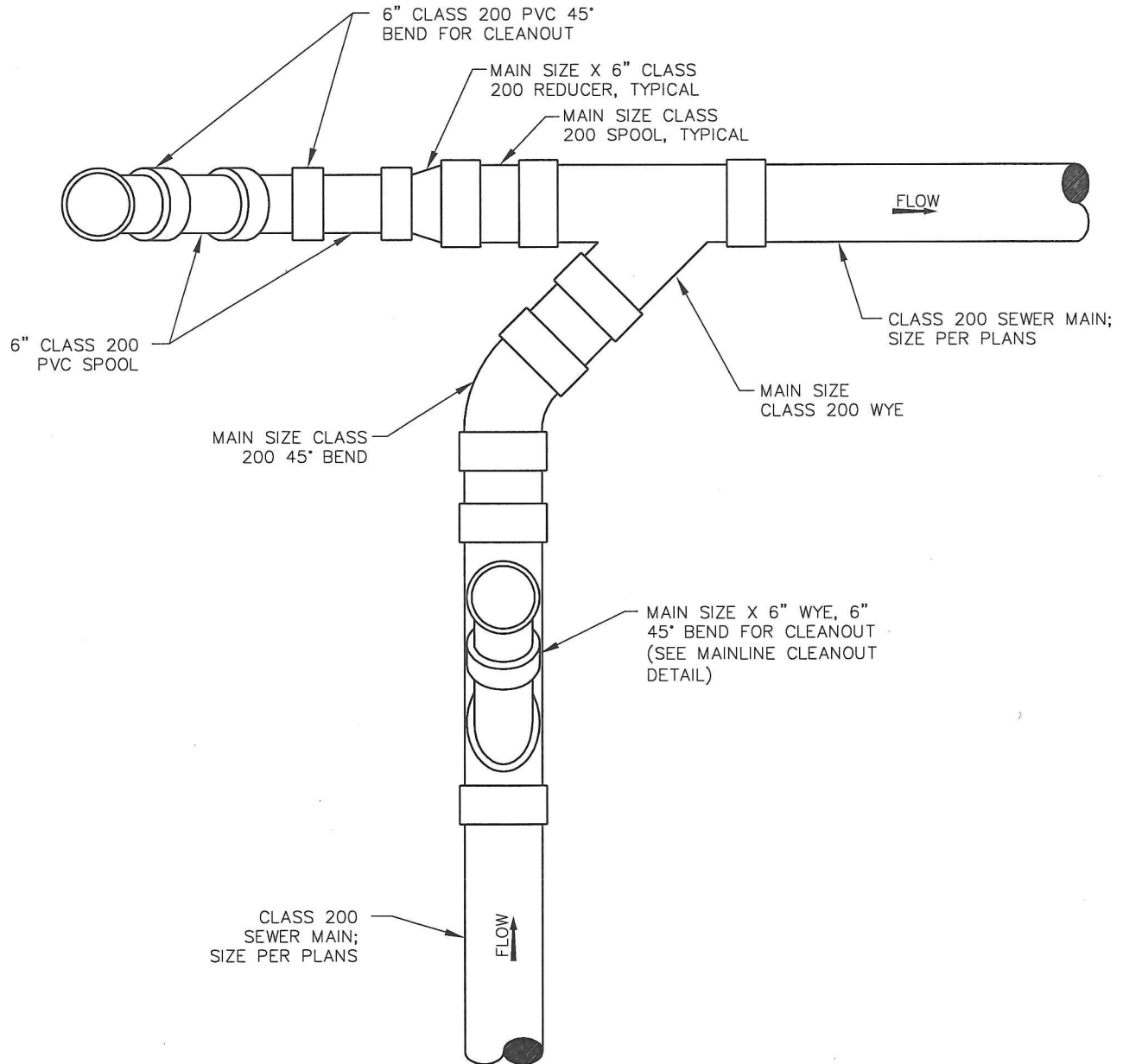
DETAIL NO.	NOT TO SCALE	SANITARY SEWER DETAIL
SF2	REVISION: 3	STEF SEWER SERVICE STUB OUT
DATE: 7/17/2018	DATE: 7-23-18	DATE
DATE	DATE	DATE
DATE	DATE	DATE



APPROVED BY: *[Signature]*



- NOTES:
- THIS SERVICE INSTALLATION SHALL ONLY BE INSTALLED WITH ENGINEER APPROVAL, ON LOTS WHERE STEF TANK OUTLET PIPE WILL NOT SLOPE TO MAIN, OR WHERE SHOWN ON PLANS.
  - ALL PIPE AND FITTINGS SHALL BE ASTM D2241 DR21 (CLASS 200) PVC, EXCEPT FOR 1" HDPE PE4710 SDR11 STEP TANK SERVICE PIPE. COMPRESSION COUPLINGS ARE NOT ALLOWED.
  - PRESSURE TESTING SHALL BE PERFORMED PER THE STANDARD STEF SEWER AIR TEST ON CITY OF CAMAS DETAIL G4 - STANDARD TESTING REQUIREMENTS.
  - SEWER UTILITY MARKING TAPE AND 14 GAUGE GREEN HDPE INSULATED COPPER CLAD STEEL TONING WIRE REQUIRED AS SHOWN ON TRENCH DETAIL.
  - 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.
  - SEE TRENCH DETAIL FOR BEDDING AND BACKFILL REQUIREMENTS.
  - FOR INSTALLATION ON EXISTING MAIN, CUT-IN THE APPROPRIATE SIZE WYE AND USE A GASKETED SLIP COUPLING. INSERT-A-TEE OR SADDLE ARE NOT ALLOWED.
  - 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.



**NOTES:**

1. ALL PIPE AND FITTINGS SHALL BE GASKETED CLASS 200 PVC.
2. SEWER UTILITY MARKING TAPE AND **14 GAUGE GREEN HMWPE INSULATED COPPER CLAD STEEL TONING WIRE** REQUIRED AS SHOWN ON TRENCH DETAIL.
3. 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.
4. SEE 'CLEANOUT DETAIL' FOR CLEANOUT CONSTRUCTION.

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



**CITY OF CAMAS ~ SANITARY DETAIL**

**STEF 90° BEND**

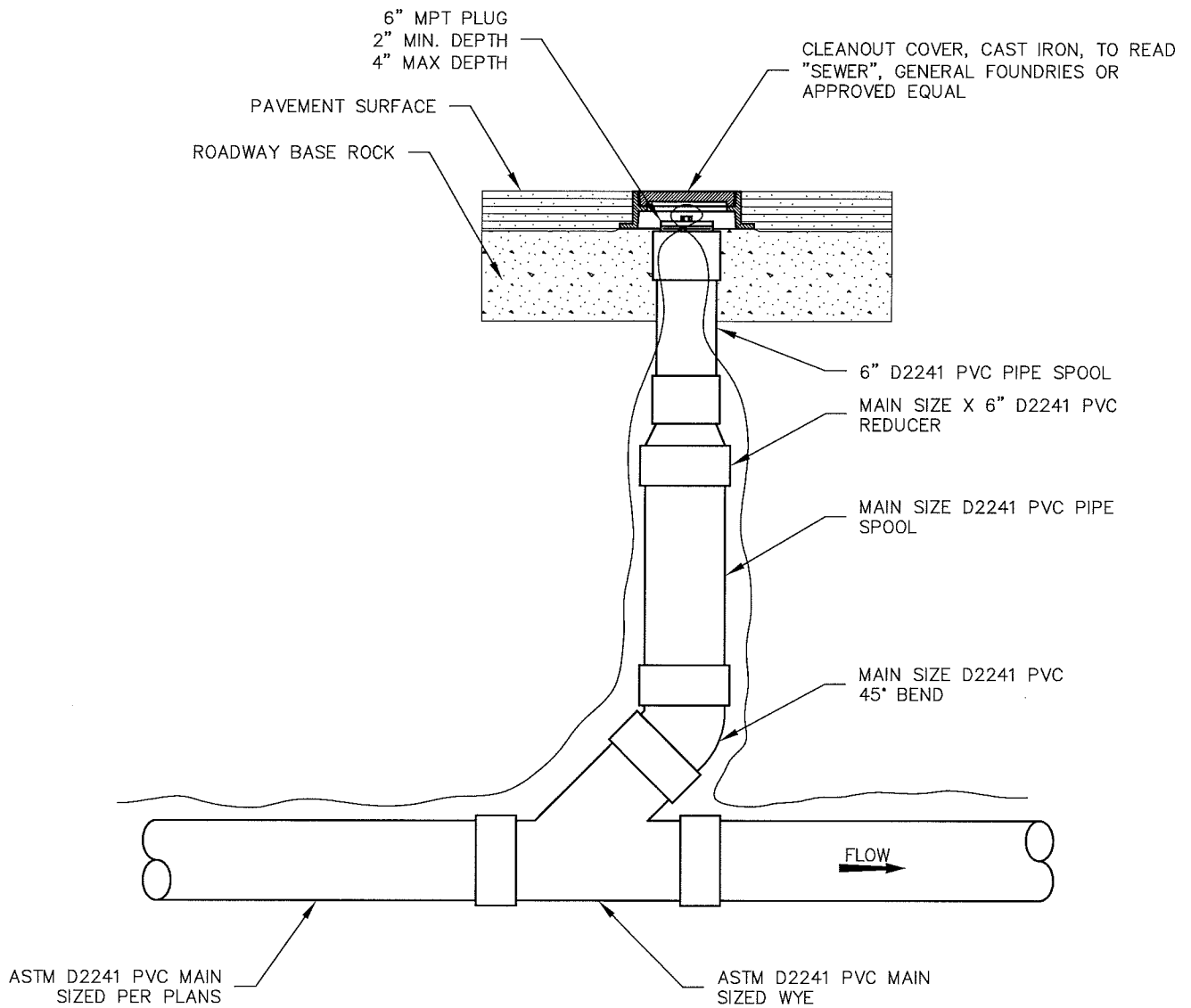
*Don E. Caution* 1-4-11  
 DETAIL APPROVED BY DATE

DETAIL NO.

SF4

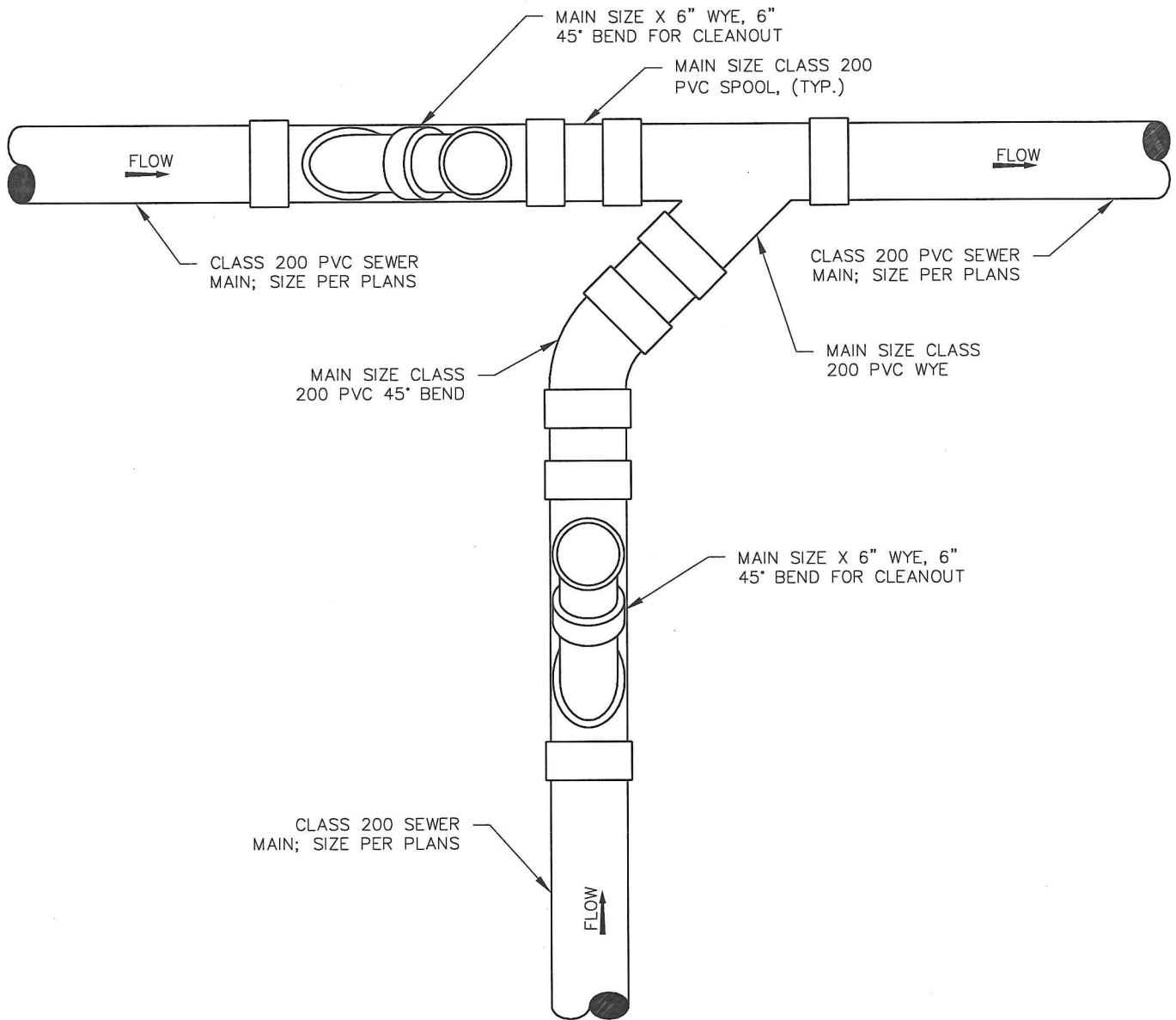
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STEF-MAIN.DWG



**NOTES:**

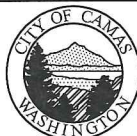
1. PROVIDE 2' SQ. x 6" DEEP CONCRETE COLLAR AROUND VALVE BOX FOR CLEANOUTS IF OUT OF ROADWAY.
2. ALL PIPE AND FITTINGS SHALL BE GASKETED ASTM D2241 DR21 (CLASS 200) PVC.
3. SEE TRENCH DETAIL FOR BACKFILL/BEDDING, SEWER UTILITY MARKING TAPE AND TONING WIRE REQUIREMENTS.
4. CONNECTIONS AND SPLICES TO TONING 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.



**NOTES:**

1. ALL PIPE AND FITTINGS SHALL BE GASKETED CLASS 200 PVC.
2. SEWER UTILITY MARKING TAPE AND **14 GAUGE GREEN HMWPE INSULATED COPPER CLAD STEEL TONING WIRE** REQUIRED AS SHOWN ON TRENCH DETAIL.
3. 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.
4. SEE 'CLEANOUT DETAIL' FOR CLEANOUT CONSTRUCTION.

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



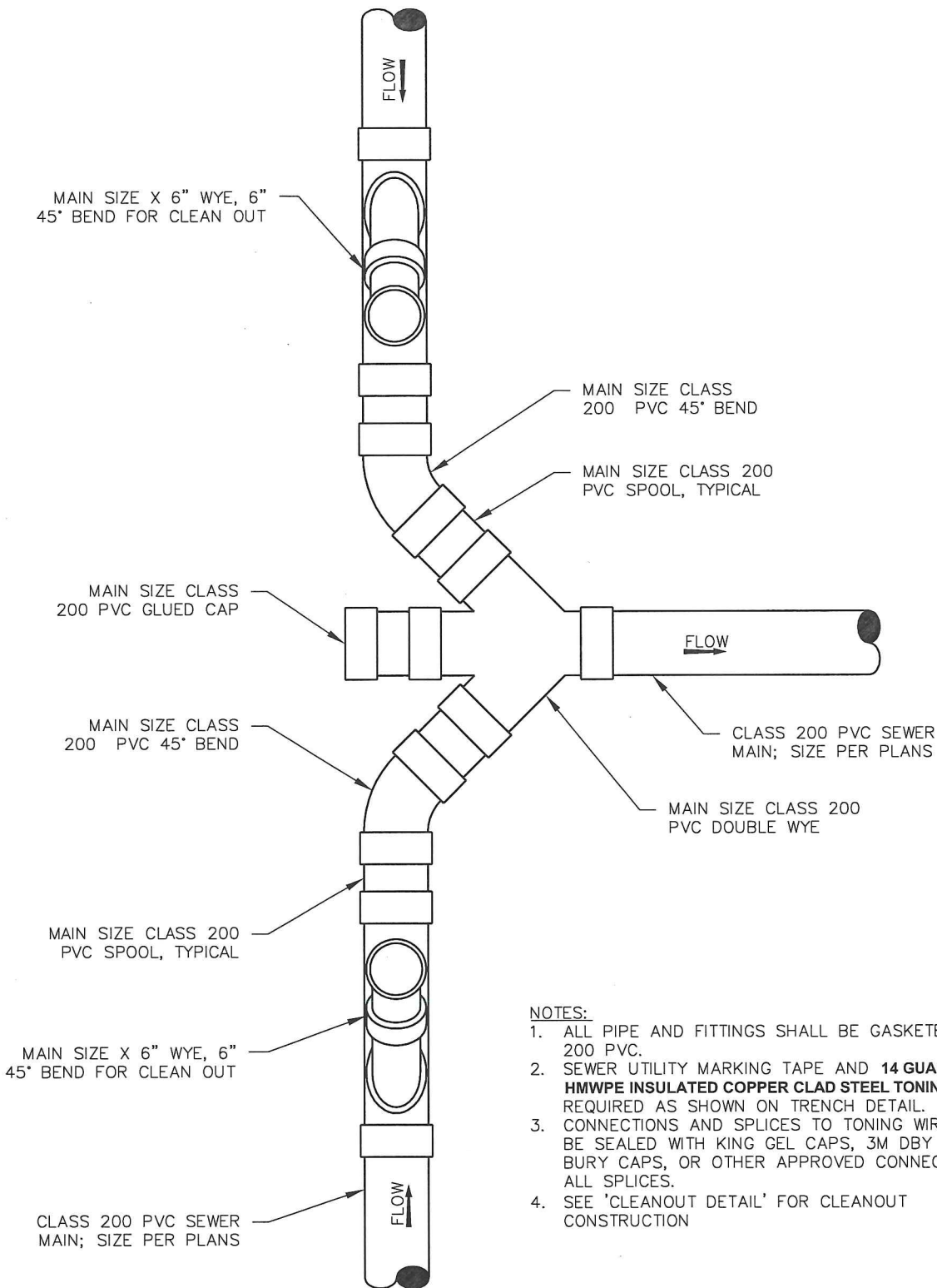
**CITY OF CAMAS ~ SANITARY DETAIL**  
**STEF MAIN TEE ASSEMBLY (FLOW A)**

*Don P. Coathran* 1-4-11  
 DETAIL APPROVED BY DATE

DETAIL NO.  
 SF6

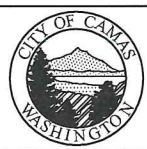
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- NOTES:**
1. ALL PIPE AND FITTINGS SHALL BE GASKETED CLASS 200 PVC.
  2. SEWER UTILITY MARKING TAPE AND **14 GAUGE GREEN HMWPE INSULATED COPPER CLAD STEEL TONING WIRE** REQUIRED AS SHOWN ON TRENCH DETAIL.
  3. CONNECTIONS AND SPLICES TO TONING WIRE SHALL BE SEALED WITH KING GEL CAPS, 3M DBY DIRECT BURY CAPS, OR OTHER APPROVED CONNECTION, AT ALL SPLICES.
  4. SEE 'CLEANOUT DETAIL' FOR CLEANOUT CONSTRUCTION

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



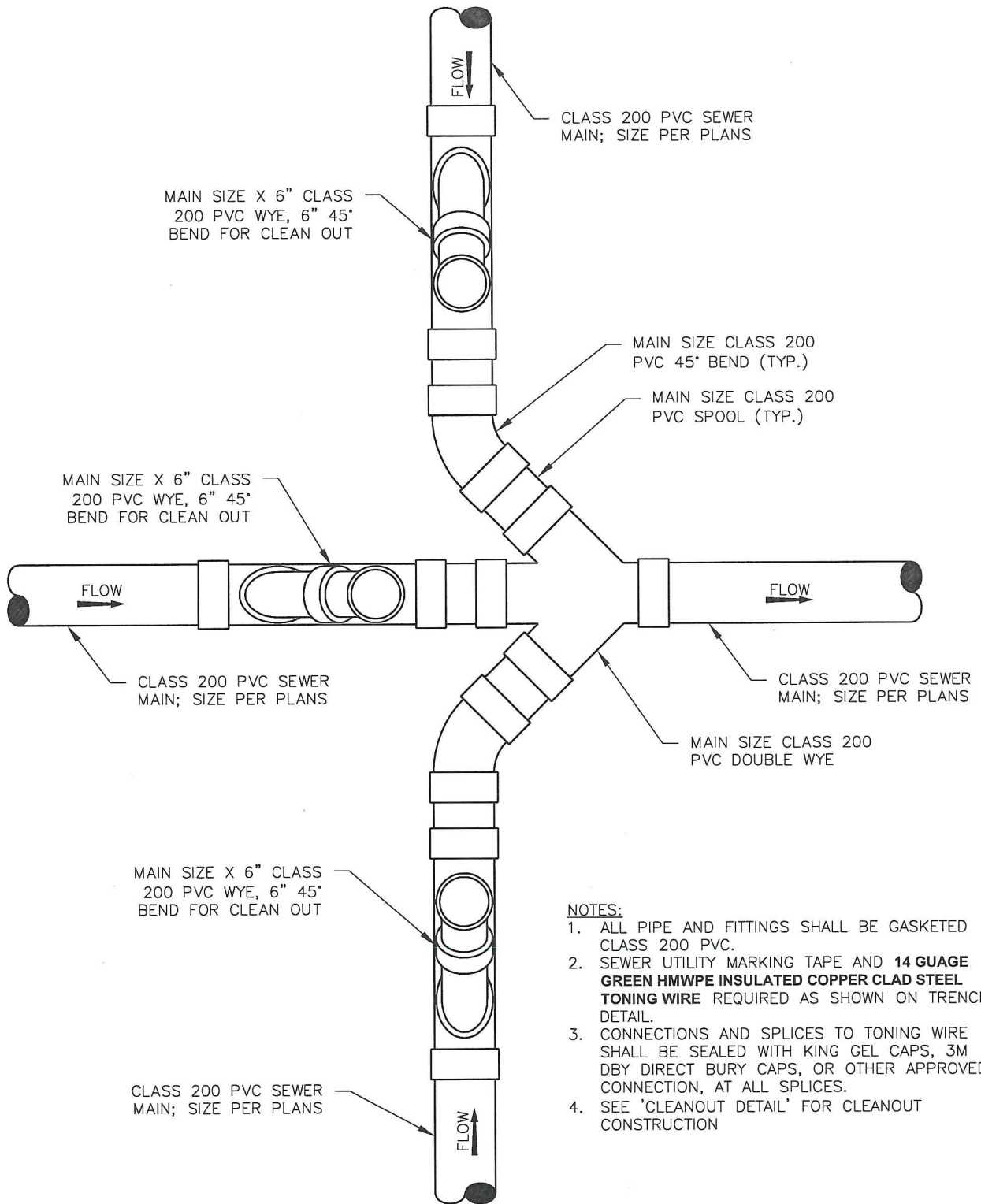
**CITY OF CAMAS ~ SANITARY DETAIL**  
**STEF MAIN TEE ASSEMBLY (FLOW B)**

*John P. Caruthers* 1-4-11  
 DETAIL APPROVED BY DATE

DETAIL NO.  
 SF7

NOT TO SCALE

STEF-MAIN.DWG



**NOTES:**

1. ALL PIPE AND FITTINGS SHALL BE GASKETED CLASS 200 PVC.
2. SEWER UTILITY MARKING TAPE AND **14 GAUGE GREEN HMWPE INSULATED COPPER CLAD STEEL TONING WIRE** REQUIRED AS SHOWN ON TRENCH DETAIL.
3. 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.
4. SEE 'CLEANOUT DETAIL' FOR CLEANOUT CONSTRUCTION

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

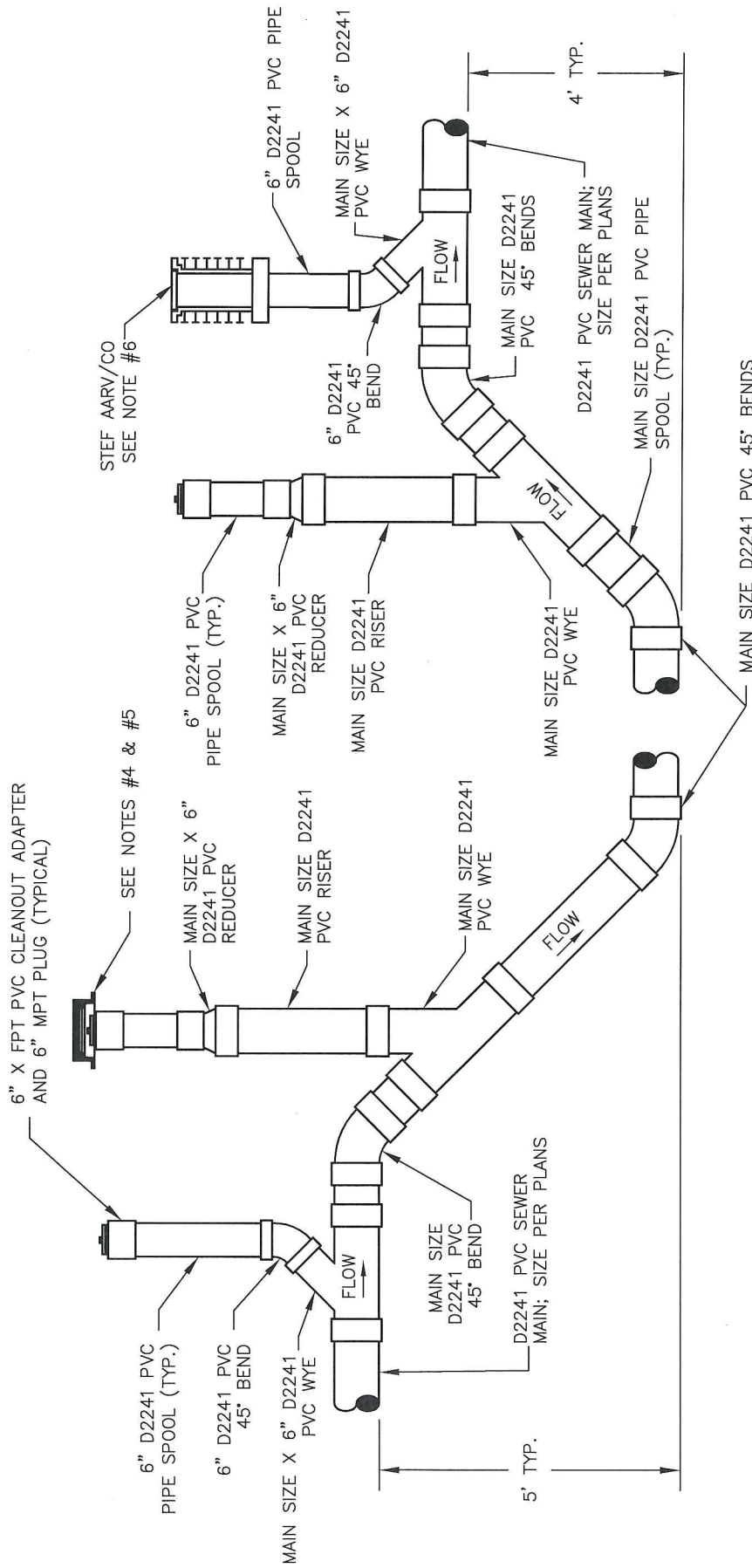


**CITY OF CAMAS ~ SANITARY DETAIL**  
**STEF MAIN CROSS ASSEMBLY**

*Don E. Carstensen* 1-4-11  
 DETAIL APPROVED BY DATE

DETAIL NO.  
 SF8

NOT TO SCALE



STEF AARY/CO  
SEE NOTE #6

SEE NOTES #4 & #5

- NOTES:**
- SEWER UTILITY MARKING TAPE AND 14 GAUGE GREEN HMWPE INSULATED COPPER CLAD STEEL TONING WIRE REQUIRED. LOOP IN ALL CLEANOUT BOXES.
  - 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.
  - ALL PIPE FITTINGS SHALL BE GASKETED ASTM D2241 DR21 (CLASS 200) PVC.
  - PROVIDE 2" SQUARE x 6" DEEP CONCRETE COLLAR AROUND ALL VALVE BOXES WHEN LOCATED OUTSIDE ROADWAY.
  - REFER TO MAINLINE CLEANOUT DETAIL FOR CONSTRUCTION REQUIREMENTS.
  - REFER TO AARY CLEANOUT DETAILS FOR ROADWAY AND OUTSIDE-ROADWAY CONSTRUCTION REQUIREMENTS.
  - DOWNSTREAM SECTION MUST BE AT LEAST 1' LOWER IN ELEVATION THAN UPSTREAM SECTION.

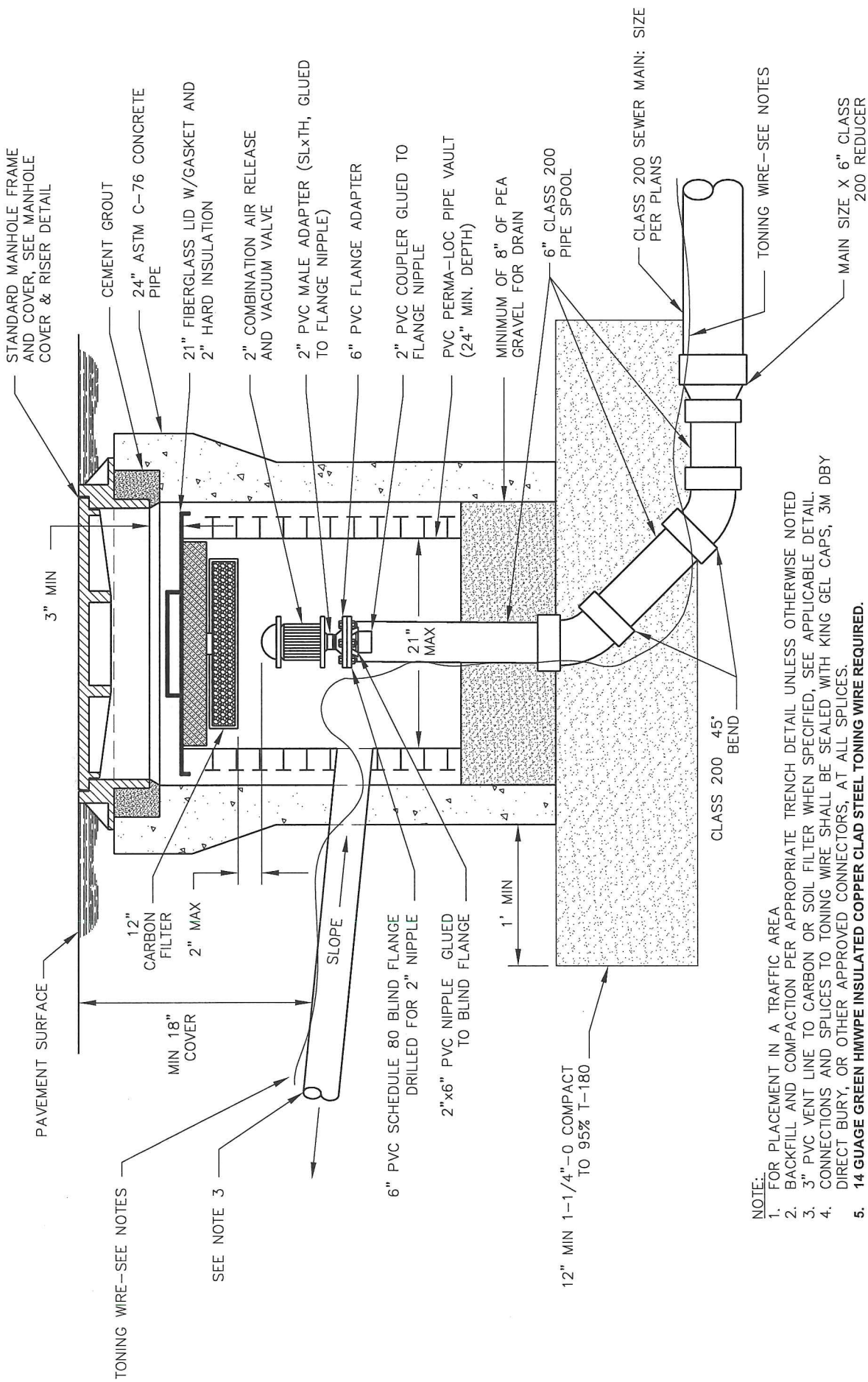


SANITARY SEWER DETAIL  
STEF "P" TRAP ASSEMBLY

*Jan P. Crutcher*  
DATE APPROVED BY 7-23-18  
DATE

NOT TO SCALE  
REVISION: 3  
DATE: 7/17/2018

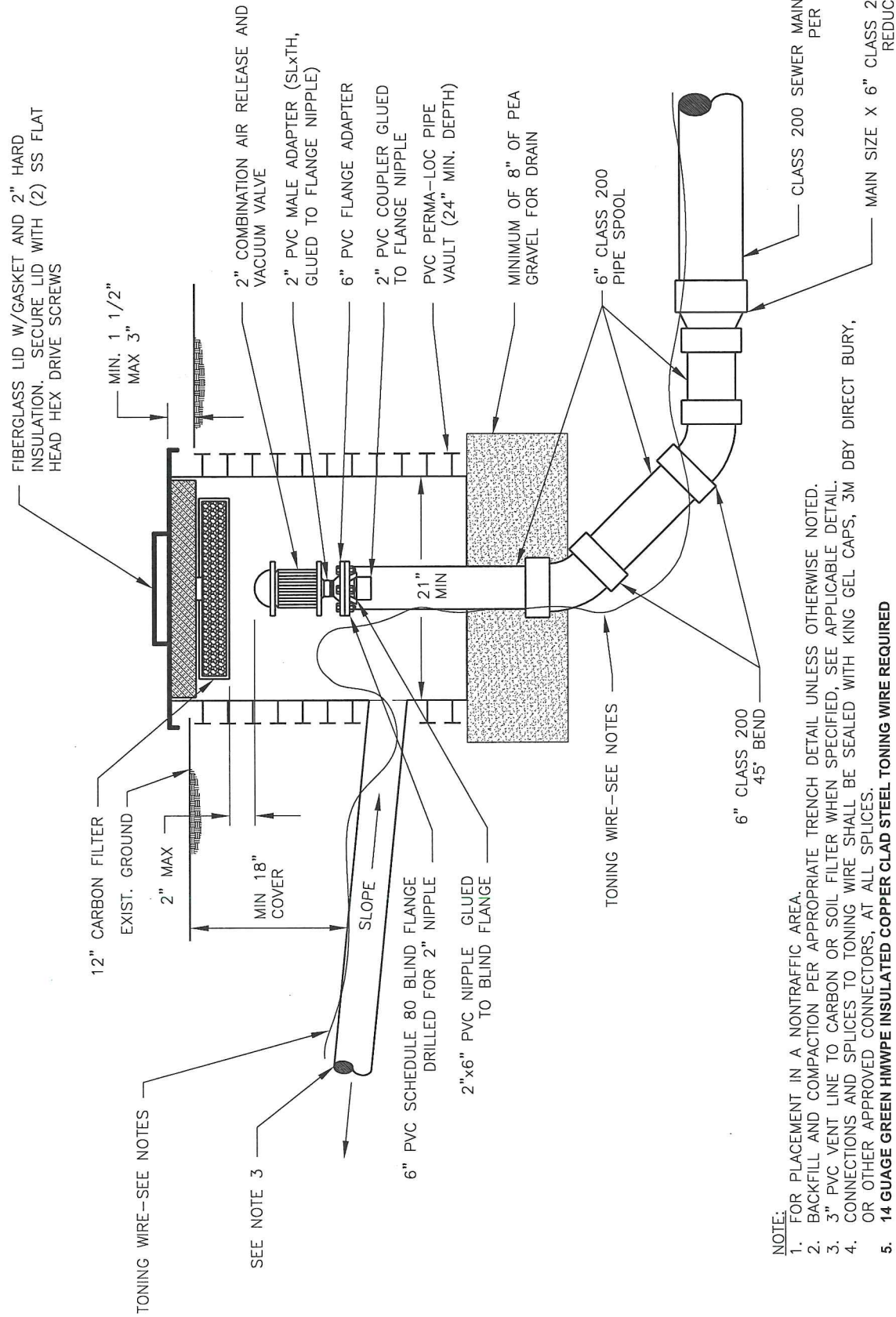
DETAIL NO.  
SF9



- NOTE:
- FOR PLACEMENT IN A TRAFFIC AREA
  - BACKFILL AND COMPACTION PER APPROPRIATE TRENCH DETAIL UNLESS OTHERWISE NOTED
  - 3" PVC VENT LINE TO CARBON OR SOIL FILTER WHEN SPECIFIED, SEE APPLICABLE DETAIL.
  - CONNECTIONS AND SPLICES TO TONING WIRE SHALL BE SEALED WITH KING GEL CAPS, 3M DBY DIRECT BURY, OR OTHER APPROVED CONNECTORS, AT ALL SPLICES.
  - 14 GAUGE GREEN HIMWPE INSULATED COPPER CLAD STEEL TONING WIRE REQUIRED.**

REV. NO.	DATE	BY	APPR.	DETAIL NO.
1	5/1/07	SCD	JC	SF10
2	1/1/11	SCD	JC	
<p>CITY OF CAMAS ~ SANITARY DETAIL</p> <p>STEF AARV/CLEANOUT (TRAFFIC RATED)</p> <p><i>Jan E. Carstensen 1-4-11</i></p> <p>DATE APPROVED BY _____ DATE _____</p> <p>NOT TO SCALE</p>				

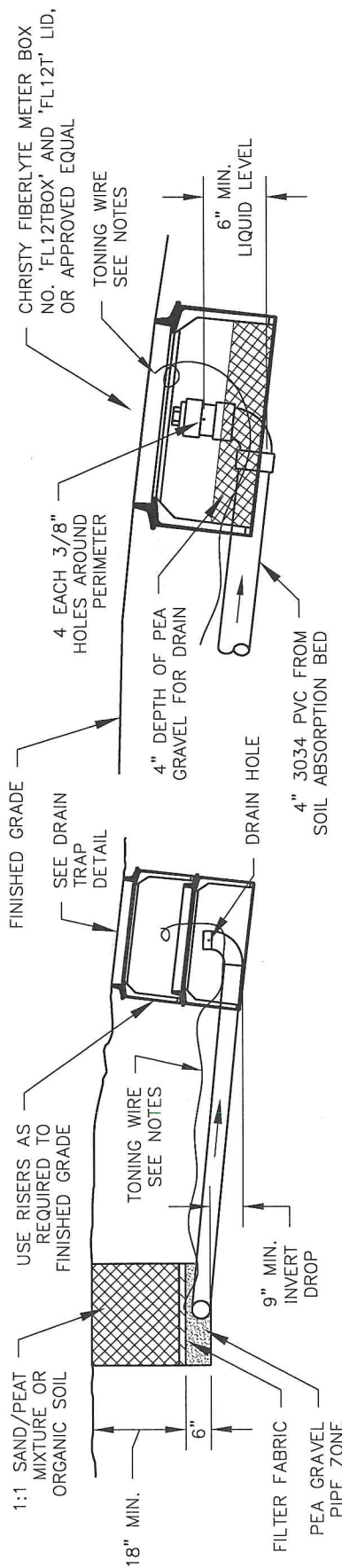




- NOTE:**
1. FOR PLACEMENT IN A NONTRAFFIC AREA.
  2. BACKFILL AND COMPACTION PER APPROPRIATE TRENCH DETAIL UNLESS OTHERWISE NOTED.
  3. 3" PVC VENT LINE TO CARBON OR SOIL FILTER WHEN SPECIFIED, SEE APPLICABLE DETAIL.
  4. CONNECTIONS AND SPLICES TO TONING WIRE SHALL BE SEALED WITH KING GEL CAPS, 3M DBY DIRECT BURY, OR OTHER APPROVED CONNECTORS, AT ALL SPLICES.
  5. 14 GAUGE GREEN HIMWPE INSULATED COPPER CLAD STEEL TONING WIRE REQUIRED

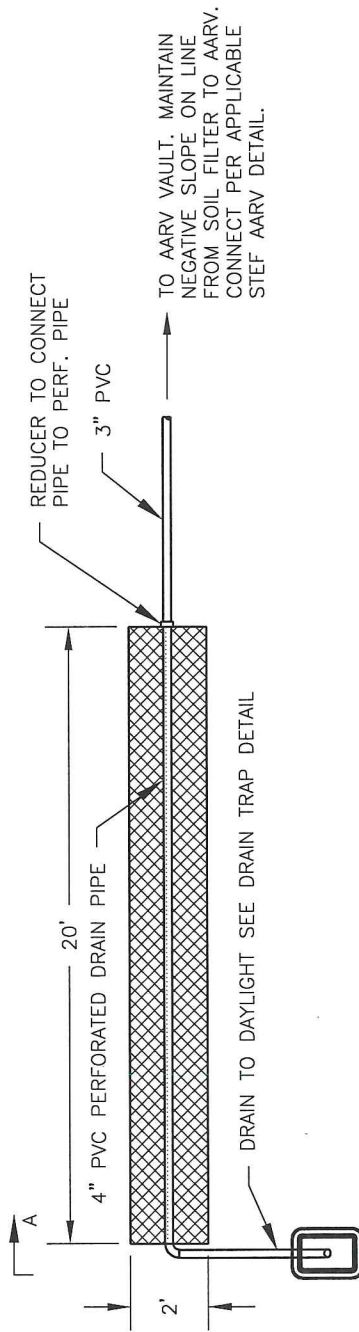
REV. NO.	DATE	BY	APPR.	DETAIL NO.
1	5/1/07	SGD	JC	SF11
2	1/1/11	SGD	JC	
<p>CITY OF CAMAS ~ SANITARY DETAIL                  STEF AARV/CLEANOUT (NON-TRAFFIC RATED)</p> <p><i>Jan P. C... 1-4-11</i>                  DATE APPROVED BY _____ DATE _____</p>				NOT TO SCALE





SECTION A-A

DRAIN TRAP DETAIL



PLAN VIEW  
SOIL ABSORPTION BED

- 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 HIMWPE INSULATED COPPER CLAD STEEL TONING WIRE REQUIRED.

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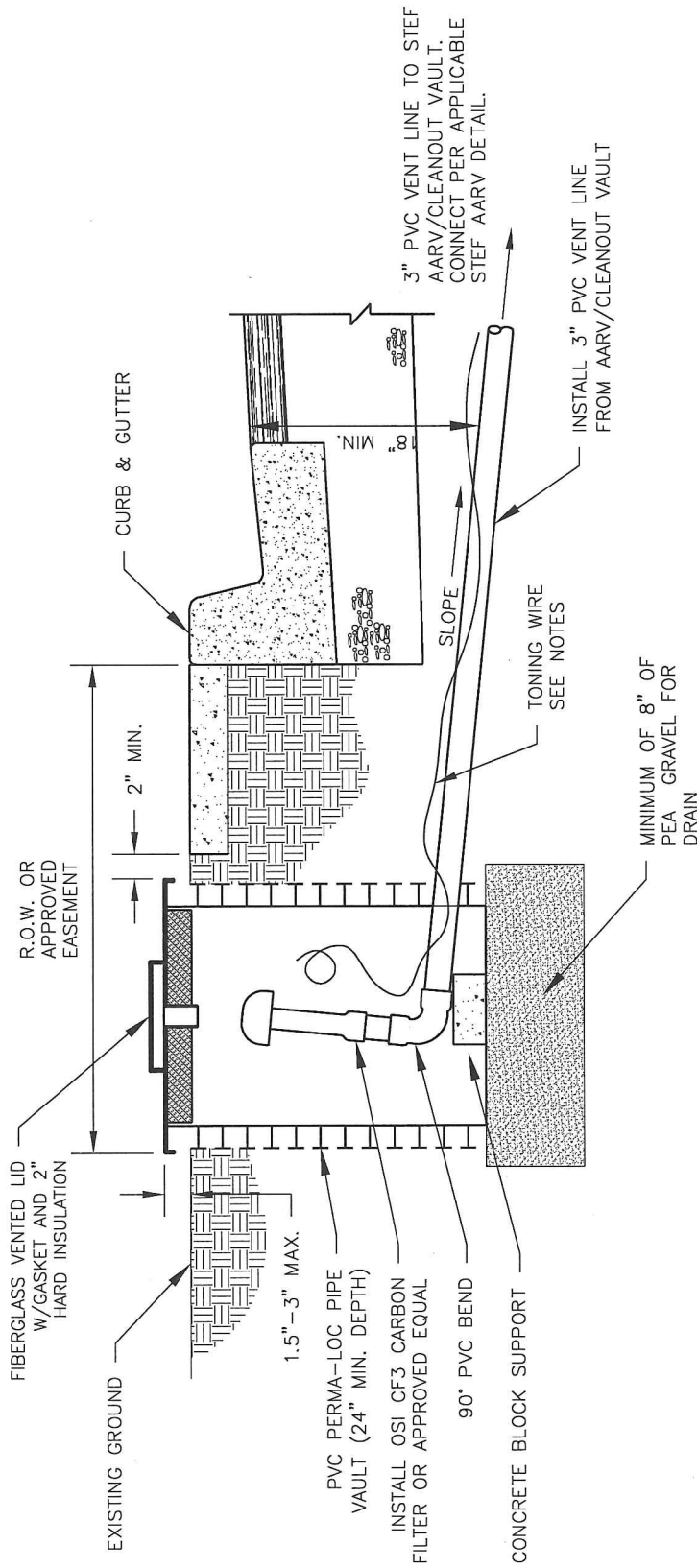


CITY OF CAMAS ~ SANITARY DETAIL  
STEF SOIL FILTER

DETAIL APPROVED BY *[Signature]* DATE 1-4-11

DETAIL NO.  
SF12

NOT TO SCALE



**NOTE:**

1. SEE PLAN AND STREET SECTIONS FOR SIDEWALK LOCATION 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.
2. **14 GAUGE GREEN HMWPE INSULATED COPPER CLAD STEEL TONING WIRE REQUIRED**



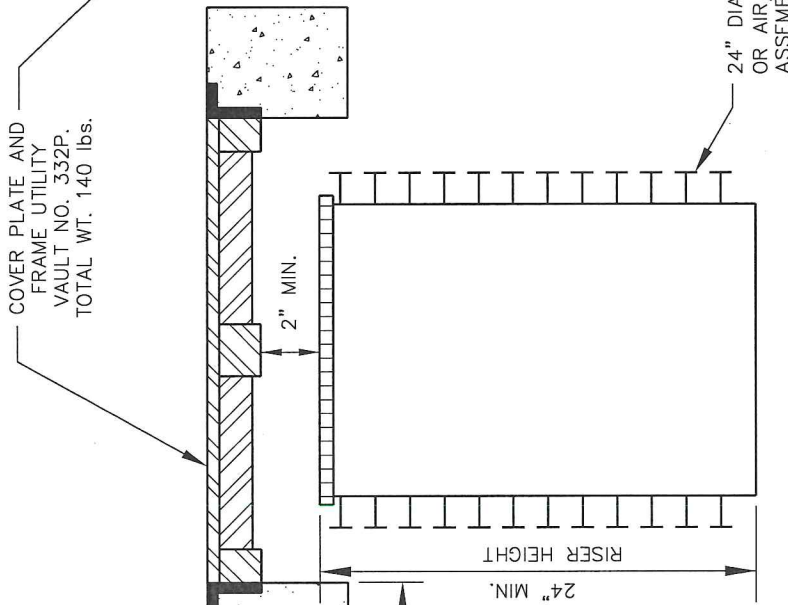
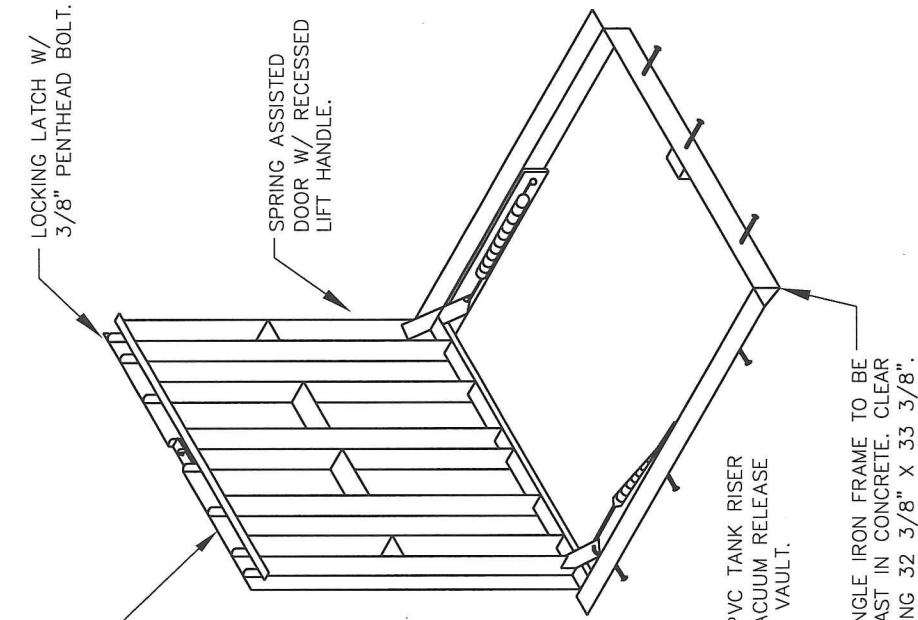
CITY OF CAMAS ~ SANITARY DETAIL  
 STEF CARBON FILTER

*David P. Cantor* 1-4-11  
 DATE

NOT TO SCALE

DETAIL NO.  
 SF13

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



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.



CITY OF CAMAS ~ SANITARY DETAIL  
STEF TRAFFIC BEARING RISER LID

DATE: 1-4-11  
APPROVED BY: *Jim P. ...*

NOT TO SCALE

DETAIL NO.  
SF15

REV. NO.	DATE	BY	APPR.
1	1/1/11	SCD	JC