

RESOLUTION NO. 6490-2022

RESOLUTION OF THE CITY COUNCIL OF THE CITY OF SEBASTOPOL
ADOPTING THE WATER AND SEWER STANDARD DETAILS

WHEREAS, the City of Sebastopol has standard details, more commonly referred to as “Standards”, for construction of public improvements, which include streets, water, sewer, and storm drain facilities to provide minimum standards and engineering and construction best practices for private developers and contractors; and

WHEREAS, it is necessary to periodically update the Standards to remain compliant with current engineering and construction best practices, and state and federal regulations; and

WHEREAS, the City of Sebastopol last adopted the Street Standards by Council passage of Resolution No. 6371 (2021) and the Water and Sewer Standards by Council passage of Resolution No. 4978 (1998); and

WHEREAS, the Water and Sewer Standards have now been updated, the City Engineer has reviewed these updates and the updated Water and Sewer Standards are ready to be adopted; and

WHEREAS, minor discrepancies may be found from time to time necessitating the City Engineer to periodically make minor changes to the Water and Sewer Standards to correct errors, conflicts, and discrepancies.

NOW, THEREFORE BE IT RESOLVED, that the City Council of the City of Sebastopol, as follows:

1. Finds the foregoing recitals are true and correct.
2. Adopts the Water and Sewer Standard Details (“Water and Sewer Standards”) dated October 2022 attached hereto as Exhibit “A,” and.
3. Authorizes the City Engineer to make minor changes to the Water and Sewer Standards from time to time to correct errors, conflicts, and discrepancies.

The above and foregoing Resolution was duly passed, approved, and adopted at a meeting by the City Council on the 15th day of November 2022.

I, the undersigned, hereby certify that the foregoing Resolution was duly adopted by City of Sebastopol City Council following a roll call vote:

VOTE:

Ayes: Councilmembers Glass, Gurney, Rich, Vice Mayor Hinton and Mayor Slayter
Noes: None
Absent: None
Abstain: None

APPROVED: 
Mayor Patrick Slayter

ATTEST: Mary C Gourley

Mary Gourley, Assistant City Manager/City Clerk, MMC

APPROVED AS TO FORM:



Larry McLaughlin, City Attorney



TRENCH BACKFILL AND RESURFACING

STD. NO.

R-1.4

SCALE: NONE

DRAWN: NB

APPROVED:

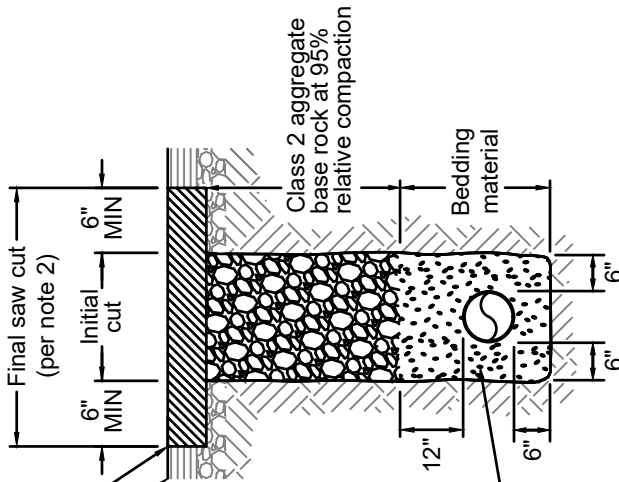
ML

DATE: OCT 2022

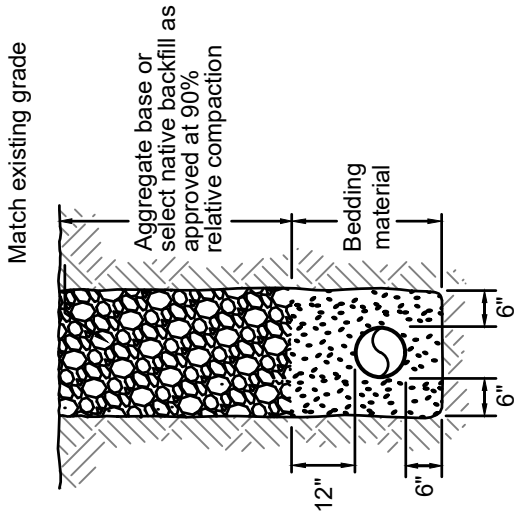
Page 5 of 88
11/15/2022

New AC trench plug shall be placed in 2 lifts (with tack coat) and shall match existing A.C. thickness plus 1" (4" min - 7" max)

Existing pavement (thickness varies)



Bedding material for all pipes except water service laterals shall be 3/8" crushed chips. Poly water services shall be bedded in #4 grade salt-free sand.

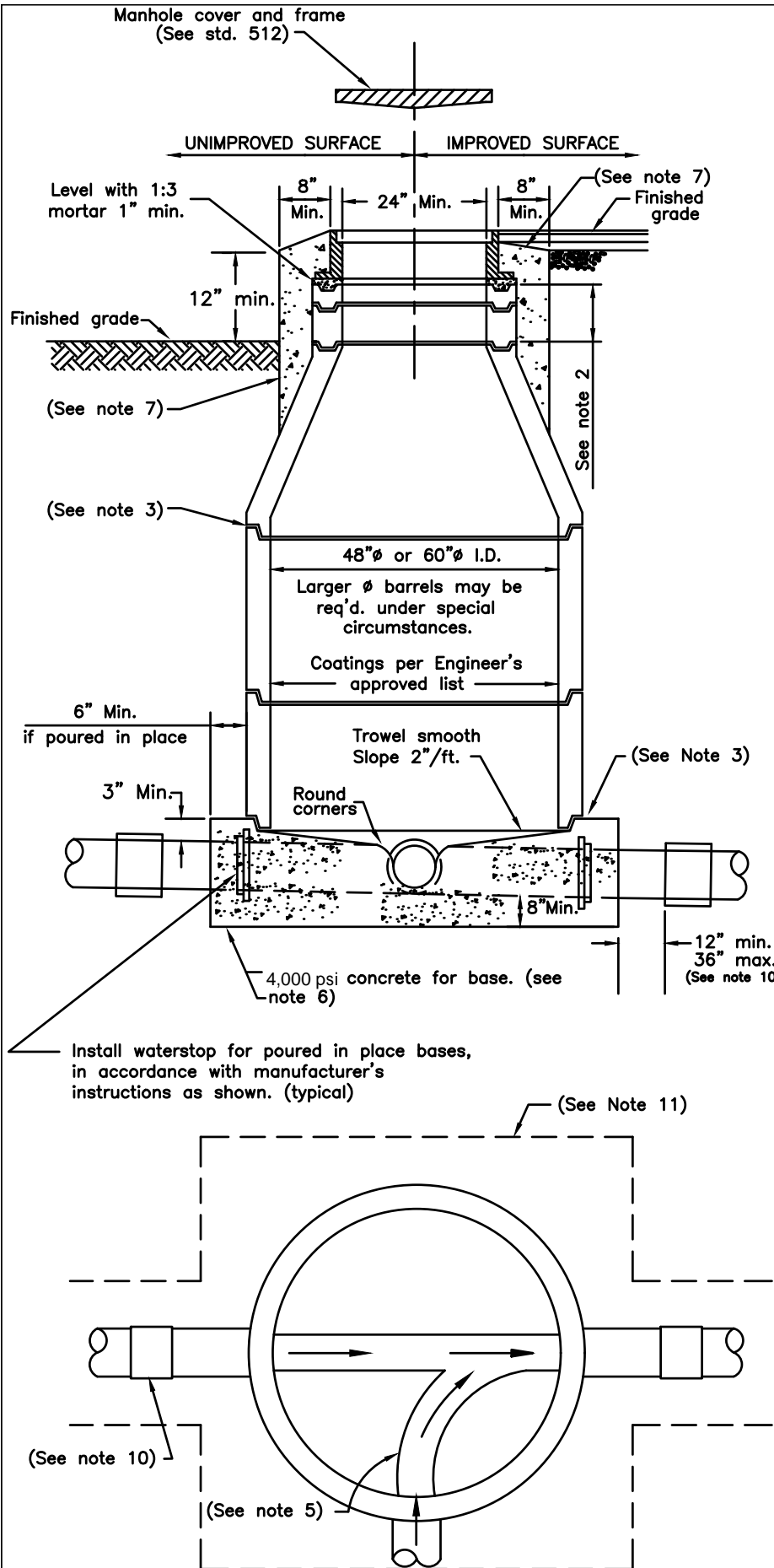


NON-PAVED AREAS

ROADWAYS / SIDEWALKS

NOTES:

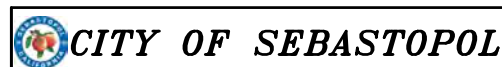
1. Where existing street is concrete overlaid with AC, the concrete section removed by trenching shall be replaced with AC to the required structural section.
2. Final trench paving is required to be expanded to a painted lane stripe, existing pavement patch, the lip of gutter or edge of pavement where such street feature is within 3 feet of the final saw cut.
3. If existing pavement adjacent to trench is cracked or damaged, final trench paving shall be extended to a location where a clean, smooth edge can be established.
4. Permanent paving must be completed within 30 days. AC or cutback (1" thick) may be placed as a temporary surface in roadway areas and shall be maintained until permanent paving is completed. Where warranted and at the discretion of the Public Works Inspector, trench plates may be used for up to 2 weeks. Trench plates shall have a skid resistant surface, secured with 24" wide collar of cutback around all sides of plate, and tapered to provide smooth transitions. Temporary surface and material shall be completely removed prior to placement of permanent pavement.
5. Contractor shall be responsible to provide adequate shoring to keep adjacent material from running into trench. Voids under pavement sections adjacent to the trench shall be filled with a 2 sack slurry or the pavement over such voids shall be removed and the area backfilled with Class 2 aggregate and compacted to 95% relative compaction.



NOTES:

1. When manholes are installed in unimproved areas, the top of the cover shall be a min. of 1 foot above grade.
2. Min. of one 3" grade adjustment ring. Max. height of grade adjustment rings = 20". Alternately, contractor may cast grade adjustment rings in place.
3. Set all barrel sections & taper on an approved seal per the Engineer's List of Approved Items, per manufacturer's instructions. Use two seals per joint in high water table areas.
4. Concentric taper sections shall be used on all manholes except where a drop inlet is installed. Eccentric taper section shall be use where one drop is required with opening over drop.
5. After lower ring section is set, break out top half of pipe flush with inside face of M.H. wall and construct shelf and u-shaped channel. Make elevation changes gradually and directional changes with smooth curves. Slope and size of channels shall match upstream and downstream pipes. Manhole channels with a horizontal change in direction of 30° or more shall have a minimum drop of 0.1' across the manhole or shall match the slope of the pipe, whichever is greater.
6. Poured-in-place base shall be poured full thickness on undisturbed soil. Precast base to be from Engineer's approved list and placed on 6" minimum of 3/4" drain rock installed against undisturbed earth.
7. 4,000 psi concrete for collar shall be 2" below finished grade.
8. Standard manhole barrel section per ASTM C478.
9. 48" ϕ I.D. M.H. to be used for sewer mains less than 18" ϕ . 60" ϕ I.D. M.H. to be used for all trunk and collector sewers 18" ϕ to 48" ϕ or where drop fittings are used.
10. Couplers used to connect PVC to PVC shall be SDR 26 gasketed type. Flexible transition couplers shall have stainless steel shear bands. For DIP see Water Standards. Coupler to be installed in mainline trench and out of manhole excavation.
11. Excavation shall be a minimum of 24" wider than barrel sections to allow for proper compaction and testing.
12. See City of Santa Rosa Sewer Construction Specifications regarding poured-in-place base over existing asbestos cement pipe.

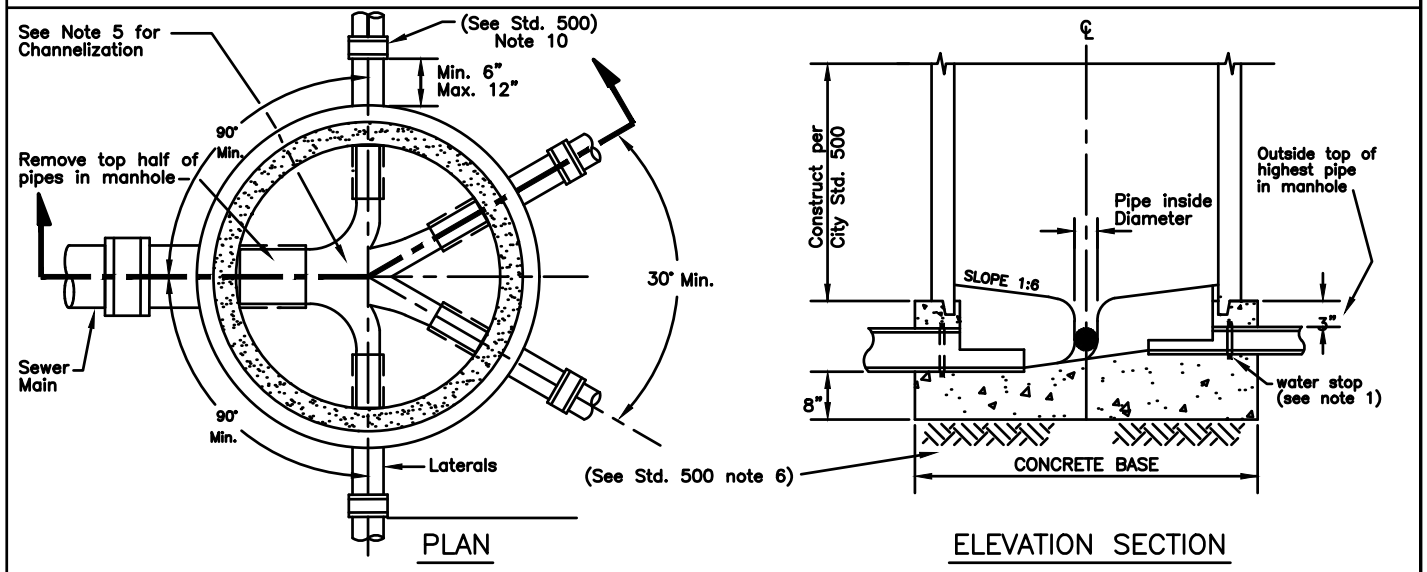
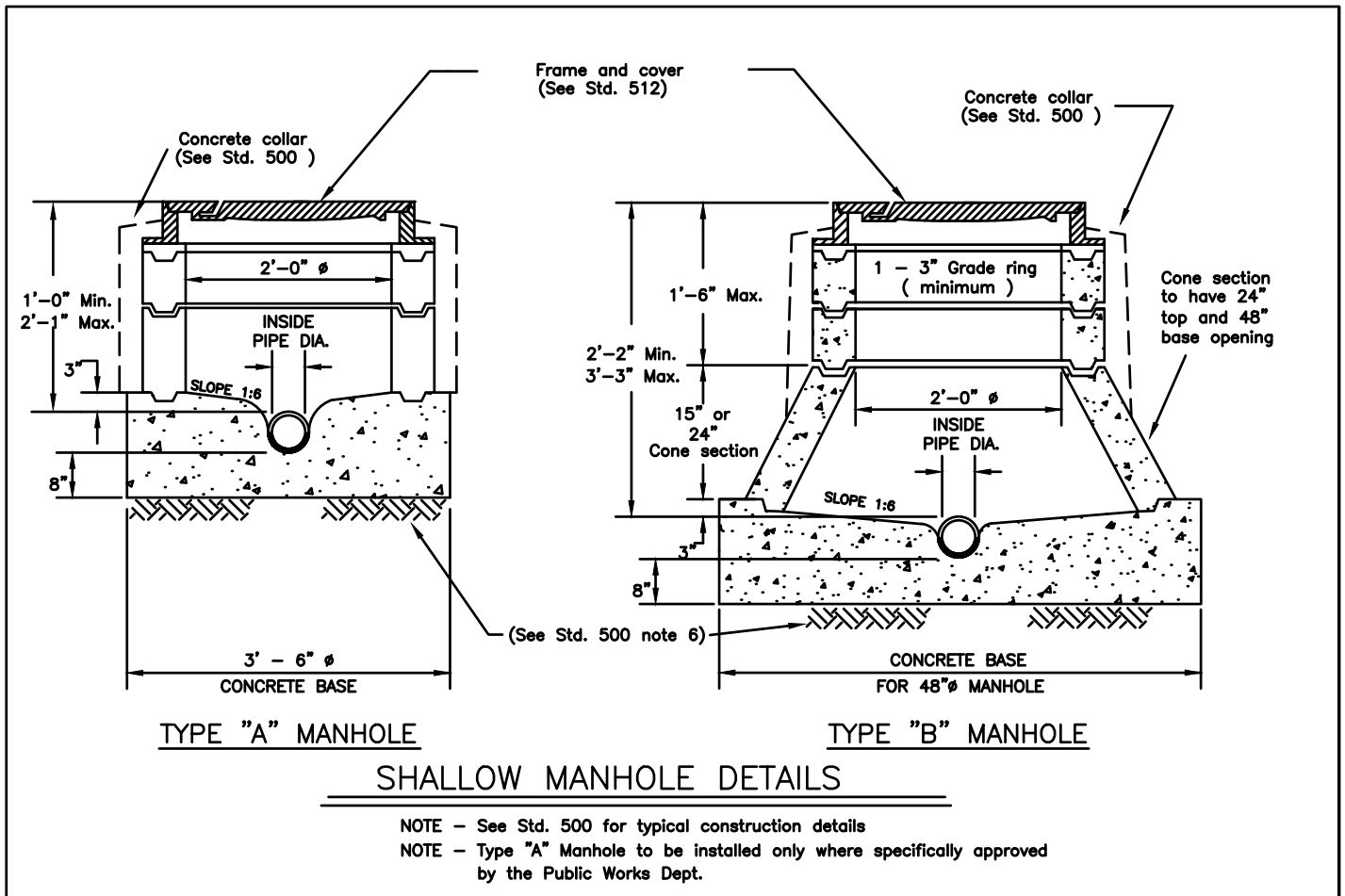
MANHOLE BASE
CHANNELIZATION PLAN AND LOCATION OF
ECCENTRIC MANHOLE COVER



**STANDARD PRECAST
CONCRETE MANHOLE for
SANITARY SEWER**

SCALE: NONE | DATE: OCT 2022

DWN: NB | APPROVED | FILE NO.
CHK: DDP | ML | 11/15/2022 | STD.- 500

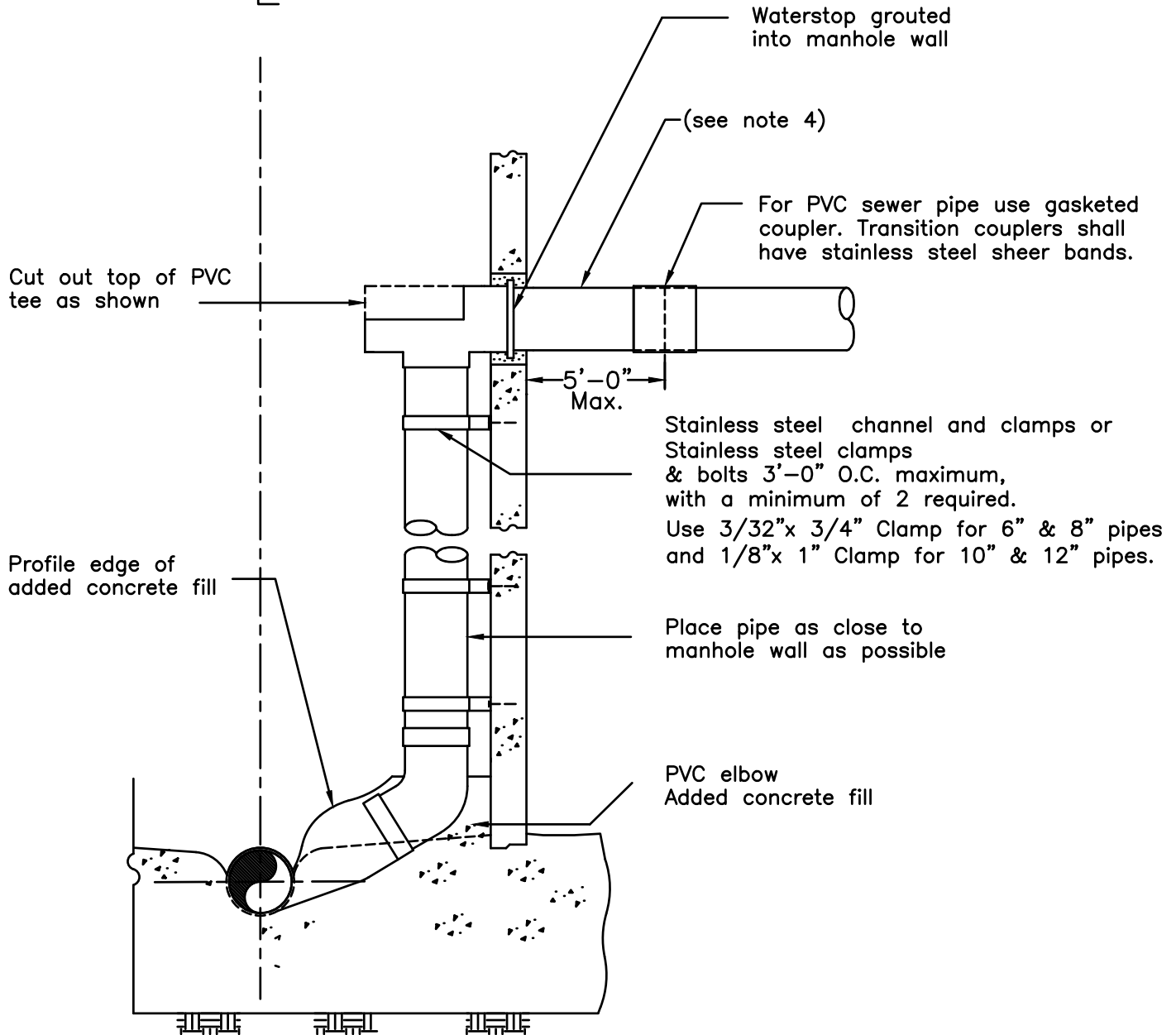


- NOTES:**
1. An approved water stop shall be installed on all pipe entering or leaving a manhole and centered under manhole wall as shown.
 2. The elevations of the top of all pipes entering the manhole base block shall be the same.
 3. The maximum number of laterals to be connected to a manhole is (4) four.
 4. See Std. 500 for manhole construction details.
 5. The channels shall be formed to provide smooth flow through the manhole to the satisfaction of the City Engineer.
 6. Channels and laterals through the exterior of the base shall be constructed radially.
 7. Long radius sweeps may be needed outside of the junction structure.

CITY OF SEBASTOPOL		
SHALLOW MANHOLES AND JUNCTION STRUCTURES FOR MULTIPLE LATERALS		
SCALE: NONE	DATE: OCT 2022	
DWN: NB CHK: DDP	APPROVED ML	FILE NO. STD.-502


Page 5 of 68
11/15/2022

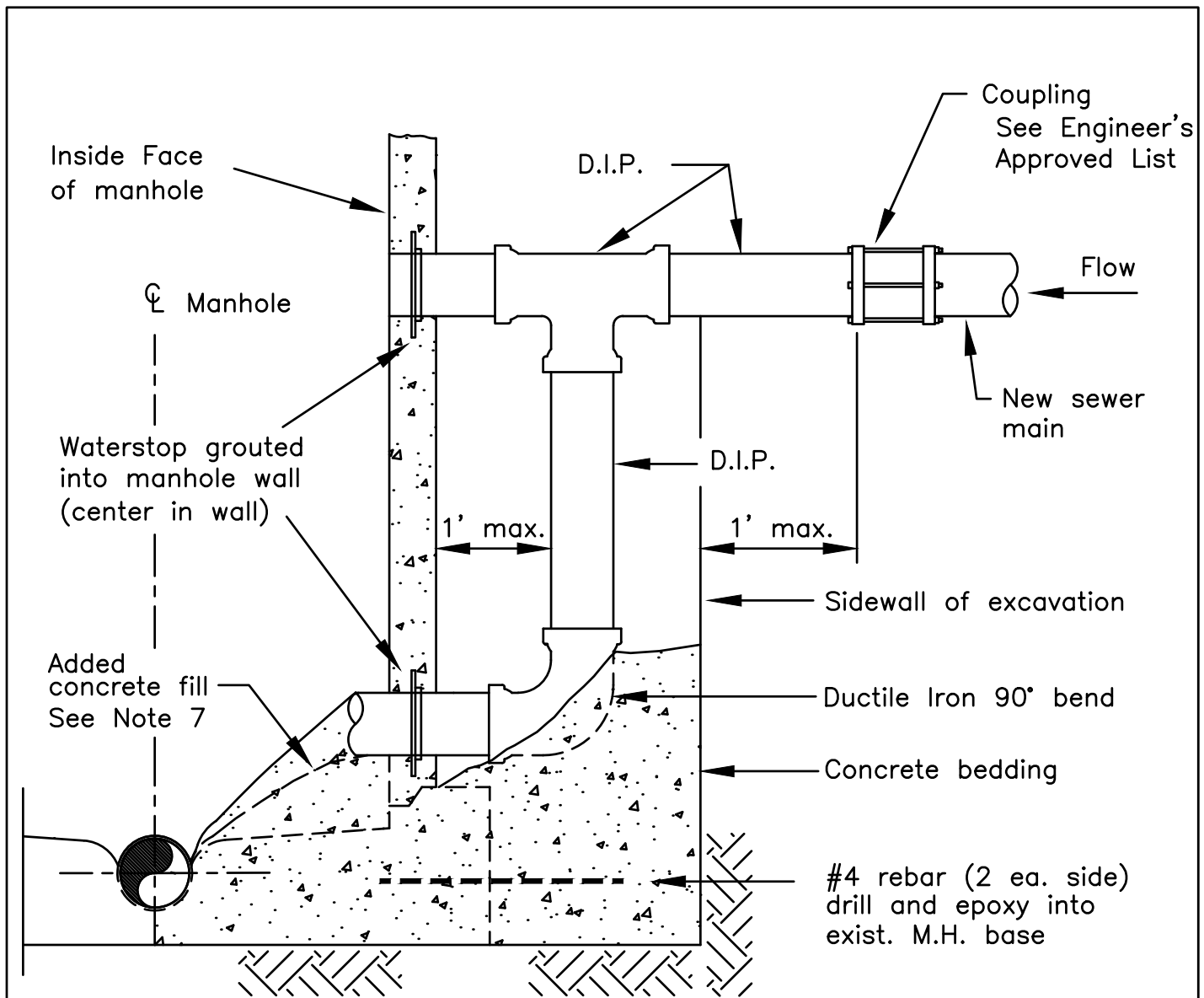
CL M.H.



NOTES:


1. Manholes constructed using this standard shall be 60" in diameter and installed in conformance with Standard 500. Use 72" MH where there are two drop connections.
2. Enclose elbow in concrete. Form smooth channel with sweep to manhole flowline.
3. Install waterstop in accordance with manufacturer's instructions as shown.
4. Pipe shall be PVC SDR 26 unless otherwise approved, and shall be the same nominal size as incoming pipe.
5. All piping inside manhole used to construct the drop shall be SDR 26 solvent weld material. PVC primer and cement shall be per pipe manufacturer's instructions.

 CITY OF SEBASTOPOL		
INSIDE DROP MANHOLE		
SCALE: NONE	DATE: OCT 2022	
DWN: NB CHK: DDP	APPROVED ML	FILE NO. SD-503



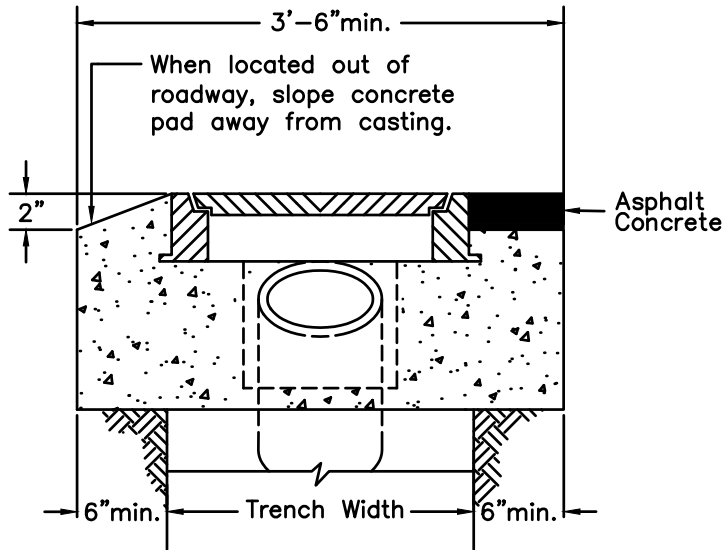
NOTES

1. Ductile iron pipe shall be pressure class 350 per AWWA C151.
2. Pipe and fittings shall be furnished with push – on or mechanical joints. Fittings shall conform to ANSI/AWWA C110/C153.
3. To be installed only where specifically approved by the Public Works Dept.
4. Drop inlet pipe and fittings shall be the same size as the incoming sewer main.
5. See Standard 503 for standard inside drop installation.
6. Install waterstop in accordance with manufacturer's instructions as shown.
7. Form smooth channel with sweep to manhole flowline.

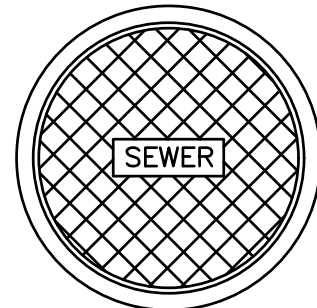
 CITY OF SEBASTOPOL		
OUTSIDE DROP MANHOLE		
SCALE: NONE	DATE: OCT 2022	
DWN: NB CHK: DDP	APPROVED ML	FILE NO. 11/18/2022 Std - 504

APPROVED FRAME & COVER

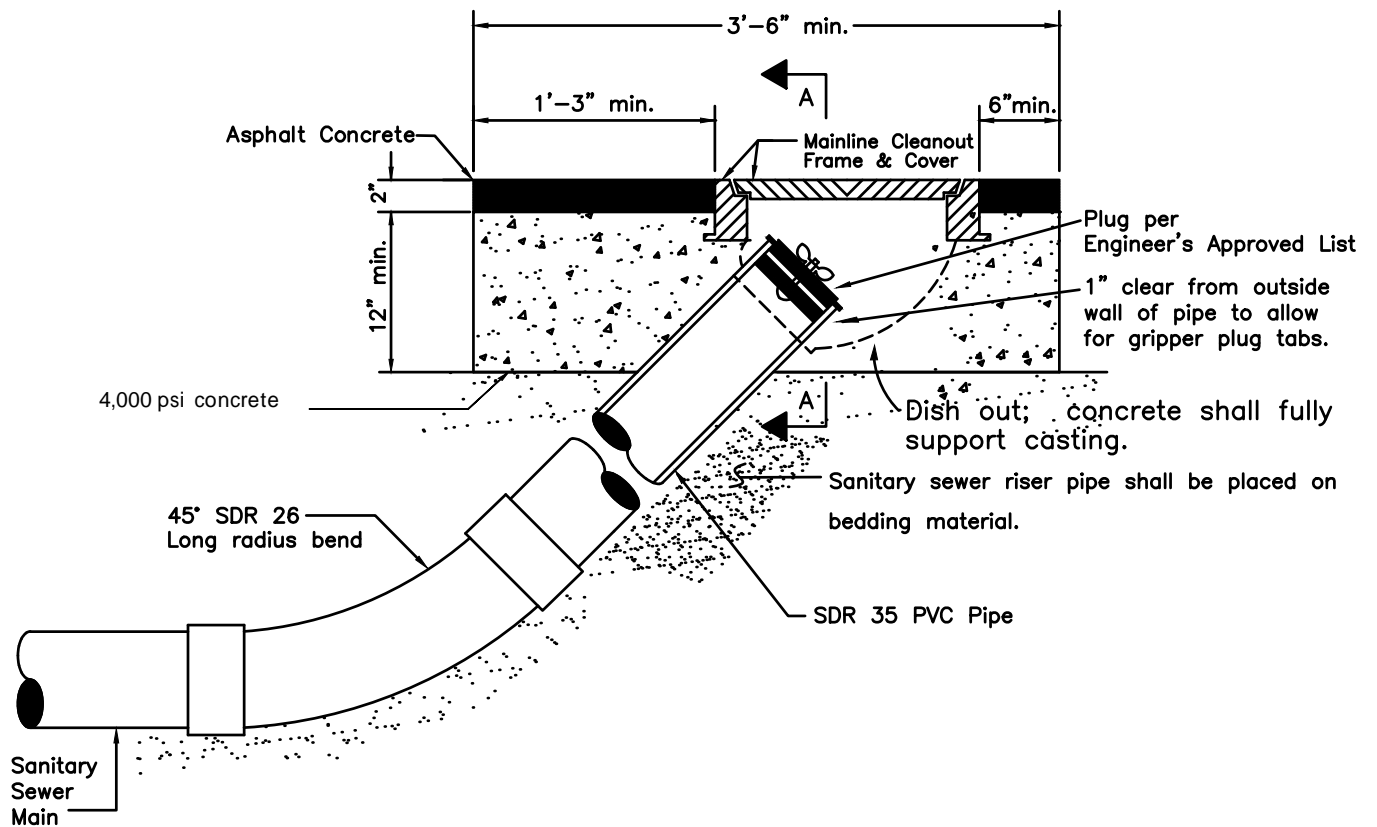
See Engineer's Approved List



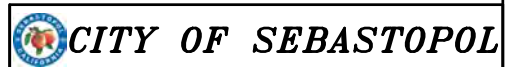
SECTION A-A



PLAN VIEW



Note: To be used for main sizes 10" or less and where sewer main will not be extended.



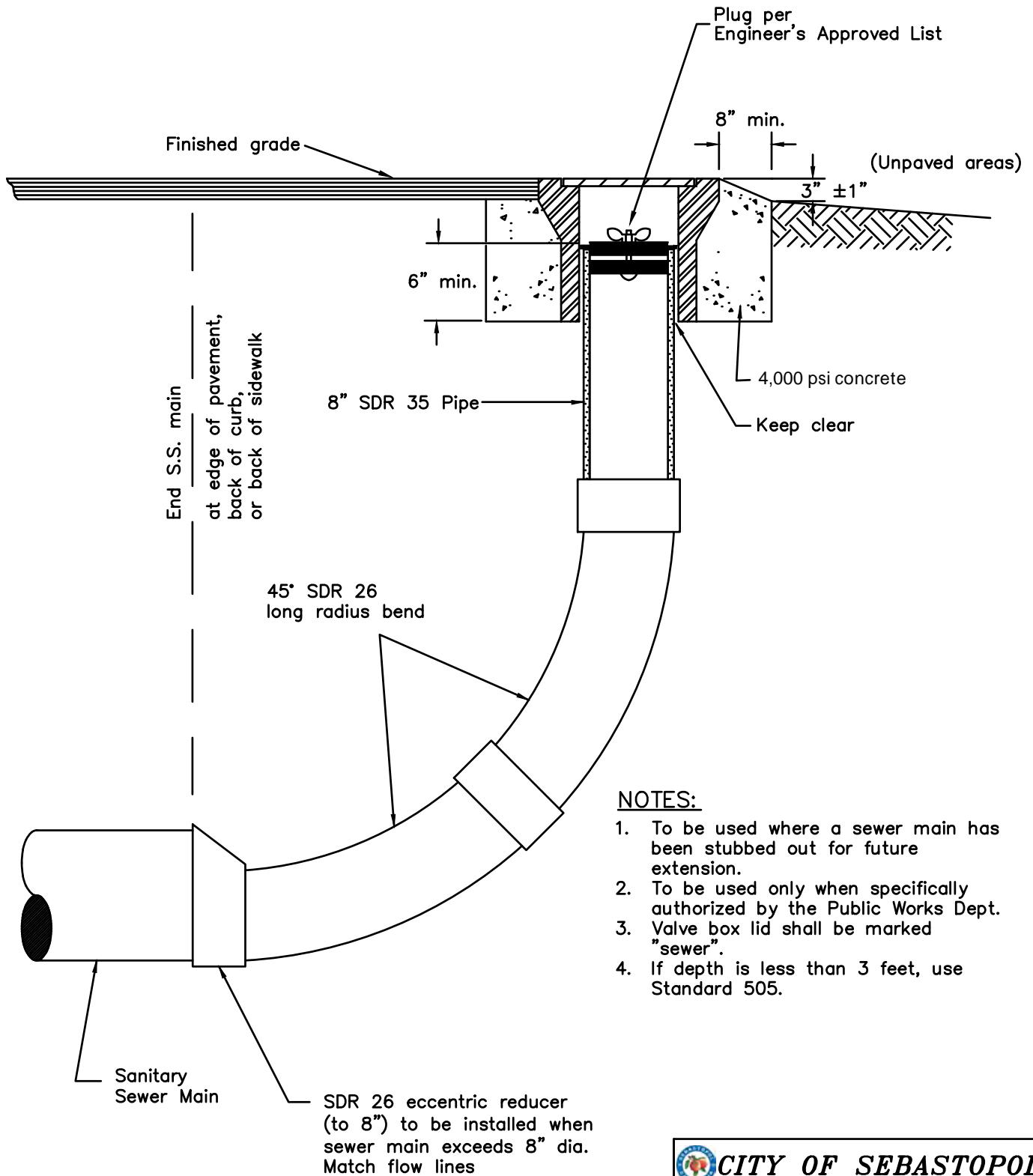
MAIN LINE CLEANOUT PERMANENT

SCALE: NONE | DATE: OCT 2022

DWN: NB | APPROVED | FILE NO.
CHK: DDP | ME | STD.-505


APPROVED BOX & COVER

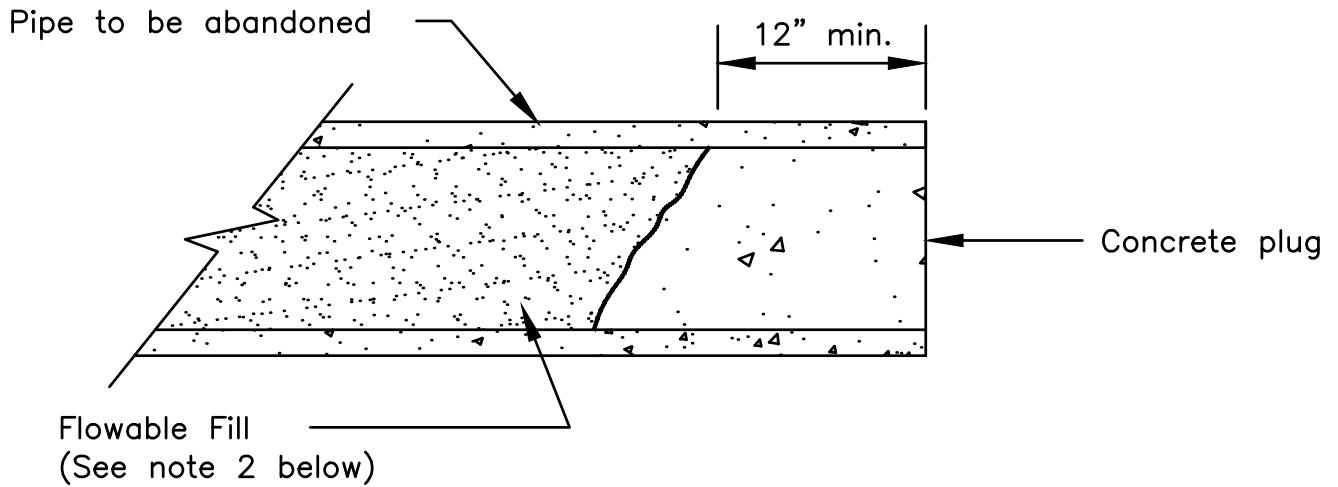
See Engineer's Approved List.



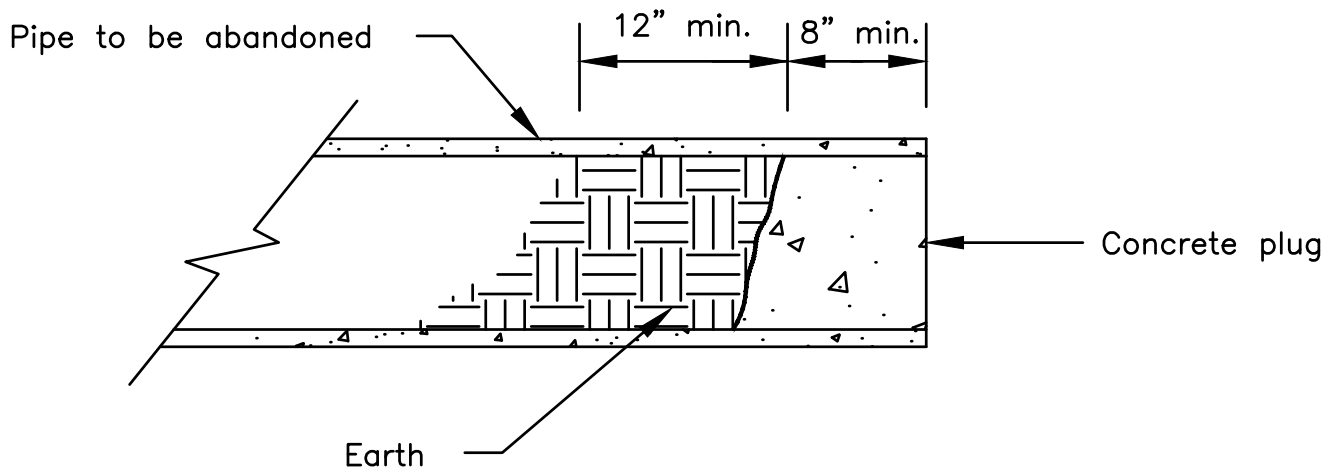
NOTES:

1. To be used where a sewer main has been stubbed out for future extension.
2. To be used only when specifically authorized by the Public Works Dept.
3. Valve box lid shall be marked "sewer".
4. If depth is less than 3 feet, use Standard 505.

 CITY OF SEBASTOPOL			
TEMPORARY MAINLINE CLEANOUT			
SCALE: NONE		DATE: OCT 2022	
DWN: NB	APPROVED	FILE NO.	
CHK: DDP	ML	Page 9 of 68	11/15/2022
			STD- 506




12" DIAMETER PIPE AND LARGER

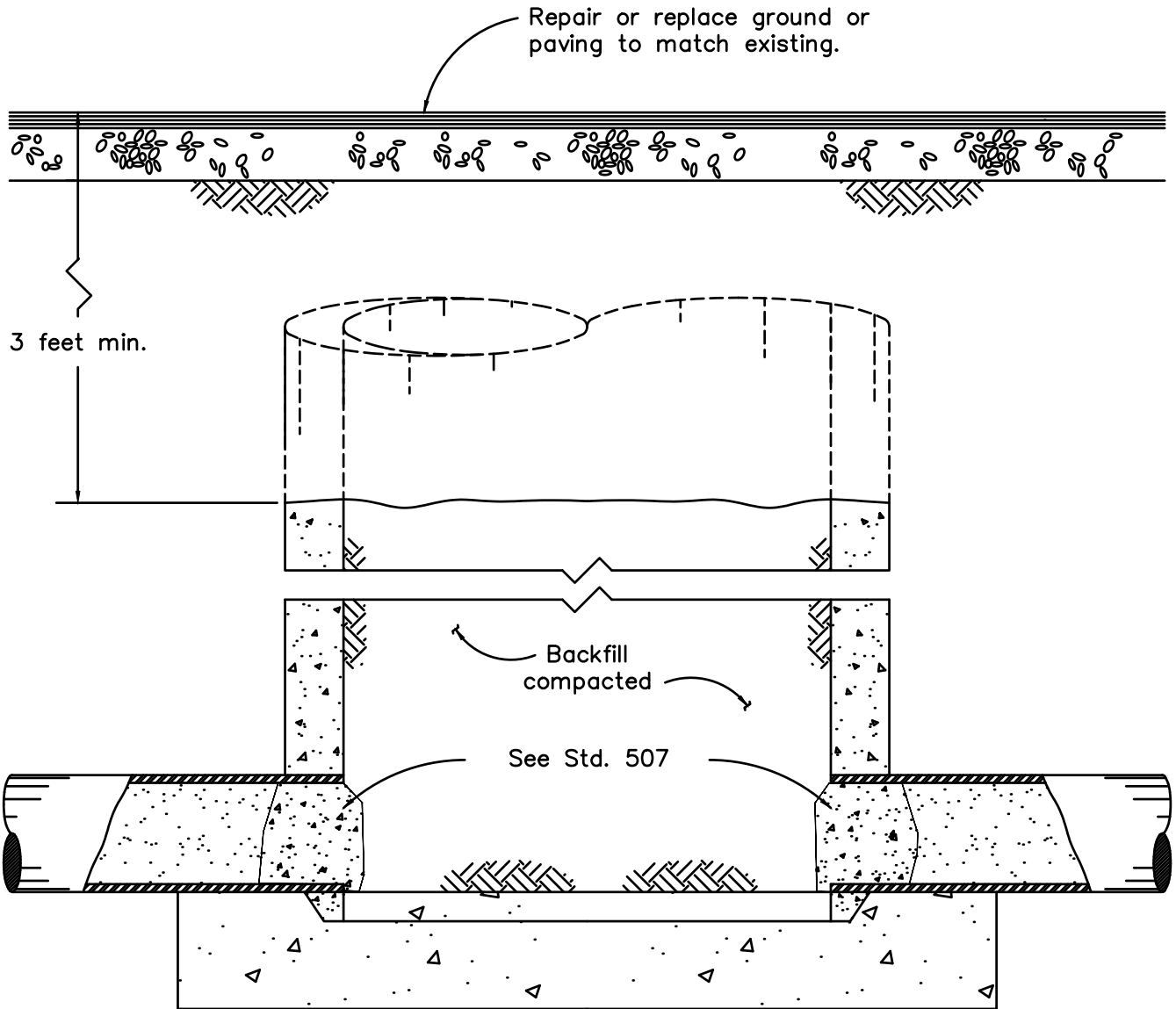


10" DIAMETER PIPE AND SMALLER

NOTES:


1. Pipe plugs shall be installed to the satisfaction of the Public Works Dept.
2. Unless otherwise approved by the Public Works Dept. abandoned pipes 12"Ø and larger shall be broken into every 50' and shall be filled completely with a flowable fill material approved by the Public Works Dept.

 CITY OF SEBASTOPOL		
ABANDONED PIPE PLUG		
SCALE: NONE	DATE: OCT 2022	
DWN: NB	APPROVED	FILE NO.
CHK: DDP	ML	507



NOTES:

1. Remove frame, cover, taper and barrel sections as required to a minimum of 3' below finished grade.
2. After plugging all pipes in manhole, the remaining portion of the barrel section and all voids created by the removal of the upper portions of the manhole, shall be backfilled and compacted to 90% relative density. Use trench backfill or pipe bedding material.

 CITY OF SEBASTOPOL		
ABANDONED MANHOLE		
SCALE: NONE	DATE: OCT 2022	
DWN: NB	APPROVED	FILE NO.
CHK: DDP	ML	508

APPROVED MANHOLE FRAME & COVER

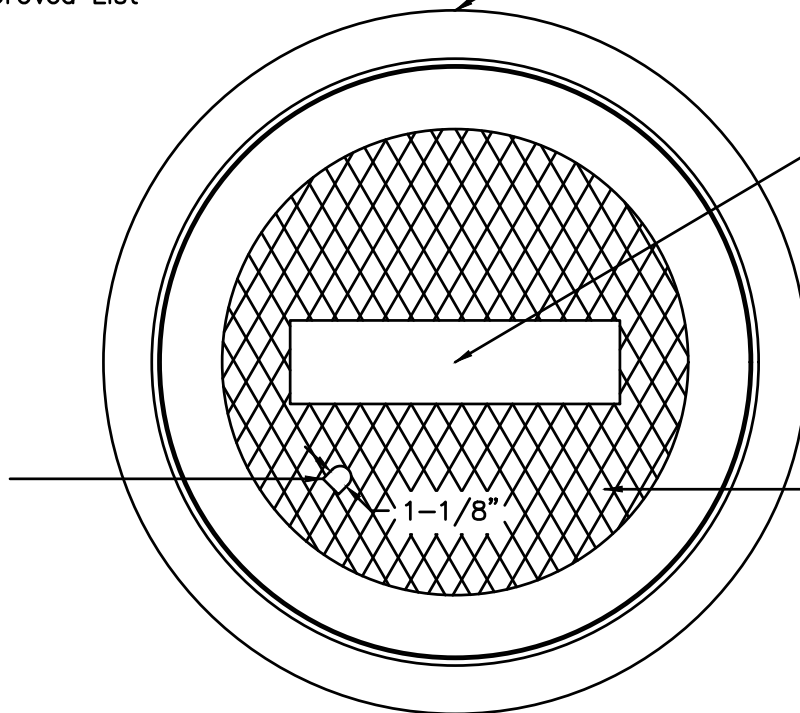
See Engineer's Approved List

Standard 24" heavy duty, non rocking manhole frame and cover.

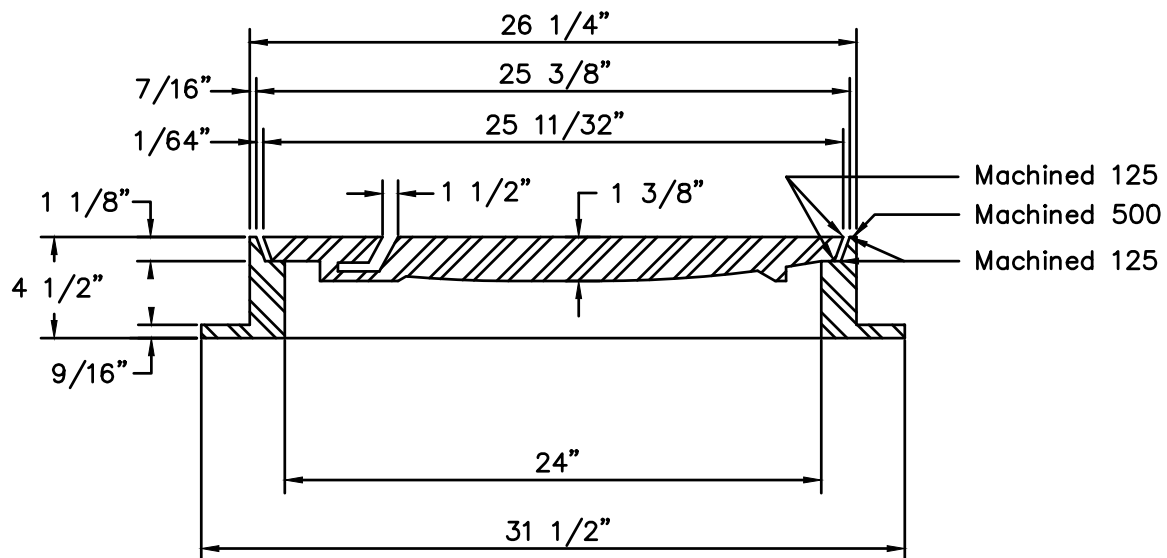
"STORM DRAIN"
"SANITARY SEWER"
"ELECTRICAL VAULT"
"WATER"

As required for type of utility.

One closed pick hole per cover




Grid pattern



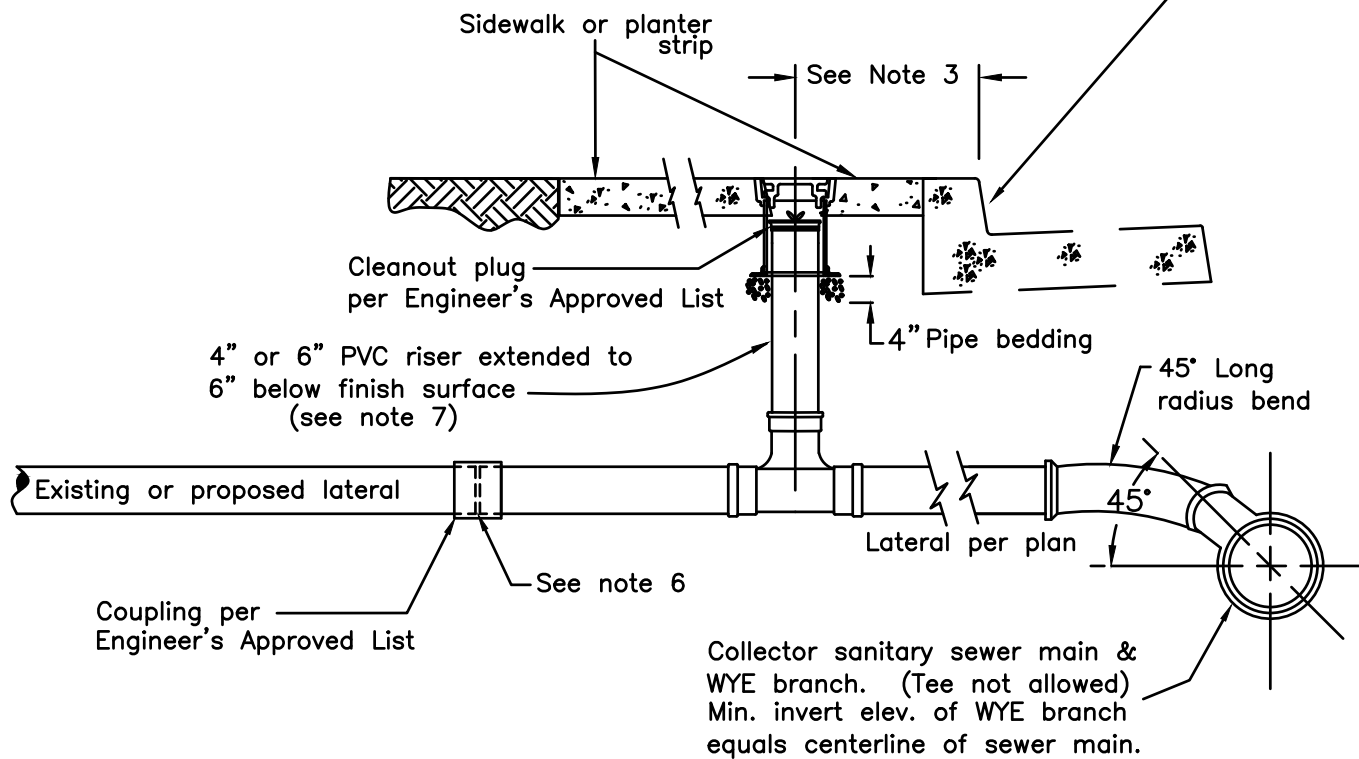
NOTES:

1. Specify sanitary sewer, storm drain, electrical vault, or water when ordering. All castings shall be dipped in approved ASPHALTUM or BITUMINOUS Paint.
2. All material used in manufacturing shall conform to A.S.T.M. designation A-48 Class 35 B, or of United States Government Specifications QQ1-652b.
3. Minimum weight components: Cover - 130 pounds
Frame - 135 pounds
4. Bolt down covers are required on all sewer mains located in easements, on school grounds, through parks, and on any manhole within 1000ft of a creek. Bolts shall be 1/2"Ø stainless steel with 3/4" hex head. Coat the bolt threads on the final bolt up with "anti-seize" or teflon based pipe dope.

 CITY OF SEBASTOPOL		
MANHOLE FRAME and COVER		
SCALE: NONE	DATE: OCT 2022	
DWN: NB	APPROVED ML	FILE NO.
CHK: DDP	Page 12 of 68 11/15/2022	STD.-512

Cleanout box per
Engineer's Approved List

4" high "S" marked on
face of curb or at back of sidewalk
for lateral location.




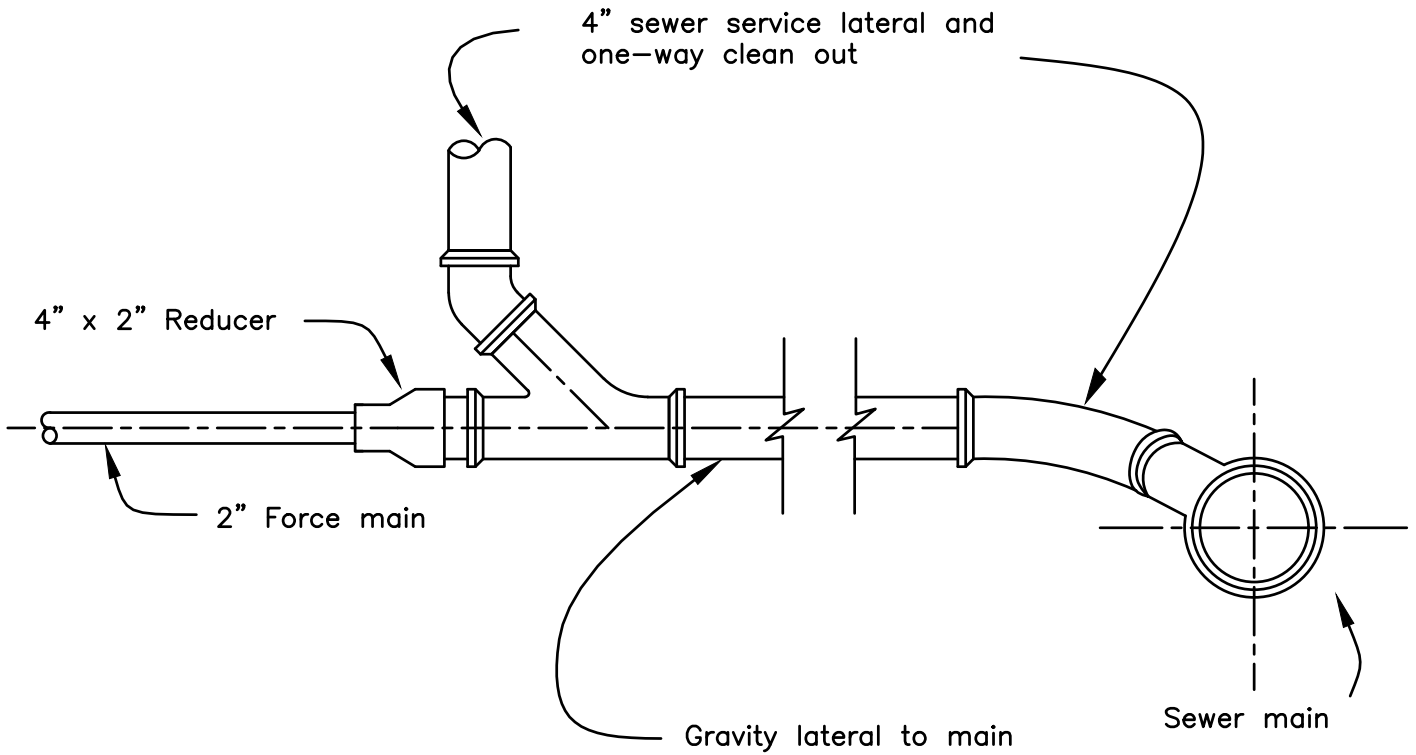
NOTES:

1. The sewer service lateral shall be of sufficient depth to adequately serve the building site, and in no case shall be less than 3 FT. deep at the back of the P.U.E. unless matching existing conditions on rehabilitation projects or as otherwise authorized by the Public Works Dept.
2. Where problems are anticipated in providing sewer service to a given building site, the lateral invert at the back of the P.U.E. shall be staked by the Owner's Engineer.
3. Cleanout must be installed within the Public Right of Way or P.U.E. Install 18" to 24" behind face of curb if field conditions allow. If unable to install 18" to 24" behind face of curb, install behind sidewalk to a maximum of 12". Where service is in driveway, install at back of sidewalk.
4. In cases where the cleanout installation conflicts with existing facilities, the contractor shall verify any alternate location with the City's Engineer prior to installation.
5. Minimum 2% slope for 4" laterals and a min. 1% slope for 6" laterals are required unless a variance is specifically approved by the Public Works Dept. and the Building Official.
6. If connecting to an existing lateral, tie in at a minimum of 12" behind sidewalk or P.U.E. If new construction, and property lateral is not yet installed, extend to 1' behind sidewalk or P.U.E. and cap or plug watertight.
7. Lateral material shall be SDR 26 PVC or Ductile Iron pipe. Riser pipe shall be SDR 35 or 26 on 4" lateral and SDR 35 on 6" lateral.
8. Cleanout components shall be the same size as the lateral pipe, and all PVC fittings shall be SDR 26.
9. If cover, at cleanout, is 5' or greater, or riser pipe must be installed more than 5' from vertical, construct sewer lateral with one way cleanout behind sidewalk or P.U.E.

LATERAL CONNECTIONS TO EXISTING MAINS:


Main Size & Material	Connection Type	Couplings
6-10" ACP, VCP	Cut in PVC wye w/18" spools each end	Rubber w/Steel shear bands
6-10" PVC	Cut in PVC wye w/18" spools each end	Rigid slip couplings
6-10" DIP	Cut in DIP wye w/18" spools each end	DIP couplings
12" and larger	Tap fitting: see Engineer's approved list	NA

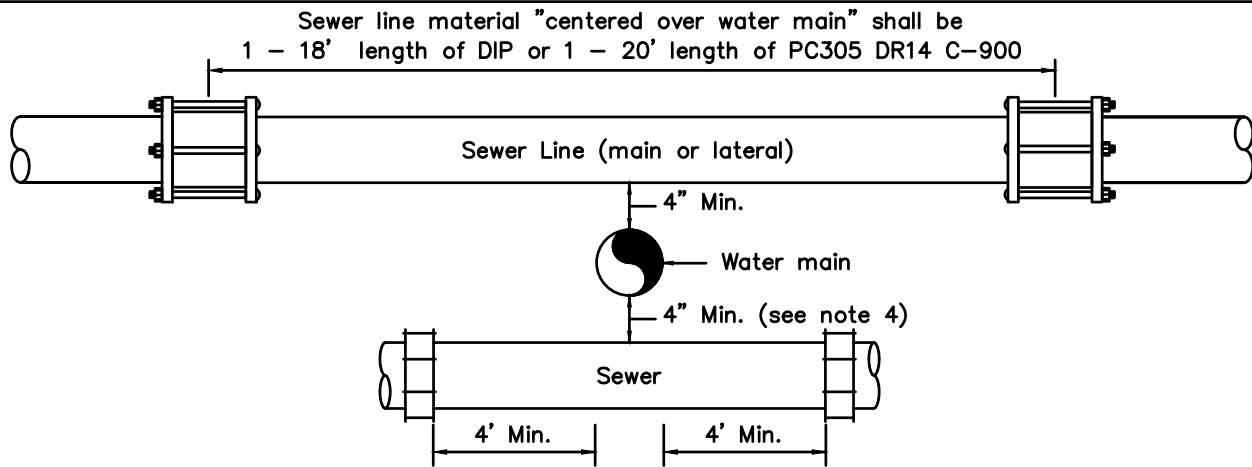
 CITY OF SEBASTOPOL		
4" & 6" SEWER SERVICE LATERAL and TWO WAY CLEANOUT		
SCALE: NONE		DATE: OCT 2022
DWN: NB	APPROVED	FILE NO.
CHK: DDP	ML	11/15/2022
		STD.- 513A



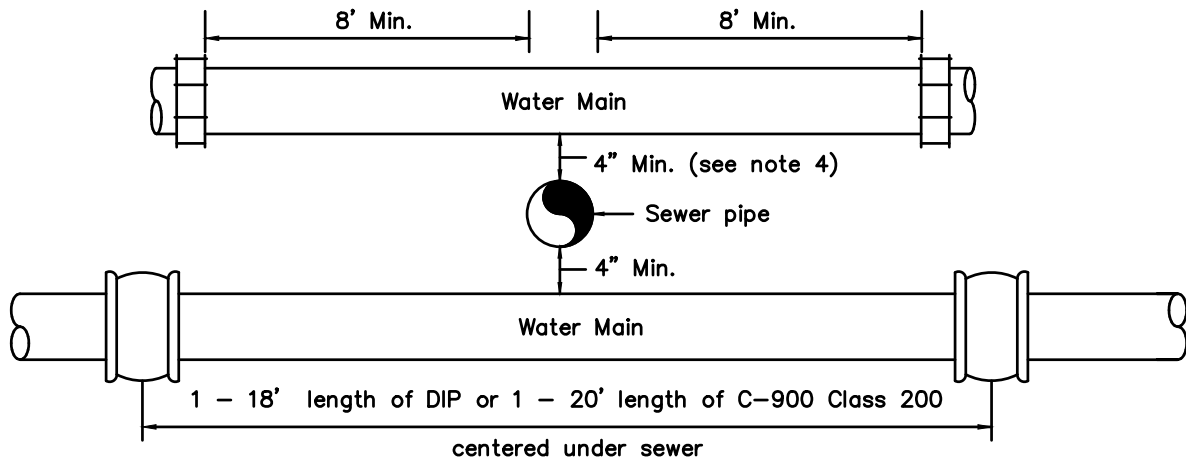
NOTES

1. Must be used for all private sewage lift station discharges. No discharges may be made directly to the collector sewer, trunk sewer, or manhole.
2. Any alternate design must be approved by the Public Works Dept.
3. Construction details, slope and materials conform to STD-513 A.

 CITY OF SEBASTOPOL		
DISCHARGE for PRIVATE FORCE MAIN		
SCALE: NONE	DATE: OCT 2022	
DWN: NB	APPROVED	FILE NO.
CHK: DDP	ML	Page 14 of 16 STD-513



SEWER OVER OR UNDER WATER



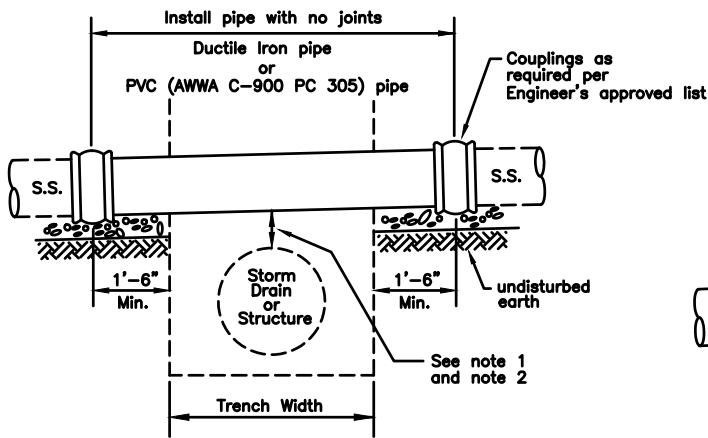
WATER OVER OR UNDER SEWER

NOTES:

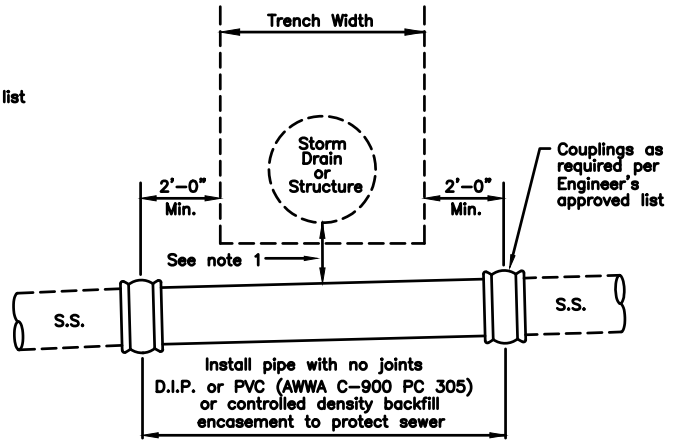
1. All installations shall conform to the State of California Water Resources Control Board "Criteria For The Separation of Water Mains & Sanitary Sewers".
2. This Standard applies to pipes less than 24" in diameter. All crossings of larger diameter shall be as approved by the Public Works Dept.
3. All new Ductile Iron shall be wrapped in polyethylene per City of Santa Rosa Construction Specifications.
4. Per State Std.'s, a min. 4" clearance is required where sewer crosses below a water main. Where there is 1' or more vertical clearance, no special installation is required.
5. Any pipe / pipe crossings with less than 6" vertical clearance shall be padded with styrofoam, felt expansion joint material, or other expansive materials between pipes as approved by the Public Works Dept.

APPROVED COUPLINGS
See Engineer's Approved List

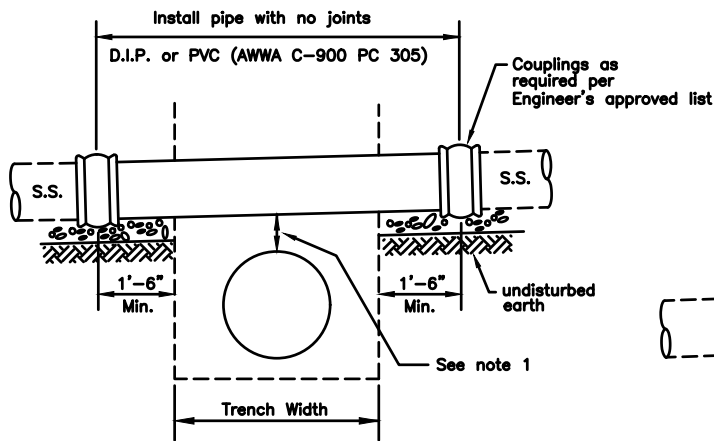
CITY OF SEBASTOPOL		
SEWER-WATER MAIN CROSSING DETAILS		
SCALE: NONE	DATE: OCT 2022	
DWN: NB CHK: DDP	APPROVED ML	FILE NO. STD.- 516



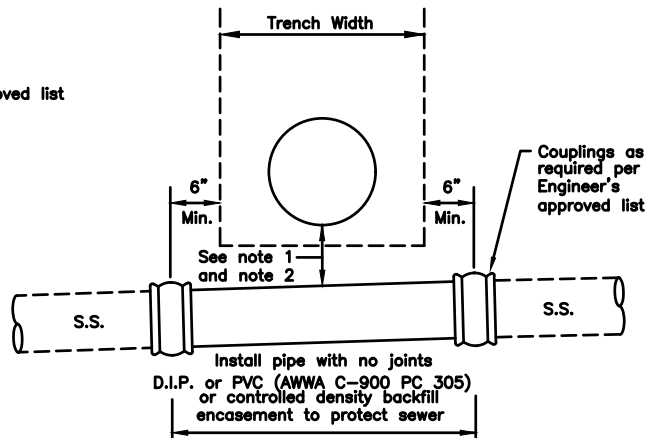
INSTALLATION OVER PIPE OR STRUCTURE



INSTALLATION UNDER PIPE OR STRUCTURE

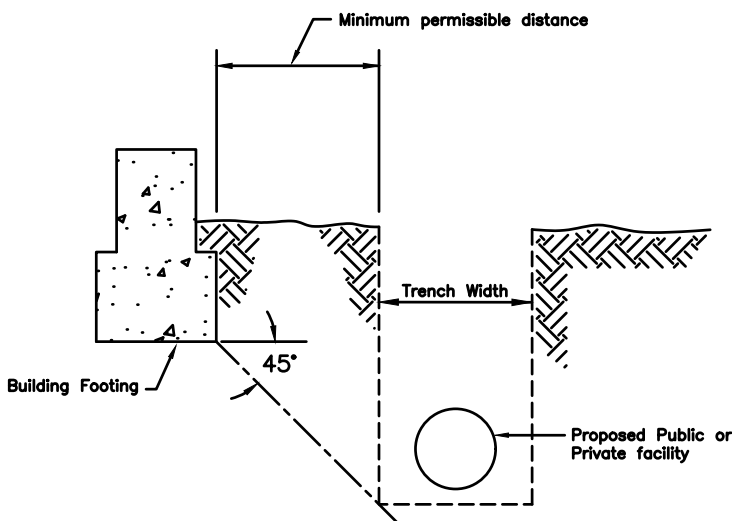


INSTALLATION OF PIPE OR STRUCTURE UNDER SANITARY SEWER




INSTALLATION OF PIPE OR STRUCTURE OVER SANITARY SEWER

- NOTES: 1. 1" minimum vertical clearance is required between pipes. Where clearance is less than 6", install felt expansion material or styrofoam between pipes.
2. This installation detail is required only if clearance is less than 1'.
3. Ductile Iron pipe shall be encased in polyethylene film per City of Santa Rosa Construction Specifications.
4. Sewer/Water separation criteria are not part of this City Standard. See Appendix "A" of the City of Santa Rosa Water Distribution System Design Standards.
5. S.S.= Sanitary Sewer



DETAIL OF BUILDING SETBACK FROM UNDERGROUND UTILITY

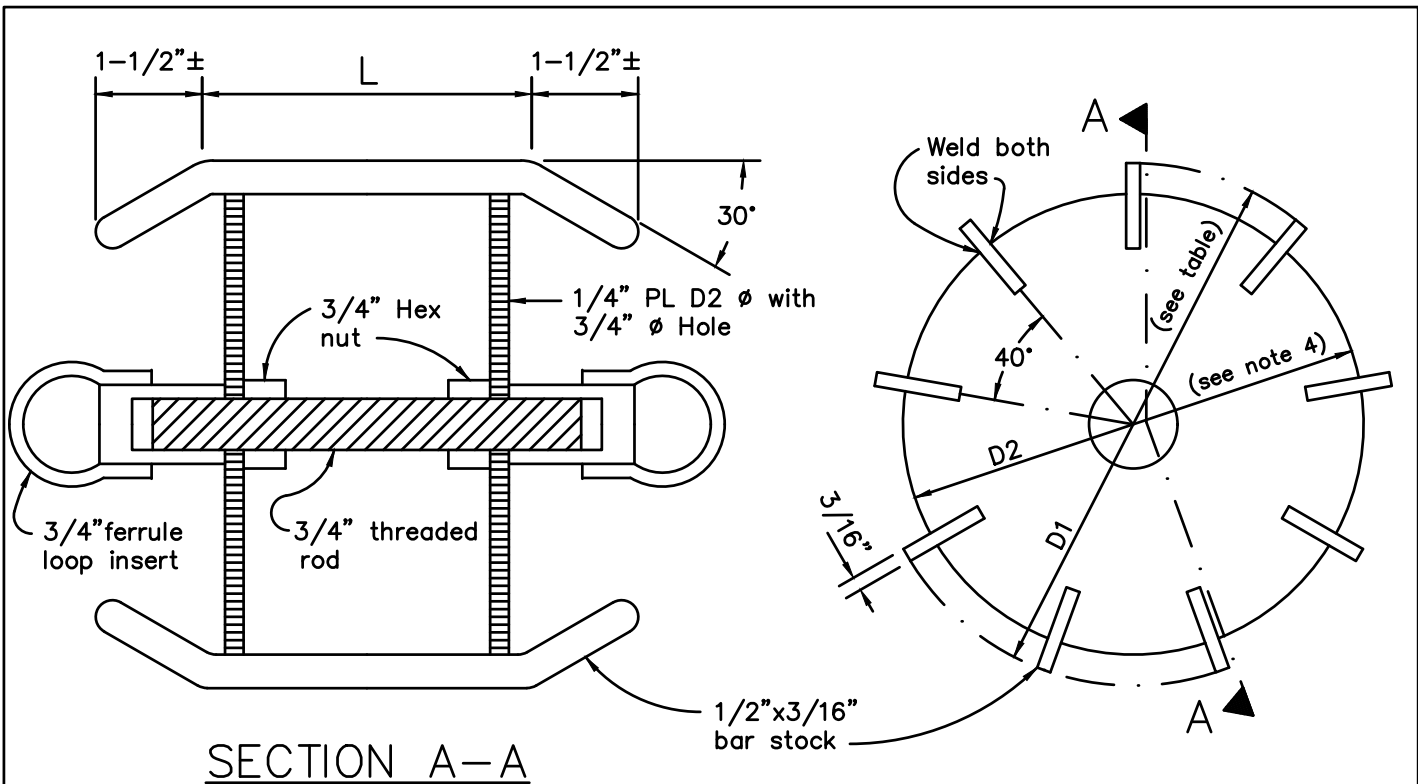
* NOTE: REQUIRED PER CA UNIFORM PLUMBING CODE SECTION 314.1 2013 Rev.

 **CITY OF SEBASTOPOL**

MISCELLANEOUS PIPE INSTALLATION DETAILS

SCALE: NONE | DATE: OCT 2022

DWN: NB | APPROVED: ML | FILE NO. |
 CHK: DDP | 11/13/2022 | STD-517




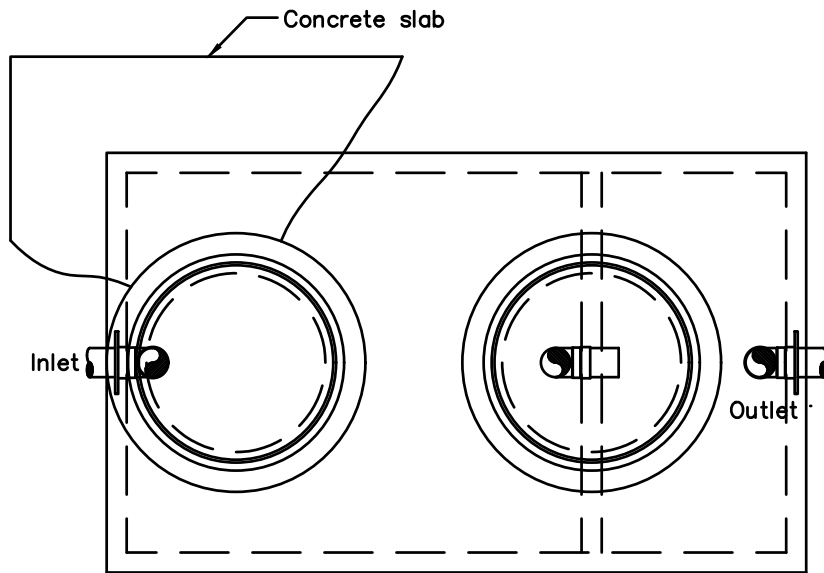
NOTES:

1. Mark all materials with ASTM specification number, SDR number and deflection.
2. Plate diameter shall be 1" less than the mandrel diameter.
3. The 1/2" Bar Stock on edge provides clearance to pass small amounts of soil which may be in pipe.
4. Mandrel diameter has been calculated based on section 306-1.2.12 of the "Greenbook" Standard Specifications for Public Works Construction and or dimensions given in Table 1 of ASTM Standard D3034.
5. Alternative designs that match the deflection dimensions shown may be submitted for review.

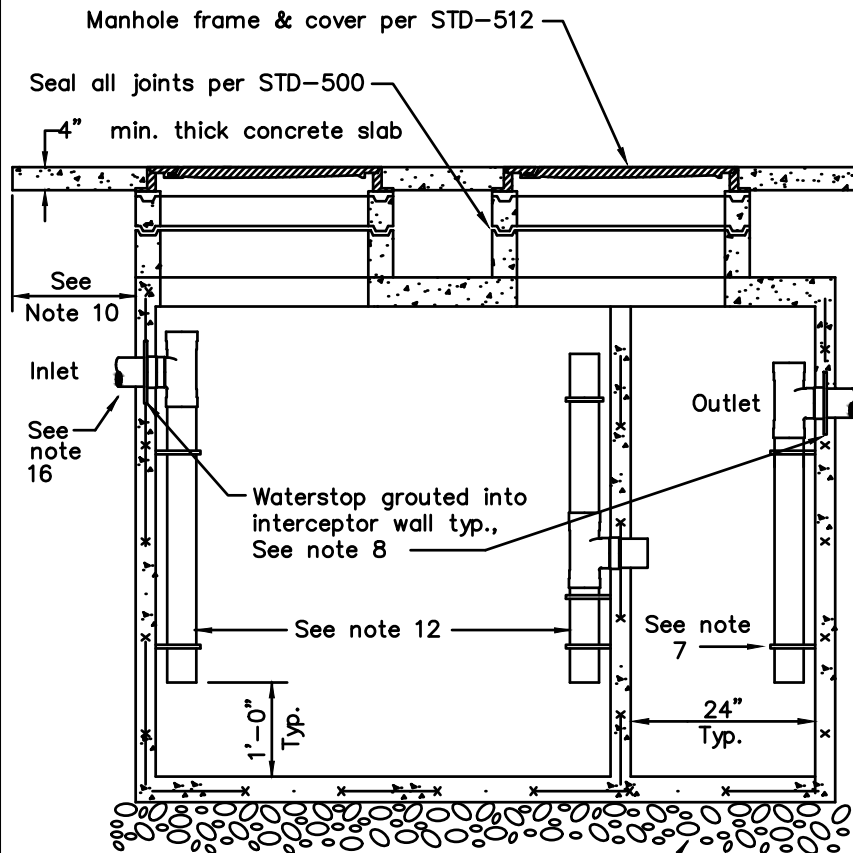
		MANDREL DIAMETER (D-1) SEE NOTE 4	
		5% DEFLECTION	
Nom. Pipe Dia.	L	SDR 35	SDR 26
6	6"	5.619	5.503
8	8"	7.524	7.366
10	10"	9.405	9.207
12	12"	11.191	10.961
15	15"	13.849	13.559
>15	*	*	*

*Request required mandrel dimensions from City.

 CITY OF SEBASTOPOL		
PVC SEWER PIPE DEFLECTION MANDREL		
SCALE: NONE	DATE: OCT 2022	
DWN: NB	APPROVED	FILE NO.
CHK: DDP	ML	518




PLAN



SECTION

Notes:

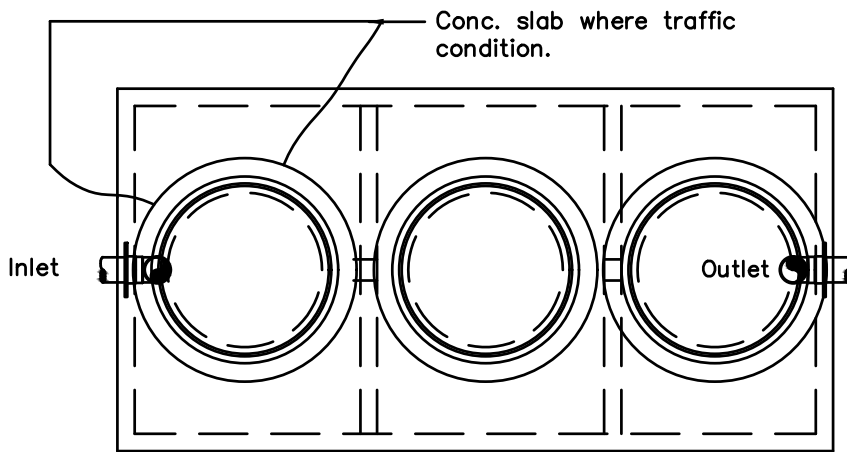
1. Pre manufactured tank shall be per Engineer's approved list.
2. All grease interceptors shall be located outside public right-of-way except with written approval of the Public Works Dept.
3. Grease interceptors shall be located outside of buildings in a location accessible to wastehauler pumper. Location subject to the approval of the Public Works Dept.
4. Tank capacity to be determined at the time of permit application.
5. Alternate design by a Registered Engineer may be substituted for review by the City.
6. Interceptor to be used in conjunction with "Sampling Manhole" per City Std. 521.
7. Stainless steel clamp and bolts 3'-0" o.c. max. (typ.) min. 2 req'd.
8. A waterstop consisting of a standard manhole adapter gasket as supplied by the pipe manufacturer shall be grouted into the interceptor wall near the center of the inlet and outlet walls.
9. Place on 6" bed of 3/4" drain rock consolidated.
10. Concrete slab to extend min. 24" beyond all sides of tank in traffic areas.
11. Install interceptor per manufacturer's specifications.
12. Pipe and fittings to be 4" schedule 40 PVC DWV.
13. All surface water must drain away from manholes.
14. All waste must enter through inlet fittings only.
15. Protective coating shall cover all internal surfaces and meet the criteria of ASTM-C309.
16. Invert grades of inlet and outlet pipes to be provided by design Engineer.

 CITY OF SEBASTOPOL		
TWO STAGE GREASE INTERCEPTOR		
SCALE: NONE	DATE: OCT 2022	
DWN: NB	APPROVED	FILE NO.
CHK: DDP	ML	519

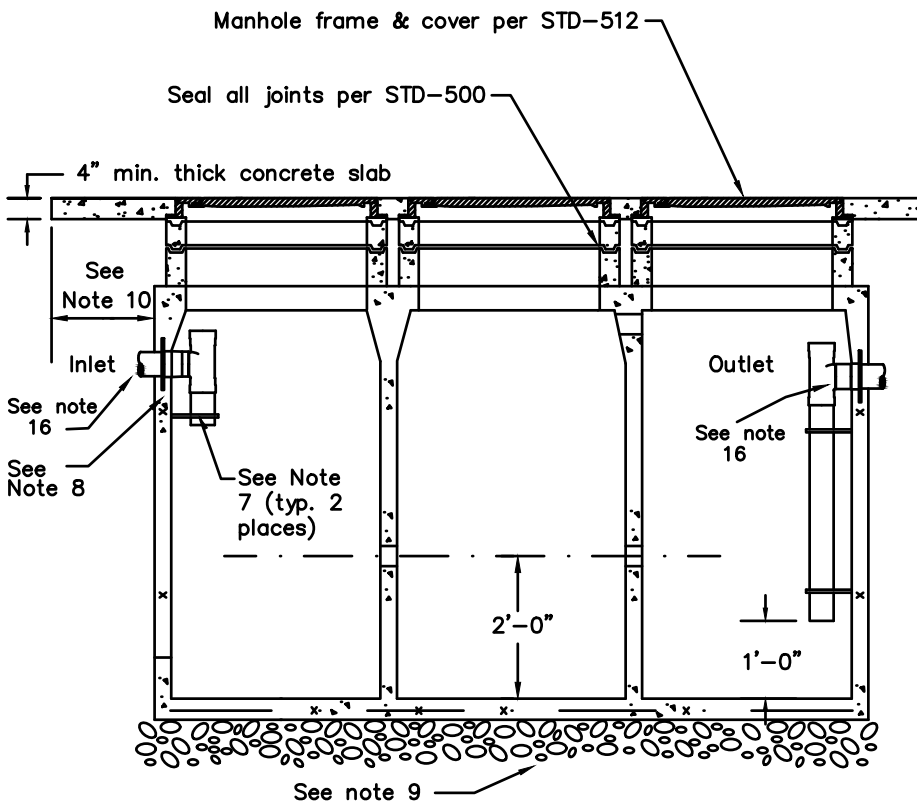
Page 18 of 68
11/15/2022

Notes:

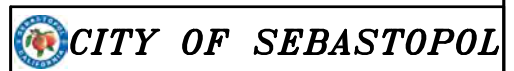
1. Pre manufactured tank shall be per Engineer's approved list.
2. All grease interceptors shall be located outside public right-of-way except with written approval of the Public Works Dept.
3. Grease interceptors shall be located outside of buildings in a location accessible to wastehauler pumper. Location subject to the approval of the Public Works Dept.
4. Tank capacity to be determined at the time of permit application.
5. Alternate design by a Registered Engineer may be substituted for review by the City.
6. Interceptor to be used in conjunction with "Sampling Manhole" per City Std. 521.
7. Stainless steel clamp and bolts 3'-0" o.c. max. (typ.) min. 2 req'd.
8. A waterstop consisting of a standard manhole adapter gasket as supplied by the pipe manufacturer shall be grouted into the interceptor wall near the center of the inlet and outlet walls.
9. Place on 6" bed of 3/4" drain rock consolidated.
10. Concrete slab to extend min. 24" beyond all sides of tank in traffic areas.
11. Install interceptor per manufacturer's specifications.
12. Pipe and fittings to be 4" schedule 40 PVC DWV.
13. All surface water must drain away from manholes.
14. All waste must enter through inlet fittings only.
15. Protective coating shall cover all internal surfaces and meet the criteria of ASTM-C309.
16. Invert grades of inlet and outlet pipes to be provided by design engineer.



PLAN



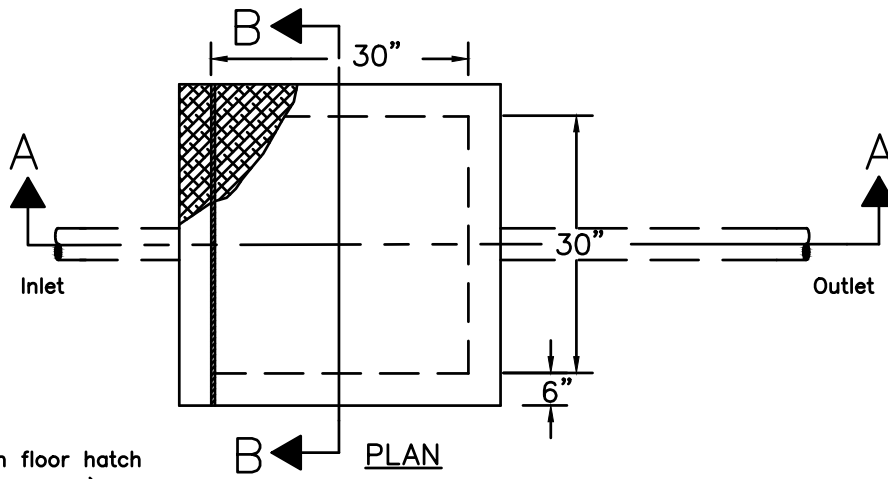
SECTION



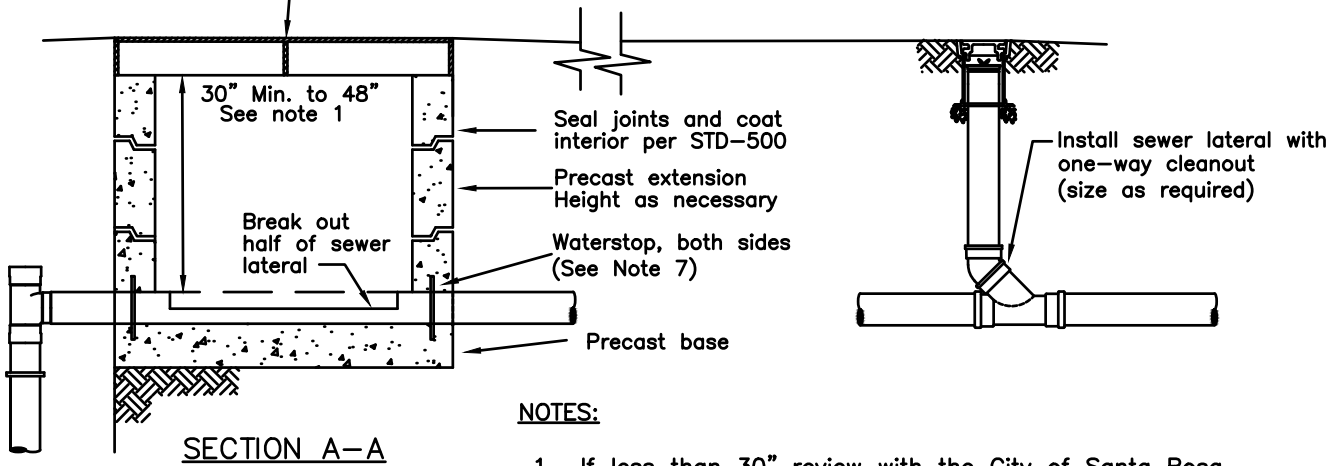
THREE STAGE SAND AND GREASE INTERCEPTOR

SCALE: NONE | DATE: OCT 2022

DWN: NB	APPROVED ML	FILE NO.
CHK: DDP		STD.-520

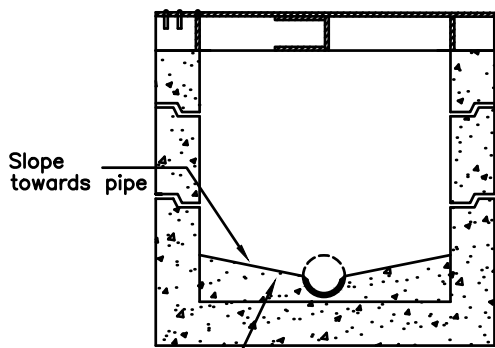
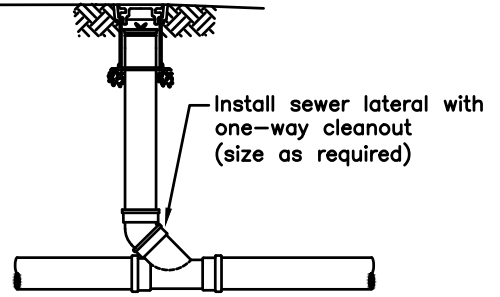


1/4" Hinged aluminum floor hatch
(See Engineer's Approved List)




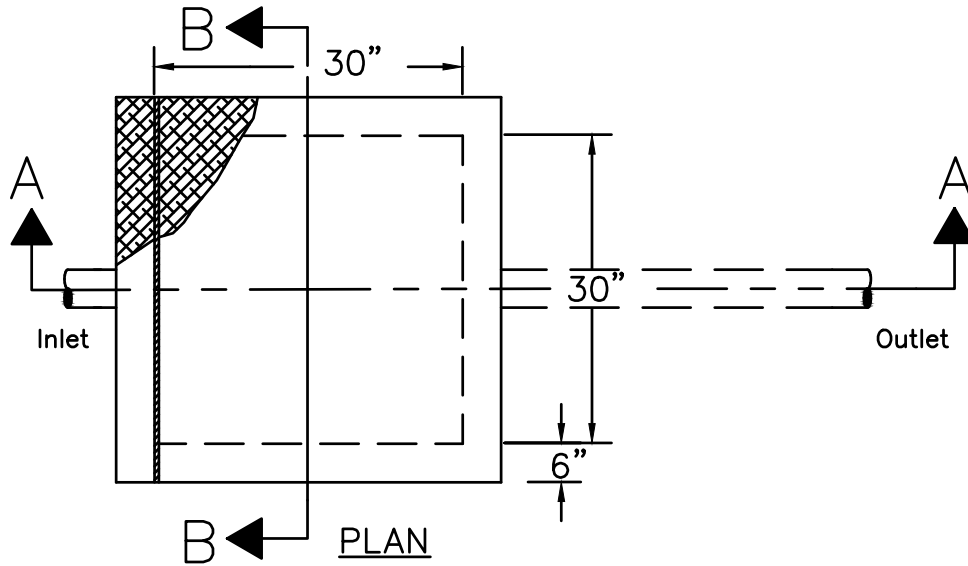
NOTES:

1. If less than 30" review with the City of Santa Rosa Environmental Compliance Section for additional vault requirements. If greater than 48" and/or within traffic areas, install a manhole per STD-500 or STD-502 with flow through cut away pipe per this standard, and fitted with a frame and cover per STD-512.
2. Sampling manhole shall be located outside of public right of way unless approved, in writing, by the Public Work Dept.
3. An alternative design by a Registered Engineer may be submitted for review by the Public Works Dept.
4. Location subject to the approval of the Public Works Dept.
5. Manhole shall be 30" x 30" inside dimension precast box with 24" x 24" hinged aluminum floor hatch or a manhole frame and cover per STD-512.
6. All surface water must drain away from sampling manhole.
7. A waterstop per the "Engineer's Approved List of Items" for STD-500 shall be centered and cast into the wall of the box.

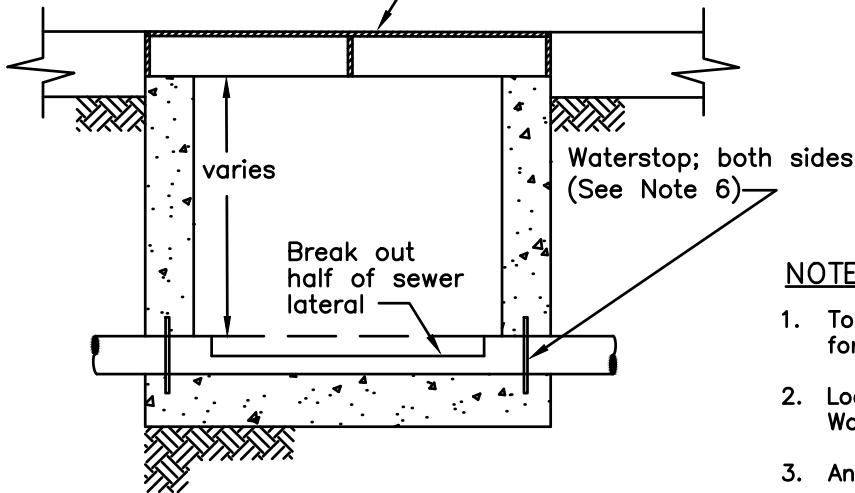


Grout with concrete around half broken out pipe and provide a smooth troweled finish.

 CITY OF SEBASTOPOL		
SAMPLING MANHOLE EXTERIOR USE		
SCALE: NONE		DATE: OCT 2022
DWN: NB	APPROVED ML	FILE NO.
CHK: DDP	11/15/2022	STD-521



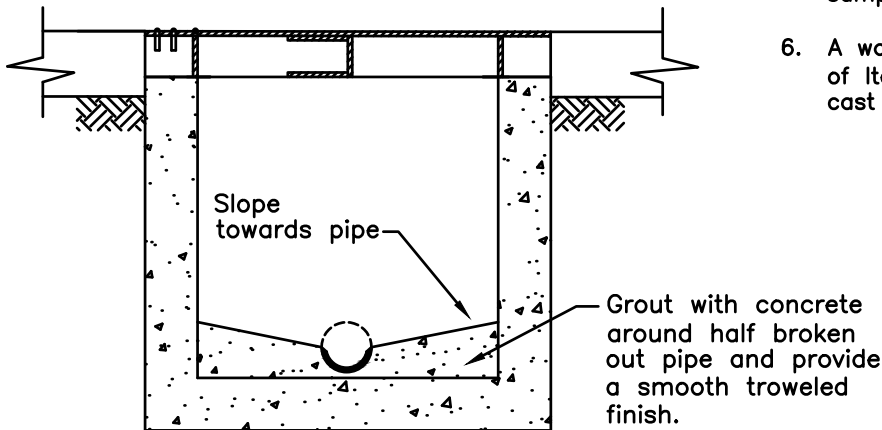
1/4" Hinged aluminum floor hatch
(See Engineer's Approved List)




SECTION A-A

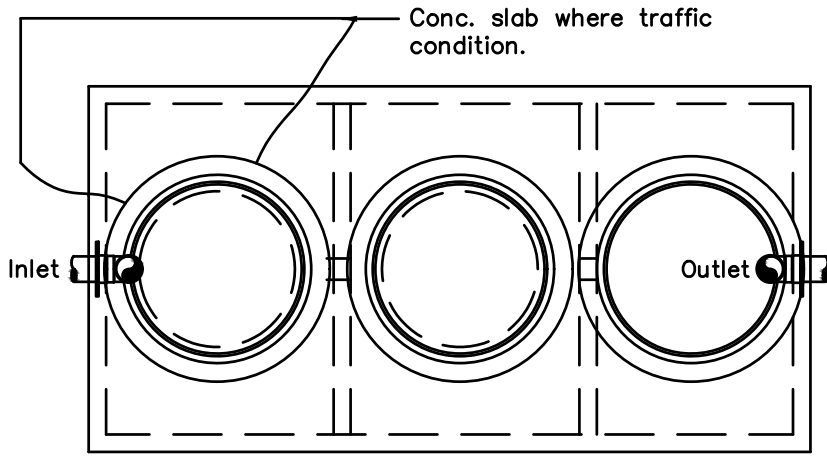
NOTES:

1. To be used in the interior of buildings, free of forklift traffic and accessible to City personnel.
2. Location subject to the approval of the Public Works Dept.
3. An alternative design by a Registered Engineer may be submitted for review by the Public Works Dept.
4. Box shall be 30" x 30" inside dimension precast box with 24" x 24" hinged aluminum floor hatch.
5. All surface water must drain away from sample box.
6. A waterstop per the "Engineer's Approved List of Items" for STD-500 shall be centered and cast into the wall of the box.

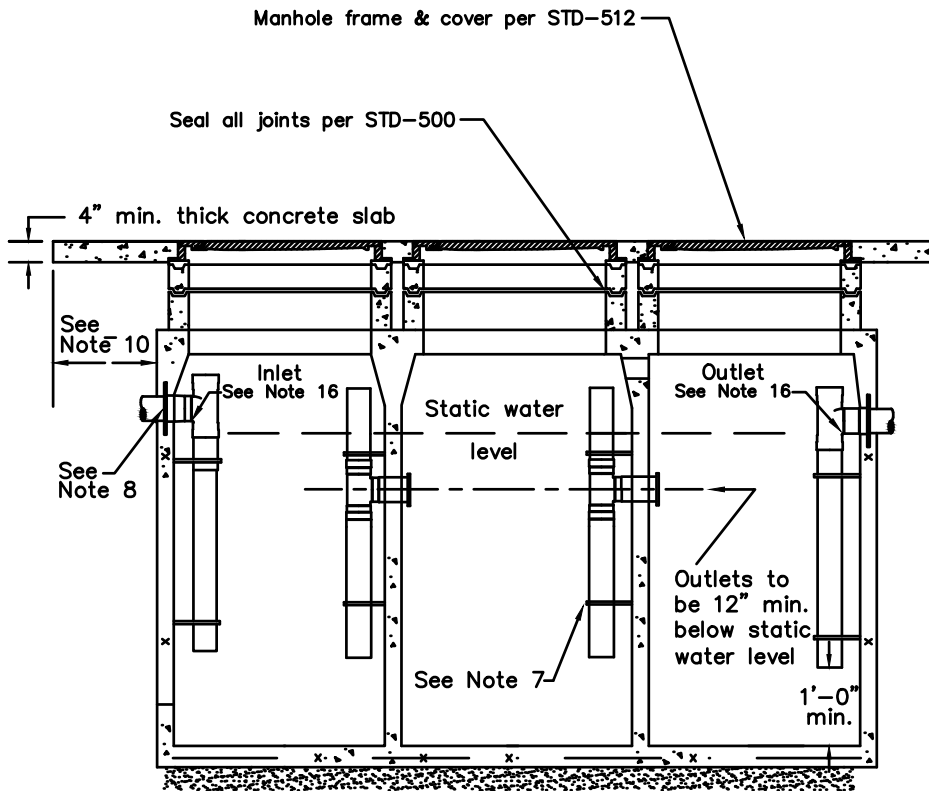


SECTION B-B

 CITY OF SEBASTOPOL		
SAMPLING BOX BUILDING INTERIOR		
SCALE: NONE	DATE: OCT 2022	
DWN: NB CHK: DDP	APPROVED ML	FILE NO. STD-522



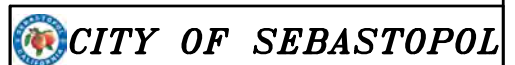
PLAN



See note 9 SECTION

Notes:

1. Pre manufactured tank shall be per Engineer's approved list.
2. All grease interceptors shall be located outside public right-of-way except with written approval of the Public Works Dept.
3. Grease interceptors shall be located outside of buildings in a location accessible to waste hauler pumper. Location subject to the approval of the Public Works Dept.
4. Tank capacity to be determined at the time of permit application.
5. Alternate design by a Registered Engineer may be substituted for review by the City.
6. Interceptor to be used in conjunction with "Sampling Manhole" per STD-521.
7. Stainless steel clamp and bolts shall typically be installed 3'-0" o.c. max, and min. two per pipe.
8. A waterstop, per the Engineer's Approved List, shall be centered and cast into inlet and outlet wall penetrations.
9. Place on 6" bed of 3/4" drain rock, consolidated.
10. Concrete slab to extend min. 24" beyond all sides of tank in traffic areas.
11. Install interceptor per manufacturer's specifications.
12. Pipe and fittings to be 4" schedule 40 PVC DWV.
13. All surface water must drain away from manholes.
14. All waste must enter through Inlet fittings only.
15. Protective coating shall cover all internal surfaces and meet the criteria of ASTM-C309.
16. Invert grades of inlet and outlet pipes to be provided by Design Engineer.

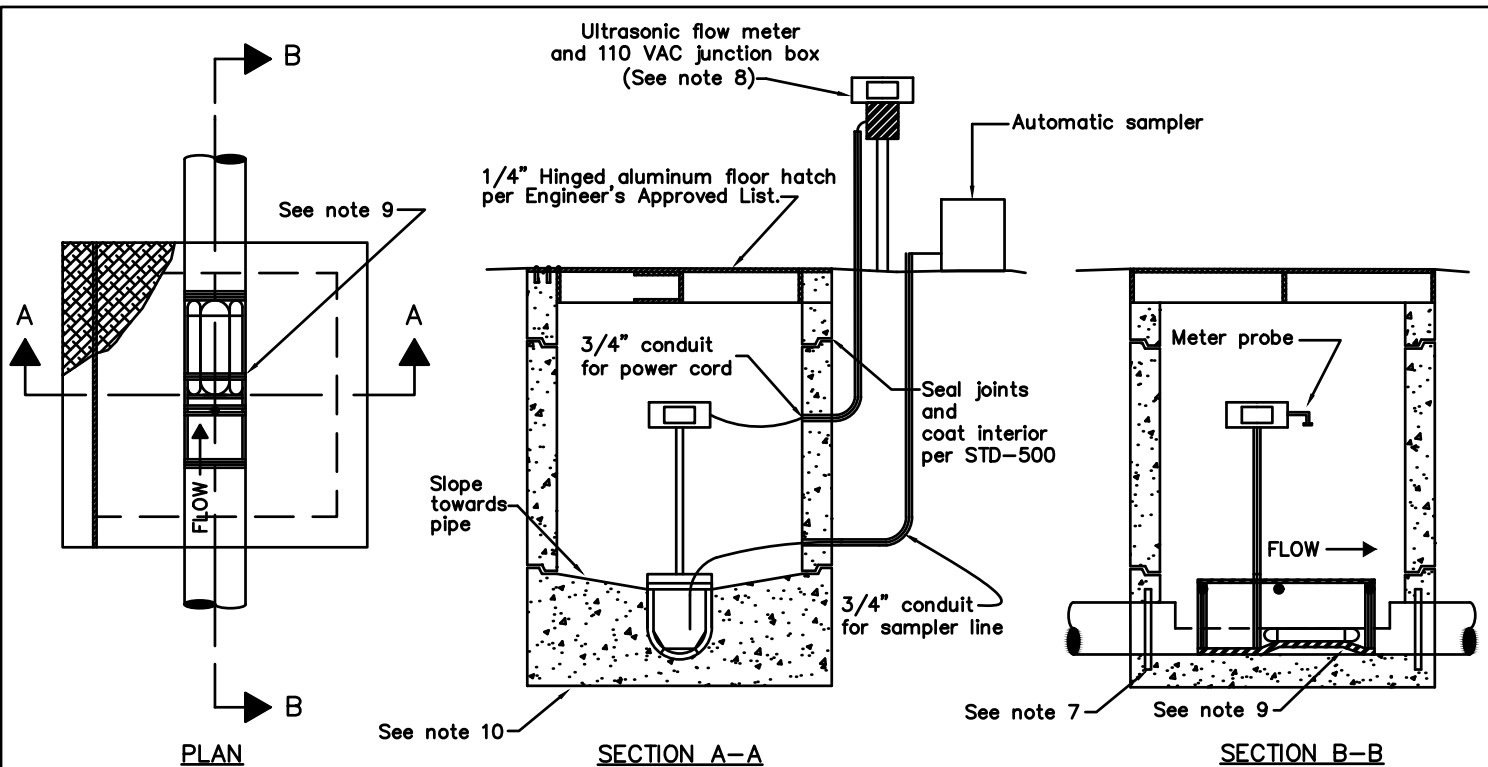


CITY OF SEBASTOPOL

THREE STAGE
GREASE
INTERCEPTOR



SCALE: NONE | DATE: OCT 2022

DWN: NB	APPROVED ML	FILE NO.
CHK: DDP		STD-523



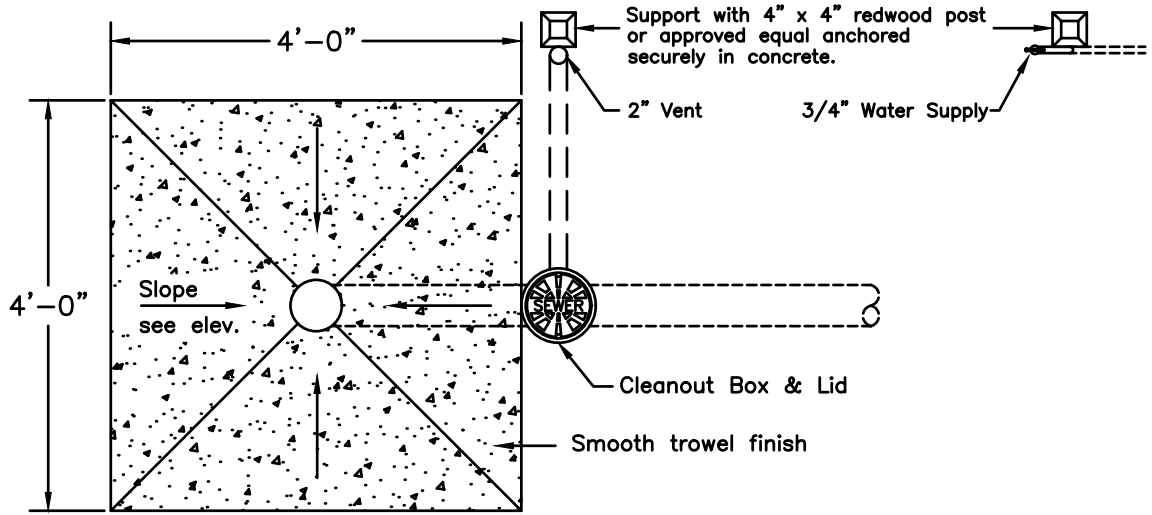
Notes:

1. If less than 30" , review with the City of Santa Rosa Environmental Compliance Section for additional vault requirements. If greater than 48", install sampling manhole similar to Standard 500 with flow through cut away pipe as per this standard.
2. Sampling manhole to be located outside of public right of way except with written approval of the Public Works Dept. The sampling manhole shall be situated in a secure location.
3. An alternative design by a Registered Engineer may be submitted for review by the City of Santa Rosa Environmental Compliance Section.
4. Location subject to the approval of the Public Works Dept.
5. Manhole shall be 30" x 30" inside dimension precast box with 24" X 24" hinged aluminum floor hatch. Hatch shall be H20 rated if approved location has potential for wheeled traffic.
6. All surface water must drain away from sampling manhole.
7. A waterstop per the "Engineer's Approved List of Items" for STD-500 shall be centered and cast into the walls of the box as shown.
8. Install a City approved secondary measuring device and flow recorder equipped with a 110 VAC Junction box for 4-20MA to provide pulse output for flow proportional sampling.

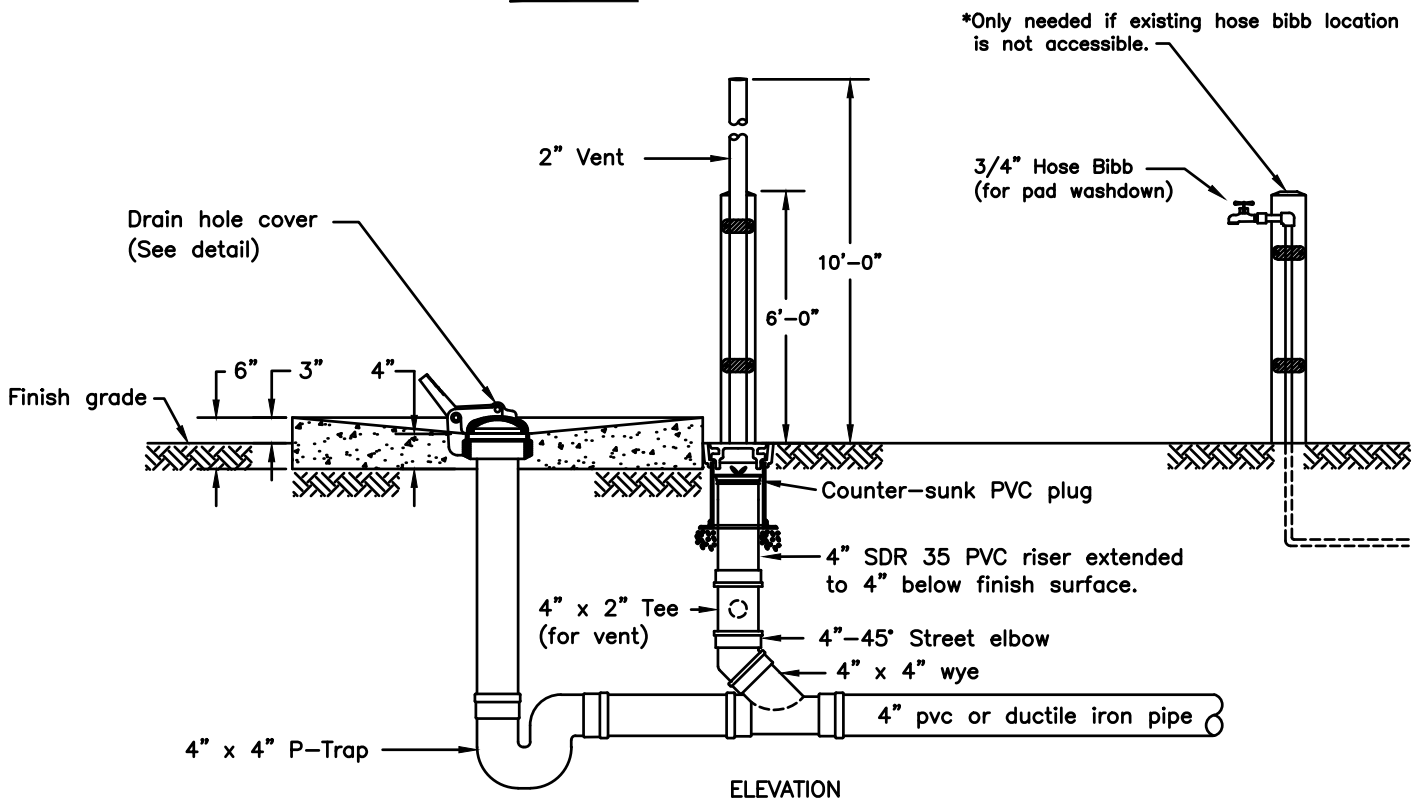
 CITY OF SEBASTOPOL		
CONTROL SAMPLING MANHOLE		
SCALE: NONE		DATE: OCT 2022
DWN: NB	APPROVED	FILE NO.
CHK: DDP	 11/15/2022	STD.-524

CONCRETE PAD

Reinforced with
6" x 6" / 10 x 10
welded wire fabric



PLAN VIEW



*Only needed if existing hose bibb location is not accessible.

Drain hole cover
(See detail)

Finish grade

2" Vent

3/4" Hose Bibb
(for pad washdown)

10'-0"

6'-0"

Counter-sunk PVC plug

4" SDR 35 PVC riser extended
to 4" below finish surface.

4" x 2" Tee
(for vent)

4"-45° Street elbow

4" x 4" wye

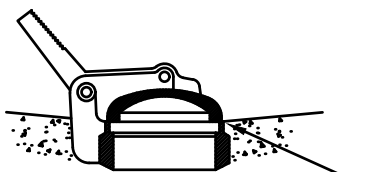
4" pvc or ductile iron pipe

4" x 4" P-Trap

ELEVATION

NOTES:

1. Must install Reduced Pressure Backflow Prevention Device (RP) per STD-876 on water service, and have passing certification test, prior to installation of this disposal facility.
2. See STD-513A & Engineer's approved list for cleanout box and cover.



Cast cover in slab so lip of opening is flush for washdown.

VAREC Fig. 46 drain hole cover assembly foot operated, cast iron body, bronze cover, or an approved equal.

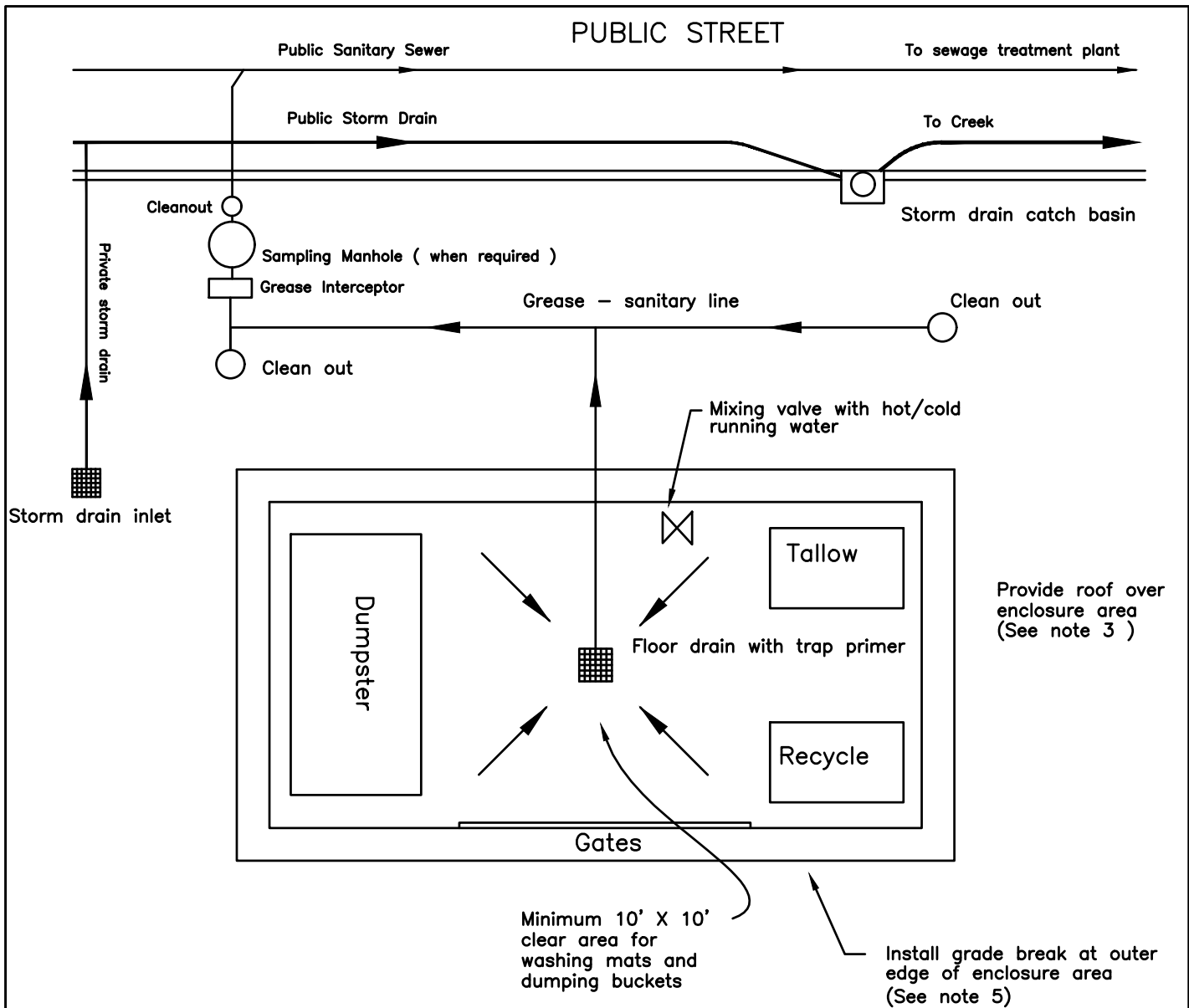
DRAIN HOLE COVER DETAIL

CITY OF SEBASTOPOL

**RECREATIONAL VEHICLE
DISPOSAL FACILITY**

SCALE: NONE | DATE: oct 2022

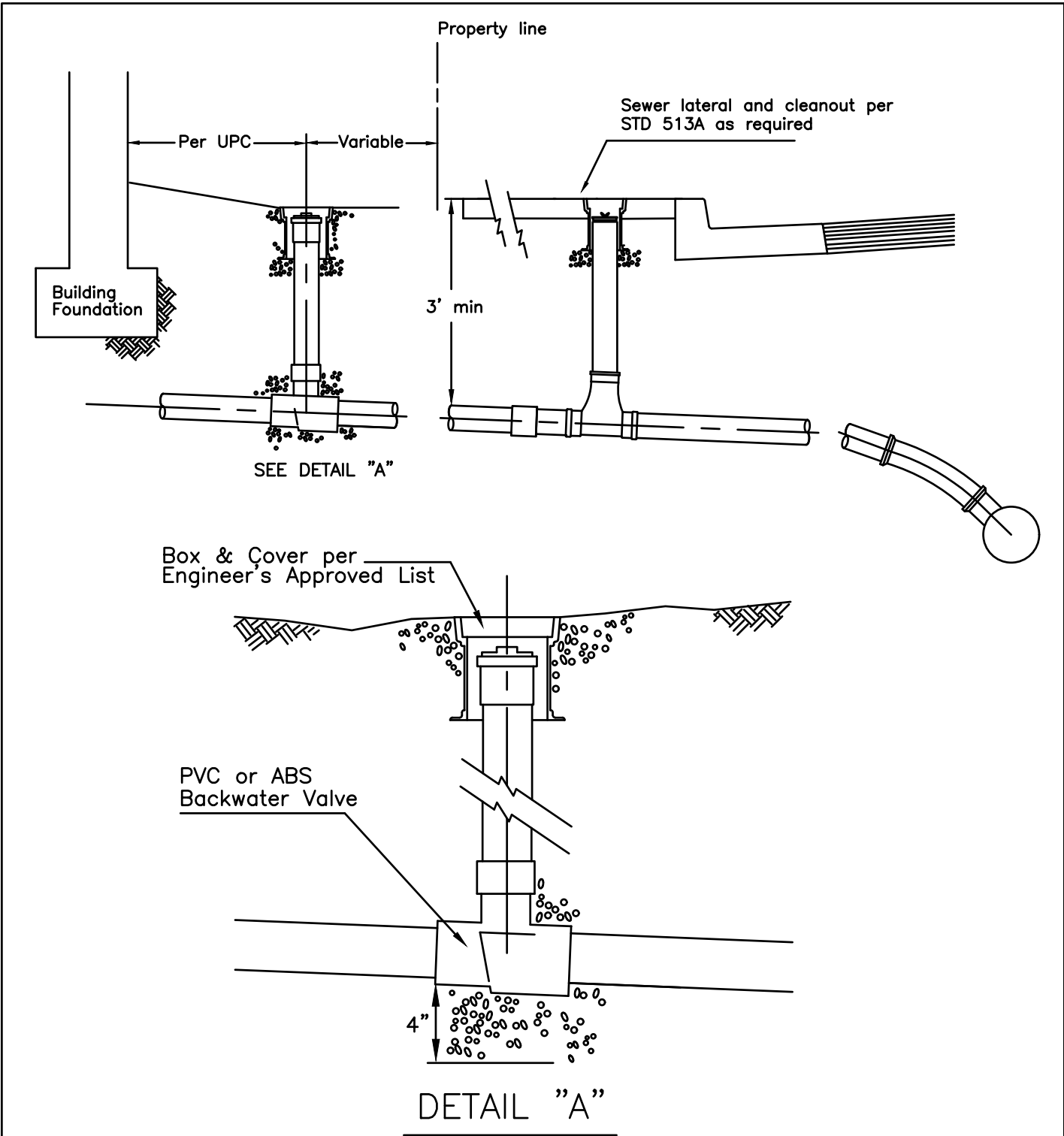
DWN: NB | APPROVED | FILE NO.
CHK: DDP | ML | 525



NOTES:

1. All waste storage, recycling containers including dumpsters, tallow bins, and mat washing to be located in an enclosed area. The enclosure shall be designed to prevent any waste or garbage from entering the storm drain system, to contain spills within the enclosure, facilitate cleaning, and to prevent rainwater from entering the enclosure.
2. Minimum height of enclosure shall be 7 feet.
3. A roof structure is required to prevent rain water from entering the dumpsters, containers, or the sanitary sewer. Roof structure shall be high enough to allow clearance for opening dumpsters.
4. The enclosure shall have a floor drain, with trap primer, and shall be connected to a grease interceptor which discharges to the sanitary sewer. The floor drain shall be connected to a minimum size interceptor equivalent to a Zurn Model Z1170, size 700 35/70 grease trap equipped with a flow control valve. size 700 35/70 grease trap equipped with a flow control valve.
5. Finished surfaces surrounding enclosure shall provide drainage away from enclosure.
6. All Food Facility Enclosures require a Building Permit and Design Review approval from the Community Development Department. The enclosure shall conform to all provisions of the California Fire Code and California Building Code. Enclosure walls and roof must be designed by an licensed architect, civil engineer or structural engineer.

CITY OF SEBASTOPOL		
FOOD FACILITY ENCLOSURE		
SCALE: NONE	DATE: OCT 2022	
DWN: NB CHK: DDP	APPROVED ML	FILE NO. STD.- 526

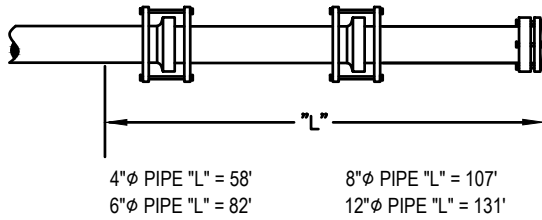


NOTES:

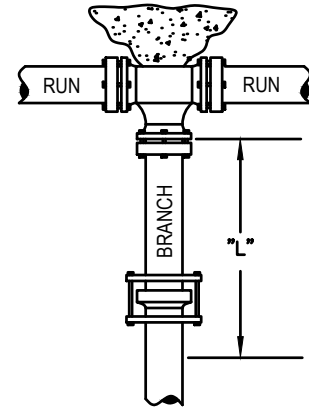
1. Sewage Backwater Valve Assembly to be installed on all laterals where cover is 3' or less at the main, or where the finish floor elevation is less than 1' above the first upstream manhole.
2. Property owner is responsible for the installation and maintenance of the sewage backwater valve assembly.
3. Use extendable backwater valve if depth is greater than 24".

CITY OF SEBASTOPOL		
SEWAGE BACKWATER VALVE ASSEMBLY		
SCALE: NONE	DATE: OCT 2022	
DWN: NB CHK: DDP	APPROVED ML	FILE NO. 527

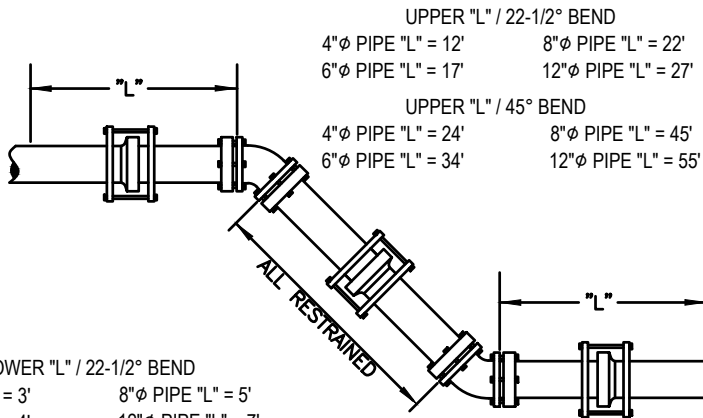
RESTRAINED LENGTHS PROVIDED BY DESIGN ENGINEER SUPERSEDE THIS STANDARD



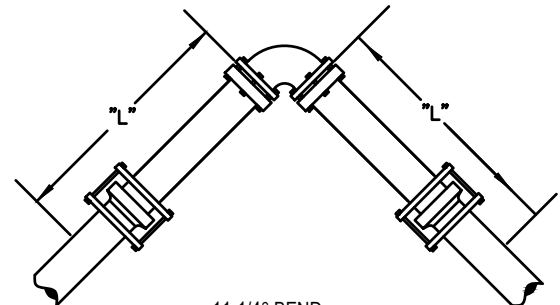
DEAD END & EACH SIDE OF A VALVE



TEE



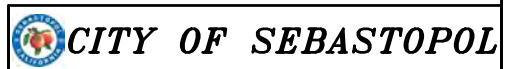
VERTICAL BENDS



HORIZONTAL BENDS

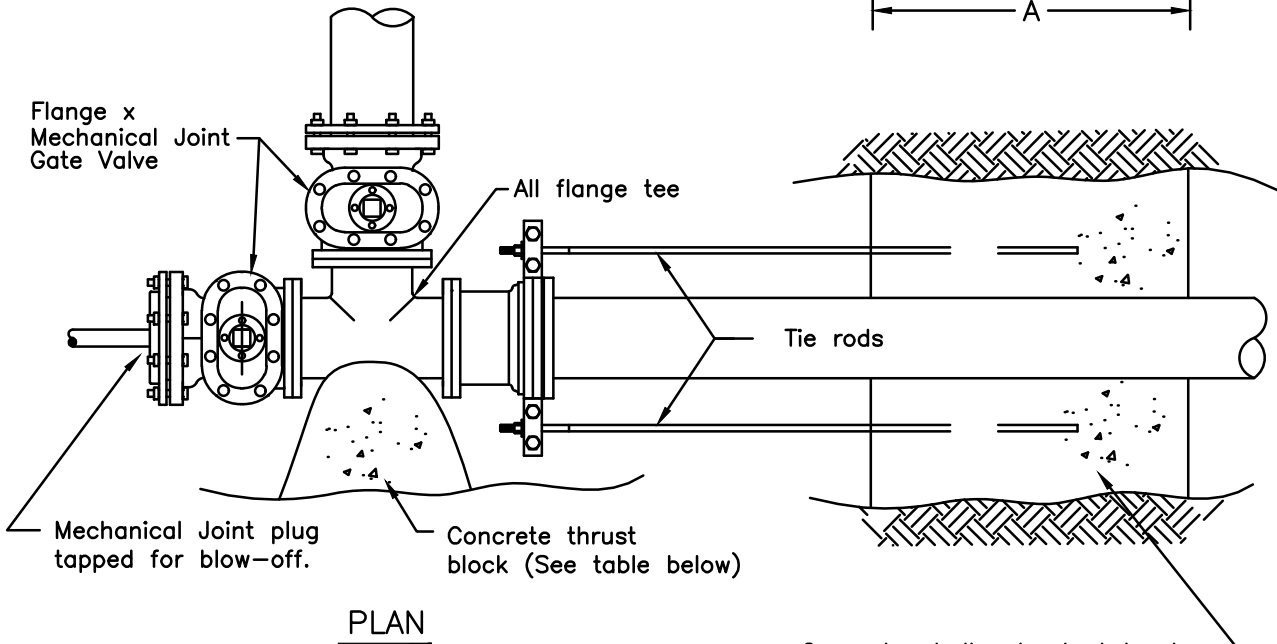
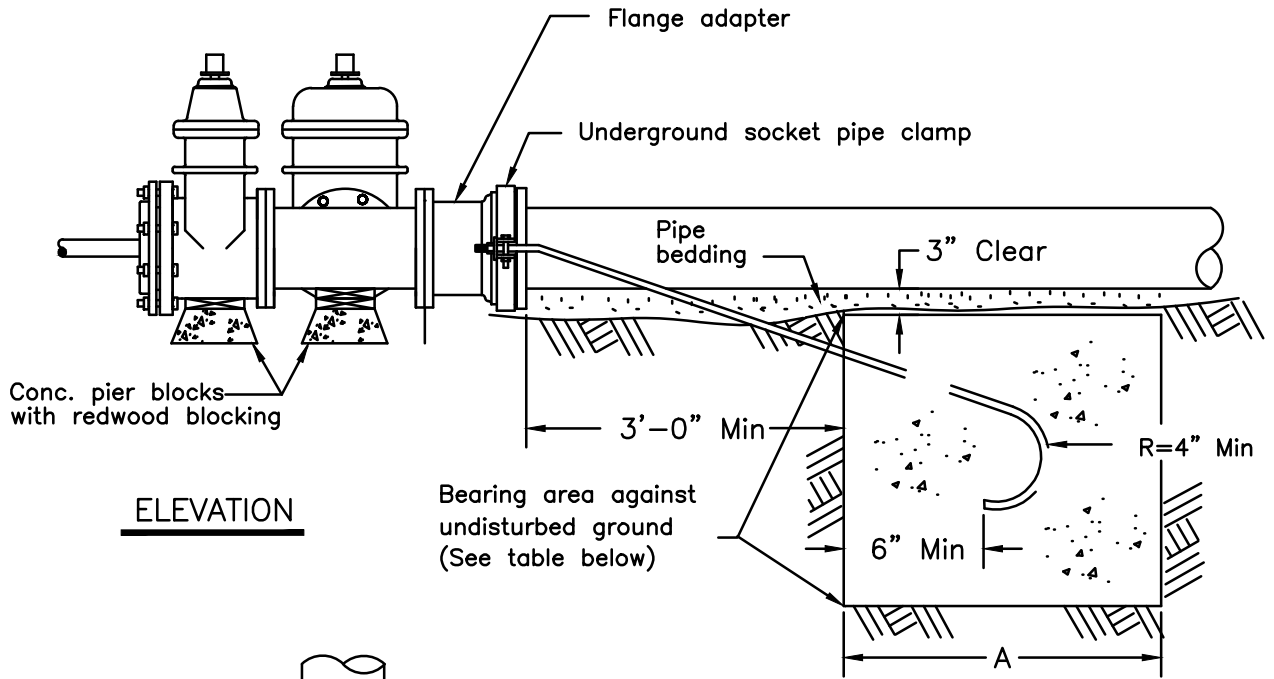
NOTES:

1. All joints within length "L" shall be restrained.
2. All tees shall have a concrete thrust block per Standard 854.
3. All four "branches" on a cross shall be restrained per the TEE branch length as shown.
4. Lengths shown assumes all pipes are installed at City Standard minimum depths. For Vertical bends, low side length provided is for a 1' drop.
5. Assumes safety factor of 1.5 and test pressure of 150psi.
6. Assumes bedding and backfill is per Standard.
7. Restraint shown is for new piping, when connecting to existing piping utilize the appropriate City Standards for proper system restraint.
8. All joint restraints shall be per the Engineer's List of Approved Items or a City accepted submittal.
9. Where main is 12"φ or larger and area water pressure is 90 psi or greater, concrete thrust blocking per applicable City Standards, and restrained joints shall be installed.



TYPICAL SYSTEM
RESTRAINT LENGTHS

SCALE: NONE		DATE: Oct 2022
DWN: NB	APPROVED ML	FILE NO.
CHK: DDP		850



Concrete shall extend at least to the undisturbed earth at both sides of trench.

MINIMUM DIMENSIONS				
PIPE SIZE	TIE RODS	HARNESS BLOCK*	A	THRUST BLOCK**
6"	5/8"	4 Sq. Ft.	2'	4 Sq. Ft.
8"	3/4"	7 Sq. Ft.	3'	7 Sq. Ft.
12"	1-1/8"	15 Sq. Ft.	3'	15 Sq. Ft.
OVER 12" BY DESIGN ENGINEER				

* Bearing area below grade of pipe against undisturbed ground.
 ** Bearing area against undisturbed ground.

NOTE:

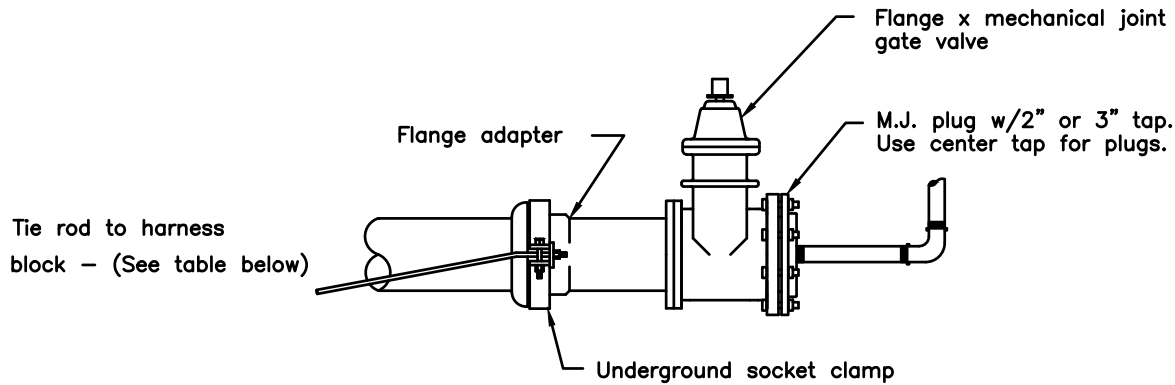
1. Where possible, design a "Restrained Joint System" per City of Santa Rosa Standards and Specifications in place of, or in addition to harness & tie rods.
2. All joints shown shall be restrained.

CITY OF SEBASTOPOL

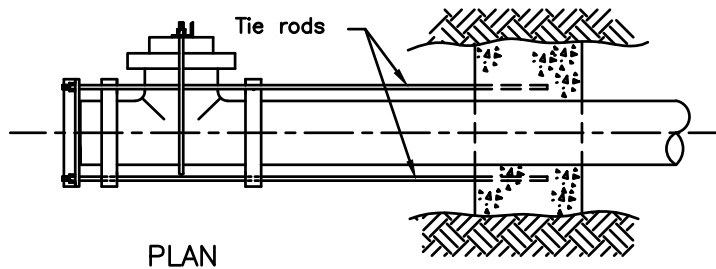
HARNESS INSTALLATION
for FLANGE FITTINGS

SCALE: NONE DATE: OCT 2022

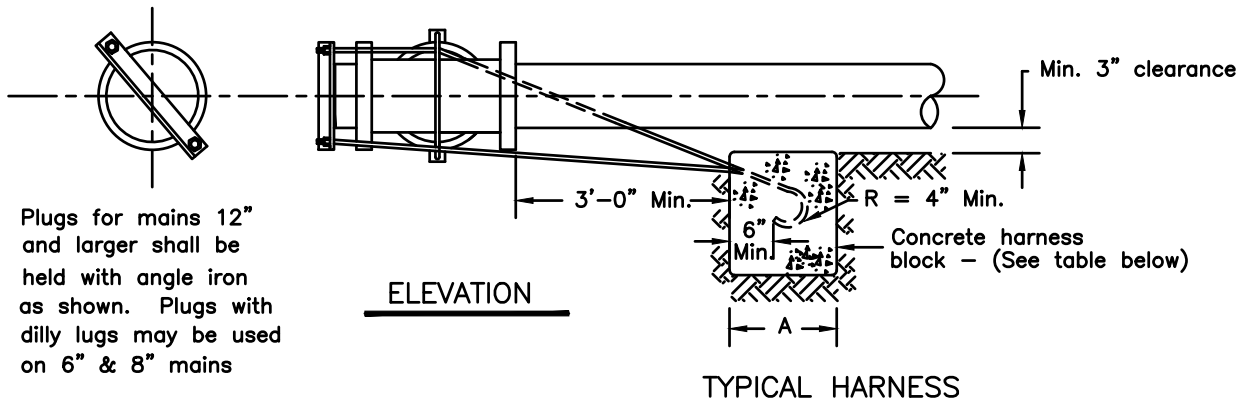
DWN: NB APPROVED FILE NO.
CHK: DDP ML 851



HARNESS FOR VALVE WITH PLUG



Concrete shall extend at least to the undisturbed earth at both sides of trench




Plugs for mains 12" and larger shall be held with angle iron as shown. Plugs with dilly lugs may be used on 6" & 8" mains

MINIMUM DIMENSIONS				
PIPE SIZE	TIE RODS	ANGLE IRON	* HARNESS BLOCK	A
				6"
8"	3/4"	3 1/2"x3"x1/4"	7 Sq. Ft.	3'
12"	1 1/8"	4"x3"x1/2"	15 Sq. Ft.	3'
OVER 12" BY THE DESIGN ENGINEER				

* Bearing area below grade of pipe against undisturbed ground

NOTE:

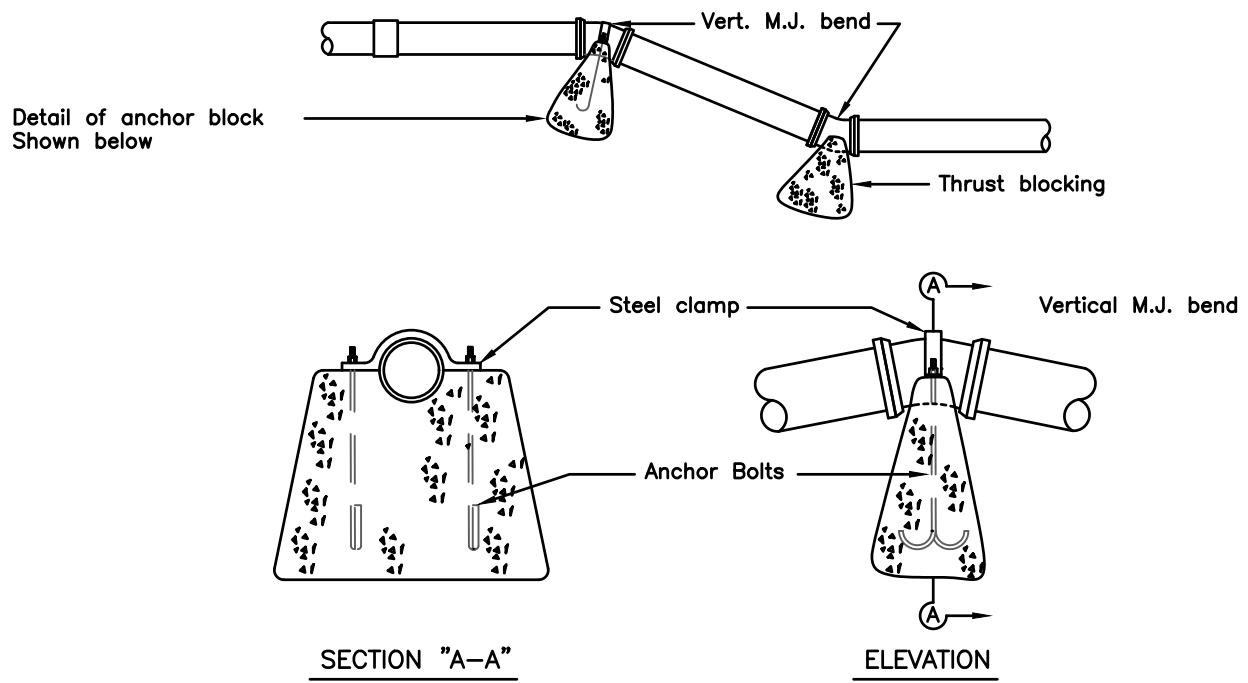
Where possible, design a "Restrained Joint System" per City of Santa Rosa Standards & Specifications in place of, or in addition to harness & tie rods.

 **CITY OF SEBASTOPOL**

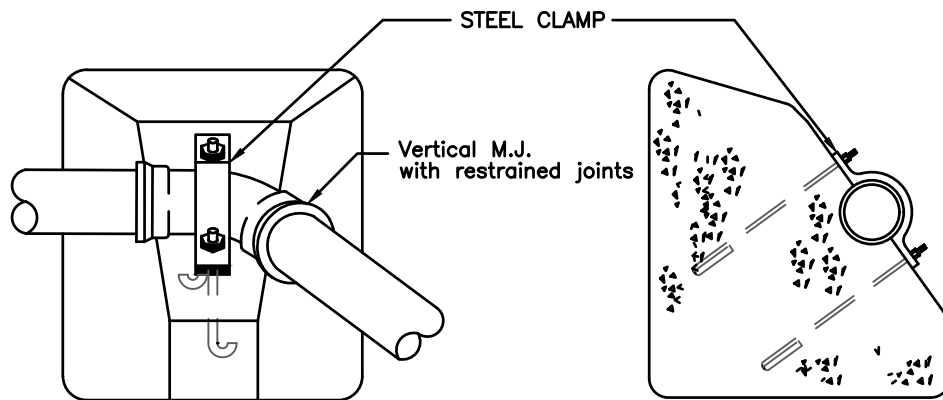
**HARNESS
INSTALLATION**

SCALE: NONE | DATE: OCT 2022

DWN: NB | APPROVED | FILE NO.
CHK: DDP | ML | 852



TYPICAL CONCRETE ANCHOR BLOCK FOR VERTICAL BEND



TYPICAL CONCRETE ANCHOR BLOCK FOR COMBINATION


HORIZONTAL - VERTICAL BEND

TABLE 1

PIPE SIZE	ANCHOR BOLTS	STEEL CLAMPS
6"	5/8"	3" x 1/4"
8"	3/4"	3-1/4"x1/4"
12"	1-1/8"	4" x 1/2"

NOTES:

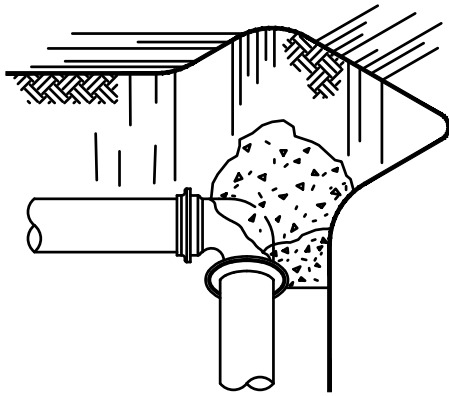
1. Where new and/or existing conditions allow, design a "Restrained Joint System" per City of Santa Rosa Standards and Specifications in lieu of, or in addition to anchor blocks as shown.
2. Concrete anchor blocks shall be installed by the Contractor to withstand a thrust produced by the test pressure plus 50 p.s.i. Minimum dimensions for anchor bolts and clamps are listed on Table 1.
3. For pipes greater than 12"Ø, bolts and clamps shall be properly sized by the Design Engineer, with calculations submitted to the public works dept.
4. Use mechanical restrained joints at all fittings.

 **CITY OF SEBASTOPOL**

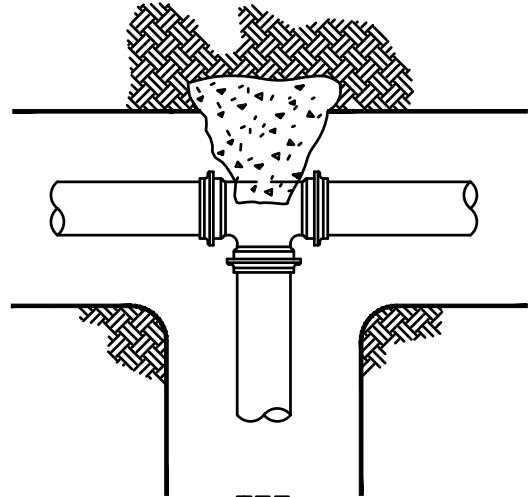
CONCRETE ANCHOR BLOCKS
for VERTICAL BENDS

SCALE: NONE | DATE: OCT 2022

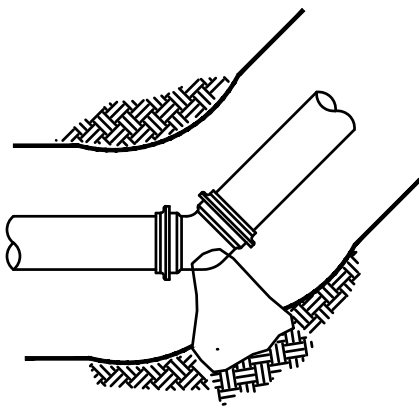
DWN: NB | APPROVED | FILE NO.
CHK: DDP | ML | 853



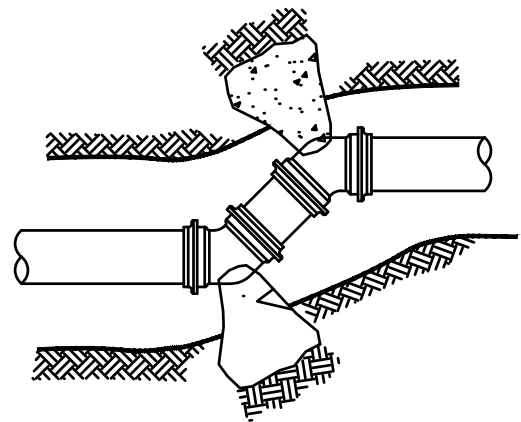
BEND
TYPICAL CONC. BLOCKING
SHOWN IN PERSPECTIVE.



TEE



TYPICAL BEND



OFFSET

NOTES:

1. Where new and/or existing conditions allow, design a "Restrained Joint System" in lieu of or in addition to concrete thrust blocks as shown.
2. Concrete blocking shall be poured to extend from bells of fittings to undisturbed soil, and the entire bearing area must be against undisturbed soil. Bolts and nuts shall be protected and kept clear of concrete.
3. In using Table 1, assume 2000 P.S.F. bearing capacity unless otherwise shown on the plans. The Design Engineer shall specify thrust blocking requirements for all other soil bearing conditions.
4. Safe bearing load of soil for horizontal thrust shall not be exceeded.
5. See Cit of Santa Rosa Water Distribution Construction Specification for fitting type requirements.
6. Install mechanical joint plug or blind flange on leg(s) of tee or cross installed for future use.
7. For pipes greater than 12"Ø, concrete thrust blocks shall be properly sized by the Design Engineer, with calculations submitted to the public works dept.

TABLE 1

MIN. REQ'D BEARING AREA IN SQ. FT. PER 100 P.S.I. TEST PRESSURE*					
PIPE SIZE	SOIL BEARING CAPACITY(PSF)	TEES & DEAD ENDS	90° BENDS	45° BENDS	22-1/2° BENDS
6"	1000	4	6	3	2
	2000	2	3	2	1
8"	1000	7	10	5	3
	2000	4	5	3	2
12"	1000	16	22	12	6
	2000	8	11	6	3

* MULTIPLY NO. IN TABLE BY TEST PRESSURE & DIVIDE BY 100

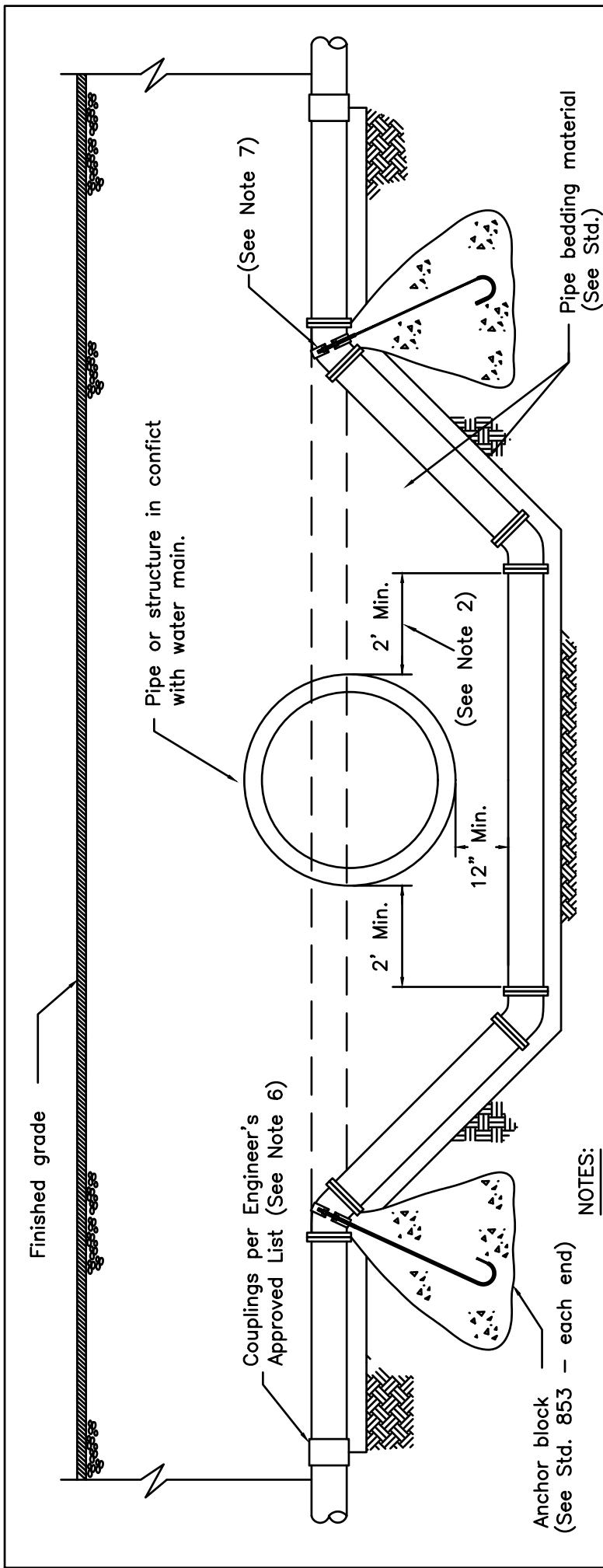


CITY OF SEBASTOPOL

CONCRETE THRUST
 BLOCKS for
 HORIZONTAL BENDS

SCALE: NONE DATE: OCT 2022

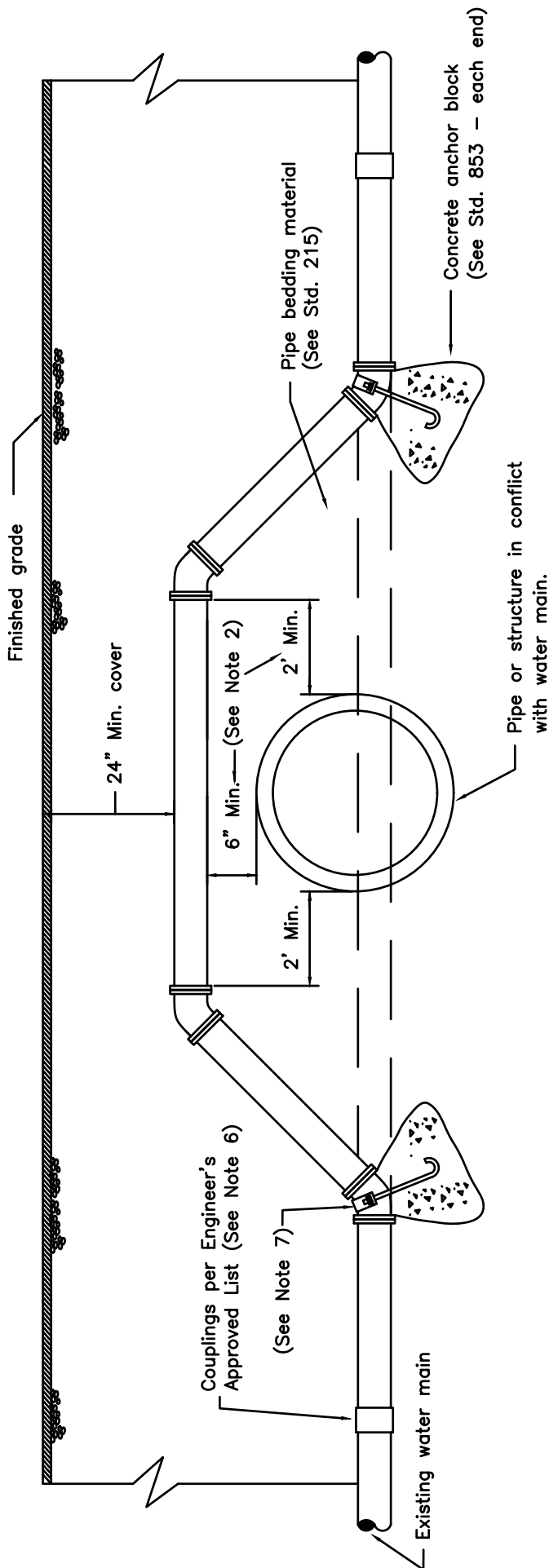
DWN: NB APPROVED FILE NO.
 CHK: DDP ML 11/15/2022 STD.-854



NOTES:


1. Where possible, design a "Restrained Joint System" per City of Santa Rosa Standards and Specifications, in lieu of, or in addition to, anchor blocks.
2. Joint distances shown are a minimum. See Appendix "A" of the City of Santa Rosa Water Design Standards for additional requirements.
3. All pipe and fittings shall be ductile iron, and all fittings shall be mechanical joint type except as specified per note 6 below.
4. All joints shall be mechanical joint type with restraints glands, except where otherwise specified.
5. All bends shall be either 45° or 22-1/2° M.J. fittings.
6. When connecting to an existing main, connections to cast iron, ductile iron or PVC pipe shall be made with mechanical joint solid sleeves. Approved "Wide Range" couplings shall be used when connecting to oversized cast iron or asbestos cement pipe. When not connecting to an existing main couplings are not required.
7. Use two clamps (upper & lower) per fitting. Double nut each side.

CITY OF SEBASTOPOL		
WATER MAIN LOWERING		
SCALE: NONE	DATE: OCT 2022	
DWN: NB CHK: DDP	APPROVED ML	FILE NO. STD. - 855



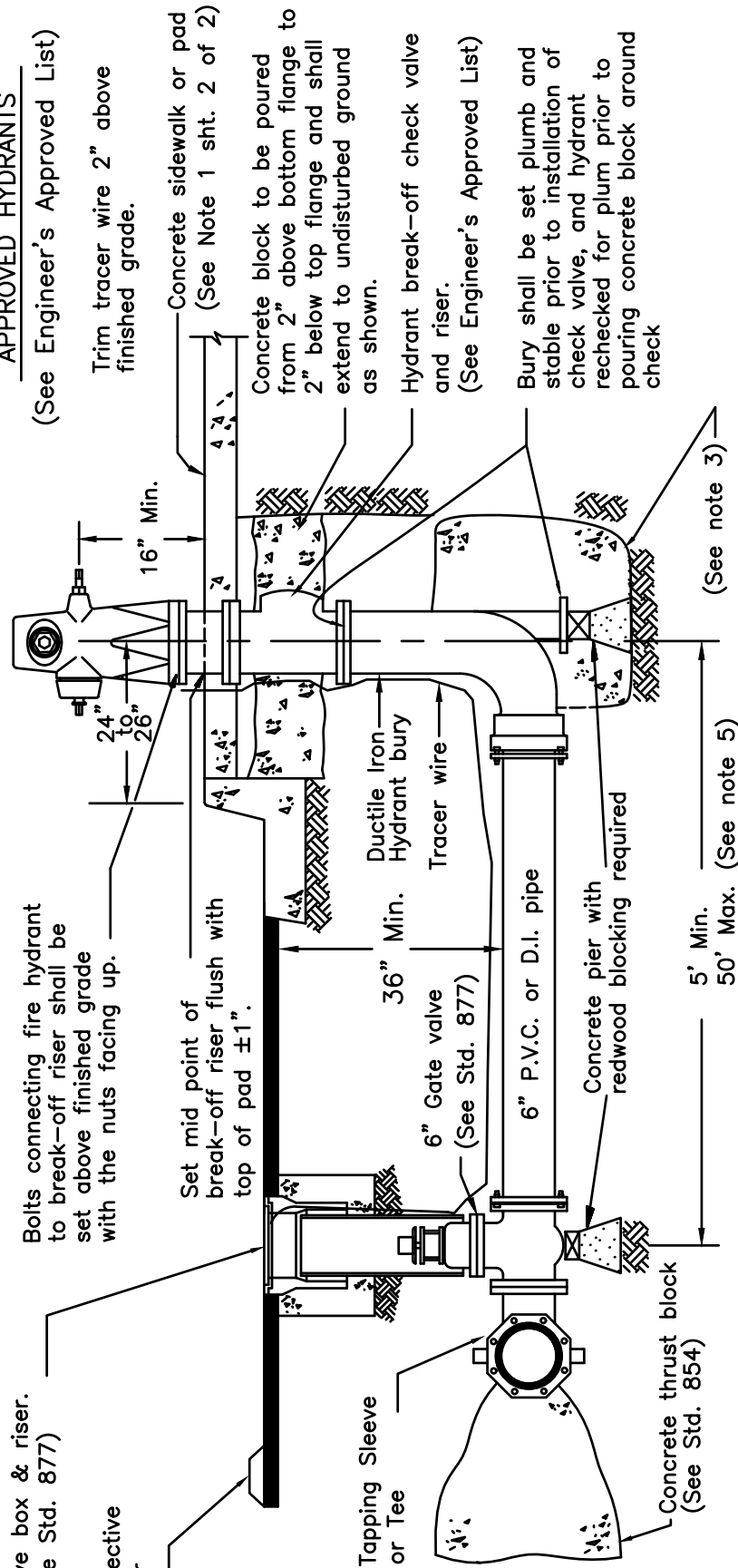
NOTES:

1. Where possible, design a "Restrained Joint System" per City of Santa Rosa Standards and Specifications, in lieu of, or in addition to, anchor blocks.
2. Joint distances shown are a minimum. See Appendix "A" of the City of Santa Rosa Water Design Standards for additional requirements
3. All pipe and fittings shall be ductile iron, and all fittings shall be mechanical joint type except as specified per note 6 below.
4. All joints shall be mechanical joint type with restraints glands, except where otherwise specified.
5. All bends shall be either 45° or 22-1/2° M.J. fittings.
6. When connecting to an existing main, connections to cast iron, ductile iron or PVC pipe shall be made with mechanical joint solid sleeves. Approved "Wide Range" couplings shall be used when connecting to oversized cast iron or asbestos cement pipe. When not connecting to an existing main couplings are not required.
7. Use two clamps (upper & lower) per fitting. Double nut each side.
8. To be used only at the direct approval of the Public Works Dept.

 CITY OF SEBASTOPOL		
WATER MAIN OVER STRUCTURE		
SCALE: NONE		DATE: OCT 2022
DWN: NB CHK: DDP	APPROVED ML	FILE NO. STD.- 856


APPROVED HYDRANTS

(See Engineer's Approved List)

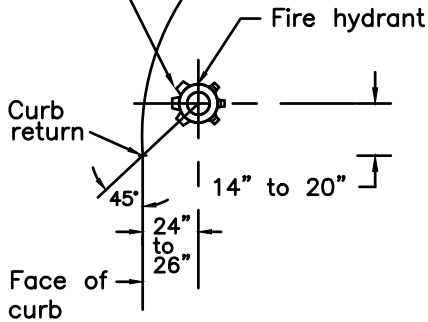


NOTES:

1. Residential fire hydrants shall have one 2-1/2" & one 4-1/2" outlet, and Commercial fire hydrants have one 2-1/2" & two 4-1/2" outlets.
2. Fire hydrant painting shall conform to AWWA C503. The hydrant top and cap shall be color coded to meet NFPA 291 Standard. The remaining surface shall be silver. Any damaged paint surfaces shall be corrected by touch up prior to acceptance.
3. Restrained joints are required for all new construction, from tee or saddle to hydrant bury. Thrust blocks are only required where existing services are being modified and restrained joints alone are not adequate.
4. Flanged riser spools may be installed below check valve to obtain proper grade. Spools used for this purposes shall not have break-off grooves.
5. If proposed hydrant lateral length is greater than 50 feet, contact Public Works.
6. Blue reflective raised pavement markers shall be placed 6 inches from the street centerline stripe, or at the approximate centerline of the street where there is no centerline stripe, on the side nearest the fire hydrant. When located near the corner of an intersection, this applies to both streets.
7. Private fire hydrants shall be constructed per NFPA Standards and as approved by City Fire Department.

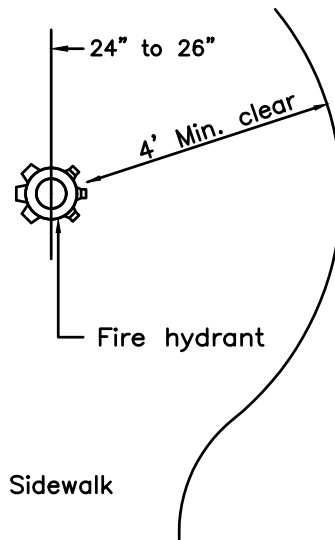
 CITY OF SEBASTOPOL		
PUBLIC FIRE HYDRANT AND LATERAL		
PAGE 1 of 2		
SCALE: NONE		DATE: OCT 2022
DWN: NB CHK: DDP	APPROVED ML	FILE NO. Std.- 857

Face 4 1/2" outlets to street



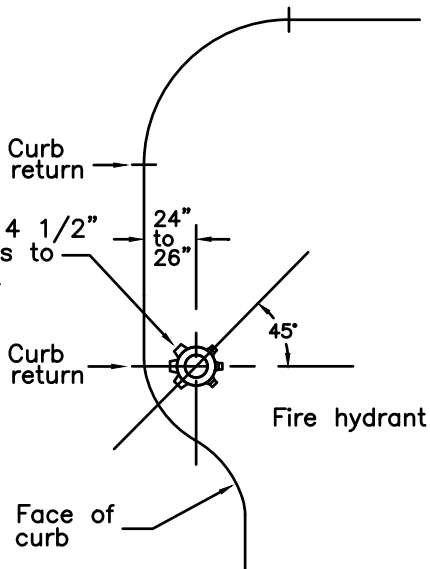
CURB RETURN

Face of curb



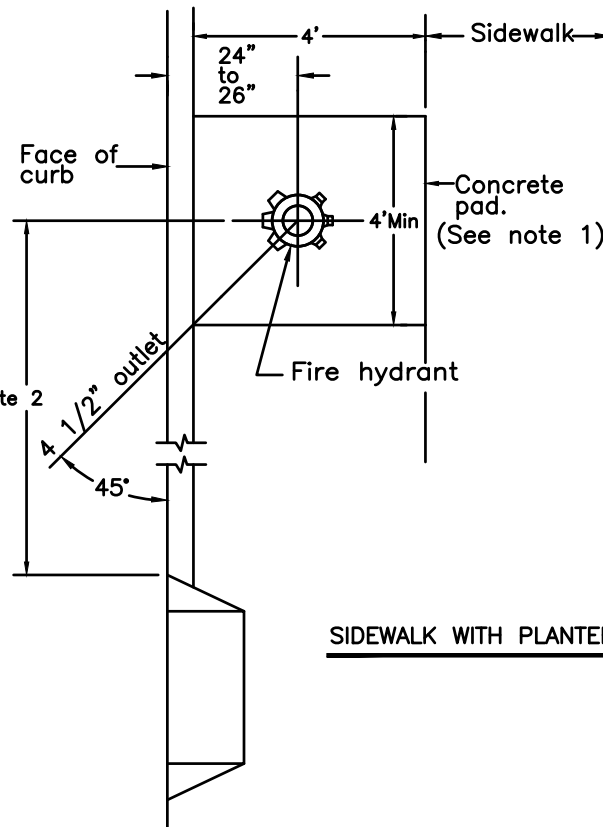
CONTIGUOUS SIDEWALK

Face 4 1/2" outlets to street



CURB RETURN WITH NECKDOWN


See note 2



SIDEWALK WITH PLANTER STRIP

NOTES:

1. Where no sidewalk exists, or where hydrant is installed in planter strip, a 4" thick 4' x 4' concrete pad shall be installed.
2. Hydrants to be a minimum of 10 feet from driveway approach in commercial or multi-family developments and a minimum of 5 feet from driveway approach in one or two family developments.

 CITY OF SEBASTOPOL		
PUBLIC FIRE HYDRANT AND LATERAL		
PAGE 2 of 2		
SCALE: NONE	DATE: OCT 2022	
DWN: NB	APPROVED	FILE NO.
CHK: DDP	ML	857

8' to 10' for permanent connection
by Contractor under Inspection by authorized City personnel

Temporary meter & double check
valve installed by City Forces
at the Contractor's expense.

2" brass angle ball valve
(F.I.P. x meter flange)

(See Note 9)

(See Note 7)

Temporary connection between
check valve assembly and blowoff
to be made by the Contractor
where temporary metered
connection is required.

Install plug if metered
connection is not required.

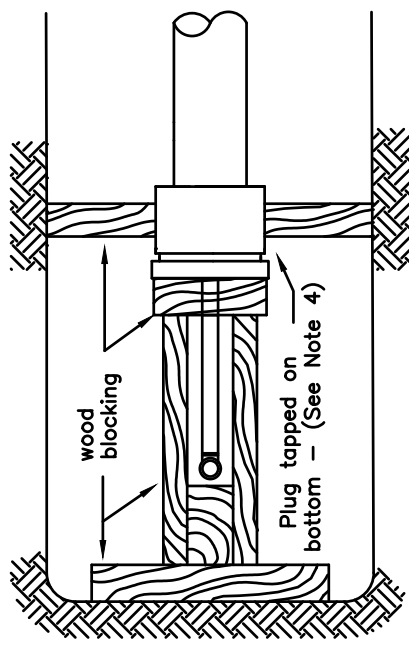
New main
(See Note 1)

Finished Grade

Temporary
wood blocking
sufficient to hold
test pressure.

Pipe and fittings to be threaded
galvanized iron.


ELEVATION



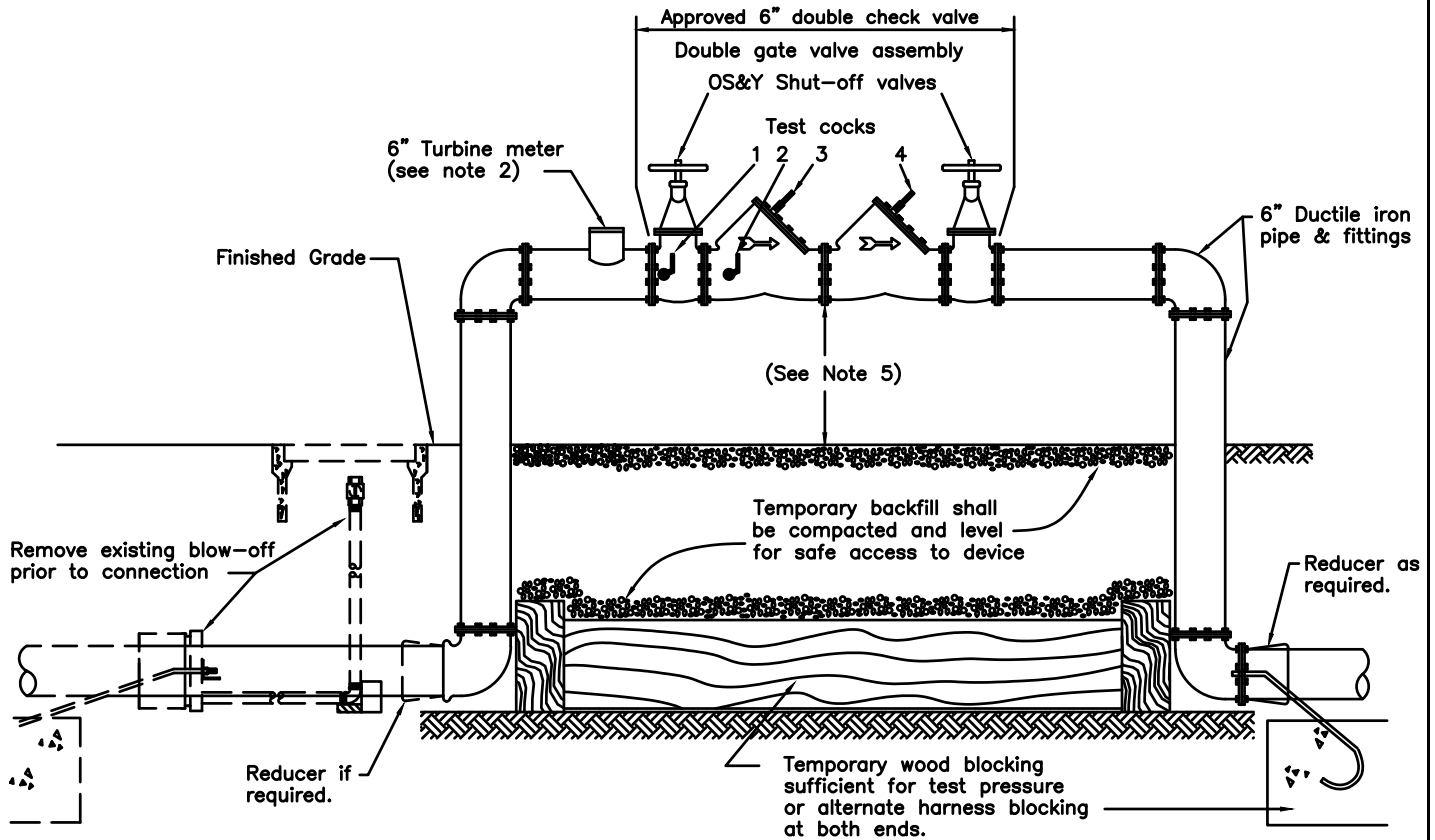
PLAN

NOTES:

1. End of new main to be on same line and grade as existing where feasible.
2. Wood blocking to be used for thrust produced by test pressure plus 50 P.S.I.
3. Safe bearing load of soil for horizontal thrust shall not be exceeded.
4. See Std. 861 for blowoff size chart. ("Blowoff" = pipe and fittings, up to and including valve.)
5. The Contractor shall make the final tie-in under the inspection of a City Public Works Dept. representative. Inspection fees must be paid prior to scheduling tie-in.
6. Should the blowoff on the existing main be located out of the traveled way as indicated on Std. 861, the temporary blowoff piping shall be extended out of the traveled way and the risers, meter, and check valve will be installed out of the traveled way.
7. Clearance to be 12" min. above finished grade or 6" above the inundation level, whichever is higher.
8. This installation is not acceptable when combustible material is stored on site or construction above grade begins. (See Standard 860 when fire flow is required).
9. If blow off is 3" install 3" x 2" reducer.


 CITY OF SEBASTOPOL		
TEMPORARY BLOWOFF AND/OR METERED CONNECTION FOR MAINS UNDER CONSTRUCTION		
SCALE: NONE	DATE: OCT 2022	
DWN: NB CHK: DDP	APPROVED ML	FILE NO. - 859

Installed by Contractor under inspection by authorized City personnel



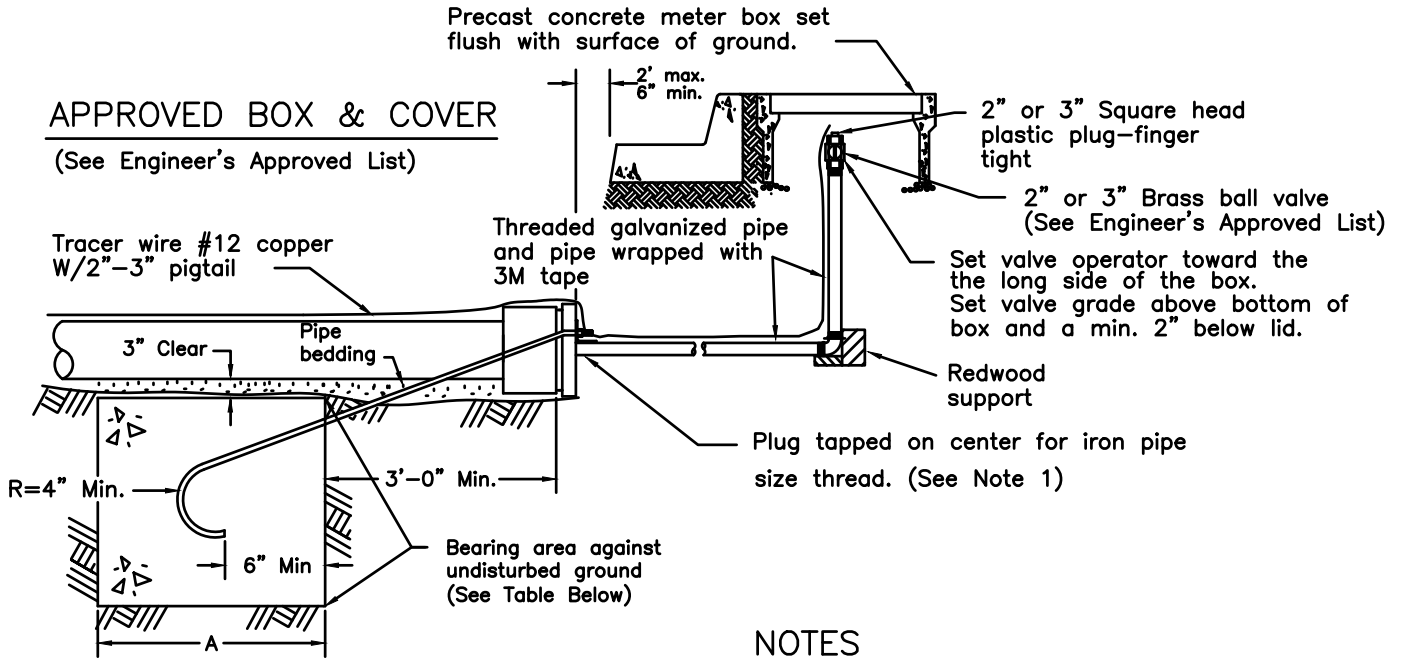
NOTES:

1. This assembly shall be installed when combustible materials will be stored or constructed on-site prior to acceptance of the on-site water main by the City. Fire flow & access must be satisfactory to the City Fire Department.
2. The Contractor shall furnish the 6" meter and double check valve. The meter shall have a current certification by an approved testing facility upon arrival, and the double check valve shall be tested and certified on-site by a Certified Tester off the City's Approved List of Testers. Written proof of a passing certification shall be provided to the City prior to activating the system. The Contractor is responsible for any fees and charges incurred.
3. Tie-in shall be made by the Contractor under inspection by authorized City personnel. Inspection fees must be paid prior to scheduling tie-in.
4. Meters to be gallon units only.
5. Clearance to be 12" min. above finished grade or 6" above the inundation level, whichever is higher.
6. Fire lines shall be flushed per City Standard Specifications and adequate fire flow provided prior to combustible materials being delivered to the site or construction beginning.

 CITY OF SEBASTOPOL		
TEMPORARY METERED CONNECTION WHEN FIRE FLOW IS REQUIRED		
SCALE: NONE	DATE: OCT 2022	
DWN: NB CHK: DDP	APPROVED ML	FILE NO. 860

APPROVED BOX & COVER

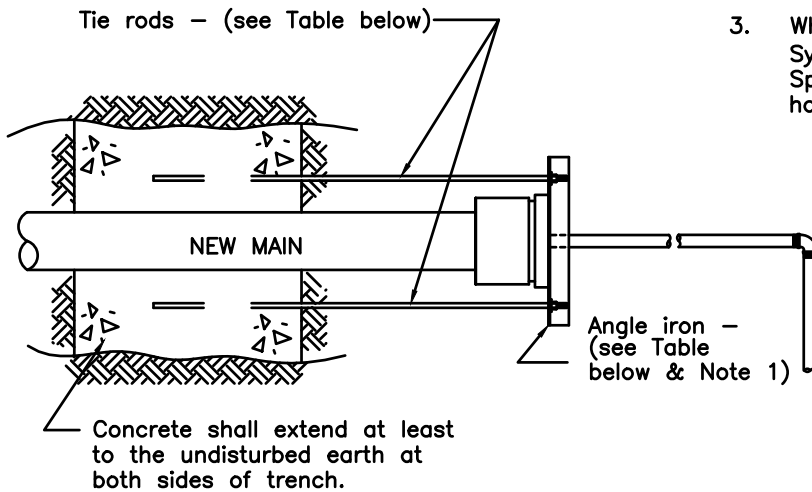
(See Engineer's Approved List)



ELEVATION

NOTES


- For 6" & 8" mains, M.J. plugs or caps with dilly lugs or starr bolts and 2" center tap may be used in lieu of angle iron. Install angle iron off-center to accommodate center tap.
- Blow-off shall not be installed within the traveled way. If main ends within street area, blow-off to be extended to area outside of traveled way and installed as shown above.
- Where possible, design a "Restrained Joint System" per City Standards and Specifications in lieu of, or in addition to harness and tie rods.



PLAN

MINIMUM DIMENSIONS					
PIPE SIZE	TIE RODS	ANGLE IRON	BEARING AREA	A	SIZE B.O.
6"	5/8"	3"x3"x1/4" *	4 Sq. Ft.	2'	2"
8"	3/4"	3 1/2"x3"x1/4"*	7 Sq. Ft.	3'	2"
12"	1-1/8"	4"x3"x1/2"	15 Sq. Ft.	3'	3"
OVER 12"	BY THE DESIGN ENGINEER				3"

* (see note 1)

 **CITY OF SEBASTOPOL**

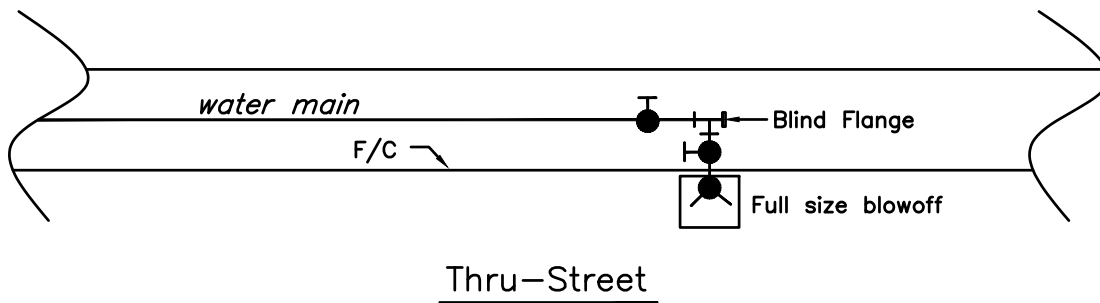
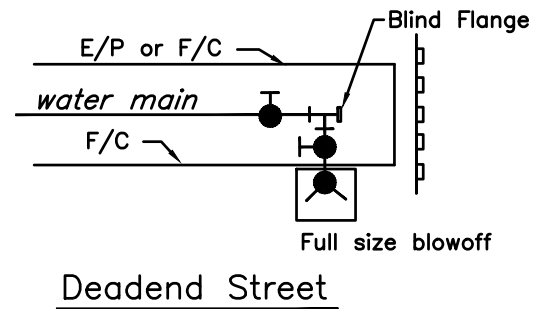
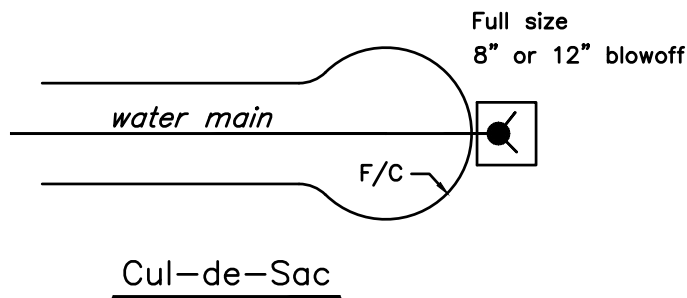
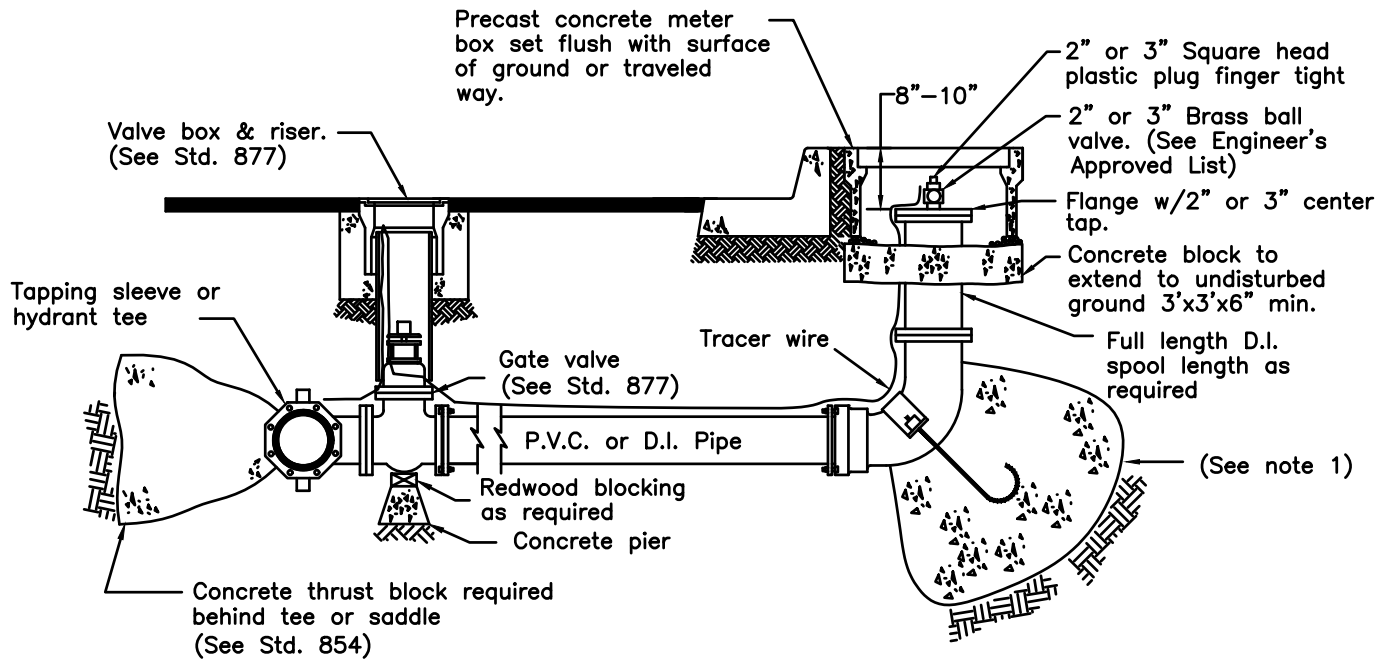
PERMANENT BLOW-OFF

SCALE: NONE | DATE: OCT 2022

DWN: NB | APPROVED ML | FILE NO. |
CHK: DDP | 11/15/2022 | STD.- 861


Approved Box & Cover

(See Engineer's Approved List)



NOTES

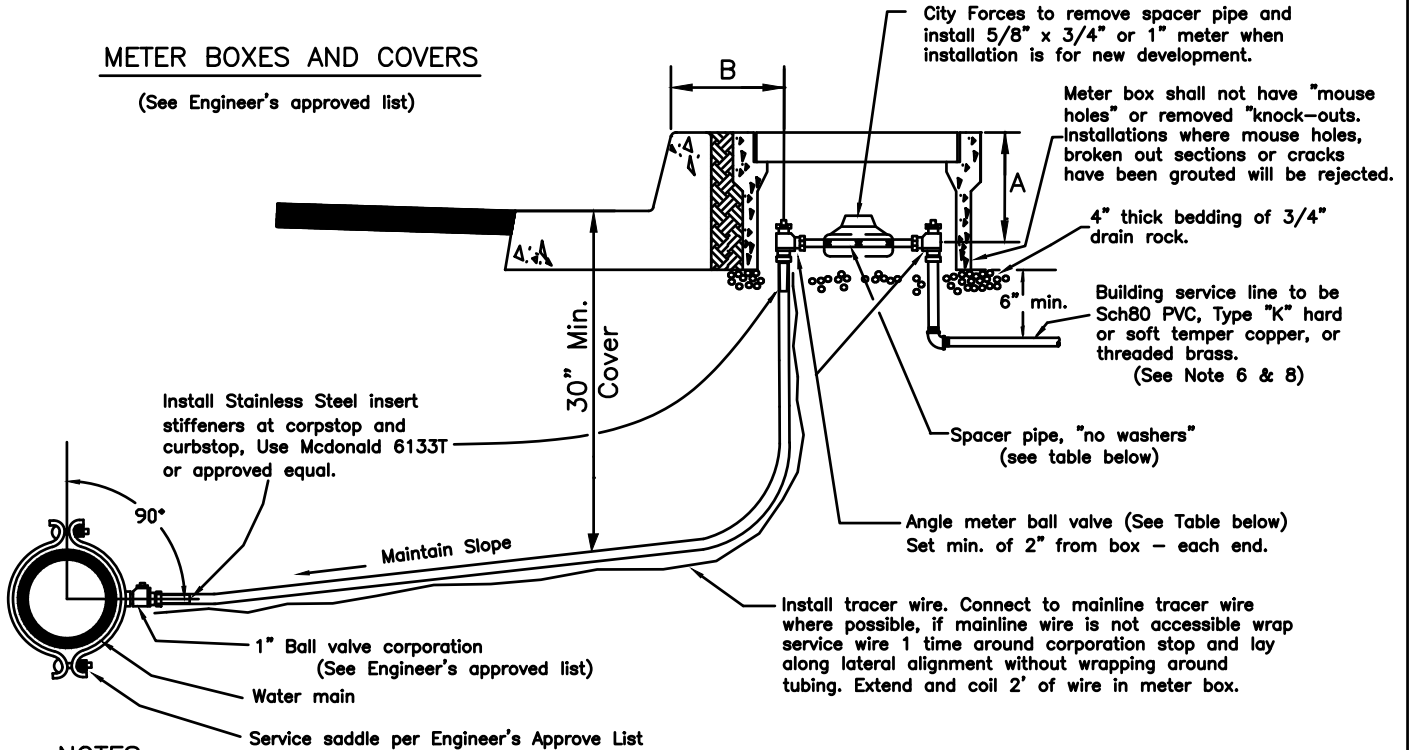
1. Restrained joints are required for all new construction from tee or saddle to 90° bend. Thrust blocks are only required where existing services are being modified and restrained joints are not used.
2. Elbow and riser pipe to be the same size as the main.

 CITY OF SEBASTOPOL		
FULL SIZE BLOW-OFF		
SCALE: NONE	DATE: OCT 2022	
DWN: NB CHK: DDP	APPROVED ML	FILE NO. STD.- 862

Page 39 of 68
11/15/2022

METER BOXES AND COVERS

(See Engineer's approved list)




NOTES

1. Unless otherwise specified plumb 1" service lateral for a 5/8" x 3/4" meter when use is for residential, or a 1" meter when use is for commercial. Where plans show a service lateral to be installed without specifying a City Standard, the Contractor shall request direction from the Engineer.
2. Bedding material shall be compacted to a minimum 90% relative compaction prior to tubing installation.
3. For new development, after testing the service lateral the Contractor shall install a Sch.80 PVC spacer with N.I.P. threads on both ends. The spacer shall have 1/2" ϕ holes drilled through the pipe @ 2" O.C.
4. Meter box shall be set flush with surrounding surfaces.
5. Prior to setting water meter for new development projects the Public Works Dept. requires the service address to be clearly marked on the topside lip of meter box with a permanent felt marker.
6. If connecting to a backflow device see specific backflow standard for piping requirements between meter and device. If existing line to be connected to is galvanized, use a dielectric fitting.
7. Water services and meter boxes shall be located away from driveways where possible. Installations in driveways, or anywhere vehicular traffic may occur, must be approved by the Public Works Dept. If so approved, the box & lid shall have at a minimum an AASHTO H20 rating. All meter box and lid installations shall be per manufacturer's recommendations, and shall comply with all applicable City Standards.
8. When not extending to a building, or connecting to a backflow device or an existing lateral, the Contractor shall extend the service lateral to a minimum of 12" behind future sidewalk or to back of P.U.E. and cap watertight. There shall be no bends or fittings under sidewalk and/or concrete planter strip. If the permanent service meter is requested prior to completion of the property side plumbing, at least 10 linear feet of service lateral shall be installed at a location safe from traffic and construction activities, and extended vertically to a minimum 24" above grade with a 3/4" hose bib on the end.
9. If 1" installation setup calls for 5/8" x 3/4" meter, Contractor to supply approved 1" x 3/4" meter adapters.
10. Where multiple boxes are set side-by-side see spacing requirements on Standard 887.

METER SETTING ASSEMBLY PARTS LIST

METER SIZE	VALVES	SPACER BAR (SEE NOTE 3)
5/8" x 3/4"	1" service x 3/4" meter angle ball valve per Engineer's approved list	1" ϕ x 7-3/4" Schl. 80 PVC Pipe
1"	1" service x 1" meter angle ball valve per Engineer's approved list	1-1/4" ϕ x 11" Schl. 80 PVC Pipe

SIZE OF METER	DIMENSION	
	A	B
5/8" x 3/4"	9"-11"	14"-15"
1"	9"-11"	14"-15"

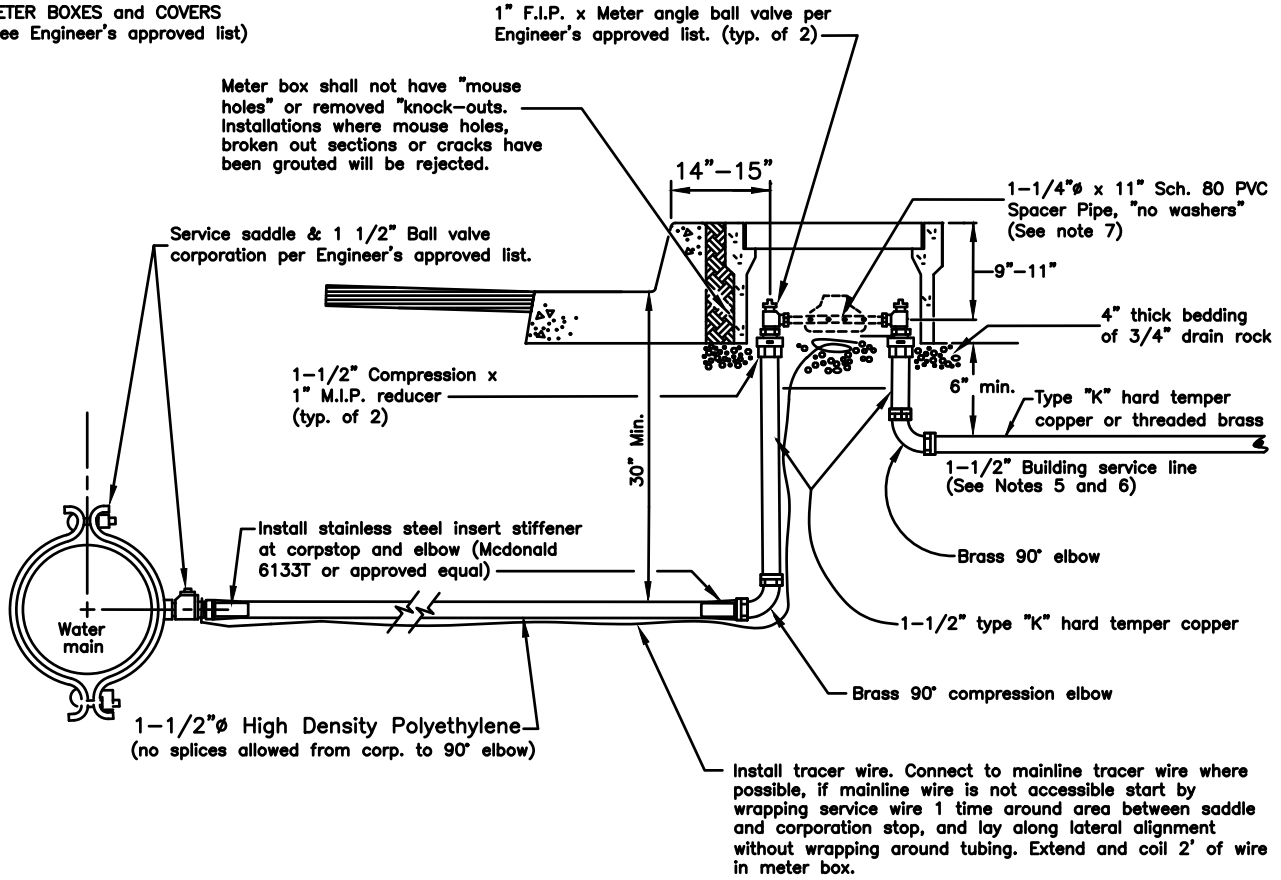
 **CITY OF SEBASTOPOL**

1" HIGH DENSITY POLYETHYLENE
WATER SERVICE LATERAL FOR
5/8" x 3/4" or 1" METERS

SCALE: NONE DATE: OCT 2022


DWN: NB APPROVED FILE NO.
CHK: DDP ML 11/15/2022 STD-863-A

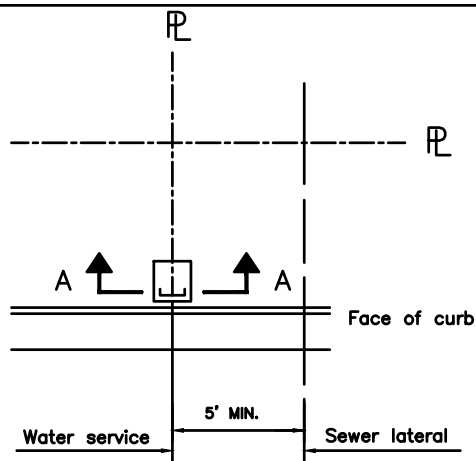
METER BOXES and COVERS
(See Engineer's approved list)



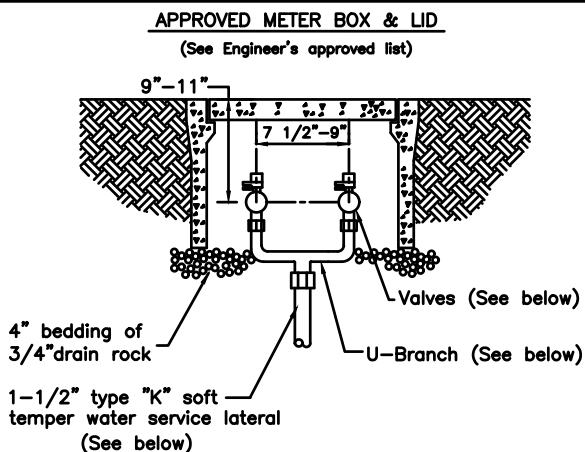
NOTES

1. Service lateral bedding material to be compacted to minimum 90% relative compaction prior to installation of Polyethylene service tubing.
2. Unless otherwise specified on the plans, plumb 1-1/2" service for a 1" meter installation.
3. Meter box must be set flush with surrounding surfaces. Service address shall be clearly marked on top of meter box lip with a permanent felt marker prior to requesting meter set.
4. Water services and meter boxes shall be located away from driveways where possible. Installations in driveways, or anywhere vehicular traffic may occur, must be approved by the Public Works Department. If so approved, the box & lid shall have a AASHTO H20 rating. All meter box and lid installations shall be per manufacturer's recommendations, and shall comply with all applicable City Standards.
5. Building Service line material shall be type "K" hard temper copper or threaded brass for at least the first 10 linear feet, 12" behind proposed sidewalk or to the back of P.U.E., whichever is farther. When not extending the service line to a building or connecting to a backflow device or an existing lateral, the Contractor shall cap the end watertight. There shall be no bends or fittings under curb, gutter, concrete planter strip or sidewalk unless first approved by the Public Works Department. If the permanent service meter is requested prior to completion of the property side plumbing, the service line shall be at least 10 linear feet in length and installed at a location safe from traffic and construction activities, and extended vertically to a minimum 24" above grade with a 3/4" hose bib on the end.
6. If connecting to a backflow device see specific backflow standard for piping requirements between meter and device. If existing line to be connected to is galvanized, use a dielectric fitting.
7. For new development, after testing the service lateral, the Contractor shall install a Sch.80 PVC spacer with N.I.P. threads on both ends. The spacer shall have 1/2" ϕ holes drilled through the pipe @ 2" O.C.
8. If installation calls for 5/8" x 3/4" meter, Contractor to supply approved 1" x 3/4" meter adapters.

 CITY OF SEBASTOPOL		
1-1/2" HIGH DENSITY POLYETHYLENE WATER SERVICE LATERAL for 1" METERS		
SCALE: NONE	DATE: OCT 2022	
DWN: NB	APPROVED	FILE NO.
CHK: DDP	ML	

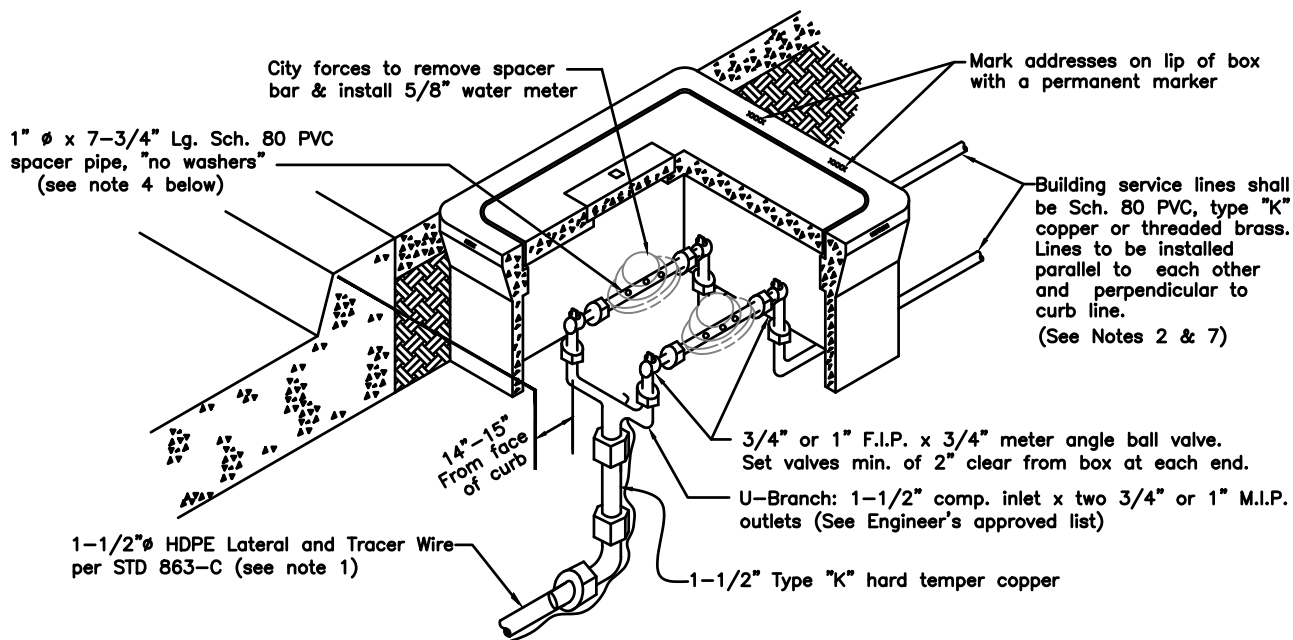


PLAN VIEW




SECTION A-A

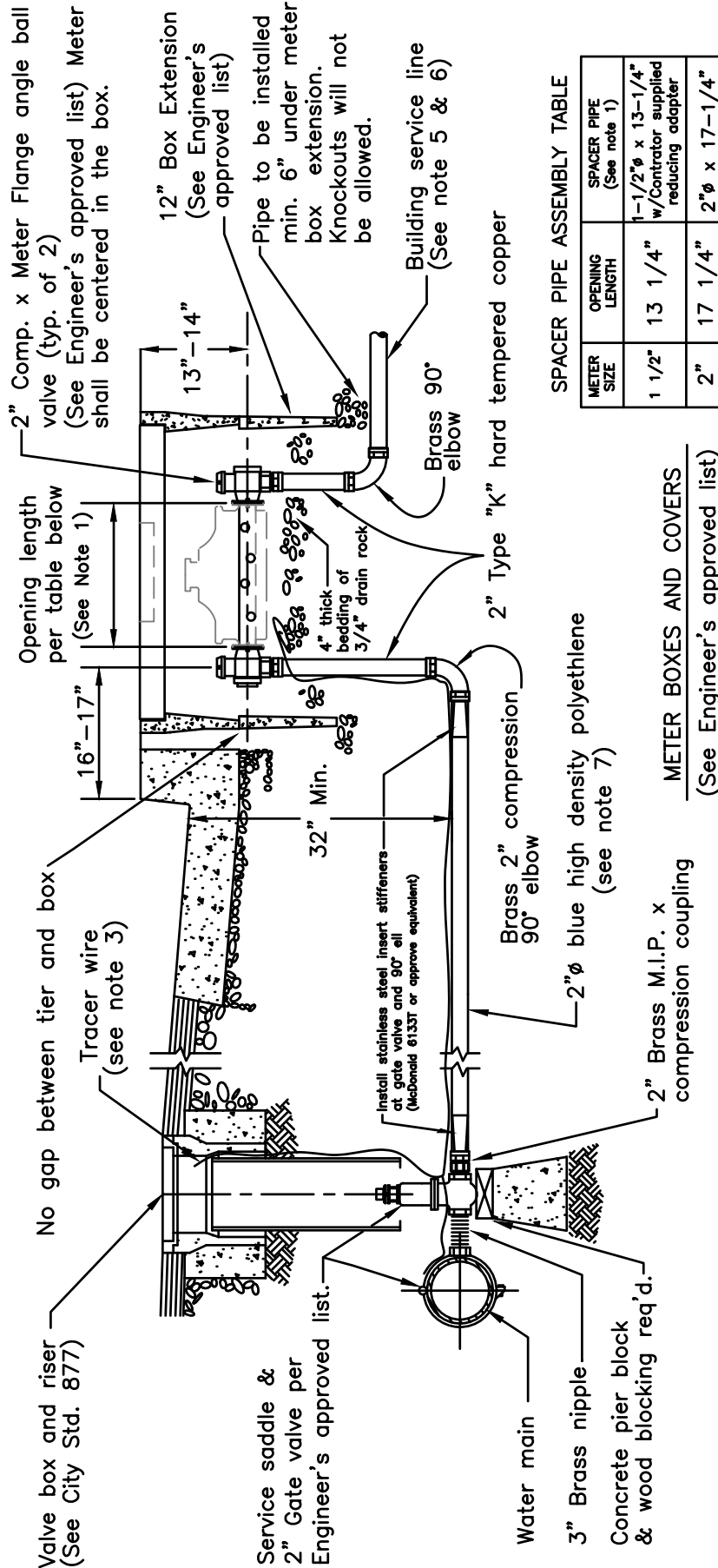
**SINGLE METER BOX INSTALLATION
FOR DUAL 3/4" MANIFOLD**



NOTES:

1. If plans or site conditions call for copper installation, install lateral per Standard 863-B unless otherwise directed by the Engineer.
2. When not extending to a building or connecting to a backflow device or an existing lateral, the Contractor shall extend the service laterals to a minimum of 12" behind future sidewalk or to back of P.U.E. and cap watertight. There shall be no bends or fittings under sidewalk and/or concrete planter strip. If the permanent service meter is requested prior to completion of the property side plumbing, at least 10 linear feet of service lateral shall be installed at a location safe from traffic and construction activities, and extended vertically to a minimum 24" above grade with a 3/4" hose bib on the end.
3. Bedding material shall be compacted to a minimum 90% relative compaction prior to tubing installation.
4. For new development, after testing the service lateral the Contractor shall install a Sch.80 PVC spacer with N.I.P. threads on both ends. The spacer shall have 1/2" Ø holes drilled through the pipe @ 2" O.C.
5. Meter box "knock-outs" shall not be removed for installation. Grouting of removed knock-outs, broken out sections or cracks will be rejected. Box shall be set at grade with surrounding surfaces.
6. Install solid lid with probe holes per City Standards and Specifications. If directed to install lid with inset read lid, box and read lid shall be centered over meters so both registers are easily visible.
7. If connecting to a backflow device see specific backflow standard for piping requirements between meter and device. If existing line to be connected to is galvanized, use a dielectric fitting.
8. Water services and meter boxes shall be located away from driveways where possible. Installations in driveways, or anywhere vehicular traffic may occur, must be approved by the Public Works Department. If so approved, the box & lid shall have a AASHTO H20 rating. All meter box and lid installations shall be per manufacturer's recommendations, and shall comply with all applicable City Standards.

 CITY OF SEBASTOPOL CALIFORNIA	
1-1/2" HIGH DENSITY POLYETHYLENE DUAL WATER SERVICE LATERAL	
SCALE: NONE	DATE: OCT 2022
DWN: NB CHK: DDP	APPROVED ML FILE NO. SID.- 864



SPACER PIPE ASSEMBLY TABLE

METER SIZE	OPENING LENGTH	SPACER PIPE (See note 1)
1 1/2"	13 1/4"	1-1/2" ϕ x 13-1/4" w/Contractor supplied reducing adapter
2"	17 1/4"	2" ϕ x 17-1/4"

METER BOXES AND COVERS
(See Engineer's approved list)

NOTES:

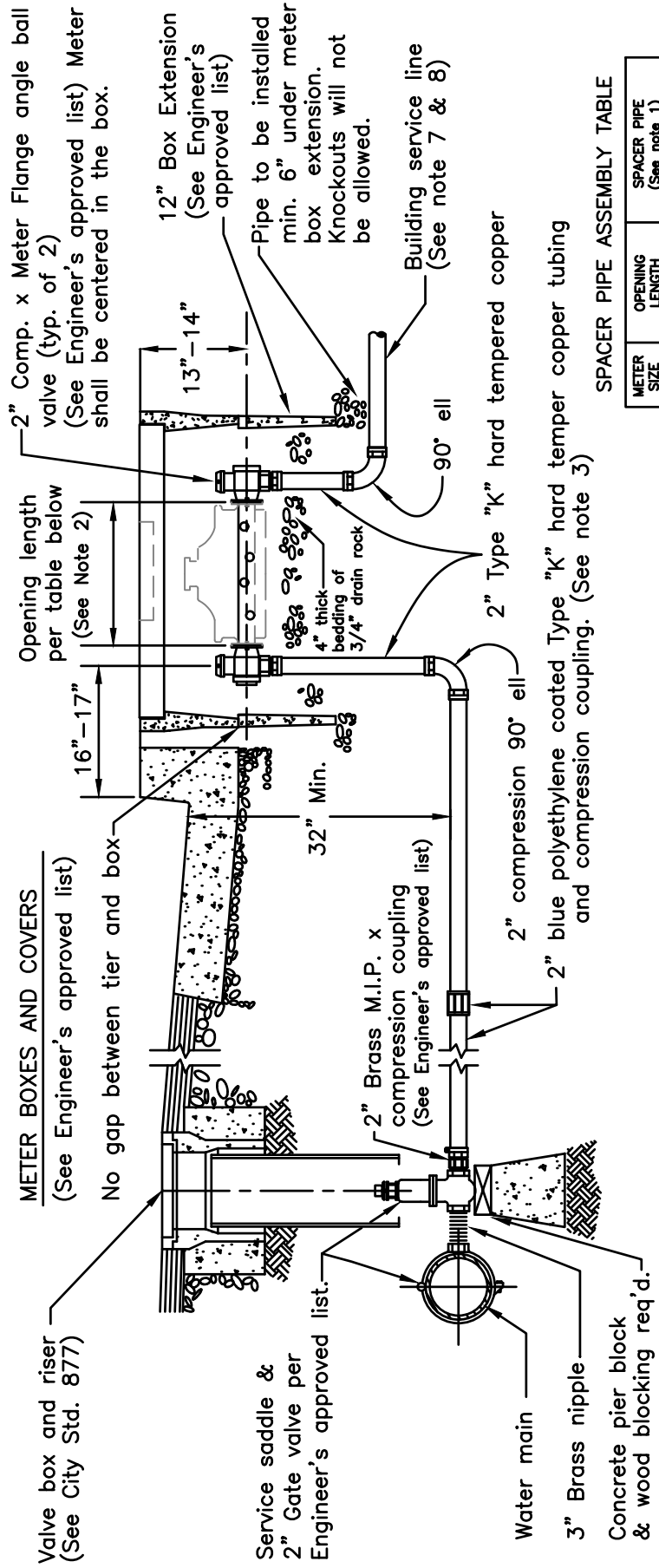
- For new development, after testing building service line, Contractor to install galvanized spacer pipe with 2" flanges threaded on both ends. Drill 1/2" holes @ 2" O.C. through spacer pipe. Spacer assembly length is to outside of flanges. Do not install meter gaskets. City forces will remove spacer and install meter.
- Meter box shall be set flush with surrounding surfaces. Service address shall be clearly marked on top of meter box lip with a permanent marker prior to requesting meter set.
- Install tracer wire per City of Santa Rosa Construction Specifications. Connect to mainline tracer wire where possible, if mainline wire is not accessible start by wrapping service wire 1 time around area between saddle and corporation stop, and lay along lateral alignment without wrapping around tubing. Extend and coil 2' of wire in meter box.
- Water services and meter boxes shall be located away from driveways where possible. Installations in driveways, or anywhere vehicular traffic may occur, must be approved by the Public Works Department. If so approved, the box & lid shall have a AASHTO H20 rating. All meter box and lid installations shall be per manufacturer's recommendations, and shall comply with all applicable City Standards.
- Building Service line material shall be type "K" hard temper copper or threaded brass for at least the first 10 linear feet, 12" behind proposed sidewalk or to the back of P.U.E., whichever is farther. When not extending the service line to a building or connecting to an existing lateral, the Contractor shall cap the end watertight. There shall be no bends or fittings under curb, gutter, concrete planter strip or sidewalk unless first approved by the Public Works Department. If the permanent service meter is requested prior to completion of the property side plumbing, the service line shall be at least 10 linear feet in length and installed at a location safe from traffic and construction activities, and extended vertically to a minimum 24" above grade with a 3/4" hose bib on the end.
- If connecting to a backflow device use Type "K" hard tempered copper or threaded brass between the meter and backflow device. If existing line to be connected is galvanized, use dielectric fitting.
- In general the service shall only have lateral joints where more than one length of tubing is necessary, or where bends are require for alignment changes.

CITY OF SEBASTOPOL

**2" HIGH DENSITY POLYETHYLENE
WATER SERVICE LATERAL
FOR 2" OR 1-1/2" METER**

SCALE: NONE
DATE: OCT 2022

DWN: NB
CHK: DDP
APPROVED
ML
FILE NO.



SPACER PIPE ASSEMBLY TABLE

METER SIZE	OPENING LENGTH	SPACER PIPE (See note 1)
1 1/2"	13 1/4"	1-1/2"ø x 13-1/4" w/Contractor supplied reducing adapter
2"	17 1/4"	2"ø x 17-1/4"

NOTES:

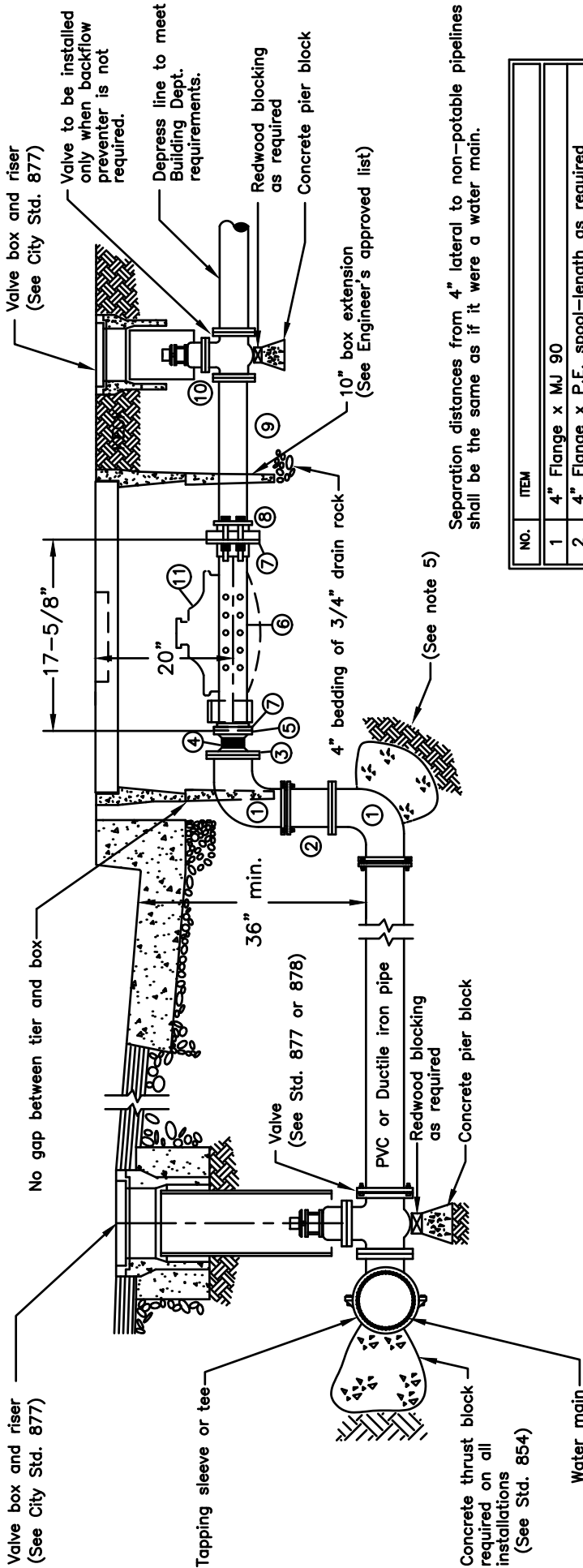
- This standard shall only be used where 2" copper tubing is already specified for use, or when specifically called for on the plans or other contract documents. Where no specific standard is called out Contractor to request direction from Engineer.
- For new development, after testing building service line, Contractor to install galvanized spacer pipe with 2" flanges threaded on both ends. Drill 1/2" holes @ 2" O.C. through spacer pipe. Spacer assembly length is to outside of flanges. Do not install meter gaskets. City forces will remove spacer and install meter.
- In general the service shall only have lateral joints where more than one length of tubing is necessary, or where bends are required for alignment changes.
- Meter box shall be set flush with surrounding surfaces.
- Prior to setting the water meter the Public Works Department requires the service address to be clearly marked on the top side lip of meter box with a permanent felt marker.
- Water services and meter boxes shall be located away from driveways where possible. Installations in driveways, or anywhere vehicular traffic may occur, must be approved by the Public Works Department. If so approved, the box & lid shall have a AASHTO H20 rating. All meter box and lid installations shall be per manufacturer's recommendations, and shall conform to all applicable City Standards.
- Building Service line material shall be type "K" hard temper copper or threaded brass for at least the first 10 linear feet, 12" behind proposed sidewalk or to the back of P.U.E., whichever is farther. When not extending the service line to a building or connecting to an existing lateral, the Contractor shall cap the end watertight. There shall be no bends or fittings under curb, gutter, concrete planter strip or sidewalk unless first approved by the Public Works Department. If the permanent service meter is requested prior to completion of the property side plumbing, the service line shall be at least 10 linear feet in length and installed at a location safe from traffic and construction activities, and extended vertically to a minimum 24" above grade with a 3/4" hose bib on the end.
- If connecting to a backflow device use Type "K" hard tempered copper or threaded brass between the meter and backflow device. If existing line to be connected is galvanized, use dielectric fitting.

CITY OF SEBASTOPOL

2" COPPER WATER SERVICE LATERAL FOR 2" OR 1-1/2" METER

SCALE: NONE | DATE: OCT 2022

DWN: NB | APPROVED: ML | FILE NO. STD-865-B
 CHK: DDP | Page 44 of 68 | 11/15/2022



Separation distances from 4" lateral to non-potable pipelines shall be the same as if it were a water main.

NO.	ITEM
1	4" Flange x MJ 90
2	4" Flange x P.E. spool—length as required
3	4" x 3" Threaded Companion flange
4	3" Brass close nipple
5	3" Threaded Companion flange
6	3"Ø Galvanized Steel Pipe (See note 1)
7	3" Steel flange
8	3" Megaflange, or approved equivalent
9	3" Flange x P.E. D.I.P. — length as req'd.
10	3" AWWA C509/515 resilient wedge gate valve
11	3" Meter by City Forces

NOTES:


1. Install solid wall galvanized steel spacer, with meter gaskets, for testing. After testing drill 1/2"Ø holes @ 2" O.C. through pipe. City Forces to remove spacer bar & install 3" water meter. Do not install meter gaskets.
2. Boxes located in traffic loading areas shall be AASHTO H20 rated. If a box with a steel cover is approved for installation by the Public Works Department they shall be installed so the steel cover is flush with the surrounding finished surfaces. All box and lid installations shall be per manufacturer's recommendations, and shall comply with all applicable City Standards.
3. Prior to meter set, address shall be clearly marked on top of meter box with permanent marker.
4. Pipe openings in box/tier shall be neatly cut, do not break out or use hammer. All annular spaces between box/tier and piping shall be neatly grouted with an approved high strength non-shrink grout.
5. Restrained joints are required on all new piping from gate valve to 90° ell. Thrust blocks are only required where existing services are being modified and restrained joints are not practical.

APPROVED METER BOXES, EXTENSIONS AND COVERS

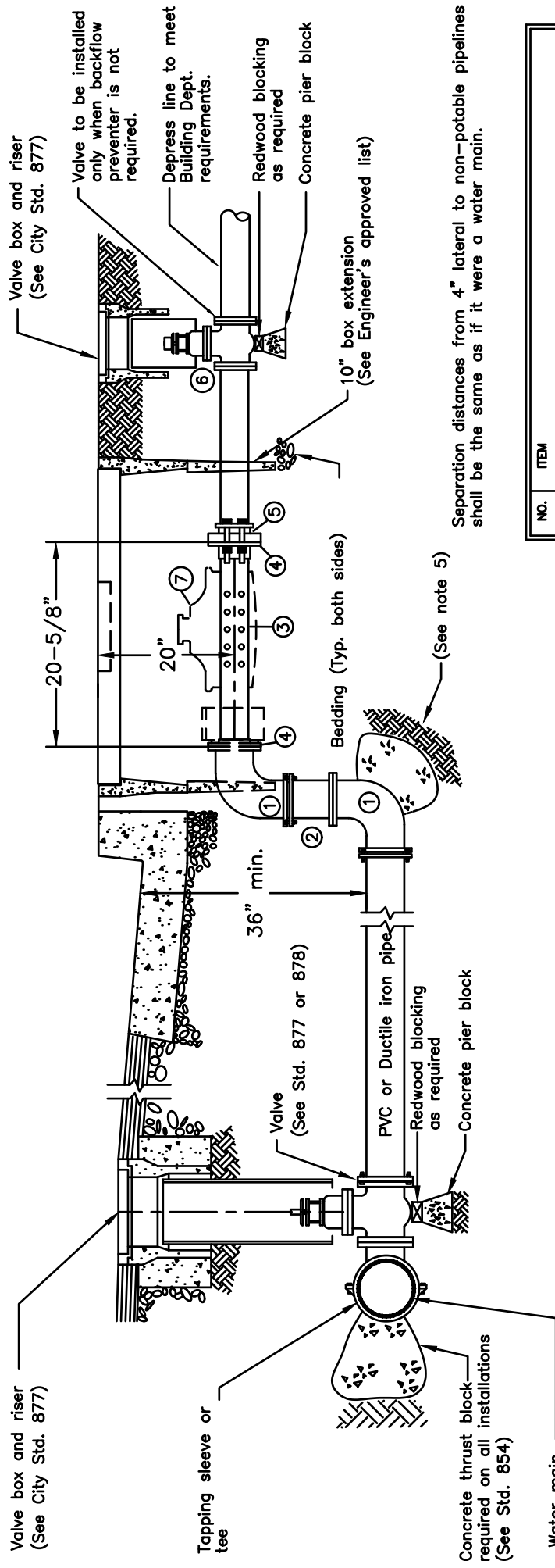
(See Engineer's approved list)

APPROVED TAPPING SLEEVES

(See Engineer's approved list)

 CITY OF SEBASTOPOL		
4" WATER SERVICE LATERAL FOR 3" METER		
SCALE: NONE	DATE: OCT 2022	
DWN: NB CHK: DDP	APPROVED ML	FILE NO. STD.- 866

Note: Valve may be installed in or directly behind sidewalk.



Separation distances from 4" lateral to non-potable pipelines shall be the same as if it were a water main.

NOTES:

1. Install solid wall galvanized steel spacer, with meter gaskets, for testing. After testing drill 1/2" holes @ 2" O.C. through pipe. City Forces to remove spacer bar & install 4" water meter.
2. Boxes located in traffic loading areas shall be AASHTO H20 rated. If a box with a steel cover is approved for installation by the Public Works Department they shall be installed so the steel cover is flush with the surrounding finished surfaces. All box and lid installations shall be per manufacturer's recommendations, and shall comply with all applicable City Standards.
3. Prior to meter set, address shall be clearly marked on top of meter box with permanent marker.
4. Pipe openings in box/tier shall be neatly cut, do not break out or use hammer. All annular spaces between box/tier and piping shall be neatly grouted with an approved high strength non-shrink grout. Restrained joints are required on all new piping from gate valve to 90° eli. Thrust blocks are only required where existing services are being modified and restrained joints are not practical.

NO.	ITEM
1	4" Flange x MJ 90
2	4" Flange x P.E. spool-length as required
3	4"φ Galvanized Steel Pipe (See note 1)
4	4" Steel Flange
5	4" Megaflange or approved equivalent
6	4" AWWA C509/515 resilient wedge gate valve
7	Meter by City Forces

APPROVED METER BOXES, EXTENSIONS AND COVERS

(See Engineer's approved list)

APPROVED TAPPING SLEEVES

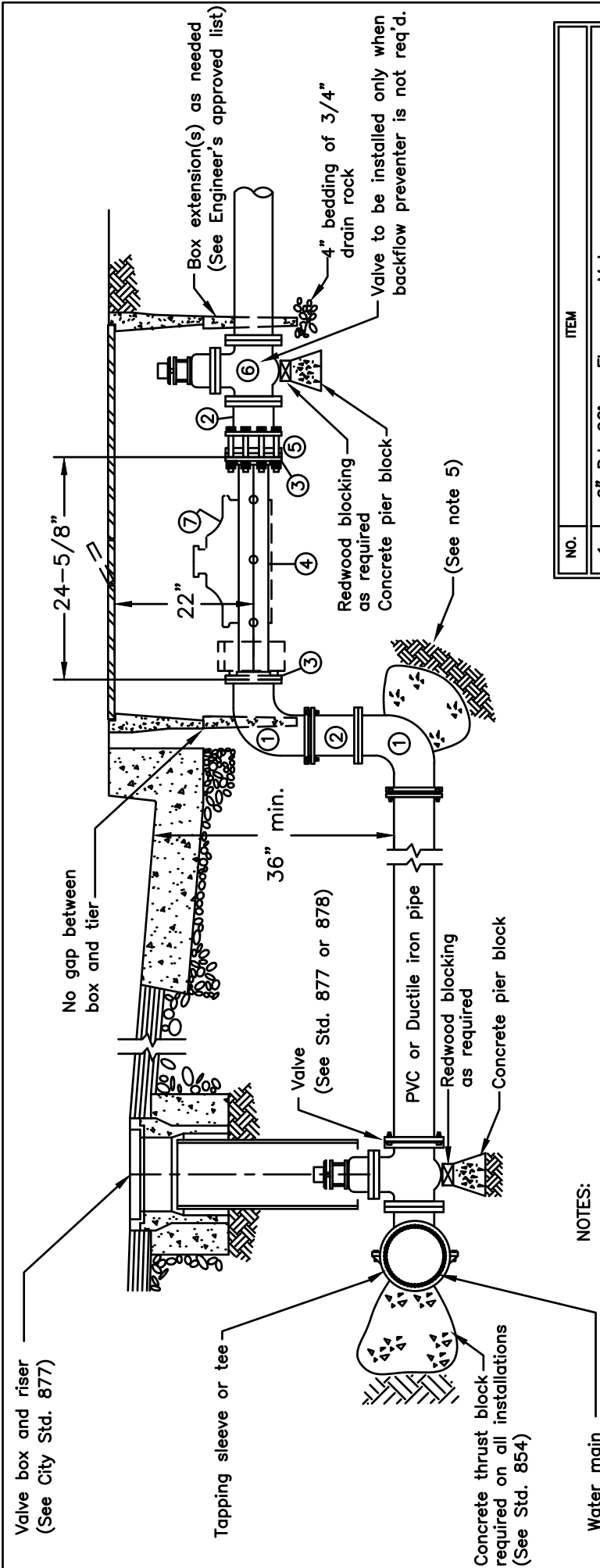
(See Engineer's approved list)

CITY OF SEBASTOPOL

4" WATER SERVICE
LATERAL FOR 4" METER

SCALE: NONE DATE: OCT 2022

DWN: NB APPROVED FILE NO.
CHK: DDP ML 11/15/2022 867



NOTES:

1. Install solid wall galvanized steel spacer, with meter gaskets, for testing. After testing drill 1/2" holes @ 2" O.C. through pipe. City Forces to remove spacer bar & install 3" water meter.
2. Boxes located in traffic loading areas shall be AASHTO H20 rated. If a box with a steel cover is approved for installation by the Public Works Department they shall be installed so the steel cover is flush with the surrounding finished surfaces. All box and lid installations shall be per manufacturer's recommendations, and shall comply with all applicable City Standards.
3. Prior to meter set, address shall be clearly marked on top of meter box with permanent marker.
4. Pipe openings in box/tier shall be neatly cut, do not break out or use hammer. All annular spaces between box/tier and piping shall be neatly grouted with an approved high strength non-shrink grout.
5. Restrained joints are required on all new piping from gate valve to 90° ell. Thrust blocks are only required where existing services are being modified and restrained joints are not practical.

NO.	ITEM
1	6" D.I. 90° - Flange x M.J.
2	6" D.I. Flange x P.E. spool - length as required
3	6" Steel Flange
4	6" Galvanized Steel Pipe (See note 1)
5	6" Megaflange, or approved equivalent
6	6" AWWA C509/515 resilient wedge gate valve
7	6" Turbine meter by City Forces

APPROVED METER BOXES, EXTENSIONS AND COVERS

(See Engineer's approved list)

APPROVED TAPPING SLEEVES

(See Engineer's approved list)

CITY OF SEBASTOPOL

**6" WATER SERVICE
LATERAL FOR 6" METER**

SCALE: NONE

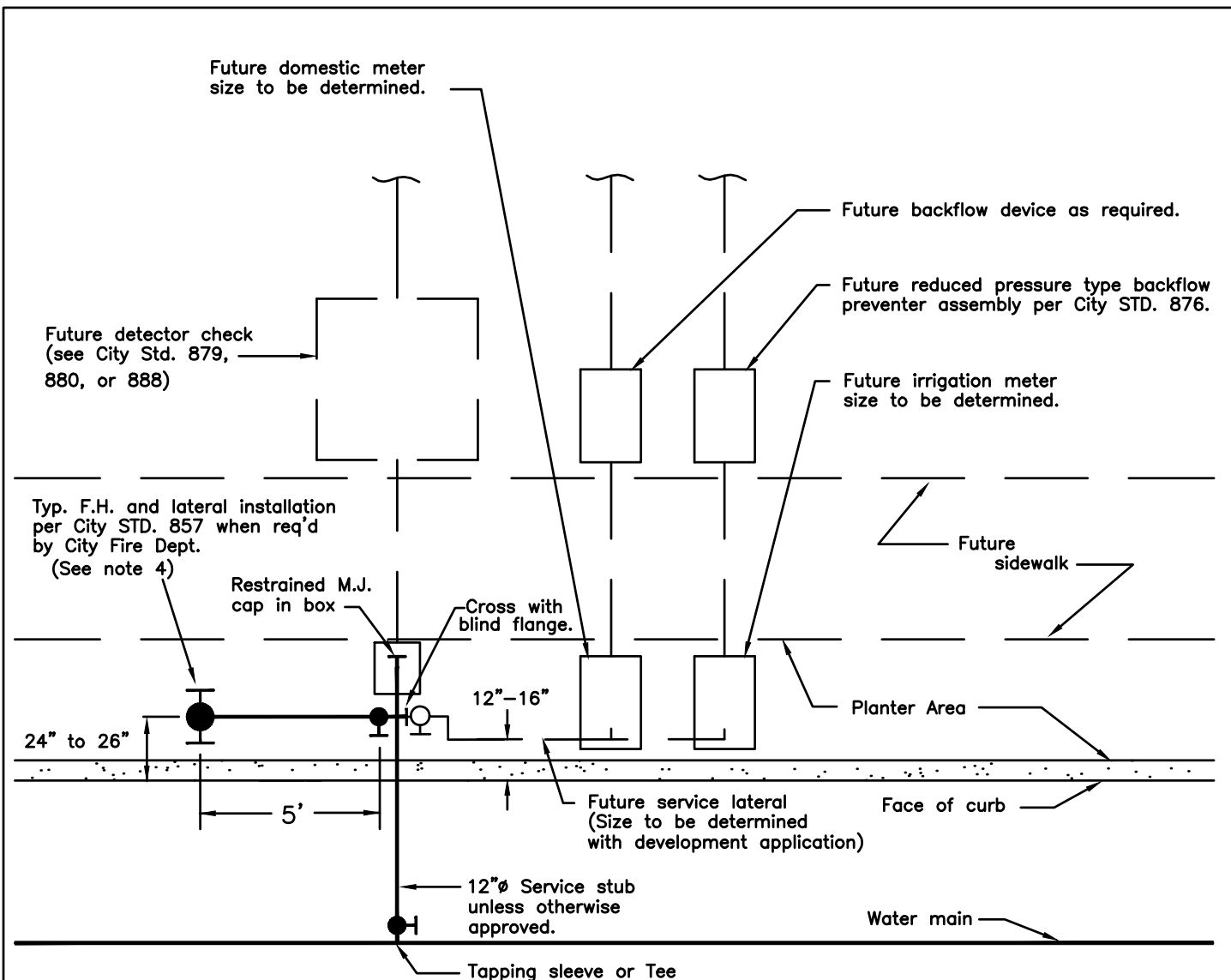
DATE: OCT 2022

DWN: NB
CHK: DDP

APPROVED
ML


FILE NO.
868

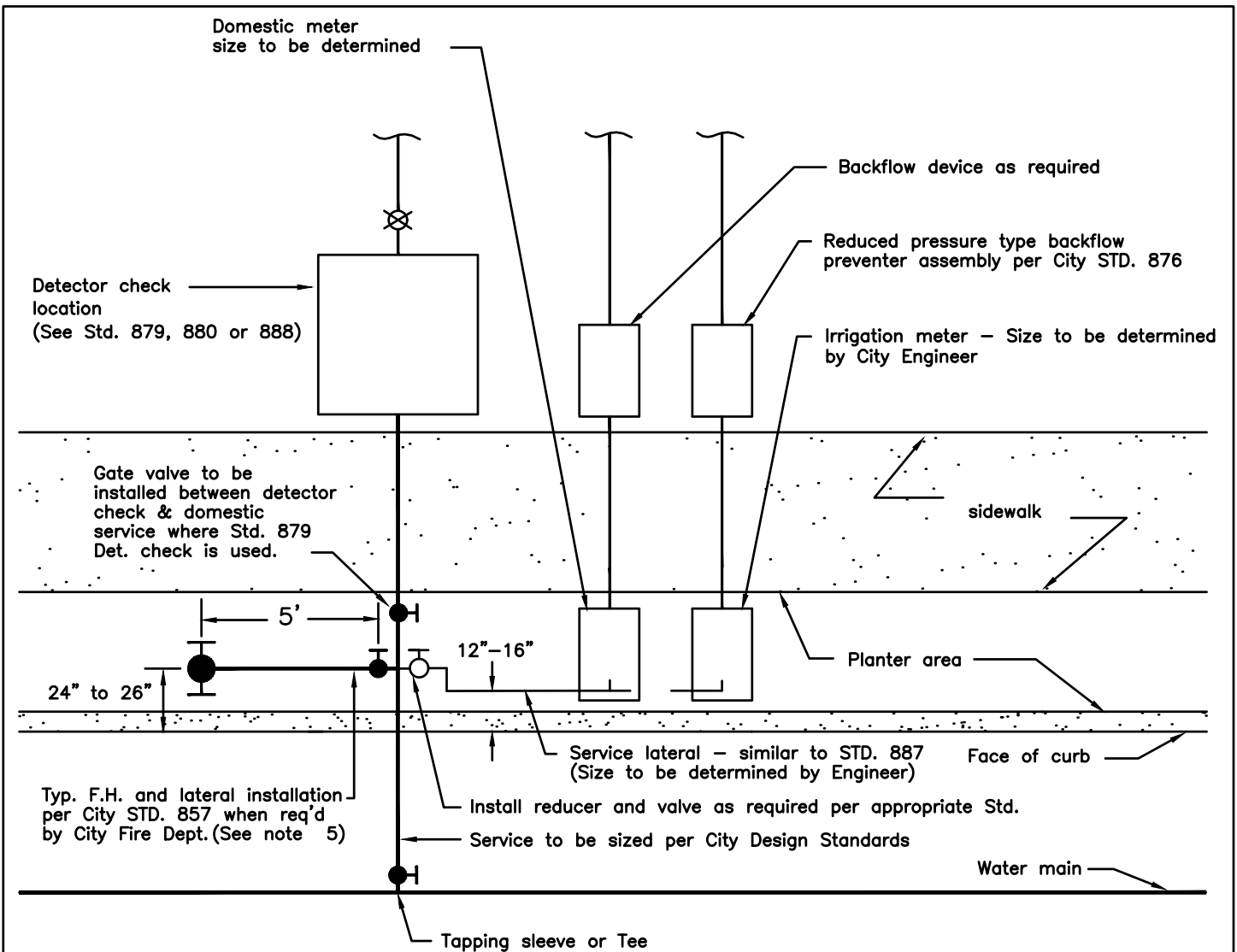
Separation distances from 6" lateral to non-potable pipelines shall be the same as if it were a water main.



NOTES:

1. This standard applies to commercial and multi-residential developments where domestic, irrigation, or fire protection requirements are not established at the time of application.
2. Public Works Department approval must be obtained prior to installation.
3. Where a hydrant is required, install an 8" x 6" cross or 12" x 6" cross as appropriate. Where a hydrant is not required, install manifold connection per the appropriate service lateral Standard.
4. Orientation of fire hydrant outlets will be determined in the field by the Public Works Department.
5. Restrained joints are required on all new construction.

 CITY OF SEBASTOPOL		
COMBINATION WATER SERVICE STUB		
SCALE: NONE	DATE: OCT 2022	
DWN: NB	APPROVED	FILE NO.
CHK: DDP	ML	Page 48 of 51 STD.- 869



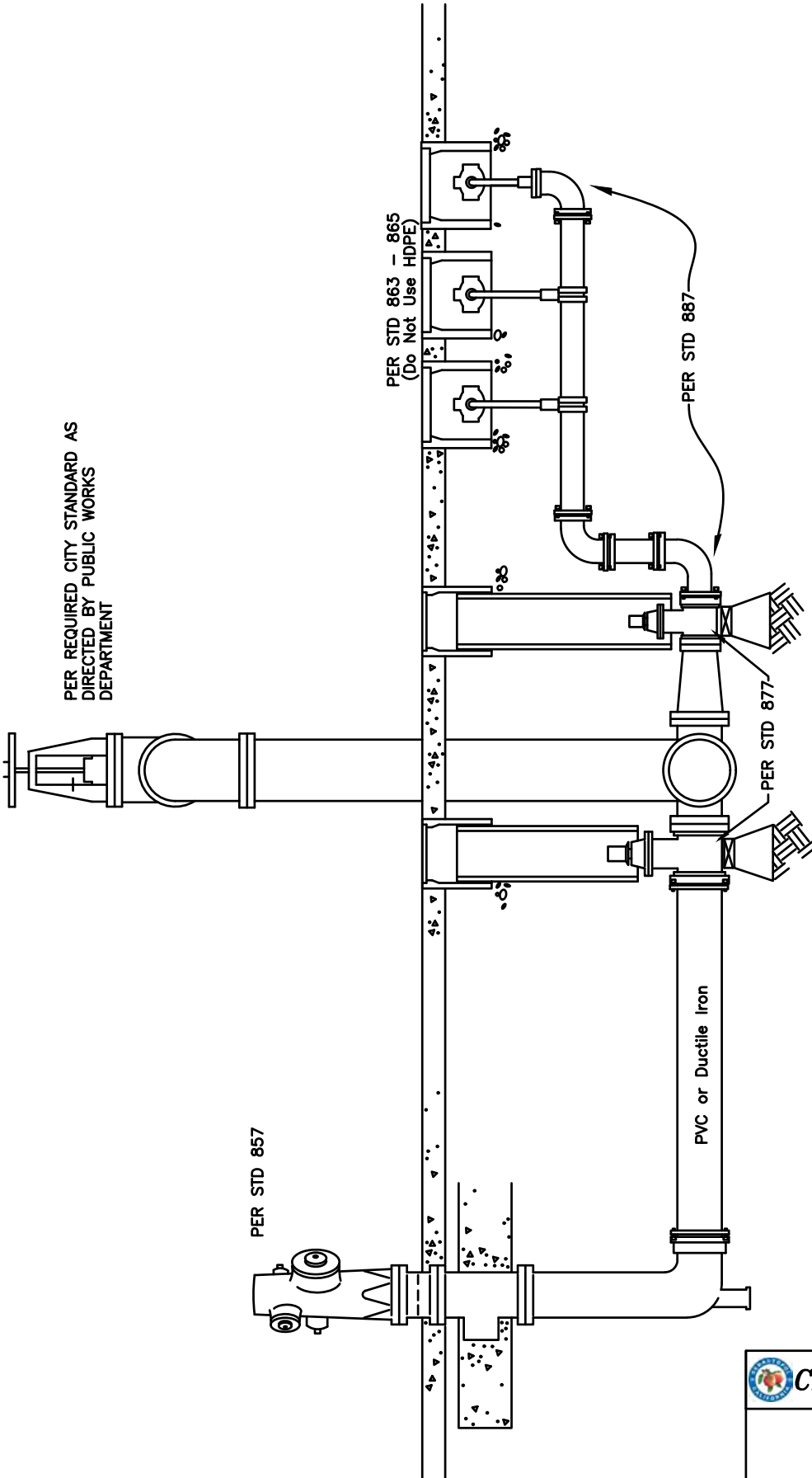
PLAN VIEW

NOTES:

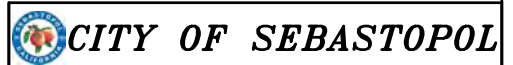
1. This standard applies to commercial and multi-residential developments where domestic, irrigation, or fire protection requirements are established at the time of application.
2. When referring to this standard, specify meter and detector check sizes and appropriate standard plans.
3. When field conditions preclude the installation of meters at or near the curb line, submit detailed plans of the proposed installation for Public Works Department approval. All meter installations must be within public right-of-way.
4. Where a hydrant is required, install 8" x 6" or 12" x 6" cross as appropriate. Where a hydrant is not required, install manifold connection per the appropriate service lateral standard.
5. Orientation of fire hydrant outlets shall be determined in the field by the Public Works Department.
6. Restrained joints are required on all new construction.

CITY OF SEBASTOPOL		
COMBINATION WATER SERVICE Page 1 of 2		
SCALE: NONE	DATE: OCT 2022	
DWN: NB CHK: DDP	APPROVED ML	FILE NO. Std. - 870

PER REQUIRED CITY STANDARD AS
DIRECTED BY PUBLIC WORKS
DEPARTMENT



PROFILE VIEW



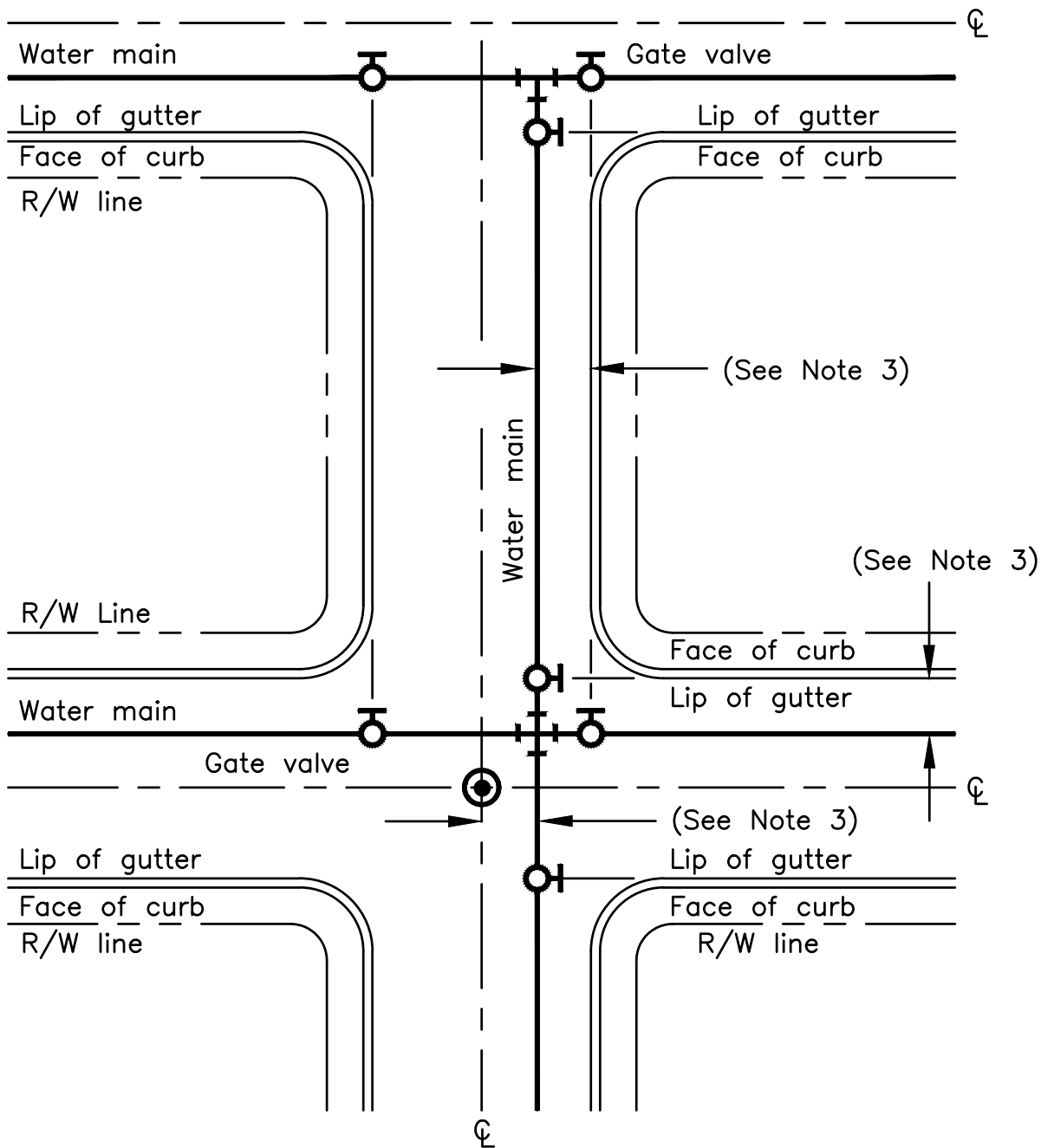
COMBINATION
WATER SERVICE

Page 2 of 2

SCALE: NONE | DATE: OCT 2022

DWN: NB | APPROVED ML | FILE NO. STD.- 870
CHK: DDP

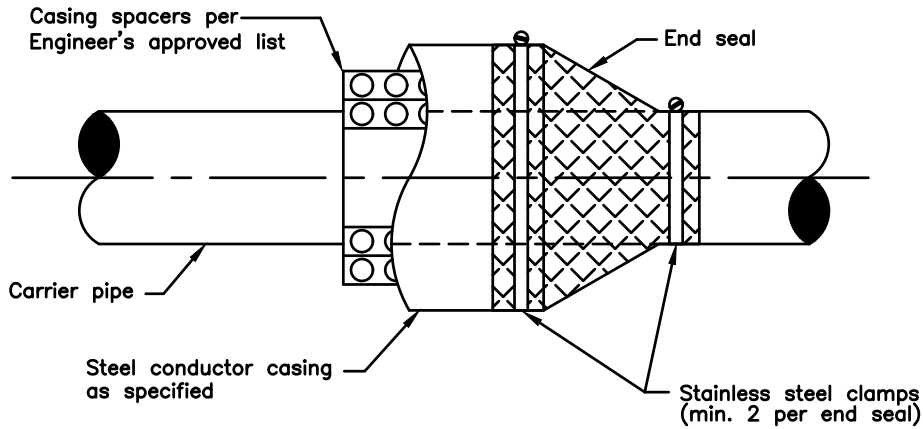
Page 50 of 68
11/15/2022



NOTES

1. Water mains shall be located parallel to street centerlines unless conflicts with other underground facilities cannot be avoided.
2. Non-standard alignments must be approved by the Public Works Director prior to installation. Mainline valves, except hydrant valves and tapping valves, shall be on face of curb extended where feasible.
3. Install mains with constant alignment whenever possible, minimums from nearest outside edge of pipe are; 3' to lip of gutter; 4' to centerline of monuments; and 5' to outside edge of structures such as manholes.

CITY OF SEBASTOPOL		
ALIGNMENT OF WATER MAINS AND PLACEMENT OF MAINLINE VALVES		
SCALE: NONE	DATE: OCT 2022	
DWN: NB CHK: DDP	APPROVED ML	FILE NO. SD-871

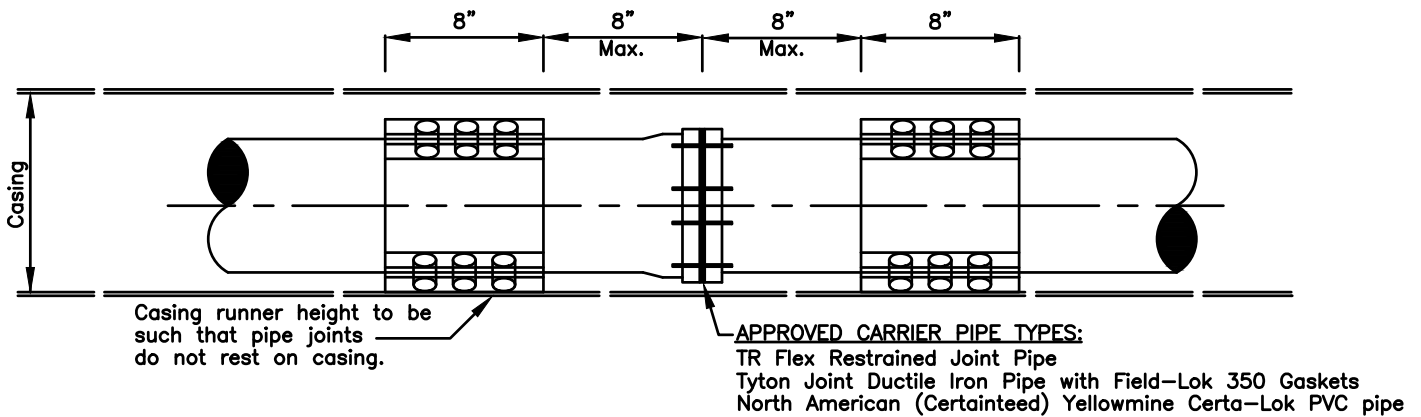


TYPICAL END SEAL DETAIL

NO SCALE

NOTES

1. Installations shall be per applicable manufacturer's recommendations and installation instructions.



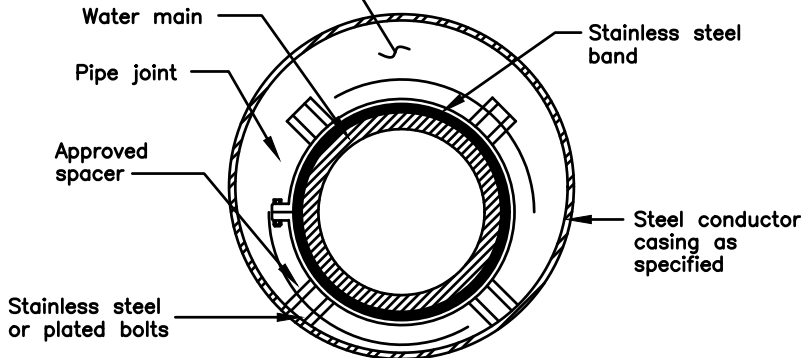
TYPICAL PIPE AND SPACER INSTALLATION

NO SCALE

NOTES

1. Install minimum three spacers per length of pipe.
2. Where conductor casing is existing R.C.P., stainless steel banded unfinished 2x4 redwood skids, made from con-heart grade lumber, may be installed, with the approval from the Public Works Department, in lieu of casing spacers. Redwood skids shall be a minimum of 4' long, notched to accommodate bands, with the leading edges beveled. There shall be a minimum of two bottom skids, side by side, and one top skid. Ends of skids shall be no more than 30" from pipe joints.

Specific Installations may require filling of the annular space with dry blown sand



SECTION "A-A"

NO SCALE

Minimum size conductor casing for all approved pipe types

Pipe Size	6"	8"	12"	14"	16"
Casing Size (Inside ϕ)	16"	18"	24"	24"	30"
Casing Wall Thickness	.375"	.375"	.375"	.375"	.500"

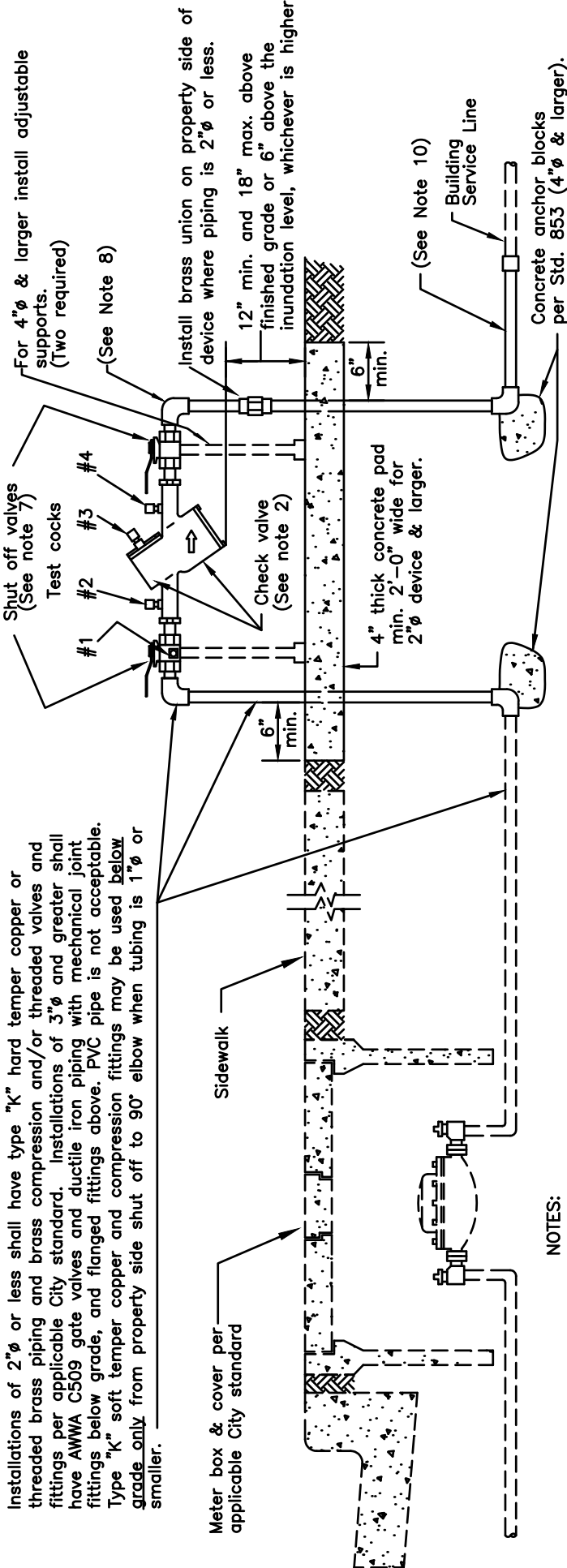
CITY OF SEBASTOPOL

WATER MAIN ENCASEMENT AND END SEAL

SCALE: NONE DATE: OCT 2022


DWN: NB APPROVED FILE NO. CHK: DDP ML 11/15/2022 - 872

Installations of 2"φ or less shall have type "K" hard temper copper or threaded brass piping and brass compression and/or threaded valves and fittings per applicable City standard. Installations of 3"φ and greater shall have AWWA C509 gate valves and ductile iron piping with mechanical joint fittings below grade, and flanged fittings above. PVC pipe is not acceptable. Type "K" soft temper copper and compression fittings may be used below grade only from property side shut off to 90° elbow when tubing is 1"φ or smaller.

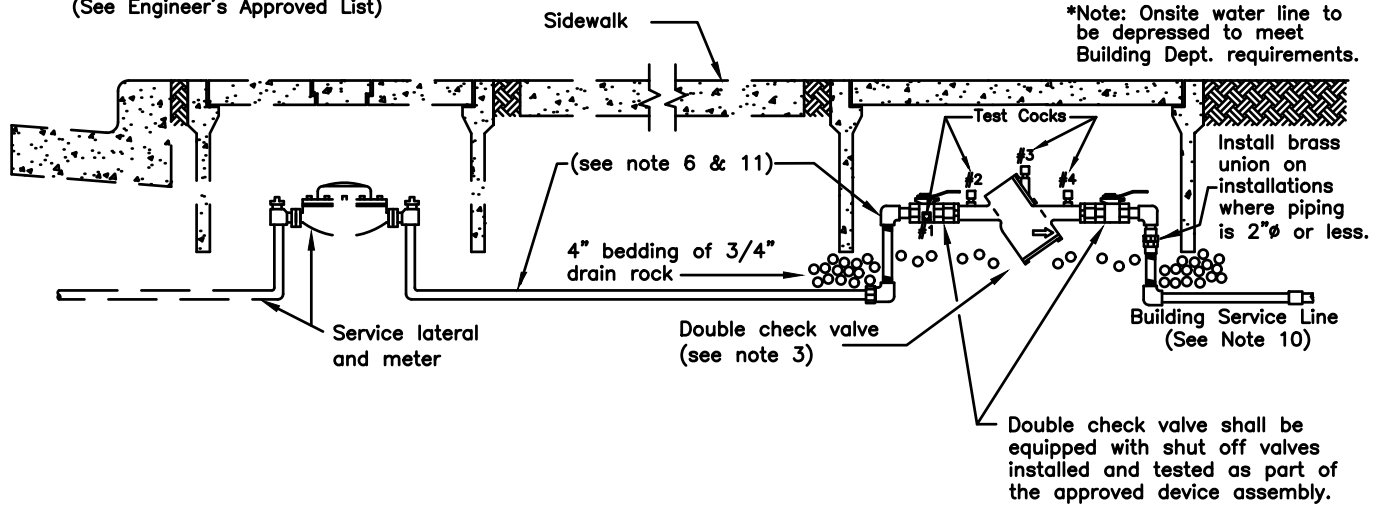


NOTES:

1. This standard shall be used for all commercial installations requiring a double check valve type backflow preventer.
2. Approved double check valve assemblies shall be from the "List Of Approved Backflow Prevention Devices" (Latest Revision) by the University of Southern California Foundation For Cross-Connection Control & Hydraulic Research.
3. Double check valve assemblies are required on all services where, in the opinion of the Public Works Department, a potential intermediate hazard exists. Device to be installed on all services to properties with wells.
4. If above ground installation is not feasible a request may be made to the Public Works Department for an installation per City Standard 875.
5. Double check valve assemblies shall typically be installed inline with the water meter and just behind the sidewalk. Where no sidewalk exists or installation at this location is not practical, double check valve assemblies shall be installed as close as possible to the water meter in a location that is safe from traveled ways. Any conflicts shall be brought to the attention of the Engineer and final location shall be determined by the Public Works Department.
6. The piping from the meter to the double check valve assembly and the double check valve assembly itself must be the same size as the meter unless otherwise approved by the Public Works Department.
7. Double check valve shall be equipped with shut off valves installed and tested as part of approved device assembly.
8. M.I.P x F.I.P. 90° elbows (street ells) are not allowed for use on this installation.
9. Provide brass caps or plugs for all test cocks.
10. Minimum 12" long threaded brass nipple for 2"φ and smaller, and 24" long ductile iron pipe for 3"φ and greater.
11. Any enclosure, cover or screening for the backflow assembly must first be approved by the Public Works Department prior to installation.
12. For Residential Fire Line Requirements, if applicable, see details on City Standard 875.
13. Where multiple devices are installed side by side there shall be a minimum of 12" between devices. Where enclosures are installed over devices, devices shall be centered within, and there shall be a minimum of 4" between enclosures.

 CITY OF SEBASTOPOL		
ABOVE GROUND DOUBLE CHECK VALVE BACKFLOW DEVICE		
SCALE: NONE	DATE: OCT 2022	
DWN: NB	APPROVED	FILE NO.
CHK: DDP	ML	Std.- 874

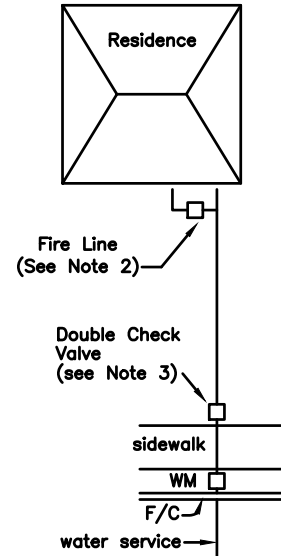
BOXES & COVERS per applicable City Standards (See Engineer's Approved List)




NOTES:

1. Upon written approval by the Public Works Department, this standard applies where there is a proposed residential connection to City water and there also may be an auxiliary water supply onsite, or where, in the opinion of the Public Works Department, a potential intermediate hazard may exist.
2. Upon written approval by the Fire Department, this standard applies where a residential fire sprinkler system is proposed. When approved, fire line to be installed in accordance with NFPA 13D.
3. Approved double check valve assemblies shall be from the "List Of Approved Backflow Prevention Devices" (Latest Revision) by the University of Southern California Foundation For Cross-Connection Control & Hydraulic Research.
4. Double check valve assemblies shall typically be installed inline with the water meter and just behind existing or proposed sidewalk. Where no sidewalk exists or installation at this location is not practical, assemblies shall be installed as close as possible to the water meter. Any conflicts shall be brought to the attention of the Engineer and final location shall be determined by the Public Works Department.
5. For 2" and smaller use brass compression and/or threaded fittings and threaded nipples. For 3" and larger use ductile iron fittings with mechanical joint connections below ground and flanged in the box.
6. Piping between property side shut off and backflow device shall be type "K" soft or hard temper copper for 1" and smaller, type "K" hard temper copper for 1-1/2" and 2", and ductile iron for 3" and larger. PVC will not be allowed. For all installations this piping shall be the same size as the meter unless otherwise approved by Public Works Department.
7. The device shall be centered in the box with a minimum of 2" clear between upper 90° elbows and box. The top of the highest point of the device shall be between 6" and 4" below the lid. Box shall not have "mouse holes" or removed "knock-outs". Installations where mouse holes, broken out sections or cracks have been grouted will be rejected.
8. M.I.P x F.I.P. 90° elbows (street ells) are not allowed for use on this installation.
9. Provide brass caps or plugs for all test cocks.
10. Minimum 12" long threaded brass nipple for 2" and smaller, and 24" long ductile iron pipe for 3" and greater.
11. Compression fittings are not allowed on piping inside box

Typical Residential Fire Line Connection Details

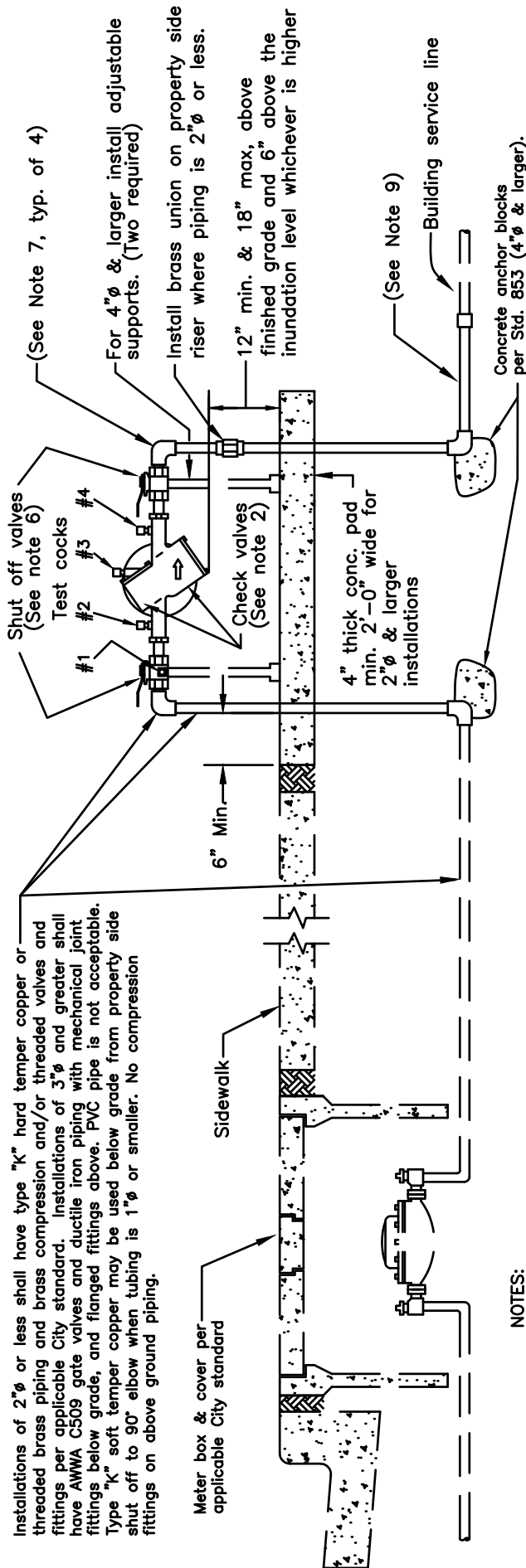


This installation allows the connection of the fire line to the domestic supply line near the residence.

 CITY OF SEBASTOPOL		
BELOW GROUND DOUBLE CHECK VALVE BACKFLOW DEVICE		
SCALE: NONE		DATE: OCT 2022
DWN: NB	APPROVED	FILE NO.
CHK: DDP	ML	STD.- 875


Installations of 2" or less shall have type "k" hard temper copper or threaded brass piping and brass compression and/or threaded valves and fittings per applicable City standard. Installations of 3" and greater shall have AWWA C509 gate valves and ductile iron piping with mechanical joint fittings, below grade, and flanged fittings above. PVC pipe is not acceptable. Type "k" soft temper copper may be used below grade from property side shut off to 90° elbow when tubing is 1" or smaller. No compression fittings on above ground piping.

Meter box & cover per applicable City standard



NOTES:

1. Reduced pressure type backflow assembly shall be required as determined by the Public Works Department.
2. Approved backflow assemblies shall be from the "List Of Approved Backflow Prevention Devices" (Latest Revision) by the University of Southern California Foundation For Cross-Connection Control & Hydraulic Research.
3. Reduced pressure type backflow assemblies are required on all services where, in the opinion of the Public Works Department, a potential intermediate hazard exists. Device to be installed on all services to properties with wells.
4. Reduced pressure backflow assemblies shall typically be installed inline with the water meter and just behind the sidewalk. Where no sidewalk exists or installation at this location is not practical, double check valve assemblies shall be installed as close as possible to the water meter in a location that is safe from traveled ways. Any conflicts shall be brought to the attention of the Engineer and final location shall be determined by the Public Works Department.
5. The piping from the meter to the device, and the device itself shall be the same size as the meter unless otherwise approved by the Public Works Department.
6. Valves 2" & less shall be brass ball valves, and valves 3" and greater shall be resilient seat gate valves. When shut off valves on approved backflow assemblies are installed on their vertical risers, the bottom of the valves shall be a minimum of 4" above finished grade.
7. M.I.P x F.I.P. 90° elbows (street ells) are not allowed for use on this installation.
8. Provide brass caps or plugs for all test cocks.
9. Minimum 12" long threaded brass nipple for 2" and smaller, and 24" long ductile iron pipe for 3" and greater.
10. Any enclosure, cover or screening for the backflow assembly must first be approved by the Public Works Department prior to installation.
11. Where multiple devices are installed side by side they shall have a minimum separation of 12".
12. Where multiple devices are installed side by side there shall be a minimum of 12" between devices. Where enclosures

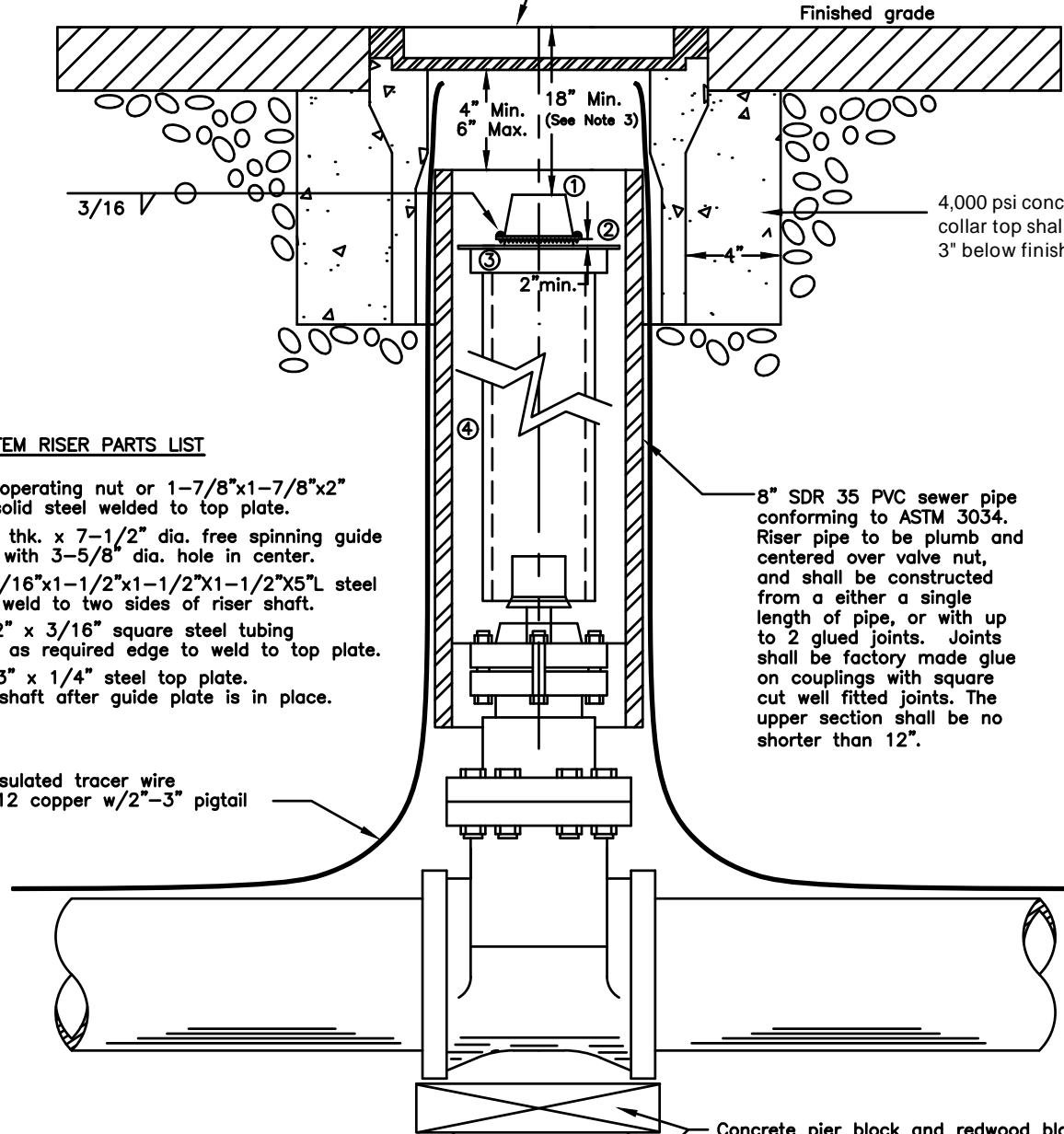
 CITY OF SEBASTOPOL		
REDUCED PRESSURE BACKFLOW DEVICE		
SCALE: NONE	DATE: OCT 2022	
DWN: NB	APPROVED	FILE NO.
CHK: DDP	ML	876

VALVE BOXES:
(See Engineer's approved list)

VALVE STEM RISER FABRICATION NOTES

1. All welds to riser shaft shall be fillet welds all around as specified below.
2. All steel required for riser fabrication shall be structural steel per ASTM A36.

Precast valve box set flush with street surface with cast iron ring and cover marked "WATER".



VALVE STEM RISER PARTS LIST

- ① Valve operating nut or 1-7/8"x1-7/8"x2" high solid steel welded to top plate.
- ② 3/16" thk. x 7-1/2" dia. free spinning guide plate, with 3-5/8" dia. hole in center.
- ③ Two 3/16"x1-1/2"x1-1/2"x5"L steel angle weld to two sides of riser shaft.
- ④ 2-1/2" x 3/16" square steel tubing length as required edge to weld to top plate.
- ⑤ 3" x 3" x 1/4" steel top plate.
Riser shaft after guide plate is in place.


8" SDR 35 PVC sewer pipe conforming to ASTM 3034. Riser pipe to be plumb and centered over valve nut, and shall be constructed from a either a single length of pipe, or with up to 2 glued joints. Joints shall be factory made glue on couplings with square cut well fitted joints. The upper section shall be no shorter than 12".

Insulated tracer wire #12 copper w/2"-3" pigtail

Concrete pier block and redwood blocking required when installing new valve on existing main.

NOTES

1. Valves 2" and larger shall be resilient wedge gate valves per City of Santa Rosa Specification 132-1.05 unless otherwise approved by the Public Works Department.
2. All external valve bolts and nuts shall be stainless steel grade 304 or better.
3. Where valve is installed so that the top of the operating nut is 36" or less below finished grade, the valve stem riser is not required. Where valve stem riser is required the operating nut of the riser shall be 18" to 24" below grade. Risers of 12" in length or shorter shall not be used.
4. Where top of operating nut of valve will be 6" or less below finished grade, horizontal gate valve shall be installed unless otherwise approved.
5. For installation of tapping valve, or butterfly valve as approved by the Public Works Department, installation shall be per City Standard 878.

 **CITY OF SEBASTOPOL**

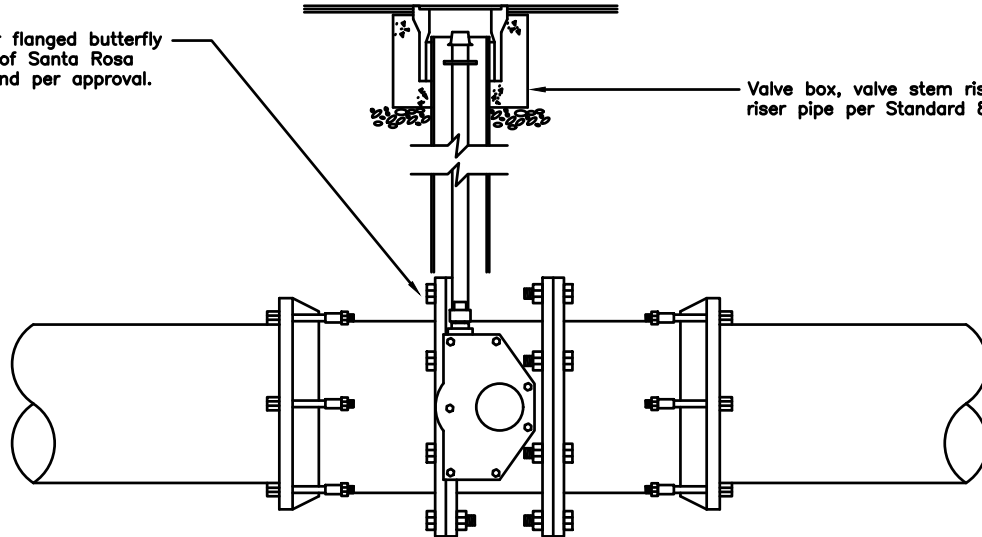
GATE VALVE

SCALE: NONE DATE: OCT 2022

DWN: NB	APPROVED	FILE NO.
CHK: DDP	ML	Std.- 877

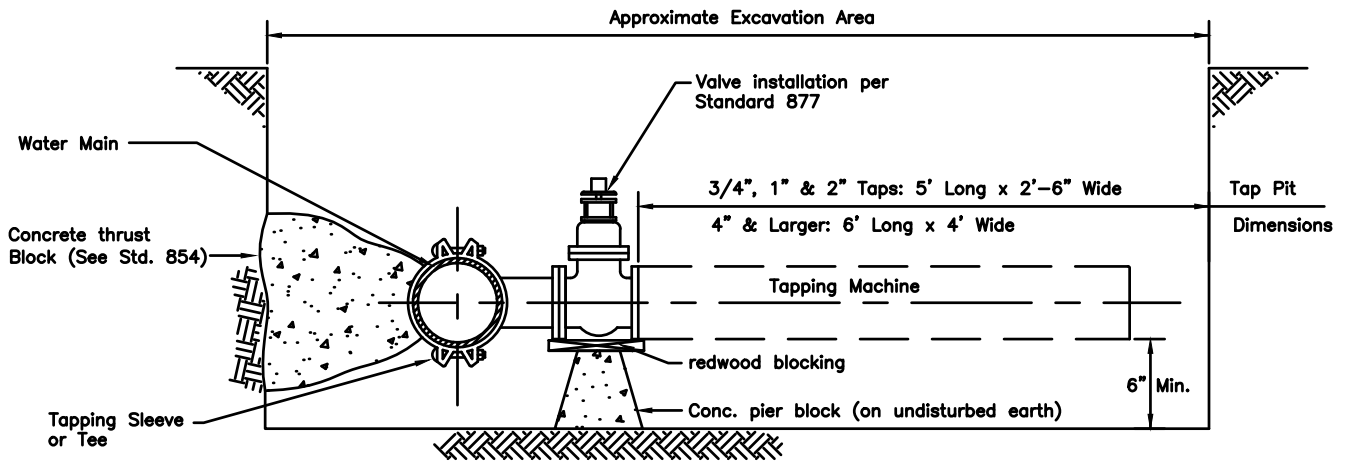
Install mechanical joint or flanged butterfly valve conforming to City of Santa Rosa Specification 132-1.06, and per approval.

Valve box, valve stem riser and riser pipe per Standard 877



BUTTERFLY VALVE

To be used only upon approval from the Public Works Department.



TAPPING SLEEVE & VALVE

TAPPING SLEEVES

(See Engineer's Approved List for Std. 866/867)

NOTES:

1. All external bolts and nuts on valve shall be stainless steel grade 304 or better.
2. Taps shall be scheduled through and made by Public Works personnel only.

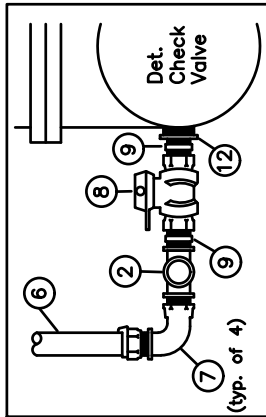
CITY OF SEBASTOPOL		
BUTTERFLY VALVE AND TAPPING VALVE		
SCALE: NONE	DATE: OCT 2022	
DWN: NB CHK: DDP	APPROVED ML	FILE NO. std.- 878

THIS STANDARD ONLY TO BE USED UPON APPROVAL FROM THE PUBLIC WORKS DEPARTMENT

Public Works Department Responsibility

Public Works Inspector

Fire Department Inspector

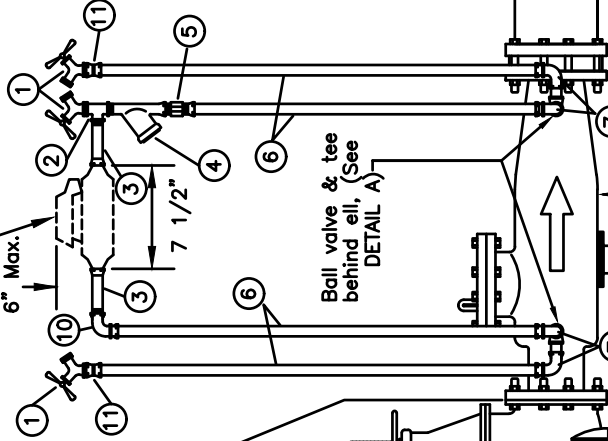


Bypass meter to be installed by Public Works Department upon City approval of fire line installation. Plumbing shall center meter under read lid of vault.

APPROVED DETECTOR CHECK VALVES
(See Engineer's Approved List)

Precast vault & cover
(See note 3, sheet 2)

Sidewalk



Resilient wedge gate valve

Megaflange or approved equivalent. (typ. of 2)

There shall be a minimum 2" annular space around pipe during installation. Annular space shall be grouted with high strength non-shrink grout after plumbing is complete. (both sides)

Adjustable supports
(typ. of 2)

6" thick bedding of 1" drain rock

Min. 6" thick vault floor with 12" x 12" x 12" sump and galvanized grate

Provide 1" conduit for tamper switch controls when req. (see note 2 sheet 2)

See note 2 Sheet 2

See note 8 Sheet 2

To private hydrant(s)

CITY OF SEBASTOPOL		
SINGLE CHECK DETECTOR ASSEMBLY IN VAULT		
Page 1 of 3		
SCALE: NONE	DATE: OCT 2022	
DWN: NB CHK: DDP	APPROVED ML	FILE NO. Std. - 879

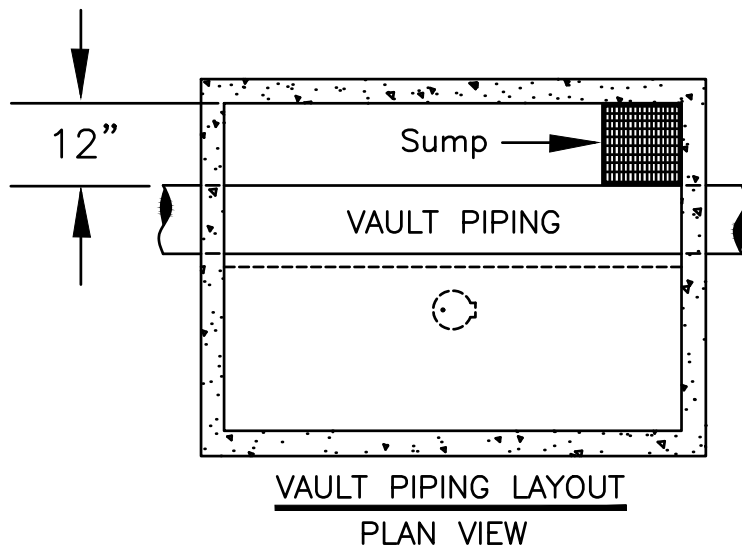
BY-PASS PARTS LIST

NO.	DESCRIPTION	QUANTITY
1.	3/4" BRASS MALE HOSE BIB	3
2.	3/4" BRASS TEE - FIP x FIP x FIP	3
3.	3/4" BRASS MTR SPUD - LENGTH AS NEEDED	2
4.	3/4" BRASS MIP INLET X FIP OUTLET STRAIGHT CHK. VALVE	1
5.	3/4" BRASS MIP X COMP. COUPLING	1
6.	3/4" TYPE "K" SOFT TEMPER COPPER	AS NEEDED
7.	3/4" BRASS COMP. X MIP 90° ELL	4
8.	3/4" BRASS FIP X FIP STRAIGHT BALL VALVE	2
9.	3/4" BRASS HEX HEAD CLOSE NIPPLE	4
10.	3/4" BRASS COMP. X FIP 90° ELL	1
11.	3/4" BRASS COMP x FIP COUPLING	2
12.	DEVICE PENETRATION Ø X 3/4" BRASS BUSHING	2

* All material shall comply with California Health and Safety Code Section 116875

NOTES

1. Single check detector installation per Standard 879 requires prior authorization by the Public Works Department. Authorization shall only be provided when, in the opinion of the Engineer, above ground installation, per Standard 879 is not possible due to site constraints.
2. The post indicator and valve shall be installed as approved by the Fire Department. The installation shall be provided with electronic supervision monitoring when required by the Fire Department. Any adjustments to this standard must be first approved, in writing, by both the Fire and Public Works Departments.
3. Refer to vault size chart for proper size. Should a property side O.S. & Y. valve be required inside the vault the vault length shall increase by an additional 12" for 4" & 6" installations, and 18" for 8" and 12" installations. The Contractor shall notify the Engineer if additional clearances appear to be warranted. See the engineer's approved list for approved vaults and covers. Pipe penetrations in vault shall be offset to allow 12" clearance from edge of device to edge of vault wall on side opposite of bypass.
4. All fire line services, to the post indicator valve, shall be tested by the Public Works Inspector per Public Works Dept. Requirements. All onsite fire line appurtenances, including, the post indicator valve and hydrants, shall be inspected and tested by the City Fire Department per City Fire Code.
5. Where, in the opinion of the Public Works Department, there's potential for a higher level of hazard to exist on any fire service, the service shall be installed per City Standard 880.
6. The fire department connection (FDC) shall be installed and located as required by the Fire Department.
7. Post indicator valves shall be locked with a breakaway lock. The post indicator valve status indicator shall not be less than 36" above finished grade.
8. Valve shall be tied down with Fire Department approved rods and concrete blocking. See table on STD-851 for rod and block sizes. 4" valves shall sized the same as a 6".



VAULT (inside) DIMENSIONS		
S.D.C. SIZE	WIDTH	LENGTH
4"	4'	6'
6"	4'	6'
8"	5'	7'
10"	5'	7'

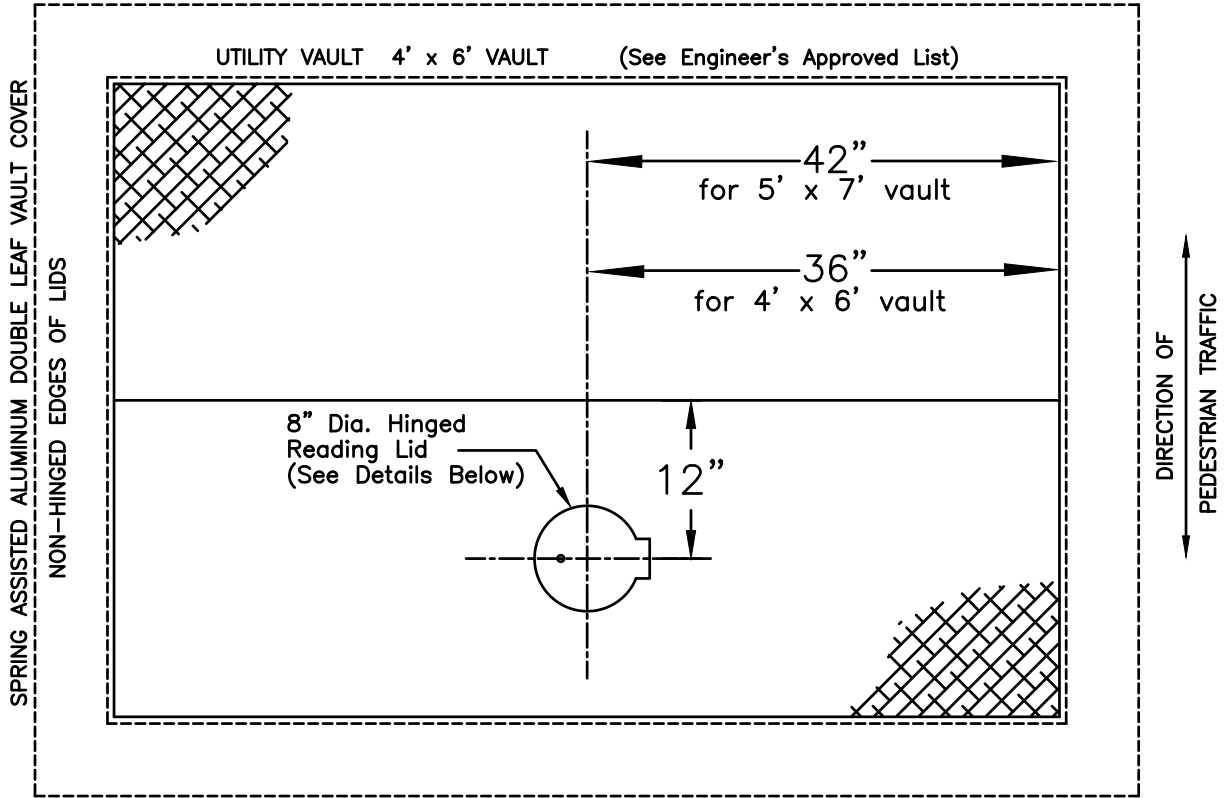
CITY OF SEBASTOPOL		
SINGLE CHECK DETECTOR ASSEMBLY IN VAULT Page 2 of 3		
SCALE: NONE		DATE: oct 2022
DWN: NB CHK: DDP	APPROVED ML	FILE NO. Std.- 879

UTILITY VAULT 5' x 7' VAULT

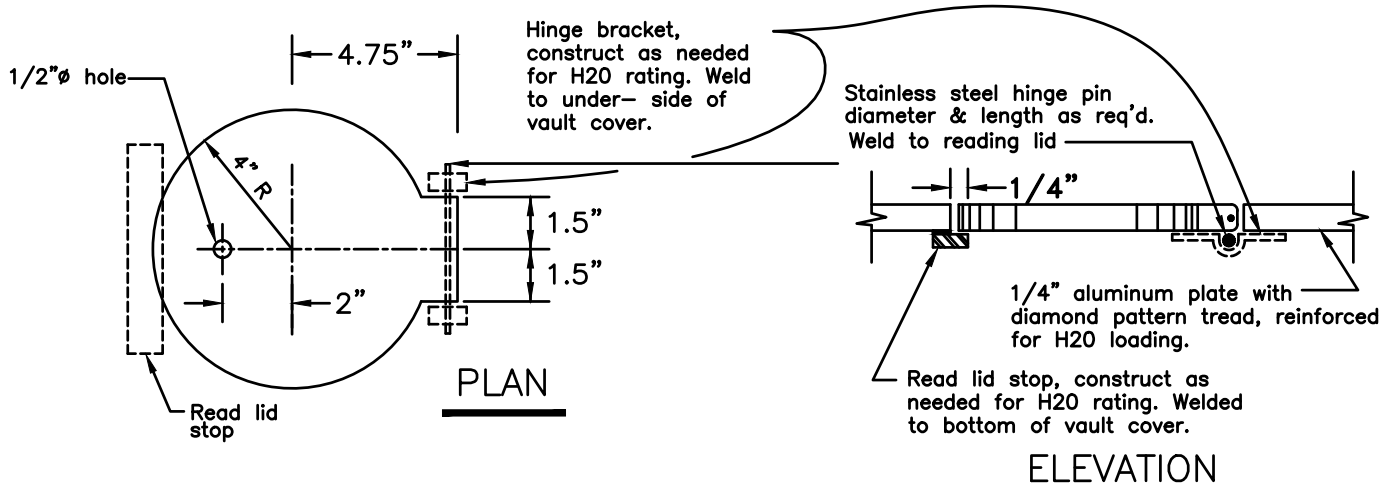
(See Engineer's Approved List)

UTILITY VAULT 4' x 6' VAULT

(See Engineer's Approved List)



VAULT PLAN




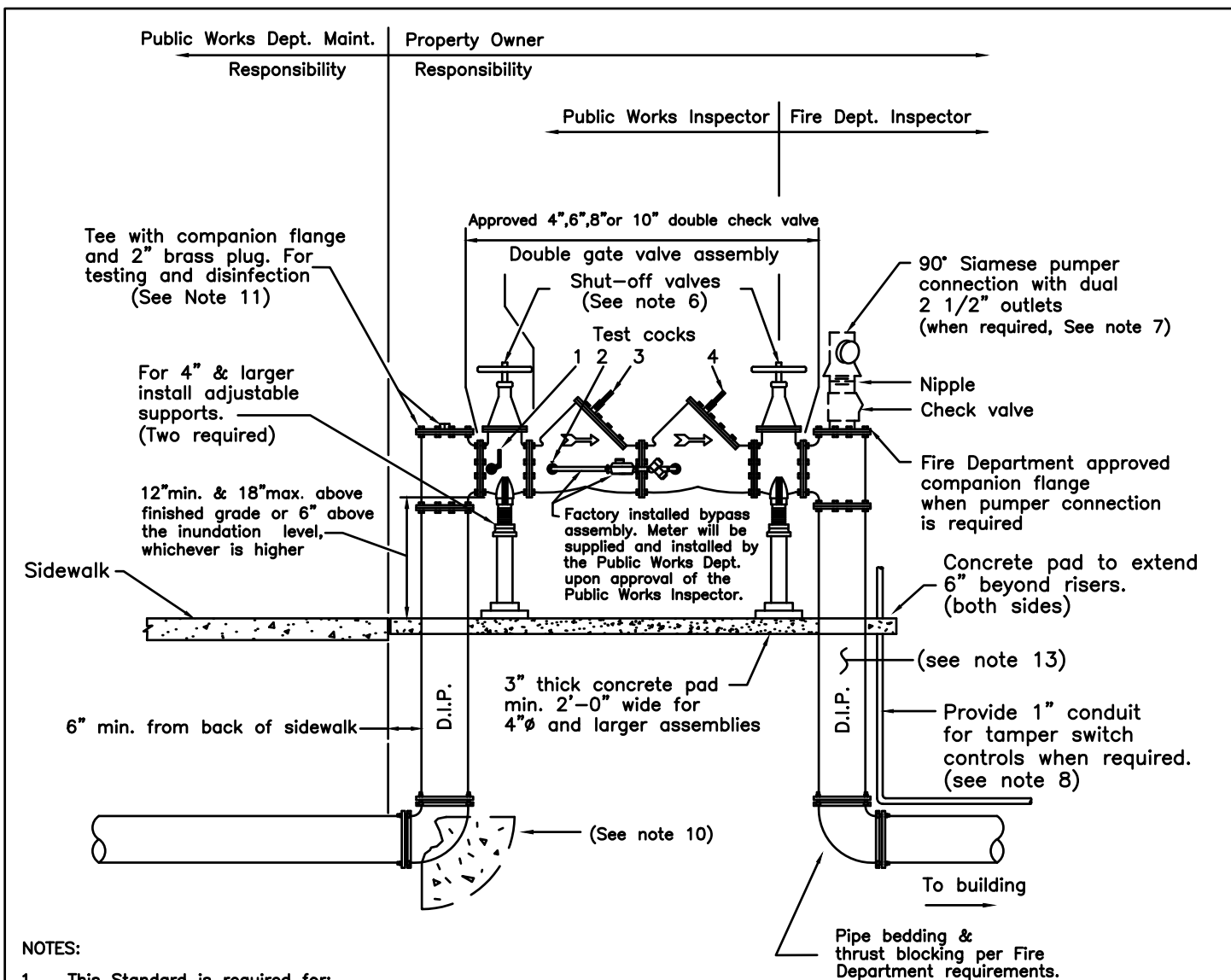
READING LID DETAILS

NOTES

N.T.S.


1. By-pass meter shall be plumbed to center under reading lid. Read lid may be replaced with Automatic Meter Reading probe mount at the direction of the Public Works Department.
2. Vault cover shall have extruded aluminum channel frame with bend down anchor tabs around perimeter. Hinges shall be heavy forged type 316 stainless steel. Cover shall have a type 316 stainless steel "slam-lock" type latch with fixed interior handle and a removable exterior handle and mechanism to automatically lock doors in the open position. Latch release shall be protected by a flush removable screw plug.
3. Vault cover shall be AASHTO H20 compliant, and have a "non-skid" surface.

 CITY OF SEBASTOPOL		
SINGLE CHECK DETECTOR ASSEMBLY IN VAULT Page 3 of 3		
SCALE: NONE	DATE: OCT 2022	
DWN: NB CHK: DDP	APPROVED ML	FILE NO. Std.- 879

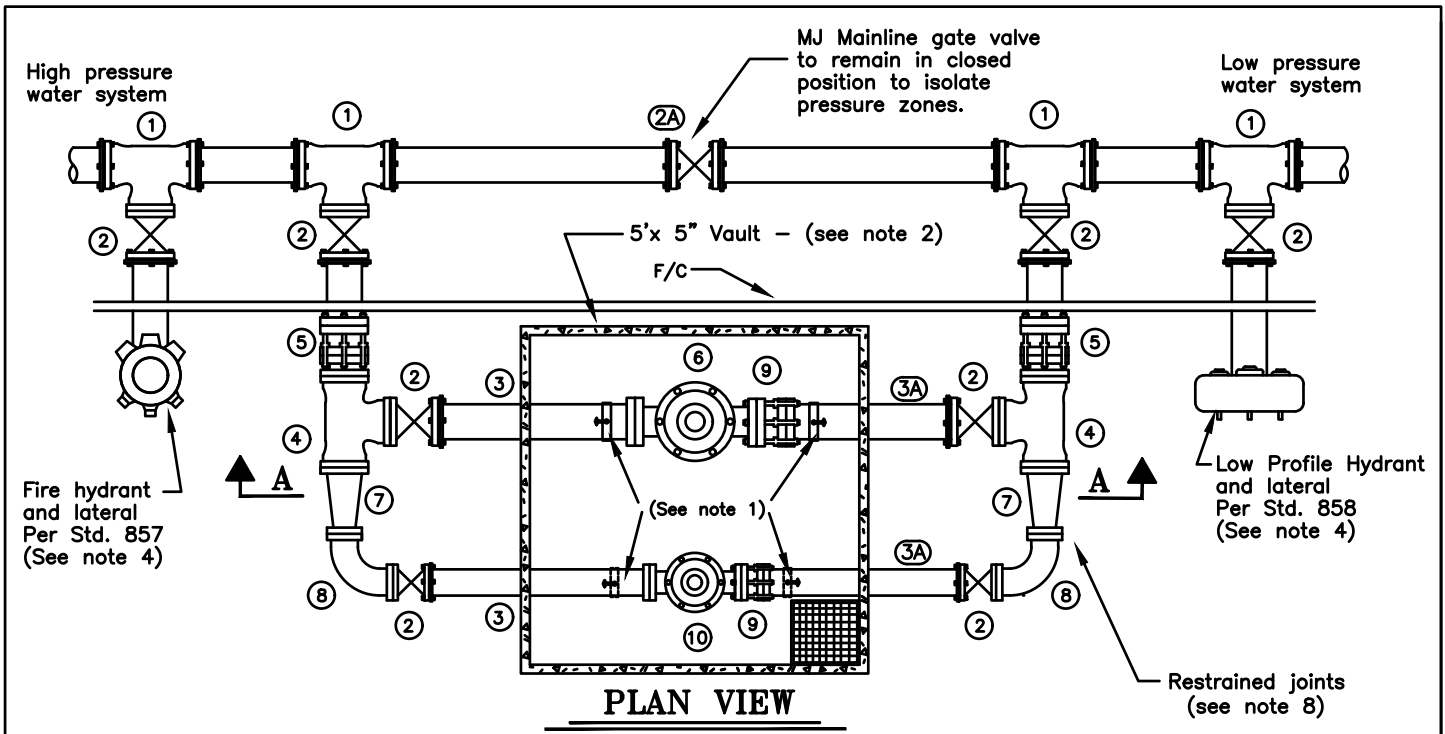


NOTES:

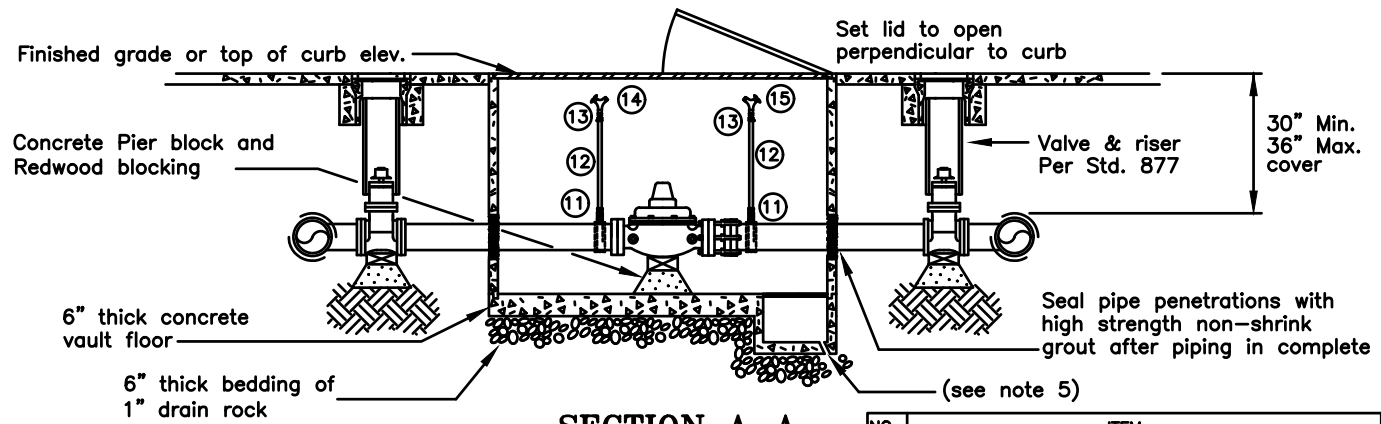
1. This Standard is required for:
 - a.) all connections serving commercial fire sprinkler systems.
 - b.) any fire line connections to properties with auxiliary water supplies.
 - c.) sites with multiple fire line connections to the City water system.
2. Approved double check detector backflow assemblies shall be shown on "List of approved backflow devices" of latest revision, by the University of Southern California Foundation for Cross Connection Control & Hydraulic Research.
3. All test valves shall be fitted with 1/4" female test cocks.
4. Double check detector assembly shall be located as close as possible to the sidewalk or public right-of-way.
5. Any cover or screening for this assembly must have both the Fire and Public Works Department's approval prior to installation.
6. Shut-off valves shall be resilient wedge type O.S. & Y. valves. Valves are to be chained and padlocked by device owner in the open position.
7. Must have specific approval of the Fire Dept. prior to installation.
8. The installation shall be provided with electronic supervision monitoring when required by the Fire Department.
9. Double check detector shall be the same size as the fire line except when a 12" fire line is required, then a 10" double detector check backflow assembly is required.
10. Restrained joints are required for all new construction from gate valve to 90° elbow. Thrust blocks are only required where existing service is being modified and restrained joints are not used. Thrust block behind tee or tapping sleeve is required on all installations.
11. For filling and disinfection when service has been tapped or cut-in on existing main, add 2" piping as needed so "fill line" is a minimum of 6" above all other piping. Install brass plug after disinfection and testing.
12. Regardless of detector device orientation, bypass meter shall be installed to set horizontally at a location easily accessed and read. See City Standard 885.
13. Contractor shall provide protection from corrosion in accordance with Fire Department requirements.

 CITY OF SEBASTOPOL		
DOUBLE CHECK DETECTOR FIRE LINE BACKFLOW ASSEMBLY		
SCALE: NONE	DATE: OCT 2022	
DWN: NB CHK: DDP	APPROVED ML	FILE NO. Std.- 880

Page 61 of 68
11/15/2022



PLAN VIEW



SECTION A-A

NOTES:

1. Make 3/4" top tap - install risers as shown.
2. Precast vault and spring assisted aluminum double leaf H20 rated cover with non-skid surface.
3. Low flow by-pass (part numbers 7-13) shall be installed unless otherwise approved by the Public Works Department and shall be sized as required (4" min.). If low flow P.R.V. is not required, center lone P.R.V. in vault and change part number 7 to a blind flange.
4. Install fire hydrant and low profile hydrant only when required by the Public Works Department.
5. 12"x 12"x 12" sump with galvanized grate cover. Install 3/4"Ø drain in corner of sump.
6. Gate valves shall be resilient wedge type. Where cover from top of operating nut to finish grade is 6" or less, install horizontal gate valve. Installation of any other valve type must be approved by the Public Works Department.
7. Pressure reducing valve shall be fusion bonded epoxy lined and coated. (See the engineer's approved list)
8. Restrained joints are required for all new construction from mainline gate valve to vault. Thrust blocks are only required where existing services are being modified and restrained joints are not used.

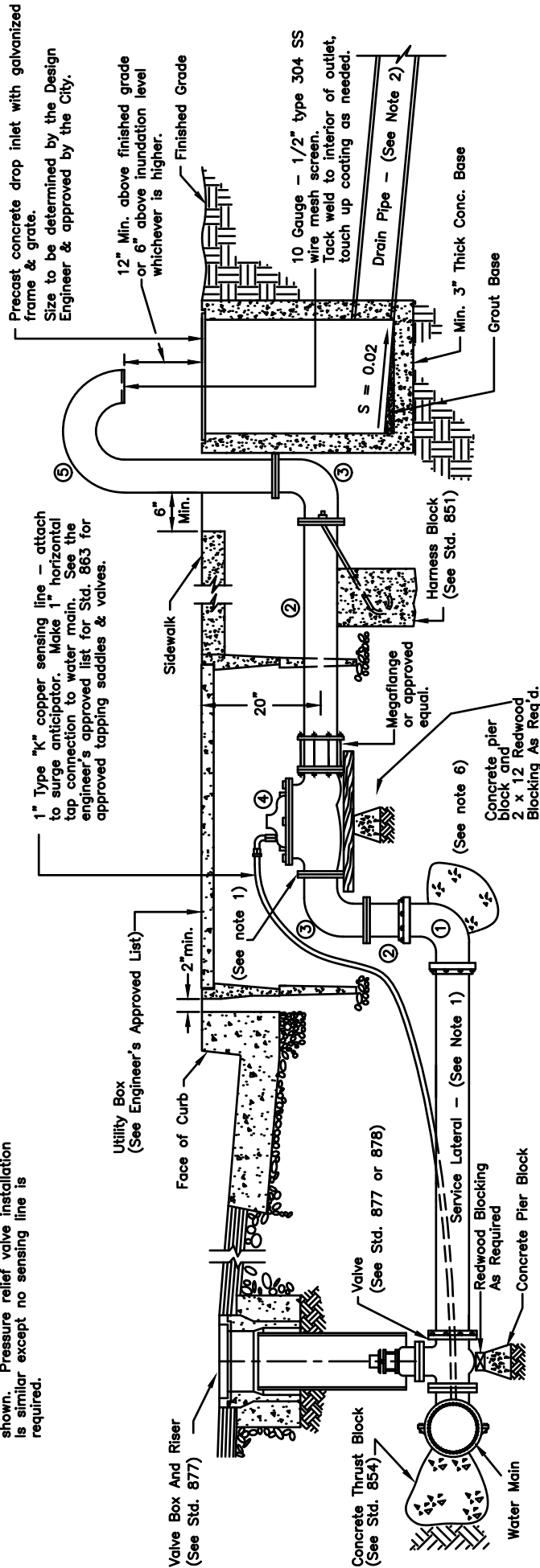
NO.	ITEM
①	MJ x MJ x FL TEE
②	FL x MJ GATE VALVE
②A	MJ GATE VALVE
③	DUCTILE IRON PIPE - FL X P.E.
③A	DUCTILE IRON PIPE - P.E. X P.E.
④	FLANGED TEE
⑤	FL x MJ ADAPTER
⑥	FLANGED P.R.V. - HIGH FLOW
⑦	FLANGED REDUCER
⑧	FLANGED 90° ELL
⑨	MEGAFLANGE - OR APPROVED EQUIVALENT
⑩	FLANGED P.R.V. - LOW FLOW
⑪	SADDLE & 3/4" BRASS CORPORATION BALL VALVE
⑫	3/4" TYPE "K" HARD TEMPER COPPER TUBING
⑬	3/4" BRASS COMP. X F.I.P. COUPLER
⑭	3/4" M.I.P X HOSE BIBB - BRASS
⑮	3/4" M.I.P. TEE WITH TWO (2) 3/4" F.I.P. X H.B.

CITY OF SEBASTOPOL

PRESSURE REDUCING VALVE ASSEMBLY

SCALE: NONE	DATE: OCT 2022
DWN: NB	APPROVED
CHK: DDP	ML
	FILE NO. 11/15/2022
Std. - 881	

NOTE: Surge anticipator valve installation is shown. Pressure relief valve installation is similar except no sensing line is required.



NOTES

1. Service lateral pipe and fittings on inlet side of valve shall be 4" or same size as surge anticipator valve, whichever is greater. 3" and larger pipe material shall be PC350 ductile iron unless otherwise shown on the plans. Where a smaller than 4" surge anticipator valve is approved for installation, install 4" x "as required" reducer on the inlet side of the valve.
2. The Project Engineer shall submit a proposed design to the Engineer and all other appropriate Agencies for approval of discharge water drainage.
3. Material for discharge side of valve shall be the same size as the valve, and material smaller than 3" shall be submitted on for approval.
4. Discharge riser shall be fabricated from standard welded steel pipe, with a weld on flange. Welding of pipe shall conform to AWWA Standard C206. The riser assembly shall be Fusion Bonded Epoxy lined and coated per AWWA Standard C213.
5. Contact the Public Works Department for specific telemetry requirements which must be met.
6. Restrained joints are required for all new construction from gate valve to upper 90° bend. Thrust blocks are only required where existing services are being modified and restrained joints are not used.

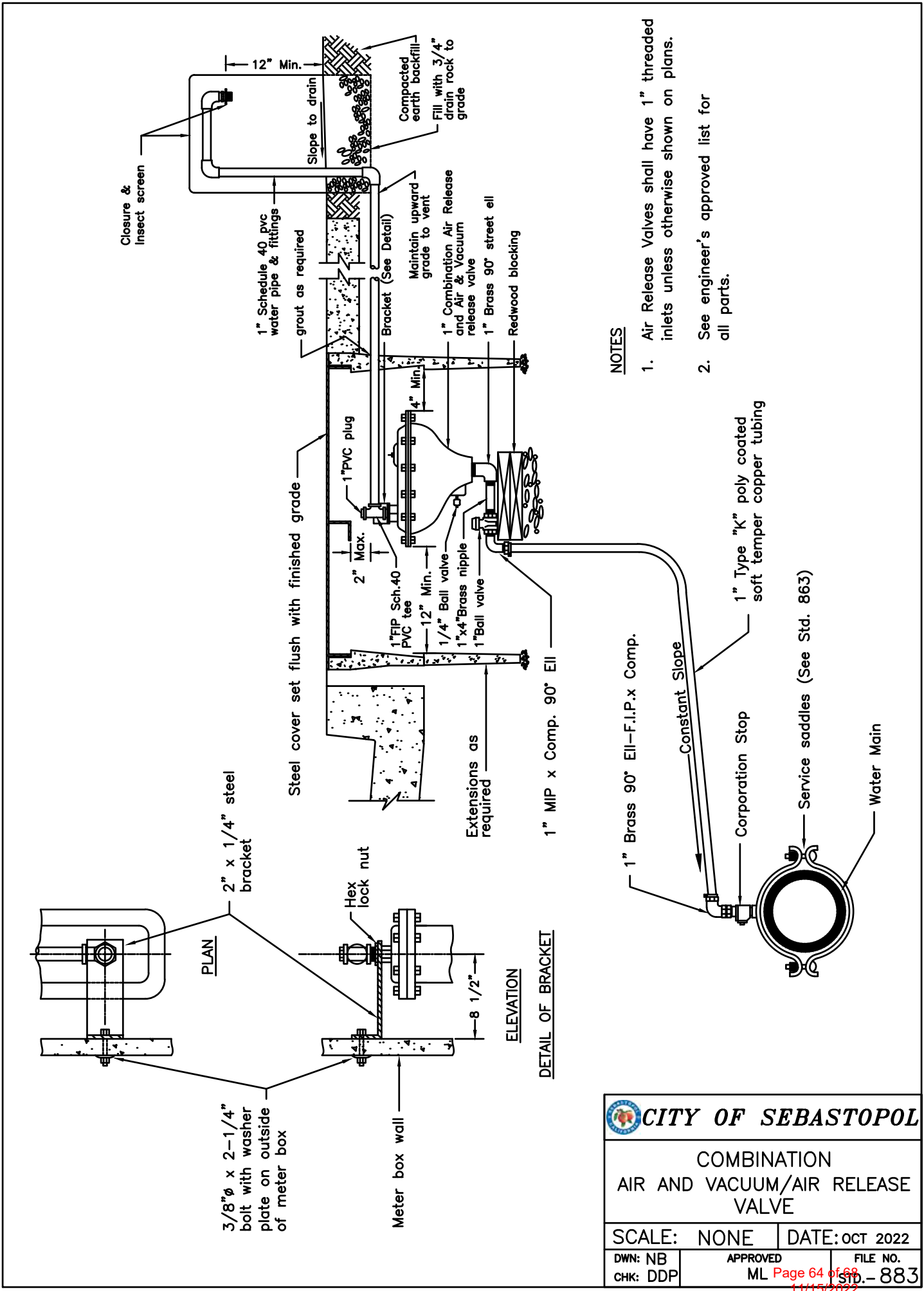
PARTS LIST	
NO.	ITEM DESCRIPTION
1	M.J. 90" - Size As Required
2	FL x P.E. D.I. Spool - Dia. & Length As Required
3	FL 90" Ell - Size As Required
4	Valve - See Engineer's approved list
5	Fabricated Welded Steel Discharge (See Note 4)

CITY OF SEBASTOPOL

SURGE ANTICIPATOR VALVE
or PRESSURE RELIEF VALVE

SCALE: NONE DATE: OCT 2022

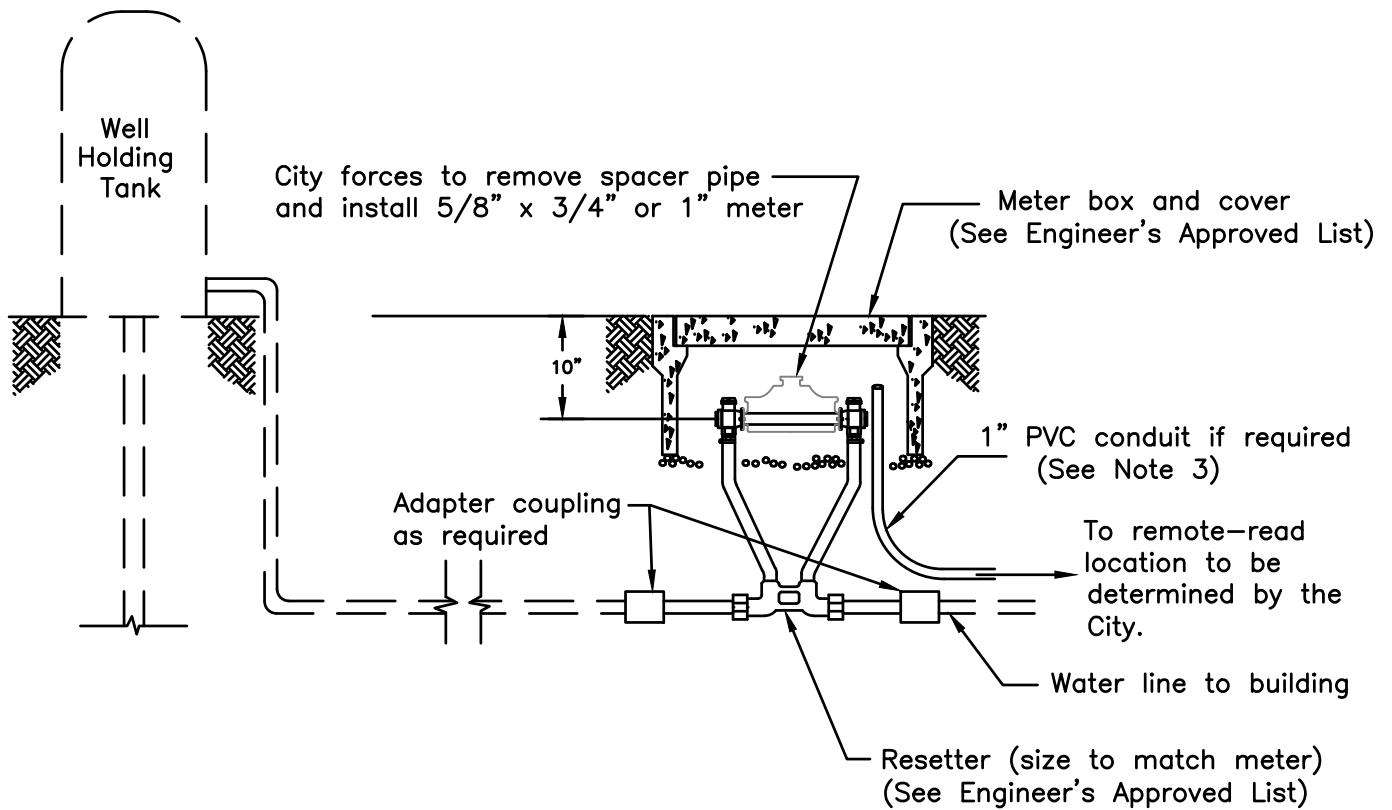
DWN: NB	APPROVED	FILE NO.	
CHK: DDP	ML	11/15/2022	882



NOTES


1. Air Release Valves shall have 1" threaded inlets unless otherwise shown on plans.
2. See engineer's approved list for all parts.

CITY OF SEBASTOPOL		
COMBINATION AIR AND VACUUM/AIR RELEASE VALVE		
SCALE: NONE	DATE: OCT 2022	
DWN: NB CHK: DDP	APPROVED ML	FILE NO. Std.- 883



NOTES

1. Contractor to install schedule 80 PVC spacer pipe—without holes.
2. All meter boxes, vaults and pits shall be bedded on 3" minimum thick, 3/4" drain rock, AB-2, or other clean material with typical sand equivalent of 20 minimum uncontaminated by native soil, against compacted or undisturbed base. The gravel bed shall extend to a 4" minimum beyond all sides of the meter box. Box shall set flush with the top of curb, sidewalk or ground, whichever is applicable.
3. 1" PVC electrical conduit with pull cable may be required where a remote-read meter is to be installed. Only long-radius ells may be used. Conduit installation to be inspected by the Public Works Department.
4. Location of meter requires prior approval by Public Works Department.
5. Meters larger than 1" requires prior approval by Public Works Department.
6. Traffic loading box and lid to be installed in all driveways or locations where vehicular traffic may occur, and where specified on plans. Box shall be installed so that the steel cover is set flush with finished surface.

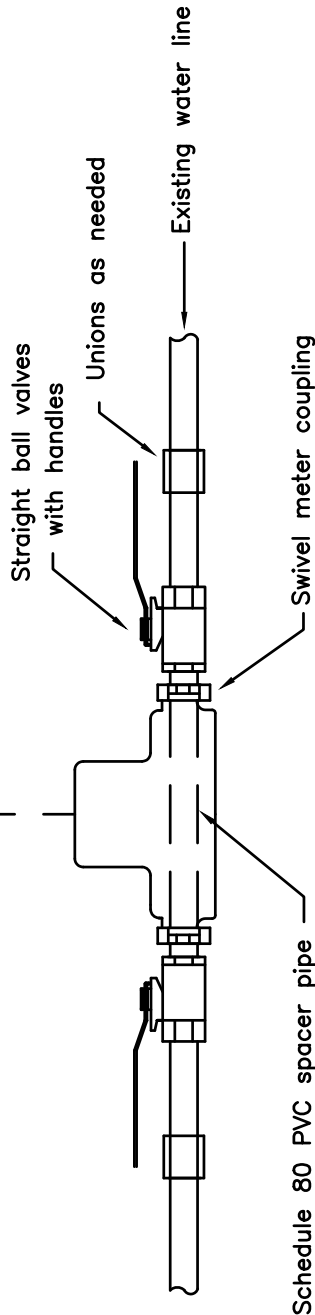
 CITY OF SEBASTOPOL		
WATER METER for PRIVATE NON-RESIDENTIAL SYSTEMS		
SCALE: NONE		DATE: OCT 2022
DWN: NB CHK: DDP	APPROVED ML	FILE NO. Std.- 884

METER SETTING ASSEMBLY PARTS LIST

METER SIZE	RESETTER	SPACER PIPE (See note 1)
5/8" x 3/4"	(See Engineer's approved list)	1"ø x 7-3/4" LG. SCHL. 80 PVC PIPE
1"	(See Engineer's approved list)	1-1/4"ø x 11" LG. SCHL. 80 PVC PIPE

—— To receptacle -- (See note 2)

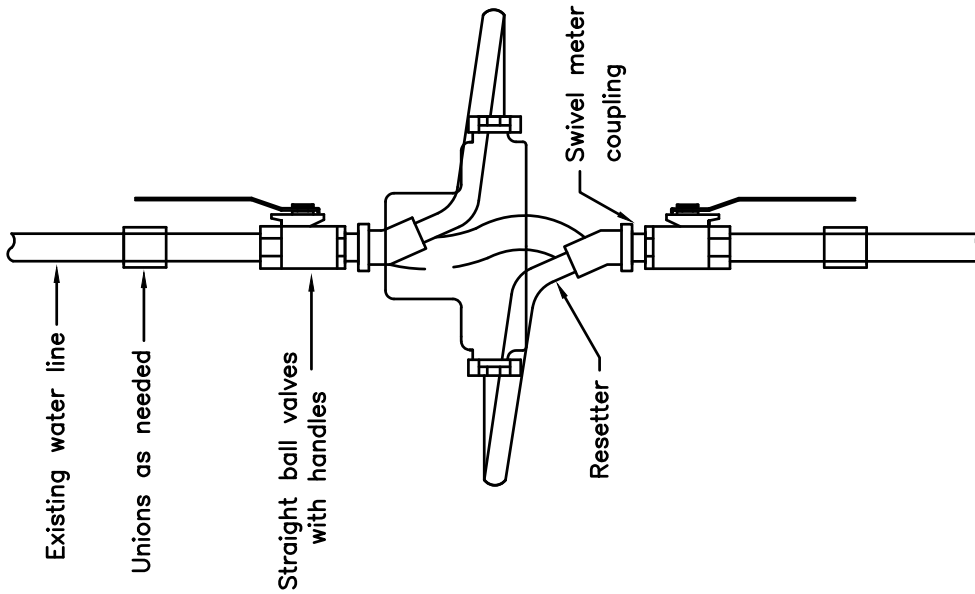
Connecting wire is 3 lead #22 AWG




HORIZONTAL INSTALLATION

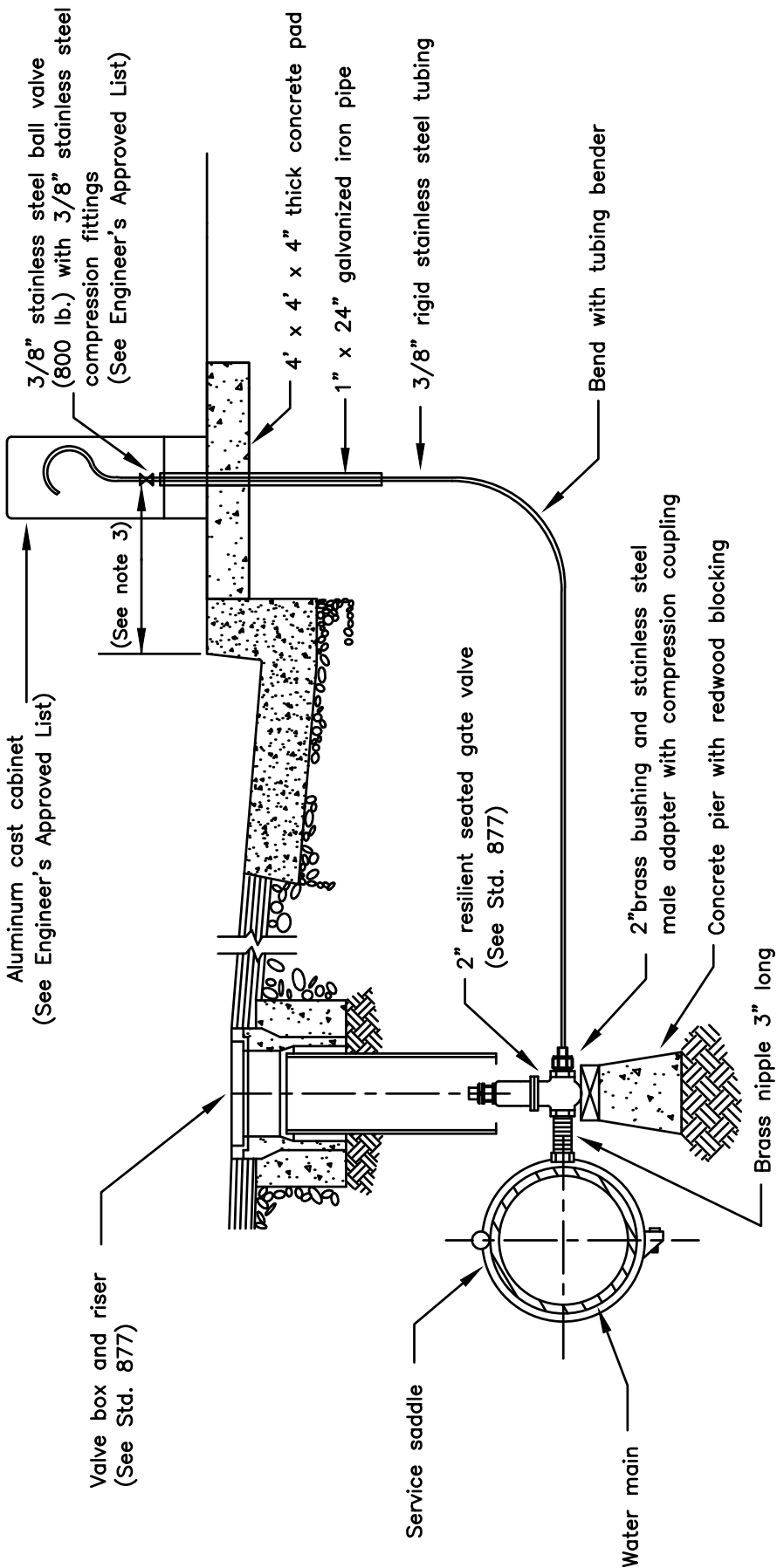
NOTES:

1. Spacer pipe--without holes to be installed between ball valves. City Forces to remove spacer pipe, install water meter and connect wiring.
2. Receptacle to be located on the outside wall of building. Receptacle to be mounted a minimum of 3 feet and a maximum of 4 feet above finished grade. The location of the receptacle will be determined by the Public Works Department.
3. Water meter must be mounted in a horizontal position. Water meter to be mounted a minimum of 3 feet and a maximum of 5 feet above finished floor. The location of the water meter will be determined by the Public Works Department.
4. Connecting wire to be installed in 1/2" diameter PVC conduit. Meter, conduit and wire may not be installed in areas with explosive atmospheres.
5. The Public Works Department will maintain the water meter only. All plumbing and wiring is the responsibility of the property owner.



VERTICAL INSTALLATION
FOR STANDARDS 879 & 880
RESETTER REQUIRED


 CITY OF SEBASTOPOL		
WATER METER for PRIVATE PROCESS and EVAPORATIVE WATER LINES		
SCALE: NONE	DATE: OCT 2022	
DWN: NB CHK: DDP	APPROVED ML	FILE NO. 885



NOTES:

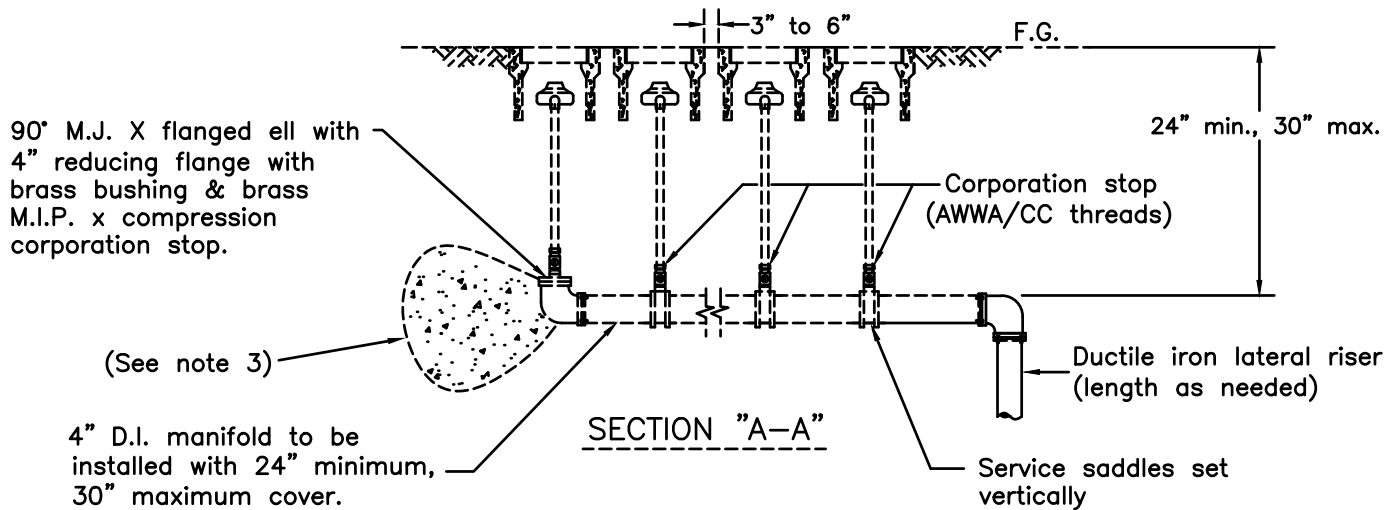
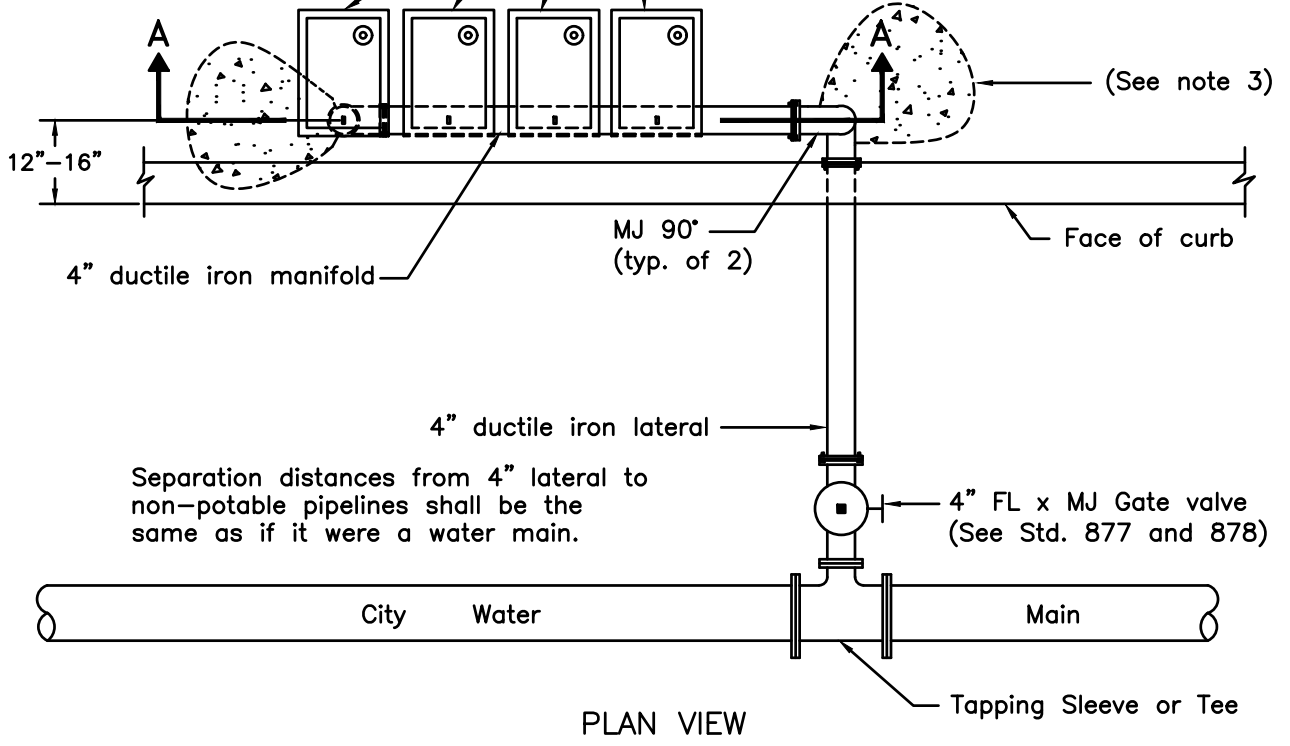
1. If more than one length of 3/8" stainless steel tubing is required stainless steel compression couplings shall be used.
2. All 3/8" tubing shall be wrapped in 10 mil tape.
3. Where planter strip exists, install min. 24" behind F/C - Where sidewalk is contiguous, install 12" behind sidewalk.

APPROVED SERVICE SADDLES:
 (See Engineer's Approved List; STD-863A)

 CITY OF SEBASTOPOL		
WATER SAMPLING STATION		
SCALE: NONE	DATE: OCT 2022	
DWN: NB CHK: DDP	APPROVED ML	FILE NO. 11/15/2022 STD.- 886


BOXES & COVERS
per applicable City Standards

Water service tubing shall be poly coated copper conforming to the sizes as required and applicable City Standards and Specifications. Install backflow devices as required.



NOTES:

1. This Standard may be adapted, as approved by the Public Works Department, for connection to a combination water service per Std. 870.
2. Service saddle and corporation stop per applicable City Standard for individual service sizes.
3. Restrained joints are required for all new construction from gate valve to end of 4" manifold. Thrust blocks are only required where existing services are being modified and restrained joints are not used.

 CITY OF SEBASTOPOL		
4" DUCTILE IRON MULTI-SERVICE MANIFOLD		
SCALE: NONE		DATE: OCT 2022
DWN: NB	APPROVED	FILE NO.
CHK: DDP	ML	Std.- 887