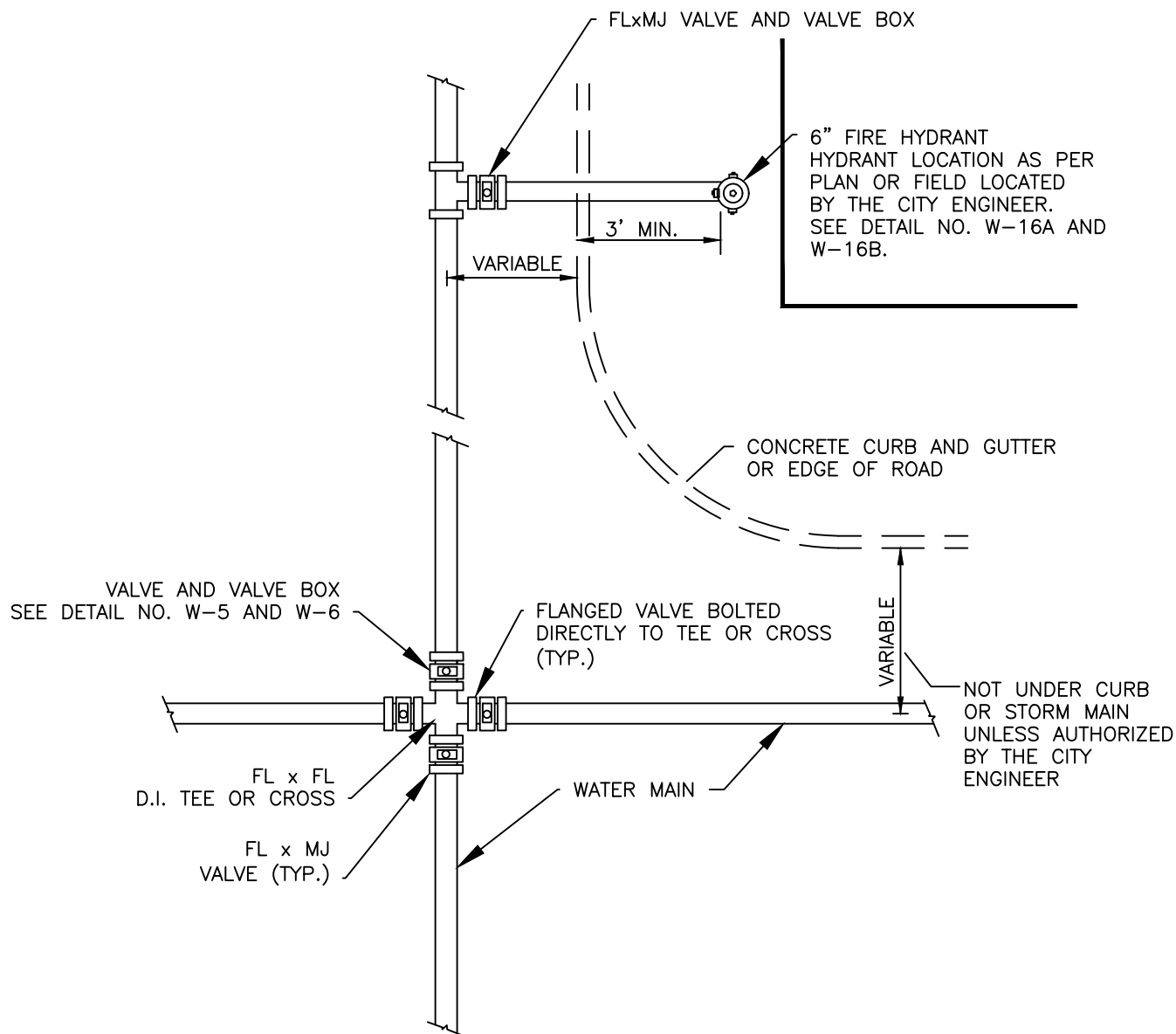


CITY OF MERCER ISLAND

WATER - STANDARD DETAIL DRAWING INDEX

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2" Blow-Off Assembly	W-26	W-18
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Pressure Reducing Valve (PRV) Vault – Ladder & Pipe Support	W-27C	W-19D
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Residential Pressure Reducing Valve	W-28	W-20
Water Main Flushing	W-32	W-21



NOTES

1. ROMAGRIP RESTRAINT TO BE PLACED ON MJ SIDE OF VALVE.
2. ALL VALVES TO HAVE VALVE BOXES INSTALLED PER DETAIL NO. W-5.



CITY OF MERCER ISLAND STANDARD DETAILS WATER

INTERSECTION LAYOUT

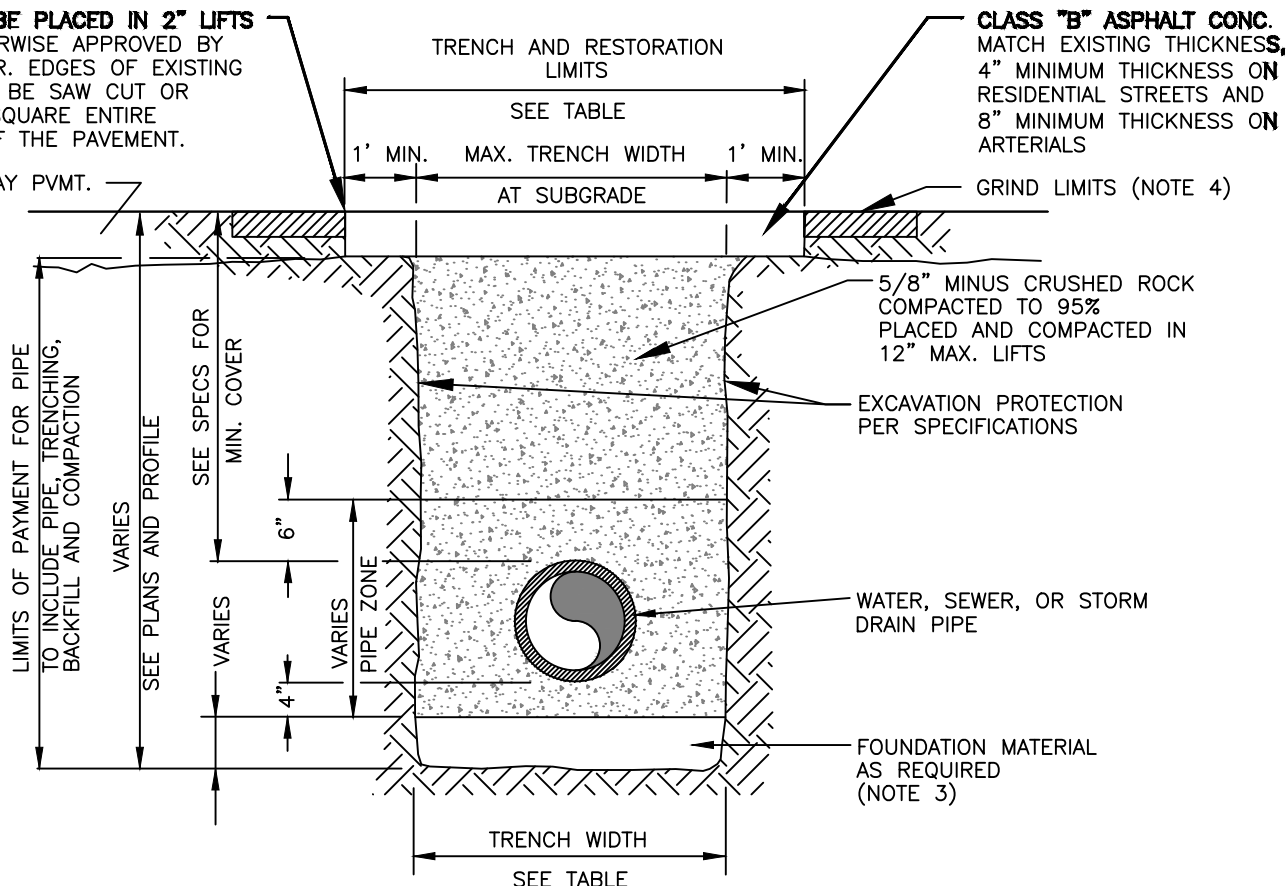
02/06/2026

NO SCALE

W-1

ASPHALT TO BE PLACED IN 2" LIFTS
UNLESS OTHERWISE APPROVED BY
CITY ENGINEER. EDGES OF EXISTING
PAVEMENT TO BE SAW CUT OR
ROTO MILLED SQUARE ENTIRE
THICKNESS OF THE PAVEMENT.

EXIST. ROADWAY PVMT.
GRAVEL BASE



TRENCH WIDTH

PIPE SIZE	PIPE ZONE MAX. TRENCH WIDTH	MAX. TRENCH WIDTH AT SUBGRADE	TYPICAL RESTORATION WIDTH AT SURFACE
WATER SERVICES	2'-0"	2'-0"	4'-0"
4" OR 6"	2'-2"	3'-0"	5'-0"
8"	2'-4"	4'-0"	6'-0"
10"	2'-6"	4'-0"	6'-0"
12"	2'-8"	4'-6"	6'-6"
16"	3'-0"	5'-0"	7'-0"

NOTES

1. CALL IN LOCATES TWO BUSINESS DAYS BEFORE YOU DIG.
(1-800-424-5555)
2. USE 100% 5/8 MINUS CRUSHED ROCK FOR BEDDING, PIPE ZONE AND BACKFILL. OUTSIDE THE PIPE ZONE, 1 1/4" MINUS CRUSHED ROCK MAY BE USED IF APPROVED BY CITY ENGINEER.
3. FOUNDATION MATERIAL SHALL BE 1 1/4" MINUS CRUSHED ROCK OR OTHER AGGREGATE AS APPROVED BY CITY ENGINEER.
4. GRIND AND OVERLAY LIMITS SHALL EXTEND A MINIMUM OF 10' PAST THE END OF TRENCH AREAS.
5. SEAL ALL FINAL PATCHING AND PAVING SEAMS WITH LIQUID ASPHALT. SQUEEGEE OR MOP THE SEALER. COVER WITH DRY SAND.



CITY OF MERCER ISLAND STANDARD DETAILS WATER

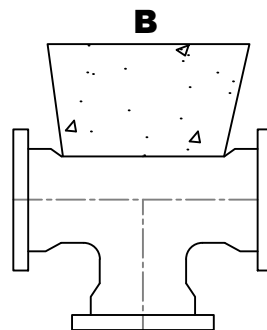
TRENCH SECTION

02/06/2026

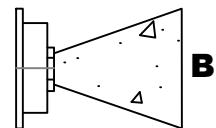
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W-2

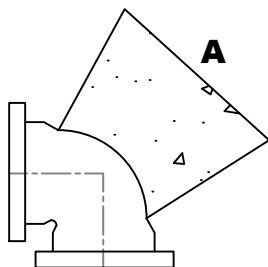
THRUST BLOCKING TABLE					
PIPE SIZE	MINIMUM BEARING AREA AGAINST UNDISTURBED SOIL IN SQUARE FEET				
	A	B	C	D	E
4"	2	2	2	2	2
6"	4	3	2	2	2
8"	7	5	4	2	2
10"	11	8	6	3	2
12"	16	12	9	5	3
14"	22	16	12	6	3
16"	29	20	16	8	4



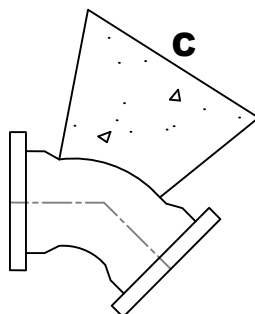
TEE



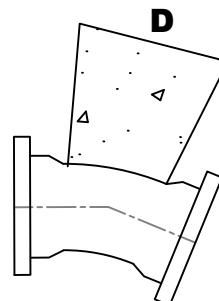
MJ CAP



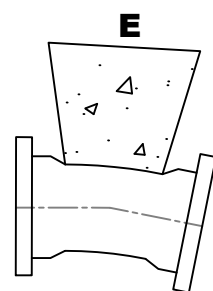
90° BEND



45° BEND



22-1/2° BEND



11-1/4° BEND

NOTES

1. ROMAGRIP RETAINER MAY BE SUBSTITUTED FOR VERTICAL BLOCKING UPON PRIOR APPROVAL OF THE CITY ENGINEER.
2. CONCRETE THRUST BLOCKING SHALL BE POURED AGAINST UNDISTURBED EARTH.
3. THRUST BLOCKS SHALL BE CAST-IN-PLACE AND BE CONSTRUCTED WITH CLASS 3000 OR COMMERCIAL CONCRETE.
4. BLOCK SHALL BEAR AGAINST FITTINGS ONLY AND SHALL BE CLEAR OF BOLTS AND JOINTS TO PERMIT TAKING UP OR DISMANTLING JOINT. WRAP FITTINGS WITH 8 MIL THICK POLYETHYLENE SHEETING PRIOR TO POURING CONCRETE.
5. BEARING AREA MUST BE ADJUSTED FOR HIGHER INTERNAL PRESSURES AND LOWER SOIL BEARING VALUES.
6. THE CONTRACTOR SHALL INSTALL BLOCK WHICH IS ADEQUATE TO WITHSTAND FULL TEST PRESSURE AS WELL AS TO CONTINUOUSLY STAND OPERATING PRESSURE UNDER ALL CONDITIONS OF SERVICE.



CITY OF MERCER ISLAND STANDARD DETAILS WATER

HORIZONTAL CONCRETE BLOCKING

02/06/2026

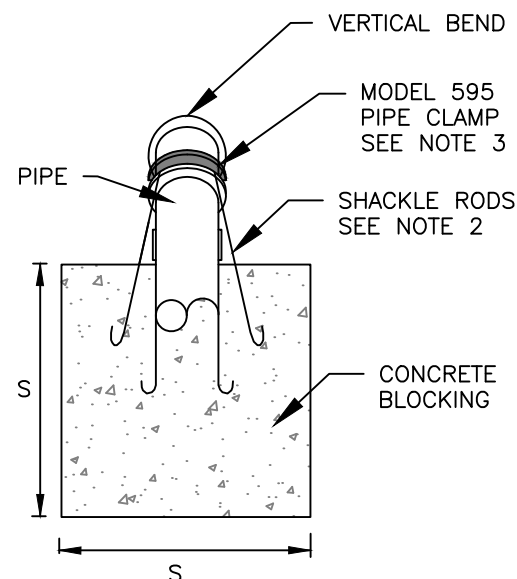
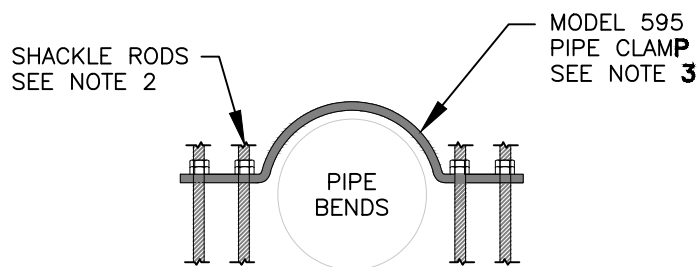
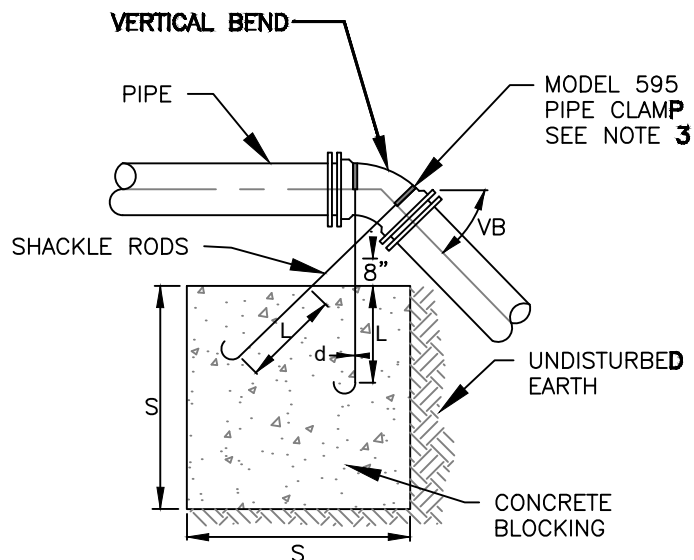
NO SCALE

W-3A

VERTICAL THRUST BLOCKING FOR 11 1/4" - 22 1/2" - 45°							NUMBER OF TIE RODS SETS (2 EMBEDDED RODS PER SET)
PIPE SIZE NOM. DIAMETER - INCHES	TEST PRESSURE P.S.I.	VB VERTICAL BEND DEGREES	AMOUNT CONCERT BLOCKING - CU. FT.	S LENGTH OF SIDE FEET	d SHACKLE ROD DIA. - INCHES	L DEPTH OF ROD IN CONCRETE INCHES	
3"	250	11-1/4	3.4	1.5	5/8"	12"	2
		22-1/2	5.4	1.75	5/8"	12"	2
		45	11.4	2.25	5/8"	12"	2
4"	250	11-1/4	5.4	1.75	5/8"	12"	2
		22-1/2	11.4	2.25	5/8"	12"	2
		45	20.8	2.75	5/8"	12"	2
6"	250	11-1/4	11.4	2.25	5/8"	12"	2
		22-1/2	27.0	3.0	5/8"	12"	2
		45	42.9	3.5	5/8"	12"	2
8"	250	11-1/4	20.8	2.75	5/8"	12"	2
		22-1/2	42.9	3.5	5/8"	12"	2
		45	76.8	4.25	5/8"	12"	2
10"	250	11-1/4	34.3	3.25	5/8"	12"	2
		22-1/2	64.0	4.0	5/8"	12"	2
		45	125	5.0	5/8"	12"	2
12"	250	11-1/4	42.9	3.5	5/8"	12"	2
		22-1/2	91.1	4.5	5/8"	12"	2
		45	166	5.5	5/8"	12"	4
14"	250	11-1/4	52.7	3.75	3/4"	12"	2
		22-1/2	107	4.75	3/4"	24"	2
		45	190	5.75	3/4"	24"	4
16"	250	11-1/4	64.0	4.0	3/4"	24"	2
		22-1/2	125	5.0	3/4"	24"	4
		45	216	6.0	3/4"	24"	4
18"	250	11-1/4	64.0	4.0	3/4"	24"	2
		22-1/2	145	5.25	3/4"	24"	4
		45	244	6.25	3/4"	24"	4

NOTES

1. CONCRETE SHALL BE 3000 PSI CONCRETE.
2. SHACKLE RODS/ALL THREAD SHALL BE ZINC PLATED. REFER TO CHART FOR SIZE AND NUMBER OF SHACKLE RODS. REFER TO PIPE CLAMP FOR INSTALLATION OF SHACKLE ROD. AFTER CONCRETE IS PLACED. 24 HOURS LATER INSTALL NUT AND WASHER AND TIGHTEN SHACKLE RODS NUTS ON PIPE CLAMP.
3. ANVIL PIPE CLAMP 595 FITS 4"-24" DIA.
4. ROMAGRIP RESTRAINTS AT EACH JOINT MAY BE USED IF APPROVED BY CITY ENGINEER.



BLOCKING FOR VERTICAL BENDS



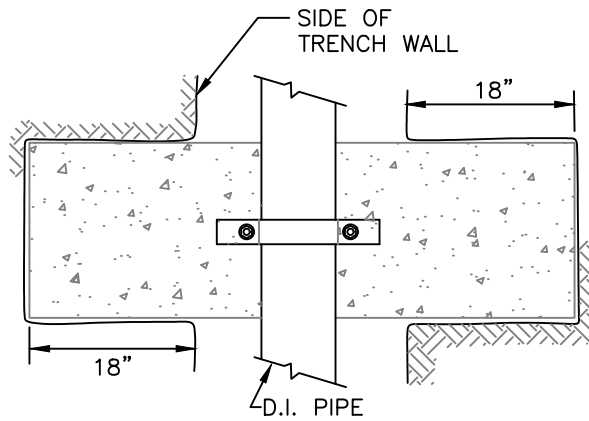
CITY OF MERCER ISLAND STANDARD DETAILS WATER

VERTICAL CONCRETE BLOCKING

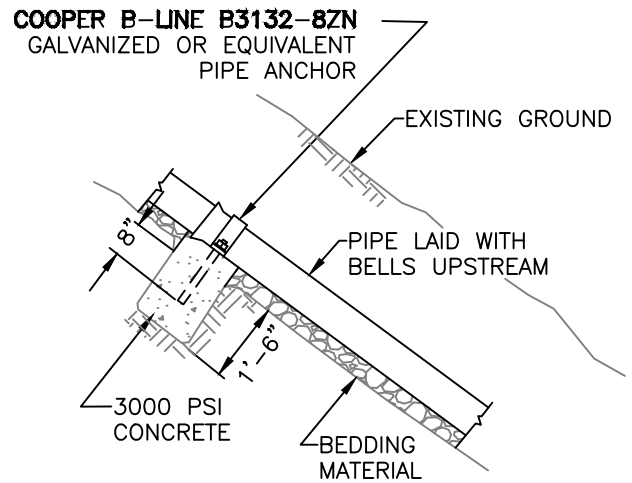
02/06/2026

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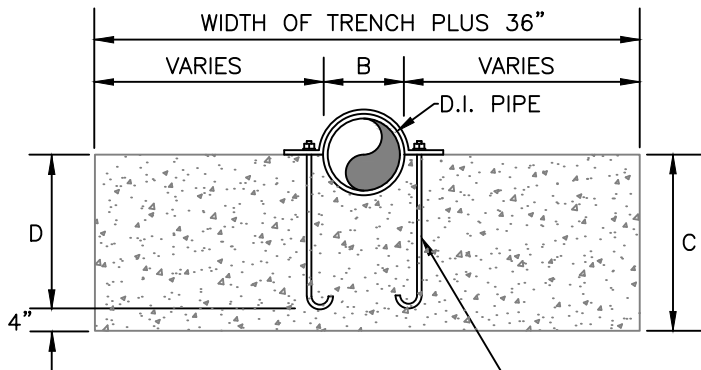
W-3B



PLAN

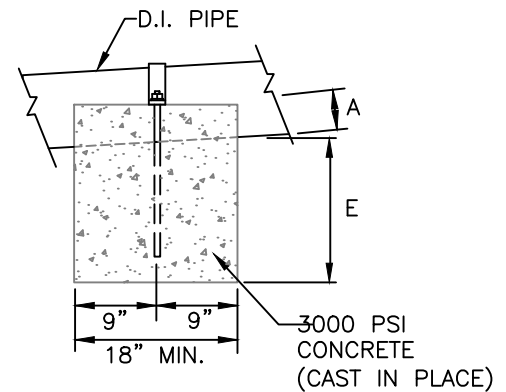


PROFILE



J-BOLT STAINLESS STEEL AND THREADED FOR CONNECTION TO PIPE CLAMP. FOLLOWING INSTALLATION ALL EXPOSED CONNECTORS TO BE COATED W/ROYSTON ROSCOTS (SEE W-5 FOR DETAILS).

ELEVATION



SECTION

PIPE SIZE	DIMENSIONS INCHES				
	A	B	C	D	E
4"	2.4	4.8	17	13	14.6
6"	3.5	6.9	18	14	14.5
8"	4.5	9.1	19	15	14.5
10"	5.6	11.1	20	16	14.4
12"	6.6	13.2	21	17	14.4
14"	7.7	15.3	22	18	14.3
16"	8.7	17.4	23	19	14.3
18"	9.8	19.5	24	20	14.2

NOTES

1. SLOPES GREATER THAN 20% - PROVIDE CONCRETE SLOPE ANCHORS (20' TO 25' ON CENTER)
2. RESTRAINED JOINT PIPE, ROMAC PIPE RESTRAINERS OR OTHER METHODS OF RESTRAINT MAY BE USED WITH PRIOR APPROVAL OF THE CITY ENGINEER.



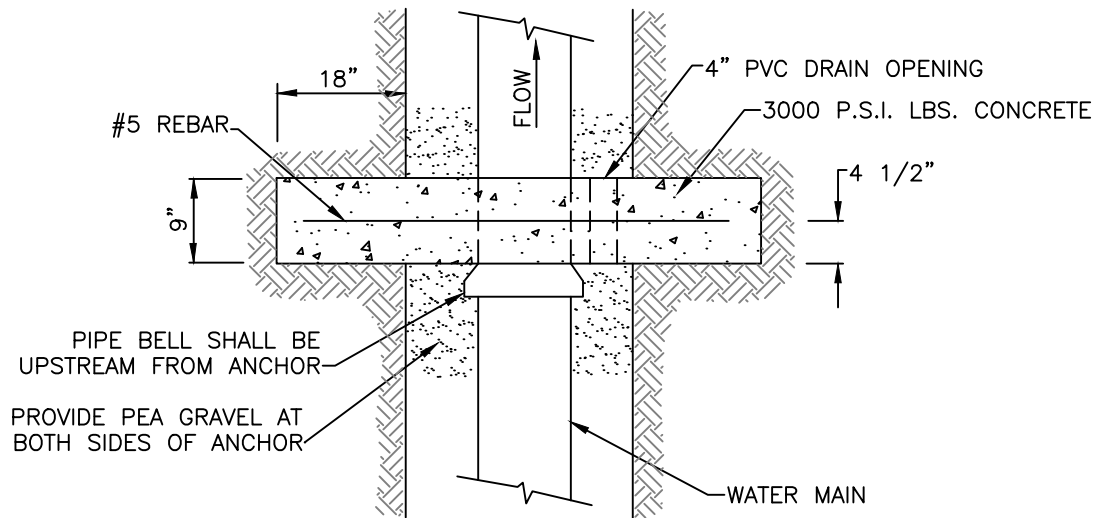
**CITY OF MERCER ISLAND
STANDARD DETAILS
WATER**

ALTERNATE "A" PIPE ANCHOR

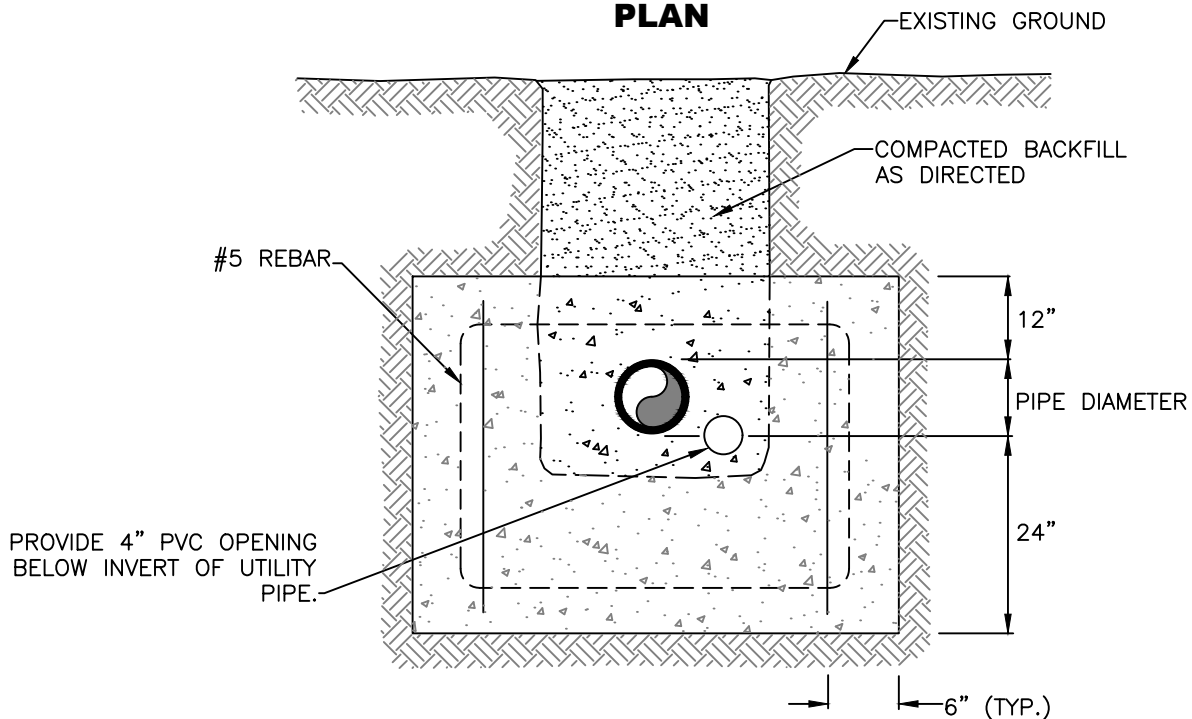
2021

NO SCALE

W-4A



PLAN



ELEVATION

NOTES

1. PIPE ANCHORS ARE TO BE INSTALLED ON ALL SLOPES GREATER THAN 20% AS FOLLOWS:
 - A. NOT OVER 36 FEET CENTER TO CENTER ON GRADES 20% UP TO 35%.
 - B. NOT OVER 24 FEET CENTER TO CENTER ON GRADES 35% UP TO 50%.
 - C. NOT OVER 16 FEET CENTER TO CENTER ON GRADES 50% AND OVER.
2. RESTRAINED JOINT PIPE, ROMAC PIPE RESTRAINERS OR OTHER METHODS OF RESTRAINT MAY BE USED WITH PRIOR APPROVAL OF THE CITY ENGINEER.



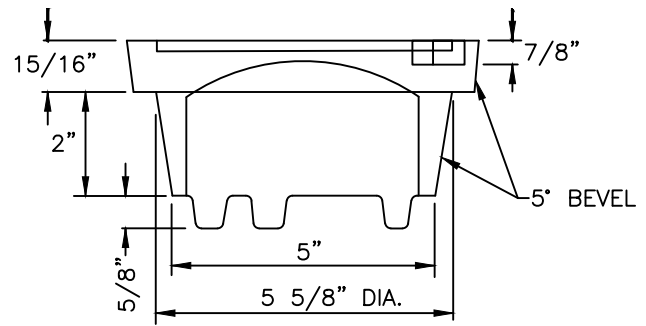
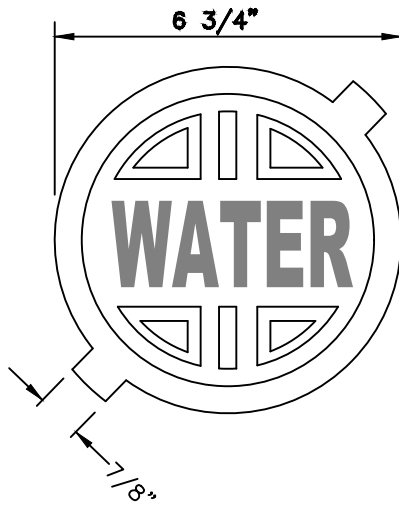
CITY OF MERCER ISLAND STANDARD DETAILS WATER

ALTERNATE "B" PIPE ANCHOR

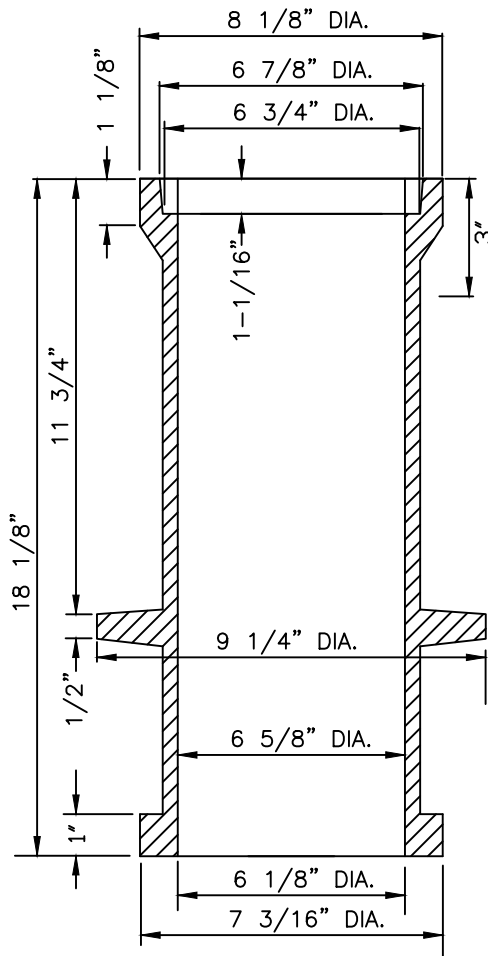
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NO SCALE

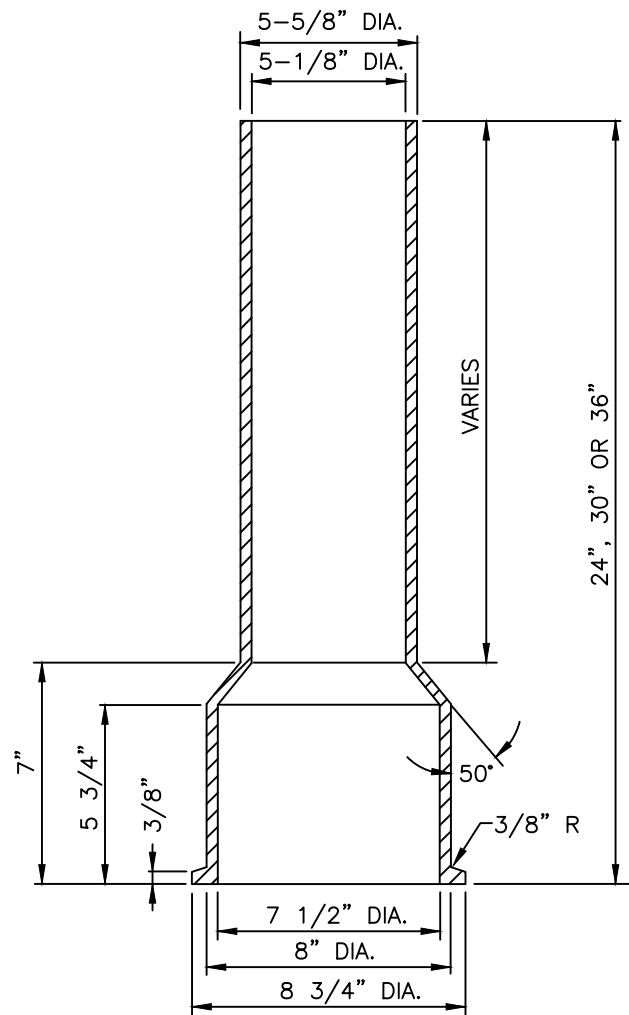
W-4B



VALVE BOX LID



VALVE BOX TOP



VALVE BOX BOTTOM

NOTES

1. VALVE BOX SHALL BE OLYMPIC FOUNDRY PART NO. VB940 OR EQUAL.
2. THE TOP AND LID SHALL HAVE A MACHINED FIT.



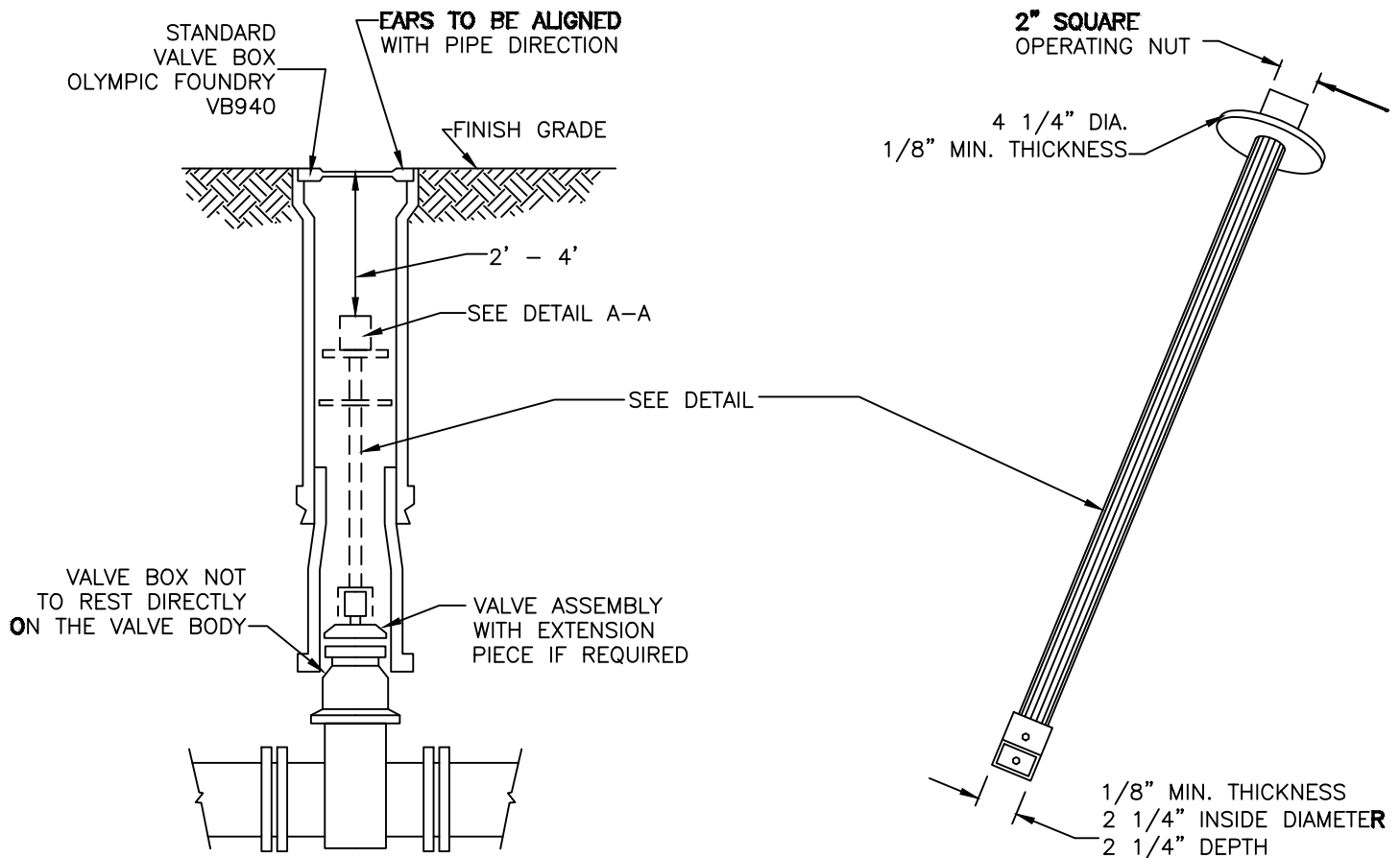
**CITY OF MERCER ISLAND
STANDARD DETAILS
WATER**

WATER VALVE BOX

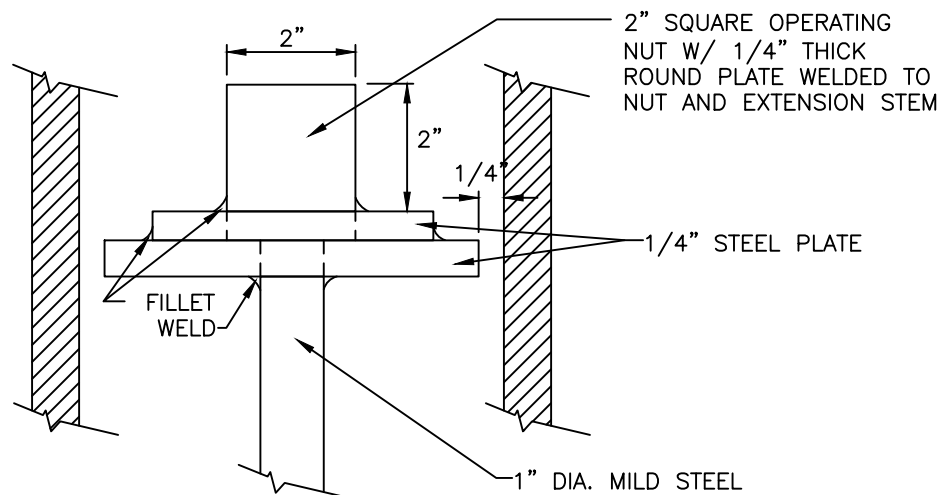
02/06/2026

NO SCALE

W-5



SECTION



DETAIL A-A

NOTES

1. EXTENSIONS ARE REQUIRED WHEN THE VALVE NUT IS MORE THAN THREE (3) FEET BELOW FINISHED GRADE.
2. EXTENSIONS ARE TO BE A MINIMUM OF ONE (1) FOOT LONG. ONLY ONE EXTENSION PER VALVE WILL BE ALLOWED.
3. ALL EXTENSIONS ARE TO BE MADE OF STEEL, SIZED AS NOTED AND PAINTED WITH TWO COATS ASPHALTIC VARNISH.



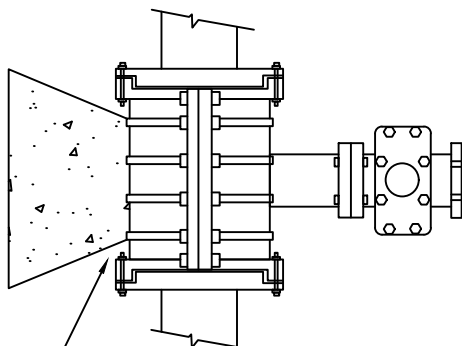
CITY OF MERCER ISLAND STANDARD DETAILS WATER

WATER VALVE EXTENSION

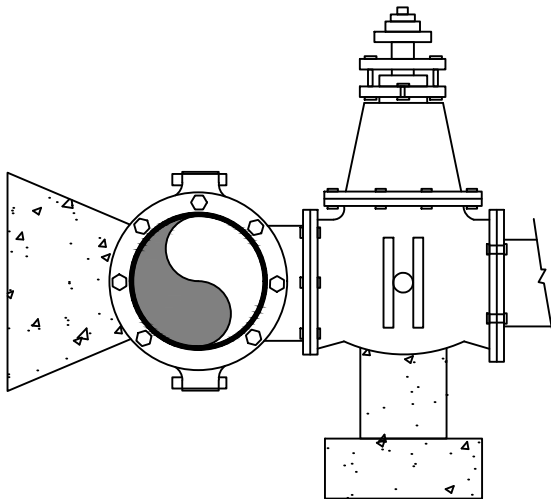
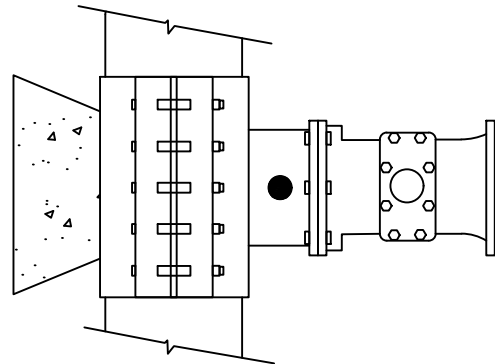
02/06/2026

NO SCALE

W-6

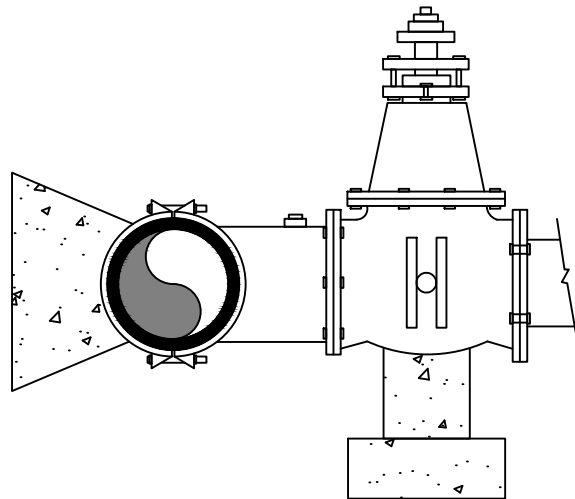


SEE W-5 FOR 8 MIL THICK
POLYETHYLENE SHEETING
(TO MATCH W-5)



DUCTILE IRON TAPPING TEE MECHANICAL JOINT SLEEVE

INSTALLED ON ASBESTOS CEMENT PIPE,
CAST IRON PIPE AND DUCTILE IRON PIPE



STAINLESS STEEL TAPPING TEE

INSTALLED ON ASBESTOS CEMENT PIPE,
CAST IRON PIPE AND DUCTILE IRON PIPE

NOTES

1. STAINLESS STEEL TAPPING TEES SHALL HAVE FULL CIRCLE SEAL.
2. STEEL TAPPING TEES SHALL BE EPOXY COATED.
3. NO SIZE ON SIZE TAPS. TAP SHALL BE AT LEAST 2" SMALLER DIAMETER THAN THE EXISTING MAIN.
4. TAPPING TEES SHALL BE ROMAC INDUSTRIES SSTIII OR EQUAL.



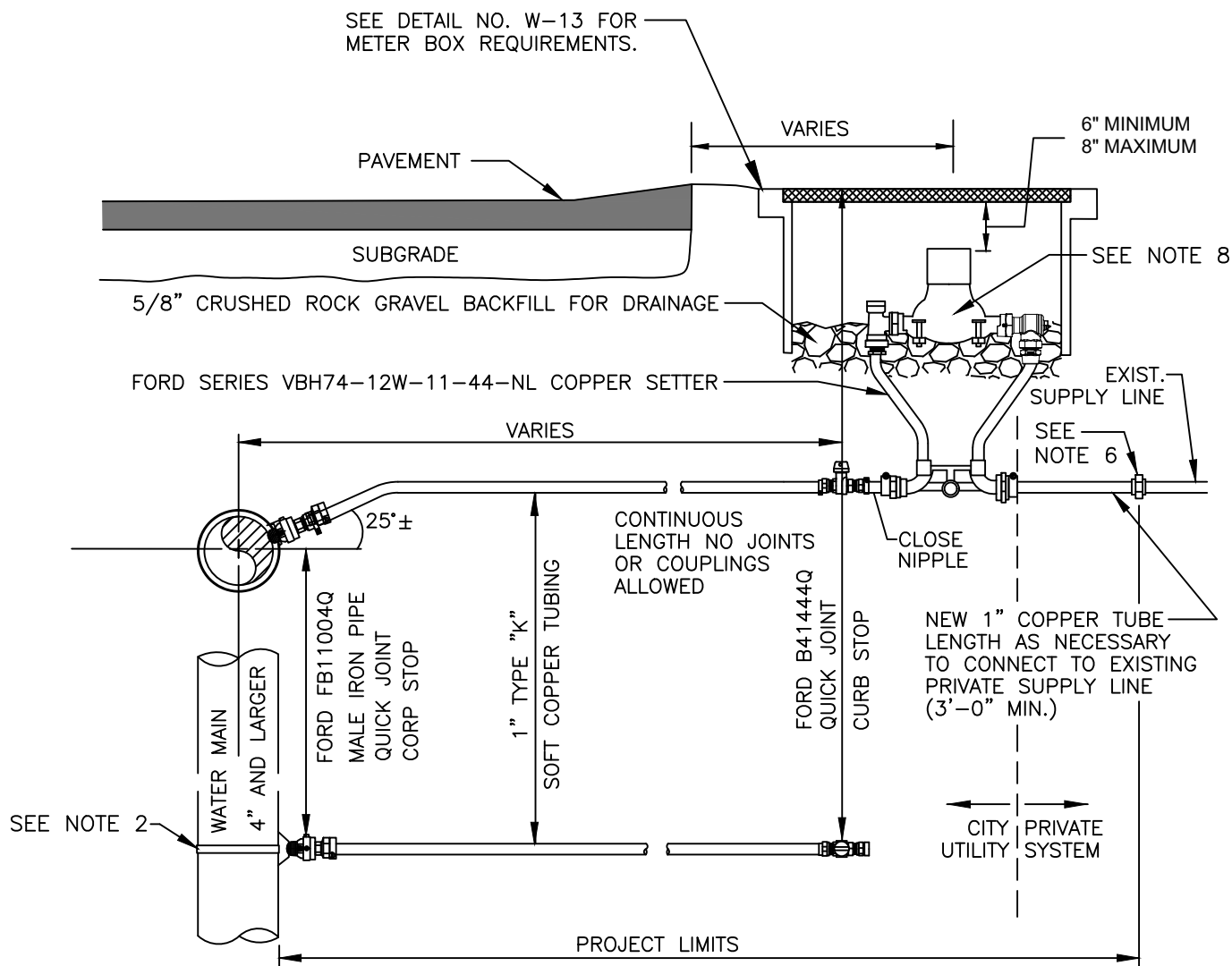
CITY OF MERCER ISLAND STANDARD DETAILS WATER

TAPPING TEE

08/05/2026

NO SCALE

W-7



NOTES

1. WATER SERVICES SHALL USE ONLY LOW-LEAD BRASS AND COPPER FITTINGS AND PIPE, IN COMPLIANCE WITH THE REDUCTION OF LEAD IN DRINKING WATER ACT DATED 01/04/2014.
2. ON EXISTING WATER MAINS USE NYLON COATED D.I. SADDLE WITH STAINLESS STEEL DOUBLE STRAPS, ROMAC 202NS, OR APPROVED EQUAL.
3. DISTANCE BETWEEN CORP STOPS SHALL BE 18" MINIMUM. DISTANCE BETWEEN CORP STOP AND PIPE ENDS SHALL BE 24" MINIMUM, ALL HORIZONTALLY STAGGERED.
4. INSTALLING METER BOXES WITHIN ROADWAY, SIDEWALK, OR DRIVEWAYS SHOULD BE AVOIDED.
5. UPON CITY ENGINEER'S APPROVAL, METER BOXES ARE ALLOWED TO BE INSTALLED IN PORTLAND CEMENT CONCRETE PAVEMENT OR SIDEWALK.
6. WHEN CONNECTING TO EXISTING PRIVATE SUPPLY LINE CONTAINING FERROUS METAL, PROVIDE INSULATING COUPLING (DB SERIES WITH C21 SERIES ADAPTERS) AND PROVIDE REDUCER AS NECESSARY TO MATCH EXISTING PRIVATE SUPPLY LINE DIAMETER.
7. SERVICE LINE SHALL BE PERPENDICULAR TO THE WATER MAIN AND STRAIGHT TO WATER METER, UNLESS OTHERWISE APPROVED BY CITY ENGINEER.
8. WATER METER AND MXU TRANSCLEVER SUPPLIED BY CITY.
9. ALL FITTINGS TO BE BRASS COMPRESSION TYPE, FORD QUICK JOINT OR EQUAL.
10. NO SERVICE CONNECTIONS BETWEEN BLOW-OFF AND END OF MAIN.



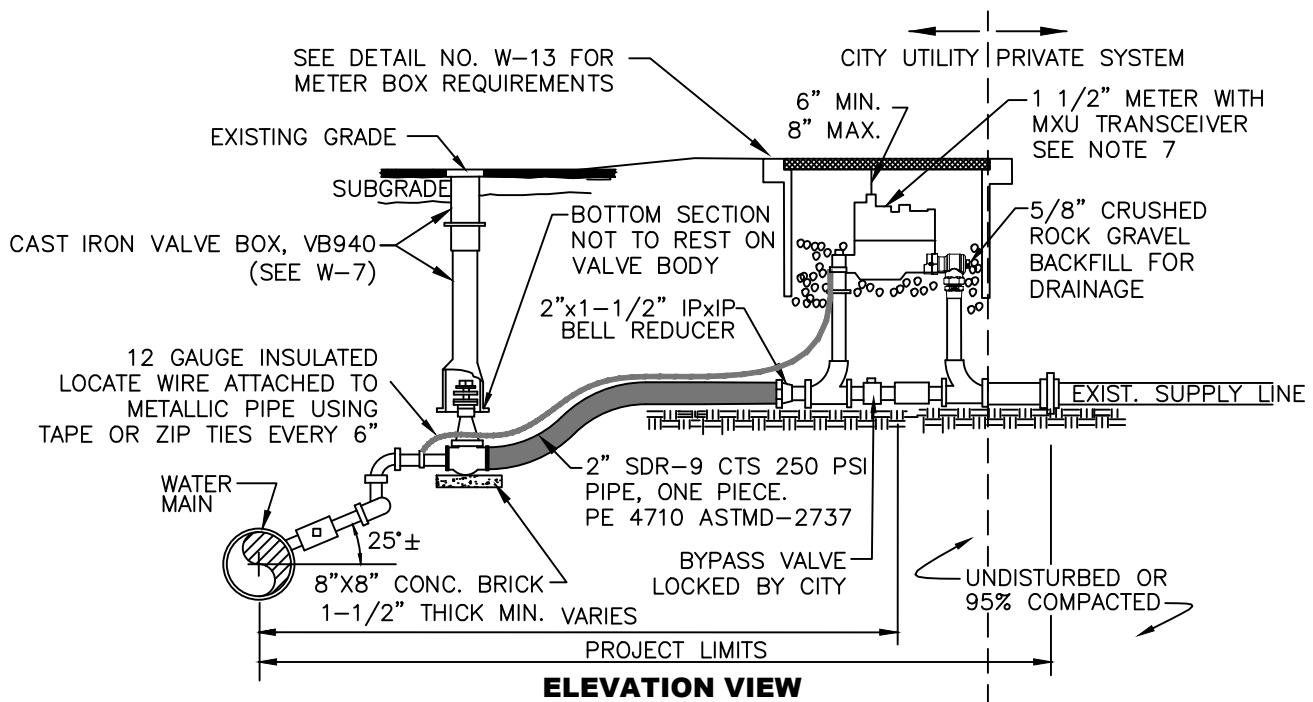
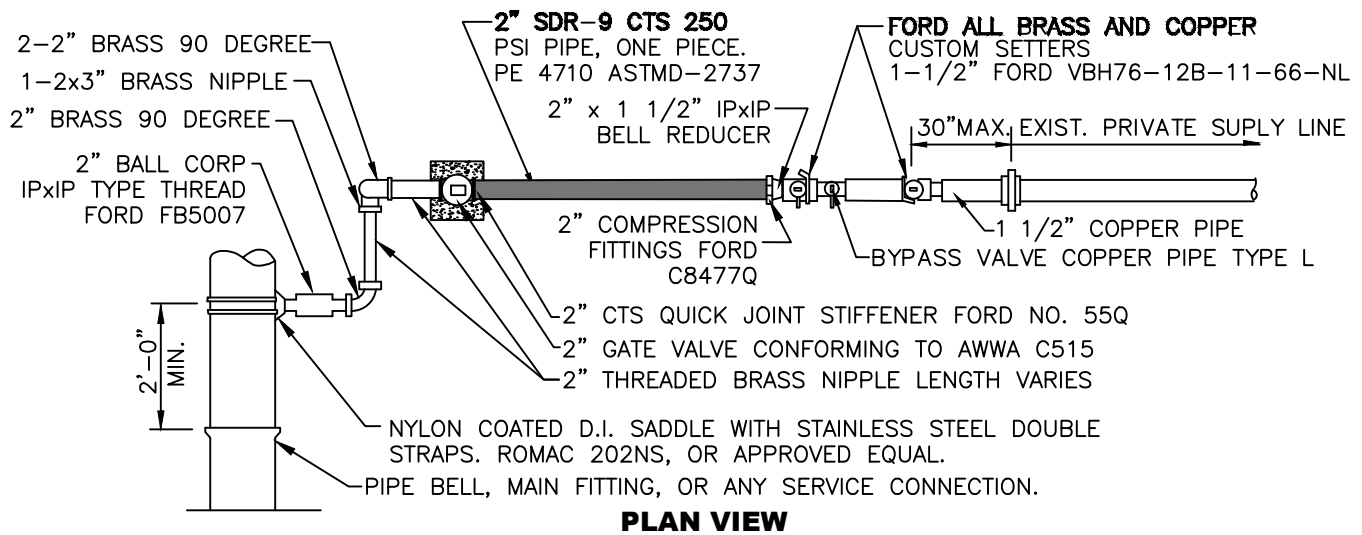
CITY OF MERCER ISLAND STANDARD DETAILS WATER

1" WATER METER INSTALLATION

02/06/2026

NO SCALE

W-8



NOTES

1. WATER SERVICES SHALL USE ONLY LOW-LEAD BRASS AND COPPER FITTINGS AND PIPE, IN COMPLIANCE WITH THE REDUCTION OF LEAD IN DRINKING WATER ACT DATED 01/04/2014.
2. DISTANCE BETWEEN CORP STOPS SHALL BE 18" MINIMUM. DISTANCE BETWEEN CORP STOP AND PIPE ENDS SHALL BE 24" MINIMUM, ALL HORIZONTALLY STAGGERED.
3. INSTALLING METER BOXES WITHIN ROADWAY, SIDEWALK, OR DRIVEWAYS SHOULD BE AVOIDED.
4. UPON CITY ENGINEER'S APPROVAL, METER BOXES ARE ALLOWED TO BE INSTALLED IN PORTLAND CEMENT CONCRETE PAVEMENT OR SIDEWALK.
5. WHEN CONNECTING TO EXISTING PRIVATE SUPPLY LINE CONTAINING FERROUS METAL, PROVIDE INSULATING COUPLING (DB SERIES WITH C21 SERIES ADAPTERS) AND PROVIDE REDUCER AS NECESSARY TO MATCH EXISTING PRIVATE SUPPLY LINE DIAMETER.
6. SERVICE LINE SHALL RUN PERPENDICULAR TO THE WATER MAIN AND STRAIGHT TO WATER METER, UNLESS OTHERWISE APPROVED BY CITY ENGINEER.
7. WATER METER AND MXU TRANSCEIVER SUPPLIED BY CITY.
8. ALL FITTINGS TO BE BRASS COMPRESSION TYPE, FORD QUICK JOINT OR EQUAL.
9. NO SERVICE CONNECTIONS BETWEEN BLOW-OFF AND END OF MAIN.



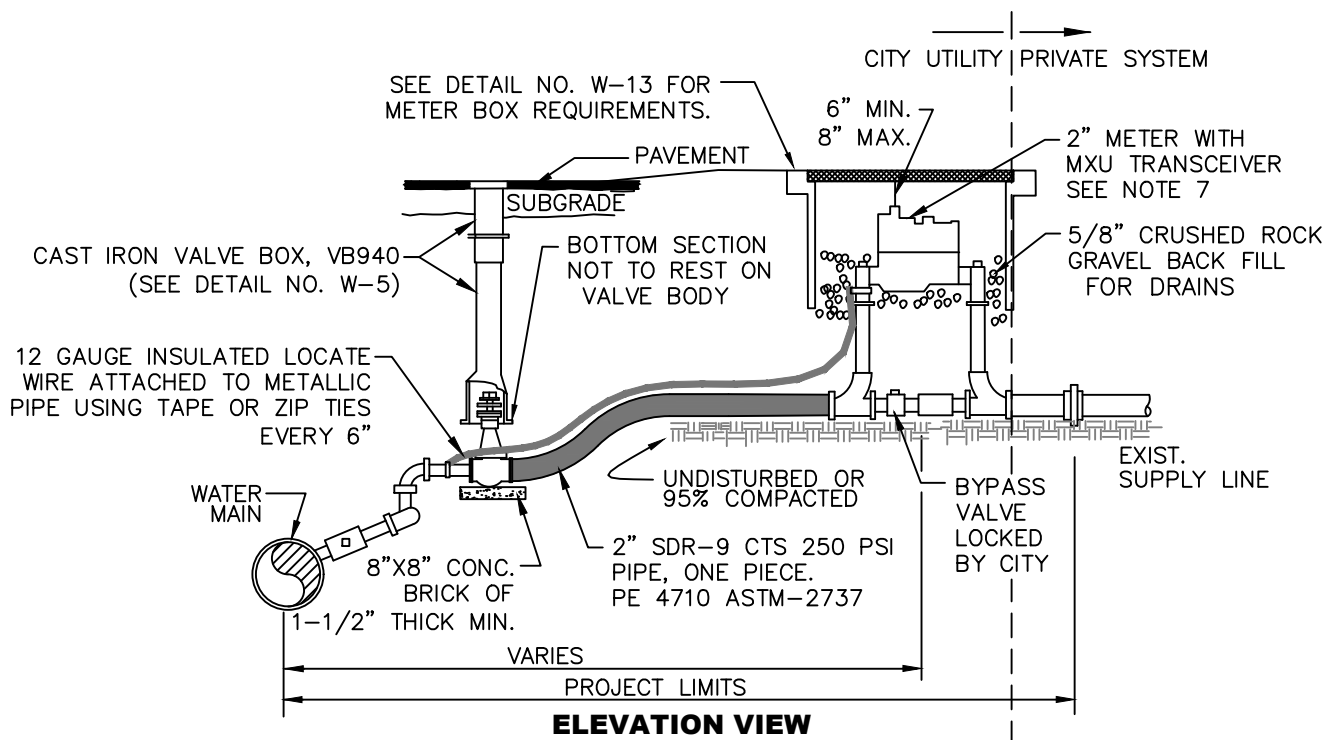
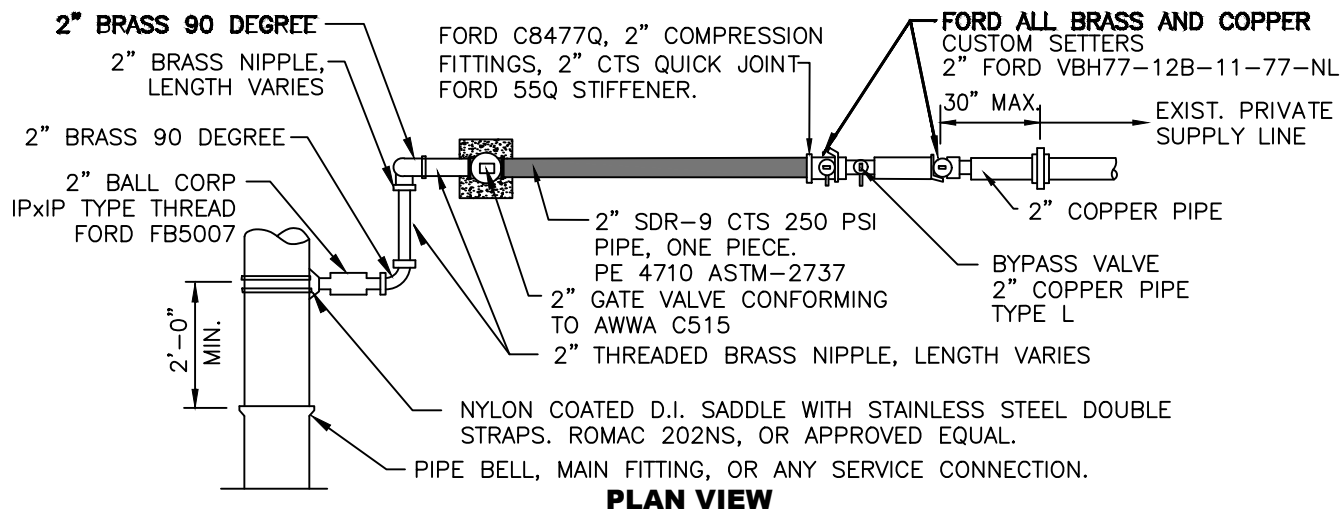
CITY OF MERCER ISLAND STANDARD DETAILS WATER

1 1/2" WATER METER INSTALLATION

02/06/2026

NO SCALE

W-9



NOTES

1. WATER SERVICES SHALL USE ONLY LOW-LEAD BRASS AND COPPER FITTINGS AND PIPE, IN COMPLIANCE WITH THE REDUCTION OF LEAD IN DRINKING WATER ACT DATED 01/04/2014.
2. DISTANCE BETWEEN CORP STOPS SHALL BE 18" MINIMUM. DISTANCE BETWEEN CORP STOP AND PIPE ENDS SHALL BE 24" MINIMUM, ALL HORIZONTALLY STAGGERED.
3. INSTALLING METER BOXES WITHIN ROADWAY, SIDEWALK, OR DRIVEWAYS SHOULD BE AVOIDED.
4. UPON CITY ENGINEER'S APPROVAL, METER BOXES ARE ALLOWED TO BE INSTALLED IN PORTLAND CEMENT CONCRETE PAVEMENT OR SIDEWALK.
5. WHEN CONNECTING TO EXISTING PRIVATE SUPPLY LINE CONTAINING FERROUS METAL, PROVIDE INSULATING COUPLING (DB SERIES WITH C21 SERIES ADAPTERS) AND PROVIDE REDUCER AS NECESSARY TO MATCH EXISTING PRIVATE SUPPLY LINE DIAMETER.
6. SERVICE LINE SHALL RUN PERPENDICULAR TO THE WATER MAIN AND STRAIGHT TO WATER METER, UNLESS OTHERWISE APPROVED BY CITY ENGINEER.
7. WATER METER AND MXU TRANSCEIVER SUPPLIED BY CITY.
8. ALL FITTINGS TO BE BRASS COMPRESSION TYPE, FORD QUICK JOINT OR EQUAL.
9. NO SERVICE CONNECTIONS BETWEEN BLOW-OFF AND END OF MAIN.



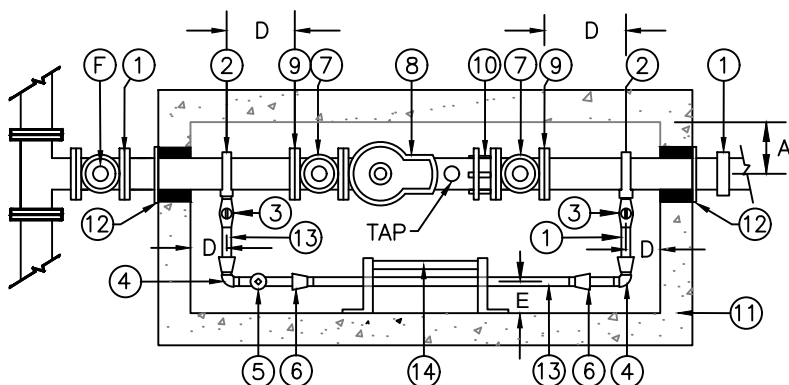
CITY OF MERCER ISLAND STANDARD DETAILS WATER

2" WATER METER INSTALLATION

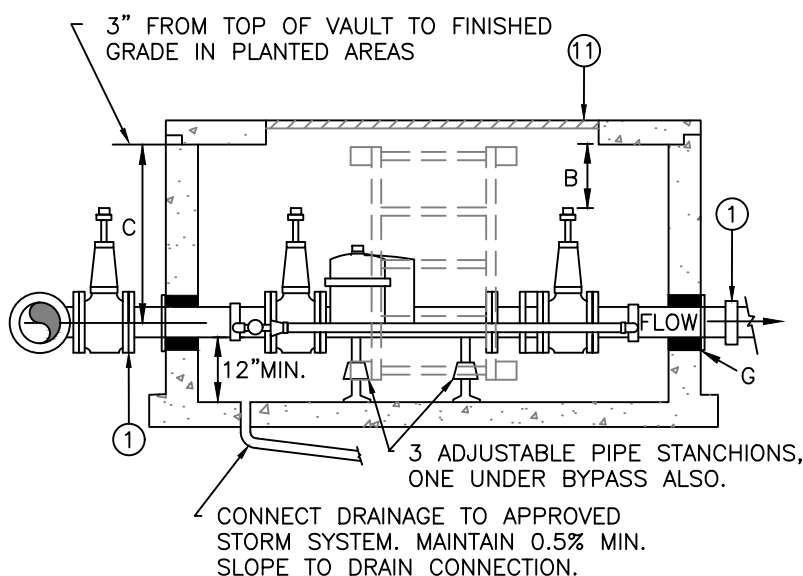
02/06/2026

NO SCALE

W-10



PLAN VIEW



SIDE VIEW

NOTES

- A** – 9.5" MIN.
B – 6.0" MIN.
C – 2.5' MIN.
D – 1.0' MIN.
E – 4.0" MIN.

F – PIPING FROM MAIN TO VAULT SHALL BE D.I. WITH A 4" MIN. TAP.

G – PIPE OPENINGS SHALL BE CORED AND SEALED USING A LINK SEAL OR APPROVED EQUAL. NO GROUT PERMITTED.

H – WHEN INSTALLING VAULT IN SIDEWALK OR PAVED AREAS, SET FRAME AND HATCH AT FINISHED GRADE. VAULT TOP SLAB SHALL REMAIN BELOW GRADE.

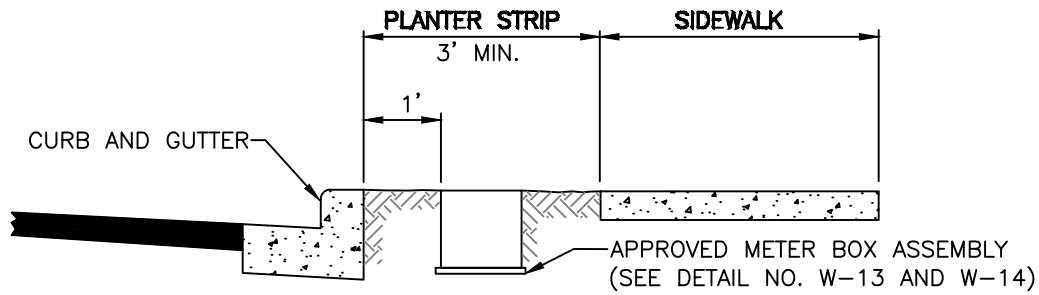
MATERIAL LIST

- ① FLEX. CPLG. TO FIT. ROMAC 501 OR APPROVED EQUAL. (4" X 3" REDUCER, M.J. FOR 3" METER INSTALLATION).
- ② DOUBLE STRAP SADDLE, ROMAC 202NU OR APPROVED EQUAL.
- ③ 2" IPXIP BALL CORP. FORD FB500-7 OR APPROVED EQUAL.
- ④ 2" BRASS 90° BEND.
- ⑤ 2" FORD B11-777 FIPS X FIPS 1/4 TURN BALL VALVE (WITH LOCKING EAR), OR APPROVED EQUAL, WITH ONE 2" X 6" BRASS NIPPLE.
- ⑥ FORD QUICK JOINT C85-77Q OR APPROVED EQUAL.
- ⑦ M&H C515 STYLE 7000 FLG X FLG RESILIENT SEATED GATE VALVE WITH SQUARE OPERATING NUT OR APPROVED EQUAL.
- ⑧ METRON METER WITH 2" TAPPED FLANGED SPACER AND SENSUS RADIO MXU PROVIDED BY THE CITY AT THE CONTRACTORS EXPENSE. LENGTH VARIES BY SIZE.
- ⑨ FLG X SPOOL, 12" MINIMUM. CONNECTION AT GATE VALVE MAY USE OPTIONAL EZ FLANGE 1000 OR APPROVED EQUAL.
- ⑩ CPLG ADPT, FLG ROMAC FCA 501 OR APPROVED EQUAL.
- ⑪ PRECAST VAULT TO BE APPROPRIATELY SIZED FOR SIZE OF WATER SERVICE. ACCESS HATCH TO BE LW PRODUCTS, HS-30, 3' X 5' SINGLE DOOR WITH ON-SLIP FINISH. LID OPENING TO BE PLACED FOR PROPER LADDER ACCESS.
- ⑫ ROMA-GRIP RESTRAINT OR APPROVED EQUAL.
- ⑬ 2" BRASS PIPE CUT AND THREADED TO FIT.
- ⑭ LADDER PER STD. DETAIL W-19D.

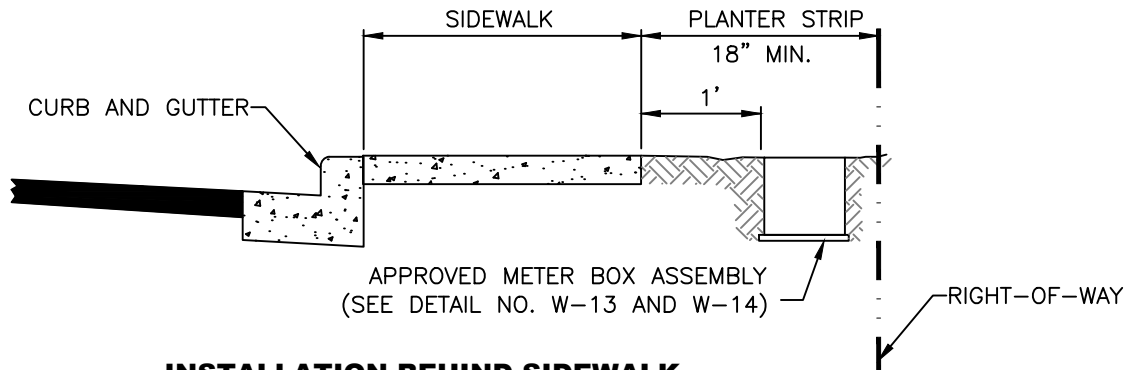


**CITY OF MERCER ISLAND
 STANDARD DETAILS
 WATER**

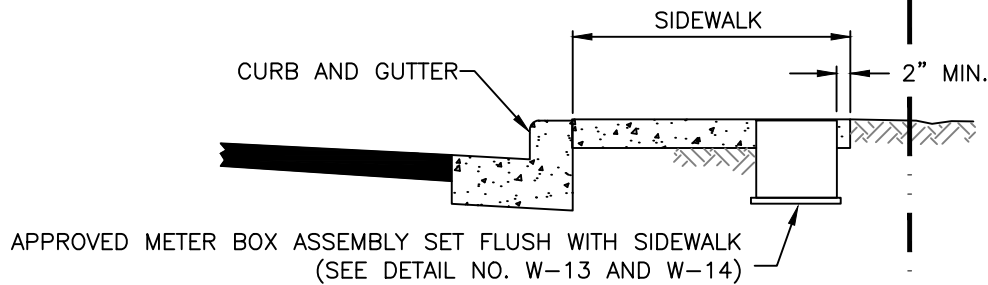
3" & 4" DOMESTIC METER INSTALLATION



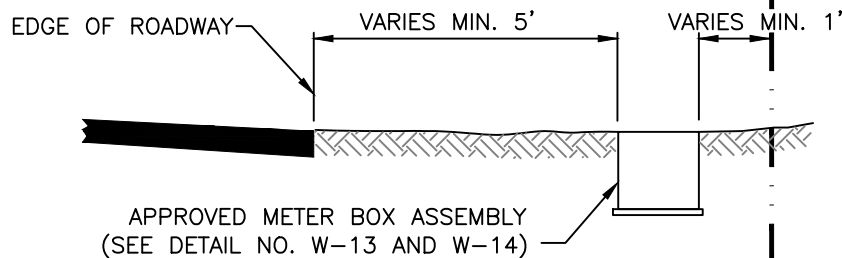
INSTALLATION IN PLANTER STRIP 3' OR WIDER



INSTALLATION BEHIND SIDEWALK



INSTALLATION IN SIDEWALK



INSTALLATION WITH NO SIDEWALK

NOTES

1. ALL NEW WATER METER LOCATIONS SHALL BE APPROVED BY CITY ENGINEER.



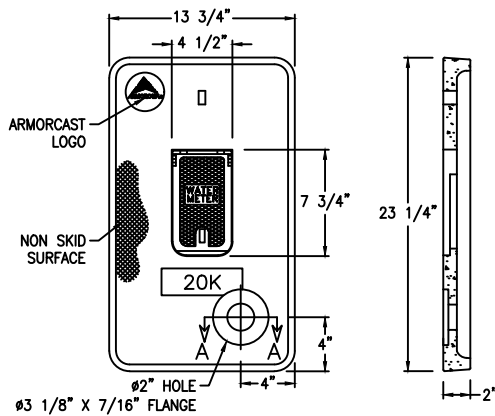
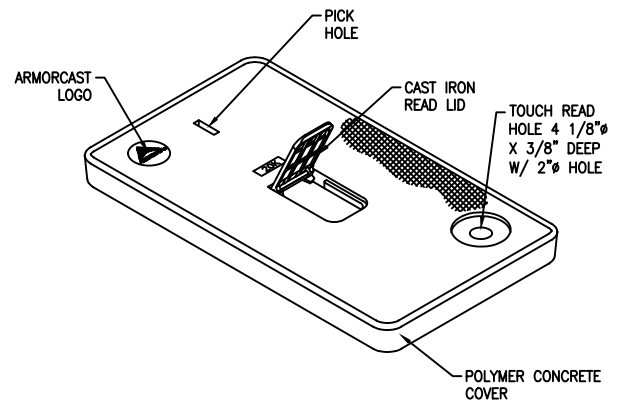
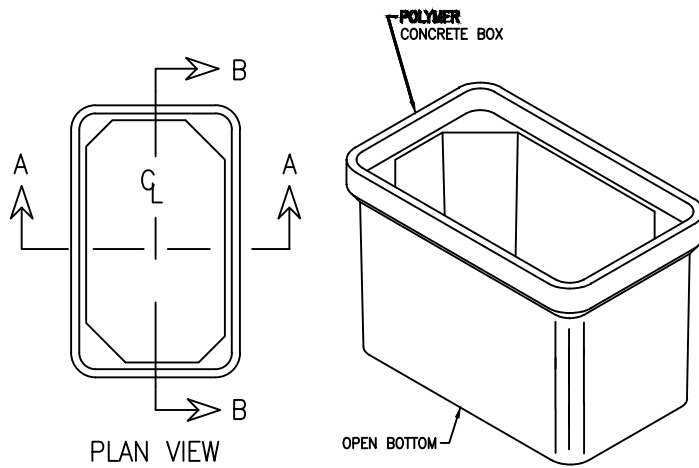
CITY OF MERCER ISLAND STANDARD DETAILS WATER

WATER METER PLACEMENT

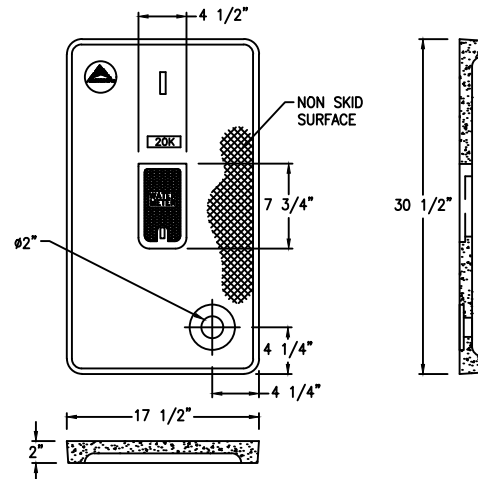
02/06/2026

NO SCALE

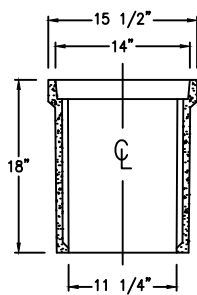
W-12



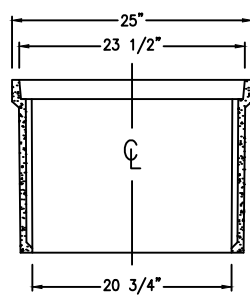
1" TRAFFIC RATED METER BOX AND LID WITH RADIO HOLE



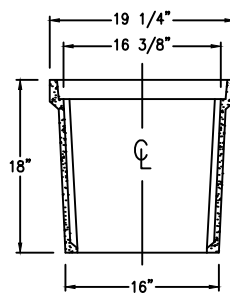
2" TRAFFIC RATED METER BOX AND LID WITH RADIO HOLE



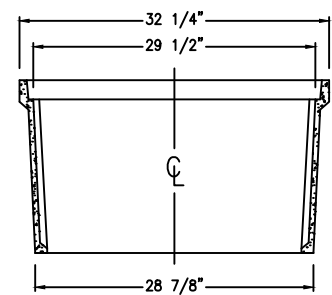
SECTION A-A



SECTION B-B



SECTION A-A



SECTION B-B

NOTES

- FOR 1" TRAFFIC-RATED BOX, USE ARMORCAST A6001946PCX18 OR APPROVED EQUAL. FOR LID USE ARMORCAST A6001969RCI-H7 OR APPROVED EQUAL.
- FOR 2" TRAFFIC-RATED BOX, USE ARMORCAST A001640PCX18 OR APPROVED EQUAL. FOR LID USE ARMORCAST A6001947TRCI-H7 OR APPROVED EQUAL.



CITY OF MERCER ISLAND STANDARD DETAILS WATER

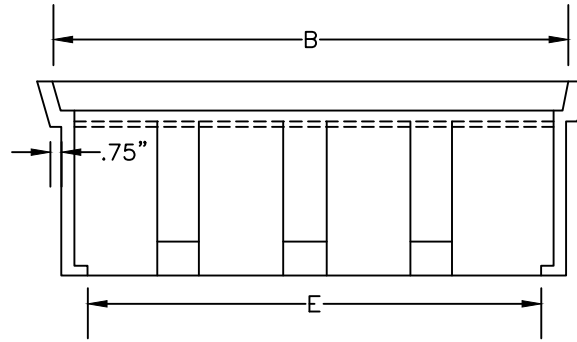
1" & 2" WATER METER BOX

04/17/2026

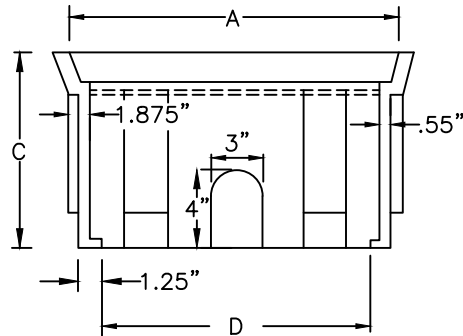
NO SCALE

W-13

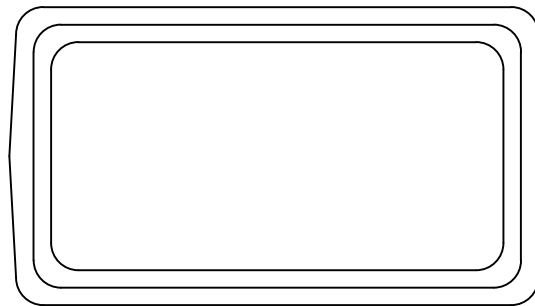
MSBCF



LONG SIDE VIEW



SHORT SIDE VIEW



TOP VIEW

	A	B	C	D	E
1730-18	20 1/2"	33 1/2"	18"	16"	29 1/16"

NOTES

1. METER BOX SHALL BE OLD CASTLE MSBCF WITH A SOLID DUCTILE IRON LID WITH NO FLIP LID OR HOLE.
2. PLASTIC WATER METER BOXES SHALL NOT BE INSTALLED WITHIN A DRIVING OR PARKING AREA.
3. PLASTIC WATER BOXES SHALL BE USED FOR **AIR AND VACUUM VALVE ASSEMBLY ONLY.**



CITY OF MERCER ISLAND
STANDARD DETAILS
WATER

2" PLASTIC WATER METER BOX

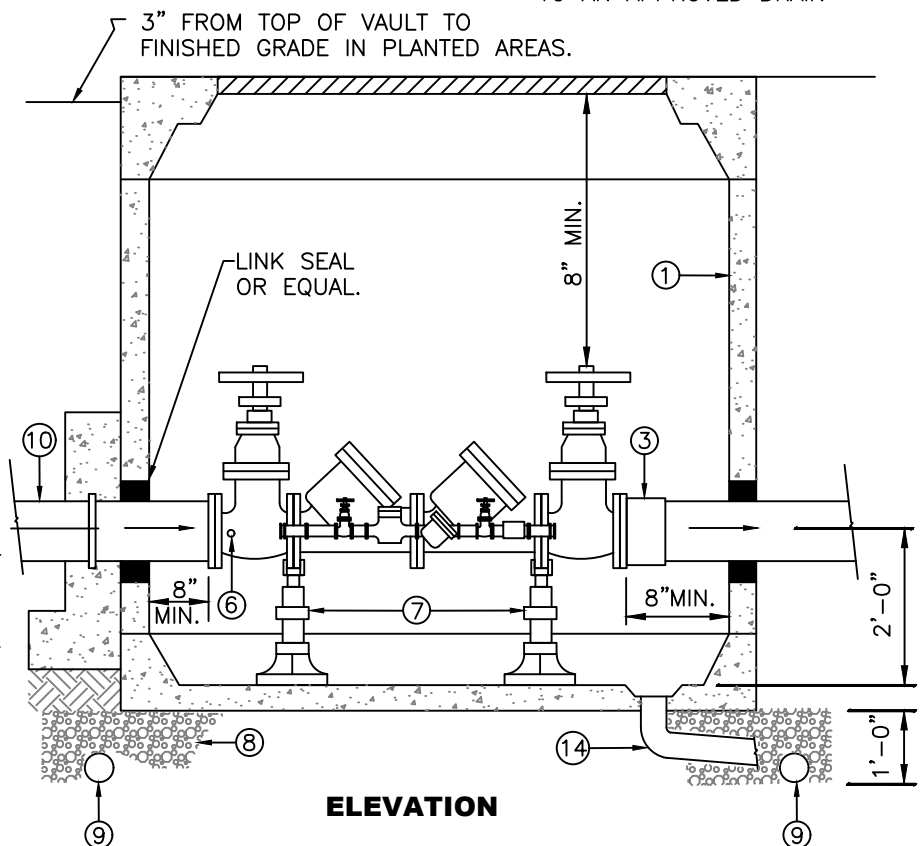
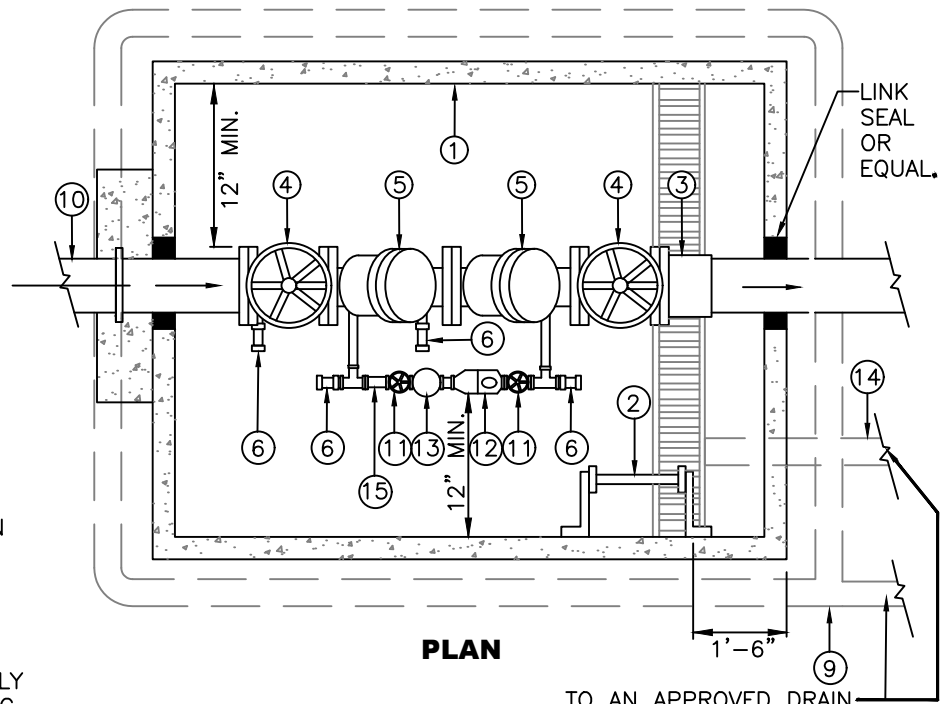
02/06/2026

NO SCALE

W-14

NOTES

1. SEE W-15B FOR MATERIAL LIST.
2. VALVE ASSEMBLY TO BE CENTERED IN VAULT.
3. TEE AND GATE VALVE REQUIRED ON MAIN.
4. WHEN DOUBLE CHECK VALVE ASSEMBLY IS USED IN SAME LINE WITH DOMESTIC BUILDING METER, METERED DETECTOR BYPASS SHALL BE OMITTED.
5. ASSEMBLY TO BE MAINTAINED BY OWNER AND ANNUAL CERTIFICATION IS REQUIRED.
6. THE CITY OF MERCER ISLAND MUST TEST AND CERTIFY THE FIRE LINE BEFORE CONNECTION TO THE CITY SYSTEM IS ALLOWED.
7. FIRELINE SHALL NOT BE PUT INTO SERVICE UNTIL THE DOUBLE CHECK VALVE ASSEMBLY IS APPROVED BY THE CITY.
8. VAULT PENETRATIONS SHALL BE CORE DRILLED.
9. A THRUST RING OR APPROVED EQUAL SHALL BE INSTALLED ON INLET SIDE OF PIPE RESTRAINED JOINT.
10. MATERIALS FOR BY PASS SHALL BE ALL BRASS AND COPPER WITH SWIVEL COUPLINGS BETWEEN SHUT-OFF VALVES FOR REPLACEMENT.



CITY OF MERCER ISLAND STANDARD DETAILS WATER

DOUBLE DETECTOR CHECK VALVE ASSEMBLY

08/05/2026

NO SCALE

W-15A

KEY NO.	QUANTITY		MATERIAL
	4"	6" & 8"	
1	1	—	PRE CAST CONCRETE VAULT AS APPROVED BY THE CITY ENGINEER
1	—	1	PRE CAST CONCRETE VAULT AS APPROVED BY THE CITY ENGINEER
1	1	—	PRE CAST CONCRETE VAULT AS APPROVED BY THE CITY ENGINEER
1	—	1	PRE CAST CONCRETE VAULT AS APPROVED BY THE CITY ENGINEER
1	—	1	PRE CAST CONCRETE VAULT AS APPROVED BY THE CITY ENGINEER
1	1	1	LW PRODUCTS ALUMINUM, SINGLE DOOR, H-20 OR EQUAL.
2	1	1	FABRICATED BOLT-ON LADDER. USE THREE SETS OF MOUNTING BRACKETS ATTACHED TO VAULT WALL WITH 5/8" DIAMETER CORROSION RESISTANT ANCHOR BOLTS (HILTI KWIK BOLT, PHILIPS RED HEAD OR APPROVED EQUAL). ALL STEEL FOR LADDER SHALL BE A-36, OSHA APPROVED HOT DIPPED GALVANIZED AFTER FABRICATION. SEE DRAWING NO. W-27C.
3	1	—	4" DIAMETER FLEXIBLE FLANGED COUPLING ADAPTER ROCKWELL TYPE 912
3	—	1	8" OR 6" DIAMETER FLEXIBLE FLANGED COUPLING ADAPTER ROCKWELL TYPE 912
4	1	—	4" O.S. & Y. GATE VALVE U.L. APPROVED
4	—	1	8" OR 6" O.S. & Y. GATE VALVE U.L. APPROVED
5	1	—	4" D.S.H.S. APPROVED DOUBLE CHECK VALVE ASSEMBLY, INCLUDING 2 O.S. & Y. GATE VALVES, TEST COCK, 3/4" DOUBLE CHECK VALVE, SINGLE OR MULTI JET METER (TO READ IN CUBIC FEET) AND 3/4" BRASS OR COPPER BYPASS WITH IN LINE VALVE.
5	—	1	8" OR 6" D.S.H.S. APPROVED DOUBLE CHECK VALVE ASSEMBLY, INCLUDING 2 O.S. & Y. GATE VALVES, TEST COCK, 3/4" DOUBLE CHECK VALVE, SINGLE OR MULTI JET METER (TO READ IN CUBIC FEET) AND 3/4" BRASS OR COPPER BYPASS WITH IN LINE VALVES.
6	1	1	3/4" DIAMETER TEST COCKS
7	2	2	ADJUSTABLE PIPE SADDLE SUPPORT (ITT GRINNEL FIG 264 OR APPROVED EQUAL). ATTACH TO VAULT FLOOR WITH FOUR 1/2" DIAMETER CORROSION RESISTANT ANCHOR BOLTS (HILTI KIWI BOLT, PHILIPS RED HEAD OR APPROVED EQUAL). SEE DRAWING NO. W-27C.
8	—	—	PEA GRAVEL BACKFILL FOR PIPE BEDDING UNDER PRECAST CONCRETE UTILITY VAULT.
9	—	—	4" DIAMETER UNDERDRAIN, CONNECT TO DRAINAGE SYSTEM, SCHEDULE 200 PERFORATED PVC WITH GALVANIZED SCREEN EACH END.
10	—	—	4" DIAMETER CL. 52 DUCTILE IRON PIPE
10	—	—	6" OR 8" DIAMETER CL. 52 DUCTILE IRON PIPE
11	1	1	3/4" GATE VALVE U.L. LISTED
12	1	1	5/8" x 3/4" ACCULINK MULTINET MASTER METER WITH SENSUS COMPATABLE MXU READ IN CU. FT. MULTI-JET
13	1	1	3/4" DOUBLE CHECK VALVE
14	1	1	SOLID PVC PIPE SUMP DRAIN. SIZE PER MANUFACTURER'S RECOMMENDATION. CONNECT TO DRAINAGE STRUCTURE AS APPROVED
15	1	1	3/4" "Y" STRAINER

NOTES

1. ALL VAULT, BASED AND TOPS TO BE COATED WITH DAMPPROOFING.
2. SIZE DETERMINED ON BASIS OF ACTUAL FIRE DEMAND.
3. SEE W-15A FOR ADDITIONAL DETAILED MATERIAL NOTES.



CITY OF MERCER ISLAND STANDARD DETAILS WATER

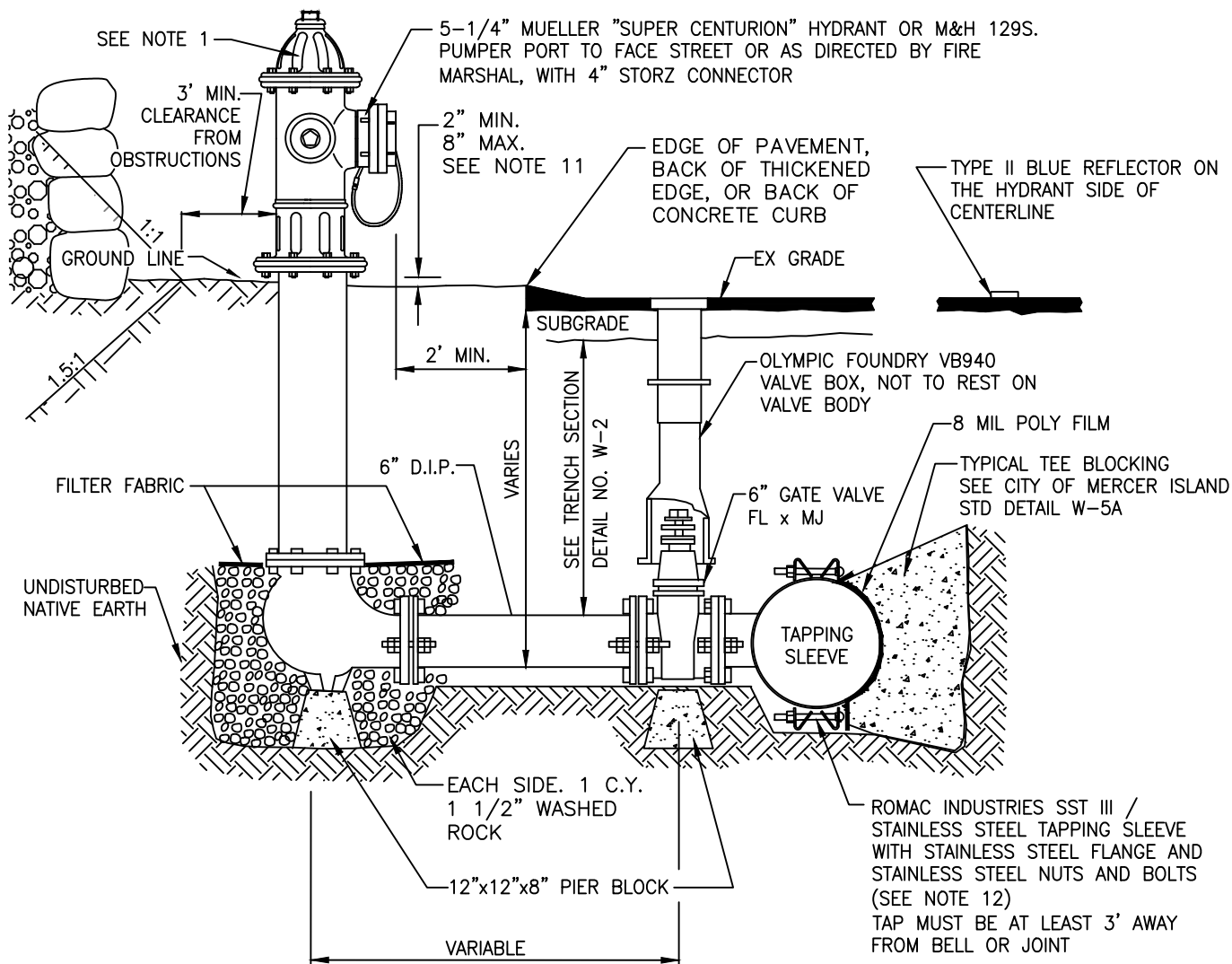
DOUBLE DETECTOR CHECK VALVE ASSEMBLY MATERIAL LIST

2014

NO SCALE

W-15B

W-16A



NOTE:

1. 1-5 1/4" M.V.O. HYDRANT WITH 2-2 1/2" N.T.S. M.J. INLET WITH LUGS, BRASS-TO-BRASS SUB-SEAT AND 1-4 1/2" PUMPER, SEATTLE STANDARD PIPE THREAD WITH 4" STORZ CONNECTOR ITEM NUMBER HPHA40-40-004/CAP SIZE 4.875-INCH BY 6-INCH.
2. WET TAP IS ALLOWED ONLY UPON ENGINEER'S APPROVAL. NO SIZE ON SIZE WET TAPS.
3. NO DOMESTIC CONNECTIONS CAN BE MADE TO THE FIRE HYDRANT RUNS.
4. ANY FIRE HYDRANT RUN OVER 18 FEET IN LENGTH OF PIPE SHALL HAVE RESTRAINED JOINT GASKETS.
5. USE ROMA GRIP, OR APPROVED EQUAL, PIPE RESTRAINERS AT VALVE AND HYDRANT BASE.
6. HYDRANT SHALL BE PAINTED WITH 2 COATS OF FARWEST #250 HIGH GLOSS WHITE PAINT, OR APPROVED EQUAL, APPLIED WITH A PAINT BRUSH. DO NOT APPLY PAINT TO STORZ FITTING, BRASS PORT THREADS, OR BELOW SAFETY FLANGE.
7. BOLLARDS MAY BE USED TO PROTECT THE HYDRANT ONLY IN PARKING LOTS WHEN NO CURBS ARE PRESENT OR IN EXPOSED AREAS OF PARKING LOTS.
8. STRAIGHT PIPE TO HYDRANTS FROM MAIN, NO BENDS.
9. REMOVE CHAINS FROM HYDRANT CAPS.
10. VALVE AND HYDRANT MUST BE PLUMB.
11. THIS DISTANCE IS MEASURED FROM BOTTOM OF SAFETY FLANGE TO LEVEL OF FINISH GRADE BELOW HYDRANT.
12. TAPPING SLEEVE O.D. (OUTSIDE DIAMETER) RANGE MUST BE COMMENSURATE WITH PIPE O.D.



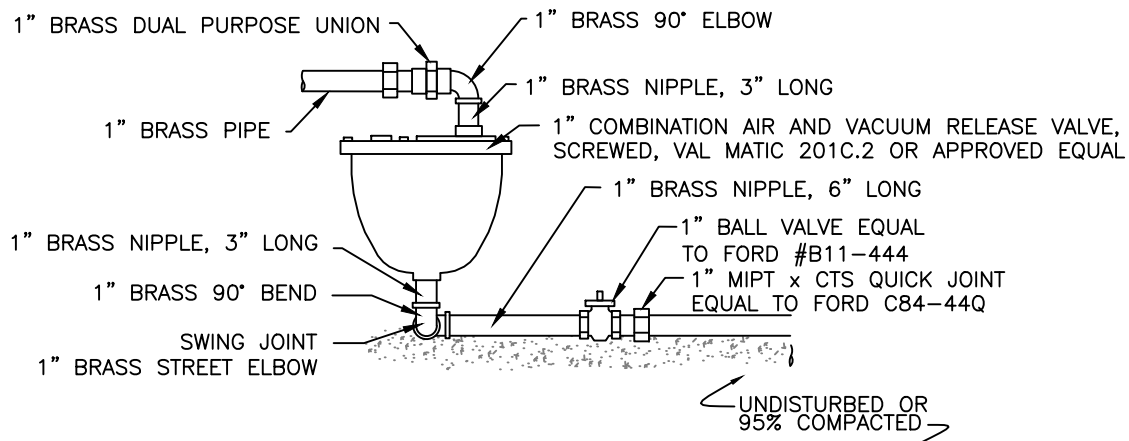
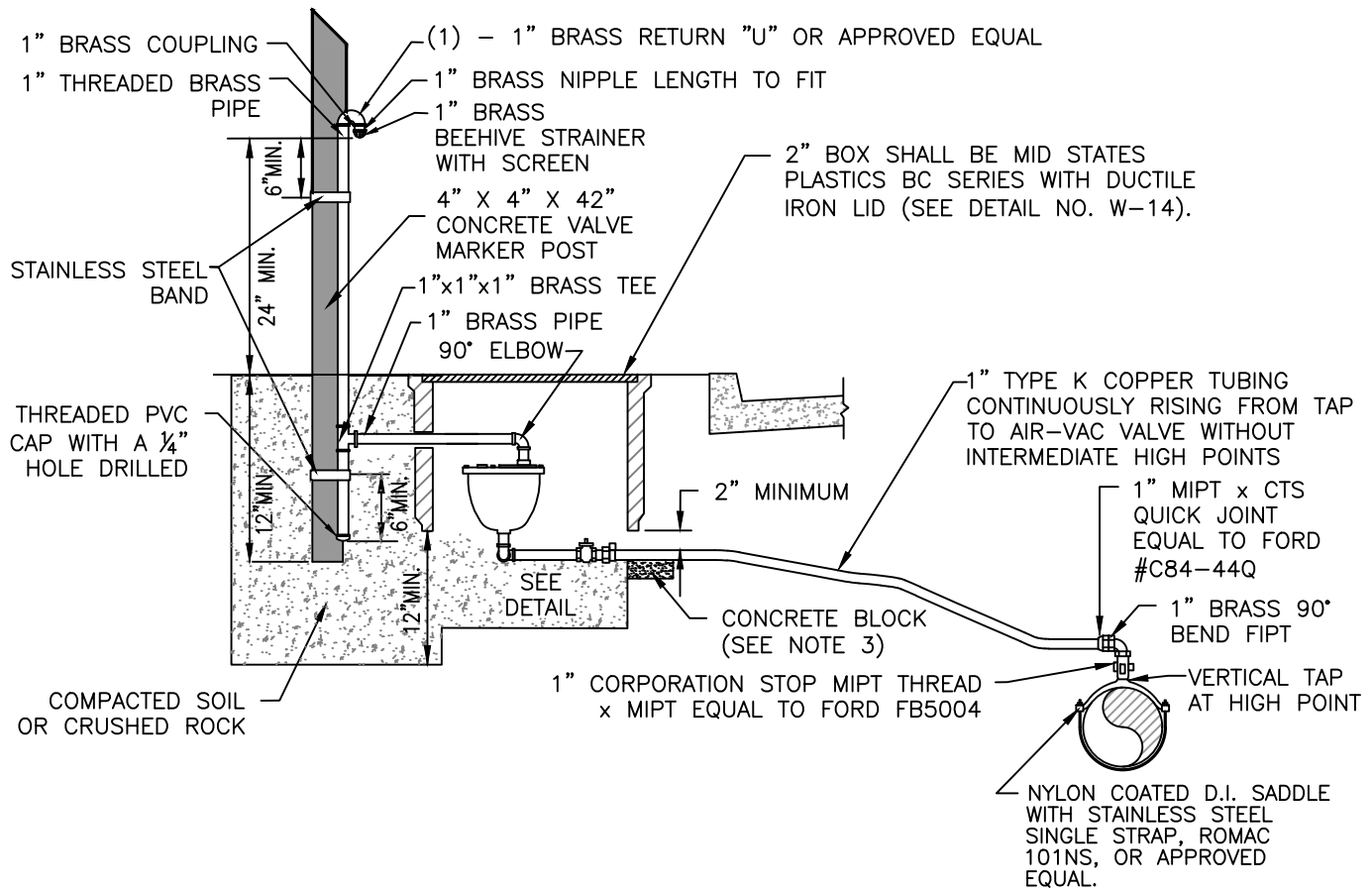
CITY OF MERCER ISLAND STANDARD DETAILS WATER

FIRE HYDRANT ASSEMBLY - WET TAP INSTALLATION

02/06/2026

NO SCALE

W-16B



VALVE ASSEMBLY DETAIL

NOTES

1. ALL FITTINGS SHALL BE BRASS, ALL PIPE SHALL BE COPPER, UNLESS OTHERWISE SHOWN.
2. TAP FOR COMBINATION AIR AND VACUUM VALVE ASSEMBLY MUST BE INSTALLED AT HIGHEST POINT OF WATER MAIN. EXACT LOCATION OF ASSEMBLY TO BE DETERMINED BY CITY.
3. AT THE CITY INSPECTORS DISCRETION A CONCRETE BLOCK SHALL BE PLACED UNDER VALVE BOX TO KEEP BALL VALVE EXPOSED.
4. VALVE MARKER POST SHALL BE PAINTED WITH 2 COATS OF FARWEST #250 HIGH GLOSS WHITE PAINT, OR APPROVED EQUAL, APPLIED WITH A PAINT BRUSH.
5. AIR AND VACUUM VALVE ASSEMBLIES SHALL BE LOCATED IN UNPAVED AREAS.



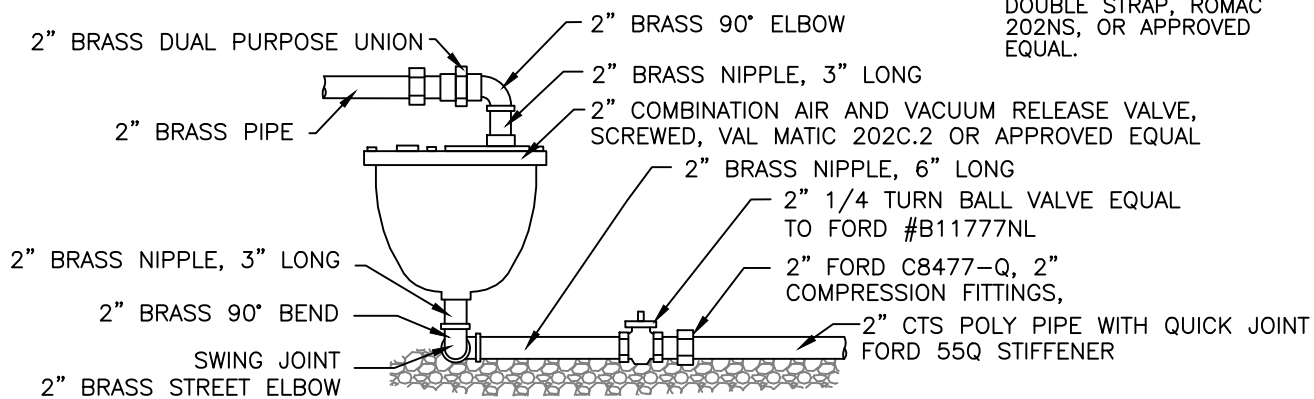
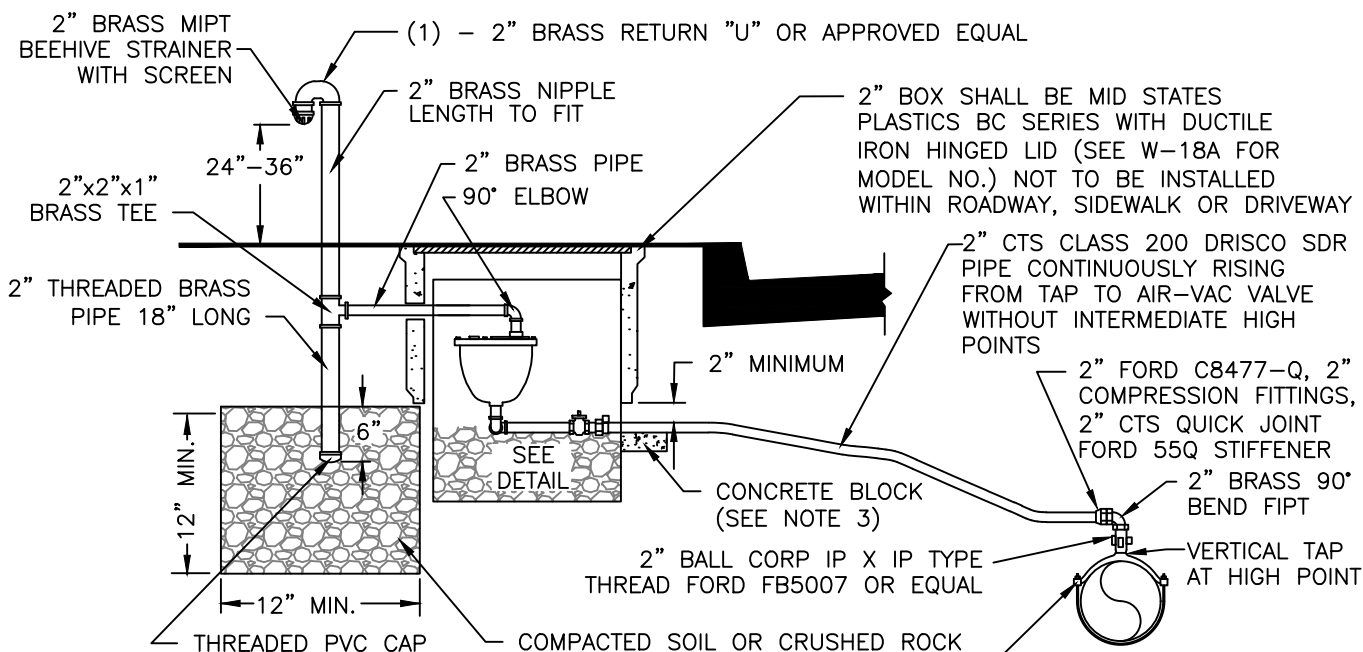
CITY OF MERCER ISLAND STANDARD DETAILS WATER

1" AIR & VACUUM VALVE ASSEMBLY

02/06/2026

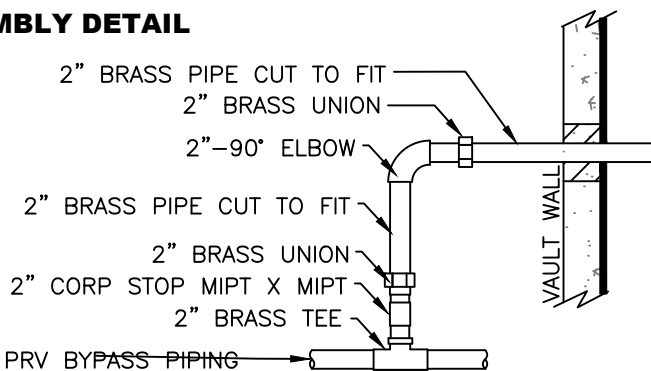
NO SCALE

W-17A



VALVE ASSEMBLY DETAIL

← UNDISTURBED OR 95% COMPACTED →



PRV VAULT INSTALLATION DETAIL

NOTES

1. ALL FITTINGS SHALL BE BRASS.
2. TAP FOR COMBINATION AIR AND VACUUM VALVE ASSEMBLY MUST BE INSTALLED AT HIGHEST POINT OF WATER MAIN. EXACT LOCATION OF ASSEMBLY TO BE DETERMINED BY CITY.
3. AT THE CITY INSPECTORS DISCRETION A CONCRETE BLOCK SHALL BE PLACED UNDER VALVE BOX TO KEEP **BALL VALVE EXPOSED.**



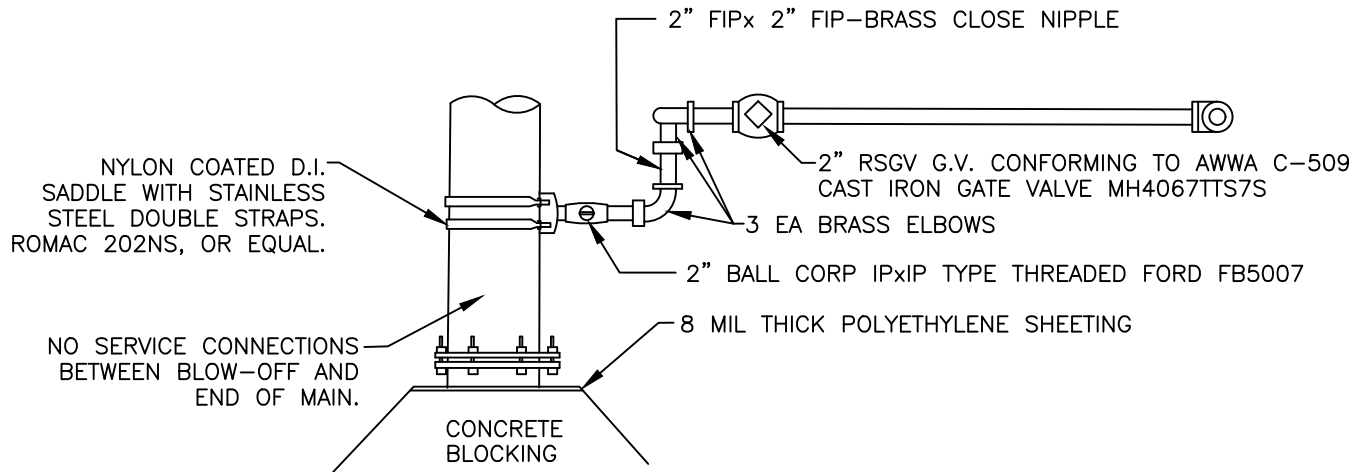
**CITY OF MERCER ISLAND
STANDARD DETAILS
WATER**

2" AIR & VACUUM VALVE ASSEMBLY

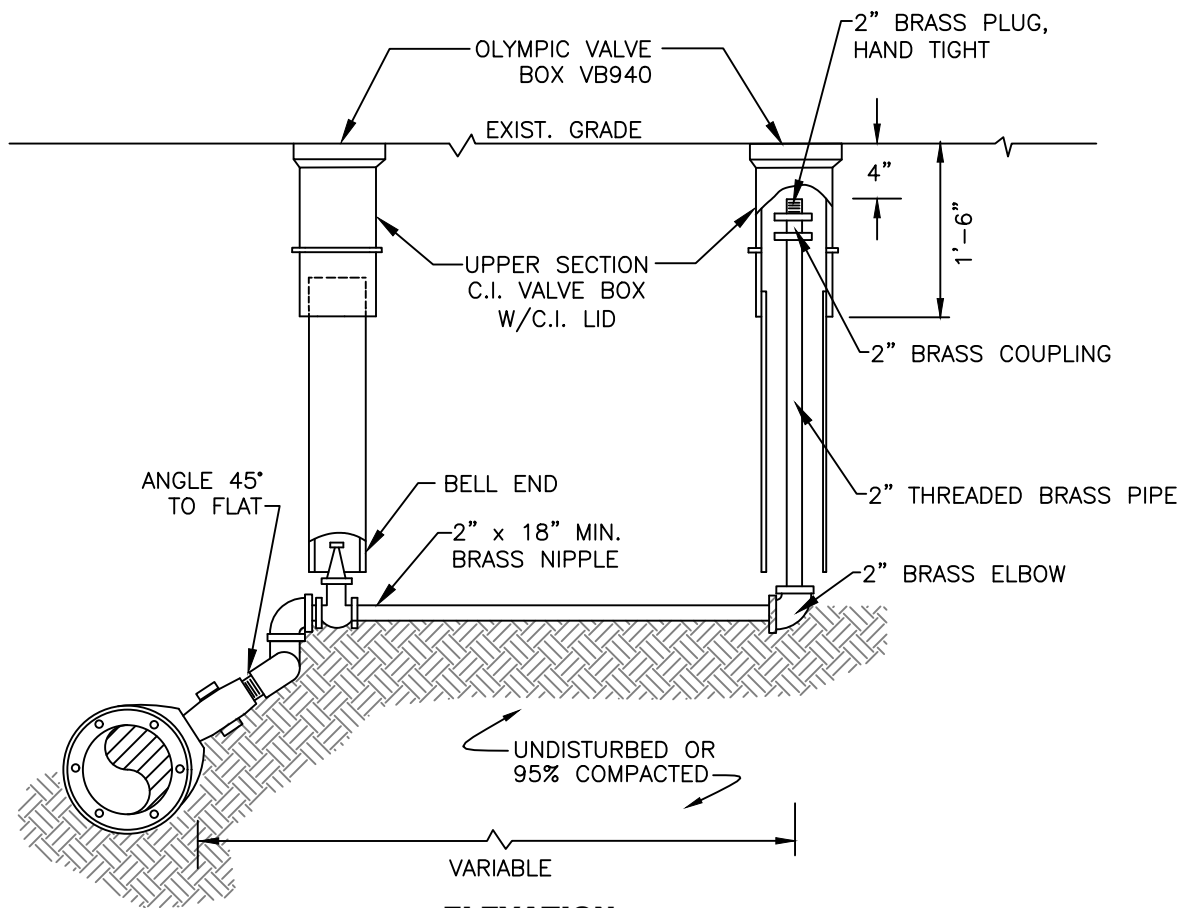
2015

NO SCALE

W-17B



PLAN VIEW



ELEVATION

NOTES

1. ALL PIPING MATERIALS, FITTINGS, COUPLINGS SHALL BE BRASS.
NO GALVANIZED MATERIALS WILL BE ALLOWED.



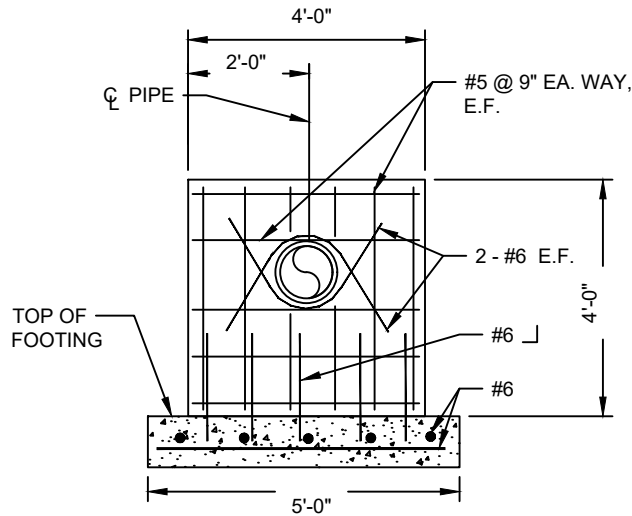
**CITY OF MERCER ISLAND
STANDARD DETAILS
WATER**

2" BLOW-OFF ASSEMBLY

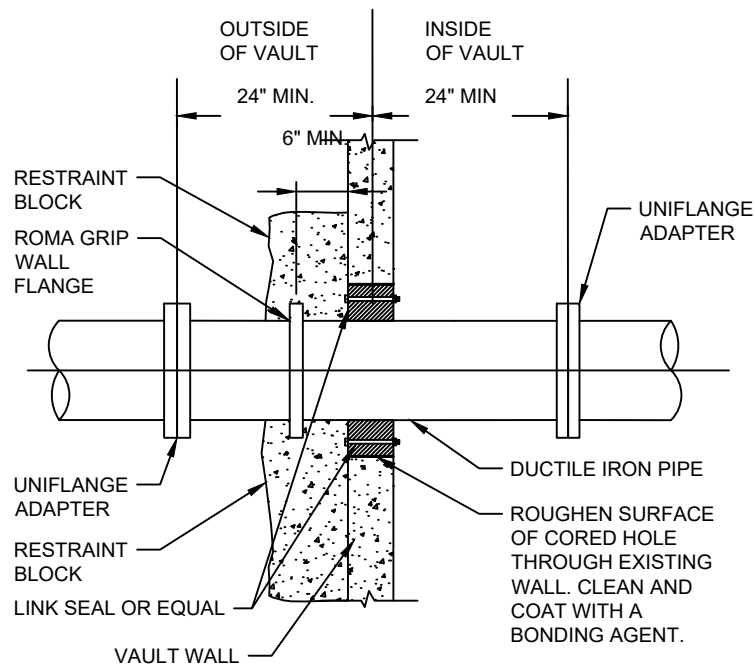
02/06/2026

NO SCALE

W-18



WALL FLANGE DETAIL



WALL PENETRATION DETAIL
(FOR ALL PIPE PENETRATIONS)

NOTES:

1. ALL PIPE PENETRATIONS SHALL BE LEVEL.



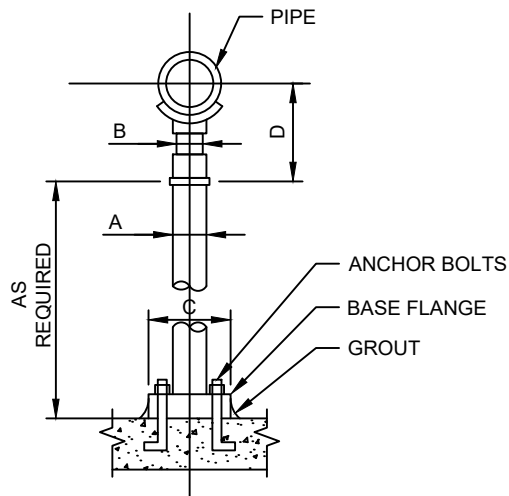
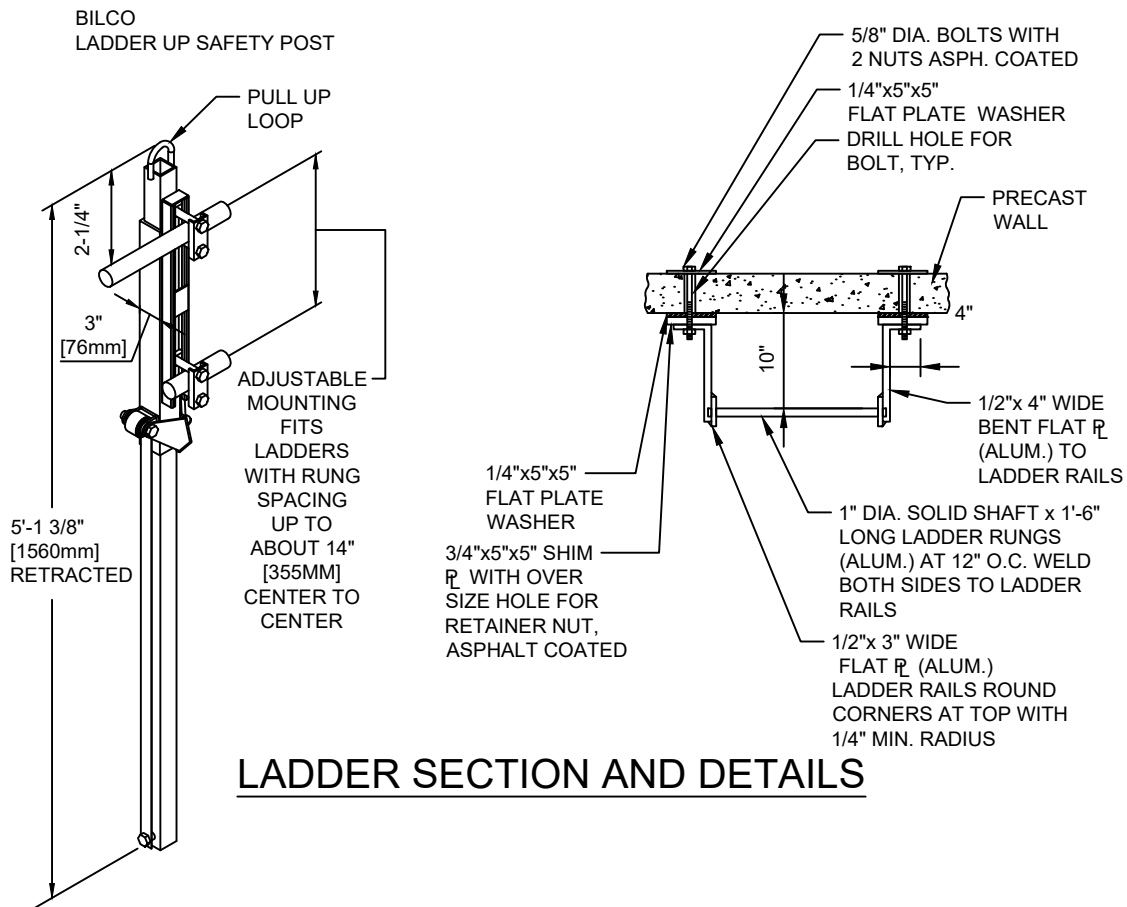
CITY OF MERCER ISLAND
STANDARD DETAILS
WATER

PRESSURE REDUCING VALVE (PRV) VAULT
WALL FLANGE & WALL PENETRATION

02/06/2026

NO SCALE

W-19C



ADJUSTABLE PIPE SUPPORT SCHEDULE (IN INCHES)					
PIPE SIZE	A	B	C	D	
				MIN.	MAX.
2-1/2	2-1/2	2-1/2	9	8	13
3	2-1/2	1-1/2	9	8-1/4	13-1/4
3-1/2	2-1/2	1-1/2	9	8-1/2	13-1/2
4	3	2-1/2	9	9-1/4	14
5	3	2-1/2	9	10	14-3/4
6	3	2-1/2	9	10-1/2	15-1/4
8	3	2-1/2	9	11-3/4	16-1/2
10	3	2-1/2	9	13-1/2	18-1/4
12	3	2-1/2	9	15	19-3/4
16	6	3-1/2	13-1/2	19-1/2	24

NOTES:

- LADDER SHALL BE EQUIP. W/ BILCO "LADDER-UP" POLE AND SHALL BE BOLTED TO SIDE & BOTTOM OF VAULT ON SIDE CLOSEST TO LADDER. RUNGS TO BE EXTENDED 2" BEYOND EDGE OF OPENING.



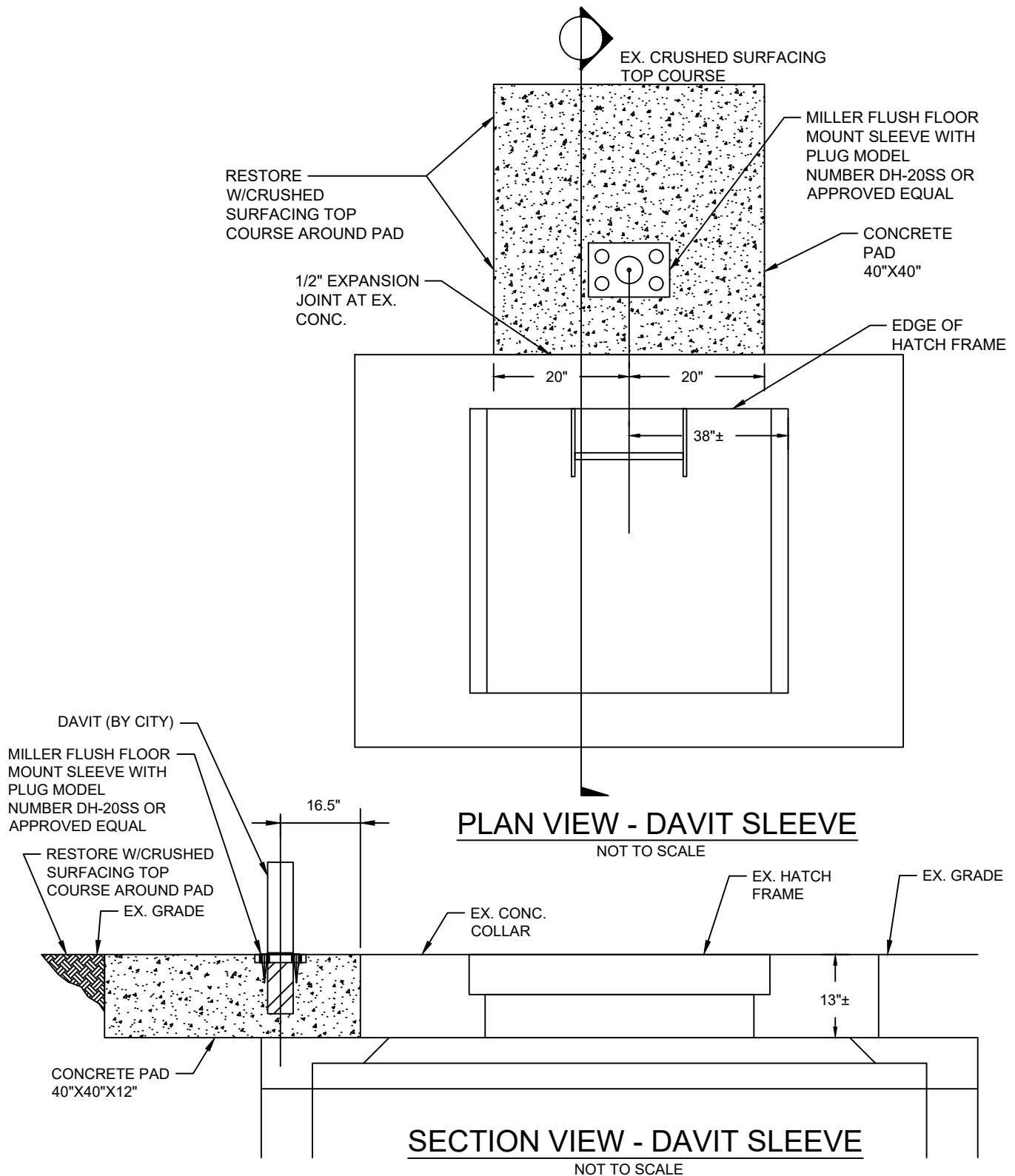
**CITY OF MERCER ISLAND
STANDARD DETAILS
WATER**

**PRESSURE REDUCING VALVE (PRV) VAULT
LADDER & PIPE SUPPORT**

02/06/2026

NO SCALE

W-19D



NOTES

1. DAVIT CONCRETE PAD SHALL BE INSTALLED ON SIDE OF PRV VAULT THAT IS CLEAR OF THE HATCH IN OPEN POSITION. EXACT LOCATION OF THE CONCRETE PAD SHALL BE FIELD VERIFIED AND APPROVED BY CITY ENGINEER.



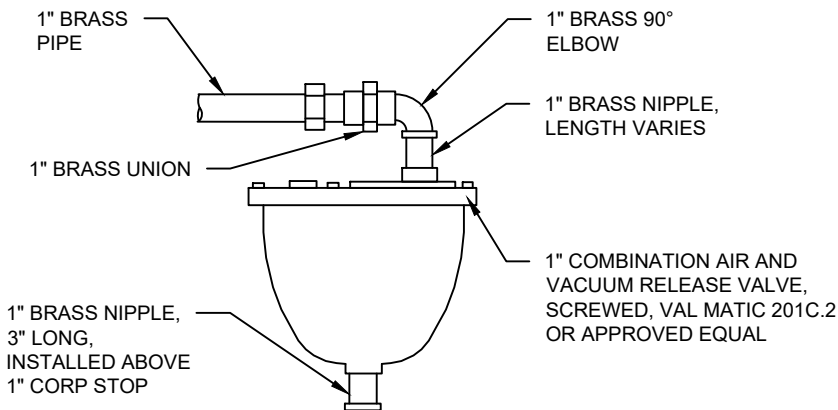
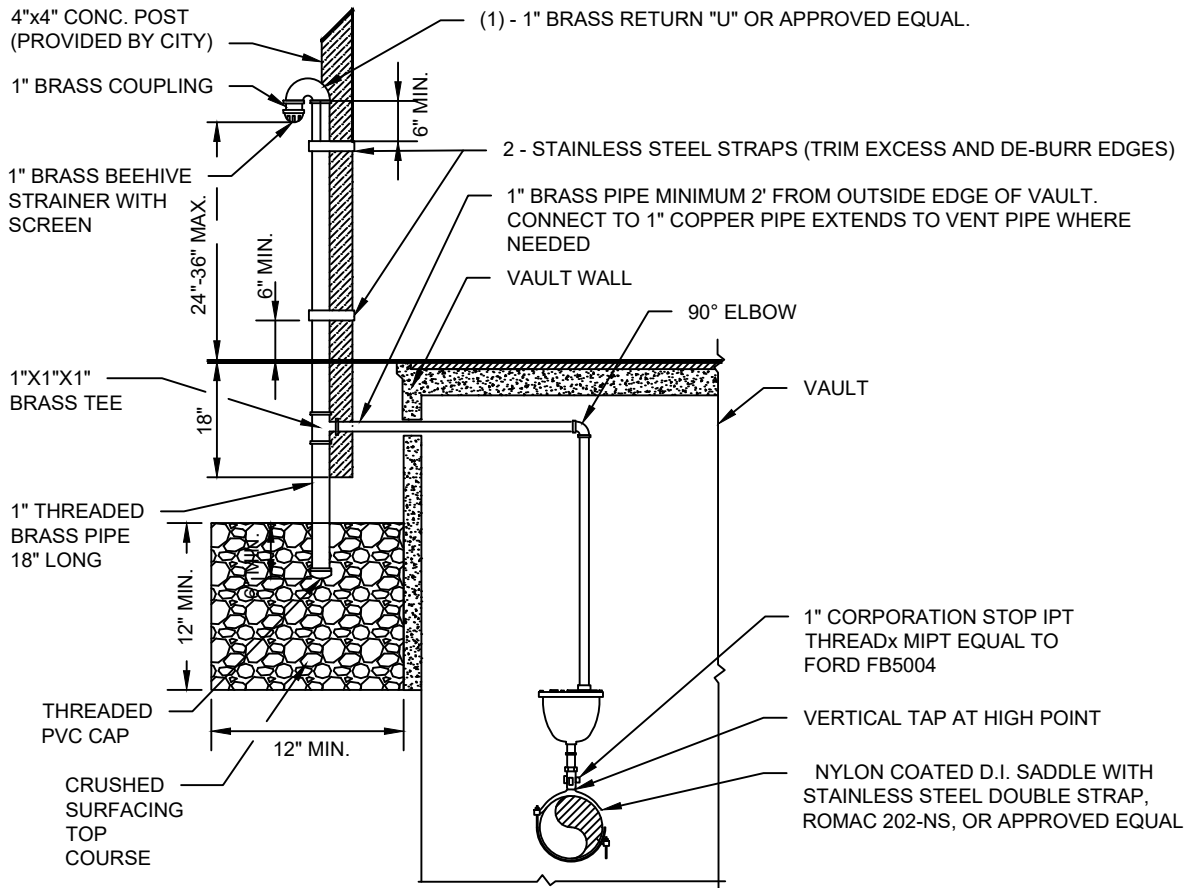
CITY OF MERCER ISLAND STANDARD DETAILS WATER

PRESSURE REDUCING VALVE (PRV) VAULT DAVIT

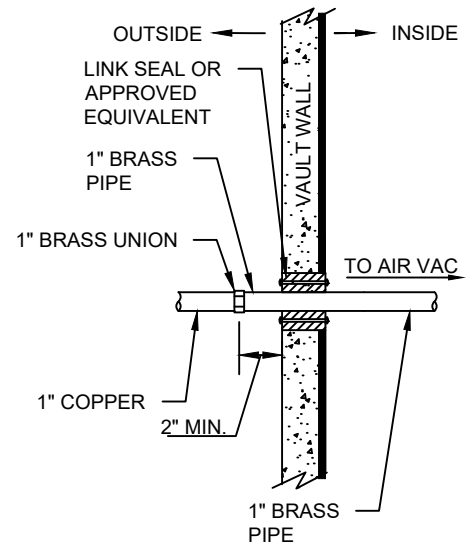
02/06/2026

NO SCALE

W-19E



VALVE ASSEMBLY DETAIL



PIPE PENETRATION AT VAULT WALL DETAIL

NOTES

1. ALL FITTINGS SHALL BE BRASS, ALL PIPE SHALL BE BRASS OR COPPER, UNLESS OTHERWISE SHOWN.
2. TAP FOR COMBINATION AIR AND VACUUM VALVE ASSEMBLY MUST BE INSTALLED AT HIGHEST POINT OF WATER MAIN. EXACT LOCATION OF ASSEMBLY TO BE DETERMINED BY CITY ENGINEER
3. COPPER LINE MUST MAINTAIN LEVEL GRADE - NO DIPS OR BELLIES.



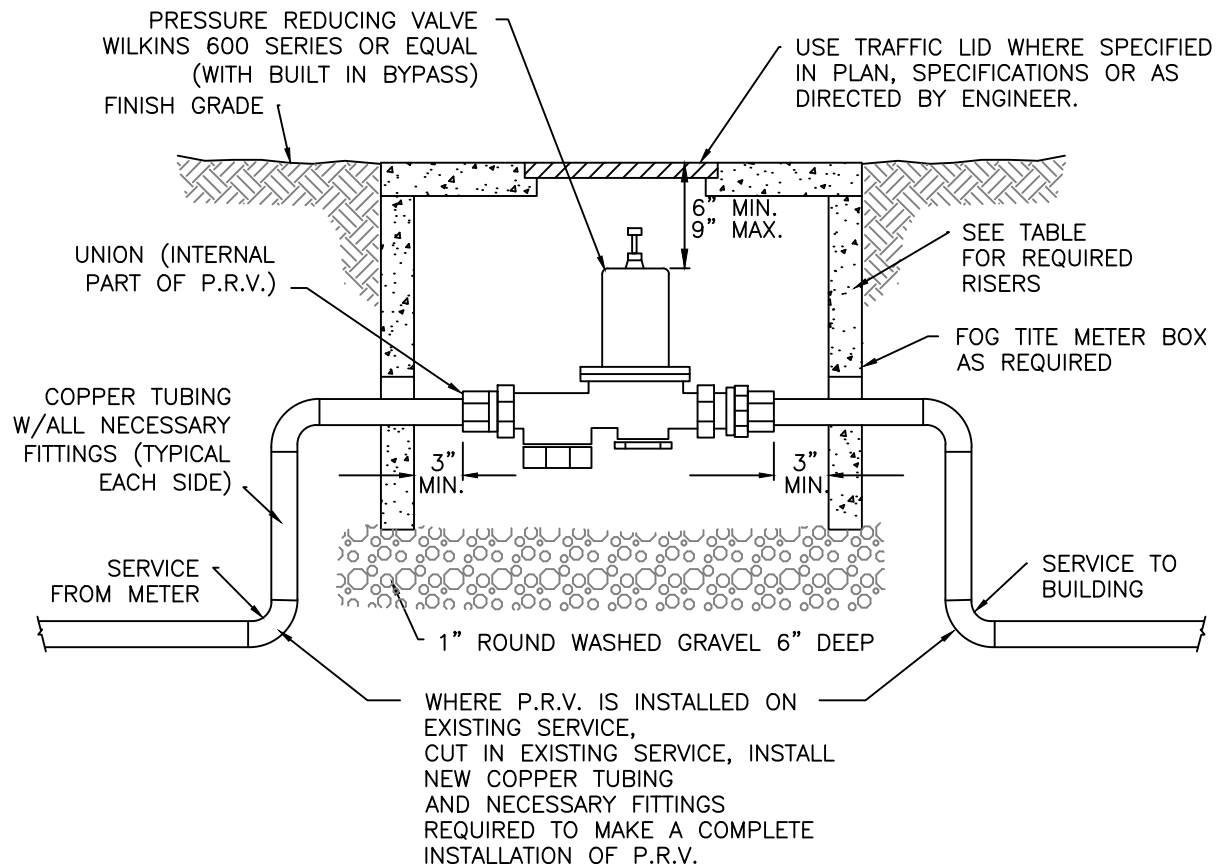
**CITY OF MERCER ISLAND
STANDARD DETAILS
WATER**

PRESSURE REDUCING VALVE (PRV) VAULT 1" AIR VACUUM VALVE ASSEMBLY INSTALLATION

02/06/2026

NO SCALE

W-19F



P.R.V. SIZE	FOG TITE METER BOX NO.	RISER REQUIRED
2"	2	12"
1-1/2"	2	12"
1-1/4"	1	6"
1"	1	6"
3/4"	1	4"
1/2"	1	4"

NOTES

1. P.R.V. SHALL HAVE AN INTEGRAL BYPASS.



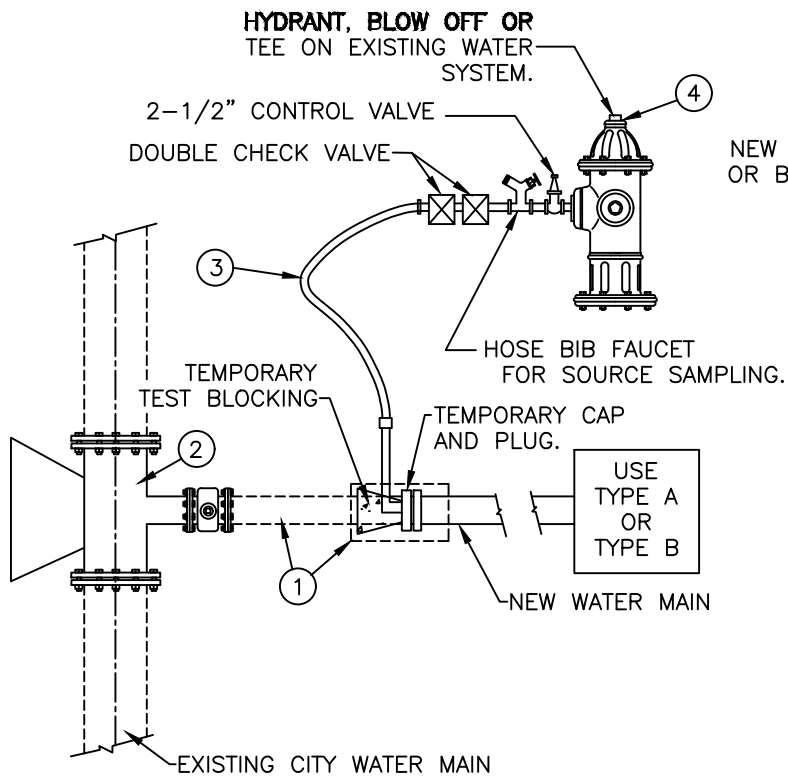
CITY OF MERCER ISLAND STANDARD DETAILS WATER

RESIDENTIAL PRESSURE REDUCING VALVE

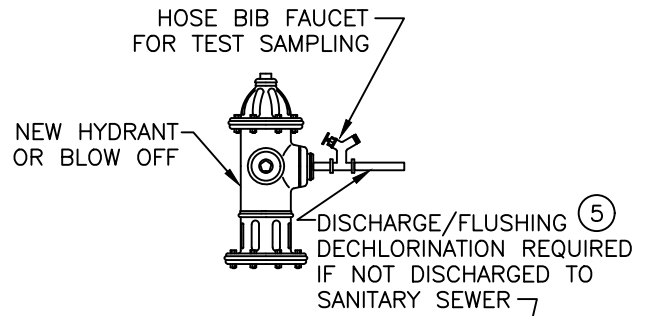
2013

NO SCALE

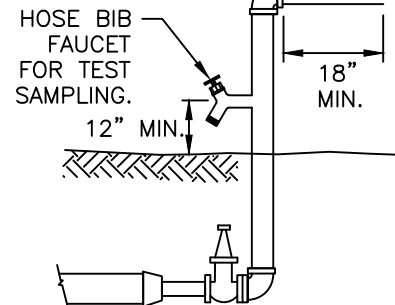
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TEMPORARY FLUSHING/TESTING CONNECTION
PLAN



TYPE A



TEMPORARY TAP AND FLUSHING ASSEMBLY

TYPE B

- ① LONG PATTERN MECHANICAL JOINT SLEEVE WITH PIPE CUT TO FIT GAP SHALL BE FURNISHED AND INSERTED AT TIME OF CONNECTION.
- ② TEE OR TAPPING TEE AND MATERIALS NECESSARY TO MAKE THE FINAL CONNECTION TO THE CITY WATER SYSTEM SHALL BE SUPPLIED AND INSTALLED BY THE CONTRACTOR.
- ③ CLEAN POTABLE WATER HOSE, WATER METER AND DCVA PROVIDED BY CITY, A RENTAL FEE IS REQUIRED.
- ④ HYDRANT PERMIT REQUIRED.
- ⑤ CHECK WITH SEWER DEPARTMENT BEFORE DISCHARGING INTO THE SANITARY SEWER SYSTEM. ALL CHLORINATED WATER MUST BE DISCHARGED INTO THE SANITARY SEWER SYSTEM, UNLESS DECHLORINATED FIRST.

NOTES

1. CONTRACTOR TO DETERMINE ALIGNMENT, SIZE AND GRADE OF EXISTING FACILITIES PRIOR TO SHUTDOWN.
2. ALL EXCAVATION, PIPE FITTINGS, MATERIALS, BACKFILL, COMPACTION, AND STREET RESTORATION ARE THE RESPONSIBILITY OF THE CONTRACTOR.
3. ALL MATERIALS NEEDED FOR FLUSHING SHALL BE ON SITE PRIOR TO SHUTDOWN OF EXISTING MAIN.
4. ALL PRESSURE TESTING, DISINFECTION, BACTERIA TESTING, TASTE TESTING AND NOTIFICATION OF RESIDENTS EFFECTED BY THE SHUTDOWN SHALL BE COMPLETED IN ACCORDANCE WITH SECTION 7, 8 & 9 OF DIVISION 9, WATER ENGINEERING STANDARDS, PRIOR TO CONNECTION TO THE CITY SYSTEM OF THE NEW WATERMAIN.
5. ALL FITTINGS TO BE DUCTILE IRON.
6. ALL EXCAVATION SHALL PROVIDE A MINIMUM CLEARANCE OF 12" AROUND PIPE AND FITTINGS.



**CITY OF MERCER ISLAND
STANDARD DETAILS
WATER**

WATER MAIN FLUSHING

02/06/2026

NO SCALE

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