## STANDARD WATER DETAILS DRAWING INDEX

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<td>1” &amp; 2” Steel Water Meter Box</td>
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<td>1”, 1 ½” &amp; 2” Plastic Water Meter Box</td>
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<td>Double Detector Check Valve Assembly</td>
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<td>Pressure Reducing Valve Vault – Plan</td>
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<td>Pressure Reducing Valve Vault – Ladder and Support Detail</td>
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<td>W-27D</td>
<td>Pressure Reducing Valve Vault – Pipe Penetration Detail and Wall Anchor</td>
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<td>Residential Pressure Reducing Valve</td>
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<td>W-32</td>
<td>Typical Water Main Flushing</td>
<td>08-12-2009</td>
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NOTES

1. MECHANICAL JOINTS WITH ROMAC PIPE RESTRAINERS MAY BE USED AT FITTINGS IN LIEU OF FLANGE TO FLANGE CONNECTIONS SHOWN ABOVE, WHERE APPROVED BY THE CITY ENGINEER.

2. BUTTERFLY VALVE OPERATING NUTS SHALL BE ON THE NORTH AND WEST SIDE OF THE MAIN.
NOTES

1. CALL TWO BUSINESS DAYS BEFORE YOU DIG. (1-800-424-5555)

2. ALL TRENCH BACKFILL MATERIAL SHALL BE 100% 5/8" MINUS CRUSHED ROCK PER WSDOT 9-03.9(3) UNLESS DIRECTED OTHERWISE BY CITY ENGINEER.

CITY OF MERCER ISLAND
STANDARD DETAILS
WATER
TRENCH SECTION

12-23-2013 NO SCALE W-3

REV DATE

APPROVED
### THRUST BLOCKING TABLE

<table>
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<tr>
<th>PIPE SIZE</th>
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### NOTES

1. AFTER INSTALLATION, WIRE BRUSH CLEAN RODS. PAINT WITH TWO COATS ASPHALTIC VARNISH ROYSTON ROSKOTE #612XM OR APPROVED EQUAL.

2. SHACKLE RODS SHALL BE ROUND MILD STEEL ASTM A–36, 6” MAX. BEND ON ENDS.

3. ROMAC MJ WEDGE ACTION RETAINER MAY BE SUBSTITUTED FOR VERTICAL BLOCKING UPON PRIOR APPROVAL OF THE CITY ENGINEER.

4. CONCRETE THRUST BLOCKING SHALL BE POURED AGAINST UNDISTURBED EARTH.

5. THRUST BLOCKS SHALL BE CONSTRUCTED WITH CLASS 3000 OR COMMERCIAL CONCRETE. IF THREE OR MORE BLOCKS ARE REQUIRED ON A GIVEN JOB, PREMIXED CONCRETE MUST BE USED.

6. 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.

7. BEARING AREA MUST BE ADJUSTED FOR HIGHER INTERNAL PRESSURES AND LOWER SOIL BEARING VALUES.

8. CONCRETE BLOCKING SHALL BE CAST–IN–PLACE AND HAVE A MINIMUM OF 1/4 SQUARE FOOT BEARING AGAINST THE FITTING.

9. 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.
### Blocking for Vertical Bends

#### Vertical Thrust Blocking

<table>
<thead>
<tr>
<th>PIPE SIZE NOM. DIAMETER - INCHES</th>
<th>TEST PRESSURE</th>
<th>VERTICAL BEND (DEGREES)</th>
<th>AMOUNT CONCRETE BLOCKING - CUL. FT.</th>
<th>LENGTH OF SIDE FEET</th>
<th>SHACKLE ROD DIAM. - INCHES</th>
<th>DEPTH OF ROOD IN CONCRETE (INCHES)</th>
<th>NUMBER OF TIE RODS SETS (2 EMBBEDD RODS PER SET)</th>
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### Notes

1. Concrete shall have a minimum 28 day compressive strength of 3000 p.s.i.

2. Tie rod assemblies shall be coated with Royston Rescoat #6125M or approved equal.

3. Both right-hand thread and left-hand thread tie rods shall be provided and turn-buckles shall have one end right-hand thread and one end left-hand thread to enable tightening of tie rods.
COOPER B-LINE B3132-8ZN GALVANIZED OR EQUIVALENT PIPE ANCHOR

EXISTING GROUND

PIPE LAID WITH BELLS UPSTREAM

3000 PSI CONCRETE

BEDDING MATERIAL

D.I. PIPE

18"

18"

SIDE OF TRENCH WALL

PLAN

WIDTH OF TRENCH PLUS 36"

VARIES B VARIES

D.I. PIPE

D

4"

C

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

PROFILE

SECTION

3000 PSI CONCRETE (CAST IN PLACE)

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

7-01-2014 NO SCALE W-6A

REV DATE APPROVED
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

W-6B

3-20-2006
NO SCALE
APPROVED
NOTES

1. VALVE BOX SHALL BE OLYMPIC FOUNDRY PART NO. VB940 OR EQUAL.

2. THE TOP AND LID SHALL HAVE A MACHINED FIT.

3. LOCKING LID, WHEN REQUIRED, SHALL BE OLYMPIC FOUNDRY PART NO. 13–5200 OR EQUAL.
NOTES

1. VALVE BOX RISER WITH PAVING LUGS SHALL BE OLYMPIC NO. VB2 OR EQUAL.

2. MINIMUM VALVE BOX BOTTOM LENGTH OVERALL = 21 1/16". SHORT RISERS ARE NOT PERMITTED.

3. SEE DWG. NO. W-7 FOR DETAILS.
NOTES

1. EXTENSIONS ARE REQUIRED WHEN THE VALVE NUT IS MORE THAN FOUR (4) 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 CAST OR DUCTILE IRON, SIZED AS NOTED AND PAINTED WITH TWO COATS ASPHALTIC VARNISH.
NOTES

1. PROVIDE A VALVE MARKER POST FOR EACH VALVE OUTSIDE OF THE PAVEMENT.

2. THE FIBERGLASS VALVE MARKER POST SHALL BE BLUE IN COLOR, 3 3/4” WIDE (FLAT), 60” LONG, AND FURNISHED WITH A 2” x 2”, HIGH-INTENSITY WHITE REFLECTOR (250 CANDLE POWER) AND A FLEXIBLE ANCHOR BARB. VALVE MARKER SHALL BE CARSONITE UTILITY MARKER CUM 375 OR EQUAL.

3. THE POST SHALL BE SITUATED IN A SAFE, REASONABLY CONSPICUOUS LOCATION, AND AT A RIGHT ANGLE TO THE ROADWAY FROM THE VALVE.

4. STENCIL FOOTAGE MEASUREMENT ON FRONT OF MARKER USING BRIGHT WHITE PAINT.
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 MULLER OR EQUAL.
NOTES

1. ON EXISTING WATER MAINS USE NYLON COATED D.I. SADDLE WITH STAINLESS STEEL SINGLE STRAP, ROMAC 101NS, OR APPROVED EQUAL. ON NEW DUCTILE IRON WATER MAIN 6" DIA. OR LARGER, THE SERVICE MAY BE DIRECTLY TAPPED.

2. MINIMUM DISTANCE BETWEEN CORP STOPS SHALL BE 18". MINIMUM DISTANCE BETWEEN TAPS, BETWEEN CORP STOP AND PIPE ENDS SHALL BE 24", ALL HORIZONTALLY STAGGERED.

3. PLASTIC METER BOXES SHALL NOT BE INSTALLED WITHIN ROADWAY, SIDEWALK, OR DRIVEWAYS.

4. WHEN METER BOXES ARE INSTALLED IN PORTLAND CEMENT CONCRETE PAVEMENT OR SIDEWALK, CONTINUOUS FELT EXPANSION MATERIAL SURROUNDING THE PERIMETER OF THE METER BOX SHALL BE PROVIDED.

5. WHEN CONNECTING TO EXISTING SERVICE LINE CONTAINING FERROUS METAL, PROVIDE INSULATING COUPLING (DB SERIES WITH C21 SERIES ADAPTERS) AND PROVIDE REDUCER AS NECESSARY TO MATCH EXISTING SERVICE LINE DIAMETER.

6. SERVICE LINE SHALL BE PERPENDICULAR TO THE WATER MAIN AND STRAIGHT TO WATER METER, UNLESS OTHERWISE APPROVED BY CITY ENGINEER. PROVIDE WINDING SLACK IN THE SERVICE LINE BETWEEN THE MAIN AND WATER METER.

7. WATER METER 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.
NOTES

1. MINIMUM DISTANCE BETWEEN CORP STOPS SHALL BE 18". MINIMUM DISTANCE BETWEEN TAPS, BETWEEN CORP STOP AND PIPE ENDS SHALL BE 24". ALL HORIZONTALLY STAGGERED.

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6. WATER METER SUPPLIED BY CITY.

7. ALL FITTINGS TO BE BRASS COMPRESSION TYPE, FORD QUICK JOINT OR EQUAL.

8. NO SERVICE CONNECTIONS BETWEEN BLOW-OFF AND END OF MAIN.
MATERIAL LIST, 3" & 4" METER

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 OF 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 NON–SLIP FINISH. LID OPENING TO BE PLACED FOR PROPER LADDER ACCESS.
12. ROMA–CRIP RESTRAINT OR APPROVED EQUAL.
13. 2" BRASS PIPE CUT AND THREADED TO FIT.
14. LADDER PER W–27C.
15. WHEN INSTALLING VAULT IN SIDEWALK OR PAVED AREAS, SET FRAME AND HATCH AT FINISHED GRADE. VAULT TOP SLAB SHALL REMAIN BELOW GRADE.

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.
INSTALLATION IN PLANTER STRIP 3' OR WIDER

INSTALLATION BEHIND SIDEWALK

INSTALLATION IN SIDEWALK

INSTALLATION WITH NO SIDEWALK
**NOTES**

1. FOR 1" STEEL BOX, USE FOG TITE J20S LID OR EQUAL, WITH A 3/4" ROUND HOLE.

2. 2" METER BOX SHALL BE FOG TITE #2J20S ALL STEEL BOX WITH TAR COATING. LID SHALL BE HINGED WITH 3/4" DIA. LIFTING HOLE.

---

**STANDARD DETAILS**

**WATER**

**1" AND 2" STEEL WATER METER BOX**

12-23-2013 | NO SCALE | W-17

REV DATE |  |  | APPROVED
NOTES:

1. METER BOX SHALL BE MID-STATES PLASTICS AS SHOWN, WITH A DUCTILE IRON LID WITH A FLIP OR HINGED INSPECTION LID TO INCLUDE A 3/4” PICK HOLE.

2. PLASTIC WATER METER BOXES SHALL NOT BE INSTALLED WITHIN A DRIVING OR PARKING AREA.

<table>
<thead>
<tr>
<th>WATER SERVICE SIZE</th>
<th>PART NO.</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>1”</td>
<td>MSBCF1324–12</td>
<td>13.75”</td>
<td>23.1875”</td>
<td>12”</td>
<td>12.125”</td>
<td>24.5”</td>
</tr>
<tr>
<td>2”</td>
<td>MSBC1730–18</td>
<td>17.625”</td>
<td>30.5”</td>
<td>18”</td>
<td>22.875”</td>
<td>35”</td>
</tr>
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</table>

CITY OF MERCER ISLAND
STANDARD DETAILS
WATER
1” & 2” PLASTIC
WATER METER BOX
12–23–2013 NO SCALE W-18A

REV DATE
APPROVED
A. SEE W-19B FOR MATERIAL LIST.

B. VALVE ASSEMBLY TO BE CENTERED IN VAULT.

C. TEE AND GATE VALVE REQUIRED ON MAIN.

D. WHEN DOUBLE CHECK VALVE ASSEMBLY IS USED IN SAME LINE WITH DOMESTIC BUILDING METER, METERED DETECTOR BYPASS SHALL BE Omitted.

E. ASSEMBLY TO BE MAINTAINED BY OWNER AND ANNUAL CERTIFICATION IS REQUIRED.

F. THE CITY OF MERCER ISLAND MUST TEST AND CERTIFY THE FIRE LINE BEFORE CONNECTION TO THE CITY SYSTEM IS ALLOWED.

G. FIRELINE SHALL NOT BE PUT INTO SERVICE UNTIL THE DOUBLE CHECK VALVE ASSEMBLY IS APPROVED BY THE CITY.

H. VAULT PENETRATIONS SHALL BE CORE DRILLED.

I. A THRUST RING OR APPROVED EQUAL SHALL BE INSTALLED ON INLET SIDE OF PIPE RESTRAINED JOINT.

J. MATERIALS FOR BYPASS SHALL BE ALL BRASS AND COPPER WITH SWIVEL COUPLINGS BETWEEN SHUT-OFF VALVES FOR REPLACEMENT.

3" FROM TOP OF VAULT TO FINISHED GRADE IN PLANTED AREAS.

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

**NOTES**

1. ALL VAULT, BASE AND TOPS TO BE COATED WITH DAMPROOFING.

2. SIZE DETERMINED ON BASIS OF ACTUAL FIRE DEMAND.

3. SEE W-19A FOR ADDITIONAL DETAILED MATERIAL NOTES.
1. NO DOMESTIC CONNECTIONS CAN BE MADE TO THE FIRE HYDRANT RUNS.
2. ANY FIRE HYDRANT RUN OVER 18 FEET IN LENGTH OF PIPE SHALL HAVE RESTRAINED JOINT GASKETS.
3. USE ROMA GRIP, OR APPROVED EQUAL, PIPE RESTRAINERS AT VALVE AND HYDRANT BASE.
4. 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.
5. 1–5 1/4" M.V.O. HYDRANT WITH 2–2 1/2" N.T.S. AND 1–4" PUMPER, SEATTLE STANDARD PIPE THREAD WITH 4" STORZ CONNECTOR, M.J. INLET WITH LUGS, BRASS-TO-BRASS SUB-SEAT, M&H 929T OR MUELLER "SUPER CENTURION".
6. BOLLARDS MAY BE USED TO PROTECT THE HYDRANT WHEN NO CURBS ARE PRESENT OR IN EXPOSED AREAS OF PARKING LOTS.
7. STRAIGHT PIPE TO HYDRANTS FROM MAIN, NO BENDS.
8. REMOVE CHAINS FROM HYDRANT CAPS.
9. VALVE AND HYDRANT MUST BE PLUMB.
10. THIS DISTANCE IS MEASURED FROM BOTTOM OF SAFETY FLANGE TO LEVEL OF FINISH GRADE BELOW HYDRANT.
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.

CITY OF MERCER ISLAND
STANDARD DETAILS
WATER

1” AIR & VACUUM VALVE ASSEMBLY

3-25-2015
W-25

REV DATE

APPROVED

WATER
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.
NYLON COATED D.I. SADDLE WITH STAINLESS STEEL DOUBLE STRAPS. ROMAC 202NS, OR EQUAL.

NO SERVICE CONNECTIONS BETWEEN BLOW-OFF AND END OF MAIN.

CONCRETE BLOCKING

2" FIP x 2" FIP - BRASS CLOSE NIPPLE

2" RSGV G.V. CONFORMING TO AWWA C-509 CAST IRON GATE VALVE MH4067TTS7S

3 EA BRASS ELBOWS

2" BALL CORP IP x IP TYPE THREADED FORD FB5007

8 MIL THICK POLYETHYLENE SHEETING

PLAN VIEW

OLYMPIC VALVE BOX V8940

EXIST. GRADE

UPPER SECTION C.I. VALVE BOX W/C.I. LID

ANGLE 45' TO FLAT

BELL END

2" x 18" BRASS NIPPLE

2" BRASS COUPLING

2" THREADED BRASS PIPE

2" BRASS ELBOW

UNDISTURBED OR 95% COMPACTED

VARIABLE 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

7-01-2014 NO SCALE W-26

REV DATE

APPROVED
LOCATION TO BE DETERMINED. INSTALL 2" BRASS TEE, 2" IP X IP BRASS BALL CORP, 2" COMBINATION AIR AND VACUUM RELEASE VALVE THREADED VALMATIC 202C.2 OR APPROVED EQUAL.

2" BRASS PIPE CUT TO FIT FOR RISER, 1 – 2" BRASS RETURN "U" OR APPROVED EQUAL CUT TO FIT EXISTING VAULT

BACKFILL COMPACTED TO 95%

CORE DRILL FOR 2" BRASS AIR AND VACUUM RELEASE PIPE. LOCATION TO BE DETERMINED

LADDER SEE DWG. NO. W-27C

4" DIA. P.V.C. TIGHT LINE TO STORM DRAIN 0.5% SLOPE MIN.

(1)–2" BRASS RETURN "U"

2" BRASS TEE

2" THREADED BRASS PIPE LENGTH TO BE DETERMINED

2" BRASS MIPT BEEHIVE STRAINER

2" BRASS NIPPLE LENGTH TO FIT

2" THREADED PVC CAP WITH NUMEROUS 1/8" HOLES FOR DRAINAGE

1–1/2" DRAIN ROCK COVERED WITH MIRAFI FILTER FABRIC

FLANGE OR P.E. CONNECTION AS REQUIRED BY EXISTING PIPE

THRUSTRING WALL ANCHOR OR APPROVED EQUIVALENT

8"X8"X16" CONC. BLOCK SUPPORT (TYP.) FILLED WITH CONCRETE 2–#4 REBAR VERTICAL ANCHOR TO FLOOR.

NOTES

1. SEE DRAWING NO. W-27B FOR A MATERIAL LIST.

2. SEE DRAWING NO. W-27C & W-27D FOR DETAILS.
<table>
<thead>
<tr>
<th>KEY NO.</th>
<th>QUANTITY</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>6&quot; SPOOL – FLxFL WITH THRUST RING</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>6&quot; SPOOL W/2&quot; IP TAP – FLxFL</td>
</tr>
<tr>
<td>4</td>
<td>2</td>
<td>6&quot; GATE VALVE – MUELLER A-2380-6, WHEEL VALVE, CLASS 125 OR EQUAL FLxFL EPOXY COATED RESILIENT SEAT</td>
</tr>
<tr>
<td>5</td>
<td>1</td>
<td>6&quot; PRESSURE REDUCING VALVE FLxFL PILOT SYSTEM TO FACE TOWARD CENTER OF VAULT. CITY TO PROVIDE EXACT PRV SPECIFICATIONS.</td>
</tr>
<tr>
<td>6</td>
<td>1</td>
<td>6&quot; ADJUSTABLE CONNECTION – CLOW F-1439, FLxMJ</td>
</tr>
<tr>
<td>7</td>
<td>1</td>
<td>6&quot; MECHANICAL JOINT RETAINER GLAND</td>
</tr>
<tr>
<td>8</td>
<td>1</td>
<td>6&quot; SPOOL – FLxPE</td>
</tr>
<tr>
<td>9</td>
<td>1</td>
<td>6&quot;x2&quot; DOUBLE STRAP SADDLE ROMAC 202NS</td>
</tr>
<tr>
<td>10</td>
<td>4</td>
<td>2&quot; – I.P.xI.P. BRONZE BALL VALVE</td>
</tr>
<tr>
<td>11</td>
<td>3</td>
<td>2&quot; x 90’ ELBOW BRASS</td>
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<td>12</td>
<td>6’±</td>
<td>2” BRASS PIPE AND FITTINGS</td>
</tr>
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<td>13</td>
<td>2</td>
<td>2” GATE VALVE – MUELLER 2360, EPOXY COATED CLASS 125 – I.P. x I.P. OR EQUAL, W/HAND WHEEL</td>
</tr>
<tr>
<td>14</td>
<td>1</td>
<td>2” PRESSURE REDUCING VALVE I.P. x I.P. PILOT SYSTEM TO FACE TOWARDS CENTER OF VAULT. CITY TO PROVIDE EXACT PRV SPECIFICATIONS.</td>
</tr>
<tr>
<td>15</td>
<td>1</td>
<td>2&quot;x3/4” TEE, 3/4” I.P. CORP STOP WITH A 3/8” QUARTER TURN BALL VALVE, OR EQUAL BRASS 3/4”x3/8” BELL REDUCERS, ALL BRASS</td>
</tr>
<tr>
<td>16</td>
<td>2</td>
<td>THD, 3/4” I.P. CORP STOP – MUELLER WITH 3/8” QUARTER TURN BALL VALVE, OR EQUAL 3/4”x3/8” BELL REDUCERS, ALL BRASS</td>
</tr>
<tr>
<td>17</td>
<td>1</td>
<td>6” Y–STRAINER (FLxFL) EQUAL TO MUESSCO NO. 751</td>
</tr>
<tr>
<td>18</td>
<td>5</td>
<td>ADJUSTABLE PIPE SUPPORT – GRINNELL FIG. 264 BOLTED TO FLOOR (2)–2&quot;, (2)–6”</td>
</tr>
<tr>
<td>19</td>
<td>1</td>
<td>VALVE CHAMBER – SIZE AS REQUIRED UTILITY VAULT LW PRODUCTS ALUMINUM LID, SPRING ASSISTED H–20 OR EQUAL OUT OF TRAFFIC OR H–30 IN DRIVING SURFACE OR SIDEWALK</td>
</tr>
<tr>
<td>20</td>
<td>1</td>
<td>DRAIN SUMP W/4” OUTLET</td>
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<tr>
<td>21</td>
<td>6</td>
<td>2” BRASS UNION</td>
</tr>
<tr>
<td>21A</td>
<td>2</td>
<td>2” X 6” BRASS NIPPLES</td>
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<tr>
<td>22</td>
<td>1</td>
<td>6” BLIND FLANGE W/2” TAP</td>
</tr>
<tr>
<td>23</td>
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<td>0–200 PSI PRESSURE GAUGES, GLYCOL FILLED 3/8” I.P.</td>
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<tr>
<td>24</td>
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<td>0–100 PSI PRESSURE GAUGES, GLYCOL FILLED 3/8” I.P.</td>
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<tr>
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<td>2” COMBINATION AIR &amp; VACUUM RELEASE VALVE, SCREWED, VALMATIC 2026.2 OR APPROVED EQUAL.</td>
</tr>
<tr>
<td>26</td>
<td>3</td>
<td>CORE DRILL HOLES IN VAULT, USE LINK SEAL OR EQUAL, NO JET SET</td>
</tr>
<tr>
<td>27</td>
<td>2</td>
<td>2” CTS BRASS DRESSER COUPLINGS, PROVIDED ACCESS HATCH AND CONNECT INTO VAULT DRAINAGE.</td>
</tr>
</tbody>
</table>

**NOTES**

1. SIZES PER APPROVED DESIGN.
2. SEE DRAWING NO. W–27A FOR VAULT PLAN.
3. SEE DRAWING NO. W–27C & W–27D FOR OTHER DETAILS.
4. PAINT INTERIOR VAULT WALLS WITH 2 COATS OF OYSTER WHITE PAINT.
5. PRIMER COAT AND PAINT ALL PIPING WITH 2 COATS OF SHERWIN WILLIAMS ACROLON 218HS, CUSTOM COLOR #8605–36202 OR APPROVED EQUAL.

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**CITY OF MERCER ISLAND**

**STANDARD DETAILS**

**WATER**

**MATERIAL LIST**

**6” PRESSURE REDUCING VALVE**

9–3–2014  NO SCALE  W-27B

**REV DATE**

**APPROVED**
ADJUSTABLE PIPE SUPPORT

NOTES

1. SEE DRAWING NO. W–27A FOR VAULT PLAN.
2. SEE DRAWING NO. W–27B FOR MATERIAL LIST.
3. SEE DRAWING NO. W–27D FOR ADDITIONAL DETAILS.

ADJUSTABLE PIPE SADDLE SUPPORT SCHEDULE (IN INCHES)

<table>
<thead>
<tr>
<th>PIPE SIZE</th>
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<th>B</th>
<th>C</th>
<th>D_MIN.</th>
<th>D_MAX.</th>
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<td>3</td>
<td>2 1/2</td>
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<td>11 3/4</td>
<td>16 1/2</td>
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<td>2 1/2</td>
<td>9</td>
<td>13 1/2</td>
<td>18 1/4</td>
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<td>3 1/2</td>
<td>13 1/2</td>
<td>19 1/2</td>
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</table>

ADJUSTABLE PIPE SUPPORT

LADDER SECTION

LADDER PLAN

CITY OF MERCER ISLAND
STANDARD DETAILS
WATER

DETAILS
PRESSURE REDUCING VALVE VAULT

9–24–2013
NO SCALE
W-27C
NOTES
1. SEE DRAWING NO. W–27A FOR VAULT PLAN.
2. SEE DRAWING NO. W–27B FOR MATERIAL LIST.
3. SEE DRAWING NO. W–27C FOR ADDITIONAL DETAILS.
NOTES

1. ALL FITTINGS TO BE COPPER AND BRASS

2. CONNECT TO CUSTOMER SIDE PER STANDARD WATER SERVICE DETAILS (W-13) ⑤
NOTES

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

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"

CITY OF MERCER ISLAND
STANDARD DETAILS
WATER
RESIDENTIAL PRESSURE REDUCING VALVE

12-24-2013
NO SCALE
W-28

APPROVED
CONTRACTOR TO DETERMINE ALIGNMENT, SIZE AND GRADE OF EXISTING FACILITIES PRIOR TO SHUTDOWN.

ALL EXCAVATION, PIP, FITTINGS, MATERIALS, BACKFILL COMPACTION AND STREET RESTORATION ARE THE CONTRACTOR’S RESPONSIBILITY.

ALL MATERIALS TO BE ON SITE PRIOR TO SHUTDOWN OF EXISTING MAIN.

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.

LONG PATTERN MECHANICAL JOINT, SLEEVE, WITH PIPE CUT TO FIT GAP – FURNISH AND INSERTED AT TIME OF CONNECTION.

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.

CLEAN POTABLE WATER HOSE, WATER METER AND DCAV PROVIDED BY CITY, A RENTAL FEE IS REQUIRED.

HYDRANT PERMIT REQUIRED.

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. ALL FITTINGS TO BE DUCTILE IRON.

2. ALL EXCAVATION SHALL PROVIDE A MINIMUM OF 1’ CLEAR AROUND PIPE AND FITTINGS.