3/4" COPPER TAIL PIECE
WITH 3/4" BRASS FEMALE
ADAPTER AND PLUG
BY CONTRACTOR

INSTALL METER BOX
FLUSH WITH SIDEWALK

P/L
24"±
2±
24" MIN.

6" MIN.
DRN. ROCK

1/4 PE SERVICE LINE (ALL SERVICES
LINES SHALL BE IRON PIPE SIZE [IPS])

EXTENSION RISER REQ'D

14 AWG
TRACER WIRE

30" MIN.
COVER

FINSIHED GRDE

P/L
24"±

24" MIN.

METER

KEY VALVE BRANCH ASSEMBLY BY FORD, MODEL UV63-42W,
OR COMPATIBLE EQUAL, CONTRACTOR TO VERIFY EXACT
MODEL NO. WITH CITY PRIOR TO ORDERING. (REFER TO
CONSTRUCTION NOTE 3)

CUSTOMER SERVICE VALVES WITH INLET SIDE METER COUPLER BY
CONTRACTOR.

PROFILE

CUSTOMER SERVICE VALVES

PROPERTY PIN

P/L

WATER METERS BY CITY AT TIME OF SERVICE APPLICATION.

1" PE SERVICE LINE (ALL SERVICES LINES SHALL BE IRON PIPE SIZE [IPS])

P/L

1" IPT IDLER (MAX) 7 ½" LONG (A.Y. MCDONALD PART #40MJ07,
FORD PART #IDLER-2, MUeller PART #H-10887 5/8x3/4 OR EQUAL)
AT FUTURE METER LOCATIONS BY CONTRACTOR. 1 ½" OR 2"
METER SPACER PER MANUFACTURER REQUIREMENTS.

PLAN

CONSTRUCTION NOTES

1. ALL POLYETHYLENE (PE) PIPE SHALL CONTAIN STAINLESS STEEL INSERT STIFFENERS INSIDE BOTH ENDS OF PIPE.
2. METER BOXES SHALL BE SET IN THE SIDEWALK AT THE BACK OF SIDEWALK OR DIRECTLY BEHIND THE BACK OF SIDEWALK.
3. REFER TO STANDARD DRAWINGS 7-100A - 7-100C FOR PARTS LIST.
4. TRACER WIRE SHALL BE EXTENDED 24" ABOVE FINISHED SURFACE AND LEFT COILED UNDER METER BOX LID.

CITY OF KLAMATH FALLS
WATER SERVICE CONNECTION
RESIDENTIAL

Date: 1/2002
Drwg. No.: 7-100

Approved By: Don Wilcox

Drawn By: GDG

3/10 5th EDITION
2/06 4th EDITION
1/04 2nd EDITION
# TYPICAL 1" TAP

<table>
<thead>
<tr>
<th>#</th>
<th>1&quot;MAIN TAP – FITTING</th>
<th>QTY</th>
<th>FORD</th>
<th>A.Y. McDonald</th>
<th>MUeller</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Saddle Main Size 1/2&quot; x 1&quot;IP tap Romac 1081 (12&quot;Main + 2025)</td>
<td>1</td>
<td>F1101-4</td>
<td>4704-33 1&quot;</td>
<td>H-15029</td>
</tr>
<tr>
<td>2</td>
<td>Corp Stop 1&quot;IP x 1&quot;PE/PV</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>PE Pipe 1&quot; IPS 200#PSI Thick Wall</td>
<td>1</td>
<td>Insert 72</td>
<td>6136 1&quot;</td>
<td>505142</td>
</tr>
<tr>
<td>4</td>
<td>Strainer 1&quot; IPS PE Pipe</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>2&quot; Water Detectortape</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>14 gauge x 1 Blue UF Irr Cont Wire</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Dual 3/4" x 1" SERVICE SETTING**

<table>
<thead>
<tr>
<th>#</th>
<th>1&quot;Branch Assembly 1&quot;PE/PVC 3/4&quot; msp/NAV 1/4&quot;WSH/LW (w)</th>
<th>1</th>
<th>UV83-32W 7.5</th>
<th>08U35W 1&quot;x3/4&quot;</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>U Branch 1&quot; PE/PVC 3/4&quot; msp</td>
<td>1</td>
<td>U88-43-7.5</td>
<td>08U3W 1&quot;x3/4&quot;</td>
<td>N/A</td>
</tr>
<tr>
<td>9</td>
<td>Angle meter valve 1&quot;IP x 1&quot; swivel nut/lock wing</td>
<td>2</td>
<td>BA13-332W</td>
<td>462B-3/4</td>
<td>8 24265</td>
</tr>
<tr>
<td>10</td>
<td>Spacer PVC or Idler</td>
<td>2</td>
<td>1Id2-2</td>
<td>40AX07</td>
<td>H-10887</td>
</tr>
<tr>
<td>12</td>
<td>Copper tubing 1/4&quot; type K soft</td>
<td>3&quot;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Coupling 1/4&quot; Cu flare x 1/4&quot; Fp</td>
<td>2</td>
<td>C14-33-0, C14-33</td>
<td>47540-3/4, 4754-22-3/4</td>
<td>H15451, P15451</td>
</tr>
<tr>
<td>14</td>
<td>Plug 1/4&quot; PVC</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**METER BOXES**

<table>
<thead>
<tr>
<th>#</th>
<th>Dual Box Body</th>
<th>2</th>
<th>P6001S4X28</th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>Dual Box S-Cover</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Dual Box Sh-Lid</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Dual Box Traffic Cover</td>
<td>1</td>
<td>A6001947T-1H</td>
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<td></td>
</tr>
</tbody>
</table>

**3/4" x 1" SINGLE SERVICE SETTING**

<table>
<thead>
<tr>
<th>#</th>
<th>Angle meter valve 1&quot; PE/PVC 3/4&quot; swivel nut/lock wing</th>
<th>1</th>
<th>KW83-342W</th>
<th>462B-33 1&quot; x 1&quot;</th>
<th>H-14259</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>Spacer/Idler PVC</td>
<td>1</td>
<td></td>
<td>40AX07</td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>Angle meter spig 1/2&quot; meter swivel nut x 1/2&quot; Cu</td>
<td>1</td>
<td>BA43-332W-0, BA43-332W</td>
<td>462B280-3/4, 462B280-22-3/4</td>
<td>824258, P24258</td>
</tr>
<tr>
<td>22</td>
<td>Copper tubing 1/2&quot; type K soft</td>
<td>1.5&quot;</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>Coupling 1/2&quot; Cu flare x 1/2&quot; Fp</td>
<td>1</td>
<td>C21-33</td>
<td>47541&quot;</td>
<td>H-15450</td>
</tr>
<tr>
<td>24</td>
<td>Plug 1/2&quot; PVC</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**METER BOXES**

<table>
<thead>
<tr>
<th>#</th>
<th>Box Body</th>
<th>1</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>Box Bottom</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>Box Body</td>
<td>2</td>
<td>P6000185X24</td>
<td></td>
<td></td>
</tr>
<tr>
<td>27</td>
<td>Box S-Cover</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>28</td>
<td>Box Sh-Lid</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>29</td>
<td>Box Traffic Cover</td>
<td>1</td>
<td>A6000484A1H7</td>
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<td></td>
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<table>
<thead>
<tr>
<th>#</th>
<th>Fitting</th>
<th>Qty</th>
<th>QTY</th>
<th>1&quot; Main Tap</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Saddle Main Size OD * 1&quot;P tap Romac 101 S (12&quot; Main + 202S)</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Corp Stop 1½&quot;PE/PJ</td>
<td>1</td>
<td>1</td>
<td>Insert 72</td>
</tr>
<tr>
<td>3</td>
<td>PE Pipe 1 IPS PE Pipe</td>
<td>1</td>
<td>1</td>
<td>Insert 72</td>
</tr>
<tr>
<td>4</td>
<td>Stiffener 1 IPS PE Pipe</td>
<td>1</td>
<td>1</td>
<td>Insert 72</td>
</tr>
<tr>
<td>5</td>
<td>2&quot; Water Detectotape</td>
<td>1</td>
<td>1</td>
<td>Insert 72</td>
</tr>
<tr>
<td>6</td>
<td>14' gauge x 1 Blue UF Irr Cont Wire</td>
<td>1</td>
<td>1</td>
<td>Insert 72</td>
</tr>
<tr>
<td>7</td>
<td>Angle meter valve 1&quot;PE/1½&quot;swivel nut/lock wing</td>
<td>1</td>
<td>1</td>
<td>Insert 72</td>
</tr>
<tr>
<td>8</td>
<td>Straight meter valve 1&quot;Fip x 1&quot;swivel nut/lock wing</td>
<td>1</td>
<td>1</td>
<td>Insert 72</td>
</tr>
<tr>
<td>9</td>
<td>Spacer PVC or idler</td>
<td>1</td>
<td>1</td>
<td>Insert 72</td>
</tr>
<tr>
<td>10</td>
<td>Angle meter valve 1&quot;swivel nut/lock wing x 1&quot; Cu</td>
<td>1</td>
<td>1</td>
<td>Insert 72</td>
</tr>
<tr>
<td>11</td>
<td>Copper tubing 1&quot; type K soft</td>
<td>1</td>
<td>1</td>
<td>Insert 72</td>
</tr>
<tr>
<td>12</td>
<td>Coupling 1&quot;CU flare x 1 Fip</td>
<td>1</td>
<td>1</td>
<td>Insert 72</td>
</tr>
<tr>
<td>13</td>
<td>Plug 1&quot;PVC</td>
<td>1</td>
<td>1</td>
<td>Insert 72</td>
</tr>
<tr>
<td>14</td>
<td>Box Body</td>
<td>1</td>
<td>1</td>
<td>Insert 72</td>
</tr>
<tr>
<td>15</td>
<td>Box Bottom</td>
<td>1</td>
<td>1</td>
<td>Insert 72</td>
</tr>
<tr>
<td>16</td>
<td>Box S-Cover</td>
<td>2</td>
<td>2</td>
<td>Insert 72</td>
</tr>
<tr>
<td>17</td>
<td>Box S-Lid</td>
<td>1</td>
<td>1</td>
<td>Insert 72</td>
</tr>
<tr>
<td>18</td>
<td>Box S-Lid</td>
<td>1</td>
<td>1</td>
<td>Insert 72</td>
</tr>
<tr>
<td>19</td>
<td>Box Traffic Cover</td>
<td>1</td>
<td>1</td>
<td>Insert 72</td>
</tr>
</tbody>
</table>

CITY OF KLAMATH FALLS

WATER SERVICE CONNECTION
RESIDENTIAL FITTINGS & BOXES

Approved By: Don Wilcox

Drwgn. No.: 7-100b

Date: 1/2002

Drwn. By: GDG

Date: 1/2002

Mark Date: 3 2/11 5th Edition
2 6/04 4th Edition
1 6/04 2nd Edition
# TYPICAL 2" TAP

## 2" MAIN TAP

<table>
<thead>
<tr>
<th>#</th>
<th>FITTING</th>
<th>QTY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Saddle Main size 0D x 2&quot; I P Tap Romac 202S</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Corp Stop 2&quot; IP x 2&quot; IP</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>Pipe 2&quot; PVC Sch80 with Sch 80 fittings or 2&quot; IPS PE or 2&quot; Cu tubing type K soft</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>2&quot; Brass Adapter/Bushing/Coupling for connection/reduction</td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>2&quot; IPS PE or Cu tubing for connection/reduction</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>2&quot; Water Detectostat</td>
<td>1</td>
</tr>
<tr>
<td>7</td>
<td>14 gauge x 1 Blue UF br Cont Wire</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>#</th>
<th>FITTING</th>
<th>QTY</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>Angle Meter Valve 2&quot; Flp x Flg</td>
<td>1</td>
</tr>
<tr>
<td>9</td>
<td>Spacer PVC 2&quot; or Idler</td>
<td>1</td>
</tr>
<tr>
<td>10</td>
<td>Angle Meter Coupling 2&quot; Flp x Flg</td>
<td>1</td>
</tr>
<tr>
<td>11</td>
<td>Pipe 2&quot; PVC Sch80 with Sch80 fittings</td>
<td>1.5</td>
</tr>
<tr>
<td>12</td>
<td>PVC 2&quot; Sch80 Adapter/Bushing/Coupling for connection/reduction</td>
<td>1.5</td>
</tr>
<tr>
<td>13</td>
<td>2&quot; IPS PE or Cu tubing type K soft</td>
<td>1.5</td>
</tr>
<tr>
<td>14</td>
<td>Brass 2&quot; IPS PE or Cu tubing size MD/3McDonald/Mueller fittings for connection/reduction</td>
<td>1</td>
</tr>
<tr>
<td>15</td>
<td>Plug 2&quot; Brass</td>
<td>1</td>
</tr>
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## 2" SERVICE SETTING

<table>
<thead>
<tr>
<th>#</th>
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<th>QTY</th>
</tr>
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<tbody>
<tr>
<td>16</td>
<td>2&quot; &amp; 3&quot; Box Body</td>
<td>2</td>
</tr>
<tr>
<td>17</td>
<td>2&quot; &amp; 3&quot; Box S-Cover</td>
<td>1</td>
</tr>
<tr>
<td>18</td>
<td>2&quot; &amp; 3&quot; Box St-Lid</td>
<td>1</td>
</tr>
<tr>
<td>19</td>
<td>2&quot; &amp; 3&quot; Traffic Cover</td>
<td>1</td>
</tr>
</tbody>
</table>

## METER BOXES

<table>
<thead>
<tr>
<th>#</th>
<th>FITTING</th>
<th>QTY</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>ARMORCAST</td>
<td>1</td>
</tr>
<tr>
<td>21</td>
<td>P6001534X28</td>
<td>1</td>
</tr>
<tr>
<td>22</td>
<td>A6001947T-17</td>
<td>1</td>
</tr>
</tbody>
</table>
VALVING AND 2" PIPE AND FITTINGS TO BE REMOVED UPON SUCCESSFUL COMPLETION OF PRESSURE AND BACTERIOLOGICAL TESTING

2" DOUBLE CHECK VALVE

NOTE: DOUBLE CHECK VALVE MUST BE TESTED BY THE CITY PRIOR TO FILLING THE NEW WATER MAIN

2" GATE VALVE

2" CORP STOP; CLOSE AND PLUG UPON COMPLETION OF TESTING

2" ROMAC SERVICE SADDLE

TEST PLATE

2" ROMAC SERVICE SADDLE

2" CORP STOP, CLOSE AND PLUG UPON COMPLETION OF TESTING

EXISTING WATER MAIN, SEE PLAN FOR CONTINUATION

FLANGED COUPLING ADAPTERS

NEW WATER MAIN, SEE PLAN FOR CONTINUATION

CITY OF KLAMATH FALLS

TESTING PLATE

Date: 12/2009

Drwg. No.: 7-102

Approved By: Don Wilcox

1/3/10 5th EDITION
NOTES:

1. 1" TESTING AND CHLORINATION TAP, TEMPORARY PIPE TO FINISH SURFACE (LOCATED AWAY FROM TRAFFIC AREAS) IPT OUTLET CORPORATION STOP AT SURFACE, TO BE REMOVED AND CAPPED (PLUGGED) AT THE MAIN AS SOON AS THE TESTING AND CHLORINATION IS COMPLETED.

2. ALL FIRE SERVICES TO BE CLASS 50 DUCTILE IRON PIPE WITH APPROPRIATE FITTINGS.

3. TRACER WIRE SHALL BE EXTENDED 24" ABOVE FINISHED SURFACE ON BOTH ENDS AND LEFT COILED UNDER VALVE CASE LID AND METER VAULT LID.

4. CITY PERSONNEL MUST BE PRESENT ANY TIME A TAP IS MADE ON AN EXISTING CITY WATER LINE.

5. WHEN INSTALLING FIRE SERVICE, INSTALL RESILIENT WEDGE GATE VALVE AT PROPERTY LINE.

6. FOR BACKFLOW PREVENTOR INSTALLATIONS, SEE STD DWGS 7-130 THRU 7-226.

7. REQUIRES BYPASS VALVE, SEE STD DWG 7-106.
CONSTRUCTION NOTES

FOR THE INSTALLATION OF FIRE SERVICES, OR SERVICE LINE GREATER THAN 2"

1. ALL WORK AND MATERIALS SHALL CONFORM TO THE MOST CURRENT EDITION OF APWA "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION" AND THE CITY OF KLAMATH FALLS STANDARD DRAWINGS AND SPECIFICATIONS UNLESS OTHERWISE NOTED OR AMENDED.

2. CONTRACTOR SHALL LOCATE ALL EXISTING UTILITIES PRIOR TO DIGGING BY CONTACTING THE KLAMATH UTILITIES COordinating COUNCIL @ 811, 48 HOURS BEFORE DIGGING.

3. CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR OF ALL IMPROVEMENTS AND UTILITIES DAMAGED DURING CONSTRUCTION. ALL REPAIR WORK SHALL MEET OR EXCEED EXISTING CONDITIONS AND BE AT CONTRACTOR'S EXPENSE.

4. CONTRACTOR SHALL COORDINATE THE INSTALLATION OF ALL UTILITIES WITH THE UTILITY OWNERS TO PREVENT DELAYS DURING CONSTRUCTION.

5. ALL UTILITIES SHALL BE MARKED WITH AN APPROVED LOCATOR TAPE PLACED 12" BELOW THE GROUND SURFACE. TAPE SHALL BE COLOR CODED FOR THE UTILITY BEING MARKED. TRACER WIRE (14 AWG SINGLE STRAND WITH BLUE INSULATION) TO BE PLACED ON TOP OF PIPE ZONE. LOCATOR TAPE AND WIRE SHALL BE PLACED PER THE CITY OF KLAMATH FALLS STANDARD DRAWING NO. 2–105 UNLESS OTHERWISE NOTED.

6. ALL VALVES SHALL BE RESILIENT WEDGE DUCTILE IRON LINED AND COATED VALVES. VALVES SHALL OPEN WHEN ROTATED COUNTERCLOCKWISE.

7. ALL WATERLINE FITTINGS SHALL BE DUCTILE IRON AND SHALL BE INSTALLED WITH THRUST BLOCKS PER THE CITY OF KLAMATH FALLS STANDARD DRAWING NO. 2–120, UNLESS OTHERWISE NOTED.

8. GENERAL CONTRACTOR SHALL PERFORM DISINFECTION OF FACILITIES BY CHLORINATION ACCORDING TO OREGON ADMINISTRATIVE RULES 333–061–0050 (10) AND AWWA STANDARDS C651 THROUGH C654. CITY PERSONNEL SHALL PERFORM CHLORINE RESIDUAL TESTS IMMEDIATELY AFTER DISINFECTION AND IMMEDIATELY AFTER FLUSHING. CITY PERSONNEL SHALL PERFORM MICROBIOLOGICAL TEST PER CURRENT STANDARDS. SHOULD ANY TEST FAIL, THE CONTRACTOR IS RESPONSIBLE TO PAY THE CITY'S CURRENT HOURLY RATE AT NO LESS THAN 1/2 HOUR INCREMENTS FOR ADDITIONAL TESTS. CALL 883–5368 FOR CURRENT RATE. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR DE-CHLORINATION AS REQUIRED BY FEDERAL, STATE AND LOCAL REGULATIONS.

9. THE CONTRACTOR SHALL MECHANICALLY CLEAN THE CONSTRUCTED WATER MAINS BEFORE WATER IS ALLOWED TO ENTER THE NEW MAIN. CLEANING WILL BE ACCOMPLISHED BY PROPPELLING OR PULLING AN APPROPRIATELY SIZED BULLET SHAPED FOAM PLUG (PIG) THROUGH THE ENTIRE LENGTH OF THE WATER MAIN. REFER TO THE WATER DISTRIBUTION OPERATION TRAINING HANDBOOK FOR INSTRUCTIONS. A COPY OF THIS SECTION CAN BE OBTAINED FROM CITY ENGINEERING.

10. THE CONTRACTOR SHALL PRESSURE TEST THE WATERLINE AND THE SERVICE BY HYDROSTATIC METHOD PER CURRENT AWWA STANDARD SECTION C600. TEST PRESSURE SHALL BE A MINIMUM OF 150 PSI FOR A TWO HOUR PERIOD DURATION. CITY PERSONNEL SHALL APPROVE ALL EQUIPMENT USED AND WITNESS FILLING OF THE LINE AND PRESSURE TESTING PROCESS. SHOULD THE TEST FAIL, THE CONTRACTOR IS RESPONSIBLE TO PAY THE CITY'S CURRENT RATE AT NOT LESS THAN 1/2 HOUR INCREMENTS FOR ADDITIONAL TESTS. CALL 883–5368 FOR CURRENT RATE.

11. CONNECTION TO THE EXISTING WATERLINES SHALL BE MADE BY THE CONTRACTOR (CONTRACTOR TO FURNISH AND INSTALL ALL FITTINGS) WITH THE CITY PERSONNEL OBSERVING. THE CONTRACTOR SHALL COORDINATE WITH THE CITY ON THE TIMING OF WORK.

12. MECHANICAL JOINT ADAPTERS SHALL BE FOSTER ADAPTERS, OR A COMPATIBLE EQUAL.

13. ALL WORK AND MATERIALS SHALL BE WARRANTED BY THE CONTRACTOR OR THE DEVELOPER FOR A PERIOD OF ONE YEAR AFTER THE DATE OF ACCEPTANCE BY THE CITY OF KLAMATH FALLS.

14. ALL TRENCH WORK SHALL CONFORM TO THE DETAILS ON STANDARD DRAWING NO. 2–105 OF THE CITY OF KLAMATH FALLS STANDARD DRAWINGS.
CONSTRUCTION NOTES
FOR THE INSTALLATION OF FIRE SERVICES, OR SERVICE LINE GREATER THAN 2” (CONTINUED)

15. ALL VAULTS SHALL BE MANUFACTURED BY UTILITY VAULT COMPANY OR A COMPATIBLE EQUAL. APPROVAL OF EQUALS REQUIRED.

16. WATER METERS SHALL BE MANUFACTURED BY SENSUS TECHNOLOGIES, INC. AND WILL MEET ALL CITY REQUIREMENTS FOR EACH APPLICATION. 1 1/2” AND LARGER SHALL BE SENSUS OMNI METER.

17. FIRE SERVICE METERS SHALL CONFORM WITH AWWA STANDARD C703.

18. FOR FIRE SERVICES INSIDE A BUILDING:
   • SENSUS SRII TRPL GALLON METER W/LENGTH OF WIRE PER EACH UNIT
   • PAD HEIGHT – REASONABLE
   • TOUCH PAD-2” HOLE THROUGH WALL, 1 1/2”+ CONDUIT IN WALL FOR WIRE TO CONNECT PAD TO SENSOR. WIRE SHALL BE STRAPPED TO FITTINGS AND PIPE.

19. WHEN TAPPING EXISTING WATER MAIN LINES, THE CONTRACTOR SHALL MAKE PROVISIONS TO CONTINUOUSLY FLUSH AND PURGE WATER THROUGH THE NON-PRESSURIZED SIDE OF THE TAPPING VALVE (TOWARD THE BOTTOM), OR THROUGH THE TAPPING MACHINE. USING A CORPORATION STOP ON THE TESTING TAP ON THE TAPPING SLEEVE IS NOT ACCEPTABLE. AN ALTERNATE METHOD MAY BE APPROVED BY THE CITY INSPECTOR TWO WORKING DAYS PRIOR TO THE ACTUAL TAP. WHEN WORKING WITH ASBESTOS PIPE, REFER TO APPENDIX 7-A FOR PROPER HANDLING. THE CONTRACTOR IS RESPONSIBLE TO DISPOSE OF CONTAMINATED WATER AND ASBESTOS PIPE IN ACCORDANCE WITH DEQ REGULATIONS.

20. THE CONTRACTOR SHALL NOT ADJUST OR OPERATE WATER VALVES UNDER CITY JURISDICTION. IF IT IS DETERMINED BY THE CONTRACTOR THAT A CITY VALVE NEEDS TO BE OPERATED, THE CONTRACTOR SHALL NOTIFY THE CITY INSPECTOR A MINIMUM OF TWO WORKING DAYS BEFORE THE CONTRACTOR’S SCHEDULED DATE.

21. CONTRACTOR TO NOTIFY THE CITY INSPECTOR A MINIMUM OF THREE WORKING DAYS BEFORE THE PRESSURE TEST SO THE CITY INSPECTOR CAN NOTIFY THE WATER DIVISION TO SCHEDULE MICROBIOLOGICAL TESTING.

22. IF THE CONTRACTOR IS PLANNING A CITY WATER MAIN SHUT DOWN, THE CONTRACTOR SHALL GIVE ALL AFFECTED WATER USERS A MINIMUM OF TWO WORKING DAYS WRITTEN NOTICE (FLYERS INSERTED ON DOOR HANDLES ARE RECOMMENDED) PRIOR TO THE CITY SHUTTING DOWN THE MAIN LINE. THE CITY INSPECTOR WILL SUPPLY THE CONTRACTOR WITH THE ADDRESSES OF THE AFFECTED WATER USERS.

23. THE CONTRACTOR SHALL NOT MIX GALVANIZED AND BRASS FITTINGS.

24. A RESTRAINT SCHEDULE SHALL BE INCLUDED ON THE DESIGN PLANS OR SUBMITTED BY THE CONTRACTOR SEPARATELY FOR CITY ENGINEERING APPROVAL.
NOTES

1. ALL JOINTS MUST BE RESTRAINED.
CONSTRUCTION NOTES:

1. MATERIALS: Fire Hydrant shall be KENNEDY, MODEL K81D. No substitutions will be permitted. Connection shall be Mechanical Joint unless otherwise noted.
2. All joints will be restrained from the valve to the hydrant.
3. Fire hydrant shall be installed on the same side of street as main line (short service only).
4. Maximum installation distance of 500’ between hydrants.
5. Protective bollards required for fire hydrants in close proximity of vehicle travel. (See detail 7-110a)
6. Public Fire Hydrants and bollards shall be painted chrome yellow.

CITY OF KLAMATH FALLS
FIRE HYDRANT ASSEMBLY

Date: 1/2002
Drwg. No.: 7-110
Approved By: Don Wilcox
WHEN PLACED IN R.O.W. PLANTING STRIPS, THE DISTANCE BETWEEN THE CURB AND SIDEWALK WILL GOVERN ONE SIDE OF THE SLAB WIDTH

4"Ø STL PIPE
CONC FILLED,

BOLLARDS REQ'D ON SIDES FACING TRAFFIC

4000 PSI CONC (CITY SIDEWALK MIX DESIGN), LIGHT BROOM FINISH

PCC SLAB DETAIL

NOTES
1. CONSTRUCTED IN PLANTER OR PARKING AREAS.
7. PCC SLAB SHALL SLOPE TO THE STREET WITH A 2% GRADE.

SCALE: NONE

CITY OF KLAMATH FALLS

FIRE HYDRANT
BOLLARD LOCATION DETAIL

Approved By: Don Wilcox

Date: 10/04
Drwg. No.: 7-110a
NOTES:

1. Blow-offs located outside of roadway shall have a raised pad around valve box, conforming to the gate valve box shown above.

2. Tracer wire shall be extended 24" above finished surface on both ends and left coiled under the valve box lids.
CONSTRUCTION NOTES:
1. Locate assembly away from driveways.
2. Refer to 7–5.7

AIR/COMBINATION AIR–VACUUM VALVE ASSEMBLY
PARTS LIST

1. DUCTILE IRON PIPE
2. SPOOL (MJxPE) WITH MEGA-LUGS OR EQUAL TO BE USED IN PRECAST VAULTS
3. NON-SHRINK GROUT
4. FLANGED COUPLING ADAPTER (FLxMJ)
5. TEE (ALL FL)
6. GV CL 200 (FLxFL), OR BUTTERFLY VALVE IF LARGER THAN 12 INCH.
7. PRV (FLxFL) (CLA = VAL), HIGH FLOW
8. FLANGE COUPLING ADAPTER
9. FLG x FLG 90° ELL
10. GV (FLxFL)
11. LOW FLOW PRV (FLxFL) (CLA = VAL)
12. UTILITY VAULT CO., OR EQUAL, LID WITH TRAFFIC LOADED LOCKING STEEL COVERS.
13. UTILITY VAULT CO., OR EQUAL, PRECAST VAULT.
14. 2" GRAVITY SUMP DRAIN EXTEND TO DAY-LIGHT OR TO STORM DRAINAGE SYSTEM.
15. WALL SLEEVE (FLxPE) TO BE USED WITH CAST IN PLACE VAULTS.
16. 1/4" GAUGE TAPS WITH 1/4" BALL VALVES FOR ISOLATION.
17. GALVANIZED STEEL LADDER TO BE SECURED TO THE VAULT.

NOTES

1. MINIMUM CLEARANCE BETWEEN PRV VALVES AND FLOOR SHALL BE 12".
2. MINIMUM CLEARANCE BETWEEN HIGHEST PART OF ASSEMBLY AND TOP OF VAULT SHALL BE 24".
3. PROVIDE LIQUID FILLED 2 1/2" GAUGES AMETEK SERIES 550L OR EQUAL.

4. ALL EQUIPMENT MUST BE RATED FOR SOURCE PRESSURE.
5. PIPING AND VALVES SHALL BE SUPPORTED BY Poured-in-place CONCRETE OR STEEL STANDS. NUMBER AND PLACEMENT OF STANDS TO BE DETERMINED BY CITY ACCORDING TO VALVE SIZE.
6. BRAND, TYPE OF PRV, AND ACCESSORIES TO BE APPROVED BY CITY. PRESSURE SETTINGS TO BE DETERMINED BY CITY. SUBMITTAL REQUIRED.
# Minimum Airgaps for Water Distribution

## Fixtures

<table>
<thead>
<tr>
<th>Fixtures</th>
<th>When Not Affected by Side Walls</th>
<th>When Affected by Side Walls</th>
</tr>
</thead>
<tbody>
<tr>
<td>LAVATORIES AND OTHER FIXTURES WITH EFFECTIVE OPENINGS NOT GREATER THAN ONE HALF (1/2) INCH IN DIAMETER</td>
<td>1&quot; (25)</td>
<td>1 1/2&quot; (38)</td>
</tr>
<tr>
<td>SINKS, LAUNDRY TRAYS, GOOSE-NECKS BATH FAUCETS AND OTHER FIXTURES WITH EFFECTIVE OPENINGS NO GREATER THAN THREE QUARTERS (3/4) INCH IN DIAMETER</td>
<td>1 1/2&quot; (38)</td>
<td>2 1/4&quot; (57)</td>
</tr>
<tr>
<td>OVER RIM BATH FILLERS AND OTHER FIXTURES WITH EFFECTIVE OPENINGS NO GREATER THAN ONE (1) INCH IN DIAMETER</td>
<td>2&quot; (51)</td>
<td>3&quot; (76)</td>
</tr>
<tr>
<td>EFFECTIVE OPENINGS GREATER THAN ONE (1) INCH IN DIAMETER</td>
<td>TWO (2) TIMES DIAMETER OF EFFECTIVE OPENING</td>
<td>THREE (3) TIMES DIAMETER OF EFFECTIVE OPENING</td>
</tr>
</tbody>
</table>

**Scale:** None

---

**City of Klamath Falls**

**Airgap Backflow Protection**

**Drwn. By:** WEM

**Date:** 5/06

**Drwng. No.:** 7-130

**Approved By:**
1. Side walls, ribs or similar obstructions do not affect airgaps when spaced from the inside edge of the spout opening a distance greater than three times the diameter of the effective opening for a single wall, or a distance greater than four times the effective opening for two intersecting walls.

2. Vertical walls, ribs, or similar obstructions extending from the water surface to or above the horizontal plane of the spout opening other than specified in Note 1 above. The effect of three or more such vertical walls or ribs has not been determined. In such cases, the airgap shall be measured from the top of the wall.

3. The effective opening shall be the minimum cross-sectional area at the seat of the control valve or the supply pipe or tubing which feeds the device outlet. If two or more lines supply one outlet, the effective opening shall be the sum of the cross-sectional areas of the individual supply lines or the area of the single outlet, whichever is smaller.

4. Airgaps less than one (1) inch (25 mm) shall be approved as a permanent part of a listed assembly that has been tested under actual backflow conditions with vacuums of from 0 to 25 inches of mercury.

Notes

1. Airgap protection may be used in lieu of mechanical backflow protection, with City of Klamath Falls approval in their respective service area.

2. All airgaps are measured from the bottom of the supply line to the top of the overflow rim of the sink or basin that is being filled. The airgap shall be twice the diameter (2xD) of the supply line, but in no case less than 1". If the supply line is adjacent to the wall, the airgap shall be increased to three times the diameter (3xD) of the supply piping.

3. If the supply line is cut at an angle, the point closest to the basin is used for measurement.

4. If the supply line is reduced at the opening, the diameter used for airgap is taken at the largest portion of the supply piping.

5. There shall be no extensions or attachments on the open end of the supply piping. Any such extensions or attachments will void the airgap protection.

NOTES

1. ATMOSPHERIC VACUUM BREAKERS SHALL BE INSTALLED A MINIMUM OF 6" ABOVE THE HIGHEST PIPING OR OUTLET THAT IT SERVES.

2. FOR TESTING AND MAINTENANCE PURPOSES, ATMOSPHERIC VACUUM BREAKER (AVB) SHALL NOT BE INSTALLED MORE THAN 6" ABOVE THE GROUND OR FLOOR LEVEL, UNLESS ACCOMPANIED BY A PERMANENT OSHA APPROVED PLATFORM.

3. ALL CLEARANCES APPLY TO OUTSIDE OR IN-BUILDING INSTALLATIONS.

4. AVB'S SHALL NOT BE INSTALLED IN AN AREA WHERE FLOODING IS A POSSIBILITY.

5. AVB'S SHALL NOT BE INSTALLED WHERE DUSTY, CORROSIVE, OR TOXIC ATMOSPHERES ARE PRESENT. NO CHEMICAL OR FERTILIZER MAY BE INTRODUCED THROUGH AN IRRIGATION SYSTEM EQUIPPED WITH AVB'S.

6. THERE SHALL BE NO SHUT-OFF VALVES DOWNSTREAM (ON THE DISCHARGE SIDE) OF THE DEVICE.

7. DEVICE CANNOT BE UNDER CONSTANT PRESSURE MORE THAN 12 HOURS IN ANY 24 HOUR PERIOD.

1 - APPROVED ATMOSPHERIC VACUUM BREAKER (DEVICES WITH IAPMO AND ASSE APPROVAL ARE APPROVED BY ODHS).
NOTES

1. PRESSURE VACUUM BREAKER ASSEMBLY (PVB) SHALL BE INSTALLED A MINIMUM OF 12" ABOVE THE HIGHEST PIPING THAT IT SERVES, 12" CLEARANCE ABOVE THE DEVICE FOR MAINTENANCE AND 6" CLEARANCE ON THE TEST-COCK SIDE FOR TESTING.
2. FOR TESTING AND MAINTENANCE PURPOSES, PVB ASSEMBLY SHALL NOT BE INSTALLED MORE THAN 5' ABOVE GROUND OR FLOOR LEVEL, UNLESS ACCOMPANIED BY A PERMANENT OSHA APPROVED PLATFORM.
3. ALL CLEARANCES APPLY TO OUTSIDE OR IN-BUILDING INSTALLATIONS. WHEN INSTALLED INSIDE A BUILDING, THERE MUST BE A DRAINAGE SYSTEM CAPABLE OF HANDLING THE VOLUME OF WATER, WHICH COULD DISCHARGE FROM THE ASSEMBLY.
4. PVB ASSEMBLY SHALL NOT BE INSTALLED IN AN AREA WHERE IT IS POSSIBLE TO FLOOD THE ASSEMBLY.
5. PVB’S SHALL NOT BE INSTALLED WHERE DUSTY, CORROSIVE, OR TOXIC ATMOSPHERES ARE PRESENT. NO CHEMICAL OR FERTILIZER MAY BE INTRODUCED THROUGH AN IRRIGATION SYSTEM EQUIPPED WITH PVB’S.

[1] – APPROVED PRESSURE VACUUM BREAKER ASSEMBLY

AS REQUIRED BY OAR 333-061-0070 AND THE OREGON PLUMBING SPECIALTY CODE, AN INITIAL TEST PERFORMED BY A STATE CERTIFIED BACKFLOW ASSEMBLY TESTER IS REQUIRED AT THE TIME OF INSTALLATION, WITH COPIES FURNISHED TO:

1. THE OWNER
2. THE WATER SUPPLIER
3. THE BUILDING OFFICIAL
NOTES
1. DOUBLE CHECK VALVE ASSEMBLY SHALL BE INSTALLED IN A LOCATION APPROVED BY
   CITY OF KLAMATH FALLS FOR THEIR RESPECTIVE SERVICE AREA.
2. DOUBLE CHECK VALVE ASSEMBLY MAY BE INSTALLED VERTICALLY, PROVIDED THAT
   THE ASSEMBLY:
   A. IS RECOMMENDED BY THE MANUFACTURER FOR VERTICAL INSTALLATION
   B. IS INSTALLED IN AN ORIENTATION AS LISTED IN THE CURRENT "APPROVED
      BACKFLOW ASSEMBLY LIST" (OREGON DEPARTMENT OF HUMAN SERVICES,
      503-731-4007).
3. ALL CLEARANCES APPLY TO OUTSIDE, INSIDE, BUILDING, AND VERTICAL INSTALLATIONS.
4. INSULATION—FREEZE PROTECTION TO BE INSULATION AND/OR HEAT SOURCE TO KEEP
   ENCLOSURES AT A MINIMUM TEMPERATURE OF 40°F (NFPA 13-4-5.4.1.1).
5. CITY OF KLAMATH FALLS DEVICES IN ITS SERVICE AREA MAY APPROVE ALTERNATE
   METHODS. ALLOWABLE ALTERNATIVES TO DAYLIGHT MAY INCLUDE:
   A. DRY WELL
6. COMPACTED GRAVEL OR UNDISTURBED BASE.
7. A DOOR OR OTHER ACCESS SHALL BE PROVIDED.
8. ASSEMBLIES INSTALLED BELOW GROUND LEVEL SHALL HAVE WATERTIGHT PLUGS OR
   CAPS INSTALLED ON THE TEST COCKS.

FOR FIRE SERVICES
9. FIRE ASSEMBLIES SHALL BE INSTALLED WITHIN 100 FT OF THE CONNECTION TO THE
   PUBLIC SUPPLY WATER MAIN.
10. ALL PIPING PRECEDING THE DOUBLE CHECK VALVE SHALL BE CONSTRUCTED OF
    POTABLE APPROVED MATERIAL, (E.G., PVC, LINED CAST IRON, OR DUCTILE IRON).
11. NO OUTLETS OR CONNECTIONS (INCLUDING HYDRANTS) WILL BE PERMITTED ON
    FIRE SERVICE LIES PRIOR TO THE DOUBLE CHECK VALVE.

1 - APPROVED CHECK VALVE ASSEMBLY INCLUDING FACTORY SUPPLIED SHUT-OFF
   VALVES

AS REQUIRED BY OAR 333-061-0070 AND THE OREGON PLUMBING SPECIALTY CODE, AN
INITIAL TEST PERFORMED BY A STATE CERTIFIED BACKFLOW ASSEMBLY TESTER IS
REQUIRED AT THE TIME OF INSTALLATION, WITH COPIES FURNISHED TO:

1. THE OWNER
2. THE WATER SUPPLIER
3. THE BUILDING OFFICIAL

CITY OF KLAMATH FALLS

DOUBLE CHECK VALVE 1/2"—
2" BELOW GROUND

Mark Willrett

Drwn. By: WEM

Date: 5/06

Drwg. No.: 7-146

1 6/06 4th EDITION

Approved By: Mark Willrett
1. DOUBLE CHECK VALVE ASSEMBLY SHALL BE INSTALLED IN A LOCATION APPROVED BY CITY OF KLAMATH FALLS FOR THEIR RESPECTIVE SERVICE AREA.
2. DOUBLE CHECK VALVE ASSEMBLY MAY BE INSTALLED VERTICALLY, PROVIDED THAT THE ASSEMBLY:
   A. IS RECOMMENDED BY THE MANUFACTURER FOR VERTICAL INSTALLATION
   B. IS INSTALLED IN AN ORIENTATION AS LISTED IN THE CURRENT "APPROVED BACKFLOW ASSEMBLY LIST" (OREGON DEPARTMENT OF HUMAN SERVICES, 503–731–4007).
3. ALL CLEARANCES APPLY TO OUTSIDE, IN–BUILDING, AND VERTICAL INSTALLATIONS.
4. INSULATION–FREEZE PROTECTION TO BE INSULATION AND/OR HEAT SOURCE TO KEEP ENCLOSURES AT A MINIMUM TEMPERATURE OF 40° F (NFPA 13–4–5.4.1.1).
5. CITY OF KLAMATH FALLS DEVICES IN ITS SERVICE AREA MAY APPROVE ALTERNATE METHODS. ALLOWABLE ALTERNATIVES TO DAYLIGHT MAY INCLUDE:
   A. DRY WELL
6. COMPACTED GRAVEL OR UNDISTURBED BASE.
7. A DOOR OR OTHER ACCESS SHALL BE PROVIDED.
8. ALL STRUCTURES TO COMPLY WITH LOCAL CODES.

FOR FIRE SERVICES
9. FIRE ASSEMBLIES SHALL BE INSTALLED WITHIN 100 FT OF THE CONNECTION TO THE PUBLIC SUPPLY WATER MAIN.
10. ALL PIPING PRECEDING THE DOUBLE CHECK VALVE SHALL BE CONSTRUCTED OF POTABLE APPROVED MATERIAL, (E.G., PVC, LINED CAST IRON, OR DUCTILE IRON).
11. NO OUTLETS OR CONNECTIONS (INCLUDING HYDRANTS) WILL BE PERMITTED ON FIRE SERVICE LIES PRIOR TO THE DOUBLE CHECK VALVE.

① APPROVED CHECK VALVE ASSEMBLY INCLUDING FACTORY SUPPLIED SHUT–OFF VALVES

AS REQUIRED BY OAR 333–061–0070 AND THE OREGON PLUMBING SPECIALTY CODE, AN INITIAL TEST PERFORMED BY A STATE CERTIFIED BACKFLOW ASSEMBLY TESTER IS REQUIRED AT THE TIME IF INSTALLATION, WITH COPIES FURNISHED TO:

1. THE OWNER
2. THE WATER SUPPLIER
3. THE BUILDING OFFICIAL

CITY OF KLAMATH FALLS

DOUBLE CHECK VALVE 1/2”–2” ABOVE GROUND

Scale: None

Approved By: Mark Willrett

Drwn. By: KBW
Date: 5/06
Drwg. No.: 7-151
NOTES
1. DOUBLE CHECK VALVE ASSEMBLY SHALL BE INSTALLED IN A LOCATION APPROVED BY
   CITY OF KLAMATH FALLS FOR THEIR RESPECTIVE SERVICE AREA.
2. DOUBLE CHECK VALVE ASSEMBLY MAY BE INSTALLED VERTICALLY, PROVIDED THAT
   THE ASSEMBLY:
   A. IS RECOMMENDED BY THE MANUFACTURER FOR VERTICAL INSTALLATION
   B. IS INSTALLED IN AN ORIENTATION AS LISTED IN THE CURRENT "APPROVED
      BACKFLOW ASSEMBLY LIST" (OREGON DEPARTMENT OF HUMAN SERVICES,
      503–731–4007).
3. ALL CLEARANCES APPLY TO OUTSIDE, IN–BUILDING, AND VERTICAL INSTALLATIONS.
4. INSULATION–FREEZE PROTECTION TO BE INSULATION AND/OR HEAT SOURCE TO KEEP
   ENCLOSURES AT A MINIMUM TEMPERATURE OF 40°F (NFPA 13–4–5, 4.1.1).
5. CITY OF KLAMATH FALLS DEVICES IN ITS SERVICE AREA MAY APPROVE ALTERNATE
   METHODS. ALLOWABLE ALTERNATIVES MAY INCLUDE:
   A. DRY WELL (2 CUBIC YARD MINIMUM)
   B. SUMP PUMP
6. COMPACTED GRAVEL OR UNDISTURBED BASE.
7. HATCH, MINIMUM 3’ X 3’, SPRING ASSISTED, GALVANIZED OR ALUMINUM DIAMOND PLATE.
8. ALL ASSEMBLIES 2½” AND LARGER SHALL HAVE FLANGE SUPPORTS.
9. ASSEMBLIES INSTALLED BELOW GROUND LEVEL SHALL HAVE WATERTIGHT PLUGS OR CAPS
    INSTALLED ON TEST COCKS.
10. WATERTIGHT GROUT SHALL BE USED TO SEAL OPENINGS.
11. If VAULT DEPTH EXCEEDS 4’, USE OSHA APPROVED FIXED LADDER (OAR CH 437,
    DIVISION 2, 1910.27). PROVIDE LOCKABLE EXTENSION W/LADDER.

FOR FIRE SERVICES
13. FIRE ASSEMBLIES SHALL BE INSTALLED WITHIN 100 FT OF THE CONNECTION TO THE
    PUBLIC SUPPLY WATER MAIN.
14. ALL PIPING PRECEDING THE DOUBLE CHECK VALVE SHALL BE CONSTRUCTED OF
    POTABLE APPROVED MATERIAL, (E.G., PVC, LINED CAST IRON, OR DUCTILE IRON).
15. NO OUTLETS OR CONNECTIONS (INCLUDING HYDRANTS) WILL BE PERMITTED ON
    FIRE SERVICE LIES PRIOR TO THE DOUBLE CHECK VALVE.

☑ APPROVED DOUBLE CHECK VALVE ASSEMBLY INCLUDING FACTORY SUPPLIED SHUT–OFF
   VALVES

AS REQUIRED BY OAR 333–061–0070 AND THE OREGON PLUMBING SPECIALTY CODE, AN
INITIAL TEST PERFORMED BY A STATE CERTIFIED BACKFLOW ASSEMBLY TESTER IS
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1. THE OWNER
2. THE WATER SUPPLIER
3. THE BUILDING OFFICIAL

SCALE: NONE

CITY OF KLAMATH FALLS

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<tr>
<th>M#</th>
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<th>Revision</th>
<th>DOUBLE CHECK VALVE ASSY</th>
<th>Drwn. By</th>
<th>KBW</th>
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<tbody>
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<td></td>
<td>2½”–10” BELOW GROUND</td>
<td>Date:</td>
<td>5/06</td>
</tr>
<tr>
<td>1</td>
<td>6/06</td>
<td>4th EDITION</td>
<td>Approved By: Mark Willrett</td>
<td>Drwg. No.: 7-156</td>
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</table>
CITY OF KLAMATH FALLS

DOUBLE CHECK VALVE ASSEMBLY
2½" – 10" BELOW GROUND
AMES SS/SE PATTERN

SCALE: NONE

Drawn By: KBW
Date: 5/06
Drwg. No.: 7-160

Approved By: Mark Willrett

16/06 4th EDITION
NOTES
1. DOUBLE CHECK VALVE ASSEMBLY SHALL BE INSTALLED IN A LOCATION APPROVED BY CITY OF KLAMATH FALLS FOR THEIR RESPECTIVE SERVICE AREA.
2. DOUBLE CHECK VALVE ASSEMBLY MAY BE INSTALLED VERTICALLY, PROVIDED THAT THE ASSEMBLY:
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   B. IS INSTALLED IN AN ORIENTATION AS LISTED IN THE CURRENT "APPROVED BACKFLOW ASSEMBLY LIST" (OREGON DEPARTMENT OF HUMAN SERVICES, 503-731-4007).
3. ALL CLEARANCES APPLY TO OUTSIDE, IN-BUILDING, AND VERTICAL INSTALLATIONS.
4. INSULATION-FREEZE PROTECTION TO BE INSULATION AND/OR HEAT SOURCE TO KEEP ENCLOSURES AT A MINIMUM TEMPERATURE OF 40°F (NFPA 13-4-5,4.1.1).
5. CITY OF KLAMATH FALLS DEVICES IN ITS SERVICE AREA MAY APPROVE ALTERNATE METHODS. ALLOWABLE ALTERNATIVES MAY INCLUDE:
   A. DRY WELL (2 CUBIC YARD MINIMUM)
   B. SUMP PUMP
6. COMPACTED GRAVEL OR UNDISTURBED BASE.
7. HATCH, MINIMUM 3’ X 3’, SPRING ASSISTED, GALVANIZED OR ALUMINUM DIAMOND PLATE.
8. ALL ASSEMBLIES 2½” AND LARGER SHALL HAVE FLANGE SUPPORTS.
9. ASSEMBLIES INSTALLED BELOW GROUND LEVEL SHALL HAVE WATERTIGHT PLUGS OR CAPS INSTALLED ON TEST COCKS.
10. WATERTIGHT GROUT SHALL BE USED TO SEAL OPENINGS.
11. IF VAULT DEPTH EXCEEDS 4’, USE OSHA APPROVED FIXED LADDER (OAR CH 437, DIVISION 2, 1910.27). PROVIDE LOCKABLE EXTENSION W/LADDER.
12. REINFORCED CONCRETE VAULT (ASTM C-875).

FOR FIRE SERVICES
13. FIRE ASSEMBLIES SHALL BE INSTALLED WITHIN 100 FT OF THE CONNECTION TO THE PUBLIC SUPPLY WATER MAIN.
14. ALL PIPING PRECEDING THE DOUBLE CHECK VALVE SHALL BE CONSTRUCTED OF POTABLE APPROVED MATERIAL, (E.G., PVC, LINED CAST IRON, OR DUCTILE IRON).
15. NO OUTLETS OR CONNECTIONS (INCLUDING HYDRANTS) WILL BE PERMITTED ON FIRE SERVICE LIES PRIOR TO THE DOUBLE CHECK VALVE.

Approved DOUBLE CHECK VALVE ASSEMBLY INCLUDING FACTORY SUPPLIED SHUT-OFF VALVES

AS REQUIRED BY OAR 333-061-0070 AND THE OREGON PLUMBING SPECIALTY CODE, AN INITIAL TEST PERFORMED BY A STATE CERTIFIED BACKFLOW ASSEMBLY TESTER IS REQUIRED AT THE TIME IF INSTALLATION, WITH COPIES FURNISHED TO:

1. THE OWNER
2. THE WATER SUPPLIER
3. THE BUILDING OFFICIAL

SCALE: NONE

CITY OF KLAMATH FALLS

DOUBLE CHECK VALVE ASSEMBLY
2½” – 10” BELOW GROUND
AMES SS/SE PATTERN

Approved By: Mark Willrett

Drwn. By: KBW
Date: 5/06
Drwg. No.: 7-161

1/ 5/06 4th EDITION
NOTES
1. DOUBLE CHECK VALVE ASSEMBLY SHALL BE INSTALLED IN A LOCATION APPROVED BY CITY OF KLAMATH FALLS FOR THEIR RESPECTIVE SERVICE AREA.
2. DOUBLE CHECK VALVE ASSEMBLY MAY BE INSTALLED VERTICALLY, PROVIDED THAT THE ASSEMBLY:
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3. ALL CLEARANCES APPLY TO OUTSIDE, IN-BUILDING, AND VERTICAL INSTALLATIONS.
4. INSULATION-FREEZE PROTECTION TO BE INSULATION AND/OR HEAT SOURCE TO KEEP ENCLOSURES AT A MINIMUM TEMPERATURE OF 40°F (NFPA 13-4-5.4.1.1).
5. CITY OF KLAMATH FALLS DEVICES IN ITS SERVICE AREA MAY APPROVE ALTERNATE METHODS. ALLOWABLE ALTERNATIVES MAY INCLUDE:
   A. DRY WELL (2 CUBIC YARD MINIMUM)
   B. SUMP PUMP
6. COMPACTED GRAVEL OR UNDISTURBED BASE.
7. HATCH, MINIMUM 3’ X 3’, SPRING ASSISTED, GALVANIZED OR ALUMINUM DIAMOND PLATE.
8. ALL ASSEMBLIES 2½” AND LARGER SHALL HAVE FLANGE SUPPORTS.
9. ASSEMBLIES INSTALLED BELOW GROUND LEVEL SHALL HAVE WATERTIGHT PLUGS OR CAPS INSTALLED ON TEST COCKS.
10. WATERTIGHT GROUT SHALL BE USED TO SEAL OPENINGS.
11. IF VAULT DEPTH EXCEEDS 4’, USE OSHA APPROVED FIXED LADDER (OAR CH 437, DIVISION 2, 1910.27). PROVIDE LOCKABLE EXTENSION W/LADDER.
12. REINFORCED CONCRETE VAULT (ASTM C-875).

FOR FIRE SERVICES
13. FIRE ASSEMBLIES SHALL BE INSTALLED WITHIN 100 FT OF THE CONNECTION TO THE PUBLIC SUPPLY WATER MAIN.
14. ALL PIPING PRECEDING THE DOUBLE CHECK VALVE SHALL BE CONSTRUCTED OF POTABLE APPROVED MATERIAL, (E.G., PVC, LINED CAST IRON, OR DUCTILE IRON).
15. NO OUTLETS OR CONNECTIONS (INCLUDING HYDRANTS) WILL BE PERMITTED ON FIRE SERVICE LIES PRIOR TO THE DOUBLE CHECK VALVE.

1 – APPROVED DOUBLE CHECK VALVE ASSEMBLY INCLUDING FACTORY SUPPLIED SHUT-OFF VALVES

AS REQUIRED BY OAR 333-061-0070 AND THE OREGON PLUMBING SPECIALTY CODE, AN INITIAL TEST PERFORMED BY A STATE CERTIFIED BACKFLOW ASSEMBLY TESTER IS REQUIRED AT THE TIME IF INSTALLATION, WITH COPIES FURNISHED TO:

1. THE OWNER
2. THE WATER SUPPLIER
3. THE BUILDING OFFICIAL

CITY OF KLAMATH FALLS

DOUBLE CHECK VALVE ASSEMBLY
2½” – 10” BELOW GROUND
FEBCO N PATTERN

Approved By: Mark Willrett

SCALE: NONE

Drawn By: KBW
Date: 5/06
Drwg. No.: 7-166
CITY OF KLAMATH FALLS

DOUBLE CHECK VALVE ASSY
2 1/2 – 10" ABOVE GROUND

Drwn. By: KBW
Date: 5/06
Drwg. No.: 7-170

Approved By: Mark Willrett
NOTES
1. DOUBLE CHECK VALVE ASSEMBLY SHALL BE INSTALLED IN A LOCATION APPROVED BY
   CITY OF KLAMATH FALLS FOR THEIR RESPECTIVE SERVICE AREA.
2. DOUBLE CHECK VALVE ASSEMBLY MAY BE INSTALLED VERTICALLY, PROVIDED THAT
   THE ASSEMBLY:
   A. IS RECOMMENDED BY THE MANUFACTURER FOR VERTICAL INSTALLATION
   B. IS INSTALLED IN AN ORIENTATION AS LISTED IN THE CURRENT "APPROVED
      BACKFLOW ASSEMBLY LIST" (OREGON DEPARTMENT OF HUMAN SERVICES,
      503-731-4007).
3. ALL CLEARANCES APPLY TO OUTSIDE, IN-BUILDING, AND VERTICAL INSTALLATIONS.
4. INSULATION-FREEZE PROTECTION TO BE INSULATION AND/OR HEAT SOURCE TO KEEP
   ENCLOSURES AT A MINIMUM TEMPERATURE OF 40°F (NFPA 13-4-5.4.1.1).
5. COMPACTED GRAVEL OR UNDISTURBED BASE.
6. A DOOR OR OTHER ACCESS SHALL BE PROVIDED.
7. ALL ASSEMBLIES 2½" AND LARGER SHALL HAVE FLANGE SUPPORTS.
8. ALL STRUCTURES TO COMPLY WITH LOCAL CODES.

FOR FIRE SERVICES
9. FIRE ASSEMBLIES SHALL BE INSTALLED WITHIN 100 FT OF THE CONNECTION TO THE
   PUBLIC SUPPLY WATER MAIN.
10. ALL PIPING PRECEDING THE DOUBLE CHECK VALVE SHALL BE CONSTRUCTED OF
    POTABLE APPROVED MATERIAL, (E.G., PVC, LINED CAST IRON, OR DUCTILE IRON).
11. NO OUTLETS OR CONNECTIONS (INCLUDING HYDRANTS) WILL BE PERMITTED ON
    FIRE SERVICE LIES PRIOR TO THE DOUBLE CHECK VALVE.

① - APPROVED DOUBLE CHECK VALVE ASSEMBLY INCLUDING FACTORY SUPPLIED SHUT-OFF
    VALVES

AS REQUIRED BY OAR 333-061-0070 AND THE OREGON PLUMBING SPECIALTY CODE, AN
INITIAL TEST PERFORMED BY A STATE CERTIFIED BACKFLOW ASSEMBLY TESTER IS
REQUIRED AT THE TIME OF INSTALLATION, WITH COPIES FURNISHED TO:

1. THE OWNER
2. THE WATER SUPPLIER
3. THE BUILDING OFFICIAL

---

CITY OF KLAMATH FALLS

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Approved By: **Mark Willrett**

SCALE: NONE
NOTES
1. DOUBLE CHECK VALVE ASSEMBLY SHALL BE INSTALLED IN A LOCATION APPROVED BY CITY OF KLAMATH FALLS FOR THEIR RESPECTIVE SERVICE AREA.
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3. ALL CLEARANCES APPLY TO OUTSIDE, IN–BUILDING, AND VERTICAL INSTALLATIONS.
4. INSULATION–FREEZE PROTECTION TO BE INSULATION AND/OR HEAT SOURCE TO KEEP ENCLOSURES AT A MINIMUM TEMPERATURE OF 40°F (NFPA 13–4–5.4.1.1).
5. COMPACTED GRAVEL OR UNDISTURBED BASE.
6. A DOOR OR OTHER ACCESS SHALL BE PROVIDED.
7. ALL ASSEMBLIES 2½” AND LARGER SHALL HAVE FLANGE SUPPORTS.
8. ALL STRUCTURES TO COMPLY WITH LOCAL CODES.

FOR FIRE SERVICES
9. FIRE ASSEMBLIES SHALL BE INSTALLED WITHIN 100 FT OF THE CONNECTION TO THE PUBLIC SUPPLY WATER MAIN.
10. ALL PIPING PRECEDING THE DOUBLE CHECK VALVE SHALL BE CONSTRUCTED OF POTABLE APPROVED MATERIAL, (E.G., PVC, LINED CAST IRON, OR DUCTILE IRON).
11. NO OUTLETS OR CONNECTIONS (INCLUDING HYDRANTS) WILL BE PERMITTED ON FIRE SERVICE LIES PRIOR TO THE DOUBLE CHECK VALVE.

① – APPROVED DOUBLE CHECK VALVE ASSEMBLY INCLUDING FACTORY SUPPLIED SHUT–OFF VALVES

AS REQUIRED BY OAR 333–061–0070 AND THE OREGON PLUMBING SPECIALTY CODE, AN INITIAL TEST PERFORMED BY A STATE CERTIFIED BACKFLOW ASSEMBLY TESTER IS REQUIRED AT THE TIME OF INSTALLATION, WITH COPIES FURNISHED TO:

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3. THE BUILDING OFFICIAL

CITY OF KLAMATH FALLS

Date Revision: 2/3/10 5th EDITION
1/6/06 4th EDITION

DOUBLE CHECK VALVE ASSEMBLY
2½” – 10” ABOVE GROUND
AMES SS/SE PATTERN

Drwn. By: KBW
Date: 5/06
Drwg. No.: 7-176

Approved By: Mark Willrett
NOTES
1. DOUBLE CHECK VALVE ASSEMBLY SHALL BE INSTALLED IN A LOCATION APPROVED BY CITY OF KLAMATH FALLS FOR THEIR RESPECTIVE SERVICE AREA.
2. DOUBLE CHECK VALVE ASSEMBLY MAY BE INSTALLED VERTICALLY, PROVIDED THAT THE ASSEMBLY:
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3. ALL CLEARANCES APPLY TO OUTSIDE, IN–BUILDING, AND VERTICAL INSTALLATIONS.
4. INSULATION–FREEZE PROTECTION TO BE INSULATION AND/OR HEAT SOURCE TO KEEP ENCLOSURES AT A MINIMUM TEMPERATURE OF 40°F (NFPA 13–4–5.4.1.1).
5. COMPACTED GRAVEL OR UNDISTURBED BASE.
6. A DOOR OR OTHER ACCESS SHALL BE PROVIDED.
7. ALL ASSEMBLIES 2½” AND LARGER SHALL HAVE FLANGE SUPPORTS.
8. ALL STRUCTURES TO COMPLY WITH LOCAL CODES.

FOR FIRE SERVICES
9. FIRE ASSEMBLIES SHALL BE INSTALLED WITHIN 100 FT OF THE CONNECTION TO THE PUBLIC SUPPLY WATER MAIN.
10. ALL PIPING PRECEDING THE DOUBLE CHECK VALVE SHALL BE CONSTRUCTED OF POTABLE APPROVED MATERIAL, (E.G., PVC, LINED CAST IRON, OR DUCTILE IRON).
11. NO OUTLETS OR CONNECTIONS (INCLUDING HYDRANTS) WILL BE PERMITTED ON FIRE SERVICE LINES PRIOR TO THE DOUBLE CHECK VALVE.

– APPROVED DOUBLE CHECK VALVE ASSEMBLY INCLUDING FACTORY SUPPLIED SHUT–OFF VALVES

AS REQUIRED BY OAR 333–061–0070 AND THE OREGON PLUMBING SPECIALTY CODE, AN INITIAL TEST PERFORMED BY A STATE CERTIFIED BACKFLOW ASSEMBLY TESTER IS REQUIRED AT THE TIME OF INSTALLATION, WITH COPIES FURNISHED TO:

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CITY OF KLAMATH FALLS

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DOUBLE CHECK VALVE ASSEMBLY
2½” – 10” ABOVE GROUND
FEBCO N PATTERN

Approved By: Mark Willrett

Drawn By: KBW
Date: 5/06
Drwg. No.: 7-181

SCALE: NONE
NOTES

1. DETECTOR DOUBLE CHECK VAULT OR ENCLOSURE SHALL BE INSTALLED AT POINT OF SERVICE OR AN ALTERNATIVE LOCATION APPROVED BY THE CITY FOR THEIR RESPECTIVE SERVICE ARE, BUT NO LESS THAN 10 FEET FROM POINT OF SERVICE.
2. DETECTOR DOUBLE CHECK ASSEMBLY MAY BE INSTALLED VERTICALLY, PROVIDED THAT THE ASSEMBLY:
   A. IS RECOMMENDED BY THE MANUFACTURER FOR VERTICAL INSTALLATION
   B. IS INSTALLED IN AN ORIENTATION AS LISTED IN THE CURRENT “APPROVED BACKFLOW PREVENTION ASSEMBLY LIST” (OREGON DEPARTMENT OF HUMAN RESOURCES, HEALTH SERVICES 503–731–4007).
3. ALL CLEARANCES APPLY TO OUTSIDE AND IN–BUILDING INSTALLATIONS.
4. INSULATION–FREEZE PROTECTION TO BE INSULATION AND/OR HEAT SOURCE TO KEEP ENCLOSURES AT A MINIMUM TEMPERATURE OF 40°F (NFPA 13–4–5.4.1.1).
5. BORE–SIGHTED DRAIN TO DAYLIGHT IS REQUIRED. ALLOWABLE ALTERNATIVES MAY INCLUDE:
   A. DRY WELL
   B. SUMP PUMP
6. COMPACTED GRAVEL OR UNDISTURBED BASE.
7. HATCH MINIMUM 3’x3’, SPRING ASSISTED, GALVANIZED OR ALUMINUM DIAMOND PLATE.
8. ALL ASSEMBLIES 2 1/2” AND LARGER SHALL HAVE FLANGE SUPPORTS.
9. ASSEMBLIES INSTALLED BELOW GROUND LEVEL SHALL HAVE WATERTIGHT PLUGS OR CAPS INSTALLED ON ALL TEST COCKS.
10. WATERTIGHT GROUT SHALL BE USED TO SEAL OPENINGS.
11. IF VAULT DEPTH EXCEEDS 4′, USE OSHA APPROVED FIXED LADDER (OAR Ch 437, DIVISION 2, 1910.27). PROVIDE LOCKABLE EXTENSION W/LADDER.
13. FIRE DEPARTMENT PUMPER CONNECTION PER LOCAL FIRE CODE.
14. INSTALL REMOTE READER, METER AND TOUCH PAD SUPPLIED BY CITY.

1 – APPROVED REDUCED PRESSURE BACKFLOW ASSEMBLY INCLUDING FACTORY SUPPLIED SHUT-OFF VALVES

AS REQUIRED BY OAR 333–061–0070 AND THE OREGON PLUMBING SPECIALTY CODE, AN INITIAL TEST PERFORMED BY A STATE CERTIFIED BACKFLOW ASSEMBLY TESTER IS REQUIRED AT THE TIME IF INSTALLATION, WITH COPIES FURNISHED TO:

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2. THE WATER SUPPLIER
3. THE BUILDING OFFICIAL
CITY OF KLAMATH FALLS

DETECTOR DOUBLE CHECK
ASSEMBLY, 2 1/12"-10" BELOW
GROUND AMES SS/SE PATTERN

DRAWN BY: WEM
DATE: 5/06
DRAWN. NO.: 7-190

APPROVED BY: Mark Willrett
NOTES

1. DETECTOR DOUBLE CHECK VAULT OR ENCLOSURE SHALL BE INSTALLED AT POINT OF SERVICE, OR IN AN ALTERNATE LOCATION APPROVED BY THE CITY FOR ITS SERVICE AREA, BUT NO MORE THAN 10 FEET FROM POINT OF SERVICE.
2. DETECTOR DOUBLE CHECK ASSEMBLY MAY BE INSTALLED VERTICALLY, PROVIDED THAT THE ASSEMBLY:
   A. IS RECOMMENDED BY THE MANUFACTURER FOR VERTICAL INSTALLATION
   B. IS INSTALLED IN AN ORIENTATION AS LISTED IN THE CURRENT "APPROVED BACKFLOW PREVENTION ASSEMBLY LIST" (OREGON DEPARTMENT OF HUMAN RESOURCES, HEALTH SERVICES 503–731–4007).
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4. INSULATION–FREEZE PROTECTION TO BE INSULATION AND/OR HEAT SOURCE TO KEEP ENCLOSURES AT A MINIMUM TEMPERATURE OF 40°F (NFPA 13–4–5.4.1.1).
5. BORE–SIGHTED DRAIN TO DAYLIGHT IS REQUIRED FOR ALL INSTALLATIONS.
   ALLOWABLE ALTERNATIVES MAY INCLUDE:
   A. DRY WELL
   B. SUMP PUMP
6. COMPACTED GRAVEL OR UNDISTURBED BASE.
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8. ALL ASSEMBLIES 2 1/2” AND LARGER SHALL HAVE FLANGE SUPPORTS.
9. ASSEMBLIES INSTALLED BELOW GROUND LEVEL SHALL HAVE WATERTIGHT PLUGS OR OR CAPS ON THE TEST COCKS.
10. WATERTIGHT GROUT SHALL BE USED TO SEAL OPENINGS.
11. IF VAULT DEPTH EXCEEDS 4’, USE OSHA APPROVED FIXED LADDER (OAR CH 437, DIVISION 2, 1910.27). PROVIDE LOCKABLE EXTENSION W/LADDER.
13. FIRE DEPARTMENT PUMPER CONNECTION PER LOCAL FIRE CODE.
14. INSTALL REMOTE READER, METER AND TOUCH PAD AS PROVIDED BY CITY.

![Approved Detector Double Check Assembly Including Factory Supplied Shut-Off Valves](image-url)

AS REQUIRED BY OAR 333–061–0070 AND THE OREGON PLUMBING SPECIALTY CODE, AN INITIAL TEST PERFORMED BY A STATE CERTIFIED BACKFLOW ASSEMBLY TESTER IS REQUIRED AT THE TIME IF INSTALLATION, WITH COPIES FURNISHED TO:

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CITY OF KLAMATH FALLS

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DETECTOR DOUBLE CHECK ASSEMBLY, 2 1/12”–10” BELOW GROUND AMES SS/SE PATTERN NOTES

Approved By: Mark Willrett

Drwn. By: WEM
Date: 5/06
Drwg. No.: 7-191

SCALE: NONE
1. DETECTOR DOUBLE CHECK VAULT OR ENCLOSURE SHALL BE INSTALLED AT POINT OF
SERVICE, OR IN AN ALTERNATE LOCATION APPROVED BY THE CITY FOR ITS
SERVICE AREA, BUT NO MORE THAN 10 FEET FROM POINT OF SERVICE.
2. DETECTOR DOUBLE CHECK ASSEMBLY MAY BE INSTALLED VERTICALLY, PROVIDED
THAT THE ASSEMBLY:
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5. BORE–SIGHTED DRAIN TO DAYLIGHT IS REQUIRED FOR ALL INSTALLATIONS.
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      A. DRY WELL
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6. COMPACTED GRAVEL OR UNDISTURBED BASE.
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10. WATERTIGHT GROUT SHALL BE USED TO SEAL OPENINGS.
11. IF VAULT DEPTH EXCEEDS 4’, USE OSHA APPROVED FIXED LADDER (OAR CH 437,
      DIVISION 2, 1910.27). PROVIDE LOCKABLE EXTENSION W/LADDER.
13. FIRE DEPARTMENT PUMPER CONNECTION PER LOCAL FIRE CODE.
14. INSTALL REMOTE READER, METER AND TOUCH PAD AS PROVIDED BY CITY.

1 – APPROVED DETECTOR DOUBLE CHECK ASSEMBLY INCLUDING FACTORY SUPPLIED
   SHUT–OFF VALVES

AS REQUIRED BY OAR 333–061–0070 AND THE OREGON PLUMBING SPECIALTY CODE, AN
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3. THE BUILDING OFFICIAL

Approved By:  Mark Willrett

SCALE: NONE

CITY OF Klamath Falls

DETECTOR DOUBLE CHECK
ASSEMBLY, 2 1/12”–10” BELOW
GROUND FEBCO N PATTERN NOTES

1 6/06 4th EDITION

Drwng. No.: 7-196
CITY OF KLAMATH FALLS

NOTE 4

NOTE 5

NOTE 7

NOTE 8

NOTE 6

NOTE 11

NOTE 10

NOTE 9

NOTE 1

PLAN

ELEVATION

SCALE: NONE

CITY OF KLAMATH FALLS

DETECTOR DOUBLE CHECK
ASSEMBLY, 2 1/12" - 10"
ABOVE GROUND

Drawn By: WEM
Date: 5/06
Drwg. No.: 7-200

Approved By: Mark Willrett

1 6/06 4th EDITION
NOTES

1. DETECTOR DOUBLE CHECK VAULT OR ENCLOSURE SHALL BE INSTALLED AT POINT OF SERVICE, OR IN AN ALTERNATE LOCATION APPROVED BY THE CITY FOR ITS SERVICE AREA, BUT NO MORE THAN 10 FEET FROM POINT OF SERVICE.
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4. INSULATION–FREEZE PROTECTION TO BE INSULATION AND/OR HEAT SOURCE TO KEEP ENCLOSURES AT A MINIMUM TEMPERATURE OF 40°F (NFPA 13–4–5.4.1.1).
5. BORE–SIGHTED DRAIN TO DAYLIGHT IS REQUIRED.
6. COMPACTED GRAVEL OR UNDISTURBED BASE.
7. A DOOR OR OTHER ACCESS SHALL BE PROVIDED.
8. ALL ASSEMBLIES 2 1/2” AND LARGER SHALL HAVE FLANGE SUPPORTS.
9. FIRE DEPARTMENT PUMPER CONNECTION PER LOCAL FIRE CODES.
10. ALL STRUCTURES TO COMPLY WITH LOCAL BUILDING CODES.
11. INSTALL REMOTE READER, METER AND TOUCH PAD AS PROVIDED BY CITY.

1 — APPROVED DETECTOR DOUBLE CHECK ASSEMBLY INCLUDING FACTORY SUPPLIED SHUT–OFF VALVES

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CITY OF Klamath Falls

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SCALE: NONE

Drwn. By: WEM
Date: 5/06
Drwg. No.: 7-201
PLAN

SECTION A

NOTE 1

NOTE 4

NOTE 5

NOTE 6

NOTE 7

CITY OF Klamath Falls

REDUCED PRESSURE BACKFLOW ASSEMBLY, 1 1/2" - 2"
BELOW GROUND

SCALE: NONE

Drwng. By: WEM
Date: 2/03
Drwg. No.: 7-205

Approved By: Mark Willrett

1/6/06 4th EDITION

MK Date Revision:
NOTES

1. REDUCED PRESSURE BACKFLOW ASSEMBLY SHALL BE INSTALLED IN A LOCATION APPROVED BY CITY OF KLAMATH FALLS FOR THEIR RESPECTIVE SERVICE AREA, AND SHALL BE ABOVE THE 100-YEAR FLOODPLAIN.
2. REDUCED PRESSURE BACKFLOW ASSEMBLY SHALL BE INSTALLED HORIZONTAL AND PLUMB.
3. ALL CLEARANCES APPLY TO OUTSIDE, IN-BUILDING, AND VAULT INSTALLATIONS. MINIMUM CLEARANCES FOR DEVICE ASSEMBLIES 2 INCHES OR SMALLER MAY BE REDUCED PROVIDED THAT THEY ARE ACCESSIBLE FOR TESTING AND REPAIRING AND THE CITY OF KLAMATH FALLS APPROVES THE VARIANCE FOR THEIR RESPECTIVE SERVICE AREA.
4. INSULATION—FREEZE PROTECTION TO BE INSULATION AND/OR HEAT SOURCE TO KEEP ENCLOSURES AT A MINIMUM TEMPERATURE OF 40°F (NFPA 13-4-5.4.1.1).
5. ASSEMBLY ENCLOSURE SHALL INCLUDE A BORE SIGHTED DRAIN TO DAYLIGHT CAPABLE OF DRAINING A FULL RELIEF VALVE DISCHARGE (LENGTH OF DRAIN TO BE APPROVED BY CITY OF KLAMATH FALLS FOR THEIR RESPECTIVE SERVICE AREA.
6. COMPACTED GRAVEL OR UNDISTURBED BASE.
7. DEVICE ENCLOSURE — (E.G., METER BOX, IRRIGATION CONTROL VAULT, OR FABRICATED PERMANENT ENCLOSURE).

① — APPROVED REDUCED PRESSURE BACKFLOW ASSEMBLY INCLUDING FACTORY SUPPLIED SHUT-OFF VALVES

AS REQUIRED BY OAR 333-061-0070 AND THE OREGON PLUMBING SPECIALTY CODE, AN INITIAL TEST PERFORMED BY A STATE CERTIFIED BACKFLOW ASSEMBLY TESTER IS REQUIRED AT THE TIME IF INSTALLATION, WITH COPIES FURNISHED TO:

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Approved By: Mark Willrett

SCALE: NONE

7-206
NOTE 9

NOTE 5

NOTE 7

NOTE 4

NOTE 10

NOTE 9

NOTE 5

NOTE 8

NOTE 6

NOTE 10

12” MIN EA END

12” MIN

5” MAX

ELEVATION

PLAN

CITY OF KLAMATH FALLS

DETECTOR DOUBLE CHECK ASSEMBLY, 2 1/2”-10” ABOVE GROUND FEBCO N PATTERN

SCALE: NONE

MARK WILLRETT

Drawn By: WEM

Date: 5/06

Drwg. No.: 7-210

Approved By: Mark Willrett

1 6/06 4th EDITION

NOTE 10

NOTE 4

CITY OF KLAMATH FALLS

DETECTOR DOUBLE CHECK ASSEMBLY, 2 1/2”-10” ABOVE GROUND FEBCO N PATTERN

SCALE: NONE

MARK WILLRETT

Drawn By: WEM

Date: 5/06

Drwg. No.: 7-210

Approved By: Mark Willrett

1 6/06 4th EDITION
NOTES
1. DETECTOR DOUBLE CHECK VAULT OR ENCLOSURE SHALL BE INSTALLED AT POINT OF SERVICE, OR IN AN ALTERNATE LOCATION APPROVED BY THE CITY FOR ITS SERVICE AREA, BUT NO MORE THAN 10 FEET FROM POINT OF SERVICE.
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5. BORE–SIGHTED DRAIN TO DAYLIGHT IS REQUIRED.
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7. A DOOR OR OTHER ACCESS SHALL BE PROVIDED.
8. ALL ASSEMBLIES 2 1/2” AND LARGER SHALL HAVE FLANGE SUPPORTS.
9. FIRE DEPARTMENT PUMPER CONNECTION PER LOCAL FIRE CODES.
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AS REQUIRED BY OAR 333–061–0070 AND THE OREGON PLUMBING SPECIALTY CODE, AN INITIAL TEST PERFORMED BY A STATE CERTIFIED BACKFLOW ASSEMBLY TESTER IS REQUIRED AT THE TIME IF INSTALLATION, WITH COPIES FURNISHED TO:

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3. THE BUILDING OFFICIAL

SCALE: NONE

CITY OF KLAMATH FALLS

Approved By: Mark Willrett
NOTE 4

NOTE 5

NOTE 6

NOTE 7

PLAN

SECTION A

CITY OF KLAMATH FALLS

REDUCED PRESSURE BACKFLOW ASSEMBLY, 1 1/2" - 2"

ABOVE GROUND

Drwn. By: WEM
Date: 2/03
Drwg. No.: 7-215

Approved By: Mark Willrett
NOTES
1. REDUCED PRESSURE BACKFLOW ASSEMBLY SHALL BE INSTALLED IN A LOCATION APPROVED BY CITY OF KLAMATH FALLS FOR THEIR RESPECTIVE SERVICE AREA, AND SHALL BE ABOVE THE 100-YEAR FLOOD PLAIN.
2. REDUCED PRESSURE BACKFLOW ASSEMBLY SHALL BE INSTALLED HORIZONTAL AND PLUMB.
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7. DEVICE ENCLOSURE – (E.G., METER BOX, IRRIGATION CONTROL VAULT, OR FABRICATED PERMANENT ENCLOSURE).

1 – APPROVED REDUCED PRESSURE BACKFLOW ASSEMBLY INCLUDING FACTORY SUPPLIED SHUT-OFF VALVES

AS REQUIRED BY OAR 333–061–0070 AND THE OREGON PLUMBING SPECIALTY CODE, AN INITIAL TEST PERFORMED BY A STATE CERTIFIED BACKFLOW ASSEMBLY TESTER IS REQUIRED AT THE TIME IF INSTALLATION, WITH COPIES FURNISHED TO:

1. THE OWNER
2. THE WATER SUPPLIER
3. THE BUILDING OFFICIAL

CITY OF KLAMATH FALLS

MK Date Revision: REDUCED PRESSURE BACKFLOW ASSEMBLY, 1 1/2"–2" ABOVE GROUND NOTES

Drwn. By: WEM
Date: 5/06
Drwg. No.: 7-216

Approved By: Mark Willrett

1 6/06 4th EDITION
1. REDUCED PRESSURE BACKFLOW ASSEMBLY SHALL BE INSTALLED IN A LOCATION APPROVED BY CITY OF KLAMATH FALLS FOR THEIR RESPECTIVE SERVICE AREA, AND SHALL BE ABOVE THE 100-YEAR FLOOD PLAIN.

2. REDUCED PRESSURE BACKFLOW ASSEMBLY SHALL BE INSTALLED HORIZONTAL AND PLUMB.

3. ALL CLEARANCES APPLY TO OUTSIDE, IN-BUILDING, AND VAULT INSTALLATIONS.

4. INSULATION–FREEZE PROTECTION TO BE INSULATION AND/OR HEAT SOURCE TO KEEP ENCLOSURES AT A MINIMUM TEMPERATURE OF 40°F (NFPA 13–4–5.4.1.1).

5. ASSEMBLY ENCLOSURE SHALL INCLUDE A BORE SIGHTED DRAIN TO DAYLIGHT CAPABLE OF DRAINING A FULL RELIEF VALVE DISCHARGE (LENGTH OF DRAIN TO BE APPROVED BY CITY OF KLAMATH FALLS FOR THEIR RESPECTIVE SERVICE AREA).

6. COMPACTED GRAVEL OR UNDISTURBED BASE.

7. HATCH MINIMUM 3’x3’, SPRING ASSISTED, GALVANIZED OR ALUMINUM DIAMOND PLATE.

8. ALL ASSEMBLIES 2 1/2” AND LARGER SHALL HAVE FLANGE SUPPORTS.

9. WATERTIGHT GROUT SHALL BE USED TO SEAL OPENINGS.

10. IF VAULT DEPTH EXCEEDS 4’, USE OSHA APPROVED FIXED LADDER (OAR Ch 437, DIVISION 2, 1910.27). PROVIDE LOCKABLE EXTENSION W/LADDER.

11. REINFORCED CONCRETE VAULT (ASTM C–875).

\[\text{(1)}\] APPROVED REDUCED PRESSURE BACKFLOW ASSEMBLY INCLUDING FACTORY SUPPLIED SHUT–OFF VALVES

AS REQUIRED BY OAR 333–061–0070 AND THE OREGON PLUMBING SPECIALTY CODE, AN INITIAL TEST PERFORMED BY A STATE CERTIFIED BACKFLOW ASSEMBLY TESTER IS REQUIRED AT THE TIME IF INSTALLATION, WITH COPIES FURNISHED TO:

1. THE OWNER
2. THE WATER SUPPLIER
3. THE BUILDING OFFICIAL

\[\text{MARK WILLRETT}\]

\[\text{7-221}\]
CITY OF KLAMATH FALLS

REDUCED PRESSURE BACKFLOW ASSEMBLY, 2 1/2" - 10" ABOVE GROUND

Drawn By: WEM
Date: 5/06
Drwg. No.: 7-225

Approved By: Mark Willrett
NOTES

1. REDUCED PRESSURE BACKFLOW ASSEMBLY SHALL BE INSTALLED IN A LOCATION APPROVED BY CITY OF KLAMATH FALLS FOR THEIR RESPECTIVE SERVICE AREA, AND SHALL BE ABOVE THE 100–YEAR FLOOD PLAIN.
2. REDUCED PRESSURE BACKFLOW ASSEMBLY SHALL BE INSTALLED HORIZONTAL AND PLUMB.
3. ALL CLEARANCES APPLY TO OUTSIDE, IN–BUILDING, AND VAULT INSTALLATIONS.
4. INSULATION–FREEZE PROTECTION TO BE INSULATION AND/OR HEAT SOURCE TO KEEP ENCLOSURES AT A MINIMUM TEMPERATURE OF 40°F (NFPA 13–4–5.4.1.1).
5. ASSEMBLY ENCLOSURE SHALL INCLUDE A BORE SIGHTED DRAIN TO DAYLIGHT CAPABLE OF DRAINING A FULL RELIEF VALVE DISCHARGE (LENGTH OF DRAIN TO BE APPROVED BY CITY OF KLAMATH FALLS FOR THEIR RESPECTIVE SERVICE AREA).
6. COMPACTED GRAVEL OR UNDISTURBED BASE.
7. A DOOR OR OTHER ACCESS SHALL BE PROVIDED.
8. ALL ASSEMBLIES 2 1/2" AND LARGER SHALL HAVE FLANGE SUPPORTS.
9. ALL STRUCTURES TO COMPLY WITH LOCAL CODES.

1 – APPROVED REDUCED PRESSURE BACKFLOW ASSEMBLY INCLUDING FACTORY SUPPLIED SHUT–OFF VALVES

AS REQUIRED BY OAR 333–061–0070 AND THE OREGON PLUMBING SPECIALTY CODE, AN INITIAL TEST PERFORMED BY A STATE CERTIFIED BACKFLOW ASSEMBLY TESTER IS REQUIRED AT THE TIME OF INSTALLATION, WITH COPIES FURNISHED TO:

1. THE OWNER
2. THE WATER SUPPLIER
3. THE BUILDING OFFICIAL

CITY OF KLAMATH FALLS

REDUCED PRESSURE BACKFLOW ASSEMBLY, 2 1/2”–10” ABOVE GROUND

Approved By: Mark Willrett

Drwn. By: WEM
Date: 5/06
Drwg. No.: 7-226