CHAPTER 8

STANDARD PLANS - WATER
List of Standard Plans - Water

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NOTES

1. ALL CONSTRUCTION SHALL CONFORM TO CITY OF KEIZER STANDARDS.

2. THE CITY OF KEIZER REQUIRES A PRE-CONSTRUCTION CONFERENCE. CALL ALL AFFECTED UTILITIES 48 HOURS PRIOR TO START OF CONSTRUCTION TO REQUEST FIELD LOCATES. NOTIFY ENGINEER & CITY OF KEIZER 24 HOURS PRIOR TO START OF CONSTRUCTION.

3. USE GRANULAR BACKFILL ABOVE THE PIPE ZONE IN ALL AREAS WHICH ARE OR ARE PLANNED TO BE PAVED, & ELSEWHERE AS NOTED OR DIRECTED.

4. WATER MAIN TO BE DUCTILE IRON PIPE (AWWA C 151), PRESSURE CLASS 350. SERVICES TO BE 3/4", TYPE "K" COPPER (AWWA C 800), UNLESS OTHERWISE NOTED.

5. MAINTAIN 36" COVER OVER MAIN LINES, MEASURED FROM EXISTING OR PROPOSED FINISHED GRADE. IF APPROVED BY THE ENGINEER, COVER MAY BE REDUCED TO 30" WHERE CROSSING THE CURB LINE OF NEWLY CONSTRUCTED STREETS.

6. MAIN LINE VALVES TO BE:

   MAIN SIZE | TYPE | SPEC.
   ----------|------|------
   3-INCH TO 10-INCH | GATE VALVE | AWWA C 509
   RESILIENT SEAT | NRS
   12-INCH AND LARGER | BUTTERFLY | AWWA C 504
   RUBBER GASKETED

7. ANCHOR & THRUST BLOCKS, TIE RODS & APPROVED JOINT RESTRAINTS ARE CONSIDERED INCIDENTAL TO THE CONSTRUCTION.

8. FLUSH, PRESSURE TEST & DISINFECT NEW MAIN PRIOR TO ACTIVATING OR RECONNECTING SERVICES, PRESSURE TEST TO BE WITNESSED BY CITY OF KEIZER. COORDINATE CHLORINATION WITH CITY & PROVIDE TEMPORARY WATER SERVICE IN ANY CASE WHERE SHUTDOWN MAY EXCEED FOUR (4) HOURS. ALL VALVES UNDER PRESSURE TO BE OPERATED ONLY BY CITY OF KEIZER WATER DEPARTMENT.

9. WHERE NOTED, PROVIDE POLYWARO ON MAINS IN ACCORDANCE WITH ANSI/AWWA C-105.

10. SAW CUT ALL EXISTING PAVED AREAS.

11. ALL LIVE TAPS TO BE FURNISHED BY CITY OF KEIZER. CALL 390-3700 TO OBTAIN COSTS & ARRANGE SCHEDULING.

12. INSTALL METERS LARGER THAN 2-INCH IN APPROVED METER VAULTS. SUBMIT PLANS & DETAILS TO CITY FOR APPROVAL PRIOR TO INSTALLATION.

13. PRIOR TO FINAL PAYMENT, SUBMIT COMPLETE "AS-BUILT" PLANS TO THE ENGINEER SHOWING SERVICE LOCATIONS, LENGTHS, DEPTHS, SIZES, DISTANCES BETWEEN STRUCTURES & CORP. STOPS.
CURB LINE SIDEWALK

( N.T.S. )

1.) SPECIFIED "BRONZE" OR "BRASS" FITTINGS TO BE 'FORD', 'MUELLER' OR 'McDONALD', CONFORMING TO A.S.T.M. SPEC. B-62.

2.) ALL BRASS THREADED FITTINGS WILL BE USED WITH THE AID OF TEFILON PASTE; NO PASTE TO COME IN CONTACT WITH ANY PLASTIC.

3.) USE TEFILON TAPE FOR P.V.C. OR PLASTIC TO BRASS.

4.) FINAL CONNECTIONS TO METER SHALL BE MADE BY CONTRACTOR AFTER TESTING AND DISINFECTION.

PROPERTY LINE SIDEWALK

( N.T.S. )

STANDARD DETAIL DRAWING

3/4" DOMESTIC WATER SERVICE

DRAWN: D.G.G. DATE: 10-11-90
APPROVED: W.I.P. NUMBER: W-11
Curb Line Sidewalk

Notes:
1. Specified "Bronze" or "Brass" fittings to be 'Ford', 'Mueller' or 'McDonald', conforming to A.S.T.M. Spec. B-62.
2. All brass threaded fittings will be used with the aid of Teflon paste; no paste to come in contact with any plastic.
3. Use Teflon tape for P.V.C. or plastic to brass.
4. Final connections to meter shall be made by contractor after testing and disinfection.

Property Line Sidewalk

Standard Detail Drawing

1" Domestic Water Service

Drawn: D.G.G. Date: 10-11-90
Approved: W.I.P. Number: W-12
METER BOX LOCATION
CURBLINE SIDEWALK - 6" FROM BACK OF SIDEWALK,
PROPERTY LINE SIDEWALK - 6" FROM CURB,
OR AS DIRECTED BY CITY OF KEIZER WATER DEPT.

SERIES 66 BROOKS BOX
(STEEL LID REQUIRED IN TRAFFIC AREA)

2) 1-1/2” G.V.
OUTSIDE OF 2)
1-1/2” CHECK
VALVES

1-1/2” OR 2” TYPE K
COPPER TUBING

1-1/2” OR 2” BRASS CORPORATION
STOP

BRASS 90° ELBOW
COMP x M.I.P.T.

EPOXY COATED SADDLE WITH STAINLESS
STEEL BANDS (I.P. THREADS)

NOTES:

1.) SPECIFIED "BRONZE" or "BRASS" FITTINGS TO BE 'FORD' or 'MUELLER
CONFORMING TO A.S.T.M. SPEC. B-62.

2.) ALL BRASS THREADED FITTINGS WILL BE USED WITH THE AID OF
TEFLON PASTE; NO PASTE TO COME IN CONTACT WITH ANY PLASTIC.

STANDARD DETAIL DRAWING

CITY OF KEIZER

1-1/2" AND 2" DOMESTIC
WATER SERVICE

DRAWN: T.A.K.      DATE: 10-11-90
APPROVED: W.I.P.   NUMBER: W-13
NOTES:
1. WATER MAIN LOCATION ON STREETS WITH D.I. SIDEWALKS TBD ON CASE BY CASE BASIS.
2. AREA BETWEEN METERS TO REMAIN CLEAR TO PERMIT INSTALLATION OF STREET LIGHT POLES.
3. WATER MAIN LOCATION MAY VARY.
4. TAP LONG SIDE SERVICE INSIDE SHORT SIDE SERVICES AS SHOWN.
5. SEE STANDARD DRAWING W-11, W-12, W-13 FOR SERVICE DETAILS.
7'-0" x 4'-8" x 1'-0"
TOP WITH LOCKING GALVANIZED STEEL DOORS

INSTALL MEGA LUGS
4" X 3" REDUCER (FLG)
2" LOCKABLE BALL VALVE
2" COPPER BYPASS
COMPRESSION FITTINGS
USED ON COPPER BYPASS

575-WA UTILITY VAULT

INSTALL MEGA LUGS
4" X 3" REDUCER (FLG)
2" COPPER BYPASS

575-WA OVERALL DIMENSIONS

STANDARD DETAIL DRAWING

CITY OF KEIZER

3" WATER METER

DRAWN: S.G.S.  DATE: 09-25-00
APPROVED: W.I.P.  NUMBER: W-15
C.I. LID WITH ONE INCH RAISED LETTERS AS MANUFACTURED BY BROOKS PRODUCTS, PORTLAND, OREGON OR APPROVED EQUAL.

UTILITY VAULT 1V8-812

8" MIN.

8" P.V.C. PIPE (A.S.T.M. 3034 - SDR 35)

WATER MAIN GATE VALVE ( OR BUTTERFLY VALVE )

NON-TRAFFIC AREAS
N.T.S.

CITY OF KEIZER

STANDARD DETAIL DRAWING
WATER VALVE BOX IN NON-TRAFFIC AREAS

DRAWN: J.M.M. DATE: 10-29-99
APPROVED: W.I.P. NUMBER: W-20
NOTES:
1. ANCHOR BLOCK SIZE TO BE SPECIFIED OR APPROVED BY THE ENGINEER.
2. THE RODS TO BE 3/4" A 307 STEEL BOLT STOCK WITH 14,000 P.S.I.
   TENSILE STRENGTH OR APPROVED EQUAL NUMBER OF RODS
   AND SIZE TO BE APPROVED BY THE ENGINEER.
3. ALTERNATE FOR STRADDLE BLOCK.

CITY OF KEIZER

STANDARD DETAIL DRAWING
STANDARD BLOWOFF WITH IN-LINE VALVE

DRAWN: T.A.K.    DATE: 10-11-90
APPROVED: W.I.P.   NUMBER: W-22
NOTES:
1. ANCHOR BLOCK SIZE TO BE SPECIFIED OR APPROVED BY THE ENGINEER.
NOTES:
1. STORZ ADAPTER REQUIRED.
2. IF HYDRANT IS NOT INSTALLED ON STUB:
   a. DELETE PIER BLOCK & GRAVEL FOR DRAINAGE.
   b. BOLT BLIND FLANGE OVER OPEN FLANGE OF GATE VALVE.
3. DO NOT PLACE THRUST BLOCKS BEHIND TEE OR HYDRANT.
4. PUMPER OUTLET TO FACE THE DIRECTION OF ACCESS.
5. CONTRACTOR TO VERIFY HYDRANT DEPTH PRIOR TO INSTALLATION.
6. HYDRANT EXTENSIONS NOT ALLOWED UNLESS AUTHORIZED BY THE CITY OF KEIZER.
7. DO NOT LOCATE HYDRANTS IN SIDEWALK AREAS.
8. PROVIDE BAG COVER FOR HYDRANTS AFTER INSTALLATION, UNTIL SYSTEM IS COMPLETE.
9. APPROVED HYDRANTS:
   MUELLER, CENTURION #423 KENNEDY KB1 GUARDIAN
10. 3 FT. MIN. CLEARANCE FROM OBSTRUCTIONS ON ALL SIDES. (i.e. FENCES, LANDSCAPE BLOCKS)
11. ALL GATE VALVES TO BE RESILIENT SEAT TYPE.
NOTES:
1. STORZ ADAPTER REQUIRED.
2. IF HYDRANT IS NOT INSTALLED ON STUB:
   a. DELETE PIER BLOCK & GRAVEL FOR DRAINAGE.
   b. BOLT BLIND FLANGE OVER OPEN FLANGE OF GATE VALVE.
3. DO NOT PLACE THRUST BLOCKS BEHIND TEE OR HYDRANT.
4. PUMPER OUTLET TO FACE THE DIRECTION OF ACCESS.
5. CONTRACTOR TO VERIFY HYDRANT DEPTH PRIOR TO INSTALLATION.
6. HYDRANT EXTENSIONS NOT ALLOWED UNLESS AUTHORIZED BY THE CITY OF KEIZER.
7. DO NOT LOCATE HYDRANTS IN SIDEWALK AREAS.
8. PROVIDE BAG COVER FOR HYDRANT AFTER INSTALLATION; UNTIL SYSTEM IS COMPLETE.
9. APPROVED HYDRANTS:
   MUELLER, CENTURION #423,
   KENNEDY K81 GUARDIAN
10. 3 FT. MIN. CLEARANCE FROM OBSTRUCTIONS ON ALL SIDES (i.e. FENCES, LANDSCAPE BLOCKS
11. ALL GATE VALVES TO BE RESILIENT SEAT TYPE.
12. MJ TO MJ CONNECTIONS SHALL BE MADE W/FOSTER ADAPTORS OR APPROVED EQUAL.

FIRE HYDRANT ASSEMBLY  
ON LINE
N.T.S.

STANDARD DETAIL DRAWING
FIRE HYDRANT ASSEMBLY  
ON LINE

DRAWN:  J.M.M.       DATE:  10-29-99
APPROVED:  W.I.P.     NUMBER:  W-25
TRENCH STABILIZATION AS DIRECTED BY ENGINEER

NATIVE BACKFILL

GRANULAR BACKFILL

CONTROLLED DENSITY BACKFILL

CONTROLLED DENSITY BACKFILL SHALL BE USED IN ALL EXIST. PAVED STREETS IF THE TRENCH MEETS ONE OR MORE OF THE FOLLOWING CRITERIA:
1. TRENCH DEPTH IS 5' OR LESS (SURFACE TO INVD)
2. TRENCH WIDTH IS 12' OR LESS
3. TRENCH LENGTH IS 50' OR LESS

TRENCH BACKFILL DETAIL

D = OUTSIDE DIAMETER

d = DEPTH OF BEDDING MATERIAL BELOW PIPE

<table>
<thead>
<tr>
<th>D</th>
<th>d</th>
</tr>
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<tbody>
<tr>
<td>12' &amp; SMALLER</td>
<td>6&quot;</td>
</tr>
<tr>
<td>15' - 36'</td>
<td>8&quot;</td>
</tr>
<tr>
<td>42' &amp; LARGER</td>
<td>10&quot;</td>
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NOTE:
WHERE DIRECTED BY THE ENGINEER, TRENCH STABILIZATION SHALL BE PLACED PRIOR TO PLACEMENT OF BEDDING. SIZE & DEPTH ARE DEPENDENT ON SOIL CONDITIONS.
FOR ROCK OR OTHER INCOMPRESSIBLE MATERIALS, TRENCH SHALL BE OVER EXCAVATED A MIN. OF 6" & REFILLED WITH GRANULAR MATERIAL AS DIRECTED BY THE ENGINEER.
BEDDING & BACKFILL MATERIALS IN PIPE ZONE SHALL BE COMPACTED AS SPECIFIED PRIOR TO BACKFILLING THE REMAINDER OF THE TRENCH.

STANDARD DETAIL DRAWING
TRENCH DETAILS FOR WATER MAINS

DRAWN: J.M.M.     DATE: 1-24-00
APPROVED: W.I.P.  NUMBER: W-30
POLYWRAP DETAIL
N.T.S.

NOTES:
1. All valves, fittings, joints, bolts to be wrapped with 8 mil. poly and sealed with polytape.
2. Contractor must have approval for Class "C" backfill prior to installation.
NOTES:
1. Concrete thrust blocking to be poured against undisturbed earth.
2. Keep concrete clear of joint and accessories.
3. The required thrust bearing areas for special connections are shown encircled on the plans.
4. If not shown on plans required bearing areas at fitting shall be as indicated below, adjusted if necessary,
   to conform to the test pressure(s) and allow for soil bearing stress(es) stated in the special specifications.
5. Bearing areas and special blocking details shown on plans take precedence over bearing areas and
   blocking details shown on this standard detail.
6. Concrete to be 3300 psi, 28 day strength.

<table>
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<th>Fitting Size</th>
<th>Tee, Wye</th>
<th>90° Sl Bend</th>
<th>Plugged Cross</th>
<th>Tee Plugged on Run</th>
<th>45° Bend</th>
<th>22-1/2° Bend</th>
<th>11-1/4° Bend</th>
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NOTE: Above bearing areas based on test pressure of 150 p.s.i. and an allowable soil bearing stress of 2,000
pounds per square foot. To compute bearing areas for different test pressures and soil bearing stresses, use the
following equation: Bearing area = (Test Pressure/150) x (2000/Soil Bearing Stress) x (Table Value).
Design for 150 psi with 1.5 safety factor = 225 psi.
5/8" rods – Thru bolt holes, ductile iron lugs, Starr tie bolts, steel plates.
3/4" rods – Thru bolt holes, Starr tie bolts, steel plates.
1" rods – Connect to steel plate, straps or "ears"

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<tr>
<th>Size</th>
<th>Area Sq. in.</th>
<th>Thrust at 150 psi</th>
<th>Thrust at 225 psi</th>
<th>5/8 in.</th>
<th>3/4 in.</th>
<th>1 in.</th>
<th>5/16 in.</th>
<th>3/4 in.</th>
<th>1 in.</th>
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A307 Bolt Stock @ 14,000 psi

FULL DIAMETER BARS

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<tr>
<th>Size</th>
<th>Tensile Area</th>
<th>Strength</th>
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<td>.3068</td>
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<tr>
<td>3/4</td>
<td>.4414</td>
<td>8,185 lbs</td>
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<td>1</td>
<td>.7854</td>
<td>10,996 lbs</td>
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THREADED BARS

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<th>Tensile Area</th>
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<td>8,471 lb.</td>
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STANDARD TIE ROD REQUIREMENTS

DRAWN: T.A.K.    DATE: 04-04-95
APPROVED: W.I.P.    W-34
1. VALVE BOX OVER 3/4" CHLORINE LINE DOES NOT NEED TO BE INSTALLED IF CHLORINE LINE IS BEHIND THE CURB. VALVE BOX IS TO BE INSTALLED ONLY WHEN CHLORINE LINE IS IN AREA COVERED BY TRAFFIC.

2. CHLORINE LINE PLACED IN AN AREA NOT COVERED BY TRAFFIC WILL BE 6" ABOVE NATURAL GROUND LEVEL, WITH ANGLE CURB STOP WITH METER COUPLING FOR 5/8" METER.

3. DISTANCE FROM GATE VALVE TO CHLORINE TAP WILL NOT BE MORE THAN 12"

4. UPON RETURN AN ACCEPTABLE BACTERIOLOGICAL REPORT CONTRACTOR, UNDER CITY SUPERVISION, WILL REMOVE THE TAPS, & PLUG THE MAIN PRIOR TO PAVING, UNLESS OTHERWISE SHOWN OR SPECIFIED.