

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 DIRCTED.
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 RESILIENT SEAT NRS	AWWA C 509
12-INCH AND LARGER	BUTTERFLY RUBBER GASKETED	AWWA C 504
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 POLYWARP 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.

2. REVISED AS PER CITY OF KEIZER REVIEW. 3-05-00.
1. REVISED AS PER CITY OF KEIZER REVIEW. 1-25-00.



CITY OF KEIZER

STANDARD DETAIL DRAWING

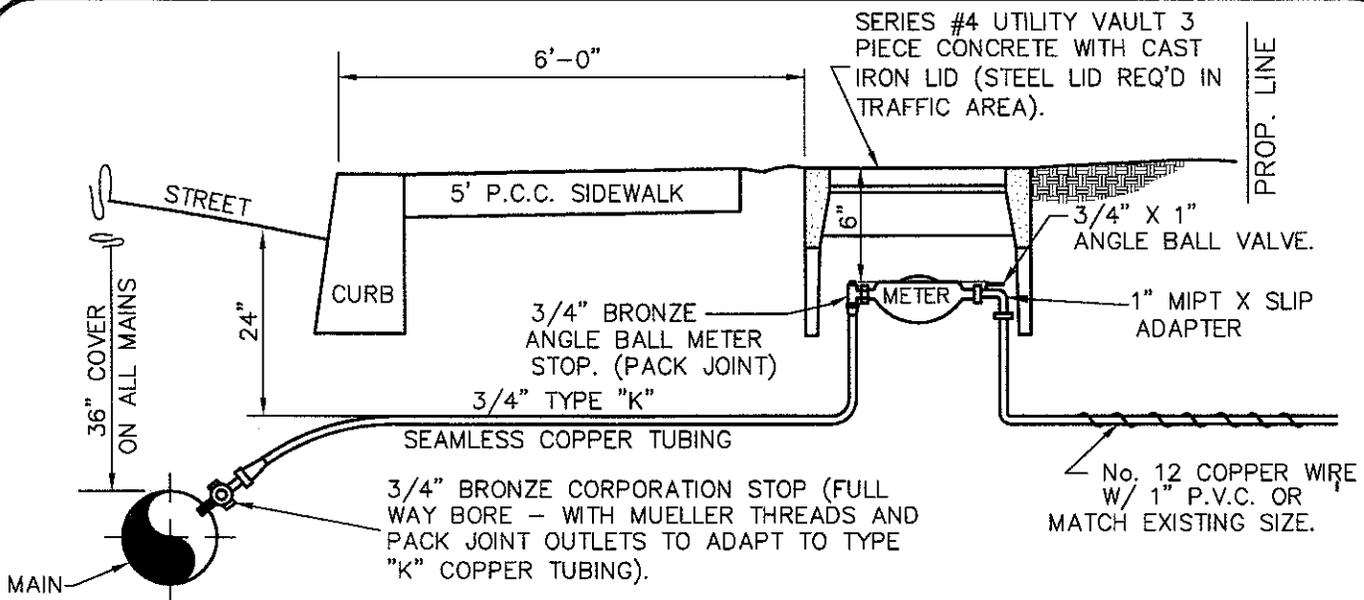
STANDARD WATER NOTES

DRAWN: J.M.M.

DATE: 10-29-99

APPROVED: W.I.P.

NUMBER: W-10

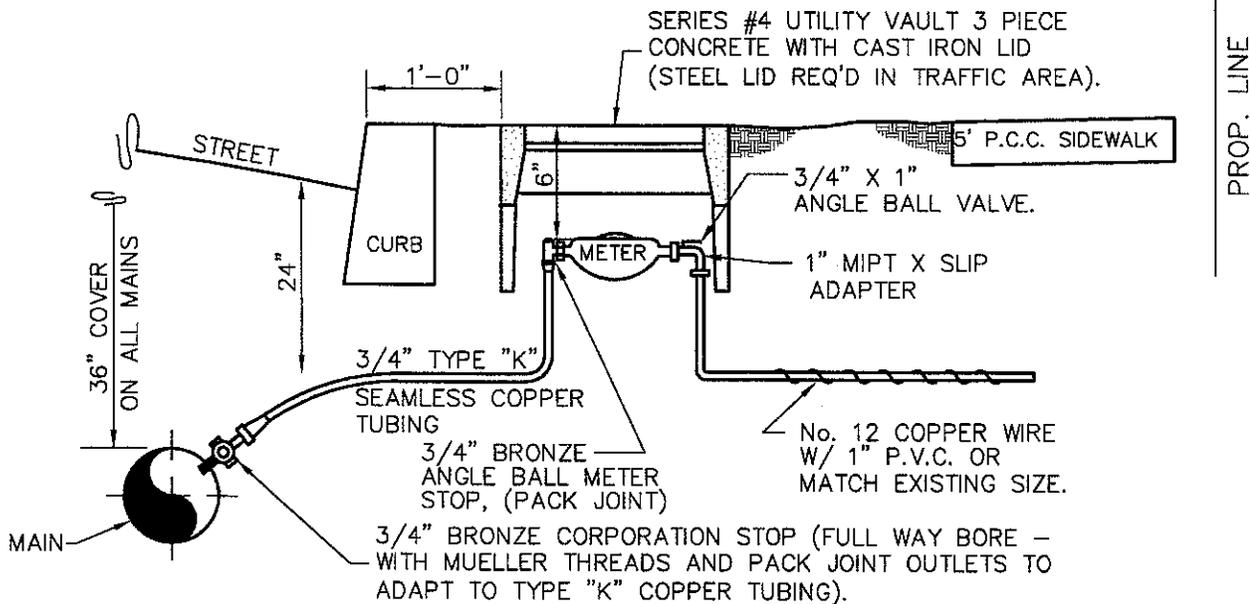


CURB LINE SIDEWALK

NOTES:

(N.T.S.)

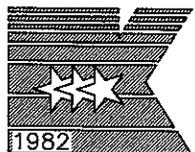
- 1.) SPECIFIED "BRONZE" OR "BRASS" FITTINGS TO BE 'FORD', 'MUELLER' OR 'McDONALD', CONFORMING TO A.S.T.M. SPEC. B-62.
- 2.) ALL BRASS THREADED FITTINGS WILL BE USED WITH THE AID OF TEFLON PASTE; NO PASTE TO COME IN CONTACT WITH ANY PLASTIC.
- 3.) USE TEFLON TAPE FOR P.V.C. OR PLASTIC TO BRASS.
- 4.) FINAL CONNECTIONS TO METER SHALL BE MADE BY CONTRACTOR AFTER TESTING AND DISINFECTION.



PROPERTY LINE SIDEWALK

(N.T.S.)

3. REVISED AS PER CITY OF KEIZER REVIEW 09-23-08.
 2. REVISED AS PER CITY OF KEIZER REVIEW 1-25-00
 1. REVISED AS PER CITY OF KEIZER REVIEW 10-11-96



CITY OF KEIZER

STANDARD DETAIL DRAWING

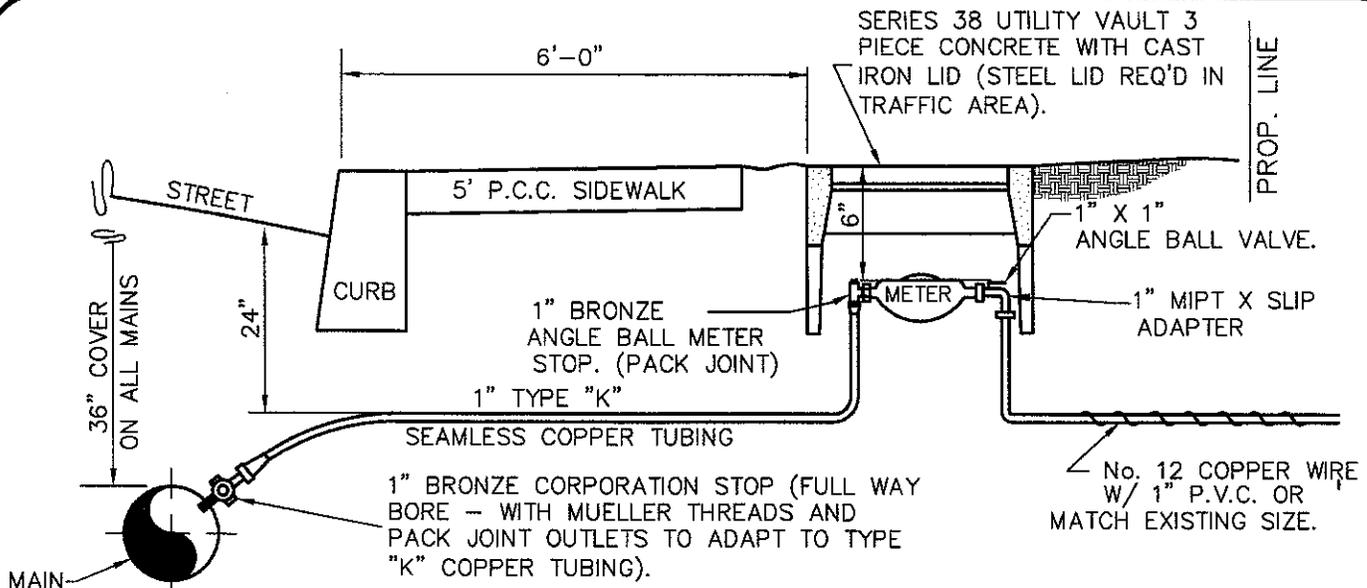
3/4" DOMESTIC WATER SERVICE

DRAWN: D.G.G.

DATE: 10-11-90

APPROVED: W.I.P.

NUMBER: W-11

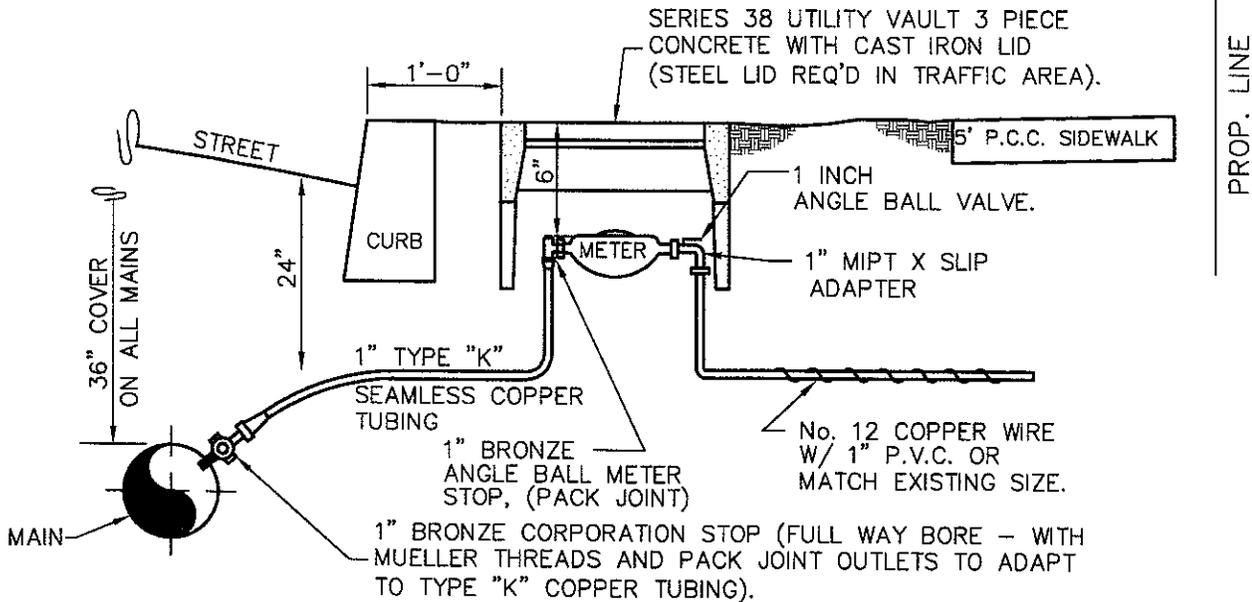


CURB LINE SIDEWALK

NOTES:

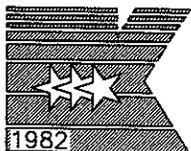
(N.T.S.)

- 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 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

(N.T.S.)



CITY OF KEIZER

STANDARD DETAIL DRAWING

1" DOMESTIC
WATER SERVICE

DRAWN: D.G.G.

DATE: 10-11-90

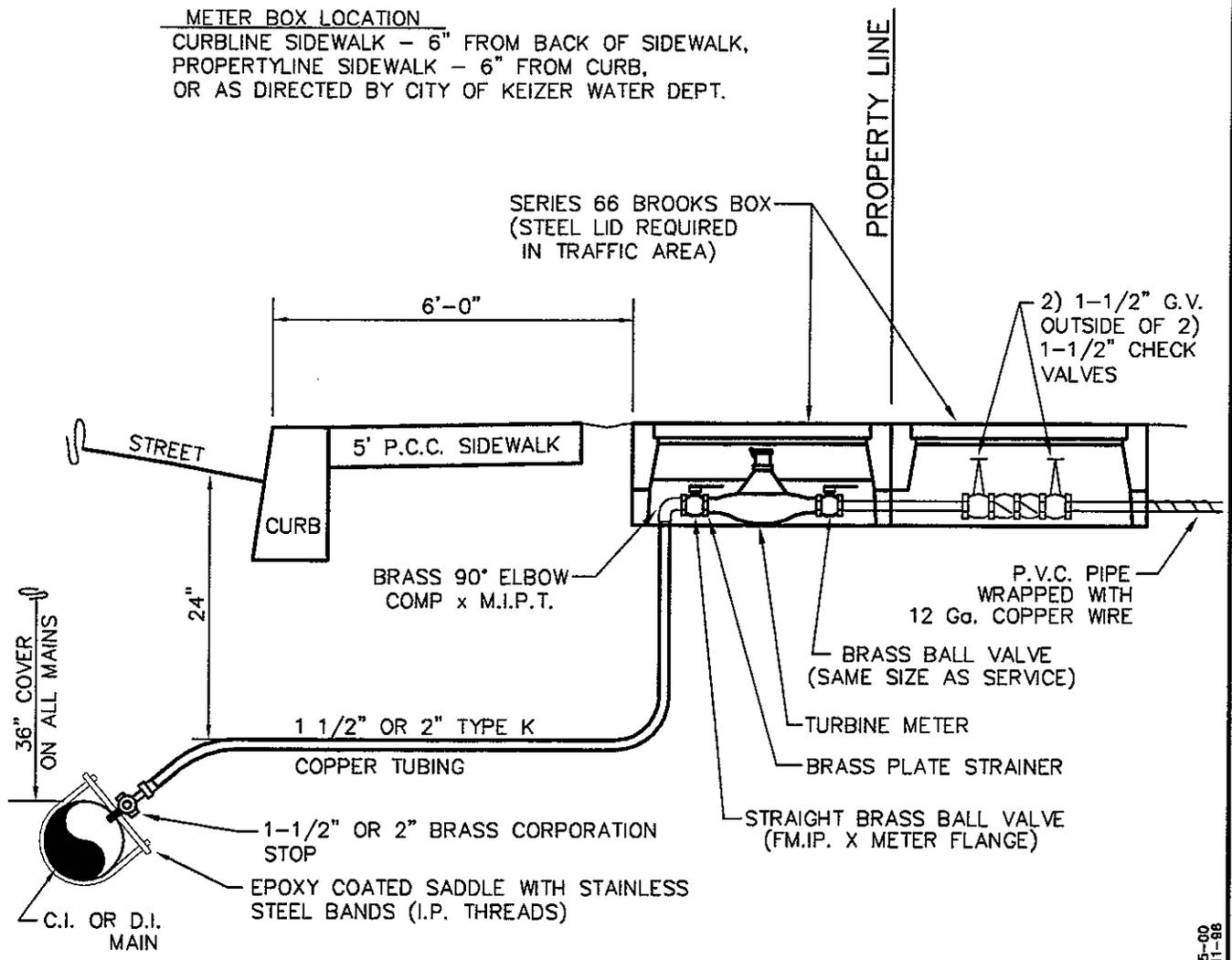
APPROVED: W.I.P.

NUMBER: W-12

3. REVISED AS PER CITY OF KEIZER REVIEW 08-23-08.
2. REVISED AS PER CITY OF KEIZER REVIEW 1-25-00
1. REVISED AS PER CITY OF KEIZER REVIEW 10-11-96

Attn: SANDY

METER BOX LOCATION
 CURBLINE SIDEWALK - 6" FROM BACK OF SIDEWALK,
 PROPERTYLINE SIDEWALK - 6" FROM CURB,
 OR AS DIRECTED BY CITY OF KEIZER WATER DEPT.



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.

2. REVISED AS PER CITY OF KEIZER REVIEW. 1-25-00
 1. REVISED AS PER CITY OF KEIZER REVIEW. 10-11-88



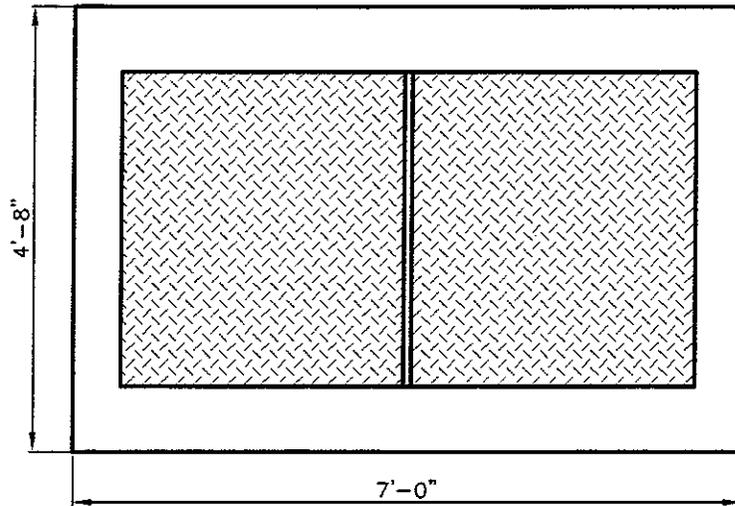
CITY OF KEIZER

STANDARD DETAIL DRAWING

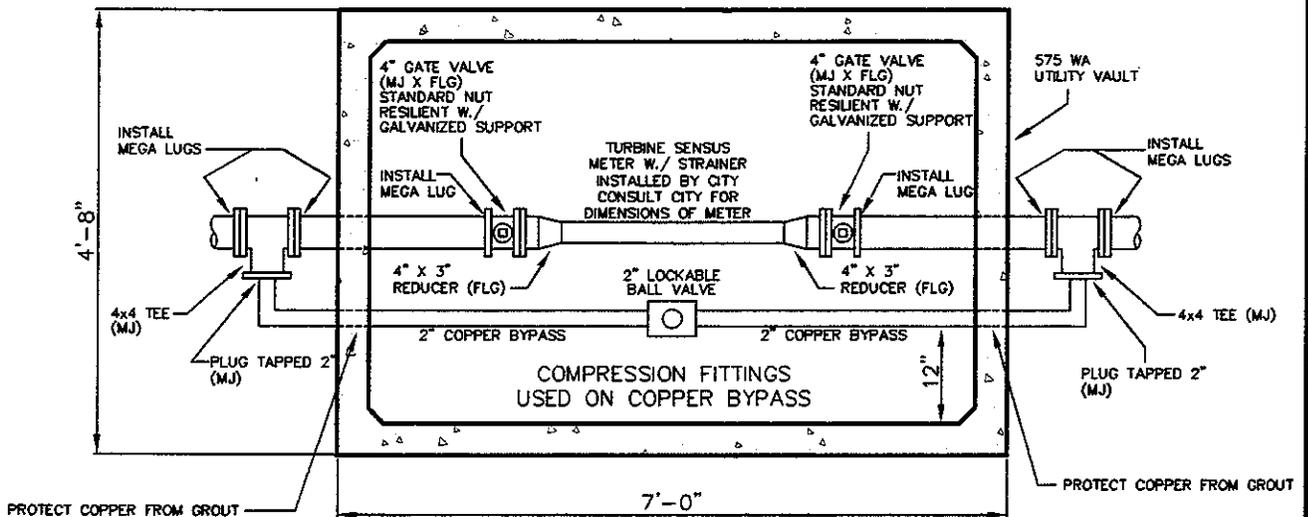
1-1/2" AND 2" DOMESTIC WATER SERVICE

DRAWN: T.A.K.	DATE: 10-11-90
APPROVED: W.I.P.	NUMBER: W-13

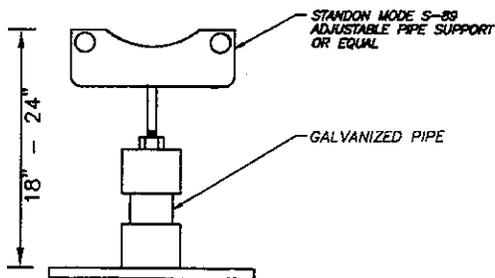
Attn: John S. 503-682-2657



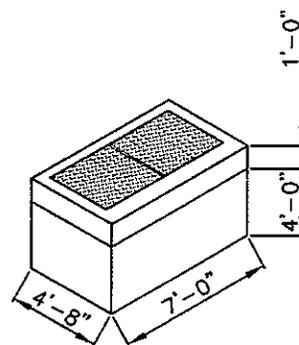
7'-0" x 4'-8" x 1'-0"
TOP WITH LOCKING GALVANIZED STEEL DOORS
 NTS



7'-0" x 4'-8" x 4'-0"
575-WA UTILITY VAULT
 NTS



GALVANIZED SUPPORT
 NTS



575-WA OVERALL DIMENSIONS
 NTS



CITY OF KEIZER

STANDARD DETAIL DRAWING

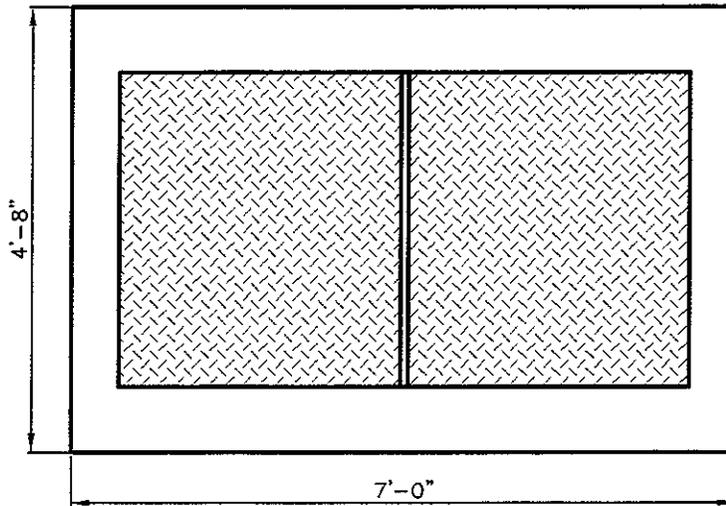
3" WATER METER

DRAWN: S.G.S.

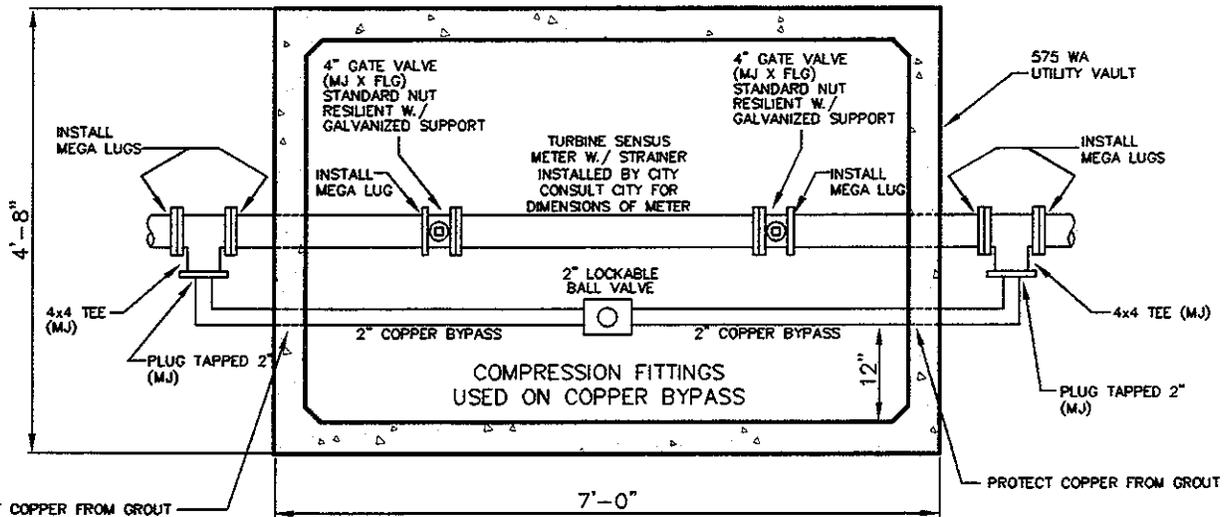
DATE: 09-25-00

APPROVED: W.I.P.

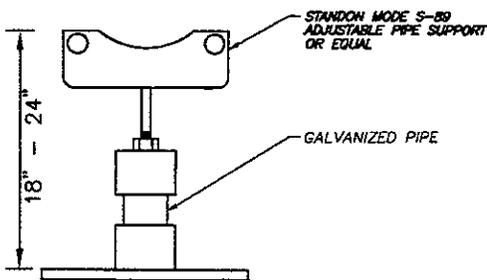
NUMBER: W-15



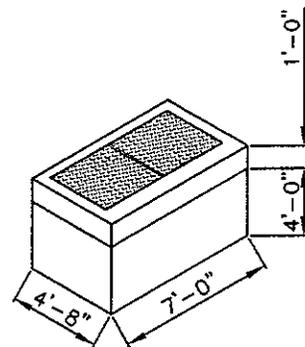
7'-0" x 4'-8" x 1'-0"
TOP WITH LOCKING GALVANIZED STEEL DOORS
 NTS



7'-0" x 4'-8" x 4'-0"
575-WA UTILITY VAULT
 NTS



GALVANIZED SUPPORT
 NTS



575-WA OVERALL DIMENSIONS
 NTS



CITY OF KEIZER

STANDARD DETAIL DRAWING

4" WATER METER

DRAWN: S.G.S.

DATE: 09-25-00

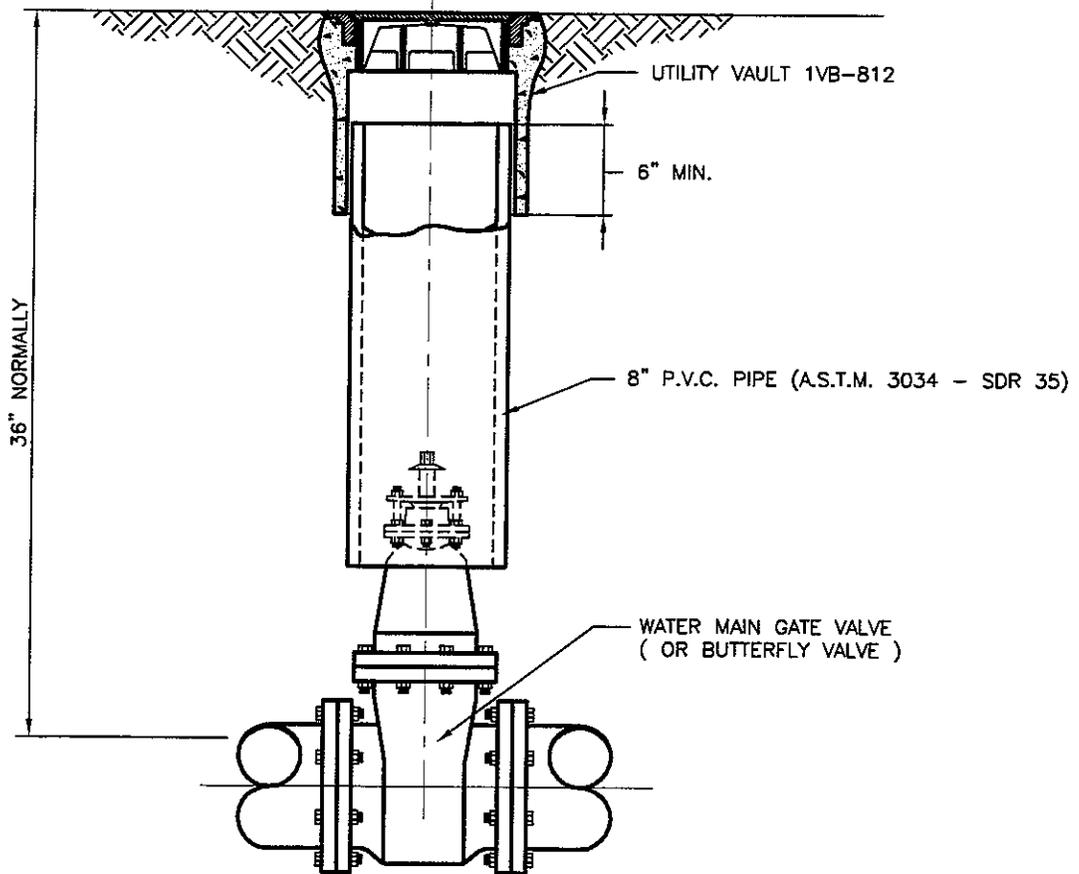
APPROVED: W.I.P.

NUMBER: W-16



C.I. FRAME

C.I. LID WITH ONE INCH RAISED LETTERS AS MANUFACTURED BY BROOKS PRODUCTS, PORTLAND, OREGON OR APPROVED EQUAL.



NON-TRAFFIC AREAS
N.T.S.

1. REVISED AS PER CITY OF KEIZER REVIEW. 1-25-00.



CITY OF KEIZER

STANDARD DETAIL DRAWING

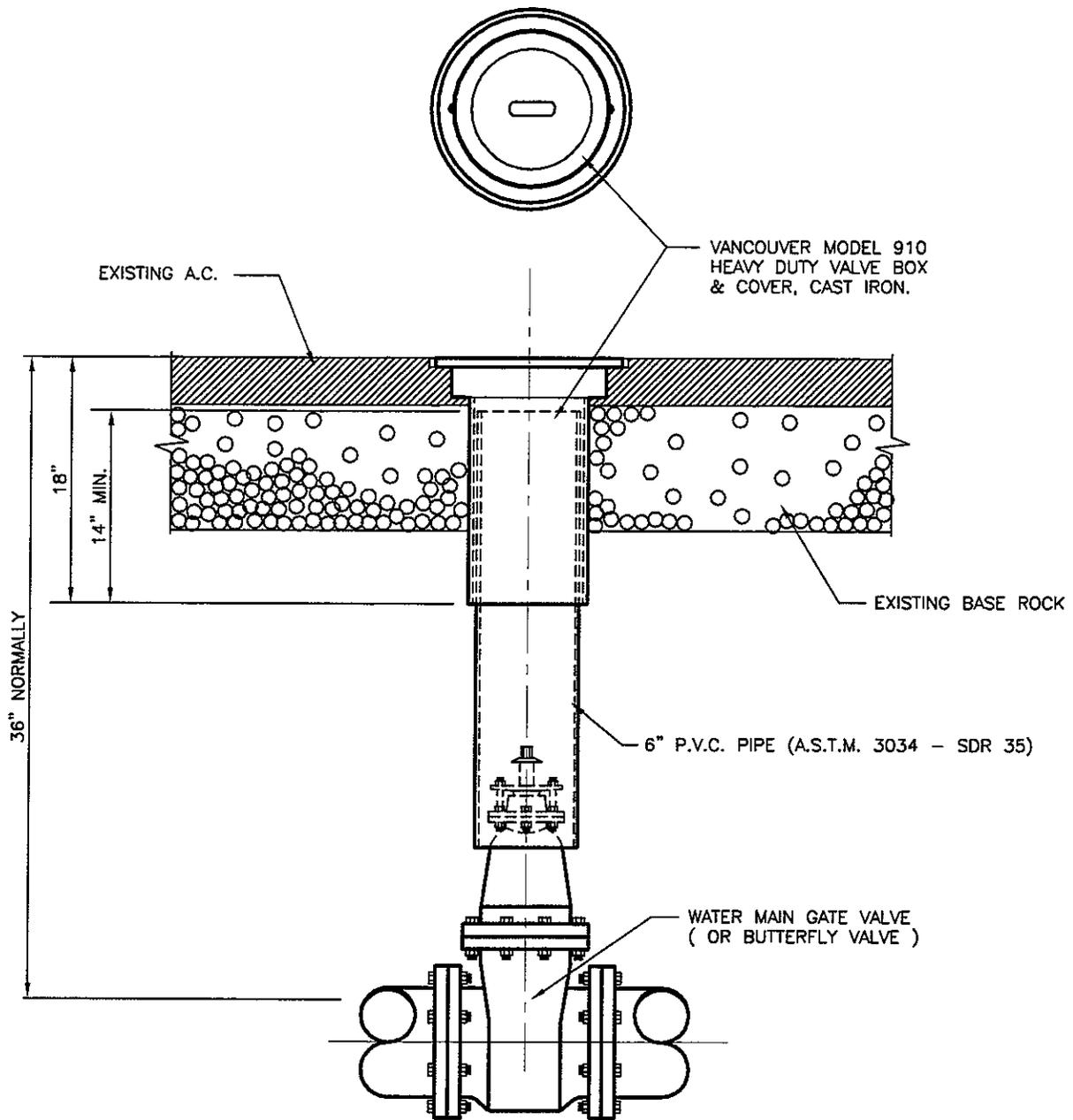
**WATER VALVE BOX
IN NON-TRAFFIC AREAS**

DRAWN: J.M.M.

DATE: 10-29-99

APPROVED: W.I.P.

NUMBER: W-20



TRAFFIC AREAS

N.T.S.

1. REVISED AS PER CITY OF KEIZER REVIEW. 1-25-00.



CITY OF KEIZER

STANDARD DETAIL DRAWING

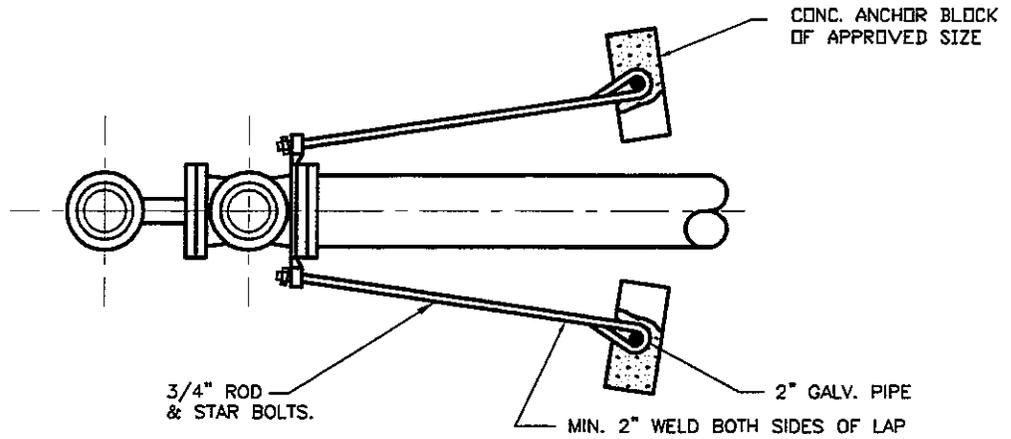
**WATER VALVE BOX
IN TRAFFIC AREAS**

DRAWN: T.A.K.

DATE: 12-11-91

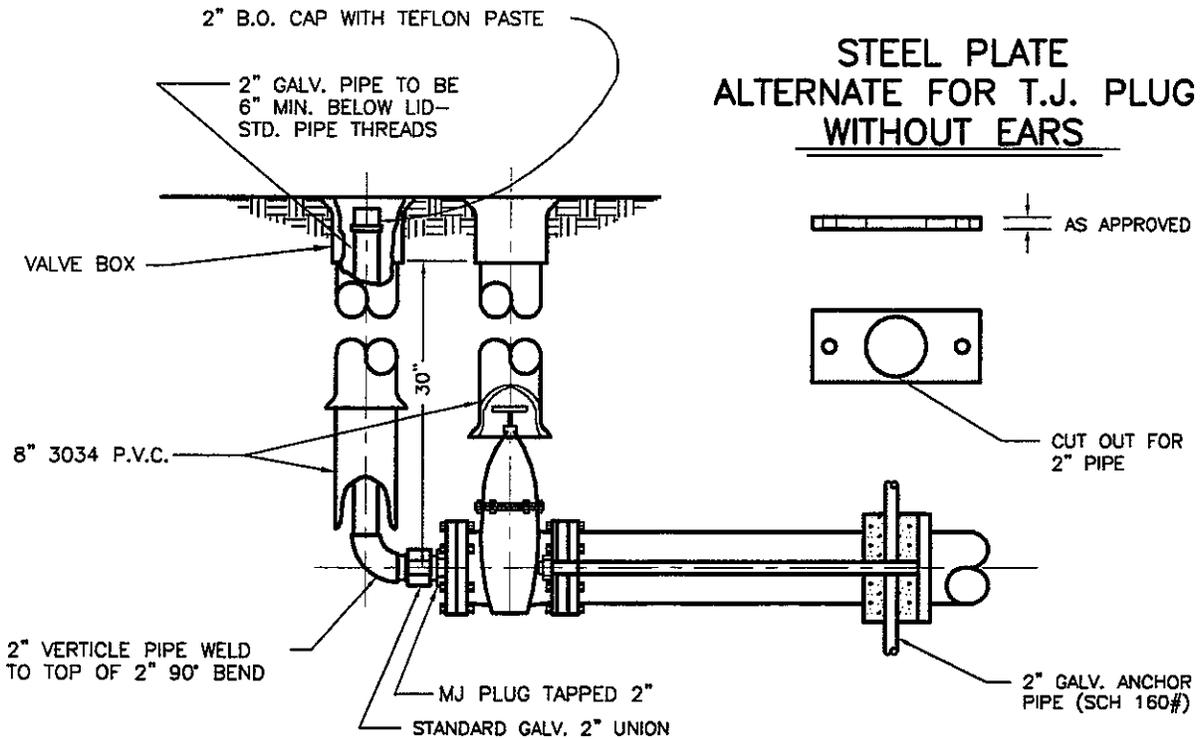
APPROVED: W.I.P.

W-21



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.



1. REVISED AS PER CITY OF KEIZER REVIEW. 1-25-00.



CITY OF KEIZER

STANDARD DETAIL DRAWING

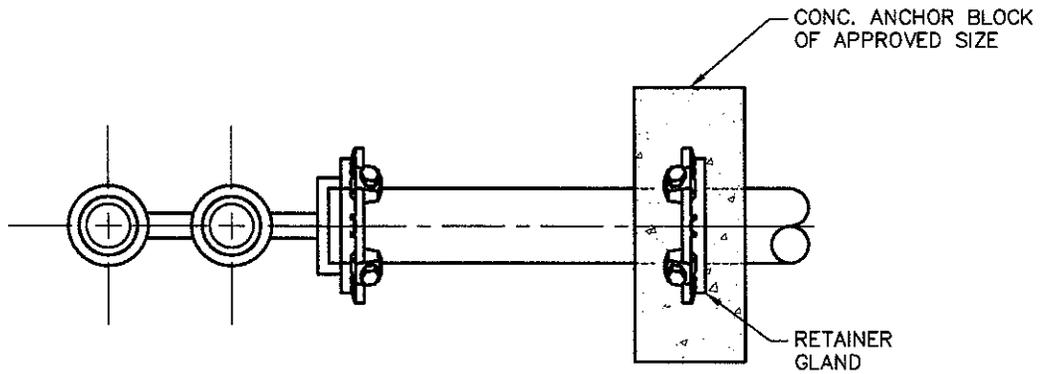
STANDARD BLOWOFF WITH IN-LINE VALVE

DRAWN: T.A.K.

DATE: 10-11-90

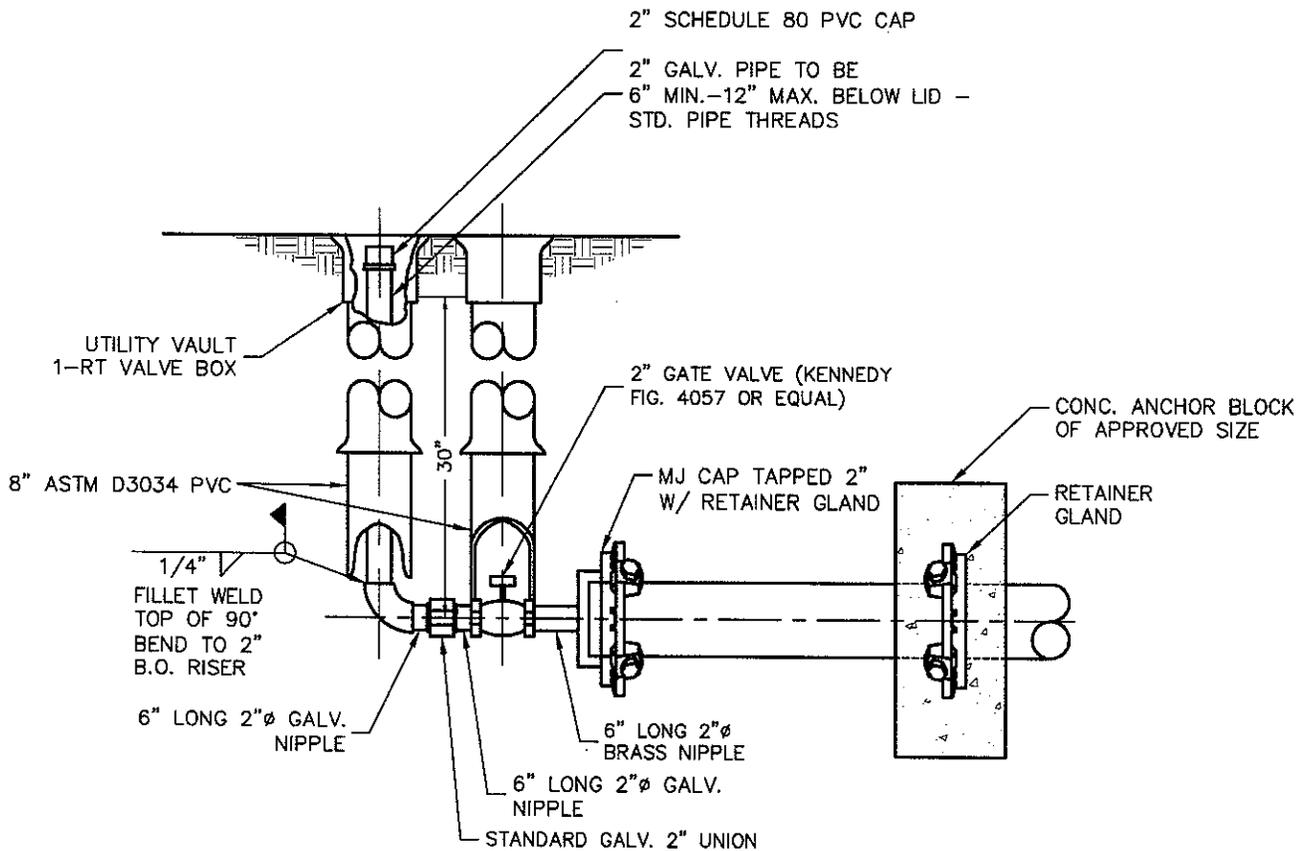
APPROVED: W.I.P.

NUMBER: W-22



NOTES:

1. ANCHOR BLOCK SIZE TO BE SPECIFIED OR APPROVED BY THE ENGINEER.



2. REVISED AS PER CITY OF KEIZER REVIEW 09-23-08.
1. REVISED AS PER CITY OF KEIZER REVIEW 1-25-00.



CITY OF KEIZER

STANDARD DETAIL DRAWING

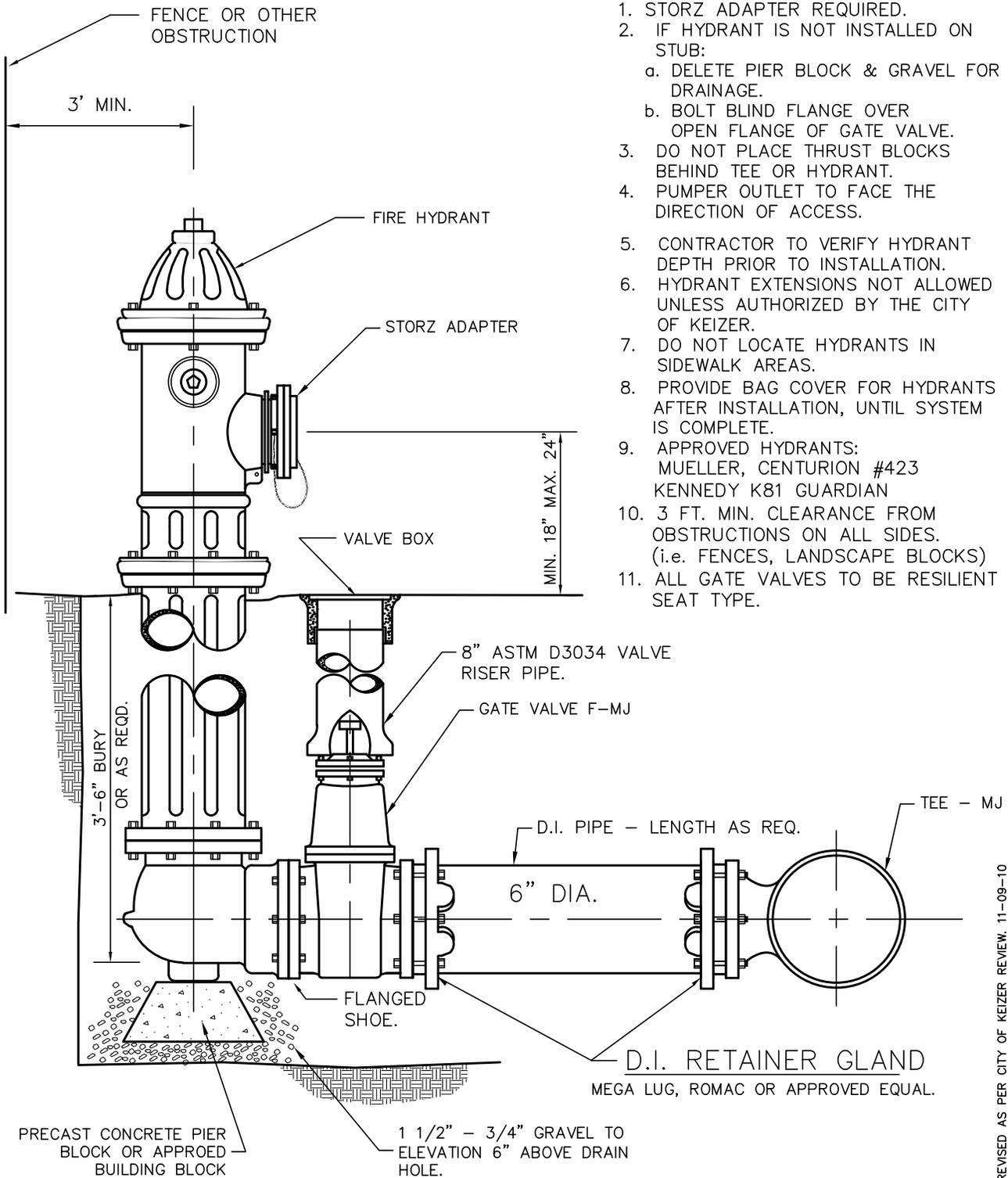
STANDARD BLOWOFF
WITH PLUGGED END

DRAWN: T.A.K.

DATE: 10-11-90

APPROVED: W.I.P.

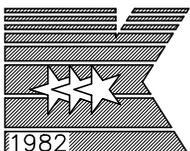
NUMBER: W-23



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 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.

6. REVISED AS PER CITY OF KEIZER REVIEW. 11-09-10
 5. REVISED AS PER CITY OF KEIZER REVIEW. 09-23-08
 4. ADDED STORZ ADAPTER. 4-20-06
 3. ADDED WATERLOUS AS SUPPLIER. 9-15-00
 2. REVISED AS PER CITY OF KEIZER REVIEW. 1-25-00
 1. REVISED AS PER CITY OF KEIZER REVIEW. 10-10-96



CITY OF KEIZER

STANDARD DETAIL DRAWING

FIRE HYDRANT ASSEMBLY
OFF LINE

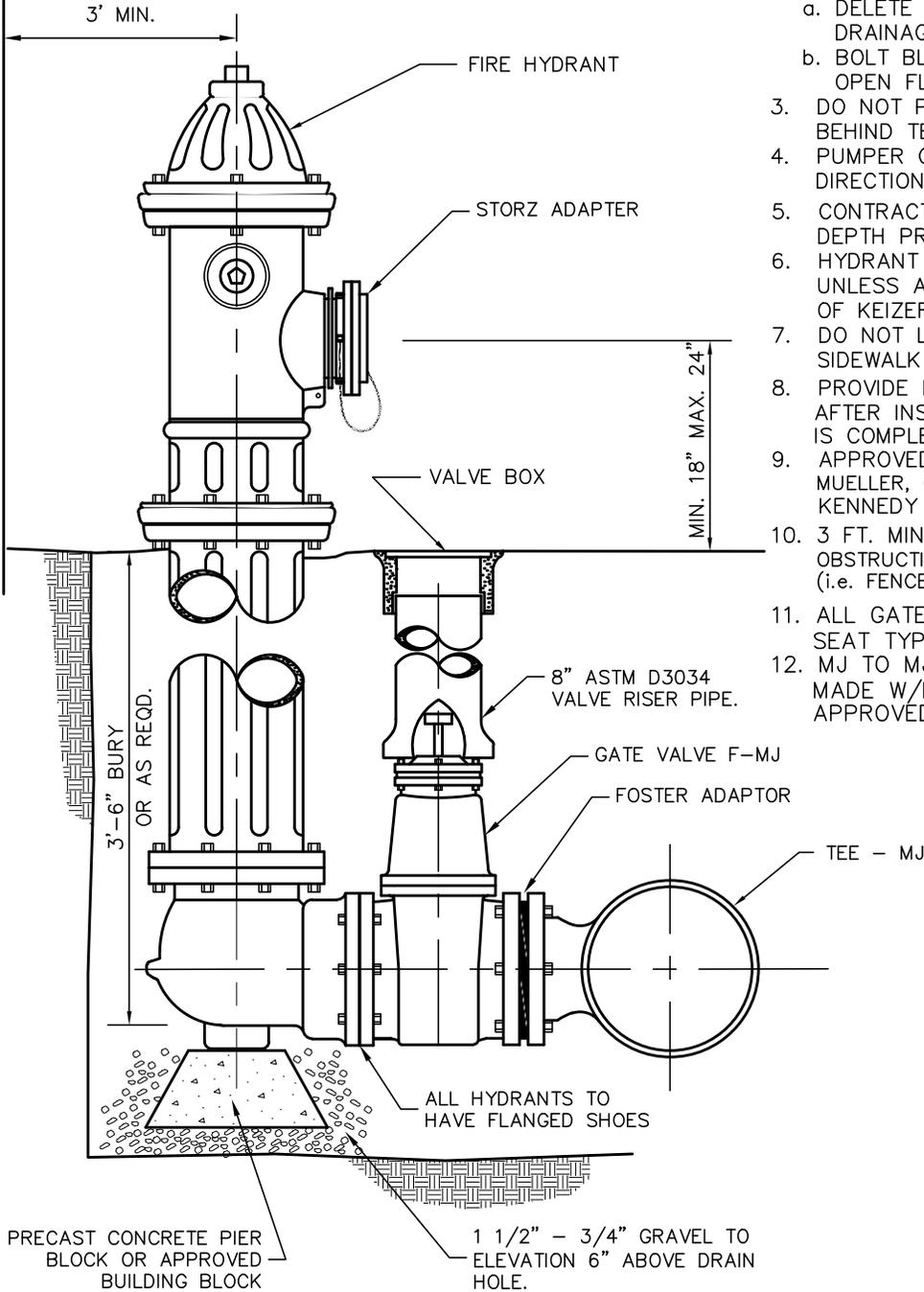
DRAWN: D.G.G.

DATE: 10-11-90

APPROVED: W.I.P.

NUMBER: W-24

FENCE OR OTHER OBSTRUCTION

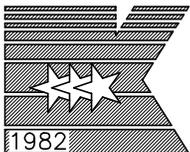


NOTES:

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.

5. REVISED AS PER CITY OF KEIZER REVIEW. 11-09-10
 4. REVISED AS PER CITY OF KEIZER REVIEW. 09-23-08
 3. ADDED STORZ ADAPTER. 04-219-06
 2. ADDED WATEROUS AS SUPPLIER. 9-15-00
 1. REVISED AS PER CITY OF KEIZER REVIEW. 1-25-00.



CITY OF KEIZER

STANDARD DETAIL DRAWING

FIRE HYDRANT ASSEMBLY
ON LINE

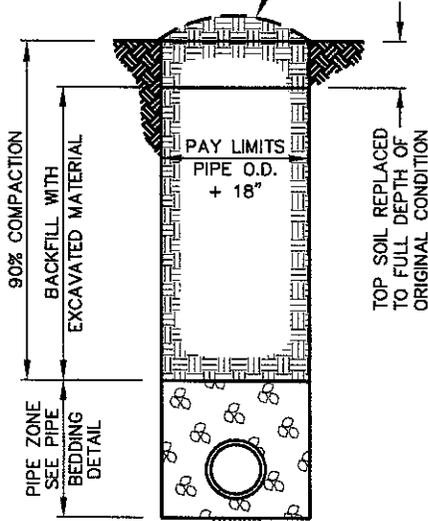
DRAWN: J.M.M.

DATE: 10-29-99

APPROVED: W.I.P.

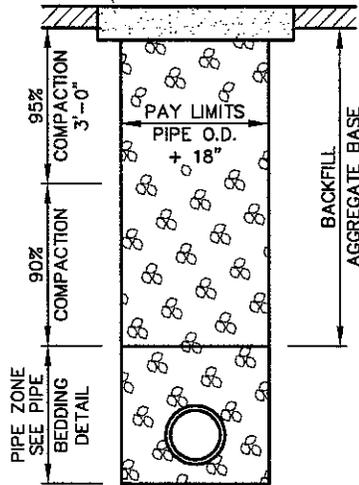
NUMBER: W-25

MOUND UNLESS OTHERWISE DIRECTED BY ENGINEER



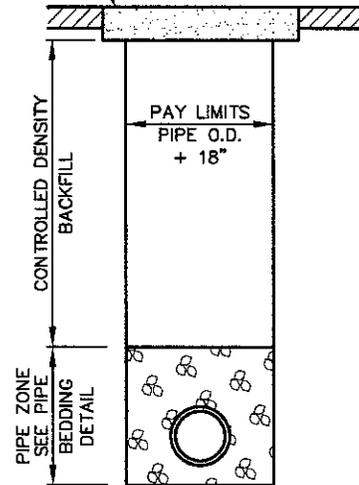
NATIVE BACKFILL

SEE TYPICAL STREET SECTION FOR NEW CONSTRUCTION OR TYPICAL PAVEMENT PATCH DETAILS - ST 56



GRANULAR BACKFILL

SEE TYPICAL PAVEMENT PATCH DETAILS - ST 56



CONTROLLED DENSITY BACKFILL

IF REQUIRED, POLYWRAP PIPE IN ACCORDANCE WITH POLYWRAP DETAIL W-32

CONTROLLED DENSITY BACKFILL SHALL BE USED IN ALL EXIST. PAVED STREETS IF THE TRENCH MEETS ONE OR MORE OF THE FOLLOWING CRITERIA:

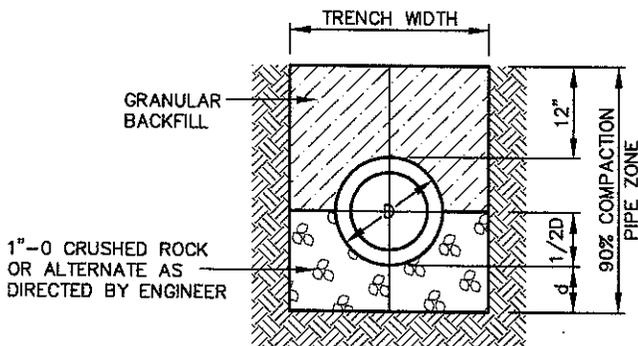
1. TRENCH DEPTH IS 5' OR LESS (SURFACE TO INV.)
2. TRENCH WIDTH IS 12" OR LESS
3. TRENCH LENGTH IS 50' OR LESS

TRENCH BACKFILL DETAIL

NTS

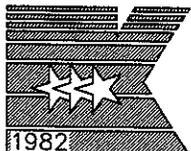
D = OUTSIDE DIAMETER
d = DEPTH OF BEDDING MATERIAL BELOW PIPE

DEPTH OF BEDDING MATERIAL BELOW PIPE	
D	d
12" & SMALLER	6"
15" - 36"	8"
42" & LARGER	10"



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.

1. REVISED AS PER CITY OF KEIZER REVIEW. 09-23-08



CITY OF KEIZER

STANDARD DETAIL DRAWING

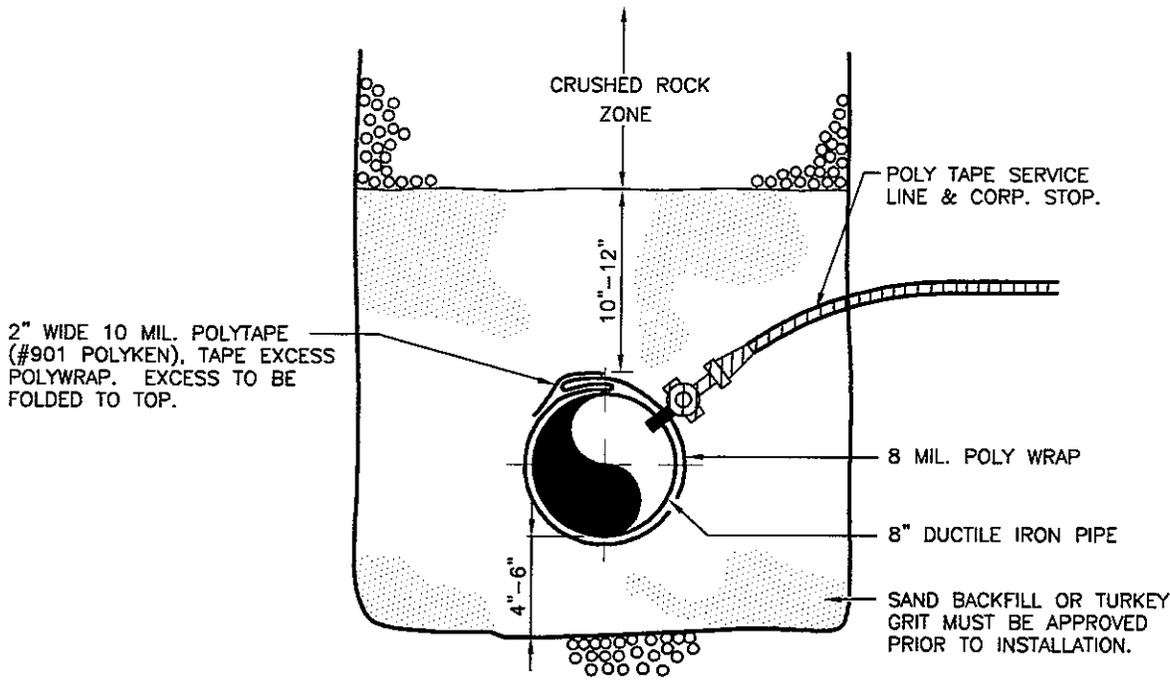
TRENCH DETAILS FOR WATER MAINS

DRAWN: J.M.M.

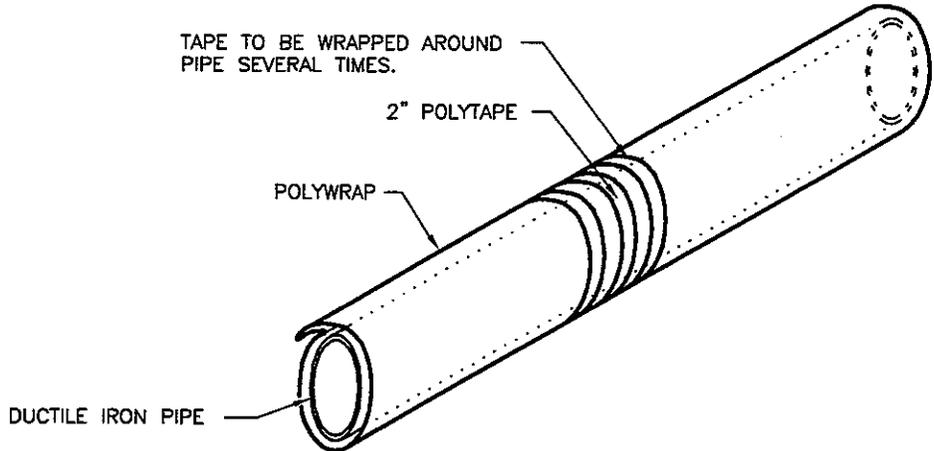
DATE: 1-24-00

APPROVED: W.I.P.

NUMBER: W-30



POLYWRAP DETAIL
N.T.S.

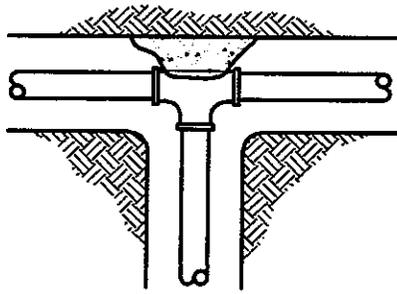


- NOTES:**
1. ALL VALVES, FITTINGS, JOINTS, BOLTS TO BE WRAPED WITH 8 MIL. POLY AND SEALED WITH POLYTAPE.
 2. CONTRACTOR MUST HAVE APPROVAL FOR CLASS "C" BACKFILL PRIOR TO INSTALLATION.

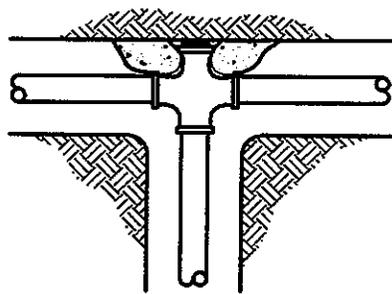
1. REVISED AS PER CITY OF KEIZER REVIEW. 1-25-00.

CITY OF KEIZER
1982

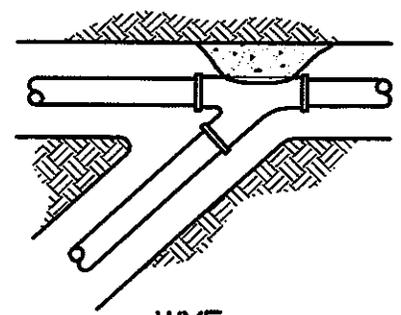
STANDARD DETAIL DRAWING	
POLYWRAP DETAIL	
DRAWN: D.G.G.	DATE: 10-11-90
APPROVED: W.I.P.	NUMBER: W-32



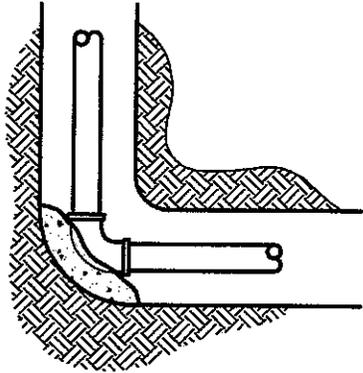
TEE



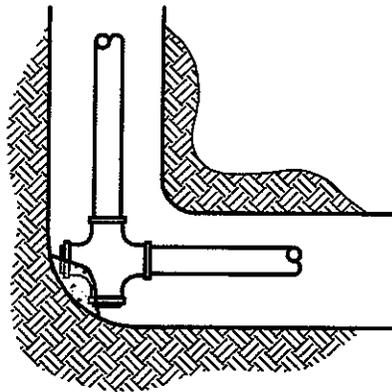
PLUGGED CROSS



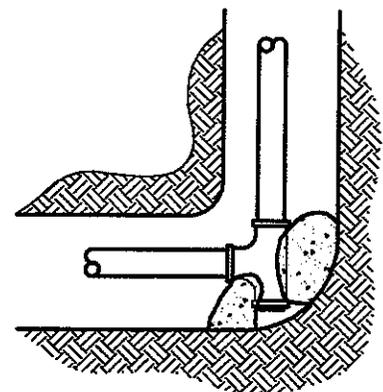
WYE



BEND



PLUGGED CROSS



TEE

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 allowable 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.

BEARING AREA OF THRUST BLOCKS IN SQ. FT.

Fitting Size	Tee, Wye	90° Bend Plugged Cross	Tee Plugged on Run		45° Bend	22-1/2° Bend	11-1/4° Bend
			A 1	A 2			
4	1.0	1.4	1.9	1.4	1.0	--	--
6	2.1	3.0	4.3	3.0	1.6	1.0	--
8	3.8	5.3	7.6	5.4	2.9	1.5	1.0
10	5.9	8.4	11.8	8.4	4.6	2.4	1.2
12	8.5	12.0	17.0	12.0	6.6	3.4	1.7
14	11.5	16.3	23.0	16.3	8.9	4.6	2.3
16	15.0	21.3	30.0	21.3	11.6	6.0	3.0
18	19.0	27.0	38.0	27.0	14.6	7.6	3.8
20	23.5	33.3	47.0	33.3	18.1	9.4	4.7
24	34.0	48.0	68.0	48.0	26.2	13.6	6.8

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).

1. REVISED AS PER CITY OF KEIZER REVIEW. 1-25-00.



CITY OF KEIZER

STANDARD DETAIL DRAWING

**STANDARD THRUST
BLOCKING DETAIL**

DRAWN: T.A.K.

DATE: 04-04-95

APPROVED: W.I.P.

W-33

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"

Size	Area Sq. in.	Thrust at 150 psi	Thrust at 225 psi	No of Full Dia. Bars Welded to plates			No. of Threaded Bars		
				5/8 in.	3/4 in.	1 in.	5/16 in.	3/4 in.	1 in.
2	3.1416	300	450	2	Warning Will hold	Duc--Lugs not	2	Warning	No
4	12.566	1,885	2,827	2			2		Duc-
6	28.274	4,241	6,362	2			3	2	2
8	50.265	7,540	11,310	3	2	2	4	3	2
10	78.540	11,781	17,672	5	3	2	6	4	2
12	113.10	16,965	25,448	6	5	3	6	4	2
14	153.94	23,091	34,636	9	6	4	11	8	4
16	201.06	30,159	45,238	11	8	5	15	10	6
18	254.47	38,170	57,056	14	10	6	19	13	7
20	314.16	47,124	70,686	17	12	7	23	16	9
24	452.39	67,858	101,788	24	17	10	33	22	12
30	706.86	106,029	159,044	38	26	15	51	34	19
36	1017.9	152,685	229,028	54	38	21	73	49	27

A307 Bolt Stock @ 14,000 psi

FULL DIAMETER BARS

Size	Tensile Area	Strength
5/8	.3068	4,295 lbs.
3/4	.4414	6,185 lbs.
1	.7854	10,996 lbs.

THREADED BARS

Size	Tensile Area	Strength
5/9	.2256	3,158 lb.
3/4	.3340	4,676 lb.
1	.6051	8,471 lb.

1. REVISED AS PER CITY OF KEIZER REVIEW. 1-25-00.



CITY OF KEIZER

STANDARD DETAIL DRAWING

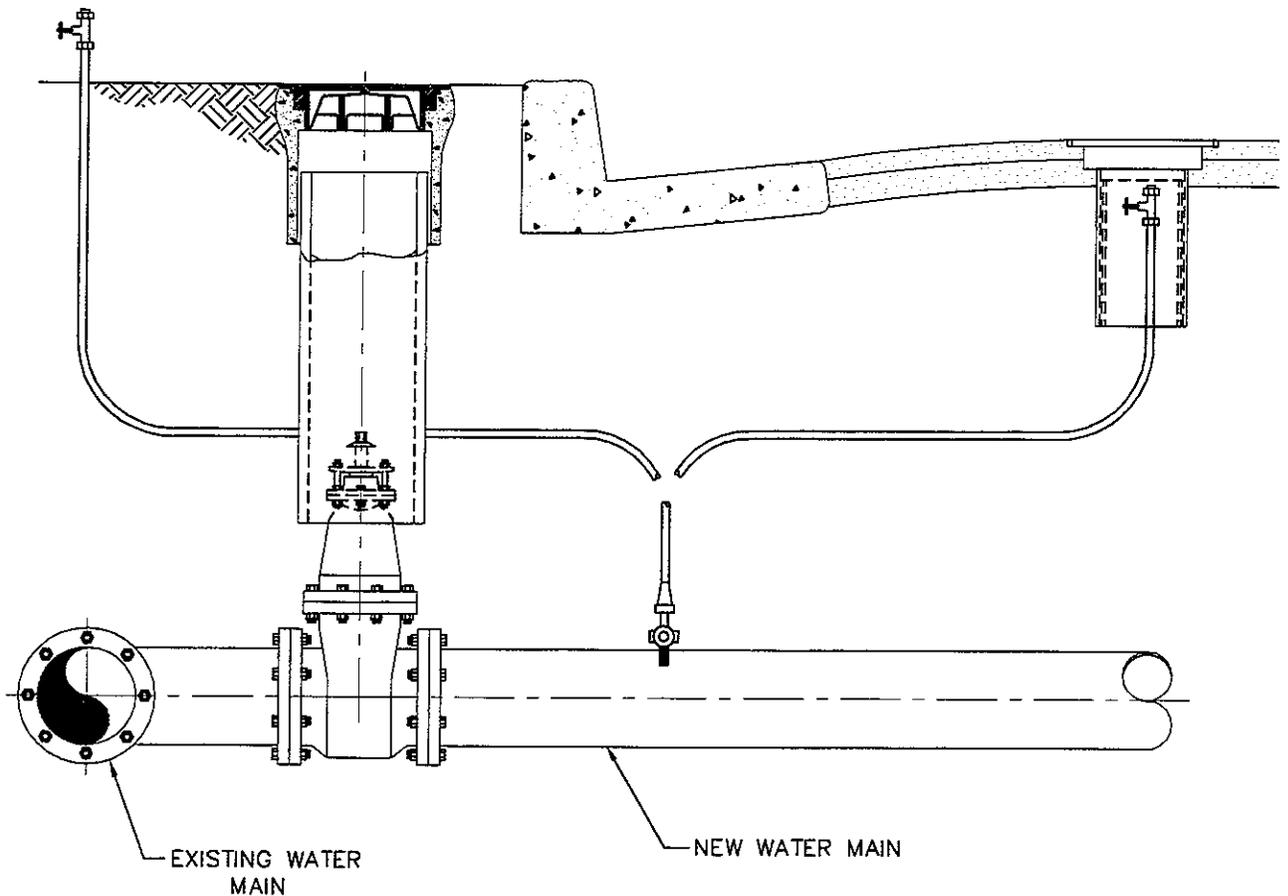
**STANDARD TIE ROD
REQUIREMENTS**

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.

1. REVISED AS PER CITY OF KEIZER REVIEW. 1-25-00.



CITY OF KEIZER

STANDARD DETAIL DRAWING

**STANDARD FOR MAIN
LINE CHLORINATION**

DRAWN: T.A.K.

DATE: 04-04-95

APPROVED: W.I.P.

W-40