

COPPER MOUNTAIN CONSOLIDATED METROPOLITAN DISTRICT

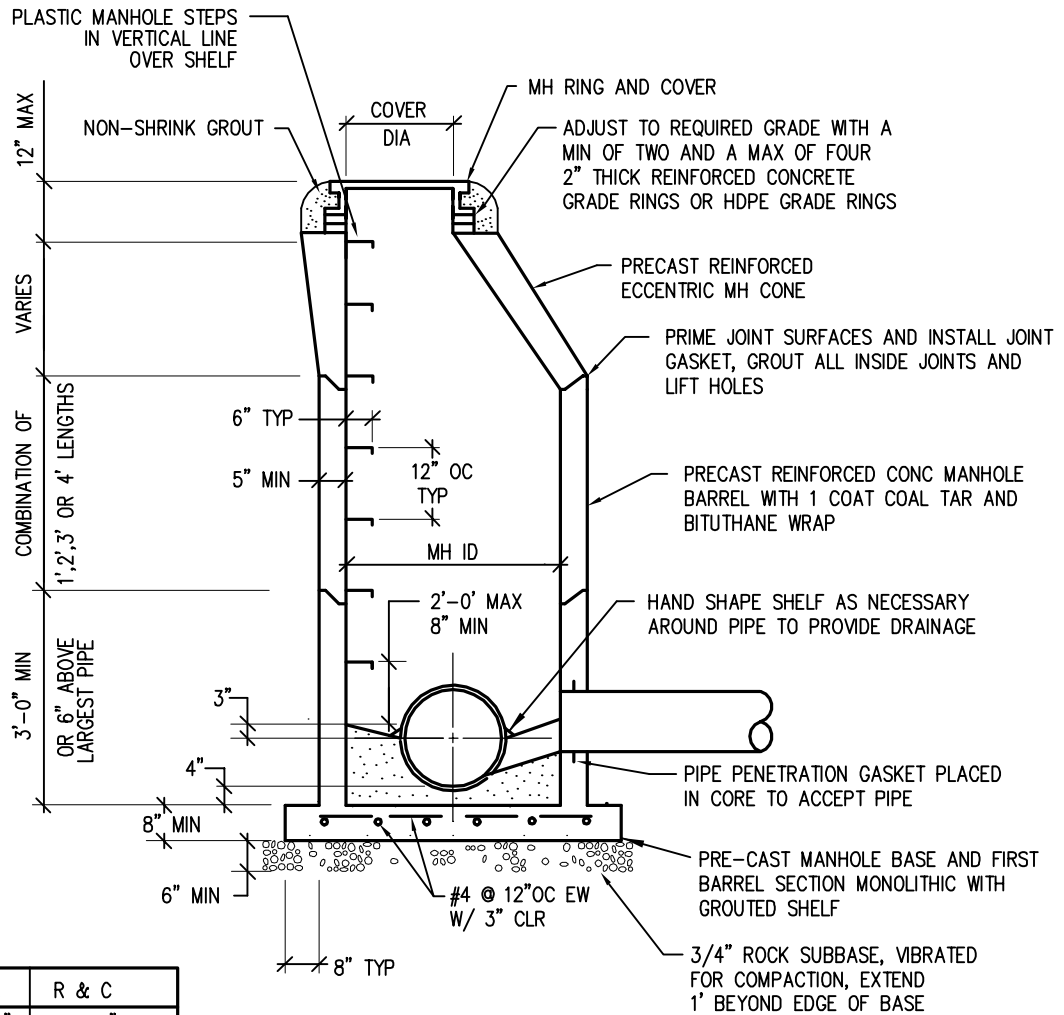
APPENDIX H - STANDARD DETAILS



Adopted: December 2023

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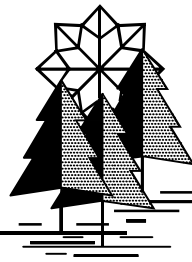
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PIPE I.D.	MH I.D.	R & C
<18"	4'-0"	24"
18"-24"	5'-0"	30"
>24"	6'-0"	30", 36" W/ 24" INNER COVER

NOTE:
IN AREAS OF HIGH GROUND WATER,
GROUT ALL OUTSIDE JOINTS.

SS-1.DWG H:\3896cdy\ NOV 10, 2000 @ 3:05:18 pm - (R/JF)



TYPICAL MANHOLE DETAIL

NO.	DWN	DATE	REVISION

Approved:

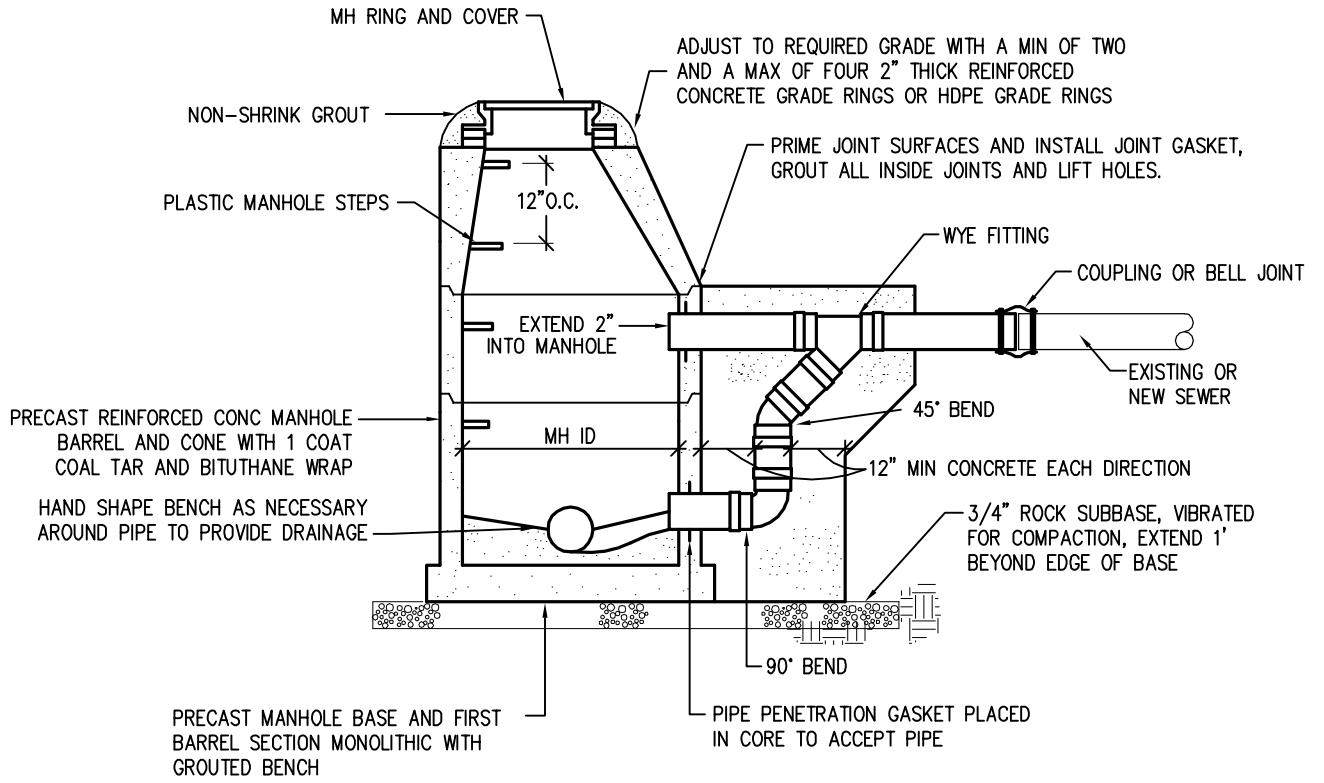
SHT: SS-1

Date: 09-24-93

Scale: NTS

DWN: RTW

COPPER MOUNTAIN CONSOLIDATED METROPOLITAN DISTRICT



NOTES:

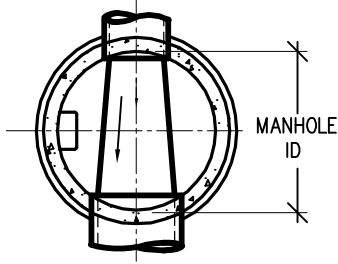
1. REFERENCE TYPICAL MANHOLE DETAIL FOR INSIDE DIAMETERS OF MANHOLE, DIAMETER OF RING AND COVER, AND TYPICAL DIMENSIONS.
2. IN AREAS SUBJECT TO HIGH GROUND WATER, GROUT ALL OUTSIDE JOINTS.

SS-2.DWG H:\3896dy\ NOV 10, 2000 @ 3:08:42 pm - (R/JF)

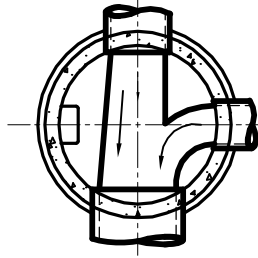
NO.	DWN	DATE	REVISION	

<p>TYPICAL DROP MANHOLE DETAIL</p>	
Approved:	SHT: SS-2
Date: 09-24-93	Scale: NTS
	DWN: RTW

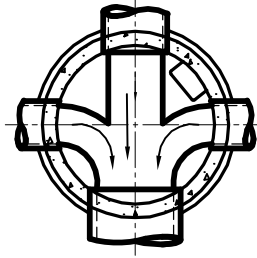
COPPER MOUNTAIN CONSOLIDATED METROPOLITAN DISTRICT



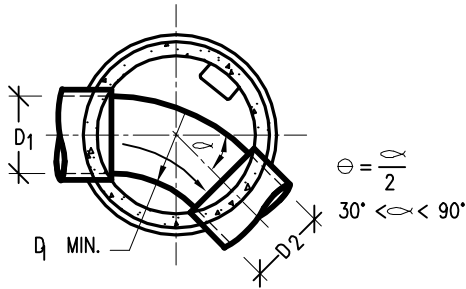
THROUGH PIPE



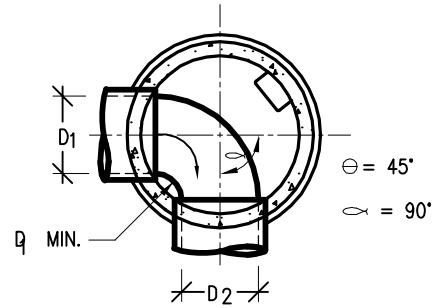
THROUGH PIPE
ONE COLLECTION LINE



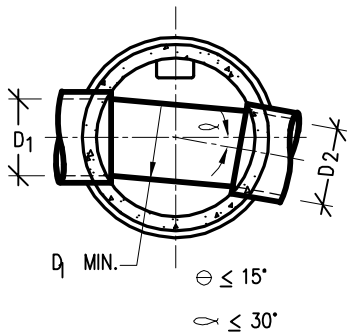
THROUGH PIPE
TWO COLLECTION LINES



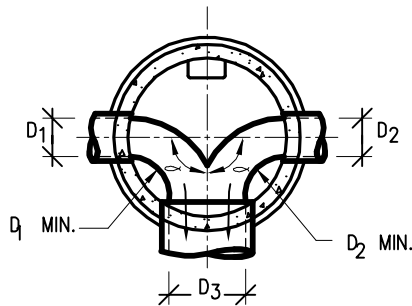
INTERMEDIATE ANGLE



SHARP ANGLE



INTERMEDIATE ANGLE



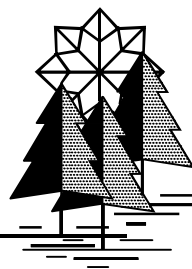
OPPOSED LATERALS

NOTES:

1. DETAILS SHOWN ARE TYP. ONLY FOR INSTALLATIONS WITH A MAXIMUM OF UP TO 18" INCH DIFFERENCE IN INVERTS (INSIDE DROP)
2. PROVIDE A MINIMUM DROP OF 0.1 FEET FROM INLET INVERT TO OUTLET.
3. VERTICALLY ALIGN AND CENTER MH STEPS OVER LARGEST BENCH.

SS-3.DWG H:\3896dy\ DCT 16, 2000 @ 1:50:51 pm - (R.J.F)

NO.	DWN	DATE	REVISION



TYPICAL
DEFLECTION DETAILS
FOR MANHOLES

Approved:

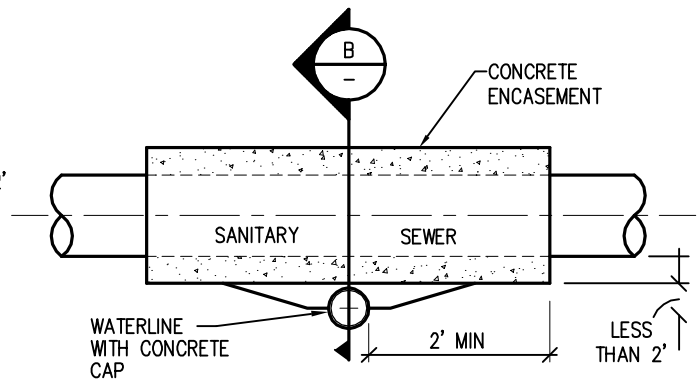
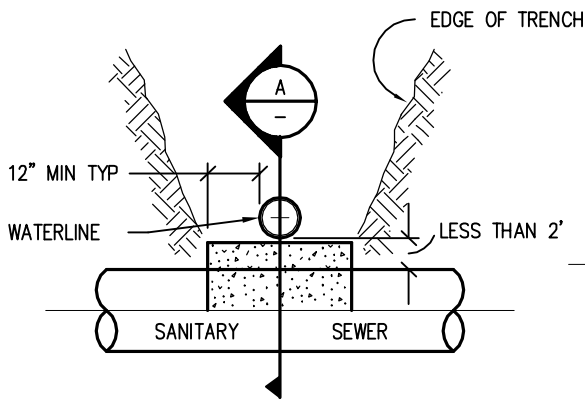
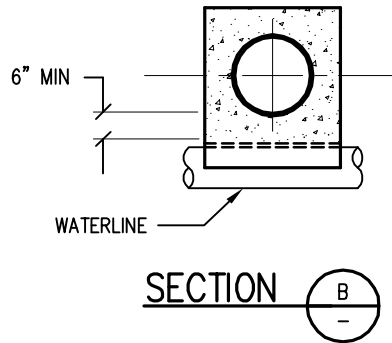
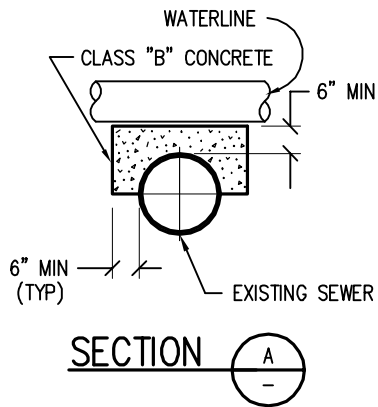
SHT: SS-3

Date: 09-24-93

Scale: NTS

DWN: RTW

COPPER MOUNTAIN CONSOLIDATED METROPOLITAN DISTRICT

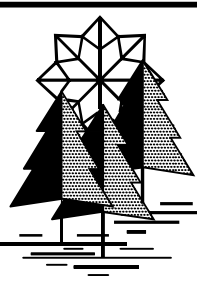


NOTES:

1. FOR GREATER THAN 2' SEPARATION, "SEWER CROSSING UNDER" PROTECTION NOT REQUIRED AS APPROVED BY DISTRICT.
2. FOR JOINTS WITHIN 10' FEET OF WATERLINE, "SEWER CROSSING OVER", CONCRETE ENCASE JOINTS.

SS-4.DWG H:\3896cd\ OCT 16, 2000 @ 1:51:11 pm - (R.J.F)

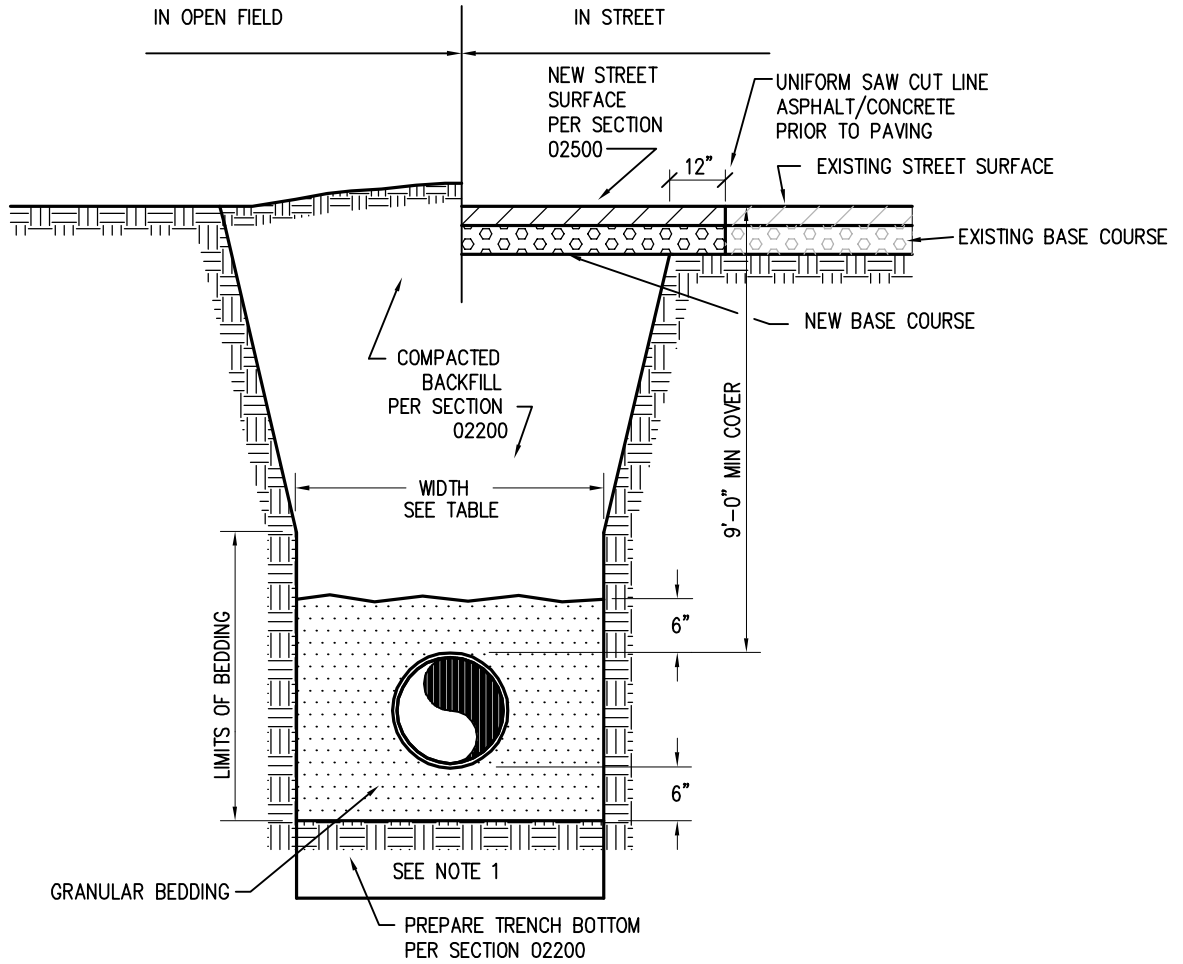
NO.	DWN	DATE	REVISION



**TYPICAL
CROSSING SANITARY SEWER
DETAIL**

Approved:	SHT: SS-4
Date: 09-24-93	DWN: RTW
Scale: NTS	

COPPER MOUNTAIN CONSOLIDATED METROPOLITAN DISTRICT



PIPE DIAMETER	MINIMUM WIDTH	MAXIMUM WIDTH
4"	1'-6"	2'-6"
6"	1'-6"	2'-6"
8"	1'-8"	2'-8"
10"	2'-0"	3'-0"
12"	2'-0"	3'-0"
16"	2'-6"	3'-6"
18"	2'-6"	3'-6"

NOTE:

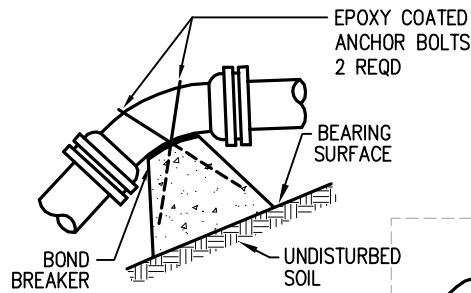
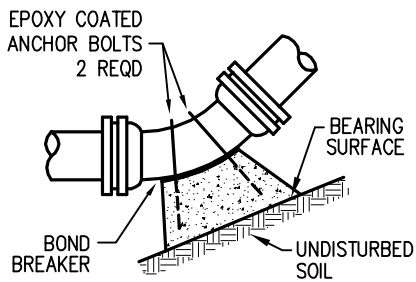
1. IF UNSTABLE MATERIALS ARE FOUND IN TRENCH BOTTOM, OVEREXCAVATE PER SECTION 02200.
2. TRENCH TO BE BRACED OR SHEETED AS NECESSARY FOR THE SAFETY OF THE WORKMEN AND THE PROTECTION OF OTHER UTILITIES.
3. MINIMUM COVER TO BE BELOW FINAL GRADE.

W-01.DWG H:\3896cd\ NOV 09, 2000 @ 2:25:25 pm - (R.J.F)

NO.	DWN	DATE	REVISION	

TYPICAL TRENCH SECTION DETAIL	
Approved:	SHT: W-1
Date: 09-24-93	Scale: NTS
	DWN: RTW

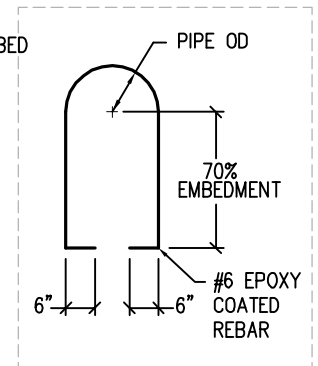
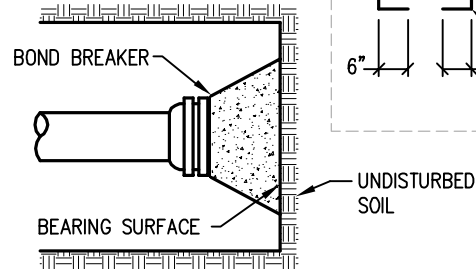
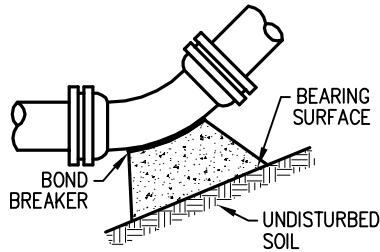
COPPER MOUNTAIN CONSOLIDATED METROPOLITAN DISTRICT



THRUST BLOCK SHALL NOT INTERFERE W/ MECHANICAL JOINT BOLT OPERATION

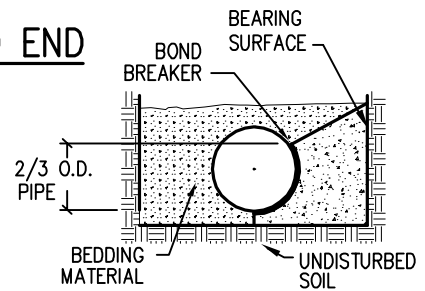
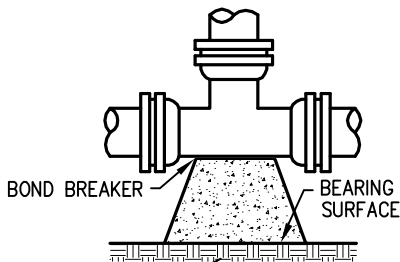
UPWARD BEND

DOWNWARD BEND



11 1/4°, 22 1/2°, 45° AND 90° BENDS

DEAD END



TYPICAL CROSS SECTION

UNDISTURBED SOIL

TEE

NOTES:

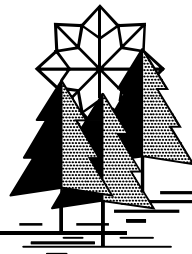
1. BEARING SURFACES SHOWN IN CHART ARE MINIMUM SQUARE FEET.
2. BASED ON SOIL BEARING CAPACITY OF 2,500 lb/s.f.
3. BASED ON 150 PSI INTERNAL PIPE PRESSURE PLUS 100 PSI WATER HAMMER
4. ALL FITTINGS TO BE CONCRETE THRUST BLOCKED AND TO HAVE RESTRAINED JOINTS PER LENGTH OF TIED PIPE DETAIL.

SIZE OF PIPE	B E N D S				TEE OR DEAD END
	11 1/4°	22 1/2°	45°	90°	
4"	1.00	1.00	1.00	NA	1.50
6"	1.00	1.25	2.25	NA	3.00
8"	1.00	2.00	4.00	NA	5.25
10"	1.80	3.50	6.50	13.00	8.75
12"	2.00	4.25	8.25	NA	11.00
16"	5.00	6.50	12.50	23.00	16.50
20"	3.50	10.00	19.50	35.50	25.00

MINIMUM BEARING SURFACE AREA

TYPICAL CONCRETE THRUSTBLOCK BEARING SURFACES AND INSTALLATION DETAIL

NO.	DWN	DATE	REVISION



Approved:

SHT: W-2

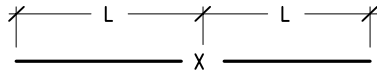
Date: 09-24-93

Scale: NTS

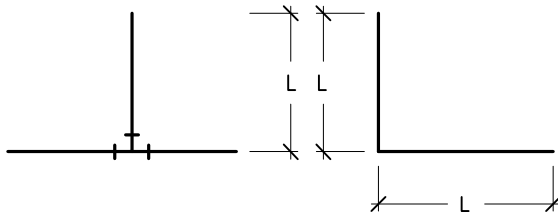
DWN: RTW

COPPER MOUNTAIN CONSOLIDATED METROPOLITAN DISTRICT

PIPE SIZE	4"			6"			8"			10"			12"			16"			18"		
	D	L	G	D	L	G	D	L	G	D	L	G	D	L	G	D	L	G	D	L	G
TEE	3/4"	10.0'	M.S.	3/4"	14.0'	M.S.	3/4"	18.0'	M.S.	3/4"	22.0'	M.S.	3/4"	32.0'	M.S.	3/4"	60.0'	H.S.	1"	74.0'	H.S.
PLUG OR VALVE	3/4"	35.0'	M.S.	3/4"	50.0'	M.S.	3/4"	66.0'	M.S.	3/4"	80.0'	M.S.	3/4"	94.0'	M.S.	3/4"	123.0'	H.S.	1"	137.0'	H.S.
90° BEND	3/4"	10.0'	M.S.	3/4"	14.0'	M.S.	3/4"	18.0'	M.S.	3/4"	22.0'	M.S.	3/4"	26.0'	M.S.	3/4"	34.0'	H.S.	1"	38.0'	H.S.
45° BEND	3/4"	4.0'	M.S.	3/4"	6.0'	M.S.	3/4"	8.0'	M.S.	3/4"	9.0'	M.S.	3/4"	11.0'	M.S.	1"	14.0'	M.S.	3/4"	16.0'	H.S.
22 1/2° BEND	3/4"	2.0'	M.S.	3/4"	3.0'	M.S.	3/4"	4.0'	M.S.	3/4"	4.0'	M.S.	3/4"	5.0'	M.S.	3/4"	7.0'	M.S.	3/4"	8.0'	M.S.
11 1/4° BEND	3/4"	1.0'	M.S.	3/4"	1.0'	M.S.	3/4"	2.0'	M.S.	3/4"	2.0'	M.S.	3/4"	3.0'	M.S.	3/4"	3.0'	M.S.	3/4"	4.0'	M.S.

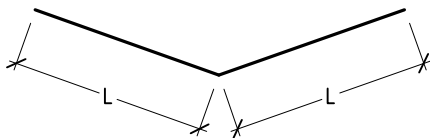


VALVE



TEE

90° BEND



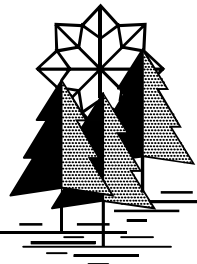
BENDS

NOTES:

1. LENGTHS OF PIPE MEASURED EACH WAY FROM VALVES AND BENDS.
2. D=DIAMETER, L=LENGTH, G=GRADE, NO.=NUMBER OF RODS
M.S.=MILD STEEL, H.S.=HIGH STRENGTH
3. MINIMUM 9.0' GROUND COVER REQUIRED.
4. BASED ON 150 PSI INTERNAL PRESSURE PLUS 100 PSI WATER HAMMER, POLYWRAP DIP.
5. M.S. MEANS MILD STEEL ROD A.S.T.M. STANDARD DESIGNATION A-36.
6. H.S. MEANS HIGH STRENGTH ROD A.S.T.M. STANDARD DESIGNATION A-193 GRADE B-7.
7. NUTS SHALL BE A.S.T.M. STANDARD DESIGNATION A-563 GRADE A OR B HEXAGON HEAVY SERIES.
8. LENGTH REFERS TO THE MINIMUM AMOUNT OF PIPE WHICH MUST BE TIED TOGETHER AND IS NOT NECESSARILY THE LENGTH OF THE RODS. PIPE MUST BE TIED AT JOINTS.

W-03.DWG H:\3896dy\ NOV 03, 2000 @ 2:28:40 pm - (R.J.F)

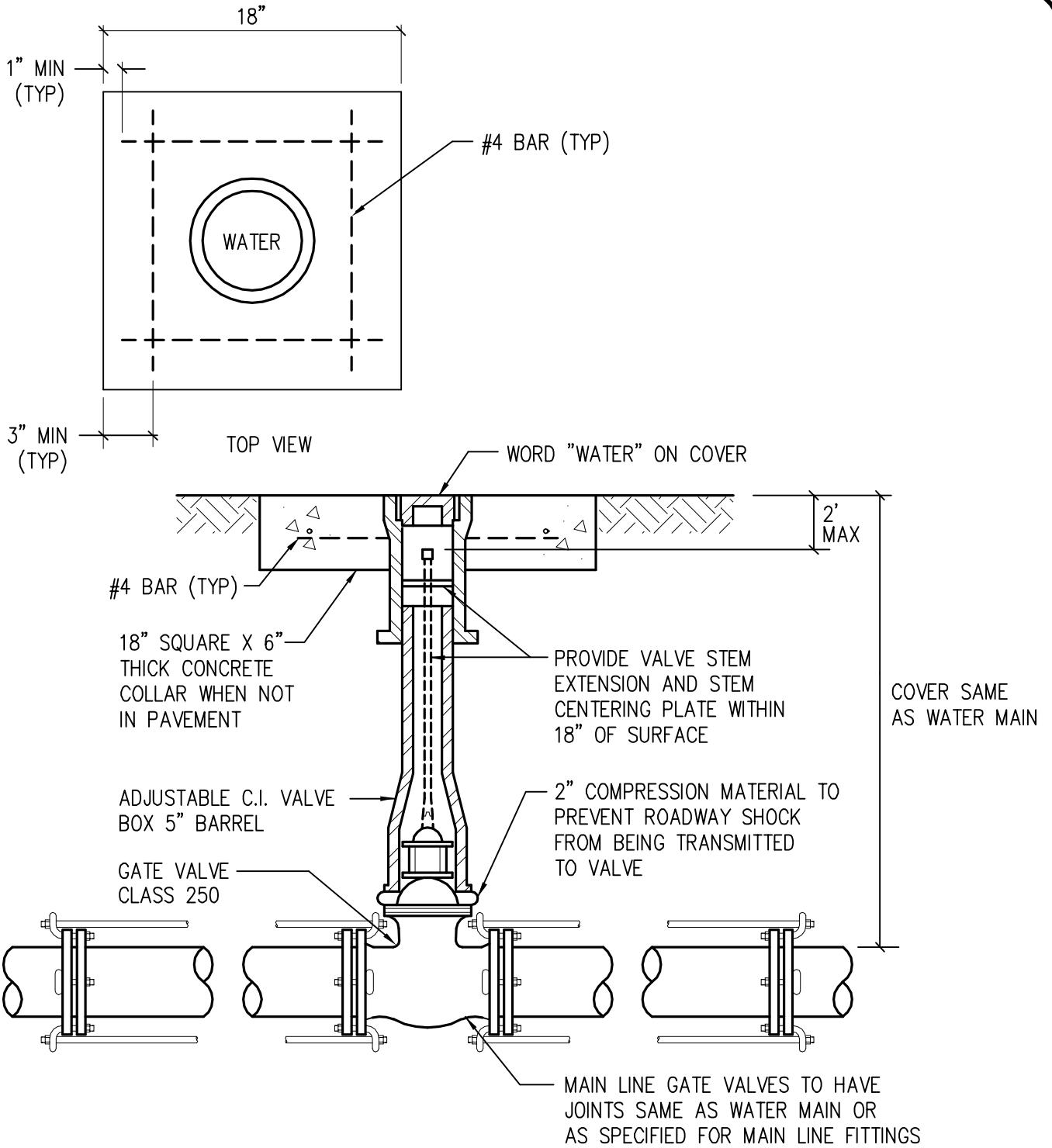
NO.	DWN	DATE	REVISION



TYPICAL LENGTH OF TIED PIPE DETAIL

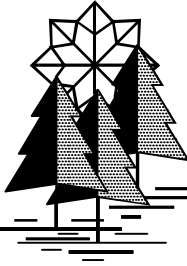
Approved: _____ SHT: W-3
 Date: 09-24-93 Scale: NTS DWN: RTW

COPPER MOUNTAIN CONSOLIDATED METROPOLITAN DISTRICT



W-06.DWG H:\3896cd\ NOV 10, 2000 @ 3:19:09 pm - (R.J.F)

NO.	DWN	DATE	REVISION	



TYPICAL
MAIN LINE
GATE VALVE DETAIL

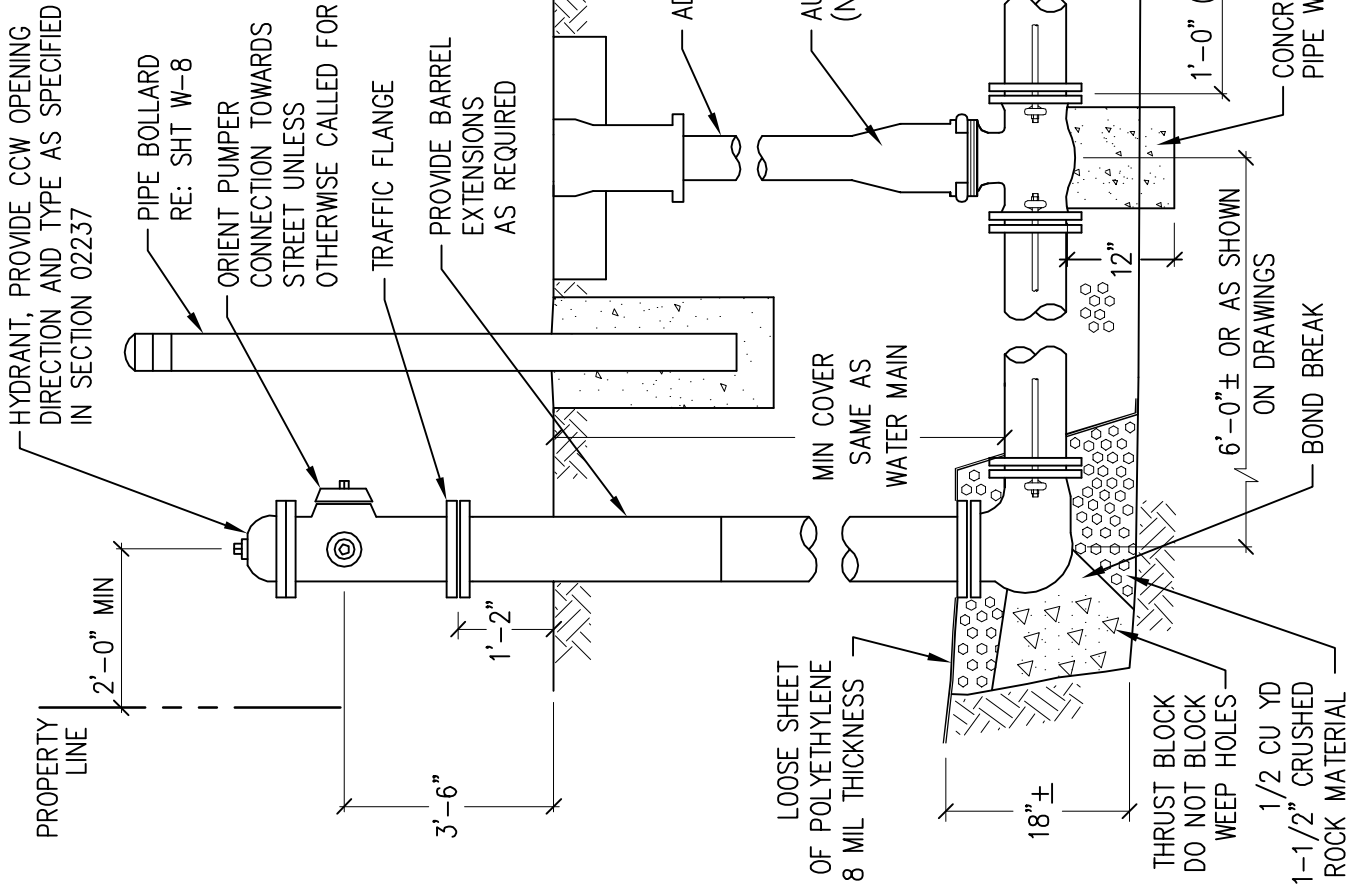
Approved: SHT: W-6
Date: 09-24-93 Scale: NTS DWN: RTW

COPPER MOUNTAIN CONSOLIDATED METROPOLITAN DISTRICT

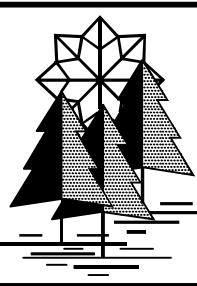
NOTES:

1. HYDRANT VALVES AND FITTINGS TO BE 250 PSI RATING
2. ALL HYDRANT ASSEMBLY VALVES AND FITTINGS TO BE MECHANICAL JOINTS
3. HYDRANT LEAD LINE 6" DIP, CLASS 50
4. POLYETHYLENE ENCASE ALL PIPES, FITTINGS & FIRE HYDRANT TO GRADE.
5. ENSURE HYDRANT BOTTOM DRAIN HOLE IS CLEAR AND DRAINS FREELY.
6. ALL RODDING SHALL BE PRIMED AND PLOYKEN TAPE WRAPPED OR COAL TAR COATED.
7. CONSTRUCT AUXILIARY GATE VALVE BOX IDENTICAL TO MAIN LINE GATE VALVE DETAIL

HYDRANT, PROVIDE CCW OPENING DIRECTION AND TYPE AS SPECIFIED IN SECTION 02237

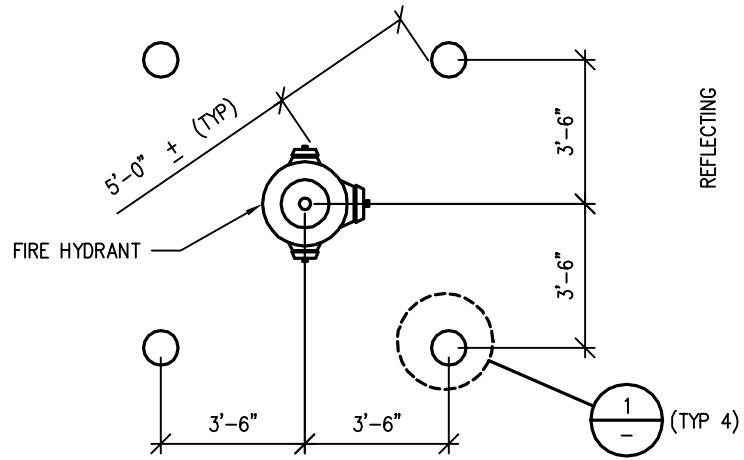


NO.	DWN	DATE	REVISION



**TYPICAL
FIRE HYDRANT ASSEMBLY
INSTALLATION DETAIL**

Approved:	SHT: W-7
Date: 09-24-93	DWN: RTW
Scale: NTS	

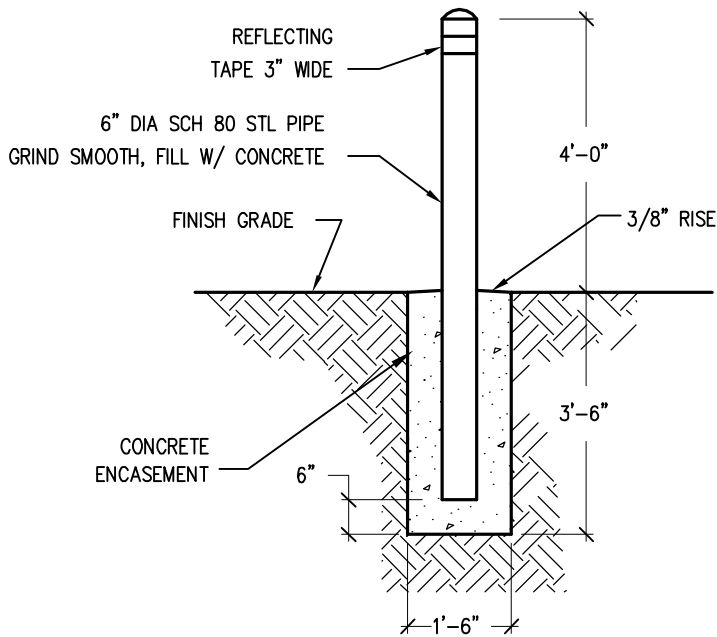


NOTES:

1. PROVIDE BOLLARDS AS DIRECTED BY DISTRICT.
2. DISTRICT WILL FIELD VERIFY ACTUAL NUMBER AND LOCATION OF BOLLARDS REQUIRED
3. PRIME AND FINISH (ALKYD ENAMEL) BOLLARDS TO COLOR REQUIRED BY DISTRICT FIRE DEPARTMENT

PLAN

NTS

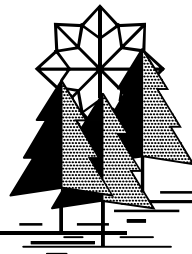


DETAIL

NTS



**TYPICAL
PIPE BOLLARD ASSEMBLY
INSTALLATION DETAIL**



Approved:

Date: 05-17-02

Scale: NTS

SHT: W-8

DWN: RTW

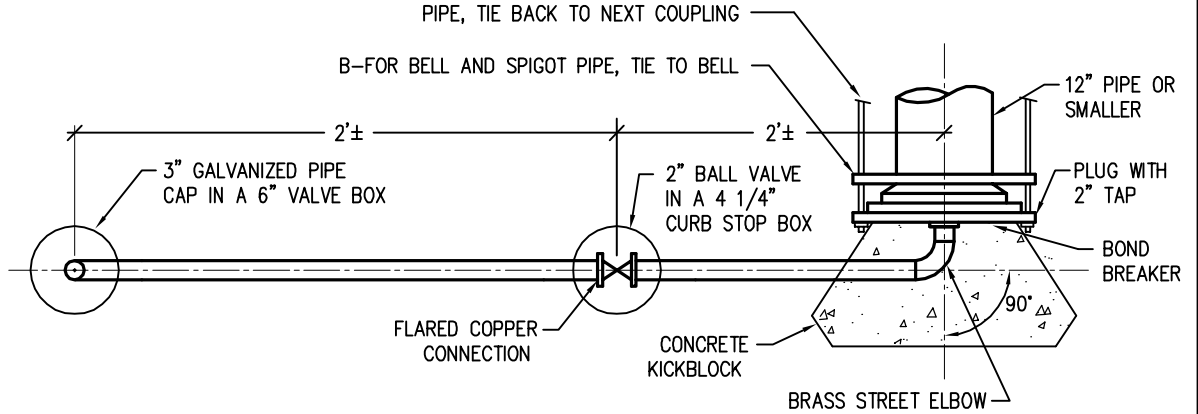
NO.	DWN	DATE	REVISION

COPPER MOUNTAIN CONSOLIDATED METROPOLITAN DISTRICT

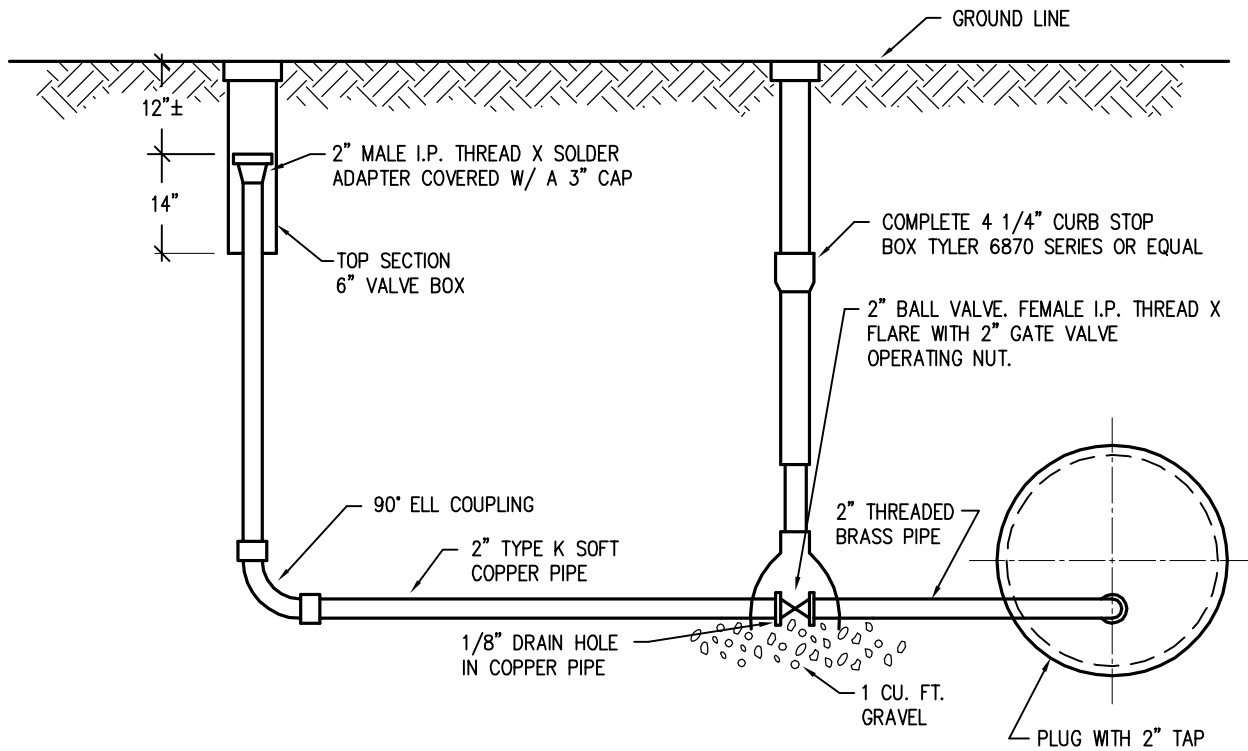
NOTE:
PLUG SHALL BE MECHANICALLY RESTRAINED:

A- FOR SLEEVE TYPE MACHINED COUPLING
PIPE, TIE BACK TO NEXT COUPLING

B-FOR BELL AND SPIGOT PIPE, TIE TO BELL



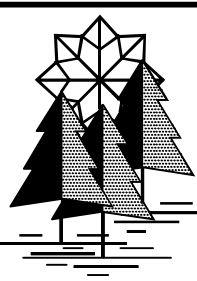
PLAN



ELEVATION

W-09.DWG H:\3896dy\ OCT 16, 2000 @ 1:46:09 pm - (R.J.F)

NO.	DWN	DATE	REVISION



TYPICAL
BLOW-OFF INSTALATION
FOR 12" & SMALLER PIPE
DETAIL

Approved:

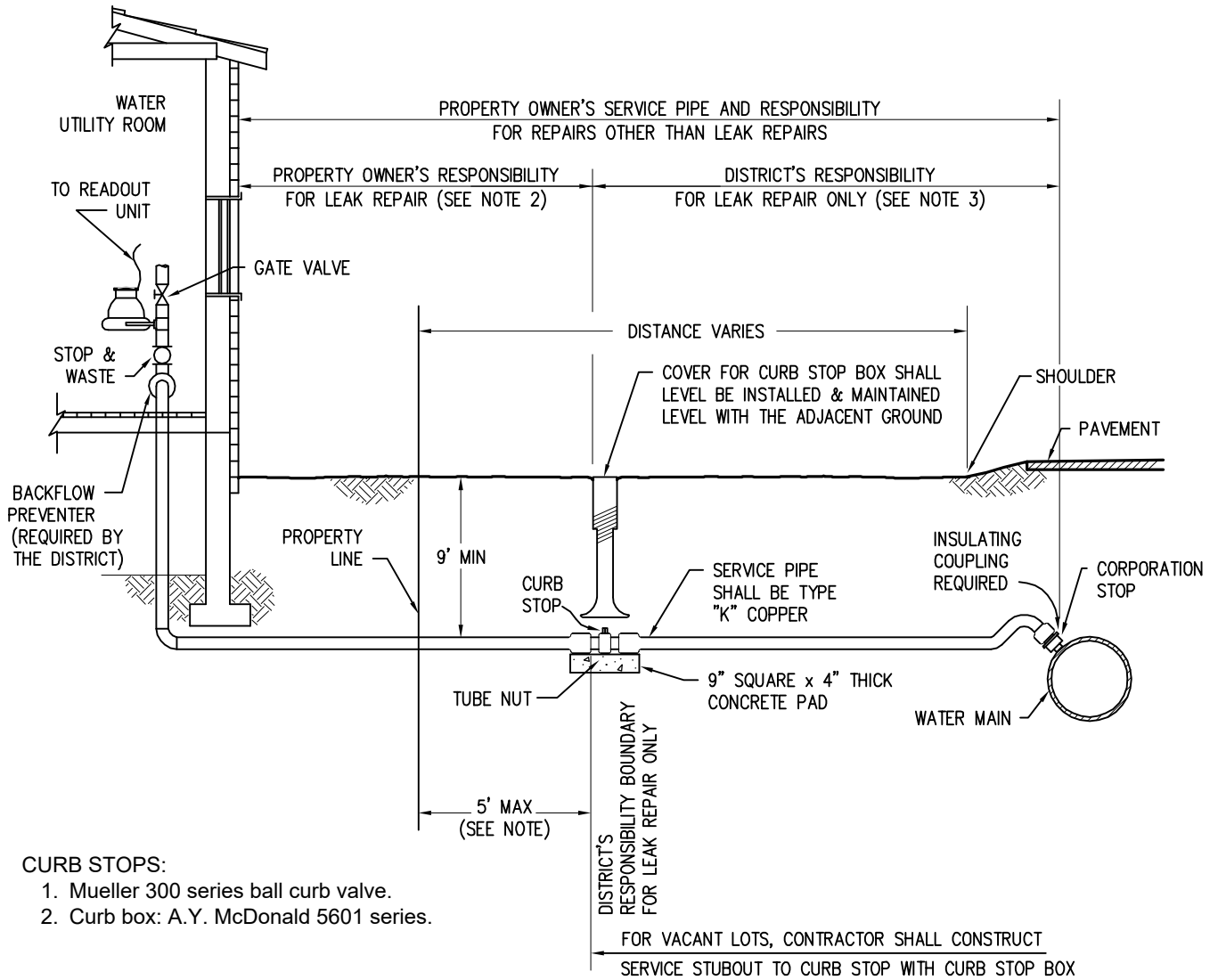
SHT: W-9

Date: 09-24-93

Scale: NTS

DWN: RTW

COPPER MOUNTAIN CONSOLIDATED METROPOLITAN DISTRICT



CURB STOPS:

1. Mueller 300 series ball curb valve.
2. Curb box: A.Y. McDonald 5601 series.

NOTES:

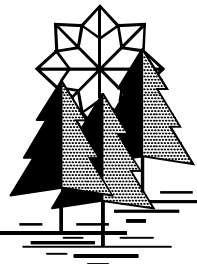
1. PLACEMENT OF CURB STOP SHALL BE A MAXIMUM OF 5 FEET OUTSIDE THE PROPERTY LINE INSIDE STREET RIGHT OF WAY.
2. PROPERTY OWNER'S RESPONSIBILITY FOR LEAK REPAIR SHALL BE UP TO AND INCLUDING THE TUBE NUT WHICH THREADS ONTO THE CURB STOP. PROPERTY OWNER'S RESPONSIBILITY FOR REPAIRS OTHER THAN LEAKS EXTENDS TO THE CORPORATION STOP.
3. DISTRICT'S RESPONSIBILITY SHALL BE THE WATER MAIN, THE CORPORATION STOP, AND WHERE NEEDED, THE DOUBLE STRAP TAPPING SADDLE. THE DISTRICT WILL ONLY REPAIR LEAKS OCCURRING BETWEEN THE CORPORATION STOP AND THE CURB STOP.

CORPORATION STOPS:

1. Mueller DR2S series tapping saddle w/ AWWA taper (CC) thread. 250 psi max working pressure.
2. Mueller 300 series ball corporation valve. AWWA taper (CC).
3. Type K copper or NSF61 approved polyethylene pipe. Blue Ultra PE 4710 or approved equal. 1.5-inch minimum diameter.
4. Wet Tapping may be approved on a case-by-case basis. Wet tapping contractor Core and Main or approved equal.

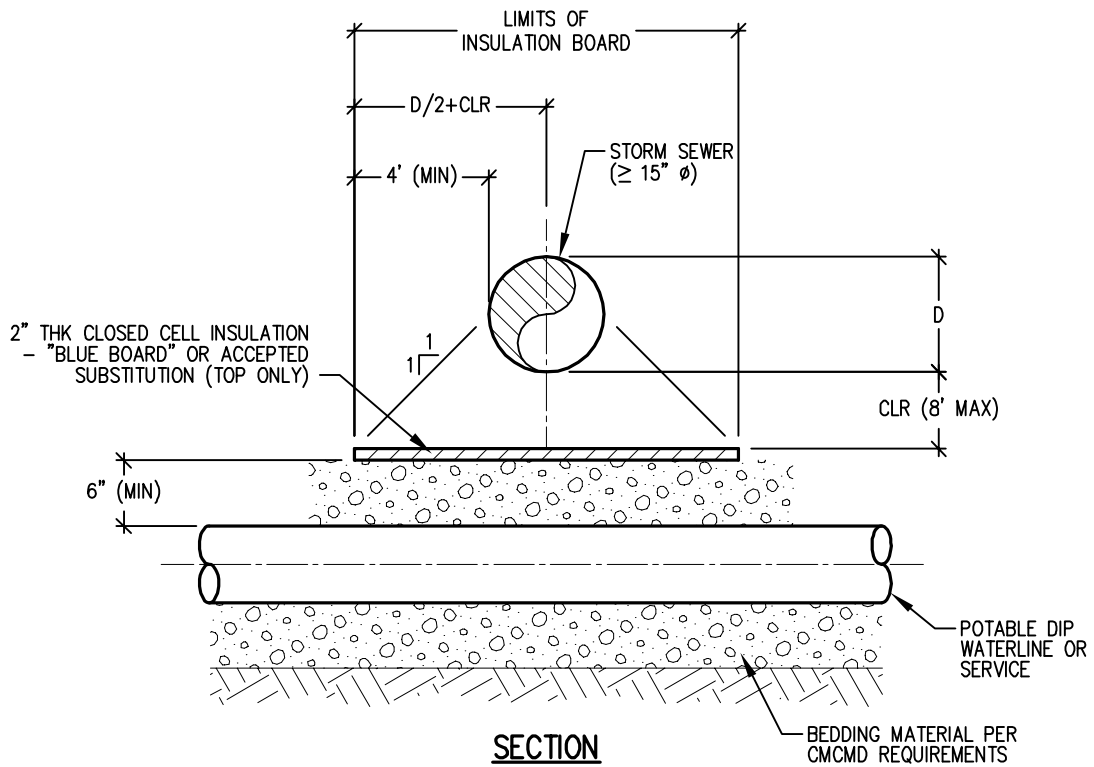
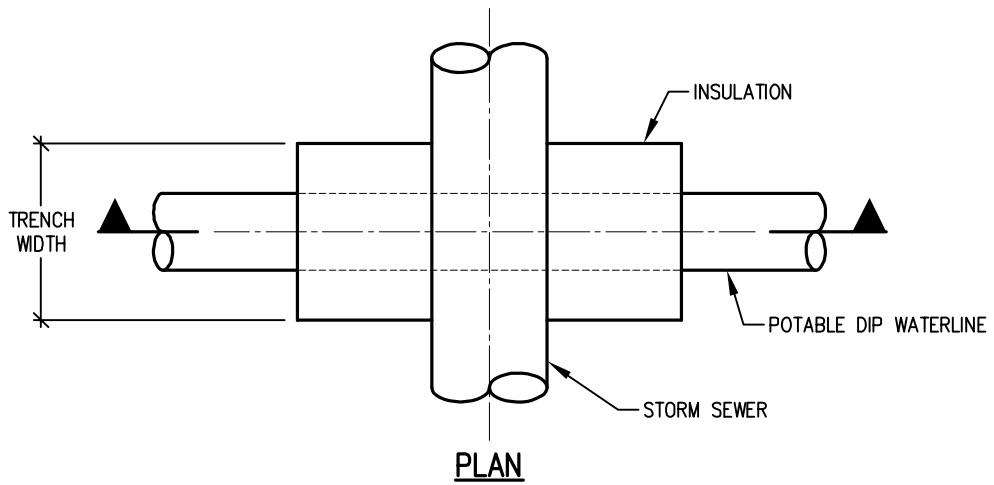
W-12.DWG H:\3896cdy\ NOV 10, 2000 @ 3:10:20 pm - (R.J.F)

NO.	DWN	DATE	REVISION	



TYPICAL SMALL DIAMETER SERVICE LINE DETAIL

Approved: SHT: W-12
 Date: 09-24-93 Scale: NTS DWN: RTW



NOTES:

- 1. PROVIDE INSULATION BOARD WHERE CLEARANCE IS LESS THAN 8 FEET

W-13.dwg H:\3896cd\ NOV 10, 2000 @ 10:10:54 am - (RUF)

NO.	DWN	DATE	REVISION	

TYPICAL WATERLINE INSULATION DETAIL

Approved:

SHT: W-13

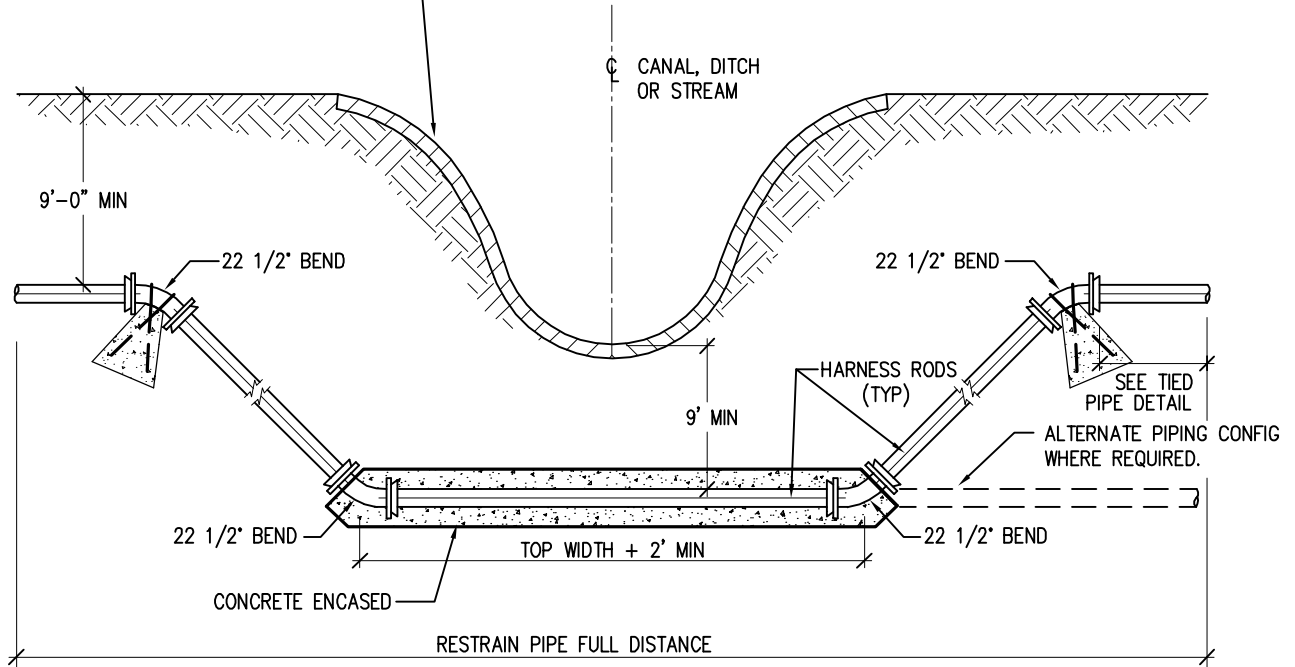
Date: 04-15-99

Scale: NTS

DWN: RTW

COPPER MOUNTAIN CONSOLIDATED METROPOLITAN DISTRICT

TRENCH SEAL TO BE 6" LAYER OF CLAY (TYPE CL OR CH) OR 4" OF TRENCH EXCAVATED SOIL OVER 2" OF BENTONITE. EXTEND TRENCH SEAL (AND RIPRAP WHERE INDICATED) TO TOP OF BANK AND MIN OF 2' BEYOND DISTURBED TRENCH WIDTH EACH SIDE.

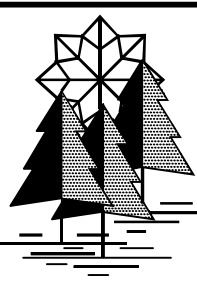


NOTE:

1. PROVIDE TRENCH SEAL, 1 1/2" WASHED ROCK LAYER AND TYPE M RIPRAP.

W-14.DWG H:\3896dy\ OCT 16, 2000 @ 1:47:16 pm - (R.J.F)

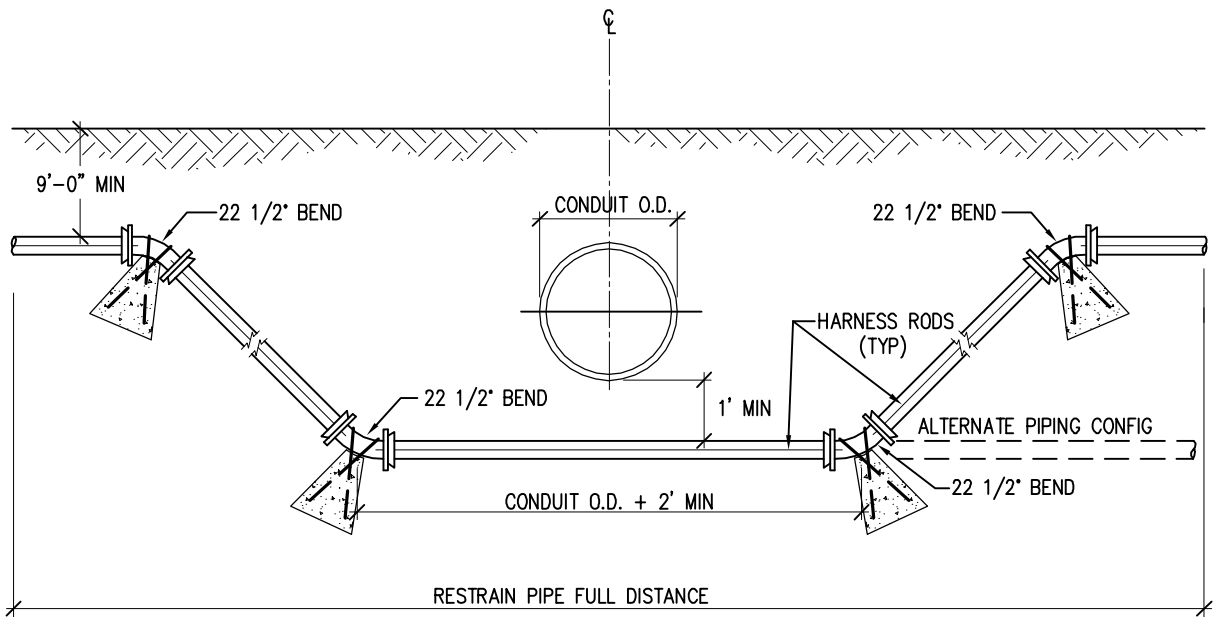
NO.	DWN	DATE	REVISION



TYPICAL CANAL/DITCH/STREAM CROSSING DETAIL

Approved:	SHT: W-14
Date: 09-24-93	Scale: NTS
	DWN: RTW

COPPER MOUNTAIN CONSOLIDATED METROPOLITAN DISTRICT



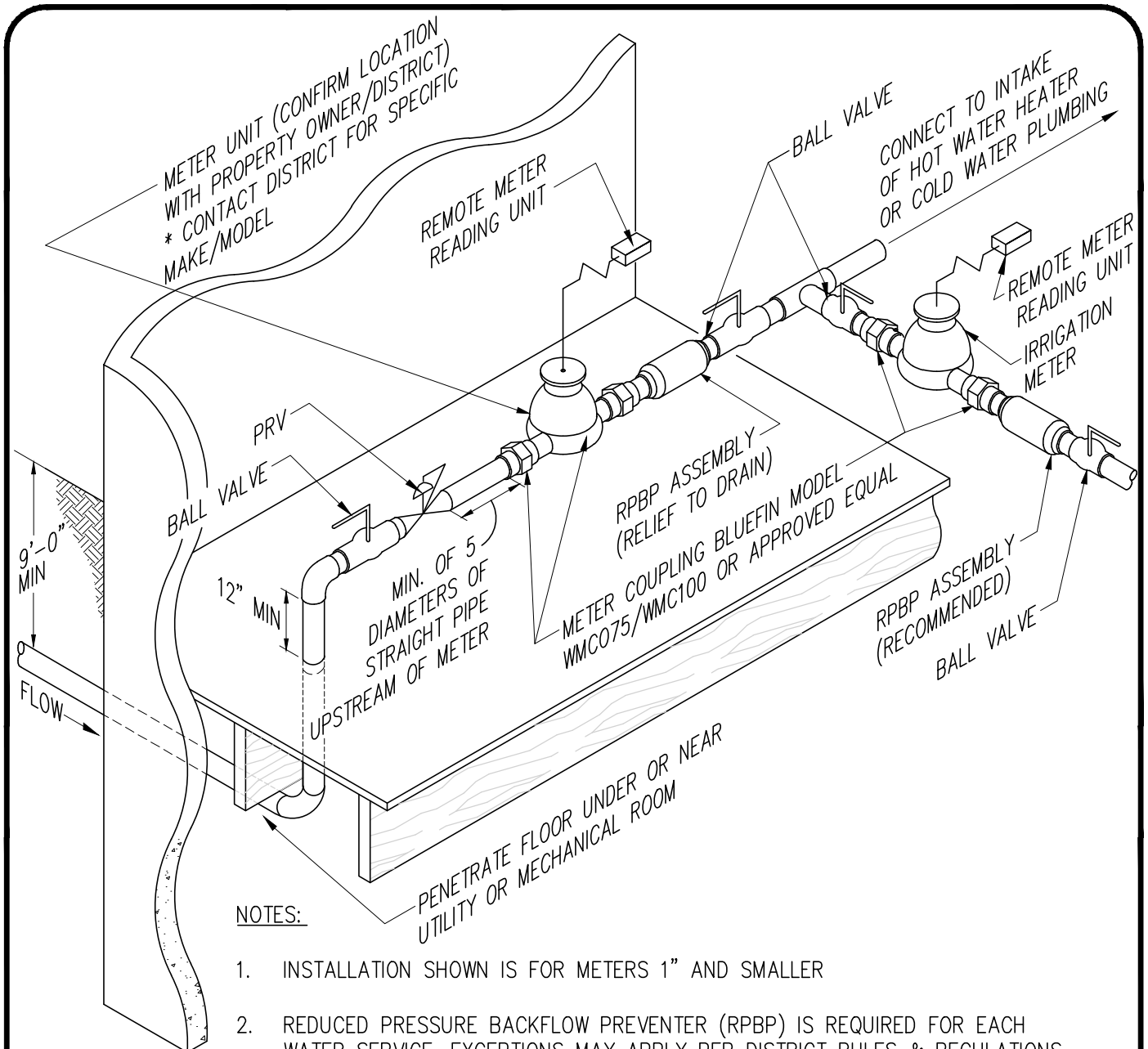
W-15.DWG H:\3896dy\ OCT 16, 2000 @ 1:47:39 pm - (R.J.F)

NO.	DWN	DATE	REVISION	

TYPICAL CONDUIT CROSSING DETAIL

Approved:	SHT: W-15
Date: 09-24-93	Scale: NTS
	DWN: RTW

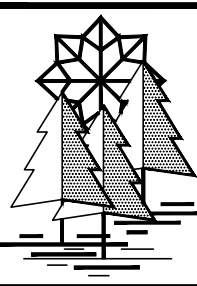
COPPER MOUNTAIN CONSOLIDATED METROPOLITAN DISTRICT



NOTES:

1. INSTALLATION SHOWN IS FOR METERS 1" AND SMALLER
2. REDUCED PRESSURE BACKFLOW PREVENTER (RPBP) IS REQUIRED FOR EACH WATER SERVICE. EXCEPTIONS MAY APPLY PER DISTRICT RULES & REGULATIONS
3. INSTALL IRRIGATION METER DOWNSTREAM OF MAIN METER FOR METERING IRRIGATION USE
4. METER INSTALLATIONS IN CRAWL SPACE SHALL NOT BE ALLOWED
5. SOLDERED JOINTS AT METER CONNECTIONS ARE PROHIBITED

NO.	DWN	DATE	REVISION

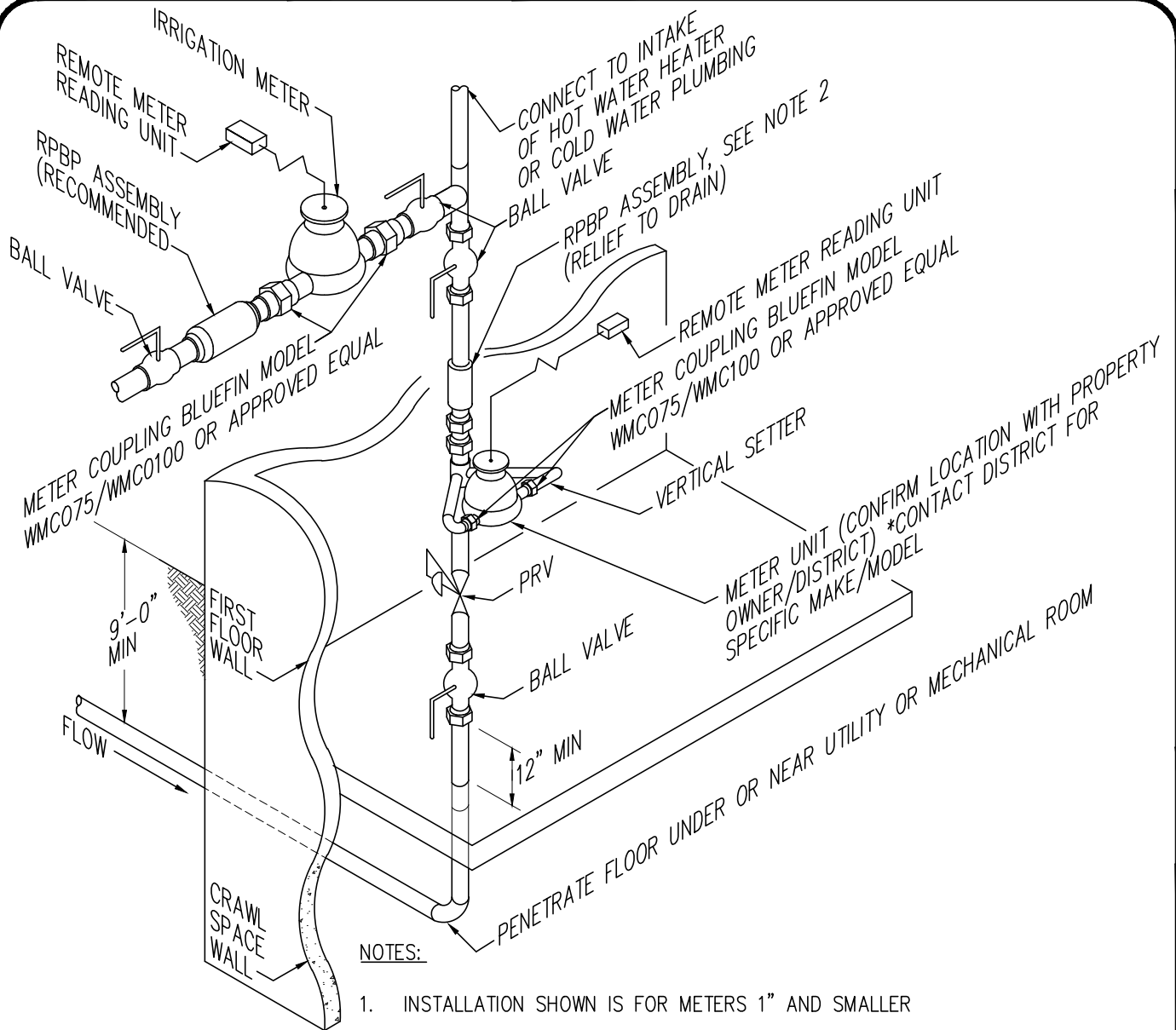


**TYPICAL
HORIZONTAL METER SETTING
DETAIL**

Approved: CMCMD	SHT: W-16
Date: NOV 2021	Scale: NTS
	DWN: TT

COPPER MOUNTAIN CONSOLIDATED METROPOLITAN DISTRICT

W-16.dwg P: |29177|133-29177-11002|CAD|Sheet1|es| FEB 03, 2016 @ 1:08:21 pm - (KELLY KRAMER)



NOTES:

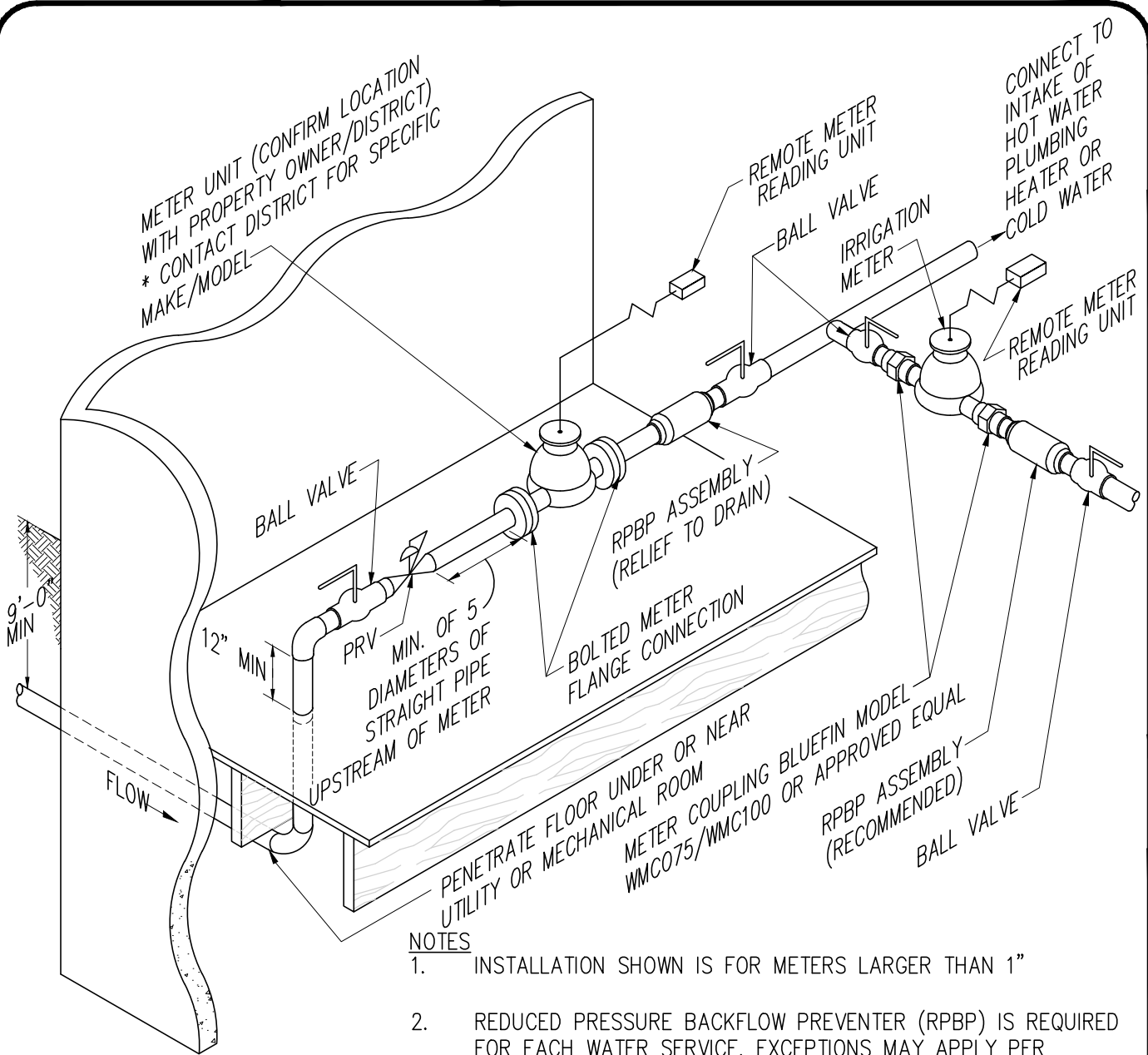
1. INSTALLATION SHOWN IS FOR METERS 1" AND SMALLER
2. REDUCED PRESSURE BACKFLOW PREVENTER (RPBP) IS REQUIRED FOR EACH WATER SERVICE. EXCEPTIONS MAY APPLY PER DISTRICT RULES & REGULATIONS
3. INSTALL IRRIGATION METER DOWNSTREAM OF MAIN METER FOR METERING IRRIGATION USE
4. METER INSTALLATIONS IN CRAWL SPACE SHALL NOT BE ALLOWED
5. SOLDERED JOINTS AT METER CONNECTIONS ARE PROHIBITED

**TYPICAL
VERTICAL SMALL METER
SETTING DETAIL**



Approved: CMCMD	SHT: W-17
Date: NOV 2021	Scale: NTS
	DWN: TT

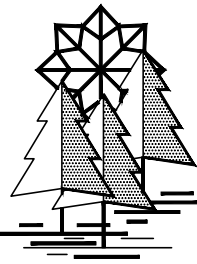
NO.	DWN	DATE	REVISION



NOTES

1. INSTALLATION SHOWN IS FOR METERS LARGER THAN 1"
2. REDUCED PRESSURE BACKFLOW PREVENTER (RPBP) IS REQUIRED FOR EACH WATER SERVICE. EXCEPTIONS MAY APPLY PER DISTRICT RULES & REGULATIONS
3. INSTALL IRRIGATION METER DOWNSTREAM OF MAIN METER FOR METERING IRRIGATION USE
4. METER INSTALLATIONS IN CRAWL SPACE SHALL NOT BE ALLOWED
5. SOLDERED JOINTS AT METER CONNECTIONS ARE PROHIBITED

TYPICAL HORIZONTAL METER SETTING DETAIL



NO.	DWN	DATE	REVISION

Approved: CMCMD	SHT: W-18
Date: NOV 2021	Scale: NTS
	DWN: TT

COPPER MOUNTAIN CONSOLIDATED METROPOLITAN DISTRICT