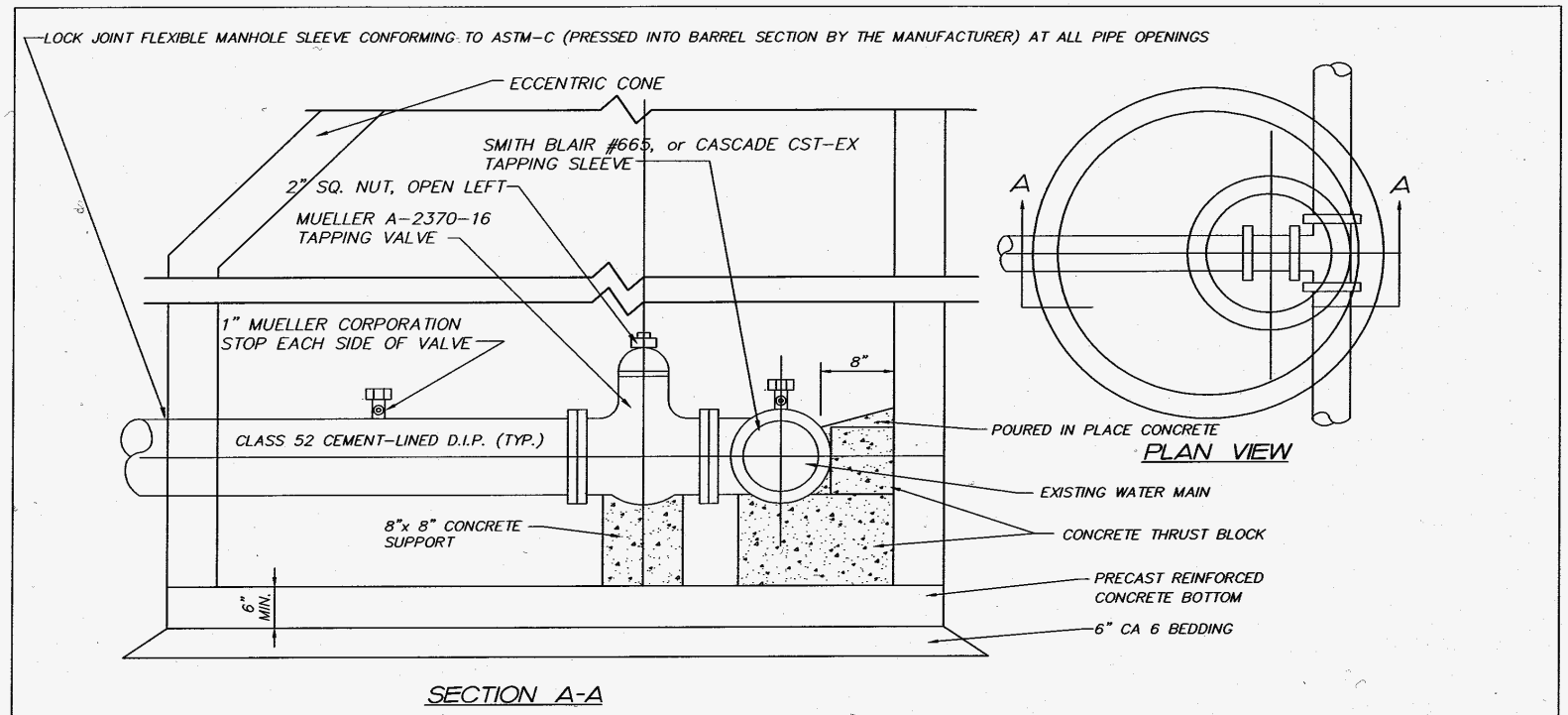

NOTES:
C.I. MANHOLE FRAME AND COVER EAST JORDAN 1050 WITH STANDARD DUTY, NON-ROCKING TYPE LIDS (EAST JORDAN 1020 MAY BE USED IN GRASSY AREAS).
ADJUSTING RING HEIGHT NOT TO EXCEED 8"
ALL JOINTS ARE TO BE MADE WATERTIGHT WITH EXTERNAL SEALING BANDS PER ASTM C-877 WITH MECHANICAL STRAPS (MAC WRAP OR EQUAL).
STANDARD VALVE VAULT SPECIFICATIONS REQUIRE ECCENTRIC CONES (SEE SEPARATE DETAIL).

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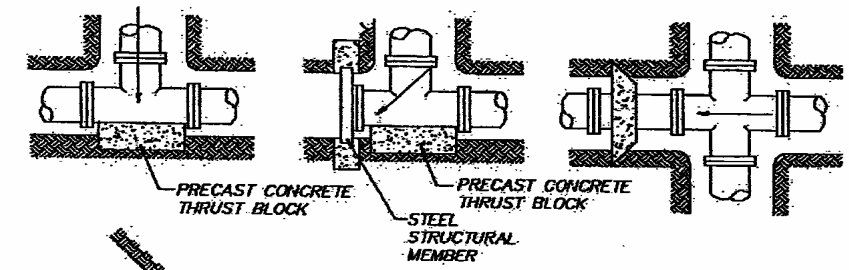
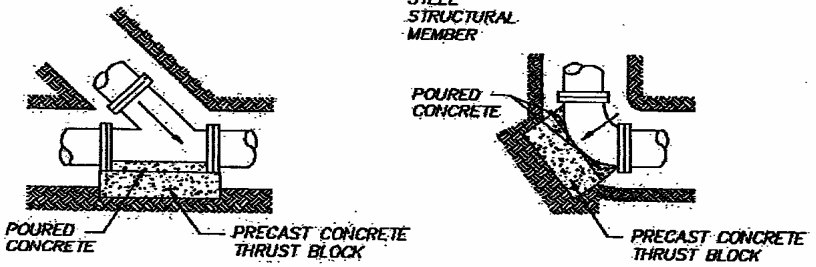
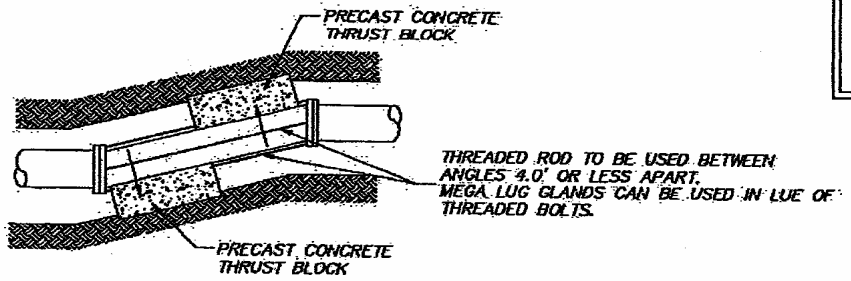
	4.		
	5.		

WATER MAIN PRESSURE CONNECTION DETAIL

W-1







BEARING AREA (SQ. FT.)

PIPE SIZE	TEE/PLUG	90°	45°	22-1/2°	11-1/4°
6	4	2	1	1	1
8	6	4	3	1	1
10	7	5	3	2	1
12	8	6	4	3	2
14	12	9	6	4	3
16	15	12	7	5	3
18	18	15	9	5	4
24	40	30	15	10	5

ALL BLOCKING MUST BEAR ON UNDISTURBED EARTH.

ALL BENDS OR ELBOWS GREATER THAN AND INCLUDING 11-1/4° SHALL HAVE THRUST BLOCKING.

VILLAGE OF LAKE IN THE HILLS
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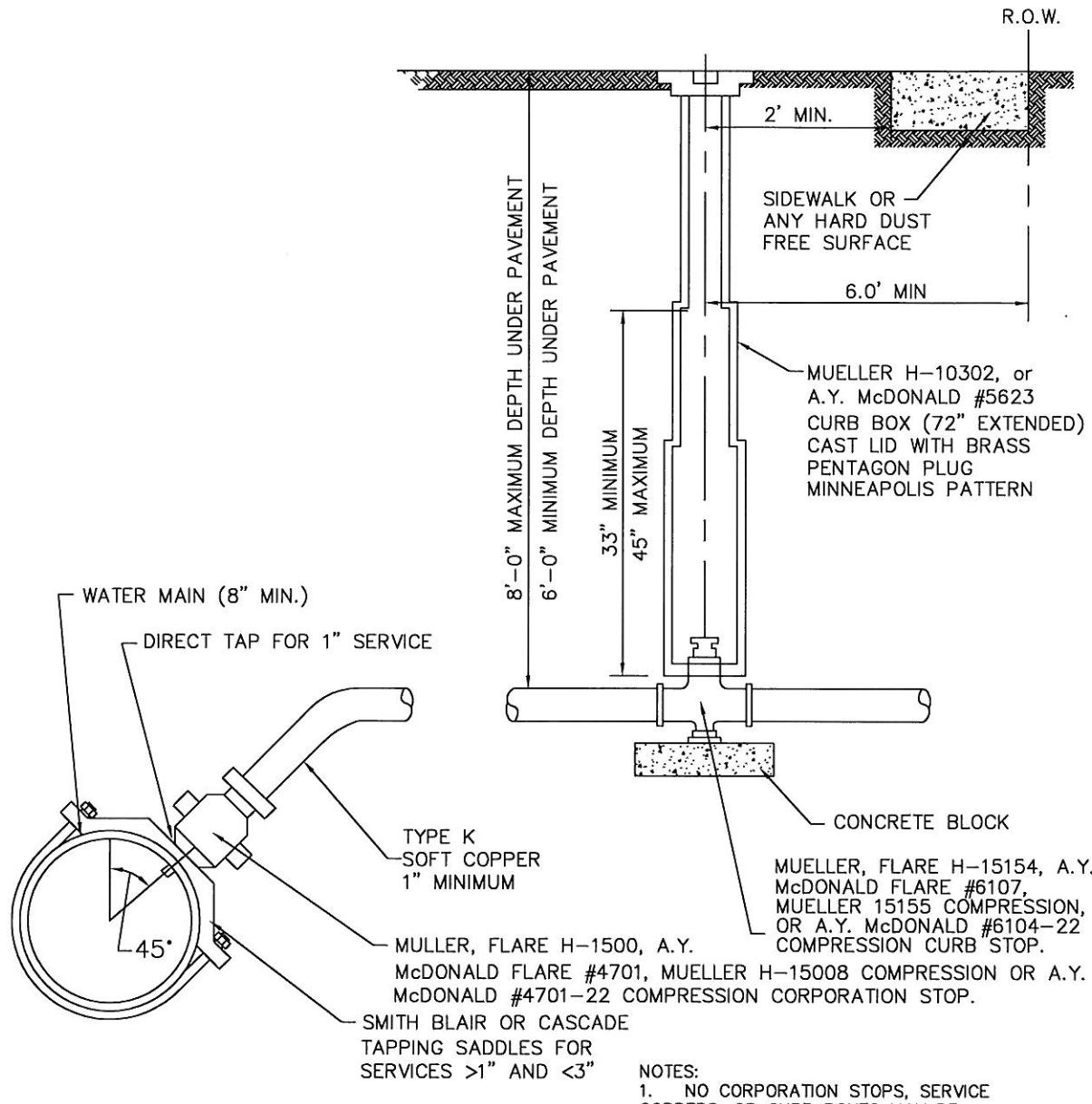
THRUST BLOCK INSTALLATION DETAIL

W-2



NOTES:

1. NO CORPORATION STOPS, SERVICE COPPERS, OR CURB BOXES MAY BE LOCATED UNDER PAVED AREAS INCLUDING ANY PUBLIC OR PRIVATE DRIVES AND SIDEWALKS.
2. SERVICE TO BE CONTINUOUS WITHOUT JOINTS FROM CORPORATION STOP TO CURB STOP.
3. MULTIPLE TAPS INTO MAIN SHALL BE NO CLOSER THAN 2' APART. 5. TRENCH FROM MAIN TO BACK OF SIDEWALK TO BE COMPACTED TRENCH BACKFILL.

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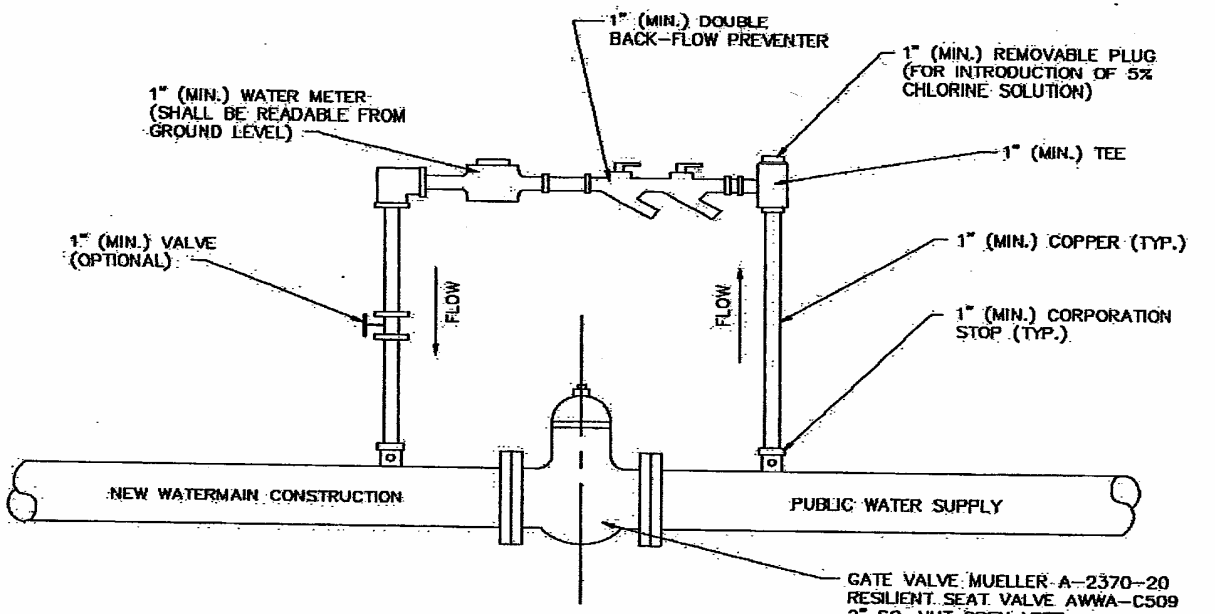
CURB BOX INSTALLATION DETAIL

W-3



VILLAGE OF LAKE IN THE HILLS	REVISIONS NO.	BY	DATE
PUBLIC WORKS DEPARTMENT	1		
APPROVED 00-00-00	2		
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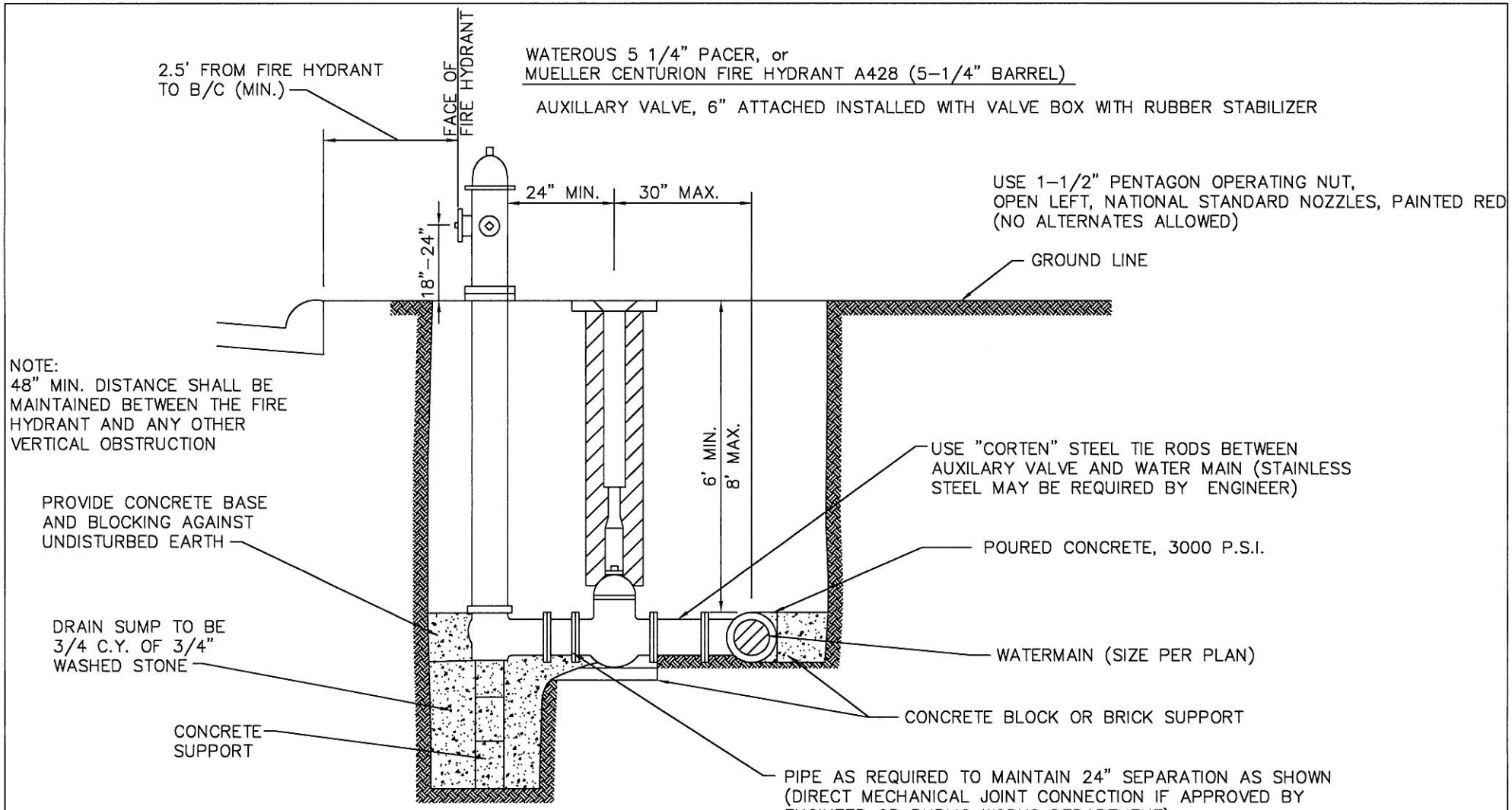
	5		

WATER VALVE JUMPER DETAIL

W-4



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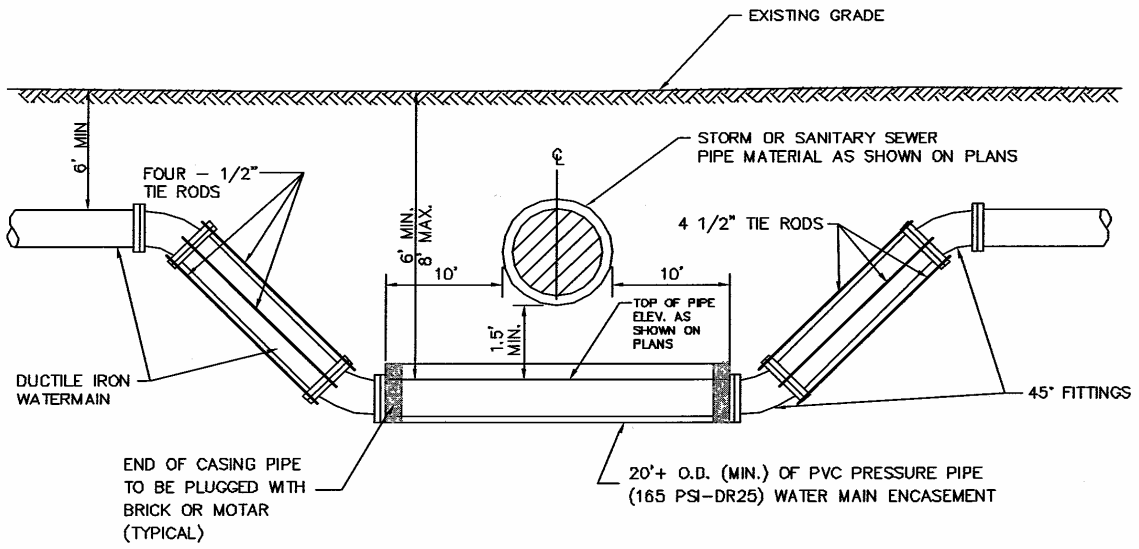
NOTE: FIRE HYDRANTS SHALL BE PLACED A MAXIMUM OF 300 FEET APART. LOCATION OF HYDRANTS MUST BE APPROVED BY ENGINEER OR PUBLIC WORKS DEPARTMENT.

FIRE HYDRANT INSTALLATION DETAIL

W-5



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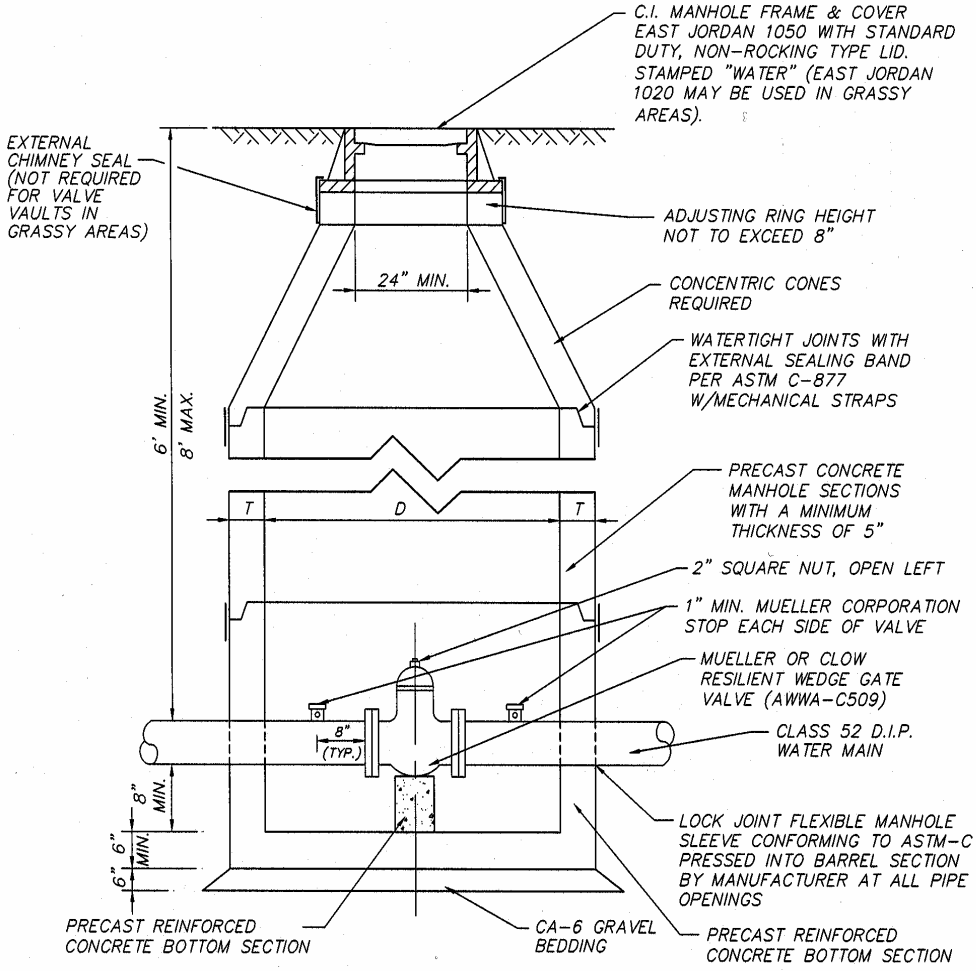
WATER MAIN LOWERING DETAIL

W–6



NOTES:

1. DRAIN FOR VALVE VAULT SHALL BE CONSTRUCTED ONLY WHEN SHOWN ON PLANS.
2. FOR PRESSURE CONNECTION SEE SEPARATE DETAIL.

DIAMETER OF WATER MAIN	D	T
8 INCHES	5'-0"	5"
10 INCHES AND OVER	5'-0"	5"

VILLAGE OF LAKE IN THE HILLS

PUBLIC WORKS DEPARTMENT

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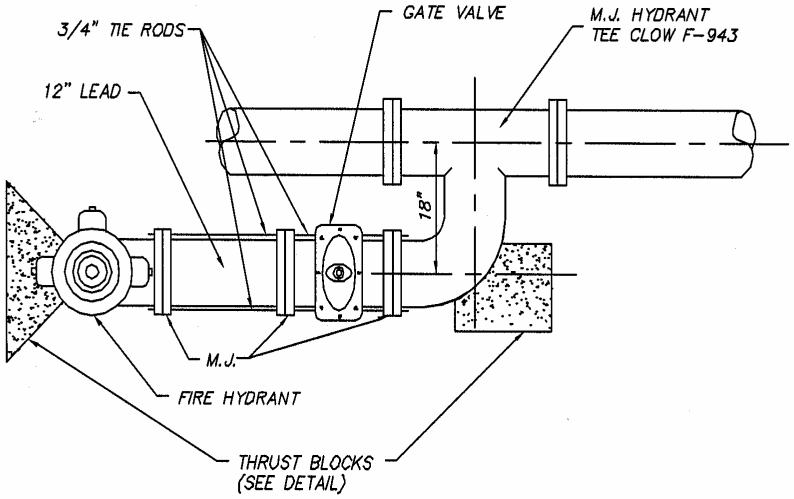
STANDARD VALVE VAULT DETAIL

W-7



NOTES:

1. CONTRACTOR WILL SUPPLY HYDRANTS WITH AUXILIARY VALVES AND MECHANICAL JOINT CONNECTIONS WITH PLAIN END CAST IRON PIPE BETWEEN HYDRANT AND VALVE.

2. THIS ITEM SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE EACH FOR FIRE HYDRANT ASSEMBLY OR FIRE HYDRANT ASSEMBLY RELOCATION WHICH PRICE SHALL INCLUDE PROVIDING AND INSTALLING THE HYDRANT, THE VALVE AND VALVE BOX, THE CONNECTION PIPES, BACKFILL MATERIAL, AND THRUST BLOCK AS DETAILED.

3. EXISTING FIRE HYDRANT RELOCATION SHALL BE IN ACCORDANCE WITH SECTION 564 OF THE I.D.O.T. STANDARD SPECIFICATIONS.

4. WHEN A 4' MINIMUM DISTANCE BETWEEN HYDRANT AND WATER MAIN CANNOT BE OBTAINED THE HYDRANT SHALL BE INSTALLED AND/OR RELOCATED PER THE SPECIAL FIRE HYDRANT DETAIL SHOWN. THE COST OF ANY ADDITIONAL MATERIALS OR LABOR SHALL BE CONSIDERED INCIDENTAL TO THE COST OF HYDRANT INSTALLATION AND/OR RELOCATION.

5. ALL MECHANICAL JOINTS OR WATER MAIN FITTINGS SHALL USE STAINLESS STEEL T-BOLTS & NUTS AND MEGALUG RESTRAINING DEVICES. NO SUBSTITUTIONS WILL BE ALLOWED.

VILLAGE OF LAKE IN THE HILLS	REVISIONS NO.	BY	DATE	
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				FIRE HYDRANT CONNECTION FOR LIMITED ACCESS DETAIL
				W-8

W-9
WATERMAIN AND WATER SERVICE SPECIFICATIONS

WATERMAIN
Watermain shall be 8-inch minimum, Class 52 Ductile Iron Pipe, Domestic only

MAIN AND HYDRANT AUXILLARY VALVES
All valves shall be Waterous or Mueller resilient wedge gate valves, open left

VALVE VAULTS
All main valves shall be in a minimum of a 60-inch valve vault, unless otherwise approved by the Village of Lake in the Hills

VALVE BOXES
Valves boxes shall be Tyler cast iron or approved equal with rubber valve box stabilizer

FIRE HYDRANTS
Accepted hydrants shall be Waterous 5 ¼" Pacer, or Mueller Centurion, A-428, no substitutes.
All hydrants shall be as follows:

1. 6-foot 6-inch bury depth
2. Valve attached, installed with valve box with rubber stabilizer
3. 1 ½ inch pentagon operating nut
4. Two 2 ½ inch and One 4 ½ inch nozzles
5. Color shall be red
6. Mechanical joint

RESTRAINING DEVICES
Restraining devices shall be Megalug type, no substitutions.

VALVE INSERTIONS AND LINE STOPS
All valve insertions and line stops must be approved by the Village of Lake in the Hills

WATERMAIN CASING SPACERS
Casing spacers shall be Cascade #CCS, or approved equal

WATERMAIN BEDDING AND COVERAGE
Bedding shall be CA-6 placed a minimum of 6-inches below the bottom of the watermain.

Coverage shall be CA-6 placed at least 6-inches above the top of the watermain unless the trench is within 3-feet of the roadway, then complete coverage to the top of the excavation is required.

LANDSCAPE RESTORATION

Final grade shall meet existing grade and shall be of at least 8-inches of topsoil, grass seed, and excelsior blanket or sod as determined by the Village of Lake in the Hills.

Other landscaping including but not limited to trees, shrubs, bushes, retaining walls, decorative landscaping items, etc. will be determined on a case by case basis.

WATERMAIN TAPPING SLEEVES

Pressure taps to existing watermains shall use the following approved sleeves:

1. Smith Blair, #665
2. Cascade, CST-EX

No substitutes.

MECHANICAL FITTINGS

All mechanical joint fittings shall be Ductile Iron Class 250, domestic only, with stainless steel nuts and bolts. Mechanical joint fittings shall be installed with Megalug restraining devices.

WATER SERVICES

All residential water service lines shall be a minimum of 1-inch type K copper. Services shall be one continuous piece of copper from the corporation stop to the b-box and one piece of continuous copper from b-box to the shut-off valve inside the residence. All 1-inch services shall be direct tapped. Water services sized between 1 ¼ inch through 2-inch shall be type K copper and use approved tapping saddles. All water service lines 3-inch or greater shall be installed via pressure tap using approved tapping sleeve.

CORPORATION STOPS

Mueller, flare, H-15000, A.Y. McDonald, flare, #470, Mueller H- 15008 compression, or A.Y. McDonald #4701-22 only

CURB STOPS

Muller, flare, H-15154, A.Y. McDonald, flare, #6107, Mueller 15155 compression, or A.Y. McDonald #6104-22 only

B-BOXES

Muller, H-10302 or A.Y. McDonald #5623 only. B-Boxes shall be 1 ½ inch with a minimum of a 6-foot bury depth, Minneapolis pattern, no risers shall be accepted.

TAPPING SADDLES

Water services 1 ¼ inch to 2-inch shall use approved tapping saddles as follows: Smith Blair #317 or Cascade, CST-EX only.

REPAIR SLEEVES

Repair sleeves shall be full circle, all stainless steel. Approved sleeves are Smith Blair #261 or Cascade CR1 only.

WATERMAIN TESTING

All new watermains and water services 3-inches and greater shall be tested as follows:

1. Pressure tested at a minimum of 100 psi for one hour, with no loss of pressure.
2. Chlorinated per I.E.P.A. and A.W.W.A. specifications.
3. Bacteriological sampling and analysis shall be based upon I.E.P.A. requirements and specifications.

All new watermains, hydrants, and water services 3-inch and greater shall not be put into service until all testing requirements are fulfilled and required permits are obtained by the Village of Lake in the Hills.