

NOTES:

1. GATE VALVE BOXES WILL BE CAST IRON OF THE THREE PIECE SCREW TYPE SUITABLE FOR A DEPTH OF 7 $\frac{1}{2}$ ' OF COVER OVER THE TOP OF THE PIPE. BOXES SHALL BE 5 $\frac{1}{4}$ " DIAMETER.
2. GATE VALVES DEEPER THAN 14' WILL HAVE AN EXTENSION ROD INSTALLED TO WITHIN 6" OF FINISHED GRADE.
3. GATE VALVES SHALL CONFORM WITH AWWA C509-80 STANDARDS.
4. USE CORE-BLUE WATER MAIN BOLTS OR APPROVED EQUAL.
5. NO INSIDE ADJUSTMENT SECTIONS WILL BE ALLOWED (I.E. NO INSERTS).
6. INSTALL MARKING POSTS AT ALL GATE VALVES LOCATED OUTSIDE OF STREET SECTIONS. SEE PLATE NO. MISC-01.
7. COAT STAINLESS STEEL GATE VALVE BODY BOLTS WITH BITUMINOUS COAL TAR SUPPLIED BY THE MANUFACTURER.



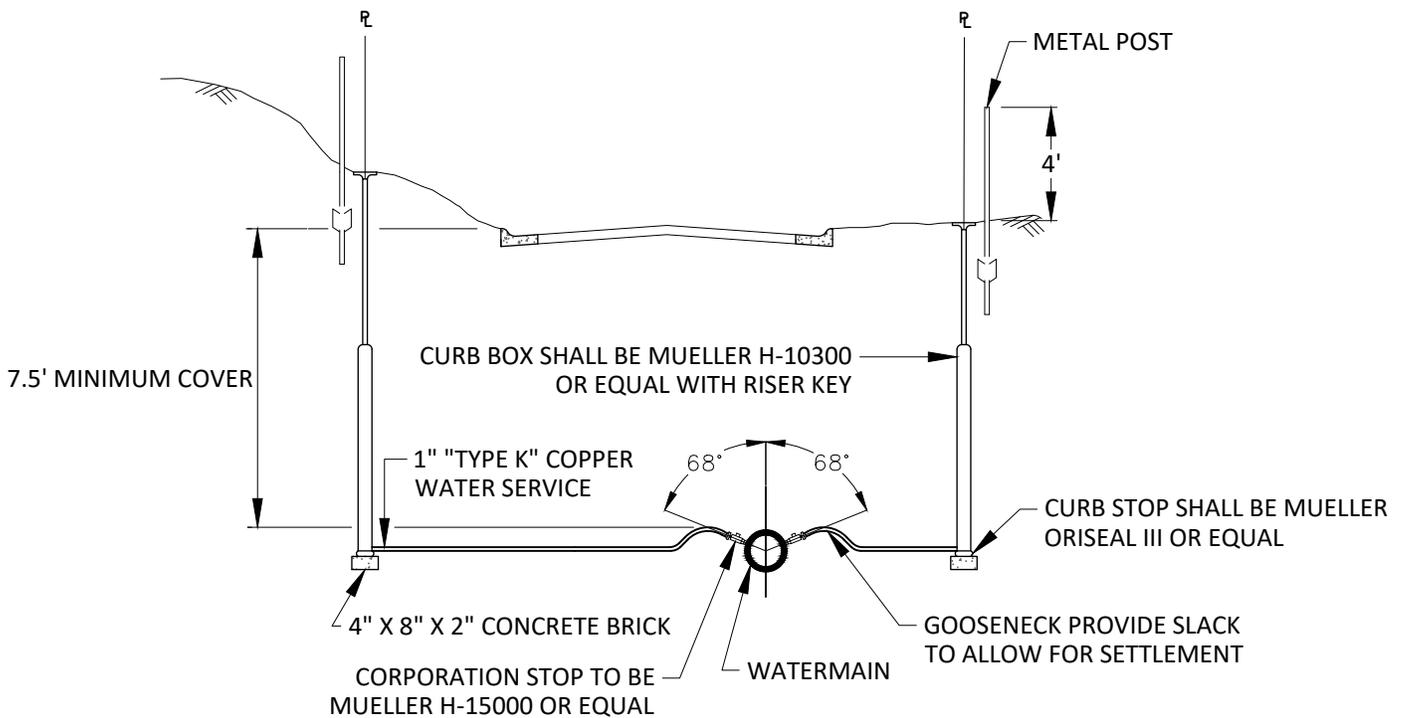
CITY OF INVER GROVE HEIGHTS
PUBLIC WORKS ENGINEERING DIVISION

VALVE BOX INSTALLATION

Plate No.

WTR-02

Revised 02/23



NOTES:

1. NO COPPER TO COPPER CONNECTIONS SHALL BE MADE IN THE PUBLIC RIGHT OF WAY.
2. DO NOT EXTEND COPPER SERVICE BEYOND THE CURB BOX (NO PIGTAILS).
3. INSTALL CURB BOX WITH RISER KEY.
4. INSTALL CURB BOX AT HALF-EXTENSIONS. BRING CURB BOX TO PROPER SURFACE GRADE WHEN THE FINAL GROUND SURFACE HAS BEEN ESTABLISHED.
5. FOR CURB BOXES IN PAVED AREAS, USE FORD TYPE A-1 SINGLE LID COVER (4" BURY DEPTH) OR EQUAL. NO ADDITIONAL COMPENSATION WILL BE PROVIDED FOR COVER.
6. INSTALL METAL TEE FENCE POST 6" TO 12" BEHIND CURB BOX LOCATION. FENCE POST SHALL BE GREEN WITH TOP PAINTED BLUE.
7. STAMP SERVICE LOCATION INTO ADJACENT CONCRETE CURB.
8. ALL COPPER PIPE FITTINGS SHALL BE FLARED. USE OF COMPRESSION FITTINGS SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER.
9. DRY TAPS WILL NOT BE ALLOWED.



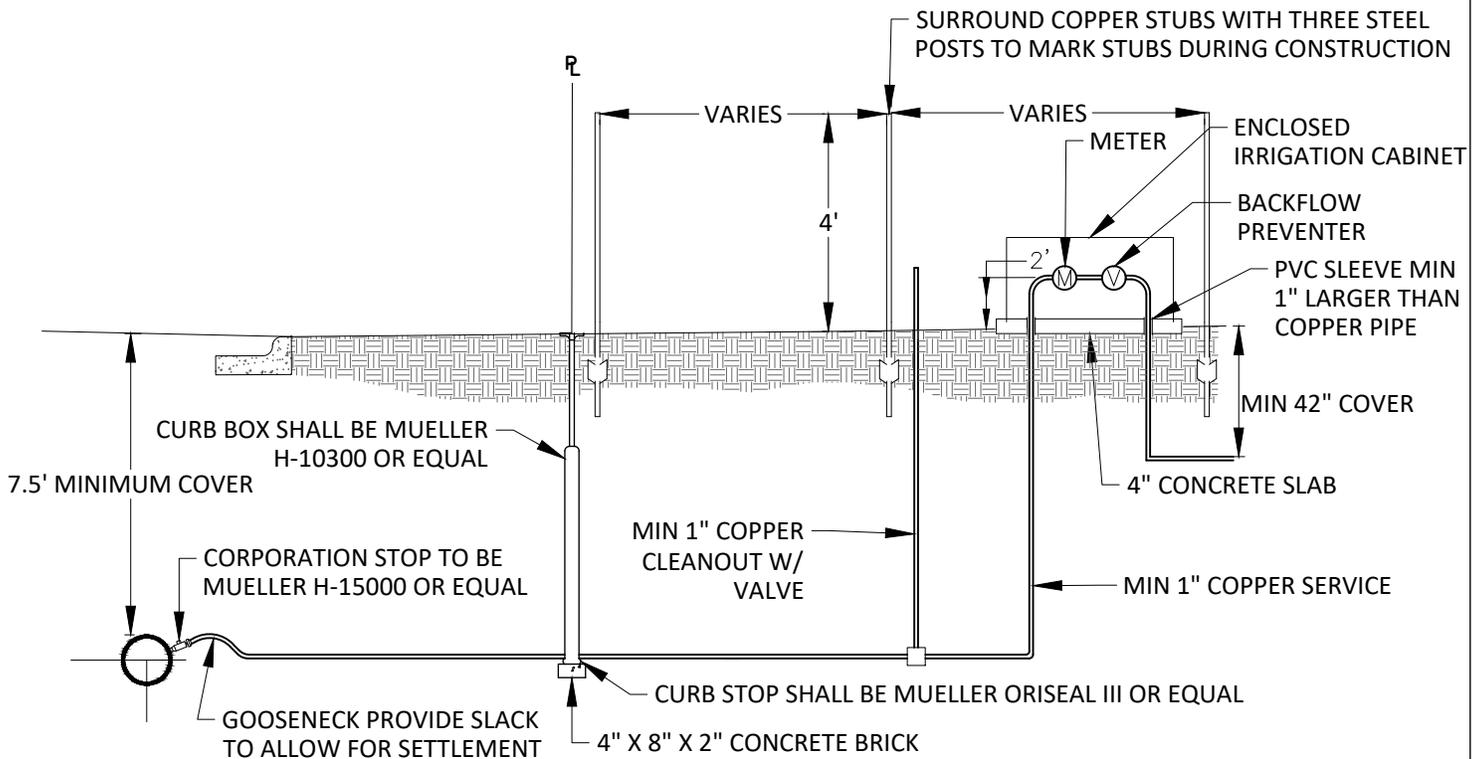
CITY OF INVER GROVE HEIGHTS
PUBLIC WORKS ENGINEERING DIVISION

RESIDENTIAL WATER SERVICE

Plate No.

WTR-03

Revised 02/23



NOTES:

1. NO COPPER TO COPPER CONNECTIONS SHALL BE MADE IN THE PUBLIC RIGHT OF WAY.
2. INSTALL CURB BOX WITH RISER KEY.
3. PLACE CURB BOX AT HALF EXTENSION.
4. USE FORD TYPE A-1 SINGLE UD COVER (4" BURY DEPTH) OR EQUAL FOR CURB BOXES IN DRIVEWAYS, SIDEWALKS, OR PARKING AREAS.
5. INSTALL METAL TEE FENCE POST 6" TO 12" BEHIND CURB BOX LOCATION. FENCE POST SHALL BE GREEN WITH TOP PAINTED BLUE.



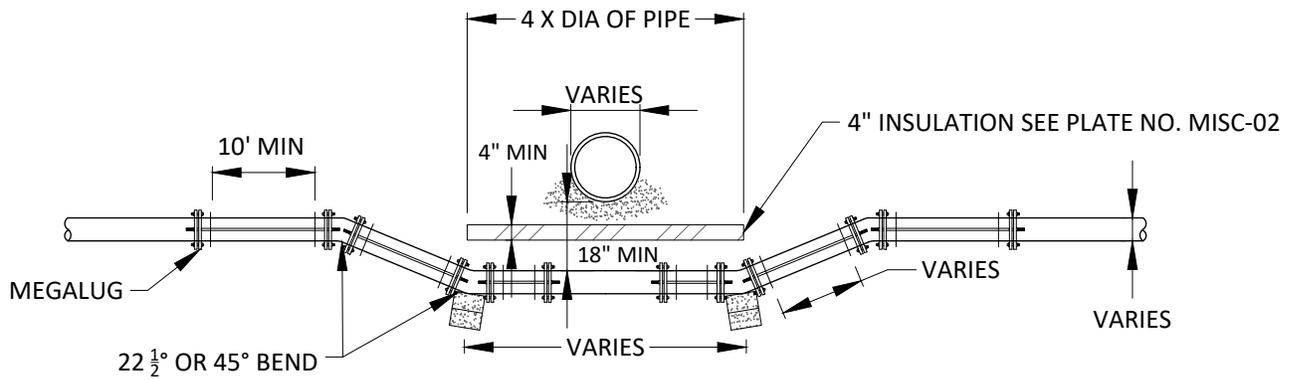
CITY OF INVER GROVE HEIGHTS
PUBLIC WORKS ENGINEERING DIVISION

IRRIGATION SERVICE

Plate No.

WTR-04

Revised 02/23



NOTES:

1. USE CORE-BLUE WATER MAIN BOLTS OR APPROVED EQUAL.
2. USE PVC MEGALUGS ON ALL CAST IRON PIPE.
3. USE MEGALUG JOINT RESTRAINT FOR ALL JOINTS.
4. SWAB ALL PIPE AND FITTINGS WITH CHLORINE SOLUTION.
5. SELECT GRANULAR REQUIRED FOR ALL BEDDING.



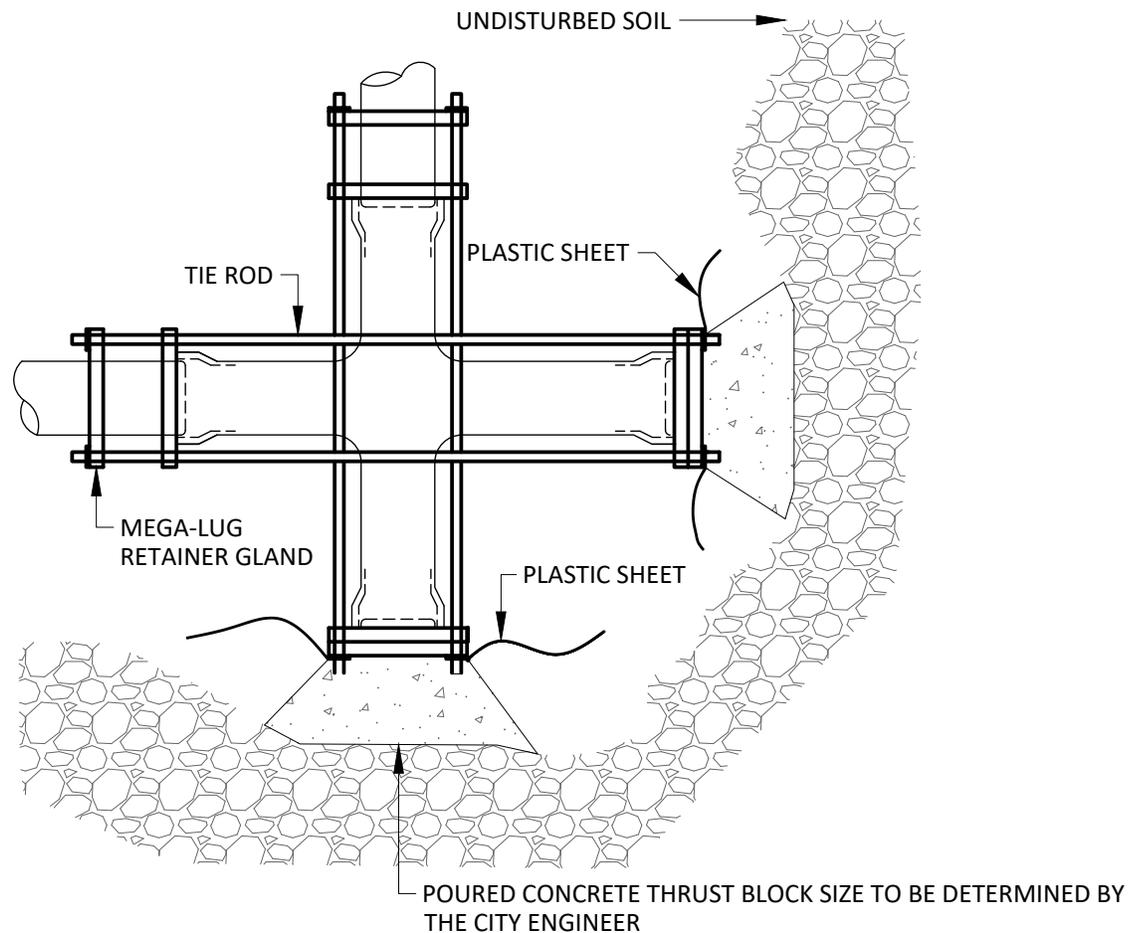
CITY OF INVER GROVE HEIGHTS
PUBLIC WORKS ENGINEERING DIVISION

WATER MAIN OFFSET

Plate No.

WTR-05

Revised 02/23



NOTES:

1. SECURE PLUG WITH TIE RODS IN ADDITION TO THRUST BLOCKING.
2. TIE RODS SHALL BE $\frac{5}{8}$ " DIAMETER THREADED STEEL.
3. SPRAY ALL TIE RODS WITH A BITUMINOUS COAL TAR PROTECTIVE COATING I.E. LOCTITE HEAVY DUTY RUBBERIZED UNDERCOATING OR APPROVED EQUAL.
4. TYING BACK PLUG IS INCIDENTAL TO WATER MAIN INSTALLATION.
5. USE CORE-BLUE WATER MAIN BOLTS OR APPROVED EQUAL.
6. USE POURED CONCRETE OR PRECAST BLOCKS FOR BLOCKING (NO WOOD, CURBING, SIDEWALK, ETC.).
7. PRECAST BLOCKS (MANHOLE BLOCKS OR EQUAL) MAY BE USED ON 6" OR 8" WATER MAIN.
8. WRAP PLASTIC SHEETING AROUND PLUG PRIOR TO POURING CONCRETE.
9. DO NOT POUR CONCRETE AROUND SIDES OF PLUG.
10. CONCRETE SHALL BE 4000 PSI.
11. ALL SERVICE STUBS AND FUTURE WATER MAIN EXTENSIONS MUST HAVE A 1" CORP AND 1" TYPE "K" BLEED OFF AS DIRECTED BY THE ENGINEER.



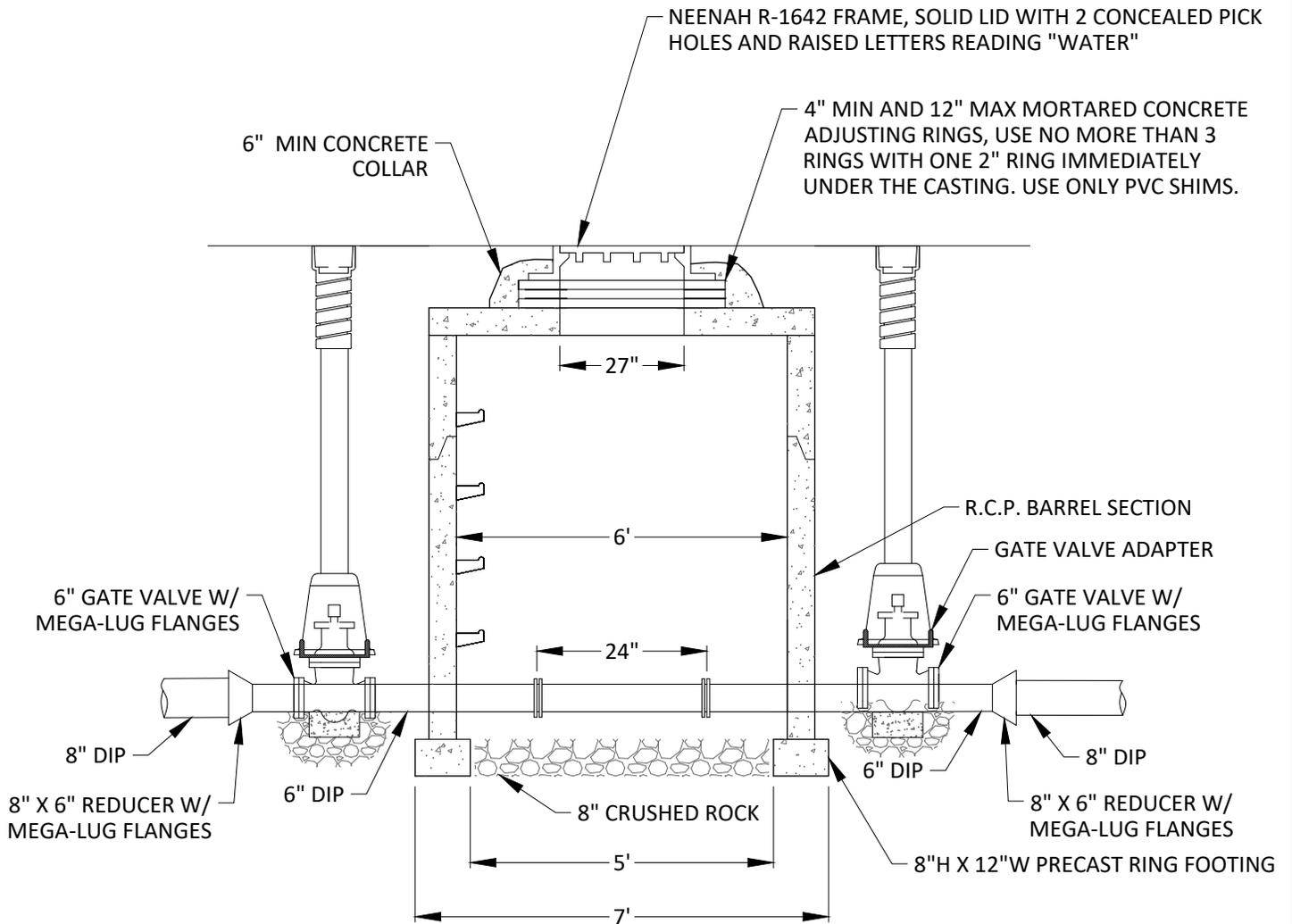
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TYPICAL WATER MAIN PLUG

Plate No.

WTR-06

Revised 02/23



NOTES:

1. INSTALL MARKING POSTS AT ALL MANHOLES LOCATED OUTSIDE OF STREET RIGHT OF WAY. SEE PLATE NO. MISC-01.



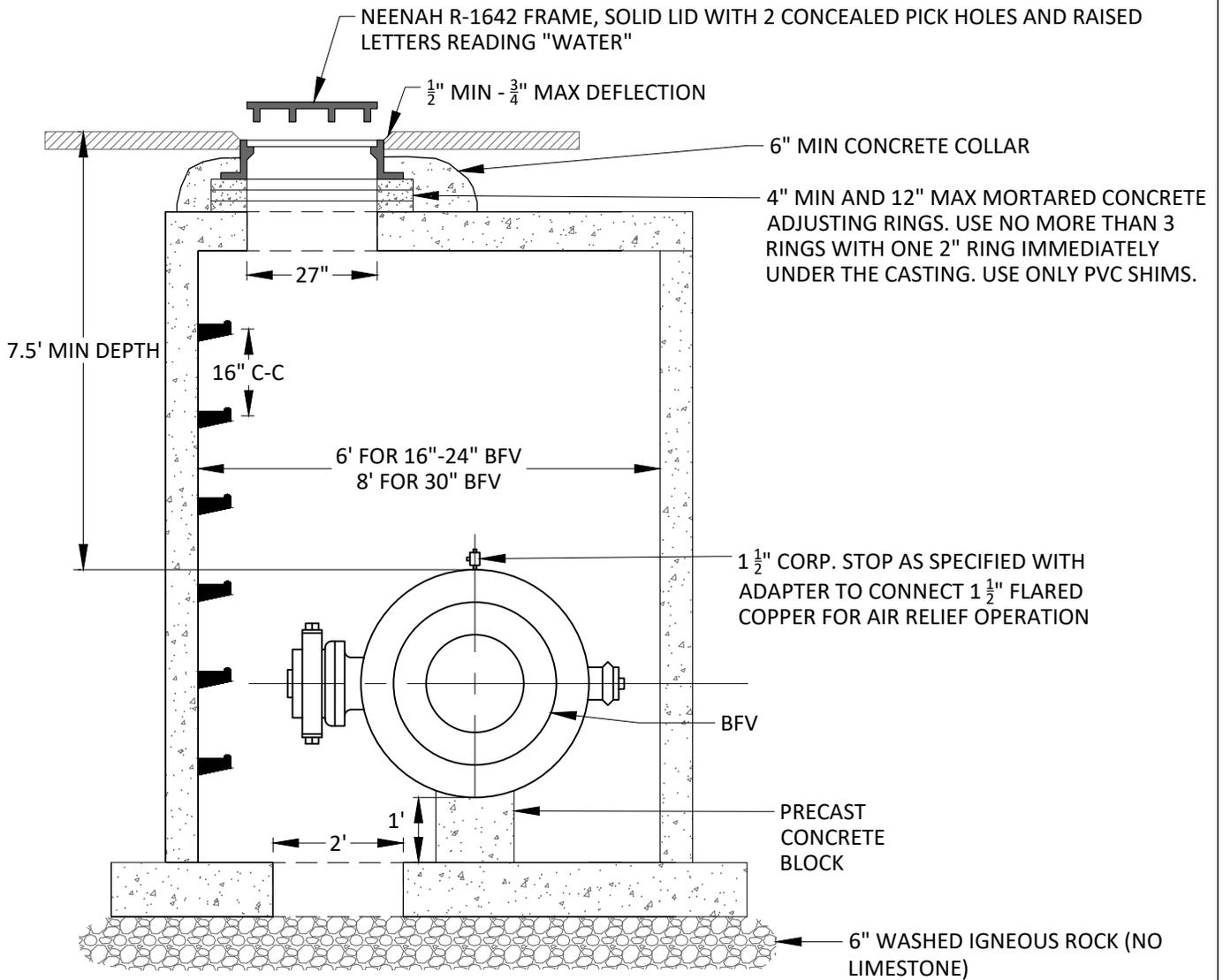
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WATER METER MANHOLE

Plate No.

WTR-07

Revised 02/23



NOTES:

1. CENTER OPERATING NUT UNDER MANHOLE OPENING.
2. POSITION GEARBOX SO IT IS REMOVABLE AND MAINTAINABLE.
3. INSTALL MARKING POSTS AT ALL MANHOLES LOCATED OUTSIDE OF STREET RIGHT OF WAY. SEE PLATE NO. MISC-01.



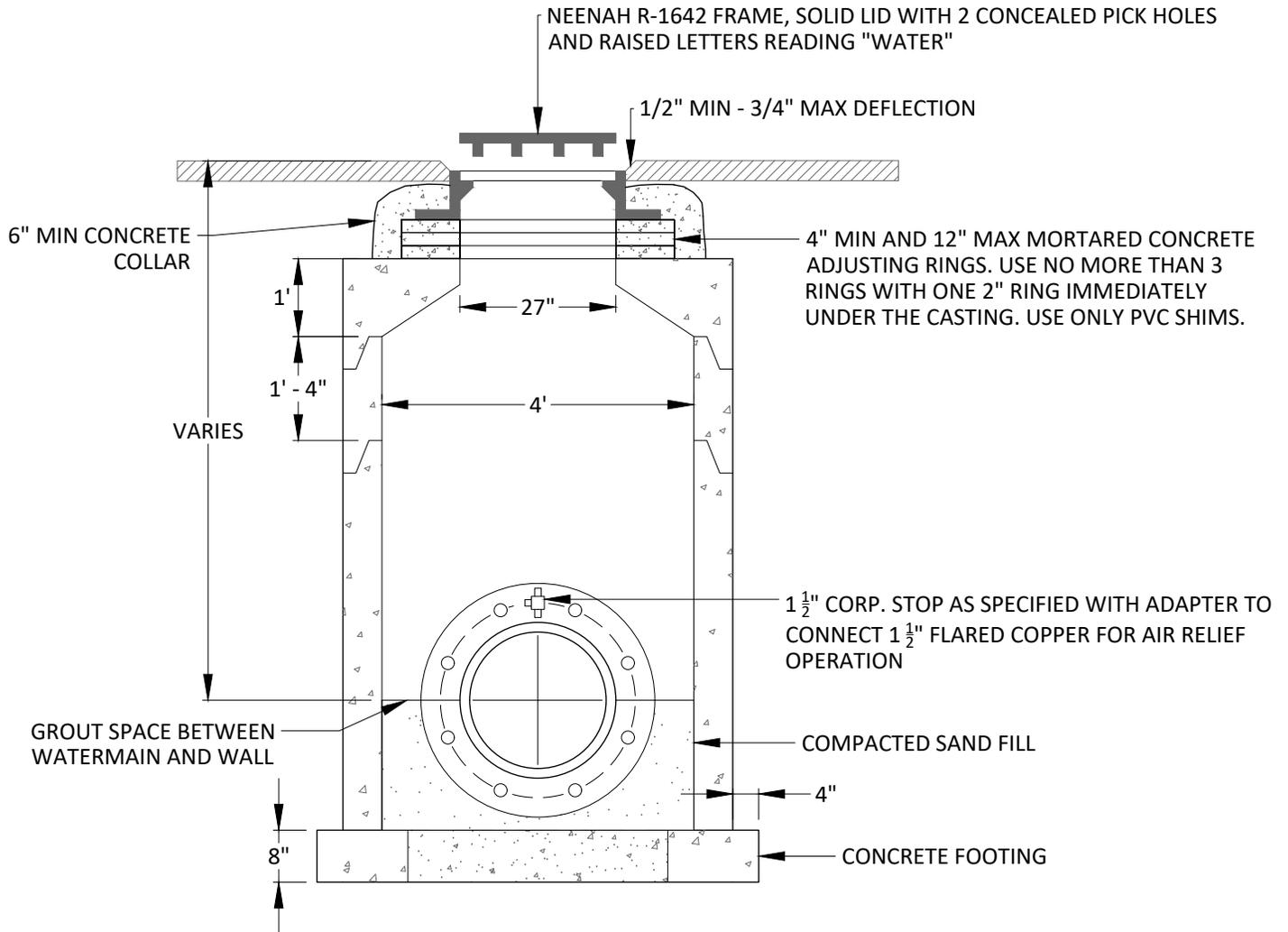
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PUBLIC WORKS ENGINEERING DIVISION

BUTTERFLY VALVE MANHOLE

Plate No.

WTR-08

Revised 02/23



NOTES:

1. PRECAST CONCRETE MANHOLE PIPE SHALL CONFORM TO ASTM C-76, CLASS II.
2. INSTALL MARKING POSTS AT ALL MANHOLES LOCATED OUTSIDE OF STREET RIGHT OF WAYS. SEE PLATE NO. MISC-01.



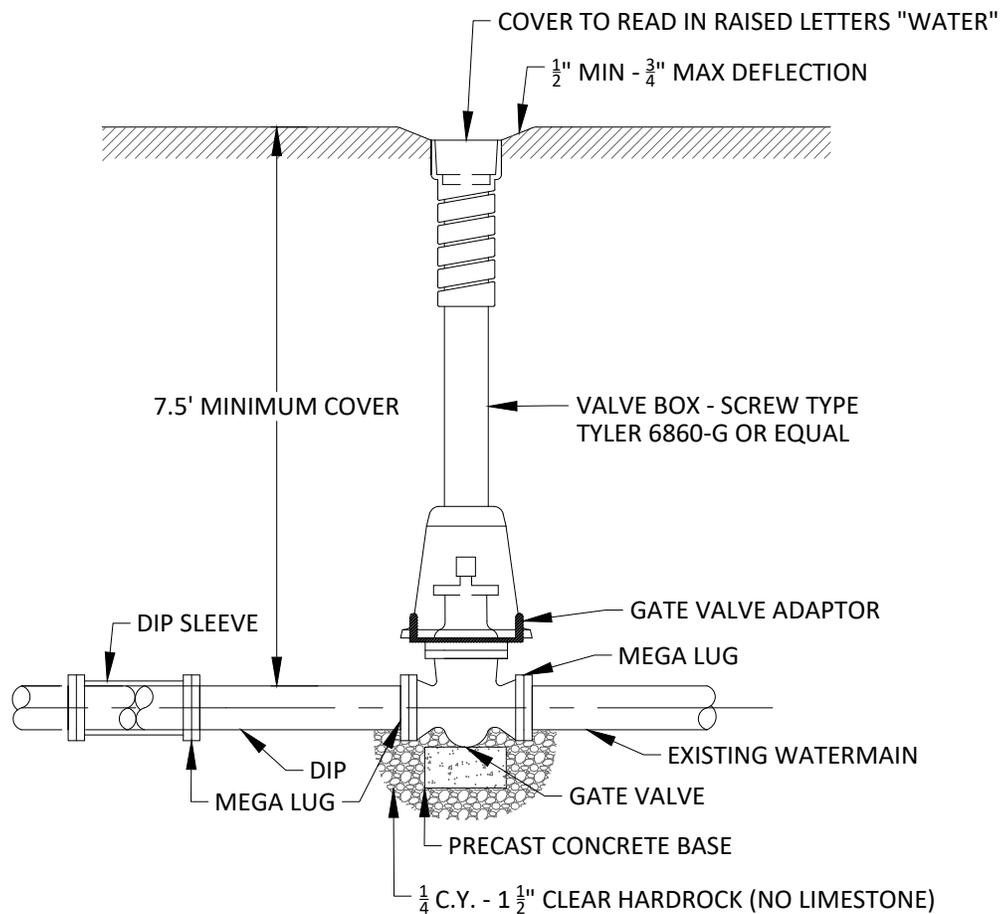
CITY OF INVER GROVE HEIGHTS
PUBLIC WORKS ENGINEERING DIVISION

AIR RELIEF MANHOLE

Plate No.

WTR-09

Revised 02/23



NOTES:

1. GATE VALVES SHALL CONFORM WITH AWWA C509-80 STANDARDS.
2. USE CORE-BLUE WATER MAIN BOLTS OR APPROVED EQUAL.
3. INSIDE ADJUSTMENT SECTIONS SHALL NOT BE ALLOWED (IE. NO INSERTS).
4. PVC MEGA LUG FOR CIP CONNECTIONS. STANDARD MEGA LUG FOR DIP CONNECTIONS.

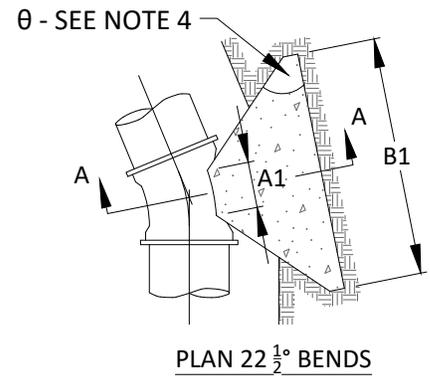
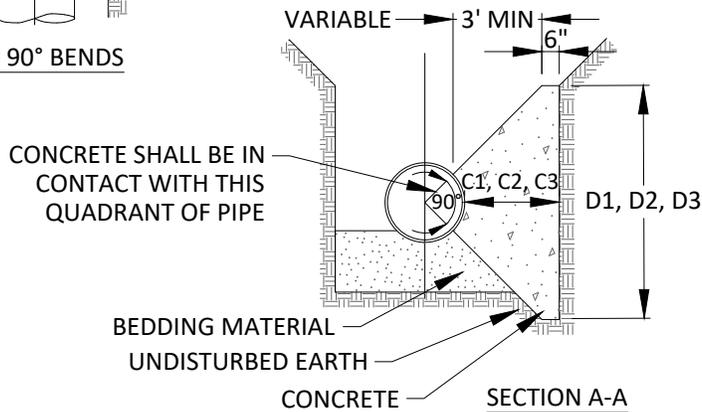
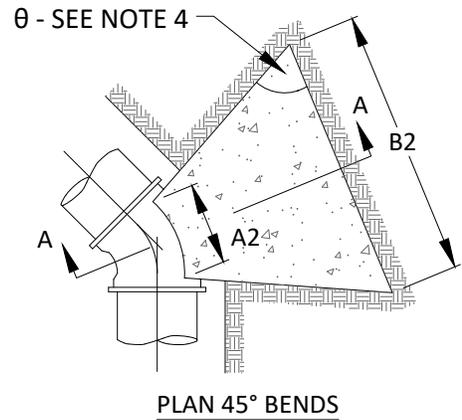
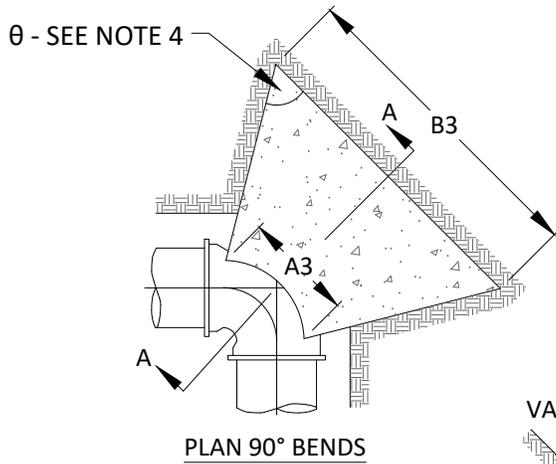


CITY OF INVER GROVE HEIGHTS
PUBLIC WORKS ENGINEERING DIVISION
**CUT-IN VALVE BOX
INSTALLATION**

Plate No.

WTR-10

Revised 03/23



BUTTRESS DIMENSIONS						
PIPE SIZE	22 1/2° BEND		45° BEND		90° BEND	
	B1	D1	B2	D2	B3	D3
6"	1'-5"	1'-5"	1'-5"	1'-5"	2'-1"	1'-6"
8"	1'-5"	1'-5"	2'-1"	1'-6"	2'-8"	2'-0"
12"	1'-10"	1'-10"	3'-4"	2'-0"	4'-9"	2'-6"
16"	3'-0"	2'-0"	3'-10"	3'-0"	6'-2"	3'-6"
20"	3'-6"	2'-8"	5'-6"	3'-4"	8'-4"	4'-0"
24"	4'-4"	3'-0"	6'-10"	3'-10"	9'-8"	5'-0"
30"	-	-	9'-3"	6'-0"	17'-0"	6'-0"

NOTES:

1. SHAPE OF BACK OF BUTTRESS MAY VARY AS LONG AS POURED AGAINST FIRM UNDISTURBED EARTH.
2. DIMENSION C1, C2, C3 SHOULD BE LARGE ENOUGH TO MAKE ANGLE θ EQUAL TO OR LARGER THAN 45°.
3. DIMENSION A1, A2, A3 SHOULD BE AS LARGE AS POSSIBLE WITHOUT INTERFERING WITH MJ BOLTS.
4. θ = 45° MINIMUM.
5. PLACE POLYETHYLENE BETWEEN CONCRETE AND PIPE.



CITY OF INVER GROVE HEIGHTS
PUBLIC WORKS ENGINEERING DIVISION

**CONCRETE THRUST BLOCKING
DETAIL**

Plate No.

WTR-11

Revised 03/23