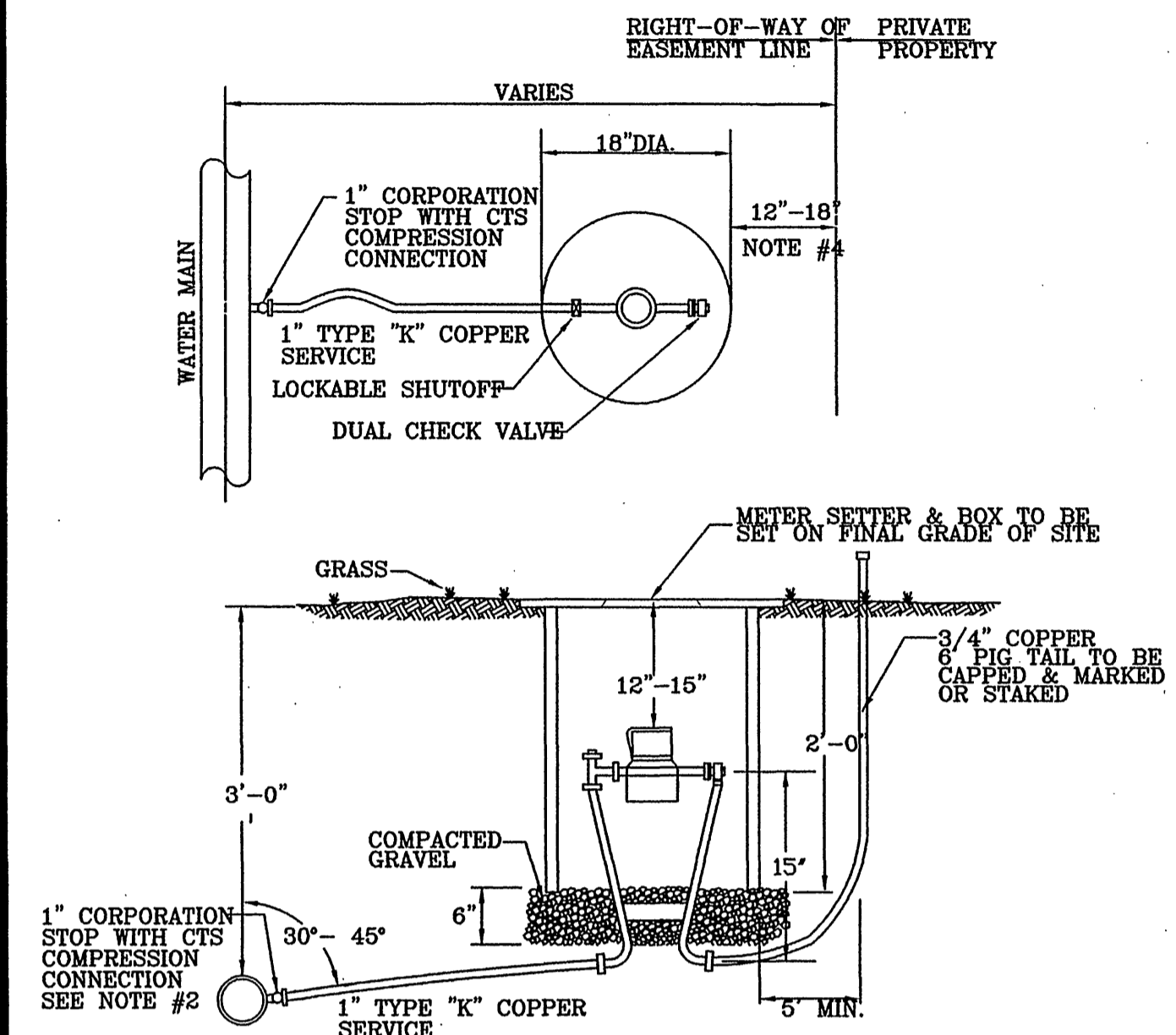
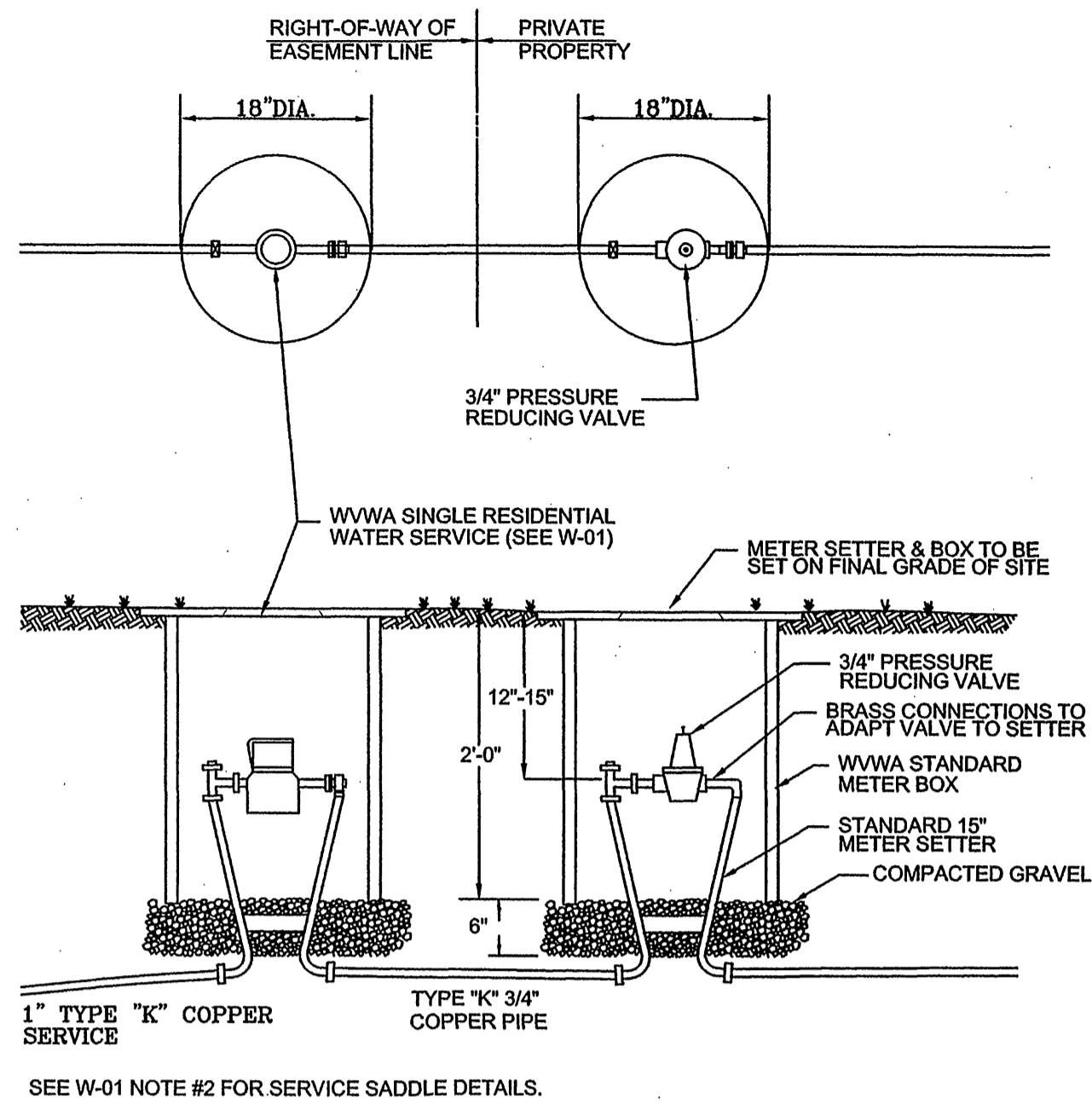


1. SETTER TO BE A.Y. McDONALD #20-215 WDLL33, FORD VBHH72-15W-1133 OR APPROVED EQUAL.
2. SADDLES MUST BE USED WITH ALL PLASTIC & CLASS 50 DUCTILE IRON PIPE. SERVICE SADDLES SHALL BE USED IN ACCORDANCE WITH SECTION 2665 OF THE WATER STANDARDS. SERVICE SADDLES FOR PLASTIC PIPE SHALL BE: POWERSEAL 3417, OR 3412AS, ROMAC 202S, OR 306, OR FORD METER FS202 OR FS303. FOR DUCTILE IRON PIPE USE THE ABOVE OR POWERSEAL 3413, ROMAC 202 OR FORD METER F202.
3. METER BOX MUST BE MID-STATES PLASTICS, INC. PLASTIC BOX WITH FORD A32-T (ELECTRONIC READ LID) OR A.Y. McDONALD MODEL 74M32C-TC CAST IRON BASE & COVER OR APPROVED EQUAL.
4. WHENEVER SIDEWALK EXISTS OR IS PROPOSED, MODIFY METER LOCATION AS DIRECTED.
5. CORPORATION STOP MUST BE FORD F1000-4-6 OR APPROVED EQUAL.



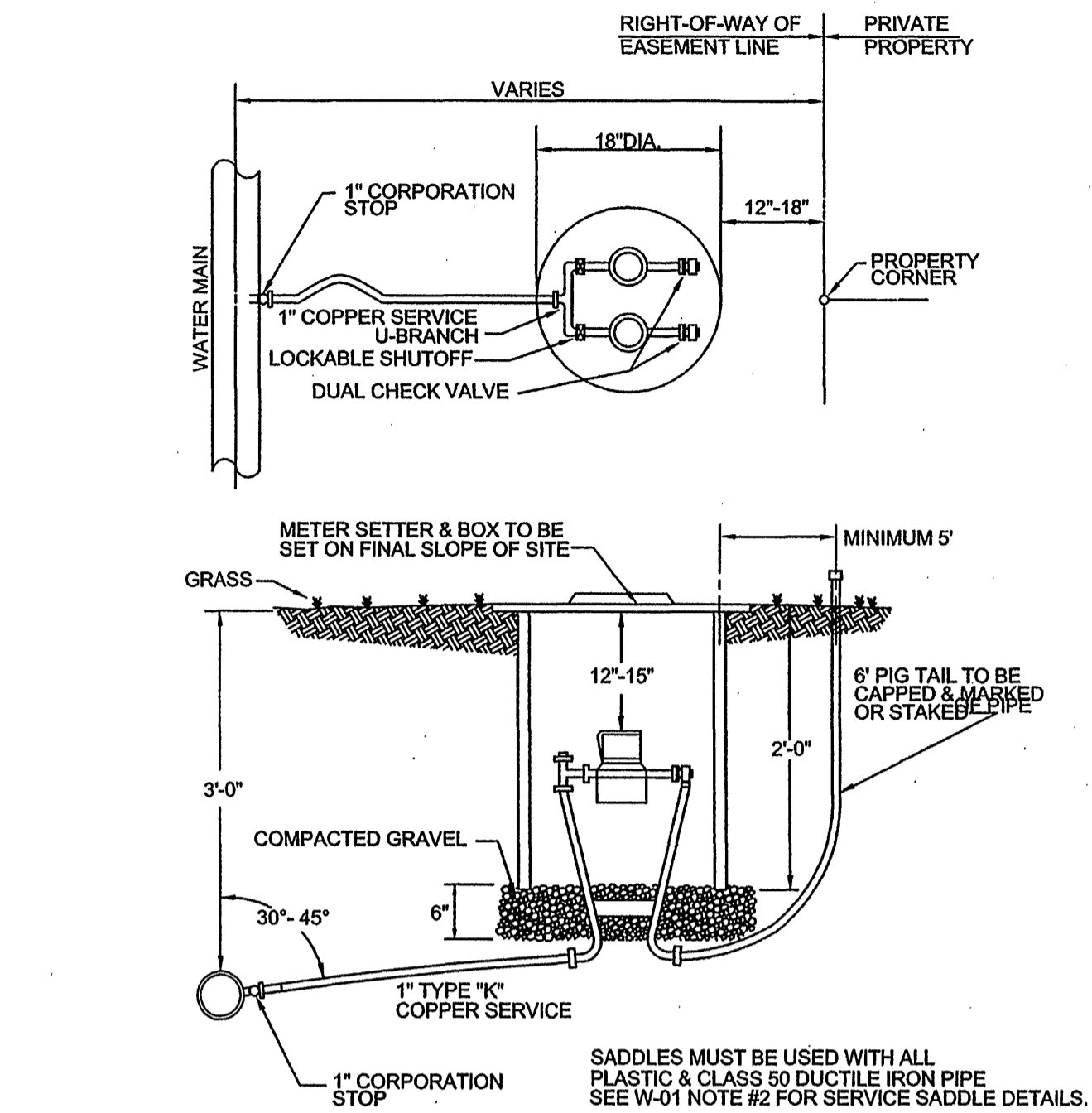
WESTERN VIRGINIA WATER AUTHORITY - CONSTRUCTION STANDARDS			
REVISION DATE	TYPE "A" SINGLE RESIDENTIAL WATER SERVICE (LINE PRESSURE UNDER 80 PSI)	W-01	
07/01/04			



1. THIS CONFIGURATION REQUIRED WHEN WATER PRESSURE AT THE WATER MAIN IS BETWEEN 80 AND 120 PSI.

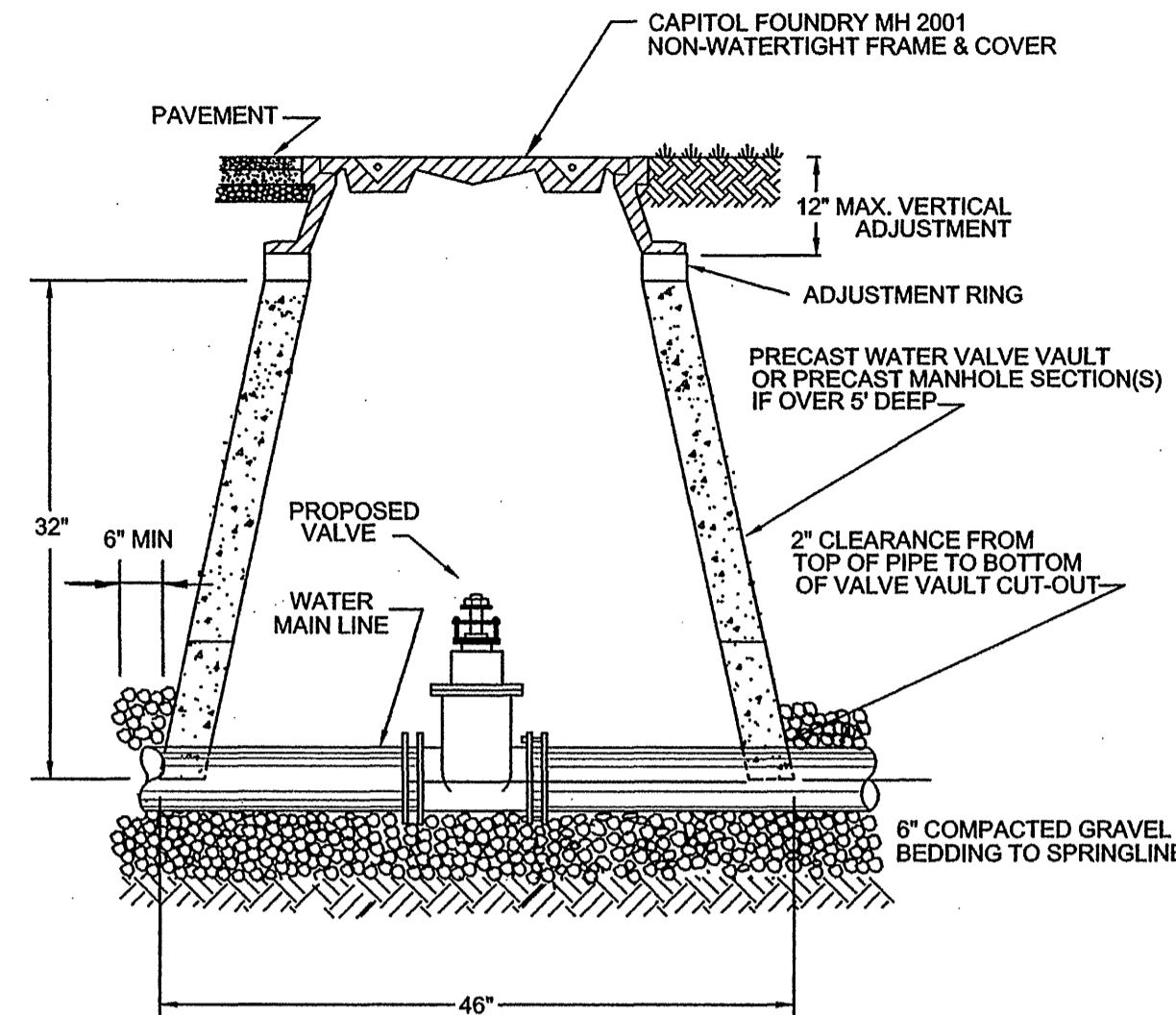
WESTERN VIRGINIA WATER AUTHORITY - CONSTRUCTION STANDARDS			
REVISION DATE	TYPE "B" SINGLE RESIDENTIAL WATER SERVICE (LINE PRESSURE UNDER 80 TO 120 PSI)	W-02	
07/01/04			

1. SETTER TO BE A.Y. McDONALD #20-215 WDLL33, FORD VBHH72-15W-1133 OR APPROVED EQUAL.
2. METER BOX MUST BE MID-STATES PLASTICS, INC. PLASTIC BOX WITH FORD A32-T (ELECTRONIC READ LID) OR A.Y. McDONALD MODEL 74M32C-TC CAST IRON BASE & COVER OR APPROVED EQUAL.
3. CORPORATION STOP MUST BE FORD F1000-4-6 OR APPROVED EQUAL.

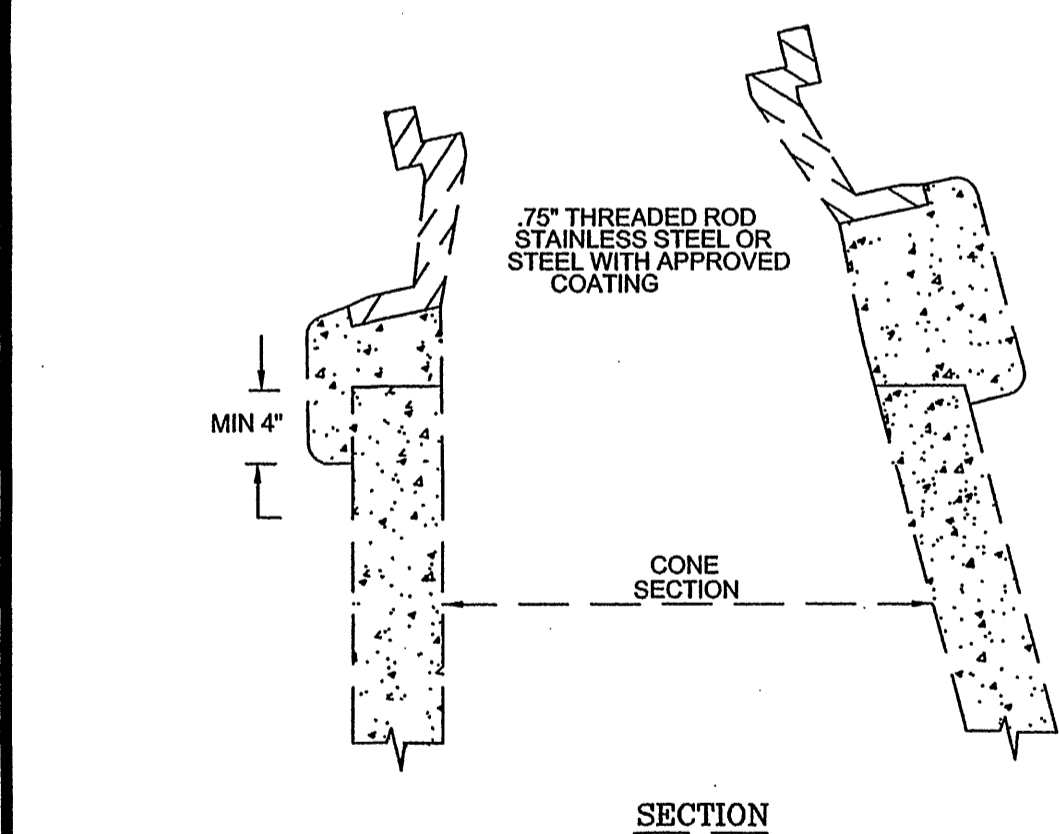


SADDLES MUST BE USED WITH ALL PLASTIC & CLASS 50 DUCTILE IRON PIPE SEE W-01 NOTE #2 FOR SERVICE SADDLE DETAILS.

WESTERN VIRGINIA WATER AUTHORITY - CONSTRUCTION STANDARDS			
REVISION DATE	DOUBLE RESIDENTIAL WATER SERVICE	W-04	
07/01/04			

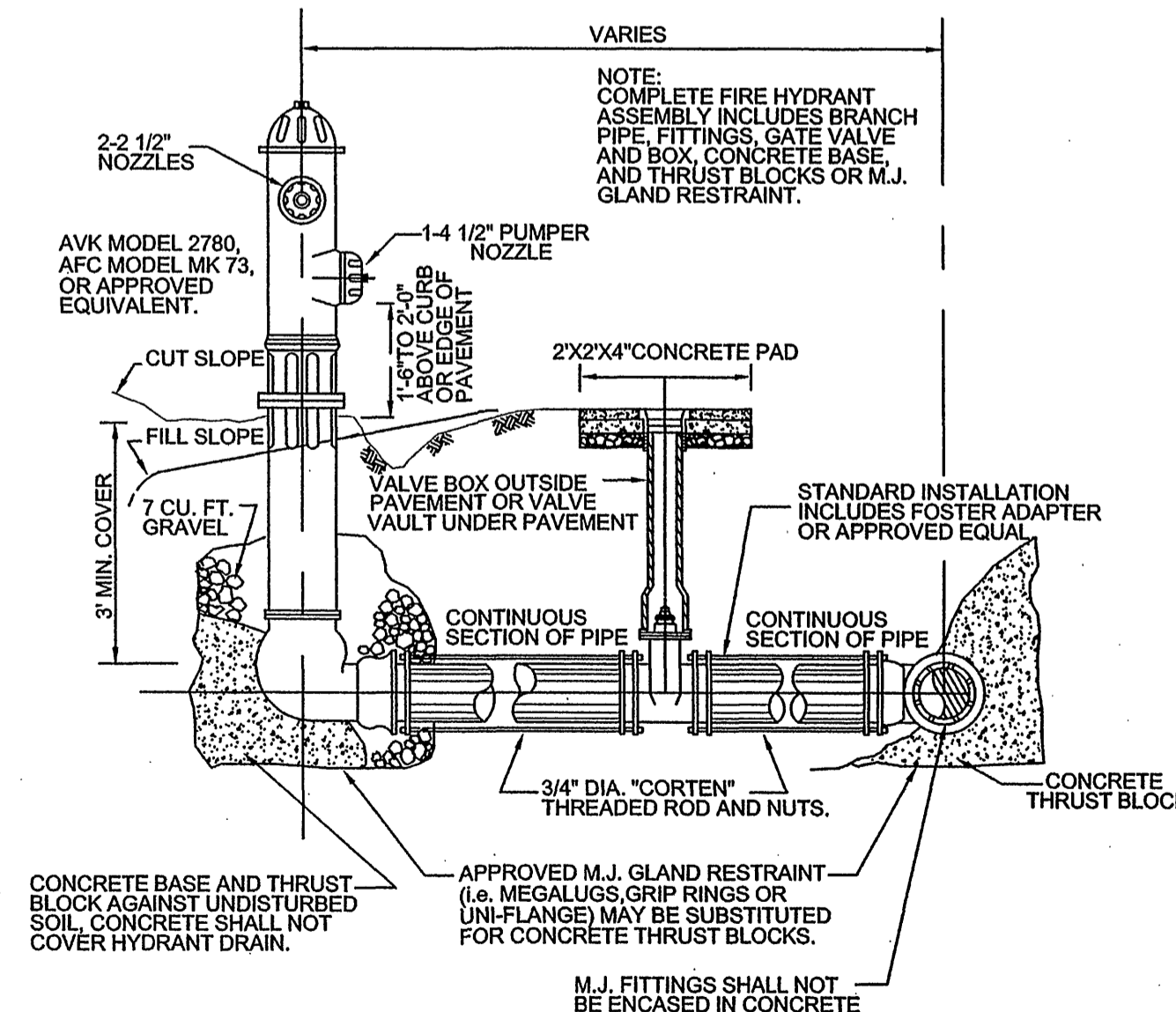


WESTERN VIRGINIA WATER AUTHORITY - CONSTRUCTION STANDARDS			
REVISION DATE	WATER LINE VALVE INSTALLATION	W-08	
07/01/04			

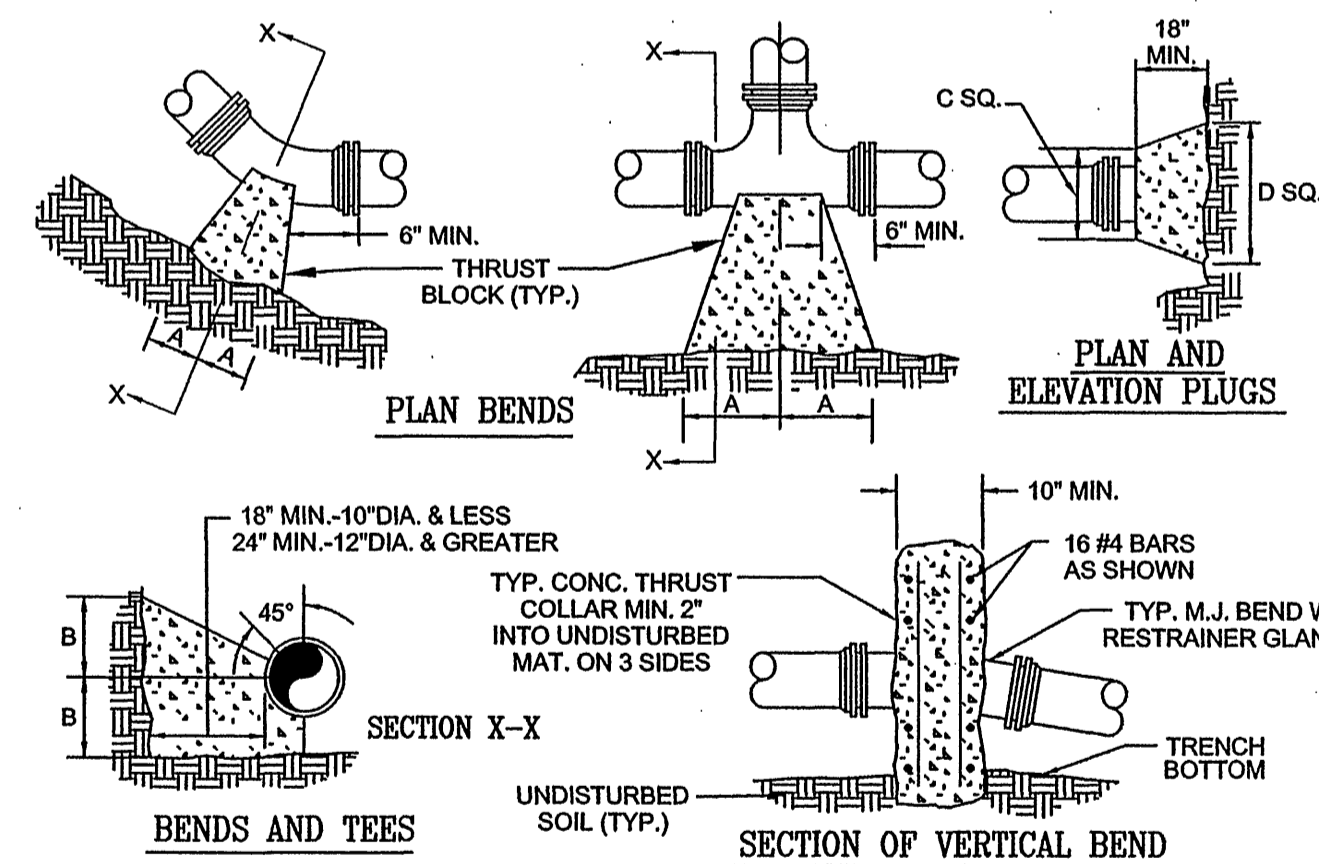


- NOTE:
1. USE MODERATELY STIFF MIX OF NON SHRINK CEMENT, SAND AND 1/2" LESS DIAMETER GRAVEL WITH 28 DAYS STRENGTH AT 3000 P.S.I.
2. MIX IS TO BE FORCED INTO ALL GROOVES AND UNDER FLANGE OF FRAME AND LEFT AT OR ABOVE TOP OF FLANGE.
3. MAX. OF 4 BRICK OR CONCRETE BLOCKS TO BE USED FOR GRADE CONTROL.
4. DO NOT BACKFILL AROUND FRAME AND COVER, FOR 48 HOURS AFTER CON. IS PLACED. THE USE OF HIGHLY STRENGTH CONCRETE WOULD REDUCE TIME TO (24HRS).
5. RESTRICT TRAFFIC LOAD FOR MIN. 24 HOURS.

- NOTES:
1. MAIN BODY OF HYDRANT MUST BE PAINTED SILVER WITH RED REFLECTIVE CAPS AND BONNET.
2. FIRE HYDRANT SHALL BE INSTALLED 2' MIN. AND 4' MAX. FROM BACK OF CURB OR 6' MIN. AND 12' MAX. WHEN CURB IS NOT PRESENT. FIRE HYDRANT TO BE INSTALLED WITHIN RIGHT-OF-WAY OR EASEMENT LINE.
3. AREA AROUND HYDRANT AT A RADIUS OF 4' TO BE LEVEL AND UNOBSTRUCTED.
4. WATERPROOF BAGS SHALL BE PLACED OVER ALL NEWLY INSTALLED FIRE HYDRANTS.
5. HIGH PRESSURE (OVER 120 PSI) REQUIRES THE USE ALL 3 RESTRAINTS.



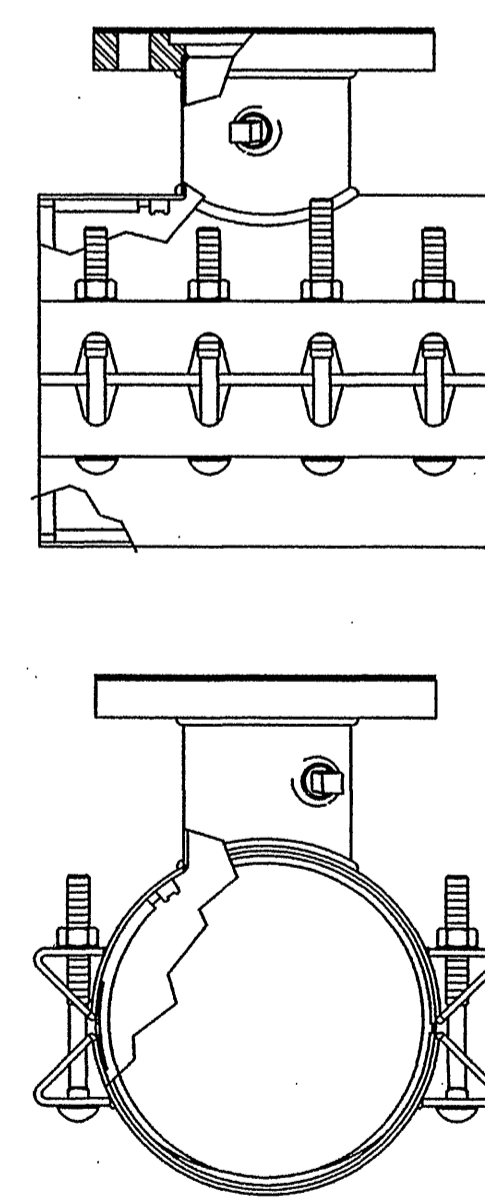
WESTERN VIRGINIA WATER AUTHORITY - CONSTRUCTION STANDARDS			
REVISION DATE	FIRE HYDRANT ASSEMBLY	W-18	
07/01/04			



- NOTES:
1. FOR VERT. BEND DOWN IN EXCESS OF 11 1/4" BEND, ANCHORAGE SHALL BE DESIGNED BY ENGINEER.
2. FOR VERT. BEND UPWARD, BLOCKING TO BE SIMILAR TO THAT FOR HORIZ. BEND.
3. GLANDS & BOLTS SHALL BE PROTECTED FROM CONC. BY PLASTIC SHEETING WHEN POURING THRUST BLOCKS.
4. ALL THRUST BLOCK & SUPPORT CONC. SHALL BE 3000 PSI READY MIX CONC.
5. THRUST BLOCKS WITH "B" DIMENSION GREATER THAN 30" SHALL HAVE THE RESTRAINED PIPE INSTALLED WITH A MINIMUM OF 4' OF COVER.
PRESSURE = 200 psi
BEARING = 2000 psf
FACTOR OF SAFETY = 1.5

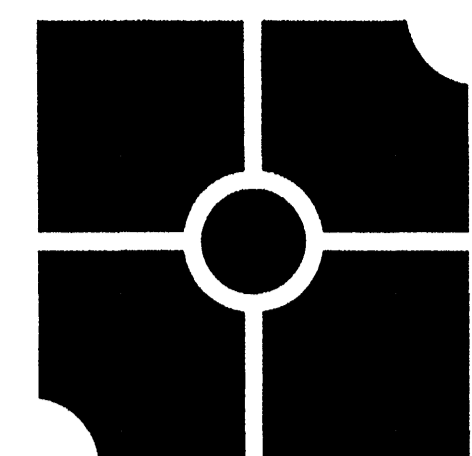
PIPE SIZE	90° BEND	45° BEND	22 1/2° BEND	11 1/4° BEND	TEE	PLUG
4"	8"	8"	8"	8"	8"	8"
6"	12"	12"	12"	12"	12"	12"
8"	16"	16"	16"	16"	16"	16"
10"	20"	20"	20"	20"	20"	20"
12"	24"	24"	24"	24"	24"	24"
14"	28"	28"	28"	28"	28"	28"
16"	32"	32"	32"	32"	32"	32"
18"	36"	36"	36"	36"	36"	36"
20"	40"	40"	40"	40"	40"	40"
22"	44"	44"	44"	44"	44"	44"
24"	48"	48"	48"	48"	48"	48"
26"	52"	52"	52"	52"	52"	52"
28"	56"	56"	56"	56"	56"	56"
30"	60"	60"	60"	60"	60"	60"

WESTERN VIRGINIA WATER AUTHORITY - CONSTRUCTION STANDARDS			
REVISION DATE	THRUST BLOCK CONSTRUCTION	W-19	
07/01/04			



1. TAPPING SLEEVE SHALL BE POWERSEAL MODEL 3490 TYPE 304 STAINLESS STEEL WITH CARBON STEEL FLANGE, ROMAC'S MODEL SET III OR APPROVED EQUIVALENT. SLEEVE SHALL BE RATED AT 250 PSI AND MUST HAVE A TEST PLUG.
2. TAPPING VALVE SHALL BE AVK RESILENT SEATED GATE VALVE WITH MJFL. VALVE SHALL BE RATED AT 250 PSI.
3. TAPPING SLEEVE AND VALVE SHALL BE FULL PORT TO ACCEPT FULL SIZE SHELL CUTTER.

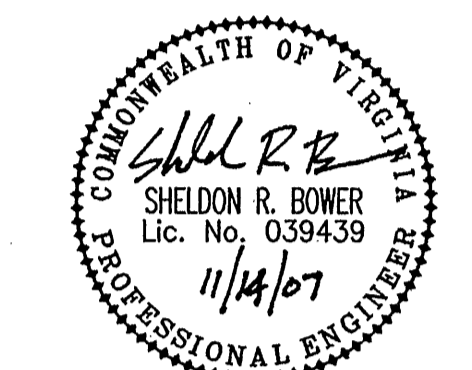
WESTERN VIRGINIA WATER AUTHORITY - CONSTRUCTION STANDARDS			
REVISION DATE	TAPPING SLEEVE AND VALVE	W-23	
07/01/04			



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**Comprehensive Site Plan for
The Village at Tinker Creek-Phase II
Prepared for Star City Developers**
Hollins Magisterial District
Roanoke County, Virginia

REVISIONS:
Revisions per Roanoke County comments 10-31-07
Revisions per Roanoke County comments 11-14-07

DESIGNED BY: SRB
DRAWN BY: AAS
CHECKED BY: SRB
SCALE: 1"=20'
DATE: July 20, 2007

SHEET TITLE:
**Waterline
Details**

C15
15 OF 16
PROJECT NUMBER:
06-0402-04