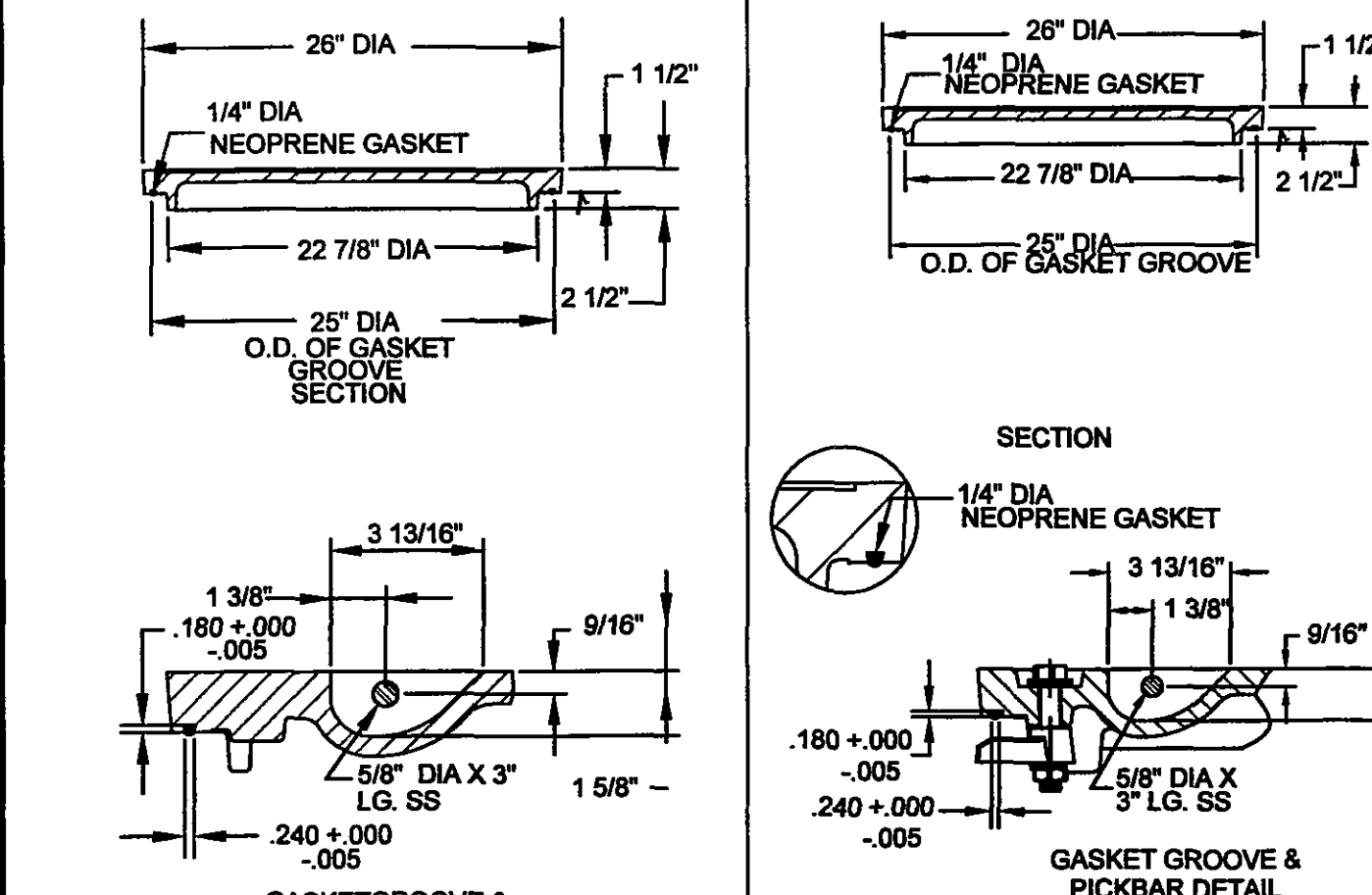
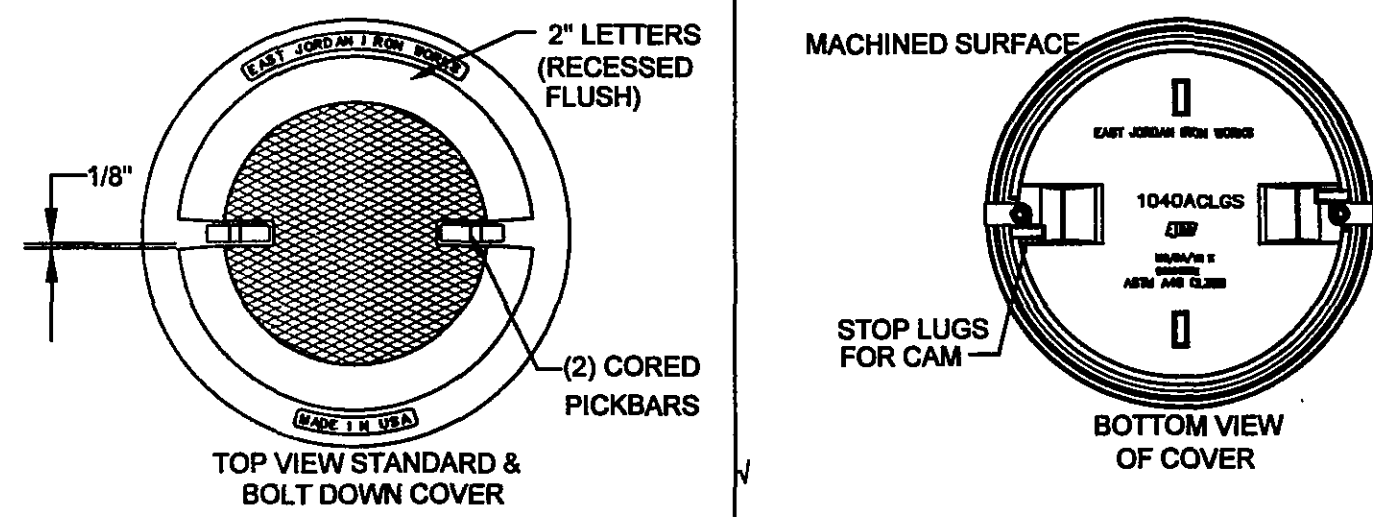
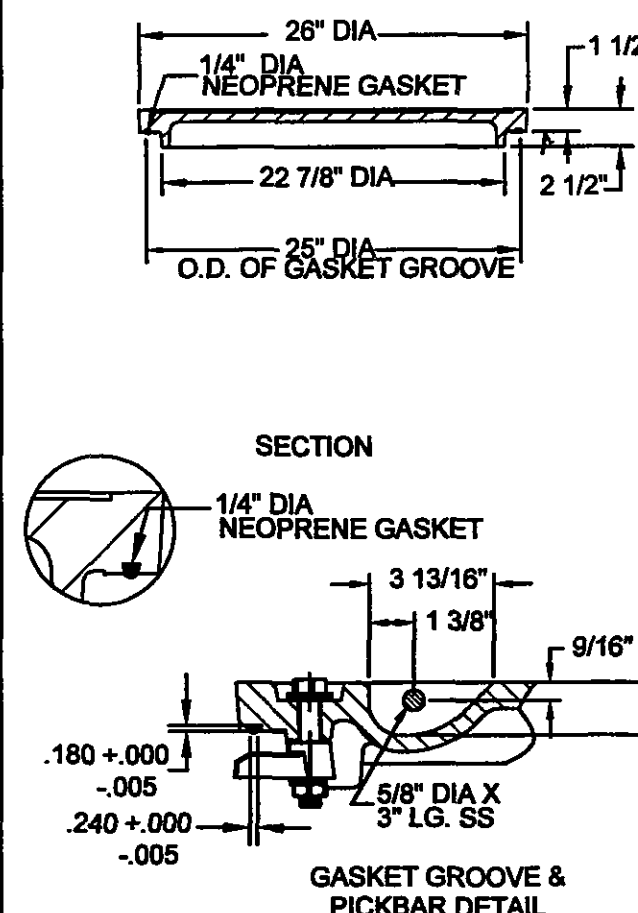
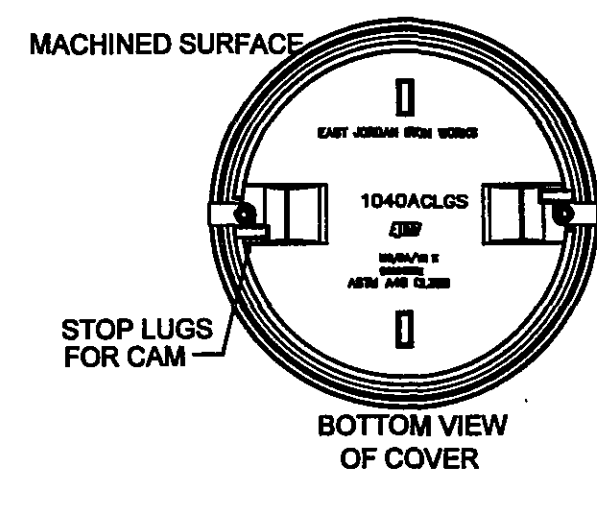


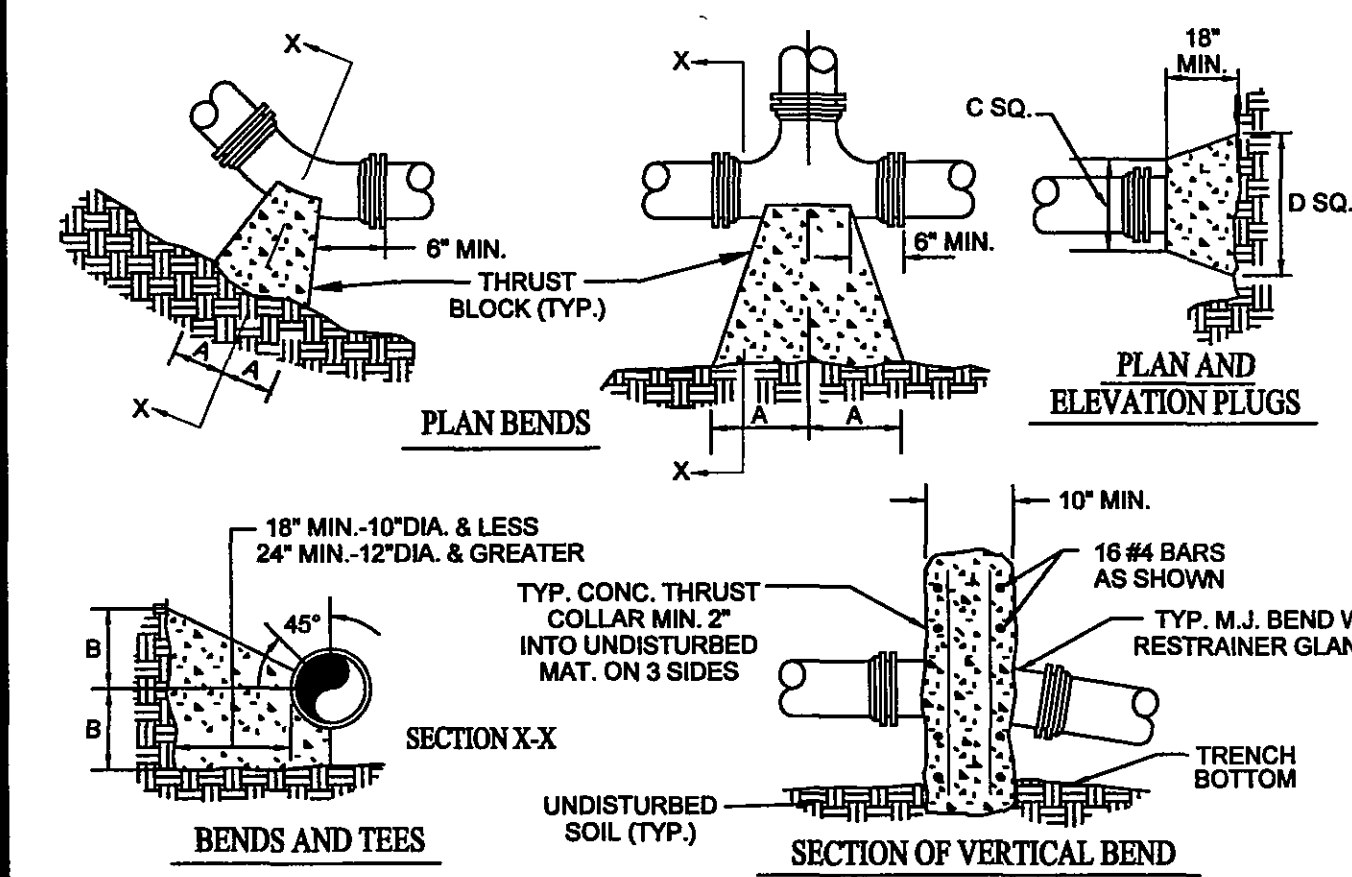
WATERTIGHT MANHOLE FRAME MODEL #1045Z BY EAST JORDAN IRON WORKS, INC. OR EQUIVALENT.



STANDARD MANHOLE COVER



BOLT-DOWN MANHOLE COVER

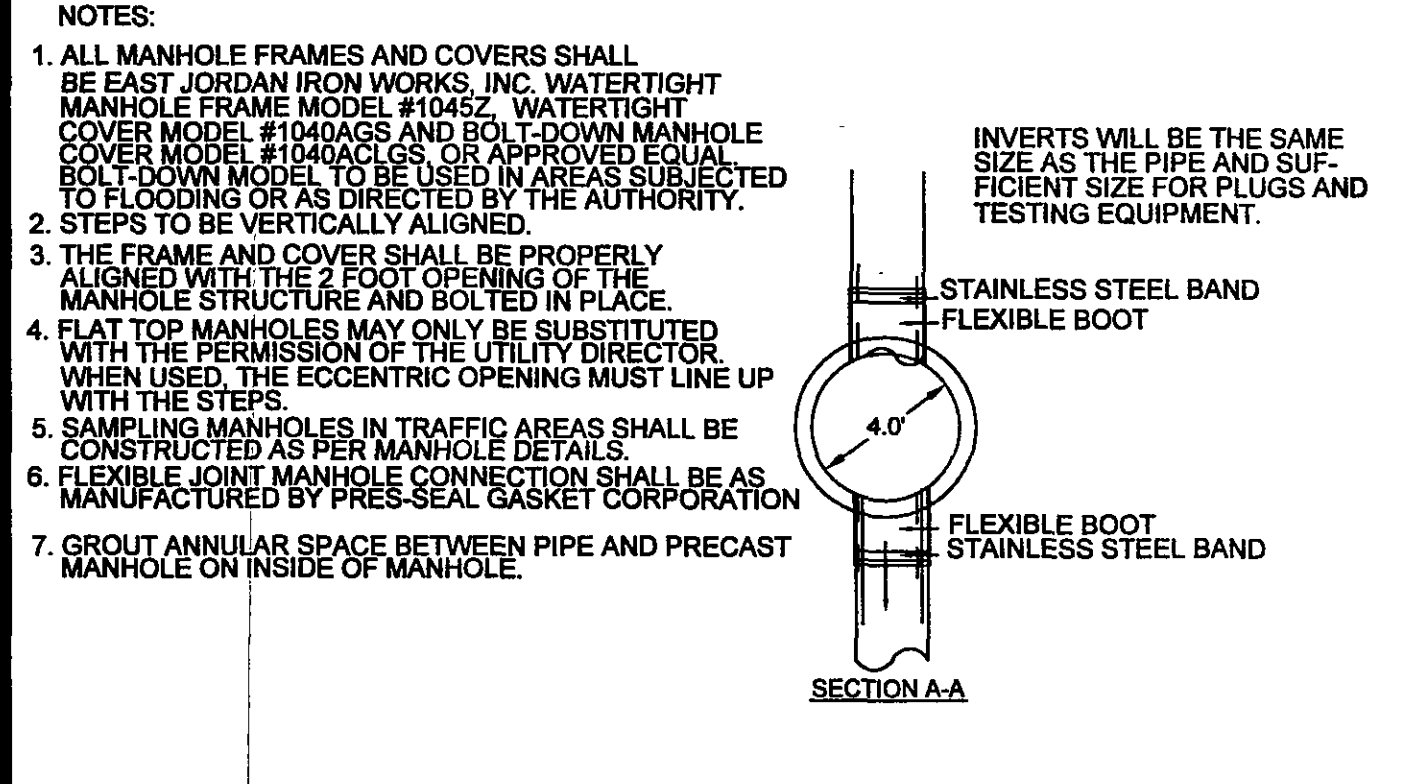


NOTES:  
 1. FOR VERT. BEND DOWN IN EXCESS OF 11 1/4\"/>

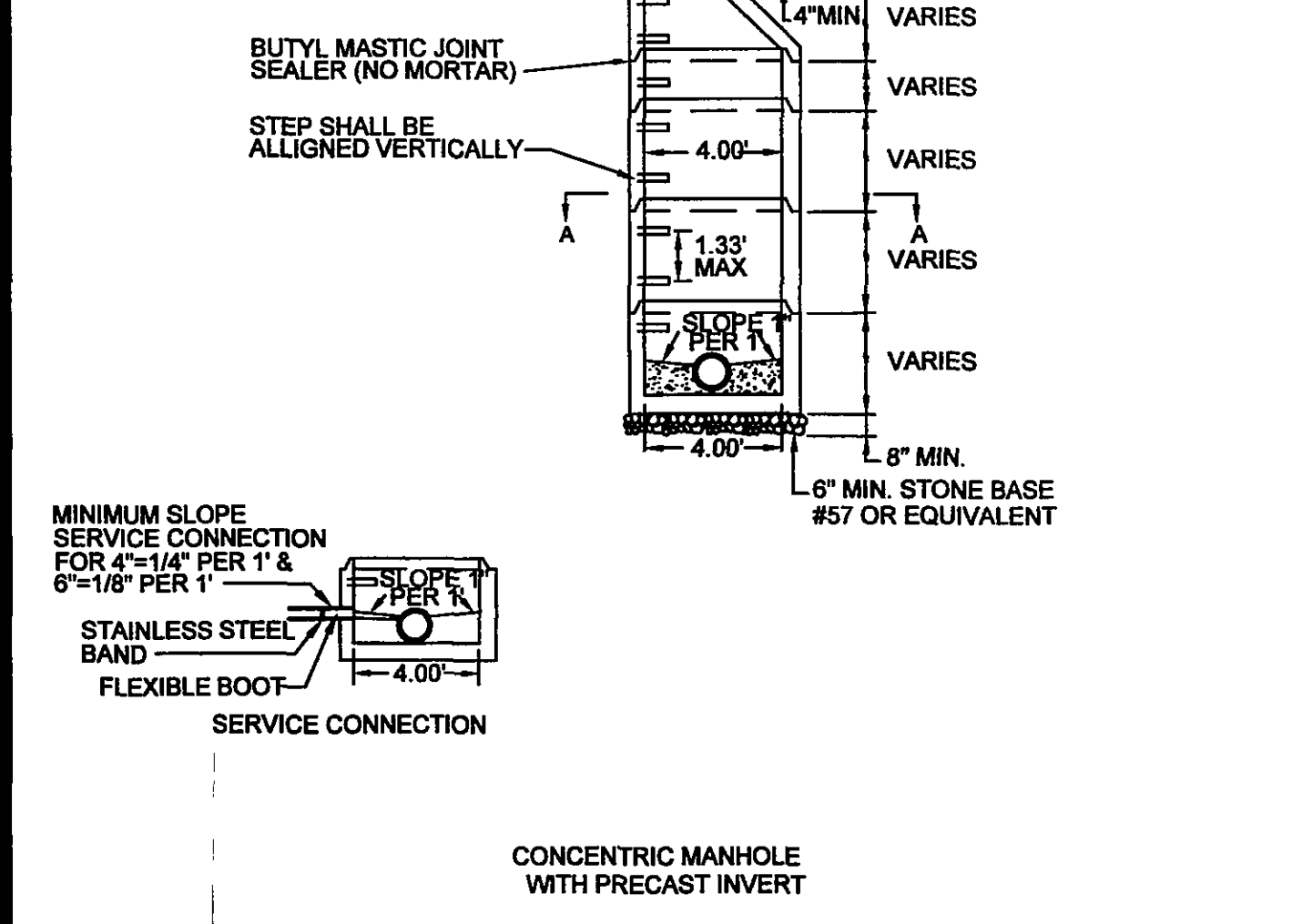
PIPE SIZE	90° BEND	45° BEND	22 1/2° BEND	11 1/4° BEND	TEE	PLUG
4"	8"	8"	8"	8"	8"	8"
6"	12"	12"	12"	12"	12"	12"
8"	18"	18"	18"	18"	18"	18"
10"	24"	24"	24"	24"	24"	24"
12"	30"	30"	30"	30"	30"	30"
16"	42"	42"	42"	42"	42"	42"
20"	54"	54"	54"	54"	54"	54"
24"	66"	66"	66"	66"	66"	66"
30"	78"	78"	78"	78"	78"	78"

PIPE SIZE	PIPE MAT'L	90° BEND	45° BEND	22 1/2° BEND	11 1/4° BEND	TEE	REDUCER	VERT. VERT.	VERT. VERT.
6"	D.I.	37"	19"	7"	4"	51"	47"	21"	30"
8"	D.I.	45"	19"	9"	4"	61"	57"	20"	37"
10"	D.I.	53"	22"	11"	5"	73"	68"	43"	41"
12"	D.I.	61"	25"	13"	6"	85"	79"	51"	49"
6"	PVC	32"	12"	9"	3"	50"	38"	29"	17"
8"	PVC	47"	16"	8"	4"	68"	51"	48"	22"
10"	PVC	47"	20"	9"	5"	89"	82"	30"	56"
12"	PVC	56"	23"	11"	6"	106"	86"	56"	32"

1. ALL JOINTS SHALL BE RESTRAINED ON BOTH SIDES OF THE FITTING FOR THE LENGTH SHOWN UNLESS OTHERWISE INDICATED.  
 2. REDUCER IS ONE SIZE SMALLER THAN PIPE LISTED. RESTRAINED LENGTH IS UPSTREAM ON THE LARGE SIDE OF THE REDUCER.



NOTES:  
 1. ALL MANHOLE FRAMES AND COVERS SHALL BE EAST JORDAN IRON WORKS, INC. WATERTIGHT MANHOLE FRAME MODEL #1045Z. WATERTIGHT COVER MODEL #1040AGS AND BOLT-DOWN MANHOLE COVER MODEL #1040AUGS OR APPROVED EQUAL.  
 2. STEPS TO BE VERTICALLY ALIGNED.  
 3. THE FRAME AND COVER SHALL BE PROPERLY ALIGNED WITH THE 2 FOOT OPENING OF THE MANHOLE STRUCTURE AND BOLTED IN PLACE.  
 4. THE FRAME AND COVER MAY ONLY BE SUBSTITUTED WITH THE PERMISSION OF THE UTILITY DIRECTOR. WHEN USED, THE ECCENTRIC OPENING MUST LINE UP WITH THE STEPS.  
 5. SAMPLING MANHOLES IN TRAFFIC AREAS SHALL BE CONSTRUCTED AS PER MANHOLE DETAILS.  
 6. MANUFACTURED BY PRESEAL GASKET CORPORATION.  
 7. GROUT ANNUAL SPACE BETWEEN PIPE AND PRECAST MANHOLE ON INSIDE OF MANHOLE.



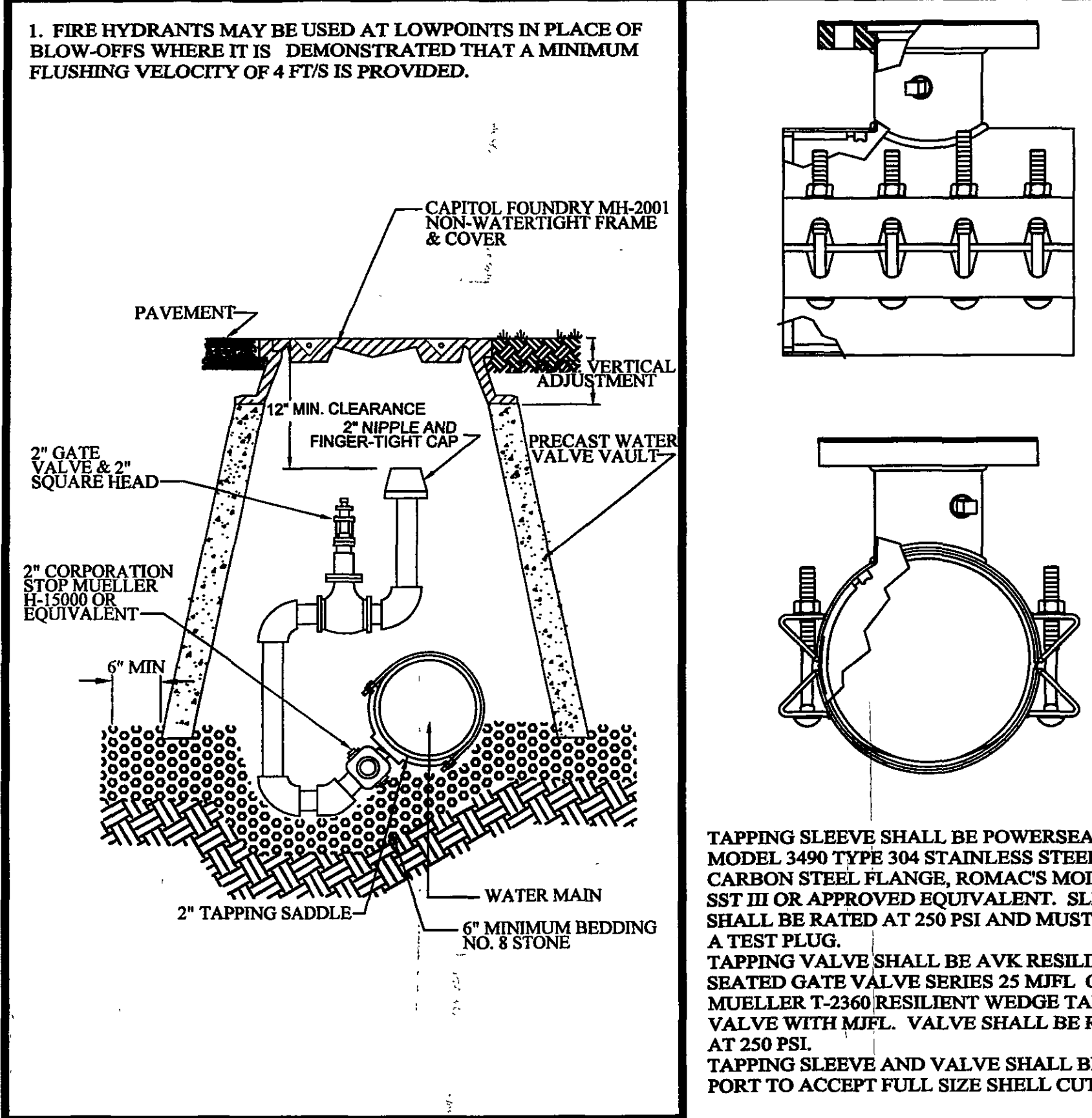
CONCENTRIC MANHOLE WITH PRECAST INVERT

WESTERN VIRGINIA WATER AUTHORITY - CONSTRUCTION STANDARDS		
REVISION DATE	DESCRIPTION	NO.
07/01/04	WATERTIGHT MANHOLE FRAME	S-05

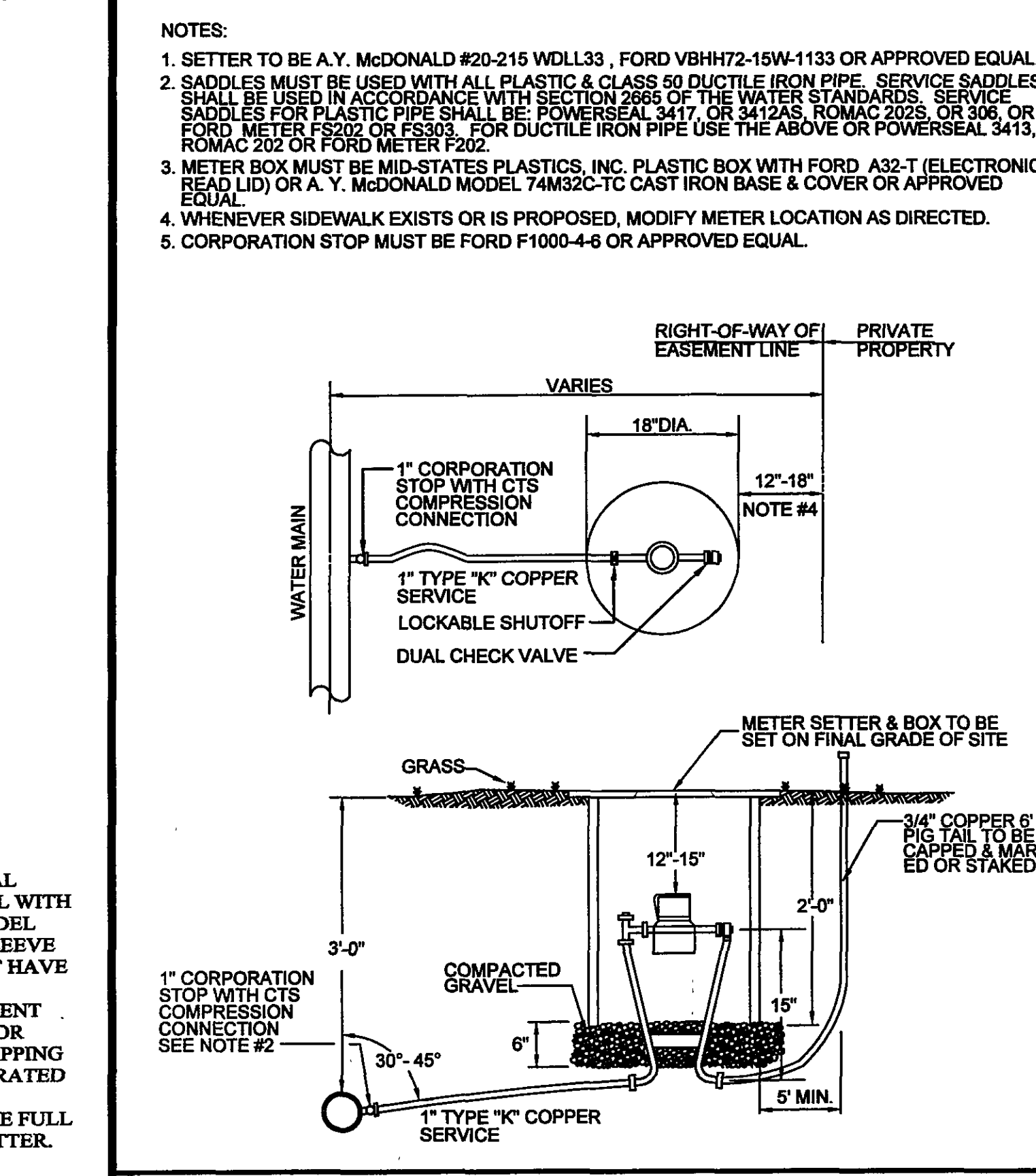
WESTERN VIRGINIA WATER AUTHORITY - CONSTRUCTION STANDARDS		
REVISION DATE	DESCRIPTION	NO.
07/01/04	WATERTIGHT MANHOLE COVER	S-06

WESTERN VIRGINIA WATER AUTHORITY - CONSTRUCTION STANDARDS		
REVISION DATE	DESCRIPTION	NO.
07/01/04	THRUST BLOCK CONSTRUCTION	W-19 W-20

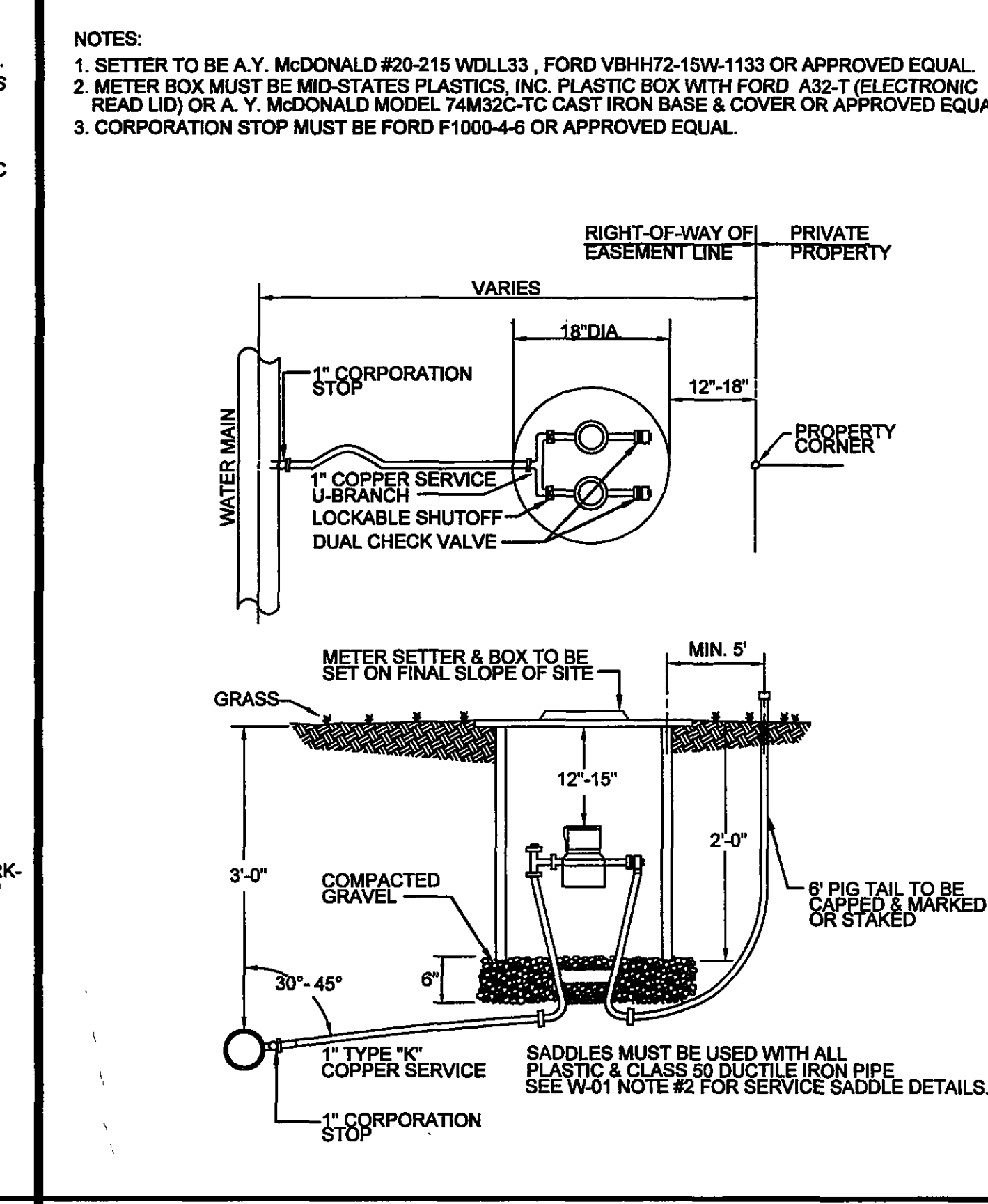
WESTERN VIRGINIA WATER AUTHORITY - CONSTRUCTION STANDARDS		
REVISION DATE	DESCRIPTION	NO.
07/01/04	4\"/>	



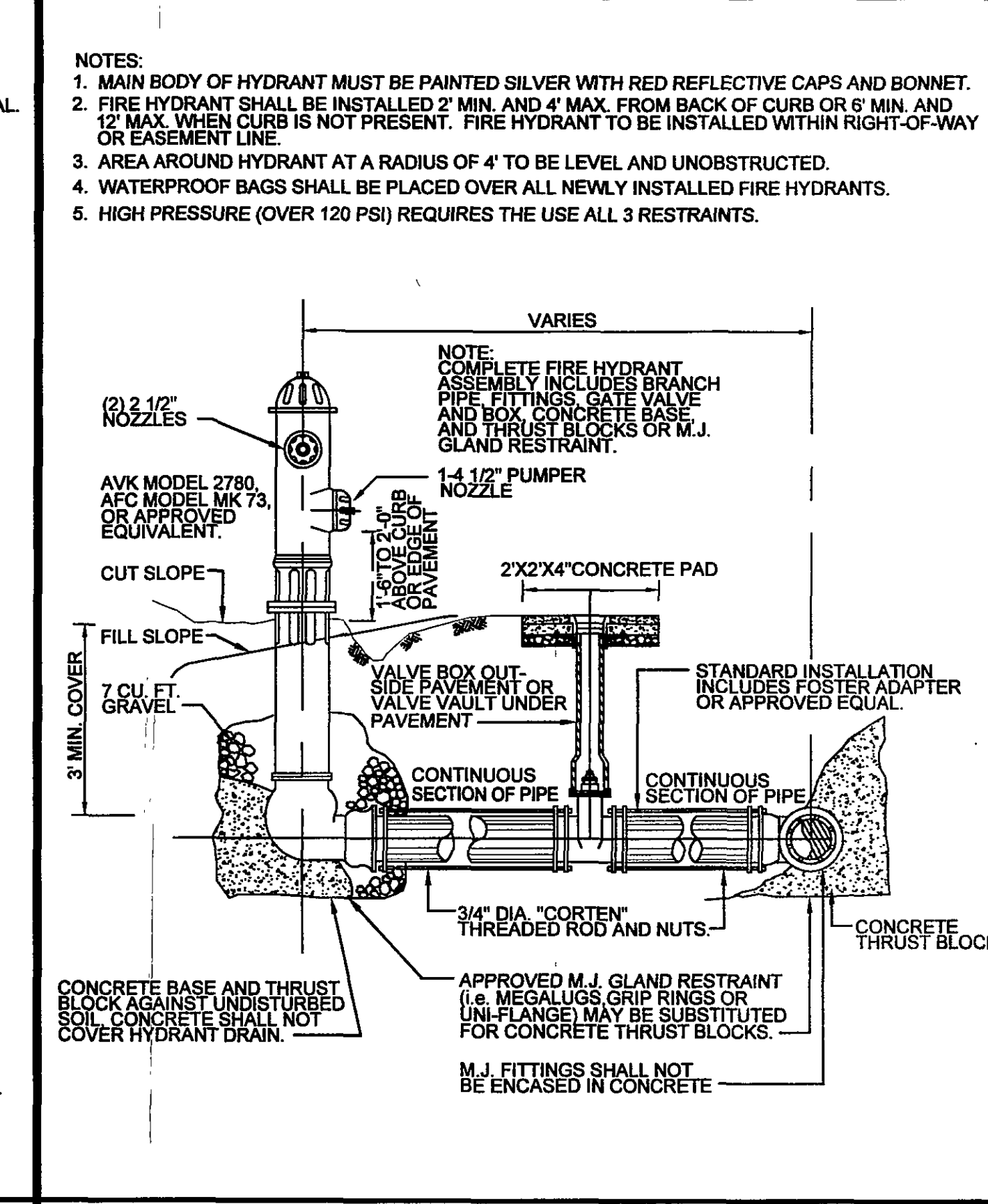
IN-LINE BLOW-OFF ASSEMBLY



TYPE "A" SINGLE RESIDENTIAL WATER SERVICE (LINE PRESSURE UNDER 80 PSI)



DOUBLE RESIDENTIAL WATER SERVICE



FIRE HYDRANT ASSEMBLY

102 Albemarle Ave  
 Roanoke, Virginia 24013  
 www.lmwpc.com  
 ph: 540.345.0675  
 fax: 540.342.4456  
 imweng@lmwpc.com

Engineering  
 Architecture  
 Surveying  
 Landscape Design

INDIAN VILLAGE  
 COMPREHENSIVE SITE PLAN  
 CITY OF ROANOKE, VIRGINIA

PER CITY COMMENTS	CHW	BY

WATER & SEWER DETAILS

DESIGNED BY: KJR  
 DRAWN BY: KJR  
 CHECKED BY: RCW  
 APPROVED BY: RCW  
 SUBMITTED BY: RCW  
 DRAWING: 2863V\_Detail  
 DATE: AUG. 24, 2005  
 SCALE: AS NOTED  
 COMMISSION NO.: 2863V  
 SHEET: 12 OF 12