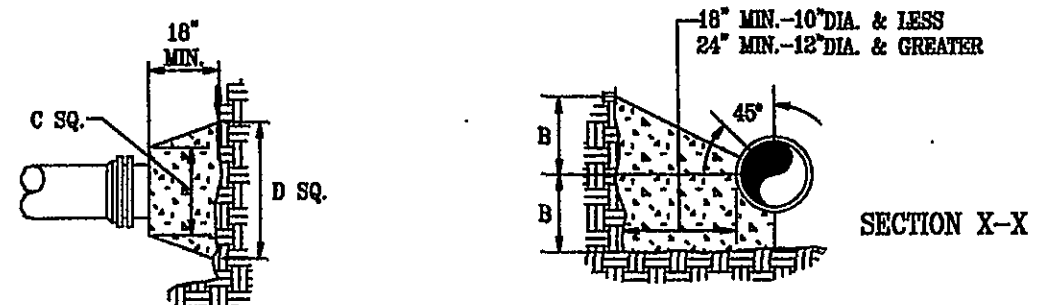


SECTION OF VERTICAL BEND



NOTES:

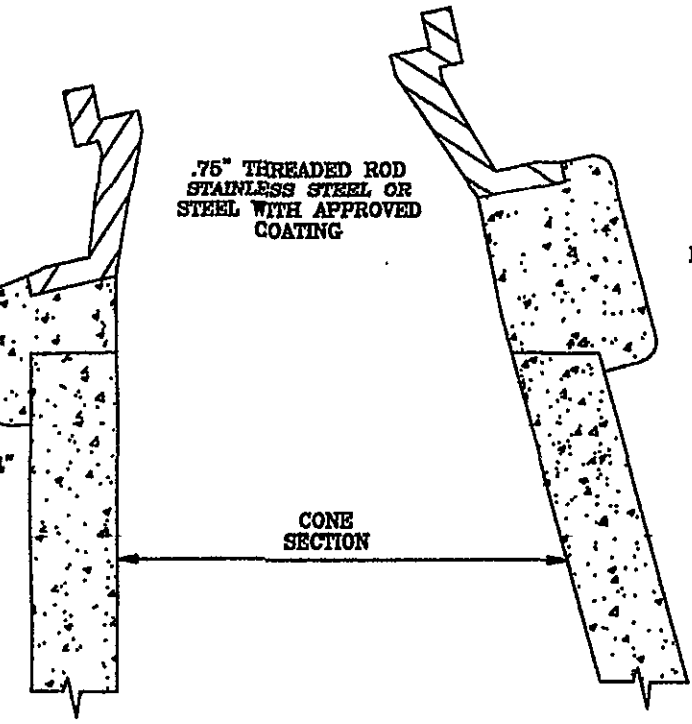
1. FOR VERT. BEND DOWN IN EXCESS OF 11 1/4" BEND, ANCHORAGE SHALL BE DESIGNED BY ENGINEER.
2. FOR VERT. BEND UPWARD, BLOCKING TO BE SIMILAR TO THAT FOR HORIZ. BEND.
3. GLANDS & BOLTS SHALL BE PROTECTED FROM CONC. BY PLASTIC SHEETING WHEN FOUNDING THRU BLOCKS.
4. ALL THRUST BLOCK & SUPPORT CONC. SHALL BE 3000 PSI READY MIX CONC.
5. THRUST BLOCKS WITH "D" DIMENSION GREATER THAN 30" SHALL HAVE THE RESTRAINED PIPE INSTALLED WITH A MINIMUM OF 4' OF COVER.

PRESSURE = 200 psi
BREAKING = 2000 psi
FACTOR OF SAFETY = 1.5

PIPE SIZE	50' BEND	45' BEND	22 1/2' BEND	11 1/4' BEND	TEE	PLUG
4"	12"	8"	8"	8"	11"	10"
6"	18"	12"	10"	10"	17"	16"
8"	24"	16"	14"	14"	23"	22"
10"	30"	20"	18"	18"	29"	28"
12"	36"	24"	22"	22"	35"	34"
14"	42"	28"	26"	26"	41"	40"
16"	48"	32"	30"	30"	47"	46"
18"	54"	36"	34"	34"	53"	52"
20"	60"	40"	38"	38"	59"	58"
24"	72"	48"	46"	46"	67"	66"
30"	90"	60"	58"	58"	83"	82"

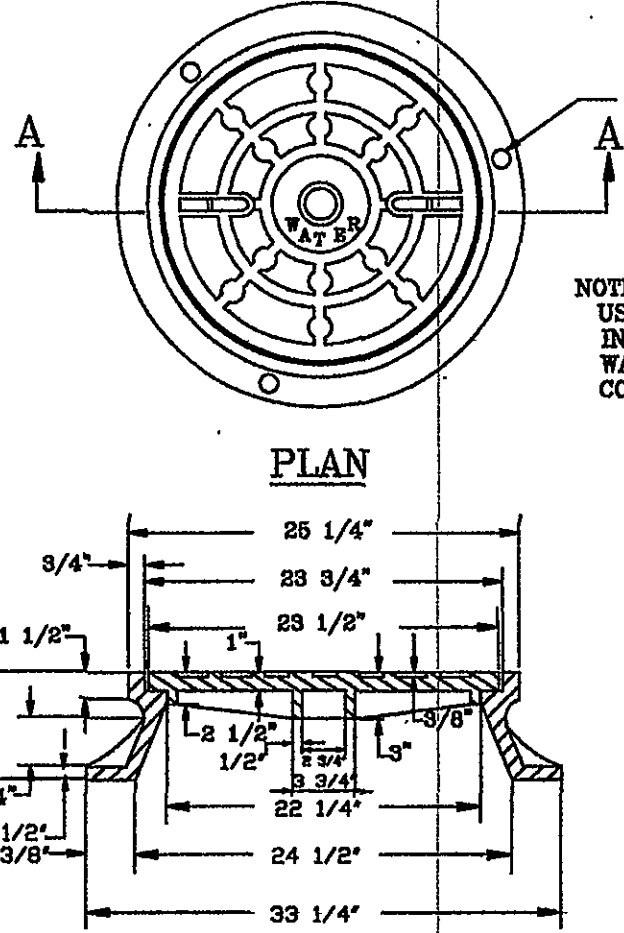
THRUST BLOCK CONSTRUCTION

NO SCALE



NOTE:

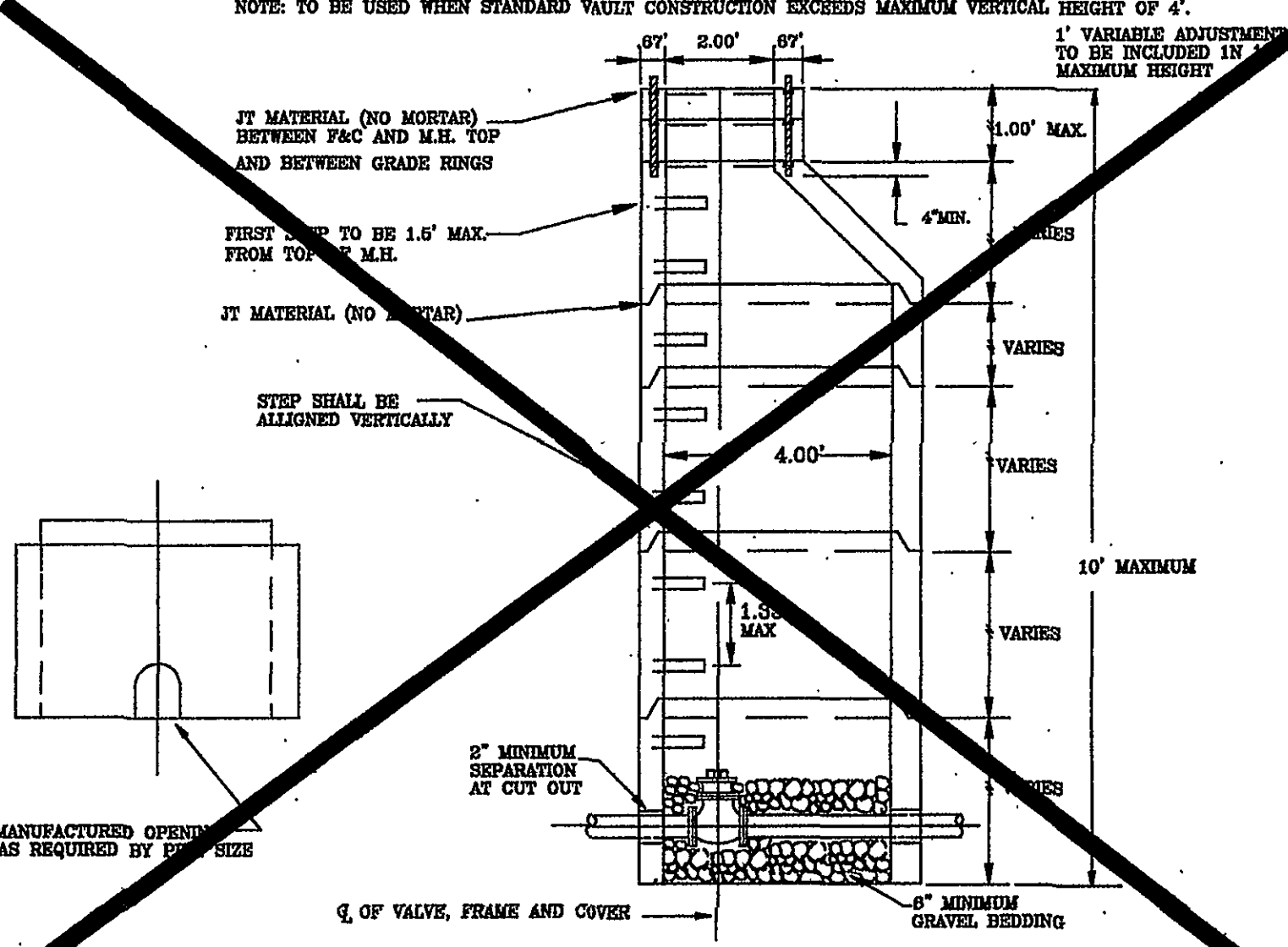
1. USE MODERATELY STIFF MIX OF NON SHRINK CEMENT, SAND AND 1/2" AND LESS DIAMETER GRAVEL WITH 28 DAYS STRENGTH AT 3,000 P.S.I.
2. MIX IS TO BE FORCED INTO ALL GROOVES AND UNDER FLANGE OF FRAME AND LEFT AT OR ABOVE TOP OF FLANGE.
3. MAX. OF 4 BRICK OR CONCRETE BLOCKS TO BE USED FOR GRADE CONTROL.
4. DO NOT BACKFILL AROUND FRAME AND COVER, FOR 48 HOURS AFTER CON. IS PLACED. THE USE OF HIGH-STRENGTH STRENGTHENING CONCRETE WOULD REDUCE TIME TO (24HRS).
5. RESTRICT TRAFFIC LOAD FOR MIN. 24 HOURS.



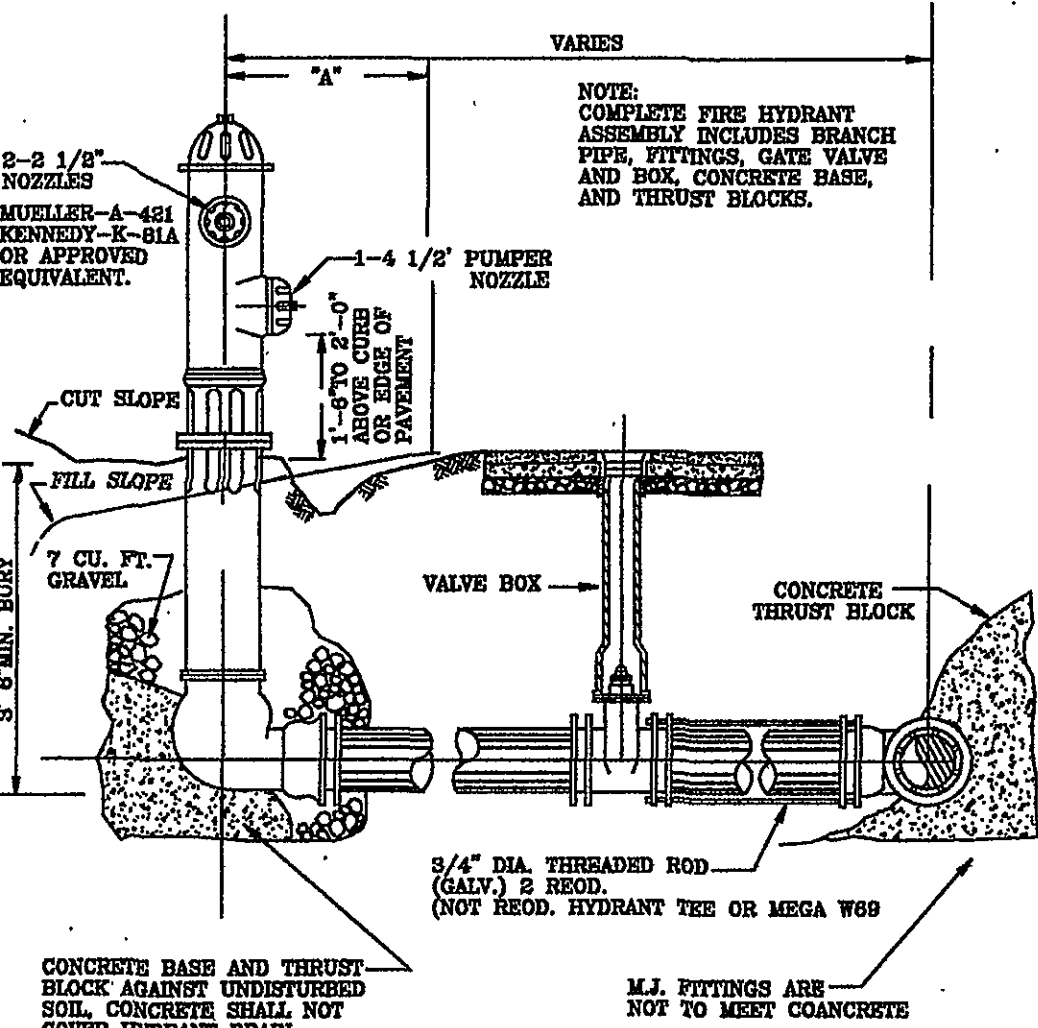
MANHOLE FRAME AND COVER

PAVED 2001BC
UNPAVED 2001(ABOVE)

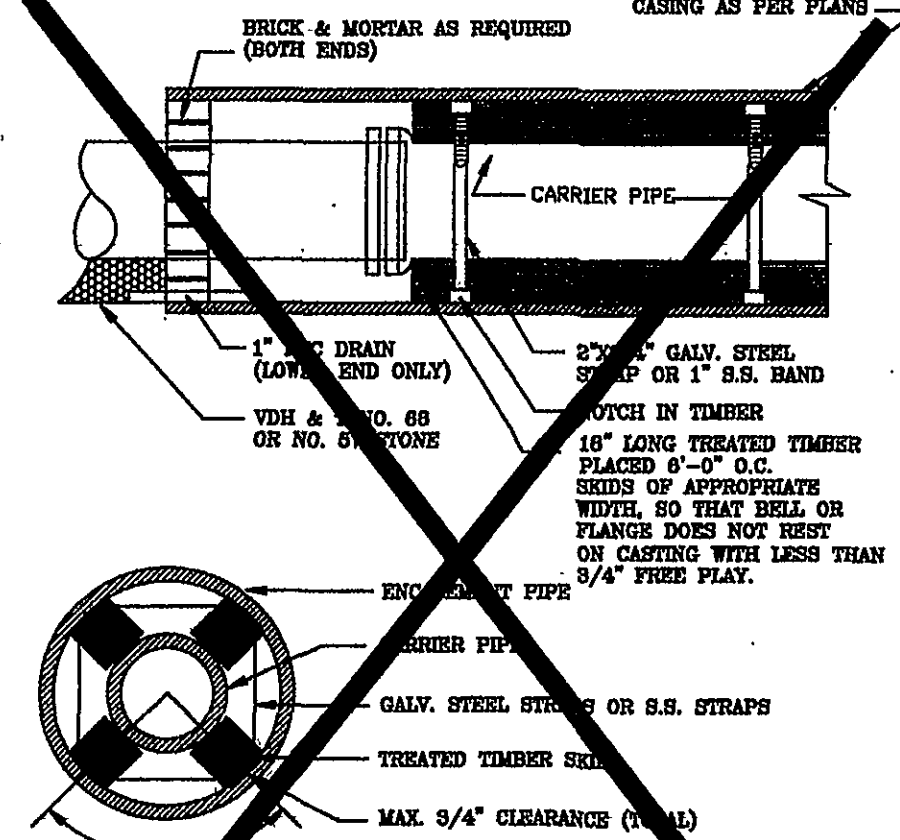
NOTE: USE DEWEY BROTHERS INC. MH-RCR-2000 OR 2001 WATER TIGHT FRAME & COVER IN PAVED AREAS.



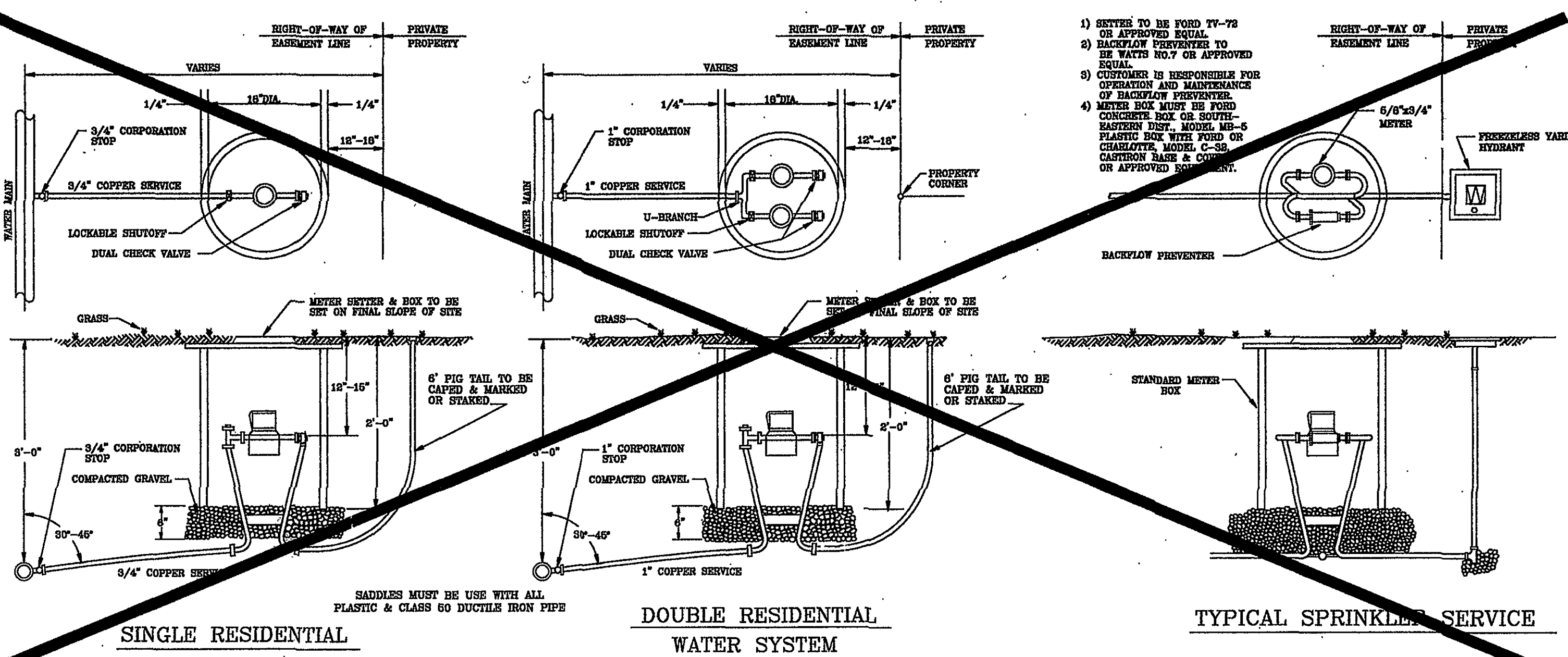
ALTERNATE VALVE VAULT (MANHOLE)



FIRE HYDRANT ASSEMBLY



PIPE SUPPORT IN CASING PIPE



SINGLE RESIDENTIAL WATER SERVICE

DOUBLE RESIDENTIAL WATER SYSTEM

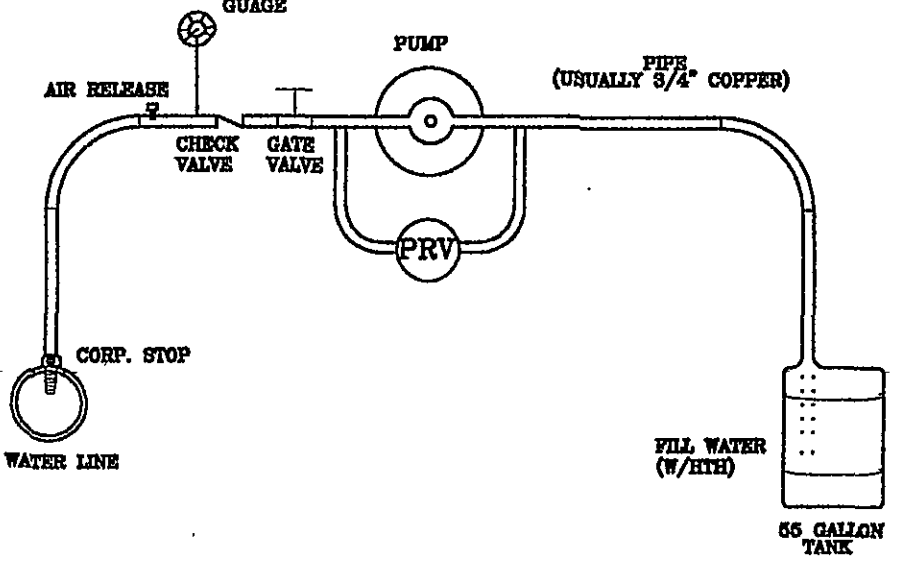
TYPICAL SPRINKLER SERVICE

VAULT & WATER STANDARDS FOR CONSTRUCTION

1. VAULTS, MANHOLE BASES, RISERS, TAPERS AND GRADE RINGS SHALL BE PRECAST REINFORCED CONCRETE MANUFACTURED IN ACCORDANCE WITH VIRGINIA DEPARTMENT OF TRANSPORTATION ROAD AND BRIDGE SPECIFICATIONS, SECTION 603.
2. MANHOLE BASE AND RISER SECTIONS CONSTRUCTION SHALL BE VERTICAL WITH MAXIMUM 1" IN 4' TILT.
3. A MAXIMUM OF 2 CONSTRUCTION GRADE RINGS OR MAXIMUM OF 1' OF GRADE RINGS AND FRAME AND COVER ADJUSTMENT ARE ALLOWABLE.
4. FINAL ADJUSTMENT OF FRAME AND COVER SHALL BE IN ACCORDANCE TO FRAME AND COVER ADJUSTMENT DETAIL USING NON SHRINK CONCRETE WITH MAXIMUM OF 4 BRICKS OR CONCRETE BLOCKS FOR GRADE CONTROL. FRAME AND COVER ARE TO BE SET AT FINISH GRADE OR 1/4" ABOVE FINISH GRADE IN PAVEMENT AND YARD AREAS AND MINIMUM 8" ABOVE FINISH GRADE IN OTHER AREAS. MANHOLE FRAMES AND COVERS ARE NOT TO BE SET IN DRAINAGE SWALE, VALLEY GUTTER, ETC.
5. JOINTS AND OPENINGS IN MANHOLE UNITS SHALL BE MADE WATER TIGHT BY USING BUTYL SEALANTS, "O" RING GASKETS OR MASTIC. THE CONCRETE SURFACE SHALL BE CLEANED PRIOR TO USE OF SEALANT.
6. FRAME AND COVERS
A) DEWEY BROTHERS INC. SERIES 2000 OR 2001.
B) APPROVED EQUAL.
7. ALL LIFT HOLES, OPENINGS AROUND PIPE, ETC. SHALL BE FILLED FROM INSIDE AND OUTSIDE TO THICKNESS OF STRUCTURE.
8. ALL UNITS USED IN MANHOLE AND VAULT CONSTRUCTION SHALL BE SECURELY CONNECTED BY INTERLOCKING BETWEEN UNITS, CONCRETE COLLARS OR OTHER APPROVED METHODS.
9. AREA AROUND METER BOX AT A RADIUS OF 4' TO BE ON FINISH GRADE AND UNOBSTRUCTED.

APPROVED MATERIALS

1. METER BOXES
A) FORD INCONCRETE METER BOX WITH NO. 2 IRONCONCRETE TOP OR APPROVED EQUAL.
B) SOUTHEASTERN DISTRIBUTOR MODEL MB-5 PLASTIC BOX WITH FORD OR CHARLOTTE MODEL C-38 CAST IRON BASE AND COVER (NOT APPROVED FOR ROADWAY AREA).
C) APPROVED EQUAL.
2. METER SETTER (INCLUDING INLET RISER VALVE AND DOUBLE CHECK VALVE ON OUTLET).
A) FORD VWH 75-16-WD.
B) APPROVED EQUAL.
3. METER SETTER EXTENDER OR RISER
A) NOT ALLOWED UNLESS APPROVED BY THE UTILITY DIRECTOR.
4. CORPORATION STOP
A) MUELLER MODEL H-1600
B) FORD MODEL F-800
C) APPROVED EQUAL.
5. U-BRANCH
A) FORD MODEL URB-49
B) MUELLER MODEL H 15382
C) APPROVED EQUAL.
6. SERVICE SADDLES (FOR PVC PIPE)
A) FORD MODEL FS 202 AND FC 202 WITH STAINLESS STEEL BAND AND BOLTS.
B) APPROVED EQUAL.



TYPICAL WATER PRESSURE TEST RIG