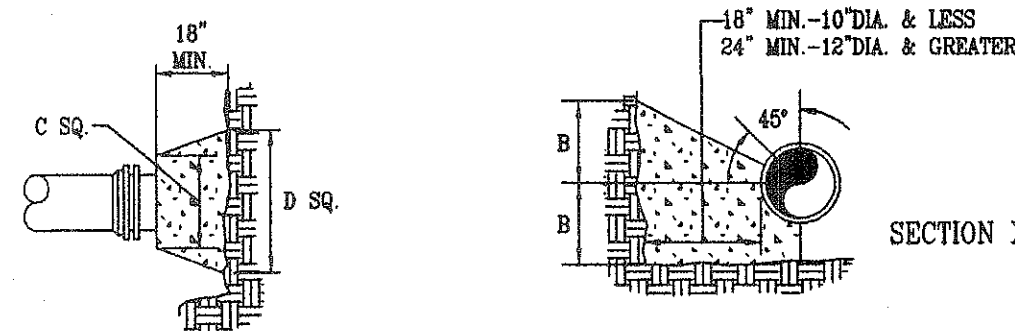


PLAN BENDS

SECTION OF VERTICAL BEND



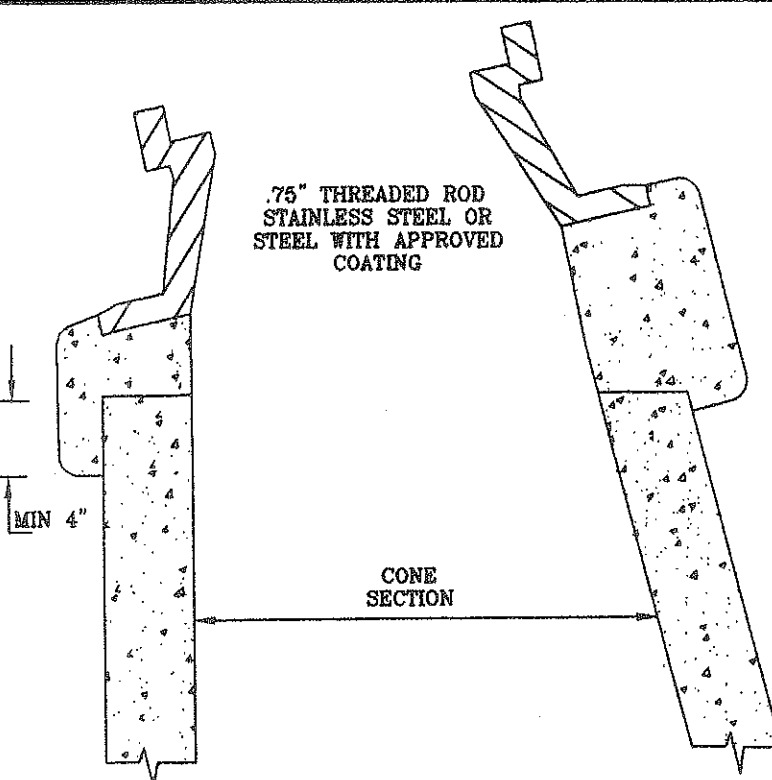
PLAN AND ELEVATION PLUGS

BENDS AND TEES

PIPE SIZE	90° BEND	45° BEND	22 1/2° BEND	11 1/4° BEND	TEE	PLUS	D
4"	A	B	A	B	A	B	
4"	8"	12"	8"	8"	6"	11"	9"
6"	18"	12"	8"	8"	6"	11"	10"
8"	18"	13"	10"	8"	8"	11"	12"
10"	20"	16"	12"	14"	8"	12"	14"
12"	20"	16"	12"	14"	8"	12"	14"
16"	26"	20"	16"	18"	11"	13"	18"
24"	82"	42"	62"	30"	44"	22"	16"
30"	185"	42"	100"	42"	52"	42"	40"

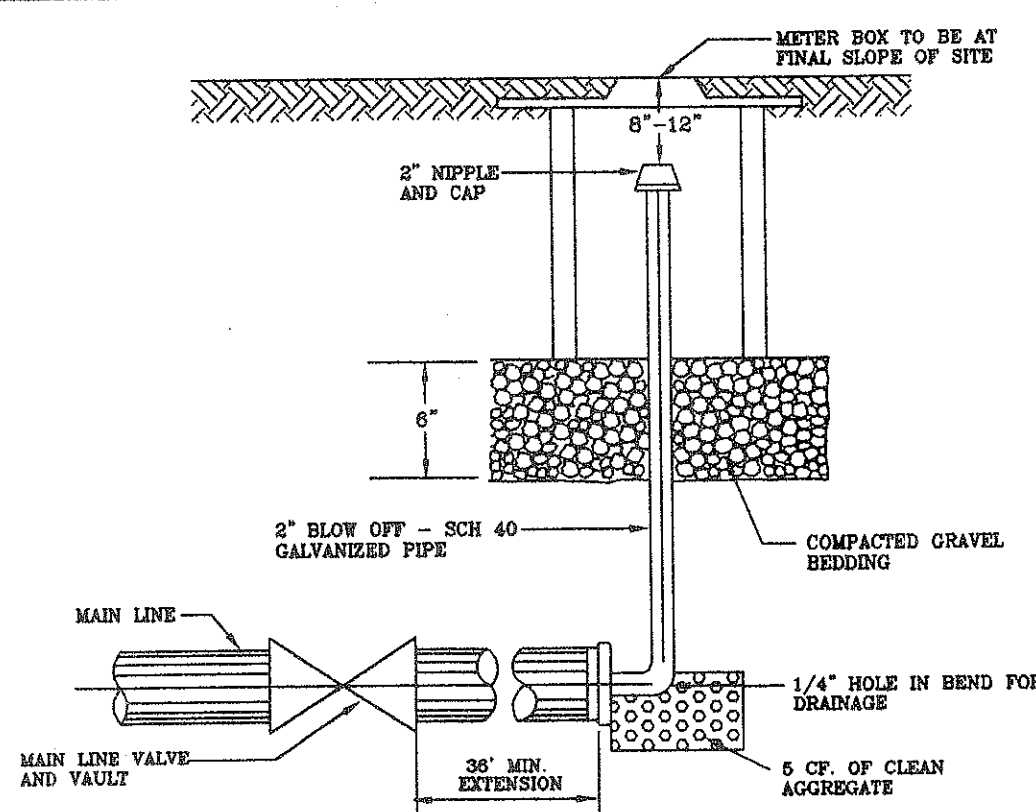
THRUST BLOCK CONSTRUCTION

NO SCALE

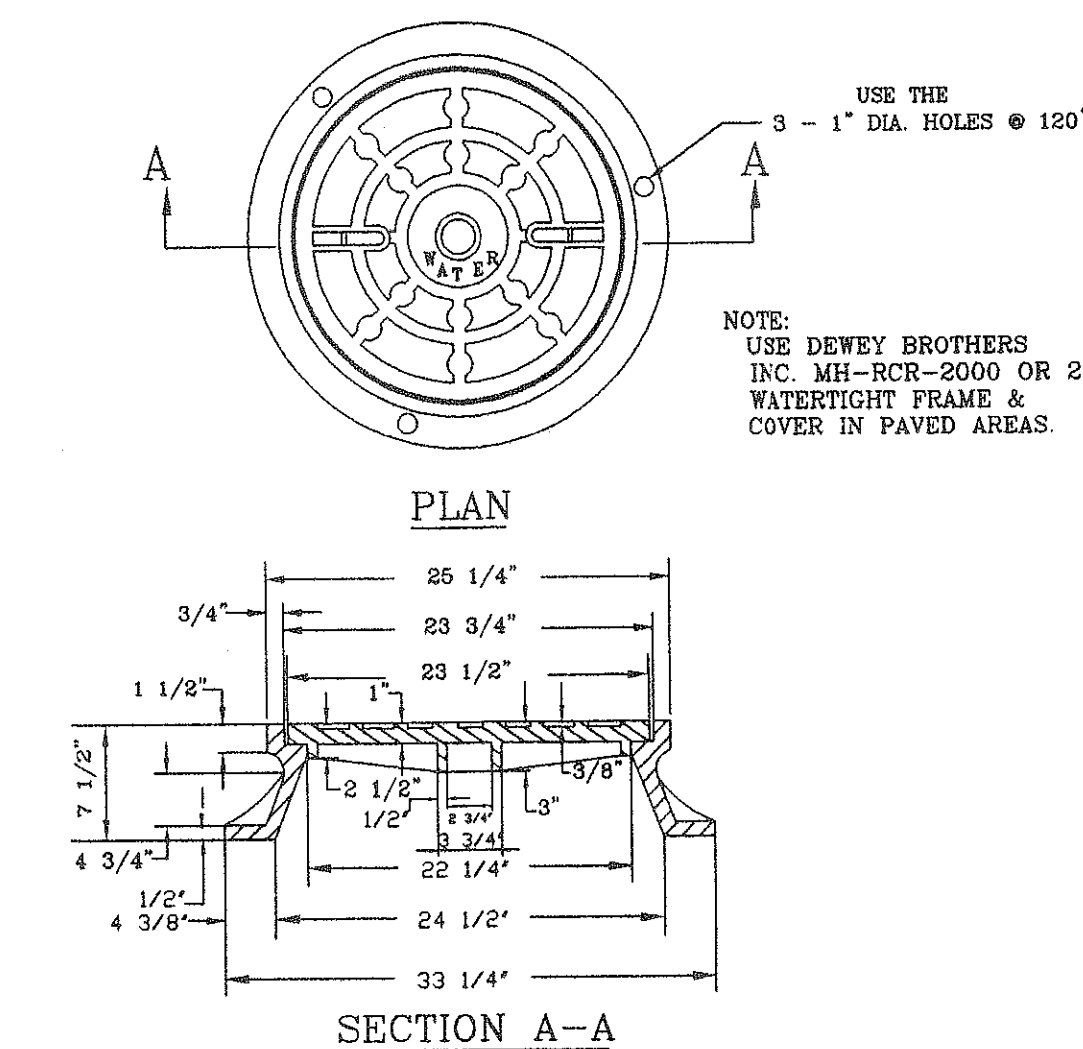


SECTION

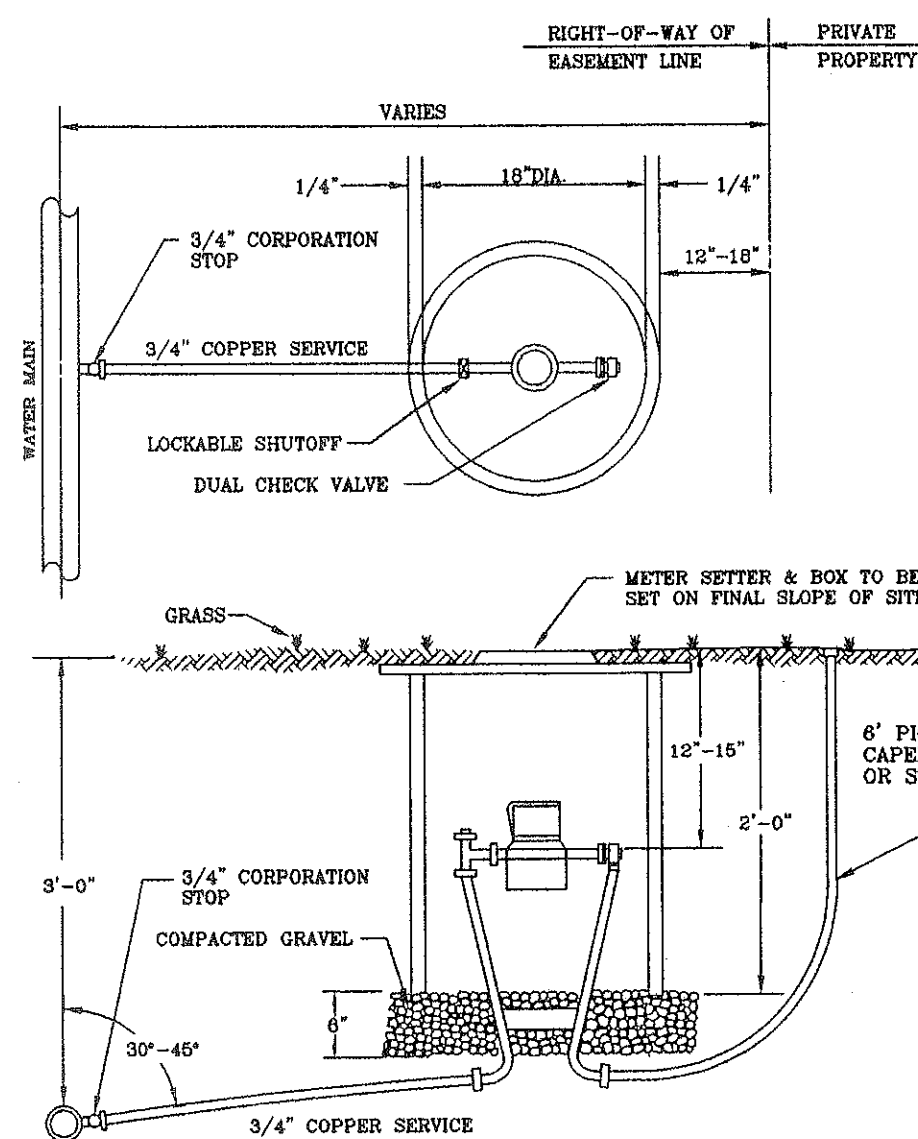
INSTALLATION DETAIL FOR ALL FRAMES AND COVERS



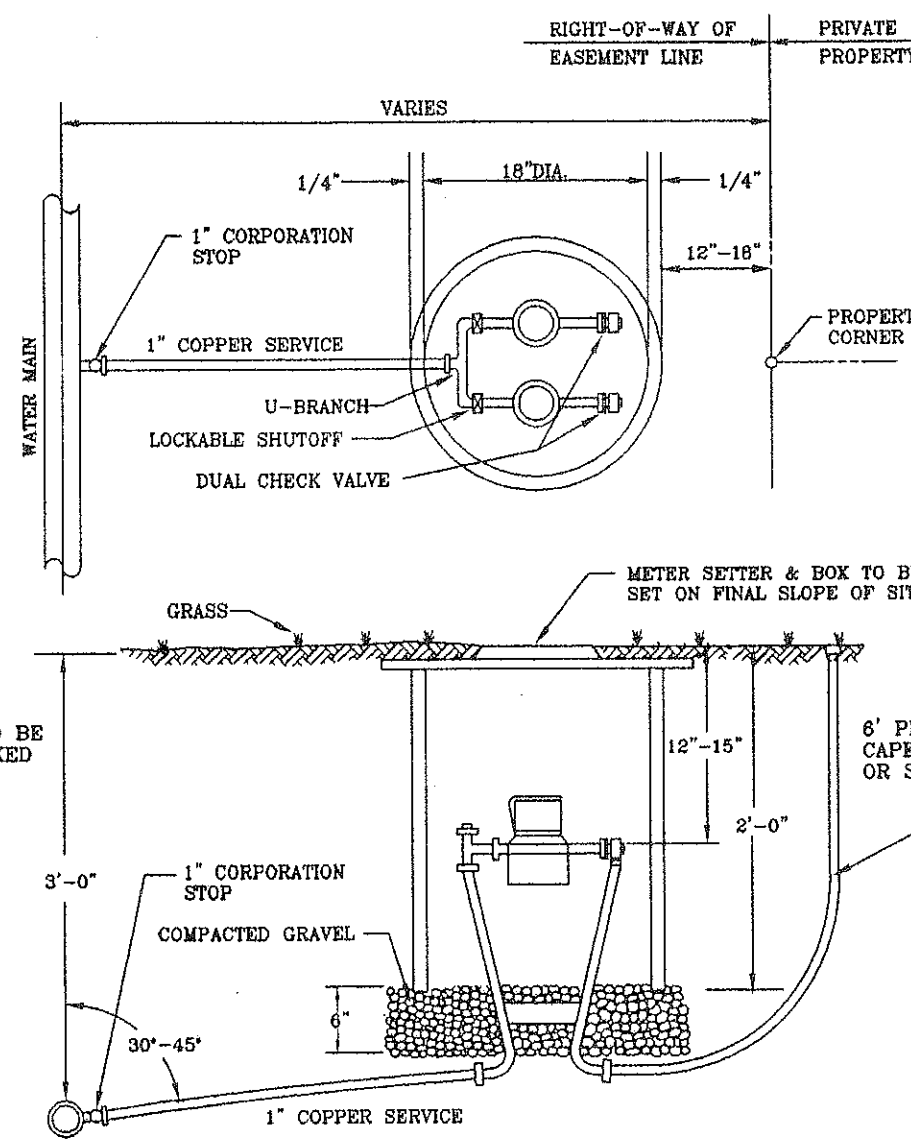
BLOW OFF ASSEMBLY FOR MAIN LINE
TEMPORARY TERMINATION



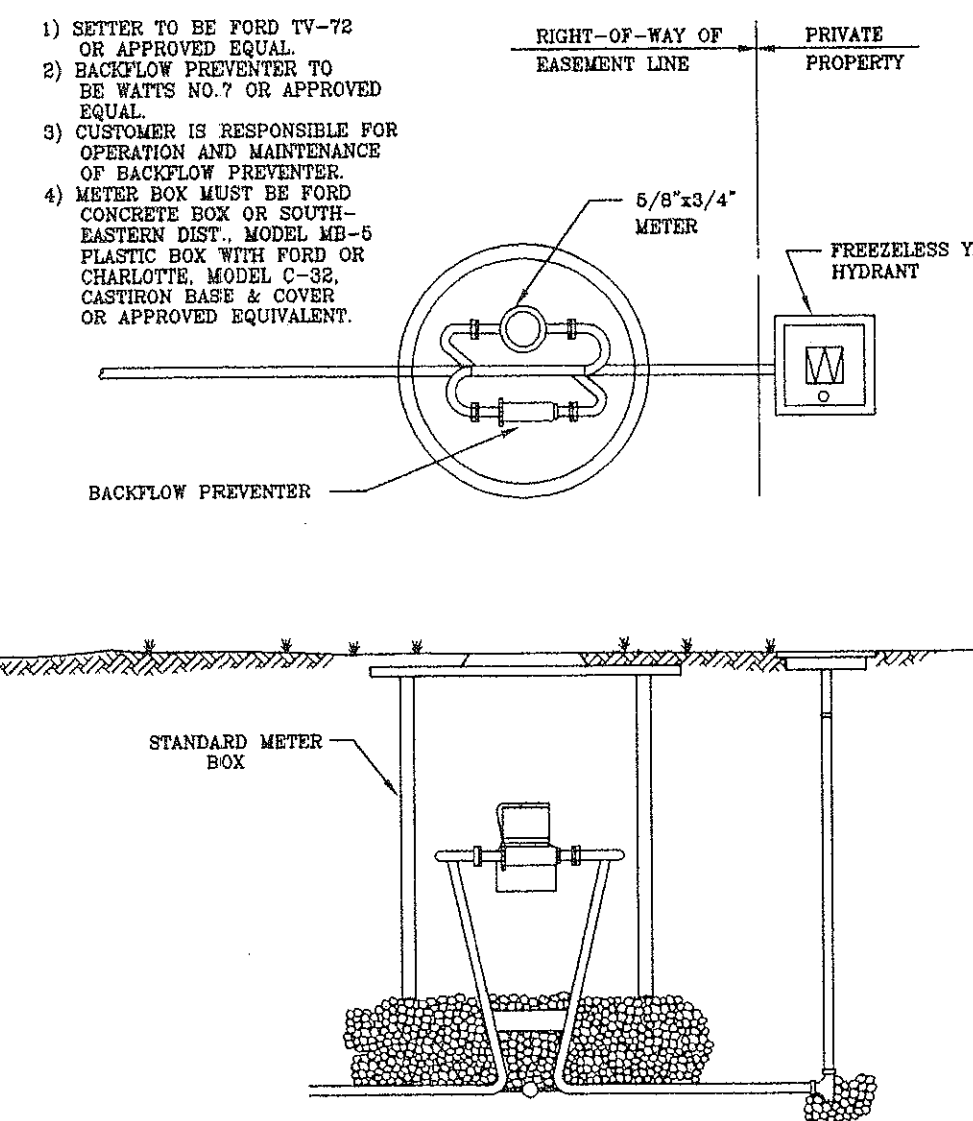
MANHOLE FRAME AND COVER

PAVED 2001EC
UNPAVED 2001(ABOVE)

SINGLE RESIDENTIAL
WATER SERVICE



DOUBLE RESIDENTIAL
WATER SYSTEM



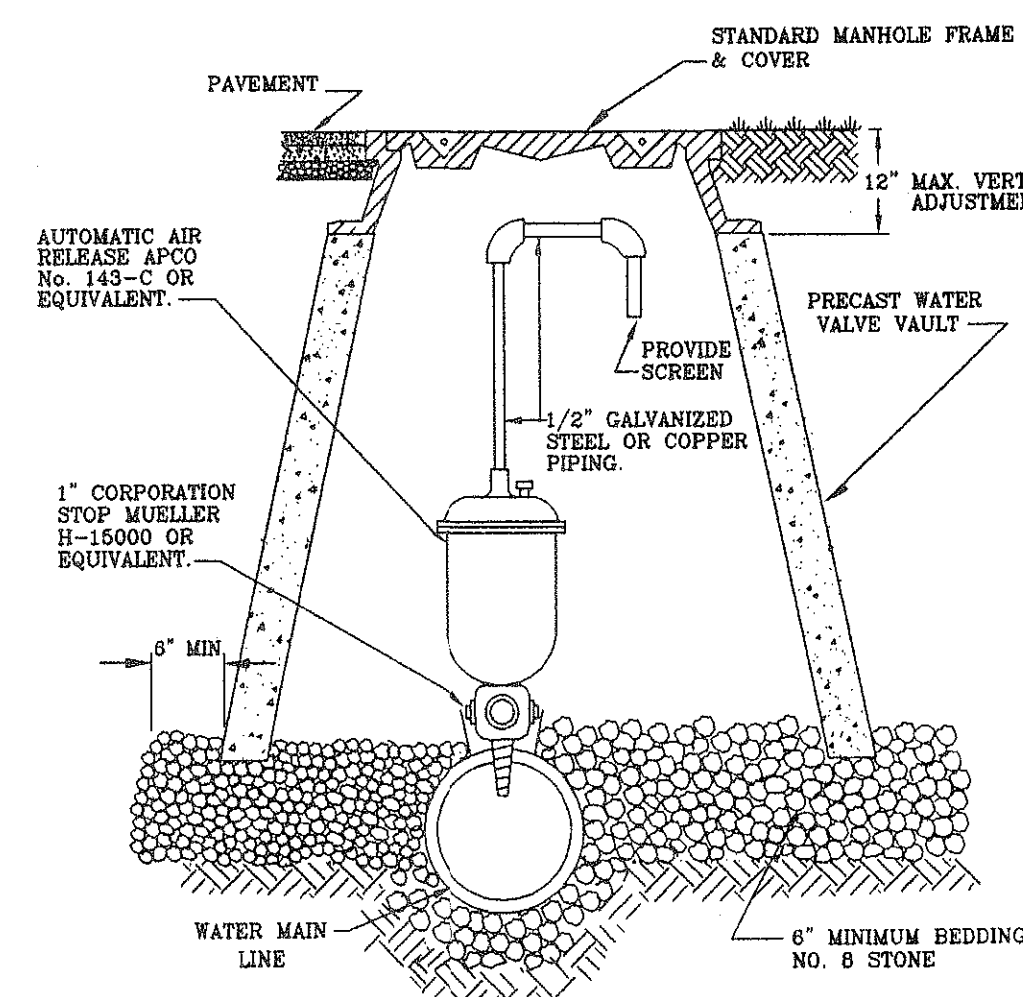
TYPICAL SPRINKLER SERVICE

- 1) SETTER TO BE FORD TV-72 OR APPROVED EQUAL.
- 2) BACKFLOW PREVENTER TO BE WATTS NO.7 OR APPROVED EQUAL.
- 3) CUSTOMER IS RESPONSIBLE FOR OPERATION AND MAINTENANCE OF BACKFLOW PREVENTER.
- 4) METER BOX MUST BE FORD CONCRETE BOX OR SOUTH-EASTERN DIST., MODEL MB-5 PLASTIC BOX WITH FORD OR CHARLOTTE, MODEL C-32, CASTIRON BASE & COVER OR APPROVED EQUIVALENT.

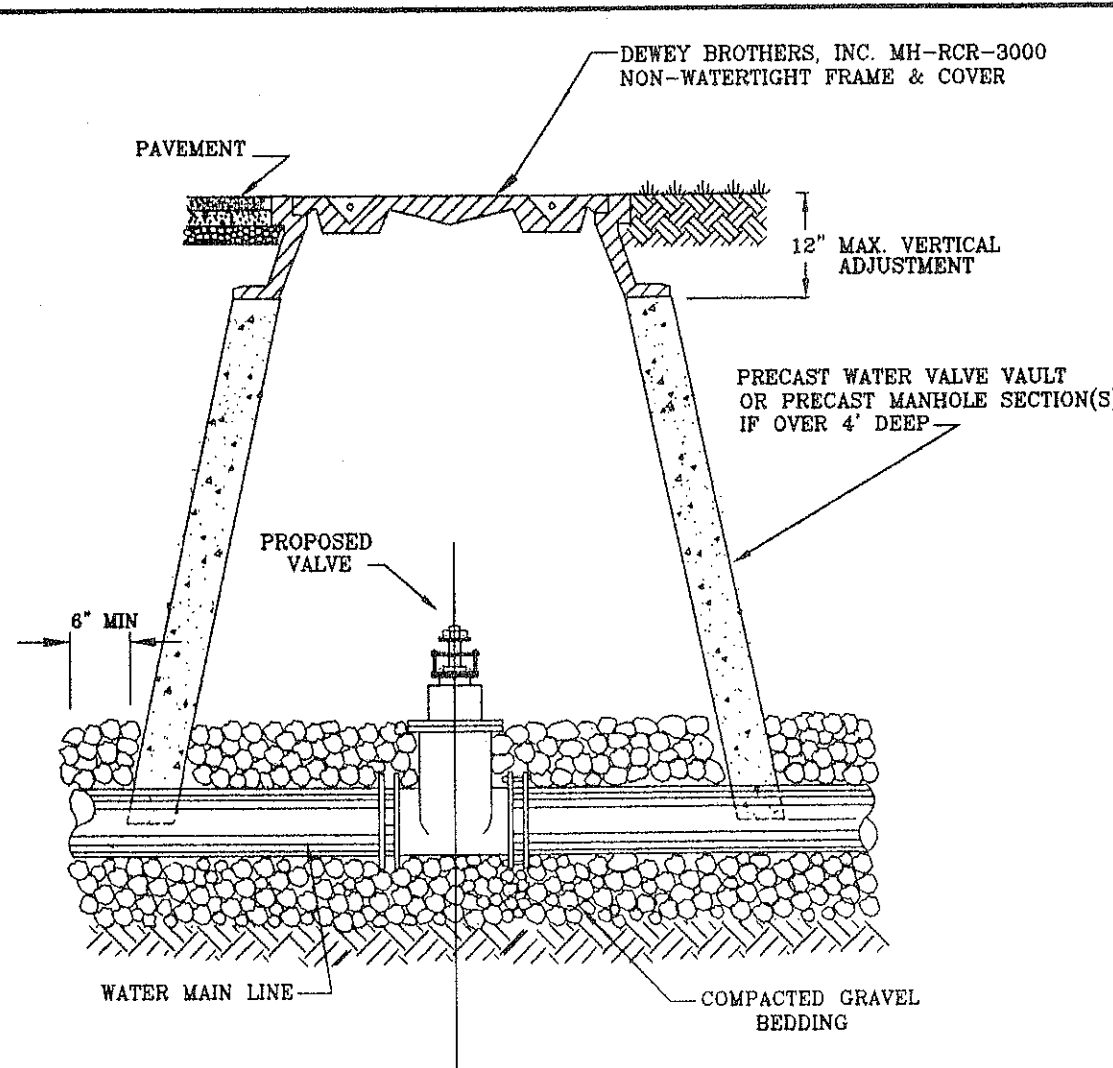
- VAULT & WATER STANDARDS FOR CONSTRUCTION**
1. VAULTS, MANHOLE BASES, RISERS, TAPERS AND GRADE RINGS SHALL BE PRECAST REINFORCED CONCRETE MANUFACTURED IN ACCORDANCE WITH THE ARIZONA DEPARTMENT OF TRANSPORTATION ROAD AND BRIDGE SPECIFICATIONS, SECTION 503.
 2. MANHOLE BASE AND RISER SECTIONS CONSTRUCTION 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 6" 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 SHALL BE MADE WATERTIGHT 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) DREYER BROTHERS INC. SERIES 2200 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 UNOBTURATED.

APPROVED MATERIALS

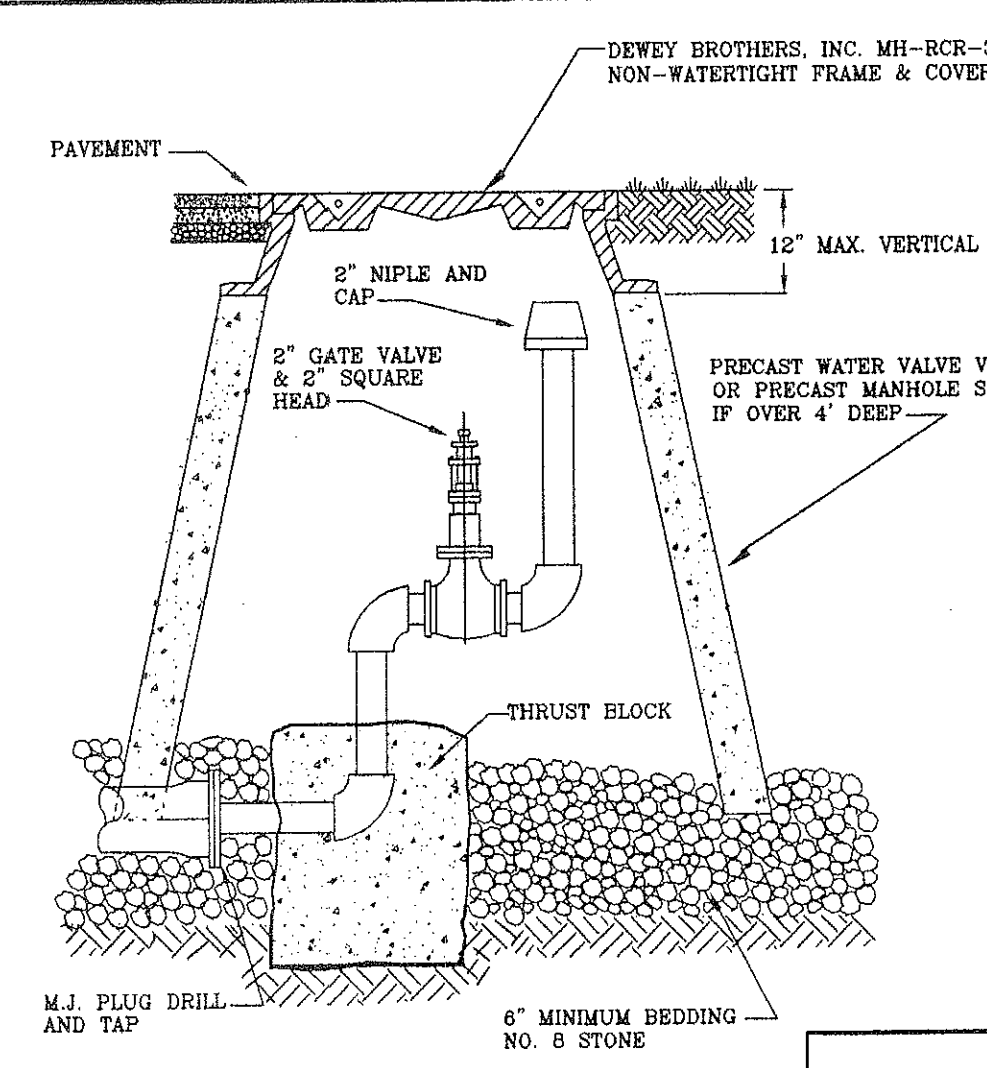
1. METER BOXES
 - A) FORD IRONCRETE METER BOX WITH NO. 2 IRONCRETE TOP OR APPROVED EQUAL.
 - B) SOUTHEASTERN DISTRIBUTOR MODEL MB-5 PLASTIC BOX WITH FORD OR CHARLOTTE MODEL C-32 CAST IRON BASE AND COVER (NOT APPROVED FOR ROADWAY AREA).
 - C) APPROVED EQUAL.
2. METER SETTER (INCLUDING INLET RISER VALVE AND DOUBLE CHECK VALVE ON OUTLET).
 - A) FORD VBHH 72-15-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-1500
 - B) FORD MODEL F-600
 - C) APPROVED EQUAL.
5. U-BRANCH
 - A) FORD MODEL U22-43
 - B) MUELLER MODEL B 15362
 - 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.



AUTOMATIC AIR
RELEASE ASSEMBLY

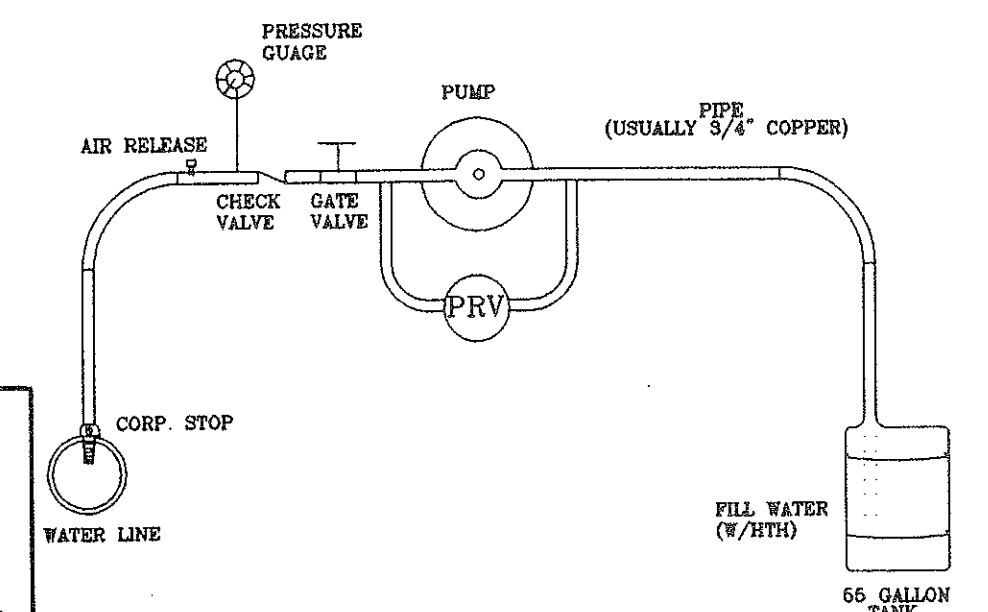


WATER LINE VALVE INSTALLATION

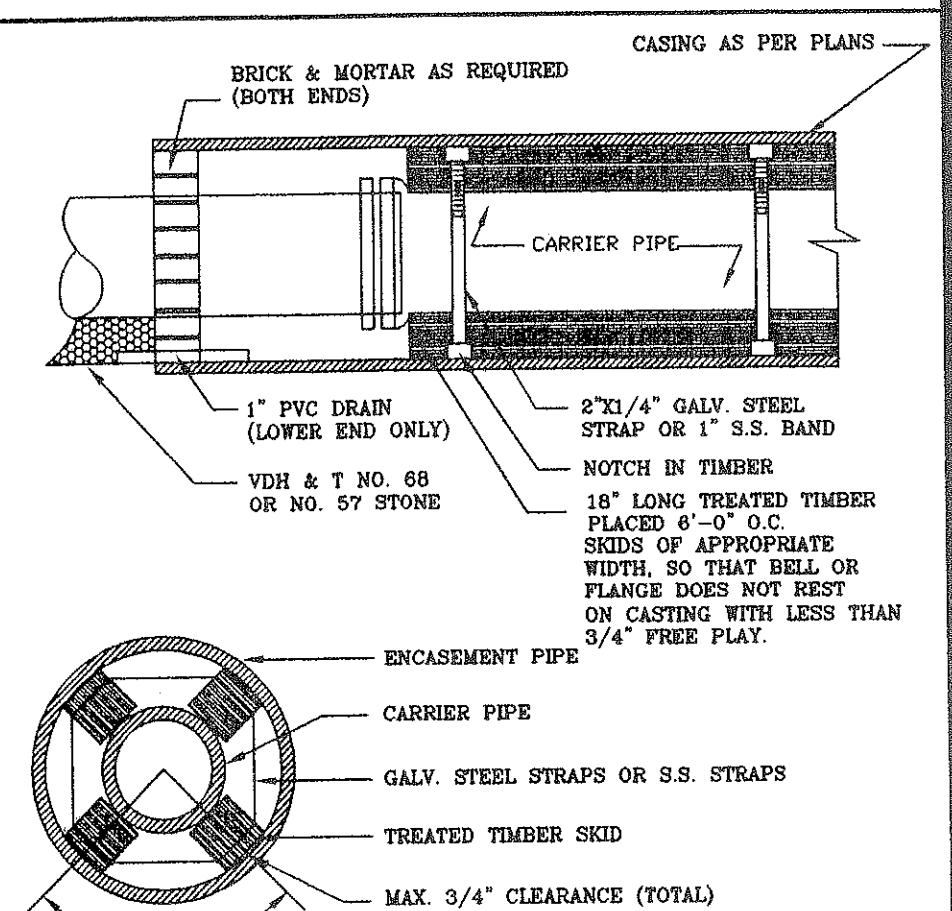


PERMANENT END OF LINE

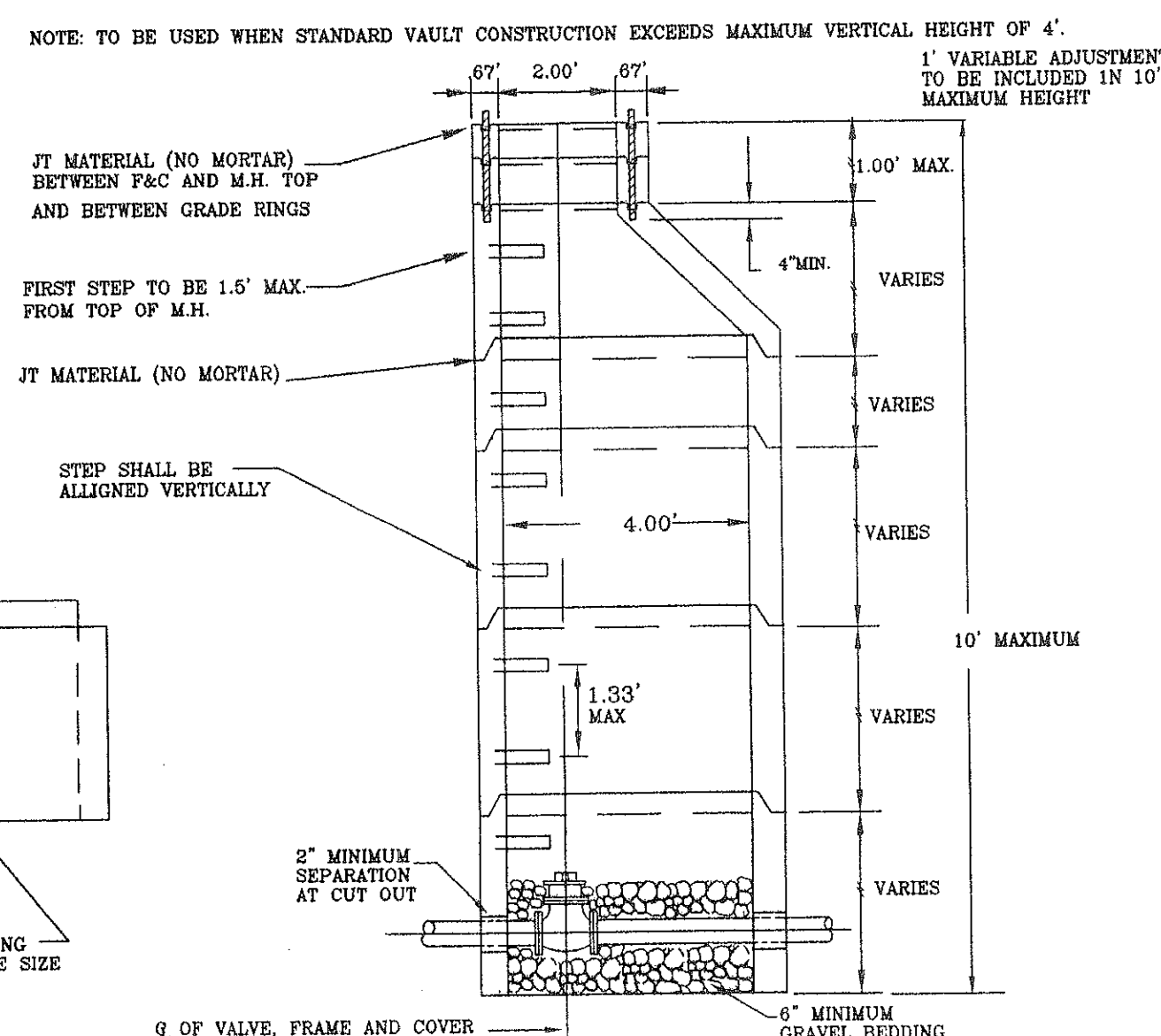
- NOTES:
- (1) MAIN BODY OF HYDRANT MUST BE SILVER AND HAVE RED CAPS AND BONNET.
 - (2) DISTANCE "A" WITH CURB AND GUTTER, 2' MIN., 4' MAX. FROM BACK OF CURB.
 - (3) DISTANCE "A" WITHOUT CURB AND CUTTER, 6' MIN., 12' MAX. FROM EDGE OF PAVEMENT.
 - (4) AREA AROUND HYDRANT AT A RADIUS OF 4' TO BE APPROXIMATELY LEVEL AND UNOBSTRUCTED.



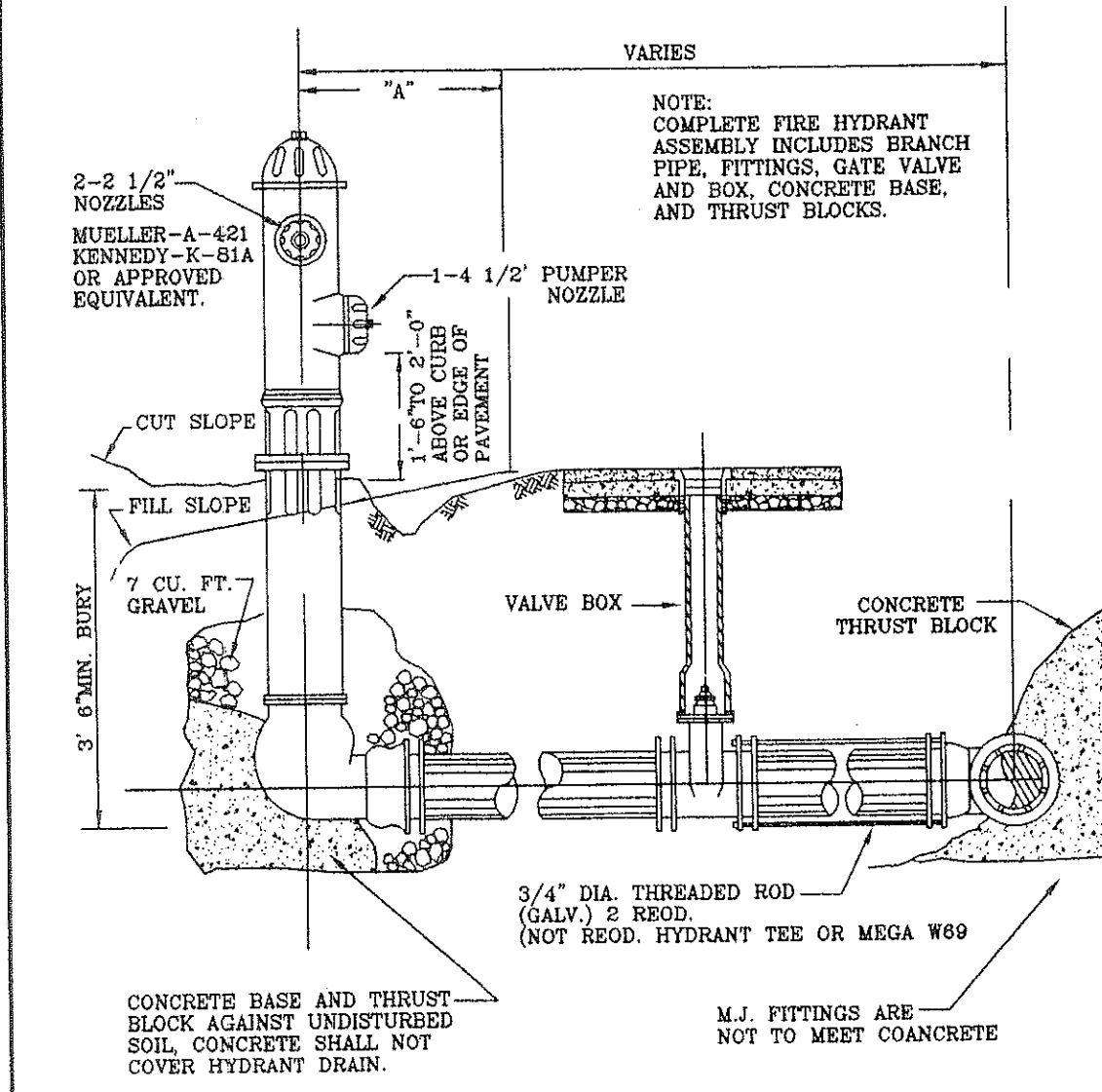
TYPICAL WATER PRESSURE TEST RIG



PIPE SUPPORT IN CASING PIPE



ALTERNATE VALVE VAULT (MANHOLE)



FIRE HYDRANT ASSEMBLY