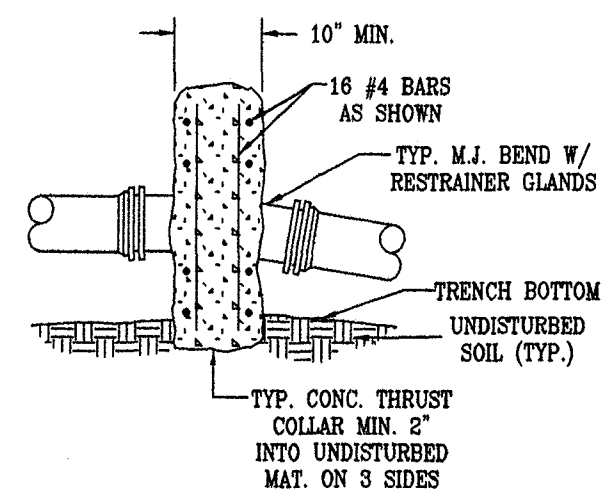


PLAN BENDS

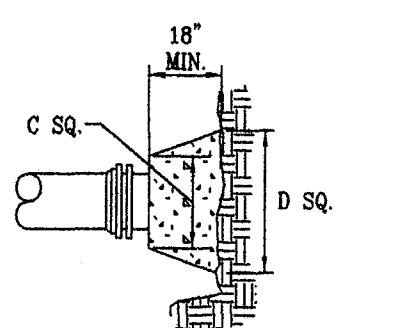


SECTION OF VERTICAL BEND

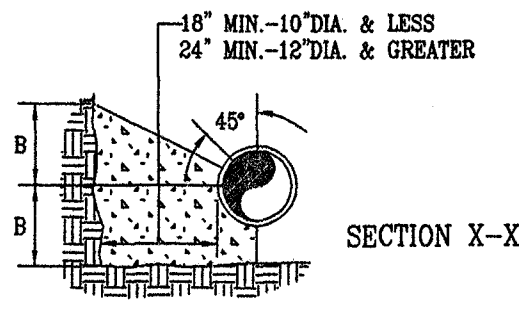
NOTES:

1. FOR VERT. BEND DOWN IN EXCESS OF 11 1/4\"/>
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 3\"/>

PRESSURE = 200 psi  
BEARING = 2000 pcf  
FACTOR OF SAFETY = 1.5



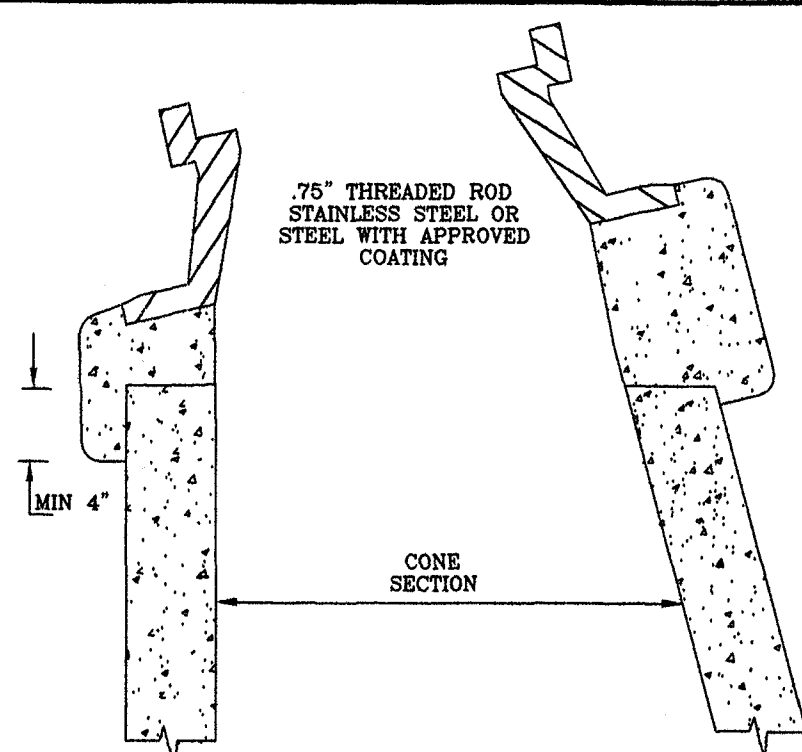
PLAN AND ELEVATION PLUGS



BENDS AND TEES

PIPE SIZE	90° BEND	45° BEND	22 1/2° BEND	11 1/4° BEND	TEE	PLUG
4"	8"	12"	8"	8"	8"	8"
6"	12"	18"	12"	12"	12"	12"
8"	18"	24"	18"	18"	18"	18"
10"	24"	36"	24"	24"	24"	24"
12"	30"	48"	30"	30"	30"	30"
14"	36"	54"	36"	36"	36"	36"
16"	42"	66"	42"	42"	42"	42"
18"	48"	72"	48"	48"	48"	48"
20"	54"	78"	54"	54"	54"	54"
22"	60"	84"	60"	60"	60"	60"
24"	66"	90"	66"	66"	66"	66"
26"	72"	96"	72"	72"	72"	72"
28"	78"	102"	78"	78"	78"	78"
30"	84"	108"	84"	84"	84"	84"

THRUST BLOCK CONSTRUCTION  
NO SCALE

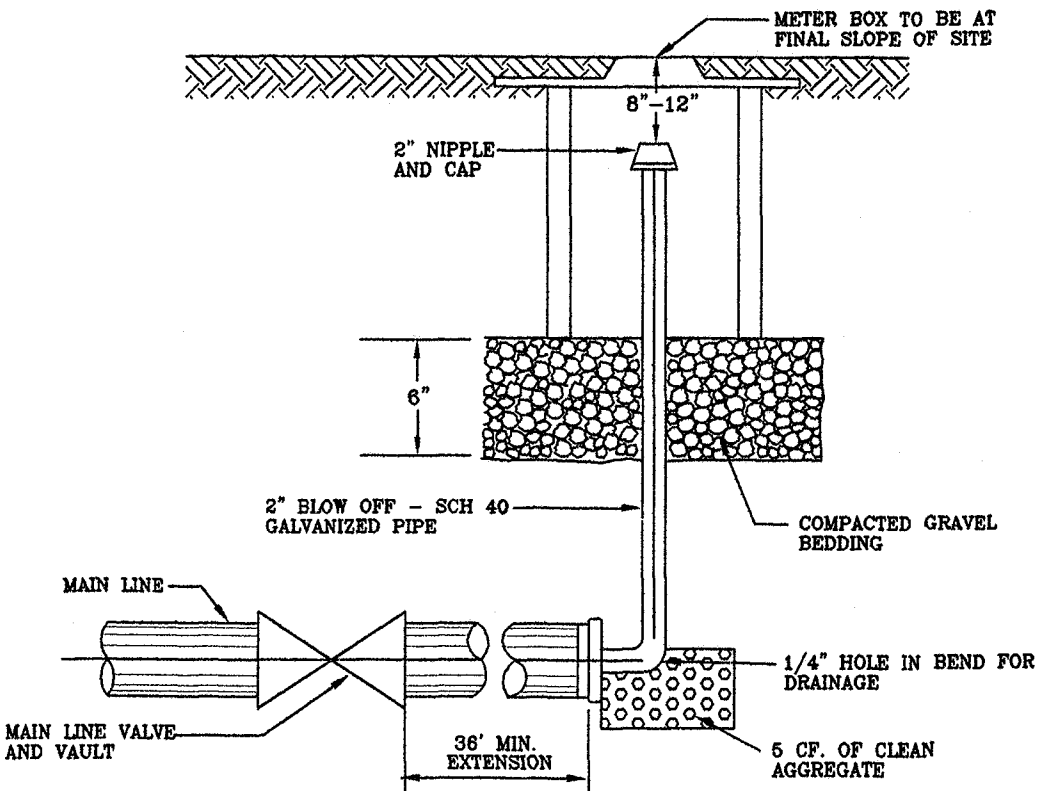


SECTION

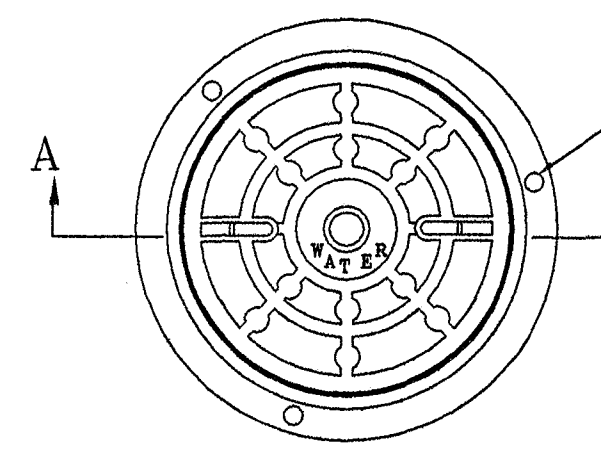
INSTALLATION DETAIL  
FOR ALL FRAMES AND COVERS

NOTE:

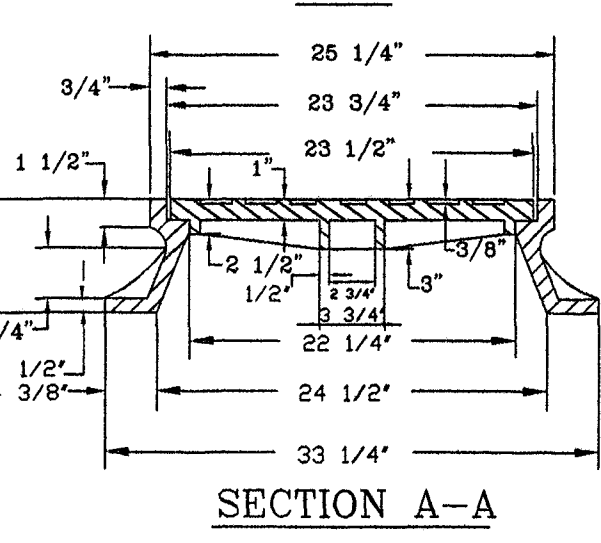
1. USE MODERATELY STIFF MIX OF NON SHRINK CEMENT, SAND AND 1/2\"/>
2. MIX IS TO BE FORCED INTO ALL GROOVES AND UNDER FLANGE OF FRAME AND LEFT AT OR ABOVE TOP OF FLANGE.
3. MAX. OF 4 BRICK OR CONCRETE BLOCKS TO BE USED FOR GRADE CONTROL.
4. DO NOT BACKFILL AROUND FRAME AND COVER, FOR 48 HOURS AFTER CON.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



BLOW OFF ASSEMBLY FOR MAIN LINE  
TEMPORARY TERMINATION

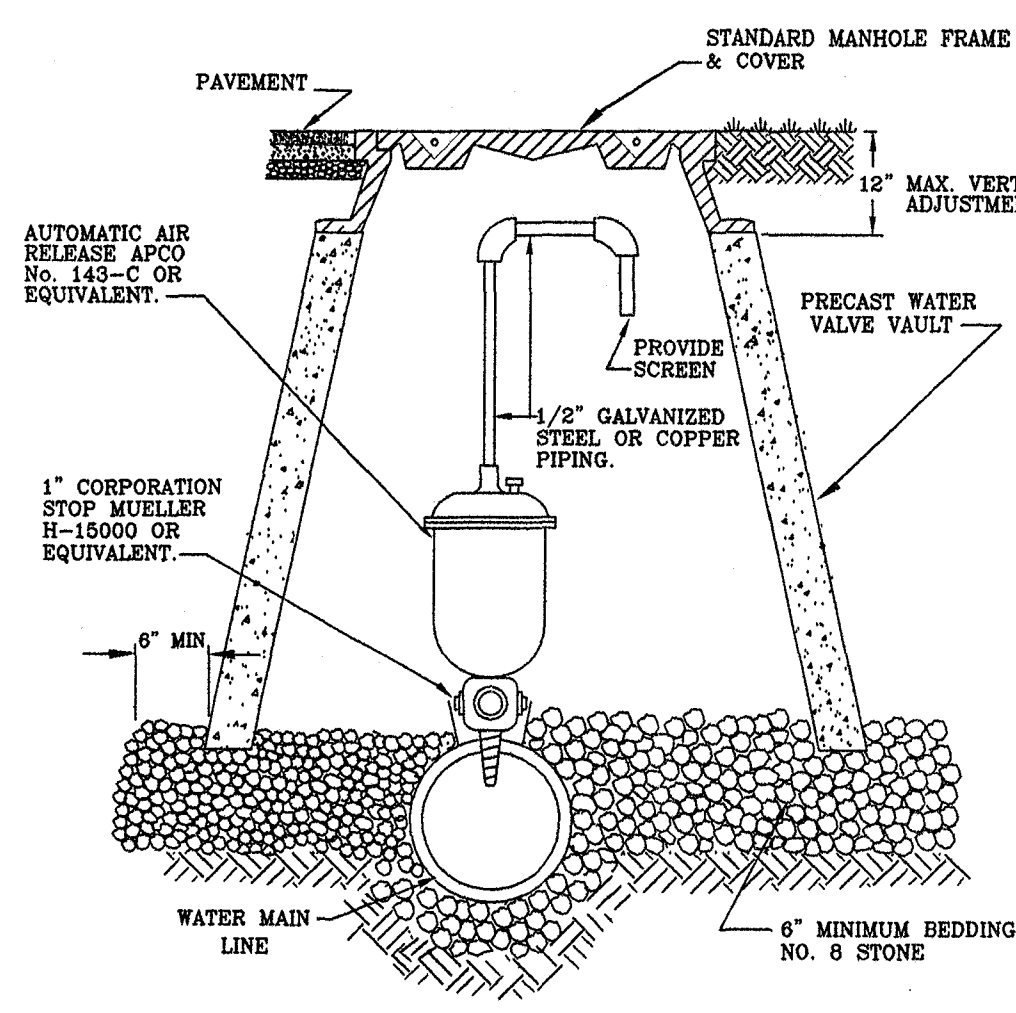


PLAN

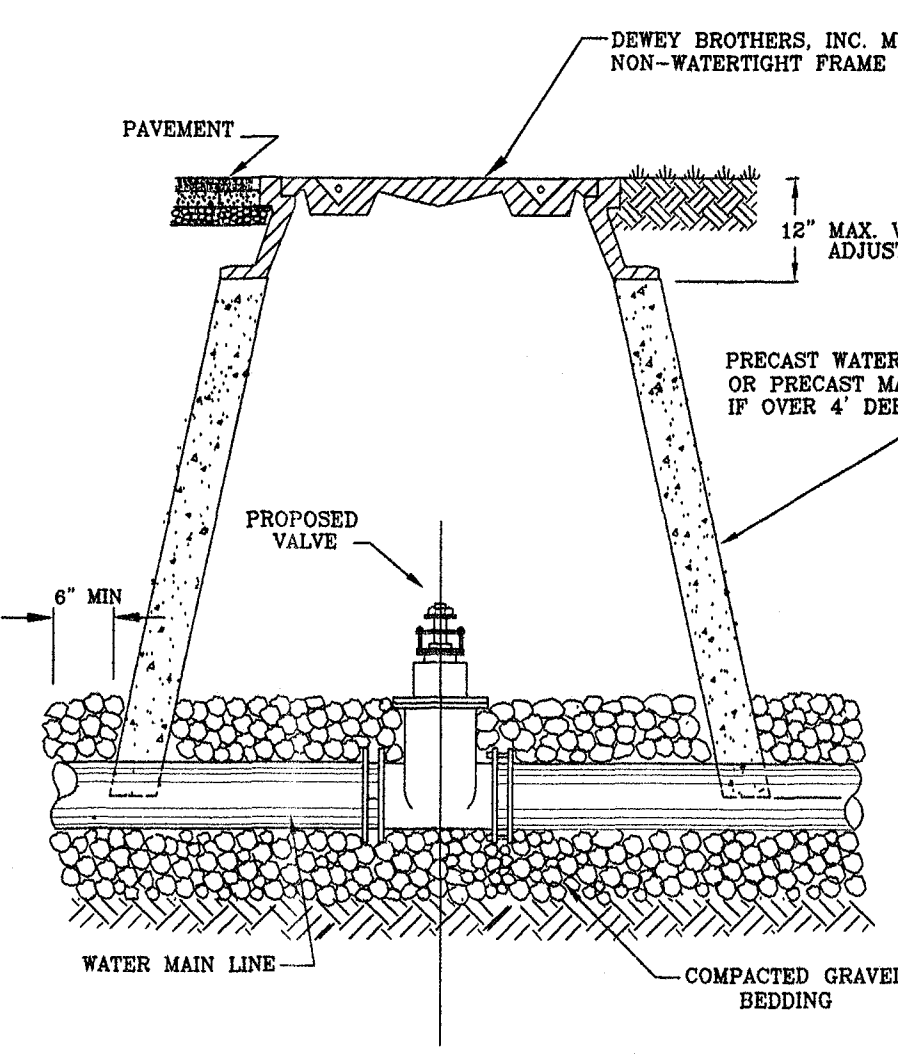


SECTION A-A

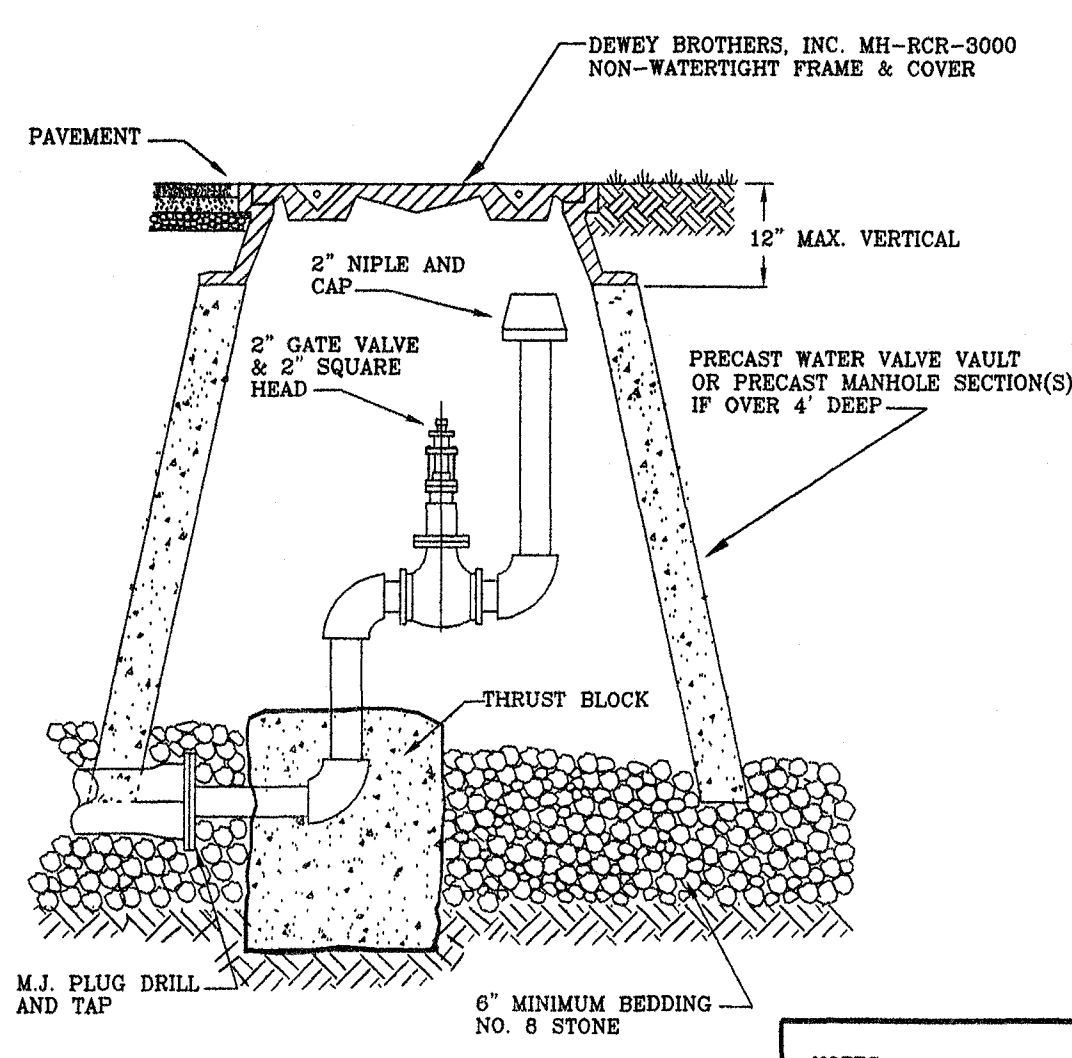
MANHOLE FRAME AND COVER  
PAVED 2001EC  
UNPAVED 2001(A)OVE)



AUTOMATIC AIR  
RELEASE ASSEMBLY



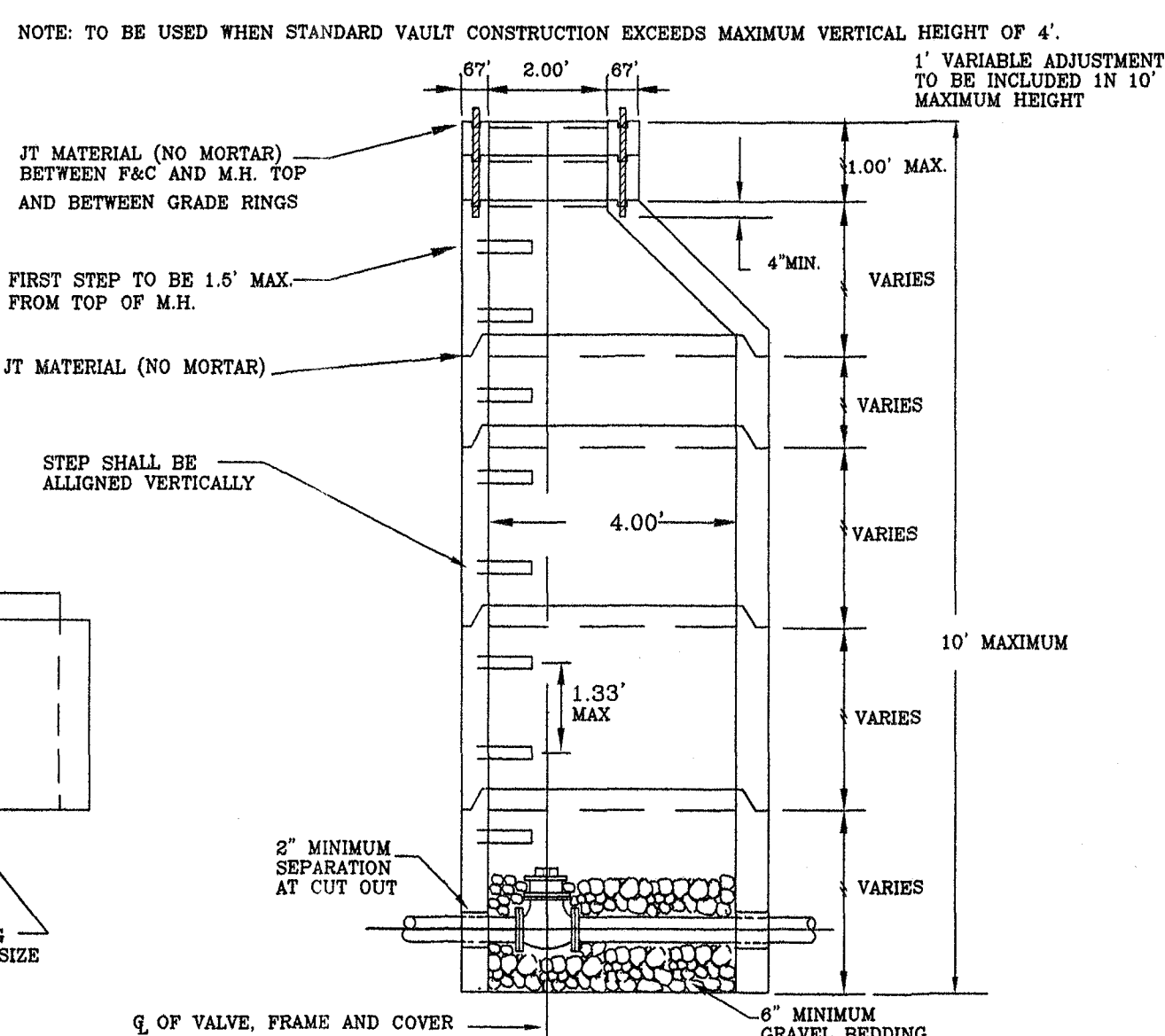
WATER LINE VALVE  
INSTALLATION



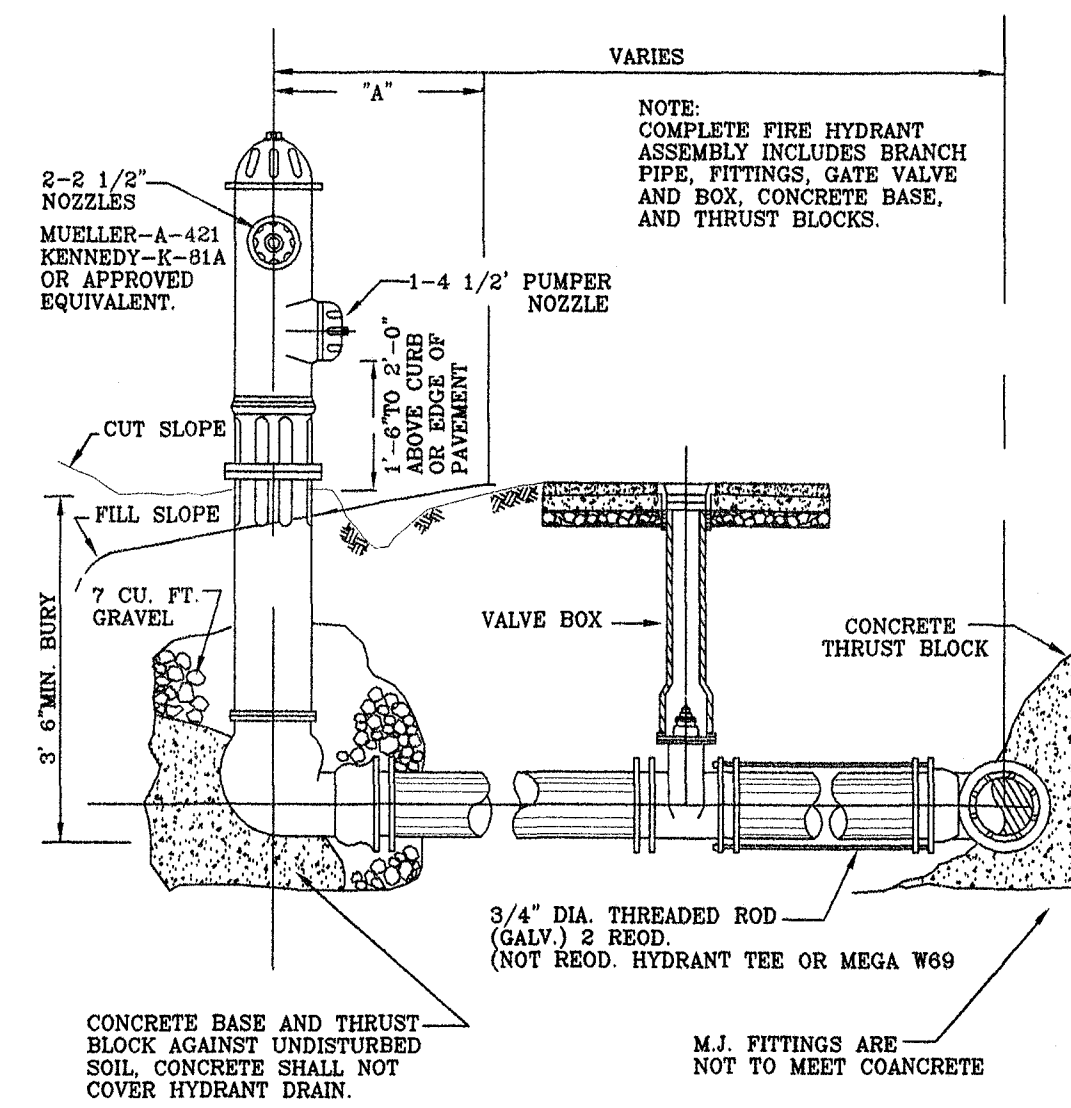
PERMANENT END OF LINE

NOTES:

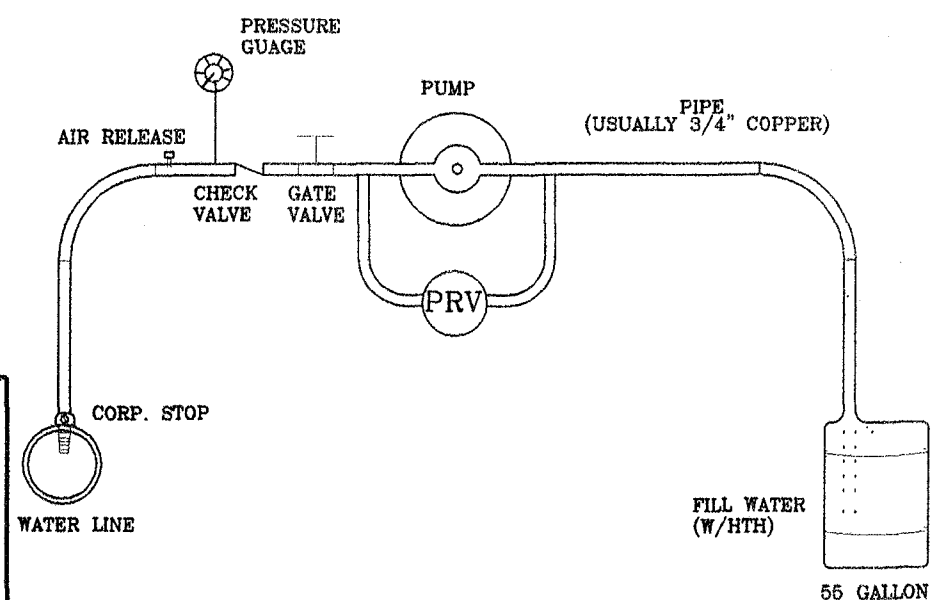
- (1) MAIN BODY OF HYDRANT MUST BE SILVER AND HAVE RED CAPS AND BONNET.
- (2) DISTANCE "A" WITH CURB AND GUTTER, 2\"/>
- (3) DISTANCE "A" WITHOUT CURB AND GUTTER, 6\"/>
- (4) AREA AROUND HYDRANT AT A RADIUS OF 4\"/>



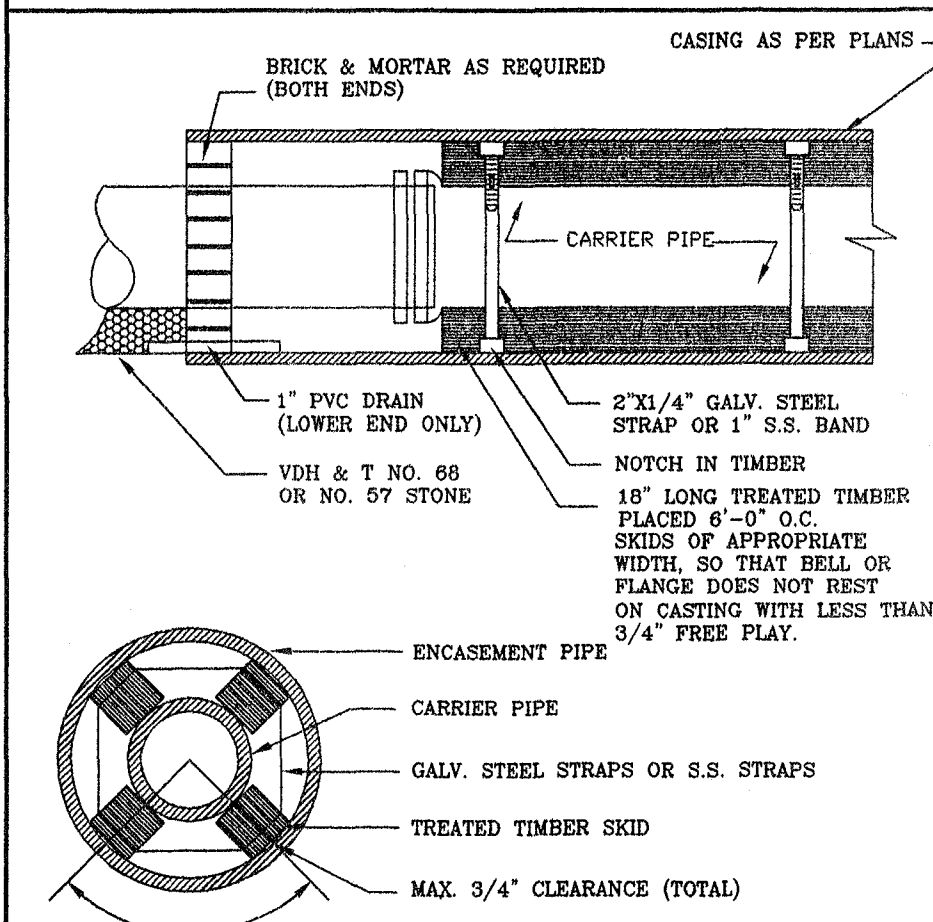
ALTERNATE VALVE VAULT (MANHOLE)



FIRE HYDRANT ASSEMBLY



TYPICAL WATER PRESSURE TEST RIG



PIPE SUPPORT IN CASING PIPE

- 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 503.
  2. MANHOLE BASE AND RISER SECTIONS CONSTRUCTION SHALL BE VERTICAL WITH MAXIMUM 1\"/>
  3. A MAXIMUM OF 2 CONSTRUCTION GRADE RINGS OR MAXIMUM OF 1\"/>
  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\"/>
  5. JOINTS AND OPENINGS IN MANHOLE UNITS SHALL BE MADE WATERTIGHT BY USING BUTYL SEALANTS, O\"/>
  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\"/>

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 VEH 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 U28-43  
B) MUELLER MODEL H 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.