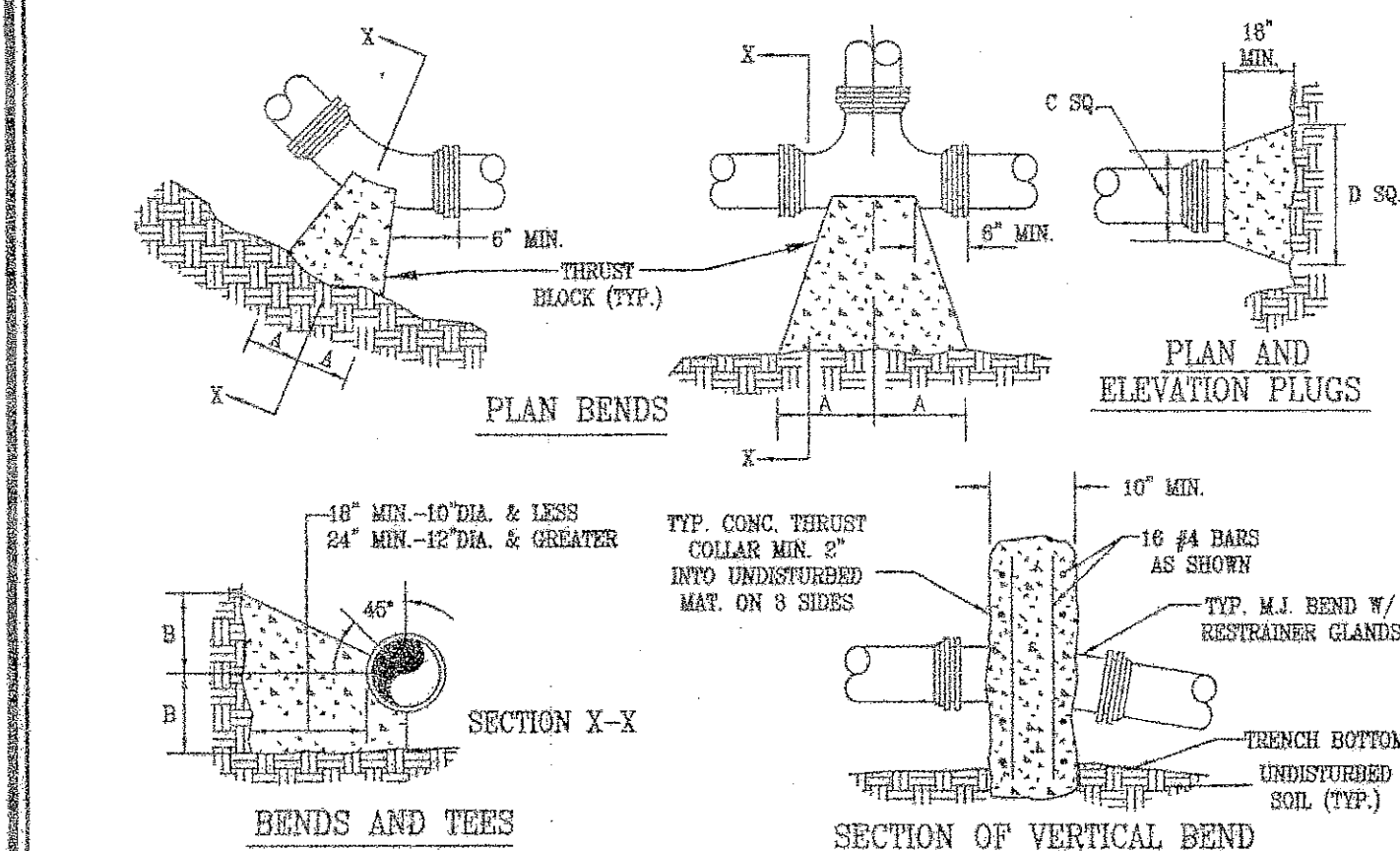
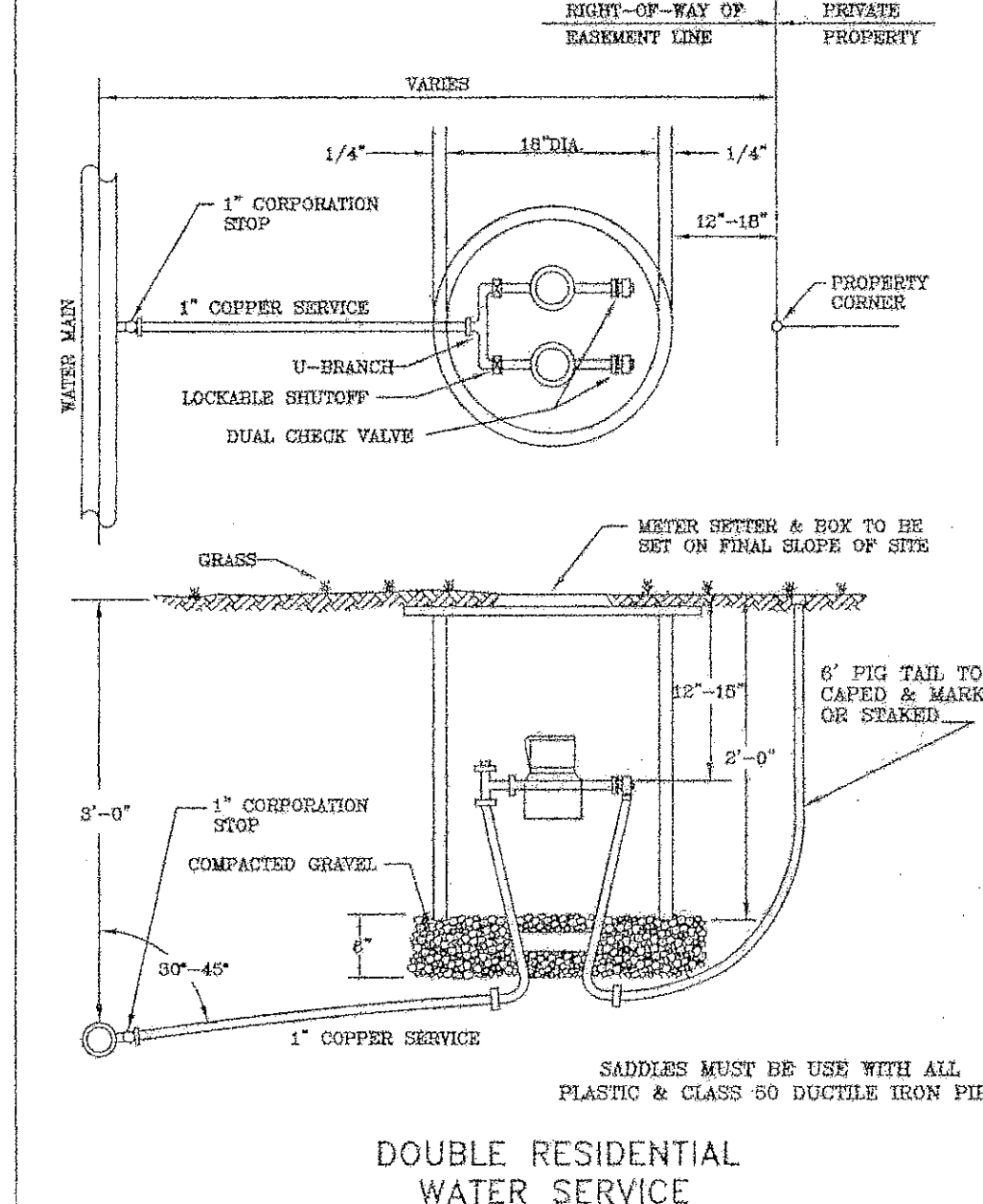
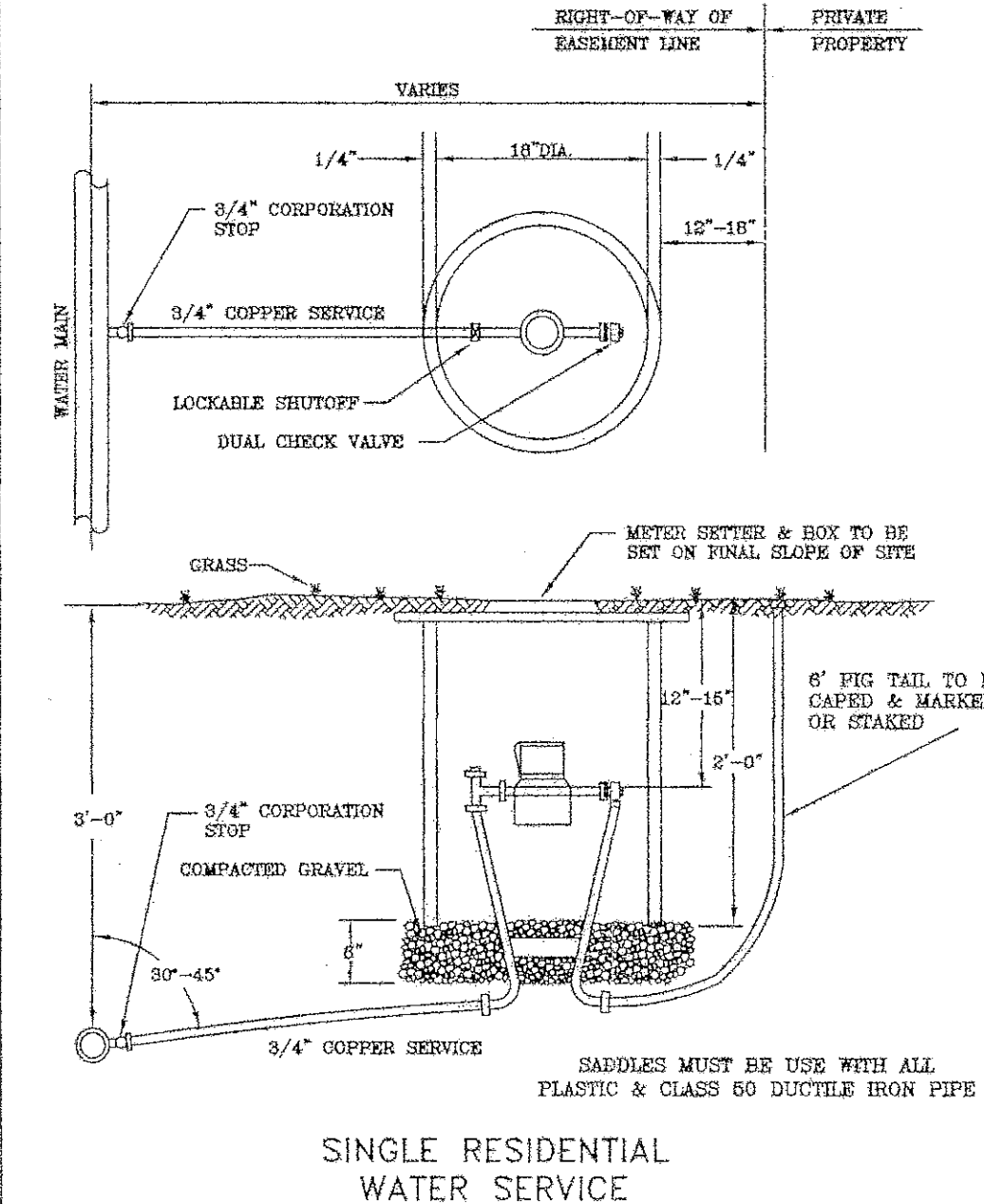
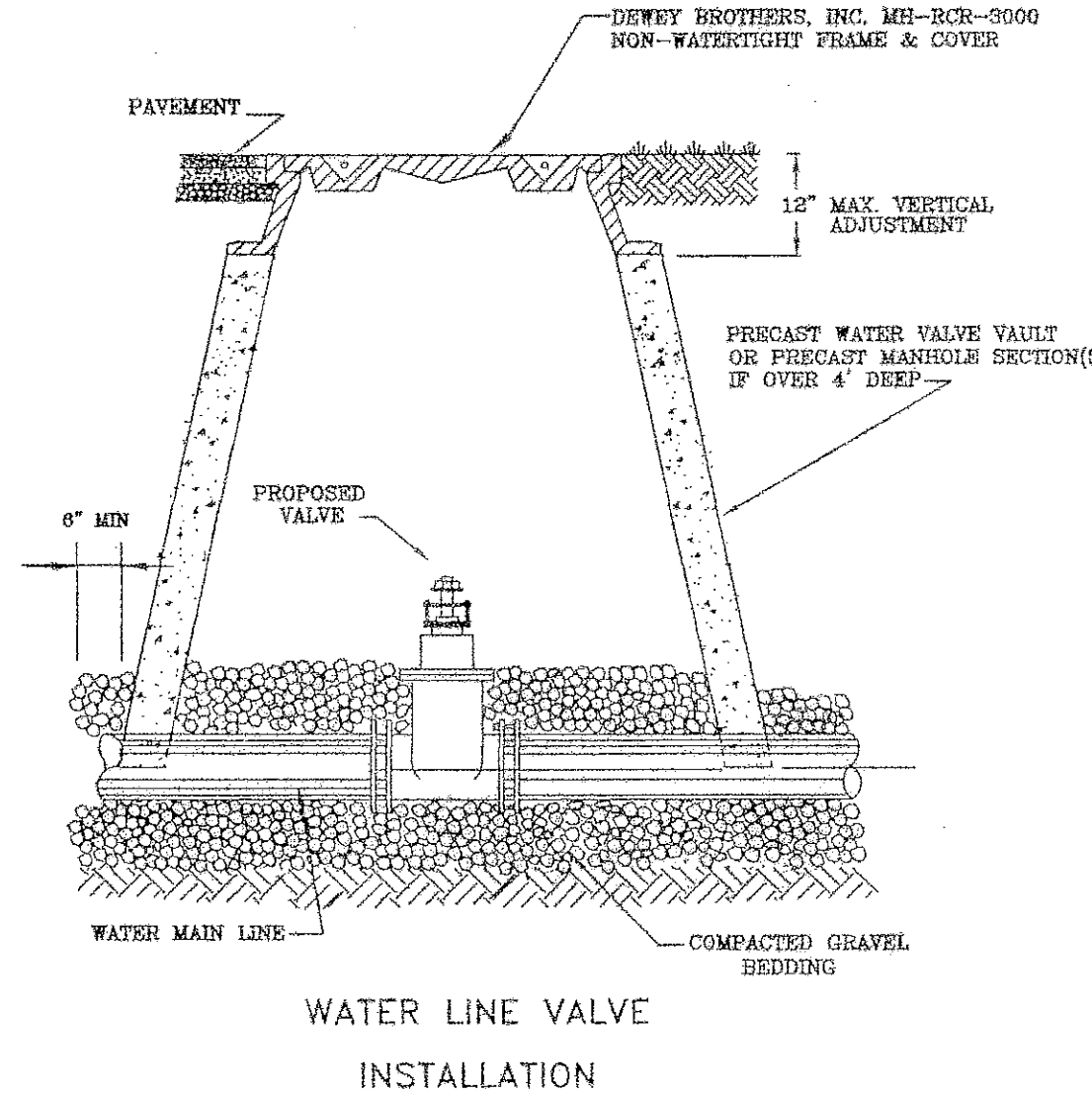
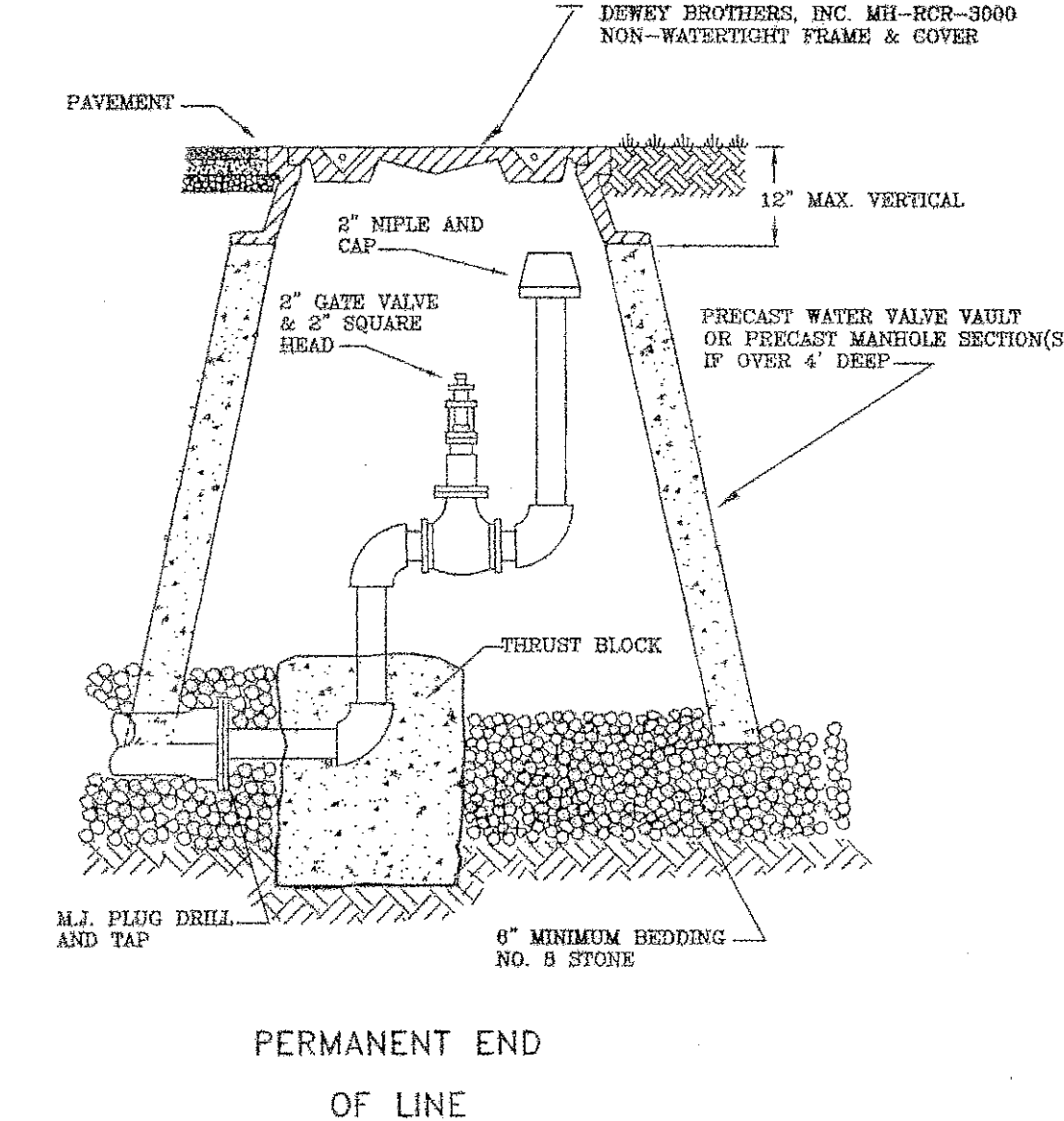
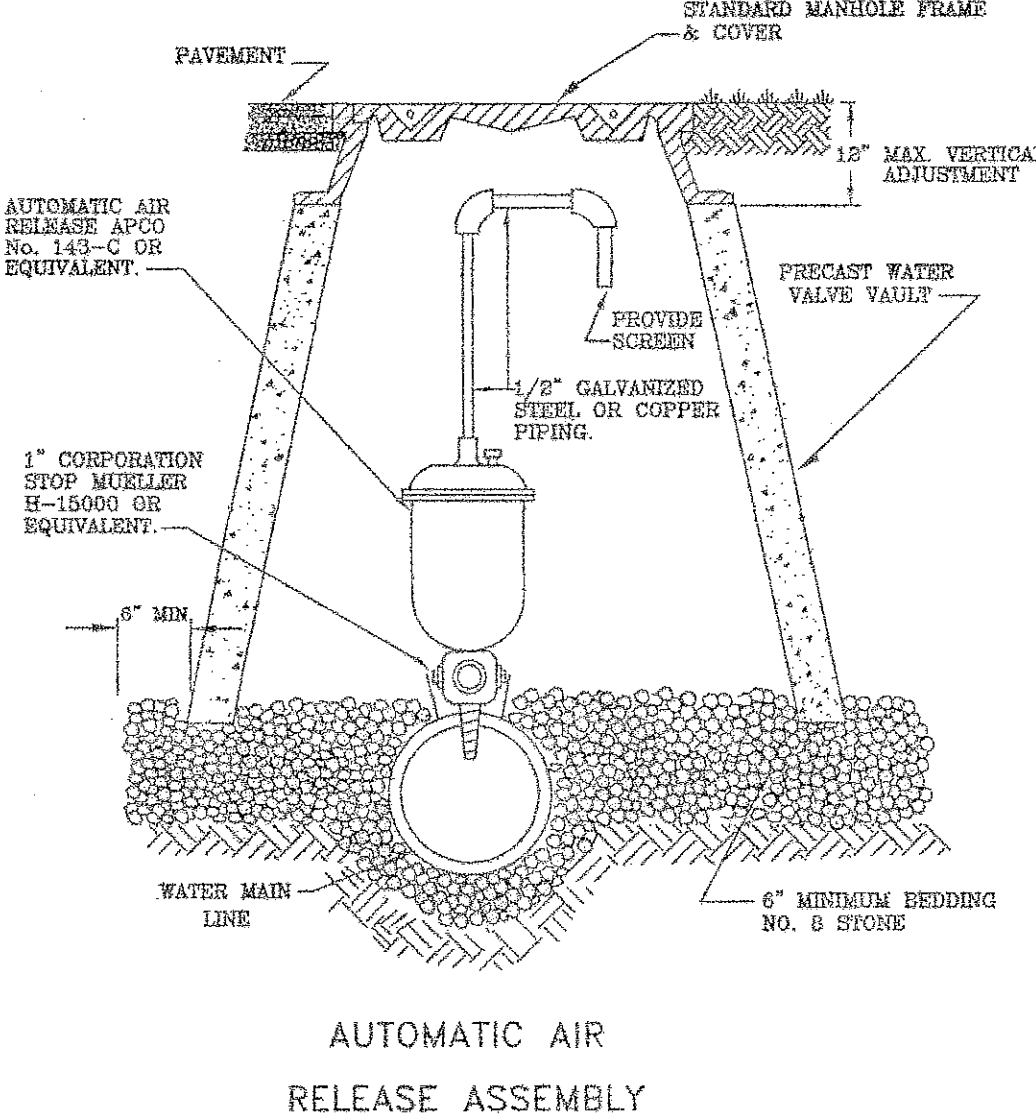
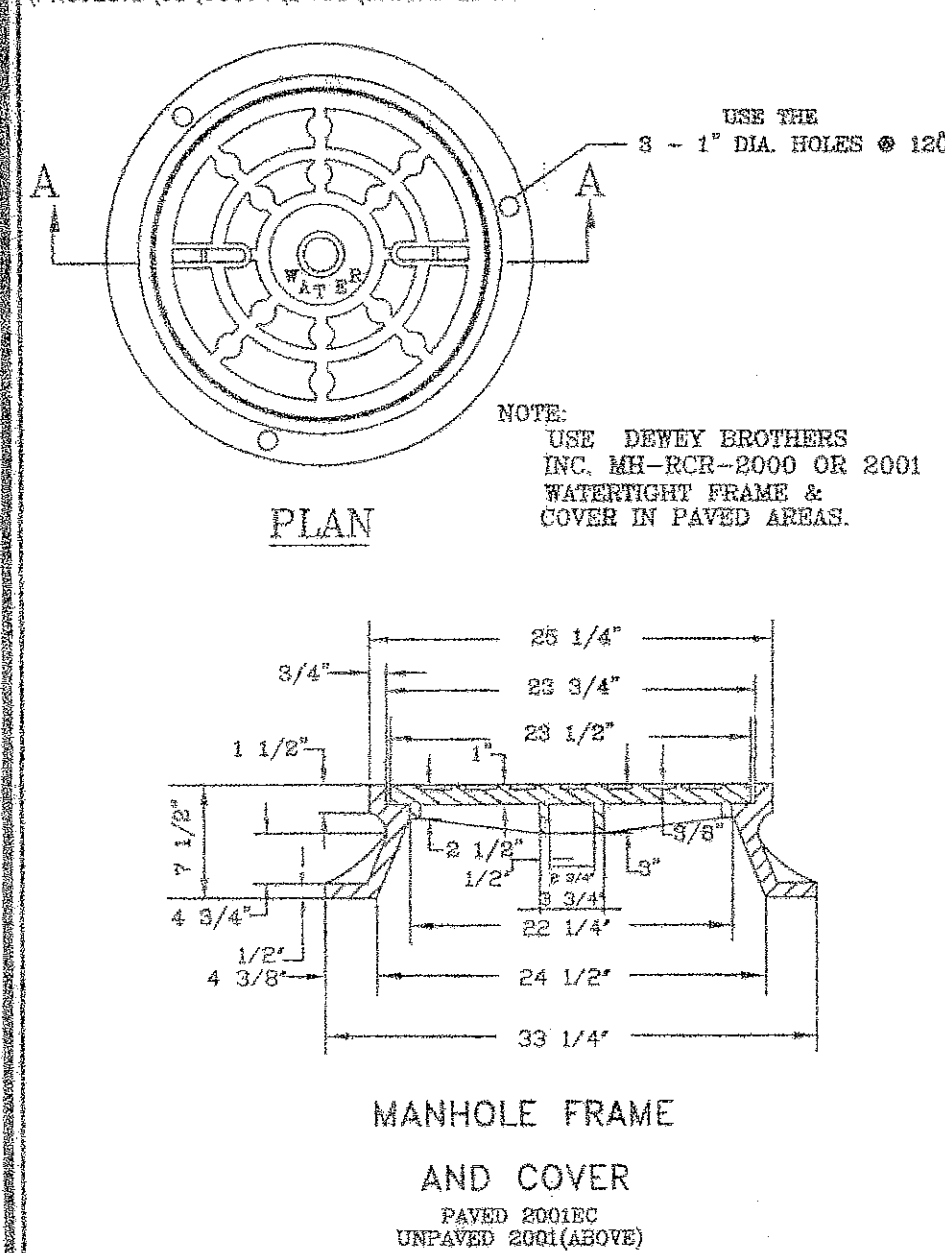




- NOTES:
- FOR VERT. BEND DOWN IN EXCESS OF 11 1/4" BEND, ANCHORAGE SHALL BE DESIGNED BY ENGINEER.
 - FOR VERT. BEND UPWARD, BLOCKING TO BE SIMILAR TO THAT FOR HORIZ. BEND.
 - GLANDS & BOLTS SHALL BE PROTECTED FROM CONC. BY PLASTIC SHEETING WHEN POURING THRUST BLOCKS.
 - ALL THRUST BLOCK & SUPPORT CONC.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

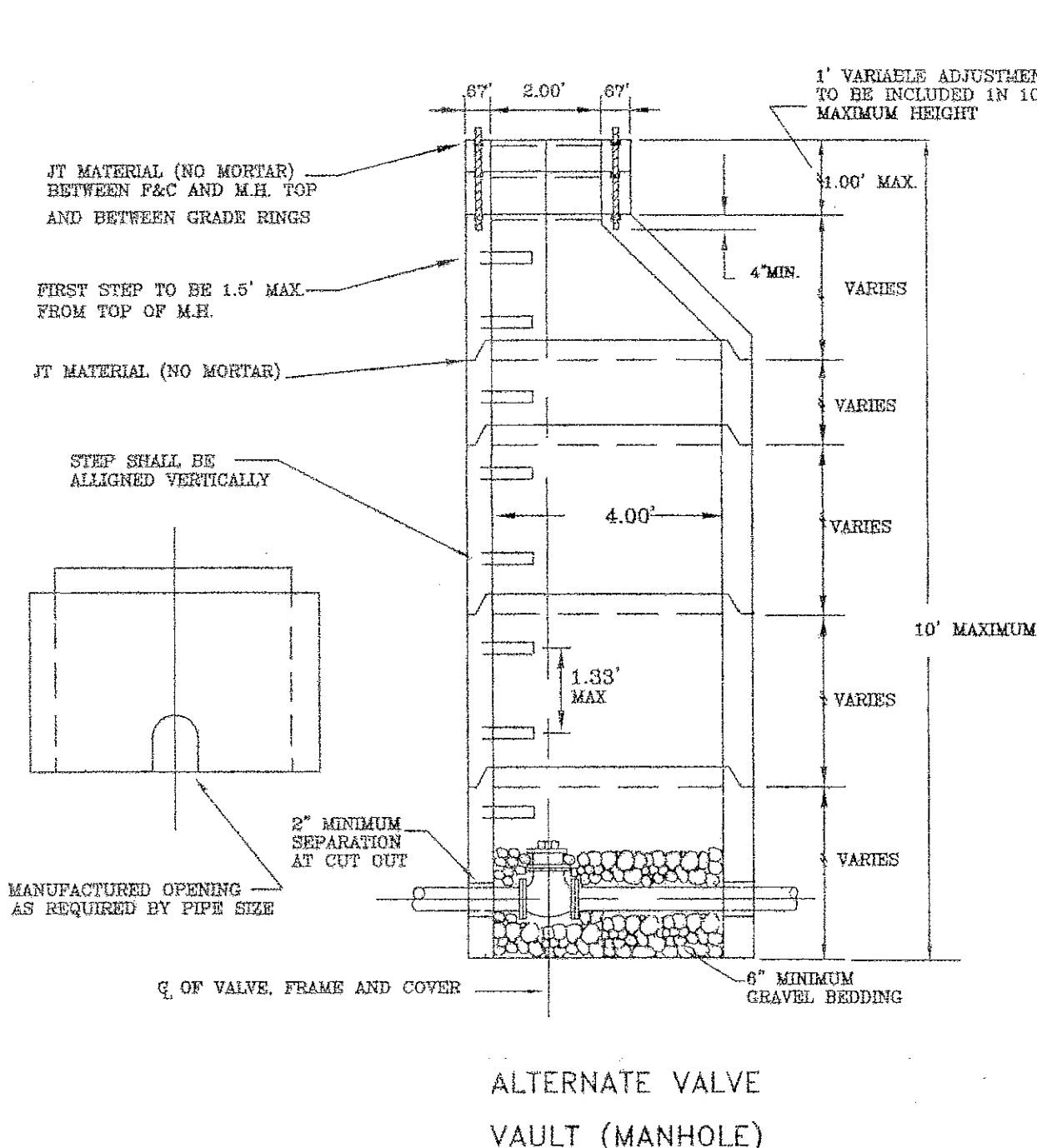
PIPE SIZE	90° BEND	45° BEND	22 1/2° BEND	11 1/4° BEND	TEE	PLUG
4"	2"	12"	8"	8"	6"	6"
6"	4"	18"	12"	12"	8"	8"
8"	6"	24"	16"	16"	10"	10"
10"	8"	30"	20"	20"	12"	12"
12"	10"	36"	24"	24"	14"	14"
14"	12"	42"	28"	28"	16"	16"
16"	14"	48"	32"	32"	18"	18"
18"	16"	54"	36"	36"	20"	20"
20"	18"	60"	40"	40"	22"	22"
22"	20"	66"	44"	44"	24"	24"
24"	22"	72"	48"	48"	26"	26"
26"	24"	78"	52"	52"	28"	28"
28"	26"	84"	56"	56"	30"	30"
30"	28"	90"	60"	60"	32"	32"

THRUST BLOCK CONSTRUCTION

VALVE & WATER STANDARDS FOR CONSTRUCTION

- VAULTS, MANHOLE BASES, RISERS, TAPERS AND GRADE RINGS SHALL BE PRECAST REINFORCED CONCRETE MANUFACTURED IN ACCORDANCE TO VIRGINIA DEPARTMENT OF TRANSPORTATION, ROAD AND BRIDGE SPECIFICATIONS, SECTION 503.
- MANHOLE BASE AND RISER SECTIONS CONSTRUCTION SHALL BE VERTICAL WITH MAXIMUM 1 INCH IN 4 FT. TILT.
- A MAXIMUM OF 2 CONSTRUCTION GRADE RINGS OR MAXIMUM OF 1' OF GRADE RINGS AND FRAME AND COVER ADJUSTMENT ARE ALLOWABLE.
- 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 INCH ABOVE FINISH GRADE IN PAVEMENT AND YARD AREAS AND MINIMUM 6 INCH ABOVE FINISH GRADE IN OTHER AREAS. MANHOLE FRAMES AND COVERS ARE NOT TO BE SET IN DRAINAGE SWALE, VALLEY GUTTER, ETC.
- JOINTS AND OPENINGS IN MANHOLE UNITS SHALL BE MADE WATER-TIGHT BY USING BUTYL SEALANTS, 1/2" RING GASKETS OR MASTIC. THE CONCRETE SURFACE SHALL BE CLEANED PRIOR TO USE OF SEALANT.
- FRAME AND COVERS - RCR - 30.
a) DEWEY BROTHERS, INC.
b) APPROVED EQUAL.
- ALL LEFT HOLES, OPENINGS AROUND PIPE, ETC. SHALL BE FILLED FROM INSIDE AND OUTSIDE TO THICKNESS OF STRUCTURE.

NOTE:
TO BE USED WHEN STANDARD VAULT CONSTRUCTION EXCEEDS MAXIMUM VERTICAL HEIGHT OF 4'.

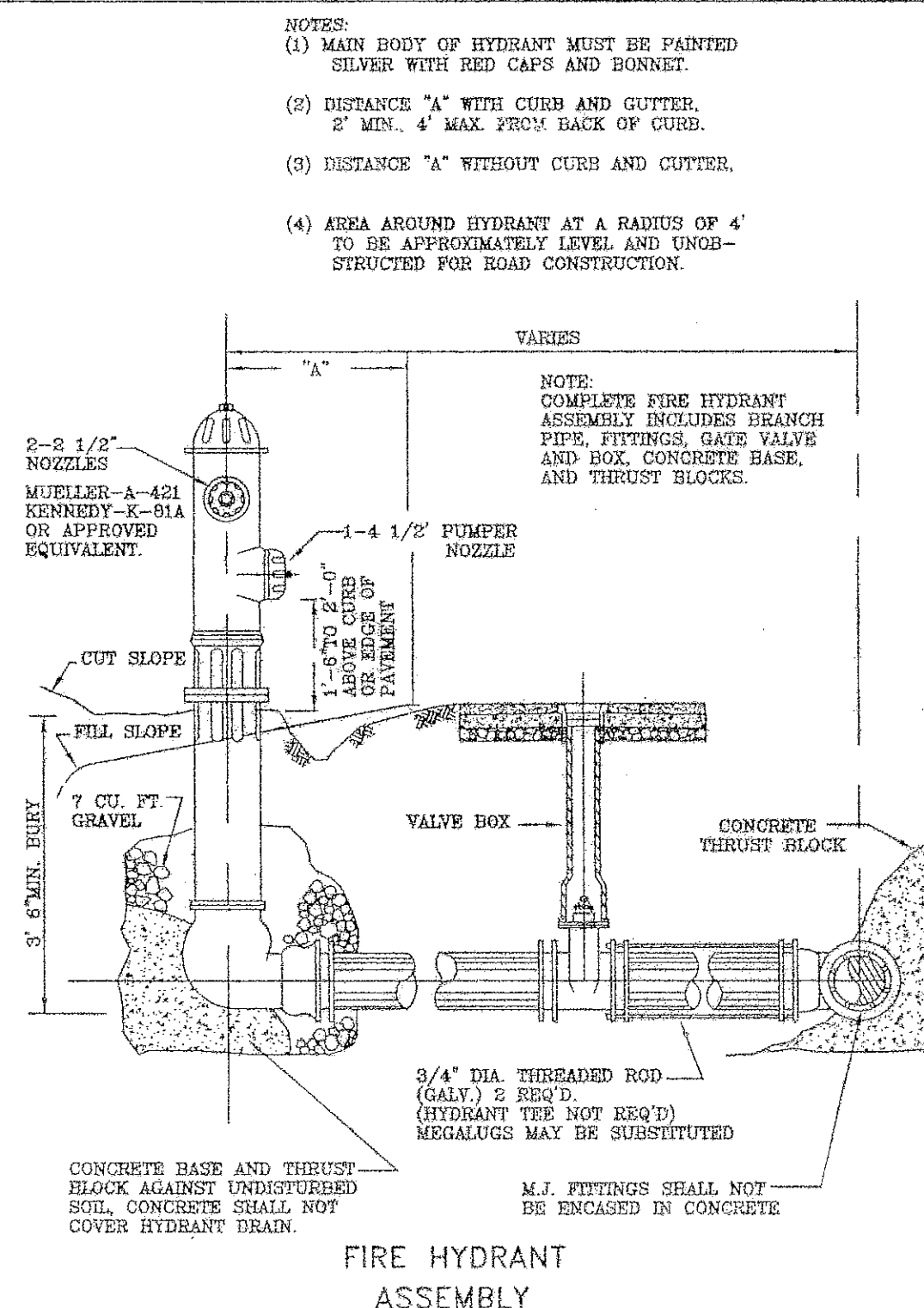
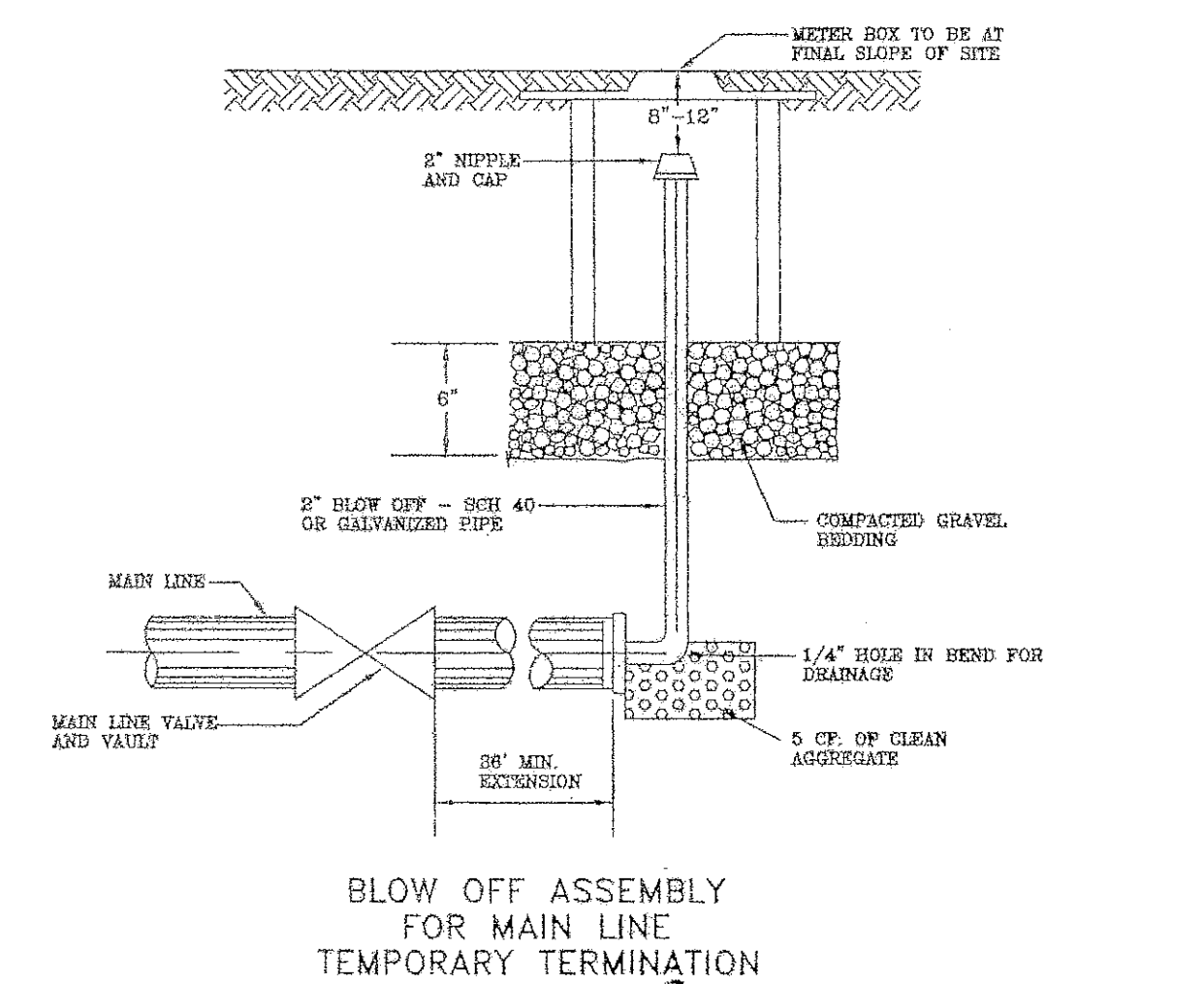
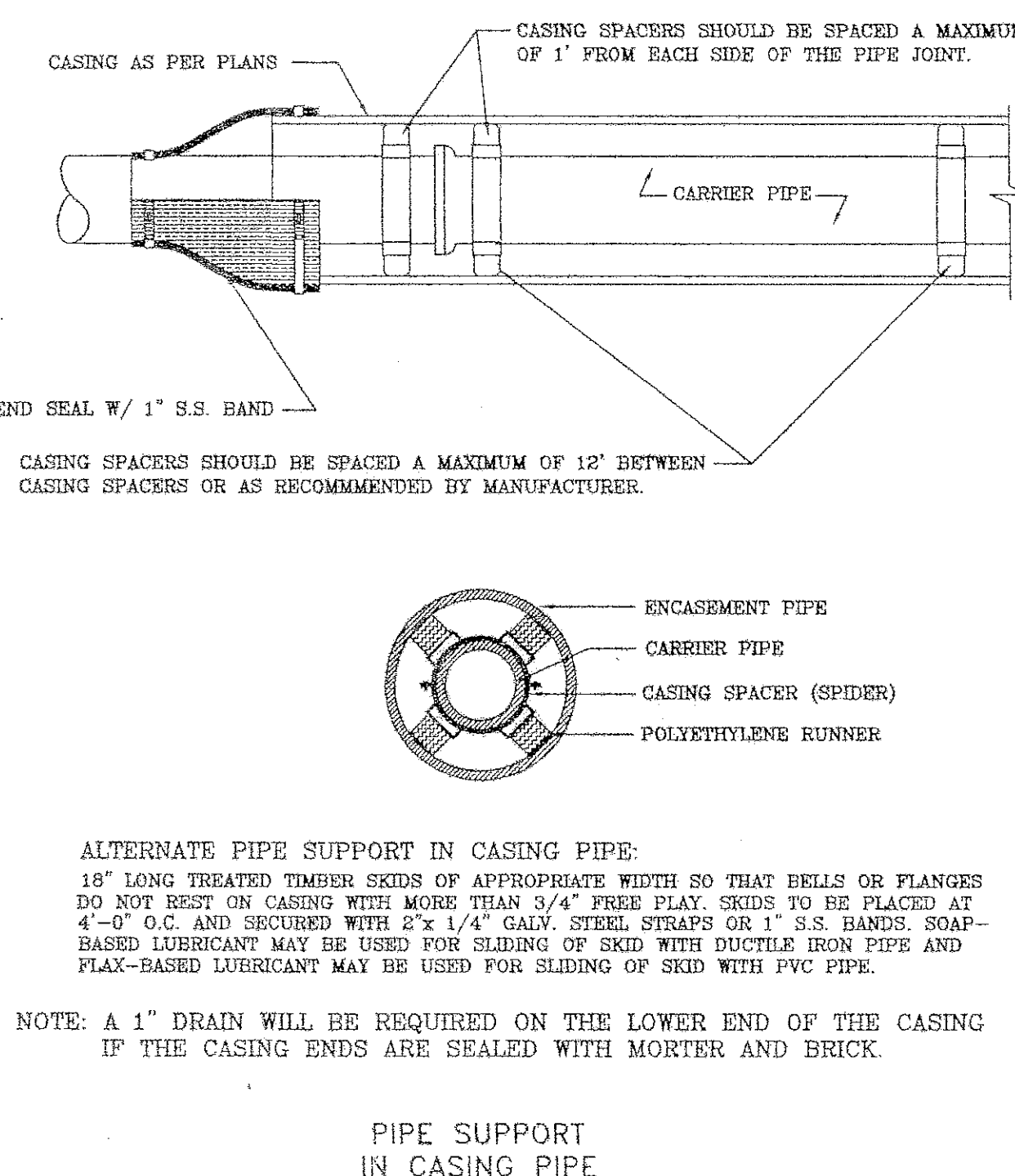
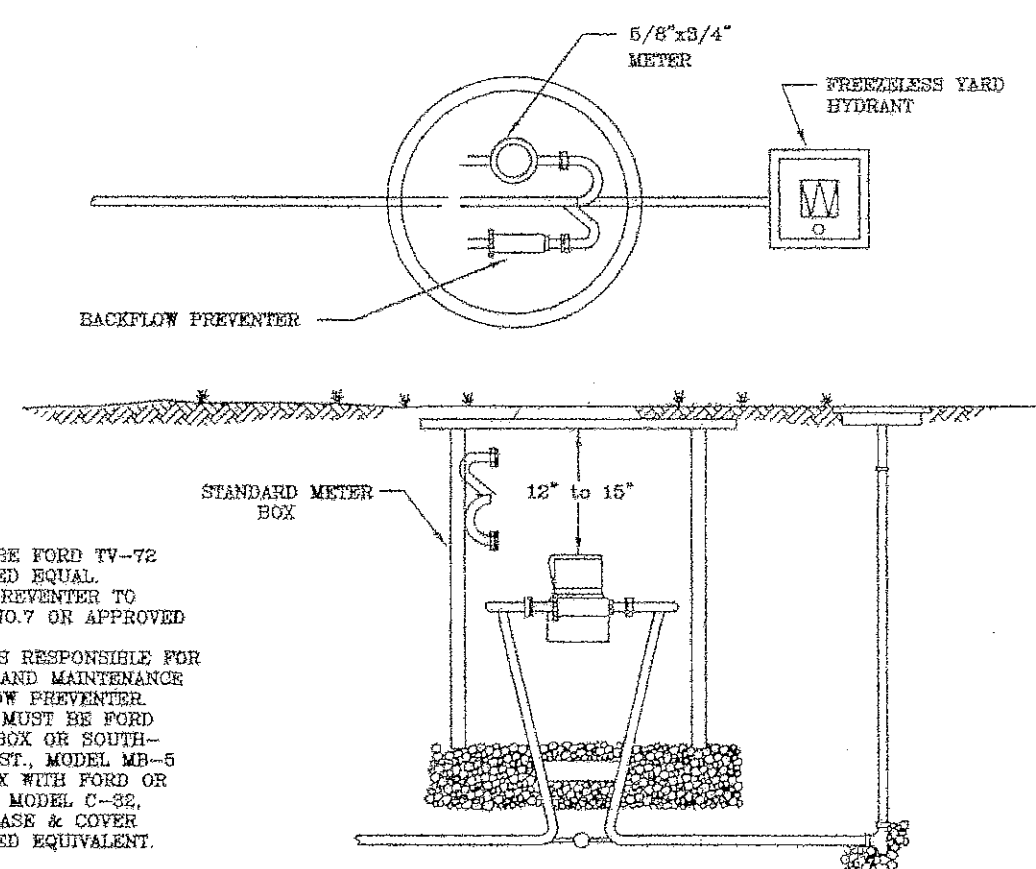


- ALL UNITS USED IN MANHOLES AND VAULT CONSTRUCTION SHALL BE SECURELY CONNECTED BY INTERLOCKING BETWEEN UNITS, CONCRETE COLLARS OR OTHER APPROVED METHODS.
- AREA AROUND METER BOX AT A RADIUS OF 4 FT. TO BE ON FINISH GRADE AND UNSTRUCTURED EXCEPT FOR ROAD CONSTRUCTION.

APPROVED MATERIALS

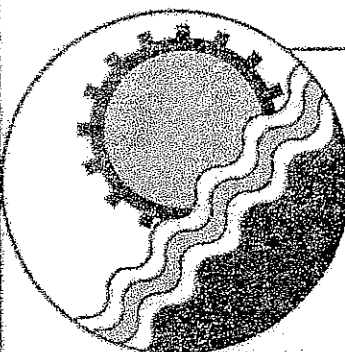
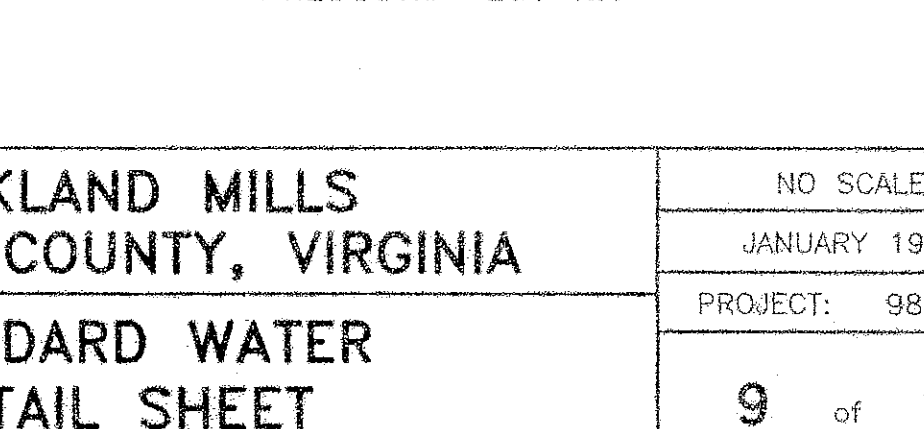
- METER BOXES
A) FORD BRONCE METER BOX WITH NO. 2 BRONCE TOP OR APPROVED EQUAL.
B) SOUTHEASTERN DISTRIBUTOR MODEL MB-5 PLASTIC BOX WITH FORD OR CHARLOTTE MODEL C-30 CAST IRON BASE AND COVER ONLY APPROVED FOR ROADWAY AREA.
C) APPROVED EQUAL.
- METER SETTER (INCLUDING INLET RISER VALVE AND DOUBLE CHECK VALVE ON BUTTLE).
A) FORD 1/2" 402-15-HD
B) APPROVED EQUAL.
- METER SETTER EXTENDER OR RISER
A) NOT ALLOWED UNLESS APPROVED BY THE UTILITY DIRECTOR.
- CORPORATION STOP
A) MUELLER MODEL H-1500
B) FORD MODEL F-600
C) APPROVED EQUAL.
- U-BRANCH
A) FORD MODEL U2B-43
B) MUELLER MODEL H 15362
C) APPROVED EQUAL.
- SERVICE SADDLES (FOR PVC PIPE)
A) FORD MODEL F 5 202 AND FC 202 WITH STAINLESS STEEL BAND AND BOLTS.
B) APPROVED EQUAL.

TYPICAL SPRINKLER SERVICE



TYPICAL WATER PRESSURE TEST RIG

TYPICAL WATER PRESSURE TEST RIG



ENGINEERING CONCEPTS, INC.

20 S. ROANOKE ST., PO BOX 619
FINCASTLE, VIRGINIA 24090
404.473.1253 FAX: 540.473.1254

Drawn
Designed
Checked
Approved

BUCKLAND MILLS
ROANOKE COUNTY, VIRGINIA
STANDARD WATER
DETAIL SHEET

NO SCALE
JANUARY 1999
PROJECT: 98099
9 of 11