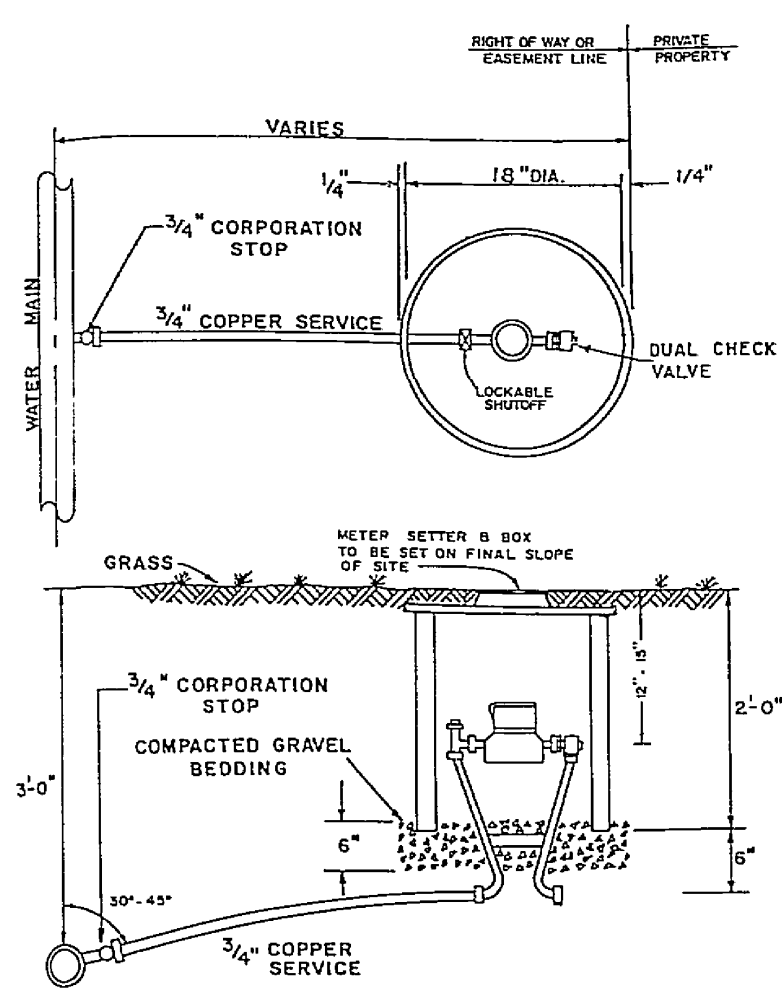
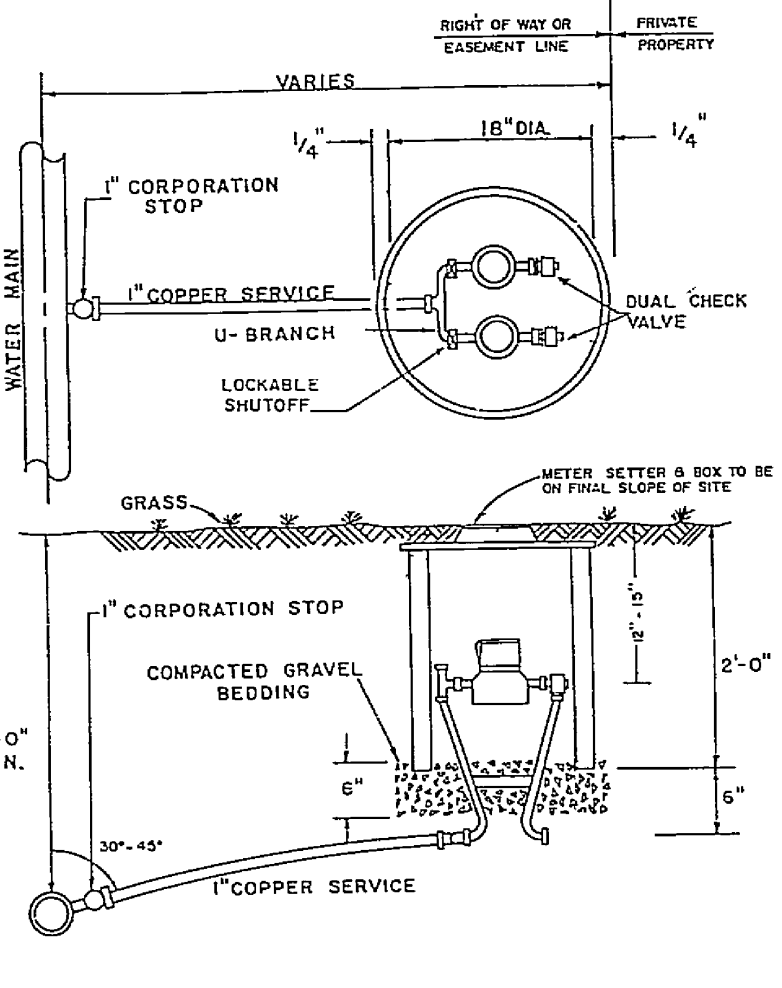
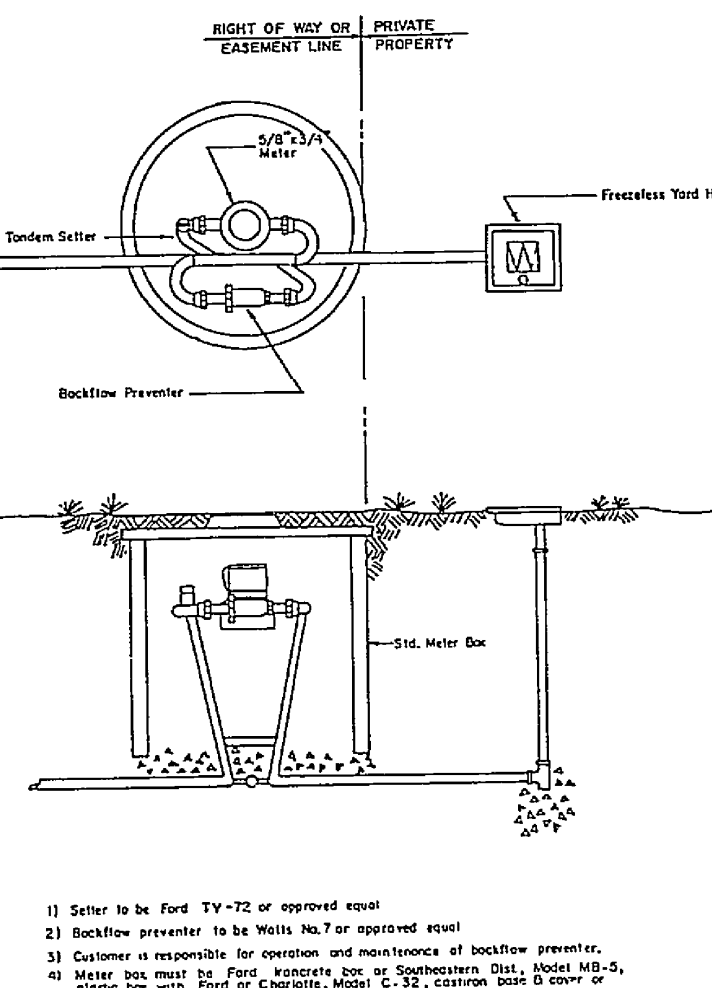




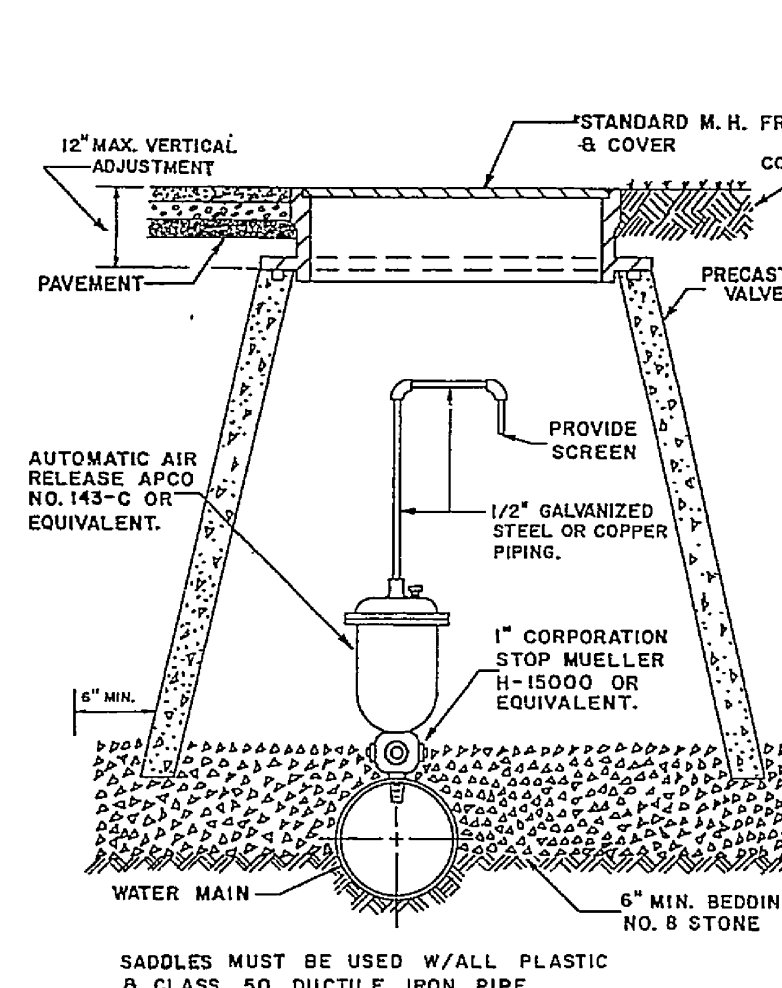
SINGLE RESIDENTIAL WATER SERVICE



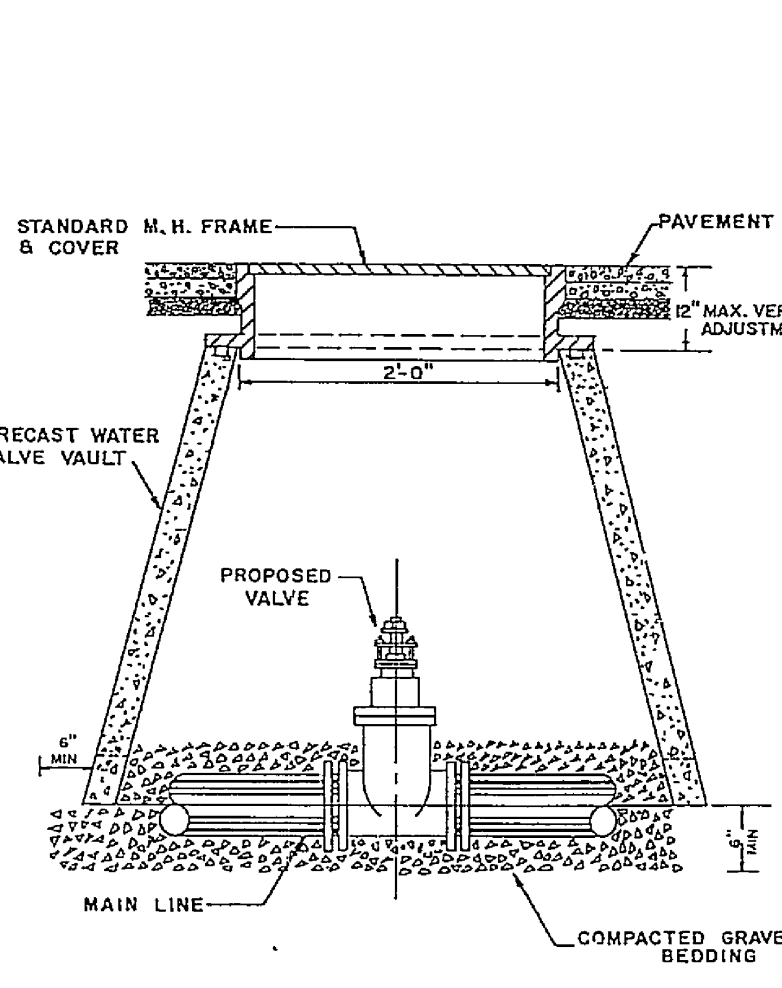
DOUBLE RESIDENTIAL WATER SERVICE



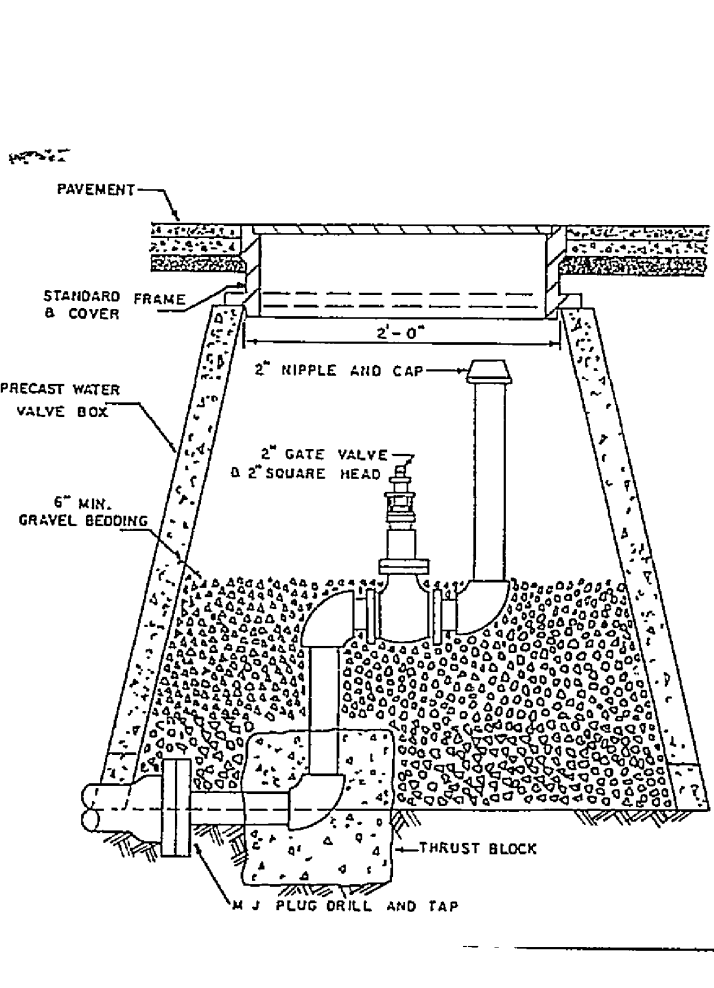
TYPICAL SPRINKLER SERVICE



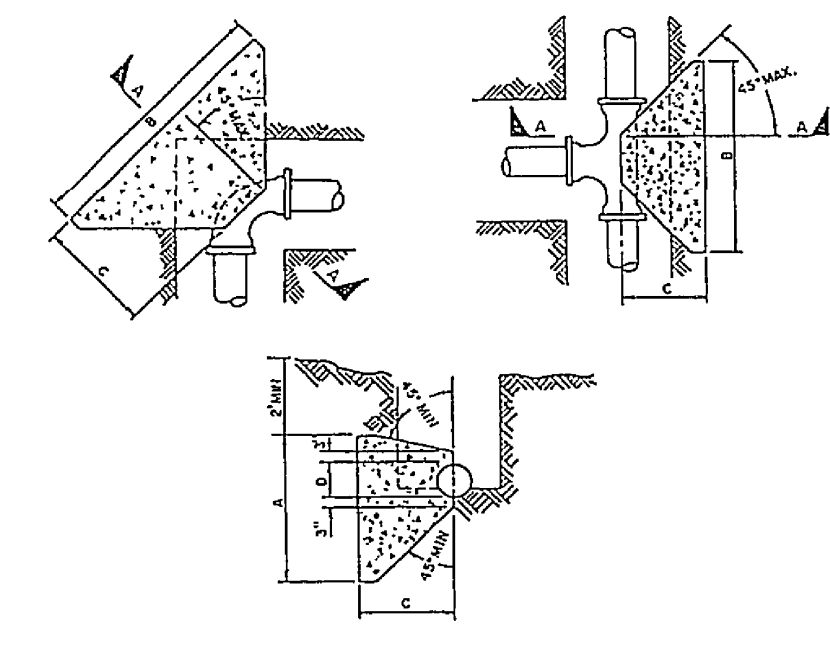
AUTOMATIC AIR RELEASE ASSEMBLY



WATER LINE VALVE INSTALLATION



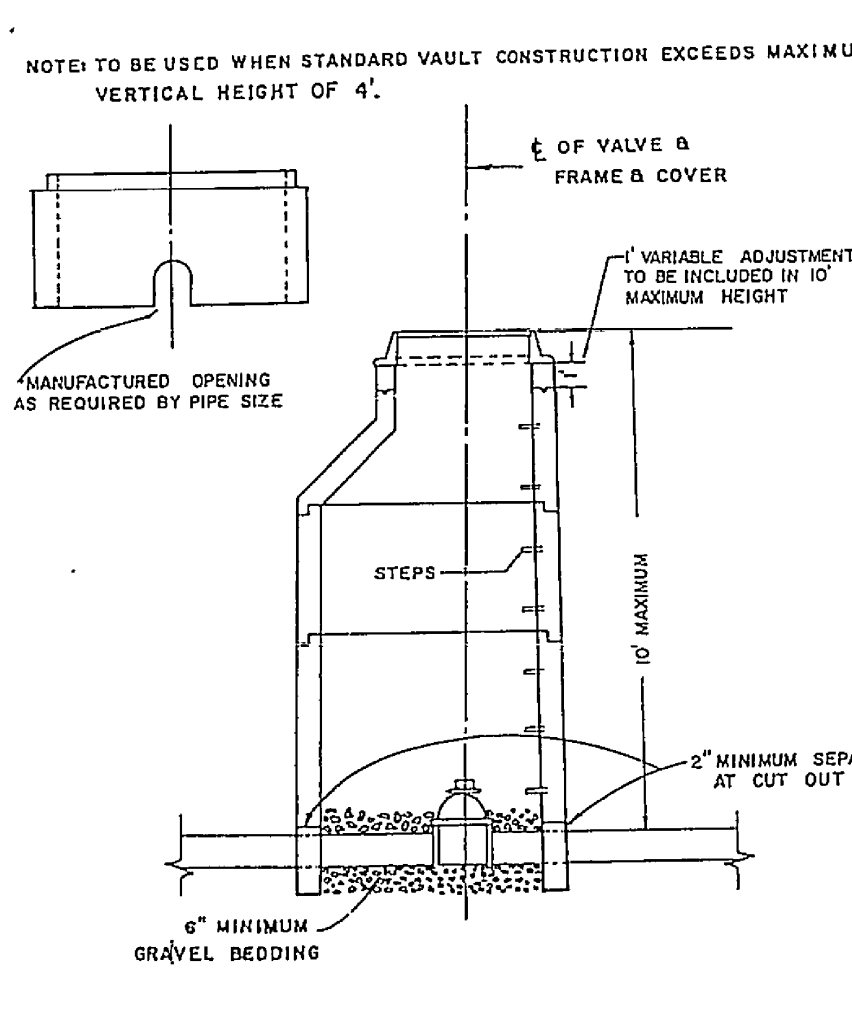
PERMANENT END OF LINE



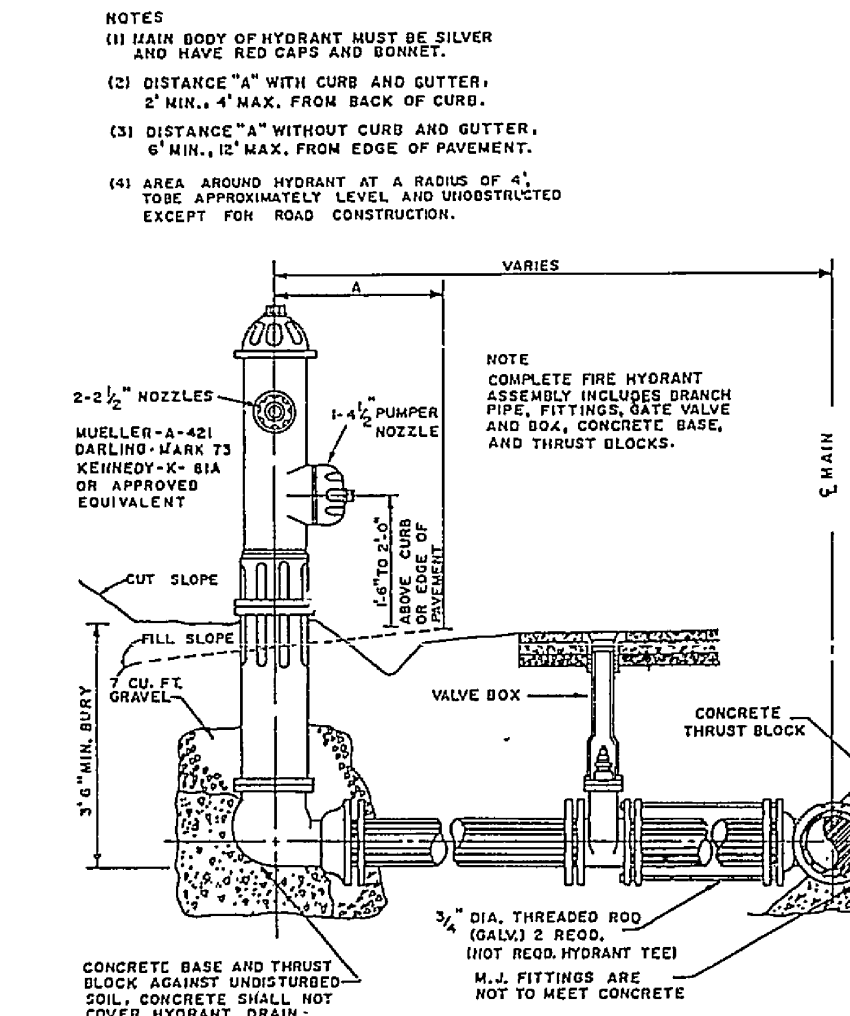
SECTION A-A

PIPE SIZE	90° BEND	45° BEND	22.5° LESS BEND
1/2"	1.0'	1.0'	1.0'
3/4"	1.0'	1.0'	1.0'
1"	1.0'	1.0'	1.0'
1 1/4"	1.0'	1.0'	1.0'
1 1/2"	1.0'	1.0'	1.0'
2"	1.0'	1.0'	1.0'
2 1/2"	1.0'	1.0'	1.0'
3"	1.0'	1.0'	1.0'
3 1/2"	1.0'	1.0'	1.0'
4"	1.0'	1.0'	1.0'
4 1/2"	1.0'	1.0'	1.0'
5"	1.0'	1.0'	1.0'
5 1/2"	1.0'	1.0'	1.0'
6"	1.0'	1.0'	1.0'
6 1/2"	1.0'	1.0'	1.0'
7"	1.0'	1.0'	1.0'
7 1/2"	1.0'	1.0'	1.0'
8"	1.0'	1.0'	1.0'
8 1/2"	1.0'	1.0'	1.0'
9"	1.0'	1.0'	1.0'
9 1/2"	1.0'	1.0'	1.0'
10"	1.0'	1.0'	1.0'
10 1/2"	1.0'	1.0'	1.0'
11"	1.0'	1.0'	1.0'
11 1/2"	1.0'	1.0'	1.0'
12"	1.0'	1.0'	1.0'
12 1/2"	1.0'	1.0'	1.0'
13"	1.0'	1.0'	1.0'
13 1/2"	1.0'	1.0'	1.0'
14"	1.0'	1.0'	1.0'
14 1/2"	1.0'	1.0'	1.0'
15"	1.0'	1.0'	1.0'
15 1/2"	1.0'	1.0'	1.0'
16"	1.0'	1.0'	1.0'
16 1/2"	1.0'	1.0'	1.0'
17"	1.0'	1.0'	1.0'
17 1/2"	1.0'	1.0'	1.0'
18"	1.0'	1.0'	1.0'
18 1/2"	1.0'	1.0'	1.0'
19"	1.0'	1.0'	1.0'
19 1/2"	1.0'	1.0'	1.0'
20"	1.0'	1.0'	1.0'
20 1/2"	1.0'	1.0'	1.0'
21"	1.0'	1.0'	1.0'
21 1/2"	1.0'	1.0'	1.0'
22"	1.0'	1.0'	1.0'
22 1/2"	1.0'	1.0'	1.0'
23"	1.0'	1.0'	1.0'
23 1/2"	1.0'	1.0'	1.0'
24"	1.0'	1.0'	1.0'
24 1/2"	1.0'	1.0'	1.0'
25"	1.0'	1.0'	1.0'
25 1/2"	1.0'	1.0'	1.0'
26"	1.0'	1.0'	1.0'
26 1/2"	1.0'	1.0'	1.0'
27"	1.0'	1.0'	1.0'
27 1/2"	1.0'	1.0'	1.0'
28"	1.0'	1.0'	1.0'
28 1/2"	1.0'	1.0'	1.0'
29"	1.0'	1.0'	1.0'
29 1/2"	1.0'	1.0'	1.0'
30"	1.0'	1.0'	1.0'
30 1/2"	1.0'	1.0'	1.0'
31"	1.0'	1.0'	1.0'
31 1/2"	1.0'	1.0'	1.0'
32"	1.0'	1.0'	1.0'
32 1/2"	1.0'	1.0'	1.0'
33"	1.0'	1.0'	1.0'
33 1/2"	1.0'	1.0'	1.0'
34"	1.0'	1.0'	1.0'
34 1/2"	1.0'	1.0'	1.0'
35"	1.0'	1.0'	1.0'
35 1/2"	1.0'	1.0'	1.0'
36"	1.0'	1.0'	1.0'
36 1/2"	1.0'	1.0'	1.0'
37"	1.0'	1.0'	1.0'
37 1/2"	1.0'	1.0'	1.0'
38"	1.0'	1.0'	1.0'
38 1/2"	1.0'	1.0'	1.0'
39"	1.0'	1.0'	1.0'
39 1/2"	1.0'	1.0'	1.0'
40"	1.0'	1.0'	1.0'
40 1/2"	1.0'	1.0'	1.0'
41"	1.0'	1.0'	1.0'
41 1/2"	1.0'	1.0'	1.0'
42"	1.0'	1.0'	1.0'
42 1/2"	1.0'	1.0'	1.0'
43"	1.0'	1.0'	1.0'
43 1/2"	1.0'	1.0'	1.0'
44"	1.0'	1.0'	1.0'
44 1/2"	1.0'	1.0'	1.0'
45"	1.0'	1.0'	1.0'
45 1/2"	1.0'	1.0'	1.0'
46"	1.0'	1.0'	1.0'
46 1/2"	1.0'	1.0'	1.0'
47"	1.0'	1.0'	1.0'
47 1/2"	1.0'	1.0'	1.0'
48"	1.0'	1.0'	1.0'
48 1/2"	1.0'	1.0'	1.0'
49"	1.0'	1.0'	1.0'
49 1/2"	1.0'	1.0'	1.0'
50"	1.0'	1.0'	1.0'
50 1/2"	1.0'	1.0'	1.0'
51"	1.0'	1.0'	1.0'
51 1/2"	1.0'	1.0'	1.0'
52"	1.0'	1.0'	1.0'
52 1/2"	1.0'	1.0'	1.0'
53"	1.0'	1.0'	1.0'
53 1/2"	1.0'	1.0'	1.0'
54"	1.0'	1.0'	1.0'
54 1/2"	1.0'	1.0'	1.0'
55"	1.0'	1.0'	1.0'
55 1/2"	1.0'	1.0'	1.0'
56"	1.0'	1.0'	1.0'
56 1/2"	1.0'	1.0'	1.0'
57"	1.0'	1.0'	1.0'
57 1/2"	1.0'	1.0'	1.0'
58"	1.0'	1.0'	1.0'
58 1/2"	1.0'	1.0'	1.0'
59"	1.0'	1.0'	1.0'
59 1/2"	1.0'	1.0'	1.0'
60"	1.0'	1.0'	1.0'
60 1/2"	1.0'	1.0'	1.0'
61"	1.0'	1.0'	1.0'
61 1/2"	1.0'	1.0'	1.0'
62"	1.0'	1.0'	1.0'
62 1/2"	1.0'	1.0'	1.0'
63"	1.0'	1.0'	1.0'
63 1/2"	1.0'	1.0'	1.0'
64"	1.0'	1.0'	1.0'
64 1/2"	1.0'	1.0'	1.0'
65"	1.0'	1.0'	1.0'
65 1/2"	1.0'	1.0'	1.0'
66"	1.0'	1.0'	1.0'
66 1/2"	1.0'	1.0'	1.0'
67"	1.0'	1.0'	1.0'
67 1/2"	1.0'	1.0'	1.0'
68"	1.0'	1.0'	1.0'
68 1/2"	1.0'	1.0'	1.0'
69"	1.0'	1.0'	1.0'
69 1/2"	1.0'	1.0'	1.0'
70"	1.0'	1.0'	1.0'
70 1/2"	1.0'	1.0'	1.0'
71"	1.0'	1.0'	1.0'
71 1/2"	1.0'	1.0'	1.0'
72"	1.0'	1.0'	1.0'
72 1/2"	1.0'	1.0'	1.0'
73"	1.0'	1.0'	1.0'
73 1/2"	1.0'	1.0'	1.0'
74"	1.0'	1.0'	1.0'
74 1/2"	1.0'	1.0'	1.0'
75"	1.0'	1.0'	1.0'
75 1/2"	1.0'	1.0'	1.0'
76"	1.0'	1.0'	1.0'
76 1/2"	1.0'	1.0'	1.0'
77"	1.0'	1.0'	1.0'
77 1/2"	1.0'	1.0'	1.0'
78"	1.0'	1.0'	1.0'
78 1/2"	1.0'	1.0'	1.0'
79"	1.0'	1.0'	1.0'
79 1/2"	1.0'	1.0'	1.0'
80"	1.0'	1.0'	1.0'
80 1/2"	1.0'	1.0'	1.0'
81"	1.0'	1.0'	1.0'
81 1/2"	1.0'	1.0'	1.0'
82"	1.0'	1.0'	1.0'
82 1/2"	1.0'	1.0'	1.0'
83"	1.0'	1.0'	1.0'
83 1/2"	1.0'	1.0'	1.0'
84"	1.0'	1.0'	1.0'
84 1/2"	1.0'	1.0'	1.0'
85"	1.0'	1.0'	1.0'
85 1/2"	1.0'	1.0'	1.0'
86"	1.0'	1.0'	1.0'
86 1/2"	1.0'	1.0'	1.0'
87"	1.0'	1.0'	1.0'
87 1/2"	1.0'	1.0'	1.0'
88"	1.0'	1.0'	1.0'
88 1/2"	1.0'	1.0'	1.0'
89"	1.0'	1.0'	1.0'
89 1/2"	1.0'	1.0'	1.0'
90"	1.0'	1.0'	1.0'
90 1/2"	1.0'	1.0'	1.0'
91"	1.0'	1.0'	1.0'
91 1/2"	1.0'	1.0'	1.0'
92"	1.0'	1.0'	1.0'
92 1/2"	1.0'	1.0'	1.0'
93"	1.0'	1.0'	1.0'
93 1/2"	1.0'	1.0'	1.0'
94"	1.0'	1.0'	1.0'
94 1/2"	1.0'	1.0'	1.0'
95"	1.0'	1.0'	1.0'
95 1/2"	1.0'	1.0'	1.0'
96"	1.0'	1.0'	1.0'
96 1/2"	1.0'	1.0'	1.0'
97"	1.0'	1.0'	1.0'
97 1/2"	1.0'	1.0'	1.0'
98"	1.0'	1.0'	1.0'
98 1/2"	1.0'	1.0'	1.0'
99"	1.0'	1.0'	1.0'
99 1/2"	1.0'	1.0'	1.0'
100"	1.0'	1.0'	1.0'

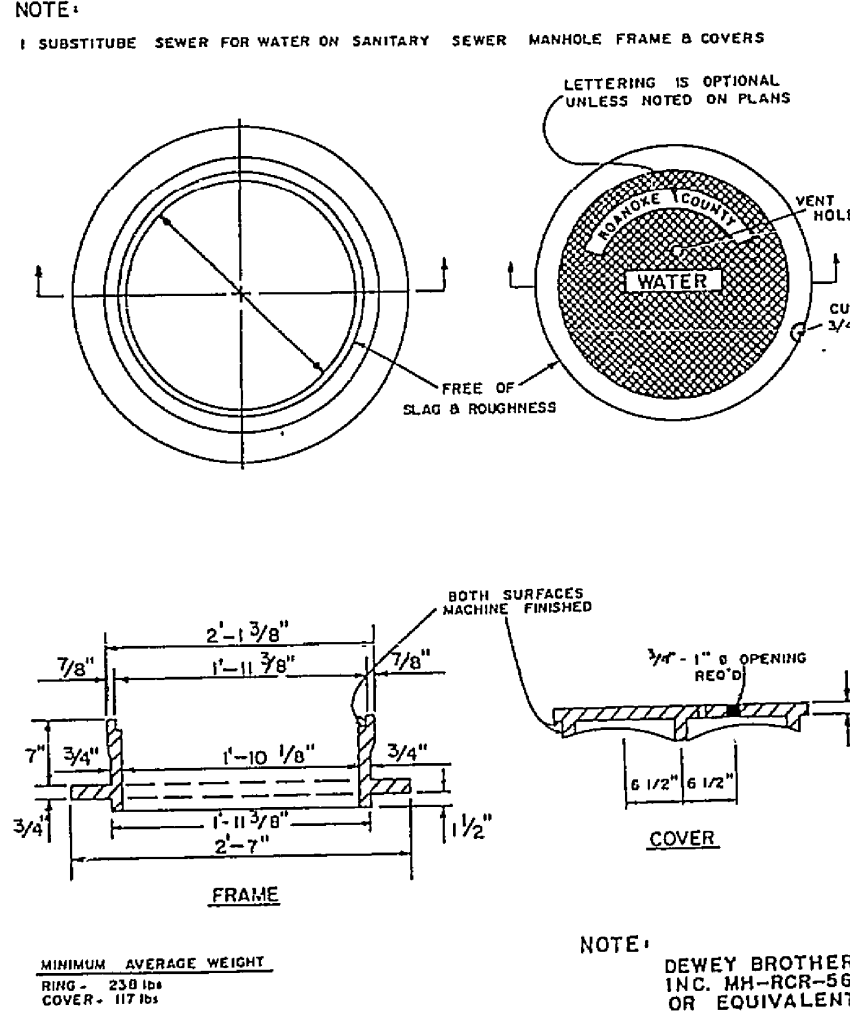
THRUST BLOCK FOR HORIZONTAL & LOWER VERTICAL BENDS



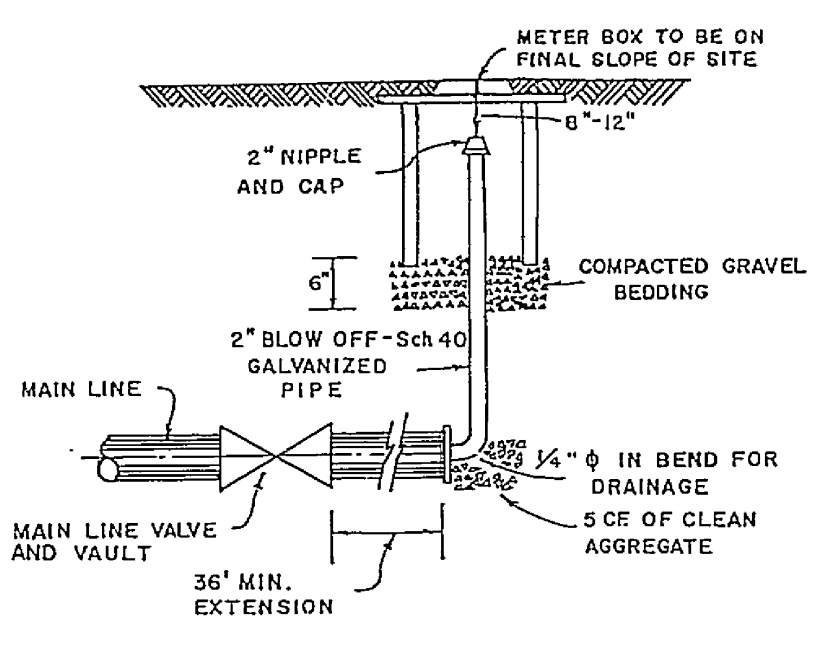
ALTERNATE VALVE VAULT (MANHOLE)



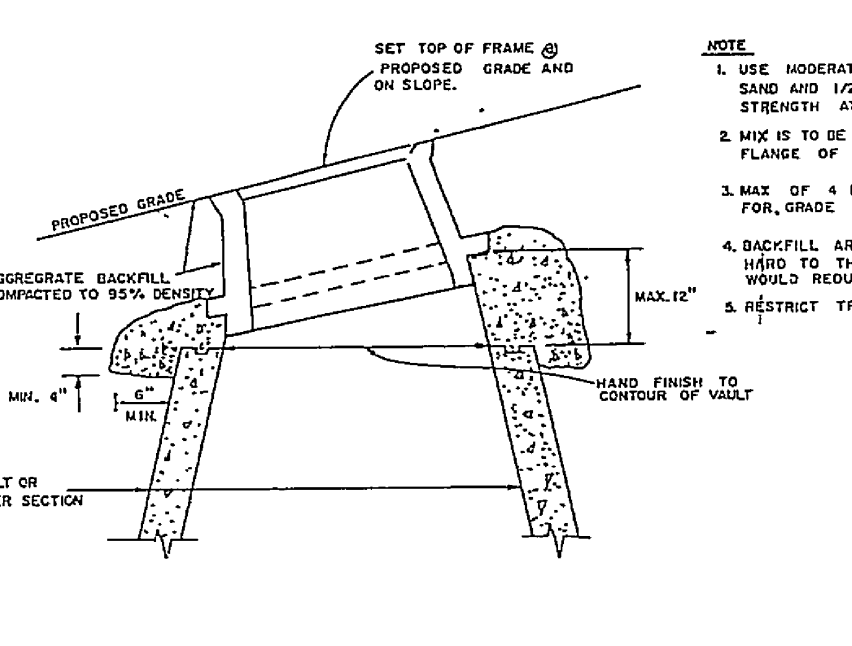
FIRE HYDRANT SETTING



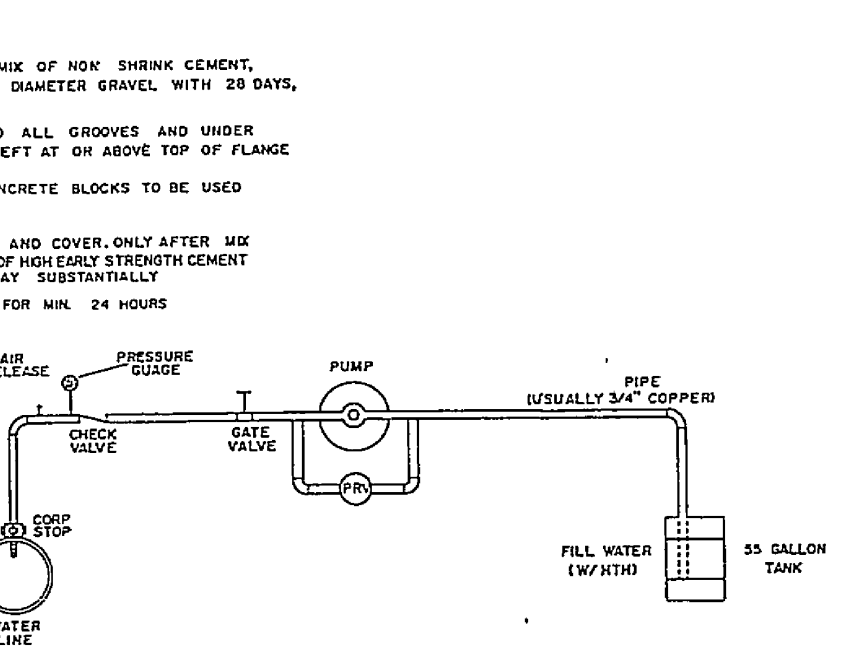
MANHOLE FRAME AND COVER



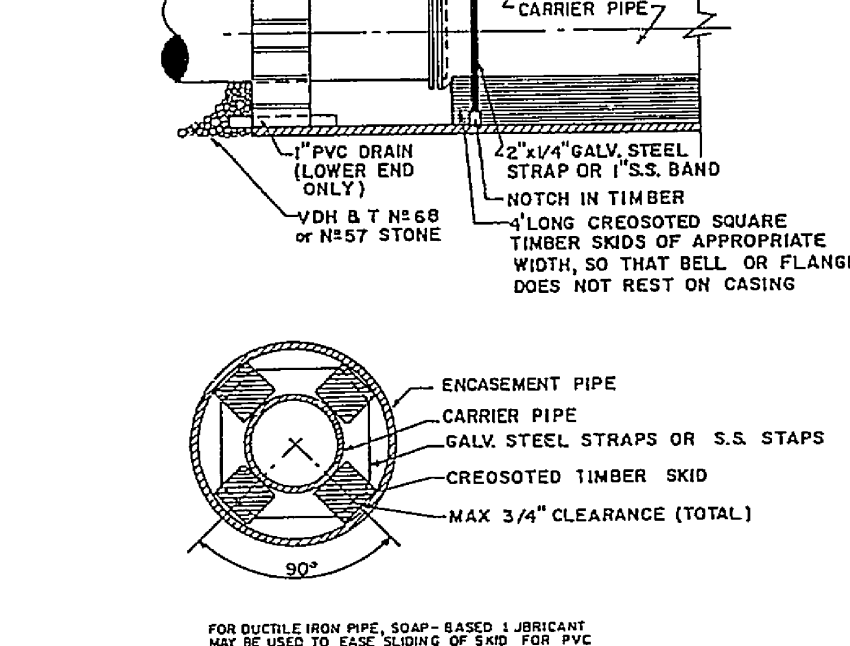
BLOW OFF ASSEMBLY FOR MAIN LINE TEMPORARY TERMINATION



MANHOLE FRAME & COVER ADJUSTMENT



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 to Virginia 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 units 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) Dewey Brothers Inc. MH - RCR - 56.
 - 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 except for road construction.

- 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 areas).
 - c) Approved equal.
 2. Meter Setter (including inlet riser valve and double check valve on outlet)
 - a) Ford Model 75-15-NO
 - 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 TS 202 and FC 202 with stainless steel band and bolts.
 - b) Approved equal.