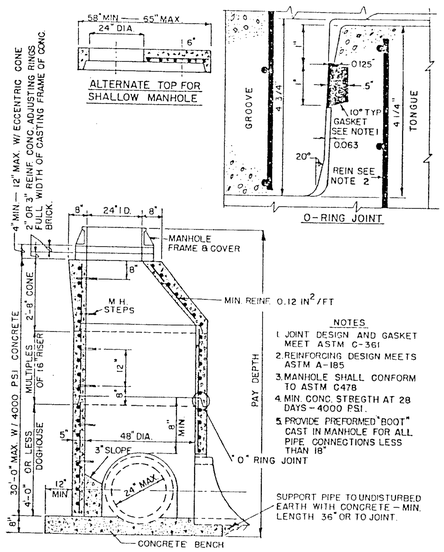
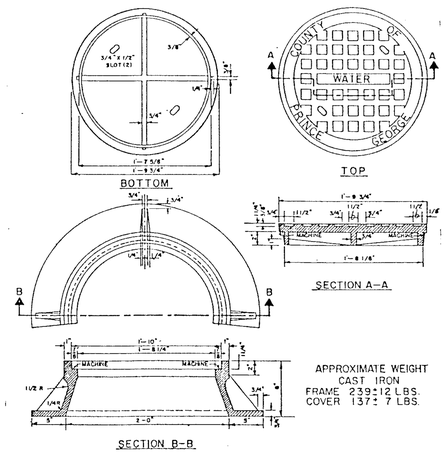


NOTES

1. JOINT DESIGN AND GASKET MEET ASTM C-361
2. REINFORCING DESIGN MEETS ASTM A-185
3. MANHOLE SHALL CONFORM TO ASTM C478
4. MIN. CONC. STRESTH AT 28 DAYS – 4000 PSI.
5. PROVIDE PREFORMED "BOOT" CAST IN MANHOLE FOR ALL PIPE CONNECTIONS LESS THAN 18"

PRE-CAST CONCRETE MANHOLE

NOT TO SCALE



APPROXIMATE WEIGHT
CAST IRON
FRAME 239 ± 12 LBS.
COVER 137 ± 7 LBS.

MANHOLE FRAME AND COVER

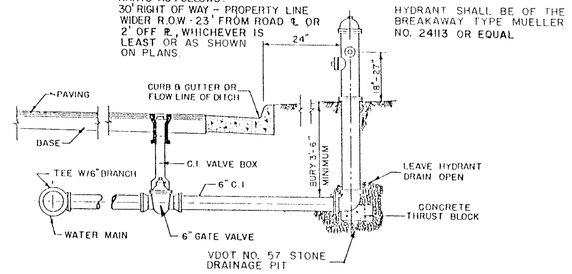
NOT TO SCALE

NOTE

HYDRANTS SHALL BE PLACED 24" BEHIND FACE OF CURB UNLESS INDICATED OTHERWISE. WHERE WALKS ABUT THE CURB, THE HYDRANT SHALL BE 24" BEHIND THE WALK.

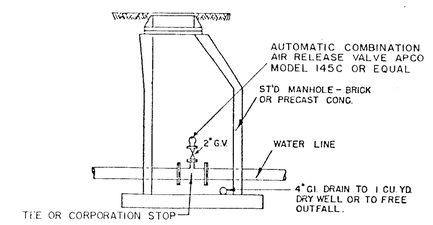
ON STREETS WITHOUT CURB & GUTTER LOCATE FIRE HYDRANTS AS FOLLOWS:
30' RIGHT OF WAY – PROPERTY LINE
WIDER R.O.W. - 23' FROM ROAD ℄ OR 2' OFF R, WHICHEVER IS LEAST OR AS SHOWN ON PLANS.

HYDRANT SHALL BE OF THE BREAKAWAY TYPE MUELLER NO. 24113 OR EQUAL



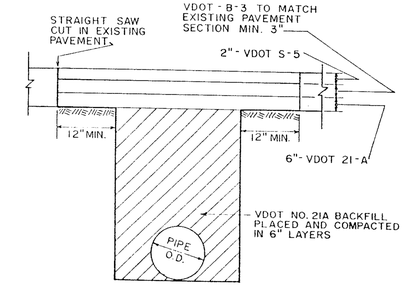
FIRE HYDRANT SETTING

NOT TO SCALE



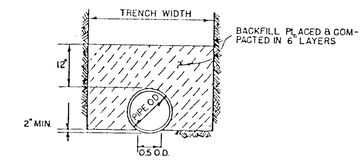
AUTOMATIC COMBINATION AIR RELEASE VALVE

NOT TO SCALE



PAVEMENT REPAIR

NOT TO SCALE

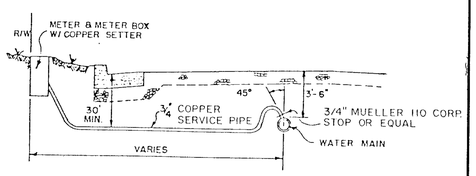


STANDARD TRENCH - WATER MAINS

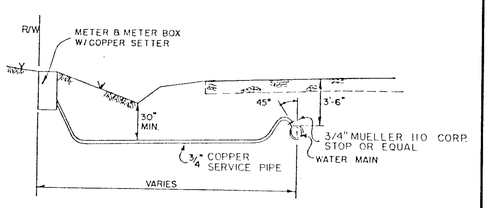
(CLASS C)
(LAYING CONDITION B)
NOT TO SCALE

NOTE

THREE-QUARTER INCH SERVICE PIPE IS MINIMUM. PROVIDE LARGER SIZE WHERE SHOWN ON PLANS.



CURB & GUTTER STREETS



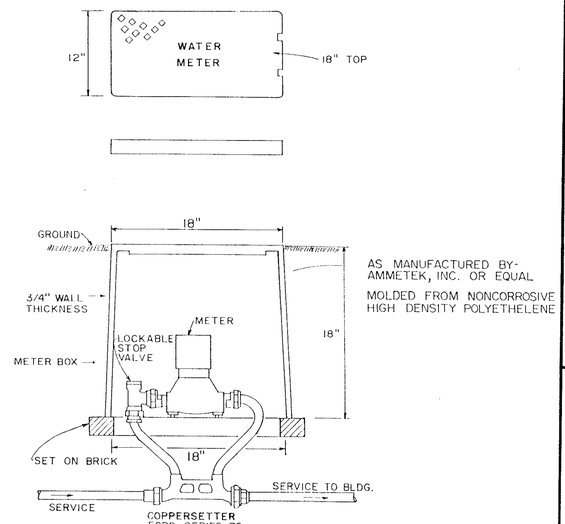
ROADSIDE DITCH

NOTE

METER BOXES SHALL BE LOCATED BEYOND THE RIGHT-OF-WAY LINE WHEN REQUIRED TO PLACE BOXES ON RELATIVELY FLAT SLOPES (NO STEEPER THAN 4:1)

WATER SERVICE CONNECTIONS

NOT TO SCALE



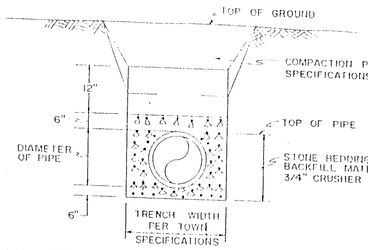
AS MANUFACTURED BY-AMMETEK, INC. OR EQUAL

MOLDED FROM NONCORROSIVE HIGH DENSITY POLYETHELENE

NOTE: DETAIL IS FOR 5/8" THRU 1" DISC METERS

18" PLASTIC METER BOX & METER SETTING DETAIL

NOT TO SCALE

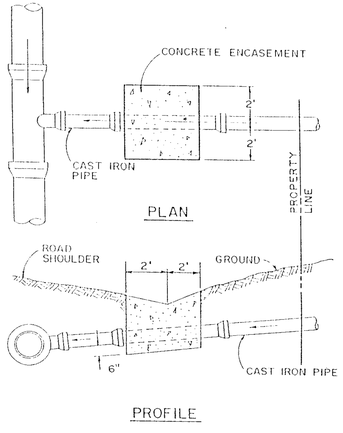


NOTE: CONTRACTOR MUST INSURE THE STONE IS PROPERLY COMPACTED, ESPECIALLY UNDER THE HAUNCHES OF THE PIPE.

THOROUGHLY COMPACTED FILL AREA TO BE FREE OF CLODS, DEBRIS, ETC.

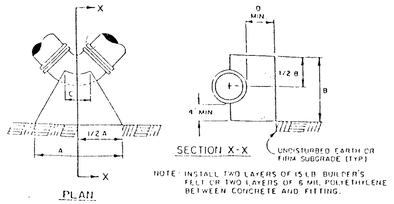
BEDDING AND BACKFILL DETAIL FOR PVC PIPE

NOT TO SCALE



CONCRETE DITCH APRON

NOT TO SCALE

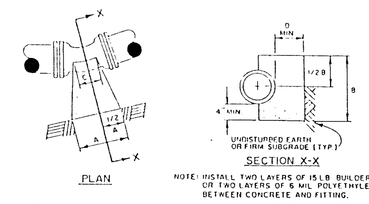


NOTE: INSTALL TWO LAYERS OF 15 LB. BUILDER'S FELT OR TWO LAYERS OF 6 MIL POLYETHYLENE BETWEEN CONCRETE AND FITTING.

PIPE DIAM.	45° BEND					90° BEND				
	A	B	C	D	E	A	B	C	D	E
3"	9"	12"	6"	6"	4"	12"	12"	6"	12"	6"
4"	9"	12"	6"	6"	4"	16"	12"	6"	12"	6"
6"	12"	14"	6"	8"	4"	21"	14"	6"	18"	6"
8"	18"	16"	8"	9"	6"	30"	16"	8"	18"	9"
10"	24"	18"	8"	10"	6"	36"	24"	10"	18"	9"
12"	30"	20"	12"	12"	9"	48"	24"	12"	18"	12"
16"	42"	30"	12"	15"	9"	60"	30"	16"	21"	12"
20"	56"	30"	12"	16"	16"	72"	40"	20"	21"	24"
24"	60"	36"	12"	21"	24"	84"	48"	24"	24"	30"
30"	72"	48"	16"	27"	24"	108"	60"	30"	24"	36"

BASED ON NORMAL OPERATING PRESSURE UP TO 150 PSI

E* ADDITIONAL LENGTH TO BE ADDED TO DIMENSION A FOR EACH ADDITIONAL 50 PSI PRESSURE UP TO 300 PSI

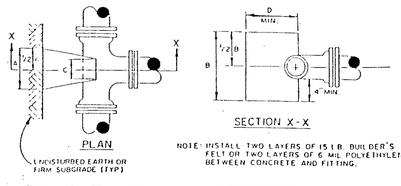


NOTE: INSTALL TWO LAYERS OF 15 LB. BUILDER'S FELT OR TWO LAYERS OF 6 MIL POLYETHYLENE BETWEEN CONCRETE AND FITTING.

PIPE DIAM.	11 1/4° BEND					22 1/2° BEND				
	A	B	C	D	E	A	B	C	D	E
3"	4"	12"	4"	6"	2"	6"	12"	6"	7"	2"
4"	4"	12"	4"	6"	2"	6"	12"	6"	7"	2"
6"	6"	14"	6"	7"	2"	8"	14"	6"	8"	2"
8"	8"	16"	8"	7"	2"	12"	16"	8"	8"	4"
10"	9"	18"	8"	8"	4"	15"	18"	8"	10"	4"
12"	12"	20"	12"	9"	4"	18"	20"	12"	12"	6"
16"	15"	24"	12"	9"	6"	24"	24"	12"	15"	6"
20"	30"	12"	10"	10"	6"	30"	30"	12"	18"	9"
24"	18"	36"	12"	12"	6"	36"	36"	12"	18"	9"
30"	24"	42"	16"	14"	9"	48"	42"	16"	21"	12"

BASED ON NORMAL OPERATING PRESSURE UP TO 150 PSI

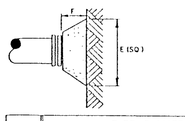
E* ADDITIONAL LENGTH TO BE ADDED TO DIMENSION "A" FOR EACH ADDITIONAL 50 PSI PRESSURE UP TO 300 PSI



NOTE: INSTALL TWO LAYERS OF 15 LB. BUILDER'S FELT OR TWO LAYERS OF 6 MIL POLYETHYLENE BETWEEN CONCRETE AND FITTING.

TEE	BRANCH DIAMETER								
	3"	4"	6"	8"	10"	12"	16"	20"	24"	30"
A	12"	12"	16"	18"	26"	30"	40"	48"	60"	80"
B	12"	16"	20"	30"	32"	42"	56"	72"	80"	96"
C	8"	8"	12"	12"	12"	12"	16"	24"	24"	24"
D	6"	6"	8"	9"	10"	12"	14"	18"	20"	24"

BASED ON NORMAL OPERATING PRESSURE UP TO 150 PSI



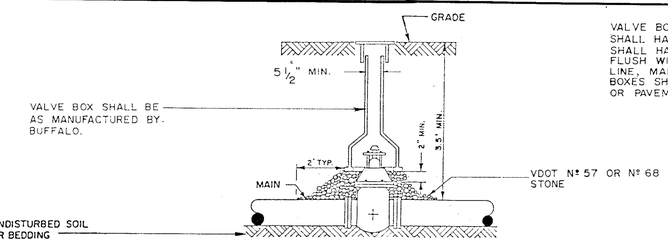
NOTE: INSTALL TWO LAYERS OF 15 LB. BUILDER'S FELT OR TWO LAYERS OF 6 MIL POLYETHYLENE BETWEEN CONCRETE AND FITTING.

PLUG	PIPE DIAMETER								
	3"	4"	6"	8"	10"	12"	16"	20"	24"	30"
E	14"	16"	21"	29"	36"	41"	54"	64"	75"	88"
F	8"	8"	10"	10"	12"	14"	16"	18"	20"	24"

BASED ON NORMAL OPERATING PRESSURE UP TO 150 PSI

TYPICAL CONCRETE THRUST BLOCKING FOR WATER LINES DETAILS

NOT TO SCALE



VALVE BOXES WITHIN STATE RIGHTS-OF-WAYS SHALL HAVE 6" OF COVER. THE VALVE BOX SHALL HAVE A 6"x6" CONCRETE MARKER, FLUSH WITH THE GROUND AT THE RIGHT-OF-WAY LINE, MARKED WITH A "W". ALL OTHER VALVE BOXES SHALL BE FLUSH WITH EXISTING GROUND OR PAVEMENT.

TYPICAL VALVE BOX INSTALLATION

NOT TO SCALE

COMMONWEALTH OF VIRGINIA
FREDERICK T. M. PRIBBLE
No. 10055
PROFESSIONAL ENGINEER

DRAPER – ADEN ASSOCIATES, INC. CONSULTING ENGINEERS RICHMOND, VIRGINIA	DESIGNED FTP DRAWN NJH CHECKED JNL DATE 2/26/89	ROUTE 106/COMMONWEALTH ACRES WATER MAINS PRINCE GEORGE COUNTY, VIRGINIA	WATER DETAILS	REVISIONS :	SCALE : AS NOTED PLAN Nº T-20213	SHEET 18 OF 19

american blueprint of columbia