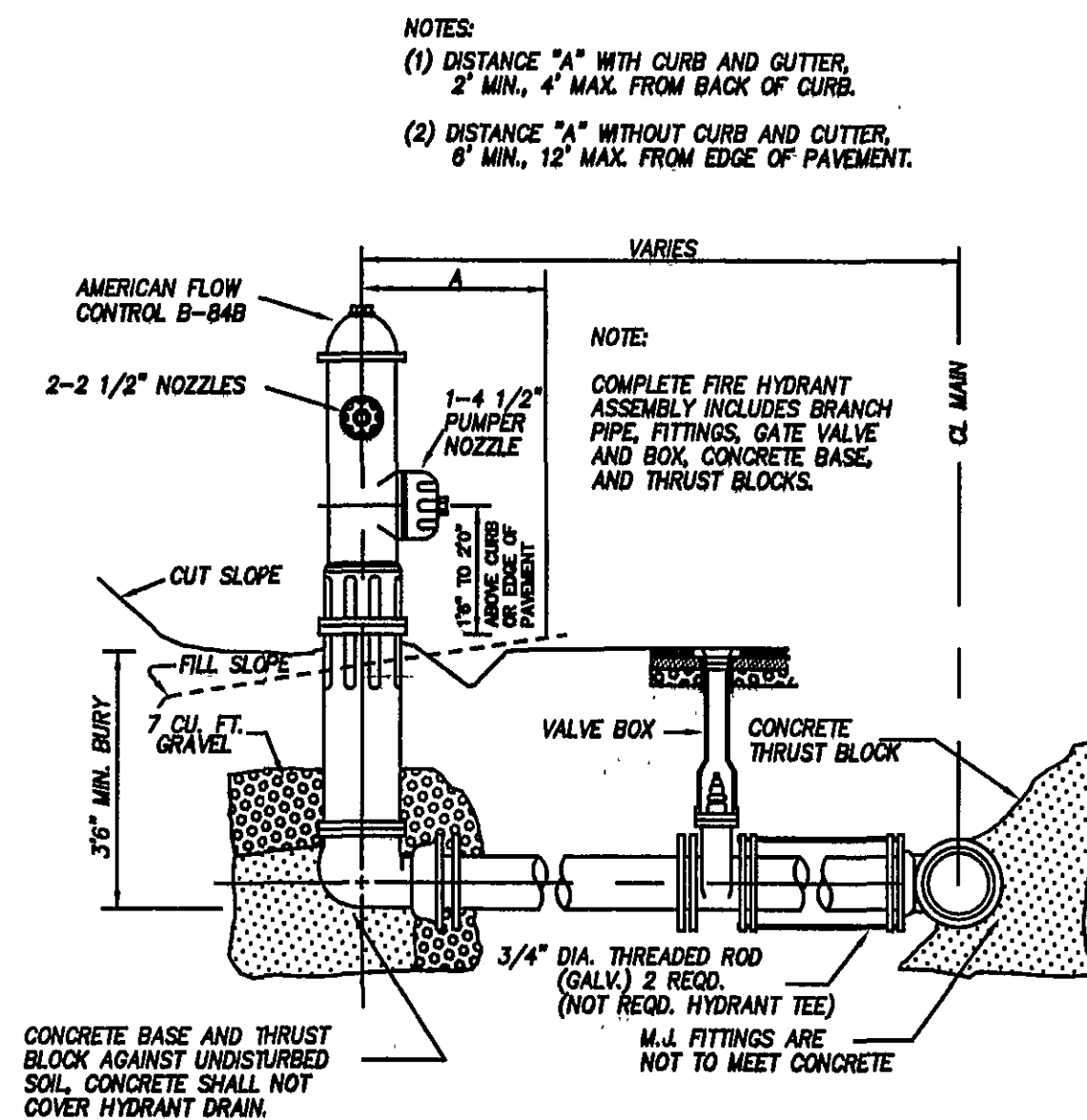
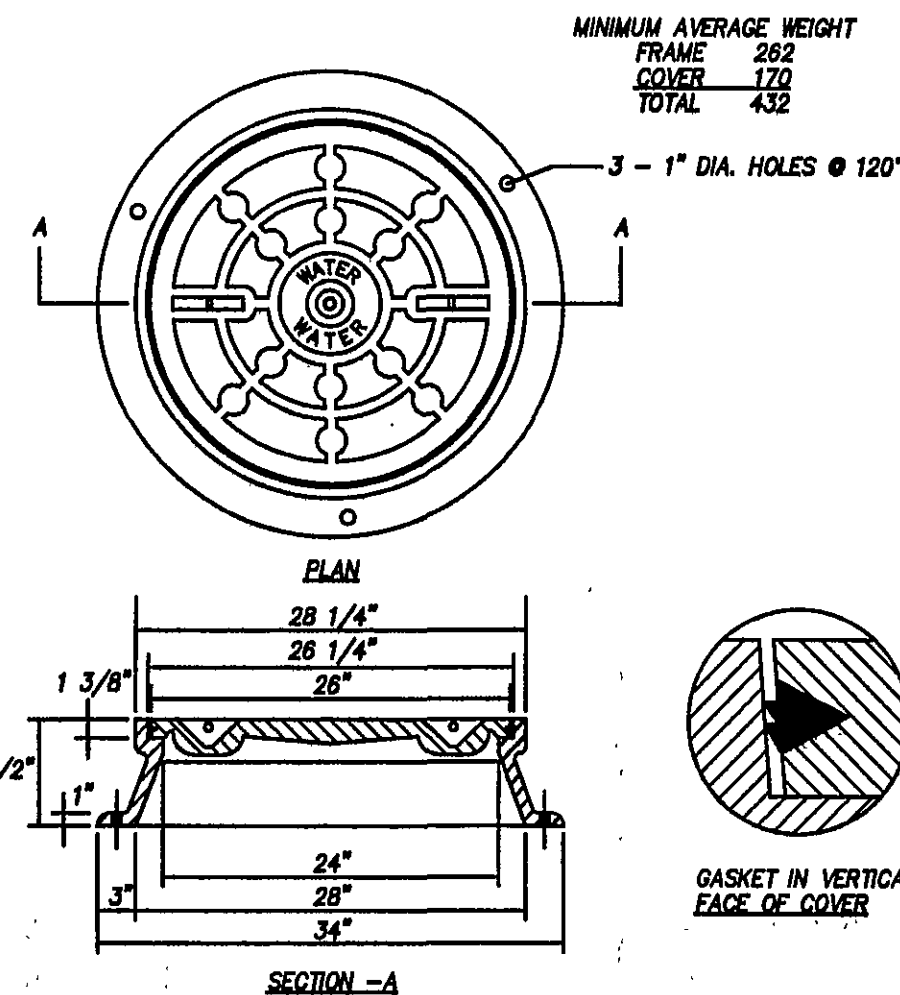


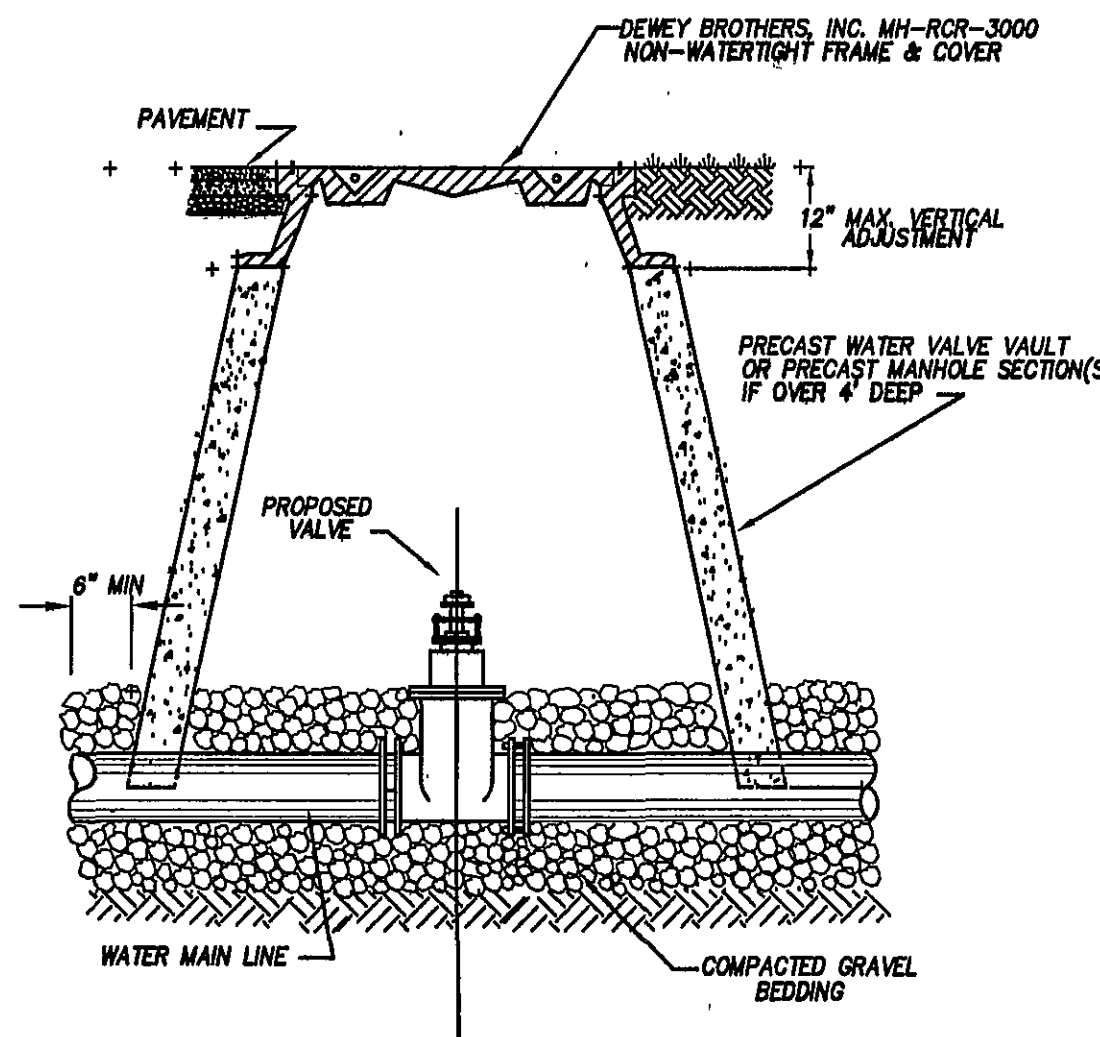
AUTOMATIC AIR RELEASE ASSEMBLY



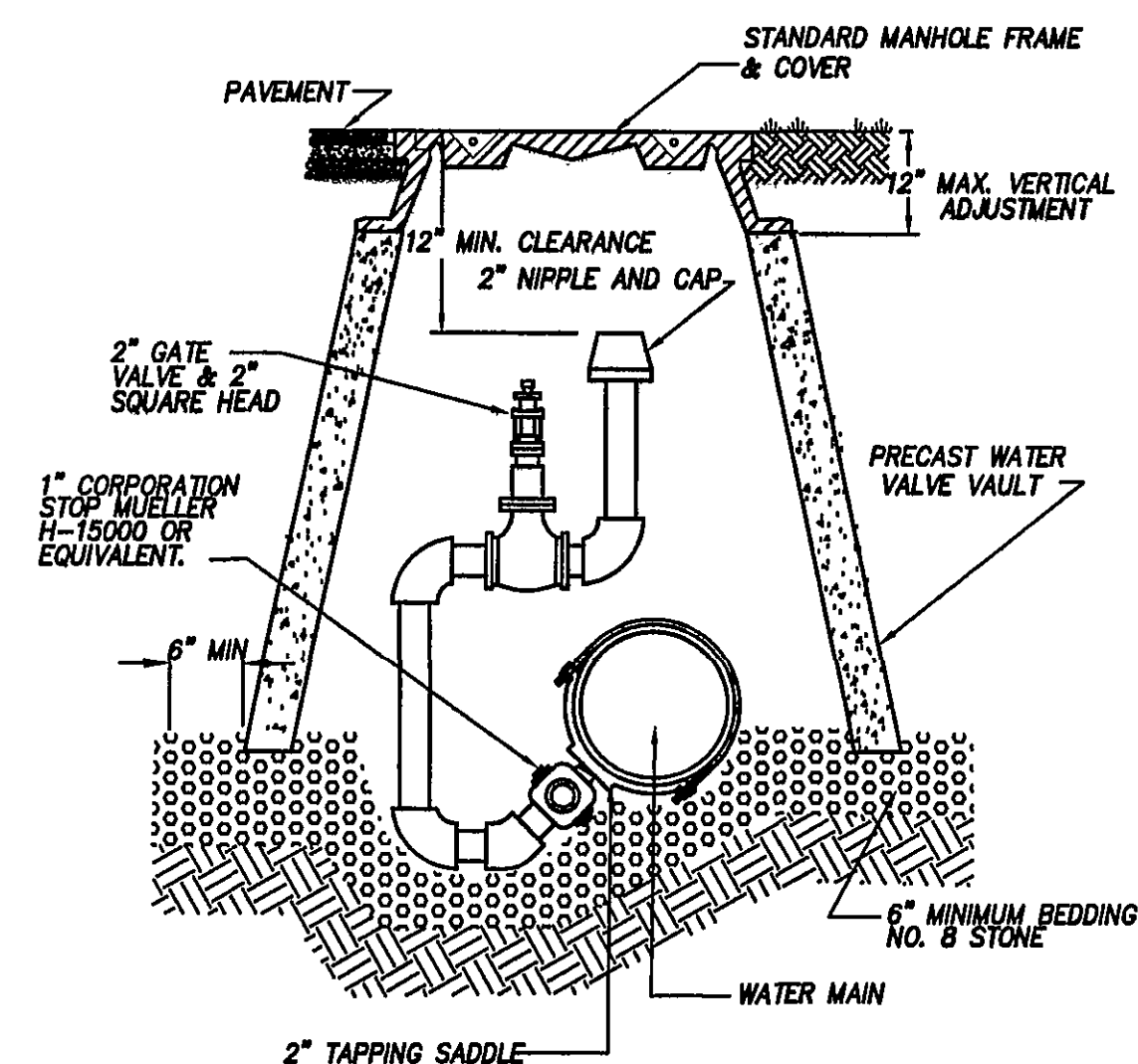
FIRE HYDRANT SETTING



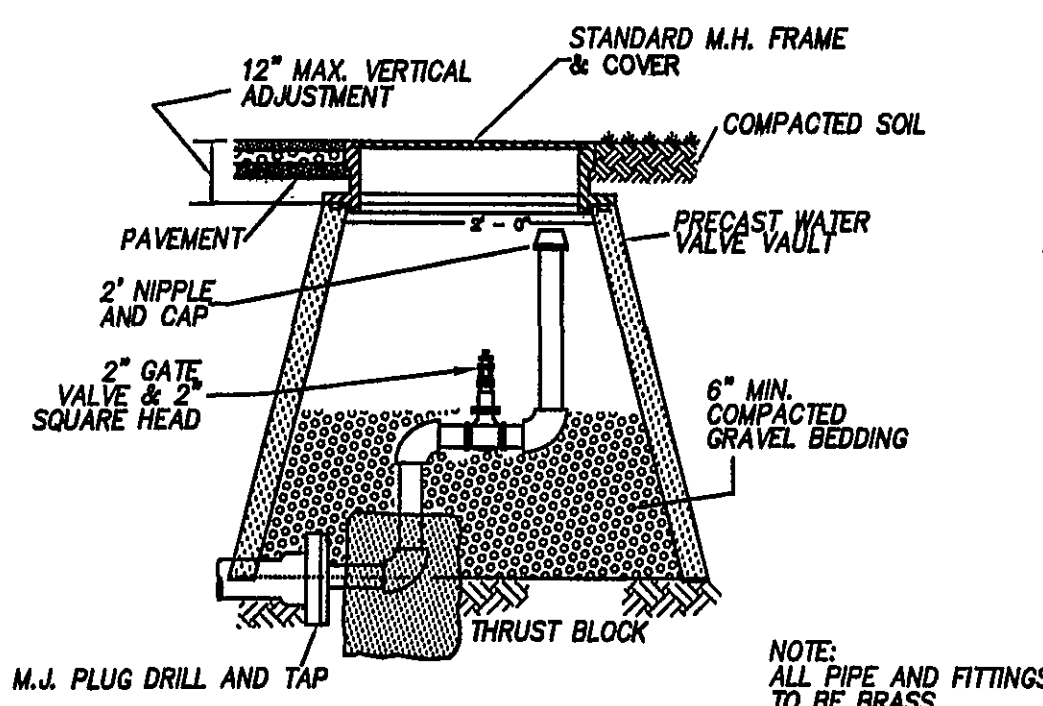
WATER VAULT FRAME AND COVER INSTALLATION DETAIL



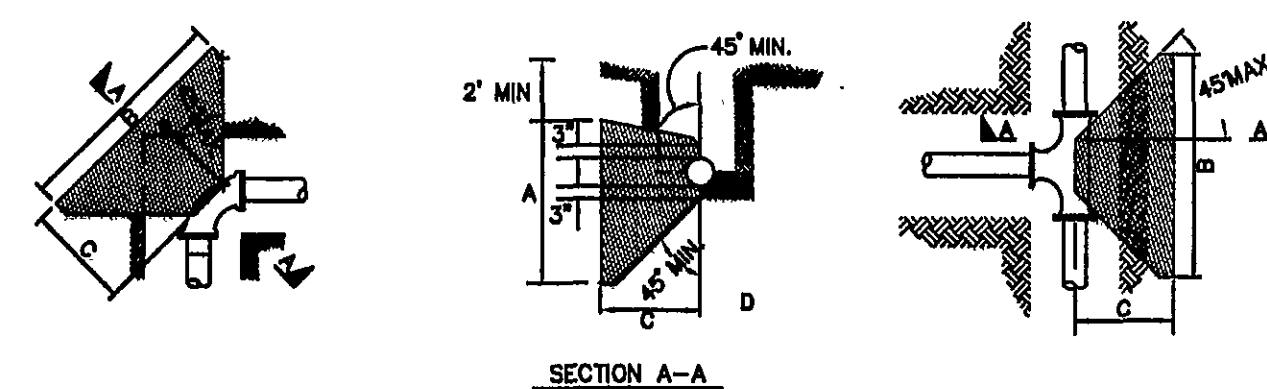
WATER LINE VALVE VAULT



IN-LINE BLOWOFF ASSEMBLY



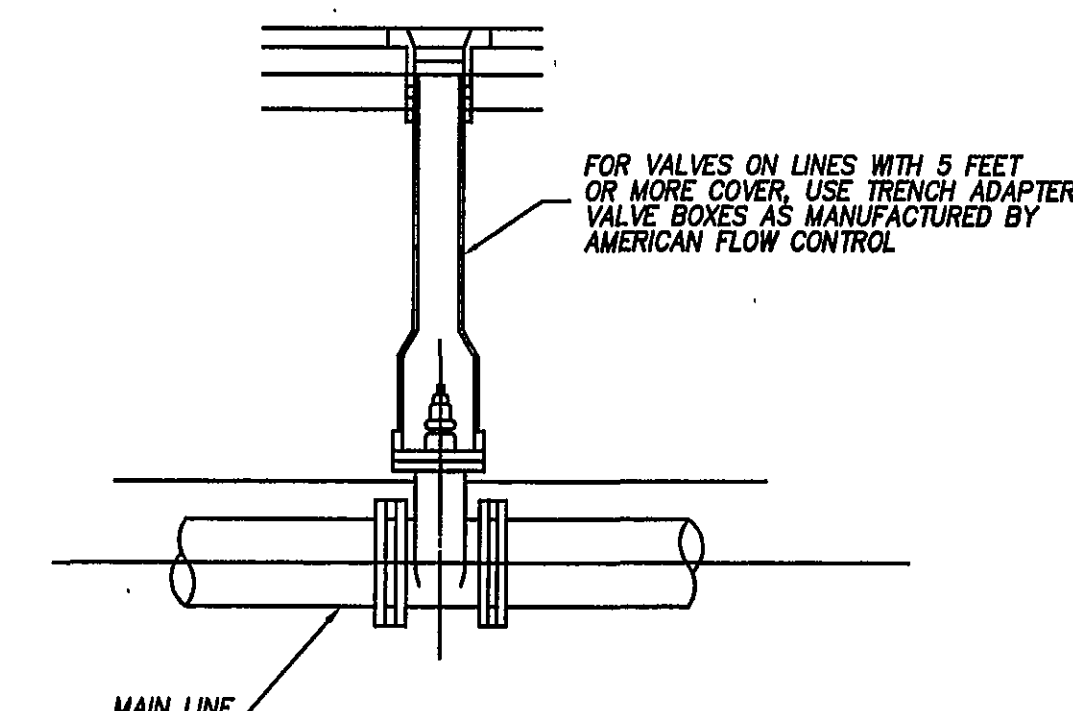
BLOWOFF ASSEMBLY



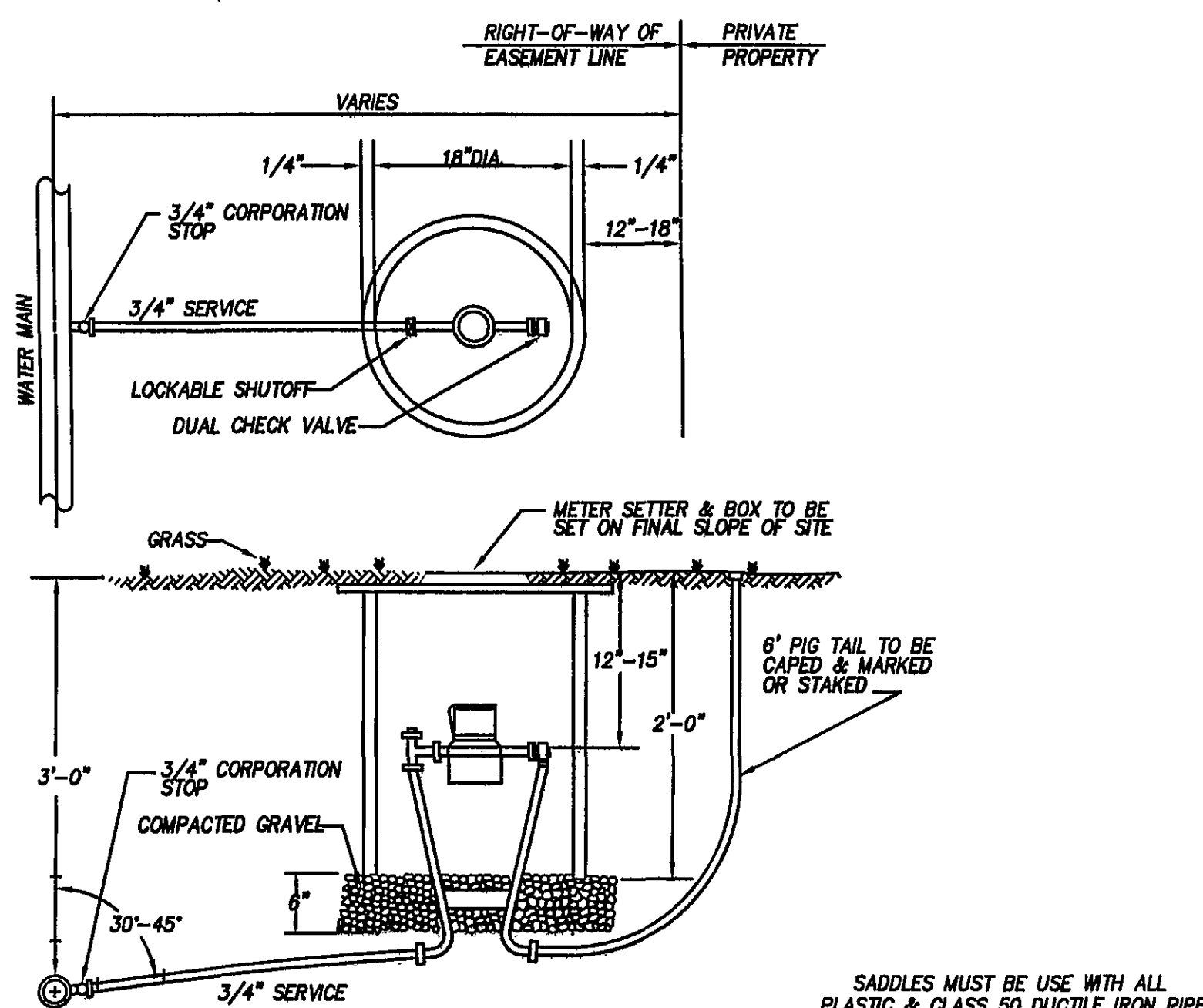
PIPE SIZE	TEE OR DEAD END			90° BEND			45° BEND			22.5° LESS BEND		
	A	B	C	A	B	C	A	B	C	A	B	C
6" OR LESS	1.2	3.0	1.0	1.5	3.3	2.0	1.2	2.3	1.0	1.2	2.0	1.0
8"	1.7	3.8	1.5	2.0	4.5	2.0	1.3	3.6	1.5	1.3	2.0	1.0
10"	2.0	4.9	2.0	3.0	4.7	2.0	1.7	4.5	2.0	1.5	2.6	1.5
12"	2.5	6.7	2.0	3.5	6.8	2.5	2.2	5.0	2.5	1.7	3.3	1.5
16"	3.5	7.0	3.0	4.5	8.0	3.5	3.0	6.5	3.0	2.5	4.0	2.0
24"							3.5	7.0	3.25	3.0	4.5	2.5

- NOTES:
- THE ABOVE NOTED DIMENSIONS ARE MINIMUM BASED ON CONCRETE ANCHOR EXTENDING TO UNDISTURBED SOIL. LINE PRESSURE NOT TO EXCEED 150 PSI AND, MINIMUM SOIL BEARING CAPACITY OF 2500 PSF. UNSATISFACTORY SOIL BEARING OR EXCESS PRESSURE WILL REQUIRE ADDITIONAL DESIGN.
 - CONCRETE SHALL NOT BE POURED ON JOINTS OR BOLTS.
 - CONCRETE TO BE MINIMUM 3000 PSI - 28 DAY COMPRESSIVE STRENGTH.
 - FITTING CONTACT AREA SHALL BE POLYETHYLENE WRAPPED PRIOR TO BLOCKING.

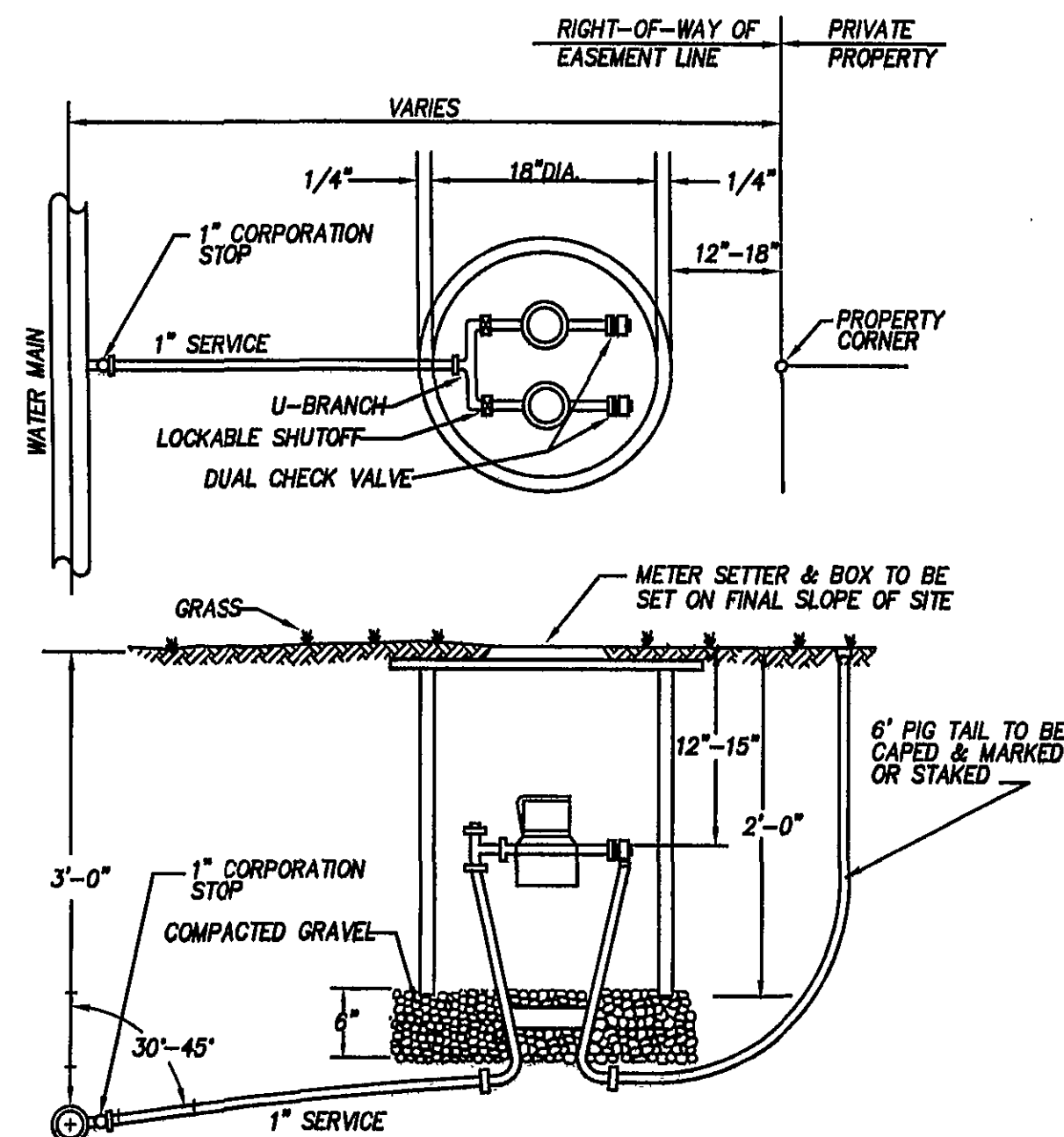
THRUST BLOCK FOR HORIZONTAL AND LOWER VERTICAL BENDS



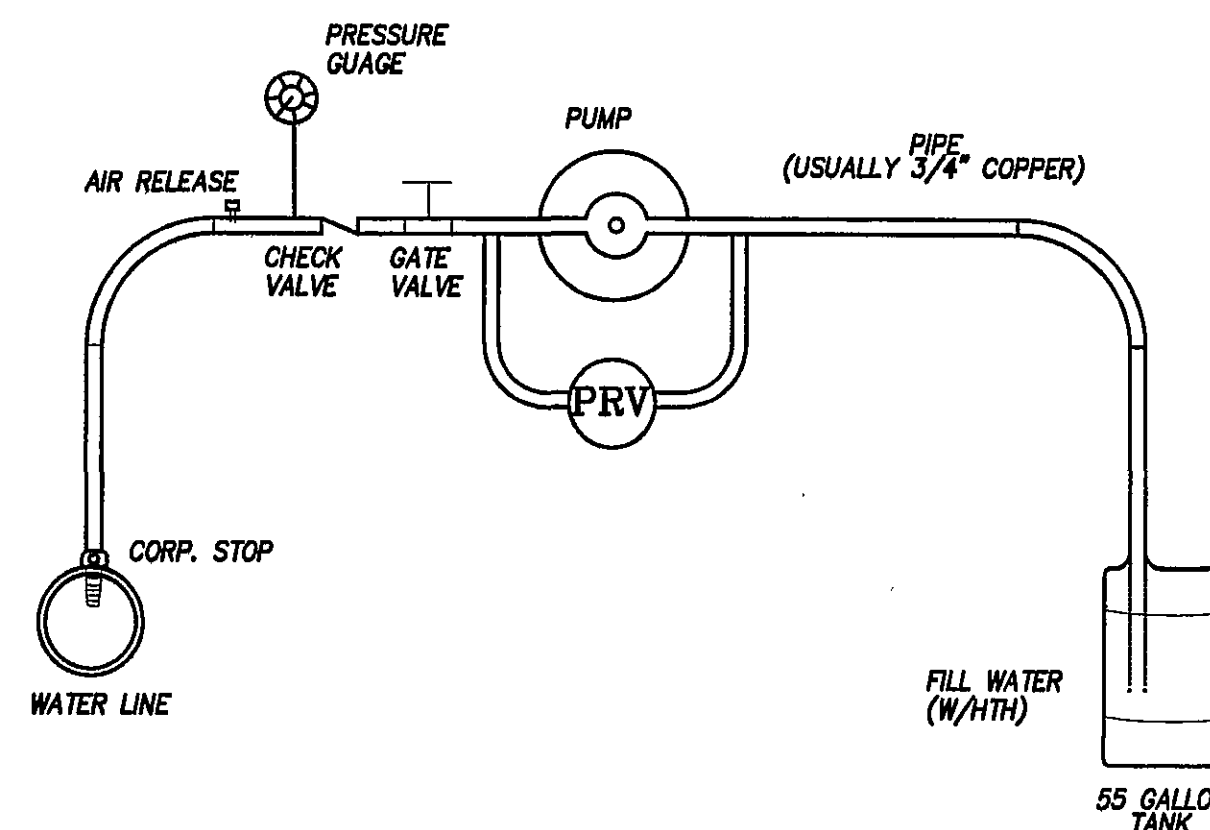
WATER LINE VALVE BOX



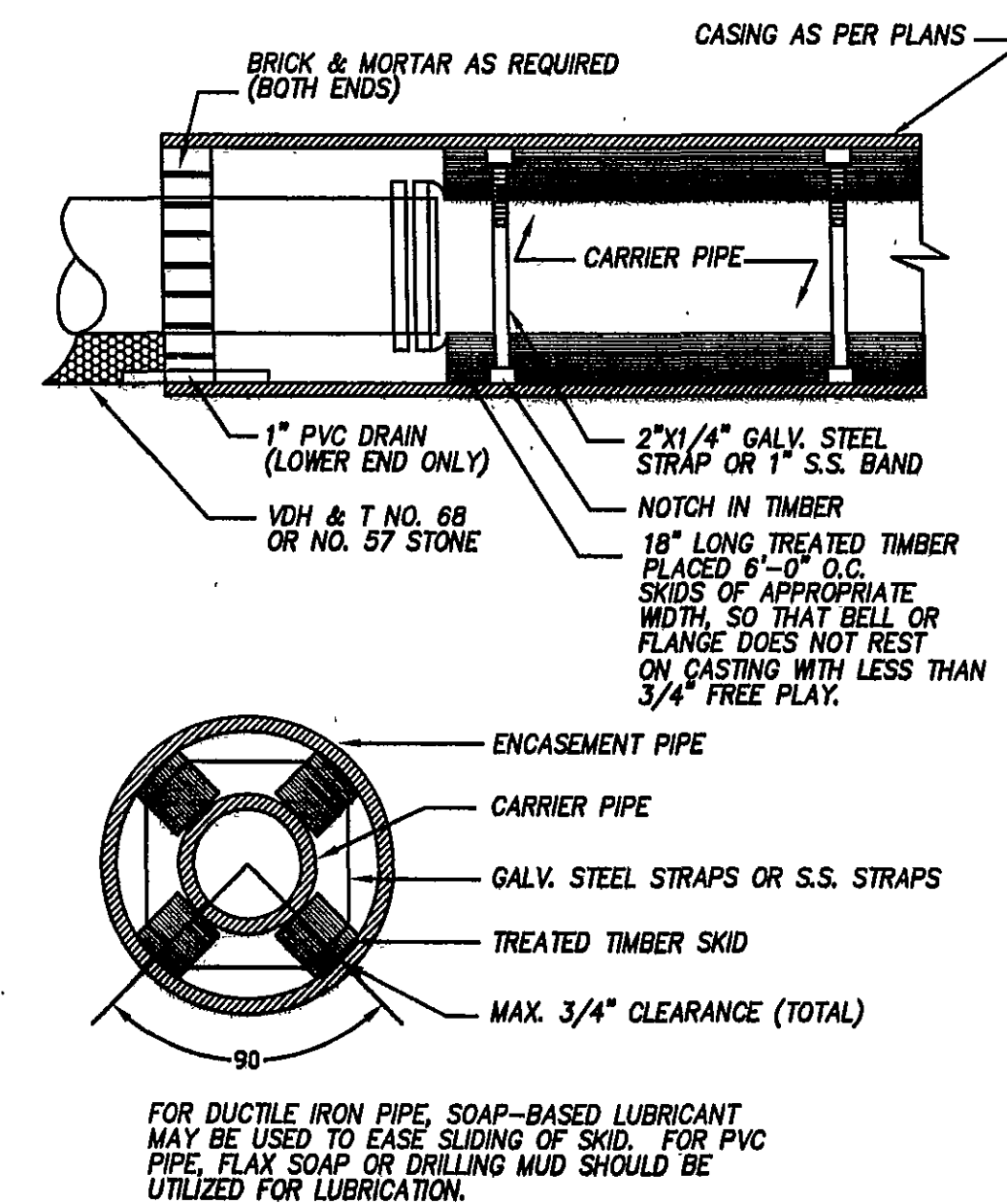
SINGLE RESIDENTIAL WATER SERVICE



DOUBLE RESIDENTIAL WATER SERVICE



TYPICAL WATER PRESSURE TEST RIG

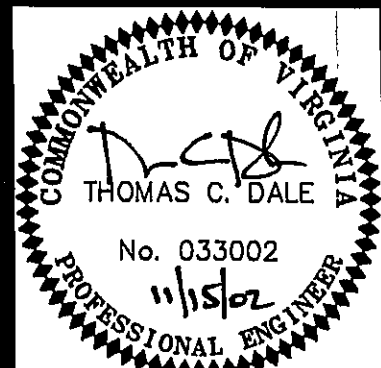


PIPE SUPPORT IN CASING PIPE

LUMSDEN ASSOCIATES, P.C.
ENGINEERS-SURVEYORS-PLANNERS
ROANOKE, VIRGINIA

4664 BRAMBLETON AVENUE
P.O. BOX 20669
ROANOKE, VIRGINIA 24018

PHONE: (540) 774-4411
FAX: (540) 775-9447
E-MAIL: MAIL@LUMSDENPC.COM



SECTION No. 8

THE WATER'S EDGE

PREPARED FOR

WILLARD CONSTRUCTION OF

ROANOKE VALLEY, INC.

UNION HALL MAGISTERIAL DISTRICT

FRANKLIN COUNTY, VIRGINIA

NO.	DATE	DESCRIPTION	APPROVED BY
1	11/15/02		
2			
3			
4			
5			

DATE: JULY 22, 2002

SCALE: NONE

COMMISSION NO: 2002-022

CADD FILE: FLA2003\020202\ENGIN\0202COMP.DWG

SHEET 9 OF 9