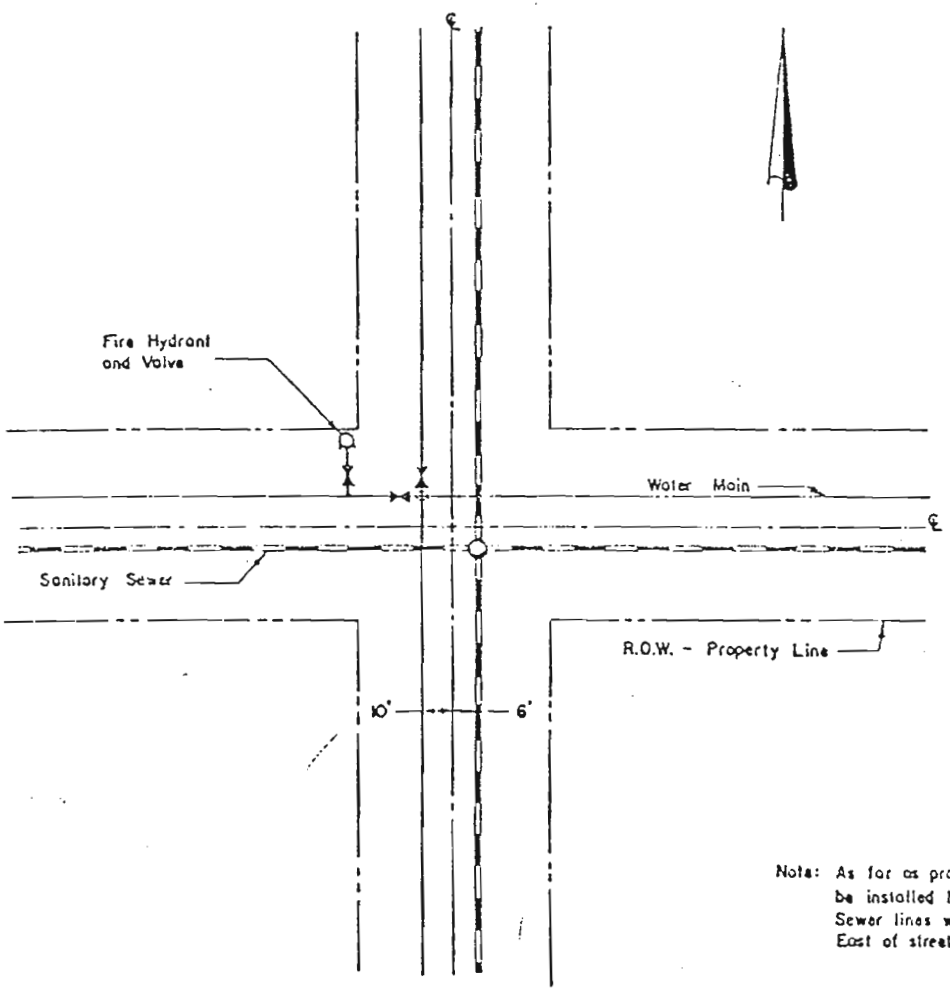
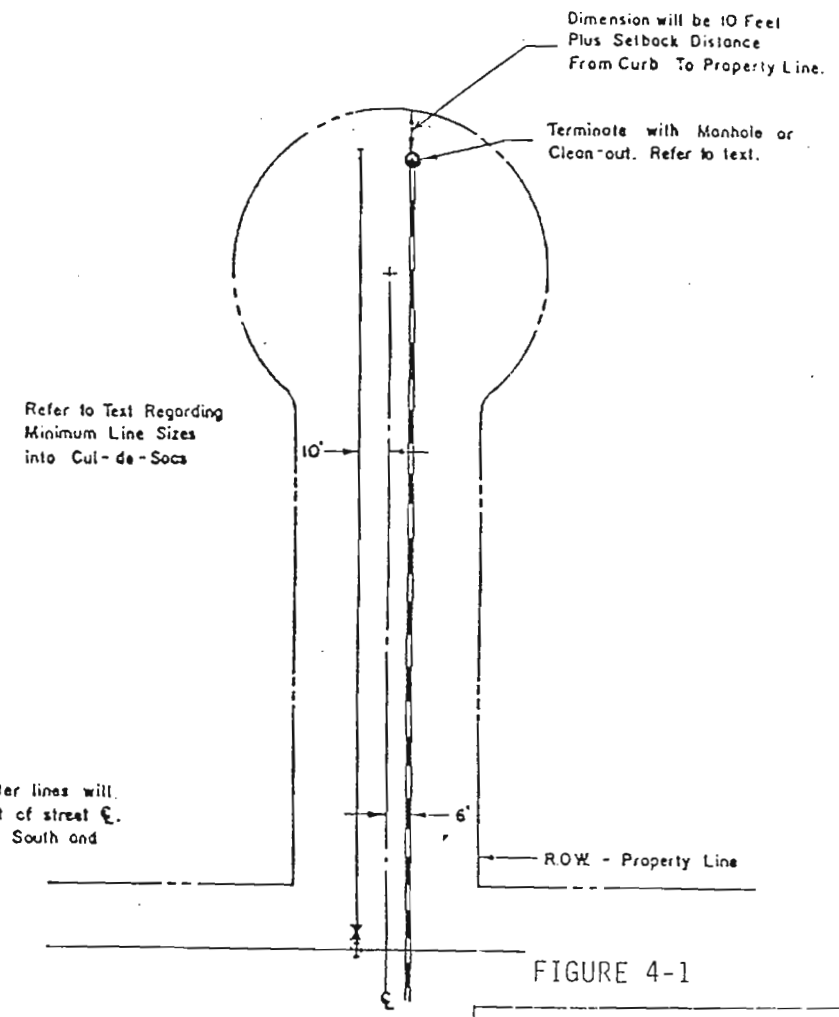




Note: As far as practible, all water lines will be installed North and West of street ℄. Sewer lines will be installed South and East of street ℄.

FIGURE 4-1

MAIN LOCATIONS IN THRU STREETS & CUL-DE-SACS

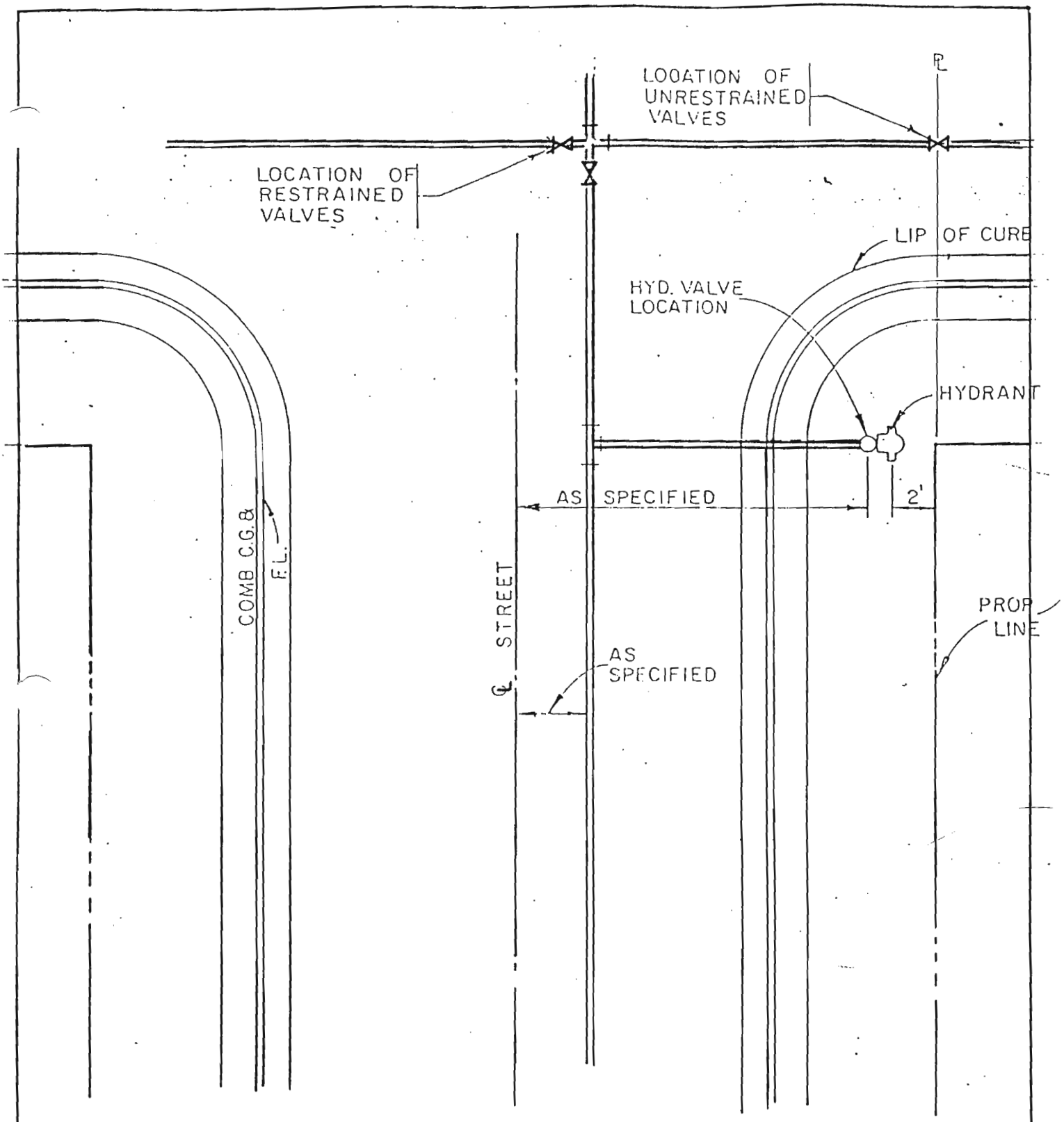
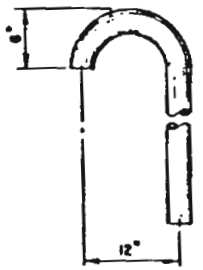
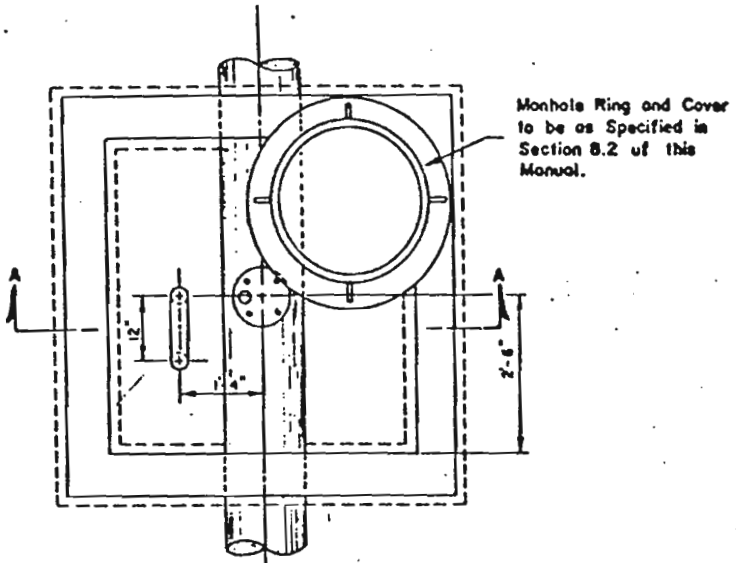


FIGURE 4-2

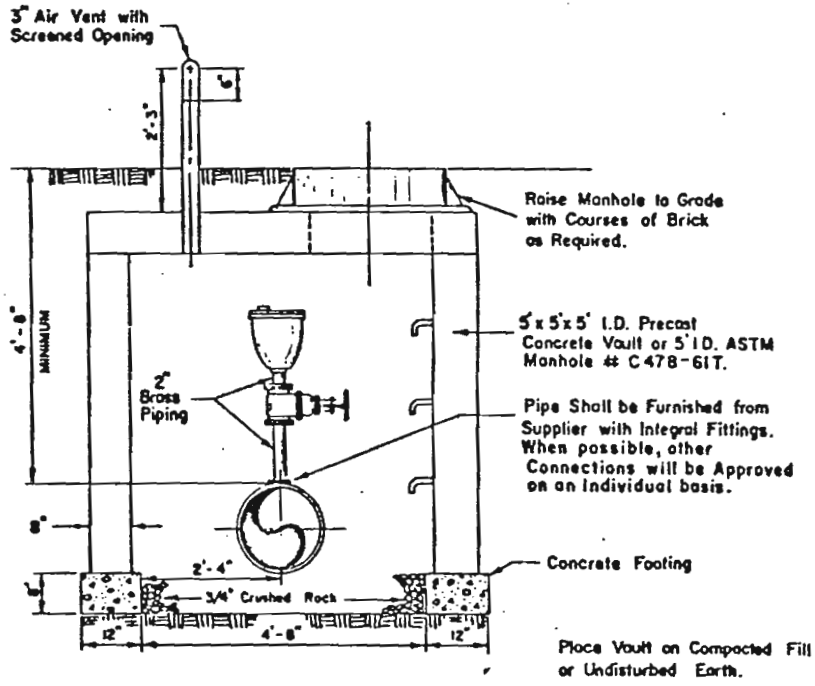
LOCATION OF FIRE HYDRANTS AND VALVES



VENT PIPE DETAIL



PLAN VIEW

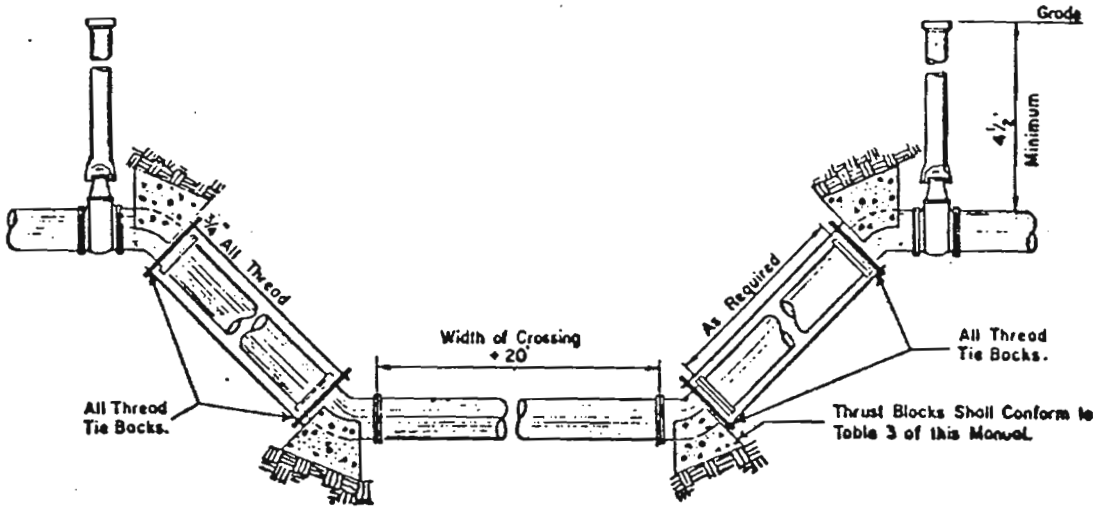


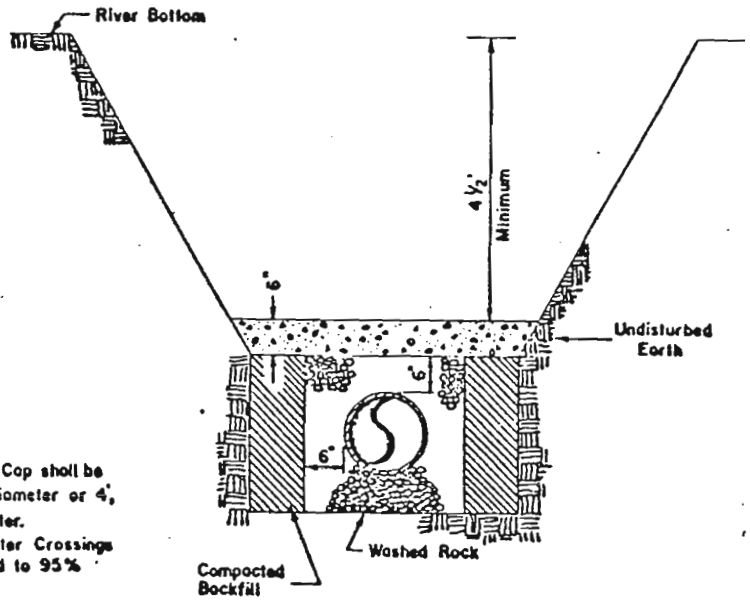
SECTION A-A

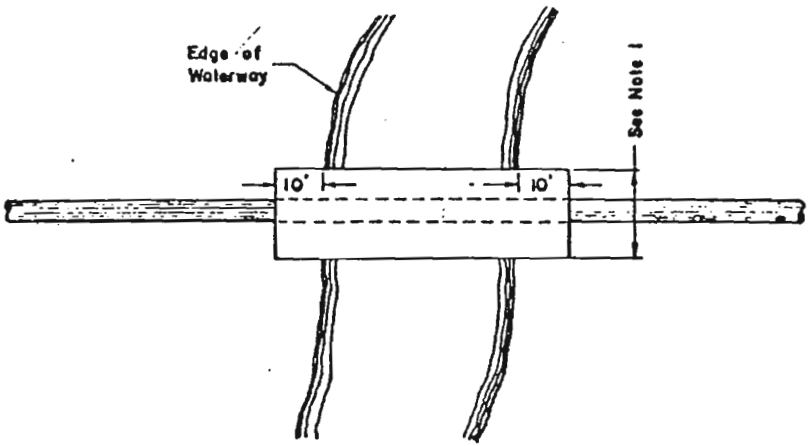
Contractor shall furnish all piping, valves, fittings, vault, etc. for a complete installation.

FIGURE 4-3

AIR RELIEF VALVE DETAILS



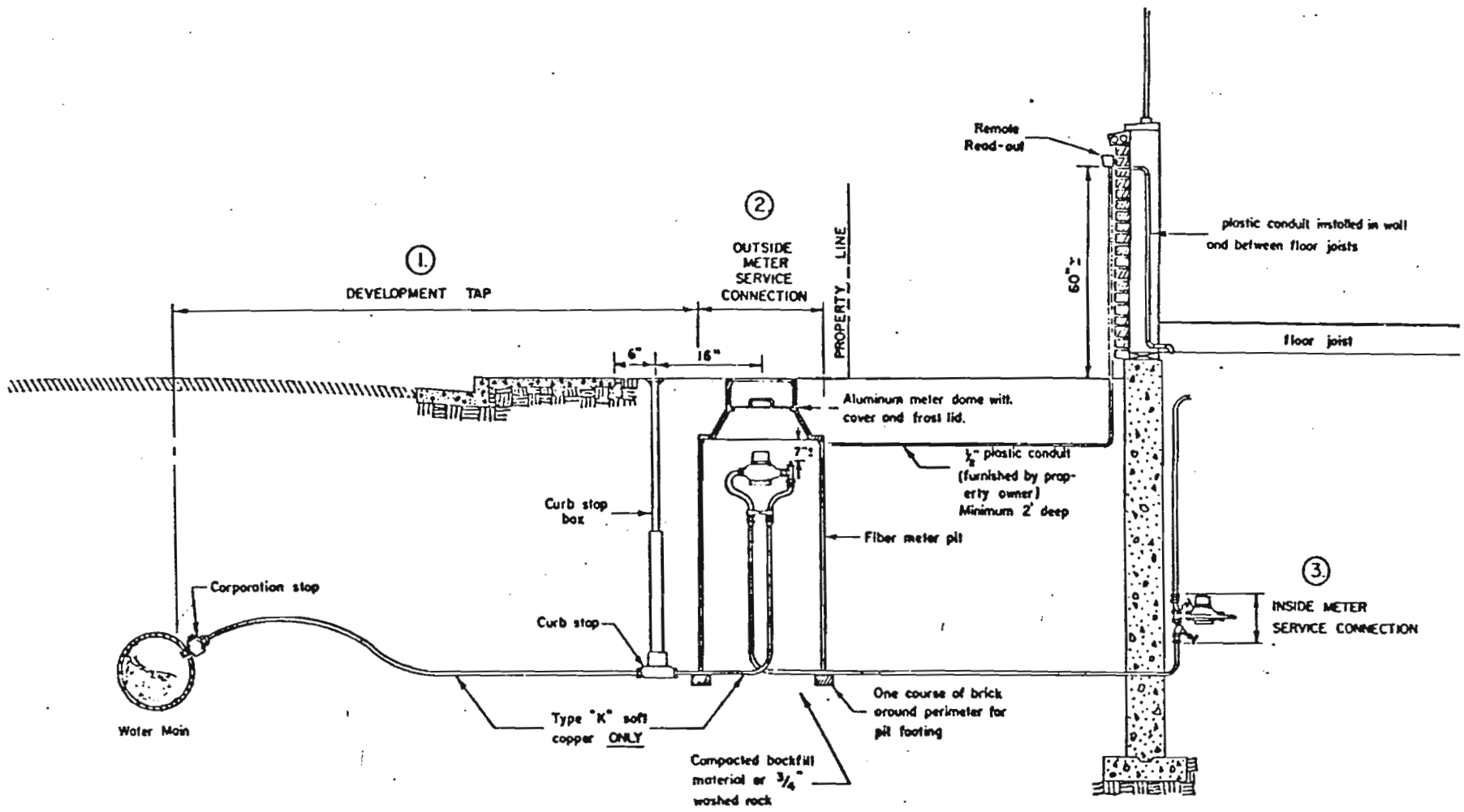




Notes:
1. Width of Concrete Cap shall be 3 Times the Pipe Diameter or 4', Whichever is Greater.
2. All Backfill for Water Crossings shall be Compacted to 95% Maximum Density.
3. All Required Shoring shall Conform to Table 2 of this Manual.
4. All Crossings shall be Valved at both ends.

FIGURE 4-4

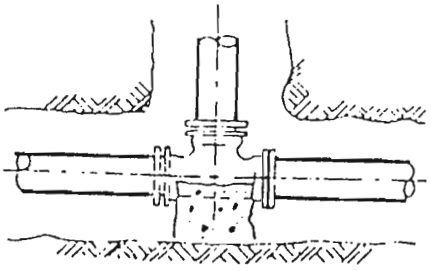
WATERCOURSE CROSSING DETAILS



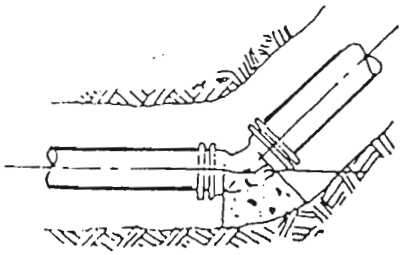
1. For existing buildings when no Building Permit is required, meter location shall be determined by the Water Dept. prior to issuance of Meter Service Connection Order.
2. No consumptive uses will be permitted prior to water being metered, i.e. sprinkling systems, laundry facilities, etc.
3. Inside Meter Service Connections may be installed in either the basement or on the first level of the building. Under no circumstances will meters be installed in crawl spaces.
4. Connection wire between meter and read-out shall be installed with a minimum of 3 extra feet of wire at the meter to facilitate connection of the meter. Wire shall be continuous strand with no splices.

FIGURE 4-5

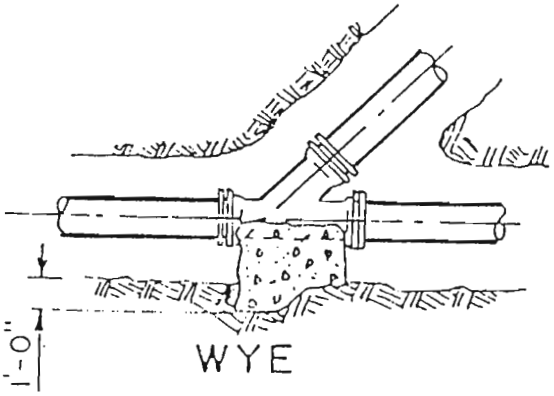
WATER TAP DIFFERENTIATION AND METER LOCATIONS



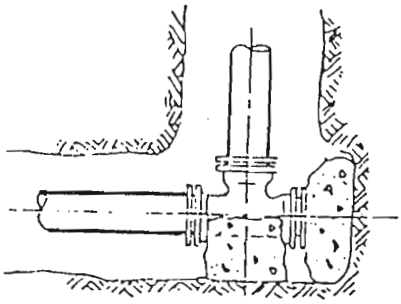
TEE



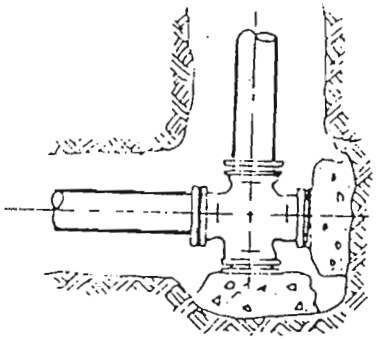
BEND-HORIZONTAL OR
BOTTOM OF VERTICAL



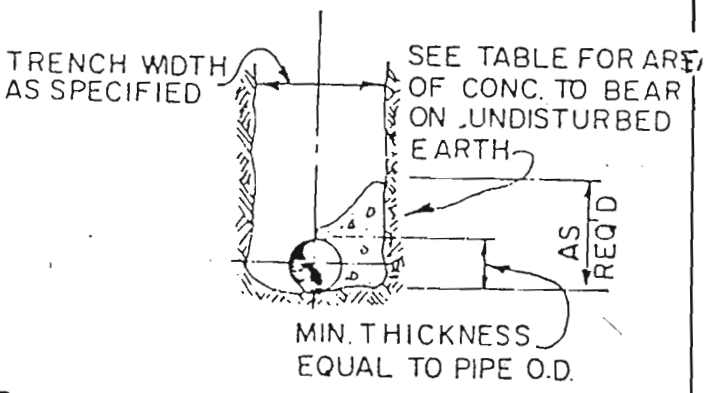
WYE



TEE W/DEAD END ON RUN

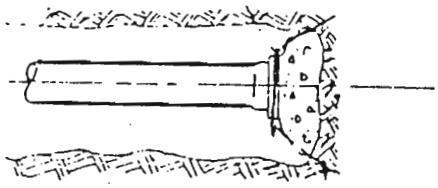


CROSS W/ DEAD END BRANCHES

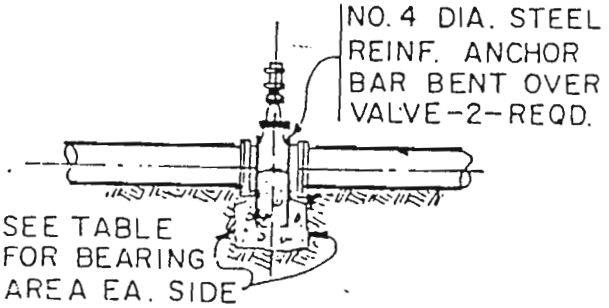


SECTION
(TYPICAL)

PLUG OR LINE CAP



DEAD END



VALVE
(GATE OR BUTTERFLY)

FIGURE 4-6(a)

THRUST BLOCKS

TABLE OF BEARING AREAS IN SQ. FT. FOR CONCRETE THRUST BLOCKING

FOR 100 P.S.I. INTERNAL STATIC PRESSURE AND 1000 LBS. PER SQ. FT. SOIL BEARING CAPACITY.

SIZE	BENDS				TEES	GATE VALVES	DEAD ENDS	CROSS W/ 1 BRANCH PLUGGED	CROSS 2 BRANCH PLUGGED
	90°	45°	22 1/2°	11 1/4°					
3	1.0	0.6	0.3	0	0.7	0.5	0.7	0.7	0.7
4	1.8	1.0	0.5	0	1.3	0.5	1.3	1.3	1.3
6	4.0	2.2	1.1	0	2.8	0.7	2.8	2.8	2.8
8	7.1	3.8	2.0	1.0	5.0	2.4	5.0	5.0	5.0
10	11.1	6.0	3.0	1.5	7.8	4.5	7.8	7.8	7.8
12	16.0	8.6	4.4	2.2	11.3	7.3	11.3	11.3	11.3
14	21.7	11.8	6.0	3.0	15.4	11.0	15.4	15.4	15.4
15	25.0	13.5	7.0	3.5	17.6	SPECIAL DESIGN	17.6	17.6	17.6
16	28.4	15.3	8.0	4.0	20.0		20.0	20.0	20.0
18	36.0	19.4	10.0	5.0	25.4		25.4	25.4	25.4
20	44.2	24.0	12.2	6.1	31.4		31.4	31.4	31.4
21	49.0	26.5	13.5	6.8	34.6		34.6	34.6	34.6
22	54.0	29.0	14.8	7.4	38.0		38.0	38.0	38.0
24	64.0	34.5	17.7	8.8	45.0		45.0	45.0	45.0
30	100.0	54.0	27.6	13.8	71.0		71.0	71.0	71.0
36	144.0	78.0	40.0	20.0	102.0		102.0	102.0	102.0

SIZE IS BRANCH SIZE.

AREAS GIVEN IN TABLE ARE BASED UPON AN INTERNAL STATIC PRESSURE OF 100 P.S.I. AND A SOIL BEARING CAPACITY OF 1000 LBS. PER SQ. FT. BEARING AREAS FOR ANY PRESSURE AND SOIL BEARING CAPACITY MAY BE OBTAINED BY MULTIPLYING THE TABULATED VALUES BY A CORRECTION FACTOR "F".

$$F = \frac{\text{ACTUAL SPECIFIED TEST PRESSURE IN HUNDREDS OF LBS/SQ. IN.}}{\text{ACTUAL SOIL BEARING CAPACITY IN THOUSANDS OF LBS.}}$$

FIGURE 4-6(b)

THRUST BLOCKS

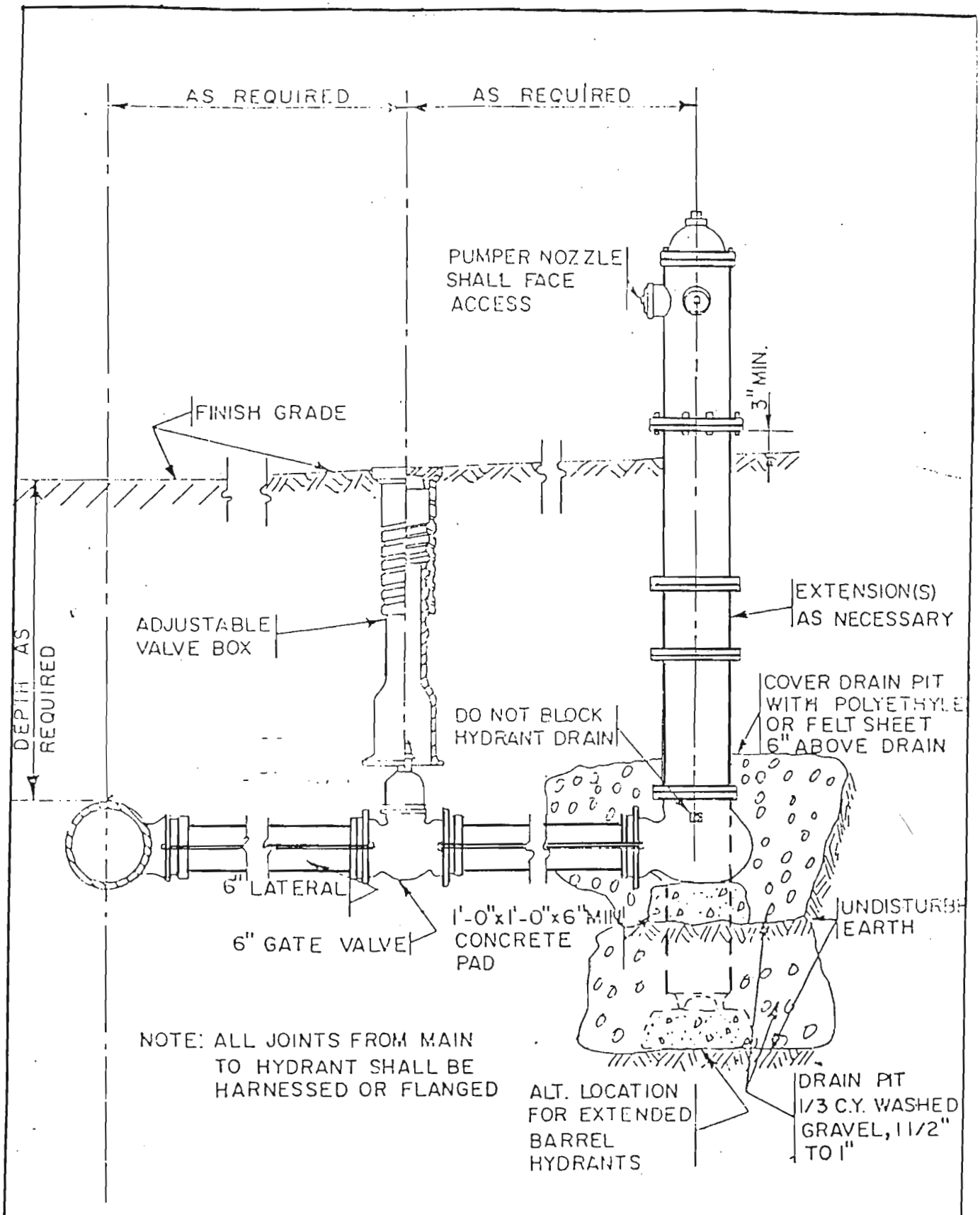


FIGURE 4-7

FIRE HYDRANT ASSEMBLY

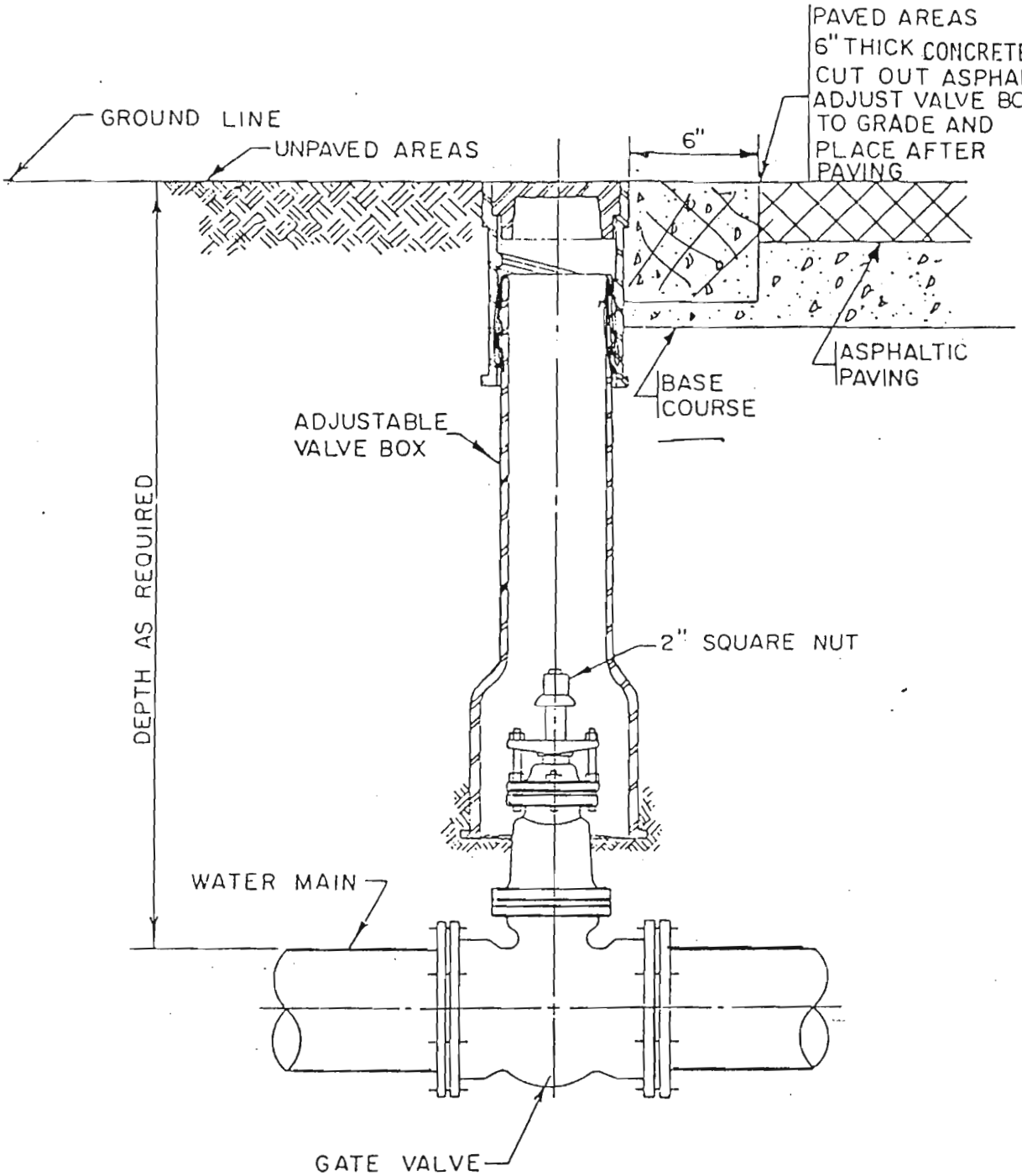
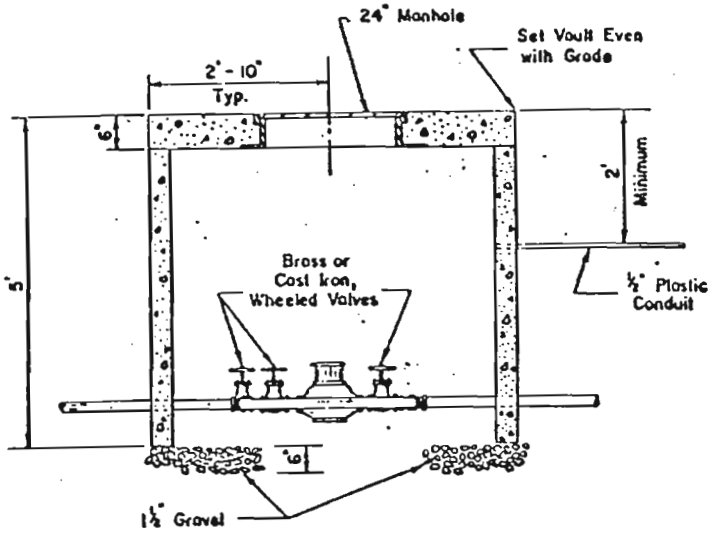
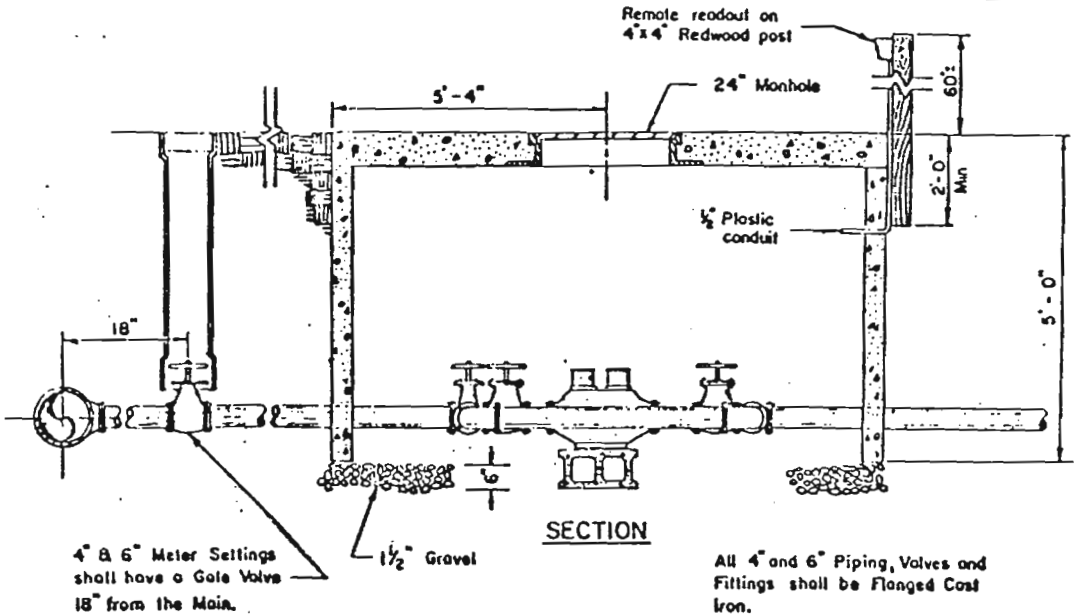


FIGURE 4-8

GATE VALVE AND VALVE BOX
DETAILS



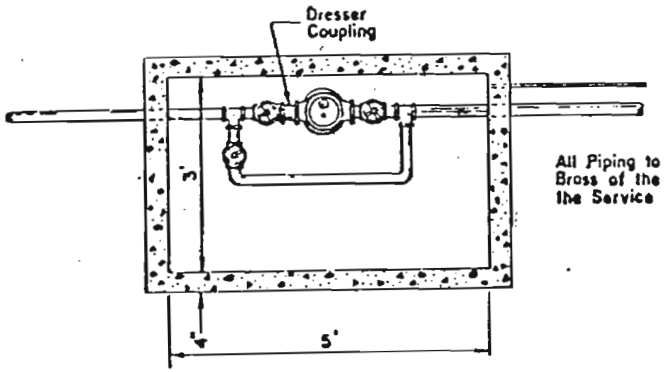
SECTION



SECTION

4" & 6" Meter Settings shall have a Gate Valve 18" from the Main.

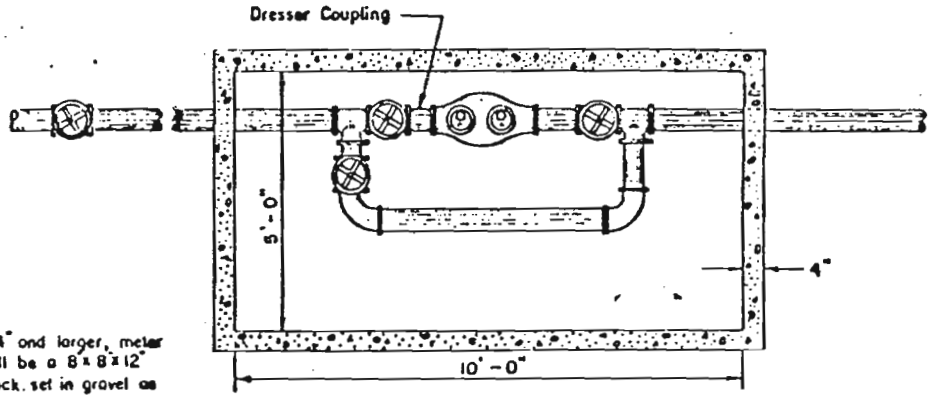
All 4" and 6" Piping, Valves and Fittings shall be Flanged Cast Iron.



PLAN

All Piping to be Copper or Brass of the Same Size as the Service Line.

1½" & 2" METER and VAULT DETAILS



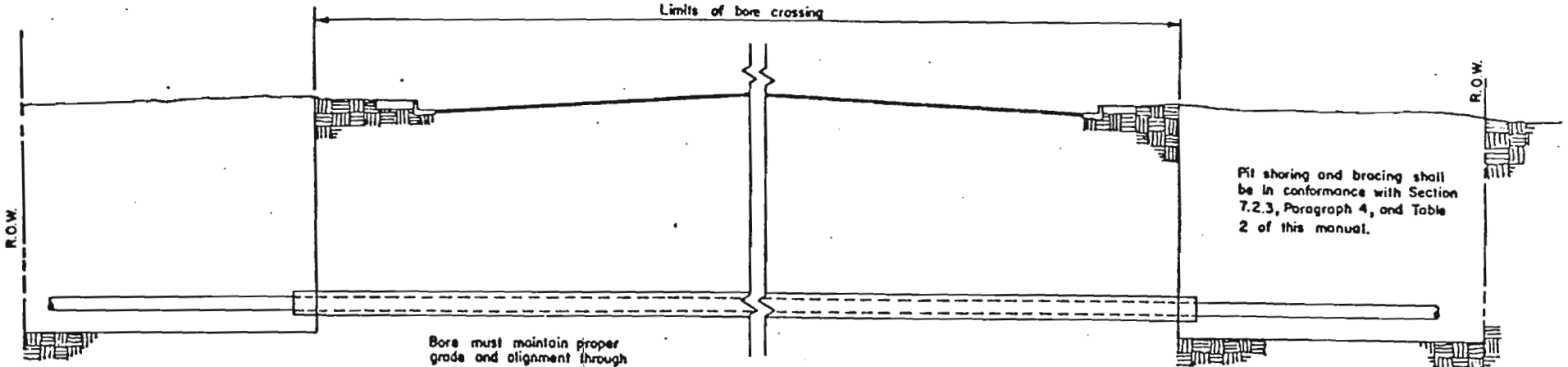
PLAN

For meters 4" and larger, meter support shall be a 8"x8"x12" concrete block, set in gravel as shown. Vault cover may be sectional (3 piece) to facilitate installation and removal.

4" & 6" METER and VAULT DETAILS

FIGURE 4-9

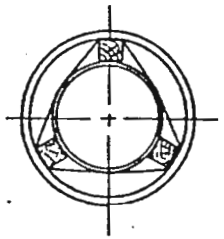
METER SETTINGS for TAPS 1½" and LARGER



PROFILE

No Scale

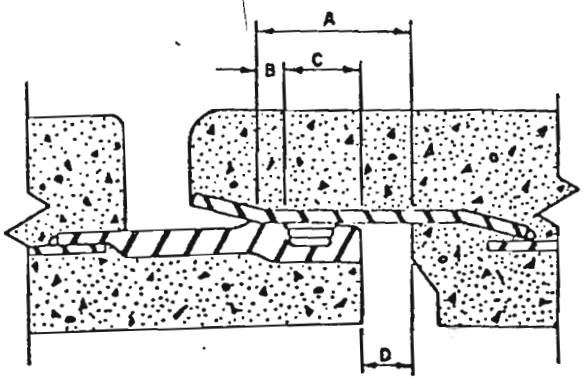
Redwood skids of the proper dimension shall be banded to carrier pipe prior to insertion into bore casing. Voids shall filled with blown-in sand.



DETAIL

FIGURE 4-10

BORE CROSSING DETAILS



A = Depth of straight portion of bell

B = Minimum reserve extensibility

C = Sealing and gasket retention space

D = Maximum joint opening

Pipe Size	A	B		C	D	
		Layout	Installation		Layout	Installation
16-30	2-1/4	9/16	7/16	1-1/8	9/16	11/16
36	2-3/8	5/8	1/2	1-1/8	5/8	3/4
42	2-3/4	7/8	3/4	1-1/8	3/4	7/8
42	3-1/8	7/8	3/4	1-1/8	1-1/8	1-1/4
48	2-7/8	7/8	3/4	1-1/8	7/8	1
48	3-1/8	7/8	3/4	1-1/8	1-1/8	1-1/4
54	2-7/8	7/8	3/4	1-1/4	3/4	7/8
60	3	7/8	3/4	1-1/4	7/8	1

All dimensions are in inches.

FIGURE 4-11

MAXIMUM JOINT OPENING
for STEEL and RUBBER
PIPE JOINTS