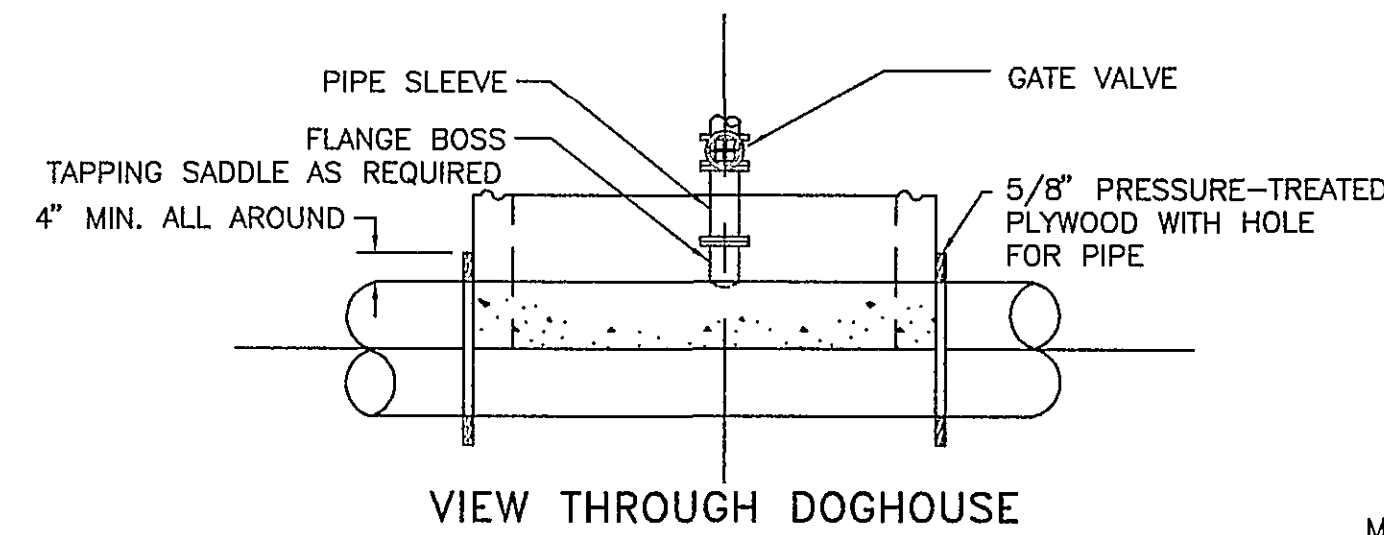
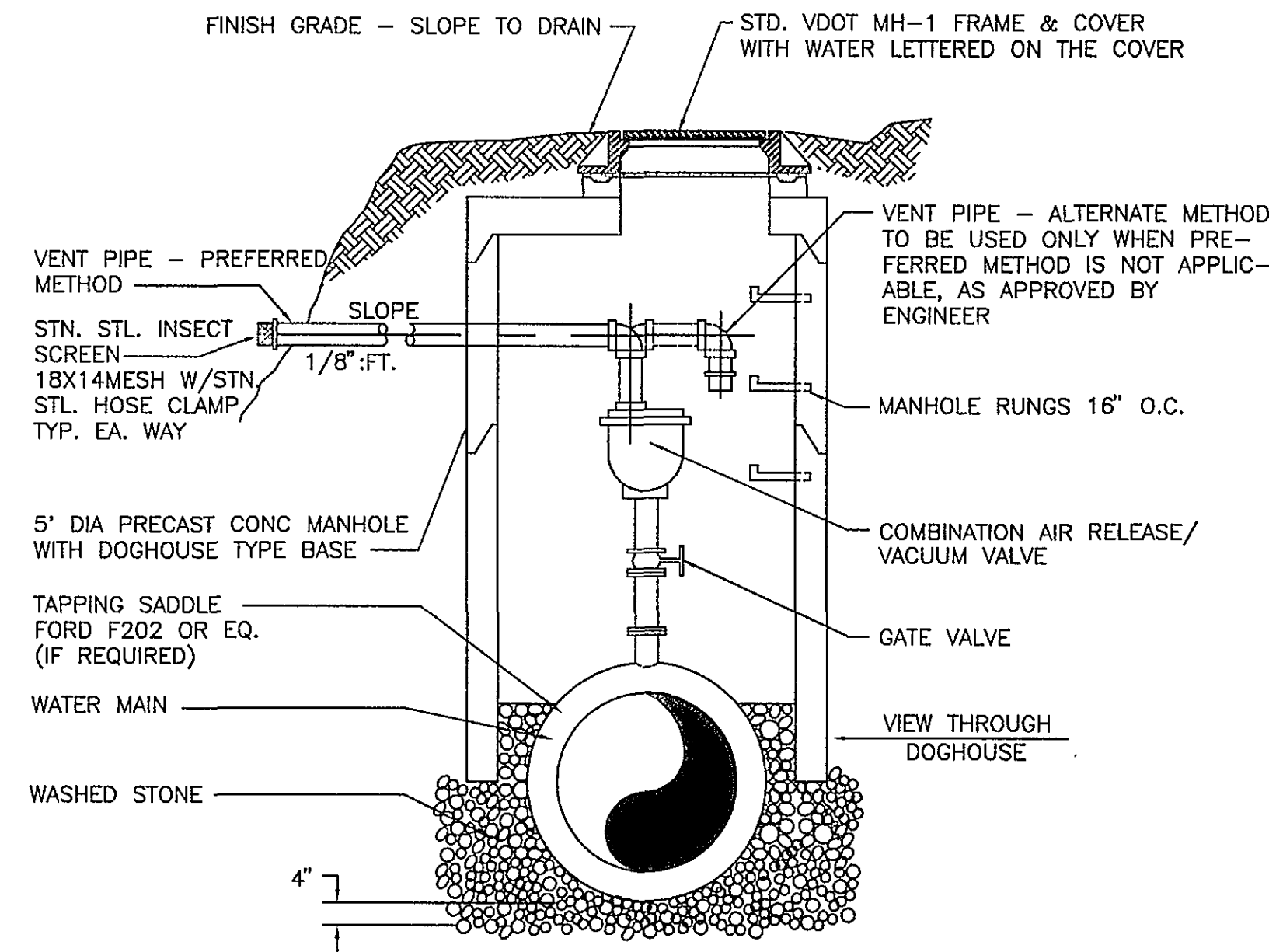
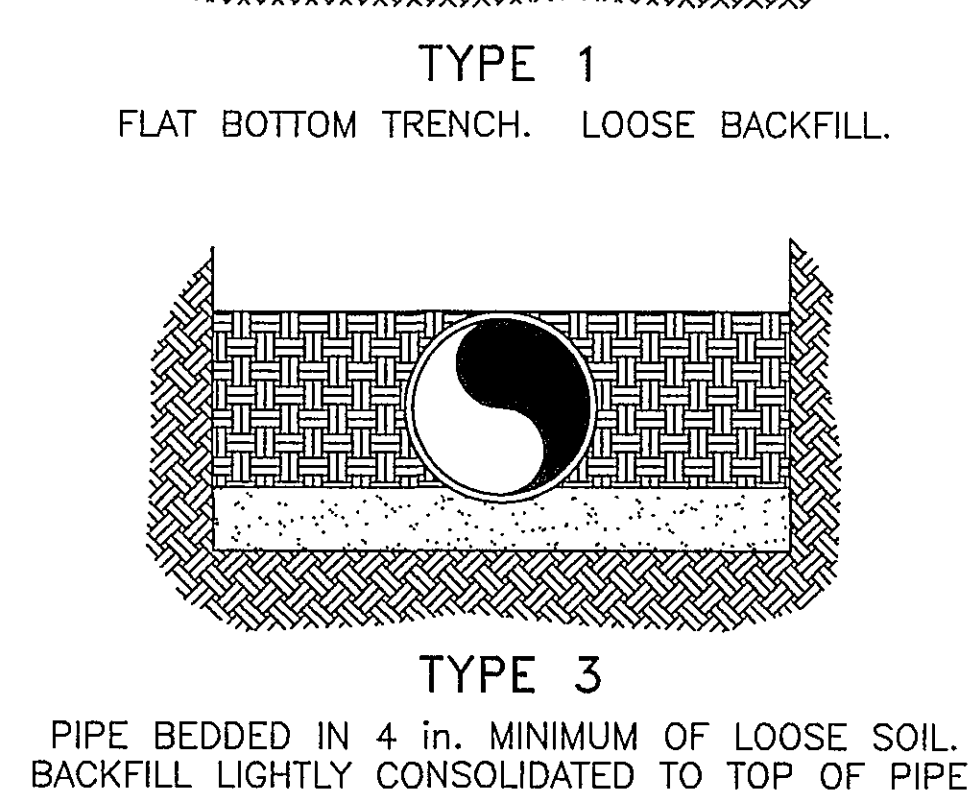
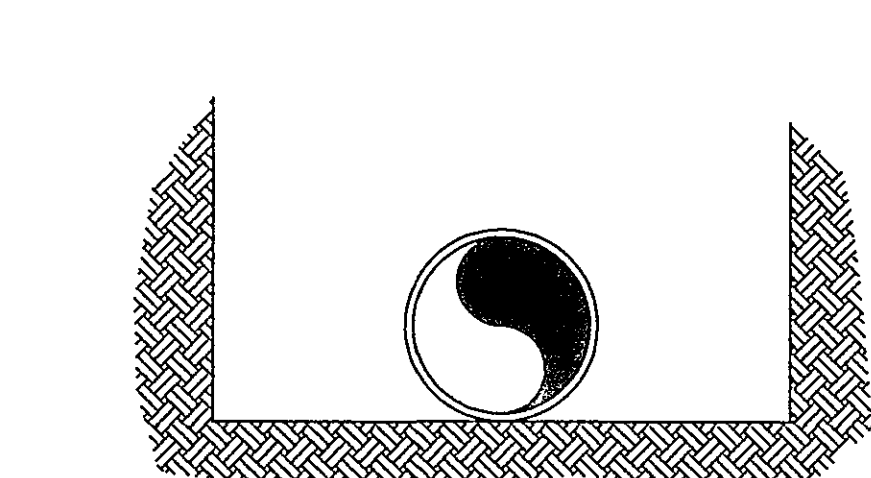


AIR VACUUM VALVE CHART

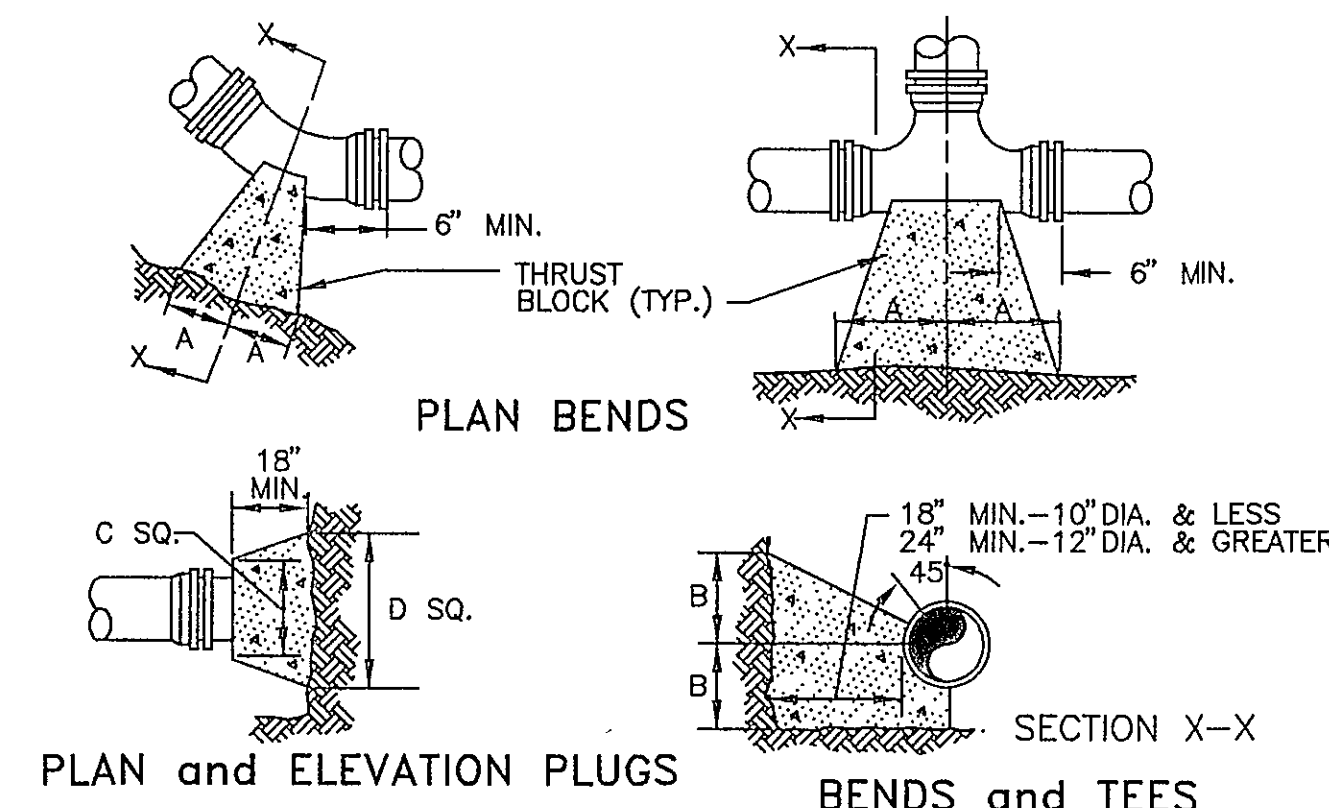
PIPE SIZE	VALVE SIZE	CONNECTOR	VALVE
30" - 36"	6"	6" FLANGE	6" BALL VALVE
24"	4"	4" FLANGE	4" BALL VALVE
18"	3"	TAPPING SADDLE	BALL VALVE
10" - 16"	2"	TAPPING SADDLE	BALL VALVE
6" - 8"	1"	TAPPING SADDLE	BALL VALVE



COMBINATION AIR RELEASE/VACUUM VALVE DETAIL



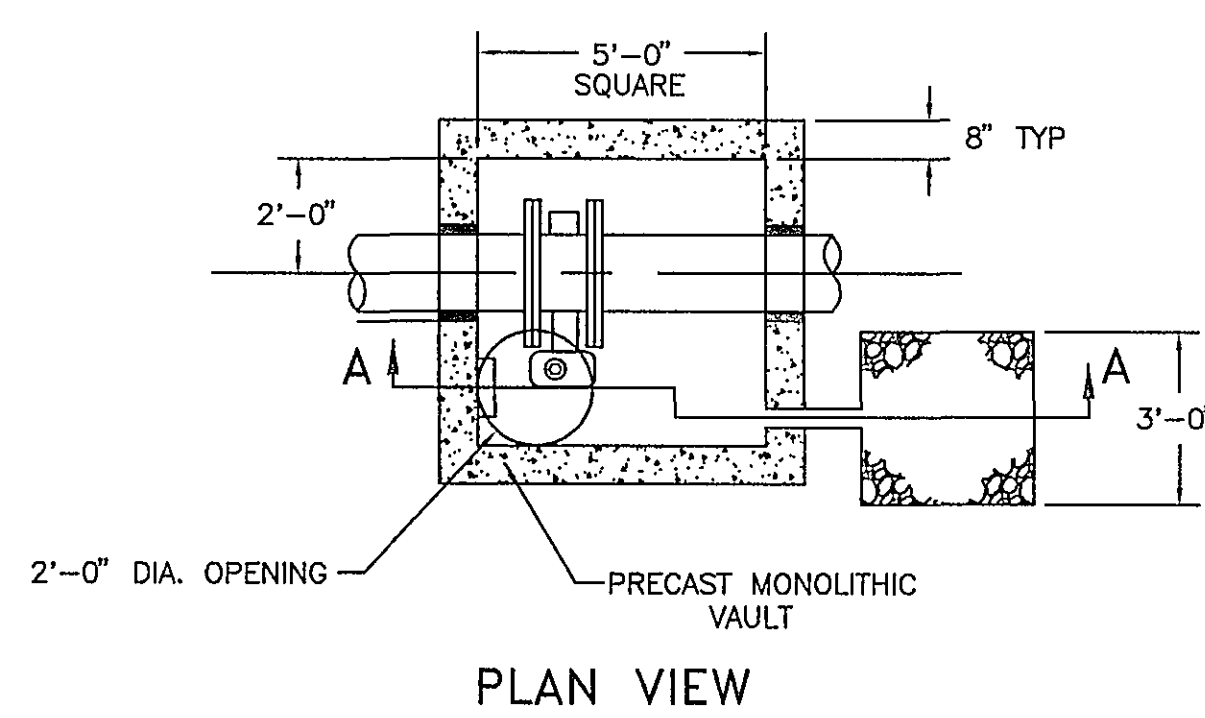
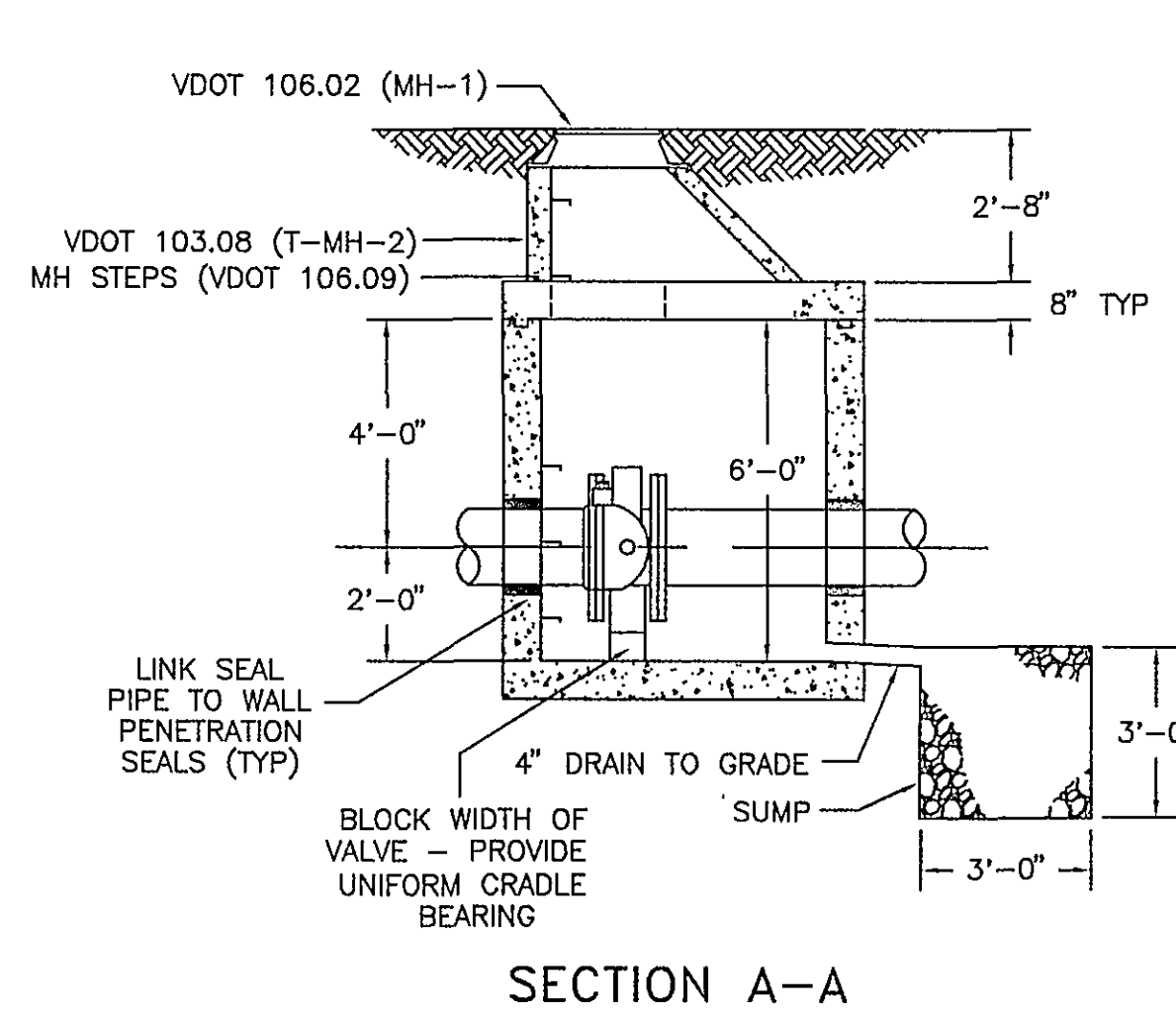
BEDDING DETAIL



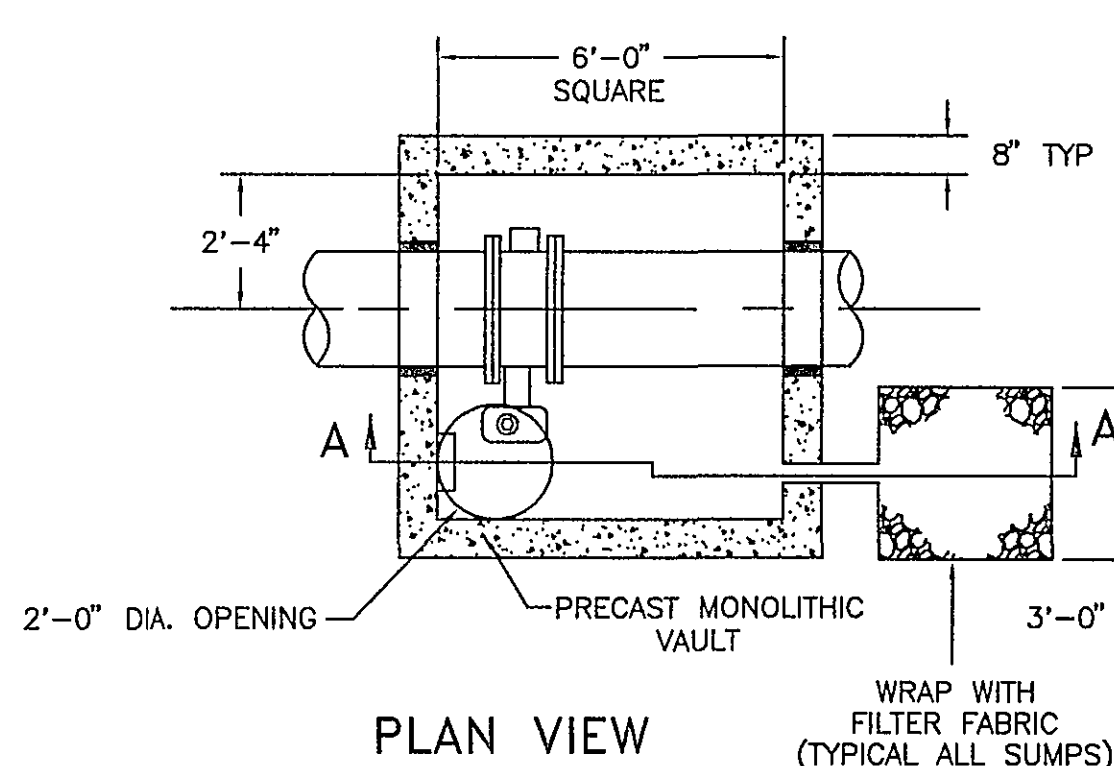
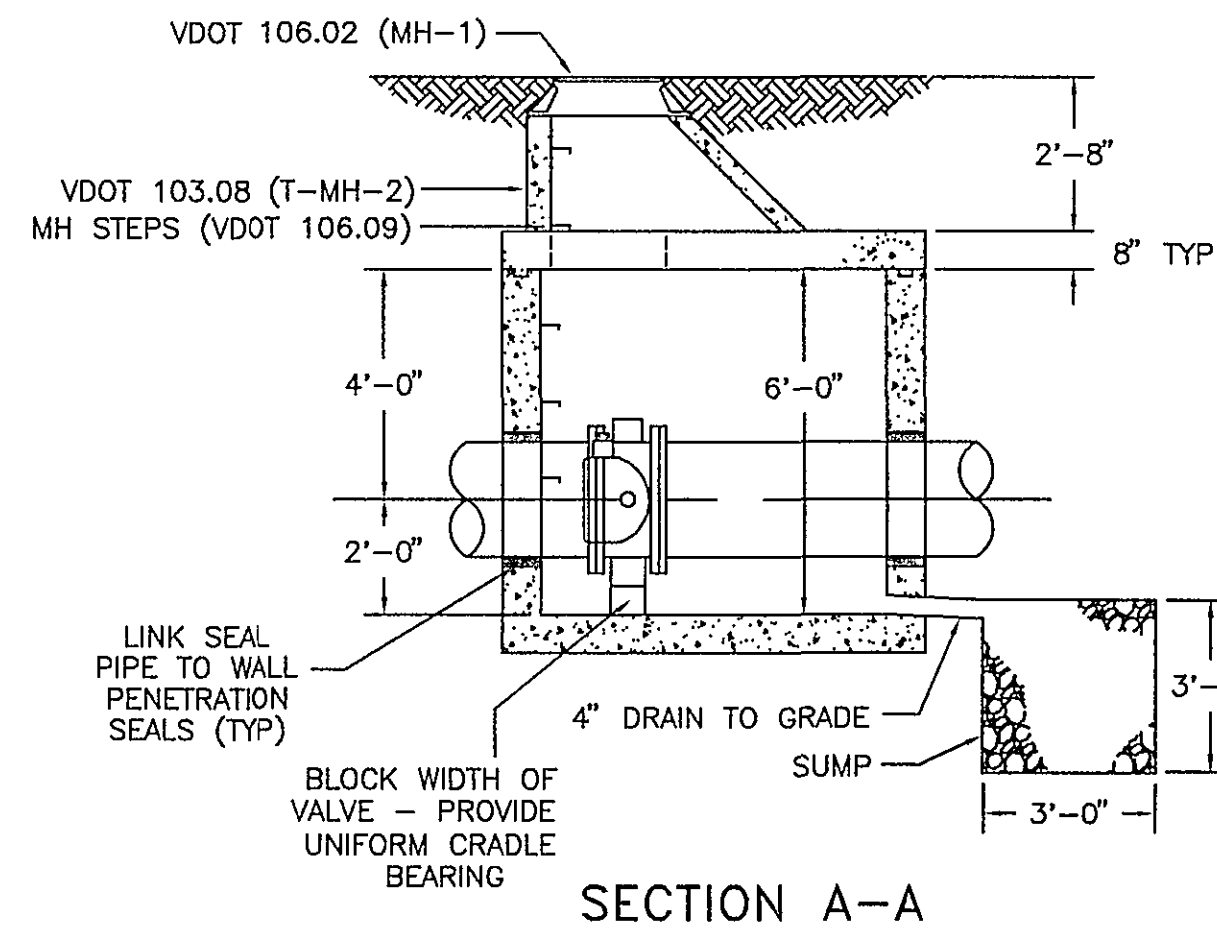
- NOTES:
1. FOR VERT. BEND DOWN IN EXCESS OF 1.25', ANCHORAGE SHALL BE RECOMMENDED BY ENGINEER.
 2. FOR VERT. BEND UPWARD, BLOCKING TO BE SIMILAR TO THAT FOR HORIZ. BEND
 3. GLANDS & BOLTS SHALL BE PROTECTED FROM CONC. WHEN POURING THRUST BLOCKS
 4. ALL THRUST BLOCK & SUPPORT CONC. SHALL BE CLASS B.
 5. THRUST BLOCKS WITH 'B' DIMENSION GREATER THAN 30" SHALL HAVE THE RESTRAINED PIPE INSTALLED WITH A MINIMUM OF 4" OF COVER.
- 10" MIN.
- 16 #4 BARS AS SHOWN
- TYP. MJ BEND w/ RESTRAINER GLANDS
- TRENCH BOTTOM
- UNDISTURBED SOIL (TYP.)
- TYP. CONC. THRUST COLLAR MIN. 2" INTO DISTURBED MAT ON 3 SIDES
- SECTION of VERTICAL BEND

PIPE SIZE	90° BEND		45° BEND		22 1/2° BEND		11 1/4° BEND		TEE		PLUG	
	A	B	A	B	A	B	A	B	A	B	C	D
4"	8"	12"	8"	8"	6"	6"	6"	6"	11"	9"	10"	6"
6"	18"	12"	8"	10"	8"	8"	8"	8"	10"	10"	12"	18"
8"	15"	13"	10"	10"	8"	8"	8"	8"	10"	12"	12"	24"
10"	20"	16"	12"	14"	8"	12"	8"	12"	14"	16"	16"	30"
12"	20"	16"	12"	14"	8"	12"	8"	12"	14"	16"	16"	30"
16"	26"	20"	16"	18"	11"	13"	11"	13"	18"	20"	20"	36"
24"	82"	42"	62"	30"	44"	22"	22"	16"	82"	42"	82"	42"
36"	185"	42"	100"	42"	52"	42"	40"	30"	185"	42"	185"	42"

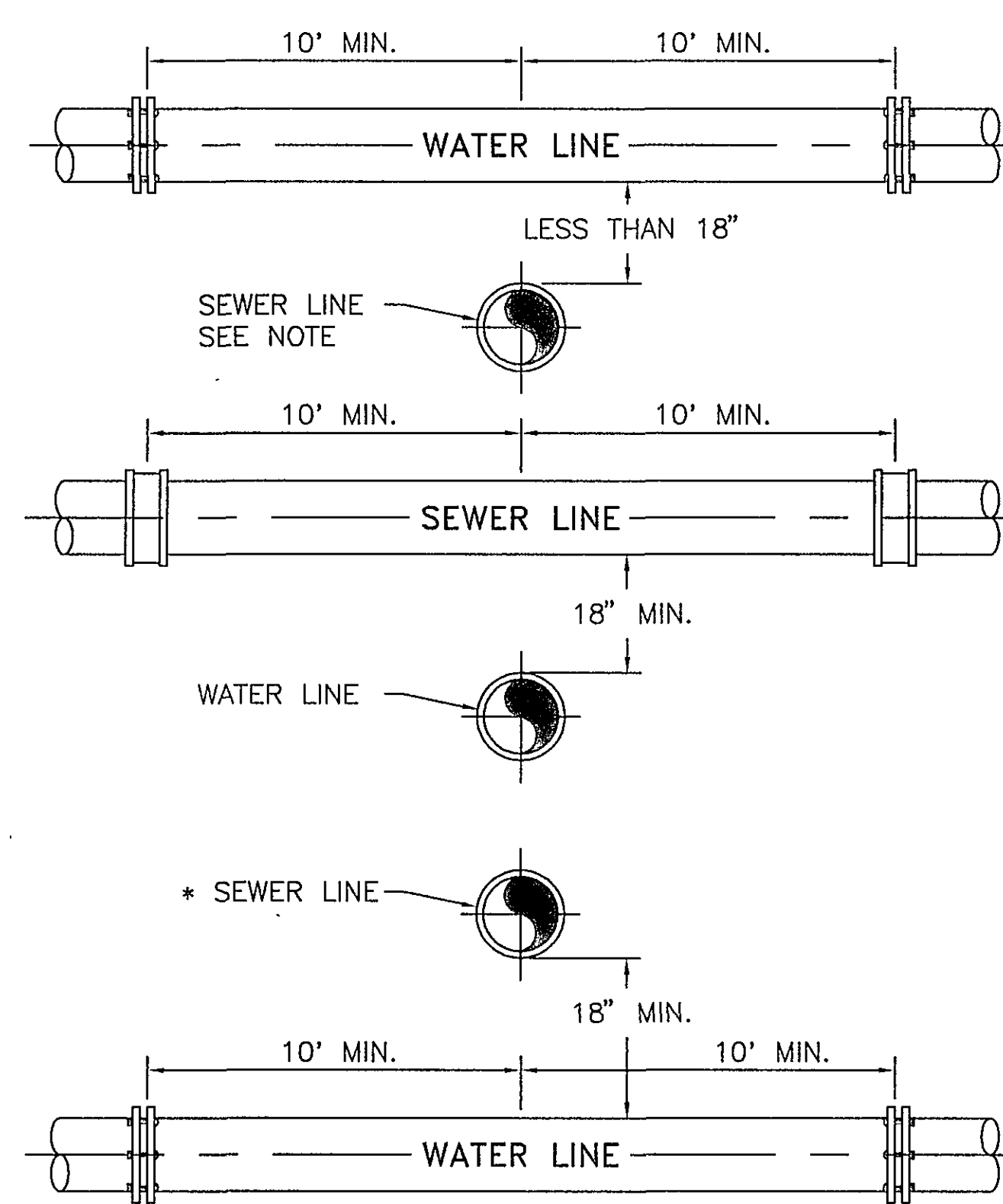
THRUST BLOCK DETAILS



16" BUTTERFLY VALVE VAULT



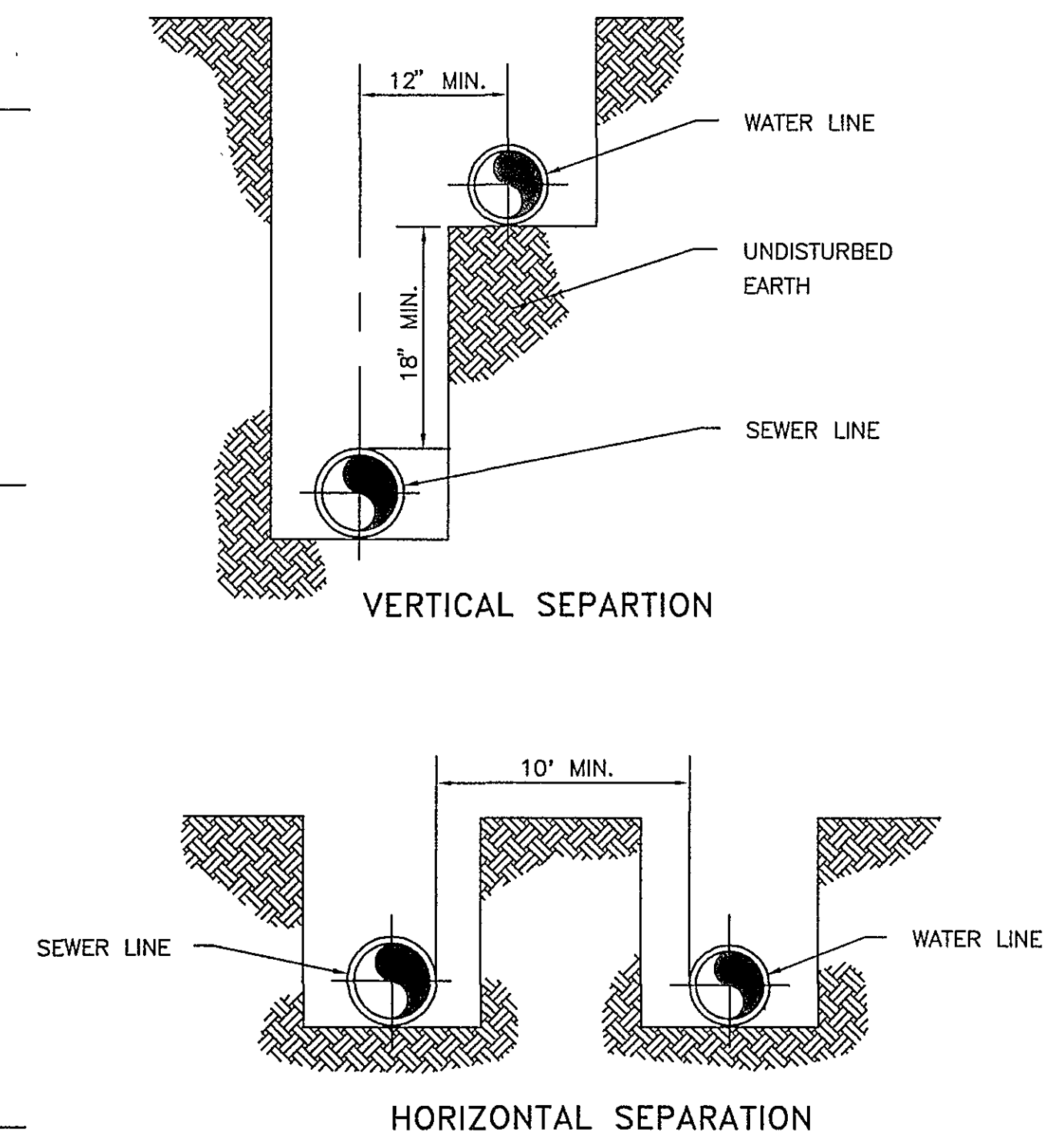
24" BUTTERFLY VALVE VAULT



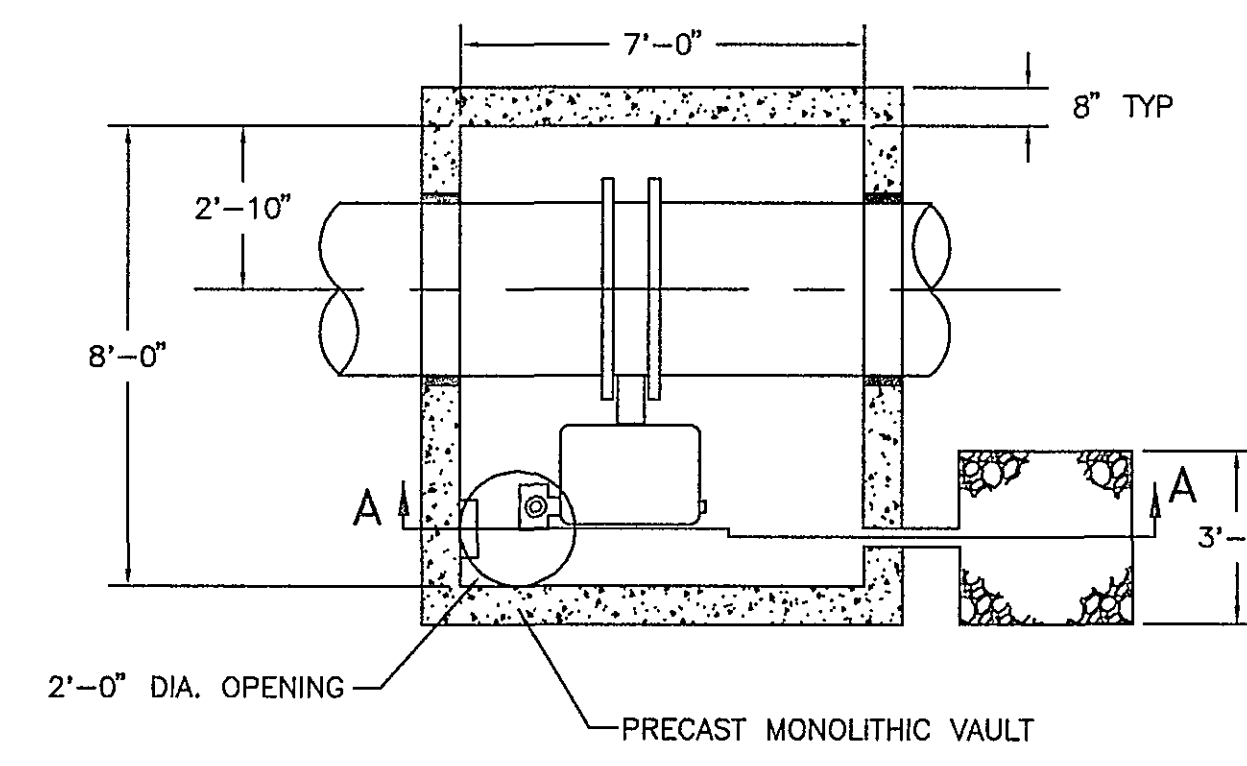
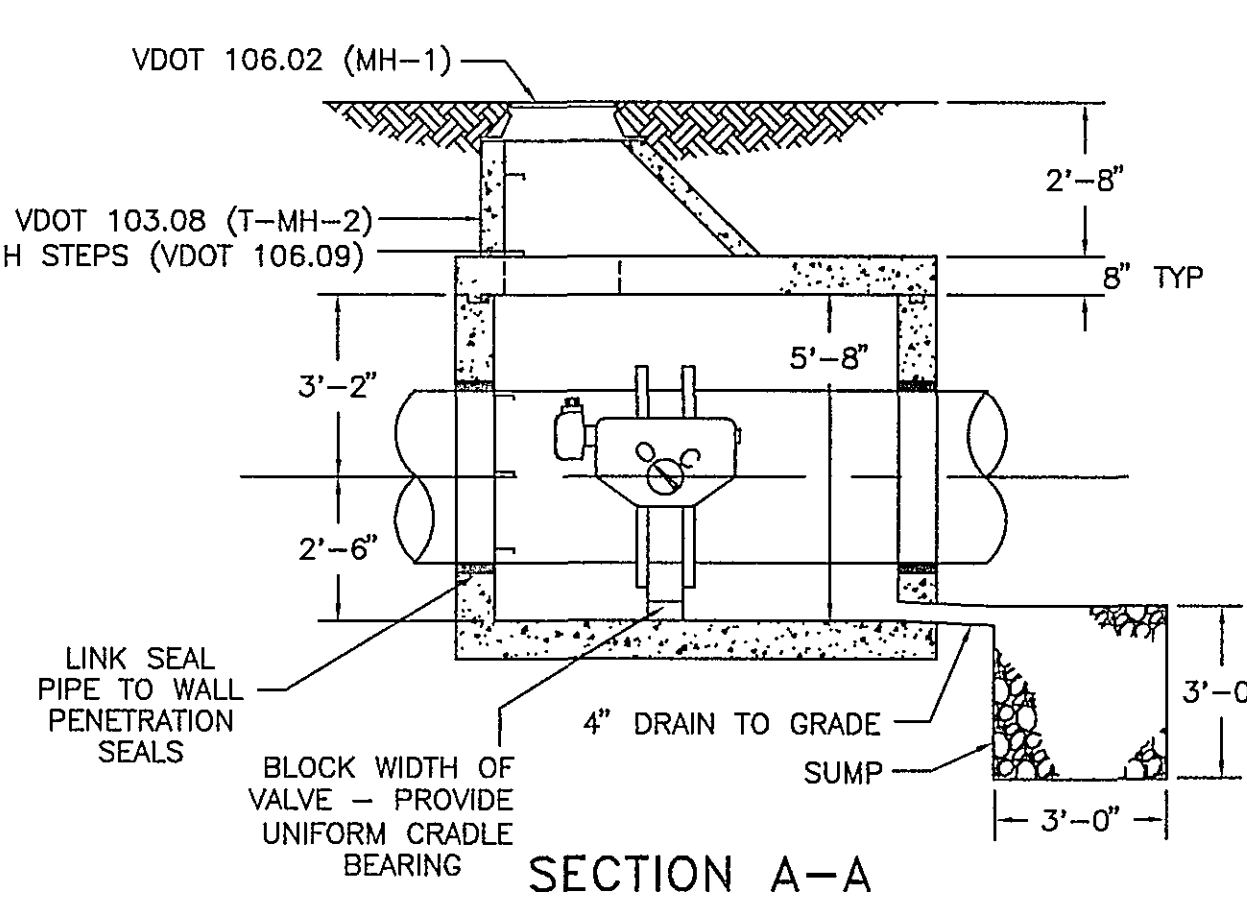
NOTE:

* SEWER LINE ABOVE WATERLINE TO BE CONSTRUCTED OF AWWA WATER LINE MATERIAL & PRESSURE TESTED (SEE SPEC.) AT NO ADDITIONAL COST (SEE SEWER LINE COUPLING DETAIL).

WATER and SEWER CROSSING DETAIL

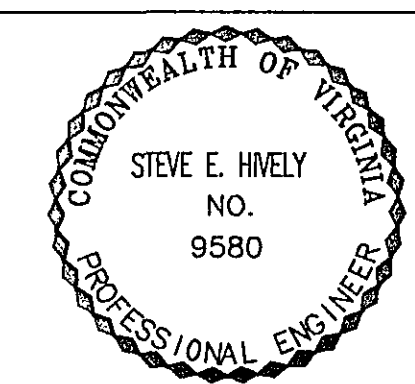


WATER and SEWER SEPARATION DETAIL

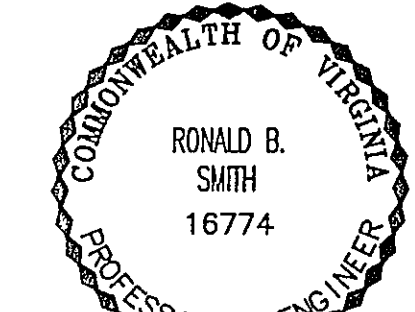


36" BUTTERFLY VALVE VAULT

AS BUILT



ENGINEER'S SEAL



ENGINEER'S SEAL

Architects
Engineers
Planners
Surveyors

Dewberry & Davis

5238 Valleypointe Parkway, Suite One-B
Roanoke, Virginia 24018
703 362-7725

Carvins Cove, Phase II

City of Roanoke
Roanoke, Virginia

CONTRACT "C1"

DETAILS

Drawn By ACF

Designed By RBS

Checked By SEH

Date MARCH 93

Scale AS SHOWN

Plan Number C1DTRWL1

Zoned NONE

Sheet 10 of 12

File Number

C1160