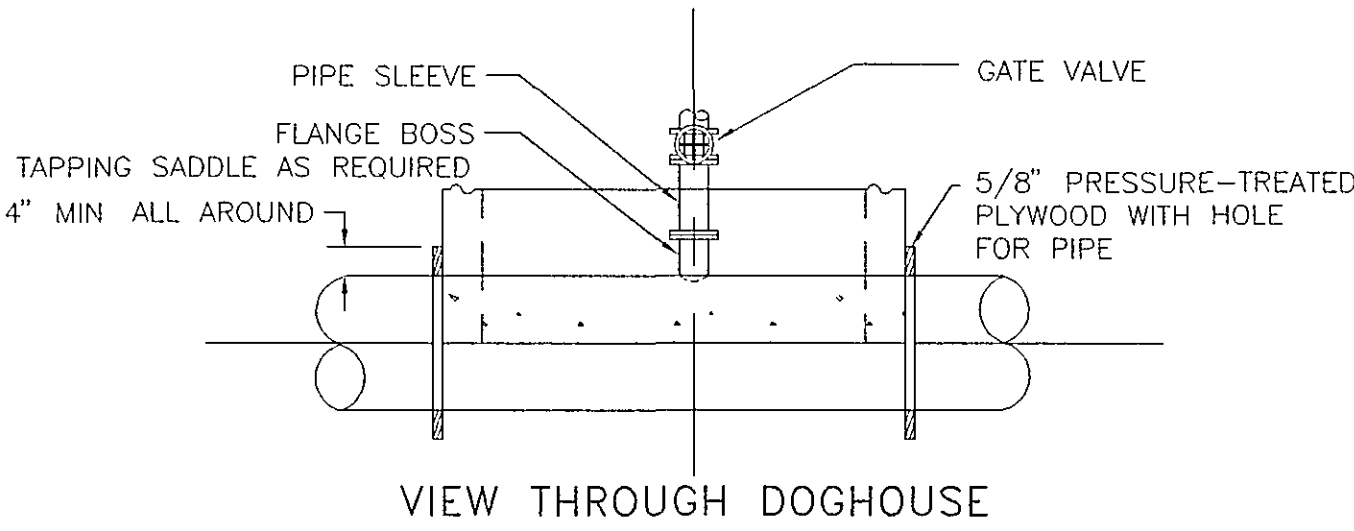
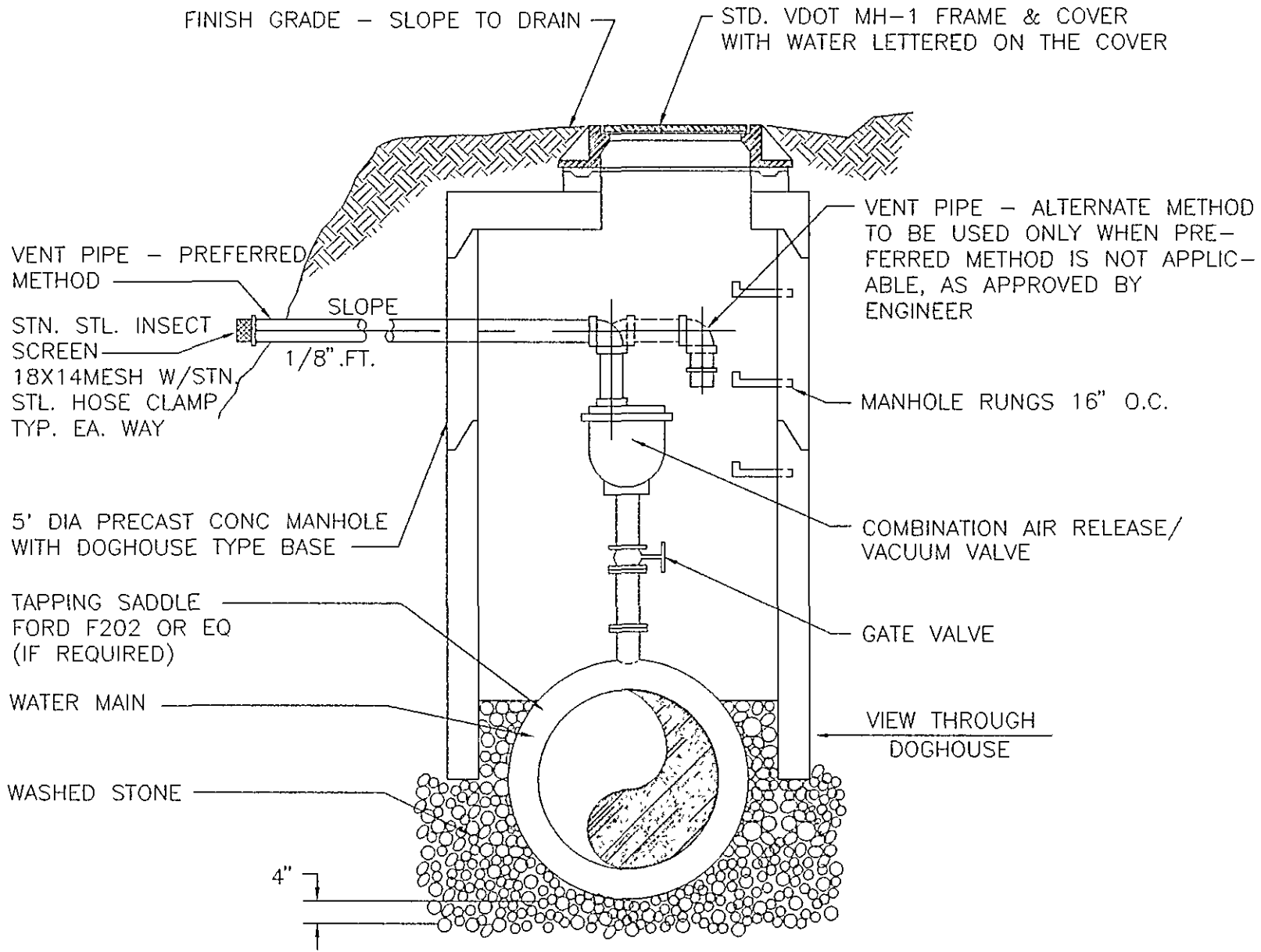
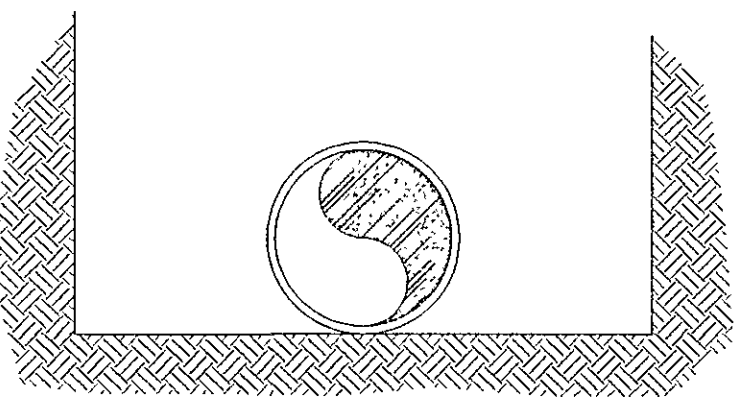


AIR VACUUM VALVE CHART

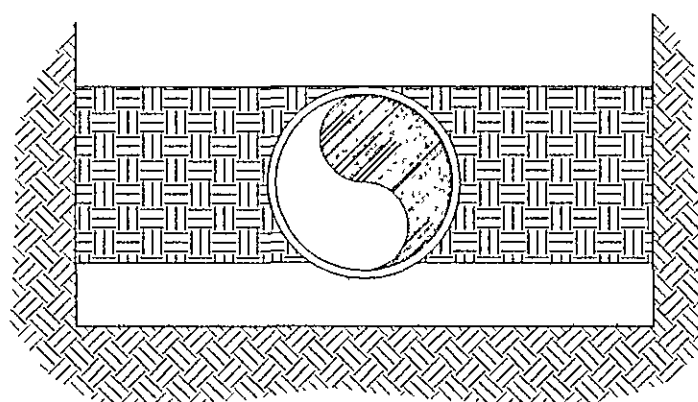
PIPE SIZE	VALVE SIZE	CONNECTOR	VALVE
30" - 36"	6"	6" FLANGE	6" BALL VALVE
24"	4"	4" FLANGE	4" BALL VALVE
18"	3"	TAPPING SADDLE	BALL VALVE
10" - 16"	2"	TAPPING SADDLE	BALL VALVE
6" - 8"	1"	TAPPING SADDLE	BALL VALVE



COMBINATION AIR RELEASE/
VACUUM VALVE DETAIL
NTS

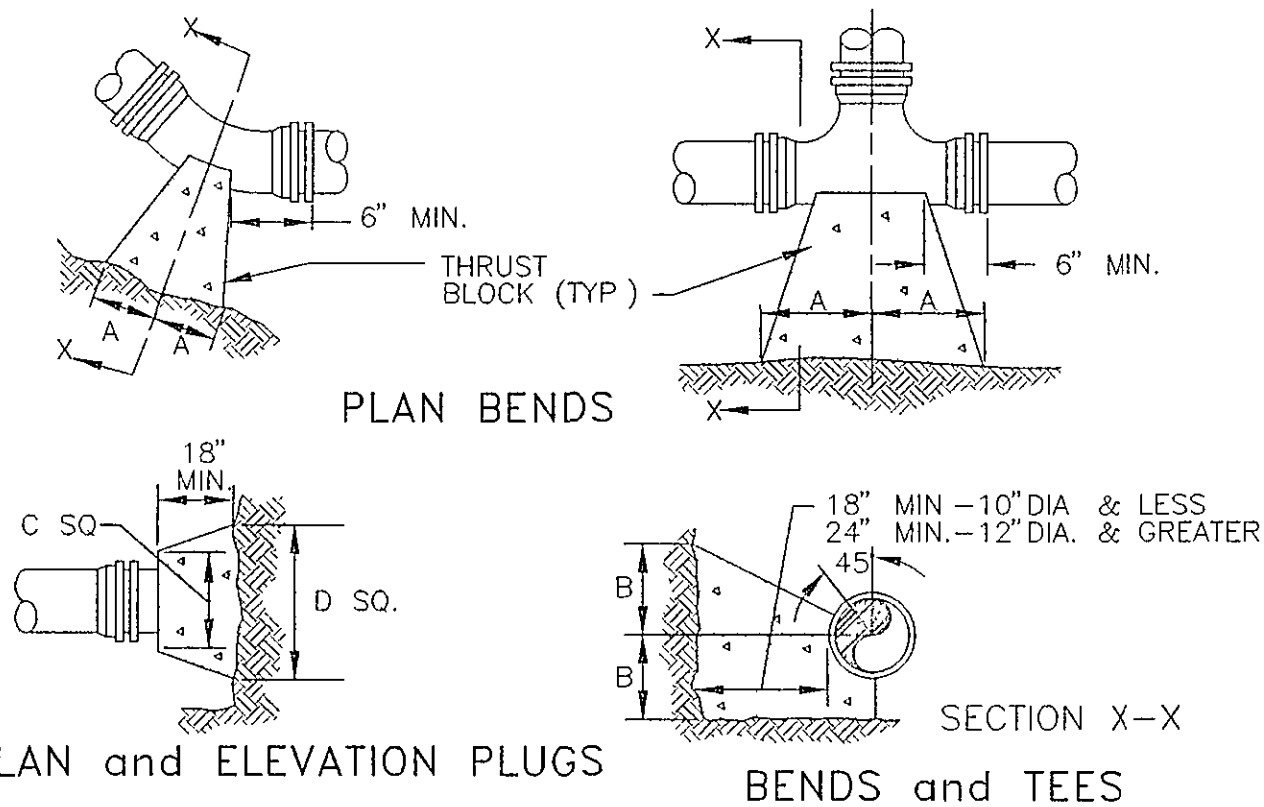


TYPE 1
FLAT BOTTOM TRENCH. LOOSE BACKFILL.



TYPE 3
PIPE BEDDED IN 4 in. MINIMUM OF LOOSE SOIL.
BACKFILL LIGHTLY CONSOLIDATED TO TOP OF PIPE.

BEDDING DETAIL
NTS

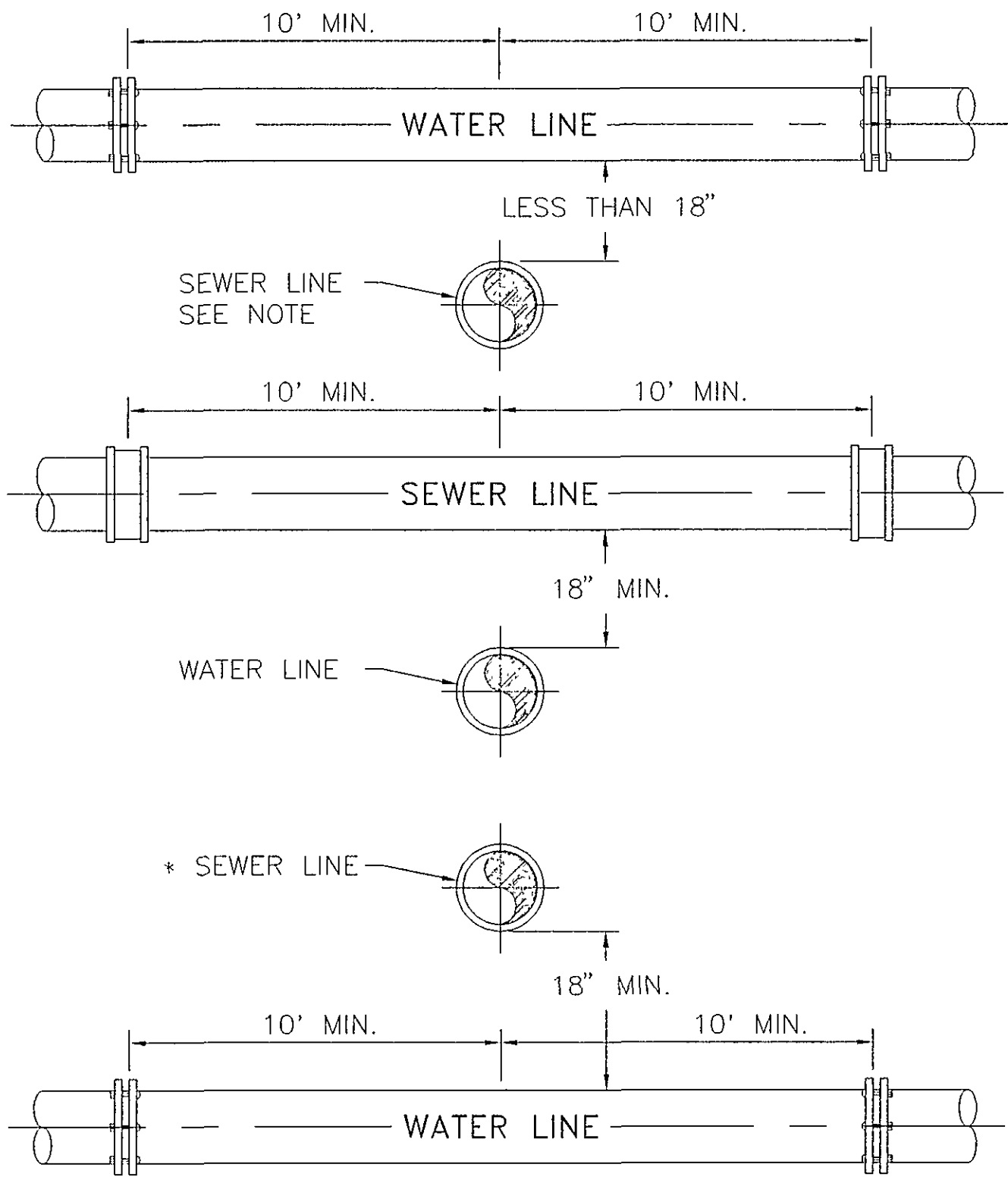


- NOTES:
- FOR VERT. BEND DOWN IN EXCESS OF 125', ANCHORAGE SHALL BE RECOMMENDED BY ENGINEER
 - FOR VERT. BEND UPWARD, BLOCKING TO BE SIMILAR TO THAT FOR HORIZ. BEND
 - GLANDS & BOLTS SHALL BE PROTECTED FROM CONC WHEN POURING THRUST BLOCKS
 - ALL THRUST BLOCK & SUPPORT CONC SHALL BE CLASS B
 - THRUST BLOCKS WITH 'B' DIMENSION GREATER THAN 30" SHALL HAVE THE RESTRAINED PIPE INSTALLED WITH A MINIMUM OF 4' OF COVER

PRESSURE = 200psi
BEARING = 2,000psf
FACTOR OF SAFETY = 1.5

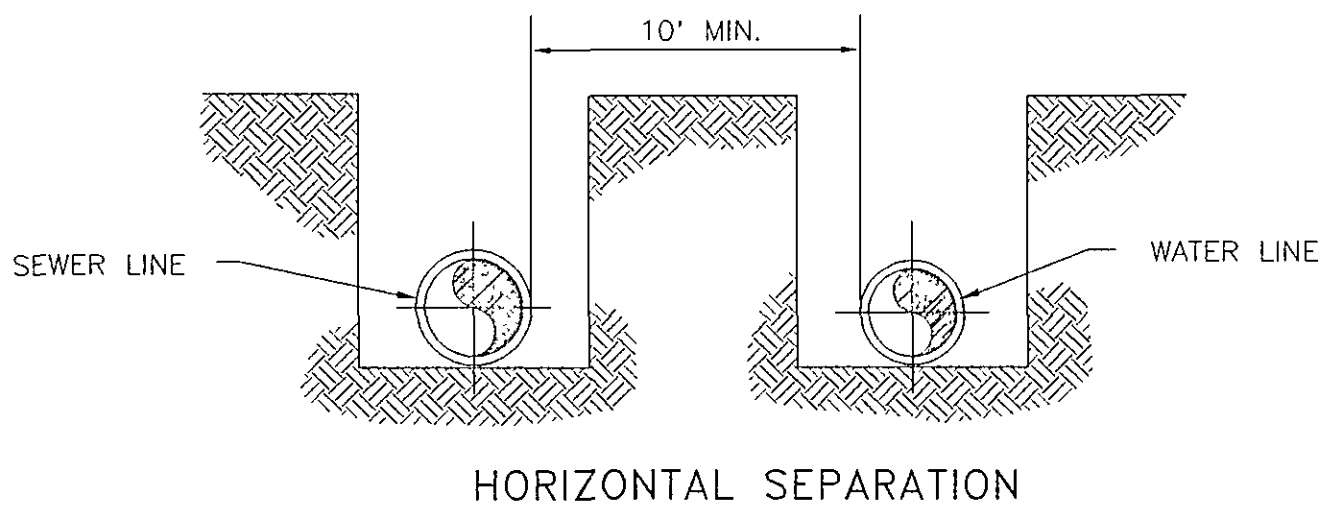
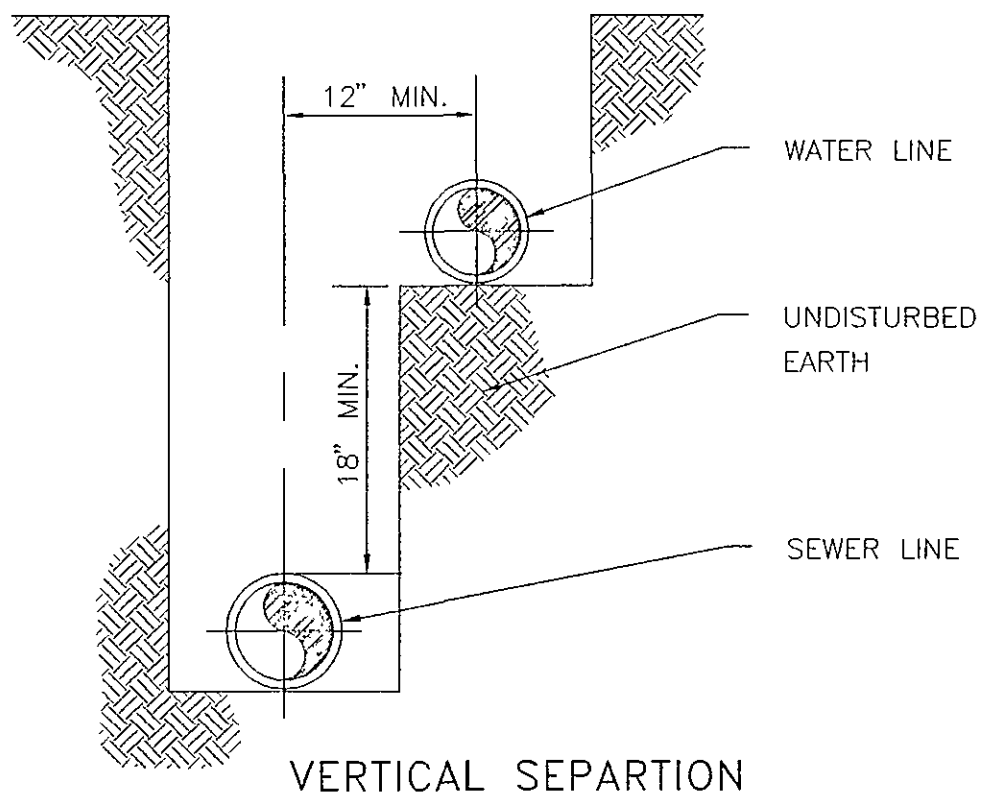
PIPE SIZE	90° BEND	45° BEND	22 1/2° BEND	11 1/4° BEND	TEE	PLUG
	A B	A B	A B	A B	A B	C D
4"	8" 12"	8" 8"	6" 6"	6" 6"	11" 9"	10" 6"
6"	18" 12"	8" 10"	8" 8"	8" 8"	10" 10"	12" 18"
8"	15" 13"	10" 10"	8" 8"	8" 8"	10" 12"	12" 24"
10"	20" 16"	12" 14"	8" 12"	8" 12"	14" 16"	16" 30"
12"	20" 16"	12" 14"	8" 12"	8" 12"	14" 16"	16" 30"
16"	26" 20"	16" 18"	11" 13"	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
NTS

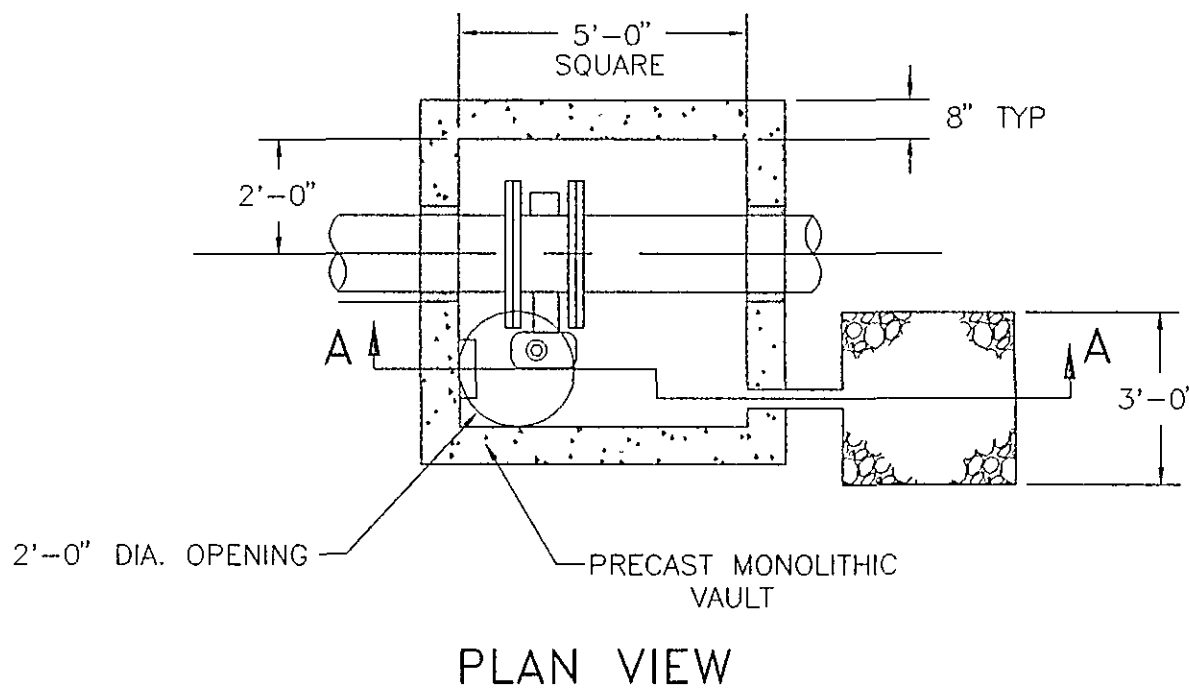
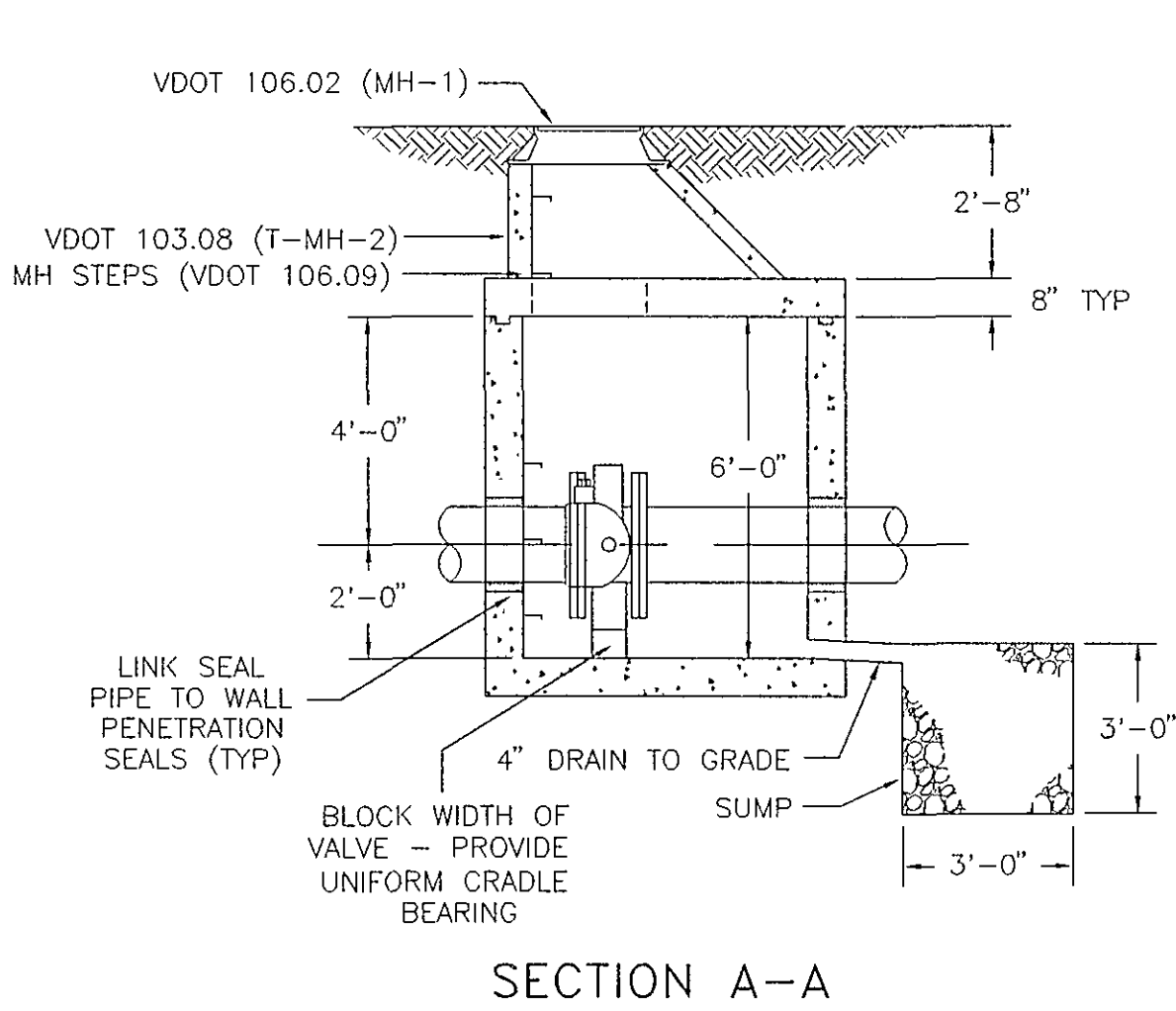


NOTE:
* SEWER LINE ABOVE WATERLINE TO BE CONSTRUCTED OF AWWA WATER LINE MATERIAL & PRESSURE TESTED (SEE SPEC.) AT NO ADDITIONAL COST (SEE SEWER LINE COUPLING DETAIL).

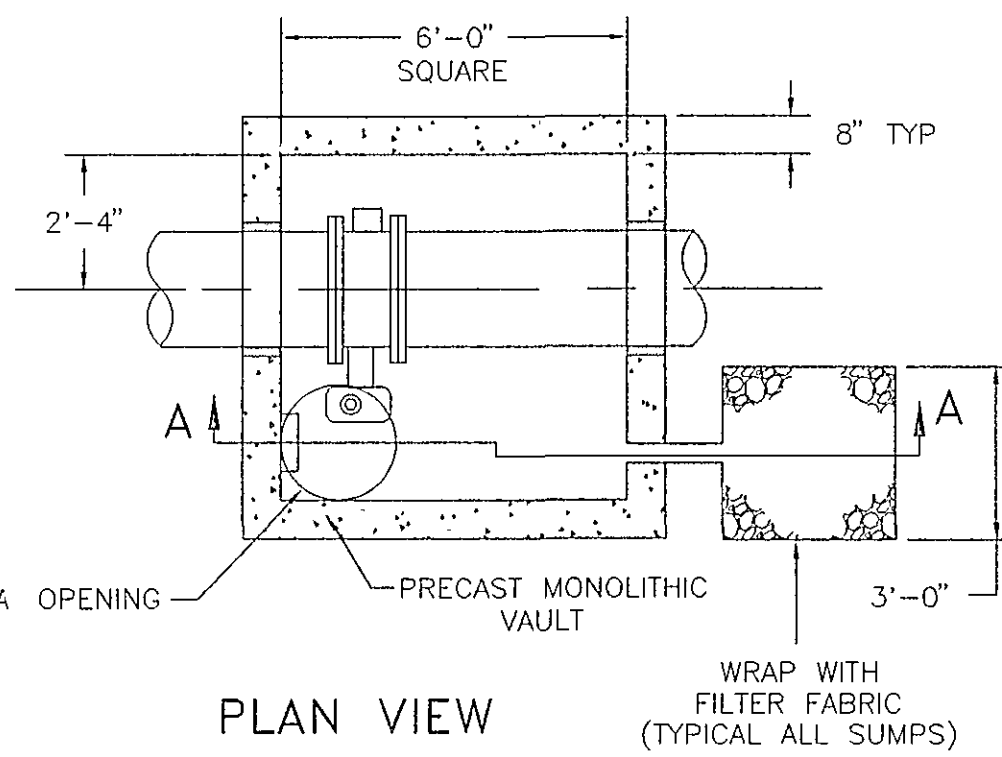
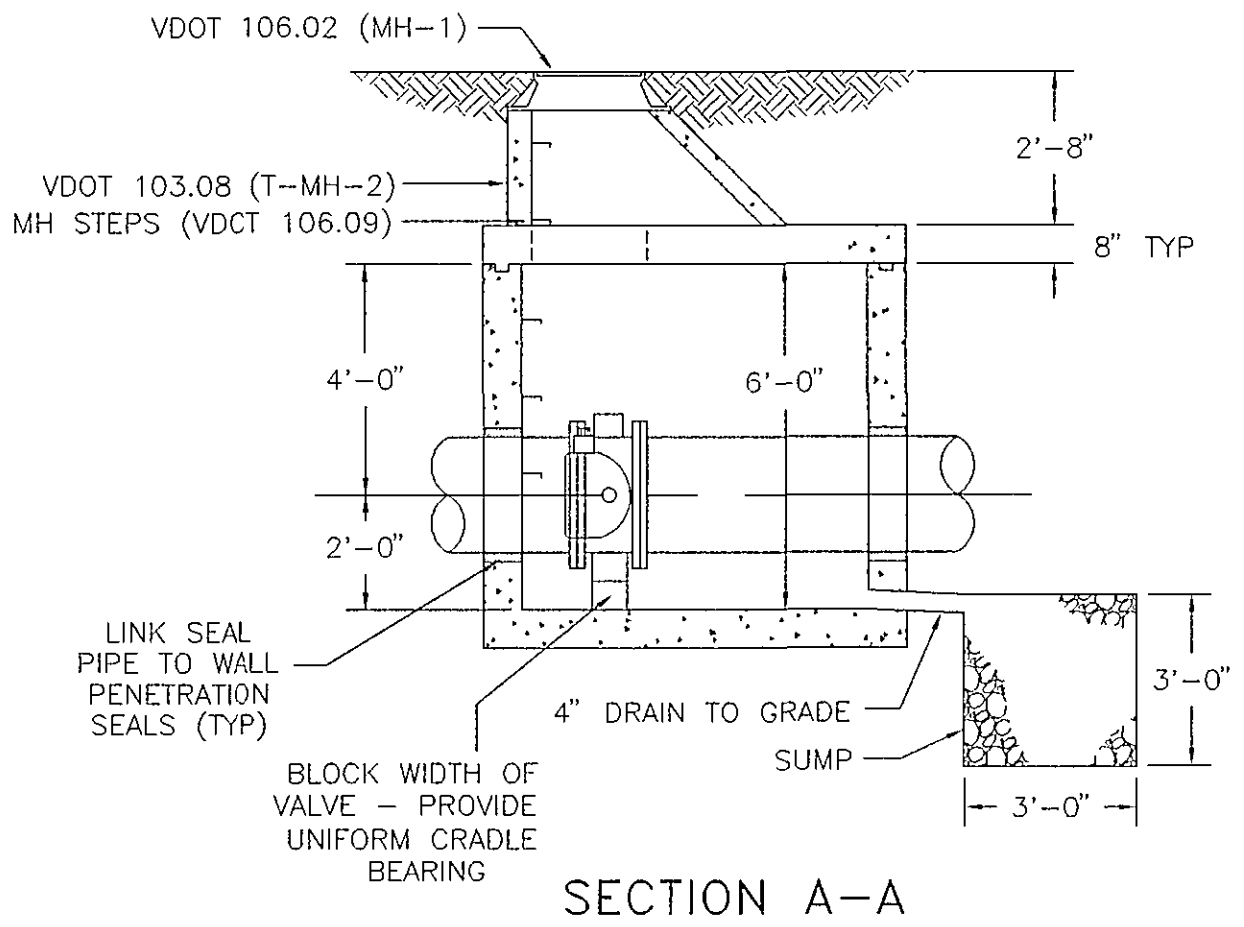
WATER and SEWER CROSSING DETAIL
NTS



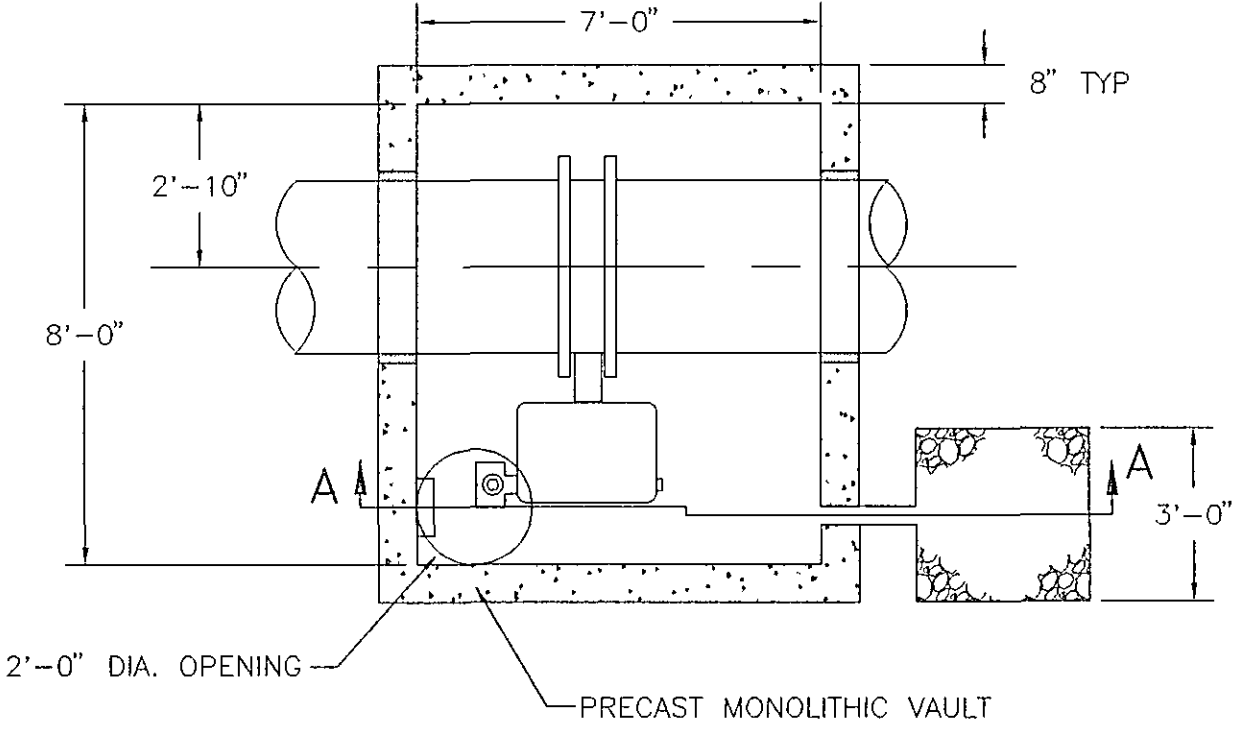
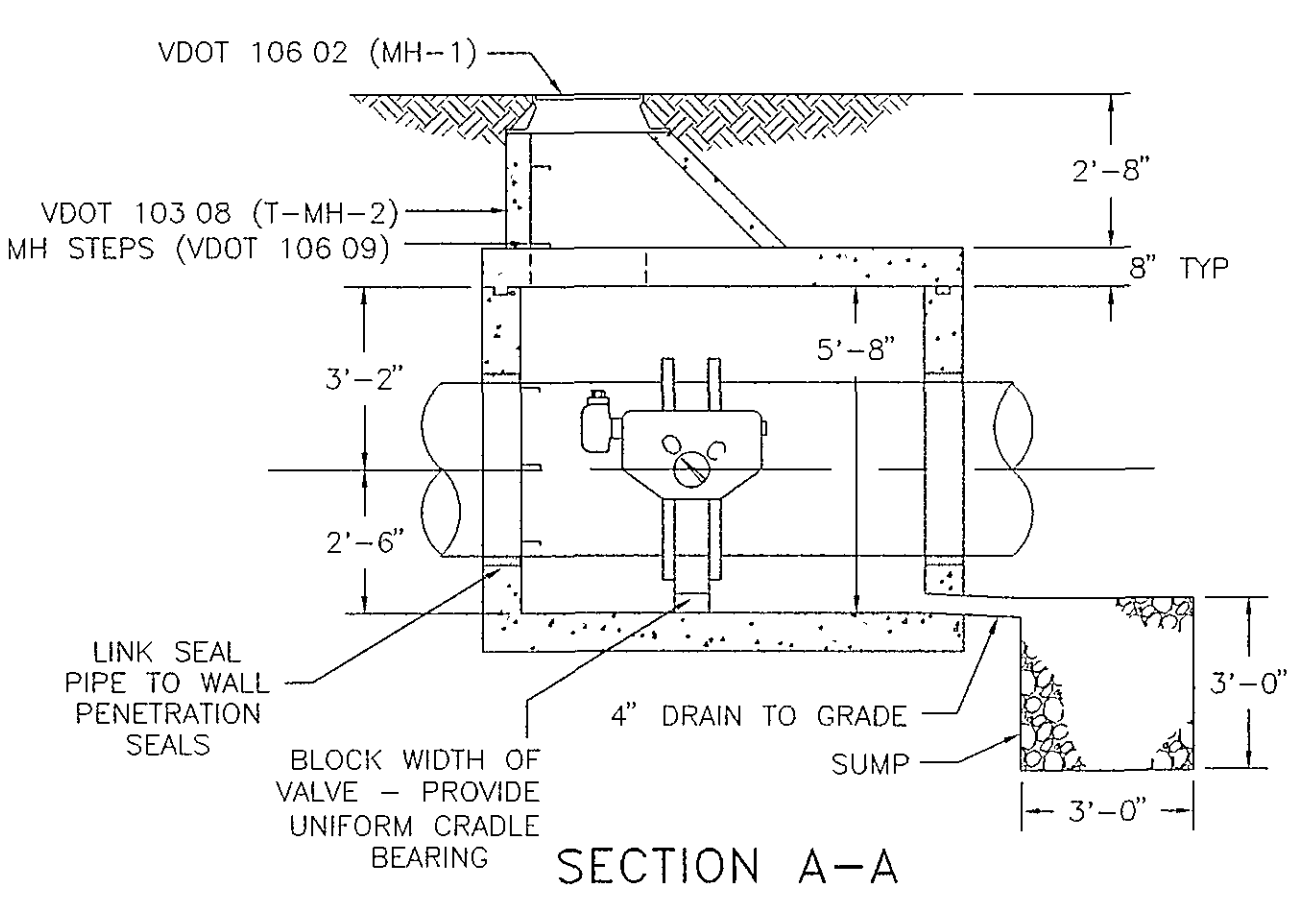
WATER and SEWER SEPARATION DETAIL
NTS



16" BUTTERFLY VALVE VAULT
NTS



24" BUTTERFLY VALVE VAULT
NTS



36" BUTTERFLY VALVE VAULT
NTS

WATER DEP'T. #93-25

Architects
Engineers
Planners
Surveyors

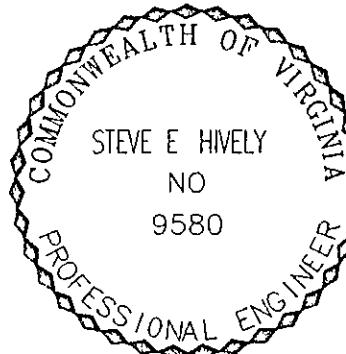
Dewberry & Davis

5238 Valleypointe Parkway, Suite One-B
Roanoke, Virginia 24019
703 362-7725

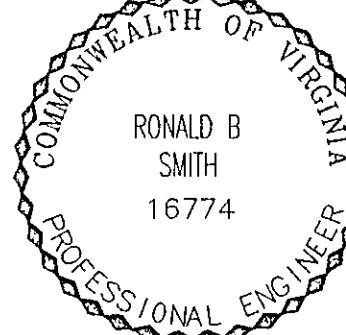
Carvins Cove, Phase II
City of Roanoke
Roanoke, Virginia

CONTRACT "C2"
DETAILS

AS BUILT



ENGINEER'S SEAL



ENGINEER'S SEAL

Drawn By	ACF
Designed By	RBS
Checked By	SEH
Date	MARCH 93
Scale	AS SHOWN
Plan Number	C2DTRWL1
Zoned	NONE
Sheet	23 of 25
File Number	C1160