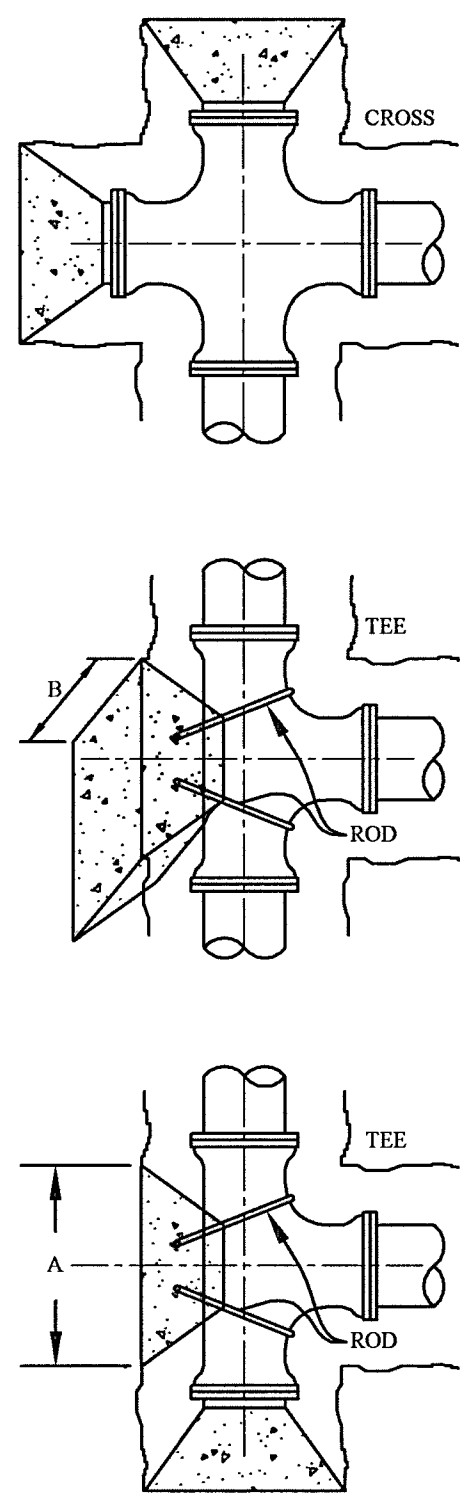


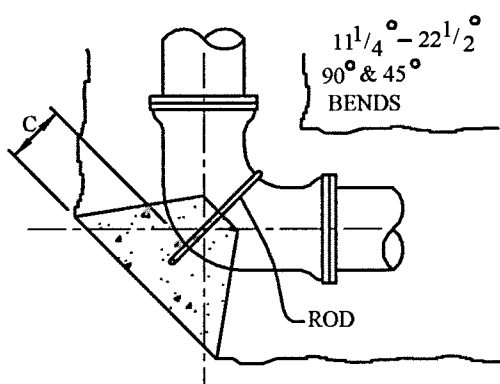
FORCE MAIN INSTALLATION
NO SCALE



HORIZONTAL THRUST BLOCK FOR HORIZONTAL ALIGNMENT
NO SCALE

BEND		TABLE A SIZE					
		4"x 6"	6"	8"	10"	12"	16"
TEE OR PLUG	A	1'-8"	3'-2"	3'-6"	4'-2"	5'-5"	
	B	1'-2"	1'-4"	1'-6"	1'-0"	2'-6"	
	C	8"	9"	10"	1'-10"	1'-2"	
11 1/4"	A	6"	7"	8"	8"	1'-3"	
	B	1'-2"	1'-4"	1'-6"	1'-8"	2'-0"	
	C	7"	8"	8"	8"	9"	
22 1/2"	A	8"	1'-4"	1'-5"	1'-10"	2'-8"	
	B	1'-2"	1'-4"	1'-6"	1'-8"	2'-0"	
	C	8"	9"	10"	11"	1'-2"	
45°	A	1'-3"	2'-3"	2'-8"	3'-2"	4'-1"	
	B	1'-2"	1'-4"	1'-6"	1'-10"	2'-6"	
	C	8"	9"	10"	11"	1'-2"	
90°	A	2'-3"	3'-7"	3'-0"	3'-10"	7'-7"	
	B	1'-2"	1'-4"	1'-6"	1'-10"	2'-6"	
	C	8"	9"	10"	1'-0"	1'-2"	

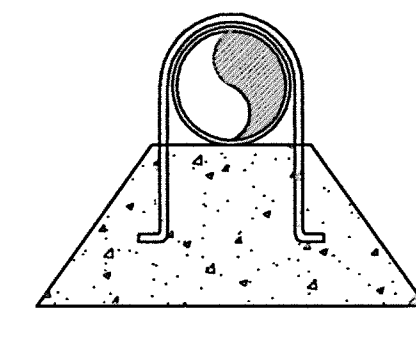
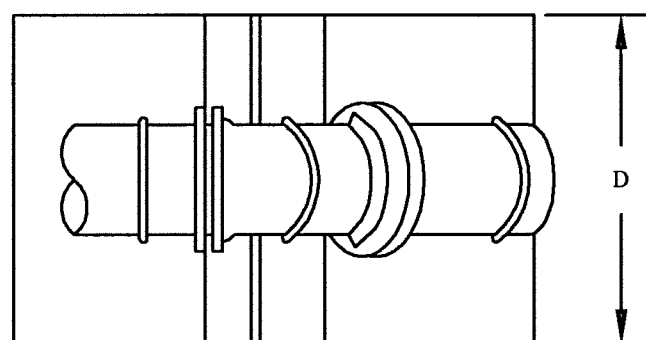
- NOTES:
1. ALL B&C DIMENSIONS TO BE AS REQUIRED TO REACH UNDISTURBED EARTH BUT NOT LESS THAN LISTED ON THRUST BLOCK TABLE.
 2. CAST-IN-PLACE CONCRETE SHALL BE IN ACCORDANCE WITH THE PCI TYPE 1 PORTLAND CEMENT 3,000 PSI.
 3. DIMENSIONS A, B, C, APPLY TO ALL BEND CONDITIONS SHOWN.
 4. INSTALL PLUGS AT ALL RUNS OR BRANCHES DISCONTINUED FOR FUTURE SERVICES.
 5. ALL BENDS, TEES, PLUGS, FITTINGS OR OTHER SIGNIFICANT CHANGES SHALL BE BRACED WITH POURED CONCRETE THRUST BLOCK AS SHOWN ON THIS DETAIL.
 6. ALL PLUGS SHALL BE SEPARATED FROM THE CONCRETE THRUST BLOCK BY A 5 MIL LAYER OF PLASTIC SHEETING.



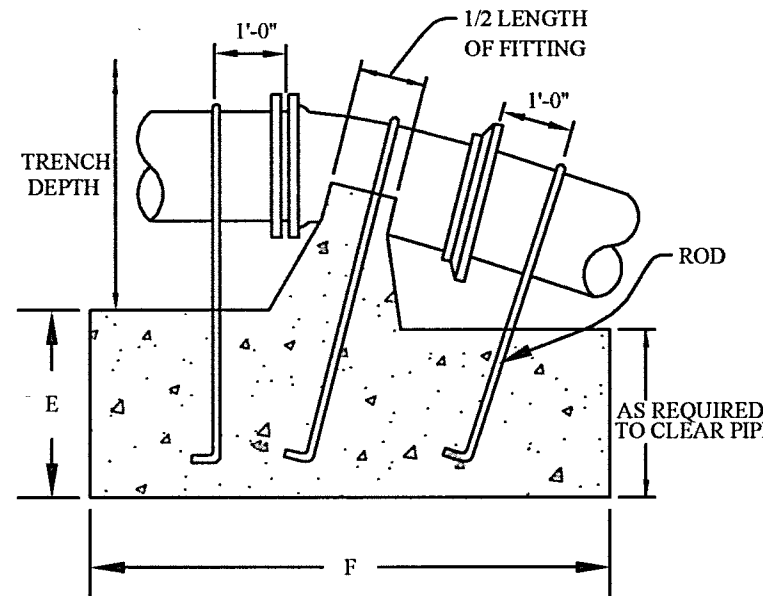
BEND		SIZE			
		4"x 6"	6"	8"	10"
11 1/4"	D	1'-6"	1'-9"	2'-0"	3'-0"
	E	1'-3"	1'-6"	1'-9"	2'-0"
	F	2'-0"	2'-6"	2'-9"	3'-0"
22 1/2"	D	2'-0"	3'-4"	3'-8"	4'-0"
	E	1'-9"	2'-3"	2'-6"	2'-6"
	F	2'-6"	2'-8"	3'-10"	4'-0"
45°	D	2'-6"	3'-0"	4'-0"	4'-6"
	E	2'-6"	2'-9"	3'-0"	3'-6"
	F	3'-0"	4'-0"	4'-6"	4'-9"

PIPE SIZE	ROD SIZE (IN)			NO. REQD.
	45°	22 1/2°	11 1/4°	
4"x 6"	1/2	1/2	1/2	3
8"	1/2	1/2	1/2	3
10"	3/4	3/4	3/4	3
12"	3/4	3/4	3/4	3
16"	3/4	3/4	3/4	3

THIS TABLE APPLIES TO VERTICAL & HORIZONTAL THRUST BLOCKS.

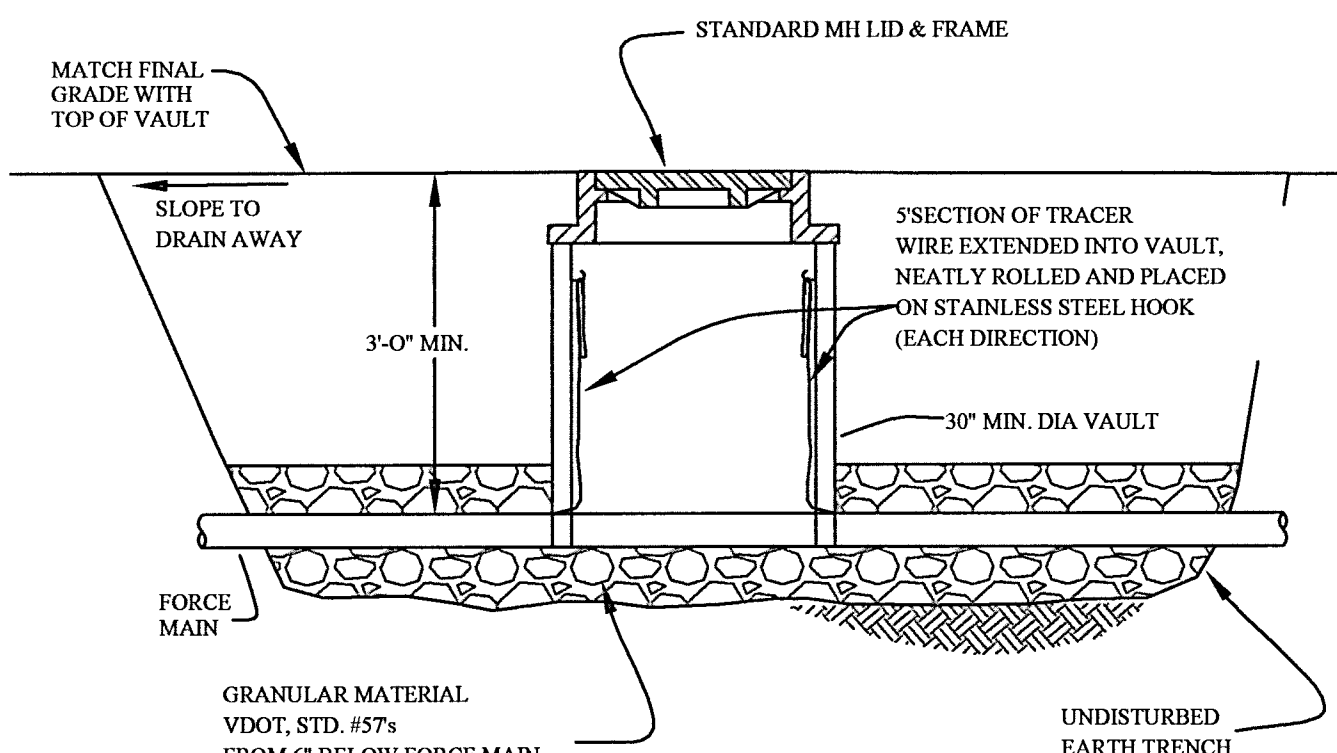


ROD DETAIL

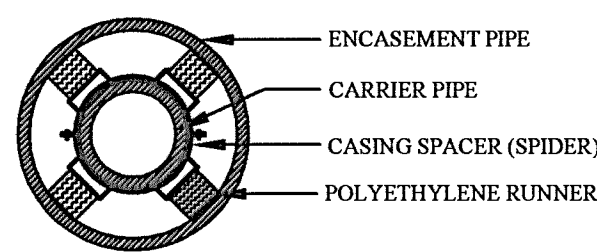


- NOTES:
1. ALL POURED CONCRETE SHALL BE PLACED ON UNDISTURBED EARTH AFTER EXCAVATION ACCORDING TO DIMENSIONS INDICATED ON THRUST BLOCK DIMENSION TABLE OR IT SHALL BE PLACED THE FULL WIDTH OF TRENCH FROM UNDISTURBED WALL BUT NOT LESS THAN LISTED ON THRUST BLOCK TABLE.
 2. CAST IN PLACE CONCRETE SHALL BE IN ACCORDANCE WITH THE PCI TYPE 1 PORTLAND CEMENT, 3,000 PSI.
 3. ALL RODS TO BE 316 OR 304 STAINLESS STEEL.

VERTICAL THRUST BLOCK FOR VERTICAL ALIGNMENT
NO SCALE



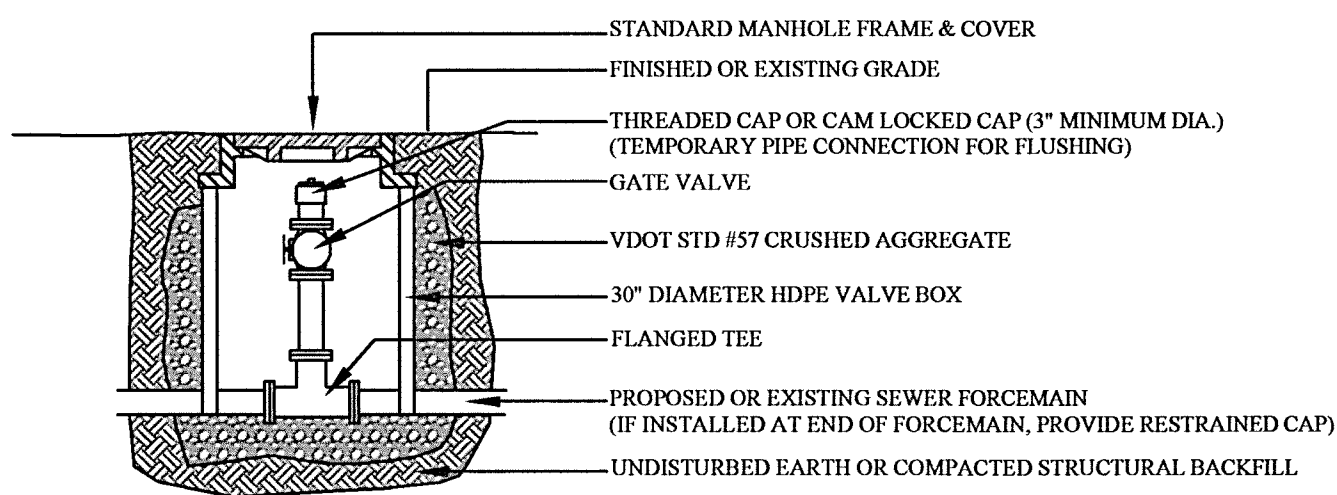
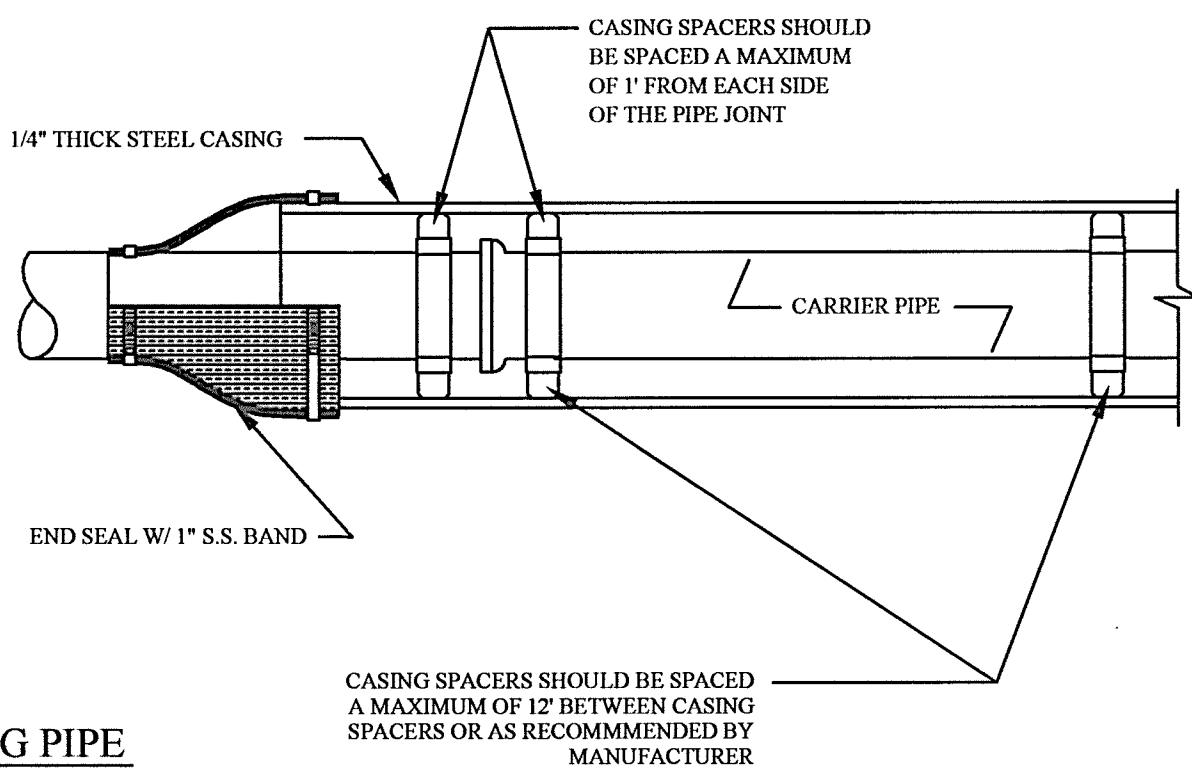
TRACER WIRE ACCESS VAULT
NO SCALE



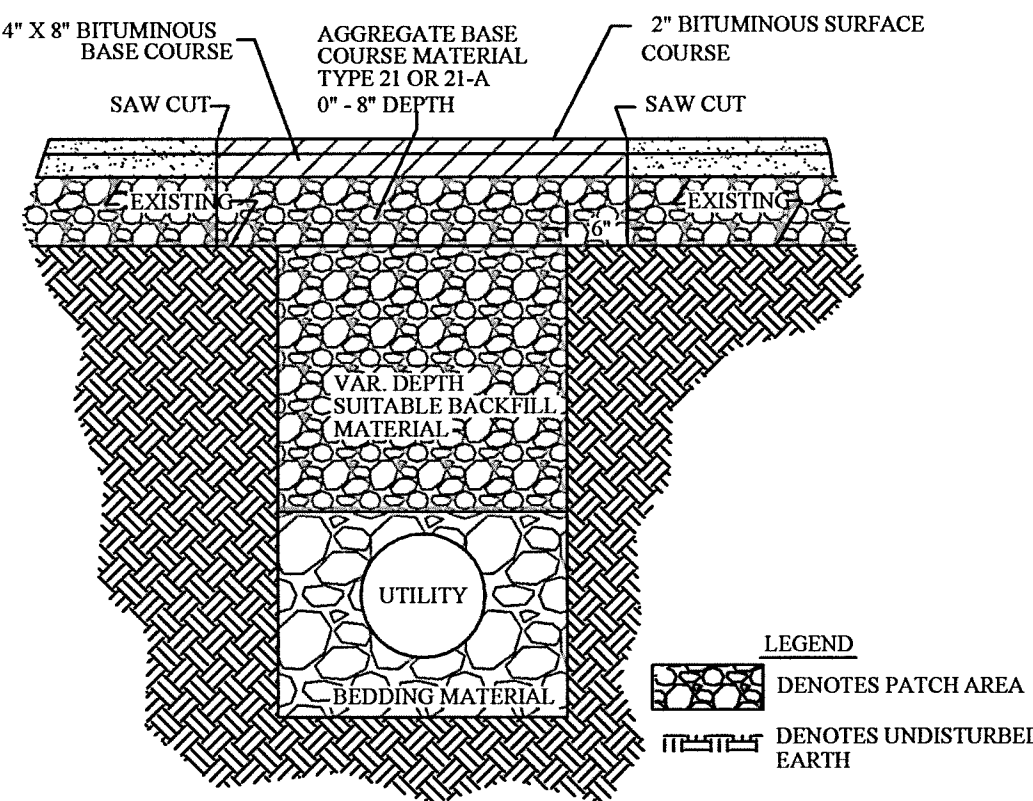
ALTERNATE PIPE SUPPORT IN CASING PIPE:
18" LONG TREATED TIMBER SKIDS OF APPROPRIATE WIDTH SUCH THAT BELLS OR FLANGES DO NOT REST ON CASING WITH MORE THAN 3/4" FREE PLAY. SKIDS TO BE PLACED AT 4'-0" O.C. AND SECURED WITH 2"x 1/4" GALV. STEEL STRAPS OR 1" S.S. BANDS. SOAP-BASED LUBRICANT MAY BE USED FOR SLIDING OF SKID WITH DUCTILE IRON PIPE AND FLAX-BASED LUBRICANT MAY BE USED FOR SLIDING OF SKID WITH PVC PIPE.

- NOTE:
1. A 1" DRAIN WILL BE REQUIRED ON THE LOWER END OF THE CASING IF THE CASING ENDS ARE SEALED WITH MORTAR AND BRICK.
 2. ALL STEEL ENCASEMENT PIPES WITHIN THE VDOT RIGHT OF WAY MUST BE IN ACCORDANCE WITH 2001 VDOT ROAD AND BRIDGE STANDARDS. CONCRETE AND STEEL ENCASEMENT PIPE (STD. 1404.1)

PIPE SUPPORT IN CASING PIPE
NO SCALE

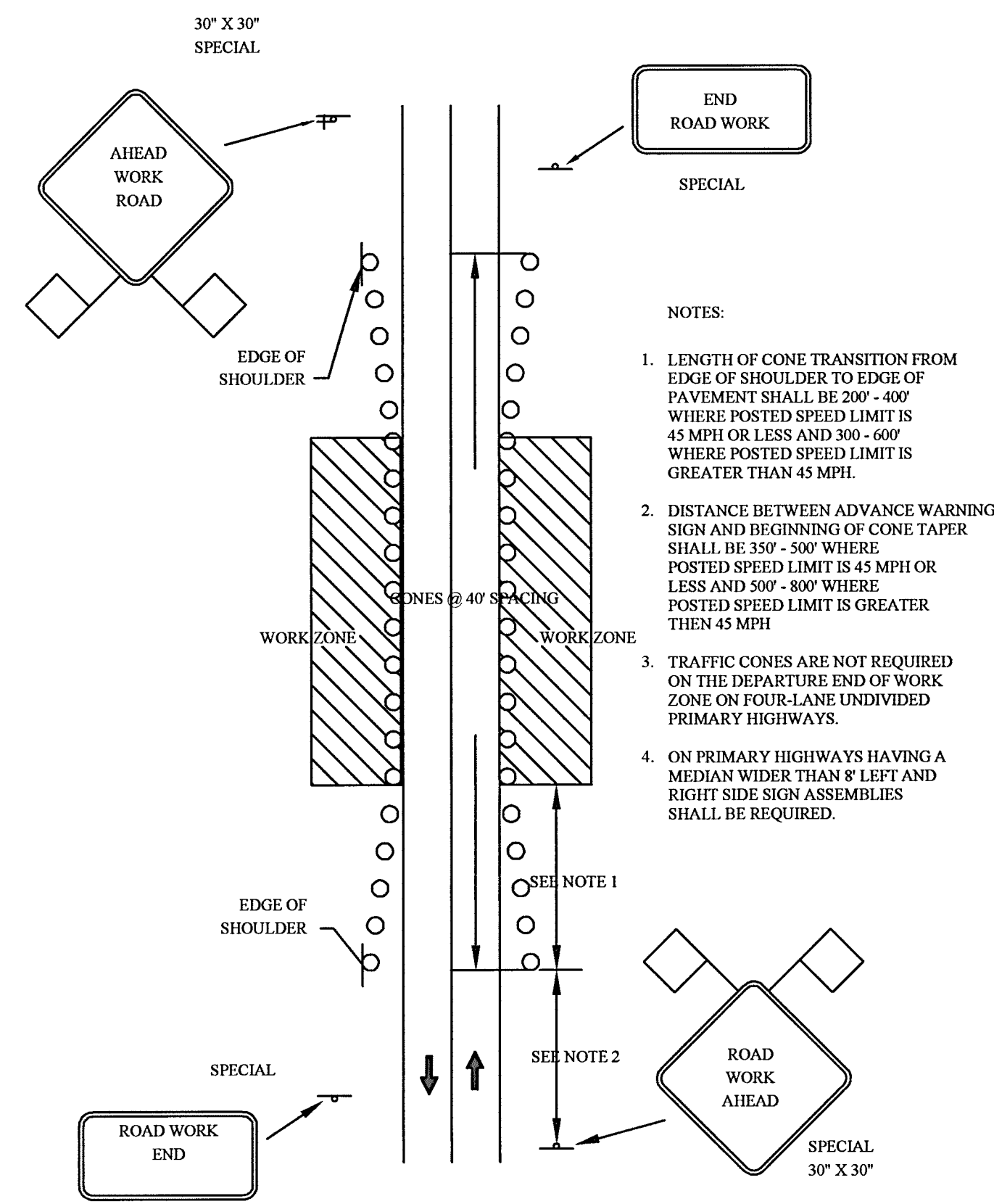


Sewer Forcemain Flushing Station
NTS

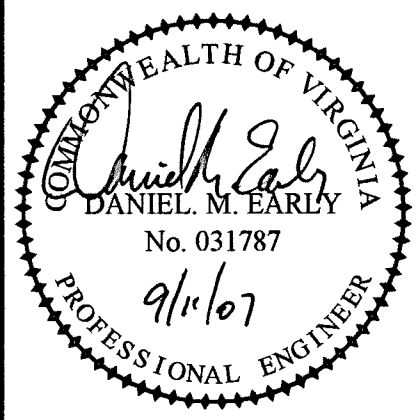


- NOTES:
1. SURFACE AND BASE REPLACEMENT WILL GENERALLY BE REQUIRED TO MATCH EXISTING ASPHALT LAYERS AND SHALL BE COMPACTED IN LIFTS ACCORDING TO VIRGINIA DEPARTMENT OF TRANSPORTATION ROAD AND BRIDGE SPECIFICATIONS.
 2. AGGREGATE BASE MATERIAL SHALL BE REPLACED TO A DEPTH GREATER THAN EXISTING STONE BASE TO ENSURE LOAD BEARING CAPACITY OF CUT RELATED TO UNDISTURBED EARTH AREAS. AGGREGATE BASE SHALL BE COMPACTED ACCORDING TO VIRGINIA DEPARTMENT OF TRANSPORTATION ROAD AND BRIDGE SPECIFICATIONS.
 3. BEDDING MATERIAL SHALL BE ACCORDING TO REQUIREMENT OF EACH UTILITY (GENERALLY FROM BOTTOM OF REPAIR DITCH TO SIX INCHES ABOVE PIPE WITH MINIMUM OF FOUR INCHES BELOW PIPE).
 4. SAW CUT TO BE MADE WITH MECHANICAL SAW AND SIDES TO BE TACKED WITH BITUMINOUS MATERIAL TYPE RC-250 OR EQUAL.

PAVEMENT CUTTING & REPLACEMENT
NO SCALE



TYPICAL TRAFFIC CONTROL WORK BETWEEN PAVEMENT AND DITCH LINE ON PRIMARY HIGHWAYS
NO SCALE



ACS DESIGN

ENGINEERING • SURVEYING
LANDSCAPE ARCHITECTURE
CONSTRUCTION MANAGEMENT

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**WESTLAKE VILLAGE
CENTRAL SEWER SYSTEM
FRANKLIN COUNTY, VIRGINIA**

DRAWN BY: CEK
DESIGNED BY: CEK
CHECKED BY: DME
DATE: 15 JUNE 2007
JOB NUMBER: 06145

REVISIONS:	
No. 1	
No. 2	
No. 3	
No. 4	

SHEET NO.:
C3.5

FORCEMAIN
DETAILS