

**FORCE MAIN INSTALLATION**  
NTS

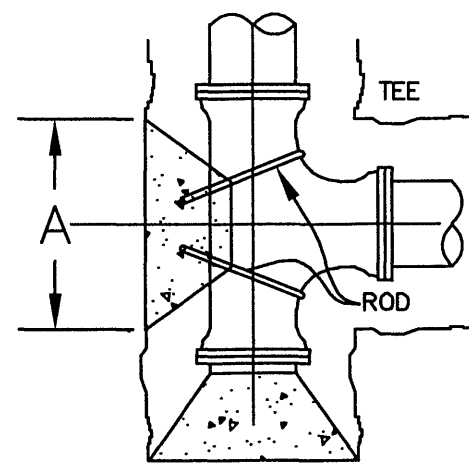
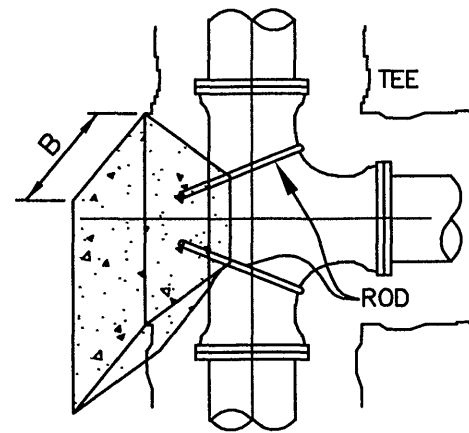
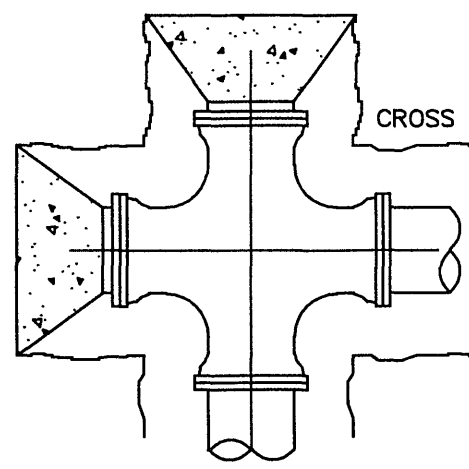
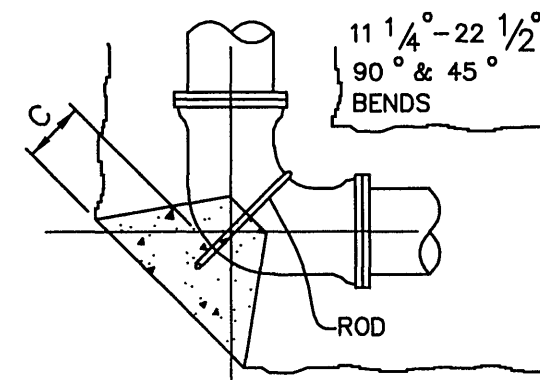


TABLE A

BEND	SIZE				
	4" & 6"	8"	10"	12"	16"
45°	A 1'-8"	3'-2"	3'-6"	4'-2"	5'-0"
	B 1'-2"	1'-4"	1'-6"	1'-10"	2'-6"
	C 8"	9"	10"	1'-10"	1'-2"
90°	A 6"	7"	8"	8"	1'-3"
	B 1'-2"	1'-4"	1'-6"	1'-8"	2'-0"
	C 7"	8"	9"	10"	1'-2"
111 1/4°	A 8"	9"	10"	11"	1'-2"
	B 1'-2"	1'-4"	1'-6"	1'-8"	2'-0"
	C 8"	9"	10"	11"	1'-2"
22 1/2°	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"
45°	A 2'-3"	3'-7"	5'-0"	6'-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.



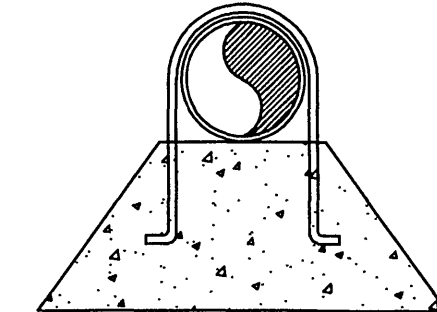
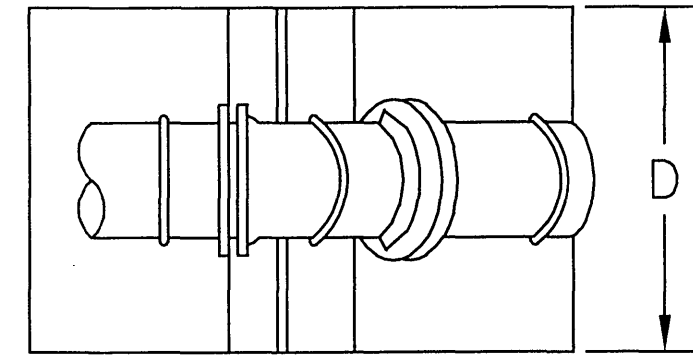
**FOR HORIZONTAL ALIGNMENT**

**HORIZONTAL THRUST BLOCK**  
NTS

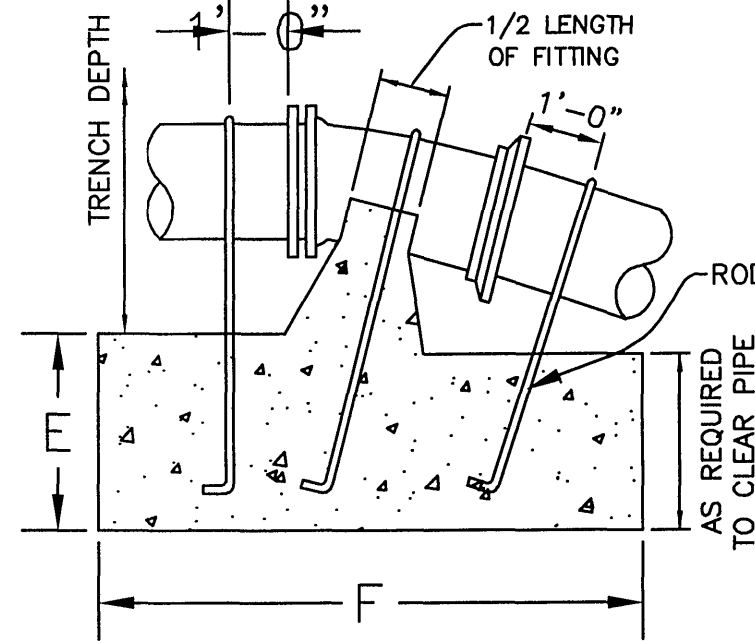
BEND	SIZE			
	4" & 6"	8"	10"	12"
45°	D 1'-6"	1'-9"	2'-0"	3'-0"
	E 1'-3"	1'-6"	1'-9"	2'-0"
	F 2'-0"	2'-6"	2'-9"	3'-0"
90°	D 2'-0"	3'-4"	3'-8"	4'-0"
	E 1'-9"	2'-3"	2'-6"	2'-6"
	F 2'-6"	2'-8"	3'-10"	4'-0"
111 1/4°	D 2'-6"	2'-8"	3'-10"	4'-0"
	E 2'-6"	3'-0"	3'-0"	4'-6"
	F 3'-0"	4'-0"	4'-6"	6'-6"

PIPE SIZE	ROD SIZE (IN)			NO. REQ'D.
	45°	22 1/2°	11 1/4°	
4" & 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.

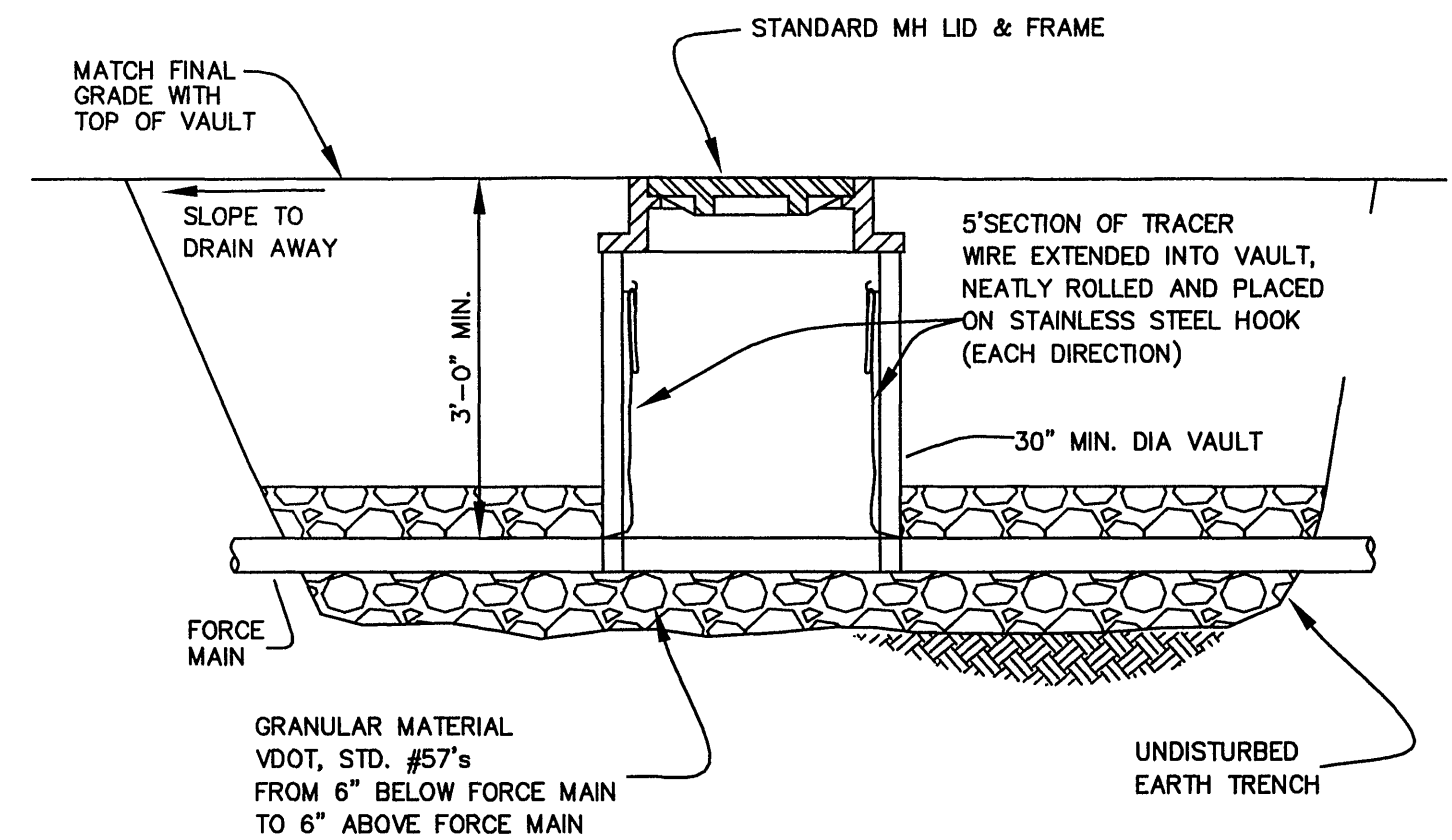


- NOTES:
1. ALL POURED CONCRETE SHALL BE LAID ON UNDISTURBED EARTH AFTER EXCAVATION ACCORDING TO DIMENSIONS INDICATED ON THRUST BLOCK DIMENSION TABLE OR IT SHALL BE LAID THE FULL WIDTH OF TRENCH FROM UNDISTURBED WALL, BUT NOT LESS THAN LISTED ON THRUST BLOCK TABLE.
  2. CAST IN PLACE CONCRETE SHALL BE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

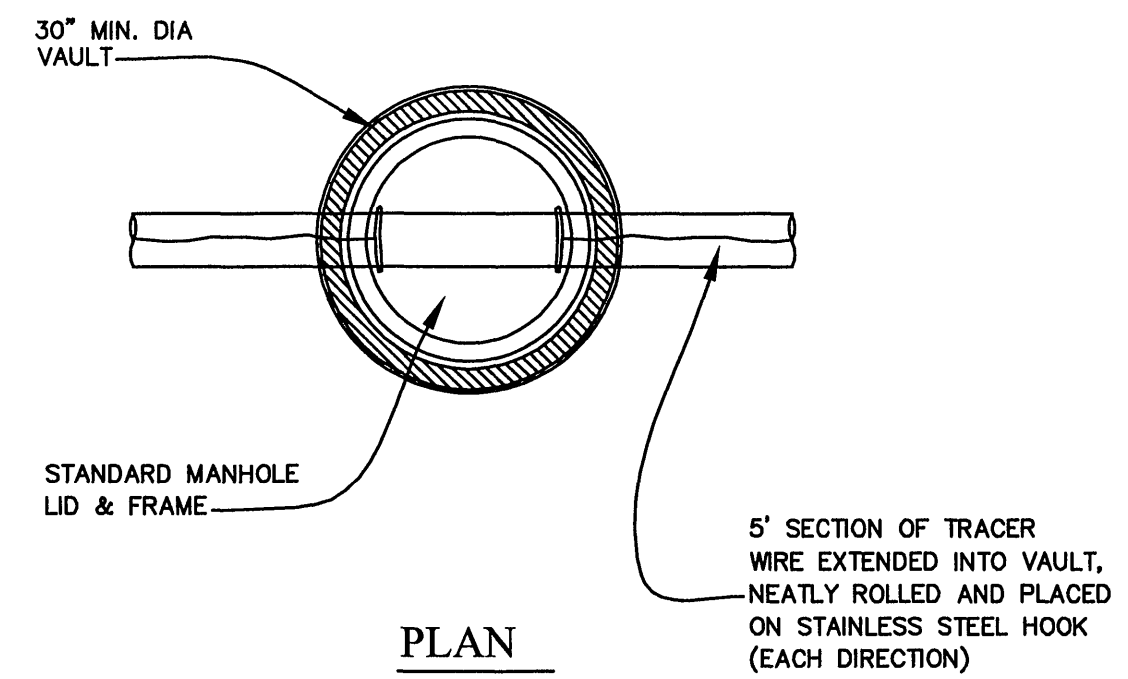


**FOR VERTICAL ALIGNMENT**

**VERTICAL THRUST BLOCK**  
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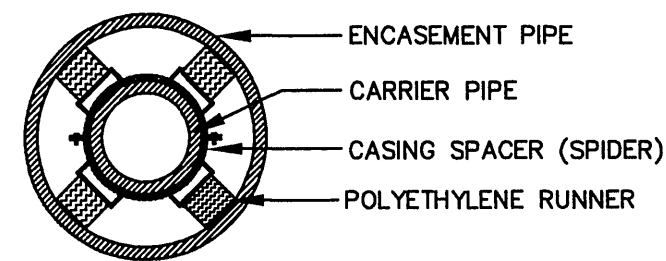


**SECTION**



**PLAN**

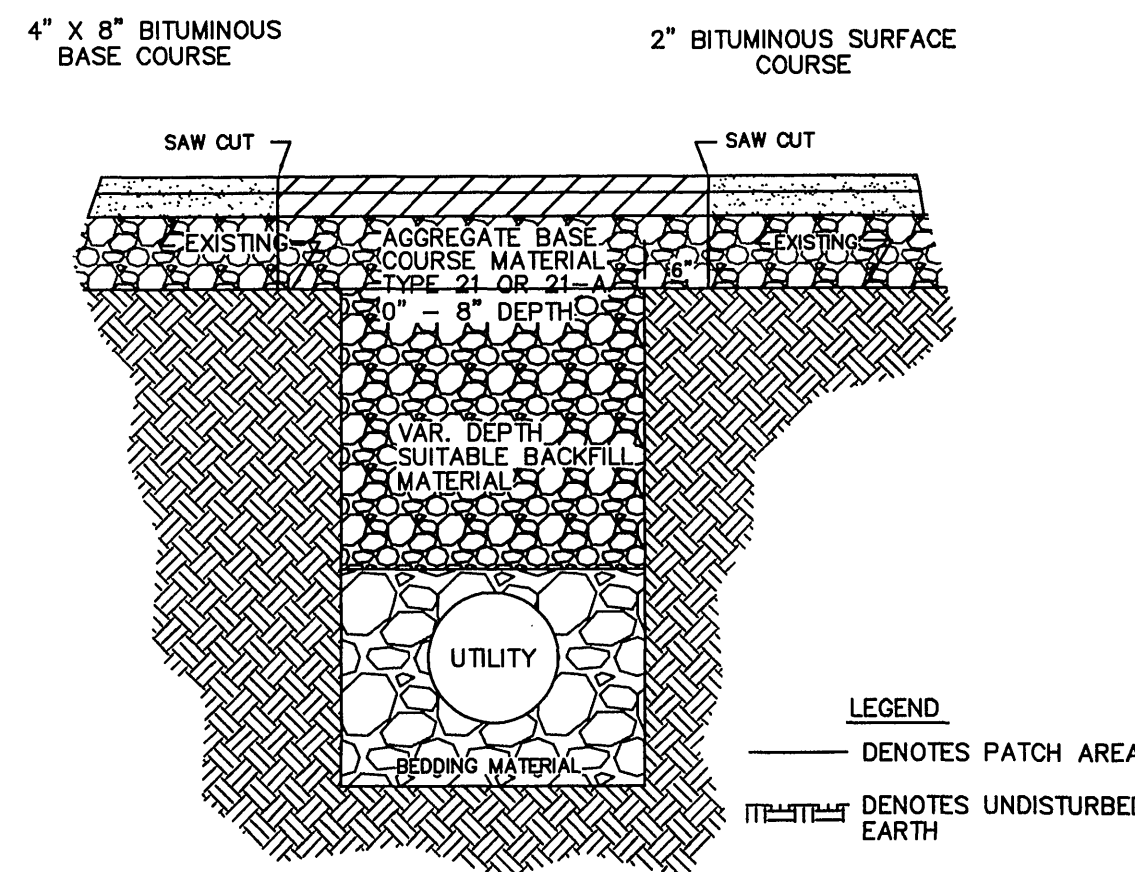
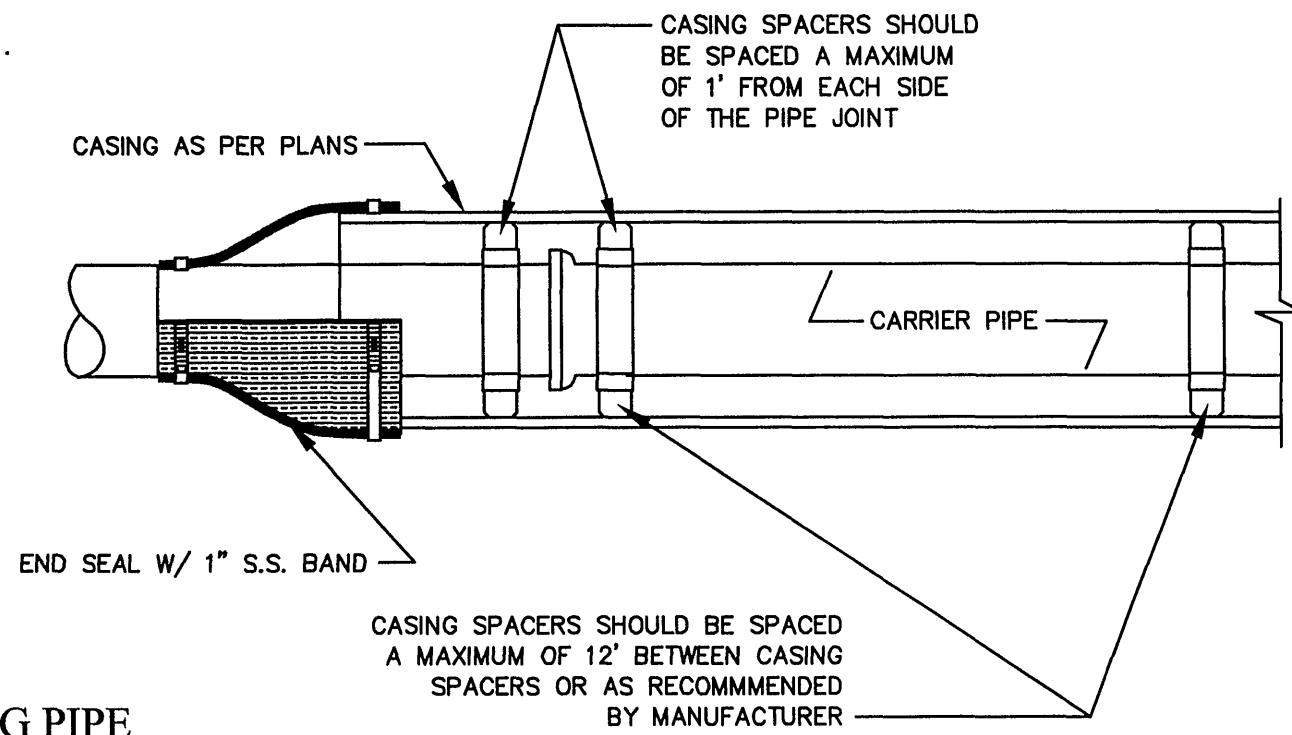
**TRACER WIRE ACCESS VAULT**  
NTS



ALTERNATE PIPE SUPPORT IN CASING PIPE:  
18" LONG TREATED TIMBER SKIDS OF APPROPRIATE WIDTH SO 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.

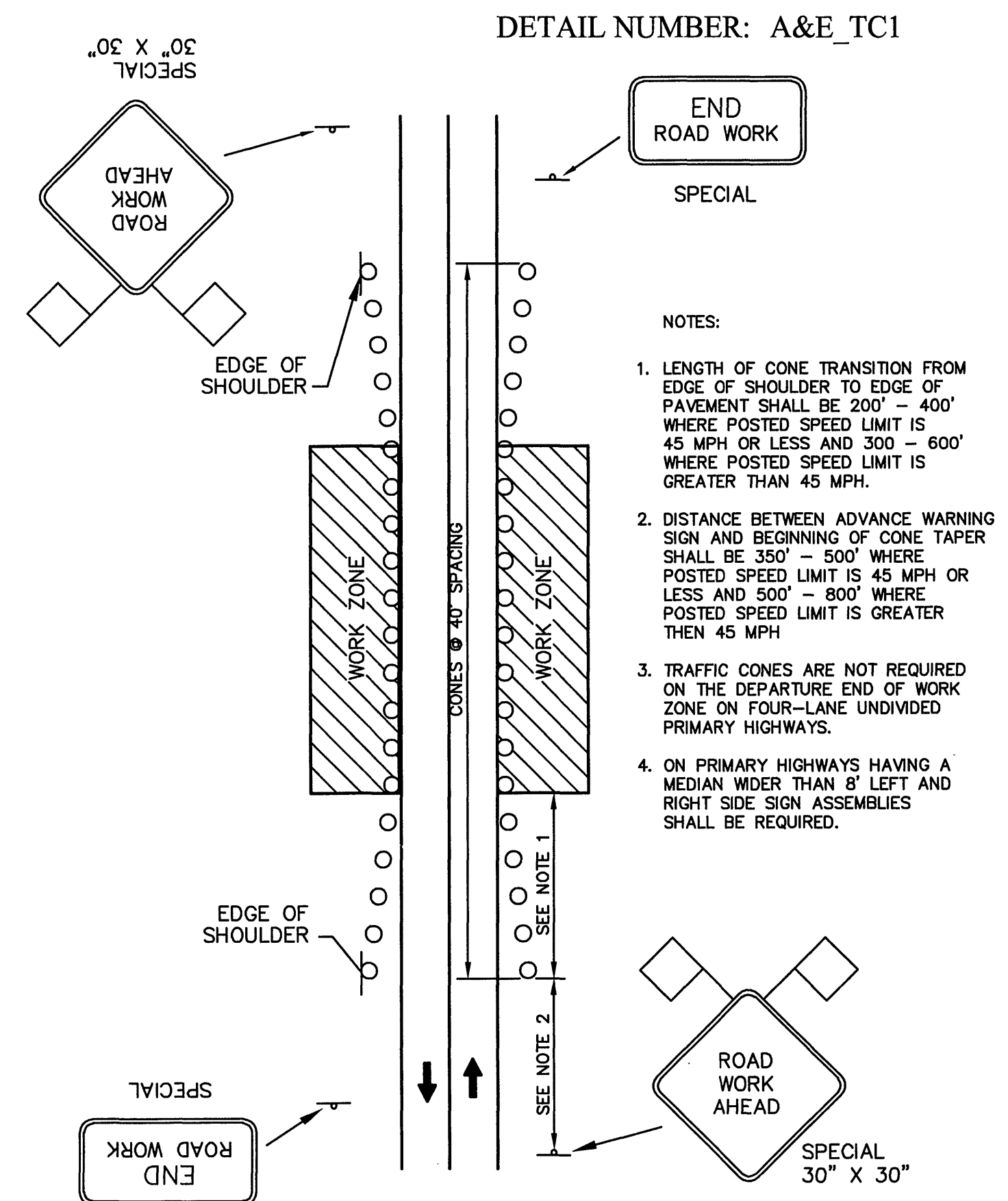
NOTE: A 1" DRAIN WILL BE REQUIRED ON THE LOWER END OF THE CASING IF THE CASING ENDS ARE SEALED WITH MORTAR AND BRICK.

**PIPE SUPPORT IN CASING PIPE**  
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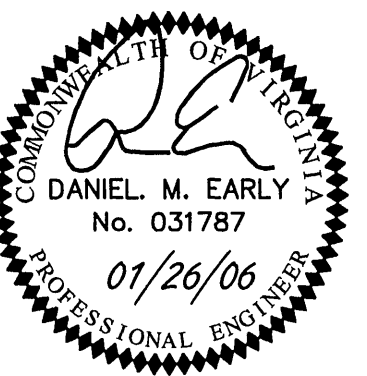


- NOTES:
1. SURFACE AND BASE REPLACEMENT WILL GENERALLY BE REQUIRED TO MATCH EXISTING ASPHALT LAYERS AND SHALL BE COMPACTED IN LIFTS ACCORDING TO VIRGINIA DEPARTMENT OF TRANSPORTATION ROAD AND BRIDGE SPECIFICATIONS.
  2. AGGREGATE BASE MATERIAL SHALL BE REPLACED TO A DEPTH GREATER THAN EXISTING STONE 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**  
NTS



TYPICAL TRAFFIC CONTROL WORK BETWEEN PAVEMENT AND DITCH LINE ON PRIMARY HIGHWAYS (NON-LIMITED ACCESS) - NTS



**ACS DESIGN**

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**LAKEWATCH PLANTATION  
COMMUNITY SEWER SYSTEM  
PHASE 1  
FRANKLIN COUNTY, VIRGINIA**

DRAWN BY: AH

DESIGNED BY: CEK

CHECKED BY: DME

DATE: JAN. 26, 2006

SCALE: NTS

REVISIONS

DATE	REVISION	COMMENT

SHEET No.

**C1.24**

STANDARD DETAILS

JOB No. 05076