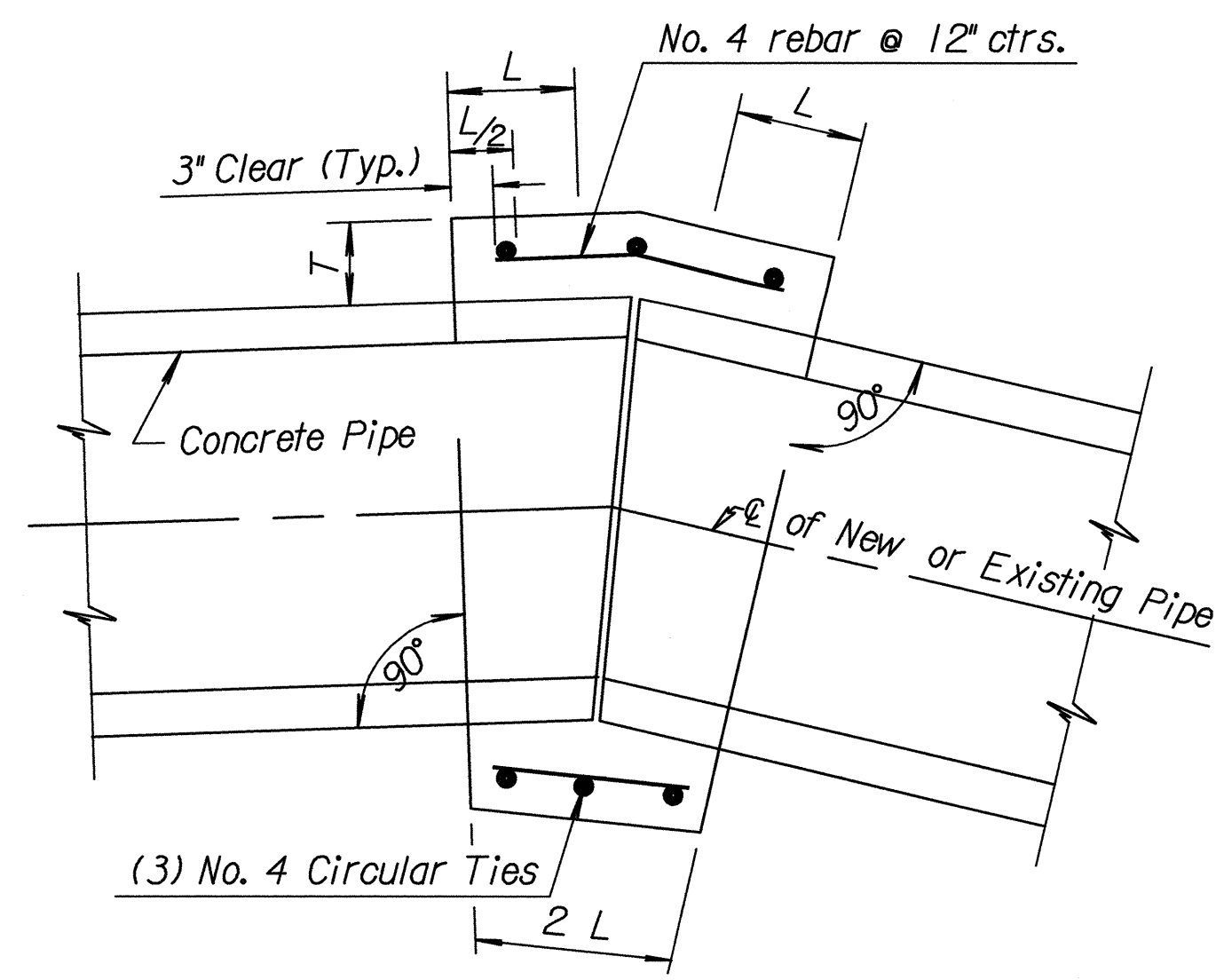
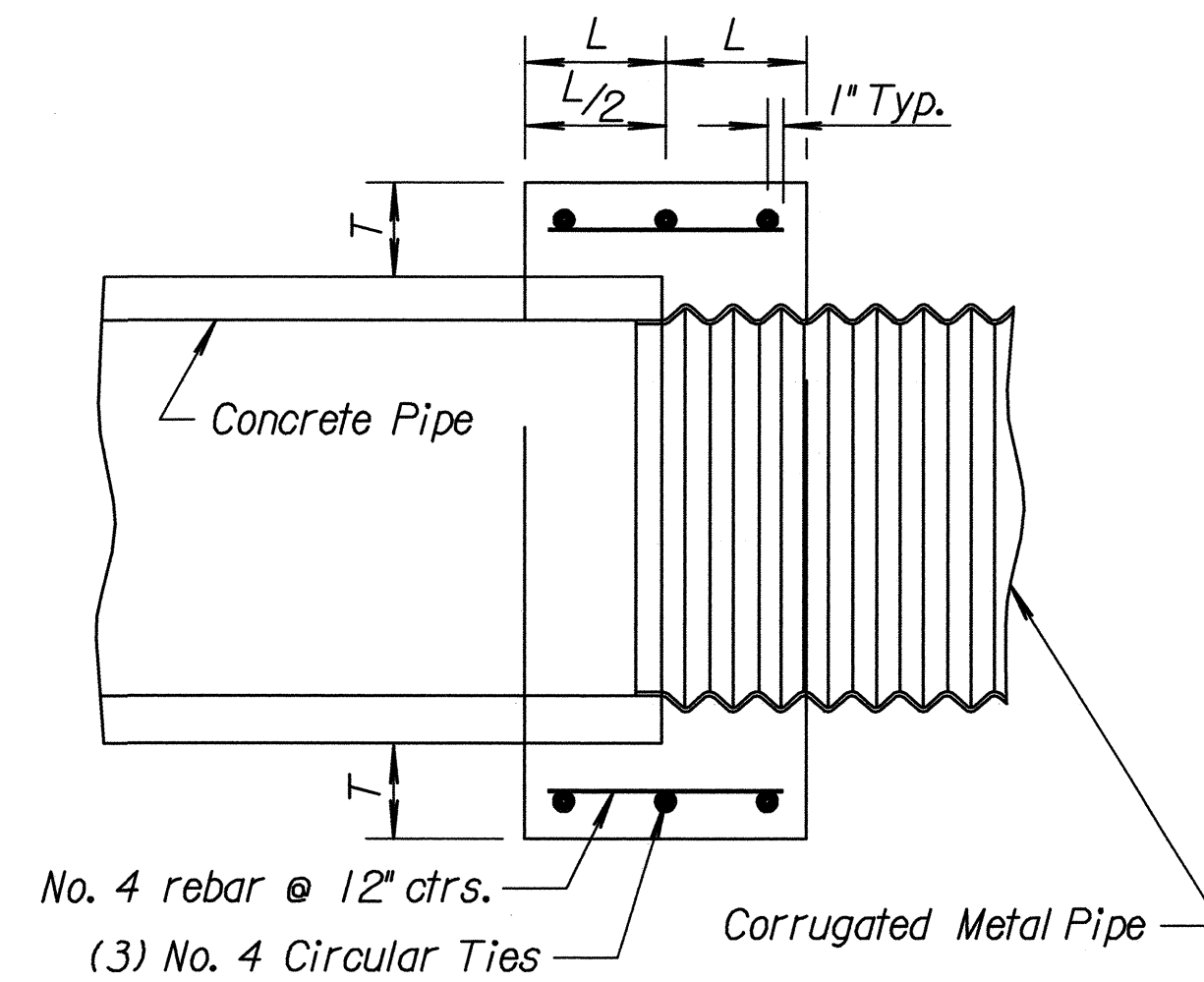


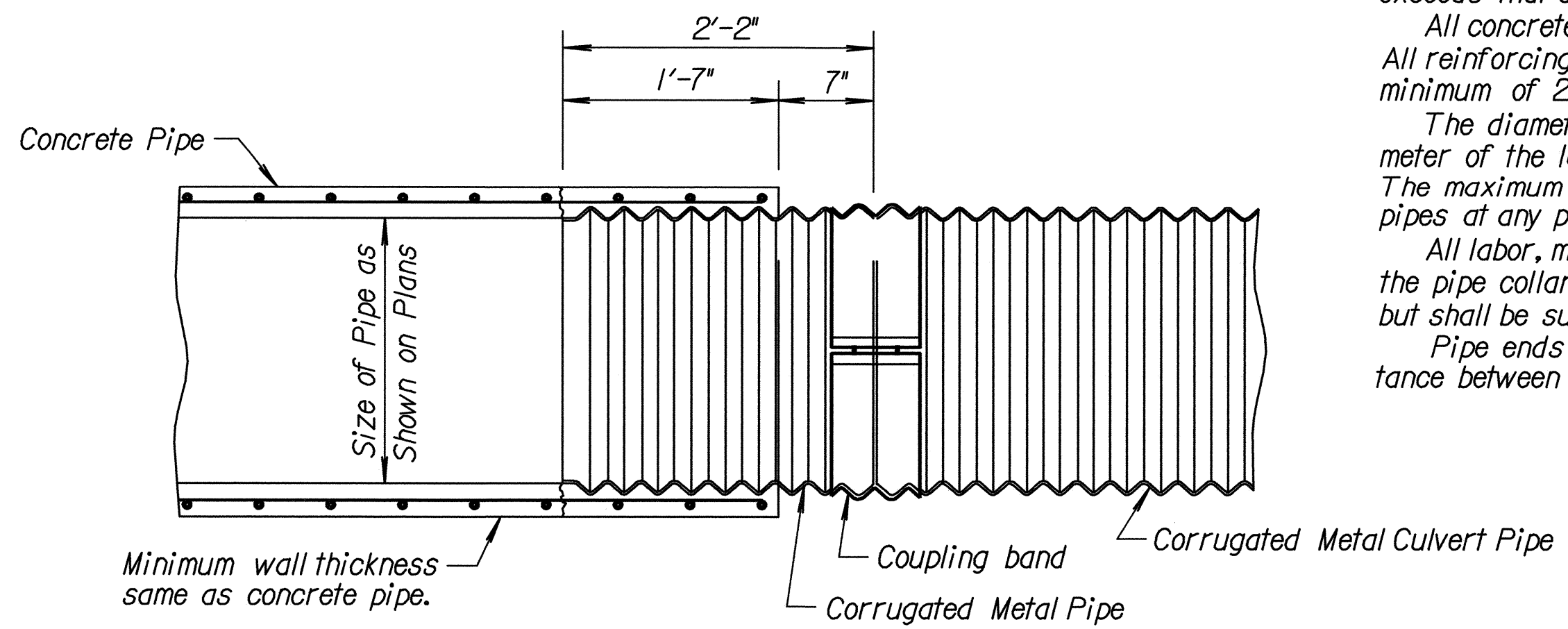
**General Notes:**  
 Pipe collar shall be used to join pipes of different diameters or materials or where change in alignment or grade exceeds that allowed for ordinary joints.  
 All concrete shall be Concrete Grade 3.0.  
 All reinforcing steel shall be Grade 60 and shall have a minimum of 2" of cover.  
 The diameter of the circular ties shall be the outside diameter of the larger pipe plus "T".  
 The maximum allowable distance between the ends of the pipes at any point is 2".  
 All labor, materials and incidentals required to construct the pipe collar Type A, B or C shall not be paid for directly but shall be subsidiary to the individual pipe bid items.  
 Pipe ends shall be trimmed such that the maximum distance between pipes at any point is 2".



PIPE COLLAR AT CHANGE IN ALIGNMENT  
 TYPE A COLLAR



PIPE COLLAR AT CHANGE IN PIPE MATERIAL  
 TYPE B COLLAR

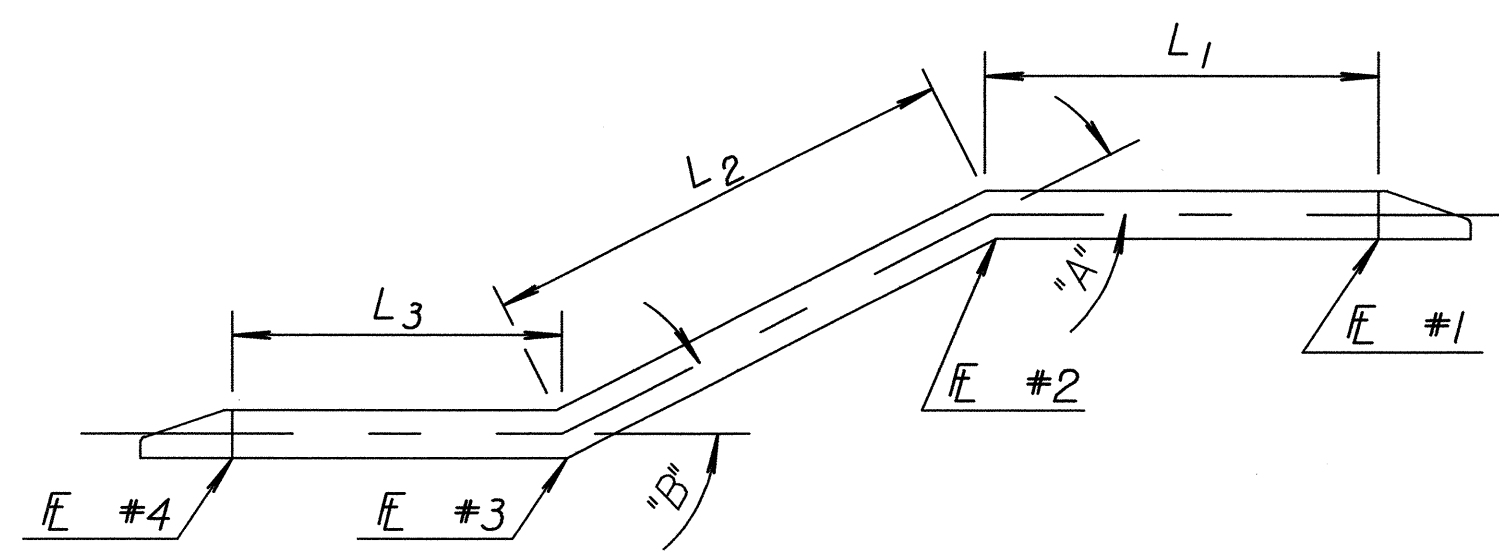


(CONCRETE PIPE CONNECTED TO CORRUGATED METAL PIPE)  
 TYPE C COLLAR ▲

▲ A section of concrete pipe (6'-0" min.) is cast 1'-7" short with the re-steel protruding. Tack weld the re-steel to the 2'-2" section of CMP and finish casting the remaining 1'-7" of RCP around the CMP. This is an approved connection provided it is fabricated as an integral part of a section of concrete pipe.

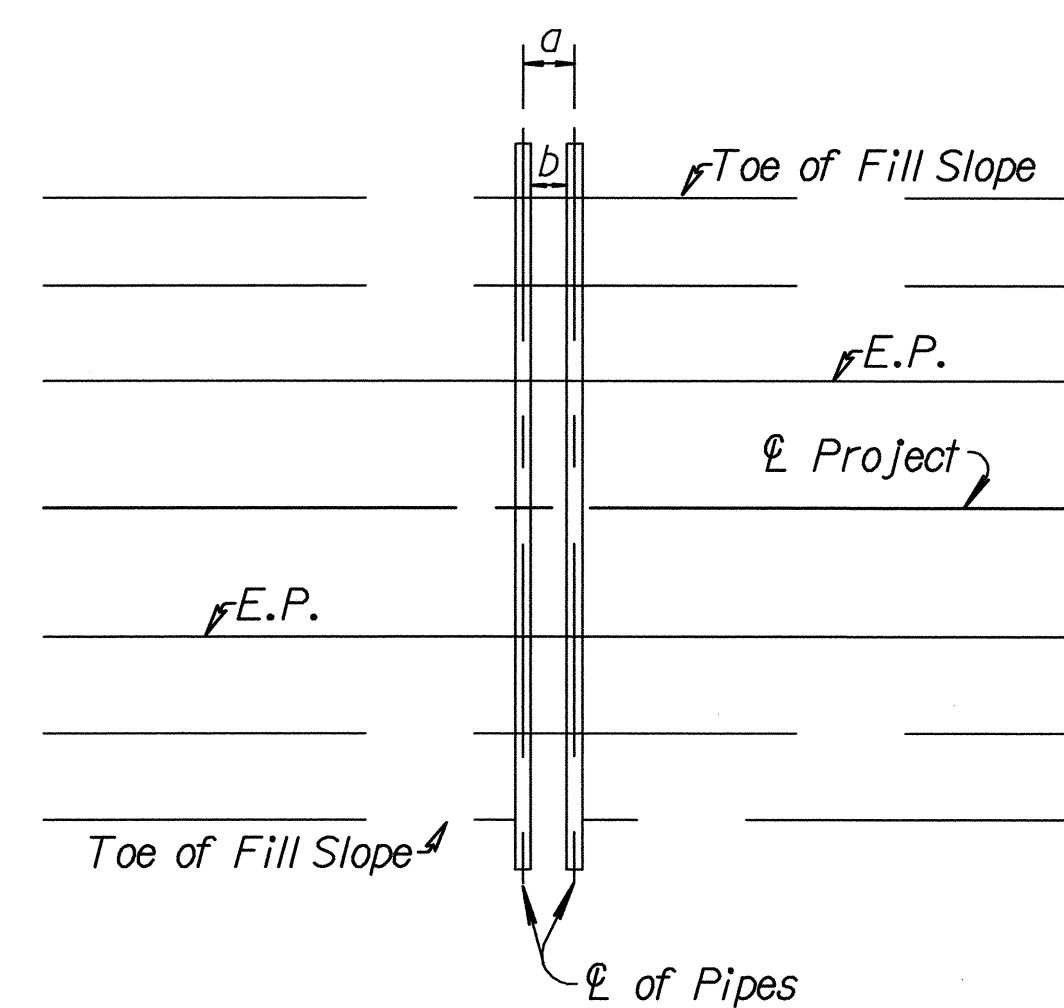
Pipe Dia.	L	T
18"	1'-0"	6"
24"	1'-0"	6"
36"	1'-6"	8"
48"	1'-6"	10"
60"	1'-9"	11"

PIPE COLLARS



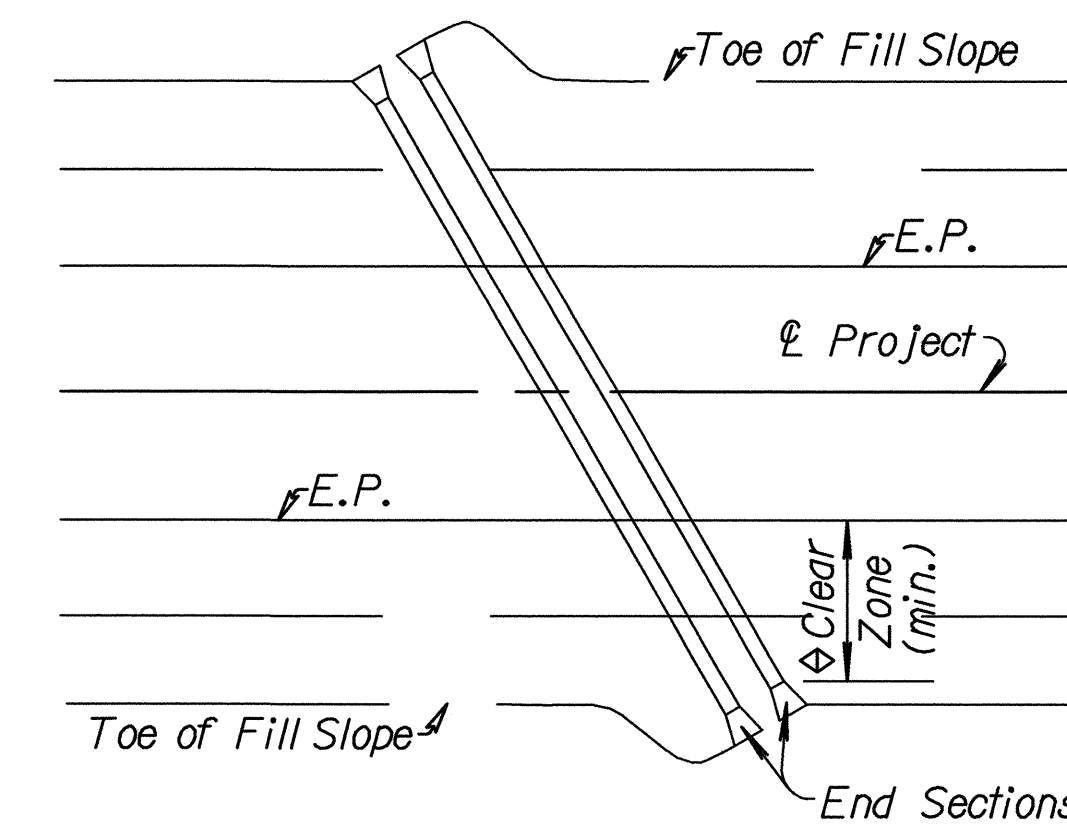
Sketch Along L<sup>c</sup>CRP (CMP)  
 Broken-Back

STATION	SIZE	FLOW LINES				LENGTH			ANGLES		REMARKS
		#1	#2	#3	#4	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	A	B	



a = Face width of end section \* + 1'.  
 \* Face width is equal to the following dimension shown on the end section std. drawing.  
 Type I Concrete = D  
 Type III Concrete = I  
 Type I CM = W + 2A  
 Type III CM = G  
 Type IV = W + 2A  
 b = Pipe diameter or span (3' min.)  
 Spacing shall be equal to the larger of dimensions a or b.  
 Spacing for three or more pipes shall be determined using a similar method.

MULTIPLE PIPE SPACING



PLACEMENT OF ROTATED PIPES  
 RELATIVE TO FILL SLOPE  
 AND CLEAR ZONE

◇ Pipe culverts 2'-0" or less in height may terminate within the clear zone with Type I or Type III End Section. Any size pipe may terminate within the clear zone with a Type IV End Section.

Drawn By: \$\$\$USERNAME\$\$\$ Plotted: \$\$\$SYTIME\$\$\$  
 File: \$\$\$DGN\$\$\$SPEC\$

NO.	DATE	REVISIONS	BY	APP'D
3	1-28-05	Changed Class to Grade concrete	S.W.K.	J.O.B.
2	8-12-04	Revised dimension	S.W.K.	J.O.B.
1	1-20-04	Added Type C Collar	S.W.K.	J.O.B.

KANSAS DEPARTMENT OF TRANSPORTATION

**MISCELLANEOUS  
 PIPE CULVERT DETAILS**

**RD668**

DESIGNED	6-10-05	APP'D. James O. Brewer
DESIGN CK.	DETAIL CK.	QUAN. CK. TRACED CK. Seitz