



TYPE 1 APRON								
Dia.	Slope	A	B	Minimum		F	G	T
				C	E			
300	2.4:1	100	610	1240	1850	610	50	50
375	2.4:1	150	685	1170	1855	760	55	55
450	2.3:1	230	685	1170	1855	915	65	65
525	2.4:1	230	900	950	1870	1040	75	75
600	2.5:1	240	1105	760	1870	1220	75	75
675	2.5:1	270	1250	600	1870	1320	90	90
750	2.5:1	305	1370	505	1875	1525	90	90
900	2.5:1	380	1600	840	2440	1830	100	100
1050	2.5:1	535	1600	840	2440	1980	115	115
1200	2.5:1	610	1830	610	2440	2135	125	125
1350	1.8:1	685	1525	915	2440	2285	140	140
1500	1.6:1	750	1525	915	2440	2440	140	150
1650	1.7:1	760	1830	685	2515	2440	140	150
1800	1.6:1	760	1980	535	2515	2745	150	180
1950	1.8:1	915	2285	535	2820	2895	165	190
2100	1.3:1	750	2055	775	2830	3050	165	205

TYPE 2 APRON								
Dia.	Slope	A	B	Minimum		F	G	T
				C	E			
300	2.4:1	100	610	1240	1850	610	50	50
375	2.4:1	150	685	1170	1855	760	55	55
450	2.3:1	230	685	1170	1855	915	65	65
525	2.4:1	230	900	950	1870	1040	75	75
600	2.5:1	240	1105	760	1870	1220	75	75
675	2.5:1	270	1250	600	1870	1320	90	90
750	2.5:1	305	1370	505	1875	1525	90	90
900	2.5:1	380	1600	840	2440	1830	100	100
1050	2.5:1	535	1600	840	2440	1980	115	115
1200	2.5:1	610	1830	610	2440	2135	125	125
1350	1.9:1	620	1650	790	2440	2285	140	140
1500	1.4:1	620	1525	915	2440	2440	140	150
1650	1.7:1	760	1830	685	2515	2440	140	150
1800	1.4:1	610	1980	535	2515	2745	150	180
1950	1.8:1	915	2285	535	2820	2895	165	190
2100	1.5:1	600	2295	535	2830	3050	165	205

Where 75D pipe is used, the barrel portion of the apron shall meet or exceed the requirements for 75D pipe. Where 100D pipe is used, the barrel portion of the apron shall meet or exceed the requirements for 100D pipe.

Reinforcement for the barrel portion of the apron shall be as shown on RF-1.

Dimension 'E' shown is minimum and shall be considered the design length. Any difference between the actual length of concrete apron installed and the length indicated hereon shall be appropriately adjusted for in the length of concrete culvert pipe furnished.

When specified in the contract documents, pipe apron guards shall be installed as shown on RF-26. Pipe apron guards will not be measured separately for payment, but shall be included in the contract unit price for "Concrete Aprons."

① Tongue end used on inlet end section. Groove end used on outlet end section. Dimensions for tongue and groove connections shall be as indicated on RF-1.

Contract Items:  
Apron, Concrete

Tabulation:  
104-3  
104-5C

All dimensions given in millimeters unless noted.

<b>M</b> <b>METRIC VERSION</b>	 Iowa Department of Transportation	REVISION 8   10-16-07
		<b>RF-3</b>
	<b>STANDARD ROAD PLAN</b>	SHEET 1 of 1
	REVISIONS: Cleaned up notes and modified to show the tongue and groove end details. <i>Deanna Mufsh</i> APPROVED BY DESIGN METHODS ENGINEER	
<b>CONCRETE APRONS</b>		