

Comply with AASHTO M 206 for Apron Reinforcement.

Dimension "E" shown is minimum and is considered the design length. Appropriately adjust for any difference between the actual length of concrete apron installed and the length indicated hereon for the length of concrete culvert pipe furnished.

Install connected pipe joints as shown on RF-14.

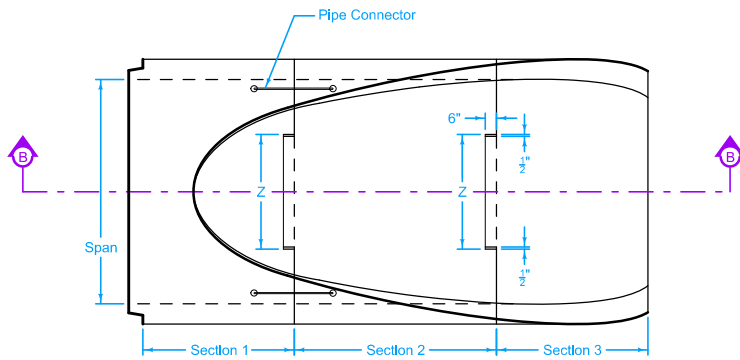
① Tongue end on inlet end section. Groove end on outlet end section. (Inlet end section shown.)

Possible Contract Item:  
Low Clearance Concrete Pipe Aprons

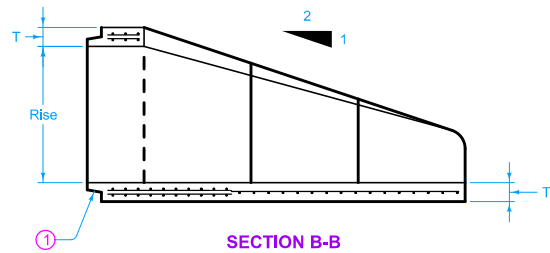
Possible Tabulations:  
104-3  
104-4

NOMINAL DIMENSIONS SPAN X RISE Inches	EQUIVALENT DIAMETER Inches	SPAN Inches	RISE Inches	SLOPE	APPROXIMATE DIMENSIONS Inches					
					T	A	B	C	E	F
					22 X 14	18	22	13 $\frac{1}{2}$	3:1	2 $\frac{1}{2}$
29 X 18	24	28 $\frac{1}{2}$	18	3:1	3	8 $\frac{1}{2}$	39	33	72	48
37 X 23	30	36 $\frac{1}{4}$	22 $\frac{1}{2}$	3:1	3 $\frac{1}{2}$	9 $\frac{1}{2}$	50	46	96	60
44 X 27	36	43 $\frac{3}{8}$	26 $\frac{3}{8}$	3:1	4	11 $\frac{1}{8}$	60	36	96	72
52 X 32	42	51 $\frac{1}{8}$	31 $\frac{5}{16}$	3:1	4 $\frac{1}{2}$	15 $\frac{13}{16}$	60	36	96	78
59 X 36	48	58 $\frac{1}{2}$	36	3:1	5	21	60	36	96	84
65 X 40	54	65	40	3:1	5 $\frac{1}{2}$	25 $\frac{1}{2}$	60	36	96	90
73 X 45	60	73	45	3:1	6	31	60	36	96	96
88 X 54	72	88	54	2:1	7	31	60	39	99	120
102 X 62	84	102	62	2:1	8	21 $\frac{1}{2}$	83	19	102	144

 Iowa Department of Transportation	REVISION
	7   04-15-14
<b>STANDARD ROAD PLAN</b>	<b>RF-42</b>
SHEET 1 of 3	
REVISIONS: Added note on pages 1 and 3 to install connected pipe joint.	
 APPROVED BY DESIGN METHODS ENGINEER	
<b>LOW CLEARANCE CONCRETE PIPE APRONS</b>	

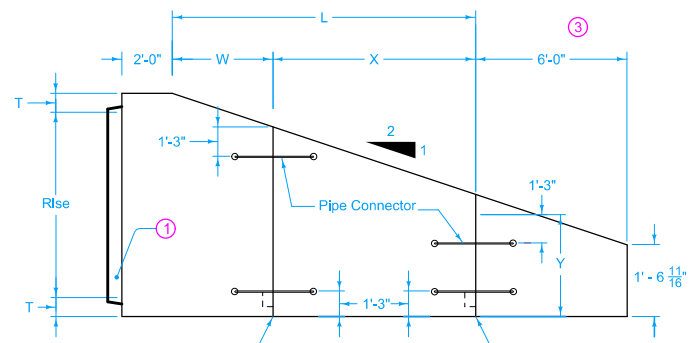


PLAN

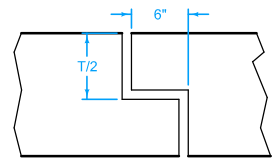


SECTION B-B

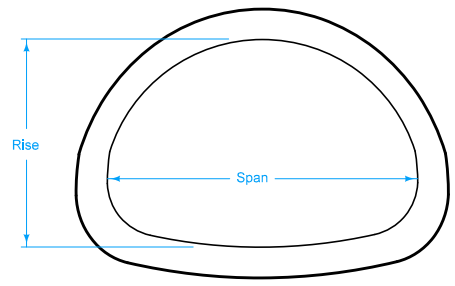
- ① Tongue end on inlet end section. Groove end on outlet end section. (Inlet end section shown.)
- ③ 132" size is a three-piece end section.



ELEVATION



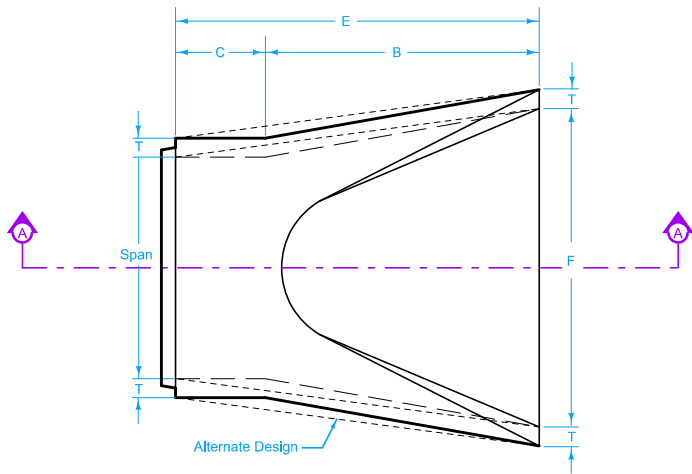
DETAIL 'A'



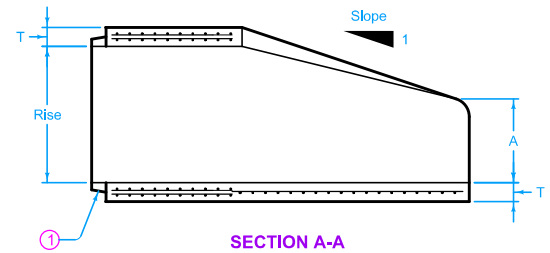
END

NOMINAL DIMENSIONS SPAN X RISE Inches	EQUIVALENT DIAMETER Inches	SPAN Inches	RISE Inches	APPROXIMATE DIMENSIONS Inches					
				T	L	W	X	Y	Z
115 X 72	90	115	72	8 1/2	102 1/4	72	30 1/4	37 7/8	48
122 X 78	96	122	77 1/2	9	112 1/2	72	40 1/2	39	54
138 X 88	108	138	87 1/8	10	129 1/2	48	81 1/2	42 3/8	66
154 X 97	120	154	96 7/8	11	144	48	96	46 7/8	78
169 X 107	132 ③	168 3/4	106 1/2	10	144	48	96	54 3/8	90

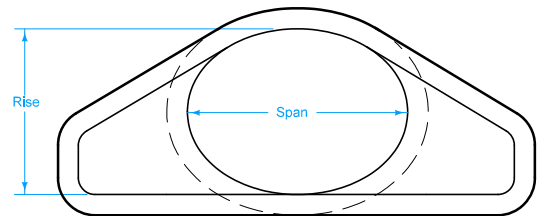
 Iowa Department of Transportation	REVISION
	7 04-15-14
<b>STANDARD ROAD PLAN</b>	<b>RF-42</b>
SHEET 2 of 3	
REVISIONS: Added note on pages 1 and 3 to install connected pipe joint.	
APPROVED BY DESIGN METHODS ENGINEER  Brian Smith	
<b>LOW CLEARANCE CONCRETE PIPE APRONS</b>	



PLAN



SECTION A-A



END

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Install connected pipe joints as shown on RF-14.

1 Tongue end on inlet end section. Groove end on outlet end section. (Inlet end section shown.)

EQUIVALENT DIAMETER Inches	SPAN Inches	RISE Inches	SLOPE	APPROXIMATE DIMENSIONS Inches					
				T	A	B	C	E	F
18	23	14	3:1	2 <sup>3</sup> / <sub>4</sub>	7 <sup>1</sup> / <sub>2</sub>	27	45	72	36
24	30	19	3:1	3 <sup>1</sup> / <sub>4</sub>	8 <sup>3</sup> / <sub>2</sub>	39	33	72	48
30	38	24	3:1	3 <sup>3</sup> / <sub>4</sub>	9 <sup>1</sup> / <sub>2</sub>	54	18	72	60
36	45	29	2.5 to 1	4 <sup>1</sup> / <sub>2</sub>	11 <sup>1</sup> / <sub>8</sub>	60	24	84	72
42	53	34	2.5 to 1	5	15 <sup>3</sup> / <sub>4</sub>	60	36	96	78
48	60	38	2.5 to 1	5 <sup>1</sup> / <sub>2</sub>	21	60	36	96	84
54	68	43	2.5 to 1	6	25 <sup>1</sup> / <sub>2</sub>	60	36	96	90
60	76	48	2.5 to 1	6 <sup>1</sup> / <sub>2</sub>	30	60	36	96	96
72	91	58	2.5 to 1	7 <sup>1</sup> / <sub>2</sub>	36	63	33	96	108
90	113	72	1.6 to 1	9	36 <sup>1</sup> / <sub>2</sub>	58	38	96	113

 Iowa Department of Transportation	REVISION
	7   04-15-14
<b>STANDARD ROAD PLAN</b>	<b>RF-42</b>
SHEET 3 of 3	
REVISIONS: Added note on pages 1 and 3 to install connected pipe joint.	
APPROVED BY DESIGN METHODS ENGINEER  Brian Smith	
<b>LOW CLEARANCE CONCRETE PIPE APRONS</b>	