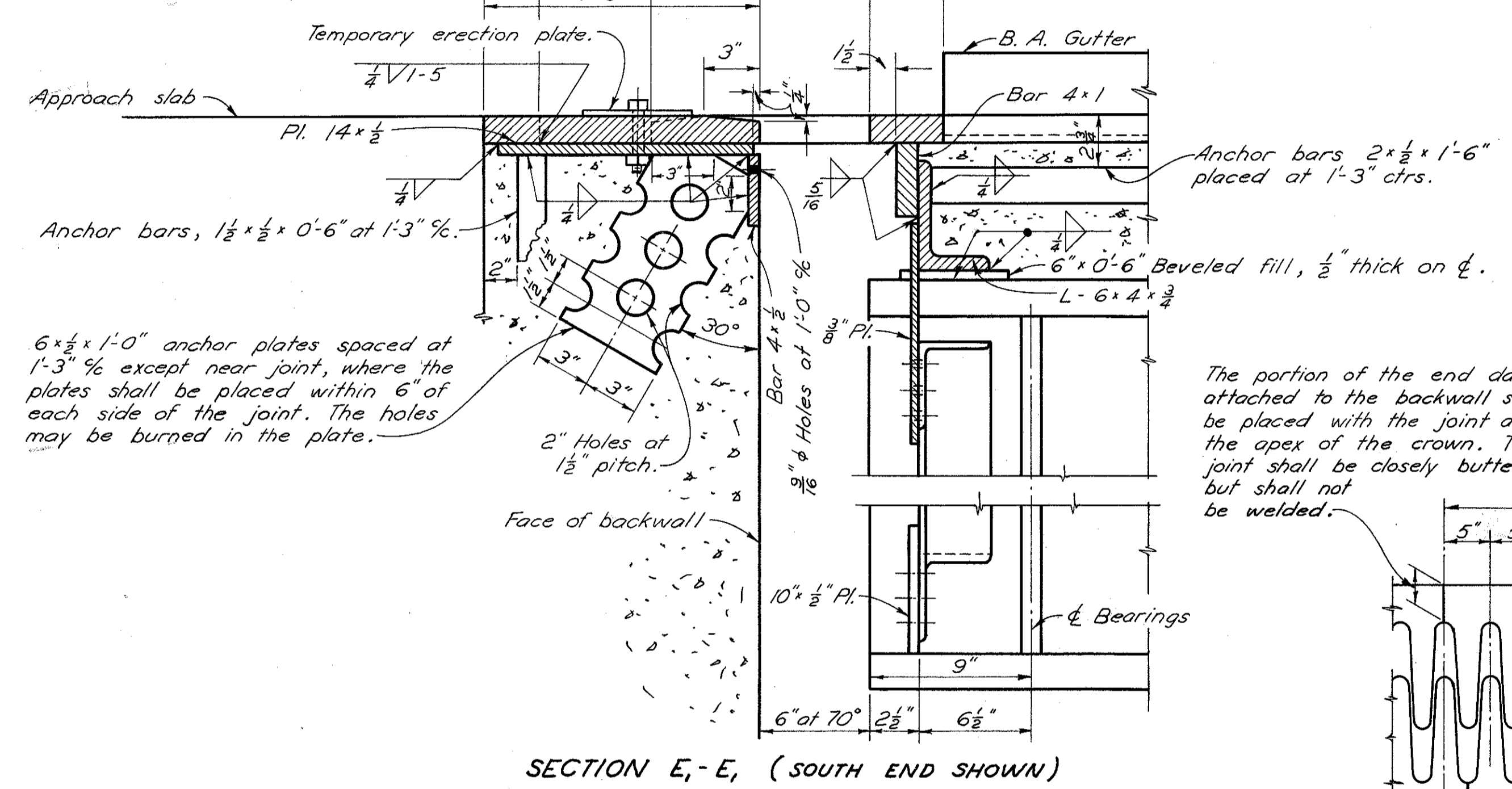


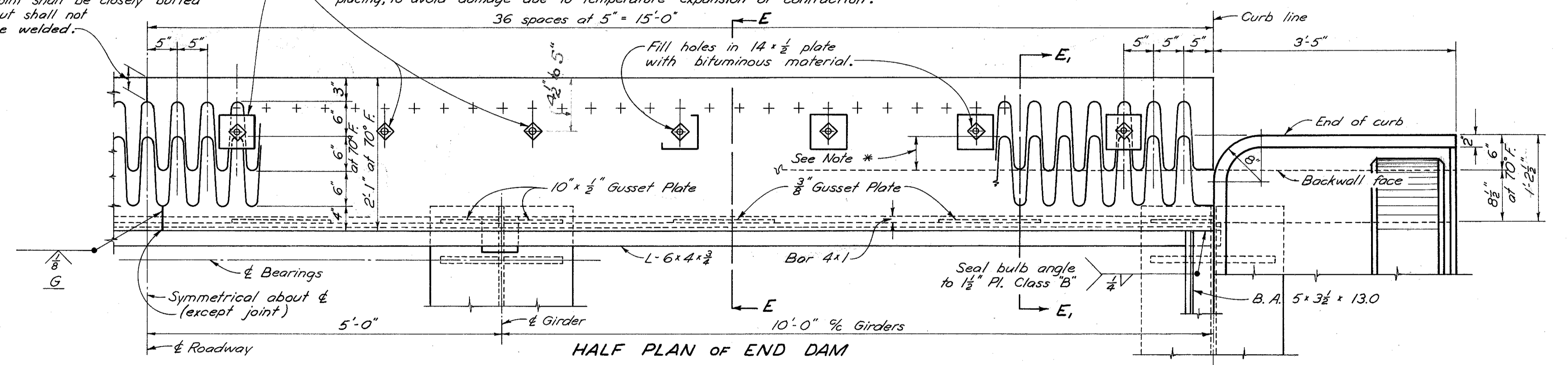
**DETAILS OF EXPANSION BEARINGS AT ABUTMENTS (R-190)**

**NOTE:** R-190 rollers and bearing plates shall be steel forgings conforming to ASTM A-237-59 Grade 80-55 Class B. Rollers and bearing plates are included with Item S-7 for payment.

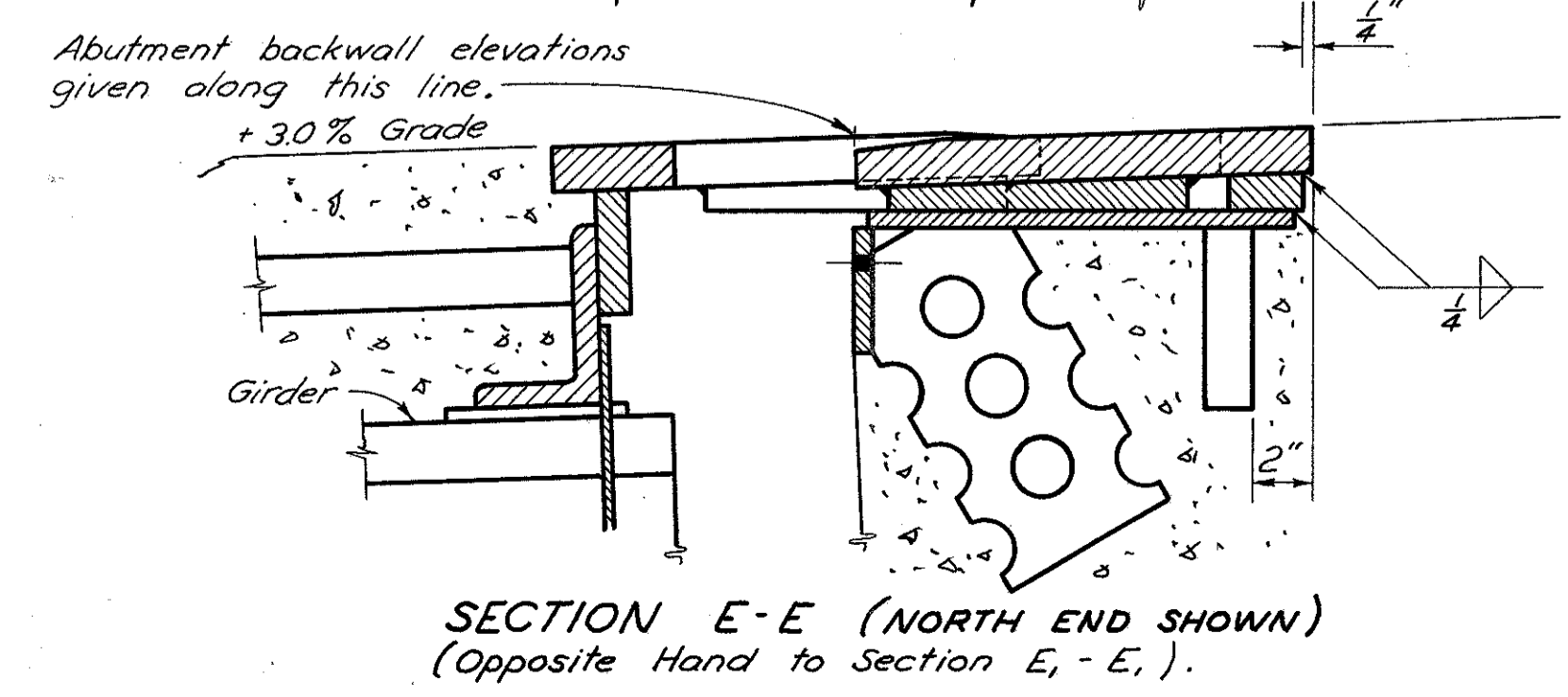
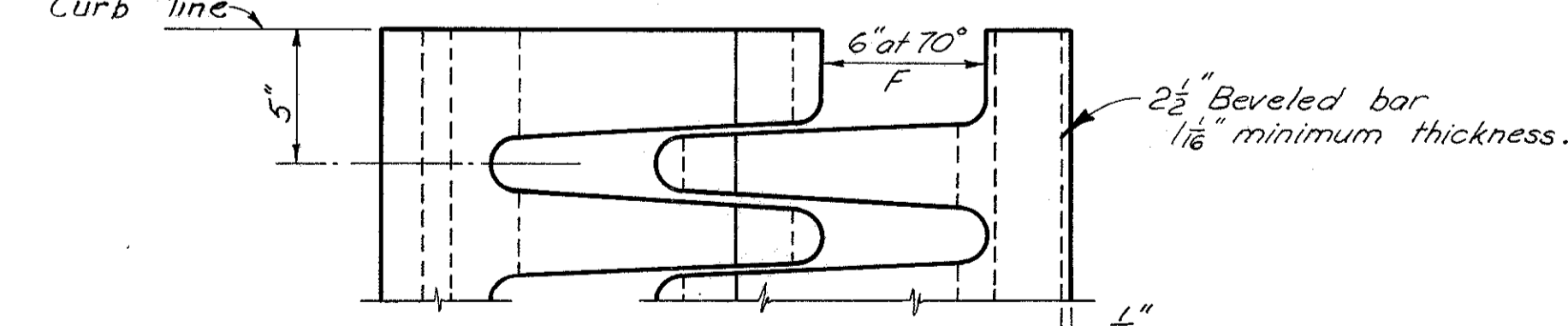
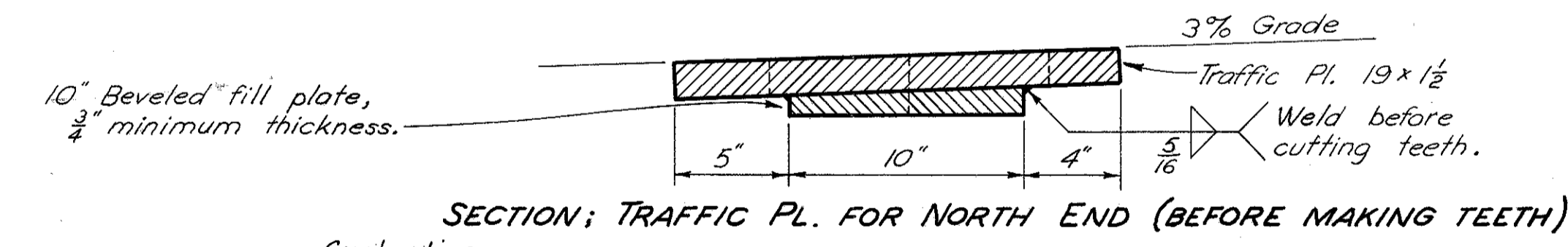


The portion of the end dam attached to the backwall shall be placed with the joint at the apex of the crown. The joint shall be closely butted but shall not be welded.

5/8" Bolts at not more than 2'-1" G with nuts tack-welded to underside of 14 x 1/2" plate. Apply flake graphite between temporary erection plates and 1/2" plate. Turn bolt tight and release one-half turn. Remove bolts as soon as concrete has set, preferably within two hours after placing, to avoid damage due to temperature expansion or contraction.



\*Note: This contact surface shall not be painted and shall be lubricated with flake graphite prior to placing backwall concrete.



Omit shop coat of paint on all portions of end dam. Portions in contact with steel or with concrete shall not be painted. All other portions shall be cleaned and given the shop coat in the field as well as the three field coats.

STATE OF OHIO DEPARTMENT OF HIGHWAYS DIVISION OF DESIGN AND CONSTRUCTION BUREAU OF BRIDGES					
<b>END DAM DETAILS ABUTMENT BEARINGS R-190</b>					
BRIDGE NO. LAK-528-0192 OVER GRAND RIVER					
LAKE COUNTY				Sta. 37 + 85.50 To 47 + 72.50	
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
KED	KED	Jcn	BFG	BFG	8-24-61
				1-9-61	