entire work on both bridges, according to the details shown in the plans presented herewith. Great care was exercised in getting the forms well braced and finished, so that all exposed surfaces would appear smooth and uniform after the removal of the forms. In this, the efforts were very successful, and good results were obtained. The forms for the long span girders were given a camber of 34 inch at the centre of the span, to allow for any possible settlement when forms sidewalks, roadway, and track portions was completed. Upon the completion of the whole work on the bridges, and after the forms were removed, the surfaces of concrete exposed to view were well brushed with steel brooms, and a coat of waterproofing, known as "Dry Wall" was applied. The results of the application are apparently all right, as far as can be seen at present, but it was feared at the time it was applied that the material would peel off.



Cross-Section of Concrete Bridges over Penstocks.

were loaded with concrete. After the work of setting forms was completed, the steel was placed in the girders, being firmly supported with wire, fastened to a 2-in. by 4-in. placed across the opening of girder forms at intervals of 3'-o. The pouring of concrete was then commenced and carried on day and night until the completion of each bridge. As stated before, the concrete was of a rather sloppy nature, and besides reasons previously stated, this was necessary as owing to the amount of steel in the beams, it was difficult to thoroughly embed it with anything but a concrete of this kind. The concrete work was commenced at one end of the bridge and finished up to the top of the slab, and continued in this way until the other end was reached, the steel in the

The cost of the bridges is as follows:-	
Bridges proper constructed in place	7,589.98
Reinforcing steel	3,800.00
Freight and hauling steel	628.46
Lemps including duty wiring etc	585.85
Dry rock excavation	50.00
Daylder excavation	280.00
Der oorth excavation	153.40
Wet earth excavation	377.60
Die Ten	198.20
Rip-lap	2.403.25
Earth embankment	223.04
Sundries	6 280.68
Total	.0,500.00



Cumberland Street Bridge Forms.

slab, etc., being placed as the work progressed. A groove about 1½ inches in depth was left to set curb, anchors being set in this groove to further secure the curb. The curb and concrete posts were set after the concrete work on the These bridges were designed by the writer, subject to the approval of Mr. J. Antonisen, who was Commissioner of Utilities for Port Arthur at that time, while the construction of the bridges was in charge of Mr. C. E. Henderson.