Before concrete is placed in the forms they shall be thoroughly wetted (except in freezing weather) to fill all the pores of the wood. Oil shall not be used for this purpose.

In all piers and abutments, when required by the engineer, all joints between layers shall be bonded by the embedding of approved hard stones of one-man size in the concrete of the lower layer. These stones shall not be placed nearer than the width of a man's foot to each other or to any face of the piers. All embedded stones shall have the concrete placed first, and shall then be embedded by being forced down into the concrete mass an amount equal to one-half their size.

The sidewalk surface was specified as follows:—

The surface veneer layer shall consist of a layer 1 inch thick composed of 1½ parts cement, ½ part hydrated lime, and 2 parts crushed granite screenings; the last shall be specified under "broken stone" Class C.

All exposed surfaces shall be finished by wet-rubbing to an extent sufficient to produce a fine-grained paste covering the entire surface. Immediately upon the completion of the rubbing this paste must be brushed with a wet whitewash brush to form a thin, even coating upon the

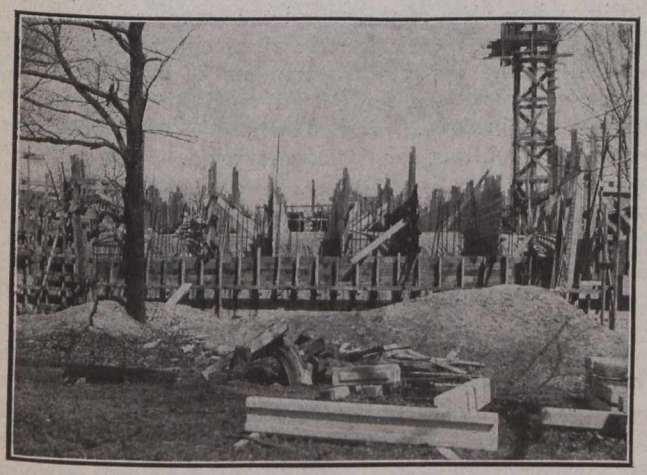

Fig. No. 8.—Forms in Place for Alternate Sections of Superstructure

surface of the concrete. This method has been found to give a finish of a lighter and more uniform color than by the ordinary wash finish with cement grout, probably for the reason that the paste formed from the rubbing is of the same color and composition as the body of concrete.

Excavation for the footing of the piers and abutments was done by clam-shell, horse scraper and by hand labor.

When the excavations had been made the foundation proved to be a dense cemented gravel, so that good bearing value was secured without the use of piles. The soil pressure from piers and abutments is in no case in excess of two tons per square foot and generally less.

The specification for forms in part was as follows:—

Sheathing for forms shall not be less than 1¼ inches in thickness. The face forms shall be of sound, straight, tongued and grooved sheathing, accurately matched and planed smooth on side next the concrete.

The sheeting or lagging of all curved slab centering shall be narrow, accurately matched, tongued and grooved, and planed smooth on the side next the concrete. Joints shall be close-fitting, and all uneven joints or other irregularities shall be planed off. The lagging shall be rigidly supported upon the falsework.

All lagging and timbering of main slabs shall be thoroughly saturated with water prior to commencing the construction of the slabs, and shall be kept so saturated until the concreting of the deck slabs and floor system is completed, and shall then be permitted to dry out gradually as a means of slowly relaxing their support.

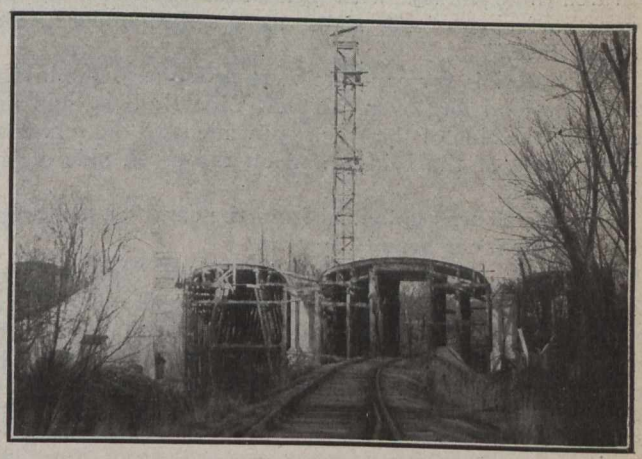

Fig. No. 9.—Falsework and Centering for Arched Superstructure

The roadway and sidewalk surfaces were waterproofed under the following specification:—

The concrete surface when thoroughly cleaned of dirt, loose concrete or other foreign material, shall be first covered with a coating of approved asphaltic material to bond the overlying waterproofing material to the surface of the concrete. Upon this shall be applied two ply of 8-ounce burlap, two ply of heavy asphalt felt and a course of asphaltic mastic; the latter to be not less than 1 inch in thickness. The burlap and felt shall be carefully laid in alternate layers and in such a manner as to permit the layers to break joints and shall be free from folds or pockets.

Between each ply of fabric and over the top surface of same there shall be applied a coating of approved water-

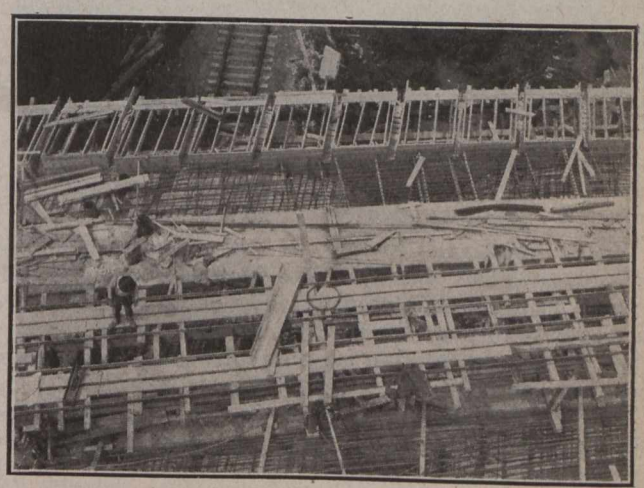

Fig. No. 10.—Aviator's View of Partially Completed Deck

proofing compound in such a manner as to thoroughly saturate, cement and bond the several parts together to form a waterproof membrane covering the whole roadway area of the bridge. This membrane shall be covered with one ply of building paper, upon which the asphalt mastic course shall then be applied to form a continuous layer over the waterproofing membrane specified above.