

The substructure consists of white oak piles cut off at low-water level and is secured together both longitudinally and transversely with oak waling. The piling is in five rows, there being two rows close together under the front wall at 2-ft. centres, a centre row at 4-ft.

secured together with bolts, the clusters being placed at 35 ft. centres along the front of the wharf.

A reinforced concrete warehouse 160 ft. long, 30 ft. wide, and about 11 ft. high inside was built along the rear side and opposite to centre of wharf. This building pro-

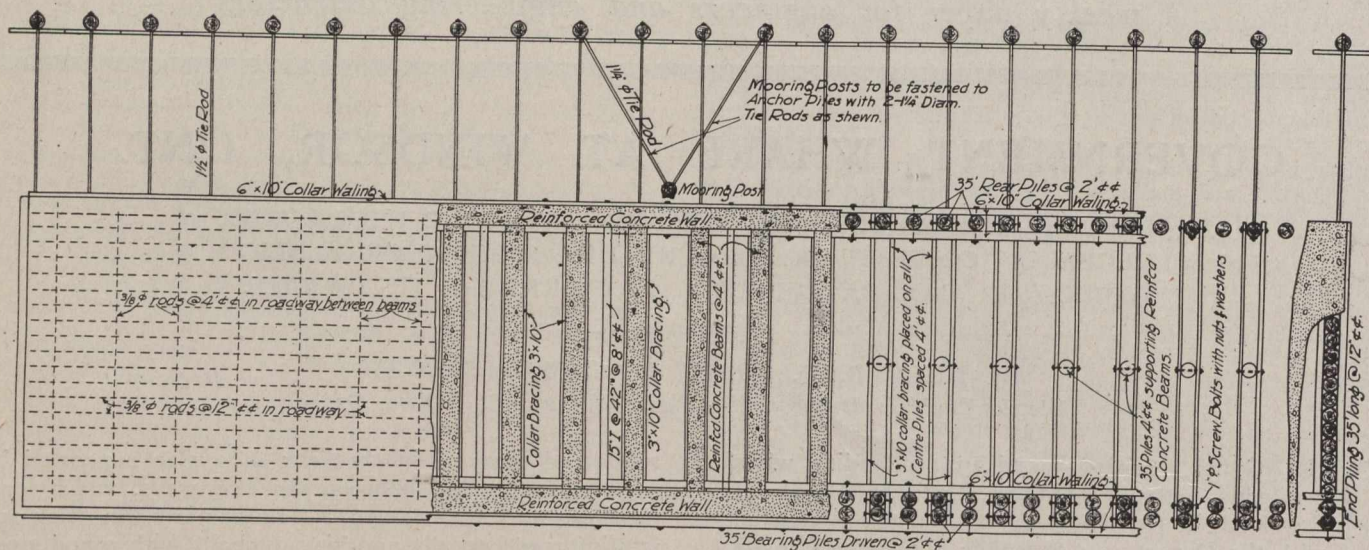


Fig. 2.—Plan of Roadway Reinforcing, Beams, Piling, Collar Waling and Bracing.

centres, a rear row under rear wall at 2-ft. centres and a row of anchor piles about 15 ft. in rear of wharf which is sheeted on front face and through which 1½-in. steel tie-rods are secured through the piles under

jects 12 ft. over the rear face of wharf, the remaining 18 ft. of width being supported by piles driven in rows of three at 8 ft. centres between rows. It is divided into three sections, an office 20 ft. long, a general warehouse 100 ft. long, bonded warehouse 40 ft. long.

The columns, roof beams and girders are all reinforced with Kahn bars and the roof-slab with round steel. Hyrib metal was used in the partition walls, the steel sash as used for the windows was furnished by the Trussed Concrete Steel Company of Canada, and nine Kinnear rolling lift-doors were placed.

The roof-slab consisting of 3 ins. of reinforced concrete, was covered with Carey's standard roofing.

The construction of both wharf and warehouse was well executed by Mr. A. E. Ponsford, of St. Thomas, Ont.,

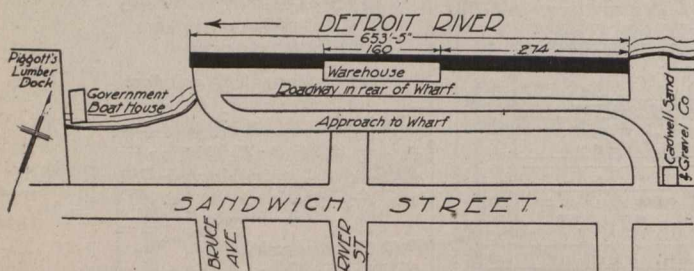


Fig. 3.—Detail Plan of Location of Government Wharf at Windsor.

rear wall. All piling is 35 ft. long except the outside front row, which is 40 ft. long. The row of piles under rear wall is sheeted on rear face for a depth of about 5 ft. below water-level so as to cut down or lower the slope of the filling which was placed in rear of the wharf after construction. It also acts directly against the filling in front of anchor-piles. The waling consists of 4 longitudinal rows of 6-in. x 10-in. and transverse wales 3-in. x 10-in. white oak. All waling is securely bolted to piles.

The superstructure is secured to substructure by means of 1-in. ϕ drift bolts which were placed in the tops of all piles in holes bored for same and extended through into the concrete.

All concrete consisted of 1 part Portland cement to 6 parts of sand and gravel, reinforced as above stated and as shown on plans.

Fender pile clusters of six piles, 55 ft. long, of white oak, were driven and framed with white oak separators,

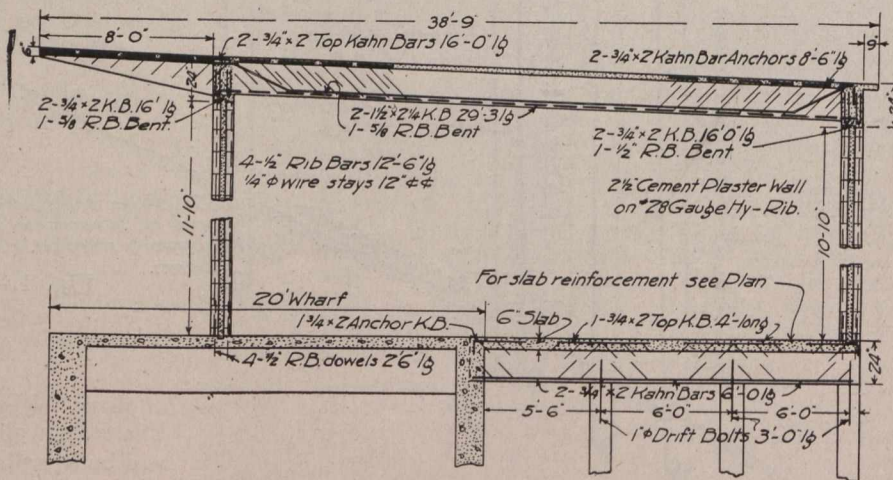


Fig. 4.—Typical Cross-Section Through Warehouse.

and the total cost of the works, including inspection, was slightly over \$75,000, which was approximately \$1,000 less than the estimated cost. Of this amount the cost of warehouse alone was \$7,931.