

CONSTRUCTION OF THE KINGSWAY, B.C.

THE following notes relating to the construction and maintenance of the interurban road between New Westminster and Vancouver are from an address recently delivered before the Vancouver Branch of the Canadian Society of Civil Engineers by Mr. Fred. L. Macpherson, municipal engineer of Burnaby, B.C. This thoroughfare is the shortest and most direct of the three principal highways between the two cities. For the most part it lies along the high ridge of land on the Burrard Peninsula, on a route originally known as the False Creek Trail. Its length is about 7 miles, $4\frac{1}{2}$ miles in Burnaby and the remainder in the municipality of South Vancouver. The highway terminates with paved portions situated within the limits of each city. There is a length of 0.65 mile in New Westminster and another of 1.15 miles in Vancouver, which were completed in the years 1911 and 1912. The interurban portion was linked up in the year 1913.

For many years previously the scheme for a paved interurban highway had been frequently discussed, but it was not until the matter was endorsed by the Provincial Government that the scheme was realized and the two largest cities in the lower mainland thereby linked up with a continuous paved highway.

In the construction of this road particular regard was entertained for combining the utility of the paved city street with the aesthetic features of an interurban highway. The road was re-surveyed and opportunity taken for considerable re-alignment and straightening out of undesirable jogs and inconsistencies, permanent survey monuments being subsequently established along the centre line of the highway. The profile was carefully prepared so as to reduce the heavier grades and yet preserve the natural contour of the country, generally so pleasing to the eye.

Illustrative of the heavy mixed traffic on this highway, undernoted are the traffic records taken on the Burnaby portion on September 26, 1913, shortly after its completion and recently on the 9th March, 1915, between 8 a.m. and 6 p.m. (ten hours):

	Sept. 26, 1913.	March 9, 1915.
Automobiles	359	507
Auto trucks	32	51
Auto cycles	13	28
Bicycles	25	43
Wagons and vans	41	57
Rigs	78	51
Total No. of vehicles	548	737

Obviously the recent incursion of the "jitney" buses is accountable for the increasingly large number of automobiles using this highway. The immediate effect of the opening of the continuous paved highway was the more general adoption of interurban transportation of freight by auto truck, resulting, according to available comparative figures, in a saving to some wholesale mercantile firms of \$1 per ton.

According to the speaker, in the Vancouver portion the paved width of 56 feet appeared to be proper proportioning of the 99-foot road reservation to meet existing and future traffic conditions. The grading was very heavy, involving several deep fills which were allowed to settle for about a year before the paving was commenced. As fills, particularly those composed of different materials,

cannot wholly settle in such a time, it is questionable, observed Mr. Macpherson, whether or not reinforcement of the concrete foundation would have been justifiable. Particular reference was made to the track construction which was surfaced with granite block. In spite of all that is said regarding the loosening of the blocks under the jarring action of street car traffic this piece of track work is to-day wholly intact and presents a very substantial and finished appearance.

The South Vancouver portion extends from Boundary Road to Knight Road, a distance of $2\frac{3}{4}$ miles. The original recommendation adopted by the council of the then municipal engineer was for a creosoted wood block pavement 42 feet wide on a 6-inch concrete base, estimated to cost approximately \$347,000, or about \$7 per foot front, the probable life of the pavement being estimated as 20 years. The encouragement of local industry seems to have been the principal reason for the selection of this type of pavement. However, the Provincial Government, who had promised a grant of \$10,000 towards the work, insisted on an asphaltic mixture pavement.

Doubtless there were initial difficulties and expense connected with the widening of the existing 66-foot road reservation but nevertheless the speaker suggested that an additional 10 feet could quite well have been sacrificed from the boulevards. "The time is not far distant when traffic conditions will demand the widening of this pavement at comparatively heavy expense and at considerable inconvenience to property owners and the travelling public," said Mr. Macpherson.

In the absence of sewers no special provision was made for surface water drainage. The concrete catch basins, which were few and far between, were drained to the nearest water course or intersecting streets with vitrified pipe varying in size from 6 inches to 12 inches, laid at an average depth of 4 feet 6 inches. The schedule costs of same varied from 75 cents to \$1.35 per lineal foot. The total cost of the drainage work, including concrete culverts and timber catch basins at intersecting streets, was approximately \$14,000.

GOVERNMENT CONSTRUCTION OF BRIDGES IN QUEBEC.

In a recent speech in Montreal Sir Lomer Gouin, Premier of Quebec province, stated that the provincial government was continuing to subsidize the construction of steel bridges. Some 260 bridges had already been put into service and 56 were now under construction. This has entailed an expenditure, since 1908, of about \$700,000. Since 1912 the Government has abolished 11 toll bridges and 6 level crossings at a cost of about \$1,400,000.

RESUMPTION OF WORK ON HUDSON'S BAY RAILWAY.

Steel-laying operations were resumed on March 24th at Mile 214 on the Hudson's Bay Railway. It is expected that the work will be within 40 miles of Fort Nelson when operations cease in the fall. The contract for the steel cantilever bridge across the Nelson River at Manitou Rapids, on the Hudson's Bay Railway, has been let to the Canadian Bridge Co., Walkerville, Ont., is it stated by J. W. Porter, chief engineer.