

consider in how far the plans prepared by the Chief Engineer of the Company will, if carried out, ensure permanency and durability in the proposed structures over the many broad and important rivers which intersect the line of railway between Quebec and Montreal.

In my opinion the piles should be cut off, not at a uniform depth of so many feet under the surface of the respective rivers at the lowest water; but rather that they should be curtailed in length so as not to project more than a very few feet above the bed or bottom of such rivers; as otherwise, with the proposed crib-work around them, composed, as it is intended to be, of a single wall or casing of round logs notched into each other and bolted and the intervening space between it and the piles filled in with stones, if the crib-work should fail, and I am afraid it would be very likely to do so in course of time, the piles would, from the falling away of the surrounding stone, remain unsupported, and where projecting several feet above bed of stream, would be liable, I think, to bend or sway from their vertical position and endanger the superstructure.

But if the plan be persisted in, of cutting the piles off short beneath the surface at low water, and it should be at extreme low water so that no portion of the wood-work could at any time be exposed to wind and weather, which would cause its rapid decay; I say that if this plan be followed out, then in my opinion the pile foundations should be surrounded with strong crib-work of double walls of solid timber well braced by cross ties at every few feet apart, the whole solidly braced and bolted, and the space within the walls as well as between the crib-work and piles solidly filled in with stones, and this crib-work should not be less