

Temporary Roads.

32. Roads constructed to and from any point on the line of Railway for the convenience of the Contractor, for the conveyance of material or otherwise, must be at his own risk, cost and charges.

Existing Roads.

33. Wherever the line is intersected by public or private roads, the Contractor must keep open at his own cost convenient passing places, and he shall be held responsible for keeping all crossings during the progress of the works in such condition as will enable the public to use them with perfect safety, and such as will give rise to no just ground for complaint. Contractors will be held liable for any damages resulting from negligence on their part or that of their men.

TRUSS BRIDGES.

34. The Railway will in most cases be carried over the larger streams by wooden superstructures, supported on abutments and piers, of timber framing on pile foundations. The pile foundation will, wherever practicable, be made suitable for permanent structures.

Crib Work.

35. In some cases crib abutments and piers filled with stone may be allowed. The cribs must be constructed in the most substantial manner of tamarac or other suitable timber; outside timbers to be not less than 12 inches square, halved together at the angles, and properly secured with drift bolts of iron; the ties may be of flatted timber, dove-tailed into face timbers and bolted. The sloping faces of the cutwaters to piers must be of square timber laid with one side in the line of the rake of the cutwater, and be halved at angles; the faces of the cutwaters will be covered with hardwood timber 8 inches thick, well fastened to the crib work with spikes or rag-bolts. The whole of the abutments and piers to be finished in accordance with plans, and to the satisfaction of the Engineer.

Superstructures of Timber.

36. The superstructures will be of the most approved Howe or Pony Truss pattern, the former built of Douglas fir of approved quality, with cast-iron or white oak keys, cast iron prisms and wrought iron rods with up-set ends, the whole to be first-class material and workmanship. The parts that are inaccessible after the structures are erected, are to receive one good coat of paint of approved quality as soon as framed, and a second coat when the work is put together. Drawings Nos. 20, 21, 22, 23 and 24 are prepared to suit each span or bridge, and to which the Contractor must work. These bridges must be executed in a thoroughly substantial and workmanlike manner, and shall be completed in every respect, including painting.

PILE BRIDGES.

37. Wherever the circumstances of the case require the adoption of bridges on piles, they will be erected according to the following, drawing No. 19, or special drawing. Each bent will be composed of piles, as shown in the drawings. The piles shall be of tamarac, Douglas fir, or other approved timber, and of sufficient size at the butt or larger end to square not less than 12 inches, and for long piles 14 inches. They must be perfectly sound and straight, sawed or hewed to these dimensions, and be of such lengths as circumstances may require. The piles must be driven by a hammer weighing 1,500 lbs. or upwards, until they reach perfectly firm ground. They will generally be tested by the hammer falling 24 feet at the last blow, under which they should not yield more than two inches. Care must be taken to have