The timber employed will be tamarack, hemlock, black, spruce or pine, and planks from three to six inches, or timber flattened on two sides only, and ranging from six inches to twelve inches thick. The faces of the flattened timber will at least measure as much as its thickness, and the bark will be removed from the sides not flattened.

49. All spikes, bolts, straps, or other iron work found necessary to be used in timber foundations, or in the wooden superstructure of beam culverts or short span bridges, must be of the best quality of iron usually employed for similar purposes.

50. Whenever the Engineer may direct piling to be done, the timber shall be in every respect sound, and of such description as he may approve; where he thinks it necessary, trial piles shall first be driven.

51. The piles shall be carefully and truly pointed, shod and hooped with iron as may be directed, they shall be driven to any depth the Engineer may deem expedient, and the weight of the ram, as well as the fall, shall be such as he may consider necessary. The greatest care must be taken to drive the piles plumb, or battered in such positions and distances apart as he may direct. A pile that may be damaged or too short, or out of line when driven, shall be taken up and replaced by another; the heads of piles must not be injured in driving.

52. Whenever concrete is employed, it will be composed of Portland cement, clean sharp sand, and good gravel of approved quality and proportion. The proportion of sand and cement will be the same as in mortar, and in making the concrete a sufficient quantity will be used with the gravel to fill up every interstice, and render the mass when set, perfectly solid and compact.