

contract, the Contractor shall make good and complete the same at his own cost. Work left unfinished in the autumn shall be properly protected during the winter by the Contractor at his risk and cost.

Punning and filling.

70. After the masonry of a structure has been completed for a period of four or five weeks, the formation of the embankment around it may be proceeded with. The earth shall be carefully punned in thin layers around the walls, and in this manner the filling shall be carried up simultaneously on both sides. The Contractor must be extremely careful in forming the embankments around culverts and bridges, as he will be held liable for any damages to the structures that may arise. The punning shall be carefully attended to, and the whole filling shall invariably be done in uniform courses from the bottom to the top of the embankment, without loading on either side of the masonry more than another.

Mortar.

71. Mortar shall be of Portland cement and common lime.

Cement.

72. Portland cement shall be used in building all masonry, from the foundations up to a line two feet above the freshet level of the stream. It shall be used also in turning arches, in laying girder-beds, coping, covering of walls generally, in lipping and in pointing. The Portland cement shall be fresh ground, of the best brand, and shall be delivered on the ground, and kept till used in good order. Before being used satisfactory proof shall be afforded the Engineer of its hydraulic properties, and no inferior cement will be allowed.

Lime.

73. Common lime mortar shall be made of the best common lime and shall be employed in all masonry (except dry) where cement is not directed to be used.

Mortar how made.

74. Both cement and lime must be thoroughly incorporated with approved proportions of clean large-grained sand. The general proportions shall be one part of lime to two parts of sand. Mortar shall be only made as required, and it shall be prepared and used under the immediate direction and to the satisfaction of an Inspector failing which the Inspector may employ men to prepare the mortar, and any expense incurred thereby shall be borne by the Contractor. Grout shall be formed by adding a sufficient quantity of water to well tempered and well proportioned mortar.

Grouting.

75. When mortar is used, every stone must be set in a full bed and beaten solid the vertical joints shall be perfectly level and thoroughly grouted.

Lipping.

76. In all walls built in common lime, the exposed faces shall have a 4-inch lipping of cement.

Concrete.

77. Whenever concrete is employed, it shall be composed of Portland cement, clean, sharp sand, and broken stone of quality, size and proportions approved by the Engineer. The proportion of sand and cement shall be about the same as in mortar and in making the concrete a sufficient quantity of cement mortar shall be used with the broken stone to fill up the interstices and render the mass, when set, perfectly solid and compact.