

72. When efficient side ditches in wet cuts cannot be maintained on account of the character of the sand, material or lack of space, the ditches and the roadbed if necessary should be underdrained by means of stone or tile drains and the trench filled with gravel or cinders. They must be laid at such point and in such manner as directed by the Engineer.

73. Material taken from ditches or elsewhere must be used to reinforce narrow embankments or be deposited on the slopes of embankments below the ballast; it must not be placed on the tops or slopes of cuts as it is liable to be washed back into the ditches.

74. Covered cross drains should be put in wherever necessary; they must be placed deep enough and upon such grade as will thoroughly drain the ditch from which they lead. They must not be placed where slopes of embankments or sidehills will be washed away unless properly protected.

BALLAST.

75. Ballast is used to give perfect drainage, prevent upheaval by frost, to distribute the bearing of the ties, and insure a uniform support thereto.

76. In the selection of ballast, the volume and character of traffic, the climatic conditions, and the nature of the material in the sub-grade should be considered.

77. Broken stone ballast should be in accordance with standard specifications and be used as directed.

78. Gravel ballast will be used ordinarily. It should be clean, strong and not too coarse, and

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