

## GRADING.

6. Under this term is included all excavations, embankments and surface Grading, forming, whatever may be the materials, and whether the same be required for the line of railway, or for the diversion of forming or water-courses, roads, approaches to bridges or level crossings, draining and off-take ditches, station grounds and all other works, contingent upon, or relating to excavations and embankments, as required by the nature of the contract or described in this specification.

7. In woodland the grading shall be commenced after the clearing, close-cutting and grubbing required is completed to the satisfaction of the Engineer. Time of commencement.

8. The red line on the profile exhibited, according to drawing No. 2 indicates Profile. the formation level, that is, the surface of the tops of embankments and the bottoms of cuttings previous to the laying and ballasting of the permanent way. The black undulating line represents the present surface of the ground, and the blue line the level of the top of the rail which is 22 inches above formation level.

9. The cuttings shall be formed to the cross section exhibited, according to drawings Nos. 4 and 5. The width at formation level shall be 22 feet, and the inclination of the slopes in earth shall be, as a rule, one and a half horizontal to one perpendicular. In gypsum and other rock cuttings the slopes shall be, as a rule, one horizontal to four perpendicular. In cuttings partly earth and partly rock, a berm of four feet shall be left on the surface of the rock. But these proportions may be varied by the Engineer to suit the nature of the materials to be excavated and insure the stability of the slopes. The Contractor shall not take out nor be paid for rock, nor any other excavation beyond the specified slopes, without an express order, in writing, from the Engineer. In the event of a slide in a cutting after it is formed, the Contractor shall remove the debris, and be paid for it as loose rock or as earth, according to the class to which it may appear to the Engineer to belong. Cuttings.

10. The whole of the grading shall be carefully formed to the levels given and the roadway in cuttings shall invariably be rounded and left at not less than six inches lower at the sides than in the centre. There shall be a side ditch at the foot of each slope throughout the whole length of the earth cuttings, the bottom of which shall be kept 12 inches below the roadway on the centre line, and lower if necessary, with a fall towards the ends of the cuttings so as to thoroughly drain the same. The cuttings shall be widened a little at the ends, and these ditches shall be carried into the ditches at the sides of the embankments, so as not to injure the latter. In rock cuttings a water channel about two feet wide and eight inches deep shall be formed at the foot of each slope. Side ditches in cuttings.

11. In very wet cuttings, arising from springs or soakage, drains shall be formed at the foot of the slopes, averaging not less than four feet deep, formed with a bed of three cedar poles not less than two inches in diameter at the small end, laid breaking joint in the bottom of the trench and then filled up with coarse gravel or broken Drains in cuttings.