

expiration of the time of appeal, making the time altogether inadequate to the amount of the work to be done, and then proceed as provided for by Section 13 of the Ditches and Watercourses Act.

The grades or fall of a ditch will generally depend on the natural fall of the land to be drained. The engineer will find that he is very seldom called upon to lay out a ditch with less fall than 2.5 ft. to the mile. When it does occur so level, and the cases are by no means exceptional, the ditch will have to be made deeper at the lower end, and thereby create what is termed an *artificial* fall. Should there be a good fall above and a good fall below the level portion, I do not consider it necessary to make the *artificial fall* so great as would be required should the fall be all below the level portion, the water above adding a certain force to the water in the level portion and tending to drive it out. I consider three feet to the mile a fall sufficient for all ordinary purposes, although I have had cases in which the fall was as low as 1.75 ft. per mile, which, however, is altogether inadequate for a ditch which is supposed to keep itself clean.

When a Municipal Council employ an engineer to locate, and make a report, as provided for in the Municipal Act, the surveyor's or engineer's duties sometimes cease when the by-law has been passed, the council appointing either one of their own number or an outsider as inspector. In which case, if the engineer has any regard for his fair name, he will not furnish either the contractor or the inspector with a profile, for in ninety-nine cases out of a hundred, neither of them understands the least thing about a profile, and the contractor, if he is not honest, will be sure to get ahead of the inspector (?) and make a botch of the job, and if the ditch should not prove a success the engineer is of course blamed. The Municipal Act provides for a profile and the engineer has to return a profile with his returns; but there is nothing in the Act to prevent him from making it as unintelligible as possible, so as not only to prevent any mistakes, but also to make sure that they will not get any information from it. In place of the usefulness of the profile, however, under both of the Acts, I always return a *schedule*, which is, in fact, a ward, report, plan, profile and specifications all in one. The schedule is divided in the following manner, which, I think, is sufficiently clear without any explanation.