

ESTABLISHMENT of a COVER of TURF on a MIXTURE of STONE and QUARRY DUST

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The design of the New York State Thruway called for three lanes of pavement in each direction between Nyack and Harriman. The cross-section for this six-lane unit has a 20-foot median, depressed in the center for drainage. A 4-foot stabilized gravel shoulder was to be built adjacent to each center lane, and the entire median, including the shoulders, was to be seeded.

Difficulty was experienced in securing a run-of-bank gravel to meet the specifications for the shoulders. Finally, permission was granted to use 2 parts of the $\frac{3}{8}$ -inch stone and 1 part of stone dust, which could be obtained from a local quarry. The materials were uniformly mixed, dumped from trucks, and spread and graded by bulldozers and motorized graders. The shoulders are 4 feet wide and 9 inches thick, with a $\frac{3}{4}$ -inch pitch of the surface. The longitudinal grade varies from 3 down to 0.5 percent. There was no hand raking. A motorized 10-ton roller was used to achieve the required compaction.

The remainder of the median was subsoil from the road prism, together with a surplus of the shoulder materials. Actually the shoulder materials predominated near the surface in most areas. The subsoil contained about 60 percent passing the 200-mesh sieve. All the dust passed a $\frac{3}{4}$ -inch screen, and 23 percent passed the 200. The gravel and dust were of a calcereous origin, with the dust testing 8.6 pH. Their organic content was 1.7 percent by an ignition test at 1,200 C, and 0.5 percent by a wet combustion test.

The paving, shoulders, and grading were completed early in December 1955. Two to three tons of dry hay, mechanically chopped, was uniformly distributed on the entire median area on Dec. 7, 1955. The mulch averaged $2\frac{1}{2}$ inches in thickness. An asphalt emulsion was then applied to the mulch by a conven-

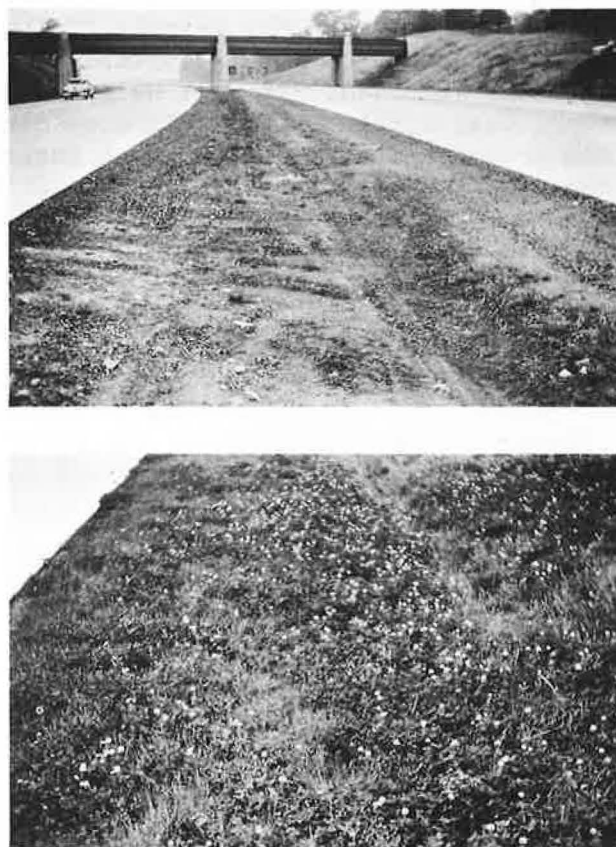


Figure 1. Gravel and stone dust median shoulders, showing (upper) no plant growth for summer preceding the seeding and (lower) typical heavy growth where seeded, fertilized, and mulched.

tional motorized distributor with a spray bar. The emulsion was under constant and steady pressure, with 300 gallons per acre being applied in two passes.

Twenty-seven pounds of red fescue, 19 of Canadian bluegrass, 9 of perennial ryegrass, and 5 of wild white clover, making 60 pounds of pure live seed per acre, plus 800 pounds of 10-20-10 commercial fertilizer per acre, were applied over the entire mulched area the following day, using a hydraulic spreader.

In June, six months after seeding, the growth of turf was judged good with an average cover of better than 80 percent. Most noticeable was the development of the turf on the stabilized shoulders. Normally on those areas adjacent to the pavement, where a constant and continual flow of traffic blows the mulch away, the growth is either sparse or missing. On this project, because of the mulch being completely held in place by the asphalt emulsion and the positive retention of the seed and fertilizers, the turf was excellent, with an average cover of over 90 percent.

The turf was maintained by the use of conventional mowing equipment. It improved in quality through the year and in the late fall comprised 50 to 60 percent fescue and 30 to 35 percent wild white clover; the remainder was bluegrass and perennial ryegrass. Although of excellent quality throughout, it will be desirable to apply a commercial nitrogen fertilizer in the spring of 1957.

This test is another example of the production of a good turf where there is a fair proportion of fines, suitable kinds of grasses are used, and adequate fertilizer is supplied. It will be noted that essentially no organic matter was present and that little or no difference could be detected between the turf on the combined gravel and dust areas and on those areas where these inert materials were mixed with subsoil.