CLAY-CHLORIDE STABILIZATION

Our experience with clay-chloride stabilization has been quite limited. During the past summer, we stabilized eleven miles of gravel road, adding two inches of new gravel. The materials were mixed on the road without detouring traffic, and we experienced some difficulties from extremely dry weather. About 20,000 gallons of water per mile were used to compact the surface. The plasticity index was kept low to avoid a muddy surface during rainy weather and because it is intended as a base for a bituminous surface. The cost of this work was about $1300.00 per mile. While this type of stabilization has been quite extensively used as a road surface, the trend at present is toward its use as a base for a bituminous surface rather than as a finished road.

GETTING THE MOST OUT OF THE GOVERNMENT SECONDARY ROAD PROGRAM

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As an opening statement I will quote from the Report of the Chief of the Bureau of Public Roads, 1936:

"One of the major efforts of the Federal Government to relieve unemployment through a large-scale road-construction program began with an authorization of $400,000,000 as a direct grant to the States by the National Industrial Recovery Act of June 16, 1933. One year later the Hayden-Cartwright Act of June 18, 1934, authorized a supplementary $200,000,000. These funds are known as the 1934 and 1935 Public Works highway funds. The Hayden-Cartwright Act also provided $125,000,000 as Federal aid to the States in each of the fiscal years 1936 and 1937. The emergency program was continued by allocations of $200,000,000 for highways and $200,000,000 for grade-crossing work, as direct grants to the States made from funds provided by the Emergency Relief Appropriation Act of April 8, 1935. These various acts also provided lesser amounts for the improvement of highways in national parks, national forests, public lands, and other Federal areas.

"The work of highway construction carried out under these several acts had resulted, at the end of the last fiscal year, in the construction of 38,220 miles of road at a total cost of $636,622,561, of which $571,276,033 was paid by the Federal Government, and there were under construction, or approved for construction, 17,862 miles additional, involving an estimated total cost of $357,283,044, of which $270,336,054 was Federal funds. The remaining Federal funds, available for new projects, including Federal aid for the fiscal year 1937,

amounted to $191,137,913. Under the emergency grade-crossing program, projects approved or under construction included 1,407 new crossing eliminations, the reconstruction of 198 existing structures, and the protection without elimination of 322 crossings, at a total cost of $133,524,019, of which the Federal portion was $130,681,697. Begun within the past year, this program had already resulted in the completion of 66 new elimination structures, the reconstruction of 10 existing structures, and the installation of protective devices at one crossing, at a cost of $3,234,563, including Federal payment of $3,219,291. For additional work on grade crossings there remained at the end of the year $62,099,012.

"During the last three years the road construction described above and that carried on under other appropriations in Federal areas of various kinds has provided nearly 6,000,000 man-months of direct employment, or an average rate of 2,000,000 man-months per year, which is approximately double the average of employment furnished in the two years preceding the beginning of the enlarged emergency program.

"The $200,000,000 allocated for highways from funds provided by the Emergency Relief Appropriation Act was apportioned to the States in accordance with the provision of the act as follows: One-eighth on the basis of population and the remaining seven-eights divided into three equal parts and apportioned on the basis of population, area, and mileage of post roads. The $200,000,000 for elimination of hazards at grade crossings was apportioned, one-fourth in proportion to the mileage of the Federal-aid highway system, one-fourth in proportion to mileage of railroads, and one-half in proportion to population.

"Regulations for the administration of these funds, approved by the Secretary of Agriculture, the Works Progress Administration and the President, were issued on July 12, 1935. Further consideration developed the desirability of making certain changes, and the regulations were reissued in final form on September 12, 1935.

"These regulations followed the general plan of administration employed in the Public Works highway program except that more rigid requirements were made governing the employment of labor and the selection of projects to meet employment needs. Not less than 25 per cent of the highway fund was to be expended on secondary roads not included in the State highway systems, not less than 25 per cent was to be expended within municipalities, and the remainder was to be expended on the Federal-aid and State systems. The State highway departments were required to prepare highway programs giving preference to projects in those areas where, according to reports of the Emergency Relief Administration, the relief need was greatest. Conferences were to be held with the State relief Administrator and State Administrator

of the Works Progress Administration in an endeavor to select projects for which labor was available from local relief rolls. Programs were required to be submitted to the district engineer of the Bureau of Public Roads, the State director of the National Emergency Council, and the State administrator of the Works Progress Administration for concurrence before transmission to Washington for final approval."

After careful study of the foregoing paragraphs describing the National program of Work Relief, it is easy to understand how the scheme fits our local units of township and county.

During the last three years each of the 13 townships in Jasper County has taken advantage of the Works Relief Program in some form or another. During this time Jasper County has constructed 26¾ miles of roads with Federal Works Relief labor. Of this mileage, 22¼ miles were built of gravel, and 1½ miles of crushed limestone; 3 miles were built of very coarse quarry limestone, laid 12 inches thick, rolled and filled with bank sand, and then a wearing surface of gravel or crushed stone was placed thereon to the depth of six inches. Also 3½ miles of grade have been built, upon which no wearing material has yet been placed.

The County has furnished all material necessary in the form of gravel, crushed stone, quarry stone, cement, culverts, form lumber, dynamite, nails, and wire for the construction of these roads, and the Federal Aid has consisted of trucks, labor, and supervision. The cost of gravel for these projects has varied from 10 cents to 40 cents per cubic yard, crushed limestone has cost $1.05 per ton, and the large quarry limestone cost the county nothing.

Railroad crossing improvements were undertaken on the NewYork Central and Monon Railroads. These crossings are being improved by filling the approaches with earth to flatten the grades, and a wearing surface of cinders or crushed limestone is placed thereon.

Another project, painting the steel bridges in the county, was completed. There are 325 bridges on the county highway system, excluding concrete arches and large metal culverts. As many of these bridges had not been painted for years, the labor of steel brushing and scraping was enormous. Other road improvement projects consisted of tile drains and open drains.