

OFFICE MEMORANDUM



MICHIGAN
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September 24, 1965

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To: E. A. Finney, Director
Research Laboratory Division

From: R. C. Mainfort

Subject: Fifth Progress Report on Salt Stabilized Sections of M 46 (Howard City to Newaygo): 1965 Surveys and Testing. Research Project 57 E-15. Research Report No. R-548.

This memorandum is the fifth in a series of reports on ten test sections in the experimental salt stabilization project on M 46 between Newaygo and Howard City. The project is now six years old and continues to be in excellent condition. Figs. 1 through 3 show yearly variations in certain properties of each test section, as recorded since the start of the project. Each point on the graphs represents the average of at least three samples for each condition shown. Roughness values represent the average obtained from four wheel tracks in the section. Density measurements were made with the Rainhart device. The quantity of salt in the aggregate was determined by ASTM Designation: D 1411-56 T.

In addition to these tests, a study was made during 1964 and 1965 to determine the magnitude of any rutting that might be taking place in the test sections. A wire was stretched across the pavement surface and measurements made of the maximum depression in each of the four wheel tracks. Such measurements were made every 100 ft along the pavement, and averaged to produce rutting values for each section as plotted in Fig. 4. Although there was some variation in the rutting values for the different sections, none of the differences appear to be critical and there is no indication that the rutting is progressive.

In general, the data obtained during 1965 show no appreciable changes in the properties of the salt stabilized sections. Some variations are to be expected due to seasonal effects at the time of testing and to sampling errors. Density values, in particular, have varied over a wide range, most likely due to the variation in density itself over the areas and to the difficulty of obtaining Rainhart measurements through the cored asphalt surface. There is no trend, however, indicating progressive change in densities.

The following conclusions can be made, based on the present condition of the test project:

1. Densities remain high in all sections and particularly so in the 12- and 9-percent fines areas.
2. Salt content has decreased with time in all sections but most notably in the low fines area.
3. Moisture content has remained fairly constant, probably reflecting only seasonal variations. The low fines area has a lower moisture content than do the 9- and 12-percent fines areas.
4. Surface roughness has increased only slightly since 1960 and there are no signs of base course deterioration.
5. Rutting tests show slightly deeper depressions in the 12-percent fines area but this difference is not enough to be considered critical.
6. The appearance and riding quality of the test sections continues to be excellent.

OFFICE OF TESTING AND RESEARCH



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RCM:nw

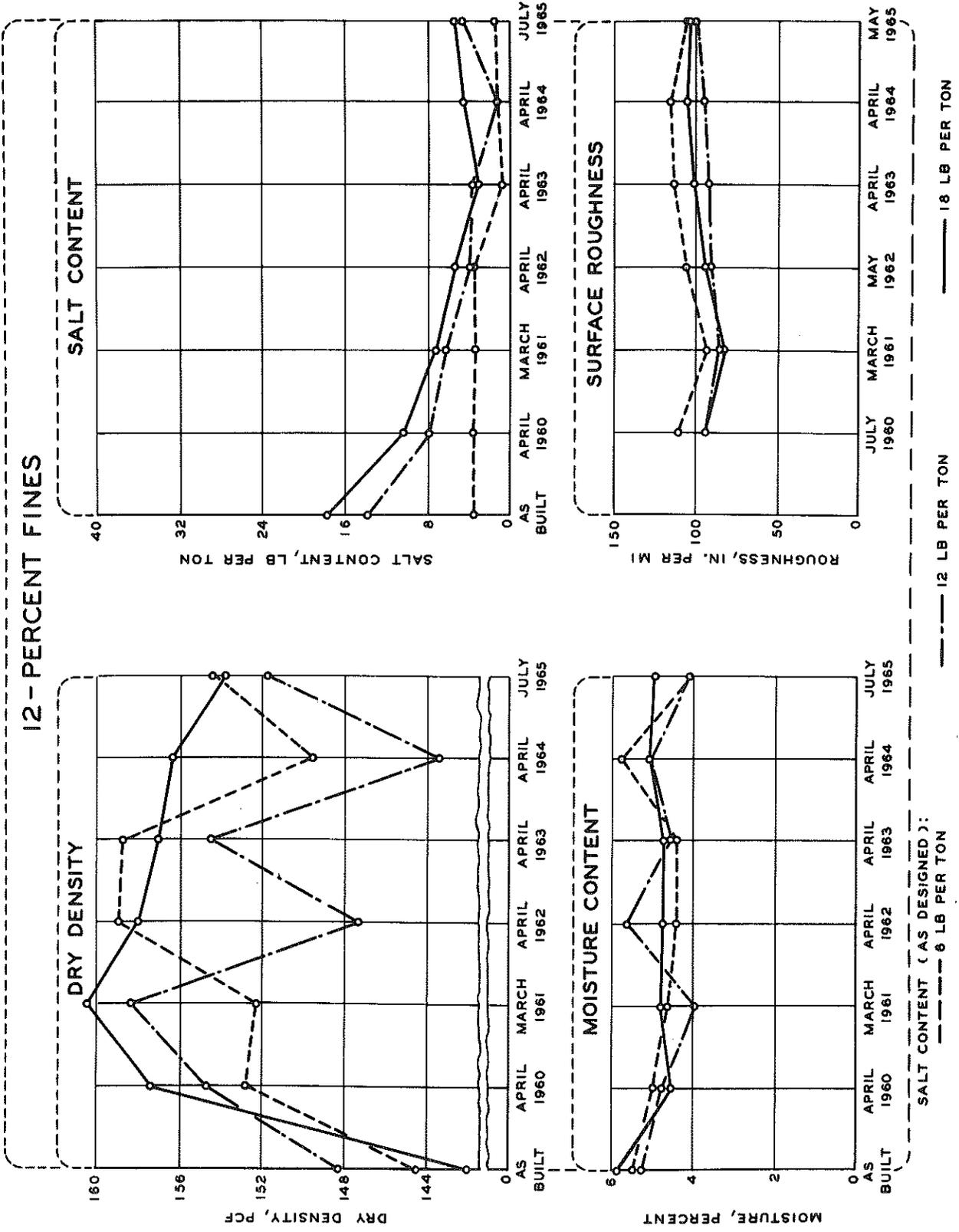
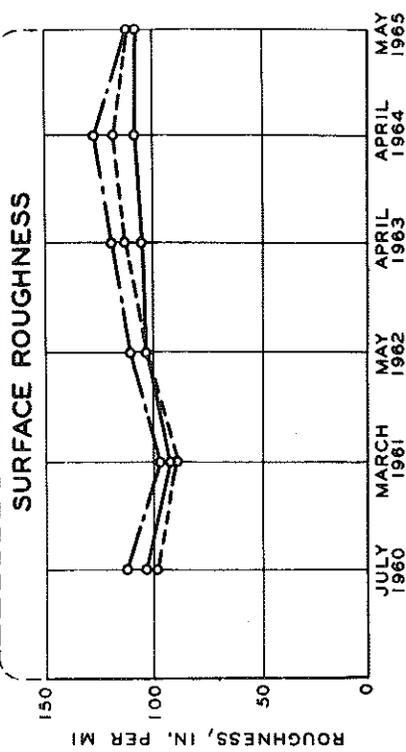
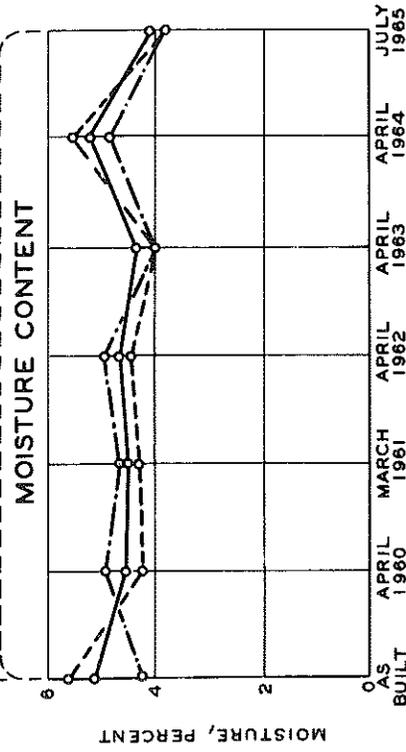
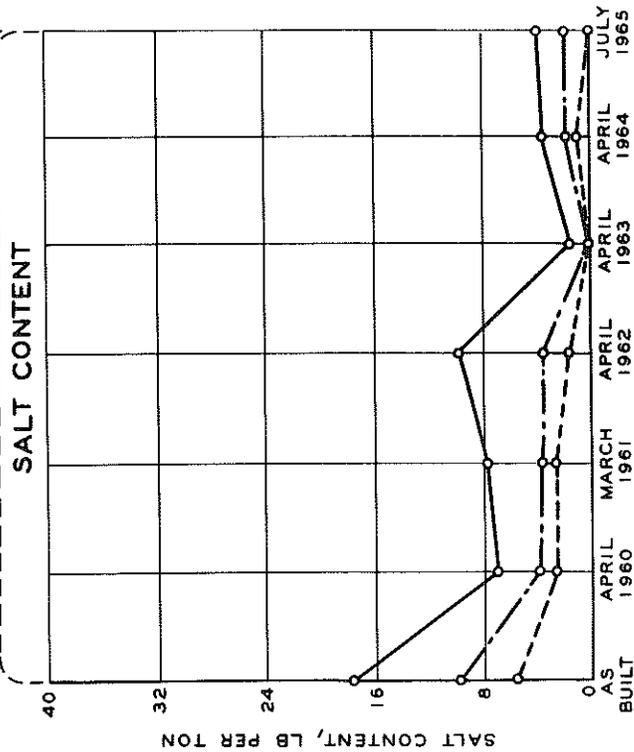
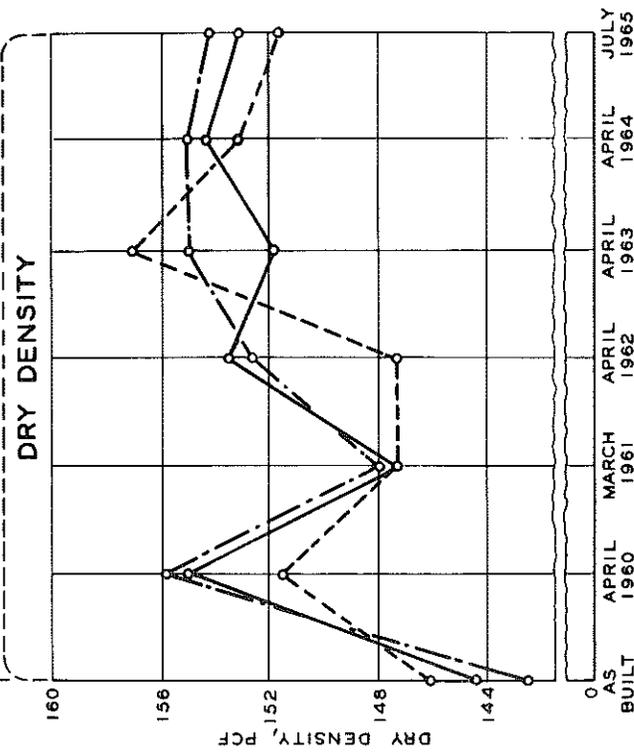


Figure 1. Yearly variation in base and surface properties (Sections 1-2-3).

9 - PERCENT FINES



--- 6 LB PER TON - · - · 12 LB PER TON — 18 LB PER TON

Figure 2. Yearly variation in base and surface properties (Sections 4-5-6).

5 - PERCENT FINES

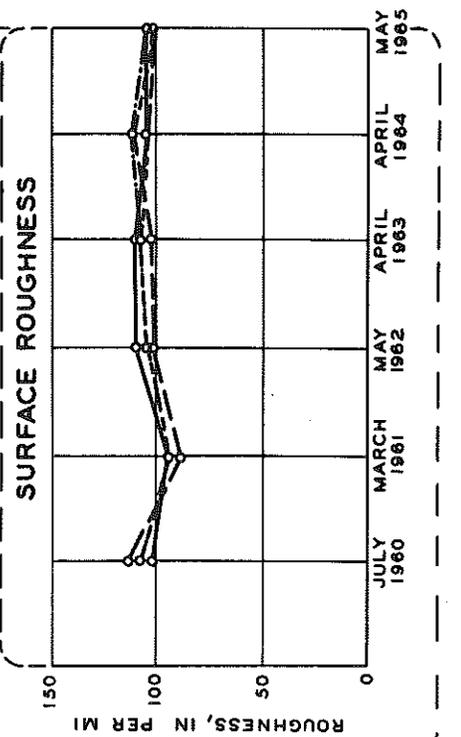
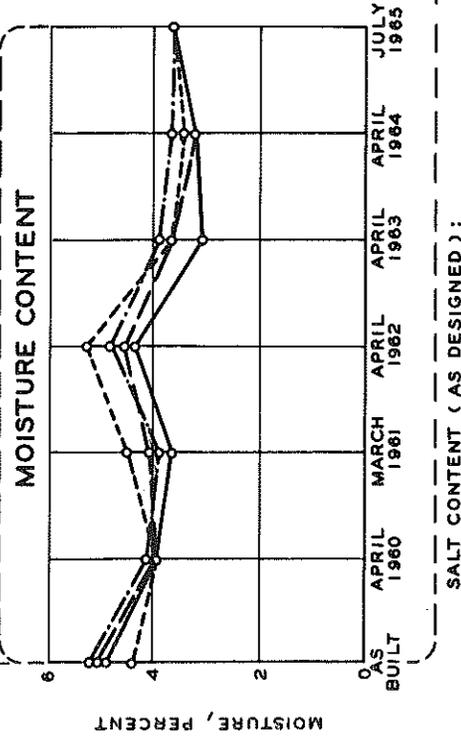
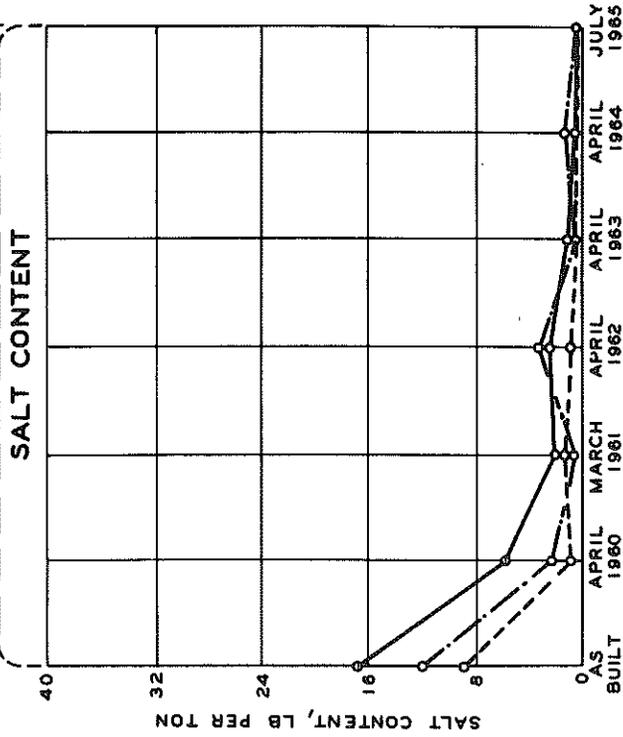
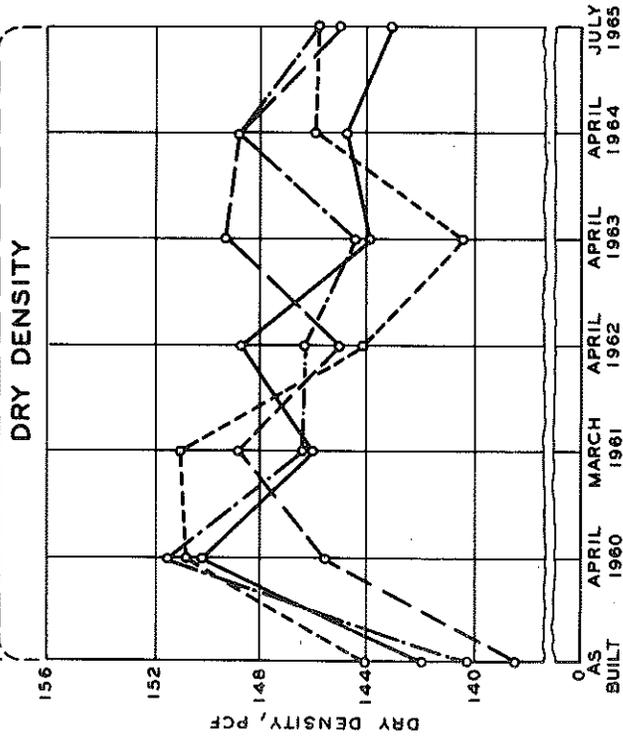


Figure 3. Yearly variation in base and surface properties (Sections 9-10-11-12).

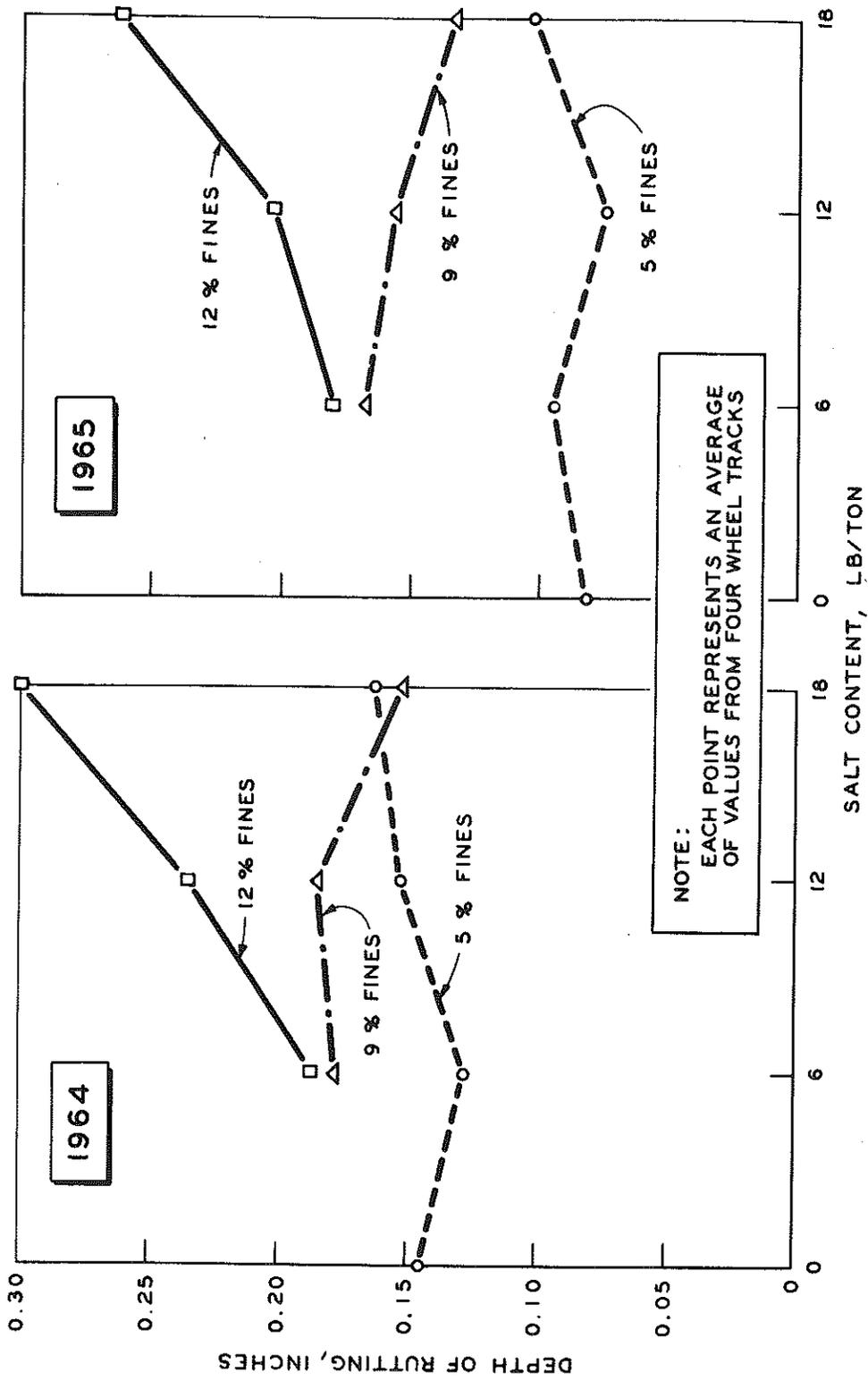


Figure 4. Amount of rutting in the different sections.