

MICHIGAN
STATE HIGHWAY DEPARTMENT

Lansing 13

Charles M. Ziegler
State Highway Commissioner

INTEROFFICE COMMUNICATION

January 11, 1952

TO: W. W. McLaughlin

SUBJECT: American Steel and Wire Company alternate 3" x 12" mesh for
concrete pavements
Report No. 168 Research Project 52 G-60

With reference to Mr. F. S. Zimmerman's letter of May 18, 1951, to H. C. Coons, Deputy Commissioner-Chief Engineer:

We wish to inform you that two full-sized sheets of 3" x 12" mesh were received at the Research Laboratory on December 24, 1951, for visual inspection. An inspection of this material was made on Monday, January 7, 1952, by the writer in company with Messrs. Homer Cash and C. B. Laird of the Construction Division.

The American Steel and Wire Company, in their letter of May 18, 1951, give the following reasons for introducing the 3" x 12" mesh as an alternate to the 6" x 12" mesh now in common use. The two types of mats will provide approximately the same area of steel per foot of width and weight per yard of surface.

1. "The price of the proposed 3" x 12" mesh will be approximately 2½ percent less than the present 6" x 12" fabric. This is an economic consideration for the State."
2. "The 3" x 12" mesh will promote better distribution of steel, hence it will be more efficient than present styles of fabric."

In regard to Item 1, it is our opinion that the 2½ percent price difference would quickly fade in a highly competitive market or under adverse procurement conditions. Furthermore, there is no assurance that such a small saving in steel cost would be reflected in lower pavement costs to the State.

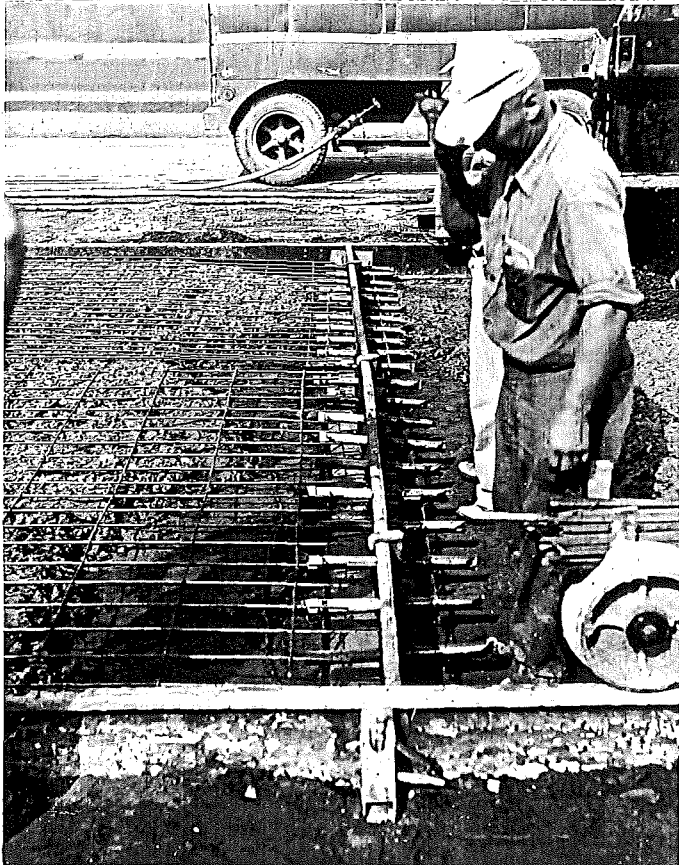
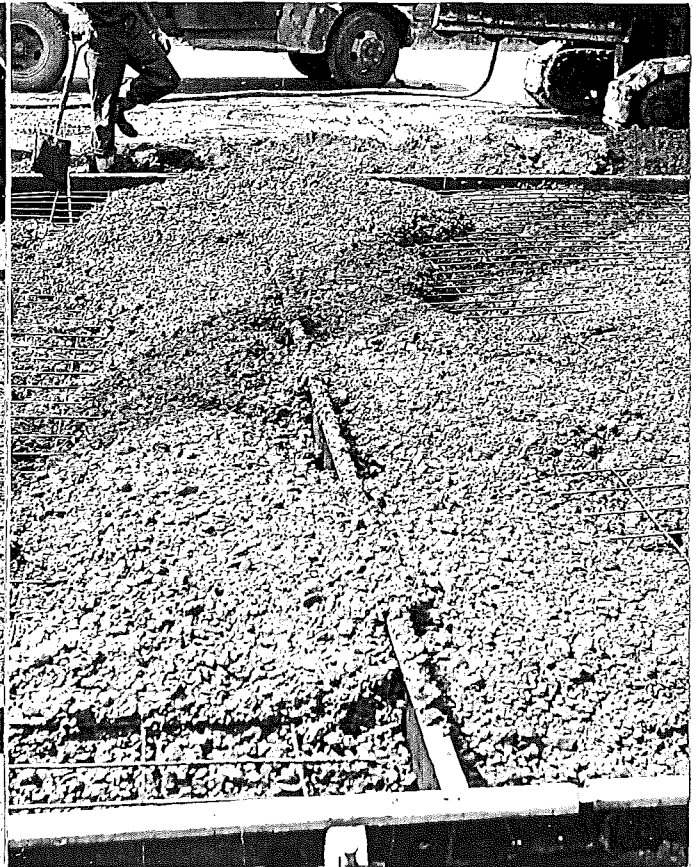
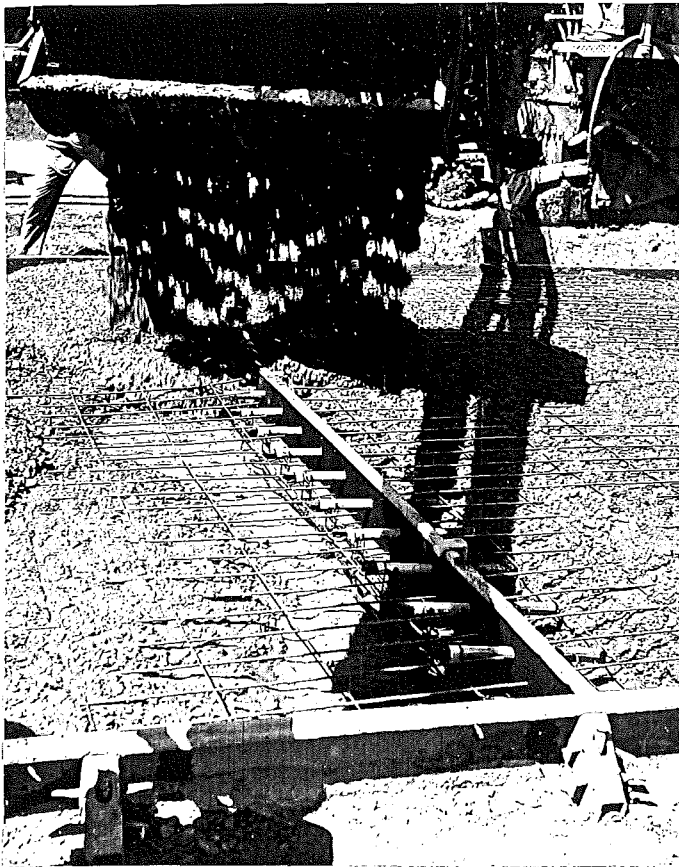
For Item 2, there is no question but that the closer spacing would provide better distribution of steel; but on the other hand, the placing of the bars at three-inch centers introduces construction factors which cannot be ignored. As shown in the attached photographs, which illustrate typical concreting practice at joint installations, the narrow spacing of the longitudinal wires will make it extremely difficult to force the concrete down through the mesh and completely fill the unpoured areas adjacent to the joints. Furthermore, if the first layer of concrete was not screeded perfectly, as is often the case, it would be more difficult to force the mesh into place through tramping by workmen.

The above, in turn, would necessitate closer supervision by paving inspectors.

In view of these facts, it is our firm opinion that such a mesh spacing should not be accepted.

E. A. Finney
Ass't Testing and Research Engr.
in charge of Research

EAF:mw



Construction practice adjacent to joints, showing how concrete must pass freely through mesh without segregation to insure satisfactory work.