TO: W. W. McLaughlin  
Testing and Research Engineer

SUBJECT: Rigidity Tests on LaClede Dowel Bar Joint Assembly.  
Report No. 259 which supplements Report No. 200  
and 237. Research Project 39 F-1(3).

At the request of C. E. Laird, Assistant Construction Engineer,  
the Research Laboratory has tested the LaClede dowel bar contraction  
joint assembly (Laboratory Sample No. 56 M647) and the results of this  
testing are reported herein.

Vertical and lateral load-deflection tests on a simply supported  
8 foot, 0 inch, span with a concentrated load at mid-span were conducted  
in accordance with the procedure used previously on other dowel bar joint  
assemblies and described in Report No. 200.

Figure 1 shows a cross-section of the assembly while Figures 2, 3,  
and 4 show the assembly and the tests being conducted on it. Figure 5  
illustrates the vertical and horizontal load-deflection relationships  
for the LaClede assembly (Type G contraction) compared to the Bethlehem  
assembly (Type O contraction) which has been used as a standard of comp­  
arison on previous studies (Report No. 200 and 237).

The LaClede assembly is 1.6 times as stiff vertically and 2.2 times  
as stiff laterally as the Bethlehem assembly. The latter assembly has  
been considered as the standard of acceptability since this assembly has  
had satisfactory field performance and it is superior to assemblies used  
in Michigan prior to 1953.

E. A. Finney  
Research Engineer

cc: H. S. Rathfoot  
H. Cash  
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C. A. Weber
Figure 2 (a) Overall view of dowel basket assembly

Figure 2 (b) Close up view of dowel bar assembly
Figure 3 Test set up for vertical loading
Figure 4. Test set up for lateral loading.
FIGURE 5

VERTICAL DEFLECTION

HORIZONTAL DEFLECTION