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MICHIGAN
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CRACKING OF SLAG AGGREGATE CONCRETE
ON GRATIOT AVENUE

E. A. Finney

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Highway Research Project 46 B-20

Research Laboratory
Office of Testing and Research
Report No. 266
October 22, 1956

October 22, 1956

TO: W. W. McLaughlin
Testing and Research Engineer

SUBJECT: Cracking of Slag Aggregate Concrete on Gratiot Ave., Detroit
Construction Project 50-27, C4
Report No. 266; Research Project 46 B-20

This is a summary report on cracking experience of slag aggregate concrete on Gratiot Avenue between 8-Mile and 13-Mile Roads.

Previous surveys were made in 1948, 1953, and the last one was during the summer of 1956.

The change in cracking experience is presented below.

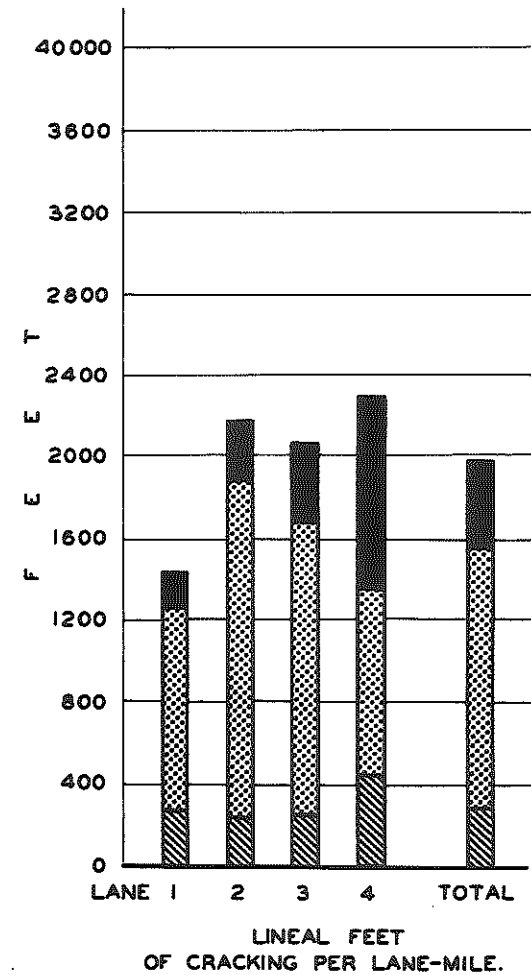
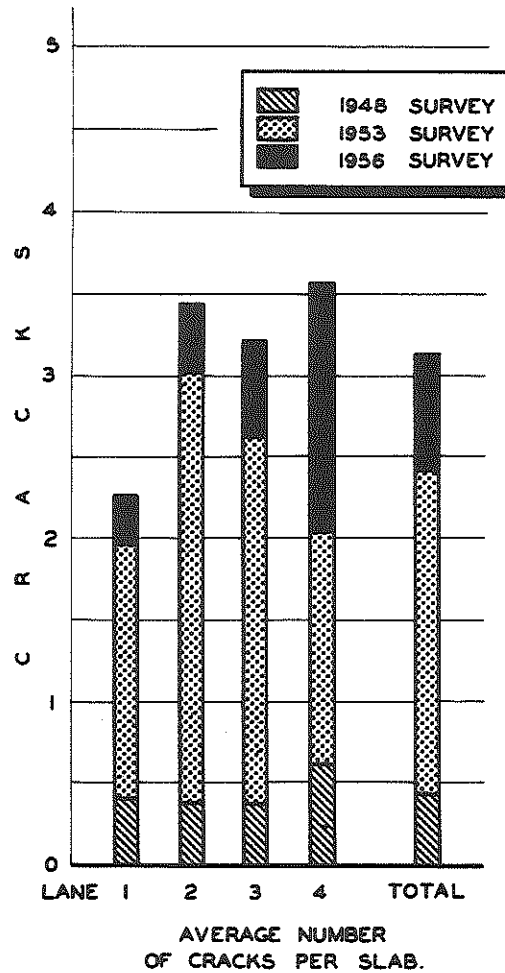
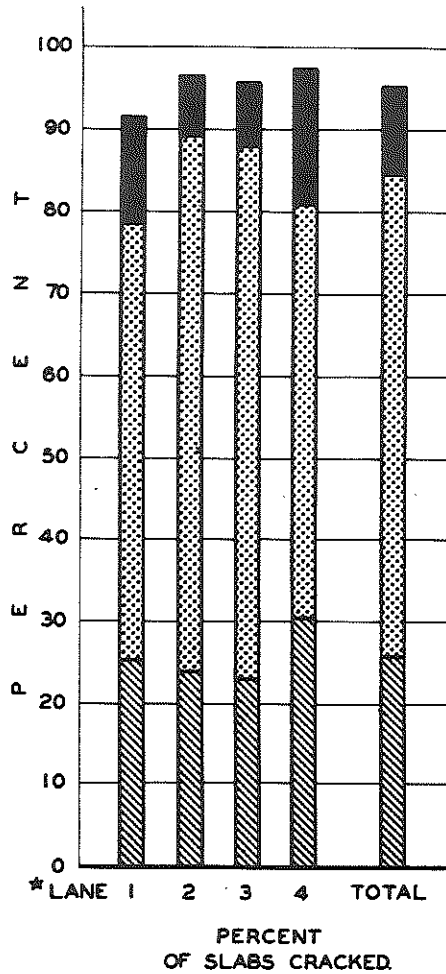
	<u>1948</u>	<u>1953</u>	<u>1956</u>
Percentage of slabs cracked	25.6	84.5	95.4
Average number of cracks per slab	0.46	2.43	3.13
Lineal feet of cracking per lane-mile	294	1537	1979

Data supporting the above summary is attached.



H. A. Finney
Research Engineer

RAF:em
encl.



* LANES NUMBERED FROM OUTSIDE TO INSIDE.

10" PAVEMENT - 100' CONTRACTION JOINTS - NO EXPANSION JTS. - SLAG FROM GREAT LAKES STEEL CO., ZUG ISLAND

CRACKING EXPERIENCE OF SLAG AGGREGATE CONCRETE ON GRATIOT AVENUE DETROIT.

PROJECT 50-27, C4. BETWEEN 8 MILE AND 13 MILE ROADS.
BUILT IN 1947. SOUTH BOUND ROADWAY.

TABLE 1

SUMMARY OF CRACKING DATA
Slag Aggregate Concrete - Construction Project 50-27, C4

		Number of Cracked Slabs					
		1948		1953		1956	
Lane No.	Number Slabs	Slabs Cracked	Percent Cracked	Slabs Cracked	Percent Cracked	Slabs Cracked	Percent Cracked
1	252	63	25.0	199	79.0	231	91.7
2	252	60	23.8	225	89.3	243	96.4
3	256	59	23.1	226	88.3	245	95.7
4	256	78	30.5	208	81.3	250	97.7
Average			25.6		84.5		95.4

		Amount of Cracks Per Slab					
		1948		1953		1956	
Lane No.	Number Slabs	Number Cracks	Number Per Slab	Number Cracks	Number Per Slab	Number Cracks	Number Per Slab
1	252	115.5	0.46	498.5	1.98	568.5	2.26
2	252	89.5	0.36	758.5	3.01	870.5	3.45
3	256	96.0	0.38	675.5	2.64	824.0	3.22
4	256	171.0	0.67	537.5	2.10	917.0	3.58
Average			0.46		2.43		3.13

		Lineal Feet of Cracking Per Lane-Mile					
		1948		1953		1956	
Lane No.	Length in Miles	Lineal Ft. Cracking	Lineal Ft. Per Lane-Mi.	Lineal Ft. Cracking	Lineal Ft. Per Lane-Mi.	Lineal Ft. Cracking	Lineal Ft. Per Lane-Mi.
1	4.22	1210	287	5230	1240	5970	1416
2	4.22	940	223	7960	1888	9140	2168
3	4.22	1010	240	7090	1681	8650	2051
4	4.22	1800	427	5650	1340	9630	2284
Average			294		1537		1979