

# OFFICE MEMORANDUM



MICHIGAN  
STATE HIGHWAY DEPARTMENT

February 11, 1966

To: W. W. McLaughlin  
Testing & Research Engineer

From: E. A. Finney

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Subject: Slab Faulting Measurements at Blowup Repairs on I 94 near Jackson.  
Research Project 39 F-7(14). Research Report No. R-566R.

Measurements of slab faulting representing the relative difference between adjacent slab edges and the established pavement grade in nine blowup repair areas were made on the eastbound roadway of I 94 in the roadway area 4 miles west of US 127, on the afternoon of October 7, 1965. They represent either the inside or outside wheel track of the traffic and passing lanes. These data were obtained by means of the GM Rapid Travel Profilometer and also independently by a level rod survey. The results of the surveys, showing relative displacements of the approach slab with respect to the leaving slab, are given in Table 1.

It is to be noted that relative displacement of the approach slab with respect to the leaving slab is not always in the same direction. Thus, in Table 1 the approach slab displacements are marked (+) when higher and (-) when lower than the leaving slab.

The average length of patch for the nine areas tested was 4.7 ft in the traffic lane and 4.9 ft in the passing lane. Individual traces as obtained by the GM Rapid Travel Profilometer are shown in Figs. 1 through 9. These traces show the relative displacement, perpendicular to the grade, of slab ends at the nine patches areas, reading from left to right in the direction of traffic. The profiles were taken at mid-day when slabs would be in a most favorable position. However, from experience, relative displacement values can be expected to change in magnitude and position under varying temperature and moisture conditions, and between day and night.

There are two other significant purposes in presenting these data: 1) this is the first application of this equipment for a specific highway purpose, and 2) the data show the degree of resolution now possible with this equipment.

OFFICE OF TESTING AND RESEARCH

  
E. A. Finney, Director  
Research Laboratory Division

TABLE 1  
RELATIVE SLAB DISPLACEMENT

Location	Relative Slab Displacement, in.			
	Traffic Lane		Passing Lane	
	Profilometer	Level	Profilometer	Level
568+15	+0.80	+0.80	+0.35	+0.48
591+65	-0.15	--	-0.50	-0.40
606+72	+0.02	0.00	+0.32	+0.56
620+58	--	--	-0.17	-0.16
641+23	+0.32	+0.24	+0.50	+0.40
662+26	-0.25	-0.32	-0.25	-0.24
712+13	-0.38	-0.40	0.00	0.00
725+39	+0.37	+0.40	+0.48	+0.32
740+78	-0.08	-0.08	0.00	0.00

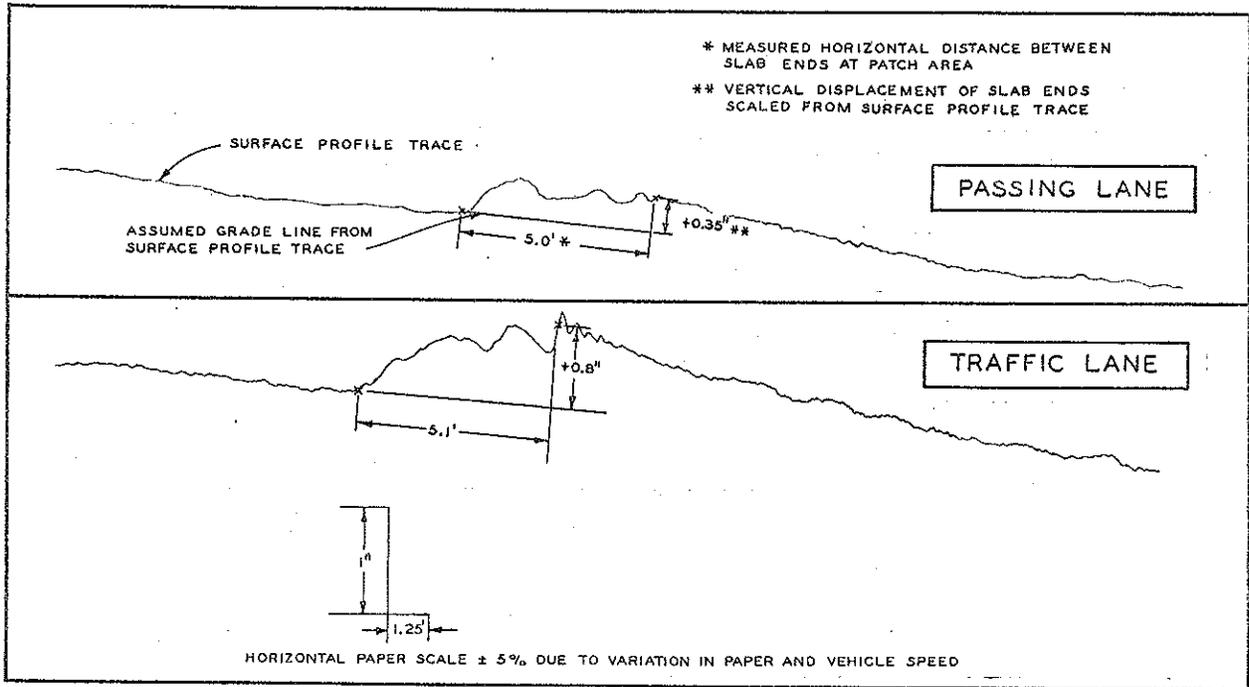


Figure 1. Station 568+15--Grade: -0.24%.

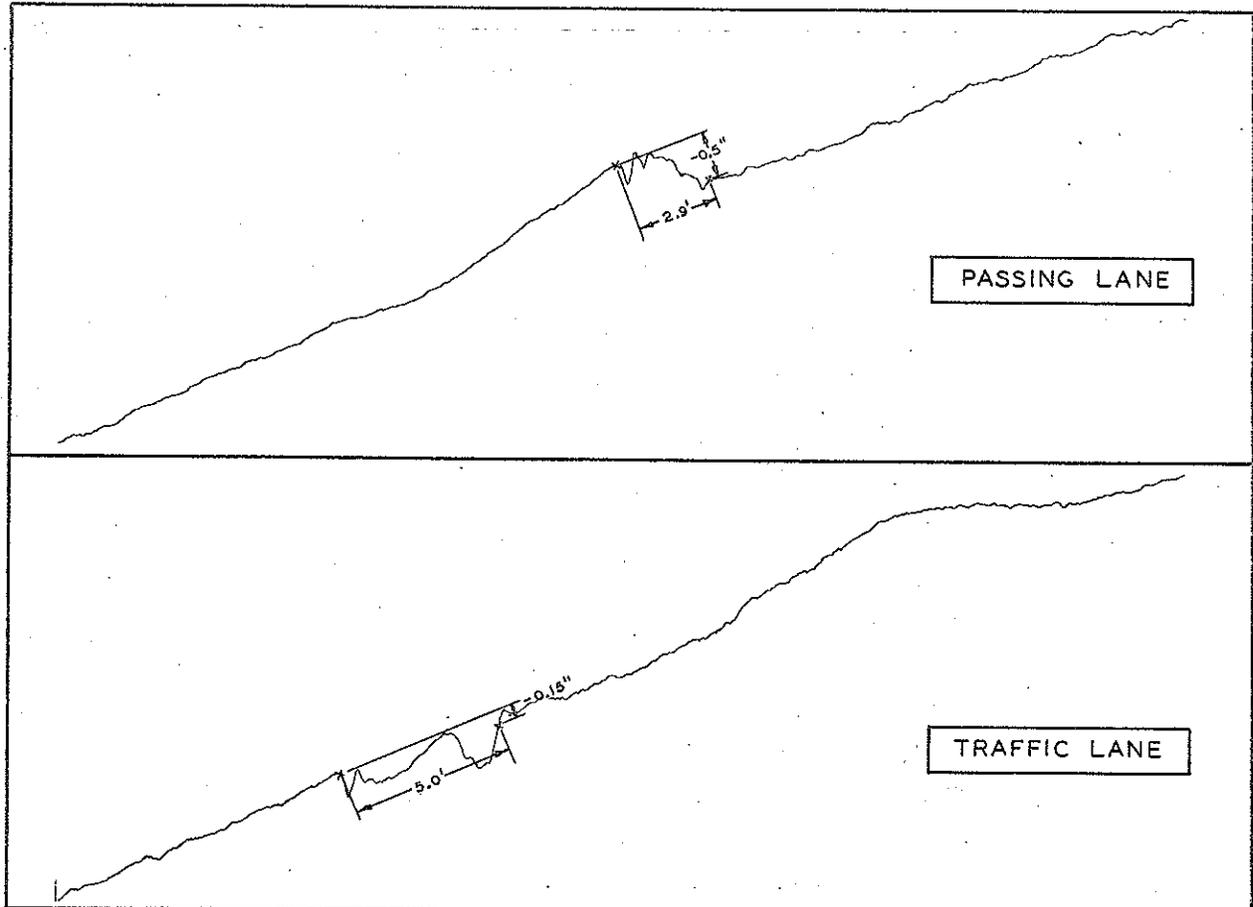


Figure 2. Station 591+65--Grade: +1.40%.

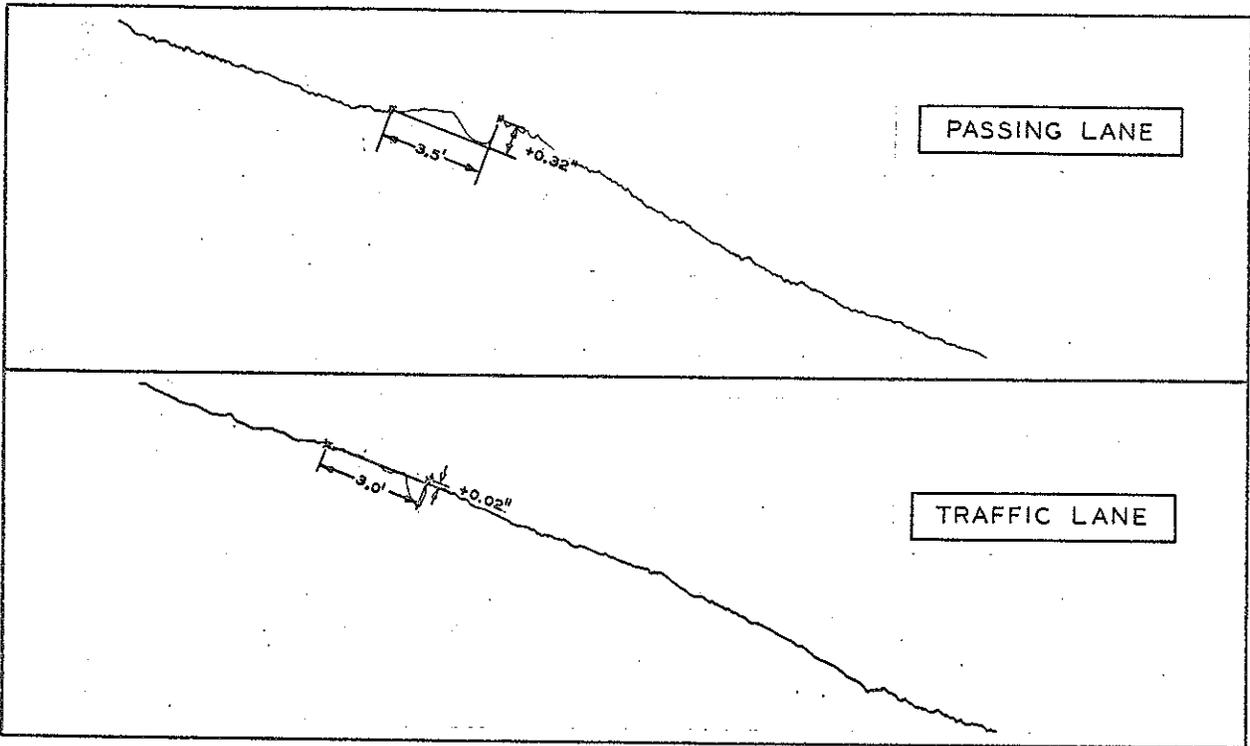


Figure 3. Station 606+72--Grade: -1.15%.

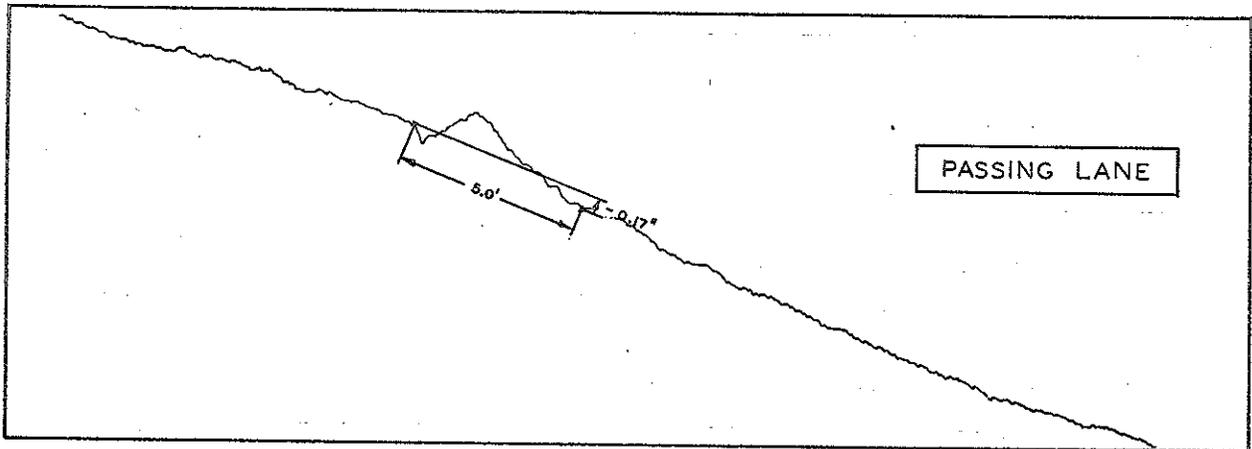


Figure 4. Station 620+58--Grade: -0.80%.

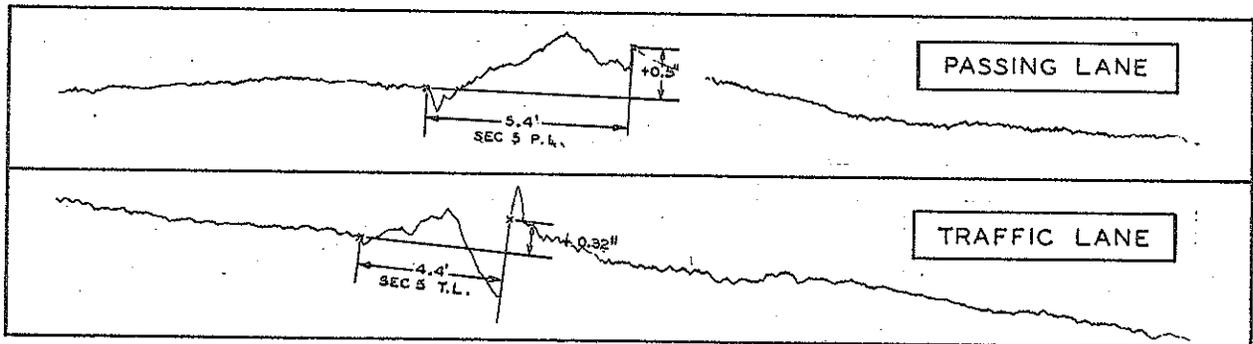


Figure 5. Station 641+23--Grade: -0.15%.

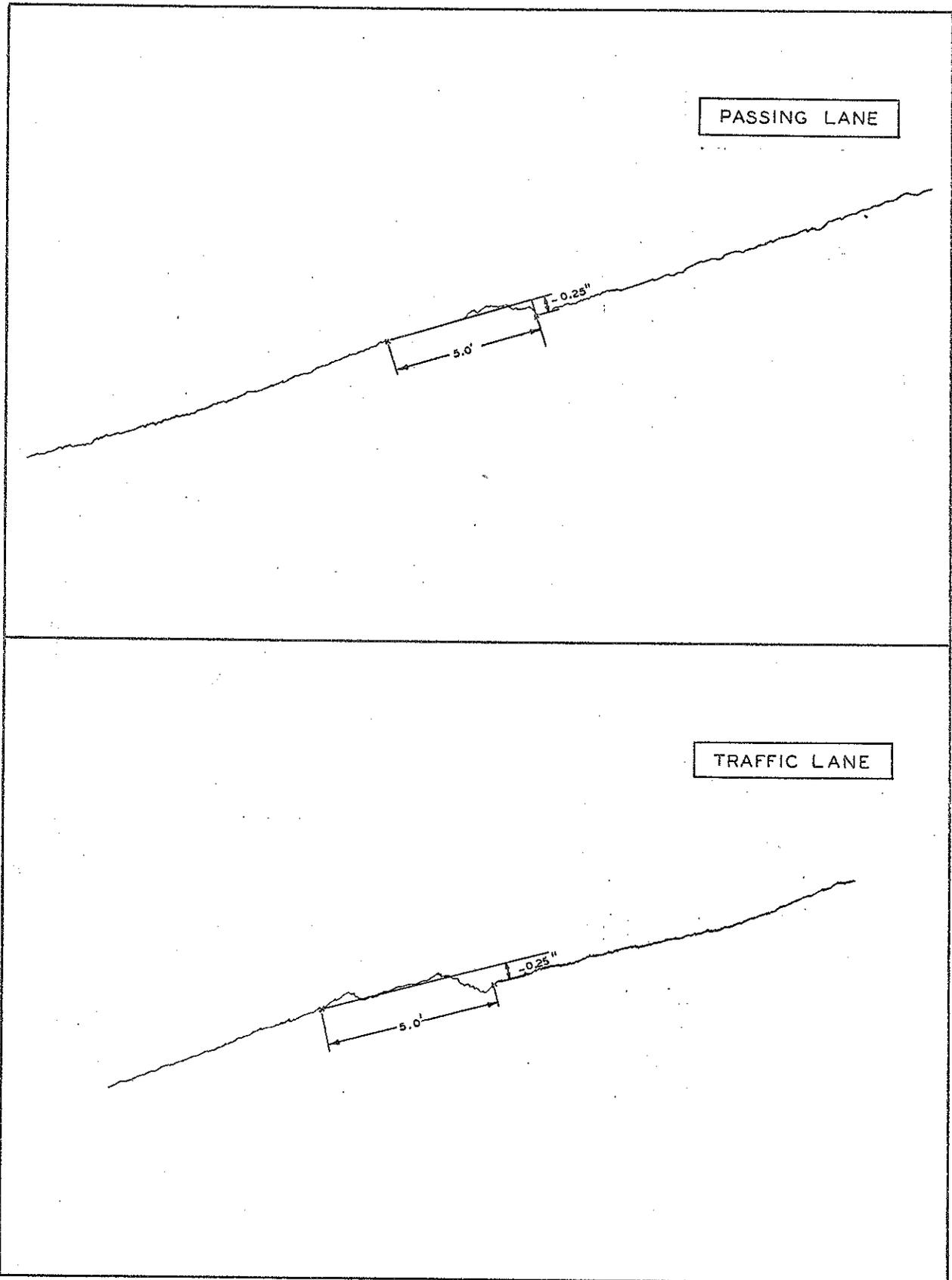


Figure 6. Station 662+26--Grade: +0.70%

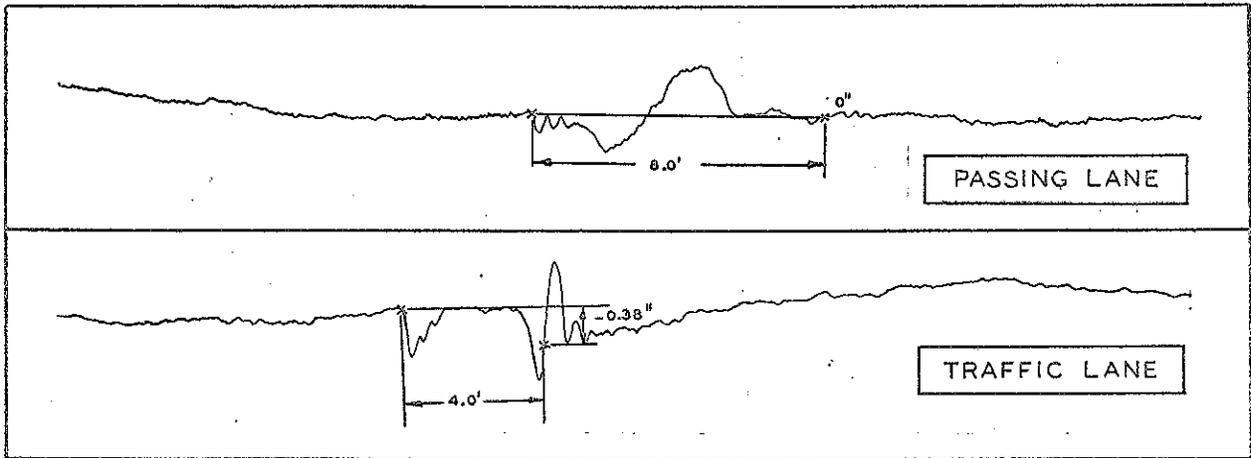


Figure 7. Station 712+13--Grade: 0%

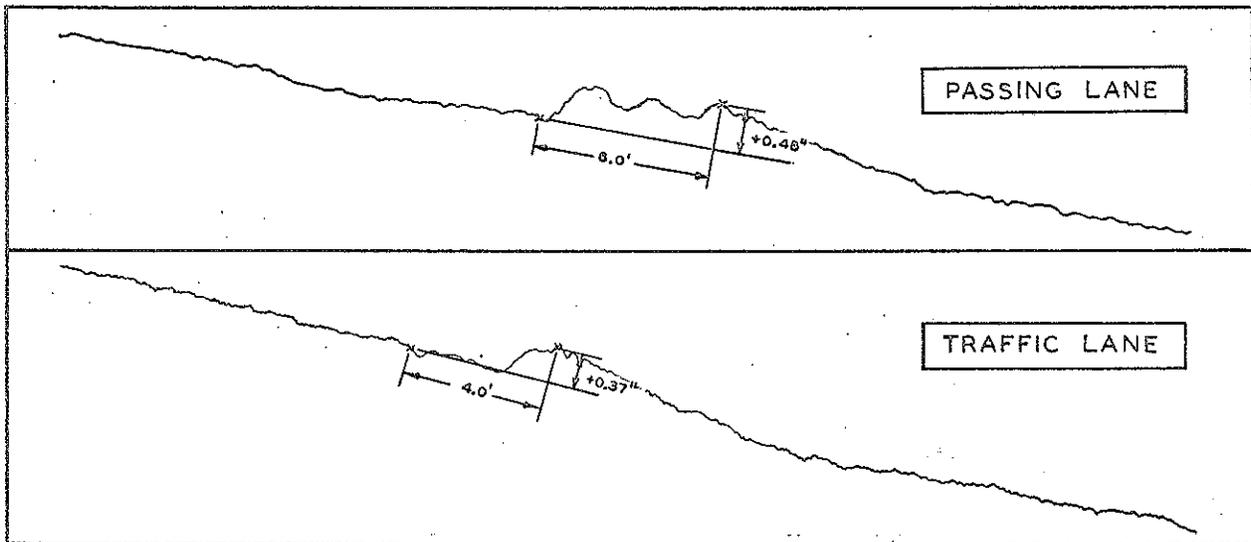


Figure 8. Station 725+39--Grade: -0.30%

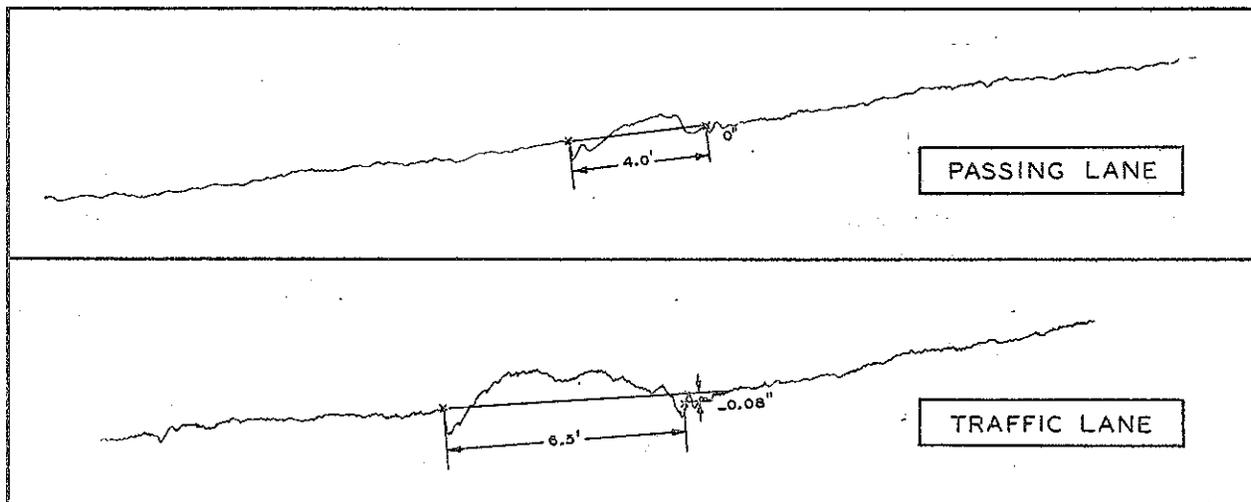


Figure 9. Station 740+78--Grade: +0.25%