OFFICE MEMORANDUM

DATE: December 12, 1979

TO: K. A. Allemeier
Engineer of Testing and Research

FROM: G. M. Smith

SUBJECT: Stimsonite Delineators
Research Project 78 NM-588, Research Report No. R-1131

This is in response to J. J. Kanillopoolos' June 12, 1979 request to test the subject delineators (marked Stimsonite Model No. 962-001). Photometric tests, sealing tests, and heat or warping tests were conducted. The seal between the front face and the supporting back face was considered satisfactory. The delineator showed no evidence of water intake after being submerged in water in a pressurized container at 2.5 psi for 15 minutes.

Results from a heat test which subjected the delineator to a 125 F temperature for four hours showed no loss in photometric performance of the delineator. Initial specific luminance values for the delineator are shown in Table 1. Entrance angle and orientation angle geometries are shown in Figure 1 for information purposes.

The Model 962 delineator, as shown in Figure 2, houses its delineator face at a 10° angle. Center mount delineators rotated to the same 10° angle provide about the same reflective intensity performance as the Model 962 delineator.

Mounted on a barrier wall, the Stimsonite delineator would protrude about 2-1/2 in. from the barrier, and therefore, is highly susceptible to impact damage. A relatively short service life can be expected.

Experimental barrier wall installations can be recommended with the reservation that a short service life is expected. The Model 962 delineator cannot be expected to provide the optical performance for limited viewing distance delineators—less than the 400 ft recommended and shown in Table 2.

This evaluation of the Stimsonite delineator may be compared with the results for Astro Optics delineators, Research Report No. R-1110, and for NFS Industries delineators, Research Report No. R-1111, both dated March 28, 1979.

TESTING AND RESEARCH DIVISION

George M. Smith

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GMS:bf

TABLE 1
INITIAL SPECIFIC LUMINANCE OF STIMSONITE DELINEATOR

Divergence Angle	Specific Luminance, cd/ftc/unit at 0.2 Degree Divergence																					
	+ Entrance Angle -																					
	70	60	50	40	35	30	25	20	15	10	5	0	5	10	15	20	25	30	35	40	50	60	70
0.2°	--	0.2	2.1	39.4	55.5	70.2	81.7	88.4	91.7	91.7	88.6	86.6	76.9	61.4	47.3	14.4	4.1	1.5	0.5	0.1	--	--	--

TABLE 2
OPTICAL PERFORMANCE OF LIMITED
VIEWING DISTANCE DELINEATORS

Color	Specific Luminance, Candela Per Footcandle Per Unit At 0.2 Degree Divergence Angle		
	Entrance Angle, degrees		
	0	+20	+60
Crystal	25	25	25
Yellow	15	15	15

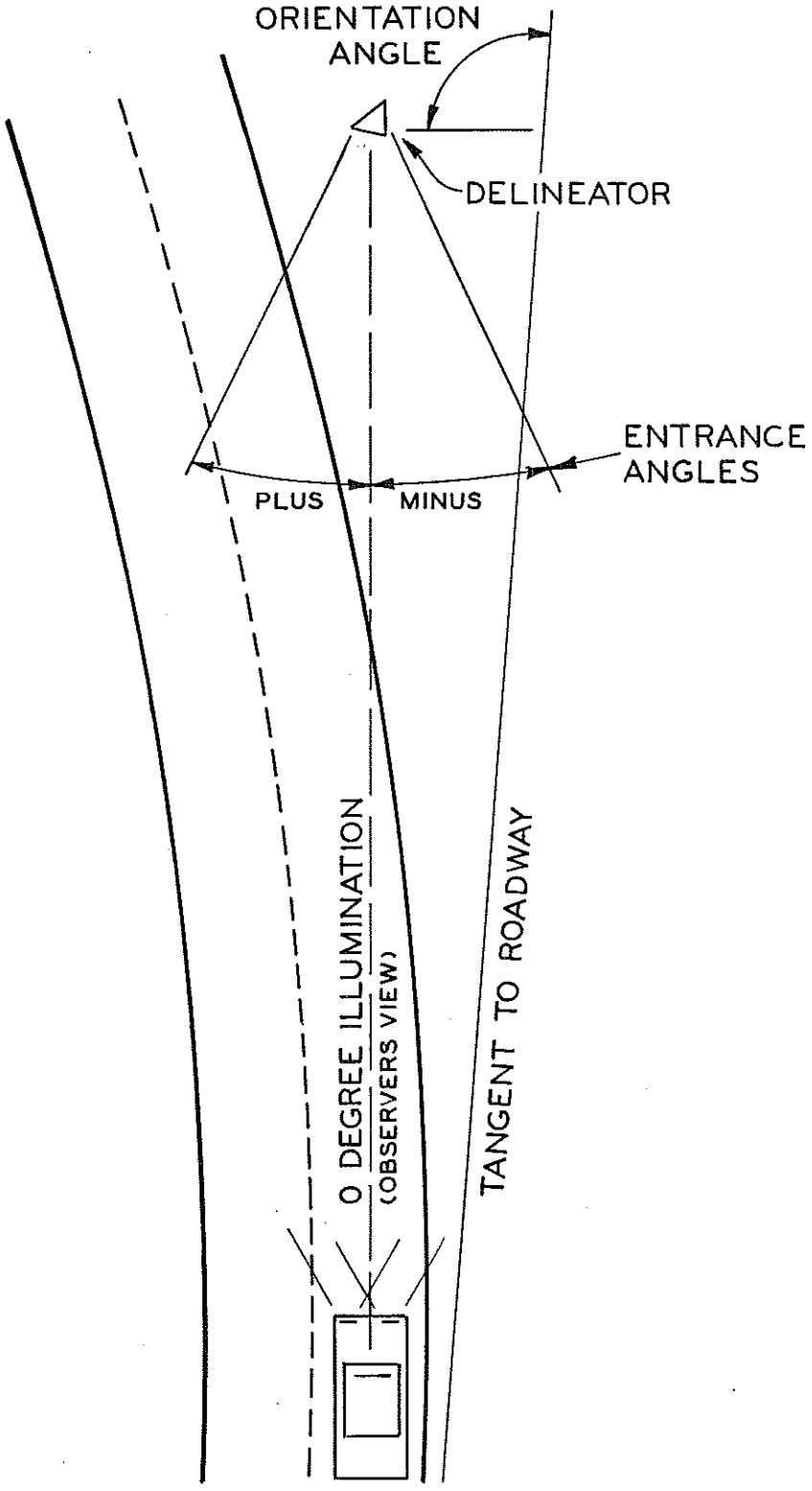

Figure 1. Delineator entrance angle and orientation angle geometries.

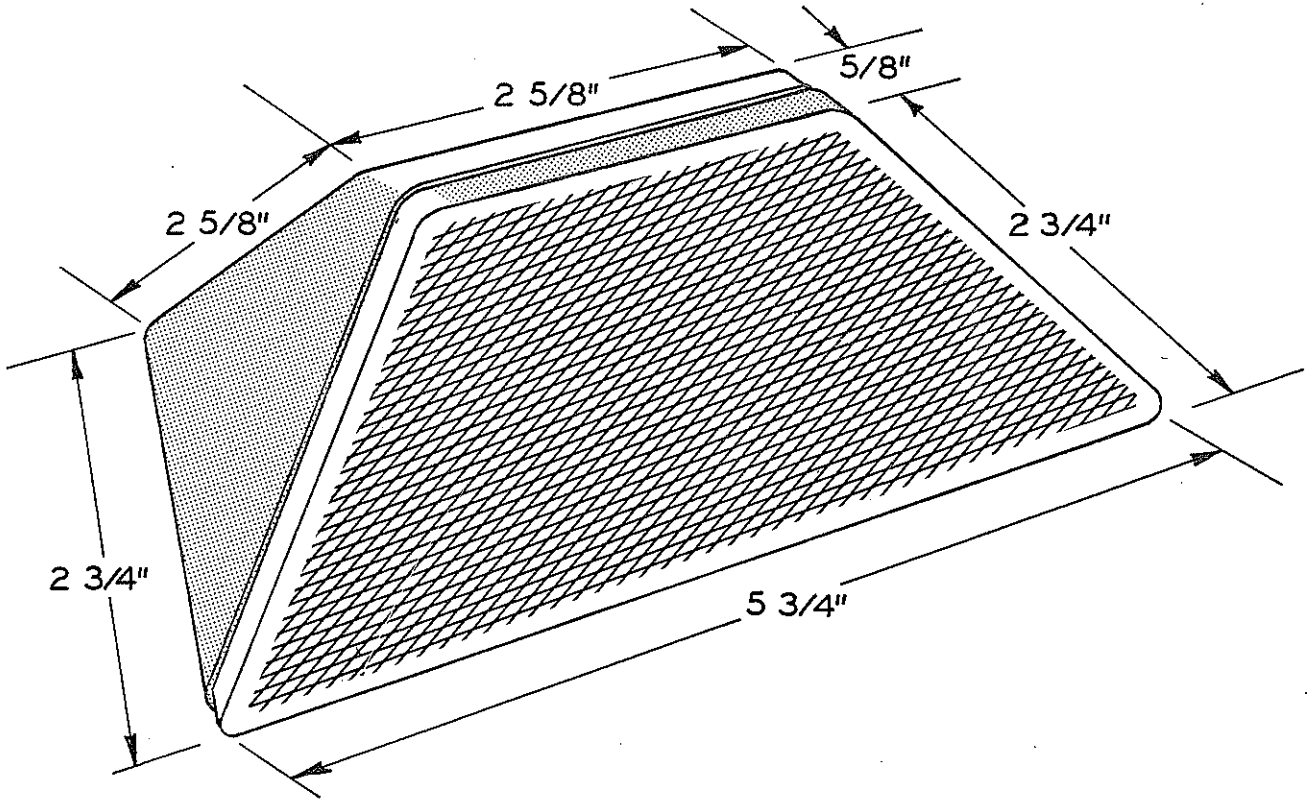

Figure 2. Stimsonite delineator, Model 962.