

OFFICE MEMORANDUM



MICHIGAN
DEPARTMENT OF STATE HIGHWAYS

September 21, 1972

Hand
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To: John P. Woodford
Deputy Director - Chief Engineer

From: Max N. Clyde

Subject: Cambridge Green Subdivision Noise Impact Study, Research Project
72 TI-109, Research Report No. R-833 (EV-18).

This is in response to your July 6, 1972 directive to K. A. Allemeier to conduct a noise impact study at Cambridge Subdivision near I 275. Senator Carl Purcell had expressed concern about the possible impact of highway-generated noise in this area once it is opened to traffic.

The problem at the site is complicated by the fact that the residential developer reportedly sold lots by indicating that the freeway would be at least 100 yards (300 ft) from the back lot lines. This, however, is definitely not the case as several lots are only 22 yards (66 ft) from the center of the near lane of proposed I 275.

On August 9, 1972, photos (Photos 1 through 3) were taken of the subdivision area. Although present noise levels were not taken due to high wind and nearby housing construction noise, ambient levels of 50 to 55 dbA are typical for this type of neighborhood.

Table 1 presents the predicted 1990 noise levels at eight typical back lot-lines along the approximate 1/2 mile length of the subdivision. All but one of the 1990 L_{10} levels (Site No. 8) exceeds the PPM 90-2 standard of 70 dbA for residences. The table also includes the predicted noise levels that would result from erection of a 10-ft high barrier between the pavement edge and the back lot lines (for computation purposes the barrier was arbitrarily placed 24 ft from the lot lines). Such a barrier would bring the noise levels into compliance with the PPM 90-2 standards.

Although, the noise levels due to I 275 traffic will exceed the federal standards, thereby creating a problem for the Department, there is a possibility that at least part of the responsibility for resolving the problem rests with the developer. Since, either through error or intent, the home buyers were misled as to the separation that would exist between the freeway and their properties.

John P. Woodford

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It should be noted (Photo 3) that a developer is now building four-family dwellings on the other side of the proposed I 275. These apartments appear to be close enough to also experience high noise levels.

TESTING AND RESEARCH DIVISION

Max N. Clyde
Engineer of Testing and Research

MNC:GHG:bf

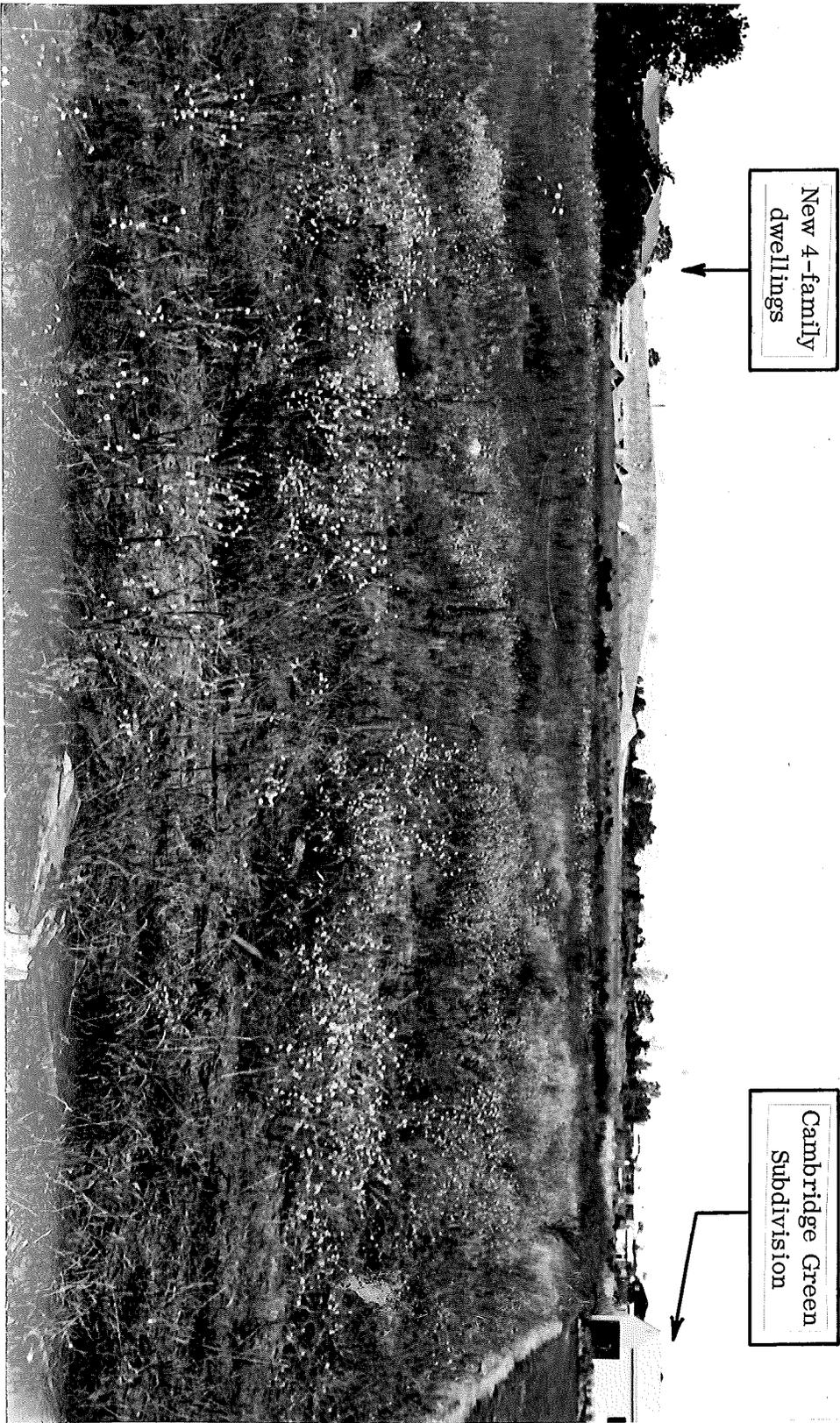
cc: J. G. Hautala
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TABLE 1

(All levels are L₁₀ values, i. e., level exceeded 10 percent of the time— FHWA PPM 90-2 sets 70 dbA limit for residential category)

| Site No. | L ₁₀ Levels at r-o-w Line with No Barrier | L ₁₀ Levels with 10-ft Barrier* | | | |
|----------|--|--|-----------------------|-------|-------|
| | | At r-o-w Line | Beyond r-o-w Line, ft | | |
| | | | 50 | 100 | 200 |
| 1 | 79.8 | 68.8 | 68.5 | ----- | ----- |
| 2 | 77.1 | 66.4 | 67.7 | ----- | ----- |
| 3 | 77.4 | 67.2 | 68.3 | 69.5 | ----- |
| 4 | 77.9 | 67.8 | 68.2 | 69.8 | 68.4 |
| 5 | 77.0 | 67.0 | 68.2 | 69.9 | 68.6 |
| 6 | 72.8 | 62.8 | 66.2 | 69.2 | 68.1 |
| 7 | 70.8 | 60.3 | ----- | 68.2 | 67.3 |
| 8 | 63.8 | ----- | ----- | ----- | ----- |

* In r-o-w, 24-ft from lot lines.



New 4-family dwellings

Cambridge Green Subdivision

Photo 1. I 275 right-of-way looking north from Joy Rd.

Back lot lines 66'
from center of near
pavement lane.



Photo 2a. Looking east across right-of-way toward Cambridge Green subdivision.



Photo 2b. Looking northeast across right-of-way toward Cambridge Green subdivision.

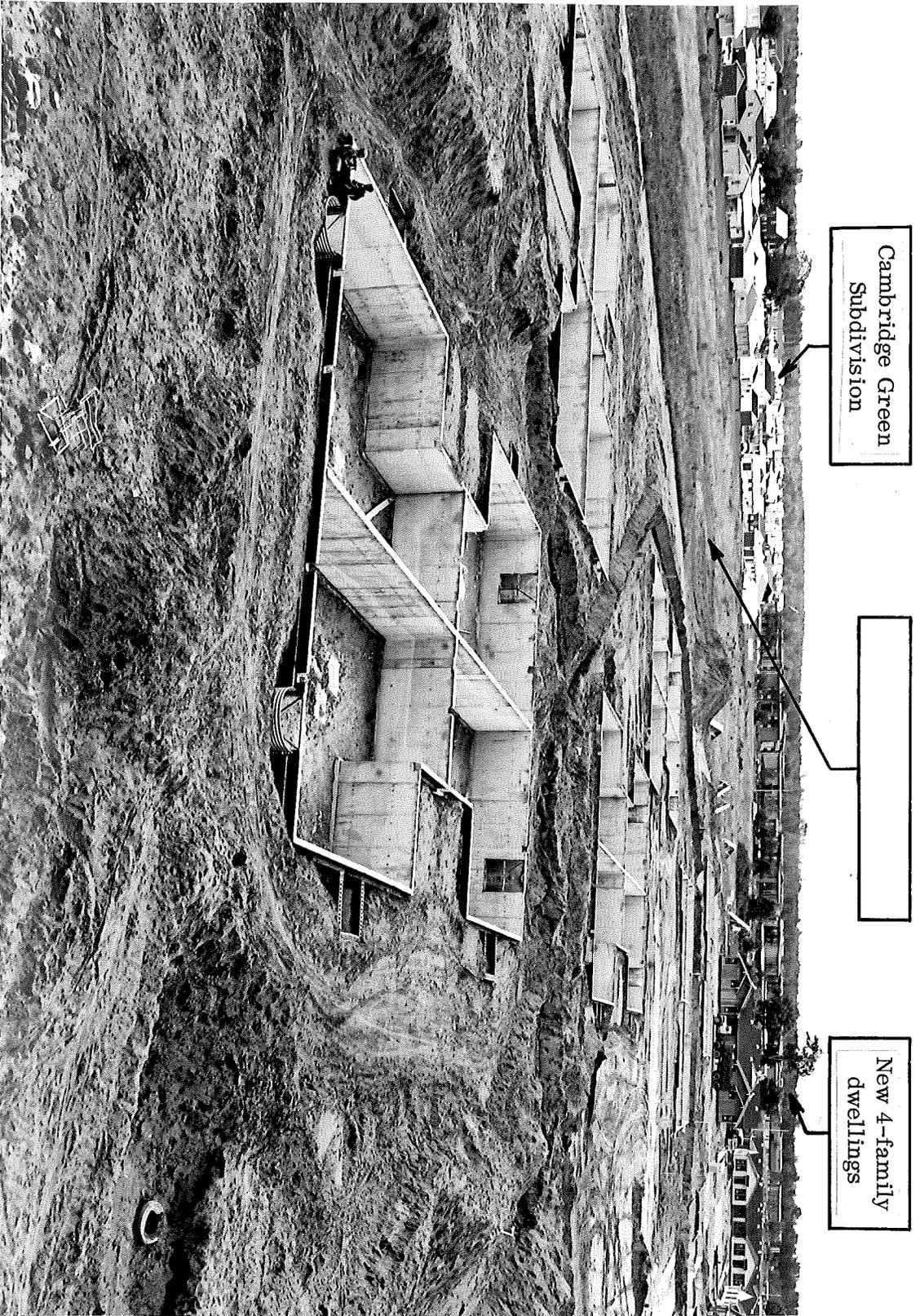


Photo 3. Looking southeast from earthen mound.