

NOISE STUDY REPORT

U.S. 41

From C.R. 887 to South of Myrtle Road

State Project Number: 03010-1568

Federal-Aid Project Number: F-301-1(10)

Work Program Item Number: 1114150

Collier County, Florida

Prepared for:

THE FLORIDA DEPARTMENT OF TRANSPORTATION

APRIL 1993

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Prepared by:

GREINER, INC.

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EXECUTIVE SUMMARY

This Noise Study Report examines the potential noise impacts associated with U.S. 41, from C.R. 887 to south of Myrtle Road in Collier County, Florida. Existing and future-year noise levels were predicted for eight noise sensitive areas using the STAMINA 2.1 computer noise model. The results of this analysis shows that two of these eight sites, representing seven residences, will approach or exceed the FHWA Noise Abatement Criteria. However, differences in the Existing and No-Build Alternative to the Build Alternative range from slight decreases near the northern project terminus to increases of only 1 to 4 dBA near the southern project terminus. These slight increases represent a barely perceptible change. In addition, no sites within the project corridor are predicted to experience a substantial increase in noise levels.

Abatement measures were considered and determined to be infeasible or unreasonable for reducing or eliminating noise impacts.

The Noise Study Report will be furnished to local officials to help aid in the understanding of highway traffic noise and be used as a planning tool to prevent future noise impact within this corridor.

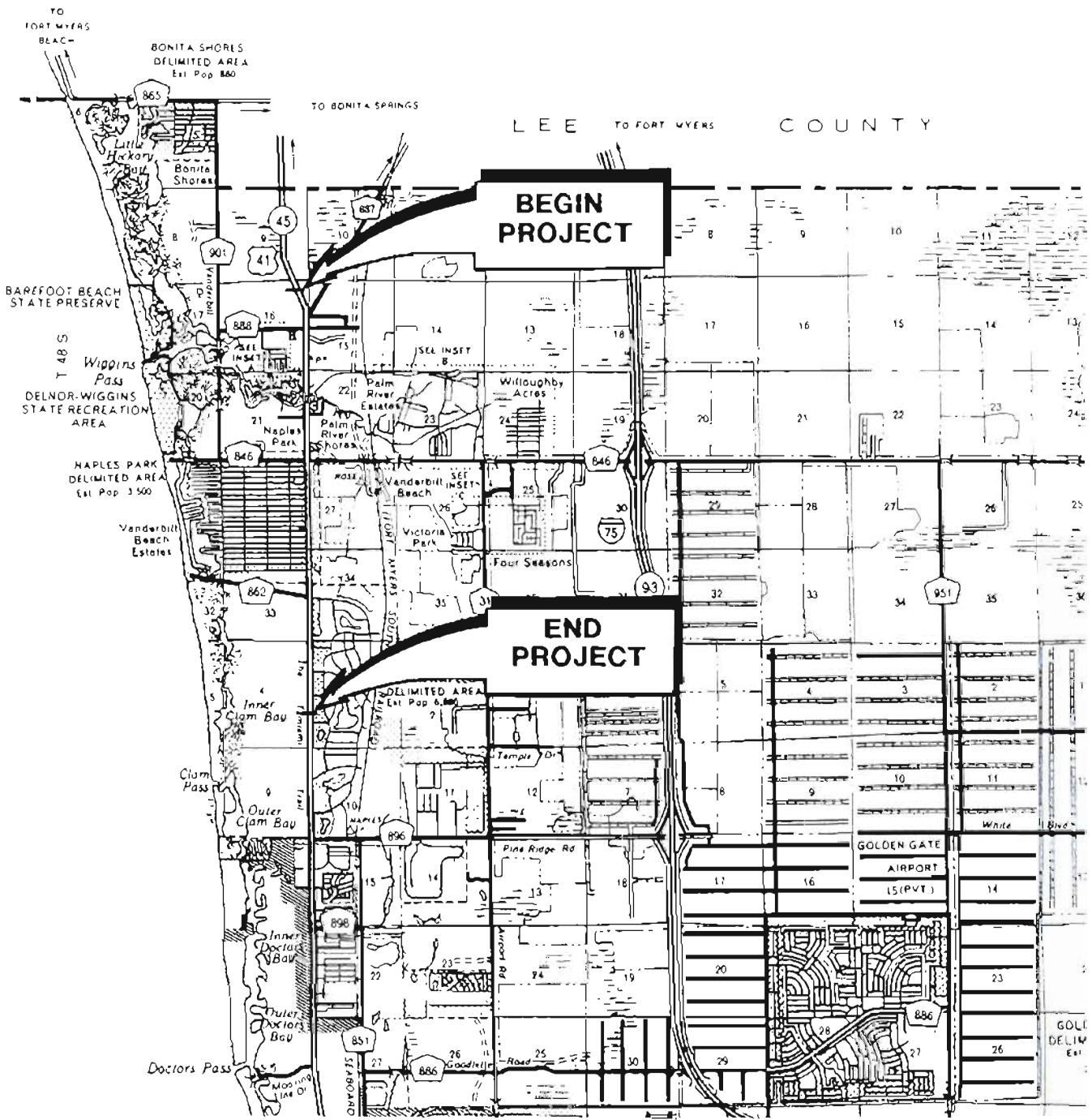
1.0 INTRODUCTION

1.1 Project Description

The Florida Department of Transportation (FDOT) proposes to widen the existing U.S. 41 from C.R. 887 (Old Highway 41) to Gulf Park Drive (south of Myrtle Road) in Collier County (see Figure 1). This approximately 7.4-kilometer (4.6-mile) study proposes to widen the existing rural divided four-lane highway to an urban divided six-lane highway.

1.2 Project Need

This project is being proposed to help accommodate increased roadway travel demand within the study area due to recent and projected population growth and commercial development in the Naples/Collier County area. The segments of U.S. 41 within the study area currently operate at Level of Service (LOS) B, with the intersections of U.S. 41 with C.R. 846 (Immokalee Road) and C.R. 862 (Vanderbilt Beach Road) currently operating at LOS F or worse during peak hours. Traffic projections indicate that, without the proposed improvements, U.S. 41 would operate at a severely congested LOS F by 1995. With the proposed improvements, U.S. 41 will operate at LOS B with intersections operating at LOS D or better through the 2015 design year. For more detailed information regarding traffic demand, refer to the Technical Memorandum: Project Traffic Report for U.S. 41 from C.R. 887 (Old Highway 41) to Gulf Park Drive (South of Myrtle Road), Florida Department of Transportation, 1993.



PROJECT LOCATION MAP

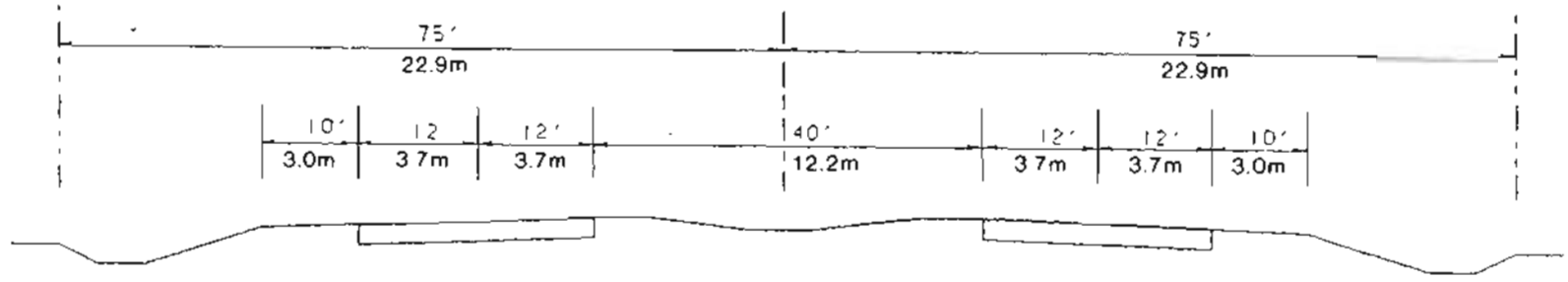
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1.3 Existing Facility

U.S. 41 is a north-south rural and urban principal arterial highway connecting Tampa in Hillsborough County and Fort Myers in Lee County to Naples in Collier County and Miami in Dade County. From C.R. 887 to south of Myrtle Road, U.S. 41 consists of a four-lane divided rural facility with two northbound and two southbound 3.6-meter (12-foot) through traffic lanes bordered by 1.8-meter (6-foot) inside and 3.1-meter (10-foot) outside grassed shoulders and divided by a 12.2-meter (40-foot) depressed median that provides left-turn lanes at numerous locations throughout the project length (see Figure 2). U.S. 41 crosses over the Cocohatchee River with two existing structures. The northbound bridge consists of two 3.6-meter (12-foot) traffic lanes with 0.9-meter (3-foot) shoulders and 0.6-meter (2-foot) wide parapets. The southbound bridge consists of two 3.6-meter (12-foot) traffic lanes with 3.0-meter (10-foot) outside and 1.2-meter (4-foot) inside shoulders and 0.6-meter (2-foot) parapets (see Figure 3).

1.4 Alternatives

This noise study examines the potential traffic noise impacts associated with U.S. 41. The existing conditions and the design year (2015) "No-Build" Condition are analyzed for the existing highway described above. The 2015 "Build" Alternative examines the proposed six-lane section. The proposed urban section consists of three 3.6-meter (12-foot) through traffic lanes and a 1.5-meter (5-foot) designated bicycle path in each direction, separated by a 9.2-meter (30-foot) raised median. The outside border areas would include 2.4-meter (8-foot) pathways within the existing right-of-way. The proposed bridge structures would be identical northbound and southbound bridges,



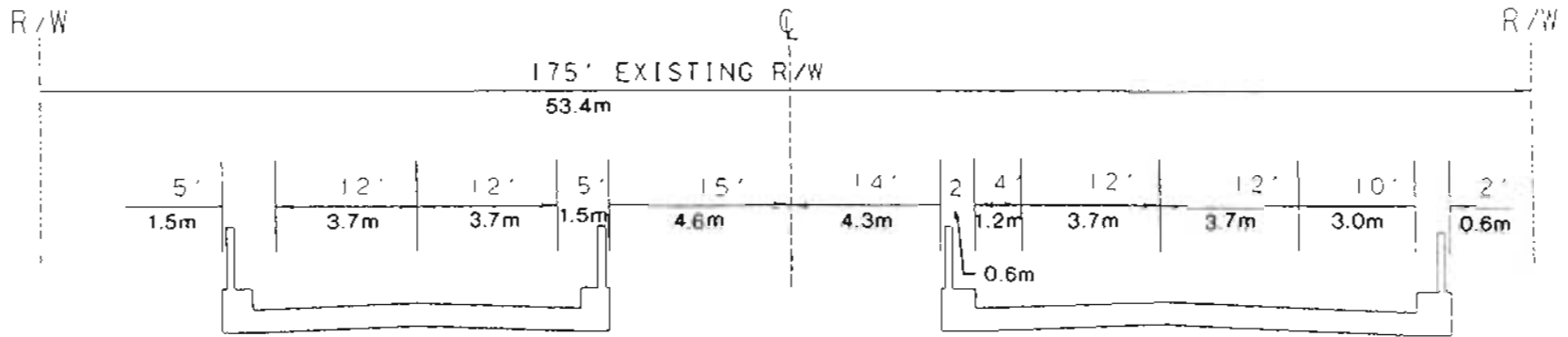
EXISTING U.S. 41 ROADWAY TYPICAL SECTION

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EXISTING U.S. 41 BRIDGE TYPICAL SECTION

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each consisting of three 3.6-meter (12-foot) through lanes and one 1.5-meter (5-foot) dedicated bicycle lane, a 0.7-meter (2.5-foot) inside and 1.2-meter (4-foot) outside shoulder, and New Jersey-type barrier walls. A 2.4-meter (8-foot) pathway and handrail would be located on the outside of each bridge, and the bridges would be separated by at least 6.1 meters (20 feet) of opening. The proposed typical sections are presented as Figures 4 and 5.

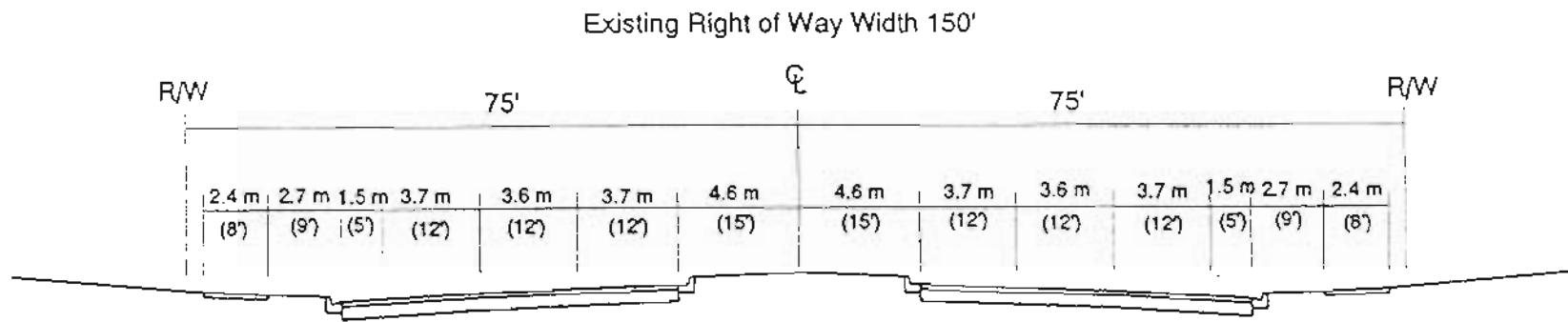
2.0 NOISE STUDY

2.1 Study Objectives

This noise study was conducted to 1) identify noise sensitive sites adjacent to U.S. 41, 2) compare and determine the significance of traffic noise impacts on land use activities at these sites for the "No-Build" and "Build" alternatives and 3) evaluate reasonable and feasible noise abatement measures for reducing or eliminating these potential noise impacts.

In addition, this study identifies a noise impact contour (isopleth) that can be used to establish future-year noise sensitive site setback requirements for those parcels that have yet to be developed. Finally, this study considers measures to minimize noise impacts that will be associated with the construction of the proposed improvements.

The study was prepared in accordance with Title 23, Code of Federal Regulations (CFR), Part 772, U.S. Department of Transportation, Federal Highway Administration, Procedures for Abatement of Highway Traffic Noise and Construction Noise and FDOT's PD&E Guidelines Manual, Part 2, Chapter 17.



PROPOSED U.S. 41 ROADWAY TYPICAL SECTION

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FIGURE 4

2.2 The Project Setting and the Noise Propagation Environment

Land use adjoining the alignment is mixed. The variety of land uses found in the study area includes residential, retail/commercial (including office), public/semi-public, agricultural, and vacant or undeveloped properties.

The project is addressed in this section as three segments from north to south. The first segment is from the northern terminus where U.S. 41 intersects C.R. 887 to Immokalee Road (Immokalee is also known as C.R. 846, David C. Brown Highway, or 111th Avenue). The land on both sides of U.S. 41 is mostly native habitat, with high density single family housing east of U.S. 41 between Sun Century Road and Imperial Golf Course Boulevard. Included in this segment is the large Germain automobile facility located on the west side of U.S. 41 at Wiggins Pass Road. The first segment is less developed than the other two segments.

The second segment is between Immokalee Road (C.R. 846) and Vanderbilt Beach Road (C.R. 862). The west side of U.S. 41 is commercial frontage faced by high density single family housing. On the east side, pine flatwoods and wetlands are found adjacent to the existing right-of-way. The open land is backed by an active agricultural operation. Westinghouse Communities of Naples is developing plans for Pelican Marsh, an urban/residential area on the east side of U.S. 41 in this segment.

The third segment is from Vanderbilt Beach Road (C.R. 862) to the southern terminus 0.25 mile south of Myrtle Road near Gulf Park Drive. From C.R. 862 to C.R. 896 (Pine Ridge Road) on the east side, the right-of-way of U.S. 41 is contiguous in right-of-way to Trail Boulevard North, a county road which acts as a commercial frontage

road to U.S. 41. The Pelican Bay residential development on the west side of U.S. 41 and planned developments of Trail Boulevard North, provide medium density single family housing. Westinghouse's Pelican Bay planned regional residential development is near completion in this segment covering the entire western side of U.S. 41.

The noise propagation environment is very similar for each of the selected noise sensitive areas (described in Section 2.3). Areas of mowed grass and other vegetation separate the noise receivers from the travel lanes, while some commercial and residential buildings shield potential noise sensitive residences from U.S. 41. Most sites are situated approximately at-grade with the proposed improvements.

2.3 Selection of Potentially Noise Sensitive Sites

Through examination of aerial photography and a field review, eight existing noise sensitive areas were identified adjacent to U.S. 41. Seven of these eight sites are located at the southern end of the project, between Gulf Park Drive and Vanderbilt Beach/Hickory Roads. Included in these seven sites are four single family residences, a church, a school and a condominium. The eighth site is a mobile home park located south of Wiggins Pass Road (C.R. 888) next to the Germain Automotive Facility. These sites are depicted on Figures 6 through 9.

2.4 Measurement of Existing Noise Levels

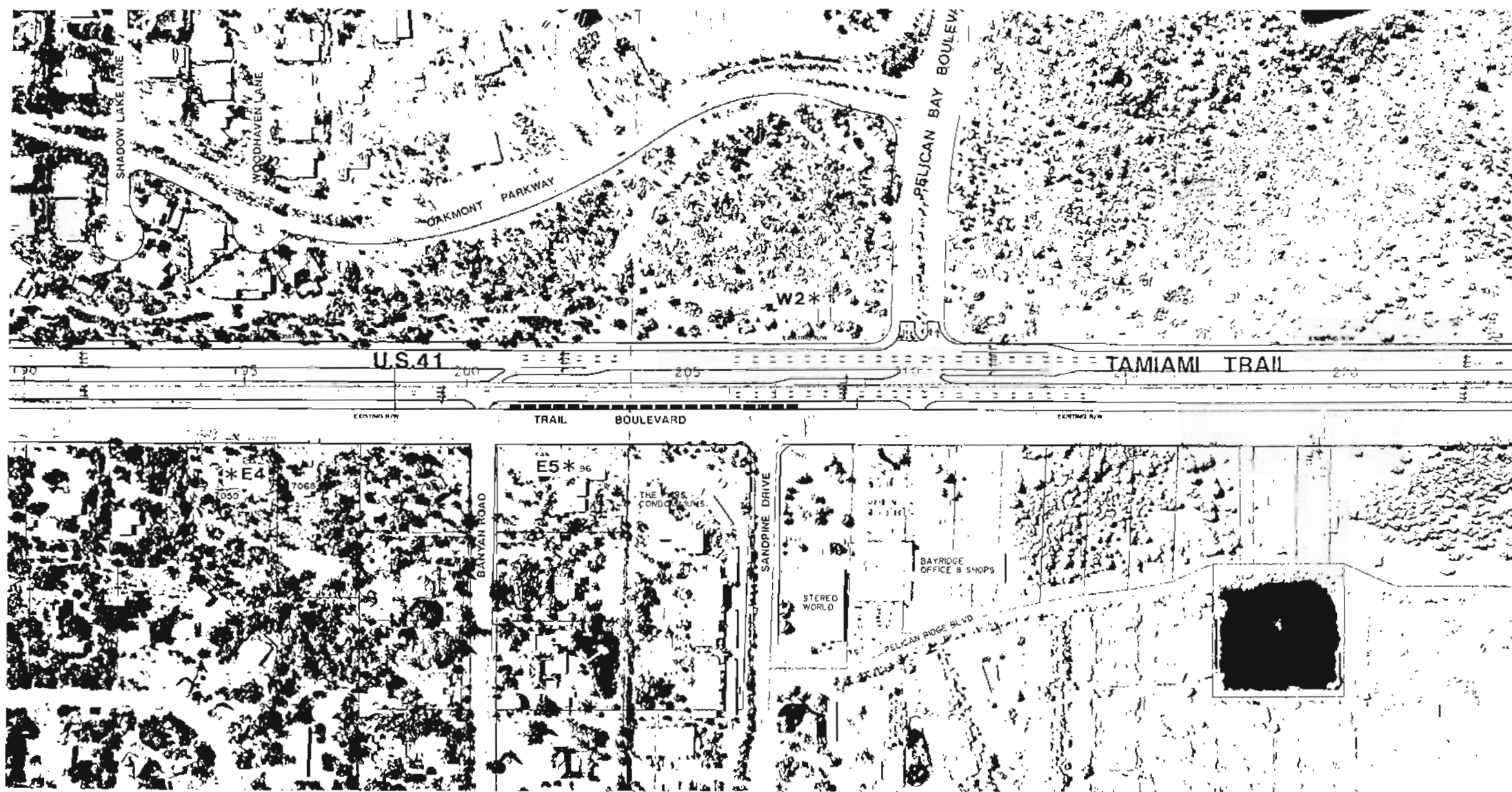
In order to validate the use of a noise prediction computer model used for this study, noise monitoring was performed at a representative location along the project corridor. The noise monitoring was conducted in accordance with procedures described in the



LEGEND

- * W3 RECEPTOR LOCATION
- ANALYZED NOISE BARRIER LOCATION

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 NOISE SENSITIVE SITES

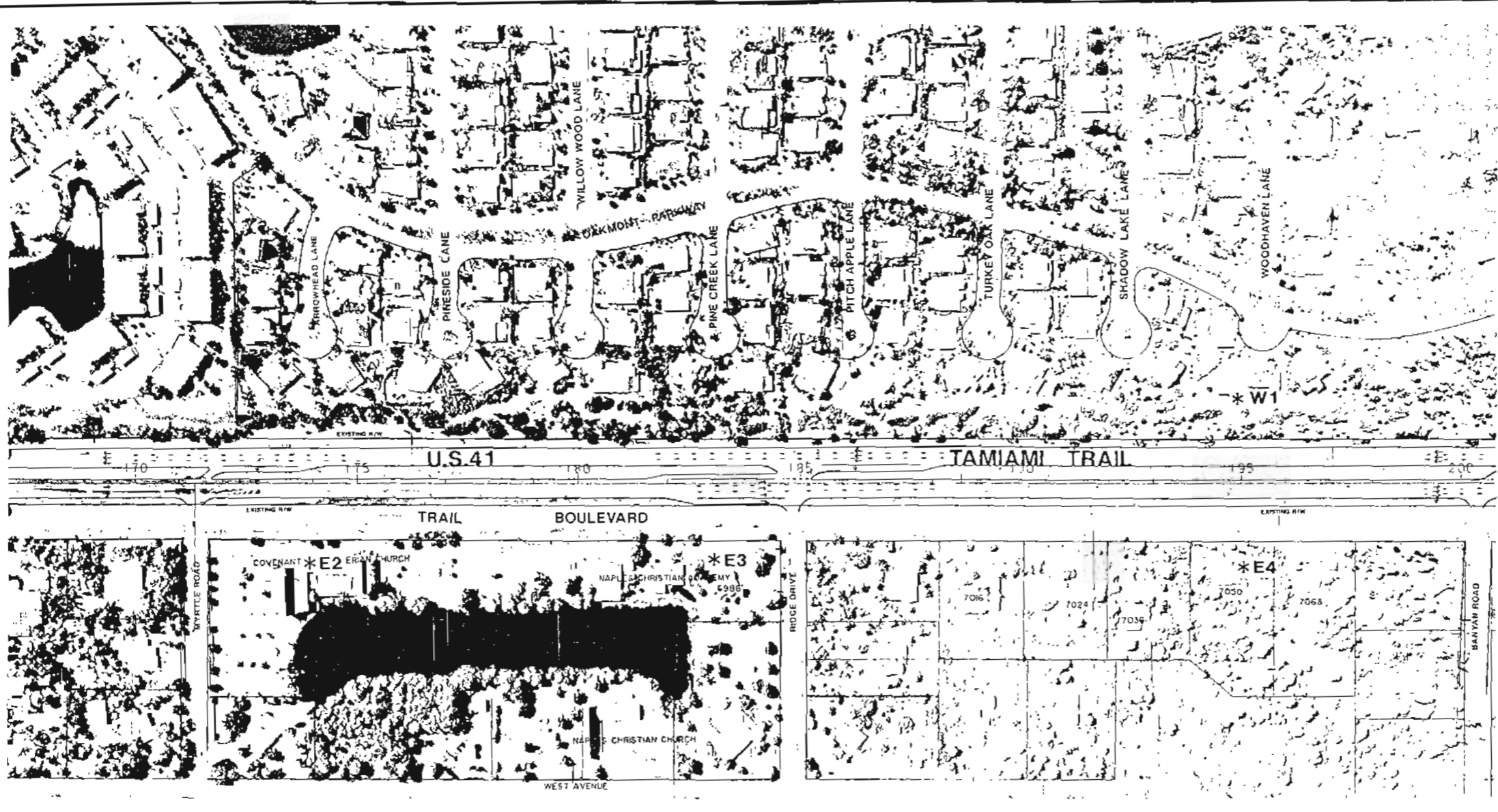


LEGEND

- * E5 RECEPTOR LOCATION
- ANALYZED NOISE BARRIER LOCATION

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FIGURE 7

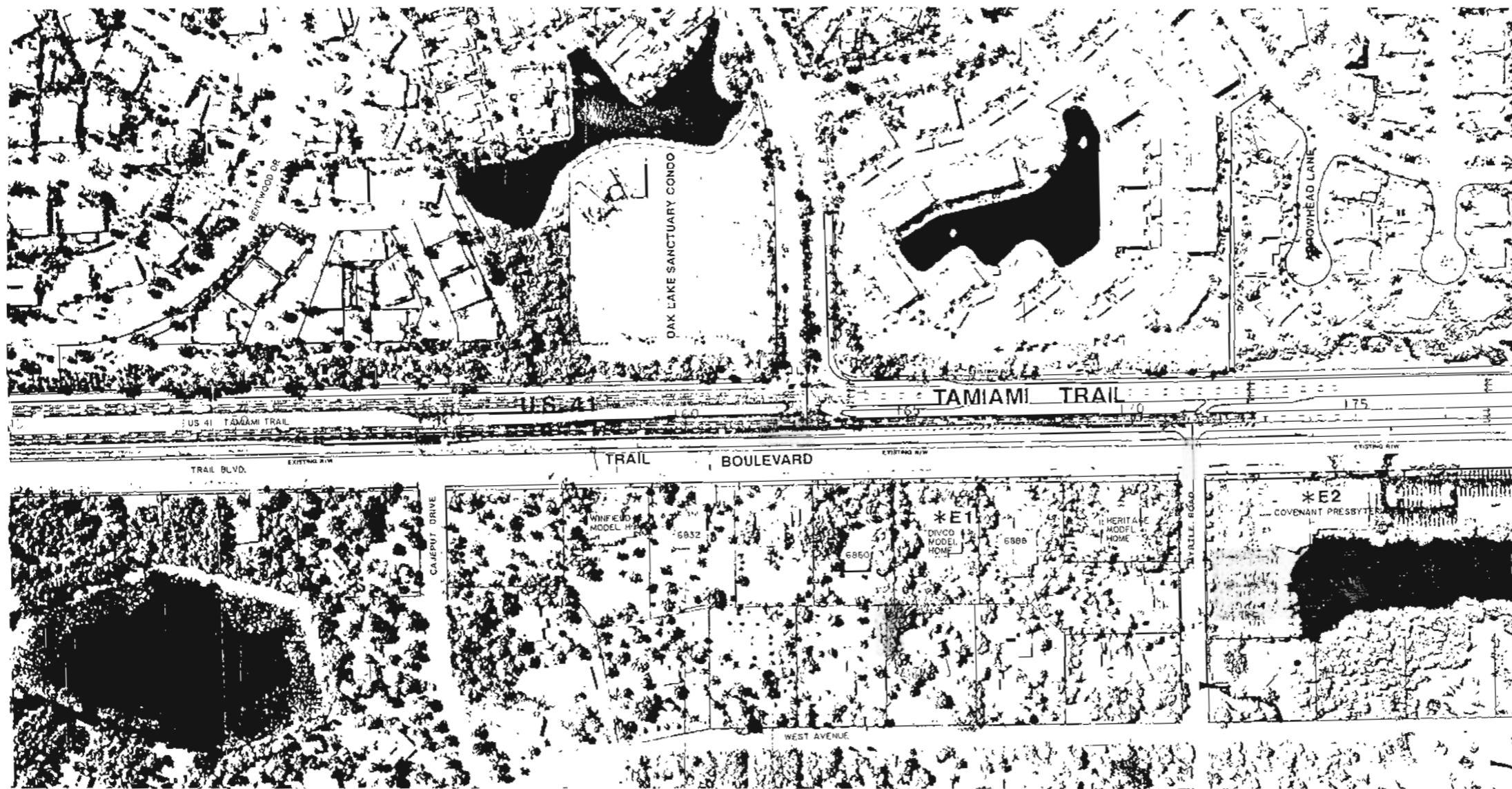


LEGEND

* E3 RECEPTOR LOCATION

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 NOISE SENSITIVE SITES

FIGURE 8



LEGEND

* E1 RECEPTOR LOCATION

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FIGURE 9

U.S. Department of Transportation, Sound Procedures for Measuring Highway Noise: Final Report. A location near Rick's Family Golf Center along U.S. 41 was selected as the representative noise monitoring site as it had no shielding or unusual geography that would complicate the collection or interpretation of the data.

Existing traffic noise levels were sampled March 10, 1993, during a twenty minute period from 12:25 p.m. to 12:45 p.m., using a Larson Davis Laboratories Model 700 Dosimeter and Sound Level Meter. Calibration checks were performed before and after the sampling period to assure the performance of the dosimeter/analyzer's microphone. The test equipment was placed on a tripod at the prescribed height of 1.7 meters (5 feet, 6 inches) above the ground and at a distance 15.2 meters (50 feet) from the centerline of the northbound (near) travel lane.

This test sampling design has been found to provide a statistically accurate measure of a site's approximate exposure to noise. The level of exposure was computed by the dosimeter/analyzer and described by the noise descriptor Leq. Leq is an expression of the constant sound level which over a given period would produce an equivalent amount of acoustic energy as all the variable sound levels produced over that time frame. The Leq was measured in A-Weighted Decibels (dBA) which closely approximates the sound spectrum frequencies audible to the human ear.

Traffic conditions including traffic volume, vehicle mix, and vehicle speeds were recorded during the test period. These data and other roadway/receiver site condition factors were used as input to the Noise Prediction Model, STAMINA 2.1.

The computer model's ability to accurately predict noise levels was confirmed as the predicted noise level was within the FDOT's tolerance standard (3 dBA) of the measured noise level. The results of the monitoring and the computer predicted noise levels are presented in Table 1. The overall noise monitoring report and prediction model printouts are presented in Appendix A.

2.5 Prediction of Existing and Future Noise Levels

Existing and projected traffic noise levels for the "No-Build" and "Build" Alternatives were predicted for a representative site in each of the four noise sensitive areas using the FDOT approved "PC" version of the STAMINA 2.1 Noise Prediction Model. A representative site was used since the noise sensitive receptors within each area have similar source/receptor relationships, such as elevation, distance and shielding.

Input data for this model was derived from several sources. Average daily traffic volume, vehicle speeds, peak hour factor (K), direction factor (D) and truck factors (T) were furnished by FDOT. Table 2 contains the traffic data used in this study. Aerial photography base maps showing preliminary roadway geometry was used to provide the horizontal coordinates of the roadway and receptors. Vertical relationships between receptor and roadway were identified in the field. STAMINA 2.1 predicted noise levels for existing and future year "No-Build" and "Build" conditions. Table 3 presents the predicted noise levels for each receptor, a description of each site, and identifies their outdoor use. Figures 6 through 9 show the location of each site and their relationship to the Build Alternative. A copy of the STAMINA 2.1 output is provided in Appendix B.

TABLE 1

NOISE STUDY REPORT
U.S. 41 from C.R. 887 to South of Myrtle Road

FIELD MEASURED VS. PREDICTED NOISE LEVELS
MODEL VALIDATION TEST RESULTS

<u>Measurement Location</u>	<u>Field Measured Noise Level Leq (dBA)</u>	<u>Model Predicted Noise Level Leq (dBA)</u>
15.2 meters (50 feet) from NB US 41 near Ricks Family Golf Course	67.6	68.7

TABLE 2

NOISE STUDY REPORT
U.S. 41 from C.R. 887 to South of Myrtle Road

TRAFFIC PARAMETERS USED FOR NOISE PREDICTION MODEL^a

U.S. 41 Segment	Travel ^b Lanes	1991 No Build				2015 No Build				2015 Build			
		Cars	Medium Trucks	Heavy Trucks	Speed (MPH)	Cars	Medium Trucks	Heavy Trucks	Speed (MPH)	Cars	Medium Trucks	Heavy Trucks	Speed (MPH)
South of Myrtle Road to Ride Road	Near	1,911	44	38	33	2,061	47	41	22	2,128	49	42	39
	Far	1,274	29	25	33	1,374	32	27	22	1,419	33	28	39
Ridge Road to Banyan Road	Near	1,993	46	40	28	2,061	47	41	22	2,128	49	42	39
	Far	1,330	30	26	28	1,374	32	27	22	1,419	33	28	39
Banyan Road to Vanderbilt Beach/ Hickory Road	Near	1,823	42	36	39	2,061	47	41	22	2,320	53	46	39
	Far	1,215	28	24	39	1,374	32	27	22	1,547	35	31	39
Vanderbilt Beach/Hickory Road to Immokalee Road	Near	1,657	38	33	39	2,061	47	41	22	2,838	65	56	36
	Far	1,105	25	22	39	1,374	32	27	22	1,892	43	38	36
Immokalee Road to C.R. 887	Near	1,641	38	33	39	2,061	47	41	22	3,102	71	62	22
	Far	1,094	25	22	39	1,374	32	27	22	2,068	47	41	22

^a Derived from Florida Department of Transportation Average Daily Traffic using the following factors:
K = 9%, D = 60%, MT = 2.2%, HT = 1.9%.

^b For this analysis, the 60% peak hour distribution traffic was modeled on the direction of travel nearest the receptors.

TABLE 3

NOISE STUDY REPORT
U.S. 41 from C.R. 887 to South of Myrtle Road

PREDICTED NOISE LEVELS

Representative Receptor	Location/Description	Number of Sites Represented	Outdoor Use Area	Modeled Noise Level Leq(h) in dBA				
				1991 (Existing)	2015		Change	
					No-Build	Build	Existing To Build	No-Build To Build
E1	Single Family Residence	4	Front Yard	61	59	63	+2	+4
E2	Convenent Presbyterian Church	1	Front Lot	62	60	64	+2	+4
E3	Naples Christian Academy	1	Front Lot	63	61	64	+1	+3
E4	Single Family Residence	7	Front yard	62	61	64	+2	+3
E5	Condominium 7096 Trail Boulevard	4	Front Lot	64	62	65*	+1	+3
W1	Single Family Residence Pelican Bay	15	Rear yard	59	58	61	+2	+3
W2	Duplex Residence Barrington Club	3	Rear yard	62	60	63	+1	+3
W3	Mobile Home	3	Front Lot	70*	68*	69*	-1	+1

* Approaches, meets or exceeds FHWA Noise Abatement Criteria

The predicted noise levels take into account shielding from commercial and residential properties, as well as existing vegetation and privacy fences. These adjustment factors were based on guidance contained in FHWA's Highway Traffic Noise Prediction Model and the Policy and Procedures Memorandum, PPM 90-2.

2.6 Noise Impact Analysis

As shown in Table 4, FHWA has established noise level guidelines for traffic noise impact assessment with respect to various land uses. When traffic noise associated with a roadway project is predicted to approach, or exceed, the FHWA criteria, noise abatement measures must be considered. FDOT considers the term "approach" to normally mean noise levels within 2 dBA of the FHWA criteria. For this analysis, noise impacts were identified for locations predicted to exceed a noise level of 2 dBA less than the FHWA criteria for the appropriate activity category. For example, while the FHWA criteria for Activity Category B is 67 dBA, a value of 65 dBA was used in this evaluation to determine noise impacts.

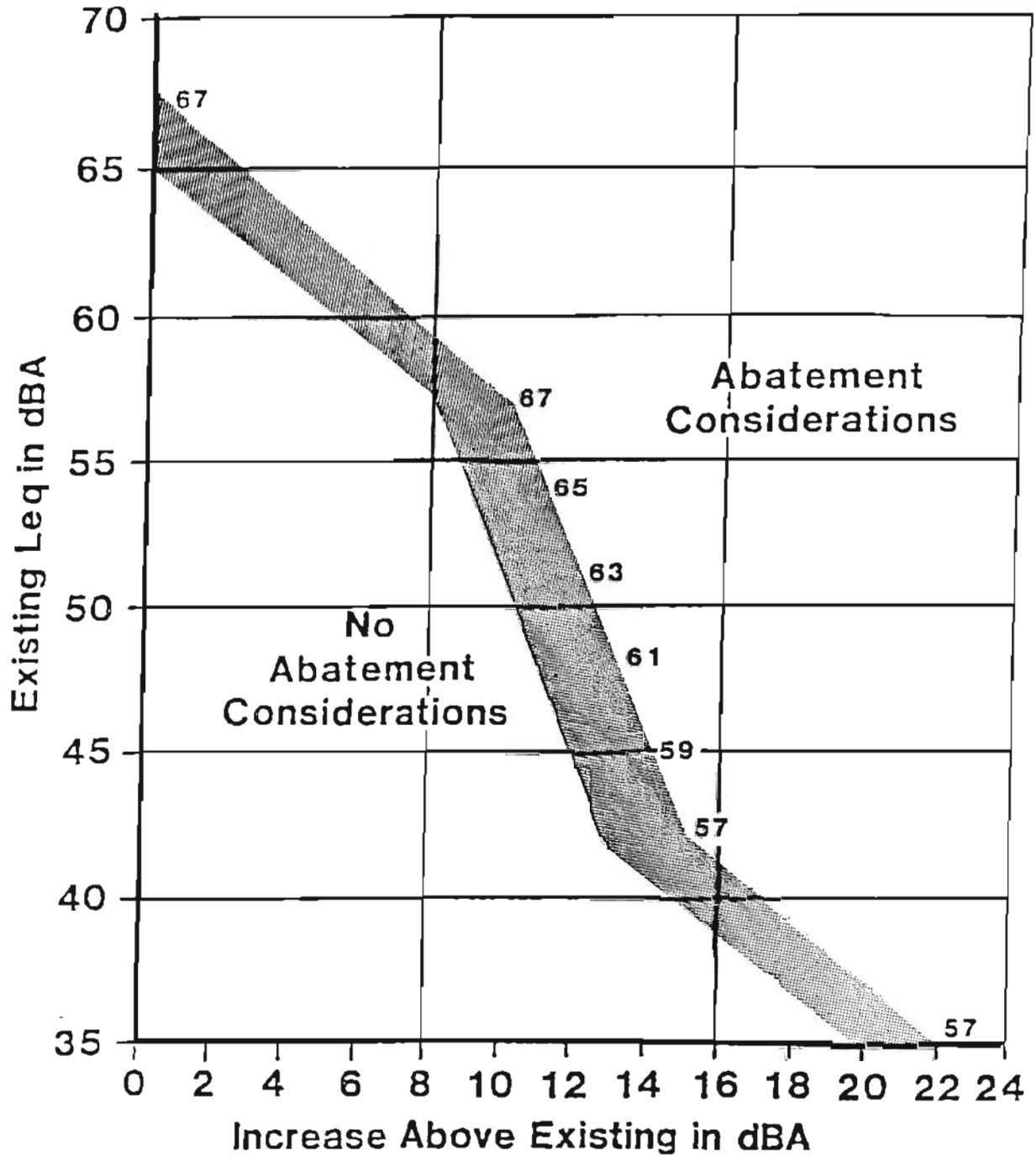
Noise impacts are also considered to occur when noise levels are predicted to increase substantially, yet not approach or exceed the FHWA Noise Abatement Criteria. These impacts occur primarily when proposed roadway improvements are planned in the vicinity of noise sensitive areas where existing noise levels are relatively low. Comparison of the FHWA Substantial Increase Criteria in Figure 10 with the predicted noise levels in Table 3 indicate that the proposed project will not cause substantial increases.

TABLE 4
FHWA NOISE ABATEMENT CRITERIA

<u>Activity Category</u>	<u>Design Noise Level Leq(h)</u>	<u>Description of Land Use Category</u>
A	57 dbA	Tracts of Land in which serenity are of extraordinary significance and serve an important public need, and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose. For example, such areas could include amphitheaters, particular parks or portions of parks, or open spaces which are dedicated or recognized by appropriate local officials for activities requiring special qualities of serenity and quiet.
B	67 dbA	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, picnic areas, recreation areas, playgrounds, active sports areas, and parks.
C	72 dbA	Developed lands, properties or activities not included in Categories A and B above.
D	---	Undeveloped lands.
E	52 dbA (interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.

Source: 23 CFR, Part 772

Activity Category B



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SUBSTANTIAL INCREASE CRITERIA

Finally, predicted noise levels at the eight representative sites for the 2015 "Build" Alternative were compared to the FHWA Noise Abatement Criteria. Noise levels at two of the eight sites are predicted to approach or exceed the criteria (E5 and W3). Noise abatement measures were evaluated at these sites as discussed in the next section.

3.0 EVALUATION OF ALTERNATIVE NOISE ABATEMENT MEASURES

In accordance with the 23 CFR, Part 772, noise abatement measures for those areas which approach or exceed the FHWA Noise Abatement Criteria were evaluated. Abatement measures considered include traffic management, modifications to the vertical or horizontal alignment, land use controls, and the construction of permanent noise barriers within the right-of-way.

3.1 Traffic Management

Traffic management measures which limit motor vehicle type, travel speed, traffic volume, and/or time of operation can often be effective noise mitigation measures. However, these measures, would negate the project's ability to accommodate anticipated traffic volumes and reduce the capacity of the proposed facility.

Any reduction in speed would reduce the roadway operating conditions to below LOS C in the design year, which is not consistent with the goals of this project. In addition, because this area is predominantly commercial, limiting truck volumes or their time of operation would be restrictive to commercial establishments and detrimental to the economic interests of the area. Therefore, traffic management is not considered a reasonable noise abatement approach for this project.

3.2 Alignment Alterations

Alignment alterations generally involve orienting and siting the roadway at sufficient distances from noise sensitive areas so as to minimize the noise impact. However, since the project corridor follows the existing U.S. 41 alignment, selection of another alignment corridor that does not utilize existing right-of-way would not be consistent with the intent of this project. Therefore, substantial horizontal alignment modifications to the "Build" Alternative are not feasible.

3.3 Land Use Controls

This project has a large percentage of vacant land fronting U.S. 41. This land use is not currently noise sensitive, and through land use controls, local governments can insure that these areas will not become noise sensitive in the future. FDOT developed a computer model, FLAMOD, which is used to predict a noise impact contour (isopleth) that can be used by public officials to guide residential and other noise sensitive site setback requirements. The setback distance from the proposed project to the 65 dBA Leq(h) isopleth for each segment of U.S. 41 in the project area is presented in Table 5. Local governmental and planning agencies can use this information to help develop policies that limit the establishment and growth of noise sensitive land uses adjacent to U.S. 41. Appendix C contains the printouts from the FLAMOD program.

3.4 Noise Barriers

A noise barrier evaluation was performed for this project to determine whether reasonable and feasible barriers could be constructed for the noise impacted areas.

TABLE 5
NOISE STUDY REPORT
U.S. 41 from C.R. 887 to South of Myrtle Road
65 dBA NOISE ISOPLETHS

<u>U.S. 41 Segment</u>	<u>Offset Distance to Isopleth^a</u>
South of Myrtle Road to Banyan Road	39.9 meters (131 feet)
Banyan Road to Vanderbilt Beach/Hickory Road	42.1 meters (138 feet)
Vanderbilt Beach/Hickory Road to Immokalee Road	44.8 meters (147 feet)
Immokalee Road to C.R. 887	35.1 meters (115 feet)

^aDistance measured from the center of the near travel lane.

Feasibility primarily addresses engineering considerations (physical constraints affecting barrier construction, ability to provide a substantial noise reduction given certain access, drainage, safety, or maintenance requirements, presence of other noise sources, etc.). Reasonableness addresses the use of common sense and sound judgement when considering noise abatement. Items such as noise abatement benefits, cost of abatement, views of impacted residences, absolute noise levels, change in predicted noise levels, adjacent development, and environmental impacts of abatement construction all should be considered before making a decision on noise abatement.

In accordance with FDOT guidelines, a barrier should be considered feasible if it can be constructed to provide a minimum 10 dBA reduction in noise levels at impacted sites. In addition, FDOT considers a barrier to be cost reasonable if the cost per benefitted receptor is no more than \$25,000. A benefitted receptor is defined as a receptor receiving at least a 5 dBA reduction from a barrier. The other reasonableness items need to be evaluated on a case by case basis.

The noise barrier analysis for this project was accomplished using FDOT's approved OPTIMA noise barrier simulation model. In accordance with FHWA and FDOT guidelines, barriers were analyzed by (1) developing barrier lengths and heights that would meet a design goal of 10 dBA at noise impacted sites, (2) estimating the total cost of the barrier assuming a cost of \$16.50 per square foot, and (3) determining the cost of abatement per benefitted receptor. The results of the analysis for each impacted noise sensitive area are described below.

E5 - Condominiums 7096 Trail Boulevard: The predicted 2015 "Build" noise level at this site is predicted to approach the FHWA Noise Abatement Criteria. A barrier 183 meters (600 feet) long and 5.5 meters (18 feet) high located between Trail Boulevard and U.S. 41 would provide a 65 dBA reduction in predicted noise levels at two residences. The total cost of this barrier is approximately \$178,200, with a corresponding cost per residence of \$89,100. This is above the \$25,000 figure the FDOT considers reasonable. Considering the cost per benefitted receptor, the barely perceptible increases above the existing (+1dBA) and "No-Build" (+3dBA) conditions, and the small number of benefitted receptors, abatement is not considered reasonable at this location.

W3 - Mobile Home Park: This location had predicted 2015 "Build" noise levels that exceed the FHWA Noise Abatement Criteria. A barrier located along the right-of-way, 107 meters (340 feet) long and 4.9 meters (16 feet) high would reduce noise levels by 8dBA at three residences. The total cost for this barrier is approximately \$89,760, with a cost per residence of \$29,920. This is above the \$25,000 figure that FDOT considers reasonable. As can be seen in Table 3, the 2015 "Build" noise levels are predicted to drop from the existing condition. This is due to the reduction in speeds projected for the 2015 "Build" LOS C condition as compared to 1991 existing demand condition. In addition, because of the location of the access roads to this mobile home park, this barrier cannot be continuous. The gaps left to provide access will degrade the effectiveness of the barrier and result in areas behind the barrier which would receive less than a 5dBA reduction in noise levels. Considering the cost per residence, the predicted decrease in noise levels, and the location of access roads, abatement is not considered reasonable at this location.

4.0 CONCLUSIONS AND RECOMMENDATIONS

Seven residences located in two noise sensitive areas will be impacted by the Build Alternative. However, because of the need for access to U.S. 41, the undetectable increase or slight decrease in predicted noise levels for the Build Alternative and the cost per benefitted residence for noise barriers, noise abatement measures are not considered reasonable or feasible for the impacted noise sensitive areas.

Local governmental and planning agencies, with the help of the 65 dBA contour, should develop policies that limit the establishment and growth of noise sensitive land uses adjacent to U.S. 41.

5.0 CONSTRUCTION NOISE

The construction and development of the proposed U.S. 41 improvements would result in temporary noise increases within the project area. The noise would be generated primarily from heavy equipment used in hauling materials and building the roadway improvements. Sensitive areas located close to the construction area may temporarily experience increased noise levels. Construction noise will be minimized to the greatest extent practicable through the adherence to controls listed in the latest edition of FDOT's Standard Specifications for Road and Bridge Construction.

6.0 COORDINATION WITH LOCAL OFFICIALS

Title 23, Code of Federal Regulations (CFR) Part 772 delegates to the highway agency (FDOT) the responsibility of taking measures that are prudent and feasible to assure the location and design of highways are compatible with existing and planned land uses.

The 65 dBA noise isopleths, which are contained in Table 5, were generated to assist the local authorities in making prudent choices for the types of development that should be allowed to occur along the project corridor. A copy of this report will be provided to appropriate local planning authorities to assist in the development of compatible future land use.

7.0 BIBLIOGRAPHY

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APPENDIX A

NOISE MEASUREMENT/MODEL VALIDATION

DATA REPORT

LARSON-DAVIS LABS -- MODEL 700
03/15/92 08:51:36 SN 700B0666 PACE 1

Dacc 0.0
Proj 0.5
SEL 98.4
LVL 67.6
Time 0000:20:00
Lmin 53.5
Lmax 77.5
Lpr 91.0
OVL 00
RMS Ex 0021
Pk Ex 0184
P/S 01
Memory 5954.0
L10 70.0
L23 68.0
L50 66.5
L90 60.0

SETUP DATA

Dacc SLOW
Wght A
Pk Wght -0

Crit 90.0
Thld 35.0
Exch 3
LDL -0

RMS Thld 60.0
Pk Thld 80.0
Hyst 2

Run date 00/00
Step date 00/00
Run time 1 00:00
Step time 1 00:00
Run time 2 00:00
Step time 2 00:00

Excd -0

Intv -1
Time 00:20
Auto-Stop -1
Ln -1

Hist -0
Save Pk -0
Per 100.0

Gal 29.0
Vor 1.380

INTV REPORT

LARSON-DAVIS LABS -- MODEL 700

03/15/93 09:51:46

SN 700B0666

PAGE 2

Cnt	LVL	SEL	Lmax	Lpk	Lmin	Date	Time	Dur	Ex	Pr	Ov
1	67.5	98.0	77.5	91.0	51.5	10 MAR	12:25:00	0:20	h:m	21 99	0
			L10 - 70.5		L33 - 68.0		L50 - 66.5			L90 - 60.0	

99999

STAMINA 2.1/BCK
 FHWA VERSION 3 (MARCH 1983)
 TRAFFIC NOISE PREDICTION MODEL

(INPUT UNITS- ENGLISH , OUTPUT UNITS- ENGLISH)

US 41 FROM C.R. 887 TO SOUTH OF MYRTLE RD. 02693.03 BRG VALIDATION

PROGRAM INITIALIZATION PARAMETERS

HEIGHT	CODE	DESCRIPTION
.00	1	RECEIVER HEIGHT ADJUSTMENT
1.00	2	A-WEIGHTED SOUND LEVEL ONLY
.00	3	HEIGHT ADJUSTMENT FOR PASSENGER CARS (CAR3)
8.00	4	HEIGHT ADJUSTMENT FOR HEAVY TRUCKS (HT)
2.30	5	HEIGHT ADJUSTMENT FOR MEDIUM TRUCKS (MT)

ROADWAY 1 US 41 NORTHBOUND - S OF MYRTLE RD. TO RIDGE RD.

VEHICLE TYPE	VEHICLES/HOUR	SPEED
CARS	1335.	45.
HT	3.	45.
MT	12.	45.

-----COORDINATES-----

	X	Y	Z	GRADE
NE150	1842.	1562.	.0	0
NE165	1848.	2979.	.0	0
NE175	1850.	3970.	.0	0
NE185	1815.	5002.	.0	0

ROADWAY 2 US 41 SOUTHBOUND - S OF MYRTLE RD. TO RIDGE RD.

VEHICLE TYPE	VEHICLES/HOUR	SPEED
CARS	1290.	45.
HT	12.	45.
MT	10.	45.

-----COORDINATES-----

	X	Y	Z	GRADE
SB150	1908.	1552.	.0	0
SB165	1910.	2965.	.0	0
SB175	1908.	3960.	.0	0
SB185	1890.	4989.	.0	0

VALIDATION RECEPTOR - EAST SIDE NEAR COVENANT PRESBYTERIAN CHURCH

ALPHA FACTORS - RECEIVER ACROSS ROADWAY DOWN

1 * 1.5
2 * 1.5

BUILDING FACTORS - RECEIVER ACROSS ROADWAY DOWN

1 * 1.0
2 * 1.0

RECEIVER L50(H) L10
VAL-E 68.7 72.2

ROADWAY SEGMENT SOUND LEVEL CONTRIBUTIONS EXCEEDING 50.0 DBA

ROADWAY	SEGMENT	2	3
1		65.1	62.1
2		60.7	60.2

APPENDIX B

NOISE LEVEL PREDICTION PRINTOUTS

STANDA 2.1/BCF
 FHWA VERSION 3 (MARCH 1983)
 TRAFFIC NOISE PREDICTION MODEL

(INPUT UNITS- ENGLISH , OUTPUT UNITS- ENGLISH)

US 41 FROM C.R. 887 TO SOUTH OF MYRTLE RD. 02093.03 MRA EXISTING EAST

PROGRAM INITIALIZATION PARAMETERS

HEIGHT	CODE	DESCRIPTION
.00	1	RECEIVER HEIGHT ADJUSTMENT
1.00	2	A-WEIGHTED SOUND LEVEL ONLY
.00	3	HEIGHT ADJUSTMENT FOR PASSENGER CARS (CAR)
8.00	4	HEIGHT ADJUSTMENT FOR HEAVY TRUCKS (HT)
2.30	5	HEIGHT ADJUSTMENT FOR MEDIUM TRUCKS (MT)

ROADWAY 1 US 41 NORTHBOUND - S OF MYRTLE RD. TO RIDGE RD.

VEHICLE TYPE	VEHICLES/HOUR	SPEED
CAR	1911.	33.
HT	38.	37.
MT	44.	33.

-----COORDINATES-----

	X	Y	Z	GRADE
NB150	1842.	1562.	0	0
NB165	1848.	2979.	0	0
NB175	1850.	3970.	0	0
NB185	1815.	5002.	0	0

ROADWAY 2 US 41 NORTHBOUND RIDGE RD. TO BANYAN RD.

VEHICLE TYPE	VEHICLES/HOUR	SPEED
CARS	1493.	20.
HT	40.	28.
MT	46.	28.

-----COORDINATES-----

	X	Y	Z	GRADE
NB185	1815.	5002.	0	0
NB200	1777.	6541.	0	0

ROADWAY 3 US 41 NORTHBOUND BANYAN RD. TO VANDERBILT BEACH RD.

VEHICLE TYPE	VEHICLES/HOUR	SPEED
CARS	1823.	19.
HT	36.	29.
MT	47.	28.

-----COORDINATES-----

	X	Y	Z	GRADE
NB200	1777.	6541.	0	0

ROADWAY 4 US 41 SOUTHBOUND - S OF MYRTLE RD. TO RIDGE RD.

VEHICLE TYPE	VEHICLES/HOUR	SPEED
CARS	1270.	33.
HT	25.	35.
MT	29.	32.

-----COORDINATES-----

	X	Y	Z	GRADE
SB150	1702.	1552.	1.0	0
SB165	1910.	2965.	1.0	0
SB175	1903.	3960.	1.0	0
SB185	1890.	4989.	1.0	0

ROADWAY 5 US 41 SOUTHBOUND - RIDGE RD. TO BANYAN RD.

VEHICLE TYPE	VEHICLES/HOUR	SPEED
CARS	1330.	28.
HT	16.	22.
MT	10.	28.

-----COORDINATES-----

	X	Y	Z	GRADE
SB185	1890.	4989.	1.0	0
SB200	1950.	6528.	1.0	0

ROADWAY 6 US 41 SOUTHBOUND - BANYAN RD. TO VANDERBILT BEACH RD.

VEHICLE TYPE	VEHICLES/HOUR	SPEED
CARS	1215.	30.
HT	24.	30.
MT	26.	30.

-----COORDINATES-----

	X	Y	Z	GRADE
SB200	1950.	6528.	1.0	0
SB210	1828.	7481.	1.0	0
SB220	1797.	8477.	1.0	0
SB230	1776.	9507.	1.0	0

BARRIER 7 TYPE (K) BARRIER FOR EAST RECEIPTS

-----COORDINATES-----

	X	Y	Z	GRADE

BE4	1808.	4075.	0.	10
BE5	1803.	4071.	0.	10
BE6	1800.	4172.	0.	10
BE7	1800.	4271.	0.	10
BE7	1796.	4371.	0.	10
BE8	1794.	4471.	0.	10
BE9	1791.	4570.	0.	10
BE10	1789.	4671.	0.	10

BARRIER 2 TYPE (R) EAST BARRIER CONTINUED "R" AFTER SEGMENT DENOTES OVER

-----COORDINATES-----

	X	Y	Z	70	DELZ	80	90
BE10	1789	4671.	0.	10		10	10
BE11	1773.	4770.	0.	10			
BE11R	1770.	4871.	0.	10			
BE12	1772.	5062.	0.	10			
BE14	1770.	5253.	0.	10			
BE15	1765.	5462.	0.	10			
BE16	1762.	5662.	0.	10			
BE17	1757.	5862.	0.	10			
BE18	1748.	6060.	0.	10			
BE19	1742.	6258.	0.	10			

BARRIER 3 TYPE (R) EAST BARRIER CONT

-----COORDINATES-----

	X	Y	Z	70	DELZ	80	90
BE19	1742.	6258.	0.	10		10	10
BE20R	1739.	6440.	0.	10			
BE21	1732.	6601.	0.	10			
BE22	1729.	6805.	0.	10			
BE23	1725.	7006.	0.	10			
BE24	1721.	7196.	0.	10			
BE25	1719.	7390.	0.	10			
BE26	1715.	7590.	0.	10			
BE27	1711.	7792.	0.	10			
BE28	1710.	7990.	0.	10			

RECEPTORS - LAST SIDE

-----COORDINATES-----

	X	Y	Z
TRBE	1630.	5050.	5.0
TRBE	1645.	5265.	5.0
NRAL	1600.	4802.	5.0
RBE	1620.	5980.	5.0
RSE	1618.	6720.	5.0

SOUND FACTORS - RECEIVER ACROSS ROADWAY DOWN

1 *	5	5	15	1	15
2 *	15	5	15	15	15
3 *	15	15	5	15	5
4 *	15	15	15	5	15
5 *	1	15	15	15	15
6 *	15	5	15	15	15

SHIELDING FACTORS - RECEIVER ACROSS ROADWAY DOWN

1 *	10	0	10	0	0
2 *	10	10	10	0	10
3 *	10	0	10	10	10
4 *	0	10	10	0	10
5 *	10	0	10	10	10
6 *	0	10	10	10	0

RECEIVER LIQ(H) LIQ
 DBHE 6917 6917

ROADWAY SEGMENT SOUND LEVEL CONTRIBUTIONS EXCEEDED 100 DBA

ROADWAY SEGMENT

RECEIVER LEQ(H) L10
 CPCL 61.8 65.0

ROADWAY SEGMENT SOUND LEVEL CONTRIBUTIONS EXCEEDING 50.0 DBA

ROADWAY	SEGMENT	2	3
1		57.0	56.9
4		53.5	53.7

RECEIVER LEQ(H) L10
 BPA 60.9 64.3

ROADWAY SEGMENT SOUND LEVEL CONTRIBUTIONS EXCEEDING 50.0 DBA

ROADWAY	SEGMENT	3	1	2	3	1
1		60.6				
2			52.9			
4				56.4		
5					50.5	

RECEIVER LEQ(H) L10
 BPE 62.1 65.6

ROADWAY SEGMENT SOUND LEVEL CONTRIBUTIONS EXCEEDING 50.0 DBA

ROADWAY	SEGMENT
---------	---------

RECEIVER LEQ(H) L10
BSE 65.9 67.2

ROADWAY SEGMENT SOUND LEVEL CONTRIBUTIONS EXCEEDING 100.0 DBA

ROADWAY SEGMENT

- 1 1
57.3
- 2 1
61.6
- 3 1
59.5
- 4 1
57.5

STAIRS CONSULTANTS
 FHWA VERSION 3 (MARCH 1983)
 TRAFFIC NOISE PREDICTION MODEL

(INPUT UNITS- ENGLISH , OUTPUT UNITS- ENGLISH)

US 41 FROM C.R. 887 TO SOUTH OF MYRTLE RD. CROW3.03 MRA EXISTING WEST

PROGRAM INITIALIZATION PARAMETERS

HEIGHT	CODE	DESCRIPTION
.00	1	RECEIVER HEIGHT ADJUSTMENT
1.00	2	A-WEIGHTED SOUND LEVEL ONLY
.00	3	HEIGHT ADJUSTMENT FOR PASSENGER CARS (CAR3)
8.00	4	HEIGHT ADJUSTMENT FOR HEAVY TRUCKS (HT)
2.30	5	HEIGHT ADJUSTMENT FOR MEDIUM TRUCKS (MT)

ROADWAY 1 US 41 NORTHBOUND - S. OF MYRTLE RD. TO RIDGE RD.

VEHICLE TYPE	VEHICLES/HOUR	SPEED
CARS	1274.	33.
HT	25.	33.
MT	29.	33.

-----COORDINATES-----

	X	Y	Z	GRADE
NB150	1842.	1500.	0	0
NB165	1848.	2070.	10	0
NB175	1850.	3070.	10	0
NB185	1815.	5002.	10	0

ROADWAY 2 US 41 NORTHBOUND - RIDGE RD. TO CANYAN RD.

VEHICLE TYPE	VEHICLES/HOUR	SPEED
CARS	1330.	28.
HT	26.	28.
MT	30.	28.

-----COORDINATES-----

	X	Y	Z	GRADE
NB185	1815.	5002.	0	0
NB200	1777.	6541.	10	0

ROADWAY 3 US 41 NORTHBOUND - CANYAN RD. TO VANDERBILT BEACH RD.

VEHICLE TYPE	VEHICLES/HOUR	SPEED
CARS	1215.	30.
HT	24.	30.
MT	28.	30.

-----COORDINATES-----

	X	Y	Z	GRADE
NB200	1777.	6541.	0	0

ROADWAY 4 US41 NORTHBOUND - VANDERBILT BEACH RD. TO IMMOKALEE RD.

VEHICLE TYPE	VEHICLES/HOUR	SPEED
CARS	1109.	39.
HT	22.	39.
MT	25.	39.

----- COORDINATES -----

	X	Y	Z	GRADE
NB230	1702.	9460.	10	0
NB240	1672.	10488.	10	0
NB250	1647.	11492.	10	0
NB260	1635.	12510.	10	0
NB270	1622.	13515.	10	0
NB280	1605.	14018.	0	0
NB290	1587.	15510.	0	0
NB300	1570.	16510.	10	0
NB310	1555.	17510.	0	0

ROADWAY 5 US 41 NORTHBOUND - IMMOKALEE RD TO N. OF CR 807

VEHICLE TYPE	VEHICLES/HOUR	SPEED
CARS	1094.	39.
HT	25.	39.
MT	25.	39.

----- COORDINATES -----

	X	Y	Z	GRADE
NB310	1555.	17510.	10	0
NB320	1535.	18510.	10	0
NB330	1500.	19510.	10	0
NB340	1468.	20510.	10	0
NB350	1448.	21510.	0	0
NB360	1425.	22510.	10	0
NB370	1400.	23510.	10	0
NB380	1370.	24510.	10	0
NB390	1345.	25510.	0	0
NB121	1328.	26205.	10	0
NB125	1365.	26660.	10	0
NB130	1450.	27091.	10	0
NB140	1676.	28065.	0	0

ROADWAY 6 US 41 SOUTHBOUND - S OF MYRTLE RD. TO RIDGE RD

VEHICLE TYPE	VEHICLES/HOUR	SPEED
CARS	1711.	33.
HT	38.	33.
MT	44.	33.

----- COORDINATES -----

	X	Y	Z	GRADE
SB150	1908.	1852.	0	0
SB160	1910.	2765.	0	0

ROADWAY 7 US 41 SOUTHBOUND - RIDGE RD. TO BANYAN RD.

VEHICLE TYPE	VEHICLES/HOUR	SPEED
CARS	1993.	28.
HT	40.	28.
MT	46.	28.

-----COORDINATES-----

	X	Y	Z	GRADE
SB185	1890.	4989.	0	0
SB200	1850.	6528.	0	0

ROADWAY 8 US 41 SOUTHBOUND BANYAN RD. TO VANDERBILT BEACH RD.

VEHICLE TYPE	VEHICLES/HOUR	SPEED
CARS	1893.	39.
HT	36.	39.
MT	43.	39.

-----COORDINATES-----

	X	Y	Z	GRADE
SB200	1850.	6528.	0	0
SB210	1828.	7481.	0	0
SB220	1797.	8171.	0	0
SB230	1776.	9502.	0	0

ROADWAY 9 US 41 SOUTHBOUND - VANDERBILT BEACH RD. TO IMMOKALEE RD.

VEHICLE TYPE	VEHICLES/HOUR	SPEED
CARS	1637.	39.
HT	33.	39.
MT	38.	39.

-----COORDINATES-----

	X	Y	Z	GRADE
SB230	1776.	9502.	0	0
SB240	1748.	10431.	0	0
SB250	1772.	11471.	0	0
SB260	1709.	12500.	0	0
SB270	1690.	13500.	0	0
SB280	1680.	14000.	0	0
SB290	1605.	15500.	0	0
SB300	1645.	16500.	0	0
SB310	1629.	17500.	0	0

ROADWAY 10 US 41 SOUTHBOUND - IMMOKALEE RD TO N. OF CR 887

VEHICLE TYPE	VEHICLES/HOUR	SPEED
CARS	1641.	39.
HT	33.	39.
MT	38.	39.

RECEIVER FACTORS - RECEIVER ACROSS, ROADWAY DOWN

1 *	.5	.5	.5
2 *	.5	.5	.5
3 *	.5	.5	.5
4 *	.5	.5	.5
5 *	.5	.5	.5
6 *	.5	.5	.5
7 *	.5	.5	.5
8 *	.5	.5	.5
9 *	.5	.5	.5
10 *	.5	.5	.5

RECEIVING FACTORS - RECEIVER ACROSS, ROADWAY DOWN

1 *	0	0	0
2 *	0	0	0
3 *	0	0	0
4 *	0	0	0
5 *	0	0	0
6 *	0	0	0
7 *	0	0	0
8 *	0	0	0
9 *	0	0	0
10 *	0	0	0

RECEIVER LLQ (H) LLD
 PEW 68.0 62.0

ROADWAY SEGMENT SOUND LEVEL CONTRIBUTIONS EXCEEDED 10.0 DBA

ROADWAY SEGMENT

2	1
	66.4
1	1
	66.4

ROW 62.1 65.4

ROADWAY SEGMENT SOUND LEVEL CONTRIBUTIONS EXCEEDING 50.0 DBA

ROADWAY	SEGMENT
3	1 2
	55.2 50.3
8	1 2
	59.4 53.4

RECEIVER LEQ(H) L10
RHW 62.9 73.4

ROADWAY SEGMENT SOUND LEVEL CONTRIBUTIONS EXCEEDING 50.0 DBA

ROADWAY	SEGMENT
5	7
	61.9
10	6 7
	50.7 68.9

STANTINA CONSULTANTS
 FHWA VERSION 3 (MARCH 1983)
 TRAFFIC NOISE PREDICTION MODEL

(INPUT UNITS- ENGLISH , OUTPUT UNITS- ENGLISH)

US 41 FROM C.R. 887 TO SOUTH OF MYRTLE RD. 02693103 MRA NORTHFIELD EAST

PROGRAM INITIALIZATION PARAMETERS

HEIGHT	CODE	DESCRIPTION
0.00	1	RECEIVER HEIGHT ADJUSTMENT
1.00	2	A-WEIGHTED SOUND LEVEL ONLY
1.00	3	HEIGHT ADJUSTMENT FOR PASSENGER CARS (CARSP)
8.00	4	HEIGHT ADJUSTMENT FOR HEAVY TRUCKS (HT)
2.30	5	HEIGHT ADJUSTMENT FOR MEDIUM TRUCKS (MT)

ROADWAY 1 US 41 NORTHBOUND - S OF MYRTLE RD. TO RIDGE RD.

VEHICLE TYPE	VEHICLES/HOUR	SPEED
CARS	2061	22.
HT	41.	22.
MT	47.	22.

-----COORDINATES-----

	X	Y	Z	GRADE
NB150	1841.	1362.	0.	0
NB165	1848	2979.	0.	0
NB175	1850.	3970.	0.	0
NB185	1815	5002.	0.	0

ROADWAY 2 US 41 SOUTHBOUND - RIDGE RD. TO BANYAN RD.

VEHICLE TYPE	VEHICLES/HOUR	SPEED
CARS	2061.	22.
HT	41.	22.
MT	47.	22.

-----COORDINATES-----

	X	Y	Z	GRADE
NB185	1815	5002.	0.	0
NB200	1777.	6541.	0.	0

ROADWAY 3 US 41 NORTHBOUND - BANYAN RD. TO VANDERBILT BEACH RD

VEHICLE TYPE	VEHICLES/HOUR	SPEED
CARS	2061	22
HT	41.	22
MT	47.	22.

-----COORDINATES-----

	X	Y	Z	GRADE
NB200	1777	6541	0	0

ROADWAY 4 US 41 SOUTHBOUND - S OF MYRTLE RD TO RIDGE RD.

VEHICLE TYPE	VEHICLES/HOUR	SPEED
CARS	1374.	22.
HT	27.	22.
MT	32.	22.

-----COORDINATES-----

	X	Y	Z	GRADE
SB150	1908.	1552.	0	0
SB165	1910.	2965.	0	0
SB175	1903.	1960.	0	0
SB185	1890.	4989.	0	0

ROADWAY 5 US 41 SOUTHBOUND - RIDGE RD. TO BANYAN RD.

VEHICLE TYPE	VEHICLES/HOUR	SPEED
CARS	1374	22.
HT	27.	22.
MT	32.	22.

-----COORDINATES-----

	X	Y	Z	GRADE
SB185	1890.	4989.	0	0
SB200	1850	6528.	0	0

ROADWAY 6 US 41 SOUTHBOUND - BANYAN RD. TO VANDERBILT BEACH RD.

VEHICLE TYPE	VEHICLES/HOUR	SPEED
CARS	1374.	22.
HT	27.	22.
MT	32.	22.

-----COORDINATES-----

	X	Y	Z	GRADE
SB200	1850	6528.	0	0
SB210	1826.	7481.	0	0
SB220	1797.	8472.	0	0
SB230	1776	9502.	0	0

CARRIER 1 TYPE (R) BARRIER FOR EAST RECEIPTS

-----COORDINATES-----

X	Y	Z	GRADE
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BE3	1808.	3675.	0.	10
BE4	1800.	4071.	0.	10
BE5	1801.	4172.	0.	10
BE6	1800.	4271.	0.	10
BE7	1796.	4371.	0.	10
BE8	1794.	4471.	0.	10
BE9	1791.	4571.	0.	10
BE10	1789.	4671.	0.	10

BARRIER 2 TYPE (R) EAST BARRIER CONTINUED "R" AFTER SEGMENT DENOTES OVER

-----COORDINATES-----

	X	Y	Z	Z0	DECL	P
BE10	1789.	4671.	0.	10	0	0
BE11	1773.	4770.	0.	10		
BE12R	1770.	4931.	0.	10		
BE13	1772.	5062.	0.	10		
BE14	1770.	5252.	0.	10		
BE15	1765.	5462.	0.	10		
BE16	1762.	5662.	0.	10		
BE17	1755.	5862.	0.	10		
BE18	1748.	6060.	0.	10		
BE19	1742.	6255.	0.	10		

BARRIER 2 TYPE (R) EAST BARRIER CONTINUED

-----COORDINATES-----

	X	Y	Z	Z0	DECL	P
BE19	1742.	6255.	0.	10	0	0
BE20R	1739.	6440.	0.	10		
BE21	1732.	6601.	0.	10		
BE22	1729.	6805.	0.	10		
BE23	1725.	7000.	0.	10		
BE24	1721.	7100.	0.	10		
BE25	1719.	7200.	0.	10		
BE26	1711.	7300.	0.	10		
BE27	1711.	7402.	0.	10		
BE28	1710.	7500.	0.	10		

RECEIVERS - LAST SIDE

	COORDINATES		
	X	Y	Z
DMHE	1610.	3091.	5.0
CPCE	1645.	3965.	5.0
NCAE	1660.	4802.	5.0
RBF	1620.	5980.	5.0
RSE	1618.	6720.	5.0

REFLECTION FACTORS - RECEIVER ACROSS ROADWAY DOWN

1 *	5	5	5	5	5
2 *	5	5	5	5	5
3 *	5	5	5	5	5
4 *	5	5	5	5	5
5 *	5	5	5	5	5
6 *	5	5	5	5	5

SHIELDING FACTORS - RECEIVER ACROSS ROADWAY DOWN

1 *	0	0	0	0	0
2 *	0	0	0	0	0
3 *	0	0	0	0	0
4 *	0	0	0	0	0
5 *	0	0	0	0	0
6 *	0	0	0	0	0

RECEIVER LEQ(1H) 1.19
 DMHE 59.3 12.4

ROADWAY SEGMENT SOUND LEVEL CONTRIBUTIONS EXCEEDING 50.0 DBA

ROADWAY SEGMENT

RECEIVER	LEQ(D)	L10
CPOT	60.0	63.3

ROADWAY SEGMENT SOUND LEVEL CONTRIBUTIONS EXCEEDING 50.0 DBA

ROADWAY	SEGMENT	1	2	3
			55.2	51.1
4			2	3
			51.7	51.9

RECEIVER	LEQ(D)	L10
NOAH	61.2	64.6

ROADWAY SEGMENT SOUND LEVEL CONTRIBUTIONS EXCEEDING 50.0 DBA

ROADWAY	SEGMENT	1	2	3
			52.9	
2			1	
			51.1	
4			1	
			54.6	

RECEIVER	LEQ(D)	L10
REI	60.9	64.3

ROADWAY SEGMENT SOUND LEVEL CONTRIBUTIONS EXCEEDING 50.0 DBA

ROADWAY	SEGMENT	1
2		1
		51.1

RECEIVER LEQ(H) L10
USE 61.5 65.0

ROADWAY SEGMENT SOUND LEVEL CONTRIBUTIONS EXCEEDING 50.0 DBA

ROADWAY SEGMENT

1	1
	52.1
2	1
	59.2
3	1
	54.3

STAMINA 2.1/RCR
 FHWA VERSION 3 (MARCH 1983)
 TRAFFIC NOISE PREDICTION MODEL

(INPUT UNITS- ENGLISH , OUTPUT UNITS- ENGLISH)

US 41 FROM D.R. 887 TO SOUTH OF MYRTLE RD. 02693.03 MRA NOBUILD WEST

PROGRAM INITIALIZATION PARAMETERS

HEIGHT	CODE	DESCRIPTION
.00	1	RECEIVER HEIGHT ADJUSTMENT
1.00	2	A-WEIGHTED SOUND LEVEL ONLY
.00	3	HEIGHT ADJUSTMENT FOR PASSENGER CARS (CARS)
8.00	4	HEIGHT ADJUSTMENT FOR HEAVY TRUCKS (HT)
2.50	5	HEIGHT ADJUSTMENT FOR MEDIUM TRUCKS (MT)

ROADWAY 1 US 41 NORTHBOUND S OF MYRTLE RD. TO RIDGE RD.

VEHICLE TYPE	VEHICLES/HOUR	SPEED
CARS	1374.	22.
HT	27.	22.
MT	32.	22.

-----COORDINATES-----

	X	Y	Z	GRADE
NB150	1842.	1562.	.0	0
NB165	1848.	3970.	.0	0
NB175	1850	3970.	.0	0
NB185	1815.	5002.	.0	0

ROADWAY 2 US 41 NORTHBOUND - RIDGE RD. TO BANYAN RD.

VEHICLE TYPE	VEHICLES/HOUR	SPEED
CARS	1374.	22.
HT	27.	22.
MT	32.	22.

-----COORDINATES-----

	X	Y	Z	GRADE
NB185	1815.	5002.	.0	0
NB200	1777.	6541.	.0	0

ROADWAY 3 US 41 NORTHBOUND - BANYAN RD. TO VANDERBILT BEACH RD.

VEHICLE TYPE	VEHICLES/HOUR	SPEED
CARS	1374.	22.
HT	27.	22.
MT	32.	22.

-----COORDINATES-----

	X	Y	Z	GRADE
NB200	1777	6541.	.0	0

ROADWAY 4 US41 NORTHBOUND - VANDERBILT BEACH RD. TO IMMOKALEE RD.

VEHICLE TYPE	VEHICLES/HOUR	SPEED
CARS	1374.	22.
HT	27.	22.
MT	32.	22.

-----COORDINATES-----

	X	Y	Z	GRADE
NB230	1702.	9468.	.0	.0
NB240	1672.	10488.	.0	.0
NB250	1647.	11482.	.0	.0
NB260	1635.	12510.	.0	.0
NB270	1622.	13515.	.0	.0
NB280	1605.	14019.	.0	.0
NB290	1587.	15510.	.0	.0
NB300	1570.	16510.	.0	.0
NB310	1555.	17510.	.0	.0

ROADWAY 5 US 41 NORTHBOUND - IMMOKALEE RD TO R. OF CR 807

VEHICLE TYPE	VEHICLES/HOUR	SPEED
CARS	1374.	22.
HT	27.	22.
MT	32.	22.

-----COORDINATES-----

	X	Y	Z	GRADE
NB310	1555.	17510.	.0	.0
NB320	1535.	18510.	.0	.0
NB330	1500.	19510.	.0	.0
NB340	1468.	20510.	.0	.0
NB350	1448.	21510.	.0	.0
NB360	1425.	22510.	.0	.0
NB370	1400.	23510.	.0	.0
NB380	1370.	24510.	.0	.0
NB390	1345.	25510.	.0	.0
NB121	1328.	26205.	.0	.0
NB125	1365.	26660.	.0	.0
NB130	1450.	27091.	.0	.0
NB140	1676.	28065.	.0	.0

ROADWAY 6 US 41 SOUTHBOUND - S OF MYRTLE RD. TO RIDGE RD.

VEHICLE TYPE	VEHICLES/HOUR	SPEED
CARS	2061.	22.
HT	41.	22.
MT	47.	22.

-----COORDINATES-----

	X	Y	Z	GRADE
SB150	1900.	1552.	.0	.0
SB155	1910.	2745.	.0	.0

ROADWAY 7 US 41 SOUTHBOUND - RIDGE RD. TO BANYAN RD.

VEHICLE TYPE	VEHICLES/HOUR	SPEED
CARS	2061.	22.
HT	41.	22.
MT	47.	22.

-----COORDINATES-----

	X	Y	Z	GRADE
SB185	1890.	4989.	10	0
SB200	1850.	6528.	10	0

ROADWAY 8 US 41 SOUTHBOUND - BANYAN RD. TO VANDERBILT BEACH RD.

VEHICLE TYPE	VEHICLES/HOUR	SPEED
CARS	2061.	22.
HT	41.	22.
MT	47.	22.

-----COORDINATES-----

	X	Y	Z	GRADE
SB200	1850.	6528.	10	0
SB210	1828.	7481.	10	0
SB220	1797.	8472.	10	0
SB230	1776.	9500.	10	0

ROADWAY 9 US41 SOUTHBOUND - VANDERBILT BEACH RD. TO INNOVALEE RD.

VEHICLE TYPE	VEHICLES/HOUR	SPEED
CARS	2061.	22.
HT	41.	22.
MT	47.	22.

-----COORDINATES-----

	X	Y	Z	GRADE
SB230	1776.	9500.	10	0
SB240	1749.	10401.	10	0
SB250	1772.	11471.	10	0
SB260	1709.	12500.	10	0
SB270	1698.	13500.	10	0
SB280	1680.	14000.	10	0
SB290	1665.	15500.	10	0
SB300	1645.	16500.	10	0
SB310	1629.	17500.	10	0

ROADWAY 10 US 41 SOUTHBOUND INNOVALEE RD TO N. OF CR 887

VEHICLE TYPE	VEHICLES/HOUR	SPEED
CARS	2061.	22.
HT	41.	22.
MT	47.	22.

	X	Y	Z	DEPTH
SB310	1629.	17500.		0
SB320	1605.	18500.		0
SB330	1571.	19500.		0
SB340	1542.	20500.		0
SB350	1518.	21500.		0
SB360	1492.	22500.		0
SB370	1470.	23500.		0
SB380	1440.	24500.		0
SB390	1420.	25500.		0
SB121	1400.	26189.		0
SB125	1440.	26641.		0
SB130	1522.	27070.		0
SB140	1738.	28047.		0

BARRIER TYPE(A) EXISTING BERM AT PELICAN BAY

-----COORDINATES-----

	X	Y	Z	Z0	DELT Z	P
B1	2055.	2881.	2.	10	10	0
B2	1989.	2900.	8.	10		
B3	1970.	3310.	8.	10		
B4	2000.	4000.	8.	10		
B5	1975.	4500.	8.	10		
B6	1955.	5500.	8.	10		
B7	1920.	6500.	8.	10		
B8	1918.	7000.	6.	10		
B9	1900.	7400.	6.	10		
B10	2135.	7435.	2.	10		

RECEPTORS - WEST SIDE

-----COORDINATES-----

	X	Y	Z
PRW	1993.	6000.	1.0
BRW	1966.	7303.	3.0
GRW	1520.	25882.	3.0

SHIELDING FACTORS - RECEIVER ACROSS, ROADWAY DOWN

1 *	.5	.5	.5
2 *	.5	.5	.5
3 *	.5	.5	.5
4 *	.5	.5	.5
5 *	.5	.5	.5
6 *	.5	.5	.5
7 *	.5	.5	.5
8 *	.5	.5	.5
9 *	.5	.5	.5
10 *	.5	.5	.5

SHIELDING FACTORS - RECEIVER ACROSS, ROADWAY DOWN

1 *	10	10	10
2 *	10	10	10
3 *	10	10	10
4 *	10	10	10
5 *	10	10	10
6 *	10	10	10
7 *	10	10	10
8 *	10	10	10
9 *	10	10	10
10 *	10	10	10

RECEIVER LEQ(H) L10
 RBW 57.7 61.1

ROADWAY SEGMENT SOUND LEVEL CONTRIBUTIONS EXCEEDING 50.0 DBA

ROADWAY SEGMENT

2 1
 51.4
 1
 55.6

BCW 59.7 63.0

ROADWAY SEGMENT SOUND LEVEL CONTRIBUTIONS EXCEEDING 50.0 DBA

ROADWAY SEGMENT

3	1	
	52.6	
6	1	2
	57.0	50.9

RECEIVER	LEO(H)	L10
MHW	67.5	71.0

ROADWAY SEGMENT SOUND LEVEL CONTRIBUTIONS EXCEEDING 50.0 DBA

ROADWAY SEGMENT

5	7	
	59.6	
10	7	
	66.5	

PLANNING 2.1/80R
 FHWA VERSION 3 (MARCH 1983)
 TRAFFIC NOISE PREDICTION MODEL

(INPUT UNITS- ENGLISH , OUTPUT UNITS- ENGLISH)

US 41 FROM C.R. 887 TO SOUTH OF MYRTLE RD. 02693.03 MRA BUILD LAST

PROGRAM INITIALIZATION PARAMETERS

HEIGHT	CODE	DESCRIPTION
0.00	1	RECEIVER HEIGHT ADJUSTMENT
1.00	2	A-WEIGHTED SOUND LEVEL ONLY
0.00	3	HEIGHT ADJUSTMENT FOR PASSENGER CARS (CARC)
8.00	4	HEIGHT ADJUSTMENT FOR HEAVY TRUCKS (HT)
2.30	5	HEIGHT ADJUSTMENT FOR MEDIUM TRUCKS (MT)

ROADWAY 1 US 41 NORTHBOUND - S OF MYRTLE RD. TO RIDGE RD.

VEHICLE TYPE	VEHICLES/HOUR	SPEED
CARS	2128.	39.
HT	41.	39.
MT	49.	39.

-----COORDINATES-----

	X	Y	Z	GRADE
NB150	1842.	1552.	0.	0
NB165	1848.	2969.	0.	0
NB175	1850.	3960.	0.	0
NB185	1815.	4992.	0.	0

ROADWAY 2 US 41 NORTHBOUND - RIDGE RD. TO BANYAN RD.

VEHICLE TYPE	VEHICLES/HOUR	SPEED
CARS	2128.	39.
HT	42.	39.
MT	49.	39.

-----COORDINATES-----

	X	Y	Z	GRADE
NB185	1815.	4992.	0.	0
NB190	1777.	6531.	0.	0

ROADWAY 3 US 41 NORTHBOUND - BANYAN RD. TO VANDERBILT BENCH RD.

VEHICLE TYPE	VEHICLES/HOUR	SPEED
CARS	2320.	39.
HT	46.	39.
MT	53.	39.

-----COORDINATES-----

	X	Y	Z	GRADE
NB200	1777.	6531.	0.	0

ROADWAY

4

US 41 SOUTHBOUND - S OF MYRTLE RD. TO RIDGE RD.

VEHICLE TYPE	VEHICLES/HOUR	SPEED
CARS	1419	39
HT	28	19
MT	33	29

-----COORDINATES-----

GRADE	X	Y	Z
0	1908	1552	10
0	1908	1552	10
0	1910	2665	10
0	1908	3960	10
0	1908	4989	10

ROADWAY

5

US 41 SOUTHBOUND - RIDGE RD. TO BANYAN RD.

VEHICLE TYPE	VEHICLES/HOUR	SPEED
CARS	1419	39
HT	28	19
MT	33	29

-----COORDINATES-----

GRADE	X	Y	Z
0	1908	4989	10
0	1908	6538	10

ROADWAY

6

US 41 SOUTHBOUND - BANYAN RD. TO WANDERLIT BEACH RD.

VEHICLE TYPE	VEHICLES/HOUR	SPEED
CARS	1547	39
HT	31	22
MT	35	33

-----COORDINATES-----

GRADE	X	Y	Z
0	1950	6538	10
0	1950	7461	10
0	1950	8472	10
0	1950	9483	10

BARRIER 3 (TYPE/R) BARRIER FOR EAST RAMP/PIERS

-----COORDINATES-----

BE3	1808.	5875.	12.	10
BE4	1803.	4071.	12.	10
BE5	1801.	4172.	12.	10
BE6	1800.	4271.	12.	10
BE7	1796.	4371.	12.	10
BE8	1794.	4471.	12.	10
BE9	1791.	4571.	12.	10
BE10	1789.	4671.	12.	10

BARRIER 2 TYPE(R) EAST BARRIER CONTINUED "R" AFTER SEGMENT DENOTES OVL

-----COORDINATES-----

	X	Y	Z	Z0	DELZ	P
BE10	1789.	4671.	12.	0	0.0	2
BE11	1773.	4770.	12.	10		
BE12R	1770.	4751.	12.	10		
BE13	1772.	5062.	12.	10		
BE14	1770.	5252.	12.	10		
BE15	1765.	5462.	12.	10		
BE16	1767.	5662.	12.	10		
BE17	1755.	5862.	12.	0		
BE18	1748.	6060.	12.	10		
BE19	1742.	6258.	12.	10		

BARRIER 3 TYPE(R) EAST BARRIER CONT

-----COORDINATES-----

	X	Y	Z	Z0	DELZ	P
BE19	1742.	6258.	12.	10	2.0	2
BE20R	1739.	6440.	12.	10		
BE21	1732.	6601.	12.	10		
BE22	1729.	6805.	12.	10		
BE23	1725.	7000.	12.	10		
BE24	1721.	7100.	12.	10		
BE25	1719.	7200.	12.	10		
BE26	1715.	7300.	12.	10		
BE27	1712.	7402.	12.	10		
BE28	1710.	7500.	12.	10		

RECEIVER	LEQ(H)	L10
NCAE	58.6	61.8

ROADWAY SEGMENT SOUND LEVEL CONTRIBUTIONS EXCEEDING 50.0 DBA

ROADWAY	SEGMENT
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1	3
	54.4
2	1
	50.6
4	3
	52.3

RECEIVER	LEQ(H)	L10
R 57	58.2	61.3

ROADWAY SEGMENT SOUND LEVEL CONTRIBUTIONS EXCEEDING 50.0 DBA

ROADWAY	SEGMENT
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1	3
	54.2
4	3
	52.5

RECEIVER	LEQ(H)	L10
7008	58.0	61.1

ROADWAY SEGMENT SOUND LEVEL CONTRIBUTIONS EXCEEDING 50.0 DBA

ROADWAY	SEGMENT
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2	1
	53.9
5	1
	52.4

RECEIVER LEQ(H) L10
7010 57.4 60.9

ROADWAY SEGMENT SOUND LEVEL CONTRIBUTIONS EXCEEDING 50.0 DBA

ROADWAY SEGMENT

2 1
 50.6
5 1
 52.5

RECEIVER LEQ(H) L10
7024 57.3 60.3

ROADWAY SEGMENT SOUND LEVEL CONTRIBUTIONS EXCEEDING 50.0 DBA

ROADWAY SEGMENT

2 1
 53.5
5 1
 52.4

RECEIVER LEQ(H) L10
7036 56.7 59.7

ROADWAY SEGMENT SOUND LEVEL CONTRIBUTIONS EXCEEDING 50.0 DBA

ROADWAY SEGMENT

2 1
 52.7
5 1
 51.5

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ROADWAY SEGMENT

ROADWAY SEGMENT SOUND LEVEL CONTRIBUTIONS EXCEPT FOR

RECEIVER LEQ(H) L10 58.1
 70.8
 61.2

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ROADWAY SEGMENT

ROADWAY SEGMENT SOUND LEVEL CONTRIBUTIONS EXCEPT FOR

RECEIVER LEQ(H) L10 57.1
 70.8
 61.1

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ROADWAY SEGMENT

ROADWAY SEGMENT SOUND LEVEL CONTRIBUTIONS EXCEPT FOR

RECEIVER LEQ(H) L10 58.4
 70.8
 61.5

RECEIVER	LEQ(H)	L10
USE	59.0	62.1

ROADWAY SEGMENT	SOUND LEVEL CONTRIBUTION	EXCEPTING	NO. OF DAYS
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ROADWAY	SEGMENT
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2	1
	50.8
3	1
	54.8
4	1
	52.7

RECEIVER	LEQ(H)	L10
CONDO	53.0	61.2

ROADWAY SEGMENT	SOUND LEVEL CONTRIBUTIONS	EXCEPTING	NO. OF DAYS
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ROADWAY	SEGMENT
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3	1
	53.0
4	1
	54.2

 OPTIMA-VUJ

 BARRIER OPTIMIZATION PROGRAM USING
 PARTIAL SOUND ENERGIES COMPUTED BY THE
 STAMINA 2.0 PROGRAM
 MODIFIED FROM THE FHWA VAS VERSION -- MARCH 1983

MODIFIED TO:

1. PLACE BARRIER COST DATA IN A DATA FILE CALLED OPTICOST.DTA TO ALLOW USER TO USE COSTS OTHER THAN THE FHWA NATIONAL AVERAGES.

MODIFIED FOR IBM-COMPATIBLE PC WITH MATH CO-PROCESSOR
 IN JUNE 1991 BY

VANDERBILT ENGINEERING CENTER FOR TRANSPORTATION
 OPERATIONS AND RESEARCH (VECTOR)
 BOX 96 B, VANDERBILT UNIVERSITY, NASHVILLE, TENNESSEE 37235
 (615) 322-3685

PRINT FILE

US 41 FROM CL 887 TO SOUTH OF MYRTLE RD. 02693.03 HRS FULL FACT

EFFECTIVENESS/COST RATIO AND BARRIER HEIGHT MATRICES

BARRIER NO.	SECTION ID	EFFECTIVENESS/COST RATIO								CORRESPONDING BARRIER HEIGHTS (IN FT)							
		1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
HEIGHT INDEX		1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
1	BE1	*	0.	0.	0.	1.	2.	2.	3.	0.	0.	8.	10.	12.	14.	16.	18.
2	BE2	*	-11.	1.	1.	1.	2.	2.	3.	0.	0.	8.	10.	12.	14.	16.	18.
3	BE3	*	-2.	3.	4.	4.	4.	4.	4.	0.	0.	8.	10.	12.	14.	16.	18.
4	BE4	*	4.	3.	8.	7.	7.	7.	6.	0.	0.	8.	10.	12.	14.	16.	18.
5	BE5	*	9.	11.	10.	9.	9.	8.	8.	0.	0.	8.	10.	12.	14.	16.	18.
6	BE6	*	13.	14.	13.	11.	10.	10.	9.	0.	0.	8.	10.	12.	14.	16.	18.
7	BE7	*	17.	17.	16.	14.	13.	12.	11.	0.	0.	8.	10.	12.	14.	16.	18.
8	BE8	*	20.	20.	18.	16.	14.	13.	13.	0.	0.	8.	10.	12.	14.	16.	18.
9	BE9	*	20.	20.	19.	16.	15.	14.	13.	0.	0.	8.	10.	12.	14.	16.	18.
10	BE10	*	21.	20.	19.	17.	15.	14.	13.	0.	0.	8.	10.	12.	14.	16.	18.
11	BE11	*	21.	21.	19.	17.	16.	15.	14.	0.	0.	8.	10.	12.	14.	16.	18.
12	BE12R	*	17.	18.	17.	15.	14.	13.	13.	0.	0.	8.	10.	12.	14.	16.	18.
13	BE13	*	19.	19.	18.	16.	15.	14.	13.	0.	0.	8.	10.	12.	14.	16.	18.
14	BE14	*	19.	20.	18.	16.	15.	14.	14.	0.	0.	8.	10.	12.	14.	16.	18.
15	BE15	*	21.	21.	20.	18.	16.	15.	15.	0.	0.	8.	10.	12.	14.	16.	18.
16	BE16	*	21.	21.	20.	18.	16.	15.	15.	0.	0.	8.	10.	12.	14.	16.	18.
17	BE17	*	22.	22.	21.	19.	17.	16.	15.	0.	0.	8.	10.	12.	14.	16.	18.
18	BE18	*	21.	21.	20.	18.	17.	15.	15.	0.	0.	8.	10.	12.	14.	16.	18.
19	BE19	*	20.	20.	19.	17.	16.	15.	14.	0.	0.	8.	10.	12.	14.	16.	18.
20	BE20R	*	20.	20.	19.	17.	16.	15.	14.	0.	0.	8.	10.	12.	14.	16.	18.
21	BE21	*	22.	22.	20.	18.	17.	15.	15.	0.	0.	8.	10.	12.	14.	16.	18.
22	BE22	*	20.	20.	19.	17.	15.	14.	13.	0.	0.	8.	10.	12.	14.	16.	18.
23	BE23	*	17.	18.	16.	14.	13.	12.	12.	0.	0.	8.	10.	12.	14.	16.	18.
24	BE24	*	14.	15.	13.	11.	11.	10.	10.	0.	0.	8.	10.	12.	14.	16.	18.
25	BE25	*	11.	12.	11.	10.	10.	9.	9.	0.	0.	8.	10.	12.	14.	16.	18.
26	BE26	*	7.	8.	8.	6.	6.	7.	7.	0.	0.	8.	10.	12.	14.	16.	18.
27	BE27	*	4.	6.	6.	5.	5.	6.	6.	0.	0.	8.	10.	12.	14.	16.	18.

US 41 FROM CL 887 TO SOUTH OF MYRTLE RD. 02693.03 HRS FULL FACT

STAMINA 2.1/BCK
 FHWA VERSION 3 (MARCH 1984)
 TRAFFIC NOISE PREDICTION MODEL

(INPUT UNITS- ENGLISH , OUTPUT UNITS- ENGLISH)

US 41 FROM C.R. 807 TO SOUTH OF MYRTLE RD. C2693.03 MRA BUILD WEST

PROGRAM INITIALIZATION PARAMETERS

HEIGHT	CODE	DESCRIPTION
1.00	1	RECEIVER HEIGHT ADJUSTMENT
1.00	2	A-WEIGHTED SOUND LEVEL ONLY
1.00	3	HEIGHT ADJUSTMENT FOR PASSENGER CARS (CAR3)
8.00	4	HEIGHT ADJUSTMENT FOR HEAVY TRUCKS (HT)
2.30	5	HEIGHT ADJUSTMENT FOR MEDIUM TRUCKS (MT)

ROADWAY 1 US 41 NORTHBOUND S OF MYRTLE RD. TO RIDGE RD.

VEHICLE TYPE	VEHICLES/HOUR	SPEED
CARS	1419.	39.
HT	28.	39.
MT	33.	39.

-----COORDINATES-----

	X	Y	Z	GRADE
NR150	1842.	1552.	10	0
NR165	1848.	2767.	10	0
NR175	1850	3960.	10	0
NR185	1815.	4797.	10	0

ROADWAY 2 US 41 NORTHBOUND - RIDGE RD. TO BANYAN RD.

VEHICLE TYPE	VEHICLES/HOUR	SPEED
CARS	1419.	39.
HT	28.	39.
MT	33.	39.

-----COORDINATES-----

	X	Y	Z	GRADE
NR185	1815.	4992.	10	0
NR200	1777.	6531.	10	0

ROADWAY 3 US 41 NORTHBOUND - BANYAN RD. TO VANDERBILT BEACH RD.

VEHICLE TYPE	VEHICLES/HOUR	SPEED
CARS	1547.	39.
HT	33.	39.
MT	35.	39.

-----COORDINATES-----

	X	Y	Z	GRADE
NR200	1777	6531	10	0

ROADWAY 4 US41 NORTHBOUND - VANDERBILT BEACH RD. TO IMMOKALEE RD.

VEHICLE TYPE	VEHICLES/HOUR	SPEED
CARS	1892.	36.
HT	38.	36.
MT	45.	36.

-----COORDINATES-----

	X	Y	Z	GRADE
NB230	1702.	9458.	0	0
NB240	1672.	10478.	0	0
NB250	1647.	11472.	0	0
NB260	1635.	12500.	0	0
NB270	1622.	13505.	0	0
NB280	1605.	14008.	0	0
NB290	1587.	15500.	0	0
NB300	1570.	16500.	0	0
NB310	1555.	17500.	0	0

ROADWAY 5 US 41 NORTHBOUND - IMMOKALEE RD TO FL. OF CR 887

VEHICLE TYPE	VEHICLES/HOUR	SPEED
CARS	2068.	22.
HT	41.	22.
MT	47.	23.

-----COORDINATES-----

	X	Y	Z	GRADE
NB310	1555.	17500.	0	0
NB320	1535.	18500.	0	0
NB330	1500.	19500.	0	0
NB340	1468.	20500.	0	0
NB350	1448.	21500.	0	0
NB360	1425.	22500.	0	0
NB370	1400.	23500.	0	0
NB380	1370.	24500.	0	0
NB390	1345.	25500.	0	0
NB121	1328.	26195.	0	0
NB125	1365.	50.	0	0
NB130	1450.	27081.	0	0
NB140	1670.	28055.	0	0

ROADWAY 6 US 41 SOUTHBOUND - S OF MYRTLE RD. TO RIDGE RD.

VEHICLE TYPE	VEHICLES/HOUR	SPEED
CARS	2128.	30.
HT	22.	19.
MT	45.	30.

-----COORDINATES-----

	X	Y	Z	GRADE
SB150	1900.	1552.	0	0
SB160	1910.	2985.	0	0

ROADWAY 7 US 41 SOUTHBOUND - RIDGE RD. TO BANYAN RD.

VEHICLE TYPE	VEHICLES/HOUR	SPEED
CARS	2128.	39.
HT	42.	39.
MT	49.	39.

-----COORDINATES-----

	X	Y	Z	GRADE
SB185	1870.	4989.	10	0
SB200	1850.	6528.	10	0

ROADWAY 8 US 41 SOUTHBOUND - BANYAN RD. TO VANDERBILT BEACH RD.

VEHICLE TYPE	VEHICLES/HOUR	SPEED
CARS	2320.	39.
HT	16.	39.
MT	55.	39.

-----COORDINATES-----

	X	Y	Z	GRADE
SB200	1850.	6528.	10	0
SB210	1828.	7481.	10	0
SB220	1797.	8472.	10	0
SB230	1776.	9502.	10	0

ROADWAY 9 US41 SOUTHBOUND - VANDERBILT BEACH RD. TO IMMOKALEE RD.

VEHICLE TYPE	VEHICLES/HOUR	SPEED
CARS	2838	36
HT	68.	36
MT	65.	36.

-----COORDINATES-----

	X	Y	Z	GRADE
SB230	1776	9502.	10	0
SB240	1748.	10481.	10	0
SB250	1772.	11471.	10	0
SB260	1709.	12500.	10	0
SB270	1698.	13500.	10	0
SB280	1680.	14000.	10	0
SB290	1665.	15500.	10	0
SB300	1645.	16500.	10	0
SB310	1629.	17500.	10	0

ROADWAY 10 US 41 SOUTHBOUND - IMMOKALEE RD TO N OF CR 387

VEHICLE TYPE	VEHICLES/HOUR	SPEED
CARS	3102.	27.
HT	67.	22.
MT	71	22.

	X	Y	Z	DELTA
SB310	1629.	17500.		0
SB320	1605.	18500.		0
SB330	1571.	19500.		0
SB340	1542.	20500.		0
SB350	1518.	21500.		0
SB360	1492.	22500.		0
SB370	1470.	23500.		0
SB380	1440.	24500.		0
SB390	1420.	25500.		0
CB12J	1400.	26189.		0
SB125	1440.	26641.		0
SB130	1522.	27070.		0
SB140	1738.	28047.		0

BARRIER 1 TYPE (A) EXISTING BERM AT PELICAN BAY

----- COORDINATES -----

	X	Y	Z	DELTA	P
B1	2055.	2881.	1.	10	0
B2	1989.	2900.	1.	10	
B3	1970.	3310.	1.	10	
B4	2000.	4000.	1.	10	
B5	1975.	4500.	1.	10	
B6	1955.	5500.	1.	10	
B7	1920.	6500.	1.	10	
B8	1918.	7000.	1.	10	
B9	1930.	7400.	1.	10	
B10	2155.	7435.	1.	10	

RECEPTORS - WEST SIDE

----- COORDINATES -----

	X	Y	Z
REW	1993.	6900.	1.0
BCW	1968.	7503.	1.0
BRW	1520.	23889.	1.0

REFLECTION FACTORS - RECEIVER ACROSS ROADWAY DOWN

1 *	.5	.5	.5
2 *	.5	.5	.5
3 *	.5	.5	.5
4 *	.5	.5	.5
5 *	.5	.5	.5
6 *	.5	.5	.5
7 *	.5	.5	.5
8 *	.5	.5	.5
9 *	.5	.5	.5
10 *	.5	.5	.5

SHIELDING FACTORS - RECEIVER ACROSS ROADWAY DOWN

1 *	1.0	1.0	1.0
2 *	1.0	1.0	1.0
3 *	1.0	1.0	1.0
4 *	1.0	1.0	1.0
5 *	1.0	1.0	1.0
6 *	1.0	1.0	1.0
7 *	1.0	1.0	1.0
8 *	1.0	1.0	1.0
9 *	1.0	1.0	1.0
10 *	1.0	1.0	1.0

RECEIVER	LEQ(H)	L10
NRW	60.7	63.9

ROADWAY SEGMENT SOUND LEVEL CONTRIBUTIONS EXCEEDING 50.0 DBA

ROADWAY SEGMENT

2	1
	54.6
7	1
	58.5

BLW 63.2 66.8

ROADWAY SEGMENT SOUND LEVEL CONTRIBUTIONS EXCEEDING 50.0 DBA

ROADWAY SEGMENT

3	1	2
	56.2	51.5
8	1	2
	60.5	54.4

RECEIVER LEQ(H) L10
MMW 69.3 72.8

ROADWAY SEGMENT SOUND LEVEL CONTRIBUTIONS EXCEEDING 50.0 DBA

ROADWAY SEGMENT

5	7	
	61.3	
10	6	7
	50.1	60.3

STAMINA 2.1.1/BCR
 FHWA VERSION 3 (MARCH 1984)
 TRAFFIC NOISE PREDICTION MODEL

(INPUT UNITS- ENGLISH , OUTPUT UNITS- ENGLISH)

US 41 FROM C.R. 887 TO SOUTH OF MYRTLE RD. 02693.03 MRA BUILD WEST

PROGRAM INITIALIZATION PARAMETERS:

HEIGHT	CODE	DESCRIPTION
.00	1	RECEIVER HEIGHT ADJUSTMENT
1.00	2	A-WEIGHTED SOUND LEVEL ONLY
.00	3	HEIGHT ADJUSTMENT FOR PASSENGER CARS (CARS)
8.00	4	HEIGHT ADJUSTMENT FOR HEAVY TRUCKS (HT)
2.30	5	HEIGHT ADJUSTMENT FOR MEDIUM TRUCKS (MT)

ROADWAY 1 US 41 NORTHBOUND - IMMOKALEE RD TO N. OF CR 887

VEHICLE TYPE	VEHICLES/HOUR	SPEED
CARS	2068.	22.
HT	41.	22.
MT	47.	22.

-----COORDINATES-----

	X	Y	Z	GRADE
NB310	1555.	17500.	.0	0
NB320	1535.	18500.	.0	0
NB330	1500.	19500.	.0	0
NB340	1468.	20500.	.0	0
NB350	1448.	21500.	.0	0
NB360	1425.	22500.	.0	0
NB370	1400.	23500.	.0	0
NB380	1370.	24500.	.0	0
NB390	1345.	25500.	.0	0
NB121	1329.	26195.	.0	0
NB125	1365.	26650.	.0	0
NB130	1450.	27081.	.0	0
NB140	1676.	28055.	.0	0

ROADWAY 2 US 41 SOUTHBOUND - IMMOKALEE RD TO N. OF CR 887

VEHICLE TYPE	VEHICLES/HOUR	SPEED
CARS	3102.	22.
HT	62.	22.
MT	71.	22.

-----COORDINATES-----

	X	Y	Z	GRADE
SB310	1620.	17500.	.0	0
SB320	1605.	18500.	.0	0
SB330	1571.	19500.	.0	0
SB340	1542.	20500.	.0	0
SB350	1518.	21500.	.0	0
SB360	1492.	22500.	.0	0
SB370	1470.	23500.	.0	0

SB121	1400.	26189.	10	0
SB125	1440.	26641.	10	0
SB130	1522.	27070.	10	0
SB140	1738.	28047.	10	0

BARRIER 1 TYPE(R) BARRIER WEST FOR MOBILE HOMES - "R" DENOTES SEGMENT OF

-----COORDINATES-----

	X	Y	Z	SD	DILZ	P
BW1	1500.	23420.	12.	10	2.0	3
BW2	1500.	23520.	12.	10		
BW3	1500.	23620.	12.	10		
BW4R	1500.	23720.	12.	10		
BW5	1500.	23764.	12.	10		
BW6R	1500.	23908.	12.	10		
BW7	1500.	23948.	12.	10		
BW8	1500.	24044.	12.	10		
BW9	1500.	24140.	12.	10		
BW10	1500.	24248.	12.	10		

RECEPTORS - WEST SIDE

-----COORDINATES-----

	X	Y	Z
MHW	1520.	23882.	5.0
MHW2	1555.	23795.	5.0
MHW3	1580.	23845.	5.0
MHW4	1630.	23900.	5.0

ALPHA FACTORS - RECEIVER ACROSS ROADWAY DOWN

1 *	.5	.5	.5	.5
2 *	.5	.5	.5	.5

SHIELDING FACTORS - RECEIVER ACROSS ROADWAY DOWN

1 * 1.0 1.0 1.0 1.0
 2 * 1.0 1.0 1.0 1.0

RECEIVER LEQ(H) L10
 MHW 58.8 62.1

ROADWAY SEGMENT SOUND LEVEL CONTRIBUTIONS EXCEEDING 50.0 DBA

ROADWAY SEGMENT

1 7
 51.3
 2 7
 50.5

RECEIVER LEQ(H) L10
 MHW2 59.0 62.3

ROADWAY SEGMENT SOUND LEVEL CONTRIBUTIONS EXCEEDING 50.0 DBA

ROADWAY SEGMENT

1 7
 52.4
 2 7
 50.3

RECEIVER LEQ(H) L10
 MHW3 58.6 61.7

ROADWAY SEGMENT

1	7
	52.3
2	7
	55.4

RECEIVER	LEQ (H)	L10
MHW4	57.8	60.8

ROADWAY SEGMENT SOUND LEVEL CONTRIBUTIONS EXCEEDING 50.0 DBA

ROADWAY SEGMENT

1	7
	51.6
2	7
	54.1


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FH-WOOD      0.
FH-CONC      0.
FH-STEEL     0.
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TOTALS: \$ 31200. 8704.

UT 4) FROM C.R. 887 TO SOUTH OF MYRTLE RD. C2693.03 NWA BUILD WEST
 TRIAL 2

BARRIER HEIGHT INDEX FOR EACH BARRIER SECTION
 1 1 7 1 7 1 7 7 1
 CORRESPONDING BARRIER HEIGHTS FOR EACH SECTION
 0. 0.16. 0.16. 0.16.16. 0.

RESULTS

REC	REC ID	LOW	LEQ(Z(0))	UL
1	MHW	61.3	62.1	2.0
2	MHW2	60.7	61.2	1.2
3	MHW3	59.7	61.7	2.0
4	MHW4	58.8	62.6	3.8

BARRIER TYPE	COST	AREA (SQ. FT.)
FH-BERM	26000	7194
FH-MASON	0	0
FH-WOOD	0	0
FH-CONC	0	0
FH-STEEL	0	0

TOTALS 1 26000. 7194.

UT 4) FROM C.R. 887 TO SOUTH OF MYRTLE RD. C2693.03 NWA BUILD W.
 TRIAL 3

BARRIER HEIGHT INDEX FOR EACH BARRIER SECTION
 1 7 7 7 1 7 1 1
 CORRESPONDING BARRIER HEIGHTS FOR EACH SECTION
 0. 0.16. 0.16. 0.16. 0.

RESULTS

REC	REC ID	LOW	LEQ(Z(0))	UL
1	MHW	61.3	62.1	2.0
2	MHW2	61.1	61.1	0.1
3	MHW3	60.7	61.7	1.0
4	MHW4	59.5	62.3	1.2

BARRIER TYPE	COST	AREA (SQ. FT.)
FH-BERM	19000	5440
FH-MASON	0	0
FH-WOOD	0	0
FH-CONC	0	0
FH-STEEL	0	0

TOTALS 1 19000. 5440.

END OF ALL CASES

APPENDIX C
ISOPLETH COMPUTER PRINTOUTS

US 41 CR 887 TO MYRTLE RD, COLLIER COUNTY
 BUILD -- CR887 TO IMMOKALEE
 2015 LOS C 6 LANES
 C2693.03 M. ADAMS 3/93

SITE	ROADWAY	TRAFFIC	SHIELDING	L50	L10
	LANES= 6	ADT= 59900.		AUTO	62.3 62.4
	WIDTH=102.	% ADT 9.	HEIGHT 0.	MEDTRK	55.4 61.4
HEIGHT 5.	FINITE= 1	FLOW 0	DIST.= 0.	HVYTRK	60.4 66.9
DIST. 100.	THETA= 0.	A MT HT	ALPHA= 0.		
STRUCT 0.	GRADE= 0.	MIX 96. 2. 2.			65.0 69.0
	SURFACE 0.	SPD 22. 22. 22.			

SITE	ROADWAY	TRAFFIC	SHIELDING	L50	L10
	LANES= 6	ADT= 59900.		AUTO	61.6 61.7
	WIDTH=102.	% ADT 9.	HEIGHT 0.	MEDTRK	54.8 60.4
HEIGHT 5.	FINITE= 1	FLOW 0	DIST.= 0.	HVYTRK	59.8 65.9
DIST. 113.	THETA= 0.	A MT HT	ALPHA= 0.		
STRUCT 0.	GRADE= 0.	MIX 96. 2. 2.			64.3 68.1
	SURFACE 0.	SPD 22. 22. 22.			

SITE	ROADWAY	TRAFFIC	SHIELDING	L50	L10
	LANES= 6	ADT= 59900.		AUTO	61.6 61.6
	WIDTH=102.	% ADT 9.	HEIGHT 0.	MEDTRK	54.7 60.3
HEIGHT 5.	FINITE= 1	FLOW 0	DIST.= 0.	HVYTRK	59.7 65.8
DIST. 115.	THETA= 0.	A MT HT	ALPHA= 0.		
STRUCT 0.	GRADE= 0.	MIX 96. 2. 2.			64.2 68.0
	SURFACE 0.	SPD 22. 22. 22.			

SITE	ROADWAY	TRAFFIC	SHIELDING	L50	L10
	LANES= 6	ADT= 59900.		AUTO	61.6 61.6
	WIDTH=102.	% ADT 9.	HEIGHT 0.	MEDTRK	54.7 60.3
HEIGHT 5.	FINITE= 1	FLOW 0	DIST.= 0.	HVYTRK	59.7 65.8
DIST. 115.	THETA= 0.	A MT HT	ALPHA= 0.		
STRUCT 0.	GRADE= 0.	MIX 96. 2. 2.			64.2 68.0
	SURFACE 0.	SPD 22. 22. 22.			

ELEMENT # 1 68.0 DBA AT 115.2 FEET
 TOTAL: 68.0 DBA AT 115.2 FEET

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Stop - Program terminated.

US41 CR 887 TO MYRTLE ROAD, COLLIER COUNTY
 BUILD -- IMMOKALEE TO VANDERBILT/HICKORY
 2015 DEMAND 6 LANES
 C2693.03 M. ADAMS 3/93

SITE	ROADWAY	TRAFFIC	SHIELDING	L50	L10
	LANES= 6	ADT= 54800.		AUTO	66.0 66.4
	WIDTH=102.	% ADT 9.	HEIGHT 0.	MEDTRK	55.6 63.6
HEIGHT 5.	FINITE= 1	FLOW 0	DIST.= 0.	HVYTRK	59.7 67.2
DIST. 100.	THETA= 0.	A MT HT	ALPHA= 0.		
STRUCT 0.	GRADE= 0.	MIX 96. 2. 2.			67.0 70.8
	SURFACE 0.	SPD 36. 36. 36.			

SITE	ROADWAY	TRAFFIC	SHIELDING	L50	L10
	LANES= 6	ADT= 54800.		AUTO	64.2 64.5
	WIDTH=102.	% ADT 9.	HEIGHT 0.	MEDTRK	53.8 60.9
HEIGHT 5.	FINITE= 1	FLOW 0	DIST.= 0.	HVYTRK	56.9 64.5
DIST. 140.	THETA= 0.	A MT HT	ALPHA= 0.		
STRUCT 0.	GRADE= 0.	MIX 96. 2. 2.			65.3 69.4
	SURFACE 0.	SPD 36. 36. 36.			

SITE	ROADWAY	TRAFFIC	SHIELDING	L50	L10
	LANES= 6	ADT= 54800.		AUTO	64.0 64.2
	WIDTH=102.	% ADT 9.	HEIGHT 0.	MEDTRK	53.6 60.5
HEIGHT 5.	FINITE= 1	FLOW 0	DIST.= 0.	HVYTRK	56.7 64.1
DIST. 146.	THETA= 0.	A MT HT	ALPHA= 0.		
STRUCT 0.	GRADE= 0.	MIX 96. 2. 2.			65.1 68.1
	SURFACE 0.	SPD 36. 36. 36.			

SITE	ROADWAY	TRAFFIC	SHIELDING	L50	L10
	LANES= 6	ADT= 54800.		AUTO	64.6 64.2
	WIDTH=102.	% ADT 9.	HEIGHT 0.	MEDTRK	53.6 60.5
HEIGHT 5.	FINITE= 1	FLOW 0	DIST.= 0.	HVYTRK	56.7 64.1
DIST. 147.	THETA= 0.	A MT HT	ALPHA= 0.		
STRUCT 0.	GRADE= 0.	MIX 96. 2. 2.			65.0 68.0
	SURFACE 0.	SPD 36. 36. 36.			

SITE	ROADWAY	TRAFFIC	SHIELDING	L50	L10
	LANES= 6	ADT= 54800.		AUTO	64.0 64.2
	WIDTH=102.	% ADT 9.	HEIGHT 0.	MEDTRK	53.6 60.5
HEIGHT 5.	FINITE= 1	FLOW 0	DIST.= 0.	HVYTRK	56.7 64.1
DIST. 147.	THETA= 0.	A MT HT	ALPHA= 0.		
STRUCT 0.	GRADE= 0.	MIX 96. 2. 2.			65.0 68.0
	SURFACE 0.	SPD 36. 36. 36.			

ELEMENT # 1 68.0 DBA AT 147.0 FEET
 TOTAL: 68.0 DBA AT 147.2 FEET

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US 41 CR 887 TO MYRTLE ROAD, COLLIER COUNTY
 BUILD -- VANDERBILT BCH/HICKORY TO BANYAN ROAD
 2015 DEMAND 6 LANES
 C2693.03 M. ADAMS 3/93

SITE	ROADWAY	TRAFFIC	SHIELDING	L50	L10
	LANES= 6	ADT= 44800.		AUTO	65.8 66.4
	WIDTH=102.	% ADT 9.	HEIGHT 0.	MEDTRK	54.0 63.1
HEIGHT 5.	FINITE= 1	FLOW 0	DIST.= 0.	HVYTRK	56.8 66.3
DIST. 100.	THETA= 0.	A MT HT	ALPHA= 0.		
STRUCT 0.	GRADE= 0.	MIX 96. 2. 2.			66.5 70.3
	SURFACE 0.	SPD 39. 39. 39.			

SITE	ROADWAY	TRAFFIC	SHIELDING	L50	L10
	LANES= 6	ADT= 44600.		AUTO	64.3 64.8
	WIDTH=102.	% ADT 9.	HEIGHT 0.	MEDTRK	52.6 60.8
HEIGHT 5.	FINITE= 1	FLOW 0	DIST.= 0.	HVYTRK	55.3 64.1
DIST. 132.	THETA= 0.	A MT HT	ALPHA= 0.		
STRUCT 0.	GRADE= 0.	MIX 96. 2. 2.			65.1 69.3
	SURFACE 0.	SPD 39. 39. 39.			

SITE	ROADWAY	TRAFFIC	SHIELDING	L50	L10
	LANES= 6	ADT= 44900.		AUTO	64.1 64.6
	WIDTH=102.	% ADT 9.	HEIGHT 0.	MEDTRK	52.4 60.5
HEIGHT 5.	FINITE= 1	FLOW 0	DIST.= 0.	HVYTRK	55.1 63.8
DIST. 137.	THETA= 0.	A MT HT	ALPHA= 0.		
STRUCT 0.	GRADE= 0.	MIX 96. 2. 2.			64.9 68.0
	SURFACE 0.	SPD 39. 39. 39.			

SITE	ROADWAY	TRAFFIC	SHIELDING	L50	L10
	LANES= 6	ADT= 44800.		AUTO	64.1 64.5
	WIDTH=102.	% ADT 9.	HEIGHT 0.	MEDTRK	52.3 60.4
HEIGHT 5.	FINITE= 1	FLOW 0	DIST.= 0.	HVYTRK	55.1 63.8
DIST. 138.	THETA= 0.	A MT HT	ALPHA= 0.		
STRUCT 0.	GRADE= 0.	MIX 96. 2. 2.			64.8 68.0
	SURFACE 0.	SPD 39. 39. 39.			

SITE	ROADWAY	TRAFFIC	SHIELDING	L50	L10
	LANES= 6	ADT= 44800.		AUTO	64.1 64.5
	WIDTH=102.	% ADT 9.	HEIGHT 0.	MEDTRK	52.3 60.4
HEIGHT 5.	FINITE= 1	FLOW 0	DIST.= 0.	HVYTRK	55.1 63.7
DIST. 138.	THETA= 0.	A MT HT	ALPHA= 0.		
STRUCT 0.	GRADE= 0.	MIX 96. 2. 2.			64.8 63.0
	SURFACE 0.	SPD 39. 39. 39.			

ELEMENT # 1 65.0 DBA AT 138.1 FEET
 TOTAL: 68.0 DBA AT 138.1 FEET

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US41 CR 887 TO MYRTLE ROAD, COLLIER COUNTY
 BUILD -- BANYAN ROAD TO S OF MYRTLE ROAD
 2015 DEMAND 6 LANES
 CZ693.03 M. ADAMS 3/93

SITE	ROADWAY	TRAFFIC	SHIELDING	L50	L10
	LANES= 6	ADT= 41100.		AUTO	65.4 66.1
	WIDTH=102.	% ADT 9.	HEIGHT 0.	MEDTRK	53.3 62.6
HEIGHT 5.	FINITE= 1	FLOW 0	DIST.= 0.	HVYTRK	56.0 65.8
DIST. 100.	THETA= 0.	A MT HT	ALPHA= 0.		
STRUCT 0.	GRADE= 0.	MIX 96. 2. 2.			66.1 69.9
	SURFACE 0.	SPD 39. 39. 39.			

SITE	ROADWAY	TRAFFIC	SHIELDING	L50	L10
	LANES= 6	ADT= 41100.		AUTO	64.2 64.8
	WIDTH=102.	% ADT 9.	HEIGHT 0.	MEDTRK	52.1 60.8
HEIGHT 5.	FINITE= 1	FLOW 0	DIST.= 0.	HVYTRK	54.9 64.1
DIST. 125.	THETA= 0.	A MT HT	ALPHA= 0.		
STRUCT 0.	GRADE= 0.	MIX 96. 2. 2.			64.9 68.3
	SURFACE 0.	SPD 39. 39. 39.			

SITE	ROADWAY	TRAFFIC	SHIELDING	L50	L10
	LANES= 6	ADT= 41100.		AUTO	64.0 64.6
	WIDTH=102.	% ADT 9.	HEIGHT 0.	MEDTRK	51.9 60.5
HEIGHT 5.	FINITE= 1	FLOW 0	DIST.= 0.	HVYTRK	54.7 63.8
DIST. 130.	THETA= 0.	A MT HT	ALPHA= 0.		
STRUCT 0.	GRADE= 0.	MIX 96. 2. 2.			64.7 68.0
	SURFACE 0.	SPD 39. 39. 39.			

SITE	ROADWAY	TRAFFIC	SHIELDING	L50	L10
	LANES= 6	ADT= 41100.		AUTO	64.0 64.5
	WIDTH=102.	% ADT 9.	HEIGHT 0.	MEDTRK	51.9 60.5
HEIGHT 5.	FINITE= 1	FLOW 0	DIST.= 0.	HVYTRK	54.6 63.8
DIST. 131.	THETA= 0.	A MT HT	ALPHA= 0.		
STRUCT 0.	GRADE= 0.	MIX 96. 2. 2.			64.7 68.0
	SURFACE 0.	SPD 39. 39. 39.			

SITE	ROADWAY	TRAFFIC	SHIELDING	L50	L10
	LANES= 6	ADT= 41100		AUTO	64.0 64.5
	WIDTH=102.	% ADT 9.	HEIGHT 0.	MEDTRK	51.9 60.4
HEIGHT 5.	FINITE= 1	FLOW 0	DIST.= 0.	HVYTRK	54.6 63.8
DIST. 131.	THETA= 0.	A MT HT	ALPHA= 0.		
STRUCT 0.	GRADE= 0.	MIX 96. 2. 2.			64.7 68.0
	SURFACE 0.	SPD 39. 39. 39.			

ELEMENT # 1 68.0 DBA AT 131.2 FEET
 TOTAL: 68.0 DBA AT 131.2 FEET

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